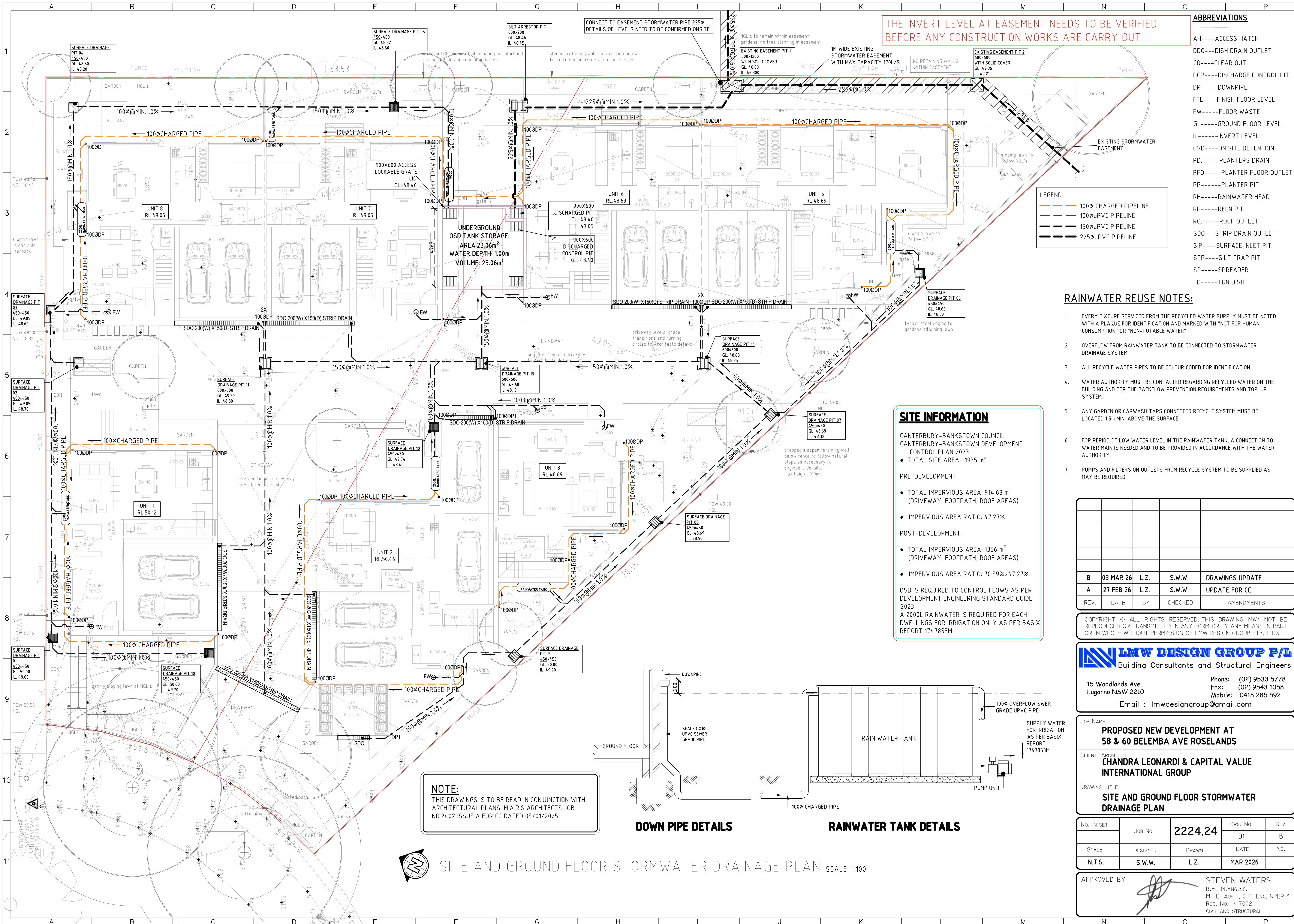




THE INVERT LEVEL AT EASEMENT NEEDS TO BE VERIFIED BEFORE ANY CONSTRUCTION WORKS ARE CARRY OUT

ABBREVIATIONS

- AH----ACCESS HATCH
- DDO----DISH DRAIN OUTLET
- CO----CLEAR OUT
- DCP----DISCHARGE CONTROL PIT
- DP----DOWNPIPE
- FFL----FINISH FLOOR LEVEL
- FW----FLOOR WASTE
- GL----GROUND FLOOR LEVEL
- IL----INVERT LEVEL
- OSD----ON SITE DETENTION
- PD----PLANTERS DRAIN
- PFO----PLANTER FLOOR OUTLET
- PP----PLANTER PIT
- RH----RAINWATER HEAD
- RP----RELN PIT
- RO----ROOF OUTLET
- SDO---STRIP DRAIN OUTLET
- SIP----SURFACE INLET PIT
- STP----SILT TRAP PIT
- SP----SPREADER
- TD----TUN DISH

- LEGEND
- 100Ø CHARGED PIPELINE
  - 100ØUPVC PIPELINE
  - 150ØUPVC PIPELINE
  - 225ØUPVC PIPELINE

RAINWATER REUSE NOTES:

- EVERY FIXTURE SERVICED FROM THE RECYCLED WATER SUPPLY MUST BE NOTED WITH A PLAQUE FOR IDENTIFICATION AND MARKED WITH "NOT FOR HUMAN CONSUMPTION" OR "NON-POTABLE WATER".
- OVERFLOW FROM RAINWATER TANK TO BE CONNECTED TO STORMWATER DRAINAGE SYSTEM.
- ALL RECYCLE WATER PIPES TO BE COLOUR CODED FOR IDENTIFICATION.
- WATER AUTHORITY MUST BE CONTACTED REGARDING RECYCLED WATER ON THE BUILDING AND FOR THE BACKFLOW PREVENTION REQUIREMENTS AND TOP-UP SYSTEM.
- ANY GARDEN OR CARWASH TAPS CONNECTED RECYCLE SYSTEM MUST BE LOCATED 1.5m MIN. ABOVE THE SURFACE.
- FOR PERIOD OF LOW WATER LEVEL IN THE RAINWATER TANK, A CONNECTION TO WATER MAIN IS NEEDED AND TO BE PROVIDED IN ACCORDANCE WITH THE WATER AUTHORITY.
- PUMPS AND FILTERS ON OUTLETS FROM RECYCLE SYSTEM TO BE SUPPLIED AS MAY BE REQUIRED.

SITE INFORMATION

CANTERBURY-BANKSTOWN COUNCIL  
CANTERBURY-BANKSTOWN DEVELOPMENT  
CONTROL PLAN 2023  
• TOTAL SITE AREA: 1935 m<sup>2</sup>

PRE-DEVELOPMENT:

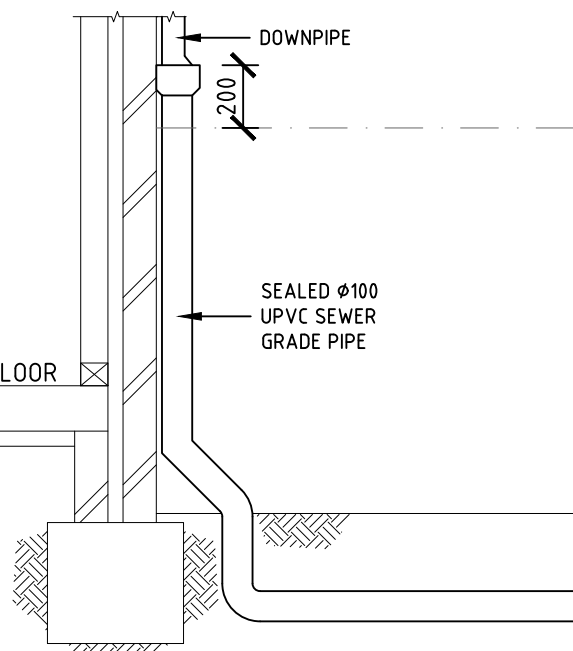
- TOTAL IMPERVIOUS AREA: 914.68 m<sup>2</sup> (DRIVEWAY, FOOTPATH, ROOF AREAS)
- IMPERVIOUS AREA RATIO: 47.27%

POST-DEVELOPMENT:

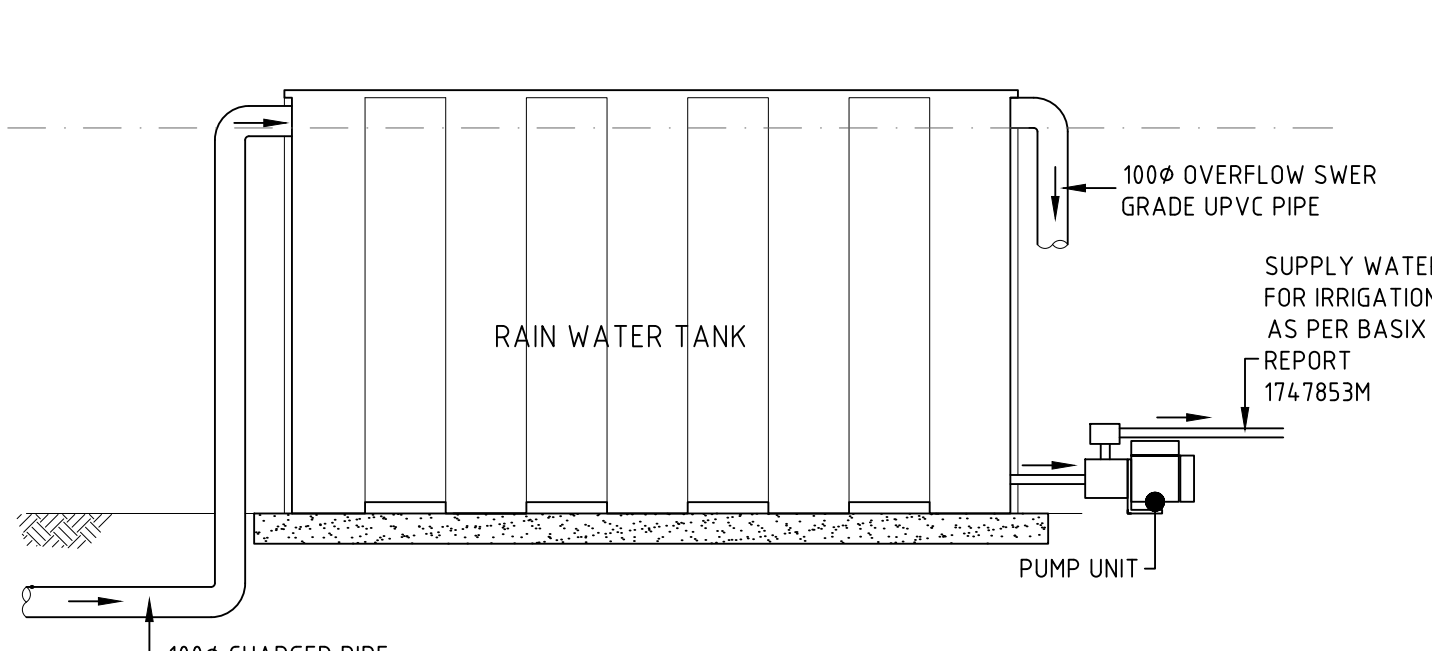
- TOTAL IMPERVIOUS AREA: 1366 m<sup>2</sup> (DRIVEWAY, FOOTPATH, ROOF AREAS)
- IMPERVIOUS AREA RATIO: 70.59%-47.27%

OSD IS REQUIRED TO CONTROL FLOWS AS PER DEVELOPMENT ENGINEERING STANDARD GUIDE 2023  
A 2000L RAINWATER IS REQUIRED FOR EACH DWELLINGS FOR IRRIGATION ONLY AS PER BASIX REPORT 1747853M

NOTE:  
THIS DRAWINGS IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL PLANS: M.A.R.S ARCHITECTS JOB NO.2402 ISSUE A FOR CC DATED 05/01/2025.



DOWN PIPE DETAILS



RAINWATER TANK DETAILS

SITE AND GROUND FLOOR STORMWATER DRAINAGE PLAN SCALE: 1:100

| REV. | DATE      | BY   | CHECKED | AMENDMENTS      |
|------|-----------|------|---------|-----------------|
| B    | 03 MAR 26 | L.Z. | S.W.W.  | DRAWINGS UPDATE |
| A    | 27 FEB 26 | L.Z. | S.W.W.  | UPDATE FOR CC   |

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JOB NAME  
**PROPOSED NEW DEVELOPMENT AT 58 & 60 BELEMB AVE ROSELANDS**

CLIENT, ARCHITECT  
**CHANDRA LEONARDI & CAPITAL VALUE INTERNATIONAL GROUP**

DRAWING TITLE  
**SITE AND GROUND FLOOR STORMWATER DRAINAGE PLAN**

| No. IN SET | JOB No   | 2224.24 | DRG. No  | REV |
|------------|----------|---------|----------|-----|
| SCALE      | DESIGNED | DRAWN   | DATE     | No. |
| N.T.S.     | S.W.W.   | L.Z.    | MAR 2026 |     |

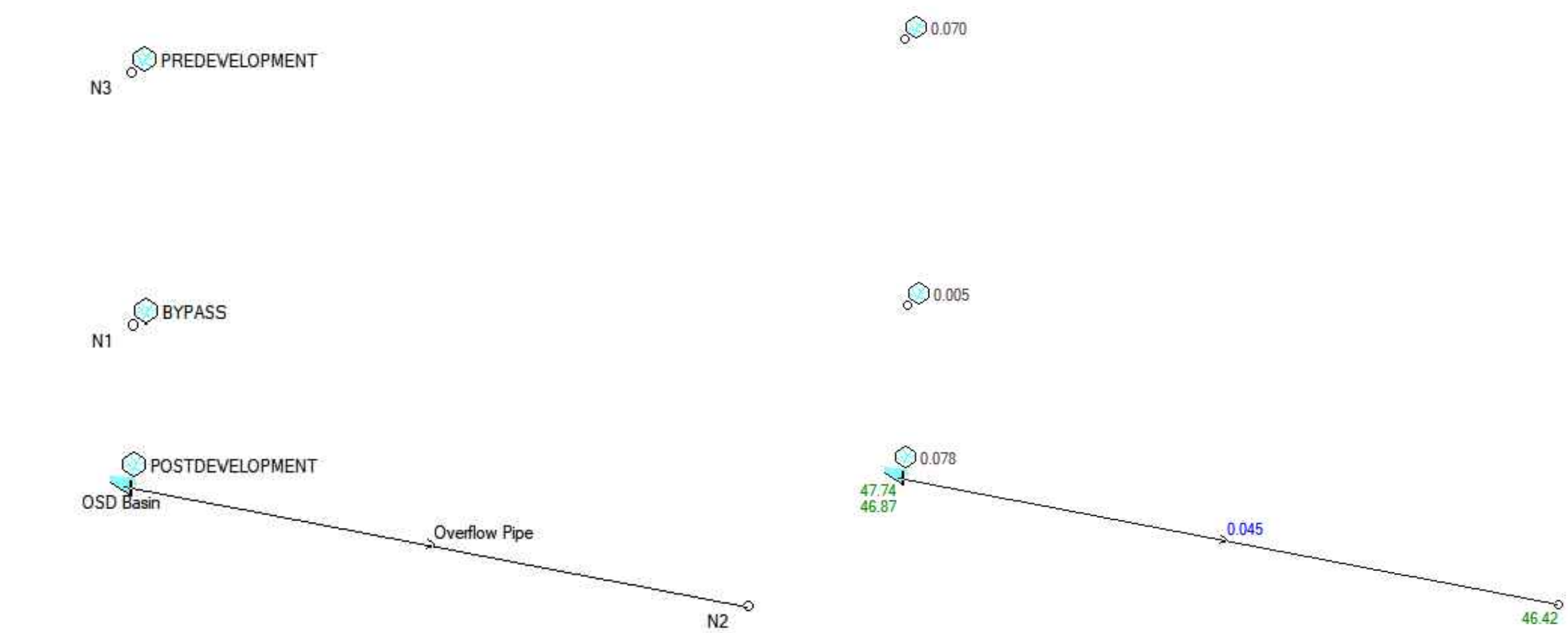
APPROVED BY

STEVEN WATERS  
B.E., M.Eng.Sc.  
M.I.E. Aust., C.P. Eng, NPER-3  
REG. No. 417092  
CIVIL AND STRUCTURAL

POST-DEVELOPMENT OSD REQUIREMENTS:

| LOT AREA (m2) | PRE-DEV IMPERVIOUS (%) | POST-DEV IMPERVIOUS (%) | STORM (YR) | PRE-DEV(PSD) FLOW (m3/s) | POST-DEV FLOW (m3/s) | PIPE OUTFLOW (m3/s) | BYPASS FLOW (m3/s) | TOTAL FLOW (m3/s) | OSD VOLUME (m3) FOR 100 YR STORM STORAGE |
|---------------|------------------------|-------------------------|------------|--------------------------|----------------------|---------------------|--------------------|-------------------|------------------------------------------|
| 1935          | 47.27                  | 70.59                   | 5          | 0.036                    | 0.045                | 0.029               | 0.002              | 0.031             | 22.35                                    |
|               |                        |                         | 10         | 0.046                    | 0.054                | 0.033               | 0.003              | 0.036             |                                          |
|               |                        |                         | 20         | 0.053                    | 0.061                | 0.037               | 0.003              | 0.04              |                                          |
|               |                        |                         | 50         | 0.062                    | 0.071                | 0.041               | 0.004              | 0.045             |                                          |
|               |                        |                         | 100        | 0.07                     | 0.078                | 0.045               | 0.005              | 0.05              |                                          |

DRAINS MODEL



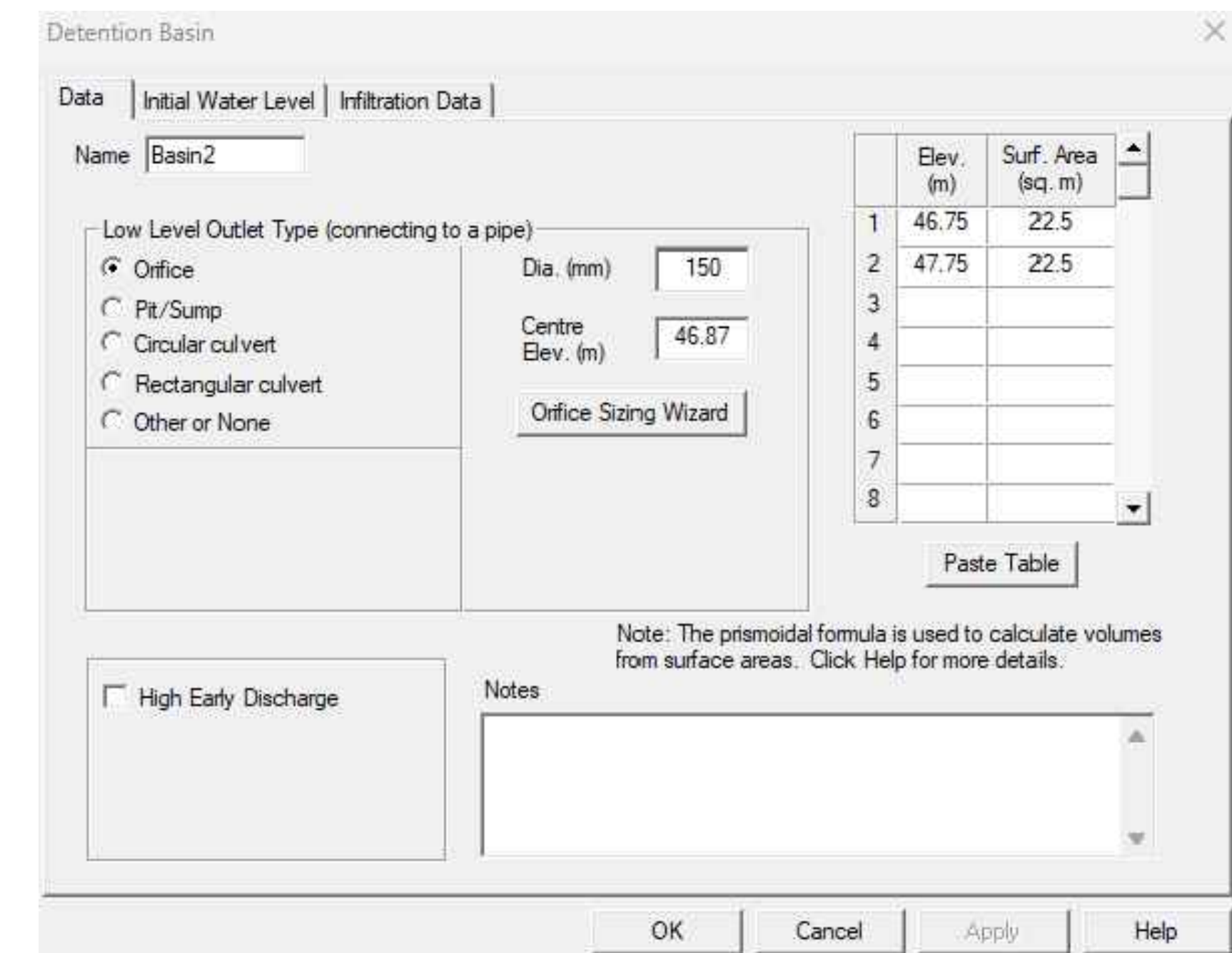
DRAINS 100YR RESULT

RAINFALL DATA INPUTS



Design Rainfall Data System (2016)

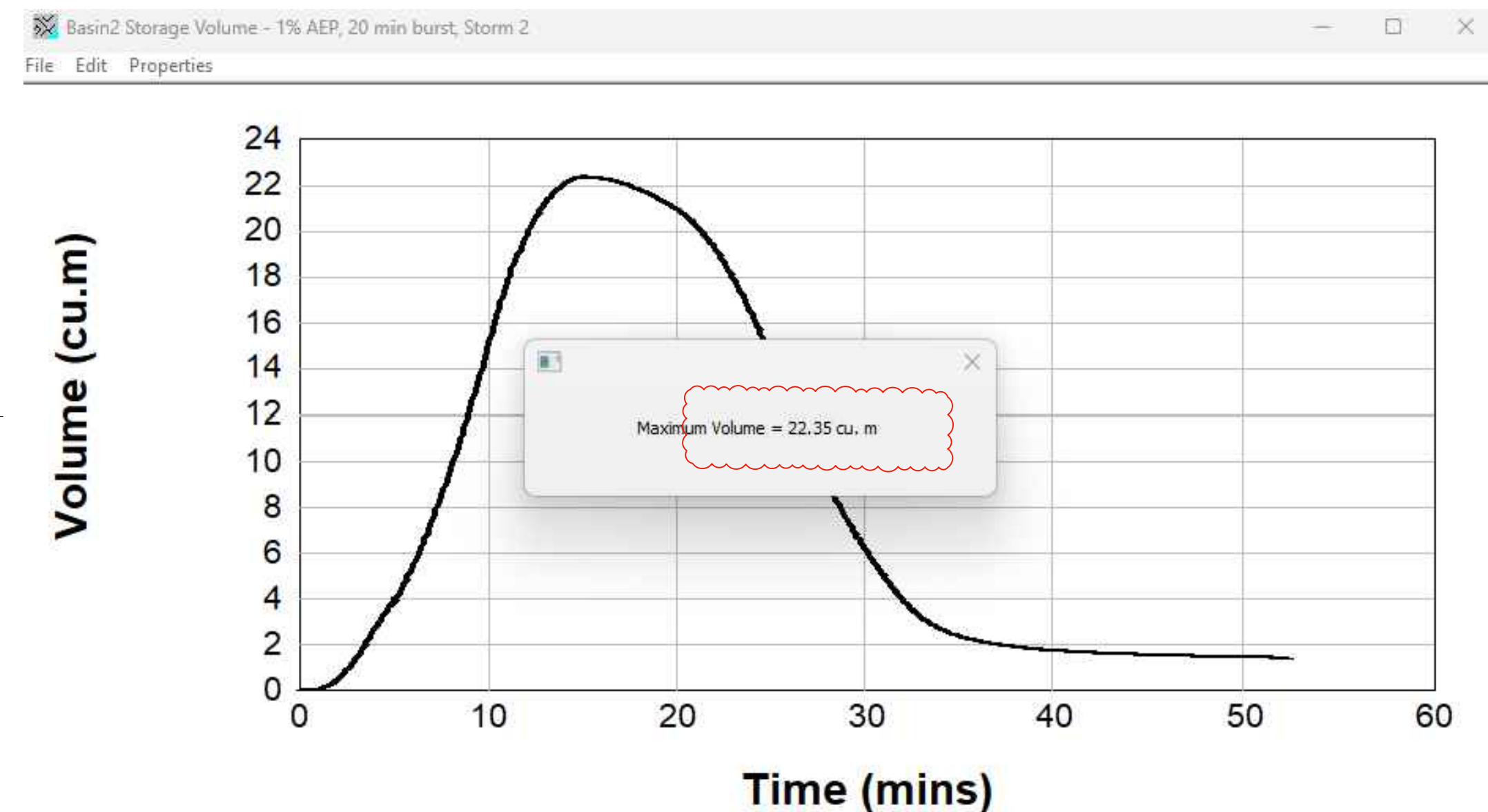
DRAINS MODEL OF OSD



COUNCIL'S DCP REQUIREMENT - ENGINEERING STANDARDS GUIDE( AMENDED AUGUST 2024)  
Peak and pre-development stormwater discharges

7.1 OSD must be designed and constructed to control stormwater runoff from development sites such that, for 5 to 100-year ARI events, peak stormwater discharges from the site do not exceed pre-development stormwater discharges.

DRAINS RESULT OF OSD VOLUME 100YR

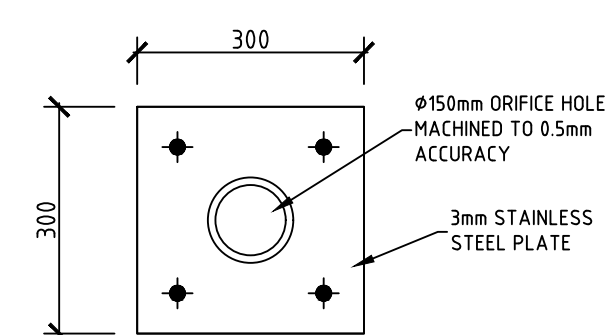


**OSD CALCULATION FOR 100 YRS:**  
REQUIRED OSD VOLUME BY DRAINS: 22.35m³  
DESIGNED WATER DEPTH: 1.00m  
PROPOSED UNDER GROUND OSD BASIN  
VOLUME: 23.06 m³  
PIPE TYPE AT EASEMENT: PVC 225Ø  
PIPE SLOPE AT EASEMENT: 6.0%  
MAXIMUM PIPE FLOW RATE AT EASEMENT: 170L/S  
100 YEAR DISCHARGED FLOW RATE AT PROPOSED SITE: 50L/S  
TOTAL DISCHARGED FLOW RATE AT 62-64 BELEMB  
AVENUE ROSELANDS: 48L/S  
ACCUMULATED FLOW RATE FOR BOTH SITES:  
50 + 48 = 98 L/S < 170L/S

| MAINTENANCE ACTION                                                                                       | FREQUENCY   | RESPONSIBILITY         | PROCEDURE                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------|-------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Outlets</b>                                                                                           |             |                        |                                                                                                                                                                                                                                          |
| Inspect & remove any blockage of orifices                                                                | Six monthly | Owner                  | Remove grate & screen to inspect orifice. See plan for location of outlets                                                                                                                                                               |
| Check attachment of orifice plates to wall of chamber and/or pit (gaps less than 5 mm)                   | Annually    | Maintenance Contractor | Remove grate and screen. Ensure plates are mounted securely, tighten fixings if required. Seal gaps as required.                                                                                                                         |
| Check orifice diameters are correct and retain sharp edges                                               | Five yearly | Maintenance Contractor | Compare diameter to design (see Work-as-Executed) and ensure edge is not pitted or damaged.                                                                                                                                              |
| Inspect screen and clean                                                                                 | Six monthly | Owner                  | Remove grate(s) and screens if required to clean them.                                                                                                                                                                                   |
| Check attachment of screens to wall of chamber or pit                                                    | Annually    | Maintenance Contractor | Remove grate(s) and screen(s). Ensure screen fixings are secure. Repair as required.                                                                                                                                                     |
| Check screen(s) for corrosion                                                                            | Annually    | Maintenance Contractor | Remove grate(s) and examine screen(s) for rust or corrosion, especially at corners or welds.                                                                                                                                             |
| Inspect walls (internal and external, if appropriate) for cracks or spalling                             | Annually    | Maintenance Contractor | Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.                                                                                                 |
| Inspect outlet sumps & remove any sediment/sludge                                                        | Six monthly | Owner                  | Remove grate(s) and screen(s). Remove sediment/sludge build-up and check orifices are clear.                                                                                                                                             |
| Inspect grate(s) for damage or blockage                                                                  | Six monthly | Owner                  | Check both sides of a grate for corrosion, (especially corners and welds) damage or blockage.                                                                                                                                            |
| Inspect outlet pipe & remove any blockage                                                                | Six monthly | Maintenance Contractor | Remove grate(s) and screen(s). Ventilate underground storage if present. Check orifices and remove any blockages in outlet pipe. Flush outlet pipe to confirm it drains freely. Check for sludge/debris on upstream side of return line. |
| Check step irons for corrosion                                                                           | Annually    | Maintenance Contractor | Remove grate. Examine step irons and repair any corrosion or damage.                                                                                                                                                                     |
| Check fixing of step irons is secure                                                                     | Six monthly | Maintenance Contractor | Remove grate(s) and ensure fixings are secure prior to placing weight on step iron.                                                                                                                                                      |
| <b>Storage</b>                                                                                           |             |                        |                                                                                                                                                                                                                                          |
| Inspect storage & remove any sediment/sludge in pit                                                      | Six monthly | Owner                  | Remove grate(s) and screen(s). Remove sediment/sludge build-up.                                                                                                                                                                          |
| Inspect internal walls of storage (and external, if appropriate) for cracks or spalling                  | Annually    | Maintenance Contractor | Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.                                                                                                 |
| Inspect & remove any debris/litter/mulch etc blocking grates                                             | Six monthly | Owner                  | Remove blockages from grate(s) and check if storage is blocked.                                                                                                                                                                          |
| Inspect areas draining to the storage(s) & remove debris/mulch/litter etc likely to block screens/grates | Six monthly | Owner                  | Remove debris and floatable material likely to be carried to grates.                                                                                                                                                                     |
| Compare storage volume to volume approved. (Rectify if loss > 5%)                                        | Annually    | Maintenance Contractor | Compare actual storage available with Work-as Executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.                                          |
| Inspect storages for subsidence near pits                                                                | Annually    | Maintenance Contractor | Check along drainage lines and at pits for subsidence likely to indicate leakages.                                                                                                                                                       |

OSD MAINTENANCE SCHEDULE

ORIFICE PLATE



TYPICAL ORIFICE PLATE  
ELEVATION  
NTS

|      |           |      |         |                 |
|------|-----------|------|---------|-----------------|
|      |           |      |         |                 |
|      |           |      |         |                 |
|      |           |      |         |                 |
|      |           |      |         |                 |
| B    | 03 MAR 26 | L.Z. | S.W.W.  | DRAWINGS UPDATE |
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| REV. | DATE      | BY   | CHECKED | AMENDMENTS      |

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JOB NAME  
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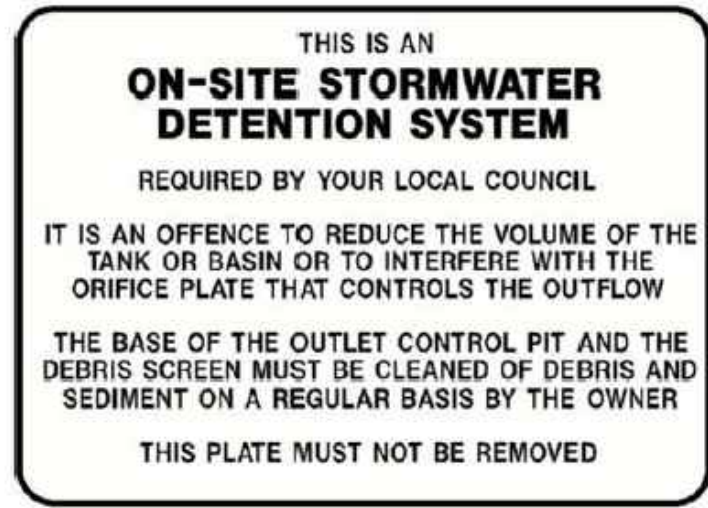
DRAWING TITLE  
**OSD CALCULATION AND DRAINS MODELING  
RESULT**

|            |          |         |          |     |
|------------|----------|---------|----------|-----|
| No. IN SET | JOB No   | 2224.24 | DRG. No  | REV |
|            |          |         | D2       | B   |
| SCALE      | DESIGNED | DRAWN   | DATE     | No. |
| N.T.S.     | S.W.W.   | L.Z.    | MAR 2026 |     |

APPROVED BY  
  
STEVEN WATERS  
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M.I.E. Aust., C.P. Eng, NPER-3  
REG. No. 447092  
CIVIL AND STRUCTURAL



OSD Signage

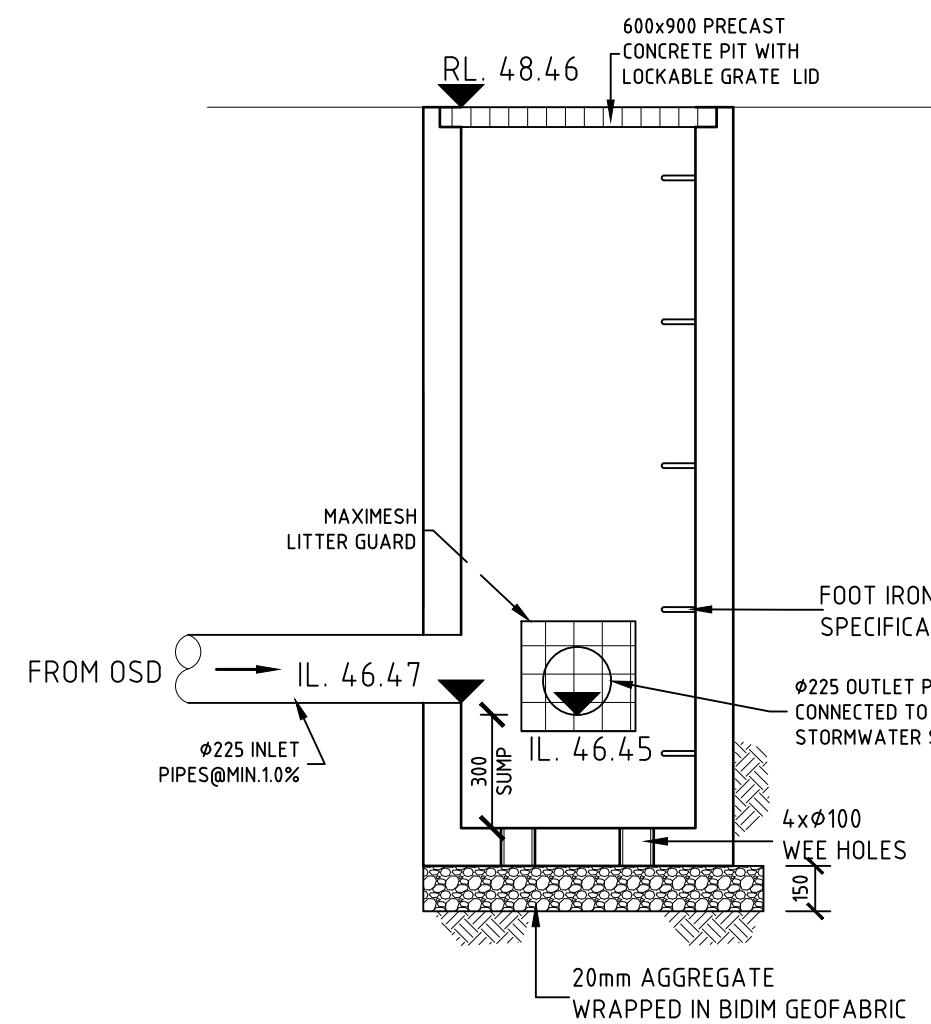


### OSD MARKER PLATE

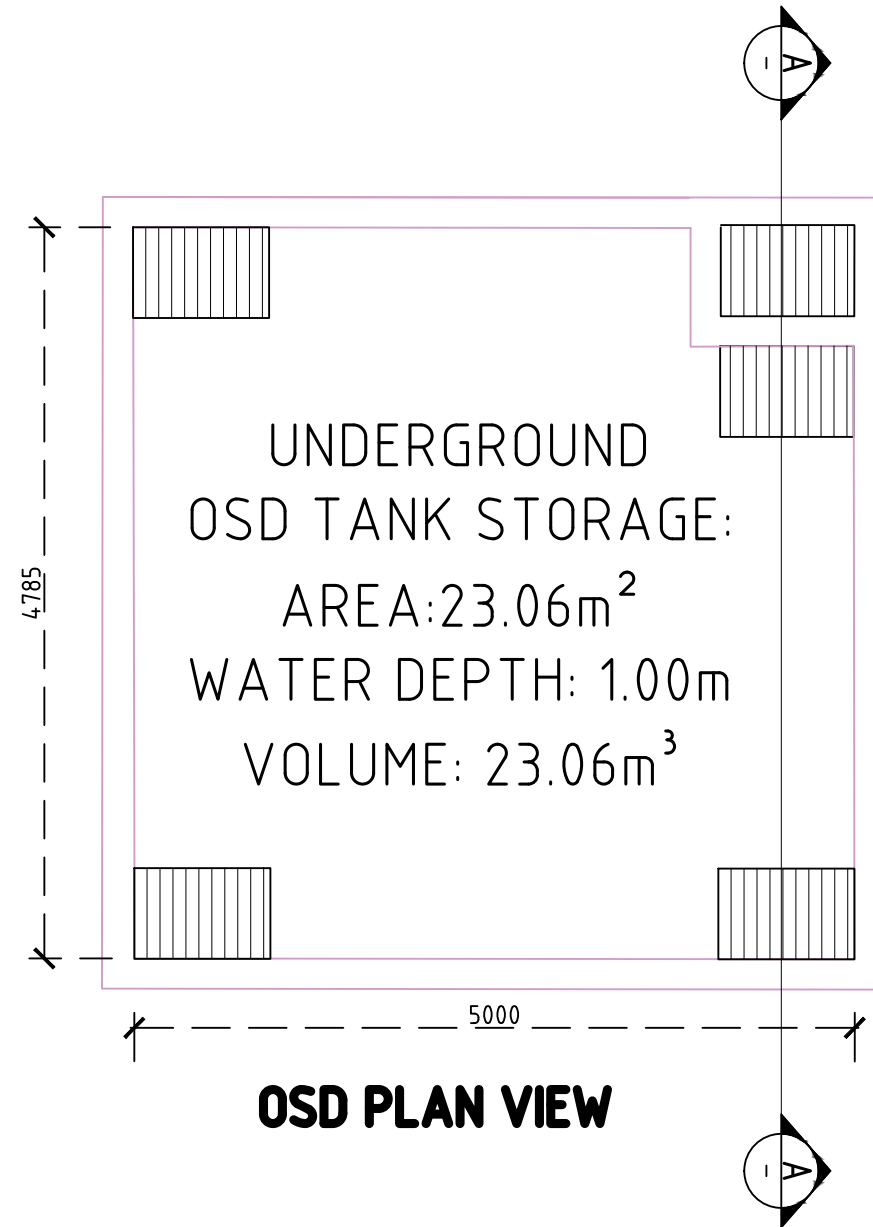
Confined Space Signage



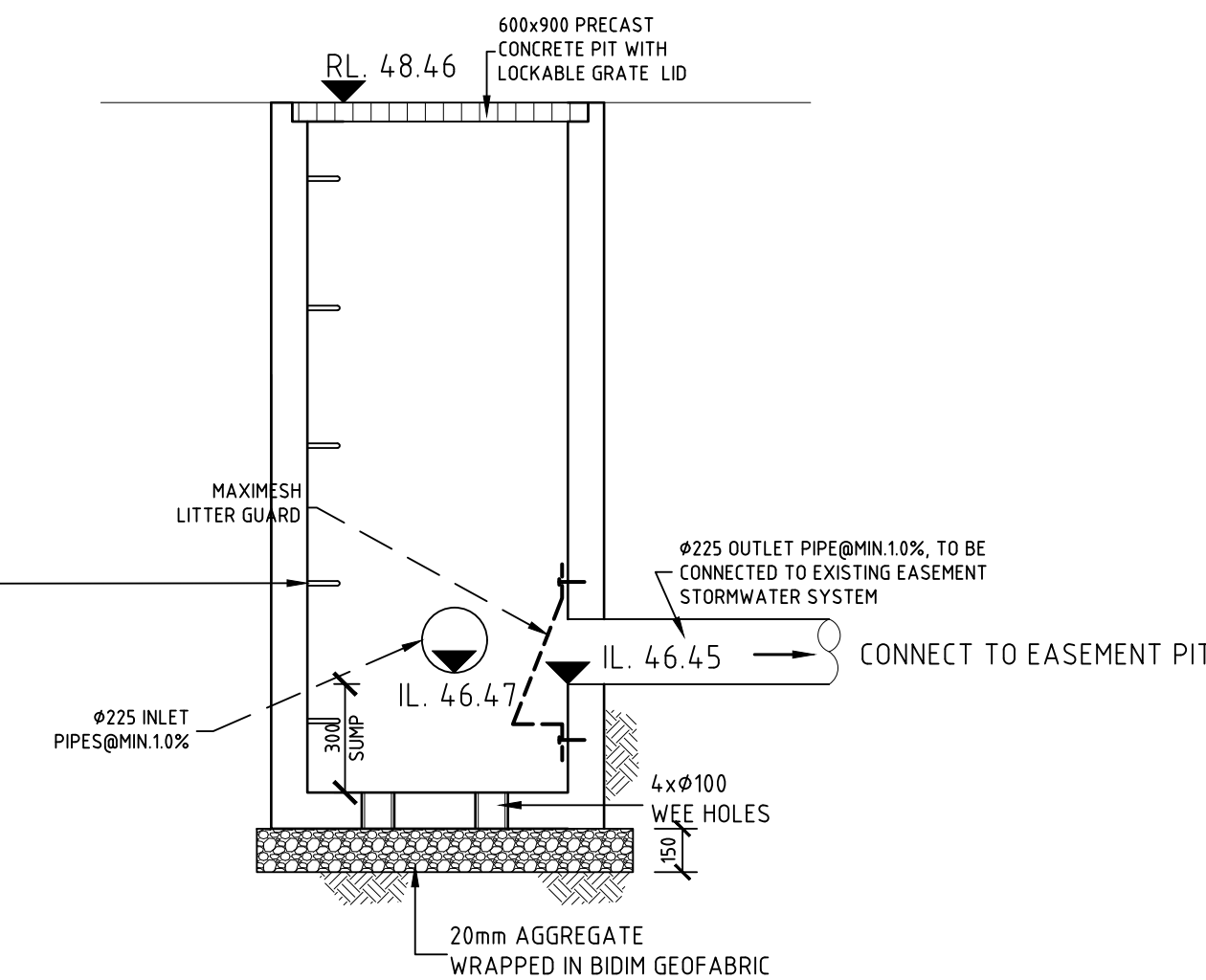
### CONFINED SPACE DANGER SIGN



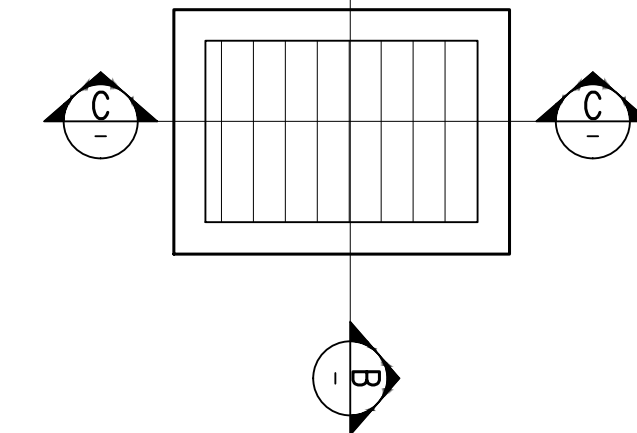
SECTION B  
SCALE:1:25



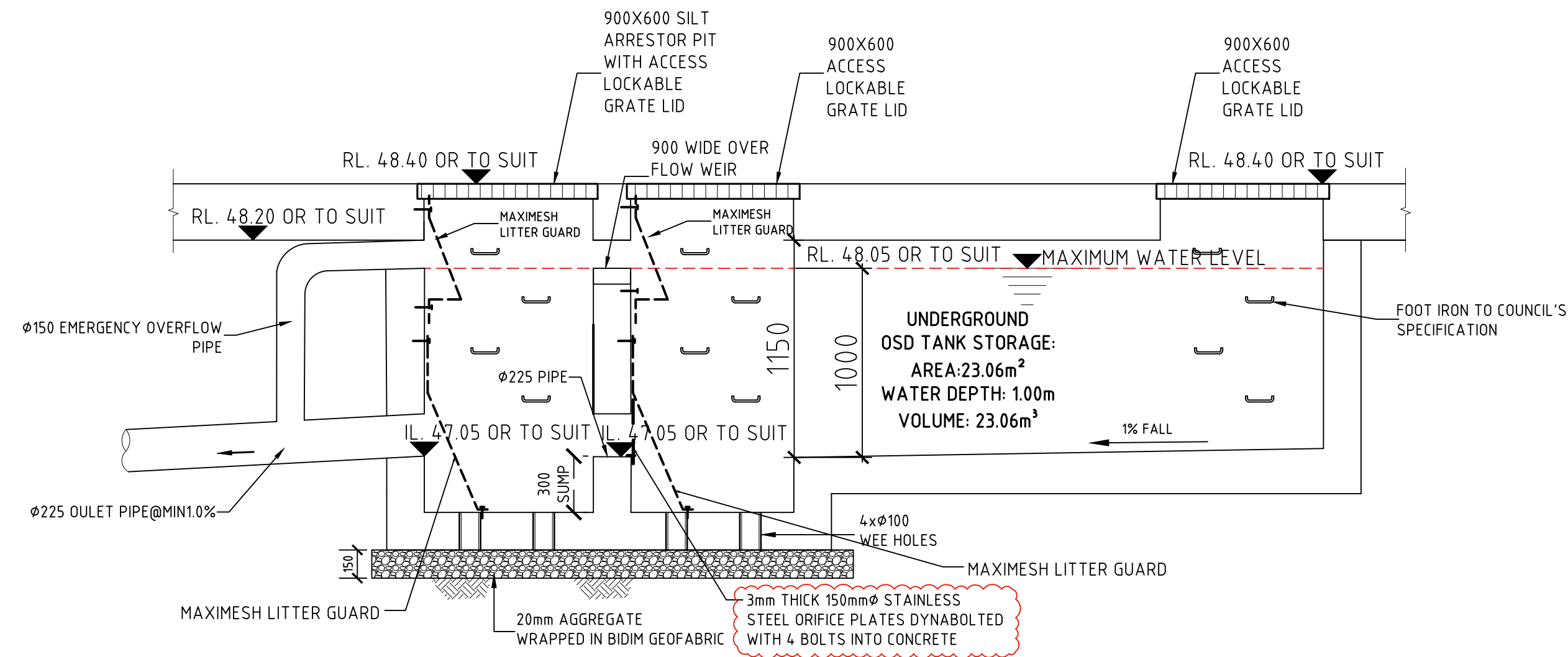
OSD PLAN VIEW



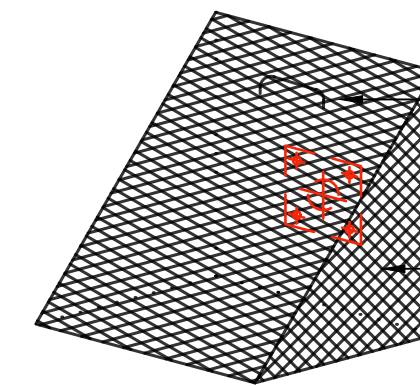
SECTION C  
SCALE:1:25



SILT ARRESTOR PIT PLAN VIEW



SECTION A  
SCALE:1:25



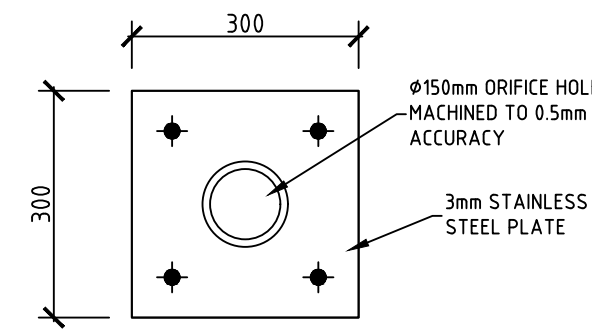
### TYPICAL TRASH SCREEN

NTS

HANDLE  
ORIFICE PLATE BEHIND  
TRASH SCREEN TO PROTECT THE ORIFICE AND DOWNSTREAM DRAINAGE SYSTEM.(MAXIMESH RH3030 OR EQUIVALENT) SCREEN MUST BE PLACED SO THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE HORIZONTAL WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING DOWNSTREAM.

### TYPICAL ORIFICE PLATE ELEVATION

NTS



### STORMWATER DRAINAGE NOTES

- PROVIDE INSPECTION OPENINGS TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.
- ALL PIPES TO BE 100Ø UPVC SEWER GRADE UNO, LAID ON A MIN 1% GRADE, MINIMUM 300mm COVER UNO.
- PIT SIZE
  - TO BE 450x450mm, PITS ARE 600mm OR LESS DEEP TO BE 450X450mm.
  - TO BE 600x600mm, PITS ARE GREATER THAN 600mm BUT LESS THAN 1000mm DEEP.
- ALL PIPES TO BE ADVISED.
- ALL PIT FLOORS TO HAVE A MINIMUM OF 20mm FALL, PROFILED AND STEAMLINED (FOR HALF OF THE DEPTH OF THE PIPE) IN THE DIRECTION OF FLOW.
- ALL GRATES TO THE DRIVEWAY TO BE HEAVY DUTY.
- ALL GUTTERS, PITS, PIPES AND DOWNPIPES TO BE INSTALLED IN ACCORDANCE WITH AS3500.3.2.1 2018.
- THE CONNECTION TO COUNCIL'S DRAINAGE SYSTEM SHALL BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ALL INTERNAL DRAINAGE. THE COUNCIL ENGINEER BEING GIVEN 48 HOURS NOTICE PRIOR TO CONSTRUCTION.
- DRIVEWAY BOUNDARY LEVEL'S MUST BE CONFIRMED PRIOR TO CONSTRUCTION.

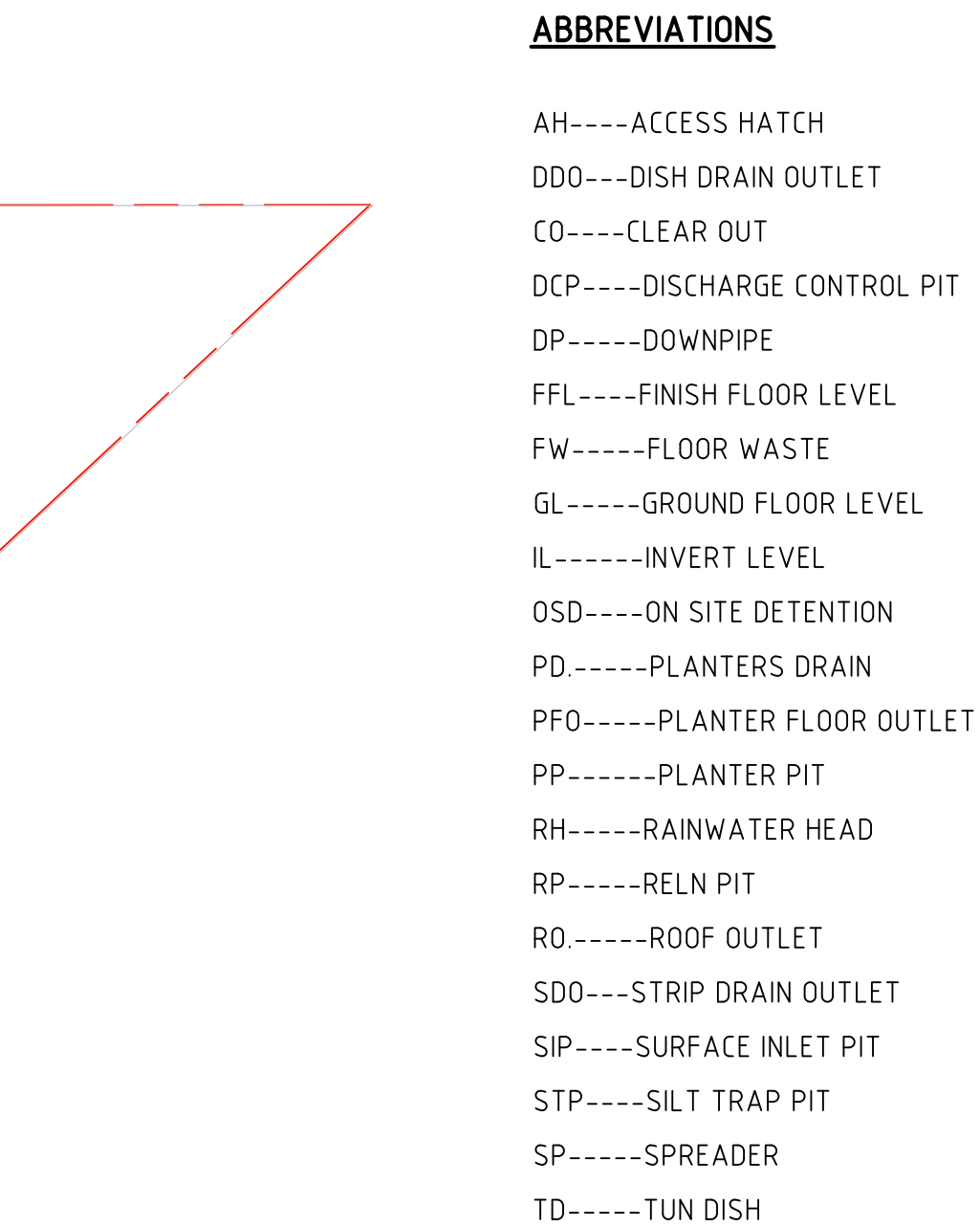
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|                                                                                                                                                                                     |                                                                                                          |
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|                   |                                                             |
|-------------------|-------------------------------------------------------------|
| JOB NAME          | PROPOSED NEW DEVELOPMENT AT<br>58 & 60 BELEMB AVE ROSELANDS |
| CLIENT, ARCHITECT | CHANDRA LEONARDI & CAPITAL VALUE<br>INTERNATIONAL GROUP     |
| DRAWING TITLE     | OSD SECTION DETAILS                                         |

|             |          |                                                                                                                |          |     |
|-------------|----------|----------------------------------------------------------------------------------------------------------------|----------|-----|
| No. IN SET  | JOB No   | 2224.24                                                                                                        | DRG. No  | REV |
|             |          |                                                                                                                | D3       | B   |
| SCALE       | DESIGNED | DRAWN                                                                                                          | DATE     | No. |
| N.T.S.      | S.W.W.   | L.Z.                                                                                                           | MAR 2026 |     |
| APPROVED BY |          | STEVEN WATERS<br>B.E., M.Eng.Sc.<br>M.I.E. AUSTR., C.P. Eng, NPER-3<br>REG. No. 417092<br>CIVIL AND STRUCTURAL |          |     |





PROVIDE INSPECTION OPENINGS TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.

ALL PIPES TO BE 1000 UPVC SEWER GRADE UNO, LAID ON A MIN 1% GRADE, MINIMUM 300mm COVER UNO.

PIT SIZE

- TO BE 450x450mm, PITS ARE 600mm OR LESS DEEP TO BE 450x450mm.
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ALL PIPES TO BE ADVISED.

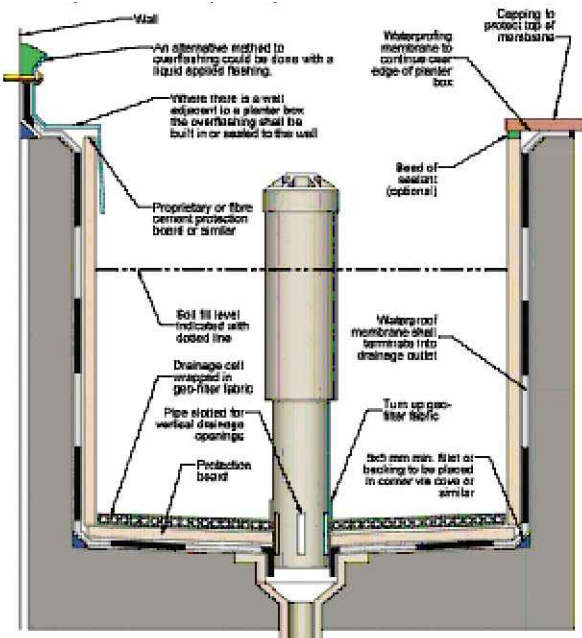
ALL PIT FLOORS TO HAVE A MINIMUM OF 20mm FALL, PROFILED AND STEAMLINED (FOR HALF OF THE DEPTH OF THE PIPE) IN THE DIRECTION OF FLOW.

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DRIVEWAY BOUNDARY LEVEL'S MUST BE CONFIRMED PRIOR TO CONSTRUCTION.



BYPASS  
AREA:150m<sup>2</sup>  
7.75% OF THE TOTAL SITE

DRAINS TO THE OSD  
AREA:1785m<sup>2</sup>  
92.25% OF THE TOTAL SITE

**SITE DRAINAGE LAYOUT PLAN (SEE SD9)**  
(UPDATED AS PER DA-591/2024 CONDITION 24)  
(MINIMUM 70% OF THE AREA DRAINS TO OSD AS PER DCP)

|      |           |      |         |                 |
|------|-----------|------|---------|-----------------|
|      |           |      |         |                 |
|      |           |      |         |                 |
|      |           |      |         |                 |
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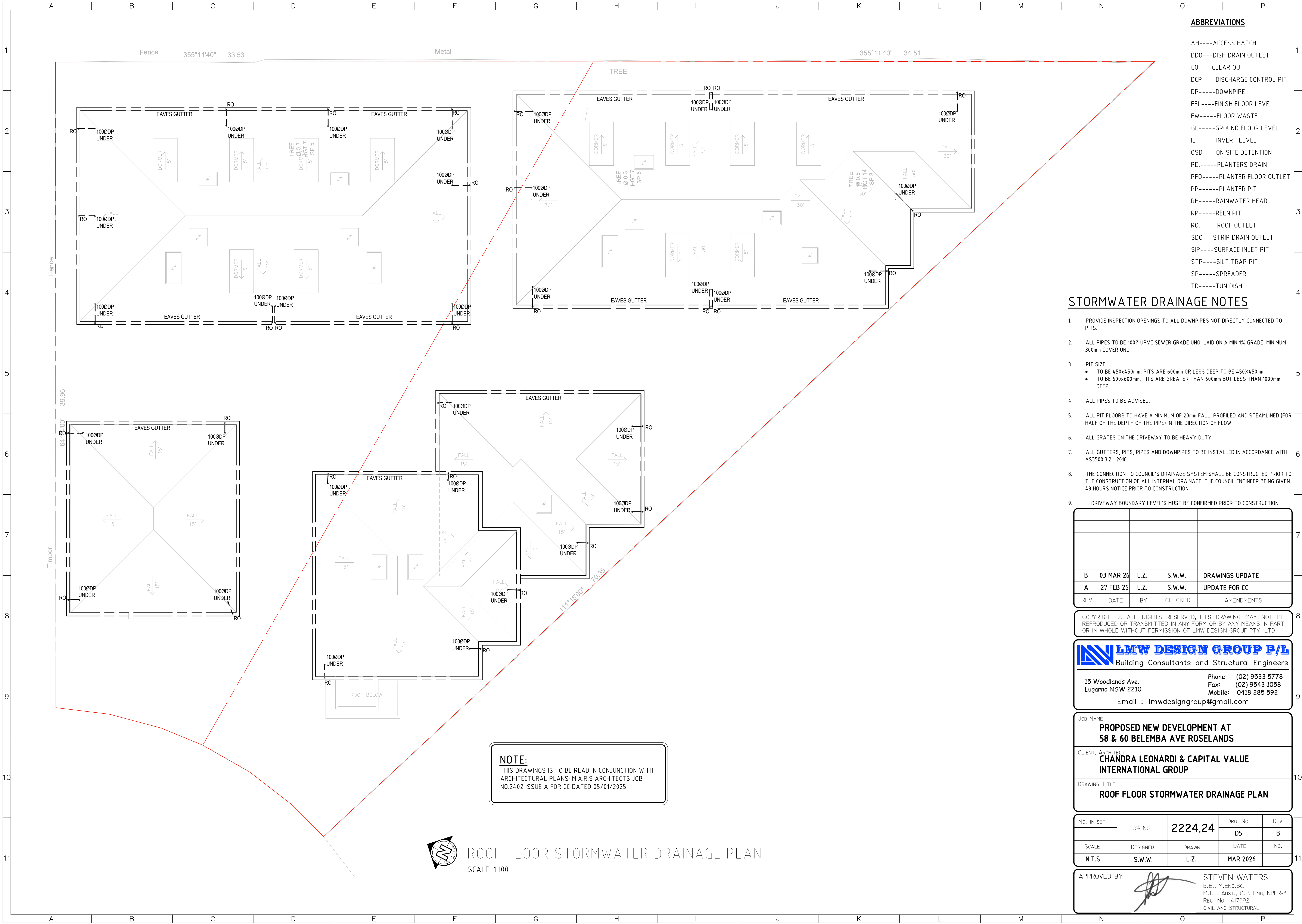
Phone: (02) 9533 5778  
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Email : [lmwdesigngroup@gmail.com](mailto:lmwdesigngroup@gmail.com)

|                   |                                                                         |
|-------------------|-------------------------------------------------------------------------|
| JOB NAME          | <b>PROPOSED NEW DEVELOPMENT AT<br/>58 &amp; 60 BELEMB AVE ROSELANDS</b> |
| CLIENT, ARCHITECT | <b>CHANDRA LEONARDI &amp; CAPITAL VALUE<br/>INTERNATIONAL GROUP</b>     |
| DRAWING TITLE     | <b>FIRST FLOOR STORMWATER DRAINAGE PLAN</b>                             |

|            |          |         |          |     |
|------------|----------|---------|----------|-----|
| NO. IN SET | JOB NO   | 2224.24 | DRG. NO  | REV |
|            |          |         | D4       | B   |
| SCALE      | DESIGNED | DRAWN   | DATE     | NO. |
| N.T.S.     | S.W.W.   | L.Z.    | MAR 2026 |     |

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M.I.E. AUST., C.P. ENG, NPFR-3  
REG. NO. 417092  
CIVIL AND STRUCTURAL



ABBREVIATIONS

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CO----CLEAR OUT  
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GL-----GROUND FLOOR LEVEL  
IL-----INVERT LEVEL  
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TD-----TUN DISH

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- PIT SIZE
  - TO BE 450x450mm, PITS ARE 600mm OR LESS DEEP TO BE 450X450mm.
  - TO BE 600x600mm, PITS ARE GREATER THAN 600mm BUT LESS THAN 1000mm DEEP.
- ALL PIPES TO BE ADVISED.
- ALL PIT FLOORS TO HAVE A MINIMUM OF 20mm FALL, PROFILED AND STEAMLINED (FOR HALF OF THE DEPTH OF THE PIPE) IN THE DIRECTION OF FLOW.
- ALL GRATES ON THE DRIVEWAY TO BE HEAVY DUTY.
- ALL GUTTERS, PITS, PIPES AND DOWNPIPES TO BE INSTALLED IN ACCORDANCE WITH AS3500.3.2.1 2018.
- THE CONNECTION TO COUNCIL'S DRAINAGE SYSTEM SHALL BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ALL INTERNAL DRAINAGE. THE COUNCIL ENGINEER BEING GIVEN 48 HOURS NOTICE PRIOR TO CONSTRUCTION.
- DRIVEWAY BOUNDARY LEVEL'S MUST BE CONFIRMED PRIOR TO CONSTRUCTION.

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| B    | 03 MAR 26 | L.Z. | S.W.W.  | DRAWINGS UPDATE |
| A    | 27 FEB 26 | L.Z. | S.W.W.  | UPDATE FOR CC   |
| REV. | DATE      | BY   | CHECKED | AMENDMENTS      |

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JOB NAME  
**PROPOSED NEW DEVELOPMENT AT  
58 & 60 BELEMB AVE ROSELANDS**

CLIENT, ARCHITECT  
**CHANDRA LEONARDI & CAPITAL VALUE  
INTERNATIONAL GROUP**

DRAWING TITLE  
**ROOF FLOOR STORMWATER DRAINAGE PLAN**

|            |          |         |          |     |
|------------|----------|---------|----------|-----|
| No. IN SET | JOB No   | 2224.24 | DRG. No  | REV |
|            |          |         | D5       | B   |
| SCALE      | DESIGNED | DRAWN   | DATE     | No. |
| N.T.S.     | S.W.W.   | L.Z.    | MAR 2026 |     |

APPROVED BY  


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