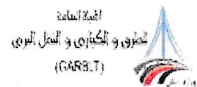


MATERIAL INSPECTION REQUEST



Contractor Company	U MARK 2 COMPANY		Designer Company																	
Issued by Contractor	Name	Sign	Date	Time																
	Eng. Mohamed Farg																			
Contractor reference	UM2 - (5)																			
Received by ER		MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>15</td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>		C1	C2	C3	DD	MM	YY	HH	MM				15	5	2023		
C1	C2	C3	DD	MM	YY	HH	MM													
			15	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	RPLACMENT FILL MATERIAL RESULTS				
Location to be Used	532+360 – 532+500 (-2.00) 532+280 – 532+360 (-0.25) 532+360 – 532+500 (-1.75) 532+040 – 532+160 (-0.00) 532+260 – 532+360 (-0.00)				
MAR Approval No				Date	
Supplier Name					
Test Requirement	Specification			Clause	
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m ³	5000	12-5-2023	
2	Classification	m ³	5000	12-5-2023	
3	Proctor & O.m.c	m ³	5000	12-5-2023	
4	L.L & P.L & PI	m ³	5000	12-5-2023	
5	C.B.R	m ³	5000	15-5-2023	

Comments by:

A sample has been taken from fill material by K.K office to (EL-NOBY laboratory) and the results founded meet the specifications and accepted.

Comments by:

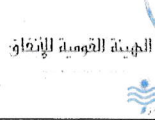
APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG/ Mohamed Farg			
QA/QC *	Hassan		15/5/2023	
GARB**	1			
Comments by				
Employers Representative				

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST



الهيئة العامة
للبنية التحتية
(GAR3.T)



U-MARK
GENERAL CONTRACTING

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



Location Name	Contractor Company				Designer Company						
Electric express train	U MARK 2 COMPANY										
Issued by Contractor	Name	Sign	Date	Time							
	ENG / Mohamed farg										
Contractor Reference	UM 2 - (5)										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM
							15	5	2023		

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Soil (A-1-A)			
Location to be Used	532+360 – 532+500 (-2.00)			
	532+280 – 532+360 (-0.25)			
	532+360 – 532+500 (-1.75)			
	532+040 – 532+160 (-0.00)			
	532+260 – 532+360 (-0.00)			
Item	Specification	Test requirement	Test result attachment	Remarks+
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.0 %	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.00 %	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	65.80	
Comments by:			Comments by:	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG / Mohamed Farg			
Contractor QA/QC *	Hassa			
GARB**				
Employers Representative				

* Designer

** Alignment/Bridges: Culvert only



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



Opreating Lab **AL Nuby Central Lab**

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	12-5-2023	Code			
LOCATION	K,P (531+500)	UM2 (5)	zone	531+000	532+000
NAME COMPANY	U- Mark				

1-visual inspection test

2-Gradient test

1-gradation of bulk materials				SAMPLE WEIGHT [g]		26354.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	
Mass retained (g)	0.0	1687.0	1987.0	2299.0	3269.0	3563.0	3835.0		
Cumulative Retained (g)	0.0	1687.0	3674.0	5973.0	9242.0	12805.0	16640.0		PRO
Cumulative Retained %	0.0	6.4	13.9	22.7	35.1	48.6	63.1		WC
Cumulative Passing %	100.0	93.6	86.1	77.3	64.9	51.4	36.9		CBR

3-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	68.50	189.00	337.50					
Cumulative Retained %	13.70	37.80	67.50					
Cumulative Passing %	86.30	62.20	32.50					

4-General gradient										
sieve size(in)	2	1.5	1	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	93.6	86.1	77.3	64.9	51.4	36.9	31.8	22.9	12.0

ATTERBERG LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	25.0%	19.6%	5.4%

Contractor



Consultant

Hassa

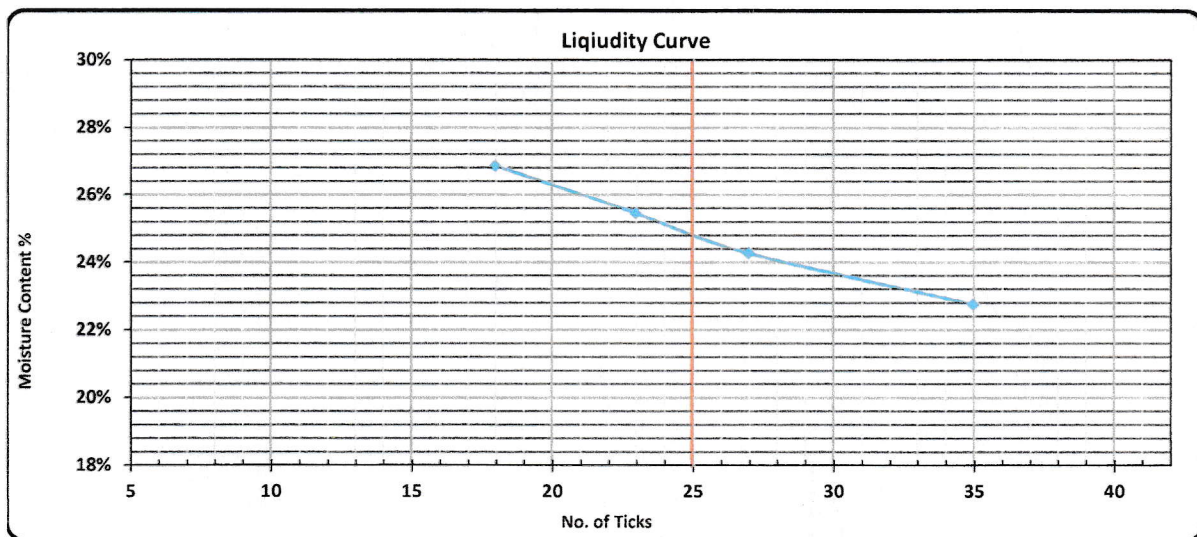
	Electric Express Train - HSR	
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Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	12-5-2023	code	ZONE	531+000	532+000
Location:	K.P (531+500)	UM2 (5)			
Company Name	U-MARK				

Testing Results :-

Test	Liquidity Limit				Plastic Limit	
No. of Ticks	35	27	23	18	-	-
Tare No.	37	88	30	34	50	36
Tare WT. (gm)	79.30	79.80	79.80	81.2	81.00	80.30
Tare WT. + Wet WT. (gm)	121.90	114.60	119.70	116.60	84.20	83.80
Tare WT. + Dry WT. (gm)	114.00	107.80	111.60	109.10	83.70	83.20
Water WT. (gm)	7.90	6.80	8.10	7.50	0.50	0.60
Dry WT. (gm)	34.70	28.00	31.80	27.90	2.70	2.90
Moisture Content %	22.8%	24.3%	25.5%	26.9%	18.5%	20.7%
Average %					19.6%	



L.L	P.L	P.I
25.0%	19.6%	5.43%

Lab. Specialist	Lab. Engineer	Consultant Engineer
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Name :

Name :

Name :

Sign :

Sign :

Sign :




PROCTOR TEST

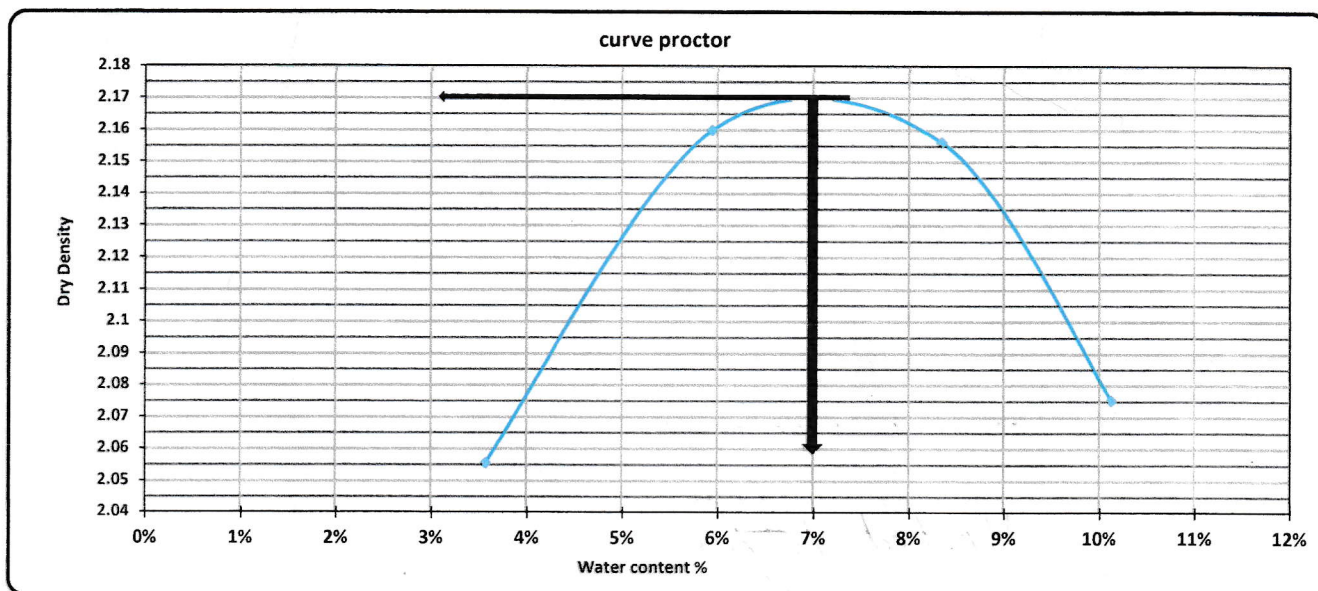
TESTING DATE:	12-5-2023	Code	zone	531+000	532+000
LOCATION	K,P (531+500)	UM2 (5)			
NAME COMPANY	U- Mark				

Weight of empty mold :	6033.0
Mold Volume:	2113.0

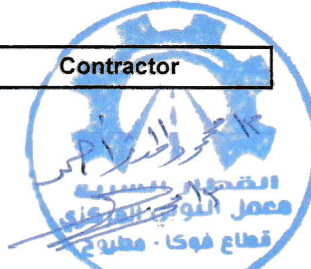
MAX Dry Density	2.17
Water content %	7

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10532.0	10869.0	10970.0	10863	
WT. WET SOIL	4499.0	4836.0	4937.0	4830.0	
Wt. Density	2.129	2.289	2.336	2.286	

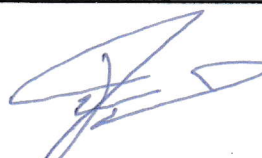
Tare No.	19	45	32	17	26	20	16	40		
Tare wt.	44.4	41.5	74.4	59.5	55	60.9	33.9	46.4		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	146.4	146.2	145.6	145.1	142.5	143.3	139.5	140.3		
Wt. Of water	3.6	3.8	4.4	4.9	7.5	6.7	10.5	9.7		
Wt. Of dry soil	102.0	104.7	71.2	85.6	87.5	82.4	105.6	93.9		
Water content %	3.5%	3.6%	6.2%	5.7%	8.6%	8.1%	9.9%	10.3%		
AV. Water content %	3.6%		6.0%		8.4%		10.1%			
Dry Density	2.056		2.160		2.156		2.075			



Contractor


 المقاول
 محمد النور
 قطاع فوكا - مطروح

Consultant



Operating Lab

AL Nuby Central Lab

California Bearing Ratio TEST

Testing Date :	15-5-2023	Code	FROM STA :	531+000	532+000
Location :	K,P (531+500)	UM2 (5)			
Company Name	U- Mark				

:- Test Results

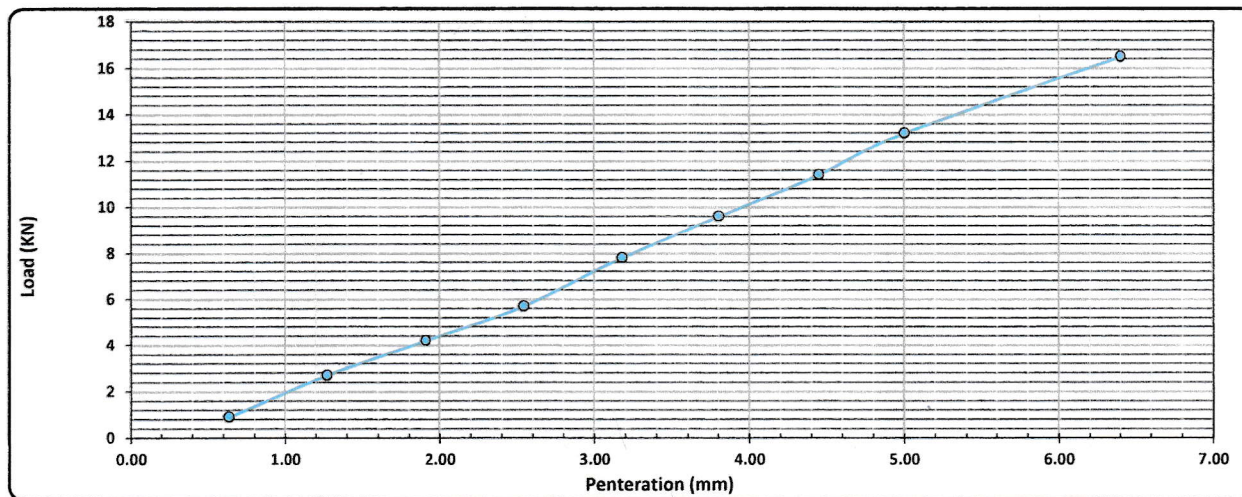
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm ³)	2122
Mold WT. (gm)	5075
Mold WT. + Wet WT. (gm)	9904
Wet WT. (gm)	4829
Wet Density (g/cm ³)	2.276
Dry Density (g/cm ³)	2.129
Proctor Density (g/cm ³)	2.170
Compaction %	98.1

Moisture Ratio After Compacted Mold	
Tare No.	19
Tare WT. (gm)	44.5
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.2
Wt Of Water	6.8
Dry WT. (gm)	98.7
Moisture Content %	6.9

Swelling	
Mold No.	6
Date	15-5-2023
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.09	0.14	0.19	0.26	0.32	0.38	0.44	0.55
Load (KN)	0.9	2.7	4.2	5.7	7.8	9.6	11.4	13.2	16.5



Calculations :-

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.70	13.4	42.7%	98	98	42.6%
5.00	13.20	20.0	65.9%			65.8%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

MATERIAL APPROVAL REQUEST



Location Name	Contractor Company				Designer Company						
Electric express train	U MARK 2 COMPANY										
Issued by Contractor	Name ENG / Mohamed farg	Sign 	Date	Time							
Contractor Reference	UM 2 - (6)										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM
								5	2023		

NB:Package 1 only (Package 2 via Content)

The following test result are attached for review

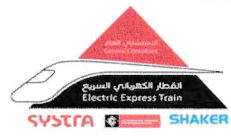
Description of Materials	Soil (A-1-A)			
Location to be Used	532+360 – 532+500 (-1.50) 532+160 – 532+260 (0.00) 532+360 – 532+500 (-1.25) 532+360 – 532+500 (-1.00) 532+360 – 532+500 (-0.75) 532+360 – 532+500 (-0.50) 532+360 – 532+400 (-0.25)			
Item	Specification	Test requirement	Test result attachment	Remarks+
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	8 0. %	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.00 %	
6	ASTM D 1557	Modified proctor	2.146	
7	ASTM D 1883	CBR	33.70	
Comments by:		Comments by:		
		تم ايتاد مشون كمية ... مطابقة للوصفات		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG / Mohamed Farg			
Contractor QA/QC *	Khaled Zaki			
GARB**				
Employers Representative				

* Designer

** Alignment/Bridges: Culvert only

MATERIAL INSPECTION REQUEST



Contractor Company	U MARK 2 COMPANY			Designer Company																
Issued by Contractor	Name	Sign	Date	Time																
	Eng. Mohamed Farag																			
Contractor reference	UM2 - (6)																			
Received by ER			MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td>2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM					5	2023		
C1	C2	C3	DD	MM	YY	HH	MM													
				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	RPLACMENT FILL MATERIAL RESULTS				
Location to be Used	532+360 – 532+500 (-1.50) 532+160 – 532+260 (0.00) 532+360 – 532+500 (-1.25) 532+360 – 532+500 (-1.00) 532+360 – 532+500 (-0.75) 532+360 – 532+500 (-0.50) 532+360 – 532+400 (-0.25)				
MAR Approval No				Date	
Supplier Name					
Test Requirement				Specification	Clause
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m ³	5000	18-5-2023	
2	Classification	m ³	5000	18-5-2023	
3	Proctor & O.m.c	m ³	5000	18-5-2023	
4	L.L & P.L & PI	m ³	5000	18-5-2023	
5	C.B.R	m ³	5000	20-5-2023	
Comments by:			Comments by:		
A sample has been taken from fill material by K.K office to (EL-NOBY laboratory) and the results founded meet the specifications and accepted.					

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG/ Mohamed Farag			
QA/QC *	Khaled Zaki			
GARB**				
Comments by				
Employers Representative				

* Designer

** Alignment / Bridges: Culvert Only



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



Operating lab Mansour Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	18/5/2023	code	Zone	532+000 To 532+500
LOCATION	KP 531+500	UM2-6		
NAME COMPANY	U-Mark 2			

-visual inspection test

-Gradient test

-gradation of bulk materials				SAMPLE WEIGHT [g]		22293.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	
0.00	0.0	1292.0	1516.0	2475.0	3099.0	3165.0	3557.0		A-1-a
Cumulative Retained (g)	0.0	1292.0	2808.0	5283.0	8382.0	11547.0	15104.0	PRO	2.146
Cumulative Retained %	0.0	5.8	12.6	23.7	37.6	51.8	67.8	WC	7.00
Cumulative Passing %	100.0	94.2	87.4	76.3	62.4	48.2	32.2	CBR	33.70

-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	66.00	243.00	376.00					
Cumulative Retained %	13.20	48.60	75.20					
Cumulative Passing %	86.80	51.40	24.80					

-General gradient										
sieve size(in)	2	1.5	1	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	94.2	87.4	76.3	62.4	48.2	32.2	28.0	16.6	8.0

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

Contractor

Consultant
Khaled Zaki
Zaki



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

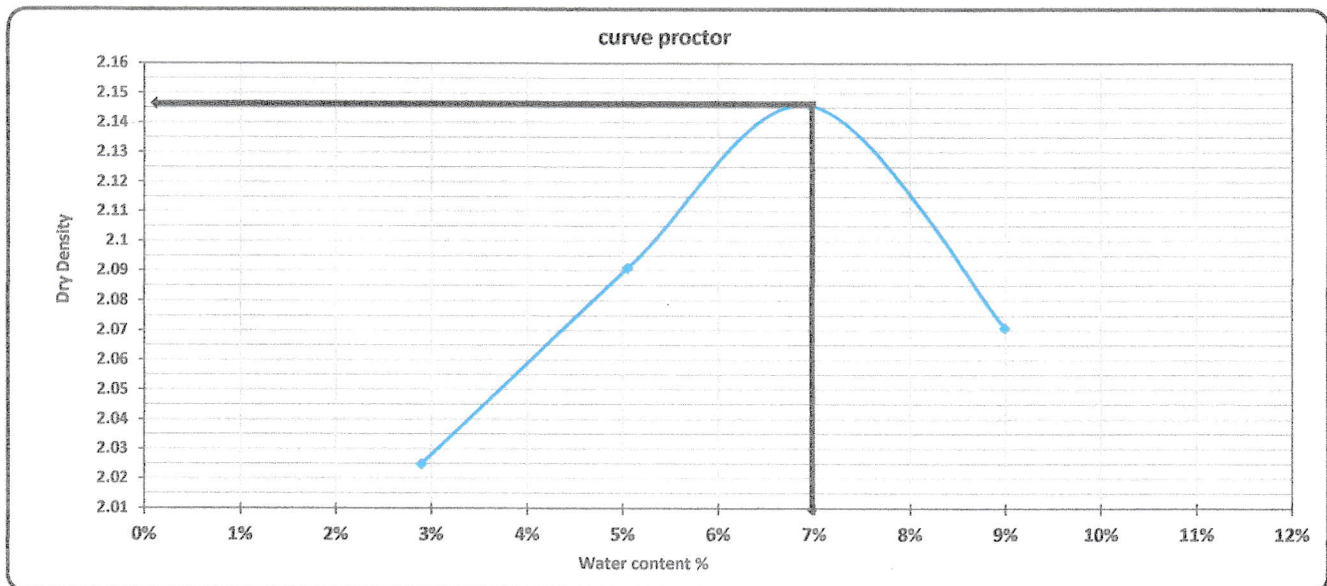
TESTING DATE:	18/5/2023	code		
LOCATION	KP 531+500	UM2-6	Zone	532+000 To 532+500
NAME COMPANY	U-Mark 2			

Weight of empty mold :	5759.0
Mold Volume:	2134.0

MAX Dry Density	2.146
Water content %	7

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10205.4	10446.3	10656.6	10576.0	
WT. WET SOIL	4446.4	4687.3	4897.6	4817.0	
Wt. Density	2.084	2.196	2.295	2.257	

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	150.3	149.9	150.3	151.3	149.7	150.1	149.2	151.8		
Wt. Of dry soil & tare	147.6	147.3	145.6	146.7	143.5	144.2	141.6	144.0		
Wt. Of water	2.7	2.6	4.7	4.6	6.2	5.9	7.6	7.7		
Wt. Of dry soil	91.7	92.8	90.0	94.3	86.5	87.5	84.8	86.1		
Water content %	3.0%	2.8%	5.3%	4.8%	7.2%	6.8%	9.0%	9.0%		
AV. Water content %	2.9%		5.1%		7.0%		9.0%			
Dry Density	2.025		2.091		2.146		2.071			



Consultant
Khaled Zaki
[Signature]

California Bearing Ratio TEST

Testing Date :	20/5/2023	Code	ZONE	532+000	532+500
Location :	K.P 531+500	UM2-6			
Name of Company	U-MARK2				

- : Test Results

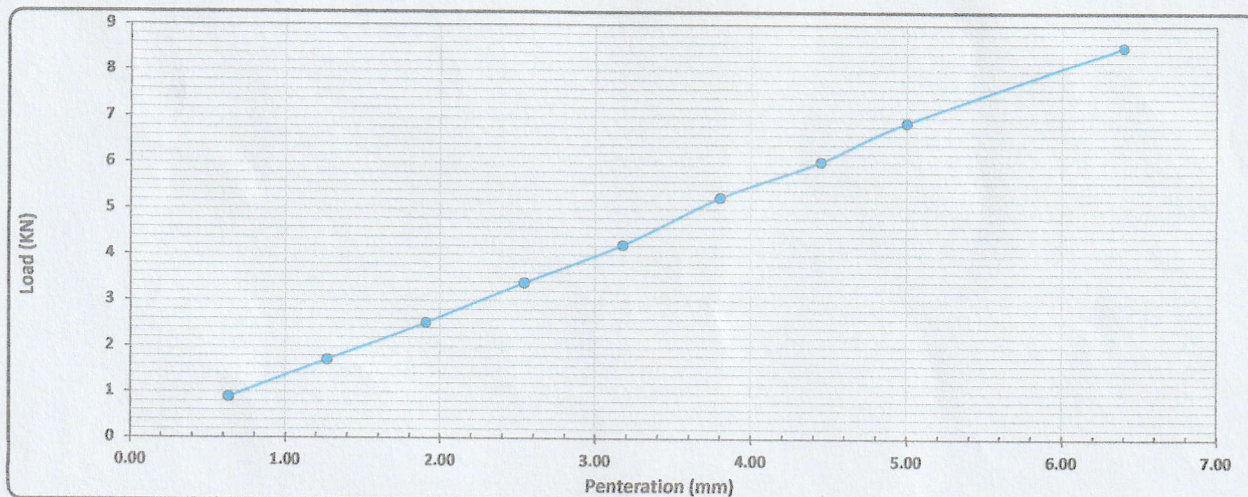
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm ³)	2122
Mold WT. (gm)	6075
Mold WT. + Wet WT. (gm)	10974.8
Wet WT. (gm)	4900
Wet Density (g/cm ³)	2.309
Dry Density (g/cm ³)	2.158
Proctor Density (g/cm ³)	2.146
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	13
Tare WT. (gm)	59.5
Tare WT. +Wet WT. (gm)	150.44
Tare WT. +Dry WT. (gm)	144.5
Water WT. (gm)	5.9
Dry WT. (gm)	85.0
Moisture Content %	7.0

Swelling	
Mold No.	1
Date	
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	116.00
Swelling Ratio %	0%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	90.00	174.00	256.00	345.00	430.00	535.00	615.00	702.00	870.00
Load (kN)	0.9	1.7	2.5	3.4	4.2	5.2	6.0	6.9	8.5



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	خذ نسبة 98 %
2.50	3.38	13.4	25.3%	100	98	24.8%
5.00	6.88	20.0	34.4%			33.7%

Lab. Engineer

Name :

Sign :

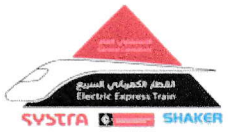


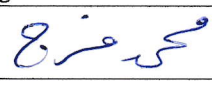
Consultant Engineer

Name :

Sign :

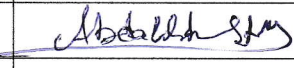
Khaleel Zakri
fwp

MATERIAL INSPECTION REQUEST	   				

Contractor Company	U MARK 2 COMPANY		Designer Company																	
Issued by Contractor	Name	Sign	Date	Time																
	Eng. Mohamed Farg																			
Contractor reference	UM2 - (7)																			
Received by ER		MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>5</td> <td>6</td> <td>2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM				5	6	2023			
C1	C2	C3	DD	MM	YY	HH	MM													
			5	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		

Description of Materials	RPLACMENT FILL MATERIAL RESULTS				
Location to be Used	532+400 – 532+500 (-0.25) 532+360 – 532+500 (0.00) ferma				
MAR Approval No				Date	
Supplier Name					
Test Requirement	Specification			Clause	
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m ³	2500	31-5-2023	
2	Classification	m ³	2500	31-5-2023	
3	Proctor & O.m.c	m ³	2500	31-5-2023	
4	L.L & P.L & PI	m ³	2500	31-5-2023	
5	C.B.R	m ³	2500	3-6-2023	
Comments by:			Comments by:		
A sample has been taken from fill material by K.K office to (Negida Central laboratory) and the results founded meet the specifications and accepted.					

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG/ Mohamed Farg			
QA/QC *	Abdallah SAMY			
GARB**				
Comments by				
Employers Representative				

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST



Location Name	Contractor Company				Designer Company						
Electric express train	U MARK 2 COMPANY										
Issued by Contractor	Name	Sign	Date	Time							
	ENG / Mohamed farg										
Contractor Reference	UM 2 - (7)										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM
							5	6	2023		

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Soil (A-1-A)			
Location to be Used	532+400 – 532+500 (-0.25) 532+360 – 532+500 (0.00) ferma			
Item	Specification	Test requirement	Test result attachment	Remarks+
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	8.7 %	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.4 %	
6	ASTM D 1557	Modified proctor	2.196	
7	ASTM D 1883	CBR	44.5 %	
Comments by:			Comments by:	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG / Mohamed Farg			
Contractor QA/QC *				
GARB**				
Employers Representative				

* Designer

** Alignment/Bridges: Culvert only

Operating Lab Negida Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

Description of Materials Embankment

Testing Date	31-05-23	code		From Station		TO Station
Location	K.P 531+500	U-MARK2 (7)	Zone	532+000		532+500
Company Name	U-MARK2 COMPANY					

1-visual inspection test :-

2-Gradient test :-

A-gradation of bulk materials				SAMPLE WEIGHT [g]		38057.00	gm		table classify
sieve size	2	1.5	1	3/4	1/2	3/8	# 4	PASS	soil classify
Mass retained (g)	920.0	4606.0	7531.0	3603.0	3705.0	1635.0	3642.0		A-1-a
Cumulative Retained (g)	920.0	4606.0	12137.0	15740.0	19445.0	21080.0	24722.0	proctor	2.110
Cumulative Retained %	2.6	12.8	33.7	43.7	53.9	58.5	68.6	W.C	7.4
Cumulative Passing %	97.4	87.2	66.3	56.3	46.1	41.5	31.4	CBR	44.5%
								Corr.Proctor	2.196%
								Corr.o.m.c	7.6%

B-soft material gradation				WT.OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	44.00	185.00	362.00				
Cumulative Retained %	8.80	37.00	72.40				
Cumulative Passing %	91.20	63.00	27.60				

C-General gradient

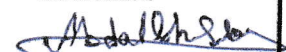
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	97.4	87.2	66.3	56.3	46.1	41.5	31.4	28.7	19.8	8.7

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

Contractor

Consultant

شركة توريد البضائيات
 المعمل المركزي
 مشروع القطار السريع / فوكا - مطروح



 K.K. KAWTHAR KAWTHAR CONSULTING GROUP ك.ك. كواثر كواثر للاستشارات الهندسية	 SYSTRA SHAKER SYSTRA SHAKER SYSTRA SHAKER	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	 الهيئة العامة للتخطيط والتنمية الاقتصادية (GASBLT)
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PROCTOR TEST

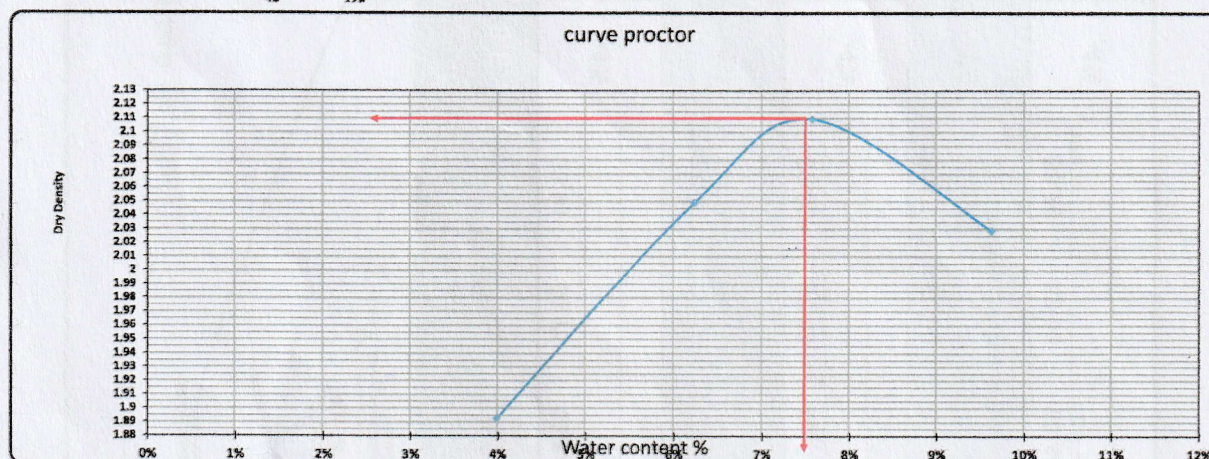
Testing Date	31-05-23	code		From Station	To Station
Location	K.P 531+500	U-MARK2 (7)	Zone	532+000	532+500
U-MARK2 COMPANY	U-MARK2 COMPANY				

Weight of empty mold	5698.0	MAX Dry Density	2.11
Mold Volume	2127.0	Water content %	7.4

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	9884.0	10328.0	10525.0	10429	
WT. WET SOIL	4186.0	4630.0	4827.0	4731.0	
Wt. Density	1.968	2.177	2.269	2.224	

Tare No.	8	6	7	4	5	6	8	5		
Tare wt.	36.26	38.82	35.99	36.28	35.35	35.8	36.26	35.35		
Wt. Of wet soil & tare	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0		
Wt. Of dry soil & tare	155.20	155.38	152.69	152.75	151.23	151.22	149.05	149.11		
Wt. Of water	4.8	4.6	7.3	7.3	8.8	8.8	11.0	10.9		
Wt. Of dry soil	118.9	116.6	116.7	116.5	115.9	115.4	112.8	113.8		
Water content %	4.04%	3.96%	6.26%	6.22%	7.57%	7.61%	9.71%	9.57%		
AV. Water content %	4.00%		6.24%		7.59%		9.64%			
Dry Density	1.892		2.049		2.109		2.029			

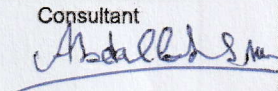
42 192



Contractor

Consultant

شركة تجميع المقاولات
 المعمل المركزي
 مشروع القطار السريع / فوكة - مطروح



California Bearing Ratio TEST

Testing Date	3-6-2023	code	Zone	From Station	To station
Location	K.P 531+500	U-MARK2 -(7)		532+000	532+500
Company Name	U-MARK2 COMPANY				

Test Results:

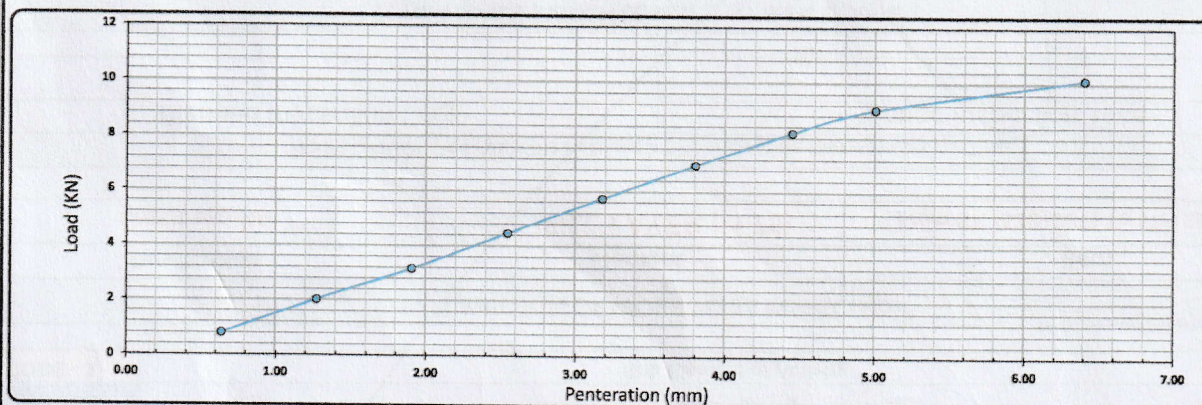
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm ³)	2103
Mold WT. (gm)	7099
Mold WT. + Wet WT. (gm)	11819
Wet WT. (gm)	4720
Wet Density (g/cm ³)	2.244
Dry Density (g/cm ³)	2.092
Proctor Density (g/cm ³)	2.110
Compaction %	99

Moisture Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	36.28
Tare WT. +Wet WT. (gm)	203.26
Tare WT. +Dry WT. (gm)	191.89
Water WT. (gm)	11.4
Dry WT. (gm)	155.6
Moisture Content %	7.31

Swelling	
Mold No.	3
Date	3-6-2023
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0.00
Sample Height (mm)	116.40
Swelling Ratio %	0%

Loading Reading :

Pentration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	81	204	321	454	585	710	832	920	1033
Load (KN)	0.8	2.0	3.1	4.4	5.7	7.0	8.2	9.0	10.1



Calculations :-

Pentration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	عدد نسبة 98
2.50	4.45	13.4	33.3%	99	98	32.95%
5.00	9.02	20.0	45.0%			44.51%

Lab. Specialist

Lab. Engineer

Consultant Engineer

Name :

Name :

Name :

Sign :

Sign :

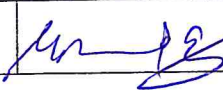
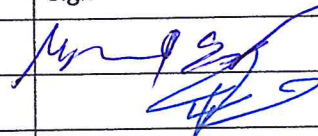
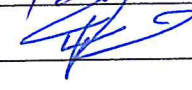
Sign :

شركة نجمة للمقاولات
المعمل المركزي
مشروع القطار السريع / فوكة - مطروح

MATERIAL INSPECTION REQUEST	 الهيئة العامة للنقل والبنية التحتية (GARBT)	 U-MARK GENERAL CONTRACTING	 ENGINEERING CONSULTING OF Khaled Fawzy El-Khadrawy (K.K.)	 SVSTRA SHAKER																
Contractor Company	U MARK COMPANY		Designer Company																	
Issued by Contractor	Name Eng. Mohamed Farg	Sign 	Date	Time																
Contractor reference	UM - (P1)																			
Received by ER		MIR	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">28</td> <td style="text-align: center;">5</td> <td style="text-align: center;">2023</td> <td></td> <td></td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM				28	5	2023			
C1	C2	C3	DD	MM	YY	HH	MM													
			28	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	Prepared sub grade																			
Location to be Used	532+000 TO 532+500 (+0.25) 532+000 TO 532+500 (+0.50)																			
MAR Approval No				Date																
Supplier Name																				
Test Requirement				Specification	Clause															
Reference Photos	Yes attached / No	Other																		
Item	Description	Unit	Quantity	Arrival Date	Note															
1	Sieve analysis	m ³	4100	25-5-2023																
2	Classification	m ³	4100	25-5-2023																
3	Proctor & O.m.c	m ³	4100	27-5-2023																
4	L.L & P.L & PI	m ³	4100	27-5-2023																
5	C.B.R	m ³	4100	28-5-2023																
Comments by:			Comments by:																	
A sample has been taken from fill material by K.K office to (NEGIDA laboratory) and the results founded meet the specifications and accepted.																				
APPROVAL STATUS																				
Organisation	Name	Sign	Date	A-AWC-R																
Contractor	ENG/ Mohamed Farg																			
QA/QC *	ENG/Hassan																			
GARB**	ENG / Khaled Fawzy																			
Comments by																				
Employers Representative																				

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL INSPECTION REQUEST		   									
Contractor Company		U MARK COMPANY		Designer Company							
Issued by Contractor	Name	Sign	Date	Time							
	Eng. Mohamed Farg										
Contractor reference		UM - (P1)									
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM
							28	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			Prepared sub grade								
Location to be Used			532+000 TO 532+500 (+0.25) 532+000 TO 532+500 (+0.50)								
MAR Approval No									Date		
Supplier Name											
Test Requirement			Specification						Clause		
Reference Photos			Yes attached / No			Other					
Item	Description		Unit	Quantity	Arrival Date		Note				
1	Sieve analysis		m ³	4100	25-5-2023						
2	Classification		m ³	4100	25-5-2023						
3	Proctor & O.m.c		m ³	4100	27-5-2023						
4	L.L & P.L & PI		m ³	4100	27-5-2023						
5	C.B.R		m ³	4100	28-5-2023						
Comments by:						Comments by:					
A sample has been taken from fill material by K.K office to (NEGIDA laboratory) and the results founded meet the specifications and accepted.											
APPROVAL STATUS											
Organisation	Name		Sign		Date		A-AWC-R				
Contractor	ENG/ Mohamed Farg										
QA/QC *	ENG / Hassan										
GARB**	ENG / Khaled Fawzy										
Comments by											
Employers Representative											

* Designer

** Alignment / Bridges: Culvert Only

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	 SVS/TA SHAKER	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	 الهيئة العامة لتنظيم و التطوير (GARBEL)
Operating Lab NEGIDA CENTRAL LAB			

PARTICLE SIZE DISTRIBUTION OF Prepared Subgrade

Description of Materials	Prepared Subgrade	Code	Zone	FROM STATION	TO STATION
TESTING DATE:	25-5-2023	U-MARK-2 (P-1)		532+000	532+500
LOCATION	531+500				
COMPANY NAME	U-MARK 2				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		19347.00		gm	Table classify	
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	Soil Classify	A-1-a
Mass retained (g)	0.0	559.0	3741.0	1453.0	7281.0	774.0	1049.0		PRO	2.193
Cumulative Retained (g)	0.0	559.0	4300.0	5753.0	13034.0	13808.0	14857.0		WC	7.30
Cumulative Retained %	0.0	2.9	22.2	29.7	67.4	71.4	76.8		CBR	82.1%
Cumulative Passing %	100.0	97.1	77.8	70.3	32.6	28.6	23.2		Los Angles	25.6
									SP. Gravity	2.368
									Absorption	3.93

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	82.00	191.00	299.00					
Cumulative Retained %	16.40	38.20	59.80					
Cumulative Passing %	83.60	61.80	40.20					

C-General gradient										
sieve size(in)	2	1.5	1	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	97.1	77.8	70.3	32.6	28.6	23.2	19.4	14.3	9.3
SPECIFICATION	—	97	—	70 — 75	—	15 — 60	—	0 — 35	—	0 — 12

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

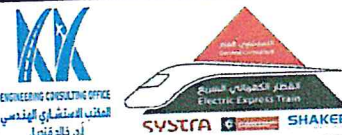
Contractor

Consultant

شركة تهيئة المقاولات
 المعمل المركزي
 مشروع القطار السريع / فوكا - مطروح

Hassan



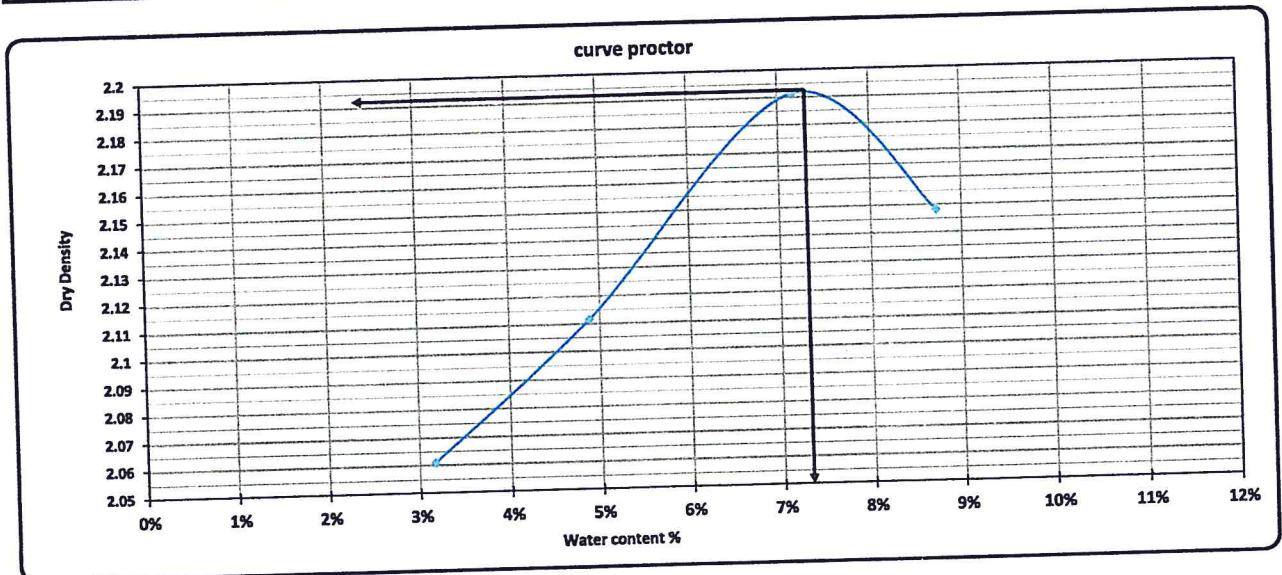
	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177		
	PROCTOR TEST (Prepared Subgrade)		

TESTING DATE:	27-5-2023	Code	zone	FROM	TO
LOCATION	KP 506+500	U-MARK-2 (P-1)		532+000	532+500
NAME COMPANY	U-MARK 2				

Weight of empty mold :	5698.0	MAX Dry Density	2.193
Mold Volume:	2127.0	Water content %	7.3

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10221.0	10409.0	10693.0	10666	
WT. WET SOIL	4523.0	4711.0	4995.0	4968.0	
Wt. Density	2.126	2.215	2.348	2.336	

Tare No.	7	19	13	17	15	40	31	32		
Tare wt.	42.2	44.1	53.6	53.2	30.9	46.2	80.7	82.7		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	146.20	146.00	144.05	143.93	141.09	141.30	139.00	139.55		
Wt. Of water	3.8	4.0	5.9	6.1	8.9	8.7	11.0	10.5		
Wt. Of dry soil	123.0	123.0	123.0	123.0	123.0	123.0	123.0	123.0		
Water content %	3.1%	3.3%	4.8%	4.9%	7.2%	7.1%	8.9%	8.5%		
AV. Water content %	3.2%		4.9%		7.2%		8.7%			
Dry Density	2.061		2.112		2.191		2.148			



Contractor

شركة نجيدة للمقاولات
 المعمل المركزي
 مشروع القطار السريع / فوكة - مطروح

Consultant

Hassan

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	 SVS7A SHAKER	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
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**Absorbition & Aggregate specific gravity
AASHTO-T85**

Prepared Subgrade

TESTING DATE:	28-5-2023	code	zone	FROM	TO
LOCATION	KP 506+500	U-MARK-2 (P-1)		532+000	532+500
NAME COMPANY	U-MARK 2				

Absorbition & specific gravity AASHTO-T85

Weight of sample	—	gm
Weight of saturated -dry surface sample (B)	3756	gm
Weight of saturated sample in water (C)	2230	gm
Weight of dry sample after heating (A)	3614	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.368	
Apparent specific gravity = $A / (A-C)$	2.611	
Asorbition = $(B-A)/A$	3.929	

Los Anglos abrasion AASHTO-T96

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
5000	3720	25.6

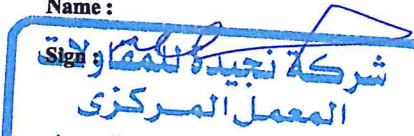
Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :


 شركة نجيدة للمقاولات
 المعمل المركزي
 مشروع القطار السريع / فوكة - مطروح

Consultant Engineer

Name :

Sign :



 وزارة النقل والبنى التحتية (MOT)	 مشروع القطار السريع / فوكا - مطروح	Electric Express Train - HSR	 الهيئة العامة للتخطيط والتنمية الاقتصادية
Operating Lab: NEGIDA CENTRAL LAB		California Bearing Ratio TEST	

Testing Date :	28-05-23	Code	ZONE	FROM	TO
Location :	KP 506+500	U-MARK-2 (P-1)		532+000	532+500
Company Name	U-MARK 2				

-: Test Results

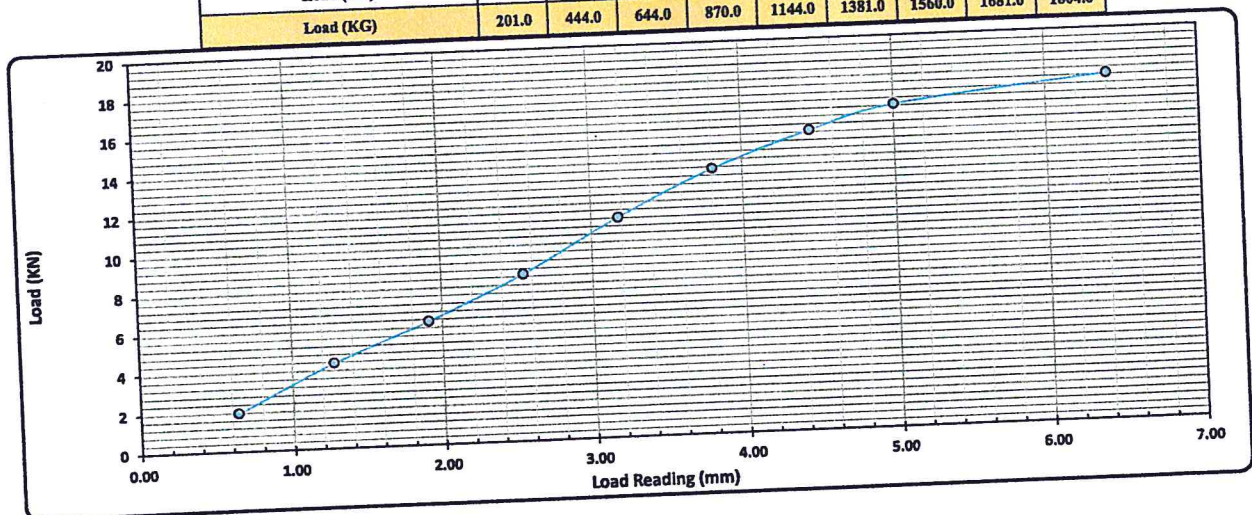
Compaction % for Mold	
Mold No.	2
Mold Vol.	2134
Mold WT. (gm)	8227
Mold WT. + Wet WT. (gm)	13165
Wet WT. (gm)	4938
Wet Density (g/cm^3)	2.314
Dry Density (g/cm^3)	2.154
Proctor Density (g/cm^3)	2.193
Compaction %	98

Moisture Ratio After Compacted Mold	
Tare No.	17
Tare WT. (gm)	53.2
Tare WT. + Wet WT. (gm)	143.62
Tare WT. + Dry WT. (gm)	137.36
Water WT. (gm)	6.3
Dry WT. (gm)	84.2
Moisture Content %	7.4

Swelling	
Mold No.	2
Date	28-5-2023
Initial Height (mm)	0.00
Final Height (mm)	0.00
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.0%

Loading Reading :

Load Reading (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load (KN)	2.0	4.4	6.3	8.5	11.2	13.5	15.3	16.5	17.7
Load (KG)	201.0	444.0	644.0	870.0	1144.0	1381.0	1560.0	1681.0	1804.0



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	98 عند نسبة 98
2.50	8.53	13.4	63.9%	98	98	63.7%
5.00	16.47	20.0	82.3%			82.1%

Lab. Specialist

Lab. Engineer

Consultant Engineer

Name :

Name :

Sign :

Sign :

شركة نجيدة للمقاولات
 Sign :
 المعمل المركزي
 مشروع القطار السريع / فوكا - مطروح

Plate Load Test Results

Company Name

U Mark

Location

532+360

To

532+500

Station

532+390

Taste Date

23/5/2023

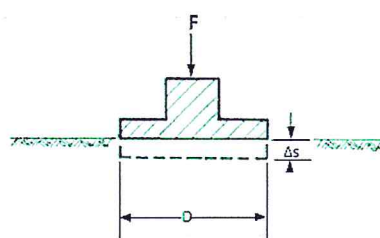
Layer level

-1.5

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	5.03	7.66		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.00	7.60		0.030	0.060		0.045
2.000	17.1	5.652	0.08	4.86	7.39		0.170	0.270		0.220
0.080	34.2	11.304	0.16	4.73	7.21		0.300	0.450		0.375
4.000	53.4	17.663	0.25	4.55	7.02		0.480	0.640		0.560
5.000	70.5	23.315	0.33	4.44	6.91		0.590	0.750		0.670
6.000	89.7	29.673	0.42	4.31	6.80		0.720	0.860		0.790
7.000	106.8	35.325	0.50	4.11	6.62		0.920	1.040		0.980
8.000	53.4	17.663	0.25	4.16	6.68		0.870	0.980		0.925
9.000	26.7	8.831	0.12	4.24	6.78		0.790	0.880		0.835
9.000	2.1	0.707	0.01	4.39	6.98		0.640	0.680		0.660
10.000	2.1	0.707	0.01	4.39	6.98		0.640	0.680		0.660
11.000	17.1	5.652	0.08	4.37	6.96		0.660	0.700		0.680
12.000	34.2	11.304	0.16	4.32	6.87		0.710	0.790		0.750
13.000	53.4	17.663	0.25	4.25	6.80		0.780	0.860		0.820
14.000	70.5	23.315	0.33	4.21	6.74		0.820	0.920		0.870
15.000	89.7	29.673	0.42	4.16	6.67		0.870	0.990		0.930

		s	Δs	$\Delta \sigma$
0.7 σ_1	0.35	0.62375	0.26813	0.2
0.3 σ_1	0.15	0.35563		
0.7 σ_2	0.35	0.88333	0.18333	0.2
0.3 σ_2	0.15	0.7		
D (mm)	300			
Ev ₁	167.83			
Ev ₂	245.46			
Area (Sq.m)	0.07065			

Ev ₂ /Ev ₁	1.46		
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$$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$$

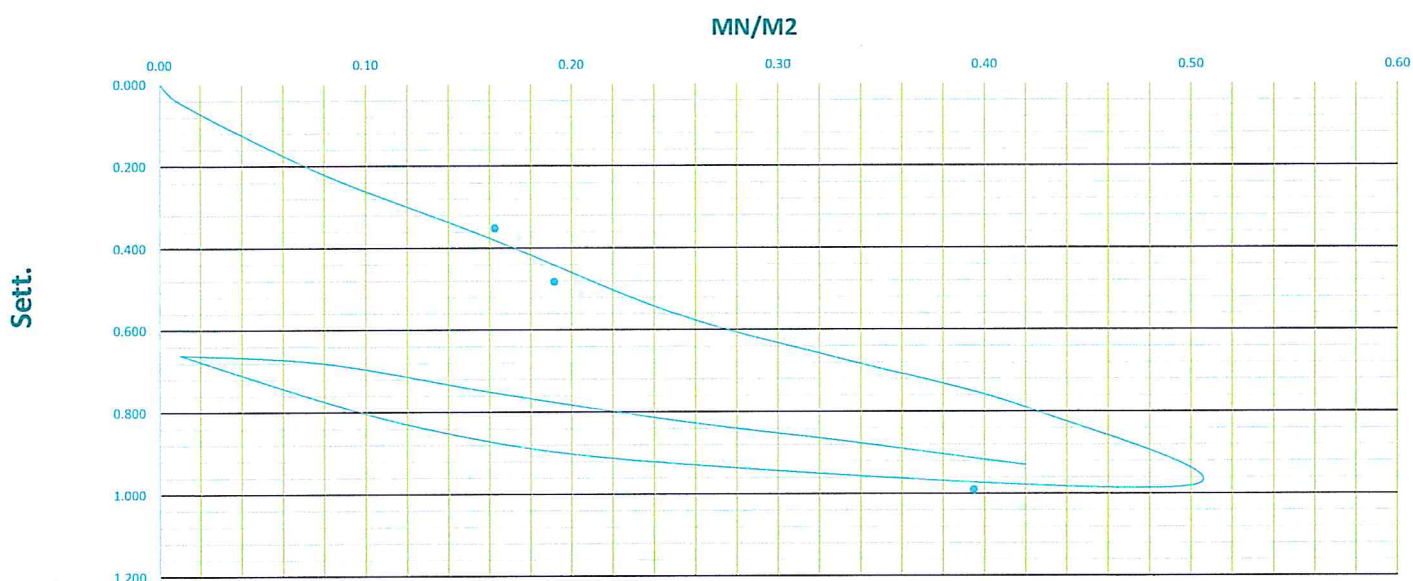
E_v = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

معامل مركزي
رقم ٣
انقطاع اسريع - القطاع السابع

Consultant Engineer

Name :

Sign :

Plate Load Test Results

Company Name

U Mark

Location

532+360

To

532+500

Test Date

23/5/2023

Station

532+480

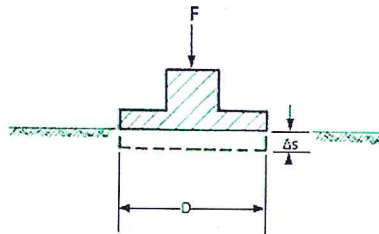
Layer level

-1.5

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	3.04	4.19		0.000	0.000		0.000
1.000	2.1	0.707	0.01	2.98	4.11		0.060	0.080		0.070
2.000	17.1	5.652	0.08	2.75	3.86		0.290	0.330		0.310
0.080	34.2	11.304	0.16	2.56	3.58		0.480	0.610		0.545
4.000	53.4	17.663	0.25	2.38	3.34		0.660	0.850		0.755
5.000	70.5	23.315	0.33	2.26	3.13		0.780	1.060		0.920
6.000	89.7	29.673	0.42	2.11	2.89		0.930	1.300		1.115
7.000	106.8	35.325	0.50	1.94	2.67		1.100	1.520		1.310
8.000	53.4	17.663	0.25	1.98	2.74		1.060	1.450		1.255
9.000	26.7	8.831	0.12	2.07	2.87		0.970	1.320		1.145
9.000	2.1	0.707	0.01	2.24	3.09		0.800	1.100		0.950
10.000	2.1	0.707	0.01	2.24	3.09		0.800	1.100		0.950
11.000	17.1	5.652	0.08	2.22	3.05		0.820	1.140		0.980
12.000	34.2	11.304	0.16	2.16	2.97		0.880	1.220		1.050
13.000	53.4	17.663	0.25	2.09	2.88		0.950	1.310		1.130
14.000	70.5	23.315	0.33	2.03	2.80		1.010	1.390		1.200
15.000	89.7	29.673	0.42	1.98	2.72		1.060	1.470		1.265

		s	Δs	Δσ
0.7 σ_1	0.35	0.94438	0.42875	0.2
0.3 σ_1	0.15	0.51563		
0.7 σ_2	0.35	1.21444	0.20444	0.2
0.3 σ_2	0.15	1.01		
D (mm)	300			
E_{v1}	104.96			
E_{v2}	220.11			
Area (Sq.m)	0.07065			

E_{v2}/E_{v1}	2.10		
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$$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$$

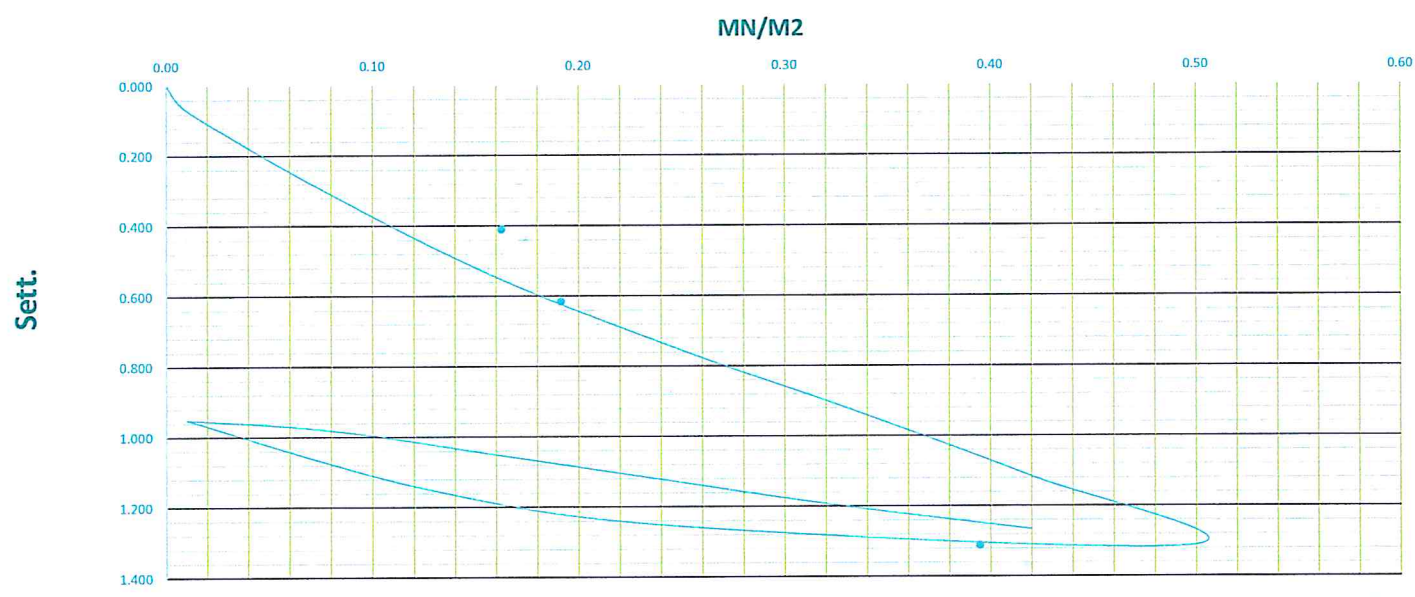
E_v = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

معمل مركز
رقم ٣
القطار السريع - القطاع السابع

Consultant Engineer

Name :

Sign :



Owner Consultant



Contractor Consultant



Contractor



Owner

Plate Load Test Results

Company Name

U Mark

Location

532+360

To

532+500

Test Date

12/6/2023

Layer level

FERMA

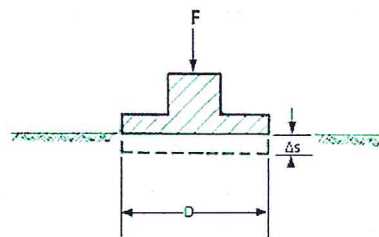
Station

532+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

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	4.38	12.25		0.000	0.000		0.000
1.000	2.1	0.707	0.01	4.14	11.91		0.240	0.340		0.290
2.000	17.1	5.652	0.08	4.09	11.82		0.290	0.430		0.360
0.080	34.2	11.304	0.16	3.87	11.50		0.510	0.750		0.630
4.000	53.4	17.663	0.25	3.62	11.19		0.760	1.060		0.910
5.000	70.5	23.315	0.33	3.46	10.97		0.920	1.280		1.100
6.000	89.7	29.673	0.42	3.30	10.75		1.080	1.500		1.290
7.000	106.8	35.325	0.50	3.11	10.49		1.270	1.760		1.515
8.000	53.4	17.663	0.25	3.15	10.58		1.230	1.670		1.450
9.000	26.7	8.831	0.12	3.27	10.73		1.110	1.520		1.315
9.000	2.1	0.707	0.01	3.54	11.07		0.840	1.180		1.010
10.000	2.1	0.707	0.01	3.54	11.07		0.840	1.180		1.010
11.000	17.1	5.652	0.08	3.48	11.00		0.900	1.250		1.075
12.000	34.2	11.304	0.16	3.37	10.87		1.010	1.380		1.195
13.000	53.4	17.663	0.25	3.29	10.74		1.090	1.510		1.300
14.000	70.5	23.315	0.33	3.22	10.65		1.160	1.600		1.380
15.000	89.7	29.673	0.42	3.15	10.56		1.230	1.690		1.460

		s	Δs	Δσ
0.7 σ ₁	0.35	1.09313	0.49688	0.2
0.3 σ ₁	0.15	0.59625		
0.7 σ ₂	0.35	1.39778	0.25777	0.2
0.3 σ ₂	0.15	1.14001		
D (mm)	300			
Ev ₁	90.57			
Ev ₂	174.57			
Area (Sq.m)	0.07065			

Ev2/Ev1	1.93		
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$$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$$

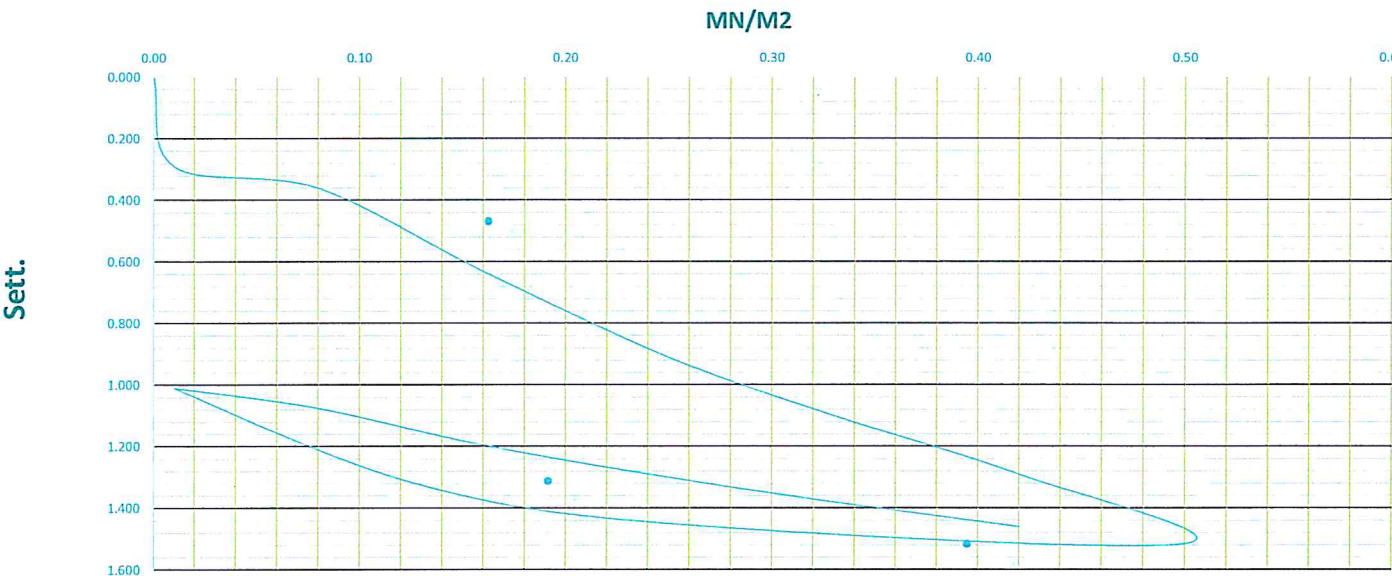
E_v = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Plate Load Test Results

Company Name

U Mark

Location

532+360

To

532+500

Station

532+430

Taste Date

12/6/2023

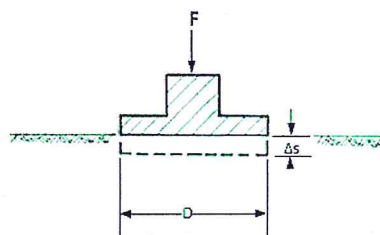
Layer level

FERMA

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 .

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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	6.21	10.05		0.000	0.000		0.000
1.000	2.1	0.707	0.01	6.19	9.99		0.020	0.060		0.040
2.000	17.1	5.652	0.08	6.15	9.91		0.060	0.140		0.100
0.080	34.2	11.304	0.16	6.03	9.73		0.180	0.320		0.250
4.000	53.4	17.663	0.25	5.90	9.55		0.310	0.500		0.405
5.000	70.5	23.315	0.33	5.81	9.41		0.400	0.640		0.520
6.000	89.7	29.673	0.42	5.71	9.25		0.500	0.800		0.650
7.000	106.8	35.325	0.50	5.57	9.02		0.640	1.030		0.835
8.000	53.4	17.663	0.25	5.63	9.11		0.580	0.940		0.760
9.000	26.7	8.831	0.12	5.74	9.27		0.470	0.780		0.625
9.000	2.1	0.707	0.01	5.88	9.43		0.330	0.620		0.475
10.000	2.1	0.707	0.01	5.88	9.43		0.330	0.620		0.475
11.000	17.1	5.652	0.08	5.86	9.42		0.350	0.630		0.490
12.000	34.2	11.304	0.16	5.80	9.35		0.410	0.700		0.555
13.000	53.4	17.663	0.25	5.73	9.24		0.480	0.810		0.645
14.000	70.5	23.315	0.33	5.67	9.17		0.540	0.880		0.710
15.000	89.7	29.673	0.42	5.62	9.10		0.590	0.950		0.770

		s	Δs	Δσ
0.7 σ_1	0.35	0.48813	0.25688	0.2
0.3 σ_1	0.15	0.23125		
0.7 σ_2	0.35	0.72333	0.21833	0.2
0.3 σ_2	0.15	0.505		
D (mm)	300			
E_{v1}	175.18			
E_{v2}	206.11			
Area (Sq.m)	0.07065			

E_{v2}/E_{v1}	1.18	
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$$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$$

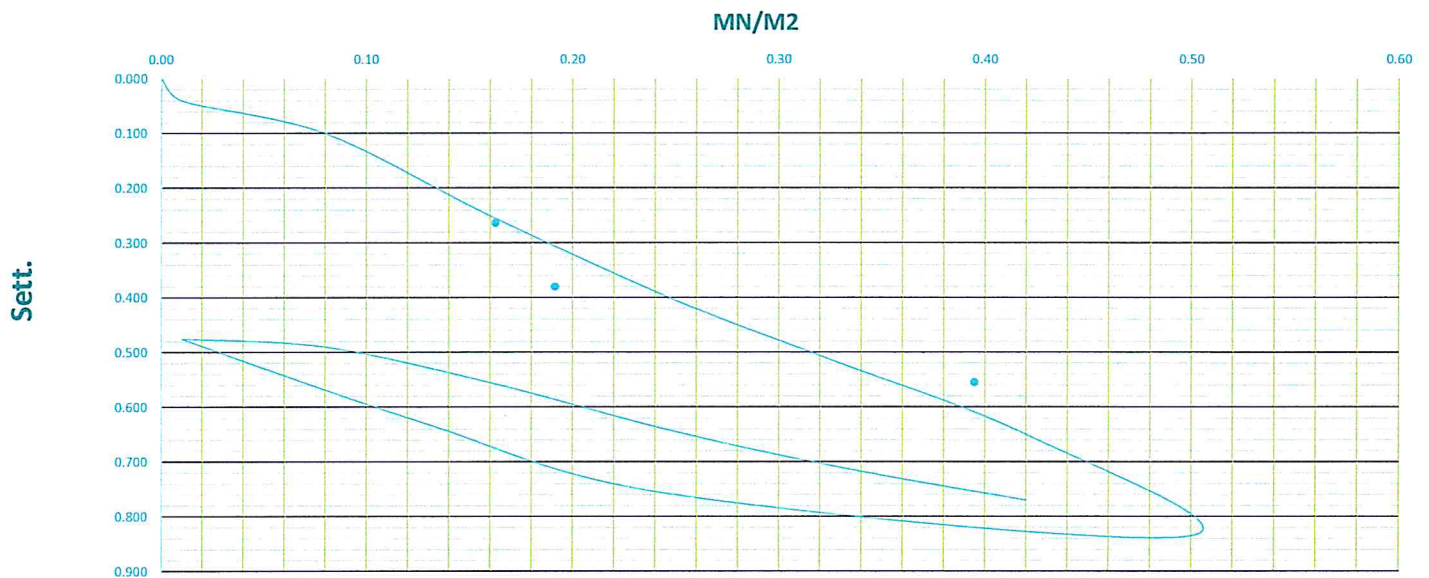
E_v = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

معمل مركزي
رقم ٣
القطار السريع - القطاع السابع

Consultant Engineer

Name :

Sign :

Plate Load Test Results

Company Name

U Mark

Location

532+360

To

532+500

Station

532+380

Taste Date

12/6/2023

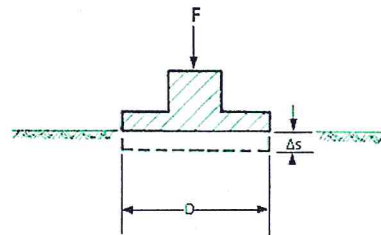
Layer level

FERMA

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 .

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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	5.32	8.63		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.28	8.31		0.040	0.320		0.180
2.000	17.1	5.652	0.08	5.24	8.18		0.080	0.450		0.265
0.080	34.2	11.304	0.16	5.14	7.98		0.180	0.650		0.415
4.000	53.4	17.663	0.25	4.99	7.75		0.330	0.880		0.605
5.000	70.5	23.315	0.33	4.90	7.60		0.420	1.030		0.725
6.000	89.7	29.673	0.42	4.83	7.47		0.490	1.160		0.825
7.000	106.8	35.325	0.50	4.71	7.24		0.610	1.390		1.000
8.000	53.4	17.663	0.25	4.75	7.36		0.570	1.270		0.920
9.000	26.7	8.831	0.12	4.83	7.50		0.490	1.130		0.810
9.000	2.1	0.707	0.01	4.94	7.67		0.380	0.960		0.670
10.000	2.1	0.707	0.01	4.94	7.67		0.380	0.960		0.670
11.000	17.1	5.652	0.08	4.92	7.65		0.400	0.980		0.690
12.000	34.2	11.304	0.16	4.87	7.60		0.450	1.030		0.740
13.000	53.4	17.663	0.25	4.80	7.53		0.520	1.100		0.810
14.000	70.5	23.315	0.33	4.69	7.47		0.630	1.160		0.895
15.000	89.7	29.673	0.42	4.63	7.43		0.690	1.200		0.945

		s	ΔS	Δσ
0.7 σ_1	0.35	0.67188	0.27563	0.2
0.3 σ_1	0.15	0.39625		
0.7 σ_2	0.35	0.90611	0.19611	0.2
0.3 σ_2	0.15	0.71		
D (mm)	300			
E_{v1}	163.27			
E_{v2}	229.46			
Area (Sq.m)	0.07065			

E_{v2}/E_{v1}	1.41		
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$$E_v = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$$

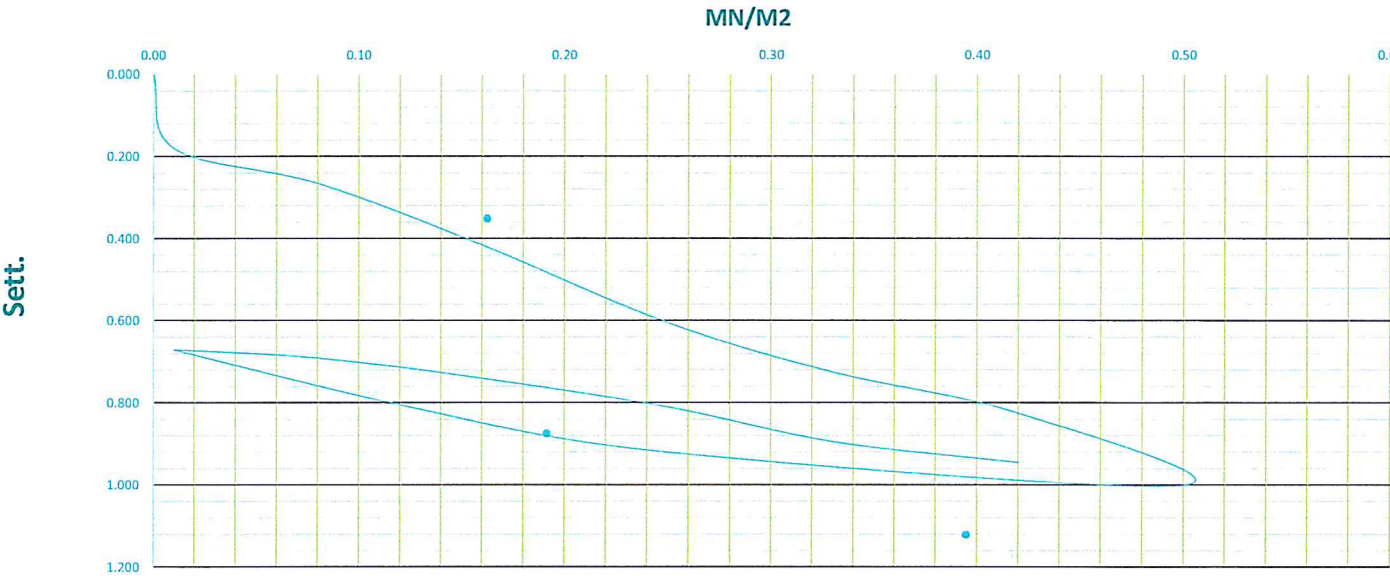
E_v = deformation modulus

$\Delta \sigma$ = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

رقم ٣
القطار السريع - القطاع السابع

Consultant Engineer

Name :

Sign :