البينة العامة اللطرق و الكبارى و النقل البرى (GARBLT) المنطقة الخامسة – (غرب الدلتا)

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة.. وبعد،،

بالإحالة إلى مشروع القطار الكهربائى فائق السرعة قطاع (برج العرب – العلمين) نتشرف بأن نرفق لسيادتكم طيه المقايسات المعدله بعد اعتماد لجنة المفاوضه للقطاعات الأتية:

| الإتج | إلى المحطة | من المحطة | اسم الشركـــــة | المسلسل |
|--------|------------|-----------|--|---------|
| النجيا | ۳۸٤+۰۰۰ | ۳۸۱+۰۰۰ | شركة محمد محمود شعبان حمدان | ١ |
| | | | من المحطة إلى المحطة الإتج ٣٨١+٠٠٠ النجيا | |

برجاء من سيادتكم التفضل بالأحاطه والتوجيه بالازم

وتفضلوا بقبول فائق الأحترام والتقدير،،

رنيس الإدارة المركزية المنطقة الخامسة. غرب الدائما C. Cm عميد مهندس/ Te " هاتي محمد محمود ظله "

مقايسة معدلة بعد المفاوضة



وزارة النقل

=





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| | | کة محمد محمود شع | المقايسة التقدرية لبنود الاعمال تنفيذ شرّ | |
|----------|--|---|--|--|
| (لفنة | الكمية | الوحدة | بيان الأعمال | قم البند |
| | | | اعمال الردم | ٣ |
| ٨٥, | ۱٤,, | ٣٨ | اعسال تحميل وتوريد اترية مطايقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن ٥٠ سم حتى منسوب ٢٠ متر ويسمك لايزيد عن ٢٥ سم لاستكمال المنسوب التصميمي لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥ %) ورشها بالميزة الاصولية الى نسبة الرطوية المطلوية والدمك الجيد باتهر اسات للوصول الى اقصى كثفة جافة (20% من الكثافة الجافة القصوى) ويتم التنفيذ طبقا والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهينية العامة للطرق والبندرى وتعليمات المهندس المشرف. والكبارى وتعليمات المهندس المشرف. والكبارى وتعليمات المهندس المشرف. ٥ هي يحسب زيادة اجنية على زيادة نسبة الدمك لكل ١%. ٤ ، اجنية الذم بالزيادة والقصان. ٤ ، اجنية الذم بالزيادة والقصان. ٤ ، اجنية المع ماريات وتخليط واختبارات ونقل لموق العمل حتى مسافة ٢ كم . - السعر يشمل قيمة المادة المحجرية . | ۱_۳ |
| 111,11 | 11,7 | م۳ | علاوة مسافة نقل للتربة لمسافة ١٠٣ كم ١٠٣ ؛ ١٠ = ١، ٢ = ؛ ١ : ١ جنيه | |
| ۱. ۵, ۷. | ۲,۸۰۰,۰۰ | ۴۵ | علاوة مسافة نقل للرمل لمسافة ٥,٧٧ كم =٥,٥ ٧*، ١ =٧،٥،٧ جنيه | |
| 17, | ۱٤,٠٠٠,٠٠ | ٣٥ | علاوة تحصيل رسوم الكارتة والموازين طبقا للاسمة الشركة الوطنية | |
| | | | طبقات الاساس | : |
| ۲۷۸,۰۰ | ۱۲,.٦., | 47 | المترجة لتلج تكسير المسارات والمطابقة للمواصفات وأقصى حجم للعبيبات ١٠٠٠ مو والا تزيد نسبة السفر من منفق ٢٠٠٠ من ٢٢ % و السطرية الدرج الوارد بالانشرطات الفاصة بالمدروع لا تقل لنسبة تصل كاليفوريات من ٢٢ % و الارتية نسبة المائة بجهاز لوس الحيل من ٢٠٠ % والا يزيد الاستماصى من ٢٠ % و الا يقل معامل المرونة (Ev2) من تجربة لوح التحيل من ٢٠ ميروابلري ليم قردها على طنيتين بالمتدام الات النسوية الحيثة على الا يزيد مسلة الطبقة بعد تمام الدمل اليقل معاصى من عليتين (الاصولية المحرفة الحيل الا يزيد مسلة الملوية المعالية و التصلي من ٢٠ % والا يزيد الاستماصى من يتامية الاصولية المرونة (Ev2) من تجربة لوح التحيل عن ٢٠ ميوابسكار و يتم قردها على يتامية الاصولية المحرفة المرومية المعانية واللغة الحيد الهواسات للوصول الى القصي كثافة ويتم التلفي طبق لاصول الصناعة والرسومات التلصانية المحمدة والمائة بشمل اجراء التجارب المعلية والحقلية المواصفات القلية للمروح و تقرير الاستشاري وتعليمات المواضى المشرف مسابقة التلك لا تقا ٢٠ كم | T-1 |
| 97, | 17,.3., | کم | علاوة مسافة النقل لمسافة ١٠٠ كم = ٨٠كم ٢٠. ٢ = ٢ جنية | |
| ۲٥, | 17, | ۲ ۵ | علاوة تحصيل رسوم الكارتة والموازين طبقا للائحة الشركة الوطنية | |
| ¥4X, | ۸,۷۹۰,۰۰ | ٣٨ | بالمتر المتعب اعمال ترريد وفرش طبقة أسلى من الاحجار الصلية المتنزجة تلج تنسير التسنرات والمطابقة للمواصفات وأقصى حجم للحبيبات ما بين ٦٩.٩ مع إلى ٤٠ مع والا يزيد نسبة المار من منظر ٢٠٠ عن هي 9% والترج الوارد بالاشتراطات الخاصة بالمشروع لا تمّا نسبة تحطى كانيورتيا عن الفائد بعواز لمن العزمي الدورية (Ev2) من تجربة لوح التحميل عن ٢٠ ١ ميجابسكان والا يزيد نسبة الفائد بعواز لمن العزمي الدورية (الارزيد بالاشتراطات الطاقية بعد تمام الدهر 6.2 مي والا يزيد نسبة المائد بعواز لمن العزمي من ٢٠ % والا يزيد الامتصاص عن ٢٠ % ويتم فردها على طبقيتي الاصولية للوصول لل نسبة الرطوبية المطلوبة والدك الجيد بالهواسات للوصول الى قصى كثافة ويتم قصوري الا يترك عن ٢٠ % من منافعية والنذة العنان الجارب المصلية والتجرية ويتم تشفية طبقا لاصول المناعة والرسومات التفصيلية المتحدة والبند بجميع مشتملاته طبقا للمواصفات مصافة النقر مع وتغير الاستشاري وتعليمات المهتمين المشروق . مصافة النقر ٢٠ كثير الاستشاري وتعليمات المهتمين المشرق . | |
| ۹٦, | ۸,٧٩., | کم | علاوة مسافة النقل لمسافة ١٠٠ كم = ٨٠كم ٢٠،٤ = ١، تجنية | |
| ۲٥, | ۸,٧٩., | ٣٩ | علاوة تحصيل رسوم الكارتة والموازين طبقا للائحة الشركة الوطنية | |
| | | | البلاطات الخرسانية | э |
| **** | 71,.74,000 | ٩٢ | بالمتر المسطح أصل توريد وصب خرسانة عادية ست ١٩ سم لتحلية الأكثاف والميول الجانيية تتكون من ٨, ٢ من دولوميت متدرج + ٢, ٢ م ٢ رمل حرش + ٢٥ كجم أسمنت بورتلاندي عادي واضافة موالاملاح والمواد الغريبة والبند يشمل تجهيز واستحدال مناسيب التربة من الشروانب و الطفة والاملاح والمواد الغريبة والبند يشمل تجهيز واستحدال مناسيب التربة الطبيعية أسفل البلاطة للوصول إلى المناسيب التصميميه على أن تحق الخرسانة إجهاد لا يقل عن ٢٦ كجم / سم٢ وتشطيب السطح والتنفيذ طبقاً لأصول الصناعة والرسومات التفصيلية المتددة والبند بجميع مشتملاته طبقاً لمواصفات الهينة العامة للطرق والكباري وتعليمات الميندة والمنذ وعميمة. | ۲_۵ |
| | ΣιάΝ Λο, Νο, Νο, | النجيلة. الفنة الكنية الفنة المارية الفنة المارية الفنة المارية الفنة المارية المارية المارية المارية | کة محمد محمد شعبان القصلی للمقاولات و رصف الطرق الوحدة الكمية الخلة النقلة الوحدة الكمية الفلة م ٢ م | العقام عن العدرة ليوه (العبل تعليم) العدل المعارية عن المعارة العبلة. العارة العربية العربية العربية العربية العربية المعارية المعار |





مدير مسّروع (هيئة الطرق 1. م / مارجريت مجدي

مدير عام مشروعات المنطقة الخامسة مهندس/ مكود حسني فياض

ا يعتمد رنيس الأدارة المركزية منطقة غرب الدلتا (بالاسكندرية / مرسى مطروق عميد مهندس / 15

محمد محمود طه

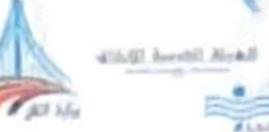




all the work of the all









| Contractor | Mohamed Mahmo | ud Shaban (ALKASALY) | Desi | gner C | ompa | ny | | RUM) E ting Off | ngineer ice | ing |
|-------------------------|-------------------|----------------------|------|--------|----------------|-----|------|--------------------|----------------|-----|
| compony | Name | Sign | Date | /Seria | l Num | ber | Time | he al | 111849 | |
| Issued by Contractor | Mohamed shaban | SK-1 | | | -2023 15-1) | | 3 | 1: | 30 | |
| Received by | | | C1 | CZ I | C3 | DD | MM | YY | нн | MIM |
| GARB | Eng. Mazen Essamy | MAR | 381 | EW | CS | 15 | 03 | 23 | 01 | 30 |
| | | | | | | | | | | |

| CODE-1 | 51 to 521 Station Reference | D1 to 53 Depot Reference | Kp XXX Note For Kilometer point only Start Km is used |
|----------|--|-----------------------------|--|
| CODE - 2 | the second s | Work Activity | |
| CODE - 3 | La contra de la co | Sub Element of Activity | |

| Description of Materials | Fill Layer Total Quantity (75000 m3) | |
|--------------------------|---|--|
| Location to be Used | From Station (381+000) to Station (383+000) | |



| 1 A A | | n., | | | | |
|-------|----|-----|-----|----|-----|--|
| - | 28 | 10 | | T | - 2 | |
| 100 | | 10 | 1.1 | τ. | | |
| 1 | | | 57 | | - | |
| | | - | | | | |

Location to be used From Station (Sourceo) to station (Sourceo)

| Yes | Materials Type | Fill layers |
|---------------------------|---|---|
| Alsewy, Alharamin | Data Sheet provi | ided Yes attached |
| | Specification | EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP |
| | Test Samples Res | sults |
| No/Yes | Other | |
| azen Essamy (SPECTRUM | | by: Eng. Alaa Abd-Allatif (ER) |
| rd Party Lab is Approved. | COMIBASSA 2-Results re project spec | eport attached and acceptable with the |
| | Alsewy , Alharamin No/Yes | Alsewy , Alharamin Data Sheet provide Specification Specification Test Samples Re Other No/Yes Other Alsewy (SPECTRUM) Comments Alsewy (SPECTRUM) 1- All tests COMIBASSA 2-Results re Project spect 3-Final app |

il an il and i and the

| Organisation | Name | Sign'1474 | e A-AWC-R |
|-----------------------------|-------------------------|--------------|-----------|
| Contractor | Mohamed shaban | 24-1-1 | A |
| QA/QC * | Eng. Mazen Essamy | CAE | A |
| GARB** | Eng. Mohammed Fayad | Ω_{1} | |
| Employers Representative | Eng. Alaa Abd-Allatif 2 | 23 Alafth | AWC |

Copy (1) - ريكريست File: 1-14 - ريكريست

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Page 1 of 1



الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum قطاع التغتيش الداخلى والمعا مل معتمد لدى الهيئة المسرية العامة لابترون تحت رقم ٢٤/ ٢٠١١/١١٠٢٩

I-Introduction

General Consultant : Consultant : Contractor : Sample : Station : Date of Test : SYSTRA SPECTRUM شركة القصلي للمقاولات FERMA St(381+0.00) to st(383+0.00) 01/03/2023 646

QC : 646

II- Sample description:

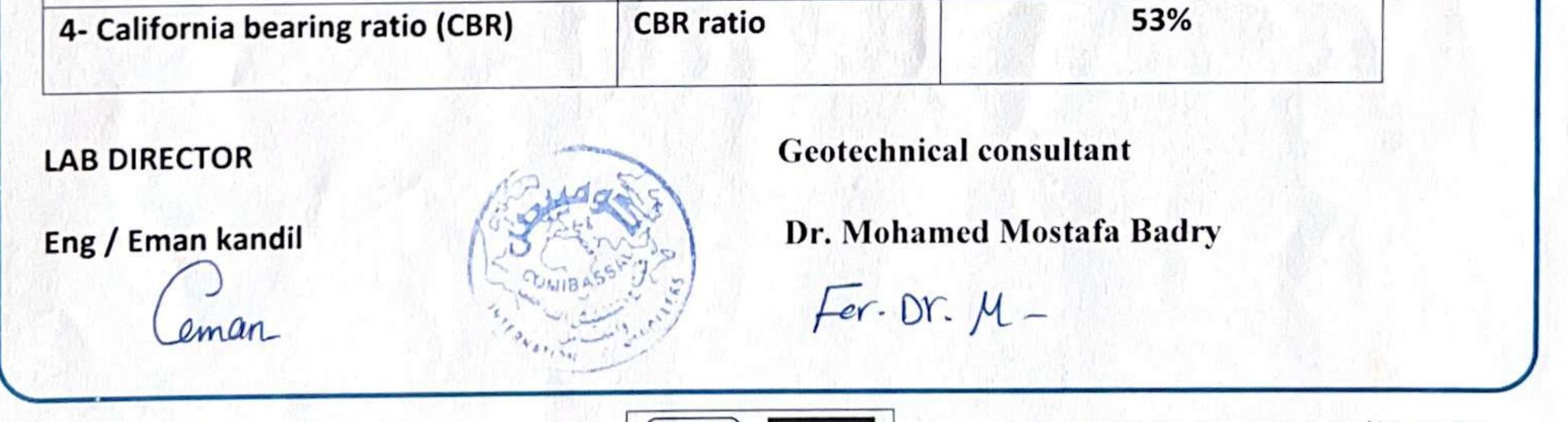
Gravel and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction and optimum moisture content (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)

IV- Results

| 1- Grain size analysis and classifica- | Grain size analysis | As showed in appendix | | |
|--|---------------------|-----------------------|--|--|
| tion | Classification | A-1-a | | |
| 2- Modified compaction and opti- | MDD | 2.130 | | |
| mum moisture content (Proctor test) | OMC | 6.00% | | |
| 3- Liquid limit, plastic limit and plas- | LLSUM | 26.1% - | | |
| ticity index | PL | 24.8% | | |
| | PI | 1.3% | | |
| | | | | |



الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب ١٥٧ ت، ٤٨٧٠٥٧٢ - ف+ت، ٤٨٢٩٨ - ٥٢٢٠٥٧٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،خلف ٤٩ طريق الحرية - الإسكندرية - مصر ت، ٢٩٠٠٤٧٦ - ف، ٢٩٢٠٤٨٢ - ٢٩٢٠١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com



الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by: Egyptian General Authority for Petroleum Under No.: 34/29.11.2011 قطاع التغتيش الداخلى والمعامل

معتمد لدى العينة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩-١١/١١٠٢

APPENDEX

الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب ١٥٧ ت، ٤٨٧٠٥٧٣ - ف ت، ٤٨٦٩٧٩٨ - ٢٢٠٥٧٣ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



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معتمد لدى المينة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩-١١/١١٠٢

SOIL REPORTS FOR

ELECTRIC EXPRESS TRAIN PROJECT

Contractor : Date of report :

QC

شركة القصلي للمقاولات 14/03/2023 646

الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب ١٥٧ ت، ٤٨٧٠٥٧٣ - ف+ت، ٤٨٦٩٧٩٨ - ٥٢٢٠٥٧٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،خلف ٤٩ طريق الحرية - الإسكندرية - مصر ت، ٢٩٠٠٤٧٦ - ٢٩٢١٤٨٢ - ٢٩٢٠١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com



الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum

قطاع التغتيش الداخلى والمعامل معتمد لدى الهيئة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩٠١١/١١٠٢

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

| | RETAINED | WEIGHT | | | | |
|---------|--|---|---|--|--|--|
| 19 | | whom | PERCENTAGE | PERCENTAGE | SPECIFICATION | |
| | (gm) | RETAINED (gm) | RETAINED (%) | PASSING (%) | LIMITS | |
| 2 | 120.00 | 120.00 | 1.51 | 98.5 | | |
| 1 1/2 | 1160.00 | 1280.00 | 16.14 | 83.9 | | |
| 1 | 546.00 | 1826.00 | 23.03 | 77.0 | Contraction of the second | 29 . N. P. |
| 3/4 | 500.00 | 2326.00 | 29.33 | 70.7 | 1 N N N N N N N N N N N N N N N N N N N | |
| 1/2 | 885.00 | 3211.00 | 40.49 | 59.5 | | |
| 3/8 | 366.00 | 3577.00 | 45.11 | 54.9 | COMPARE THE SALE | |
| No.4 | 1103.00 | 4680.00 | 59.02 | 41.0 | and the second second | |
| 0.10 | 176.00 | 176.00 | 35.20 | 26.6 | MITTER STATE | |
| io.40 | 275.00 | 275.00 | 55.00 | 18.4 | 1 miles 1 | |
| 0.200 | 392.00 | 392.00 | 78.40 | 8.9 | Die . Think to | |
| ample v | veight = | 7930.00 | pass No.4= % 41.0 | 3250.0 Total fi | ne aggregates weight | = 500 g |
| | | Size analysis d | istribution curve | | | |
| 120.0 | | | | | | |
| 100.0 | | | | | | |
| 115 | | | | | | |
| 80.0 | | 1111 | 김 엄마, 나는 신부는 것 | | | |
| 60.0 | | i Thhead Street | | 1 mm | | |
| 40.0 | | | | 10 | | |
| 20.0 | | A Last | | | | |
| 1.6 | | · · · · · · · · · · · · · · · · · · · | | | | |
| 0.0 | | 0.1 | 1 | 10 | 100 | |
| | | | Size of grains (mm) | | | 1 10.3 |
| 1.1 | | | | | | |
| | 1/2 3/8 50.4 0.10 0.40 0.200 ample v 20.0 60.0 60.0 40.0 20.0 | 3/4 500.00 1/2 885.00 3/8 366.00 3/8 366.00 3/8 366.00 3/8 103.00 0.10 176.00 0.40 275.00 0.200 392.00 ample weight = 120.0 | 3/4 500.00 2326.00 $1/2$ 885.00 3211.00 $3/8$ 366.00 3577.00 60.4 1103.00 4680.00 60.0 392.00 392.00 392.00 392.00 392.00 392.00 392.00 392.00 392.00 392.00 $5ize analysis d$ 120.0 60 | $\frac{3/4}{1/2} = \frac{500.00}{385.00} = \frac{2326.00}{3211.00} = \frac{29.33}{40.49}$ $\frac{3/8}{366.00} = \frac{3577.00}{45.11} = \frac{45.11}{5.00}$ $\frac{3/8}{366.00} = \frac{366.00}{3577.00} = \frac{45.11}{45.11}$ $\frac{3/8}{50.0} = \frac{176.00}{176.00} = \frac{176.00}{35.20} = \frac{176.00}{55.00}$ $\frac{392.00}{392.00} = \frac{392.00}{78.40} = \frac{7930.00}{78.40}$ $\frac{120.0}{100.0} = \frac{120.0}{0.0} = \frac{100.00}{0.01} = \frac{100.00}{0.1} = \frac{100.00}{0.00} = $ | $\frac{3/4}{1/2} = \frac{500.00}{2326.00} = \frac{29.33}{29.33} = \frac{70.7}{1/2}$ $\frac{3/4}{1/2} = \frac{885.00}{3211.00} = \frac{3211.00}{40.49} = \frac{59.5}{59.5}$ $\frac{3/8}{366.00} = \frac{3577.00}{45.11} = \frac{54.9}{54.9}$ $\frac{3/4}{103.00} = \frac{4680.00}{59.02} = \frac{41.0}{26.6}$ $\frac{50.0}{176.00} = \frac{176.00}{176.00} = \frac{35.20}{26.6} = \frac{26.6}{26.00}$ $\frac{50.0}{275.00} = \frac{275.00}{275.00} = \frac{55.00}{18.4} = \frac{18.4}{8.9}$ $\frac{392.00}{392.00} = \frac{392.00}{78.40} = \frac{3250.0}{78.40} = \frac{3250.0}{70.1} = \frac{1}{10}$ $\frac{122.0}{100} = \frac{1}{100}$ $\frac{1000}{1000} = \frac{1}{100}$ $\frac{1000}{1000} = \frac{1}{1000} = \frac{1}{1000}$ $\frac{1000}{1000} = \frac{1}{1000} = \frac{1}{10000}$ | $\frac{3/4}{12} = \frac{500.00}{388} = \frac{2326.00}{3211.00} = \frac{29.33}{40.49} = \frac{79.7}{59.5}$ $\frac{3/4}{12} = \frac{885.00}{3211.00} = \frac{3211.00}{40.49} = \frac{40.49}{59.5} = \frac{100}{59.5}$ $\frac{3/4}{10} = \frac{100}{100} = \frac{100}{100} = \frac{100}{100}$ $\frac{392.00}{392.00} = \frac{100}{392.00} = \frac{100}{100} = \frac{100}{100}$ $\frac{392.00}{100} = \frac{100}{100} = \frac{100}{100} = \frac{100}{100}$ |

Soil classification: A - 1- a

الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب١٥٧ ت، ٤٨٧٠٥٧٢ - ف+ت، ٤٨٦٩٧٩٨ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع الخلف ٤٩ طريق الحرية - الإسكندرية - مصر ت، ٢٩٠٠٤٧٦ - ف، ٢٩٢٠١٧٦ - ف 40. El Horria Ave -Alex Equat

49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com



الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum

قطاع التغتيش الداخلى والمعامل معتمد لدى الهيئة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩٠١١/١١٠٢

Modified Proctor Test Report ASTM - D 1557

| Mould Number :- | 2 |
|-------------------|-----------|
| Volume of mould = | 2188 cm3 |
| Weight of mould = | 7020 g |
| G.S = | 2.55 g/cm |
| | |

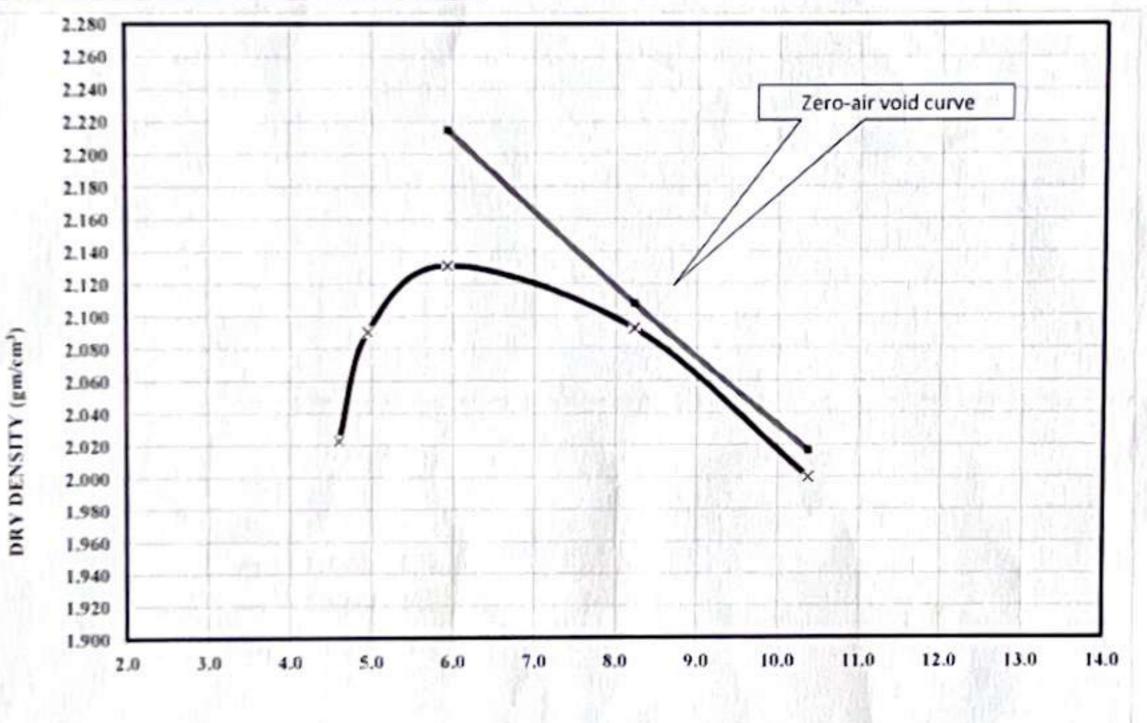
A- Density Calculations :-

| the second s | 1 | 2 | 3 | 4 | 5 |
|--|---------|-------|-------|-------|-------|
| Weight.of wet soil+mould (g) | 11650 | 11820 | 11960 | 11975 | 11850 |
| Weight.of mould (g) | 7020 | 7020 | 7020 | 7020 | 7020 |
| Weight.of wet soil (g) | 4630 | 4800 | 4940 | 4955 | 4830 |
| Volume of mould (cm ³) | 2188 | 2188 | 2188 | 2188 | 2188 |
| Wet density (g/cm ³) | 2.116 | 2.194 | 2.258 | 2.265 | 2.207 |
| Dry density (g/cm ³) | 2.023 | 2.090 | 2.131 | 2.093 | 2.000 |
| Zero-air Void curve | K Maria | 1.111 | 2.215 | 2.108 | 2.016 |

B-Moisture Calculations :-

| Weight.of wet soil (g) | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|------------------------|-------|-------|-------|-------|-------|
| Weight.of dry soil (g) | 239.0 | 238.2 | 236.0 | 231.0 | 226.5 |
| moisture content% | 4.6 | 5.0 | 5.9 | 8.2 | 10.4 |

C - Dry density-Moisture relationship:-



MOISTURE CONTENT(%)



الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب١٥٧ ت. ٤٨٧٠٥٧٢ - ف+ت، ٤٨٦٩٧٩٨ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



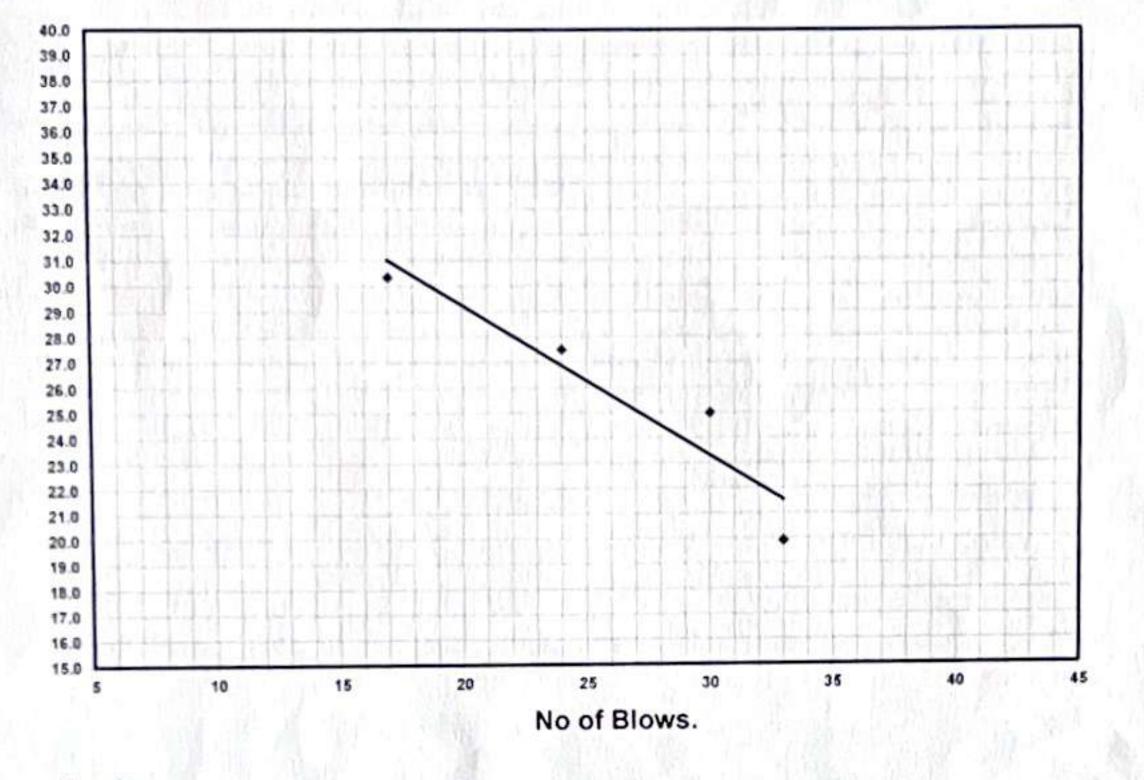
القطاع اخلف ٤٩ طريق الحرية - الإسكندرية - مصر ت، ٢٩٠٠٤٧٦ - ٢٩٢١٤٨٢ - ٢٩٢٠١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

C NR.P.



Liquid and Plastic Limits Test ASTM - D 4318

| Test No | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------|-------|--------|-------|-------|---------|---------|
| Type of test | 11.12 | Liquid | Limit | | Plastic | Limit |
| NO of B. | 33 | 30 | 24 | 17 | 1.0 | ug/at r |
| Container No | j s | c | S | m | F | J |
| Mass of wet soil (g) | 47.00 | 50.00 | 51.00 | 36.50 | 35.00 | 30.00 |
| Mass of dry soil (g) | 39.20 | 40.00 | 40.00 | 28.00 | 27.00 | 25.00 |
| Mass of moisture(g) | 7.80 | 10.00 | 11.00 | 8.50 | 8.00 | 5.00 |
| Moisture content % | 19.90 | 25.00 | 27.50 | 30.36 | 29.63 | 20.00 |



Results:

| Liquid Limit (L.L) : | 26.1 %. |
|-------------------------|---------|
| Plastic Limit (P.L) : | 24.8 %. |
| Plasticity Index (P.I): | 1.3 %. |



M.C%

الإدارة، ٤٠ مصية زغلول - الأسكندرية من من الالكندرية من من الإدارة، ٤٠ م ت، ٤٨٧٠٥٧٢ - ف+ت، ٤٨٩٧٩٨ - ٥٢٦٠٥٧٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،خلف ٤٩ طريق الحرية - الإسكندرية - مصر ٢٩٠٠٤٧٦ - ٢٩٢٦٤٨٢ - ٣٩٤٩٣٤٤٤ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com



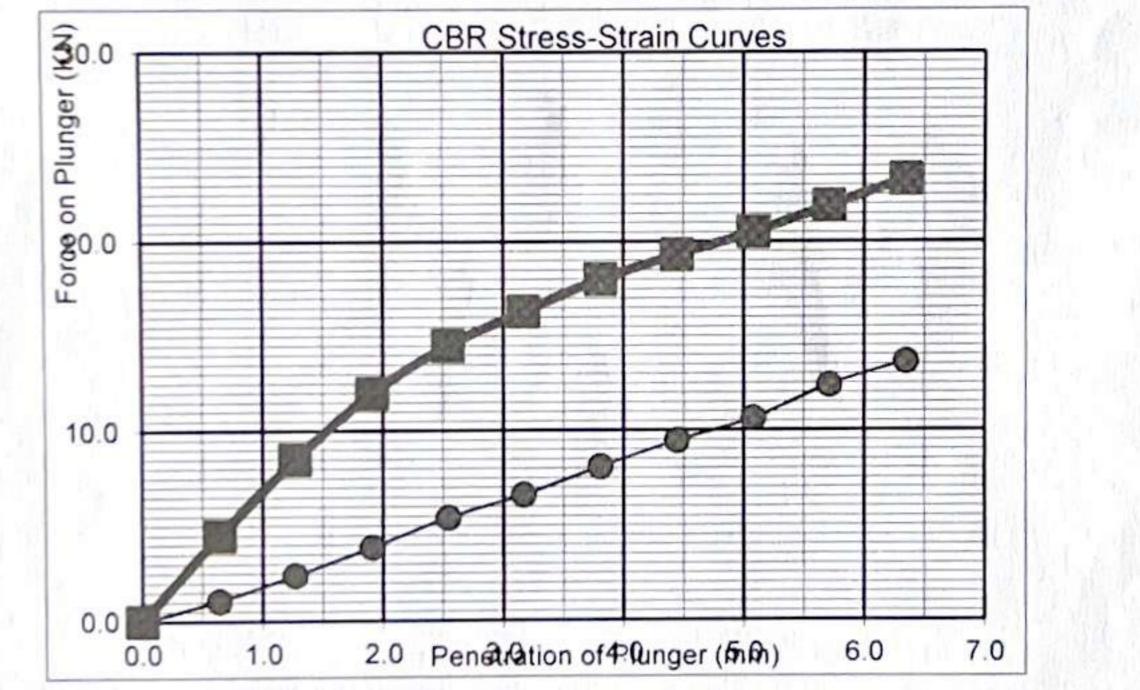
الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum قطاع التغتيش الداخلى والمعامل

معتمد لدى الهينة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩/١١/١١٠٢

Report Of CBR Test - ASTM - D 1883

| NO OF I | BLOWS | 56 | 6 165 | de la coltar a | Swell % | | |
|---|--|---|-------------------|--------------------|---------------|--|------------------|
| MOULD | NO | 1 | 355 AP-04 | THE PERSON AND | 56 | 1 11 | 11.12220/- |
| WT OF | IOULD+SOIL | 11950 | The Addition and | Start | 0.00 | - Di | 10 |
| WTOFI | | 7020 | 1. P. 2. 4. 1. | End | 0.00 | | 1 |
| WT OF S | the second se | 4930 | No. 1991 | Swell | 0.00 | 1.68 | 1 |
| VOLUM | E OF MOULD | 2188 | il - il - | Mer of | TO MAR . MA | 1.00 | 102, 2339 |
| WET DE | NSITY | 2.253 | Well a Storf | 140: 08 | A DECK | 1. 100 164 | 1 31 |
| and the specific | State - Halleste - Hare - | MC be | fore soakin | g Weig | ght of Ran | nmer | 4.54Kg |
| TIN NO | TO MUTCHEN AND | 1 | LAT TO PAY | 1 1 1 | MDD | Kg/m3 | 2.130 |
| WTOF | WET SOIL+TIN | 250.00 | ALT: SUG OF | - 11 T.J. (2015) | 111 1 - 29 | 184 | 25-01-0-0 |
| | DRY SOIL+TIN | 240.1 | isth in Ala | 1 | OMC | % | 6.000 |
| WT OF N | and the second | 9.90 | THE MONTH | 15 A. 1847 | | 10 | |
| WT OF | TIN | 81 | KURKE MURIT | 1000 June - | PROVING R | | ING |
| | DRY SOIL | 159.1 | de la competencia | 1 | Div/KN | | 0.0210 |
| the second se | IRE CONTENT | 6.2 | the south dealer | 1. S. 1. S. 1. | 4.20 1.00 | 1. C. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | |
| DRY DE | NSITY | 2.121 | 生一月中心 | 144 1 1 | Capacity (KN) | | 50 |
| Pen | Reading (I | Div) | Bearin | a (KN) | CBR | | t a state of the |
| mm | 56 | | 56 | | standar | 56 | 1 |
| 0.00 | 0 | | 0.0 | and the second | 0.0 | 100010.00 | the ball of the |
| 0.64 | 110 | 1111 | 1.1 | 1.10 | 4.5 | EXTERNAL AND | a de la des |
| 1.27 | 245 | | 2.4 | | 8.5 | THE AND | 1011000 |
| 1.91 | 395 | 1. T. | 3.9 | and the state | 12.0 | 1940 N | annorshin a |
| 2.54 | 554 | | 5.4 | | 14.5 | 41 | A Detty |
| 3.17 | 675 | - 1 B | 6.6 | L. L. L. L. | 16.3 | i i Mesi - A | 1.7.1 |
| 3.81 | 825 | | 8.1 | | 18.0 | TO US A CONSTRUCTION | |
| 4.45 | 965 | | 9.5 | | 19.3 | | 1 Block |
| 5.08 | 1085 | - 11-11 | 10.6 | all and a strength | 20.5 | 53 | 14.0 |
| 5.71 | 1265 | Sec. 1 | 12.4 | 188, 0 11 1 | 21.9 | NUT MORE | (1) (1) (1) |
| 6.35 | 1392 | 1000 | 13.6 | 63.01 N. 184 | 23.3 | 317 20 11 202 | Inter Aste |





الإدارة، ٤٠ ش صفية زغلول - الأسكندرية ص - ب١٥٧ ت، ٤٨٧٠٥٧٢ - ف+ت، ٤٨٧٩٨ - ٥٢٦٠٥٧٦ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع اخلف ٤٩ طريق الحرية - الإسكندرية - مصر ت، ٢٩٠٠٤٧٦ - ٢٩٢٠٤٨٢ - ٢٩٢٠١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

انظمات القيامة المعظ

COMIBASSAL International Controllers

الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum

302 - 2 - Center Report 15/03/2023 Date

قطاع التغتيش الداخلى والمعامل

معتمد لدى المينة المسرية العامة للبترول تحت رقم ٢٤/ ٢٩٠١١/١١٠٢٩

CHEMICAL ANALYSIS

| General Consultant | : | SYSTRA |
|---------------------------|---------------------------------------|----------------------------|
| Consultant | 3 ··· | SPECTRUM |
| Contractor | : | شركة القصلي للمقاولات |
| Project | · · · · · · · · · · · · · · · · · · · | Electric express train |
| Sample | : 1 | FERMA |
| Station | : | ST (381+ 0.00) : (383 + 0 |
| Date of Test | | 1-3-2023 |

Temperature : 18 °C

Humidity : 50%

(383 + 0.00)

| ANALYSIS | RESULTS | METHOD REFERENCE |
|----------------|----------|------------------|
| ORGANIG MATTER | NEGATIVE | ASTM D 2974 |

LAB DIRECTOR CH/ Mostafa Asker Mousta

الإدارة، ٤٠ مشية زغلول- الأسكندرية ص - ب١٥٧ 2AV. 170 - EATAVAA : - 2AV. OVT : 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



القطاع اخلف ٤٩ طريق الحرية - الإسكندرية - مصر - TATIEAT - TATIEAT - TAT.IVI ... 49 EL Horria Ave .- Alex; Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

| MATERIAL APPROVAL REQUEST | | | | الهيئة المامة طرق و الكبا (GARB) | - | | لموجود الإسكاد | العبلة ال العبلة ال | - | | |
|---|----------------------|---------------|---|---|-------------|------------------|----------------|------------------------|-------------|---------------|-----------|
| Contractor Company | MOHAMAED SHABAN | (AL KASALY) | | Designer | Company | , | | (SPECTRUN | A) Engineer | ing Consultin | g Office |
| | Name | Sign | | C | Date/Seria | I Numb | er | | T | ime | |
| Issued by Contractor | | Brelin - | | | 2023- | 03-25 6 - 1) | | - | 0 | 8:00 | |
| | | | | C1 | C2 | C3 | DD | мм | YY | нн | MM |
| Received by GARB CONSULTANT | Eng. Mazen Essamy | the | MAR | 381 | EW | cs | 26 | 03 | 23 | 08 | 00 |
| CODE-1 | | \$1 to \$21 | | | D1 to | o \$3 | | | КрХ | XX Note | |
| Station Reference | | | | | Depot Re | ference | | For Kilom | eter point | t only Start | Km is use |
| | | | | Work A | | 121-14- | | | | | |
| | | | 3 | ub Element | U Activity | | | | | | |
| Descriptio | n of Materials | | | Fill Laye | r Total Q | luantity | (80000 | m³) | | | |
| Location to be Used | | | | Station (381+000 : 383+000) | | | | | | | |
| Sam | ple only | Yes | ſ | Mat | erials Ty | pe | Fill layers . | | | • | |
| Suppl | ier Name | ELSEWY | | Data S | heet prov | vided | Yes attached | | | | |
| Refere | nce in BoQ | | | Spe | ecificatio | n | | RK SPECIFIC | | | |
| Prequalifica | ation reference | | | Test Sa | mples Re | esults | | | | | |
| Referen | nce Photos | No/Yes | | | Other | | | | | | |
| Comments by: Eng. I | Mazen Essamy | | | Comments by: Eng. Alaa Abd-Allatif (ER) | | | | | | | |
| 1-Quality test Result By Third Party Lab is Approved. | | | 1- All tests were carried-out by third Party lab (COMIBASSAL) | | | | | | | | |
| -This Sample Representi | ve (5000 m3) only. | | | 2-Results | report att | ached a | ind accept | table with | the pro | ject speci | fication |
| | | | | 3-Final apj | oroval is s | ubject | to above i | mentioned | d comme | ents. | |
| | | | | | | | | | | | |

| | APPRO | VAL STATUS | | |
|---------------------------------|-----------------------|------------|----------|---------|
| Organisation | Name | Sign | Date | A-AWC-R |
| Contractor | | Orle | | A |
| QA/QC * | Eng. Mazen Essamy | -1- | 8 | A |
| GARB** | Eng. Mohammed Fayad | • | | |
| Employers Representative | Eng. Alaa Abd-Allatif | , PE | - 30-9-1 | 278 ANC |
| • Designer | 1/ | WT | | PULI |
| Alignment/Bridges: Culvert only | for | | | |



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

Contractor:

Date : QC : شركة القصلي للمقاو لات 30/09/2023 2012-01

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com







Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

| Report NO. | 2012-01 |
|----------------|------------|
| Date of report | 30-09-2023 |

I-Introduction

General Consultant :SYSTRAConsultant :SPECTRUMContractor :نلي للمقاولات:Sample :Upper EmbStation :ST(381+00)Date of Test :26/03/202

SYSTRA SPECTRUM شركة القصلي للمقاولات Upper Embankment. ST(381+000) to st(383+000) 26/03/2023

II- Sample description:

Gravel and sand.

III- Required tests and Results

| Required Test | Results | |
|--|---------------------|-----------------------|
| 1- Grain size analysis and classifica- | Grain size analysis | As showed in appendix |
| tion and Percentage of MATERIALS | Classification | A-1-b |
| FINER THAN No. 200 (75 μm) | Pass From No.200 | 13.6% |
| 2- Modified compaction (Proctor | MDD | 2.103 |
| test) | OMC | 8.4% |
| 3- Liquid limit, plastic limit and plas- | LL | 27.9% |
| ticity index | PL | 25.0% |
| | PI | 2.9% |
| 4- California bearing ratio (CBR) | CBR ratio | 37% |
| | | |

IV- Notes

- 1- Samples were brought by : Contractor.
- 2- Samples are responsible from the Person who brought it.
- 3- The results are applying only for the present r



Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



49 El Horria Ave. Alex,Egypt Tel: 002 033920176 - 002 033931482 Fax :002 033900476 Email : internal-inspection@comibassal.com

eotechnical consultant

Dr. Mohamed Mostafa Badry



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



49 El Horria Ave. Alex,Egypt Tel: 002 033920176 - 002 033931482 Fax :002 033900476 Email : internal-inspection@comibassal.com

الممسوحة ضوئيا بـ CamScanner

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031705/1A

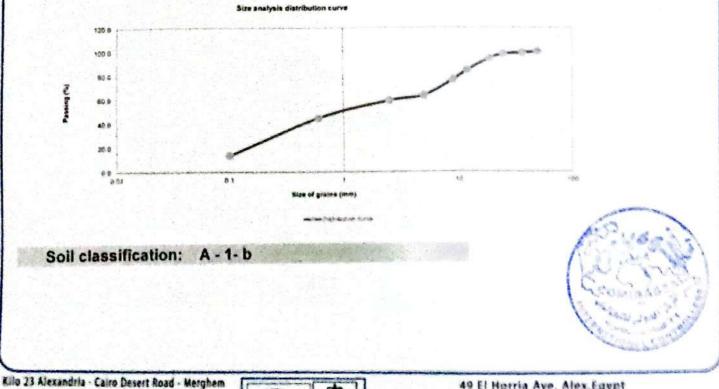
PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

| | WEIGHT | CUMULATIVE | CUMULATIVE | CUMULATIVE | STANDLRD |
|--------|----------|---------------|--------------|-------------|---------------|
| | RETAINED | WEIGHT | PERCENTAGE | PERCENTAGE | SPECIFICATION |
| | (gm) | RETAINED (gm) | RETAINED (%) | PASSING (%) | LIMITS |
| 2 | 0.00 | 0.00 | 0.00 | 100.0 | |
| 1 1/2 | 145.00 | 145.00 | 1.45 | 98.5 | |
| 1 | 91.00 | 236.00 | 2.36 | 97.6 | |
| 3/4 | 364.00 | 600.00 | 6.00 | 94.0 | |
| 1/2 | 976.00 | 1576.00 | 15.77 | 84.2 | |
| 3/8 | 798.00 | 2374.00 | 23.75 | 76.3 | |
| No.4 | 1312.00 | 3686.00 | 36.87 - | 63.1 | |
| No.10 | 69.00 | 69.00 | 6.90 | 58.8 | |
| No.40 | 298.00 | 298.00 | 29.80 | 44.3 - | |
| No.200 | 785.00 | 785.00 | 78.50 - | 13.6 - | |

%

63.1

1000 gm



Tel: 002 03 4704595 - 802 034703391 Email : cludept@combassal.com WebSite : www.combassal.com

COMIBATIAL

WIDE SE



COMIBATIAL

COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report ASTM - D 1557

| Mould Number :- | |
|-------------------|--|
| Volume of mould = | |
| Weight of mould = | |
| G.S = | |

2 2165 cm' 5860 g 2.72 g/cm3

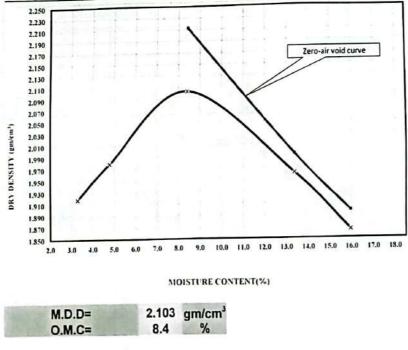
A- Density Calculations :-

| 1 | 2 | 3 | 4 | 5 |
|-------|----------------------|---|--|---|
| 10150 | 10350 | 10797 | 10674 | 10540 |
| 5860 | 5860 | 5860 | 5860 | 5860 |
| 4290 | 4490 | 4937 | 4814 | 4680 |
| 2165 | 2165 | 2165 | 2165 | 2165 |
| 1.982 | 2.074 | 2.280 | 2.224 | 2.162 |
| 1.918 | 1.979 | 2.103 | 1.961 | 1.864 |
| 10.10 | | 2.213 | 1.993 | 1.897 |
| | 5860 4290 2165 | 5860 5860 4290 4490 2165 2165 1.982 2.074 | 5860 5860 5860 4290 4490 4937 2165 2165 2165 1.982 2.074 2.280 | 10100 10100 10100 5860 5860 5860 5860 4290 4490 4937 4814 2165 2165 2165 2165 1.982 2.074 2.280 2.224 1.918 1.979 2.103 1.961 |

B- Moisture Calculations :-

| Weight.of wet soil+container (g) | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|--|-------|-------|-------|-------|-------|
| Weight.of dry soil+container (g) | 243.0 | 240.0 | 233.0 | 224.0 | 220.0 |
| | 30.0 | 31.0 | 31.0 | 30.0 | 32.0 |
| Weight.of container (g) moisture content(%) | 3.3 | 4.8 | 8.4 | 13.4 | 16.0 |
| moisture content(70) | 0.0 | | | | |

C - Dry density-Moisture relationship:-



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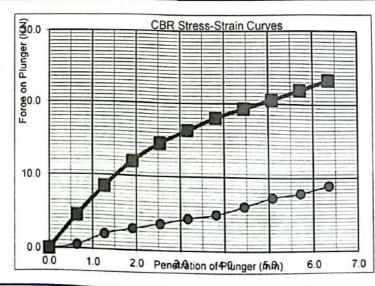




Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

| NO OF E | BLOWS | 56 | | | | | |
|----------------------|------------------------|--------|--------------|---|--------------|--------|--------|
| MOULD | 193 - 938-94940 (1.0s) | 2 | | | | | |
| | NOULD+SOIL | 10294 | | | | | |
| WTOFI | | 5394 | | | | | |
| WT OF S | SOIL | 4900 | | | | | |
| | E OF MOULD | 2160 | | | | | |
| WET DE | | 2.269 | | | | | |
| | | | fore soaking | Weig | ht of Ran | nmer | 4.54Kg |
| TIN NO | | 1 | | | MDD | Kg/m3 | 2.103 |
| WT OF | WET SOIL+TIN | 250.00 | | (| | | |
| | DRY SOIL+TIN | 237 | | | OMC | % | 8.400 |
| WT OF | | 13.00 | | | | | |
| WT OF | TIN | 81 | | | | | |
| WT OF | DRY SOIL | 156 | | | | | |
| MOISTL | JRE CONTENT | 8.3 | | _ | | | |
| DRY DE | INSITY | 2.094 | | | Capacit | y (KN) | 50 |
| | | | Design (II | | | CBR | |
| Pen | Reading (I | | Bearing (K | N) | | 56 | |
| mm | 56 | | 56 | _ | standar | 00 | |
| 0.00 | 0 | | 0.0 | | 0.0 | | |
| 0.64 | 53 | | 0.5 | | 4.5 | | |
| 1.27 | 210 | - | 2.1 | - | 8.5 | | |
| 1.91 | 295 | | 2.9 | | 12.0 | 27 | |
| | 766 | | 3.6 | | 14.5 | 41 | |
| 2.54 | | | 4.2 | in the second | | | N |
| 3.17 | 442 | | 4.3 | - | 16.3 | | |
| 3.17 3.81 | 442 502 | | 4.9 | | 18.0 | | |
| 3.17 | 442 | | | | | | |
| 3.17 3.81 | 442 502 | | 4.9 | | 18.0 | 37 | |
| 3.17 3.81 4.45 | 442 502 620 | | 4.9 6.1 | | 18.0 19.3 | 37 | |





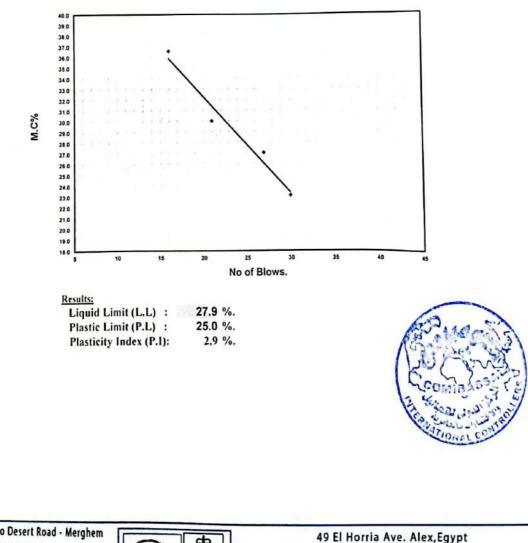
Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



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Liquid and Plastic Limits Test ASTM - D 4318

| Test No | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------|-------|---------|-------|-------|-------|-------|
| Type of test | | Plastic | Limit | | | |
| NO of B. | 30 | 27 | 21 | 16 | | |
| Container No | i | c | 5 | m | F | J |
| Mass of wet soil +container | 54.00 | 45.00 | 50.00 | 52.50 | 64.00 | 47.00 |
| Mass of dry soil +container | 48.00 | 40.00 | 44.00 | 44.60 | 56.80 | 44.00 |
| Mass of container | 22.00 | 21.50 | 24.00 | 23.00 | 30.00 | 31.00 |
| Mass of moisture | 6.00 | 5.00 | 6.00 | 7.90 | 7.20 | 3.00 |
| Mass of dry soil | 26.00 | 18.50 | 20.00 | 21.60 | 26.80 | 13.00 |
| Moisture content | 23.08 | 27.03 | 30.00 | 36.57 | 26.87 | 23.08 |



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Accredited by : Egyption General Authority for Petroleum under No. 34/28-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031708/1A

| Report : | 745 - 1 - Center |
|----------|------------------|
| Date : | 30/09/2023 |

JUMIBATTAL

CHEMICAL ANALYSIS

| General Consultant | : | SYSTRA | | |
|--------------------|---------|----------------------------------|--|--|
| Consultant | : | SPECTRUM | | |
| Contractor | : | شركة القصلي للمقاولات | | |
| Project | : | Electric express train | | |
| Sample | : | FERMA | | |
| Station | : | ST (381 +0.00) : (500 + 382) | | |
| Date of Test | : | 26-3-2023 | | |
| Temperature | : 28 °C | Humidity : 45% | | |

| ANALYSIS | RESULTS | TEST METHOD |
|----------------|----------|-------------|
| ORGANIG MATTER | NEGATIVE | ASTM D 2974 |



LAB DIRECTOR CH/ Mostafa Asker

Mousta

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704095 - 002 034701191 Enail : civdept@com/bassal.com WebSite : evex.com/bassal.com



| APPROVAL REQUEST | | | رى | الهية العامة طرق و الكيار (GARB) | - | AL AL | | العبيد (العبيد (| - | | |
|----------------------|----------------|-----------------|----|--|-----------|--------------------|----|----------------------|--------------|--------------|----------|
| Contractor Company | MOHAMAED SHABA | N (AL KASALY) | | Designer | Compan | Y | | (SPECTRUN | 1) Engineeri | ng Consultin | g Office |
| | Name | Sign | _ | | Date/Seri | al Numbe | r | | Ti | me | |
| Issued by Contractor | | diel 2 | - | | | -03-28 17 - 1) | | - | 08 | 8.00 | |
| Received by GARB | | . 2 | - | ci | 2 | 3 | DD | MM | 11 | HH | MM |
| | MAR | 381 | EW | cs | 29 | 03 | 23 | 08 | 00 | | |

| CODE-1 | \$1 to \$21 | D1 to 53 | Kp XXX Note |
|---------|-------------------|-------------------------|---|
| | Station Reference | Depot Reference | For Kilometer point only Start Km is used |
| 1. 10 M | | Work Activity | |
| | | Sub Element of Activity | |

| Description of Materials | Fill Layer Total Quantity (85000 m ³) | | | | |
|---|--|--|---|--|--|
| Location to be Used | | Station (381+000 : 383+000) | | | |
| Sample only | Yes | Materials Type | Fill layers | | |
| Supplier Name | ELSEWY | Data Sheet provided | Yes attached | | |
| Reference in BoQ | | Specification | EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP | | |
| Prequalification reference | | Test Samples Results | | | |
| Reference Photos | No/Yes | Other | | | |
| Comments by: Eng. Mazen Essamy | | Comments | by: Eng. Alaa Abd-Allatif (ER) | | |
| -Quality test Result By Third Party Lab is Approved. -This Sample Representive (5000 m3) only. | | 1- All tests were carried-out by third Party lab (COMIBASSAL) 2-Results report attached and acceptable with the project specification | | | |
| | | 3-Final approval is subject | to above mentioned comments. | | |

| | APPRO | VAL STATUS | Charles and a second | |
|------------------------------------|-----------------------|------------|----------------------|---------|
| Organisation | Name | Sign | Date | A-AWC-R |
| Contractor | | della to | * | А |
| QA/QC * | Eng. Mazen Essamy | Tis | - | A |
| GARB** | Eng. Mohammed Fayad | | | |
| Employers Representative | Eng. Alaa Abd-Allatif | AP7 | - 30-9-7 | 623 AWC |
| Designer | her | · v | | |
| ** Alignment/Bridges: Culvert only | 101 | / | | |



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

Contractor:

Date : QC : شركة القصلي للمقاولات 30/09/2023 2012-02

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com





Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011

| Report NO. | 2012-02 |
|----------------|------------|
| Date of report | 30-09-2023 |

I-Introduction

| General Consulta | nt : | SYSTRA |
|------------------|------|----------------------------|
| Consultant | • | SPECTRUM |
| Contractor | : | شركة القصلي للمقاولات |
| Sample | : | Upper Embankment. |
| Station | : | ST(381+000) to st(383+000) |
| Date of Test | : | 29/03/2023 |

II- Sample description:

Gravel and sand.

III- Required tests and Results

| analysis As showed in appendix ion A-1-b |
|---|
| ion A-1-b |
| |
| No.200 14.7% |
| 2.105 |
| 8.00% |
| 29.7% |
| 26.5% |
| 3.2% |
| 39% |
| |

IV-Notes

- 1- Samples were brought by : Contractor.
- 2- Samples are responsible from the Person who brought it.
- 3- The results are applying only for the present report.





Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com

Dr. Mohamed Mostafa Badry

Geotechnical consultant

For. DY.M -



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



49 El Horria Ave. Alex,Egypt Tel: 002 033920176 - 002 033931482 Fax :002 033900476 Email : internal-inspection@comibassal.com

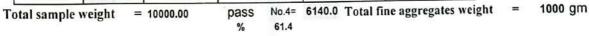
الممسوحة ضوئيا بـ CamScanner

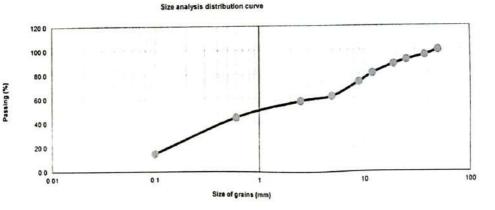


Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

| | WEIGHT RETAINED | CUMULATIVE WEIGHT | CUMULATIVE PERCENTAGE | CUMULATIVE PERCENTAGE | STANDURD SPECIFICATION |
|--------|--------------------|----------------------|--------------------------|--------------------------|---------------------------|
| | (gm) | RETAINED (gm) | RETAINED (%) | PASSING (%) | LIMITS |
| 2 | 0.00 | 0.00 | 0.00 | 100.0 | |
| 1 1/2 | 427.00 | 427.00 | 4.27 | 95.7 | |
| 1 | 401.00 | 828.00 | 8.28 | 91.7 | |
| 3/4 | 353.00 | 1181.00 | 11.81 | 88.2 | |
| 1/2 | 769.00 | 1950.00 | 19.50 | 80.5 | |
| 3/8 | 710.00 | 2660.00 | 26.60 | 73.4 | |
| No.4 | 1200.00 | 3860.00 | 38.60 - | 61.4 | |
| No.10 | 60.00 | 60.00 | 6.00 | 57.7 | line |
| No.40 | 279.00 | 279.00 | 27.90 | 44.3 - | |
| No.200 | 760.00 | 760.00 | 76.00 - | 14.7 - | |







Soil classification: A - 1- b

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2

2165 cm' 5860 g 2.72 g/cm3

Modified Proctor Test Report ASTM - D 1557

| Mould Number :- | |
|-------------------|--|
| Volume of mould = | |
| Weight of mould = | |
| G.S = | |

A- Density Calculations :-

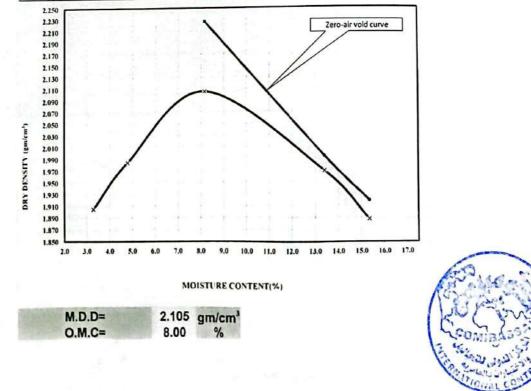
CUMIBALLAL

| | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|-------|-------|-------|-------|-------|
| Weight.of wet soil+mould (g) | 10120 | 10361 | 10789 | 10692 | 10574 |
| Weight.of mould (g) | 5860 | 5860 | 5860 | 5860 | 5860 |
| Weight.of wet soil (g) | 4260 | 4501 | 4929 | 4832 | 4714 |
| Volume of mould (cm ³) | 2165 | 2165 | 2165 | 2165 | 2165 |
| Wet density (g/cm ³) | 1.968 | 2.079 | 2.277 | 2.232 | 2.177 |
| Dry density (g/cm ³) | 1.905 | 1.984 | 2.105 | 1.968 | 1.888 |
| Zero-air Void curve | | | 2.227 | 1.993 | 1.919 |

B- Moisture Calculations :-

| Weight.of wet soil+container (g) | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|----------------------------------|-------|-------|-------|-------|-------|
| Weight.of dry soil+container (g) | 243.0 | 240.0 | 233.5 | 224.0 | 221.0 |
| Weight.of container (g) | 30.0 | 31.0 | 31.0 | 30.0 | 32.0 |
| moisture content(%) | 3.3 | 4.8 | 8.1 | 13.4 | 15.3 |

C - Dry density-Moisture relationship:-



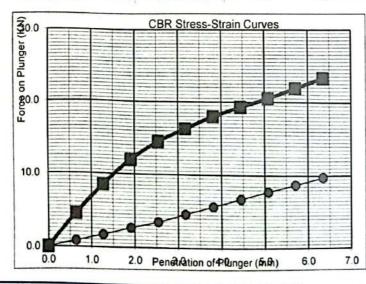
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Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

| NO OF I | | 56 | | | | | |
|--|---|--------------------|---|------|--|---------------|--------|
| MOULD | | 2 | | | | | |
| WT OFN | AOULD+SOIL | 10108 | | | | | |
| WT OF | MOULD | 5207 | | | | | |
| WT OF : | | 4901 | | | | | |
| VOLUM | E OF MOULD | 2180 | | | | | |
| WET DE | | 2.248 | | | | | |
| | | | fore soaking | Weig | ht of Ran | nmer | 4.54Kg |
| TIN NO | | 1 | | | MDD | Kg/m3 | 2.105 |
| WT OF | WET SOIL+TIN | 250.00 | | | | | |
| | DRY SOIL+TIN | 238 | | | OMC | % | 8.000 |
| | WATER | 12.00 | | S | | | |
| WT OF | TIN | 81 | | | | | |
| WT OF | DRY SOIL | 157 | | | | | |
| MOIST | JRE CONTENT | 7.6 | | | | | 50 |
| DRY DE | ENSITY | 2.089 | | | Capaci | Capacity (KN) | |
| Pen | Reading (I | | Bearing (| | r | CBR | |
| 1 011 | 56 | | 56 | | standar | | |
| | 50 | | | - | | | |
| mm | | Contraction of the | 0.0 | | 0.0 | | |
| 0.00 | 0 | | 0.0 | | 0.0 | - | |
| 0.00 0.64 | | | | | 0.0 4.5 8.5 | | |
| 0.00 | 0 85 173 270 | | 0.8 1.7 2.6 | | 4.5 8.5 12.0 | | |
| 0.00 0.64 1.27 1.91 2.54 | 0 85 173 270 355 | | 0.8 1.7 2.6 3.5 | | 4.5 8.5 12.0 14.5 | 26 | |
| 0.00 0.64 1.27 1.91 2.54 3.17 | 0 85 173 270 355 470 | | 0.8 1.7 2.6 3.5 4.6 | | 4.5 8.5 12.0 14.5 16.3 | 26 | |
| 0.00 0.64 1.27 1.91 2.54 3.17 3.81 | 0 85 173 270 355 470 579 | | 0.8 1.7 2.6 3.5 4.6 5.7 | | 4.5 8.5 12.0 14.5 16.3 18.0 | 26 | |
| 0.00 0.64 1.27 1.91 2.54 3.17 | 0 85 173 270 355 470 579 690 | | 0.8 1.7 2.6 3.5 4.6 | | 4.5 8.5 12.0 14.5 16.3 | 26 | |
| 0.00 0.64 1.27 1.91 2.54 3.17 3.81 | 0 85 173 270 355 470 579 | | 0.8 1.7 2.6 3.5 4.6 5.7 | | 4.5 8.5 12.0 14.5 16.3 18.0 | 26 | |
| 0.00 0.64 1.27 1.91 2.54 3.17 3.81 4.45 | 0 85 173 270 355 470 579 690 | | 0.8 1.7 2.6 3.5 4.6 5.7 6.8 | | 4.5 8.5 12.0 14.5 16.3 18.0 19.3 | | |





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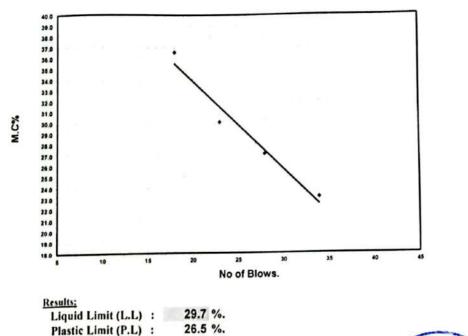
TIMIBATTAL



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031708/1A

Liquid and Plastic Limits Test ASTM - D 4318

| Test No | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------|-------|---------------|-------|-------|-------|-------|
| Type of test | | Plastic Limit | | | | |
| NO of B. | 34 | 28 | 23 | 18 | | |
| Container No | j | c | 5 | m | F | J |
| Mass of wet soil +container | 54.00 | 45.00 | 50.00 | 52.50 | 63.00 | 35.00 |
| Mass of dry soil +container | 48.00 | 40.00 | 44.00 | 44.60 | 55.00 | 32.50 |
| Mass of container | 22.00 | 21.50 | 24.00 | 23.00 | 25.00 | 23.00 |
| Mass of moisture | 6.00 | 5.00 | 6.00 | 7.90 | 8.00 | 2.50 |
| Mass of dry soil | 26.00 | 18.50 | 20.00 | 21.60 | 30.00 | 9.50 |
| Moisture content | 23.08 | 27.03 | 30.00 | 36.57 | 26.67 | 26.32 |



3.2 %.

Plasticity Index (P.I):



Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdegt@comjbassal.com WebSite : www.comibassal.com

INTTABIMUS



COMIBATIAL

COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

| Report : | 745 - 2 - Center |
|----------|------------------|
| Date : | 30/09/2023 |

CHEMICAL ANALYSIS

| General Consultant | : | SYSTRA |
|--------------------|---------|----------------------------------|
| Consultant | : | SPECTRUM |
| Contractor | : | شركة القصلي للمقاولات |
| Project | : | Electric express train |
| Sample | : | FERMA |
| Station | : | ST (381 +0.00) : (500 + 382) |
| Date of Test | : | 29-3-2023 |
| Temperature | : 28 °C | Humidity : 45% |

| ANALYSIS | RESULTS | TEST METHOD |
|----------------|----------|-------------|
| ORGANIG MATTER | NEGATIVE | ASTM D 2974 |



LAB DIRECTOR CH/ Mostafa Asker

Moust

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



| | | | and the second se | | | هدية الإره | | | | |
|-------------------|------------------|--|---|--|---|---|--|---|---|--|
| MOHAMAED SHABA | AN (AL KASALY) | | Designer | Compan | y | | (SPECTRUN | 1) Engineeri | ng Consultin | g Office |
| Name | Sign | | | Date/Seri | al Numbe | r | | Ti | me | |
| | WET Z | ~ | | 2023 | -04-07 | | | 09 | 2.00 | |
| | φ | | | (QT) | 18-1) | | 08:00 | | | |
| | | | C1 | C2 | C3 | DD | мм | ŶŶ | нн | мм |
| Eng. Mazen Essamy | The | MAR | R 381 | EW | cs | 08 | 04 | 23 | 08 | 00 |
| | MOHAMAED SHABA | MOHAMAED SHABAN (AL KASALY) Name Sign | MOHAMAED SHABAN (AL KASALY) Name Sign | لرق و الكبارى (GARB) MOHAMAED SHABAN (AL KASALY) Name Sign CL Eng. Mazen Essamy | MOHAMAED SHABAN (AL KASALY) Name Sign Date/Seri 2023 (QARB) Designer Compan Date/Seri 2023 (QT) Eng. Mazen Essamy | MOHAMAED SHABAN (AL KASALY) Designer Company Name Sign Output 2023-04-07 (QT 18 - 1) C1 Eng. Mazen Essamy C1 C2 | MOHAMAED SHABAN (AL KASALY) Designer Company Name Sign Date/Serial Number 2023-04-07 (QT 18 - 1) Eng, Mazen Essamy | MOHAMAED SHABAN (AL KASALY) Designer Company (SPECTRUM Name Sign Date/Serial Number UURANIA UURANIA UURANIA Name Sign Date/Serial Number UURANIA UURANIA UURANIA Name Sign Date/Serial Number UURANIA UURANIA UURANIA UURANIA UURANIA UURANIA | MOHAMAED SHABAN (AL KASALY) Designer Company (SPECTRUM) Engineeri Name Sign Date/Serial Number Ti UMUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU | MOHAMAED SHABAN (AL KASALY) Designer Company (SPECTRUM) Engineering Consulting Name Sign Date/Serial Number Time UMUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU |

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

| Description of Materials | | Fill Layer Total Quantity (90000 m³) | | | | |
|---|-------------|--|---|--|--|--|
| Location to be Used | | Station (381+000 : 383+000) | | | | |
| Sample only | Yes | Materials Type | Fill layers | | | |
| Supplier Name | ELSEWY | Data Sheet provided | Yes attached | | | |
| Reference in BoQ | | Specification | EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP | | | |
| Prequalification reference | and a start | Test Samples Results | | | | |
| Reference Photos | No/Yes | Other | | | | |
| Comments by: Eng. Mazen Essamy | | Comments by: Eng. Alaa Abd-Allatif (ER) | | | | |
| 1-Quality test Result By Third Party Lab is Approved. | | 1- All tests were carried-out by third Party lab (COMIBASSAL) | | | | |
| 2-This Sample Representive (5000 m3) only. | | 2-Results report attached and acceptable with the project specifications | | | | |
| | | 3-Final approval is subject | to above mentioned comments. | | | |
| | | | | | | |
| | | | | | | |

| | APPRO | VAL STATUS | | |
|--|-----------------------|------------|-----------|---------|
| Organisation | Name | Sign | Date | A-AWC-R |
| Contractor | | ducedin | K- | A |
| QA/QC * | Eng. Mazen Essamy | -+- | 8 | A |
| GARB** | Eng. Mohammed Fayad | | | |
| Employers Representative | Eng. Alaa Abd-Allatif | P | 7 30-9.20 | 23 110 |
| Designer Alignment/Bridges: Culvert only | pr | | | 5 100 |



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011

SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

Contractor:

Date : QC : شركة القصلي للمقاولات 30/09/2023 2012-03

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com





Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011

| Report NO. | 2012-03 |
|----------------|------------|
| Date of report | 30-09-2023 |

I-Introduction

| General Consultant | : | SYSTRA |
|---------------------------|---|----------------------------|
| Consultant | : | SPECTRUM |
| Contractor | : | شركة القصلي للمقاولات |
| Sample | : | Upper Embankment. |
| Station | : | ST(381+000) to st(383+000) |
| Date of Test | : | 08/04/2023 |

II- Sample description:

Gravel and sand.

III- Required tests and Results

| Required Test | Results | | |
|--|---------------------|----------------------|--|
| 1- Grain size analysis and classifica- | Grain size analysis | As showed in appendi | |
| tion and Percentage of MATERIALS FINER THAN No. 200 (75 μ m) | Classification | A-1-b - | |
| | Pass From No.200 | 14.9% | |
| 2- Modified compaction (Proctor | MDD | 2.100 | |
| test) | OMC | 8.4% | |
| 3- Liquid limit, plastic limit and plas- | LL | 27.9% | |
| ticity index | PL | 24.5% | |
| | PI | 3.4% | |
| 4- California bearing ratio (CBR) | CBR ratio | 38% | |
| | | | |

IV-Notes

- 1- Samples were brought by : Contractor.
- 2- Samples are responsible from the Person who brought it.
- 3- The results are applying only for the present report.





Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



Geotechnical consultant

Dr. Mohamed Mostafa Badry



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APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



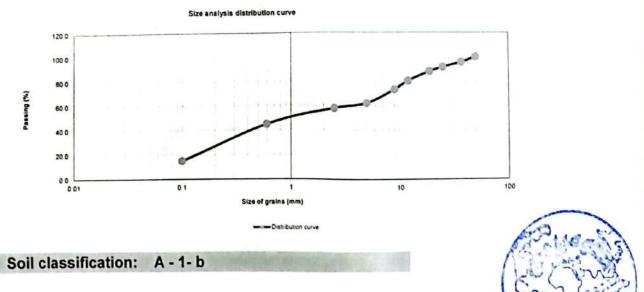


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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

| | WEIGHT RETAINED | CUMULATIVE WEIGHT | CUMULATIVE PERCENTAGE | CUMULATIVE PERCENTAGE | STANDURD SPECIFICATION |
|--------|--------------------|----------------------|--------------------------|--------------------------|---------------------------|
| | (gm) | RETAINED (gm) | RETAINED (%) | PASSING (%) | LIMITS |
| 2 | 0.00 | 0.00 | 0.00 | 100.0 | |
| 1 1/2 | 427.00 | 427.00 | 4.26 | 95.7 | |
| 1 | 401.00 | 828.00 | 8.26 | 91.7 | |
| 3/4 | 353.00 | 1181.00 | 11.79 | 88.2 | |
| 1/2 | 769.00 | 1950.00 | 19.46 | 80.5 | |
| 3/8 | 710.00 | 2660.00 | 26.55 | 73.5 | |
| No.4 | 1119.00 | 3779.00 | 37.72 - | 62.3 | |
| No.10 | 71.00 | 71.00 | 7.10 | 57.9 | |
| No.40 | 280.00 | 280.00 | 28.00 - | 44.8 2 | |
| No.200 | 760.00 | 760.00 | 76.00 - | 14.9 - | |

Total sample weight = 10019.00 pass No.4= 6240.0 Total fine aggregates weight = 1000 gm % 62.3



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Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report ASTM - D 1557

| Mould Number :- | 2 |
|-------------------|------------|
| Volume of mould = | 2165 cm' |
| Weight of mould = | 5860 g |
| G.S = | 2.72 g/cm3 |

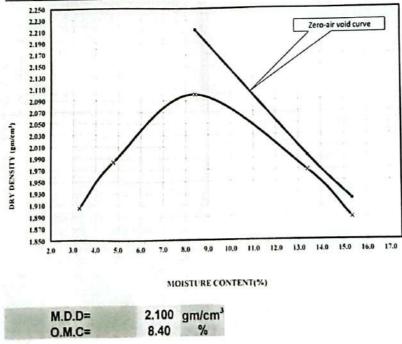
A- Density Calculations :-

| | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|-------|-------|-------|-------|-------|
| Weight.of wet soil+mould (g) | 10120 | 10361 | 10790 | 10692 | 10574 |
| Weight.of mould (g) | 5860 | 5860 | 5860 | 5860 | 5860 |
| Weight.of wet soil (g) | 4260 | 4501 | 4930 | 4832 | 4714 |
| Volume of mould (cm ³) | 2165 | 2165 | 2165 | 2165 | 2165 |
| Wet density (g/cm ³) | 1.968 | 2.079 | 2.277 | 2.232 | 2.177 |
| Dry density (g/cm ³) | 1.905 | 1.984 | 2.100 | 1.968 | 1.888 |
| Zero-air Void curve | | | 2.213 | 1.993 | 1.919 |

B- Moisture Calculations :-

| Weight.of wet soil+container (g) | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|----------------------------------|-------|-------|-------|-------|-------|
| Weight.of dry soil+container (g) | 243.0 | 240.0 | 233.0 | 224.0 | 221.0 |
| Weight.of container (g) | 30.0 | 31.0 | 31.0 | 30.0 | 32.0 |
| moisture content(%) | 3.3 | 4.8 | 8.4 | 13.4 | 15.3 |

C - Dry density-Moisture relationship:-



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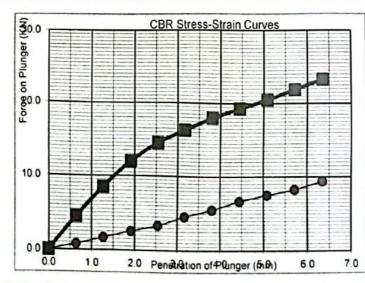




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Report Of CBR Test - ASTM - D 1883

| NO OF BLOWS | | 56 | | | | | |
|--------------------------------------|--------------------------|--------|-------------------|------------|----------------------|--------|--------|
| MOULD NO | | 2 | | | | | |
| WT OFMOULD+SOIL | | 10110 | | | | | |
| WTOF | MOULD | 5207 | | | | | |
| WT OF S | SOIL | 4903 | | | | | |
| VOLUM | E OF MOULD | 2180 | | | | | |
| WET DENSITY | | 2.249 | | | | | |
| | | MC be | fore soaking | Weig | ht of Ran | nmer | 4.54Kg |
| TIN NO | | 1 | | | MDD | Kg/m3 | 2.100 |
| WT OF WET SOIL+TIN | | 250.00 | | | | | |
| WT OF DRY SOIL+TIN | | 237 | | | OMC | % | 8.400 |
| | WATER | 13.00 | | | | | |
| WT OF | TIN | 81 | | | | | |
| WT OF | DRY SOIL | 156 | | | | - | |
| | JRE CONTENT | 8.3 | St. and and | | 0 | | 50 |
| DRY DE | NSITY | 2.076 | | | Capacit | y (KN) | 50 |
| Pen | Reading (I | | Bearing (K | (N) | | CBR | |
| 19725-197 | 56 | | 56 | | standar | 56 | |
| 0.00 | 0 | | 0.0 | | 0.0 | | |
| 0.64 | 80 | | 0.8 | | 4.5 | | |
| 1.27 | 170 | | 1.7 | | 8.5 | | |
| | | | 2.5 | Section 2. | 12.0 | | |
| | 260 | | | | | 25 | |
| 1.91 2.54 | 340 | | 2.5 | | 14.5 | 25 | |
| 1.91 2.54 3.17 | 340 466 | | 4.6 | | 16.3 | _23 | |
| 1.91 2.54 3.17 3.81 | 340 466 560 | | 4.6 5.5 | | 16.3 18.0 | | |
| 1.91 2.54 3.17 | 340 466 560 680 | | 4.6 5.5 6.7 | | 16.3 18.0 19.3 | | |
| 1.91 2.54 3.17 3.81 | 340 466 560 | | 4.6 5.5 | | 16.3 18.0 | 38 | |
| 1.91 2.54 3.17 3.81 4.45 | 340 466 560 680 | | 4.6 5.5 6.7 | | 16.3 18.0 19.3 | | |





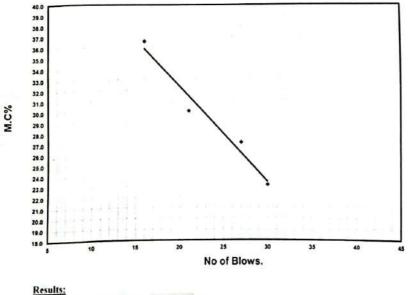
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Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011

Liquid and Plastic Limits Test ASTM - D 4318

| Test No | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------|-------|---------------|-------|-------|-------|-------|
| Type of test | | Plastic Limit | | | | |
| NO of B. | 30 | 27 | 21 | 16 | | |
| Container No | j | c | s | m | F | J |
| Mass of wet soil +container | 54.00 | 45.00 | 50.00 | 52.50 | 64.00 | 47.00 |
| Mass of dry soil +container | 48.00 | 40.00 | 44.00 | 44.60 | 56.80 | 44.10 |
| Mass of container | 22.00 | 21.50 | 24.00 | 23.00 | 30.00 | 31.00 |
| Mass of moisture | 6.00 | 5.00 | 6.00 | 7.90 | 7.20 | 2.90 |
| Mass of dry soil | 26.00 | 18.50 | 20.00 | 21.60 | 26.80 | 13.10 |
| Moisture content | 23.08 | 27.03 | 30.00 | 36.57 | 26.87 | 22.14 |



| cesuits: | |
|-------------------------|---------|
| Liquid Limit (L.L) : | 27.9 %. |
| Plastic Limit (P.L) : | 24.5 %. |
| Plasticity Index (P.I): | 3.4 %. |

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UMIBATTAL



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| Report : | 745 - 3 - Center |
|----------|------------------|
| Date : | 30/09/2023 |

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MIBATTAL

CHEMICAL ANALYSIS

| General Consultant | : | SYSTRA | |
|--------------------|---------|----------------------------------|--|
| Consultant | : | SPECTRUM | |
| Contractor | : | شركة القصلي للمقاولات | |
| Project | : | Electric express train | |
| Sample | : | FERMA | |
| Station | : | ST (381 +0.00) : (500 + 382) | |
| Date of Test | : | 8-4-2023 | |
| Temperature | : 28 °C | Humidity : 45% | |

| ANALYSIS | RESULTS | TEST METHOD |
|----------------|----------|-------------|
| ORGANIG MATTER | NEGATIVE | ASTM D 2974 |



LAB DIRECTOR CH/ Mostafa Asker

Moust

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



| MATERIAL APPROVAL REQUI EST | | - | المستقالمامة الطرق و الكباري (GARE) | alarte lucas | | |
|--|--|---|--|--------------|--|--|
|--|--|---|--|--------------|--|--|

| Contractor Company | IVIONAIVIAED SHABA | AL RASALT / | | Designer | compan | Ŷ | | 1.5r cernon | d rugineern | ing conserting | , onnee |
|----------------------------|--------------------|-------------|-----|------------|-----------|----------|-------|-------------|-------------|----------------|---------|
| | Name | Sign | | 1 | Date/Seri | al Numbe | r | | TI | me | |
| Issued by Contractor | | 101 50 | | 2023-05-05 | | | 08:00 | | | | |
| Issued by Contractor Eng : | | Earoring | | S.G 01-1 | | | | | | | |
| Received by GARB | | 1.0 | | 1 Ct | C2 | C3 | DD | мм | YY | нн | MM |
| CONSULTANT | Eng. Mazen Essamy | -tie | MAR | 381 | EW | cs | 06 | 05 | 23 | 80 | 00 |

| | 51 to 521 | D1 to 53 | Kp XXX Note |
|-------|-------------------|-------------------------|---|
| 0.021 | Station Reference | Depot Reference | For Kilometer point only Start Km is used |
| | | Work Activity | |
| | | Sub Element of Activity | |

| Description of Materials | | Fill Layer Total Quantit | ty (5000 m³) | | |
|---|--|-----------------------------|---|--|--|
| Location to be Used | | From Station (381+000) to 5 | Station (382+500) | | |
| Sample only | Yes | Materials Type | Prepared Sub Grade | | |
| Supplier Name | EL BORG | Data Sheet provided | Yes attached | | |
| Reference in BoQ | Specification | | EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP | | |
| Prequalification reference | | Test Samples Results | | | |
| Reference Photos | No/Yes | Other | | | |
| Comments by: Eng. Mazen Essamy (SPECTRU | M) | Comments by: Eng. Alaa A | Abd-Allatif (ER) | | |
| 1-Quality test Result By Third Party Lab is Appro | Quality test Result By Third Party Lab is Approved. 1- All tests v | | tests were carried-out by third Party lab (COMIBASSAL) | | |
| 2-This Sample Representive (5000 m3) only. | This Sample Representive (5000 m3) only. | | and acceptable with the project specifications. | | |
| | | 3-Final approval is subject | to above mentioned comments. | | |
| | | | | | |
| | | | | | |

| | APPRO | VAL STATUS | | |
|--------------------------|-----------------------|------------|---------------|---------|
| Organisation | Name | Sign | Date | A-AWC-R |
| Contractor | | Chog " | , Rec. | A |
| QA/QC • | Eng. Mazen Essamy | # | 8 | |
| GARB** | Eng. Mohammed Fayad | | | |
| Employers Representative | Eng. Alaa Abd-Allatif | INP | \$1 3 28-5-20 | 27 |
| Designer | | - | | |

** Alignment/Bridges: Culvert only

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

Contractor:

OMIBALLA

Date of report :

QC

شركة القصلي للمقاولات 28/05/2023

1201-1





Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/LA

I- Introduction

P. Press

| General Consultant | 4 | SYSTRA |
|--------------------|---|----------------------------|
| Consultant | : | SPECTRUM |
| Contractor | : | شركة القصلي للمذاولات |
| Sample | : | Prepared Sub-grade |
| Station | ; | St(381+000) to st(382+500) |
| Date of Test | : | 06/05/2023 |
| QC | : | 1201-1 |

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6-Los Angeles test

IV- Results

| 1- Grain size analysis and classifica- | Grain size analysis | As showed in appendix |
|--|---------------------|-----------------------|
| tion | Classification | A-1-a |
| 2- Modified compaction (Proctor | MDD | 2.159 |
| test) | OMC | 6.4% |
| 3- Liquid limit, plastic lim/t and plas- ticity index | u | Non plastic |
| | PL | Non plastic |
| | PI | Non plastic |
| 4- California bearing ratio (CBR) | CBR ratio | 92% |
| 5- Specific gravity (SG), absorption | SSD | 2.573 |
| and degradation | Absorption | 1.2% |
| and degradation | Degradation | 0.2% |
| 6- Los Angeles test | Abrasion ratio | 27.0% |
| 6- Los Angeles test | Abrasion ratio | 21.00 |



Kilo 25 Alexandriz - Cairo Desert Road - Nerphen Ini: 802 83 4704595 - 802 854721391 Enull -contept@combasial.com RefSile: www.combasial.com



Geotechnickl consultant

Dr. Mohamed Mostafa Badry



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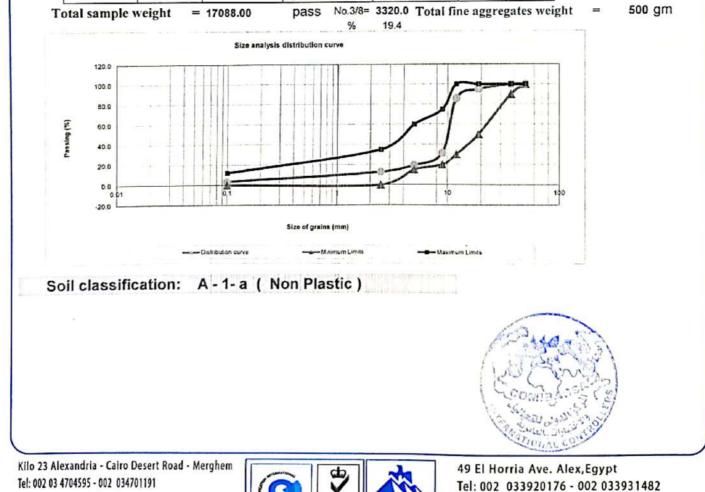
APPENDIX



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

| | WEIGHT RETAINED | CUMULATIVE WEIGHT | CUMULATIVE PERCENTAGE | CUMULATIVE PERCENTAGE | STANDURD SPECIFICAT | ION |
|----------|--------------------|----------------------|--------------------------|--------------------------|------------------------|-----|
| | (gm) | RETAINED (gm) | RETAINED (%) | PASSING (%) | LIMITS | |
| 5 | 0.00 | 0.00 | 0.00 | 100.0 | 100 | 100 |
| 4 | 0.00 | 0.00 | 0.00 | 100.0 | 90 | 100 |
| 3 | 0.00 | 0.00 | 0.00 | 100.0 | 75 | 100 |
| 1.5 | 840.00 | 840.00 | 4.92 | 95.1 | 50 | 100 |
| 3/4 | 9280.00 | 11698.00 | 68.46 | 31.5 | 20 | 75 |
| 3/8 | 2070.00 | 13768.00 | 80.57 | 19.4 | 15 | 60 |
| No.10 | 170.00 | 170.00 | 34.00 | 12.8 | o | 35 |
| - No.200 | 410.00 | 410.00 | 82.00 | 3.5 | 0 | 12 |



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Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould = Weight of mould = G.S =

1 2199 cm 7045 g 2.55 g/cm3

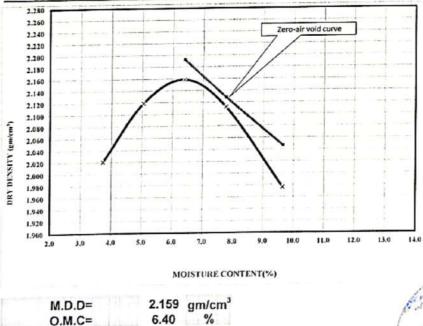
A- Density Calculations :-

| | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|-------|-------|-------|-------|-------|
| Weight.of wet soil+mould (g) | 11655 | 11940 | 12095 | 12050 | 11810 |
| Weight.of mould (g) | 7045 | 7045 | 7045 | 7045 | 7045 |
| Weight.of wet soil (g) | 4610 | 4895 | 5050 | 5005 | 4765 |
| Volume of mould (cm ³) | 2199 | 2199 | 2199 | 2199 | 2199 |
| Wet density (g/cm ³) | 2.096 | 2.226 | 2.296 | 2.276 | 2.167 |
| Dry density (g/cm ³) | 2.021 | 2.119 | 2.159 | 2.112 | 1.976 |
| Zero-air Void curve | | | 2.193 | 2.129 | 2.046 |

B- Moisture Calculations :-

| Weight.of wet soil (g) | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|------------------------|-------|-------|-------|-------|-------|
| Weight.of dry soil (g) | 241.0 | 238.0 | 235.0 | 232.0 | 228.0 |
| moisture content(%) | 3.7 | 5.0 | 6.4 | 7.8 | 9.6 |

C - Dry density-Moisture relationship:-



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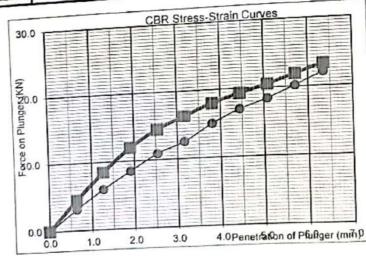
NNV

COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

| | | | | | | Swe | 11 % | |
|------------------|----------|--------|------------|--|--------------|----------------|----------|--------|
| OF BLOW | /S | 56 | | | | 56 | | |
| DULD NO | | 1 | - | | | | | |
| TOFMOUL | D+SOIL | 12015 | | | Start End | 0.00 | | |
| T OF MOU | LD | 7047 | | | Swell | 0.00 | | |
| T OF SOIL | | 4968 | | | owen | | | |
| OLUME OF | MOULD | 2190 | | | | | | - |
| | | 2,268 | | | | ight of Ramr | ner | 4.54Kg |
| ET DENSI | 11 | MCt | efore soak | ing | we | | Kg/m3 | 2.159 |
| | | 1 1 | | | MDD Kg/n | | Rgine | |
| IN NO | | | | | | | % | 6.4 |
| VT OF WET | SOIL+TIN | 250.00 | | | | OMC | 70 | 0.7 |
| NT OF DRY | SOIL+TIN | 242 | | | | | OVING RI | NG |
| NT OF WA | TER | 8.00 | | | | PR | KN KN | 10 |
| NT OF TIN | | | 92 | | | Div/KN | | |
| AT OF DRY SOIL | | 150 | 2.120 | | | | W (KN) | 50 |
| MOISTURE CONTENT | | | | 10 10 10 10 10 10 10 10 10 10 10 10 10 1 | | Capaci | ly (nul) | |
| DRY DENS | ITY | 2.154 | | | | | CBR | |
| DICTOL | | | В | earing (K | N) | | 56 | |
| T | 9 | 7 | 56 | | | standar 0.0 | | |
| Pen mm | 56 | _ | FALSE | | | 4.5 | | |
| 0.00 | 0 | _ | 3.1 | | | 8.5 | | |
| 0.64 | 320 | | 6.0 | | | 12.0 | | |
| 1.27 | 610 | | 8.5 | | | 14.5 | 83 | |
| 1.91 | 870 | | 10.9 | - | | 16.3 | | |
| 2.54 | 1115 | | 12.5 | | | 18.0 | | - |
| 3.17 | 1280 | | 15.0 | | | 19.3 | | |
| 3.81 | 1530 | | 17.0 | | | 20.5 | 92 | |
| 4.45 | 1730 | | 18.4 | | | | | |
| 5.08 | 1878 | | 20.2 | | | 21.9 | | |
| 5.71 | 2060 | | | - | | 23.3 | | |
| | | | 22.1 | | | | | |
| 6.35 | 2250 | | | | | | | |





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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

| weight of comple | 2500 |
|--|------|
| Weight of sample Weight of saturated - dry surface sample (B) | 2524 |
| | 1543 |
| Weight of saturated sample in water (C) | 2495 |
| Weight of dry sample aftre heating (A) | |

Results:-

MIBALLAY

| 1ESUI V | |
|--|-------|
| Saturation surface dry spicific gravity = B / (B-C) | 2.573 |
| | 2.543 |
| Bulk spicific gravity = A / (B-C) Apparent spicific gravity = A /(A-C) | 2.621 |
| Apparent spicific gravity Asorbtion of water = (B-A)/A*100 | 1.2 |
| Asorbtion of water = (27,), and Degradation of aggregate = (2500-A)/ A*100 | 0.2 |
| Degradation of aggregate (2000 v) | |





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ABRASION AND IMPACT " LOS ANGELES " TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

| Speed | Rotate at 30 to 33 Rpm For 500 Revolution |
|---|--|
| Trial Grading | А |
| Intitial Weight (W1) gms | 5000 |
| Weight of tested sample (W2) gms Retained on sieve No.12 | 3650 |
| % abrasion By Weight Passing from Sieve No.12 | 27.0% |



MIBALLAN



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| Report | : | 492 - 1 - Center |
|--------|---|------------------|
| Date | : | 28/05/2023 |

MIBALIAL

TTUTT-

CHEMICAL ANALYSIS

| General Consultant | | SYSTRA |
|--------------------|---------|--------------------------------|
| Consultant | : | SPECTRUM |
| 1.712 | | شركة القصلي للمقاولات |
| Contractor | | Electric express train |
| Project Sample | : | Prepared Sub Grade |
| | : | ST (381 +0.00); (382 + 500) |
| Station | | 6-5-2023 |
| Date of Test | • | Humidity : 40% |
| Temperature | : 24 °C | Humidity . 40% |

| | NAME OF TAXABLE PARTY OF TAXABLE PARTY. | |
|----------------|---|-------------|
| ANALYSIS | RESULTS | TEST METHOD |
| CHLORIDE | 0.0008% | |
| SULPHATE | 0.0027% | ASTM D 2974 |
| ORGANIG MATTER | NEGATIVE | |



LAB DIRECTOR CH/ Mostafa Asker Mousta



| NATERIAL TAPPROVAL REQUEST | | - | (19) | المبتعالمامه طرق و الکیا ر GARB) | • | | دورون دیارد مرکز دیارد | العويام و العويام و اباد العوام | 1 | | |
|----------------------------------|-------------------|-----------------|------|--|------------|----------|---------------------------|---------------------------------------|-------------|--------------|----------|
| Contractor Company | MOHAMAED SHABA | N (AL KASALY) | | Designer | Company | / | | (SPECTRUM |) Engineeri | ng Consultin | g Office |
| | Name | Sign | | (| Date/Seria | al Numbe | r | | Ti | me | |
| Issued by Contractor | Eng: | Charlin Cours | | 2023-05-10 GT 5.G 02-1 | | | | | | | |
| Received by GARB | | 1.8 | | (4) | C2 | C3 | DD | MM | YY | нн | MM |
| CONSULTANT | Eng. Mazen Essamy | 720 | MAR | 381 | EW | cs | 11 | 05 | 23 | 80 | 00 |

| | \$1 to \$21 | D1 to 53 | Kp XXX Note | | | |
|------------|-------------------------|-----------------|---|--|--|--|
| ALL STREET | Station Reference | Depot Reference | For Kilometer point only Start Km is used | | | |
| | | Work Activity | | | | |
| | Sub Element of Activity | | | | | |

| Description of Materials | | y (10000 m³) | | | | |
|---|---|------------------------------|---|--|--|--|
| Location to be Used | From Station (381+000) to Station (382+500) | | | | | |
| Sample only | Yes | Materials Type | Prepared Sub Grade | | | |
| Supplier Name | EL BORG | Data Sheet provided | Yes attached | | | |
| Reference in BoQ | | Specification | EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP | | | |
| Prequalification reference | | Test Samples Results | | | | |
| Reference Photos | No/Yes | Other | | | | |
| Comments by: Eng. Mazen Essamy (SPECTRUM) | | Comments by: Eng. Alaa A | Comments by: Eng. Alaa Abd-Allatif (ER) | | | |
| 1-Quality test Result By Third Party Lab is Approved. | | 1- All tests were carried-ou | 1- All tests were carried-out by third Party lab (COMIBASSAL) | | | |
| 2-This Sample Representive (5000 m3) only. | | 2-Results report attached | 2-Results report attached and acceptable with the project specificatio | | | |
| | | 3-Final approval is subject | to above mentioned comments. | | | |
| | | > | | | | |
| | | | | | | |

| | APPRO | VAL STATUS | | |
|--------------------------|-----------------------|------------|-------------|---------|
| Organisation | Name | Sign | Date | A-AWC-R |
| Contractor | | 5,692 | R. | A |
| QA/QC • | Eng. Mazen Essamy | + | 2 | A |
| GARB** | Eng. Mohammed Fayad | | | |
| Employers Representative | Eng. Alaa Abd-Allatif | hart | 513 28-5-20 | 23 Awc |
| * Designer | - / | 1 | | |

** Alignment/Bridges: Culvert only



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SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

Contractor : Date of report : شركة القصلي للمقاولات 28/05/2023 1201-2

QC

:





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I- Introduction

| General Consultant | : | SYSTRA |
|---------------------------|-----|----------------------------|
| Consultant | : | SPECTRUM |
| Contractor | 1.1 | شركة القصلي للمقاولات |
| Sample | : | Prepared Sub-grade |
| Station | : | St(381+000) to st(382+500) |
| Date of Test | : | 11/05/2023 |
| QC | : | 1201-2 |
| | | |

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test

IV- Results

| 1- Grain size analysis and classifica- | Grain size analysis | As showed in appendix | | |
|--|---------------------|-----------------------|--|--|
| | Classification | A-1-a | | |
| tion 2- Modified compaction (Proctor | MDD | 2.157 | | |
| test) | OMC | 6.7% | | |
| 3- Liquid limit, plastic limit and plas- | LL | Non plastic | | |
| ticity index | PL | Non plastic | | |
| | PI | Non plastic | | |
| 4- California bearing ratio (CBR) | CBR ratio | 93% | | |
| 5- Specific gravity (SG), absorption | SSD | 2.577 | | |
| and degradation | Absorption | 1.2% | | |
| | Degradation | 0.2% | | |
| 6- Los Angeles test | Abrasion ratio | 27.8% | | |
| | | | | |

LAB DIRECTOR man_ Eng / Eman kandil

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



49 El Horria Ave. Alex,Egypt Tel: 002 033920176 - 002 033931482 Fax :002 033900476 Email : internal-inspection@comibassal.com

Geotechnical Consultant

Dr. Mohamed Mostafa Badry



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Egyption General Authority for Petroleum under No. 34/29-11-2011

APPENDIX

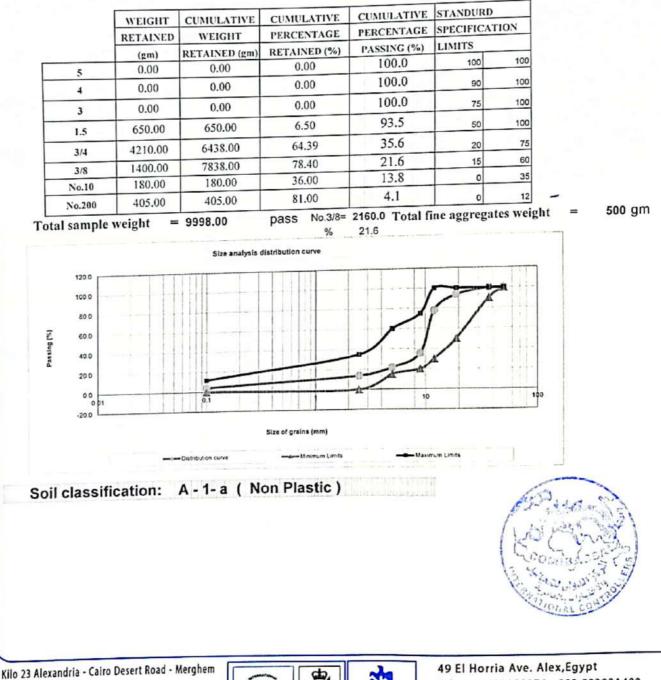
الممسوحة ضونيا بـ CamScanner

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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27



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Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould = Weight of mould = G.S = 1 2199 cm³ 7045 g 2.55 g/cm3

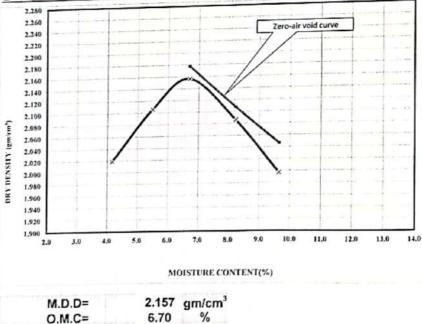
A- Density Calculations :-

| | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|-------|-------|-------|-------|-------|
| | 11670 | 11930 | 12105 | 12010 | 11860 |
| Weight.of wet soil+mould (g) | 7045 | 7045 | 7045 | 7045 | 7045 |
| Weight.of mould (g) | 4625 | 4885 | 5060 | 4965 | 4815 |
| Weight.of wet soil (g) | | 2199 | 2199 | 2199 | 2199 |
| Volume of mould (cm ³) | 2199 | | | 2.258 | 2.190 |
| Wet density (g/cm ³) | 2.103 | 2.221 | 2.301 | | 1.997 |
| Dry density (g/cm ³) | 2.019 | 2.106 | 2.157 | 2.086 | |
| Zero-air Void curve | | | 2.178 | 2.108 | 2.046 |

B- Moisture Calculations :-

| B- Moisture Calculations | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
|--------------------------|-------|-------|-------|-------|-------|
| Weight.of wet soil (g) | | 237.0 | 234.3 | 231.0 | 228.0 |
| Weight.of dry soil (g) | 240.0 | | | 8.2 | 9.6 |
| moisture content(%) | 4.2 | 5.5 | 6.7 | 0.2 | 7.0 |

C - Dry density-Moisture relationship:-





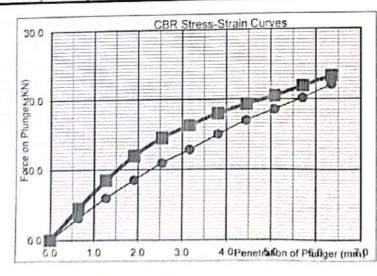
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Report Of CBR Test - ASTM - D 1883

| NO OF BLOWS 56 | | | | SVIS | el % | | |
|-----------------------------|-------------|--------|----------------|--------|------------------------|----------|--------|
| MOULD NO | | | | - | 56 | | |
| | ULD+SOIL | 12035 | | Start | 0.00 | | |
| | | 7047 | | End | 0.00 | | |
| NT OF MO NT OF SO | | 4988 | | Swell | 0.00 | | |
| | OF MOULD | 2190 | | | | | |
| | | 2 278 | | | | | |
| ET DENS | SILY | | halana saakuna | We | ight of Ramr | ner | 4.54Kg |
| | | | before soaking | | MDD | Kg/m3 | 2.157 |
| TN NO | | 1 | | | MOU | | |
| T OF WE | ET SOIL+TIN | 250.00 | | | 0110 | % | 6.7 |
| | Y SOLATIN | 241 | | | OMC | 70 | |
| AT OF W | | 9.00 | | | 5.5 | OVING RI | NG |
| | 4 | 92 | | | PROVING RING Div/KN | | |
| NT OF TH NT OF OF Y SOIL | | 149 | 2.125 | | | | |
| WC STURE CONTENT | | 50 | | | Capacity | (KN) | 50 |
| CAY DENSITY | | 2.148 | | | Gapaon | (1.1.1) | |
| | | | Bearing | - (KND | | CBR | |
| Pen mm | 9 | 7 | 56 | 11010 | standar | 56 | |
| | 55 | | FALSE | | 0.0 | | |
| 0 00 | 0 | | 3.1 | | 4.5 | | |
| 0.54 | 320 | | 60 | | 8.5 | | |
| 1.27 | 610 | | 85 | | 12.0 | | |
| 1.91 | 870 | | 10.9 | | 14.5 | 83 | |
| 2.54 | 1115 | | 12.8 | | 16.3 | | |
| 3.17 | 1310 | | 15.0 | | 18.0 | | |
| 3.81 | 1530 | | 17.0 | | 19.3 | | |
| 4.45 | 1730 | | 18.6 | | 20.5 | 93 | |
| 5.08 | 1895 | | | | | | |
| 5.71 | 2060 | | 20.2 | | 21.9 | | |
| 6.35 | 2250 | | 22.1 | | 23 3 | | |





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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

| | 2500 |
|--|------|
| Weight of sample | |
| Weight of saturated - dry surface sample (B) | 2525 |
| | 1545 |
| Weight of saturated sample in water (C) | 2496 |
| Weight of dry sample aftre heating (A) | 2400 |

Results:-

OMIBAZZA

| Saturation surface dry spicific gravity = B / (B-C) | 2.577 | |
|---|-------|--|
| Bulk spicific gravity = A / (B-C) | 2.547 | |
| Apparent spicific gravity = A /(A-C) | 2.625 | |
| Asorbtion of water = (B-A)/A*100 | 1.2 | |
| Degradation of aggregate = (2500-A)/ A*100 | 0.2 | |



