
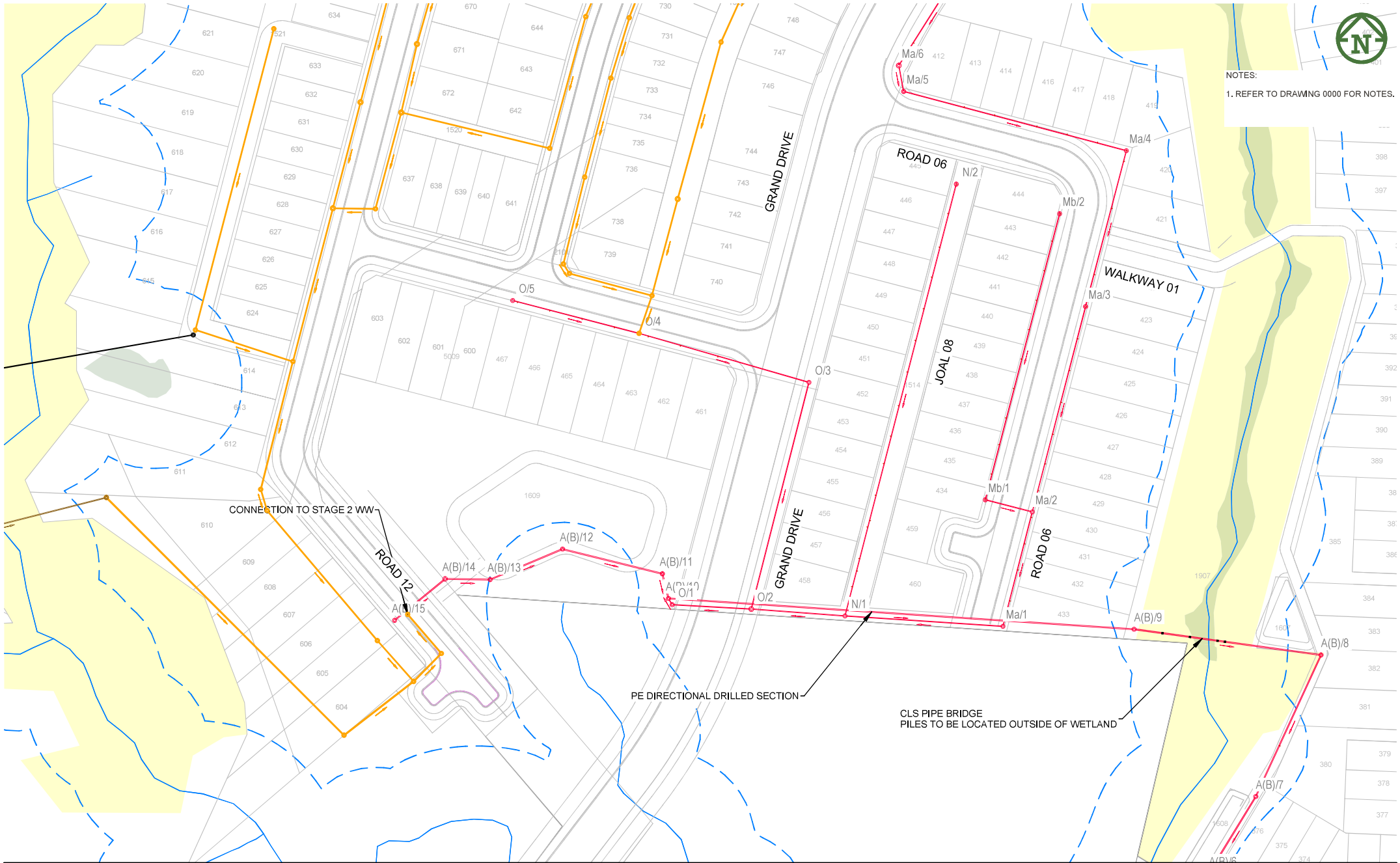
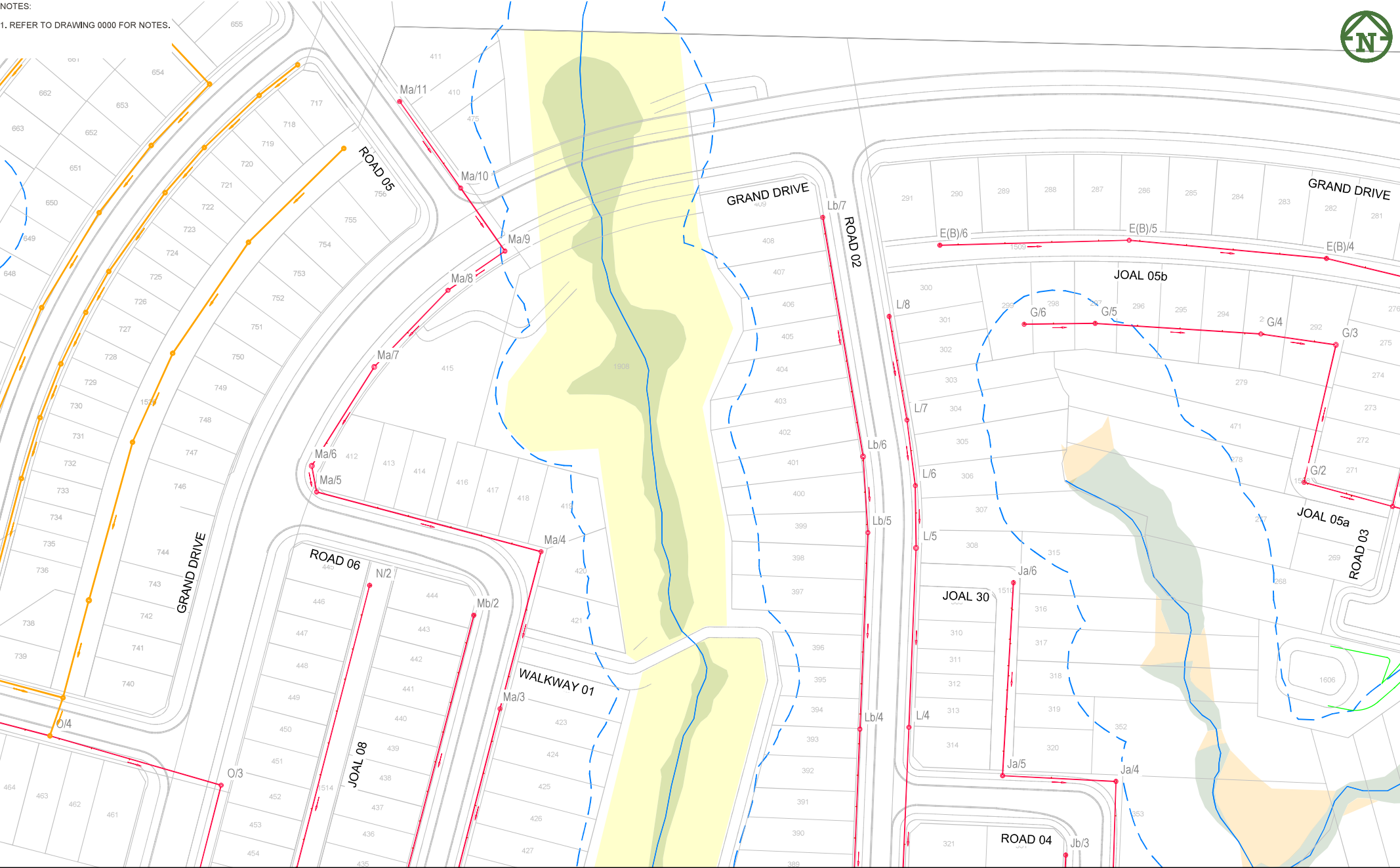


| | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|----------------------|-------------|----|------------|------------|--------------------------|---------|--|-------------------------|---------|------------|------------------|---|--|--|--|--|--|--|--|
| FOR RESOURCE CONSENT | | | | SJO | JK | 2/07/2025 | | <div></div> | VINEWAY LIMITED | DELMORE | WASTEWATER | RESOURCE CONSENT | | | | | | | | |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 | | STAGE 1 | LAYOUT | | SCALE: | | | | | | | | | | | |
| D | FOR TENDER | MO | PO | 15/05/2025 | | 53A, 53B & 55 RUSSELL RD | OVERALL | | 1:4000 @A3 | | | | | | | | | | | |
| C | FOR RESOURCE CONSENT | NC | PO | JK | 31/01/2025 | | | | DO NOT SCALE | | | | | | | | | | | |
| B | UPDATED CONTOURS | NC | JK | 13/01/2025 | | | | | DRAWING NO: | REV: | | | | | | | | | | |
| A | FIRST ISSUE | | | 20/12/2024 | | 3725-1-5000 | F | | | | | | | | | | | | | |
| REV | | DESCRIPTION | | DRN BY | CHK BY | APP BY | DATE | | | | | | | | | | | | | |
| PLOT DATE Wed Jul 2 01:00:43 2025 | | | | | | | | | WWW.MCKENZIEANDCO.CO.NZ | | | | THIS DRAWING IS SOLELY FOR USE BY THE CLIENT ON THIS PROJECT ONLY. NO LIABILITY IS ACCEPTED IN ITS USE BY ANY OTHER ENTITY OR FOR ANY OTHER PURPOSE | | | | c:\1245\data\mckfs07\3725 Delmore - 53A, 53B & 55 Russell Road, Orewa, Delmore_4684\06_Engineering Design\6.4.124\Stage 1 Plotting\1240m2 Stage 1 Plotting | | | |





NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



| | | | | |
|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 15/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

| | | | | | |
|-----|-------------|--------|--------|--------|------|
| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
|-----|-------------|--------|--------|--------|------|



MCKENZIE & CO.

VINWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LAYOUT
SHEET 2 OF 8

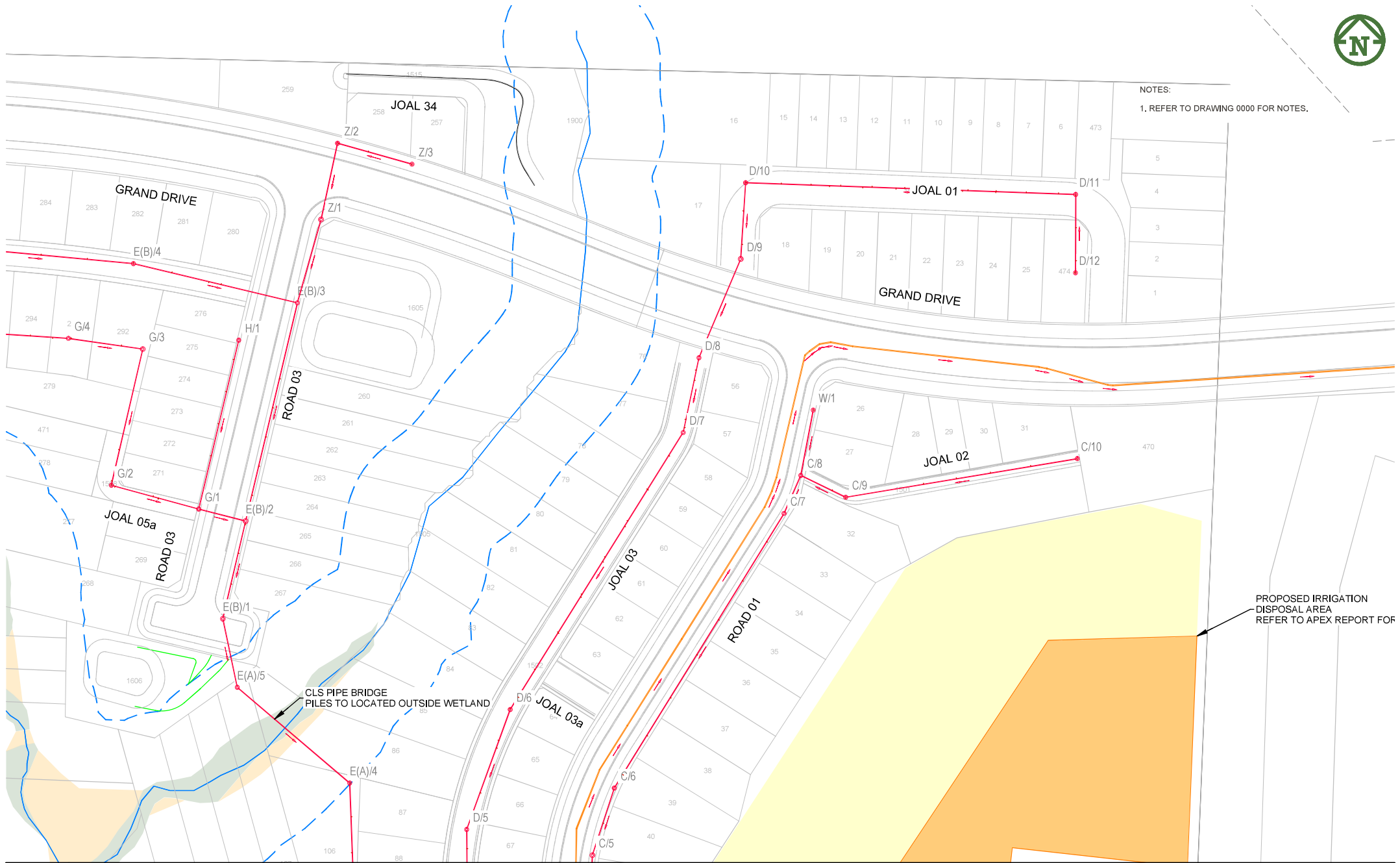
RESOURCE CONSENT

SCALE:
1:1000 @ A3
DO NOT SCALE
DRAWING NO:
3725-1-5002

REV:
F



NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



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|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 16/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

| | | | | | |
|-----|-------------|--------|--------|--------|------|
| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
| | | | | | |

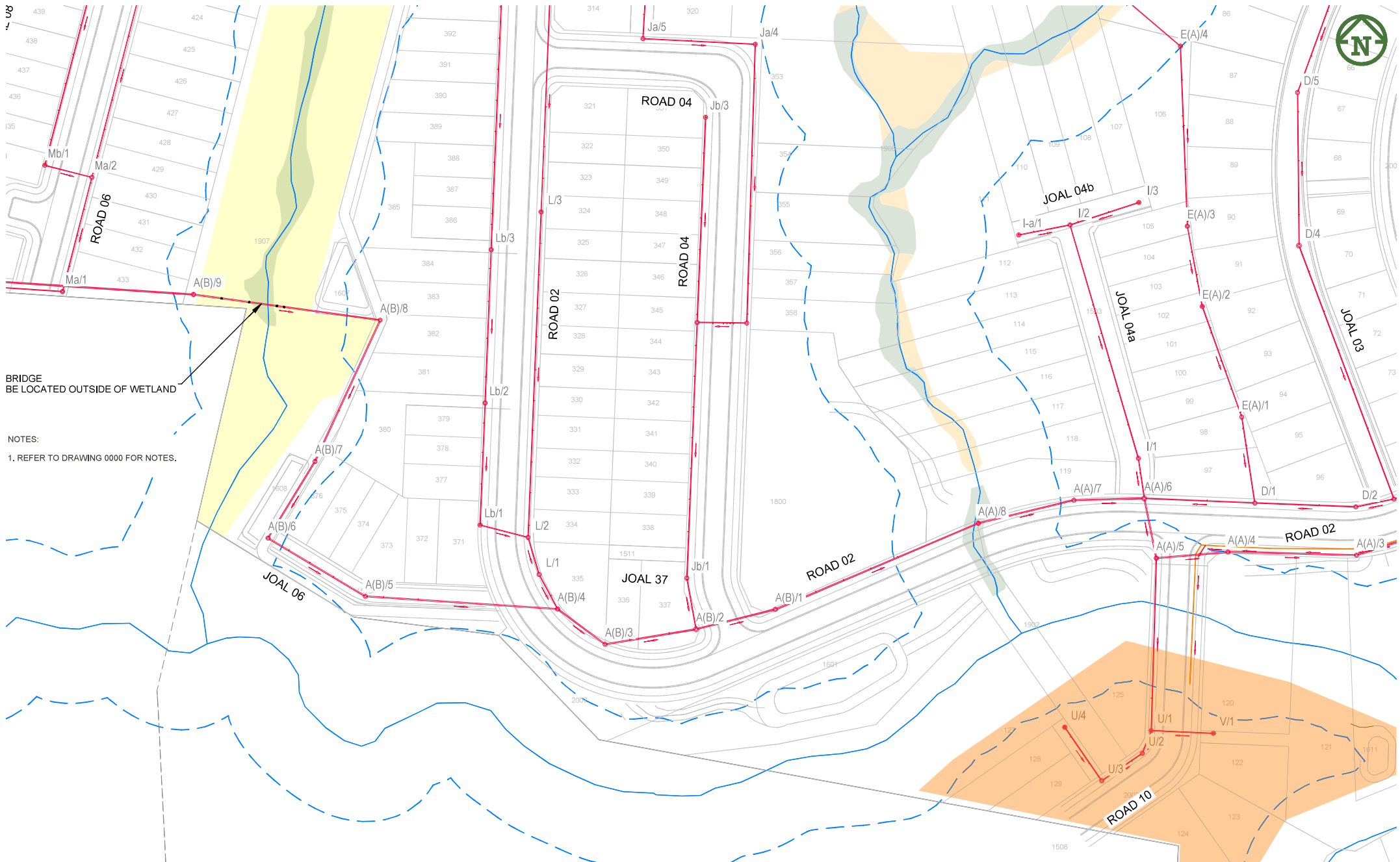


VINEWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LAYOUT
SHEET 3 OF 8

| | |
|-------------------|------------------|
| PURPOSE OF ISSUE: | RESOURCE CONSENT |
| SCALE: | 1:1000 @ A3 |
| DO NOT SCALE | |
| DRAWING NO: | 3725-1-5003 |
| REV: | F |



| | | | | |
|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 17/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

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|-----|-------------|--------|--------|--------|------|
| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
| | | | | | |



MCKENZIE & CO.

VINEWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LAYOUT
SHEET 4 OF 8

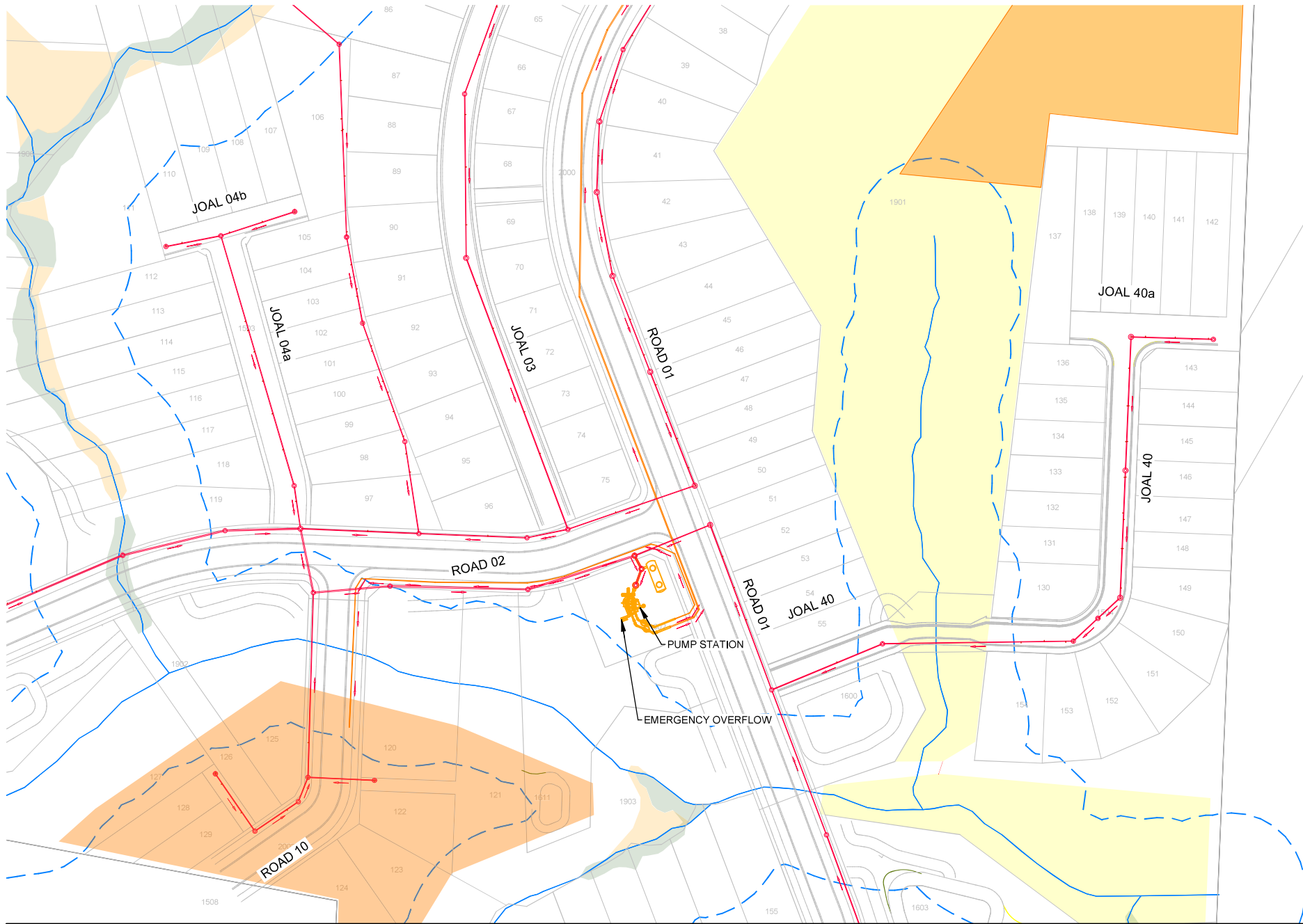
PURPOSE OF ISSUE:
RESOURCE CONSENT

SCALE:
1:1000 @ A3
DO NOT SCALE
DRAWING NO:
3725-1-5004

REV:
F



NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



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|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 18/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

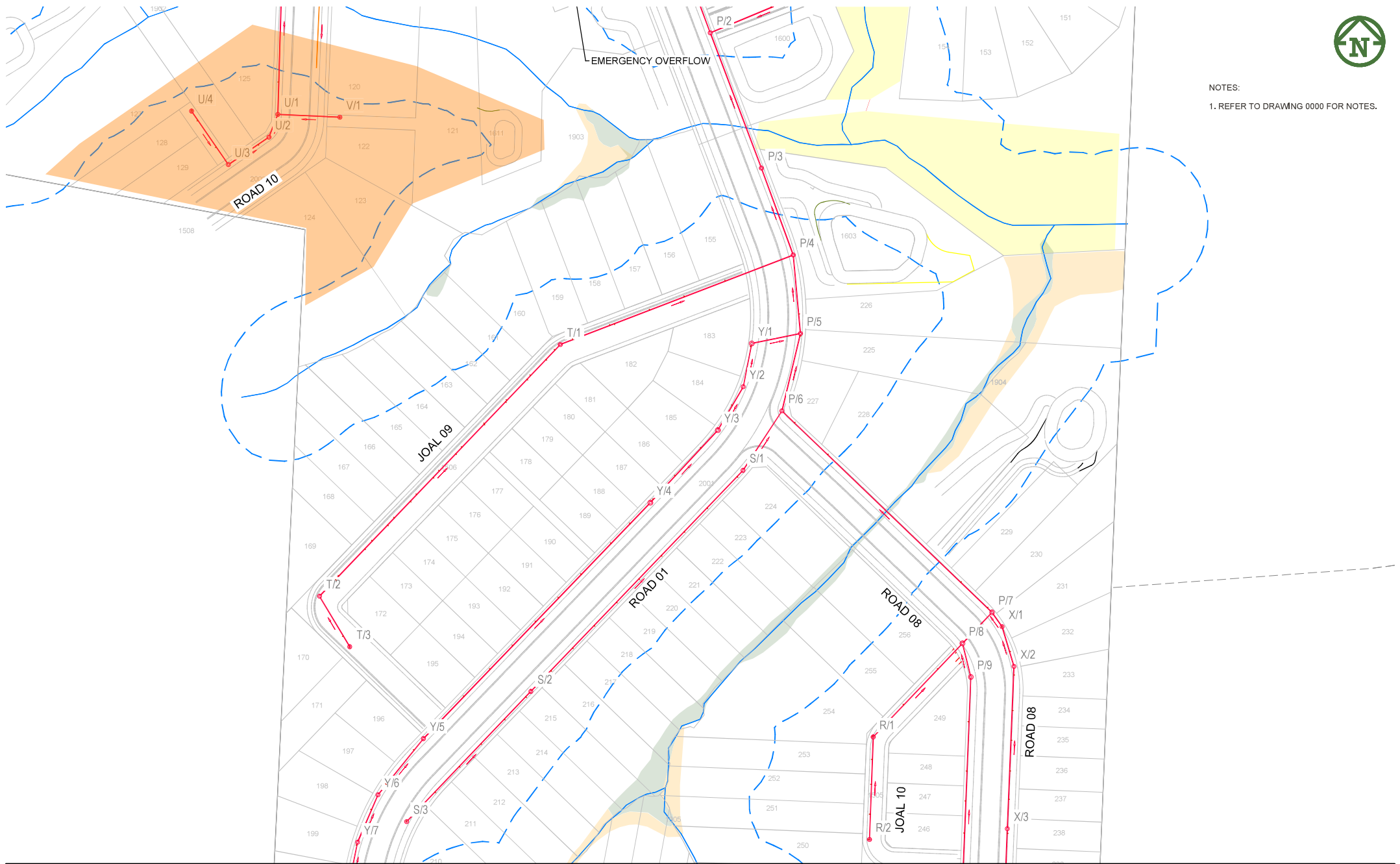
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| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
| | | | | | |



| | | | | | | | |
|---------|-----------------|----------|---|--------|--------------------------------------|-------------------|------------------|
| CLIENT: | VINEWAY LIMITED | PROJECT: | DELMORE STAGE 1 53A, 53B & 55 RUSSELL RD OREWA | TITLE: | WASTEWATER LAYOUT SHEET 5 OF 8 | PURPOSE OF ISSUE: | RESOURCE CONSENT |
| | | | | | | SCALE: | 1:1000 @ A3 |
| | | | | | | DO NOT SCALE | |
| | | | | | | DRAWING NO: | 3725-1-5005 |
| | | | | | | REV: | F |



NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



| | | | | |
|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 19/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |



VINEWAY LIMITED

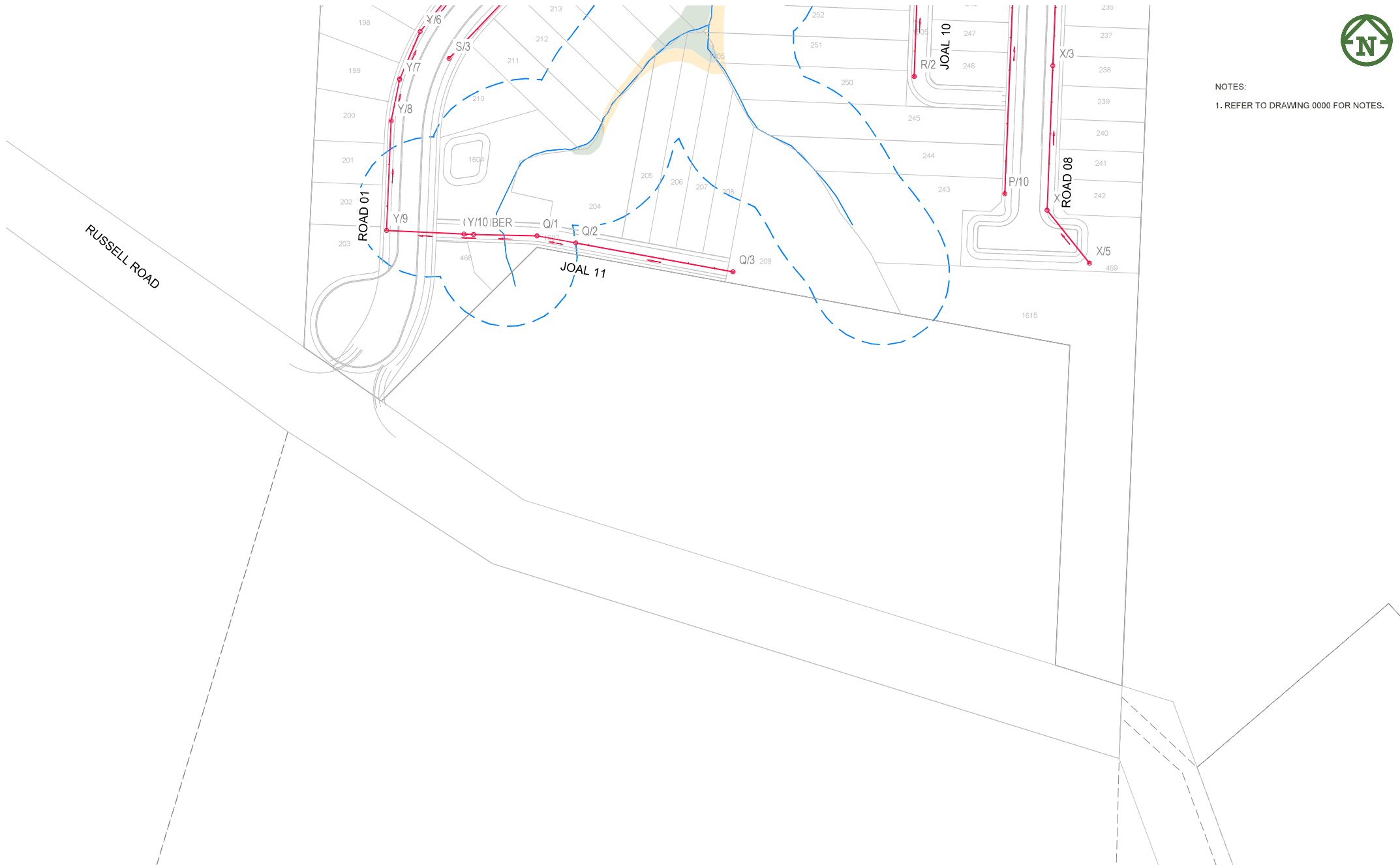
DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LAYOUT
SHEET 6 OF 8

PURPOSE OF ISSUE:
RESOURCE CONSENT
SCALE:
1:1000 @ A3
DO NOT SCALE
DRAWING NO:
3725-1-5006
REV:
F



NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



| | | | | |
|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 20/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
|-----|-------------|--------|--------|--------|------|
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|---------------------------------------|---|--------------------------------------|----------------------------|
| CLIENT: | PROJECT: | TITLE: | PURPOSE OF ISSUE: |
| VINEWAY LIMITED | DELMORE STAGE 1 53A, 53B & 55 RUSSELL RD OREWA | WASTEWATER LAYOUT SHEET 7 OF 8 | RESOURCE CONSENT |
| SCALE: 1:1000 @ A3 DO NOT SCALE | | | DRAWING NO: 3725-1-5007 |
| | | | REV: F |



NOTES:
1. REFER TO DRAWING 0000 FOR NOTES.



| | | | | |
|---|----------------------|-----|----|------------|
| F | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| E | RE-ISSUE WITH RM | MO | PO | 16/06/2025 |
| D | FOR TENDER | MO | PO | 15/05/2025 |
| C | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| B | UPDATED CONTOURS | NC | JK | 21/01/2025 |
| A | FIRST ISSUE | | | 20/12/2024 |

REV DESCRIPTION DRN BY CHK BY APP BY DATE

PLOT DATE Wed Jul 2 01:01:35 2025

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CLIENT:

VINEWAY LIMITED

PROJECT:

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE:

WASTEWATER
LAYOUT
SHEET 8 OF 8

PURPOSE OF ISSUE:

RESOURCE CONSENT

SCALE:

1:1500 @ A3

DO NOT SCALE

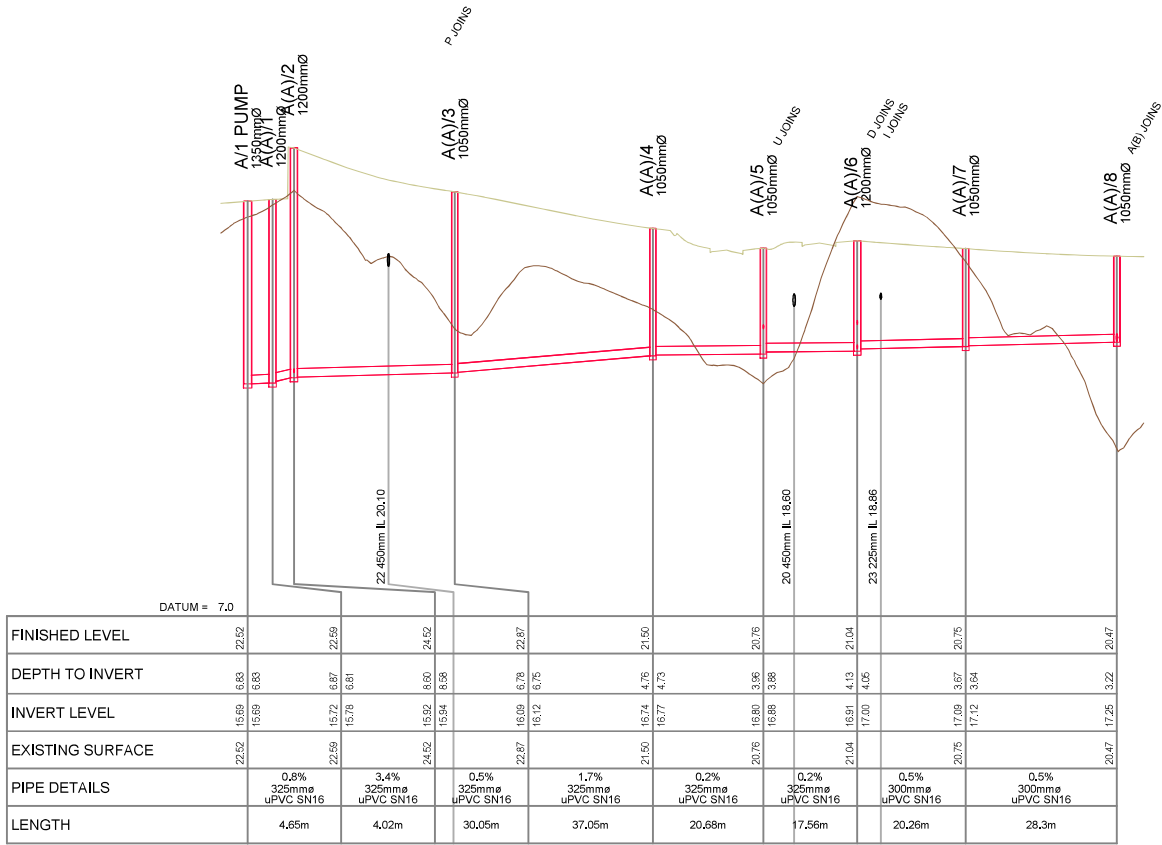
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3725-1-5008

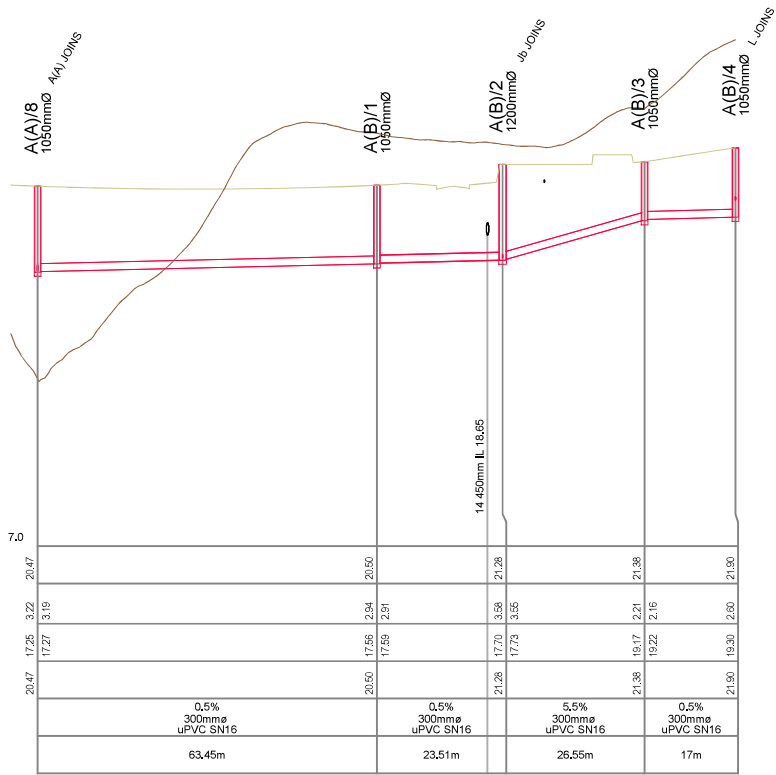
REV:

F

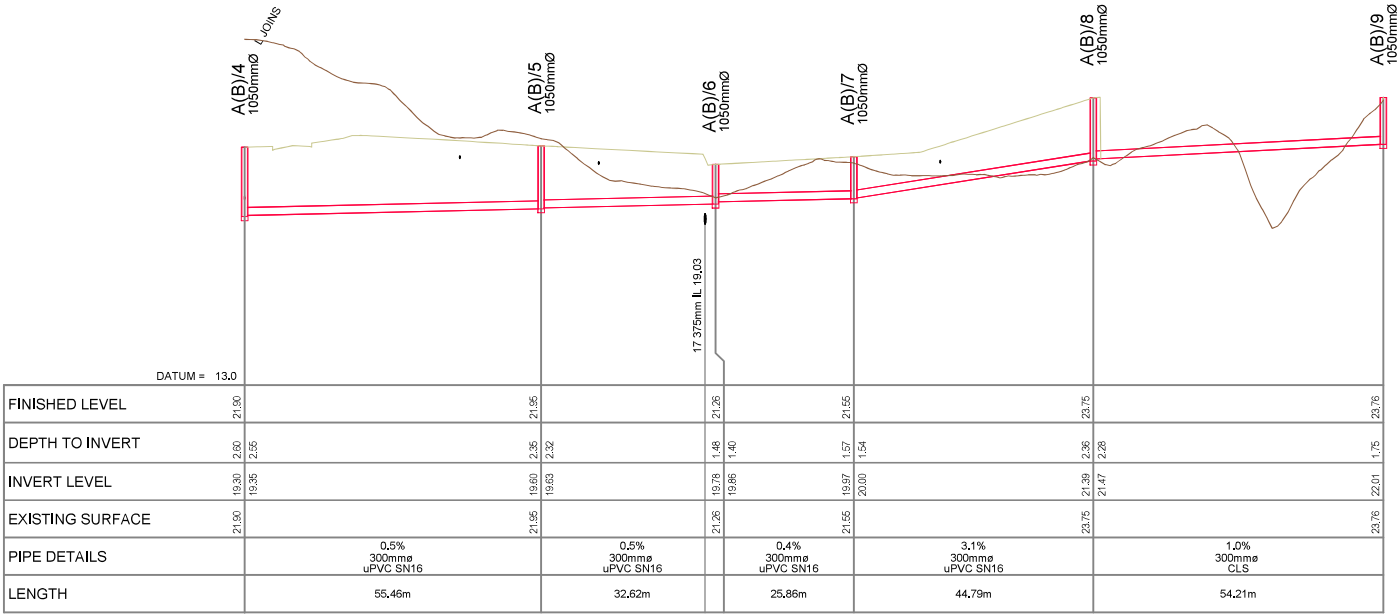
c:\12a5\data\1\MCK9501\3725 Delmore - 53A, 53B & 55 Russell Road, Orewa, Delmore_4684\06_Engineering Design\6.4_12a5\Stage 1 Plotting\12a5model Stage 1 Plotting



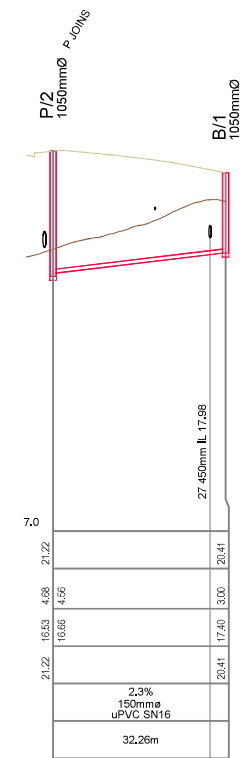
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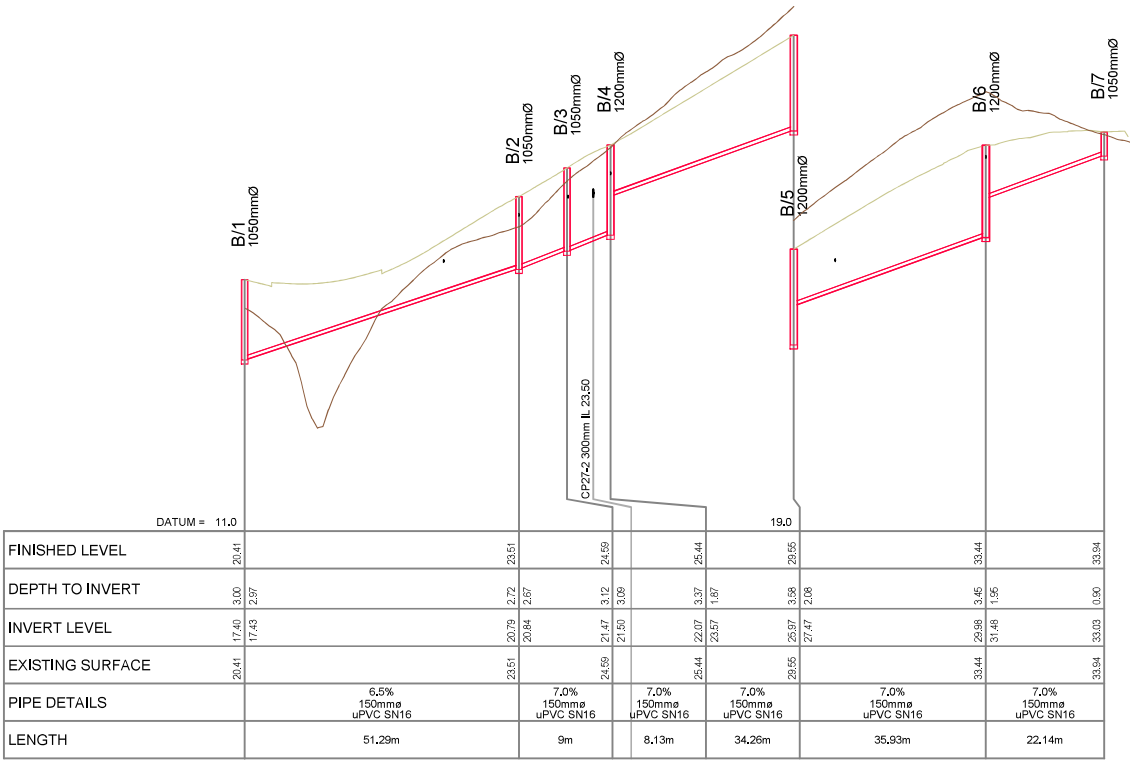
WW LINE A(B)



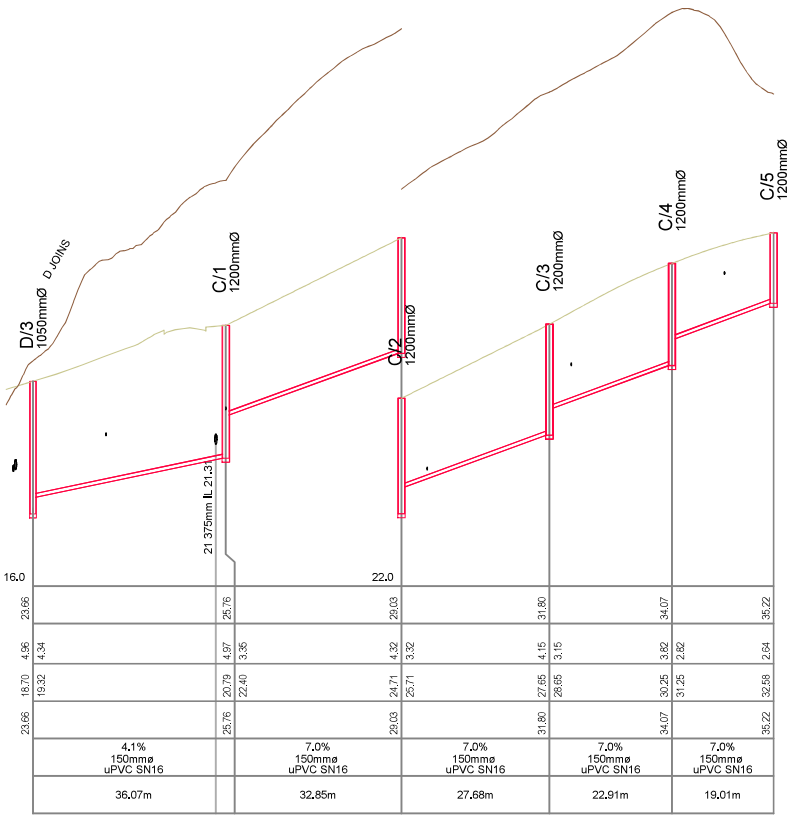
WW LINE A(B)



WW LINE B



WW LINE B



WW LINE C

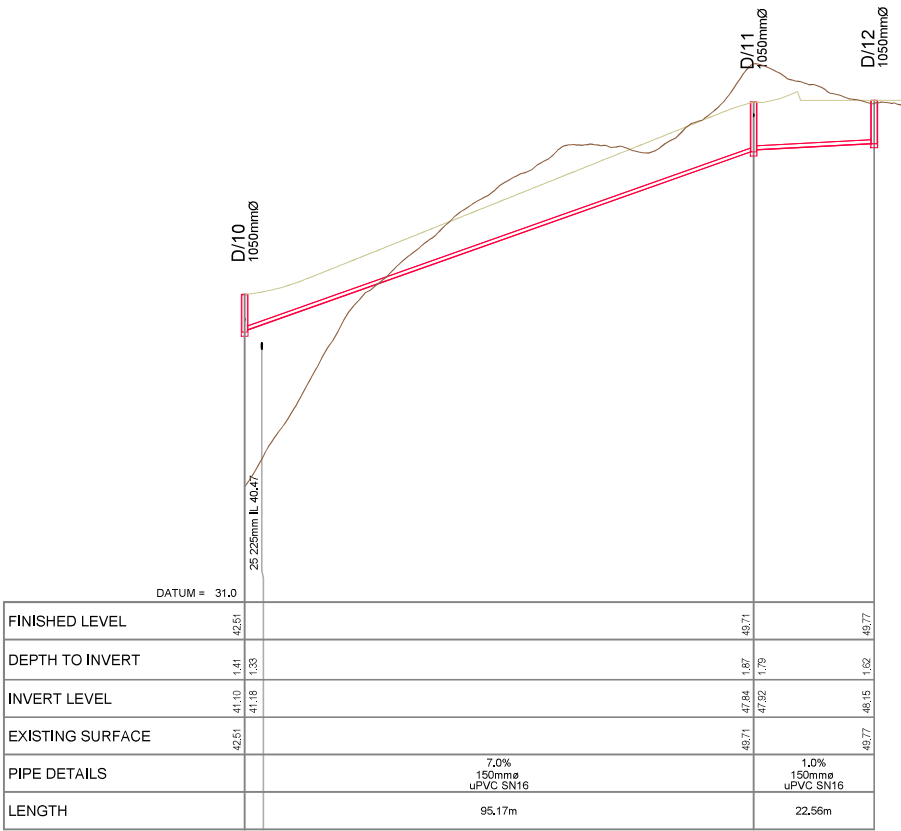




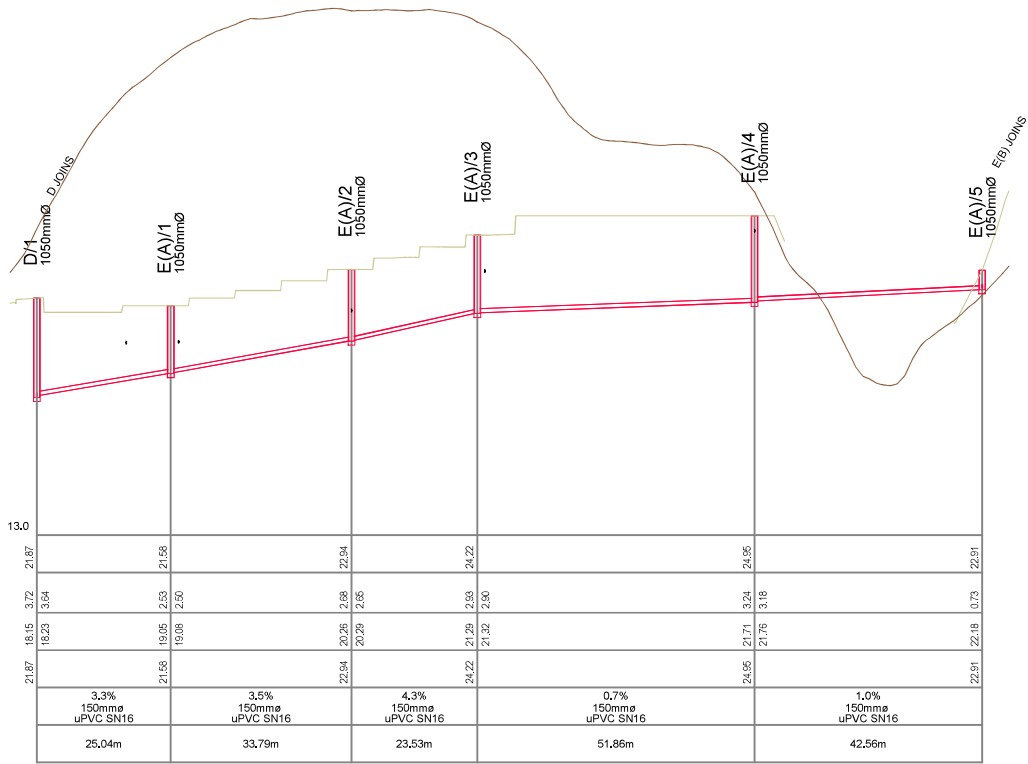
PURPOSE OF ISSUE:

REV:

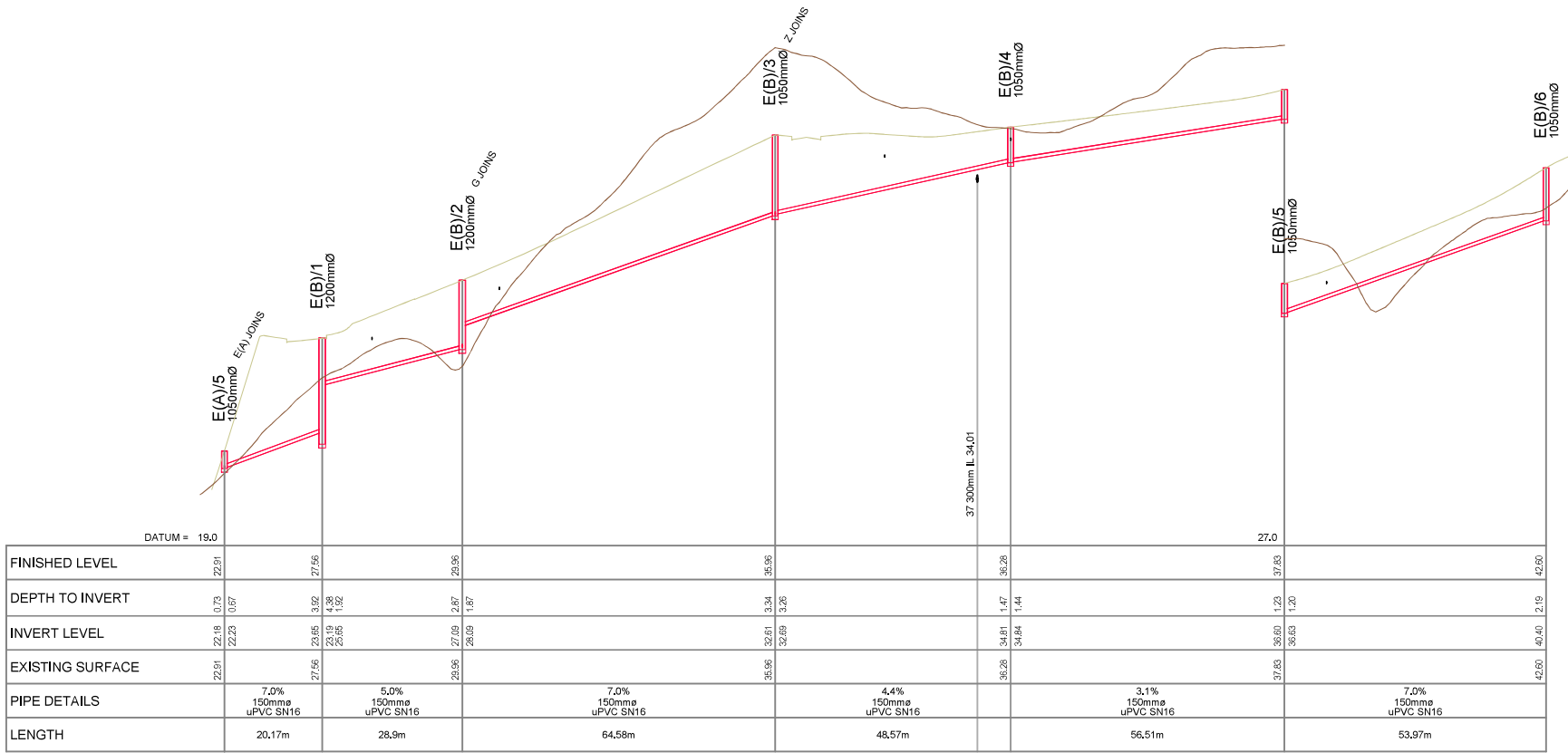
PLOT DATE Wed Jul 2 01:10:43 2025 WWW.MCKENZIEANDCO.CO.NZ THIS DRAWING IS SOLELY FOR USE BY THE CLIENT ON THIS PROJECT ONLY. NO LIABILITY IS ACCEPTED IN ITS USE BY ANY OTHER ENTITY OR FOR ANY OTHER PURPOSE c:\12a5\data\mckf801\3725 Delmore - 53A, 53B & 55 Russell Road, Orewa, Delmore_4684\06_Engineering Design\6.4.12a5\Stage 1 Plotting\12a5dmd Stage 1 Plotting



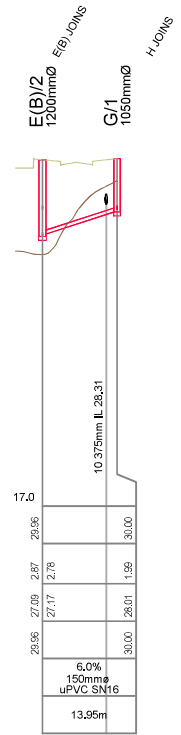
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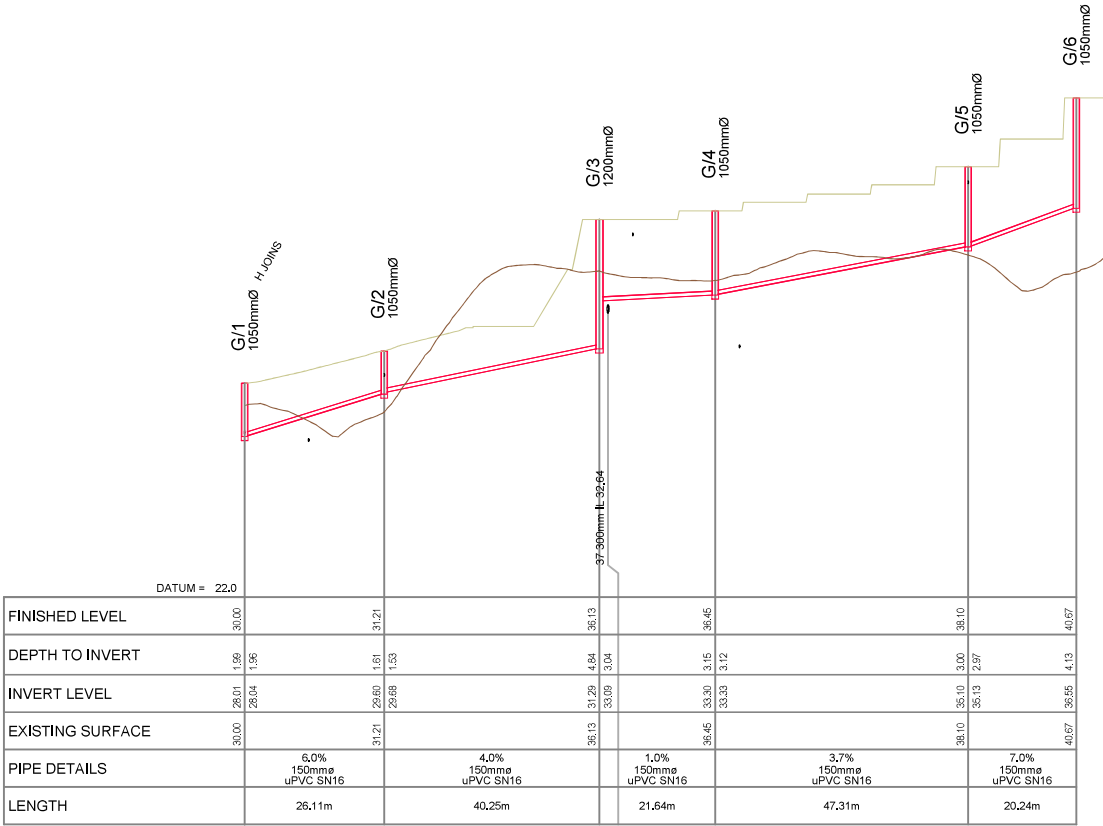
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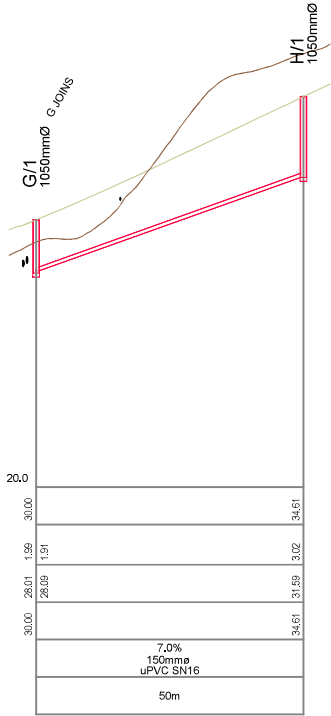
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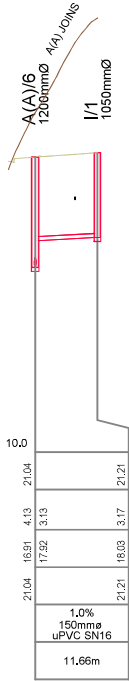
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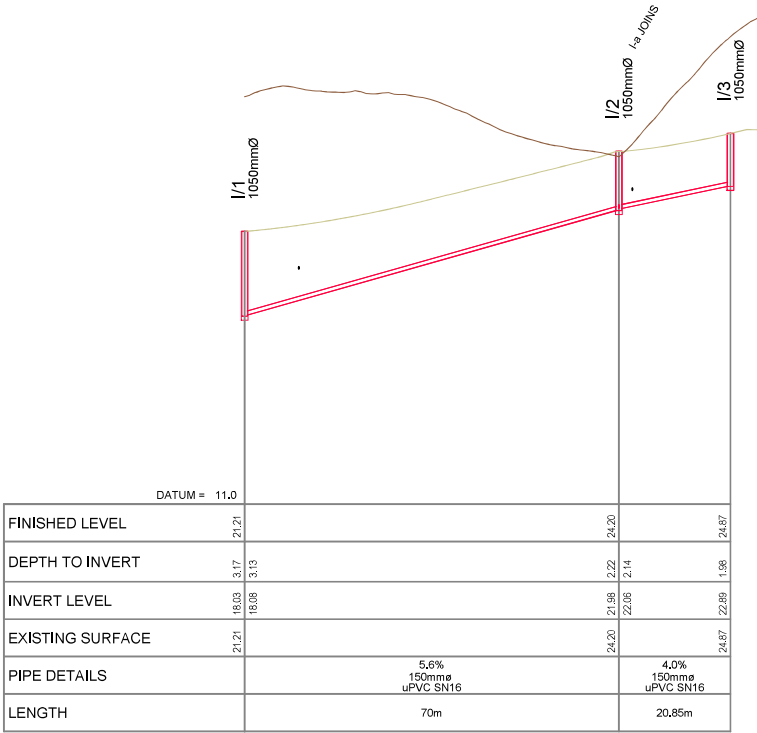
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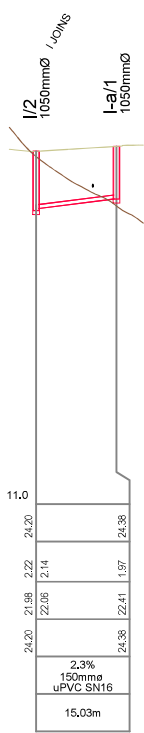
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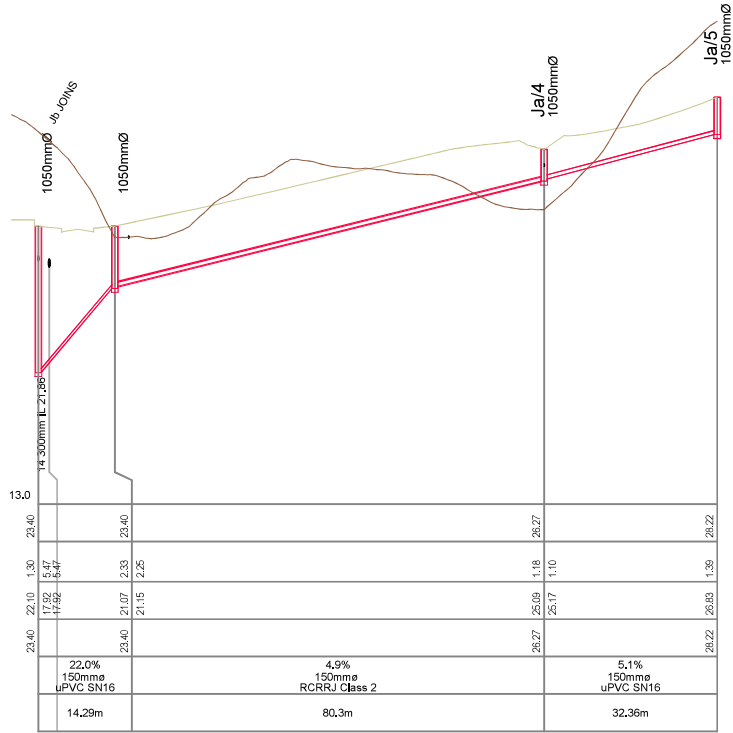
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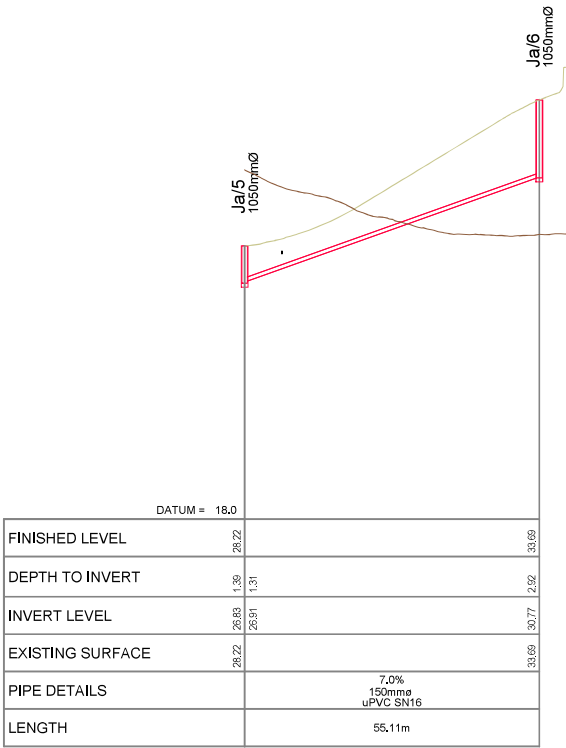
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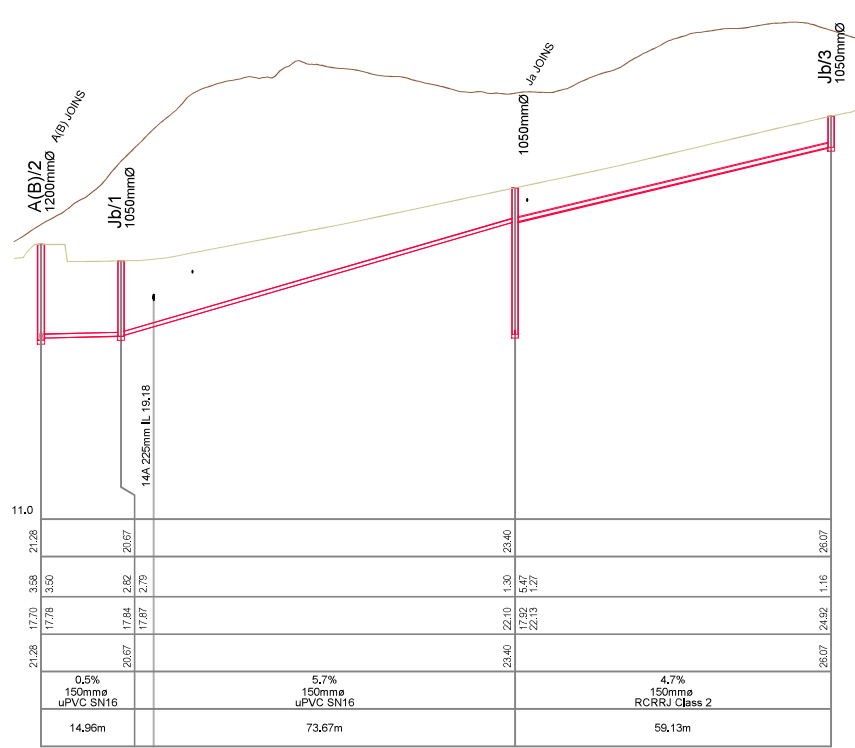
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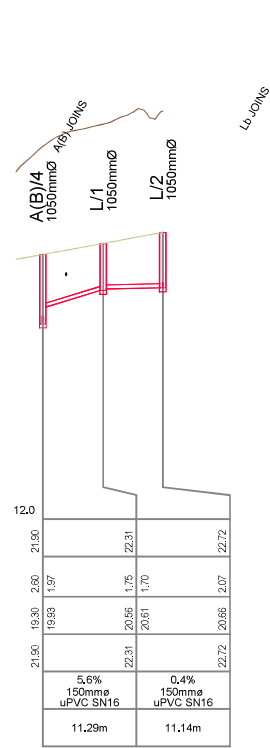
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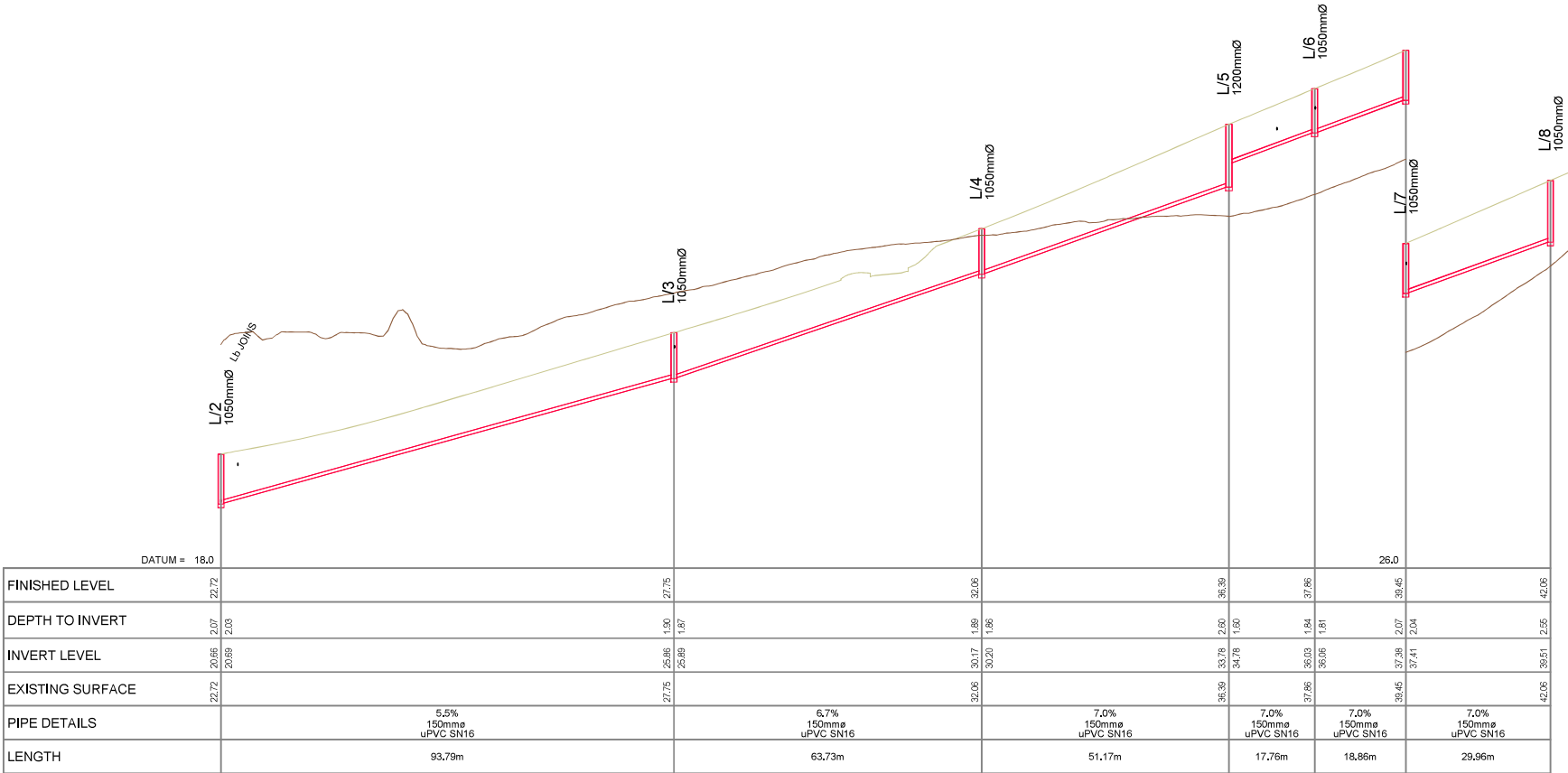
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WW LINE Jb



WW LINE L



WW LINE L



WW LINE Lb

[illegible]

CLIENT:

PROJECT:

TITLE:

PURPOSE OF ISSUE:

| | | | | |
|---|----------------------|-----|----|---------------|
| D | FOR RESOURCE CONSENT | SJO | JK | 2/07/2025 |
| C | FOR TENDER | MO | PO | 15/05/2025 |
| B | FOR RESOURCE CONSENT | NC | PO | JK 31/01/2025 |
| A | FIRST ISSUE | | | |



VINEWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LONGSECTIONS

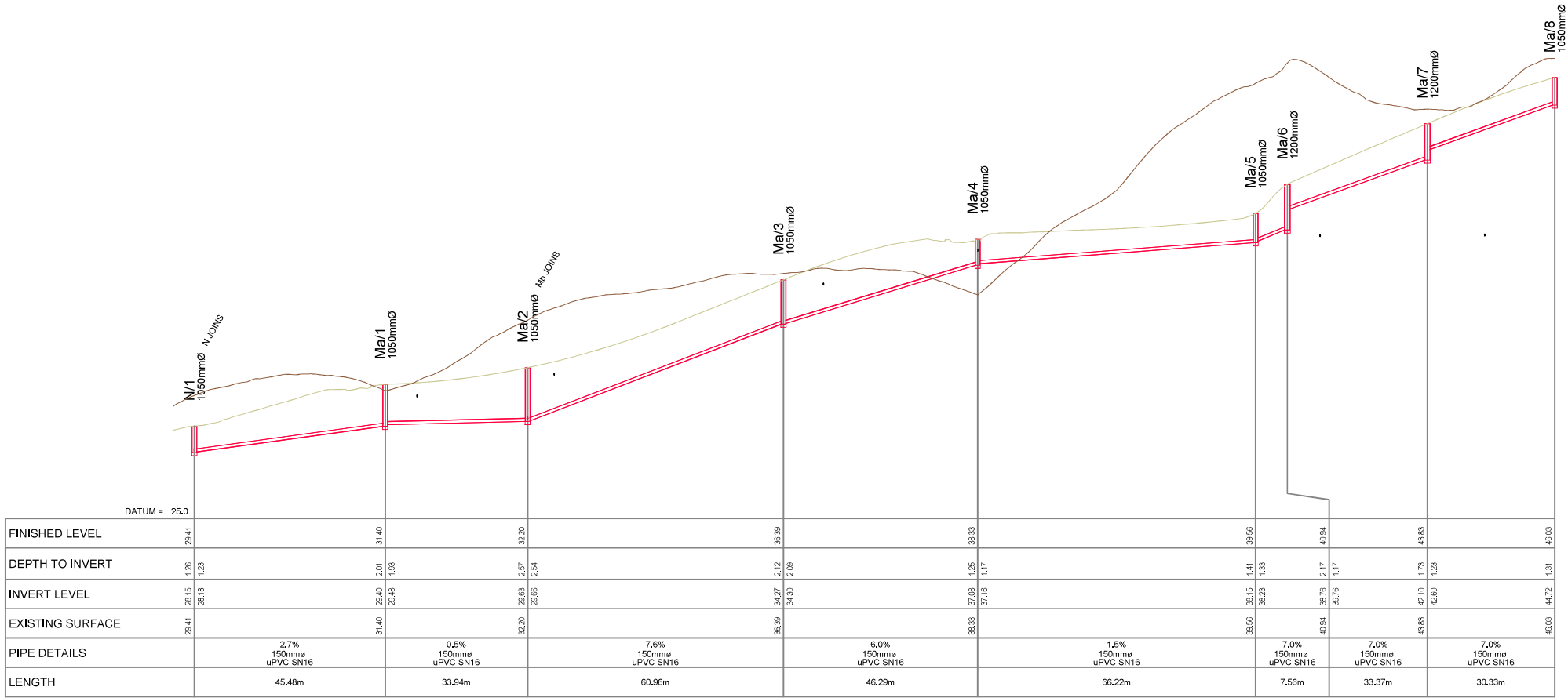
RESOURCE CONSENT

SCALE:

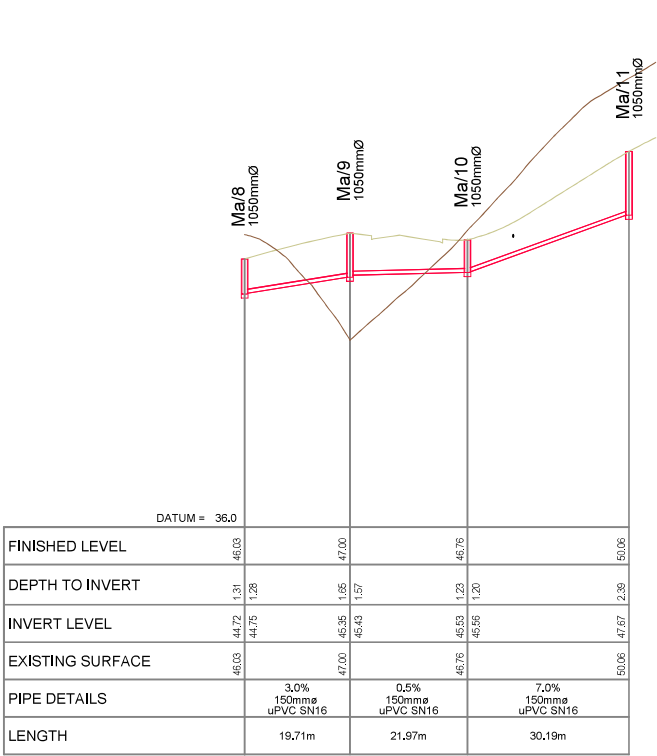
DO NOT SCALE

3725-1-5112

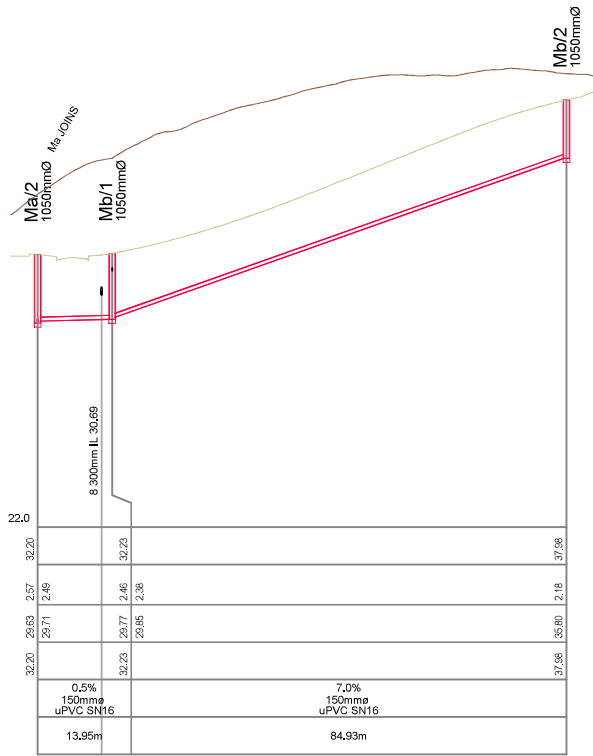
EV:
D



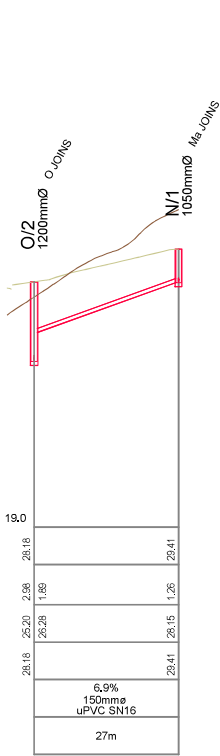
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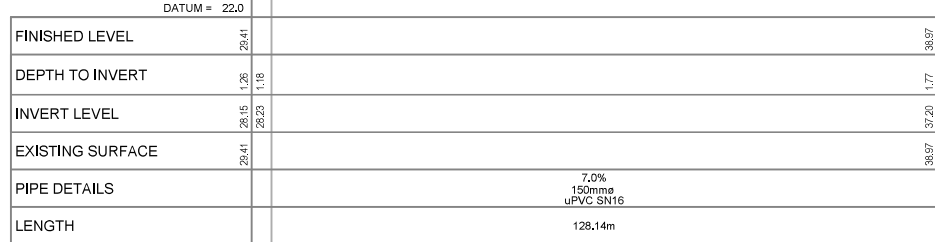
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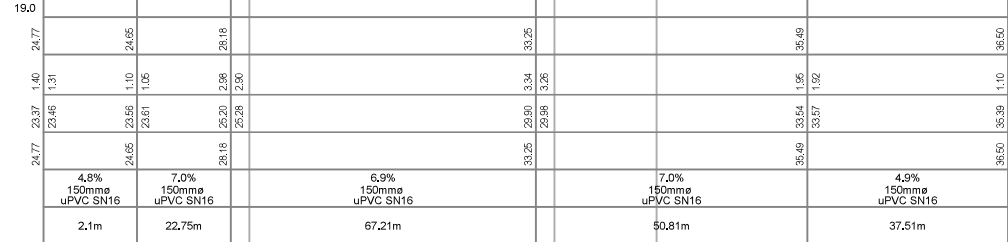
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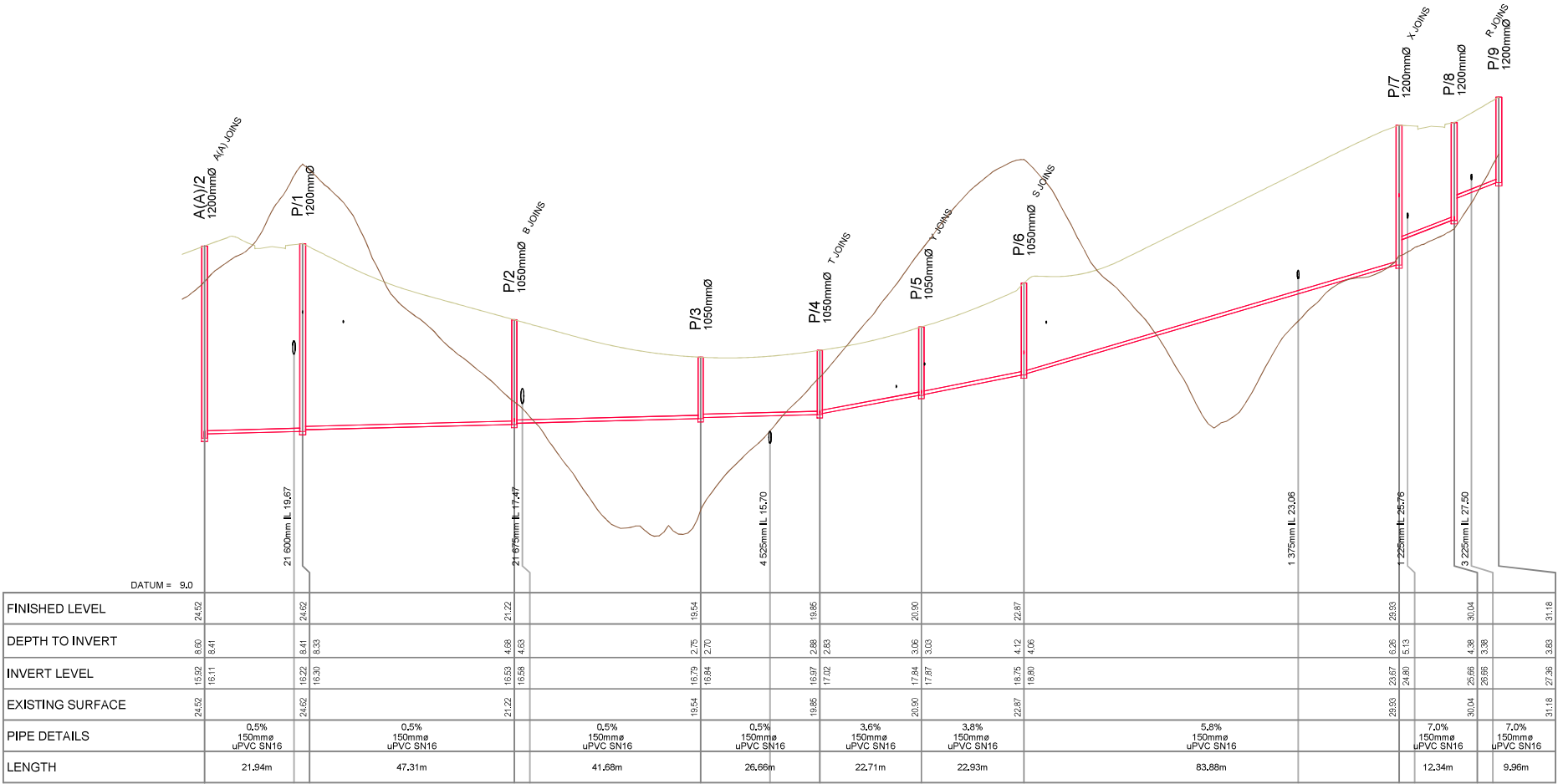
WW LINE N



WW LINE N



WW LINE O



WW LINE P

| | | | | |
|---|----------------------|-----|----|------------|
| D | FOR RESOURCE CONSENT | SJO | JK | 2/01/2025 |
| C | FOR TENDER | MO | PO | 15/05/2025 |
| B | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| A | FIRST ISSUE | | | |



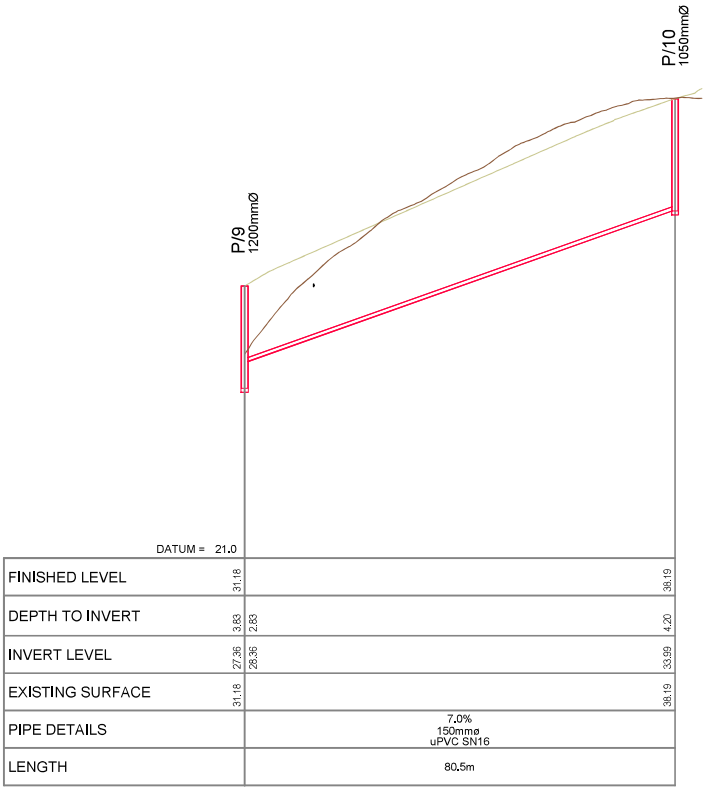
VINEWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

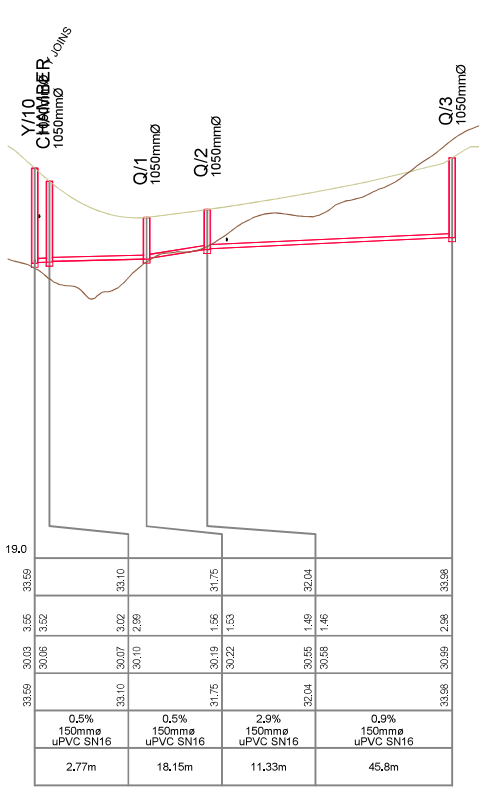
WASTEWATER
LONGSECTIONS

RESOURCE CONSENT

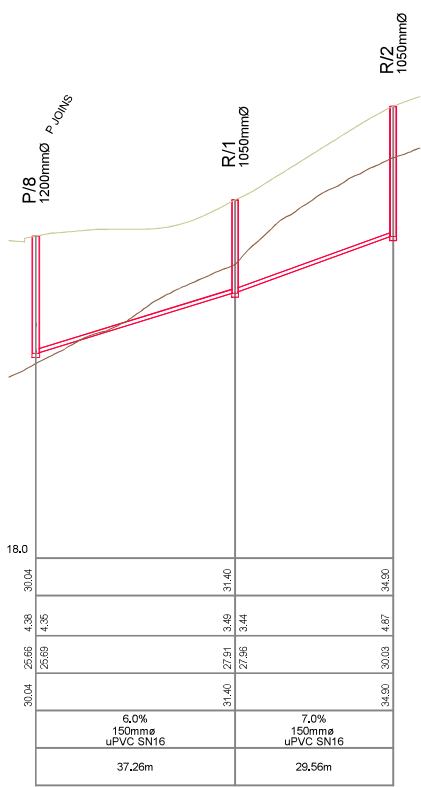
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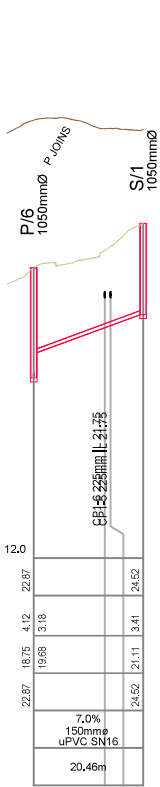
WW LINE P



WW LINE Q



WW LINE R



WW LINE S



VINEWAY LIMITED

DELMORE
STAGE 1

53A, 53B & 55 RUSSELL RD
OREWA

WASTEWATER
LONGSECTIONS

RESOURCE CONSENT

SCALE:

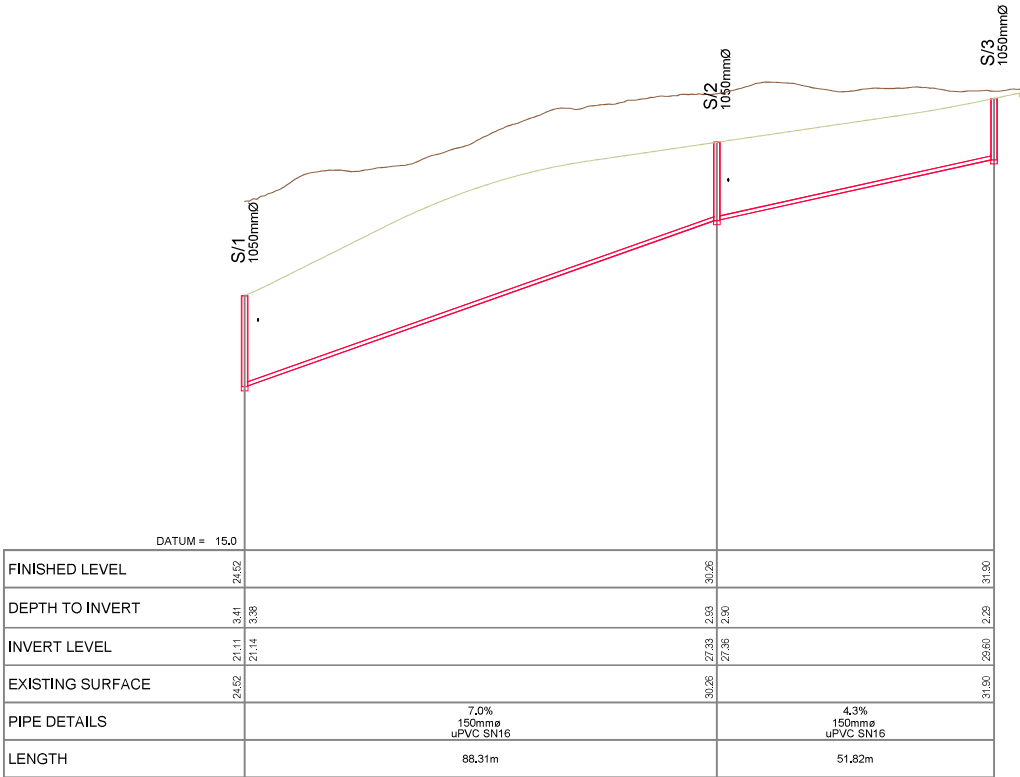
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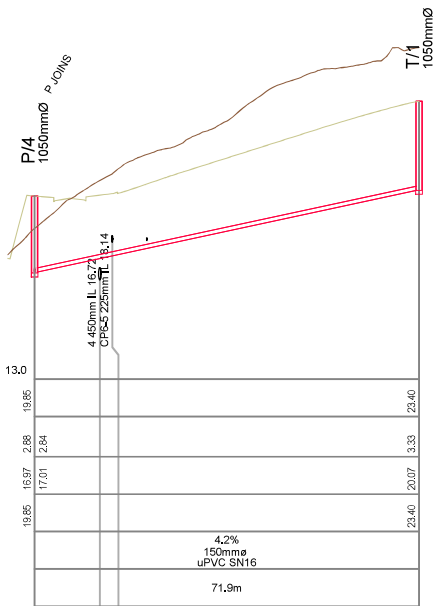
REV: D

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| C | FOR TENDER | MO | PO | 15/05/2025 |
| B | FOR RESOURCE CONSENT | NC | PO | 31/01/2025 |
| A | FIRST ISSUE | | | |

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|-----|-------------|--------|--------|--------|------|
| REV | DESCRIPTION | DRN BY | CHK BY | APP BY | DATE |
| | | | | | |



WW LINE S



WW LINE T

REV

DESCRIPTION

DRN BY

CHK BY

APP BY

DATE

WWW.MCKENZIEANDCO.CO.NZ

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CLIENT:

VINEWAY LIMITED

PROJECT:

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE:

WASTEWATER
LONGSECTIONS

PURPOSE OF ISSUE:

RESOURCE CONSENT

SCALE:

DO NOT SCALE

DRAWING NO:

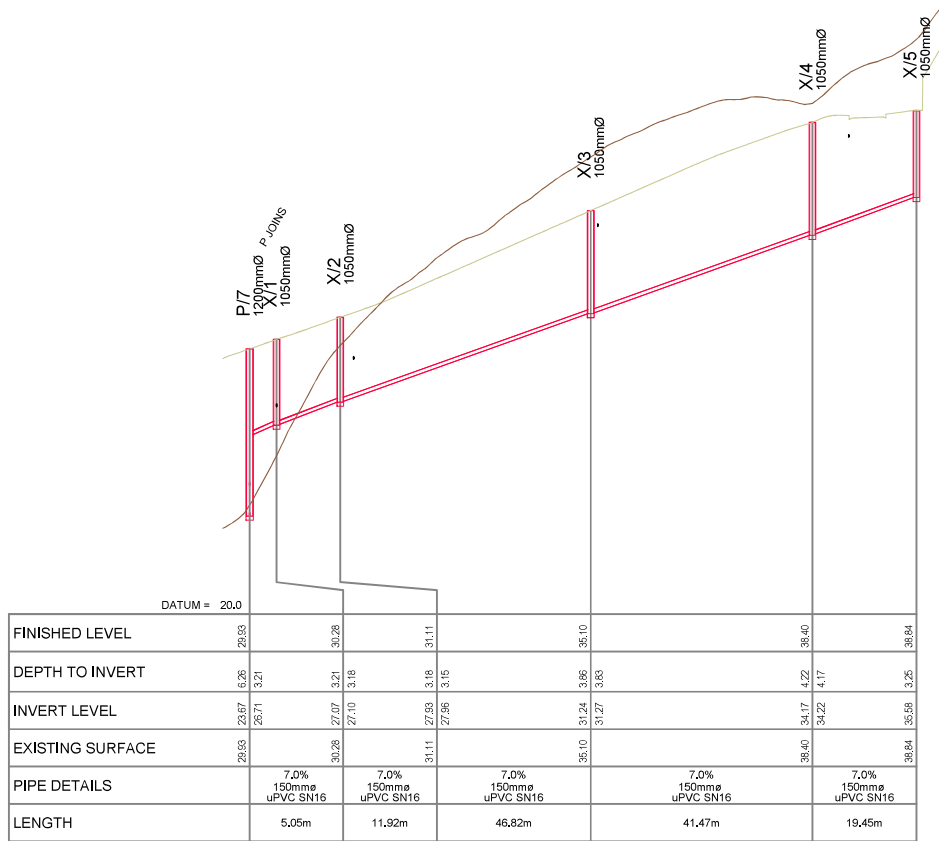
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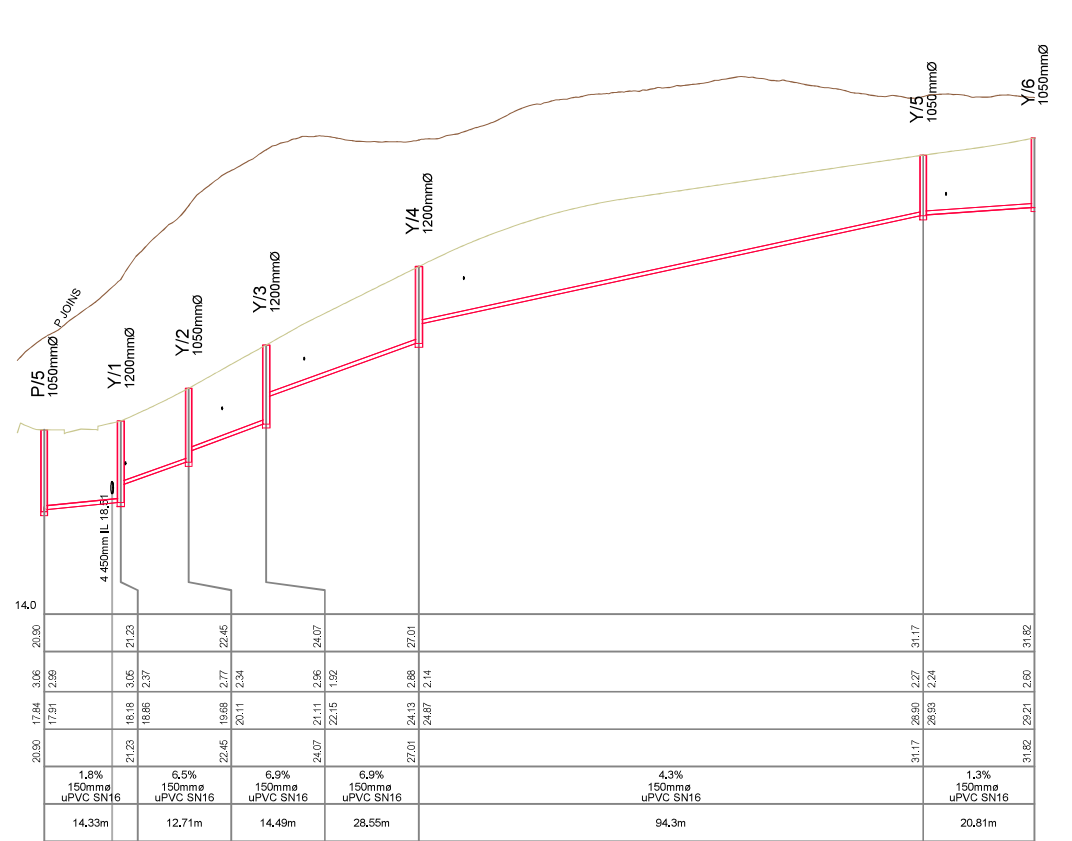
D

2 01:10:46 2025

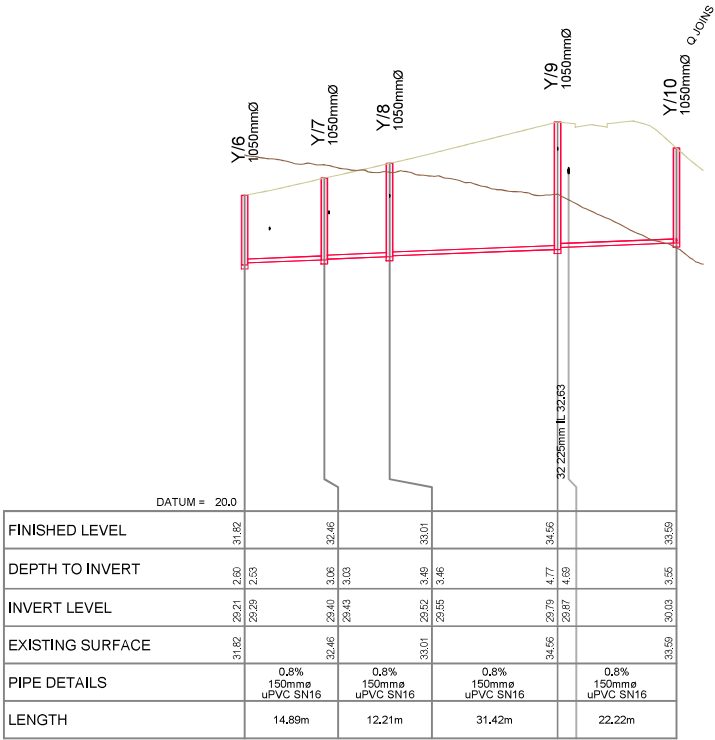
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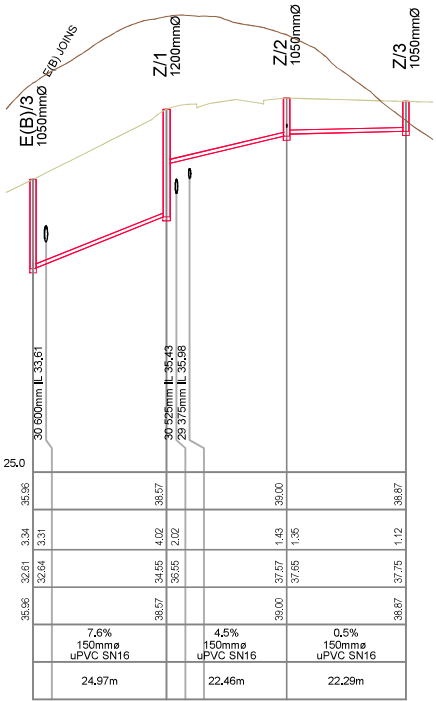
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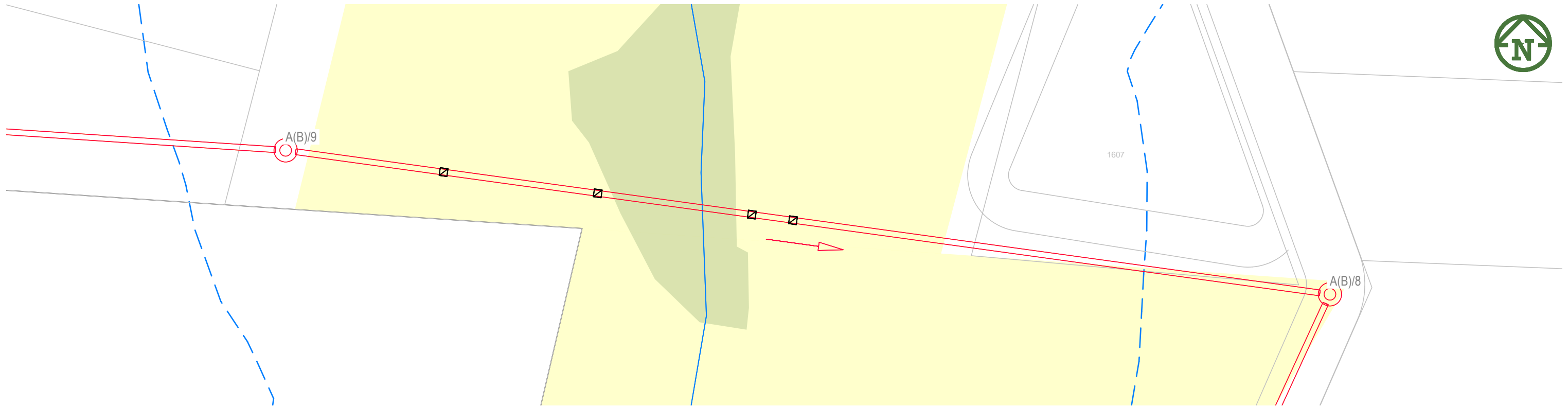
WW LINE Y



WW LINE Y



WW LINE Z

WW LINE A

D

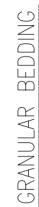
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- 
- Watercare**

TYPICAL TRENCH REINSTATEMENT DETAILS FOR WASTEWATER

| | |
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| SCALE: | N.T.S. |
| ISSUE DATE: | 06-03-2017 |
| DWG No. | 2010070.001C |
| REFERENCE No. | WW 2 |



- | DIMENSION TABLE | | |
|-----------------|-------|-------|
| | D≤250 | D=300 |
| A | 0.5D | 150 |
| B | 100 | 150 |
| C | 50 | 50 |
| D | 150 | 150 |
| E* | 25 | 25 |
| E** | 25 | 25 |

 $E^* = E$ for concrete surround
 $E^{**} = E$ for concrete bedding

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WW 3

WW 3

WW 3

| MANHOLE RISER DIAMETERS | | | | |
|-------------------------|-----------------------------|------|------|--|
| MAX. PIPE DIA. | 1 | 2* | 3** | |
| ≤250 | 1050 | 1050 | 1050 | |
| 300 | 1500 | 1500 | 1500 | |
| >300 | Refer to transmission dwgs. | | | |

* Based on Max. 120 Deg deflection through manhole.

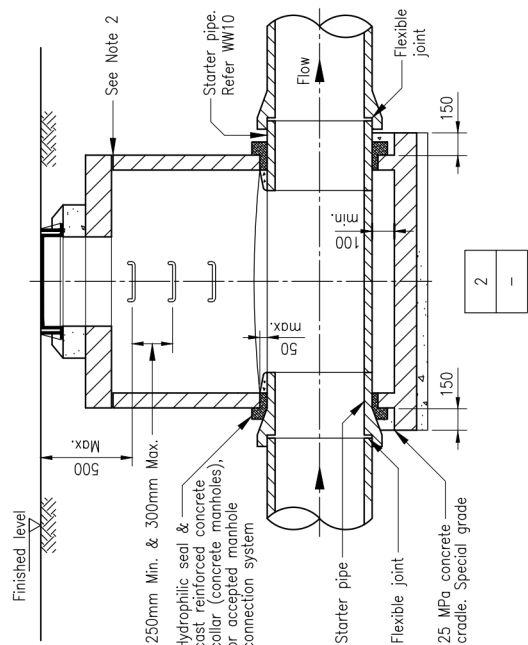
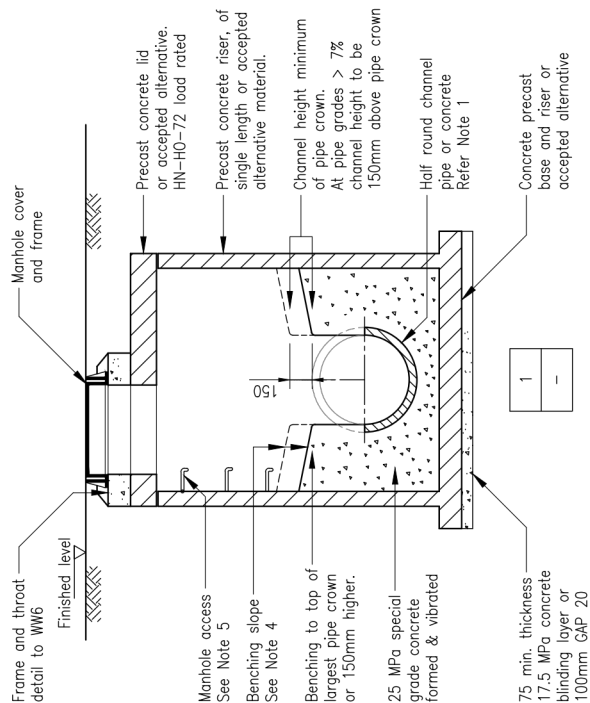
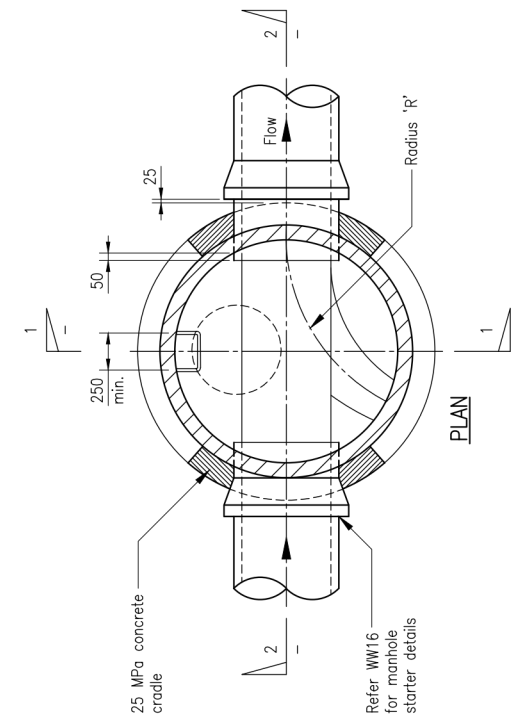
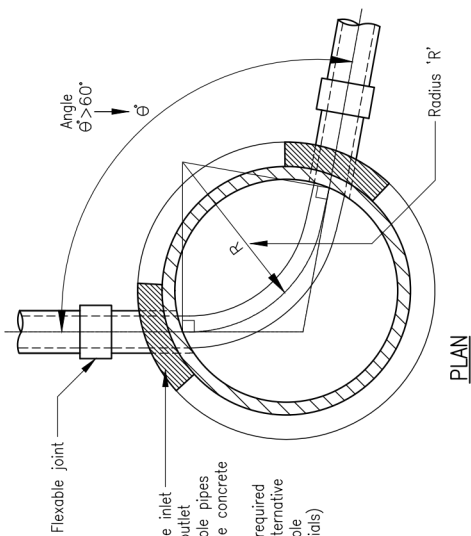
** To be determined with due regard for future potential connections.

*** Based on Min. 60 Deg between pipes & ≤ 180 Deg between pipe 1 & pipe 3

[Outside these criteria requires specific design]

NOTES:

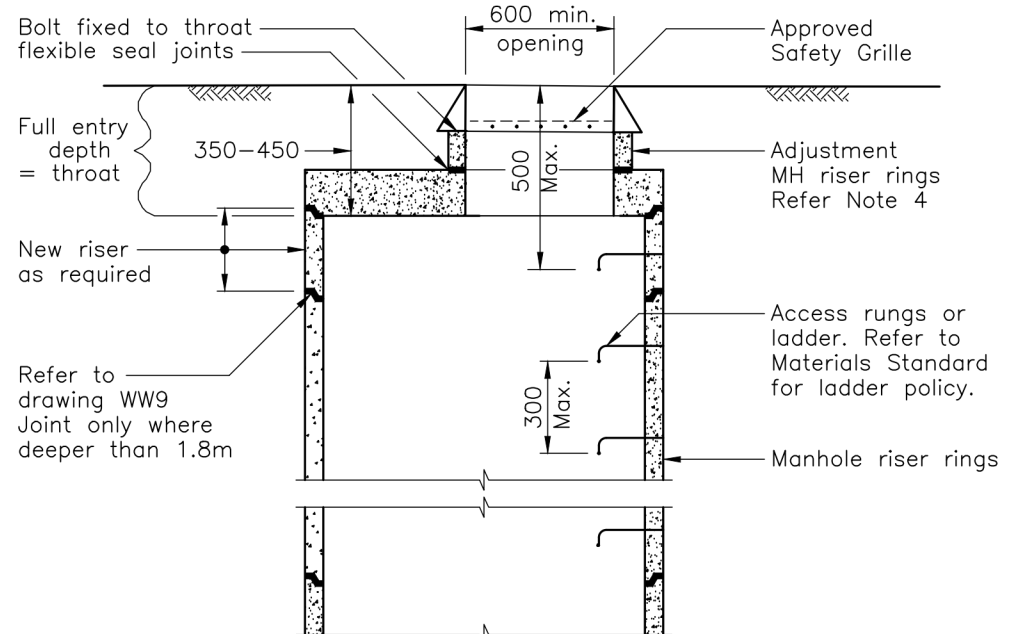
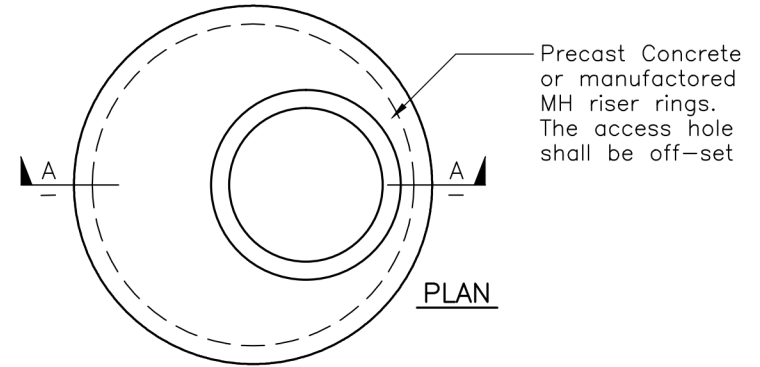
1. Half round channels shall be pre-formed from a corrosion, pre-inhibitive material.
2. Joint seals shall be an acceptable flexible seal. The joint shall be closed with an epoxy mortar (if concrete) & externally wrapped with an acceptable wrapping system. Refer WW6 for manhole throat and cover details.
3. Concrete benching shall have a minimum slope of 1 in 12, proprietary benching products (such as Polyethylene) shall not be less than 1 in 20. Refer to Watercare material supply standard.
4. Refer to the material supply standard for step-rung and ladder policy.
5. For manholes deeper than 1.8m Refer to WW9
6. Abbreviations :
Min. = Minimum
I.D. = Internal diameter
'R' = Min. Radius (3 x I.D.).



MANHOLE GENERAL DETAILS AND LAYOUT FOR MANHOLES UP TO 1.8m DEEP



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TYPICAL SECTION A-A THROUGH MANHOLE

NOTES:

1. Lid supplied to HN-HO-72 loading and compliance certified.
2. When the throat depth is greater than 450mm, a new manhole riser is required with a new adjustment ring.
3. Refer drawing WW9 for manholes deeper than 1.8m
4. Refer drawing WW7 for sloping ground.
5. Refer drawing WW5 for manhole details.
6. Approved Safety Grille below access manhole cover.
7. Manhole covers in the road shall be constructed so that the cover hinge is facing the oncoming traffic. (Refer Fig 1)
8. For all other covers the orientation should be so that the cover hinge is at 90 degrees from the ladder, Either side. (Refer Fig 2)



TYPICAL MANHOLE THROAT AND COVER DETAILS

| | |
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CLIENT:

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PROJECT:

DELMORE
53A, 53B & 55 RUSSELL ROAD
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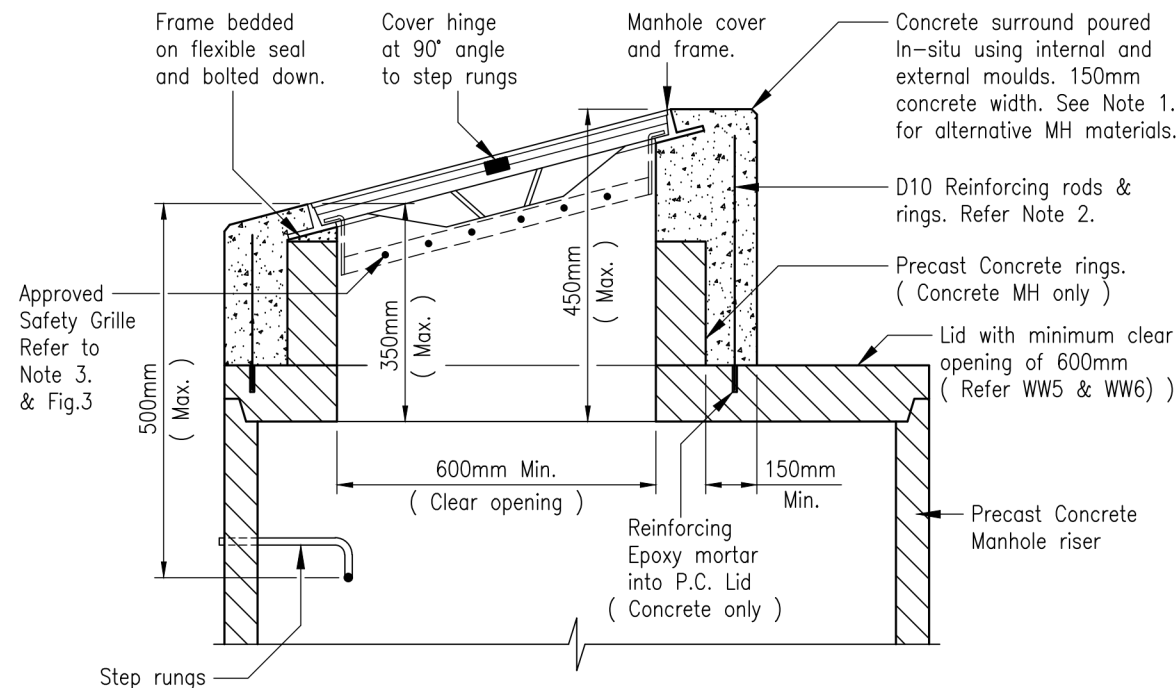
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Fig.3



ANGLED MANHOLE ACCESS

NOTES :

1. MH material other than concrete cut to suit on-site.
2. D10 vertical reinf. rods & horizontal rings to be spaced at 300mm max. crs.
3. Approved Safety Grille below access manhole cover.
4. Manhole covers in road shall be constructed so that the cover hinge is facing the oncoming traffic. (Refer Fig.1)
5. For all other covers the orientation shall be so that the cover hinge is at 90 degrees from the ladder, either side. (Refer Fig.2)
6. See Fig.3 for safety grilles. Type and position must be considered for angled installation.

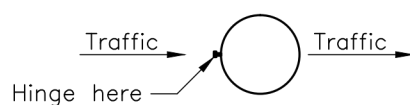


Fig.1

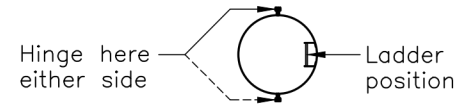


Fig.2

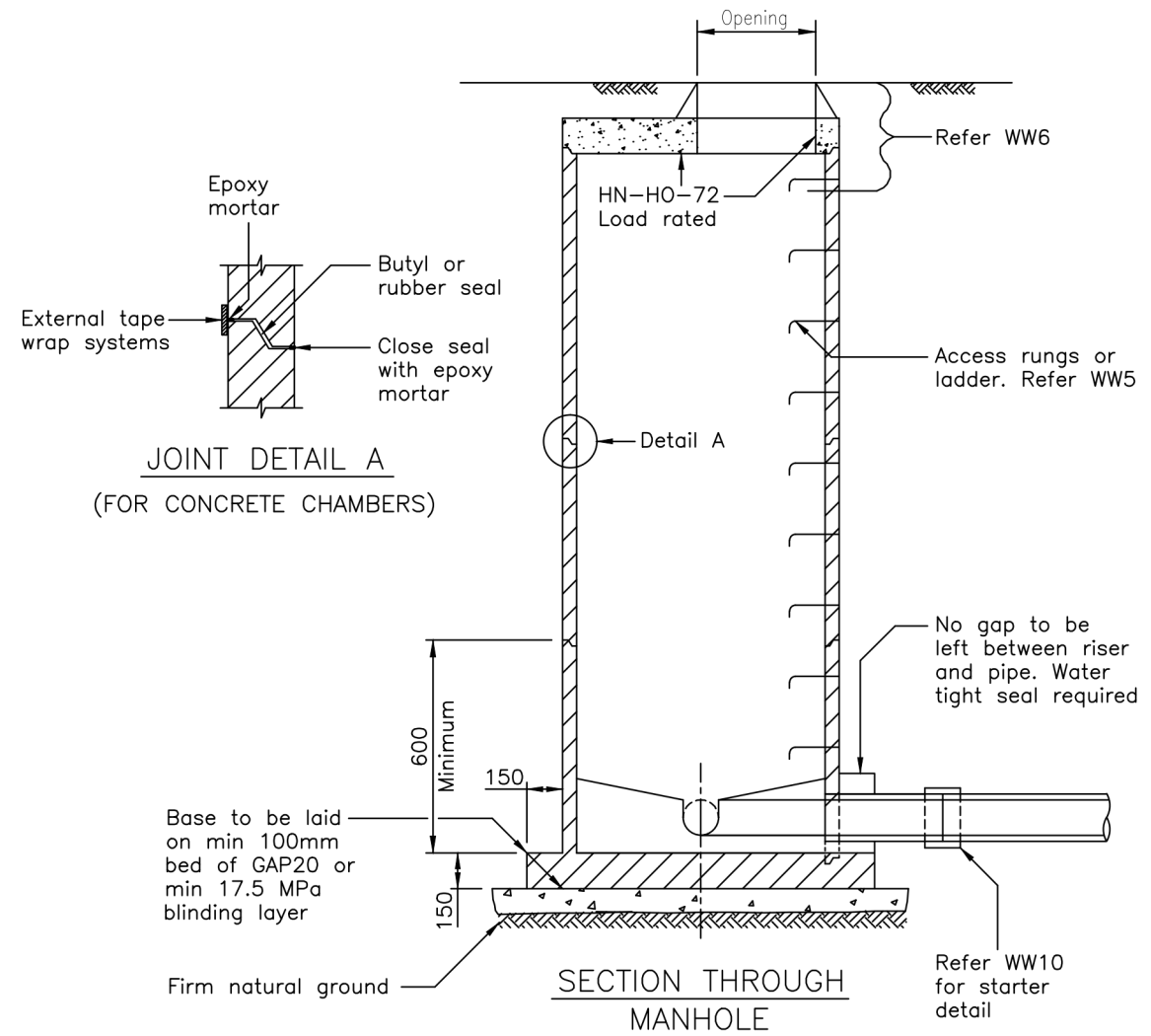
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ANGLED MANHOLE ACCESS DETAILS

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Notes:

1. Refer to WW5 for general details.
2. Channel through manhole to be lined.
3. All manhole openings must be cut.
4. For droppers refer to WW13
5. The manhole diameter shall be increased to minimum internal 1200mm for all manholes greater than 3.0 metres deep.
6. For manholes > 6.0 meters deep the minimum internal diameter shall be 1500mm.
7. Refer WW6 for manhole throat and cover details.
8. Manholes greater than 6m deep must be installed with landing platforms. Refer drawing in (Transmission drawing set)

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MANHOLES > 1.8m DEEP

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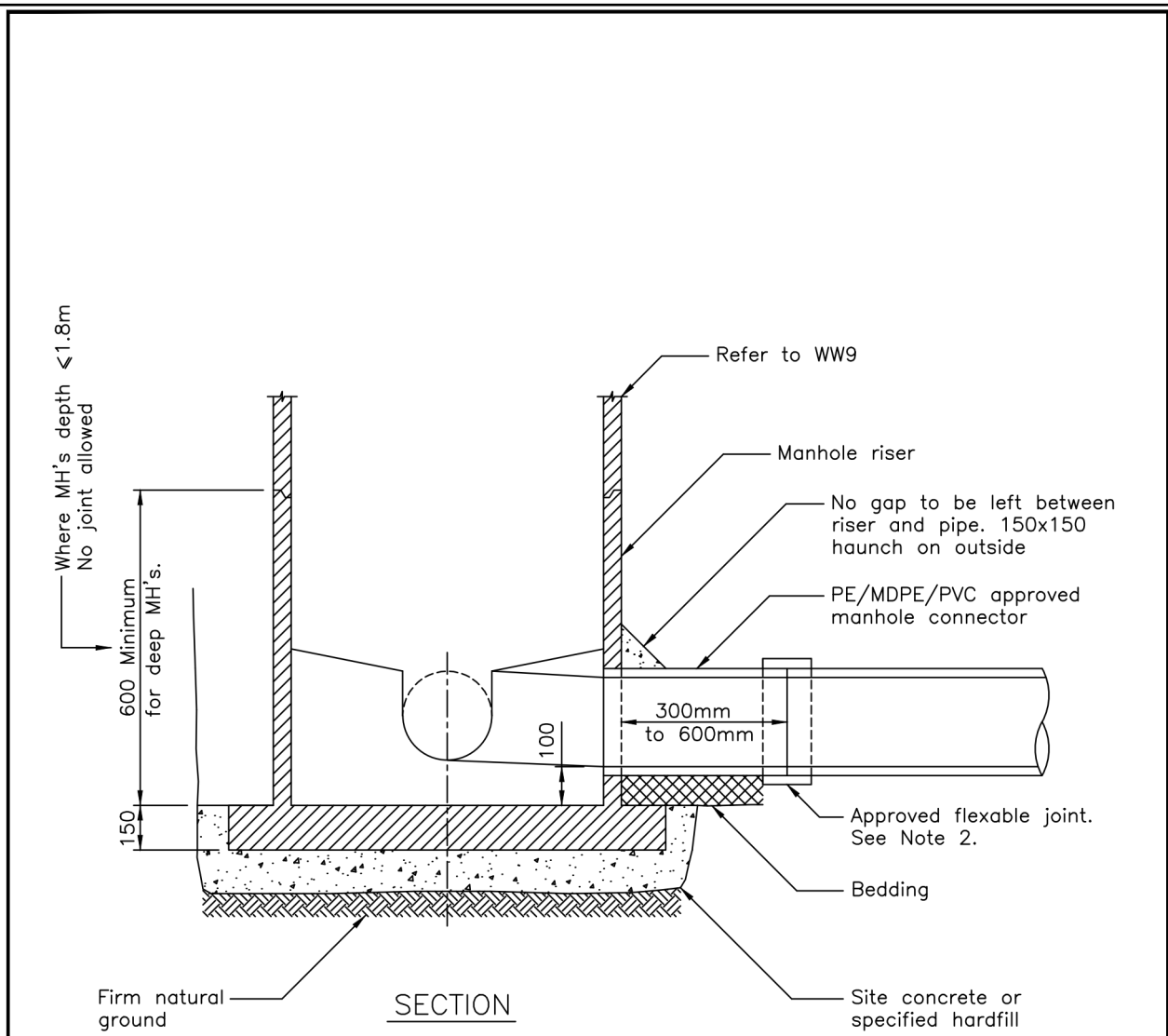
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SHEET 3




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- Notes:
1. This drawing shall be read with WW5.
 2. For PE pipe connections to a concrete manhole refer to WW11 and WW12 for acceptable solutions.
 3. Detail may differ for accepted proprietary manhole systems other than concrete.

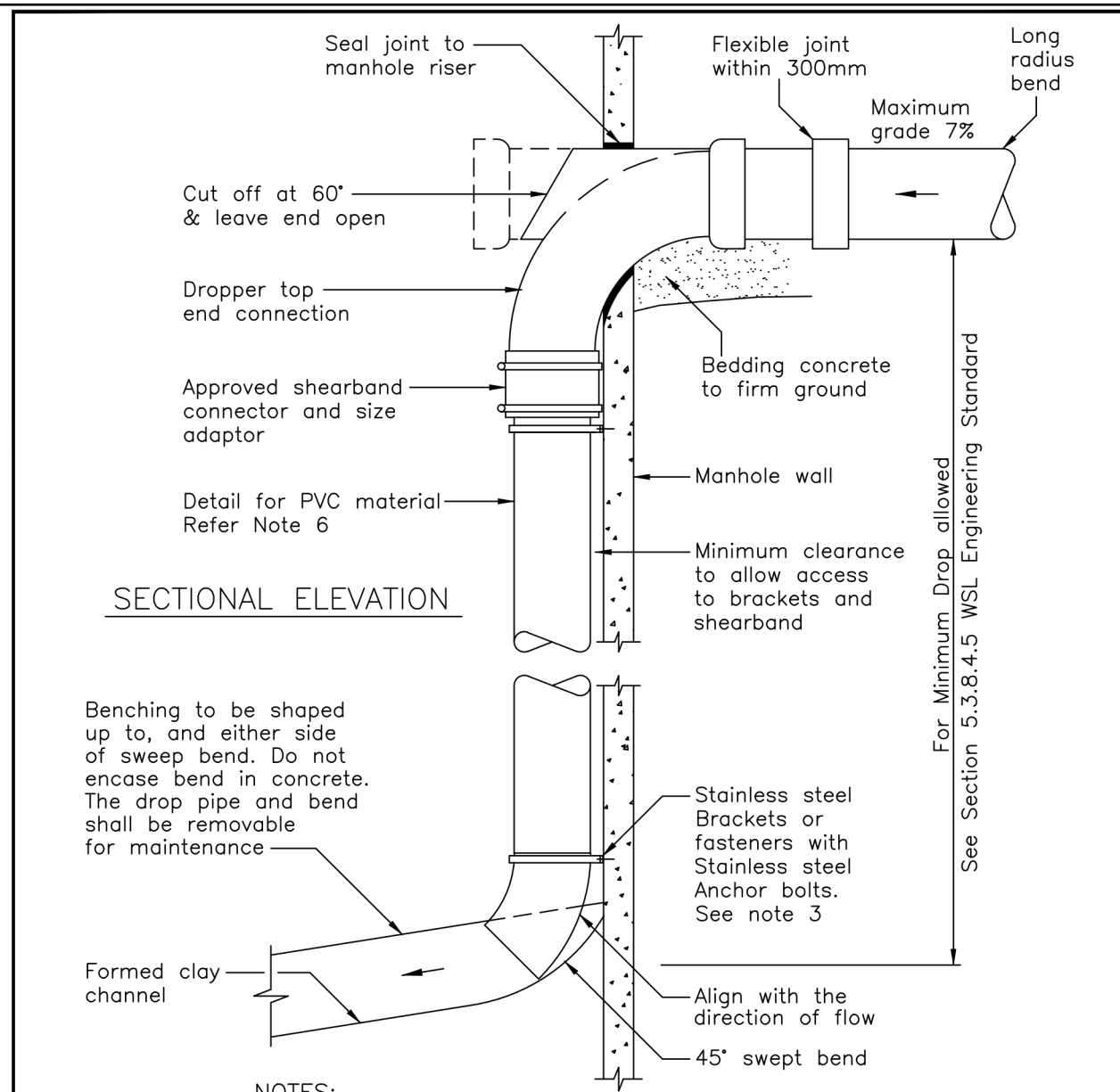


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MANHOLE CONNECTION
& STARTER DETAIL

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- NOTES:
1. Specific approval is required from Watercare for all internal drop connections to existing manholes. Considerations include space available in the existing manhole and number of existing internal drop connections.
 2. Internal drop shall be clear of Manhole rungs/ladders.
 3. 100Ø to 300Ø PVC drop pipe held in place by Stainless steel brackets or fasteners with M10 Stainless steel anchor bolts every 600 mm.
 4. Specific design is required where the incoming grade exceeds 7%, high velocity or where deep manholes make plunge-droppers unsuitable.
 5. The minium clear diameter in the manhole shall be 1m. Vertical droppers are not allowed in manholes under 1200mm diameter.
 6. This detail is suitable for GRP. For PE, joints shall be butt-welded. The PE top end connections shall be fabricated to fit over the incoming pipe with an O-ring seal.

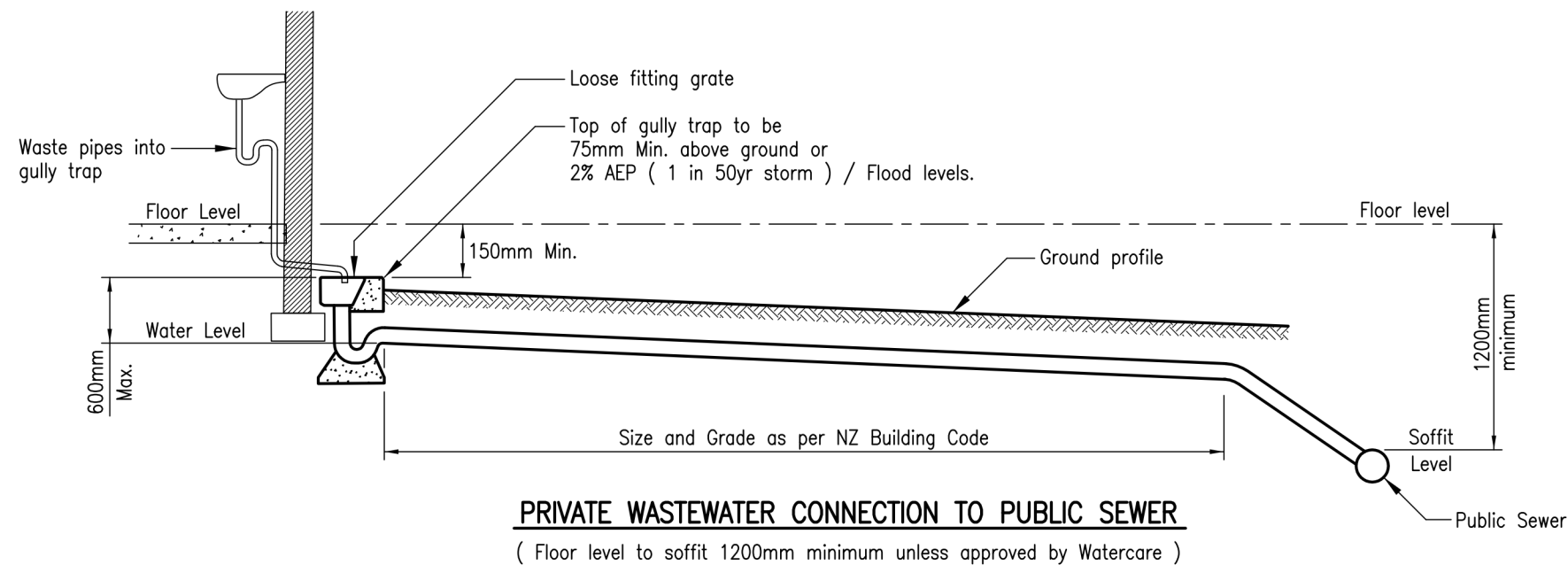


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INTERNAL MANHOLE
PLUNGE-DROP PIPE

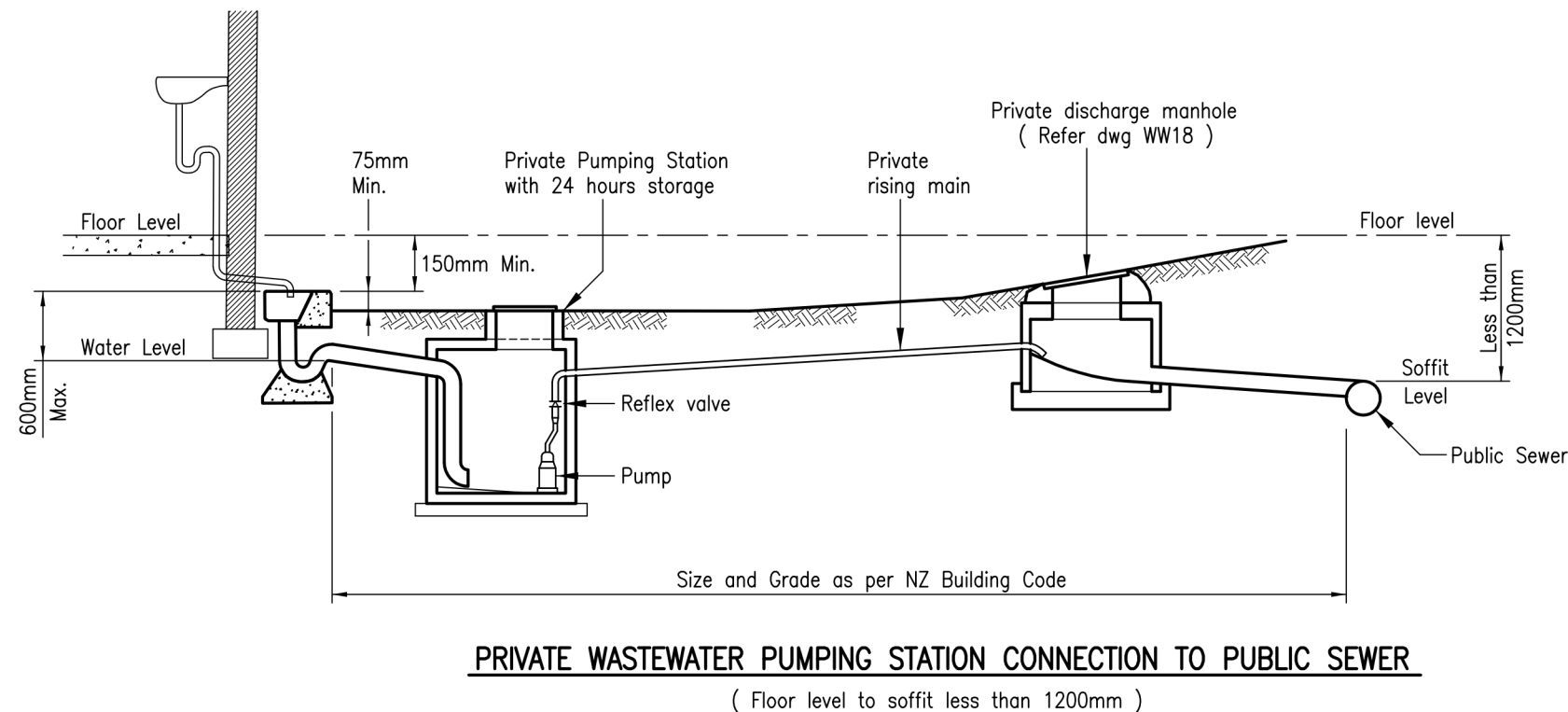
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NOTE:

EXAMPLE OF HOUSE SERVICE CONNECTION TO A PUBLIC SEWER

1. Minimum requirements are satisfied when the floor level is at least 1200mm above the soffit of the receiving sewer.
2. Where the receiving sewer is less than 1200mm a private pumping station and discharge manhole shall be installed.
3. Ground around gully trap shall be at least 75mm below the gully trap or 2% of the AEP (Annual exceedance probability) – Rain fall flood levels.
4. Building floor shall be at least 150mm above the gully trap. Gully traps shall not be placed in over land flow paths.



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PRIVATE CONNECTIONS MINIMUM FLOOR LEVEL TO SOFFIT OF WASTEWATER

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| REFERENCE No. | WW 17 |

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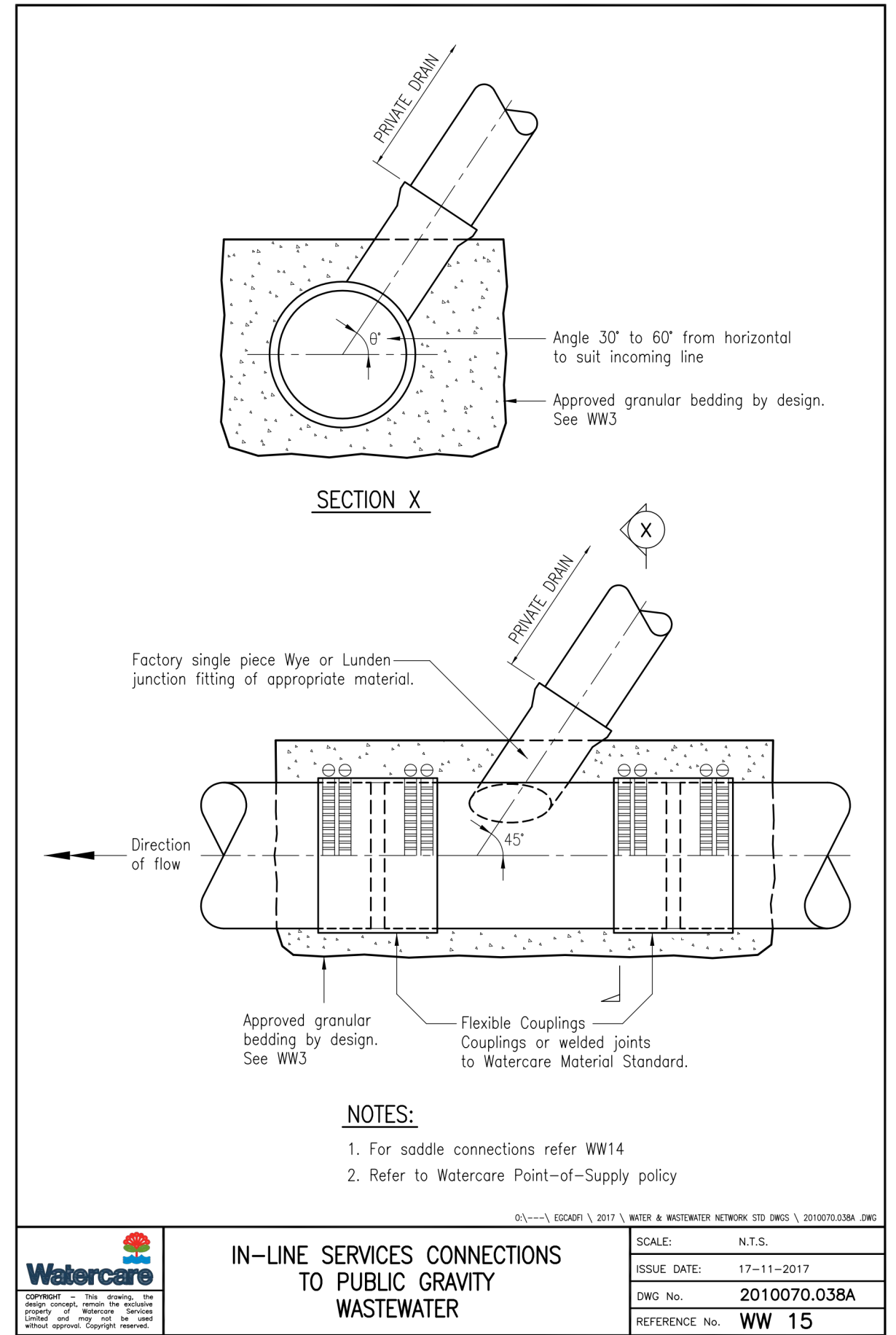
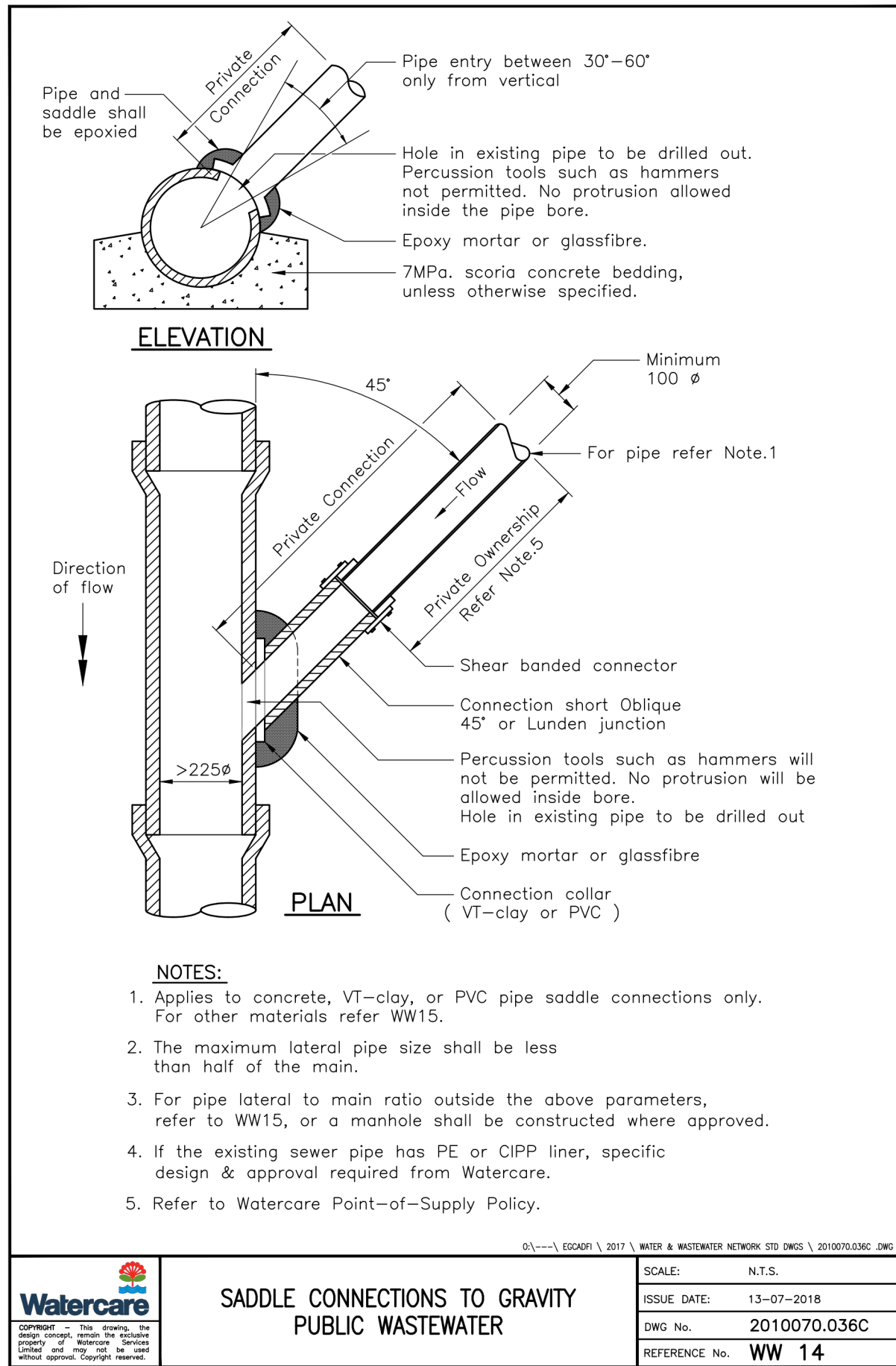


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SHEET 5



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