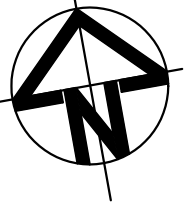
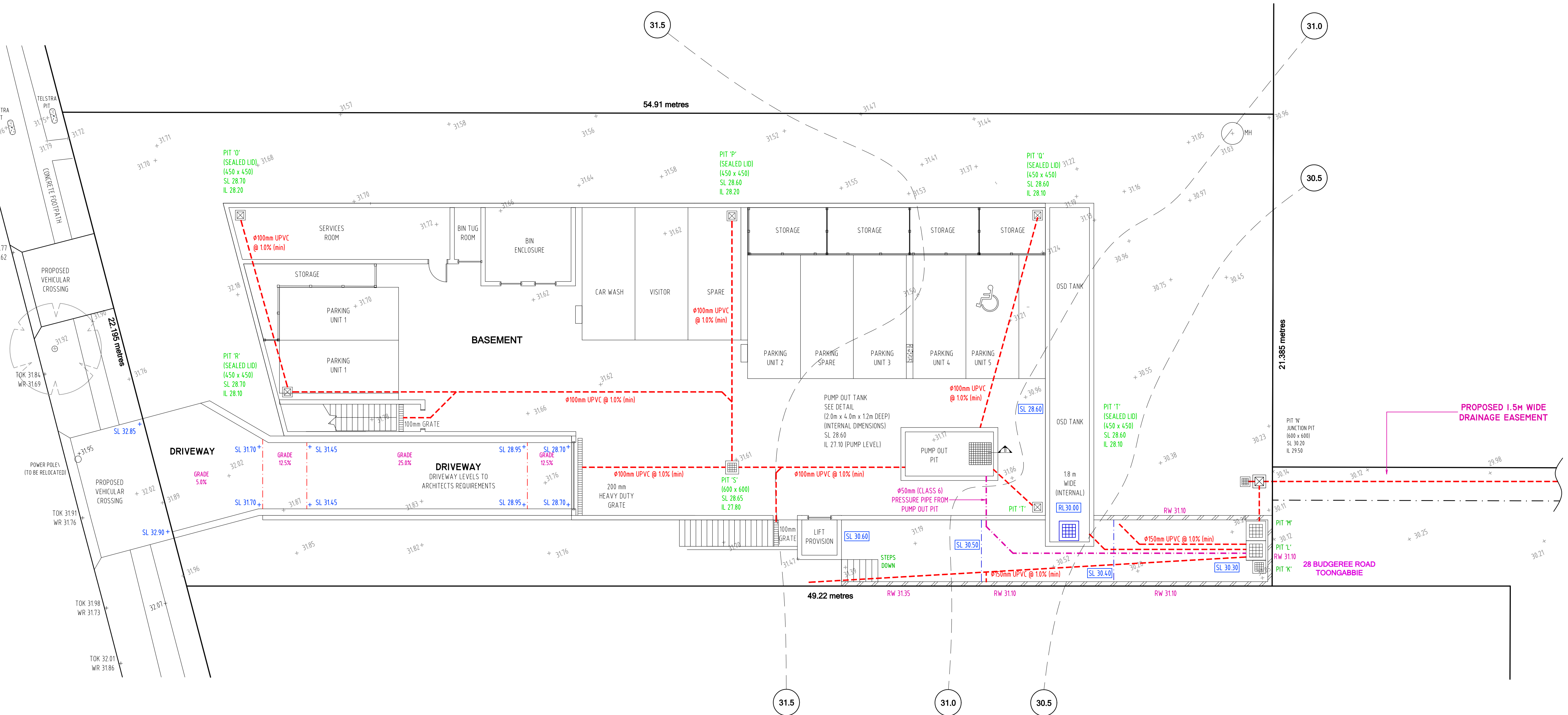


NOTES: SERVICES

NO EXCAVATION IN FOOTPATH WITHOUT CHECKING FOR DEPTH AND LOCATION OF SERVICES



WENTWORTH AVENUE



NOTE: WATERPROOFING & 'AGG' LINES

ALL GARAGE AND LOWER LEVEL WALLS TO BE WATERPROOFED AND CONSTRUCTED WITH Ø100mm AGRICULTURAL LINES AT THE BASE AND CONNECTED TO THE PUMP OUT TANK OR NEAREST PIT IN THE BASEMENT.

WATERPROOF TO BE DETERMINED AS REQUIRED BY THE BUILDER ON SITE IN CONJUNCTION WITH THE ARCHITECTURAL & STRUCTURAL ENGINEERING DETAIL TO BE PROVIDED WITH THE CONSTRUCTION CERTIFICATE

PRIOR TO THE INSTALLATION OF PUMPS OR PUMP OUT LINE BUILDER / PLUMBER TO CONTACT A LINE PUMPS OR ALTERNATE PUMP SUPPLIER TO ENSURE REQUIREMENTS OF PUMP AND DISCHARGE LINE ARE CORRECT

ALL PUMPS - PH 1300 255 786

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY PARRAMATTA CITY COUNCIL.

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

DA PLANS
NOT FOR CONSTRUCTION

NOTES:

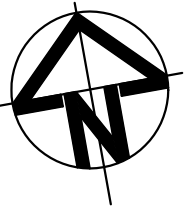
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA A.S.3500.3, COUNCIL'S STANDARD SPECIFICATION CODES AND THE THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
2. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
3. MINIMUM GRADES FOR ALL PIPE - 1.0%
4. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.

LEGEND:	
	DOWN PIPE
	SPREADER
	AIR TIGHT / SCREW DOWN CLEAN OUT POINT
EL 49.45+	EXISTING LEVEL 49.45
SL 49.45+	PROPOSED SURFACE LEVEL 49.45
IL 49.45+	PROPOSED INVERT LEVEL 49.45
WR 49.45+	PROPOSED WATER RUN LEVEL 49.45
TOK 49.45+	TOP OF KERB LEVEL 49.45
RW 49.45	TOP OF RETAINING WALL 49.45
KIP	KERB INLET PIT

ACE CIVIL & HYDRAULIC ENGINEERS	
PROPOSED RESIDENTIAL DEVELOPMENT 427 WENTWORTH AVENUE TOONGABBIE N.S.W.	
DESIGNED: PAUL ARRAJ	DATE 06/11/2021
BE (CIVIL), MIE (AUST), P. Eng	DRAWN BY: P.A.
ACE-CIVIL & HYDRAULIC ENGINEERS	SCALE: AS SHOWN
8 LEIGHDON STREET BASS HILL, NSW, 2197 PHONE / FAX: (02) 9790 7921 MOBILE: 0412 331151 EMAIL: arraj@smatchat.net.au	1920-15 DRAWING No. : SHEET No. 1 No. OF SHEETS: 4
DRAINAGE PLAN	
A1	

NOTES: SERVICES

NO EXCAVATION IN FOOTPATH WITHOUT CHECKING FOR DEPTH AND LOCATION OF SERVICES



WENTWORTH AVENUE

SITE CALCULATIONS

427 WENTWORTH AVE TOOGABBIE

SITE AREA - 1115 m²

OSD DISCHARGE - 8.9 L/s

(BASED ON UPRCT DISCHARGE - 80 L/s/Ha)

PROPOSED 1.5M WIDE DRAINAGE EASEMENT

**Ø225MM UPVC @ 0.5% (MIN)
Q (CAPACITY) - 53 L/s**

NOTE: SUB-SOIL DRAINAGE

PROVIDE Ø90mm 'AGG' LINE ADJACENT TO ALL PITS IN THE ABOVE GROUND OSD BASIN TO DRAIN EXCESS SUB-SOIL RUN OFF

NOTE: RETAINING WALLS & 'AGG' LINES

ALL RETAINING WALLS ARE TO BE WATERPROOFED AND CONSTRUCTED WITH Ø100mm AGRICULTURAL LINES AT THE BASE AND CONNECTED TO THE NEAREST PIT IN THE COURTYARD

NOTES: OSD CONSTRUCTION

1. ALL WALLS FORMING THE DETENTION BASIN SHALL BE CONSTRUCTED WHOLLY WITHIN THE PROPERTY BOUNDARIES OF THE SITE BEING DEVELOPED.
2. ALL WALLS FORMING THE DETENTION BASIN SHALL BE OF MASONARY CONSTRUCTION AND BE WATER TIGHT.
3. LANDSCAPE AREAS WITHIN THE OSD STORAGE AREAS ARE TO BE MULCHED WITH DECORATIVE ROCK MULCH (IE NON FLOATABLE).

DA PLANS
NOT FOR CONSTRUCTION

LEGEND:

- DP DOWN PIPE
○ SP SPREADER
● CE AIR TIGHT / SCREW DOWN CLEAN OUT POINT
- EL 49.45+ EXISTING LEVEL 49.45
SL 49.45+ PROPOSED SURFACE LEVEL 49.45
IL 49.45+ PROPOSED INVERT LEVEL 49.45
WR 49.45+ PROPOSED WATER RUN LEVEL 49.45
TOK 49.45+ TOP OF KERB LEVEL LEVEL 49.45
RW 49.45 TOP OF RETAINING WALL 49.45
KIP KERB INLET PIT

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA A.S.3500.3, COUNCIL'S STANDARD SPECIFICATION CODES AND THE THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
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5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION

NOTES: RAINWATER TANKS

1. RAINWATER TANK CAPACITY OF 2000 LITRES.
2. THE SYSTEM TO BE DESIGNED WITH THE FOLLOWING GUIDELINES
 - A 'FIRST FLUSH' DIVERSION TO REMOVE ROOF CONTAMINANTS
 - ADEQUATE SCREENING TO PREVENT MOSQUITO BREEDING AND ENTRY OF ANIMALS OR FOREIGN MATTER
3. TANKS TO BE PLUMBED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIODS WHEN THE TANKS ARE 80% EMPTY.
4. NO DIRECT CROSS-CONNECTION WITH THE SYDNEY WATER POTABLE SUPPLY AND AN AIR GAP MAINTAINED ABOVE THE OVERFLOW IN THE TANK
5. A SIGN TO BE INSTALLED STATING 'NOT FOR HUMAN CONSUMPTION'
6. RAINWATER TANK TO BE CONNECTED AS PER BASIX REQUIREMENTS.
7. OVERFLOW FROM THE TANK SHALL BE PIPED TO THE DRAINAGE SYSTEM.

RAINWATER TANKS

MODEL	CAPACITY	DIMENSIONS
SLIMLINE	2000 Litres	2000mm (length) x 600mm (width) x 1779mm (high)
MANUFACTURED BY DESIGNER TANKS WATER PTY LTD WEBSITE:DESIGNERTANKS.COM.AU (PH: 02 4605 0635)		

SITE DETAILS

SITE AREA (m ²)	1112
SITE AREA TO BASIN (m ²)	967
PERCENTAGE OF SITE TO BASIN (%)	87
IL(CONTROL PIT)	29.65
TOP WATER LEVEL	31.00
VOLUME PROVIDED (m ³)	54.20
VOLUME REQUIRED (m ³)	53.60
ORIFICE (mm)	52
PSD (L/s) (OSD DISCHARGE)	6.36

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY PARRAMATTA CITY COUNCIL.

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

NOTES: DRAINAGE LINES

- DRAINAGE LINES SHOWN DASHED** --- TO DISCHARGE SURFACE RUN OFF
- DRAINAGE LINES SHOWN DASHED** --- TO COLLECT ROOF WATER ONLY TO RAINWATER TANK
- DRAINAGE LINES SHOWN DASHED** --- TO DISCHARGE RAINWATER TANK OVERFLOW

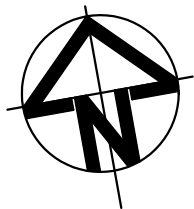
DRAINAGE PLAN
GROUND FLOOR

SCALE 1:100

HATCHED AREA DENOTES OSD AREA

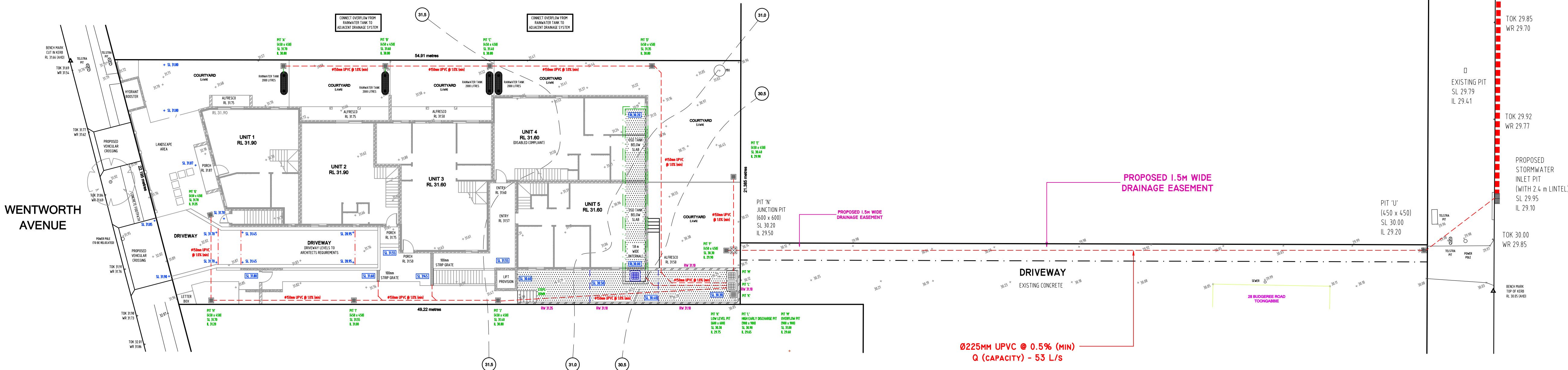


NOTES: SERVICES
NO EXCAVATION IN FOOTPATH WITHOUT
CHECKING FOR DEPTH AND LOCATION OF SERVICES



DRAINAGE IN BUDGEREE ROAD

IT IS PROPOSED TO CONSTRUCT A DRAINAGE LINE IN
BUDGEREE ROAD SHOWN
UPON APPROVAL AND DEVELOPMENT CONSENT BEING ISSUED
A DETAILED PLAN AND LONGSECTION WILL BE PREPARED FOR
APPROVAL BY PARRAMATTA CITY COUNCIL
A DIAL B4U DIG HAS BEEN LODGED AND ALL SERVICES WILL BE
DOCUMENTED AND SHOWN WITH THE CONSTRUCTION
CERTIFICATE DRAWINGS



DRAINAGE PLAN
DRAINAGE EASEMENT PLAN
SCALE 1:100

DA PLANS
NOT FOR CONSTRUCTION

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE
FINISHED LEVELS ONCE ISSUED BY CANTERBURY BANKSTOWN COUNCIL.

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY
SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

NOTES:

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COUNCIL'S STANDARD SPECIFICATION CODES AND THE THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
2. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
3. MINIMUM GRADES FOR ALL PIPE - 1.0%
4. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.

LEGEND:

- DP DOWN PIPE
- SP SPREADER
- CE AIR TIGHT / SCREW DOWN CLEAN OUT POINT
- EL 49.45+ EXISTING LEVEL 49.45
- SL 49.45+ PROPOSED SURFACE LEVEL 49.45
- IL 49.45+ PROPOSED INVERT LEVEL 49.45
- WR 49.45+ PROPOSED WATER RUN LEVEL 49.45
- TOK 49.45+ TOP OF KERB LEVEL LEVEL 49.45
- RW 49.45 TOP OF RETAINING WALL 49.45
- KIP KERB INLET PIT

ACE CIVIL & HYDRAULIC ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT
427 WENTWORTH AVENUE
TOONGABBIE N.S.W.

DESIGNED: PAUL ARRAJ
BE (CIVIL), MIE (AUST), P. Eng

DATE 06/11/2021

DRAWN BY: P.A.

ACE-CIVIL & HYDRAULIC ENGINEERS

SCALE: AS SHOWN

8 LEIGHDON STREET

BASS HILL, NSW, 2197

PHONE / FAX: (02) 9790 7921

MOBILE: 0412 331151

EMAIL: arraj@smatchat.net.au

1920-15

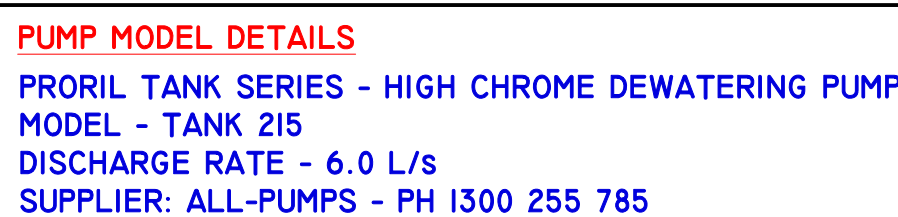
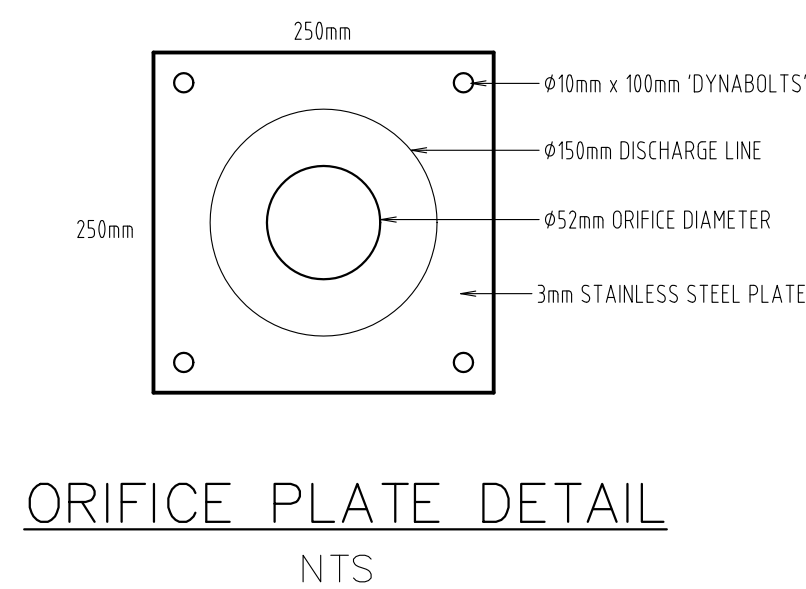
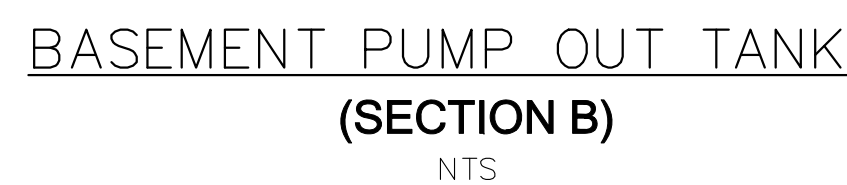
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SHEET No. 3

No. OF SHEETS: 4

DRAINAGE PLAN

A1



- ## PUMPOUT DESIGN NOTES

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
2. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THE FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE AND DRAIN THE TANK TO THE LEVEL OF THE LOW-LEVEL FLOAT.
4. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED ADJACENT TO THE TANK. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.



- NOTES: RAINWATER TANKS

1. RAINWATER TANK CAPACITY OF 2000 LITRES.
2. THE SYSTEM TO BE DESIGNED WITH THE FOLLOWING GUIDELINES
 - A FIRST 'FLUSH' TO REMOVE ROOF CONTAMINANTS
 - ADEQUATE SCREENING TO PREVENT MOSQUITO BREEDING AND ENTRY OF ANIMALS OR FOREIGN MATTER
3. TANKS TO BE PLUMBED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIODS WHEN THE TANKS ARE 80% EMPTY.
4. NO DIRECT CONNECTION WITH THE SYDNEY WATER POTABLE SUPPLY AND AN AIR GAP MAINTAINED ABOVE THE OVERFLOW IN THE TANK.
5. A SIGN TO BE INSTALLED STATING "NOT FOR HUMAN CONSUMPTION."
6. RAINWATER TANK TO BE CONNECTED AS PER BASIC REQUIREMENTS.
7. OVERFLOW FROM THE TANK SHALL BE PIPED TO THE DRAINAGE SYSTEM.

- COLOURS:**

- | | |
|----------------------------|---------------|
| TRIANGLE AND "WARNING" | RED |
| WATER | BLUE |
| FIGURE AND OTHER LETTERING | BLACK |
| MATERIALS | POLYPROPYLENE |



- COLOURS:

- "DANGER" AND BACKGROUND
ELLIPTICAL AREA
RECTANGLE CONTAINING ELIPSE
OTHER LETTERING AND BORDER

- ## MATERIALS

- WHITE
RED
BLACK
BLACK




- POLYPROPYLENE



- NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA S.3500.3, COUNCIL'S STANDARD SPECIFICATION CODES AND THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
2. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
3. MINIMUM GRADES FOR ALL PIPE - 10%.
4. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.

- LEGEND:**

- | | |
|---|---|
|  | DOWN PIPE |
|  | SPREADER |
|  | AIR TIGHT / SCREW DOWN
CLEAN OUT POINT |
| EL 49.45+ | EXISTING LEVEL 49.45 |
| SL 49.45+ | PROPOSED SURFACE LEVEL 49.45 |
| IL 49.45 + | PROPOSED INVERT LEVEL 49.45 |
| WR 49.45+ | PROPOSED WATER RUN LEVEL 49.45 |
| TOK 49.45+ | TOP OF KERB LEVEL LEVEL 49.45 |
| RW 49.45 | TOP OF RETAINING WALL 49.45 |
| KIP | KFRF IN/FIT PIT |

CONFINED SPACE WARNING SIGN
NTS

DA PLANS

NOT FOR CONSTRUCTION

RAINWATER TANKS		
MODEL	CAPACITY	DIMENSIONS
SLIMLINE	2000 Litres	2000mm (length) x 600mm (width) x 1779mm (high)

MANUFACTURED BY DESIGNER TANKS WATER PTY LTD
WEBSITE:DESIGNERTANKS.COM.AU (PH: 02 4605 0635)

<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <h1 style="margin: 0;">ACE</h1> </div> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <h2 style="margin: 0;">CIVIL & HYDRAULIC ENGINEERS</h2> </div>	
<p>PROPOSED RESIDENTIAL DEVELOPMENT</p> <p>427 WENTWORTH AVENUE</p> <p>TOONGABBIE N.S.W.</p>	
DESIGNED: PAUL ARRAG BE (CIVIL), MIE (AUST), P. Eng	DATE 06 11 2021
	DRAWN BY: P.A.
ACE-CIVIL & HYDRAULIC ENGINEERS 8 LEIGHDON STREET BASS HILL, NSW, 2197 PHONE / FAX: (02) 9790 7921 MOBILE: 0412 331151 EMAIL: arrag@smarchat.net.au	SCALE: AS SHOWN
	<h1 style="margin: 0;">1920-15</h1>
	DRAWING No. : SHEET No. 4. No. OF SHEETS: 4
<h2 style="margin: 0;">DRAINAGE PLAN</h2>	
<h1 style="margin: 0;">A1</h1>	