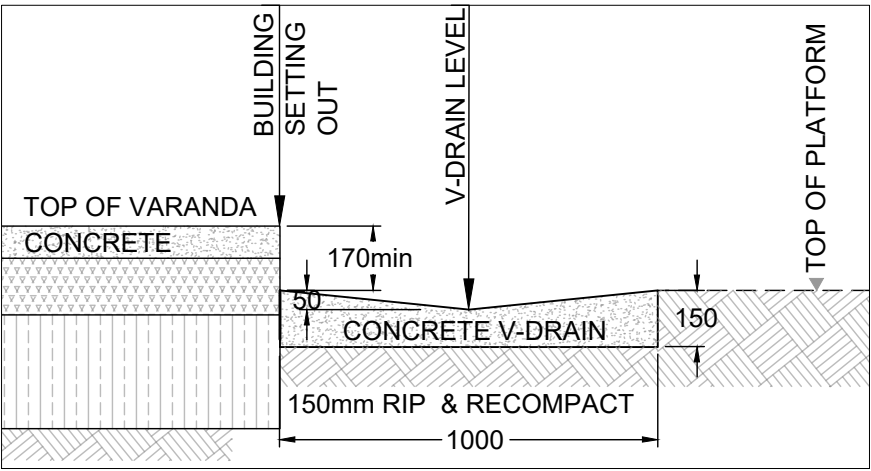
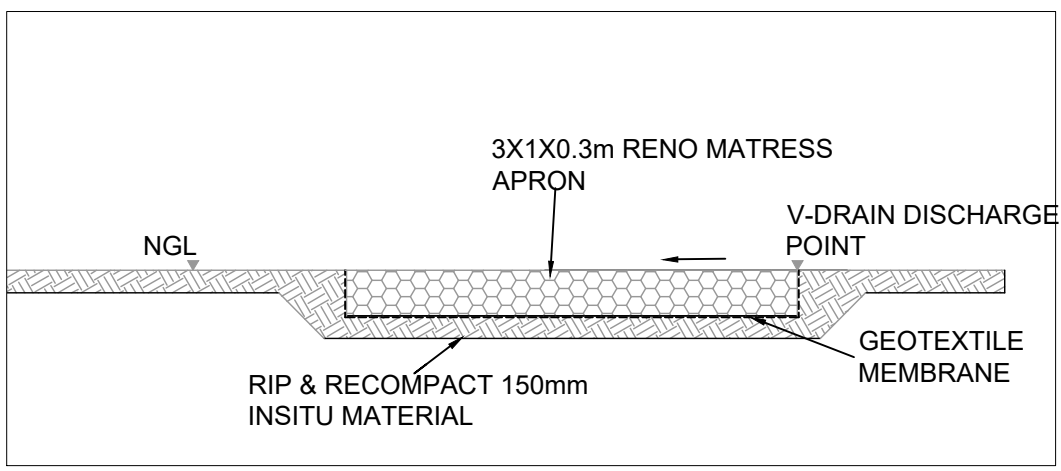


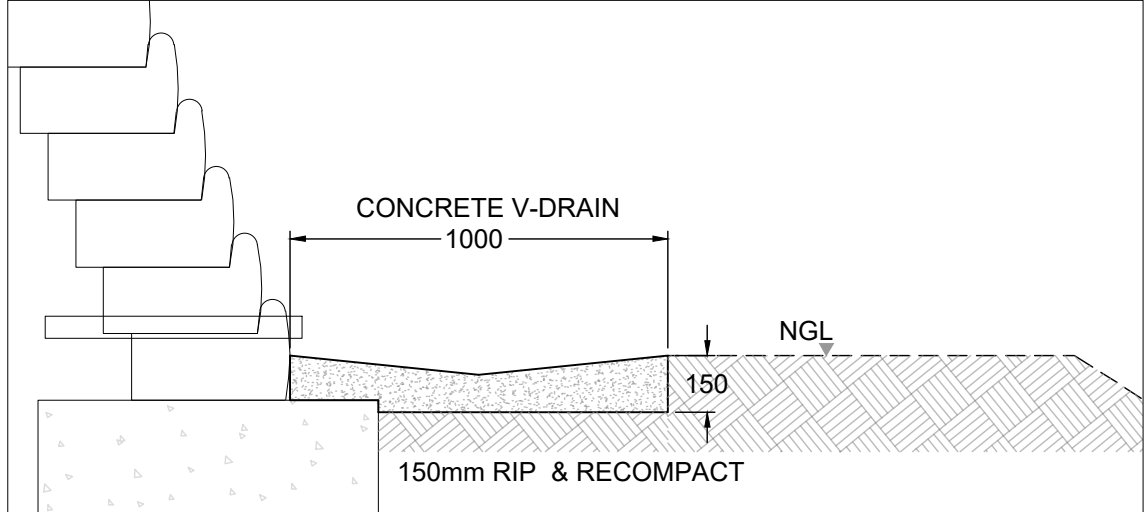
CIVIL SERVICES LAYOUT PLAN
SCALE 1:500



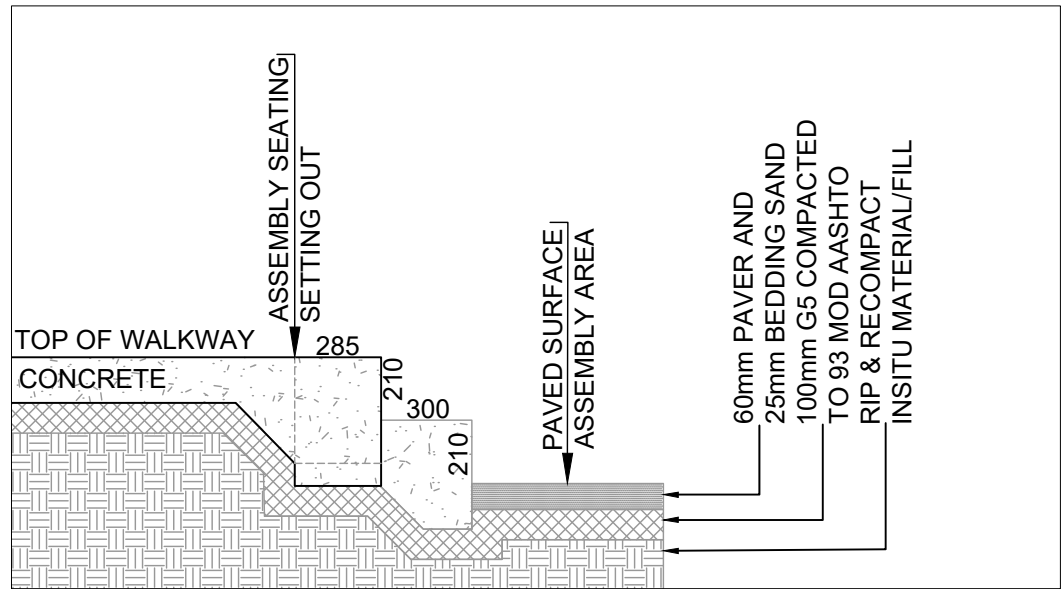
CONCRETE V-DRAIN DETAIL
SCALE 1:20



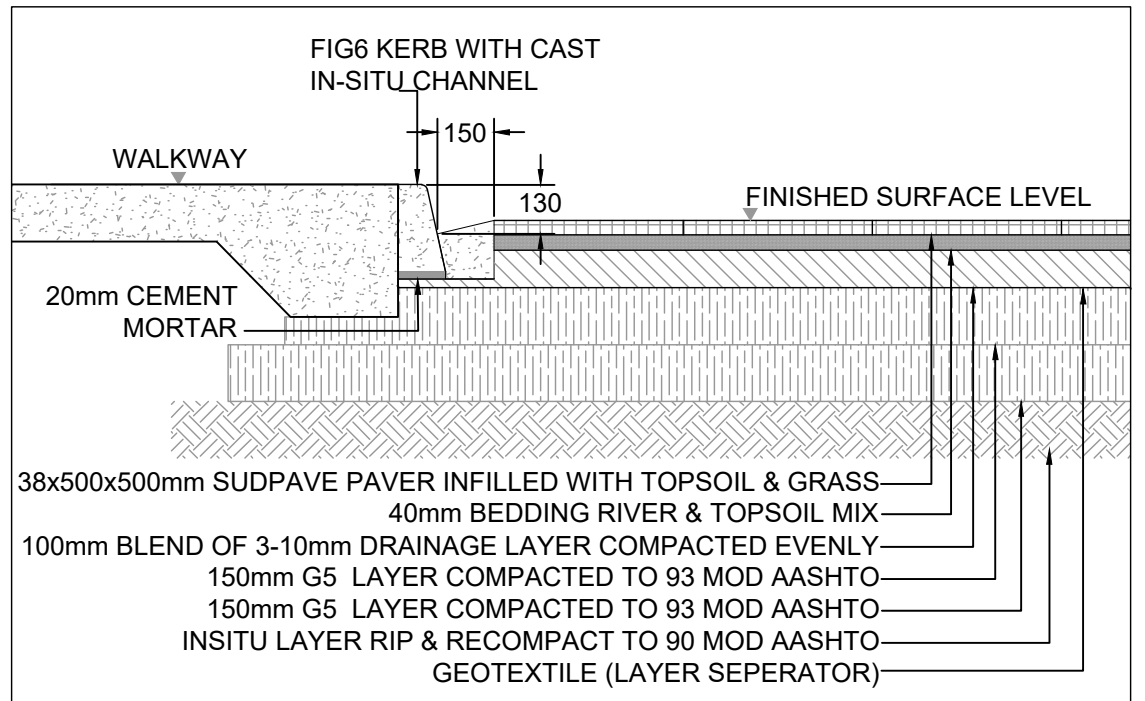
RENO MATTRESS
SCALE 1:50



V-DRAIN BELOW RETAINING STRUCTURE
SCALE 1:20

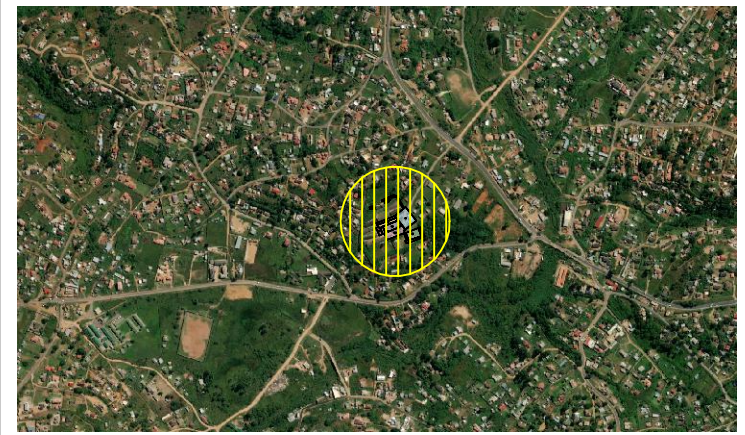


ASSEMBLY SEATING
SCALE 1:25



PROPOSED PARKING AREA DETAIL
SCALE 1:20

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 9. ALL QUANTITIES ARE TO BE MEASURED IN ACCORDANCE WITH SANS 1200.
 10. ALL WET SERVICES ARE TO HAVE FLEXIBLE JOINTS AGAINST THE BUILDING.
 11. STORMWATER IS TO BE ADEQUATELY ROUTED AWAY FROM THE STRUCTURE.
 12. PONDING OF WATER DURING AND AFTER CONSTRUCTION IS NOT BE PERMITTED.
 13. ALL STORMWATER CATCHPITS TO BE CLEANED AND JETTED/
 14. ALL CRACKS ON STORMWATER CHANNELS TO BE REPAIRED.
 15. ALL DEBRI AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN
SCALE 1:20000

STATUS: FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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Durban
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CLIENT:

education
Department:
Education
PROVINCE OF KWAZULU-NATAL

DBSA

| PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME | | | |
|---|-------------|-----------|----------|
| TITLE: MQHAWE HIGH SCHOOL CIVIL LAYOUT PLAN | | | |
| SCALE AT A1: | DATE: | DRAWN: | CHECKED: |
| AS SHOWN | 07/09/23 | RV | NZ |
| PROJECT NO: | DRAWING NO: | REVISION: | |
| D19001 | 300-MQH-01 | A | |

| REFERENCE DRAWINGS | |
|------------------------------|------------|
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD & SEWER LAYOUT PLAN | 300-MQH-03 |
| -STORMWATER LAYOUT PLAN | 300-MQH-05 |
| -WALKWAY LAYOUT PLAN | 300-MQH-12 |
| | |
| | |
| | |
| | |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 07/09/2023 |
| | | |
| | | |
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| | | |
| | | |

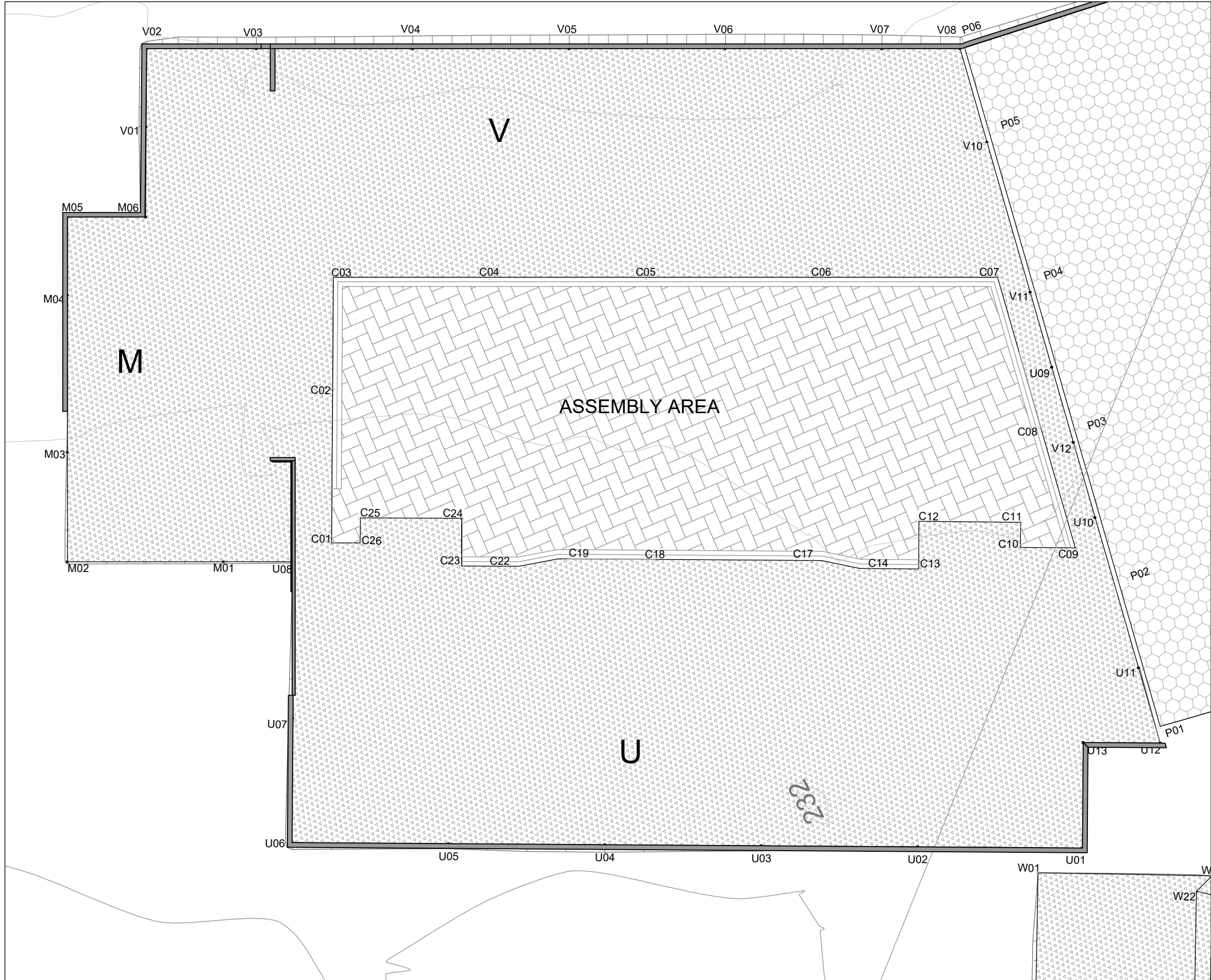
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| C04 | 8640.013 | 3285528.811 | 231.912 |
| C05 | 8630.741 | 3285526.065 | 231.807 |
| C06 | 8620.327 | 3285521.858 | 231.688 |
| C07 | 8609.913 | 3285517.651 | 231.569 |
| C08 | 8603.748 | 3285525.524 | 231.453 |
| C09 | 8598.817 | 3285531.821 | 231.359 |
| C10 | 8602.089 | 3285533.110 | 231.397 |
| C11 | 8602.682 | 3285533.614 | 231.411 |
| C12 | 8608.729 | 3285533.997 | 231.480 |
| C13 | 8607.609 | 3285536.824 | 231.453 |
| C14 | 8610.536 | 3285537.983 | 231.486 |
| C15 | 8606.999 | 3285544.196 | 231.427 |
| C16 | 8611.602 | 3285545.404 | 231.466 |
| C17 | 8614.123 | 3285538.867 | 231.530 |
| C18 | 8623.420 | 3285542.550 | 231.636 |
| C19 | 8628.654 | 3285544.624 | 231.696 |
| C20 | 8626.039 | 3285551.242 | 231.632 |
| C21 | 8629.404 | 3285552.612 | 231.674 |
| C22 | 8631.928 | 3285546.459 | 231.731 |
| C23 | 8634.772 | 3285547.596 | 231.704 |
| C24 | 8635.002 | 3285547.700 | 231.701 |
| C25 | 8641.930 | 3285547.166 | 231.860 |
| C26 | 8641.337 | 3285548.662 | 231.845 |

| NAME | Y | X | Z |
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| M01 | 8648.979 | 3285553.037 | 231.889 |
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| M03 | 8660.885 | 3285550.205 | 232.048 |
| M04 | 8664.631 | 3285540.993 | 232.127 |
| M05 | 8666.504 | 3285536.357 | 232.167 |
| M06 | 8661.868 | 3285534.484 | 232.115 |
| P01 | 8589.511 | 3285540.370 | 231.224 |
| P02 | 8595.677 | 3285532.497 | 231.321 |
| P03 | 8601.843 | 3285524.625 | 231.418 |
| P04 | 8608.010 | 3285516.752 | 231.516 |
| P05 | 8614.176 | 3285508.880 | 231.613 |
| P06 | 8617.362 | 3285504.812 | 231.663 |
| P07 | 8609.675 | 3285498.417 | 232.036 |
| P08 | 8601.988 | 3285492.021 | 232.409 |
| P09 | 8594.301 | 3285485.625 | 232.781 |
| P10 | 8589.277 | 3285481.445 | 233.025 |
| P11 | 8593.111 | 3285489.318 | 232.619 |
| P12 | 8576.944 | 3285497.190 | 232.214 |
| P13 | 8570.778 | 3285505.062 | 231.808 |
| P14 | 8564.612 | 3285512.935 | 231.403 |
| P15 | 8560.761 | 3285517.850 | 231.150 |
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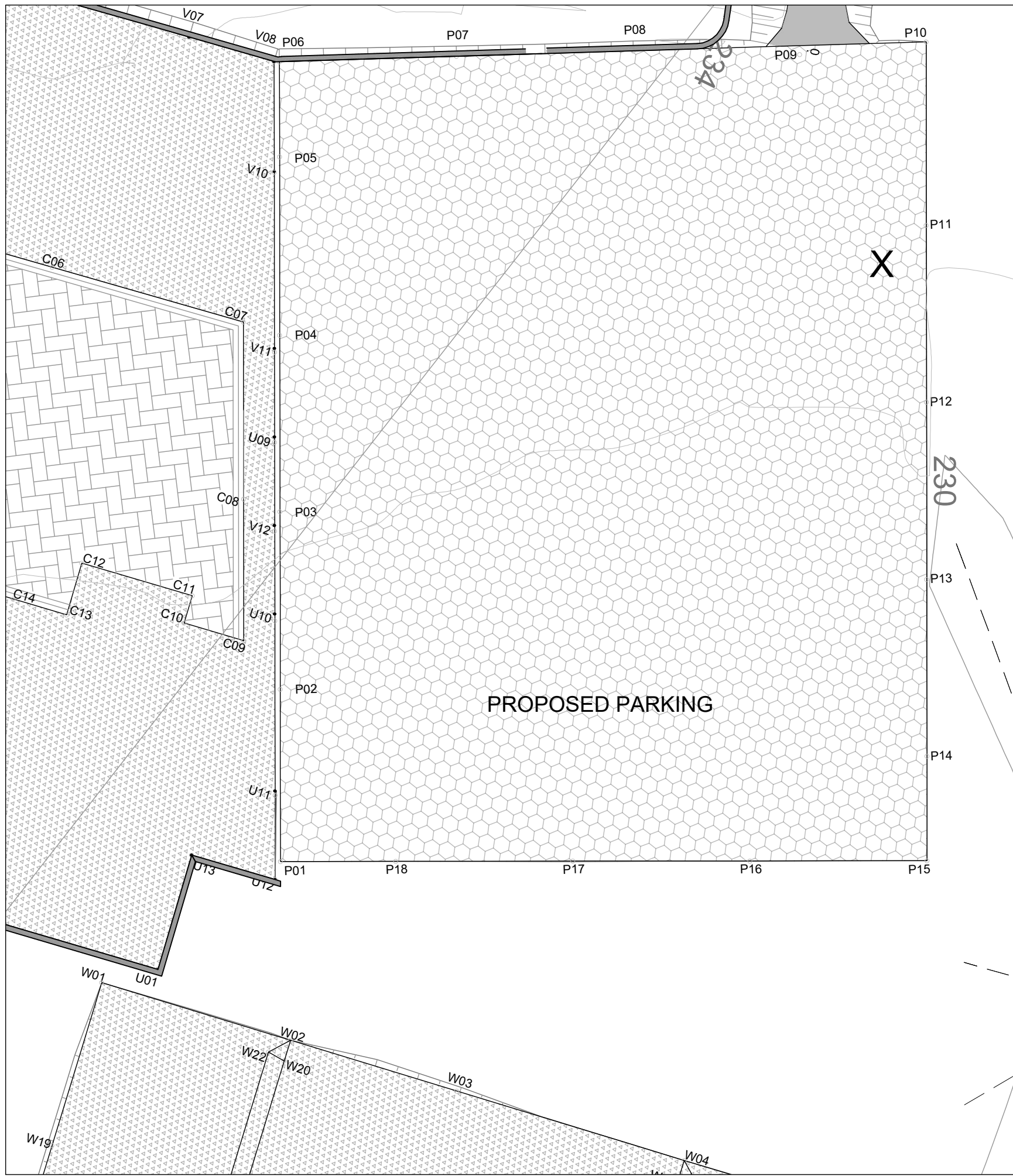
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| S04 | 8632.036 | 3285458.514 | 236.477 |
| S05 | 8629.963 | 3285463.396 | 236.438 |
| S06 | 8633.062 | 3285464.784 | 236.519 |
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| S08 | 8636.686 | 3285468.924 | 236.657 |
| S09 | 8643.288 | 3285471.911 | 236.795 |
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| T02 | 8679.165 | 3285480.112 | 236.511 |
| T03 | 8678.637 | 3285481.244 | 236.499 |
| T04 | 8674.105 | 3285479.131 | 236.509 |
| T05 | 8672.272 | 3285478.277 | 236.598 |
| T06 | 8669.635 | 3285483.934 | 236.637 |
| T07 | 8673.704 | 3285485.831 | 236.473 |
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| T09 | 8678.826 | 3285485.468 | 236.434 |
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| NAME | Y | X | Z |
|------|----------|-------------|---------|
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| U03 | 8610.307 | 3285557.002 | 231.391 |
| U04 | 8619.604 | 3285560.686 | 231.495 |
| U05 | 8628.901 | 3285564.370 | 231.598 |
| U06 | 8638.198 | 3285568.053 | 231.702 |
| U07 | 8641.130 | 3285560.652 | 231.765 |
| U08 | 8644.814 | 3285551.355 | 231.843 |
| U09 | 8604.534 | 3285521.676 | 231.441 |
| U10 | 8598.368 | 3285529.549 | 231.336 |
| U11 | 8592.201 | 3285537.421 | 231.232 |
| U12 | 8589.118 | 3285541.357 | 231.180 |
| U13 | 8593.687 | 3285543.167 | 231.231 |
| V01 | 8663.998 | 3285529.118 | 232.161 |
| V02 | 8665.842 | 3285524.470 | 232.200 |
| V03 | 8659.333 | 3285521.840 | 232.128 |
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| V05 | 8640.789 | 3285514.548 | 231.921 |
| V06 | 8631.518 | 3285510.602 | 231.818 |
| V07 | 8622.246 | 3285506.856 | 231.715 |
| V08 | 8617.610 | 3285504.983 | 231.663 |
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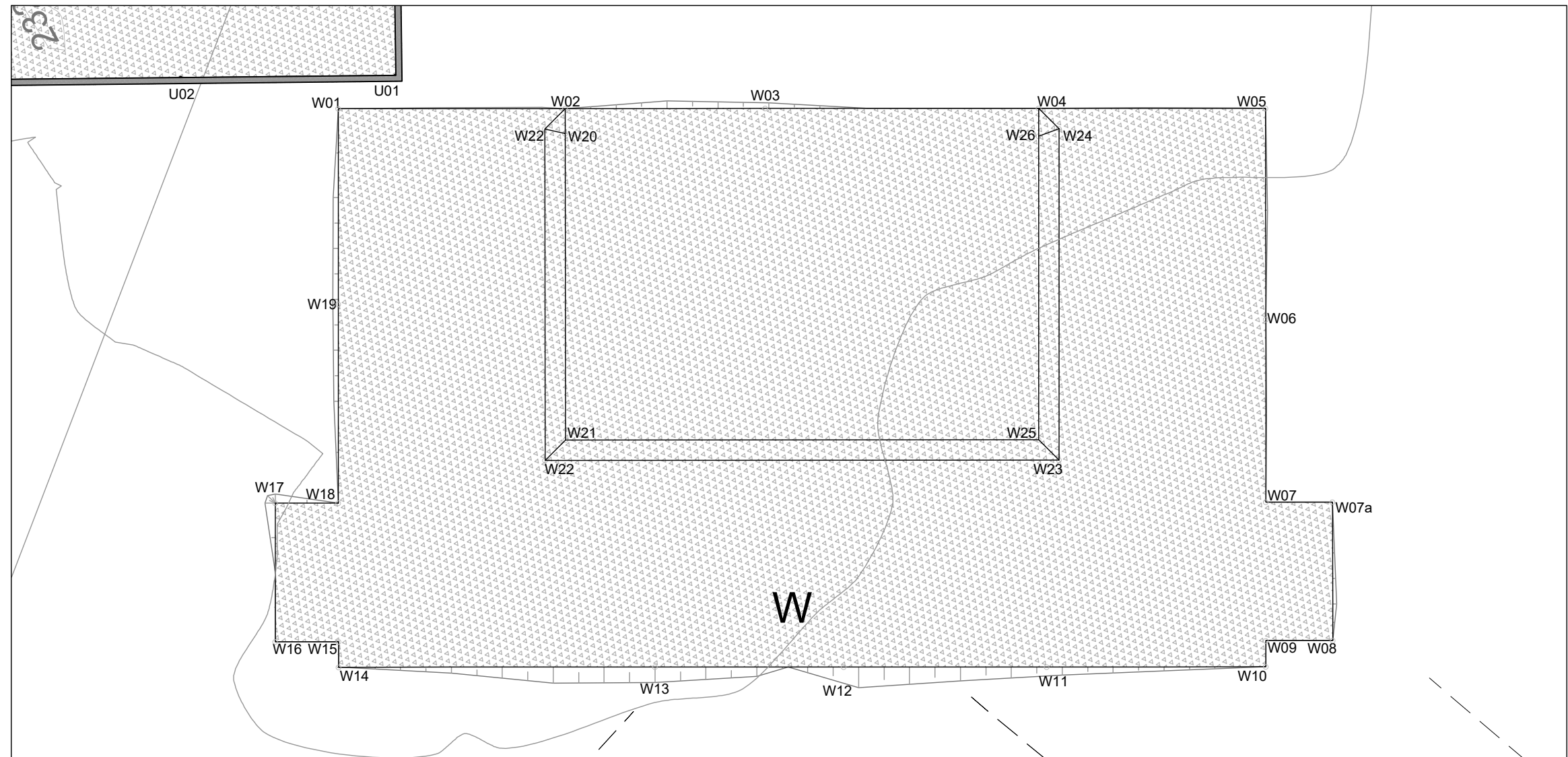
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| W03 | 8573.512 | 3285544.388 | 230.419 |
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| W09 | 8541.366 | 3285560.024 | 228.900 |
| W10 | 8540.905 | 3285561.223 | 228.953 |
| W11 | 8550.240 | 3285564.810 | 229.239 |
| W12 | 8559.574 | 3285568.397 | 229.526 |
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| W14 | 8583.420 | 3285577.561 | 230.258 |
| W15 | 8583.868 | 3285576.394 | 230.237 |
| W16 | 8586.761 | 3285577.506 | 230.158 |
| W17 | 8589.200 | 3285571.158 | 230.105 |
| W18 | 8586.308 | 3285570.947 | 230.191 |
| W19 | 8589.895 | 3285580.712 | 230.413 |
| W20 | 8582.431 | 3285548.780 | 230.522 |
| W21 | 8576.955 | 3285563.027 | 230.444 |
| W22 | 8577.588 | 3285564.448 | 230.174 |
| W23 | 8583.457 | 3285549.174 | 230.522 |
| W24 | 8554.018 | 3285555.391 | 229.620 |
| W25 | 8559.888 | 3285540.117 | 230.550 |
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| W28 | 8560.915 | 3285540.511 | 230.250 |



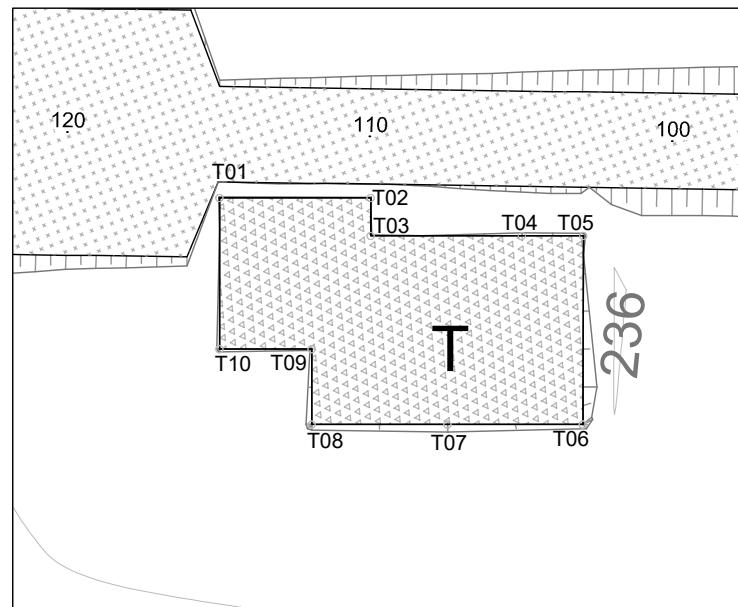
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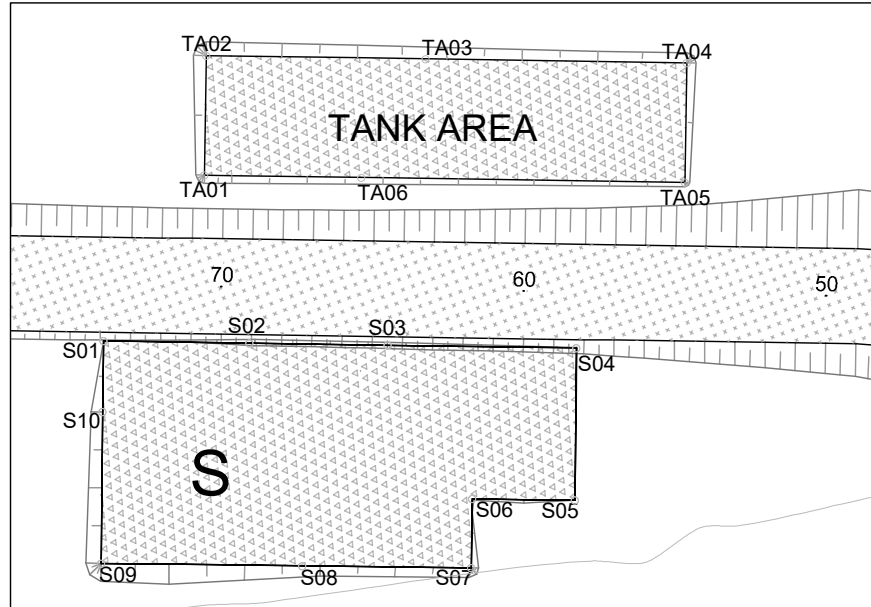
BLOCK X & PARKING AREA
SCALE 1:250



BLOCK W
SCALE 1:250



BLOCK T
SCALE 1:250



BLOCK S & TANK AREA
SCALE 1:250

- PROPOSED RETAINING WALL
- PROPOSED PARKING AREA
- PROPOSED PAVED ASSEMBLY AREA
- PROPOSED EARTHWORKS AREA

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- ALL CRACKS ON STORMWATER CHANNELS TO BE REPAIRED.
- ALL DEBRI AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN
SCALE 1:20000

STATUS:

FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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CLIENT:



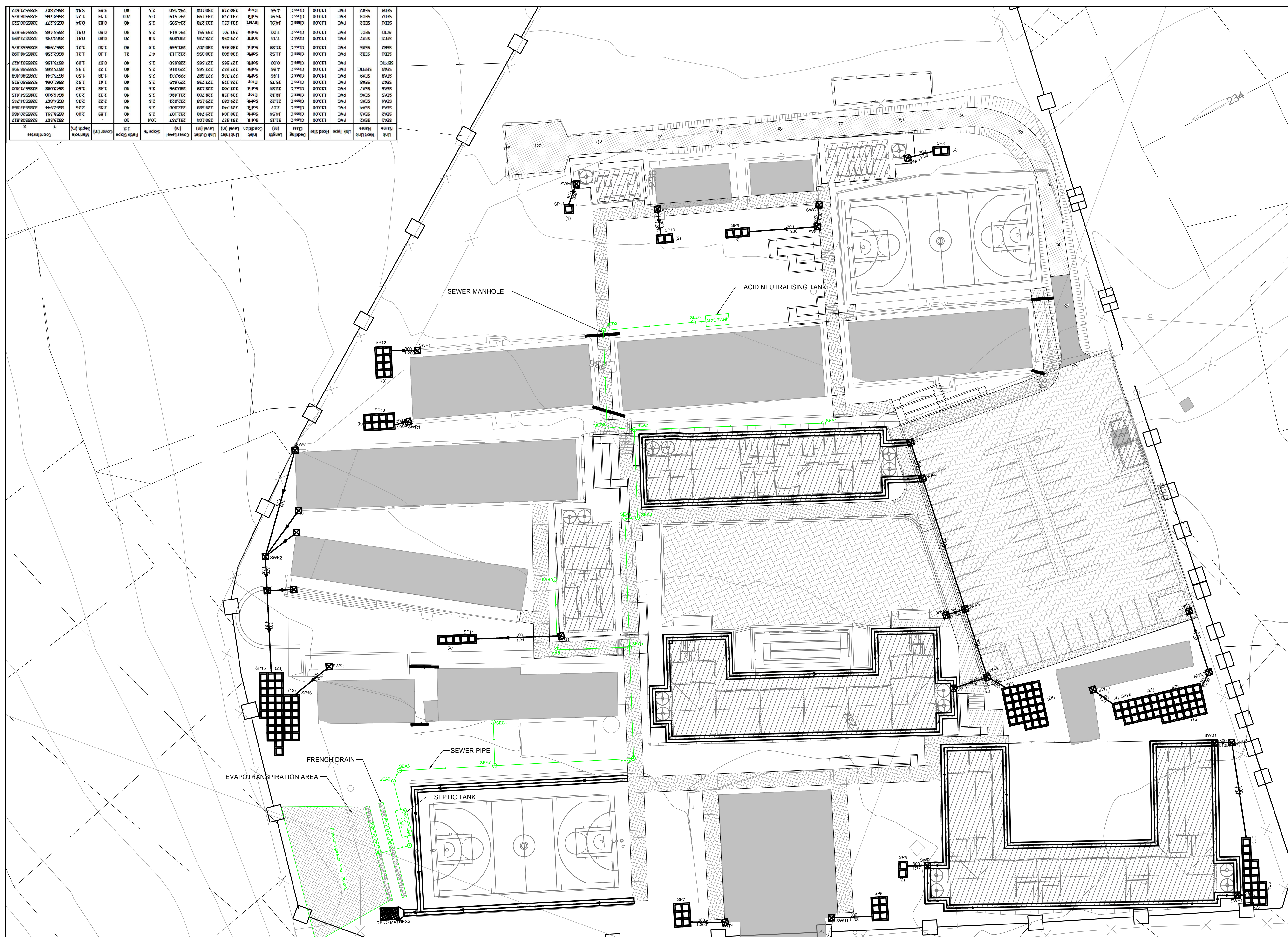
DBSA

PROJECT:
KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

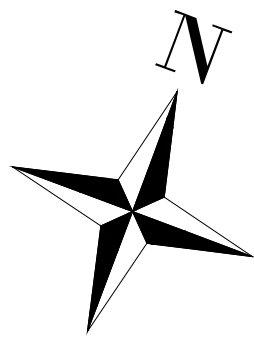
TITLE:
MQHAWE HIGH SCHOOL
EARTHWORKS SETTING OUT PLAN

| | | | |
|--------------|-------------|-----------|----------|
| SCALE AT A1: | DATE: | DRAWN: | CHECKED: |
| AS SHOWN | 07/09/23 | RV | NZ |
| PROJECT NO: | DRAWING NO: | REVISION: | |
| D19001 | 300-MQH-02 | | A |







| Name | Next Link | Link Type | Node Size | Bedding Class | Length | Condition | Link Label | Link Order | Cover Level | 5000 m ² | Link Slope | Cover (m) | Depth (m) | Latitude | Longitude | X | Y |
|------|-----------|-----------|-----------|---------------|--------|-----------|------------|------------|-------------|---------------------|------------|-----------|-----------|----------|-----------|----------|----------|
| 562A | 562B | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562B | 562C | PVC | 1100 | Class C | 4.56 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562C | 562D | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562D | 562E | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562E | 562F | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562F | 562G | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562G | 562H | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562H | 562I | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562I | 562J | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562J | 562K | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562K | 562L | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562L | 562M | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562M | 562N | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562N | 562O | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562O | 562P | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562P | 562Q | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562Q | 562R | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562R | 562S | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562S | 562T | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562T | 562U | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562U | 562V | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562V | 562W | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562W | 562X | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562X | 562Y | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |
| 562Y | 562Z | PVC | 1100 | Class C | 1.95 | Soft | 233.191 | 230.104 | 234.100 | 2.5 | 0.0 | 1.83 | 1.34 | 9.74 | 13.94 | 8868.787 | 8868.787 |



LAYOUT PLAN
SCALE 1:300



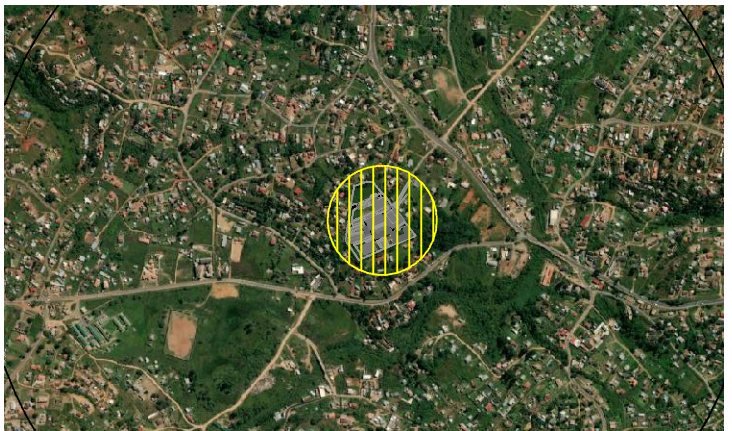
LEGEND

| | | | |
|---|------------------------|---|----------------------------------|
|  | PROPOSED SEWER PIPE |  | PROPOSED SEPTIC TANK |
|  | PROPOSED SEWER MANHOLE |  | PROPOSED EVAPOTRANSPIRATION AREA |
|  | PROPOSED FRENCH DRAIN |  | PROPOSED ACID NEUTRALISING TANK |

| REFERENCE DRAWINGS | |
|------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MOH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MOH-02 |
| -ROAD & SEWER LONGSECTIONS | 300-MOH-04 |
| -STORMWATER LAYOUR PLAN | 300-MOH-05 |
| -SEWER RING MANHOLE DETAILS | 300-MOH-10 |
| | |
| | |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 06/09/2023 |
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9. ALL QUANTITIES ARE TO BE MEASURED IN ACCORDANCE WITH SANS 1200.
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14. ALL CRACKS ON STORMWATER CHANNELS TO BE REPAIRED.
15. ALL DEBRIS AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN

SCALE 1:20000

STATUS: **FOR TENDER**

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 06-09-2023 |
| REVIEWED BY: | N.Z. | | | 06-09-2023 |
| APPROVED BY: | N.Z. | | | 06-09-2023 |

Civpro Engineering Joint Venture



Musgrave Centre
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Durban
Tel: (031) 000 0449
Fax: (086) 673 3964
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CLIENT

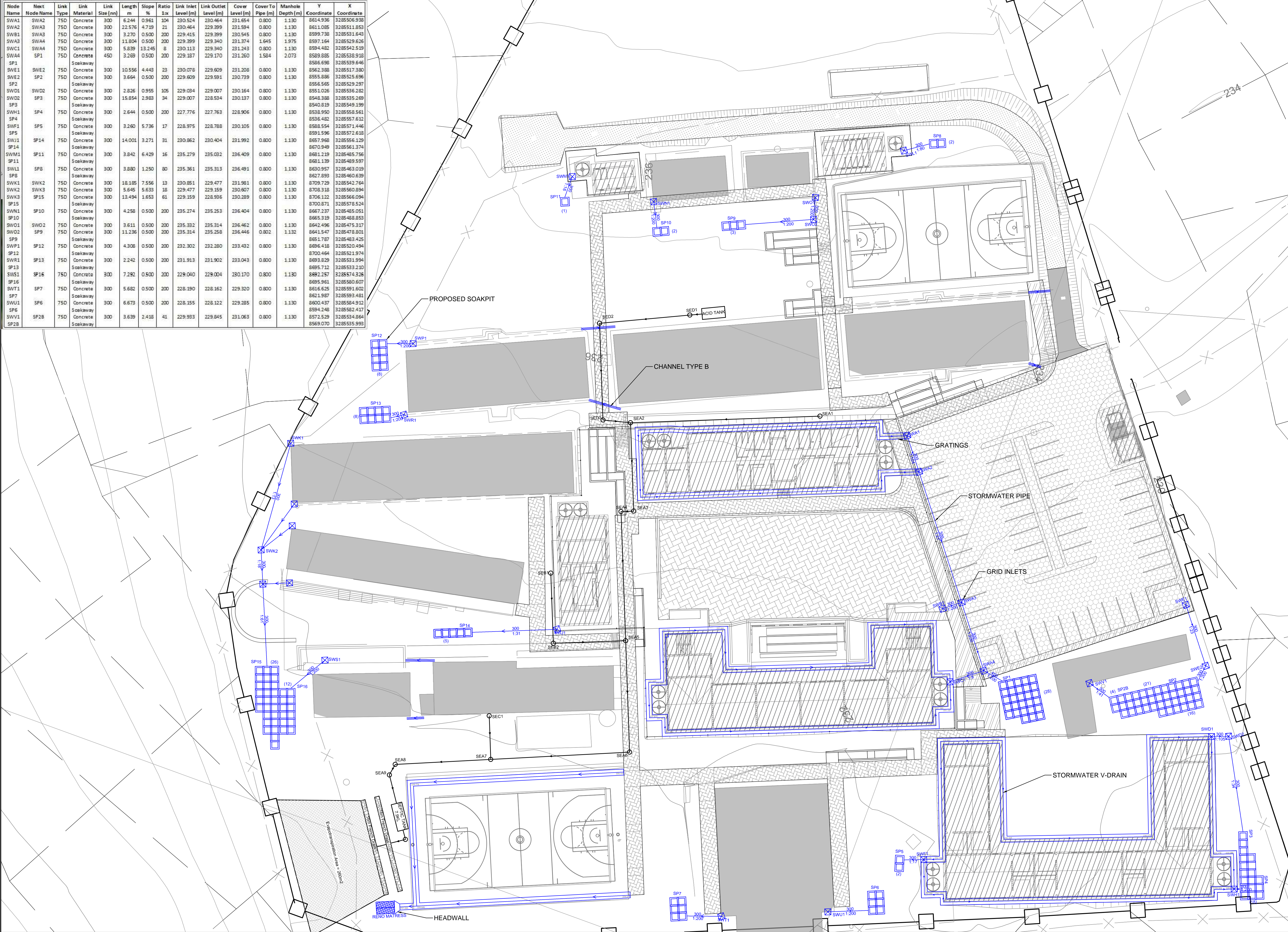


PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

TITLE: MQHAWE HIGH SCHOOL
ROAD AND SEWER LAYOUT PLAN

| | | | |
|-----------------------|---------------------------|--------------|----------------|
| SCALE AT A1: NTS | DATE: 06/09/23 | DRAWN: RV | CHECKED: NZ |
| PROJECT NO: D19001 | DRAWING NO: 300-MQH-03 | | REVISION: A |

| Node Name | Next Node Name | Link Type | Link Material | Link Size (mm) | Length m | Slope % | Ratio 1:x | Link Inlet Level (m) | Link Outlet Level (m) | Cover Level (m) | Cover To Pipe (m) | Manhole Depth (m) | Y Coordinate | X Coordinate |
|-----------|----------------|-----------|---------------|----------------|----------|---------|-----------|----------------------|-----------------------|-----------------|-------------------|-------------------|--------------|--------------|
| SWA1 | SWA2 | 750 | Concrete | 300 | 6.244 | 0.961 | 104 | 230.524 | 230.464 | 231.654 | 0.800 | 1.130 | 8614.936 | 3285506.938 |
| SWA2 | SWA3 | 750 | Concrete | 300 | 22.576 | 4.719 | 21 | 230.464 | 229.399 | 231.594 | 0.800 | 1.130 | 8611.085 | 3285511.853 |
| SWA3 | SWA4 | 750 | Concrete | 300 | 3.270 | 0.500 | 200 | 229.415 | 229.399 | 230.545 | 0.800 | 1.130 | 8595.738 | 3285529.649 |
| SWA4 | SWA5 | 750 | Concrete | 300 | 11.804 | 0.500 | 200 | 229.399 | 229.340 | 231.374 | 0.800 | 1.130 | 8597.164 | 3285529.626 |
| SWC1 | SWA4 | 750 | Concrete | 300 | 5.839 | 13.245 | 8 | 230.113 | 229.340 | 231.243 | 0.800 | 1.130 | 8594.482 | 3285542.519 |
| SWA4 | SP1 | 750 | Concrete | 450 | 3.269 | 0.500 | 200 | 229.187 | 229.170 | 231.260 | 1.584 | 2.073 | 8589.885 | 3285539.918 |
| SP1 | SWE1 | 750 | Soakaway | | | | | | | | | | 8586.698 | 3285539.646 |
| SWE1 | SWE2 | 750 | Concrete | 300 | 10.556 | 4.443 | 23 | 230.078 | 229.609 | 231.208 | 0.800 | 1.130 | 8562.388 | 3285517.380 |
| SWE2 | SP2 | 750 | Concrete | 300 | 3.664 | 0.500 | 200 | 229.609 | 229.591 | 230.739 | 0.800 | 1.130 | 8555.886 | 3285525.696 |
| SP2 | SWD1 | 750 | Soakaway | | | | | | | | | | 8556.566 | 3285529.287 |
| SWD1 | SWD2 | 750 | Concrete | 300 | 2.826 | 0.955 | 105 | 229.094 | 229.007 | 230.164 | 0.800 | 1.130 | 8551.026 | 3285536.282 |
| SWD2 | SP3 | 750 | Concrete | 300 | 15.854 | 2.983 | 34 | 229.007 | 228.534 | 230.137 | 0.800 | 1.130 | 8548.388 | 3285535.269 |
| SP3 | SWH1 | 750 | Soakaway | | | | | | | | | | 8540.819 | 3285549.199 |
| SWH1 | SP4 | 750 | Concrete | 300 | 2.644 | 0.500 | 200 | 227.776 | 227.763 | 228.906 | 0.800 | 1.130 | 8538.950 | 3285558.561 |
| SP4 | SWF1 | 750 | Concrete | 300 | 3.260 | 5.736 | 17 | 228.975 | 228.788 | 230.105 | 0.800 | 1.130 | 8536.482 | 3285557.612 |
| SWF1 | SP5 | 750 | Soakaway | | | | | | | | | | 8588.554 | 3285571.446 |
| SP5 | SWU1 | 750 | Concrete | 300 | 14.001 | 3.271 | 31 | 230.862 | 230.404 | 231.992 | 0.800 | 1.130 | 8591.596 | 3285571.638 |
| SWU1 | SP14 | 750 | Soakaway | | | | | | | | | | 8567.968 | 3285556.129 |
| SP14 | SWM1 | 750 | Concrete | 300 | 3.842 | 6.429 | 16 | 235.279 | 235.032 | 236.409 | 0.800 | 1.130 | 8670.949 | 3285561.374 |
| SWM1 | SP11 | 750 | Concrete | 300 | 3.842 | 6.429 | 16 | 235.279 | 235.032 | 236.409 | 0.800 | 1.130 | 8681.219 | 3285485.756 |
| SP11 | SWL1 | 750 | Concrete | 300 | 3.880 | 1.250 | 80 | 235.361 | 235.313 | 236.491 | 0.800 | 1.130 | 8681.139 | 3285489.597 |
| SWL1 | SP8 | 750 | Soakaway | | | | | | | | | | 8630.957 | 3285463.019 |
| SP8 | SWK1 | 750 | Concrete | 300 | 18.185 | 7.556 | 13 | 230.851 | 229.477 | 231.981 | 0.800 | 1.130 | 8627.899 | 3285460.639 |
| SWK1 | SWK2 | 750 | Concrete | 300 | 5.545 | 5.630 | 18 | 229.477 | 229.159 | 230.607 | 0.800 | 1.130 | 8709.729 | 3285542.764 |
| SWK2 | SP15 | 750 | Concrete | 300 | 13.494 | 1.653 | 61 | 229.159 | 228.936 | 230.289 | 0.800 | 1.130 | 8708.318 | 3285560.894 |
| SP15 | SWN1 | 750 | Concrete | 300 | 4.258 | 0.500 | 200 | 235.274 | 235.253 | 236.404 | 0.800 | 1.130 | 8706.122 | 3285566.094 |
| SWN1 | SP10 | 750 | Concrete | 300 | 4.258 | 0.500 | 200 | 235.274 | 235.253 | 236.404 | 0.800 | 1.130 | 8700.871 | 3285578.524 |
| SP10 | SWO1 | 750 | Concrete | 300 | 3.611 | 0.500 | 200 | 235.332 | 235.314 | 236.462 | 0.800 | 1.130 | 8667.237 | 3285485.051 |
| SWO1 | SWO2 | 750 | Concrete | 300 | 11.236 | 0.500 | 200 | 235.314 | 235.258 | 236.446 | 0.802 | 1.132 | 8665.319 | 3285488.853 |
| SWO2 | SP9 | 750 | Concrete | 300 | 3.611 | 0.500 | 200 | 235.314 | 235.258 | 236.446 | 0.802 | 1.132 | 8642.496 | 3285475.317 |
| SP9 | SWP1 | 750 | Concrete | 300 | 4.308 | 0.500 | 200 | 232.302 | 232.280 | 233.432 | 0.800 | 1.130 | 8641.547 | 3285478.801 |
| SWP1 | SP12 | 750 | Concrete | 300 | 4.308 | 0.500 | 200 | 232.302 | 232.280 | 233.432 | 0.800 | 1.130 | 8651.787 | 3285483.425 |
| SP12 | SWR1 | 750 | Concrete | 300 | 2.242 | 0.500 | 200 | 231.913 | 231.902 | 233.043 | 0.800 | 1.130 | 8696.418 | 3285520.494 |
| SWR1 | SP13 | 750 | Concrete | 300 | 2.242 | 0.500 | 200 | 231.913 | 231.902 | 233.043 | 0.800 | 1.130 | 8700.464 | 3285521.974 |
| SP13 | SWS1 | 750 | Concrete | 300 | 7.292 | 0.500 | 200 | 229.040 | 228.004 | 230.170 | 0.800 | 1.130 | 8693.829 | 3285531.994 |
| SWS1 | SP16 | 750 | Concrete | 300 | 7.292 | 0.500 | 200 | 229.040 | 228.004 | 230.170 | 0.800 | 1.130 | 8695.712 | 3285533.210 |
| SP16 | SWT1 | 750 | Concrete | 300 | 5.682 | 0.500 | 200 | 228.190 | 228.162 | 229.320 | 0.800 | 1.130 | 8692.257 | 3285574.326 |
| SWT1 | SP7 | 750 | Concrete | 300 | 5.682 | 0.500 | 200 | 228.190 | 228.162 | 229.320 | 0.800 | 1.130 | 8695.961 | 3285580.607 |
| SP7 | SWU1 | 750 | Concrete | 300 | 6.673 | 0.500 | 200 | 228.155 | 228.122 | 229.285 | 0.800 | 1.130 | 8616.625 | 3285591.602 |
| SWU1 | SP6 | 750 | Concrete | 300 | 6.673 | 0.500 | 200 | 228.155 | 228.122 | 229.285 | 0.800 | 1.130 | 8621.987 | 3285593.481 |
| SP6 | SWV1 | 750 | Concrete | 300 | 3.639 | 2.418 | 41 | 229.993 | 229.845 | 231.063 | 0.800 | 1.130 | 8600.437 | 3285584.912 |
| SWV1 | SP28 | 750 | Concrete | 300 | 3.639 | 2.418 | 41 | 229.993 | 229.845 | 231.063 | 0.800 | 1.130 | 8594.248 | 3285582.417 |
| SP28 | | | | | | | | | | | | | 8572.529 | 3285534.864 |
| | | | | | | | | | | | | | 8569.070 | 3285535.999 |



LAYOUT PLAN
SCALE 1:300

LEGEND

- PROPOSED STORMWATER PIPE
- PROPOSED GRID INLET
- PROPOSED V-DRAIN
- PROPOSED RENO MATRESS
- PROPOSED STORMWATER SOAKPIT
- PROPOSED STORMWATER GULLEY

REFERENCE DRAWINGS

| | |
|---------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MQH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD AND SEWER LAYOUT PLAN | 300-MQH-03 |
| -ROAD AND SEWER LONGSECTIONS | 300-MQH-04 |
| -STORMWATER LONGSECTIONS 1 of 3 | 300-MQH-06 |
| -STORMWATER LONGSECTIONS 2 of 3 | 300-MQH-07 |
| -STORMWATER LONGSECTIONS 3 of 3 | 300-MQH-08 |
| -STORMWATER MANHOLE DETAILS | 300-MQH-09 |
| -STORMWATER CATCHMENT AREAS | 300-MQH-11 |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 06/09/2023 |
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LOCALITY PLAN
SCALE 1:20000

STATUS: FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 06-09-2023 |
| REVIEWED BY: | N.Z. | | | 06-09-2023 |
| APPROVED BY: | N.Z. | | | 06-09-2023 |

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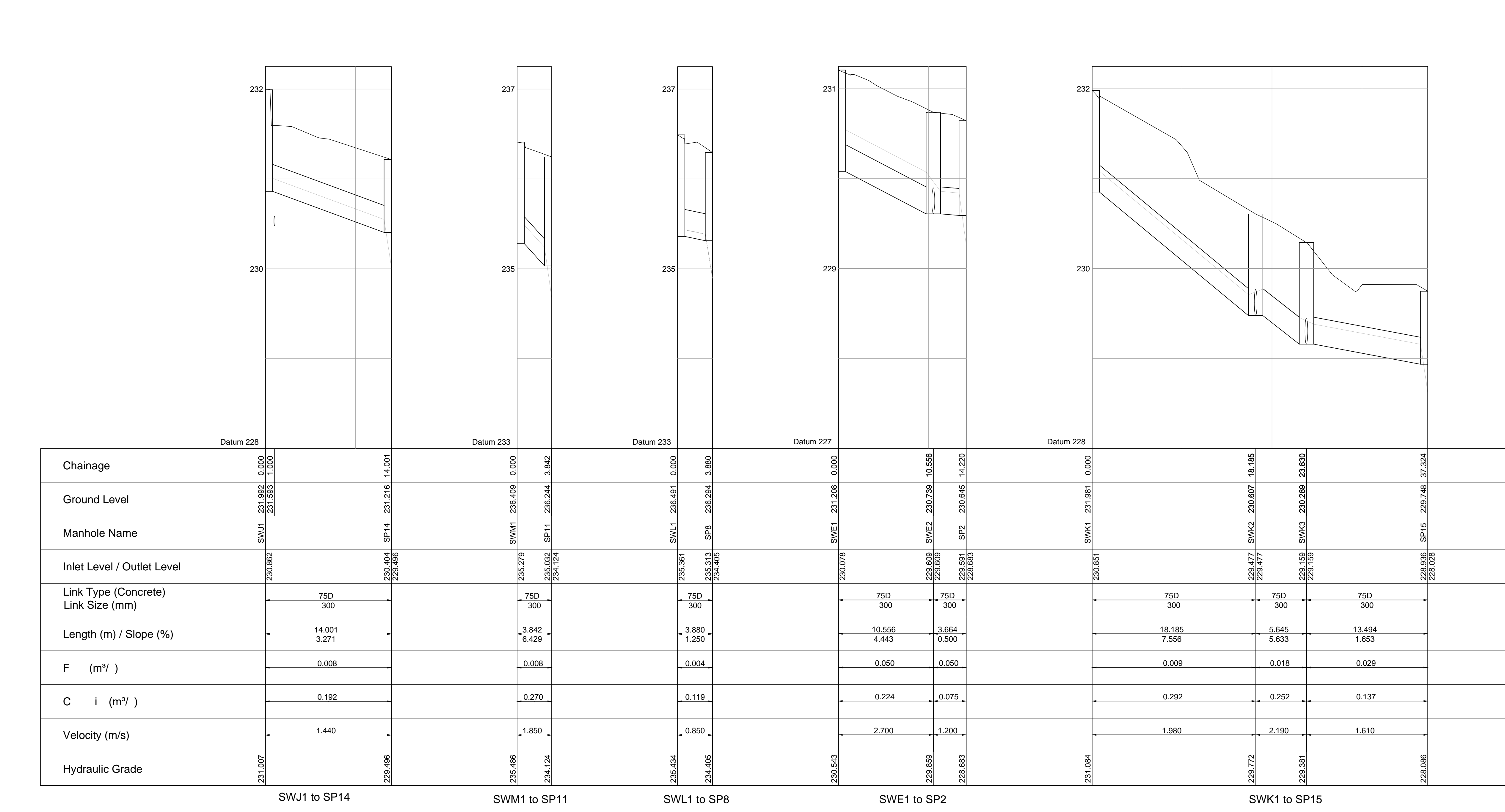
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CLIENT:

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Department:
Education
PROVINCE OF KWAZULU-NATAL

 DBSA

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|---|-------------|-----------|----------|
| PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME | | | |
| TITLE: MQHAWE HIGH SCHOOL STORMWATER LAYOUT PLAN | | | |
| SCALE AT A1: | DATE: | DRAWN: | CHECKED: |
| NTS | 06/09/23 | RV | NZ |
| PROJECT NO: | DRAWING NO: | REVISION: | |
| D19001 | 300-MQH-05 | A | |



STORMWATER LONGSECTIONS
SCALE 1:25 (V)
SCALE 1:250(H)

| NAME | Y | X |
|------|----------|-------------|
| SP1 | 8586.698 | 3285539.646 |
| SP2 | 8556.565 | 3285529.297 |
| SP2B | 8569.070 | 3285535.993 |
| SP3 | 8540.819 | 3285549.199 |
| SP4 | 8536.482 | 3285557.612 |
| SP5 | 8591.596 | 3285572.618 |
| SP6 | 8594.248 | 3285582.417 |
| SP7 | 8621.987 | 3285593.481 |
| SP8 | 8627.893 | 3285460.639 |
| SP9 | 8651.787 | 3285483.425 |
| SP10 | 8665.319 | 3285488.853 |
| SP11 | 8681.139 | 3285489.597 |
| SP12 | 8700.464 | 3285521.974 |
| SP13 | 8695.712 | 3285533.210 |
| SP14 | 8670.949 | 3285561.374 |
| SP15 | 8700.871 | 3285578.524 |
| SP16 | 8695.961 | 3285580.607 |

| NAME | Y | X |
|------|----------|-------------|
| SWA1 | 8614.936 | 3285506.938 |
| SWA2 | 8611.085 | 3285511.853 |
| SWA3 | 8597.164 | 3285529.626 |
| SWA4 | 8589.885 | 3285538.918 |
| SWB1 | 8599.738 | 3285531.643 |
| SWC1 | 8594.482 | 3285542.519 |
| SWD1 | 8551.026 | 3285536.282 |
| SWD2 | 8548.388 | 3285535.269 |
| SWE1 | 8562.388 | 3285517.380 |
| SWE2 | 8555.886 | 3285525.696 |
| SWF1 | 8588.554 | 3285571.446 |
| SWH1 | 8538.950 | 3285558.561 |
| SWJ1 | 8657.968 | 3285556.129 |

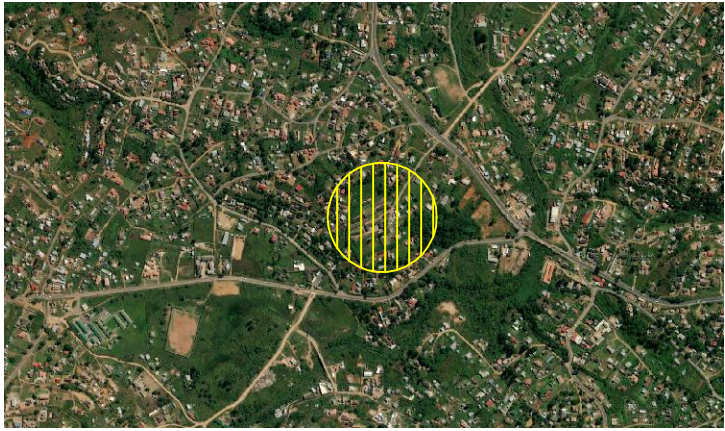
| NAME | Y | X |
|------|----------|-------------|
| SWK1 | 8709.729 | 3285542.764 |
| SWK2 | 8708.318 | 3285560.894 |
| SWK3 | 8706.122 | 3285566.094 |
| SWL1 | 8630.957 | 3285463.019 |
| SWM1 | 8681.219 | 3285485.756 |
| SWN1 | 8667.237 | 3285485.051 |
| SWO1 | 8642.496 | 3285475.317 |
| SWO2 | 8641.547 | 3285478.801 |
| SWP1 | 8696.418 | 3285520.494 |
| SWR1 | 8693.829 | 3285531.994 |
| SWS1 | 8692.257 | 3285574.326 |
| SWT1 | 8616.625 | 3285591.602 |
| SWU1 | 8600.437 | 3285584.912 |
| SWV1 | 8572.529 | 3285534.864 |

STORMWATER SETTING
OUT INFORMATION

| REFERENCE DRAWINGS | |
|---------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MQH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD & SEWER LAYOUT PLAN | 300-MQH-03 |
| -STORMWATER LAYOUT PLAN | 300-MQH-05 |
| -STORMWATER LONGSECTIONS 2 of 3 | 300-MQH-07 |
| -STORMWATER LONGSECTIONS 3 of 3 | 300-MQH-08 |
| -STORMWATER MANHOLE DETAILS | 300-MQH-09 |
| -STORMWATER CATCHMENT AREAS | 300-MQH-11 |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 07/09/2023 |
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LOCALITY PLAN
SCALE 1:20000

STATUS: **FOR TENDER**

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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Department:
Education
PROVINCE OF KWAZULU-NATAL



PROJECT:

KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

TITLE:

MQHAWE HIGH SCHOOL
STORMWATER LONGSECTIONS 1 OF 3

SCALE AT A1:

DATE:

DRAWN:

CHECKED:

AS SHOWN

07/09/23

RV

NZ

PROJECT NO:

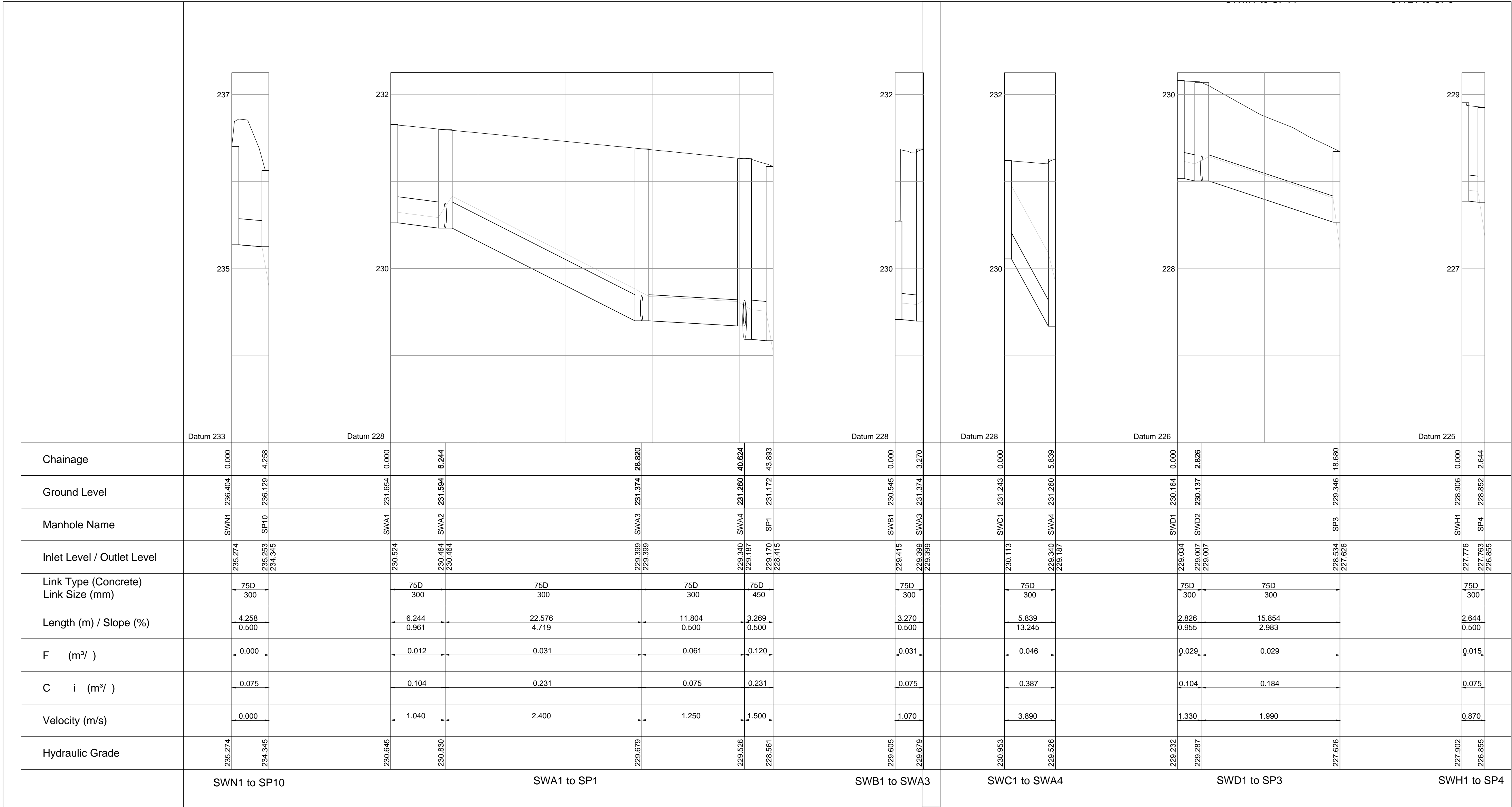
DRAWING NO:

REVISION:

D19001

300-MQH-06

A



| Chainage | | 0.000 | | | 0.000 | | | 28.820 | | 40.624 | 43.893 | | | 0.000 | | | 0.000 | | | 18.680 | | 0.000 | 2.644 | | | | | | | |
|--|--|----------------|--------------------|--|----------------|--|-----------------|--------------------|--|--------------------|--------------------|--------------|-------------------------------|---------|---------|--------------------|--------------|-------------------------------|---------|--------------------|---------|-------------------------------|---------|---------|--|--|-------------|--|--|--|
| Ground Level | | 236.404 | 236.129 | | 231.654 | | 231.594 | 231.374 | | 231.260 | 231.172 | | 230.645 | 231.374 | | 231.243 | 231.260 | | 230.164 | 230.137 | 229.346 | | 228.906 | 228.852 | | | | | | |
| Manhole Name | | SWN1 | SP10 | | SWA1 | | SWA2 | SWA3 | | SWA4 | SP1 | | SWB1 | SWA3 | | SWC1 | SWA4 | | SWD1 | SWD2 | SP3 | | SWH1 | SP4 | | | | | | |
| Inlet Level / Outlet Level | | 235.274 | 235.253 234.345 | | 230.524 | | 230.464 | 229.399 229.399 | | 229.340 229.167 | 229.170 228.475 | | 229.415 229.399 229.399 | | 230.113 | 229.340 229.187 | | 229.034 229.007 229.007 | | 228.534 227.626 | | 227.776 227.763 226.855 | | | | | | | | |
| Link Type (Concrete) Link Size (mm) | | 75D 300 | | | 75D 300 | | 75D 300 | | | 75D 300 | 75D 450 | | 75D 300 | | | 75D 300 | | 75D 300 | | 75D 300 | | 75D 300 | | | | | | | | |
| Length (m) / Slope (%) | | 4.258 0.500 | | | 6.244 0.961 | | 22.576 4.719 | | | 11.804 0.500 | 3.269 0.500 | | 3.270 0.500 | | | 5.839 13.245 | | 2.826 0.955 | | 15.854 2.983 | | 2.644 0.500 | | | | | | | | |
| F (m³/) | | 0.000 | | | 0.012 | | 0.031 | | | 0.061 | 0.120 | | 0.031 | | | 0.046 | | 0.029 | | 0.029 | | 0.015 | | | | | | | | |
| C i (m³/) | | 0.075 | | | 0.104 | | 0.231 | | | 0.075 | 0.231 | | 0.075 | | | 0.387 | | 0.104 | | 0.184 | | 0.075 | | | | | | | | |
| Velocity (m/s) | | 0.000 | | | 1.040 | | 2.400 | | | 1.250 | 1.500 | | 1.070 | | | 3.890 | | 1.330 | | 1.990 | | 0.870 | | | | | | | | |
| Hydraulic Grade | | 235.274 | 234.345 | | 230.645 | | 230.830 | 229.679 | | 229.526 | 228.561 | | 229.605 | 229.679 | | 230.953 | 229.526 | | 229.232 | 229.287 | 227.626 | | 227.902 | 226.855 | | | | | | |
| | | SWN1 to SP10 | | | | | SWA1 to SP1 | | | | | SWB1 to SWA3 | | | | | SWC1 to SWA4 | | | | | SWD1 to SP3 | | | | | SWH1 to SP4 | | | |

| NAME | Y | X |
|------|----------|-------------|
| SP1 | 8586.698 | 3285539.646 |
| SP2 | 8556.565 | 3285529.297 |
| SP2B | 8569.070 | 3285535.993 |
| SP3 | 8540.819 | 3285549.199 |
| SP4 | 8536.482 | 3285557.612 |
| SP5 | 8591.596 | 3285572.618 |
| SP6 | 8594.248 | 3285582.417 |
| SP7 | 8621.987 | 3285593.481 |
| SP8 | 8627.893 | 3285460.639 |
| SP9 | 8651.787 | 3285483.425 |
| SP10 | 8665.319 | 3285488.853 |
| SP11 | 8681.139 | 3285489.597 |
| SP12 | 8700.464 | 3285521.974 |
| SP13 | 8695.712 | 3285533.210 |
| SP14 | 8670.949 | 3285561.374 |
| SP15 | 8700.871 | 3285578.524 |
| SP16 | 8695.961 | 3285580.607 |

| NAME | Y | X |
|------|----------|-------------|
| SWA1 | 8614.936 | 3285506.938 |
| SWA2 | 8611.085 | 3285511.853 |
| SWA3 | 8597.164 | 3285529.626 |
| SWA4 | 8589.885 | 3285538.918 |
| SWB1 | 8599.738 | 3285531.643 |
| SWC1 | 8594.482 | 3285542.519 |
| SWD1 | 8551.026 | 3285536.282 |
| SWD2 | 8548.388 | 3285535.269 |
| SWE1 | 8562.388 | 3285517.380 |
| SWE2 | 8555.886 | 3285525.696 |
| SWF1 | 8588.554 | 3285571.446 |
| SWH1 | 8538.950 | 3285558.561 |
| SWJ1 | 8657.968 | 3285556.129 |

| NAME | Y | X |
|------|----------|-------------|
| SWK1 | 8709.729 | 3285542.764 |
| SWK2 | 8708.318 | 3285560.894 |
| SWK3 | 8706.122 | 3285566.094 |
| SWL1 | 8630.957 | 3285463.019 |
| SWM1 | 8681.219 | 3285485.756 |
| SWN1 | 8667.237 | 3285486.051 |
| SWO1 | 8642.496 | 3285475.317 |
| SWO2 | 8641.547 | 3285478.801 |
| SWP1 | 8696.418 | 3285520.494 |
| SWR1 | 8693.829 | 3285531.994 |
| WS1 | 8692.257 | 3285574.326 |
| SWT1 | 8616.625 | 3285591.602 |
| SWU1 | 8600.437 | 3285584.912 |
| SWV1 | 8572.529 | 3285534.864 |

STORMWATER SETTING OUT INFORMATION

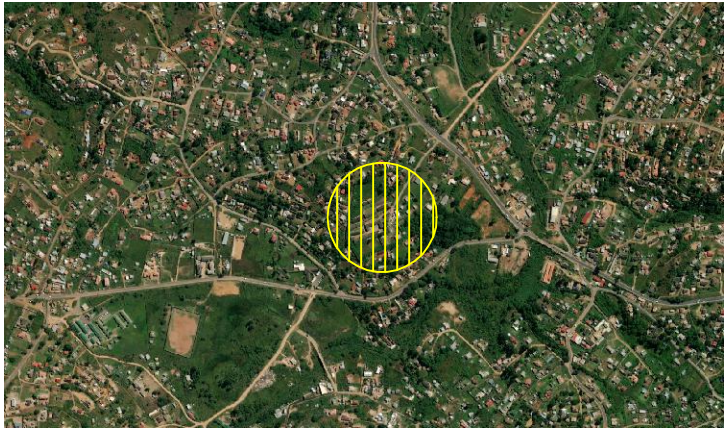
STORMWATER LONGSECTIONS

SCALE 1:25 (V)
SCALE 1:250(H)

| REFERENCE DRAWINGS | |
|---------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MQH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD & SEWER LAYOUT PLAN | 300-MQH-03 |
| -STORMWATER LAYOUT PLAN | 300-MQH-05 |
| -STORMWATER LONGSECTIONS 1 of 3 | 300-MQH-06 |
| -STORMWATER LONGSECTIONS 3 of 3 | 300-MQH-08 |
| -STORMWATER MANHOLE DETAILS | 300-MQH-09 |
| -STORMWATER CATCHMENT AREAS | 300-MQH-11 |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 07/09/2023 |
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 - ALL DEBRIS AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN
SCALE 1:20000

STATUS: FOR TENDER

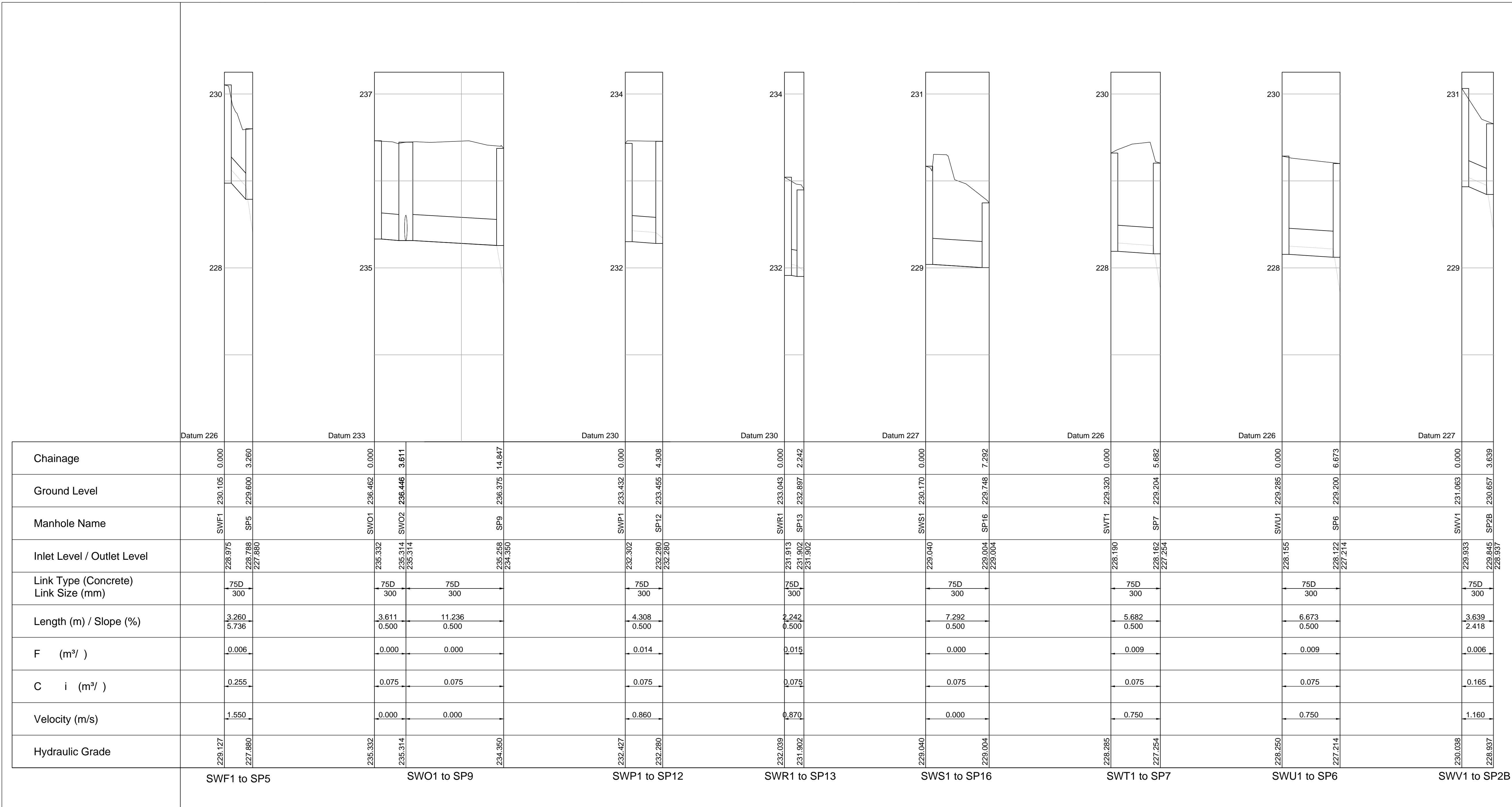
| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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| | | | |
|---|-------------|-----------|----------|
| PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME | | | |
| TITLE: MQHAWE HIGH SCHOOL STORMWATER LONGSECTIONS 2 OF 3 | | | |
| SCALE AT A1: | DATE: | DRAWN: | CHECKED: |
| AS SHOWN | 07/09/23 | RV | NZ |
| PROJECT NO: | DRAWING NO: | REVISION: | |
| D19001 | 300-MQH-08 | A | |



STORMWATER LONGSECTIONS
SCALE 1:25 (V)
SCALE 1:250(H)

| NAME | Y | X |
|------|----------|-------------|
| SP1 | 8586.698 | 3285539.646 |
| SP2 | 8566.565 | 3285529.297 |
| SP2B | 8569.070 | 3285535.993 |
| SP3 | 8540.819 | 3285549.199 |
| SP4 | 8536.482 | 3285557.612 |
| SP5 | 8591.596 | 3285572.618 |
| SP6 | 8594.248 | 3285582.417 |
| SP7 | 8621.987 | 3285593.481 |
| SP8 | 8627.893 | 3285460.639 |
| SP9 | 8651.787 | 3285483.425 |
| SP10 | 8665.319 | 3285488.853 |
| SP11 | 8681.139 | 3285489.597 |
| SP12 | 8700.464 | 3285521.974 |
| SP13 | 8695.712 | 3285533.210 |
| SP14 | 8670.949 | 3285561.374 |
| SP15 | 8700.871 | 3285578.524 |
| SP16 | 8695.961 | 3285580.607 |

| NAME | Y | X |
|------|----------|-------------|
| SWA1 | 8614.936 | 3285506.938 |
| SWA2 | 8611.085 | 3285511.853 |
| SWA3 | 8597.164 | 3285529.626 |
| SWA4 | 8589.885 | 3285538.918 |
| SWB1 | 8599.738 | 3285531.643 |
| SWC1 | 8594.482 | 3285542.519 |
| SWD1 | 8551.026 | 3285536.282 |
| SWD2 | 8548.388 | 3285535.269 |
| SWE1 | 8562.388 | 3285517.380 |
| SWE2 | 8555.886 | 3285525.696 |
| SWF1 | 8588.554 | 3285571.446 |
| SWH1 | 8538.950 | 3285558.561 |
| SWJ1 | 8657.968 | 3285556.129 |

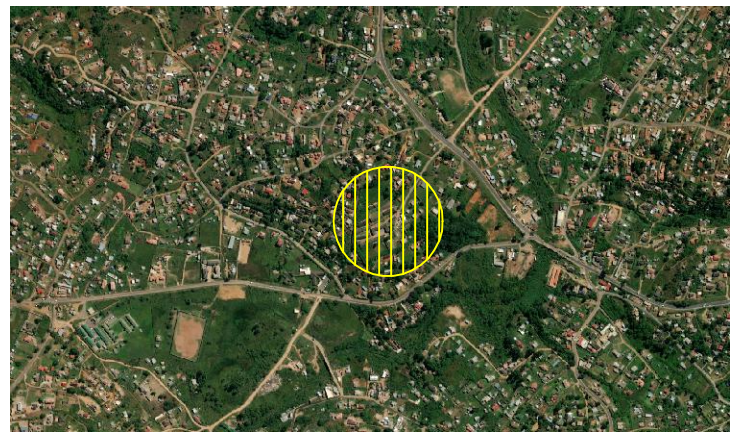
| NAME | Y | X |
|------|----------|-------------|
| SWK1 | 8709.729 | 3285542.764 |
| SWK2 | 8708.318 | 3285560.894 |
| SWK3 | 8706.122 | 3285566.094 |
| SWL1 | 8630.957 | 3285463.019 |
| SWM1 | 8681.219 | 3285485.756 |
| SWN1 | 8667.237 | 3285485.051 |
| SWO1 | 8642.496 | 3285475.317 |
| SWO2 | 8641.547 | 3285478.801 |
| SWP1 | 8696.418 | 3285520.494 |
| SWR1 | 8693.829 | 3285531.994 |
| SWS1 | 8692.257 | 3285574.326 |
| SWT1 | 8616.625 | 3285591.602 |
| SWU1 | 8600.437 | 3285584.912 |
| SWV1 | 8572.529 | 3285534.864 |

STORMWATER SETTING
OUT INFORMATION

| REFERENCE DRAWINGS | |
|---------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MQH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD & SEWER LAYOUT PLAN | 300-MQH-03 |
| -STORMWATER LAYOUT PLAN | 300-MQH-05 |
| -STORMWATER LONGSECTIONS 2 of 3 | 300-MQH-06 |
| -STORMWATER LONGSECTIONS 3 of 3 | 300-MQH-07 |
| -STORMWATER MANHOLE DETAILS | 300-MQH-09 |
| -STORMWATER CATCHMENT AREAS | 300-MQH-11 |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 07/09/2023 |
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 15. ALL DEBRIS AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN
SCALE 1:20000

STATUS:
FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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CLIENT:

 **education**
Department:
Education
PROVINCE OF KWAZULU-NATAL

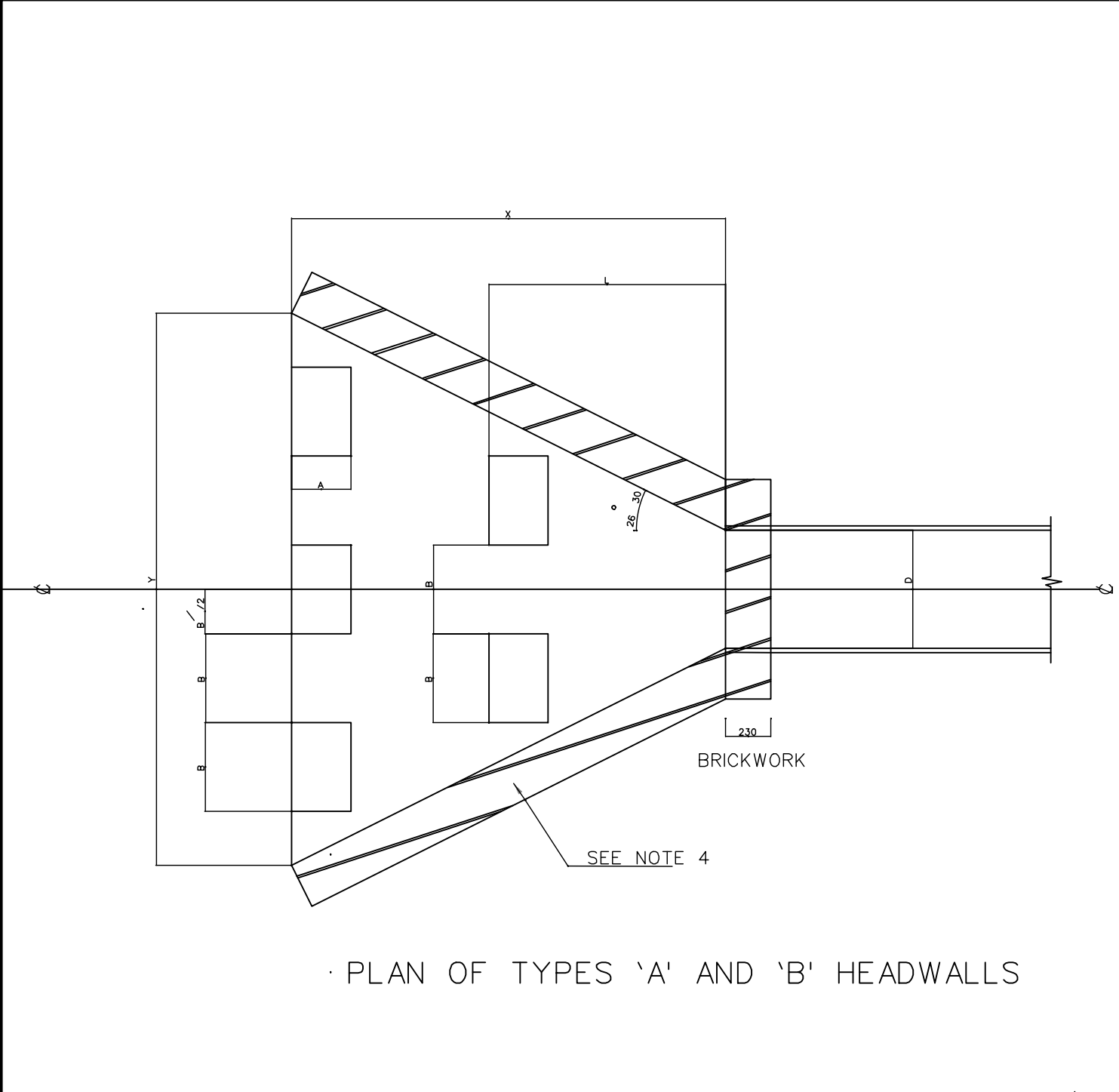
DBSA

PROJECT:
KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

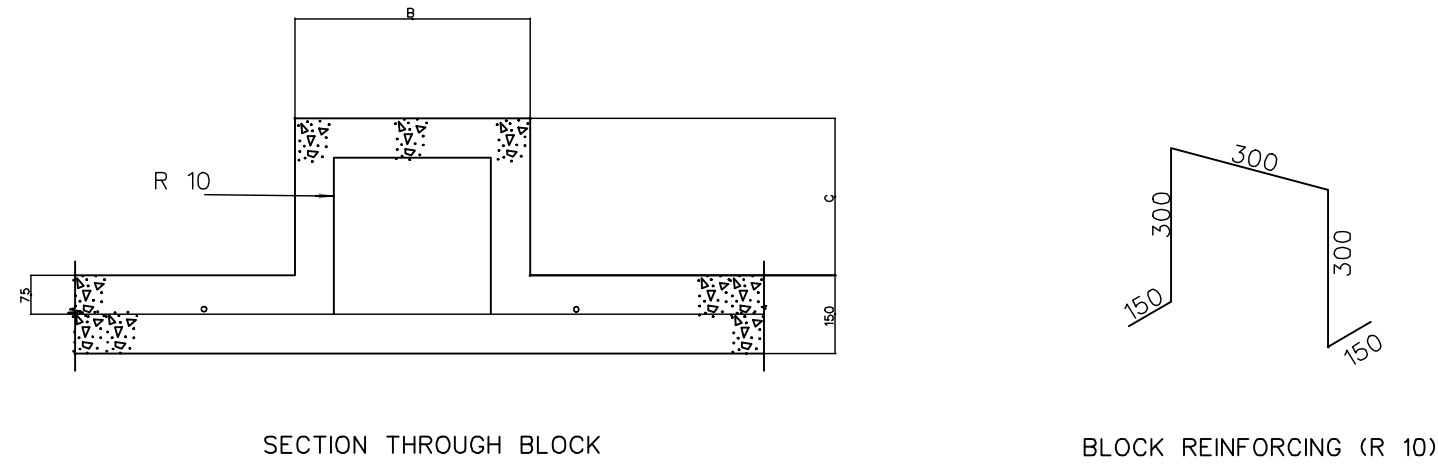
TITLE:
**MQHAWE HIGH SCHOOL
STORMWATER LONGSECTIONS 3 OF 3**

SCALE AT A1: AS SHOWN DATE: 07/09/23 DRAWN: RV CHECKED: NZ

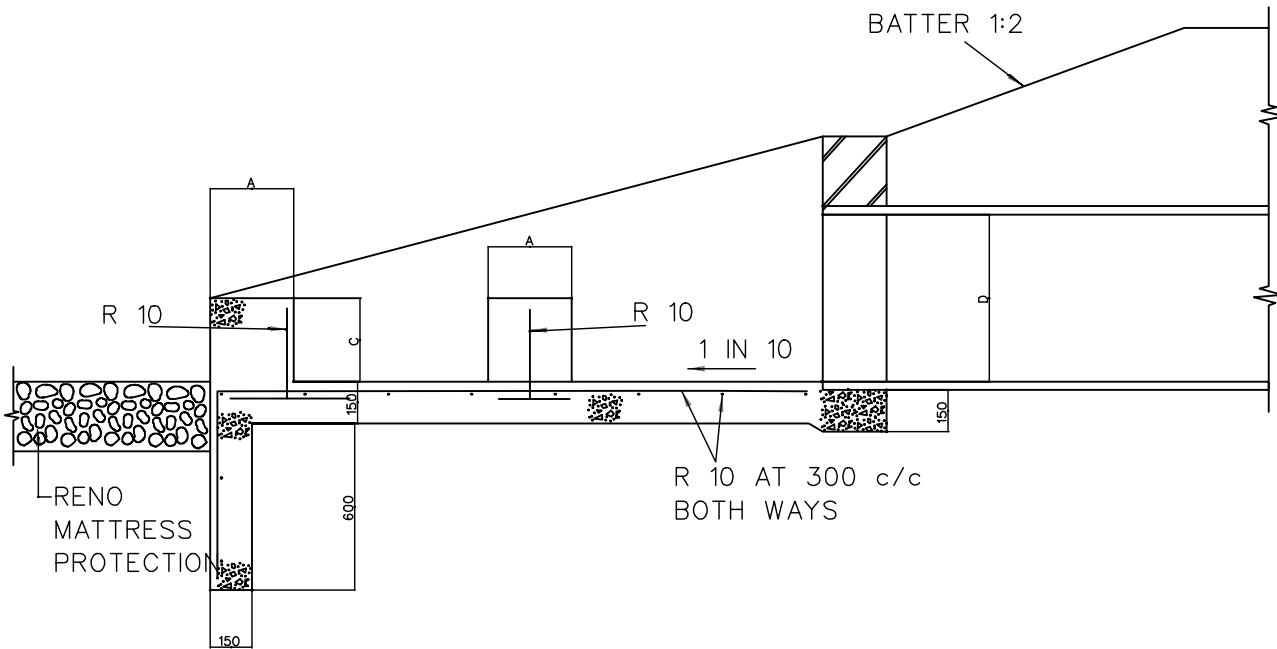
PROJECT NO: D19001 DRAWING NO: 300-MQH-08 REVISION: A



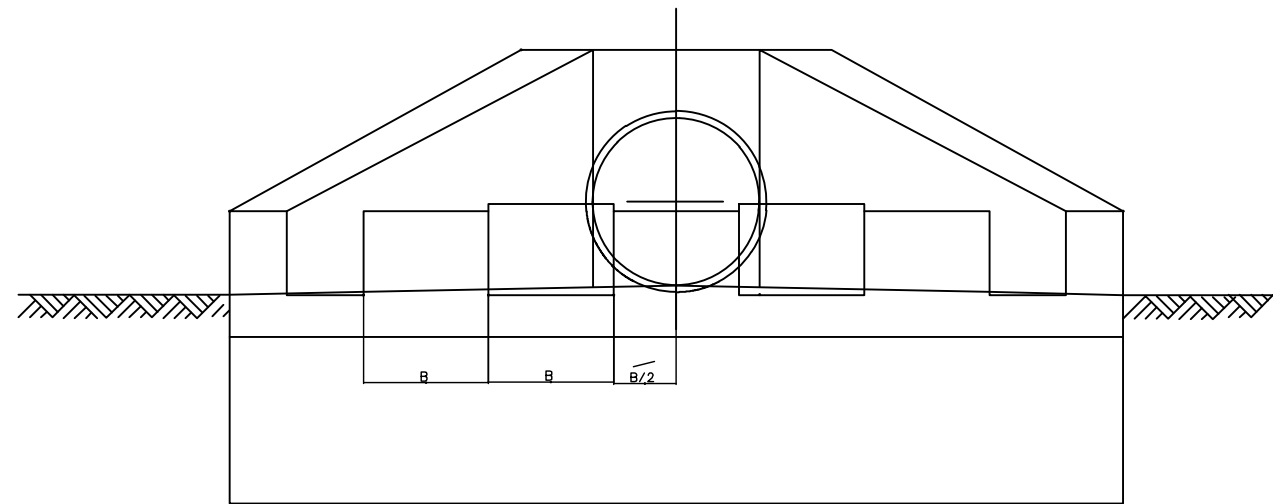
PLAN OF TYPES 'A' AND 'B' HEADWALLS



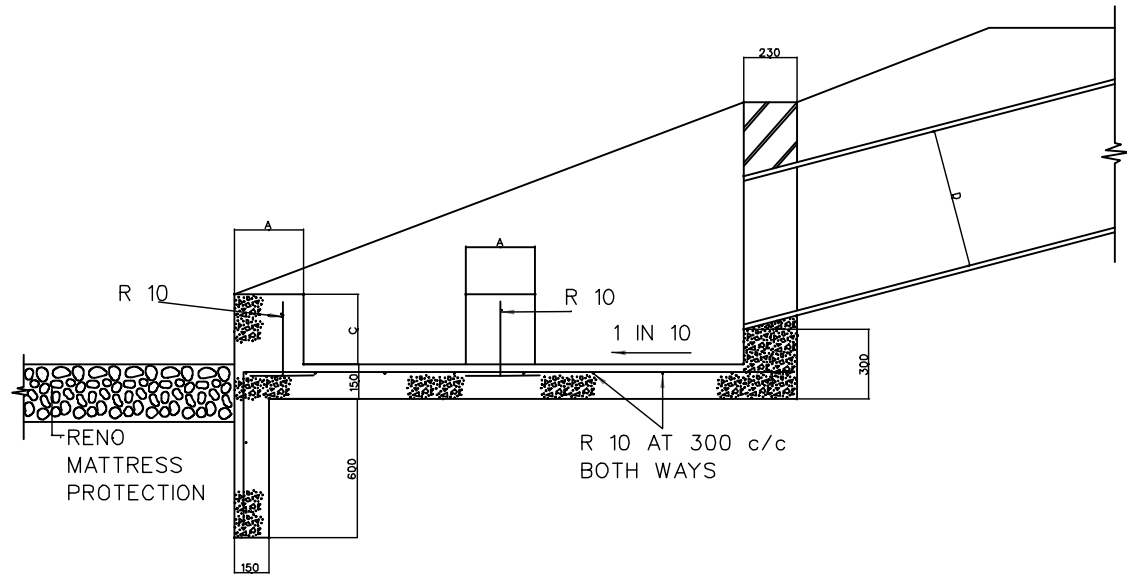
SPLITTER BLOCK DETAILS
SCALE 1:10



TYPE 'A' HEADWALL WHERE PIPE GRADE IS LESS THAN 20% (1:5)



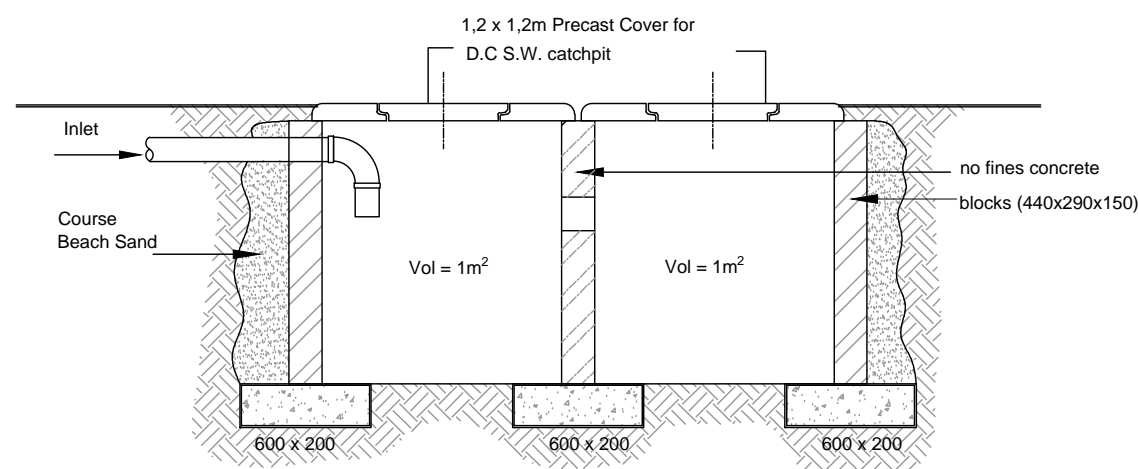
TYPE 'A' HEADWALL - ELEVATION



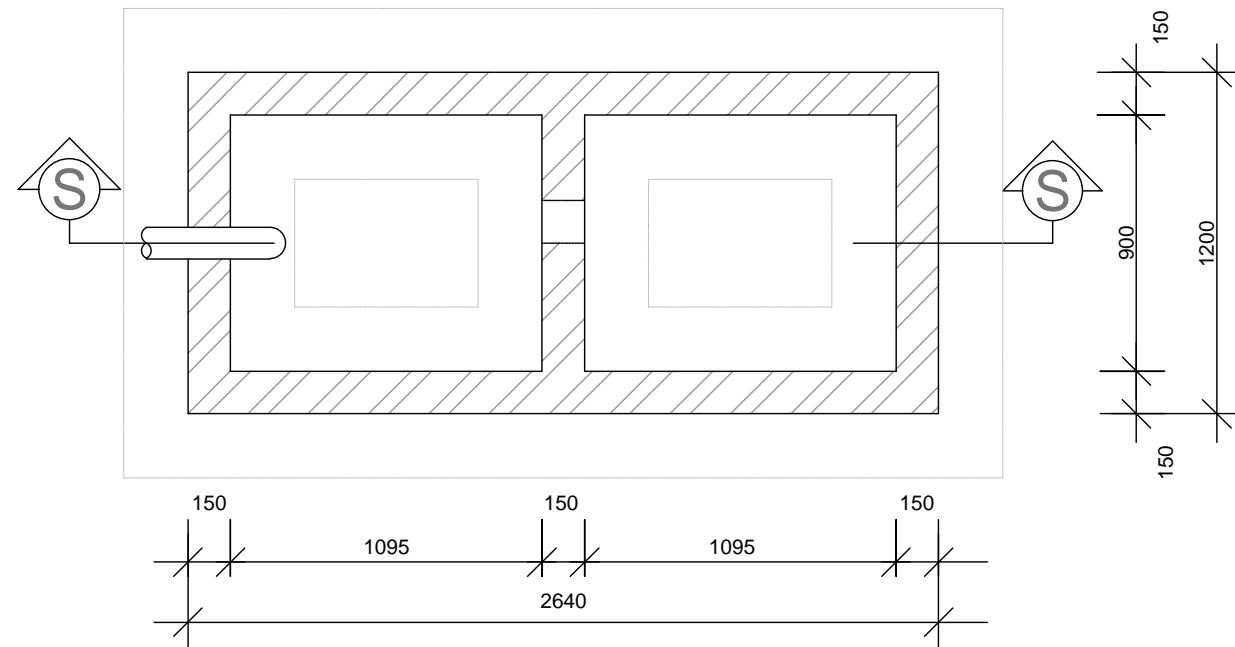
TYPE 'B' HEADWALL WHERE PIPE GRADE IS GREATER THAN 20% (1:5)

| NOM. PIPE DIA. | DIMENSIONS (mm) | | | | | |
|----------------|-------------------|-----|-----|------|------|------|
| D | A | B | C | L | X | Y |
| 375 | 245 | 350 | 250 | 980 | 1800 | 2175 |
| 450 | 245 | 360 | 250 | 980 | 1800 | 2250 |
| 525 | 250 | 375 | 250 | 1050 | 2000 | 2525 |
| 600 | 300 | 450 | 300 | 1200 | 2200 | 2800 |
| 750 | 300 | 450 | 300 | 1500 | 2400 | 3150 |
| 825 | 300 | 450 | 300 | 1650 | 2600 | 3425 |
| 900 | 300 | 450 | 300 | 1800 | 2800 | 3700 |
| 1050 | 300 | 450 | 300 | 2100 | 3000 | 4050 |
| 1200 | 300 | 450 | 300 | 2400 | 3200 | 4400 |

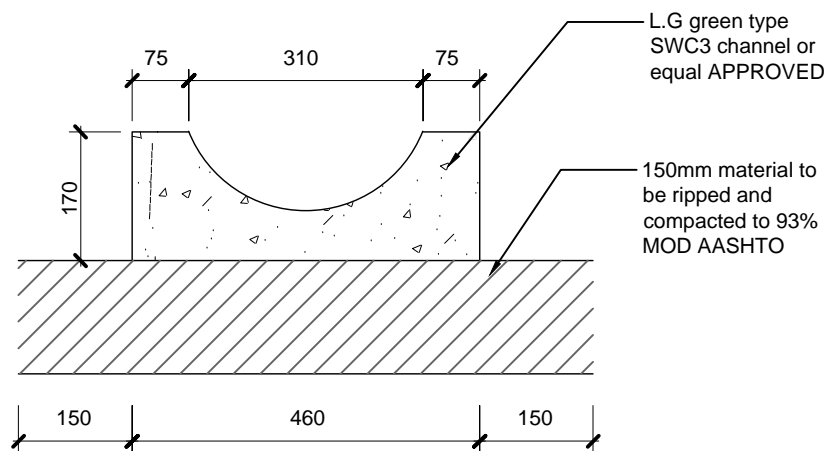
- NOTES :
- 1) CONCRETE GRADE 20/26 MPa
 - 2) COVER TO STEEL 40mm MIN.
 - 3) REINFORCING TO BE CUT AND BENT ON SITE. MIN. LAPS 500mm
 - 4) HEADWALL BRICKWORK SIZES (IN mm) :
WALL HEIGHT BRICKWORK
0-1100 230
1100-1400 345
1400-1800 460
 - 5) ALL EXPOSED BRICKWORK TO BE FACEBRICK (REFER CLAUSE F 3.5.2, DEPARTMENTAL STANDARD SPECIFICATION)



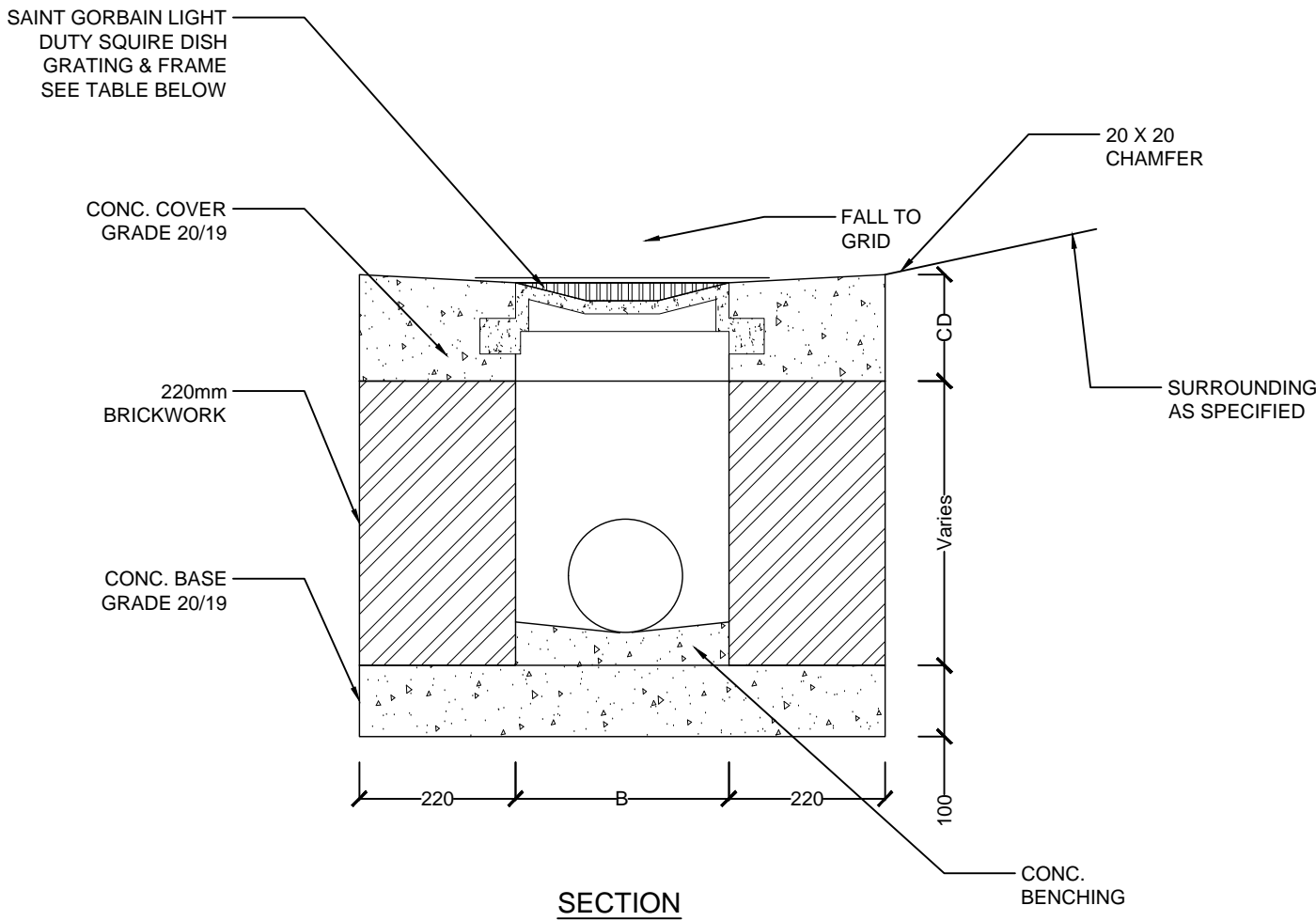
SECTION S-S 1:50



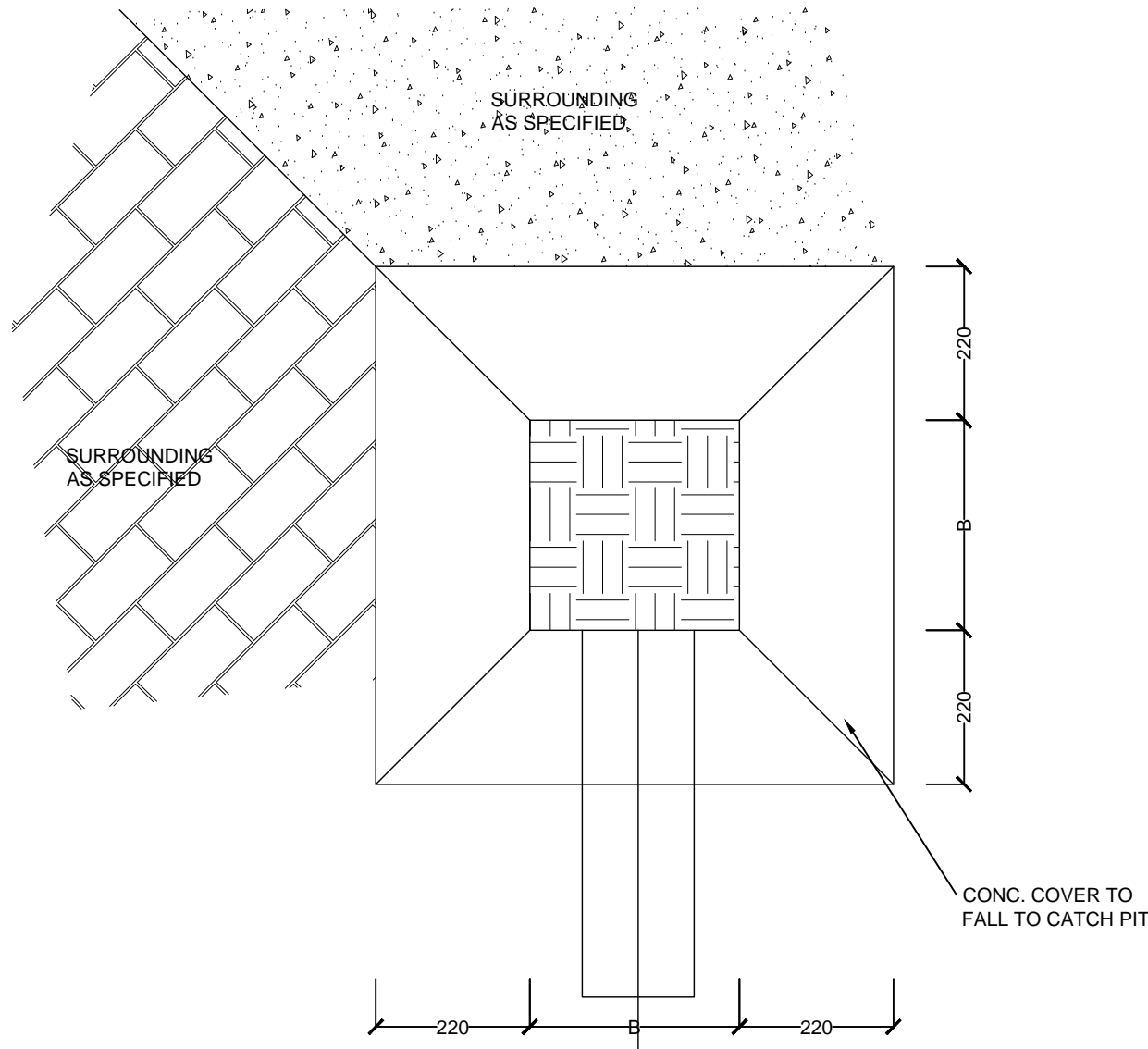
DETAIL OF 2sqm. SOAKAWAY
FOR STORMWATER 1:50



TYPE 'B' CHANNEL
Scale: 1:10



SECTION



PLAN VIEW

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STATUS:

FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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PROJECT:
KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

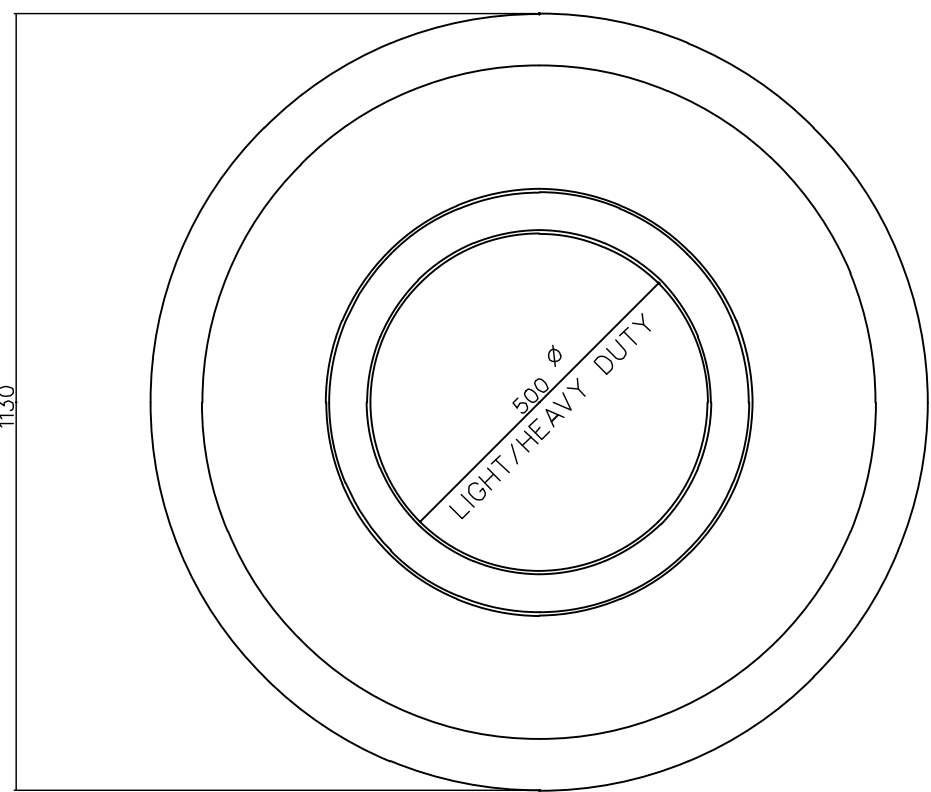
TITLE:
MQHAWE HIGH SCHOOL
STORMWATER HEADWALL DETAILS

| | | | |
|-----------------------|---------------------------|--------------|----------------|
| SCALE AT A1: NTS | DATE: 07/09/23 | DRAWN: RV | CHECKED: NZ |
| PROJECT NO: D19001 | DRAWING NO: 300-MQH-09 | REVISION: | A |

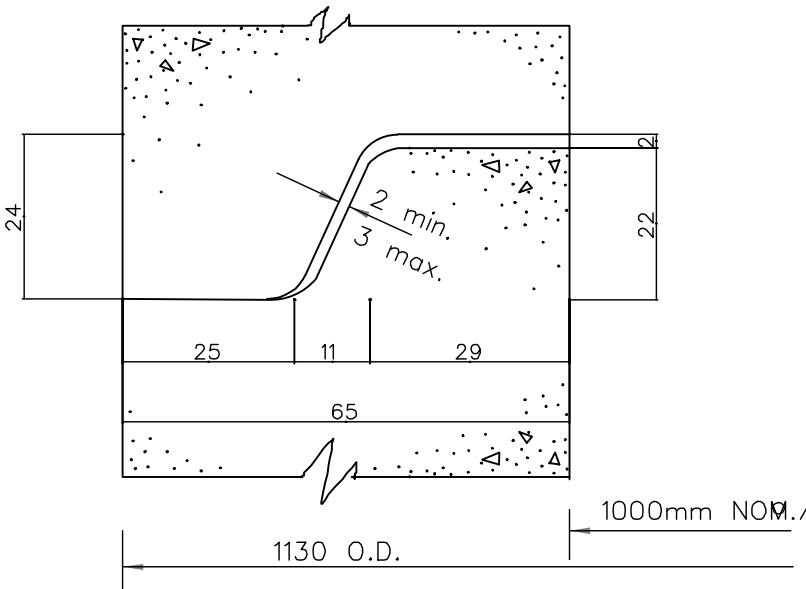
| Gully Type | Gully Size | Product No. | B | C | D |
|------------|------------|-------------|-----|----|-----|
| F | 600 x 600 | 2952 | 600 | 65 | 100 |
| E | 450 x 450 | 2946 | 450 | 65 | 100 |
| D | 380 x 380 | 2940 | 380 | 52 | 100 |
| C | 300 x 300 | 2934 | 300 | 38 | 100 |
| B | 230 x 230 | 2928 | 230 | 34 | 80 |
| A | 150 x 150 | 2922 | 150 | 34 | 80 |

| REFERENCE DRAWINGS | |
|---------------------------------|------------|
| -STORMWATER LAYOUT PLAN | 300-MQH-05 |
| -STORMWATER LONGSECTIONS 1 of 3 | 300-MQH-06 |
| -STORMWATER LONGSECTIONS 2 of 3 | 300-MQH-07 |
| -STORMWATER LONGSECTIONS 3 of 3 | 300-MQH-08 |

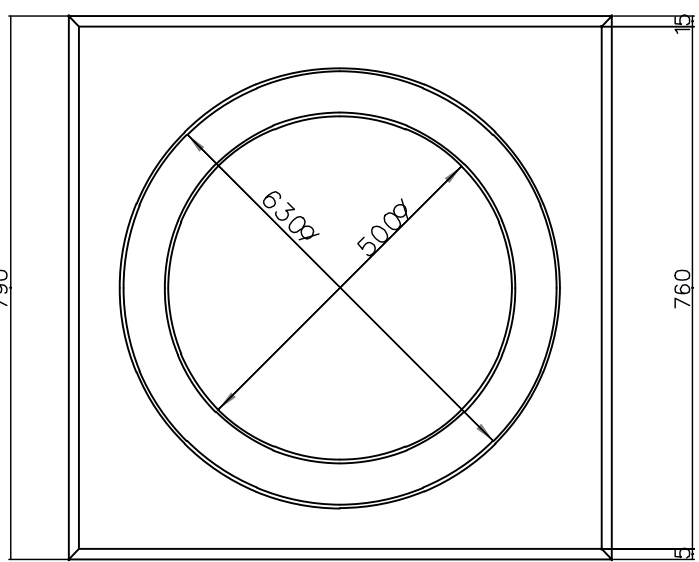
| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 06/09/2023 |



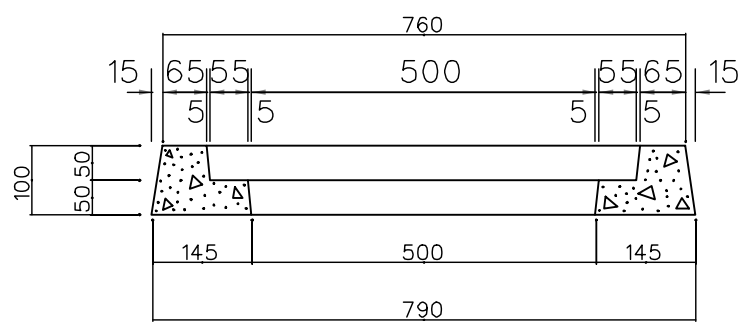
PLAN OF CIRCULAR LIGHT AND HEAVY DUTY
FRAME FOR 1000 NOM. DIA. MANHOLE



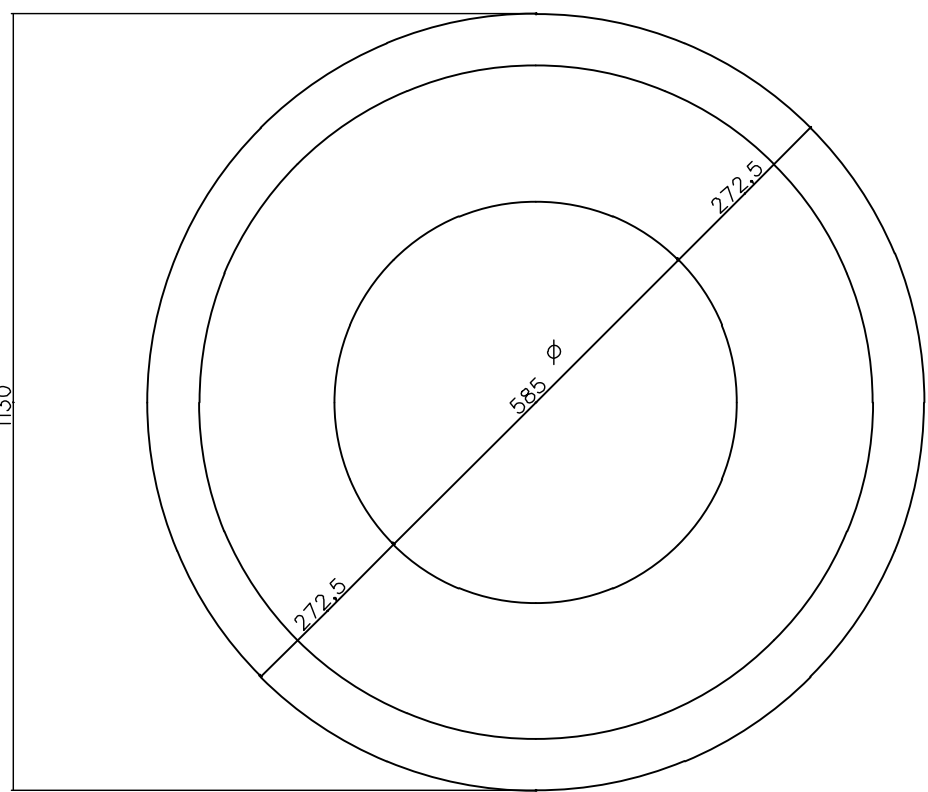
ALL RADII TO BE 10mm
DETAIL OF JOINT



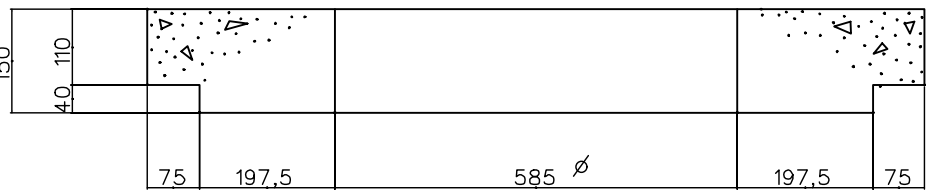
PLAN



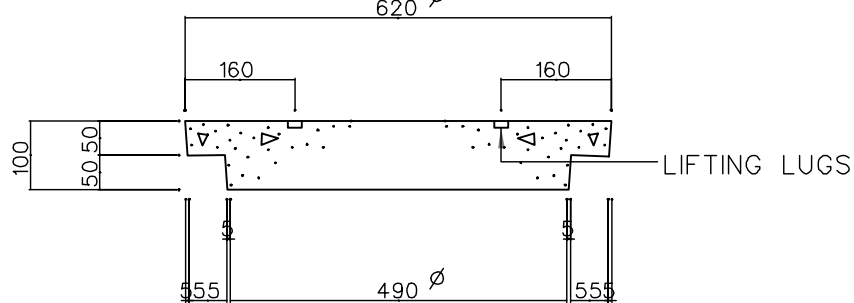
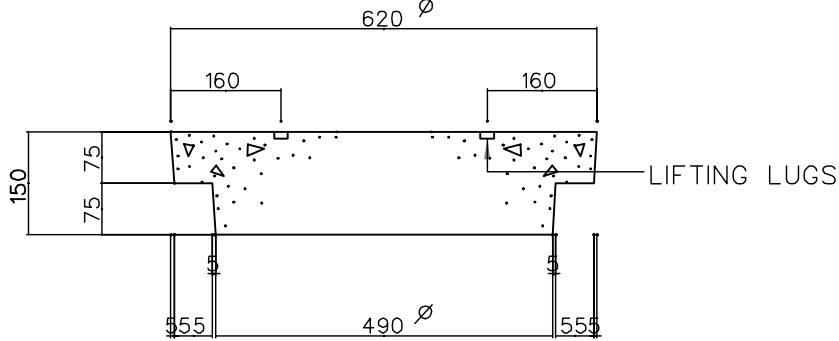
SECTION OF LIGHT DUTY
SQUARE MANHOLE FRAME



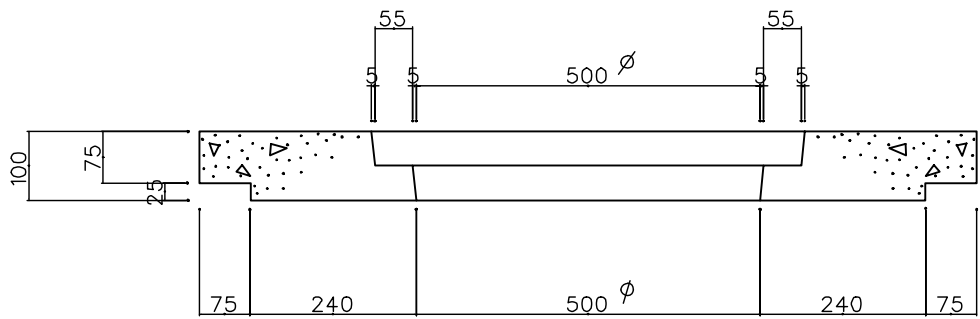
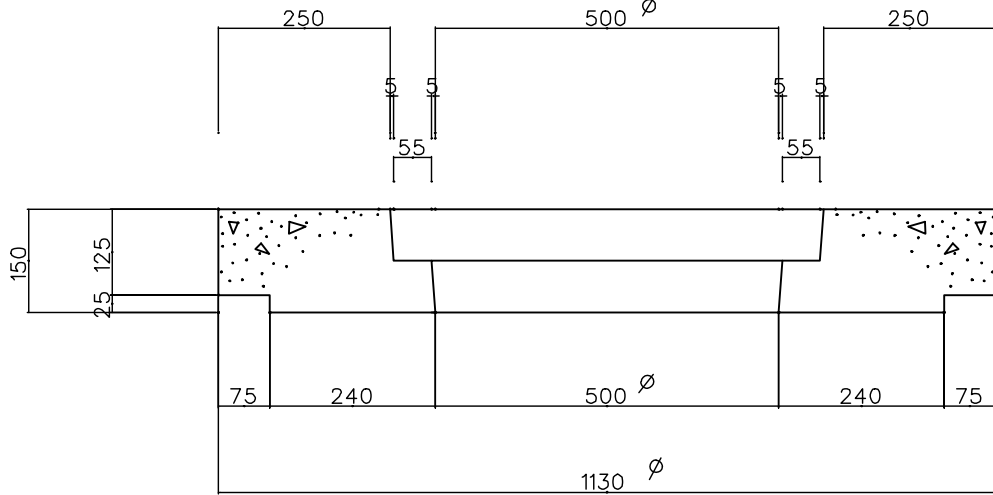
PLAN OF CIRCULAR COVER SLAB



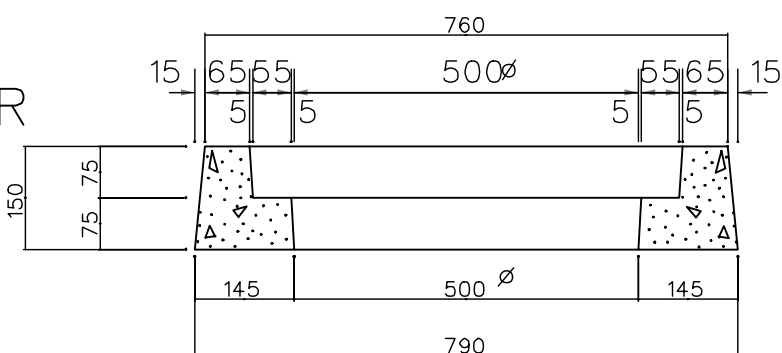
SECTION OF CIRCULAR COVER SLAB



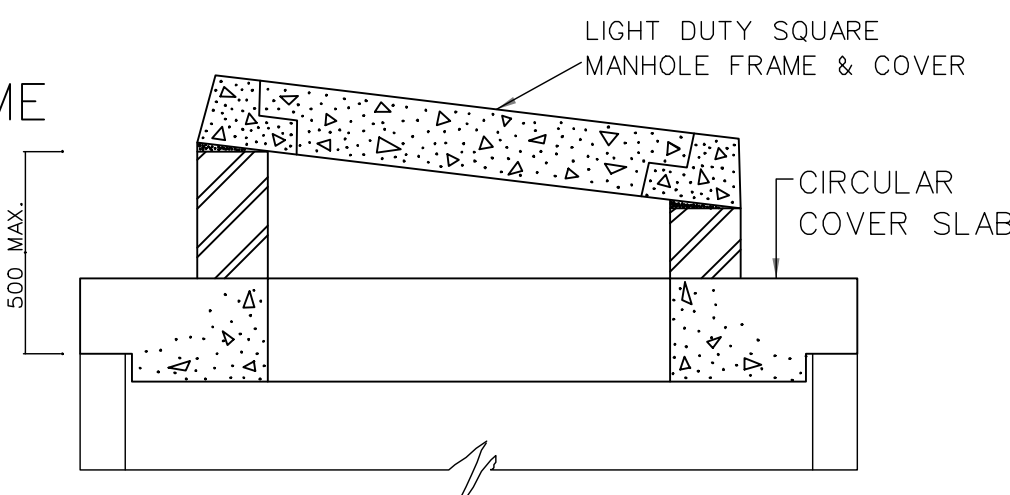
SECTION OF CIRCULAR HEAVY DUTY MH COVER
SECTION OF CIRCULAR LIGHT DUTY MH COVER



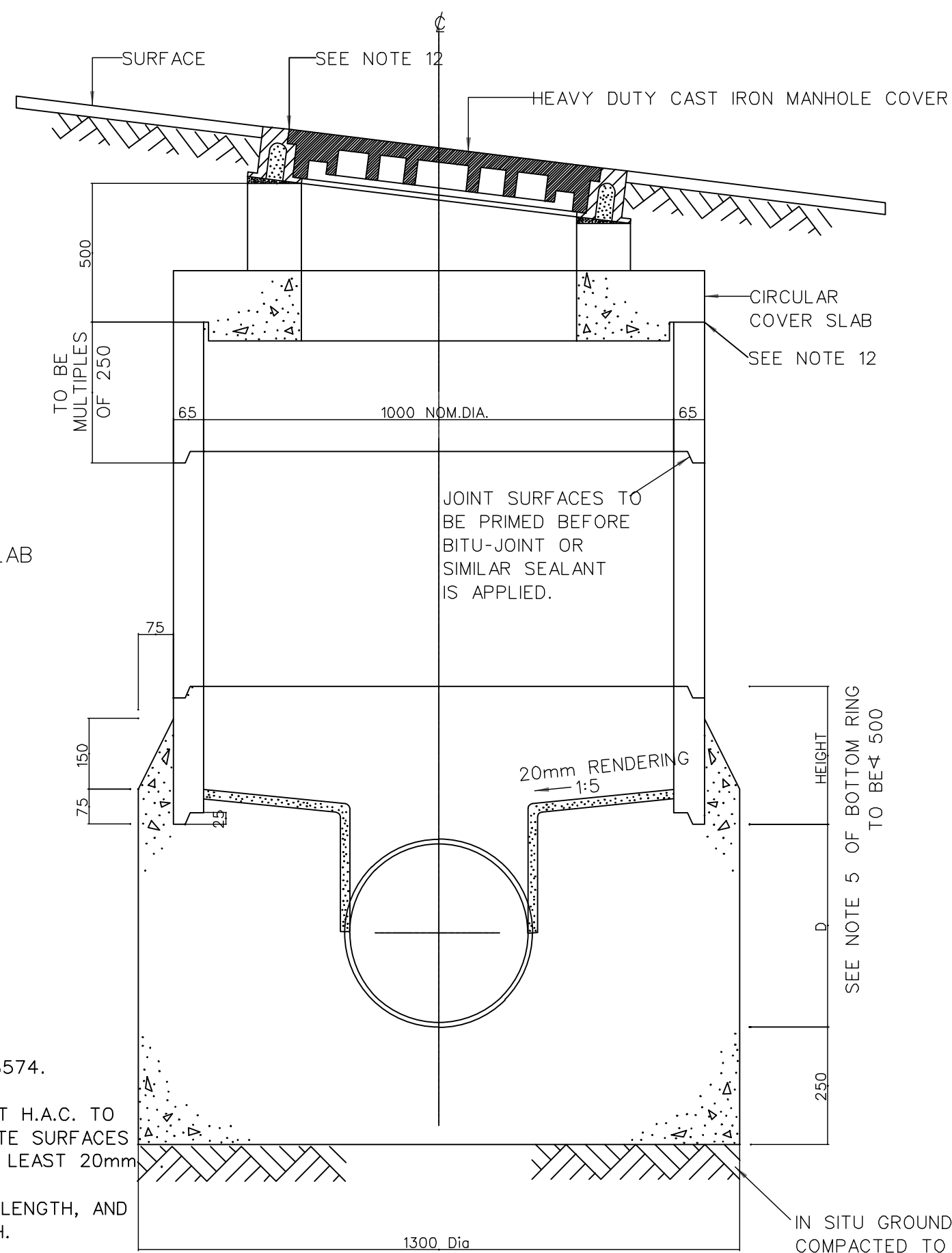
SECTION OF CIRCULAR HEAVY DUTY M.H. FRAME
SECTION OF CIRCULAR LIGHT DUTY MH FRAME



SECTION OF HEAVY DUTY
SQUARE MANHOLE FRAME.

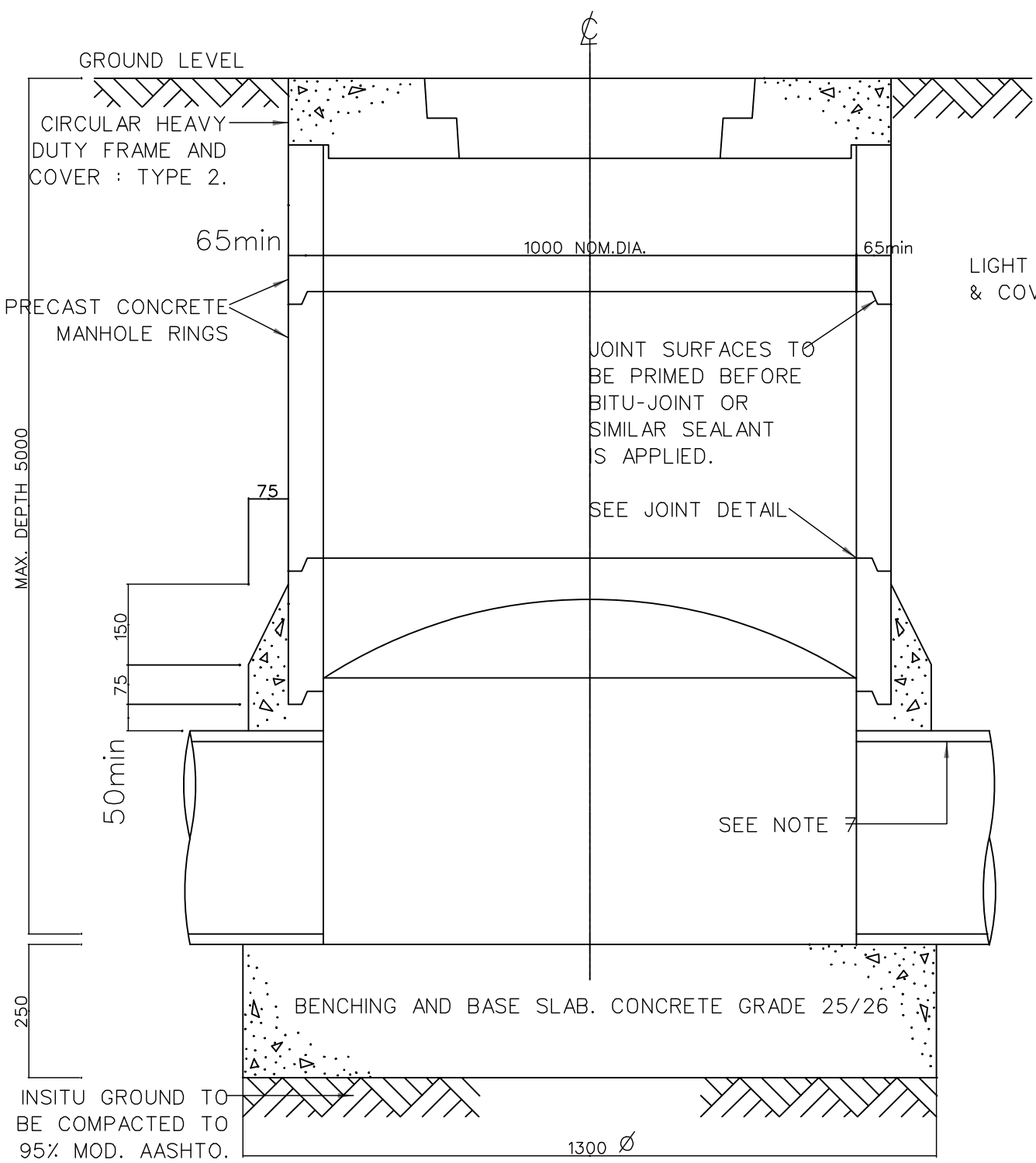


SECTION OF LIGHT DUTY SQUARE
MANHOLE FRAME AND COVER



SECTION OF 1000 DIA. MANHOLE

| PRECAST PRODUCT DETAILS | |
|--------------------------------|-------|
| RING MANHOLES | 38850 |
| CIRCULAR FRAMES AND COVER SLAB | 38851 |
| SQUARE MANHOLE FRAMES | 38852 |
| MANHOLE COVERS | 38853 |

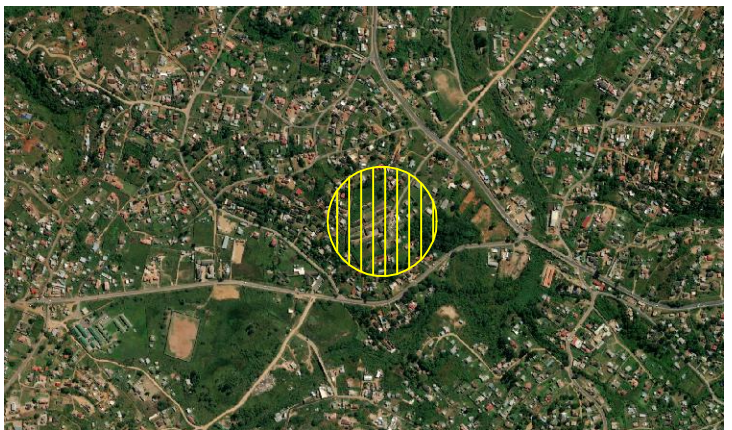


SECTION OF 1000 DIA. MANHOLE

- NOTES:
- GENERAL
 - ALL PRECAST CONCRETE MANHOLE COMPONENTS TO COMPLY WITH THE REQUIREMENTS OF S.A.B.S.1294 (WHERE APPLICABLE)
 - LENGTHS OF INDIVIDUAL WALL UNITS ARE TO VARY IN MULTIPLES OF 250mm.
 - HEAVY DUTY CAST IRON COVERS AND FRAMES TO DRG.NO.DMW1281/A ARE TO BE USED ON MANHOLES UNDER VEHICULAR TRAFFIC.
 - FOR DETAILS OF STEEL REINFORCEMENT TO MANHOLE COVERS,COVER SLABS AND FRAMES - SEE STANDARD PRECAST DETAILS LISTED ABOVE.
 - STORMWATER MANHOLE
 - DIMENSION D VARIES WITH THE DIAMETER OF THE PIPES. DIMENSION D SHALL BE TO A POINT 50mm ABOVE THE HIGHEST CROWN OF THE PIPES.
 - RENDERING FOR MANHOLE BENCHING SHALL CONSIST OF 1 PART CEMENT TO 3 PARTS SAND THOROUGHLY MIXED AND APPLIED TO CONCRETE SURFACES WHILE THE LATTER ARE STILL GREEN. RENDERING SHALL BE AT LEAST 20mm THICK.
 - THE LENGTH OF PIPE BUILT INTO THE MANHOLE SHALL NOT EXCEED 2.5m.

- C. SEWER MANHOLE:-
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 38574.
 - RENDERING FOR MANHOLE BENCHING SHALL CONSIST OF 1 PART H.A.C. TO 2 PARTS SAND THOROUGHLY MIXED AND APPLIED TO CONCRETE SURFACES WHILE THE LATTER ARE STILL GREEN. RENDERING SHALL BE AT LEAST 20mm THICK
 - ALL PIPES BUILT INTO MANHOLES SHALL NOT EXCEED 1.0m IN LENGTH, AND THE ADJOINING PIPE SHALL NOT EXCEED 2.0m IN LENGTH.
 - EVERY U.P.V.C. PIPE BUILT INTO A MANHOLE SHALL HAVE CLEAN DRY SAND (TO S.A.B.S. 1083 TABLE 1.) GLUED TO ITS OUTSIDE AS RECOMMENDED BY PIPE MANUFACTURER USING SPECIAL PVC CEMENT (HENKEL S.A. PTY. LTD. TANGIT OR SIMILAR) TO ENSURE GOOD ADHESION TO BASE CONCRETE.
 - IN LOCATIONS DEFINED BY THE ENGINEER AS SUBJECT TO FLOODING, C.I. MANHOLE COVERS AND JOINTS SEALED WITH BOSTIK BUTYL TAPE OR SIMILAR, SHALL BE USED.

- NOTES
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 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND THE CONSTRUCTION REGULATIONS.
 - SUBCONTRACTING OF ANY PORTION OF THE WORKS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AND LIABILITIES IN TERMS OF THE CONTRACT AND THE REGULATIONS NOTED IN 6.
 - ALL QUANTITIES ARE TO BE MEASURED IN ACCORDANCE WITH SANS 1200.
 - ALL WET SERVICES ARE TO HAVE FLEXIBLE JOINTS AGAINST THE BUILDING.
 - STORMWATER IS TO BE ADEQUATELY ROUTED AWAY FROM THE STRUCTURE.
 - PONDING OF WATER DURING AND AFTER CONSTRUCTION IS NOT BE PERMITTED.
 - ALL STORMWATER CATCHPITS TO BE CLEANED AND JETTED/
 - ALL CRACKS ON STORMWATER CHANNELS TO BE REPAIRED.
 - ALL DEBRIS AND VEGETATION TO BE REMOVED FROM THE STORMWATER SYSTEMS (DRAINS AND CHANNELS).



LOCALITY PLAN
SCALE 1:20000

STATUS: FOR TENDER

| | NAME | SIGNATURE | ECSA REG. No. | DATE |
|--------------|------|-----------|---------------|------------|
| DESIGNED BY: | R.V. | | | 07-09-2023 |
| REVIEWED BY: | N.Z. | | | 07-09-2023 |
| APPROVED BY: | N.Z. | | | 07-09-2023 |

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Durban
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www.civproeng.co.za



PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

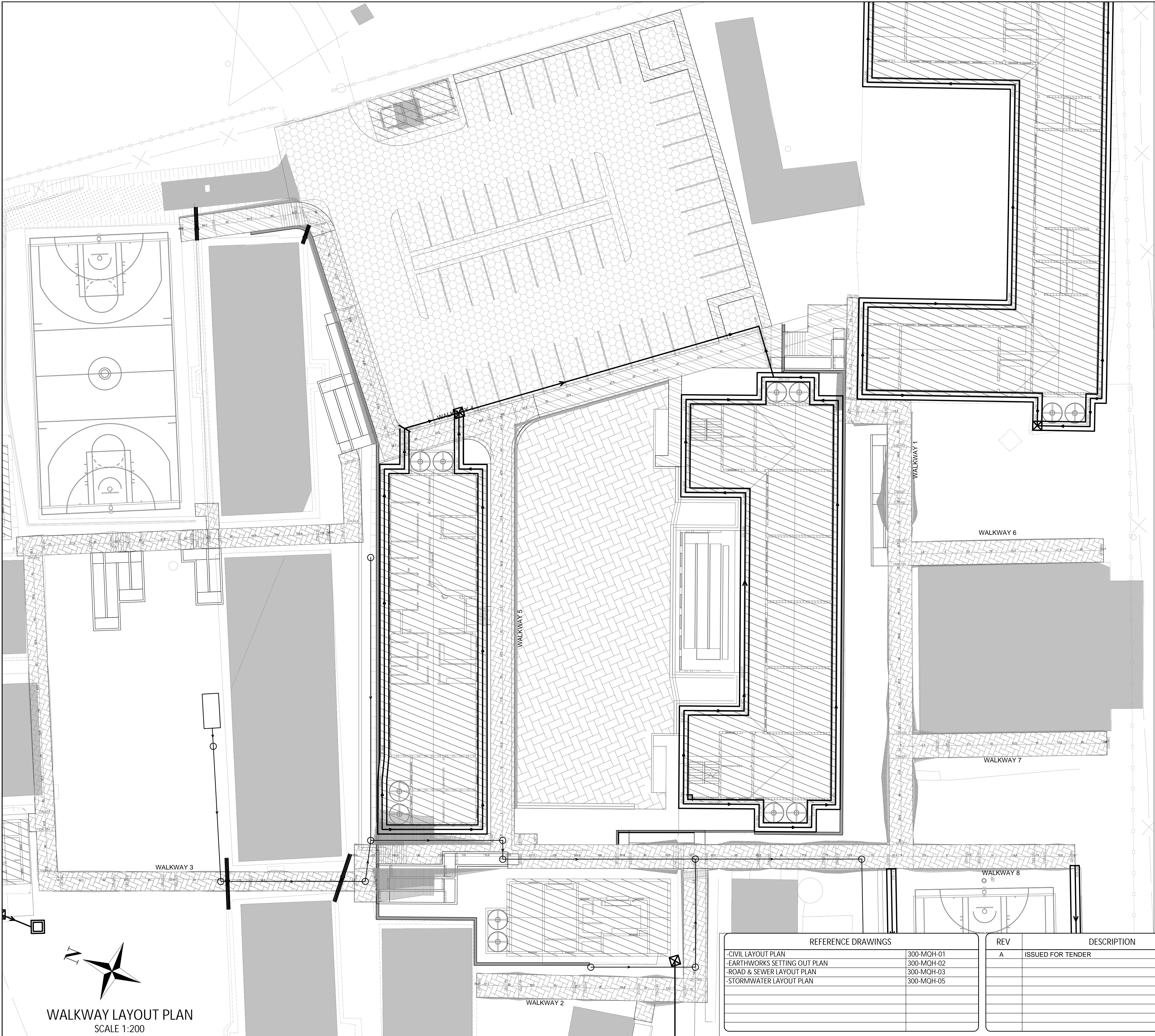
TITLE: MQHAWE HIGH SCHOOL SEWER RING MANHOLE DETAILS

SCALE AT: NTS DATE: 07/09/23 DRAWN: RV CHECKED: NZ

PROJECT NO: D19001 DRAWING NO: 300-MQH-10 REVISION: A

| REFERENCE DRAWINGS | |
|------------------------------|------------|
| -CIVIL LAYOUT PLAN | 300-MQH-01 |
| -EARTHWORKS SETTING OUT PLAN | 300-MQH-02 |
| -ROAD & SEWER LAYOUT PLAN | 300-MQH-03 |
| -ROAD AND SEWER LONGSECTIONS | 300-MQH-04 |
| -WALKWAY LAYOUT PLAN | 300-MQH-12 |

| REV | DESCRIPTION | DATE |
|-----|-------------------|------------|
| A | ISSUED FOR TENDER | 07/09/2023 |



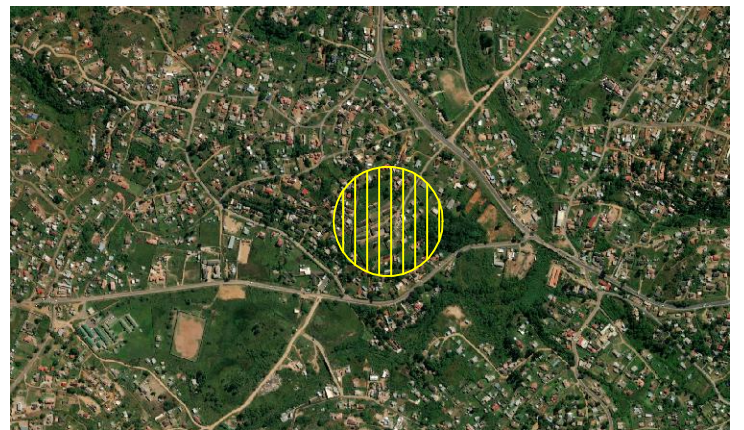
WALKWAY LAYOUT PLAN
SCALE 1:200

| | | | |
|-----------|---------|----------|-------------|
| WALKWAY 1 | | | |
| Start | 0.000 | 8583.099 | 3285547.319 |
| P11 | 12.552 | 8594.816 | 3285551.821 |
| P12 | 17.891 | 8592.901 | 3285556.805 |
| P13 | 66.791 | 8638.155 | 3285575.333 |
| End | 127.021 | 8660.718 | 3285519.488 |
| WALKWAY 2 | | | |
| Start | 0.000 | 8646.881 | 3285554.403 |
| P11 | 14.497 | 8660.322 | 3285559.834 |
| End | 38.589 | 8668.799 | 3285537.283 |
| WALKWAY 3 | | | |
| Start | 0.000 | 8662.356 | 3285522.738 |
| P11 | 36.114 | 8675.885 | 3285489.254 |
| P12 | 73.095 | 8642.285 | 3285473.806 |
| End | 105.860 | 8628.796 | 3285503.665 |
| WALKWAY 4 | | | |
| Start | 0.000 | 8584.860 | 3285547.995 |
| P11 | 52.711 | 8617.357 | 3285506.494 |
| P12 | 80.053 | 8596.339 | 3285489.006 |
| End | 95.163 | 8603.894 | 3285475.921 |
| WALKWAY 5 | | | |
| Start | 0.000 | 8654.833 | 3285534.721 |
| End | 48.774 | 8609.610 | 3285516.450 |
| WALKWAY 6 | | | |
| Start | 0.000 | 8607.346 | 3285562.719 |
| End | 22.414 | 8598.536 | 3285583.329 |
| WALKWAY 7 | | | |
| Start | 0.000 | 8626.928 | 3285570.736 |
| End | 22.705 | 8618.092 | 3285591.651 |
| WALKWAY 8 | | | |
| Start | 0.000 | 8638.155 | 3285575.333 |
| End | 19.126 | 8630.990 | 3285593.066 |

SETTING OUT INFORMATION

- PROPOSED RETAINING WALL
- PROPOSED WALKWAY
- PROPOSED COVERED WALKWAY

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LOCALITY PLAN
SCALE 1:20000

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CLIENT:

 Department: Education
PROVINCE OF KWAZULU-NATAL



PROJECT: KZN DOE INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROGRAMME

TITLE: MOHAWE HIGH SCHOOL WALKWAY LAYOUT PLAN

| | | | |
|--------------|-------------|-----------|----------|
| SCALE AT A1: | DATE: | DRAWN: | CHECKED: |
| AS SHOWN | 07/09/23 | RV | NZ |
| PROJECT NO: | DRAWING NO: | REVISION: | |
| D19001 | 300-MQH-12 | | A |