(C1)

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy	mahmoud		19 – 6 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				K.P536	T R	O T	19	6	2023	10	50

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
	13:00

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
momenesmaced visualinspection is approved	levels Are Rejected Ahmed Ashraf mahmoud	momenesmaced compaction test No 20/6/2023 ~~Approved~~ 20/6/2023

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

* Designer
** Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهور)
من المحطة (536+000) إلي المحطة (536+140)

59,66+1,40=61,06

LAYER LEVEL	0.9

STATION	ACT. WIDTH	LEFT SIDE 7	LEFT SIDE 4	S.E.%	PGL DESIGN LEVEL	PGL FERMA LEVEL	PGL CL	S.E.%	RIGHT SIDE 4	RIGHT SIDE 7	ACT. WIDTH
536+000		59.08	59.20	-4%	59.36	58.46	1,70 59.36	-4%	59.20	59.08 1,98	
Act.											
Diff.											
536+010		59.11	59.23	-4%	59.39	58.49	1,67 59.39	-4%	59.23	59.11 1,95	
Act.											
Diff.											
536+020		59.13	59.25	-4%	59.41	58.51	1,65 59.41	-4%	59.25	59.13 1,93	
Act.											
Diff.											
536+030		59.16	59.28	-4%	59.44	58.54	1,62 59.44	-4%	59.28	59.16 1,90	
Act.											
Diff.											
536+040		59.19	59.31	-4%	59.47	58.57	1,60 59.47	-4%	59.31	59.19 1,87	
Act.											
Diff.											
536+050		59.21	59.33	-4%	59.49	58.59	1,58 59.49	-4%	59.33	59.21 1,85	
Act.											
Diff.											
536+060		59.24	59.36	-4%	59.52	58.62	1,55 59.52	-4%	59.36	59.24 1,82	
Act.											
Diff.											
536+070		59.27	59.39	-4%	59.55	58.65	1,52 59.55	-4%	59.39	59.27 1,79	
Act.											
Diff.											
536+080		59.29	59.41	-4%	59.57	58.67	1,50 59.57	-4%	59.41	59.29 1,77	
Act.											
Diff.											
536+090		59.32	59.44	-4%	59.60	58.70	1,47 59.60	-4%	59.44	59.32 1,74	
Act.											
Diff.											
536+100		59.35	59.47	-4%	59.63	58.73	1,44 59.63	-4%	59.47	59.35 1,71	
Act.											
Diff.											
536+110		59.37	59.49	-4%	59.65	58.75	59.65 1,41	-4%	59.49	59.37 1,69	
Act.											
Diff.											
536+120		59.40	59.52	-4%	59.68	58.78	59.68 1,38	-4%	59.52	59.40 1,66	
Act.											
Diff.											
536+130		59.43	59.55	-4%	59.71	58.81	59.71 1,35	-4%	59.55	59.43 1,63	
Act.											
Diff.											
536+140		59.45	59.57	-4%	59.73	58.83	59.73 1,33	-4%	59.57	59.45 1,61	
Act.											
Diff.											

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

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 Ashraf

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	53.48	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	5.14	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Empankement		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				
Lower Empankment		-5.5													
		-6													
		-6.5													
		-7													

MS Approved
According to Des. Table

18.9.2022

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

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

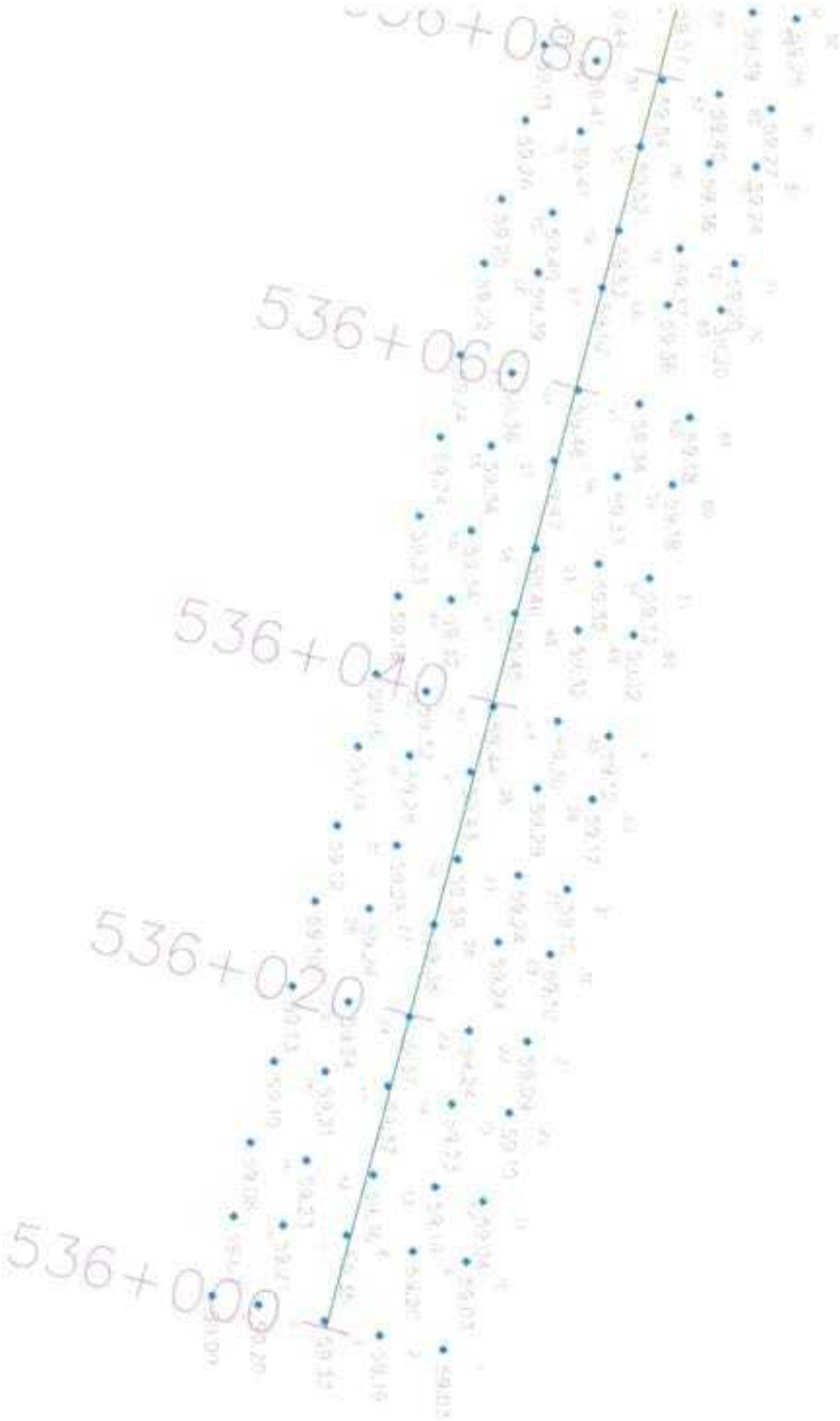
POINT	NORTH	EAST	ELEV
61	943758.816	290939.851	59.175
62	943755.726	290939.007	59.339
63	943751.959	290938.124	59.484
64	943747.869	290937.05	59.361
65	943744.687	290935.901	59.237
66	943746.19	290930.242	59.218
67	943749.527	290930.831	59.393
68	943753.468	290931.797	59.518
69	943757.525	290932.884	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

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

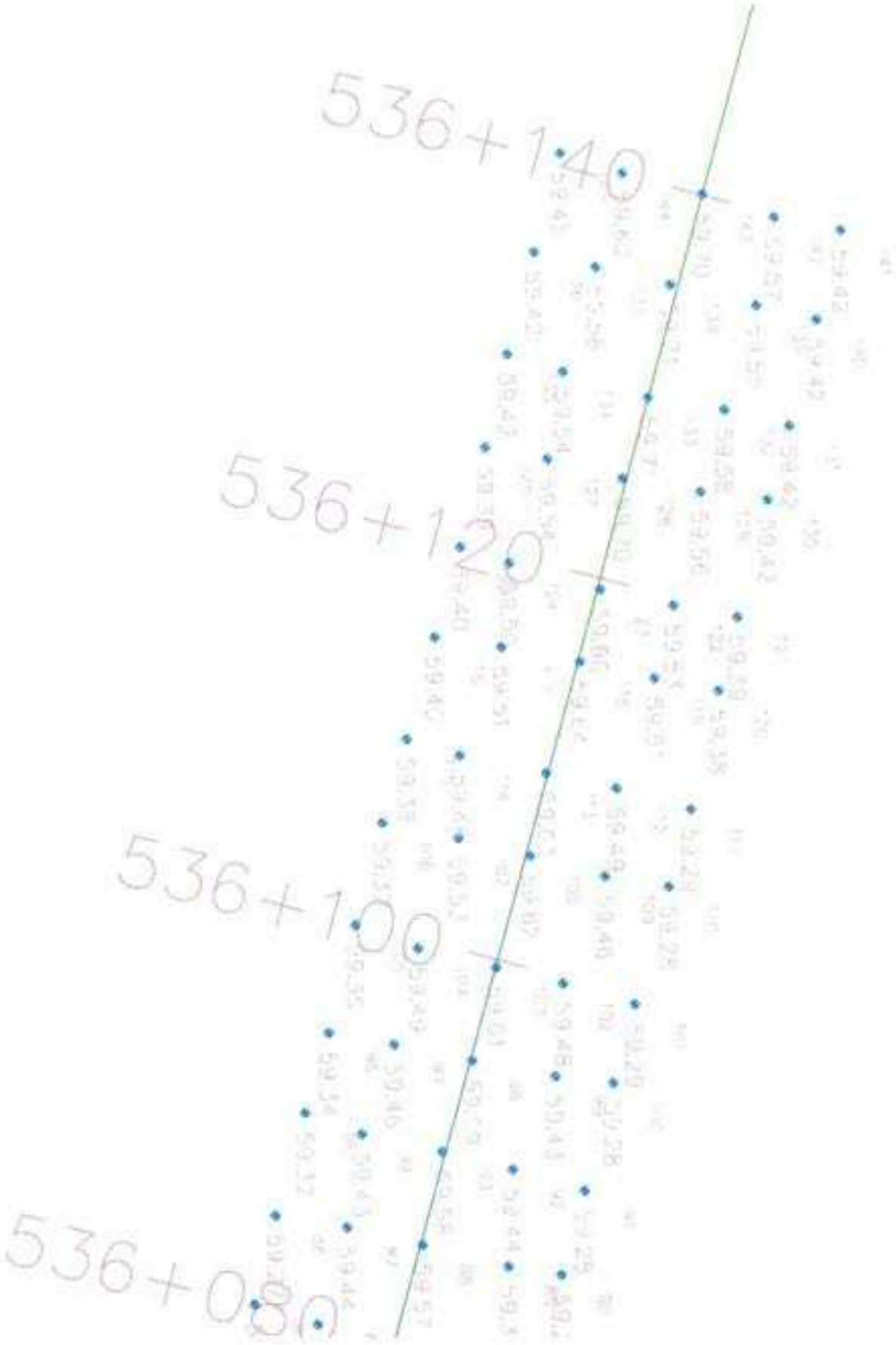
POINT	NORTH	EAST	ELEV
121	943774.44	290882.029	59.386
122	943771.2	290881.438	59.529
123	943767.489	290880.627	59.659
124	943762.889	290879.29	59.504
125	943760.423	290878.475	59.398
126	943761.704	290873.435	59.392
127	943764.854	290874.033	59.545
128	943768.658	290875.028	59.703
129	943772.594	290875.719	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

Ahmed Ashwag

mahmoud



Mohamad



mahmoud

Electric Express Train - HSR From El Ain El Sokhna 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	3/8/2023	code	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZI-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials												table classify
				SAMPLE WEIGHT (g)		33249.00		gm				
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS				soil classify
Mass retained (g)	0.0	0.0	1035.9	8888.0	4513.0	1433.0	3443.0					
Cumulative Retained (g)	0.0	0.0	1035.9	9704.9	14217.0	15650.0	19093.0			PRO		2.206
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.4			WC		5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6			CBR		94.7%

B-soft 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(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	96.9	70.8	57.2	52.9	42.6	31.2	42.6	3.4
		100	97 - 90	75 - 70		60 - 15		35 - 0		0 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 502+177

operating Lab	Mansour Lab

Proctor Test

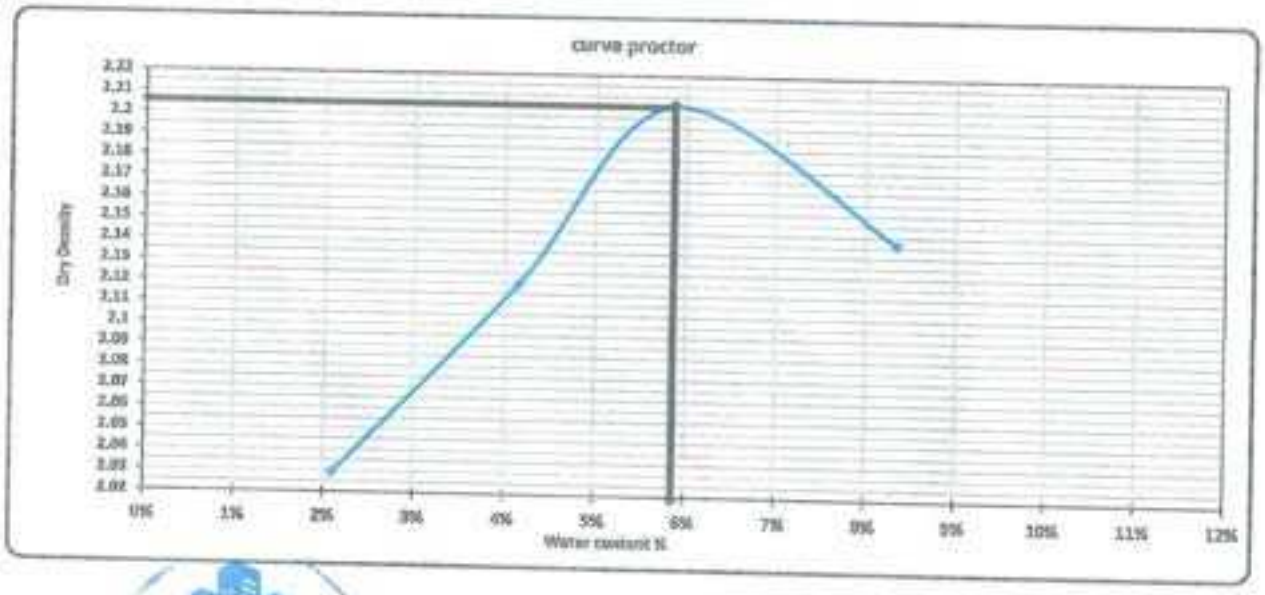
TESTING DATE:	4/6/2023	code		
LOCATION	K.P 536+500 (5000 m3)	ZH-BP-1	Zone	536+000 TO 537+000
NAME COMPANY	Elsohor			

Weight of empty mold :	5759.0
Mold Volume:	2134.0

MAX Dry Density	2.266
Water content %	5.9

trial 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	2.072	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.05	56.5	55.65	52.42	56.96	56.74	56.74	57.02		
Wt. Of wet soil & tare	198.8	198.3	198.4	198.7	198.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	195.5	195.5	192.9	192.7	191.3	191	188.8	189.3		
Wt. Of water	3.1	2.8	5.5	6.0	7.7	8.1	11.0	11.0		
Wt. Of dry soil	138.7	141.0	137.3	140.3	134.3	134.5	132.0	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.266		2.041			



Contractor

Consultant

KK	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5-6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	ZH-BP-1			
Name of Company	Cleaner				

-: Test Results

Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2100
Mold WT. (gm)	8159
Mold WT. + Wet WT. (gm)	12760
Wet WT. (gm)	4601
Wet Density (g/cm^3)	2.141
Dry Density (g/cm^3)	2.200
Proctor Density (g/cm^3)	2.356
Compaction %	100

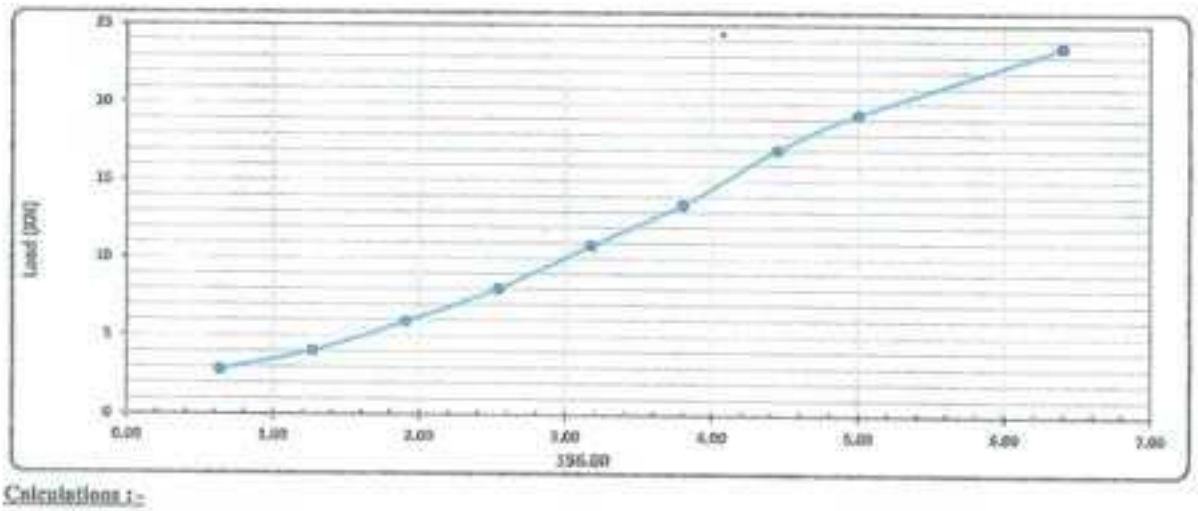
4700

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare WT. (gm)	55.03
Tare WT. +Wet WT. (gm)	150.1
Tare WT. +Dry WT. (gm)	144.8
1000	5.3
Dry WT. (gm)	89.8
Moisture Content %	5.90

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (kg)	208.00	412.00	602.00	810.00	1105.00	1375.00	1755.00	1970.00	2610.00
Load (KN)	2.0	4.0	5.9	8.0	10.8	13.5	17.0	19.3	25.6



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Kn)	(%)	(%)	(%)	% 98 نسبة الدك
2.50	8.93	13.4	66.7%	100	98	99.1%
5.00	19.24	20.0	96.4%			96.7%

Lab. Engineer	Consultant Engineer
Name :	Name :
Sign :	Sign :

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Specification	Test Requirment	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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY	mahmoud		
QA/QC *	Abdallah SAMY	Abdallah SAMY		
GARB**				
Employers Representative				

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company			KK CONSULT.		
Issued by Contractor	Name	Sign		Date			COD		
	Eng \ Mahmoud Elkhlawy	mahmoud		18-5-2023			ZH 2 P.G		
Received by ER			MIR	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	Work Activity		
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					
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhlawy**	mahmoud		
QA/QC *	Abdallah SAMB	Abdallah		
GARB**				

Electric Express Train - HSR

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	Zh-BP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohar		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)	1329	gm	
Weight of dry sample after heating (A)	1978	gm	40000

Results:-

Bulk specific gravity = A / (B-C)	2.524	2700	4810	6130
Apparent specific gravity = A /(A-C)	2.645			
Aeorbtion = (B-A)/A	1.822	%		

Los Angles 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 :	

(٢٨)

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy	Mahmoud		8 – 7 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				K.PS36	T R	O T	8	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 Balast (+ 0.9)	From St (536+600) to (536+680)

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
M.Attia visual inspection Accepted 8/7/2023	Levells is approved	M.Attia Compaction Accepted 9/7/2023

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng : Mahmoud Elkhlhwy	mahmoud				
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 (الزهور)
من المحطة (536+600) إلي المحطة (536+680)

59.74
+2.56
62.30

STATION	LEFT SIDE ACT. WIDTH	LEFT SIDE 7	LEFT SIDE 4	LEFT SIDE S.E.%	PGL DESIGN LEVEL	PGL FERMA LEVEL	PGL CL	RIGHT SIDE S.E.%	RIGHT SIDE 4	RIGHT SIDE 7	RIGHT SIDE ACT. WIDTH
					LAYER LEVEL		0.9				
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.		✓	✓				+2		✓	✓	
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.		✓	+1				-1		-1	+1	
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.		✓	✓				+2		✓	-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				+1		✓	✓	
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.		✓	✓				+1		✓	✓	
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				+1		-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	+2				+1		✓	-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	+3				+1		+4	+2	

mahmoud

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	60.85	60.89	60.95	61.01	61.07	61.13	61.19	61.25
		FERMA LEVEL	59.61	59.87	59.90	59.99	60.06	60.11	60.17	60.23	60.29	60.35
		CUT LEVEL	55.69	55.93	56.07	56.42	56.45	56.38	56.19	56.58	57.32	57.63
		DIFF (FERMA - CUT)	3.92	3.94	3.83	3.57	3.61	3.73	4.01	3.65	2.97	2.72
Upper Empankment	0		60.01	59.87	59.93	59.99	60.05	60.11	60.17	60.23	60.29	60.35
	-0.25		59.96	59.91	59.86	59.74	59.80	59.88	59.92	59.98	60.04	60.10
	-0.5		59.91	59.97	59.47	59.49	59.55	59.61	59.67	59.73	59.79	59.85
	-0.75		59.00	59.12	59.16	59.24	59.30	59.36	59.42	59.48	59.54	59.60
	-1		58.81	58.87	58.93	58.99	59.05	59.11	59.17	59.23	59.29	59.35
	-1.25		58.56	58.62	58.68	58.74	58.80	58.86	58.92	58.98	59.04	59.10
	-1.5		58.31	58.37	58.43	58.49	58.55	58.61	58.67	58.73	58.79	58.85
	-1.75		58.06	58.12	58.18	58.24	58.30	58.36	58.42	58.48	58.54	58.60
	-2		57.81	57.87	57.93	57.99	58.05	58.11	58.17	58.23	58.29	58.35
	-2.5		57.31	57.37	57.43	57.49	57.55	57.61	57.67	57.73	[illegible]	[illegible]
	-3		56.81	56.87	56.93	56.99	57.05	57.11	57.17	57.23		
	-3.5		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	-4								58.17			
	-4.5											
	-5											

Middle Empankment

M S APPROVED
According to Design Profile
Rev. 08

4/6/2022

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

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

mahmoud

536+60
536+60
536+60
536+60
536+60

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

mahmoud

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

mahmoud

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

Ahmed

Mahmoud

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.			
Issued by Contractor	Name	Sign		Date				COD			
	Eng \ Mahmoud Elkhlawy	mahmoud		18-5-2023				ZH 2 P.G			
Received by ER			MIR	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	Work Activity		
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			
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhlawy**	mahmoud		
QA/QC *	Abdelrahman	Abdelrahman		
GARB**				

MATERIAL APPROVAL REQUEST

Contractor Company	EL ZHOOR COMPANY			Designer Company			KK					
Issued by Contractor	Name	Sign		Date			COD					
	ENG : MAHMOUD ELKHLAWY	mahmoud		5– 6 – 2023			ZH-1-sb					
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	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 is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY	mahmoud		
QA/QC *	Abdallah SAMY	Abdallah SAMY		
GARB**				
Employers Representative				

	Electric Express Train - HSR From El Ain El Sokhna 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	CODE	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZH-SP-1	Material	Sub-Ballast	
NAME COMPAKY	Elzohor				

1-visual inspection test

2-Gradient 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	9.0	1035.0	8659.0	4512.0	1433.0	3443.0			
Cumulative Retained (g)	0.0	9.0	1035.0	9794.0	14217.0	15650.0	19093.0		PRO	2.260
Cumulative Retained %	0.0	0.0	5.1	29.2	42.8	47.1	57.4		WC	5.9
Cumulative Passing %	100.0	100.0	94.9	70.8	57.2	52.9	42.6		CBR	94.7%

B-soft 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(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	94.9	70.8	57.2	52.9	42.6	31.2	12.6	5.4
		100	97 - 50	75 - 70		60 - 15		35 - 0		0 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 568+177

operating Lab	Mansour Lab

Proctor Test

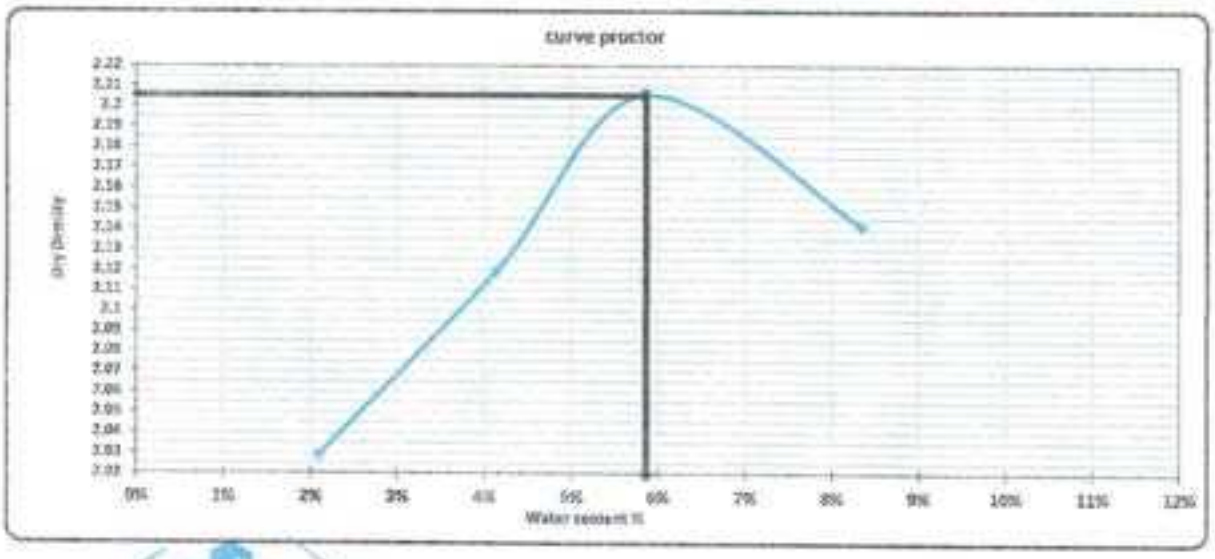
TESTING DATE:	4/6/2023	code	Zone	536+000 TO 537+000
LOCATION	K.P 536+000 (5000 m3)	ZH-SP-1		
NAME COMPANY	Elrohor			

Weight of empty mold :	5759.0
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	10470.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.071	2.208	2.336	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.65	54.8	55.65	52.42	56.96	56.74	56.74	57.92		
Wt. Of wet soil & tare	195.6	198.3	195.6	196.7	196.9	196.3	198.7	200.3		
Wt. Of dry soil & tare	195.8	195.5	192.9	192.7	191.3	191	188.8	189.3		
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	141.0	137.2	140.3	134.3	134.5	132.0	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.206		2.141			



Contractor

Consultant

	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	ZS-SP-1			
Name of Company	Elsolar				

- : Test Results

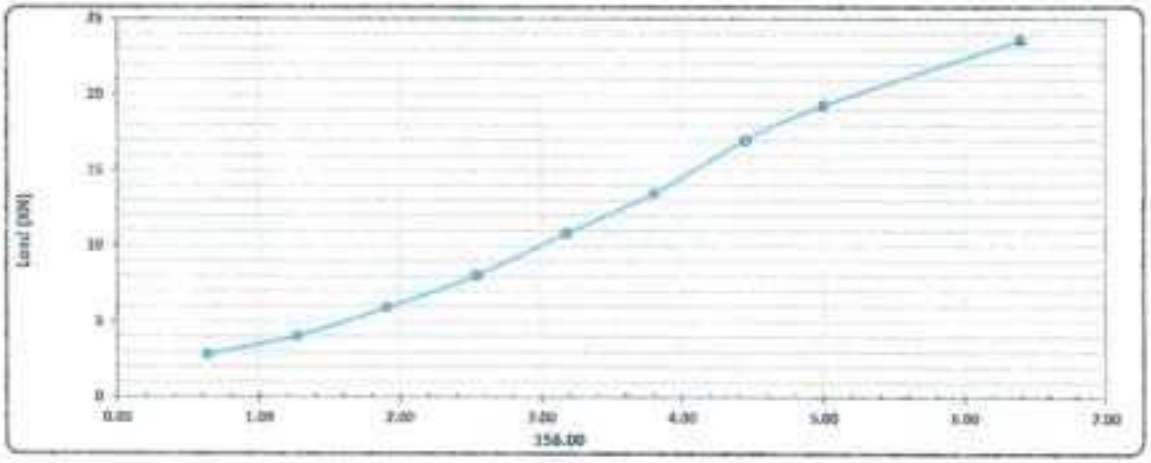
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2196
Mold W.T. (gm)	3219
Mold W.T. + Wet W.T. (gm)	12745
Wet W.T. (gm)	9621
Wet Density (g/cm^3)	2.141
Dry Density (g/cm^3)	2.200
Proctor Density (g/cm^3)	2.201
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	12
Tare W.T. (gm)	85.01
Tare WT. +Wet W.T. (gm)	196.3
Tare W.T. +Dry W.T. (gm)	144.8
8000	8.3
Dry W.T. (gm)	89.0
Moisture Content %	9.00

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	116.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.63	1.27	1.90	2.54	3.18	3.80	4.43	5.08	6.35
Load Reading (kg)	288.00	612.00	882.00	[illegible]	1180.00	1371.00	1739.00	[illegible]	2432.00
Load (KN)	2.8	6.0	8.9	[illegible]	10.0	13.5	17.0	[illegible]	23.6



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% 98 [illegible]
2.54	[illegible]	13.4	[illegible]	100	98	99.1%
5.00	15.51	20.0	[illegible]			91.7%

Lab. Engineer	Consultant Engineer
Name :	Name :
Sign :	Sign :

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From YOKA To MARSA MATROUH

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)		Material	Sub-Ballast	
NAME COMPANY	Elmoher		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)	1220	gm
Weight of dry sample after heating (A)	1976	gm

Results:-

Bulk specific gravity = A / (B-C)	2.574	KN/M
Apparent specific gravity = A /(A-C)	2.640	
Absorbtion = (B-A)/A	1.822	%

Los Anglos 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 :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	From Station 504+000 To Station 568+177	

ACTIVITY : Sand cone test	laboratory results	COD	Z H (S.B 1)

Density and Unite 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 :	536+600 TO 536+680	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
2.20	5.5	100%	1.48

Compaction Testing Results & Calculations

STATION	536+610	536+620	536+630	536+640	536+650	536+660	536+670	536+680		
Hole No.	1	2	3	4	5	6	7	8		
Wt. of Sand before Test ,gm	9430	9530	9580	9670	9670	9715	9815	9905		
Wt. of Sand After Test ,gm	5570	5621	5660	5750	5720	5790	5860	5930		
Wt. of Sand in Cone + hole ,gm	3860	3897	3920	3940	3950	3925	3960	3972		
Wt. of Sand in Cone	1140	1140	1140	1140	1140	1140	1140	1140		
Wt. of Sand at hole ,gm	2720	2757	2780	2800	2810	2785	2820	2832		
Volume of the hole, Cm3	1838	1870	1878	1882	1899	1882	1905	1914		
Wt. of Soil from Hole ,gm	4378	4388	4400	4411	4421	4422	4444	4455		
Bulk Density of Soil, Gm/cm3	2.382	2.348	2.342	2.333	2.329	2.356	2.332	2.328		
Moisture Content , %	5.3	5.5	5.3	5.8	5.8	5.8	5.5	5.5		
Dry Density, gm/cm3	2.237	2.204	2.199	2.204	2.201	2.227	2.211	2.207		
Compaction, (%)	101.7%	100.2%	100.0%	100.2%	100.1%	101.2%	100.5%	100.3%		

Acceptance Criteria	Comply		Not Comply		

CONSULTANT COMMENTS	

Site engineer :-

Name :- MAHMOUD ELKHLAWY

Signature :- Mahmoud

Consultant Materials Engineer :-

Name :- M. Atta

Signature :- M. Atta

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

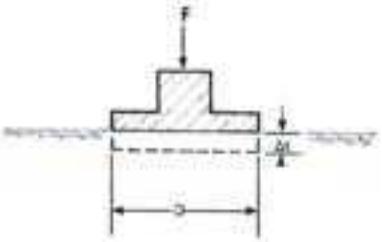
Company Name	الزهور		
Location	536+600	To	536+680
Taste Date	29-7-2023		
Layer level	+(.90)	**Sub Ballast**	

Station	536+600

EQUIPMENT AND TEST PROCEDURE : -

The basis of the given equation is Boussiuesq'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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. 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	0.240		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	23.315	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	23.315	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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.9325	0.32125	0.2
$0.3\,\sigma_1$	0.15	0.61125		
$0.7\sigma_2$	0.35	1.14056	0.11055	0.2
$0.3\sigma_2$	0.15	1.03001		
D (mm)	300			
Ev_1	140.08			
Ev_2	407.07			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.91		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

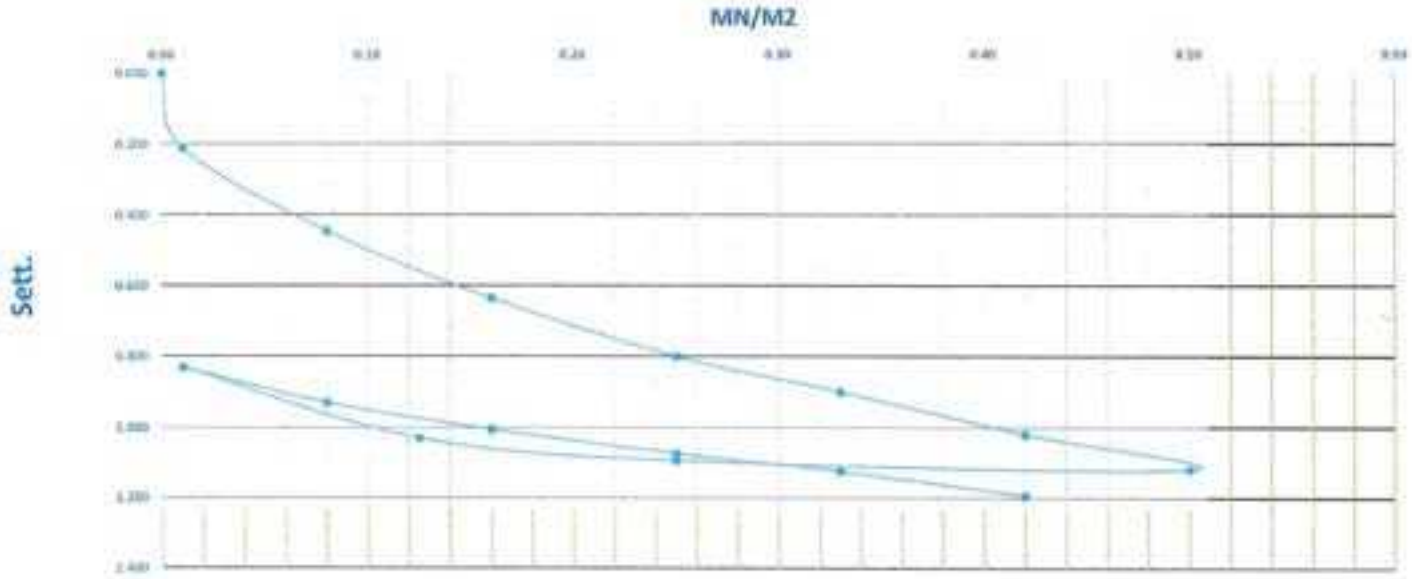
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 r

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hussein
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

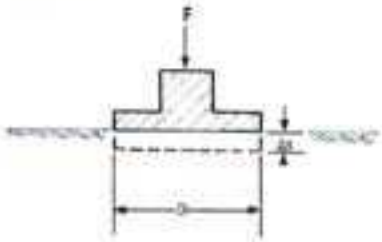
Company Name	الزهور		
Location	536+600	To	536+680
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

Station	536+635

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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. mm
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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	1.17938	0.36375	0.2
$0.3\,\sigma_1$	0.15	0.81563		
$0.7\sigma_2$	0.35	1.47444	0.10443	0.2
$0.3\sigma_2$	0.15	1.37001		
D (mm)	300			
Ev_1	123.71			
Ev_2	430.91			
Area (Sq.m)	0.07065			

Ev2/Ev1	3.48		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

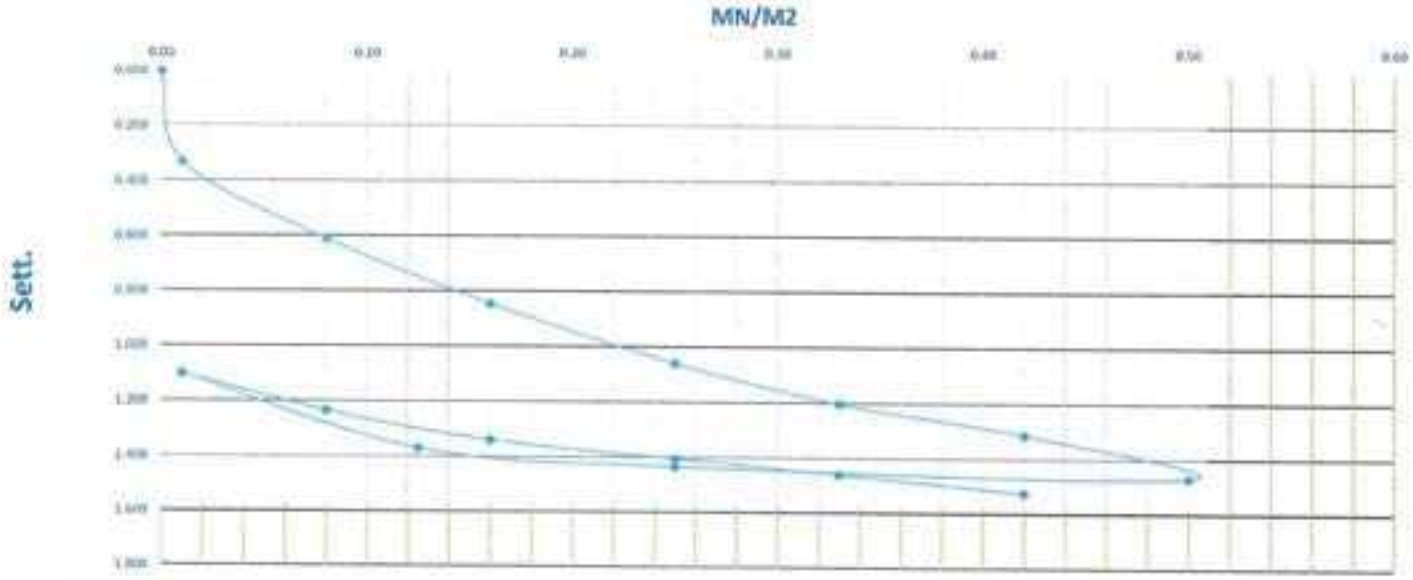
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 29-7-2023

Owner Consultant | Contractor Consultant | Contractor | Owner

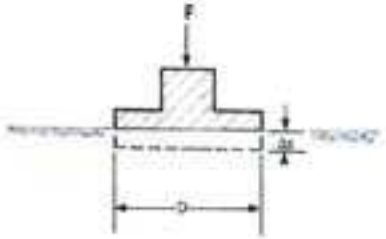
Plate Load Test Results

Company Name	الزهور				
Location	536+600	To	536+680	Station	536+660
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.



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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. mm
0.000	0.0	0.000	0.00	11.69	7.26		0.000	0.000		0.000
1.000	2.4	0.707	0.01	11.54	7.09		0.150	0.170		0.160
2.000	18.8	5.652	0.08	11.16	6.80		0.530	0.460		0.495
0.080	37.7	11.304	0.16	11.02	6.53		0.670	0.730		0.700
4.000	58.9	17.663	0.25	10.89	6.30		0.800	0.960		0.880
5.000	77.7	23.315	0.33	10.77	6.10		0.920	1.160		1.040
6.000	98.9	29.673	0.42	10.64	5.88		1.050	1.380		1.215
7.000	117.8	35.325	0.50	10.40	5.51		1.290	1.750		1.520
8.000	58.9	17.663	0.25	10.50	5.56		1.190	1.700		1.445
9.000	29.4	8.831	0.12	10.70	5.70		0.990	1.560		1.275
9.000	2.4	0.707	0.01	10.93	5.95		0.760	1.310		1.035
10.000	2.4	0.707	0.01	10.93	5.95		0.760	1.310		1.035
11.000	18.8	5.652	0.08	10.86	5.80		0.830	1.460		1.145
12.000	37.7	11.304	0.16	10.76	5.66		0.930	1.600		1.265
13.000	58.9	17.663	0.25	10.69	5.56		1.000	1.700		1.350
14.000	77.7	23.315	0.33	10.66	5.50		1.030	1.760		1.395
15.000	98.9	29.673	0.42	10.63	5.45		1.060	1.810		1.435

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.94812	0.27375	0.2
$0.3\,\sigma_1$	0.15	0.67438		
$0.7\sigma_2$	0.35	1.40389	0.14888	0.2
$0.3\sigma_2$	0.15	1.25501		
D (mm)	300			
Ev_1	164.38			
Ev_2	302.26			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.84		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

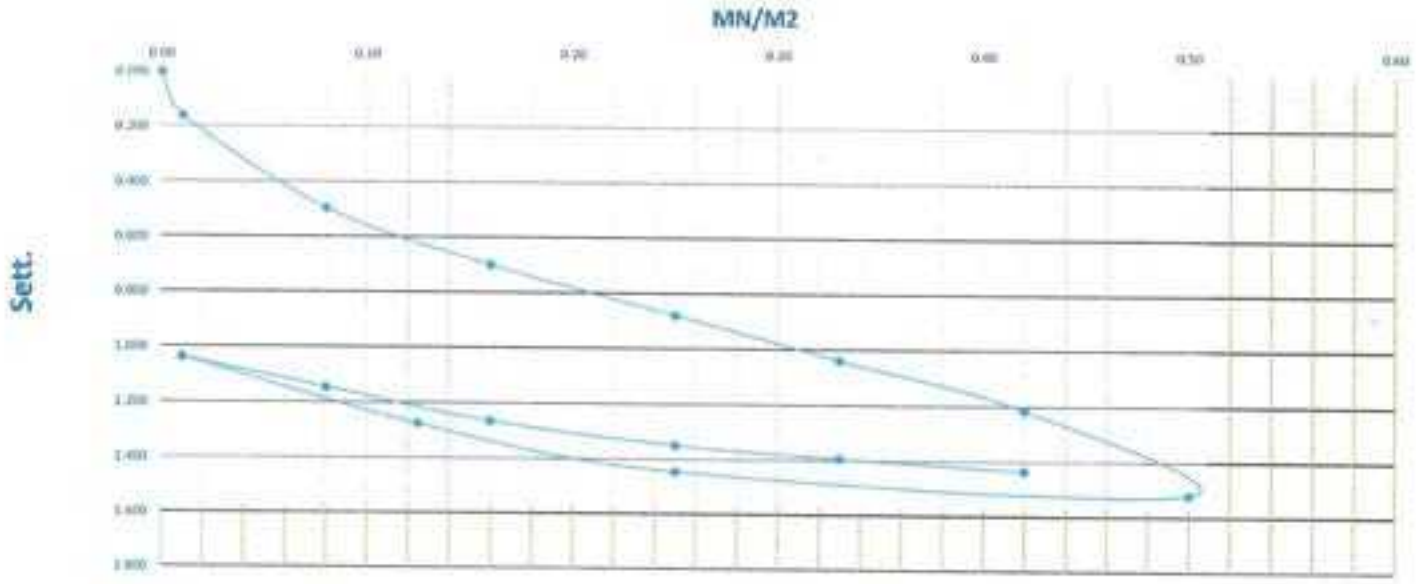
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hossa
Sign :	Sign :	Sign :

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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.					
Issued by Contractor	Name	Sign		Date			Time					
	Eng : Mahmoud Elkhlhwy	mahmoud		8/7 8 – 7 - 2023								
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM	
				K.P536	T R	O T	8	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 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	ITP Reference	MS Reference	

Civil	Survey	Material
M. Attia visual inspection Accepted 8/7/2023	Levels is Approved	M. Attia Compaction Accepted 9/7

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

* Designer

** Alignment: Bridges: Culvert

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	55.99	56.93	56.07	56.42	56.45	56.38	56.16	56.56	57.33	57.63
		DIFF (FERMA - CUT)	3.93	3.90	3.86	3.57	3.60	3.73	4.01	3.67	2.97	2.72
Upper Embankment		0	59.91	59.87	59.93	59.99	60.05	60.11	60.17	60.23	60.29	60.35
		-0.25	59.56	59.62	59.68	59.74	59.80	59.86	59.92	59.98	60.04	60.10
		-0.5	59.31	59.37	59.43	59.49	59.55	59.61	59.67	59.73	59.79	59.85
		-0.75	59.06	59.12	59.18	59.24	59.30	59.36	59.42	59.48	59.54	59.60
		-1	58.81	58.87	58.93	58.99	59.05	59.11	59.17	59.23	59.29	59.35
		-1.25	58.56	58.62	58.68	58.74	58.80	58.86	58.92	58.98	59.04	59.10
		-1.5	58.31	58.37	58.43	58.49	58.55	58.61	58.67	58.73	58.79	58.85
		-1.75	58.06	58.12	58.18	58.24	58.30	58.36	58.42	58.48	58.54	58.60
Middle Embankment		-2	57.81	57.87	57.93	57.99	58.05	58.11	58.17	58.23	58.29	58.35
		-2.5	57.31	57.37	57.43	57.49	57.55	57.61	57.67	57.73	[illegible]	[illegible]
		-3	56.81	56.87	56.93	56.99	57.05	57.11	57.17	57.23		
		-3.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
		-4							56.17			
		-4.5										
		-5										

MS Approved According to Design Profile Rev. 08

4/6/2020

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

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهور)
من المحطة (536+500) إلي المحطة (536+600)

59.74 + 2.56 = 62.30 م.ر.م

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.م. خالد خليل

					LAYER LEVEL		0.9					
STATION	ACT. WIDTH	LEFT SIDE 7	LEFT SIDE 4	S.E.%	PGL DESIGN LEVEL	PGL FERMA LEVEL	PGL CL	S.E.%	RIGHT SIDE 4	RIGHT SIDE 7	ACT. WIDTH
536+500		60.43	60.55			59.81	1.59		60.55	60.43	
Act.		1.87	1.75	-4%	60.71		60.71	-4%	1.75	1.87	
Diff.		-1	✓				-1		✓	+1	
536+510		60.46	60.58			59.84	1.56		60.58	60.46	
Act.		1.84	1.72	-4%	60.74		60.74	-4%	1.72	1.84	
Diff.		+2	✓				✓		✓	✓	
536+520	✓	60.49	60.61			59.87	1.53		60.61	60.49	
Act.		1.81	1.69	-4%	60.77		60.77	-4%	1.69	1.81	
Diff.		+1	-1				+3		+1	+1	
536+530		60.52	60.64			59.90	1.50		60.64	60.52	
Act.		1.78	1.66	-4%	60.80		60.80	-4%	1.66	1.78	
Diff.		+2	+1				+2		+1	✓	
536+540		60.55	60.67			59.93	1.47		60.67	60.55	
Act.		1.75	1.63	-4%	60.83		60.83	-4%	1.63	1.75	
Diff.		+2	+1				+2		✓	-1	
536+550		60.58	60.70			59.96	1.44		60.70	60.58	
Act.		1.72	1.60	-4%	60.86		60.86	-4%	1.60	1.72	
Diff.		+1	✓				+3		+2	✓	
536+560		60.61	60.73			59.99	1.41		60.73	60.61	
Act.		1.69	1.57	-4%	60.89		60.89	-4%	1.57	1.69	
Diff.		✓	+1				+1		+2	+1	
536+570		60.64	60.76			60.02	1.38		60.76	60.64	
Act.		1.66	1.54	-4%	60.92		60.92	-4%	1.54	1.66	
Diff.		✓	+1				+1		✓	+1	
536+580		60.67	60.79			60.05	1.35		60.79	60.67	
Act.		1.63	1.51	-4%	60.95		60.95	-4%	1.51	1.63	
Diff.		+1	✓				✓		✓	-1	
536+590		60.70	60.82			60.08	1.32		60.82	60.70	✓
Act.		1.60	1.48	-4%	60.98		60.98	-4%	1.48	1.60	
Diff.		✓	✓				✓		+1	+2	
536+600		60.73	60.85			60.11	1.29		60.85	60.73	
Act.		1.57	1.45	-4%	61.01		61.01	-4%	1.45	1.57	
Diff.											

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

mohamad

536+560
536+520
536+480
536+560
536+560
536+600

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

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

POINT	NOTH	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

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.				
Issued by Contractor	Name	Sign		Date				COD				
	Eng \ Mahmoud Elkhiawy	mahmoud		18-5-2023				ZH 2 P.G				
Received by ER			MIR	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	Work Activity		
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			
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhiawy**	mahmoud		
QA/QC *	Abdallah SAMS	Abdallah SAMS		
GARB**				

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY	mahmoud		
QA/QC *	Abdallah SAYY	Abdallah SAYY		
GARB**				
Employers Representative				

Electric Express Train - HSR From El Ain El Sokhna 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	code	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZH-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient 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	8669.0	4513.0	1433.0	3443.0			
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	19093.0		PRO	2.206
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.4		WC	5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6		CBR	94.7%

B-soft 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(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	96.9	70.8	57.2	52.9	42.6	31.2	42.6	5.4
		100	97 - 90	75 - 70		60 - 15		35 - 0		0 - 7

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

Contractor

Consultant

Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 565+177	

operating Lab	Mansour Lab

Proctor Test

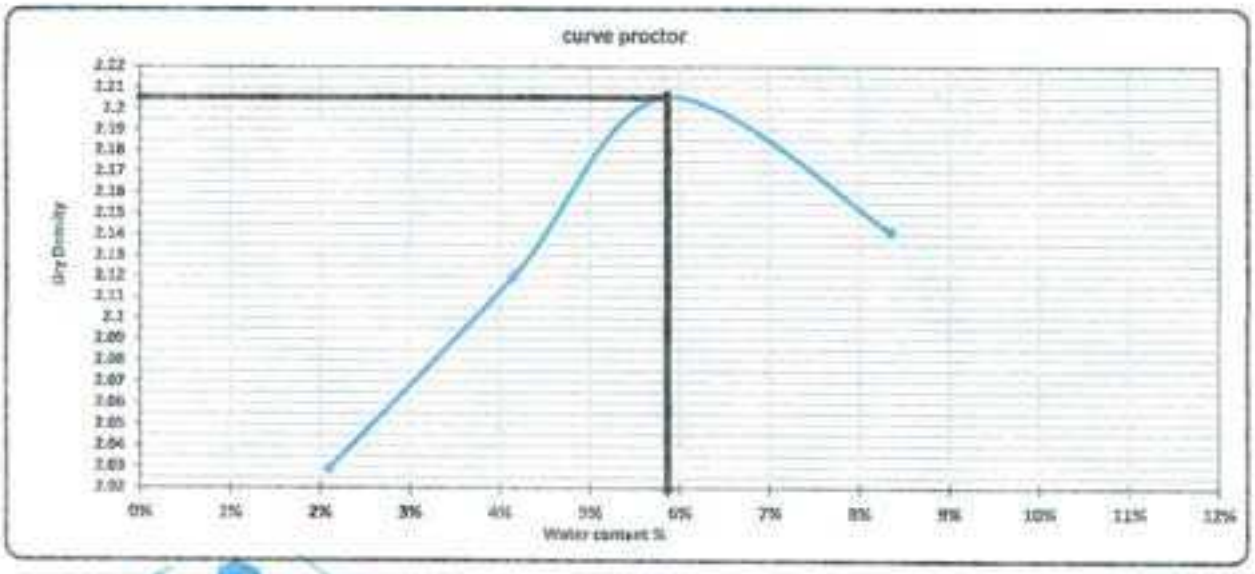
TESTING DATE:	4/6/2023	code		
LOCATION	K.P 536+500 (5000 m3)	ZH-SP-1	Zone	536+000 TO 537+000
NAME COMPANY	Elzohar			

Weight of empty mold :	5759.0
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	10470.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.072	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.35	54.5	55.65	52.42	56.96	56.74	56.74	57.92		
Wt. Of wet soil & tare	198.6	198.3	198.4	196.7	198.9	199.3	199.7	200.1		
Wt. Of dry soil & tare	195.5	195.5	192.9	192.7	191.3	191	188.8	189.3		
Wt. Of water	3.1	2.8	5.5	6.0	7.7	8.1	11.0	11.8		
Wt. Of dry soil	139.7	141.0	137.3	140.3	134.3	134.5	132.0	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.206		2.141			



Contractor

Consultant

KK	**Electric Express Train - HSR**	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	KP 536+500 (5000 m3)	DI-BP-1			
Name of Company	Elrahar				

- : Test Results

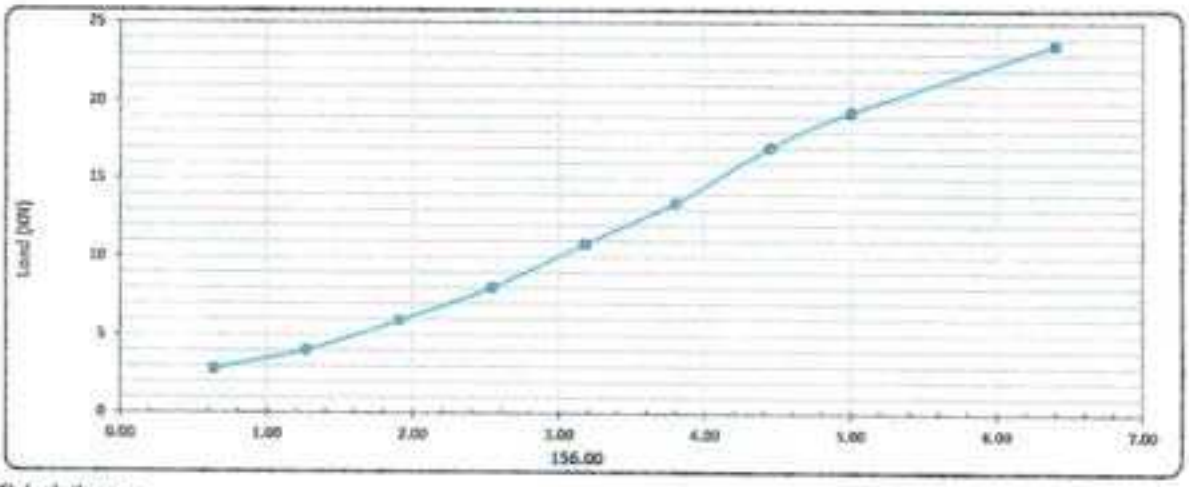
Compaction % for Mold	
Mold No.	8
Mold Vol. (cm^3)	2150
Mold WT. (gm)	5119
Mold WT. + Wet WT. (gm)	12740
Wet WT. (gm)	4621
Wet Density (g/cm^3)	2.151
Dry Density (g/cm^3)	2.200
Proctor Density (g/cm^3)	2.206
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare WT. (gm)	55.61
Tare WT. +Wet WT. (gm)	156.1
Tare WT. +Dry WT. (gm)	144.8
[illegible]	6.3
Dry WT. (gm)	89.0
Moisture Content %	5.90

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.64	1.27	1.90	2.54	3.18	3.80	4.43	5.00	6.40
Load Reading (kg)	288.00	412.00	602.00	[illegible]	1101.60	1371.00	1735.00	[illegible]	2431.00
Load (KN)	2.8	4.0	5.9	[illegible]	10.8	13.5	17.0	[illegible]	23.8



Calculations : -

Penetration	Load	Standard Load	CBR	Max Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% [illegible]
2.50	[illegible]	13.4	[illegible]	100	98	99.1%
5.00	[illegible]	20.0	94.2%			94.7%

Lab. Engineer
Name :
Sign :

Consultant Engineer
Name :
Sign :

Electric Express Train - NSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FDKA To MARSA MATROUH From Station 504+000 To Station 560+177	

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	254-80-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor		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

40000

Results:-

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

4950 6130

Los Anglos 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 :	Abdelkader Saad
Sign :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	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 :	EL-ZHOUR COMPANY	**Layer level :**	**Sub Ballast(0.9)**
Description:	**Compaction test**	**Layer Thickness :**	**0.2 m**
Station represented :	**536+500 TO 536+600**	**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
2.20	5.9	100%	1.48

Compaction Testing Results & Calculations

STATION	536+510	536+520	536+530	536+540	536+550	536+560	536+570	536+580	536+590	536+600
Hole No.	1	2	3	4	5	6	7	8	9	10
WT, of Sand before Test ,gm	9420	9525	9580	9670	9670	9715	9820	9902	9980	10020
WT, of Sand After Test ,gm	5670	5625	5660	5710	5720	5790	5860	5930	5980	6070
WT, of Sand in Cone + hole ,gm	3860	3907	3920	3940	3950	3925	3960	3972	3982	3960
WT, of Sand in Cone	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
WT, of Sand at hole ,gm	2720	2767	2780	2800	2810	2785	2820	2832	2842	2820
Volume of the hole, Cm3	1838	1870	1878	1892	1899	1882	1905	1914	1920	1906
WT, of Soil from Hole ,gm	4370	4380	4400	4411	4422	4433	4444	4455	4460	4477
Bulk Density of Soil, Gm/cm3	2.382	2.348	2.342	2.332	2.329	2.356	2.332	2.328	2.324	2.350
Moisture Content , %	5.3	5.8	5.8	5.8	5.8	5.8	5.3	5.8	5.8	5.8
Dry Density, gm/cm3	2.237	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%	100.5%	100.3%	100.2%	101.2%

Acceptance Criteria	**Comply**		**Not Comply**			

CONSULTANT COMMENTS	

Site engineer :-

Name :- MAHMOUD ELKHLAWY

Signature :-

Consultant Materials Engineer :-

Name :-

Signature :-

M. Attia

9/7/2023

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

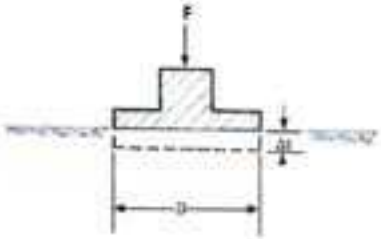
Company Name	الزهور		
Location	536+500	To	536+600
Taste Date	29-7-2023		
Layer level	+(.90)	**Sub Ballast**	

Station	**536+500**

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 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	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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

		s	AS	Δσ
$0.7\,\sigma_1$	0.35	1.48563	0.465	0.2
$0.3\,\sigma_1$	0.15	1.02063		
$0.7\sigma_2$	0.35	1.99611	0.2161	0.2
$0.3\sigma_2$	0.15	1.78001		
D (mm)	300			
Ev_1	96.77			
Ev_2	208.23			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.15		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

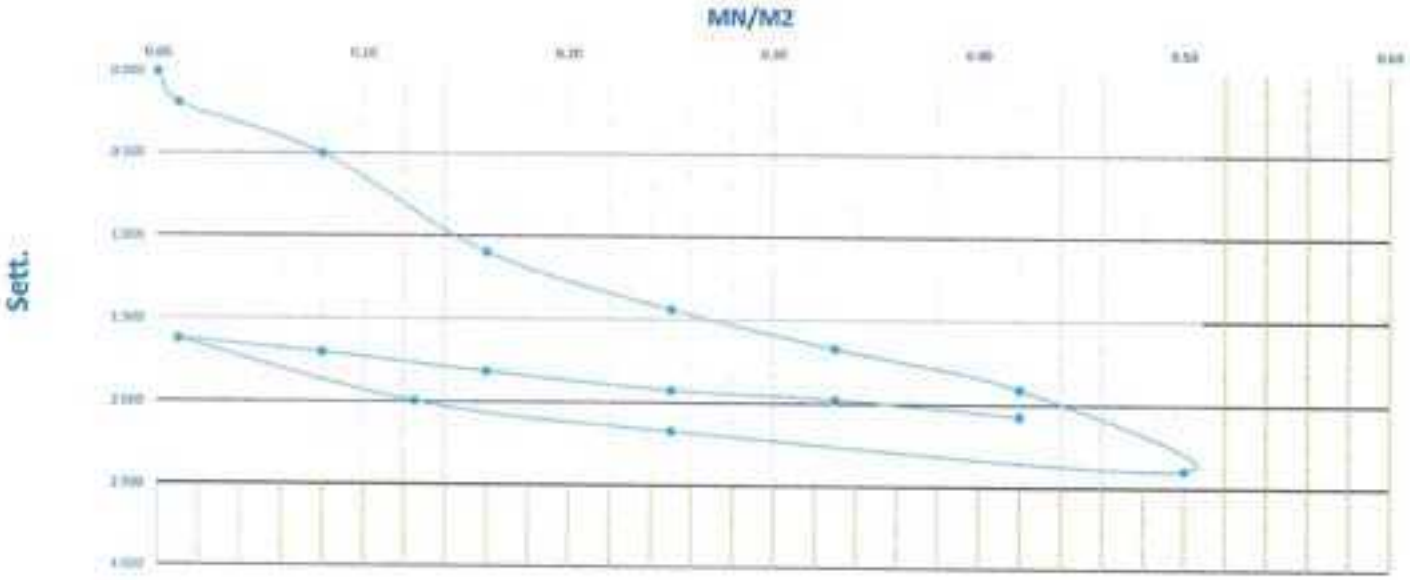
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.3

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 30/7/2023

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

Company Name	الزهور		
Location	536+500	To	536+600
Taste Date	29-7-2023		
Layer level	+(.90)	**Sub Ballast**	

Station	536+525

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

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/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	Level	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	17.55	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
9.000	2.4	0.707	0.01	16.74	10.15		0.810	1.050		0.930
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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	1.07	0.23938	0.2
$0.3\,\sigma_1$	0.15	0.83063		
$0.7\sigma_2$	0.35	1.23944	0.15944	0.2
$0.3\sigma_2$	0.15	1.08001		
D (mm)	300			
Ev_1	187.99			
Ev_2	282.24			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.50		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

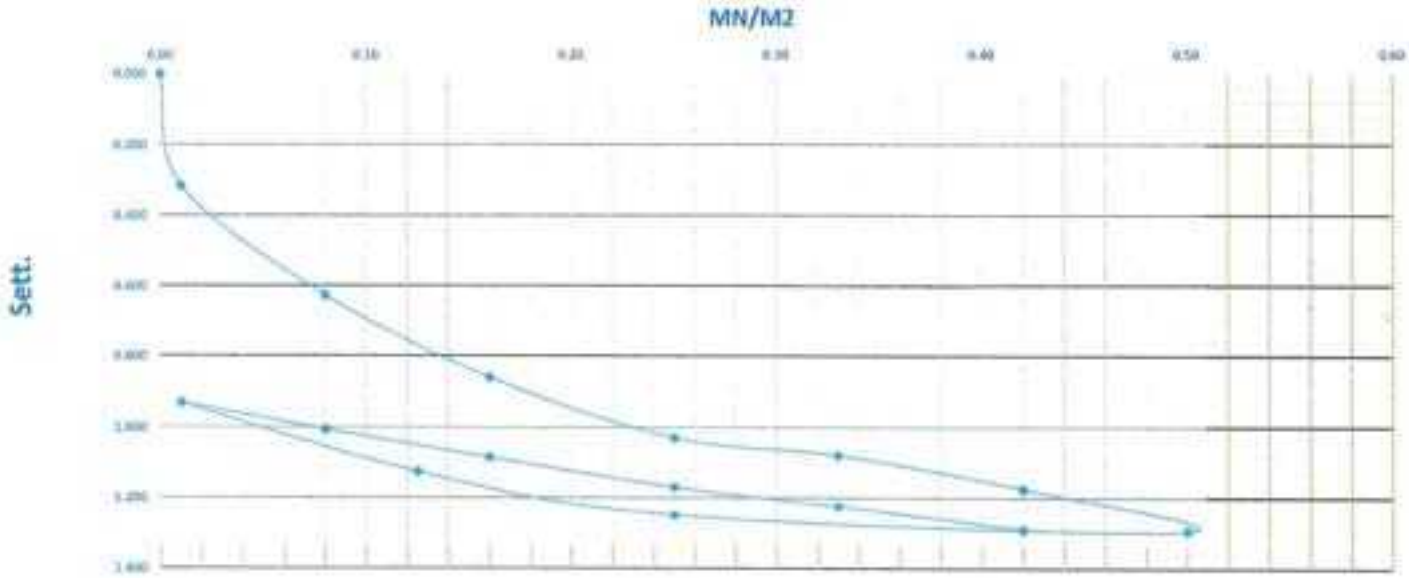
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name:	Name :
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

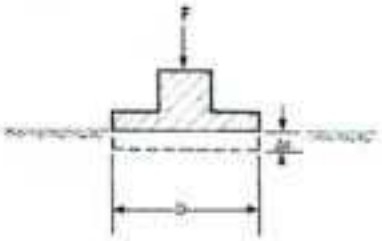
Company Name	الزهور		
Location	536+500	To	536+600
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

Station	536+550

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

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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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	0.850		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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	1.06375	0.355	0.2
$0.3\,\sigma_1$	0.15	0.70875		
$0.7\sigma_2$	0.35	1.64	0.16999	0.2
$0.3\sigma_2$	0.15	1.47001		
D (mm)	300			
Ev_1	126.76			
Ev_2	264.72			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.09		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

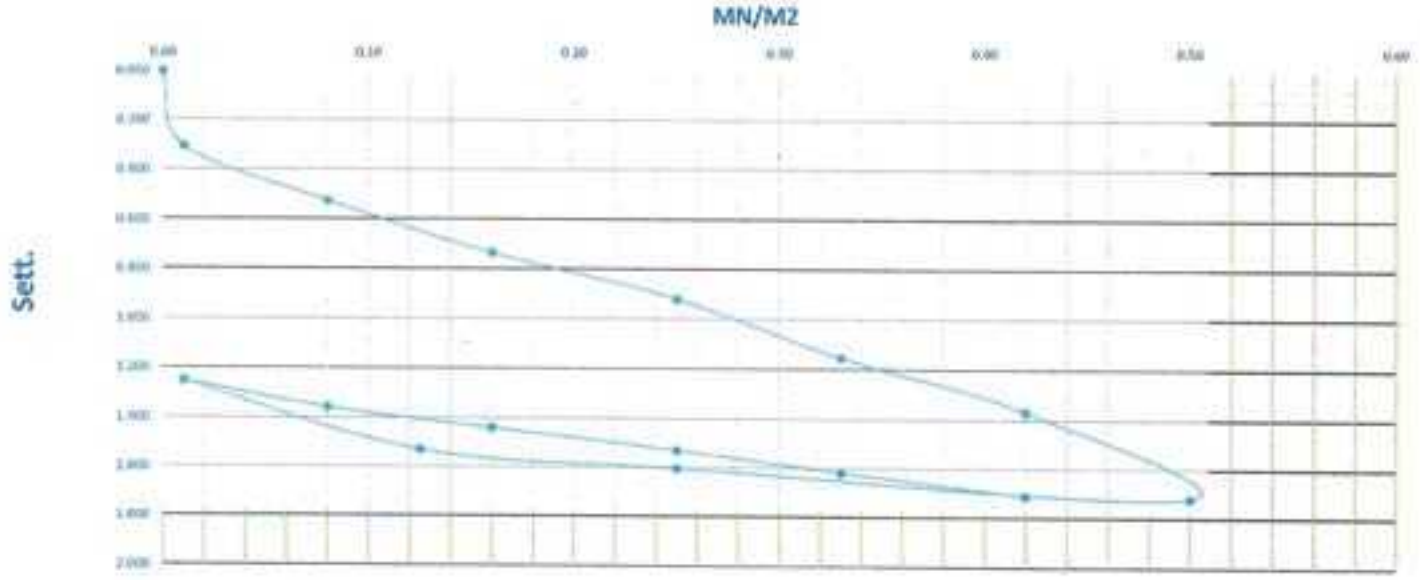
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

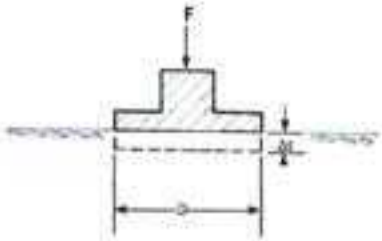
Company Name	الزهور		
Location	536+500	To	536+600
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

Station	536+575

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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. 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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.99438	0.24563	0.2
$0.3\,\sigma_1$	0.15	0.74875		
$0.7\sigma_2$	0.35	1.39333	0.11332	0.2
$0.3\sigma_2$	0.15	1.28001		
D (mm)	300			
Ev_1	183.21			
Ev_2	397.09			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.17		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

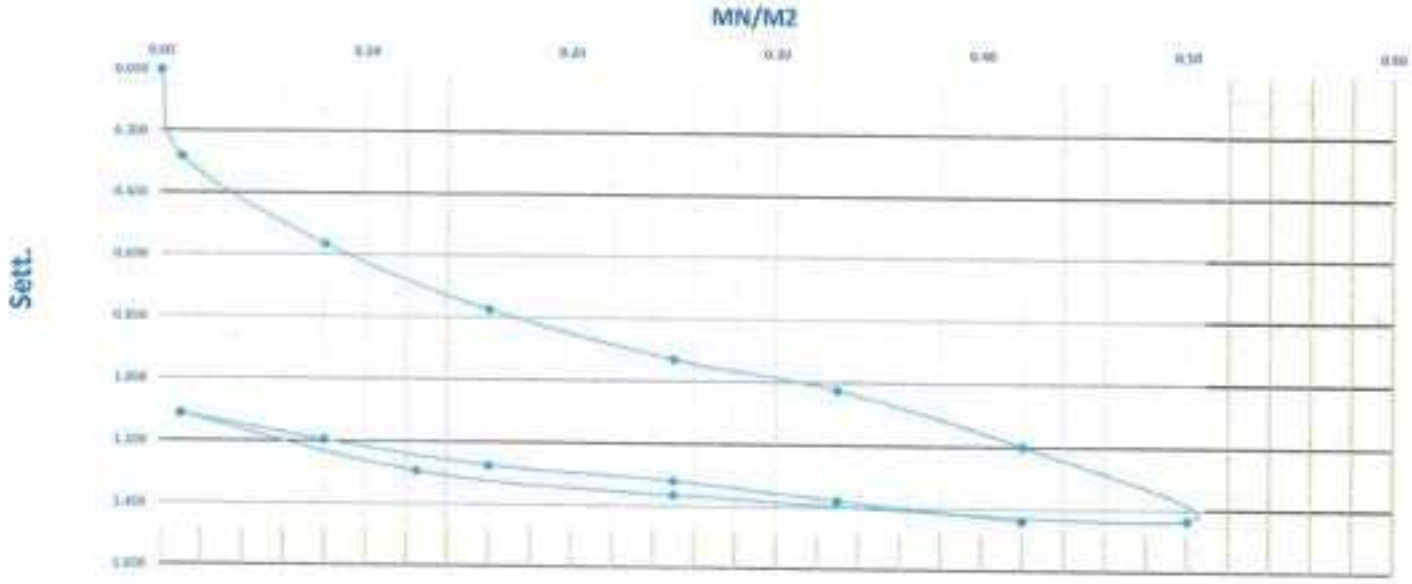
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy	Mahmoud		6 – 7 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				K.P536	T R	O T	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 Balast (+ 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.homed 8/7	Levells is Approved	Approved A.hamed 8/7

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng : Mahmoud Elkhlhwy	Mahmoud				
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 (الزهور)
من المحطة (536+400) إلي المحطة (536+500)

57,73
+4,13 = 61,86

					LAYER LEVEL		0.9					
	LEFT SIDE				PGL			RIGHT SIDE				
STATION	ACT. WIDTH	7	4	S.E.%	DESIGN LEVEL	FERMA LEVEL	CL	S.E.%	4	7	ACT. WIDTH
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	
Diff.											
536+410		60.18	60.30	-4%	60.46	59.56	1.40 60.46 -1	-4%	60.30	60.18	
Act.									1.56	1.68	
Diff.		✓	✓						✓	-1	
536+420		60.21	60.33	-4%	60.49	59.59	1.37 60.49 -1	-4%	60.33	60.21	
Act.									1.53	1.65	
Diff.		✓	+1						-2	✓	
536+430		60.23	60.35	-4%	60.51	59.61	1.35 60.51 -2	-4%	60.35	60.23	
Act.									1.51	1.63	
Diff.		-1	-2						-1	+1	
536+440		60.26	60.38	-4%	60.54	59.64	1.32 60.54 ✓	-4%	60.38	60.26	
Act.									1.48	1.60	
Diff.		-1	+1						+1	✓	
536+450		60.29	60.41	-4%	60.57	59.67	1.29 60.57 ✓	-4%	60.41	60.29	
Act.									1.45	1.57	
Diff.		+2	✓						✓	✓	
536+460		60.32	60.44	-4%	60.60	59.70	1.26 60.60 -1	-4%	60.44	60.32	
Act.									1.42	1.54	
Diff.		+1	+2						✓	+2	
536+470		60.35	60.47	-4%	60.63	59.73	1.23 60.63 ✓	-4%	60.47	60.35	
Act.									1.39	1.61	
Diff.		✓	✓						✓	+1	
536+480		60.38	60.50	-4%	60.66	59.76	1.20 60.66 ✓	-4%	60.50	60.38	
Act.									1.36	1.48	
Diff.		+2	✓						-1	-1	
536+490		60.40	60.52	-4%	60.68	59.78	1.18 60.68 -1	-4%	60.52	60.40	
Act.									1.34	1.46	
Diff.		+2	+2						-1	-1	
536+500		60.43	60.55	-4%	60.71	59.81	1.15 60.71 ✓	-4%	60.55	60.43	
Act.									1.31	1.43	
Diff.		+1	✓						+1	✓	

mahmoud

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
	FERNA 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 (FERNA - 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
Upper Embankment	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	59.02	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
Middle Embankment	-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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-4	55.15	[illegible]	[illegible]	[illegible]	55.37		55.48			55.64			55.81
	-4.5	[illegible]												
	-5													
	-5.5													
	-6													
	-6.5													
	-7													

MS Approved
According to Des. Profile
18/08/2022

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

TYPICAL WIDTH

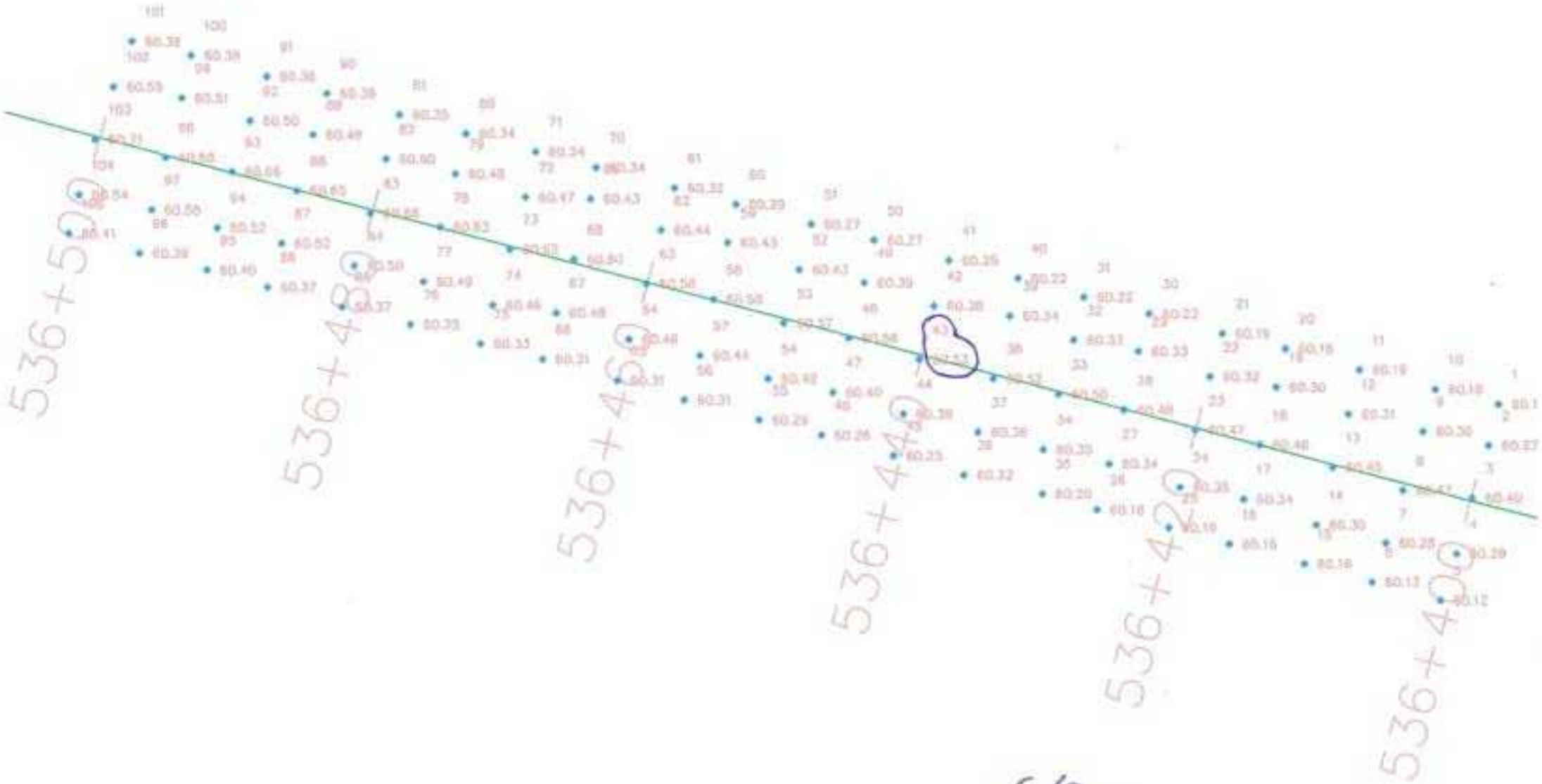
layer	slope	left	slop	right	TOTAL
.9 (Ballast 2)	-4.00%	7	-4.00%	7	14.00
0.7 (Ballast 1)	-4.00%	7.32	-4.00%	7.32	14.64
0.5 (grade 2)	-4.00%	7.64	-4.00%	7.64	15.28
0.25 (grade 1)	-4.00%	8.04	-4.00%	8.04	16.08
(0) ferma	-4.00%	13.44	-4.00%	9.94	23.38
-0.25	-4.00%	13.84	-4.00%	10.34	24.18
-0.5	-4.00%	14.24	-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

mahmud

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

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


536+500
536+480
536+460
536+440
536+420
536+400

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.			
Issued by Contractor	Name	Sign		Date				COD			
	Eng \ Mahmoud Elkhlawy	mahmoud		18-5-2023				ZH 2 P.G			
Received by ER			MIR	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	Work Activity		
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			
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhlawy**	mahmoud		
QA/QC *	Abdallah SAMB	Abdallah SAMB		
GARB**				

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY	mahmoud		
QA/QC*	Abdallah SMG	Abdallah SMG		
GARB**				
Employers Representative				

	Electric Express Train - HSR From El Ain El Sokhna 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	code	ZONE	536+000	537+000
location	K.P 536+500 (5500 m3)	ZH-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient 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	8669.0	4513.0	1433.0	3443.0			
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	19093.0		PRO	2.206
Cumulative Retained %	0.0	0.0	5.1	29.2	42.8	47.1	57.4		WC	5.9
Cumulative Passing %	100.0	100.0	94.9	70.8	57.2	52.9	42.6		CBR	94.7%

B-soft material gradation				WT.OF sample		590.00		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(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	94.9	70.8	57.2	52.9	42.6	31.2	42.6	5.4
		100	97 - 50	75 - 70		68 - 15		35 - 0		0 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section -7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 508+177

operating Lab	Mansour Lab

Proctor Test

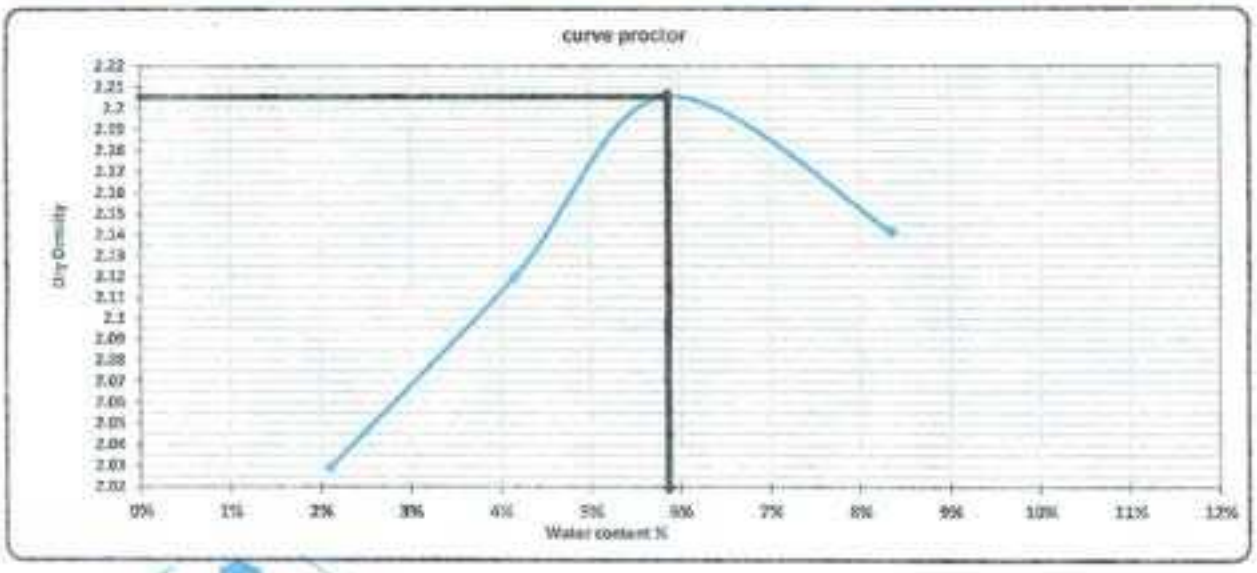
TESTING DATE:	4/6/2023	code	Zone	536+000 TO 537+000
LOCATION	K.P 536+500 (5000 m3)	ZN-SP-1		
NAME COMPANY	Elsaiar			

Weight of empty mold :	5759.0
Mold Volume:	2134.0

MAX Dry Density	2.206
Water content %	5.9

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10100.0	10178.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.072	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.85	54.5	55.65	52.42	56.96	56.74	56.74	57.92		
Wt. Of wet soil & tare	195.6	198.3	198.4	196.7	198.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	195.5	195.5	192.9	192.7	191.3	191	188.8	189.3		
Wt. Of water	3.1	2.8	5.5	4.0	7.7	8.1	11.0	11.0		
Wt. Of dry soil	139.7	141.0	137.2	140.3	134.3	134.3	132.0	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.206		2.141			



Contractor

Consultant

KK	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5800 m3)	ZS-BP-1			
Name of Campaos	Elrahar				

-: Test Results

Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2196
Mold WT. (gm)	9219
Mold WT. + Wet W.T. (gm)	13700
Wet W.T. (gm)	4621
Wet Density (g/cm^3)	2.104
Dry Density (g/cm^3)	2.000
Proctor Density (g/cm^3)	2.000
Compaction %	100

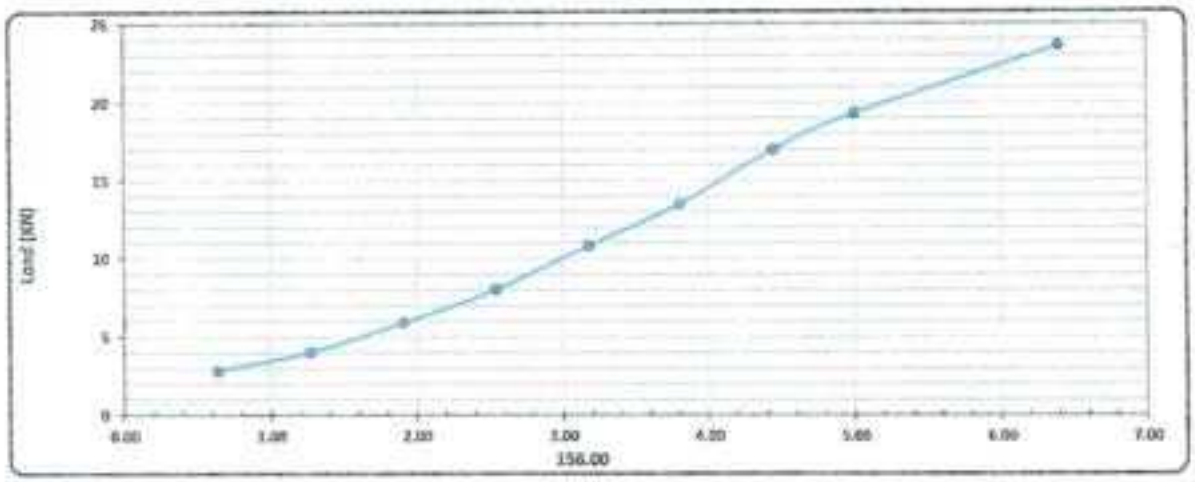
6700

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare W.T. (gm)	55.01
Tare WT. + Wet W.T. (gm)	199.1
Tare W.T. +Dry W.T. (gm)	144.8
[illegible]	5.3
Dry W.T. (gm)	89.0
Moisture Content %	5.96

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	280.00	612.00	602.00	[illegible]	1105.00	1375.00	1755.00	[illegible]	2410.00
Load (KN)	2.8	4.9	5.9	[illegible]	10.0	13.5	17.0	[illegible]	23.6



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% 98 نسبة طلب
2.54	[illegible]	13.4	[illegible]	100	98	99.1%
5.08	19.31	20.0	[illegible]			94.7%

Lab. Engineer	Consultant Engineer
Name :	Name :
Sign :	Sign :

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 1 From FOKA To MARSA MATROUH

From Station [illegible] To Station [illegible]

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	[illegible]	Material	Sub-Ballast	
NAME COMPANY	Elzoher		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

Results:-

Bulk specific gravity = A / (B-C)	2.524	5790
Apparent specific gravity = A /(A-C)	2.643	
Absorbtion = (B-A)/A	1.822	%

Los Angios 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 :	Abdallah Sami
Sign :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	From Station 504+000 To Station 568+177	

ACTIVITY : Sand cone test	laboratory results	COD	ZH (S.B 1)

Density and Unite 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 :	536+400 TO 536+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	5.9%	100%	1.48

Compaction Testing Results & Calculations

STATION	536+410	536+420	536+430	536+440	536+450	536+460	536+470	536+480	536+490	536+500
Hole No.	1	2	3	4	5	6	7	8	9	10
WT. of Sand before Test ,gm	9538	9428	9865	9775	9778	9820	9923	10002	10089	10140
WT. of Sand After Test ,gm	5074	5720	5765	5835	5815	5880	5960	6020	6100	6170
WT. of Sand in Cone + hole ,gm	3904	3908	3920	3940	3953	3930	3963	3972	3988	3970
WT. of Sand in Cone	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
WT. of Sand at hole ,gm	2724	2768	2780	2800	2813	2790	2823	2832	2848	2830
Volume of the hole, Cm3	1841	1870	1878	1892	1901	1885	1907	1914	1924	1913
WT. of Soil from hole ,gm	4378	4388	4400	4411	4412	4432	4464	4455	4466	4477
Bulk Density of Soil, Gm/cm3	2.379	2.347	2.342	2.332	2.327	2.352	2.330	2.328	2.321	2.341
Moisture Content , %	5.5	6.5	6.5	5.8	5.8	5.8	5.9	5.5	5.5	5.5
Dry Density, gm/cm3	2.233	2.203	2.199	2.204	2.198	2.223	2.208	2.207	2.200	2.219
Compaction, (%)	101.5%	100.2%	100.0%	100.2%	100.0%	101.0%	100.4%	100.3%	100.0%	100.9%

Acceptance Criteria	Comply		Not Comply			

CONSULTANT COMMENTS	

Site engineer :-

Name :- MAHMOUD ELKHLAWY

Signature :- mahmoud

Consultant Materials Engineer :-

Name :- Ahmed hamed

Signature :- Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

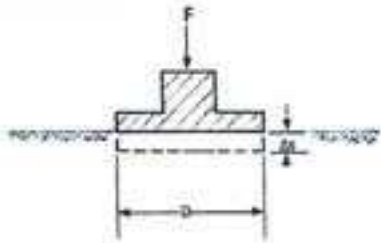
Company Name	الزهور		
Location	536+300	To	536+400
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

Station	536+400

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

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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	15.25	14.65		0.000	0.000		0.000
1.000	2.4	0.707	0.01	15.17	14.51		0.080	0.140		0.110
2.000	18.8	5.652	0.08	15.05	14.38		0.200	0.270		0.235
0.080	37.7	11.304	0.16	14.92	14.25		0.330	0.400		0.365
4.000	58.9	17.663	0.25	14.80	14.17		0.450	0.480		0.465
5.000	77.7	23.315	0.33	14.69	14.08		0.560	0.570		0.565
6.000	98.9	29.673	0.42	14.58	13.95		0.670	0.700		0.685
7.000	117.8	35.325	0.50	14.43	13.70		0.820	0.950		0.885
8.000	58.9	17.663	0.25	14.46	13.84		0.790	0.810		0.800
9.000	29.4	8.831	0.12	14.52	13.91		0.730	0.740		0.735
9.000	2.4	0.707	0.01	14.70	14.11		0.550	0.540		0.545
10.000	2.4	0.707	0.01	14.70	14.11		0.550	0.540		0.545
11.000	18.8	5.652	0.08	14.65	14.05		0.600	0.600		0.600
12.000	37.7	11.304	0.16	14.60	14.00		0.650	0.650		0.650
13.000	58.9	17.663	0.25	14.53	13.96		0.720	0.690		0.705
14.000	77.7	23.315	0.33	14.46	13.90		0.790	0.750		0.770
15.000	98.9	29.673	0.42	14.38	13.85		0.870	0.800		0.835

		s	ΔS	Δσ
0.7 σ_1	0.35	0.51	0.16125	0.2
0.3 σ_1	0.15	0.34875		
0.7σ_2	0.35	0.78444	0.12944	0.2
0.3σ_2	0.15	0.65501		
D (mm)	300			
Ev_1	279.07			
Ev_2	347.65			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.25		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

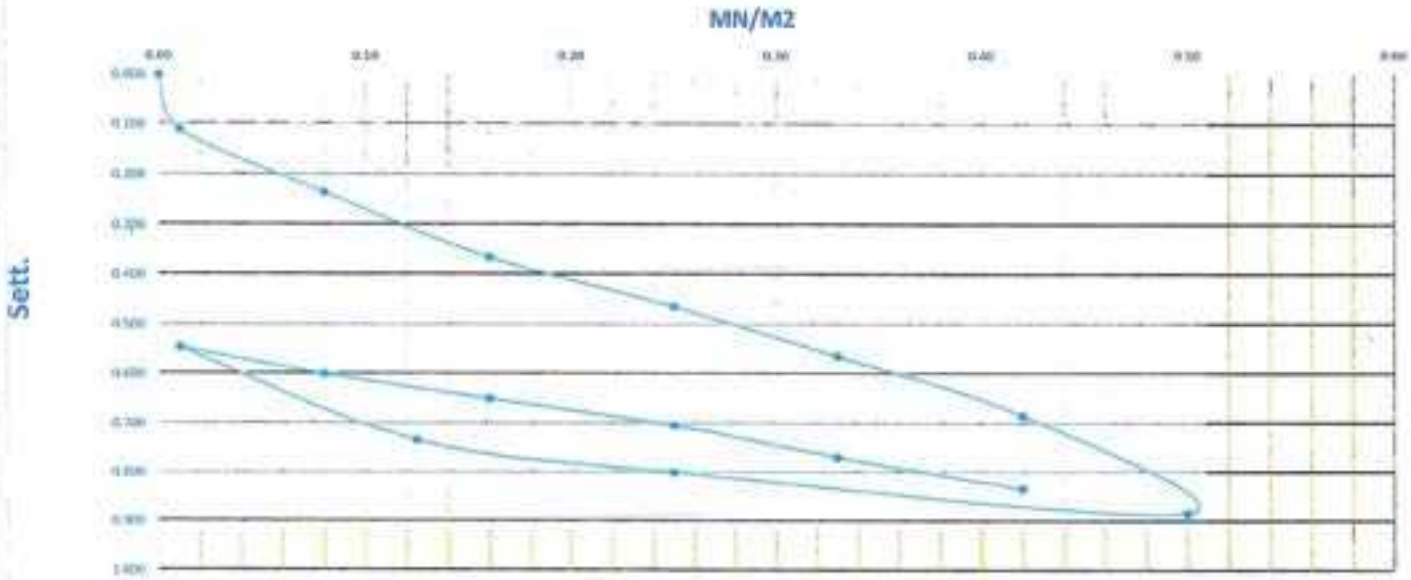
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.3t

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 30/7/2023

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

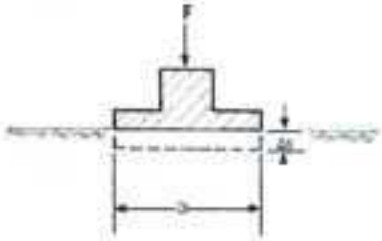
Company Name	الزهور		
Location	536+400	To	536+500
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

Station	536+425

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_0 = 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	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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

		s	SS	Ar
$0.7\,\sigma_1$	0.35	1.11875	0.36125	0.2
$0.3\,\sigma_1$	0.15	0.7575		
$0.7\sigma_2$	0.35	1.58944	0.14943	0.2
$0.3\sigma_2$	0.15	1.44001		
D (mm)	300			
Ev_1	124.57			
Ev_2	301.14			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.42		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

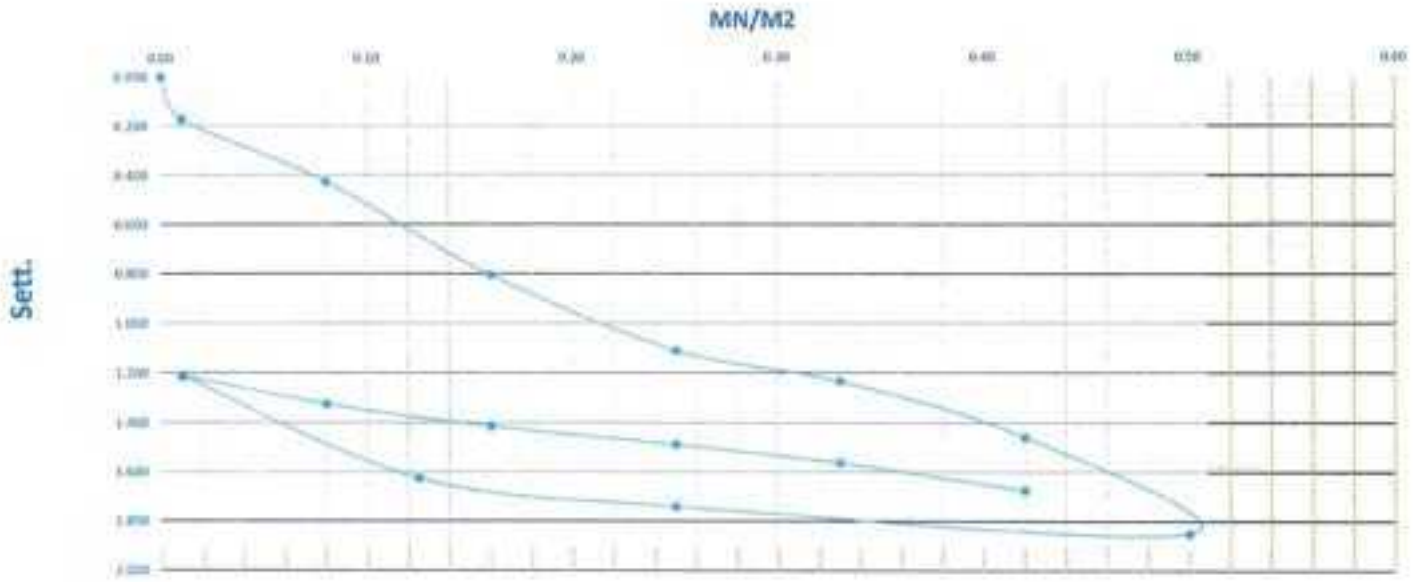
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

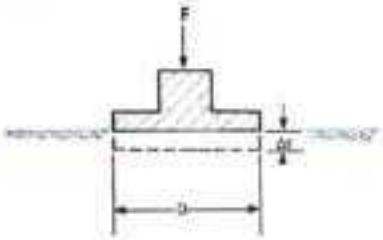
Company Name	الزهور		
Location	536+400	To	536+500
Taste Date	29-7-2023		
Layer level	+(.90)	**Sub Ballast**	

Station	**536+490**

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 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	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	19.26	12.55		0.000	0.000		0.000
1.000	2.4	0.707	0.01	19.10	12.27		0.160	0.280		0.220
2.000	18.8	5.652	0.08	18.97	12.04		0.290	0.510		0.400
0.080	37.7	11.304	0.16	18.91	11.86		0.350	0.690		0.520
4.000	58.9	17.663	0.25	18.85	11.69		0.410	0.860		0.635
5.000	77.7	23.315	0.33	18.79	11.58		0.470	0.970		0.720
6.000	98.9	29.673	0.42	18.73	11.41		0.530	1.140		0.835
7.000	117.8	35.325	0.50	18.60	11.20		0.660	1.350		1.005
8.000	58.9	17.663	0.25	18.65	11.23		0.610	1.320		0.965
9.000	29.4	8.831	0.12	18.78	11.35		0.480	1.200		0.840
9.000	2.4	0.707	0.01	18.85	11.60		0.410	0.950		0.680
10.000	2.4	0.707	0.01	18.85	11.60		0.410	0.950		0.680
11.000	18.8	5.652	0.08	18.78	11.50		0.480	1.050		0.765
12.000	37.7	11.304	0.16	18.74	11.40		0.520	1.150		0.835
13.000	58.9	17.663	0.25	18.70	11.35		0.560	1.200		0.880
14.000	77.7	23.315	0.33	18.67	11.30		0.590	1.250		0.920
15.000	98.9	29.673	0.42	18.61	11.26		0.650	1.290		0.970

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.68625	0.18125	0.2
$0.3\,\sigma_1$	0.15	0.505		
$0.7\sigma_2$	0.35	0.93111	0.0811	0.2
$0.3\sigma_2$	0.15	0.85001		
D (mm)	300			
Ev_1	248.28			
Ev_2	554.85			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.23		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

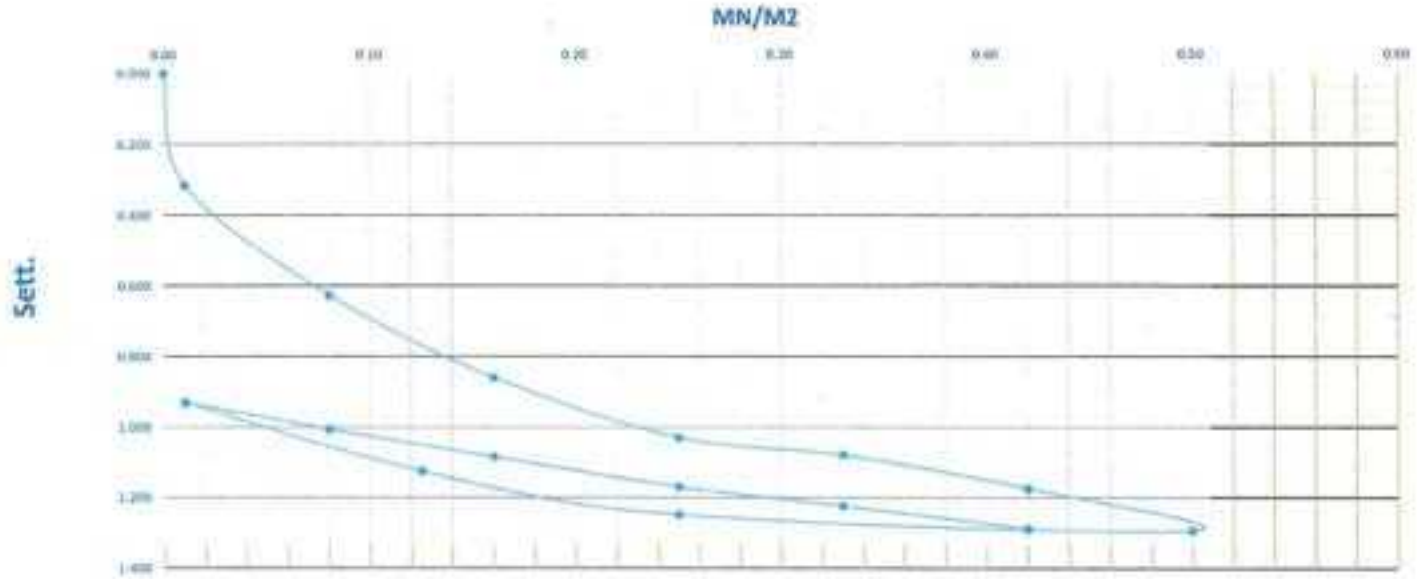
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign :

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.					
Issued by Contractor	Name	Sign		Date			Time					
	Eng : Mahmoud Elkhlhwy	mahmoud		24 – 6 - 2023								
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM	
				K.P536	T R	O T	24	6	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 Balast (+ 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
Visual inspection is accepted Mo. Safwat 24/6/2023	Ahmed Levells is Approved	Compaction is accepted Mo. Safwat 25/6/2023

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng : Mahmoud Elkhlhwy	mahmoud				
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 (الزهور)

من المحطة (536+300) إلي المحطة (536+400)

57.73 +4.13 = 61.86 م.ب.م

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. غالب غنيل

	LAYER LEVEL	0.9

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

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Mahmoud

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	60.59	60.65	60.71
	FORMATLEVEL	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	55.16	55.24	55.46	55.41	55.75	55.78	55.83	55.81	55.82	55.80
	DIFF (FORMA - 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
Upper Embankment	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	58.82	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	58.32	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	57.72	57.78	57.83	57.89	57.95	58.00	58.06
Middle Embankment	-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												
	-5													
	-5.5													
	-6													
	-6.5													
	-7													

Approved

Ahmed

MS Approved
According to Des Profile

18/08/2022

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

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

Mahmoud

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

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

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

Mahmoud

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY	mahmoud		
QA/QC *	Abdallah SAIG	Abdallah SAIG		
GARB**				
Employers Representative				

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.		
Issued by Contractor	Name	Sign		Date				COD		
	Eng \ Mahmoud Elkhlawy	Mahmoud		18-5-2023				ZH 2 P.G		
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM
							18	5	2023		

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

Description of Materials	Fill 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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG : Mahmoud Elkhlawy	Mahmoud		
QA/QC *	Abdallah SAMY	Abdallah		
GARB**				

Electric Express Train - HSR From El Ain El Sokhna 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	code	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZI-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual Inspection test

2-Gradiant 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	8669.0	4513.0	1433.0	3443.0			
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	19093.0		PRO	2.206
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.4		WC	5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6		CBR	94.7%

B-soft 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(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	96.9	70.8	57.2	52.9	42.6	31.2	42.0	5.4
		100	97 - 50	75 - 70		60 - 15		35 - 0		0 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 534+000 To Station 552+177

operating Lab | Mansour Lab

Proctor Test

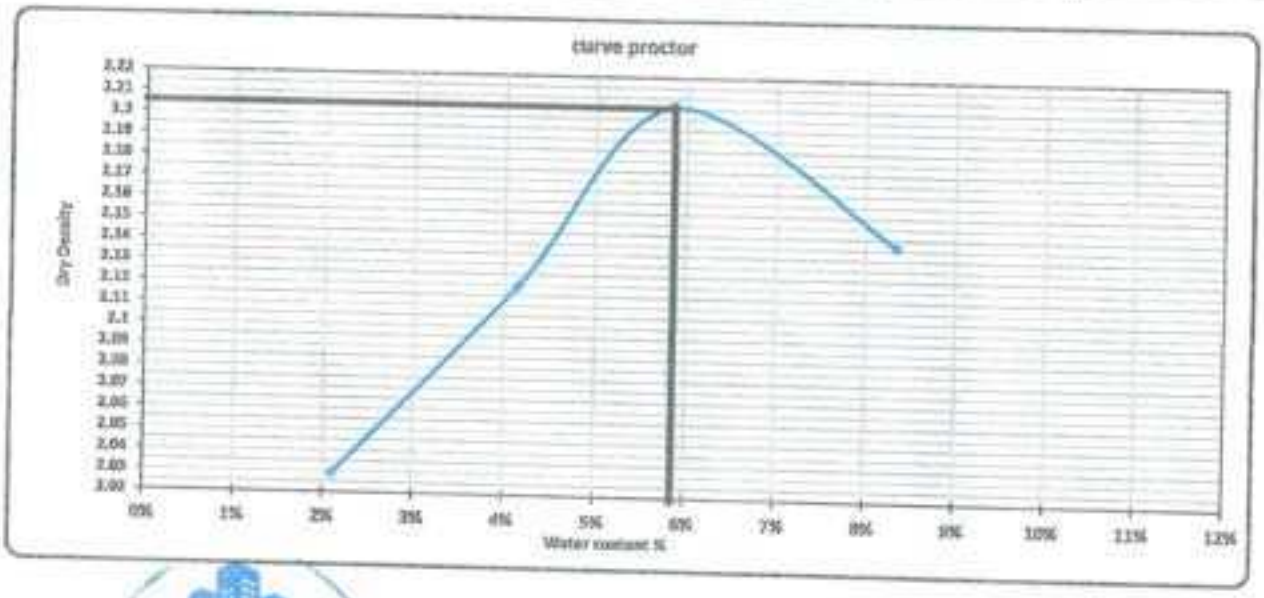
TESTING DATE:	4/6/2023	code		
LOCATION	KP 538+500 (5000 m3)	24-EP-1	Zone	538+000 TO 537+000
NAME COMPANY	Elenitor			

Weight of empty mold :	5759.0
Mold Volumer	2134.0

MAX Dry Density	2.206
Water content %	5.9

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10189.0	10478.0	10741.0	10710.0	
WT. WET SOIL	4431.0	4711.0	4982.0	4951.0	
Wt. Density	2.072	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.85	54.5	55.65	52.42	56.96	56.74	56.74	57.92		
Wt. Of wet soil & tare	198.6	198.3	198.4	198.7	192.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	195.5	195.5	192.9	192.7	191.3	191	188.8	189.3		
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	141.0	137.2	140.3	134.3	134.5	132.0	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.206		2.041			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	3/6/2023	Cladie	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	DI-BP-1			
Name of Company	Cladiar				

-: Test Results

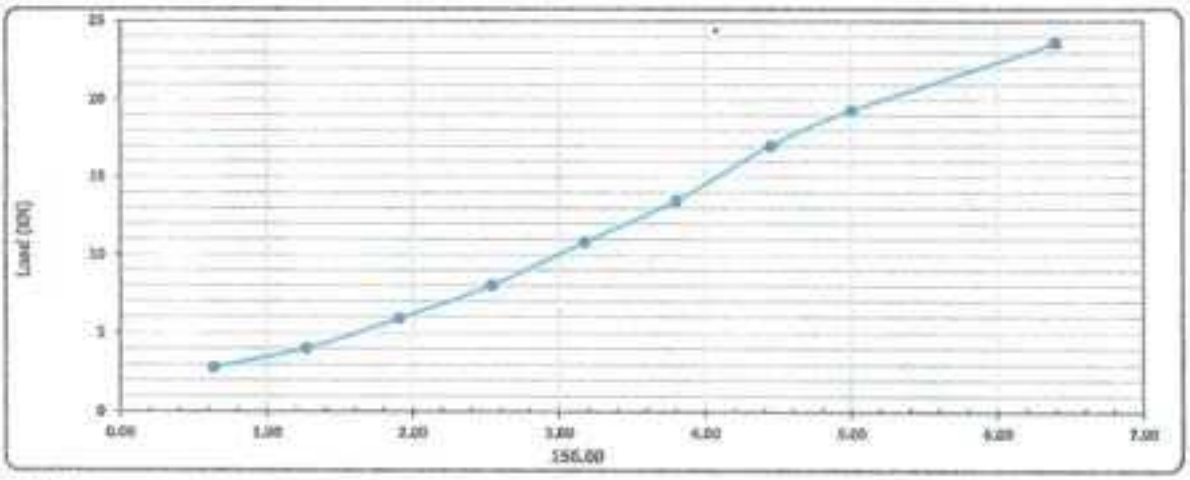
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2100
Mold WT. (gm)	8219
Mold WT. + Wet WT. (gm)	12760
Wet WT. (gm)	4621
Wet Density (g/cm^3)	2.141
Dry Density (g/cm^3)	2.100
Proctor Density (g/cm^3)	2.266
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare WT. (gm)	55.01
Tare WT. +Wet WT. (gm)	159.1
Tare WT. +Dry WT. (gm)	144.8
8500	5.5
Dry WT. (gm)	89.8
Moisture Content %	5.68

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (kg)	288.00	412.00	602.00	[illegible]	1105.00	1375.00	1735.00	[illegible]	5610.00
Load (KN)	2.8	4.0	5.9	[illegible]	10.8	13.5	17.0	[illegible]	23.0



Calculations : -

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% 98 نسبة
2.54	9.03	13.4	69.17%	100	98	98.1%
5.08	13.71	20.8	96.47%			94.7%

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

ENGINEERING CONSULTING OFFICE

Electric Express Train - HSR
From El Ain El Sukhna City To El Alamein - MATROUH
Section - 1 From FOKA To MARSA MATROUH
From Station 364+000 To Station 369+177

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	[illegible]	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	[illegible]	Material	Sub-Ballast	
NAME COMPANY	Elzoher		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

40000

Results:-

Bulk specific gravity = A / (B-C)	2.524	2790	4850	6130
Apparent specific gravity = A /(A-C)	2.648			
Absorbtion = (B-A)/A	1.822	%		

Los Angles 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 :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	From Station 504+000 To Station 568+177	

ACTIVITY : Sand cone test	laboratory results	COD	Z H (S.B 1)

Density and Unite 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 :	536+300 TO 536+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
2.20	5.9 %	100%	1.48

Compaction Testing Results & Calculations

STATION	536+310	536+320	536+330	536+340	536+350	536+360	536+370	536+380	536+390	536+400
Hole No.	1	2	3	4	5	6	7	8	9	10
WT. of Sand before Test ,gm	6928	6728	6787	6875	6870	10022	10133	10201	10288	10340
WT. of Sand After Test ,gm	5774	5621	5660	5628	5625	6064	6163	6123	6261	6270
WT. of Sand in Cone + hole ,gm	3864	3907	3910	3937	3953	3929	3960	3970	3987	3970
WT. of Sand in Cone	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
WT. of Sand at hole ,gm	2724	2767	2779	2797	2813	2789	2820	2830	2847	2830
Volume of the hole, Cm3	1841	1870	1878	1890	1901	1884	1905	1912	1924	1912
WT. of Soil from Hole ,gm	4378	4389	4400	4411	4422	4433	4444	4455	4466	4477
Bulk Density of Soil, Gm/cm3	2.379	2.348	2.343	2.334	2.327	2.352	2.332	2.330	2.322	2.341
Moisture Content , %	5.3	5.3	5.3	5.8	5.8	5.8	5.5	5.5	5.5	5.5
Dry Density, gm/cm3	2.233	2.204	2.200	2.206	2.199	2.223	2.211	2.208	2.201	2.219
Compaction, (%)	101.5%	100.2%	100.0%	100.3%	100.0%	101.1%	100.5%	100.4%	100.0%	100.9%

Acceptance Criteria	Comply		Not Comply		

CONSULTANT COMMENTS

Site engineer :-

Name :- MAHMOUD ELKHLAWY

Signature :- Mahemoud

Consultant Materials Engineer :-

Name :-

Signature :-

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

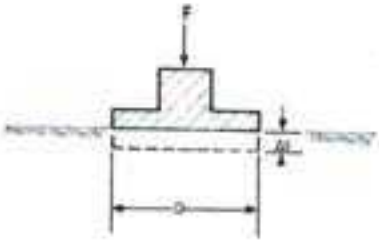
Company Name	الزهور		
Location	536+300	To	536+400
Taste Date	29-7-2023		
Layer level	+(.90)	Sub Ballast	

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.



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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Ave. Sett. mm
0.000	0.0	0.000	0.00	15.70	16.93		0.000	0.000		0.000
1.000	2.4	0.707	0.01	15.58	16.79		0.120	0.140		0.130
2.000	18.8	5.652	0.08	15.47	16.65		0.230	0.280		0.255
0.080	37.7	11.304	0.16	15.36	16.51		0.340	0.420		0.380
4.000	58.9	17.663	0.25	15.28	16.38		0.420	0.550		0.485
5.000	77.7	23.315	0.33	15.18	16.24		0.520	0.690		0.605
6.000	98.9	29.673	0.42	15.10	16.17		0.600	0.760		0.680
7.000	117.8	35.325	0.50	14.97	16.00		0.730	0.930		0.830
8.000	58.9	17.663	0.25	15.05	16.10		0.650	0.830		0.740
9.000	29.4	8.831	0.12	15.20	16.14		0.500	0.790		0.645
9.000	2.4	0.707	0.01	15.45	16.27		0.250	0.660		0.455
10.000	2.4	0.707	0.01	15.45	16.27		0.250	0.660		0.455
11.000	18.8	5.652	0.08	15.38	16.20		0.320	0.730		0.525
12.000	37.7	11.304	0.16	15.30	16.15		0.400	0.780		0.590
13.000	58.9	17.663	0.25	15.20	16.11		0.500	0.820		0.660
14.000	77.7	23.315	0.33	15.14	16.04		0.560	0.890		0.725
15.000	98.9	29.673	0.42	15.03	15.98		0.670	0.950		0.810

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.54875	0.18437	0.2
$0.3\,\sigma_1$	0.15	0.36437		
$0.7\sigma_2$	0.35	0.74389	0.14888	0.2
$0.3\sigma_2$	0.15	0.59501		
D (mm)	300			
Ev_1	244.07			
Ev_2	302.25			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.24		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

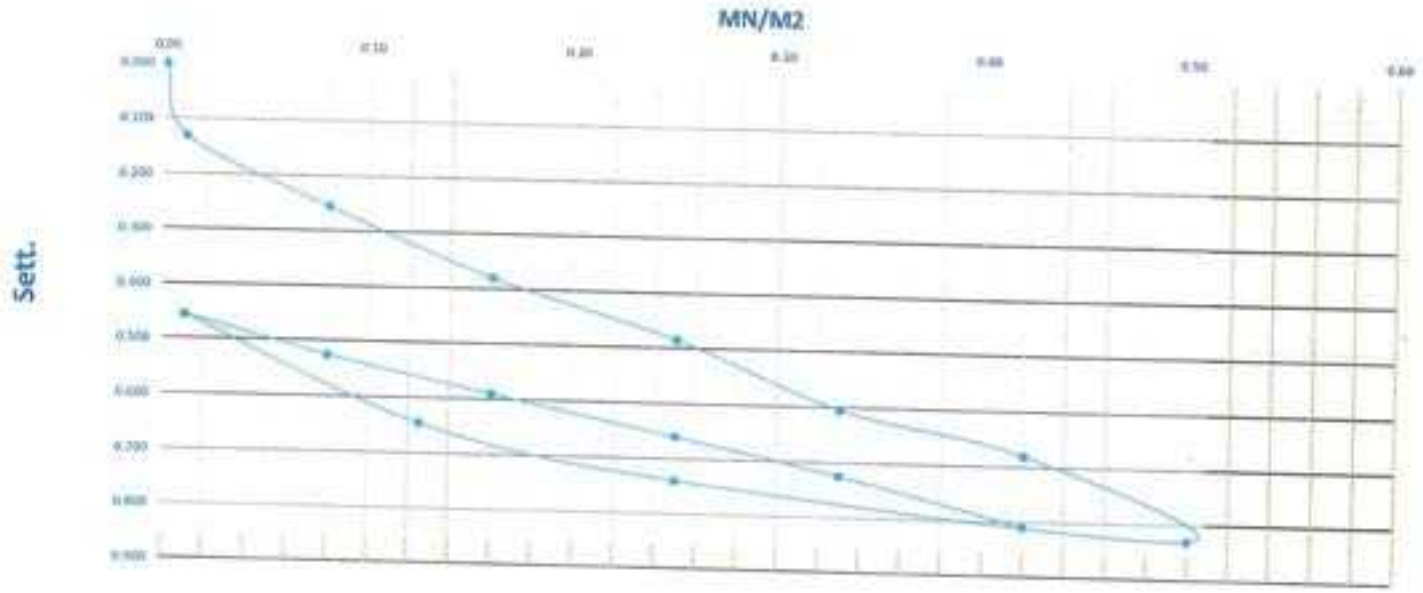
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Laby Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

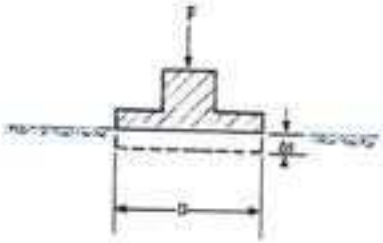
Company Name	الزهور		
Location	536+300	To	536+400
Taste Date	29-7-2023		
Layer level	+(.90)	**Sub Ballast**	

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.



F = 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/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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. 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	0.680		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

		s	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			
Ev_1	178.22			
Ev_2	268.22			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.51		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

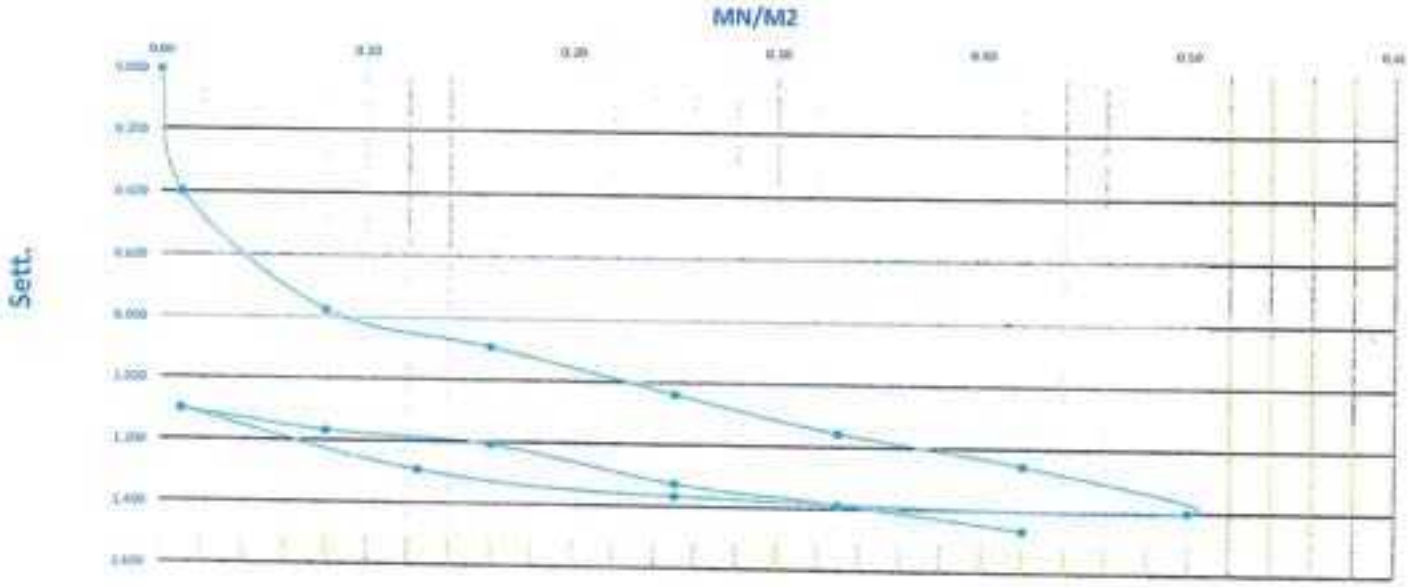
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

Owner Consultant | Contractor Consultant | Contractor | Owner

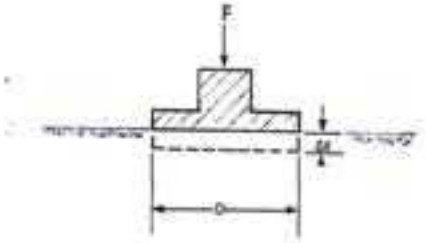
Plate Load Test Results

Company Name	الزهور				
Location	536+300	To	536+400	Station	536+375
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.



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 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. mm
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

		s	ΔS	$\Delta\sigma$
$0.7\,\sigma_1$	0.35	0.57875	0.20813	0.2
$0.3\,\sigma_1$	0.15	0.37063		
$0.7\sigma_2$	0.35	0.86444	0.17944	0.2
$0.3\sigma_2$	0.15	0.685		
D (mm)	300			
Ev_1	216.22			
Ev_2	250.78			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.16		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

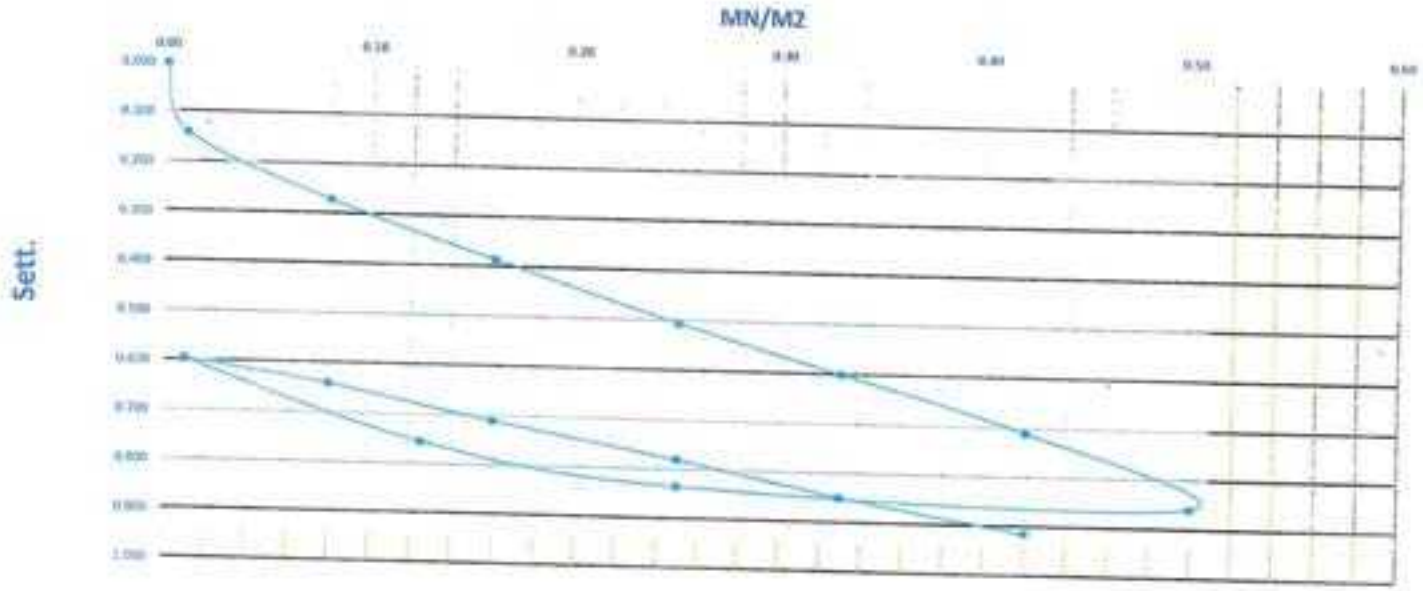
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy			22 – 6 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				KLP536	T R	O T	22	6	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 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	Levels Are APPrOVed Ahmed Ashraf	Approved. Moaz Mostafa. 23/6/2023

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

* Designer
** Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهور)
من المحطة (536+000) إلى المحطة (536+140)

61,02 م ٧ .٢٥ | LAYER LEVEL | 0.9

STATION	ACT. WIDTH	LEFT SIDE 7	LEFT SIDE 4	S.E.%	PGL DESIGN LEVEL	PGL FERMA LEVEL	PGL CL	S.E.%	RIGHT SIDE 4	RIGHT SIDE 7	ACT. WIDTH
536+000		59.08	59.20	-4%	59.36	58.46	1,66	-4%	59.20	59.08	
Act.							59.36			1,94	
Diff.		-1	+1				✓		✓	-1	
536+010		59.11	59.23	-4%	59.39	58.49	1,63	-4%	59.23	59.11	
Act.							59.39			1,91	
Diff.		+1	-1				+1		+1	+2	
536+020		59.13	59.25	-4%	59.41	58.51	1,61	-4%	59.25	59.13	
Act.							59.41			1,88	
Diff.		✓	-1						✓	-1	
536+030		59.16	59.28	-4%	59.44	58.54	1,58	-4%	59.28	59.16	
Act.							59.44			1,86	
Diff.		✓	-1				✓		+1	-1	
536+040		59.19	59.31	-4%	59.47	58.57	1,55	-4%	59.31	59.19	
Act.							59.47			1,83	
Diff.		-1	+1				+1		✓	-1	
536+050		59.21	59.33	-4%	59.49	58.59	1,53	-4%	59.33	59.21	
Act.							59.49			1,81	
Diff.			+1				-2				
536+060		59.24	59.36	-4%	59.52	58.62	1,50	-4%	59.36	59.24	
Act.							59.52			1,78	
Diff.		✓	✓				-2		-2	+2	
536+070		59.27	59.39	-4%	59.55	58.65	1,47	-4%	59.39	59.27	
Act.							59.55			1,75	
Diff.		+1	+1				-2		✓	+2	
536+080		59.29	59.41	-4%	59.57	58.67	1,45	-4%	59.41	59.29	
Act.							59.57			1,73	
Diff.		+2	+1				✓		✓	+1	
536+090		59.32	59.44	-4%	59.60	58.70	1,42	-4%	59.44	59.32	
Act.							59.60			1,70	
Diff.		+1	✓				-1		✓	+2	
536+100		59.35	59.47	-4%	59.63	58.73	1,39	-4%	59.47	59.35	
Act.							59.63			1,67	
Diff.		+2	-1				-2		✓	✓	
536+110		59.37	59.49	-4%	59.65	58.75	1,37	-4%	59.49	59.37	
Act.							59.65			1,65	
Diff.		-1	+1				-2		✓	✓	
536+120		59.40	59.52	-4%	59.68	58.78	1,34	-4%	59.52	59.40	
Act.							59.68			1,62	
Diff.		+1	✓				✓		+1	+3	
536+130		59.43	59.55	-4%	59.71	58.81	1,31	-4%	59.55	59.43	
Act.							59.71			1,659	
Diff.		✓	✓				✓		✓	-1	
536+140		59.45	59.57	-4%	59.73	58.83	1,29	-4%	59.57	59.45	
Act.							59.73			1,57	
Diff.		+1	✓				-3		-1	✓	

Ahmed Ashraf

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	53.48	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	5.14	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
		-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
Middle Empankment		-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				
Lower Empankment		-5.5													
		-6													
		-6.5													
		-7													

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

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

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

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

Amr Ashraf

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

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

536+060
536+070
536+080
536+090
536+100
536+110
536+120
536+130

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.		
Issued by Contractor	Name	Sign		Date				COD		
	Eng \ Mahmoud Elkhlawy			18-5-2023				ZH 2 P.G		
Received by ER			MIR	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	Work Activity		
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					
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG : Mahmoud Elkhlawy			
QA/QC *	Abdallah SAMY	Abdallah		
GARB**				

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	EMG : MAHMOUD ELKHLAWY			
QA/QC *	Abdallah SAMY	Abdallah SAMY		
GARB**				
Employers Representative				

Operating Lab	Mansour LAb	

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

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	code	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZH-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials

sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS
Mass retained (g)	0.0	0.0	1035.0	8669.0	4513.0	1433.0	3443.0	
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	19093.0	
Cumulative Retained %	0.0	0.0	5.1	29.2	42.8	47.1	57.4	
Cumulative Passing %	100.0	100.0	94.9	70.8	57.2	52.9	42.6	

SAMPLE WEIGHT (g) 33240.00 gm

	table classif
	soil classif
PRO	2.206
WC	5.9
CBR	94.7%

B-soft material gradation

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

WT.OF sample 500.00 gm

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	94.9	70.8	57.2	52.9	42.6	31.2	42.6	5.4
		100	97 - 50	75 - 70		60 - 15		35 - 0		6 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 569+177

operating Lab	Mansour Lab

Proctor Test

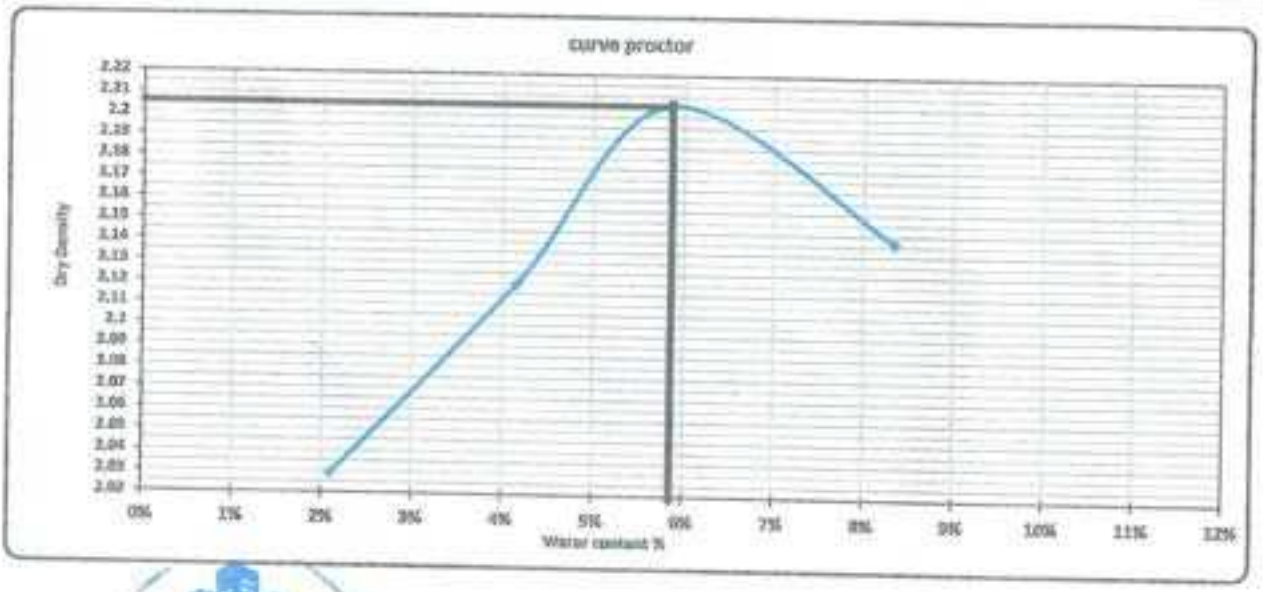
TESTING DATE:	4/6/2023	code	Zone	538+000 TO 537+600
LOCATION	KP 538+500 (5000 m3)	ZH-SP-1		
NAME COMPANY	Elenhor			

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	10180.0	10470.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.072	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.25	54.5	55.65	52.42	56.98	56.74	58.74	57.92		
Wt. Of wet soil & tare	198.6	198.3	198.4	198.7	198.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	195.5	195.5	192.8	192.7	191.3	191	188.8	189.3		
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	141.0	137.2	140.3	134.3	134.5	132.8	131.4		
Water content %	2.2%	1.8%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.286		2.041			



Contractor

Consultant

KK	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	ZH-SP-1			
Name of Company	Elsehar				

- : Test Results

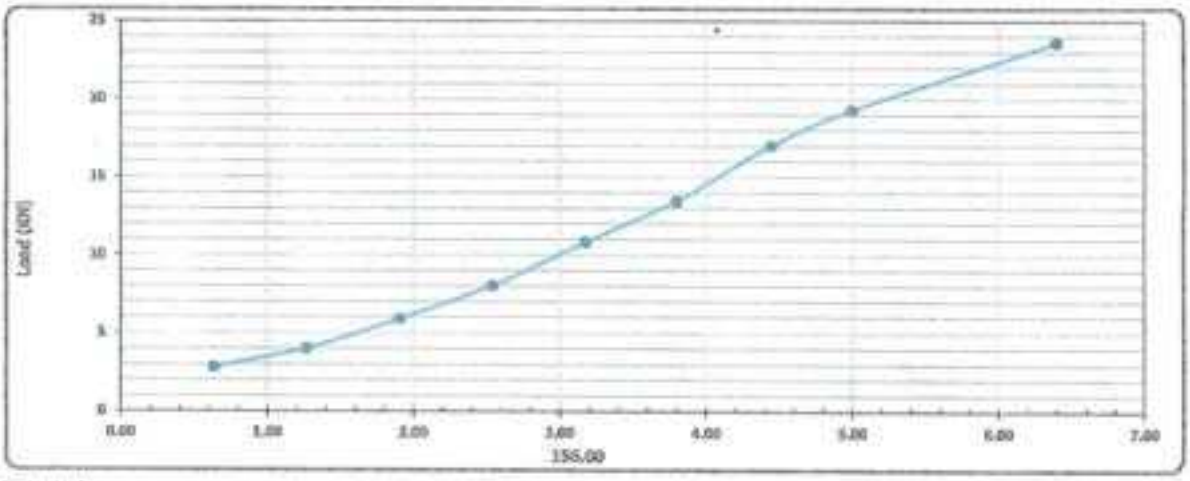
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2120
Mold WT. (gm)	8119
Mold WT. + Wet WT. (gm)	12760
Wet WT. (gm)	4621
Wet Density (g/cm^3)	2.141
Dry Density (g/cm^3)	2.386
Proctor Density (g/cm^3)	2.386
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	12
Tare WT. (gm)	55.81
Tare WT. +Wet WT. (gm)	158.1
Tare WT. +Dry WT. (gm)	144.8
1000	5.3
Dry WT. (gm)	89.0
Moisture Content %	0.00

Swelling	
Mold No.	3
Date	0
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Reading :

196.00	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (kg)	288.00	412.00	602.00	[illegible]	1105.00	1375.00	1735.00	[illegible]	3410.00
Load (KN)	2.8	4.0	5.9	[illegible]	10.8	13.5	17.0	[illegible]	33.4



Calculations :-

Penetration	Load	Standard Load	CBR	Mold-Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% [illegible]
2.50	[illegible]	13.4	[illegible]	100	98	98.1%
5.08	19.31	20.0	96.4%			96.7%

Lab. Engineer
Name :
Sign :

Consultant Engineer
Name :
Sign :

ENGINEERING CONSULTING OFFICE	Electric Express Train - MNR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From PDKA To MARSA MATROUH From Station 504+000 To Station 538+177	

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	Code	Station	536+000	537+000
LOCATION	KJ* 536+580 (5000 m3)	EN-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elsaber		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	40000

Results:-

Bulk specific gravity = A / (B-C)	2.524	8790	4850	6139
Apparent specific gravity = A /(A-C)	2.645			
Asorbtion = (B-A)/A	1.822	%		

Los Angles 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 :	Abdallah SAMR
Sign :	

Owner Consultant | Contractor Consultant | Contractor | Owner

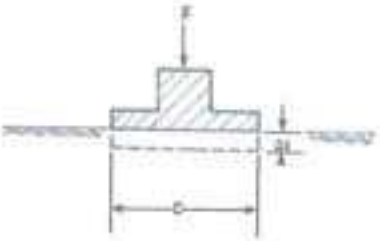
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+025
Taste 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.



F = load

w = 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 6 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. mm
0.000	0.0	0.000	0.00	5.66	11.88		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.55	11.58		0.110	0.300		0.205
2.000	17.1	5.652	0.08	5.26	11.29		0.400	0.590		0.495
0.080	34.2	11.304	0.16	4.92	10.91		0.740	0.970		0.855
4.000	53.4	17.663	0.25	4.56	10.51		1.100	1.370		1.235
5.000	70.5	23.315	0.33	4.39	10.31		1.270	1.570		1.420
6.000	89.7	29.673	0.42	4.22	10.05		1.440	1.830		1.635
7.000	106.8	35.325	0.50	3.65	9.75		2.010	2.130		2.070
8.000	53.4	17.663	0.25	3.94	9.82		1.720	2.060		1.890
9.000	26.7	8.831	0.12	4.03	9.92		1.630	1.960		1.795
9.000	2.1	0.707	0.01	4.33	10.22		1.330	1.660		1.495
10.000	2.1	0.707	0.01	4.33	10.22		1.330	1.660		1.495
11.000	17.1	5.652	0.08	4.27	10.14		1.390	1.740		1.565
12.000	34.2	11.304	0.16	4.18	10.03		1.480	1.850		1.665
13.000	53.4	17.663	0.25	4.09	9.94		1.570	1.940		1.755
14.000	70.5	23.315	0.33	4.02	9.87		1.640	2.010		1.825
15.000	89.7	29.673	0.42	3.95	9.79		1.710	2.090		1.900

		ν	SS	$\Delta\sigma$
$0.7\,\sigma_1$	0.35	1.25438	0.44438	0.2
$0.3\,\sigma_1$	0.15	0.81		
$0.7\sigma_2$	0.35	1.841667	0.20666	0.2
$0.3\sigma_2$	0.15	1.63501		
D (mm)	300			
Ev_1	101.27			
Ev_2	217.75			
Area (Sq.m)	0.07065			

E=2/E=1	2.15		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

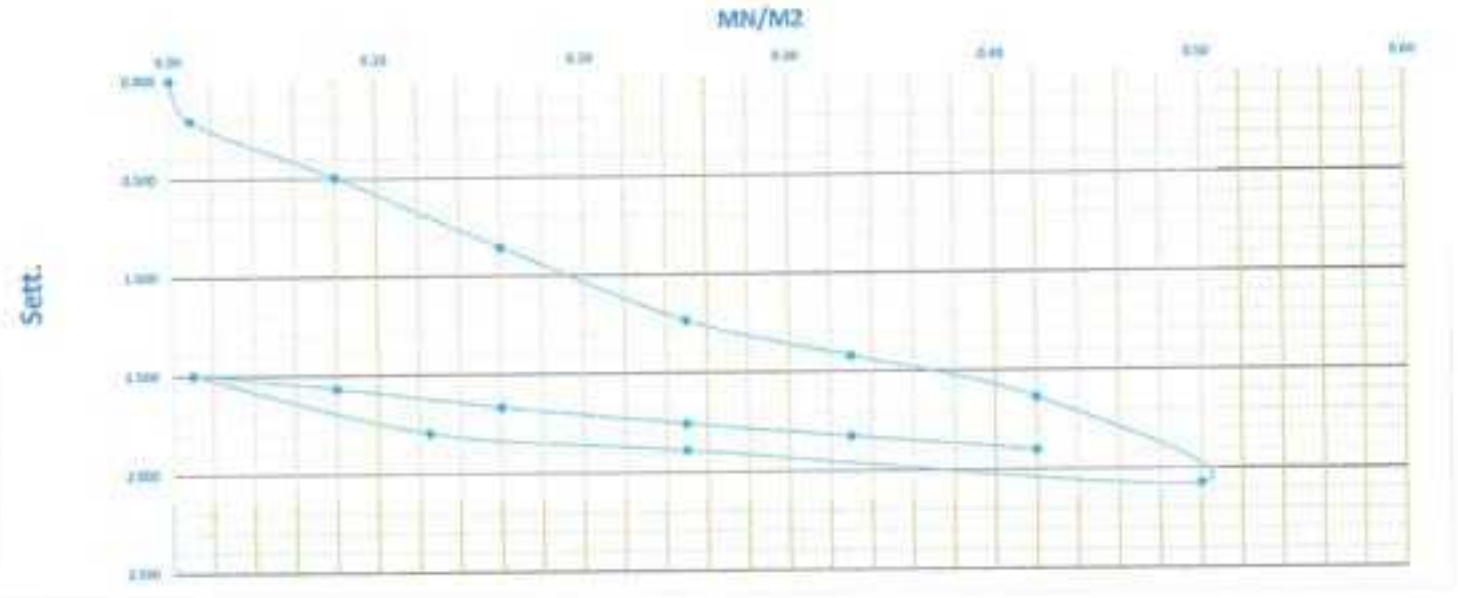
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Consortor | Owner

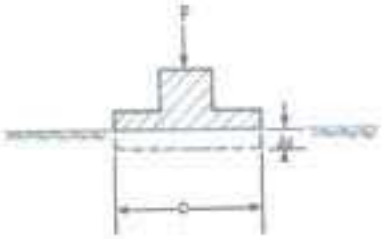
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+050
Taste 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.



F = 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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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
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
0.060	34.2	11.304	0.16	3.92	5.32		0.720	0.250		0.485
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	106.8	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		1.480	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	11.304	0.16	3.43	4.95		1.210	0.620		0.915
13.000	53.4	17.663	0.25	3.29	4.85		1.350	0.720		1.035
14.000	70.5	23.315	0.33	3.20	4.78		1.440	0.790		1.115
15.000	89.7	29.673	0.42	3.07	4.69		1.570	0.880		1.225

		s	ΔS	Δσ
$0.7\ \sigma_1$	0.35	0.9375	0.485	0.2
$0.3\ \sigma_1$	0.15	0.4525		
$0.7\sigma_2$	0.35	1.13944	0.28444	0.2
$0.3\sigma_2$	0.15	0.85501		
D (mm)	300			
Ev_1	92.79			
Ev_2	158.31			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.71		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

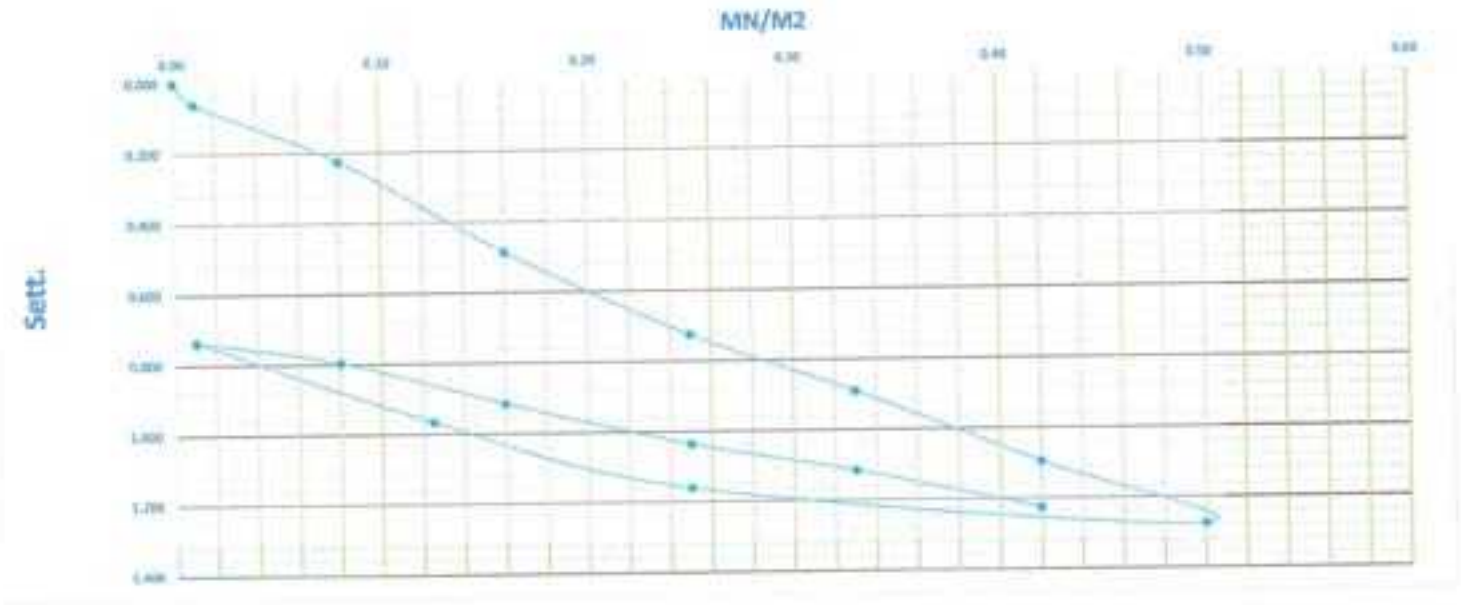
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+075
Taste 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.

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 6 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	7.70	7.78		0.000	0.000		0.000
1.000	2.1	0.707	0.01	7.52	7.30		0.180	0.480		0.330
2.000	17.1	5.652	0.08	7.18	6.97		0.520	0.810		0.665
0.080	34.2	11.304	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	11.304	0.16	6.48	5.72		1.220	2.060		1.640
13.000	53.4	17.663	0.25	6.37	5.57		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

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	1.615	0.64813	0.2
$0.3\,\sigma_1$	0.15	0.96688		
$0.7\sigma_2$	0.35	1.87833	0.33333	0.2
$0.3\sigma_2$	0.15	1.54501		
D (mm)	300			
Ev_1	69.43			
Ev_2	135.00			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.94		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

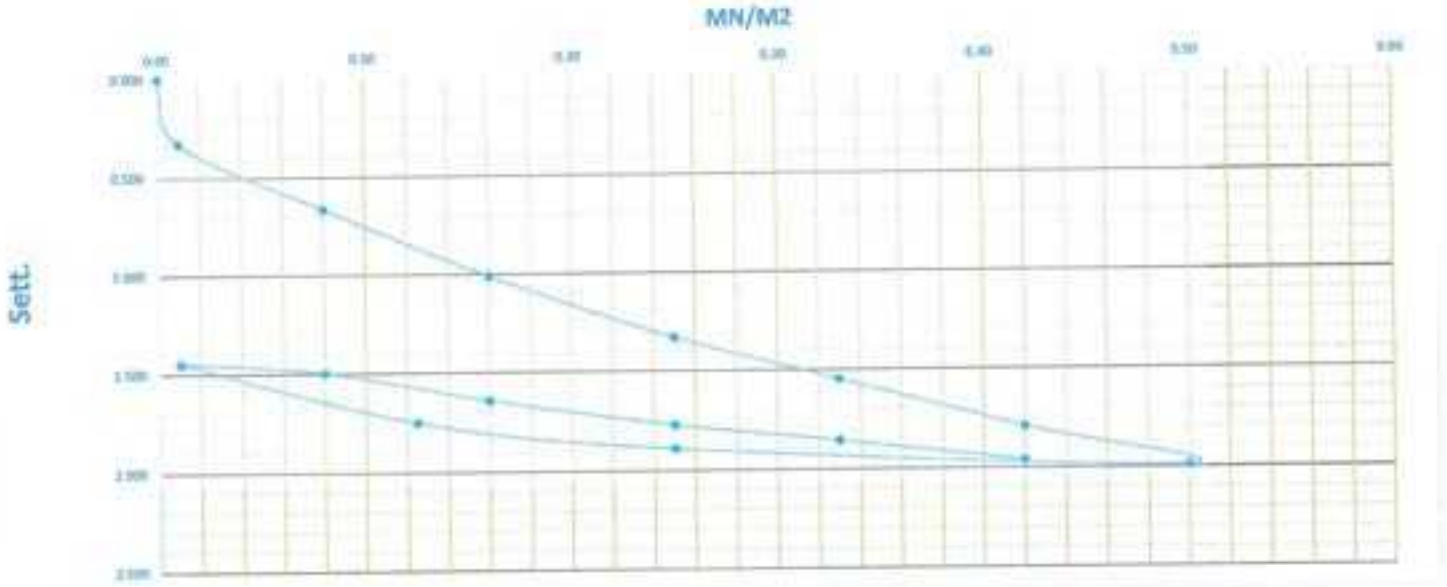
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed Nagied
Sign :	Sign :	Sign : Ahmed Nagied

Owner Consultant | Contractor Consultant | Contractor | Owner

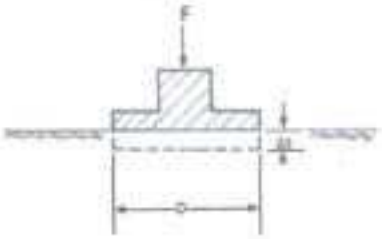
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Series	536+100
Taste 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.



F = load

s_0 = 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	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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
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	11.304	0.16	3.92	5.32		0.720	0.250		0.485
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	106.8	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		1.480	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	11.304	0.16	3.43	4.95		1.210	0.620		0.915
13.000	53.4	17.663	0.25	3.29	4.85		1.350	0.720		1.035
14.000	70.5	23.315	0.33	3.20	4.78		1.440	0.790		1.115
15.000	89.7	29.673	0.42	3.07	4.69		1.570	0.880		1.225

		s	Δs	Δσ
$0.7\,\sigma_1$	0.35	0.9375	0.485	0.2
$0.3\,\sigma_1$	0.15	0.4525		
$0.7\sigma_2$	0.35	1.13944	0.28444	0.2
$0.3\sigma_2$	0.15	0.85501		
D (mm)	300			
Ev_1	92.78			
Ev_2	158.21			
Area ($S_{0,ind}$)	0.070685			

Ev2/Ev1	1.71		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

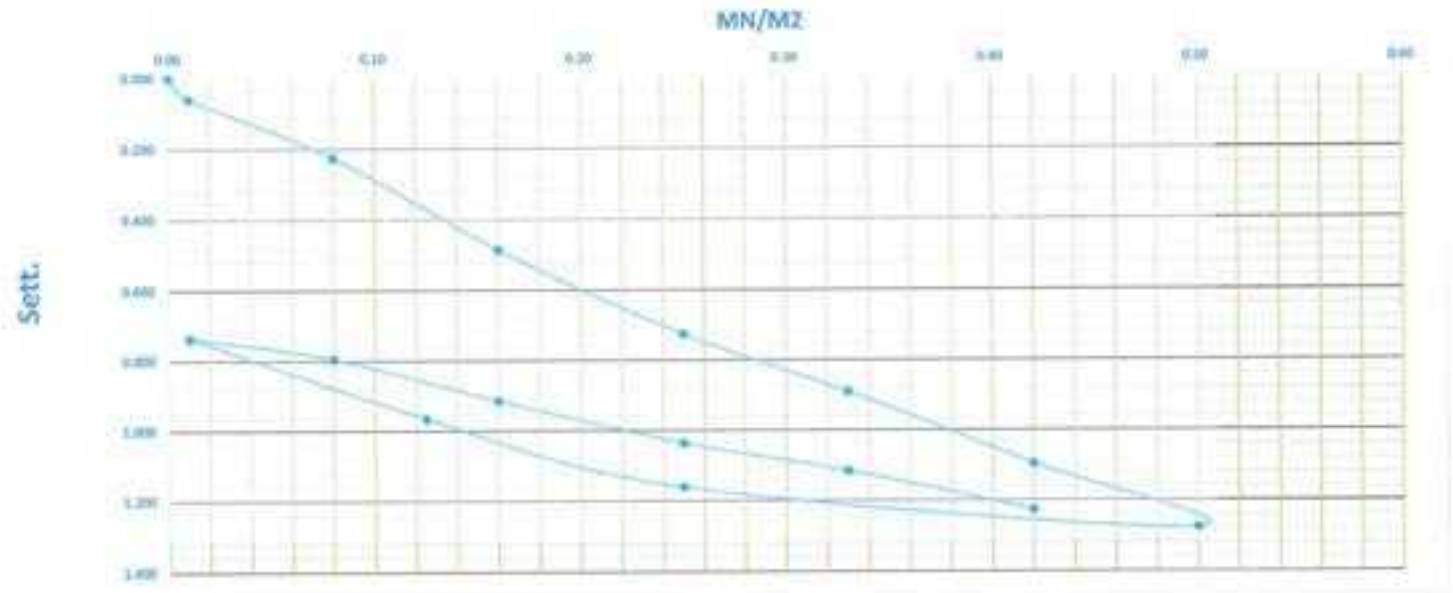
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Sperialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

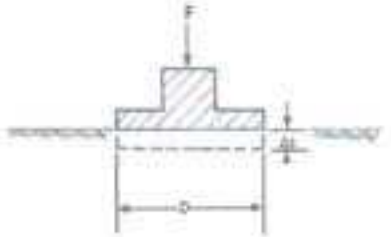
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+125
Taste 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.



F = 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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	5.58	7.71		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	0.620		0.550
14.000	70.5	23.315	0.33	5.00	7.05		0.580	0.660		0.620
15.000	89.7	29.673	0.42	4.93	6.92		0.650	0.790		0.720

		σ	ΔS	$\Delta\sigma$
$0.7\,\sigma_1$	0.35	0.63875	0.29062	0.2
$0.3\,\sigma_1$	0.15	0.34813		
$0.7\sigma_2$	0.35	0.64222	0.22722	0.2
$0.3\sigma_2$	0.15	0.415		
D (mm)	300			
Ev_1	154.84			
Ev_2	198.05			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.28		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

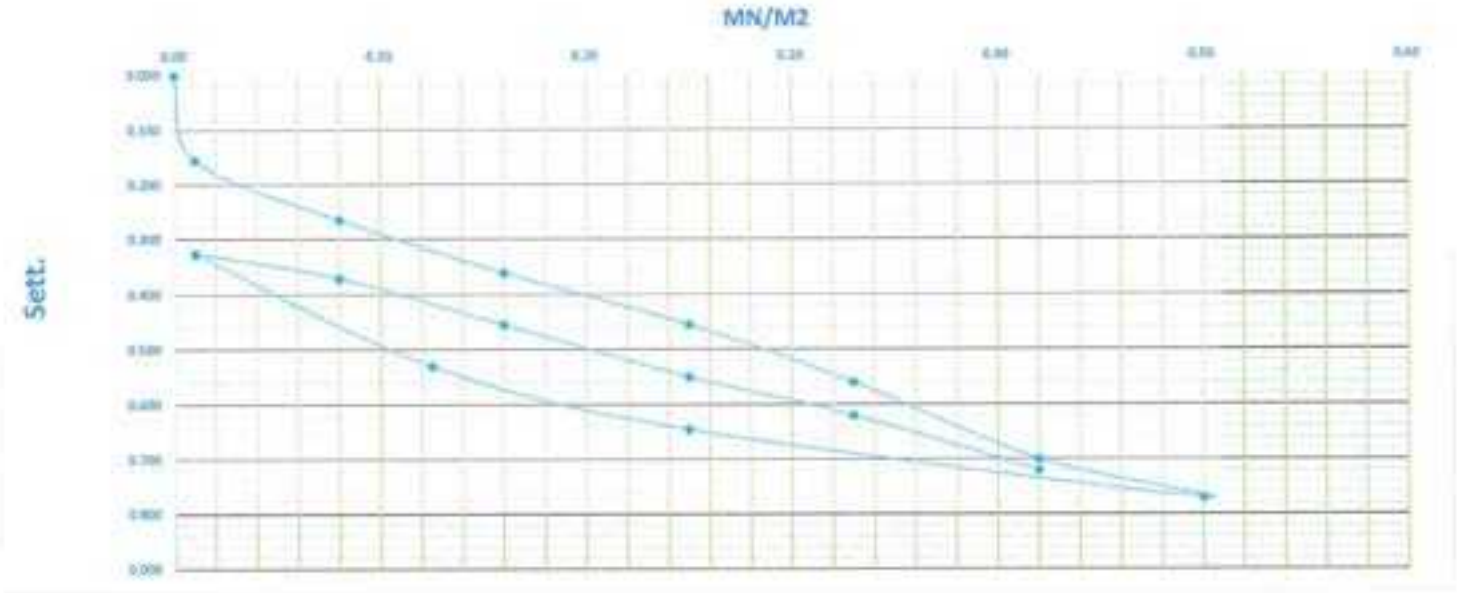
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy			21 – 6 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				K.P536	T R	O T	21	6	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 Balast (+ 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
Visually inspection is accepted Mo. Safwat 24/4/2023	levels are approving Ahmed Ashraf	Compaction is accepted Mo. Safwat 25/6/2023

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng : Mahmoud Elkhlhwy					
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 (الزهور)
من المحطة (536+220) إلي المحطة (536+300)

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد غنيمل

59,89 +1,52 = 61,41

LAYER LEVEL	0.9

STATION	LEFT SIDE				PGL			RIGHT SIDE			
	ACT. WIDTH	7	4	S.E.%	DESIGN LEVEL	FERMA LEVEL	CL	S.E.%	4	7	ACT. WIDTH
536+220		59.67	59.79			59.05	1,40		59.79	59.67	
Act.				-4%	59.95		59.95	-4%		1,74	
Diff.		+1	-2				-2		✓	-2	
536+230		59.69	59.81			59.07	1,44		59.81	59.69	
Act.				-4%	59.97		59.97	-4%		1,72	
Diff.		-1	-1				-3		-1	-1	
536+240		59.72	59.84			59.10	1,41		59.84	59.72	
Act.				-4%	60.00		60.00	-4%		1,69	
Diff.		✓	+1							-2	
536+250		59.75	59.87			59.13	1,38		59.87	59.75	
Act.				-4%	60.03		60.03	-4%		1,66	
Diff.		-3	-3				-2		-3	-1	
536+260		59.77	59.89			59.15	1,36		59.89	59.77	
Act.				-4%	60.05		60.05	-4%		1,64	
Diff.		-1	-1				-3		-2	-1	
536+270		59.80	59.92			59.18	1,33		59.92	59.80	
Act.				-4%	60.08		60.08	-4%		1,61	
Diff.		-1	-1				-2		-2	-1	
536+280		59.83	59.95			59.21	1,30		59.95	59.83	
Act.				-4%	60.11		60.11	-4%		1,58	
Diff.		-1	-2				-2		-1	-1	
536+290		59.86	59.98			59.24	1,27		59.98	59.86	
Act.				-4%	60.14		60.14	-4%		1,55	
Diff.		+1	✓				✓		-1	+1	
536+300		59.88	60.00			59.26	1,25		60.00	59.88	
Act.				-4%	60.16		60.16	-4%		1,53	
Diff.		-1	+1				✓		+1	-1	

Ahmed Ashraf

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	53.48	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	5.14	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Empankement		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
		-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
Middle Empankment		-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				
Lower Empankment		-5.5													
		-6													
		-6.5													
		-7													

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
	FERNA 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
	CUT LEVEL	54.50	54.75	55.04	55.15	55.24	55.46	55.41	55.75	55.78	55.63	55.81	55.82	55.80
	DIFF (FERNA - CUT)	4.65	4.46	4.22	4.16	4.13	3.96	4.07	3.78	3.87	4.01	3.89	3.93	4.61
Upper Embankment	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	59.00	59.06	59.01	59.06	59.12	59.17	59.23	59.28	59.33	59.39	59.45	59.50	59.56
	-0.5	58.85	58.91	58.76	58.81	58.87	58.92	58.98	59.03	59.08	59.14	59.20	59.25	59.31
	-0.75	58.70	58.76	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	56.65	56.71	56.76	56.81	56.87	56.92	56.98	57.03	57.08	57.14	57.20	57.25	57.31
Middle Embankment	-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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-4	55.15	[illegible]	[illegible]	[illegible]	55.37		55.48			55.64			55.81
	-4.5	[illegible]												
	-5													
	-5.5													
	-6													
	-6.5													
	-7													

MS Approved
According to Des Addis
18/03/2022

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

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

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

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

MATERIAL INSPECTION REQUEST

Contractor Company	El . Zhoor . Company			Designer Company			KK CONSULT.				
Issued by Contractor	Name	Sign		Date			COD				
	Eng \ Mahmoud Elkhlawy			18-5-2023			ZH 2 P.G				
Received by ER			MIR	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	Work Activity		
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					
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	Selve 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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhlawy**			
QA/QC *				
GARB**				

MATERIAL APPROVAL REQUEST

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

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	EMG : MAHMOUD ELKHLAWY			
QA/QC *	Abdallah SAMY	Abdallah SAMY		
GARB**				
Employers Representative				

Operating Lab	Manaour LAb	

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section -7 From FOKA To MARSA MATROUH

From Station 504+000 To Station 568+177

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	code	ZONE	538+000	537+000
location	K.P 536+500 (5000 m3)	ZH-SP-1	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials												table classify
				SAMPLE WEIGHT (g)		33240.00		gm				
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	8669.0	4513.0	1433.0	3443.0					
Cumulative Retained (g)	0.0	0.0	1035.0	9704.0	14217.0	15650.0	19093.0			PRO		2.208
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.4			WC		5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6			CBR		94.7%

B-soft 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(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	0.426	0.075
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6	31.2	42.6	5.4
		100	97 - 50	75 - 70		60 - 15		35 - 0		8 - 7

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

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 589+177

operating Lab	Mansour Lab

Proctor Test

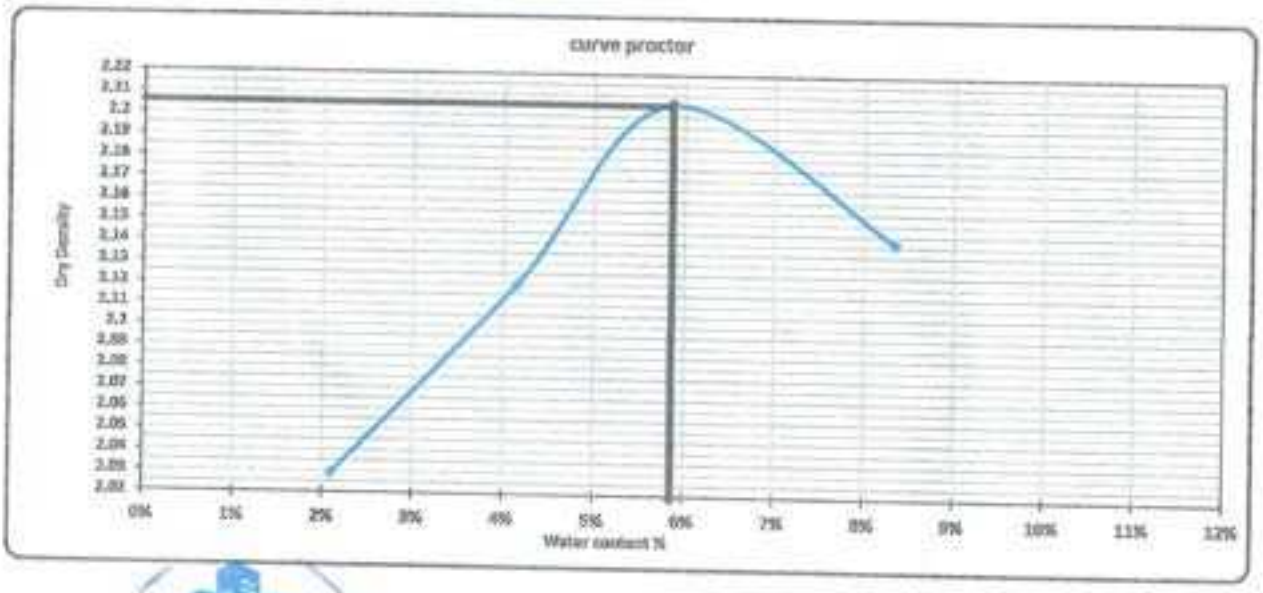
TESTING DATE:	4/6/2023	code		
LOCATION	K.P 538+500 (5000 m3)	ZN-EP-1	Zone	538+000 TO 537+000
NAME COMPANY	Elzohor			

Weight of empty mold :	5759.0
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	10470.0	10741.0	10710.0	
WT. WET SOIL	4421.0	4711.0	4982.0	4951.0	
Wt. Density	2.073	2.208	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.89	54.5	55.65	52.41	56.96	56.74	56.34	57.92		
Wt. Of wet soil & tare	195.6	198.3	196.4	195.7	195.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	190.5	195.5	192.9	192.7	191.3	191	188.0	189.3		
Wt. Of water	5.1	2.8	5.5	6.0	7.7	8.1	11.8	11.0		
Wt. Of dry soil	139.7	141.0	137.3	140.3	134.3	134.3	133.0	131.4		
Water content %	3.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.206		2.041			



Contractor

Consultant

KK	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	2/4-SP-1			
Name of Company	Elsahar				

- : Test Results

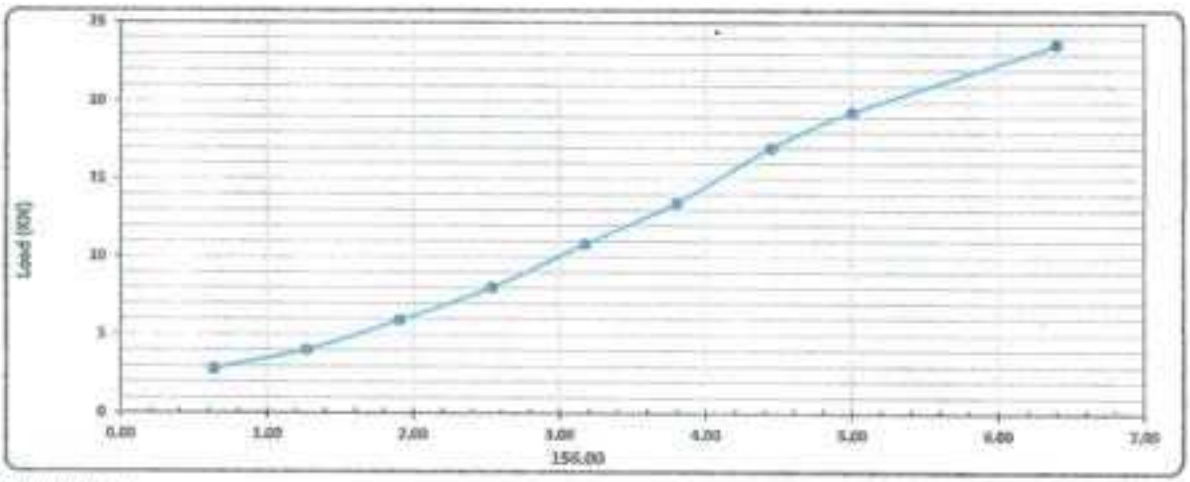
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2110
Mold WT. (gm)	8119
Mold WT. + Wet WT. (gm)	12760
Wet WT. (gm)	4641
Wet Density (g/cm^3)	2.141
Dry Density (g/cm^3)	2.200
Proctor Density (g/cm^3)	2.200
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	85.81
Tare WT. +Wet WT. (gm)	185.1
Tare WT. +Dry WT. (gm)	144.8
[illegible]	3.3
Dry WT. (gm)	99.0
Moisture Content %	5.50

Swelling	
Mold No.	3
Date	[illegible]
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	116.00
Swelling Ratio %	0%

Loading Reading :

156.00	0.66	1.27	1.91	2.54	3.19	3.80	4.45	5.08	6.00
Load Reading (kg)	200.00	412.00	602.00	[illegible]	1165.00	1375.00	1755.00	[illegible]	2410.00
Load (KN)	2.0	4.0	5.9	[illegible]	10.0	13.5	17.0	[illegible]	23.6



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Kn)	(%)	(%)	(%)	% 98 [illegible]
2.54	[illegible]	13.4	[illegible]	100	98	58.1%
5.08	19.31	20.4	94.8%			94.7%

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Electric Express Train - NSR
From El Ain El Sokhna City To El Alamein - MATROUH
Section - 1 From FOKA To MARSA MATROUH
From Station 536+000 To Station 560+117

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	[illegible]	Material	Sub-Ballast	
NAME COMPANY	Etesher		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)	1978	gm	40000

Results:-

Bulk specific gravity = A / (B-C)	2.324	8790	4850	6130
Apparent specific gravity = A /(A-C)	2.646			
Absorbtion = (B-A)/A	1.622	%		

Los Angles 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 :	Abdelrahman SAMR
Sign :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	From Station 504+000 To Station 568+177	

ACTIVITY : Sand cone test	laboratory results	COD	Z H (S.B 1)

Density and Unite 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 tast	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+230	536+240	536+250	536+260	536+270	536+280	536+290	536+300		
Hole No.	1	2	3	4	5	6	7	8		
Wt. of Sand before Test ,gm	9638	9720	9818	9908	9999	10088	10178	10268		
Wt. of Sand After Test ,gm	5774	5821	5868	5938	6025	6084	6163	6232		
Wt. of Sand in Cone + hole ,gm	3884	3907	3950	3970	3973	3964	4015	4036		
Wt. of Sand in Cone	1140	1140	1140	1140	1140	1140	1140	1140		
Wt. of Sand at hole ,gm	2724	2767	2810	2830	2833	2854	2875	2896		
Volume of the hole, Cm3	1841	1870	1899	1912	1914	1928	1943	1957		
Wt. of Soil from Hole ,gm	4378	4389	4400	4411	4422	4433	4444	4455		
Bulk Density of Soil, Gm/cm3	2.378	2.348	2.317	2.307	2.310	2.299	2.288	2.277		
Moisture Content , %	6.5	5.8	5.2	4.7	4.1	3.8	3.9	3.8		
Dry Density, gm/cm3	2.233	2.217	2.201	2.203	2.219	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 Elkhally

Signature :-

Consultant Materials Engineer :-

Name :- Hosafawy

Signature :-

Owner Consultant | Contractor Consultant | Contractor | Owner

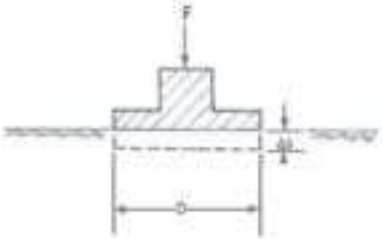
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+225
Taste 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.



F = 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/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 6 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	5.58	7.51		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.51	7.47		0.070	0.040		0.055
2.000	17.1	5.652	0.08	5.40	7.36		0.180	0.150		0.165
0.080	34.2	11.304	0.16	5.31	7.26		0.270	0.250		0.260
4.000	53.4	17.663	0.25	5.22	7.16		0.360	0.350		0.355
5.000	70.5	23.315	0.33	5.11	7.06		0.470	0.450		0.460
6.000	89.7	29.673	0.42	4.95	6.94		0.630	0.570		0.600
7.000	106.8	35.325	0.50	4.92	6.83		0.660	0.680		0.670
8.000	53.4	17.663	0.25	5.04	6.96		0.540	0.550		0.545
9.000	26.7	8.831	0.12	5.15	7.08		0.430	0.430		0.430
9.000	2.1	0.707	0.01	5.35	7.29		0.230	0.220		0.225
10.000	2.1	0.707	0.01	5.35	7.29		0.230	0.220		0.225
11.000	17.1	5.652	0.08	5.30	7.25		0.280	0.260		0.270
12.000	34.2	11.304	0.16	5.20	7.19		0.380	0.320		0.350
13.000	53.4	17.663	0.25	5.10	7.10		0.480	0.410		0.445
14.000	70.5	23.315	0.33	5.00	7.02		0.580	0.490		0.535
15.000	89.7	29.673	0.42	4.92	6.94		0.660	0.570		0.615

		s	ΔS	Δσ
$0.7\,\sigma_1$	0.35	0.53875	0.29062	0.2
$0.3\,\sigma_1$	0.15	0.24813		
$0.7\sigma_2$	0.35	0.55278	0.23777	0.2
$0.3\sigma_2$	0.15	0.315		
D (mm)	300			
Ev_1	154.84			
Ev_2	189.26			
Area (Sq.m)	0.07068			

Ev2/Ev1	1.22		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

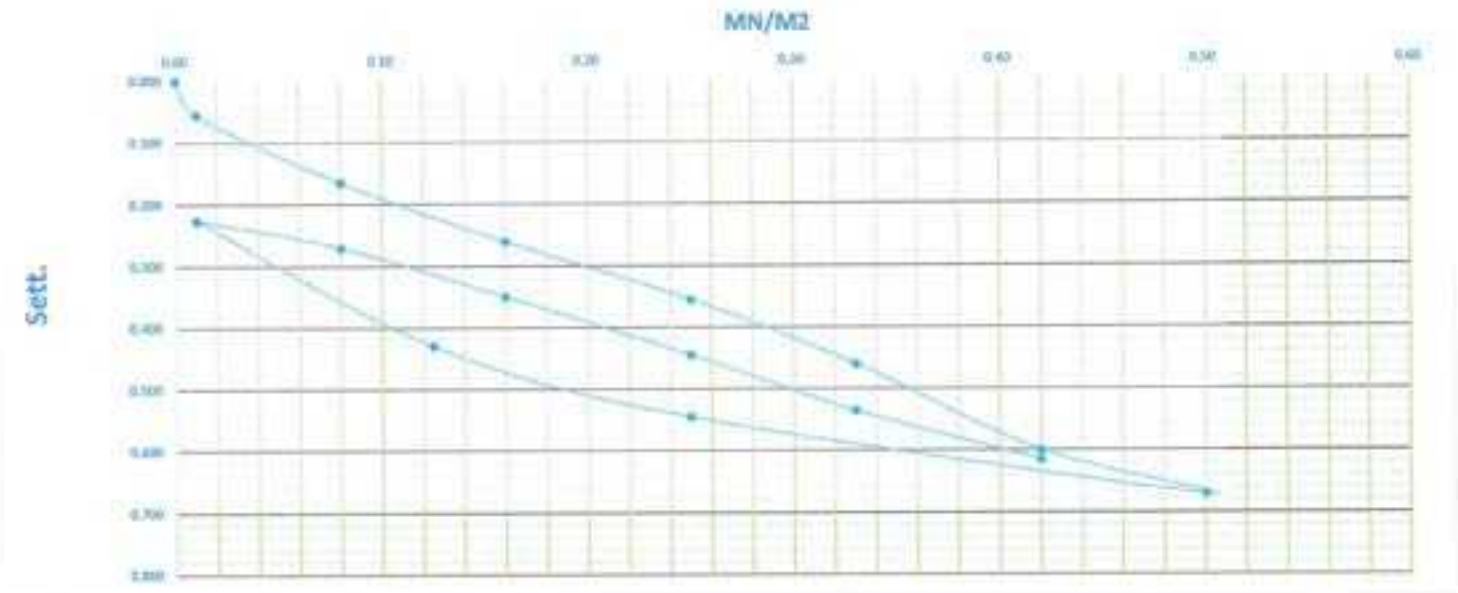
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

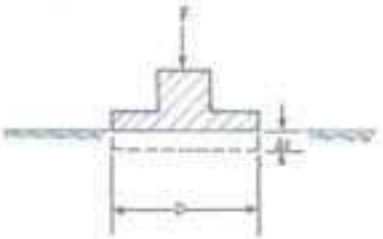
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+250
Taste 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.



F = load

s_F = 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	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	5.58	7.51		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.51	7.47		0.070	0.040		0.055
2.000	17.1	5.652	0.08	5.40	7.36		0.180	0.150		0.165
0.000	34.2	11.304	0.16	5.31	7.26		0.270	0.250		0.260
4.000	53.4	17.663	0.25	5.22	7.16		0.360	0.350		0.355
5.000	70.5	23.315	0.33	5.11	7.06		0.470	0.450		0.460
6.000	89.7	29.673	0.42	4.95	6.94		0.630	0.570		0.600
7.000	106.8	35.325	0.50	4.92	6.83		0.660	0.680		0.670
8.000	53.4	17.663	0.25	5.04	6.96		0.540	0.550		0.545
9.000	26.7	8.831	0.12	5.15	7.08		0.430	0.430		0.430
9.000	2.1	0.707	0.01	5.35	7.29		0.230	0.220		0.225
10.000	2.1	0.707	0.01	5.35	7.29		0.230	0.220		0.225
11.000	17.1	5.652	0.08	5.30	7.25		0.280	0.260		0.270
12.000	34.2	11.304	0.16	5.20	7.19		0.380	0.320		0.350
13.000	53.4	17.663	0.25	5.10	7.10		0.480	0.410		0.445
14.000	70.5	23.315	0.33	5.00	7.02		0.580	0.490		0.535
15.000	89.7	29.673	0.42	4.92	6.94		0.660	0.570		0.615

		s	ΔS	Δσ
$0.7\ \sigma_1$	0.35	0.53875	0.29062	0.2
$0.3\ \sigma_1$	0.15	0.24813		
$0.7\sigma_2$	0.35	0.55278	0.23777	0.2
$0.3\sigma_2$	0.15	0.315		
D (mm)	300			
Ev_1	154.84			
Ev_2	189.26			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.22		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

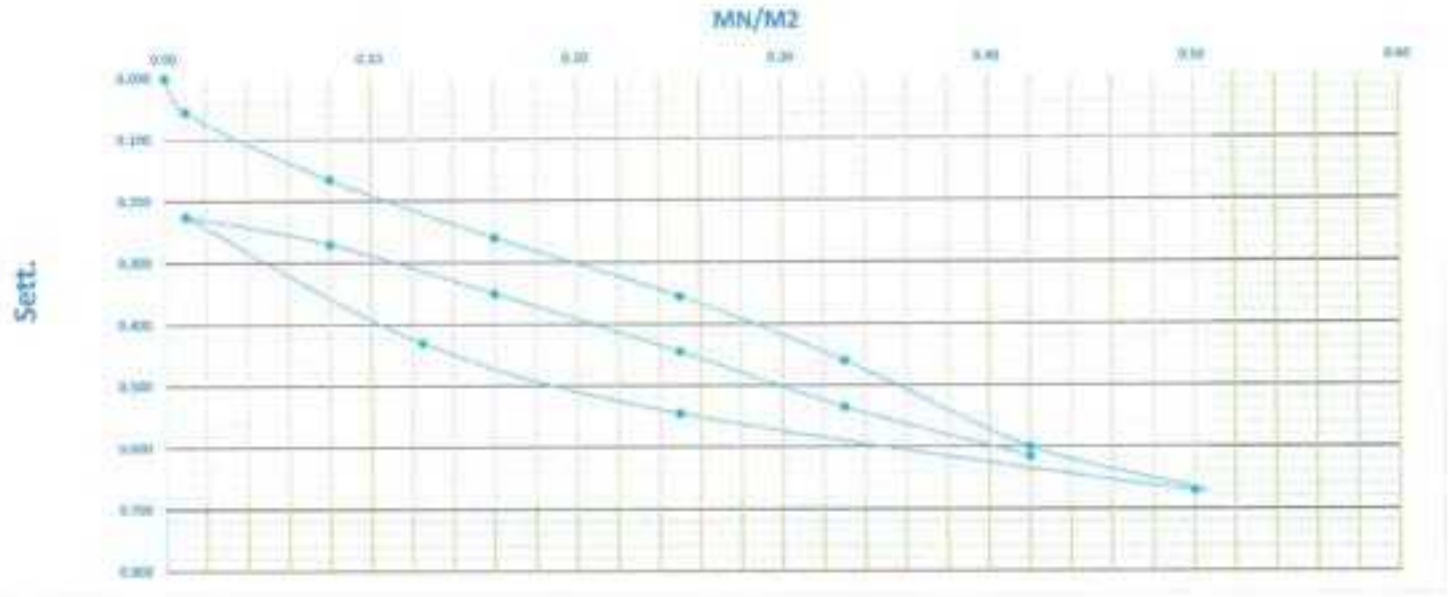
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

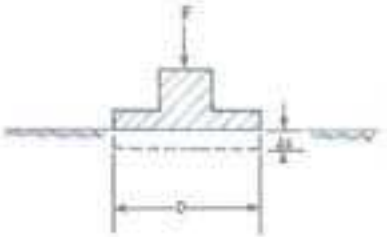
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+275
Taste 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.



F = 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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	10.02	4.19		0.000	0.000		0.000
1.000	2.1	0.707	0.01	9.64	4.04		0.380	0.150		0.265
2.000	17.1	5.652	0.08	9.33	3.86		0.690	0.330		0.510
0.080	34.2	11.304	0.16	9.04	3.61		0.980	0.580		0.780
4.000	53.4	17.663	0.25	8.68	3.47		1.340	0.720		1.030
5.000	70.5	23.315	0.33	8.32	3.38		1.700	0.810		1.255
6.000	89.7	29.673	0.42	7.92	3.29		2.100	0.900		1.500
7.000	106.8	35.325	0.50	7.43	3.22		2.590	0.970		1.780
8.000	53.4	17.663	0.25	7.50	3.28		2.520	0.910		1.715
9.000	26.7	8.831	0.12	7.70	3.41		2.320	0.780		1.550
9.000	2.1	0.707	0.01	7.88	3.78		2.140	0.410		1.275
10.000	2.1	0.707	0.01	7.88	3.78		2.140	0.410		1.275
11.000	17.1	5.652	0.08	7.85	3.72		2.170	0.470		1.320
12.000	34.2	11.304	0.16	7.74	3.52		2.280	0.670		1.475
13.000	53.4	17.663	0.25	7.60	3.36		2.420	0.830		1.625
14.000	70.5	23.315	0.33	7.52	3.32		2.500	0.870		1.685
15.000	89.7	29.673	0.42	7.40	3.28		2.620	0.910		1.765

		α	ΔS	Δσ
$0.7\,\sigma_1$	0.35	1.255	0.50875	0.2
$0.3\,\sigma_1$	0.15	0.74625		
$0.7\sigma_2$	0.35	1.70278	0.33777	0.2
$0.3\sigma_2$	0.15	1.365		
D (mm)	300			
Ev_1	88.45			
Ev_2	133.23			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.51		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

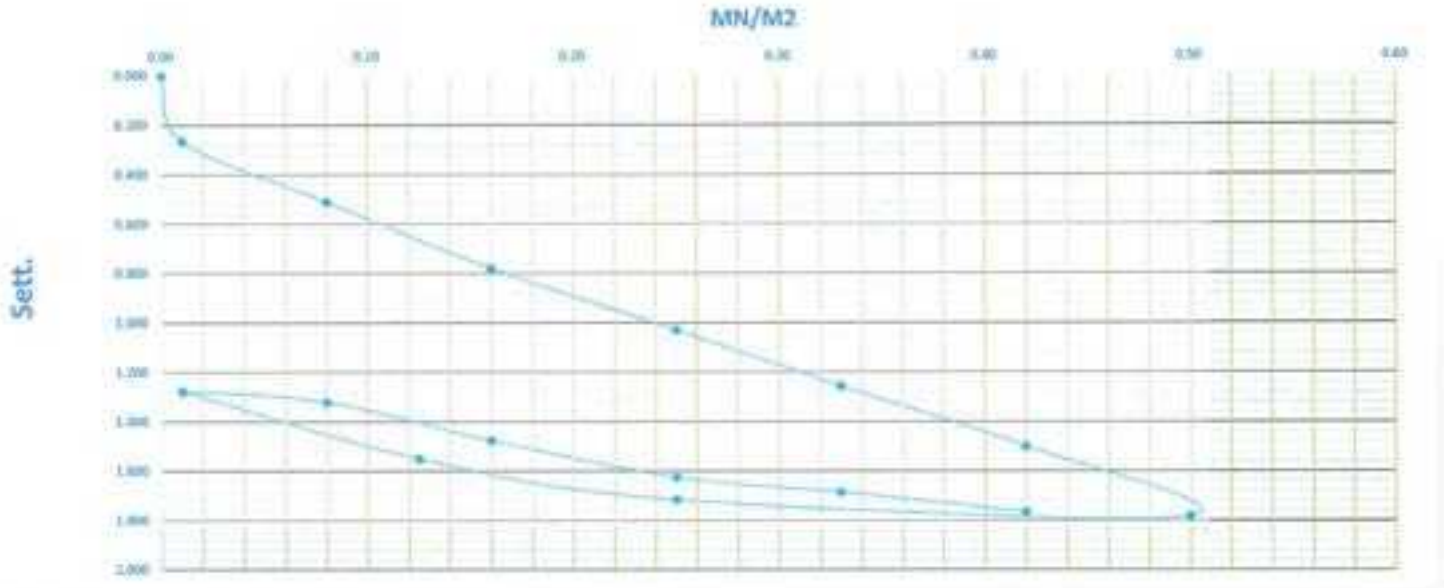
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Speciallist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

Owner Consultant | Contractor Consultant | Contractor | Owner

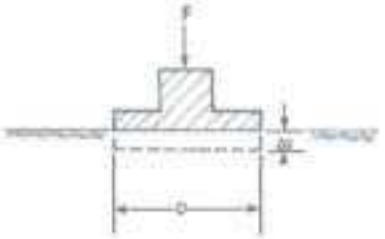
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+300
Taste 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.



F = 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/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	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	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	0.490		0.490
4.000	53.4	17.663	0.25	17.17	15.52		0.790	0.730		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

		s	Δs	Δσ
$0.7\,\sigma_1$	0.35	0.95813	0.49813	0.2
$0.3\,\sigma_1$	0.15	0.46		
$0.7\sigma_2$	0.35	1.12722	0.25222	0.2
$0.3\sigma_2$	0.15	0.875		
D (mm)	300			
Ev_1	90.34			
Ev_2	178.42			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.97		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

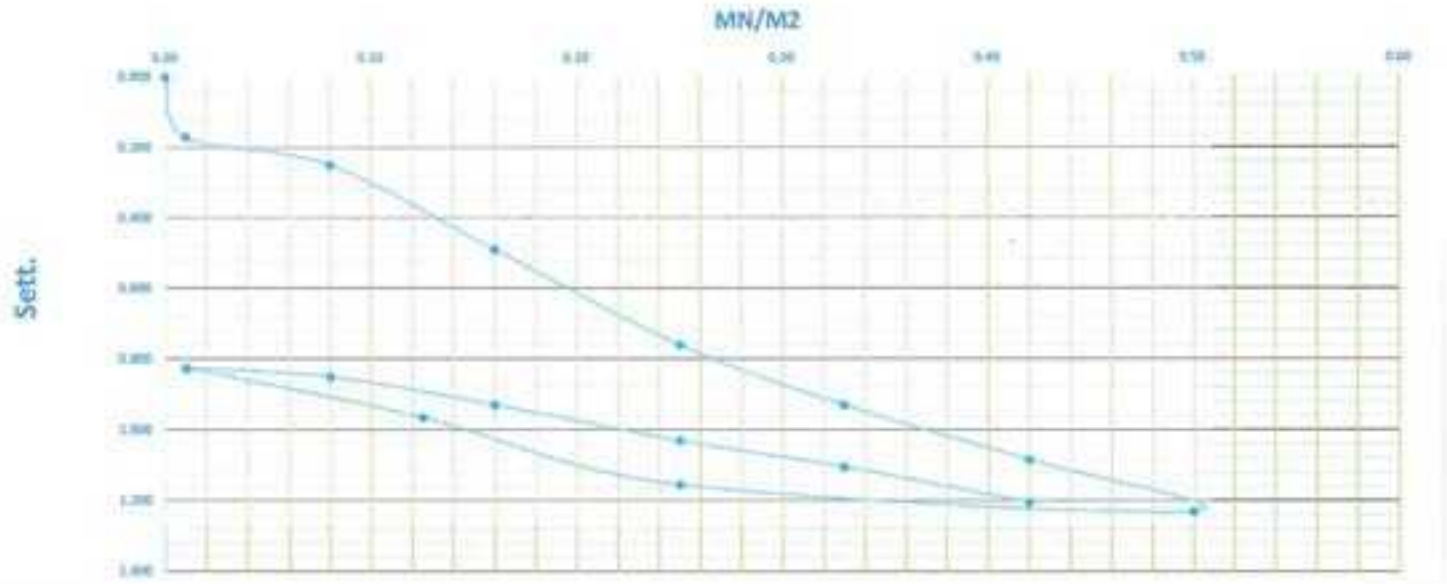
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed

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.				
Issued by Contractor	Name	Sign		Date			Time				
	Eng : Mahmoud Elkhlhwy			21 – 6 - 2023							
Received by Employers Representative			UIR	C1	C2	C3	DD	MM	YY	HH	MM
				K.P536	T R	O T	21	6	2023	10	18

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+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	ITP Reference	MS Reference	

Civil	Survey	Material
visual inspection is Approved Moaz Mostafa 21/6/2023	levels Are Approved Ahmed Ashraf	Approved Moaz Mostafa 21/6/2023

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

* Designer

** Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع (فوكه - مطروح)
شركة (الزهور)
من المحطة (536+140) إلي المحطة (536+220)

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.م. خالد فتحيل

LAYER LEVEL	0.9

STATION	LEFT SIDE				PGL			RIGHT SIDE			
	ACT. WIDTH	7	4	S.E.%	DESIGN LEVEL	FERMA LEVEL	CL	S.E.%	4	7	ACT. 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.							+1				
Diff.		✓	-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.							+1				
Diff.		+1	-1						-1	✓	
536+180		59.56	59.68	-4%	59.84	58.94	59.84	-4%	59.68	59.56	
Act.							-1				
Diff.		✓	-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.							-1				
Diff.		+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.							-1				
Diff.		✓	-1						+1	✓	

Ahmed Ashraf
(Totalstation) فني

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	53.48	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	5.14	5.39	5.33	5.31	4.99	5.12	4.97	4.73	4.66	4.74
Upper Empankemnt		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				
Lower Empankment		-5.5													
		-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

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

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

Contractor Company	El . Zhoor . Company			Designer Company				KK CONSULT.		
Issued by Contractor	Name	Sign		Date				COD		
	Eng \ Mahmoud Elkhlawy			18-5-2023				ZH 2 P.G		
Received by ER			MIR	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	Work Activity		
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					
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 specificontions and accepted	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	**ENG : Mahmoud Elkhlawy**			
QA/QC *	Abdallah SAMY			
GARB**				

MATERIAL APPROVAL REQUEST

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

CODE 1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp 536 Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Sub ballast			
Location to be Used	536+000 to 537+000			
Item	Spacification	Test Requirment	Test Result Attachment	Remark
1	ASTM D 75	Aggregate Sampling	According Spacification	
2	ASTM C 136	Sieve Analysis	According Spacification	
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 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	A-AWC-R
Contractor	ENG : MAHMOUD ELKHLAWY			
QA/QC *	Abdallah SAMY	Abdallah SAMY		
GARB**				
Employers Representative				

Operating Lab	Mansour LAb	

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA To MARSA MATROUH

From Station 504+000 To Station 568+177

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	3/6/2023	node	ZONE	536+000	537+000
location	K.P 536+500 (5000 m3)	ZH-SP-5	Material	Sub-Ballast	
NAME COMPANY	Elzohor				

1-visual inspection test

2-Gradient 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	8689.0	4513.0	1433.0	3443.0			
Cumulative Retained (g)	0.0	0.0	1035.0	9724.0	14237.0	15670.0	19113.0		PRO	2.200
Cumulative Retained %	0.0	0.0	3.1	29.2	42.8	47.1	57.4		WC	5.9
Cumulative Passing %	100.0	100.0	96.9	70.8	57.2	52.9	42.6		CBR	94.7%

B-soft 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(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	96.9	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 LIMTS	LIQUID LIMIT (L.L)	PLASTIC LIMIT (P.L)	PLASTIC INDEX (P.I)
	N.P	N.P	N.P

Contractor

Consultant

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 565+177

operating Lab	Mansour Lab

Proctor Test

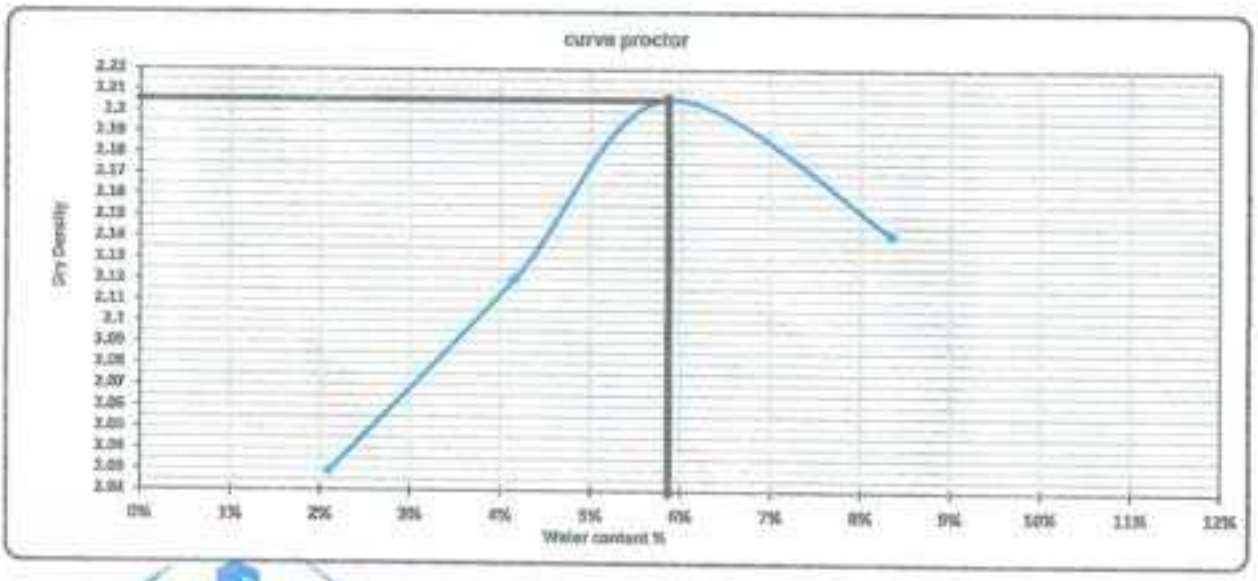
TESTING DATE:	4/6/2023	sand	Zone	536+000 TO 537+000
LOCATION	KP 536+500 (5000 m3)	ZH-SP-1		
NAME COMPANY	Elzohor			

Weight of empty mold :	5759.0
Mold Volumet	2134.0

MAX Dry Density	2.286
Water content %	5.9

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10188.0	10470.0	10741.0	10710.0	
WT. WET SOIL	4431.0	4711.0	4982.0	4951.0	
Wt. Density	2.073	2.200	2.335	2.320	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	55.05	54.5	55.65	52.62	56.96	56.74	56.74	57.92		
Wt. Of wet soil & tare	198.6	198.3	198.4	198.7	198.9	199.3	199.7	200.3		
Wt. Of dry soil & tare	195.5	195.5	192.9	192.7	191.3	191	188.8	189.3		
Wt. Of water	3.1	2.8	5.5	6.0	7.7	8.3	11.0	11.0		
Wt. Of dry soil	139.7	141.0	137.2	140.3	134.3	134.5	132.8	131.4		
Water content %	2.2%	2.0%	4.0%	4.3%	5.7%	6.0%	8.3%	8.4%		
AV.Water content %	2.1%		4.2%		5.9%		8.3%			
Dry Density	2.029		2.120		2.286		2.041			



Contractor

Consultant

KK	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	5/6/2023	Code	Zone	536+000	537+000
Location :	K.P 536+500 (5000 m3)	ZH-BP-4			
Name of Company	Elsalar				

- : Test Results

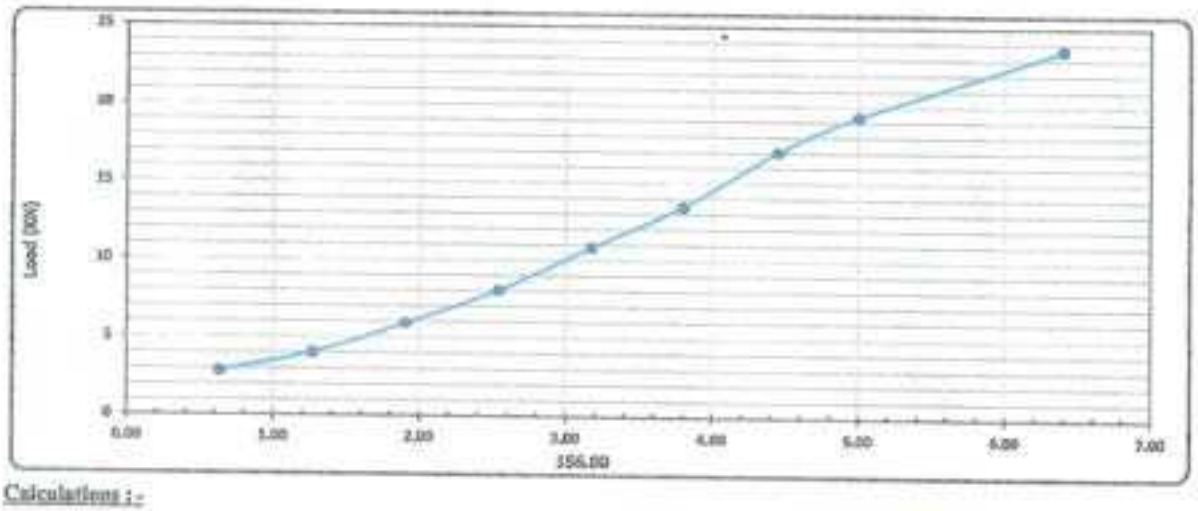
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2198
Mold WT. (gm)	8119
Mold WT. + Wet WT. (gm)	12760
Wet WT. (gm)	4621
Wet Density (g/cm^3)	2.101
Dry Density (g/cm^3)	2.098
Proctor Density (g/cm^3)	2.096
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare WT. (gm)	85.81
Tare WT. +Wet WT. (gm)	198.1
Tare WT. +Dry WT. (gm)	144.8
WWW	5.3
Dry WT. (gm)	59.0
Moisture Content %	5.98

Swelling	
Mold No.	3
Date	2
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	118.00
Swelling Ratio %	0%

Loading Readings :

156.00	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.00
Load Reading (kg)	288.00	412.00	602.00	879.00	1105.00	1375.00	1735.00	2170.00	3410.00
Load (KN)	2.8	4.0	5.9	8.6	10.8	13.5	17.0	19.3	23.6



Calculations :-

Penetration (mm)	Load (Kg)	Standard Load (lb)	CBR (%)	Moldi-Compaction (%)	Compaction (%)	CBR %
2.50	9.81	13.4	68.17%	100	98	95.1%
5.00	19.31	20.8	96.45%			94.7%

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

ENGINEERING CONSULTING OFFICE	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 534+000 To Station 538+017	

Absorbtion & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	6/6/2023	code	Station	536+000	537+000
LOCATION	K.P 536+500 (5000 m3)	ZN-RP-1	Material	Sub-Ballast	
NAME COMPANY	Elembor		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)	1979	gm	4000

Results:-

Bulk specific gravity = A / (B-C)	2.524	8790	4850	6130
Apparent specific gravity = A /(A-C)	2.649			
Absorbtion = (B-A)/A	1.622	%		

Los Angles 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 :	Abdelbah SAMR
Sign :	

	Electric Express Train - HSR	
	From El Ain El Sokhna City To El Alamein	
	Section -7 From FokaTo MARSA MATROUH	
	From Station 504+000 To Station 568+177	

ACTIVITY : Sand cone test	laboratory results	COD	Z H (S.B 1)

Company :	EL-ZHOUR COMPANY	Layer level :	Sub Ballast(0.9)
Description:	Compaction tast	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
2.20	5.8 6.3%	100%	1.68

Compaction Testing Results & Calculations

STATION	536+150	536+160	536+170	536+180	536+190	536+200	536+210	536+220		
Hole No.	1	2	3	4	5	6	7	8		
WT. of Sand before Test ,gm	9487	9671	9889	10099	9875	10517	10317	10317		
WT. of Sand After Test ,gm	5561	5749	5937	6125	5897	6522	6324	6591		
WT. of Sand in Cone + hole ,gm	3896	3922	3948	3974	3978	4005	3993	3946		
WT. of Sand in Cone	1140	1140	1140	1140	1140	1140	1141	1142		
WT. of Sand in hole ,gm	2756	2782	2808	2834	2838	2865	2852	2804		
Volume of the hole, Cm3	1862	1880	1897	1915	1918	1936	1927	1895		
WT. of Sand from Hole ,gm	4378	4389	4400	4411	4422	4433	4424	4425		
Bulk Density of Soil, Gm/cm3	2.351	2.335	2.319	2.304	2.306	2.290	2.301	2.341		
Moisture Content , %	6.3	5.8	5.3	4.7 X	4.3 X	3.3 X	4.3 X	5.3		
Dry Density, gm/cm3	2.208	2.205	2.202	2.200	2.219	2.213	2.202	2.219		
Compaction, (%)	100.3%	100.2%	100.1%	100.0%	100.7%	100.6%	100.1%	100.0%		

Acceptance Criteria	Comply		Not Comply			

CONSULTANT COMMENTS	

Site engineer :-

Name :- Mahmoud El Khlawy

Signature :-

Consultant Materials Engineer :-

Name :- Moaz Mostafa

Signature :- 22/6/2023

Owner Consultant | Contractor Consultant | Contractor | Owner

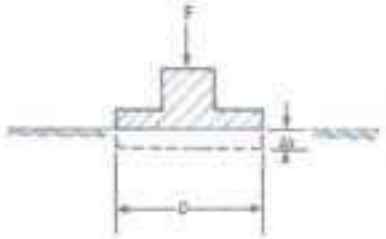
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+150
Taste 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.



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 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 6 steps. A loaded truck, an excavator or a roller usually serve as counterweight for the hydraulic jack

Diameter = 300mm

Loading	Load	Load	Stress	Dial 1	Dial 2	Dial 3	Sett. 1	Sett. 2	Sett. 3	Avg. Sett.
Stage No.	Bar	KN	MN/M2	mm	mm	mm	mm	mm	mm	mm
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		0.210	0.110		0.160
2.000	17.1	5.652	0.08	10.61	9.59		0.310	0.220		0.265
0.080	34.2	11.304	0.16	10.44	9.43		0.480	0.380		0.430
4.000	53.4	17.663	0.25	10.32	9.30		0.600	0.510		0.555
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	9.13		0.810	0.680		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		0.535
12.000	34.2	11.304	0.16	10.24	9.29		0.680	0.520		0.600
13.000	53.4	17.663	0.25	10.18	9.18		0.740	0.630		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		0.805

		s	SS	Δσ
$0.7\,\sigma_1$	0.35	0.68125	0.27188	0.2
$0.3\,\sigma_1$	0.15	0.40938		
$0.7\sigma_2$	0.35	0.76222	0.19723	0.2
$0.3\sigma_2$	0.15	0.565		
D (mm)	300			
E_{V1}	165.52			
E_{V2}	228.17			
Area ($S_{0.05}$)	0.07065			

E_{V2}/E_{V1}	1.38		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

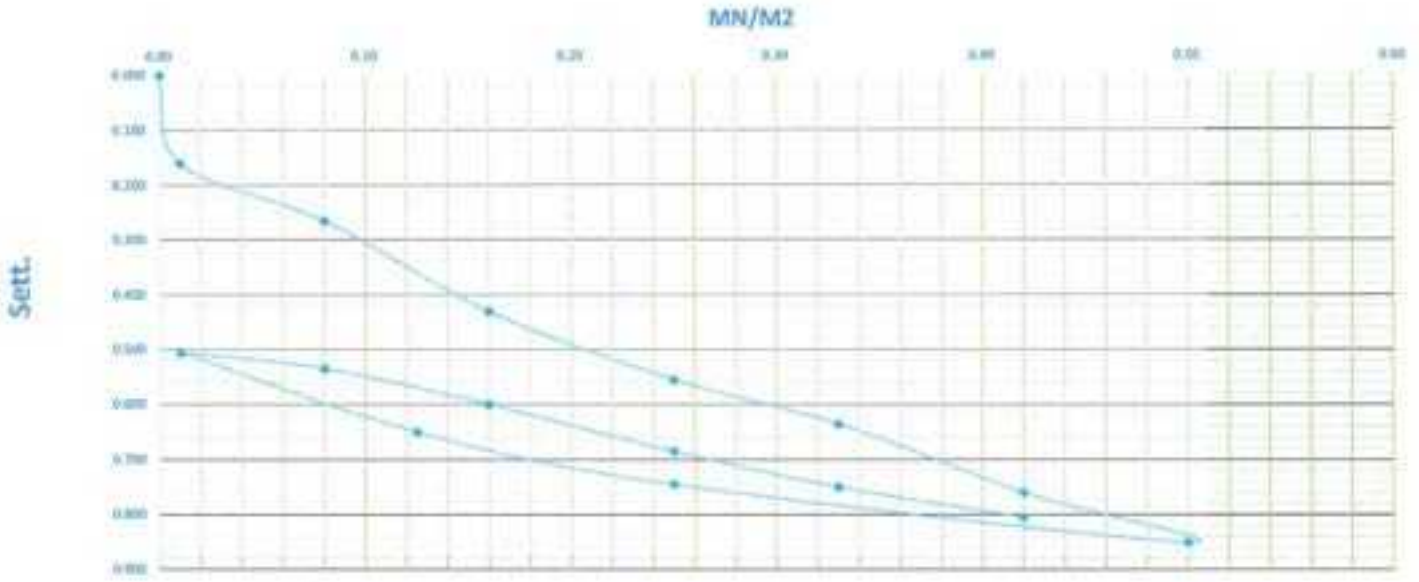
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmedhamed
Sign :	Sign :	Sign : Ahmedhamed

Owner Consultant | Contractor Consultant | Contractor | Owner

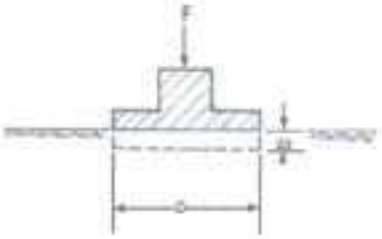
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+175
Taste 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.



F = load

s_0 = 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 MN/M2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. 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	0.330		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		0.640	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		0.880	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	1.290		1.095
14.000	70.5	23.315	0.33	2.55	3.99		1.000	1.340		1.170
15.000	89.7	29.673	0.42	2.45	3.96		1.100	1.370		1.235

		s	ΔS	Δs
$0.7\,\sigma_1$	0.35	1.08875	0.50375	0.2
$0.3\,\sigma_1$	0.15	0.58375		
$0.7\sigma_2$	0.35	1.18444	0.23944	0.2
$0.3\sigma_2$	0.15	0.945		
D (mm)	300			
Ev_1	89.33			
Ev_2	187.94			
Area (Sq.m)	0.07065			

Ev2/Ev1	2.10		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

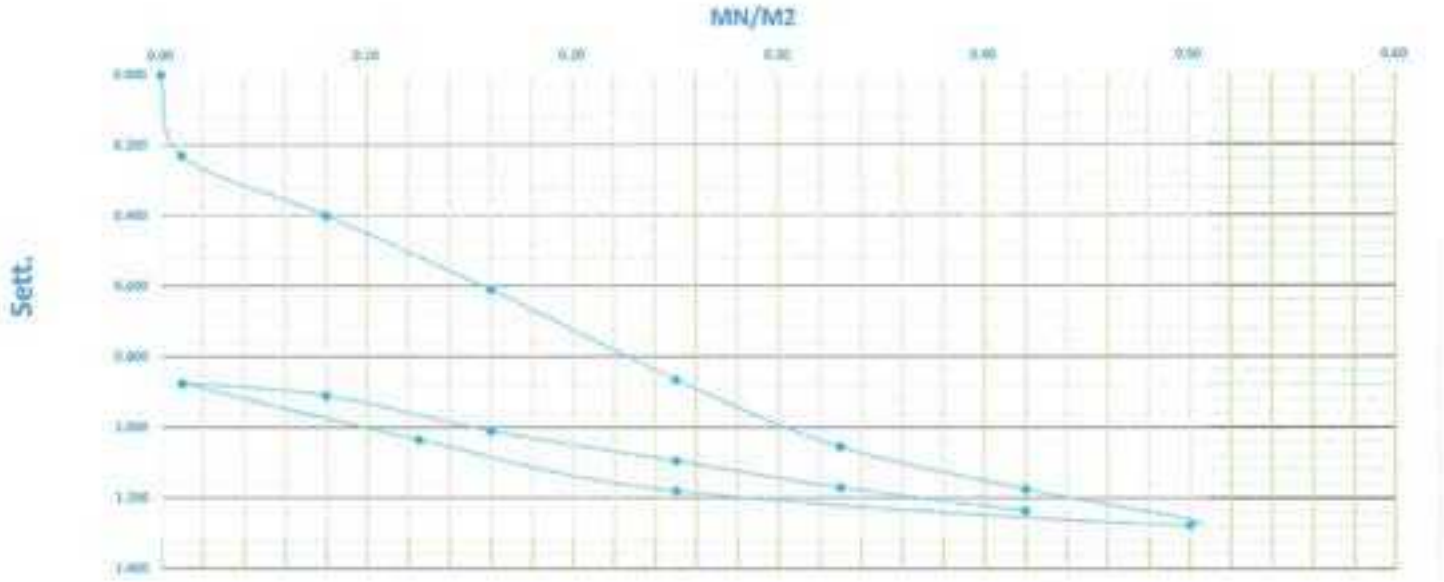
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed Mohamed
Sign :	Sign :	Sign : Ahmed Mohamed

Owner Consultant | Contractor Consultant | Contractor | Owner

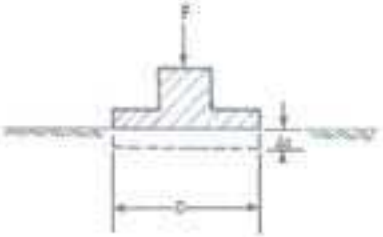
Plate Load Test Results

Company Name	EL-Zohor				
Location	536+000	To	536+300	Station	536+200
Taste 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.



F = load

s_0 = 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 N/mM2	Dial 1 mm	Dial 2 mm	Dial 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. 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	0.08	10.86	9.97		0.540	0.210		0.375
0.080	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	23.315	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	53.4	17.663	0.25	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	0.08	10.44	9.15		0.960	1.030		0.995
12.000	34.2	11.304	0.16	10.35	9.04		1.050	1.140		1.095
13.000	53.4	17.663	0.25	10.24	8.89		1.160	1.290		1.225
14.000	70.5	23.315	0.33	10.17	8.78		1.230	1.400		1.315
15.000	89.7	29.673	0.42	10.12	8.67		1.280	1.510		1.395

		s	ΔS	Δs
$0.7\,\sigma_1$	0.35	1.09813	0.52625	0.2
$0.3\,\sigma_1$	0.15	0.57188		
$0.7\sigma_2$	0.35	1.33278	0.38777	0.2
$0.3\sigma_2$	0.15	1.025		
D (mm)	300			
Ev_1	85.51			
Ev_2	146.21			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.71		

$$E_v = 0.75 \cdot D \cdot \Delta\sigma / \Delta s$$

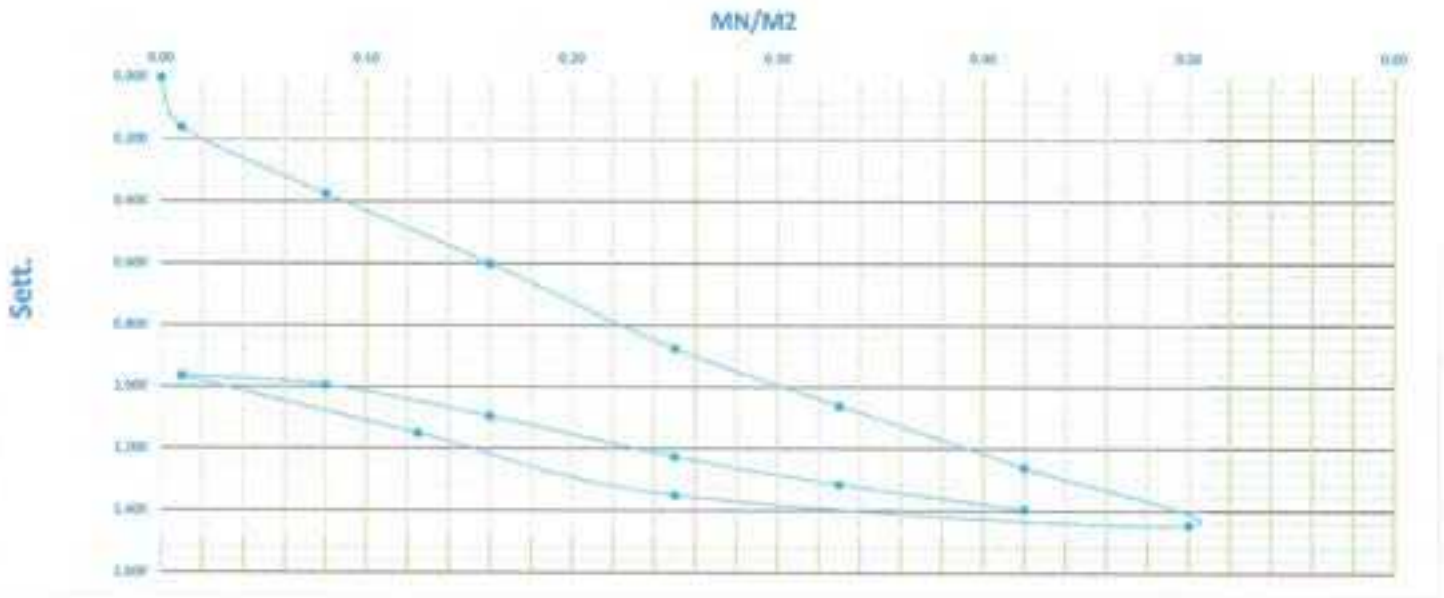
E_v = deformation modulus

$\Delta\sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Ahmed hamed
Sign :	Sign :	Sign : Ahmed hamed