

RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR. COMPANY		Designer Company*	KK CONSULT.																	
Issued by Contractor	Name	Sign	Date	19 - 6 - 2023																	
Received by Employers Representative	Eng : Mahmoud Elkhilwy	<i>Mahmoud</i>	UIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DO</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>K.P.536</td> <td>T.R</td> <td>O.T</td> <td>19</td> <td>6</td> <td>2023</td> <td>10</td> <td>50</td> </tr> </table>		C1	C2	C3	DO	MM	YY	HH	MM	K.P.536	T.R	O.T	19	6	2023	10	50
C1	C2	C3	DO	MM	YY	HH	MM														
K.P.536	T.R	O.T	19	6	2023	10	50														
CODE - 1	S1 to S21	D1 to S3	Kp XXX Note																		
CODE - 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used																		
CODE - 3	Sub Element of Activity																				

EXPLANATION OF WORK TO BE INSPECTED		
Description	Element	Item
Sub-ballast	Sub Ballast (+ 0.9)	From S1 (536+000) to (536+140)

INSPECTION DETAILS The following will be ready at the Planned Inspection Time	
Planned Inspection Date	Planned Inspection Time
	13:30

COMPLIANCE EVIDENCE Must be included as appropriate			
Checklist Attached ☐	Test Results Attached ☐	Calibration Attached ☐	Other as indicated ☐
Drawing Reference	ITP Reference	MS Reference	

Civil	Survey	Material
Women spaces visuall inspection is approved	14/6/2023 Ahmed Ashraf Mahmoud	14/6/2023 Ahmed Ashraf Mahmoud

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng : Mahmoud Elkhilwy	<i>Mahmoud</i>				
QA/QC*						
GARB**	Eng : Khaleel Fawzy	<i>Khaleel</i>				
Employers Representative Notes						
Employers Representative Sign						

* Designer
** Alignment: Bridges; Culvert

[illegible]

Center Line DATA

Station	Easting	Northing
536+000	290995.89	943736.1423
536+020	290976.5852	943741.3695
536+040	290957.2804	943746.5968
536+060	290937.9756	943751.8241
536+080	290918.6708	943757.0513
536+100	290899.366	943762.2786
536+120	290880.0611	943767.5059
536+140	290860.7563	943772.7331

Extremes Asympt

Refined

TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Ahmed El-Sherpi

Mohamed

MS FROM ST.(536+000) TO ST.(536+240)

Layer Zone	Layer No.	Station	536+000	536+020	536+040	536+060	536+080	536+100	536+120	536+140	536+160	536+180	536+200	536+220	536+240
		DESIGN LEVEL	59.36	59.41	59.47	59.52	59.57	59.63	59.68	59.73	59.79	59.84	59.89	59.95	60.00
		FERMA LEVEL	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		CUT LEVEL	53.28	53.25	53.21	53.18	53.29	53.40	53.47	53.54	53.76	53.97	54.27	54.39	54.36
		DIFF (FERMA - CUT)	5.18	5.26	5.35	5.44	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Embankment		0	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		-0.25	58.21	58.26	58.32	58.37	58.42	58.48	58.53	58.58	58.64	58.69	58.74	58.80	58.85
		-0.5	57.96	58.01	58.07	58.12	58.17	58.23	58.28	58.33	58.39	58.44	58.49	58.55	58.60
		-0.75	57.71	57.76	57.82	57.87	57.92	57.98	58.03	58.08	58.14	58.19	58.24	58.30	58.35
		-1	57.46	57.51	57.57	57.62	57.67	57.73	57.78	57.83	57.89	57.94	57.99	58.05	58.10
		-1.25	57.21	57.26	57.32	57.37	57.42	57.48	57.53	57.58	57.64	57.69	57.74	57.80	57.85
Middle Embankment		-1.5	56.96	57.01	57.07	57.12	57.17	57.23	57.28	57.33	57.39	57.44	57.49	57.55	57.60
		-1.75	56.71	56.76	56.82	56.87	56.92	56.98	57.03	57.08	57.14	57.19	57.24	57.30	57.35
		-2	56.46	56.51	56.57	56.62	56.67	56.73	56.78	56.83	56.89	56.94	56.99	57.05	57.10
		-2.5	55.96	56.01	56.07	56.12	56.17	56.23	56.28	56.33	56.39	56.44	56.49	56.55	56.60
		-3	55.46	55.51	55.57	55.62	55.67	55.73	55.78	55.83	55.88	55.94	55.99	56.05	56.10
		-3.5	54.96	55.01	55.07	55.12	55.17	55.23	55.28	55.33	55.39	55.44	55.49	55.55	55.60
Lower Embankment		-4	54.46	54.51	54.57	54.62	54.67	54.73	54.78	54.83	54.89	54.94	54.99	55.05	55.10
		-4.5	53.96	54.01	54.07	54.12	54.17	54.23	54.28	54.33	54.39	54.44	54.49	54.55	54.60
		-5	53.46	53.51	53.57	53.62	53.67	53.73	53.78		53.89				
		-5.5													
		-6													
		-6.5													

ms

MS APPROVED
According to Des. Profile

[Signature]
18/9/2022

Anmet Ashraf

mahmoud

POINT	NORTH	EAST	ELEV
1	943743.379	290997.207	59.026
2	943739.458	290996.341	59.192
3	943736.053	290995.464	59.327
4	943731.967	290994.476	59.2
5	943729.107	290993.912	59.087
6	943730.459	290989.004	59.066
7	943733.516	290989.572	59.21
8	943737.437	290990.178	59.351
9	943741.526	290991.183	59.204
10	943744.83	290991.815	59.031
11	943745.87	290988.098	59.043
12	943742.916	290987.195	59.192
13	943739.062	290986.452	59.36
14	943734.949	290985.559	59.23
15	943731.484	290984.452	59.084
16	943732.965	290979.464	59.096
17	943736.117	290980.086	59.213
18	943740.001	290980.989	59.367
19	943743.947	290982.088	59.233
20	943747.494	290982.637	59.104
21	943748.611	290978.256	59.09
22	943745.019	290977.581	59.242
23	943741.317	290976.715	59.37
24	943737.559	290975.788	59.237
25	943734.099	290974.809	59.128
26	943735.523	290969.569	59.104
27	943738.867	290970.034	59.245
28	943742.865	290971.053	59.383
29	943746.834	290972.128	59.244
30	943750.063	290972.889	59.101

A. H. JASHA

mahmoud

POINT	NORTH	EAST	ELEV
31	943751.114	290968.875	59.096
32	943748.091	290967.993	59.243
33	943744.343	290966.977	59.386
34	943740.59	290966.104	59.278
35	943736.897	290964.881	59.121
36	943738.225	290960.002	59.139
37	943741.388	290960.568	59.282
38	943745.168	290961.579	59.429
39	943749.284	290962.609	59.29
40	943752.695	290963.294	59.125
41	943753.721	290959.42	59.125
42	943750.571	290958.482	59.298
43	943746.589	290957.564	59.444
44	943742.444	290956.629	59.318
45	943739.371	290955.534	59.164
46	943740.741	290950.753	59.182
47	943744.015	290950.99	59.324
48	943747.958	290951.843	59.449
49	943751.851	290952.904	59.316
50	943755.282	290953.214	59.125
51	943756.28	290949.727	59.132
52	943753.148	290948.821	59.316
53	943749.263	290947.848	59.457
54	943745.298	290946.73	59.338
55	943742.079	290945.813	59.226
56	943743.415	290940.962	59.244
57	943746.558	290941.506	59.337
58	943750.463	290942.46	59.473
59	943754.314	290943.452	59.331
60	943757.737	290943.962	59.176

Ahmed Al-Sayid

Mahmoud A

POINT	NORTH	EAST	ELEV
61	943758.816	290939.851	59.175
62	943755.726	290939.007	59.339
63	943751.959	290938.124	59.484
64	943747.869	290937.05	59.361
65	943744.687	290935.901	59.237
66	943746.19	290930.242	59.218
67	943749.527	290930.831	59.393
68	943753.468	290931.797	59.518
69	943757.525	290932.884	59.361
70	943760.803	290933.235	59.195
71	943761.651	290930.348	59.204
72	943758.278	290929.377	59.372
73	943754.537	290928.252	59.522
74	943750.437	290927.131	59.398
75	943747.297	290926.277	59.249
76	943748.807	290921.426	59.263
77	943752.214	290922.124	59.409
78	943755.871	290923.081	59.521
79	943760.139	290924.135	59.36
80	943763.036	290924.375	59.236
81	943763.968	290920.817	59.267
82	943760.743	290919.886	59.404
83	943757.242	290918.992	59.535
84	943753.196	290917.778	59.414
85	943749.991	290916.795	59.308
86	943751.058	290912.287	59.269
87	943754.671	290912.874	59.435
88	943758.494	290913.754	59.568
89	943762.84	290914.828	59.392
90	943765.526	290915.242	59.254

Adnan Aswaf

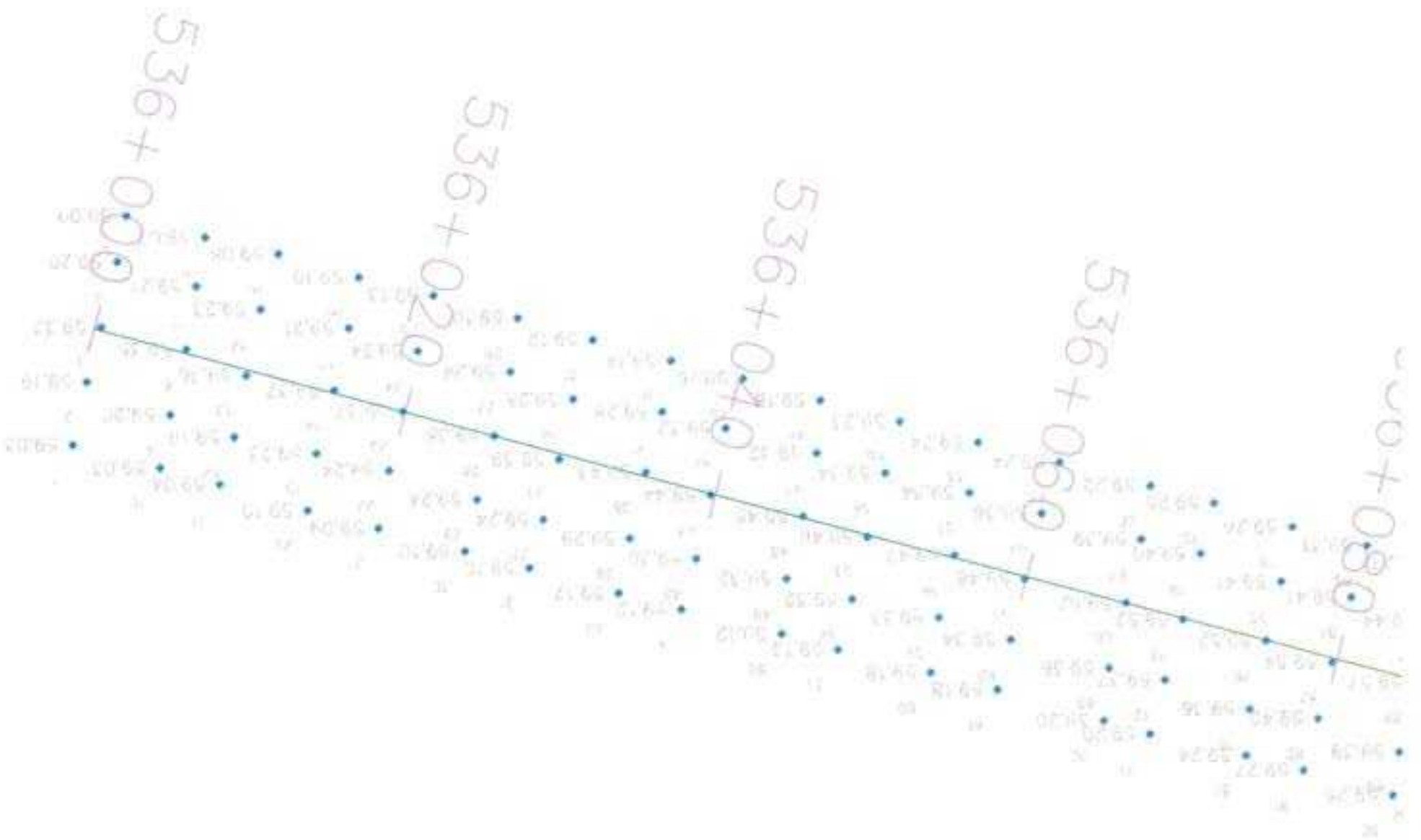
Mahmoud

POINT	NORTH	EAST	ELEV
91	943766.692	290910.997	59.281
92	943763.055	290909.943	59.44
93	943759.49	290909.055	59.582
94	943755.417	290908.173	59.427
95	943752.546	290907.112	59.316
96	943753.731	290903.078	59.335
97	943757.037	290903.667	59.456
98	943760.995	290904.452	59.589
99	943765.209	290905.26	59.43
100	943768.136	290905.577	59.282
101	943769.223	290901.608	59.291
102	943765.591	290900.565	59.48
103	943762.2	290899.746	59.61
104	943758.251	290898.791	59.486
105	943755.089	290897.621	59.348
106	943756.442	290892.434	59.367
107	943760.283	290893.225	59.526
108	943763.928	290894.11	59.615
109	943767.717	290895.13	59.456
110	943770.949	290895.648	59.275
111	943772.055	290891.752	59.286
112	943768.298	290890.667	59.494
113	943764.748	290889.911	59.627
114	943760.367	290889.013	59.475
115	943757.689	290888.196	59.377
116	943759.107	290883.038	59.396
117	943762.487	290883.541	59.514
118	943766.459	290884.268	59.636
119	943770.239	290885.119	59.51
120	943773.473	290885.746	59.378

Ahmed Ahmed

POINT	NORTH	EAST	ELEV
121	943774.44	290882.029	59.386
122	943771.2	290881.438	59.529
123	943767.489	290880.627	59.659
124	943762.889	290879.29	59.504
125	943760.423	290878.475	59.398
126	943761.704	290873.435	59.392
127	943764.854	290874.033	59.545
128	943768.658	290875.028	59.703
129	943772.594	290875.719	59.555
130	943775.98	290876.13	59.417
131	943777.098	290872.388	59.416
132	943773.809	290871.579	59.577
133	943769.954	290870.948	59.712
134	943765.655	290869.619	59.536
135	943762.844	290868.729	59.416
136	943764.213	290863.595	59.425
137	943767.327	290864.357	59.56
138	943771.096	290865.256	59.707
139	943775.452	290866.299	59.551
140	943778.497	290867.032	59.425
141	943779.737	290862.545	59.415
142	943776.36	290861.88	59.573
143	943772.736	290860.711	59.705
144	943768.686	290859.625	59.597
145	943765.571	290858.602	59.453

prohromad



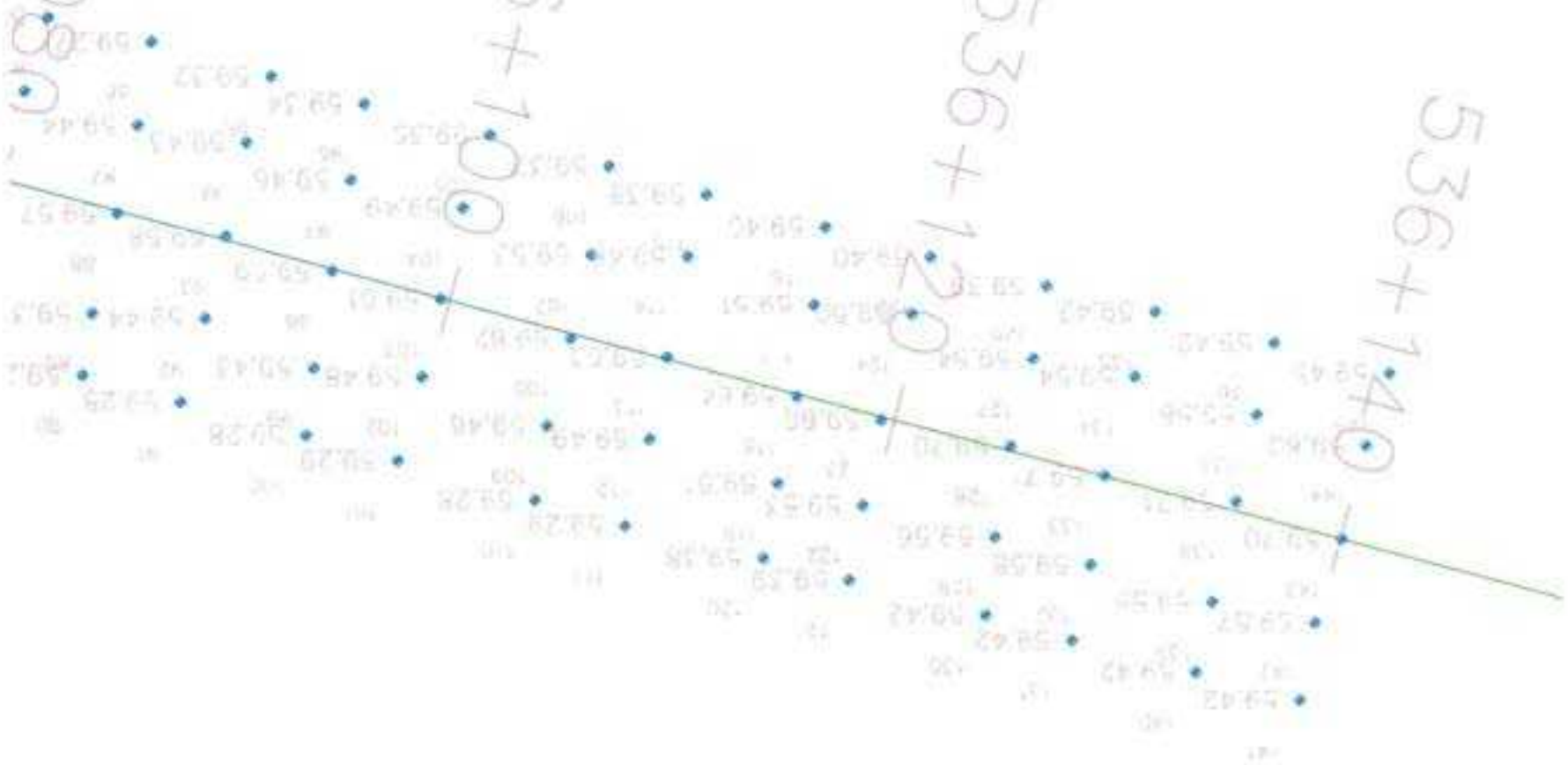
Mohamed

536+080

536+100

536+120

536+140



2.4.5. *Streptococcus* count

B-soft material graduation				Wt. Of sample				500.00	gm
above size	10	40	200						
Cumulative Retained (u)	134.00	0.00	437.00						
Cumulative Retained %	26.80	0.00	87.40						
Cumulative Passing %	73.20	100.00	12.60						

C-General gradient										
slieve size(in)	4	5	4 1/2	3/4	1/2	3/8	3/4	# 10	# 40	# 200
slieve size(mm)	90.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	100.0	88.5	70.5	57.2	33.8	42.8	31.2	42.8	54
		100	97 - 99	75 - 79		60 - 75		25 - 50		0 - 7

ATTERBERG LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	N.P.	N.P.	N.P.

Contributors

Consultant





Electric Express Train - HSR
From El Ain El Badiya City To El Alminin - MATROUH
Section - 7 From FOHA TO MARESA MATROUH
From station 504+000 To station 532+177



Operating Lab Mansour Lab

Proctor Test

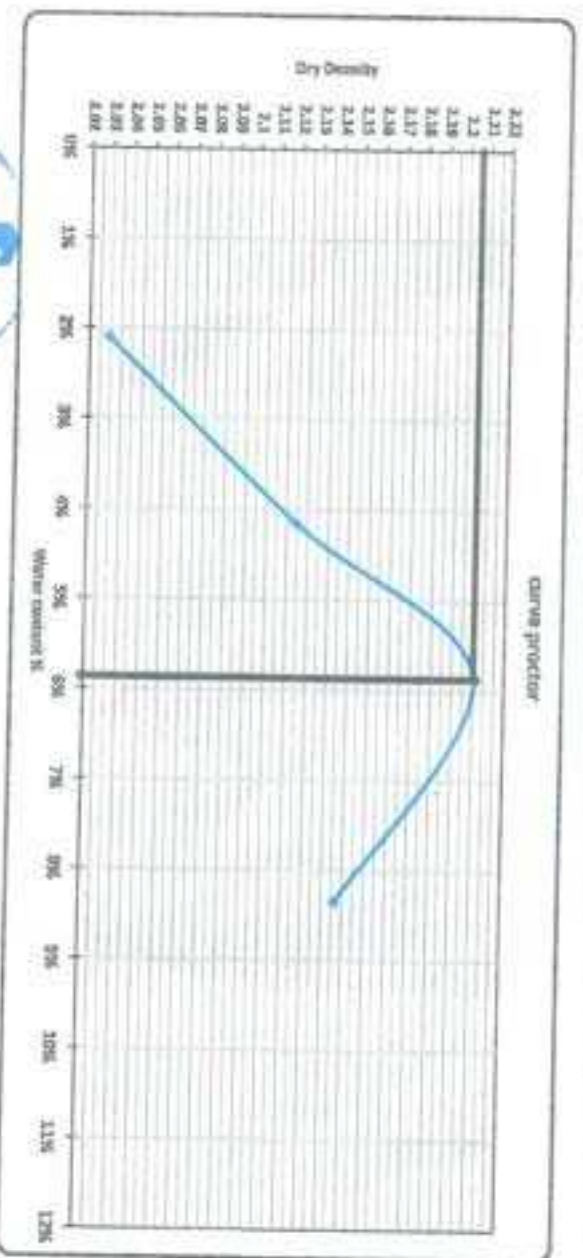
TESTING DATE:	4/9/2023	CODE	
LOCATION:	K.P 536+500 (2000 m3)	DATE	20-6-2023
NAME COMPANY	Eschner	Zone	536+000 TO 537+000

Weight of empty mold :	8750.0
Mold Volume:	2154.0

MAX Dry Density	2.756
Water content %	5.9

trial no :	1	2	3	4
Wt. Of Mold+ wet soil	18180.0	18070.0	18141.0	18710.0
Wt. WET SOIL	4421.0	4711.0	4902.0	4951.0
Wt. Density	2.073	2.200	2.230	2.320

Test No.	1	2	3	4	5	6	7	8
Tare Wt.	55.85	56.5	55.65	52.42	56.35	56.34	56.34	57.02
Wt. Of wet soil & tare	108.4	108.3	108.4	105.7	108.0	109.3	109.7	100.3
Wt. Of dry soil & tare	105.5	105.5	102.0	102.7	103.3	101	100.0	100.3
Wt. Of water	3.1	3.8	5.5	6.0	7.7	8.1	11.0	11.0
Wt. Of dry soil	126.7	141.0	137.3	140.3	134.3	134.5	122.0	131.4
Water content %	2.3%	2.6%	4.0%	4.3%	5.7%	6.0%	8.9%	8.4%
AV Water content %	2.1%	4.2%			5.9%		8.3%	
Dry Density	2.029	2.120			2.206		2.441	



Contractor

Consultant

Abdelkader S.M.



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	5-9/2023	City :	Zone :	534+000	537+000
Location :	R.P 534+500 (5000 m3)				
Name of Engineer :	Engineer	20-09-23			

1. Test Results

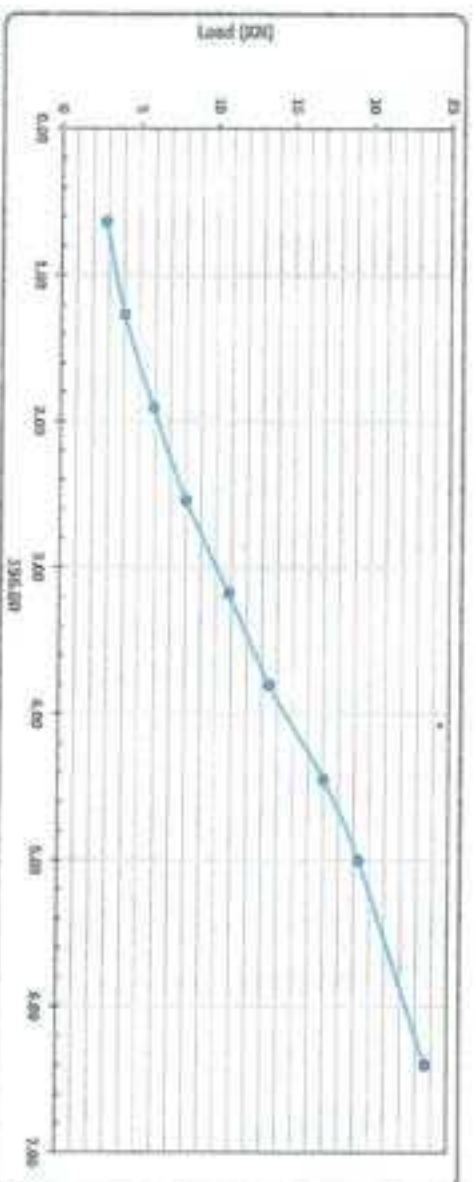
Compaction % for Mold	
Mold No.	8
Mold Vol.(cm ³)	2100
Mold Wt. (gm)	3019
Mold Wt. + Wet Wt. (gm)	13700
Wet Wt. (gm)	4681
Wet Density (g/cm ³)	2.21
Dry Density (g/cm ³)	2.200
Proctor Density (g/cm ³)	2.308
Compaction %	95.8

Moisture Rate After Compacted Mold	
Test No.	13
Tare Wt. (gm)	52.61
Tare Wt. + Wet Wt. (gm)	186.1
Tare Wt. + Dry Wt. (gm)	144.8
Wet Wt. (gm)	5.5
Dry Wt. (gm)	99.8
Moisture Content %	5.66

Swelling	
Mold No.	2
Time	9
Initial Height (mm)	0.00
Final Height (mm)	0.02
Settlement	0
Swelling Height (mm)	118.00
Swelling Ratio %	0%

Location Reading :

150.00	0.64	1.27	1.91	2.54	3.18	3.80	4.43	5.07	5.70
Lead Reading (mm)	208.00	412.00	602.00	811.00	1100.00	1475.00	1755.00	1910.00	2010.00
Lead (mm)	2.8	4.8	5.9	6.9	10.8	13.5	17.0	20.7	21.8



Calculations :-

Proctor	Lead	Standard Lead	CBR	Moist. Compaction	Compaction	CBR
(mm)	(KPa)	(mm)	(%)	(%)	(%)	
2.50	6.9	17.4	66.7%	100	95	99.1%
4.50	19.1	26.8	94.4%			99.2%

Lab. Engineer

Consultant Engineer

Thema :

Thema :

Map :

Map :



Handwritten signature: M. M. S. S. S.

MATERIAL APPROVAL REQUEST

المجلس
المحلي
للمياه
والمياه
والمياه



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK	
Issued by Contractor	Name ENG : MAHMOUD ELAKHLAWY	Sign <i>Mahmoud</i>	Date 5-6-2023	COD ZH-1-5b	
Received by ER		MAIR	☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10	DO	MM
				YY	MM

CODE - 1	53 to 533	01 to 53	Rip 536 Note For Edometer print only Start Km is used
CODE - 2	Station Reference	Output Reference	
CODE - 3	Work Activity Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Specification	Test Requirement	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Specification	
2	ASTM C 136	Sieve Analysis	According Specification	
3	ASTM D 1440	Passing Sieve #200	5.4 %	
4	ASTM D 4318	Atterberg Limit	NON .	
5	ASTM D 2974	Moisture Content	5.9 %	
6	ASTM D 1557	Modifd Proctor	2.206	
7	ASTM D 1883	C B R	94.7 %	
8	ASTM C 127	Specific gravity	2.524	
9	ASTM C535	Los Angeles	26.50	
Comments by:		Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELAKHLAWY	<i>Mahmoud</i>	
QA/QC *	<i>Abdelrahman S.M.S</i>	<i>Mahmoud S.M.S</i>	
GARB**			
Employers Representative			

MATERIAL INSPECTION REQUEST

المشروع
المبني و المخطط
(Project)



الهيئة العامة
للحماية المدنية
(General
Civil Defense
Authority)

مركز المراقبة
والسلامة
(Monitoring
and Safety
Center)



Contractor Company	EI. Zhoor . Company			Designer Company	KK CONSULT.		
Issued by Contractor	Name Eng \ Mahmoud Elkhilawy	Sign <i>Mahmoud</i>	Date 18-5-2023	COD ZH 2 P.G			
Received by ER			MIR	C1	C2	C3	DO
							MM
							YY
							HH
							MM

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

Description of Materials		Fill material results				
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)				
MAR Approval No		Date				
Supplier Name		Specification	Clause			
Test Requirement		Clause				
Reference Photos	Yes attached / No	Other				
Item	Description	Unit	Quantity	Arrival Date	Note	
1	L.L & P.L & O.M.C %	m3	5000	15 - 5 - 2023		
2	Proctor	m3	5000	15 - 5 - 2023		
3	Classification	m3	5000	15 - 5 - 2023		
4	Serve analysis	m3	5000	15 - 5 - 2023		
Comments by:		Comments by:				
Asample has been taken form fill material by KK office to (AL NUBY CENTER Lab) lab and the results founded meet the specifcointons and accepted						
APPROVAL STATUS						
Organisation	Name	Sign	Date	A-AWC-R		
Contractor	ENG : Mahmoud Elkhilawy	<i>Mahmoud</i>				
QA/QC *	<i>Abdallah SAMS</i>	<i>Abdallah SAMS</i>				
GARB**						



Maritime Express Trade - 1000
From 10 Jan 10 to 10 Jan 10 (10 Jan 10) - 10000000
Maritime - 1 From 10 Jan 10 to 10 Jan 10 (10 Jan 10) - 10000000
From 10 Jan 10 to 10 Jan 10 (10 Jan 10) - 10000000



Absorption & Aggregate specific gravity
ASTM-C136

TESTING DATE:	6/6/2023	code:	Standard	S36+000	507+000
LOCATION	K.P. 536+500 (5000 m3)	Material	Material		
NAME COMPANY	KSA Engineering	Layer thickness			0.20 cm

Weight of sample	2000	gm
Weight of saturated -dry surface sample (B)	2012	gm
Weight of saturated sample in water (C)	1229	gm
Weight of dry sample after testing (A)	1978	gm

Results:-

Bulk specific gravity = $A / (B - C)$	2.524	2700
Apparent specific gravity = $A / (B - C)$	2.645	
Absorption = $(B - A) / A$	1.022	%

4830 6130

Los Angeles abrasion ASTM-C136

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3979	28.50

Lab. Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	
Sign :	



شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهرة)
من المحطة (536+600) إلى المحطة (536+680)
م.م 62.30

STATION	ACT. WIDTH	LEFT SIDE			S.E.%	PGL			S.E.%	RIGHT SIDE			ACT. WIDTH
		7	4			DESIGN LEVEL	FERMA LEVEL	CL		4	7		
536+600		60.73	60.85		-4%	61.01	60.11	1.29	-4%	60.85	60.73		
Act.		1.57	1.45					61.01		1.45	1.57		
Diff.		✓	✓					x2		✓	✓		
536+610		60.76	60.88		-4%	61.04	60.14	1.26	-4%	60.88	60.76		
Act.		1.54	1.42					61.04		1.42	1.54		
Diff.		✓	x1					-1		-1	x1		
536+620		60.79	60.91		-4%	61.07	60.17	1.23	-4%	60.91	60.79		
Act.	✓	1.51	1.39					61.07		1.39	1.51		
Diff.		✓	✓					x2		✓	-2		
536+630		60.82	60.94		-4%	61.10	60.20	1.20	-4%	60.94	60.82		
Act.		1.48	1.36					61.10		1.36	1.48		
Diff.		✓	-1					x1		✓	✓		
536+640		60.85	60.97		-4%	61.13	60.23	1.17	-4%	60.97	60.85		
Act.		1.45	1.33					61.13		1.33	1.45		
Diff.		✓	✓					x1		✓	✓		
536+650		60.88	61.00		-4%	61.16	60.26	1.14	-4%	61.00	60.88		
Act.		1.42	1.30					61.16		1.30	1.42		
Diff.		-1	✓					✓		-2	-1		
536+660		60.91	61.03		-4%	61.19	60.29	1.11	-4%	61.03	60.91		
Act.		1.39	1.27					61.19		1.27	1.39		
Diff.		-1	-1					x1		-2	-2		
536+670		60.94	61.06		-4%	61.22	60.32	1.08	-4%	61.06	60.94	✓	
Act.		1.36	1.24					61.22		1.24	1.36		
Diff.		-1	x2					x1		✓	-1		
536+680		60.97	61.09		-4%	61.25	60.35	1.05	-4%	61.09	60.97		
Act.		1.33	1.21					61.25		1.21	1.33		
Diff.		-2	(x3)					x1		(x4)	x2		

rehab

Muhammad

MS FROM ST.(536+500) TO ST.(536+680)

Layer Zone

Layer No.

Station

DESIGN LEVEL

FERMA LEVEL

CUT LEVEL

DIFF (FERMA - CUT)

0

-0.25

-0.5

-0.75

-1

-1.25

-1.5

-1.75

-2

-2.5

-3

-3.5

-4

-4.5

-5

Upper Embankment

Middle Embankment

Madan

Shree

MS APPROVED
According to Design Profile
Rev- 08

Shree

4/10/2022

Center Line DATA

Station	Easting	Northing
536+600	290416.7457	943892.9601
✓ 536+620	290397.4409	943898.1874
536+640	290378.1361	943903.4147
536+660	290358.8312	943908.6419
536+680	290339.5264	943913.8692

Mohamed

Imad

TYPICAL WIDTH

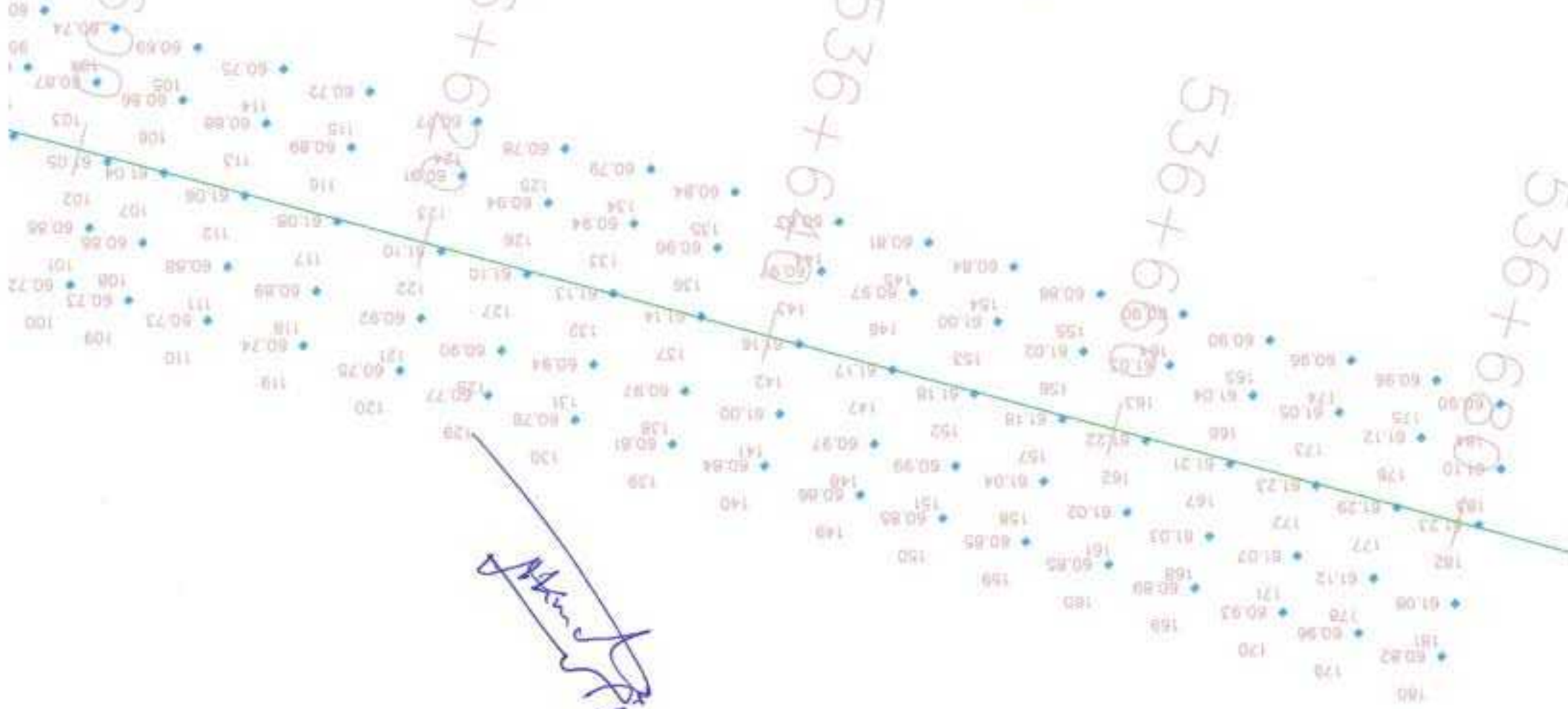
layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferme	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Murphy
GAS

reformed

Prasanna

[Signature]



POINT	NORTH	EAST	ELEV
105	943887.262	290410.155	60.693
106	943890.204	290410.97	60.86
107	943894.29	290412.005	61.036
108	943898.194	290413.195	60.856
109	943901.422	290413.982	60.729
110	943902.556	290409.547	60.729
111	943899.531	290408.44	60.876
112	943895.569	290407.486	61.056
113	943891.502	290406.305	60.884
114	943888.472	290405.354	60.746
115	943889.73	290400.503	60.722
116	943892.842	290401.542	60.887
117	943896.989	290402.315	61.076
118	943900.897	290403.491	60.886
119	943903.955	290404.203	60.74
120	943905.341	290398.793	60.751
121	943902.415	290397.629	60.917
122	943898.653	290396.508	61.099
123	943894.443	290395.344	60.906
124	943891.384	290394.478	60.768
125	943892.902	290389.6	60.778
126	943895.943	290390.532	60.945
127	943899.922	290391.705	61.097
128	943904.209	290393.123	60.901
129	943906.718	290393.872	60.769
130	943908.093	290389.018	60.784
131	943904.99	290387.994	60.942
132	943901.011	290386.891	61.128
133	943897.106	290385.745	60.944
134	943894.057	290384.785	60.787
135	943895.326	290380.023	60.837
136	943898.455	290381.022	60.958
137	943902.308	290381.935	61.145
138	943906.487	290382.841	60.972
139	943909.454	290383.543	60.808

Handwritten signature

rephoned

POINT	NORTH	EAST	ELEV
140	943910.679	290378.359	60.838
141	943907.772	290377.511	60.997
142	943903.854	290376.446	61.163
143	943899.774	290375.193	60.969
144	943896.998	290374.224	60.827
145	943898.161	290369.237	60.811
146	943900.952	290370.083	60.973
147	943905.305	290371.227	61.166
148	943909.453	290372.251	60.971
149	943912.303	290373.036	60.861
150	943913.618	290368.452	60.851
151	943910.695	290367.718	60.988
152	943906.637	290366.656	61.176
153	943902.604	290365.36	60.999
154	943899.527	290364.444	60.838
155	943901.053	290359.572	60.855
156	943904.282	290360.52	61.016
157	943908.062	290361.706	61.179
158	943911.556	290362.771	61.037
159	943914.937	290363.767	60.846
160	943916.221	290359.135	60.853
161	943913.293	290358.107	61.022
162	943909.258	290357.053	61.217
163	943905.044	290355.732	61.034
164	943902.193	290354.951	60.898
165	943903.662	290350.102	60.899
166	943906.762	290351.061	61.045
167	943910.572	290352.34	61.213
168	943914.659	290353.505	61.032
169	943917.537	290354.317	60.888
170	943918.919	290349.384	60.927
171	943915.76	290348.564	61.068
172	943911.818	290347.486	61.228
173	943907.715	290346.196	61.047

Richard

POINT	NORTH	EAST	ELEV
174	943904.812	290345.498	60.96
175	943905.924	290340.745	60.964
176	943909.135	290341.591	61.125
177	943913.058	290342.967	61.29
178	943917.022	290344.269	61.122
179	943920.104	290345.125	60.955
180	943921.408	290340.447	60.815
181	943918.446	290339.688	61.081
182	943914.036	290338.387	61.226
183	943910.893	290337.129	61.104
184	943907.239	290337.182	60.898

Nune
9/5/

Mahmoud



Contractor Company	El. Zhoor . Company		Designer Company	KK CONSULT.																	
Issued by Contractor	Name	Eng \ Mahmoud Elkhilawy	Sign	Date	18-5-2023																
					COD																
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>D0</td> <td>MM</td> <td>VY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	D0	MM	VY	HH	MM				18	5	2023			ZH 2 P.G
C1	C2	C3	D0	MM	VY	HH	MM														
			18	5	2023																

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

Description of Materials		Fill material results			
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)			
MAR Approval No			Date		
Supplier Name					
Test Requirement		Specification	Clause		
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	LL & P.L & O.M.C %	m3	5000	15 - 5 - 2023	
2	Proctor	m3	5000	15 - 5 - 2023	
3	Classification	m3	5000	15 - 5 - 2023	
4	Serve analysis	m3	5000	15 - 5 - 2023	
Comments by:		Comments by:			
Asample has been taken form fill material by KK office to (AL NUBY CENTER Lab) lab and the results founded meet the specifications and accepted					
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	ENG : Mahmoud Elkhilawy	<i>Mahmoud</i>			
QA/QC *	<i>Abdellhameed</i>	<i>Abdellhameed</i>			
GARB**					

MATERIAL APPROVAL REQUEST

Approved by
Signature of Engineer
Date



Signature of Engineer
Date



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK	
Issued by Contractor	Name ENG : MAHMOUD ELKHLAWY	Sign <i>Mahmoud</i>	Date 5-6-2023	COD ZH-1-sb	
Received by ER			MAR	☒ C1 ☒ C2 ☒ C3 ☒ C4 ☒ C5 ☒ C6 ☒ C7 ☒ C8 ☒ C9 ☒ C10 ☒ C11 ☒ C12 ☒ C13 ☒ C14 ☒ C15 ☒ C16 ☒ C17 ☒ C18 ☒ C19 ☒ C20 ☒ C21 ☒ C22 ☒ C23 ☒ C24 ☒ C25 ☒ C26 ☒ C27 ☒ C28 ☒ C29 ☒ C30 ☒ C31 ☒ C32 ☒ C33 ☒ C34 ☒ C35 ☒ C36 ☒ C37 ☒ C38 ☒ C39 ☒ C40 ☒ C41 ☒ C42 ☒ C43 ☒ C44 ☒ C45 ☒ C46 ☒ C47 ☒ C48 ☒ C49 ☒ C50 ☒ C51 ☒ C52 ☒ C53 ☒ C54 ☒ C55 ☒ C56 ☒ C57 ☒ C58 ☒ C59 ☒ C60 ☒ C61 ☒ C62 ☒ C63 ☒ C64 ☒ C65 ☒ C66 ☒ C67 ☒ C68 ☒ C69 ☒ C70 ☒ C71 ☒ C72 ☒ C73 ☒ C74 ☒ C75 ☒ C76 ☒ C77 ☒ C78 ☒ C79 ☒ C80 ☒ C81 ☒ C82 ☒ C83 ☒ C84 ☒ C85 ☒ C86 ☒ C87 ☒ C88 ☒ C89 ☒ C90 ☒ C91 ☒ C92 ☒ C93 ☒ C94 ☒ C95 ☒ C96 ☒ C97 ☒ C98 ☒ C99 ☒ C100	

CODE - 1	SI to S2L Station Reference	D1 to S3 Depth Reference	Up 536 Meter For Kilometer point only Start km is used
CODE - 2			
CODE - 3		Work Activity Sub Element of Activity	

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Specification	Test Requirement	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Specification	
2	ASTM C 136	Sieve Analysis	According Specification	
3	ASTM D 1440	Passing Sieve #200	5.4 %	
4	ASTM D 4318	Atterberg Limit	NON	
5	ASTM D 2974	Moisture Content	5.9 %	
6	ASTM D 1557	Modifid Proctor	2.206	
7	ASTM D 1863	C B R	94.7 %	
8	ASTM C 127	Specific gravity	2.524	
9	ASTM C335	Los Angeles	26.50	
Comments by:		Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHLAWY	<i>Mahmoud</i>	
QA/QC *	<i>Abdelkhalik SING</i>	<i>Mahmoud SING</i>	
GARB**			
Employers Representative			

 Karama Karama and Son's 011 5511 0000	 HSR 011 5511 0000	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATRUH From Station 504+000 To Station 589+177		 HSR 011 5511 0000
		Clienting Lab	Mansour Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	ZONE	536+000	537+000
Location	R.P 536+500 (5000 m3)	Z1-Cp-1	Material	Sub-Gradient
MADE COMPANY	Elsofor			

1-Visual inspection test

2-Grain test

A-gradation of bulk material				SAMPLE WEIGHT (g)				33240.00		gm	table classify
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS		soil classify	
Mass retained (g)	0.0	0.0	1035.0	8680.0	4812.0	1433.0	3463.0			2.250	
Cumulative Retained (g)	0.0	0.0	1035.0	9715.0	14527.0	15960.0	19423.0			5.9	
Cumulative Retained %	0.0	0.0	2.1	20.2	42.8	47.1	57.4				
Cumulative Passing %	100.0	100.0	97.9	79.8	57.2	52.9	42.6			94.7%	
										CBR	

B-grad material gradation						WT. OF sample	500.00	g/m
sieve size	10	40	200					
Cumulative Retained (g)	124.00	0.00	437.00					
Cumulative Retained %	24.80	0.00	87.40					
Cumulative Passing %	75.20	100.00	12.60					

C-General grad limit										
sieve size(in)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	100.0	95.3	78.8	57.2	52.9	42.6	21.2	12.0	5.4
		100	97.50	75.70		60.15		35.8		0.7

ATTENTION LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	N.P	N.P	N.P

Contractor

Consultant



Abdelhakim S. Mohamed



Electric Express Train - MSR
From El Ahi El Babara City To El Alamein - MATROUH
Section - 7 From FOICA TO MARESA MATROUH
From Station B64+000 To Station 508+177



operating Lab Mansour Lab

Proctor Test

TESTING DATE:	4/6/2023	code		Zone	S38+000 TO 537+000
LOCATION:	K.P. 536-538 (5000 m3)	216-50-4			
NAME COMPANY	Elprocor				

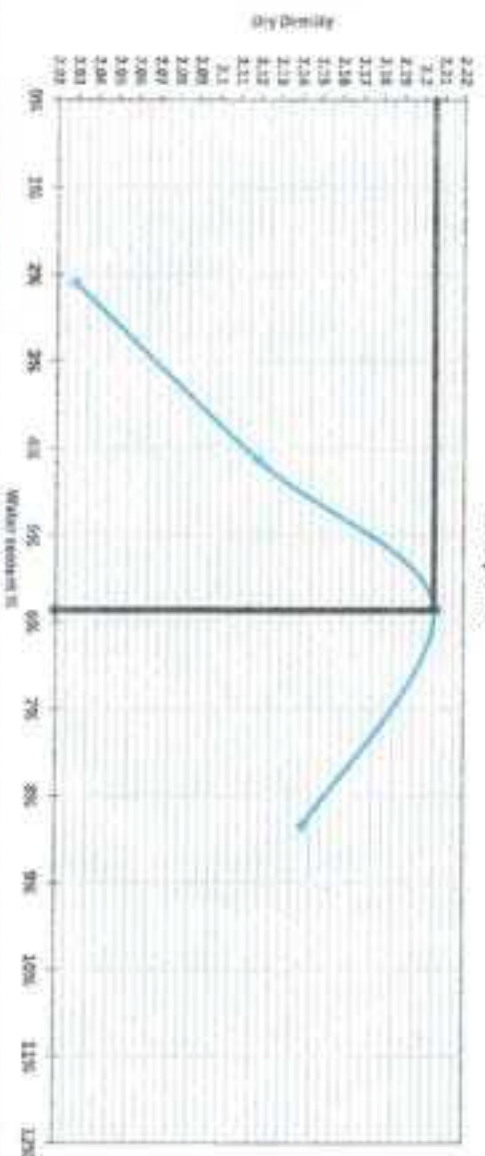
Weight of empty mold :	3759.0
Mold Volume :	2134.0

MAX Dry Density	2.366
Water content %	9.9

Test no :	1	2	3	4	
Wt. Of Mold wet soil	10180.8	10076.0	10741.0	10710.0	
Wt. WET MOLD	4411.0	4711.8	4982.9	4951.0	
Wt. Density	2.073	2.308	2.336	2.338	

Tare No.	1	2	3	4	5	6	7	8	
Tare wt.	88.30	94.8	88.68	92.42	96.96	96.74	96.74	97.92	
Wt. Of wet soil in tare	1906.6	1908.3	1901.4	1908.9	1903.9	1908.7	1908.3	1908.3	
Wt. Of dry soil in tare	1958.0	1958.5	1921.9	1921.7	1911.3	191	1881.8	1891.3	
Wt. Of water	31	2.8	8.8	6.0	7.7	8.1	11.8	11.0	
Wt. Of dry soil	139.7	141.0	137.2	140.3	134.3	135.8	132.8	131.0	
Water content %	12%	2.0%	0.8%	4.3%	5.7%	6.0%	8.4%	8.4%	
Wt. Water content %	2.1%		4.3%		8.9%		8.3%		
Dry Density	2.029		2.120		2.286		2.141		

Curve proctor



Contractor

Consultant

Abdelrahman



Electric Express Train - HSR



California Bearing Ratio Test

Testing Date:	6/10/2023	Color:	Zone:	SSA+000	SS7+000
Location:	K&P SSA+500 (5000 m ³)	PSI=			
Name of Contractor:	1 Subur				

2. Test Results

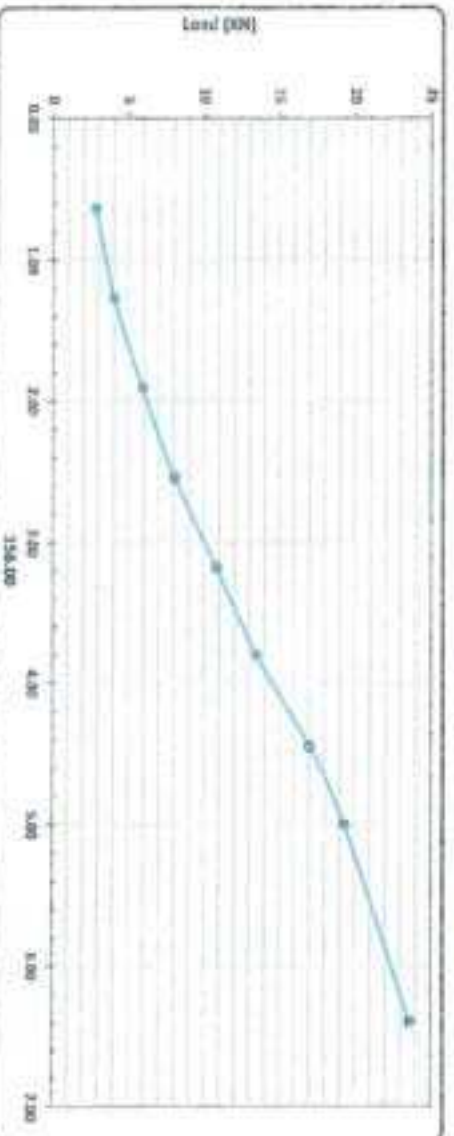
Compaction % for Moist	
Moist No.	3
Moist Vol (cm ³)	230
Moist Wt. (gms)	3219
Moist Wt. - Wet Wt. (gms)	1879
Wet Wt. (gms)	483
Wet Density (g/cm ³)	2.10
Pro Density (g/cm ³)	2.20
Proctor Density (g/cm ³)	2.20
Compaction %	100

Moisture Ratio After Compacted Moist	
Test No.	12
Test Wt. (gms)	88.43
Test Wt. - Wet Wt. (gms)	76.43
Test Wt. - Dry Wt. (gms)	12.43
Moist	6.3
Pro Wt. (gms)	88.43
Moisture Content %	9.00

Swelling	
Moist No.	3
Test	0
Initial Height (mm)	6.40
Final Height (mm)	6.40
Swelling	0
Swelling Height (mm)	100.00
Swelling Ratio %	100.00

Loading Results:

100.00	6.61	1.27	1.90	2.54	3.19	3.83	4.47	5.10	5.74
Load Bearing (kN)	208.50	417.00	625.00	833.00	1041.00	1249.00	1457.00	1665.00	1873.00
Load (kN/m ²)	2.8	4.8	5.9	7.7	10.3	13.3	17.0	20.7	24.4



Conclusion:

Penetration	Load	Standard Load	CBR	Moist Compaction	Expansion	CBR
0.001	0.00	0.00	1.00	1.00	1.00	1.00
2.00	6.61	0.01	6.61	1.00	1.00	6.61
5.00	16.61	20.0	86.40	1.00	98	91.70

Lab. Engineer

Name:

Sign:



Construction Engineer

Name:

Sign:

Signature of the Construction Engineer.



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KARNATAKA VETERINARY, VETERINARY & ANIMAL SCIENCES

Elaville Exporters Trade - HSN

From 01 Aug 21 Section City To 01 August - MATRICKS

Section - 1 From 1000 To MATRICKS MATRICKS

From 01 Aug 21 Section City To 01 August - MATRICKS

**Absorption & Aggregate specific gravity
AASHTO-T95**

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	N.P 536+500 (5000 m.s)	road	Material	Sub-Buland	
NAME COMPANY	Uthar		layer thickness	0.20 cm	

Weight of sample	2000	gm
Weight of saturated dry surface sample (B)	2012	gm
Weight of saturated sample in water (C)	1229	gm
Weight of dry sample after heating (A)	1976	gm

error

Results:-

Bulk specific gravity = $A / (B - C)$	2.524	1.770
Apparent specific gravity = $A / (A - C)$	2.640	
Absorption = $(B - A) / A$	1.822	%

error

error

Los Angeles abrasion AASHTO-T96

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3675	26.50

Lab Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	
Sign :	<i>Abdullah S. M. S.</i>





Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein



Section : 7 From Fokato MARSA MATRUH

From Station 504+000 To Station 568+127



ACTIVITY : Sand cone test

Laboratory results

COD

Z H (S.B.1)

Density and Unit Weight of Soil In Place by the Sand-cone Method _ ASTM D 1556

Company :	EL-ZHOOR COMPANY	Layer level :		Sub Base(0.9)
Description:	Compaction test	Layer Thickness :	0.2 m	
Station represented :	536+600 TO 536+880	Sample Date :	9/7/2023	

Modified Proctor Testing Results

Max. Dry Density , gm/cm3	Optimum Moisture Content , %	Degree of Compaction Required , %	bulk Density of Specified Sand , gm/cm3
2.30	5.3	100%	1.48

Compaction Testing Results & Calculations

STATION	536+810	536+820	536+830	536+840	536+850	536+860	536+870	536+880		
Mold No.	1	2	3	4	5	6	7	8		
Wt. of Sand Filled Tare Can	6180	6058	6360	6670	6870	6713	6620	6663		
Wt. of Sand Above Tare Can	5570	5821	5660	5750	5720	5766	5669	5820		
Wt. of Sand in Compaction Mold	3680	3997	3920	3840	3896	3920	3980	3972		
Wt. of Sand in Compaction Mold	1340	1149	1140	1148	1140	1146	1140	1140		
Wt. of Sand in Tare Can	2720	2767	2780	2800	2810	2785	2820	2822		
Volume of the Mold (cm3)	1838	1876	1878	1882	1880	1882	1909	1814		
Wt. of Sand from Mold (gm)	4379	4268	4409	4613	4623	4623	4664	4639		
bulk Density of Soil (gm/cm3)	2.382	2.268	2.342	2.332	2.328	2.356	2.332	2.328		
Moisture Content , %	6.3	6.3	6.3	5.9	6.8	5.8	6.3	5.5		
Dry Density, gm/cm3	2.237	2.104	2.199	2.204	2.201	2.227	2.213	2.207		
Compaction (%)	101.7%	108.2%	100.0%	100.2%	109.1%	101.2%	100.5%	100.3%		

Acceptance Criteria

Comply

Not Comply

CONTRACTOR COMMENTS

Site engineer :-

Consultant Materials Engineer :-

Name :- MAHMOUD ELKHALAWY

Name :- M.A. Attia

Signature :-

Signature :-

Plate Load Test Results

Company Name _____

البر

Location

536+600

7

536+680

Station

536+600

Taste Date

29-7-2023

Layer level

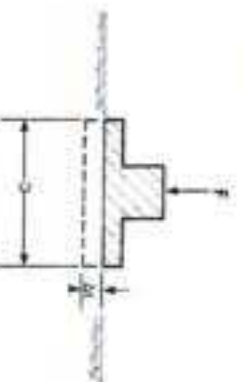
(06.90)4

Sub Ballast

EQUIPMENT AND TEST PROCEDURE:—

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



Dr. W. K. Brown

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P = direction of the slope

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable and (< 0.02 mm/minutely). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Lead/ing	Lead	Lead	Stores	Dist 1	Dist 2	Dist 3	Sept. 1	Sept. 2	Sept. 3	Ass.
Shape No.	Bar	K/S	MS/D&Z	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	16.30	19.44		0.000	0.000		0.000
1.000	2.4	0.707	0.01	16.12	19.20		0.180	0.340		0.210
2.000	18.8	5.652	0.08	15.93	18.92		0.370	0.520		0.445
0.080	37.7	11.304	0.16	15.77	18.70		0.530	0.740		0.635
4.000	58.9	17.663	0.25	15.65	18.49		0.650	0.950		0.800
5.000	77.7	21.315	0.33	15.58	18.36		0.720	1.080		0.900
6.000	98.9	29.673	0.42	15.49	18.21		0.810	1.230		1.020
7.000	117.8	35.325	0.50	15.45	18.05		0.850	1.390		1.120
8.000	58.9	17.663	0.25	15.48	18.07		0.820	1.370		1.095
9.000	29.4	8.831	0.12	15.53	18.15		0.770	1.290		1.030
9.000	2.4	0.707	0.01	15.66	18.42		0.640	1.020		0.830
10.000	2.4	0.707	0.01	15.66	18.42		0.640	1.020		0.830
11.000	18.8	5.652	0.08	15.58	18.30		0.720	1.140		0.930
12.000	37.7	11.304	0.16	15.54	18.19		0.760	1.250		1.005
13.000	58.9	17.663	0.25	15.47	18.12		0.830	1.320		1.075
14.000	77.7	21.315	0.33	15.44	18.05		0.860	1.390		1.125
15.000	98.9	29.673	0.42	15.39	17.96		0.910	1.480		1.195

		σ	AS	Se
$0.7\sigma_0$	0.35	0.0325		
$0.5\sigma_0$	0.15	0.01125	0.02125	0.2
$0.7\sigma_0$	0.35	1.14956		
$0.2\sigma_0$	0.15	1.03001	0.11055	0.2
D (mm)	300			
E_{T1}	1.40.08			
E_{T2}	407.97			
Area (Sq.m)	0.07945			

INDEX	1.91		
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$$E_s = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$
 $\mathcal{X}_i$ = deformation modulus

= load increment

As settlement increment

D = diameter of the plate, generally 0.20 m

For this calculation Δw and Δ_s are usually taken from the load span between 0.3 l_{max} and 0.7 l_{max} .



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Wassan
20/7/2003

Plate Load Test Results

Company Name	البحر	To	Station
Location	S36+600		S36+635
Test Date	29-7-2023		
Layer level	+(90)	Sub Ballast	

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading Stage No.	Load	Load	Settle	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
0.000	0.0	0.000	0.00	9.02	13.77		0.000	0.000		0.000
1.000	2.4	0.707	0.01	8.72	13.41		0.300	0.360		0.330
2.000	18.8	5.652	0.08	8.42	13.15		0.600	0.620		0.610
0.080	37.7	11.304	0.16	8.20	12.90		0.820	0.870		0.845
4.000	58.9	17.663	0.25	7.89	12.78		1.130	0.990		1.060
5.000	77.7	23.315	0.33	7.75	12.63		1.270	1.140		1.205
6.000	98.9	29.673	0.42	7.62	12.54		1.400	1.230		1.315
7.000	117.8	35.325	0.50	7.46	12.39		1.560	1.380		1.470
8.000	58.9	17.663	0.25	7.49	12.43		1.530	1.340		1.435
9.000	29.4	8.831	0.12	7.55	12.50		1.470	1.270		1.370
9.000	2.4	0.707	0.01	7.77	12.82		1.250	0.950		1.100
10.000	2.4	0.707	0.01	7.77	12.82		1.250	0.950		1.100
11.000	18.8	5.652	0.08	7.67	12.65		1.350	1.120		1.235
12.000	37.7	11.304	0.16	7.58	12.53		1.440	1.240		1.340
13.000	58.9	17.663	0.25	7.51	12.47		1.510	1.300		1.405
14.000	77.7	23.315	0.33	7.46	12.41		1.560	1.360		1.460
15.000	98.9	29.673	0.42	7.39	12.35		1.630	1.420		1.525

0.7 σ_1	0.35	1.17938	0.16375	0.2
0.3 σ_1	0.15	0.81563		
0.7 σ_2	0.35	1.47444	0.10443	0.2
0.3 σ_2	0.15	1.37001		
D (mm)	300			
E_{v1}	123.71			
E_{v2}	430.91			
Average	0.07065			

$E_{20(1)}$	3.48		
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E_v	$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$
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$\Delta \sigma$ = deformation modulus

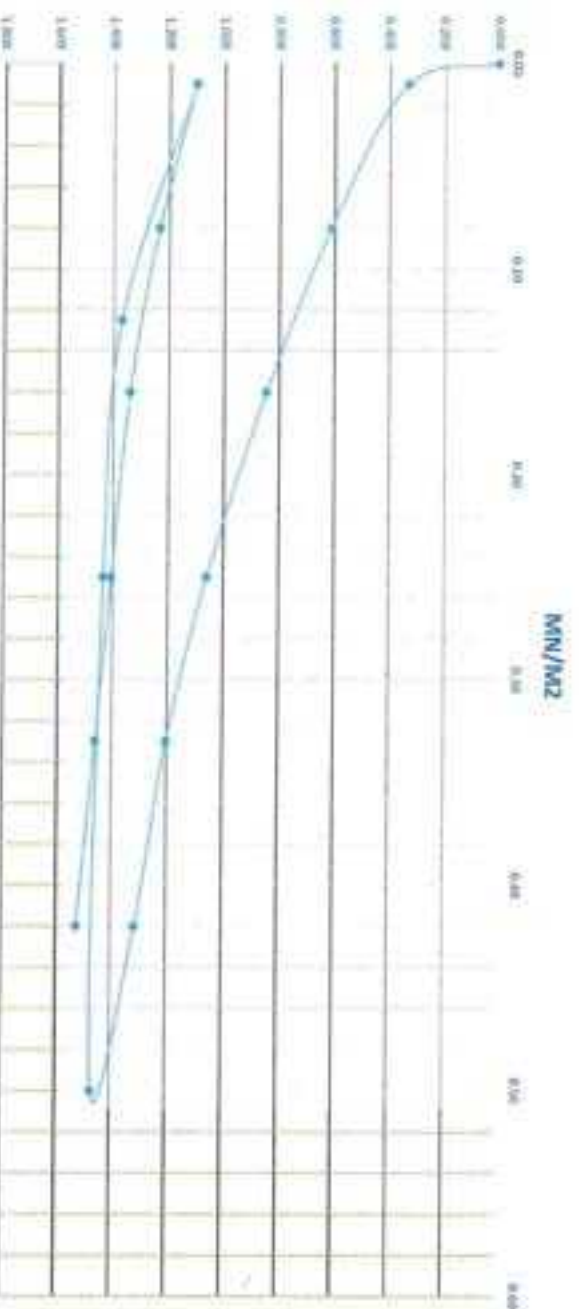
$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation k_r and k_t are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max} .

Sett.



Lab. Supervisor

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Plate Load Test Results

Company Name	ك.س.ا	Station	536+660
Location	536+600	To	536+680
Test Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



F = load
 s = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable and (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading Step No.	Load (kN)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)
1	0.000	0.0	0.000	0.00	11.69	7.26	0.000	0.000	0.000
2	1.000	2.4	0.707	0.01	11.54	7.09	0.150	0.170	0.160
3	2.000	18.8	5.652	0.08	11.16	6.80	0.530	0.460	0.495
4	0.000	37.7	11.304	0.16	11.02	6.43	0.670	0.730	0.700
5	4.000	58.9	17.663	0.25	10.89	6.30	0.800	0.960	0.880
6	5.000	77.7	23.315	0.33	10.77	6.10	0.920	1.160	1.040
7	6.000	98.9	29.673	0.42	10.64	5.88	1.050	1.380	1.215
8	7.000	117.8	35.325	0.50	10.40	5.41	1.290	1.750	1.520
9	8.000	58.9	17.663	0.25	10.50	5.56	1.190	1.700	1.445
10	9.000	29.4	8.831	0.12	10.70	5.70	0.990	1.560	1.275
11	10.000	2.4	0.707	0.01	10.93	5.95	0.760	1.310	1.035
12	11.000	18.8	5.652	0.08	10.86	5.80	0.830	1.460	1.145
13	12.000	37.7	11.304	0.16	10.76	5.66	0.930	1.600	1.265
14	13.000	58.9	17.663	0.25	10.69	5.56	1.000	1.700	1.350
15	14.000	77.7	23.315	0.33	10.66	5.50	1.030	1.760	1.395
16	15.000	98.9	29.673	0.42	10.63	5.45	1.060	1.810	1.435

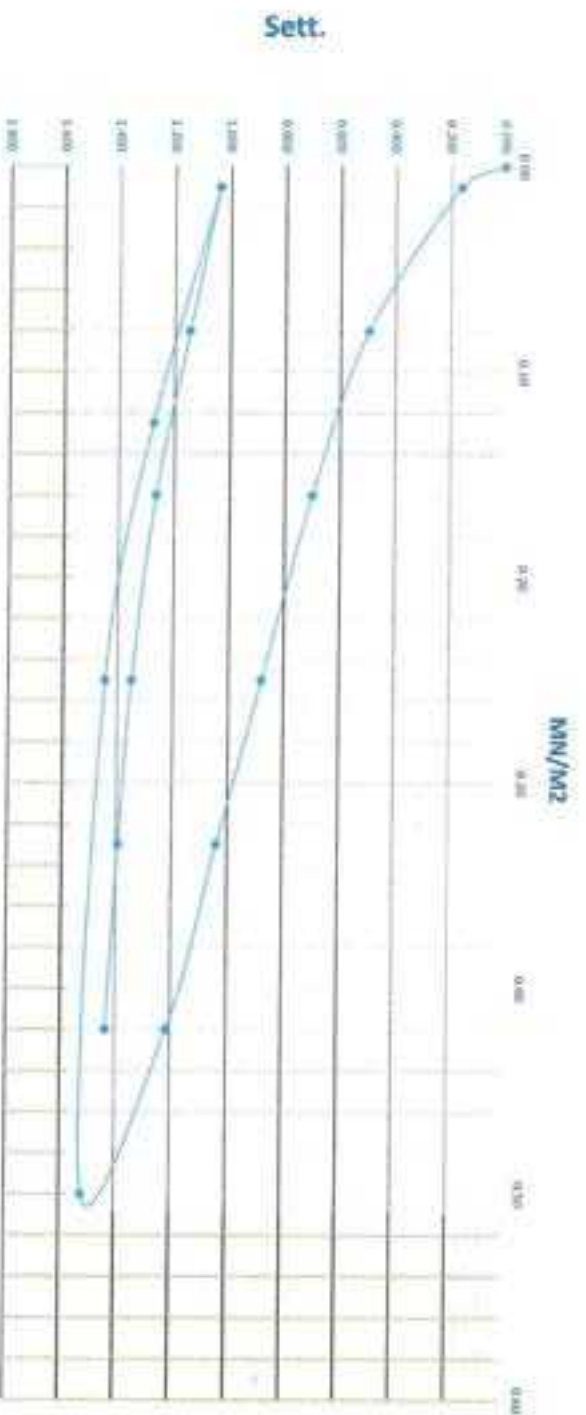
Step	Load (kN)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)	Settlement (mm)
1	0.7	0.1	0.35	0.34812	0.27275	0.2			
2	0.5	0.1	0.15	0.67438					
3	0.7	0.35	1.40389	0.14888	0.2				
4	0.3	0.15	1.25901						
5	0.7	0.35	1.40389	0.14888	0.2				
6	0.5	0.1	0.15	0.67438					
7	0.7	0.35	1.40389	0.14888	0.2				
8	0.3	0.15	1.25901						
9	0.7	0.35	1.40389	0.14888	0.2				
10	0.5	0.1	0.15	0.67438					
11	0.7	0.35	1.40389	0.14888	0.2				
12	0.3	0.15	1.25901						
13	0.7	0.35	1.40389	0.14888	0.2				
14	0.5	0.1	0.15	0.67438					
15	0.7	0.35	1.40389	0.14888	0.2				
16	0.3	0.15	1.25901						
17	0.7	0.35	1.40389	0.14888	0.2				
18	0.5	0.1	0.15	0.67438					
19	0.7	0.35	1.40389	0.14888	0.2				
20	0.3	0.15	1.25901						
21	0.7	0.35	1.40389	0.14888	0.2				
22	0.5	0.1	0.15	0.67438					
23	0.7	0.35	1.40389	0.14888	0.2				
24	0.3	0.15	1.25901						
25	0.7	0.35	1.40389	0.14888	0.2				
26	0.5	0.1	0.15	0.67438					
27	0.7	0.35	1.40389	0.14888	0.2				
28	0.3	0.15	1.25901						
29	0.7	0.35	1.40389	0.14888	0.2				
30	0.5	0.1	0.15	0.67438					
31	0.7	0.35	1.40389	0.14888	0.2				
32	0.3	0.15	1.25901						
33	0.7	0.35	1.40389	0.14888	0.2				
34	0.5	0.1	0.15	0.67438					
35	0.7	0.35	1.40389	0.14888	0.2				
36	0.3	0.15	1.25901						
37	0.7	0.35	1.40389	0.14888	0.2				
38	0.5	0.1	0.15	0.67438					
39	0.7	0.35	1.40389	0.14888	0.2				
40	0.3	0.15	1.25901						
41	0.7	0.35	1.40389	0.14888	0.2				
42	0.5	0.1	0.15	0.67438					
43	0.7	0.35	1.40389	0.14888	0.2				
44	0.3	0.15	1.25901						
45	0.7	0.35	1.40389	0.14888	0.2				
46	0.5	0.1	0.15	0.67438					
47	0.7	0.35	1.40389	0.14888	0.2				
48	0.3	0.15	1.25901						
49	0.7	0.35	1.40389	0.14888	0.2				
50	0.5	0.1	0.15	0.67438					
51	0.7	0.35	1.40389	0.14888	0.2				
52	0.3	0.15	1.25901						
53	0.7	0.35	1.40389	0.14888	0.2				
54	0.5	0.1	0.15	0.67438					
55	0.7	0.35	1.40389	0.14888	0.2				
56	0.3	0.15	1.25901						
57	0.7	0.35	1.40389	0.14888	0.2				
58	0.5	0.1	0.15	0.67438					
59	0.7	0.35	1.40389	0.14888	0.2				
60	0.3	0.15	1.25901						
61	0.7	0.35	1.40389	0.14888	0.2				
62	0.5	0.1	0.15	0.67438					
63	0.7	0.35	1.40389	0.14888	0.2				
64	0.3	0.15	1.25901						
65	0.7	0.35	1.40389	0.14888	0.2				
66	0.5	0.1	0.15	0.67438					
67	0.7	0.35	1.40389	0.14888	0.2				
68	0.3	0.15	1.25901						
69	0.7	0.35	1.40389	0.14888	0.2				
70	0.5	0.1	0.15	0.67438					
71	0.7	0.35	1.40389	0.14888	0.2				
72	0.3	0.15	1.25901						
73	0.7	0.35	1.40389	0.14888	0.2				
74	0.5	0.1	0.15	0.67438					
75	0.7	0.35	1.40389	0.14888	0.2				
76	0.3	0.15	1.25901						
77	0.7	0.35	1.40389	0.14888	0.2				
78	0.5	0.1	0.15	0.67438					
79	0.7	0.35	1.40389	0.14888	0.2				
80	0.3	0.15	1.25901						
81	0.7	0.35	1.40389	0.14888	0.2				
82	0.5	0.1	0.15	0.67438					
83	0.7	0.35	1.40389	0.14888	0.2				
84	0.3	0.15	1.25901						
85	0.7	0.35	1.40389	0.14888	0.2				
86	0.5	0.1	0.15	0.67438					
87	0.7	0.35	1.40389	0.14888	0.2				
88	0.3	0.15	1.25901						
89	0.7	0.35	1.40389	0.14888	0.2				
90	0.5	0.1	0.15	0.67438					
91	0.7	0.35	1.40389	0.14888	0.2				
92	0.3	0.15	1.25901						
93	0.7	0.35	1.40389	0.14888	0.2				
94	0.5	0.1	0.15	0.67438					
95	0.7	0.35	1.40389	0.14888	0.2				
96	0.3	0.15	1.25901						
97	0.7	0.35	1.40389	0.14888	0.2				
98	0.5	0.1	0.15	0.67438					
99	0.7	0.35	1.40389	0.14888	0.2				
100	0.3	0.15	1.25901						

Initial	1.88		
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$E_s = 6.75 \cdot D \cdot \Delta s / \Delta s$	
--	--

E_s = deformation modulus
 Δs = load increment
 Δs = settlement increment
 D = diameter of the plate, generally 0.30 m

For this calculation Δx and Δt are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max} .



Name : Lab. Specialist

Sign :

Name : Lab. Engineer

Sign :



Name : Consultant Engineer

Sign :

RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR. COMPANY		Designer Company*	KK CONSULT.	
Issued by Contractor	Name	Sign	Date	Time	
	Eng : Mahmoud Elkhilwy	<i>Mahmoud</i>	8/7 - 7 - 2023		
Received by Employers Representative					
CODE - 1	S1 to S21	D1 to S3	KP XXX Note		
CODE - 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used		
CODE - 3	Work Activity				
Sub Element of Activity					

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Balast (+ 0.9)	From St (536+500) to (536+600)

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate

Checklist Attached ☐	Test Results Attached ☐	Calibration Attached ☐	Other as Indicated ☐
Drawing Reference	IIP Reference	MS Reference	

Civil	Survey	Material
<i>M. Attia</i>	<i>June 2023</i>	<i>M. Attia</i>
<i>visual inspection Accepted</i>	<i>levels is Approved</i>	<i>compaction Accepted</i>
<i>8/7/2023</i>		<i>9/7</i>

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elkhilwy	<i>Mahmoud</i>				
QA/QC*						
GARB**	Eng : Khalek Fawzey					
Employers Representative Notes						
Employers Representative Sign						

* Designer

** Alignment: Bridges: Culvert

not recommended

MS FROM ST.(536+500) TO ST.(536+680)

Layer Zone	Layer No.	Station	536+500	536+520	536+540	536+560	536+580	536+600	536+620	536+640	536+660	536+680
		DESIGN LEVEL	60.71	60.77	60.83	60.89	60.95	61.01	61.07	61.13	61.19	61.25
		FERMA LEVEL	59.91	59.87	59.93	59.99	60.05	60.11	60.17	60.23	60.29	60.35
		CUT LEVEL	55.20	55.98	56.27	56.42	56.41	56.38	56.18	56.58	57.23	57.63
		DIFF (FERMA - CUT)	3.93	3.90	3.66	3.57	3.63	3.73	4.01	3.65	2.97	2.72
Upper Empankment	0	59.81	59.87	59.93	59.99	60.05	60.11	60.17	60.23	60.29	60.35	60.41
	-0.25	59.56	59.61	59.66	59.71	59.76	59.81	59.86	59.91	59.96	60.01	60.06
	-0.5	59.31	59.37	59.43	59.48	59.53	59.58	59.63	59.68	59.73	59.78	59.83
	-0.75	59.06	59.12	59.18	59.24	59.29	59.34	59.39	59.44	59.49	59.54	59.59
	-1	58.81	58.87	58.93	58.99	59.05	59.11	59.17	59.23	59.29	59.35	59.41
	-1.25	58.56	58.62	58.68	58.74	58.80	58.86	58.91	58.96	59.01	59.06	59.11
	-1.5	58.31	58.37	58.43	58.49	58.55	58.61	58.67	58.73	58.78	58.83	58.89
	-1.75	58.06	58.12	58.18	58.24	58.30	58.36	58.42	58.48	58.54	58.60	58.66
Middle Empankment	-2	57.81	57.87	57.93	57.99	58.05	58.11	58.17	58.23	58.29	58.35	58.41
	-2.5	57.31	57.37	57.43	57.49	57.55	57.61	57.67	57.73	57.79	57.85	57.91
	-3	56.81	56.87	56.93	56.99	57.05	57.11	57.17	57.23	57.29	57.35	57.41
	-3.5	56.31	56.37	56.43	56.49	56.55	56.61	56.67	56.73	56.79	56.85	56.91
	-4							56.17				
	-4.5											
	-5											
	-5.5											

Amel

MS APPROVED
According to Design Profile
REV-08

Amel

4/16/2022

Center Line DATA

Station	Easting	Northing
536+500 ✓	290513.2697	943866.8238
536+520	290493.9649	943872.0511
536+540	290474.6601	943877.2784
536+560	290455.3553	943882.5056
536+580	290436.0505	943887.7329
536+600	290416.7457	943892.9601

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Reviewed

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهور)

من المحطة (536+500) إلى المحطة (536+600)

STATION				LEFT SIDE		LAYER LEVEL		RIGHT SIDE		STATION	
ACT. WIDTH		7	4	S.E. %	DESIGN LEVEL	FERMA LEVEL	CL	S.E. %	4	7	ACT. WIDTH
536+500		60.43	60.55	-4%	60.71	59.81	1.59	-4%	60.55	60.43	
Act.		1.87	1.75				60.71		1.75	1.87	
Diff.		-	-				-		-	-	
536+510		60.46	60.58	-4%	60.74	59.84	1.51	-4%	60.58	60.46	
Act.		1.87	1.72				60.74		1.72	1.87	
Diff.		-	-				-		-	-	
536+520		60.49	60.61	-4%	60.77	59.87	1.53	-4%	60.61	60.49	
Act.		1.81	1.69				60.77		1.69	1.81	
Diff.		-	-				-		-	-	
536+530		60.52	60.64	-4%	60.80	59.90	1.50	-4%	60.64	60.52	
Act.		1.78	1.66				60.80		1.66	1.78	
Diff.		-	-				-		-	-	
536+540		60.55	60.67	-4%	60.83	59.93	1.47	-4%	60.67	60.55	
Act.		1.75	1.63				60.83		1.63	1.75	
Diff.		-	-				-		-	-	
536+550		60.58	60.70	-4%	60.86	59.96	1.44	-4%	60.70	60.58	
Act.		1.72	1.60				60.86		1.60	1.72	
Diff.		-	-				-		-	-	
536+560		60.61	60.73	-4%	60.89	59.99	1.41	-4%	60.73	60.61	
Act.		1.69	1.57				60.89		1.57	1.69	
Diff.		-	-				-		-	-	
536+570		60.64	60.76	-4%	60.92	60.02	1.38	-4%	60.76	60.64	
Act.		1.66	1.54				60.92		1.54	1.66	
Diff.		-	-				-		-	-	
536+580		60.67	60.79	-4%	60.95	60.05	1.35	-4%	60.79	60.67	
Act.		1.63	1.51				60.95		1.51	1.63	
Diff.		-	-				-		-	-	
536+590		60.70	60.82	-4%	60.98	60.08	1.32	-4%	60.82	60.70	
Act.		1.60	1.48				60.98		1.48	1.60	
Diff.		-	-				-		-	-	
536+600		60.73	60.85	-4%	61.01	60.11	1.29	-4%	60.85	60.73	
Act.		1.57	1.45				61.01		1.45	1.57	
Diff.		-	-				-		-	-	

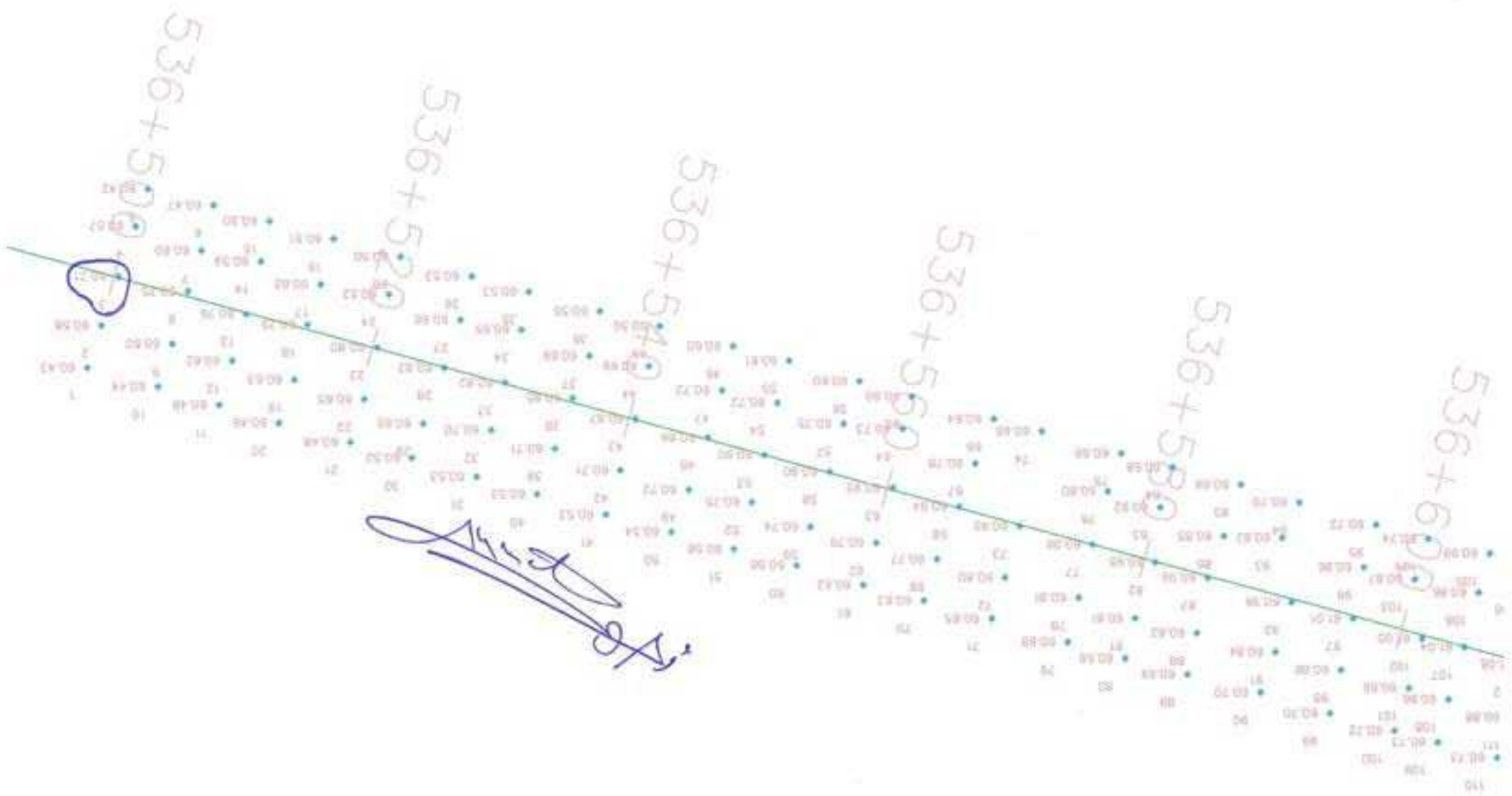
مراجعة

Yusef

TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47



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POINT	NOTH	EAST	ELEV
1	943873.664	290515.242	60.428
2	943870.494	290514.199	60.577
3	943866.831	290512.943	60.711
4	943863.052	290511.674	60.569
5	943860.256	290510.768	60.423
6	943861.468	290505.854	60.469
7	943864.854	290506.746	60.602
8	943867.926	290507.747	60.749
9	943871.853	290508.896	60.605
10	943875.06	290509.94	60.439
11	943876.41	290505.363	60.476
12	943873.105	290504.408	60.623
13	943869.597	290503.358	60.755
14	943865.659	290502.31	60.594
15	943862.643	290501.681	60.499
16	943863.942	290496.883	60.51
17	943867.368	290497.832	60.622
18	943870.358	290498.792	60.789
19	943874.506	290499.768	60.634
20	943877.734	290500.89	60.46
21	943879.157	290495.565	60.484
22	943875.946	290494.554	60.654
23	943872.064	290493.621	60.803
24	943868.08	290492.759	60.619
25	943865.259	290491.902	60.503
26	943866.698	290486.548	60.532
27	943869.971	290487.376	60.656
28	943873.559	290488.565	60.827
29	943877.743	290490.139	60.65
30	943880.32	290490.968	60.518
31	943881.71	290486.105	60.528
32	943878.196	290485.034	60.7
33	943874.657	290484.016	60.823
34	943870.681	290482.802	60.653
35	943867.857	290482.243	60.531
36	943869.298	290476.923	60.565
37	943872.63	290477.702	60.691
38	943875.782	290478.934	60.849
39	943879.584	290480.242	60.707
40	943883.005	290481.552	60.53
41	943884.515	290476.417	60.528

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POINT	NOTH	EAST	ELEV
42	943881.184	290475.329	60.712
43	943877.325	290474.2	60.874
44	943873.387	290473.203	60.69
45	943870.389	290472.407	60.586
46	943871.871	290466.912	60.595
47	943875.182	290467.728	60.717
48	943878.721	290468.797	60.889
49	943882.619	290470.185	60.725
50	943885.79	290471.484	60.539
51	943887.059	290466.808	60.578
52	943883.535	290465.476	60.754
53	943880.009	290464.55	60.901
54	943876.091	290463.601	60.716
55	943872.962	290462.708	60.613
56	943874.475	290457.425	60.596
57	943877.656	290458.609	60.753
58	943881.252	290459.662	60.905
59	943885.376	290461.087	60.744
60	943888.256	290462.101	60.58
61	943889.723	290457.115	60.616
62	943886.57	290456.154	60.757
63	943882.452	290454.936	60.915
64	943878.032	290454.187	60.729
65	943875.615	290453.5	60.605
66	943877.285	290447.4	60.639
67	943880.619	290448.779	60.783
68	943883.844	290449.932	60.937
69	943887.777	290451.6	60.772
70	943890.886	290452.574	60.628
71	943892.219	290447.507	60.649
72	943889.14	290446.536	60.796
73	943885.3	290445.429	60.949
74	943878.204	290443.804	60.656
75	943879.848	290437.844	60.675
76	943882.693	290438.839	60.799
77	943886.678	290439.975	60.975
78	943890.651	290441.032	60.808
79	943893.969	290441.825	60.681
80	943895.194	290437.495	60.679
81	943892.187	290436.76	60.813
82	943887.993	290435.239	60.982

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POINT	NORTH	EAST	ELEV
83	943883.875	290434.906	60.818
84	943880.881	290433.973	60.681
85	943882.186	290428.823	60.689
86	943886.032	290430.119	60.854
87	943889.141	290431.313	60.99
88	943893.285	290432.146	60.82
89	943896.382	290432.848	60.693
90	943897.731	290427.327	60.702
91	943894.717	290426.219	60.843
92	943890.97	290425.023	60.981
93	943886.156	290425.711	60.824
94	943883.502	290424.452	60.704
95	943885.149	290418.693	60.722
96	943888.35	290419.602	60.865
97	943892.188	290420.422	61.011
98	943896.041	290421.322	60.86
99	943899.285	290422.14	60.704
100	943900.563	290417.251	60.717
101	943897.355	290416.181	60.865
102	943893.653	290415.187	61.051
103	943889.2	290415.774	60.87
104	943886.191	290414.771	60.735

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MATERIAL INSPECTION REQUEST

المشروع :
الخط 5 و 6
(KARAF)



الجهة :
الهيئة العامة
للطرق



Contractor Company	El. Zhoor . Company		Designer Company	KK CONSULT.																	
Issued by Contractor	Name	Sign	Date	COD																	
	Eng \ Mahmoud Elkhilawy	<i>Mahmoud</i>	18-5-2023	ZH 2 P.G																	
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM				18	5	2023			
C1	C2	C3	DD	MM	YY	HH	MM														
			18	5	2023																

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

Description of Materials

Fill material results

Location to be Used

From 536+800 to 537+000 (+0.7)
From 536+000 to 536+680 (+0.7)
From 536+000 to 536+680 (+0.9)
From 536+800 to 537+000 (+0.9)

MAR Approval No

Date

Supplier Name

Test Requirement

Specification

Clause

Reference Photos

Yes attached / No

Other

Item	Description	Unit	Quantity	Arrival Date	Note
1	L.L & P.L & O.M.C %	m3	5000	15 - 5- 2023	
2	Proctor	m3	5000	15 - 5- 2023	
3	Classification	m3	5000	15 - 5- 2023	
4	Seive analysis	m3	5000	15 - 5- 2023	

Comments by:

Comments by:

Assemble has been taken form fill material by **KK** office to **(AL NUBY CENTER Lab)** lab and the results founded meet the specifications and accepted

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG : Mahmoud Elkhilawy	<i>Mahmoud</i>		
QA/QC *	<i>Abdullah</i>	<i>Abdullah</i>		
GARB**				

MATERIAL APPROVAL REQUEST

المجلس
المؤقت
لإدارة
البنية التحتية



الهيئة العامة
للإدارة
والتطوير
البنية التحتية



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK																	
Issued by Contractor	Name ENG : MAHMOUD ELKILAWY	Sign <i>Mahmoud</i>	Date 5-6-2023	COD ZH-1-Sb																	
Received by ER		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>BD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>5</td> <td>6</td> <td>2023</td> <td></td> <td></td> </tr> </table>			C1	C2	C3	BD	MM	YY	HH	MM				5	6	2023		
C1	C2	C3	BD	MM	YY	HH	MM														
			5	6	2023																

CODE - 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp S36 Hole For Kibometer point only Start Km is used
CODE - 2			
CODE - 3	Work Activity Sub Element of Activity		

Description of Materials Location to be Used	Sub ballast	S36+000 to S37+000		
Item	Specification	Test Requirement	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Specification	
2	ASTM C 136	Sieve Analysis	According Specification	
3	ASTM D 1440	Passing Sieve #200	5.4 %	
4	ASTM D 4318	Atterberg Limit	NON.	
5	ASTM D 2974	Moisture Content	5.9 %	
6	ASTM D 1557	Modified Proctor	2.206	
7	ASTM D 1883	C B R	94.7 %	
8	ASTM C 127	Specific gravity	2.524	
9	ASTM C535	Los Angeles	26.50	
Comments by:		Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKILAWY	<i>Mahmoud</i>	
ONQC *	<i>Abdullah Sily</i>	<i>Abdullah Sily</i>	
GARB *			
Employers Representative			

 K.K.	 SYSTEM EPC	Electric Express Train - HSR				 وزارة النقل والبنية التحتية
		From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 304+000 To Station 388+177				
Geotechnical Lab	Mansour Lab	PARTICLE SIZE DISTRIBUTION OF SOIL				

TESTING DATE	3/6/2023	ZONE	530+000	337+000
Location	K.P 536+500 (5000 m3)	Material	Sub-Basemat	
NAME COMPANY	Elzohor			

1-Visual inspection test

2-Grainum test

A-gradation of bulk materials					SAMPLE WEIGHT (g)				33240.00		gm	table classify
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS				soil classify
Mass retained (g)	0.0	0.0	1035.0	8659.0	4513.0	1433.0	3445.0					2.206
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	15993.0					WC
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	52.8					5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	47.2					CBR
												94.7%

B-20R material gradation						WT.OF sample		500.00		gum	
sieve size	10	40	200								
Cumulative Retained (g)	134.00	0.00	437.00								
Cumulative Retained %	28.80	0.00	87.40								
Cumulative Passing %	71.20	100.00	12.60								

C-General gradent											
sieve size(in)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200	
slieve size(mm)	50.0	37.5	25.0	18.0	12.5	9.5	4.75	2.00	0.425	0.075	
Cumulative Passing %	100.0	100.0	98.8	79.8	57.3	52.3	42.8	31.2	42.6	5.4	
		100	97 - 100	75 - 70		60 - 15		35 - 0		0 - 7	

ATTERBERG LIMITS	LIQUID LIMIT (P.L.) N.P	PLASTIC LIMIT (P.L.) N.P	PLASTIC INDEX (P.I.) N.P
---------------------	----------------------------	-----------------------------	-----------------------------

Contractor

Consultant



Abdelhak S. Mery



Electric Express Train - HSR
From El Ain El Sakina City To El Aemeln - MATROUH
Section - 7 From FORA TO MATROUH
From Station 594+000 To Station 606+117



operating Lab Mansour Lab

Proctor Test

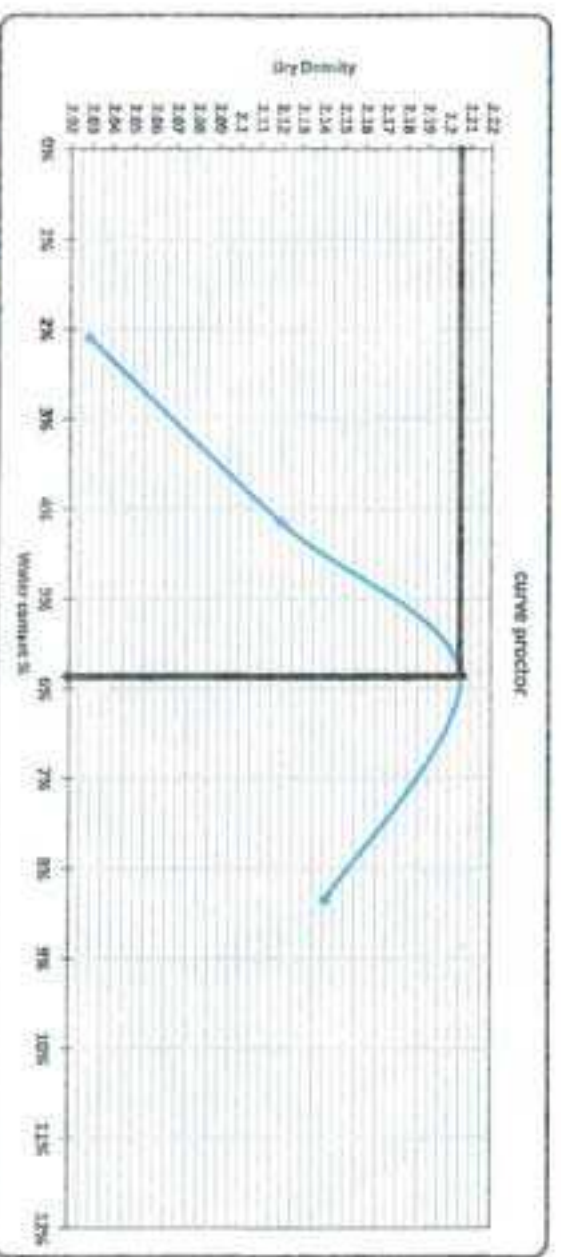
TESTING DATE:	4/6/2023	code:	
LOCATION:	K.P 536+000 (5000 m3)		
NAME COMPANY:	Elzohar	216.09-1	
		Zone:	536+000 TO 557+000

Weight of empty mold :	5759.0
Mold Volume:	2134.0

MAX Dry Density	1.966
Water content %	5.9

trial no :	1	2	3	4
Wt. (G Mold+ wet soil)	10180.0	10478.0	10741.0	10710.0
Wt. WET MOUL	4671.0	4711.0	4902.0	4951.0
Wt. Empty	2.071	2.298	2.335	2.330

Tare No.	1	2	3	4	5	6	7	8
Tare wt.	55.55	64.5	55.45	52.42	56.96	56.74	56.74	57.82
Wt. Of wet soil & tare	1983.6	1983	1982.4	1982.7	1982.9	1992.3	1992.7	1992.7
Wt. Of dry soil & tare	1965.8	1965.5	1972.9	1972.7	1974.3	1991	1988.8	1992.3
Wt. Of water	3.8	2.8	5.5	6.0	7.7	8.1	11.0	11.0
Wt. Of dry soil	1987	1418.0	1272	1403	1343	1343	1328	1374
Water content %	2.3%	2.0%	4.8%	4.3%	5.7%	6.0%	8.3%	8.0%
AV. Water content %	2.1%	4.2%	4.2%	4.2%	6.0%	6.0%	8.0%	8.0%
Dry Density	2.029	2.125	2.126	2.141				



Contractor

Abdelhakim

Consultant



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	30/2/2023	Code :	21-SP-1	Zone :	S36+000	S37+000
Location :	KCP 536+500 (5000 m ³)					
Name of Company :	Elinbow					

1. Test Results

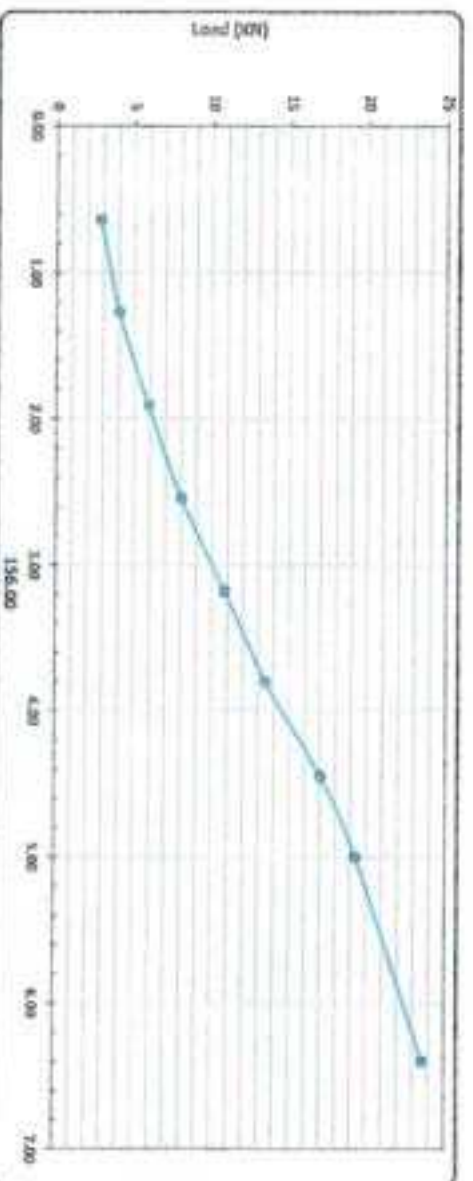
Compaction % for Mold	
Mold No.	1
Mold Vol.(cm ³)	2106
Mold WT. (gm)	3119
Mold WT. + Wet WT. (gm)	42740
Wet WT. (gm)	4021
Wet Density (g/cm ³)	2.141
Dry Density (g/cm ³)	2.208
Proctor Density (g/cm ³)	2.206
Compaction %	100

Nonhurry Rate After Compacted Mold	
Test No.	13
Test WT. (gm)	95.01
Test WT. + Wet WT. (gm)	156.1
Test WT. + Dry WT. (gm)	144.8
Wet Density (g/cm ³)	6.3
Dry WT. (gm)	80.8
Moisture Content %	5.50

Swelling	
Mold No.	2
Time	4
Initial Height (mm)	6.80
Final Height (mm)	8.80
Increase	4
Sample Height (mm)	118.80
Swelling Ratio %	47%

Location Reading:

ENR.00	0.04	1.23	1.80	2.34	3.18	3.80	4.42	5.00	6.40
Load Reading (kg)	200.00	412.00	602.00	777.00	1101.00	1371.00	1735.00	2175.00	3410.00
Load (kN)	2.8	6.0	8.9	10.9	16.6	19.8	19.8	19.8	21.6



Calculations :-

Preparation	Load	Standard Load	CBR	Moist. Compaction	Compaction	CBR
(mm)	(kN)	(kN)	(%)	(%)	(%)	(%)
2.70	6.0	15.4	46.7%	100	98	99.3%
5.00	16.3	20.8	76.2%			94.7%

Lab Engineer

Name :

Sign :

Contract Engineer

Name :

Sign :



Signature of the Contract Engineer.

 KINGDOM OF SAUDI ARABIA MINISTRY OF HIGHWAYS GENERAL SUPERINTENDING OFFICE GENERAL DEPARTMENT OF ROAD & TRANSPORTATION Jeddah	 Saudi Railways Jeddah	Electric Express Train - HSR From 81 Ave El-Souda City To El-Munaw - MATROOH Section : 7 From TDRCA To MARSA MATROOH From Station 504+00 To Station 504+177	 Saudi Railways Jeddah
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Absorption & Aggregate specific gravity AASHTO-T95

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P. 536+500 (5000 ml)	price	Material	Sub-Ballast	
NABL COMPANY	Elzohor		layer thickness	0.20 cm	

Weight of sample	2000	gms
Weight of saturated -dry surface sample (B)	2012	gms
Weight of saturated sample in water (C)	1228	gms
Weight of dry sample after heating (A)	1976	gms

40000

Results:-

Bulk specific gravity = $A / (B-C)$	2.526	8798
Apparent specific gravity = $A / (A-C)$	2.645	
Absorption = $(B-A)/A$	1.822	%

40000

61700

Los Angeles abrasion AASHTO-T96

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3875	26.50

Lab. Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	Abdullah Samir
Sign :	





Electric Express Train - HSR

From El Ain El Sobhna City To El Alamein

Section :7 From Foba To MARSA MATRUH

From Station 504+000 To Station 568+177



ACTIVITY : Sand cone test

Laboratory results

COD

Z H (S.B. 1)

Density and Units Weight of Soil In Place by the Sand-cone Method - ASTM D 1556

Company :	RE-ZHOUR COMPANY	Layer level :	Soil Ballast(6.9)
Description:	Compaction test	Layer Thickness :	0.2 m
Station represented :	536+500 TO 536+600	Sample Date :	5/7/2023

Modified Proctor Testing Results

Max. Dry Density - gm/cm3	Optimum Moisture Content - %	Degree of Compaction Required - %	Bulk Density of Specified Sand - gm/cm3
2.30	5.5	100%	1.48

Compaction Testing Results & Calculations

STATION	836+518	836+525	836+530	836+540	836+550	836+560	836+570	836+580	836+590	836+600
Moisture %	1	2	3	4	5	6	7	8	9	10
Wt. of Sand before Test (gm)	8420	8525	8580	8670	8670	8715	8820	8925	8980	9025
Wt. of Sand After Test (gm)	9570	8625	8680	8750	8750	8790	8880	8930	8980	9070
Wt. of Sand in Oven + Water (gm)	3880	3907	3920	3940	3950	3975	3980	3972	3982	3980
Wt. of Sand in Oven	1140	1140	1140	1140	1140	1140	1140	1150	1140	1140
Wt. of Sand in Water (gm)	2720	2767	2780	2800	2810	2785	2820	2832	2842	2830
Volume of the hole, (cm3)	1828	1870	1878	1882	1888	1882	1895	1914	1920	1908
Wt. of Sand from hole (gm)	8179	8280	8400	8411	8432	8432	8444	8485	8480	8477
Dry Density of Soil, (ton/cord)	2.382	2.348	2.342	2.352	2.329	2.358	2.332	2.328	2.326	2.358
Relative Compaction, %	8.3	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Dry Density, gm/cm3	2.327	2.204	2.198	2.204	2.201	2.227	2.211	2.207	2.204	2.227
Compaction, (%)	101.7%	100.2%	100.0%	100.2%	100.1%	101.2%	100.8%	100.3%	100.2%	101.3%

Acceptance Criteria:

Comply

☐

Not Comply

☐☐

COMPLAINT COMMENTS

Site engineer :-

Consultant Materials Engineer :-

Name :- MAHMOUD ELKHALAWY

Name :-

Signature :-

Signature :-

9/7/2023



Plate Load Test Results

Company Name
Location
Test Date
Layer level

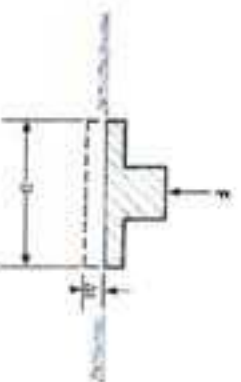
536+500
29-7-2023
+(.90)

To 536+600
Station 536+500
Sub Ballast

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load
 s = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading	Load	Load	Settlement	Dist. 1	Dist. 2	Dist. 3	Set. 1	Set. 2	Set. 3	Avg. Set.
Step No.	Bar	kN	mm	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	17.33	19.96		0.000	0.000		0.000
1.000	2.4	0.707	0.01	17.11	19.80		0.220	0.160		0.190
2.000	18.8	5.652	0.08	16.79	19.50		0.540	0.460		0.500
0.080	37.7	11.304	0.16	16.12	18.98		1.210	0.980		1.095
4.000	58.9	17.663	0.25	15.81	18.60		1.520	1.360		1.440
5.000	77.7	23.315	0.33	15.55	18.40		1.780	1.560		1.670
6.000	98.9	29.673	0.42	15.35	18.12		1.980	1.840		1.910
7.000	117.8	35.325	0.50	14.90	17.60		2.430	2.360		2.395
8.000	58.9	17.663	0.25	15.15	17.80		2.180	2.160		2.170
9.000	29.4	8.831	0.12	15.30	18.00		2.030	1.960		1.995
9.000	2.4	0.707	0.01	15.71	18.34		1.620	1.620		1.620
10.000	2.4	0.707	0.01	15.71	18.34		1.620	1.620		1.620
11.000	18.8	5.652	0.08	15.64	18.25		1.690	1.710		1.700
12.000	37.7	11.304	0.16	15.51	18.15		1.820	1.810		1.815
13.000	58.9	17.663	0.25	15.40	18.04		1.930	1.920		1.925
14.000	77.7	23.315	0.33	15.34	18.00		1.990	1.960		1.975
15.000	98.9	29.673	0.42	15.21	17.94		2.120	2.020		2.070

$0.7 \sigma_1$	0.38	1.48563	0.465	0.2
$0.3 \sigma_1$	0.15	1.02063		
$0.7 \sigma_2$	0.25	1.99611	0.2161	0.2
$0.3 \sigma_2$	0.15	1.78001		
D (mm)	300			
E_s	96.77			
E_y	208.23			
Area (sq.m)	0.07065			

$0.2 \sigma_1$	2.15		
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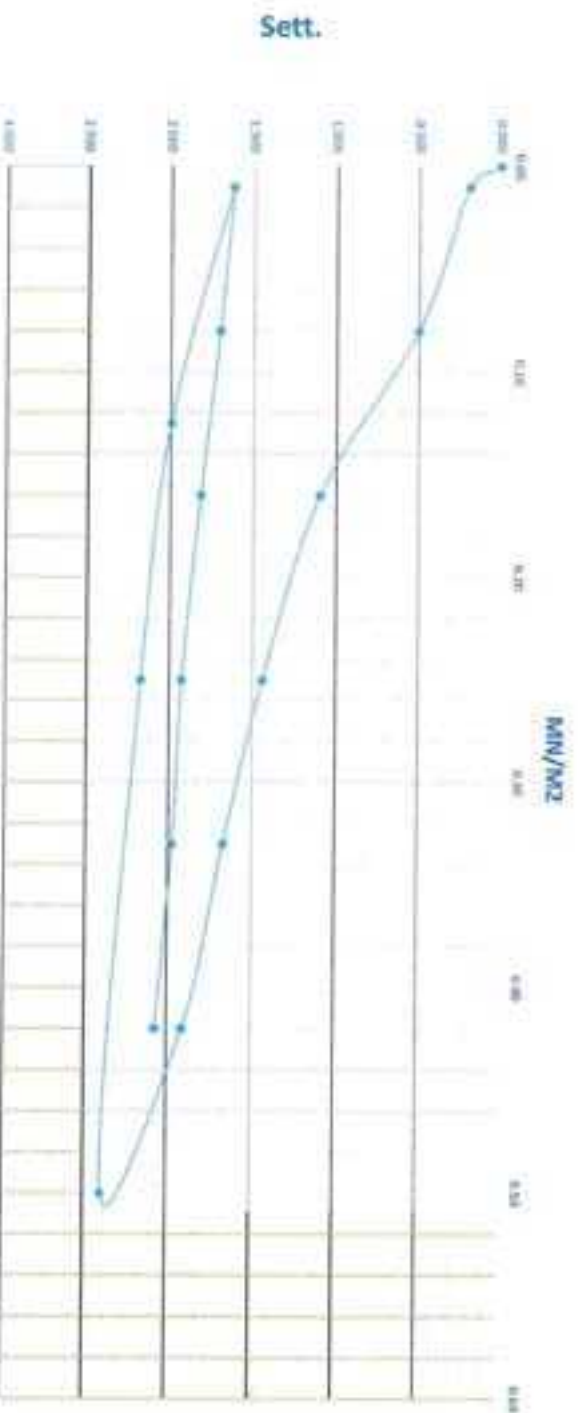
E_s	$E_s = 0.75 \cdot D \cdot \Delta s / \Delta s$
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Δs = deformation modulus
 Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.3

For this calculation δ_{cr} and δ_{crs} are usually taken from the load span between 0.3 v_{max} and 0.7 v_{max} .



Name: _____

Sign: _____

Name: _____

Sign: _____



Name: _____

Sign: _____

Handwritten signature and date: 30/5/2003

Plate Load Test Results

Company Name	م.ج.د		Station	536+525
Location	536+500			
Taste Date	29-7-2023			
Layer level	+(-.90)	Sub Ballast		

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Settle	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Avg. Settle
Slope No.	Bar	KN	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	17.45	11.20	0.000	0.000		0.000
1.000	2.4	0.707	0.01	17.26	10.86	0.290	0.340		0.315
2.000	18.8	5.652	0.08	16.96	10.54	0.590	0.660		0.625
0.080	37.7	11.304	0.16	16.75	10.28	0.800	0.920		0.860
4.000	58.9	17.663	0.25	16.61	10.08	0.940	1.120		1.030
5.000	77.7	23.315	0.33	16.58	10.01	0.970	1.190		1.080
6.000	98.9	29.673	0.42	16.46	9.94	1.090	1.260		1.175
7.000	117.8	35.325	0.50	16.34	9.82	1.210	1.380		1.295
8.000	58.9	17.663	0.25	16.40	9.85	1.150	1.350		1.250
9.000	29.4	8.831	0.12	16.50	10.00	1.050	1.200		1.125
10.000	2.4	0.707	0.01	16.74	10.15	0.810	1.050		0.930
11.000	18.8	5.652	0.08	16.65	10.09	0.900	1.110		1.005
12.000	37.7	11.304	0.16	16.55	10.03	1.000	1.170		1.085
13.000	58.9	17.663	0.25	16.47	9.94	1.080	1.260		1.170
14.000	77.7	23.315	0.33	16.40	9.90	1.150	1.300		1.225
15.000	98.9	29.673	0.42	16.35	9.82	1.200	1.380		1.290

Load	Settle	s	Δs	Δs
0.7 q_1	0.35	1.07		
0.3 q_1	0.15	0.81063		0.23938
0.7 q_2	0.35	1.23944		0.15944
0.3 q_2	0.15	1.08001		
D (mm)	300			
E_{v1}	187.99			
E_{v2}	282.24			
Average	0.87065			

E_{v2}/E_{v1}	1.50		
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$E_v = 0.75 \cdot D \cdot \Delta s / \Delta s$	
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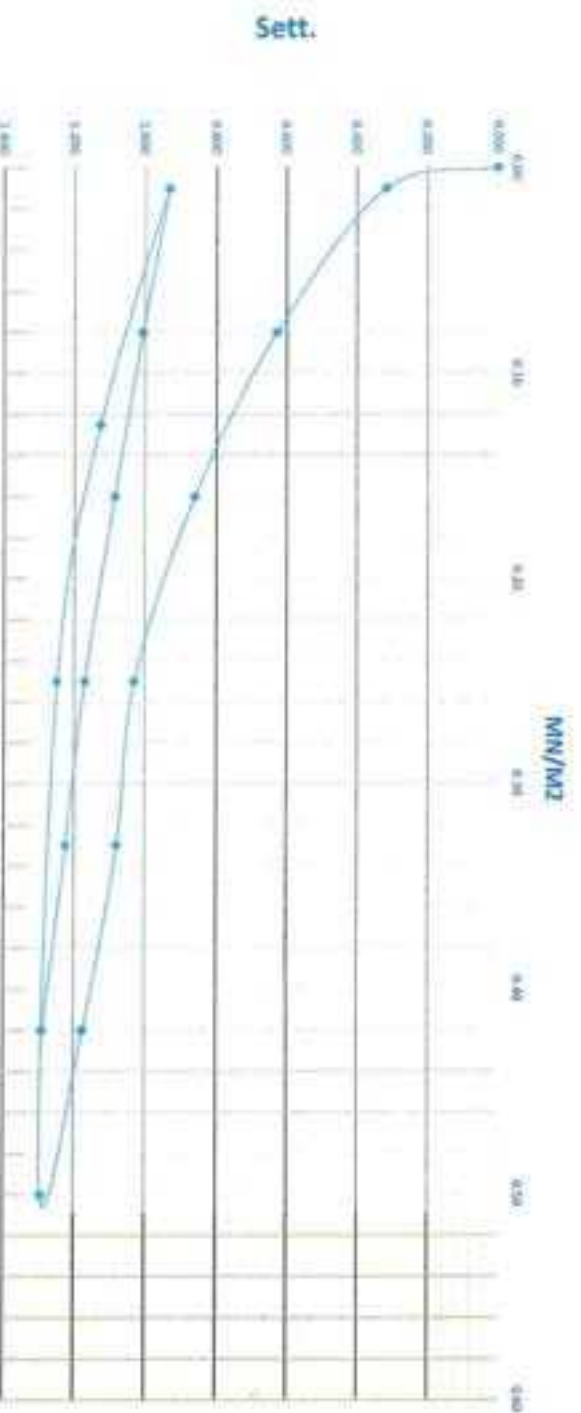
E_v = deformation modulus

Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation $\delta_{0.7}$ and $\delta_{1.1}$ are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max} .



Lab. Specialist
Name :
Sign :

Lab. Engineer
Name: *Dr. M. M. Hossain*
Sign : *[Signature]*

Consultant Engineer
Name : *Alison*
Sign : *[Signature]*



Plate Load Test Results

Company Name	JPS		Station	S36+S50
Location	S36+500		To	S36+600
Test Date	29-7-2023			
Layer level	+(-.90)		Sub Ballast	

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading	Load	Load	Stress	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Ave. Sett.
Stage No.	Bar	kN	kN/m ²	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	18.54	16.20		0.000	0.000		0.000
1.000	2.4	0.707	0.01	18.21	15.92		0.330	0.280		0.305
2.000	18.8	5.652	0.08	18.00	15.69		0.540	0.510		0.525
0.080	37.7	11.304	0.16	17.77	15.50		0.770	0.700		0.735
4.000	58.9	17.663	0.25	17.55	15.35		0.990	0.880		0.920
5.000	77.7	23.315	0.33	17.32	15.11		1.220	1.090		1.155
6.000	98.9	29.673	0.42	17.00	15.00		1.540	1.200		1.370
7.000	117.8	35.325	0.50	16.75	14.55		1.790	1.650		1.720
8.000	58.9	17.663	0.25	16.88	14.65		1.660	1.550		1.605
9.000	29.4	8.831	0.12	16.93	14.75		1.610	1.450		1.530
9.000	2.4	0.707	0.01	17.03	15.21		1.510	0.990		1.250
10.000	2.4	0.707	0.01	17.03	15.21		1.510	0.990		1.250
11.000	18.8	5.652	0.08	16.92	15.10		1.620	1.100		1.360
12.000	37.7	11.304	0.16	16.86	15.00		1.680	1.200		1.440
13.000	58.9	17.663	0.25	16.77	14.91		1.770	1.290		1.530
14.000	77.7	23.315	0.33	16.70	14.80		1.840	1.400		1.620
15.000	98.9	29.673	0.42	16.62	14.70		1.920	1.500		1.710

$0.7 \sigma_1$	0.35	1.06375	0.355	0.1
$0.3 \sigma_1$	0.15	0.70875		
$0.7 \sigma_2$	0.35	1.64	0.16999	0.1
$0.3 \sigma_2$	0.15	1.47001		
D (mm)	300			
E_1	126.76			
E_2	264.72			
Area (sq.m)	0.07065			

Exc/Trk1	2.00		
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E_1	$= 0.75 \times D \times \Delta \sigma / \Delta s$
E_2	$=$ deformation modulus
$\Delta \sigma$	$=$ load increment
Δs	$=$ settlement increment
D	$=$ diameter of the plate, generally 0.30 m

Plate Load Test Results

Company Name	٢٩٨٣		Station	S36+S75
Location	S36+500		To	S36+600
Test Date	29-7-2023			
Layer level	+(-90)		Sub Ballast	

EQUIPMENT AND TEST PROCEDURE :-

The base of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 8 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Load	Stress	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	KN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	17.93	14.74		0.000	0.000		0.000
1.000	2.4	0.707	0.01	17.66	14.45		0.270	0.290		0.280
2.000	18.8	5.652	0.08	17.41	14.13		0.520	0.610		0.565
0.080	37.7	11.304	0.16	17.29	13.83		0.640	0.910		0.775
4.000	58.9	17.663	0.25	17.19	13.62		0.740	1.120		0.930
5.000	77.7	23.315	0.33	17.10	13.52		0.830	1.220		1.025
6.000	98.9	29.673	0.42	16.97	13.30		0.960	1.440		1.200
7.000	117.8	35.325	0.50	16.75	13.05		1.180	1.690		1.435
8.000	58.9	17.663	0.25	16.85	13.09		1.080	1.650		1.365
9.000	29.4	8.831	0.12	16.90	13.18		1.030	1.560		1.295
9.000	2.4	0.707	0.01	17.05	13.40		0.880	1.340		1.110
10.000	2.4	0.707	0.01	17.05	13.40		0.880	1.340		1.110
11.000	18.8	5.652	0.08	16.98	13.30		0.950	1.440		1.195
12.000	37.7	11.304	0.16	16.91	13.21		1.020	1.530		1.275
13.000	58.9	17.663	0.25	16.88	13.15		1.050	1.590		1.320
14.000	77.7	23.315	0.33	16.80	13.11		1.130	1.630		1.380
15.000	98.9	29.673	0.42	16.75	13.04		1.180	1.700		1.440

0.7 σ_1	0.35	0.09438	0.24863	0.2
0.3 σ_1	0.15	0.74875		
0.7 σ_2	0.35	1.39333	0.11332	0.2
0.3 σ_2	0.15	1.28001		
D (mm)	300			
E_{v1}	183.21			
E_{v2}	397.09			
Avg (σ_{avg})	0.07065			

E_{v2}/E_{v1}	2.17		
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$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$

E_v = deformation modulus
 $\Delta \sigma$ = load increment
 Δs = settlement increment
 D = diameter of the plate, generally 0.30 m

For this calculation Δ_{cr} and Δ_s are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max}



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Hassan

Sign :

2023

UNIVERSAL INSPECTION REQUEST



RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR. COMPANY		Designer Company*	KK CONSULT.							
	Name	Sign	Date	Time							
Issued by Contractor	Eng : Mahmoud Elkhlwy	<i>Mahmoud</i>	6 - 7 - 2023								
Received by Employers Representative			UJR	C1	C2	C3	DO	MM	YY	HH	MM
				K.P.636	TR	OT	6	7	2023		

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

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Ballast (+ 0.9)	From St (536+400) to (536+500)

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate

Checklist Attached ☐	Test Results Attached ☐	Calibration Attached ☐	Other as Indicated ☐
Drawing Reference	ITP Reference	MS Reference	

Civil	Survey	Material
Visual inspection is approved A.hamed 8/7 <i>Survey</i> <i>Approved</i> <i>Approved</i> A.hamed 8/7		

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elkhlwy	<i>Mahmoud</i>				
QA/QC*						
GARB**	Eng : Khaled Fawzey					
Employers Representative Notes						
Employers Representative Sign						

* Designer

** Alignment Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهرة)
من المحطة (536+400) إلى المحطة (536+500)
مسافة 81.86 كم
57.73 + 4.13 = 61.86

STATION	ACT. WIDTH	LEFT SIDE		S.E. %	LAYER LEVEL		0.9	RIGHT SIDE		ACT. WIDTH
		7	4		DESIGN LEVEL	PGL FERMA LEVEL		4	7	
536+400		60.15	60.27	-4%	60.43	59.53	1.43 60.43	60.27	60.15	
Act.								1.59	1.71	
Diff.										
536+410		60.18	60.30	-4%	60.46	59.56	1.46 60.46	60.30	60.18	
Act.								1.54	1.68	
Diff.										
536+420		60.21	60.33	-4%	60.49	59.59	1.37 60.49	60.33	60.21	
Act.								1.53	1.65	
Diff.										
536+430		60.23	60.35	-4%	60.51	59.61	1.35 60.51	60.35	60.23	
Act.								1.51	1.63	
Diff.										
536+440		60.26	60.38	-4%	60.54	59.64	1.32 60.54	60.38	60.26	
Act.								1.48	1.60	
Diff.										
536+450		60.29	60.41	-4%	60.57	59.67	1.29 60.57	60.41	60.29	
Act.								1.45	1.57	
Diff.										
536+460		60.32	60.44	-4%	60.60	59.70	1.26 60.60	60.44	60.32	
Act.								1.42	1.54	
Diff.										
536+470		60.35	60.47	-4%	60.63	59.73	1.23 60.63	60.47	60.35	
Act.								1.39	1.61	
Diff.										
536+480		60.38	60.50	-4%	60.66	59.76	1.20 60.66	60.50	60.38	
Act.								1.36	1.48	
Diff.										
536+490		60.40	60.52	-4%	60.68	59.78	1.18 60.68	60.52	60.40	
Act.								1.34	1.46	
Diff.										
536+500		60.43	60.55	-4%	60.71	59.81	1.15 60.71	60.55	60.43	
Act.								1.31	1.43	
Diff.										

Mohamed
Khaled

MS FROM ST.(536+260) TO ST.(536+500)

Layer Zone
Layer No.

Station	536+260	536+280	536+300	536+320	536+340	536+360	536+380	536+400	536+420	536+440	536+460	536+480	536+500
DESIGN LEVEL	60.05	60.11	60.16	60.21	60.27	60.32	60.38	60.43	60.48	60.54	60.60	60.65	60.71
PERMA LEVEL	59.16	59.21	59.26	59.31	59.37	59.42	59.48	59.53	59.58	59.64	59.70	59.75	59.81
CUT LEVEL	54.50	54.75	55.04	55.15	55.24	55.46	55.41	55.75	55.76	55.63	55.81	55.82	55.80
DIFF (PERMA - CUT)	4.65	4.46	4.22	4.16	4.13	3.96	4.07	3.78	3.82	4.01	3.89	3.93	4.01
0	58.13	58.11	58.06	58.11	58.17	58.41	58.45	58.51	58.58	58.64	58.70	58.75	58.81
-0.25	58.90	58.98	59.01	59.06	59.12	59.17	59.23	59.28	59.33	59.39	59.43	59.50	59.56
-0.5	58.65	58.71	58.76	58.81	58.87	58.92	58.98	59.03	59.08	59.14	59.19	59.25	59.31
-0.75	58.40	58.46	58.51	58.56	58.62	58.67	58.73	58.78	58.83	58.89	58.95	59.00	59.06
-1	58.15	58.21	58.26	58.31	58.37	58.42	58.48	58.53	58.58	58.64	58.70	58.75	58.81
-1.25	57.90	57.96	58.01	58.06	58.12	58.17	58.23	58.28	58.33	58.39	58.43	58.50	58.56
-1.5	57.65	57.71	57.76	57.81	57.87	57.92	57.98	58.03	58.08	58.14	58.19	58.25	58.31
-1.75	57.40	57.46	57.51	57.56	57.62	57.67	57.73	57.78	57.83	57.89	57.95	58.00	58.06
-2	57.15	57.21	57.26	57.31	57.37	57.42	57.48	57.53	57.58	57.64	57.70	57.75	57.81
-2.5	56.65	56.71	56.76	56.81	56.87	56.92	56.98	57.03	57.08	57.14	57.20	57.25	57.31
-3	56.15	56.21	56.26	56.31	56.37	56.42	56.48	56.53	56.58	56.64	56.70	56.75	56.81
-3.5	55.65	55.71	55.76	55.81	55.87	55.92	55.98	56.03	56.08	56.14	56.20	56.25	56.31
-4	55.15	55.21	55.26	55.31	55.37	55.42	55.48	55.53	55.58	55.64	55.70	55.75	55.81
-4.5	54.65	54.71	54.76	54.81	54.87	54.92	54.98	55.03	55.08	55.14	55.20	55.25	55.31
-5													
-5.5													
-6													
-6.5													
-7													

Mural
SAS

MS Approved
According to Des. Profile
[Signature]
18/09/2022

Center Line DATA

Station	Easting	Northing
536+400	290609.7939	943840.6879
536+420	290590.4891	943845.9152
536+440	290571.1843	943851.1425
536+460	290551.8795	943856.3698
536+480	290532.5747	943861.5971
536+500	290513.2699	943866.8244

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TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Reviewed *[Signature]* JH 06/05/21

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POINT	NORTH	EAST	ELEV
1	943847.467	290611.766	60.155
2	943844.577	290611.064	60.267
3	943840.879	290609.921	60.398
4	943836.967	290608.793	60.294
5	943833.676	290607.653	60.12
6	943835.002	290602.822	60.134
7	943837.741	290603.801	60.282
8	943841.458	290605.021	60.42
9	943845.599	290606.449	60.299
10	943848.563	290607.335	60.155
11	943849.977	290601.967	60.186
12	943846.857	290601.192	60.314
13	943843.123	290600.066	60.454
14	943839.065	290598.89	60.298
15	943836.317	290598.061	60.161
16	943837.732	290592.802	60.164
17	943840.894	290593.816	60.345
18	943844.721	290594.946	60.462
19	943848.782	290596.112	60.303
20	943851.507	290596.755	60.185
21	943852.584	290592.335	60.188
22	943849.544	290591.475	60.323
23	943845.768	290590.438	60.473
24	943841.754	290589.356	60.347
25	943838.91	290588.563	60.187
26	943840.193	290583.497	60.184
27	943843.413	290584.374	60.341
28	943847.212	290585.437	60.483
29	943851.352	290586.462	60.326
30	943853.993	290587.223	60.218
31	943855.192	290582.62	60.218
32	943852.165	290581.887	60.33
33	943848.342	290580.8	60.503
34	943844.443	290579.722	60.353
35	943841.32	290579.644	60.2
36	943842.68	290574.108	60.218
37	943845.693	290575.118	60.364
38	943849.463	290576.197	60.517
39	943853.872	290577.376	60.337
40	943856.539	290577.959	60.222
41	943857.818	290573.106	60.252
42	943854.612	290572.035	60.38

Handwritten mark

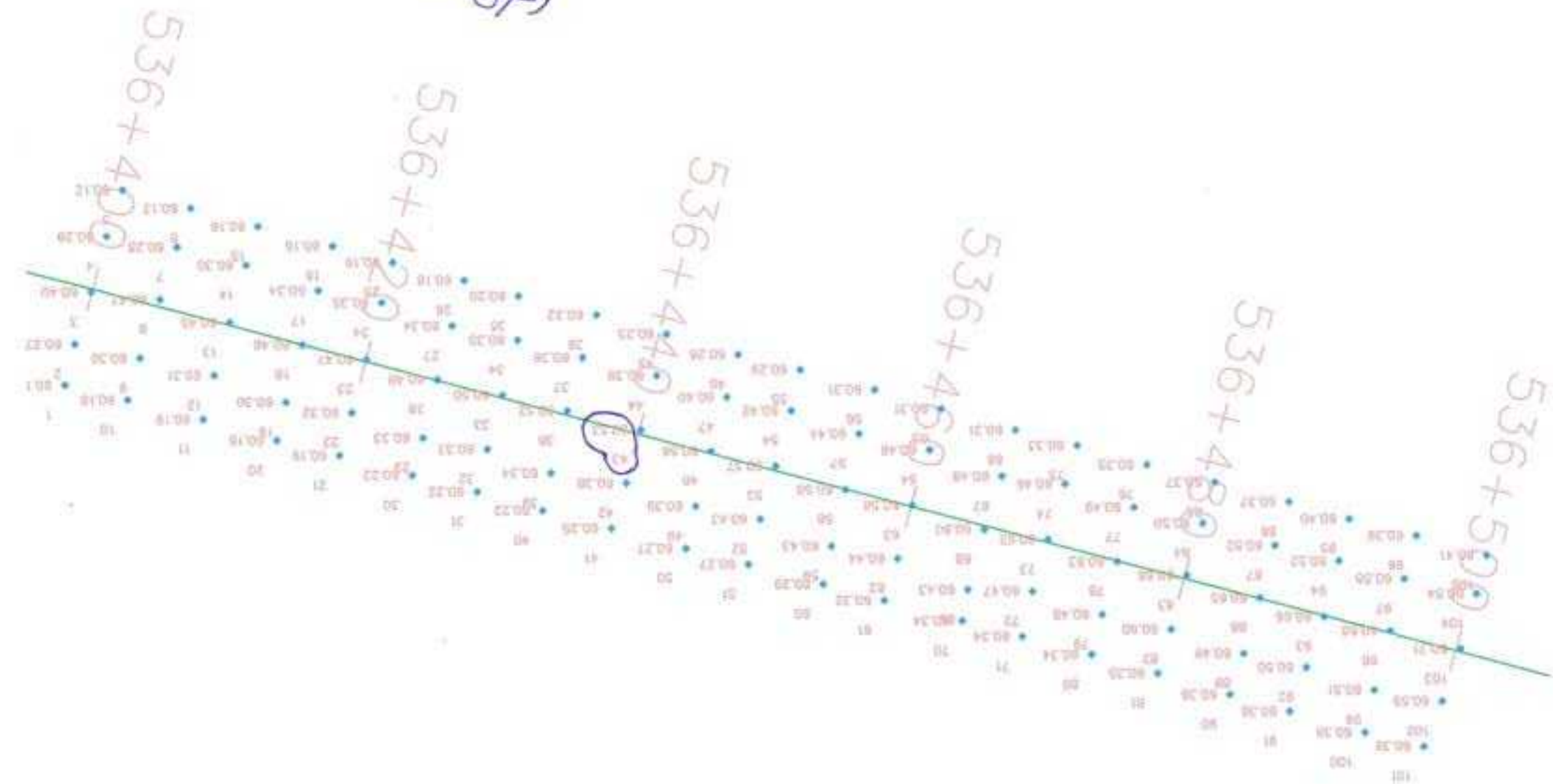
Handwritten signature

POINT	NORTH	EAST	ELEV
43	943850.833	290570.998	60.534
44	943846.999	290569.856	60.375
45	943844.055	290569.127	60.25
46	943845.528	290564.054	60.263
47	943848.549	290564.867	60.404
48	943852.37	290566.008	60.555
49	943856.277	290567.111	60.394
50	943859.262	290567.825	60.268
51	943860.403	290563.392	60.27
52	943857.211	290562.535	60.426
53	943853.45	290561.417	60.57
54	943849.535	290560.302	60.42
55	943846.631	290559.654	60.291
56	943848.072	290554.388	60.306
57	943851.203	290555.526	60.443
58	943855.145	290556.471	60.576
59	943859.144	290557.509	60.426
60	943861.845	290558.103	60.291
61	943863.02	290553.789	60.322
62	943860.052	290552.834	60.444
63	943856.271	290551.784	60.582
64	943852.364	290550.55	60.455
65	943849.45	290549.723	60.312
66	943850.997	290544.471	60.306
67	943854.266	290545.452	60.482
68	943858.022	290546.717	60.6
69	943862.291	290547.89	60.429
70	943864.503	290548.303	60.339
71	943865.643	290544.042	60.341
72	943862.438	290543.325	60.473
73	943858.765	290542.18	60.623
74	943854.837	290540.957	60.465
75	943852.114	290540.082	60.326
76	943853.516	290535.142	60.349
77	943856.525	290536.071	60.493
78	943860.363	290537.267	60.634
79	943864.108	290538.377	60.475
80	943866.95	290539.132	60.344
81	943868.306	290534.458	60.347
82	943865.199	290533.488	60.495
83	943861.366	290532.357	60.656
84	943857.691	290531.207	60.496

POINT	NORTH	EAST	ELEV
85	943854.786	290530.336	60.366
86	943856.217	290525.067	60.371
87	943859.298	290526.081	60.518
88	943863	290527.189	60.652
89	943866.934	290528.366	60.487
90	943869.842	290529.346	60.363
91	943871.068	290525.089	60.36
92	943867.949	290523.881	60.498
93	943864.368	290522.59	60.656
94	943860.421	290521.52	60.522
95	943857.448	290520.78	60.395
96	943858.656	290516.001	60.389
97	943861.706	290516.872	60.546
98	943865.406	290517.885	60.675
99	943869.594	290519.062	60.509
100	943872.596	290519.727	60.38
101	943873.599	290515.528	60.39
102	943870.4	290514.231	60.552
103	943866.699	290512.944	60.708
104	943862.798	290511.773	60.545
105	943860.066	290511.043	60.413

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Amel
2/1



Contractor Company	EL ZHOOR COMPANY			Designer Company	KK																		
Issued by Contractor	Name ENG : MAHMOUD ELKHLAWY	Sign <i>Mahmoud</i>	Date 5-6-2023	COD ZH-1-sb																			
Received by ER			MAR	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 5%;">C1</td> <td style="width: 5%;">C2</td> <td style="width: 5%;">C3</td> <td style="width: 5%;">OD</td> <td style="width: 5%;">MM</td> <td style="width: 5%;">YY</td> <td style="width: 5%;">III</td> <td style="width: 5%;">MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="color: red;">5</td> <td style="color: red;">6</td> <td style="color: red;">2023</td> <td></td> <td></td> </tr> </table>				C1	C2	C3	OD	MM	YY	III	MM				5	6	2023		
C1	C2	C3	OD	MM	YY	III	MM																
			5	6	2023																		

CODE - 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp S36 Note For Kilometer point only Start Km to used
CODE - 2			
CODE - 3	Work Activity Sub Element of Activity		

Description of Materials	Sub ballast	Location to be Used	S36+000 to S37+000		
Item	Specification	Test Requirement	Test Result Attachment	Remark	
1	ASTM D 75	Aggregate Sampling	According Specification		
2	ASTM C 136	Sieve Analysis	According Specification		
3	ASTM D 1440	Passing Sieve #200	5.4 %		
4	ASTM D 4318	Atterberg Limit	NON		
5	ASTM D 2974	Moisture Content	5.9 %		
6	ASTM D 1557	Modified Proctor	2.206		
7	ASTM D 1883	C B R	94.7 %		
8	ASTM C 127	Specific gravity	2.524		
9	ASTM C535	Los Angeles	26.50		
Comments by:			Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHLAWY	<i>Mahmoud</i>	
QA/QC *	<i>Abdullah S.Mg</i>	<i>Abdullah S.Mg</i>	
GARB **			
Employers Representative			

 	Electric Express Train - HSR From El Ain El Sokhna City To El Alemein - MATROUH Section - 7 From FOXA To MARSA MATROUH From Station 564+000 To Station 568+177		
	Operating Lab	Mansour Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	31/5/2023	ZONE	536+000	537+000
Location	K.P 536+500 (5000 m3)	Z1-GP-1	Material	Sub-Ballast
NAME COMPANY	Elzohor			

1-Visual inspection test

2-Grainent (sui)

A-gradation of bulk materials					SAMPLE WEIGHT (g)				33240.00		gm	table classify	
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS	soil classify	2.206	5.9	94.7%	
Mass retained (g)	0.0	0.0	1035.0	6699.0	4513.0	1433.0	3443.0						
Cumulative Retained (g)	0.0	0.0	1035.0	5704.0	14277.0	15690.0	18933.0						
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.3						
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6						

B-soil material gradation						WT. OF sample	500.00	gm
sieve size	10	40	200					
Cumulative Retained (g)	134.00	0.00	437.00					
Cumulative Retained %	26.80	0.00	87.40					
Cumulative Passing %	73.20	100.00	12.60					

C-General gradient										
sieve size(n)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200
blows size(n)	50.0	37.5	25.0	10.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	100.0	94.5	70.8	57.2	52.9	42.6	31.2	42.6	5.4
		100	97 - 50	75 - 70		60 - 15		35 - 0		0 - 7

ATTERBERG LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	N.P	N.P	N.P

Contractor

Consultant

Abdullah S. M. M.





Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein - MATROUH
Section - 7 From FOUA TO MARSA MATROUH
From Station 504+000 To Station 508+177



operating Lab Mansour Lab

Proctor Test

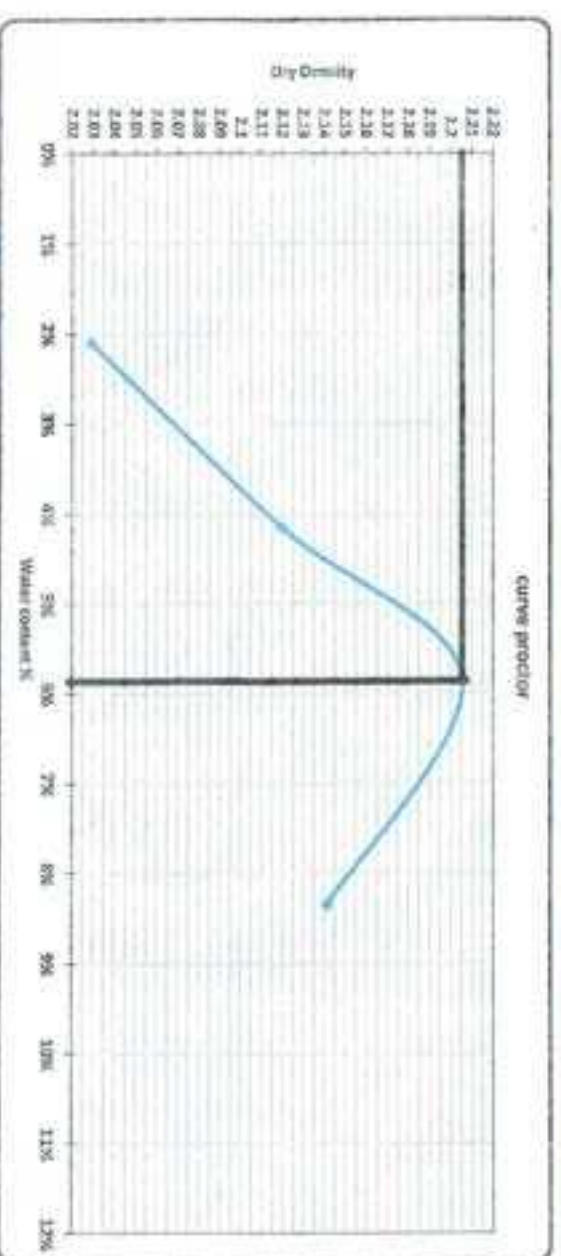
TESTING DATE:	14/2/2023	Code		Zone	536+000 TO 537+000
LOCATION:	K.P 536+500 (5000 m3)	24-CP-1			
NAME COMPANY:	Eloussier				

Weight of empty mold :	5759.0
Mold Volume:	2134.0

MAX Dry Density	2.286
Water content %	5.9

trial no :	1	2	3	4
Wt. Of Mold + wet soil	10108.0	10170.0	10741.0	10710.0
Wt. WET SOIL	4431.0	4711.0	4902.0	4681.0
Wt. Density	2.072	2.208	2.335	2.320

Tare Wt.	1	2	3	4	5	6	7	8
Wt. Of wet soil & tare	106.6	108.3	108.4	108.7	108.9	109.3	109.7	200.3
Wt. Of dry soil & tare	106.8	106.8	102.0	102.2	101.3	101	100.8	100.3
Wt. Of water	3.1	2.8	6.8	6.0	7.7	8.1	11.0	11.0
Wt. Of dry soil	100.7	104.0	103.2	100.8	104.3	102.8	102.0	101.4
Water content %	2.2%	2.0%	6.0%	6.3%	5.7%	6.0%	8.1%	8.4%
AV. Water content %	2.1%	4.2%	5.0%	8.3%				
DO Density	2.029	2.120	2.208	2.311				



Contractor

Consultant



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	SL-1000	SLT-1000
Location :	K.P. 536+500 (5000 m/s)	DR-RP-1			
Name of Company :	Trishar				

2. Test Results

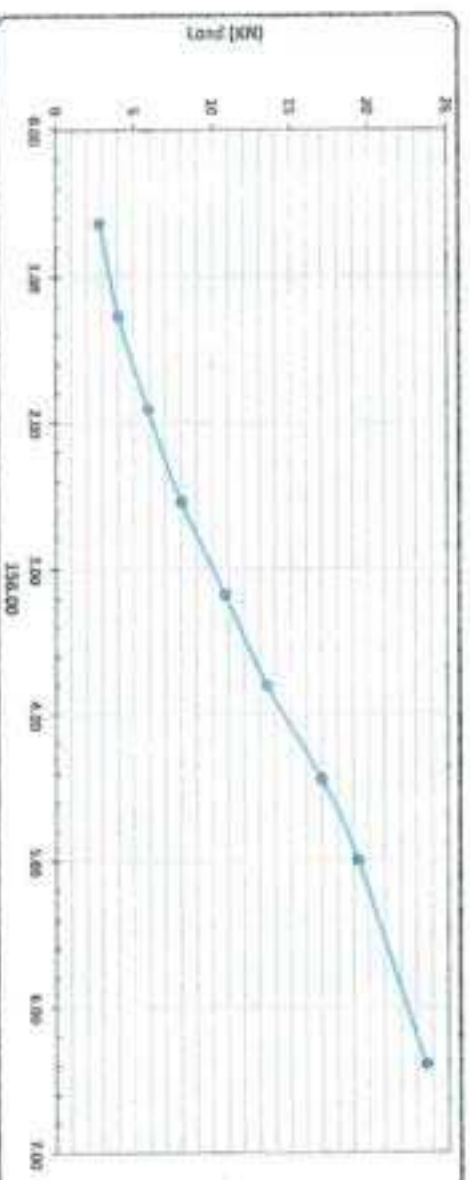
Compaction % for Mold	
Mold No	1
Mold Vol (cm ³)	2336
Mold Wt. (gm)	6219
Mold Wt. - Wet Wt. (gm)	1276
Wet Wt. (gm)	4943
Wet Density (g/cm ³)	2.141
Dry Density (g/cm ³)	2.266
Proctor Density (g/cm ³)	2.266
Compaction %	100

Moisture Ratio After Compacted Mold	
Test No	13
Test Wt. (gm)	88.47
Test Wt. - Wet Wt. (gm)	196.4
Test Wt. - Dry Wt. (gm)	144.8
Moisture Content %	3.2
Dry Wt. (gm)	88.8
Moisture Content %	5.99

Swelling	
Steel No	2
Mo	0
Initial Height (mm)	8.00
Final Height (mm)	8.88
Distress	0
Sample Height (mm)	118.80
Swelling Ratio %	6%

Loadline Reading:

150.00	0.67	1.27	1.91	2.58	3.18	3.80	4.41	4.99	6.40
Load Reading (kg)	200.00	612.00	642.80	676.00	1100.00	1375.00	1750.00	1970.00	2410.00
Load (KN)	2.0	4.9	6.3	6.6	10.8	13.5	17.0	19.7	24.1



Calculations :-

Proctor data	Load	Standard Load	CRH	Total Compaction	Compaction	CRH
(mm)	(KN)	(lb)	(%)	(%)	(%)	(%)
2.40	6.87	15.4	66.7%	100	98	98.1%
6.20	14.01	26.0	54.2%			94.7%

Lab Engineer

Name :

Page :



Consultant Engineer

Name :

Page :

Signature of Consultant Engineer

 KXK CONSULTING SERVICES 10000 10th Street, Suite 100 San Diego, CA 92121	 Electric Express Trains - HSR From El Cajon to San Diego City To El Cajon - MARSDEN Section - FROM PCHLA TO MARCIA MATRICON From Station 536+000 To Station 557+000	
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**Absorption & Aggregate specific gravity
AASHTO-195**

TESTING DATE:	6/6/2023	Code	Station	536+000	557+000
LOCATION	KLP 536+500 (5600 in3)	2150-1	Material	Sub-Ballast	
NAME COMPANY	Kloiber		layer thickness	0.20 cm	

Weight of sample	2000	gm
Weight of saturated dry surface sample (B)	2012	gm
Weight of saturated sample in water (C)	1228	gm
Weight of dry sample after heating (A)	1876	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.524	8790
Apparent specific gravity = $A / (A-C)$	2.645	
Absorption = $(B-A)/A$	1.822	%

4890 6138

Los Angeles abrasion AASHTO-196

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3875	26.50

L.A. Engineer	
Name :	
NO. :	

Consultant Engineer	
Name :	Abdullah S. M.
Sign :	





Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein



Section :7 From FokaTo MARSA MATRUH

From Station 504+000 To Station 568+177

ACTIVITY : Sand cone test

laboratory results

COD

Z H (S.B.1)

Density and Unit Weight of Soil In place by the Sand-cone Method _ ASTM D 1556

Company :	EL-ZHOUR COMPANY	Layer level :	Sub Ballast(0.9)
Description:	Compaction test	Layer Thickness :	0.2 m
Station represented :	538+400 TO 538+500	Sample Date :	7/7/2023

Modified Proctor Testing Results

Max. Dry Density - gm/cm3	Optimum Moisture Content - %	Degree of Compaction Required - %	Bulk Density of Specified Sand - gm/cm3
2.20	19.5%	100%	1.48

Compaction Testing Results & Calculations

STATION	538+410	538+420	538+430	538+440	538+450	538+460	538+470	538+480	538+490	538+500
Moist. No.	1	2	3	4	5	6	7	8	9	10
WT, of Sand bucket Twt, gm	9538	9638	9663	9775	9778	9820	9823	10002	10088	10140
WT, of Sand After Twt, gm	3074	3720	3763	3833	3823	3886	3860	4020	4100	4170
WT, of Sand In Cone + Water, gm	3904	3908	3920	3940	3953	3930	3963	3972	3988	3970
WT, of Sand In Cone	1340	1140	1140	1140	1140	1140	1140	1140	1140	1140
WT, of Sand of Water, gm	2724	2768	2780	2809	2813	2790	2823	2832	2848	2830
Volume of the Soil, CM3	1841	1878	1878	1882	1891	1883	1907	1914	1924	1913
WT, of Soil From hole, gm	4778	4389	4400	4413	4413	4433	4444	4473	4486	4477
Bulk Density of Soil, dry/100g	2.379	2.342	2.342	2.332	2.327	2.332	2.330	2.338	2.321	2.341
Moisture Content, %	8.5	6.3	6.8	5.8	5.8	5.8	5.5	5.5	5.5	5.5
Dry Density, gm/cm3	2.223	2.203	2.199	2.204	2.198	2.223	2.208	2.207	2.200	2.218
Compaction, (%)	101.5%	100.3%	100.0%	100.2%	100.0%	101.0%	100.4%	100.3%	100.0%	100.8%

Acceptance Criteria:

Comply

☐

Not Comply

☐☐☐☐

CONSULTANT COMMENTS

Site engineer :-

Name :- MAHMOUD ELKHAIFY

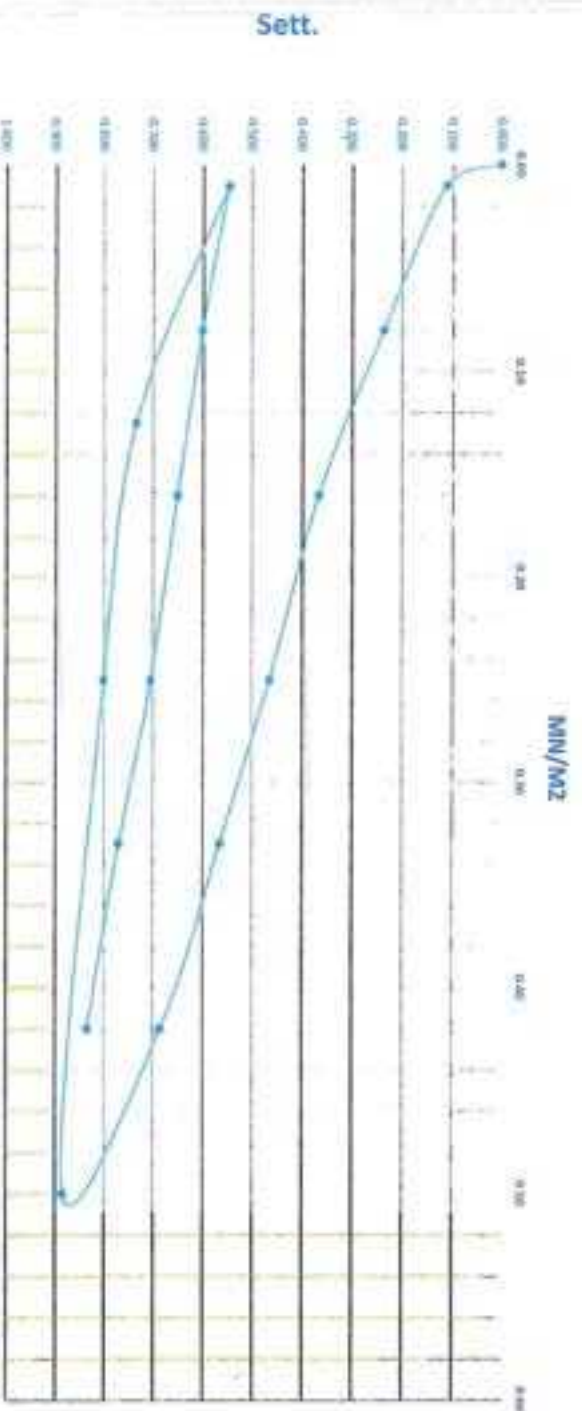
Signature :- Mahmoud

Consultant Materials Engineer :-

Name :- Ahmed Hamed

Signature :- Ahmed Hamed

For this calculation k_{cr} and k_t are usually taken from the load span between $0.3 \sigma_{max}$ and $0.7 \sigma_{max}$.



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Handwritten signature and date: 20/3/2003

Plate Load Test Results

Company Name شركة

Location S36+400

Test Date 29-7-2023

Layer level +(-.90)

Station S36+425

To S36+500

Sub Ballast

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



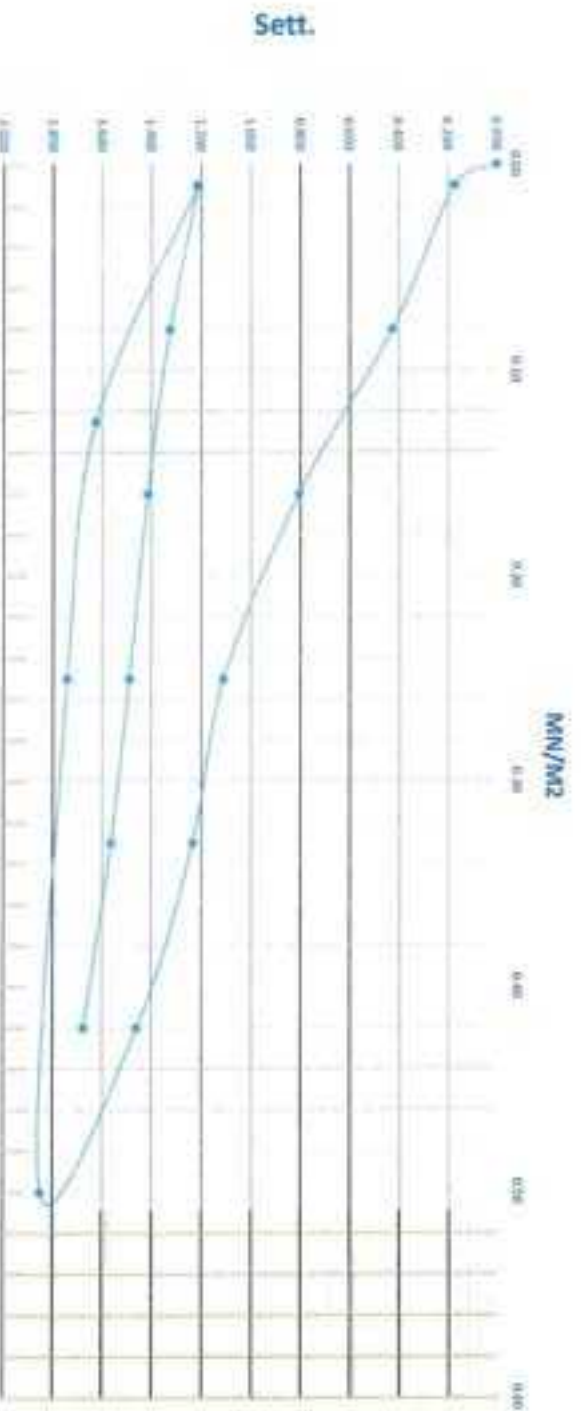
The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (≤ 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is relocated in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Leading	Lead	Lead	Service	Dist 1	Dist 2	Dist 3	Set 1	Set 2	Set 3	Avg.
Sege No.	Bar	KN	MPAGE	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	16.86	15.44		0.000	0.000		0.000
1.000	2.4	0.707	0.01	16.66	15.30		0.200	0.140		0.170
2.000	18.8	5.652	0.08	16.39	15.06		0.470	0.380		0.425
0.080	37.7	11.304	0.16	16.04	14.65		0.820	0.790		0.805
4.000	58.9	17.663	0.25	15.79	14.29		1.070	1.150		1.110
5.000	77.7	23.315	0.33	15.76	14.07		1.100	1.370		1.235
6.000	98.9	29.673	0.42	15.55	13.83		1.310	1.610		1.460
7.000	117.8	35.325	0.50	15.20	13.40		1.660	2.040		1.850
8.000	58.9	17.663	0.25	15.32	13.50		1.540	1.940		1.740
9.000	29.4	8.831	0.12	15.45	13.60		1.410	1.840		1.625
9.000	2.4	0.707	0.01	15.75	14.13		1.110	1.310		1.210
10.000	2.4	0.707	0.01	15.75	14.13		1.110	1.310		1.210
11.000	18.8	5.652	0.08	15.65	14.00		1.210	1.440		1.325
12.000	37.7	11.304	0.16	15.59	13.88		1.270	1.560		1.415
13.000	58.9	17.663	0.25	15.54	13.78		1.320	1.660		1.490
14.000	77.7	23.315	0.33	15.48	13.69		1.380	1.750		1.565
15.000	98.9	29.673	0.42	15.39	13.56		1.470	1.880		1.675

For this calculation Δ_{1r} and Δ_{1s} are usually taken from the load span between $0.3 \sigma_{max}$ and $0.7 \sigma_{max}$.

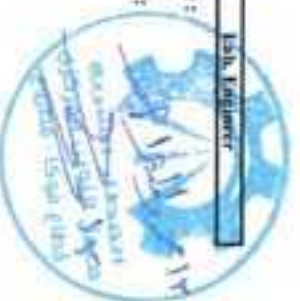


Name : Lab. Specialist

Sign :

Name : Lab. Engineer

Sign :



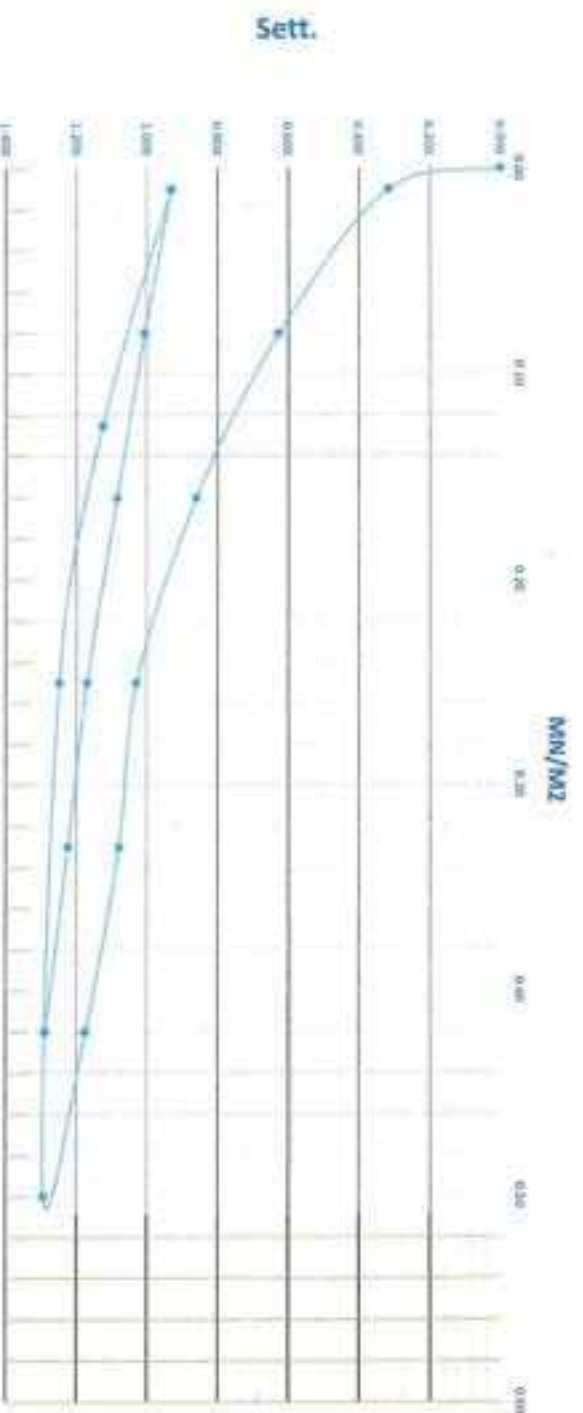
Name : Consultant Engineer

Sign :

Handwritten signature in blue ink.

D = diameter of the plate, generally 0.25

For this calculation δ and δ_r are usually taken from the load span between $0.3 \sigma_{max}$ and $0.7 \sigma_{max}$.



Name : Lab. Specialist

Sign :

Name : Lab. Engineer

Sign :



Name : Consultant Engineer

Sign :

Handwritten signature in blue ink

RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown:

Contractor Company	EL. ZHOOR . COMPANY		Designer Company*	KK CONSULT.																	
Issued by Contractor	Name Eng : Mahmoud Elkhilwy	Sign <i>Mahmoud A</i>	Date 24 - 6 - 2023	Time																	
Received by Employers Representative		UIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>D0</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>KP536</td> <td>TR</td> <td>OT</td> <td>24</td> <td>6</td> <td>2023</td> <td></td> <td></td> </tr> </table>			C1	C2	C3	D0	MM	YY	HH	MM	KP536	TR	OT	24	6	2023		
C1	C2	C3	D0	MM	YY	HH	MM														
KP536	TR	OT	24	6	2023																
CODE - 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note																		
CODE - 2	Work Activity		For Kilometer point only Start Km is used																		
CODE - 3	Sub Element of Activity																				

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Ballast (+ 0.9)	From St (536+300) to (536+400)

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate

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

Civil	Survey	Material
<i>Visual inspection is accepted</i> <i>Levelled & GTS's compaction is accepted</i> <i>No. 50 of July 2016/2013</i> <i>25/6/2023</i>		

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	A-AWC-R	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elkhilwy	<i>Mahmoud</i>					
QA/QC*							
GARB**	Eng : Khaled Fawzey						
Employers Representative Notes							
Employers Representative Sign							

* Designer

** Alignment Bridges: Culvert

STATION		ACT. WIDTH	LEFT SIDE		S.E. %	PGL		RIGHT SIDE		ACT. WIDTH	
			7	4		DESIGN LEVEL	FERMA LEVEL	CL	S.E. %	4	7
536+300			59.88	60.00	-4%	60.16	59.26	1.73 60.16	-4%	60.00	59.88
Act.										1.86	1.98
DIF.			✓	✓				-2		✓	✓
536+310			59.91	60.03	-4%	60.19	59.29	1.67 60.19	-4%	60.03	59.91
Act.										1.83	1.95
DIF.			✓	✓				-1		+2	✓
536+320			59.94	60.06	-4%	60.22	59.32	1.64 60.22	-4%	60.06	59.94
Act.										1.80	1.92
DIF.			✓	✓				-1		✓	✓
536+330			59.96	60.08	-4%	60.24	59.34	1.62 60.24	-4%	60.08	59.96
Act.										1.78	1.90
DIF.			✓	✓				-1		✓	✓
536+340			59.99	60.11	-4%	60.27	59.37	1.59 60.27	-4%	60.11	59.99
Act.										1.75	1.87
DIF.			✓	✓				✓		✓	✓
536+350			60.02	60.14	-4%	60.30	59.40	1.56 60.30	-4%	60.14	60.02
Act.										1.72	1.84
DIF.			✓	✓				✓		✓	✓
536+360			60.04	60.16	-4%	60.32	59.42	1.54 60.32	-4%	60.16	60.04
Act.										1.70	1.82
DIF.			✓	✓				-1		✓	✓
536+370			60.07	60.19	-4%	60.35	59.45	1.51 60.35	-4%	60.19	60.07
Act.										1.67	1.79
DIF.			✓	✓				✓		✓	✓
536+380			60.10	60.22	-4%	60.38	59.48	1.48 60.38	-4%	60.22	60.10
Act.										1.64	1.76
DIF.			✓	✓				-1		✓	✓
536+390			60.12	60.24	-4%	60.40	59.50	1.46 60.40	-4%	60.24	60.12
Act.										1.62	1.74
DIF.			✓	✓				-2		✓	✓
536+400			60.15	60.27	-4%	60.43	59.53	1.43 60.43	-4%	60.27	60.15
Act.										1.59	1.71
DIF.			✓	✓				(-3)		✓	✓

67.73

 +4.13 =

 71.86

67.73

 +4.13 =

 71.86

MS FROM ST.(536+260) TO ST.(536+500)

Layer Zone
Layer No.

Station	536+280	536+290	536+300	536+310	536+320	536+330	536+340	536+350	536+360	536+370	536+380	536+390	536+400
DESIGN LEVEL	60.05	60.11	60.16	60.21	60.27	60.32	60.38	60.43	60.48	60.54	60.58	60.63	60.71
FEMA LEVEL	59.10	59.21	59.26	59.31	59.37	59.42	59.48	59.53	59.58	59.64	59.70	59.75	59.81
OUT LEVEL	54.50	54.75	55.04	55.15	55.24	55.46	55.41	55.75	55.78	55.53	55.81	55.82	55.95
DIFF (FEMA - OUT)	4.65	4.46	4.22	4.16	4.13	3.96	4.07	3.78	3.82	4.01	3.89	3.93	4.01
0	59.15	59.21	59.26	59.31	59.37	59.42	59.48	59.53	59.58	59.64	59.70	59.75	59.81
-0.25	58.90	58.96	59.01	59.06	59.12	59.17	59.23	59.28	59.33	59.39	59.45	59.50	59.56
-0.5	58.65	58.71	58.76	58.81	58.87	58.92	58.98	59.03	59.08	59.14	59.20	59.25	59.31
-0.75	58.40	58.46	58.51	58.56	58.62	58.67	58.73	58.78	58.83	58.89	58.95	59.00	59.06
-1	58.15	58.21	58.26	58.31	58.37	58.42	58.48	58.53	58.58	58.64	58.70	58.75	58.81
-1.25	57.90	57.96	58.01	58.06	58.12	58.17	58.23	58.28	58.33	58.39	58.45	58.50	58.56
-1.5	57.65	57.71	57.76	57.81	57.87	57.92	57.98	58.03	58.08	58.14	58.20	58.25	58.31
-1.75	57.40	57.46	57.51	57.56	57.62	57.67	57.73	57.78	57.83	57.89	57.95	58.00	58.06
-2	57.15	57.21	57.26	57.31	57.37	57.42	57.48	57.53	57.58	57.64	57.70	57.75	57.81
-2.5	56.90	56.96	56.96	56.81	56.87	56.92	56.98	57.03	57.08	57.14	57.20	57.25	57.31
-3	56.65	56.71	56.76	56.81	56.87	56.92	56.98	57.03	57.08	57.14	57.20	57.25	57.31
-3.5	56.40	56.46	56.51	56.56	56.62	56.67	56.73	56.78	56.83	56.89	56.95	57.00	57.06
-4	56.15	56.21	56.26	56.31	56.37	56.42	56.48	56.53	56.58	56.64	56.70	56.75	56.81
-4.5	55.90	55.96	55.96	55.81	55.87	55.92	55.98	56.03	56.08	56.14	56.20	56.25	56.31
-5	55.65	55.71	55.76	55.81	55.87	55.92	55.98	56.03	56.08	56.14	56.20	56.25	56.31
-5.5	55.40	55.46	55.51	55.56	55.62	55.67	55.73	55.78	55.83	55.89	55.95	56.00	56.06
-6	55.15	55.21	55.26	55.31	55.37	55.42	55.48	55.53	55.58	55.64	55.70	55.75	55.81
-6.5	54.90	54.96	55.01	55.06	55.12	55.17	55.23	55.28	55.33	55.39	55.45	55.50	55.56
-7	54.65	54.71	54.76	54.81	54.87	54.92	54.98	55.03	55.08	55.14	55.20	55.25	55.31

Handwritten signature: J. H. M. S. J.

*MSA Approved
According to Des. A. B. C.
18/09/2022*

Center Line DATA

Station	Easting	Northing
✓ 536+300	290706.3179	943814.5514
536+320	290687.0131	943819.7787
536+340	290667.7083	943825.006
536+360	290648.4035	943830.2333
536+380	290629.0987	943835.4606
536+400	290609.7939	943840.6879

Muhammad GAI

Muhammad GAI

mohammad

TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Yune GHS

Stephane

POINT	NORTH	EAST	ELEV
1	943807.705	290704.013	59.863
2	943809.157	290699.209	59.903
3	943810.961	290704.906	60.007
4	943812.225	290699.994	60.063
5	943814.542	290705.942	60.126
6	943816.052	290701.263	60.171
7	943818.224	290706.943	60.011
8	943819.811	290702.18	60.034
9	943821.427	290707.669	59.892
10	943822.777	290702.896	59.907
11	943823.835	290697.969	59.885
12	943820.058	290696.842	60.06
13	943825.471	290692.592	59.968
14	943822.103	290691.633	60.08
15	943818.688	290690.783	60.228
16	943817.281	290696.271	60.194
17	943814.917	290689.963	60.113
18	943813.284	290695.515	60.034
19	943812.009	290688.966	59.969
20	943810.497	290694.493	59.924
21	943813.146	290684.754	59.967
22	943814.68	290679.24	59.972
23	943816.598	290685.655	60.114
24	943818.347	290679.962	60.11
25	943820.709	290686.535	60.215
26	943821.973	290680.721	60.219
27	943823.963	290687.525	60.062
28	943825.346	290681.821	60.057
29	943826.721	290688.35	59.968
30	943828.672	290682.275	59.928
31	943829.664	290678.808	59.974
32	943830.983	290673.71	59.932
33	943827.318	290672.741	60.098
34	943825.913	290677.629	60.108
35	943824.261	290671.62	60.255
36	943822.781	290676.688	60.252
37	943820.237	290670.561	60.118
38	943818.974	290675.592	60.137
39	943817.264	290669.74	59.991
40	943815.942	290674.615	59.986
41	943818.33	290665.58	60.016
42	943822.573	290666.511	60.162

Madhavi

8/8/21

POINT	NORTH	EAST	ELEV
43	943819.855	290659.934	60.025
44	943822.904	290660.863	60.178
45	943825.684	290667.139	60.26
46	943826.913	290662.019	60.29
47	943830.947	290663.351	60.128
48	943829.639	290668.232	60.077
49	943832.309	290669.151	59.956
50	943833.611	290664.185	59.986
51	943834.963	290659.571	60.005
52	943836.196	290654.04	60.044
53	943831.324	290658.495	60.144
54	943832.677	290653.001	60.191
55	943827.873	290657.692	60.289
56	943829.312	290652.014	60.327
57	943823.578	290656.708	60.173
58	943825.232	290651.131	60.174
59	943820.848	290655.975	60.045
60	943822.452	290650.281	60.07
61	943825.055	290640.644	60.08
62	943823.559	290646.234	60.054
63	943829.52	290641.66	60.251
64	943828.015	290647.348	60.249
65	943832.338	290642.453	60.324
66	943831.021	290648.139	60.325
67	943836.601	290643.543	60.143
68	943835.392	290649.206	60.136
69	943838.812	290643.828	60.073
70	943837.238	290649.964	60.062
71	943839.866	290640.294	60.089
72	943841.39	290634.786	60.097
73	943836.175	290639.141	60.226
74	943837.605	290633.438	60.258
75	943833.108	290638.463	60.364
76	943834.602	290632.606	60.382
77	943829.105	290637.472	60.212
78	943830.836	290631.417	60.255
79	943826.104	290636.55	60.11
80	943827.777	290630.48	60.119
81	943828.658	290626.871	60.136
82	943830.262	290621.276	60.118
83	943832.075	290627.688	60.257
84	943833.549	290621.868	60.285

John

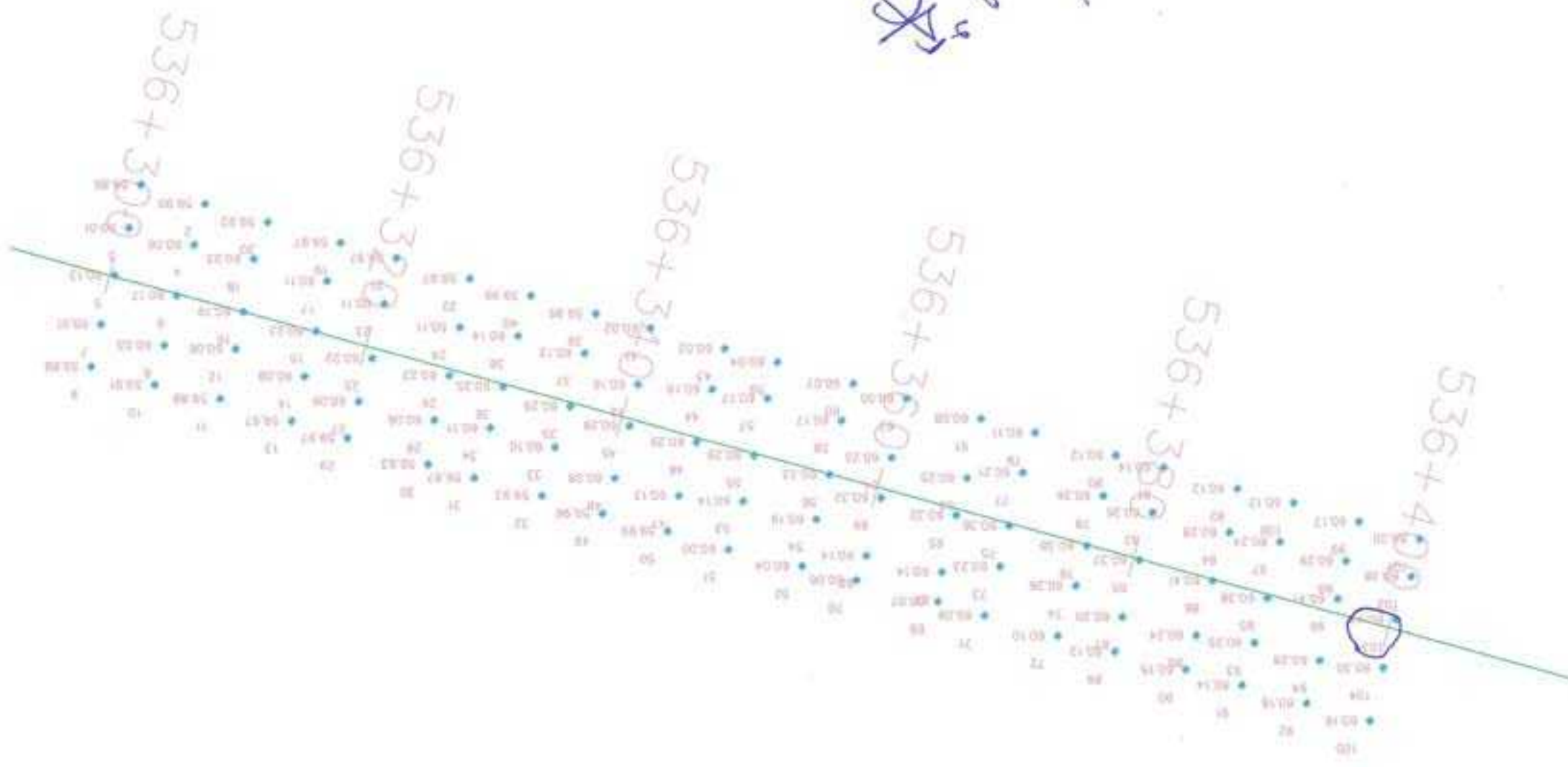
John

POINT	NORTH	EAST	ELEV
85	943835.652	290628.644	60.37
86	943837.192	290623.12	60.411
87	943839.933	290629.935	60.205
88	943841.312	290624.352	60.239
89	943842.552	290630.482	60.124
90	943843.891	290625.118	60.149
91	943845.054	290620.866	60.141
92	943846.404	290615.971	60.155
93	943841.849	290619.935	60.253
94	943843.176	290614.976	60.281
95	943838.499	290618.969	60.385
96	943838.534	290613.661	60.414
97	943834.273	290618.049	60.243
98	943835.687	290613.031	60.288
99	943832.72	290612.063	60.174
100	943831.325	290617.011	60.125
101	943833.995	290607.485	60.196
102	943836.831	290608.11	60.28
103	943840.093	290609.223	60.445
104	943843.722	290610.186	60.295
105	943847.714	290611.166	60.162

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Refused

thuc
thuc



MATERIAL APPROVAL REQUEST

المجلس
المؤقت
لإقليم
البحر



السلطنة
البحرية



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK																		
Issued by Contractor	Name ENG : MAHMOUD ELKHILAWY	Sign <i>Mahmoud</i>	Date 5-6-2023	COD ZH-1-5b																		
Received by ER		MAR	<table border="1"> <tr> <td>Q</td> <td>C</td> <td>C</td> <td>C</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td>6</td> <td>2023</td> <td></td> <td></td> </tr> </table>	Q	C	C	C	DD	MM	YY	HH	MM					5	6	2023			
Q	C	C	C	DD	MM	YY	HH	MM														
				5	6	2023																

CODE - 1	S1 to S21 Station Reference	D1 to S3 Deposit Reference	Tip S36 Note For Kilometer point only Start Now to used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub testlast		
Location to be Used	536+000 to 537+000		
Item	Specification	Test Requirement	Test Result Attachment
1	ASTM D 75	Aggregate Sampling	According Specification
2	ASTM C 136	Sieve Analysis	According Specification
3	ASTM D 1440	Passing Sieve #200	5.4 %
4	ASTM D 4318	Atterberg Limit	NON
5	ASTM D 2974	Moisture Content	5.9 %
6	ASTM D 1557	Modified Proctor	2.206
7	ASTM D 1883	C B R	94.7 %
8	ASTM C 127	Specific gravity	2.524
9	ASTM C535	Los Angeles	26.50
Comments by:		Comments by:	

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHILAWY	<i>Mahmoud</i>	
QA/QC *	<i>Abdelbaki SING</i>	<i>Abdelbaki SING</i>	
GARB**			
Employers Representative			

MATERIAL INSPECTION REQUEST

المشروع
المنفذ في الموقع
(Station)



الجهة
المختصة

المكتب
المختص بالرقابة
على الجودة



Contractor Company	El .Zhoor . Company		Designer Company	KK CONSULT.																
Issued by Contractor	Name Eng \ Mahmoud Elkhilawy	Sign <i>Mahmoud</i>	Date 18-5-2023	COD ZH 2 P.G																
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>D0</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	D0	MM	YY	HH	MM				18	5	2023		
C1	C2	C3	D0	MM	YY	HH	MM													
			18	5	2023															

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

Description of Materials		Fill material results			
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)			
MAR Approval No		Date			
Supplier Name		Specification	Clause		
Test Requirement		Other			
Reference Photos	Yes attached / No				
Item	Description	Unit	Quantity	Arrival Date	Note
1	L.L & P.L & O.M.C %	m3	5000	15 - 5 - 2023	
2	Proctor	m3	5000	15 - 5 - 2023	
3	Classification	m3	5000	15 - 5 - 2023	
4	Seive analysis	m3	5000	15 - 5 - 2023	
Comments by:		Comments by:			
Asample has been taken from fill material by KK office to (ALNUBY CENTER Lab) lab and the results founded meet the specifications and accepted					
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	ENG : Mahmoud Elkhilawy	<i>Mahmoud</i>			
QA/QC *	<i>Abdallah Elkhilawy</i>	<i>Abdallah Elkhilawy</i>			
GARB**					

  KXX KXX KXX	Electric Express Train - HSR From El Ain El Sedina City To El Azzamli - MATROUH Section - 7 From FOKA To MARIYA MATROUH From Station 504+008 To Station 558+177		 Logo Logo Logo
	Operating Lab	Manoeuvre Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL.

TESTING DATE	3/6/2023	code	ZONE	538+000	537+000
Location	K.P 538+506 (5000 m3)	215-57-1	National	Sub-Ballast	
NAME COMPANY	Elzohor				
1-Visual Inspection test					

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT (g)						33340.00		gm	table classify	
above size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS					soil classify	
Mass retained (g)	0.0	0.0	1053.0	8889.0	4913.0	1433.0	3463.0						2.250	
Cumulative Retained (g)	0.0	0.0	1053.0	9792.0	14277.0	15810.0	19273.0						5.9	
Cumulative Retained %	0.0	0.0	2.1	23.2	42.3	47.1	57.4							
Cumulative Passing %	100.0	100.0	98.9	76.8	57.7	52.9	42.6						94.7%	

B-soft material gradation		WT.OF sample		500.0g		gm	
above size	10	40	200				
Cumulative Retained (g)	134.00	0.00	437.00				
Cumulative Retained %	28.80	0.00	87.40				
Cumulative Passing %	71.20	100.00	12.60				

C-General gradient											
above sizes(in)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200	
above sizes(mm)	50.0	37.5	25.0	18.0	12.5	9.5	4.75	2.00	0.425	0.075	
Cumulative Passing %	100.0	100.0	96.3	70.8	57.2	52.9	42.6	31.2	40.0	5.4	
		100	87.50	75.75	60.15			35.0		0.7	

ATTERBERG LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
	N.P	N.P	N.P

Contractor

Consultant

Abdo Abdel-S.M.M.





Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein - MATROUH
Station - 2 From PCA TO MATSA MATROUH
From Station 834+000 To Station 858+177



Operating Lab
Master Lab

Proctor Test

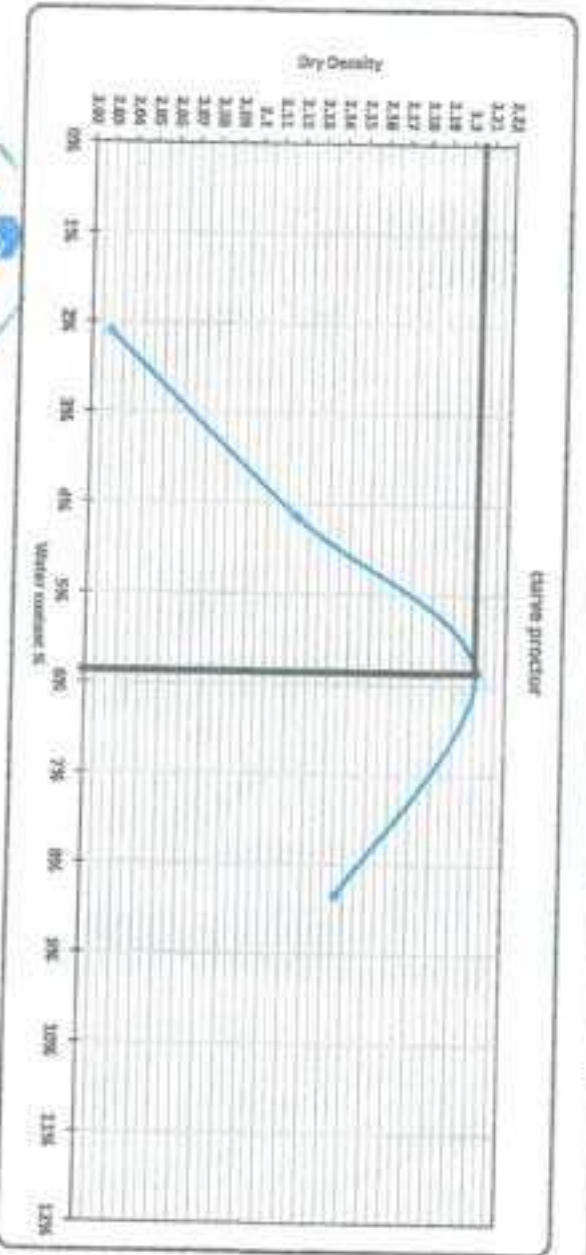
TESTING DATE:	10/2/2023	Scale	Zone	538+000 TO 557+000
LOCATION:	KCP G3E-S30 (5000 m2)	20-25-1		
NAME COMPANY:	Elmhur			

Weight of empty mold :	5799.0
Mold Volume :	1134.0

MAX Dry Density	2.206
Water content %	5.9

Find no :	1	2	3	4
Wt. Of Mould wet soil	10180.0	10479.0	10761.8	10770.0
Wt. WET SOIL	4411.0	4711.8	4952.8	4951.0
Wt. Density	1.475	1.308	1.330	1.328

Test No.	1	2	3	4	5	6	7	8
Tare wt.	55.85	54.5	55.55	52.42	56.96	56.74	56.54	57.02
Wt. Of wet soil & tare	198.8	198.2	198.4	198.7	198.9	199.2	199.7	200.2
Wt. Of dry soil & tare	195.8	195.8	192.9	192.7	192.2	191	188.8	189.2
Wt. Of water	3.1	2.8	5.5	6.0	7.7	8.1	11.0	11.0
Wt. Of dry soil	139.7	141.8	137.2	140.2	134.2	134.5	122.8	127.4
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.9%	8.4%
AV. Water content %	2.1%		6.2%		5.9%		8.3%	
Dry Density	1.429		2.128		1.206		2.441	



Contractor

Consultant



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date:	04/20/23	Class	Zone	536+000	537+000
Location:	K.P 536+500 (5400 m ²)				
Name of Company:	Chakkar				

1. Test Results

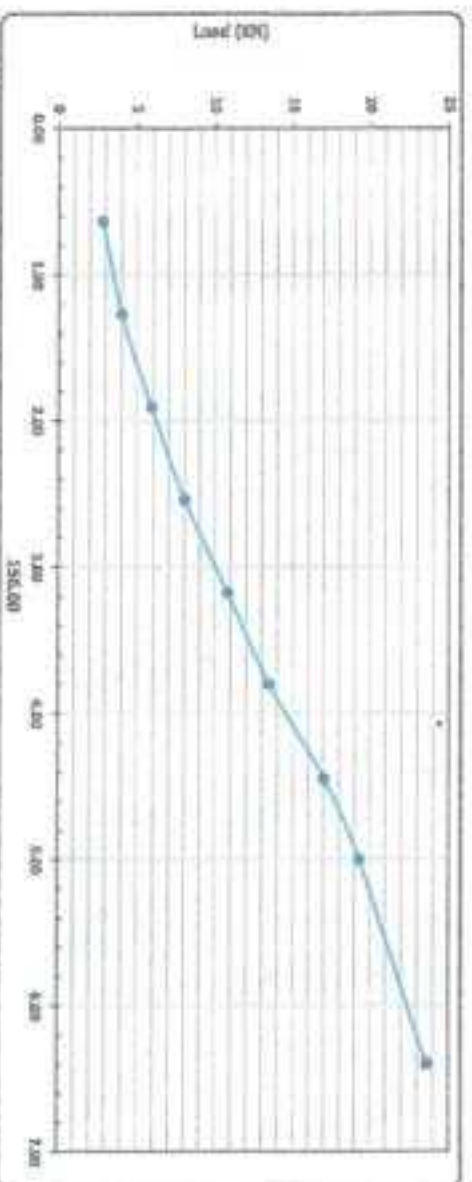
Compaction % for Road	3
Moist No.	3
Moist Vol (cm ³)	2100
Moist Wt. (gm)	8219
Moist Wt. + Moist Wt. (gm)	12700
Wet Wt. (gm)	4821
Soil Density (g/cm ³)	1.14
Dry Density (g/cm ³)	1.200
Proctor Density (g/cm ³)	1.200
Compaction %	100

Moisture Ratio After Compacted Soil	13
Test No.	13
Test Wt. (gm)	65.41
Test Wt. + Moist Wt. (gm)	100.1
Test Wt. - Dry Wt. (gm)	144.3
Moist	3.5
Dry Wt. (gm)	20.8
Moisture Content %	5.04

Sewerage	2
Moist No.	2
Moist	0
Moist (kg/m ³)	8.00
Test (kg/m ³)	8.00
Moisture	0
Moist (kg/m ³)	110.00
Moist (kg/m ³)	9%

Loadline Result:

100.00	6.66	1.27	1.91	2.34	3.13	3.80	4.43	5.00	6.00
Load (kN)	200.00	412.00	602.00	811.00	1100.00	1375.00	1735.00	1975.00	2410.00
Load (kN)	2.8	4.8	5.9	11.0	10.8	13.3	17.0	20.2	23.0



Calculations:-

Proctor	Load	Standard Load	CBR	Moist - Compaction	Compaction	CBR
(mm)	(kN)	(kN)	(%)	(%)	(%)	% 50 k _{max} 100
2.50	9.00	13.4	66.7%	300	90	90.1%
5.00	19.75	20.8	96.4%		90	94.7%

Sub Engineer

Name :

Page :

Consultant Engineer

Name :

Page :



Handwritten signature of the Consultant Engineer.



Electronic Express Train - 1000
From 10 km to 100 km city to 100 km - 1000 km
Section - 1 from 100 km to 100 km
From 100 km to 100 km to 100 km - 100 km



Absorption & Apparent specific gravity ASTM-D792

TESTING DATE:	6/6/2023	6/6/2023	Start	536+000	537+000
LOCATION	K.P. 536+000 (5000 m3)	6/6/2023	Material	Sub-Ballast	
NAME COMPANY	Elzavir	6/6/2023	layer thickness	0.30 cm	

Weight of sample	2000	gm
Weight of saturated - dry surface sample (B)	2012	gm
Weight of saturated sample in water (C)	1229	gm
Weight of dry sample after heating (A)	1978	gm

Results:-

Bulk specific gravity = $A / (B - C)$	2.824	87%
Apparent specific gravity = $A / (A - C)$	2.648	
Absorption = $(B - A) / A$	1.822	%

4000

6170

Results:-

Los Angeles Abrasion ASTM-D796

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3875	26.50

Labs Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	Abdullah S.M.P.
Sign :	



Electric Express Train - HSR

From El Ain El Sokhna City To El Alameh



Section - 7 From Fokato MARSSA MATROUH

From Station 504+000 To Station 568+117



ACTIVITY : Sand cone test

Laboratory results

COD

Z H (S.B.1)

Density and Unit Weight of Soil In Place by the Sand-cone Method - ASTM D 1556

Company :	EL-ZHOOR COMPANY	Layer level :	SUB BASE(0.9)
Description:	Compaction task	Layer Thickness :	0.3 m
Station represented :	538+300 TO 538+400	Sample Date :	25/6/2023

Modified Proctor Testing Results

Max. Dry Density - gm/cm3	Optimum Moisture Content - %	Degree of Compaction Required - %	Bulk Density of Specified Sand - gm/cm3
2.30	5.9 %	100%	1.40

Compaction Testing Results & Calculations

STATION	538+310	538+320	538+330	538+340	538+350	538+360	538+370	538+380	538+390	538+400
Moist No.	1	2	3	4	5	6	7	8	9	10
WT, of Sand before Test (gm)	6628	6226	6767	6875	6870	10822	10122	10705	10288	10740
WT, of Sand after Test (gm)	5774	6621	6660	6626	6626	6984	6163	6222	6201	6270
WT, of Sand in Cone + Moist (gm)	3864	3907	3919	2937	2652	3829	3946	3978	3987	3878
WT, of Sand in Cone	1340	1346	1340	1148	1240	1146	1148	1146	1140	1140
Volume of the hole (cm3)	1841	1878	1878	1898	1802	1884	1905	1912	1924	1912
WT, of Sand from hole (gm)	4378	4328	4466	4411	4422	4622	4444	4425	4388	4477
Bulk Density of Soil, Dry/Unit	2.379	2.348	2.362	2.334	2.327	2.372	2.332	2.330	2.322	2.341
moisture Content, %	6.3	6.3	6.8	3.8	6.8	6.8	6.8	6.8	6.8	6.8
Dry Density, gm/cm3	2.233	2.204	2.200	2.260	2.199	2.222	2.211	2.208	2.201	2.219
Compaction, (%)	101.5%	100.2%	100.0%	100.2%	100.8%	101.1%	100.5%	100.4%	100.4%	100.8%

Accreditation Certificate

Comply

Not Comply

CONSULTANT COMMENTS

Site Engineer :-

Name :- MAHMOUD ELASHAWY

Signature :- *Mahmoud*

Construction Materials Engineer :-

Name :-

Signature :-

W. S. Safwat

Plate Load Test Results

Company Name
Location
Taste Date
Layer level

المدينة
536+300
29-7-2023
+(90)

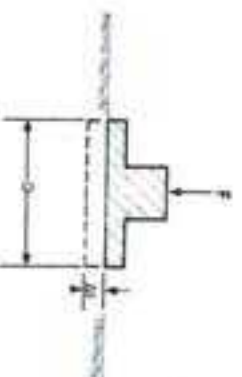
Sub Ballast

Station 536+325

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Settlement	Load 1	Load 2	Load 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	15.70	16.93		0.000	0.000		0.000
1.000	2.4	0.707	15.58	16.79		0.120	0.140		0.130
2.000	18.8	5.652	15.47	16.65		0.230	0.280		0.255
0.080	37.7	11.304	15.36	16.51		0.340	0.420		0.380
4.000	58.9	17.663	15.28	16.38		0.420	0.550		0.485
5.000	77.7	23.315	15.18	16.24		0.520	0.690		0.605
6.000	98.9	29.673	15.10	16.17		0.600	0.760		0.680
7.000	117.8	35.325	14.97	16.00		0.730	0.930		0.830
8.000	58.9	17.663	15.05	16.10		0.650	0.830		0.740
9.000	29.4	8.831	15.20	16.14		0.500	0.790		0.645
9.000	2.4	0.707	15.45	16.27		0.250	0.660		0.455
10.000	2.4	0.707	15.45	16.27		0.250	0.660		0.455
11.000	18.8	5.652	15.38	16.20		0.320	0.750		0.525
12.000	37.7	11.304	15.30	16.15		0.400	0.780		0.590
13.000	58.9	17.663	15.20	16.11		0.500	0.820		0.660
14.000	77.7	23.315	15.14	16.04		0.560	0.890		0.725
15.000	98.9	29.673	15.03	15.98		0.670	0.950		0.810

0.7 σ_1	0.35	0.54875	0.18437	0.2
0.3 σ_1	0.15	0.36437		
0.7 σ_2	0.35	0.74389	0.14888	0.2
0.3 σ_2	0.15	0.59501		
D (mm)	300			
E_v	244.07			
E_v	302.25			
Area (sq.m)	0.07065			

Excursion	1.24		
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$E_s = \sigma_1 \cdot D \cdot \Delta s / \Delta s$	
--	--

E_s = deformation modulus

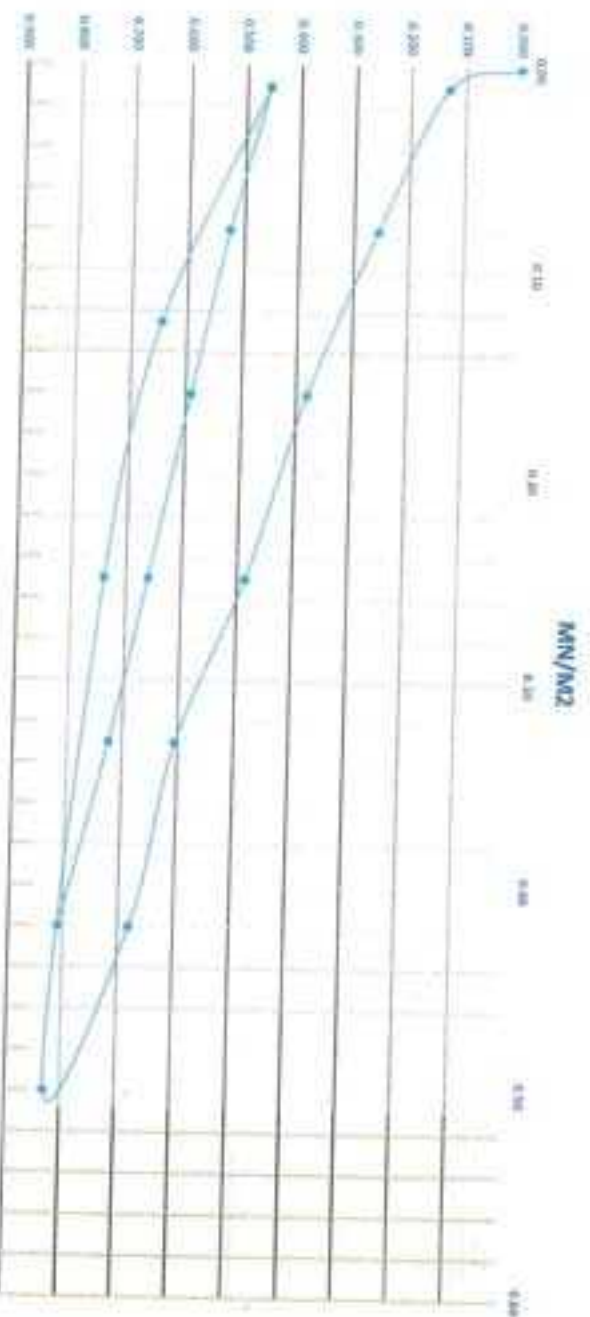
Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation Δx and Δt are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max} .

Sett.



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Hasan

Plate Load Test Results

Company Name
Location
Taste Date
Layer level

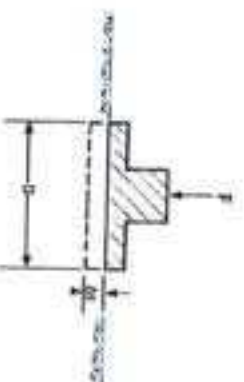
المركز
536+300
29-7-2023
+(-.90)

To 536+400
Sub Ballast
Station 536+350

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load
 Δs = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

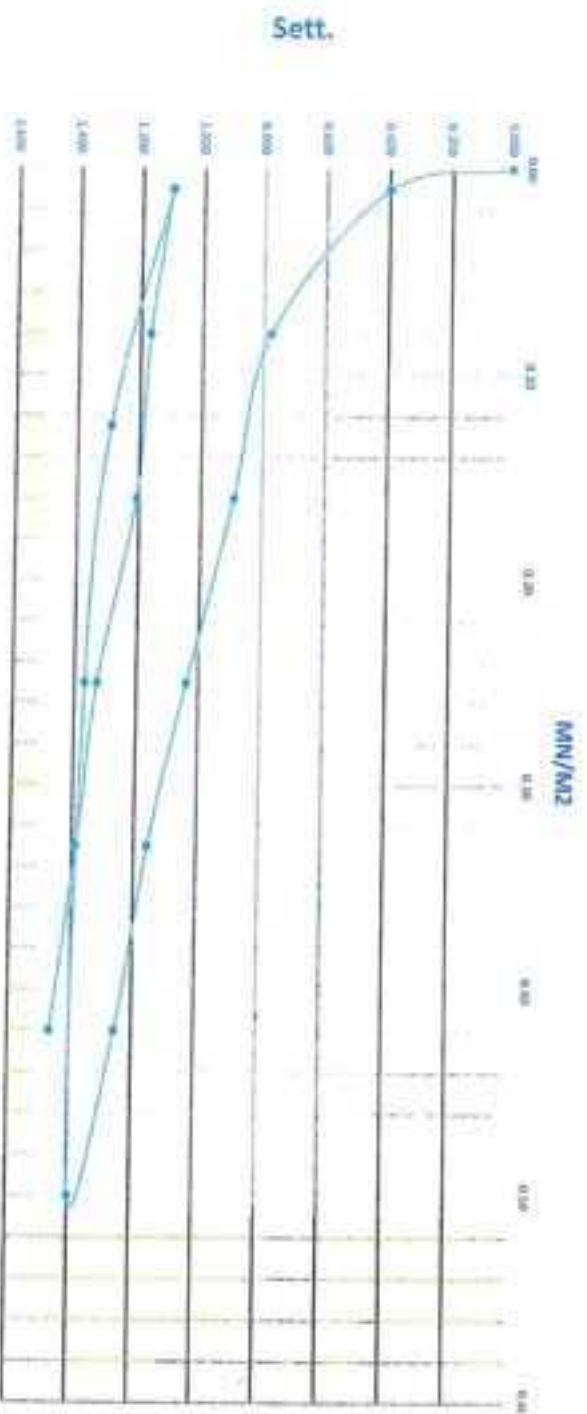
Load	Load	Stress	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Ave. Sett.
Stage No.	Bar	kN	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	18.71	15.47	0.000	0.000		0.000
1.000	2.4	0.707	0.01	18.08	15.31	0.630	0.160		0.395
2.000	18.8	5.652	0.08	17.45	15.18	1.260	0.290		0.775
0.080	37.7	11.304	0.16	17.31	15.09	1.400	0.380		0.890
4.000	58.9	17.663	0.25	17.17	14.94	1.540	0.530		1.035
5.000	77.7	23.315	0.33	17.07	14.80	1.640	0.670		1.155
6.000	98.9	29.673	0.42	16.99	14.68	1.720	0.790		1.255
7.000	117.8	35.325	0.50	16.85	14.53	1.860	0.940		1.400
8.000	58.9	17.663	0.25	16.87	14.58	1.840	0.890		1.365
9.000	29.4	8.831	0.12	16.97	14.63	1.740	0.840		1.290
9.000	2.4	0.707	0.01	17.17	14.82	1.540	0.650		1.095
10.000	2.4	0.707	0.01	17.17	14.82	1.540	0.650		1.095
11.000	18.8	5.652	0.08	17.09	14.76	1.620	0.710		1.165
12.000	37.7	11.304	0.16	16.98	14.79	1.730	0.850		1.205
13.000	58.9	17.663	0.25	16.91	14.62	1.800	0.850		1.325
14.000	77.7	23.315	0.33	16.85	14.56	1.860	0.910		1.385
15.000	98.9	29.673	0.42	16.78	14.47	1.930	1.000		1.465

		δ	ΔS	Δs
$0.7 \sigma_1$	0.35	1.12813	0.2525	0.2
$0.3 \sigma_1$	0.15	0.87563		
$0.7 \sigma_2$	0.35	1.40278	0.16777	0.2
$0.3 \sigma_2$	0.15	1.23501		
D (mm)	300			
E_{v1}	178.22			
E_{v2}	268.22			
Area (kg/m)	8.07045			

E_s	1.51		
-------	------	--	--

E_s	$= 8.75 \cdot D \cdot \Delta s / \Delta s$
Δs	$=$ load increment
Δs	$=$ settlement increment
D	$=$ diameter of the plate, generally 0.30 m

For this calculation Δ_{ir} and Δ_s are usually taken from the load span between 0.3 l_{max} and 0.7 l_{max}



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

11/11/2013

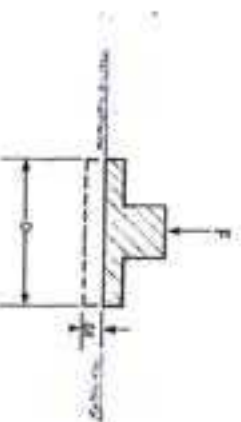
Plate Load Test Results

Company Name	شركة	To	Station
Location	536+300	536+400	536+375
Test Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load
 s = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

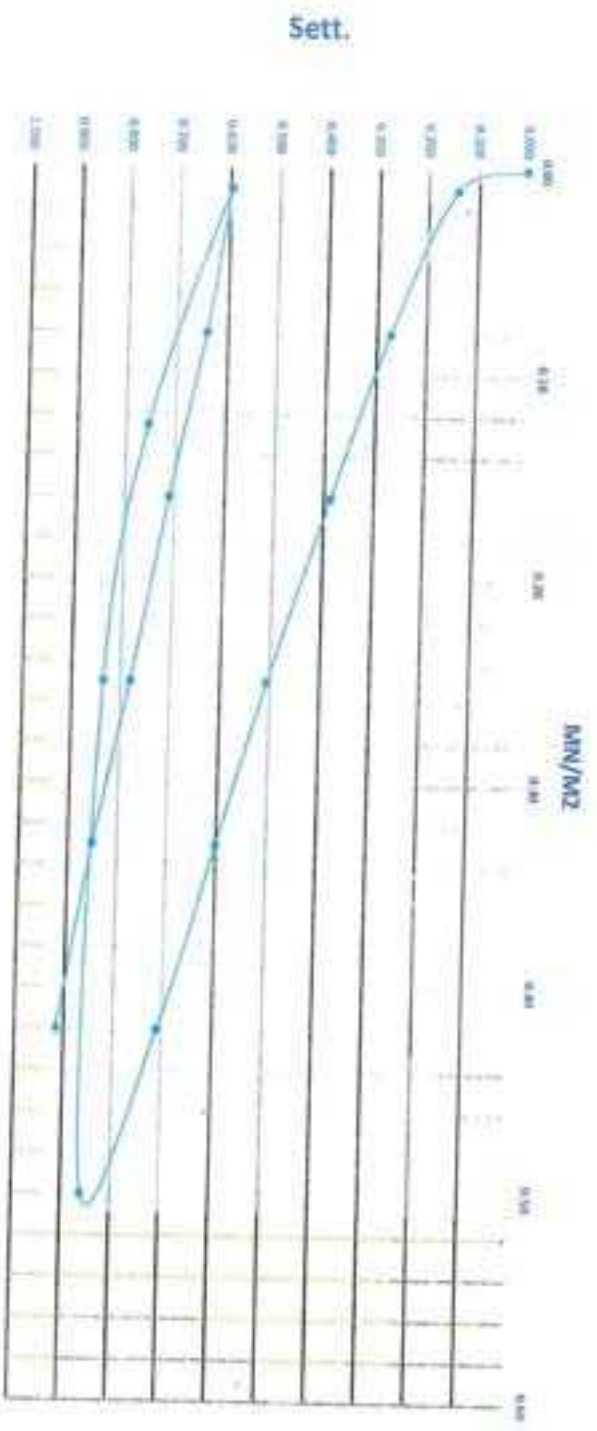
Loading Stage No.	Load Bar	Load KN	Stress MNO/CM ²	Dist 1 mm	Dist 2 mm	Dist 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Ave Sett.
0.000	0.0	0.000	0.00	16.52	17.81		0.000	0.000		0.000
1.000	2.4	0.707	0.01	16.38	17.67		0.140	0.140		0.140
2.000	18.8	5.652	0.08	16.25	17.54		0.270	0.270		0.270
0.080	37.7	11.304	0.16	16.16	17.40		0.360	0.410		0.385
4.000	58.9	17.663	0.25	16.03	17.29		0.490	0.520		0.505
5.000	77.7	23.315	0.33	15.95	17.18		0.570	0.630		0.600
6.000	98.9	29.673	0.42	15.83	17.08		0.690	0.730		0.710
7.000	117.8	35.325	0.50	15.70	16.91		0.820	0.900		0.860
8.000	58.9	17.663	0.25	15.72	16.94		0.800	0.870		0.835
9.000	29.4	8.831	0.12	15.80	17.02		0.720	0.790		0.755
9.000	2.4	0.707	0.01	15.96	17.18		0.560	0.630		0.595
10.000	2.4	0.707	0.01	15.96	17.18		0.560	0.630		0.595
11.000	18.8	5.652	0.08	15.90	17.15		0.620	0.660		0.640
12.000	37.7	11.304	0.16	15.82	17.09		0.700	0.720		0.710
13.000	58.9	17.663	0.25	15.75	17.02		0.770	0.790		0.780
14.000	77.7	23.315	0.33	15.68	16.95		0.840	0.860		0.850
15.000	98.9	29.673	0.42	15.60	16.90		0.920	0.910		0.915

0.7 σ_1	0.35	0.57875	0.20013	0.2
0.3 σ_1	0.15	0.37063		
0.7 σ_2	0.35	0.86444	0.17944	0.2
0.3 σ_2	0.15	0.685		
D (mm)	300			
E_{v1}	216.27			
E_{v2}	250.78			
Area (sq.m)	0.07066			

Excess	1.16		
--------	------	--	--

$E_s = 0.75 \cdot D \cdot \Delta s / \Delta s$	
E_s	= deformation modulus
Δs	= load increment
Δs	= settlement increment
D	= diameter of the plate, generally 0.30 m

For box calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 l_{max} and 0.7 l_{max} .



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name : Vlassa

Sign :

RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR . COMPANY		Designer Company*	KK CONSULT.	
Issued by Contractor	Name Eng : Mahmoud Elshihwy	Sign 	Date 22 - 6 - 2023	Time	
Received by Employers Representative					
CODE - 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used		
CODE - 2		Work Activity			
CODE - 3	Sub Element of Activity				

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Balast (+ 0.9)	From St (536+000) to (536+140)

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate

Checklist Attached ☐	Test Results Attached ☐	Calibration Attached ☐	Other as Indicated ☐
Drawing Reference	ITP Reference	MS Reference	

Civil	Survey	Material
Visual inspection is Approved Moaz Mostafa. 22/6/2023	Visual inspection is Approved Moaz Mostafa. 23/6/2023	Approved. Moaz Mostafa. 23/6/2023

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	A-AWC-R	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elshihwy						
QA/QC*							
GARB**	Eng : Khaleel Fawzey						
Employers Representative Notes							
Employers Representative Sign							

* Designer

** Alignment Bridges, Culvert

STATION	ACT. WIDTH	LEFT SIDE		S.E. %	DESIGN LEVEL		CL	S.E. %	RIGHT SIDE		ACT. WIDTH
		7	4		DESIGN LEVEL	FERMA LEVEL			4	7	
536+000		59.08	59.20	-4%	59.36	58.46	1.66 59.36	-4%	59.20	59.08	
Act.											
Diff.		-1	+1							-1	
536+010		59.11	59.23	-4%	59.39	58.48	1.63 59.39	-4%	59.23	59.11	
Act.											
Diff.		+1	-1						+1	+2	
536+020		59.13	59.25	-4%	59.41	58.51	1.61 59.41	-4%	59.25	59.13	
Act.											
Diff.		✓	-1						✓	1.88	
536+030		59.16	59.28	-4%	59.44	58.54	1.59 59.44	-4%	59.28	59.16	
Act.											
Diff.		✓	-1						✓	1.86	
536+040		59.19	59.31	-4%	59.47	58.57	1.55 59.47	-4%	59.31	59.19	
Act.											
Diff.		-1	41						✓	1.83	
536+050		59.21	59.33	-4%	59.49	58.59	1.53 59.49	-4%	59.33	59.21	
Act.											
Diff.			+1							1.81	
536+060		59.24	59.36	-4%	59.52	58.62	1.58 59.52	-4%	59.36	59.24	
Act.											
Diff.		✓	✓						-2	1.78	
536+070		59.27	59.39	-4%	59.55	58.65	1.47 59.55	-4%	59.39	59.27	
Act.											
Diff.		+1	+1							1.75	
536+080		59.29	59.41	-4%	59.57	58.67	1.45 59.57	-4%	59.41	59.29	
Act.											
Diff.		+2	+1						✓	1.73	
536+090		59.32	59.44	-4%	59.60	58.70	1.42 59.60	-4%	59.44	59.32	
Act.											
Diff.			✓							1.70	
536+100		59.35	59.47	-4%	59.63	58.73	1.39 59.63	-4%	59.47	59.35	
Act.											
Diff.		+2	-1						✓	1.67	
536+110		59.37	59.49	-4%	59.65	58.75	1.37 59.65	-4%	59.49	59.37	
Act.											
Diff.		-1	+1						✓	1.68	
536+120		59.40	59.52	-4%	59.68	58.78	1.34 59.68	-4%	59.52	59.40	
Act.											
Diff.		+1	✓						+1	1.68	
536+130		59.43	59.55	-4%	59.71	58.81	1.31 59.71	-4%	59.55	59.43	
Act.											
Diff.		✓	✓						✓	1.65	
536+140		59.45	59.57	-4%	59.73	58.83	1.29 59.73	-4%	59.57	59.45	
Act.											
Diff.		+1	✓						-1	1.57	

Must
Fahad

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Layer Zone Layer No.		MS FROM ST.(536+000) TO ST.(536+240)													
		Station	536+000	536+020	536+040	536+060	536+080	536+100	536+120	536+140	536+160	536+180	536+200	536+220	536+240
		DESIGN LEVEL	59.36	59.41	59.47	59.52	59.57	59.63	59.68	59.73	59.79	59.84	59.89	59.95	60.00
		FERMA LEVEL	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		CUT LEVEL	53.28	53.25	53.21	53.18	53.29	53.40	53.47	53.84	53.76	53.97	54.27	54.39	54.36
		DIFF (FERMA - CUT)	5.18	5.26	5.35	5.44	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Embankment		0	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
	-0.25	58.21	58.26	58.32	58.37	58.42	58.48	58.53	58.58	58.64	58.69	58.74	58.80	58.85	
	-0.5	57.96	58.01	58.07	58.12	58.17	58.23	58.28	58.33	58.39	58.44	58.49	58.55	58.60	
	-0.75	57.71	57.76	57.82	57.87	57.92	57.98	58.03	58.08	58.14	58.19	58.24	58.30	58.35	
	-1	57.46	57.51	57.57	57.62	57.67	57.73	57.78	57.83	57.89	57.94	57.99	58.05	58.10	
	-1.25	57.21	57.26	57.31	57.37	57.42	57.48	57.53	57.58	57.64	57.69	57.74	57.80	57.85	
	-1.5	56.96	57.01	57.07	57.12	57.17	57.23	57.28	57.33	57.39	57.44	57.49	57.55	57.60	
	-1.75	56.71	56.76	56.82	56.87	56.92	56.98	57.03	57.08	57.14	57.19	57.24	57.30	57.35	
	-2	56.46	56.51	56.57	56.62	56.67	56.73	56.78	56.83	56.89	56.94	56.99	57.05	57.10	
	-2.5	55.96	56.01	56.07	56.12	56.17	56.23	56.28	56.33	56.39	56.44	56.49	56.55	56.60	
Middle Embankment	-3	55.46	55.51	55.57	55.62	55.67	55.73	55.78	55.83	55.89	55.94	55.99	56.05	56.10	
	-3.5	54.96	55.01	55.07	55.12	55.17	55.23	55.28	55.33	55.39	55.44	55.49	55.55	55.60	
	-4	54.46	54.51	54.57	54.62	54.67	54.73	54.78	54.83	54.89	54.94	54.99	55.05	55.10	
	-4.5	53.96	54.01	54.07	54.12	54.17	54.23	54.28	54.33	54.39	54.44	54.49	54.55	54.60	
	-5	53.46	53.51	53.57	53.62	53.67	53.73	53.78		53.89					
	-5.5														
Lower Embankment	-6														
	-6.5														
	-7														

MS Approved
According to Des. Profile

1/20

MS APPROVED
According to Des. Profile


18/9/2022

Center Line DATA

Station	Easting	Northing
536+000	290995.89	943736.1423
536+020	290976.5852	943741.3695
536+040	290957.2804	943746.5968
536+060	290937.9756	943751.8241
536+080	290918.6708	943757.0513
536+100	290899.366	943762.2786
536+120	290880.0611	943767.5059
536+140	290860.7563	943772.7331

Ahmed Asad

2024

TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Amir Ashraf

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point	north	east	elev
1	943743.1	290997.384	59.068
2	943744.374	290992.954	59.052
3	943741.52	290992.083	59.174
4	943740.292	290996.671	59.163
5	943738.024	290991.11	59.311
6	943736.705	290995.605	59.316
7	943734.03	290990.122	59.221
8	943732.817	290994.43	59.21
9	943730.715	290989.289	59.062
10	943729.454	290994.053	59.061
11	943731.911	290984.432	59.102
12	943734.838	290985.155	59.236
13	943738.784	290986.126	59.329
14	943733.183	290979.044	59.087
15	943736.565	290979.814	59.224
16	943740.274	290980.834	59.358
17	943738.767	290986.115	59.327
18	943743.417	290981.801	59.241
19	943742.062	290987.059	59.237
20	943747.087	290982.661	59.108
21	943745.671	290988.056	59.108
22	943748.216	290978.284	59.118
23	943744.623	290977.466	59.238
24	943749.671	290972.832	59.158
25	943746.567	290971.975	59.254
26	943741.377	290976.483	59.345
27	943743.017	290970.802	59.379
28	943737.351	290975.451	59.21
29	943738.975	290969.644	59.253
30	943734.364	290974.515	59.108
31	943736.057	290968.643	59.132
32	943737.123	290964.98	59.116
33	943738.466	290959.945	59.146
34	943740.38	290965.787	59.267
35	943741.583	290960.666	59.284
36	943745.338	290961.824	59.436
37	943744.009	290966.877	59.375
38	943749.015	290962.741	59.299
39	943747.698	290967.916	59.253
40	943752.197	290963.706	59.146
41	943750.802	290968.64	59.128
42	943753.466	290958.874	59.179
43	943754.976	290953.562	59.135

Almud Adhuc



point	north	east	elev
44	943751.794	290952.756	59.312
45	943750.375	290957.439	59.326
46	943748.581	290952.245	59.424
47	943747.375	290956.488	59.442
48	943744.561	290950.943	59.326
49	943743.321	290955.42	59.331
50	943741.159	290950.21	59.181
51	943739.843	290954.623	59.175
52	943742.339	290945.984	59.165
53	943743.712	290941.216	59.186
54	943747.643	290942.321	59.394
55	943746.159	290946.933	59.356
56	943750.741	290943.181	59.467
57	943749.505	290947.895	59.442
58	943754.877	290944.173	59.32
59	943753.459	290948.651	59.294
60	943757.452	290944.798	59.203
61	943756.037	290949.309	59.182
62	943758.616	290940.173	59.238
63	943760.082	290935.127	59.228
64	943756.715	290934.397	59.355
65	943755.425	290939.3	59.34
66	943753.303	290933.535	59.486
67	943751.836	290938.094	59.49
68	943749.026	290932.614	59.347
69	943747.861	290936.884	59.363
70	943746.161	290931.722	59.218
71	943745.045	290936.011	59.187
72	943747.57	290926.18	59.235
73	943749.145	290921.016	59.264
74	943750.701	290926.975	59.375
75	943751.99	290921.914	59.4
76	943754.538	290928.048	59.493
77	943755.909	290923.066	59.523
78	943758.648	290929.526	59.337
79	943760.017	290924.352	59.376
80	943761.317	290930.201	59.241
81	943762.768	290924.971	59.275
82	943764.08	290920.249	59.284
83	943765.441	290915.154	59.28
84	943762.51	290914.286	59.415
85	943761.043	290919.352	59.387
86	943758.894	290913.189	59.56

Amur Point

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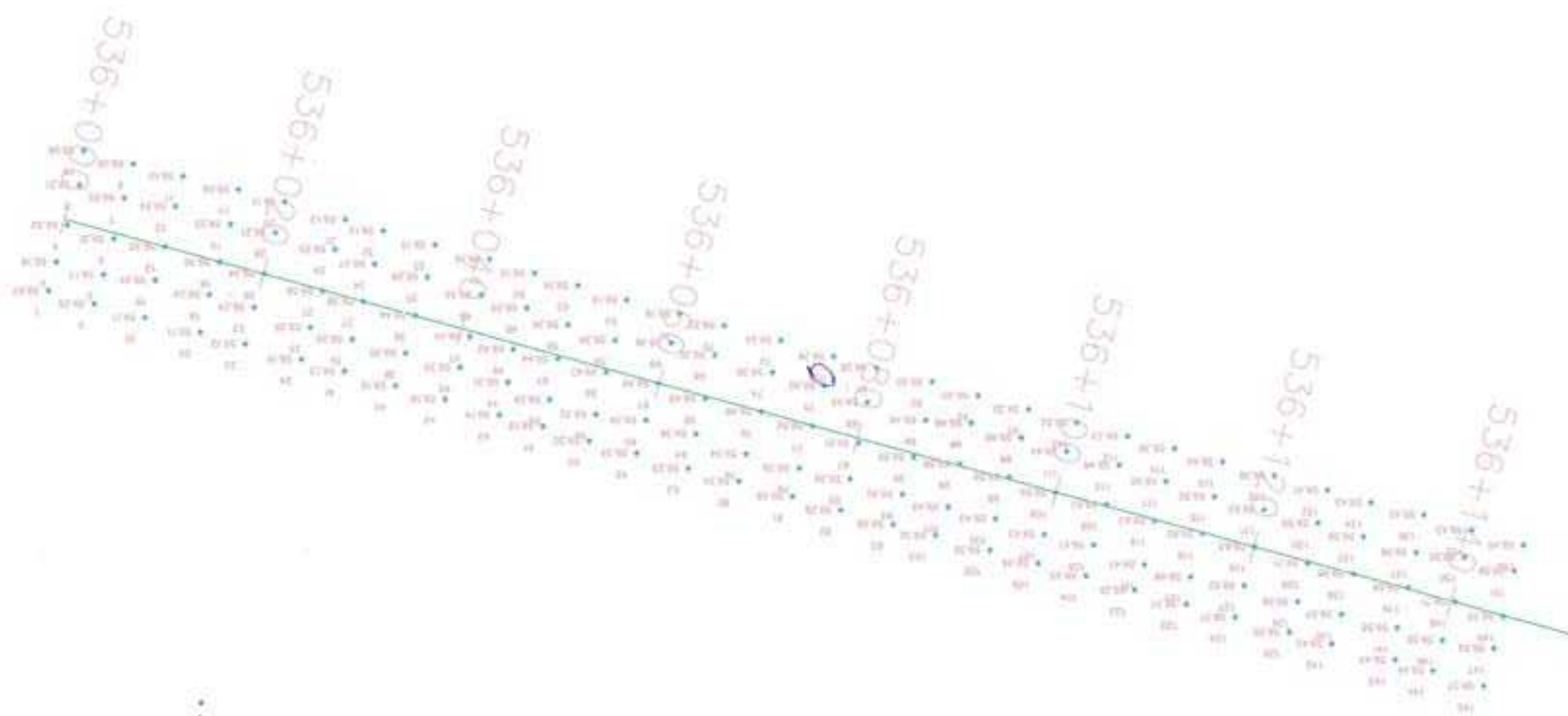
point	north	east	elev
87	943757.553	290918.545	59.51
88	943755.312	290912.05	59.459
89	943753.592	290917.733	59.419
90	943751.566	290911.411	59.299
91	943750.219	290916.849	59.278
92	943752.91	290907.02	59.295
93	943754.215	290902.096	59.318
94	943756.992	290902.771	59.405
95	943756.979	290902.806	59.401
96	943755.565	290907.656	59.406
97	943755.553	290907.68	59.404
98	943760.817	290903.965	59.576
99	943759.547	290908.769	59.584
100	943764.876	290905.282	59.429
101	943763.761	290909.845	59.416
102	943767.918	290905.805	59.318
103	943766.506	290911.056	59.315
104	943770.408	290896.429	59.333
105	943769.187	290901.112	59.338
106	943767.395	290895.692	59.473
107	943766.364	290900.52	59.434
108	943763.471	290894.451	59.624
109	943762.307	290899.437	59.587
110	943759.631	290893.232	59.481
111	943758.333	290898.391	59.435
112	943756.809	290892.448	59.333
113	943755.503	290897.393	59.319
114	943757.989	290887.835	59.379
115	943759.277	290883.122	59.398
116	943762.668	290883.935	59.505
117	943761.202	290888.645	59.495
118	943766.284	290885.081	59.617
119	943765.03	290889.766	59.631
120	943770.472	290886.221	59.48
121	943769.27	290890.76	59.469
122	943773.132	290886.607	59.369
123	943771.766	290891.659	59.348
124	943774.384	290881.834	59.372
125	943775.842	290876.578	59.381
126	943772.865	290875.767	59.557
127	943771.294	290880.983	59.516
128	943769.101	290874.798	59.707
129	943767.537	290879.982	59.633

Almora Ashraf

202

point	north	east	elev
130	943765.216	290873.829	59.553
131	943763.905	290879.072	59.522
132	943762.016	290872.905	59.411
133	943760.62	290878.057	59.382
134	943763.204	290868.66	59.434
135	943766.527	290869.372	59.562
136	943764.384	290863.472	59.415
137	943768.052	290864.249	59.562
138	943770.112	290870.355	59.678
139	943771.471	290865.024	59.684
140	943774.077	290871.501	59.568
141	943775.382	290866.093	59.553
142	943776.931	290872.423	59.448
143	943778.488	290866.281	59.433
144	943779.505	290862.521	59.436
145	943780.992	290857.54	59.373
146	943776.543	290861.606	59.575
147	943777.314	290856.542	59.592
148	943772.79	290860.36	59.708
149	943774.208	290855.668	59.695
150	943768.433	290859.441	59.551
151	943769.768	290854.62	59.555
152	943765.831	290858.775	59.43
153	943767.263	290853.724	59.446

Amir Aslam



46

MATERIAL INSPECTION REQUEST

المشروع
أو البنية التحتية
(الموقع)



الجهة
المختصة



Contractor Company	El. Zhoor . Company		Designer Company	KK CONSULT.																	
Issued by Contractor	Name Eng \ Mahmoud Elkhlewy	Sign 	Date 18-5-2023	COD ZH 2 P.G																	
Received by ER		MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>D0</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>			C1	C2	C3	D0	MM	YY	HH	MM				18	5	2023		
C1	C2	C3	D0	MM	YY	HH	MM														
			18	5	2023																

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

Description of Materials		Fill material results			
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)			
MAR Approval No		Date			
Supplier Name					
Test Requirement		Specification		Clause	
Reference Photos		Yes attached / No		Other	
Item	Description	Unit	Quantity	Arrival Date	Note
1	L.L & P.L & O.M.C %	m3	5000	15 - 5 - 2023	
2	Proctor	m3	5000	15 - 5 - 2023	
3	Classification	m3	5000	15 - 5 - 2023	
4	Seive analysis	m3	5000	15 - 5 - 2023	
Comments by:		Comments by:			
As sample has been taken from fill material by KK office to (AL NUBY CENTER Lab) lab and the results founded meet the specifications and accepted					
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	ENG : Mahmoud Elkhlewy				
QA/QC *	Abdullah SAMS				
GARB**					

MATERIAL APPROVAL REQUEST

مجلس بلدية
الرياض (Riyadh
Municipality)



شركة كوك
للبناء والتشييد
(Kok Construction
& Contracting Co.)



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK																								
Issued by Contractor	Marrie ENG : MAHMOUD ELKHLAWY	Sign 	Date 5-6-2023	COD ZH-1-sh																								
Received by ER		MAR	<table border="1"> <tr> <td>01</td> <td>02</td> <td>03</td> <td>04</td> <td>05</td> <td>06</td> <td>07</td> <td>08</td> <td>09</td> <td>10</td> <td>11</td> <td>12</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td>6</td> <td>2023</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	01	02	03	04	05	06	07	08	09	10	11	12					5	6	2023						
01	02	03	04	05	06	07	08	09	10	11	12																	
				5	6	2023																						

code-1	S1 to S13 Station Reference	D1 to S3 Depot Reference	Kp S26 Note For Kilometer point only Start Ion is used
code-2			
code-3	Work Activity Sub Element of Activity		

Description of Materials	Sub ballast		
Location to be Used	S36+000 to S37+000		
Item	Specification	Test Requirement	Test Result Attachment
1	ASTM D 75	Aggregate Sampling	According Specification
2	ASTM C 136	Sieve Analysis	According Specification
3	ASTM D 1440	Passing Sieve #200	5.4 %
4	ASTM D 4318	Atterberg Limit	NON.
5	ASTM D 2974	Moisture Content	5.9 %
6	ASTM D 1557	Modified Proctor	2.206
7	ASTM D 1883	C B R	94.7 %
8	ASTM C 127	Specific gravity	2.524
9	ASTM C535	Los Angeles	26.50
Comments by:		Comments by:	

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHLAWY		
QVOC *	Abdoallah SMY		
GARB **			
Employers Representative			

 		Electric Express Train - HSR From El Ain El Bohma City To El Alamein - MATROUH Breeden - 7 From FOKA To MANSRA MATROUH From Station 504+000 To Station 552+177			
Operating Lab	Memour Lab				

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/02/2023	ZONE	536+000	837+000
Location	KLP 536+500 (5000 m3)			
NAME COMPANY	Elzahor	Material		Sub-Brehan
1-Visual Inspection test				

2-Gradant test

A-gradation of built materials		SAMPLE WEIGHT (kg)				table class	
sieve size		3/4	1/2	3/8	# 4	PASS	soil class
Mass retained (g)	4	3	1 1/2				
	0.0	0.0	1035.0	8668.0	4873.0	1433.0	3443.0
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14317.0	10650.0	12091.0
Cumulative Percent %	0.0	0.0	2.1	28.2	42.8	47.1	57.4
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6
							PRO
							WC
							CBR
							84.7%

B-soft material gradation		WT. OF sample				500.00	
sieve size		10	40	200			gms
Cumulative Retained (g)		134.00	0.00	437.00			
Cumulative Retained %		26.80	0.00	87.40			
Cumulative Passing %		73.20	100.00	12.60			

C-General gradient											
sieve size(n)		4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)		50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.50	0.425	0.075
Cumulative Passing %		100.0	100.0	96.9	76.2	87.2	92.0	42.6	31.2	42.6	5.4
			100	97.50	75.79		60.15		35.0		6.7

ATERBERG	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
LIMITS	NLP	NLP	NLP

Contractor

Consultant

Abdullah S. Alms





Electric Express Train - HSR
From El Ain El Boukhay City To El Alamein - MATROOH
Section - 7 From FOKA TO MATRIA MATROOH
From Station 88+000 To Station 88+177



operating Lab

Measour Lab

Proctor Test

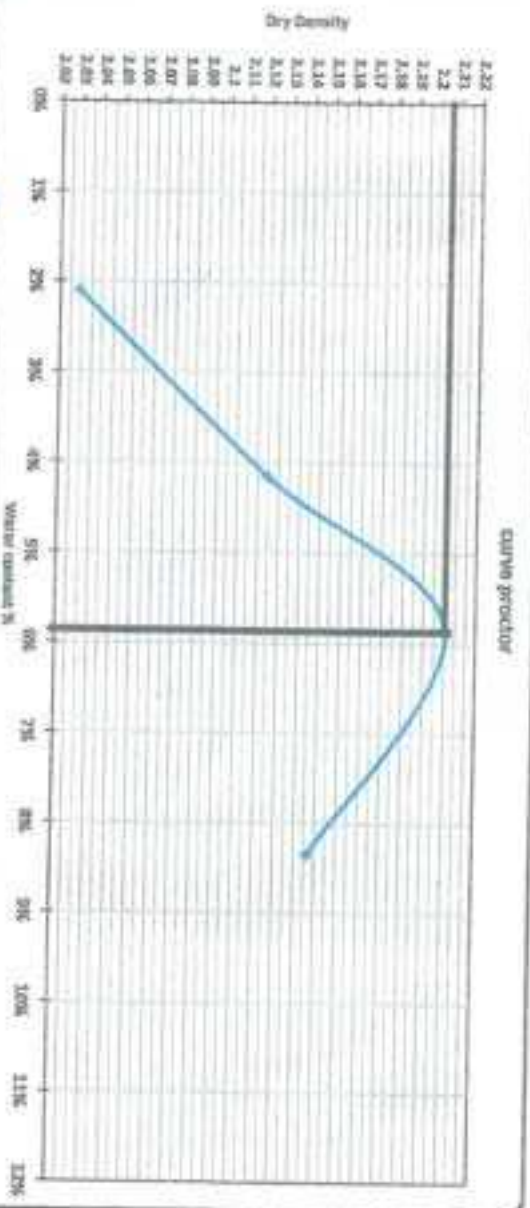
TESTING DATE	4/8/2021	code	Zone	558+000 TO 557+500
LOCATION	KCP 839+500 (5000 m3)	215-07-1		
NAME COMPANY	Eltaher			

Weight of empty mold :	5759.0
Mold Volume	2154.0

MAX Dry Density	2.206
Water content %	5.9

Total no :	1	2	3	4	
Wt. Of mold+ wet soil	10180.0	10470.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.071	2.208	2.135	2.230	

Test No.	1	2	3	4	5	6	7	8	
Tare wt.	85.20	84.5	85.83	82.82	80.06	80.74	80.34	87.92	
Wt. Of wet soil & tare	198.6	198.3	198.4	198.7	198.9	199.3	198.7	200.3	
Wt. Of dry soil & tare	193.5	195.5	192.8	192.7	191.3	191	188.8	188.3	
Wt. Of water	5.1	2.8	5.5	6.0	7.7	8.1	11.8	11.0	
Wt. Of dry soil	188.7	191.8	187.3	186.7	183.6	182.8	176.8	177.4	
Water content %	2.7%	1.4%	2.9%	3.2%	4.2%	4.4%	6.1%	6.2%	
AV. Water content %	2.1%	4.7%	5.5%	8.3%	8.3%				
Dry Density	2.029	2.130	2.206	2.230	2.230	2.230	2.230	2.230	



Contractor

Consultant

Abdelkhalik Elshorbagy



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	5/6/2023	Color	Zone	550+000	507+000
Location :	K.P 536+500 (5000 m3)				
Name of Company	Elaborate	25-02-4			

-1 Test Results

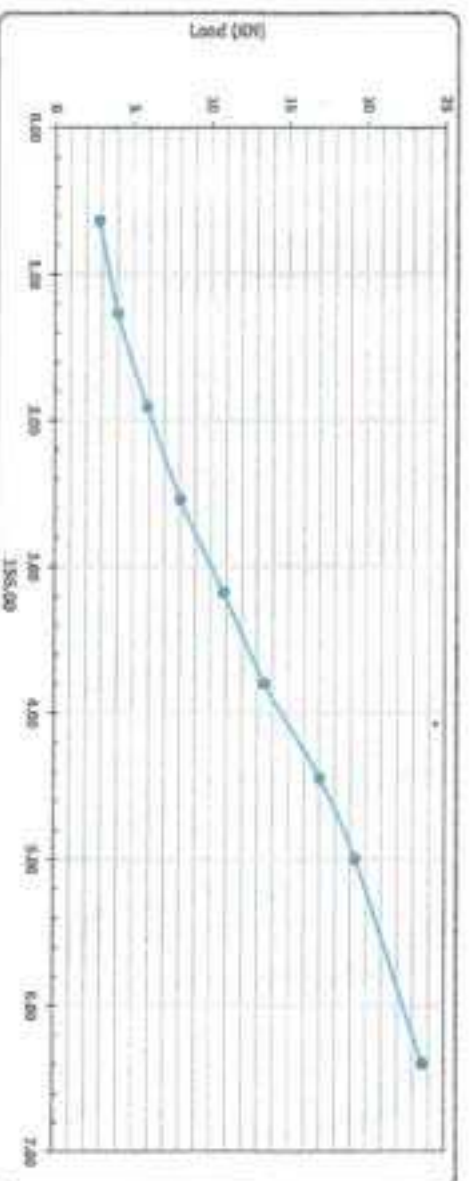
Compaction % for Moist	
Mold No.	2
Moist Vol (cm^3)	3529
Moist Wt. (gm)	3219
Moist Wt. + 95% Wt. (gm)	3250
Wet Wt. (gm)	4021
Wet Density (g/cm^3)	3.141
Dry Density (g/cm^3)	3.206
Proctor Density (g/cm^3)	3.206
Compaction %	100

Moisture Ratio After Compacted Mold	
Test No.	12
Test Wt. (gm)	32.40
Test Wt. + Dry Wt. (gm)	106.4
Test Wt. + Dry Wt. (gm)	144.2
Moist	3.2
Dry Wt. (gm)	60.2
Moisture Content %	6.49

Soaking	
Mold No.	2
Time	6
Soaked Weight (gm)	3.09
Final Weight (gm)	0.85
Difference	0
Soaked Weight (gm)	118.05
Soaking Ratio %	97%

Soaking Results :

106.40	0.64	1.23	1.31	2.34	3.12	3.80	4.45	5.00	6.40
Soaked Standing (gm)	208.40	412.00	602.00	811.00	1105.00	1375.00	1705.00	2075.00	2410.00
Soaked (PCN)	2.8	4.0	5.9	8.5	10.8	13.5	17.0	20.7	24.6



Calculations :-

Penetration	Load	Standard Load	CBR	Mass Compaction	Compaction	CBR
(mm)	(kN)	(kN)	(%)	(%)	(%)	(%)
2.5	3.0	12.4	24.1%	100	86	86.1%
5.0	10.0	20.0	50.0%			50.0%

Lab. Engineer

Name :

Sign :

Assistant Engineer

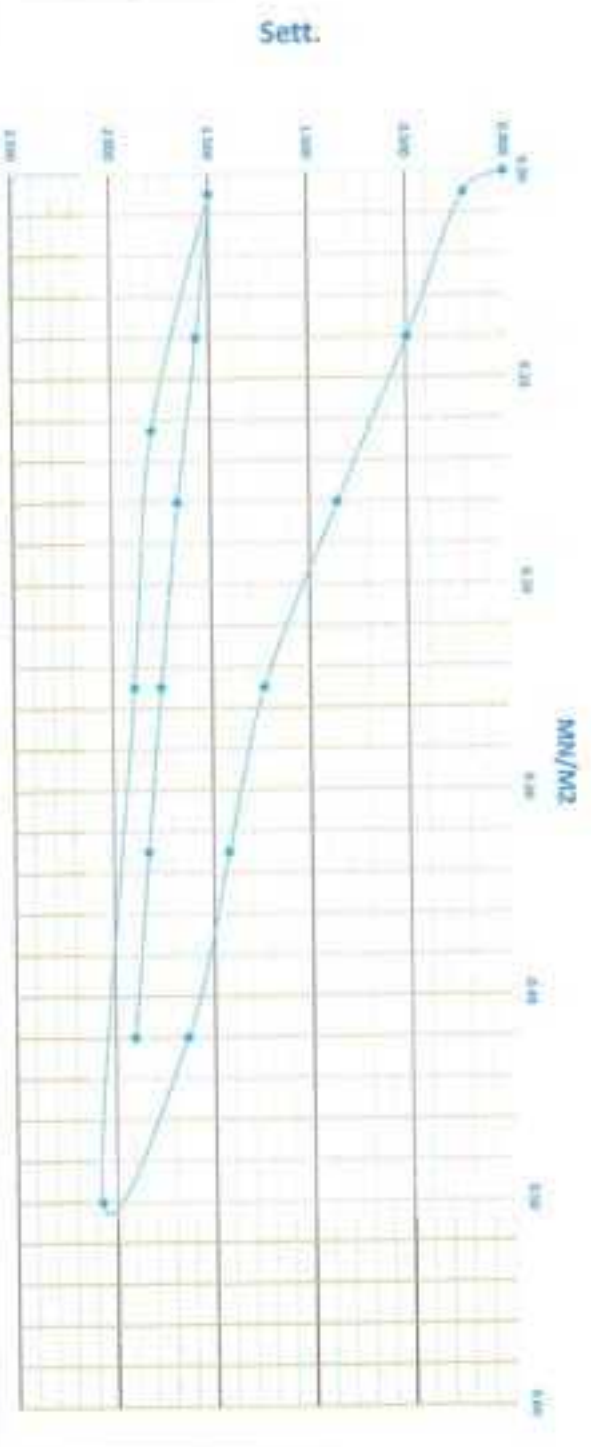
Name :

Sign :



Handwritten signature

For this calculation d_r and d_s are usually taken from the total span between 0.3 or less and 0.7 or more.



Lab. Specification

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Mohamed

Plate Load Test Results

Company Name

EL-Zohor

Location

536+000

To

536+300

Test Date

5/7/2023

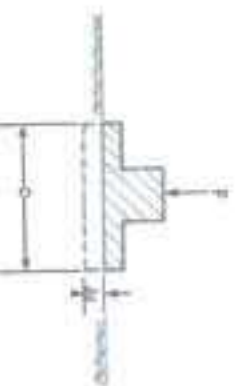
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied in a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load
 s = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.782$ m are used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a negligible and (≤ 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After test, the plate is reloading in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Load	Load	Settle	Mod E	Mod E	Mod E	Settle	Settle	Settle	Settle
Step No.	Bar	kN	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	4.64	5.57	0.000	0.000	0.000	0.000
1.000	2.1	0.707	0.01	4.56	5.53	0.000	0.040	0.000	0.000
2.000	17.1	5.652	0.08	4.25	5.51	0.290	0.060	0.225	0.225
0.000	34.2	11.304	0.16	3.92	5.32	0.720	0.250	0.485	0.485
4.000	53.4	17.663	0.25	3.66	5.10	0.980	0.470	0.725	0.725
5.000	70.5	23.315	0.33	3.48	4.95	1.160	0.630	0.890	0.890
6.000	89.7	29.673	0.42	3.25	4.77	1.390	0.800	1.055	1.055
7.000	106.8	35.325	0.50	3.05	4.61	1.590	0.960	1.275	1.275
8.000	53.4	17.663	0.25	3.16	4.73	1.480	0.840	1.160	1.160
9.000	26.7	8.831	0.12	3.38	4.90	1.260	0.670	0.965	0.965
9.000	2.1	0.707	0.01	3.64	5.10	1.000	0.470	0.735	0.735
10.000	2.1	0.707	0.01	3.64	5.10	1.000	0.470	0.735	0.735
11.000	17.1	5.652	0.08	3.56	5.06	1.090	0.510	0.795	0.795
12.000	34.2	11.304	0.16	3.43	4.95	1.210	0.620	0.915	0.915
13.000	53.4	17.663	0.25	3.29	4.85	1.350	0.720	1.035	1.035
14.000	70.5	23.315	0.33	3.20	4.78	1.440	0.790	1.115	1.115
15.000	89.7	29.673	0.42	3.07	4.69	1.570	0.890	1.225	1.225

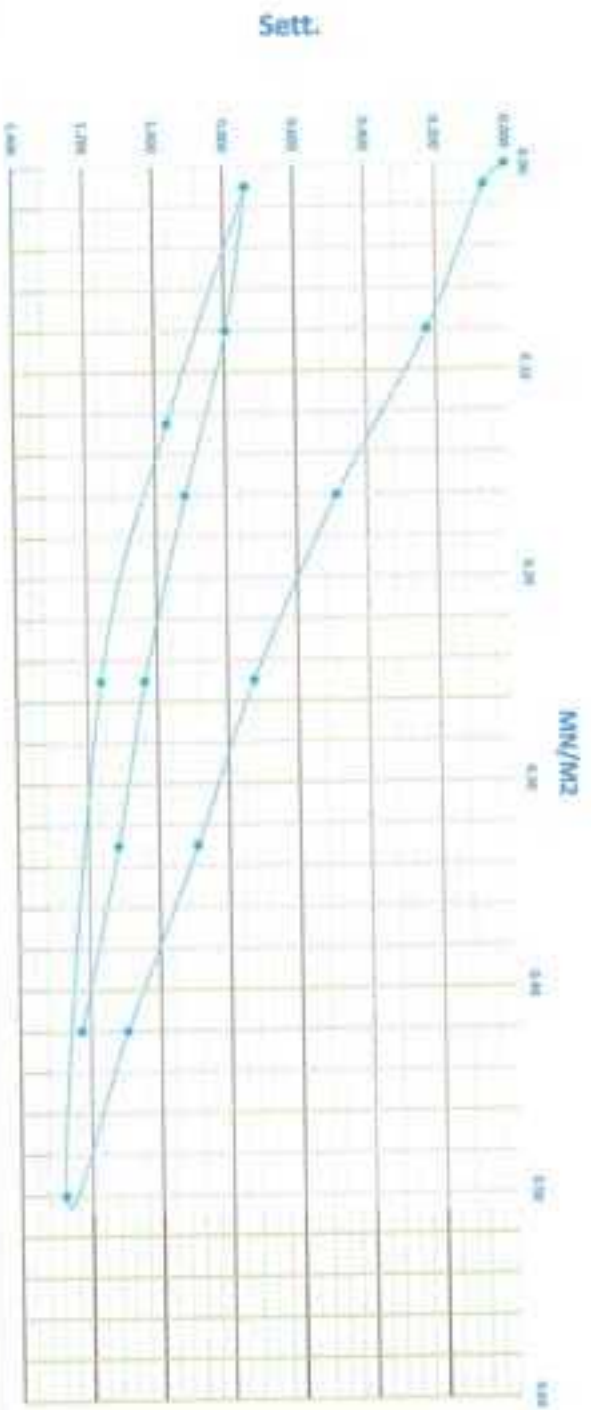
E_v	a	AS	BS
0.7 E_v	0.36	0.0379	0.485
0.3 E_v	0.15	0.0525	0.2
0.7 E_v	0.35	1.17944	0.20444
0.3 E_v	0.15	0.85301	0.2
D (mm)	300		
E_v	42.78		
E_v	158.21		
Area (Sqm)	0.07068		

Factor	1.71		
--------	------	--	--

$E_v = 6.71 \cdot D \cdot \Delta s / \Delta s$	
--	--

- E_v = deformation modulus
- Δs = load increment
- Δs = settlement increment
- D = diameter of the plate, generally 0.30 m

For this calculation Δr and Δr are usually taken from the load span between 0.3 r_{max} and 0.7 r_{max}



Lab. Supervisor

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Mohamed
Ahmed Mohamed

Plate Load Test Results

Company Name

El-Zohor

Location

536+000

To

536+300

Station

536+875

Test Date

5/7/2023

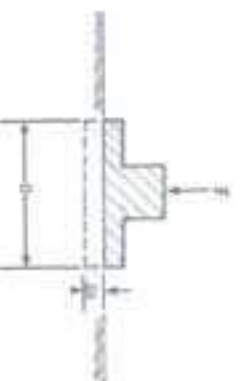
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE :-

The formula of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = Load
 s = settlement
 D = diameter of the plate

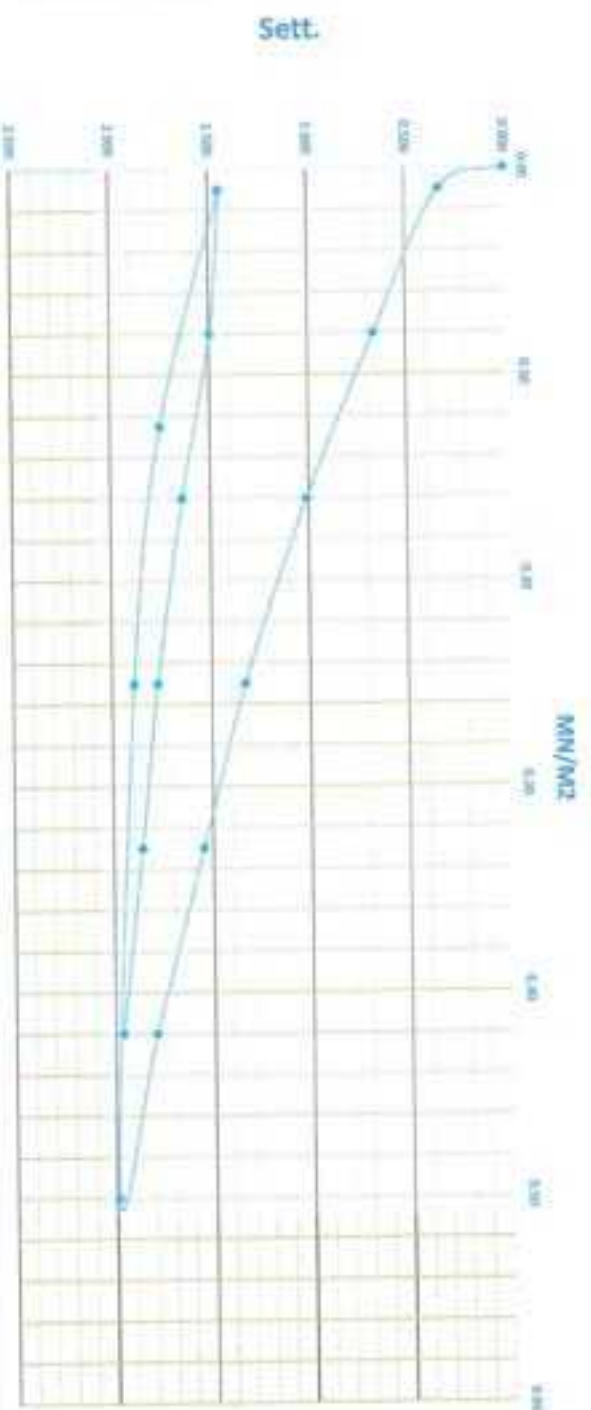
The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.30$ m and $D = 0.762$ m are used.

The load is applied in 8 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

COASTWISE										AVE.	
Location	Lat	Long	Stream	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Sett.	
Stage Sta.	Bar	RTN	MTN/HTS	min	min	min	min	min	min	min	
0.000	0.0	0.000	0.00	7.70	7.70		0.000	0.000		0.000	
1.000	2.1	0.707	0.01	7.52	7.30		0.180	0.080		0.330	
2.000	17.1	5.652	0.08	7.18	6.97		0.520	0.810		0.665	
0.000	34.2	11.204	0.16	6.96	6.50		0.740	1.280		1.010	
4.000	53.4	17.663	0.25	6.71	6.11		0.990	1.670		1.330	
5.000	70.5	23.315	0.33	6.55	5.84		1.150	1.940		1.545	
6.000	89.7	29.673	0.42	6.38	5.52		1.320	2.260		1.790	
7.000	106.8	35.325	0.50	6.22	5.28		1.480	2.500		1.990	
8.000	53.4	17.663	0.25	6.29	5.41		1.410	2.370		1.890	
9.000	26.7	8.831	0.12	6.40	5.58		1.300	2.200		1.750	
9.000	2.1	0.707	0.01	6.60	5.99		1.100	1.790		1.445	
10.000	2.1	0.707	0.01	6.60	5.99		1.100	1.790		1.445	
11.000	17.1	5.652	0.08	6.58	5.91		1.120	1.870		1.495	
12.000	34.2	11.204	0.16	6.48	5.72		1.230	2.060		1.640	
13.000	53.4	17.663	0.25	6.37	5.87		1.330	2.210		1.770	
14.000	70.5	23.315	0.33	6.30	5.47		1.400	2.310		1.855	
15.000	89.7	29.673	0.42	6.24	5.32		1.460	2.460		1.960	

For this calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 δ_{cr} and 0.7 δ_{cr}



Lab. Specialist

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name : Ahmed Hamed

Sign :

Ahmed Hamed

Plate Load Test Results

Company Name

EL-Zohor

Location

536+000

To

536+300

Boiles

536+160

Taste Date

5/7/2023

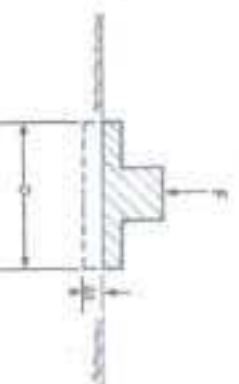
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Housneed's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



Downloaded At: 11:53 11 September 2009

family segment is very

10 • dimension of the plate

The diameter D of the plate is generally 0.20 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.782$ m were used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (≤ 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is released in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

ID	Project Overview										Avg. Score
	Location	Level	Label	Priority	Task 1	Task 2	Task 3	Sub 1	Sub 2	Sub 3	
Group Name	Map	Key	Category	Area	Area	Area	Area	Area	Area	Area	Avg. Score
0.000	0.0	0.000	0.00	4.64	5.57			0.000	0.000		0.000
1.000	2.1	0.707	0.01	4.56	5.53			0.080	0.040		0.060
2.000	17.1	5.652	0.08	4.25	5.51			0.390	0.060		0.225
0.080	34.2	11.204	0.16	3.92	5.32			0.720	0.250		0.085
4.000	53.4	17.663	0.25	3.66	5.10			0.980	0.470		0.725
5.000	70.5	23.315	0.33	3.48	4.95			1.160	0.620		0.890
6.000	89.7	29.673	0.42	3.25	4.77			1.390	0.800		1.095
7.000	100.8	35.325	0.50	3.05	4.61			1.590	0.960		1.275
8.000	53.4	17.663	0.25	3.16	4.73			1.680	0.840		1.160
9.000	26.7	8.831	0.12	3.38	4.90			1.260	0.670		0.965
9.000	2.1	0.707	0.01	3.64	5.10			1.000	0.470		0.735
10.000	2.1	0.707	0.01	3.64	5.10			1.000	0.470		0.735
11.000	17.1	5.652	0.08	3.56	5.06			1.080	0.510		0.795
12.000	34.2	11.204	0.16	3.43	4.95			1.210	0.630		0.915
13.000	53.4	17.663	0.25	3.29	4.85			1.350	0.710		1.035
14.000	70.5	23.315	0.33	3.20	4.70			1.440	0.790		1.115
15.000	89.7	29.673	0.42	3.07	4.60			1.570	0.880		1.225

		α	β	γ
0.7 σ_y	0.35	0.0375	0.085	0.2
0.3 σ_y	0.15	0.0325		
0.7 σ_{eq}	0.35	1.13944	0.78444	0.2
0.3 σ_{eq}	0.15	0.85081		
D (mm)	200			
R_{y1}	92.78			
R_{y2}	158.21			
Area (mm ²)	8.7005			

1000000	1.71		
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$$E_p = A \cdot T_d + T_0 + A \cdot \sigma \cdot T_a^4$$

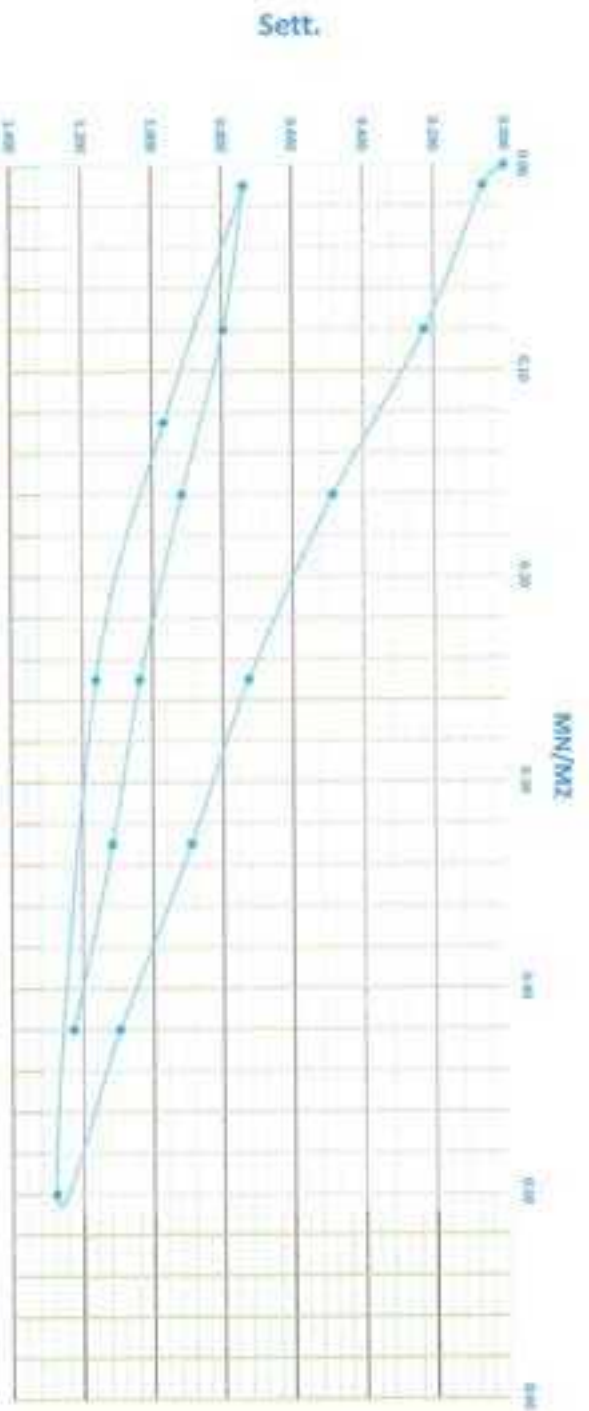
E. = Echinostomum modiolae

- **load increment**

- **multinomial logit**

ϕ = diameter of the plate, generally 0.20 m

For this calculation ΔR and ΔS are usually taken from the load span between 0.3 rmax and 0.7 rmax.



Lab. Supervisor

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Hamed
Ahmed Hamed

Plate Load Test Results

Company Name

EL-Zohor

To 536+300

Station 536+125

Location

Test Date

5/7/2023

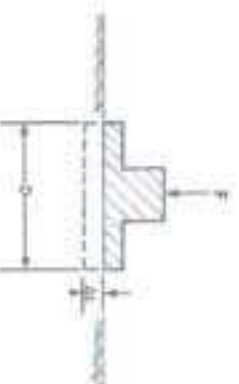
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable and ≤ 0.02 mm/minute. After the maximum load is reached the unloading procedure can begin. After that, the plate is rebounded in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Load	Load	Settle	Dist 1	Dist 2	Dist 3	Sett. 1	Sett. 2	Sett. 3	Sett. 4	Avg. Sett.
Load	Dist	KN	mm	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	5.98	7.71	0.000	0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.51	7.47	0.070	0.240			0.155
2.000	17.1	5.652	0.08	5.40	7.36	0.180	0.350			0.265
0.080	34.2	11.304	0.16	5.31	7.26	0.270	0.450			0.360
4.000	53.4	17.663	0.25	5.22	7.16	0.360	0.550			0.455
5.000	70.5	23.315	0.33	5.11	7.06	0.470	0.650			0.560
6.000	89.7	29.673	0.42	4.95	6.94	0.630	0.770			0.700
7.000	106.8	35.325	0.50	4.92	6.83	0.660	0.880			0.770
8.000	53.4	17.663	0.25	5.04	6.96	0.540	0.750			0.645
9.000	26.7	8.831	0.12	5.15	7.08	0.430	0.630			0.530
9.000	2.1	0.707	0.01	5.35	7.29	0.230	0.420			0.325
10.000	2.1	0.707	0.01	5.35	7.29	0.230	0.420			0.325
11.000	17.1	5.652	0.08	5.30	7.25	0.280	0.460			0.370
12.000	34.2	11.304	0.16	5.20	7.18	0.380	0.530			0.455
13.000	53.4	17.663	0.25	5.10	7.09	0.480	0.610			0.530
14.000	70.5	23.315	0.33	5.00	7.05	0.580	0.680			0.610
15.000	89.7	29.673	0.42	4.93	6.92	0.650	0.790			0.710

		s	SS	Sur
0.7 σ_1	0.35	0.63075	0.27062	0.2
0.3 σ_1	0.15	0.34813		
0.7 σ_1	0.35	0.64222	0.22722	0.2
0.3 σ_1	0.15	0.415		
D (mm)	260			
E_{p1}	154.84			
E_{p2}	158.05			
Avg (kg/cm ²)	0.8700			

Settled	1.28		
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$E_p = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$

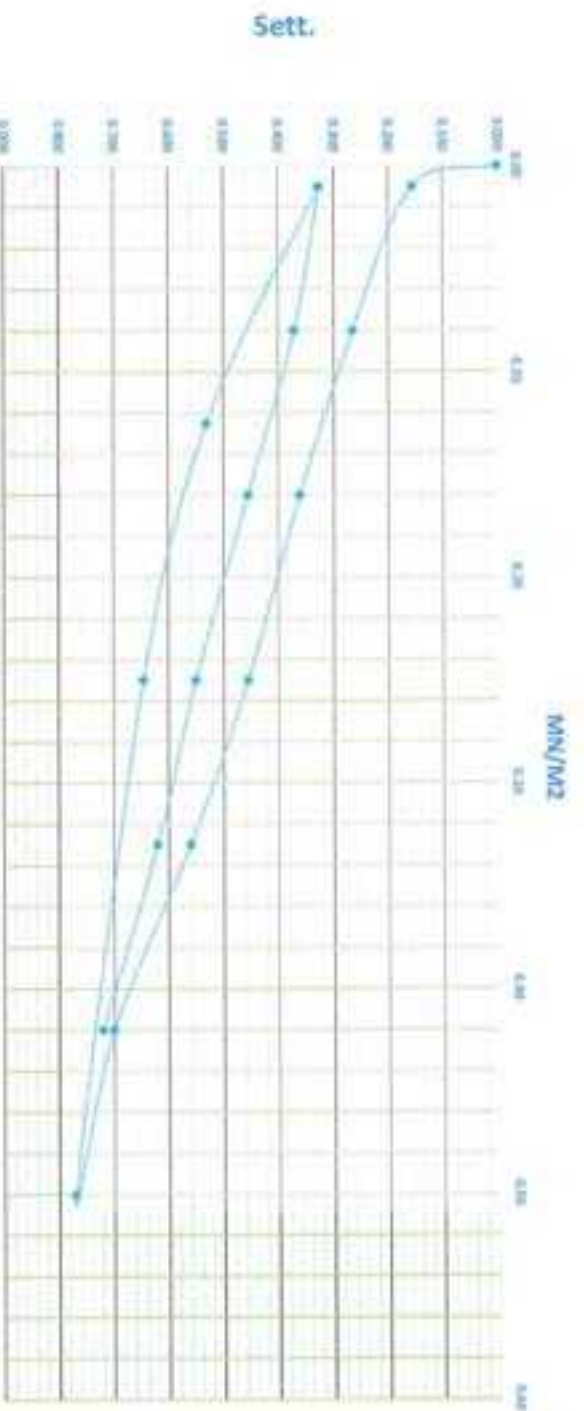
E_p = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 300 mm

For this calculation $\Delta\epsilon$ and $\Delta\sigma$ are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max}



Lab. Supervisor

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed hamed
Ahmed hamed

RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR . COMPANY		Designer Company*	KK CONSULT.																	
Issued by Contractor	Name	Sign	Date	21 - 6 - 2023																	
Received by Employers Representative	Eng : Mahmoud Elkhilwy	Sign	UIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>K.P.536</td> <td>T R</td> <td>O T</td> <td>21</td> <td>6</td> <td>2023</td> <td></td> <td></td> </tr> </table>		C1	C2	C3	DD	MM	YY	HH	MM	K.P.536	T R	O T	21	6	2023		
C1	C2	C3	DD	MM	YY	HH	MM														
K.P.536	T R	O T	21	6	2023																
CODE - 1	S1 to S21	Station Reference	01 to S3	Depot Reference	K.P XXX Note																
CODE - 2	Work Activity		For Kilometer point only Start Km is used																		
CODE - 3	Sub Element of Activity																				

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Ballast (+ 0.9)	From St (536+220) to (536+300)

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate

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

Civil	Survey	Material
<i>Visual inspection is accepted</i> <i>Visuals are approved</i> <i>Approved</i> <i>Mo. Safwat 24/6/2023</i>		

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	A-AWC-R	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elkhilwy	Sign					
QA/QC*							
GARB**	Eng : Khaleel Fawzey	Sign					
Employers Representative Notes							
Employers Representative Sign							

* Designer

** Alignment: Bridges; Culvert



شبكة تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الرهور)

من المحطة (536+220) إلى المحطة (536+300)

ENGINEERING CONSULTING OFFICE
مكتب استشارات الهندسة
Jeddah, K.S.A.



Ministry of Public Works and Urban Planning
Kingdom of Saudi Arabia

59,89 + 1,52 = 61,41

STATION	ACT. WIDTH	LEFT SIDE		S.E. %	LAYER LEVEL		S.E. %	RIGHT SIDE		ACT. WIDTH
		7	4		DESIGN LEVEL	PGL FERMA LEVEL		4	7	
536+220		59.67	59.79	-4%	59.95	59.05	-4%	59.79	59.67	
Act.										
Diff.		+1	-2						-2	
536+230		59.69	59.81	-4%	59.97	59.07	-4%	59.81	59.69	
Act.										
Diff.		-1	-1					-1	-1	
536+240		59.72	59.84	-4%	60.00	59.10	-4%	59.84	59.72	
Act.										
Diff.			+1						-2	
536+250		59.75	59.87	-4%	60.03	59.13	-4%	59.87	59.75	
Act.										
Diff.		-3	-3					-3	-1	
536+260		59.77	59.89	-4%	60.05	59.15	-4%	59.89	59.77	
Act.										
Diff.		-1	-1					-2	-1	
536+270		59.80	59.92	-4%	60.08	59.18	-4%	59.92	59.80	
Act.										
Diff.										
536+280		59.83	59.95	-4%	60.11	59.21	-4%	59.95	59.83	
Act.										
Diff.		-1	-2					-1	-1	
536+290		59.86	59.98	-4%	60.14	59.24	-4%	59.98	59.86	
Act.										
Diff.		+1						-1	+1	
536+300		59.88	60.00	-4%	60.16	59.26	-4%	60.00	59.88	
Act.										
Diff.		-1	+1					+1	-1	

Ahmed Ahmed

Signature

MS FROM ST.(536+000) TO ST.(536+240)

Layer Zone	Layer No.	Station	536+000	536+020	536+040	536+060	536+080	536+100	536+120	536+140	536+160	536+180	536+200	536+220	536+240
		DESIGN LEVEL	59.36	59.41	59.47	59.52	59.57	59.63	59.68	59.73	59.79	59.84	59.89	59.95	60.00
		FERMA LEVEL	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		CUT LEVEL	53.28	53.25	53.21	53.18	53.29	53.40	53.47	53.84	53.76	53.97	54.27	54.39	54.36
		DIFF (FERMA - CUT)	5.18	5.26	5.35	5.44	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Embankment		0	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		-0.25	58.21	58.26	58.32	58.37	58.42	58.48	58.53	58.58	58.64	58.68	58.74	58.80	58.85
		-0.5	57.96	58.01	58.07	58.12	58.17	58.23	58.28	58.33	58.39	58.44	58.49	58.55	58.60
		-0.75	57.71	57.76	57.82	57.87	57.92	57.98	58.03	58.08	58.14	58.19	58.24	58.30	58.35
		-1	57.46	57.51	57.57	57.62	57.67	57.73	57.78	57.83	57.89	57.94	57.99	58.05	58.10
		-1.25	57.21	57.26	57.32	57.37	57.42	57.48	57.53	57.58	57.64	57.69	57.74	57.80	57.85
Middle Embankment		-1.5	56.96	57.01	57.07	57.12	57.17	57.23	57.28	57.33	57.39	57.44	57.49	57.55	57.60
		-1.75	56.71	56.76	56.82	56.87	56.92	56.98	57.03	57.08	57.14	57.19	57.24	57.30	57.35
		-2	56.46	56.51	56.57	56.62	56.67	56.73	56.78	56.83	56.89	56.94	56.99	57.05	57.10
		-2.5	55.96	56.01	56.07	56.12	56.17	56.23	56.28	56.33	56.39	56.44	56.49	56.55	56.60
		-3	55.46	55.51	55.57	55.62	55.67	55.73	55.78	55.83	55.89	55.94	55.99	56.05	56.10
		-3.5	54.96	55.01	55.07	55.12	55.17	55.23	55.28	55.33	55.39	55.44	55.49	55.55	55.60
Lower Embankment		-4	54.46	54.51	54.57	54.62	54.67	54.73	54.78	54.83	54.89	54.94	54.99	55.05	55.10
		-4.5	53.96	54.01	54.07	54.12	54.17	54.23	54.28	54.33	54.39	54.44	54.49	54.55	54.60
		-5	53.46	53.51	53.57	53.62	53.67	53.73	53.78		53.89				
		-5.5													
		-6													

MS Approved
According to Des. Profile


18/9/2022



MS FROM ST.(536+260) TO ST.(536+500)

Layer Zone Layer No.	Station	536+260	536+280	536+300	536+320	536+340	536+360	536+380	536+400	536+420	536+440	536+460	536+480	536+500
	DESIGN LEVEL	60.05	60.11	60.16	60.21	60.27	60.32	60.38	60.43	60.48	60.54	60.60	60.65	60.71
	FORM LEVEL	59.16	59.21	59.26	59.31	59.37	59.42	59.48	59.53	59.58	59.64	59.70	59.75	59.81
	CUT LEVEL	54.50	54.75	55.04	55.15	55.24	55.40	55.41	55.75	55.78	55.83	55.81	55.82	55.80
	OPS (FERMA - CUT)	4.65	4.46	4.22	4.16	4.13	3.96	4.07	3.78	3.82	4.01	3.89	3.93	4.61
Upper Embankment Middle Embankment Lower Embankment	0	59.13	59.21	59.26	59.31	59.37	59.42	59.48	59.53	59.58	59.64	59.70	59.75	59.81
	-0.25	59.90	59.96	59.91	59.96	59.13	59.17	59.23	59.28	59.38	59.49	59.45	59.50	59.56
	-0.5	58.60	58.71	58.76	58.81	58.87	58.92	58.98	59.03	59.08	59.14	59.20	59.25	59.31
	-0.75	58.46	58.48	58.51	58.58	58.62	58.67	58.73	58.79	58.83	58.89	58.95	59.00	59.06
	-1	58.15	58.21	58.26	58.31	58.37	58.42	58.48	58.53	58.58	58.64	58.70	58.75	58.81
	-1.25	57.90	57.96	58.01	58.06	58.13	58.17	58.23	58.28	58.33	58.38	58.45	58.50	58.56
	-1.5	57.83	57.71	57.76	57.81	57.87	57.92	57.98	58.03	58.08	58.14	58.20	58.25	58.31
	-1.75	57.40	57.46	57.51	57.56	57.62	57.67	57.72	57.78	57.83	57.89	57.95	58.00	58.06
	-2	57.15	57.11	57.16	57.21	57.27	57.32	57.38	57.43	57.48	57.54	57.60	57.65	57.71
	-2.5	56.65	56.71	56.76	56.81	56.87	56.92	56.98	57.03	57.08	57.14	57.20	57.25	57.31
	-3	56.15	56.21	56.26	56.31	56.37	56.42	56.48	56.53	56.58	56.64	56.70	56.75	56.81
	-3.5	55.65	55.71	55.76	55.81	55.87	55.92	55.98	56.03	56.08	56.14	56.20	56.25	56.31
	-4	55.15	55.21	55.26	55.31	55.37	55.42	55.48	55.53	55.58	55.64	55.70	55.75	55.81
	-4.5	54.65	54.71	54.76	54.81	54.87	54.92	54.98	55.03	55.08	55.14	55.20	55.25	55.31

[Handwritten signature]

MS APPROVED
According to D.A. File
[Handwritten signature]
18/09/2022

Center Line DATA

Station	Easting	Northing
536+220	290783.5371	943793.6422
536+240	290764.2323	943798.8695
536+260	290744.9275	943804.0968
536+280	290725.6227	943809.3241
536+300	290706.3179	943814.5514

Amr A. Shaf

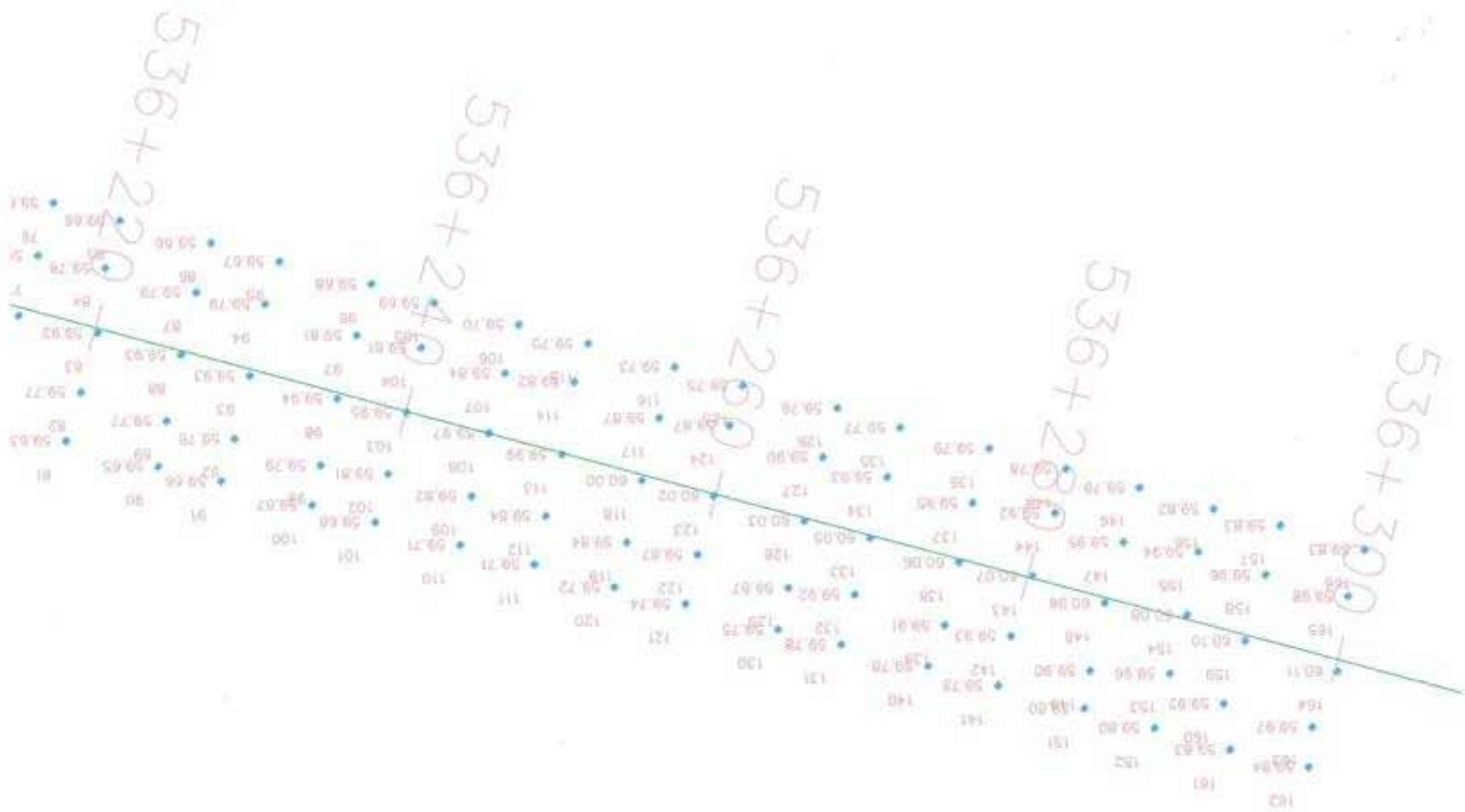
RF

TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

Khmer FBHCL

ing



40

POINT	NORTH	EAST	ELEV
86	943788.404	290776.359	59.66
87	943791.475	290777.283	59.792
88	943795.341	290778.203	59.934
89	943799.452	290779.099	59.768
90	943802.278	290779.598	59.647
91	943803.213	290775.73	59.658
92	943800.576	290774.89	59.781
93	943796.653	290773.947	59.93
94	943792.2	290773.009	59.79
95	943789.559	290772.123	59.671
96	943790.96	290766.399	59.676
97	943794.14	290767.31	59.809
98	943798.08	290768.503	59.945
99	943802.235	290769.547	59.788
100	943804.705	290770.08	59.674
101	943805.759	290766.157	59.676
102	943802.761	290765.355	59.812
103	943798.941	290764.186	59.951
104	943794.909	290763.29	59.814
105	943792.127	290762.481	59.694
106	943793.494	290757.226	59.698
107	943796.517	290758.086	59.839
108	943800.239	290759.079	59.97
109	943804.153	290760.176	59.823
110	943807.184	290760.864	59.706
111	943808.407	290756.278	59.712
112	943805.401	290755.572	59.836
113	943801.578	290754.556	59.99
114	943797.055	290753.801	59.823
115	943794.677	290752.931	59.701
116	943796.146	290747.505	59.729
117	943799.312	290748.473	59.869
118	943803.209	290749.578	60.003
119	943807.055	290750.515	59.842
120	943809.838	290751.285	59.721
121	943810.897	290746.848	59.745
122	943807.817	290746.088	59.868
123	943804.17	290745.076	60.02
124	943799.807	290744.083	59.867
125	943797.323	290743.259	59.751
126	943798.746	290737.412	59.76
127	943801.801	290738.305	59.899

Amey Patel



POINT	NORTH	EAST	ELEV
128	943805.746	290739.473	60.032
129	943809.922	290740.476	59.872
130	943812.501	290741.12	59.746
131	943813.445	290737.21	59.779
132	943810.364	290736.361	59.916
133	943806.84	290735.402	60.05
134	943803.055	290734.328	59.929
135	943799.972	290733.51	59.773
136	943801.313	290727.962	59.793
137	943804.688	290729.022	59.948
138	943808.375	290729.88	60.062
139	943812.289	290730.777	59.911
140	943814.832	290731.835	59.78
141	943816.057	290727.47	59.783
142	943812.991	290726.669	59.929
143	943809.254	290725.32	60.072
144	943805.343	290723.905	59.916
145	943802.594	290723.202	59.775
146	943803.797	290718.624	59.792
147	943807.182	290719.635	59.952
148	943810.954	290720.823	60.083
149	943815.167	290721.757	59.898
151	943817.507	290722.127	59.796
152	943818.762	290717.754	59.802
153	943815.367	290716.783	59.96
154	943811.735	290715.699	60.079
155	943807.816	290714.97	59.941
156	943805.158	290714.008	59.82
157	943806.202	290709.858	59.831
158	943809.27	290710.783	59.96
159	943813.368	290712.062	60.1
160	943817.27	290713.42	59.921
161	943820.125	290713.033	59.83
162	943821.239	290708.164	59.844
163	943818.755	290707.925	59.967
164	943815.28	290706.331	60.109
165	943810.615	290705.659	59.979
166	943807.727	290704.623	59.832

Amos H. H. H. H.

20

MATERIAL INSPECTION REQUEST

المشروع رقم 1
Project No. 1



الهيئة العامة
للإسكان
General Housing
Authority



Contractor Company	EI. Zhoor . Company		Designer Company	KK CONSULT.																	
Issued by Contractor	Name Eng \ Mahmoud Elkhlawy	Sign 	Date 18-5-2023	COD ZH 2 P.G																	
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>OD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>		C1	C2	C3	OD	MM	YY	HH	MM				18	5	2023		
C1	C2	C3	OD	MM	YY	HH	MM														
			18	5	2023																

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

Description of Materials		Fill material results				
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)				
MAR Approval No				Date		
Supplier Name						
Test Requirement		Specification		Clause		
Reference Photos		Yes attached / No		Other		
Item	Description	Unit	Quantity	Arrival Date	Note	
1	L.L & P.L & O.M.C %	m3	5000	15 - 5 - 2023		
2	Proctor	m3	5000	15 - 5 - 2023		
3	Classification	m3	5000	15 - 5 - 2023		
4	Serve analysis	m3	5000	15 - 5 - 2023		
Comments by:		Comments by:				
Asample has been taken form fill material by KK office to (AL NUBY CENTER Lab) lab and the results founded meet the specifcortions and accepted						
APPROVAL STATUS						
Organisation	Name	Sign	Date	A-AWC-R		
Contractor	ENG : Mahmoud Elkhlawy					
QA/QC *						
GARB**						

MATERIAL APPROVAL REQUEST

مجلس إدارة
الهيئة العامة
(General Council)



الهيئة العامة
للتنظيم والإدارة
(General Administration)

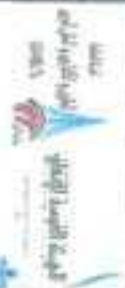


Contractor Company	EL ZHOOR COMPANY		Designer Company	KK
Issued by Contractor	Name ENG : MAHMOUD ELKHLAWY	Sign 	Date 5-6-2023	COD ZH-1-Sb
Received by ER		MAR	☒ C1 ☒ C2 ☒ C3 ☒ DD ☒ MM ☒ YY ☒ HH ☒ MM	

CODE - 1	SL to SI1 Station Reference	SI to SI3 Deput Reference	Rp SI36 Note For Kilometer point only Sheet Km is used
CODE - 1	Work Activity		
CODE - 1	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	S36+000 to S37+000			
item	Specification	Test Requirement	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Specification	
2	ASTM C 136	Sieve Analysis	According Specification	
3	ASTM D 1440	Passing Sieve #200	5.4 %	
4	ASTM D 4318	Atterberg Limit	NON	
5	ASTM D 2974	Moisture Content	5.9 %	
6	ASTM D 1557	Modified Proctor	2.206	
7	ASTM D 1883	C B R	94.7 %	
8	ASTM C 127	Specific gravity	2.524	
9	ASTM C535	Los Angeles	26.50	
Comments by:		Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHLAWY		
QA/QC *	Abdullah SMY		
GARB **			
Employers Representative			

		Electric Express Train - HSR From El Ah El Gattina City To El Alamein - MATROUH Section - 7 From FOXA To MARESA MATROUH From Station 504+000 To Station 548+177			
Operating Lab	Memour Lab				

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	ZONE	S36+000	S37+000
Location	K.P 536+500 (5900 m3)			
NAME COMPANY	Elkhoraf	27+50-1	Material	Sub-Ballast

1-Visual Inspection test

2-Gradient test

Acceleration of bulk materials				SAMPLE WEIGHT (g)						soil classify		
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS	PRC	WC	CBR	2.200 8.9 94.7%
Mass retained (g)	0.0	0.0	1035.0	8690.0	4813.0	1433.0	3443.0					
Cumulative Retained (g)	0.0	0.0	1035.0	9724.0	14577.8	15500.8	18943.8					
Cumulative Retained %	0.0	0.0	3.1	38.2	42.8	47.1	57.6					
Cumulative Passing %	100.0	100.0	96.9	76.6	57.2	52.9	42.4					

B-soft material gradation		WT. OF sample					500.00	
sieve size		10	40	200				g/m
Cumulative Retained (g)	134.00	0.00	437.00					
Cumulative Retained %	26.00	0.00	87.40					
Cumulative Passing %	73.99	100.00	12.60					

C-General gradient											
sieve size (in)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200	
sieve size (mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075	
Cumulative Passing %	100.0	100.0	96.5	70.8	37.2	22.8	42.9	31.2	42.8	5.4	
		100	97 - 50	75 - 70	60 - 15	25 - 0	0 - 7				

ATTENTION LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
	N.P	N.P	N.P

Contractor

Consultant

Abdelhadi S. Alvi





Electric Express Train - HSR
From El Ain El Nakina City To El Alminah - MATROUH
Station - 7 From FUYA TO MATROUH MATROUH
From Station 604+000 To Station 608+177



Operating Lab
Matrouh Lab

Proctor Test

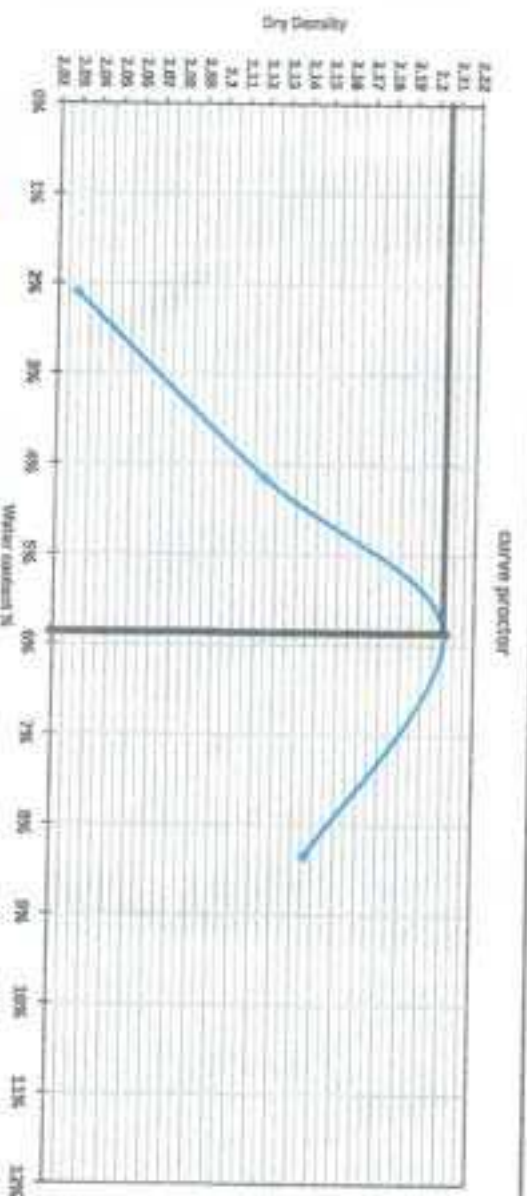
TESTING DATE:	4/6/2023	CC-00	Zone	S38+600 TO S37+000
LOCATION:	K.P 535+500 (5000 m3)	20-60-1		
NAME COMPANY	Ethab			

Weight of empty mold :	5759.8
Mold Volume :	2134.0

MAX Dry Density	2.206
Water content %	5.9

trial no :	1	2	3	4
Wt. Of Mold + wet soil	10180.0	10478.8	10741.0	10711.0
WT. WET SOIL	4421.8	4711.0	4902.0	4901.8
Wt. Density	2.071	2.208	2.305	2.310

Test No.	1	2	3	4	5	6	7	8
Tare wt.	55.93	56.5	55.65	57.41	56.36	56.34	56.34	57.92
Wt. Of wet soil & tare	100.6	108.3	106.4	105.7	105.9	109.3	109.7	106.3
Wt. Of dry soil & tare	196.8	195.5	192.9	192.7	191.3	191	188.8	189.3
Wt. Of water	3.1	2.8	5.5	6.8	7.7	8.1	11.8	11.0
Wt. Of dry soil	129.7	141.8	127.3	148.3	134.3	124.5	122.8	121.4
Water content %	2.3%	2.0%	4.0%	4.5%	5.7%	6.8%	8.3%	8.4%
A.V. Water content %	2.1%		4.2%		5.9%		8.3%	
Dry Density	2.029		2.128		2.208		2.441	



Contractor

Consultant

Abdelrahman Elshor



Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	06/08/23	Core	Zone	S34+000	S37+000
Location :	K.P. S34+500 (9000 m ³)				
Name of Company :	Etobah				

- : Test Results

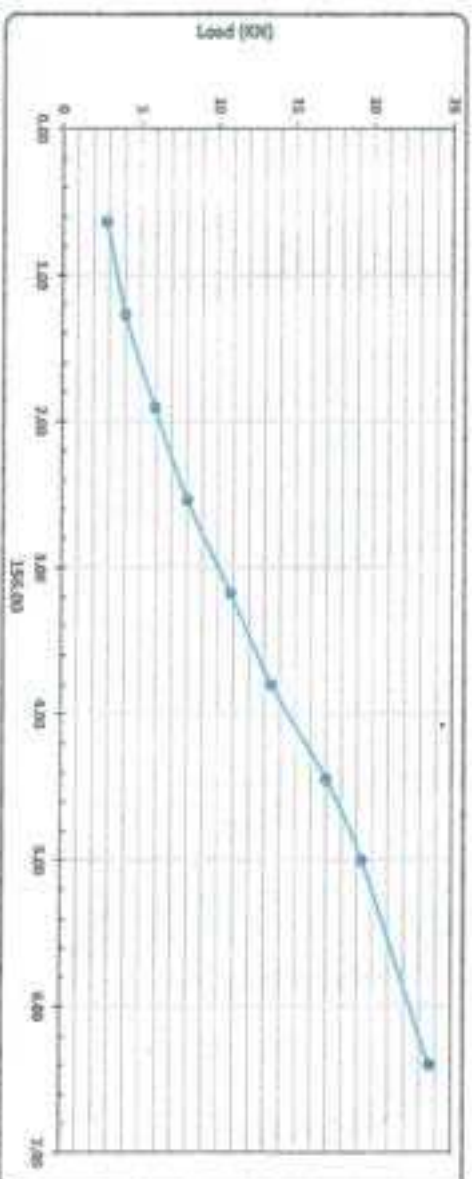
Compaction % for Moist	
Moist No.	1
Moist Vol (cm ³)	2100
Moist WT, (gm)	8170
Moist Wt. + Wet Wt. (gm)	13700
Wet Wt. (gm)	4631
Wet Density (g/cm ³)	2.443
Dry Density (g/cm ³)	2.200
Theoretical Density (g/cm ³)	2.700
Compaction %	100

Moisture Ratio After Compacted Moist	
Test No.	1A
Test Wt. (gm)	85.81
Test Wt. + Wet Wt. (gm)	156.1
Test Wt. + Dry Wt. (gm)	144.8
Wet	5.2
Dry Wt. (gm)	m2
Moisture Content %	5.66

Dovelling	
Moist No.	2
Name	2
Initial Thickness (mm)	5.80
Final Thickness (mm)	6.05
Difference	0
Thickness (mm) (mm)	118.00
Swelling Ratio %	0%

Loading Results :

155.00	0.66	1.27	1.91	2.54	3.19	3.80	4.45	5.09	6.00
Load Bending (kg)	200.00	413.00	602.00	675.00	1105.00	1335.00	1735.00	1970.00	2410.00
Load (KN)	2.8	4.0	5.9	9.8	16.3	17.8	17.8	26.5	21.6



Calculations :-

Proportion (mm)	Load (kN)	Standard Load (kN)	CBR (%)	Moist Compaction (%)	Empirical (%)	CBR (%)
2.50	0.91	13.2	6.7%	100	93	58.7%
4.75	17.31	20.8	84.7%			94.7%

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :





Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein

Section - 7 From Foka To MARSA MATRUH

From Station 504+000 To Station 568+177



ACTIVITY : Sand cone test

Laboratory results

COD

Z H (S.B.1)

Density and Unit Weight of Soil In Place by the Sand-cone Method _ ASTM D 1556

Company :	EL-ZHOOR COMPANY	Layer level :	Sub Ballast(0.9)
Description:	Compaction test	Layer Thickness :	0.2 m
Station represented :	536+220 TO 536+300	Sample Date :	22/6/2023

Modified Proctor Testing Results

Max. Dry Density , gm/cm3	Optimum Moisture Content , %	Degree of Compaction Required , %	Bulk Density of Specified Sand , gm/cm3
2.20	5.6	100%	1.48

Compaction Testing Results & Calculations

STATION	536+220	536+240	536+250	536+260	536+270	536+280	536+290	536+300	536+300
Mois No.	1 \	2	3	4	5	6	7	8	
Wt. of Sand bucket Test (gm)	9628	9720	9812	9908	9998	10088	10178	10268	
Wt. of Sand After Test (gm)	9776	9821	9868	9918	10025	10164	10313	10433	
Wt. of Sand in Cone + Water (gm)	3884	3907	3950	3970	3973	3994	4015	4036	
Wt. of Sand in cone	1140	1140	1140	1140	1146	1146	1146	1148	
Wt. of Sand at 30% spm	2728	2767	2810	2830	2833	2854	2875	2896	
Volume of the hole (cm3)	1841	1870	1899	1912	1914	1928	1943	1957	
Wt. of Sand from hole (gm)	4378	4388	4400	4411	4421	4432	4444	4455	
Bulk Density of Soil (gm/cm3)	2.378	2.348	2.317	2.367	2.310	2.289	2.288	2.277	
Moisture Content , %	6.3	3.8	5.2	4.7	4.1	3.8	3.9	3.3	
Dry Density, gm/cm3	2.133	2.217	2.201	2.203	2.218	2.221	2.223	2.226	
Compaction, (%)	101.5%	100.8%	100.0%	100.1%	100.8%	101.0%	101.1%	101.2%	

Acceptance Criteria

Comply



Not Comply

CONSULTANT COMMENTS

Site engineer :-

Name :- Mohamed Elindy

Signature :-

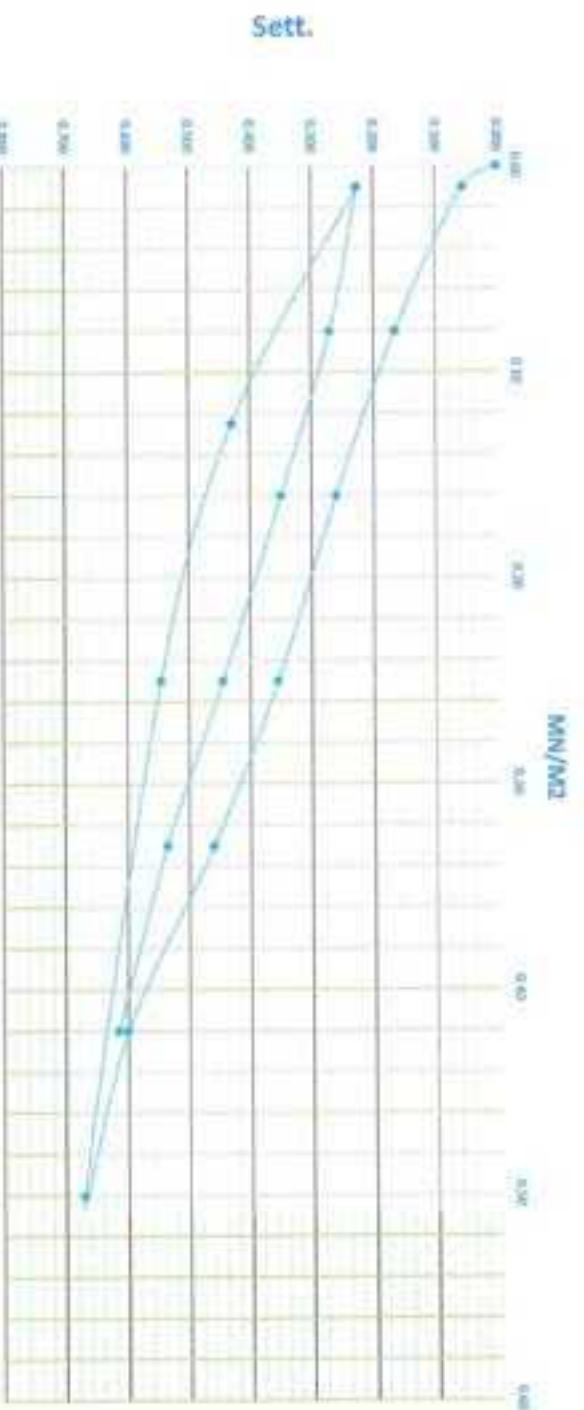
Consultant Materials Engineer :-

Name :- Wasef Ahmed

Signature :-

ϕ = thickness of the plate, generally 0.30 in

For this calculation λ_{cr} and λ_{cr} are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max}



Name : Lab. Specialist

Sign :

Yusuf



Name : Lab. Engineer

Sign :

Yusuf



Name : Chairman Engineer

Sign : Ahmed Hamed

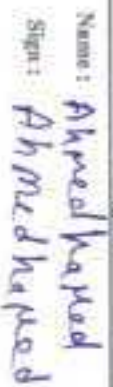


Plate Load Test Results

Company Name

Location

Test Date

Layer level

El-Zohor

536+000

5/7/2023

SUB BALLAST(+90)

To

536+300

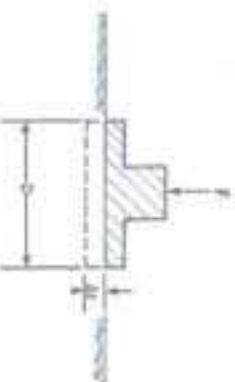
Station

536+250

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.40$ m and $D = 0.762$ m are used.

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is released in 5 steps. A loaded truck, an excavator or a roller usually serves as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Settle	Thick 1	Thick 2	Thick 3	Soil 1	Soil 2	Soil 3	Avg
Stage No.	Bar	KN	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	5.48	7.51	0.000	0.000	0.000	0.000
1.000	2.1	0.707	0.01	5.51	7.47	0.070	0.040	0.055	0.055
2.000	17.1	5.652	0.08	5.40	7.36	0.180	0.150	0.165	0.165
0.090	34.2	11.304	0.16	5.31	7.26	0.270	0.250	0.260	0.260
4.000	53.4	17.663	0.25	5.23	7.16	0.360	0.350	0.355	0.355
5.000	70.5	23.315	0.33	5.11	7.06	0.470	0.450	0.460	0.460
6.000	89.7	29.673	0.42	4.95	6.94	0.630	0.570	0.600	0.600
7.000	106.8	35.325	0.50	4.92	6.83	0.660	0.680	0.670	0.670
8.000	53.4	17.663	0.35	5.04	6.96	0.540	0.550	0.545	0.545
9.000	26.7	8.831	0.12	5.15	7.08	0.430	0.430	0.438	0.438
9.000	2.1	0.707	0.01	5.35	7.29	0.230	0.230	0.225	0.225
10.000	2.1	0.707	0.01	5.35	7.29	0.230	0.220	0.225	0.225
11.000	17.1	5.652	0.08	5.30	7.25	0.290	0.260	0.270	0.270
12.000	34.2	11.304	0.16	5.20	7.19	0.380	0.320	0.350	0.350
13.000	53.4	17.663	0.25	5.10	7.10	0.480	0.410	0.445	0.445
14.000	70.5	23.315	0.33	5.00	7.02	0.580	0.490	0.535	0.535
15.000	89.7	29.673	0.42	4.92	6.94	0.660	0.570	0.615	0.615

Q_1 / q_1	0.35	0.53875	0.79062	0.2
Q_2 / q_2	0.15	0.34813		
Q_3 / q_3	0.36	0.60278	0.23777	0.2
Q_4 / q_4	0.15	0.315		
D (mm)	380			
E_s	154.94			
E_{ys}	189.28			
Avg (kg/cm ²)	8.7705			

$D > 300$	1.23		
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$E_s = 0.23 \cdot D \cdot \Delta s / \Delta s$
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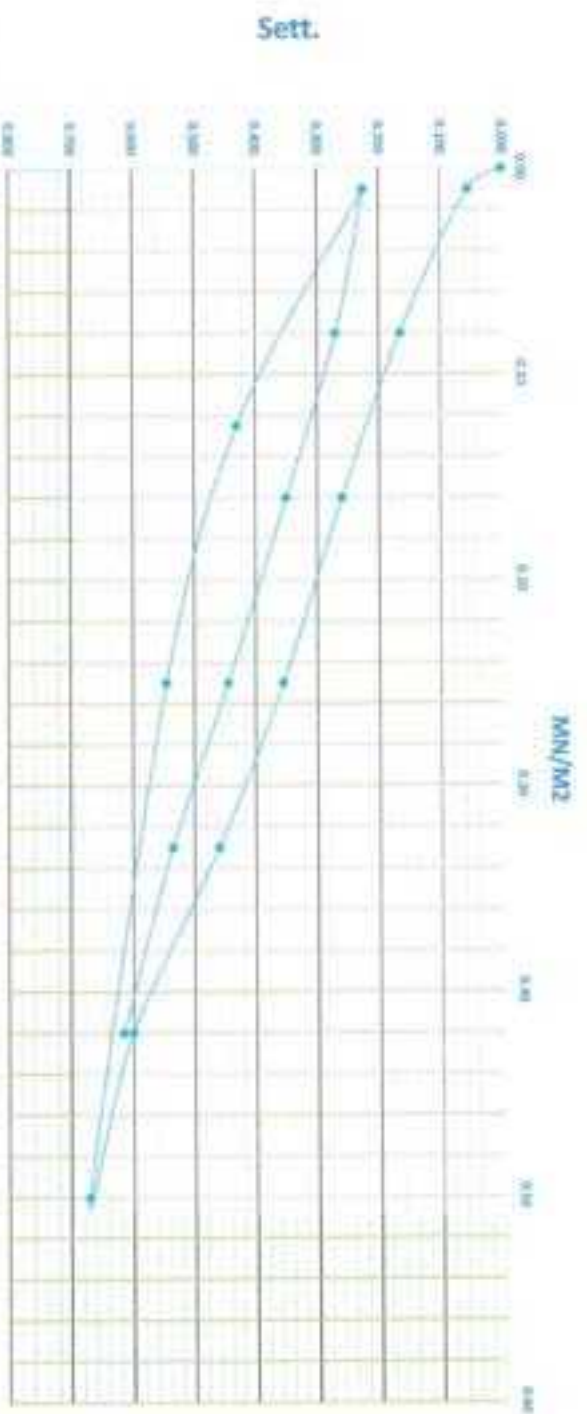
E_s = settlement modulus

Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max} .



Lab. Supervisor

Name :

Sign :

[Signature]

[Stamp: Faculty of Engineering, Mansoura University, 2019]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Mohamed

Plate Load Test Results

Company Name

EL-Zohor

Location

536+000

To

536+300

Test Date

5/7/2023

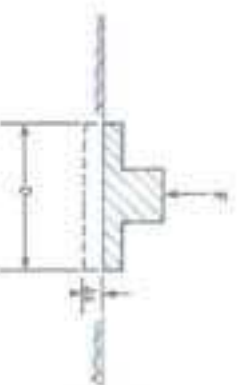
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation in Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

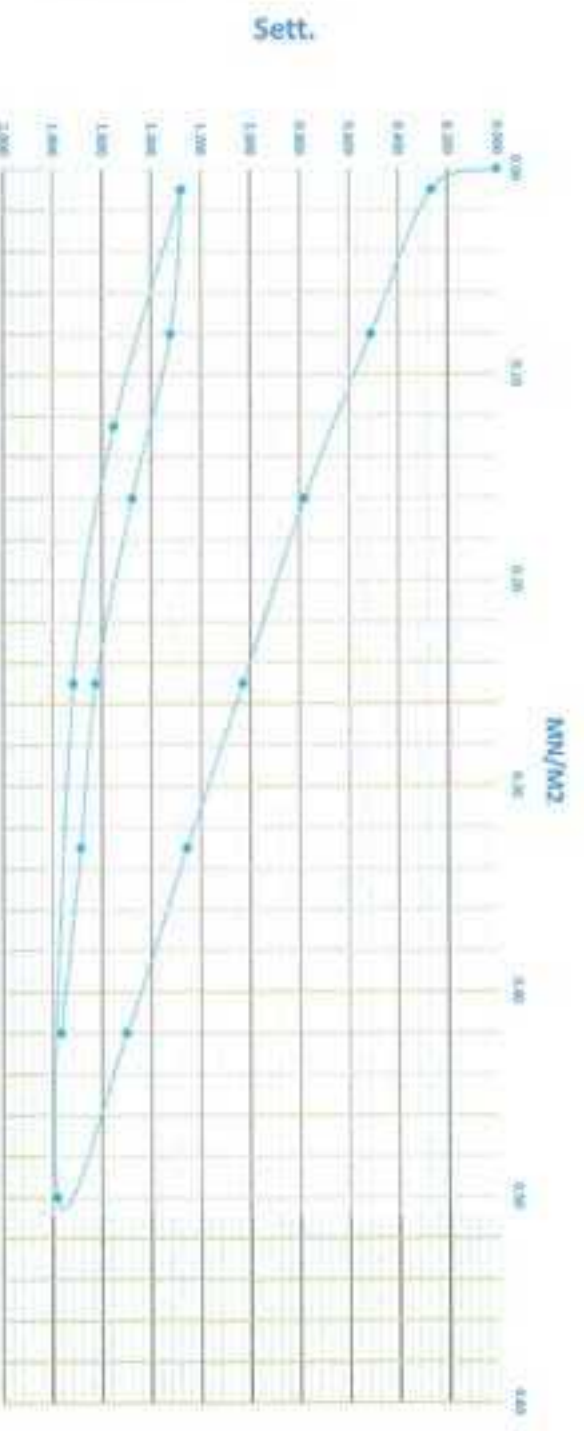
The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable and (≈ 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is released in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Load/ing	Load	Load	Settle	Thick 1	Thick 2	Thick 3	Thick 4	Thick 5	Thick 6	Thick 7	Thick 8	Thick 9	Thick 10	Thick 11	Thick 12	Thick 13	Thick 14	Thick 15	Thick 16	Thick 17	Thick 18	Thick 19	Thick 20	Thick 21	Thick 22	Thick 23	Thick 24	Thick 25	Thick 26	Thick 27	Thick 28	Thick 29	Thick 30	Thick 31	Thick 32	Thick 33	Thick 34	Thick 35	Thick 36	Thick 37	Thick 38	Thick 39	Thick 40	Thick 41	Thick 42	Thick 43	Thick 44	Thick 45	Thick 46	Thick 47	Thick 48	Thick 49	Thick 50	Thick 51	Thick 52	Thick 53	Thick 54	Thick 55	Thick 56	Thick 57	Thick 58	Thick 59	Thick 60	Thick 61	Thick 62	Thick 63	Thick 64	Thick 65	Thick 66	Thick 67	Thick 68	Thick 69	Thick 70	Thick 71	Thick 72	Thick 73	Thick 74	Thick 75	Thick 76	Thick 77	Thick 78	Thick 79	Thick 80	Thick 81	Thick 82	Thick 83	Thick 84	Thick 85	Thick 86	Thick 87	Thick 88	Thick 89	Thick 90	Thick 91	Thick 92	Thick 93	Thick 94	Thick 95	Thick 96	Thick 97	Thick 98	Thick 99	Thick 100	Thick 101	Thick 102	Thick 103	Thick 104	Thick 105	Thick 106	Thick 107	Thick 108	Thick 109	Thick 110	Thick 111	Thick 112	Thick 113	Thick 114	Thick 115	Thick 116	Thick 117	Thick 118	Thick 119	Thick 120	Thick 121	Thick 122	Thick 123	Thick 124	Thick 125	Thick 126	Thick 127	Thick 128	Thick 129	Thick 130	Thick 131	Thick 132	Thick 133	Thick 134	Thick 135	Thick 136	Thick 137	Thick 138	Thick 139	Thick 140	Thick 141	Thick 142	Thick 143	Thick 144	Thick 145	Thick 146	Thick 147	Thick 148	Thick 149	Thick 150	Thick 151	Thick 152	Thick 153	Thick 154	Thick 155	Thick 156	Thick 157	Thick 158	Thick 159	Thick 160	Thick 161	Thick 162	Thick 163	Thick 164	Thick 165	Thick 166	Thick 167	Thick 168	Thick 169	Thick 170	Thick 171	Thick 172	Thick 173	Thick 174	Thick 175	Thick 176	Thick 177	Thick 178	Thick 179	Thick 180	Thick 181	Thick 182	Thick 183	Thick 184	Thick 185	Thick 186	Thick 187	Thick 188	Thick 189	Thick 190	Thick 191	Thick 192	Thick 193	Thick 194	Thick 195	Thick 196	Thick 197	Thick 198	Thick 199	Thick 200	Thick 201	Thick 202	Thick 203	Thick 204	Thick 205	Thick 206	Thick 207	Thick 208	Thick 209	Thick 210	Thick 211	Thick 212	Thick 213	Thick 214	Thick 215	Thick 216	Thick 217	Thick 218	Thick 219	Thick 220	Thick 221	Thick 222	Thick 223	Thick 224	Thick 225	Thick 226	Thick 227	Thick 228	Thick 229	Thick 230	Thick 231	Thick 232	Thick 233	Thick 234	Thick 235	Thick 236	Thick 237	Thick 238	Thick 239	Thick 240	Thick 241	Thick 242	Thick 243	Thick 244	Thick 245	Thick 246	Thick 247	Thick 248	Thick 249	Thick 250	Thick 251	Thick 252	Thick 253	Thick 254	Thick 255	Thick 256	Thick 257	Thick 258	Thick 259	Thick 260	Thick 261	Thick 262	Thick 263	Thick 264	Thick 265	Thick 266	Thick 267	Thick 268	Thick 269	Thick 270	Thick 271	Thick 272	Thick 273	Thick 274	Thick 275	Thick 276	Thick 277	Thick 278	Thick 279	Thick 280	Thick 281	Thick 282	Thick 283	Thick 284	Thick 285	Thick 286	Thick 287	Thick 288	Thick 289	Thick 290	Thick 291	Thick 292	Thick 293	Thick 294	Thick 295	Thick 296	Thick 297	Thick 298	Thick 299	Thick 300	Thick 301	Thick 302	Thick 303	Thick 304	Thick 305	Thick 306	Thick 307	Thick 308	Thick 309	Thick 310	Thick 311	Thick 312	Thick 313	Thick 314	Thick 315	Thick 316	Thick 317	Thick 318	Thick 319	Thick 320	Thick 321	Thick 322	Thick 323	Thick 324	Thick 325	Thick 326	Thick 327	Thick 328	Thick 329	Thick 330	Thick 331	Thick 332	Thick 333	Thick 334	Thick 335	Thick 336	Thick 337	Thick 338	Thick 339	Thick 340	Thick 341	Thick 342	Thick 343	Thick 344	Thick 345	Thick 346	Thick 347	Thick 348	Thick 349	Thick 350	Thick 351	Thick 352	Thick 353	Thick 354	Thick 355	Thick 356	Thick 357	Thick 358	Thick 359	Thick 360	Thick 361	Thick 362	Thick 363	Thick 364	Thick 365	Thick 366	Thick 367	Thick 368	Thick 369	Thick 370	Thick 371	Thick 372	Thick 373	Thick 374	Thick 375	Thick 376	Thick 377	Thick 378	Thick 379	Thick 380	Thick 381	Thick 382	Thick 383	Thick 384	Thick 385	Thick 386	Thick 387	Thick 388	Thick 389	Thick 390	Thick 391	Thick 392	Thick 393	Thick 394	Thick 395	Thick 396	Thick 397	Thick 398	Thick 399	Thick 400	Thick 401	Thick 402	Thick 403	Thick 404	Thick 405	Thick 406	Thick 407	Thick 408	Thick 409	Thick 410	Thick 411	Thick 412	Thick 413	Thick 414	Thick 415	Thick 416	Thick 417	Thick 418	Thick 419	Thick 420	Thick 421	Thick 422	Thick 423	Thick 424	Thick 425	Thick 426	Thick 427	Thick 428	Thick 429	Thick 430	Thick 431	Thick 432	Thick 433	Thick 434	Thick 435	Thick 436	Thick 437	Thick 438	Thick 439	Thick 440	Thick 441	Thick 442	Thick 443	Thick 444	Thick 445	Thick 446	Thick 447	Thick 448	Thick 449	Thick 450	Thick 451	Thick 452	Thick 453	Thick 454	Thick 455	Thick 456	Thick 457	Thick 458	Thick 459	Thick 460	Thick 461	Thick 462	Thick 463	Thick 464	Thick 465	Thick 466	Thick 467	Thick 468	Thick 469	Thick 470	Thick 471	Thick 472	Thick 473	Thick 474	Thick 475	Thick 476	Thick 477	Thick 478	Thick 479	Thick 480	Thick 481	Thick 482	Thick 483	Thick 484	Thick 485	Thick 486	Thick 487	Thick 488	Thick 489	Thick 490	Thick 491	Thick 492	Thick 493	Thick 494	Thick 495	Thick 496	Thick 497	Thick 498	Thick 499	Thick 500	Thick 501	Thick 502	Thick 503	Thick 504	Thick 505	Thick 506	Thick 507	Thick 508	Thick 509	Thick 510	Thick 511	Thick 512	Thick 513	Thick 514	Thick 515	Thick 516	Thick 517	Thick 518	Thick 519	Thick 520	Thick 521	Thick 522	Thick 523	Thick 524	Thick 525	Thick 526	Thick 527	Thick 528	Thick 529	Thick 530	Thick 531	Thick 532	Thick 533	Thick 534	Thick 535	Thick 536	Thick 537	Thick 538	Thick 539	Thick 540	Thick 541	Thick 542	Thick 543	Thick 544	Thick 545	Thick 546	Thick 547	Thick 548	Thick 549	Thick 550	Thick 551	Thick 552	Thick 553	Thick 554	Thick 555	Thick 556	Thick 557	Thick 558	Thick 559	Thick 560	Thick 561	Thick 562	Thick 563	Thick 564	Thick 565	Thick 566	Thick 567	Thick 568	Thick 569	Thick 570	Thick 571	Thick 572	Thick 573	Thick 574	Thick 575	Thick 576	Thick 577	Thick 578	Thick 579	Thick 580	Thick 581	Thick 582	Thick 583	Thick 584	Thick 585	Thick 586	Thick 587	Thick 588	Thick 589	Thick 590	Thick 591	Thick 592	Thick 593	Thick 594	Thick 595	Thick 596	Thick 597	Thick 598	Thick 599	Thick 600	Thick 601	Thick 602	Thick 603	Thick 604	Thick 605	Thick 606	Thick 607	Thick 608	Thick 609	Thick 610	Thick 611	Thick 612	Thick 613	Thick 614	Thick 615	Thick 616	Thick 617	Thick 618	Thick 619	Thick 620	Thick 621	Thick 622	Thick 623	Thick 624	Thick 625	Thick 626	Thick 627	Thick 628	Thick 629	Thick 630	Thick 631	Thick 632	Thick 633	Thick 634	Thick 635	Thick 636	Thick 637	Thick 638	Thick 639	Thick 640	Thick 641	Thick 642	Thick 643	Thick 644	Thick 645	Thick 646	Thick 647	Thick 648	Thick 649	Thick 650	Thick 651	Thick 652	Thick 653	Thick 654	Thick 655	Thick 656	Thick 657	Thick 658	Thick 659	Thick 660	Thick 661	Thick 662	Thick 663	Thick 664	Thick 665	Thick 666	Thick 667	Thick 668	Thick 669	Thick 670	Thick 671	Thick 672	Thick 673	Thick 674	Thick 675	Thick 676	Thick 677	Thick 678	Thick 679	Thick 680	Thick 681	Thick 682	Thick 683	Thick 684	Thick 685	Thick 686	Thick 687	Thick 688	Thick 689	Thick 690	Thick 691	Thick 692	Thick 693	Thick 694	Thick 695	Thick 696	Thick 697	Thick 698	Thick 699	Thick 700	Thick 701	Thick 702	Thick 703	Thick 704	Thick 705	Thick 706	Thick 707	Thick 708	Thick 709	Thick 710	Thick 711	Thick 712	Thick 713	Thick 714	Thick 715	Thick 716	Thick 717	Thick 718	Thick 719	Thick 720	Thick 721	Thick 722	Thick 723	Thick 724	Thick 725	Thick 726	Thick 727	Thick 728	Thick 729	Thick 730	Thick 731	Thick 732	Thick 733	Thick 734	Thick 735	Thick 736	Thick 737	Thick 738	Thick 739	Thick 740	Thick 741	Thick 742	Thick 743	Thick 744	Thick 745	Thick 746	Thick 747	Thick 748	Thick 749	Thick 750	Thick 751	Thick 752	Thick 753	Thick 754	Thick 755	Thick 756	Thick 757	Thick 758	Thick 759	Thick 760	Thick 761	Thick 762	Thick 763	Thick 764	Thick 765	Thick 766	Thick 767	Thick 768	Thick 769	Thick 770	Thick 771	Thick 772	Thick 773	Thick 774	Thick 775	Thick 776	Thick 777	Thick 778	Thick 779	Thick 780	Thick 781	Thick 782	Thick 783	Thick 784	Thick 785	Thick 786	Thick 787	Thick 788	Thick 789	Thick 790	Thick 791	Thick 792	Thick 793	Thick 794	Thick 795	Thick 796	Thick 797	Thick 798	Thick 799	Thick 800	Thick 801	Thick 802	Thick 803	Thick 804	Thick 805	Thick 806	Thick 807	Thick 808	Thick 809	Thick 810	Thick 811	Thick 812	Thick 813	Thick 814	Thick 815	Thick 816	Thick 817	Thick 818	Thick 819	Thick 820	Thick 821	Thick 822	Thick 823	Thick 824	Thick 825	Thick 826	Thick 827	Thick 828	Thick 829	Thick 830	Thick 831	Thick 832	Thick 833	Thick 834	Thick 835	Thick 836	Thick 837	Thick 838	Thick 839	Thick 840	Thick 841	Thick 842	Thick 843	Thick 844	Thick 845	Thick 846	Thick 847	Thick 848	Thick 849	Thick 850	Thick 851	Thick 852	Thick 853	Thick 854	Thick 855	Thick 856	Thick 857	Thick 858	Thick 859	Thick 860	Thick 861	Thick 862	Thick 863	Thick 864	Thick 865	Thick 866	Thick 867	Thick 868	Thick 869	Thick 870	Thick 871	Thick 872	Thick 873	Thick 874	Thick 875	Thick 876	Thick 877	Thick 878	Thick 879	Thick 880	Thick 881	Thick 882	Thick 883	Thick 884	Thick 885	Thick 886	Thick 887	Thick 888	Thick 889	Thick 890	Thick 891	Thick 892	Thick 893	Thick 894	Thick 895	Thick 896	Thick 897	Thick 898	Thick 899	Thick 900	Thick 901	Thick 902	Thick 903	Thick 904	Thick 905	Thick 906	Thick 907	Thick 908	Thick 909	Thick 910	Thick 911	Thick 912	Thick 913	Thick 914	Thick 915	Thick 916	Thick 917	Thick 918	Thick 919	Thick 920	Thick 921	Thick 922	Thick 923	Thick 924	Thick 925	Thick 926	Thick 927	Thick 928	Thick 929	Thick 930	Thick 931	Thick 932	Thick 933	Thick 934	Thick 935	Thick 936	Thick 937	Thick 938	Thick 939	Thick 940	Thick 941	Thick 942	Thick 943	Thick 944	Thick 945	Thick 946	Thick 947	Thick 948	Thick 949	Thick 950	Thick 951	Thick 952	Thick 953	Thick 954	Thick 955	Thick 956	Thick 957	Thick 958	Thick 959	Thick 960	Thick 961	Thick 962	Thick 963	Thick 964	Thick 965	Thick 966	Thick 967	Thick 968	Thick 969	Thick 970	Thick 971	Thick 972	Thick 973	Thick 974	Thick 975	Thick 976	Thick 977	Thick 978	Thick 979	Thick 980	Thick 981	Thick 982	Thick 983	Thick 984	Thick 985	Thick 986	Thick 987	Thick 988	Thick 989	Thick 990	Thick 991	Thick 992	Thick 993	Thick 994	Thick 995	Thick 996	Thick 997	Thick 998	Thick 999	Thick 1000	Thick 1001	Thick 1002	Thick 1003	Thick 1004	Thick 1005	Thick 1006	Thick 1007	Thick 1008	Thick 1009	Thick 1010	Thick 1011	Thick 1012	Thick 1013	Thick 1014	Thick 1015	Thick 1016	Thick 1017	Thick 1018	Thick 1019	Thick 1020	Thick 1021	Thick 1022	Thick 1023	Thick 1024	Thick 1025	Thick 1026	Thick 1027	Thick 1028	Thick 1029	Thick 1030	Thick 1031	Thick 1032	Thick 1033	Thick 1034	Thick 1035	Thick 1036	Thick 1037	Thick 1038	Thick 1039	Thick 1040	Thick 1041	Thick 1042	Thick 1043	Thick 1044	Thick 1045	Thick 1046	Thick 1047	Thick 1048	Thick 1049	Thick 1050	Thick 1051	Thick 1052	Thick 1053	Thick 1054	Thick 1055	Thick 1056	Thick 1057	Thick 1058	Thick 1059	Thick 1060	Thick 1061	Thick 1062	Thick 1063	Thick 1064	Thick 1065	Thick 1066	Thick 1067	Thick 1068	Thick 1069	Thick 1070	Thick 1071	Thick 1072	Thick 1073	Thick 1074	Thick 1075	Thick 1076	Thick 1077	Thick 1078	Thick 1079	Thick 1080	Thick 1081	Thick 1082	Thick 1083	Thick 1084	Thick 1085	Thick 1086	Thick 1087	Thick 1088	Thick 1089	Thick 1090	Thick 1091	Thick 1092	Thick 1093	Thick 1094	Thick 1095	Thick 1096	Thick 1097	Thick 1098	Thick 1099	Thick 1100	Thick 1101	Thick 1102	Thick 1103	Thick 1104	Thick 1105	Thick 1106	Thick 1107	Thick 1108	Thick 1109	Thick 1110	Thick 1111	Thick 1112	Thick 1113	Thick 1114	Thick 1115	Thick 1116	Thick 1117	Thick 1118	Thick 1119	Thick 1120	Thick 1121	Thick 112
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For this calculation δ_c and δ_s are usually taken from the load span between 0.3 m and 0.7 m.



Name : Lab. Supervisor

Sign :

[Signature]

Name : Lab. Engineer

Sign :

[Signature]

Name : Consultant Engineer

Sign :

Ahmed hamed

Plate Load Test Results

Company Name

EL-Zohor

Location

536+000

To

536+300

Test Date

5/7/2023

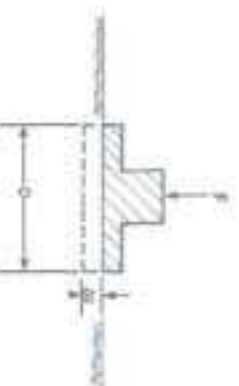
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is relocated in 6 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Load	Settle	Test 1	Test 2	Test 3	Sett. 1	Sett. 2	Sett. 3	Sett. 4	Avg. Sett.
Step No.	Bar	KN	mm/KN	mm	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	17.96	16.25		0.000	0.000			0.000
1.000	2.1	0.707	0.01	17.76	16.11		0.200	0.140			0.170
2.000	17.1	5.652	0.08	17.67	16.04		0.290	0.210			0.250
0.080	34.2	11.304	0.16	17.47	15.76		0.490	0.400			0.490
4.000	53.4	17.663	0.25	17.17	15.52		0.790	0.720			0.760
5.000	70.5	23.315	0.33	16.99	15.36		0.970	0.890			0.930
6.000	89.7	29.673	0.42	16.84	15.20		1.120	1.050			1.085
7.000	106.8	35.325	0.50	16.70	15.05		1.260	1.200			1.230
8.000	53.4	17.663	0.25	16.76	15.14		1.200	1.110			1.155
9.000	26.7	8.831	0.12	16.95	15.33		1.010	0.920			0.965
9.000	2.1	0.707	0.01	17.09	15.47		0.870	0.780			0.825
10.000	2.1	0.707	0.01	17.09	15.47		0.870	0.780			0.825
11.000	17.1	5.652	0.08	17.07	15.44		0.890	0.810			0.850
12.000	34.2	11.304	0.16	16.99	15.36		0.970	0.890			0.930
13.000	53.4	17.663	0.25	16.89	15.26		1.070	0.990			1.030
14.000	70.5	23.315	0.33	16.82	15.18		1.140	1.070			1.105
15.000	89.7	29.673	0.42	16.72	15.08		1.240	1.170			1.205

		σ	ΔS	$\Delta \sigma$
0.7 σ_y	0.35	0.95813	0.47913	0.2
0.3 σ_y	0.15	0.40		
0.7 σ_y	0.35	1.12722	0.25222	0.2
0.3 σ_y	0.15	0.875		
D (mm)	300			
E_p	91.14			
E_{ys}	178.42			
Avg (kg/cm ²)	8.07965			

0.35-1	1.87		
--------	------	--	--

$E_p = 0.75 \cdot D - \Delta \sigma / \Delta S$	
---	--

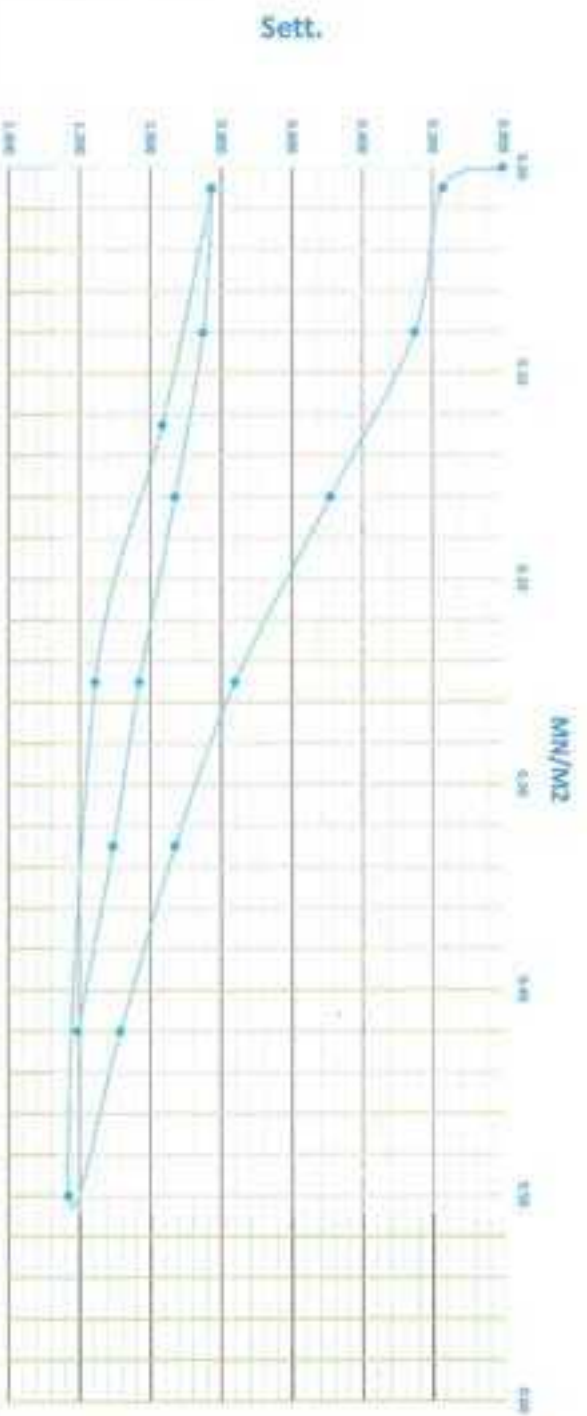
E_p = deformation modulus

$\Delta \sigma$ = load increment

ΔS = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max}



Lab. Supervisor

Name :

Sign :

[Signature]
[Stamp]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed hamed
Ahmed hamed

RECEIPT OF NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	EL. ZHOOR. COMPANY		Designer Company*	KK CONSULT.																	
Issued by Contractor	Name	Sign	Date	21 - 6 - 2023																	
Received by Employers Representative	Eng : Mahmoud Elkhawy		UJR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>KP636</td> <td>TR</td> <td>OT</td> <td>21</td> <td>6</td> <td>2023</td> <td>10</td> <td>18</td> </tr> </table>		C1	C2	C3	DD	MM	YY	HH	MM	KP636	TR	OT	21	6	2023	10	18
C1	C2	C3	DD	MM	YY	HH	MM														
KP636	TR	OT	21	6	2023	10	18														
CODE - 1	S1 to S71	D1 to S3	Kp XXX Note																		
CODE - 2	Station Reference	Dipol Reference	For Kilometer point only Start Km is used																		
CODE - 3	Sub Element of Activity																				

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
Sub-ballast	Sub Ballast (+ 0.9)	From St (536+140) to (536+220)

INSPECTION DETAILS The following will be ready at the Planned Inspection Time

Planned Inspection Date	Planned Inspection Time
	12:15

COMPLIANCE EVIDENCE Must be included as appropriate

Checklist Attached ☐	Test Results Attached ☐	Calibration Attached ☐	Other as indicated ☐
Drawing Reference	IIP Reference	MS Reference	

Civil	Survey	Material
Visual inspection is Approved Maz Mostafa 21/6/2023	Values are Approved Ahmed Ashraf 21/6/2023	Approved. Maz Mostafa 21/6/2023

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	Approval Status	Please Tick if Not Attend
Contractor	Eng : Mahmoud Elkhawy				A-AWC-R	
QA/QC*						
GARB**	Eng : Khaled Fawzey				A	
Employers Representative Notes						
Employers Representative Sign						

* Designer

** Alignment: Bridges: Culvert



تمت تشغيل طابقا الردم لمشروع القطار السريع القطاع السابع (فوق
شركة (الرهور)
من المحطة (536+140) إلى المحطة (536+220)



STATION														LEFT SIDE			LAYER LEVEL				RIGHT SIDE		
		ACT.	7		4		S.E. %	DESIGN LEVEL	FERMA LEVEL	CL	S.E. %	4		7		ACT.							
		WIDTH														WIDTH							
536+140			59.45		59.57		-4%	59.73	58.83	59.73	-4%	59.57		59.45									
Act.																							
Diff.			-1		+1					✓		-1		✓									
536+150			59.48		59.60		-4%	59.76	58.86	59.76	-4%	59.60		59.48									
Act.																							
Diff.			✓		-1					+1		✓		+1									
536+160			59.51		59.63		-4%	59.79	58.89	59.79	-4%	59.63		59.51									
Act.																							
Diff.			-1		✓					✓		-1		-1									
536+170			59.53		59.65		-4%	59.81	58.91	59.81	-4%	59.65		59.53									
Act.																							
Diff.			+1		-1					+1		-1		✓									
536+180			59.56		59.68		-4%	59.84	58.94	59.84	-4%	59.68		59.56									
Act.																							
Diff.			✓		-1					-1		✓		+1									
536+190			59.59		59.71		-4%	59.87	58.97	59.87	-4%	59.71		59.59									
Act.																							
Diff.			-1		✓					✓		-1		+1									
536+200			59.61		59.73		-4%	59.89	58.99	59.89	-4%	59.73		59.61									
Act.																							
Diff.			+1		+1					-1		✓		-1									
536+210			59.64		59.76		-4%	59.92	59.02	59.92	-4%	59.76		59.64									
Act.																							
Diff.			-1		✓					✓		-1		+1									
536+220			59.67		59.79		-4%	59.95	59.05	59.95	-4%	59.79		59.67									
Act.																							
Diff.			✓		-1					-1		✓		✓									

Alma Asvat (Tolstoyan) 1921

MS FROM ST.(536+000) TO ST.(536+240)

Layer Zone	Layer No.	Station	536+000	536+020	536+040	536+060	536+080	536+100	536+120	536+140	536+160	536+180	536+200	536+220	536+240
		DESIGN LEVEL	59.36	59.41	59.47	59.52	59.57	59.63	59.68	59.73	59.79	59.84	59.89	59.95	60.00
		FERMA LEVEL	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		CUT LEVEL	53.28	53.25	53.21	53.18	53.29	53.40	53.47	53.54	53.76	53.97	54.27	54.39	54.36
		DIFF (FERMA - CUT)	5.18	5.26	5.35	5.44	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Empankment		0	58.46	58.51	58.57	58.62	58.67	58.73	58.78	58.83	58.89	58.94	58.99	59.05	59.10
		-0.25	58.21	58.26	58.32	58.37	58.42	58.48	58.53	58.58	58.64	58.69	58.74	58.80	58.85
		-0.5	57.96	58.01	58.07	58.12	58.17	58.23	58.28	58.33	58.39	58.44	58.49	58.55	58.60
		-0.75	57.71	57.76	57.82	57.87	57.92	57.98	58.03	58.08	58.14	58.19	58.24	58.30	58.35
		-1	57.46	57.51	57.57	57.62	57.67	57.73	57.78	57.83	57.89	57.94	57.99	58.05	58.10
		-1.25	57.21	57.26	57.32	57.37	57.42	57.48	57.53	57.58	57.64	57.69	57.74	57.80	57.85
Middle Empankment		-1.5	56.96	57.01	57.07	57.12	57.17	57.23	57.28	57.33	57.39	57.44	57.49	57.55	57.60
		-1.75	56.71	56.76	56.82	56.87	56.92	56.98	57.03	57.08	57.14	57.19	57.24	57.30	57.35
		-2	56.46	56.51	56.57	56.62	56.67	56.73	56.78	56.83	56.89	56.94	56.99	57.05	57.10
		-2.5	55.96	56.01	56.07	56.12	56.17	56.23	56.28	56.33	56.39	56.44	56.49	56.55	56.60
		-3	55.46	55.51	55.57	55.62	55.67	55.73	55.78	55.83	55.89	55.94	55.99	56.05	56.10
		-3.5	54.96	55.01	55.07	55.12	55.17	55.23	55.28	55.33	55.39	55.44	55.49	55.55	55.60
		-4	54.46	54.51	54.57	54.62	54.67	54.73	54.78	54.83	54.89	54.94	54.99	55.05	55.10
		-4.5	53.96	54.01	54.07	54.12	54.17	54.23	54.28	54.33	54.39	54.44	54.49	54.55	54.60
		-5	53.46	53.51	53.57	53.62	53.67	53.73	53.78		53.89				
		-5.5													
Lower Empankment		-6													
		-6.5													
		-7													

MS APPROVED
According to Des. Profile

18/9/2022

Center Line DATA

Station	Easting	Northing
536+140	290860.7563	943772.7331
536+160	290841.4515	943777.9604
536+180	290822.1467	943783.1876
536+200	290802.8419	943788.4149
536+220	290783.5371	943793.6422

Amir Asmer

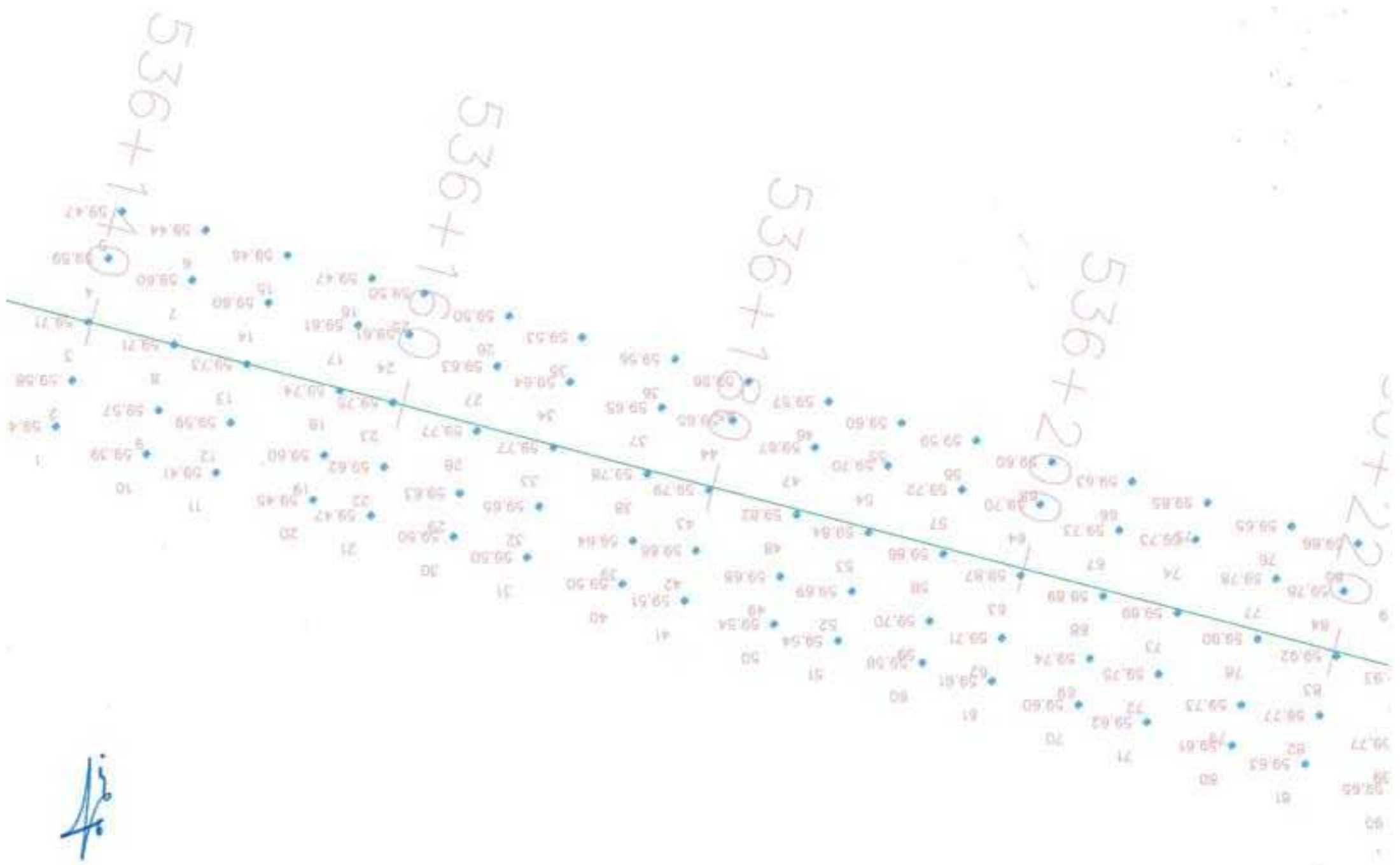


TYPICAL WIDTH

layer	slope	left	slop	right	TOTAL
0.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferna	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-4.00%	10.74	24.98
-0.75	-4.00%	14.64	-4.00%	11.14	25.78
-1	-4.00%	15.04	-4.00%	11.54	26.58
-1.25	-4.00%	15.44	-4.00%	11.94	27.38
-1.5	-4.00%	15.84	-4.00%	12.34	28.18
-1.75	-4.00%	16.24	-4.00%	12.74	28.98
-2	-4.00%	16.64	-4.00%	13.14	29.78
-2.5	-4.00%	17.44	-4.00%	13.94	31.38
-3	-4.00%	18.24	-4.00%	14.74	32.98
-3.5	-4.00%	19.04	-4.00%	15.54	34.58
-4	-4.00%	19.84	-4.00%	16.34	36.18
-4.5	-4.00%	20.64	-4.00%	16.98	37.62
-5	-4.00%	8.75	-4.00%	8.75	17.5
-5.5	0%	20.88	0%	17.59	38.47

James H. Davis

10/2/24



POINT	NORTH	EAST	ELEV
1	943779.161	290862.96	59.412
2	943776.309	290861.943	59.582
3	943772.678	290860.951	59.707
4	943768.741	290859.709	59.587
5	943765.834	290858.849	59.473
6	943767.014	290853.635	59.44
7	943770.122	290854.47	59.595
8	943774.13	290855.609	59.714
9	943778.212	290856.594	59.572
10	943780.929	290857.364	59.387
11	943782.102	290853.03	59.411
12	943779.009	290852.109	59.587
13	943775.387	290851.073	59.728
14	943771.562	290849.73	59.596
15	943768.619	290848.53	59.462
16	943770.082	290843.339	59.469
17	943772.978	290844.203	59.611
18	943777.046	290845.336	59.742
19	943781.07	290846.336	59.599
20	943783.84	290847.033	59.448
21	943784.81	290843.465	59.471
22	943781.799	290842.625	59.623
23	943777.801	290842.057	59.749
24	943773.574	290841.012	59.606
25	943771.021	290840.058	59.498
26	943772.463	290834.786	59.503
27	943775.584	290835.545	59.633
28	943779.601	290836.818	59.769
29	943783.473	290837.903	59.63
30	943786.161	290838.305	59.504
31	943787.475	290833.745	59.502
32	943784.326	290832.987	59.652
33	943780.651	290832.074	59.772
34	943776.597	290831.028	59.642
35	943773.813	290830.245	59.526
36	943775.21	290824.471	59.562
37	943778.209	290825.312	59.653
38	943782.339	290826.229	59.782
39	943786.493	290827.15	59.642
40	943789.162	290827.824	59.505
41	943790.244	290823.95	59.506
42	943787.125	290823.209	59.664
43	943783.35	290822.39	59.791

POINT	NORTH	EAST	ELEV
44	943779.045	290820.882	59.647
45	943776.629	290819.883	59.558
46	943777.915	290814.914	59.573
47	943780.758	290815.79	59.67
48	943784.927	290816.946	59.816
49	943788.777	290817.995	59.679
50	943791.732	290818.385	59.54
51	943792.798	290814.426	59.537
52	943789.718	290813.554	59.693
53	943786.061	290812.5	59.843
54	943781.939	290811.263	59.696
55	943779.283	290810.398	59.596
56	943780.419	290805.761	59.592
57	943783.466	290806.663	59.715
58	943787.445	290807.854	59.861
59	943791.607	290808.724	59.695
60	943794.208	290809.203	59.583
61	943795.384	290804.89	59.612
62	943792.71	290804.244	59.709
63	943788.817	290803.05	59.874
64	943784.43	290801.805	59.702
65	943781.782	290801.052	59.602
66	943783.031	290796.081	59.628
67	943786.061	290796.902	59.734
68	943790.149	290797.933	59.891
69	943794.036	290798.78	59.744
70	943796.895	290799.5	59.601
71	943798.01	290795.257	59.615
72	943795.028	290794.509	59.746
73	943791.237	290793.307	59.888
74	943786.684	290792.132	59.732
75	943784.399	290791.366	59.653
76	943785.871	290786.139	59.647
77	943789.145	290787.106	59.778
78	943792.879	290788.296	59.904
79	943796.986	290789.357	59.726
80	943799.515	290789.942	59.607
81	943800.681	290785.365	59.628
82	943797.656	290784.445	59.773
83	943793.967	290783.395	59.925
84	943789.927	290782.919	59.777
85	943786.984	290782.015	59.656

MATERIAL INSPECTION REQUEST

المجلس
المجلس
المجلس



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Contractor Company	Ei. Zhoor . Company		Designer Company	KK CONSULT.																	
Issued by Contractor	Name Eng \ Mahmoud Elkhawwy	Sign 	Date 18-5-2023	COD ZH 2 P.G																	
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>D0</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>18</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>		C1	C2	C3	D0	MM	YY	HH	MM				18	5	2023		
C1	C2	C3	D0	MM	YY	HH	MM														
			18	5	2023																

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

Description of Materials		Fill material results			
Location to be Used		From 536+800 to 537+000 (+0.7) From 536+000 to 536+680 (+0.7) From 536+000 to 536+680 (+0.9) From 536+800 to 537+000 (+0.9)			
MAR Approval No		Date			
Supplier Name					
Test Requirement		Specification	Clause		
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	L.L & P.L & O.M.C %	m3	5000	15 - 5 - 2023	
2	Proctor	m3	5000	15 - 5 - 2023	
3	Classification	m3	5000	15 - 5 - 2023	
4	Seive analysis	m3	5000	15 - 5 - 2023	
Comments by:		Comments by:			
Asample has been taken form fill material by KK office to (AL NUBY CENTER Lab) lab and the results founded meet the specifcointons and accepted					
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	ENG : Mahmoud Elkhawwy				
QA/QC *	Abdallah SAMS				
GARB**					

MATERIAL APPROVAL REQUEST

المجلس
المحلي
للمدن
والمناطق
1340081



المجلس
المحلي
للمدن
والمناطق
1340081



Contractor Company	EL ZHOOR COMPANY		Designer Company	KK	
Issued by Contractor	Name ENG : MAHMOUD ELKHALAWY	Sign 	Date 5-6-2023	COD ZH-1-sh	
Received by ER			MAR	01	02
				03	04
				05	06
				07	08
				09	10
				11	12

CODE : 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kip S56 Note For Kilometer point only Start Km is used
CODE : 2			
CODE : 3	Work Activity Sub Element of Activity		

Description of Materials Location to be Used	Sub ballast	S36+000 to S37+000		
Item	Specification	Test Requirement	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Specification	
2	ASTM C 136	Sieve Analysis	According Specification	
3	ASTM D 1440	Passing Sieve #200	5.4 %	
4	ASTM D 4318	Atterberg Limit	NON.	
5	ASTM D 2974	Moisture Content	5.9 %	
6	ASTM D 1557	Modified Proctor	2.206	
7	ASTM D 1883	C B R	94.7 %	
8	ASTM C 127	Specific gravity	2.524	
9	ASTM C535	Los Angeles	26.50	
Comments by:		Comments by:		

APPROVAL STATUS			
Organisation	Name	Sign	Date
Contractor	ENG : MAHMOUD ELKHALAWY		
QA/QC *	Abdelkhalik S.M.Y		
GARB **			
Employers Representative			

 		Electric Express Train - HSR From El Ain El Beldia City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177			
Operating Lab	Mansour Lab				

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	ZONE	S36+000	S37+000
Location	K.P. S36+500 (5000 m3)			
NAME COMPANY	Elzohor	Material	Sub-Ballast	

1-Visual Inspection Test

2-Gradient test

A-gradation of bulk material		SAMPLE WEIGHT (g)				table classify	
sieve size		3/4	1/2	3/8	# 4	PASS	soil classify
Mass retained (g)	0.0	1636.0	4613.0	1433.0	3443.0		2.200
Percentage Retained (g)	0.0	16.36	46.13	14.33	34.43		5.9
Cumulative Retained %	0.0	16.36	62.49	76.82	111.25		
Cumulative Passing %	100.0	83.64	37.51	23.18	8.75		
							CBR
							94.7%

B-soil material gradation		WT OF sample		500.00		g/m	
sieve size		10	40	200			
Mass retained (g)	134.00	0.00	437.80				
Percentage Retained %	26.80	0.00	87.40				
Cumulative Retained %	73.20	100.00	12.60				

C-General gradient											
sieve size (in)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 40	# 200	
Mass retained (g)	60.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075	
Cumulative Passing %	100.0	100.0	96.3	78.8	67.2	62.5	42.5	31.3	42.8	5.4	
		100	97 - 50	75 - 70		60 - 15		35 - 0		0 - 7	

ATTENTION LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	N.P	N.P	N.P

Contractor

Consultant

Abdelkader S. Alamy





Electric Express Train - HSR
 From El Ain El Stations City To El Alamein - MATROUH
 Section : 7 From FORA TO MARISSA MATROUH
 From Station 554+000 To Station 558+177



Operating Lab
Mansour Lab

Proctor Test

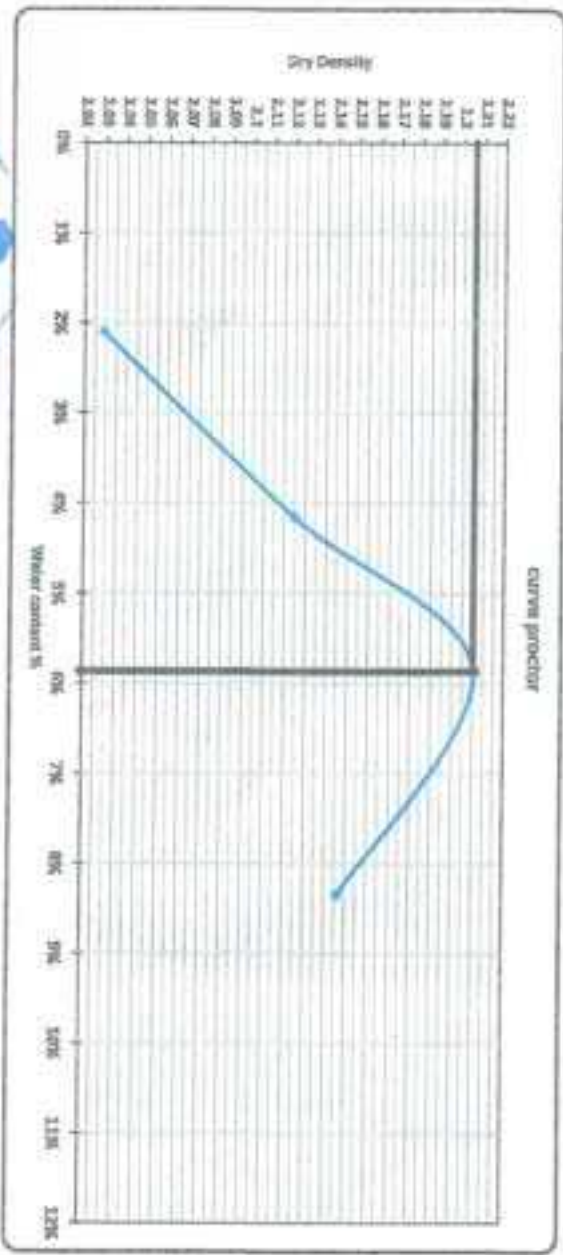
TESTING DATE:	4/6/2023	NO.64	Zone	554+000 TO 557+000
LOCATION	K.P 536+500 (5000 m3)		2/4-2/4-1	
NAME COMPANY	Ezrahor			

Weight of empty mold +	5759.8
Mold Volume	3334.8

MAX Dry Density	2.288
Water content %	5.8

trial no 1	1	2	3	4		
Wt. Of Molder wet soil	10138.8	10470.8	10761.8	10718.8		
WT. WET MOIL	4421.8	4711.8	4982.8	4951.8		
Wt. Density	2.871	3.308	3.338	3.330		

Tern No.	1	2	3	4	5	6	7	8		
Tern wt.	55.85	54.5	55.65	52.62	56.96	56.74	56.74	57.53		
Wt. Of wet soil & tern	198.6	198.3	198.4	198.7	199.9	199.3	199.7	200.3		
Wt. Of dry soil & tern	198.5	198.8	192.9	192.7	191.3	191	188.8	188.3		
Wt. Of water	2.1	3.8	8.5	6.8	7.7	8.4	11.8	11.8		
Wt. Of dry soil	129.7	141.8	137.2	148.8	134.3	134.8	133.8	121.8		
Water content %	2.2%	2.8%	4.8%	4.5%	5.7%	6.0%	8.3%	8.4%		
AV. Water content %	3.1%	4.1%	5.9%	6.3%						
Dry Density	3.029	3.128	3.308	3.338						



Consultant

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Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date :	5/6/2023	Cycle		Zone	S36+000	S37+000
Location :	KCP S36+500 (5000 m2)					
Name of Company :	Stanlar		20+80+4			

1. Test Results

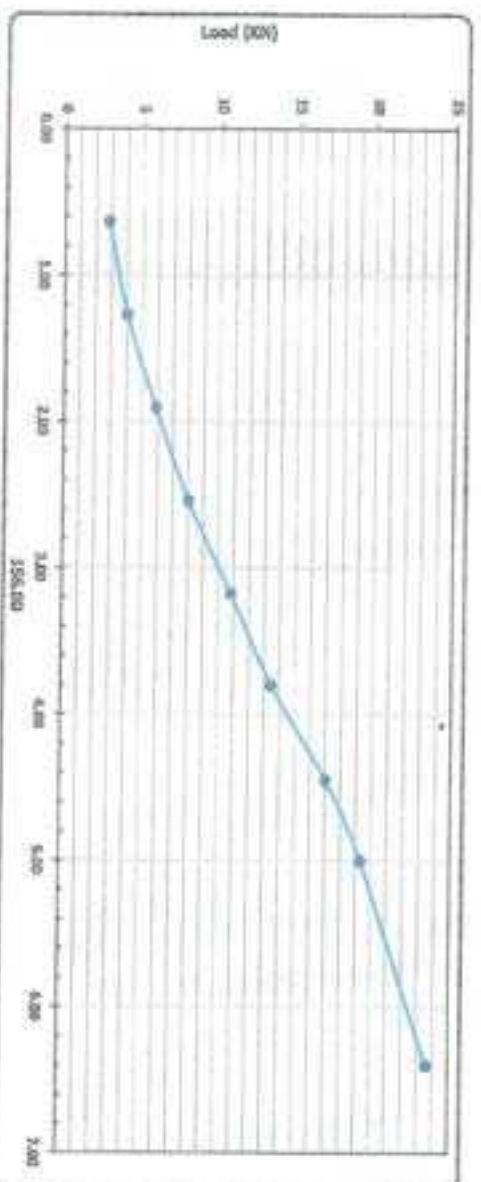
Compaction % for Steel	
Steel Size	3
Steel Vol (cm ³)	2198
Steel WT. (gm)	8119
Steel WT. + 90% WT. (gm)	17700
90% WT. (gm)	9621
Steel Density (g/cm ³)	2.410
Dry Density (g/cm ³)	2.299
Relative Density (g/cm ³)	2.298
Compaction %	100

Moisture Ratio After Compacted Steel	
Test No.	13
Steel WT. (gm)	8141
Steel WT. + 90% WT. (gm)	18613
Steel WT. + 90% WT. (gm)	14448
90%	5.3
Dry WT. (gm)	3049
Moisture Content %	2.06

Swelling	
Steel No.	3
Steel	3
Steel Thickness (mm)	8.89
Steel Height (mm)	8.89
200/100mm	0
Swelling Ratio (mm)	118.68
Swelling Ratio %	87%

Leveling Results:

Leveling	196.20	6.64	1.27	1.91	2.54	3.18	3.80	4.43	5.00	5.61
Level Reading (kg)	208.10	417.80	603.20	777.20	1105.00	1375.00	1735.00	2110.00	2510.00	2910.00
Level (mm)	3.8	4.0	3.9	3.6	3.8	3.8	3.8	3.8	3.8	3.8



Calculations :-

Preparation	Load	Standard Load	CBR	Moist. Compaction	Compaction	CBR
(mm)	(kN)	(mm)	(%)	(%)	(%)	(%)
2.50	6.64	15.6	66.7%	100	88	84.7%
6.00	19.1	20.8	96.4%			

Lab Engineer

Name :

Signature :

Contract Engineer

Name :

Signature :



Signature

 Engineering Council of Kenya P.O. Box 42488 Nairobi Kenya Tel: 011 254 20 271 1000 Email: info@ecok.org.ke	 Kenya Road Research Board P.O. Box 42488 Nairobi Kenya Tel: 011 254 20 271 1000 Email: info@krrb.org.ke	Electrical Engineers Trade - 1028 From 10.00 to 10.30 hours (10.00 to 10.30 hours) Section - 1 From 10.00 to 10.30 hours (10.00 to 10.30 hours) From 10.00 to 10.30 hours (10.00 to 10.30 hours)	 Kenya Road Research Board P.O. Box 42488 Nairobi Kenya Tel: 011 254 20 271 1000 Email: info@krrb.org.ke
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**Absorption & Aggregate specific gravity
ASHTO-T86**

TESTING DATE:	6/6/2023	Scale	Station	536+400	537+000
LOCATION	K.P 536+500 (5880 m ²)	Material	Layer thickness	Sub-Bedrock	
NAME COMPANY	Elambar	10000		0.20 cm	

Weight of sample	2060	gms
Weight of saturated -dry surface sample (B)	2012	gms
Weight of saturated sample in water (C)	1220	gms
Weight of dry sample after heating (A)	1978	gms

Results:-

Bulk specific gravity = $A / (B-C)$	2.524	8790
Apparent specific gravity = $A / (A-C)$	2.040	4870
Absorption = $(B-A)/A$	1.822	%

4870 6130

Los Angeles abrasion ASHTO-T96

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3675	26.50

Lab. Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	
Sign :	





Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein

Section -7 From Foka To MARSA MATRUH

From Station 504+000 To Station 568+177



ACTIVITY : Sand cone test

Laboratory results

COD

Z H (5.0.1)

Company :	EL-ZHOOR COMPANY	Layer level :	Sub Ballast(0.9)
Description:	Compaction test	Layer Thickness :	0.2 m
Station represented :	536+140 TO 536+220	Sample Date :	22/6/2023

Modified Proctor Testing Results

Max. Dry Density , gm/cm3	Optimum Moisture Content , %	Degree of Compaction Required , %	Bulk Density of Specified Sand , gm/cm3
2.30	5.9 <u>6.3%</u>	100%	1.48

Compaction Testing Results & Calculations

STATION	536+150	536+160	536+170	536+180	536+190	536+200	536+210	536+220	
Probe No.	1	2	3	4	5	6	7	8	
WT, of Sand before Test ,gm	9437	8671	8888	10098	9875	10517	10717	10317	
WT, of Sand After Test ,gm	3561	8719	9037	8128	9687	8511	8814	8981	
WT, of Sand in Comp. hole ,gm	3896	3952	3948	3974	3978	4005	3993	3846	
WT, of Sand in Comp. hole	1140	1140	1140	1140	1140	1140	1141	1141	
WT, of Sand in hole ,gm	2758	2782	2804	2834	2888	2865	2852	2804	
Volume of the hole, cm3	1862	1880	1897	1815	1818	1938	1827	1895	
WT, of Sand from hole ,gm	4378	4289	4800	4411	4432	4435	4424	4425	
Bulk Density of Soil, gm/cm3	2.351	2.335	2.510	2.304	2.206	2.290	2.201	2.341	
Moisture Content , %	6.3	5.8	5.8	4.7X	4.5	4.5X	4.0X	5.5	
Dry Density, gm/cm3	2.208	2.205	2.202	2.200	2.218	2.213	2.202	2.219	
Compaction, (%)	100.3%	100.3%	100.1%	100.0%	100.7%	100.8%	100.1%	100.0%	

Acceptance Criteria:

Comply

Not Comply

CONSULTANT COMMENTS

Site engineer :-

Name :- Mahmoud El Khawy

Signature :-

Consultant Materials Engineer :-

Name :-

Maria Mostafa

Signature :-

22/6/2023

Plate Load Test Results

Company Name

El-Zohor

Location

536+0+00

To

536+300

Michael

506+130

Taste Date

5/7/2023

Layer level

SUB-BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE 11

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



$\gamma = 1000$

References

It is characteristic of this phase

The diameter D of the pins is generally 0.20 m. For very coarse grained material also plates with diameter $D = 0.50$ m and $D = 0.75$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must grow to a noticeable and (< 0.02 mm/minutely). After the maximum load is reached the unloading procedure can begin. After that, the plate is refilled in 6 steps. A loaded truck, an excavator or a rather usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Load	Stress	Prod 1		Prod 2		Prod 3		Dept 1		Dept 2		Dept 3		Avg. Util.
				Rate	Cost	Rate	Cost	Rate	Cost	Rate	Cost	Rate	Cost	Rate	Cost	
Single Pkg.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.000	0.0	0.000	0.00	10.92	9.81			0.000	0.000							0.000
1.000	2.1	0.707	0.01	10.71	9.70			0.310	0.110							0.160
2.000	17.1	5.652	0.08	10.61	9.59			0.310	0.220							0.365
0.080	34.2	11.304	0.16	10.44	9.43			0.480	0.380							0.430
4.000	53.4	17.603	0.25	10.32	9.30			0.600	0.510							0.585
5.000	70.5	23.315	0.33	10.24	9.22			0.680	0.590							0.635
6.000	89.7	29.673	0.42	10.10	9.11			0.820	0.700							0.760
7.000	106.8	35.325	0.50	10.02	9.01			0.900	0.800							0.850
8.000	53.4	17.663	0.25	10.11	9.12			0.810	0.690							0.745
9.000	26.7	8.831	0.12	10.18	9.25			0.740	0.560							0.650
9.800	2.1	0.707	0.01	10.31	9.41			0.610	0.400							0.505
10.000	2.1	0.707	0.01	10.31	9.41			0.610	0.400							0.505
11.000	17.1	5.652	0.08	10.28	9.38			0.640	0.430							0.525
12.000	34.2	11.304	0.16	10.34	9.29			0.680	0.520							0.600
13.000	53.4	17.663	0.25	10.18	9.18			0.740	0.610							0.685
14.000	70.5	23.315	0.33	10.13	9.10			0.790	0.710							0.750
15.000	89.7	29.673	0.42	10.09	9.03			0.830	0.780							0.885

		σ	$\delta\sigma$	$\Delta\sigma$
0.70%	0.35	0.66125		
0.50%	0.15	0.40920	0.27186	0.2
0.70%	0.25	0.76222		
0.30%	0.15	0.565	0.19731	0.2
D (mm)	200			
E (%)	165.42			
E (%)	228.17			

1.28	0.0001
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$$F_i = K_i M_i - D_i = \Delta S_i / \Delta t_i$$

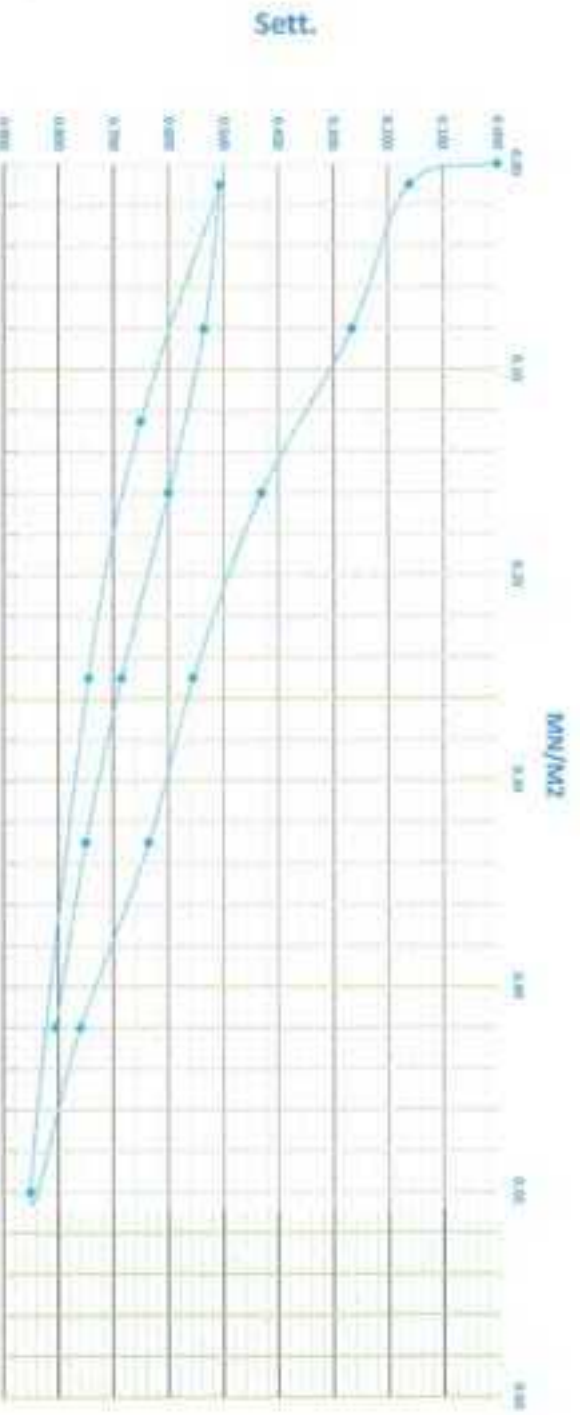
K. a information module

the
in local instruments

Abstract

is character of the plate, generally 0.50 m

For this calculation Δ_w and Δ_f are usually taken from the load span between 0.3 σ_{max} and 0.7 σ_{max}



Lab. Specialist

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Ahmed

Plate Load Test Results

Company Name

EL-Zohor

Location

536+000

To

536+300

Station

536+175

Test Date

5/7/2023

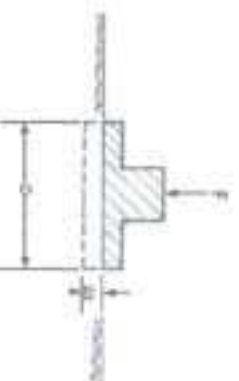
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE:-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

S = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.50$ m and $D = 0.75$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloading in 5 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Load	Stress	Thd 1	Thd 2	Thd 3	Soil 1	Soil 2	Soil 3	Avg
Stage No.	ton	kN	MPa	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	3.55	5.33		0.000	0.000		0.000
1.000	2.1	0.707	0.01	3.42	5.00		0.130	0.130		0.230
2.000	17.1	5.652	0.08	3.29	4.79		0.260	0.540		0.400
0.080	34.2	11.304	0.16	3.11	4.55		0.440	0.780		0.610
4.000	53.4	17.663	0.25	2.91	4.24		0.540	1.090		0.865
5.000	70.5	23.315	0.33	2.77	4.00		0.780	1.330		1.055
6.000	89.7	29.673	0.42	2.67	3.86		0.800	1.470		1.175
7.000	106.8	35.325	0.50	2.60	3.73		0.950	1.600		1.275
8.000	53.4	17.663	0.25	2.69	3.83		0.860	1.500		1.180
9.000	26.7	8.831	0.12	2.76	4.05		0.790	1.280		1.035
9.000	2.1	0.707	0.01	2.90	4.23		0.650	1.100		0.875
10.000	2.1	0.707	0.01	2.90	4.23		0.650	1.100		0.875
11.000	17.1	5.652	0.08	2.86	4.20		0.690	1.130		0.910
12.000	34.2	11.304	0.16	2.76	4.10		0.790	1.230		1.010
13.000	53.4	17.663	0.25	2.65	4.04		0.900	1.360		1.095
14.000	70.5	23.315	0.33	2.65	3.99		1.000	1.540		1.170
15.000	89.7	29.673	0.42	2.45	3.96		1.100	1.370		1.235

P (kN)	S (mm)	a	b
0.707	0.25	1.0875	0.50375
0.301	0.15	0.50375	0.2
0.707	0.25	1.10444	0.33944
0.301	0.15	0.945	0.2
D (mm)	300		
E_s	187.04		
Area (sq.m)	0.0706		

Factor	2.10		
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$E_s = 0.75 \cdot D \cdot \Delta S / \Delta s$	
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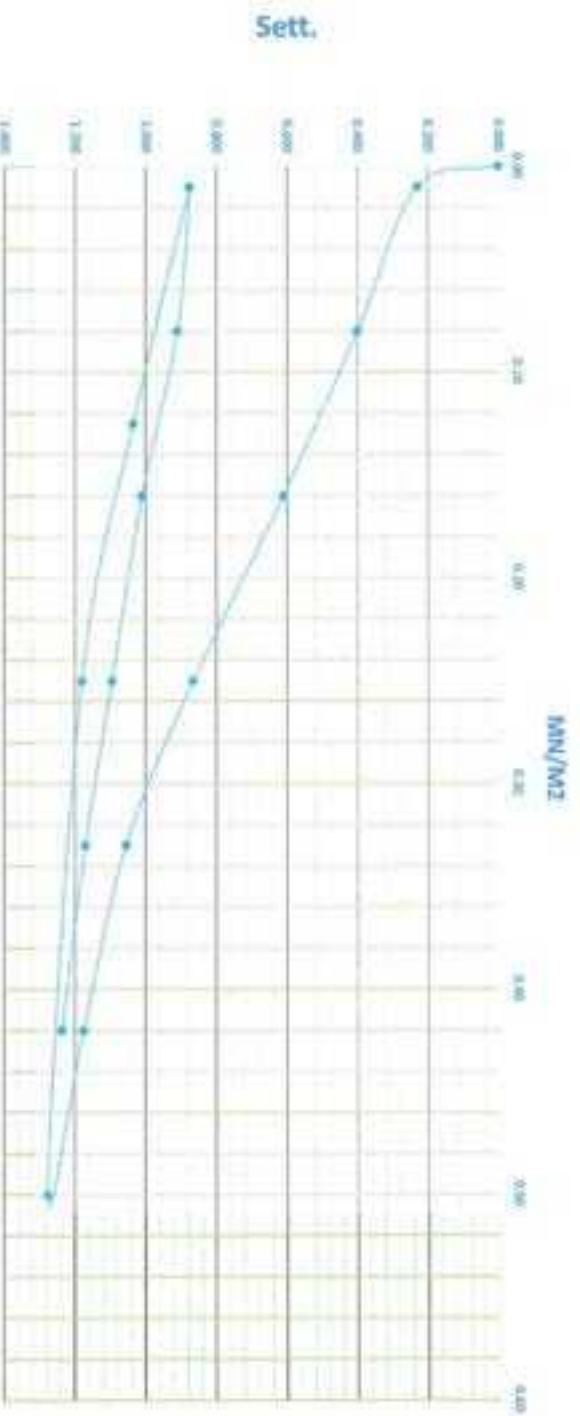
E_s = deformation modulus

ΔS = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 r_{max} and 0.7 r_{max} .



Lab. Supervisor

Name :

Sign :

[Signature]

Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Mohamed

Plate Load Test Results

Company Name

EL-Zohar

Location

536+000

To

536+300

Test Date

5/7/2023

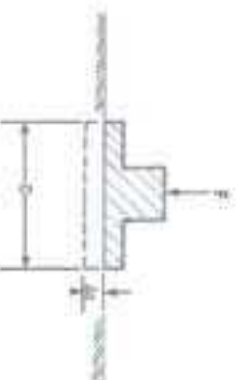
Layer level

SUB BALLAST(+90)

EQUIPMENT AND TEST PROCEDURE :-

The basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load

s = settlement

D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.782$ m are used

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable and (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloading in 5 steps. A loaded truck, an excavator or a roller usually serves as counterweight for the hydraulic jack.

Diameter = 300mm

Loading	Load	Load	Settle	Dist 1	Dist 2	Dist 3	Soil 1	Soil 2	Soil 3	Avg. Settle
Stage No.	Rate	kN	Settle12	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	11.40	10.18		0.000	0.000		0.000
1.000	2.1	0.707	0.01	11.20	10.06		0.200	0.120		0.160
2.000	17.1	5.652	0.00	10.96	9.97		0.540	0.210		0.375
0.000	34.2	11.304	0.16	10.73	9.65		0.670	0.530		0.600
4.000	53.4	17.663	0.25	10.48	9.35		0.920	0.830		0.875
5.000	70.5	23.115	0.33	10.32	9.14		1.080	1.040		1.060
6.000	89.7	29.673	0.42	10.19	8.87		1.210	1.310		1.260
7.000	106.8	35.325	0.50	10.08	8.61		1.320	1.570		1.445
8.000	133.4	41.663	0.55	10.14	8.74		1.260	1.440		1.350
9.000	26.7	8.831	0.12	10.30	8.98		1.100	1.200		1.150
9.000	2.1	0.707	0.01	10.47	9.18		0.930	1.000		0.965
10.000	2.1	0.707	0.01	10.47	9.18		0.930	1.000		0.965
11.000	17.1	5.652	0.06	10.44	9.15		0.960	1.030		0.995
12.000	34.2	11.304	0.16	10.35	9.04		1.010	1.140		1.075
13.000	53.4	17.663	0.25	10.24	8.89		1.160	1.290		1.215
14.000	70.5	23.115	0.33	10.17	8.78		1.220	1.400		1.315
15.000	89.7	29.673	0.42	10.12	8.67		1.280	1.510		1.395

σ_1	σ_3	s	Δs	Δs
0.7 σ_1	0.35	1.05012	0.52626	0.2
σ_1	0.15	0.57188		
0.3 σ_1	0.25	1.53178	0.38777	0.2
0.3 σ_3	0.15	1.025		
D (mm)	300			
E_s	85.51			
R_{90}	146.21			
Avg (N/mm ²)	88786			

W-0001	1.71		
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$E_s = 8.75 \cdot D \cdot \Delta s / \Delta s$	
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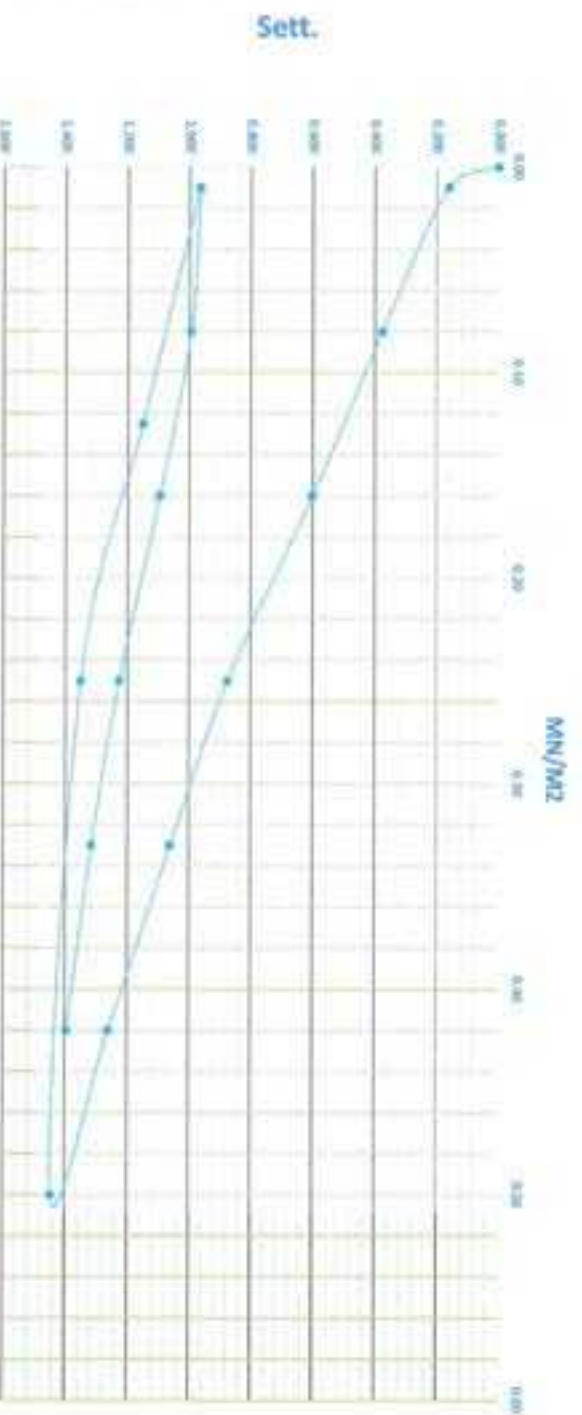
E_s = deformation modulus

Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

For this calculation δ_{cr} and δ_{cr} are usually taken from the load span between 0.3 r_{max} and 0.7 r_{max} .



Lab. Specialist

Name :

Sign :

[Signature]



Lab. Engineer

Name :

Sign :

[Signature]

Consultant Engineer

Name :

Sign :

Ahmed Mohamed
Ahmed Mohamed