

## السيد المهندس // رئيس قطاع التنفيذ والمناطق

تحية طيبة وبعد ،،،

بالاحالة الى مشروع اعمال الجسر الترابي القطار الكهربائي السريع قطاع (فوكة / مطروح ) - استكمال اعمال الردم والتأسيس والاساس .

نتشرف بان نرفق لسيادتكم طيه المقاييس المعدلة بعد اعتماد لجنة المفاوضة للقطاعات الاتية :-

| م | اسم الشركة                               | من المحطة | الى المحطة | اتجاه                 |
|---|------------------------------------------|-----------|------------|-----------------------|
| ١ | مكتب الفيروز للمقاولات العامة والتوريدات | ٥٠٦+٣٢٠   | ٥٠٦+٤٦٠    | قطاع ( فوكة / مطروح ) |

برجاء من سيادتكم التفضل بالاعانة والتوجيه باللازم

وتفضلوا بقبول فائق الاحترام ،،،

رئيس الادارة المركزية  
منطقة غرب الدلتا  
(بالاسكندرية/ مرسى مطروح)  
٢٠٢٣/١١/٢٨  
عبد مهندس // هاني محمد محمود طه



الهيئة العامة  
للطرق والكباري  
(GARB)



**مشروع القطار الكهربائي السريع**  
**المقاييس المعدلة لبنود أعمال الجسر الترابي لمسار القطار الكهربائي السريع للخط الأول (قطاع فوكة / مطروح) (استكمال أعمال الردم والتأسيس والاساس) لتنفيذ المسافة من الكم 506+320 الى الكم 506+460 بطول 0.140 كم (بالأمر المباشر)**

| رقم البند | بيان الأعمال                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | الوحدة | الكمية     | الفئة  | الاجمالي      |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|--------|---------------|
| 3         | أعمال الردم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |            |        |               |
| 3-1       | بالمتر المكعب أعمال توريد وتشغيل اترية صالحة للرمد و مطابقة للمواصفات والتشغيل باستخدام الات التسوية بسمك لا يزيد عن 50 سم حتى منسوب -2 متر و بسمك لا يزيد عن 25 سم لاستكمال المنسوب التصميمي لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن 15%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95 % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية التوضيحية والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتعليمات المهندس المشرف.<br>على حالة طلب جهاز الاشراف زيادة نسبة الدمك عن 95 % بحسب زيادة 1 جنيه على زيادة نسبة الدمك لكل 1 %<br>- مسافة النقل 2 كم ويتم احتساب علاوة 1.4 جنيه لكل 1 كم بالزيادة أو النقصان<br>- السعر يشمل عمل تشوينات وتخليط واختبارات ونقل لموقع العمل حتى مسافة 2 كم<br>- السعر يشمل قيمة المادة المحجيرة طبقا لإفادة المنطقة بهذا القطاع (7) من الكم 504 إلى 568                                                                                                                          | 3م     | 20,169.228 | 85.00  | 1,714,384.38  |
|           | علاوة مسافة النقل 284.5 كم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3م     | 20,169.228 | 395.50 | 7,976,929.66  |
|           | علاوة تحصيل رسوم الكارثة والموازين طبقا للائحة الشركة الوطنية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3م     | 20,169.228 | 13.00  | 262,199.96    |
| 4         | طبقات الاساس                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            |        |               |
| 4-1       | بالمتر المكعب أعمال توريد وفرش طبقة تأسيس ( prepared Subgrade ) من الاحجار الصلبة المترججة ناتج تكسير الكسارات والمطابقة للمواصفات وأقصى حجم للحبيبات 100 مم والا يزيد نسبة المار من منخل 200 عن 12 % و التدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 25 % و الا تزيد نسبة الفاقد بجهاز لوس جلوس عن 30 % والا يزيد الامتصاص عن 15% و الا يقل معامل المرونة ( Ev2 ) من تجربة لوح التحميل عن 80 ميجاباسكال و يتم فردها على طبقتين باستخدام الات التسوية الحديثة على ان لا يزيد سمك الطبقة بعد تمام الدمك عن 25 سم و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة قصوى ( لا تقل عن 95 % ) من الكثافة المعملية والفئة تشمل اجراء التجارب المعملية والحقلية ويتم التنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا للمواصفات الفنية للمشروع وتقرير الاستشاري وتعليمات المهندس المشرف<br>-مسافة النقل لا تقل عن 20 كم<br>- يتم احتساب علاوة 1.2 جنيه لكل 1 كم بالزيادة أو النقصان<br>-السعر يشمل قيمة المادة المحجيرة طبقا لإفادة المنطقة بهذا القطاع (7) من الكم 504 إلى 568 | 3م     | 970.00     | 278.00 | 269,660.000   |
|           | علاوة مسافة النقل 64 كم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | 970.00     | 52.80  | 51,216.000    |
|           | علاوة تحصيل رسوم الكارثة والموازين طبقا للائحة الشركة الوطنية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | 970.00     | 25.00  | 24,250.000    |
| 4-2       | بالمتر المكعب أعمال توريد وفرش طبقة أساس من الاحجار الصلبة المترججة ناتج تكسير الكسارات والمطابقة للمواصفات وأقصى حجم للحبيبات ما بين 31.5 مم الى 40 مم والا يزيد نسبة المار من منخل 200 عن 5% و التدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 80 % و الا يقل معامل المرونة ( Ev2 ) من تجربة لوح التحميل عن 120 ميجاباسكال والا يزيد نسبة الفاقد بجهاز لوس جلوس عن 30 % والا يزيد الامتصاص عن 15 % و يتم فردها على طبقتين باستخدام الات التسوية الحديثة على ان لا يزيد سمك الطبقة بعد تمام الدمك عن 20 سم و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة قصوى ( لا يقل عن 100% ) من الكثافة المعملية والفئة تشمل اجراء التجارب المعملية والحقلية ويتم تنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا للمواصفات الفنية للمشروع وتقرير الاستشاري وتعليمات المهندس المشرف<br>-مسافة النقل لا تقل عن 20 كم<br>- يتم احتساب علاوة 1.2 جنيه لكل 1 كم بالزيادة أو النقصان<br>-السعر يشمل قيمة المادة المحجيرة طبقا لإفادة المنطقة بهذا القطاع (7) من الكم 504 إلى 568         | 3م     | 819.00     | 298.00 | 244,062.000   |
|           | علاوة مسافة النقل 206 كم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        | 819.00     | 223.20 | 182,800.800   |
|           | علاوة تحصيل رسوم الكارثة والموازين طبقا للائحة الشركة الوطنية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | 819.00     | 25.00  | 20,475.000    |
|           | الاجمالي                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |            |        | 10,745,977.80 |

( عشرة مائتين وسبع مائة وخمسة وأربعون ألفا و تسعمائة وسبعة وسبعون جنيا وثمانون قرشا فقط لا غير )

مدير عام المشروعات  
م / محمد حسني فياض

مدير المشروع المالك  
م / ابراهيم الحارثي

مدير المشروع الاستشاري  
م / خالد فوزي

مدير المشروع المقاول  
م / محمد عبد الله

رئيس الإدارة المركزية  
منطقة غرب الدلتا  
الاسكندرية - مرسى مطروح

يعتمد

رئيس الإدارة المركزية

منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عميد مهندس /

" هاني محمد محمود طه "

١١/٨

٢٠٢٣

١١/٨

٢٠٢٣

١١/٨






**Electric Express Train - HSR**

From El Ain El Sokhna City To El Alamein - MATROUH

**Section - 7 From FOKA To MARS MATROUH**

From Station 504+000 To Station 568+177




Opreating lap

Al Tewkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

|               |                 |          |                 |         |         |
|---------------|-----------------|----------|-----------------|---------|---------|
| TESTING DATE: | 28-01-2023      | code     | ZONE            | 506+700 | 506+820 |
| LOCATION      | بلاطة من القطاع | FZ ( 3 ) | Material        |         |         |
| NAME COMPANY  | الفيروز         |          | layer thickness |         |         |

visual inspection test

Gradient test

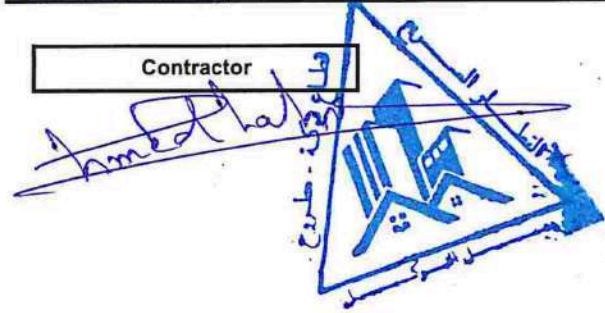
| -gradation of bulk materials |        |        |        | SAMPLE WEIGHT [g] |        | 25695.00 |         | gm   | table classify |
|------------------------------|--------|--------|--------|-------------------|--------|----------|---------|------|----------------|
| sieve size                   | 2      | 1.5    | 1      | 4/3               | 2/1    | 8/3      | # 4     | PASS | soil classify  |
| Mass retained (g)            | 2516.0 | 1748.0 | 1368.0 | 1511.0            | 1624.0 | 1635.0   | 1788.0  |      | A-1-b          |
| Cumulative Retained (g)      | 2516.0 | 4264.0 | 5632.0 | 7143.0            | 8767.0 | 10402.0  | 12190.0 | PRO  | 2.15           |
| Cumulative Retained %        | 9.8    | 16.6   | 21.9   | 27.8              | 34.1   | 40.5     | 47.4    | WC   | 8.1            |
| Cumulative Passing %         | 90.2   | 83.4   | 78.1   | 72.2              | 65.9   | 59.5     | 52.6    | CBR  | 55.8           |

| -soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|--------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size               | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g)  | 70.00 | 215.00 | 375.00 |              |  |        |  |    |
| Cumulative Retained %    | 14.00 | 43.00  | 75.00  |              |  |        |  |    |
| Cumulative Passing %     | 86.00 | 57.00  | 25.00  |              |  |        |  |    |

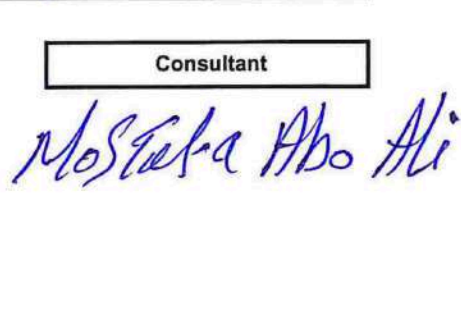
| -General gradient    |      |      |      |      |      |      |      |      |       |       |
|----------------------|------|------|------|------|------|------|------|------|-------|-------|
| sieve size(in)       | 2    | 1.5  | 1    | 3/4  | 1/2  | 3/8  | # 4  | # 10 | # 40  | # 200 |
| sieve size(mm)       | 50.0 | 37.5 | 25.0 | 19.0 | 12.5 | 9.5  | 4.75 | 2.00 | 0.425 | 0.075 |
| Cumulative Passing % | 90.2 | 83.4 | 78.1 | 72.2 | 65.9 | 59.5 | 52.6 | 45.2 | 30.0  | 13.1  |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |

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

Contractor



Consultant



|                                                                                   |                                                                                                                                                                                                     |  |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|
|  | <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> |  |  |
|                                                                                   |                                                                                                                                                                                                     |  |                                                                                     |
|                                                                                   |                                                                                                                                                                                                     |  |                                                                                     |

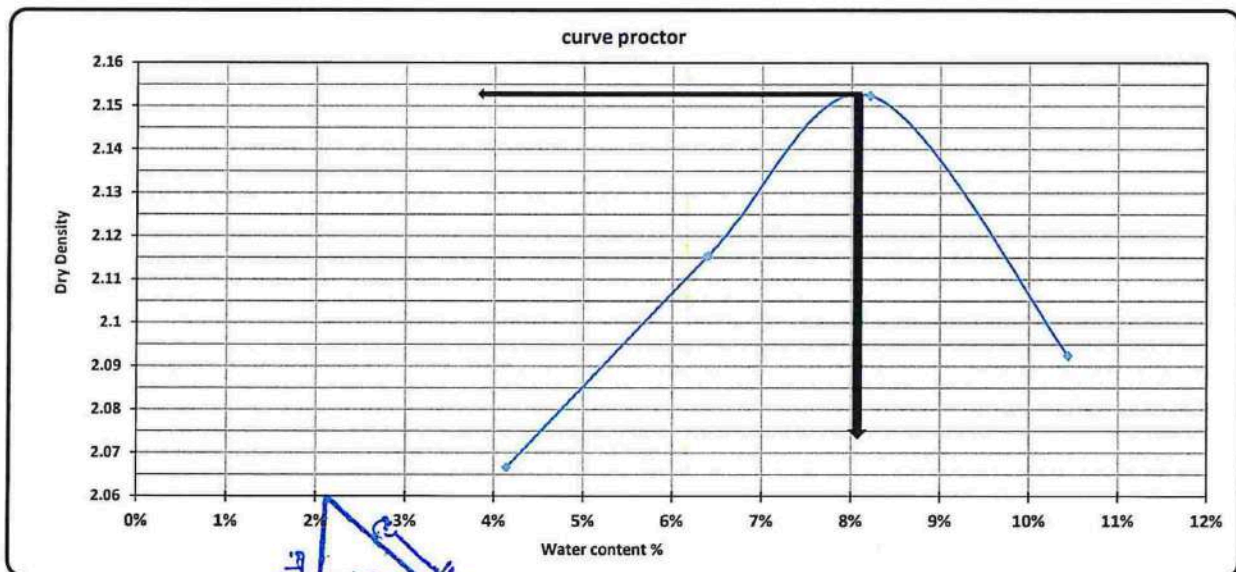
## PROCTOR TEST

|               |                 |          |                 |         |         |
|---------------|-----------------|----------|-----------------|---------|---------|
| TESTING DATE: | 28-01-2023      | code     | Station         | 506+700 | 506+820 |
| LOCATION      | بلاطة من القطاع | FZ ( 3 ) | Material        |         |         |
| NAME COMPANY  | المفروض         |          | layer thickness |         |         |

|                        |        |                 |       |
|------------------------|--------|-----------------|-------|
| Weight of empty mold : | 5620.0 | MAX Dry Density | 2.152 |
| Mold Volume:           | 2030.0 | Water content % | 8.1   |

|                       |        |         |         |        |  |
|-----------------------|--------|---------|---------|--------|--|
| trial no :            | 1      | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 9989.0 | 10189.0 | 10348.0 | 10311  |  |
| WT. WET SOIL          | 4369.0 | 4569.0  | 4728.0  | 4691.0 |  |
| Wt. Density           | 2.152  | 2.251   | 2.329   | 2.311  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare No.               | 2     | 7     | 20    | 21    | 4     | 5     | 11    | 12    |  |  |
| Tare wt.               | 52.81 | 53.52 | 55.01 | 55.38 | 55.33 | 56.36 | 55.37 | 54.83 |  |  |
| 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 | 146.2 | 146.1 | 144.5 | 144.1 | 143.0 | 142.7 | 141.0 | 141.1 |  |  |
| Wt. Of water           | 3.8   | 3.9   | 5.5   | 5.9   | 7.0   | 7.3   | 9.0   | 8.9   |  |  |
| Wt. Of dry soil        | 93.4  | 92.6  | 89.5  | 88.7  | 87.7  | 86.4  | 85.6  | 86.3  |  |  |
| Water content %        | 4.1%  | 4.2%  | 6.1%  | 6.7%  | 8.0%  | 8.4%  | 10.6% | 10.3% |  |  |
| AV. Water content %    | 4.1%  |       | 6.4%  |       | 8.2%  |       | 10.4% |       |  |  |
| Dry Density            | 2.067 |       | 2.115 |       | 2.152 |       | 2.092 |       |  |  |



Contractor

*Ahmed Hamed*

Consultant

*Mostafa Abo Ali*



### California Bearing Ratio TEST

|                |                 |          |                   |         |         |
|----------------|-----------------|----------|-------------------|---------|---------|
| Testing Date : | 31-01-2023      | Code     | FROM STA :        | 506+700 | 506+820 |
| Location :     | بلاطة من القطاع | FZ ( 3 ) | : Material        |         |         |
| Company Name   | الفيروز         |          | : Layer Thickness |         |         |

#### - : Test Results

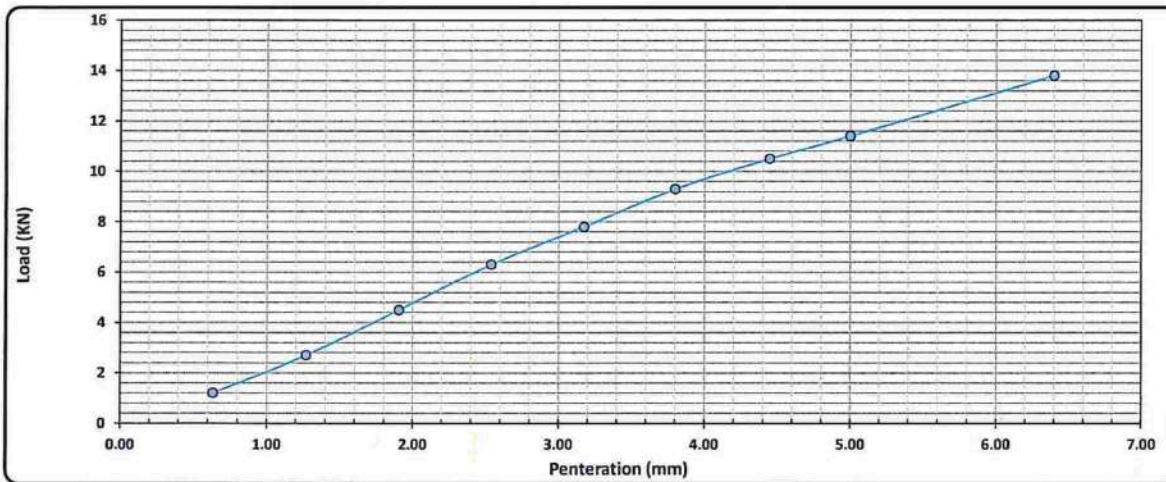
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 2     |
| Mold Vol.(cm <sup>3</sup> )          | 2168  |
| Mold WT. (gm)                        | 5089  |
| Mold WT. + Wet WT. (gm)              | 10121 |
| Wet WT. (gm)                         | 5032  |
| Wet Density (g/cm <sup>3</sup> )     | 2.321 |
| Dry Density (g/cm <sup>3</sup> )     | 2.149 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.150 |
| Compaction %                         | 100.0 |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 24    |
| Tare WT. (gm)                       | 55.38 |
| Tare WT. +Wet WT. (gm)              | 150   |
| Tare WT. +Dry WT. (gm)              | 143   |
| Water WT. (gm)                      | 7.0   |
| Dry WT. (gm)                        | 87.6  |
| Moisture Content %                  | 8.0   |

| Swelling            |            |
|---------------------|------------|
| Mold No.            | 2          |
| Date                | 31-01-2023 |
| Initial Height (mm) | 5.50       |
| Final Height (mm)   | 5.50       |
| Difference          | 0          |
| Sample Height (mm)  | 11.80      |
| Swelling Ratio %    | 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) | 0.04 | 0.09 | 0.15 | 0.21 | 0.26 | 0.31 | 0.35 | 0.38 | 0.46 |
| Load (KN)         | 1.2  | 2.7  | 4.5  | 6.3  | 7.8  | 9.3  | 10.5 | 11.4 | 13.8 |



#### Calculations :-

| Penteration | Load  | Standard Load | CBR   | Mold - Compaction | Compaction | CBR           |
|-------------|-------|---------------|-------|-------------------|------------|---------------|
| (mm)        | (Kn)  | (lb)          | ( % ) | ( % )             | ( % )      | % عند نسبة 98 |
| 2.50        | 6.30  | 13.4          | 47.2% | 100               | 98         | 46.3%         |
| 5.00        | 11.40 | 20.0          | 56.9% |                   |            | 55.8%         |

Lab. Specialist

Name :

Sign :

Lab. Engineer

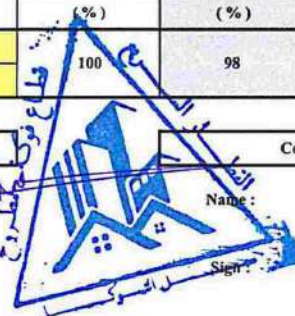
Name :

Sign :

Consultant Engineer

Name :

Sign :



Mostafa Abo Ali

# MATERIAL INSPECTION REQUEST



|                      |                    |                     |      |                  |          |          |          |         |          |    |    |
|----------------------|--------------------|---------------------|------|------------------|----------|----------|----------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ COMPANY |                     |      | Designer Company |          |          |          |         |          |    |    |
| Issued by Contractor | Name               | Sign                | Date | Time             |          |          |          |         |          |    |    |
|                      | Eng/ MOHAMED TAHA  | <i>Mohamed Taha</i> |      |                  |          |          |          |         |          |    |    |
| Received by ER       |                    |                     | MIR  | C1<br>K.P<br>506 | C2<br>EW | C3<br>CS | DD<br>28 | MM<br>1 | YY<br>23 | HH | MM |
|                      |                    |                     |      |                  |          |          |          |         |          |    |    |

|          |                                |                             |                                                          |
|----------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1   | S1 to S21<br>Station Reference | D1 to S3<br>Depot Reference | Kp 506 Note<br>For Kilometer point only Start Km is used |
| CODE - 2 | Work Activity                  |                             |                                                          |
| CODE - 3 | Sub Element of Activity        |                             |                                                          |

|                          |                                   |                |              |              |      |
|--------------------------|-----------------------------------|----------------|--------------|--------------|------|
| Description of Materials | REPLACEMENT FILL MATERIAL RESULTS |                |              |              |      |
| Location to be Used      | FROM                              | TO             | LEVEL        |              |      |
|                          | 506+300                           | 506+600        | (-1.5)       |              |      |
|                          | 506+600                           | 506+860        | (-1.5)       |              |      |
|                          | 506+200                           | 506+340        | (-1.25)      |              |      |
| MAR Approval No          |                                   |                |              | Date         |      |
| Supplier Name            |                                   |                |              |              |      |
| Test Requirement         | Specification                     |                |              | Clause       |      |
| Reference Photos         | Yes attached / No                 | Other          |              |              |      |
| Item                     | Description                       | Unit           | Quantity     | Arrival Date | Note |
| 1                        | SEIVE ANALYSIS                    | M <sup>3</sup> | 5000         | 28/1/2023    |      |
| 2                        | ATTERBERG                         | M <sup>3</sup> | 5000         | 28/1/2023    |      |
| 3                        | PROCTOR                           | M <sup>3</sup> | 5000         | 28/1/2023    |      |
| 4                        | CBR                               | M <sup>3</sup> | 5000         | 31/1/2023    |      |
| Comments by:             |                                   |                | Comments by: |              |      |
|                          |                                   |                |              |              |      |

|                          |                         |                        |      |         |
|--------------------------|-------------------------|------------------------|------|---------|
| APPROVAL STATUS          |                         |                        |      |         |
| Organisation             | Name                    | Sign                   | Date | A-AWC-R |
| Contractor               | <i>Mohammed Mostafa</i> | <i>Mohammed</i>        |      |         |
| QA/QC *                  | <i>Mostafa Abo Ali</i>  | <i>Mostafa Abo Ali</i> |      |         |
| GARB**                   |                         |                        |      |         |
| Employers Representative |                         |                        |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only



# MATERIAL APPROVAL REQUEST



|                      |                      |                     |                  |      |
|----------------------|----------------------|---------------------|------------------|------|
| Contractor Company   | AL-FAYROUZ           |                     | Designer Company |      |
| Issued by Contractor | Name                 | Sign                | Date             | Time |
|                      | ENG/<br>MOHAMED TAHA | <i>Mohamed Taha</i> |                  |      |
| Received by ER       |                      |                     | MAR              |      |
|                      |                      |                     |                  |      |

|            |    |    |    |    |    |    |    |
|------------|----|----|----|----|----|----|----|
| C1         | C2 | C3 | DD | MM | YY | HH | MM |
| KP.<br>506 | EW | CS | 31 | 1  | 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 | PREPARED SUBGRADE |                 |                            |         |
| Location to be Used      | FROM              | TO              | LEVEL                      |         |
|                          | 506+300           | 506+600         | (-1.5)                     |         |
|                          | 506+600           | 506+860         | (-1.5)                     |         |
|                          | 506+200           | 506+340         | (-1.25)                    |         |
| ITEM                     | SPECIFICATION     | TEST REQUIRMENT | TEST RESULT ATTACHMENT     | REMARKS |
| 1                        | ASTM D 6913       | SEIVE ANALYSIS  | ACCORDING TO SPECIFICATION |         |
| 2                        | ASTM D 4318       | ATTERBERG       | N.P.L                      |         |
| 3                        | ASTM D 1557       | PROCTOR         | 2.15                       |         |
| 4                        | ASTM D 18832      | CBR             | 55.8%                      |         |
| Comments by:             |                   | Comments by:    |                            |         |
|                          |                   |                 |                            |         |

| APPROVAL STATUS          |                         |                        |      |         |
|--------------------------|-------------------------|------------------------|------|---------|
| Organisation             | Name                    | Sign                   | Date | A-AWC-R |
| Contractor               | <i>Mohammed Mostafa</i> | <i>Mohammed</i>        |      |         |
| QA/QC *                  | <i>Mostafa Abo Ali</i>  | <i>Mostafa Abo Ali</i> |      |         |
| GARB**                   |                         |                        |      |         |
| Employers Representative |                         |                        |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

المكتب الاستشاري الهندسي  
أ.د. خالد فنديل

**Electric Express Train - HSR**

From El Ain El Sokhna City To El Alamein - MATROUH

**Section - 7 From FOKA To MARSALA MATROUH**

From Station 504+000 To Station 568+177

الهيئة القومية للإزفاق  
للمطرق والسكك الحديدية  
(SARST)

Operating lap

Al Tewkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

|               |            |          |                 |         |         |
|---------------|------------|----------|-----------------|---------|---------|
| TESTING DATE: | 29-01-2023 | code     | ZONE            | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ ( 4 ) | Material        |         |         |
| NAME COMPANY  | الفيروز    |          | layer thickness |         |         |

visual inspection test

Gradient test

| gradation of bulk materials |        |        |        | SAMPLE WEIGHT [g] |        | 22310.00 |         | gm   | table classify |      |
|-----------------------------|--------|--------|--------|-------------------|--------|----------|---------|------|----------------|------|
| sieve size                  | 2      | 1.5    | 1      | 4/3               | 2/1    | 8/3      | # 4     | PASS | soil classify  |      |
| Mass retained (g)           | 1874.0 | 1864.0 | 1541.0 | 1698.0            | 1576.0 | 1453.0   | 1994.0  |      | A-1-a          |      |
| Cumulative Retained (g)     | 1874.0 | 3738.0 | 5279.0 | 6977.0            | 8553.0 | 10006.0  | 12000.0 |      | PRO            | 2.16 |
| Cumulative Retained %       | 8.4    | 16.8   | 23.7   | 31.3              | 38.3   | 44.8     | 53.8    |      | WC             | 6.8  |
| Cumulative Passing %        | 91.6   | 83.2   | 76.3   | 68.7              | 61.7   | 55.2     | 46.2    |      | CBR            | 57.3 |

| soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|-------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size              | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g) | 55.00 | 225.00 | 365.00 |              |  |        |  |    |
| Cumulative Retained %   | 11.00 | 45.00  | 73.00  |              |  |        |  |    |
| Cumulative Passing %    | 89.00 | 55.00  | 27.00  |              |  |        |  |    |

| 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 % | 91.6 | 83.2 | 76.3 | 68.7 | 61.7 | 55.2 | 46.2 | 41.1 | 25.4  | 12.5  |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |

| ATTERBERG<br>LIMTS | LIQUID LIMIT ( L.L.) | PLASTIC LIMIT (P.L.) | PLASTIC INDEX (P.I.) |
|--------------------|----------------------|----------------------|----------------------|
|                    | 24.05%               | 20.28%               | 3.78%                |

Contractor

Consultant



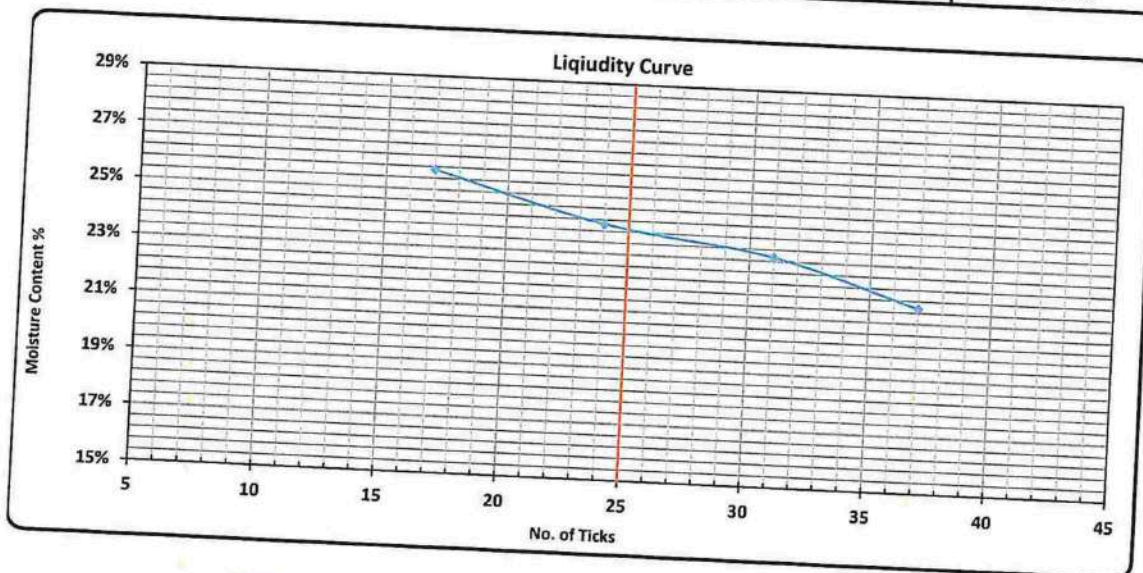
|                                                                                                                                                                   |                                                                                            |                                     |                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>أ.د. خالد قنديل | <br>SVSRA | <b>Electric Express Train - HSR</b> | <br>الهيئة العامة للنقل<br>Ministry of Transport<br>الهيئة العامة للنقل |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Plasticity and Liquidity Test -Atterberg Limits

|               |            |          |                   |         |         |         |
|---------------|------------|----------|-------------------|---------|---------|---------|
| Testing Date: | 29-01-2023 | Code:    | FROM STA:         | 506+000 | TO STA: | 507+000 |
| Location:     | K.P (506)  | FZ ( 4 ) | Material:         |         |         |         |
| Company Name  | الفيروز    |          | Layer Thickness : |         |         |         |

#### Testing Results :-

| Test                    | Liquid Limit |       |       |       | Plastic Limit |       |
|-------------------------|--------------|-------|-------|-------|---------------|-------|
| No. of Ticks            | 37           | 31    | 24    | 17    | -             | -     |
| Tare No.                | 1            | 2     | 3     | 4     | 5             | 6     |
| Tare WT. (gm)           | 57.99        | 52.81 | 55.72 | 55.33 | 56.30         | 53.97 |
| Tare WT. + Wet WT. (gm) | 71.25        | 75.64 | 75.84 | 72.50 | 59.41         | 58.36 |
| Tare WT. + Dry WT. (gm) | 68.90        | 71.35 | 71.94 | 68.99 | 58.9          | 57.6  |
| Water WT. (gm)          | 2.35         | 4.29  | 3.90  | 3.51  | 0.51          | 0.76  |
| Dry WT. (gm)            | 10.91        | 18.54 | 16.22 | 13.66 | 2.60          | 3.63  |
| Moisture Content %      | 21.5%        | 23.1% | 24.0% | 25.7% | 19.6%         | 20.9% |
| Average %               |              |       |       |       | 20.3%         |       |



| LL     | P.L    | P.I   |
|--------|--------|-------|
| 24.05% | 20.28% | 3.78% |

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

Name :

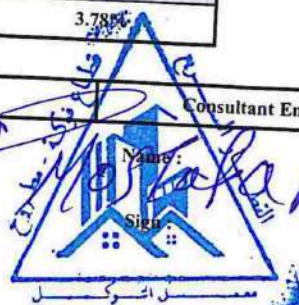
Name :

Name :

Sign :

Sign :

Sign :



|                                                                                                                                                                       |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>EK ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>ا.د. خالد فنيديل | <br>SVSTRA SHAKEP | <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 والبنى التحتية<br>(GARBL) |
|                                                                                                                                                                       |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                                                     |
|                                                                                                                                                                       |                                                                                                    |                                                                                                                                                                                                     |  |                                                                                                                                                     |

## PROCTOR TEST

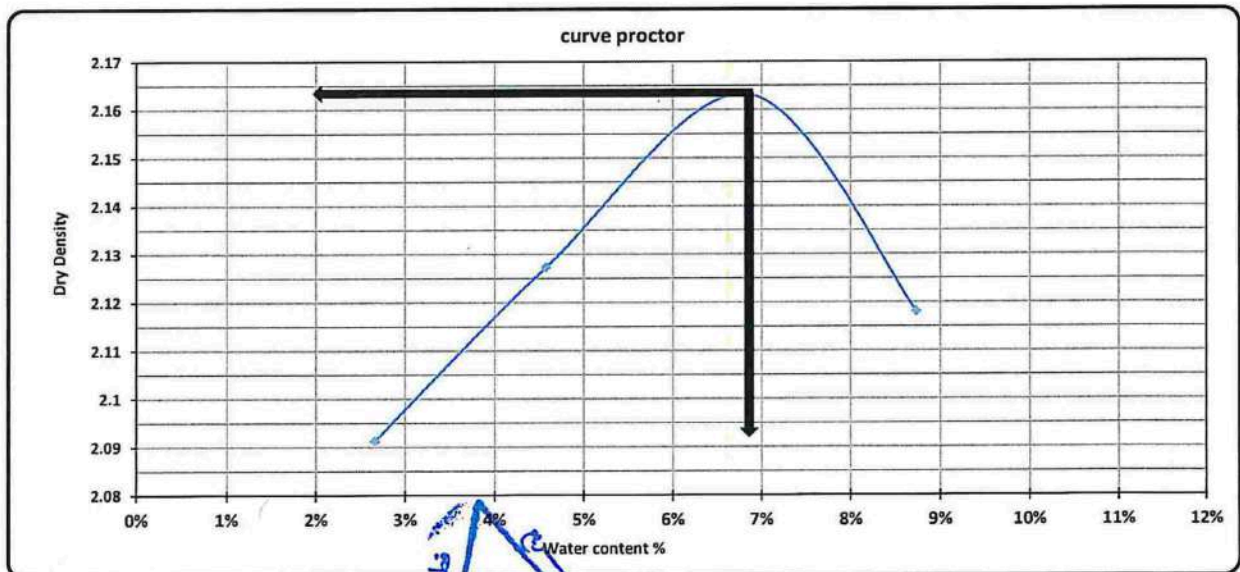
|               |            |        |                 |         |         |
|---------------|------------|--------|-----------------|---------|---------|
| TESTING DATE: | 29-01-2023 | code   | Station         | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ (4) | Material        |         |         |
| NAME COMPANY  | الفيروز    |        | layer thickness |         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 5620.0 |
| Mold Volume:           | 2030.0 |

|                 |       |
|-----------------|-------|
| MAX Dry Density | 2.163 |
| Water content % | 6.8%  |

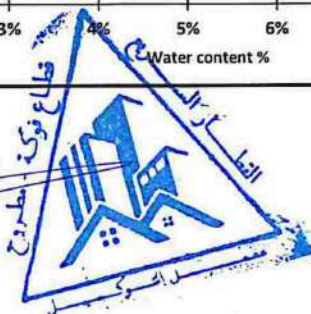
|                       |        |         |         |        |  |
|-----------------------|--------|---------|---------|--------|--|
| trial no :            | 1      | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 9978.0 | 10136.0 | 10312.0 | 10295  |  |
| WT. WET SOIL          | 4358.0 | 4516.0  | 4692.0  | 4675.0 |  |
| Wt. Density           | 2.147  | 2.225   | 2.311   | 2.303  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare No.               | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    |  |  |
| Tare wt.               | 55.43 | 55.33 | 54.83 | 53.21 | 53.66 | 54.41 | 56.51 | 56.61 |  |  |
| 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 | 147.5 | 147.6 | 145.8 | 145.8 | 143.8 | 143.9 | 142.4 | 142.6 |  |  |
| Wt. Of water           | 2.5   | 2.4   | 4.2   | 4.2   | 6.2   | 6.1   | 7.6   | 7.4   |  |  |
| Wt. Of dry soil        | 92.1  | 92.3  | 91.0  | 92.6  | 90.1  | 89.5  | 85.9  | 86.0  |  |  |
| Water content %        | 2.7%  | 2.6%  | 4.6%  | 4.5%  | 6.9%  | 6.8%  | 8.8%  | 8.6%  |  |  |
| AV. Water content %    | 2.7%  | 4.6%  | 6.8%  | 8.7%  |       |       |       |       |  |  |
| Dry Density            | 2.091 | 2.127 | 2.163 | 2.118 |       |       |       |       |  |  |



Contractor

*Amr Elhadi*



Consultant

*Mostafa Abo Ali*



**California Bearing Ratio TEST**

|                |           |          |                   |         |         |
|----------------|-----------|----------|-------------------|---------|---------|
| Testing Date : | 2/2/2023  | Code     | FROM STA :        | 506+000 | 507+000 |
| Location :     | K.P (506) | FZ ( 4 ) | : Material        |         |         |
| Company Name   | الفيروز   |          | : Layer Thickness |         |         |

**- : Test Results**

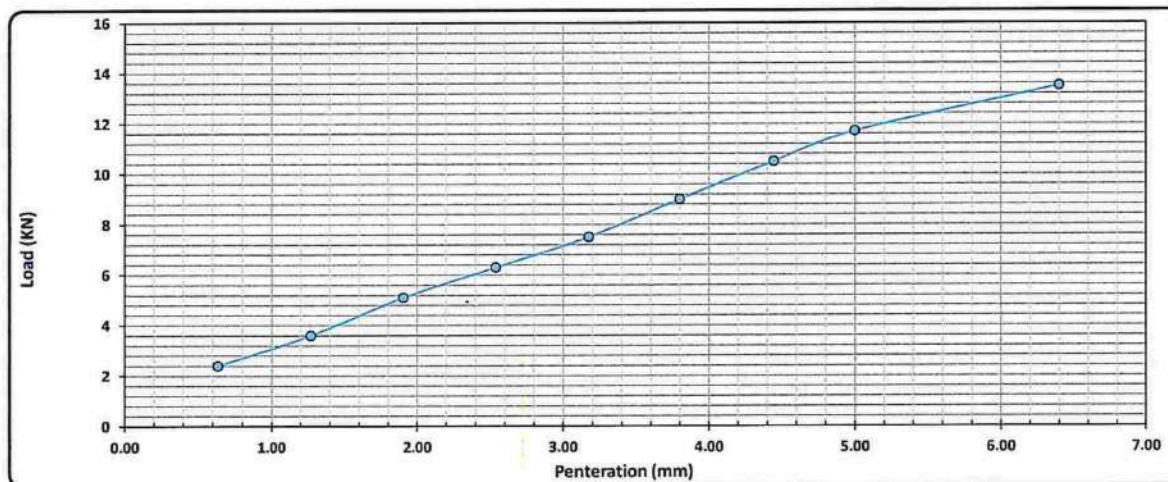
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 2025  |
| Mold WT. (gm)                        | 5034  |
| Mold WT. + Wet WT. (gm)              | 9721  |
| Wet WT. (gm)                         | 4687  |
| Wet Density (g/cm <sup>3</sup> )     | 2.315 |
| Dry Density (g/cm <sup>3</sup> )     | 2.160 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.160 |
| Compaction %                         | 100.0 |

| Mositure Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 3     |
| Tare WT. (gm)                       | 55.72 |
| Tare WT. +Wet WT. (gm)              | 150   |
| Tare WT. +Dry WT. (gm)              | 143.7 |
| Water WT. (gm)                      | 6.3   |
| Dry WT. (gm)                        | 88.0  |
| Moisture Content %                  | 7.2   |

| Swelling           |          |
|--------------------|----------|
| Mold No.           | 3        |
| Date               | 2/2/2023 |
| Intial Height (mm) | 4.50     |
| Final Height (mm)  | 4.50     |
| Difference         | 0        |
| Sample Height (mm) | 11.80    |
| 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 (mm) | 0.08 | 0.12 | 0.17 | 0.21 | 0.25 | 0.30 | 0.35 | 0.39 | 0.45 |
| Load (KN)         | 2.4  | 3.6  | 5.1  | 6.3  | 7.5  | 9.0  | 10.5 | 11.7 | 13.5 |



**Calculations :-**

| Pentration | Load  | Standard Load | CBR   | Mold - Compaction | Compaction | CBR            |
|------------|-------|---------------|-------|-------------------|------------|----------------|
| (mm)       | (Kn)  | (lb)          | ( % ) | ( % )             | ( % )      | 98 عند نسبة 98 |
| 2.50       | 6.30  | 13.4          | 47.2% | 100               | 98         | 46.2%          |
| 5.00       | 11.70 | 20.0          | 58.4% |                   |            | 57.3%          |

Lab. Specialist

Name :

Sign :

Lab. Engineer

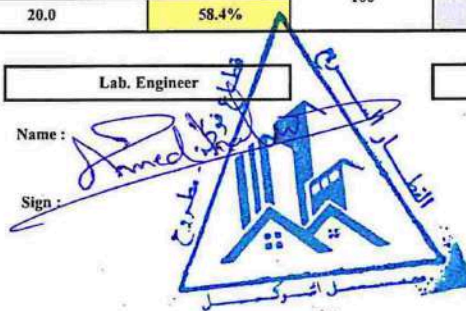
Name :

Sign :

Consultant Engineer

Name :

Sign :



Handwritten signature of the Consultant Engineer, Mostafa Abo Ali.

# MATERIAL INSPECTION REQUEST



|                      |                           |                     |                  |      |
|----------------------|---------------------------|---------------------|------------------|------|
| OContractor Company  | <b>AL-FAYROUZ COMPANY</b> |                     | Designer Company |      |
| Issued by Contractor | Name                      | Sign                | Date             | Time |
|                      | Eng/ MOHAMED TAHA         | <i>Mohamed Taha</i> |                  |      |
| Received by ER       |                           |                     | MIR              |      |
|                      | C1                        | C2                  | C3               | DD   |
|                      | K.P 506                   | EW                  | CS               | 29   |
|                      |                           |                     |                  | MM   |
|                      |                           |                     |                  | YY   |
|                      |                           |                     |                  | HH   |
|                      |                           |                     |                  | MM   |

|          |                                |                             |                                                          |
|----------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1   | S1 to S21<br>Station Reference | D1 to S3<br>Depot Reference | Kp 506 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                                     | TO             | LEVEL        |              |      |
|                          | 506+000                                  | 506+200        | (-1.25)      |              |      |
|                          | 506+340                                  | 506+600        | (-1.25)      |              |      |
|                          | 506+600                                  | 506+860        | (-1.25)      |              |      |
| MAR Approval No          |                                          |                |              | Date         |      |
| Supplier Name            |                                          |                |              |              |      |
| Test Requirement         | Specification                            |                |              | Clause       |      |
| Reference Photos         | Yes attached / No                        |                |              | Other        |      |
| Item                     | Description                              | Unit           | Quantity     | Arrival Date | Note |
| 1                        | SEIVE ANALYSIS                           | M <sup>3</sup> | 5000         | 29/1/2023    |      |
| 2                        | ATTERBERG                                | M <sup>3</sup> | 5000         | 29/1/2023    |      |
| 3                        | PROCTOR                                  | M <sup>3</sup> | 5000         | 29/1/2023    |      |
| 4                        | CBR                                      | M <sup>3</sup> | 5000         | 2/2/2023     |      |
| Comments by:             |                                          |                | Comments by: |              |      |
|                          |                                          |                |              |              |      |

|                          |                         |                        |      |         |
|--------------------------|-------------------------|------------------------|------|---------|
| <b>APPROVAL STATUS</b>   |                         |                        |      |         |
| Organisation             | Name                    | Sign                   | Date | A-AWC-R |
| Contractor               | <i>Mohammed Mostafa</i> | <i>Mohammed</i>        |      |         |
| QA/QC *                  | <i>Mostafa Abo Ali</i>  | <i>Mostafa Abo Ali</i> |      |         |
| GARB**                   |                         |                        |      |         |
| Employers Representative |                         |                        |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only



# MATERIAL APPROVAL REQUEST



|                      |                      |                     |      |                  |          |          |         |         |          |    |    |
|----------------------|----------------------|---------------------|------|------------------|----------|----------|---------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ           |                     |      | Designer Company |          |          |         |         |          |    |    |
| Issued by Contractor | Name                 | Sign                | Date | Time             |          |          |         |         |          |    |    |
|                      | ENG/<br>MOHAMED TAHA | <i>Mohamed Taha</i> |      |                  |          |          |         |         |          |    |    |
| Received by ER       |                      |                     | MAR  | C1<br>KP.<br>506 | C2<br>EW | C3<br>CS | DD<br>2 | MM<br>2 | YY<br>23 | 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 | PREPARED SUBGRADE |                 |                            |         |
| Location to be Used      | FROM              | TO              | LEVEL                      |         |
|                          | 506+000           | 506+200         | (-1.25)                    |         |
|                          | 506+340           | 506+600         | (-1.25)                    |         |
|                          | 506+600           | 506+860         | (-1.25)                    |         |
| ITEM                     | SPECIFICATION     | TEST REQUIRMENT | TEST RESULT ATTACHMENT     | REMARKS |
| 1                        | ASTM D 6913       | SEIVE ANALYSIS  | ACCORDING TO SPECIFICATION |         |
| 2                        | ASTM D 4318       | ATTERBERG       | 3.78%                      |         |
| 3                        | ASTM D 1557       | PROCTOR         | 2.16                       |         |
| 4                        | ASTM D 18832      | CBR             | 57.3%                      |         |
| Comments by:             |                   | Comments by:    |                            |         |
|                          |                   |                 |                            |         |

| APPROVAL STATUS          |                        |                        |      |         |
|--------------------------|------------------------|------------------------|------|---------|
| Organisation             | Name                   | Sign                   | Date | A-AWC-R |
| Contractor               | <i>Mohamed Mostafa</i> | <i>Mohamed</i>         |      |         |
| QA/QC *                  | <i>Mostafa Abo Ali</i> | <i>Mostafa Abo Ali</i> |      |         |
| GARB**                   |                        |                        |      |         |
| Employers Representative |                        |                        |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

Operating lap Al Tawkol Central Lab

## PARTICLE SIZE DISTRIBUTION OF SOIL

|               |            |          |                 |         |         |
|---------------|------------|----------|-----------------|---------|---------|
| TESTING DATE: | 06-02-2023 | code     | ZONE            | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ ( 5 ) | Material        |         |         |
| NAME COMPANY  | الفيروز    |          | layer thickness |         |         |

visual inspection test

Gradient test

| -gradation of bulk materials |        |        |        | SAMPLE WEIGHT [g] |         | 30115.00 |         | gm   | table classify |
|------------------------------|--------|--------|--------|-------------------|---------|----------|---------|------|----------------|
| sieve size                   | 2      | 1.5    | 1      | 4/3               | 2/1     | 8/3      | # 4     | PASS | soil classify  |
| Mass retained (g)            | 1986.0 | 1897.0 | 1698.0 | 1587.0            | 2845.0  | 2145.0   | 2345.0  |      | A-1-b          |
| Cumulative Retained (g)      | 1986.0 | 3883.0 | 5581.0 | 7168.0            | 10013.0 | 12158.0  | 14503.0 |      | PRO 2.16       |
| Cumulative Retained %        | 6.6    | 12.9   | 18.5   | 23.8              | 33.2    | 40.4     | 48.2    |      | WC 7.5         |
| Cumulative Passing %         | 93.4   | 87.1   | 81.5   | 76.2              | 66.8    | 59.6     | 51.8    |      | CBR 60.2       |

| -soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|--------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size               | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g)  | 55.00 | 184.00 | 366.00 |              |  |        |  |    |
| Cumulative Retained %    | 11.00 | 36.80  | 73.20  |              |  |        |  |    |
| Cumulative Passing %     | 89.00 | 63.20  | 26.80  |              |  |        |  |    |

| -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 % | 93.4 | 87.1 | 81.5 | 76.2 | 66.8 | 59.6 | 51.8 | 46.1 | 32.8  | 13.9  |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |

| ATTERBERG<br>LIMITS | LIQUID LIMIT (L.L.) | PLASTIC LIMIT (P.L.) | PLASTIC INDEX (P.I.) |
|---------------------|---------------------|----------------------|----------------------|
|                     | N.L                 | N.P                  | N.P                  |

Contractor

Consultant

Amr El-Sayed  
مهندس  
الهندسة المدنية  
6/1/2023

Abdallah Omar  
6/1/2023



|                                                                                                                                                                   |                                                                                                                                                       |                                                    |  |                                                                                                                                               |                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>إ.د. خالد فنيبل | <br>قطار التوكباني السريع<br>Electric Express Train<br>SVCSTA SHAKEP | Electric Express Train - HSR                       |  | <br>الهيئة العامة للنقل<br>Ministry of Transport<br>(ARAB) | <br>الهيئة العامة للإحصاء<br>Ministry of Planning<br>(ARAB) |
|                                                                                                                                                                   |                                                                                                                                                       | From El Ain El Sokhna City To El Alamein - MATROUH |  |                                                                                                                                               |                                                                                                                                                |
|                                                                                                                                                                   |                                                                                                                                                       | Section - 7 From FOKA TO MARSALA MATROUH           |  |                                                                                                                                               |                                                                                                                                                |
| From Station 504+000 To Station 568+177                                                                                                                           |                                                                                                                                                       |                                                    |  |                                                                                                                                               |                                                                                                                                                |

## PROCTOR TEST

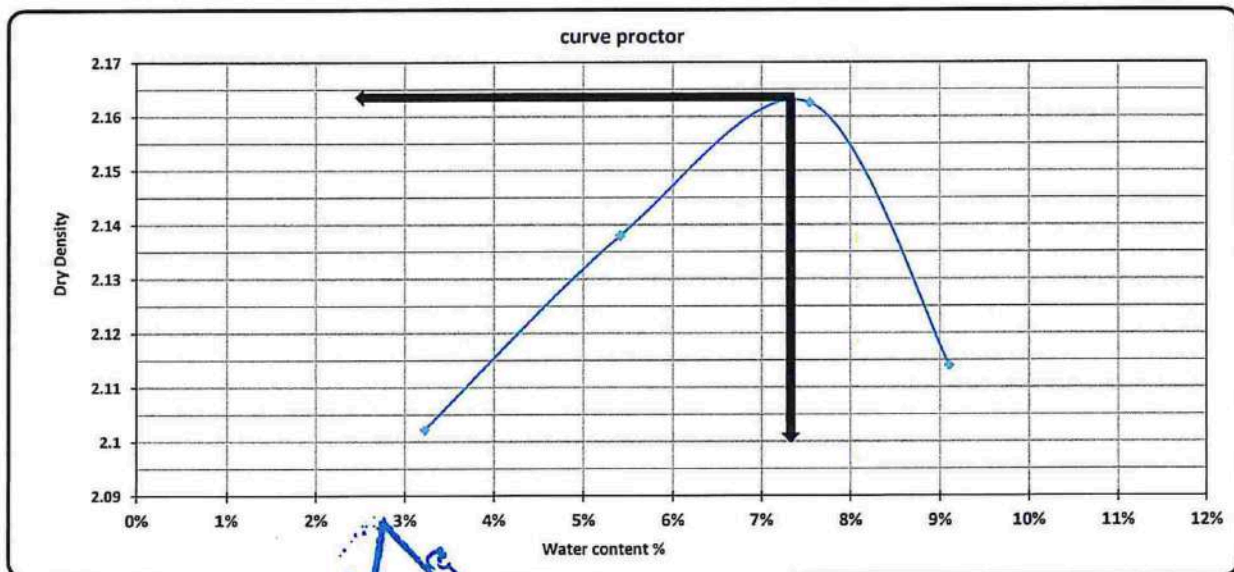
|               |            |          |                 |         |         |
|---------------|------------|----------|-----------------|---------|---------|
| TESTING DATE: | 06-02-2023 | code     | Station         | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ ( 5 ) | Material        |         |         |
| NAME COMPANY  | الفيروز    |          | layer thickness |         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 5620.0 |
| Mold Volume:           | 2030.0 |

|                 |       |
|-----------------|-------|
| MAX Dry Density | 2.163 |
| Water content % | 7.5%  |

|                       |         |         |         |        |  |
|-----------------------|---------|---------|---------|--------|--|
| trial no :            | 1       | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 10025.0 | 10195.0 | 10341.0 | 10302  |  |
| WT. WET SOIL          | 4405.0  | 4575.0  | 4721.0  | 4682.0 |  |
| Wt. Density           | 2.170   | 2.254   | 2.326   | 2.306  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare No.               | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |  |  |
| Tare wt.               | 57.99 | 52.81 | 55.72 | 55.33 | 56.3  | 53.97 | 53.52 | 57.06 |  |  |
| 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 | 147.0 | 147.1 | 145.0 | 145.3 | 143.2 | 143.5 | 142.0 | 142.2 |  |  |
| Wt. Of water           | 3.0   | 2.9   | 5.0   | 4.7   | 6.8   | 6.5   | 8.0   | 7.8   |  |  |
| Wt. Of dry soil        | 89.0  | 94.3  | 89.3  | 90.0  | 86.9  | 89.5  | 88.5  | 85.1  |  |  |
| Water content %        | 3.4%  | 3.1%  | 5.6%  | 5.2%  | 7.8%  | 7.3%  | 9.0%  | 9.2%  |  |  |
| AV. Water content %    | 3.2%  |       | 5.4%  |       | 7.5%  |       | 9.1%  |       |  |  |
| Dry Density            | 2.102 |       | 2.138 |       | 2.163 |       | 2.114 |       |  |  |



Contractor

*Signature of Contractor*

*Stamp of Contractor*

Consultant

*Signature of Consultant*

6/2/2023

|                                                                                                                                                                    |                                                                                                                   |                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>إ. د. خالد قلندج | <br>Electric Express Train - HSR | <br>الهيئة العامة للطرق والمواصلات<br>وزارة النقل |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

### California Bearing Ratio TEST

|                |           |          |                   |         |         |
|----------------|-----------|----------|-------------------|---------|---------|
| Testing Date : | 8/2/2023  | Code     | FROM STA :        | 506+000 | 507+000 |
| Location :     | K.P (506) | FZ ( 5 ) | : Material        |         |         |
| Company Name   | الفيروز   |          | : Layer Thickness |         |         |

#### - : Test Results

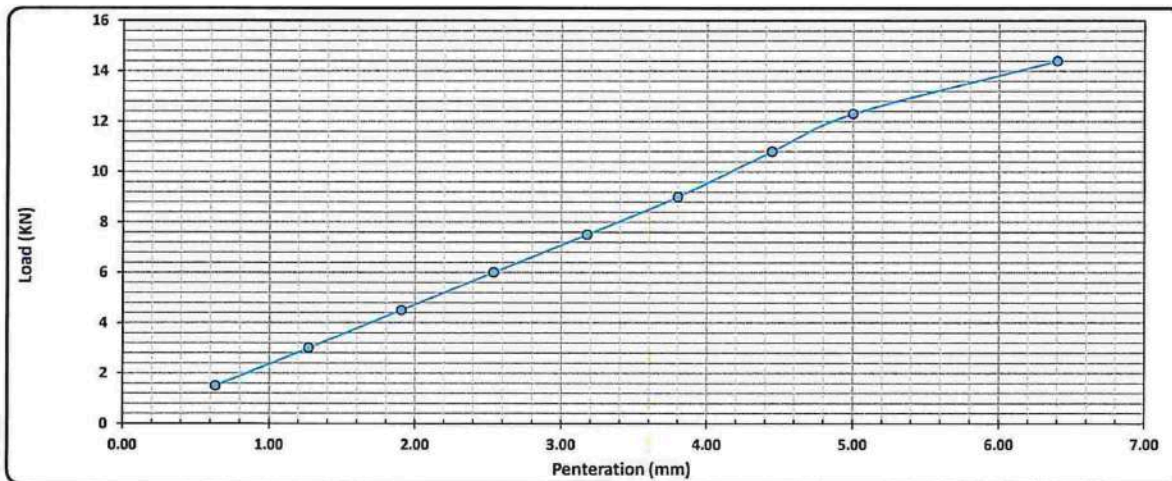
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 1     |
| Mold Vol. (cm <sup>3</sup> )         | 2158  |
| Mold WT. (gm)                        | 5088  |
| Mold WT. + Wet WT. (gm)              | 10102 |
| Wet WT. (gm)                         | 5014  |
| Wet Density (g/cm <sup>3</sup> )     | 2.323 |
| Dry Density (g/cm <sup>3</sup> )     | 2.160 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.160 |
| Compaction %                         | 100.0 |

| Moisture Ratio After Compacted Mold |        |
|-------------------------------------|--------|
| Tare No.                            | 5      |
| Tare WT. (gm)                       | 55.72  |
| Tare WT. +Wet WT. (gm)              | 150    |
| Tare WT. +Dry WT. (gm)              | 143.35 |
| Water WT. (gm)                      | 6.7    |
| Dry WT. (gm)                        | 87.6   |
| Moisture Content %                  | 7.6    |

| Swelling            |          |
|---------------------|----------|
| Mold No.            | 1        |
| Date                | 8/2/2023 |
| Initial Height (mm) | 4.50     |
| Final Height (mm)   | 4.50     |
| Difference          | 0        |
| Sample Height (mm)  | 11.80    |
| 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 (mm) | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.36 | 0.41 | 0.48 |
| Load (KN)         | 1.5  | 3.0  | 4.5  | 6.0  | 7.5  | 9.0  | 10.8 | 12.3 | 14.4 |



#### Calculations :-

| Penetration | Load  | Standard Load | CBR   | Mold - Compaction | Compaction | CBR           |
|-------------|-------|---------------|-------|-------------------|------------|---------------|
| (mm)        | (Kn)  | (lb)          | ( % ) | ( % )             | ( % )      | % عند نسبة 98 |
| 2.50        | 6.00  | 13.4          | 44.9% | 98                | 98         | 44.1%         |
| 5.00        | 12.30 | 20.0          | 61.4% |                   |            | 60.2%         |

Lab. Specialist

Name :

Sign :

Lab. Engineer

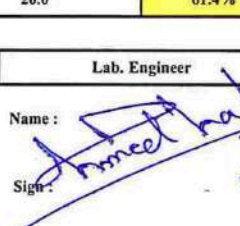
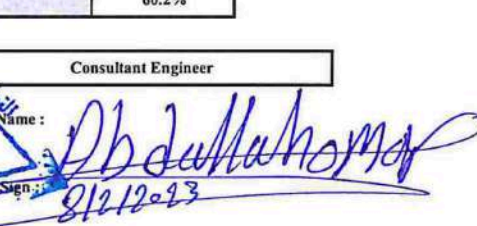
Name :

Sign :

Consultant Engineer

Name :

Sign :


  

  
 8/2/2023



# MATERIAL INSPECTION REQUEST



|                      |                    |              |      |                  |          |          |         |         |          |    |    |
|----------------------|--------------------|--------------|------|------------------|----------|----------|---------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ COMPANY |              |      | Designer Company |          |          |         |         |          |    |    |
| Issued by Contractor | Name               | Sign         | Date | Time             |          |          |         |         |          |    |    |
|                      | Eng/ MOHAMED TAHA  | Mohamed Taha |      |                  |          |          |         |         |          |    |    |
| Received by ER       |                    |              | MIR  | C1<br>K.P<br>506 | C2<br>EW | C3<br>CS | DD<br>6 | MM<br>2 | YY<br>23 | HH | MM |

|          |                                |                             |                                                          |
|----------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1   | S1 to S21<br>Station Reference | D1 to S3<br>Depot Reference | Kp 506 Note<br>For Kilometer point only Start Km is used |
| CODE - 2 | Work Activity                  |                             |                                                          |
| CODE - 3 | Sub Element of Activity        |                             |                                                          |

|                          |                |                                   |              |              |      |
|--------------------------|----------------|-----------------------------------|--------------|--------------|------|
| Description of Materials |                | REPLACEMENT FILL MATERIAL RESULTS |              |              |      |
| Location to be Used      | FROM           | TO                                | LEVEL        |              |      |
|                          | 506+000        | 506+200                           | (-1)         |              |      |
|                          | 506+200        | 506+400                           | (-1)         |              |      |
|                          | 506+400        | 506+500                           | (-1)         |              |      |
| MAR Approval No          |                |                                   |              | Date         |      |
| Supplier Name            |                |                                   |              |              |      |
| Test Requirement         |                | Specification                     |              | Clause       |      |
| Reference Photos         |                | Yes attached / No                 |              | Other        |      |
| Item                     | Description    | Unit                              | Quantity     | Arrival Date | Note |
| 1                        | SEIVE ANALYSIS | M <sup>3</sup>                    | 5000         | 6/2/2023     |      |
| 2                        | ATTERBERG      | M <sup>3</sup>                    | 5000         | 6/2/2023     |      |
| 3                        | PROCTOR        | M <sup>3</sup>                    | 5000         | 6/2/2023     |      |
| 4                        | CBR            | M <sup>3</sup>                    | 5000         | 8/2/2023     |      |
| Comments by:             |                |                                   | Comments by: |              |      |
|                          |                |                                   |              |              |      |

|                          |                  |               |      |         |
|--------------------------|------------------|---------------|------|---------|
| APPROVAL STATUS          |                  |               |      |         |
| Organisation             | Name             | Sign          | Date | A-AWC-R |
| Contractor               | Mohammed Mustafa | Mohammed      |      |         |
| QA/QC *                  | Abdallah Omar    | Abdallah Omar |      |         |
| GARB**                   |                  |               |      |         |
| Employers Representative |                  |               |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST



|                      |                      |                     |                  |                                                                                                                                                                                                                                                      |    |    |    |    |    |    |    |    |            |    |    |   |   |    |  |  |
|----------------------|----------------------|---------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|----|------------|----|----|---|---|----|--|--|
| Contractor Company   | AL-FAYROUZ           |                     | Designer Company |                                                                                                                                                                                                                                                      |    |    |    |    |    |    |    |    |            |    |    |   |   |    |  |  |
| Issued by Contractor | Name                 | Sign                | Date             | Time                                                                                                                                                                                                                                                 |    |    |    |    |    |    |    |    |            |    |    |   |   |    |  |  |
|                      | ENG/<br>MOHAMED TAHA | <i>Mohamed Taha</i> |                  |                                                                                                                                                                                                                                                      |    |    |    |    |    |    |    |    |            |    |    |   |   |    |  |  |
| 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>KP.<br/>506</td> <td>EW</td> <td>CS</td> <td>8</td> <td>2</td> <td>23</td> <td></td> <td></td> </tr> </table> | C1 | C2 | C3 | DD | MM | YY | HH | MM | KP.<br>506 | EW | CS | 8 | 2 | 23 |  |  |
| C1                   | C2                   | C3                  | DD               | MM                                                                                                                                                                                                                                                   | YY | HH | MM |    |    |    |    |    |            |    |    |   |   |    |  |  |
| KP.<br>506           | EW                   | CS                  | 8                | 2                                                                                                                                                                                                                                                    | 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 | PREPARED SUBGRADE |                 |                            |         |
| Location to be Used      | FROM              | TO              | LEVEL                      |         |
|                          | 506+000           | 506+200         | (-1)                       |         |
|                          | 506+200           | 506+400         | (-1)                       |         |
|                          | 506+400           | 506+500         | (-1)                       |         |
| ITEM                     | SPECIFICATION     | TEST REQUIRMENT | TEST RESULT ATTACHMENT     | REMARKS |
| 1                        | ASTM D 6913       | SEIVE ANALYSIS  | ACCORDING TO SPECIFICATION |         |
| 2                        | ASTM D 4318       | ATTERBERG       | N.P.L                      |         |
| 3                        | ASTM D 1557       | PROCTOR         | 2.16                       |         |
| 4                        | ASTM D 18832      | CBR             | 60.2%                      |         |
| Comments by:             |                   | Comments by:    |                            |         |
|                          |                   |                 |                            |         |

| APPROVAL STATUS          |                         |                      |      |         |
|--------------------------|-------------------------|----------------------|------|---------|
| Organisation             | Name                    | Sign                 | Date | A-AWC-R |
| Contractor               | <i>Mohammed H. Stah</i> | <i>Mohammed</i>      |      |         |
| QA/QC *                  | <i>Abdallah Omar</i>    | <i>Abdallah Omar</i> |      |         |
| GARB**                   |                         |                      |      |         |
| Employers Representative |                         |                      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only



Operating lap Al Tawkol Central Lab

## PARTICLE SIZE DISTRIBUTION OF SOIL

|               |            |          |                 |         |         |
|---------------|------------|----------|-----------------|---------|---------|
| TESTING DATE: | 09-02-2023 | code     | ZONE            | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ ( 6 ) | Material        |         |         |
| NAME COMPANY  | الفيروز    |          | layer thickness |         |         |

visual inspection test

Gradient test

| gradation of bulk materials |        |        |        | SAMPLE WEIGHT [g] |        | 19560.00 |         | gm   | table classify |
|-----------------------------|--------|--------|--------|-------------------|--------|----------|---------|------|----------------|
| sieve size                  | 2      | 1.5    | 1      | 4/3               | 2/1    | 8/3      | # 4     | PASS | soil classify  |
| Mass retained (g)           | 1854.0 | 1587.0 | 1269.0 | 1424.0            | 1896.0 | 1559.0   | 1965.0  |      | A-1-a          |
| Cumulative Retained (g)     | 1854.0 | 3441.0 | 4710.0 | 6134.0            | 8030.0 | 9589.0   | 11554.0 | PRO  | 2.17           |
| Cumulative Retained %       | 9.5    | 17.6   | 24.1   | 31.4              | 41.1   | 49.0     | 59.1    | WC   | 7.4            |
| Cumulative Passing %        | 90.5   | 82.4   | 75.9   | 68.6              | 58.9   | 51.0     | 40.9    | CBR  | 58.7           |

| soft material gradation |       |        |        | WT.OF sample |  | 500.00 | gm |
|-------------------------|-------|--------|--------|--------------|--|--------|----|
| sieve size              | 10    | 40     | 200    |              |  |        |    |
| Cumulative Retained (g) | 60.00 | 191.00 | 385.00 |              |  |        |    |
| Cumulative Retained %   | 12.00 | 38.20  | 77.00  |              |  |        |    |
| Cumulative Passing %    | 88.00 | 61.80  | 23.00  |              |  |        |    |

| -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 % | 90.5 | 82.4 | 75.9 | 68.6 | 58.9 | 51.0 | 40.9 | 36.0 | 25.3  | 9.4   |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |
|                      |      |      |      |      |      |      |      |      |       |       |

| ATTEBERG<br>LIMITS | LIQUID LIMIT ( L.L.) | PLASTIC LIMIT (P.L.) | PLASTIC INDEX (P.I.) |
|--------------------|----------------------|----------------------|----------------------|
|                    | N.P                  | N.P                  | N.P                  |

Contractor

Consultant

Handwritten signature and stamp of the Contractor.

Handwritten signature and date (20/2/2023) of the Consultant.

|                                                                                                                                                                   |                                                                                                                             |                                                                                                                                                                                |  |                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>أ. د. خالد فريد | <br>Electric Express Train<br>KUSTA 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 للنقل<br>الهيئة العامة للتأهيل<br>الهيئة العامة للتأهيل |
|                                                                                                                                                                   |                                                                                                                             |                                                                                                                                                                                |  |                                                                                                                                                              |
|                                                                                                                                                                   |                                                                                                                             |                                                                                                                                                                                |  |                                                                                                                                                              |

## PROCTOR TEST

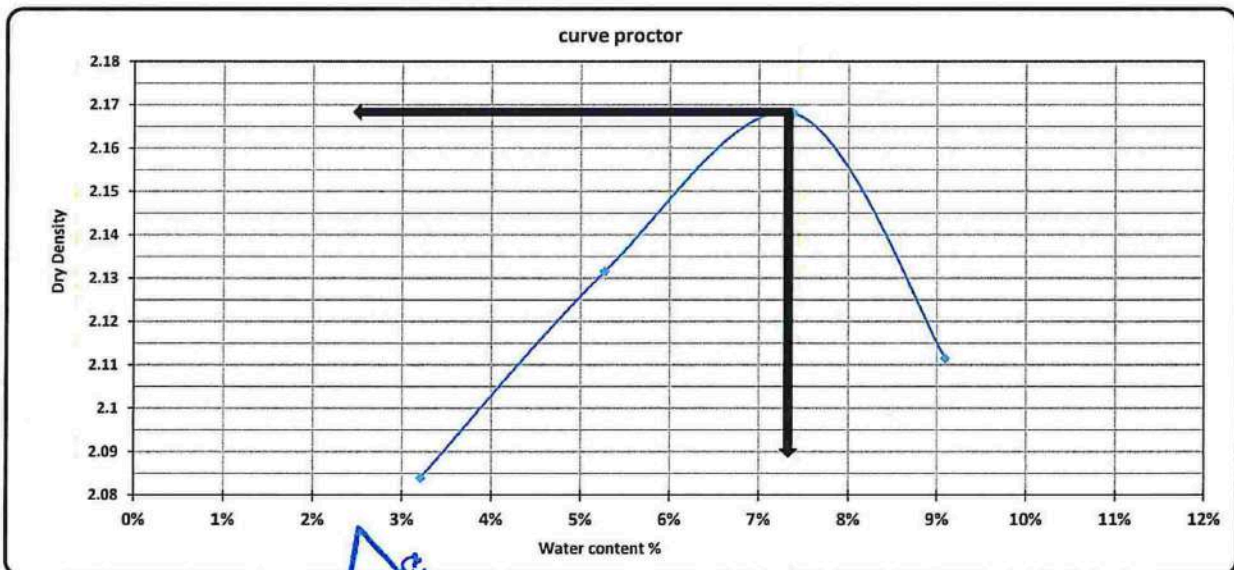
|               |            |          |                 |         |         |
|---------------|------------|----------|-----------------|---------|---------|
| TESTING DATE: | 09-02-2023 | code     | Station         | 506+000 | 507+000 |
| LOCATION      | KP (506)   | FZ ( 6 ) | Material        |         |         |
| NAME COMPANY  | الفيروز    |          | layer thickness |         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 5620.0 |
| Mold Volume:           | 2030.0 |

|                 |      |
|-----------------|------|
| MAX Dry Density | 2.17 |
| Water content % | 7.4% |

|                       |        |         |         |        |  |
|-----------------------|--------|---------|---------|--------|--|
| trial no :            | 1      | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 9986.0 | 10175.0 | 10346.0 | 10296  |  |
| WT. WET SOIL          | 4366.0 | 4555.0  | 4726.0  | 4676.0 |  |
| Wt. Density           | 2.151  | 2.244   | 2.328   | 2.303  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare No.               | 11    | 22    | 23    | 24    | 12    | 13    | 14    | 15    |  |  |
| Tare wt.               | 55.33 | 54.76 | 54.4  | 55.83 | 54.83 | 53.21 | 53.66 | 54.41 |  |  |
| 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 | 147.0 | 147.1 | 145.2 | 145.3 | 143.3 | 143.5 | 142.0 | 142.0 |  |  |
| Wt. Of water           | 3.0   | 2.9   | 4.8   | 4.7   | 6.7   | 6.5   | 8.0   | 8.0   |  |  |
| Wt. Of dry soil        | 91.7  | 92.3  | 90.8  | 89.5  | 88.5  | 90.3  | 88.3  | 87.6  |  |  |
| Water content %        | 3.3%  | 3.1%  | 5.3%  | 5.3%  | 7.6%  | 7.2%  | 9.1%  | 9.1%  |  |  |
| AV. Water content %    | 3.2%  |       | 5.3%  |       | 7.4%  |       | 9.1%  |       |  |  |
| Dry Density            | 2.084 |       | 2.132 |       | 2.168 |       | 2.111 |       |  |  |



Contractor

Consultant

*Amr Balaw*

*Abdallahomar*  
29/2/2023



## California Bearing Ratio TEST

|                |           |          |                   |         |         |
|----------------|-----------|----------|-------------------|---------|---------|
| Testing Date : | 12/2/2023 | Code     | FROM STA :        | 506+000 | 507+000 |
| Location :     | K.P (506) | FZ ( 6 ) | : Material        |         |         |
| Company Name   | الفيزوز   |          | : Layer Thickness |         |         |

### - : Test Results

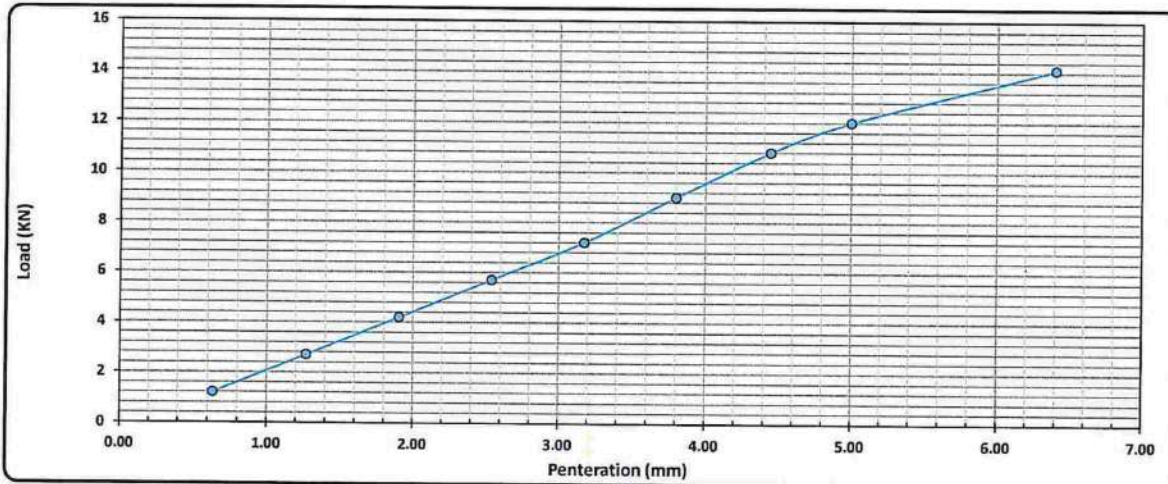
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 2025  |
| Mold WT. (gm)                        | 5034  |
| Mold WT. + Wet WT. (gm)              | 9749  |
| Wet WT. (gm)                         | 4715  |
| Wet Density (g/cm <sup>3</sup> )     | 2.328 |
| Dry Density (g/cm <sup>3</sup> )     | 2.170 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.170 |
| Compaction %                         | 100.0 |

| Mositure Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 11    |
| Tare WT. (gm)                       | 55.72 |
| Tare WT. +Wet WT. (gm)              | 150   |
| Tare WT. +Dry WT. (gm)              | 143.6 |
| Water WT. (gm)                      | 6.4   |
| Dry WT. (gm)                        | 87.9  |
| Moisture Content %                  | 7.3   |

| Swelling           |           |
|--------------------|-----------|
| Mold No.           | 3         |
| Date               | 12/2/2023 |
| Intial Height (mm) | 6.00      |
| Final Height (mm)  | 6.00      |
| Difference         | 0         |
| Sample Height (mm) | 12.00     |
| 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 (mm) | 0.04 | 0.09 | 0.14 | 0.19 | 0.24 | 0.30 | 0.36 | 0.40 | 0.47 |
| Load (KN)         | 1.2  | 2.7  | 4.2  | 5.7  | 7.2  | 9.0  | 10.8 | 12.0 | 14.1 |



### Calculations :-

| Pentration (mm) | Load (Kn) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR % عند نسبة 98 |
|-----------------|-----------|--------------------|---------|-----------------------|----------------|-------------------|
| 2.50            | 5.70      | 13.4               | 42.7%   | 100                   | 98             | 41.8%             |
| 5.00            | 12.00     | 20.0               | 59.9%   |                       |                | 58.7%             |

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Abdellahomar

9/2/2023

# MATERIAL INSPECTION REQUEST



|                      |                    |              |      |                  |          |          |         |         |          |    |    |
|----------------------|--------------------|--------------|------|------------------|----------|----------|---------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ COMPANY |              |      | Designer Company |          |          |         |         |          |    |    |
| Issued by Contractor | Name               | Sign         | Date | Time             |          |          |         |         |          |    |    |
|                      | Eng/ MOHAMED TAHA  | Mohamed Taha |      |                  |          |          |         |         |          |    |    |
| Received by ER       |                    |              | MIR  | C1<br>K.P<br>506 | C2<br>EW | C3<br>CS | DD<br>9 | MM<br>2 | YY<br>23 | HH | MM |

|          |                                |                             |                                                          |
|----------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1   | S1 to S21<br>Station Reference | D1 to S3<br>Depot Reference | Kp 506 Note<br>For Kilometer point only Start Km is used |
| CODE - 2 | Work Activity                  |                             |                                                          |
| CODE - 3 | Sub Element of Activity        |                             |                                                          |

|                          |                                   |                |              |              |      |
|--------------------------|-----------------------------------|----------------|--------------|--------------|------|
| Description of Materials | REPLACEMENT FILL MATERIAL RESULTS |                |              |              |      |
| Location to be Used      | FROM                              | TO             | LEVEL        |              |      |
|                          | 506+500                           | 506+600        | (-1)         |              |      |
|                          | 506+000                           | 506+200        | (-0.75)      |              |      |
|                          | 506+600                           | 506+860        | (-1)         |              |      |
| MAR Approval No          |                                   |                |              | Date         |      |
| Supplier Name            |                                   |                |              |              |      |
| Test Requirement         | Specification                     |                |              | Clause       |      |
| Reference Photos         | Yes attached / No                 |                | Other        |              |      |
| Item                     | Description                       | Unit           | Quantity     | Arrival Date | Note |
| 1                        | SEIVE ANALYSIS                    | M <sup>3</sup> | 5000         | 9/2/2023     |      |
| 2                        | ATTERBERG                         | M <sup>3</sup> | 5000         | 9/2/2023     |      |
| 3                        | PROCTOR                           | M <sup>3</sup> | 5000         | 9/2/2023     |      |
| 4                        | CBR                               | M <sup>3</sup> | 5000         | 12/2/2023    |      |
| Comments by:             |                                   |                | Comments by: |              |      |
|                          |                                   |                |              |              |      |

## APPROVAL STATUS

|                          |                   |          |      |         |
|--------------------------|-------------------|----------|------|---------|
| Organisation             | Name              | Sign     | Date | A-AWC-R |
| Contractor               | Mohammed M. H. H. | Mohammed |      |         |
| QA/QC *                  |                   |          |      |         |
| GARB**                   |                   |          |      |         |
| Employers Representative |                   |          |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only



# MATERIAL APPROVAL REQUEST



|                      |                   |                     |      |                  |          |          |          |         |          |    |    |
|----------------------|-------------------|---------------------|------|------------------|----------|----------|----------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ        |                     |      | Designer Company |          |          |          |         |          |    |    |
| Issued by Contractor | Name              | Sign                | Date | Time             |          |          |          |         |          |    |    |
|                      | ENG/ MOHAMED TAHA | <i>Mohamed Taha</i> |      |                  |          |          |          |         |          |    |    |
| Received by ER       |                   |                     | MAR  | C1<br>KP.<br>506 | C2<br>EW | C3<br>CS | DD<br>12 | MM<br>2 | YY<br>23 | 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 | PREPARED SUBGRADE |                 |                            |         |
| Location to be Used      | FROM              | TO              | LEVEL                      |         |
|                          | 506+500           | 506+600         | (-1)                       |         |
|                          | 506+000           | 506+200         | (-0.75)                    |         |
|                          | 506+600           | 506+860         | (-1)                       |         |
| ITEM                     | SPECIFICATION     | TEST REQUIRMENT | TEST RESULT ATTACHMENT     | REMARKS |
| 1                        | ASTM D 6913       | SEIVE ANALYSIS  | ACCORDING TO SPECIFICATION |         |
| 2                        | ASTM D 4318       | ATTERBERG       | N.P.L                      |         |
| 3                        | ASTM D 1557       | PROCTOR         | 2.17                       |         |
| 4                        | ASTM D 18832      | CBR             | 58.7%                      |         |
| Comments by:             |                   | Comments by:    |                            |         |
|                          |                   |                 |                            |         |

| APPROVAL STATUS          |                         |                 |      |         |
|--------------------------|-------------------------|-----------------|------|---------|
| Organisation             | Name                    | Sign            | Date | A-AWC-R |
| Contractor               | <i>Mohammed Mustafa</i> | <i>Mohammed</i> |      |         |
| QA/QC *                  |                         |                 |      |         |
| GARB**                   |                         |                 |      |         |
| Employers Representative |                         |                 |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

|                                                                                                                                                                  |                                                                                                    |                                                                                                                                                                                                     |                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>أ.د. خالد قنديل | <br>SASTRA 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 569+177</b> | <br>الوزارة<br>المواصلات والاقتصاد<br>جمهورية مصر العربية |
| Operating /ap                                                                                                                                                    | Al Tawkol Central Lab                                                                              |                                                                                                                                                                                                     |                                                                                                                                              |

### PARTICLE SIZE DISTRIBUTION OF SOIL

|               |              |              |                 |         |         |
|---------------|--------------|--------------|-----------------|---------|---------|
| TESTING DATE: | 08-04-2023   | code         | ZONE            | 506+000 | 507+000 |
| LOCATION      | KP (506+500) | P.S.G.FZ (2) | Material        |         |         |
| NAME COMPANY  | الميزوز      |              | layer thickness |         |         |

1-visual inspection test

2-Gradient test

| A-gradation of bulk materials |       |        |        | SAMPLE WEIGHT [g] |        | 22530.00 |         | gm   | table classify |       |
|-------------------------------|-------|--------|--------|-------------------|--------|----------|---------|------|----------------|-------|
| sieve size                    | 2     | 15.0   | 1      | 4/3               | 2/1    | 8/3      | # 4     | PASS | soil classify  |       |
| Mass retained (g)             | 0.0   | 1500.0 | 3100.0 | 1885.0            | 3180.0 | 1555.0   | 4280.0  |      | CLASS          | A-1-a |
| Cumulative Retained (g)       | 0.0   | 1500.0 | 4600.0 | 6565.0            | 9745.0 | 11300.0  | 15580.0 |      | PRO            | 2.18  |
| Cumulative Retained %         | 0.0   | 6.7    | 20.4   | 29.1              | 43.3   | 50.2     | 69.2    |      | WC             | 5.8   |
| Cumulative Passing %          | 100.0 | 93.3   | 79.6   | 70.9              | 56.7   | 49.8     | 30.8    |      | CBR            | 56.4  |
|                               |       |        |        |                   |        |          |         |      | L.A            | 32.40 |

| B-soft material gradation |       |        |        | WT.OF sample |  | 500.00 |  | gm |
|---------------------------|-------|--------|--------|--------------|--|--------|--|----|
| sieve size                | 10    | 40     | 200    |              |  |        |  |    |
| Cumulative Retained (g)   | 75.00 | 195.00 | 325.00 |              |  |        |  |    |
| Cumulative Retained %     | 15.00 | 39.00  | 65.00  |              |  |        |  |    |
| Cumulative Passing %      | 85.00 | 61.00  | 35.00  |              |  |        |  |    |

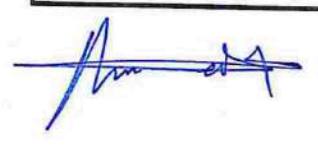
| C-General gradient   |       |      |      |      |      |      |      |      |       |       |
|----------------------|-------|------|------|------|------|------|------|------|-------|-------|
| sieve size(in)       | 2     | 1.5  | 1    | 3/4  | 1/2  | 3/8  | # 4  | # 10 | # 40  | # 200 |
| sieve size(mm)       | 50.0  | 37.5 | 25.0 | 19.0 | 12.5 | 9.5  | 4.75 | 2.00 | 0.425 | 0.075 |
| Cumulative Passing % | 100.0 | 93.3 | 79.6 | 70.9 | 56.7 | 49.8 | 30.8 | 26.2 | 18.8  | 10.80 |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |
|                      |       |      |      |      |      |      |      |      |       |       |

| ATTERBERG LIMITS | LIQUID LIMIT (L.L.) | PLASTIC LIMIT (P.L.) | PLASTIC INDEX (P.I.) |
|------------------|---------------------|----------------------|----------------------|
|                  | 22.62%              | 18.34%               | 5.18%                |

Contractor



Consultant





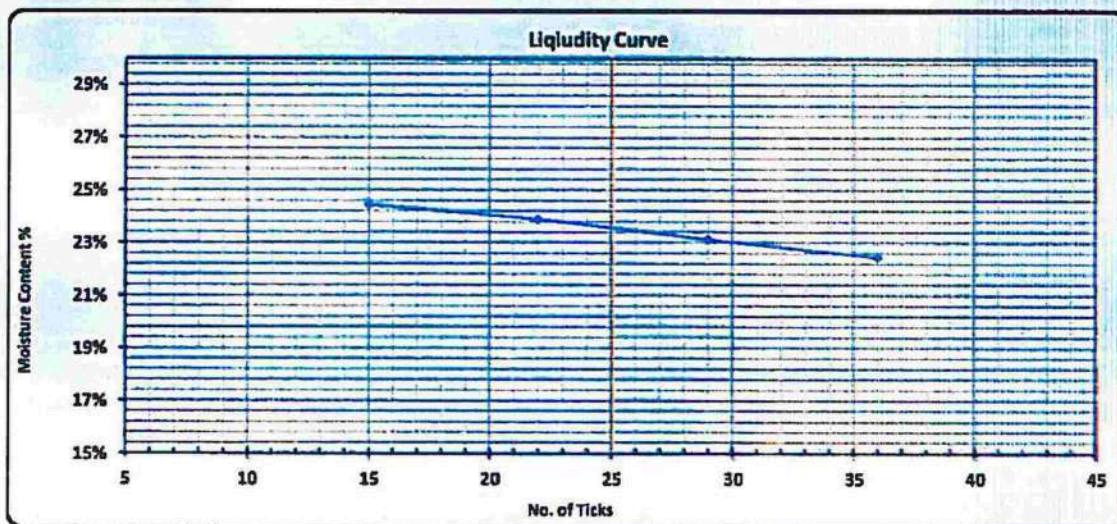
|                                                                                                                                                                     |                                     |                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <b>Electric Express Train - HSR</b> |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Plasticity and Liquidity Test -Atterberg Limits

|               |              |                |                   |         |         |         |
|---------------|--------------|----------------|-------------------|---------|---------|---------|
| Testing Date: | 8/4/2023     | Code:          | FROM STA:         | 506+000 | TO STA: | 507+000 |
| Location:     | KP (506+500) | P.S.G FZ ( 2 ) | Material:         |         |         |         |
| Company Name  | الفيروز      |                | Layer Thickness : |         |         |         |

#### Testing Results :-

| Test                    | Liquid Limit |       |       |       | Plastic Limit |       |
|-------------------------|--------------|-------|-------|-------|---------------|-------|
| No. of Ticks            | 36           | 29    | 22    | 15    | -             | -     |
| Tare No.                | 14           | 12    | 5     | 1     | 16            | 17    |
| Tare WT. (gm)           | 53.59        | 54.75 | 56.28 | 57.96 | 56.52         | 56.52 |
| Tare WT. + Wet WT. (gm) | 73.83        | 73.17 | 74.07 | 81.08 | 60.58         | 59.89 |
| Tare WT. + Dry WT. (gm) | 70.12        | 69.71 | 70.64 | 76.54 | 60.0          | 59.4  |
| Water WT. (gm)          | 3.71         | 3.46  | 3.43  | 4.54  | 0.62          | 0.53  |
| Dry WT. (gm)            | 16.53        | 14.96 | 14.36 | 18.58 | 3.44          | 2.84  |
| Moisture Content %      | 22.4%        | 23.1% | 23.9% | 24.4% | 18.0%         | 18.7% |
| Average %               |              |       |       |       | 18.3%         |       |



| L.L    | P.L    | P.I   |
|--------|--------|-------|
| 23.52% | 18.34% | 5.18% |

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

Name :

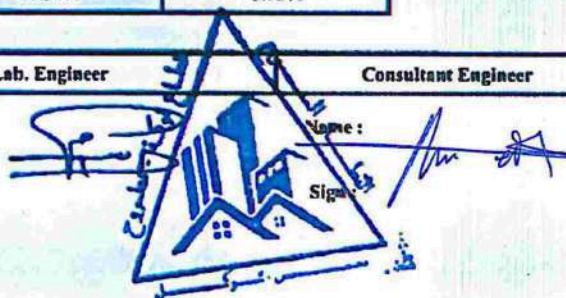
Name :

Name :

Sign :

Sign :

Sign :







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



## PROCTOR TEST

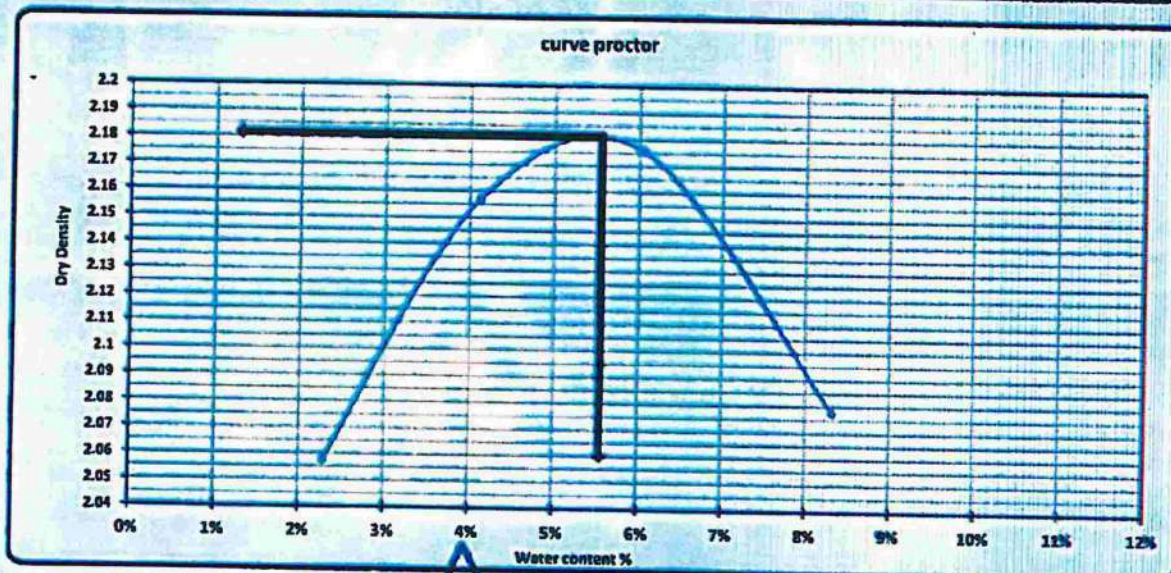
|               |              |              |                 |         |         |
|---------------|--------------|--------------|-----------------|---------|---------|
| TESTING DATE: | 09-04-2023   | code         | Station         | 506+000 | 507+000 |
| LOCATION      | KP (506+500) | P.S.G FZ (2) | Material        |         |         |
| NAME COMPANY  | المشروع      |              | layer thickness |         |         |

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

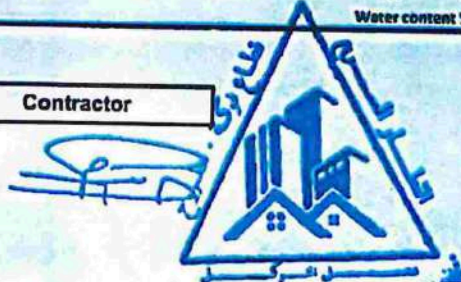
|                 |      |
|-----------------|------|
| MAX Dry Density | 2.18 |
| Water content % | 5.8% |

|                       |         |         |         |        |  |
|-----------------------|---------|---------|---------|--------|--|
| trial no :            | 1       | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 10090.0 | 10390.0 | 10521.0 | 10400  |  |
| WT. WET SOIL          | 4470.0  | 4770.0  | 4901.0  | 4780.0 |  |
| Wt. Density           | 2.105   | 2.246   | 2.307   | 2.250  |  |

|                        |        |        |        |        |        |        |        |        |  |  |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|
| Tare No.               | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      |  |  |
| Tare wt.               | 54.23  | 53.36  | 55.41  | 55.4   | 54.82  | 55.6   | 55.33  | 54.7   |  |  |
| 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 | 147.90 | 147.80 | 146.20 | 146.30 | 144.47 | 144.70 | 142.80 | 142.60 |  |  |
| Wt. Of water           | 2.1    | 2.2    | 3.8    | 3.7    | 5.5    | 5.3    | 7.2    | 7.4    |  |  |
| Wt. Of dry soil        | 93.7   | 94.4   | 90.8   | 90.9   | 89.7   | 89.1   | 87.5   | 87.9   |  |  |
| Water content %        | 2.2%   | 2.3%   | 4.2%   | 4.1%   | 6.2%   | 5.9%   | 8.2%   | 8.4%   |  |  |
| AV. Water content %    | 2.3%   |        | 4.1%   |        | 6.1%   |        | 8.3%   |        |  |  |
| Dry Density            | 2.057  |        | 2.157  |        | 2.176  |        | 2.078  |        |  |  |



Contractor



Consultant



|                                                                                                                                                                         |                                                                                                                                                                                |  |                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------|
| <br><b>ENGINEERING CONSULTING OFFICE</b><br>المكتب الاستشاري الهندسي<br>ا.د. خالد فلاح | <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 508+177 |  | <br>وزارة النقل والاقتصاد<br>(م.ن.ا) |
|                                                                                                                                                                         |                                                                                                                                                                                |  |                                                                                                                        |
|                                                                                                                                                                         |                                                                                                                                                                                |  |                                                                                                                        |

**Absorption & Aggregate specific gravity  
AASHTO-T85**

|               |              |                |                 |         |         |
|---------------|--------------|----------------|-----------------|---------|---------|
| TESTING DATE: | 10/04/2023   | code           | Station         | 504+000 | 507+800 |
| LOCATION      | KP (506+500) | P.S.G FZ ( 2 ) | Material        |         |         |
| NAME COMPANY  | البحر        |                | layer thickness |         |         |

|                                             |      |    |
|---------------------------------------------|------|----|
| Weight of sample                            | 2500 | gm |
| Weight of saturated -dry surface sample (B) | 2530 | gm |
| Weight of saturated sample in water (C)     | 1520 | gm |
| Weight of dry sample after heating (A)      | 2455 | gm |

**Results:-**

|                                       |       |   |
|---------------------------------------|-------|---|
| Bulk specific gravity = A / (B-C)     | 2.431 |   |
| Apparent specific gravity = A / (A-C) | 2.626 |   |
| Absorption = ( B-A)/A                 | 3.055 | % |

**Los Anglos Abrasion AASHTO-T96**

**Results:-**

|                                   |                                  |                    |
|-----------------------------------|----------------------------------|--------------------|
| Weight of sample before test (gm) | Weight of sample after test (gm) | Abrasion ratio (%) |
| 5000                              | 3380                             | 32.40              |

Lab. Specialist

Name :

Sign :

Lab. Engineer

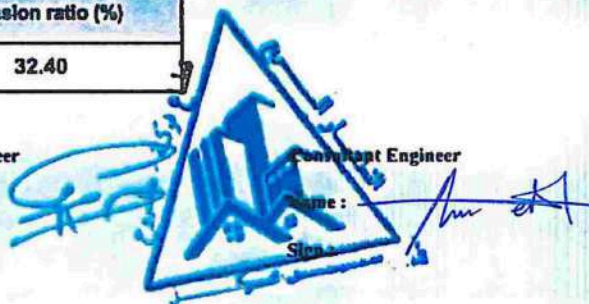
Name :

Sign :

Consultant Engineer

Name :

Sign :







## Electric Express Train - HSR



### California Bearing Ratio TEST

|               |               |              |                   |         |         |
|---------------|---------------|--------------|-------------------|---------|---------|
| Testing Date: | 4/12/2023     | Code         | FROM STA:         | 506+000 | 507+000 |
| Location:     | K.P (506+500) | P.S.G FZ (2) | : Material        |         |         |
| Company Name  | الفيروز       |              | : Layer Thickness |         |         |

#### -: Test Results

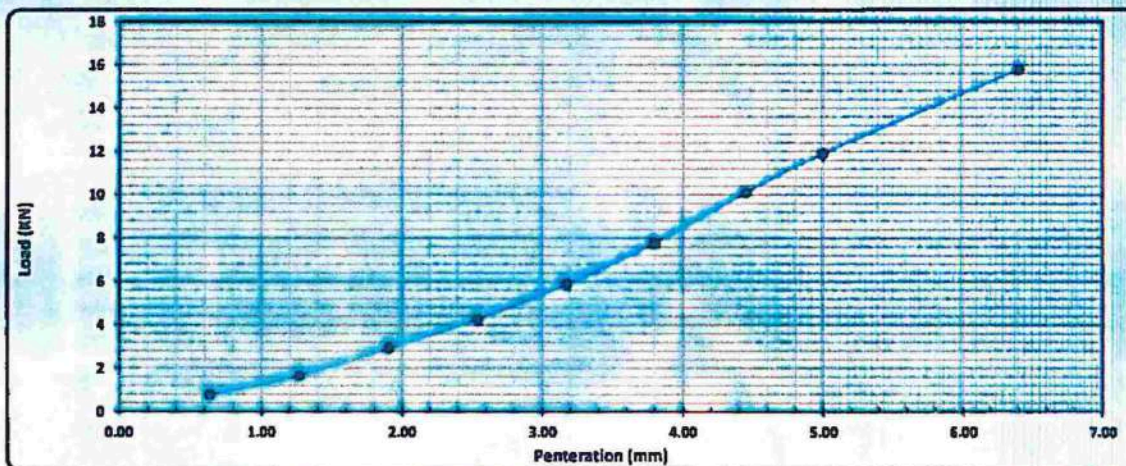
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 1     |
| Mold Vol. (cm <sup>3</sup> )         | 2120  |
| Mold WT. (gm)                        | 5310  |
| Mold WT. + Wet WT. (gm)              | 10200 |
| Wet WT. (gm)                         | 4890  |
| Wet Density (g/cm <sup>3</sup> )     | 2.307 |
| Dry Density (g/cm <sup>3</sup> )     | 2.179 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.180 |
| Compaction %                         | 100.0 |

| Moisture Ratio After Compacted Mold |        |
|-------------------------------------|--------|
| Tare No.                            | 3      |
| Tare WT. (gm)                       | 55.33  |
| Tare WT. + Wet WT. (gm)             | 190    |
| Tare WT. + Dry WT. (gm)             | 144.78 |
| Water WT. (gm)                      | 5.2    |
| Dry WT. (gm)                        | 89.5   |
| Moisture Content %                  | 5.8    |

| Swelling            |           |
|---------------------|-----------|
| Mold No.            | 1         |
| Date                | 4/12/2023 |
| Initial Height (mm) | 5.00      |
| Final Height (mm)   | 5.12      |
| Difference          | 0.12      |
| Sample Height (mm)  | 120       |
| Swelling Ratio %    | 0.10%     |

#### 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) | 85   | 185  | 325  | 475  | 654  | 863  | 1121 | 1321 | 1754 |
| Load (KN)         | 0.8  | 1.7  | 2.9  | 4.3  | 5.9  | 7.8  | 10.1 | 11.9 | 15.8 |



#### Calculations :-

| Penetration (mm) | Load (KN) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR % عند نسبة 95 |
|------------------|-----------|--------------------|---------|-----------------------|----------------|-------------------|
| 2.50             | 4.28      | 13.4               | 32.0%   | 100                   | 95             | 30.4%             |
| 5.00             | 11.89     | 20.0               | 59.4%   |                       |                | 56.4%             |

Lab. Specialist

Name :

Sign :

Lab. Engineer

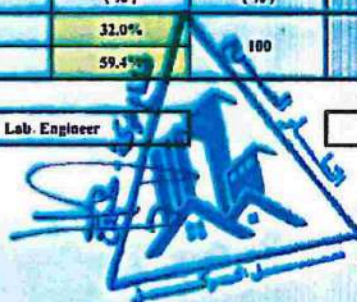
Name :

Sign :

Consultant Engineer

Name :

Sign :



Signature of Consultant Engineer



# MATERIAL INSPECTION REQUEST



|                      |                    |              |      |                  |          |          |          |         |          |    |    |
|----------------------|--------------------|--------------|------|------------------|----------|----------|----------|---------|----------|----|----|
| Contractor Company   | AL-FAYROUZ COMPANY |              |      | Designer Company |          |          |          |         |          |    |    |
| Issued by Contractor | Name               | Sign         | Date | Time             |          |          |          |         |          |    |    |
|                      | Eng/ MOHAMED TAHA  | Mohamed Taha |      |                  |          |          |          |         |          |    |    |
| Received by ER       |                    |              | MIR  | C1<br>K.P<br>506 | C2<br>EW | C3<br>CS | DD<br>18 | MM<br>5 | YY<br>23 | HH | MM |

|        |                                |                             |                                                          |
|--------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1 | S1 to S21<br>Station Reference | D1 to S3<br>Depot Reference | Kp 506 Note<br>For Kilometer point only Start Km is used |
| CODE-2 | Work Activity                  |                             |                                                          |
| CODE-3 | Sub Element of Activity        |                             |                                                          |

|                          |                                         |                                   |                     |              |      |
|--------------------------|-----------------------------------------|-----------------------------------|---------------------|--------------|------|
| Description of Materials |                                         | REPLACEMENT FILL MATERIAL RESULTS |                     |              |      |
| Location to be Used      | FROM                                    | TO                                | LEVEL               |              |      |
|                          | 506+000                                 | 506+860                           | SuBBallast 1 (0.70) |              |      |
|                          | 506+000                                 | 506+860                           | SuBBallast 2 (0.90) |              |      |
| MAR Approval No          |                                         |                                   |                     | Date         |      |
| Supplier Name            |                                         |                                   |                     |              |      |
| Test Requirement         | Specification                           |                                   |                     | Clause       |      |
| Reference Photos         | Yes attached / No                       | Other                             |                     |              |      |
| Item                     | Description                             | Unit                              | Quantity            | Arrival Date | Note |
| 1                        | SEIVE ANALYSIS                          | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| 2                        | ATTERBERG                               | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| 3                        | LOS ANGLOS                              | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| 4                        | ABSORPTION & AGGREGATE SPECIFIC GRAVITY | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| 5                        | PROCTOR                                 | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| 6                        | CBR                                     | M <sup>3</sup>                    | 5000                | 17/5/2023    |      |
| Comments by:             |                                         |                                   | Comments by:        |              |      |
|                          |                                         |                                   |                     |              |      |

| APPROVAL STATUS          |                  |               |      |         |
|--------------------------|------------------|---------------|------|---------|
| Organisation             | Name             | Sign          | Date | A-AWC-R |
| Contractor               | Mohammed Mostafa | Mohammed      |      |         |
| QA/QC *                  | Youssef Ragab    | Youssef Ragab |      |         |
| GARB**                   |                  |               |      |         |
| Employers Representative |                  |               |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST



|                      |                      |                     |                                                                                                                                                                                                                                                   |      |    |    |    |    |    |    |    |         |    |    |    |   |    |  |  |
|----------------------|----------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|----|----|----|----|----|----|---------|----|----|----|---|----|--|--|
| Contractor Company   | AL-FAYROUZ           |                     | Designer Company                                                                                                                                                                                                                                  |      |    |    |    |    |    |    |    |         |    |    |    |   |    |  |  |
| Issued by Contractor | Name                 | Sign                | Date                                                                                                                                                                                                                                              | Time |    |    |    |    |    |    |    |         |    |    |    |   |    |  |  |
|                      | ENG/<br>MOHAMED TAHA | <i>Mohamed Taha</i> |                                                                                                                                                                                                                                                   |      |    |    |    |    |    |    |    |         |    |    |    |   |    |  |  |
| 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>KP. 506</td> <td>EW</td> <td>CS</td> <td>18</td> <td>5</td> <td>23</td> <td></td> <td></td> </tr> </table> | C1   | C2 | C3 | DD | MM | YY | HH | MM | KP. 506 | EW | CS | 18 | 5 | 23 |  |  |
| C1                   | C2                   | C3                  | DD                                                                                                                                                                                                                                                | MM   | YY | HH | MM |    |    |    |    |         |    |    |    |   |    |  |  |
| KP. 506              | EW                   | CS                  | 18                                                                                                                                                                                                                                                | 5    | 23 |    |    |    |    |    |    |         |    |    |    |   |    |  |  |

|          |                                |                             |                                                          |
|----------|--------------------------------|-----------------------------|----------------------------------------------------------|
| CODE-1   | S1 to S21<br>Station Reference | D1 to 53<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 | SUBBALLAST                |                                            |                                            |         |
| Location to be Used      | FROM                      | TO                                         | LEVEL                                      |         |
|                          | 506+000<br>506+000        | 506+860<br>506+860                         | SuBBallast 1 (0.70)<br>SuBBallast 2 (0.90) |         |
| ITEM                     | SPECIFICATION             | TEST REQUIRMENT                            | TEST RESULT ATTACHMENT                     | REMARKS |
| 1                        | ASTM D 6913               | SEIVE ANALYSIS                             | ACCORDING TO SPECIFICATION                 |         |
| 2                        | ASTM D 4318               | ATTERBERG                                  | N.P                                        |         |
| 3                        | ASTM C 535                | LOS ANGLOS                                 | 22                                         |         |
| 4                        | ASTM C 127<br>ASTM D 6473 | ABSORPTION &<br>AGGREGATE SPECIFIC GRAVITY | 2.502                                      |         |
| 5                        | ASTM D 1557               | PROCTOR                                    | 2.216                                      |         |
| 6                        | ASTM D 18832              | CBR                                        | 94.33%                                     |         |
| Comments by:             |                           | Comments by:                               |                                            |         |
|                          |                           |                                            |                                            |         |

| APPROVAL STATUS          |                             |                             |      |         |
|--------------------------|-----------------------------|-----------------------------|------|---------|
| Organisation             | Name                        | Sign                        | Date | A-AWC-R |
| Contractor               | <i>Mohammed M. S. S. S.</i> | <i>Mohammed M. S. S. S.</i> |      |         |
| QA/QC *                  | <i>Youssef Rafab</i>        | <i>Youssef Rafab</i>        |      |         |
| GARB**                   |                             |                             |      |         |
| Employers Representative |                             |                             |      |         |

\* Designer  
\*\* Alignment/Bridges: Culvert only



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

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

الهيئة العامة للقناة  
سكس  
(GARBL)

Operating Lab

NEGIDA CENTRAL LAB

### PARTICLE SIZE DISTRIBUTION OF SUBBALLAST

|               |            |       |      |              |            |
|---------------|------------|-------|------|--------------|------------|
| TESTING DATE: | 13-5-2023  | Code  | Zone | FROM STATION | TO STATION |
| LOCATION      | KP 506+500 | FZ-S1 |      | 506+000      | 507+000    |
| NAME COMPANY  | AL Fauroz  |       |      |              |            |

1-visual inspection test

2-Gradient test

| A-gradation of bulk materials |       |       |        | SAMPLE WEIGHT [g] |        | 23848.00 |         | 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   | 709.0 | 378.0  | 5838.0            | 3037.0 | 2130.0   | 4066.0  |      | PRO               | 2.216  |
| Cumulative Retained (g)       | 0.0   | 709.0 | 1087.0 | 6925.0            | 9962.0 | 12092.0  | 16158.0 |      | WC                | 6.80   |
| Cumulative Retained %         | 0.0   | 3.0   | 4.6    | 29.0              | 41.8   | 50.7     | 67.8    |      | CBR               | 94.33% |
| Cumulative Passing %          | 100.0 | 97.0  | 95.4   | 71.0              | 58.2   | 49.3     | 32.2    |      | Los Angles        | 22     |
|                               |       |       |        |                   |        |          |         |      | SPECIFIC .Gravity | 2.502  |

| B-soft material gradation |        |        |        | WT.OF sample |  | 500.00 | gm |
|---------------------------|--------|--------|--------|--------------|--|--------|----|
| sieve size                | 10     | 40     | 200    |              |  |        |    |
| Cumulative Retained (g)   | 141.00 | 322.00 | 426.00 |              |  |        |    |
| Cumulative Retained %     | 28.20  | 64.40  | 85.20  |              |  |        |    |
| Cumulative Passing %      | 71.80  | 35.60  | 14.80  |              |  |        |    |

| 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 | 97.0 | 95.4 | 71.0    | 58.2 | 49.3    | 32.2 | 23.2   | 11.5  | 4.8   |
| SPECIFICATION        | —     | 97   | —    | 70 — 75 | —    | 15 — 60 | —    | 0 — 35 | —     | 0 — 5 |

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

Contractor

Consultant

*Youssef Rafab*

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

|                                                                                                                            |                                                                                                                       |                                                                                                                                                                                |  |                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------|
| <br>وزارة النقل والبنية التحتية<br>(MOTI) | <br>السكك الحديدية المصرية<br>(EGPT) | <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 509+177 |  | <br>الوزارة<br>(MOP) |
|                                                                                                                            |                                                                                                                       |                                                                                                                                                                                |  |                                                                                                         |
|                                                                                                                            |                                                                                                                       |                                                                                                                                                                                |  |                                                                                                         |

## PROCTOR TEST (SUBBALLAST)

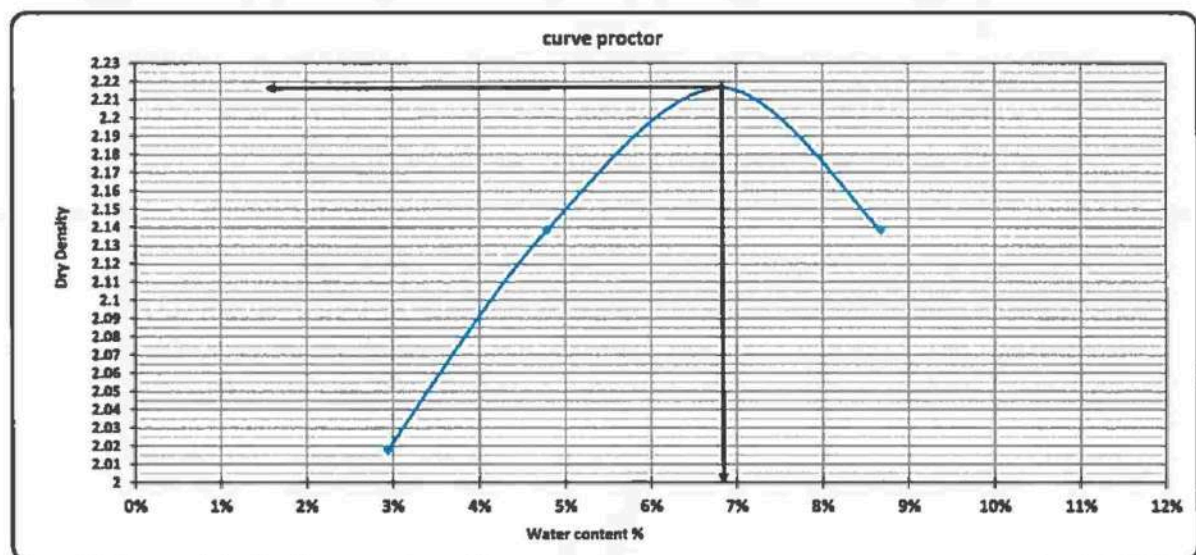
|               |            |       |      |         |         |
|---------------|------------|-------|------|---------|---------|
| TESTING DATE: | 045+060    | Code  | zone | FROM    | TO      |
| LOCATION      | KP 508+500 | FZ-S1 |      | 508+000 | 507+000 |
| NAME COMPANY  | AL Fauroz  |       |      |         |         |

|                        |        |
|------------------------|--------|
| Weight of empty mold : | 5698.0 |
| Mold Volume:           | 2127.0 |

|                 |       |
|-----------------|-------|
| MAX Dry Density | 2.216 |
| Water content % | 6.8   |

|                       |         |         |         |        |  |
|-----------------------|---------|---------|---------|--------|--|
| trial no :            | 1       | 2       | 3       | 4      |  |
| Wt. Of Mold+ wet soil | 10117.0 | 10465.0 | 10735.0 | 10642  |  |
| WT. WET SOIL          | 4419.0  | 4767.0  | 5037.0  | 4944.0 |  |
| Wt. Density           | 2.078   | 2.241   | 2.368   | 2.324  |  |

|                        |       |       |       |       |       |       |       |       |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| 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 | 146.3 | 146.5 | 144.2 | 144.0 | 141.5 | 141.7 | 139.3 | 139.4 |  |  |
| Wt. Of water           | 3.7   | 3.6   | 5.8   | 6.0   | 8.5   | 8.3   | 10.8  | 10.6  |  |  |
| Wt. Of dry soil        | 123.0 | 123.0 | 123.0 | 123.0 | 123.0 | 123.0 | 123.0 | 123.0 |  |  |
| Water content %        | 3.0%  | 2.9%  | 4.7%  | 4.9%  | 6.9%  | 6.7%  | 8.7%  | 8.6%  |  |  |
| AV. Water content %    | 2.9%  |       | 4.8%  |       | 6.8%  |       | 8.7%  |       |  |  |
| Dry Density            | 2.018 |       | 2.139 |       | 2.217 |       | 2.139 |       |  |  |



Contractor

شركة نجدة للمقاولات  
 العمل المركزي  
 مشروع القطار السريع / فوكا - مطروح

Consultant

Youssef Rafab



|                                                                                                                                                                   |                                                                                             |                                                    |                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>أ.د. خالد قنديل | <br>SYSTEM | Electric Express Train - HSR                       | <br>الهيئة العامة للنقل<br>وزارة النقل |
|                                                                                                                                                                   |                                                                                             | From El Ain El Sokhna City To El Alamein - MATROUH |                                                                                                                           |
|                                                                                                                                                                   |                                                                                             | Section - 7 From FOKA To MARS MATROUH              |                                                                                                                           |
|                                                                                                                                                                   |                                                                                             | From Station 504+000 To Station 508+177            |                                                                                                                           |

**Absorbtion & Aggregate specific gravity  
AASHTO-T85**

**SUBBALLAST**

|               |            |       |      |         |         |
|---------------|------------|-------|------|---------|---------|
| TESTING DATE: | 15-05-2023 | code  | zone | FROM    | TO      |
| LOCATION      | KP 506+500 | FZ-S1 |      | 506+000 | 507+000 |
| NAME COMPANY  | AL Fauroz  |       |      |         |         |

|                                             |      |    |
|---------------------------------------------|------|----|
| Weight of sample                            | 4987 | gm |
| Weight of saturated -dry surface sample (B) | 5051 | gm |
| Weight of saturated sample in water (C)     | 3077 | gm |
| Weight of dry sample after heating (A)      | 4939 | gm |

**Results:-**

|                                         |       |   |
|-----------------------------------------|-------|---|
| Bulk specific gravity = $A / (B-C)$     | 2.502 |   |
| Apparent specific gravity = $A / (A-C)$ | 2.653 |   |
| Asorbtlon = $(B-A)/A$                   | 2.268 | % |

**Los Anglos abrasion AASHTO-T96**

**Results:-**

|                                   |                                  |                    |
|-----------------------------------|----------------------------------|--------------------|
| Weight of sample before test (gm) | Weight of sample after test (gm) | Abrasion ratio (%) |
| 5000                              | 3890                             | 22                 |

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name : *Youssef Ragab*

Sign :

|                      |                |                              |
|----------------------|----------------|------------------------------|
| <br>KX<br>KSA<br>KSA | <br>HSR<br>HSR | Electric Express Train - HSR |
|----------------------|----------------|------------------------------|

|               |                    |                                      |
|---------------|--------------------|--------------------------------------|
| Operating Lab | NEGIDA CENTRAL LAB | <b>California Bearing Ratio TEST</b> |
|---------------|--------------------|--------------------------------------|

|                |            |       |            |         |         |
|----------------|------------|-------|------------|---------|---------|
| Testing Date : | 16/5/2023  | Code  | SUBBALLAST | FROM    | TO      |
| Location :     | KP 506+500 | FZ-S1 | ZONE       | 506+000 | 507+000 |
| Company Name   | AL Fauroz  |       |            |         |         |

**Test Results**

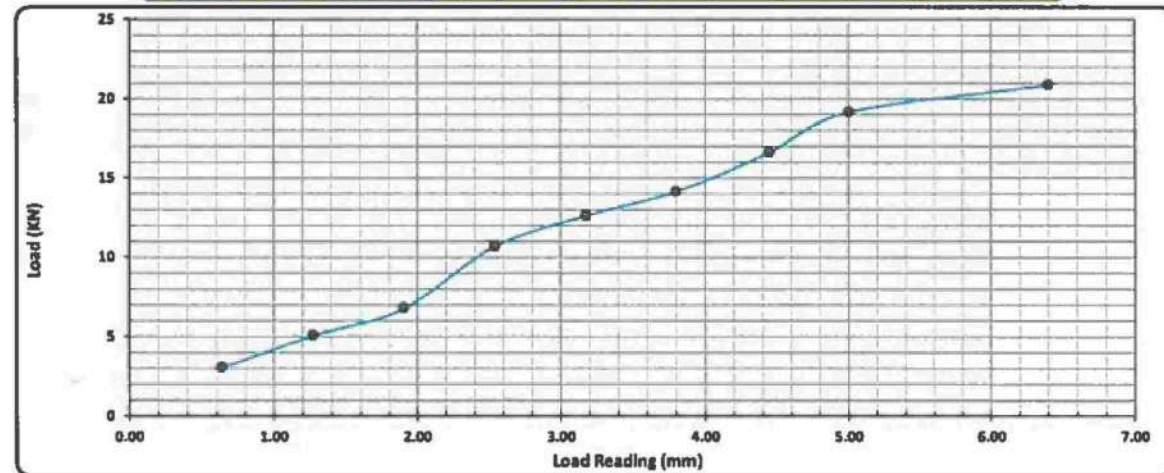
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 2     |
| Mold Vol. (cm <sup>3</sup> )         | 2134  |
| Mold WT. (gm)                        | 8227  |
| Mold WT. + Wet WT. (gm)              | 13335 |
| Wet WT. (gm)                         | 5108  |
| Wet Density (g/cm <sup>3</sup> )     | 2.394 |
| Dry Density (g/cm <sup>3</sup> )     | 2.248 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.316 |
| Compaction %                         | 101.4 |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 15    |
| Tare WT. (gm)                       | 31.9  |
| Tare WT. + Wet WT. (gm)             | 150   |
| Tare WT. + Dry WT. (gm)             | 142.8 |
| Water WT. (gm)                      | 7.2   |
| Dry WT. (gm)                        | 110.9 |
| Moisture Content %                  | 6.5   |

| Swelling            |           |
|---------------------|-----------|
| Mold No.            | 2         |
| Date                | 16/5/2023 |
| Initial Height (mm) | 0.00      |
| Final Height (mm)   | 0.00      |
| Difference          | 0         |
| Sample Height (mm)  | 120.00    |
| Swelling Ratio %    | 0.0%      |

**Loading Reading :**

|                       |       |       |       |        |        |        |        |        |        |
|-----------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Load Penetration (mm) | 0.64  | 1.27  | 1.91  | 2.54   | 3.18   | 3.80   | 4.45   | 5.00   | 6.40   |
| Load (KN)             | 3.1   | 5.1   | 6.8   | 10.7   | 12.6   | 14.2   | 16.6   | 19.2   | 20.9   |
| Load (KG)             | 315.0 | 519.0 | 695.0 | 1092.0 | 1290.0 | 1444.0 | 1695.0 | 1955.0 | 2132.0 |



**Calculations :-**

| Penetration | Load  | Standard Load | CBR   | Mold - Compaction | Compaction | CBR            |
|-------------|-------|---------------|-------|-------------------|------------|----------------|
| (mm)        | (Ks)  | (lb)          | (%)   | (%)               | (%)        | % على نسبة 100 |
| 2.50        | 10.70 | 13.4          | 89.3% | 101.4             | 100        | 79.0%          |
| 5.00        | 19.16 | 20.0          | 95.7% |                   |            | 94.3%          |

|                 |
|-----------------|
| Lab. Specialist |
|-----------------|

Name :

Sign :

|               |
|---------------|
| Lab. Engineer |
|---------------|

Name :



|                     |
|---------------------|
| Consultant Engineer |
|---------------------|

Name :

Youssef Ragab

Sign :