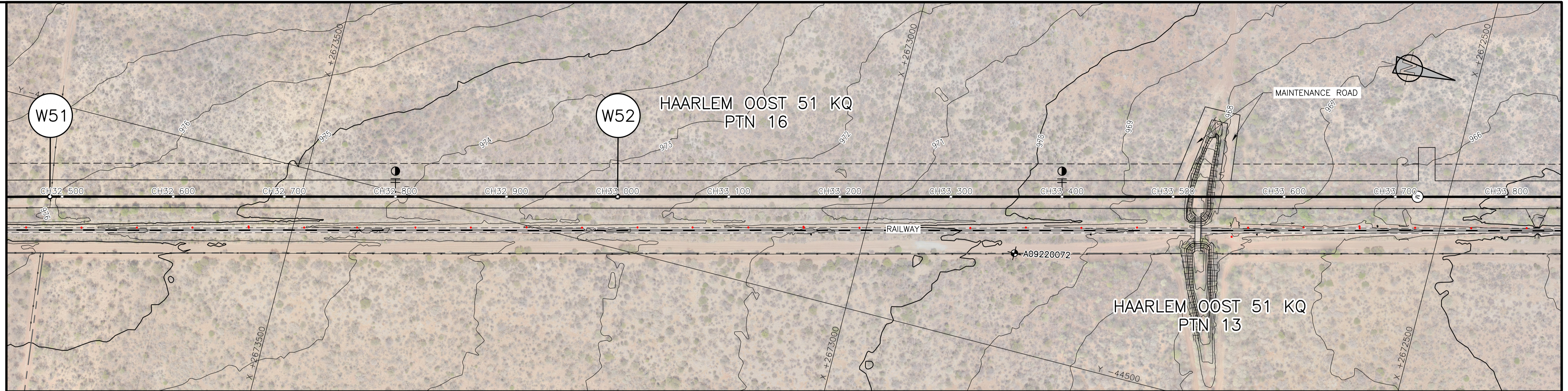


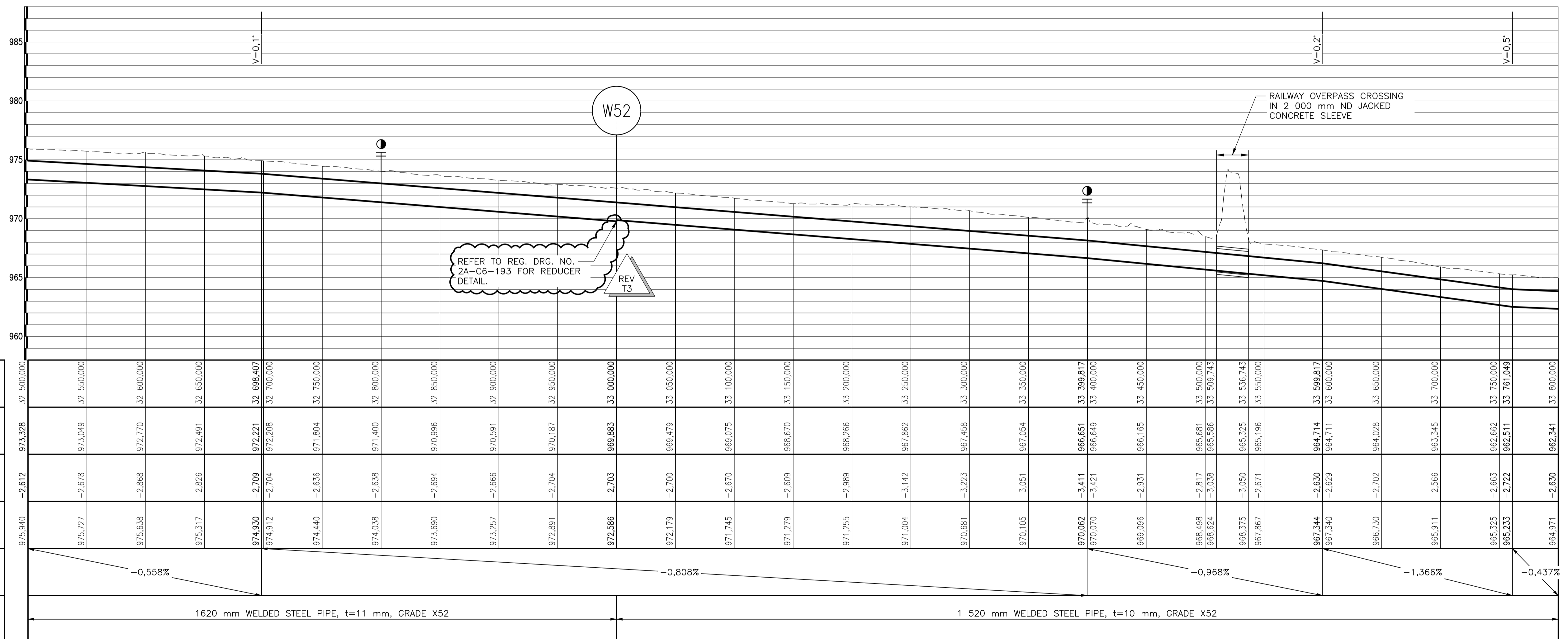
**NOTES:**  
 1. REFER TO DRAWING 2F-C6-001 FOR SERVITUDE CROSS SECTION.  
 2. REFER TO DRAWING 2A-C6-110 AND 111 FOR TYPICAL TRENCH DETAILS.

| COORDINATE LIST |             |                |
|-----------------|-------------|----------------|
| WG27            |             |                |
| Node            | YLo         | XLo            |
| W51             | -44 582.106 | +2 673 718.655 |
| W52             | -44 454.418 | +2 673 223.807 |
| W53             | -43 174.442 | +2 668 263.306 |

| LEGEND |                     |
|--------|---------------------|
|        | PERMANENT SERVITUDE |
|        | TEMPORARY SERVITUDE |
|        | PIPELINE            |
|        | AIR VALVE           |
|        | SCOUR VALVE         |
|        | ACCESS TO PIPELINE  |
|        | ISOLATING VALVE     |
|        | FLOW METER          |
|        | NON-RETURN VALVE    |
|        | OFF-TAKE            |
|        | BENCHMARK           |
|        | FARM BOUNDARY       |
|        | CADASTRAL BOUNDARY  |
|        | EXISTING SERVITUDE  |
|        | EXISTING FENCES     |
|        | POWERLINES          |



**PLAN**  
SCALE 1:2000

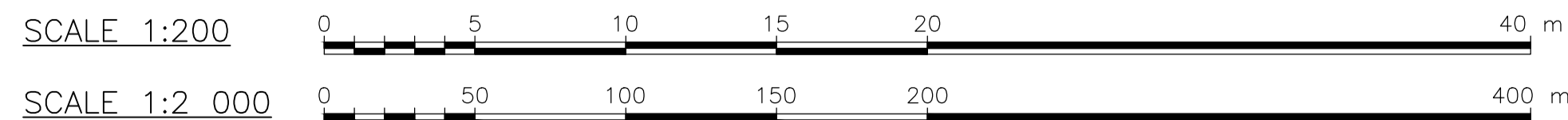


Datum : 958 m

| CHAINAGE (m) | INVERT LEVEL | DEPTH TO INVERT | GROUND LEVEL | PIPE GRADES | PIPE DETAILS |
|--------------|--------------|-----------------|--------------|-------------|--------------|
| 32 500,000   | 973,328      | -2,612          | 975,940      |             |              |
| 32 550,000   | 973,049      | -2,678          | 975,727      |             |              |
| 32 600,000   | 972,770      | -2,868          | 975,638      |             |              |
| 32 650,000   | 972,491      | -2,826          | 975,317      |             |              |
| 32 698,407   | 972,221      | -2,709          | 974,930      |             |              |
| 32 700,000   | 972,208      | -2,704          | 974,912      |             |              |
| 32 750,000   | 971,804      | -2,636          | 974,440      |             |              |
| 32 800,000   | 971,400      | -2,638          | 974,038      |             |              |
| 32 850,000   | 970,996      | -2,694          | 973,690      |             |              |
| 32 900,000   | 970,591      | -2,666          | 973,257      |             |              |
| 32 950,000   | 970,187      | -2,704          | 972,891      |             |              |
| 33 000,000   | 969,883      | -2,703          | 972,586      |             |              |
| 33 050,000   | 969,479      | -2,700          | 972,179      |             |              |
| 33 100,000   | 969,075      | -2,670          | 971,745      |             |              |
| 33 150,000   | 968,670      | -2,609          | 971,279      |             |              |
| 33 200,000   | 968,266      | -2,989          | 971,255      |             |              |
| 33 250,000   | 967,862      | -3,142          | 971,004      |             |              |
| 33 300,000   | 967,458      | -3,223          | 970,681      |             |              |
| 33 350,000   | 967,054      | -3,051          | 970,105      |             |              |
| 33 399,817   | 966,651      | -3,411          | 970,062      |             |              |
| 33 400,000   | 966,649      | -3,421          | 970,070      |             |              |
| 33 450,000   | 966,165      | -2,931          | 969,096      |             |              |
| 33 500,000   | 965,681      | -2,817          | 968,498      |             |              |
| 33 509,743   | 965,586      | -3,038          | 968,624      |             |              |
| 33 536,743   | 965,325      | -3,050          | 968,375      |             |              |
| 33 550,000   | 965,196      | -2,671          | 967,867      |             |              |
| 33 599,817   | 964,714      | -2,630          | 967,344      |             |              |
| 33 600,000   | 964,711      | -2,629          | 967,340      |             |              |
| 33 650,000   | 964,028      | -2,702          | 966,730      |             |              |
| 33 700,000   | 963,345      | -2,566          | 965,911      |             |              |
| 33 750,000   | 962,662      | -2,663          | 965,325      |             |              |
| 33 761,049   | 962,511      | -2,722          | 965,233      |             |              |
| 33 800,000   | 962,341      | -2,630          | 964,971      |             |              |

**LONGITUDINAL SECTION**  
SCALE HORIZONTAL 1:2 000  
SCALE VERTICAL 1:200

| LIST OF DRAWINGS |                     |           |            |
|------------------|---------------------|-----------|------------|
| 2                | PIPELINE DATA SHEET | 2H-C1-002 | XXXXXXXXXX |
| 1                | PIPELINE DATA SHEET | 2H-C1-001 | XXXXXXXXXX |
| SHEET            | DESCRIPTION         | OTHER No. | REV. No.   |



CONSULTING ENGINEER

WOODMEAD NORTH OFFICE PARK  
54 MAXWELL DRIVE  
WOODMEAD

IMPLEMENTING AGENT

A new word for water

| REVISION |       | FOR                      | DWS |
|----------|-------|--------------------------|-----|
| MOD No.  | DATE  |                          |     |
| T1       | 07/21 | ISSUED FOR TENDER        | PVH |
| T2       | 09/23 | SERVITUDE ACCESS REMOVED | PdP |
| T3       | 03/24 | REDUCER REFERENCE ADDED  | CVE |

**TENDER DRAWING**

DEPARTMENT OF WATER AND SANITATION  
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE  
ENGINEERING SERVICES  
PRIVATE BAG X313  
PRETORIA 0001

SEDBENG BUILDING  
185 FRANCIS BAARD STREET  
PRETORIA  
(012) 336-7500

P. DU PLESSIS  
Pr. Eng: 810012  
CHECKED: 10/08/2021  
DATE:

P. VAN HEERDEN  
Pr. Eng: 920029  
ENGINEER: 10/08/2021  
DATE:

P. VAN HEERDEN  
Pr. Eng: 920029  
10/08/2021  
DATE:

DESIGN: P. VAN HEERDEN  
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE:

CHIEF ENGINEER / APP (Pr. Eng): DATE: DIRECTOR (Pr. Eng): DATE:

**MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)**

**GRAVITY MAIN**  
PLAN AND LONGITUDINAL SECTION  
CH32 500 TO CH33 800

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: OTHER NUMBER: 2H-C4-027

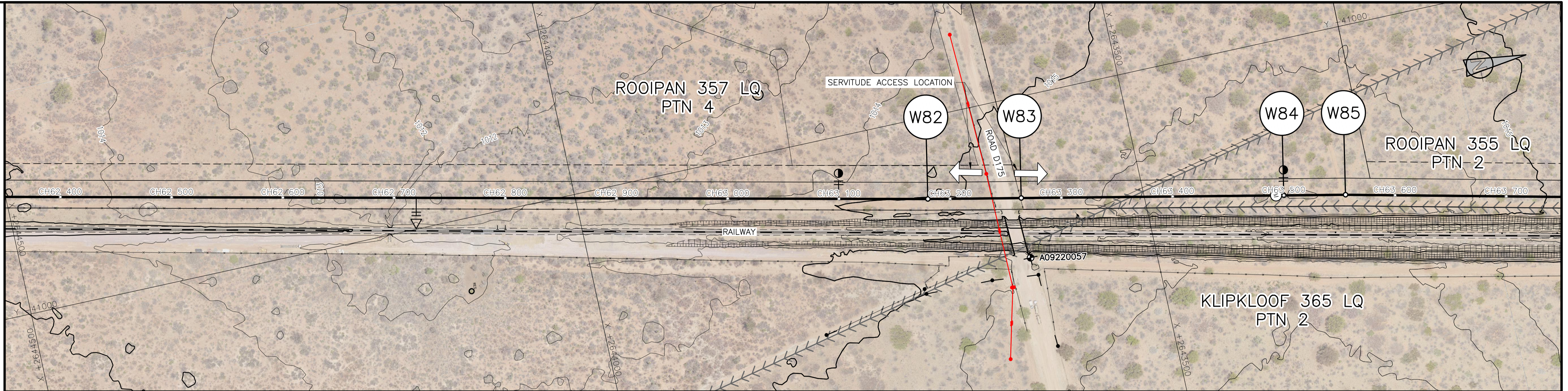
LOCALITY No.: XXXXXX TENDER/ CONTRACT No.: XXXXXXXXXXXX SHEET: 26 of 78 REG. No.: REV. T3

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX

**NOTES:**

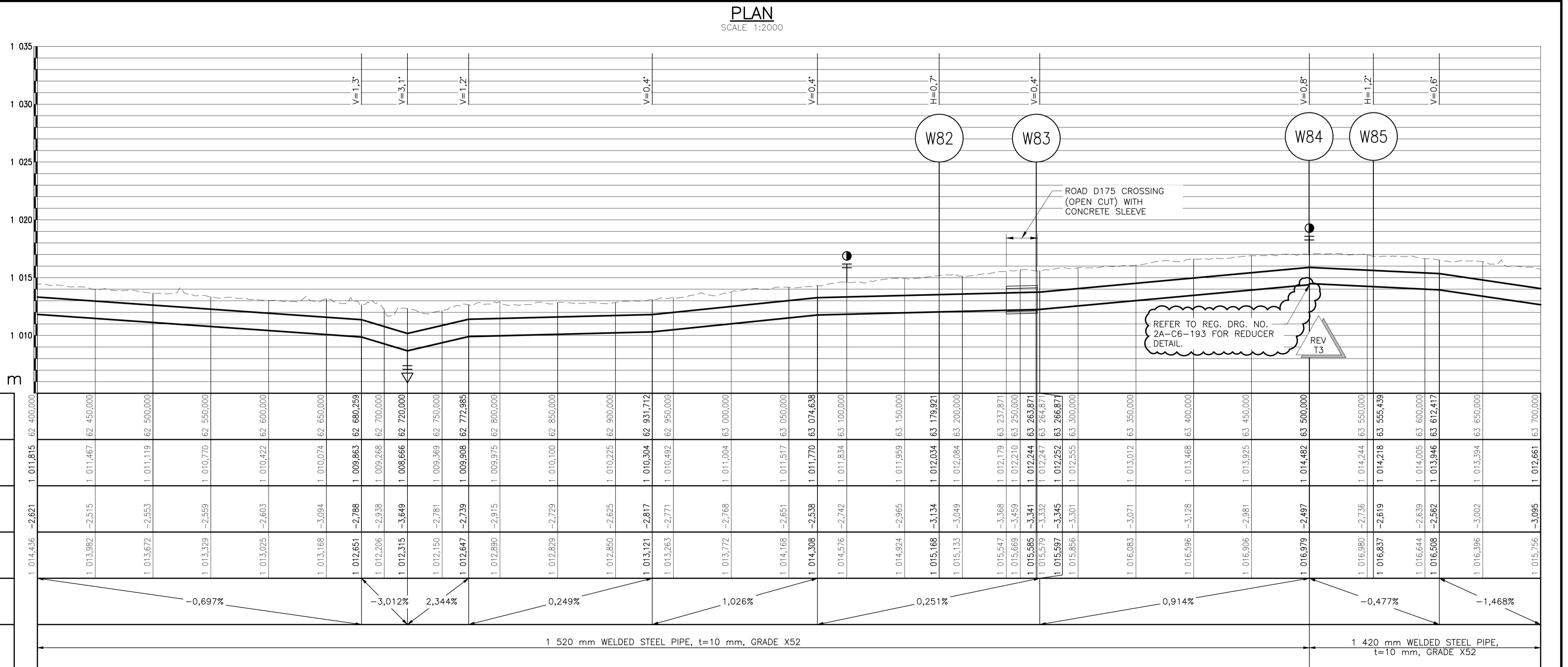
- REFER TO DRAWING 2F-C6-001 FOR SERVITUDE CROSS SECTION.
- REFER TO DRAWING 2A-C6-110 AND 111 FOR TYPICAL TRENCH DETAILS.

| COORDINATE LIST<br>WG27 |             |                |
|-------------------------|-------------|----------------|
| Node                    | YLo         | XLo            |
| W81                     | -40 750.147 | +2 645 139.818 |
| W82                     | -41 072.265 | +2 643 690.470 |
| W83                     | -41 089.440 | +2 643 608.295 |
| W84                     | -41 137.750 | +2 643 377.162 |
| W85                     | -41 149.092 | +2 643 322.895 |
| W86                     | -41 499.399 | +2 641 801.360 |



**LEGEND**

|  |                     |
|--|---------------------|
|  | PERMANENT SERVITUDE |
|  | TEMPORARY SERVITUDE |
|  | PIPELINE            |
|  | AIR VALVE           |
|  | SCOUR VALVE         |
|  | ACCESS TO PIPELINE  |
|  | ISOLATING VALVE     |
|  | FLOW METER          |
|  | NON-RETURN VALVE    |
|  | OFF-TAKE            |
|  | BENCHMARK           |
|  | FARM BOUNDARY       |
|  | CADASTRAL BOUNDARY  |
|  | EXISTING SERVITUDE  |
|  | EXISTING FENCES     |
|  | POWERLINES          |



Datum : 1005 m

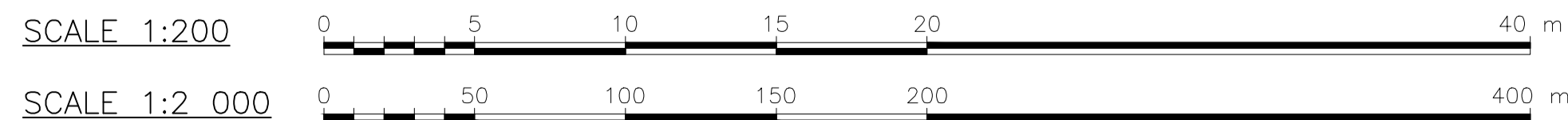
| CHAINAGE (m) | INVERT LEVEL | DEPTH TO INVERT | GROUND LEVEL | PIPE GRADES | PIPE DETAILS |
|--------------|--------------|-----------------|--------------|-------------|--------------|
| 1 011,815    | 1 011,467    | -2,621          | 1 014,456    |             |              |
| 62 450,000   | 1 011,119    | -2,553          | 1 013,872    | -0,697%     |              |
| 62 500,000   | 1 010,770    | -2,559          | 1 013,329    |             |              |
| 62 600,000   | 1 010,422    | -2,603          | 1 013,025    |             |              |
| 62 650,000   | 1 010,074    | -3,094          | 1 013,168    |             |              |
| 62 680,259   | 1 009,863    | -2,788          | 1 012,651    |             |              |
| 62 700,000   | 1 009,268    | -2,938          | 1 012,206    | -3,012%     |              |
| 62 720,000   | 1 008,666    | -3,649          | 1 012,315    | 2,344%      |              |
| 62 750,000   | 1 009,369    | -2,781          | 1 012,150    |             |              |
| 62 772,985   | 1 009,808    | -2,739          | 1 012,647    |             |              |
| 62 800,000   | 1 009,975    | -2,915          | 1 012,890    |             |              |
| 62 850,000   | 1 010,100    | -2,779          | 1 012,829    | 0,249%      |              |
| 62 900,000   | 1 010,225    | -2,625          | 1 012,850    |             |              |
| 62 931,712   | 1 010,304    | -2,817          | 1 013,121    |             |              |
| 62 950,000   | 1 010,492    | -2,771          | 1 013,263    |             |              |
| 63 000,000   | 1 011,004    | -2,768          | 1 013,772    | 1,026%      |              |
| 63 050,000   | 1 011,517    | -2,651          | 1 014,168    |             |              |
| 63 100,000   | 1 011,834    | -2,742          | 1 014,576    |             |              |
| 63 150,000   | 1 011,959    | -2,965          | 1 014,924    |             |              |
| 63 179,921   | 1 012,034    | -3,134          | 1 015,168    | 0,251%      |              |
| 63 200,000   | 1 012,084    | -3,049          | 1 015,133    |             |              |
| 63 237,871   | 1 012,179    | -3,368          | 1 015,547    |             |              |
| 63 250,000   | 1 012,210    | -3,459          | 1 015,669    |             |              |
| 63 263,871   | 1 012,244    | -3,341          | 1 015,585    |             |              |
| 63 264,871   | 1 012,247    | -3,332          | 1 015,579    |             |              |
| 63 266,871   | 1 012,252    | -3,345          | 1 015,597    |             |              |
| 63 300,000   | 1 012,555    | -3,301          | 1 015,856    |             |              |
| 63 350,000   | 1 013,012    | -3,071          | 1 016,083    |             |              |
| 63 400,000   | 1 013,468    | -3,128          | 1 016,596    |             |              |
| 63 450,000   | 1 013,925    | -2,981          | 1 016,906    |             |              |
| 63 555,939   | 1 014,216    | -2,619          | 1 016,837    | 0,914%      |              |
| 63 600,000   | 1 014,005    | -2,639          | 1 016,644    |             |              |
| 63 612,417   | 1 013,946    | -2,562          | 1 016,508    | -0,477%     |              |
| 63 650,000   | 1 013,394    | -3,002          | 1 016,396    |             |              |
| 63 700,000   | 1 012,661    | -3,085          | 1 015,756    | -1,468%     |              |

**LONGITUDINAL SECTION**

SCALE HORIZONTAL 1:2 000  
SCALE VERTICAL 1:200

| NO. | DESCRIPTION         | OTHER No. | REG. No.   |
|-----|---------------------|-----------|------------|
| 2   | PIPELINE DATA SHEET | 2H-C1-002 | XXXXXXXXXX |
| 1   | PIPELINE DATA SHEET | 2H-C1-001 | XXXXXXXXXX |

LIST OF DRAWINGS



**CONSULTING ENGINEER**

WOODMEAD NORTH OFFICE PARK  
54 MAXWELL DRIVE  
WOODMEAD

**IMPLEMENTING AGENT**

A new word for water

| MOD No. | DATE  | DESCRIPTION              | FOR | DWS |
|---------|-------|--------------------------|-----|-----|
| T1      | 07/21 | ISSUED FOR TENDER        | PVH |     |
| T2      | 01/22 | REVISED AT ROAD CROSSING | PVH |     |
| T3      | 03/24 | REDUCER REFERENCE ADDED  | CVE |     |

**TENDER DRAWING**

**DEPARTMENT OF WATER AND SANITATION  
REPUBLIC OF SOUTH AFRICA**

HEAD OFFICE  
ENGINEERING SERVICES  
PRIVATE BAG X313  
PRETORIA 0001

SEDBENG BUILDING  
185 FRANCIS BAARD STREET  
PRETORIA  
(012) 336-7500

P. DU PLESSIS  
Pr. Eng: 810012  
CHECKED: 10/08/2021

P. VAN HEERDEN  
Pr. Eng: 920029  
ENGINEER: 10/08/2021

P. VAN HEERDEN  
Pr. Eng: 920029  
26/01/2022

DESIGN: P. VAN HEERDEN  
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE: \_\_\_\_\_

CHIEF ENGINEER / APP (Pr. Eng): DATE: \_\_\_\_\_ DIRECTOR (Pr. Eng): DATE: \_\_\_\_\_

**MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)**

**GRAVITY MAIN  
PLAN AND LONGITUDINAL SECTION  
CH62 400 TO CH63 700**

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALELA KEYCODES: \_\_\_\_\_ OTHER NUMBER: 2H-C4-050

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 49 OF 78 REG. No.: \_\_\_\_\_ REV. No.: T3

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX

**NOTES:**

- REFER TO DRAWING 2F-C6-001 FOR SERVITUDE CROSS SECTION.
- REFER TO DRAWING 2A-C6-110 AND 111 FOR TYPICAL TRENCH DETAILS.

**COORDINATE LIST**  
WG27

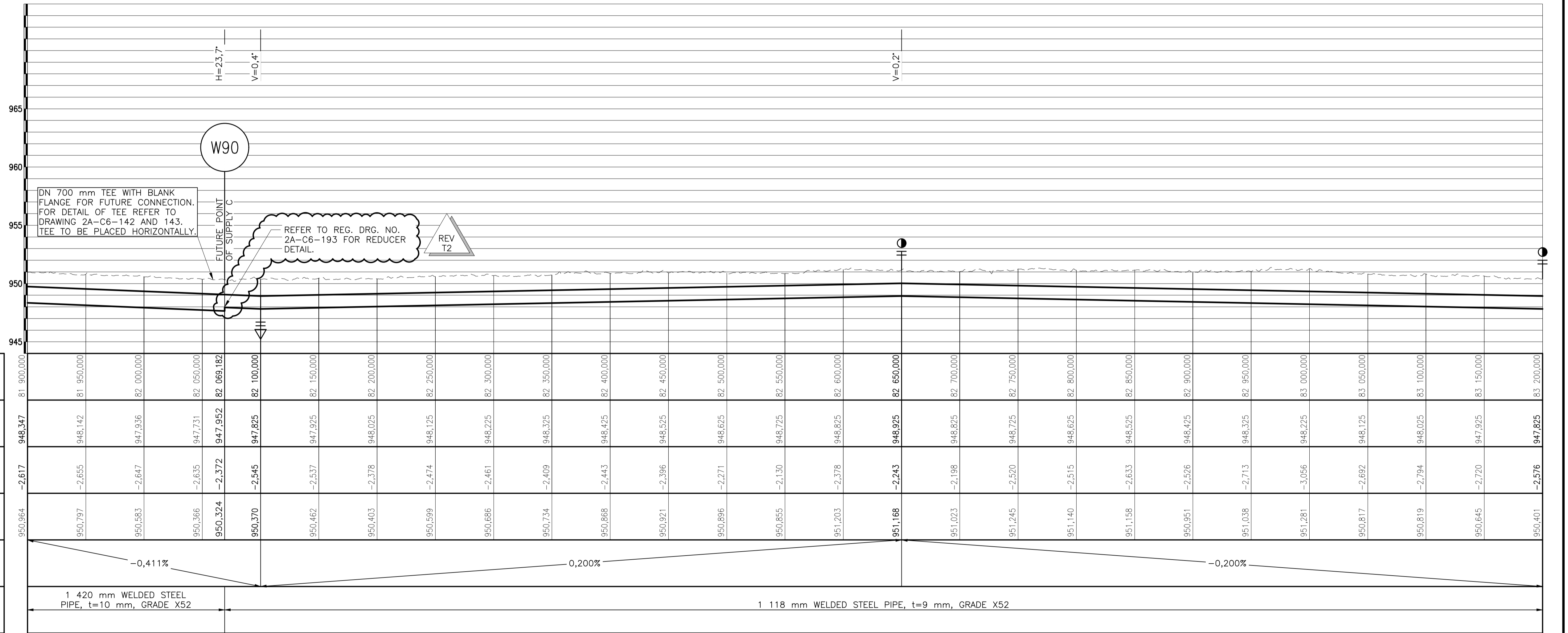
| Node | YLo         | XLo            |
|------|-------------|----------------|
| W89  | -42 406.622 | +2 628 380.670 |
| W90  | -43 818.726 | +2 625 961.509 |
| W91  | -46 515.381 | +2 624 001.894 |



**PLAN**  
SCALE 1:2000

**LEGEND**

- PERMANENT SERVITUDE
- TEMPORARY SERVITUDE
- PIPELINE
- AIR VALVE
- SCOUR VALVE
- ACCESS TO PIPELINE
- ISOLATING VALVE
- FLOW METER
- NON-RETURN VALVE
- OFF-TAKE
- BENCHMARK
- FARM BOUNDARY
- CADASTRAL BOUNDARY
- EXISTING SERVITUDE
- EXISTING FENCES
- POWERLINES



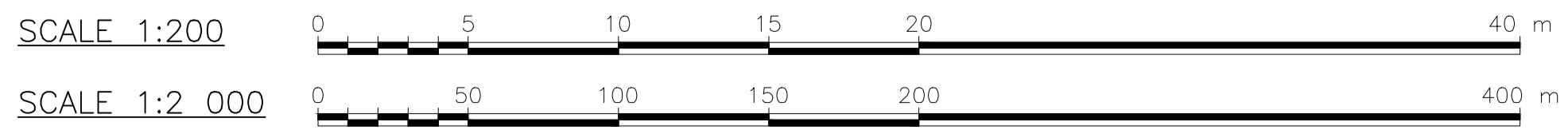
**LONGITUDINAL SECTION**  
SCALE HORIZONTAL 1:2 000  
SCALE VERTICAL 1:200

Datum : 944 m

| CHAINAGE (m) | INVERT LEVEL | DEPTH TO INVERT | GROUND LEVEL | PIPE GRADES | PIPE DETAILS                                   |
|--------------|--------------|-----------------|--------------|-------------|--|
| 81 900,000   | 948,347      | -2,617          | 950,964      |             |  |
| 81 950,000   | 948,142      | -2,655          | 950,797      |             |  |
| 82 000,000   | 947,936      | -2,647          | 950,583      |             |  |
| 82 050,000   | 947,731      | -2,635          | 950,366      |             |  |
| 82 069,182   | 947,952      | -2,372          | 950,324      |             |  |
| 82 100,000   | 947,825      | -2,545          | 950,370      | -0,411%     | 1 420 mm WELDED STEEL PIPE, t=10 mm, GRADE X52 |
| 82 150,000   | 947,925      | -2,537          | 950,462      |             |  |
| 82 200,000   | 948,025      | -2,378          | 950,403      |             |  |
| 82 250,000   | 948,125      | -2,474          | 950,599      |             |  |
| 82 300,000   | 948,225      | -2,461          | 950,686      |             |  |
| 82 350,000   | 948,325      | -2,409          | 950,734      |             |  |
| 82 400,000   | 948,425      | -2,443          | 950,868      |             |  |
| 82 450,000   | 948,525      | -2,396          | 950,921      |             |  |
| 82 500,000   | 948,625      | -2,271          | 950,896      | 0,200%      |  |
| 82 550,000   | 948,725      | -2,130          | 950,855      |             |  |
| 82 600,000   | 948,825      | -2,378          | 951,203      |             |  |
| 82 650,000   | 948,925      | -2,243          | 951,168      |             |  |
| 82 700,000   | 948,825      | -2,198          | 951,023      |             |  |
| 82 750,000   | 948,725      | -2,520          | 951,245      |             |  |
| 82 800,000   | 948,625      | -2,515          | 951,140      |             |  |
| 82 850,000   | 948,525      | -2,633          | 951,158      |             |  |
| 82 900,000   | 948,425      | -2,526          | 950,951      |             |  |
| 82 950,000   | 948,325      | -2,713          | 951,038      |             |  |
| 83 000,000   | 948,225      | -3,056          | 951,281      |             |  |
| 83 050,000   | 948,125      | -2,692          | 950,817      |             |  |
| 83 100,000   | 948,025      | -2,794          | 950,819      |             |  |
| 83 150,000   | 947,925      | -2,720          | 950,645      |             |  |
| 83 200,000   | 947,825      | -2,576          | 950,401      |             |  |

**LIST OF DRAWINGS**

| SHEET | DESCRIPTION         | OTHER No. | REG. No.   |
|-------|---------------------|-----------|------------|
| 2     | PIPELINE DATA SHEET | 2H-C1-002 | XXXXXXXXXX |
| 1     | PIPELINE DATA SHEET | 2H-C1-001 | XXXXXXXXXX |



**CONSULTING ENGINEER**

**GBN** JOINT VENTURE  
WOODMEAD NORTH OFFICE PARK  
54 MAXWELL DRIVE  
WOODMEAD

**IMPLEMENTING AGENT**

**TETA**  
A new word for water

**REVISION**

| MOD No. | DATE  | DESCRIPTION             | FOR | DWS |
|---------|-------|-------------------------|-----|-----|
| T1      | 07/21 | ISSUED FOR TENDER       | PVH |     |
| T2      | 03/24 | REDUCER REFERENCE ADDED | CVE |     |

**TENDER DRAWING**

**DEPARTMENT OF WATER AND SANITATION**  
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE  
ENGINEERING SERVICES  
PRIVATE BAG X313  
PRETORIA 0001

SEDBENG BUILDING  
185 FRANCIS BAARD STREET  
PRETORIA  
(012) 336-7500

P. DU PLESSIS  
Pr. Eng: 810012  
CHECKED: 10/08/2021

P. VAN HEERDEN  
Pr. Eng: 920029  
ENGINEER: 10/08/2021

P. VAN HEERDEN  
Pr. Eng: 920029  
10/08/2021

DESIGN: P. VAN HEERDEN  
DRAWN: A. STEENBERG

EXTERNAL APPROVAL: DATE: \_\_\_\_\_

CHIEF ENGINEER / APP (Pr. Eng): DATE: \_\_\_\_\_

DIRECTOR (Pr. Eng): DATE: \_\_\_\_\_

**MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)**

**GRAVITY MAIN**  
PLAN AND LONGITUDINAL SECTION  
CH81 900 TO CH83 200

PROVINCE: LIMPOPO DISTRICT: THABAZIMBI/LEPHALALE KEYCODES: \_\_\_\_\_ OTHER NUMBER: 2H-C4-065

LOCALITY No.: XXXXXX TENDER/CONTRACT No.: XXXXXXXXXXXX SHEET: 64 of 78 REG. No.: \_\_\_\_\_

CALCULATION FILE: XXXXXXXXXXXXXXXXXXXX

REV. T2