

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

**WARNING
BEWARE OF SERVICES**

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

- LEGEND**
- 26.0 --- ULTIMATE SURFACE CONTOURS
 - TOP OF BATTER
 - TOE OF BATTER / CHANGE IN GRADE
 - UPRIGHT KERB AND GUTTER
 - LAYBACK KERB AND GUTTER
 - 18m HIGH COLOURBOND FENCE
 - 18m HIGH COLOURBOND FENCE WITH 15m INFILL
 - EARTHWORKS - CUT
 - EARTHWORKS - FILL
 - + = AMOUNT OF FILL
 - = AMOUNT OF CUT
 - FSL = FINISHED SURFACE LEVEL
 - EXISTING SURFACE LEVEL. NO WORKS REQUIRED

AS CONSTRUCTED

| No. | Amendments | Drawn | Design | Design Chk | Appd | Date |
|-----|-------------------------|-------|--------|------------|------|----------|
| 2 | AS CONSTRUCTED | JT | LW | WR | MKB | 25/11/22 |
| 1 | MINOR AMENDMENTS | MC | LW | WR | MKB | 18/11/22 |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/07/22 |

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021

LAND DEVELOPMENT CORPORATION

urbex

Registered Engineer
Date _____ Register _____

ENGINEERING CERTIFICATION

Empower

ENGINEERS & PROJECT MANAGERS

ABN 23 010 743 692

Client **URBEX AND LAND DEVELOPMENT CORP (JV)**

Project **ZUCCOLI PHASE 3.7**

Title **EARTHWORKS MANAGEMENT PLAN**

Datum **AHD PSM RL**

Scale **(MGA) COORD**

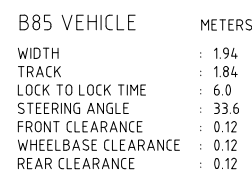
AS CONSTRUCTED

Project No. **B00202-CE001**

Drawing No. **2**

Rev **2**

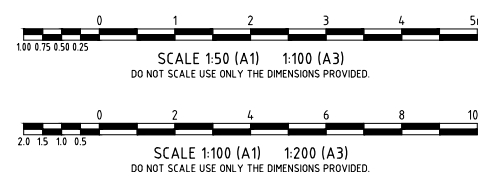
SIGNED *Brendan* 5/12/2022



THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.



SIGNED Brendan Am DATE 5/12/2022



LAND DEVELOPMENT CORPORATION

urbex

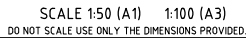
Empower
ENGINEERS &
PROJECT MANAGERS
APN 23 010 743 692

| | |
|----------------|--|
| <i>Client</i> | URBEX AND LAND DEVELOPMENT CORP (JV) |
| <i>Project</i> | ZUCCOLI PHASE 3.7 |
| <i>Title</i> | EARTHWORKS MANAGEMENT PLAN SECTIONS AND DETAILS |

| | |
|---|--------------------------------|
| <i>Datum</i> AHD PSM RL (MGA) COORD | |
| AS CONSTRUCTED | |
| <i>Project No.</i> B00202-CE002 | <i>Drawing No.</i> 1 |

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



Registered Engineer

| | |
|----------------------------------|-----------------|
| <i>Date</i> | <i>Register</i> |
| ENGINEERING CERTIFICATION | |

ject Managers © COPYRIGHT 2021



| | |
|--------------|--|
| <i>Title</i> | FOLLINGTON STREET LONGITUDINAL SECTIONS |
|--------------|--|

SIGNED.....*Brendan*.....DATE.....*5/12/2022*.....

| | |
|-------------|--|
| Datum | |
| AHD | |
| PSM . | |
| RL . | |
| (MGA) COORD | |

| | | |
|---------------------|--------------------|------------|
| <i>Project No.</i> | <i>Drawing No.</i> | <i>Rev</i> |
| B00202-CR002 | | 1 |

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

SIGNED DATE

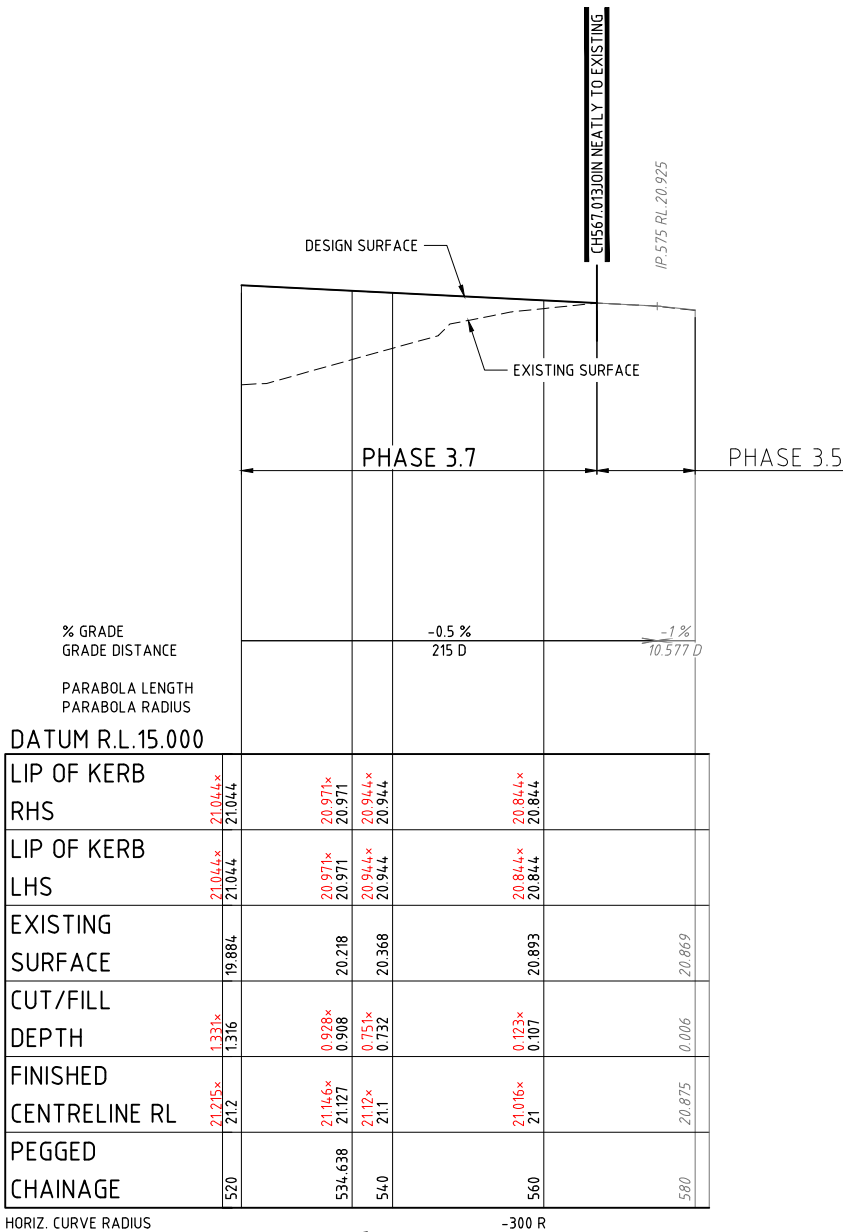
GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE
DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL
RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE
DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS
VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED
APPROVAL.

WARNING

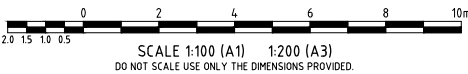
BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES
ARE APPROXIMATE ONLY AND THEIR EXACT
POSITION SHOULD BE PROVEN ON SITE BY
CONTRACTOR. NO GUARANTEE IS GIVEN
THAT ALL EXISTING SERVICES ARE SHOWN.



FOLLINGTON STREET LONGITUDINAL SECTION

SCALE 1:500(HORIZ.) 1:50(VERT.)



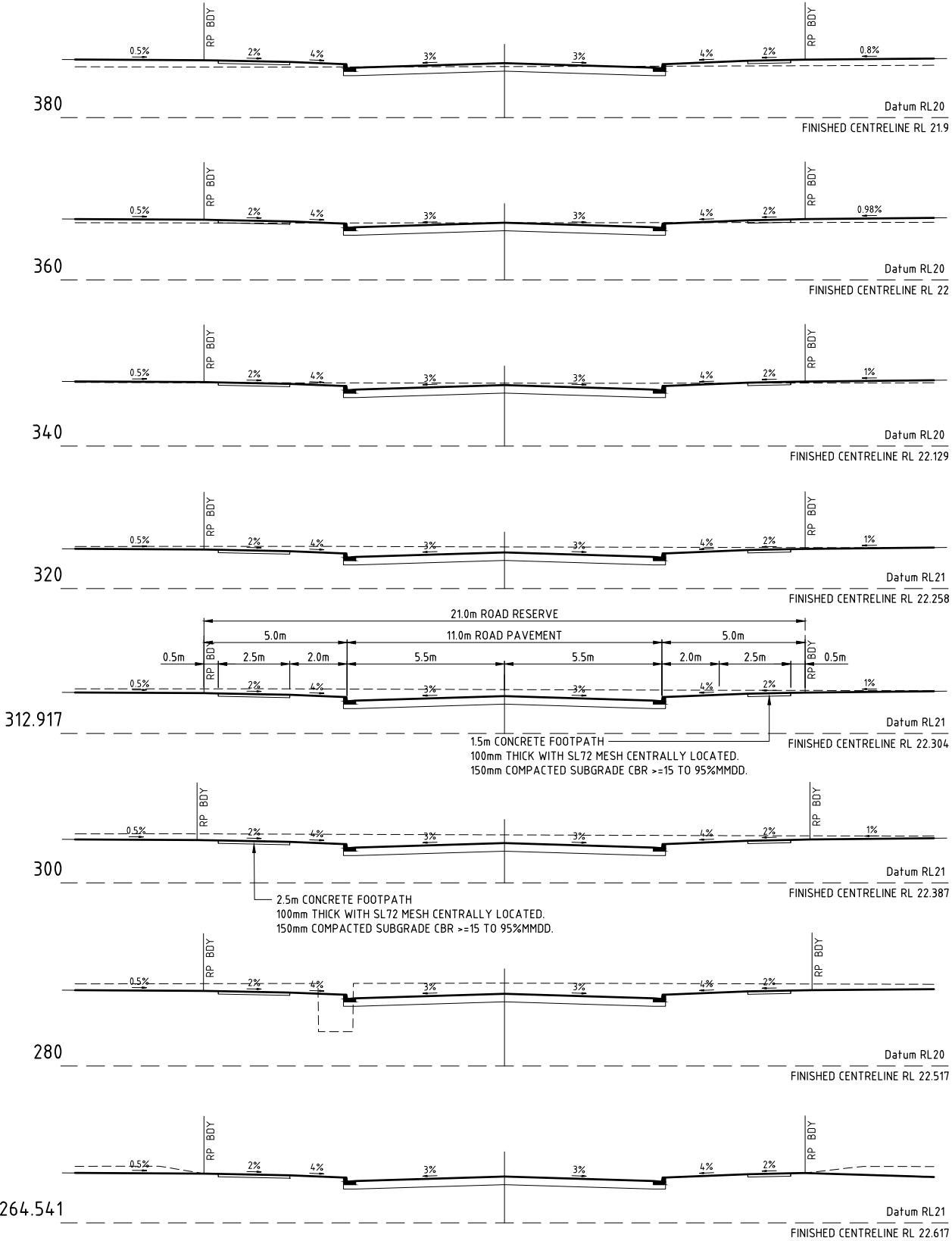
AS CONSTRUCTED

Registered Engineer
Date Register
ENGINEERING CERTIFICATION



FOLLINGTON STREET CROSS SECTION

SCALE 1:100



AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED *Brendan Ham* 5/12/2022
DATE

User: MARK CARILLO File Name: C:\Users\mark\Documents\BMD0202_1351\1\ CIVIL - DRGS\1\2 CURRENT\BMD0202-37-RD-X02

Plot Date: 25/11/2022 1:09:06 PM

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021

| | | | | | | |
|-----|-------------------------|-------|--------|------------|------|----------|
| 1 | AS CONSTRUCTED | JT | LW | WR | MKB | 25/11/22 |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/07/22 |
| No. | Amendments | Drawn | Design | Design Chk | Appd | Date |

Project No. Drawing No. Rev
B00202-CR003 1

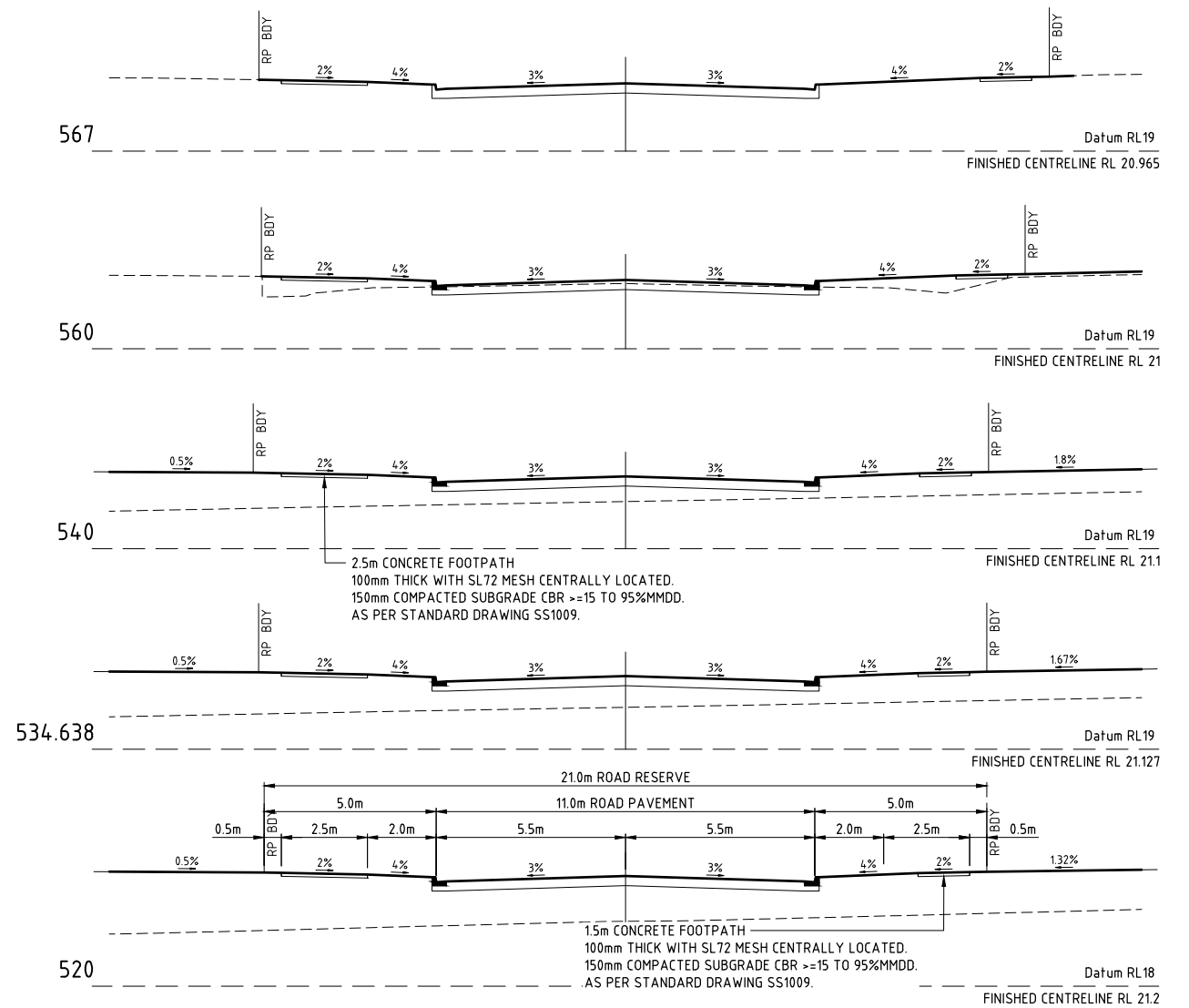
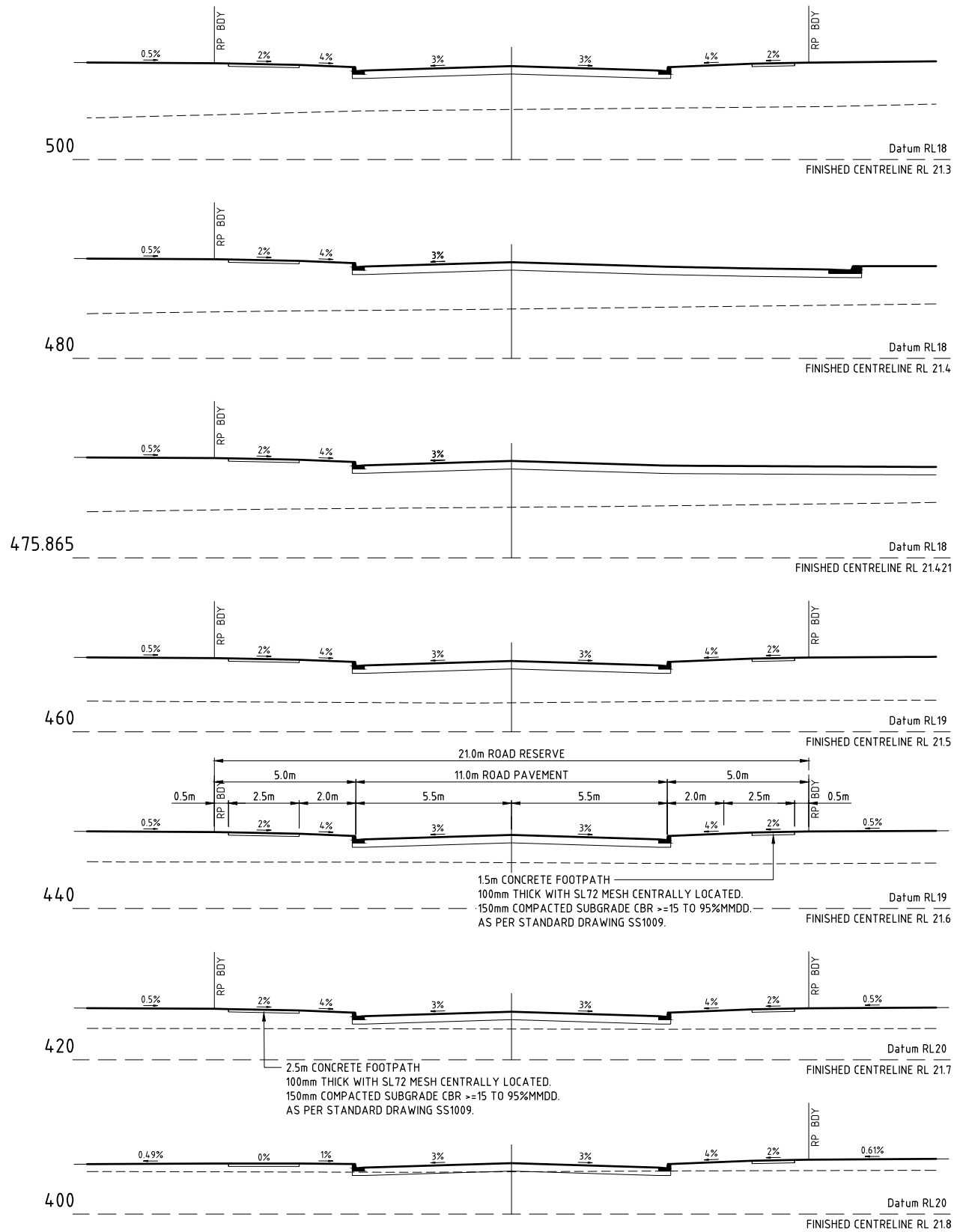
AS CONSTRUCTED

(MGA) COORD

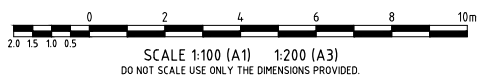
Project No. Drawing No. Rev

WARNING
BEWARE OF SERVICES
THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE
SIGNED _____ DATE _____
GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON
THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.



FOLLINGTON STREET CROSS SECTION
SCALE 1:100



AS CONSTRUCTED



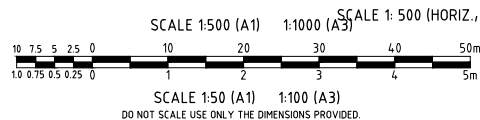
| | | | | |
|---------|---|--------------|--------------------------|-----|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | | Datum AHD | |
| Project | ZUCCOLI PHASE 3.7 | | PSM RL (MGA) COORD | |
| Title | FOLLINGTON STREET CROSS SECTIONS SHEET 2 OF 2 | | AS CONSTRUCTED | |
| | | Project No. | Drawing No. | Rev |
| | | B00202-CR004 | | 1 |

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



SCALE 1:500(HORIZ.) 1:50(VERT.)



| | |
|---------------------------|----------|
| Registered Engineer | |
| Date | Register |
| ENGINEERING CERTIFICATION | |



LAND DEVELOPMENT
CORPORATION

urbex

Empower 
**ENGINEERS &
PROJECT MANAGERS**



AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED Brendan Lane DATE 12/2022

| | |
|----------------|---|
| <i>Client</i> | URBEX AND LAND DEVELOPMENT CORP (JV) |
| <i>Project</i> | ZUCCOLI PHASE 3.7 |
| <i>Title</i> | DRAGONFLY CRESCENT CROSS AND LONGITUDINAL SECTIONS |

| | |
|--|-----------------|
| Datum AHD PSM RL (MGA) COORD | |
| AS CONSTRUCTED | |
| Project No. Drawing No. B00202-CR005 | Rev 1 |

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



SCALE 1:500 (A1) 1:1000 (A3)

10 7.5 5 2.5 0 10 20 30 40 50m
1.0 0.75 0.5 0.25 0 1 2 3 4 5m

SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.



SIGNED: Brendan Ham DATE: 5/12/2022

| | | | | | | | | | |
|--|-------------------------|-------|--------|------------|------|----------|--|--|---------------------------|
| DO NOT SCALE OR USE ONLY THE DIMENSIONS PROVIDED | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | Registered Engineer |
| 1 | AS CONSTRUCTED | JT | LW | WR | MKB | 25/11/22 | | | Date Register |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/01/22 | | | ENGINEERING CERTIFICATION |
| No. | Amendments | Drawn | Design | Design Chk | Appd | Date | | | |

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers © COPYRIGHT 2021



| | | | |
|----------------|---|----------------------------|--------------------|
| <i>Client</i> | URBEX AND LAND DEVELOPMENT CORP (JV) | <i>Datum</i> AHD | |
| <i>Project</i> | ZUCCOLI PHASE 3.7 | PSM | |
| <i>Title</i> | FRAYNE COURT CROSS AND LONGITUDINAL SECTIONS | RL | |
| | | (MGA) COORD | |
| | | AS CONSTRUCTED | |
| | | <i>Project No.</i> | <i>Drawing No.</i> |
| | | B00202-CR006 | 1 |

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

| | |
|--------|------|
| SIGNED | DATE |
|--------|------|














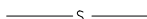


GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

NOTES:

1. KERB DETAILS AS PER DIPL STANDARD DRAWING CS-3300 OR B00202-CG005.
2. KERB TRANSITIONS TO BE AS PER DIPL STANDARD DRAWING CS-3300.
3. PEDESTRIAN PATHWAY TO BE AS PER NTG DRAWING SS1009.
4. KERB RAMPS TO BE AS PER NTG DRAWING SS1009.

LEGEND

- | | |
|---|---------------------------|
|  | FINISHED SURFACE CONTOURS |
|  | ROAD CONTROL LINE |
|   | MOUNTABLE KERB |
|   | UPRIGHT KERB AND GUTTER |
|   | LAYBACK KERB AND GUTTER |
|   | INVERT KERB |
|  | STORMWATER DRAINAGE |
|  | ELECTRICAL RETICULATION |
|  | SEWERAGE RETICULATION |
|  | WATER RETICULATION |
|  | WATER CONDUIT CROSSINGS |
|  | SWALE DRAIN |

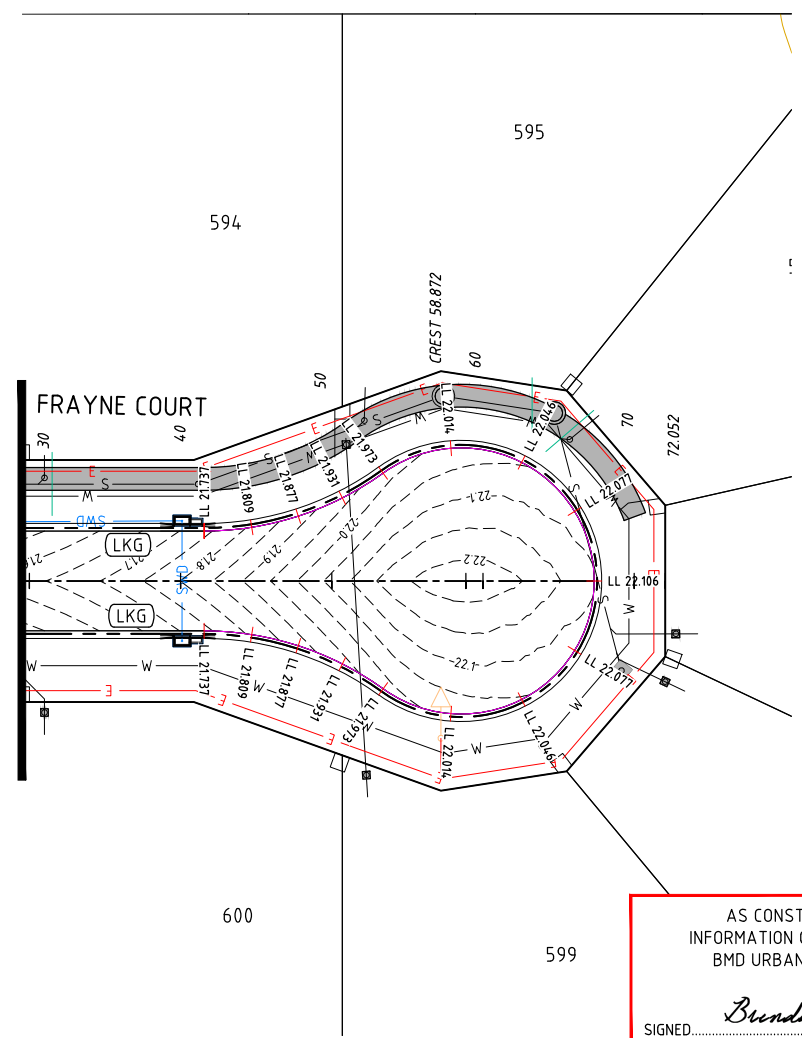
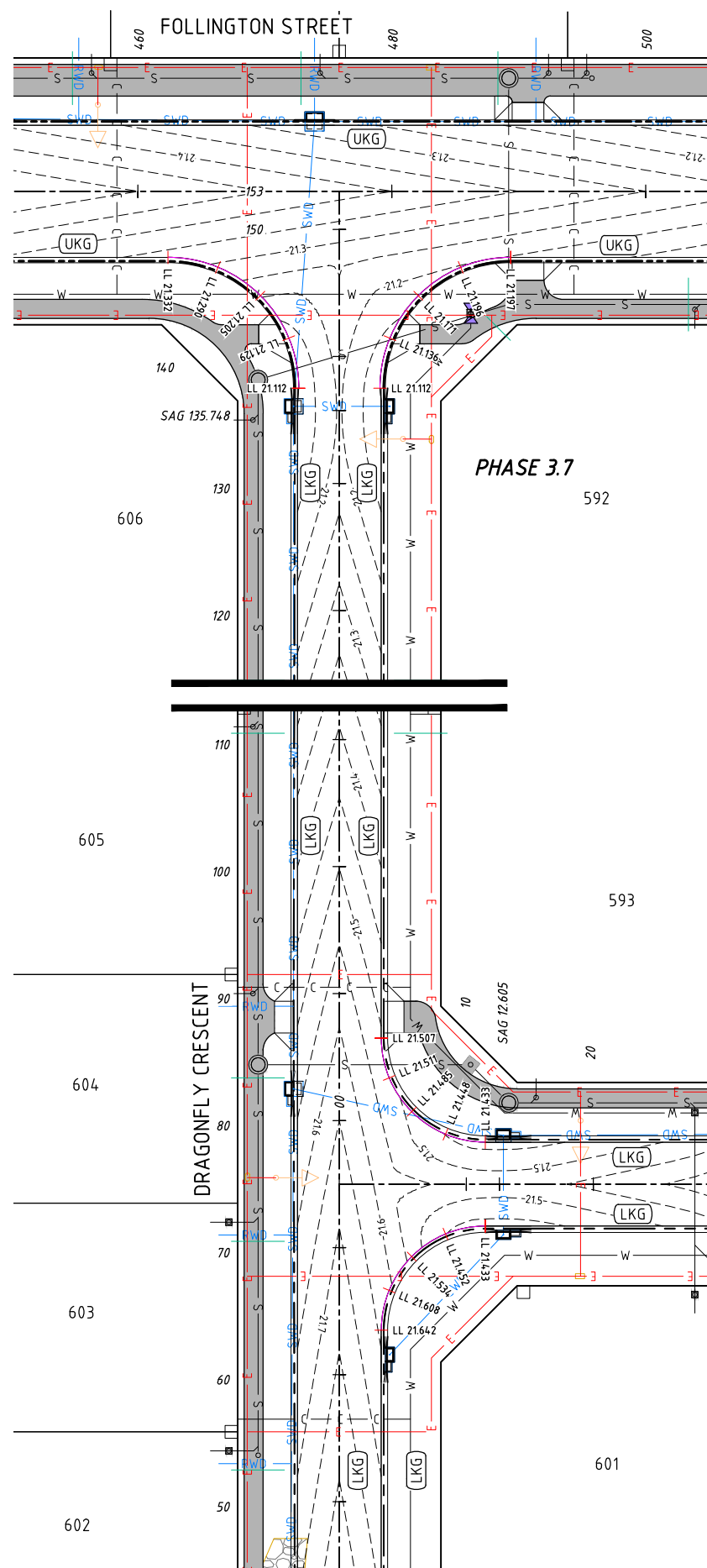
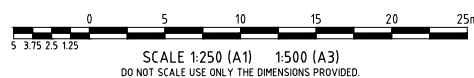
JOINT TYPES

- — S.C — — SAW CUT
— — C.J — — CONTRACTION JOINT
FOR DETAILS REFER DRAWING B00202-CG006

SURFACE TREATMENT

FOOTPATH BEHIND KERB TO NTG DRAWING SS1009 DETAILS 100mm
32MPa CONCRETE SL72 MESH PLACED CENTRAL. SUBGRADE TO BE
150mm THICK CBR 15 AND COMPACTED TO 95% MMDD MINIMUM.

ALL STEEL WORK IS TO BE INSPECTED BY THE SUPERINTENDENT
PRIOR TO ANY CONCRETE POURS.



AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED Brendan Ham DATE 5/12/2022

AS CONSTRUCTED

| | |
|---|----------------------------|
| | <i>Registered Engineer</i> |
| 2 | <i>Date Register</i> |
| 2 | ENGINEERING CERTIFICATION |



| | |
|--------|--------------------------------------|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) |
|--------|--------------------------------------|

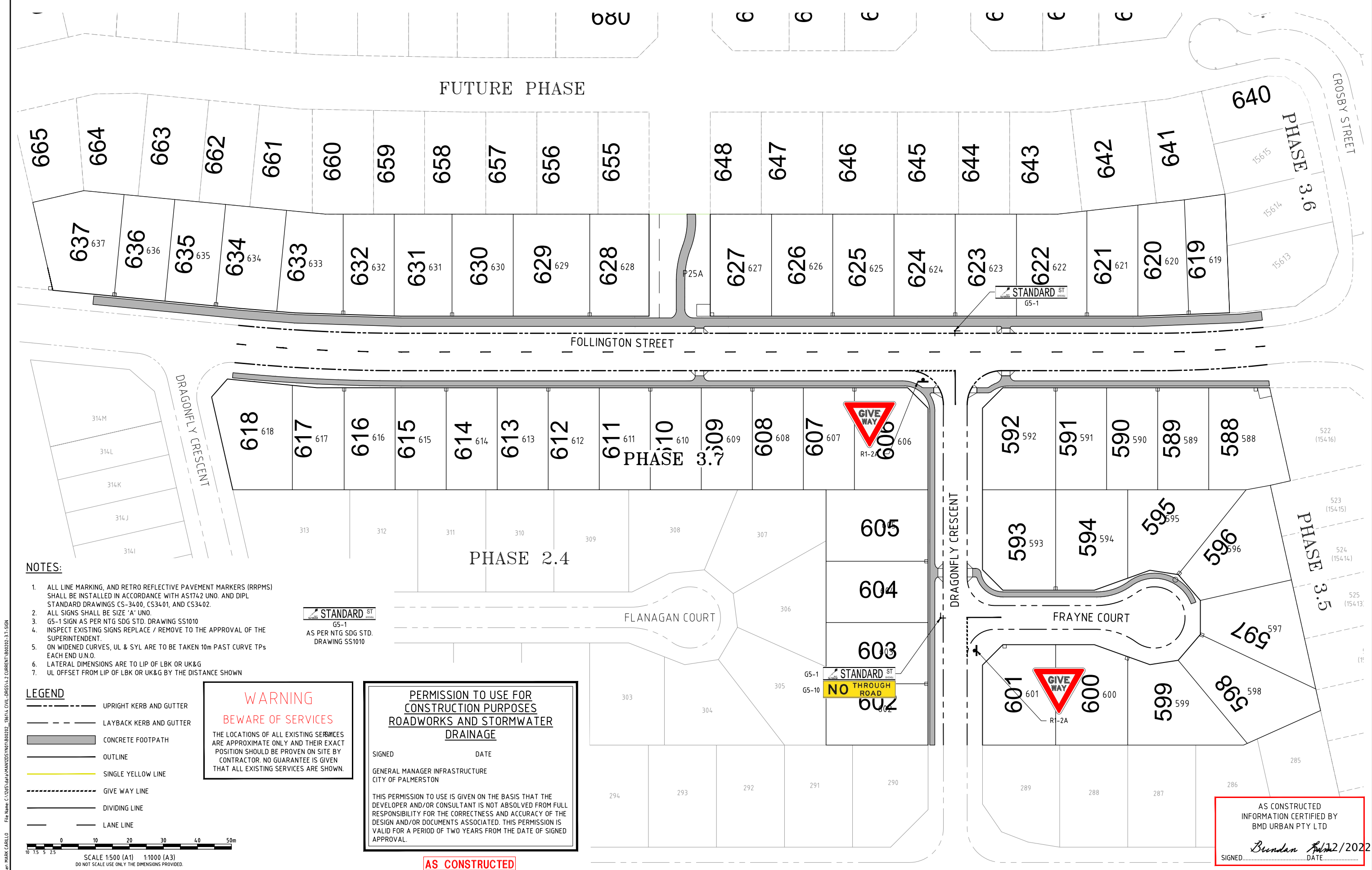
Project **ZUCCOLI PHASE 3.7**

| | |
|--------------|--------------------------|
| <i>Title</i> | INTERSECTION PLAN |
|--------------|--------------------------|

Datum
AHD
PSM .
RL .
(MGA) COORD

| |
|----------------|
| AS CONSTRUCTED |
|----------------|

| | | |
|---------------------|-------------|----------|
| Project No. | Drawing No. | Rev |
| B00202-CR007 | | 1 |



- NOTES:**
1. ALL LINE MARKING, AND RETRO REFLECTIVE PAVEMENT MARKERS (RRPMS) SHALL BE INSTALLED IN ACCORDANCE WITH AS1742 UNO. AND DIPL STANDARD DRAWINGS CS-34.00, CS34.01, AND CS34.02.
 2. ALL SIGNS SHALL BE SIZE 'A' UNO.
 3. G5-1 SIGN AS PER NTG SDG STD. DRAWING SS1010
 4. INSPECT EXISTING SIGNS REPLACE / REMOVE TO THE APPROVAL OF THE SUPERINTENDENT.
 5. ON WIDENED CURVES, UL & SYL ARE TO BE TAKEN 10m PAST CURVE TPs EACH END UNO.
 6. LATERAL DIMENSIONS ARE TO LIP OF LBK OR UK&G
 7. UL OFFSET FROM LIP OF LBK OR UK&G BY THE DISTANCE SHOWN

LEGEND

- UPRIGHT KERB AND GUTTER
- LAYBACK KERB AND GUTTER
- CONCRETE FOOTPATH
- OUTLINE
- SINGLE YELLOW LINE
- GIVE WAY LINE
- DIVIDING LINE
- LANE LINE

SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

WARNING
BEWARE OF SERVICES
THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

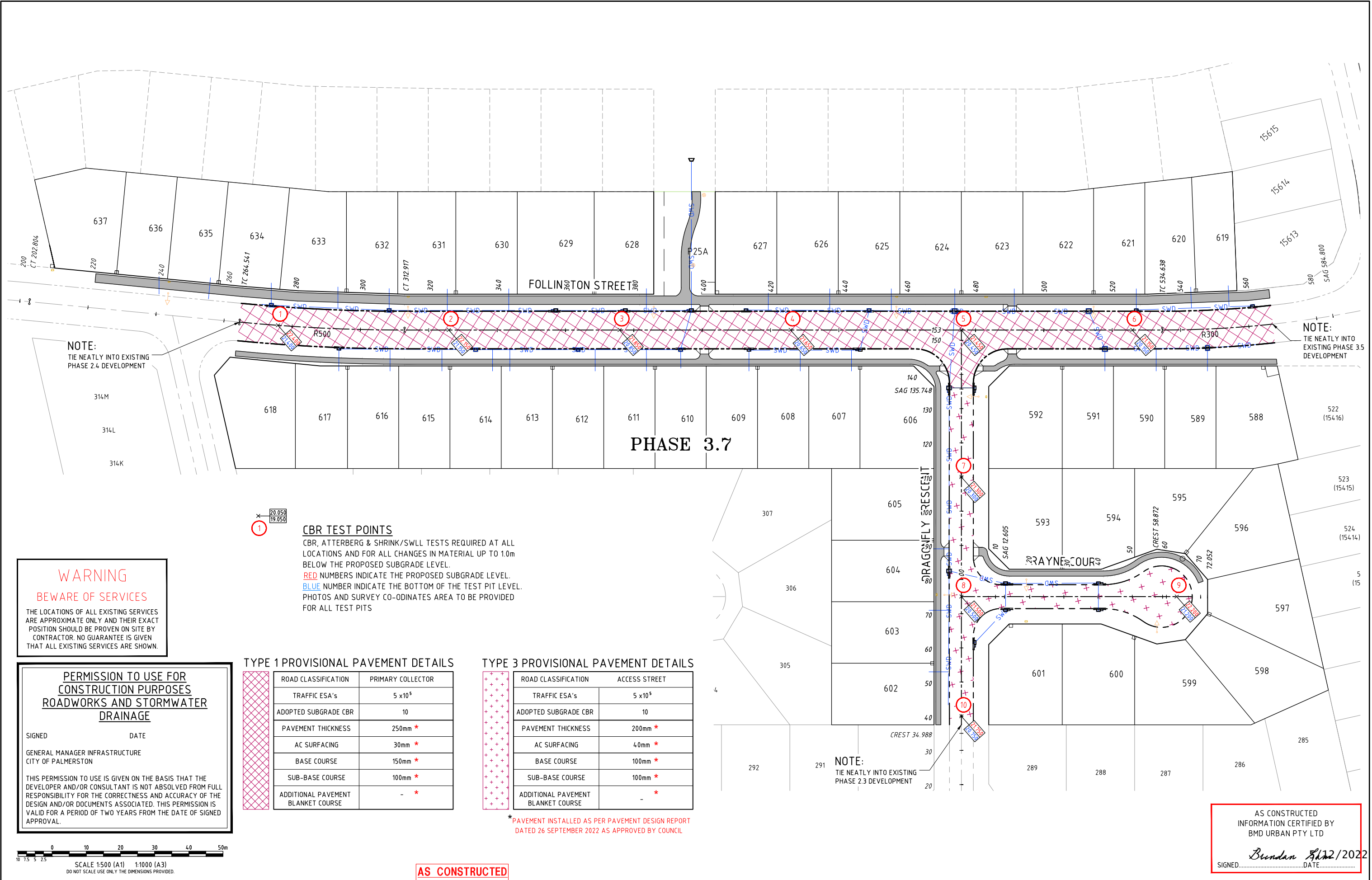
SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD
SIGNED *Brendan* DATE 12/2022

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|---------------------------|---|---|--|----------------------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | Registered Engineer | <div> LAND DEVELOPMENT CORPORATION</div> <div></div> | <div> ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692</div> | Client URBEX AND LAND DEVELOPMENT CORP (JV) | | Datum AHD PSM RL (MGA) COORD |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Date Register | | | Project ZUCCOLI PHASE 3.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | ENGINEERING CERTIFICATION | | | Title SIGNS AND LINEMARKING PLAN | | AS CONSTRUCTED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Project No. B00202-CR008 | Drawing No. 1 | Rev | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



- NOTES:
- SIDE ENTRY PITS TO BE CONSTRUCTED IN ACCORDANCE WITH NTG SDG DRAWINGS SS3001-SS3007.
 - APRONS AND HEADWALLS TO BE CONSTRUCTED IN ACCORDANCE WITH DIPL STANDARD DRAWINGS CS-3102 - CS-3108.

TEMPORARY HEADWALL AND DUMPER ROCK SCOUR PROTECTION TO BE REMOVED. NEW PIPE TO CONNECT NEATLY INTO EXISTING.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD
Brendan Luby 12/2022
SIGNED.....DATE.....

WARNING
BEWARE OF SERVICES
THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NOTE:
ROOFWATER CONNECTIONS INTO ALLOTMENTS AS PER DETAIL ON DRAWING B00202-CG006

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE
SIGNED.....DATE.....
GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON
THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

- LEGEND**
- FINISHED SURFACE CONTOURS
 - TOP OF BATTER
 - TOE OF BATTER / CHANGE IN GRADE
 - UPRIGHT KERB AND GUTTER
 - LAYBACK KERB AND GUTTER
 - EDGE OF SURFACING
 - OPEN CHANNEL
 - STORMWATER DRAINAGE (375mm DIA RCP UNLESS NOTED OTHERWISE)
 - REFER STORMWATER LONG SECTIONS B00202-CD003 TO B00202-CD008
 - KERB ADAPTER (SINGLE OR DOUBLE) WITH 100mm DIA ROOFWATER CONNECTION
 - 100mm DIA ROOFWATER CONNECTION DIRECTLY INTO CATCHPIT
 - ROOFWATER CONNECTION INTO ALLOTMENT REFER DETAIL ON B00202-CG006

0 10 20 30 40 50m
SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED



Client **URBEX AND LAND DEVELOPMENT CORP (JV)**
Project **ZUCCOLI PHASE 3.7**
Title **STORMWATER DRAINAGE LAYOUT PLAN**

Datum **AHD**
PSM **RL**
(MGA) COORD
AS CONSTRUCTED
Project No. **B00202-CD001**
Drawing No. **2**
Rev **2**

NOTE:-

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION .
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: Brendan Smith DATE: 5/12/2022

WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

PIPE SIZE (mm)

PIPE CLASS

PIPE GRADE (%)

PIPE GRADE (1 in)

FULL PIPE VELOCITY (m/s)

NORMAL DEPTH VELOCITY (m/s)

DATUM (m)

PIPE FLOW

(Cumecs)

PIPE CAPACITY

AT GRADE (Cumecs)

WATER LEVEL

IN STRUCTURE

HYDRAULIC GRADE

LEVEL

DEPTH TO

INVERT

INVERT LEVEL

OF DRAIN

DESIGN SURFACE

LEVEL

PIPE LENGTH

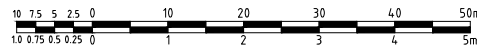
RUNNING CHAINAGE

EASTING

NORTHING

LINE

SCALE 1:500 (A1) 1:1000 (A3)



SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED

| | | | | | | |
|--|-------------------------|-------|--------|------------|------|----------|
| 1 | AS CONSTRUCTED | JT | LW | WR | MKB | 25/11/22 |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/07/22 |
| No. | Amendments | Drawn | Design | Design Chk | Appd | Date |
| This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021 | | | | | | |



| | | | | | |
|--------------|--|--------------|-------------|-------------|----------------|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | | | Datum | AHD |
| Project | ZUCCOLI PHASE 3.7 | | | PSM | RL |
| Title | STORMWATER DRAINAGE LONGITUDINAL SECTION | | | (MGA) COORD | AS CONSTRUCTED |
| SHEET 1 OF 6 | | Project No. | Drawing No. | Rev | |
| | | B00202-CD003 | | 1 | |

NOTE:-

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION .
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED *Bundarra* DATE 5/12/2022

WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

SIGNED DATE

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

PIPE SIZE (mm)

PIPE CLASS

PIPE GRADE (%)

PIPE GRADE (1 in)

FULL PIPE VELOCITY (m/s)

NORMAL DEPTH VELOCITY (m/s)

DATUM (m)

PIPE FLOW

(Cumecs)

PIPE CAPACITY

AT GRADE (Cumecs)

WATER LEVEL

IN STRUCTURE

HYDRAULIC GRADE

LEVEL

DEPTH TO

INVERT

INVERT LEVEL

OF DRAIN

DESIGN SURFACE

LEVEL

PIPE LENGTH

RUNNING CHAINAGE

EASTING

NORTHING

LINE

SCALE 1:500 (A1) 1:1000 (A3)



SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED



Client **URBEX AND LAND DEVELOPMENT CORP (JV)**

Project **ZUCCOLI PHASE 3.7**

Title **STORMWATER DRAINAGE LONGITUDINAL SECTION AS CONSTRUCTED**
SHEET 2 OF 6

Datum
AHD
PSM
RL
(MGA) COORD

Project No. Drawing No. Rev
B00202-CD004 1

NOTE:-

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION.
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: *Brendan* DATE: 15/12/2022

WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

SIGNED: DATE:

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

PIPE SIZE (mm)

PIPE CLASS

PIPE GRADE (%)

PIPE GRADE (1 in)

FULL PIPE VELOCITY (m/s)

NORMAL DEPTH VELOCITY (m/s)

DATUM (m)

PIPE FLOW

(Cumecs)

PIPE CAPACITY

AT GRADE (Cumecs)

WATER LEVEL

IN STRUCTURE

HYDRAULIC GRADE

LEVEL

DEPTH TO

INVERT

INVERT LEVEL

OF DRAIN

DESIGN SURFACE

LEVEL

PIPE LENGTH

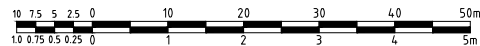
RUNNING CHAINAGE

EASTING

NORTHING

LINE

SCALE 1:500 (A1) 1:1000 (A3)



SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED

Registered Engineer

Date Register

ENGINEERING CERTIFICATION

No. Amendments

Drawn Design Design Chk Appd Date

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021



Client URBEX AND LAND DEVELOPMENT CORP (JV)

Project ZUCCOLI PHASE 3.7

Title STORMWATER DRAINAGE LONGITUDINAL SECTION
SHEET 3 OF 6Datum
AHD
PSM
RL
(MGA) COORDProject No. Drawing No. Rev
B00202-CD005 1

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION .
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

SIGNED Brendan Palm DATE 12/20/2022

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

| Stationing | Structure | Length (ft) | Material | Slope (%) | Velocity (ft/s) | Flow (cfs) | Head Loss (ft) | Manhole Elevation | Structure Elevation | Structure Type |
|------------|--------------------|-------------|----------|-----------|-----------------|--------------------|----------------|-------------------|---------------------|----------------|
| 18475.02E | 2 BAY SEP TYPE A | 375 | RCP (3) | 0.61% | 1 in 165.2 | Vf=0.25 Vn=0.97 | 0.028 | 21.724 | 21.693 | 21.724 |
| 18484.340E | 2 BAY SEP TYPE A | 375 | RCP (3) | 0.47% | 1 in 213.8 | Vf=0.69 Vn=1.15 | 0.077 | 21.694 | 21.694 | 21.694 |
| 18479.786E | SADDLE JOINT | 375 | RCP (3) | 0.47% | 1 in 213.8 | Vf=0.75 Vn=1.17 | 0.083 | 21.568 | 21.562 | 21.568 |
| 18474.003E | 1 BAY SEP TYPE B | 375 | RCP (3) | 1.2% | 1 in 83.3 | Vf=1.14 Vn=1.86 | 0.126 | 21.457 | 21.457 | 21.457 |
| 18468.916E | SADDLE JOINT | 375 | RCP (3) | 1.2% | 1 in 83.3 | Vf=1.22 Vn=1.88 | 0.135 | 20.973 | 20.973 | 20.973 |
| 18465.002E | 1 BAY SEP TYPE B | 450 | RCP (3) | 0.6% | 1 in 166.7 | Vf=1.13 Vn=1.55 | 0.180 | 20.869 | 20.869 | 20.869 |
| 18461.291E | SADDLE JOINT | 450 | RCP (3) | 0.6% | 1 in 166.7 | Vf=1.19 Vn=1.56 | 0.189 | 20.719 | 20.719 | 20.719 |
| 18457.362E | SADDLE JOINT | 450 | RCP (3) | 0.6% | 1 in 166.7 | Vf=1.24 Vn=1.57 | 0.197 | 20.623 | 20.623 | 20.623 |
| 18454.360E | 2 BAY SEP TYPE B | 525 | RCP (3) | 0.52% | 1 in 190.7 | Vf=1.08 Vn=1.58 | 0.235 | 20.471 | 20.505 | 20.471 |
| 18449.926E | 2 BAY SEP TYPE B | 600 | RCP (3) | 0.5% | 1 in 200 | Vf=0.95 Vn=1.62 | 0.269 | 20.319 | 20.319 | 20.319 |
| 18448.580E | SADDLE JOINT | 600 | RCP (3) | 0.5% | 1 in 200 | Vf=0.98 Vn=1.63 | 0.278 | 20.294 | 20.294 | 20.294 |
| 18445.715E | 2 BAY SEP TYPE B | 750 | RCP (3) | 1.11% | 1 in 90.3 | Vf=1.14 Vn=2.55 | 0.502 | 20.290 | 20.269 | 20.290 |
| 18513.477E | TEMPORARY HEADWALL | 750 | RCP (3) | 1.11% | 1 in 90.3 | Vf=1.14 Vn=2.55 | 0.502 | 19.784 | 19.784 | 19.784 |

SCALE 1:50 (A1) 1:100 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED

| | | |
|---|----------------------------|-----------------|
| | <i>Registered Engineer</i> | |
| 2 | <i>Date</i> | <i>Register</i> |
| 2 | ENGINEERING CERTIFICATION | |



| | |
|---|--------------------------------|
| <i>Datum</i> AHD PSM . RL . (MGA) COORD | |
| AS CONSTRUCTED | |
| <i>Project No.</i> B00202-CD006 | <i>Drawing No.</i> 1 |
| | <i>Rev</i> |

NOTE:-

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION.
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED Burden DATE 12/2/2022

WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

PIPE SIZE (mm)

PIPE CLASS

PIPE GRADE (%)

PIPE GRADE (1 in)

FULL PIPE VELOCITY (m/s)

NORMAL DEPTH VELOCITY (m/s)

DATUM (m)

PIPE FLOW

(Cumecs)

PIPE CAPACITY

AT GRADE (Cumecs)

WATER LEVEL

IN STRUCTURE

HYDRAULIC GRADE

LEVEL

DEPTH TO

INVERT

INVERT LEVEL

OF DRAIN

DESIGN SURFACE

LEVEL

PIPE LENGTH

RUNNING CHAINAGE

EASTING

NORTHING

LINE

1/D1

2/D1

3/D1

4/D1

5/D1

6/D1

7/D1

8/D1

9/D1

10/D1

12/D

1/P1

2/P1

3/P1

5/P

1/P2

2/P2

3/P1

1/P3

7/P

1 BAY SEP TYPE A

SADDLE JOINT

SADDLE JOINT

1 BAY SEP TYPE B

SADDLE JOINT

SADDLE JOINT

1 BAY SEP TYPE B

SADDLE JOINT

SADDLE JOINT

1 BAY SEP TYPE A

2 BAY SEP TYPE A

2 BAY SEP (SAG) TYPE A

2 BAY SEP (SAG) TYPE B

2 BAY SEP TYPE A

2 BAY SEP TYPE A

2 BAY SEP (SAG) TYPE A

2 BAY SEP (SAG) TYPE A

ELECTRICAL CONDUIT

150 SEW IL 20.009 CLR 0.356
50 DIA WATER SERVICE150 SEW IL 19.716 CLR 0.360
50 DIA WATER SERVICE

150 SEW IL 19.549 CLR 0.336

150 WAT IL 20.851 CLR 0.368

ELECTRICAL CONDUIT

EXISTING SURFACE

DESIGN SURFACE

Q5 HGL

150 SEW IL 19.338 CLR 0.364

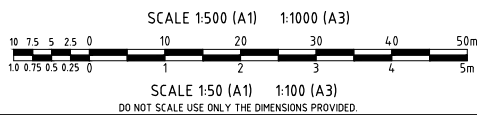
ELECTRICAL CONDUIT

| | | | | | | | | | | |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| PIPE SIZE (mm) | 375 | 375 | 375 | 450 | 450 | 450 | 450 | 450 | 450 | 525 |
| PIPE CLASS | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) | RCP (3) |
| PIPE GRADE (%) | 0.7% | 0.7% | 0.7% | 0.59% | 0.59% | 0.59% | 0.5% | 0.5% | 0.5% | 0.6% |
| PIPE GRADE (1 in) | 1 in 142.9 | 1 in 142.9 | 1 in 142.9 | 1 in 169.3 | 1 in 169.3 | 1 in 169.3 | 1 in 200 | 1 in 200 | 1 in 200 | 1 in 166.5 |
| FULL PIPE VELOCITY (m/s) | Vf=0.42 | Vf=0.51 | Vf=0.60 | Vf=0.62 | Vf=0.68 | Vf=0.74 | Vf=0.91 | Vf=0.97 | Vf=1.03 | Vf=0.95 |
| NORMAL DEPTH VELOCITY (m/s) | Vn=1.18 | Vn=1.24 | Vn=1.29 | Vn=1.34 | Vn=1.37 | Vn=1.40 | Vn=1.38 | Vn=1.40 | Vn=1.41 | Vn=1.62 |
| DATUM (m) | 14.0 | | | | | | | | | |
| PIPE FLOW (Cumecs) | 0.047 | 0.057 | 0.066 | 0.098 | 0.108 | 0.117 | 0.145 | 0.155 | 0.163 | 0.206 |
| PIPE CAPACITY AT GRADE (Cumecs) | 0.147 | 0.147 | 0.147 | 0.219 | 0.219 | 0.219 | 0.202 | 0.202 | 0.202 | 0.333 |
| WATER LEVEL IN STRUCTURE | 20.871 | 20.733 | 20.643 | 20.585 | 20.559 | 20.547 | 20.475 | 20.434 | 20.409 | 20.290 |
| HYDRAULIC GRADE LEVEL | 20.819 | 20.733 | 20.643 | 20.585 | 20.559 | 20.541 | 20.475 | 20.464 | 20.434 | 20.269 |
| DEPTH TO INVERT | 17.48 | 16.18 | 16.26 | 16.65 | 17.07 | 16.99 | 17.19 | 17.19 | 17.19 | 19.662 |
| INVERT LEVEL OF DRAIN | 20.662 | 20.558 | 20.451 | 20.489 | 20.422 | 20.275 | 20.186 | 20.082 | 19.964 | 19.625 |
| DESIGN SURFACE LEVEL | 22.411 | 22.175 | 22.078 | 22.154 | 21.982 | 21.885 | 21.800 | 21.726 | 21.815 | 21.503 |
| PIPE LENGTH RUNNING CHAINAGE | 0.000 | 14.952 | 15.176 | 9.858 | 4.964 | 15.035 | 5.000 | 14.996 | 10.004 | 11.897 |
| EASTING | 18457.290E | 18453.883E | 18450.497E | 18448.298E | 18447.161E | 18443.940E | 18441.762E | 18437.405E | 18435.225E | 18445.715E |
| NORTHING | 616500.653N | 616486.077N | 616471.283N | 616461.674N | 616456.828N | 616442.154N | 616432.394N | 616427.514N | 616403.115N | 616397.550N |

| | | | |
|---------------------------------|-------------|-------------|-------------|
| PIPE SIZE (mm) | 375 | 525 | 600 |
| PIPE CLASS | RCP (3) | RCP (3) | RCP (3) |
| PIPE GRADE (%) | 3% | 0.78% | 0.5% |
| PIPE GRADE (1 in) | 1 in 33.3 | 1 in 128.7 | 1 in 199.4 |
| FULL PIPE VELOCITY (m/s) | Vf=0.08 | Vf=0.36 | Vf=0.88 |
| NORMAL DEPTH VELOCITY (m/s) | Vn=1.23 | Vn=1.38 | Vn=1.59 |
| DATUM (m) | 13.0 | | |
| PIPE FLOW (Cumecs) | 0.009 | 0.078 | 0.248 |
| PIPE CAPACITY AT GRADE (Cumecs) | 0.304 | 0.379 | 0.435 |
| WATER LEVEL IN STRUCTURE | 20.927 | 20.923 | 20.897 |
| HYDRAULIC GRADE LEVEL | 20.924 | 20.923 | 20.888 |
| DEPTH TO INVERT | 20.280 | 19.871 | 19.678 |
| INVERT LEVEL OF DRAIN | 20.280 | 19.871 | 19.678 |
| DESIGN SURFACE LEVEL | 21.792 | 21.503 | 21.503 |
| PIPE LENGTH RUNNING CHAINAGE | 0.000 | 13.147 | 7.800 |
| EASTING | 18332.877E | 18340.090E | 18347.703E |
| NORTHING | 616337.718N | 616326.924N | 616325.224N |

| | | |
|---------------------------------|-------------|-------------|
| PIPE SIZE (mm) | 375 | 375 |
| PIPE CLASS | RCP (3) | RCP (3) |
| PIPE GRADE (%) | 1% | 1.74% |
| PIPE GRADE (1 in) | 1 in 100 | 1 in 57.5 |
| FULL PIPE VELOCITY (m/s) | Vf=0.44 | Vf=1.00 |
| NORMAL DEPTH VELOCITY (m/s) | Vn=1.36 | Vn=2.07 |
| DATUM (m) | 13.0 | |
| PIPE FLOW (Cumecs) | 0.049 | 0.110 |
| PIPE CAPACITY AT GRADE (Cumecs) | 0.175 | 0.231 |
| WATER LEVEL IN STRUCTURE | 21.172 | 21.108 |
| HYDRAULIC GRADE LEVEL | 21.095 | 21.089 |
| DEPTH TO INVERT | 20.467 | 20.374 |
| INVERT LEVEL OF DRAIN | 20.467 | 20.374 |
| DESIGN SURFACE LEVEL | 21.844 | 21.844 |
| PIPE LENGTH RUNNING CHAINAGE | 0.000 | 7.950 |
| EASTING | 18334.170E | 18341.999E |
| NORTHING | 616300.404N | 616298.672N |

| | |
|---------------------------------|-------------|
| PIPE SIZE (mm) | 450 |
| PIPE CLASS | RCP (3) |
| PIPE GRADE (%) | 3.8% |
| PIPE GRADE (1 in) | 1 in 26.3 |
| FULL PIPE VELOCITY (m/s) | Vf=0.22 |
| NORMAL DEPTH VELOCITY (m/s) | Vn=1.94 |
| DATUM (m) | 13.0 |
| PIPE FLOW (Cumecs) | 0.035 |
| PIPE CAPACITY AT GRADE (Cumecs) | 0.556 |
| WATER LEVEL IN STRUCTURE | 20.624 |
| HYDRAULIC GRADE LEVEL | 20.605 |
| DEPTH TO INVERT | 19.804 |
| INVERT LEVEL OF DRAIN | 19.804 |
| DESIGN SURFACE LEVEL | 21.247 |
| PIPE LENGTH RUNNING CHAINAGE | 0.000 |
| EASTING | 18405.527E |
| NORTHING | 616327.148N |



AS CONSTRUCTED

Registered Engineer

Date Register

ENGINEERING CERTIFICATION

No. Amendments

Drawn Design Design Chk Appd Date

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021



| | | | |
|---------|--|-------------|--------------|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | Datum | PSM . |
| Project | ZUCCOLI PHASE 3.7 | RL | COORD |
| Title | STORMWATER DRAINAGE LONGITUDINAL SECTION | Project No. | B00202-CD007 |
| | SHEET 5 OF 6 | Drawing No. | 2 |

NOTE:-

- LEVEL AT OUTLET TO BE CONFIRMED PRIOR TO COMMENCEMENT CONSTRUCTION.
- WHERE THE LEVEL IDENTIFIED ON SITE DIFFERS FROM THAT ASSUMED IN THIS DESIGN, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED Brendan Smith DATE 5/12/2022

WARNING

BEWARE OF SERVICES

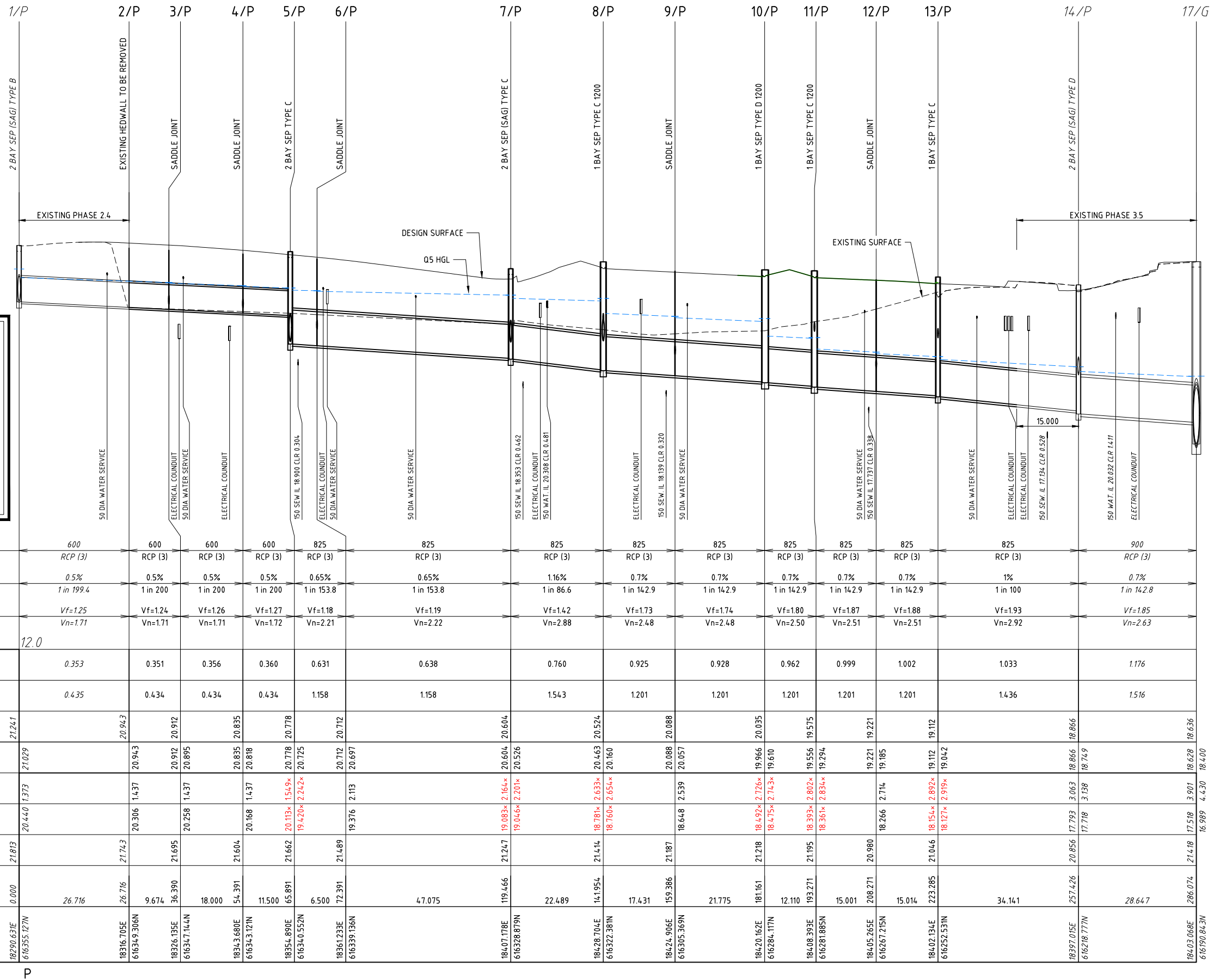
THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
DRAINAGE

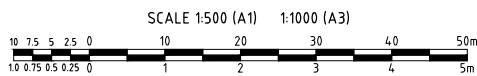
SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.



LINE P



SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED

| No. | Amendments | Drawn | Design | Design Chk | Appd | Date |
|-----|-------------------------|-------|--------|------------|------|----------|
| 1 | AS CONSTRUCTED | JT | LW | WR | MKB | 25/11/22 |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/07/22 |

| | | |
|---------------------------|-------|----------|
| Registered Engineer | Date | Register |
| _____ | _____ | _____ |
| ENGINEERING CERTIFICATION | | |



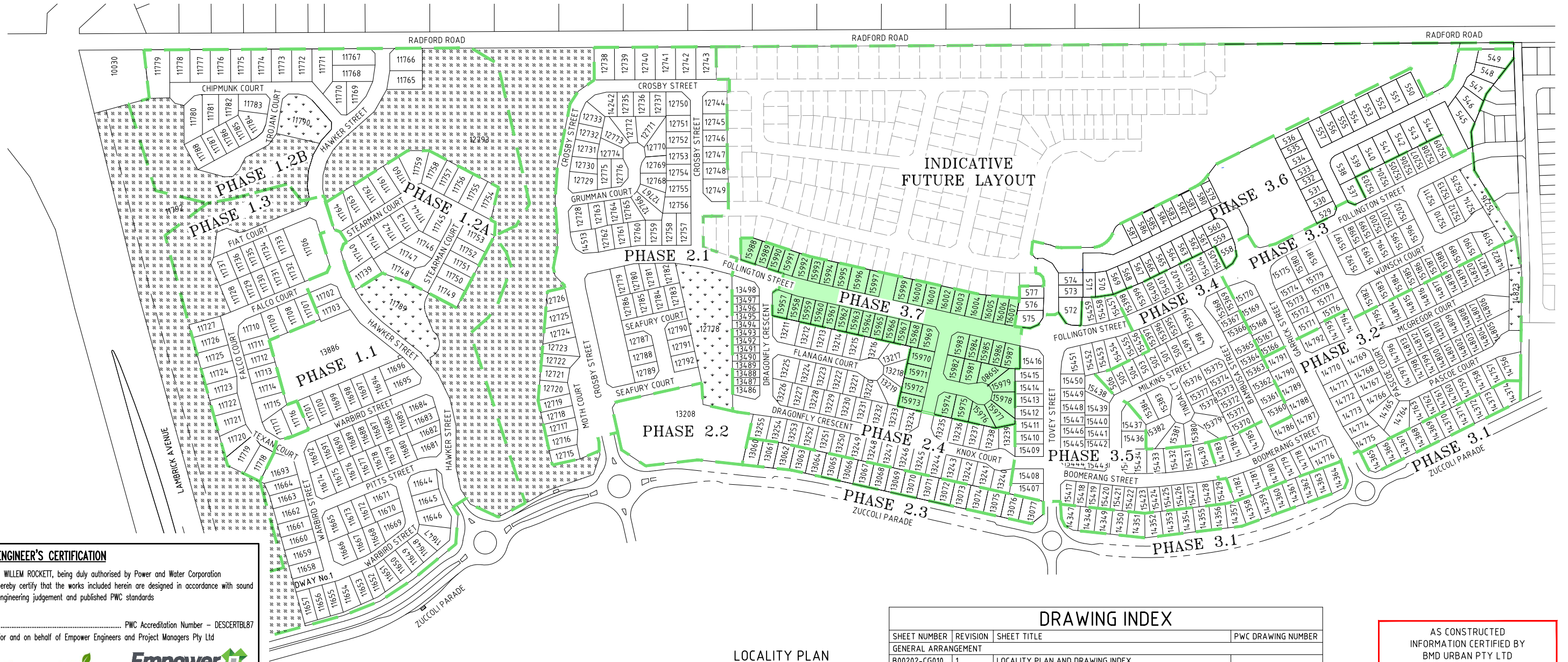
| | | | |
|-------------|--|-------------|----------------|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | Datum | AHD |
| Project | ZUCCOLI PHASE 3.7 | PSM | RL |
| Title | STORMWATER DRAINAGE LONGITUDINAL SECTION | (MGA) COORD | AS CONSTRUCTED |
| Project No. | B00202-CD008 | Drawing No. | 1 |

URBEX AND LAND DEVELOPMENT CORP (JV)

ZUCCOLI STAGE 1 PHASE 3.7

ZUCCOLI, CITY OF PALMERSTON

WATER AND SEWER



ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd



NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM A DIAL BEFORE YOU DIG SEARCH PRIOR TO COMMENCEMENT OF WORKS. ANY POTENTIAL CONFLICT OF EXISTING SERVICES SHALL BE REPORTED TO THE SUPERINTENDENT. THE LOCATION OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY THE CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

REVISION: 1 DATE: DD/MM/22

LOCALITY PLAN

SCALE 1:5000 @A1

DEVELOPMENT SUMMARY

ESTATE NAME: ZUCCOLI STAGE 1 PHASE 3.7
LOCATION: ZUCCOLI, CITY OF PALMERSTON
TOTAL AREA: 3.67 Ha
No. OF LOTS: 50 LOTS
DP PERMIT No.: DP21/0213

PROPERTY DESCRIPTION

LOT 15460
TOWN OF PALMERSTON

PWC STANDARD DRAWING INDEX

| SHEET NUMBER | REVISION | SHEET TITLE |
|------------------------------------|----------|---------------------------|
| WATER - REFER DRAWING B00201-CW001 | | FOR PWC STANDARD DRAWINGS |
| SEWER - REFER DRAWING B00201-CS001 | | FOR PWC STANDARD DRAWINGS |

DRAWING INDEX

| SHEET NUMBER | REVISION | SHEET TITLE | PWC DRAWING NUMBER |
|-----------------------|----------|--|--------------------|
| GENERAL ARRANGEMENT | | | |
| B00202-CG010 | 1 | LOCALITY PLAN AND DRAWING INDEX | |
| SEWERAGE RETICULATION | | | |
| B00202-CS001 | 1 | SEWER RETICULATION - LOCALITY PLAN AND NOTES | B22-5031 |
| B00202-CS002 | 1 | SEWER RETICULATION PLAN | B22-5032 |
| B00202-CS003 | 1 | SEWER RETICULATION - LONGITUDINAL SECTION - SHEET 1 OF 3 | B22-5033 |
| B00202-CS004 | 1 | SEWER RETICULATION - LONGITUDINAL SECTION - SHEET 2 OF 3 | B22-5034 |
| B00202-CS005 | 2 | SEWER RETICULATION - LONGITUDINAL SECTION - SHEET 3 OF 3 | B22-5035 |
| B00202-CS006 | 1 | SEWER RETICULATION - HOUSE CONNECTION DETAILS | B22-5036 |
| WATER RETICULATION | | | |
| B00202-CW001 | 1 | WATER RETICULATION - LOCALITY PLAN AND NOTES | B22-5037 |
| B00202-CW002 | 1 | WATER RETICULATION PLAN | B22-5038 |
| B00202-CW003 | 1 | WATER RETICULATION - DETAILS PLAN | B22-5039 |
| B00202-CW004 | 1 | WATER RETICULATION - FIRE HYDRANT COVERAGE PLAN | B22-5040 |

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED *Brundan* 11/11/2022
DATE



Datum
AHD
PSM
RL
(MGA) COORD
AS CONSTRUCTED
Project No. Drawing No. Rev
B00202-CG010 1

File Name: C:\265\data\MANU25\YWB00202 - 1951\1\ CIVIL - DRGS\1.2 CURRENT\B00202-37-SEW User: MARK CARILLO Plot Date: 23/11/2022 9:25:04 AM

LEGEND

PROPOSED LOT BOUNDARY
SEWERAGE RETICULATION

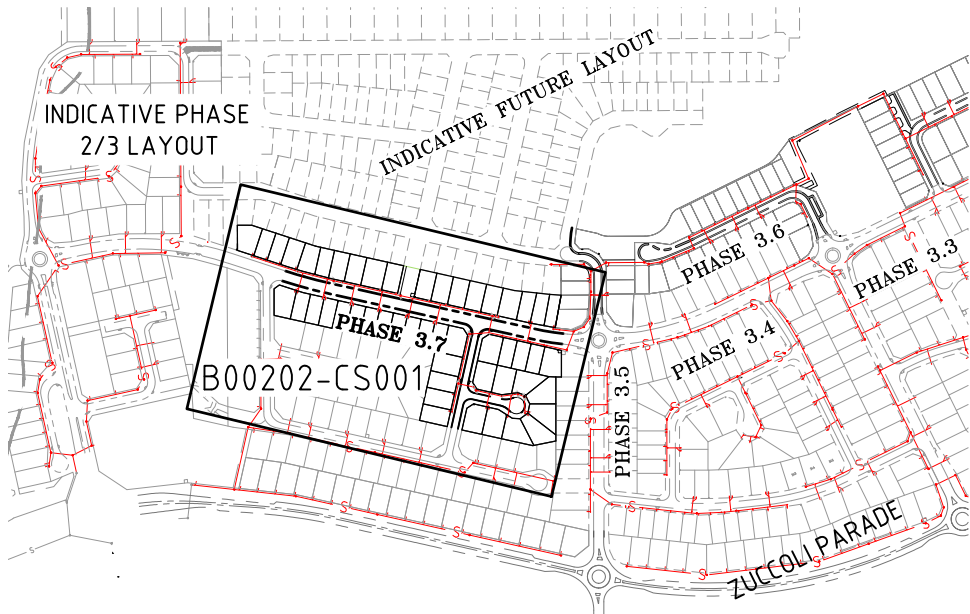
WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED *Brundan* 28/11/2022
DATE



SEWER RETICULATION LOCALITY PLAN

SCALE 1:4000

MINIMUM REQUIRED INSPECTIONS BY HYDRAULIC CERTIFIER - SEWER

PRE-START MEETING

THE CERTIFYING ENGINEER TO ARRANGE PRE-START MEETING WITH POWER WATER REPRESENTATIVE AND PLUMBING CONTRACTOR.

INSPECTION 1

INSPECT EXCAVATED TRENCH AND VERIFY EMBEDMENT TYPE REQUIRED FOR THE SUBSOIL CONDITION. OTHER EMBEDMENT TYPES MUST BE ENDORSED WITH SUPPORTING GEOTECHNICAL REPORT AND APPROVED BY POWER AND WATER.

INSPECTION 2

VERIFY ALL CONNECTIONS ARE COMPLETED AND ISOLATED FROM EXISTING.

INSPECTION 3

VERIFY ALL PIPE WORK AND CONCRETE STRUCTURES ARE CONSTRUCTED TO DRAWINGS AND SPECIFICATIONS.

INSPECTION 4

WITNESS PRESSURE TEST AND VERIFY PRESSURE TESTS HAVE PASSED.

INSPECTION 5

VERIFY ALL AS CONSTRUCTED INFORMATION. CONDUCT HANDOVER WITH POWER AND WATER.

INSPECTION 6

VERIFY ALL OUTSTANDING DEFECTS ARE COMPLETED.

HOUSE CONNECTION LEGEND

REFER LAYOUT PLANS

LOT NUMBER
HC TYPE
HC 250 - 2
IL 15.233
SL 16.182
DIST 2.097
'HC' HOUSE CONNECTION
HC INVERT LEVEL
SURFACE LEVEL AT HC
DISTANCE FROM DOWNSTREAM MANHOLE

MANHOLE DETAILS U.N.O.

REFER LONGITUDINAL SECTIONS

C: CIRCULAR MANHOLE
R: RECTANGULAR LID
D: CLASS D TRAFFICABLE LID

PERMISSION TO USE FOR CONSTRUCTION PURPOSES WATER AND SEWER RETICULATION

SIGNED DATE

ON BEHALF OF WATER SERVICES FOR THE INCORPORATION INTO POWER AND WATER CORPORATION'S NETWORK.

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED.

THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

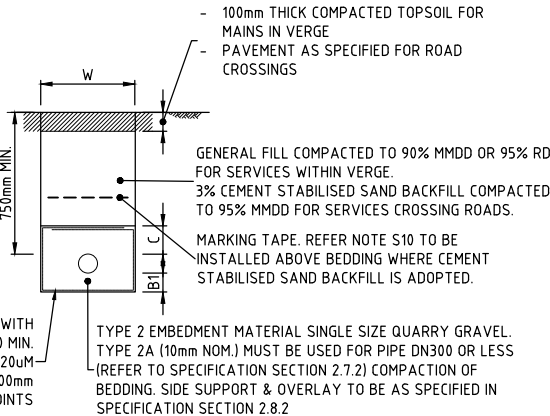
0 0.4 0.8 1.2 1.6 2.0m
0.4 0.3 0.2 0.1
SCALE 1:20 (A1) 1:40 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

0 80 160 240 320 400m
80 60 40 20
SCALE 1:4000 (A1) 1:8000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

| NOMINAL PIPE DIAMETER (DN) | W (mm) |
|----------------------------|---------------|
| 100 & 150 | 450 |
| 200-300 | 600 |
| 375 | 750 |
| 450 | 900 |
| 450-900 | PIPE OD + 600 |
| 1050-1500 | PIPE OD + 700 |
| 1650-4000 | 1.5 x PIPE OD |

| NOMINAL PIPE SIZE (mm) | B1 (mm) | C (mm) |
|------------------------|---------|--------|
| 20-50 | 100 | 150 |
| 80-100 | 100 | 150 |
| 150-600 | 150 | 150 |
| 750 & LARGER | 200 | 200 |

GEOTEXTILE FABRIC WITH AUSTRROADS G RATING OF 1200 MIN. & NOMINAL OPENING SIZE 220uM MAX. MINIMUM OVERLAP OF 500mm AT ALL JOINTS



TYPE 2A TRENCH DETAIL

SCALE 1:20

AS CONSTRUCTED

1. POWER AND WATER STANDARD NOTES

GENERAL

- WS.1. CONSTRUCTION OF THE WATER AND SEWERAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST AMENDMENT OF THE APPROVED PROJECT DRAWINGS AND SPECIFICATION AND THE POWER AND WATER CONNECTION CODE.
- WS.2. DRAWINGS MUST BE SIGNED AS 'APPROVED FOR CONSTRUCTION' BY POWER AND WATER PRIOR TO COMMENCING WORKS.
- WS.3. THE DEVELOPER MUST SUBMIT THE "DEVELOPMENT WORK PERMIT" WITH ALL RELEVANT DOCUMENTATION AT LEAST SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF WORKS. THE DEVELOPER MUST CONFIRM WITH POWER AND WATER IF A MEETING IS REQUIRED PRIOR TO COMMENCEMENT OR SITE WORKS.
- WS.4. PRIOR TO COMMENCEMENT OF WORKS, THE CONSTRUCTOR MUST CHECK THE LOCATION OF ALL UNDERGROUND SERVICES, CONFIRM FINISHED SURFACE LEVELS, CHECK THE MATERIAL, DIAMETER ALIGNMENT, LEVEL AND LOCATION OF EXISTING PIPEWORK AT THE CONNECTION POINTS. IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWINGS.
- WS.5. CHANGES REQUESTED BY ANY PARTY TO THE DESIGN OF THE WORKS DURING ANY STAGE OF THE DEVELOPMENT MUST BE ENDORSED BY THE DESIGNER/CERTIFIER WITH AMENDED DRAWINGS SUBMITTED TO POWER AND WATER FOR APPROVAL PRIOR TO THE CHANGE BEING CARRIED OUT.
- WS.6. ALL EXISTING PROPERTY SERVICES ARE TO REMAIN IN SERVICE UNTIL THE CONSTRUCTION OF THE NEW SERVICE IS COMPLETED TO THE SATISFACTION OF POWER AND WATER.
- WS.7. ALL LEVELS GIVEN ARE TO AUSTRALIAN HEIGHT DATUM (AHD) IN METRES TO THREE DECIMAL PLACES. PROJECTION SHALL BE BASED ON MGA94 MAP GRID OF AUSTRALIA ZONE 52 OR 53 COORDINATE SYSTEM.
- WS.8. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL CHAINAGES AND LEVELS IN METRES UNLESS SHOWN OTHERWISE.
- EXCAVATION AND FILLING
- WS.9. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITY PRIOR TO ANY EXCAVATION. WHERE APPLICABLE, THE CONTRACTOR MUST SEEK A WRITTEN APPROVAL FROM THE LAND OWNER TO ACCESS AND CONSTRUCT WITHIN THEIR PROPERTY. ALL APPROVALS AND PERMITS MUST BE SUBMITTED TO POWER AND WATER AT LEAST SEVEN (7) DAYS PRIOR TO EXCAVATION WORKS.
- WS.10. MINIMUM COVER TO PIPE IS 750mm IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS. 1500mm COVER REQUIRED FOR THRUST BORING UNDER ROAD.
- WS.11. EMBEDMENT TYPE FOR ALL PIPES MUST BE TYPE 2A OR 2B WRAPPED IN GEOTEXTILE UNLESS NOTED OTHERWISE. ALL OTHER EMBEDMENT TYPES MUST BE ENDORSED BY THE CERTIFIER WITH SUPPORTING GEOTECHNICAL INVESTIGATION, AND APPROVED BY POWER AND WATER.
- WS.12. WHEN EMBEDMENT TYPE CHANGES, A VERTICAL GEOTEXTILE BARRIER SHALL BE INSERTED BETWEEN THE EMBEDMENT TYPES.
- WS.13. UNLESS NOTED OTHERWISE IN THE DRAWINGS:

- A. USE GENERAL OR SELECTED BACKFILL FOR ROAD RESERVES AND GENERAL AREAS
B. USE 3% CEMENT STABILISED SAND FOR ROADWAYS, DRIVEWAYS AND TRAFFICABLE AREAS
C. USE 5% CEMENT STABILISED GRAVEL FOR OPEN UNLINED DRAIN CROSSINGS.

WS.14. REINSTATE ALL SURFACES UPON COMPLETION OF THE WORKS AS SPECIFIED OR TO MATCH EXISTING TO SATISFACTION OF THE RELEVANT AUTHORITY OR PERSONNEL.

LIVE CONNECTIONS

WS.15. ONLY AUTHORISED POWER AND WATER PERSONNEL ARE PERMITTED TO UNDERTAKE ANY WORKS; OPERATE AND PHYSICALLY ACCESS LIVE ASSETS. AT NO STAGE SHALL ANY OTHER PERSONS CARRY OUT WORK ON POWER AND WATER INFRASTRUCTURE.

WS.16. THE DEVELOPER IS RESPONSIBLE FOR ALL CONNECTION FEES AND CHARGES. THE DEVELOPER MUST SUBMIT THE "REQUEST FOR CONNECTIONS" FORM AND ALLOW FOR A MINIMUM OF TWENTY-ONE (21) DAYS FOR SCHEDULING CONNECTIONS. POWER AND WATER HAVE NO OBLIGATIONS IN AVAILABILITY FOR REQUESTED CONNECTION DATE AND THE DEVELOPER IS TO NEGOTIATE ALTERNATIVE DATES WITH POWER AND WATER.

HANDOVER AND COMMISSIONING

WS.17. THE CERTIFIER MUST SUBMIT THE "HANDOVER REQUEST FORM" WITH ALL RELEVANT DOCUMENTATION AT LEAST SEVEN (7) DAYS PRIOR TO REQUESTED INITIAL HANDOVER INSPECTION DATE.

WS.18. ALL IDENTIFIED DEFECTS MUST BE RECTIFIED BY THE DEVELOPER WITHIN FOURTEEN DAYS (14) OF INITIAL HANDOVER DATE. A FINAL HANDOVER INSPECTION WITH POWER AND WATER MUST BE ARRANGED TO CONFIRM RECTIFICATION OF OUTSTANDING DEFECTS.

WS.19. COMMISSIONING OF GIFTED ASSET WORKS IS UNDERTAKEN BY POWER AND WATER AFTER SUCCESSFUL HANDOVER OF ASSET, RECTIFICATION OF ALL OUTSTANDING DEFECTS AND COMPLETION OF ALL LIVE CONNECTIONS TO EXISTING MAINS.

CLEARANCE, DEFECTS AND LIABILITY PERIOD

WS.20. THE DEVELOPER MUST SUBMIT THE "CLEARANCE REQUEST FORM" WITH ALL RELEVANT DOCUMENTATION AND ALLOW A MINIMUM OF FOURTEEN (14) DAYS TO OBTAIN DEVELOPMENT PERMIT CLEARANCE. ALLOW FOR AN ADDITIONAL FOURTEEN (14) DAYS TO RECTIFY ALL OUTSTANDING DEFECTS AND ISSUES.

WS.21. THE DEFECTS AND LIABILITY PERIOD OF THE ASSET WILL COMMENCE ON THE DATE WHEN DEVELOPMENT CLEARANCE WAS ISSUED BY POWER AND WATER OR DATE OF FINAL ACCEPTANCE OF ASSET.

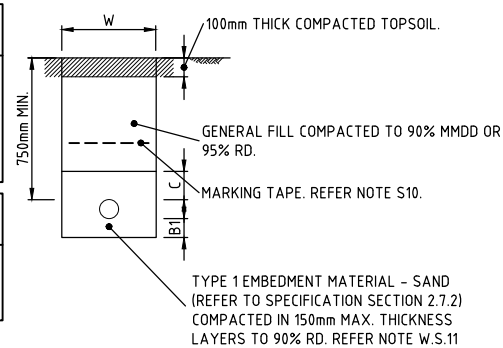
WS.22. ALL EXTENSIONS AND SUBDIVISIONS ARE SUBJECT TO TWENTY FOUR (24) MONTH DEFECT AND LIABILITY PERIOD. ALL BUILDING DEVELOPMENTS ARE SUBJECT TO TWELVE (12) MONTH DEFECT AND LIABILITY PERIOD.

WS.23. THE DEVELOPER IS FULLY RESPONSIBLE FOR ALL COSTS TO RECTIFY DEFECTS, REPAIR AND EMERGENCY WORKS WITHIN THIS PERIOD. SUCH WORKS WILL RESULT IN AN EXTENDED DEFECTS AND LIABILITY PERIOD OF FIVE (5) YEARS.

WS.24. THE DEVELOPER MUST SCHEDULE AN OFF-MAINTENANCE INSPECTION AT LEAST SEVEN (7) DAYS PRIOR TO REQUESTED INSPECTION DATE. POWER AND WATER WILL TAKE FULL RESPONSIBILITY OF ASSET AFTER ALL DEFECTS HAVE BEEN RECTIFIED AND ALL ASSOCIATED PAYMENT TO REPAIR AND EMERGENCY WORKS HAVE BEEN PAID BY THE DEVELOPER.

| NOMINAL PIPE DIAMETER (DN) | W (mm) |
|----------------------------|---------------|
| 100 & 150 | 450 |
| 200-300 | 600 |
| 375 | 750 |
| 450 | 900 |
| 450-900 | PIPE OD + 600 |
| 1050-1500 | PIPE OD + 700 |
| 1650-4000 | 1.5 x PIPE OD |

| NOMINAL PIPE SIZE (mm) | B1 (mm) | C (mm) |
|------------------------|---------|--------|
| 20-50 | 50 | 75 |
| 80-100 | 75 | 75 |
| 150-600 | 100 | 100 |
| 750 & LARGER | 100 | 100 |



TYPE 1 EMBEDMENT & TRENCH DETAIL

SCALE N.T.S

POWER AND WATER (SEWER NOTES)

- S.1. ALL GRAVITY SEWER PIPES SHALL BE UPVC DWV CLASS SN8 WITH STYRENE-BUTADIENE RUBBER RING JOINTS (SBRI), UNLESS NOTED OTHERWISE.
- S.2. SEWER SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 16m IN ROAD RESERVES AND 15m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
- S.3. ALL GRAVITY SEWER ARE TO BE A MINIMUM OF DN150, UNLESS NOTED OTHERWISE.
- S.4. THE CONTRACTOR SHALL EITHER INSCRIBE OR ATTACH A PLATE TO THE MAINTENANCE HOLES OR MAINTENANCE SHAFT WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWINGS.
- S.5. FLEXIBLE JOINTS WITH CONCRETE SURROUND MUST BE CONSTRUCTED ON BOTH UPSTREAM AND DOWNSTREAM SIDES OF THE MAINTENANCE HOLES. CONCRETE SURROUND MUST BE MINIMUM N32, 300mm THICK WITH 4 x N12 BAR AT EACH CORNER. EACH N12 BAR TO BE COGGED AND EPOXYED MIN 50mm INTO MAINTENANCE HOLE WALL WITH A MIN 50mm COVER.
- S.6. DEPTH TO INVERT AT MAINTENANCE HOLES/SHAFT ARE MEASURED FROM THE TOP OF MAINTENANCE HOLES/SHAFT.
- S.7. UNLESS NOTED OTHERWISE IN THE DRAWINGS, THE MINIMUM CONCRETE STNGTH FOR ALL SEWERAGE STRUCTURES INCLUDING MAINTENANCE HOLES MUST BE N50. REFER TO POWER AND WATER STANDARD DRAWING W2-2-01D FOR ADDITIONAL NOTES FOR SEWERAGE STRUCTURES.
- S.8. ALIGN MAINTENANCE HOLE COVER SUCH THAT THE LONG SIDE OF THE LID IS PARALLEL WITH THE SEWER MAIN.
- S.9. ALL SEWER RISING MAINS MUST BE PVC-O CLASS 16 RRJ, UNLESS NOTED OTHERWISE. NO DEFLECTIONS AT PVC JOINT ARE PERMITTED. SO-SO DI CONNECTORS (MAXIMUM OF TWO (2) DEGREES) OR DI BENDS MUST BE USED TO ACHIEVE DEFLECTIONS ON PVC PIPES.
- S.10. MARKING TAPE COLOURED ORANGE AND MARKED 'SEWER MAIN' MUST BE LAID CONTINUOUSLY AND LOCATED 300mm ABOVE THE SEWER PIPEWORK
- S.11. THE MINIMUM HORIZONTAL CLEARANCE BETWEEN EXISTING SERVICES MUST BE 600mm FOR NEW MAINS UP TO AND EQUAL TO DN200 AND 1000mm FOR NEW MAINS LARGER THAN DN200.
- S.12. THE MINIMUM VERTICAL CLEARANCE BETWEEN EXISTING SERVICES MUST BE 300mm FOR NEW MAINS UP TO AND EQUAL TO DN200 AND 500mm FOR NEW MAINS LARGER THAN DN200.
- S.13. THE TESTING OF SEWER MAINS AND STRUCTURES MUST BE ACCORDING TO POWER AND WATER'S TEST PROCEDURES GUIDELINE.

ADDITIONAL SEWER NOTES

- S.101. THE SUPERINTENDENT IN CONSULTATION WITH GEOTECHNICAL PERSONNEL AND PWC SHALL DETERMINE WATER PIPE BEDDING TYPE AFTER INSPECTION OF THE EXCAVATED TRENCH. TYPE 2A BEDDING AND GEOTEXTILE FABRIC SHALL BE USED UNDER ROADS AND AT OTHER LOCATIONS AS SHOWN ON THE DRAWINGS. ALL ROAD CROSSINGS SHALL BE BACKFILLED TO A STRINGENT COMPACTION STANDARD, USING A NATURAL GRAVEL FOR THE FULL WIDTH OF THE TRENCH TO SUBGRADE LEVEL.
- S.102. ALL SEWER MAINS SHALL BE SUBJECT TO CCTV INSPECTION IN ACCORDANCE WITH PWC CONNECTION CODE.
- S.103. UNDERTAKE 2 DISTORTION TESTS OF MAINS. ONE 3 MONTHS AFTER COMPLETION AND THE SECOND AFTER THE FIRST WET SEASON.
- S.104. PROVIDE CEMENT STABILISED BACKFILL UNDER DRAINAGE PATHS OR OPEN DRAINS.
- S.105. THE DISTANCE TO DOWNSTREAM MANHOLE IS THE PERPENDICULAR DISTANCE TO THE MAIN FROM THE LOT CONNECTION.
- S.106. THE DISTANCE TO DOWNSTREAM MANHOLE IS THE PERPENDICULAR DISTANCE TO THE MAIN FROM THE LOT CONNECTION.
- S.107. TRENCHSTOPS OR BULKHEADS TO BE CONSTRUCTED IN ACCORDANCE WITH WSA4 STANDARD DRAWING WA1-1209 WHERE WATERMAIN GRADE EXCEEDS 5%.

POWER WATER CORPORATION - SEWER

| | |
|------------|---|
| W2-1-01/9 | TYPE 1 SEWER CONNECTION DN 100 AND DN 150 |
| W2-1-02/8 | TYPE 2 SEWER CONNECTION DN 100 AND DN 150 |
| W2-1-04/7 | SEWER CONNECTION LAYOUTS DN 100 AND DN 150 |
| W2-1-05/6 | INTERMEDIATE AND TERMINAL INSPECTION OPENINGS LIGHT AND HEAVY DUTY ARRANGEMENTS |
| W2-1-06/2 | TERMINAL MAINTENANCE SHAFT AND PROPERTY CONNECTION DETAIL |
| W2-1-07/1 | INTERMEDIATE AND TERMINAL INSPECTION OPENING ARRANGEMENTS |
| W2-1-08/7 | TYPE 4 AND 5 SEWER CONNECTIONS DN100 AND DN 150 |
| W2-1-10/3 | TYPE 5 SEWER CONNECTION |
| W2-1-11/1 | ACCESS CHAMBER CONNECTION DN150-DN225 |
| W2-2-01A/3 | ACCESS CHAMBERS CAST INSITU CIRCULAR CHAMBERS (UP TO 6.0m DEEP) SHEET 1 OF 4 |
| W2-2-01D/3 | ACCESS CHAMBERS CAST INSITU AND PRECAST NOTES FOR CONSTRUCTION SHEET 4 OF 4 |
| W2-2-02/6 | ACCESS CHAMBERS PRECAST CHAMBERS (UP TO 6.0m DEEP) |
| W2-2-03/5 | ACCESS CHAMBERS EXTERNAL AND INTERNAL DROPS TYPES 1-4 |
| W2-2-07/4 | MAINTENANCE SHAFT TYPICAL ARRANGEMENT |
| W2-2-08/2 | MAINTENANCE SHAFT PIPELINE CONNECTION DETAILS |

CONTRACTOR TO CONFIRM THAT THE LATEST REVISIONS ARE USED FOR CONSTRUCTION

POWER WATER CORP. DRG No. B22-5031

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd

PowerWater
EMPLOYERS & PROJECT MANAGERS
ABN 20 617 743 692

LAND DEVELOPMENT CORPORATION
urbex

Empower
ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

Client URBEX AND LAND DEVELOPMENT CORP (JV)

Project ZUCCOLI PHASE 3.7

Title SEWER RETICULATION
LOCALITY PLAN AND NOTES

Datum

AHD

PSM

RL

(MGA) COORD

Project No.

Drawing No.

B00202-CS001

Rev

1

Registered PWC Engineer

Date

PWC No.

ENGINEERING CERTIFICATION

Drawn

Design

Design Chk

Appd

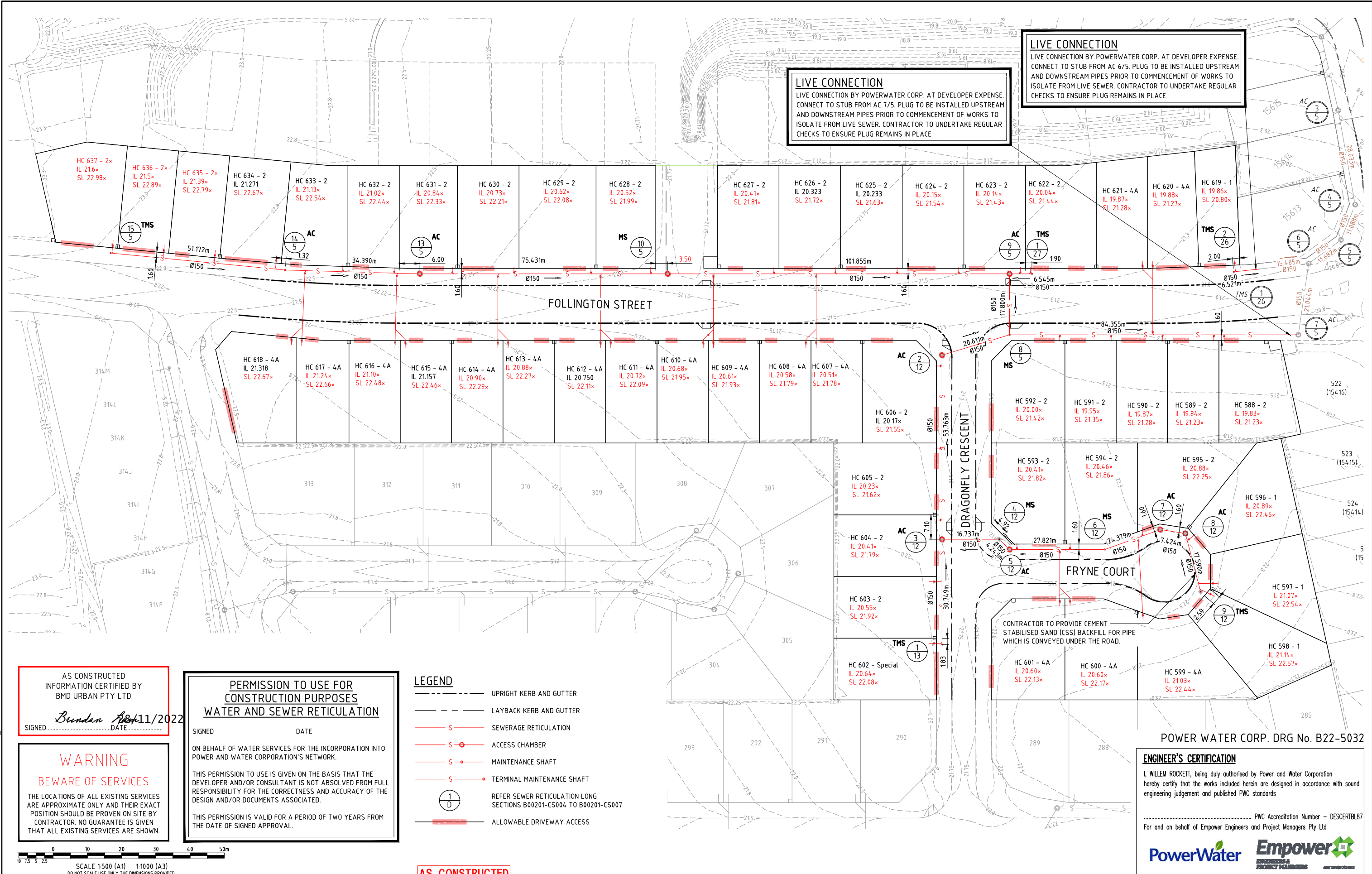
Date

Amendments

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021

User: MARK CARILLO File Name: C:\2025\data\MAN\2025\Y01\B00202 - 1951\1\ CIVIL - DRGS\1\2 CURRENT\B00202-37-SEW

Plot Date: 23/11/2022 9:25:08 AM



AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD
SIGNED: *Bundan* DATE: 11/11/2022

WARNING
BEWARE OF SERVICES
THE LOCATIONS OF ALL EXISTING SERVICES
ARE APPROXIMATE ONLY AND THEIR EXACT
POSITION SHOULD BE PROVEN ON SITE BY
CONTRACTOR. NO GUARANTEE IS GIVEN
THAT ALL EXISTING SERVICES ARE SHOWN.

**PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
WATER AND SEWER RETICULATION**
SIGNED: _____ DATE: _____
ON BEHALF OF WATER SERVICES FOR THE INCORPORATION INTO
POWER AND WATER CORPORATION'S NETWORK.
THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE
DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL
RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE
DESIGN AND/OR DOCUMENTS ASSOCIATED.
THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM
THE DATE OF SIGNED APPROVAL.

- LEGEND**
- UPRIGHT KERB AND GUTTER
 - - - LAYBACK KERB AND GUTTER
 - S — SEWERAGE RETICULATION
 - S — ACCESS CHAMBER
 - S — MAINTENANCE SHAFT
 - S — TERMINAL MAINTENANCE SHAFT
 - S — REFER SEWER RETICULATION LONG SECTIONS B00201-CS004 TO B00201-CS007
 - ALLOWABLE DRIVEWAY ACCESS

POWER WATER CORP. DRG No. B22-5032

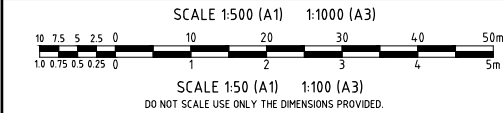
ENGINEER'S CERTIFICATION
I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation
hereby certify that the works included herein are designed in accordance with sound
engineering judgement and published PWC standards
PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd
PowerWater **Empower**
ENGINEERS & PROJECT MANAGERS

AS CONSTRUCTED

Registered PWC Engineer
Date: _____ PWC No.: _____
ENGINEERING CERTIFICATION
No. _____ Amendments: _____ Drawn: _____ Design: _____ Design Chk: _____ Appd: _____ Date: _____



| | | | | |
|---------|--------------------------------------|--|-------------|-----|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | Datum AHD PSM RL (MGA) COORD | | |
| Project | ZUCCOLI PHASE 3.7 | | | |
| Title | SEWER RETICULATION PLAN | AS CONSTRUCTED | | |
| | | Project No. | Drawing No. | Rev |
| | | B00202-CS002 | | 1 |





| MANHOLE TYPE/DROP | 3-5 | 4-5 | 5-5 | 6-5 | 7-5 | 8-5 | 9-5 | 10-5 |
|-------------------|-----------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------|-----------------------------|---------------------------|
| MANHOLE COVER | MS225 | Class D1 S1000 Drop 0.030 TYPE 1 | Class D1 S1000 Drop 0.030 TYPE 1 | Class D1 S1000 Drop 0.030 TYPE 1 | Class D1 S1000 Drop 0.040 TYPE 1 | Class D1 MS225 Drop 0.030 | Class D1 S1000 Drop 0.040 X | Class D1 MS225 Drop 0.030 |
| JUNCTION LINE No. | | | | | | | | |
| JUNCTION DROP | | | | | | | | |
| HC DEPTH | 1.351 | 1.197 | | | 1.132 | 1.134 | 1.1356 | 1.14 |
| HC TYPE | TYPE 2 | TYPE 2 | | | TYPE 2 | TYPE 2 | TYPE 2 | TYPE 2 |
| HC IL | IL 18.695 | IL 19.314 | | | IL 19.834 | IL 19.844 | IL 20.154 | IL 20.524 |
| HC LOT No. | Lot 581 | Lot 580 | | | Lot 588 | Lot 589 | Lot 624 | Lot 628 |

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

..... PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd



LEGEND

- × ALLOTMENT CONTROL LEVEL
- △ HOUSE CONNECTION
- Conc CONCRETE COVER
- C.I. CAST IRON COVER
- Bolt BOLT DOWN COVER

BEDDING/BACKFILL

| PROP. DESCRIPTION | VERGE | VERGE | VERGE | VERGE | TYPE 2/GEO-WRAP BED, GENERAL FILL, VERGE | TYPE 2A/GEO-WRAP BED, CEMENT STAB, SAND ROAD | TYPE 2/GEO-WRAP BED, GENERAL FILL, VERGE |
|----------------------|-------------------|-------------------|-------------------|-------------------|--|--|--|
| DIAMETER/TYPE | Ø150 uPVC SN8 | Ø150 uPVC SN8 | Ø150 uPVC SN8 | Ø150 uPVC SN8 | Ø150 uPVC SN8 | Ø150 uPVC SN8 | Ø150 uPVC SN8 |
| GRADE (1 in) (mm/m) | (8.4) 0.84% | (10.0) 1.00% | (10.0) 1.00% | (8.4) 0.84% | (9.0) 0.90% | (9.0) 0.90% | (8.4) 0.84% |
| LENGTH (1 in X) | (1 in 119) 28.033 | (1 in 100) 11.088 | (1 in 100) 11.682 | (1 in 119) 21.044 | (1 in 112) 84.355 | (1 in 111) 17.800 | (1 in 119) 101.855 |
| DATUM (m) | 12.0 | | | | | | |

| JUNCTION INVERT LEVEL | | | | | | | |
|------------------------|---------|---------|--------|--------|--------|---------|---------|
| DEPTH BELOW F.S.L. | 3.515 | 3.878 | 3.848 | | | 3.470x | 2.863x |
| INVERT LEVEL | 16.449 | 16.685 | 16.715 | 16.826 | 16.972 | 17.976x | 19.060x |
| FINISHED SURFACE LEVEL | 19.965 | 20.562 | 20.999 | 21.008 | 21.121 | 21.446 | 21.923 |
| CHAINAGE | -43.255 | -15.221 | -4.133 | 7.549 | 28.593 | 112.948 | 232.602 |

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD
SIGNED: *Bunden* DATE: 28/11/2022

PERMISSION TO USE FOR CONSTRUCTION PURPOSES WATER AND SEWER RETICULATION

SIGNED _____ DATE _____

ON BEHALF OF WATER SERVICES FOR THE INCORPORATION INTO POWER AND WATER CORPORATION'S NETWORK.

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED.

THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

AS CONSTRUCTED

POWER WATER CORP. DRG No. B22-5033

| No. | Amendments | Drawn | Design | Design Chk | Appd | Date |
|-----|-------------------------|-------|--------|------------|------|----------|
| 1 | AS CONSTRUCTED | JT | LW | WR | MKB | 09/11/22 |
| 0 | ISSUED FOR CONSTRUCTION | MC | LW | WR | MKB | 06/07/22 |

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021



Registered PWC Engineer

Date _____ PWC No. _____

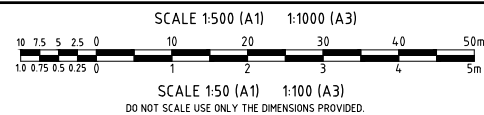
ENGINEERING CERTIFICATION



ENGINEERS & PROJECT MANAGERS

ABN 23 010 743 692

| | | | |
|-------------|---|----------------|-----|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | Datum | AHD |
| Project | ZUCCOLI PHASE 3.7 | PSM | RL |
| Title | SEWER RETICULATION - LONGITUDINAL SECTION | (MGA) COORD | |
| | SHEET 1 OF 3 | AS CONSTRUCTED | |
| Project No. | B00202-CS003 | Drawing No. | |
| Rev | 1 | | |

[illegible]

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

..... PWC Accreditation Number - DESCERTBL8
For and on behalf of Empower Engineers and Project Managers Pty Ltd



LEGEND

- | | |
|------|-------------------------|
| X | ALLOTMENT CONTROL LEVEL |
| ◁ | HOUSE CONNECTION |
| Conc | CONCRETE COVER |
| C.I. | CAST IRON COVER |
| Bolt | BOLT DOWN COVER |

| BEDDING/BACKFILL | | TYPE 2/GEO-WRAP BED, GENERAL FILL. VERGE | | TYPE 2/GEO-WRAP BED, GENERAL FILL. VERGE | | TYPE 2/GEO-WRAP BED, GENERAL FILL. VERGE | | TYPE 2/GEO-WRAP BED, GENERAL FILL. VERGE | |
|------------------------|--|--|--|--|--|--|--|--|--|
| PROP. DESCRIPTION | | | | | | | | | |
| DIAMETER/TYPE | | Ø150 uPVC SN8 | | Ø150 uPVC SN8 | | Ø150 uPVC SN8 | | Ø150 uPVC SN8 | |
| GRADE (1 in) (mm/m) | | (9.1) 0.91% | | (12.7) 1.27% | | (19.7) 1.97% | | (28.3) 2.83% | |
| LENGTH (1 in X) | | (1 in 110) 70.431 | | (1 in 79) 39.387 | | (1 in 51) 51.172 | | (1 in 35) 6.545 | |
| DATUM (m) | | | | 14.0 | | | | 12.0 | |
| JUNCTION INVERT LEVEL | | | | | | | | | |
| DEPTH BELOW F.S.L. | | 2.863x 2.828x | | 2.632 2.628x | | 2.360x 2.324x | | 1.656x | |
| INVERT LEVEL | | 19.060x 19.095x | | 19.718 19.722x | | 20.246x 20.282x | | 21.285x | |
| FINISHED SURFACE LEVEL | | 21.923 | | 22.350 | | 22.606 | | 22.941 | |
| CHAINAGE | | 232.602 | | 303.033 | | 314.240 | | 393.592 | |

LINE

AS CONSTRUCTED

[illegible]

| | | | |
|----------------|--|----------------------------|--------------------|
| <i>Client</i> | URBEX AND LAND DEVELOPMENT CORP (JV) | <i>Datum</i> AHD | |
| <i>Project</i> | ZUCCOLI PHASE 3.7 | PSM . | |
| <i>Title</i> | SEWER RETICULATION - LONGITUDINAL SECTION | RL | |
| | SHEET 2 OF 3 | (MGA) COORD | |
| | | AS CONSTRUCTED | |
| | | <i>Project No.</i> | <i>Drawing No.</i> |
| | | B00202-CS004 | 1 |

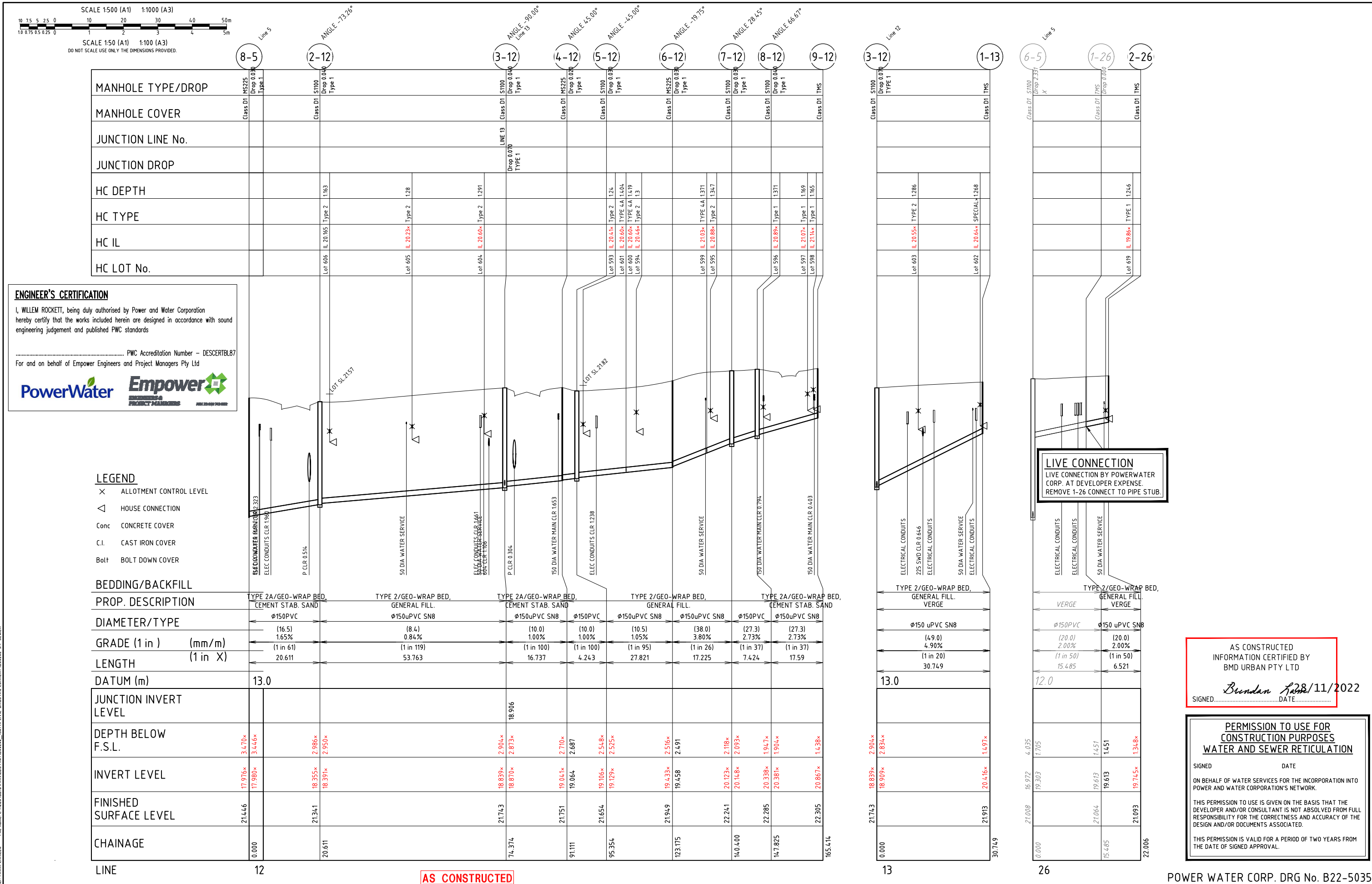
AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED Brendan Ham DATE 28/11/2022

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
WATER AND SEWER RETICULATION

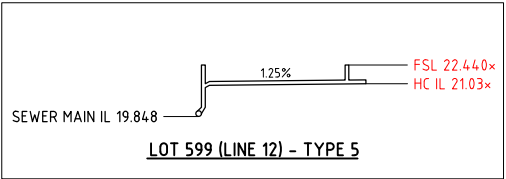
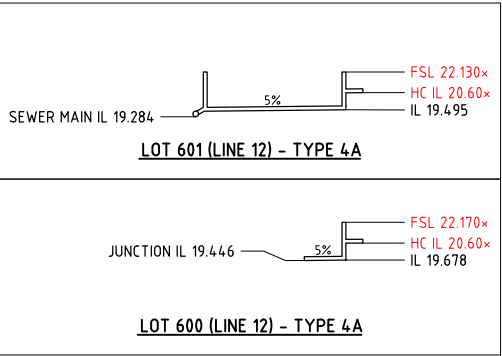
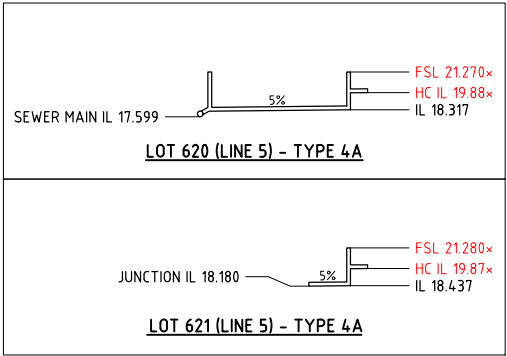
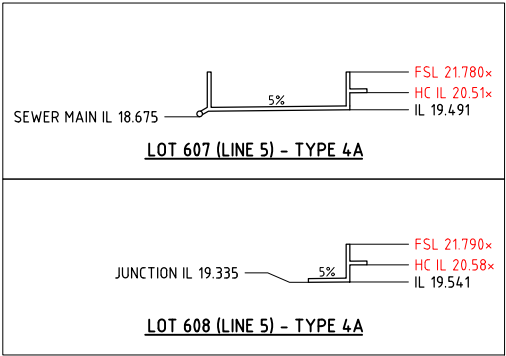
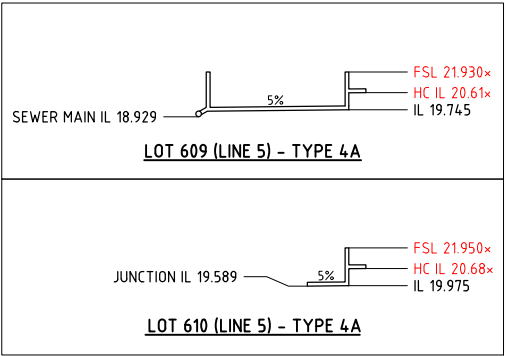
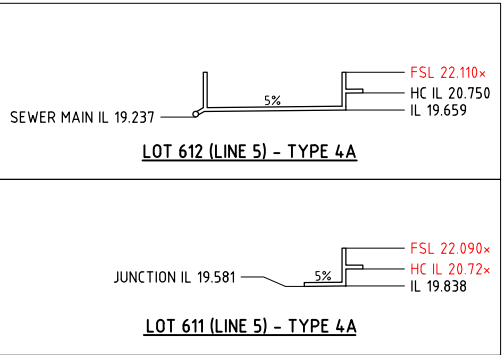
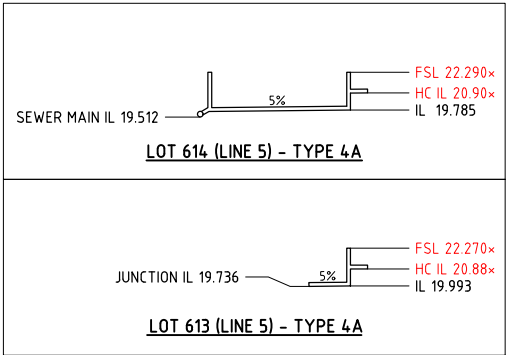
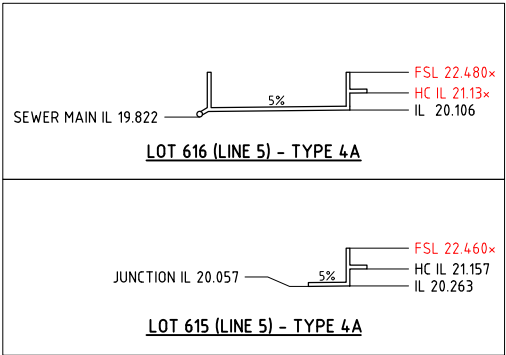
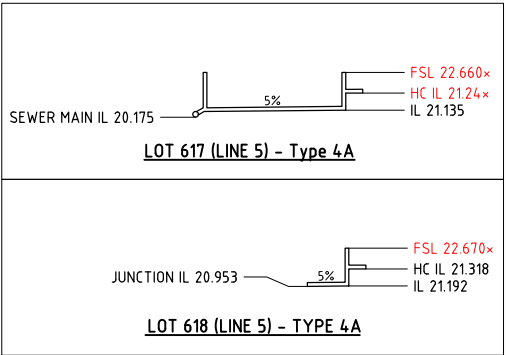
| | |
|---|------|
| SIGNED | DATE |
| ON BEHALF OF WATER SERVICES FOR THE INCORPORATION INTO POWER AND WATER CORPORATION'S NETWORK. | |
| THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. | |
| THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL. | |

POWER WATER CORP. DRG No. B22-5034



User: MARK CARILLO File Name: C:\025\data\MANHOLE\B00202 - 37-SEW.LX Plot Date: 23/11/2022 9:25:17 AM

User: MARK CARILLO File Name: C:\Users\markcarillo\Documents\B00202-37-SEW.LX Plot Date: 23/11/2022 9:25:18 AM



NOTES FOR LINES 4, 5, 6 AND 30:

- × HC IL DENOTES THE INVERT LEVEL OF THE HOUSE CONNECTION AT THE STUB.
- × ALL OTHER IL'S NOMINATED ARE TO ASSIST WITH CONSTRUCTION.
- × REFERENCE IS MADE TO THE PWC STANDARD DRAWINGS NOMINATED IN DRAWING B00202-CS006

AS CONSTRUCTED

Registered PWC Engineer

Date PWC No.

ENGINEERING CERTIFICATION

No. Amendments Drawn Design Design Chk Appd Date

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers ©COPYRIGHT 2021



AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: *Brendan Lee* DATE: 28/11/2022

**PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
WATER AND SEWER RETICULATION**

SIGNED _____ DATE _____

ON BEHALF OF WATER SERVICES FOR THE INCORPORATION INTO
POWER AND WATER CORPORATION'S NETWORK.

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE
DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL
RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE
DESIGN AND/OR DOCUMENTS ASSOCIATED.

THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM
THE DATE OF SIGNED APPROVAL.

POWER WATER CORP. DRG No. B22-5036

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation
hereby certify that the works included herein are designed in accordance with sound
engineering judgement and published PWC standards

..... PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd



Client **URBEX AND LAND DEVELOPMENT CORP (JV)**

Project **ZUCCOLI PHASE 3.7**

Title **SEWER RETICULATION
HOUSE CONNECTION DETAILS**

Datum
AHD

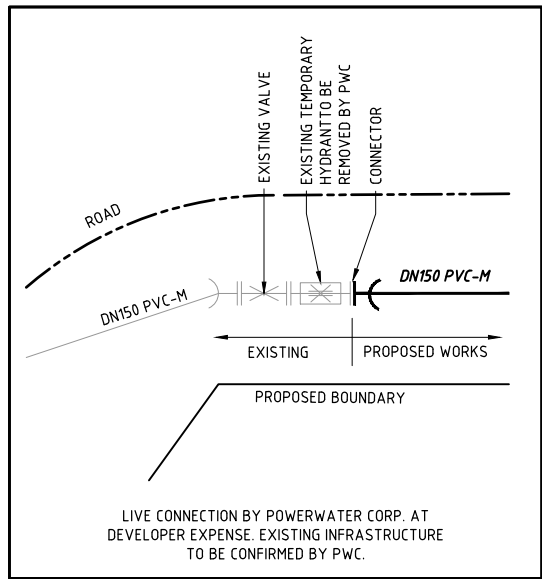
PSM
RL

(MGA) COORD

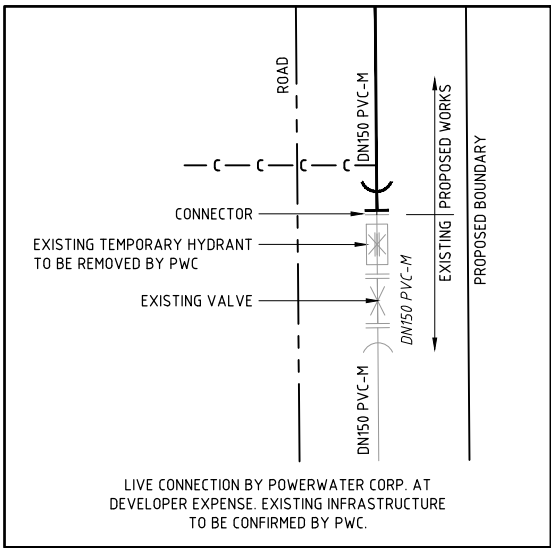
AS CONSTRUCTED

Project No. Drawing No. Rev

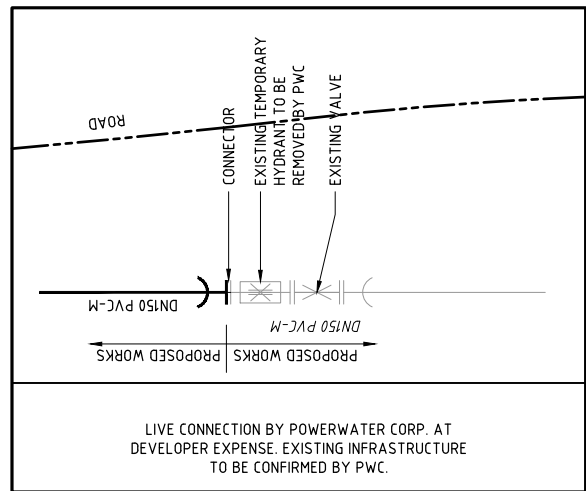
B00202-CS006 1



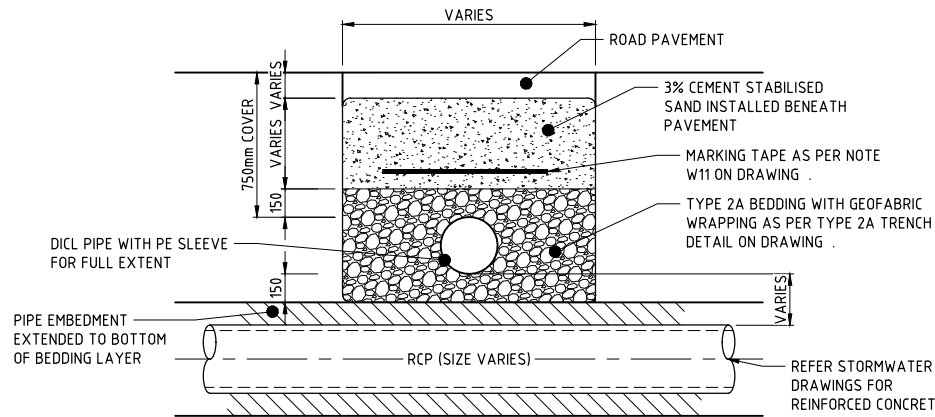
CONNECTION DETAIL A
N.T.S.



CONNECTION DETAIL B
N.T.S.



CONNECTION DETAIL C
N.T.S.



TYPICAL DETAIL FOR WATER MAINS CROSSING STORMWATER
SCALE 1:20

THRUST BLOCK NOTES

1. REFER PWC STD. DWG. W1-2-05 FOR DN150 AND DN225 THRUST BLOCK DETAILS.
2. UNLESS NOTED OTHERWISE, REFER TO THIS DETAILS ON THIS DRAWING AND PWC STANDARD DRAWING W1-2-05 FOR DN150 AND DN225 THRUST BLOCK DETAILS.
3. CONTRACTOR TO CONFIRM THE SOIL BEARING CAPACITY PRIOR TO THE CONSTRUCTION OF THE THRUST BLOCK. CERTIFIER TO WITNESS AND REPORT.

MINIMUM BLOCK VOLUME FOR ANCHORAGE OF VERTICAL COMPONENT OF THRUST

| PIPE DN | VERTICAL BENDS FOR TEST PRESSURE OF 1000 kPa | | |
|---------|--|-------------|-----------|
| | CONCRETE VOLUME m ³ | | |
| | 11.25° BENDS | 22.5° BENDS | 45° BENDS |
| Ø150 | 0.2 | 0.4 | 0.75 |
| Ø225 | 0.45 | 0.85 | 1.60 |

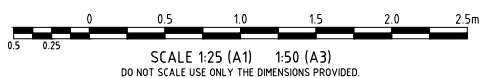
ON BEHALF OF WATER SERVICES, FOR INCORPORATION INTO POWER WATER CORP'S NETWORK.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS. THIS APPROVAL DOES NOT RELIEVE THE DEVELOPER AND CONSULTANT FROM FULL RESPONSIBILITY FOR THE CORRECTNESS OF THE DESIGN AND ASSOCIATED DOCUMENTS. THIS DRAWING IS VALID ONLY FOR 2 YEARS FROM DATE OF SIGNING

SIGNED DATE

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED *Brundan* 28/11/2022
DATE



AS CONSTRUCTED



| | | | | |
|--------------|--------------------------------------|----------------|-------------|-----|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) | | Datum | AHD |
| Project | ZUCCOLI PHASE 3.7 | | PSM | RL |
| Title | WATER RETICULATION - DETAILS PLAN | | (MGA) COORD | |
| | | AS CONSTRUCTED | | |
| Project No. | Drawing No. | Rev | | |
| B00202-CW003 | | 1 | | |

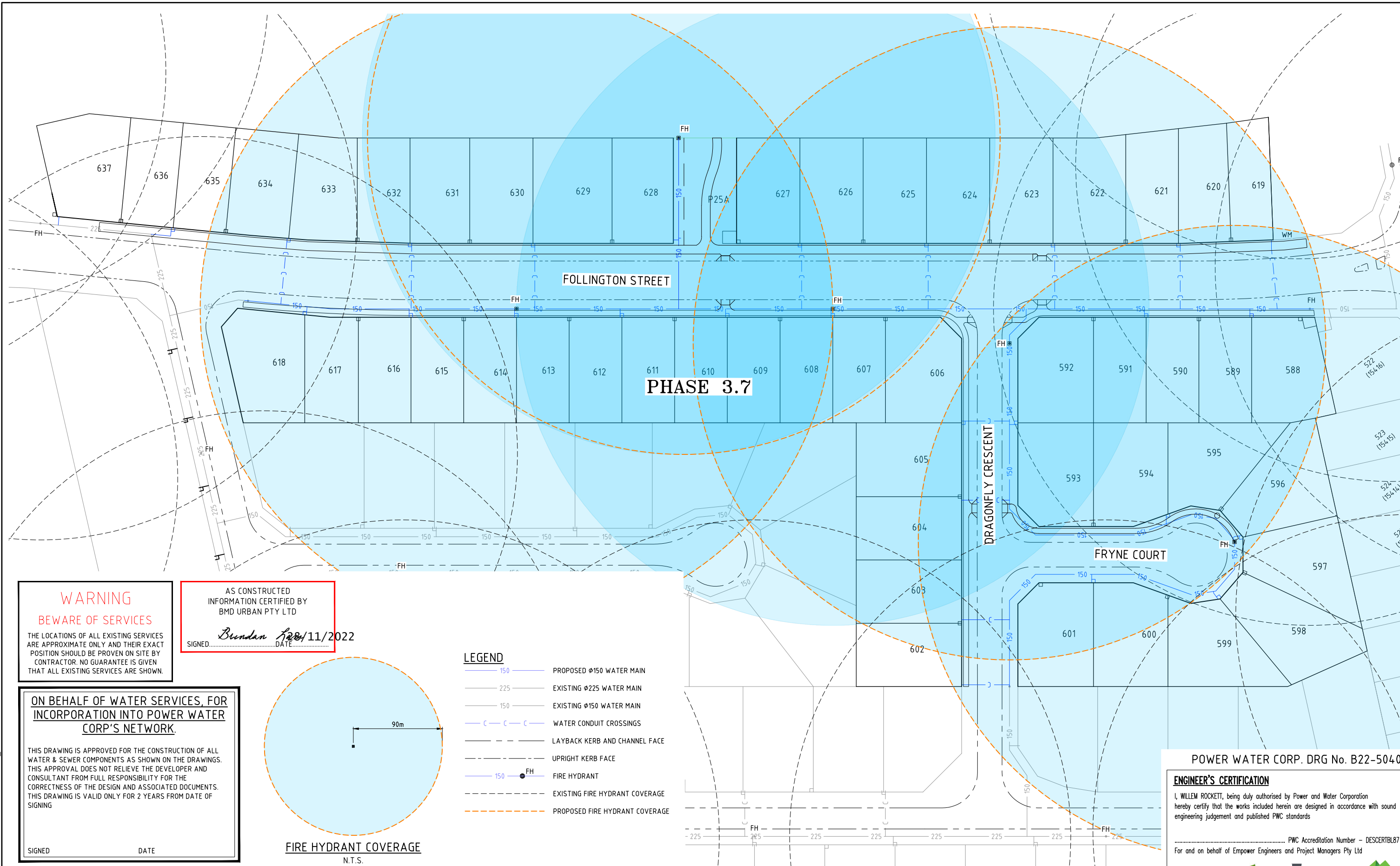
POWER WATER CORP. DRG No. B22-5039

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

PWC Accreditation Number - DESCERTBL87
For and on behalf of Empower Engineers and Project Managers Pty Ltd





WARNING

WARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: Brendan DATE: 12/11/2022










ON BEHALF OF WATER SERVICES, FOR
INCORPORATION INTO POWER WATER
CORP'S NETWORK.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL
WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS.
THIS APPROVAL DOES NOT RELIEVE THE DEVELOPER AND
CONSULTANT FROM FULL RESPONSIBILITY FOR THE
CORRECTNESS OF THE DESIGN AND ASSOCIATED DOCUMENTS.
THIS DRAWING IS VALID ONLY FOR 2 YEARS FROM DATE OF
SIGNING

SIGNED _____ DATE _____

FIRE HYDRANT COVERAGE
N.T.S.

LEGEND

- | | | |
|---|-----|--------------------------------|
|  | 150 | PROPOSED Ø150 WATER MAIN |
|  | 225 | EXISTING Ø225 WATER MAIN |
|  | 150 | EXISTING Ø150 WATER MAIN |
|  | | WATER CONDUIT CROSSINGS |
|  | | LAYBACK KERB AND CHANNEL FACE |
|  | | UPRIGHT KERB FACE |
|  | | FIRE HYDRANT |
|  | | EXISTING FIRE HYDRANT COVERAGE |
|  | | PROPOSED FIRE HYDRANT COVERAGE |

AS CONSTRUCTED

Registered PwC Engineer

| | | |
|----|-------------|----------------|
| 22 | <u>Date</u> | <u>PWC No.</u> |
|----|-------------|----------------|

22 | ENGINEERING CERTIFICATION

Project Managers ©COPYRIGHT 2021



LAND DEVELOPMENT
CORPORATION

urbex

Empower
ENGINEERS &
PROJECT MANAGERS
APN 23 010 743 692

| | |
|--------|--------------------------------------|
| Client | URBEX AND LAND DEVELOPMENT CORP (JV) |
|--------|--------------------------------------|

Project **ZUCCOLI PHASE 3.7**

| | |
|-------|--|
| Title | WATER RETICULATION FIRE HYDRANT COVERAGE PLAN |
|-------|--|

POWER WATER CORP. DRG No. B22-5040

ENGINEER'S CERTIFICATION

I, WILLEM ROCKETT, being duly authorised by Power and Water Corporation hereby certify that the works included herein are designed in accordance with sound engineering judgement and published PWC standards

For and on behalf of Empower Engineers and Project Managers Pty Ltd




| | |
|-------------|--|
| Datum | |
| AHD | |
| PSM . | |
| RL . | |
| (MGA) COORD | |

| | |
|----------------|--|
| AS CONSTRUCTED | |
|----------------|--|

| | | |
|--------------|-------------|-----|
| Project No. | Drawing No. | Rev |
| B00202-CW004 | | 1 |

User: MARK CARILLO
File Name: C:\2d\data\MAN12DSYN01\B00202_1361\4 CIVIL-DRGS\4.2 CURRENT\B00202-3.7-WATFH

Plot Date: 23/11/2022 9:29:07 AM

This drawing cannot be copied or reproduced in any form or used for any purpose other than that originally intended without the written permission of Empower Engineers and Project Managers © COPYRIGHT 2021