

## المجلس الأعلى / الرئيس الإدارة المركزية للشؤون المالية والإدارية

تحية طيبة وبعد ،،،،

بالإشارة إلى عملية اعمال الجسر الترابي بقطاعات المشروع ضمن مشروع القطار الكهربائي السريع قطاع ( العين السخنة - مطروح )

تنفيذ شركة منصور على حسن .

عقد رقم ( ٢٠٢٤/٣٠٣٣/٦٠٩ )

تتشرف بالاحاطة بأنه تم توريد مهمات الامن الصناعي و اضافتها لمخازن المنطقة باذن اضافة رقم ١٢٨٧٥ بتاريخ ١٥/١١/٢٠٢٣

برجاء التكرم بالاحاطة والتنبيه باللازم ،،،

وتفضلوا بقبول فائق الاحترام ،،،،

الإدارة المركزية  
للشؤون المالية والإدارية  
١١  
٢٠٢٣  
م. هاشم محمود طه  
م. هاشم محمود طه

المجموعة : الرقم المسلسل

وزارة النقل

### ١٠٠٠ العامة للطريق والكباري والنقل

## إدارة المخازن

إذن إضافة

Signature: \_\_\_\_\_

رقم ٢ / بتاريخ : / /

رقم الفاتورة : بتاريخ : / /

Exhibits 1-10

| الرصيد بعد الإضافة | القيمة |     | سعر الوحدة |     | الكمية | الوحدة | بيان الصنف      | رقم الصنف | صنف |
|--------------------|--------|-----|------------|-----|--------|--------|-----------------|-----------|-----|
|                    | جنيه   | قرش | جنيه       | قرش |        |        |                 |           |     |
|                    |        |     |            |     | ٥      | ملمدة  | خودون أبيض      |           | ٢٠  |
|                    |        |     |            |     | ٥      | ٢      | عطاء باصر طفيف  |           | ٢٠  |
|                    |        |     |            |     | ٢٠     | ٢      | لهير راتني      |           | ٢٠  |
|                    |        |     |            |     | ٥      | ٢      | فانت ستوب       |           | ٢٠  |
|                    |        |     |            |     | ٥      | ٢      | هداد اقام كهنين |           | ٢٠  |
|                    |        |     |            |     |        |        | المستوردة (طفر) |           |     |
|                    |        |     |            |     |        |        | خمدن            |           |     |
|                    |        |     |            |     |        |        | ١٠٠ / ٤٠٠ / ٢٠٠ |           |     |
|                    |        |     |            |     |        |        | توتو / الطر     |           |     |

تم الأضناف الموضحة بعاليه .  
وأضيفت بمعده المخزن  
أمين المخزن

التوقيع : \_\_\_\_\_ الاسم : \_\_\_\_\_

الهيئة العامة لشؤون المطابع الأميرية ٢٠١٧ - ٢٠١٨

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح)  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ١-٣ ) اعمال توريد وتشغيل اترية صالحة للردم ومطابقة للمواصفات

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق : ٠,٠ م٣

| الكمية   | الابعاد ( متر )                                |     | الموقع الكيلومتری |         | بيان الاعمال بالمقايضة |
|----------|------------------------------------------------|-----|-------------------|---------|------------------------|
|          | مساحة المقطع                                   | طول | الى               | من      |                        |
| 28792.05 | 221.48                                         | 130 | 541+530           | 541+400 | القطاع الأول           |
| 28792.05 | اجمالي الكميات خلال فترة المستخلص الحالية (م٣) |     |                   |         |                        |
| 28792.05 | الاجمالي الكلي (م٣)                            |     |                   |         |                        |

مهندس الهيئة العامة للطرق  
والجسور  
م / إبراهيم الحناوي

مهندس الاستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي

مهندس الاستشاري (xyz)  
م / محمد خليل

مهندس الشركة  
م / محمود مندي

محمد خليل  
٢٠١١/١١/٢٤

محمد خليل

الم/ محمد خليل

قائمة كميات بالمستخلص جارى ( ١ )

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائى السريع (قطاع فوكة - مطروح)  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ١-٣ ) علاوة مسافة النقل ٣٢٠,٥ كم

علاوة مسافة النقل

تنفيذ : شركة منصور علي حسن منصور

٣م

مقدار العمل السابق :

| الكمية    | بيان بالكميات                                  |
|-----------|------------------------------------------------|
| 28,792.05 | الكمية طبقاً لقوائم الكميات                    |
| 28,792.05 | اجمالي الكميات خلال فترة المستخلص الحالية (٣م) |
| 28,792.05 | الاجمالي الكلي (٣م)                            |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الإستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي  
٢٠٢١/١١/٢٤

مهندس الإستشاري (xyz)  
م / محمد خليل  
محمد خليل

مهندس الشركة  
م / محمود مندي  
الم/ع/٢٠٢١

قائمة كميات بالمستخلص جارى ( ١ )

عملية: اعمال الجسر الترابي للخط الاول من مشروع القطار الكهربائى السريع (قطاع فوكة - مطروح )  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ١-٣ ) رسوم الكارطة والموازين طبقاً للمادة (٣٦) من الشروط العامة والمواصفات طبقاً لما جاء بالقائمة الموحدة  
لاسعار الطرق لاعمال طبقة الأتربة

الكارطات والموازين

تنفيذ : شركة منصور علي حسن منصور

٣م

مقدار العمل السابق :

| الكمية    | بيان بالكميات                                  |
|-----------|------------------------------------------------|
| 28,792.05 | الكمية طبقاً لقوائم الكميات                    |
| 28,792.05 | اجمالي الكميات خلال فترة المستخلص الحالية (٣م) |
| 28,792.05 | الاجمالي الكلي (٣م)                            |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الإستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي  
١٢/١١/٢٠١٣

مهندس الإستشاري (xyz)  
م / محمد خليل  
محمد خليل

مهندس الشركة  
م / محمود مندي  
١٢/١١/٢٠١٣

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح)  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ١-٤ ) أعمال توريد وفرش طبقة تأسيس ( Prepared Subgrade ) من الأحجار الصلبة المتدرجة والمطابقة للمواصفات

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق : ٠,٠٠ ٣م

| الكمية  | الابعاد ( متر )                                             |     | الموقع الكيلومري |         | بيان الاعمال بالمقايضة |
|---------|-------------------------------------------------------------|-----|------------------|---------|------------------------|
|         | مساحة المقطع                                                | طول | الى              | من      |                        |
| 1743.76 | 13.41                                                       | 130 | 541+530          | 541+400 | القطاع الأول           |
| 1743.76 | اجمالي الكميات خلال فترة المستخلص الحالية (م <sup>٣</sup> ) |     |                  |         |                        |
| 1743.76 | الاجمالي الكلي (م <sup>٣</sup> )                            |     |                  |         |                        |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الإستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي

مهندس الإستشاري (xyz)  
م / محمد خليل  
محمد خليل

مهندس الشركة  
م / محمود مندي  
المحمود مندي



قائمة كميات بالمستخلص جارى (١)

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائى السريع (قطاع فوكة - مطروح )  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ١-٤ ) علاوة مسافة النقل ٩٥ كم لأعمال طبقات التأسيس

علاوة مسافة النقل

تنفيذ : شركة منصور علي حسن منصور

٣م

٠,٠٠

مقدار العمل السابق :

| الكمية  |                                                | بيان بالكميات                    |
|---------|------------------------------------------------|----------------------------------|
| 1743.76 |                                                | الكمية طبقاً لقوائم الكميات (م٣) |
| 1743.76 | اجمالي الكميات خلال فترة المستخلص الحالية (م٣) |                                  |
| 1743.76 | الاجمالي الكلي (م٢)                            |                                  |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الاستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي  
١٣/١١/٢٠١٩

مهندس الاستشاري  
(xyz)  
م / محمد خليل  
محمد خليل

مهندس الشركة  
م / محمود مندي  
١١/١١/٢٠١٩



قائمة كميات بالمستخلص جارى (١)

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح )  
في المسافة من الكم ٤٠٠+٥٤١ الى الكم ٥٣٠+٥٤١ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ٤-١ ) رسوم الكارثة والموازن طبقاً للمادة (٣٦) من الشروط العامة والمواصفات طبقاً لما جاء بالقائمة الموحدة لاسعار  
الطرق لاعمال طبقة التأسيس

الكارثات والموازن

تنفيذ : شركة منصور علي حسن منصور

٣م

٠,٠٠

مقدار العمل السابق :

| الكمية  | بيان بالكميات                                  |
|---------|------------------------------------------------|
| 1743.76 | الكمية طبقاً لقوائم الكميات (٣م)               |
| 1743.76 | اجمالي الكميات خلال فترة المستخلص الحالية (٣م) |
| 1743.76 | الاجمالي الكلي (٣م)                            |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الاستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي

مهندس  
الإستشاري (xyz)  
م / محمد خليل

مهندس الشركة  
م / محمود مندي



قائمة الكميات الواردة بالمستخلص جاري (١)

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح )  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ٢-٤ ) أعمال توريد وفرش طبقة اساس ( SUBBALLAST ) من الأحجار الصلبة المتدرجة والمطابقة للمواصفات

تنفيذ : شركة منصور على حسن منصور

مقدار العمل السابق : ٠,٠٠ ٣م

| الكمية  | الابعاد ( متر )                                             |     | الموقع الكيلومتری |         | بيان الاعمال بالمقايضة |
|---------|-------------------------------------------------------------|-----|-------------------|---------|------------------------|
|         | مساحة المقطع                                                | طول | الى               | من      |                        |
| 1494.40 | 11.50                                                       | 130 | 541+530           | 541+400 | القطاع الأول           |
| 1494.40 | اجمالي الكميات خلال فترة المستخلص الحالية (م <sup>٢</sup> ) |     |                   |         |                        |
| 1494.40 | الاجمالي الكلي (م <sup>٢</sup> )                            |     |                   |         |                        |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الحناوي

مهندس الاستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي

مهندس الاستشاري (xyz)  
م / محمد خليل  
محمد خليل

مهندس الشركة  
م / محمود مندي  
محمود مندي



قائمة كميات بالمستخلص جارى (١)

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح )  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ٢-٤ ) علاوة مسافة النقل ٢٢٦ كم لأعمال طبقات الأساس (SUBBALLAST)

علاوة مسافة النقل

تنفيذ : شركة منصور علي حسن منصور

٣م

٠,٠٠

مقدار العمل السابق :

| الكمية  | بيان بالكميات                                  |
|---------|------------------------------------------------|
| 1494.40 | الكمية طبقاً لقوائم الكميات (٣م)               |
| 1494.40 | اجمالي الكميات خلال فترة المستخلص الحالية (٣م) |
| 1494.40 | الاجمالي الكلي (٣م)                            |

مهندس الهيئة العامة  
للطرق والكباري  
م / إبراهيم الخناوي

مهندس الإستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي  
٢٢٨/١٢

مهندس الإستشاري  
(xyz)  
م / محمد خليل  
عند خليل

مهندس الشركة  
م / محمود مندي  
٢٢٨/١٢



قائمة كميات بالمستخلص جارى (١)

عملية: اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع (قطاع فوكة - مطروح)  
في المسافة من الكم ٥٤١+٤٠٠ الى الكم ٥٤١+٥٣٠ بطول ٠,١٣ كم  
(المنطقة الخمسة - غرب الدلتا)

رقم البند و بيانه : ( ٢-٤ ) رسوم الكارطة والموازن طبقاً للمادة (٣٦) من الشروط العامة والمواصفات طبقاً لما جاء بالقائمة الموحدة لاسعار الطرق  
لاعمال طبقة الأساس (SUBBALLAST)

الكارطات والموازن

تنفيذ : شركة منصور علي حسن منصور

٣م

٠,٠٠

مقدار العمل السابق :

| الكمية  | بيان بالكميات                                  |
|---------|------------------------------------------------|
| 1494.40 | الكمية طبقاً لقوائم الكميات (٣م)               |
| 1494.40 | اجمالي الكميات خلال فترة المستخلص الحالية (٣م) |
| 1494.40 | الاجمالي الكلي (٣م)                            |

مهندس الهيئة العامة  
للطرق والجسور  
م / إبراهيم الحناوي

مهندس الإستشاري  
مكتب د/خالد قنديل  
م / خالد فوزي

مهندس الإستشاري  
(xyz)  
م / محمد خليل

مهندس الشركة  
م / محمود مندي

٢٠٢٣/١١/١٤

محمد خليل

المحمود مندي

## محضر استلام موقع

لمهملية: أعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي السريع  
(قطاع فوكه - مطروح) في المسافة من الكم ٤٠٠ + ٥٤١ الى الكم ٥٣٠ + ٥٤١ كم بطول  
٠,١٣ كم.

(المنطقة الخامسة - غرب الدلتا)

تنفيذ: شركة منصور علي حسن منصور

إشراف: المنطقة الخامسة - منطقة غرب الدلتا

طبقاً للعقد رقم ( ٢٠٢٤/٢٠٢٣/٦٠٩ ) بتاريخ : ٢٠٢٣/١٠/٣٠

إنه في يوم السبت الموافق ٢٠٢٣/١١/١١ اجتمع كل من:-

- ١- السيد المهندس / محمد حسني فياض مدير عام المشروعات - الهيئة العامة للطرق والكباري
  - ٢- السيد المهندس / إبراهيم عبد الله الحناوي مهندس العملية - الهيئة العامة للطرق والكباري
  - ٣- السيد المهندس / محمود مندي شركة منصور علي حسن منصور مدير مشروع - شركة منصور علي حسن منصور
- وذلك للمرور على مسار العملية المذكورة عاليه لاستلام الموقع :-  
وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر  
تاريخ ٢٠٢٣/ ١١/١١ هو تاريخ استلام الموقع وبدء الأعمال بالعملية.  
واقفل المحضر على ذلك ووقع الحضور

التوقيعات

السيد المهندس / محمد حسني فياض

٣-

السيد المهندس / إبراهيم عبد الله الحناوي

٢-

السيد المهندس / محمود مندي

١-

رئيس الإدارة المركزية  
منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عبد . مهندس /

"هاني محمد محمود طه"

# California Bearing Ratio TEST

|                         |                                     |           |      |         |         |
|-------------------------|-------------------------------------|-----------|------|---------|---------|
| Testing Date : 5/8/2023 | Location : K.P. S40+500 ( 1500 m3 ) | Code      | Zone | S41+400 | S41+800 |
| Name of Company         | Manufacturer All Hason 2            | MNS2-0P-2 |      |         |         |

## 1. Test Results

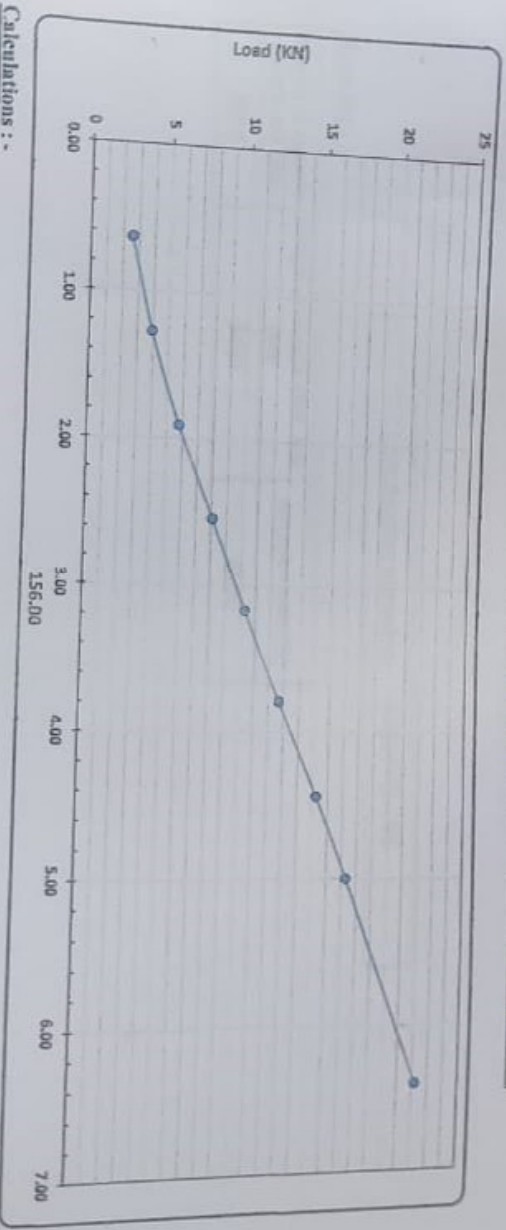
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 3158  |
| Mold WT. (gm)                        | 8119  |
| Mold WT. + Wet WT. (gm)              | 13724 |
| Wet WT. (gm)                         | 4605  |
| Wet Density (g/cm <sup>3</sup> )     | 2.134 |
| Dry Density (g/cm <sup>3</sup> )     | 2.192 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.208 |
| Compaction %                         | 99    |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 13    |
| Tare WT. (gm)                       | 86.81 |
| Tare WT. + Wet WT. (gm)             | 260.6 |
| Tare WT. + Dry WT. (gm)             | 192.1 |
| SS08                                | 7.9   |
| Dry WT. (gm)                        | 136.3 |
| Moisture Content %                  | 5.8   |

| Flowing             |          |
|---------------------|----------|
| Mold No.            | 3        |
| Tare                | 5/8/2023 |
| Initial Height (mm) | 6.00     |
| Final Height (mm)   | 6.00     |
| Difference          | 0        |
| Sample Height (mm)  | 118.00   |
| Flowing Ratio %     | 0%       |

## Loading Reading :

|                   |        |        |        |        |         |         |         |         |         |
|-------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 136.00            | 0.64   | 1.27   | 1.91   | 2.54   | 3.18    | 3.80    | 4.45    | 5.00    | 6.40    |
| Load Reading (kg) | 265.00 | 404.00 | 591.00 | 824.00 | 1054.00 | 1296.00 | 1537.00 | 1765.00 | 2263.00 |
| Load (KN)         | 2.6    | 4.0    | 5.8    | 8.1    | 10.3    | 12.7    | 15.3    | 17.2    | 22.2    |



## Calculations :-

| Penetration (mm) | Load (Kn) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR           |
|------------------|-----------|--------------------|---------|-----------------------|----------------|---------------|
| 2.50             | 8.08      | 13.4               | 60.5%   |                       |                | % 98.4 and 98 |
| 5.00             | 17.36     | 20.0               | 85.4%   | 99                    | 98             | 59.7%         |
|                  |           |                    |         |                       |                | 85.2%         |

Lab. Engineer

Name :

Sign :

Signature of Lab. Engineer

Consultant Engineer

Name :

Sign :

Signature of Consultant Engineer



Electric Express Train - HGR  
From El Ain El Sedina City To El Alamein - MATROUH  
Station - Y From FOHA To MARIYA MATROUH  
From station 444000 To station 444000

**Absorption & Aggregate specific gravity  
AASHTO-T86**

|               |                       |          |                 |             |         |
|---------------|-----------------------|----------|-----------------|-------------|---------|
| TESTING DATE: | 16/7/2023             | code     | Station         | 541+400     | 541+600 |
| LOCATION      | K.P 540+500 (3500 m3) | MM2-SP-1 | Material        | Sub-Ballast |         |
| NAME COMPANY  | Mansour Ali Hassan 2  |          | layer thickness | 0.20 cm     |         |

| Weight of sample                            | 2000 | gm |
|---------------------------------------------|------|----|
| Weight of saturated -dry surface sample (B) | 2014 | gm |
| Weight of saturated sample in water (C)     | 1228 | gm |
| Weight of dry sample after heating (A)      | 1989 | gm |

**Results:-**

|                                       |       |   |
|---------------------------------------|-------|---|
| Bulk specific gravity = A / (B-C)     | 2.531 | % |
| Apparent specific gravity = A / (A-C) | 2.614 | % |
| Absorption = (B-A)/A                  | 1.257 | % |

**Results:-**

Los Anglos abrasion AASHTO-T96

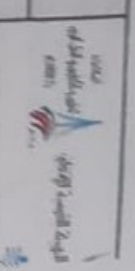
| Weight of sample before test (gm) | Weight of sample after test (gm) | Abrasion ratio (%) |
|-----------------------------------|----------------------------------|--------------------|
| 5000                              | 3813                             | 23.74              |

|               |  |
|---------------|--|
| Lab. Engineer |  |
| Name :        |  |
| Sign :        |  |

|                     |  |
|---------------------|--|
| Consultant Engineer |  |
| Name :              |  |
| Sign :              |  |



Electric Express Train - HSR  
From El Ain El Bakhia City To El Alamein - MATROUH  
Baction - 7 From FOKA To MATRA MATROUH  
From Station 604+000 To Station 606+177



### PARTICLE SIZE DISTRIBUTION OF SOIL

|                        |                         |
|------------------------|-------------------------|
| ESTING DATE            | 28/2023                 |
| LOCATION               | K.P 640+600 ( 1600 m3 ) |
| AME COMPANY            | Mansour Ali Hassan 2    |
| Visual Inspection test | code<br>MHB-SP-2        |
|                        | ZONE                    |
|                        | Material                |
|                        | Sub-Station             |

#### -Gradient test

#### -gradation of bulk materials

| sieve size              | 4     | 3     | 1 1/2  | 3/4     | 1/2     | 3/8     | # 4     | PASS | table classify |
|-------------------------|-------|-------|--------|---------|---------|---------|---------|------|----------------|
| Mass retained (g)       | 0.0   | 0.0   | 1606.0 | 11200.0 | 13410.0 | 1607.0  | 4013.0  |      | soil classify  |
| Cumulative Retained (g) | 0.0   | 0.0   | 1606.0 | 12806.0 | 26216.0 | 27913.0 | 32626.0 |      | 2.206          |
| Cumulative Retained %   | 0.0   | 0.0   | 3.2    | 25.6    | 62.3    | 65.7    | 64.9    |      | 5.8            |
| Cumulative Passing %    | 100.0 | 100.0 | 96.8   | 74.4    | 47.7    | 44.3    | 35.1    |      | CBR            |

#### -soft material gradation

| sieve size              | 10     | 200    | WT OF sample | 600.00 | gm | Specific Gravity |
|-------------------------|--------|--------|--------------|--------|----|------------------|
| Cumulative Retained (g) | 127.00 | 426.00 |              |        |    | 2.537            |
| Cumulative Retained %   | 25.40  | 85.20  |              |        |    |                  |
| Cumulative Passing %    | 74.60  | 14.80  |              |        |    |                  |

#### -General gradient

| sieve size(In)       | 4     | 3     | 1 1/2   | 3/4     | 1/2  | 3/8     | # 4  | # 10   | # 200 |
|----------------------|-------|-------|---------|---------|------|---------|------|--------|-------|
| sieve size(mm)       | 50.0  | 37.5  | 25.0    | 19.0    | 12.5 | 9.5     | 4.75 | 2.00   | 0.075 |
| Cumulative Passing % | 100.0 | 100.0 | 96.8    | 74.4    | 47.7 | 44.3    | 35.1 | 26.2   | 5.2   |
|                      |       | 100   | 97 - 50 | 75 - 70 |      | 60 - 15 |      | 35 - 0 | 0 - 7 |

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

Contractor

Consultant



Hassan  
6/5/2023



|                      |             |                     |      |                  |     |             |      |
|----------------------|-------------|---------------------|------|------------------|-----|-------------|------|
| Contractor Company   |             | Mansour Ali Hassan2 |      | Designer Company |     | Kk Consult. |      |
| Issued by Contractor | Name        | Sign                | Date | 5-8-2023         |     | Time        |      |
| Received by ER       | Ezz Mahmoud | <i>[Signature]</i>  |      |                  |     |             |      |
|                      |             |                     |      | C1               | C2  | C3          | DD   |
|                      |             |                     |      | K.P 541          | E.W |             | 5    |
|                      |             |                     |      |                  |     |             | 8    |
|                      |             |                     |      |                  |     |             | 2023 |

|                              |                   |                 |                                           |
|------------------------------|-------------------|-----------------|-------------------------------------------|
| CODE - 1                     | S1 to S21         | D1 to S3        | Kp XXX Note                               |
| CODE - 2                     | Station Reference | Depot Reference | For Kilometer point only Start Km is used |
| CODE - 3                     | Work Activity     |                 |                                           |
| Location Of Stock (540+500 ) |                   |                 |                                           |
| Sub Element of Activity      |                   |                 |                                           |

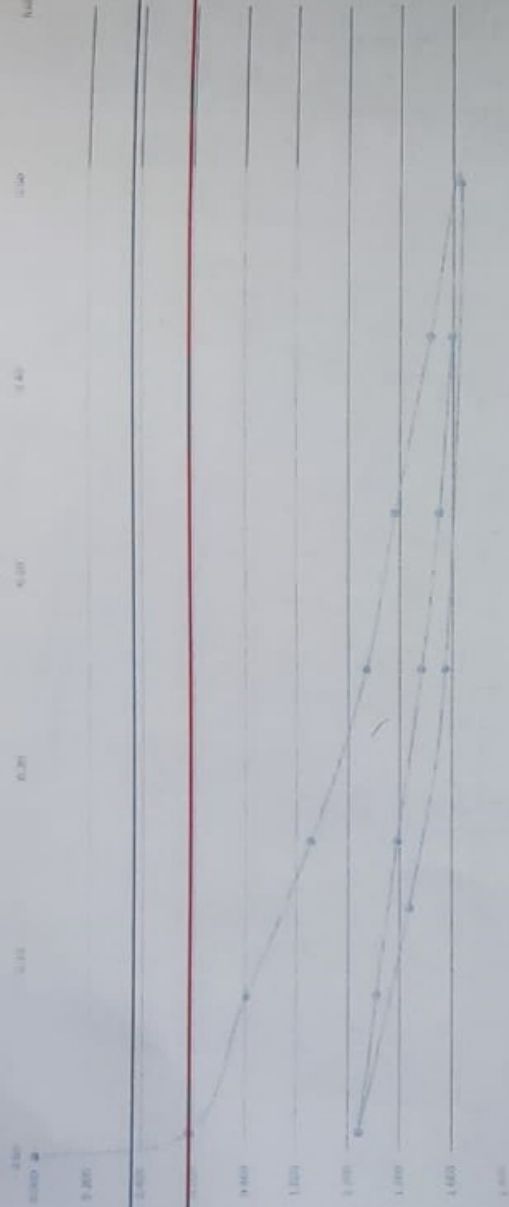
|                            |                   |                      |                            |
|----------------------------|-------------------|----------------------|----------------------------|
| Contractor Reference       |                   | MNS2-2-SB            |                            |
| Description of Materials   | Sub Ballast       | 541+690              | 541+770 (+0.90 )           |
| Location to be Used        |                   |                      |                            |
| Sample only                | Yes / No          |                      |                            |
| Supplier Name              |                   | Materials Type       |                            |
| Reference in BoQ           |                   | Data Sheet provided  |                            |
| Prequalification reference |                   | Specification        |                            |
| Reference Photos           | Yes attached / No | Test Samples Results |                            |
| Item                       | Specification     | Test Requirement     | Test Result Attachment     |
| P1                         | ASTM- D 75        | Aggregate Sampling   | According to specification |
| 2                          | ASTM- C136        | Sieve analysis       | According to specification |
| 3                          | ASTM- D1440       | Passing Seive No 200 | 5.2%                       |
| 4                          | ASTM- D4318       | Atterberg limits     | Non                        |
| 5                          | ASTM- D2974       | Moisture Content     | 5.8%                       |
| 6                          | ASTM- D1557       | Modified Proctor     | 2.206                      |
| 7                          | ASTM- D1883       | CBR                  | 85.2%                      |
| 8                          | ASTM- C127        | Specific Gravity     | 2.537                      |
| 9                          | ASTM- C535        | Los Angeles          | 23.60                      |
| Comments by:               |                   | Comments by:         |                            |

|                          |             |                    |      |
|--------------------------|-------------|--------------------|------|
| APPROVAL STATUS          |             |                    |      |
| Organisation             | Name        | Sign               | Date |
| Contractor               | Ezz Mahmoud | <i>[Signature]</i> |      |
| QA/QC *                  | Hassan      | <i>[Signature]</i> | 2023 |
| GARB**                   |             |                    |      |
| Employers Representative |             |                    |      |

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

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

MM/M2



Sett.

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

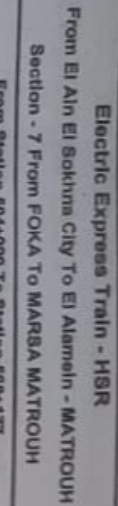
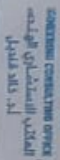
Sign :

Consultant Engineer

Name :

Sign :

2023



Mansour Lab

B41+B00

|                    |
|--------------------|
| Prepared sub grade |
| 0.25 cm            |

0.25 cm

Individual Passing %

## gm

---

---

---

1

14

2.0

17

| PLASTIC INDEX (P.I.) | NIP |
|----------------------|-----|
| 100                  | 100 |
| 90                   | 90  |
| 80                   | 80  |
| 70                   | 70  |
| 60                   | 60  |
| 50                   | 50  |
| 40                   | 40  |
| 30                   | 30  |
| 20                   | 20  |
| 10                   | 10  |
| 0                    | 0   |

---

## Consultant

Ahmed hamed

Handwritten signature: *W. W. W.*

**PARTICLE SIZE DISTRIBUTION OF SOIL**

|        |                        |                         |           |          |          |
|--------|------------------------|-------------------------|-----------|----------|----------|
| ESTI   | 15/7/2023              | code                    | ZONE      | 641+400  | 641+900  |
| OCA    | location               | K.P 640+500 ( 3500 m3 ) |           |          |          |
| LAME   | LAME COMPANY           | Mansour Ali Hassan 2    | MNS2-SP-1 | Material | Sub-Base |
| Visual | Visual Inspection test |                         |           |          |          |

**Gradient test**

**Gradation of bulk materials**

| sieve size              | 4     | 3     | 1 1/2  | SAMPLE WEIGHT (g) |         | 38683.00 | 3/8     | # 4 | PASS | table classify |
|-------------------------|-------|-------|--------|-------------------|---------|----------|---------|-----|------|----------------|
|                         |       |       |        | 3/4               | 1/2     |          |         |     |      |                |
| Mass retained (g)       | 0.0   | 0.0   | 1385.0 | 9025.0            | 2660.0  | 4345.0   | 8960.0  |     |      | soil classify  |
| Cumulative Retained (g) | 0.0   | 0.0   | 1385.0 | 10420.0           | 12980.0 | 17325.0  | 25285.0 |     |      | 2.209          |
| Cumulative Retained %   | 0.0   | 0.0   | 3.6    | 26.9              | 33.6    | 44.8     | 67.9    |     |      | WC             |
| Cumulative Passing %    | 100.0 | 100.0 | 96.4   | 73.1              | 66.4    | 55.2     | 32.1    |     |      | CBR            |
|                         |       |       |        |                   |         |          |         |     |      | 83.7%          |

**soft material gradation**

| sieve size              | 10     | 200    | WT. OF sample | 500.00 | gm |
|-------------------------|--------|--------|---------------|--------|----|
| Cumulative Retained (g) | 231.00 | 450.00 |               |        |    |
| Cumulative Retained %   | 46.20  | 90.00  |               |        |    |
| Cumulative Passing %    | 53.80  | 10.00  |               |        |    |

**General gradient**

| sieve size(in)       | 4     | 3     | 1 1/2   | 3/4     | 1/2     | 3/8  | # 4  | # 10   | # 200 |
|----------------------|-------|-------|---------|---------|---------|------|------|--------|-------|
| sieve size(mm)       | 50.0  | 37.5  | 25.0    | 19.0    | 12.5    | 9.5  | 4.75 | 2.00   | 0.075 |
| Cumulative Passing % | 100.0 | 100.0 | 96.4    | 73.1    | 66.4    | 55.2 | 32.1 | 17.2   | 3.2   |
|                      |       | 100   | 97 - 50 | 75 - 70 | 60 - 15 |      |      | 35 - 0 | 0 - 7 |

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

Contractor

Consultant


 Hassan


 Hassan



Electric Express Train - HSR  
From El Ain El Bohous City To El Alamein - MATROUH  
Section - 7 From FOKA TO MARSA MATROUH  
From Station 604+000 To Station 608+177



Operating Lab Mansour Lab

### Proctor Test

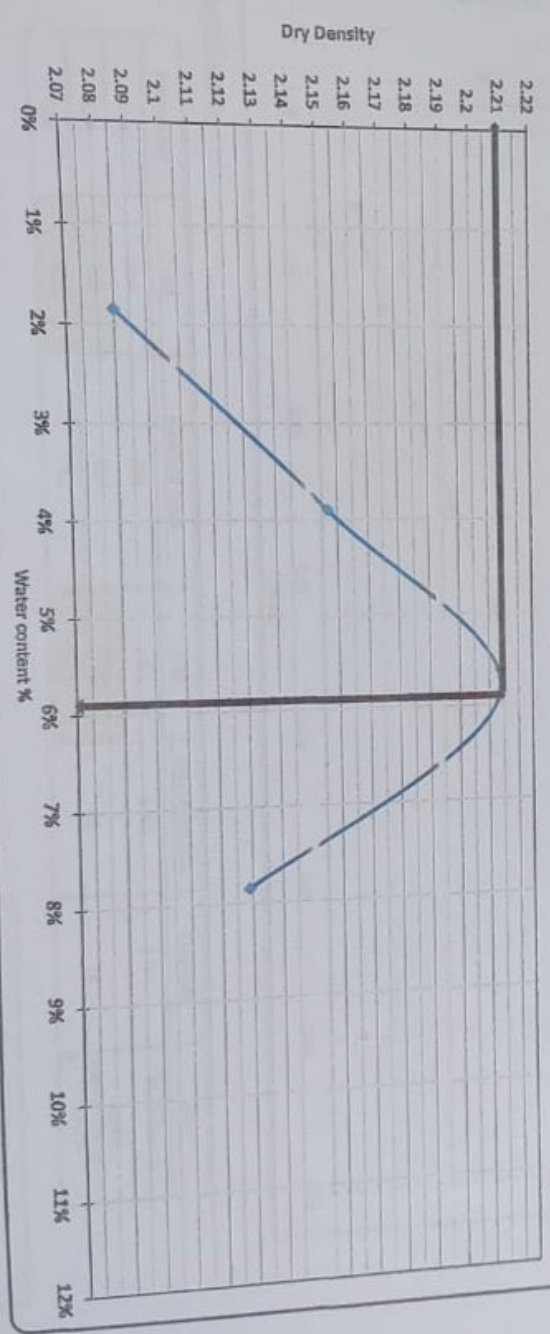
|               |                         |      |            |      |                    |
|---------------|-------------------------|------|------------|------|--------------------|
| TESTING DATE: | 16/7/2023               | code | MR03-SIP-1 | Zone | 641+400 TO 641+800 |
| LOCATION      | K.P 840+800 ( 3600 m3 ) |      |            |      |                    |
| NAME COMPANY  | Mansour Ali Hassan 2    |      |            |      |                    |

|                        |        |                 |       |
|------------------------|--------|-----------------|-------|
| Weight of empty mold : | 5759.0 | MAX Dry Density | 2.209 |
| Mold Volume:           | 2134.0 | Water content % | 5.9   |

| trial no :            | 1       | 2       | 3       | 4      |  |
|-----------------------|---------|---------|---------|--------|--|
| Wt. Of Mold+ wet soil | 10290.5 | 10530.4 | 10750.0 | 10647  |  |
| WT. WET SOIL.         | 4501.5  | 4771.4  | 4991.0  | 4888.2 |  |
| Wt. Density           | 2.123   | 2.236   | 2.339   | 2.291  |  |

| Tare No.               | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |  |  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Tare wt.               | 55.85 | 54.5  | 55.65 | 52.42 | 56.96 | 56.74 | 56.74 | 57.92 |  |  |
| Wt. Of wet soil & tare | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 |  |  |
| Wt. Of dry soil & tare | 197.3 | 197.4 | 194.6 | 194.5 | 192.0 | 192   | 189.6 | 189.6 |  |  |
| Wt. Of water           | 2.7   | 2.6   | 5.4   | 5.5   | 8.0   | 8.0   | 10.4  | 10.4  |  |  |
| Wt. Of dry soil        | 141.5 | 142.9 | 138.9 | 142.0 | 134.1 | 135.3 | 132.9 | 131.7 |  |  |
| Water content %        | 1.9%  | 1.8%  | 3.9%  | 3.9%  | 5.9%  | 5.9%  | 7.8%  | 7.9%  |  |  |
| A.V. Water content %   | 1.8%  |       | 3.9%  |       | 5.9%  |       | 7.8%  |       |  |  |
| Dry Density            | 2.085 | 2.152 | 2.209 |       |       |       | 2.124 |       |  |  |

curve proctor



Contractor

Consultant

مهندس علي حسن الحصري  
مهندس السعيد  
مهندس مظهر

Signature of Consultant

# Electric Express Train - HSR

## California Bearing Ratio TEST

|                 |                          |           |  |      |         |         |
|-----------------|--------------------------|-----------|--|------|---------|---------|
| Testing Date :  | 18/7/2023                | Code      |  | Zone | S41+400 | S41+800 |
| Location :      | K.P. S40+300 ( 3500 m3 ) |           |  |      |         |         |
| Name of Company | Minomur Ali Hassan 2     | MNS2-CP-1 |  |      |         |         |

### :- Test Results

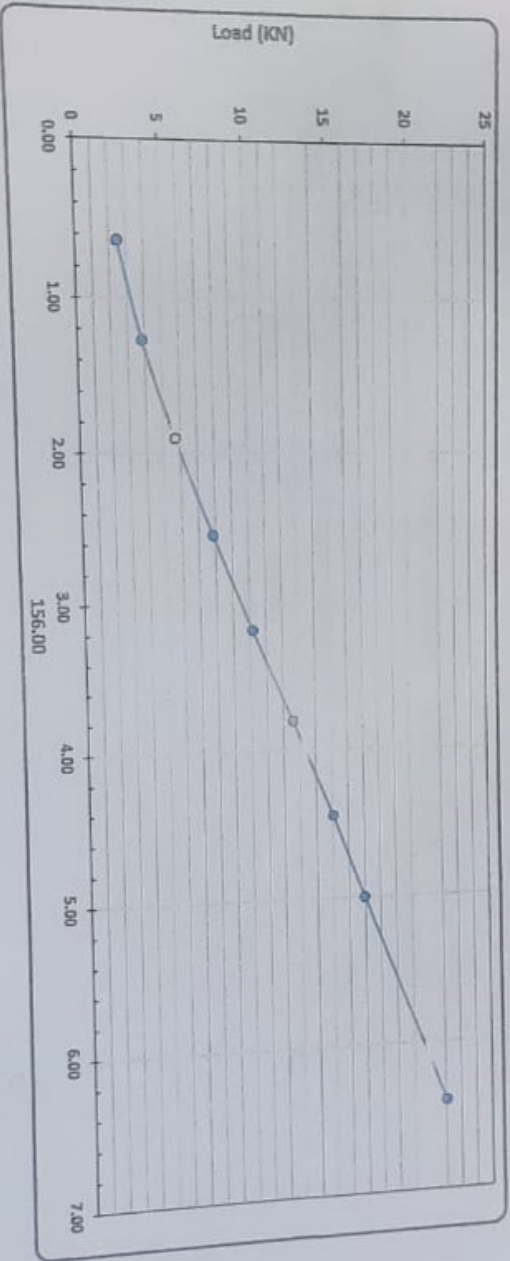
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol.(cm <sup>3</sup> )          | 2158  |
| Mold WT.(gms)                        | 8119  |
| Mold WT. + Wet WT.(gms)              | 13737 |
| Wet WT.(gms)                         | 4608  |
| Wet Density (G/cm <sup>3</sup> )     | 2.135 |
| Dry Density (G/cm <sup>3</sup> )     | 2.194 |
| Proctor Density (G/cm <sup>3</sup> ) | 2.209 |
| Compaction %                         | 99    |

| Moisture Ratio After Compacted Mold |       |
|-------------------------------------|-------|
| Tare No.                            | 13    |
| Tare WT.(gms)                       | 55.81 |
| Ture WT. + Wet WT.(gms)             | 208.0 |
| Ture WT. + Dry WT.(gms)             | 192.0 |
| 8500                                | 8.0   |
| Dry WT.(gms)                        | 136.2 |
| Moisture Content %                  | 5.9   |

| Swelling            |        |
|---------------------|--------|
| Mold No.            | 3      |
| Base                | 0      |
| Initial Height (mm) | 0.00   |
| Final Height (mm)   | 0.00   |
| Difference          | 0      |
| Sample Weight (mm)  | 118.00 |
| Swelling Ratio %    | 0%     |

### Loading Reading :

|                   |        |        |        |        |         |         |         |         |         |
|-------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 156.00            | 0.64   | 1.27   | 1.91   | 2.54   | 3.18    | 3.80    | 4.43    | 5.00    | 6.40    |
| Load Reading (kg) | 253.00 | 394.00 | 582.00 | 804.00 | 1041.00 | 1287.00 | 1537.00 | 1723.39 | 2251.00 |
| Load (KN)         | 2.5    | 3.9    | 5.7    | 7.9    | 10.2    | 12.6    | 15.1    | 17.0    | 22.1    |



### Calculations :-

| Penetration (mm) | Load (Kn) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR   |
|------------------|-----------|--------------------|---------|-----------------------|----------------|-------|
| 2.50             | 7.88      | 13.4               | 59.0%   | 99                    | 98             | 58.3% |
| 5.00             | 16.99     | 20.0               | 84.0%   |                       |                | 83.7% |

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

From Station 604+000 To Station 668+177

Mansour Lab

### -Gradient test

0.705 cm

### Gradient test

[illegible]soft material gradation

| Sieve size              |        | WT. OF sample |  | 500.00 |  | gm |
|-------------------------|--------|---------------|--|--------|--|----|
|                         | 10     | 200           |  |        |  |    |
| Cumulative Retained (g) | 111.00 | 374.00        |  |        |  |    |
| Cumulative Retained %   | 22.20  | 74.80         |  |        |  |    |
| Cumulative Passing %    | 77.80  | 25.20         |  |        |  |    |

General gradient[illegible]

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

Contractor

Consultant

Ahmed hamed

Handwritten signature: *W. J. ...*



## Electric Express Train - HSR



### California Bearing Ratio TEST

|                 |                        |          |  |      |         |         |
|-----------------|------------------------|----------|--|------|---------|---------|
| Testing Date :  | 17-6-2023              | Code     |  | Zone | 541+400 | 541+600 |
| Location :      | K.P 540+500            |          |  |      |         |         |
| Name of Company | Manusree all Harnano-2 | MNS-PO-1 |  |      |         |         |

#### Test Results

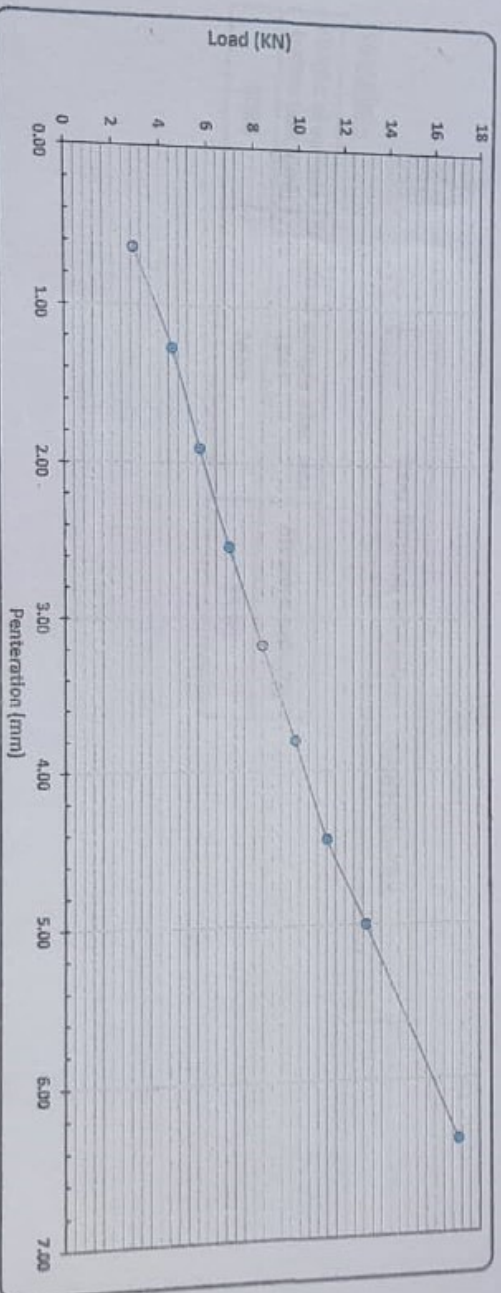
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 2158  |
| Mold Wt. (gm)                        | 8119  |
| Mold Wt. + Wet Wt. (gm)              | 12860 |
| Wet Wt. (gm)                         | 4720  |
| Wet Density (g/cm <sup>3</sup> )     | 2.187 |
| Dry Density (g/cm <sup>3</sup> )     | 2.161 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.180 |
| Compaction %                         | 99    |

| Moisture Ratio After Compacted Mold |          |
|-------------------------------------|----------|
| Tare No.                            | 13       |
| Tare Wt. (gm)                       | 86.81    |
| Tare Wt. + Wet Wt. (gm)             | 150.3    |
| Tare Wt. + Dry Wt. (gm)             | 144.6167 |
| Water Wt. (gm)                      | 5.7      |
| Dry Wt. (gm)                        | 88.8     |
| Moisture Content %                  | 6.40     |

| Swelling            |           |
|---------------------|-----------|
| Mold No.            | 3         |
| Date                | 17-6-2023 |
| Initial Height (mm) | 19.00     |
| Final Height (mm)   | 19.00     |
| Difference          | 0         |
| Sample Height (mm)  | 118.00    |
| Swelling Ratio %    | 0%        |

#### Loading Reading:

|                   |        |        |        |        |        |         |         |         |         |
|-------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| Penetration (mm)  | 0.64   | 1.27   | 1.91   | 2.54   | 3.18   | 3.80    | 4.45    | 5.00    | 6.40    |
| Load Reading (kg) | 298.00 | 463.00 | 584.00 | 912.00 | 857.00 | 1003.00 | 1145.00 | 1321.00 | 1742.00 |
| Load (KN)         | 2.9    | 4.6    | 5.7    | 7.0    | 8.4    | 9.8     | 11.2    | 12.9    | 17.1    |



#### Calculations :-

| Penetration | Load  | Standard Load | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR       |
|-------------|-------|---------------|---------|-----------------------|----------------|-----------|
| (mm)        | (KN)  | (lb)          | (%)     | (%)                   | (%)            | % 98 & 95 |
| 2.50        | 6.98  | 13.4          | 52.3%   |                       | 99             | 51.7%     |
| 5.00        | 12.95 | 20.0          | 64.0%   |                       | 98             | 63.9%     |

Lab. Engineer

Consultant Engineer

Name :

Name :

Sign :

Sign :

Ahmed hamed

Ahmed hamed

## AASHTO-T86

| Weight of sample                            | 2000 | gm |
|---------------------------------------------|------|----|
| Weight of saturated -dry surface sample (B) | 2018 | gm |
| Weight of saturated sample in water (C)     | 1245 | gm |
| Weight of dry sample after heating (A)      | 1983 | gm |

|                                               |       |   |
|-----------------------------------------------|-------|---|
| Bulk specific gravity = $A / (B \cdot C)$     | 2.565 |   |
| Apparent specific gravity = $A / (A \cdot C)$ | 2.687 |   |
| Absorption = $(B - A) / A$                    | 1.765 | % |

## Los Angeles abrasion AASHTO-T96

| Weight of sample before test (gm) | Weight of sample after test (gm) | Abrasion ratio (%) |
|-----------------------------------|----------------------------------|--------------------|
| 5000                              | 3450                             | 31.00              |

|               |  |
|---------------|--|
| Lab. Engineer |  |
| Name :        |  |
| Sign :        |  |

|                     |             |
|---------------------|-------------|
| Consultant Engineer |             |
| Name :              | Ahmed hamed |
| Sign :              | Ahmed hamed |

Signature: \_\_\_\_\_

Ahmed hamed  
Ahmed hamed

## PROCTOR TEST

TESTING DATE:

LOCATION:

COORDINATE:

15/6/2023

K.P 541+500

Mansour all hassan-2

code

MNS-PG-1

Station

Material

layer thickness

541+400

541+600

prepared sub grade

0.25 cm

Weight of empty mold :

5759.0

Mold Volume:

2134.0

MAX Dry Density

2.180

Water content %

6.40

trial no :

Wt. Of Mold+ wet soil

Wt. WET SOIL

Wt. Density

1

2

3

4

10276

10440

10708

10685

4517.0

4681.0

4949.0

4926.0

2.117

2.194

2.319

2.308

Tare No.

1

2

3

4

Tare Wt.

55.85

54.5

55.65

52.42

56.96

56.74

56.29

Wt. Of wet soil & tare

148.7

149.3

148.0

150.0

149.5

148.6

149.0

Wt. Of dry soil & tare

146.6

147

144

146

144

143

142

Wt. Of water

2.1

2.3

4.0

4.0

5.5

5.6

7.0

Wt. Of dry soil

90.8

92.5

88.4

93.6

87.0

86.3

85.7

Water content %

2.3%

2.5%

4.5%

4.3%

6.3%

6.5%

8.2%

A.V. Water content %

2.4%

4.4%

6.40%

8.3%

8.3%

Dry Density

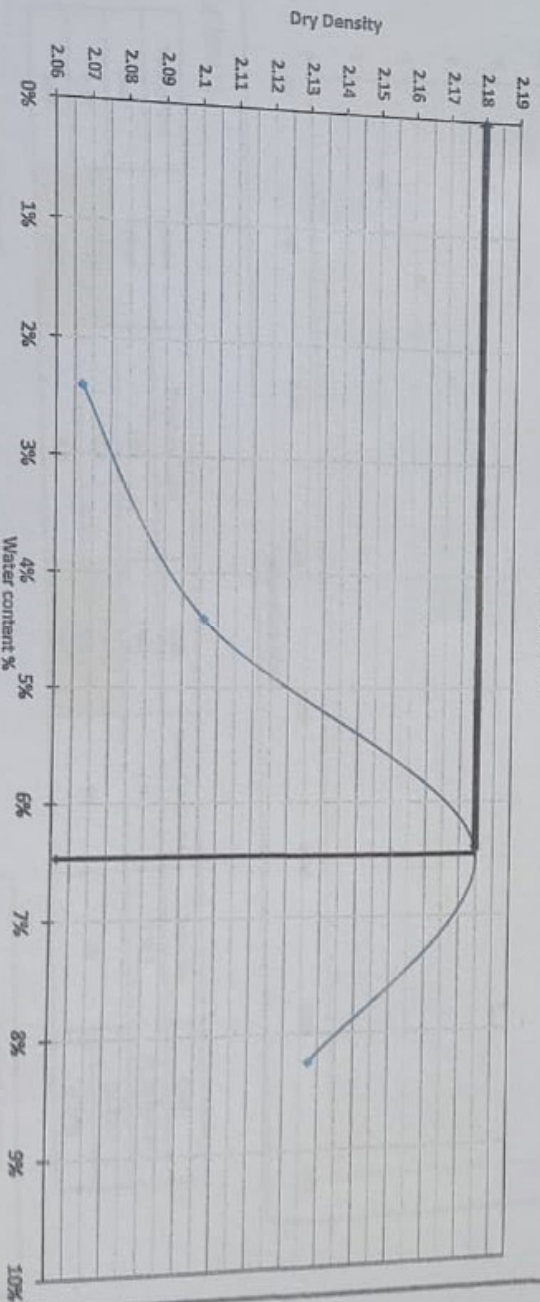
2.067

2.101

2.180

2.132

curve proctor



Contractor

Consultant

Ahmed Heged



Electrified Express Train - HHR  
From Al Ain El Shams City To Al Ahsaini - MATROUH  
Section : 7 From FOKA To MARIUTA MATROUH  
From Station No:100 To Station No:117

102  
10/10/2023  
10/10/2023  
10/10/2023

**Absorption & Aggregate specific gravity  
AASHTO-T86**

|               |                          |           |                 |         |             |
|---------------|--------------------------|-----------|-----------------|---------|-------------|
| TESTING DATE: | 3/6/2023                 | code      | Station         | 541+400 | 541+800     |
| LOCATION      | K.P 540+500 ( 1500 m.3 ) |           | Material        |         | Sub-Ballast |
| NAME COMPANY  | Mansour Ali Hassan 2     | MEHS-GP-3 | layer thickness |         | 0.20 cm     |

|                                             |      |    |
|---------------------------------------------|------|----|
| Weight of sample                            | 2000 | gm |
| Weight of saturated -dry surface sample (B) | 2021 | gm |
| Weight of saturated sample in water (C)     | 1237 | gm |
| Weight of dry sample after heating (A)      | 1989 | gm |

**Results:-**

|                                         |       |   |
|-----------------------------------------|-------|---|
| Bulk specific gravity = $A / (B-C)$     | 2.637 | % |
| Apparent specific gravity = $A / (A-C)$ | 2.645 | % |
| Absorption = $(B-A)/A$                  | 1.609 | % |

**Los Anglos abrasion AASHTO-196**

**Results:-**

|                                   |                                  |                    |
|-----------------------------------|----------------------------------|--------------------|
| Weight of sample before test (gm) | Weight of sample after test (gm) | Abrasion ratio (%) |
| 5000                              | 3820                             | 23.60              |

|               |  |
|---------------|--|
| Lab. Engineer |  |
| Name :        |  |
| Sign :        |  |

|                     |          |
|---------------------|----------|
| Consultant Engineer |          |
| Name :              | Hassan   |
| Sign :              | 6/8/2023 |


## California Bearing Ratio TEST

|                 |                       |          |      |         |         |
|-----------------|-----------------------|----------|------|---------|---------|
| Testing Date :  | 17-6-2023             | Code     | Zone | SA1+400 | SA1+500 |
| Location :      | K.P. 540+500          | MHD-PQ-1 |      |         |         |
| Name of Company | Mananor all basanti-2 |          |      |         |         |

### :- Test Results

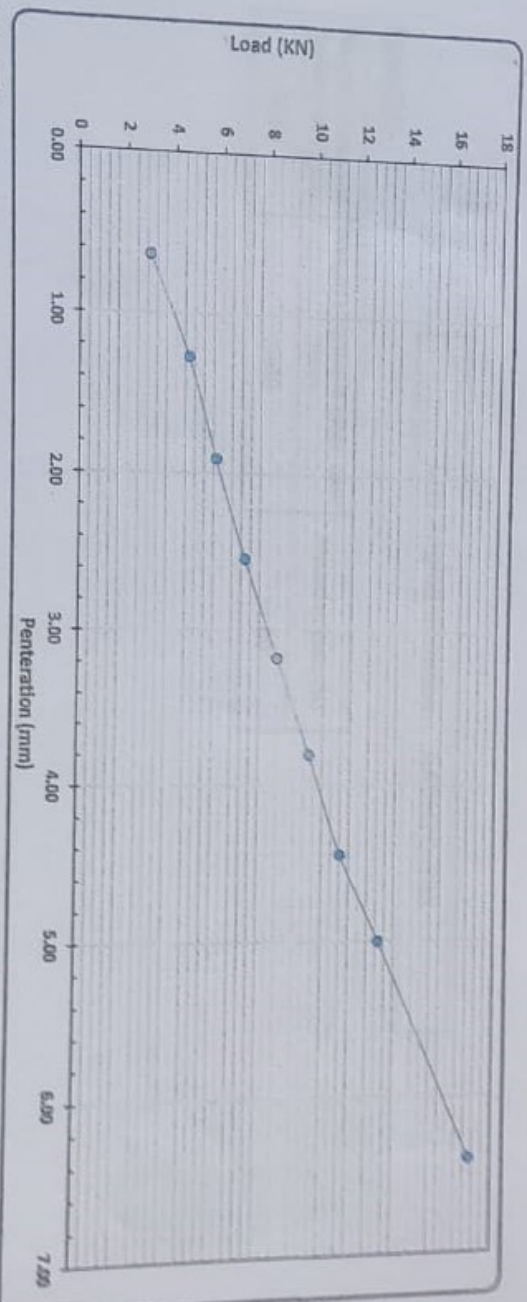
| Compaction % for Mold                |       |
|--------------------------------------|-------|
| Mold No.                             | 3     |
| Mold Vol. (cm <sup>3</sup> )         | 2158  |
| Mold WT. (gm)                        | 8119  |
| Mold WT. + Wet WT. (gm)              | 12860 |
| Wet WT. (gm)                         | 4720  |
| Wet Density (g/cm <sup>3</sup> )     | 2.187 |
| Dry Density (g/cm <sup>3</sup> )     | 2.161 |
| Proctor Density (g/cm <sup>3</sup> ) | 2.130 |
| Compaction %                         | 99    |

| Moisture Ratio After Compacted Mold |          |
|-------------------------------------|----------|
| Tare Ho.                            | 13       |
| Tare WT. (gm)                       | 68.81    |
| Tare WT. + Wet WT. (gm)             | 150.8    |
| Tare WT. + Dry WT. (gm)             | 144.6167 |
| Wet WT. (gm)                        | 8.7      |
| Dry WT. (gm)                        | 88.8     |
| Moisture Content %                  | 4.40     |

| Spreading            |           |
|----------------------|-----------|
| Mold No.             | 3         |
| Date                 | 17-6-2023 |
| Initial Spread (mm)  | 150.8     |
| Final Spread (mm)    | 150.8     |
| Difference           | 0         |
| Standard Spread (mm) | 150.8     |
| Spreading Ratio %    | 99%       |

### 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) | 298.00 | 465.00 | 584.00 | 715.00 | 857.00 | 1005.00 | 1145.00 | 1321.00 | 1742.00 |
| Load (kN)         | 2.9    | 4.6    | 5.7    | 7.0    | 8.4    | 9.8     | 11.2    | 12.9    | 17.1    |



### Calculations :-

| Penetration (mm) | Load (kN) | Standard Load (lb) | CBR (%) | Mold - Compaction (%) | Compaction (%) | CBR   |
|------------------|-----------|--------------------|---------|-----------------------|----------------|-------|
| 2.50             | 6.98      | 13.4               | 52.3%   |                       |                |       |
| 5.00             | 12.95     | 20.0               | 64.6%   | 99                    | 98             | 51.7% |
|                  |           |                    |         |                       |                | 63.9% |

Lab. Engineer

Consultant Engineer

Name :

Yasser

Sign :

Name :

Ahmed hamed

Sign :

Ahmed hamed

surge resistance for and  $\delta_1$  are usually taken from the load span between  $0.3 n_{max}$  and  $0.7 n_{max}$ .

MN/M2

0.60

0.50

0.40

0.30

0.20

0.10

0.00

0.00



Sett.

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

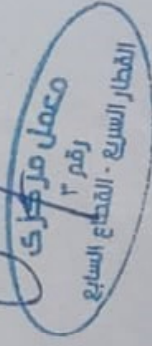
Sign :

Consultant Engineer

Name :

Sign :

19/8/2013



## Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Location

541+700

To 541+770

Station 541+760

Test Date

31/7/2023

Layer level

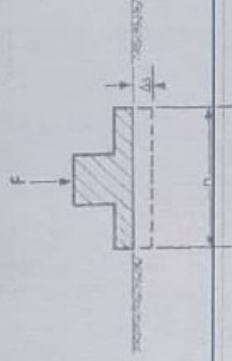
prepared sub grade

### EQUIPMENT AND TEST PROCEDURE :-

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

is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is

1. The following sketch shows the principle of the test.



$F$  = load

$\Delta s$  = settlement

$D$  = diameter of the plate

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

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

CR = 300mm

| Load   | Load  | Load   | Stress | Dial 1 | Dial 2 | Dial 3 | Sett. 1 | Sett. 2 | Sett. 3 | Avg. Sett. |
|--------|-------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| kg     | Bar   | kN     | MIN/M2 | mm     | mm     | mm     | mm      | mm      | mm      | mm         |
| 0.000  | 0.0   | 0.000  | 0.00   | 7.61   | 4.45   |        | 0.000   | 0.000   |         | 0.000      |
| 1.000  | 2.1   | 0.707  | 0.01   | 7.59   | 4.31   |        | 0.020   | 0.140   |         | 0.080      |
| 2.000  | 17.1  | 5.652  | 0.08   | 7.51   | 4.05   |        | 0.100   | 0.400   |         | 0.250      |
| 3.080  | 34.2  | 11.304 | 0.16   | 7.31   | 3.53   |        | 0.300   | 0.920   |         | 0.610      |
| 4.000  | 53.4  | 17.663 | 0.25   | 7.14   | 3.25   |        | 0.470   | 1.200   |         | 0.835      |
| 5.000  | 70.5  | 23.315 | 0.33   | 7.00   | 3.02   |        | 0.610   | 1.430   |         | 1.020      |
| 6.000  | 89.7  | 29.673 | 0.42   | 6.85   | 2.79   |        | 0.760   | 1.660   |         | 1.210      |
| 7.000  | 106.8 | 35.325 | 0.50   | 6.70   | 2.57   |        | 0.910   | 1.880   |         | 1.395      |
| 8.000  | 53.4  | 17.663 | 0.25   | 6.75   | 2.65   |        | 0.860   | 1.800   |         | 1.330      |
| 9.000  | 26.7  | 8.831  | 0.12   | 6.86   | 2.79   |        | 0.750   | 1.660   |         | 1.205      |
| 10.000 | 2.1   | 0.707  | 0.01   | 7.04   | 3.22   |        | 0.570   | 1.230   |         | 0.900      |
| 11.000 | 2.1   | 0.707  | 0.01   | 7.04   | 3.20   |        | 0.570   | 1.250   |         | 0.910      |
| 12.000 | 17.1  | 5.652  | 0.08   | 7.01   | 3.07   |        | 0.600   | 1.380   |         | 0.990      |
| 13.000 | 34.2  | 11.304 | 0.16   | 6.91   | 2.86   |        | 0.700   | 1.590   |         | 1.145      |
| 14.000 | 53.4  | 17.663 | 0.25   | 6.81   | 2.72   |        | 0.800   | 1.730   |         | 1.265      |
| 15.000 | 70.5  | 23.315 | 0.33   | 6.78   | 2.66   |        | 0.830   | 1.790   |         | 1.310      |
| 16.000 | 89.7  | 29.673 | 0.42   | 6.73   | 2.60   |        | 0.880   | 1.850   |         | 1.365      |

|         |      |  |
|---------|------|--|
| Ex/Es=1 | 1.92 |  |
|---------|------|--|

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

$E_s$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

$D$  = diameter of the plate, generally 0.30 m

## Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Location

541+400

Taste Date

12/8/2023

Layer level

Sub Ballast-2

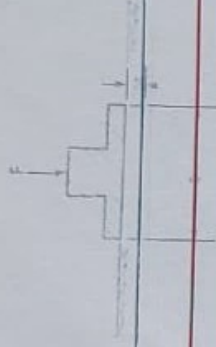
Station

541+450

### EQUIPMENT AND TEST PROCEDURE

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

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

 $F = \text{load}$  $v = \text{settlement}$  $D = \text{diameter of the plate}$ 

The diameter  $D$  of the plate is generally 0.30 m. For very coarse grained material also plates with diameter  $D = 0.60$  m and  $D = 0.752$  m are used.

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

Diameter = 300mm

| Loading Stage No. | Load Bar | Load kN | Stress MN/m <sup>2</sup> | Dist 1 mm | Dist 2 mm | Dist 3 mm | Sett. 1 mm | Sett. 2 mm | Sett. 3 mm | Avg. Sett. mm |
|-------------------|----------|---------|--------------------------|-----------|-----------|-----------|------------|------------|------------|---------------|
| 0.000             | 0.0      | 0.000   | 0.00                     | 4.42      | 4.56      |           | 0.000      | 0.000      |            | 0.000         |
| 1.000             | 2.1      | 0.707   | 0.01                     | 4.30      | 4.39      |           | 0.120      | 0.170      |            | 0.145         |
| 2.000             | 17.1     | 5.652   | 0.08                     | 4.10      | 4.25      |           | 0.320      | 0.310      |            | 0.315         |
| 3.000             | 34.2     | 11.304  | 0.16                     | 3.95      | 3.84      |           | 0.470      | 0.720      |            | 0.595         |
| 4.000             | 53.4     | 17.663  | 0.25                     | 3.75      | 3.57      |           | 0.670      | 0.990      |            | 0.830         |
| 5.000             | 70.5     | 23.315  | 0.33                     | 3.65      | 3.43      |           | 0.770      | 1.130      |            | 0.950         |
| 6.000             | 89.7     | 29.673  | 0.42                     | 3.50      | 3.26      |           | 0.920      | 1.300      |            | 1.110         |
| 7.000             | 106.8    | 35.325  | 0.50                     | 3.30      | 3.12      |           | 1.120      | 1.440      |            | 1.280         |
| 8.000             | 53.4     | 17.663  | 0.25                     | 3.44      | 3.19      |           | 0.980      | 1.370      |            | 1.175         |
| 9.000             | 26.7     | 8.831   | 0.12                     | 3.57      | 3.32      |           | 0.850      | 1.240      |            | 1.045         |
| 10.000            | 2.1      | 0.707   | 0.01                     | 3.72      | 3.60      |           | 0.700      | 0.960      |            | 0.830         |
| 11.000            | 2.1      | 0.707   | 0.01                     | 3.72      | 3.60      |           | 0.700      | 0.960      |            | 0.830         |
| 12.000            | 17.1     | 5.652   | 0.08                     | 3.66      | 3.51      |           | 0.760      | 1.050      |            | 0.905         |
| 13.000            | 34.2     | 11.304  | 0.16                     | 3.59      | 3.38      |           | 0.830      | 1.180      |            | 1.005         |
| 14.000            | 53.4     | 17.663  | 0.25                     | 3.50      | 3.28      |           | 0.920      | 1.280      |            | 1.100         |
| 15.000            | 70.5     | 23.315  | 0.33                     | 3.46      | 3.22      |           | 0.960      | 1.340      |            | 1.150         |
| 16.000            | 89.7     | 29.673  | 0.42                     | 3.40      | 3.15      |           | 1.020      | 1.410      |            | 1.215         |

|                |         |         |            |     |
|----------------|---------|---------|------------|-----|
| $0.7 \sigma_1$ | 0.35    | 0.96125 | $\sigma_1$ | 0.2 |
| $0.3 \sigma_1$ | 0.15    | 0.56    | $\sigma_2$ | 0.3 |
| $0.7 \sigma_2$ | 0.35    | 1.16444 | $\sigma_3$ | 0.3 |
| $0.3 \sigma_2$ | 0.15    | 0.58001 | $\sigma_4$ |     |
| $D$ (mm)       | 300     |         | $\sigma_5$ |     |
| $\Sigma v_i$   | 112.15  |         | $\sigma_6$ |     |
| $\Delta v_i$   | 243.99  |         | $\sigma_7$ |     |
| Area (Sq-m)    | 0.07065 |         | $\sigma_8$ |     |

|              |      |  |
|--------------|------|--|
| $\Sigma v_i$ | 2.18 |  |
|--------------|------|--|

$$\epsilon_s = \frac{v}{D} = \frac{2.18}{0.30} = 7.27$$

$\epsilon_s$  = deformation modulus

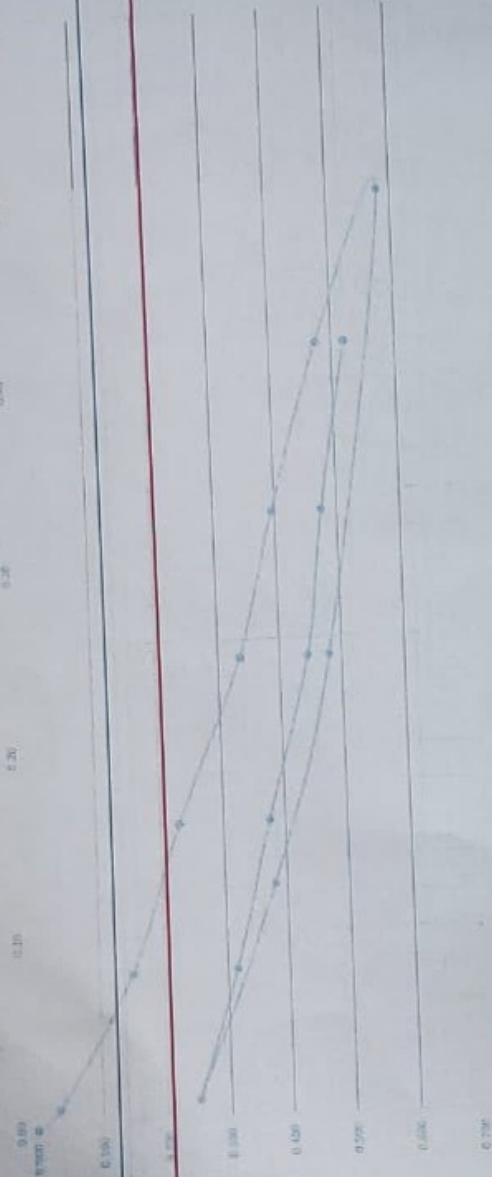
$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

$D$  = diameter of the plate, generally 0.30 m

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

MM/M2



Sett.

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

12/8/2023

محمد مكي  
رقم  
المختار السريع - مختار السليبي

## Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Location

541+400

To 541+600

Test Date

12/8/2023

Layer level

Sub Ballast-2

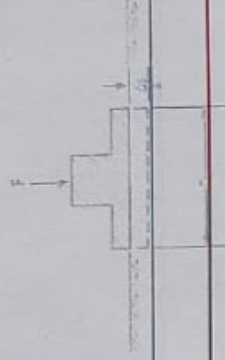
Station

541+430

### EQUIPMENT AND TEST PROCEDURE :-

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

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



$P$  = load

$s$  = settlement

$D$  = diameter of the plate

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

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

Diameter = 300mm

| Loading Stage No. | Load Bar | Load kN | Stress MN/M <sup>2</sup> | Dial 1 mm | Dial 2 mm | Dial 3 mm | Sett. 1 mm | Sett. 2 mm | Sett. 3 mm | Ave. Sett. mm |
|-------------------|----------|---------|--------------------------|-----------|-----------|-----------|------------|------------|------------|---------------|
| 0.000             | 0.0      | 0.000   | 0.00                     | 10.80     | 8.60      |           | 0.000      | 0.000      |            | 0.000         |
| 1.000             | 2.1      | 0.707   | 0.01                     | 9.68      | 8.56      |           | 1.120      | 0.040      |            | 0.580         |
| 2.000             | 17.1     | 5.652   | 0.08                     | 9.25      | 8.55      |           | 1.550      | 0.050      |            | 0.800         |
| 3.000             | 34.2     | 11.304  | 0.16                     | 8.82      | 8.47      |           | 1.980      | 0.130      |            | 1.055         |
| 4.000             | 53.4     | 17.663  | 0.25                     | 8.57      | 8.29      |           | 2.230      | 0.310      |            | 1.270         |
| 5.000             | 70.5     | 23.315  | 0.33                     | 8.47      | 8.17      |           | 2.330      | 0.430      |            | 1.380         |
| 6.000             | 89.7     | 29.673  | 0.42                     | 8.35      | 8.02      |           | 2.450      | 0.580      |            | 1.515         |
| 7.000             | 106.8    | 35.325  | 0.50                     | 8.25      | 7.89      |           | 2.550      | 0.710      |            | 1.630         |
| 8.000             | 53.4     | 17.663  | 0.25                     | 8.33      | 7.92      |           | 2.470      | 0.680      |            | 1.575         |
| 9.000             | 26.7     | 8.831   | 0.12                     | 8.49      | 8.04      |           | 2.310      | 0.560      |            | 1.435         |
| 9.666             | 2.1      | 0.707   | 0.01                     | 8.56      | 8.34      |           | 2.220      | 0.260      |            | 1.240         |
| 10.000            | 2.1      | 0.707   | 0.01                     | 8.58      | 8.34      |           | 2.220      | 0.260      |            | 1.240         |
| 11.000            | 17.1     | 5.652   | 0.08                     | 8.52      | 8.26      |           | 2.280      | 0.340      |            | 1.310         |
| 12.000            | 34.2     | 11.304  | 0.16                     | 8.48      | 8.14      |           | 2.320      | 0.460      |            | 1.390         |
| 13.000            | 53.4     | 17.663  | 0.25                     | 8.38      | 8.05      |           | 2.420      | 0.550      |            | 1.485         |
| 14.000            | 70.5     | 23.315  | 0.33                     | 8.33      | 7.97      |           | 2.470      | 0.630      |            | 1.550         |
| 15.000            | 89.7     | 29.673  | 0.42                     | 8.27      | 7.94      |           | 2.530      | 0.660      |            | 1.595         |

|                 |         | s       | AS      | As  |
|-----------------|---------|---------|---------|-----|
| 0.7 $\sigma_1$  | 0.35    | 1.41438 | 0.39125 | 0.2 |
| 0.3 $\sigma_1$  | 0.15    | 1.02313 |         |     |
| 0.7 $\sigma_2$  | 0.35    | 1.56    | 0.17999 | 0.2 |
| 0.3 $\sigma_2$  | 0.15    | 1.38001 |         |     |
| D (mm)          | 300     |         |         |     |
| E <sub>v1</sub> | 115.02  |         |         |     |
| E <sub>v2</sub> | 250.01  |         |         |     |
| Area (Sq.mm)    | 0.07665 |         |         |     |

|                      |      |
|----------------------|------|
| (kN/m <sup>2</sup> ) | 2.17 |
|----------------------|------|

|                                                     |
|-----------------------------------------------------|
| $E_s = 0.75 \cdot D \cdot \Delta \sigma / \Delta s$ |
|-----------------------------------------------------|

$E_s$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

$D$  = diameter of the plate, generally 0.30 m



Operating Lab Mansour Lab

# Proctor Test

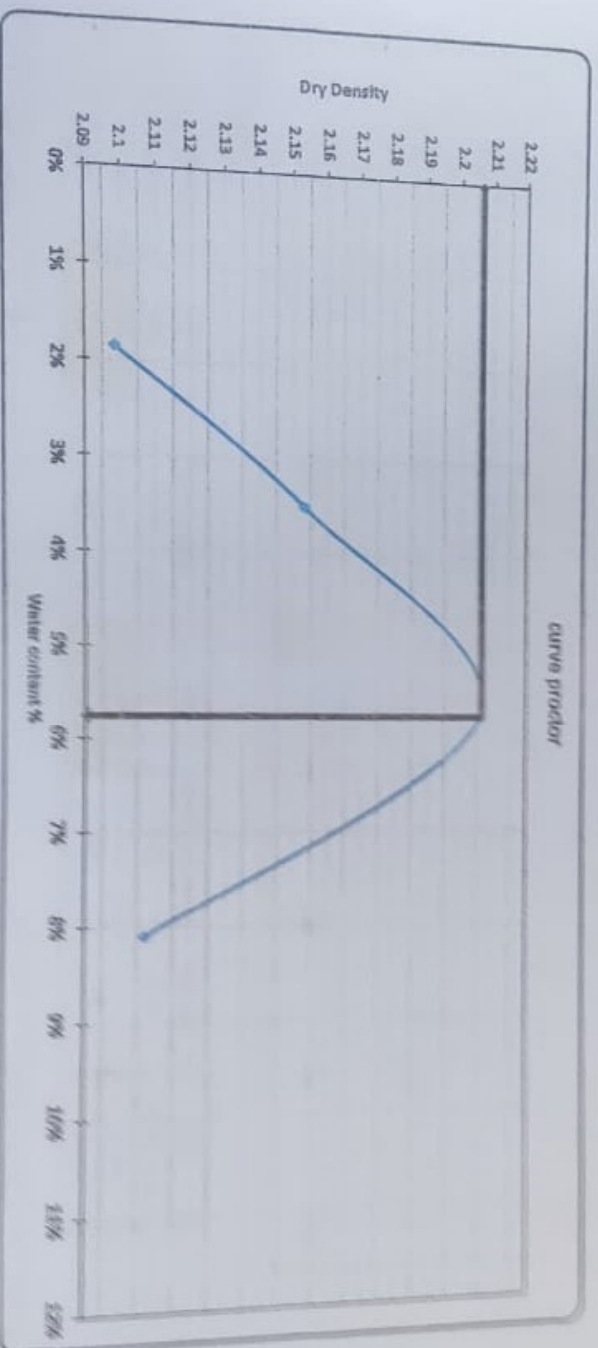
|               |                       |       |      |                   |
|---------------|-----------------------|-------|------|-------------------|
| TESTING DATE: | 3/8/2023              | Scale | Zone | 640-600 (1600 ms) |
| LOCATION      | K.P 640-600 (1600 ms) |       |      |                   |
| NAME COMPANY  | Mansour Ali Hassan 2  |       |      |                   |

Electric Highway Train - EHS  
From El Ain El Bahari City to El Alamein MATROH  
Section : 7 From E.P.A to MATROH MATROH  
From Station 640-600 to Station 600-577

|                        |        |                 |       |
|------------------------|--------|-----------------|-------|
| Weight of empty mold : | 6789.0 | MAX Dry Density | 2.006 |
| Mold Volume:           | 2134.0 | Water content % | 4.8   |

| trial no :            | 1       | 2       | 3       | 4      |
|-----------------------|---------|---------|---------|--------|
| Wt. Of Mold+ wet soil | 10320.0 | 10816.0 | 10791.3 | 10609  |
| WT. WET SOIL          | 4641.0  | 4786.0  | 4978.3  | 4661.0 |
| Wt. Density           | 2.137   | 2.139   | 2.333   | 2.078  |

| Tare No.               | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tare wt.               | 88.85 | 84.5  | 86.68 | 87.42 | 86.96 | 86.14 | 86.14 | 91.92 |
| Wt. Of wet soil & tare | 199.7 | 200.3 | 199.6 | 199.3 | 199.5 | 200.1 | 200.3 | 200.5 |
| Wt. Of dry soil & tare | 197.3 | 197.4 | 194.6 | 194.5 | 194.0 | 198   | 199.6 | 199.6 |
| Wt. Of water           | 2.4   | 2.9   | 5.0   | 4.8   | 5.4   | 8.1   | 10.6  | 10.8  |
| Wt. Of dry soil        | 141.5 | 142.9 | 138.9 | 142.6 | 136.1 | 138.3 | 137.9 | 137.1 |
| Water content %        | 1.7%  | 2.0%  | 3.6%  | 3.4%  | 3.8%  | 6.0%  | 8.0%  | 8.0%  |
| A.V. Water content %   | 1.9%  | 3.8%  |       |       | 5.8%  |       | 8.1%  |       |
| Dry Density            | 2.098 | 2.183 | 2.306 | 2.301 |       |       |       |       |



Contractor

Consultant

*[Signature]*

4/8/2023  
*[Signature]*

## Plate Load Test Results

Company Name

Location

Test Date

Layer level

Mansour Ali Hassan 2

541+480

3/4/2023

-5.5

To

541+600

Station

541+520

### EQUIPMENT AND TEST PROCEDURE

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

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



$P$  = load

$\Delta s$  = settlement

$D$  = diameter of the plate

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

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

Diameter = 300mm

| Loading Stage No. | Load Bar | Load KN | Stress MN/M <sup>2</sup> | Dial 1 mm | Dial 2 mm | Dial 3 mm | Sett. 1 mm | Sett. 2 mm | Sett. 3 mm | Avg. Sett. mm |
|-------------------|----------|---------|--------------------------|-----------|-----------|-----------|------------|------------|------------|---------------|
| 0.000             | 0.0      | 0.000   | 0.00                     | 6.09      | 8.16      |           | 0.000      | 0.000      |            | 0.000         |
| 1.000             | 2.1      | 0.707   | 0.01                     | 6.02      | 7.77      |           | 0.070      | 0.390      |            | 0.230         |
| 2.000             | 17.1     | 5.652   | 0.08                     | 5.95      | 7.51      |           | 0.140      | 0.650      |            | 0.395         |
| 3.000             | 34.2     | 11.304  | 0.16                     | 5.76      | 7.13      |           | 0.330      | 1.030      |            | 0.680         |
| 4.000             | 53.4     | 17.663  | 0.25                     | 5.61      | 6.75      |           | 0.480      | 1.410      |            | 0.945         |
| 5.000             | 70.5     | 23.315  | 0.33                     | 5.46      | 6.47      |           | 0.630      | 1.690      |            | 1.160         |
| 6.000             | 89.7     | 29.673  | 0.42                     | 5.25      | 6.13      |           | 0.840      | 2.030      |            | 1.435         |
| 7.000             | 106.8    | 35.325  | 0.50                     | 5.01      | 5.73      |           | 1.080      | 2.430      |            | 1.755         |
| 8.000             | 53.4     | 17.663  | 0.25                     | 5.12      | 5.88      |           | 0.970      | 2.280      |            | 1.625         |
| 9.000             | 26.7     | 8.831   | 0.12                     | 5.30      | 6.15      |           | 0.790      | 2.010      |            | 1.400         |
| 10.000            | 2.1      | 0.707   | 0.01                     | 5.57      | 6.59      |           | 0.520      | 1.570      |            | 1.045         |
| 11.000            | 2.1      | 0.707   | 0.01                     | 5.57      | 6.59      |           | 0.520      | 1.570      |            | 1.045         |
| 12.000            | 17.1     | 5.652   | 0.08                     | 5.56      | 6.53      |           | 0.530      | 1.630      |            | 1.080         |
| 13.000            | 34.2     | 11.304  | 0.16                     | 5.42      | 6.29      |           | 0.670      | 1.870      |            | 1.270         |
| 14.000            | 53.4     | 17.663  | 0.25                     | 5.29      | 6.06      |           | 0.800      | 2.100      |            | 1.450         |
| 15.000            | 70.5     | 23.315  | 0.33                     | 5.24      | 5.96      |           | 0.850      | 2.200      |            | 1.525         |
| 16.000            | 89.7     | 29.673  | 0.42                     | 5.13      | 5.77      |           | 0.960      | 2.390      |            | 1.675         |

6.090

|                |         |         |    |            |
|----------------|---------|---------|----|------------|
| 0.7 $\sigma_1$ | 0.35    | 1.155   | AS | $\Delta s$ |
| 0.3 $\sigma_1$ | 0.15    | 0.64438 |    | 0.2        |
| 0.7 $\sigma_2$ | 0.35    | 1.55833 |    | 0.2        |
| 0.3 $\sigma_2$ | 0.15    | 1.115   |    |            |
| D (mm)         | 300     |         |    |            |
| $E_{v1}$       | 88.13   |         |    |            |
| $E_{v2}$       | 101.50  |         |    |            |
| Area (Sq.m)    | 0.07065 |         |    |            |

|                 |      |  |  |
|-----------------|------|--|--|
| $E_{v2}/E_{v1}$ | 1.15 |  |  |
|-----------------|------|--|--|

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

$E_v$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

$D$  = diameter of the plate, generally 0.30 m



## Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Location

541+400 To 541+600

Test Date

12/8/2023

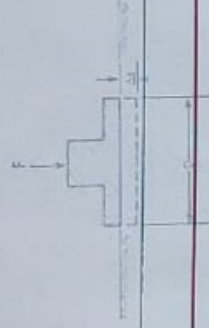
Layer level

Sub Ballast-2

### EQUIPMENT AND TEST PROCEDURE

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

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



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

The diameter  $D$  of the plate is generally 0.30 m. For very coarse grained material also plates with diameter  $D = 0.50$  m and  $D = 0.762$  m are used.

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

Diameter is 300mm

| Load<br>Stage No. | Load<br>kN | Stress<br>kN/m <sup>2</sup> | Dial 1<br>mm | Dial 2<br>mm | Dial 3<br>mm | Sett. 1<br>mm | Sett. 2<br>mm | Sett. 3<br>mm | Avg.<br>Sett.<br>mm |
|-------------------|------------|-----------------------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------------|
| 0.000             | 0.0        | 0.000                       | 9.70         | 11.56        |              | 0.000         | 0.000         |               | 0.000               |
| 1.000             | 2.1        | 0.707                       | 9.67         | 11.52        |              | 0.030         | 0.040         |               | 0.035               |
| 2.000             | 17.1       | 5.652                       | 9.52         | 11.44        |              | 0.180         | 0.120         |               | 0.150               |
| 3.000             | 34.2       | 11.304                      | 9.44         | 11.36        |              | 0.260         | 0.200         |               | 0.230               |
| 4.000             | 53.4       | 17.663                      | 9.31         | 11.28        |              | 0.390         | 0.280         |               | 0.335               |
| 5.000             | 70.5       | 23.315                      | 9.23         | 11.24        |              | 0.470         | 0.320         |               | 0.395               |
| 6.000             | 89.7       | 29.673                      | 9.12         | 11.19        |              | 0.580         | 0.370         |               | 0.475               |
| 7.000             | 106.8      | 35.325                      | 9.00         | 11.10        |              | 0.700         | 0.460         |               | 0.580               |
| 8.000             | 53.4       | 17.663                      | 9.10         | 11.20        |              | 0.600         | 0.360         |               | 0.480               |
| 9.000             | 26.7       | 8.831                       | 9.22         | 11.28        |              | 0.480         | 0.280         |               | 0.380               |
| 9.650             | 2.1        | 0.707                       | 9.40         | 11.36        |              | 0.300         | 0.200         |               | 0.250               |
| 10.000            | 2.1        | 0.707                       | 9.40         | 11.36        |              | 0.300         | 0.200         |               | 0.250               |
| 11.000            | 17.1       | 5.652                       | 9.30         | 11.33        |              | 0.400         | 0.230         |               | 0.315               |
| 12.000            | 34.2       | 11.304                      | 9.23         | 11.28        |              | 0.470         | 0.280         |               | 0.375               |
| 13.000            | 53.4       | 17.663                      | 9.14         | 11.23        |              | 0.560         | 0.330         |               | 0.445               |
| 14.000            | 70.5       | 23.315                      | 9.10         | 11.21        |              | 0.600         | 0.350         |               | 0.475               |
| 15.000            | 89.7       | 29.673                      | 9.04         | 11.18        |              | 0.660         | 0.380         |               | 0.520               |

| 0.2 $\sigma_1$ | 0.35    | 0.38313 | AS | AS      |
|----------------|---------|---------|----|---------|
| 0.5 $\sigma_1$ | 0.15    | 0.22    |    | 0.16313 |
| 0.7 $\sigma_1$ | 0.35    | 0.485   |    | 0.10499 |
| 0.9 $\sigma_1$ | 0.15    | 0.38001 |    | 0.2     |
| D (mm)         | 300     |         |    |         |
| $E_{s1}$       | 275.86  |         |    |         |
| $E_{s2}$       | 428.60  |         |    |         |
| Area (Sq.m)    | 0.07065 |         |    |         |

|                    |      |  |  |
|--------------------|------|--|--|
| $P \times D^2 / s$ | 1.55 |  |  |
|--------------------|------|--|--|

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

$E_s$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

$D$  = diameter of the plate, generally 0.30 m

# MATERIAL INSPECTION REQUEST



|                             |             |                            |             |                         |    |                    |      |
|-----------------------------|-------------|----------------------------|-------------|-------------------------|----|--------------------|------|
| <b>Contractor Company</b>   |             | <b>Mansour Ali Hassan2</b> |             | <b>Designer Company</b> |    | <b>K.K Consult</b> |      |
| <b>Issued by Contractor</b> | <b>Name</b> | <b>Sign</b>                | <b>Date</b> | <b>Time</b>             |    |                    |      |
|                             | Ezz Mahmoud | <i>Ezz Mahmoud</i>         | 5-8-2023    |                         |    |                    |      |
| <b>Received by ER</b>       |             |                            |             |                         |    |                    |      |
|                             |             |                            |             |                         |    |                    |      |
|                             |             | MIR                        | C1          | C2                      | C3 | DD                 | M    |
|                             |             |                            | K.P 540     | E.W                     |    | 5                  | 8    |
|                             |             |                            |             |                         |    |                    | 2023 |
|                             |             |                            |             |                         |    |                    |      |

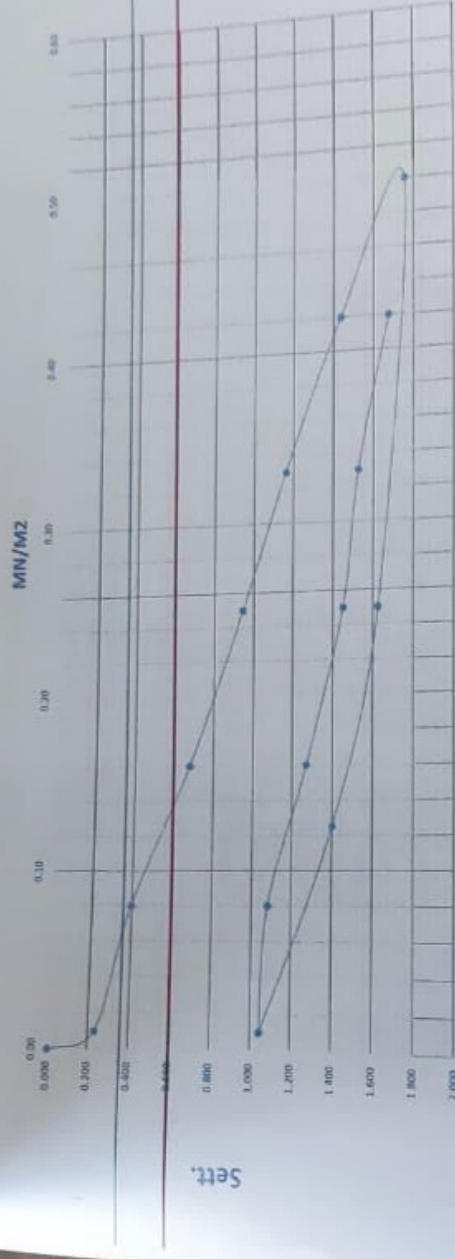
|                                |                   |  |                        |                                                  |
|--------------------------------|-------------------|--|------------------------|--------------------------------------------------|
| <b>CODE - 1</b>               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

|                                 |                                 |                      |                 |
|---------------------------------|---------------------------------|----------------------|-----------------|
| <b>Description of Materials</b> |                                 | <b>Sub Ballast</b>   |                 |
| <b>Contractor Reference</b>     | <b>MNS2-2-SB</b>                |                      |                 |
| <b>Location to be Used</b>      | 541+690                         | 541+770              | (+0.90)         |
| <b>MAR Approval No</b>          |                                 |                      | <b>Date</b>     |
| <b>Supplier Name</b>            |                                 |                      |                 |
| <b>Test Requirement</b>         |                                 | <b>Specification</b> | <b>Clause</b>   |
| <b>Reference Photos</b>         | Yes attached / No               | <b>Other</b>         |                 |
| <b>Item</b>                     | <b>Description</b>              | <b>Unit</b>          | <b>Quantity</b> |
| 1                               | L.L. & P.L. & O.M. %            | M3                   | 1500            |
| 2                               | Serve analysis & Classification | M3                   | 1500            |
| 3                               | Proctor                         | M3                   | 1500            |
| 4                               | C.B.R                           | M3                   | 1500            |
| <b>Comments by:</b>             |                                 | <b>Comments by:</b>  |                 |

|                                 |             |                    |             |
|---------------------------------|-------------|--------------------|-------------|
| <b>APPROVAL STATUS</b>          |             |                    |             |
| <b>Organisation</b>             | <b>Name</b> | <b>Sign</b>        | <b>Date</b> |
| <b>Contractor</b>               | Ezz Mahmoud | <i>Ezz Mahmoud</i> |             |
| <b>QA/QC *</b>                  | Hassan      | <i>Hassan</i>      |             |
| <b>GARB **</b>                  |             |                    |             |
| <b>Employers Representative</b> |             |                    |             |

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

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



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



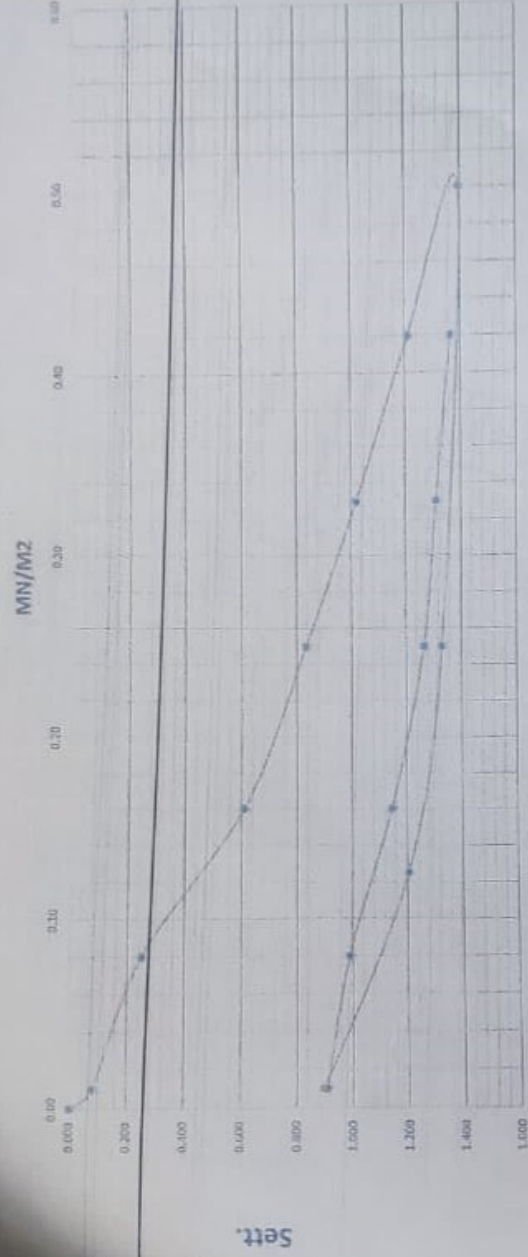
Consultant Engineer

Name : mohamed elsaied

Sign :

m-elsaied 5-4-2023

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



Lab. Specialist

Name :

Sign :

*Yanf*

Lab. Engineer

Name :

Sign :

*Yanf*

Consultant Engineer

Name :

Sign :

Hassan

*318/20*

From Station 604+000 To Station 668+177

## TESTING DATE

## Discussion

2/8/2023

AME COMPANY

N.L.P. 0410+500 ( 1500 m3 )

code

ZONE

541+400

B41+B06

Visual Inspection Test

Manabour Ali Hassan 2

MINIS-SP-2

## Material

### Sub-Ballant

Excellent test

|            |   |
|------------|---|
| glove size | A |
|------------|---|

| sieve size              |  |  |  |  |  |  |  |  |  | SAMPLE WEIGHT (g) |       |        |         | 50/100.00 |         |         |               | gm  | table classify |  |
|-------------------------|--|--|--|--|--|--|--|--|--|-------------------|-------|--------|---------|-----------|---------|---------|---------------|-----|----------------|--|
|                         |  |  |  |  |  |  |  |  |  | 3/4               | 1/2   | 3/8    | # 4     | PASS      |         |         | soil classify |     |                |  |
| Planes retained (g)     |  |  |  |  |  |  |  |  |  | 0.0               | 0.0   | 1806.0 | 13410.0 | 1697.0    | 4613.0  |         |               |     |                |  |
| Cumulative Retained (g) |  |  |  |  |  |  |  |  |  | 0.0               | 0.0   | 1606.0 | 12806.0 | 26216.0   | 27913.0 | 32526.0 |               | PRO | 2.206          |  |
| Cumulative Retained %   |  |  |  |  |  |  |  |  |  | 0.0               | 0.0   | 3.2    | 25.6    | 52.3      | 55.7    | 64.9    |               | WC  | 5.8            |  |
| Cumulative Passing %    |  |  |  |  |  |  |  |  |  | 100.0             | 100.0 | 96.8   | 74.4    | 47.7      | 44.3    | 35.1    |               |     |                |  |

## Soft material gradation

| sieve size              |        | WT. OF sample |  | 500.00 | gm | specific gravity | 2.537 |
|-------------------------|--------|---------------|--|--------|----|------------------|-------|
| Cumulative Retained (g) | 10     | 200           |  |        |    |                  |       |
|                         | 127.00 | 426.00        |  |        |    |                  |       |
| Cumulative Retained %   | 25.40  | 85.20         |  |        |    |                  |       |
| Cumulative Passing %    | 74.60  | 14.80         |  |        |    |                  |       |

General gradient[illegible]

## ATTERBERG LIMITS

LIQUID LIMIT (L.L.)

N.P.

PLASTIC LIMIT (P.L.)

N.P.

PLASTIC INDEX (P.I.)

N.P.

Contractor

## Consultant


 وزارة التعليم والبحث العلمي  
 جامعة بغداد  
 كلية التربية  
 قسم التاريخ  
 ٢٠٢٠

Hassan  
6.8  
2023