

# MATERIAL INSPECTION REQUEST



|                      |                    |              |                  |                                                                                                                                                                                                                                       |    |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
|----------------------|--------------------|--------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|----|--|--|--|---|---|----|--|--|
| Contractor Company   | AL-ANOUD AL ARABIA |              | Designer Company |                                                                                                                                                                                                                                       |    |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| Issued by Contractor | Name               | Sign         | Date             | Time                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
|                      | Eng/ Ahmed Rafaat  | <i>Ahmed</i> | 4-6-2023         |                                                                                                                                                                                                                                       |    |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| 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>4</td> <td>6</td> <td>23</td> <td></td> <td></td> </tr> </table> | C1 | C2 | C3 | DD | MM | YY | HH | MM |  |  |  | 4 | 6 | 23 |  |  |
| C1                   | C2                 | C3           | DD               | MM                                                                                                                                                                                                                                    | YY | HH | MM |    |    |    |    |    |  |  |  |   |   |    |  |  |
|                      |                    |              | 4                | 6                                                                                                                                                                                                                                     | 23 |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |

|        |                                |                             |                                                          |
|--------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1 | 51 to 521<br>Station Reference | D1 to S3<br>Depot Reference | Kp XXX Note<br>For Kilometer point only Start Km is used |
| CODE-2 | Work Activity                  |                             |                                                          |
| CODE-3 | Sub Element of Activity        |                             |                                                          |

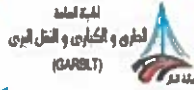
|                          |                                                                                               |       |              |              |      |
|--------------------------|-----------------------------------------------------------------------------------------------|-------|--------------|--------------|------|
| Description of Materials | <b>REPLACEMENT FILL MATERIAL RESULTS</b>                                                      |       |              |              |      |
| Location to be Used      | From 525+580 to 525+700 (-1.75) From 525+580 to 525+680 (-1.5) From 525+740 to 525+840 (-1.5) |       |              |              |      |
| MAR Approval No          | AN-9                                                                                          |       |              | Date         |      |
| Supplier Name            |                                                                                               |       |              |              |      |
| Test Requirement         | Specification                                                                                 |       | Clause       |              |      |
| Reference Photos         | Yes attached / No                                                                             | Other |              |              |      |
| Item                     | Description                                                                                   | Unit  | Quantity     | Arrival Date | Note |
| 1                        | L.L & PL & O.M.C %                                                                            | m3    | 5000         | 1-6-2023     |      |
| 2                        | Proctor                                                                                       | m3    | 5000         | 1-6-2023     |      |
| 3                        | Classification                                                                                | m3    | 5000         | 1-6-2023     |      |
| 4                        | Seive Anylasis                                                                                | m3    | 5000         | 1-6-2023     |      |
| 5                        | C.B.R                                                                                         | m3    | 5000         | 4-6-2023     |      |
| Comments by:             |                                                                                               |       | Comments by: |              |      |
|                          |                                                                                               |       |              |              |      |

| APPROVAL STATUS          |                   |                |          |         |
|--------------------------|-------------------|----------------|----------|---------|
| Organisation             | Name              | Sign           | Date     | A-AWC-R |
| Contractor               | Eng/ Ahmed Rafaat | <i>Ahmed</i>   |          |         |
| QA/QC *                  | mohamed elsaied   | <i>mehsari</i> | 4-6-2023 |         |
| GARB**                   |                   |                |          |         |
| Employers Representative |                   |                |          |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST



|                        |                      |                     |                                                                                                                                                                                                                                       |      |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
|------------------------|----------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|----|----|----|----|----|----|--|--|--|---|---|----|--|--|
| Location Name          | Contractor Company   |                     | Designer Company                                                                                                                                                                                                                      |      |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| Electric express train | AL-ANOUD AL ARABIA   |                     | k.k                                                                                                                                                                                                                                   |      |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| Issued by Contractor   | Name                 | Sign                | Date                                                                                                                                                                                                                                  | Time |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
|                        | Ahmed RaaFat         | <i>Ahmed RaaFat</i> | 4-6-2023                                                                                                                                                                                                                              |      |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| Contractor Reference   | AN- ( 9 ) - 1-6-2023 |                     |                                                                                                                                                                                                                                       |      |    |    |    |    |    |    |    |  |  |  |   |   |    |  |  |
| Received by ER         |                      | MAR                 | <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>4</td> <td>6</td> <td>23</td> <td></td> <td></td> </tr> </table> | C1   | C2 | C3 | DD | MM | YY | HH | MM |  |  |  | 4 | 6 | 23 |  |  |
| C1                     | C2                   | C3                  | DD                                                                                                                                                                                                                                    | MM   | YY | HH | MM |    |    |    |    |  |  |  |   |   |    |  |  |
|                        |                      |                     | 4                                                                                                                                                                                                                                     | 6    | 23 |    |    |    |    |    |    |  |  |  |   |   |    |  |  |

|                                                   |                |                       |                                                                         |         |
|---------------------------------------------------|----------------|-----------------------|-------------------------------------------------------------------------|---------|
| 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                               | K.p (525+500 ) |                       |                                                                         |         |
| 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 | 11.76%                                                                  |         |
| 4                                                 | ASTM D 4318    | Atterberg limit       | NP                                                                      |         |
| 5                                                 | ASTM D 2974    | Moisture content      | 7.7                                                                     |         |
| 6                                                 | ASTM D 1557    | Modified proctor      | 2.13                                                                    |         |
| 7                                                 | ASTM D 1883    | CBR                   | 36.1%                                                                   |         |
| Comments by:                                      |                |                       | Comments by:                                                            |         |
|                                                   |                |                       | تم اعتماد صلاحية متون آتية مرفقة - ٣٥٠ تقريباً طبقاً للاختبار المرفقة . |         |

| APPROVAL STATUS          |                 |                     |          |         |
|--------------------------|-----------------|---------------------|----------|---------|
| Organisation             | Name            | Sign                | Date     | A-AWC-R |
| Contractor               | Ahmed RaaFat    | <i>Ahmed RaaFat</i> |          |         |
| Contractor QA/QC *       | mohamed elsaied | <i>m-elsaied</i>    | 4-6-2023 |         |
| GARB**                   |                 |                     |          |         |
| Employers Representative |                 |                     |          |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

|                                                                                                                                                                |                                                                                                    |                                                                                                                                                                                       |                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>أ.د خالد فتحي | <br>SVSTRA SHAKER | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein - MATROUH<br><b>Section - 7 From FOKA To MARSA MATROUH</b><br>From Station 504+000 To Station 568+177 | <br>الهيئة العامة للإحصاء<br>مصر |
| Operating lap                                                                                                                                                  | Al Tawkol Central Lab                                                                              |                                                                                                                                                                                       |                                                                                                                     |

**PARTICLE SIZE DISTRIBUTION OF SOIL**

|               |                    |           |          |                     |         |
|---------------|--------------------|-----------|----------|---------------------|---------|
| TESTING DATE: | 01/06/2023         | code      | ZONE     | 525+500             | 526+000 |
| LOCATION      | K.P (525) NO. (1)  | AN ( 09 ) | Material | fill material layer |         |
| NAME COMPANY  | AL ANOUD AL ARABIA |           | quantity | 5000m               |         |

1-visual inspection test

2-Gradient test

| A-gradation of bulk materials |       |        |        | SAMPLE WEIGHT [gm] |         | 53780.00 |         | gm      | table classify |       |
|-------------------------------|-------|--------|--------|--------------------|---------|----------|---------|---------|----------------|-------|
| sieve size                    | 2 "   | 1.5 "  | 1 "    | 3/4 "              | 2/1 "   | 3/8 "    | # 4     | PASS    | soil classify  |       |
| Mass retained (g)             | 0.0   | 2000.0 | 3150.0 | 5200.0             | 5900.0  | 6100.0   | 9620.0  |         | CLASS          | A-1-a |
| Cumulative Retained (g)       | 0.0   | 2000.0 | 5150.0 | 10350.0            | 16250.0 | 22350.0  | 31970.0 | 26440.0 | PRO            | 2.13  |
| Cumulative Retained %         | 0.0   | 3.7    | 9.6    | 19.2               | 30.2    | 41.6     | 59.4    |         | WC             | 7.7   |
| Cumulative Passing %          | 100.0 | 96.3   | 90.4   | 80.8               | 69.8    | 58.4     | 40.55   |         | CBR            | 36.1  |

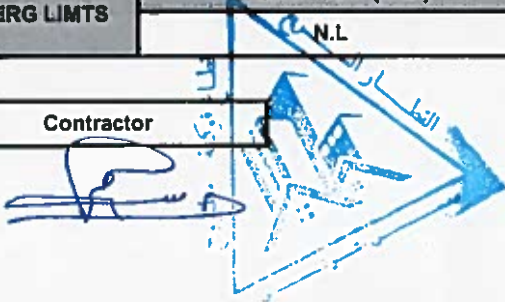
| B-soft material gradation |       |        | WT.OF sample |  | 500.00 |  | gm |
|---------------------------|-------|--------|--------------|--|--------|--|----|
| sieve size                | #10   | #40    | #200         |  |        |  |    |
| Cumulative Retained (g)   | 55.00 | 155.00 | 355.00       |  |        |  |    |
| Cumulative Retained %     | 11.00 | 31.00  | 71.00        |  |        |  |    |
| Cumulative Passing %      | 89.00 | 69.00  | 29.00        |  |        |  |    |

| 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  | 5.0   | 9.5   | 4.75 | 2.00 | 0.425 | 0.075 |
| Cumulative Passing % | 100.0 | 96.3  | 90.4 | 80.8  | 69.8  | 58.4  | 40.6 | 36.1 | 28.0  | 11.76 |
|                      |       |       |      |       |       |       |      |      |       |       |
|                      |       |       |      |       |       |       |      |      |       |       |

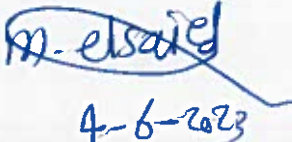
| ATTERBERG LIMITS | LIQUID LIMIT ( L.L.) | PLASTIC LIMIT (P.L.) | PLASTIC INDEX (P.I.) |
|------------------|----------------------|----------------------|----------------------|
|                  | N.L                  | N.P                  | N.PI                 |

Contractor

Consultant







|                                                                                                                                                                  |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTANCY OFFICE<br>مكتب الاستشارات الهندسية<br>أبو نداء فتحي | <br>SYSTRA SHAKER | <b>Electric Express Train - HSR</b><br><b>From El Ain El Sokhna City To El Alamein - MATROUH</b><br><b>Section - 7 From FOKA TO MARSA MATROUH</b><br><b>From Station 504+000 To Station 568+177</b> |  | <br>الهيئة العامة للنقل<br>وزارة النقل |
|                                                                                                                                                                  |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                           |
|                                                                                                                                                                  |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                           |

### MODIFIED PROCTOR TEST ASTM D1557

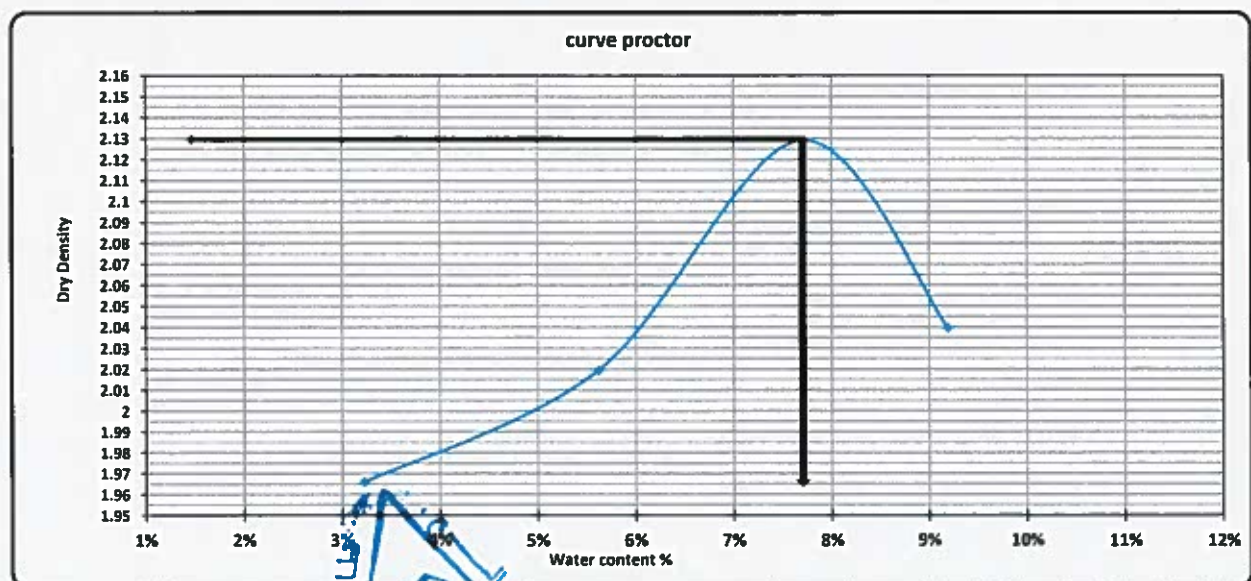
|               |                    |         |          |               |         |
|---------------|--------------------|---------|----------|---------------|---------|
| TESTING DATE: | 1/6/2023           | code    | Station  | 525+500       | 526+000 |
| LOCATION      | K.P (525) NO. (1)  | AN (09) | Material | fill material |         |
| NAME COMPANY  | AL ANOUD AL ARABIA |         | quantity | 5000m         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 5620.0 |
| Mold Volume:           | 2124.0 |

|                 |      |
|-----------------|------|
| MAX Dry Density | 2.13 |
| Water content % | 7.7% |

|                       |        |         |         |        |  |
|-----------------------|--------|---------|---------|--------|--|
| trial no :            | 1      | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 9930.0 | 10150.0 | 10490.0 | 10350  |  |
| WT. WET SOIL          | 4310.0 | 4530.0  | 4870.0  | 4730.0 |  |
| Wt. Density           | 2.029  | 2.133   | 2.293   | 2.227  |  |

|                        |        |        |        |        |        |        |        |        |  |  |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|
| Tare No.               | 10     | 11     | 17     | 6      | 19     | 12     | 3      | 13     |  |  |
| Tare wt.               | 55.33  | 55.42  | 56.59  | 53.98  | 56.08  | 54.72  | 55.7   | 53.15  |  |  |
| 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 | 147.00 | 147.10 | 145.18 | 144.74 | 143.23 | 143.27 | 142.03 | 141.88 |  |  |
| Wt. Of water           | 3.0    | 2.9    | 4.8    | 5.3    | 6.8    | 6.7    | 8.0    | 8.1    |  |  |
| Wt. Of dry soil        | 91.7   | 91.7   | 88.6   | 90.8   | 87.2   | 88.6   | 86.3   | 88.7   |  |  |
| Water content %        | 3.3%   | 3.2%   | 5.4%   | 5.8%   | 7.8%   | 7.6%   | 9.2%   | 9.2%   |  |  |
| AV. Water content %    | 3.2%   |        | 5.6%   |        | 7.7%   |        | 9.2%   |        |  |  |
| Dry Density            | 1.966  |        | 2.019  |        | 2.129  |        | 2.039  |        |  |  |



Contractor



Consultant

mohamed elsaied  
m. elsaied  
4-6-2023

### California Bearing Ratio TEST

|                |                    |           |            |               |         |
|----------------|--------------------|-----------|------------|---------------|---------|
| Testing Date : | 4/6/2023           | Code      | FROM STA : | 525+500       | 526+000 |
| Location :     | K.P (525) NO. (1)  | AN ( 09 ) | Material   | fill material |         |
| Company Name   | AL ANOUD AL ARABIA |           | quantity   | 5000m         |         |

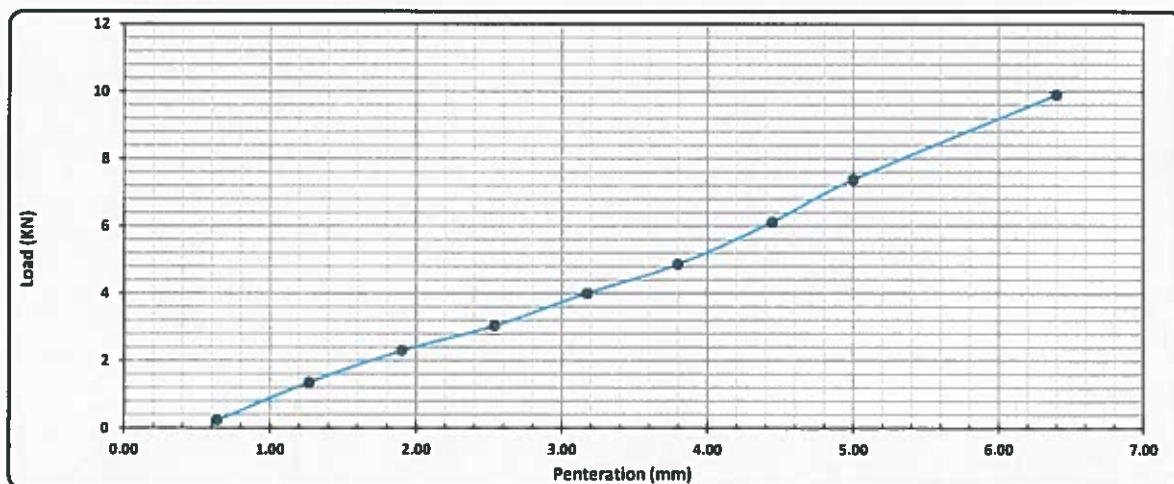
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 1     |
| Mold Vol. (cm <sup>3</sup> )         | 2120  |
| Mold WT. (gm)                        | 5310  |
| Mold WT. + Wet WT. (gm)              | 10175 |
| Wet WT. (gm)                         | 4865  |
| Wet Density (g/cm <sup>3</sup> )     | 2.295 |
| Dry Density (g/cm <sup>3</sup> )     | 2.130 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.130 |
| Compaction %                         | 100.0 |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 10    |
| Tare WT. (gm)                       | 55.33 |
| Tare WT. +Wet WT. (gm)              | 150   |
| Tare WT. +Dry WT. (gm)              | 143.2 |
| Water WT. (gm)                      | 6.8   |
| Dry WT. (gm)                        | 87.9  |
| Moisture Content %                  | 7.7   |

| Swelling            |          |
|---------------------|----------|
| Mold No.            | 1        |
| Date                | 4/6/2023 |
| Initial Height (mm) | 50.00    |
| Final Height (mm)   | 50.00    |
| Difference          | 0.00     |
| Sample Height (mm)  | 120      |
| Swelling Ratio %    | 0.00%    |

#### 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) | 24   | 150  | 255  | 337  | 445  | 540  | 680  | 820  | 1100 |
| Load (kN)         | 0.2  | 1.4  | 2.3  | 3.0  | 4.0  | 4.9  | 6.1  | 7.4  | 9.9  |



#### Calculations :-

| Penetration | Load | Standard Load | CBR   | Mold - Compaction | Compaction | CBR            |
|-------------|------|---------------|-------|-------------------|------------|----------------|
| (mm)        | (Kn) | (lb)          | ( % ) | ( % )             | ( % )      | 98 عند نسبة 98 |
| 2.50        | 3.03 | 13.4          | 22.3% | 100               | 98         | 22.3%          |
| 5.00        | 7.38 | 20.0          | 36.9% |                   |            | 36.1%          |

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Mohamed Elsaied

m.elsaied

4-6-2023

# MATERIAL INSPECTION REQUEST



|                      |                    |      |      |                  |    |    |    |    |    |    |    |
|----------------------|--------------------|------|------|------------------|----|----|----|----|----|----|----|
| Contractor Company   | EL-ANOUD AL ARABIA |      |      | Designer Company |    |    |    |    |    |    |    |
| Issued by Contractor | Name               | Sign | Date | Time             |    |    |    |    |    |    |    |
|                      | Eng/Ahmed Rafaat   |      |      |                  |    |    |    |    |    |    |    |
| Received by ER       |                    |      | MIR  | C1               | C2 | C3 | DD | MM | YY | HH | MM |
|                      |                    |      |      |                  |    |    |    |    |    |    |    |

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

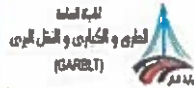
| Description of Materials | <b>REPLACEMENT FILL MATERIAL RESULTS</b>                                                                                                                                   |      |              |              |      |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|--------------|------|
| Location to be Used      | From 525+700 to 525+840 (-0.5)    From 525+580 to 525+740 (ferma)<br>From 525+580 to 525+740 (-0.25)    From 525+740 to 525+840 (-0.25)    From 525+740 to 525+840 (ferma) |      |              |              |      |
| MAR Approval No          | AD-11                                                                                                                                                                      |      |              | Date         |      |
| Supplier Name            |                                                                                                                                                                            |      |              |              |      |
| Test Requirement         | Specification                                                                                                                                                              |      |              | Clause       |      |
| Reference Photos         | Yes attached / No                                                                                                                                                          |      | Other        |              |      |
| Item                     | Description                                                                                                                                                                | Unit | Quantity     | Arrival Date | Note |
| 1                        | L.L & PL & O.M.C %                                                                                                                                                         | m3   | 5000         | 10-6-2023    |      |
| 2                        | Proctor                                                                                                                                                                    | m3   | 5000         | 10-6-2023    |      |
| 3                        | Classification                                                                                                                                                             | m3   | 5000         | 10-6-2023    |      |
| 4                        | Seive Anylasis                                                                                                                                                             | m3   | 5000         | 10-6-2023    |      |
| 5                        | C.B.R                                                                                                                                                                      | m3   | 5000         | 10-6-2023    |      |
| Comments by:             |                                                                                                                                                                            |      | Comments by: |              |      |
|                          |                                                                                                                                                                            |      |              |              |      |

| APPROVAL STATUS          |                   |      |      |         |
|--------------------------|-------------------|------|------|---------|
| Organisation             | Name              | Sign | Date | A-AWC-R |
| Contractor               | Eng/ Ahmed Rafaat |      |      |         |
| QA/QC *                  | Hassan            |      |      |         |
| GARB**                   |                   |      |      |         |
| Employers Representative |                   |      |      |         |

\* Designer

\*\* Alignment / Bridges; Culvert Only

# MATERIAL APPROVAL REQUEST



| Location Name          | Contractor Company  |       |      | Designer Company |    |    |    |    |    |    |    |
|------------------------|---------------------|-------|------|------------------|----|----|----|----|----|----|----|
| Electric express train | AL-ANOUD AL ARABIA  |       |      | k.k              |    |    |    |    |    |    |    |
| Issued by Contractor   | Name                | Sign  | Date | Time             |    |    |    |    |    |    |    |
|                        | Eng/Ahmed Rafaat    | Ahmed |      |                  |    |    |    |    |    |    |    |
| Contractor Reference   | AD- (11) -10-6-2023 |       |      |                  |    |    |    |    |    |    |    |
| Received by ER         |                     |       | MAR  | C1               | C2 | C3 | DD | MM | YY | HH | MM |

| 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                               | K.p (525+500 ) |                       |                                                        |         |
| 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 | 14.9%                                                  |         |
| 4                                                 | ASTM D 4318    | Atterberg limit       | 5.5                                                    |         |
| 5                                                 | ASTM D 2974    | Moisture content      | 7.4                                                    |         |
| 6                                                 | ASTM D 1557    | Modified proctor      | 2.165                                                  |         |
| 7                                                 | ASTM D 1883    | CBR                   | 60.40%                                                 |         |
| Comments by:                                      |                |                       | Comments by:                                           |         |
|                                                   |                |                       | تم اعتماد كمية 5000 م <sup>3</sup> ومطابقة للمواصفات . |         |

| APPROVAL STATUS          |                  |       |      |         |
|--------------------------|------------------|-------|------|---------|
| Organisation             | Name             | Sign  | Date | A-AWC-R |
| Contractor               | Eng/ahmed rafaat | Ahmed |      |         |
| Contractor QA/QC *       | Hassan           |       |      |         |
| GARB**                   |                  |       |      |         |
| Employers Representative |                  |       |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

|                                                                                                                                                                |                                                                                                    |                                                                                                                                                                                |                     |                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>د. خالد قنديل | <br>SYSTRA SHAKER | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein - MATROUH<br>Section - 7 From FOKA To MARSA MATROUH<br>From Station 504+000 To Station 568+177 |                     | <br>الهيئة العامة للتخطيط<br>(GAPOL) |
|                                                                                                                                                                |                                                                                                    |                                                                                                                                                                                |                     |                                                                                                                         |
|                                                                                                                                                                |                                                                                                    | Operating Lab                                                                                                                                                                  | AL Nuby Central Lab |                                                                                                                         |

### PARTICLE SIZE DISTRIBUTION OF SOIL

|               |               |         |      |         |         |
|---------------|---------------|---------|------|---------|---------|
| TESTING DATE: | 7/6/2023      | Code    | zone | 525+500 | 526+000 |
| LOCATION      | K.P (525+500) | AD (11) |      |         |         |
| NAME COMPANY  | AL Anoud      |         |      |         |         |

1-visual inspection

#### 2-Gradient test

| A-gradation of bulk materials |       |        |        | SAMPLE WEIGHT (g) |        | 25557.00 |         | gm   |                |               |
|-------------------------------|-------|--------|--------|-------------------|--------|----------|---------|------|----------------|---------------|
| sieve size                    | 2     | 1.5    | 1      | 4/3               | 2/1    | 8/3      | # 4     | PASS | table classify | soil classify |
| Mass retained (g)             | 0.0   | 1608.0 | 1800.0 | 3200.0            | 1462.0 | 2250.0   | 4750.0  |      |                | A-1-a         |
| Cumulative Retained (g)       | 0.0   | 1608.0 | 3408.0 | 6608.0            | 8070.0 | 10320.0  | 15070.0 |      | PRO            | 2.165         |
| Cumulative Retained %         | 0.0   | 6.3    | 13.3   | 25.9              | 31.6   | 40.4     | 59.0    |      | WC             | 7.40          |
| Cumulative Passing %          | 100.0 | 93.7   | 86.7   | 74.1              | 68.4   | 59.6     | 41.0    |      | CBR            | 60.40         |

| B-soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|---------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size                | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g)   | 58.00 | 173.00 | 318.00 |              |  |        |  |    |
| Cumulative Retained %     | 11.60 | 34.60  | 63.60  |              |  |        |  |    |
| Cumulative Passing %      | 88.40 | 65.40  | 36.40  |              |  |        |  |    |

| 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 | 93.7 | 86.7 | 74.1 | 68.4 | 59.6 | 41.0 | 36.3 | 26.8  | 14.9  |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |

| ATTERBERG LIMITS | LIQUID LIMIT (LL) | PLASTIC LIMIT (PL) | PLASTIC INDEX (PI) |
|------------------|-------------------|--------------------|--------------------|
|                  | 24.7%             | 19.3%              | 5.5%               |

Contractor



Consultant

mohamed elsard

m-elsard

13-6-2023

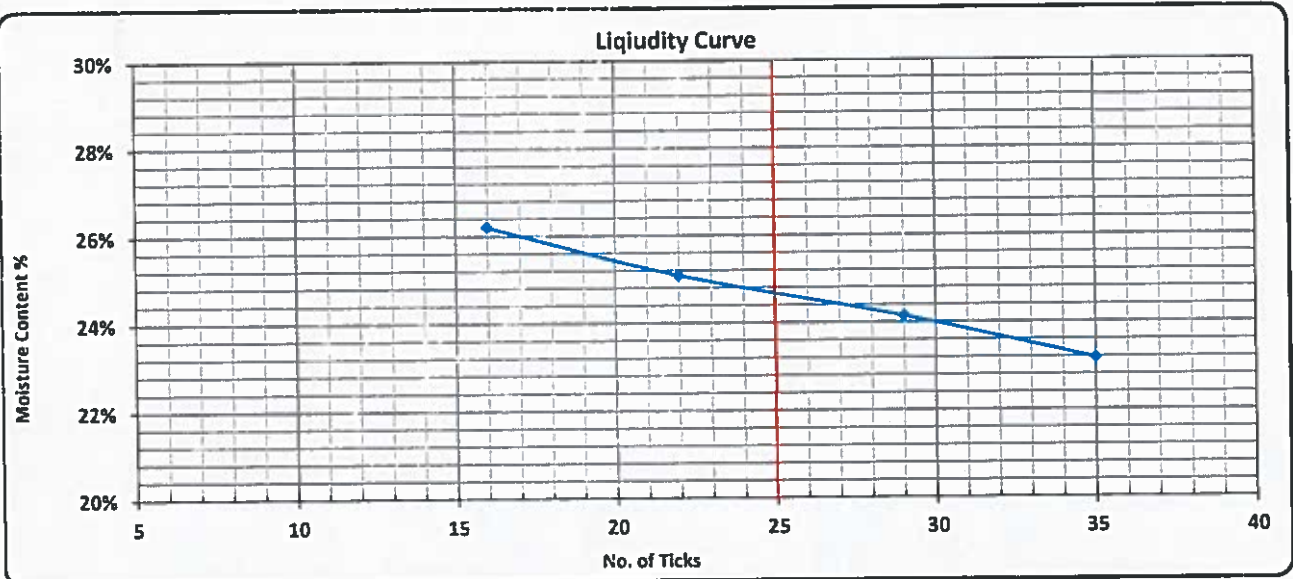
|                                                                                                                                                                         |                                                                                             |                                     |                                                                                                                                             |                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <br>KK<br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>ك.د. خالد قنديل | <br>CVSERA | <b>Electric Express Train - HSR</b> | <br>الوزارة<br>للتخطيط والتنمية الاقتصادية<br>(M.P.E.D.) | <br>الهيئة العامة للإعانة<br>(M.T.I.) |
| <b>Operating Lab</b>                                                                                                                                                    |                                                                                             | <b>AL Nuby Central Lab</b>          |                                                                                                                                             |                                                                                                                          |

### Plasticity and Liquidity Test -Atterberg Limits

|               |               |         |      |         |         |
|---------------|---------------|---------|------|---------|---------|
| :Testing Date | 07-06-2023    | :Code   | Zone | 525+500 | 526+000 |
| :Location     | K.P (525+500) | AD (11) |      |         |         |
| : Layer No    | AL Anoud      |         |      |         |         |

#### :- Testing Results

| Test                    | Liquid Limit |        |       |       | Plastic Limit |       |
|-------------------------|--------------|--------|-------|-------|---------------|-------|
| No. of Ticks            | 35           | 29     | 22    | 16    | -             | -     |
| Tare No.                | 33           | 30     | 19    | 7     | 34            | 38    |
| Tare WT. (gm)           | 78.96        | 79.60  | 44.20 | 42.30 | 81.10         | 79.60 |
| Tare WT. + Wet WT. (gm) | 116.10       | 119.70 | 81.10 | 73.60 | 84.10         | 82.80 |
| Tare WT. + Dry WT. (gm) | 105.10       | 111.90 | 73.70 | 67.10 | 83.6          | 82.30 |
| Water WT. (gm)          | 7.00         | 7.80   | 7.40  | 6.50  | 0.50          | 0.50  |
| Dry WT. (gm)            | 39.20        | 34.30  | 29.50 | 24.80 | 2.50          | 2.70  |
| Moisture Content %      | 23.2%        | 24.1%  | 25.1% | 26.2% | 20.0%         | 18.5% |
| Average %               |              |        |       |       | 19.3%         |       |



| L.L   | P.L   | P.I  |
|-------|-------|------|
| 24.7% | 19.3% | 5.5% |

|                 |               |                     |
|-----------------|---------------|---------------------|
| Lab. Specialist | Lab. Engineer | Consultant Engineer |
|-----------------|---------------|---------------------|

Name :

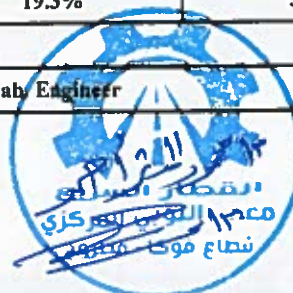
Name :

Name : mohamed elsaied

Sign :

Sign :

Sign : m-elsaied  
13-6-2023



|                                                                                                                                                                       |                                                                                                       |                                                                                                                                                                                |  |                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------|
| <br>KK<br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>لدراسة وتصميم | <br>SYSTA<br>SYSTEMS | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein - MATROUH<br>Section - 7 From FOKA TO MARSA MATROUH<br>From Station 504+000 To Station 558+177 |  | <br>وزارة التخطيط والتنمية الاقتصادية<br>(MATROUH) |
|                                                                                                                                                                       |                                                                                                       |                                                                                                                                                                                |  |                                                                                                                                       |
|                                                                                                                                                                       |                                                                                                       |                                                                                                                                                                                |  |                                                                                                                                       |

## PROCTOR TEST

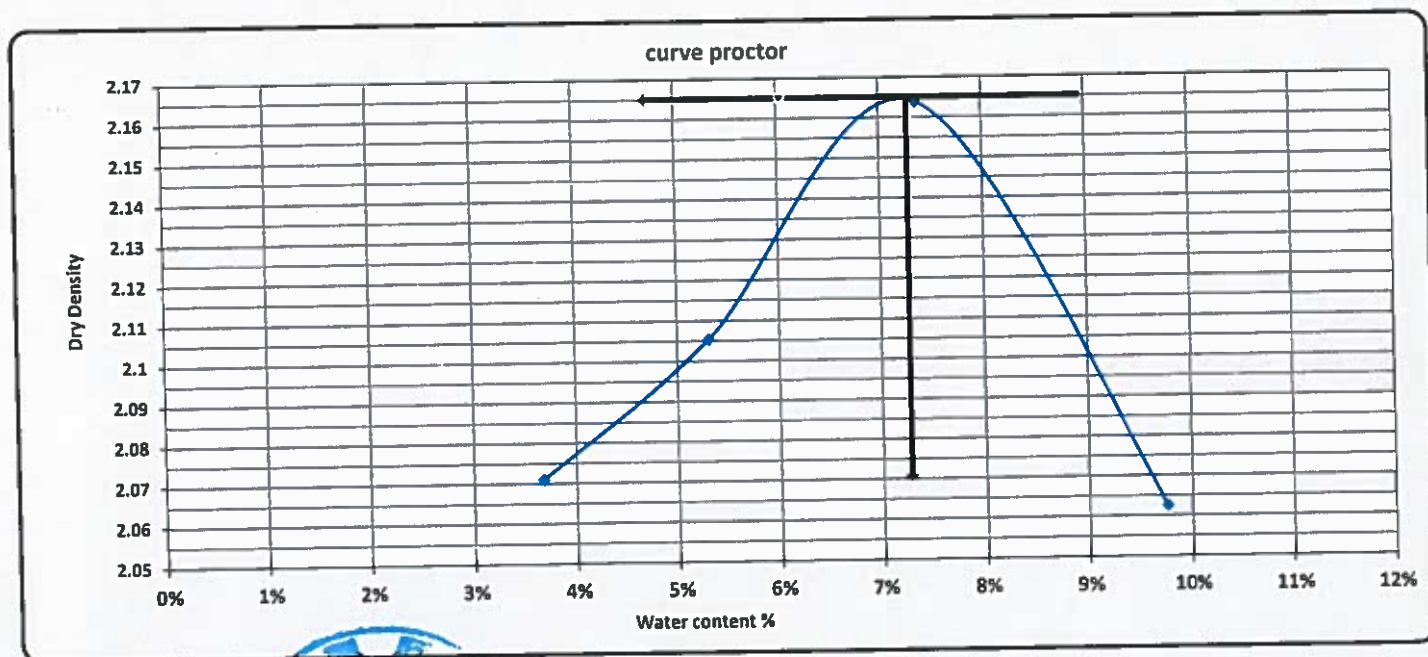
|               |               |         |      |         |         |
|---------------|---------------|---------|------|---------|---------|
| TESTING DATE: | 7/6/2023      | Code    | zone | 525+500 | 526+000 |
| LOCATION      | K.P (525+500) | AD (11) |      |         |         |
| NAME COMPANY  | AL Anoud      |         |      |         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 6037.0 |
| Mold Volume:           | 2113.0 |

|                 |       |
|-----------------|-------|
| MAX Dry Density | 2.165 |
| Water content % | 7.4   |

|                       |         |         |         |        |  |
|-----------------------|---------|---------|---------|--------|--|
| trial no :            | 1       | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 10574.0 | 10722.0 | 10946.0 | 10821  |  |
| WT. WET SOIL          | 4537.0  | 4685.0  | 4909.0  | 4784.0 |  |
| Wt. Density           | 2.147   | 2.217   | 2.323   | 2.264  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare No.               | 25    | 10    | 45    | 19    | 73    | 17    | 32    | 90    |  |  |
| Tare wt.               | 75.8  | 43.7  | 41.5  | 44.4  | 42.9  | 59.5  | 74.4  | 62.5  |  |  |
| 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 | 147.6 | 145.9 | 144.4 | 144.8 | 142.3 | 144.1 | 143.2 | 142.3 |  |  |
| Wt. Of water           | 2.4   | 4.1   | 5.6   | 5.2   | 7.7   | 5.9   | 6.8   | 7.7   |  |  |
| Wt. Of dry soil        | 71.8  | 102.2 | 102.9 | 100.4 | 99.4  | 84.6  | 68.8  | 79.8  |  |  |
| Water content %        | 3.3%  | 4.0%  | 5.4%  | 5.2%  | 7.7%  | 7.0%  | 9.9%  | 9.6%  |  |  |
| AV. Water content %    | 3.7%  |       | 5.3%  |       | 7.4%  |       | 9.8%  |       |  |  |
| Dry Density            | 2.071 |       | 2.105 |       | 2.164 |       | 2.063 |       |  |  |



Contractor

المهندس احمد عبد الله  
 احمد عبد الله  
 احمد عبد الله

Consultant

mohamed elsaid

m.elsaid

**California Bearing Ratio TEST**

|                |               |         |            |         |         |
|----------------|---------------|---------|------------|---------|---------|
| Testing Date : | 10-06-2023    | Code    | FROM STA : | 525+500 | 526+000 |
| Location :     | K.P (525+500) | AD (11) |            |         |         |
| Company Name   | AL Anoud      |         |            |         |         |

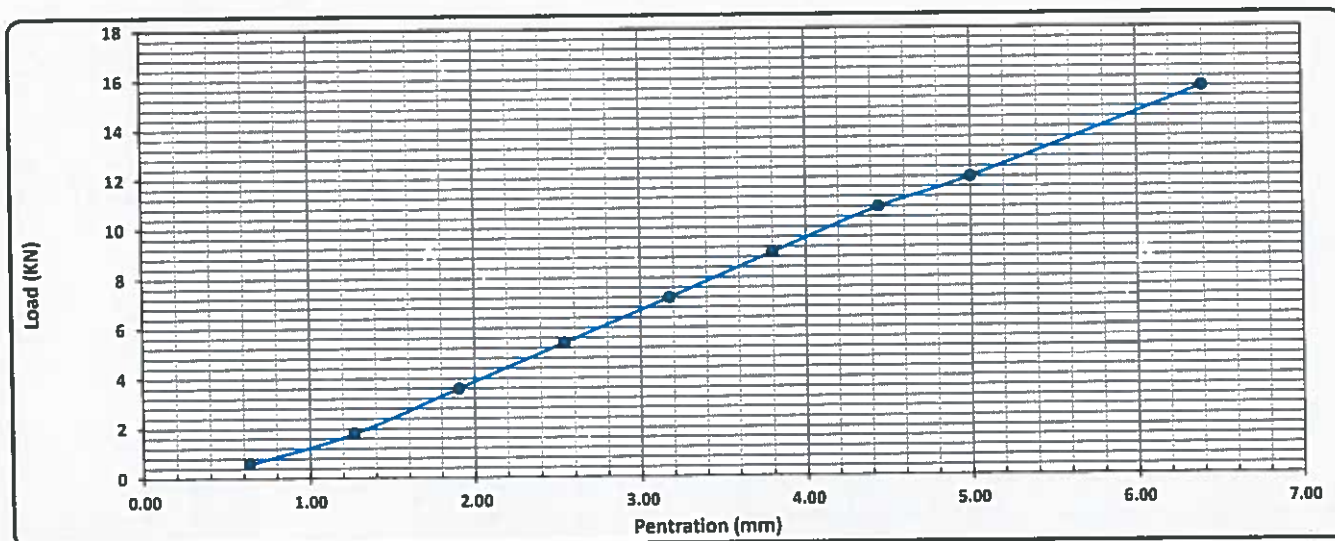
**- : Test Results**

| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 2122  |
| Mold WT. (gm)                        | 5034  |
| Mold WT. + V. WT. (gm)               | 9828  |
| Wet WT. (gm)                         | 4794  |
| Wet Density (g/cm <sup>3</sup> )     | 2.259 |
| Dry Density (g/cm <sup>3</sup> )     | 2.106 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.165 |
| Compaction %                         | 97.3  |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 10    |
| Tare WT. (gm)                       | 43.7  |
| Tare WT. + Wet WT. (gm)             | 150   |
| Tare WT. + Dry WT. (gm)             | 142.8 |
| Wt. Water                           | 7.2   |
| Dry WT. (gm)                        | 99.1  |
| Moisture Content %                  | 7.3   |

| Swelling            |            |
|---------------------|------------|
| Mold No.            | 3          |
| Date                | 10-06-2023 |
| Initial Height (mm) | 7.50       |
| Final Height (mm)   | 7.50       |
| Difference          | 0          |
| Sample Height (mm)  | 120.00     |
| Swelling Ratio %    | 0.0%       |

|                   |      |      |      |      |      |      |      |      |      |
|-------------------|------|------|------|------|------|------|------|------|------|
| Petration (mm)    | 0.64 | 1.27 | 1.91 | 2.54 | 3.18 | 3.80 | 4.45 | 5.00 | 6.40 |
| Load Reading (mm) | 0.02 | 0.06 | 0.12 | 0.18 | 0.24 | 0.30 | 0.36 | 0.40 | 0.52 |
| Load (KN)         | 0.6  | 1.8  | 3.6  | 5.4  | 7.2  | 9.0  | 10.8 | 12.0 | 15.6 |



**Calculations :-**

| Penetration (mm) | Load (Kn) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR % عند نسبة ٩٨ |
|------------------|-----------|--------------------|---------|-----------------------|----------------|-------------------|
| 2.50             | 5.40      | 13.4               | 40.4%   | 97                    | 98             | 40.7%             |
| 5.00             | 12.00     | 20.0               | 59.9%   |                       |                | 60.4%             |

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

13-6-2023

# MATERIAL INSPECTION REQUEST



|                      |                    |              |           |                  |    |    |    |    |    |    |    |
|----------------------|--------------------|--------------|-----------|------------------|----|----|----|----|----|----|----|
| Contractor Company   | EL-ANOUD AL ARABIA |              |           | Designer Company |    |    |    |    |    |    |    |
| Issued by Contractor | Name               | Sign         | Date      | Time             |    |    |    |    |    |    |    |
|                      | Eng/ Ahmed Rafaat  | <i>Ahmed</i> | 10-6-2023 |                  |    |    |    |    |    |    |    |
| Received by ER       |                    |              | MIR       | C1               | C2 | C3 | DD | MM | YY | HH | MM |
|                      |                    |              |           |                  |    |    | 10 | 6  | 23 |    |    |

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

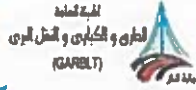
|                          |                                                                                                                                                                                                |      |              |              |      |  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|--------------|------|--|
| Description of Materials | REPLACMENT FILL MATERIAL RESULTS                                                                                                                                                               |      |              |              |      |  |
| Location to be Used      | From 525+580 to 525+740 (-1) From 525+740 to 525+840 (-1)<br>From 525+580 to 525+740 (-0.75) From 525+740 to 525+840 (-0.75) From 525+500 to 525+580 (ferma)<br>From 525+580 to 525+700 (-0.5) |      |              |              |      |  |
| MAR Approval No          | AD-10                                                                                                                                                                                          |      |              | Date         |      |  |
| Supplier Name            |                                                                                                                                                                                                |      |              |              |      |  |
| Test Requirement         | Specification                                                                                                                                                                                  |      |              | Clause       |      |  |
| Reference Photos         | Yes attached / No                                                                                                                                                                              |      | Other        |              |      |  |
| Item                     | Description                                                                                                                                                                                    | Unit | Quantity     | Arrival Date | Note |  |
| 1                        | L.L & PL & O.M.C %                                                                                                                                                                             | m3   | 5000         | 6-6-2023     |      |  |
| 2                        | Proctor                                                                                                                                                                                        | m3   | 5000         | 6-6-2023     |      |  |
| 3                        | Classification                                                                                                                                                                                 | m3   | 5000         | 6-6-2023     |      |  |
| 4                        | Seive Anylasis                                                                                                                                                                                 | m3   | 5000         | 6-6-2023     |      |  |
| 5                        | C.B.R                                                                                                                                                                                          | m3   | 5000         | 10-6-2023    |      |  |
| Comments by:             |                                                                                                                                                                                                |      | Comments by: |              |      |  |
|                          |                                                                                                                                                                                                |      |              |              |      |  |

|                          |                   |                  |           |         |
|--------------------------|-------------------|------------------|-----------|---------|
| APPROVAL STATUS          |                   |                  |           |         |
| Organisation             | Name              | Sign             | Date      | A-AWC-R |
| Contractor               | Eng/ Ahmed Rafaat | <i>Ahmed</i>     |           |         |
| QA/QC *                  | mohamed elsaied   | <i>m-elsaied</i> | 13-6-2023 |         |
| GARB**                   |                   |                  |           |         |
| Employers Representative |                   |                  |           |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST



|                        |                          |                     |                                                                                                                                                                                                                        |      |    |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |
|------------------------|--------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|----|----|----|----|----|----|--|--|--|----|---|----|--|--|--|
| Location Name          | Contractor Company       |                     | Designer Company                                                                                                                                                                                                       |      |    |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |
| Electric express train | AL-ANOUD AL ARABIA       |                     | k.k                                                                                                                                                                                                                    |      |    |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |
| Issued by Contractor   | Name<br>Eng/Ahmed Refaat | Sign<br>[Signature] | Date<br>10-6-2023                                                                                                                                                                                                      | Time |    |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |
| Contractor Reference   | AD- ( 10 ) -10-6-2023    |                     |                                                                                                                                                                                                                        |      |    |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |
| Received by ER         |                          | MAR                 | <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>10</td><td>6</td><td>23</td><td></td><td></td></tr> </table> | C1   | C2 | C3 | DD | MM | YY | HH | MM |  |  |  | 10 | 6 | 23 |  |  |  |
| C1                     | C2                       | C3                  | DD                                                                                                                                                                                                                     | MM   | YY | HH | MM |    |    |    |    |  |  |  |    |   |    |  |  |  |
|                        |                          |                     | 10                                                                                                                                                                                                                     | 6    | 23 |    |    |    |    |    |    |  |  |  |    |   |    |  |  |  |

|                                                   |                |                                                                     |                             |         |
|---------------------------------------------------|----------------|---------------------------------------------------------------------|-----------------------------|---------|
| 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                               | K.p (525+500 ) |                                                                     |                             |         |
| 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                                               | 14.4%                       |         |
| 4                                                 | ASTM D 4318    | Atterberg limit                                                     | N.P                         |         |
| 5                                                 | ASTM D 2974    | Moisture content                                                    | 6.6                         |         |
| 6                                                 | ASTM D 1557    | Modified proctor                                                    | 2.218                       |         |
| 7                                                 | ASTM D 1883    | CBR                                                                 | 65.30%                      |         |
| Comments by:                                      |                | Comments by:                                                        |                             |         |
|                                                   |                | تم اعتماد صلاحية محتويات ورقة ٣٥٠٠٠ تقريباً طبقاً لاختبارات المرفقة |                             |         |

| APPROVAL STATUS          |                  |             |           |         |
|--------------------------|------------------|-------------|-----------|---------|
| Organisation             | Name             | Sign        | Date      | A-AWC-R |
| Contractor               | Eng/Ahmed Refaat | [Signature] |           |         |
| Contractor QA/QC *       | mohamed elsaied  | [Signature] | 13-6-2023 |         |
| GARB**                   |                  |             |           |         |
| Employers Representative |                  |             |           |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

|                                                                                                                                                               |                                                                                             |                                                                                                                                                                               |                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>د. خالد فلاح | <br>SYSTRA | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein - MATROUH<br>Section - 7 From FOKA To MARS MATROUH<br>From Station 504+000 To Station 568+177 | <br>الهيئة العامة للتخطيط<br>(MATROUH) |
| Operating Lab                                                                                                                                                 | AL Nuby Central Lab                                                                         |                                                                                                                                                                               |                                                                                                                           |

## PARTICLE SIZE DISTRIBUTION OF SOIL

|               |               |         |      |         |         |
|---------------|---------------|---------|------|---------|---------|
| TESTING DATE: | 6/6/2023      | Code    | zone | 525+500 | 526+000 |
| LOCATION      | K.P (525+500) | AD (50) |      |         |         |
| NAME COMPANY  | AL Anoud      |         |      |         |         |

1-visual inspection test

2-Gradient test

| A-gradation of L.-k materials |       |        |        | SAMPLE WEIGHT [g] |         | 32927.00 |         | gm                | table classify |       |
|-------------------------------|-------|--------|--------|-------------------|---------|----------|---------|-------------------|----------------|-------|
| sieve size                    | 2     | 1.5    | 1      | 4/3               | 2/1     | 8/3      | # 4     | PASS              | soil classify  |       |
| Mass retained (g)             | 0.0   | 2719.0 | 3011.0 | 5989.0            | 2255.0  | 3500.0   | 2500.0  |                   |                | A-1-a |
| Cumulative Retained (g)       | 0.0   | 2719.0 | 5730.0 | 11719.0           | 13974.0 | 17474.0  | 19974.0 |                   | PRO            | 2.150 |
| Cumulative Retained %         | 0.0   | 8.3    | 17.4   | 35.6              | 42.4    | 53.1     | 60.7    |                   | WC             | 7.50  |
| Cumulative Passing %          | 100.0 | 91.7   | 82.6   | 64.4              | 57.6    | 46.9     | 39.3    |                   | CBR            | 65.30 |
|                               |       |        |        |                   |         |          |         | Correction of PRO |                | 2.218 |
|                               |       |        |        |                   |         |          |         | Correction of WC  |                | 6.6   |

| B-soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|---------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size                | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g)   | 48.00 | 150.00 | 317.00 |              |  |        |  |    |
| Cumulative Retained %     | 9.60  | 30.00  | 63.40  |              |  |        |  |    |
| Cumulative Passing %      | 90.40 | 70.00  | 36.60  |              |  |        |  |    |

| 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 % | 100.0 | 91.7 | 82.6 | 64.4 | 57.6 | 46.9 | 39.3 | 35.6 | 27.5  | 14.4  |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |

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

Contractor



Consultant

Ahmed hamed

Ahmed Hassan

Operating Lab

AL Nuby Central Lab

## California Bearing Ratio TEST

|                |               |         |            |         |         |
|----------------|---------------|---------|------------|---------|---------|
| Testing Date : | 10-06-2023    | Code    |            |         |         |
| Location :     | K.P (525+500) | AD (10) | FROM STA : | 525+500 | 526+000 |
| Company Name   | AL Anoud      |         |            |         |         |

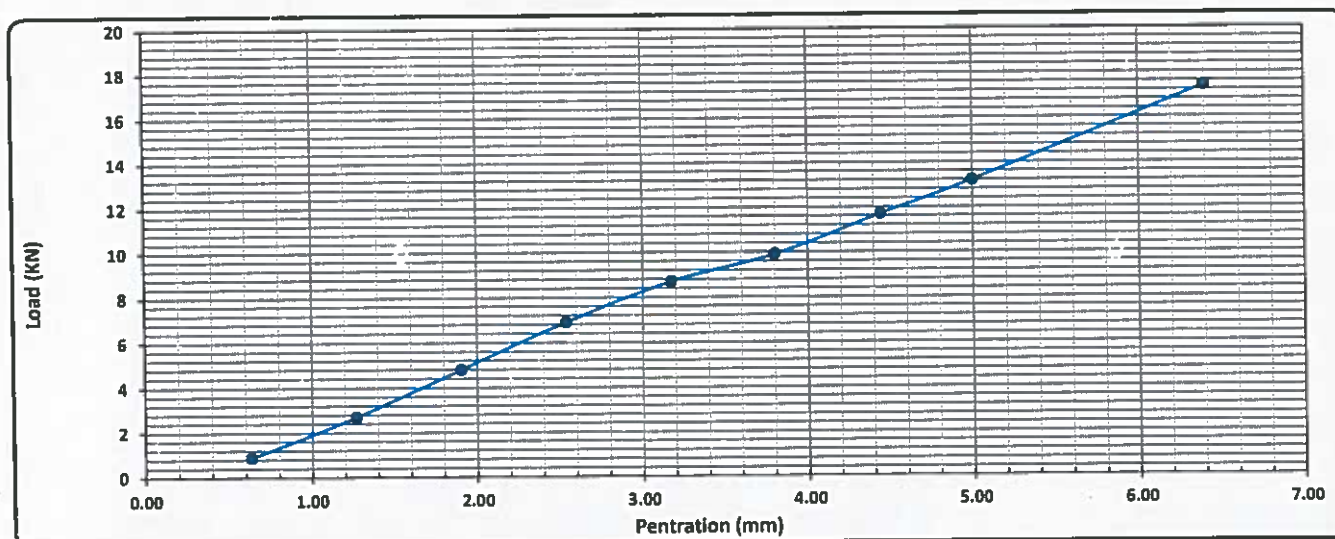
### - : Test Results

| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 4     |
| Mold Vol. (cm <sup>3</sup> )         | 2140  |
| Mold WT. (gm)                        | 4900  |
| Mold WT. + Wet WT. (gm)              | 9896  |
| Wet WT. (gm)                         | 4996  |
| Wet Density (g/cm <sup>3</sup> )     | 2.335 |
| Dry Density (g/cm <sup>3</sup> )     | 2.194 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.218 |
| Compaction %                         | 98.9  |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 16    |
| Tare WT. (gm)                       | 42.2  |
| Tare WT. + Wet WT. (gm)             | 150   |
| Tare WT. + Dry WT. (gm)             | 141   |
| Wt. Water                           | 6.5   |
| Dry WT. (gm)                        | 101.3 |
| Moisture Content %                  | 6.4   |

| Swelling            |            |
|---------------------|------------|
| Mold No.            | 4          |
| Date                | 10-06-2023 |
| Initial Height (mm) | 3.60       |
| Final Height (mm)   | 3.60       |
| Difference          | 0          |
| Sample Height (mm)  | 120.00     |
| Swelling Ratio %    | 0.0%       |

|                   |      |      |      |      |      |      |      |      |      |
|-------------------|------|------|------|------|------|------|------|------|------|
| Penetration (mm)  | 0.64 | 1.27 | 1.91 | 2.54 | 3.18 | 3.80 | 4.45 | 5.08 | 6.40 |
| Load Reading (mm) | 0.03 | 0.09 | 0.16 | 0.23 | 0.29 | 0.33 | 0.39 | 0.44 | 0.58 |
| Load (KN)         | 0.9  | 2.7  | 4.8  | 6.9  | 8.7  | 9.9  | 11.7 | 13.2 | 17.4 |



### Calculations :-

| Penetration | Load  | Standard Load | CBR   | Mold - Compaction | Compaction | CBR           |
|-------------|-------|---------------|-------|-------------------|------------|---------------|
| (mm)        | (Kn)  | (lb)          | ( % ) | ( % )             | ( % )      | % عند نسبة ٩٨ |
| 2.50        | 6.90  | 13.4          | 51.7% | 99                | 98         | 51.2%         |
| 5.00        | 13.20 | 20.0          | 65.9% |                   |            | 65.3%         |

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :



Ahmed hamed  
 Ahmed hamed