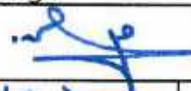
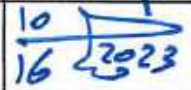


ZHR - 6-176

|                                    |                                                                                                                                                                 |  |                                                                                                                |  |                                                                                                                        |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------|
| UNIVERSAL<br>INSPECTION<br>REQUEST | <br>ENGINEERING CONSULTING OFFICE<br>المكتب الاستشاري الهندسي<br>ل.د خالد شعيب |  | <br>SUSTRA<br>مصر<br>SHARER |  | <br>الهيئة العامة<br>للطرق والكباري |
|                                    |                                                                                                                                                                 |  |                                                                                                                |  |                                                                                                                        |

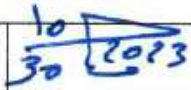
|                                                                                          |                             |                                                                                   |                          |     |                                                       |     |             |    |    |      |    |    |
|------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|--------------------------|-----|-------------------------------------------------------|-----|-------------|----|----|------|----|----|
| <b>RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24</b>                  |                             |                                                                                   |                          |     |                                                       |     |             |    |    |      |    |    |
| The Work described below will be complete and ready for inspection at planned time shown |                             |                                                                                   |                          |     |                                                       |     |             |    |    |      |    |    |
| Contractor Company                                                                       | EL . ZHOOR . COMPANY        |                                                                                   |                          |     | Designer Company*                                     |     | KK CONSULT. |    |    |      |    |    |
| Issued by Contractor                                                                     | Name                        | Sign                                                                              | Date                     |     | Time                                                  |     |             |    |    |      |    |    |
|                                                                                          | Eng : Mahmoud Elkhilwy      |  | 16 - 10 - 2023           |     |                                                       |     |             |    |    |      |    |    |
| Received by Employers Representative                                                     | M.A                         |  | 10/16/2023               | UIR | C1                                                    | C2  | C3          | DD | MM | YY   | HH | MM |
|                                                                                          |                             |                                                                                   |                          |     | K.P536                                                | E W | C S         | 16 | 10 | 2023 |    |    |
| CODE-1                                                                                   | S1 to S21 Station Reference |                                                                                   | D1 to S3 Depot Reference |     | Kp XXX Note For Kilometer point only Start Km is used |     |             |    |    |      |    |    |
| CODE - 2                                                                                 | Work Activity               |                                                                                   |                          |     |                                                       |     |             |    |    |      |    |    |
| CODE - 3                                                                                 | Sub Element of Activity     |                                                                                   |                          |     |                                                       |     |             |    |    |      |    |    |

| EXPLANATION OF WORK TO BE INSPECTED |                |                                    |
|-------------------------------------|----------------|------------------------------------|
| Description                         | Element        | Item                               |
| Earth Works                         | Fill ( FERMA ) | From St ( 536+720 ) to ( 536+800 ) |

| INSPECTION DETAILS The Following will be ready at the Planned Inspection Time |                         |
|-------------------------------------------------------------------------------|-------------------------|
| Planned Inspection Date                                                       | Planned Inspection Time |
| 16.10.2023                                                                    |                         |

| COMPLIANCE EVIDENCE Must be Included as appropriate |                                                |                                               |                                             |
|-----------------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| Checklist Attached <input type="checkbox"/>         | Test Results Attached <input type="checkbox"/> | Calibration Attached <input type="checkbox"/> | Other as indicated <input type="checkbox"/> |
| Drawing Reference                                   | ITP Reference                                  | MS Reference                                  |                                             |
|                                                     |                                                |                                               |                                             |

| Civil                           | Survey                          | Material                        |
|---------------------------------|---------------------------------|---------------------------------|
| momentum inspection is approved | momentum inspection is approved | momentum inspection is approved |
|                                 |                                 |                                 |

| INSPECTION RESULT              |                    |                                                                                     |      |      |         | Approval Status | Please Tick if Not Attend |
|--------------------------------|--------------------|-------------------------------------------------------------------------------------|------|------|---------|-----------------|---------------------------|
| Organisation                   | Name               | Sign                                                                                | Date | Time | A-AWC-R |                 |                           |
| Contractor                     | ENG : M . ELKHLAWY |  |      |      |         |                 |                           |
| QA/QC*                         |                    |                                                                                     |      |      |         |                 |                           |
| GARB**                         | ENG : KHALED FAWZY |  |      |      | A       |                 |                           |
| Employers Representative Notes |                    |                                                                                     |      |      |         |                 |                           |
| Employers Representative Sign  | M.A                |  |      |      | A       |                 |                           |

\* Designer  
\*\* Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع ( فوكه - مطروح )  
 شركة (الزهور)  
 من المحطة ( 536+720 ) إلى المحطة ( 536+800 )

| ENGINEERING CONSULTING OFFICE<br>مكتب الاستشارات الهندسية<br>إ.م. س.م.م.م. |  |            |       |       |       |        |              |             |       |        |       |       | LAYER LEVEL |    | 0 |  | PGL |  |  |  | LEFT SIDE |  |  |  |  | RIGHT SIDE |  |  |  |  |
|----------------------------------------------------------------------------|--|------------|-------|-------|-------|--------|--------------|-------------|-------|--------|-------|-------|-------------|----|---|--|-----|--|--|--|-----------|--|--|--|--|------------|--|--|--|--|
| STATION                                                                    |  | ACT. WIDTH | 13.44 | 10    | 5     | S.E. % | DESIGN LEVEL | FERMA LEVEL | CL    | S.E. % | 5     | 9.94  | ACT. WIDTH  |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| 536+720                                                                    |  |            | 59.93 | 60.07 | 60.27 |        | 61.37        | 60.47       | 60.47 |        | 60.27 | 60.07 |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Act.                                                                       |  |            |       |       |       | -4%    |              |             |       |        | -4%   |       |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Diff.                                                                      |  |            | +1    | ✓     | +2    |        |              |             |       | +1     |       | -3    | +2          | -1 |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| 536+740                                                                    |  |            | 59.99 | 60.13 | 60.33 |        | 61.43        | 60.53       | 60.53 |        | 60.33 | 60.13 |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Act.                                                                       |  |            |       |       |       | -4%    |              |             |       |        | -4%   |       |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Diff.                                                                      |  |            | -1    | +1    | +2    |        |              |             |       | +2     |       | ✓     | +3          | -1 |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| 536+760                                                                    |  |            | 60.05 | 60.19 | 60.39 |        | 61.49        | 60.59       | 60.59 |        | 60.39 | 60.19 | 60.59       |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Act.                                                                       |  |            |       |       |       | -4%    |              |             |       |        | -4%   |       |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Diff.                                                                      |  |            | -1    | ✓     | ✓     |        |              |             |       | +1     |       | +1    | ✓           | ✓  |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| 536+780                                                                    |  |            | 60.11 | 60.25 | 60.45 |        | 61.55        | 60.65       | 60.65 |        | 60.45 | 60.25 | 60.65       |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Act.                                                                       |  |            |       |       |       | -4%    |              |             |       |        | -4%   |       |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Diff.                                                                      |  |            | -1    | +2    | +2    |        |              |             |       | ✓      |       | +2    | +1          | -2 |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| 536+800                                                                    |  |            | 60.17 | 60.31 | 60.51 |        | 61.61        | 60.71       | 60.71 |        | 60.51 | 60.31 | 60.71       |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Act.                                                                       |  |            |       |       |       | -4%    |              |             |       |        | -4%   |       |             |    |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |
| Diff.                                                                      |  |            | +2    | +3    | +1    |        |              |             |       | ✓      |       | +1    | +2          | ✓  |   |  |     |  |  |  |           |  |  |  |  |            |  |  |  |  |



Approved  
 (Signature)

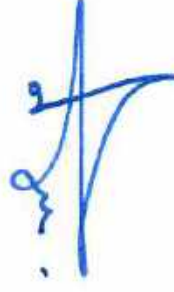
| Layer Zone                  |    | MS FROM ST.(536+700) TO ST.(536+780) |         |         |         |         | Layer No. |  |
|-----------------------------|----|--------------------------------------|---------|---------|---------|---------|-----------|--|
| Middle Empe Upper Empankemt | 10 | Station                              | 536+700 | 536+720 | 536+740 | 536+760 | 536+780   |  |
|                             |    | DESIGN LEVEL                         | 61.31   | 61.37   | 61.43   | 61.49   | 61.55     |  |
|                             |    | FERMA LEVEL                          | 60.41   | 60.47   | 60.53   | 60.59   | 60.65     |  |
|                             |    | CUT LEVEL                            | 59.11   | 59.66   | 59.90   | 59.87   | 58.85     |  |
|                             |    | DIFF ( FERMA - CUT )                 | 1.30    | 0.81    | 0.63    | 0.72    | 1.79      |  |
|                             |    | 0                                    | 60.41   | 60.47   | 60.53   | 60.59   | 60.65     |  |
|                             | 9  | -0.25                                | 60.16   | 60.22   | 60.28   | 60.34   | 60.40     |  |
|                             |    | -0.5                                 | 59.91   | 59.97   | 60.03   | 60.09   | 60.15     |  |
|                             |    | -0.75                                | 59.66   | 59.72   |         |         | 59.90     |  |
|                             |    | -1                                   | 59.41   |         |         |         | 59.65     |  |
|                             |    | -1.25                                | 59.16   |         |         |         | 59.40     |  |
|                             | 8  | -1.5                                 |         |         |         |         | 59.15     |  |
|                             |    | -1.75                                |         |         |         |         | 58.90     |  |
|                             |    | -2                                   |         |         |         |         |           |  |
|                             | 7  | -2.5                                 |         |         |         |         |           |  |
|                             |    |                                      |         |         |         |         |           |  |

MS Approved }  
 acc. to Design Profile } *[Signature]*  
 Rev-10

## C.L DATA

| Station    | Easting     | Northing    |
|------------|-------------|-------------|
| 536+720.00 | 290300.9168 | 943924.3237 |
| 536+740.00 | 290281.612  | 943929.551  |
| 536+760.00 | 290262.3072 | 943934.7782 |
| 536+780.00 | 290243.0024 | 943940.0055 |
| 536+800.00 | 290223.6976 | 943945.2328 |

*Pme Ashraf*



# TYPICAL WIDTH

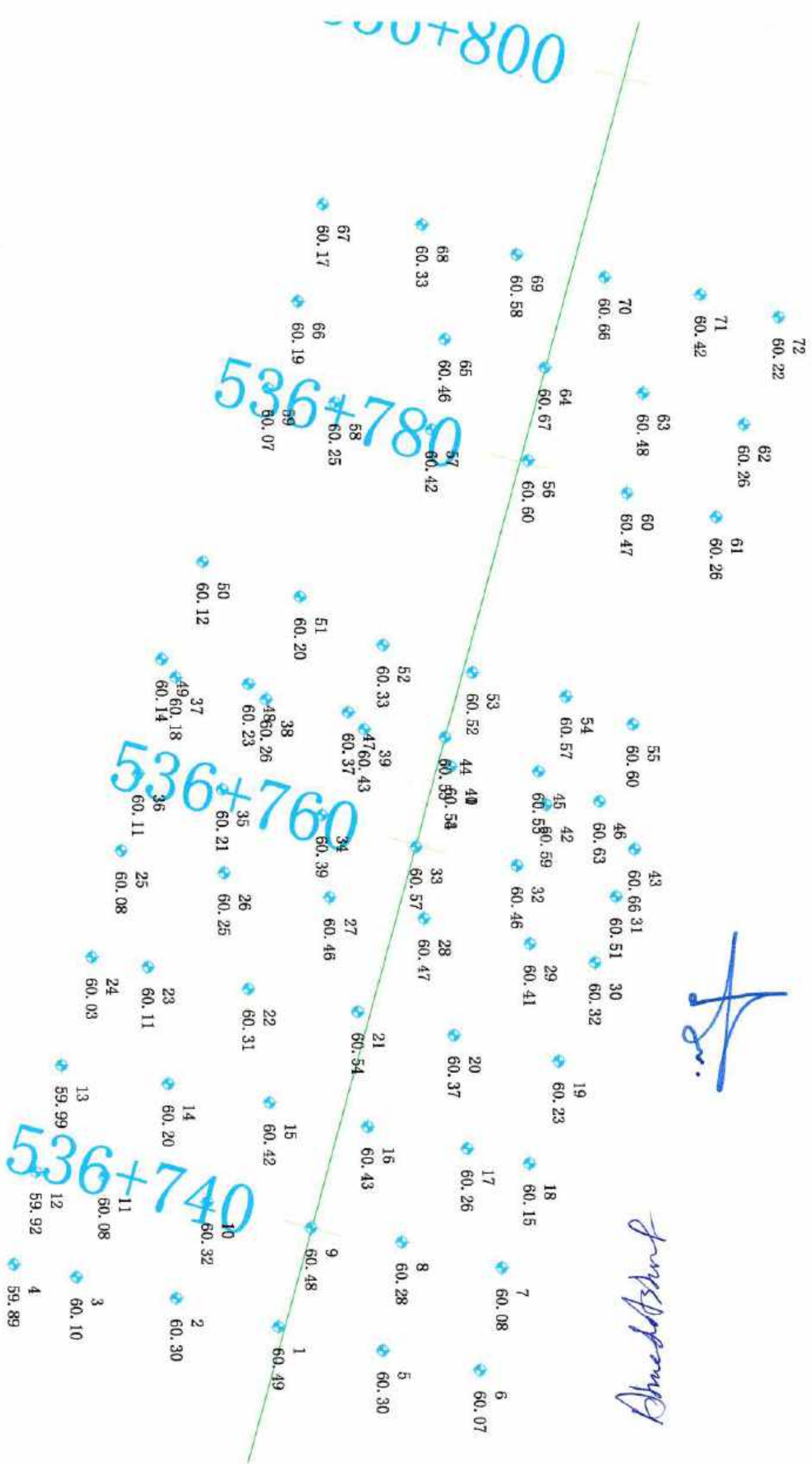
| layer | slope  | left  | slop   | right | TOTAL |
|-------|--------|-------|--------|-------|-------|
| 0     | -4.00% | 13.44 | -4.00% | 9.94  | 23.38 |
| -0.25 | -4.00% | 13.84 | -4.00% | 10.34 | 24.18 |
| -0.5  | -4.00% | 14.24 | -4.00% | 10.74 | 24.98 |
| -0.75 | -4.00% | 14.64 | -4.00% | 11.14 | 25.78 |
| -1    | -4.00% | 15.04 | -4.00% | 11.54 | 26.58 |
| -1.25 | -4.00% | 5     | -4.00% | 5     | 10    |
| -1.5  | 0%     | 14.88 | 0%     | 11.59 | 26.47 |

*Amir Adnan*

*inf*

Dr.

Dr. S. S. S. S.



| POINT | NORTH      | EAST       | ELEV   |
|-------|------------|------------|--------|
| 1     | 943927.871 | 290286.569 | 60.494 |
| 2     | 943922.746 | 290285.151 | 60.296 |
| 3     | 943917.725 | 290284.096 | 60.096 |
| 4     | 943914.58  | 290283.463 | 59.887 |
| 5     | 943933.115 | 290287.744 | 60.304 |
| 6     | 943938     | 290288.693 | 60.072 |
| 7     | 943939.084 | 290283.552 | 60.081 |
| 8     | 943934.047 | 290282.285 | 60.28  |
| 9     | 943929.504 | 290281.583 | 60.476 |
| 10    | 943924.287 | 290280.311 | 60.324 |
| 11    | 943919.122 | 290279.04  | 60.083 |
| 12    | 943915.696 | 290278.812 | 59.923 |
| 13    | 943916.978 | 290273.458 | 59.991 |
| 14    | 943922.333 | 290274.375 | 60.196 |
| 15    | 943927.428 | 290275.315 | 60.421 |
| 16    | 943932.35  | 290276.496 | 60.434 |
| 17    | 943937.352 | 290277.573 | 60.262 |
| 18    | 943940.47  | 290278.3   | 60.148 |
| 19    | 943941.948 | 290273.163 | 60.234 |
| 20    | 943936.684 | 290271.876 | 60.367 |
| 21    | 943931.858 | 290270.712 | 60.537 |
| 22    | 943926.368 | 290269.569 | 60.311 |
| 23    | 943921.325 | 290268.48  | 60.114 |
| 24    | 943918.494 | 290267.987 | 60.031 |
| 25    | 943919.969 | 290262.63  | 60.085 |
| 26    | 943925.146 | 290263.737 | 60.25  |
| 27    | 943930.44  | 290264.948 | 60.456 |
| 28    | 943935.174 | 290265.988 | 60.47  |
| 29    | 943940.494 | 290267.253 | 60.414 |
| 30    | 943943.763 | 290268.183 | 60.322 |
| 31    | 943944.824 | 290264.866 | 60.51  |
| 32    | 943939.841 | 290263.32  | 60.464 |
| 33    | 943934.773 | 290262.4   | 60.566 |
| 34    | 943930.05  | 290260.806 | 60.391 |

*James Smith*

*[Signature]*

| POINT | NORTH      | EAST       | ELEV   |
|-------|------------|------------|--------|
| 35    | 943925.046 | 290259.542 | 60.207 |
| 36    | 943920.825 | 290258.765 | 60.108 |
| 37    | 943922.719 | 290253.89  | 60.183 |
| 38    | 943927.255 | 290255.001 | 60.261 |
| 39    | 943932.174 | 290256.49  | 60.428 |
| 40    | 943936.526 | 290258.358 | 60.533 |
| 41    | 943936.526 | 290258.349 | 60.537 |
| 42    | 943941.321 | 290260.251 | 60.586 |
| 43    | 943945.757 | 290262.48  | 60.655 |
| 44    | 943936.24  | 290256.882 | 60.527 |
| 45    | 943940.932 | 290258.586 | 60.554 |
| 46    | 943943.986 | 290260.077 | 60.626 |
| 47    | 943931.379 | 290255.639 | 60.372 |
| 48    | 943926.375 | 290254.224 | 60.226 |
| 49    | 943922.013 | 290252.987 | 60.135 |
| 50    | 943924.075 | 290248.082 | 60.116 |
| 51    | 943928.955 | 290249.837 | 60.198 |
| 52    | 943933.121 | 290252.251 | 60.332 |
| 53    | 943937.609 | 290253.609 | 60.523 |
| 54    | 943942.315 | 290254.803 | 60.571 |
| 55    | 943945.665 | 290256.207 | 60.596 |
| 56    | 943940.404 | 290242.915 | 60.598 |
| 57    | 943935.561 | 290241.386 | 60.425 |
| 58    | 943930.699 | 290240.038 | 60.249 |
| 59    | 943927.355 | 290239.332 | 60.07  |
| 60    | 943945.369 | 290244.56  | 60.473 |
| 61    | 943949.86  | 290245.762 | 60.255 |
| 62    | 943951.241 | 290241.08  | 60.259 |
| 63    | 943946.179 | 290239.52  | 60.476 |
| 64    | 943941.254 | 290238.258 | 60.669 |
| 65    | 943936.237 | 290236.826 | 60.455 |
| 66    | 943928.859 | 290234.947 | 60.191 |
| 67    | 943930.113 | 290230.058 | 60.171 |
| 68    | 943935.089 | 290231.078 | 60.33  |

*Amir Ashraf*

*[Signature]*

| POINT | NORTH      | EAST       | ELEV   |
|-------|------------|------------|--------|
| 69    | 943939.832 | 290232.559 | 60.576 |
| 70    | 943944.247 | 290233.698 | 60.663 |
| 71    | 943949.071 | 290234.565 | 60.42  |
| 72    | 943952.983 | 290235.676 | 60.215 |

*Alonso A. Del*

*[Signature]*

# MATERIAL INSPECTION REQUEST

المركز العام  
للطرق والكباري  
(GARB)



|                      |                        |      |                                                                                                                                                                                                                                          |             |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
|----------------------|------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|----|----|----|----|----|----|--|--|--|----|---|------|--|--|--|
| Contractor Company   | El . Zhoor . Company   |      | Designer Company                                                                                                                                                                                                                         | KK CONSULT. |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
| Issued by Contractor | Name                   | Sign | Date                                                                                                                                                                                                                                     | COD         |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
|                      | Eng \ Mahmoud elkhlawy |      | 12-4-2023                                                                                                                                                                                                                                | ZH 21       |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
| Received by ER       |                        | MIR  | <table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>12</td> <td>4</td> <td>2023</td> <td></td> <td></td> </tr> </table> | C1          | C2   | C3 | DD | MM | YY | HH | MM |  |  |  | 12 | 4 | 2023 |  |  |  |
| C1                   | C2                     | C3   | DD                                                                                                                                                                                                                                       | MM          | YY   | HH | MM |    |    |    |    |  |  |  |    |   |      |  |  |  |
|                      |                        |      | 12                                                                                                                                                                                                                                       | 4           | 2023 |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |

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

| Description of Materials | Fill material results |         |         |              |                 |
|--------------------------|-----------------------|---------|---------|--------------|-----------------|
| Location to be Used      | fill ( 0 )            | 536+680 | 536+560 | FILL (-0.5)  | 536+720 536+680 |
|                          | FLAT (-1.5)           | 536+800 | 536+780 | FILL (-0.75) | 536+800 536+780 |
|                          | FLAT (-1)             | 536+700 | 536+680 | FILL (-0.25) | 536+720 536+680 |
|                          | FILL (-1.25)          | 536+800 | 536+780 | FILL (-0.5)  | 536+800 536+780 |
|                          | FILL (-0.75)          | 536+700 | 536+680 | FILL (-0.25) | 536+800 536+780 |
|                          | FILL (-1)             | 536+800 | 536+780 | FILL ( 0 )   | 536+720 536+680 |
|                          |                       |         |         | FILL ( 0 )   | 536+800 536+720 |

|                  |                     |       |          |              |      |
|------------------|---------------------|-------|----------|--------------|------|
| MAR Approval No  |                     |       | Date     |              |      |
| Supplier Name    |                     |       |          |              |      |
| Test Requirement | Specification       |       | Clause   |              |      |
| Reference Photos | Yes attached / No   | Other |          |              |      |
| Item             | Description         | Unit  | Quantity | Arrival Date | Note |
| 1                | L.L & P.L & O.M.C % | m3    | 5000     | 9 - 4 - 2023 |      |
| 2                | Proctor             | m3    | 5000     | 9 - 4 - 2023 |      |
| 3                | Classification      | m3    | 5000     | 9 - 4 - 2023 |      |
| 4                | Seive analysis      | m3    | 5000     | 9 - 4 - 2023 |      |

|                                                                                                                                               |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comments by:                                                                                                                                  | Comments by: |
| Asample has been taken form fill material by KK office to (mansor ali hasan) lab and the results founded meet the specifcontions and accepted |              |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | Mahmoud elkhlawy |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Comment by ER            |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST

المساحة العامة  
لشركة الطرق والكباري  
(GARB)



وزارة النقل  
Ministry of Transport

ENGINEERING CONSULTING OFFICE  
المشقة الاستشارية الهندسية  
إ.م. خالد الشاذلي



|                      |                        |      |                  |                                                                                                                                                                                                                                          |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
|----------------------|------------------------|------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|----|----|----|----|----|----|--|--|--|----|---|------|--|--|
| Contractor Company   | EL ZHOOR COMPANY       |      | Designer Company | KK                                                                                                                                                                                                                                       |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
| Issued by Contractor | Name                   | Sign | Date             | cod                                                                                                                                                                                                                                      |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
|                      | ENG : MAHMOUD ELKHLAWY |      | 12 - 4 - 2023    | Zh 21                                                                                                                                                                                                                                    |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
| Received by ER       |                        |      | MAR              | <table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>12</td> <td>4</td> <td>2023</td> <td></td> <td></td> </tr> </table> | C1   | C2 | C3 | DD | MM | YY | HH | MM |  |  |  | 12 | 4 | 2023 |  |  |
| C1                   | C2                     | C3   | DD               | MM                                                                                                                                                                                                                                       | YY   | HH | MM |    |    |    |    |    |  |  |  |    |   |      |  |  |
|                      |                        |      | 12               | 4                                                                                                                                                                                                                                        | 2023 |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |

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

| Description of Materials | Soil classify ( A 1 a ) |                    |                         |        |
|--------------------------|-------------------------|--------------------|-------------------------|--------|
| Location to be Used      | 536+000 to 537+000      |                    |                         |        |
| item                     | Spacification           | Test Requirment    | Test Result Attachment  | Remark |
| 1                        | ASTM D 75               | Aggregate Sampling | According Spacification |        |
| 2                        | ASTM C 136              | Sieve Analysis     | According Spacification |        |
| 3                        | ASTM D 1440             | Passing Sieve #200 | 8.3 %                   |        |
| 4                        | ASTM D 4318             | Atterberg Limit    | NO <sub>n</sub>         |        |
| 5                        | ASTM D 2974             | Moisture Content   | 6.5 %                   |        |
| 6                        | ASTM D 1557             | Modifid Proctor    | 2.156                   |        |
| 7                        | ASTM D 1883             | C B R              | 48.20%                  |        |
| Comments by:             |                         | Comments by:       |                         |        |
|                          |                         |                    |                         |        |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | MAHMOUD ELKHLAWY |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only



Ministry of Water Resources  
Kingdom of Saudi Arabia



Project Name: ...  
Project Location: ...  
Project No: ...

Operating Unit

Maximum Load

PERFORMANCE INDEX TEST RESULTS OF SAND

|                      |             |  |  |  |  |
|----------------------|-------------|--|--|--|--|
| TESTING DATE         | 09/02/2023  |  |  |  |  |
| LOCATION             | K.P 536+000 |  |  |  |  |
| NAME COMPANY         | Ezrahar     |  |  |  |  |
| Ref. Instruction No. |             |  |  |  |  |

Testing Unit

| Selection of bulk materials |     |       |       | SAND PROPERTIES (%) |      | SAND NO. |       | QTR  |     | Index class |
|-----------------------------|-----|-------|-------|---------------------|------|----------|-------|------|-----|-------------|
| stone size                  | 2   | 1.5   | 1     | 43                  | 34   | 03       | 0.4   | PASS |     | soil class  |
| 0.075                       | 0.0 | 145.0 | 100.0 | 10.1                | 34.0 | 370.0    | 100.0 |      |     | 4.5         |
| retention Retained (%)      |     |       |       | 10.1                | 34.0 | 100.0    | 100.0 |      | PER | 2.15        |
| retention Retained %        |     |       |       | 10.0                | 32.7 | 10.0     | 65.0  |      | WC  | 0.30        |
| retention Retained %        |     |       |       |                     |      |          |       |      | GR  | 48.20       |

| Material properties    |       |        |        | SAND PROPERTIES (%) |  | SAND NO. |  | QTR |
|------------------------|-------|--------|--------|---------------------|--|----------|--|-----|
| stone size             | 10    | 40     | 200    |                     |  |          |  |     |
| retention Retained (%) | 50.00 | 224.00 | 272.00 |                     |  |          |  |     |
| retention Retained %   |       |        |        |                     |  |          |  |     |
| retention Retained %   |       |        |        |                     |  |          |  |     |

| Material properties  |      |      |      |      |      |     |      |      |       |       |
|----------------------|------|------|------|------|------|-----|------|------|-------|-------|
| stone size (mm)      | 2    | 1.5  | 1    | 30   | 10   | 30  | 0.4  | 0.10 | 0.40  | 0.200 |
| stone size (mm)      | 50.0 | 37.5 | 25.0 | 10.0 | 10.0 | 9.0 | 4.75 | 2.00 | 0.125 | 0.075 |
| retention Retained % |      |      |      |      |      |     |      |      |       |       |
|                      |      |      |      |      |      |     |      |      |       |       |
|                      |      |      |      |      |      |     |      |      |       |       |

|                  |                   |  |  |  |  |                    |  |
|------------------|-------------------|--|--|--|--|--------------------|--|
| ATTERBERG LIMITS | LIQUID LIMIT (LL) |  |  |  |  | PLASTIC LIMIT (PL) |  |
|                  | NE                |  |  |  |  | NE                 |  |



Construction

31/1/23

Williamson, Kento

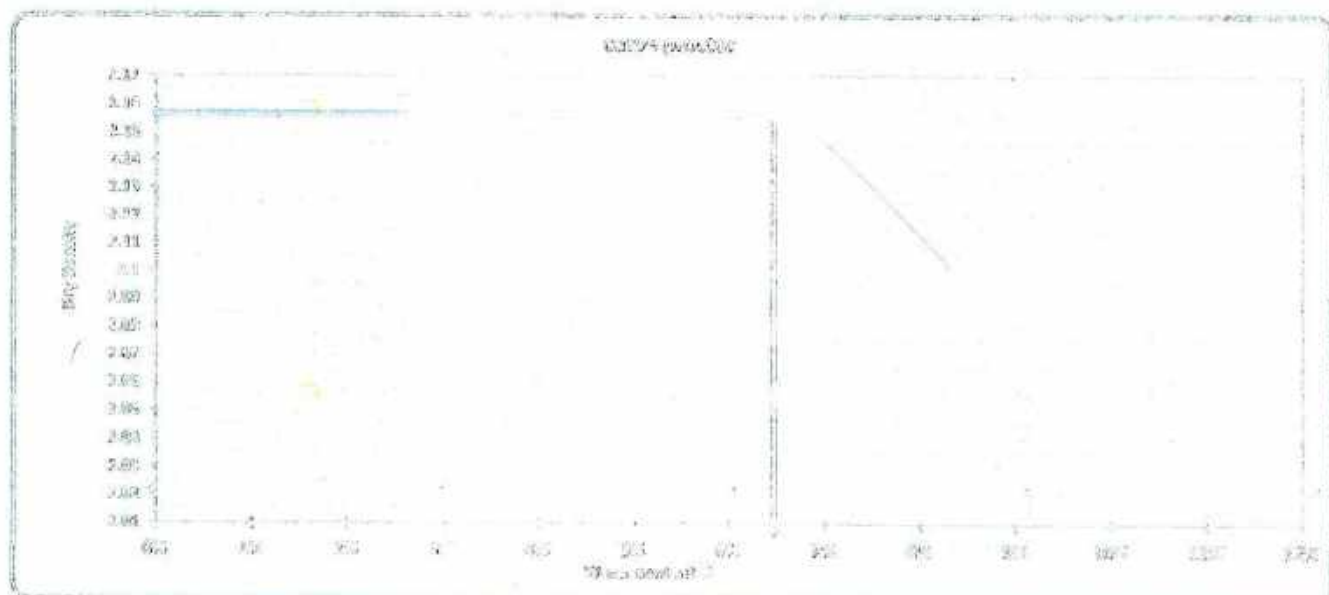
*The Journal of Law, Economics, & Organization*, V16 N1

|                 |              |  |      |                          |
|-----------------|--------------|--|------|--------------------------|
| TESTING DATE:   | 9/28/04      |  |      |                          |
| LOCATION:       | F.P. 650-009 |  | 7000 | INSTRUMENT NO. 4247-0005 |
| NAME: OPERATOR: | Elmer        |  |      |                          |

|                        |        |                    |       |
|------------------------|--------|--------------------|-------|
| Weight of empty mold : | 10.50g | Mass of Dry Powder | 2.02g |
| Mold Volume            | 20.81g | Water sorption %   | 65    |

| unit no :                | 1        | 2        | 3        | 4        |
|--------------------------|----------|----------|----------|----------|
| Wt. of (empty) container | 10.065.1 | 10.069.9 | 10.075.7 | 10.071.9 |
| W. of solution           | 2.170.1  | 2.164.7  | 2.099.7  | 2.148.9  |
| Wt. flowrate             | 2.065    | 2.231    | 2.196    | 2.227    |

| Rate No.                | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9 |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|---|
| Turn out                | 85.08 | 86.2  | 86.65 | 87.12 | 87.56 | 88.99 | 88.12 | 87.58 |   |
| Wt. 100000 soil & water | 280.0 | 280.0 | 280.0 | 280.0 | 280.0 | 280.0 | 280.0 | 281.0 |   |
| Wt. 100000 soil & water | 198.5 | 198.5 | 198.5 | 198.5 | 198.5 | 199   | 199.0 | 199.0 |   |
| Wt. 100000 water        | 4.3   | 4.3   | 4.3   | 4.3   | 4.3   | 4.3   | 4.3   | 4.3   |   |
| Wt. 100000 dry soil     | 130.7 | 131.0 | 131.2 | 131.3 | 131.5 | 131.9 | 132.0 | 131.3 |   |
| Water content %         | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.5%  | 3.5%  | 3.5%  |   |
| Wt. Water content to    | 3.2%  |       | 3.2%  |       | 3.5%  |       | 3.5%  |       |   |
| Dry Density             | 1.08  |       | 1.08  |       | 1.08  |       | 1.08  |       |   |



### Conclusions

## Discussion

3. 11. 1954



Chemical Engineering - 10101

Thermodynamics, Version 10001

|                   |                |       |      |          |          |
|-------------------|----------------|-------|------|----------|----------|
| Process Name:     | 10101/10001    | 45-46 | Zone | 500-1000 | 500-1000 |
| Location:         | K. P. 500-1000 |       |      |          |          |
| Name of Engineer: | Mohammed       |       |      |          |          |

1. Data Summary

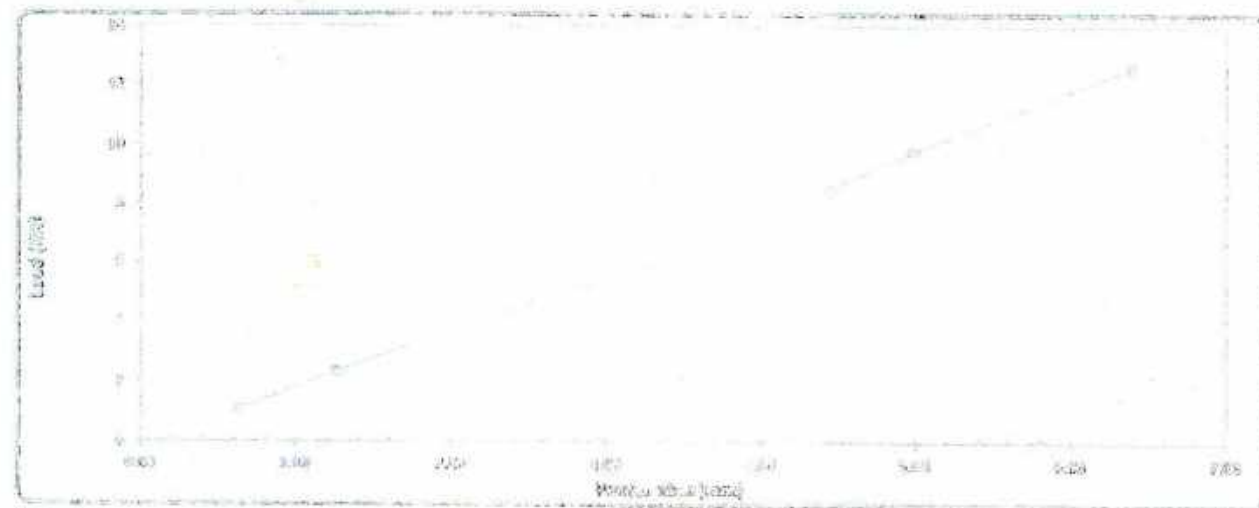
| Composition % by Weight         |           |
|---------------------------------|-----------|
| Model No.                       | 1         |
| Model No. (1)                   | 2000      |
| Model No. (2)                   | 1000      |
| Model No. (3) - Model No. (4)   | 1000-1000 |
| Model No. (5)                   | 1000      |
| Model No. (6) - Model No. (7)   | 1000-1000 |
| Model No. (8) - Model No. (9)   | 1000-1000 |
| Model No. (10) - Model No. (11) | 1000-1000 |
| Model No. (12) - Model No. (13) | 1000-1000 |
| Model No. (14) - Model No. (15) | 1000-1000 |

| Thermodynamic Properties of Water |           |
|-----------------------------------|-----------|
| Model No.                         | 1         |
| Model No. (1)                     | 1000      |
| Model No. (2) - Model No. (3)     | 1000-1000 |
| Model No. (4) - Model No. (5)     | 1000-1000 |
| Model No. (6) - Model No. (7)     | 1000-1000 |
| Model No. (8) - Model No. (9)     | 1000-1000 |
| Model No. (10) - Model No. (11)   | 1000-1000 |
| Model No. (12) - Model No. (13)   | 1000-1000 |
| Model No. (14) - Model No. (15)   | 1000-1000 |

| Properties                      |           |
|---------------------------------|-----------|
| Model No.                       | 1         |
| Model No. (1)                   | 1000      |
| Model No. (2) - Model No. (3)   | 1000-1000 |
| Model No. (4) - Model No. (5)   | 1000-1000 |
| Model No. (6) - Model No. (7)   | 1000-1000 |
| Model No. (8) - Model No. (9)   | 1000-1000 |
| Model No. (10) - Model No. (11) | 1000-1000 |
| Model No. (12) - Model No. (13) | 1000-1000 |
| Model No. (14) - Model No. (15) | 1000-1000 |

2. Properties Summary

| Properties (mm) | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
|-----------------|------|------|------|------|------|------|------|------|------|
| Length (mm)     | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Width (mm)      | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |



3. Properties Summary

| Properties | Length | Width | Height | Volume | Mass | Weight |
|------------|--------|-------|--------|--------|------|--------|
| 1000       | 1000   | 1000  | 1000   | 1000   | 1000 | 1000   |
| 1000       | 1000   | 1000  | 1000   | 1000   | 1000 | 1000   |
| 1000       | 1000   | 1000  | 1000   | 1000   | 1000 | 1000   |

4. Data Summary



Chemical Engineering

Name: Mohammed Ali

Page: 11  
30

|                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|----------------------------------------------------------------------------------------------------|--|--|--|--|----------------------------|--------|--------------------------|------------|--------------------------|
| <br>                                                                                                                                                                                                           | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein<br>Section -7 From FokaTo MARSA MATROUH<br>From Station 504+000 To Station 568+177 | <br> |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| <b>ACTIVITY : Sand cone test</b>                                                                                                                                                                                                                                                                                                                                                 | <b>laboratory results</b>                                                                                                                                          | <b>COD</b>                                                                                                                                                                 |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| <b>Z H ( 21 )</b>                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
|                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Company :                                                                                                                                                                                                                                                                                                                                                                        | EL-ZHOUR COMPANY                                                                                                                                                   | Layer level :                                                                                                                                                              |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Description:                                                                                                                                                                                                                                                                                                                                                                     | Compaction test                                                                                                                                                    | Layer Thickness :                                                                                                                                                          |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Station represented :                                                                                                                                                                                                                                                                                                                                                            | 536+720 TO 536+800                                                                                                                                                 | Sample Date :                                                                                                                                                              |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| fill (0)                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| 0.25 m                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| 17/10/2023                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| <b>Modified Proctor Testing Results</b>                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Max. Dry Density . gm/cm3                                                                                                                                                                                                                                                                                                                                                        | Optimum Moisture Content . %                                                                                                                                       | Degree of Compaction Required . %                                                                                                                                          |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| 2.15                                                                                                                                                                                                                                                                                                                                                                             | 6.5                                                                                                                                                                | 95%                                                                                                                                                                        |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Bulk Density of Specified Sand . gm/cm3                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| 1.48                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| <b>Compaction Testing Results &amp; Calculations</b>                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| STATION                                                                                                                                                                                                                                                                                                                                                                          | 536+745                                                                                                                                                            | 536+770                                                                                                                                                                    | 536+795    |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Hole No.                                                                                                                                                                                                                                                                                                                                                                         | 1                                                                                                                                                                  | 2                                                                                                                                                                          | 3          |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Sand before Test ,gm                                                                                                                                                                                                                                                                                                                                                      | 9724                                                                                                                                                               | 9534                                                                                                                                                                       | 9674       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Sand After Test ,gm                                                                                                                                                                                                                                                                                                                                                       | 5567                                                                                                                                                               | 5466                                                                                                                                                                       | 5543       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Sand in Cone + hole ,gm                                                                                                                                                                                                                                                                                                                                                   | 4157                                                                                                                                                               | 4068                                                                                                                                                                       | 4131       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Sand in Cone                                                                                                                                                                                                                                                                                                                                                              | 1140                                                                                                                                                               | 1140                                                                                                                                                                       | 1140       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Sand at hole ,gm                                                                                                                                                                                                                                                                                                                                                          | 3017                                                                                                                                                               | 2928                                                                                                                                                                       | 2991       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Volume of the hole ,cm3                                                                                                                                                                                                                                                                                                                                                          | 2039                                                                                                                                                               | 1978                                                                                                                                                                       | 2021       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| WT, of Soil from Hole ,gm                                                                                                                                                                                                                                                                                                                                                        | 4482                                                                                                                                                               | 4389                                                                                                                                                                       | 4459       |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Bulk Density of Soil, Gm/cm3                                                                                                                                                                                                                                                                                                                                                     | 2.199                                                                                                                                                              | 2.218                                                                                                                                                                      | 2.206      |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Moisture Content , %                                                                                                                                                                                                                                                                                                                                                             | 6.3                                                                                                                                                                | 6                                                                                                                                                                          | 5.7        |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Dry Density, gm/cm3                                                                                                                                                                                                                                                                                                                                                              | 2.068                                                                                                                                                              | 2.093                                                                                                                                                                      | 2.087      |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Compaction, (%)                                                                                                                                                                                                                                                                                                                                                                  | 96.2%                                                                                                                                                              | 97.3%                                                                                                                                                                      | 97.1%      |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
|                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| <table style="width: 100%;"> <tr> <td style="width: 20%;"><b>Acceptance Criteria</b></td> <td style="width: 20%; text-align: center;">Comply</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/></td> <td style="width: 20%; text-align: center;">Not Comply</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/></td> </tr> </table> |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  | <b>Acceptance Criteria</b> | Comply | <input type="checkbox"/> | Not Comply | <input type="checkbox"/> |
| <b>Acceptance Criteria</b>                                                                                                                                                                                                                                                                                                                                                       | Comply                                                                                                                                                             | <input type="checkbox"/>                                                                                                                                                   | Not Comply | <input type="checkbox"/> |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
|                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
|                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |                                                                                                                                                                            |            |                          |                                                                                                    |  |  |  |  |                            |        |                          |            |                          |
| Site engineer :-<br>Name :- Mahmoud El Khawwy<br>Signature :-                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                    |                                                                                                                                                                            |            |                          | Consultant Materials Engineer :-<br>Name :- <i>Momen esmaeel</i><br>Signature :- <i>17/10/2023</i> |  |  |  |  |                            |        |                          |            |                          |

## Plate Load Test Results

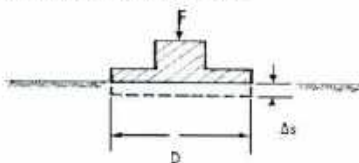
|                 |            |    |         |
|-----------------|------------|----|---------|
| Company Name    | El Zohour  |    |         |
| Location        | 536+720    | To | 536+800 |
| Test Date       | 18-10-2023 |    |         |
| Layer level (m) | 0          |    |         |

|         |         |
|---------|---------|
| Station | 536+740 |
|---------|---------|

### EQUIPMENT AND TEST PROCEDURE :-

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

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



$F$  = load

$\Delta s$  = 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

| Loading   | Load  | Load   | Stress | Dial 1 | Dial 2 | Dial 3 | Sett. 1 | Sett. 2 | Sett. 3 | Avg. Sett. |
|-----------|-------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| Stage No. | Bar   | KN     | MN/M2  | mm     | mm     | mm     | mm      | mm      | mm      | mm         |
| 0.000     | 0.0   | 0.000  | 0.00   | 14.43  | 12.90  |        | 0.000   | 0.000   |         | 0.000      |
| 1.000     | 2.4   | 0.707  | 0.01   | 14.16  | 12.65  |        | 0.270   | 0.250   |         | 0.260      |
| 2.000     | 18.8  | 5.652  | 0.08   | 13.87  | 12.36  |        | 0.560   | 0.540   |         | 0.550      |
| 3.000     | 37.7  | 11.304 | 0.16   | 13.70  | 12.00  |        | 0.730   | 0.900   |         | 0.815      |
| 4.000     | 58.9  | 17.663 | 0.25   | 13.58  | 11.78  |        | 0.850   | 1.120   |         | 0.985      |
| 5.000     | 77.7  | 23.315 | 0.33   | 13.39  | 11.67  |        | 1.040   | 1.230   |         | 1.135      |
| 6.000     | 98.9  | 29.673 | 0.42   | 13.21  | 11.59  |        | 1.220   | 1.310   |         | 1.265      |
| 7.000     | 117.8 | 35.325 | 0.50   | 13.09  | 11.47  |        | 1.340   | 1.430   |         | 1.385      |
| 8.000     | 58.9  | 17.663 | 0.25   | 13.15  | 11.52  |        | 1.280   | 1.380   |         | 1.330      |
| 9.000     | 29.4  | 8.831  | 0.12   | 13.25  | 11.61  |        | 1.180   | 1.290   |         | 1.235      |
| 10.000    | 2.4   | 0.707  | 0.01   | 13.50  | 11.80  |        | 0.930   | 1.100   |         | 1.015      |
| 11.000    | 2.4   | 0.707  | 0.01   | 13.50  | 11.80  |        | 0.930   | 1.100   |         | 1.015      |
| 12.000    | 18.8  | 5.652  | 0.08   | 13.45  | 11.74  |        | 0.980   | 1.160   |         | 1.070      |
| 13.000    | 37.7  | 11.304 | 0.16   | 13.34  | 11.65  |        | 1.090   | 1.250   |         | 1.170      |
| 14.000    | 58.9  | 17.663 | 0.25   | 13.26  | 11.56  |        | 1.170   | 1.340   |         | 1.255      |
| 15.000    | 77.7  | 23.315 | 0.33   | 13.22  | 11.47  |        | 1.210   | 1.430   |         | 1.320      |
| 16.000    | 98.9  | 29.673 | 0.42   | 13.16  | 11.40  |        | 1.270   | 1.500   |         | 1.385      |

|                |         | s       | Δs      | Δσ  |
|----------------|---------|---------|---------|-----|
| 0.7 $\sigma_1$ | 0.35    | 1.16    | 0.37812 | 0.2 |
| 0.3 $\sigma_1$ | 0.15    | 0.78188 |         |     |
| 0.7 $\sigma_2$ | 0.35    | 1.33444 | 0.20944 | 0.2 |
| 0.3 $\sigma_2$ | 0.15    | 1.12501 |         |     |
| D (mm)         | 300     |         |         |     |
| $E_{v1}$       | 119.01  |         |         |     |
| $E_{v2}$       | 214.86  |         |         |     |
| Area (Sq.m)    | 0.07065 |         |         |     |

$$E_{v2}/E_{v1} = 1.81$$

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

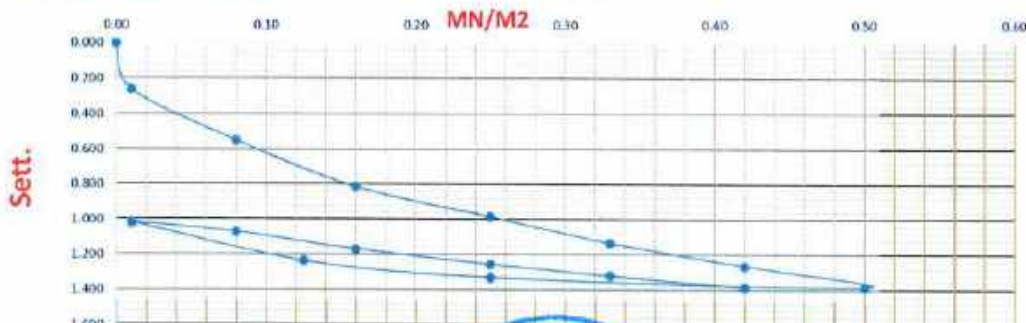
$E_v$  = deformation modulus

$\Delta\sigma$  = load increment

$\Delta s$  = settlement increment

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

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



Contractor Engineer

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name : Youssef Ragab

Sign :

Youssef  
18/10/23

## Plate Load Test Results

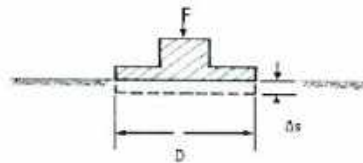
|                 |            |    |         |
|-----------------|------------|----|---------|
| Company Name    | El Zohour  |    |         |
| Location        | 536+720    | To | 536+800 |
| Test Date       | 18-10-2023 |    |         |
| Layer level (m) | 0          |    |         |

Station 536+780

### EQUIPMENT AND TEST PROCEDURE :-

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

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



$F$  = load

$\Delta s$  = 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.

| Loading   | Load  | Load   | Stress | Dial 1 | Dial 2 | Dial 3 | Sett. 1 | Sett. 2 | Sett. 3 | Avg. Sett. |
|-----------|-------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| Stage No. | Bar   | KN     | MN/M2  | mm     | mm     | mm     | mm      | mm      | mm      | mm         |
| 0.000     | 0.0   | 0.000  | 0.00   | 15.51  | 14.70  |        | 0.000   | 0.000   |         | 0.000      |
| 1.000     | 2.4   | 0.707  | 0.01   | 15.34  | 14.55  |        | 0.170   | 0.150   |         | 0.160      |
| 2.000     | 18.8  | 5.652  | 0.08   | 15.20  | 14.40  |        | 0.310   | 0.300   |         | 0.305      |
| 3.000     | 37.7  | 11.304 | 0.16   | 15.05  | 14.24  |        | 0.460   | 0.460   |         | 0.460      |
| 4.000     | 58.9  | 17.663 | 0.25   | 14.90  | 14.12  |        | 0.610   | 0.580   |         | 0.595      |
| 5.000     | 77.7  | 23.315 | 0.33   | 14.75  | 13.95  |        | 0.760   | 0.750   |         | 0.755      |
| 6.000     | 98.9  | 29.673 | 0.42   | 14.61  | 13.80  |        | 0.900   | 0.900   |         | 0.900      |
| 7.000     | 117.8 | 35.325 | 0.50   | 14.41  | 13.64  |        | 1.100   | 1.060   |         | 1.080      |
| 8.000     | 58.9  | 17.663 | 0.25   | 14.45  | 13.71  |        | 1.060   | 0.990   |         | 1.025      |
| 9.000     | 29.4  | 8.831  | 0.12   | 14.60  | 13.79  |        | 0.910   | 0.910   |         | 0.910      |
| 9.000     | 2.4   | 0.707  | 0.01   | 14.88  | 13.98  |        | 0.630   | 0.720   |         | 0.675      |
| 10.000    | 2.4   | 0.707  | 0.01   | 14.88  | 13.98  |        | 0.630   | 0.720   |         | 0.675      |
| 11.000    | 18.8  | 5.652  | 0.08   | 14.80  | 13.89  |        | 0.710   | 0.810   |         | 0.760      |
| 12.000    | 37.7  | 11.304 | 0.16   | 14.73  | 13.80  |        | 0.780   | 0.900   |         | 0.840      |
| 13.000    | 58.9  | 17.663 | 0.25   | 14.65  | 13.73  |        | 0.860   | 0.970   |         | 0.915      |
| 14.000    | 77.7  | 23.315 | 0.33   | 14.56  | 13.68  |        | 0.950   | 1.020   |         | 0.985      |
| 15.000    | 98.9  | 29.673 | 0.42   | 14.50  | 13.60  |        | 1.010   | 1.100   |         | 1.055      |

|                |         | $s$     | $\Delta s$ | $\Delta \sigma$ |
|----------------|---------|---------|------------|-----------------|
| 0.7 $\sigma_1$ | 0.35    | 0.7425  | 0.30188    | 0.2             |
| 0.3 $\sigma_1$ | 0.15    | 0.44062 |            |                 |
| 0.7 $\sigma_2$ | 0.35    | 1.00056 | 0.15555    | 0.2             |
| 0.3 $\sigma_2$ | 0.15    | 0.84501 |            |                 |
| D (mm)         | 300     |         |            |                 |
| $E_{v1}$       | 149.07  |         |            |                 |
| $E_{v2}$       | 289.30  |         |            |                 |
| Area (Sq.m)    | 0.07065 |         |            |                 |

$$E_{v2}/E_{v1} = 1.94$$

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

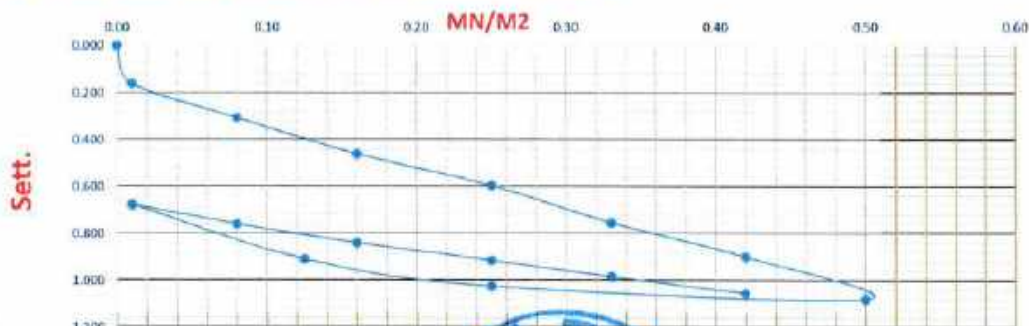
$E_v$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

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

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



Contractor Engineer

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name : Youssef Rugab

Sign :

Youssef  
18/10/2023

ZHR - 6 - 175

UNIVERSAL  
INSPECTION  
REQUEST

## RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

|                                      |                             |      |                          |             |                                                       |     |     |    |    |      |    |    |
|--------------------------------------|-----------------------------|------|--------------------------|-------------|-------------------------------------------------------|-----|-----|----|----|------|----|----|
| Contractor Company                   | EL . ZHOOR . COMPANY        |      | Designer Company*        | KK CONSULT. |                                                       |     |     |    |    |      |    |    |
| Issued by Contractor                 | Name                        | Sign | Date                     | Time        |                                                       |     |     |    |    |      |    |    |
|                                      | Eng : Mahmoud Elkhilawy     |      | 15 - 10 - 2023           |             |                                                       |     |     |    |    |      |    |    |
| Received by Employers Representative | M.A                         |      | 15/10/2023               | UIR         | C1                                                    | C2  | C3  | DD | MM | YY   | HH | MM |
|                                      |                             |      |                          |             | K.P536                                                | E W | C S | 15 | 10 | 2023 |    |    |
| CODE-1                               | S1 to S21 Station Reference |      | D1 to S3 Depot Reference |             | Kp XXX Note For Kilometer point only Start Km is used |     |     |    |    |      |    |    |
| CODE - 2                             | Work Activity               |      |                          |             |                                                       |     |     |    |    |      |    |    |
| CODE - 3                             | Sub Element of Activity     |      |                          |             |                                                       |     |     |    |    |      |    |    |

## EXPLANATION OF WORK TO BE INSPECTED

| Description | Element    | Item                               |
|-------------|------------|------------------------------------|
| Earth Works | Fill ( 0 ) | From St ( 536+680 ) to ( 536+720 ) |

## INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

|                         |                         |
|-------------------------|-------------------------|
| Planned Inspection Date | Planned Inspection Time |
| 15.10.2023              |                         |

## COMPLIANCE EVIDENCE Must be included as appropriate

|                                             |                                                |                                               |                                             |
|---------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| Checklist Attached <input type="checkbox"/> | Test Results Attached <input type="checkbox"/> | Calibration Attached <input type="checkbox"/> | Other as indicated <input type="checkbox"/> |
| Drawing Reference                           | ITP Reference                                  | MS Reference                                  |                                             |
|                                             |                                                |                                               |                                             |

| Civil                                       | Survey                           | Material                                             |
|---------------------------------------------|----------------------------------|------------------------------------------------------|
| momen esmaeel visual inspection is approved | Amr Ashraf Jaber Al-APP approved | momen esmaeel compaction test is approved 16/10/2023 |

## INSPECTION RESULT

| INSPECTION RESULT              |                    |      |            |      | Approval Status | Please Tick if Not Attend |
|--------------------------------|--------------------|------|------------|------|-----------------|---------------------------|
| Organisation                   | Name               | Sign | Date       | Time | A-AWC-R         |                           |
| Contractor                     | ENG : M. ELKHLAWY  |      |            |      |                 |                           |
| QA/QC*                         |                    |      |            |      |                 |                           |
| GARB**                         | ENG : KHALED FAWZY |      |            |      |                 | A                         |
| Employers Representative Notes |                    |      |            |      |                 |                           |
| Employers Representative Sign  | M.A                |      | 15/10/2023 |      |                 | A                         |

\* Designer

\*\* Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع ( فوكه - مطروح )  
شركة (الزهور)  
من المحطة ( 536+680 ) إلى المحطة ( 536+720 )

[illegible]

Ch. 1908 (v + 2)  
prev. end of

*[Signature]*

Layer Zone

Layer No.

MS FROM ST.(536+700) TO ST.(536+780)

| Station              | 536+700 | 536+720 | 536+740 | 536+760 | 536+780 |
|----------------------|---------|---------|---------|---------|---------|
| DESIGN LEVEL         | 61.31   | 61.37   | 61.43   | 61.49   | 61.55   |
| FERMA LEVEL          | 60.41   | 60.47   | 60.53   | 60.59   | 60.65   |
| CUT LEVEL            | 59.11   | 59.66   | 59.90   | 59.87   | 58.85   |
| DIFF ( FERMA - CUT ) | 1.30    | 0.81    | 0.63    | 0.72    | 1.79    |
| 0                    | 60.41   | 60.47   | 60.53   | 60.59   | 60.65   |
| -0.25                | 60.16   | 60.22   | 60.28   | 60.34   | 60.40   |
| -0.5                 | 59.91   | 59.97   | 60.03   | 60.09   | 60.15   |
| -0.75                | 59.66   | 59.72   |         |         | 59.90   |
| -1                   | 59.41   |         |         |         | 59.65   |
| -1.25                | 59.16   |         |         |         | 59.40   |
| -1.5                 |         |         |         |         | 59.15   |
| -1.75                |         |         |         |         | 58.90   |
| -2                   |         |         |         |         |         |
| -2.5                 |         |         |         |         |         |

Middle Empanment

Upper Empanment

22

MS Approved }  
 acc. to Design Table }  
 Rev-10

## C.L DATA

| Station | Easting     | Northing    |
|---------|-------------|-------------|
| 536+680 | 290339.5264 | 943913.8692 |
| 536+700 | 290320.2216 | 943919.0965 |
| 536+720 | 290300.9168 | 943924.3237 |

*Amr Abd*

*27*

## TYPICAL WIDTH

| layer | slope  | left  | slop   | right | TOTAL |
|-------|--------|-------|--------|-------|-------|
| 0     | -4.00% | 13.44 | -4.00% | 9.94  | 23.38 |
| -0.25 | -4.00% | 13.84 | -4.00% | 10.34 | 24.18 |
| -0.5  | -4.00% | 14.24 | -4.00% | 10.74 | 24.98 |
| -0.75 | -4.00% | 5     | -4.00% | 5     | 10.00 |
| -1    | 0.00%  | 14.13 | 0.00%  | 10.84 | 24.98 |

*Mr. H. S. S. S.*

*29*

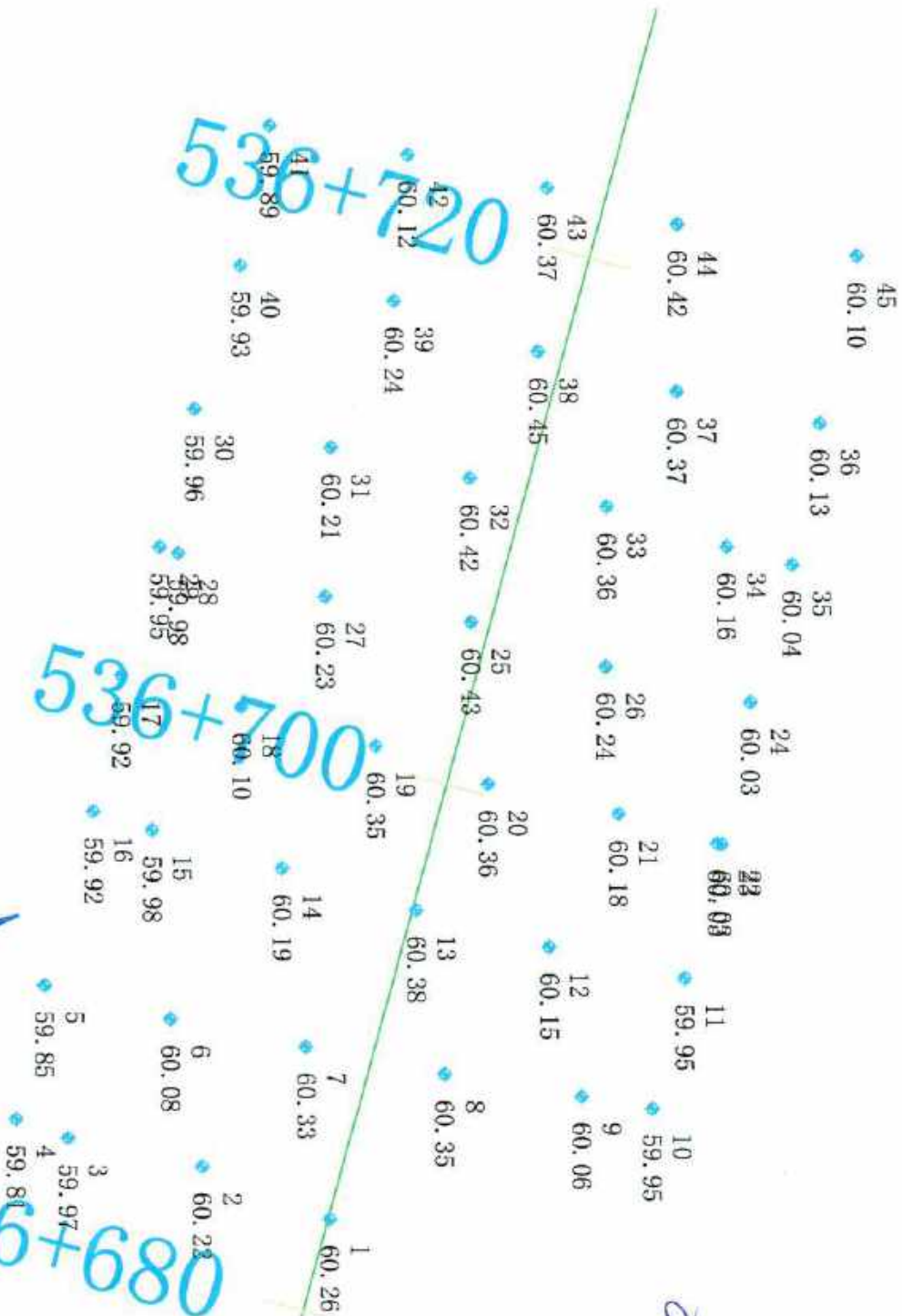
*[Handwritten signature]*

536+680

536+700

536+720

*[Handwritten signature]*



| POINT | NORTH      | EAST       | ELEV   |
|-------|------------|------------|--------|
| 1     | 943914.84  | 290336.141 | 60.258 |
| 2     | 943910.182 | 290334.241 | 60.222 |
| 3     | 943905.275 | 290333.21  | 59.969 |
| 4     | 943903.384 | 290332.519 | 59.809 |
| 5     | 943904.416 | 290327.61  | 59.853 |
| 6     | 943909.023 | 290328.837 | 60.082 |
| 7     | 943913.973 | 290329.838 | 60.329 |
| 8     | 943919.021 | 290330.831 | 60.35  |
| 9     | 943924.036 | 290331.625 | 60.056 |
| 10    | 943926.622 | 290332.067 | 59.947 |
| 11    | 943927.807 | 290327.269 | 59.947 |
| 12    | 943922.853 | 290326.138 | 60.149 |
| 13    | 943917.983 | 290324.812 | 60.385 |
| 14    | 943913.1   | 290323.291 | 60.193 |
| 15    | 943908.348 | 290321.903 | 59.985 |
| 16    | 943906.193 | 290321.226 | 59.923 |
| 17    | 943907.226 | 290316.25  | 59.922 |
| 18    | 943911.612 | 290317.39  | 60.1   |
| 19    | 943916.507 | 290318.804 | 60.351 |
| 20    | 943920.604 | 290320.178 | 60.356 |
| 21    | 943925.383 | 290321.262 | 60.176 |
| 22    | 943929.154 | 290322.35  | 60.027 |
| 23    | 943928.989 | 290322.333 | 60.031 |
| 24    | 943930.194 | 290317.167 | 60.031 |
| 25    | 943919.987 | 290314.267 | 60.432 |
| 26    | 943924.91  | 290315.875 | 60.244 |
| 27    | 943914.677 | 290313.341 | 60.231 |
| 28    | 943909.304 | 290311.766 | 59.978 |

*Handwritten signature in blue ink.*

*Handwritten signature in blue ink.*

| POINT | NORTH      | EAST       | ELEV   |
|-------|------------|------------|--------|
| 29    | 943908.626 | 290311.547 | 59.949 |
| 30    | 943909.901 | 290306.487 | 59.964 |
| 31    | 943914.88  | 290307.885 | 60.209 |
| 32    | 943919.934 | 290308.998 | 60.415 |
| 33    | 943924.945 | 290310.021 | 60.357 |
| 34    | 943929.325 | 290311.471 | 60.165 |
| 35    | 943931.731 | 290312.125 | 60.045 |
| 36    | 943932.742 | 290306.945 | 60.132 |
| 37    | 943927.507 | 290305.798 | 60.367 |
| 38    | 943922.447 | 290304.35  | 60.454 |
| 39    | 943917.177 | 290302.501 | 60.243 |
| 40    | 943911.581 | 290301.209 | 59.932 |
| 41    | 943912.66  | 290296.089 | 59.892 |
| 42    | 943917.691 | 290297.145 | 60.124 |
| 43    | 943922.789 | 290298.327 | 60.37  |
| 44    | 943927.531 | 290299.65  | 60.419 |
| 45    | 943934.09  | 290300.791 | 60.103 |

Ames  
Project

24

# MATERIAL INSPECTION REQUEST

الهيئة العامة  
للطرق والكباري  
(GARB)



|                      |                        |      |                  |             |
|----------------------|------------------------|------|------------------|-------------|
| Contractor Company   | El . Zhoor . Company   |      | Designer Company | KK CONSULT. |
| Issued by Contractor | Name                   | Sign | Date             | COD         |
|                      | Eng \ Mahmoud elkhlawy |      | 12-4-2023        | ZH 21       |
| Received by ER       |                        |      | MIR              |             |
|                      |                        |      |                  |             |

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

| Description of Materials | Fill material results |         |         |                |                 |
|--------------------------|-----------------------|---------|---------|----------------|-----------------|
| Location to be Used      | FILL ( 0 )            | 536+680 | 536+560 | FILL ( -0.5 )  | 536+720 536+680 |
|                          | FLAT ( -1.5 )         | 536+800 | 536+780 | FILL ( -0.75 ) | 536+800 536+780 |
|                          | FLAT ( -1 )           | 536+700 | 536+680 | FILL ( -0.25 ) | 536+720 536+680 |
|                          | FILL ( -1.25 )        | 536+800 | 536+780 | FILL ( -0.5 )  | 536+800 536+780 |
|                          | FILL ( -0.75 )        | 536+700 | 536+680 | FILL ( -0.25 ) | 536+800 536+780 |
|                          | FILL ( -1 )           | 536+800 | 536+780 | FILL ( 0 )     | 536+720 536+680 |
|                          |                       |         |         | FILL ( 0 )     | 536+800 536+720 |
|                          |                       |         |         |                |                 |

|                  |                   |       |        |  |
|------------------|-------------------|-------|--------|--|
| MAR Approval No  |                   |       | Date   |  |
| Supplier Name    |                   |       |        |  |
| Test Requirement | Specification     |       | Clause |  |
| Reference Photos | Yes attached / No | Other |        |  |

| Item | Description         | Unit | Quantity | Arrival Date | Note |
|------|---------------------|------|----------|--------------|------|
| 1    | L.L & P.L & O.M.C % | m3   | 5000     | 9 - 4 - 2023 |      |
| 2    | Proctor             | m3   | 5000     | 9 - 4 - 2023 |      |
| 3    | Classification      | m3   | 5000     | 9 - 4 - 2023 |      |
| 4    | Seive analysis      | m3   | 5000     | 9 - 4 - 2023 |      |

|                                                                                                                                                 |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comments by:                                                                                                                                    | Comments by: |
| Asample has been taken form fill material by KK office to (mansor ali hasan) lab and the results founded meet the specificonctions and accepted |              |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | Mahmoud elkhlawy |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Comment by ER            |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST

الهيئة العامة  
للمطرق والكباري  
(GARB)



وزارة النقل  
Ministry of Transport

ENGINEERING CONSULTING OFFICE  
المكتب الهندسي الاستشاري الهندسي  
إ.د. محمد الشاذلي



|                      |                        |      |                  |       |    |
|----------------------|------------------------|------|------------------|-------|----|
| Contractor Company   | EL ZHOOR COMPANY       |      | Designer Company | KK    |    |
| Issued by Contractor | Name                   | Sign | Date             | cod   |    |
|                      | ENG : MAHMOUD ELKHLAWY |      | 12 - 4 - 2023    | Zh 21 |    |
| Received by ER       |                        |      | MAR              | C1    | C2 |
|                      |                        |      |                  | C3    | DD |
|                      |                        |      |                  | MM    | YY |
|                      |                        |      |                  | HH    | MM |
|                      |                        |      |                  | 12    | 4  |
|                      |                        |      |                  | 2023  |    |

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

| Description of Materials | Soil classify ( A 1 a ) |                    |                         |        |
|--------------------------|-------------------------|--------------------|-------------------------|--------|
| Location to be Used      | 536+000 to 537+000      |                    |                         |        |
| item                     | Spacification           | Test Requirment    | Test Result Attachment  | Remark |
| 1                        | ASTM D 75               | Aggregate Sampling | According Spacification |        |
| 2                        | ASTM C 136              | Sieve Analysis     | According Spacification |        |
| 3                        | ASTM D 1440             | Passing Sieve #200 | 8.3 %                   |        |
| 4                        | ASTM D 4318             | Atterberg Limit    | NON                     |        |
| 5                        | ASTM D 2974             | Moisture Content   | 6.5 %                   |        |
| 6                        | ASTM D 1557             | Modifid Proctor    | 2.156                   |        |
| 7                        | ASTM D 1883             | C B R              | 48.20%                  |        |
| Comments by:             |                         | Comments by:       |                         |        |
|                          |                         |                    |                         |        |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | MAHMOUD ELKHLAWY |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only



مركز البحوث والدراسات  
Research Center

Operating Lab: Materials Lab

Project Name: ...  
Project No: ...  
Project Location: ...

Project Description: ...

|                  |            |  |  |      |                    |
|------------------|------------|--|--|------|--------------------|
| TESTING DATE:    | 24/2/2023  |  |  |      |                    |
| LOCATION:        | K/ 536+590 |  |  | Zone | 536+590 to 537+000 |
| NAME COMPANY:    | Ecohor     |  |  |      |                    |
| Inspection Test: |            |  |  |      |                    |

Remarks:

| Sieve Analysis    |     |     |     | Sieve Weight (g) |        | Sieve Weight (%) |       | Result | Soil Class |
|-------------------|-----|-----|-----|------------------|--------|------------------|-------|--------|------------|
| Sieve Size        | 2   | 1.5 | 1   | 0.75             | 0.425  | 0.75             | 0.425 | PASS   |            |
| Sample Weight (g) | 500 | 500 | 500 | 127.10           | 32.10  | 25.72            | 6.42  |        | 2-150      |
| Retained (g)      |     |     |     | 372.90           | 167.90 | 110.00           | 17.58 | FAIL   | 2-150      |
| Retained (%)      |     |     |     | 29.36            | 33.58  | 42.80            | 27.50 | FAIL   | 2-150      |
| Passing (%)       |     |     |     | 70.64            | 66.42  | 57.20            | 72.50 | FAIL   | 2-150      |

| Liquid Limit (LL) |       |        |        | WT. (g) |  | LL (%) |  | Result |
|-------------------|-------|--------|--------|---------|--|--------|--|--------|
| Sample Size       | 10    | 40     | 200    |         |  |        |  |        |
| Sample Weight (g) | 60.00 | 225.00 | 272.00 |         |  |        |  |        |
| Retained (g)      |       |        |        |         |  |        |  |        |
| Passing (%)       |       |        |        |         |  |        |  |        |

| Plasticity Index (PI) |      |      |      | WT. (g) |       | PI (%) |       | Result |
|-----------------------|------|------|------|---------|-------|--------|-------|--------|
| Sample Size           | 2    | 1.5  | 1    | 0.75    | 0.425 | 0.75   | 0.425 |        |
| Sample Weight (g)     | 50.0 | 37.5 | 25.0 | 10.0    | 5.0   | 9.5    | 4.75  | 2.00   |
| Retained (g)          |      |      |      |         |       |        |       |        |
| Passing (%)           |      |      |      |         |       |        |       |        |

| ATTERBERG LIMITS | LIQUID LIMIT (LL) |    | PLASTIC INDEX (PI) |
|------------------|-------------------|----|--------------------|
|                  | LL                | PI |                    |



Consent:   
 MI   
 31/1/23



1. Project Name : Highway 10-13  
 Location : Chennai District, Bangalore District, Karnataka  
 Client : Government of India, Ministry of Road Transport & Highways  
 Project No. : 10-13



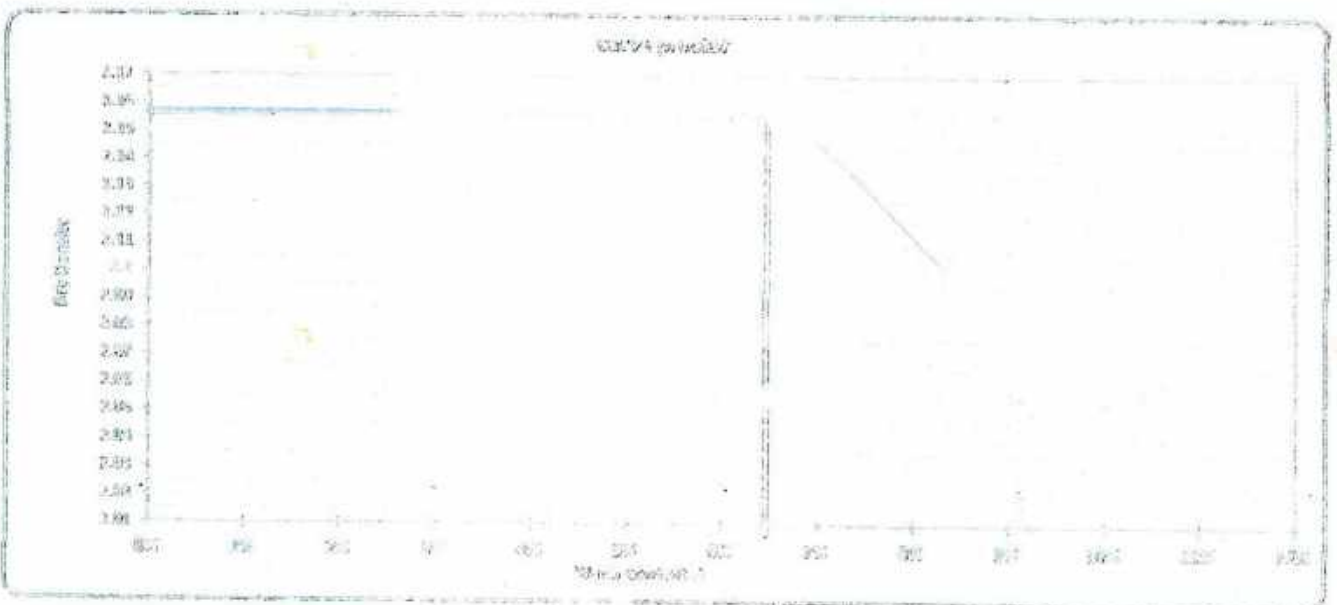
|               |                      |  |  |  |  |
|---------------|----------------------|--|--|--|--|
| TESTING DATE: | 10/10/2018           |  |  |  |  |
| LOCATION:     | D.P. Road, Bangalore |  |  |  |  |
| NAME COMPANY: | Shree                |  |  |  |  |

|                        |       |
|------------------------|-------|
| Weight of empty mold : | 2000g |
| Moisture Content :     | 2.13% |

|                    |       |
|--------------------|-------|
| Moisture Content : | 2.13% |
| Water Content :    | 4.5   |

|                      |       |        |        |        |  |
|----------------------|-------|--------|--------|--------|--|
| trial no :           | 1     | 2      | 3      | 4      |  |
| Wt. of mold & soil : | 2000g | 1999.9 | 1999.9 | 1999.9 |  |
| Wt. of soil :        | 2.13g | 2.13g  | 2.13g  | 2.13g  |  |
| Wt. of water :       | 2.13g | 2.13g  | 2.13g  | 2.13g  |  |

|                           |       |       |       |       |       |       |       |       |  |  |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
| Test No.                  | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |  |  |
| Test wt.                  | 50.0g | 50.0g | 50.0g | 50.0g | 50.0g | 50.0g | 50.0g | 50.0g |  |  |
| Wt. of soil & water :     | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 | 200.0 |  |  |
| Wt. of dry soil & water : | 198.5 | 198.5 | 198.5 | 198.5 | 198.5 | 198.5 | 198.5 | 198.5 |  |  |
| Wt. of water :            | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   |  |  |
| Wt. of dry soil :         | 194.0 | 194.0 | 194.0 | 194.0 | 194.0 | 194.0 | 194.0 | 194.0 |  |  |
| Water content % :         | 2.32% | 2.32% | 2.32% | 2.32% | 2.32% | 2.32% | 2.32% | 2.32% |  |  |
| AV Water content % :      | 2.32% |       | 2.32% |       | 2.32% |       | 2.32% |       |  |  |
| Dry Density :             | 2.429 |       | 2.429 |       | 2.429 |       | 2.429 |       |  |  |





Chemical Engineering - 1101

Chemical Engineering - 1101

|                  |                |         |         |         |         |
|------------------|----------------|---------|---------|---------|---------|
| Section Name     | 1101/1102/1103 | Section | Section | Section | Section |
| Section          | 1101/1102/1103 | Section | Section | Section | Section |
| Section of Class | Section        | Section | Section | Section | Section |

1. Test Results

| Competition % for Speed   | 1   |
|---------------------------|-----|
| Speed (km/h)              | 100 |
| Speed (km/h)              | 100 |
| Speed (km/h) - Max (km/h) | 100 |
| Max (km/h)                | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |

| Competition % for Speed   | 1   |
|---------------------------|-----|
| Speed (km/h)              | 100 |
| Speed (km/h)              | 100 |
| Speed (km/h) - Max (km/h) | 100 |
| Max (km/h)                | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |

| Competition % for Speed   | 1   |
|---------------------------|-----|
| Speed (km/h)              | 100 |
| Speed (km/h)              | 100 |
| Speed (km/h) - Max (km/h) | 100 |
| Max (km/h)                | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |

2. Test Results

| Competition % for Speed   | 1   |
|---------------------------|-----|
| Speed (km/h)              | 100 |
| Speed (km/h)              | 100 |
| Speed (km/h) - Max (km/h) | 100 |
| Max (km/h)                | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |



3. Test Results

| Competition % for Speed   | 1   |
|---------------------------|-----|
| Speed (km/h)              | 100 |
| Speed (km/h)              | 100 |
| Speed (km/h) - Max (km/h) | 100 |
| Max (km/h)                | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |
| Max (km/h) - Min (km/h)   | 100 |

4. Test Results



Chemical Engineering

Name: Mohammed AL

Name: MI 32

|                                                                                                                         |                                                                                                                                                  |                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <br><b>Electric Express Train - HSR</b> | <b>From El Ain El Sokhna City To El Alamein</b><br><b>Section -7 From FokaTo MARSA MATROUH</b><br><b>From Station 504+000 To Station 568+177</b> | <br><b>وزارة النقل</b><br>MINISTRY OF TRANSPORT |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|

|                                  |                           |            |                   |
|----------------------------------|---------------------------|------------|-------------------|
| <b>ACTIVITY : Sand cone test</b> | <b>laboratory results</b> | <b>COD</b> | <b>Z H ( 21 )</b> |
|----------------------------------|---------------------------|------------|-------------------|

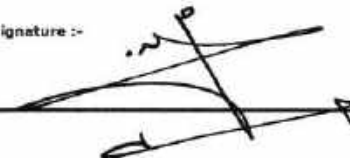
|                              |                    |                          |            |
|------------------------------|--------------------|--------------------------|------------|
| <b>Company :</b>             | EL-ZHOUR COMPANY   | <b>Layer level :</b>     | fill (0)   |
| <b>Description:</b>          | Compaction test    | <b>Layer Thickness :</b> | 0.25 m     |
| <b>Station represented :</b> | 536+680 TO 536+720 | <b>Sample Date :</b>     | 16/10/2023 |

| Modified Proctor Testing Results |                              |                                   |                                         |
|----------------------------------|------------------------------|-----------------------------------|-----------------------------------------|
| Max. Dry Density . gm/cm3        | Optimum Moisture Content . % | Degree of Compaction Required . % | Bulk Density of Specified Sand . gm/cm3 |
| 2.15                             | 6.5                          | 95%                               | 1.48                                    |

| Compaction Testing Results & Calculations |         |         |  |  |  |  |  |  |  |  |
|-------------------------------------------|---------|---------|--|--|--|--|--|--|--|--|
| STATION                                   | 536+705 | 536+720 |  |  |  |  |  |  |  |  |
| <b>Hole No.</b>                           | 1       | 2       |  |  |  |  |  |  |  |  |
| WT. of Sand before Test .gm               | 9538    | 9681    |  |  |  |  |  |  |  |  |
| WT. of Sand After Test .gm                | 5460    | 5576    |  |  |  |  |  |  |  |  |
| WT. of Sand in Cone + hole .gm            | 4078    | 4105    |  |  |  |  |  |  |  |  |
| WT. of Sand in Cone                       | 1140    | 1140    |  |  |  |  |  |  |  |  |
| WT. of Sand at hole .gm                   | 2938    | 2965    |  |  |  |  |  |  |  |  |
| Volume of the hole, Cm3                   | 1985    | 2003    |  |  |  |  |  |  |  |  |
| WT. of Soil from Hole .gm                 | 4405    | 4427    |  |  |  |  |  |  |  |  |
| Bulk Density of Soil, Gm/cm3              | 2.219   | 2.210   |  |  |  |  |  |  |  |  |
| Moisture Content , %                      | 5.7     | 6.2     |  |  |  |  |  |  |  |  |
| Dry Density, gm/cm3                       | 2.099   | 2.081   |  |  |  |  |  |  |  |  |
| Compaction, (%)                           | 97.6%   | 96.8%   |  |  |  |  |  |  |  |  |

|                            |                                 |                                     |  |  |
|----------------------------|---------------------------------|-------------------------------------|--|--|
| <b>Acceptance Criteria</b> | Comply <input type="checkbox"/> | Not Comply <input type="checkbox"/> |  |  |
|----------------------------|---------------------------------|-------------------------------------|--|--|

|                            |
|----------------------------|
| <b>CONSULTANT COMMENTS</b> |
|----------------------------|

|                                                                                                                                                                  |                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Site engineer :-</b><br><br>Name :- Mahmoud El Khrawy<br><br>Signature :-  | <b>Consultant Materials Engineer :-</b><br><br>Name :- <i>momen esraeel</i><br><br>Signature :- <i>16/10/2023</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|

## Plate Load Test Results

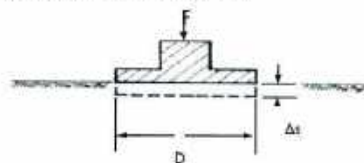
|                 |            |    |         |
|-----------------|------------|----|---------|
| Company Name    | El Zohour  |    |         |
| Location        | 536+680    | To | 536+720 |
| Test Date       | 18-10-2023 |    |         |
| Layer level (m) | 0          |    |         |

|         |         |
|---------|---------|
| Station | 536+700 |
|---------|---------|

### EQUIPMENT AND TEST PROCEDURE :-

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

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



$F$  = load

$\Delta s$  = 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

| Loading   | Load  | Load   | Stress | Dial 1 | Dial 2 | Dial 3 | Sert. 1 | Sert. 2 | Sert. 3 | Avg. Sert. |
|-----------|-------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| Stage No. | Bar   | KN     | MN/M2  | mm     | mm     | mm     | mm      | mm      | mm      | mm         |
| 0.000     | 0.0   | 0.000  | 0.00   | 18.55  | 17.99  |        | 0.000   | 0.000   |         | 0.000      |
| 1.000     | 2.4   | 0.707  | 0.01   | 18.31  | 17.80  |        | 0.240   | 0.190   |         | 0.215      |
| 2.000     | 18.8  | 5.652  | 0.08   | 18.05  | 17.55  |        | 0.500   | 0.440   |         | 0.470      |
| 3.000     | 37.7  | 11.304 | 0.16   | 17.75  | 17.36  |        | 0.800   | 0.630   |         | 0.715      |
| 4.000     | 58.9  | 17.663 | 0.25   | 17.56  | 17.21  |        | 0.990   | 0.780   |         | 0.885      |
| 5.000     | 77.7  | 23.315 | 0.33   | 17.32  | 17.08  |        | 1.230   | 0.910   |         | 1.070      |
| 6.000     | 98.9  | 29.673 | 0.42   | 17.10  | 16.94  |        | 1.450   | 1.050   |         | 1.250      |
| 7.000     | 117.8 | 35.325 | 0.50   | 16.85  | 16.75  |        | 1.700   | 1.240   |         | 1.470      |
| 8.000     | 58.9  | 17.663 | 0.25   | 16.92  | 16.80  |        | 1.630   | 1.190   |         | 1.410      |
| 9.000     | 29.4  | 8.831  | 0.12   | 17.05  | 16.88  |        | 1.500   | 1.110   |         | 1.305      |
| 9.000     | 2.4   | 0.707  | 0.01   | 17.35  | 17.15  |        | 1.200   | 0.840   |         | 1.020      |
| 10.000    | 2.4   | 0.707  | 0.01   | 17.35  | 17.15  |        | 1.200   | 0.840   |         | 1.020      |
| 11.000    | 18.8  | 5.652  | 0.08   | 17.25  | 17.07  |        | 1.300   | 0.920   |         | 1.110      |
| 12.000    | 37.7  | 11.304 | 0.16   | 17.13  | 16.98  |        | 1.420   | 1.010   |         | 1.215      |
| 13.000    | 58.9  | 17.663 | 0.25   | 17.05  | 16.90  |        | 1.500   | 1.090   |         | 1.295      |
| 14.000    | 77.7  | 23.315 | 0.33   | 16.94  | 16.82  |        | 1.610   | 1.170   |         | 1.390      |
| 15.000    | 98.9  | 29.673 | 0.42   | 16.80  | 16.76  |        | 1.750   | 1.230   |         | 1.490      |

|                |         | s       | Δs      | Δσ  |
|----------------|---------|---------|---------|-----|
| 0.7 $\sigma_1$ | 0.35    | 1.0575  | 0.37312 | 0.2 |
| 0.3 $\sigma_1$ | 0.15    | 0.68438 |         |     |
| 0.7 $\sigma_2$ | 0.35    | 1.41222 | 0.21221 | 0.2 |
| 0.3 $\sigma_2$ | 0.15    | 1.20001 |         |     |
| D (mm)         | 300     |         |         |     |
| $E_{v1}$       | 120.60  |         |         |     |
| $E_{v2}$       | 212.05  |         |         |     |
| Area (Sq.m)    | 0.07065 |         |         |     |

$$E_{v2}/E_{v1} = 1.76$$

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

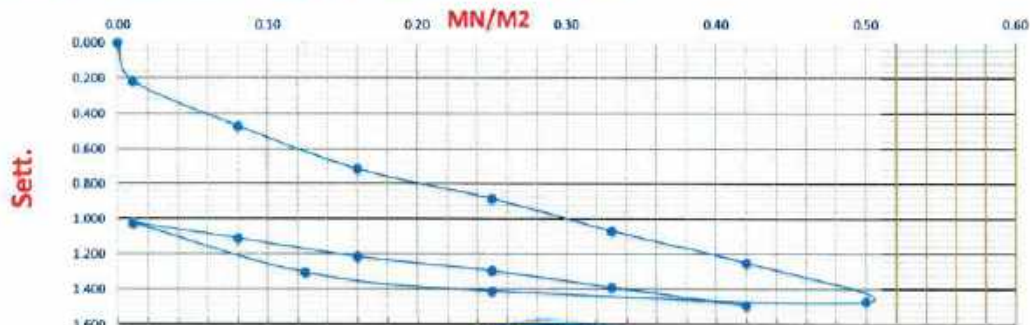
$E_v$  = deformation modulus

$\Delta \sigma$  = load increment

$\Delta s$  = settlement increment

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

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



Contractor Engineer

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Youssef Ragab

**UNIVERSAL  
INSPECTION  
REQUEST**



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



SVSEIR SHAKER



الهيئة العامة  
للطرق والكباري

**RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24**  
 The Work described below will be complete and ready for inspection at planned time shown

|                                      |                             |                                                                                   |                |                   |             |     |    |    |      |    |    |
|--------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|----------------|-------------------|-------------|-----|----|----|------|----|----|
| Contractor Company                   | <b>EL . ZHOOR . COMPANY</b> |                                                                                   |                | Designer Company* | KK CONSULT. |     |    |    |      |    |    |
| Issued by Contractor                 | Name                        | Sign                                                                              | Date           | Time              |             |     |    |    |      |    |    |
|                                      | Eng : Mahmoud Elkhilawy     |  | 11 - 10 - 2023 |                   |             |     |    |    |      |    |    |
| Received by Employers Representative | M.A                         | 10/11/2023                                                                        | UIR            | C1                | C2          | C3  | DD | MM | YY   | HH | MM |
|                                      |                             |                                                                                   |                | K.P536            | E W         | C S | 11 | 10 | 2023 |    |    |

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

**EXPLANATION OF WORK TO BE INSPECTED**

| Description | Element        | Item                               |
|-------------|----------------|------------------------------------|
| Earth Works | Fill ( -0.25 ) | From St ( 536+780 ) to ( 536+800 ) |

**INSPECTION DETAILS** The Following will be ready at the Planned Inspection Time

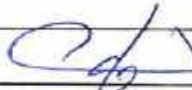
|                         |                         |
|-------------------------|-------------------------|
| Planned Inspection Date | Planned Inspection Time |
| 11.10.2023              |                         |

**COMPLIANCE EVIDENCE** Must be Included as appropriate

|                                             |                                                |                                               |                                             |
|---------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| Checklist Attached <input type="checkbox"/> | Test Results Attached <input type="checkbox"/> | Calibration Attached <input type="checkbox"/> | Other as indicated <input type="checkbox"/> |
| Drawing Reference                           | ITP Reference                                  | MS Reference                                  |                                             |
|                                             |                                                |                                               |                                             |

| Civil                                             | Survey                            | Material                                                   |
|---------------------------------------------------|-----------------------------------|------------------------------------------------------------|
| Mohamed Saleh<br>Visual inspection<br>is approved | Ahmed Abdel<br>Tests are approved | Mohamed Saleh<br>Compaction test<br>is approved 12/10/2023 |

**INSPECTION RESULT**

| Organisation                   | Name               | Sign                                                                                | Date | Time | Approval Status | Please Tick if Not Attend |
|--------------------------------|--------------------|-------------------------------------------------------------------------------------|------|------|-----------------|---------------------------|
| Contractor                     | ENG : M. ELKHLAWY  |  |      |      |                 |                           |
| QA/QC*                         |                    |                                                                                     |      |      |                 |                           |
| GARB**                         | ENG : KHALED FAWZY |  |      |      | A               |                           |
| Employers Representative Notes |                    |                                                                                     |      |      |                 |                           |
| Employers Representative Sign  | M.A                | 10/30/2023                                                                          |      |      | A               |                           |

\* Designer  
 \*\* Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع ( فوكه - مطروح )  
 شركة (الزهور)  
 من المحطة ( 536+780 ) إلى المحطة ( 536+800 )

| STATION | LEFT SIDE  |       |       |       | S.E. % | PGL          |             |       | S.E. % | RIGHT SIDE |       |            |  |
|---------|------------|-------|-------|-------|--------|--------------|-------------|-------|--------|------------|-------|------------|--|
|         | ACT. WIDTH | 13.84 | 10    | 5     |        | DESIGN LEVEL | FERMA LEVEL | CL    |        | 5          | 10.34 | ACT. WIDTH |  |
| 536+780 |            | 59.84 | 60.00 | 60.20 |        |              | 60.65       | 60.40 |        | 60.20      | 59.98 |            |  |
| Act.    |            |       |       |       | -4%    | 61.55        |             | 2,04  | -4%    |            |       |            |  |
| Diff.   |            | +1    | -2    | +1    |        |              |             | 42    |        | -1         | +1    |            |  |
| 536+800 |            | 59.90 | 60.06 | 60.26 |        |              | 60.71       | 60.46 |        | 60.26      | 60.04 |            |  |
| Act.    |            |       |       |       | -4%    | 61.61        |             |       | -4%    |            |       |            |  |
| Diff.   |            | +2    | +1    | ✓     |        |              |             | +1    |        | +1         | -1    |            |  |

2,84 +  
 59,60

60.40

Hmad Asraf  
 1

2.27

mohamed

| Layer Zone |                              | MS FROM ST.(536+700) TO ST.(536+780) |         |         |         |         | Layer No. |  |
|------------|------------------------------|--------------------------------------|---------|---------|---------|---------|-----------|--|
|            | Middle Empe: Upper Empankemt | Station                              | 536+700 | 536+720 | 536+740 | 536+760 | 536+780   |  |
|            |                              |                                      | 61.31   | 61.37   | 61.43   | 61.49   | 61.55     |  |
|            |                              |                                      | 60.41   | 60.47   | 60.53   | 60.59   | 60.65     |  |
|            |                              |                                      | 59.11   | 59.66   | 59.90   | 59.87   | 58.85     |  |
|            |                              |                                      | 1.30    | 0.81    | 0.63    | 0.72    | 1.79      |  |
|            |                              | 0                                    | 60.41   | 60.47   | 60.53   | 60.59   | 60.65     |  |
|            |                              | -0.25                                | 60.16   | 60.22   | 60.28   | 60.34   | 60.40     |  |
|            |                              | -0.5                                 | 59.91   | 59.97   | 60.03   | 60.09   | 60.15     |  |
|            |                              | -0.75                                | 59.66   | 59.72   |         |         | 59.90     |  |
|            |                              | -1                                   | 59.41   |         |         |         | 59.65     |  |
|            |                              | -1.25                                | 59.16   |         |         |         | 59.40     |  |
|            |                              | -1.5                                 |         |         |         |         | 59.15     |  |
|            |                              | -1.75                                |         |         |         |         | 58.90     |  |
|            |                              | -2                                   |         |         |         |         |           |  |
|            |                              | -2.5                                 |         |         |         |         |           |  |

MS Approved }  
 acc. to Design Table }  
 Rev. 1.0

## C.L DATA

| Station    | Easting     | Northing    |
|------------|-------------|-------------|
| 536+780.00 | 290243.0024 | 943940.0055 |
| 536+800.00 | 290223.6976 | 943945.2328 |

*Amr A. Abd*

*22/2*

*Amr A.*

# TYPICAL WIDTH

| layer | slope  | left  | slop   | right | TOTAL |
|-------|--------|-------|--------|-------|-------|
| 0     | -4.00% | 13.44 | -4.00% | 9.94  | 23.38 |
| -0.25 | -4.00% | 13.84 | -4.00% | 10.34 | 24.18 |
| -0.5  | -4.00% | 14.24 | -4.00% | 10.74 | 24.98 |
| -0.75 | -4.00% | 14.64 | -4.00% | 11.14 | 25.78 |
| -1    | -4.00% | 15.04 | -4.00% | 11.54 | 26.58 |
| -1.25 | -4.00% | 5     | -4.00% | 5     | 10    |
| -1.5  | 0%     | 14.88 | 0%     | 11.59 | 26.47 |

Amor Asad

22

Amor Asad

# MATERIAL INSPECTION REQUEST

الهيئة العامة  
للطرق والكباري  
(GARE)



وزارة النقل  
Ministry of Transport

ENGINEERING CONSULTANT OFFICE  
المكتب الاستشاري الهندسي  
للمواصلات



|                      |                       |      |     |                  |             |    |    |    |      |    |    |
|----------------------|-----------------------|------|-----|------------------|-------------|----|----|----|------|----|----|
| Contractor Company   | El . Zhoor . Company  |      |     | Designer Company | KK CONSULT. |    |    |    |      |    |    |
| Issued by Contractor | Name                  | Sten |     | Date             | COD         |    |    |    |      |    |    |
|                      | Eng \ Mahmoud elkhawy |      |     | 12-4-2023        | ZH 21       |    |    |    |      |    |    |
| Received by ER       |                       |      | MIR | C1               | C2          | C3 | DD | MM | YY   | HH | MM |
|                      |                       |      |     |                  |             |    | 12 | 4  | 2023 |    |    |

|        |                         |                 |                                           |
|--------|-------------------------|-----------------|-------------------------------------------|
| CODE-1 | 51 to 521               | D1 to 53        | Kp XXX Note                               |
|        | Station Reference       | Depot Reference | For Kilometer point only Start Km is used |
| CODE-2 | Work Activity           |                 |                                           |
| CODE-3 | Sub Element of Activity |                 |                                           |

| Description of Materials | Fill material results |         |         |                |         |         |
|--------------------------|-----------------------|---------|---------|----------------|---------|---------|
| Location to be Used      | fill ( 0 )            | 536+680 | 536+560 | FILL ( -0.5 )  | 536+720 | 536+680 |
|                          | FLAT ( -1.5 )         | 536+800 | 536+780 | FILL ( -0.75 ) | 536+800 | 536+780 |
|                          | FLAT ( -1 )           | 536+700 | 536+680 | FILL ( -0.25 ) | 536+720 | 536+680 |
|                          | FILL ( -1.25 )        | 536+800 | 536+780 | FILL ( -0.5 )  | 536+800 | 536+780 |
|                          | FILL ( -0.75 )        | 536+700 | 536+680 | FILL ( -0.25 ) | 536+800 | 536+780 |
|                          | FILL ( -1 )           | 536+800 | 536+780 | FILL ( 0 )     | 536+720 | 536+680 |
|                          |                       |         |         | FILL ( 0 )     | 536+800 | 536+720 |

|                  |                   |       |        |  |
|------------------|-------------------|-------|--------|--|
| MAR Approval No  |                   |       | Date   |  |
| Supplier Name    |                   |       |        |  |
| Test Requirement | Specification     |       | Clause |  |
| Reference Photos | Yes attached / No | Other |        |  |

| Item | Description         | Unit | Quantity | Arrival Date | Note |
|------|---------------------|------|----------|--------------|------|
| 1    | L.L & P.L & O.M.C % | m3   | 5000     | 9 - 4 - 2023 |      |
| 2    | Proctor             | m3   | 5000     | 9 - 4 - 2023 |      |
| 3    | Classification      | m3   | 5000     | 9 - 4 - 2023 |      |
| 4    | Seive analysis      | m3   | 5000     | 9 - 4 - 2023 |      |

|                                                                                                                                              |              |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comments by:                                                                                                                                 | Comments by: |
| Asample has been taken form fill material by KK office to (mansor ali hasan) lab and the results founded meet the specifcotions and accepted |              |

| APPROVAL STATUS          |                 |      |      |         |
|--------------------------|-----------------|------|------|---------|
| Organisation             | Name            | Sign | Date | A-AWC-R |
| Contractor               | Mahmoud elkhawy |      |      |         |
| QA/QC *                  | Mohamed Ali     |      |      |         |
| GARB**                   |                 |      |      |         |
| Comment by ER            |                 |      |      |         |
| Employers Representative |                 |      |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST

الهيئة العامة  
للمطرق والكباري  
(GARB)



|                      |                        |      |                  |       |    |
|----------------------|------------------------|------|------------------|-------|----|
| Contractor Company   | EL ZHOOR COMPANY       |      | Designer Company | KK    |    |
| Issued by Contractor | Name                   | Sign | Date             | cod   |    |
|                      | ENG : MAHMOUD ELKHLAWY |      | 12 - 4 - 2023    | Zh 21 |    |
| Received by ER       |                        |      |                  | C1    | C2 |
|                      |                        | MAR  |                  | C3    | DD |
|                      |                        |      |                  | MM    | YY |
|                      |                        |      |                  | HH    | MM |
|                      |                        |      |                  | 12    | 4  |
|                      |                        |      |                  | 2023  |    |

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

|                          |                         |                    |                         |        |
|--------------------------|-------------------------|--------------------|-------------------------|--------|
| Description of Materials | Soil classify ( A 1 a ) |                    |                         |        |
| Location to be Used      | 536+000 to 537+000      |                    |                         |        |
| item                     | Spacification           | Test Requirment    | Test Result Attachment  | Remark |
| 1                        | ASTM D 75               | Aggregate Sampling | According Spacification |        |
| 2                        | ASTM C 136              | Sieve Analysis     | According Spacification |        |
| 3                        | ASTM D 1440             | Passing Sieve #200 | 8.3 %                   |        |
| 4                        | ASTM D 4318             | Atterberg Limit    | NOq                     |        |
| 5                        | ASTM D 2974             | Moisture Content   | 6.5 %                   |        |
| 6                        | ASTM D 1557             | Modifid Proctor    | 2.156                   |        |
| 7                        | ASTM D 1883             | C B R              | 48.20%                  |        |
| Comments by:             |                         | Comments by:       |                         |        |
|                          |                         |                    |                         |        |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | MAHMOUD ELKHLAWY |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only

|                                                                                  |                                                                                                                                                                                               |                                           |                                                                                     |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|
|  | Project Name: <b>Water Supply Project - Phase 1</b><br>Location: <b>Al-Badayer District - Al-Badayer Municipality</b><br>Client: <b>Ministry of Water Resources - Kingdom of Saudi Arabia</b> |                                           |  |
|                                                                                  | Drawing No: <b>WS-001</b><br>Revision: <b>01</b>                                                                                                                                              | Date: <b>15/05/2023</b>                   |                                                                                     |
|                                                                                  | Prepared by: <b>Eng. Ahmed Al-Murshid</b><br>Checked by: <b>Eng. Mohamed Al-Sayid</b>                                                                                                         | Approved by: <b>Eng. Mohamed Al-Sayid</b> |                                                                                     |

Particulars of the project and its location

|                      |              |  |  |  |  |
|----------------------|--------------|--|--|--|--|
| TESTING DATE:        | 05/05/2023   |  |  |  |  |
| LOCATION:            | K.P. 530-540 |  |  |  |  |
| NAME COMPANY:        | Electron     |  |  |  |  |
| Ref. Inspection No.: |              |  |  |  |  |

Identify soil

| Soils of built materials |     |        |        | SAC IN D (kg/cm²) |        | SAC IN D (kg/cm²) |        | G.P. | Soil classify |  |
|--------------------------|-----|--------|--------|-------------------|--------|-------------------|--------|------|---------------|--|
| Soils size               | 2   | 1.5    | 1      | 40                | 20     | 10                | 5      |      | Soil classify |  |
| 0.05                     | 0.0 | 1454.0 | 1700.0 | 1711.0            | 2011.0 | 1700.0            | 1700.0 |      |               |  |
| relative Retained (%)    |     |        |        | 100.0             | 99.0   | 100.0             | 100.0  | PTU  | 2.15          |  |
| unretained (%)           |     |        |        | 0.0               | 0.0    | 0.0               | 0.0    | W.C. | 0.69          |  |
| unretained Percent (%)   |     |        |        |                   |        |                   |        | GR   | 48.20         |  |

| Soils of built materials |       |        |        | SAC IN D (kg/cm²) |    | SAC IN D (kg/cm²) |   | G.P. |
|--------------------------|-------|--------|--------|-------------------|----|-------------------|---|------|
| Soils size               | 10    | 40     | 200    | 40                | 20 | 10                | 5 |      |
| relative Retained (%)    | 50.00 | 235.00 | 272.00 |                   |    |                   |   |      |
| unretained Retained (%)  |       |        |        |                   |    |                   |   |      |
| unretained Percent (%)   |       |        |        |                   |    |                   |   |      |

| Soils of built materials |      |      |      | SAC IN D (kg/cm²) |      | SAC IN D (kg/cm²) |     | G.P. | Soil classify |       |
|--------------------------|------|------|------|-------------------|------|-------------------|-----|------|---------------|-------|
| Soils size (mm)          | 2    | 1.5  | 1    | 40                | 20   | 10                | 5   |      | Soil classify |       |
| Soils size (mm)          | 50.0 | 37.5 | 25.0 | 15.0              | 10.0 | 5.0               | 2.5 | 1.0  | 0.425         | 0.075 |
| relative Retained (%)    |      |      |      |                   |      |                   |     |      |               |       |

| ATTERBERG<br>LIMITS | LIQUID LIMIT (LL) |  | 3 | PLASTIC INDEX (PI) |  |
|---------------------|-------------------|--|---|--------------------|--|
|                     | ML                |  |   | MP                 |  |



Consultant  
 M.H.  
 30/05/23



|                  |               |       |            |             |         |
|------------------|---------------|-------|------------|-------------|---------|
| Formula          | $C_2H_4O_2$   | 46.04 | Molar mass | 88.06 g/mol | Density |
| Acid name        | $H_2SO_4$     |       |            |             |         |
| Name of compound | Sulfuric acid |       |            |             |         |

### Case Reports

[illegible]

| Chlorophyll: Carotenoid Ratio of <i>Chlorella</i> sp. | Year |
|-------------------------------------------------------|------|
| 1.00                                                  | 1957 |
| 1.00                                                  | 1958 |
| 1.00                                                  | 1959 |
| 1.00                                                  | 1960 |
| 1.00                                                  | 1961 |
| 1.00                                                  | 1962 |
| 1.00                                                  | 1963 |
| 1.00                                                  | 1964 |
| 1.00                                                  | 1965 |
| 1.00                                                  | 1966 |
| 1.00                                                  | 1967 |
| 1.00                                                  | 1968 |
| 1.00                                                  | 1969 |
| 1.00                                                  | 1970 |
| 1.00                                                  | 1971 |
| 1.00                                                  | 1972 |
| 1.00                                                  | 1973 |
| 1.00                                                  | 1974 |
| 1.00                                                  | 1975 |
| 1.00                                                  | 1976 |
| 1.00                                                  | 1977 |
| 1.00                                                  | 1978 |
| 1.00                                                  | 1979 |
| 1.00                                                  | 1980 |
| 1.00                                                  | 1981 |
| 1.00                                                  | 1982 |
| 1.00                                                  | 1983 |
| 1.00                                                  | 1984 |
| 1.00                                                  | 1985 |
| 1.00                                                  | 1986 |
| 1.00                                                  | 1987 |
| 1.00                                                  | 1988 |
| 1.00                                                  | 1989 |
| 1.00                                                  | 1990 |
| 1.00                                                  | 1991 |
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| 1.00                                                  | 1994 |
| 1.00                                                  | 1995 |
| 1.00                                                  | 1996 |
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| 1.00                                                  | 2012 |
| 1.00                                                  | 2013 |
| 1.00                                                  | 2014 |
| 1.00                                                  | 2015 |
| 1.00                                                  | 2016 |
| 1.00                                                  | 2017 |
| 1.00                                                  | 2018 |
| 1.00                                                  | 2019 |
| 1.00                                                  | 2020 |
| 1.00                                                  | 2021 |
| 1.00                                                  | 2022 |
| 1.00                                                  | 2023 |
| 1.00                                                  | 2024 |
| 1.00                                                  | 2025 |
| 1.00                                                  | 2026 |
| 1.00                                                  | 2027 |
| 1.00                                                  | 2028 |
| 1.00                                                  | 2029 |
| 1.00                                                  | 2030 |
| 1.00                                                  | 2031 |
| 1.00                                                  | 2032 |
| 1.00                                                  | 2033 |
| 1.00                                                  | 2034 |
| 1.00                                                  | 2035 |
| 1.00                                                  | 2036 |
| 1.00                                                  | 2037 |
| 1.00                                                  | 2038 |
| 1.00                                                  | 2039 |
| 1.00                                                  | 2040 |
| 1.00                                                  | 2041 |
| 1.00                                                  | 2042 |
| 1.00                                                  | 2043 |
| 1.00                                                  | 2044 |
| 1.00                                                  | 2045 |
| 1.00                                                  | 2046 |
| 1.00                                                  | 2047 |
| 1.00                                                  | 2048 |
| 1.00                                                  | 2049 |
| 1.00                                                  | 2050 |
| 1.00                                                  | 2051 |
| 1.00                                                  | 2052 |
| 1.00                                                  | 2053 |
| 1.00                                                  | 2054 |
| 1.00                                                  | 2055 |
| 1.00                                                  | 2056 |
| 1.00                                                  | 2057 |
| 1.00                                                  | 2058 |
| 1.00                                                  | 2059 |
| 1.00                                                  | 2060 |
| 1.00                                                  | 2061 |
| 1.00                                                  | 2062 |
| 1.00                                                  | 2063 |
| 1.00                                                  | 2064 |
| 1.00                                                  | 2065 |
| 1.00                                                  | 2066 |
| 1.00                                                  | 2067 |
| 1.00                                                  | 2068 |
| 1.00                                                  | 2069 |
| 1.00                                                  | 2070 |
| 1.00                                                  | 2071 |
| 1.00                                                  | 2072 |
| 1.00                                                  | 2073 |
| 1.00                                                  | 2074 |
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| 1.00                                                  | 2077 |
| 1.00                                                  | 2078 |
| 1.00                                                  | 2079 |
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| 1.00                                                  | 2081 |
| 1.00                                                  | 2082 |
| 1.00                                                  | 2083 |
| 1.00                                                  | 2084 |
| 1.00                                                  | 2085 |
| 1.00                                                  | 2086 |
| 1.00                                                  | 2087 |
| 1.00                                                  | 2088 |
| 1.00                                                  | 2089 |
| 1.00                                                  | 2090 |
| 1.00                                                  | 2091 |
| 1.00                                                  | 2092 |
| 1.00                                                  | 2093 |
| 1.00                                                  | 2094 |
| 1.00                                                  | 2095 |
| 1.00                                                  | 2096 |
| 1.00                                                  | 2097 |
| 1.00                                                  | 2098 |
| 1.00                                                  | 2099 |
| 1.00                                                  | 2100 |

| Source of Funds   |      |
|-------------------|------|
| Initial Cash Flow |      |
| Revenue           |      |
| Interest Income   | 0.00 |
| Loan Losses       | 0.00 |
| Dividends         |      |
| Net Income        | 0.00 |
| Other Income      |      |

*Journal of Management Education* 27(1)

[illegible]

### References

| Function | Year | Percentage | Value | 2002-2003 | 2003-2004 | 2004-2005 |
|----------|------|------------|-------|-----------|-----------|-----------|
| 2002     | 2003 | 100        | 100   | 100       | 100       | 100       |
| 2003     | 2004 | 100        | 100   | 100       | 100       | 100       |
| 2004     | 2005 | 100        | 100   | 100       | 100       | 100       |

1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 26

1992

Figure 1

11/16/2019 2:22:00 PM

Topic: Mohammed Ali

Normal: 111  
32



### Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein

Section -7 From Foka To MARS MATROUH

From Station 504+000 To Station 568+177



ACTIVITY : Sand cone test

laboratory results

COD

Z H ( 21 )

|                       |                    |                   |              |
|-----------------------|--------------------|-------------------|--------------|
| Company :             | EL-ZHOUR COMPANY   | Layer level :     | fill (-0.25) |
| Description:          | Compaction test    | Layer Thickness : | 0.25 m       |
| Station represented : | 536+780 TO 536+800 | Sample Date :     | 12/10/2023   |

#### Modified Proctor Testing Results

| Max. Dry Density . gm/cm3 | Optimum Moisture Content . % | Degree of Compaction Required . % | Bulk Density of Specified Sand . gm/cm3 |
|---------------------------|------------------------------|-----------------------------------|-----------------------------------------|
| 2.15                      | 6.5                          | 95%                               | 1.48                                    |

#### Compaction Testing Results & Calculations

|                                |         |  |  |  |  |  |  |  |  |  |
|--------------------------------|---------|--|--|--|--|--|--|--|--|--|
| STATION                        | 536+800 |  |  |  |  |  |  |  |  |  |
| Hole No.                       | 1       |  |  |  |  |  |  |  |  |  |
| WT, of Sand before Test ,gm    | 9426    |  |  |  |  |  |  |  |  |  |
| WT, of Sand After Test ,gm     | 5376    |  |  |  |  |  |  |  |  |  |
| WT, of Sand in Cone + hole ,gm | 4050    |  |  |  |  |  |  |  |  |  |
| WT, of Sand in Cone            | 1140    |  |  |  |  |  |  |  |  |  |
| WT, of Sand at hole ,gm        | 2910    |  |  |  |  |  |  |  |  |  |
| Volume of the hole, Cm3        | 1966    |  |  |  |  |  |  |  |  |  |
| WT, of Soil from Hole ,gm      | 4382    |  |  |  |  |  |  |  |  |  |
| Bulk Density of Soil, gm/cm3   | 2.229   |  |  |  |  |  |  |  |  |  |
| Moisture Content , %           | 6.1     |  |  |  |  |  |  |  |  |  |
| Dry Density, gm/cm3            | 2.101   |  |  |  |  |  |  |  |  |  |
| Compaction, (%)                | 97.7%   |  |  |  |  |  |  |  |  |  |

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Site engineer :-

Name :- Mahmoud El Khlewy

Signature :-

Consultant Materials Engineer :-

Name :-

Signature :-

momen esmaeel  
12/10/2023

ZHR-6-173

UNIVERSAL  
INSPECTION  
REQUEST

## RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24

The Work described below will be complete and ready for inspection at planned time shown

|                                      |                             |                |                          |             |                                           |     |    |    |      |    |    |
|--------------------------------------|-----------------------------|----------------|--------------------------|-------------|-------------------------------------------|-----|----|----|------|----|----|
| Contractor Company                   | EL . ZHOOR . COMPANY        |                | Designer Company*        | KK CONSULT. |                                           |     |    |    |      |    |    |
| Issued by Contractor                 | Name                        | Sign           | Date                     | Time        |                                           |     |    |    |      |    |    |
|                                      | Eng : Mahmoud Elkhilawy     | <i>Mohamed</i> | 10 - 10 - 2023           | 10:12       |                                           |     |    |    |      |    |    |
| Received by Employers Representative | M.A                         | 10/10/2023     | UIR                      | C1          | C2                                        | C3  | DD | MM | YY   | HH | MM |
|                                      |                             |                |                          | K.P536      | E W                                       | C S | 10 | 10 | 2023 | 10 | 12 |
| CODE-1                               | S1 to S21 Station Reference |                | D1 to S3 Depot Reference |             | Kp XXX Note                               |     |    |    |      |    |    |
| CODE - 2                             |                             |                | Work Activity            |             | For Kilometer point only Start Km is used |     |    |    |      |    |    |
| CODE - 3                             |                             |                | Sub Element of Activity  |             |                                           |     |    |    |      |    |    |

## EXPLANATION OF WORK TO BE INSPECTED

| Description | Element       | Item                               |
|-------------|---------------|------------------------------------|
| Earth Works | Fill ( -0.5 ) | From St ( 536+780 ) to ( 536+800 ) |

## INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

|                         |                         |
|-------------------------|-------------------------|
| Planned Inspection Date | Planned Inspection Time |
| 10.10.2023              | 12:01                   |

## COMPLIANCE EVIDENCE Must be Included as appropriate

|                                             |                                                |                                               |                                             |
|---------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| Checklist Attached <input type="checkbox"/> | Test Results Attached <input type="checkbox"/> | Calibration Attached <input type="checkbox"/> | Other as indicated <input type="checkbox"/> |
| Drawing Reference                           | ITP Reference                                  | MS Reference                                  |                                             |

| Civil                                             | Survey                                | Material                                                   |
|---------------------------------------------------|---------------------------------------|------------------------------------------------------------|
| <i>momenesmaeel visual inspection is approved</i> | <i>Amr Ashab</i><br><i>10/10/2023</i> | <i>momenesmaeel Compaction test is approved 11/10/2023</i> |

| INSPECTION RESULT              |                    |                |      |      | Approval Status | Please Tick if Not Attend |
|--------------------------------|--------------------|----------------|------|------|-----------------|---------------------------|
| Organisation                   | Name               | Sign           | Date | Time | A-AWC-R         |                           |
| Contractor                     | ENG : M . ELKHLAWY | <i>Mohamed</i> |      |      |                 |                           |
| QA/QC*                         |                    |                |      |      |                 |                           |
| GARB**                         | ENG : KHALED FAWZY | <i>Khaled</i>  |      |      | A               |                           |
| Employers Representative Notes |                    |                |      |      |                 |                           |
| Employers Representative Sign  | M.A                | 10/10/2023     |      |      | A               |                           |

\* Designer

\*\* Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع ( فوكه - مطروح )  
 شركة (الزهور)  
 من المحطة ( 536+780 ) إلى المحطة ( 536+800 )

| <div>ENGINEERING CONSULTING OFFICE<br/>مكتب الاستشارات الهندسية<br/>ش.م.ك. ١٩٩٥</div> |  |              |  |             |           |        |       |  |  |            |  |       | <div>ENGINEERING CONSULTING OFFICE<br/>مكتب الاستشارات الهندسية<br/>ش.م.ك. ١٩٩٥</div> |       |       |            |
|---------------------------------------------------------------------------------------|--|--------------|--|-------------|-----------|--------|-------|--|--|------------|--|-------|---------------------------------------------------------------------------------------|-------|-------|------------|
| LAYER LEVEL                                                                           |  | PGL          |  |             | LEFT SIDE |        |       |  |  | RIGHT SIDE |  |       |                                                                                       |       |       |            |
| -0.5                                                                                  |  | DESIGN LEVEL |  | FERMA LEVEL | CL        | S.E. % | 14.24 |  |  | 10         |  | 5     | S.E. %                                                                                | 5     | 10.74 | ACT. WIDTH |
| 536+780                                                                               |  | 61.55        |  | 60.65       | 60.15     | -4%    | 59.58 |  |  | 59.75      |  | 59.95 | -4%                                                                                   | 59.95 | 59.72 |            |
| Act.                                                                                  |  | 61.55        |  |             |           | -4%    |       |  |  |            |  |       |                                                                                       |       |       |            |
| Diff.                                                                                 |  | 61.55        |  |             |           |        | -2    |  |  | +1         |  | -1    |                                                                                       | +1    | -1    | +2         |
| 536+800                                                                               |  | 61.61        |  | 60.71       | 60.21     | -4%    | 59.64 |  |  | 59.81      |  | 60.01 | -4%                                                                                   | 60.01 | 59.78 |            |
| Act.                                                                                  |  | 61.61        |  |             |           | -4%    |       |  |  |            |  |       |                                                                                       |       |       |            |
| Diff.                                                                                 |  | 61.61        |  |             |           |        | +2    |  |  | -1         |  | +2    |                                                                                       | -1    | +2    | -1         |

Ahmed Ashraf  
 (Total Station)

م/احمد فهد



| Layer Zone |                      | MS FROM ST.(536+700) TO ST.(536+780) |         |         |         |         |  |
|------------|----------------------|--------------------------------------|---------|---------|---------|---------|--|
| Layer No.  | Station              | 536+700                              | 536+720 | 536+740 | 536+760 | 536+780 |  |
|            | DESIGN LEVEL         | 61.31                                | 61.37   | 61.43   | 61.49   | 61.55   |  |
|            | FERMA LEVEL          | 60.41                                | 60.47   | 60.53   | 60.59   | 60.65   |  |
|            | CUT LEVEL            | 59.11                                | 59.66   | 59.90   | 59.87   | 58.85   |  |
|            | DIFF ( FERMA - CUT ) | 1.30                                 | 0.81    | 0.63    | 0.72    | 1.79    |  |
| 1          | 0                    | 60.41                                | 60.47   | 60.53   | 60.59   | 60.65   |  |
| 2          | -0.25                | 60.16                                | 60.22   | 60.28   | 60.34   | 60.40   |  |
| 3          | -0.5                 | 59.91                                | 59.97   | 60.03   | 60.09   | 60.15   |  |
| 4          | -0.75                | 59.66                                | 59.72   |         |         | 59.90   |  |
| 5          | -1                   | 59.41                                |         |         |         | 59.65   |  |
| 6          | -1.25                | 59.16                                |         |         |         | 59.40   |  |
| 7          | -1.5                 |                                      |         |         |         | 59.15   |  |
| 8          | -1.75                |                                      |         |         |         | 58.90   |  |
| 9          | -2                   |                                      |         |         |         |         |  |
| 10         | -2.5                 |                                      |         |         |         |         |  |

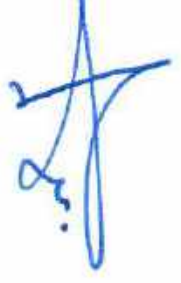
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Mr. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. 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MS Approved }  
 over the Design Profile }  
 Rev-10

## C.L DATA

| Station    | Easting     | Northing    |
|------------|-------------|-------------|
| 536+780.00 | 290243.0024 | 943940.0055 |
| 536+800.00 | 290223.6976 | 943945.2328 |

Abnef Asad



# TYPICAL WIDTH

| layer | slope  | left  | slop   | right | TOTAL |
|-------|--------|-------|--------|-------|-------|
| 0     | -4.00% | 13.44 | -4.00% | 9.94  | 23.38 |
| -0.25 | -4.00% | 13.84 | -4.00% | 10.34 | 24.18 |
| -0.5  | -4.00% | 14.24 | -4.00% | 10.74 | 24.98 |
| -0.75 | -4.00% | 14.64 | -4.00% | 11.14 | 25.78 |
| -1    | -4.00% | 15.04 | -4.00% | 11.54 | 26.58 |
| -1.25 | -4.00% | 5     | -4.00% | 5     | 10    |
| -1.5  | 0%     | 14.88 | 0%     | 11.59 | 26.47 |

Handwritten signature

Handwritten signature and date 19/10/2023

# MATERIAL INSPECTION REQUEST

الهيئة العامة  
للمطرق والكباري  
(GARB)



|                      |                        |      |                                                                                                                                                                                                                                          |             |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
|----------------------|------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|----|----|----|----|----|----|--|--|--|----|---|------|--|--|--|
| Contractor Company   | El . Zhoor . Company   |      | Designer Company                                                                                                                                                                                                                         | KK CONSULT. |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
| Issued by Contractor | Name                   | Sign | Date                                                                                                                                                                                                                                     | COD         |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
|                      | Eng \ Mahmoud elkhlawy |      | 12-4-2023                                                                                                                                                                                                                                | ZH 21       |      |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |
| Received by ER       |                        | MIR  | <table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>12</td> <td>4</td> <td>2023</td> <td></td> <td></td> </tr> </table> | C1          | C2   | C3 | DD | MM | YY | HH | MM |  |  |  | 12 | 4 | 2023 |  |  |  |
| C1                   | C2                     | C3   | DD                                                                                                                                                                                                                                       | MM          | YY   | HH | MM |    |    |    |    |  |  |  |    |   |      |  |  |  |
|                      |                        |      | 12                                                                                                                                                                                                                                       | 4           | 2023 |    |    |    |    |    |    |  |  |  |    |   |      |  |  |  |

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

| Description of Materials | Fill material results |         |         |                |                 |
|--------------------------|-----------------------|---------|---------|----------------|-----------------|
| Location to be Used      | FILL ( 0 )            | 536+680 | 536+560 | FILL ( -0.5 )  | 536+720 536+680 |
|                          | FLAT ( -1.5 )         | 536+800 | 536+780 | FILL ( -0.75 ) | 536+800 536+780 |
|                          | FLAT ( -1 )           | 536+700 | 536+680 | FILL ( -0.25 ) | 536+720 536+680 |
|                          | FILL ( -1.25 )        | 536+800 | 536+780 | FILL ( -0.5 )  | 536+800 536+780 |
|                          | FILL ( -0.75 )        | 536+700 | 536+680 | FILL ( -0.25 ) | 536+800 536+780 |
|                          | FILL ( -1 )           | 536+800 | 536+780 | FILL ( 0 )     | 536+720 536+680 |
|                          |                       |         |         | FILL ( 0 )     | 536+800 536+720 |
|                          |                       |         |         |                |                 |

|                  |                   |       |        |  |
|------------------|-------------------|-------|--------|--|
| MAR Approval No  |                   |       | Date   |  |
| Supplier Name    |                   |       |        |  |
| Test Requirement | Specification     |       | Clause |  |
| Reference Photos | Yes attached / No | Other |        |  |

| Item | Description         | Unit | Quantity | Arrival Date | Note |
|------|---------------------|------|----------|--------------|------|
| 1    | L.L & P.L & O.M.C % | m3   | 5000     | 9 - 4 - 2023 |      |
| 2    | Proctor             | m3   | 5000     | 9 - 4 - 2023 |      |
| 3    | Classification      | m3   | 5000     | 9 - 4 - 2023 |      |
| 4    | Seive analysis      | m3   | 5000     | 9 - 4 - 2023 |      |

|                                                                                                                                                 |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comments by:                                                                                                                                    | Comments by: |
| Asample has been taken form fill material by KK office to (mansor ali hasan) lab and the results founded meet the specificonctions and accepted |              |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | Mahmoud elkhlawy |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Comment by ER            |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST

إدارة الطرق والكباري  
(GARB)



|                      |                        |      |                  |                                                                                                                                                                                                                                          |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
|----------------------|------------------------|------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|----|----|----|----|----|----|--|--|--|----|---|------|--|--|
| Contractor Company   | EL ZHOOR COMPANY       |      | Designer Company | KK                                                                                                                                                                                                                                       |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
| Issued by Contractor | Name                   | Sign | Date             | cod                                                                                                                                                                                                                                      |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
|                      | ENG : MAHMOUD ELKHLAWY |      | 12 - 4 - 2023    | Zh 21                                                                                                                                                                                                                                    |      |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |
| Received by ER       |                        |      | MAR              | <table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td></td> <td></td> <td></td> <td>12</td> <td>4</td> <td>2023</td> <td></td> <td></td> </tr> </table> | C1   | C2 | C3 | DD | MM | YY | HH | MM |  |  |  | 12 | 4 | 2023 |  |  |
| C1                   | C2                     | C3   | DD               | MM                                                                                                                                                                                                                                       | YY   | HH | MM |    |    |    |    |    |  |  |  |    |   |      |  |  |
|                      |                        |      | 12               | 4                                                                                                                                                                                                                                        | 2023 |    |    |    |    |    |    |    |  |  |  |    |   |      |  |  |

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

|                          |                         |                    |                         |        |
|--------------------------|-------------------------|--------------------|-------------------------|--------|
| Description of Materials | Soil classify ( A 1 a ) |                    |                         |        |
| Location to be Used      | 536+000 to 537+000      |                    |                         |        |
| item                     | Spacification           | Test Requirment    | Test Result Attachment  | Remark |
| 1                        | ASTM D 75               | Aggregate Sampling | According Spacification |        |
| 2                        | ASTM C 136              | Sieve Analysis     | According Spacification |        |
| 3                        | ASTM D 1440             | Passing Sieve #200 | 8.3 %                   |        |
| 4                        | ASTM D 4318             | Atterberg Limit    | NO <sub>n</sub>         |        |
| 5                        | ASTM D 2974             | Moisture Content   | 6.5 %                   |        |
| 6                        | ASTM D 1557             | Modifid Proctor    | 2.156                   |        |
| 7                        | ASTM D 1883             | C B R              | 48.20%                  |        |
| Comments by:             |                         | Comments by:       |                         |        |
|                          |                         |                    |                         |        |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | MAHMOUD ELKHLAWY |      |      |         |
| QA/QC *                  | Mohamed Al:      |      |      |         |
| GARB**                   |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only



Ministry of Public Works and Urban Planning  
Kingdom of Saudi Arabia

Project Name: [Blank]  
Project Location: [Blank]  
Project Description: [Blank]



Operating Job: [Blank] District: [Blank]

TESTING RESULTS SUMMARY

|               |              |  |  |      |                    |
|---------------|--------------|--|--|------|--------------------|
| TESTING DATE: | 04/20/23     |  |  |      |                    |
| LOCATION:     | K.P. 535+500 |  |  | Core | 150-200 to 250-300 |
| NAME COMPANY: | Elstner      |  |  |      |                    |
| INFORMATION:  |              |  |  |      |                    |

Notes:

| TESTING RESULTS   |     |     |     | SOIL TYPE |     | TEST RESULTS |     | TEST RESULTS |  | TEST RESULTS |  |
|-------------------|-----|-----|-----|-----------|-----|--------------|-----|--------------|--|--------------|--|
| Slenderness Ratio | 2   | 1.5 | 1   | 30        | 20  | 0.3          | 0.4 | PASS         |  |              |  |
| Slenderness Ratio | 0.0 | 0.0 | 0.0 | 0.0       | 0.0 | 0.0          | 0.0 |              |  |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |  |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |  |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |  |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |  |              |  |

| TESTING RESULTS   |     |     |     | SOIL TYPE |  | TEST RESULTS |  | TEST RESULTS |  | TEST RESULTS |  |
|-------------------|-----|-----|-----|-----------|--|--------------|--|--------------|--|--------------|--|
| Slenderness Ratio | 10  | 40  | 70  |           |  |              |  |              |  |              |  |
| Slenderness Ratio | 0.0 | 0.0 | 0.0 |           |  |              |  |              |  |              |  |
| Slenderness Ratio |     |     |     |           |  |              |  |              |  |              |  |
| Slenderness Ratio |     |     |     |           |  |              |  |              |  |              |  |
| Slenderness Ratio |     |     |     |           |  |              |  |              |  |              |  |

| TESTING RESULTS   |     |     |     | SOIL TYPE |     | TEST RESULTS |     | TEST RESULTS |      | TEST RESULTS |  |
|-------------------|-----|-----|-----|-----------|-----|--------------|-----|--------------|------|--------------|--|
| Slenderness Ratio | 2   | 1.5 | 1   | 30        | 20  | 0.3          | 0.4 | 0.10         | 0.40 | 0.300        |  |
| Slenderness Ratio | 0.0 | 0.0 | 0.0 | 0.0       | 0.0 | 0.0          | 0.0 | 0.0          | 0.0  | 0.0          |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |      |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |      |              |  |
| Slenderness Ratio |     |     |     |           |     |              |     |              |      |              |  |

| AYERBERG LIMITS |  | CLAY LIMIT (L.C.L.) |  | CLAY LIMIT (L.C.L.) |  | CLAY LIMIT (L.C.L.) |  |
|-----------------|--|---------------------|--|---------------------|--|---------------------|--|
|                 |  |                     |  |                     |  |                     |  |



Comments:

MI  
3/1/23



Lab 1: Soil Mechanics  
Lab 2: Soil Mechanics  
Lab 3: Soil Mechanics  
Lab 4: Soil Mechanics  
Lab 5: Soil Mechanics

Soil Mechanics

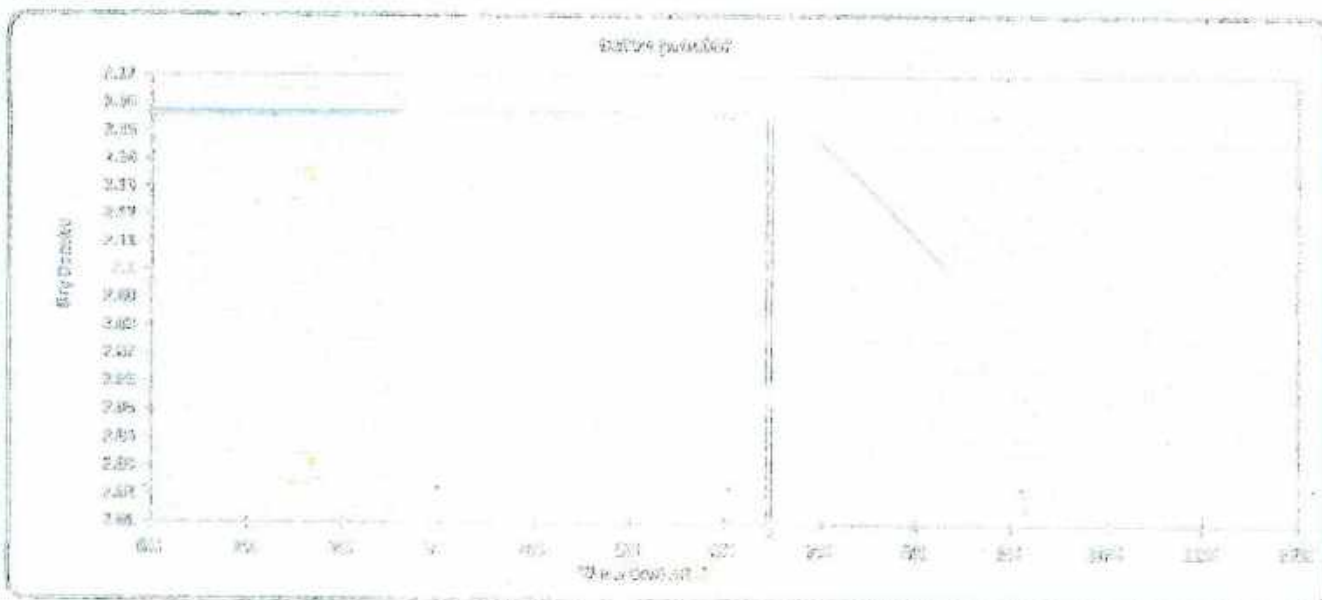
|                 |            |      |                      |
|-----------------|------------|------|----------------------|
| TESTING DATE:   | 20/10/2022 | Time | 10:00 AM to 12:00 PM |
| LAB SECTION:    | CE-550-020 |      |                      |
| NAME (COMP-ENV) | Elhachem   |      |                      |

|                       |        |
|-----------------------|--------|
| Weight of empty mold: | 2500.0 |
| Mold Volume:          | 2143.0 |

|                 |       |
|-----------------|-------|
| Wet Density:    | 2.108 |
| Wet Compaction: | 95    |

| Location:          | 1      | 2      | 3      | 4      |
|--------------------|--------|--------|--------|--------|
| Wt. of mold + soil | 4600.0 | 4600.0 | 4600.0 | 4600.0 |
| Wt. of soil        | 2100.0 | 2100.0 | 2100.0 | 2100.0 |
| Wt. Density        | 2.108  | 2.108  | 2.108  | 2.108  |

| Test No.            | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Test Wt.            | 580.5 | 580.5 | 580.5 | 580.5 | 580.5 | 580.5 | 580.5 | 580.5 |
| Wt. of soil + mold  | 260.0 | 260.0 | 260.0 | 260.0 | 260.0 | 260.0 | 260.0 | 260.0 |
| Wt. of soil + mold  | 260.5 | 260.5 | 260.5 | 260.5 | 260.5 | 260.5 | 260.5 | 260.5 |
| Wt. of soil         | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   |
| Wt. of dry soil     | 130.7 | 130.7 | 130.7 | 130.7 | 130.7 | 130.7 | 130.7 | 130.7 |
| Water content %     | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  |
| AV. Water content % | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  | 3.2%  |
| Dry Density         | 2.108 | 2.108 | 2.108 | 2.108 | 2.108 | 2.108 | 2.108 | 2.108 |





Ministry of Education and Scientific Research - Iraq

Confidentiality: Research, No. (10) / 2022

|                       |                   |        |       |          |      |
|-----------------------|-------------------|--------|-------|----------|------|
| Project Name:         | 1240282-2         |        |       |          |      |
| Location:             | Basra, 8500, 1000 | State: | Basra | Station: | 1000 |
| Number of Components: | 100000            |        |       |          |      |

### Test Results

| Compressive Strength (%)          |          |
|-----------------------------------|----------|
| Sample No.                        | 1        |
| Sample Volume (m³)                | 0.001    |
| Sample Weight (kg)                | 1000     |
| Sample Weight - Water Weight (kg) | 1000.000 |
| Water Weight (kg)                 | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |

| Laboratory Results - Compressive Strength |          |
|-------------------------------------------|----------|
| Sample No.                                | 1        |
| Sample Volume (m³)                        | 0.001    |
| Sample Weight (kg)                        | 1000     |
| Sample Weight - Water Weight (kg)         | 1000.000 |
| Water Weight (kg)                         | 0.000    |
| Water Absorption (kg/m³)                  | 0.000    |
| Water Absorption (kg/m³)                  | 0.000    |
| Water Absorption (kg/m³)                  | 0.000    |
| Water Absorption (kg/m³)                  | 0.000    |

| Specifications                    |          |
|-----------------------------------|----------|
| Sample No.                        | 1        |
| Sample Volume (m³)                | 0.001    |
| Sample Weight (kg)                | 1000     |
| Sample Weight - Water Weight (kg) | 1000.000 |
| Water Weight (kg)                 | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |
| Water Absorption (kg/m³)          | 0.000    |

### Load-Bearing Capacity

|                       |      |      |      |      |      |      |      |      |      |
|-----------------------|------|------|------|------|------|------|------|------|------|
| Load-Bearing Capacity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Load-Bearing Capacity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Load-Bearing Capacity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |



### Submissions

| Submission | Test | Result (kN) | Unit | Test Temperature | Unit | Unit |
|------------|------|-------------|------|------------------|------|------|
| 1.00       | 1.00 | 1.00        | (kN) | 1.00             | (kN) | 1.00 |
| 2.00       | 2.00 | 2.00        | (kN) | 2.00             | (kN) | 2.00 |
| 3.00       | 3.00 | 3.00        | (kN) | 3.00             | (kN) | 3.00 |

Lab. Results



Submitted By:

Signature: Mohammed Ali

Signature: M. Ali



### Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein

Section -7 From Foka To MARSA MATROUH

From Station 504+000 To Station 568+177



ACTIVITY : Sand cone test

laboratory results

COD

ZH ( 21 )

|                       |                    |                   |             |
|-----------------------|--------------------|-------------------|-------------|
| Company :             | EL-ZHOUR COMPANY   | Layer level :     | fill (-0.5) |
| Description:          | Compaction test    | Layer Thickness : | 0.25 m      |
| Station represented : | 536+780 TO 536+800 | Sample Date :     | 11/10/2023  |

#### Modified Proctor Testing Results

| Max. Dry Density .<br>gm/cm3 | Optimum Moisture Content .<br>% | Degree of Compaction Required .<br>% | Bulk Density of Specified Sand . gm/cm3 |
|------------------------------|---------------------------------|--------------------------------------|-----------------------------------------|
| 2.15                         | 6.5                             | 95%                                  | 1.48                                    |

#### Compaction Testing Results & Calculations

|                                |         |  |  |  |  |  |  |  |  |  |
|--------------------------------|---------|--|--|--|--|--|--|--|--|--|
| STATION                        | 536+800 |  |  |  |  |  |  |  |  |  |
| Hole No.                       | 1       |  |  |  |  |  |  |  |  |  |
| WT. of Sand before Test ,gm    | 9456    |  |  |  |  |  |  |  |  |  |
| WT. of Sand After Test ,gm     | 5376    |  |  |  |  |  |  |  |  |  |
| WT. of Sand in Cone + hole ,gm | 4080    |  |  |  |  |  |  |  |  |  |
| WT. of Sand in Cone            | 1140    |  |  |  |  |  |  |  |  |  |
| WT. of Sand at hole ,gm        | 2940    |  |  |  |  |  |  |  |  |  |
| Volume of the hole, Cm3        | 1986    |  |  |  |  |  |  |  |  |  |
| WT. of Soil from Hole ,gm      | 4378    |  |  |  |  |  |  |  |  |  |
| Bulk Density of Soil, gm/cm3   | 2.204   |  |  |  |  |  |  |  |  |  |
| Moisture Content , %           | 6.1     |  |  |  |  |  |  |  |  |  |
| Dry Density, gm/cm3            | 2.077   |  |  |  |  |  |  |  |  |  |
| Compaction, (%)                | 96.6%   |  |  |  |  |  |  |  |  |  |

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Site engineer :-

Name :- Mahmoud El Khawy

Signature :-

Consultant Materials Engineer :-

Name :- Momen esmaeel

Signature :-

11/10/2023

| <b>RECEIPT of NOTIFICATION - Minimum Notice Period not less than 24</b><br>The Work described below will be complete and ready for inspection at planned time shown |                             |                                |     |                             |                   |                                                          |             |    |      |    |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------|-----|-----------------------------|-------------------|----------------------------------------------------------|-------------|----|------|----|----|
| Contractor Company                                                                                                                                                  | <b>EL . ZHOOR . COMPANY</b> |                                |     |                             | Designer Company* |                                                          | KK CONSULT. |    |      |    |    |
| Issued by Contractor                                                                                                                                                | Name                        | Sign                           |     | Date                        |                   | Time                                                     |             |    |      |    |    |
|                                                                                                                                                                     | Eng : Mahmoud Elkhilawy     | <i>Mahmoud</i>                 |     | 9 - 10 - 2023               |                   |                                                          |             |    |      |    |    |
| Received by Employers Representative                                                                                                                                | M.A                         | 10/9/2023                      | UIR | C1                          | C2                | C3                                                       | DD          | MM | YY   | HH | MM |
|                                                                                                                                                                     |                             |                                |     | K.P536                      | E W               | C S                                                      | 9           | 10 | 2023 |    |    |
| CODE-1                                                                                                                                                              |                             | S1 to S21<br>Station Reference |     | D1 to S3<br>Depot Reference |                   | Kp XXX Note<br>For Kilometer point only Start Km is used |             |    |      |    |    |
| CODE - 2                                                                                                                                                            |                             | Work Activity                  |     |                             |                   |                                                          |             |    |      |    |    |
| CODE - 3                                                                                                                                                            |                             | Sub Element of Activity        |     |                             |                   |                                                          |             |    |      |    |    |

| EXPLANATION OF WORK TO BE INSPECTED |                |                                    |
|-------------------------------------|----------------|------------------------------------|
| Description                         | Element        | Item                               |
| Earth Works                         | Fill ( -0.25 ) | From St ( 536+680 ) to ( 536+720 ) |

| INSPECTION DETAILS The Following will be ready at the Planned Inspection Time |                         |
|-------------------------------------------------------------------------------|-------------------------|
| Planned Inspection Date                                                       | Planned Inspection Time |
| 9.10.2023                                                                     |                         |

| COMPLIANCE EVIDENCE Must be Included as appropriate |                                                |                                               |                                             |
|-----------------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| Checklist Attached <input type="checkbox"/>         | Test Results Attached <input type="checkbox"/> | Calibration Attached <input type="checkbox"/> | Other as indicated <input type="checkbox"/> |
| Drawing Reference                                   | ITP Reference                                  | MS Reference                                  |                                             |
|                                                     |                                                |                                               |                                             |

| Civil                                                      | Survey                                    | Material                                                            |
|------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------|
| <i>moment esmael<br/>visual inspection<br/>is approved</i> | <i>Ames Ahmed<br/>levels are approved</i> | <i>moment esmael<br/>compaction test<br/>is approved 10/10/2023</i> |

| INSPECTION RESULT              |                    |                |      |      |         | Approval Status | Please Tick if Not Attend |
|--------------------------------|--------------------|----------------|------|------|---------|-----------------|---------------------------|
| Organisation                   | Name               | Sign           | Date | Time | A-AWC-R |                 |                           |
| Contractor                     | ENG : M. ELKHLAWY  | <i>Mahmoud</i> |      |      |         |                 |                           |
| QA/QC*                         |                    |                |      |      |         |                 |                           |
| GARB**                         | ENG : KHALED FAWZY | <i>Khaled</i>  |      |      | A       |                 |                           |
| Employers Representative Notes |                    |                |      |      |         |                 |                           |
| Employers Representative Sign  | M.A                | 10/30/2023     |      |      | A       |                 |                           |

\* Designer

\*\* Alignment: Bridges: Culvert

شيت تشغيل طبقات الردم لمشروع القطار السريع القطاع السابع ( فوكه - مطروح )  
شركة (الزهور)  
من المحطة ( 536+680 ) إلى المحطة ( 536+720 )

ENGINEERING CONSULTING OFFICE  
المكتب الاستشاري الهندسي  
[أ. م. خالد شاذلي]

| LAYER LEVEL |  | PGL        |       |       |       |        | -0.25        |             |       |        |       |       |            |
|-------------|--|------------|-------|-------|-------|--------|--------------|-------------|-------|--------|-------|-------|------------|
| RIGHT SIDE  |  |            |       |       |       |        |              |             |       |        |       |       |            |
| LEFT SIDE   |  |            |       |       |       |        |              |             |       |        |       |       |            |
| STATION     |  | ACT. WIDTH | 13.84 | 10    | 5     | S.E. % | DESIGN LEVEL | FERMA LEVEL | CL    | S.E. % | 5     | 10.34 | ACT. WIDTH |
| 536+680     |  |            | 59.54 | 59.70 | 59.90 |        | 61.25        | 60.35       | 60.10 |        | 59.90 | 59.68 |            |
| Act.        |  |            |       |       |       | -4%    |              |             |       | -4%    |       |       |            |
| Diff.       |  |            | +1    | -1    | +2    |        |              |             | +1    |        | -1    | +2    |            |
| 536+700     |  |            | 59.60 | 59.76 | 59.96 |        | 61.31        | 60.41       | 60.16 |        | 59.96 | 59.74 |            |
| Act.        |  |            |       |       |       | -4%    |              |             |       | -4%    |       |       |            |
| Diff.       |  |            | +1    | -2    | +1    |        |              |             | -2    |        | +1    | -2    |            |
| 536+720     |  |            | 59.67 | 59.82 | 60.02 |        | 61.37        | 60.47       | 60.22 |        | 60.02 | 59.81 |            |
| Act.        |  |            |       |       |       | -4%    |              |             |       | -4%    |       |       |            |
| Diff.       |  |            | +1    | -2    | +1    |        |              |             | +1    |        | +2    | +1    |            |

CARTEL 1

Amr Ahmed  
(Tobolsky Station)

10/05/2019

| Layer Zone                  |   | MS FROM ST.(536+700) TO ST.(536+780) |       |         |         |         | Layer No. |         |
|-----------------------------|---|--------------------------------------|-------|---------|---------|---------|-----------|---------|
|                             |   | Station                              |       | 536+700 | 536+720 | 536+740 | 536+760   | 536+780 |
|                             |   | DESIGN LEVEL                         |       | 61.31   | 61.37   | 61.43   | 61.49     | 61.55   |
|                             |   | FERMA LEVEL                          |       | 60.41   | 60.47   | 60.53   | 60.59     | 60.65   |
|                             |   | CUT LEVEL                            |       | 59.11   | 59.66   | 59.90   | 59.87     | 58.85   |
|                             |   | DIFF ( FERMA - CUT )                 |       | 1.30    | 0.81    | 0.63    | 0.72      | 1.79    |
| Middle Empe Upper Empankemt | 1 | 0                                    | 60.41 | 60.47   | 60.53   | 60.59   | 60.65     |         |
|                             |   | -0.25                                | 60.16 | 60.22   | 60.28   | 60.34   | 60.40     |         |
|                             |   | -0.5                                 | 59.91 | 59.97   | 60.03   | 60.09   | 60.15     |         |
|                             |   | -0.75                                | 59.66 | 59.72   |         |         | 59.90     |         |
|                             |   | -1                                   | 59.41 |         |         |         | 59.65     |         |
|                             |   | -1.25                                | 59.16 |         |         |         | 59.40     |         |
|                             |   | -1.5                                 |       |         |         |         | 59.15     |         |
|                             |   | -1.75                                |       |         |         |         | 58.90     |         |
|                             |   | -2                                   |       |         |         |         |           |         |
|                             |   | -2.5                                 |       |         |         |         |           |         |

MS Approved }  
 acc. to Design Table }  
 Rev-10

## C.L DATA

| Station | Easting     | Northing    |
|---------|-------------|-------------|
| 536+680 | 290339.5264 | 943913.8692 |
| 536+700 | 290320.2216 | 943919.0965 |
| 536+720 | 290300.9168 | 943924.3237 |

Amir H. H. H.

1/10/2023

1/10/2023

## TYPICAL WIDTH

| layer | slope  | left  | slop   | right | TOTAL |
|-------|--------|-------|--------|-------|-------|
| 0     | -4.00% | 13.44 | -4.00% | 9.94  | 23.38 |
| -0.25 | -4.00% | 13.84 | -4.00% | 10.34 | 24.18 |
| -0.5  | -4.00% | 14.24 | -4.00% | 10.74 | 24.98 |
| -0.75 | -4.00% | 5     | -4.00% | 5     | 10.00 |
| -1    | 0.00%  | 14.13 | 0.00%  | 10.84 | 24.98 |

*Amr A. Abd*

*22*

*0.4198/12*

# MATERIAL INSPECTION REQUEST

الهيئة العامة  
للطرق والكباري  
(GARB)



وزارة النقل  
Ministry of Transport

ENGINEERING CONSULTING OFFICE  
المكتب الاستشاري الهندسي  
أ.م. خالد شاموس



|                      |                        |      |                  |             |
|----------------------|------------------------|------|------------------|-------------|
| Contractor Company   | El . Zhoor . Company   |      | Designer Company | KK CONSULT. |
| Issued by Contractor | Name                   | Sign | Date             | COD         |
|                      | Eng \ Mahmoud elkhlawy |      | 12-4-2023        | ZH 21       |
| Received by ER       |                        |      | MIR              |             |
|                      |                        |      |                  |             |

|        |                         |                 |                                           |
|--------|-------------------------|-----------------|-------------------------------------------|
| 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           |                 |                                           |
|        | Sub Element of Activity |                 |                                           |

| Description of Materials | Fill material results |         |         |                |                 |
|--------------------------|-----------------------|---------|---------|----------------|-----------------|
| Location to be Used      | fill ( 0 )            | 536+680 | 536+560 | FILL ( -0.5 )  | 536+720 536+680 |
|                          | FLAT ( -1.5 )         | 536+800 | 536+780 | FILL ( -0.75 ) | 536+800 536+780 |
|                          | FLAT ( -1 )           | 536+700 | 536+680 | FILL ( -0.25 ) | 536+720 536+680 |
|                          | FILL ( -1.25 )        | 536+800 | 536+780 | FILL ( -0.5 )  | 536+800 536+780 |
|                          | FILL ( -0.75 )        | 536+700 | 536+680 | FILL ( -0.25 ) | 536+800 536+780 |
|                          | FILL ( -1 )           | 536+800 | 536+780 | FILL ( 0 )     | 536+720 536+680 |
|                          |                       |         |         | FILL ( 0 )     | 536+800 536+720 |
|                          |                       |         |         |                |                 |

|                  |                   |               |        |
|------------------|-------------------|---------------|--------|
| MAR Approval No  |                   | Date          |        |
| Supplier Name    |                   |               |        |
| Test Requirement |                   | Specification | Clause |
| Reference Photos | Yes attached / No | Other         |        |

| Item | Description         | Unit | Quantity | Arrival Date | Note |
|------|---------------------|------|----------|--------------|------|
| 1    | L.L & P.L & O.M.C % | m3   | 5000     | 9 - 4 - 2023 |      |
| 2    | Proctor             | m3   | 5000     | 9 - 4 - 2023 |      |
| 3    | Classification      | m3   | 5000     | 9 - 4 - 2023 |      |
| 4    | Seive analysis      | m3   | 5000     | 9 - 4 - 2023 |      |

|                                                                                                                                                 |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comments by:                                                                                                                                    | Comments by: |
| Asample has been taken form fill material by KK office to (mansor ali hasan) lab and the results founded meet the specificonctions and accepted |              |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | Mahmoud elkhlawy |      |      |         |
| QA/QC *                  | Mohamed Ali      |      |      |         |
| GARB**                   |                  |      |      |         |
| Comment by ER            |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment / Bridges: Culvert Only

# MATERIAL APPROVAL REQUEST

الهيئة العامة  
للمرور والكباري  
(GARB)



ENGINEERING CONSULTANTS OFFICE  
المكتب الاستشاري الهندسي  
إ.م.م. والذهور



|                      |                        |      |                  |       |
|----------------------|------------------------|------|------------------|-------|
| Contractor Company   | EL ZHOOR COMPANY       |      | Designer Company | KK    |
| Issued by Contractor | Name                   | Sign | Date             | cod   |
|                      | ENG : MAHMOUD ELKHLAWY |      | 12 - 4 - 2023    | Zh 21 |
| Received by ER       |                        |      | MAR              |       |
|                      |                        |      |                  |       |

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

|                          |                         |                    |                         |        |
|--------------------------|-------------------------|--------------------|-------------------------|--------|
| Description of Materials | Soil classify ( A 1 a ) |                    |                         |        |
| Location to be Used      | 536+000 to 537+000      |                    |                         |        |
| item                     | Spacification           | Test Requirment    | Test Result Attachment  | Remark |
| 1                        | ASTM D 75               | Aggregate Sampling | According Spacification |        |
| 2                        | ASTM C 136              | Sieve Analysis     | According Spacification |        |
| 3                        | ASTM D 1440             | Passing Sieve #200 | 8.3 %                   |        |
| 4                        | ASTM D 4318             | Atterberg Limit    | NO                      |        |
| 5                        | ASTM D 2974             | Moisture Content   | 6.5 %                   |        |
| 6                        | ASTM D 1557             | Modifid Proctor    | 2.156                   |        |
| 7                        | ASTM D 1883             | C B R              | 49.20%                  |        |
| Comments by:             |                         | Comments by:       |                         |        |
|                          |                         |                    |                         |        |

| APPROVAL STATUS          |                  |      |      |         |
|--------------------------|------------------|------|------|---------|
| Organisation             | Name             | Sign | Date | A-AWC-R |
| Contractor               | MAHMOUD ELKHLAWY |      |      |         |
| QA/QC *                  | Mohamed Al:      |      |      |         |
| GARB**                   |                  |      |      |         |
| Employers Representative |                  |      |      |         |

\* Designer

\*\* Alignment/Bridges: Culvert only



مختبر التحليلات  
مختبر التربة  
مختبر المياه

Operating Lab: [ ]  
Reference Lab: [ ]

Project Name: [ ]  
Location: [ ]  
Client: [ ]  
Reference: [ ]

Project Name: [ ]  
Location: [ ]  
Client: [ ]  
Reference: [ ]

TESTING DATE: 24/02/23

|                      |              |  |  |  |  |
|----------------------|--------------|--|--|--|--|
| TESTING DATE         | 24/02/23     |  |  |  |  |
| LOCATION             | K.P. 533+000 |  |  |  |  |
| NAME COMPANY         | Elzaher      |  |  |  |  |
| Ref. Inspection from |              |  |  |  |  |

soil test

| Sieve Analysis |     |     |     | Sieve Weight (g) |       | Sieve Weight (g) |        | GR | Soil Class |            |
|----------------|-----|-----|-----|------------------|-------|------------------|--------|----|------------|------------|
| Sieve Size     | 2   | 1.5 | 1   | 0.75             | 0.425 | 0.25             | 0.15   |    | Soil Class | Soil Class |
| 0.075          | 0.0 | 0.0 | 0.0 | 17.10            | 22.10 | 27.0             | 10.0   |    |            |            |
| Retained (g)   |     |     |     | 100.0            | 227.0 | 1100.0           | 1770.0 |    | PM2        | 2.150      |
| Retained %     |     |     |     | 10.0             | 22.7  | 43.3             | 69.0   |    | WC         | 0.90       |
| Passing %      |     |     |     |                  |       |                  |        |    | CBR        | 45.20      |

| Sieve Analysis |       |        |        | Sieve Weight (g) |       | Sieve Weight (g) |      | GR |
|----------------|-------|--------|--------|------------------|-------|------------------|------|----|
| Sieve Size     | 10    | 40     | 200    | 0.75             | 0.425 | 0.25             | 0.15 |    |
| Retained (g)   | 80.00 | 224.00 | 272.00 |                  |       |                  |      |    |
| Retained %     |       |        |        |                  |       |                  |      |    |
| Passing %      |       |        |        |                  |       |                  |      |    |

| Sieve Analysis  |     |     |     | Sieve Weight (g) |       | Sieve Weight (g) |      | Sieve Weight (g) |        | GR |
|-----------------|-----|-----|-----|------------------|-------|------------------|------|------------------|--------|----|
| Sieve Size (mm) | 2   | 1.5 | 1   | 0.75             | 0.425 | 0.25             | 0.15 | 0.075            | 0.0425 |    |
| 0.075           | 0.0 | 0.0 | 0.0 | 10.0             | 10.0  | 10.0             | 10.0 | 10.0             | 10.0   |    |
| Retained (g)    |     |     |     |                  |       |                  |      |                  |        |    |
| Retained %      |     |     |     |                  |       |                  |      |                  |        |    |
| Passing %       |     |     |     |                  |       |                  |      |                  |        |    |

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



Contractor: [ ]

3/11/23

3.10.2020



Microbial Monitoring Report - 2020

### California Bearing Ratio (CBR)

|               |            |            |            |            |            |
|---------------|------------|------------|------------|------------|------------|
| Test No.      | 1          | 2          | 3          | 4          | 5          |
| Test Date     | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 |
| Test Name     | CBR        | CBR        | CBR        | CBR        | CBR        |
| Test Location | Site       | Site       | Site       | Site       | Site       |

### Test Results

| Test No.                          | 1          |
|-----------------------------------|------------|
| Test Date                         | 10/10/2020 |
| Test Name                         | CBR        |
| Test Location                     | Site       |
| Test Result                       | 100%       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |

| Test No.                          | 1          |
|-----------------------------------|------------|
| Test Date                         | 10/10/2020 |
| Test Name                         | CBR        |
| Test Location                     | Site       |
| Test Result                       | 100%       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |

| Test No.                          | 1          |
|-----------------------------------|------------|
| Test Date                         | 10/10/2020 |
| Test Name                         | CBR        |
| Test Location                     | Site       |
| Test Result                       | 100%       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |
| Test Result (kg/cm <sup>2</sup> ) | 1000       |

### Test Results

| Test No.      | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | 10         |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Test Date     | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 |
| Test Name     | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        |
| Test Location | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       |



### Test Results

| Test No.      | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | 10         |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Test Date     | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 | 10/10/2020 |
| Test Name     | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        | CBR        |
| Test Location | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       | Site       |

### Test Results



### Test Results

Name: Mohammed Ali  
Signature: [Signature]

|                                                                                  |                                                                                                                                                                   |                                                                                     |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  | <b>Electric Express Train - HSR</b><br>From El Ain El Sokhna City To El Alamein<br>Section -7 From FokaTo MARS MATROUH<br>From Station 504+000 To Station 568+177 |  |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

|                           |                    |     |           |
|---------------------------|--------------------|-----|-----------|
| ACTIVITY : Sand cone test | laboratory results | COD | ZH ( 21 ) |
|---------------------------|--------------------|-----|-----------|

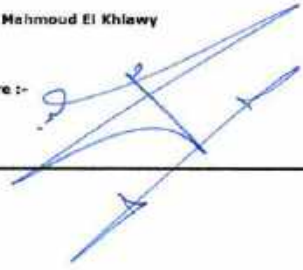
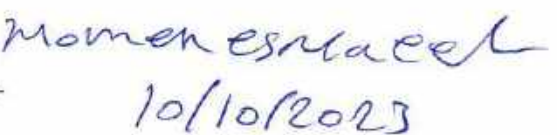
|                       |                    |                   |              |
|-----------------------|--------------------|-------------------|--------------|
| Company :             | EL-ZHOUR COMPANY   | Layer level :     | fill (-0.25) |
| Description:          | Compaction test    | Layer Thickness : | 0.25 m       |
| Station represented : | 536+680 TO 536+720 | Sample Date :     | 10/10/2023   |

| Modified Proctor Testing Results |                              |                                   |                                         |
|----------------------------------|------------------------------|-----------------------------------|-----------------------------------------|
| Max. Dry Density . gm/cm3        | Optimum Moisture Content . % | Degree of Compaction Required . % | Bulk Density of Specified Sand . gm/cm3 |
| 2.15                             | 6.5                          | 95%                               | 1.48                                    |

| Compaction Testing Results & Calculations |         |         |  |  |  |  |  |  |  |
|-------------------------------------------|---------|---------|--|--|--|--|--|--|--|
| STATION                                   | 536+705 | 536+720 |  |  |  |  |  |  |  |
| Hole No.                                  | 1       | 2       |  |  |  |  |  |  |  |
| WT, of Sand before Test ,gm               | 9548    | 9736    |  |  |  |  |  |  |  |
| WT, of Sand After Test ,gm                | 5469    | 5618    |  |  |  |  |  |  |  |
| WT, of Sand in Cone + hole ,gm            | 4079    | 4118    |  |  |  |  |  |  |  |
| WT, of Sand in Cone                       | 1140    | 1140    |  |  |  |  |  |  |  |
| WT, of Sand at hole ,gm                   | 2939    | 2978    |  |  |  |  |  |  |  |
| Volume of the hole, Cm3                   | 1986    | 2012    |  |  |  |  |  |  |  |
| WT, of Soil from Hole ,gm                 | 4386    | 4437    |  |  |  |  |  |  |  |
| Bulk Density of Soil, gm/cm3              | 2.209   | 2.205   |  |  |  |  |  |  |  |
| Moisture Content , %                      | 5.9     | 6.4     |  |  |  |  |  |  |  |
| Dry Density, gm/cm3                       | 2.086   | 2.072   |  |  |  |  |  |  |  |
| Compaction, (%)                           | 97.0%   | 96.4%   |  |  |  |  |  |  |  |

|                     |        |                          |            |                          |                          |                          |
|---------------------|--------|--------------------------|------------|--------------------------|--------------------------|--------------------------|
| Acceptance Criteria | Comply | <input type="checkbox"/> | Not Comply | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---------------------|--------|--------------------------|------------|--------------------------|--------------------------|--------------------------|

|                     |  |
|---------------------|--|
| CONSULTANT COMMENTS |  |
|---------------------|--|

|                                                                                                                                                   |                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site engineer :-<br>Name :- Mahmoud El Khlawy<br>Signature :-  | Consultant Materials Engineer :-<br>Name :- Momen esmaeel<br>Signature :- <br>10/10/2023 |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|