## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 8+000 **To:** 9+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | | (kilometres) | 8 + 0 | | | | 8 + 100 | | | | 8 + 200 | | | | 8 + 300 | | | | 8 + 400 | | | | 8 + 500 | | | | 8 + 600 | | | | 8 + 700 | | | | 8 + 800 | | | | 8 + 900 | | | | 9 + 0 |
| | | (metres) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Road form. | | Subgrade | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS |
| | | Cross section | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | B | B | B | B | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Earth-works | | Method: RES, ETL or FILL | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | | Choice of reshaping: L, T or E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Longitudinal gradient (in %) | -1 | | | | 0 | | | | -1 | | | | 0 | | | | 0 | | | | 1 | | | | 1 | | | | 1 | | | | 0 | | | | -2 | | | | |
| Mitre drains | Total | Number left = | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | 1 | | | | | | | | | | | |
| | 0 | Number right = | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | N Ex | Chainage (m) = New line = Existing line | 8+020 N | | | | 8+100 EX | | | | | | 8+260 EX | 8+260 N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | CD | | | | | | | | | | | CD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | 8 | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | IV | | | | | | | | | | | IV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Head-walls | | Inlet (Material/Type) | I | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Outlet (Material/Type) | I | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 8+000 | To: | 9+000 | pg | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 8+000 | | | | | | 8+200 | | | | | | 8+400 | | | | | | 8+600 | | | | | | 8+800 | | | | | | 9+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | 5 | 5 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | 5 | 5 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 1,000 | m2 | 1,200 | m2 | 1,600 | m2 | 1,800 | m2 | 1,600 | **7,200** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 600 | m2 | 600 | m2 | 1,000 | m2 | 1,200 | m2 | 1,000 | **4,400** |
| **Tree and stump removal** | 0 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **0** |

| | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | 0 |
| **Drains full re-construction** | 242 | m3 (insitu) | 278 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 242 | **1,391** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 9+000 **To:** 10+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | | (kilometres) | 9 + 0 | | | | 9 + 100 | | | | 9 + 200 | | | | 9 + 300 | | | | 9 + 400 | | | | 9 + 500 | | | | 9 + 600 | | | | 9 + 700 | | | | 9 + 800 | | | | 9 + 900 | | | | 10 + 0 |
| | | (metres) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Road form. | | Subgrade | RS | RS | RS | RS | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC |
| | | Cross section | E | E | E | E | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | E | E | E | E | E | E | E | E | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| Earth-works | | Method: RES, ETL or FILL | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | | Choice of reshaping: L, T or E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Longitudinal gradient (in %) | 1 | | | | 0 | | | | -1 | | | | 0 | | | | 0 | | | | -1 | | | | -2 | | | | -1 | | | | -1 | | | | -2 | | | | |
| Mitre drains | Total | Number left = | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| | 3 | Number right = | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | | Chainage (m) | | | | | | 9+150 N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9+880 N | | | | | |
| | N | = New line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ex | = Existing line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | | | | CD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | CD | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | | | | IV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | IV | | | | | |
| Head-walls | | Inlet (Material/Type) | | | | | | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | I | | | | | |
| | | Outlet (Material/Type) | | | | | | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | I | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 9+000 | To: | 10+000 | pg | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 9+000 | | | | | | 9+200 | | | | | | 9+400 | | | | | | 9+600 | | | | | | 9+800 | | | | | | 10+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 8 | 8 | 0 | 0 | 0 | m | 3 | 3 | 0 | 0 | 0 | m | 4 | 4 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 8 | 8 | 0 | 0 | 0 | m | 3 | 3 | 0 | 0 | 0 | m | 4 | 4 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | 6 | 6 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |
| *) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cross Section Sketch** | - | | | | | | - | | | | | | - | | | | | | - | | | | | | - | | | | | | |
| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | | |
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | |
| *) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantities: | Quantities | | | | | | | | | Total this page |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 1,200 | m2 | 2,200 | m2 | 1,800 | m2 | 1,400 | m2 | 1,400 | **8,000** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 600 | m2 | 1,600 | m2 | 1,400 | m2 | 1,000 | m2 | 1,000 | **5,600** |
| **Tree and stump removal** | 0 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **0** |
| | | | | | | | | | | |
| | **Quantities** | | | | | | | | | **Total this page** |
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **Drains full re-construction** | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | **1,575** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 10+000 **To:** 11+000

| Chain-age | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (kilometres) | | | | | 10 + 0 | | | | 10 + 100 | | | | 10 + 200 | | | | 10 + 300 | | | | 10 + 400 | | | | 10 + 500 | | | | 10 + 600 | | | | 10 + 700 | | | | 10 + 800 | | | | 10 + 900 | | | | 11 + 0 |
| (metres) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Road form. | Subgrade | | | | CG | CG | CG | CG | CG | CG | CG | CG | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | BC | BC | BC | BC | BC | BC | BC | BC | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | |
| | Cross section | | | | A | A | A | A | A | A | A | A | E | E | E | E | A | A | A | A | A | A | A | A | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | A | E | E | E | E | |
| Earth-works | Method: RES, ETL or FILL | | | | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | |
| | Choice of reshaping: L, T or E | | | | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | |
| | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal gradient (in %) | | | | | -1 | | | | -1 | | | | 3 | | | | 0 | | | | 0 | | | | 0 | | | | 1 | | | | 1 | | | | 1 | | | | 1 | | | | |
| Mitre drains | Total | Number left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | |
| | 3 | Number right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | N Ex | Chainage (m) = New line = Existing line | | | | | | | | | 10+170 N | | | | | | | | | | | | | | 10+510 N | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | | | | | | | CD | | | | | | | | | | | | | | CD | | | | | | | | | | | | | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | | | | | | | 10 | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | | | | | | | IV | | | | | | | | | | | | | | IV | | | | | | | | | | | | | | | | | | | | |
| Head-walls | Inlet (Material/Type) | | | | | | | | | | I | | | | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | |
| | Outlet (Material/Type) | | | | | | | | | | I | | | | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | CG- Clayey gravel | | | | | | RS-Red Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 10+000 | To: | 11+000 | pg | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 10+000 | | | | | | 10+200 | | | | | | 10+400 | | | | | | 10+600 | | | | | | 10+800 | | | | | | 11+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 800 | m2 | 800 | m2 | 1,000 | m2 | 1,200 | m2 | 1,000 | **4,800** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 400 | m2 | 400 | m2 | 400 | m2 | 600 | m2 | 600 | **2,400** |
| **Tree and stump removal** | 0 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **0** |
| | | | | | | | | | | |
| | **Quantities** | | | | | | | | | **Total this page** |
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **Drains full re-construction** | 242 | m3 (insitu) | 242 | m3 (insitu) | 278 | m3 (insitu) | 278 | m3 (insitu) | 315 | **1,355** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 11+000 **To:** 12+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | | (kilometres) | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 11 + | | | | 12 + |
| | | (metres) | 0 | | | | 100 | | | | 200 | | | | 300 | | | | 400 | | | | 500 | | | | 600 | | | | 700 | | | | 800 | | | | 900 | | | | 0 |
| Road form. | | Subgrade | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | BC | BC | BC | BC | BC | BC | BC | BC | CG | CG | CG | CG | CG | CG | CG | CG | CG |
| | | Cross section | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | E | E | E | E | A | A | A | A | B | B | B | B | B | B | B | B | B | B | B | B | A | A | A | A | A |
| Earth-works | | Method: RES, ETL or FILL | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | | Choice of reshaping: L, T or E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Longitudinal gradient (in %) | 0 | | | | 0 | | | | 0 | | | | 1 | | | | -2 | | | | -4 | | | | -4 | | | | -1 | | | | -1 | | | | 2 | | | | |
| Mitre drains | Total | Number left = | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | Number right = | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | | Chainage (m) | | | | | | | | | | | | | | | | | | | | | | | 11+570 N | | | | | | | | | | 11+790 N | | | | | | | | |
| | N | = New line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ex | = Existing line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | | | | | | | | | | | | | | | | | | | | | CD | | | | | | | | | | CD | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | 8 | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | | | | | | | | | | | | | | | | | | | | | IV | | | | | | | | | | IV | | | | | | | | |
| Head-walls | | Inlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | | | I | | | | | | | | | | I | | | | | | | | |
| | | Outlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | | | I | | | | | | | | | | I | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 11+000 | To: | 12+000 | pg | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 11+000 | | | | | | 11+200 | | | | | | 11+400 | | | | | | 11+600 | | | | | | 11+800 | | | | | | 12+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 0 | | | | | m | | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 1,200 | m2 | 1,000 | m2 | 1,000 | m2 | 800 | m2 | 1,000 | **5,000** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 600 | m2 | 600 | m2 | 600 | m2 | 400 | m2 | 400 | **2,600** |
| **Tree and stump removal** | 0 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **0** |

| | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | **0** |
| **Drains full re-construction** | 242 | m3 (insitu) | 242 | m3 (insitu) | 242 | m3 (insitu) | 315 | m3 (insitu) | 278 | **1,318** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 12+000 **To:** 13+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | | (kilometres) | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 12 + | | | | 13 + |
| | | (metres) | 0 | | | | 100 | | | | 200 | | | | 300 | | | | 400 | | | | 500 | | | | 600 | | | | 700 | | | | 800 | | | | 900 | | | | 0 |
| Road form. | | Subgrade | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS |
| | | Cross section | B | B | B | B | B | B | B | B | B | B | B | B | A | A | A | A | A | A | A | A | A | A | A | A | E | E | E | E | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Earth-works | | Method: RES, ETL or FILL | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | | Choice of reshaping: L, T or E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Longitudinal gradient (in %) | 3 | | | | 2 | | | | 0 | | | | 0 | | | | -4 | | | | 0 | | | | 2 | | | | 1 | | | | 2 | | | | 1 | | | | |
| Mitre drains | Total | Number left = | 1 | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| | 6 | Number right = | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | N | Chainage (m) = New line | | | | | | | | | | | | | | | | | | | | | 12+500 N | | | | | | | | | | | | | | | | | | | | |
| | Ex | = Existing line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | | | | | | | | | | | | | | | | | | | CD | | | | | | | | | | | | | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | | | | | | | | | | | | | | | | | | | IV | | | | | | | | | | | | | | | | | | | | |
| Head-walls | | Inlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | |
| | | Outlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | I | | | | | | | | | | | | | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 12+000 | To: | 13+000 | pg | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 12+000 | | | | | | 12+200 | | | | | | 12+400 | | | | | | 12+600 | | | | | | 12+800 | | | | | | 13+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 800 | m2 | 800 | m2 | 800 | m2 | 1,000 | m2 | 1,200 | **4,600** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 400 | m2 | 400 | m2 | 400 | m2 | 600 | m2 | 600 | **2,400** |
| **Tree and stump removal** | 0 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **0** |

| | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **Drains full re-construction** | 315 | m3 (insitu) | 315 | m3 (insitu) | 242 | m3 (insitu) | 242 | m3 (insitu) | 278 | **1,391** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 13+000 **To:** 14+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | (kilometres) | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 13 + | | | | 14 + |
| | (metres) | | 0 | | | | 100 | | | | 200 | | | | 300 | | | | 400 | | | | 500 | | | | 600 | | | | 700 | | | | 800 | | | | 900 | | | | 0 |
| Road form. | Subgrade | | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC |
| | Cross section | | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | E | E | E | E | B | B | B | B | E | E | E | E | E |
| Earth-works | Method: RES, ETL or FILL | | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | Choice of reshaping: L, T or E | | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal gradient (in %) | | | 0 | | | | 1 | | | | 1 | | | | 0 | | | | 1 | | | | 1 | | | | 1 | | | | 0 | | | | 1 | | | | 1 | | | | |
| Mitre drains | Total | Number left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7 | Number right = | 1 | | | | | | | | 1 | | | | 1 | | | | | | | | 1 | | | | 1 | | | | 1 | | | | | | | | 1 | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | N | Chainage (m) = New line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ex | = Existing line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Head-walls | Inlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Outlet (Material/Type) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 13+000 | To: | 14+000 | pg | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 13+000 | | | | | | 13+200 | | | | | | 13+400 | | | | | | 13+600 | | | | | | 13+800 | | | | | | 14+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | 9 | 9 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 1 | 1 | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 1,000 | m2 | 1,000 | m2 | 1,000 | m2 | 800 | m2 | 800 | **4,600** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 400 | m2 | 400 | m2 | 400 | m2 | 400 | m2 | 400 | **2,000** |
| **Tree and stump removal** | 1 | No. | 0 | No. | 0 | No. | 0 | No. | 0 | **1** |
| | | | | | | | | | | |
| | **Quantities** | | | | | | | | | **Total this page** |
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | **0** |
| **Drains full re-construction** | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 278 | m3 (insitu) | 278 | **1,502** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....

## DETAILED IMPROVEMENT PLAN



**Road Name:** KINA-KULA MAWE **County:** ISIOLO **From:** 14+000 **To:** 15+000

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chain-age | | (kilometres) | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | | 14 + | | | 15 + |
| | | (metres) | 0 | | | | 100 | | | | 200 | | | | 300 | | | | 400 | | | | 500 | | | | 600 | | | | 700 | | | | 800 | | | | 900 | | | | 0 |
| Road form. | | Subgrade | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC | BC |
| | | Cross section | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| Earth-works | | Method: RES, ETL or FILL | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES | RES |
| | | Choice of reshaping: L, T or E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| | | Volume of ETL or Fill (m3/m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gra-vel | Total | Thickness (cm,comp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Source (quarry No.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Longitudinal gradient (in %) | -1 | | | | -2 | | | | -1 | | | | -1 | | | | -1 | | | | 1 | | | | -1 | | | | 1 | | | | 2 | | | | 3 | | | | |
| Mitre drains | Total | Number left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | Number right = | | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Catch water | Total | Length of drain left = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Length of drain right = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Culverts | N | Chainage (m) = New line | | 14+030 EX | 14+030 N | | | | | | | 14+250 EX | 14+260 N | | | | | | | | | | | | | | 14+600 EX | 14+600 N | | | | 14+750 EX | 14+750 N | | | 14+850 EX | | | | | | | |
| | Ex | = Existing line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CD | = Cross drainage | | | CD | | | | | | | | CD | | | | | | | | | | | | | | | CD | | | | | CD | | | | | | | | | | | |
| | AC/D | = Access culvert/ drift | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L/R | = Left/ right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Length (m) | Ø 450mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ø 900mm | | | 10 | | | | | | | | 10 | | | | | | | | | | | | | | | 10 | | | | | 10 | | | | | | | | | | | |
| | Ramp | Earth fill (m3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | H. Concrete (m3) | | | IV | | | | | | | | IV | | | | | | | | | | | | | | | IV | | | | | IV | | | | | | | | | | | |
| Head-walls | | Inlet (Material/Type) | | | I | | | | | | | | I | | | | | | | | | | | | | | | I | | | | | I | | | | | | | | | | | |
| | | Outlet (Material/Type) | | | I | | | | | | | | I | | | | | | | | | | | | | | | I | | | | | I | | | | | | | | | | | |
| Scour Checks | HC | = Material this sheet/ Spacing left (m) = | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | Spacing right (m) = =Total No. this sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Additional Instruction as per Reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Quantity Assessment | KINA-KULA MAWE | # | # | County: | ISIOLO | From: | 14+000 | To: | 15+000 | pg | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Chainage: | 14+000 | | | | | | 14+200 | | | | | | 14+400 | | | | | | 14+600 | | | | | | 14+800 | | | | | | 15+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input Measurements:** | Aver. (m) | 1 to 4 readings*) | | | | | **Free Clearance Width for Calculating areas** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings | | | | | |
| **Bush Clearing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Grass Cutting** | | | | | | m | | | | | | m | | | | | | m | | | | | | m | | | | | | m | |
| **Grubbing** | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | 8 | 8 | 0 | 0 | 0 | m | |
| **Tree and stump removal** | 1 | 1 | | | | m | 0 | | | | | m | 0 | | | | | m | 0 | | | | | m | 1 | 1 | | | | m | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Cross Section Sketch** | - | - | - | - | - |
|---|---|---|---|---|---|

| **Measurements for small cut to fill:** | Aver. (m) | 1 to 4 readings*) | | | | | **Height of Cut / Differences in Levels for calculating volumes** | | | | | | | | | | | | | | | | | | Aver. (m) | 1 to 4 readings*) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **Height of cut > 0.25m** | 0 | 0 | | | | cm | 0 | | | | | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | 0 | | 0 | | 0 | cm | |
| **For Reshaping :** | **Difference in Level between Exist. Camber and Side Drain for calculating volumes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Existing Roads** | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | 0 | | | | | cm | |
| **Sloping** | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | | | | | | cm | |

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

| **Quantities:** | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bush Clearing** | 1,200 | m2 | 1,200 | m2 | 1,200 | m2 | 1,200 | m2 | 1,200 | **6,000** |
| **Grass Cutting** | | m2 | | m2 | | m2 | | m2 | | |
| **Grubbing** | 600 | m2 | 600 | m2 | 600 | m2 | 600 | m2 | 600 | **3,000** |
| **Tree and stump removal** | 1 | No. | 0 | No. | 0 | No. | 0 | No. | 1 | **2** |

| | **Quantities** | | | | | | | | | **Total this page** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Height of cut < 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Height of cut > 0.25m** | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | m3 (insitu) | 0 | **0** |
| **Embankment/Fill** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | **0** |
| **Drains full re-construction** | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | m3 (insitu) | 315 | **1,575** |
| **Reshaping by Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Towed Grader/Labour** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |
| **By Equipment Based Method** | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | m3 (insitu) | | |

**Data Collected by:** **Name:** ……..... **Date:** …….....**Signature:** …….....