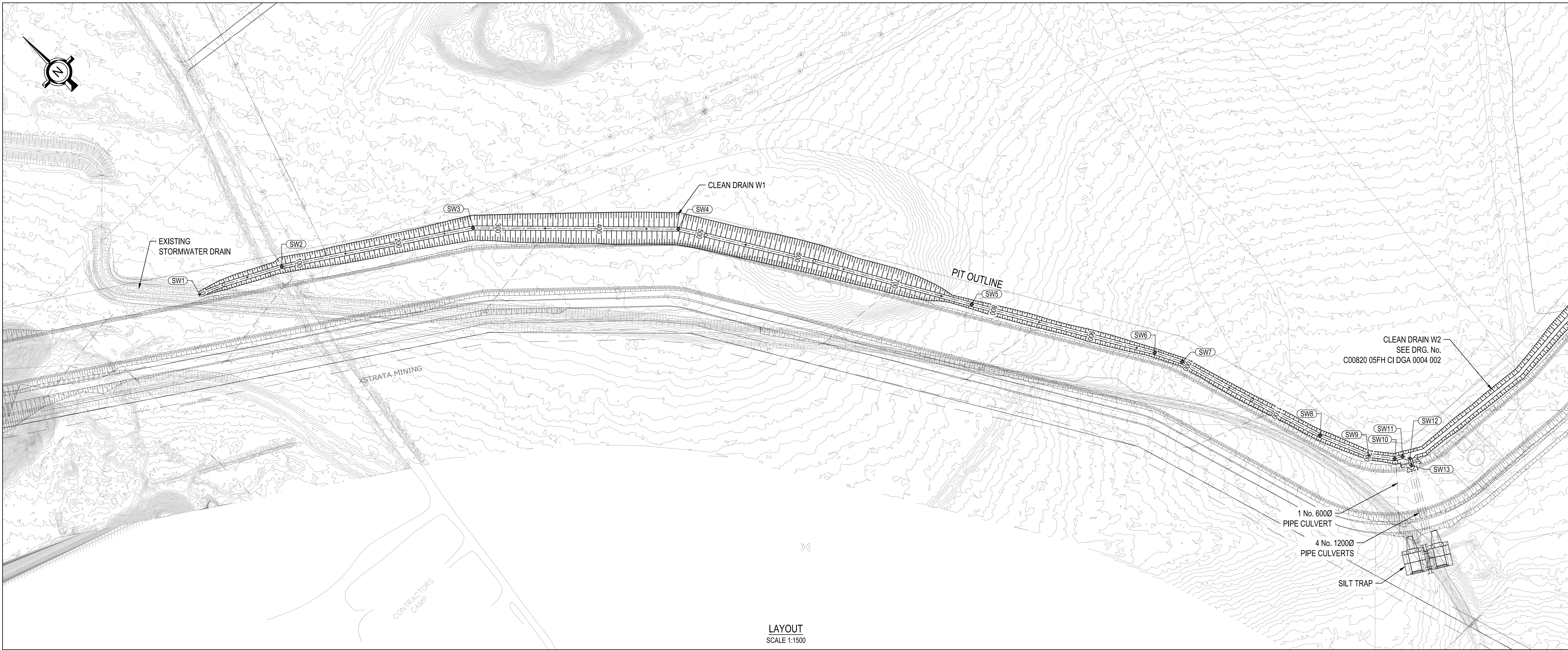


G.1 Clean water drains - West

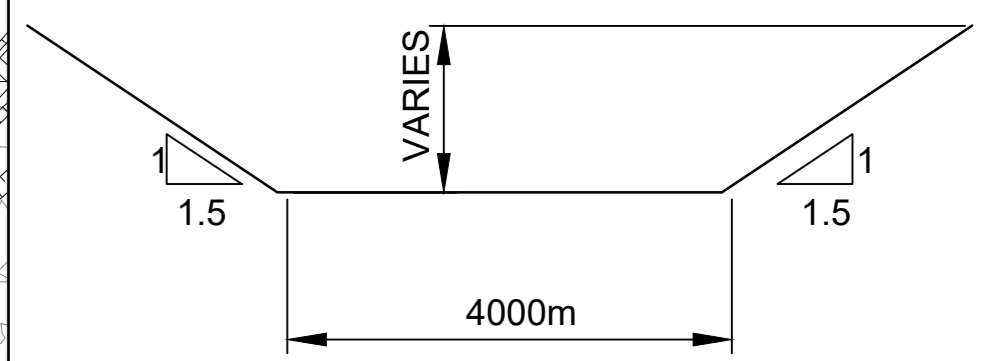


LAYOUT
SCALE 1:1500

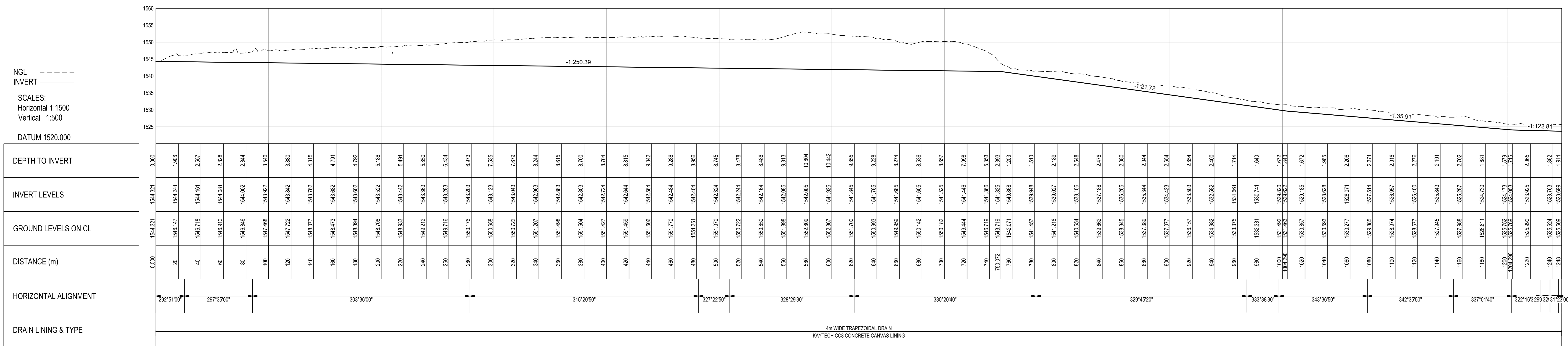
GENERAL NOTES :
1. ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.

| Cut/Fill Summary | |
|------------------|------------------|
| 2d Area | Cut |
| 23190.320sq.m | 88464.680 Cu. M. |

| DRAIN SETTING OUT | | | |
|-------------------|-------------|---------------|----------|
| POINT | Y | X | LEVEL |
| SW1 | -27 104 202 | 2 884 880 162 | 1544 321 |
| SW2 | -27 181 150 | 2 884 917 993 | 1543 978 |
| SW3 | -27 341 861 | 2 885 024 765 | 1543 208 |
| SW4 | -27 494 482 | 2 885 169 111 | 1542 397 |
| SW5 | -27 637 015 | 2 885 426 932 | 1539 889 |
| SW6 | -27 731 290 | 2 885 588 624 | 1531 272 |
| SW7 | -27 743 915 | 2 885 614 101 | 1529 963 |
| SW8 | -27 788 890 | 2 885 762 256 | 1525 517 |
| SW9 | -27 806 079 | 2 885 808 884 | 1524 077 |
| SW10 | -27 824 961 | 2 885 830 415 | 1523 849 |
| SW11 | -27 831 919 | 2 885 834 410 | 1523 783 |
| SW12 | -27 835 737 | 2 885 840 844 | 1523 722 |
| SW13 | -27 832 037 | 2 885 847 010 | 1523 664 |

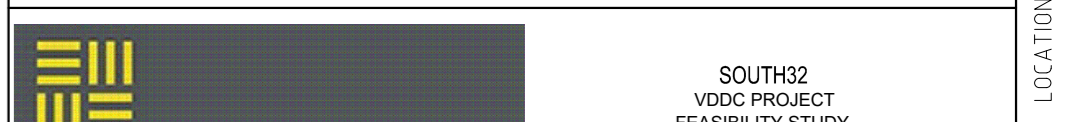


TYPICAL DRAIN SECTION



LONGSECTION CLEANDRAIN W1
FROM 0.000 TO 1247.816

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY PROFESSIONAL ENGINEER / TECH.
DESIGNED, DRAWN AND ISSUED BY:
Professional Eng. / Tech. :
Reg. No. : Rev. :



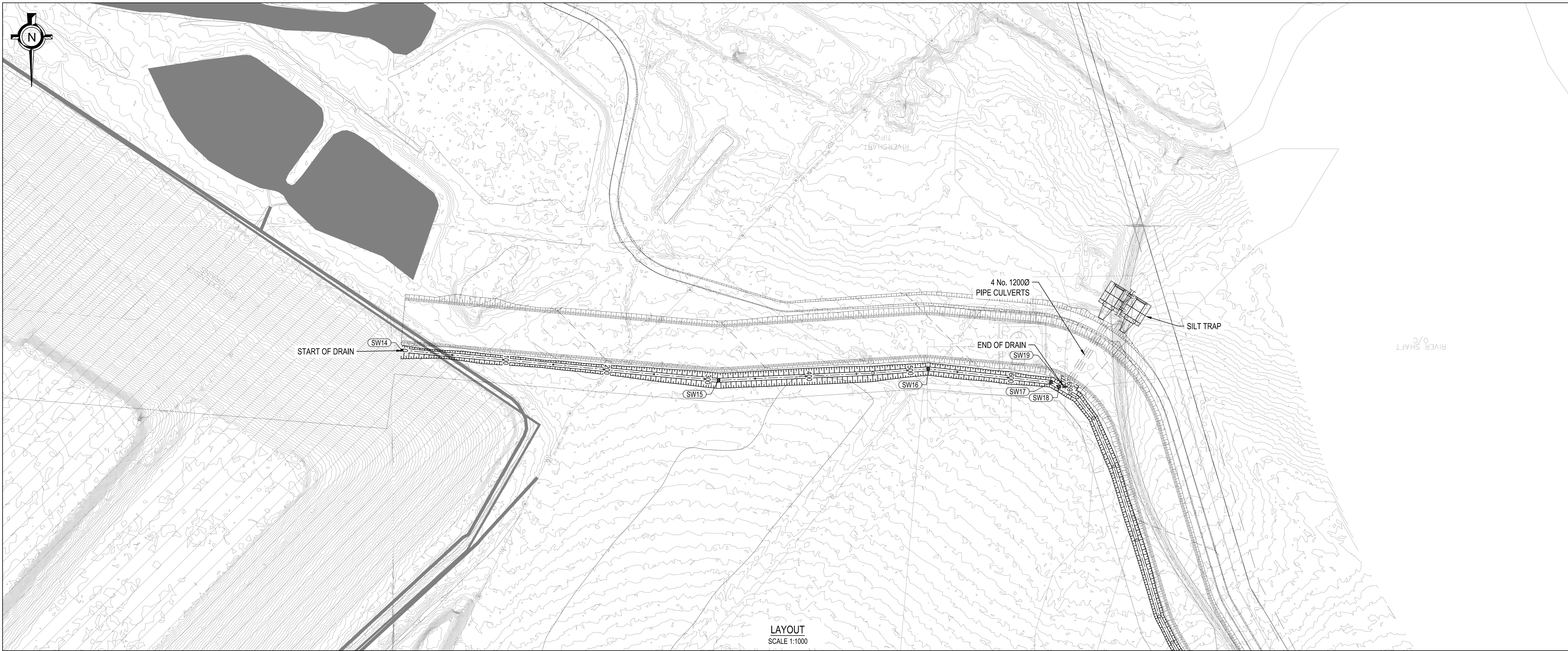
Worley
energy | chemicals | resources

Worley RSA (Pty) Ltd
P.O. Box 122, Macassar, 2107, South Africa
20 Mervyn Road, Macassar, South Africa
Tel: 0800 807 807 | Fax: 0800 807 807
Web: www.worley.com | Email: info@worley.com

VDDC PROJECT - FEASIBILITY
SITE INFRASTRUCTURE
CLEAN STORMWATER DRAIN W1
LAYOUT & LONG SECTION

| PROJECT No. | ISS | DISC | DISC ID | DOC ID | SHEET | REV |
|-------------|------|------|---------|--------|-------|-----|
| C00820 | 05FH | CI | DGA | 0005 | 001 | 0 |

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | ISSUED FOR USE | REV No. | DATE | REVISIONS | CLIENT | NAME | DATE | WP | NAME | DATE | WP | NAME | DATE |
|-------------|--------------------|-------------|--------------------|---------|----------|-----------|----------------|---------|------|-----------|-----------------|------|------|-----------------------|------|------|------------|------|----------|
| | | | | | 27/08/19 | | ISSUED FOR USE | | | | Lead Engineer | | | Piping Engineer | | | Drawn By | NM | 09/07/19 |
| | | | | | | | | | | | Project Manager | | | Struct/Civil Engineer | | | Checked By | | |
| | | | | | | | | | | | | | | Instrument Engineer | | | | | |
| | | | | | | | | | | | | | | Project Manager | | | | | |

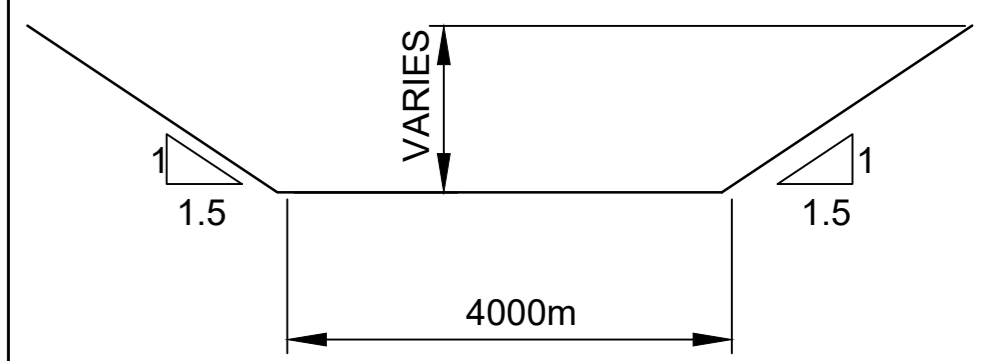


LAYOUT
SCALE 1:1000

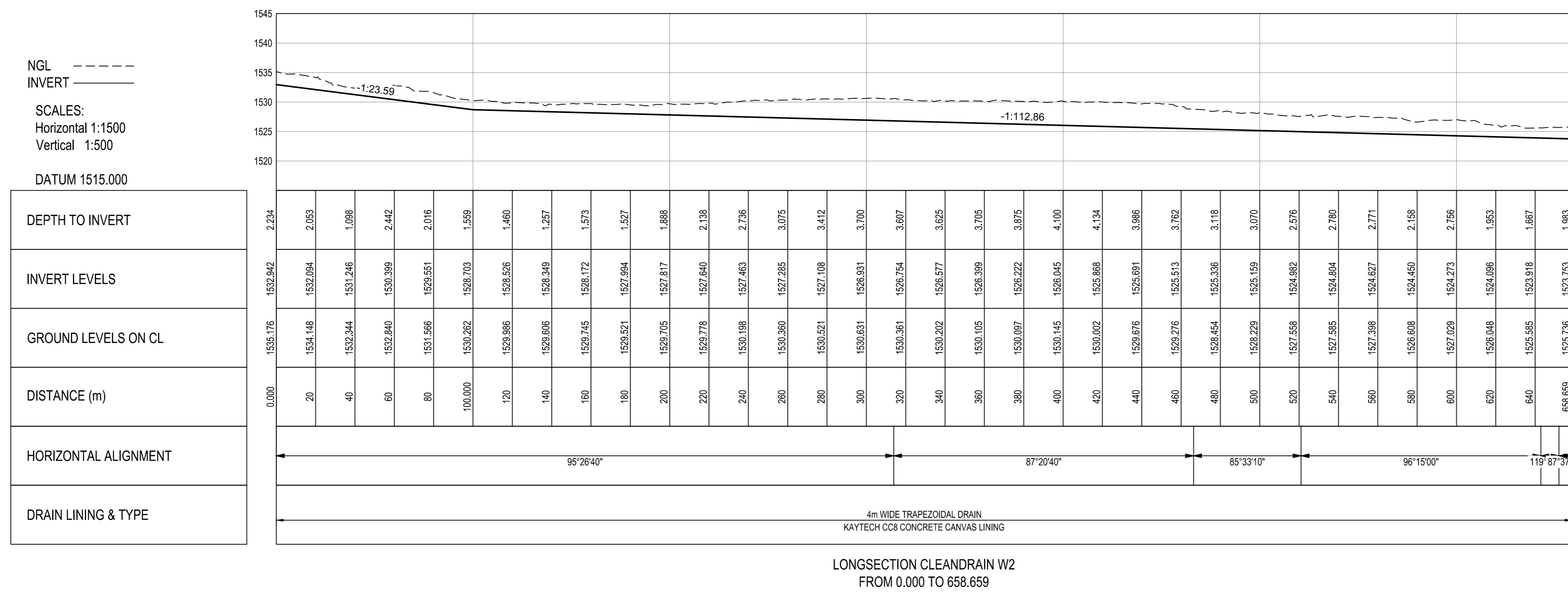
GENERAL NOTES :
1. ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.

| Cut/Fill Summary | |
|------------------|------------------|
| 2d Area | Cut |
| 7886.288sq.m | 14729.870 Cu. M. |

| DRAIN SETTING OUT | | | |
|-------------------|-------------|---------------|----------|
| POINT | Y | X | LEVEL |
| SW14 | -28 491.225 | 2 885 876.997 | 1532.842 |
| SW15 | -28 178.745 | 2 885 847.221 | 1526.808 |
| SW16 | -27 971.961 | 2 885 858.524 | 1524.973 |
| SW17 | -27 850.799 | 2 885 845.252 | 1523.893 |
| SW18 | -27 842.786 | 2 885 840.651 | 1523.811 |
| SW19 | -27 838.022 | 2 885 840.849 | 1523.769 |



TYPICAL DRAIN SECTION



LONGSECTION CLEANDRAIN W2
FROM 0.000 TO 658.659

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | ISSUED FOR USE | REVISIONS | CLIENT NAME | DATE | WP NAME | DATE | WP NAME | DATE | WP NAME | DATE |
|-------------|--------------------|-------------|--------------------|---------|----------|-----------|----------------|-----------|---------------------|----------|-----------------|------|----------|------|---------|------|
| | | | | | 27/08/19 | | ISSUED FOR USE | | Worley SA (Pty) Ltd | 09/07/19 | Project Manager | | Drawn By | NM | | |

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY PROFESSIONAL ENGINEER / TECH.

DESIGNED, DRAWN AND ISSUED BY:
Professional Eng. / Tech. :
Reg. No. :
Rev. :

Worley | chemicals | resources

VDDC PROJECT - FEASIBILITY SITE INFRASTRUCTURE CLEAN STORMWATER DRAIN W2 LAYOUT & LONG SECTION

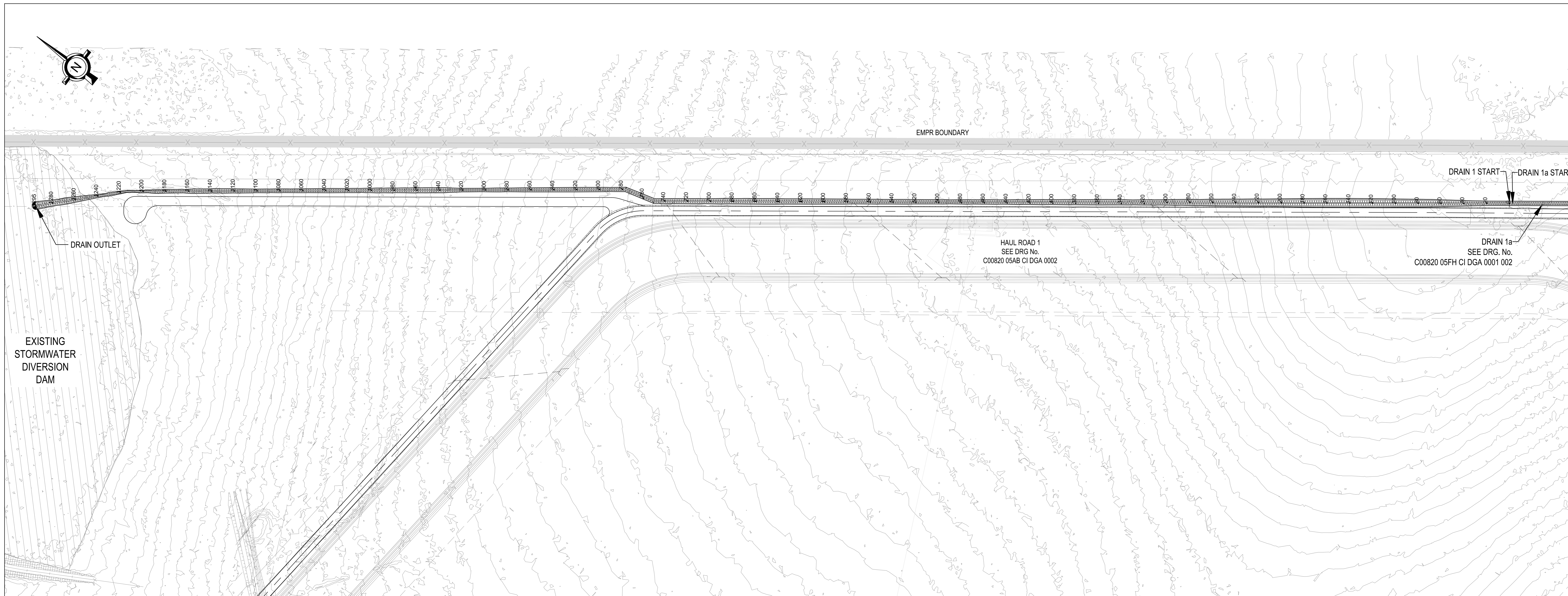
CLIENT DRAWING NUMBER: 0001 | SHEET SIZE: A0 | SCALE: AS SHOWN

PROJECT No: C00820 | WBS: 05FH | DDC: CI | DGA | DOC ID: 0005 | SHEET: 002 | REV: 0

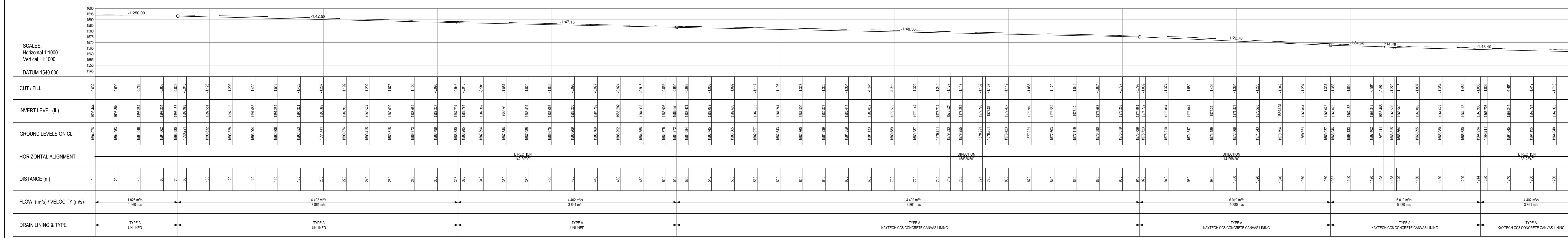
DATE: 2019/08/25

LOCATION: C:\WORKING FILES\CLEANDRAIN W2\PROJECT\05FH - INFRASTRUCTURE\05FH - CLEAN WATER MANAGEMENT\DRAWINGS - CIVIL\000820\05FH CI DGA 0005 001 TO 002 REV. CLEANDRAIN W2.DWG
 USER NAME: rmananarajapandian

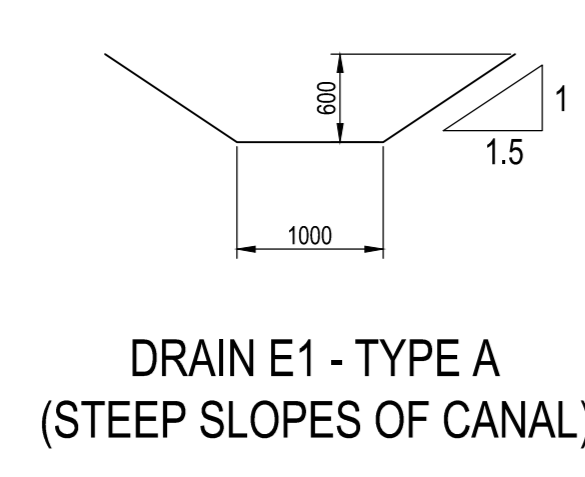
G.2 Clean water drains - East



LAYOUT: E-1 SHEET 1
SCALE 1:1250



LONGSECTION DRAIN E-1
FROM 0.000 TO 1220.000



DRAIN E1 - TYPE A
(STEEP SLOPES OF CANAL)

| CUT/FILL VOLUMES FOR ENTIRE DRAIN | |
|-----------------------------------|----------------|
| Cut | Fill |
| 5521.000 Cu. M. | 500.000 Cu. M. |

- GENERAL NOTES :**
- ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.
 - CONCRETE TOLERANCE TO DEGREE OF ACCURACY II .
 - MIN. STRENGTH OF CONCRETE TO BE 35 MPa AT 28 DAYS UNLESS OTHERWISE NOTED.
 - 50mm BLINDING TO BE GRADE 10 MPa CONCRETE UNDER ALL FOUNDATIONS.
 - 250 MICRON PVC SHEETING TO BE PROVIDED UNDER ALL GROUND SLABS IN ACCORDANCE WITH SANS 952.
 - ALL FOUNDATION EXCAVATIONS TO BE INSPECTED BY ENGINEER - PRIOR TO CASTING OF BLINDING AND TO BE KEPT DRY AT ALL TIMES.
 - ANY OVER BREAK UNDER FOUNDATIONS TO BE MADE GOOD WITH MASS CONCRETE 10 MPa TO THE ENGINEERS INSTRUCTIONS.
 - ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE BEFORE ANY WORK COMMENCES. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
 - ALL LEVELS SHOWN ARE TO "TOP OF CONCRETE" AND ARE A.M.S.L. (ABOVE MEAN SEA LEVEL).
 - ALL EXPOSED CONCRETE CORNERS TO HAVE 25x25 CHAMFERS.
 - CONCRETE FINISHES TO BE SMOOTH WHEN EXPOSED AND ROUGH WHEN CONCEALED.
 - ALL DIMENSIONS INDICATED IN mm.

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | REV No. | DATE | REVISIONS | CLIENT | NAME | DATE | WP | NAME | DATE | WP | NAME | DATE | |
|------------------------------------|--|-------------|--------------------|---------|------|-----------|---------|------|-----------|---------------------|------|------|----|-----------------------|------|----|------|------|--|
| C00820 05AB CI DGA 0004 002 | HAUL ROAD 3 - LAYOUT & SECTION - SHEETS 2 | | | | | | | | | Project Engineer | | | | Project Engineer | | | | | |
| C00820 05AB CI DGA 0001 001 | OVERALL ROADS LAYOUT | | | | | | | | | Process Engineer | | | | Struct/Civil Engineer | | | | | |
| C00820 05AB CI DGA 0002 001 TO 006 | EASTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 6 | | | | | | | | | Project Manager | | | | Project Manager | | | | | |
| C00820 05AB CI DGA 0003 001 | WESTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 5 | | | | | | | | | Instrument Engineer | | | | Mechanical Engineer | | | | | |
| C00820 05AB CI DSE 0001 001 | ROADS - TYPICAL CROSS SECTIONS | | | | | | | | | Mining Engineer | | | | | | | | | |

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY PROFESSIONAL ENGINEER / TECH.

DESIGNED, DRAWN AND ISSUED BY:
Professional Eng. / Tech. : Rev. :

Reg. No. : Rev. :

Worley
energy | chemicals | resources

Worley SA (Pty) Ltd
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21 Helderberg Road, Montelltown, South Africa
Tel: 0863 801 321 | Fax: 0863 801 323
Web: www.worley.com | Email: worley@worley.com

VDDC PROJECT - FEASIBILITY
SITE INFRASTRUCTURE
CLEAN STORMWATER DRAIN E1
LAYOUT & LONG SECTION - SHEET 1

PROJECT No: C00820 05FH CI DGA 0001 001
WSS DGC DWG ID: 0001 001 0
AS SHOWN

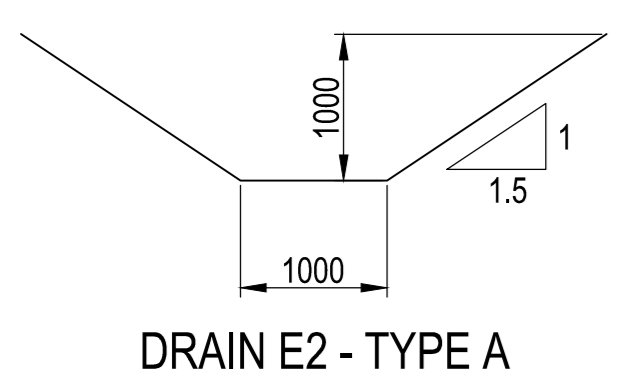
DATE: 2016/09/19

LOCATION: C:\WORKING\05AB\05AB CI DGA 0001 001 REV 01.DWG

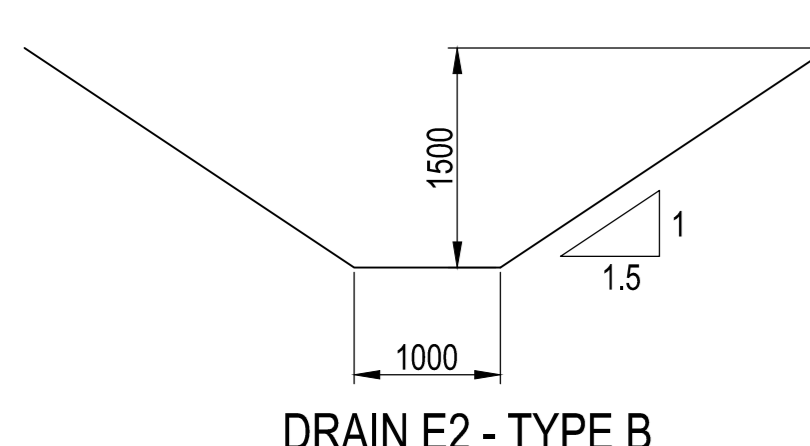


- GENERAL NOTES :**
1. ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.
 2. CONCRETE TOLERANCE TO DEGREE OF ACCURACY II .
 3. MIN. STRENGTH OF CONCRETE TO BE 35 MPa AT 28 DAYS UNLESS OTHERWISE NOTED.
 4. 50mm BLINDING TO BE GRADE 10 MPa CONCRETE UNDER ALL FOUNDATIONS.
 5. 250 MICRON PVC SHEETING TO BE PROVIDED UNDER ALL GROUND SLABS IN ACCORDANCE WITH SANS 952.
 6. ALL FOUNDATION EXCAVATIONS TO BE INSPECTED BY ENGINEER - PRIOR TO CASTING OF BLINDING AND TO BE KEPT DRY AT ALL TIMES.
 7. ANY OVER BREAK UNDER FOUNDATIONS TO BE MADE GOOD WITH MASS CONCRETE 10 MPa TO THE ENGINEERS INSTRUCTIONS.
 8. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE BEFORE ANY WORK COMMENCES. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
 9. ALL LEVELS SHOWN ARE TO "TOP OF CONCRETE" AND ARE A.M.S.L. (ABOVE MEAN SEA LEVEL).
 10. ALL EXPOSED CONCRETE CORNERS TO HAVE 25x25 CHAMFERS.
 11. CONCRETE FINISHES TO BE SMOOTH WHEN EXPOSED AND ROUGH WHEN CONCEALED.
 12. ALL DIMENSIONS INDICATED IN mm.

LAYOUT: E-2 SHEET 1
SCALE 1:1250



DRAIN E2 - TYPE A



DRAIN E2 - TYPE B

SCALES:
Horizontal 1:1000
Vertical 1:1000
DATUM 1555.000

| CUT / FILL | THIS SECTION REQUIRES DOWNSTREAM BERM OF 2m HIGH | | THIS SECTION REQUIRES DOWNSTREAM BERM OF 2m HIGH | |
|------------------------------|--|----------|--|----------|
| | 0 | 100 | 100 | 300 |
| INVERT LEVEL (RL) | 1555.000 | 1555.000 | 1555.000 | 1555.000 |
| GROUND LEVELS ON CL | 1555.000 | 1555.000 | 1555.000 | 1555.000 |
| HORIZONTAL ALIGNMENT | OBSTRUCTION 500 21200 | | OBSTRUCTION 212 41100 | |
| DISTANCE (m) | 0 | 100 | 100 | 300 |
| FLOW (m³/s) / VELOCITY (m/s) | 10.728 m³/s 4.285 m/s | | 5.728 m³/s 3.908 m/s | |
| DRAIN LINING & TYPE | TYPE B BAYTECH COB CONCRETE CANAL LINING | | TYPE A UNLINED | |

LONGSECTION DRAIN E-2
FROM 0.000 TO 600.000

| CUT/FILL VOLUMES FOR ENTIRE DRAIN | |
|-----------------------------------|----------------|
| Cut | Fill |
| 11284.000 Cu. M. | 500.000 Cu. M. |

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | 15 OK | 5/16 OK | REV No. | DATE | REVISIONS | 15 OK | 5/16 OK |
|------------------------------------|--|-------------|--------------------|---------|------|-----------|-------|---------|---------|------|-----------|-------|---------|
| C00820 0548 CI DGA 0004 002 | HAUL ROAD 3 - LAYOUT & SECTION - SHEETS 2 | | | | | | | | | | | | |
| C00820 0548 CI DGA 0001 001 | OVERALL ROADS LAYOUT | | | | | | | | | | | | |
| C00820 0548 CI DGA 0002 001 TO 006 | EASTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 6 | | | | | | | | | | | | |
| C00820 0548 CI DGA 0003 001 | WESTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 5 | | | | | | | | | | | | |
| C00820 0548 CI DSE 0001 001 | ROADS - TYPICAL CROSS SECTIONS | | | | | | | | | | | | |

| CLIENT | NAME | DATE | WP | NAME | DATE | WP | NAME | DATE |
|-----------------|------|------|-----------------------|------|------|---------------------|------|----------|
| Lead Engineer | | | Project Engineer | | | Drawn By | NM | 08/07/19 |
| Project Manager | | | Process Engineer | | | Checked By | | |
| | | | Struct/Civil Engineer | | | Project Supervisor | | |
| | | | Engineering Manager | | | Instrument Engineer | | |
| | | | Project Manager | | | Mechanical Engineer | | |
| | | | | | | Mining Engineer | | |

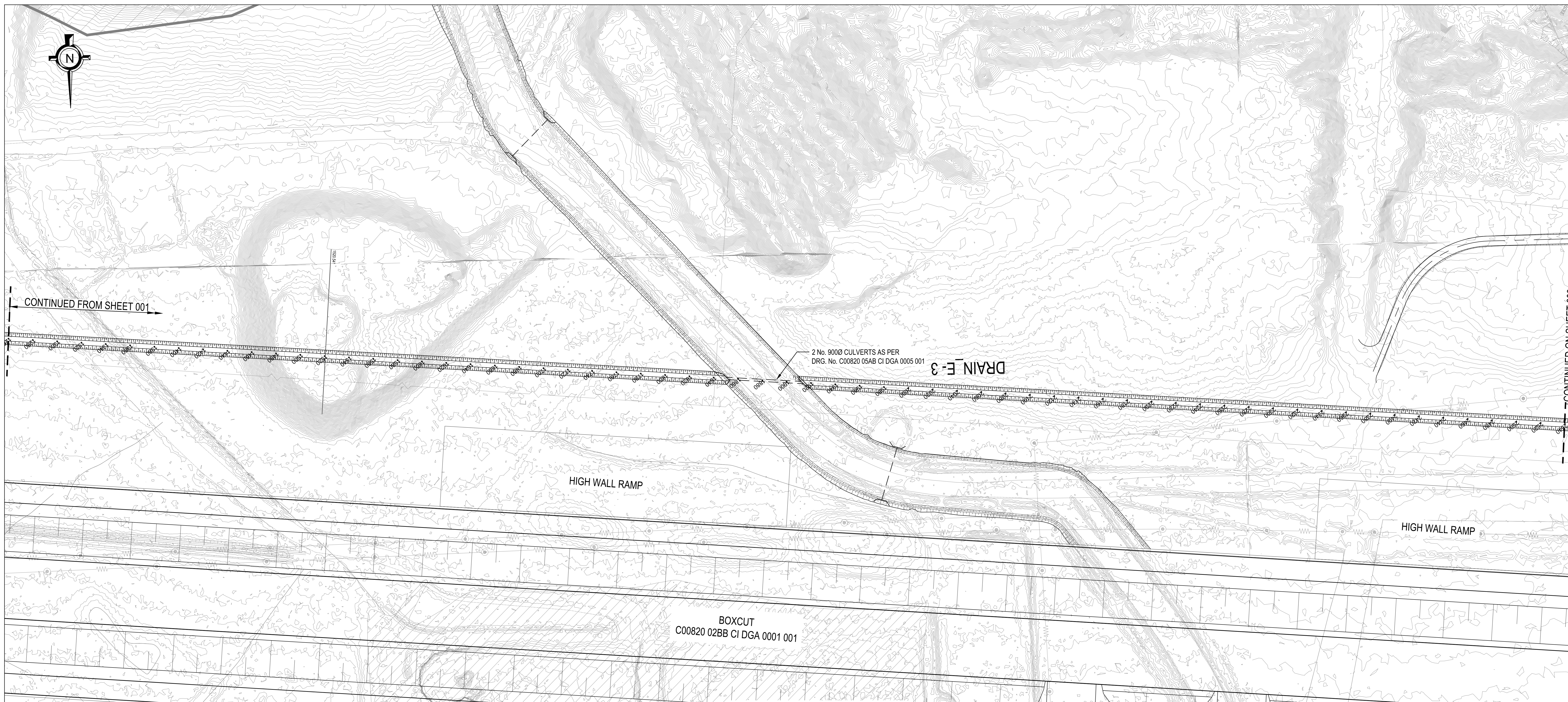
Worley energy | chemicals | resources

VDDC PROJECT - FEASIBILITY SITE INFRASTRUCTURE CLEAN STORMWATER DRAIN E2 LAYOUT & LONG SECTION - SHEET 1

CLIENT/DRAWING NUMBER: 0001
SHEET SIZE: A0
AS SHOWN

PROJECT No: C00820
ISS: 05FH
DSC: CI
DWS ID: DGA
DOC ID: 0002
SHEET: 001
REV: 0

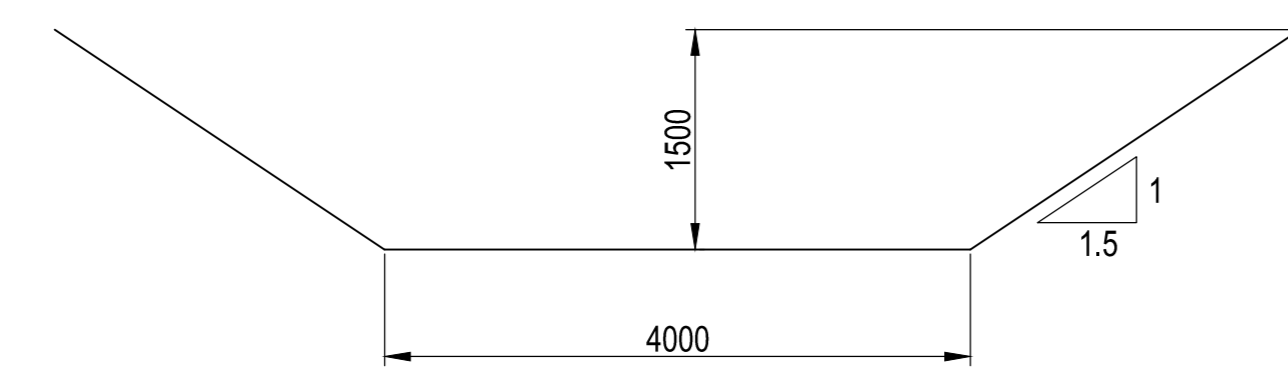
LOCATION: C:\WORKING\0548\0548 VDDC PROJECT\548 - INFRASTRUCTURE\548 - CLEAN WATER MANAGEMENT\DRAWINGS - CI - C00820 0548 CI DGA 0001 001 REV 01.DWG
DATE: 2019/08/02



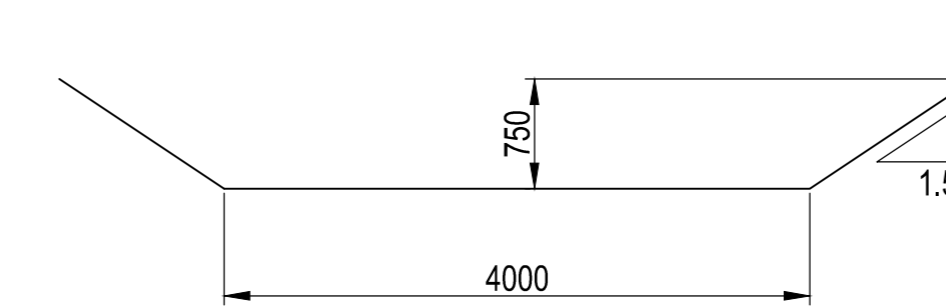
LAYOUT: E-3 SHEET 2
SCALE 1:1250

| VERTICAL PROFILE GRADES | CUT / FILL | INVERT LEVEL (RL) | GROUND LEVELS ON CL | HORIZONTAL ALIGNMENT | DISTANCE (m) | FLOW (m³/s) / VELOCITY (m/s) | DRAIN LINING & TYPE |
|-------------------------|------------|-------------------|---------------------|----------------------|--------------|------------------------------|---------------------|
| DIRECTION: 162° 50' | | | | | | | |
| -0.15% | | | | | | | |
| 17.028 m/s 1.62 m/s | | | | | | | |
| TYPE A UNLINED | | | | | | | |

LONGSECTION DRAIN E-3 FROM 1260.000 TO 2540.000



DRAIN E-3 - TYPE A
(FLAT SECTION)



DRAIN E-3 - TYPE B
(STEEP SECTION)

GENERAL NOTES :

- ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.
- CONCRETE TOLERANCE TO DEGREE OF ACCURACY II .
- MIN. STRENGTH OF CONCRETE TO BE 35 MPa AT 28 DAYS UNLESS OTHERWISE NOTED.
- 50mm BLINDING TO BE GRADE 10 MPa CONCRETE UNDER ALL FOUNDATIONS.
- 250 MICRON PVC SHEETING TO BE PROVIDED UNDER ALL GROUND SLABS IN ACCORDANCE WITH SANS 952.
- ALL FOUNDATION EXCAVATIONS TO BE INSPECTED BY ENGINEER - PRIOR TO CASTING OF BLINDING AND TO BE KEPT DRY AT ALL TIMES.
- ANY OVER BREAK UNDER FOUNDATIONS TO BE MADE GOOD WITH MASS CONCRETE 10 MPa TO THE ENGINEERS INSTRUCTIONS.
- ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE BEFORE ANY WORK COMMENCES. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
- ALL LEVELS SHOWN ARE TO 'TOP OF CONCRETE' AND ARE A.M.S.L. (ABOVE MEAN SEA LEVEL).
- ALL EXPOSED CONCRETE CORNERS TO HAVE 25x25 CHAMFERS.
- CONCRETE FINISHES TO BE SMOOTH WHEN EXPOSED AND ROUGH WHEN CONCEALED.
- ALL DIMENSIONS INDICATED IN mm.

SCALES
Horizontal 1:1000
Vertical 1:1000

DATUM 1545.000

| VERTICAL PROFILE GRADES |
|------------------------------|
| CUT / FILL |
| INVERT LEVEL (RL) |
| GROUND LEVELS ON CL |
| HORIZONTAL ALIGNMENT |
| DISTANCE (m) |
| FLOW (m³/s) / VELOCITY (m/s) |
| DRAIN LINING & TYPE |

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | 15 OK | 5/16 OK | REV No. | DATE | REVISIONS | 15 OK | 5/16 OK | CLIENT | NAME | DATE | Worley | NAME | DATE | Worley | NAME | DATE | |
|------------------------------------|--|-------------|--------------------|---------|------|-----------|-------|---------|---------|----------|----------------|-------|---------|-----------------------|------|------|--------|---------------------|------|----------|------|------|--|
| C00820 05AB CI DGA 0004 002 | HAUL ROAD 3 - LAYOUT & SECTION - SHEETS 2 | | | | | | | | | 03/09/19 | ISSUED FOR USE | | | Lead Engineer | | | | Drawn By | NM | 08/07/19 | | | |
| C00820 05AB CI DGA 0001 001 | OVERALL ROADS LAYOUT | | | | | | | | | | | | | Project Manager | | | | Checked By | | | | | |
| C00820 05AB CI DGA 0002 001 TO 006 | EASTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 6 | | | | | | | | | | | | | Struct/Civil Engineer | | | | Project S/Co-Ord | | | | | |
| C00820 05AB CI DGA 0003 001 | WESTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 5 | | | | | | | | | | | | | Engineering Manager | | | | Instrument Engineer | | | | | |
| C00820 05AB CI DGE 0001 001 | ROADS - TYPICAL CROSS SECTIONS | | | | | | | | | | | | | Project Manager | | | | Mechanical Engineer | | | | | |

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY PROFESSIONAL ENGINEER / TECH.
DESIGNED, DRAWN AND ISSUED BY :
Professional Eng. / Tech. : Rev. :

Reg. No. : Rev. :

Worley SA (Pty) Ltd
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20 Victoria Road, Bedfordview, 2008, South Africa
Tel: 0863 807 333 | Fax: 0863 807 333
Web: www.worley.com | Email: info@worley.com

| PROJECT No. | WMS | DGC | DWG ID | DOC ID | SHEET | REV |
|-------------|------|-----|--------|--------|-------|-----|
| C00820 | 05FH | CI | DGA | 0003 | 002 | 0 |

DATE: 20/09/2019



LAYOUT: E-3 SHEET 3
SCALE 1:1250

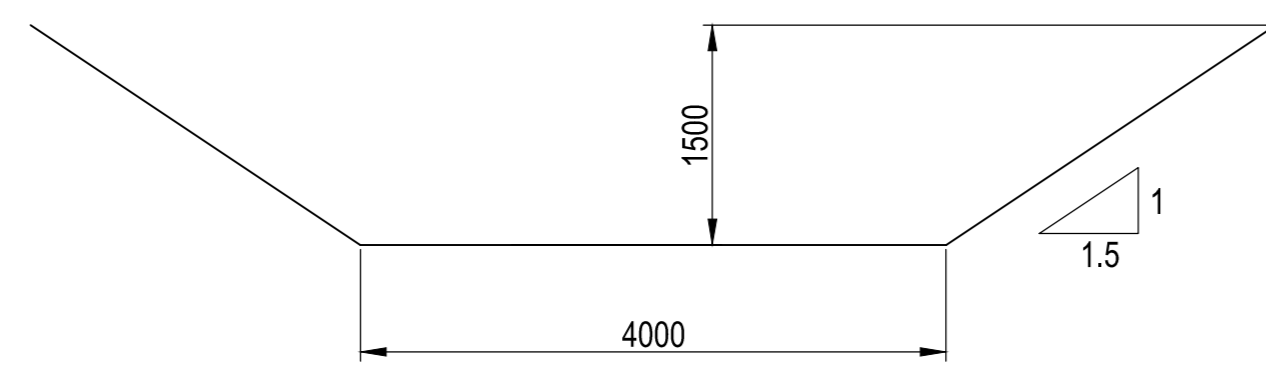
SCALES:
Horizontal 1:1000
Vertical 1:1000
DATUM 1545.000

| VERTICAL PROFILE GRADES | GRADES | |
|-----------------------------|-------------------------|-------------------------|
| CUT/FILL | -3.137% | -1.473% |
| INVERT LEVEL (L) | 1552.000 | 1552.000 |
| GROUND LEVELS ON CL | 1552.000 | 1552.000 |
| HORIZONTAL ALIGNMENT | DISTANCE (m) | |
| FLOW (m/s) / VELOCITY (m/s) | 17.028 m/s 1.621 m/s | 17.028 m/s 1.621 m/s |
| DRAIN LINING & TYPE | TYPE A (Ø4000) | TYPE B (Ø4000) |

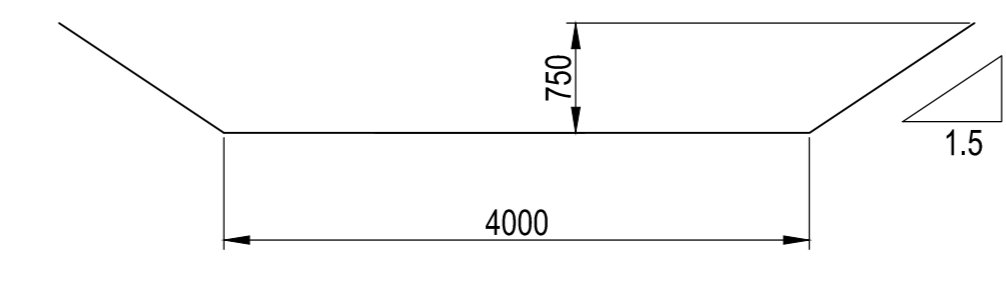
LONGSECTION DRAIN E-3 FROM 2540.000
TO 3920.000

GENERAL NOTES :

- ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S SPECIFICATION.
- CONCRETE TOLERANCE TO DEGREE OF ACCURACY II.
- MIN. STRENGTH OF CONCRETE TO BE 35 MPa AT 28 DAYS UNLESS OTHERWISE NOTED.
- 50mm BLINDING TO BE GRADE 10 MPa CONCRETE UNDER ALL FOUNDATIONS.
- 250 MICRON PVC SHEETING TO BE PROVIDED UNDER ALL GROUND SLABS IN ACCORDANCE WITH SANS 952.
- ALL FOUNDATION EXCAVATIONS TO BE INSPECTED BY ENGINEER - PRIOR TO CASTING OF BLINDING AND TO BE KEPT DRY AT ALL TIMES.
- ANY OVER BREAK UNDER FOUNDATIONS TO BE MADE GOOD WITH MASS CONCRETE 10 MPa TO THE ENGINEERS INSTRUCTIONS.
- ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE BEFORE ANY WORK COMMENCES. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
- ALL LEVELS SHOWN ARE TO "TOP OF CONCRETE" AND ARE A.M.S.L. (ABOVE MEAN SEA LEVEL).
- ALL EXPOSED CONCRETE CORNERS TO HAVE 25x25 CHAMFERS.
- CONCRETE FINISHES TO BE SMOOTH WHEN EXPOSED AND ROUGH WHEN CONCEALED.
- ALL DIMENSIONS INDICATED IN mm.



DRAIN E-3 - TYPE A
(FLAT SECTION)



DRAIN E-3 - TYPE B
(STEEP SECTION)

| DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | IS OK | SUB OK | REV No. | DATE | REVISIONS | IS OK | SUB OK |
|------------------------------------|--|-------------|--------------------|---------|------|-----------|-------|--------|---------|------|-----------|-------|--------|
| C00820 0548 CI DGA 0004 002 | HAUL ROAD 3 - LAYOUT & SECTION - SHEETS 2 | | | | | | | | | | | | |
| C00820 0548 CI DGA 0001 001 | OVERALL ROADS LAYOUT | | | | | | | | | | | | |
| C00820 0548 CI DGA 0002 001 TO 006 | EASTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 6 | | | | | | | | | | | | |
| C00820 0548 CI DGA 0003 001 | WESTERN HAUL ROADS - LAYOUT & SECTIONS - SHEETS 1 TO 5 | | | | | | | | | | | | |
| C00820 0548 CI DSE 0001 001 | ROADS - TYPICAL CROSS SECTIONS | | | | | | | | | | | | |

| CLIENT | NAME | DATE | Worley | NAME | DATE | Worley | NAME | DATE |
|------------------|------|------|-----------------------|------|------|---------------------|------|----------|
| Lead Engineer | | | Project Manager | | | Checked By | NM | 08/07/19 |
| Process Engineer | | | Struct/Civil Engineer | | | Project Supervisor | | |
| | | | Engineering Manager | | | Instrument Engineer | | |
| | | | Project Manager | | | Mechanical Engineer | | |
| | | | | | | Mining Engineer | | |

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DESIGNED, DRAWN AND ISSUED BY:
Professional Eng./Tech. _____ Rev. _____
Reg. No. _____

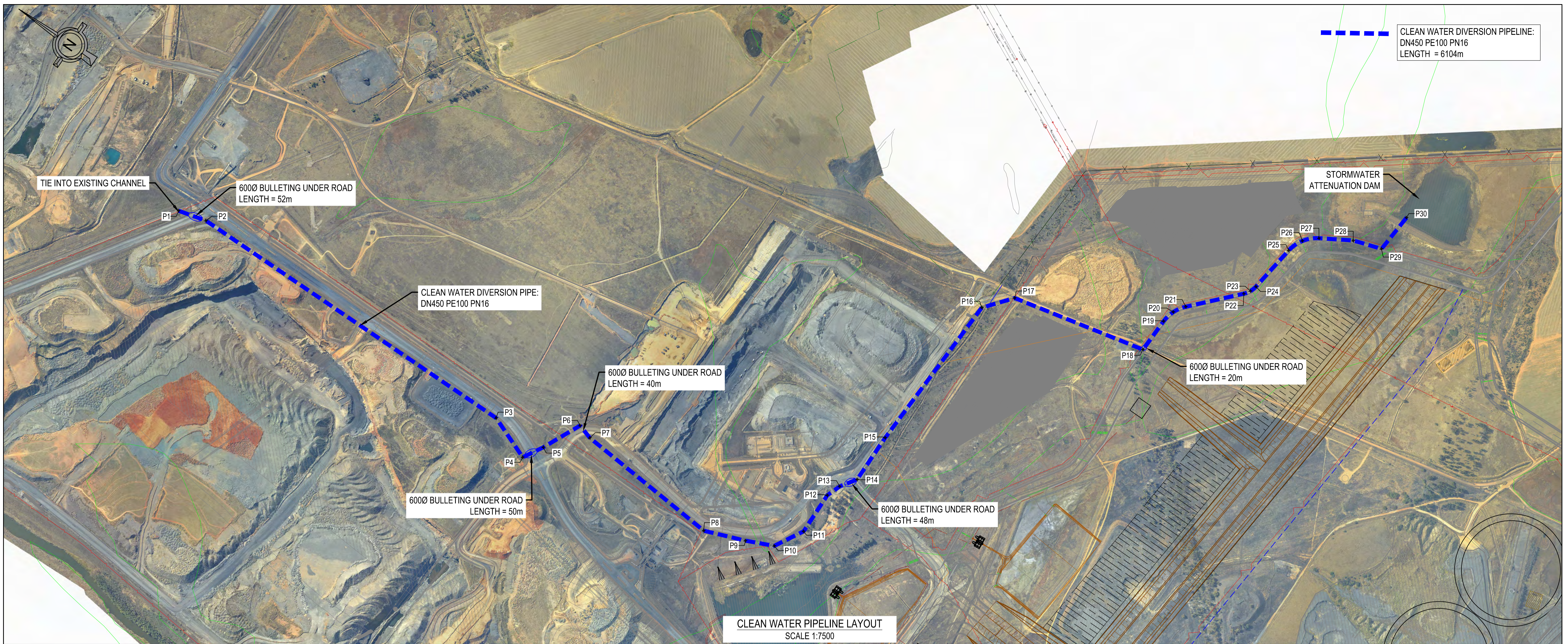
Worley
energy | chemicals | resources

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VDDC PROJECT - FEASIBILITY
SITE INFRASTRUCTURE
CLEAN STORMWATER DRAIN E3
LAYOUT & LONG SECTION - SHEET 3

PROJECT No: C00820 0548 CI DGA 0003 001
SCALE: AS SHOWN

G.3 Clean water diversion pipeline



PIPELINE SETTING OUT

| POINT | Y | X |
|-------|-------------|---------------|
| P1 | -28 108.117 | 2 880 144.226 |
| P2 | -28 137.911 | 2 880 255.194 |
| P3 | -28 156.522 | 2 881 641.513 |
| P4 | -28 089.583 | 2 881 816.572 |
| P5 | -28 168.659 | 2 881 860.778 |
| P6 | -28 322.384 | 2 881 930.540 |
| P7 | -28 304.584 | 2 881 989.939 |
| P8 | -28 262.171 | 2 882 568.800 |
| P9 | -28 324.248 | 2 882 726.506 |
| P10 | -28 372.731 | 2 882 831.601 |

PIPELINE SETTING OUT


| POINT | Y | X |
|-------|-------------|---------------|
| P11 | -28 486.150 | 2 882 893.529 |
| P12 | -28 656.474 | 2 882 888.718 |
| P13 | -28 713.340 | 2 882 908.551 |
| P14 | -28 775.795 | 2 882 949.176 |
| P15 | -28 974.342 | 2 882 945.538 |
| P16 | -29 614.385 | 2 882 963.208 |
| P17 | -29 720.131 | 2 883 047.733 |
| P18 | -29 843.916 | 2 883 579.652 |
| P19 | -29 982.430 | 2 883 582.415 |
| P20 | -30 034.520 | 2 883 592.949 |

PIPELINE SETTING OUT

| POINT | Y | X |
|-------|-------------|---------------|
| P21 | -30 079.582 | 2 883 621.122 |
| P22 | -30 253.728 | 2 883 779.604 |
| P23 | -30 276.978 | 2 883 795.001 |
| P24 | -30 303.792 | 2 883 802.658 |
| P25 | -30 494.800 | 2 883 826.610 |
| P26 | -30 557.187 | 2 883 849.373 |
| P27 | -30 603.449 | 2 883 897.017 |
| P28 | -30 673.061 | 2 884 013.540 |
| P29 | -30 710.310 | 2 884 123.446 |
| P30 | -30 868.178 | 2 884 133.566 |


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PROFESSIONAL ENGINEER / TECHNOLOGIST

DESIGNED, DRAWN AND ISSUED BY:
Professional Engineer/ Technologist :
Reg. No. : Rev. :



SOUTH32
VDDC PROJECT
FEASIBILITY STUDY

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| DRAWING No. | REFERENCE DRAWINGS | REV No. | DATE | REVISIONS | BY | CHK | S/DR | ENR |
|-----------------------------|---|---------|----------|----------------|----|-----|------|-----|
| C00820 OSAA GE DAL 0001 001 | SITE INFRASTRUCTURE - OVERALL BLOCKPLAN | 0 | 27/08/19 | ISSUED FOR USE | MM | | | |
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| CLIENT | NAME | DATE | WORLEY | NAME | DATE | WORLEY | NAME | DATE |
|-----------------|------|------|-----------------------|------|------|---------------------|------|----------|
| Lead Engineer | | | Piping Engineer | | | Drawn By | N.M. | 03/07/19 |
| Project Manager | | | Process Engineer | | | Checked By | | |
| | | | Struct/Civil Engineer | | | Project S/Leader | | |
| | | | Engineering Manager | | | Electrical Engineer | | |
| | | | Project Manager | | | Instrument Engineer | | |
| | | | | | | Mechanical Engineer | | |
| | | | | | | Mining Engineer | | |

**VDDC PROJECT - FEASIBILITY
SURFACE INFRASTRUCTURE
CLEAN WATER DIVERSION PIPELINE
LAYOUT & SETTING OUT**

| CLIENT DRAWING NUMBER | | SHEET SIZE | SCALE | | | |
|-----------------------|------|------------|--------|--------|-------|-----|
| 0001 | | A1 | | | | |
| PROJECT No. | WBS | DISC | DWG ID | DOC ID | SHEET | REV |
| C00820 | 05FF | CI | DAL | 0001 | 001 | 0 |