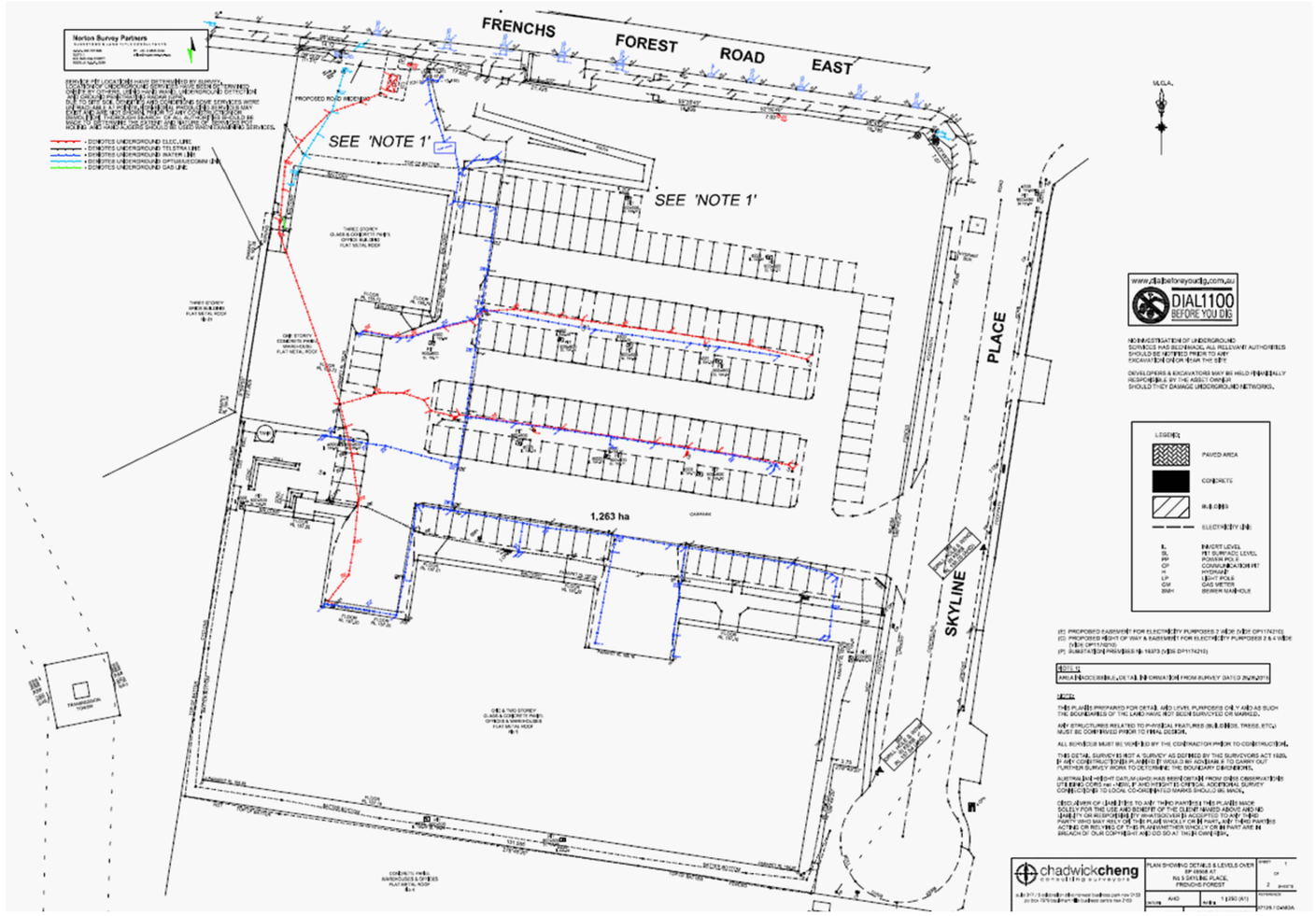
NOT FOR CONSTRUCTION

EXISITNG COUNCIL'S STORMWATER ASSET

NOT TO SCALE



SURVEY OF EXISITNG SERVICES WITHIN DEVELOPMENT SITE

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VERIFY ALL DISCREPANCIES WITH PROJECT ARCHITECT/ MANAGER PRIOR TO PROCEEDING WITH ANY WORKS. **Do not scale off drawings.**

Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh

Checked By : N. Evans

Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
(Reg. No. 2206352) RPEQ
Registered Certifier
(Hydraulic (stormwater), Road & Drainage and Stormwater)
NSW Fair Trading (Reg. No. BDC0827)

Designed By
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E : ken@ingengineers.com.au

Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

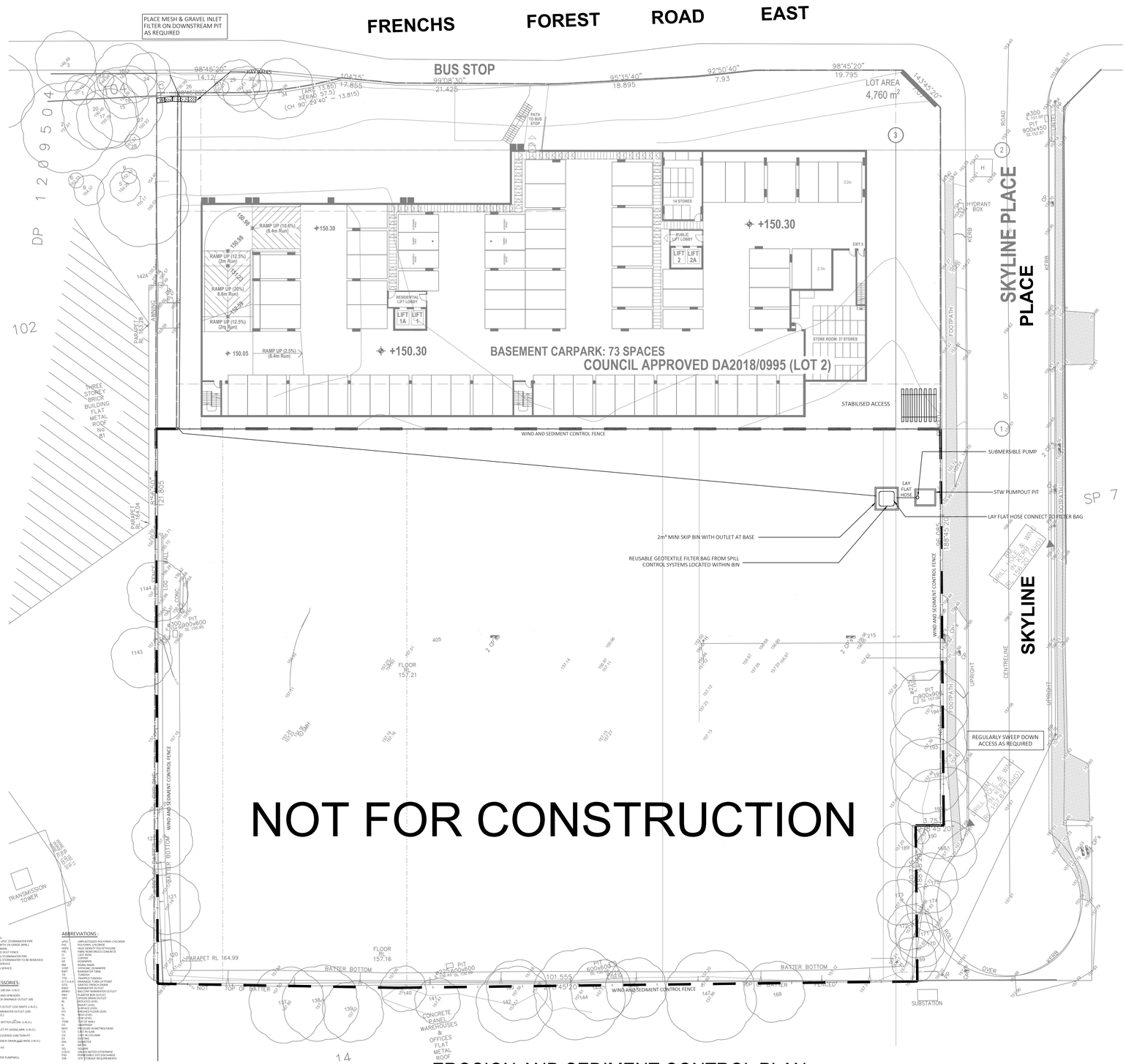
Drawing Title: Existing Services and Survey Plan

Date: January 2021

Scale: As Shown @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-00/21 / A



EROSION AND SEDIMENT CONTROL PLAN

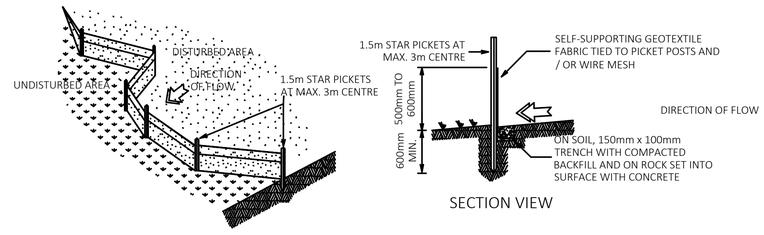
SCALE 1 : 300

EROSION AND SEDIMENT CONTROL

1. THE NOTES AND MEASURES STATED HEREAFTER SHALL BE READ IN CONJUNCTION WITH THE NSW PUBLICATION "MANAGING URBAN STORMWATER, SOILS & CONSTRUCTION, FOURTH EDITION 2004 VOLUME 1" PREPARED BY LANDCOM. PARTICULAR ATTENTION SHALL BE PAID TO CHAPTERS 6 & 8.
2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR AND DURING THE CONSTRUCTION PERIOD. THESE CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED REGULARLY BY THE CONTRACTOR TO ENSURE THE EFFECTIVES OF THE SYSTEM, ESPECIALLY AFTER STORM EVENTS.
3. ALL NECESSARY WORKS SHALL BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION AND SEDIMENTATION OF THE PROJECT SITE AND ADJACENT PROPERTIES AND DRAINAGE SYSTEMS.
4. MINIMISE DISTURBED AREAS COVERED WITH NATURAL VEGETATION, ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.
5. DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.
6. ADOPT TEMPORARY MEASURES AS MAY BE NECESSARY FOR EROSION AND SEDIMENT CONTROL, INCLUDING BUT NOT LIMTED TO THE FOLLOWING :
   - DRAINS - CONSTRUCT TEMPORARY DRAINS AND CATCH DRAINS
   - CONSTRUCT SPREADER BANKS OR OTHER STRUCTURES - DISPERSE CONCENTRATED RUN-OFF
   - SILT TRAPS - CONSTRUCT AND MAINTAIN SILT TRAPS TO PREVENT DISCHARGE OF SCOURED MATERIAL TO DOWNSTREAM AREAS
   - TEMPORARY FENCING - CONSTRUCT, MAINTAIN AND KEEP IN GOOD REPAIR ALL SILT AND WIND FENCES. CHECK AND CLAEN FENCES FOLLOWING RIN AND STORM EVENTS
   - REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED
   - ALL DISCOLOURED WATER SHALL BE TREATED TO EPA TANDARDS PRIOR TO DICHARGE OFF SITE, OR ALTERNATIVELY REMOVED BY TANKER WITH A LICENSED TRADE WASTE COLLECTOR
7. ALL STORMWATER INLET PITS ARE TO BE PROTECTED FILTER FABRIC DROP INLET SEDIMENT TRAPS OR GRAVEL SAUSAGE, WHICH IS BLUE METAL WRAPPED IN GEOTEXTILE FABRIC.
8. STOCKPILED MATERIALS SHALL BE KEPT WITHIN THE SITE BOUNDARIES IN A POSITION NOT VULNERABLE TO CONCENTRATED SURFACE RUNOFF.

DUST CONTROL:

1. DUST IS TO BE WELL CONTROLLED ON THE CONSTRUCTION SITE AT ALL TIMES, ESPECIALLY AT EXCAVATIONS, DEMOLITION ETC.
2. WATER SPRAY TO BE USED TO CONTROL DUST ON DIRT/GRADED AREAS ONLY.
3. CARE TO BE EXERCISED TO ENSURE WATER SPRAY DISPENSE ONLY SUFFICENT WATER FOR DUST CONTROL PURPOSES.
4. CARE TO BE EXERCISED TO ENSURE ONLY OPTIMIUM MOISTURE CONTENT OF THE SOIL IS REACHED FOR COMPACTION.
5. FOR CONTROLLING DUST ON PAVED FOOTPATHS, A SWEEPER IS TO BE USED WITH WATER-JET SPRAYERS.
6. NO SURFACE WATER RUN-OFF IS TO BE GENERATED.
7. CARE IS TO BE EXERCISED TO ENSURE ONLY SUITABLE AMOUNTS OF WATER IS USED DURING SWEEPING.
8. NO RUN-OFF FROM SPRAYERS TO FLOW INTO CATCH BASINS.
9. MIMINISE THE AREAS OF EXISTING VEGETATED AREA THAT ARE DISTURBED DURING CONSTRUCTION.
10. AREAS NOT BEING WORKED ON FOR 30 DAYS OR MORE ARE TO BE VEGETATED OR COVERED TO AVOID DUST GENERATION.
11. SAND & SOIL STOCKPILE ARE TO BE SUFFICIENTLY COVERED DURING WEEKENDS AND AT TIMES WHEN WINDY CONDITIONS PREVAIL.

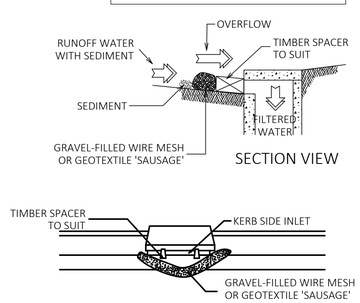


SEDIMENT CONTROL FENCE

NOT TO SCALE

CONSTRUCTION NOTES :

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT
2. FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE BEGINNING OF THE KERB INLET LEAVING A 100mm GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY.
5. MAINTAIN THE OPENING WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AT SAG POINTS.

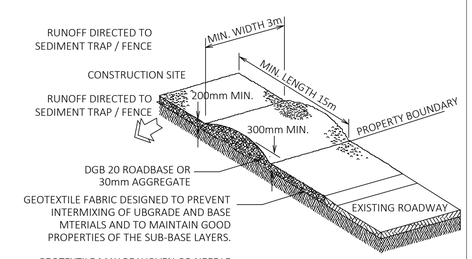


MESH AND GRAVEL INLET FILTER

NOT TO SCALE

CONSTRUCTION NOTES :

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30mm AGGREGATE MINIMUM LENGTH 15m OR TO BUILDING ALIGNMENT. MINIMUM WITH 3m.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR SEDIMENT TRAP.



GEOTEXTILE MAY BE WOVEN OR NEEDLE PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) OF 2500N

STABILISED SITE ACCESS

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LEGEND

PIPEWORK

SERVICE ACCESSORIES:

ABBREVIATIONS :

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A	Development Application	28 Jan. 2021

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Checked By : N. Evans

Approved By : Kenneth T. NG
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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

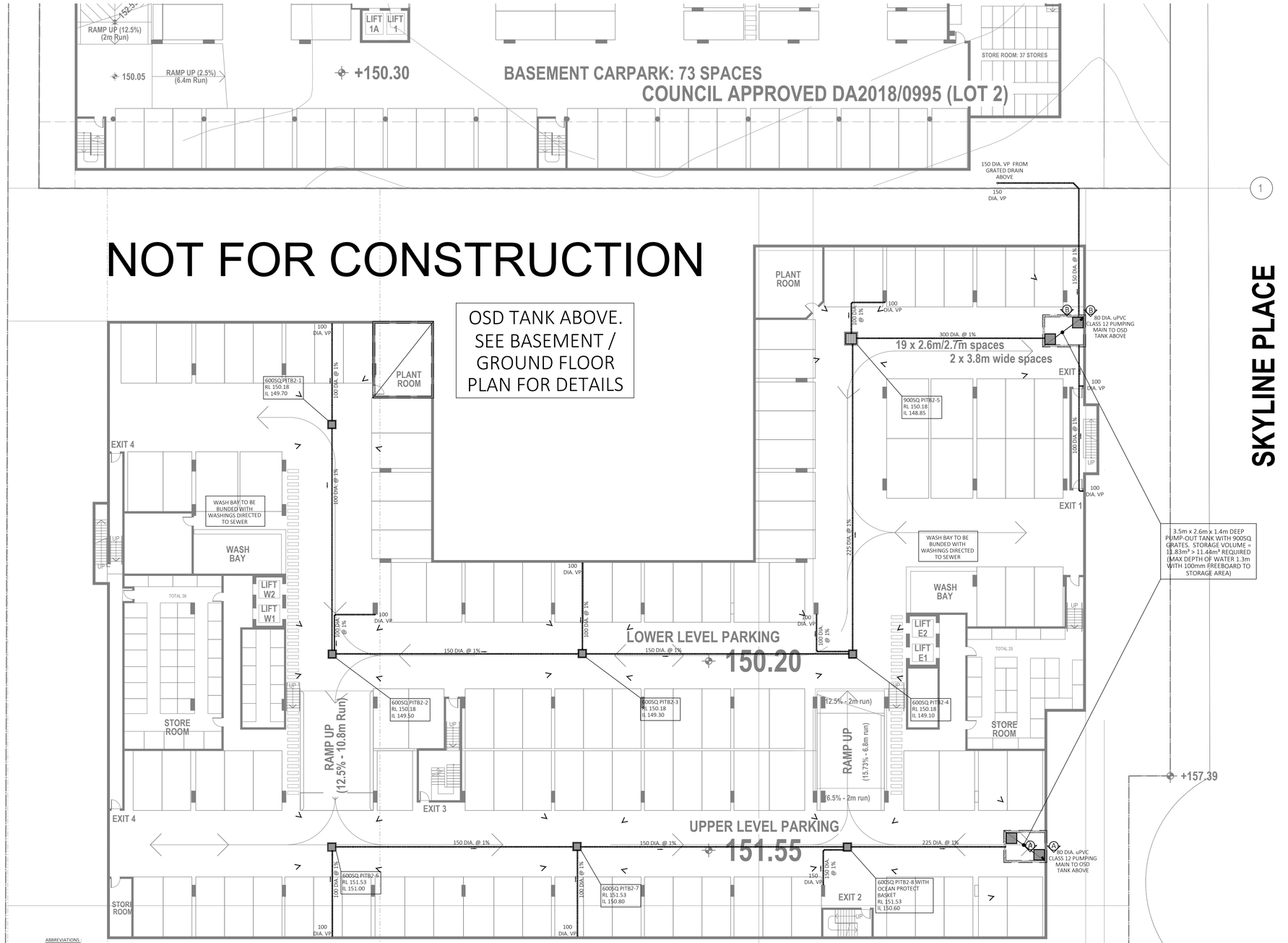
Drawing Title: Erosion & Sediment Control Plan

Date: January 2021

Scale: As Shown @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-01/21 / A



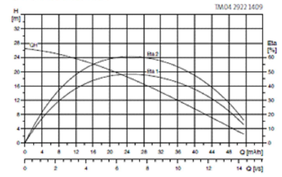
SKYLINE PLACE

LOWER BASEMENT PLAN

SCALE 1 : 200

DWK.0.6.80.22.5.0D.R

> Performance

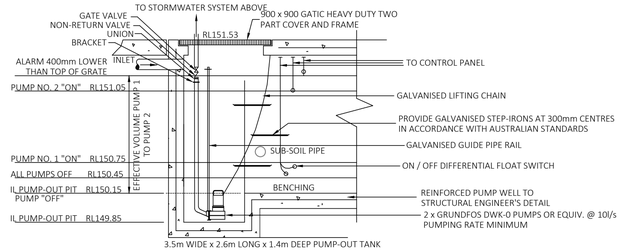


> Technical Information

	3 x 380 - 415 V, 50 Hz
Part Number	96922727
Maximum shut off head	26.5 m
Flow head @ BEP	18 L/s @ 7.1 m
Maximum flow @ low head	14.3 L/s @ 2.5 m
Pump power rating	2.2 kW
Full load current	5.1 A
Outlet size	3" / 80 mm Hose tail
Pump weight	45 kg
Can operate partially submerged	No
Cooling jacket included / material	No / NA
Motor enclosure material	Cast iron GG20
Pump casing material	Cast iron GG20
Impeller type & material	Open style high chrome stainless steel
Free passage size solids	6 mm
Mechanical seal configuration and materials	Double in oil bath Pump side – silicon carbide Motor side – silicon carbide
Strainer material	400 Stainless steel
Cable length	10 m
Insulation protection	Class F / IP68
Liquid temperature range	0 °C to 40 °C
Aluminium present in pump	Yes

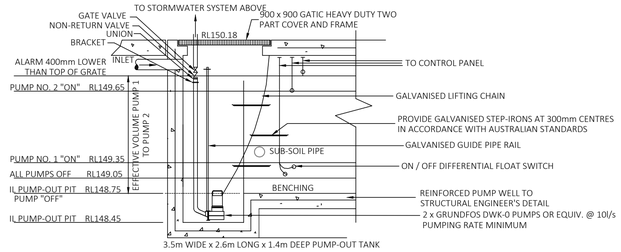
CONFINED SPACE SIGNAGE

NOT TO SCALE



SECTION A - A 11.83m³ BASEMENT PUMP-OUT TANK DETAIL

NOT TO SCALE



SECTION B -B 11.83m³ BASEMENT PUMP-OUT TANK DETAIL

NOT TO SCALE

LEGEND

PIPEWORK:

SERVICE ACCESSORIES:

ABBREVIATIONS:

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

Drawing Title: Lower Basement Plan

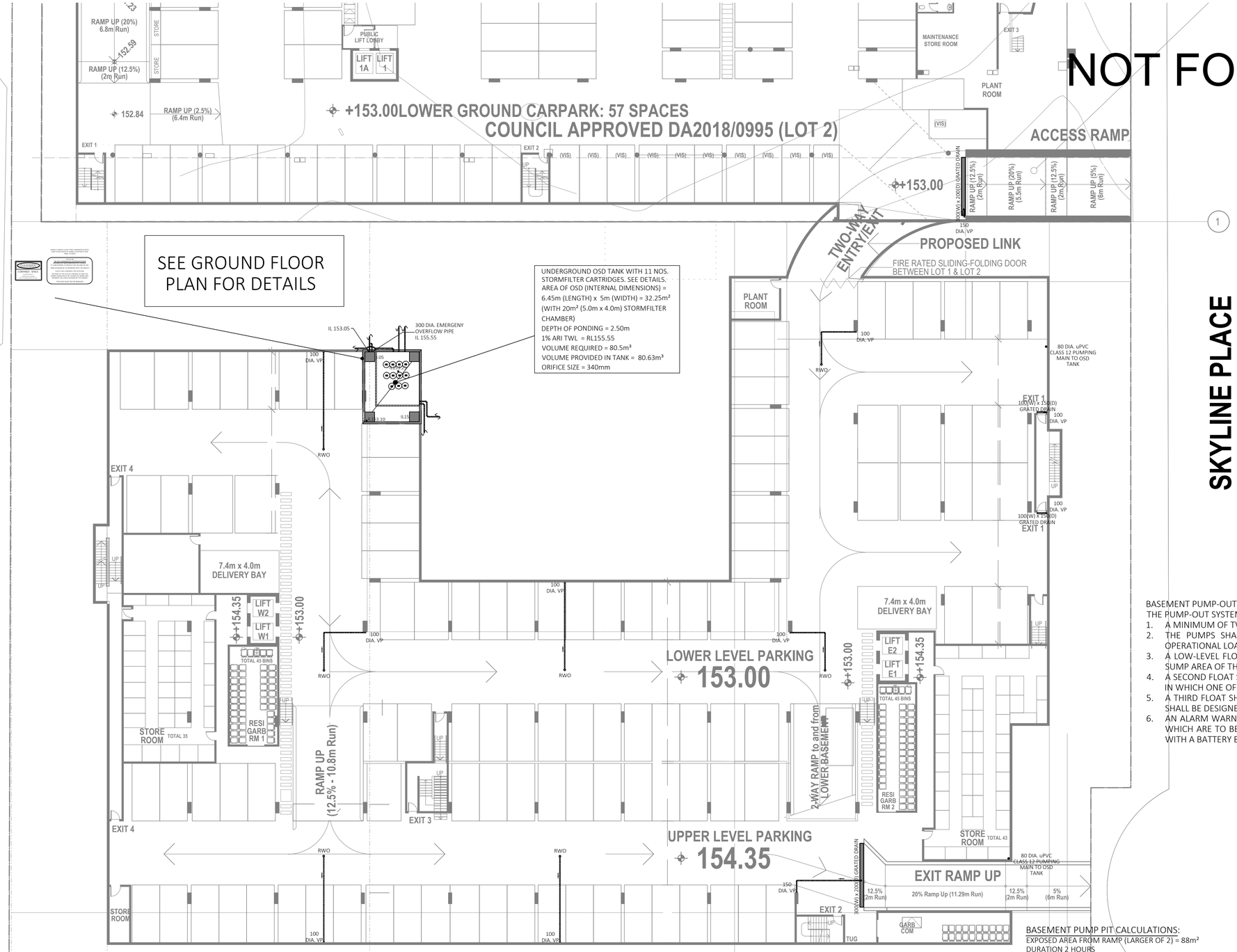
Date: January 2021

Scale: As Shown @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-02/21 / A

NOT FOR CONSTRUCTION



BASEMENT PLAN

SCALE 1 : 200

SKYLINE PLACE

WARNING
PUMP-OUT SYSTEM
FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN IS SOUNDING

COLOURS :
"WARNING" - RED
BORDER - BLACK
WORDING - BLACK

BASEMENT PUMP-OUT FAILURE WARNING SIGN
NOT TO SCALE

BASEMENT PUMP-OUT SYSTEM NOTES
THE PUMP-OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED AS FOLLOWS :

1. A MINIMUM OF TWO PUMPS ARE TO BE PROVIDED - ONE DUTY PUMP AND ONE STAND-BY PUMP.
2. THE PUMPS SHALL BE PROGRAMMED TO OPERATE ALTERNATIVELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATIONAL LOAD AND PUMP LIFE.
3. A LOW-LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE UNDERGROUND TANK. THE FLOAT SHALL FUNCTION AS AN "OFF" SWITCH FOR THE PUMP.
4. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, WHICH IS APPROXIMATELY 200mm ABOVE THE MINIMUM WATER LEVEL, IN WHICH ONE OF THE PUMPS WILL OPERATE AND DRAIN THE UNDERGROUND TANK TO THE LEVEL OF THE LOW-LEVEL FLOAT.
5. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY 200mm ABOVE THE SECOND FLOAT. THIS FLOAT SHALL BE DESIGNED TO START THE STAND-BY PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
6. AN ALARM WARNING SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT, SIREN AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO TH BASEMENT. THE ALARM WARNING SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURES.

BASEMENT PUMP PIT CALCULATIONS:
EXPOSED AREA FROM RAMP (LARGER OF 2) = 88m²
DURATION 2 HOURS
RAINFALL INTENSITY FOR 1 IN 100-YR ARI = 62mm/hr
PUMP PIT STORAGE REQUIRED = 2 x 65 x 0.0088 x 60 x 60 / 360 = 11.44m³

MINIMUM PUMPING RATE :
1-IN-100 YR ARI 10 MIN. DURATION
RAINFALL INTENSITY = 213mm/hr
Q = 1 x 213 x 0.0088 x 1000 / 360 = 5.2l/s

MIN. PUMPING RATE = 10 l/s
USE GRUNDFOS DWK-0 SERIES OR EQUIVALENT DUAL PUMP SYSTEM

NOTE :
ENTIRE BASEMENT TO BE FULLY TANKED, DETAILS TO BE PROVIDED BY STRUCTURAL ENGINEER.

LEGEND
PIPEWORK:
100 DIA uPVC STORMWATER PIPE (IL OR CL)
100 DIA. WITH 1% GRADE (MIN.)
DOWNPIPE (DP)
SILT AND DUST FENCE
EXISTING STORMWATER PIPE
EXISTING STORMWATER TO BE REMOVED
FIRE HS (IN SERVICE)
DROP IN SERVICE

SERVICE ACCESSORIES:
DOWNPIPE 100 DIA. U.N.O.
SPRINKLER AND SPRINKLER PLUMBER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
RAINWATER OUTLET (100 GRATE U.N.O.)
BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
OVERFLOW SPITTER OUTLET (DIA. U.N.O.)
GRATED INLET PIT (A1(IL) MIN. U.N.O.)
CONCRETE COVERED JUNCTION PIT
GRATED TRENCH DRAIN (200 WIDE U.N.O.)
PITS INLET PIT
STORMWATER PUMPWELL
VEHICULAR CROSSING
REVISION
OVERLAND FLOW PATH
CLEANING EYE

ABBREVIATIONS :
uPVC UNPLASTICISED POLYVINYL CHLORIDE
HDPE HIGH DENSITY POLYETHYLENE
MDPE MEDIUM DENSITY POLYETHYLENE
FRC FIBRE REINFORCED CONCRETE
CI CAST IRON
CU COPPER
DP DOWNPIPE
RWO RAINWATER OUTLET
SHDP SPRINKLER DOWNPIPE
RWT RAINWATER TANK
INV INVERT
T.ESI TRAFFICE FLINDERS
D.T.U.A.A. DRAINAGE TURN-UP POINT
RWH RAINWATER HEADER
RWO RAINWATER OUTLET
BRWO BALCONY RAINWATER OUTLET
OFO OVERFLOW OUTLET
SPO SPOON DRAIN OUTLET
RL REDUCED LEVEL
IL INVERT LEVEL
SL SURFACE LEVEL
FFL FINISHED FLOOR LEVEL
FGL FINISHED GROUND LEVEL
GL GRID LEVEL
TOW TOP OF WALL
BOW BOTTOM OF WALL
MAN PRESSURE IN METRES HEAD
CIS CAST IN SLAB
CIC CAST IN COLUMN
EX EXISTING
DIA. DIAMETER
DIA. DIAMETER
SQ. SQUARE
U.N.O. UNLESS NOTED OTHERWISE
U.O.N. UNLESS OTHERWISE NOTED
OSR SITE STORAGE REQUIREMENTS

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Project: Proposed Seniors Living (Stage 2)
At: 5 Skyline Place, Frenchs Forest NSW 2086
Client:

Drawing Title: Basement Plan
Date: January 2021
Scale: As Shown @ A1
Project No.: 284012021DA
Drawing & Sheet No./Issue: 28401-03/21 / A

DRAINS results prepared from Version 2019.03

Version 8

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Overflow Pit -1	150.42		0		5.48		None
Overflow Pit-2	149.12		0		0.88		None
KIP	147.16		0				

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Lot1-Pre	0.479	0	0.479	5	5	0	AR&R 100 year, 15 minutes storm, average 176.2 mm/h, Zone 1
Lot1-Post (ex bypass)	0.5	0.335	0.165	5	5	0	AR&R 100 year, 15 minutes storm, average 176.2 mm/h, Zone 1
Bypass Area	0.017	0	0.017	5	5	0	AR&R 100 year, 15 minutes storm, average 176.2 mm/h, Zone 1

Outflow Volumes for Total Catchment (0.48 impervious + 1.08 pervious = 1.56 total ha)

Storm	Total Rainfall cu.m 359.54	Total Runoff cu.m (Runoff %) 261.08 (72.6%)	Impervious Runoff cu.m (Runoff %) 106.72 (95.7%)	Pervious Runoff cu.m (Runoff %) 154.36 (62.2%)
AR&R 100 year, 5 minutes storm, average 276.1 mm/h, Zone 1				
AR&R 100 year, 10 minutes storm, average 211.2 mm/h, Zone 1	549.89	428.30 (77.9%)	165.79 (97.2%)	262.51 (69.2%)
AR&R 100 year, 15 minutes storm, average 176.2 mm/h, Zone 1	688.15	546.64 (79.4%)	208.69 (97.7%)	337.96 (71.2%)
AR&R 100 year, 20 minutes storm, average 153.4 mm/h, Zone 1	798.8	639.86 (80.1%)	243.03 (98.0%)	396.83 (72.0%)
AR&R 100 year, 25 minutes storm, average 136.9 mm/h, Zone 1	891.09	715.11 (80.3%)	271.66 (98.2%)	443.44 (72.2%)
AR&R 100 year, 30 minutes storm, average 124.4 mm/h, Zone 1	971.69	780.99 (80.4%)	296.67 (98.4%)	484.32 (72.3%)
AR&R 100 year, 45 minutes storm, average 99.58 mm/h, Zone 1	1166.72	939.91 (80.6%)	357.19 (98.7%)	582.72 (72.4%)
AR&R 100 year, 1 hour storm, average 84.46 mm/h, Zone 1	1319.43	1064.34 (80.7%)	404.58 (98.8%)	659.76 (72.5%)
AR&R 100 year, 2 hours storm, average 56.68 mm/h, Zone 1	1770.9	1434.30 (81.0%)	544.67 (99.1%)	889.63 (72.8%)
AR&R 100 year, 4.5 hours storm, average 35 mm/h, Zone 1	2460.47	1971.32 (80.1%)	758.64 (99.4%)	1212.68 (71.5%)
AR&R 100 year, 6 hours storm, average 29.63 mm/h, Zone 1	2777.28	2196.08 (79.1%)	856.95 (99.4%)	1339.12 (69.9%)
AR&R 100 year, 9 hours storm, average 23 mm/h, Zone 1	3233.83	2471.68 (76.4%)	998.63 (99.5%)	1473.05 (66.0%)

PIPE DETAILS

	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
Pipe 3	0.369	7.13	153.225	150.421	utes storm, average 136.9 mm/h, Zone 1
Pipe 2	0.369	3.15	149.685	149.121	utes storm, average 136.9 mm/h, Zone 1
Pipe 1	0.369	8.24	148.157	147.157	utes storm, average 136.9 mm/h, Zone 1

CHANNEL DETAILS

	Max Q (cu.m/s)	Max V (m/s)	Chainage (m)	Max HGL (m)	Due to Storm

OVERFLOW ROUTE DETAILS

	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V
OF	0	0	1.939	0	0	0	0

DETENTION BASIN DETAILS

	Max WL	MaxVol	Max Q	Max Q	Max Q
OSD	155.49	80.5	Total 0.369	Low Level 0.369	High Level 0

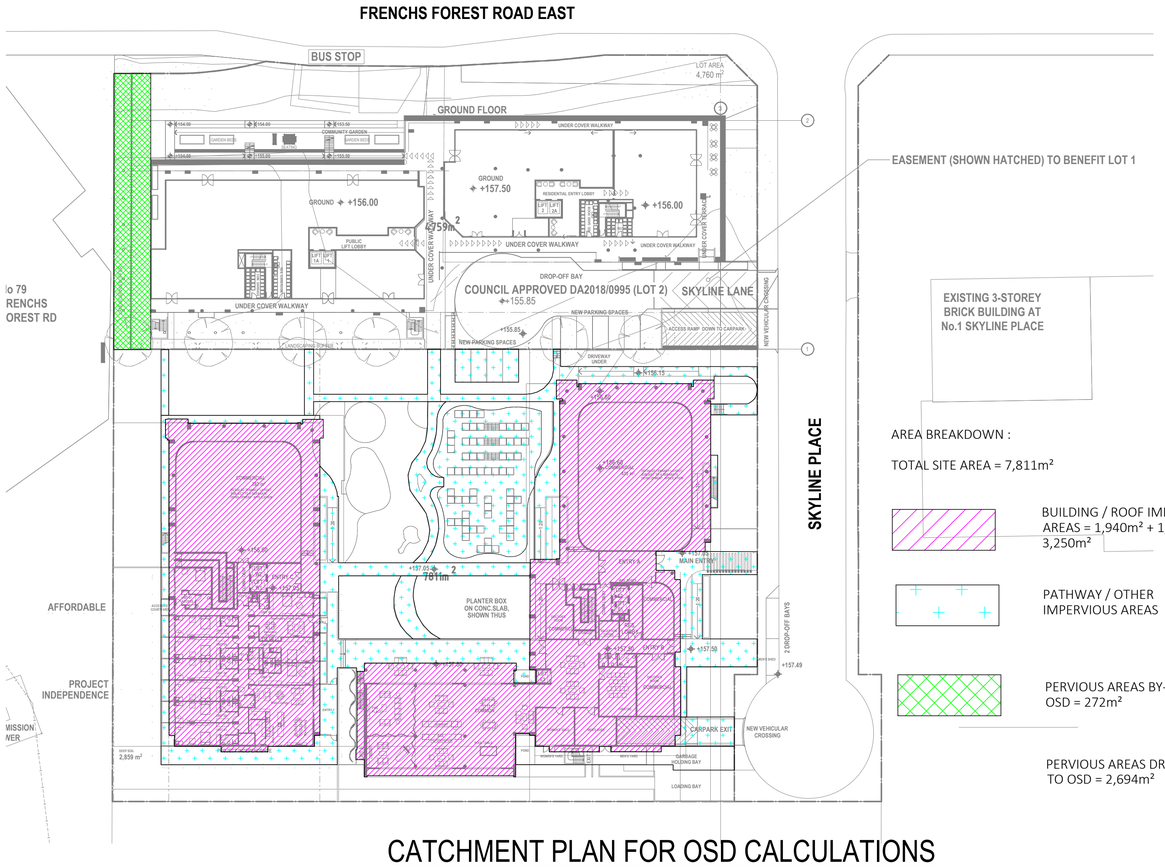
CONTINUITY CHECK for AR&R 100 year, 15 minutes storm, average 176.2 mm/h, Zone 1

Node	Inflow (cu.m)	Outflow (cu.m)	Storage Change (cu.m)	Difference %
KO	245	245	0	0
OSD	293.11	293.03	0.08	0
Overflow Pit -1	293.03	293.03	0	0
Overflow Pit-2	293.03	293.03	0	0
KIP	293.03	293.03	0	0
K O	8.53	8.53	0	0

Run Log for Stage 2 run at 17:39:03 on 17/2/2021

DRAINS MODELLING RESULTS

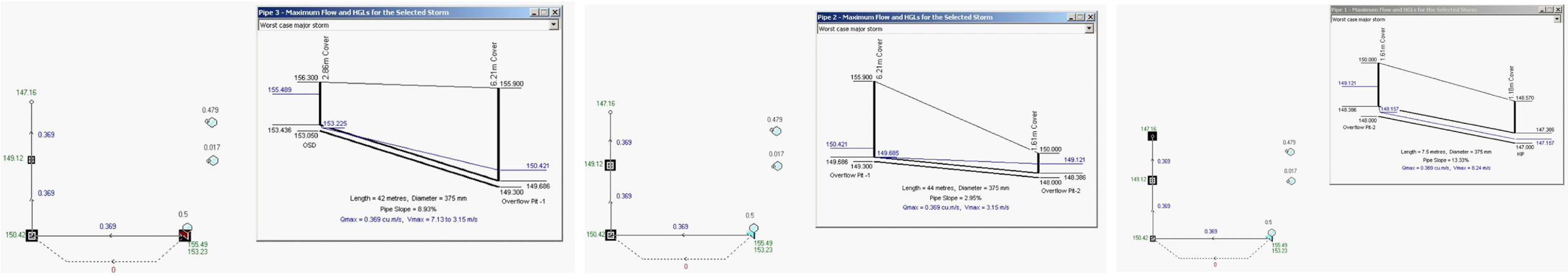
NOT TO SCALE



CATCHMENT PLAN FOR OSD CALCULATIONS

SCALE 1 : 500

NOT FOR CONSTRUCTION



HYDRAULIC GRADE LINE (FROM OSD TO KIP)

NOT TO SCALE

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh

Checked By : N. Evans

Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
(Reg. No. 2206352) RPEQ
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Designed By
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E : ken@ingengineers.com.au

Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

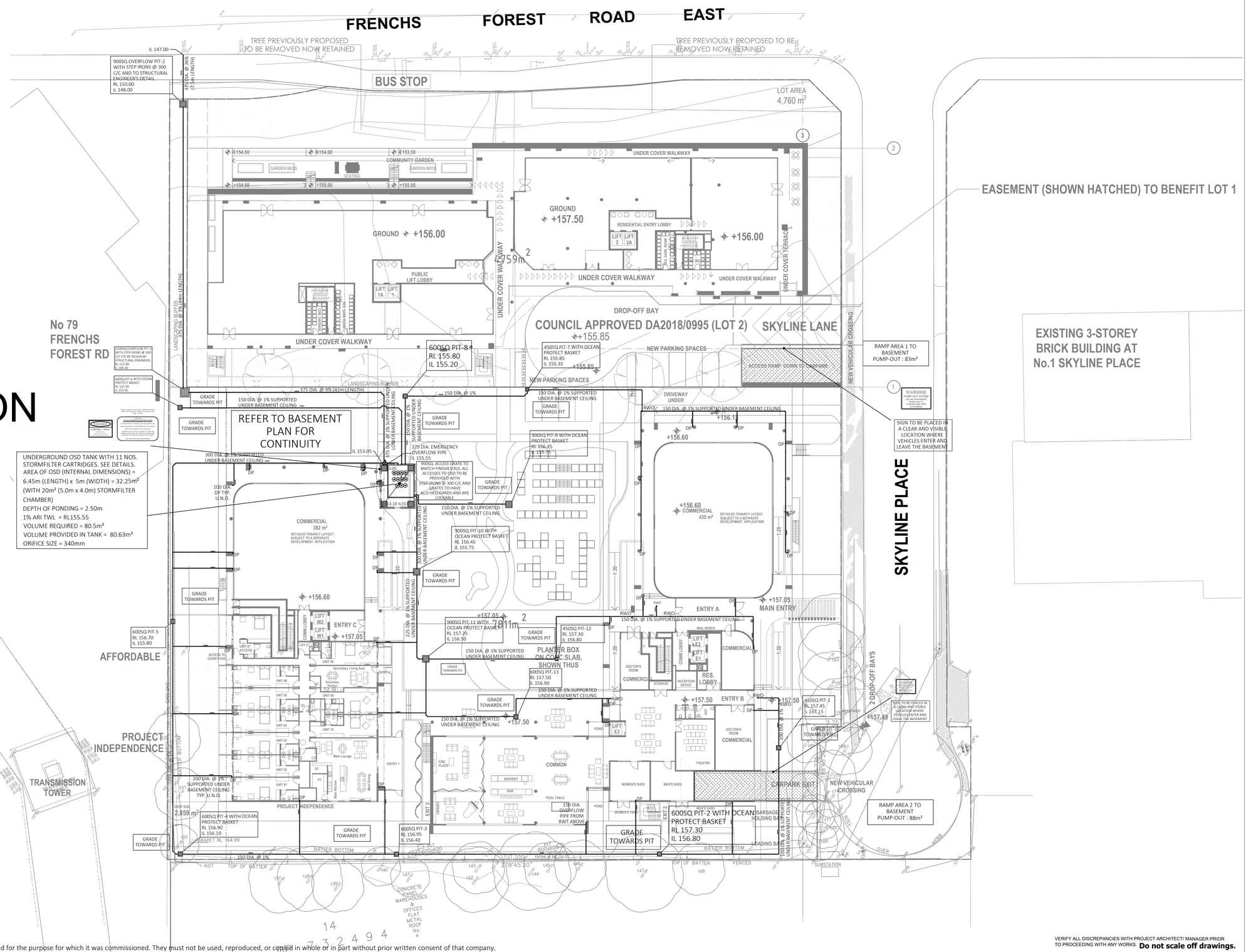
Drawing Title: Catchment Plan & OSD Calculations

Date: January 2021

Scale: As Shown @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-04/21 / A



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A	Development Application	28 Jan. 2021

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

Drawing Title: Ground Floor Plan

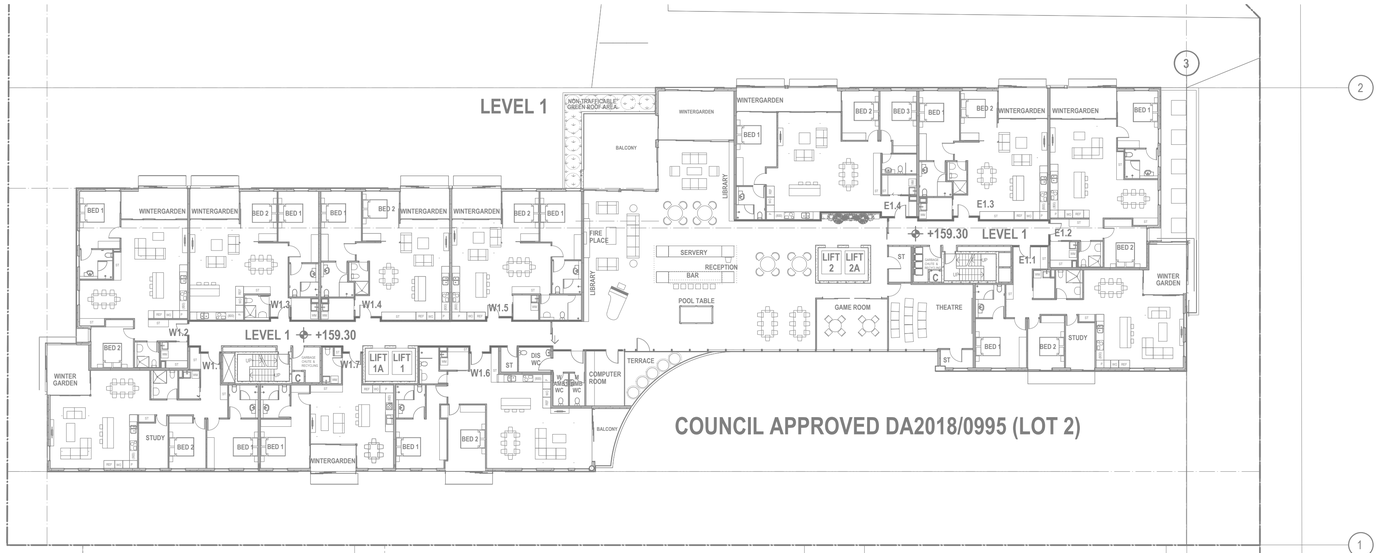
Date: January 2021

Scale: 1 : 300 @ A1

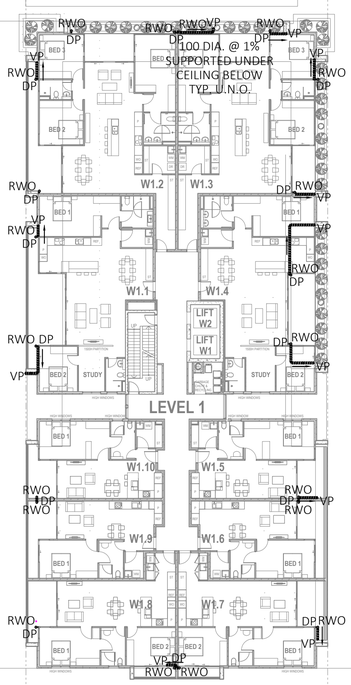
Project No.: 284012021DA

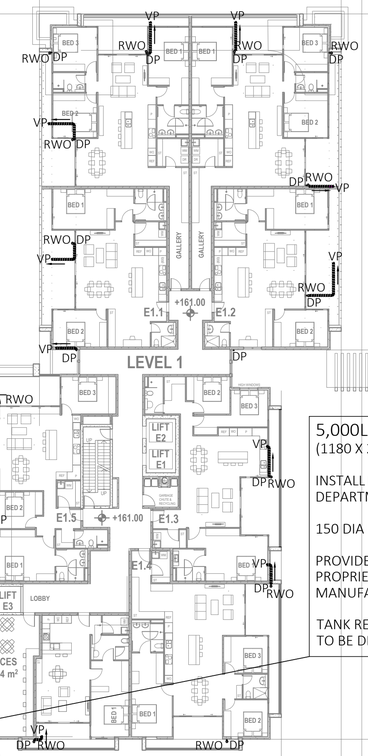
Drawing & Sheet No./Issue: 28401-05/21 / A

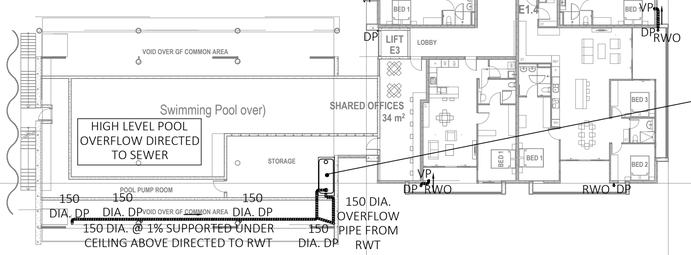
No 79
FRENCHS
FOREST RD



NOT FOR CONSTRUCTION







5,000L SLIMLINE RAINWATER TANK (FOR IRRIGATION ONLY)
(1180 X 2800 X 1850 (H)) SEE DETAIL.

INSTALL IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION, AS3500, DEPARTMENT OF HEALTH AND COUNCIL'S GUIDELINES.

150 DIA INLETS , 150 DIA OVERFLOW OUTLET

PROVIDE FIRST FLUSH RAINWATER HEAD TO EACH DOWNPIPE OR EQUIVALENT PROPRIETARY DEVICE AND INLINE REFLUX VALVE TO 100 DIA. OUTLET PIPE TO MANUFACTURER'S SPECIFICATION.

TANK RE-USE PUMP CONTROL UNIT METER BOX MOUNTED TO ALL. LOCATION TO BE DETERMINED.

TRANSMISSION TOWER

LEGEND

PIPEWORK:
- 100 DIA. uPVC STORMWATER PIPE
- 150 O.D. WITH 1% GRADE (MIN.)
- FIELD INLET
- 1.800 HIGH ROUST FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- PVC IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:
- DOWNPIPE 100 DIA. U.N.O
- BALCONY RAINWATER SPREADER PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (100 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100 DIA. U.N.O.)
- GRATED INLET PIT (450X(L)MM U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (300 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
ALUM	ALUMINIUM / ALUMINIUM
FRC	FIBRE REINFORCED CONCRETE
CON	CONCRETE
CI	CAST IRON
DP	DOWNPIPE
RWO	RAINWATER OUTLET
SWP	SWINGING WOMAPIPE
RWT	RAINWATER TANK
FL	FLOOR LEVEL
TTG	TRAPPED TUNDISH
O.T.U.A.A.	ORANGE TURN UP POINT
RWH	RAINWATER HEAD
RWO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
VP	VENT PIPE (TO ATMOS)
OFO	OPEN DRAIN OUTLET
RL	REDUCED LEVEL
SL	SOFFIT LEVEL
SL	SURFACE LEVEL
FFL	FINISHED FLOOR LEVEL
FSL	FINISHED SURFACE
LL	LOW LEVEL
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
MPH	PRESSURE IN METRES/HEAD
CIS	CAST IN SLAB
CIW	CAST IN WALL/BARN
EX	EXISTING
DIA.	DIAMETER
DIA.	DIAMETER
SQ	SQUARE
U.N.O.	UNLESS NOTED OTHERWISE
U.N.O.	UNLESS NOTED OTHERWISE
SSR	SITE STORAGE REQUIREMENTS

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh
Checked By : N. Evans
Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
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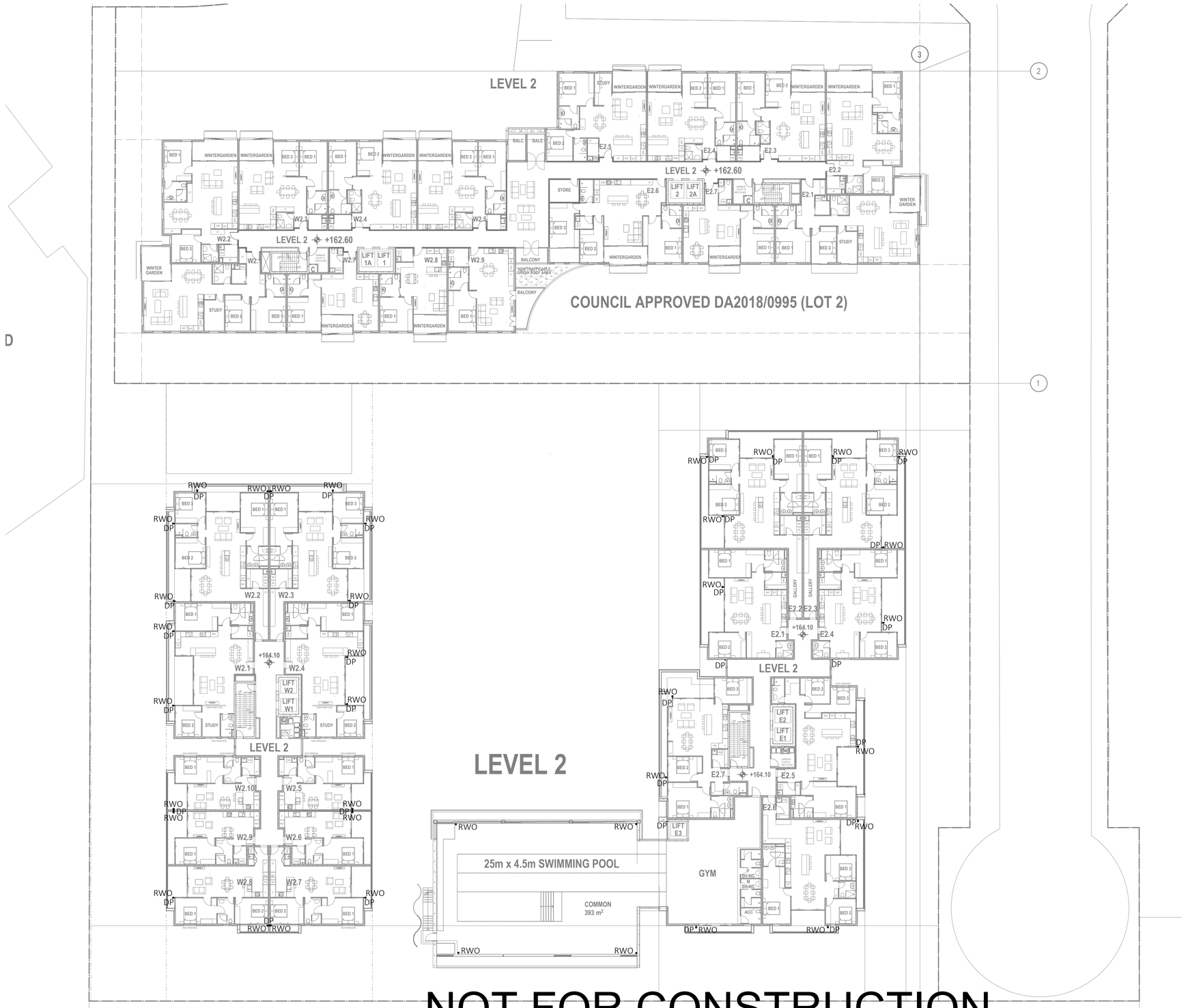
Project: Proposed Seniors Living (Stage 2)
At: 5 Skyline Place, Frenchs Forest NSW 2086
Client:

Drawing Title: Level 1 Floor Plan
Date: January 2021
Scale: 1 : 250 @ A1
Project No.: 284012021DA
Drawing & Sheet No./Issue: 28401-06/20 / A



NOT FOR CONSTRUCTION

LEGEND

PIPEWORK:

- TOP DIA.
- PVC U.N.O. UPVC STORMWATER PIPE
- M.S.C. WITH 1% GRADE (MIN.)
- DRUM MAIN
- ROOF WATER FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- PVC IN SERVICE
- CROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O.
- DOWNPIPE AND SPREADER
- PLANTER BOX DRAINAGE OUTLET 100
- GRATED INLET
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100DIA. U.N.O.)
- GRATED INLET PIT (450X2 MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (150 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
RC	REINFORCED CONCRETE
CI	CAST IRON
CU	COPPER
GI	GALVANISED
RM	RISING MAIN
DWP	DOWNPIPE DOWNPIPE
DIA	DIAMETER DIAMETER
TD	TUNDISH
TTD	TRAPPED TUNDISH
U.O.N.O.	UNLESS OTHERWISE POINT
GTD	GRATED TRENCH DRAIN
RWO	RAINWATER OUTLET
BWO	BALCONY RAINWATER OUTLET
PBO	PLANTER BOX OUTLET
WO	WOODSTORE OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
FFL	FINISHED FLOOR LEVEL
FGL	FINISHED GROUND LEVEL
LL	LOW LEVEL
TOW	TOP OF WALL
TOK	TOP OF KERB
MH	PRESSURE IN METRES/HEAD
CIS	CAST IN SLAB
CIC	CAST IN COLUMN
EX.	EXISTING
DIA.	DIAMETER
DP	DOWNPIPE
VOL	VOLUME
U.N.O.	UNLESS NOTED OTHERWISE
SRW	STORM WATER RELEASE WINDOW
SSR	SITE STORAGE REQUIREMENTS

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

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Checked By : N. Evans

Approved By : Kenneth T. NG
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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

Drawing Title: Level 2 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-07/20 / A

LEGEND

PIPEWORK:

- SOIL
- STORM (uPVC STORMWATER PIPE (N.O. WITH 1% GRADE (MIN.)
- RISING MAIN
- RAINWATER (TANK) PIPES
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- NCE IN SERVICE
- NCE IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE (100 DIA. U.N.O)
- DOWNPIPE AND SPREADER
- BALCONY DRAINAGE OUTLET 100 (NA U.N.O)
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (NOTE U.N.O.)
- GRATED INLET PIT (450SQ MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (NOTE WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
CI	CAST IRON
DP	DOWNPIPE
SP	SOAKWAYS
RM	RISING MAIN
RWT	RAINWATER TANK/PIPE
RWH	RAINWATER TANK
TD	TUNDISH
G.T.	GRATED TRENCH
D.T.U.A.A.	DRAINAGE TURN UP POINT
GTD	GRATED TRENCH DRAIN
BOP	BALCONY OUTLET PIPE
BRWO	BALCONY RAINWATER OUTLET
PRO	PLANTER BOX OUTLET
RO	RAINWATER OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
FL	FLOOR LEVEL
FFL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
BL	BOTTOM LEVEL
TOW	TOP OF WALL
US	UNDERSIDE
HWH	HEAD OF WATER(LHEAD)
CO	CAST IN SLAB
CIC	CAST IN COLUMN
CIW	CAST IN WALL
DIA.	DIAMETER
m.	METRE
mm	MILLIMETRE
U.N.O.	UNLESS NOTED OTHERWISE
PSD	PERMISSIBLE SITE DISCHARGE
SSR	SITE STORAGE REQUIREMENTS

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

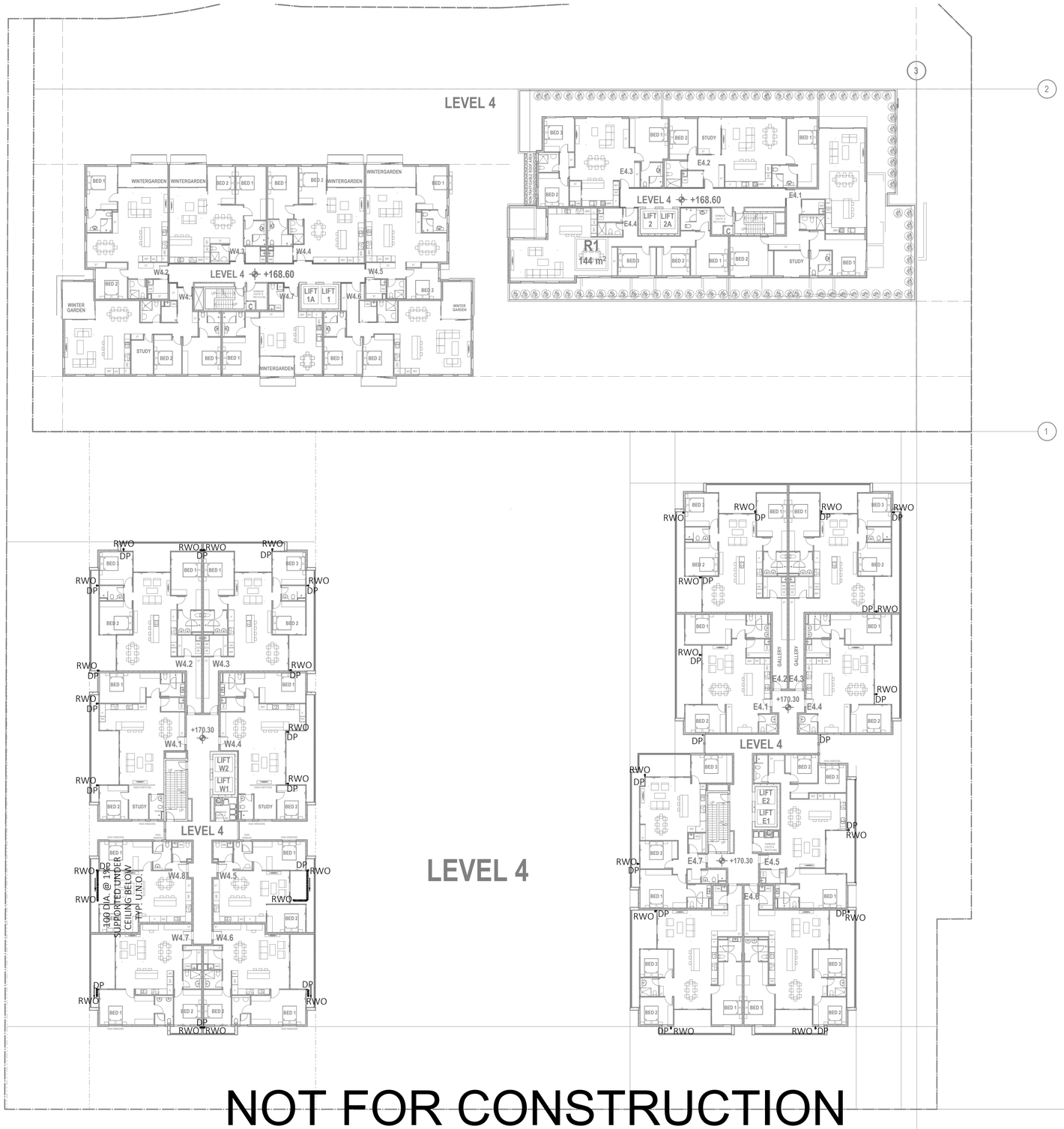
Drawing Title: Level 3 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-08/20 / A



LEGEND

PIPEWORK:

- 100 DIA. UPVC STORMWATER PIPE
- 375 O.D. WITH 1% GRADE (MIN.)
- 100 DIA. RWO
- CUT AND OUT FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- NEW IN SERVICE
- EXISTIN IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O
- DOWNPIPE AND SPREADER
- GRATED DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100DIA. U.N.O.)
- GRATED INLET PIT (450SQ MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (450 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS:-

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
CI	CAST IRON
DI	DUCTILE IRON
DP	DOWNPIPE
RM	RISING MAIN
RWHT	RAINWATER TANK/PIPE
RWT	RAINWATER TANK
TD	TUNDISH
G.T.D	GRATED TUNDISH
D.T.U.A.A.	DRAINAGE TURN UP POINT
GTD	GRATED TRENCH DRAIN
BMO	BALCONY OUTLET
BRWO	BALCONY RAINWATER OUTLET
PBO	PLANTER BOX OUTLET
RWO	RAINWATER OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
SL	SOFFIT LEVEL
FFL	FINISHED FLOOR LEVEL
TOW	TOP OF WALL
LL	LOW LEVEL
LOW	LOWER LEVEL
UNO	UNLESS NOTED
M/H	PRESSURE IN METRES/HEAD
CO	CLEAN OUT
CI	CAST IN SITU DRAIN
EX.	EXISTING
DIA.	DIAMETER
m	METRE
SQ.	SQUARE
U.N.O.	UNLESS NOTED OTHERWISE
PSD	PERMISSIBLE SITE DISCHARGE
SSR	SITE STORAGE REQUIREMENTS

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Designed By
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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

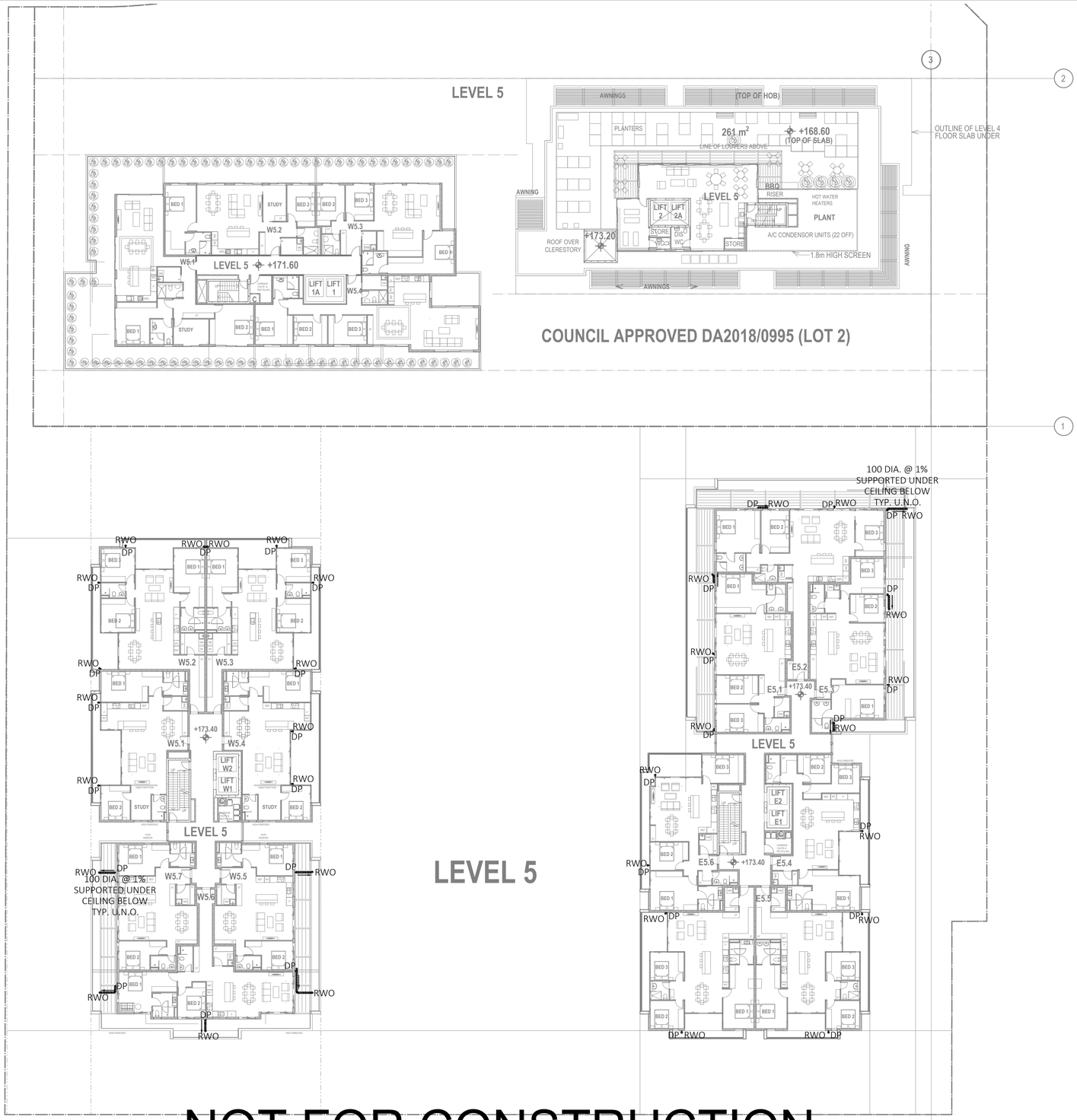
Drawing Title: Level 4 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-09/20 / A



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LEGEND

PIPEWORK:

- 100 DIA. UPVC STORMWATER PIPE
- 150 DIA.UPVC STORMWATER PIPE (M.G. WITH 1% GRADE (MIN.)
- EXISTING PIPE
- CUT AND OUT EXIST.
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- RISE IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O
- DOWNPIPE AND SPREADER
- 100 DIA. DOWNPIPE DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100 DIA. U.N.O.)
- GRATED INLET PIT (450SQ MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (450 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS:-

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
CI	CAST IRON
DI	DUCTIL IRON
DP	DOWNPIPE
RM	RISING MAIN
RWHT	RAINWATER TANKPIPE
RWT	RAINWATER TANK
TD	TUNDISH
D.T.S.	DRAINAGE TUNDISH
D.T.U.A.A.	DRAINAGE TURN-UP POINT
GTD	GRATED TRENCH DRAIN
BWGO	BALCONY WATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
PBO	PLANTER BOX OUTLET
RWO	RAINWATER OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
SL	SOFFIT LEVEL
FFL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
BW	BOTTOM WALL
TOW	TOP OF WALL
US	UNDERSIDE
HW	HEAD OF WATER(/HEAD
CS	CAST IN SLAB
CC	CAST IN COLUMN
DIA.	DIAMETER
DIA.	DIAMETER
M	METRE
W.H.	WATER HEAD
U.N.O.	UNLESS NOTED OTHERWISE
U.O.S.	UNLESS OTHERWISE SPECIFIED
SSR	SITE STORAGE REQUIREMENTS

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Approved By : Kenneth T. NG
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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

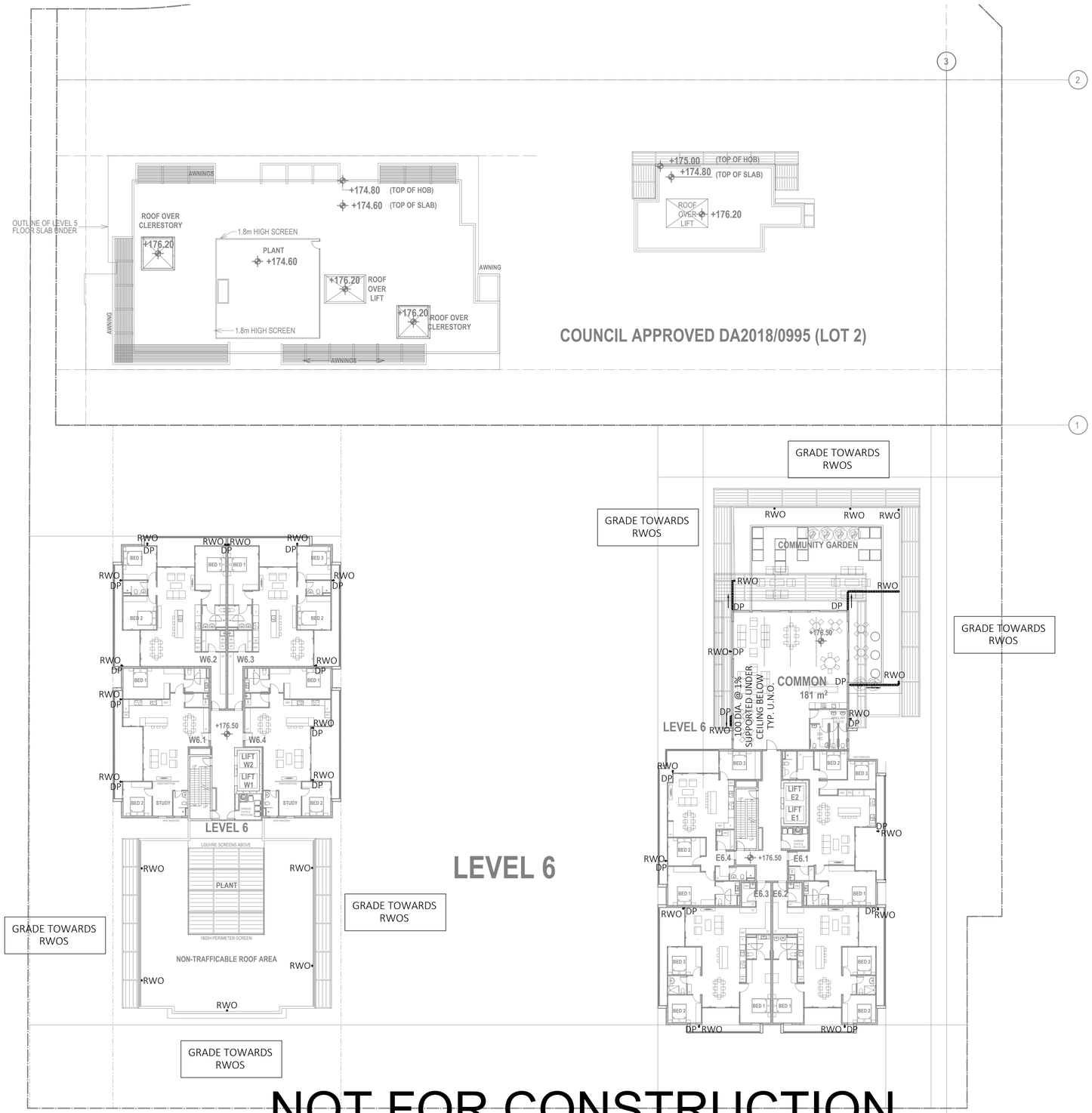
Drawing Title: Level 5 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-10/20 / A



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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh

Checked By : N. Evans

Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
(Reg. No. 2206352) RPEQ
Registered Certifier
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NSW Fair Trading (Reg. No. BDC0827)

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

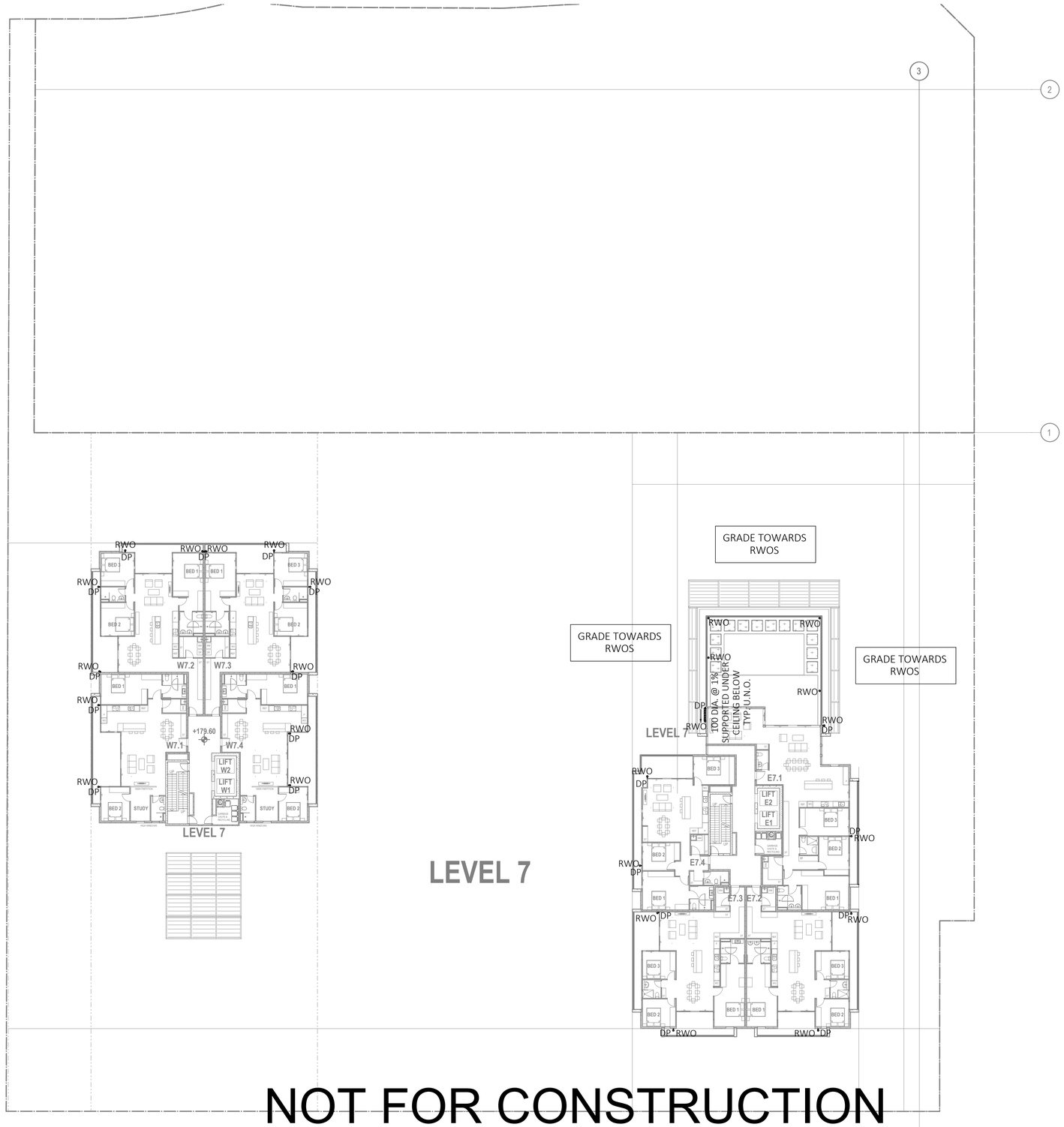
Drawing Title: Level 6 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-11/20 / A



NOT FOR CONSTRUCTION

LEGEND

PIPEWORK:

- PVC SOIL
- 100 DIA uPVC STORMWATER PIPE (UNDERGROUND IN GRADE IMPV.)
- YELLOW WARNING TAPE AND DUST FENCE
- 100 DIA uPVC STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- RISE IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. (U.N.O.)
- DOWNPIPE AND SPREADER
- PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100 DIA. U.N.O.)
- GRATED INLET PIT (450X1.5MN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (450 WIDE U.N.O.)
- 4298 INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
Al	ALUMINIUM
Cu	COPPER
DP	DOWNPIPE
SP	SPREADER
SWSP	SUPPLIMENTARY STORMWATER PIPE
RWT	RAINWATER TANK
PT	PUMPWELL
TTD	TRAPPED TUNDISH
D.T.U.A.A.	DRAINAGE TURN-UP POINT
RWO	RAINWATER OUTLET
RWGO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
SPT	SPITTER BOX OUTLET
SPO	SPIGOT DRAIN OUTLET
RL	REDUCED LEVEL
FL	FINISHED FLOOR
SL	SURFACE LEVEL
FFL	FINISHED FLOOR LEVEL
TOW	TOP OF WALL
LL	LOW LEVEL
LOW	LOWER LEVEL
UG	UNDERGROUND
W/H	PRESSURE IN METRES/HEAD
IL	INVERT LEVEL
CIC	CAST IN COLUMN
CIS	CAST IN SITU
DIA.	DIAMETER
m	METRE
mm	MILLIMETRE
U.N.O.	UNLESS NOTED OTHERWISE
PSD	PERMISSIBLE SITE DISCHARGE
SSR	SITE STORAGE REQUIREMENTS

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client

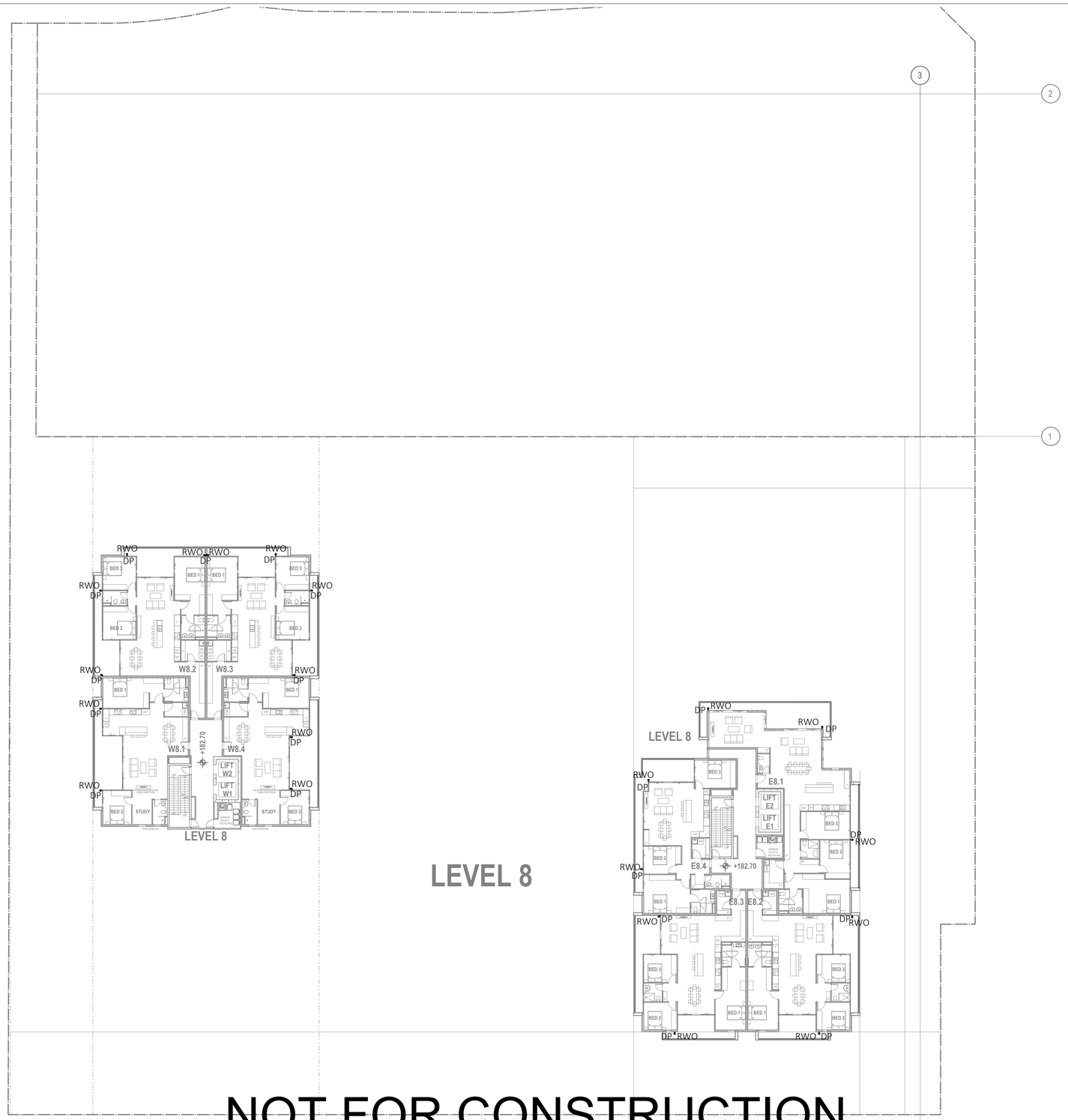
Drawing Title: Level 7 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-12/20 / A



NOT FOR CONSTRUCTION

LEGEND

PIPEWORK:

- 100 DIA GRV
- 150 DIA uPVC STORMWATER PIPE (I.N.O. WITH 1% GRADE (MIN.))
- 150 DIA PVC-U SEWER (IST AND OUT EINES)
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- RISE IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O
- DOWNPIPE AND SPREADER
- RAINWATER OR STORMWAT OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (100DIA. U.N.O.)
- GRATED INLET PIT (450SQ MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (450 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
CI	CAST IRON
SW	STORMWATER
DP	DOWNPIPE
RM	RISING MAIN
RWHT	RAINWATER TANKPIPE
RWT	RAINWATER TANK
TD	TUNDISH
D.T.S.	DRAINAGE TUNDISH
D.T.U.A.A.	DRAINAGE TURN-UP POINT
GTD	GRATED TRENCH DRAIN
BRWO	BALCONY RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
PBO	PLANTER BOX OUTLET
RO	RAINWATER OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
SL	SOFFIT LEVEL
FFL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
BL	BOTTOM LEVEL
TOW	TOP OF WALL
US	UNDERSIDE
U.N.O.	UNLESS OTHERWISE NOTED/SPECIFIED
CIS	CAST IN SLAB
CIC	CAST IN COLUMN
DIA.	DIAMETER
DIA.	DIAMETER
M	METRE
M.H.	MANHOLE
U.N.O.	UNLESS NOTED OTHERWISE
O.S.D.	OVERLAND SURFACE DRAINAGE
SSR	SITE STORAGE REQUIREMENTS

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

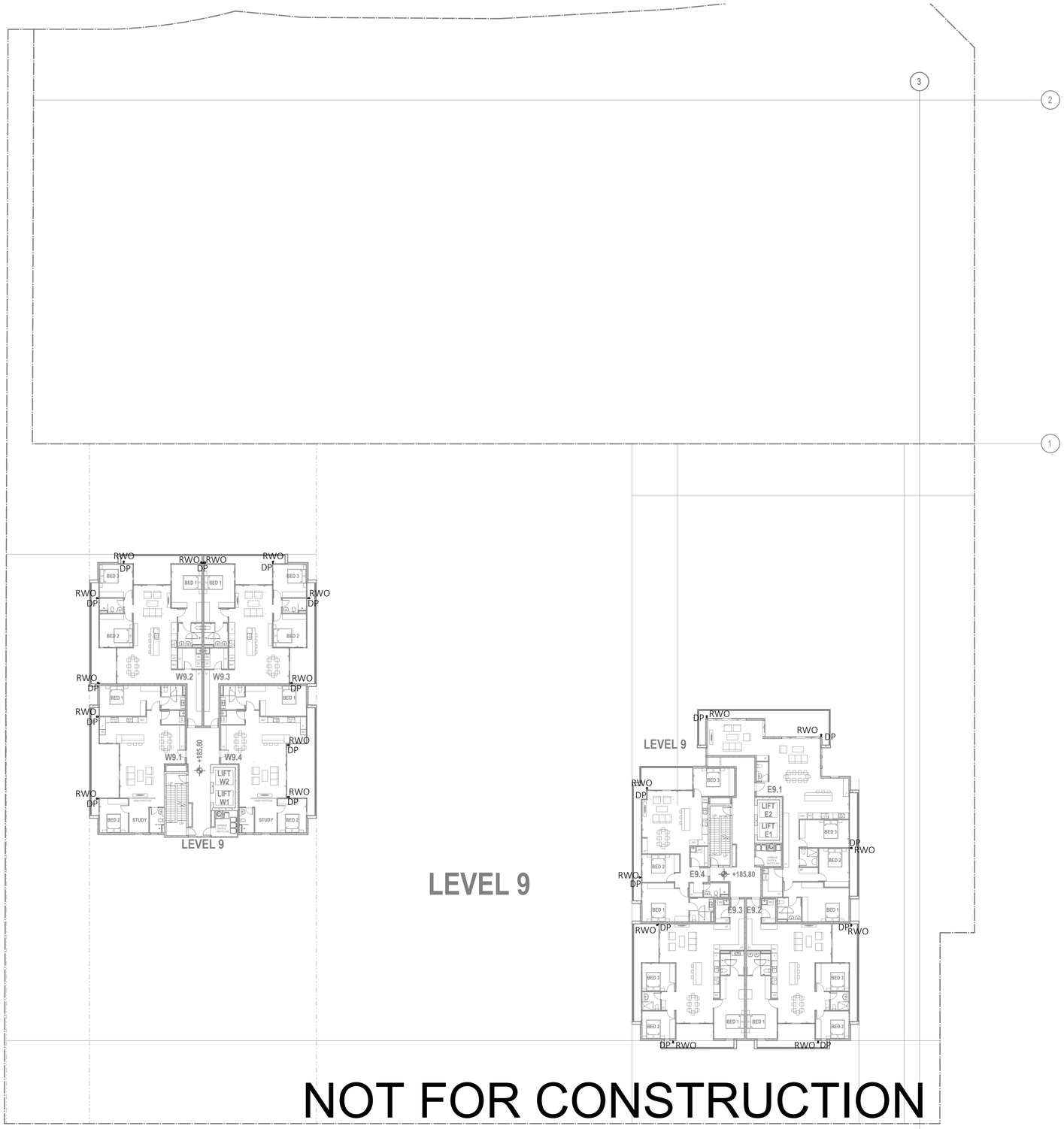
Drawing Title: Level 8 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-13/20 / A



NOT FOR CONSTRUCTION

LEGEND

PIPEWORK:

- SOIL/SEL
- PVC-U SEWAGE, STORMWATER PIPE
- PVC-U WITH ON GRADE (MIN.)
- TRUNK MAIN
- ROOF DRAINAGE FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- RISE IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O
- DOWNPIPE AND SPRINKLER
- PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O
- RAINWATER OUTLET 150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET 150 GRATE U.N.O.)
- OVERFLOW SPITTER (200W. U.N.O.)
- GRATED INLET PIT (450SQ MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (300 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
RC	REINFORCED CONCRETE
CI	CAST IRON
CU	COPPER
PB	PLUMBER
RM	RISING MAIN
SVDP	SYPHONIC DOWNPIPE
TM	TRUNK MAIN
TD	TUNDISH
TTD	TRAPPED TUNDISH
U.O.A.A.	UNLESS OTHERWISE AGREED
GTD	GRATED TRENCH DRAIN
RWO	RAINWATER OUTLET
BWO	BALCONY RAINWATER OUTLET
PBO	PLANTER BOX OUTLET
SPO	SPIGON DRAIN OUTLET
IL	INVERT LEVEL
SL	SHORT LEVEL
SL	SURFACE LEVEL
FL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
SL	STW LEVEL
U.N.O.	UNLESS NOTED
UG	UNDERGROUND
MPH	PRESSURE IN METRES HEAD
CI	CAST IRON
CIC	CAST IN COLUMN
DA	DIAGRAM
DIA.	DIAMETER
M.	METRE
MM	MILLIMETRE
U.N.O.	UNLESS NOTED OTHERWISE
PSD	PERMISSIBLE SITE DISCHARGE
SSR	SITE STORAGE REQUIREMENTS

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

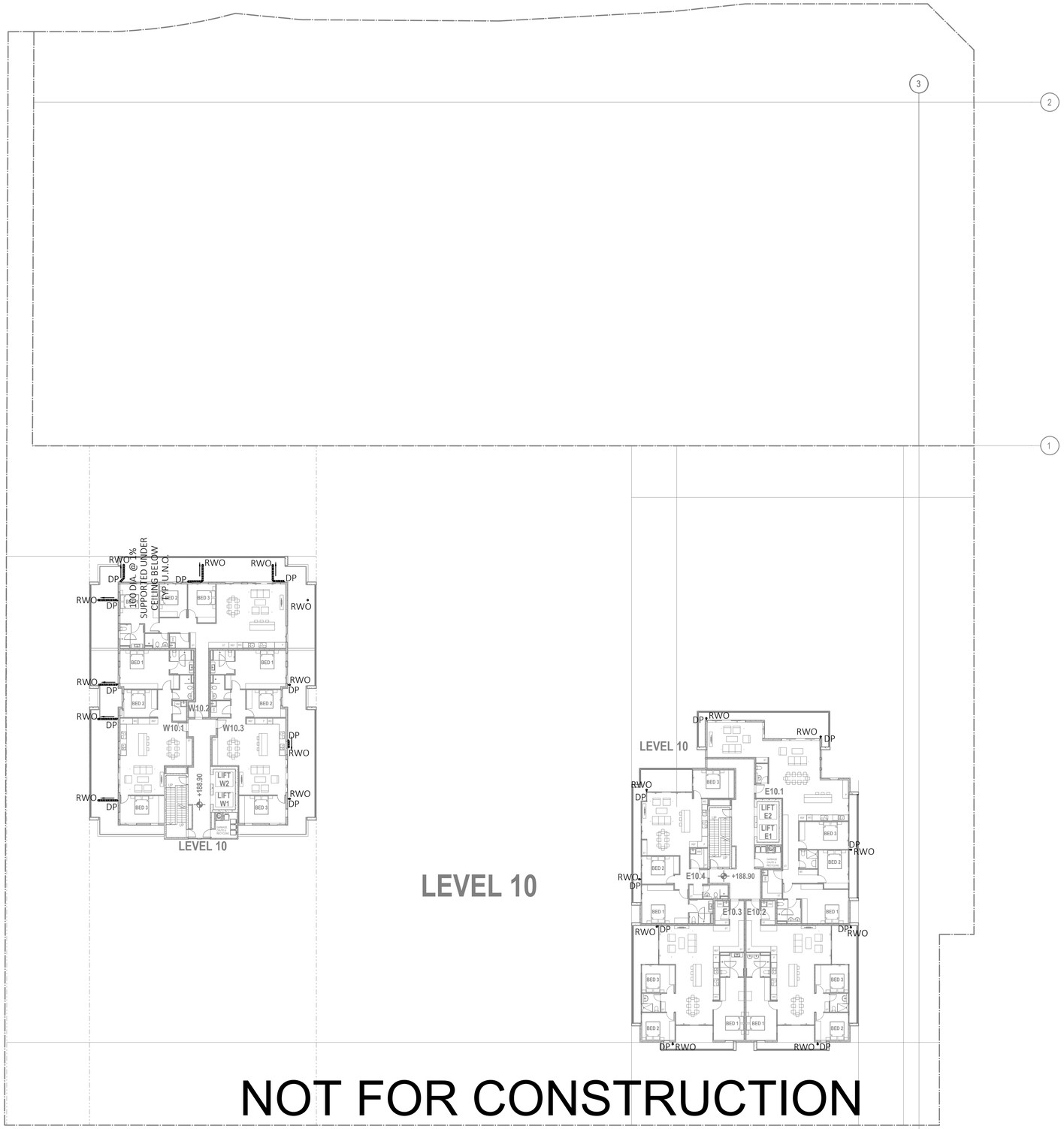
Drawing Title: Level 9 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-14/20 / A



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LEGEND

PIPEWORK:

- 100 DIA. UPVC STORMWATER PIPE
- 100 D.I. WITH 1% GRADE (MIN.)
- FLOW MAP
- EXISTING CONTOUR FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- PIT IN SERVICE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE 100 DIA. U.N.O
- DOWNPIPE AND SPREADER
- PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET 150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET 100 GRATE U.N.O.)
- OVERFLOW SPITTER (DOWN. U.N.O.)
- GRATED INLET PIT (450X2 MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (300 WIDE U.N.O.)
- 450X 450 PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE
CI	CAST IRON
CP	COPPER
GV	GATE VALVE
RM	RISING MAIN
RMP	RISING MAIN SNAPFIT
RWT	RAINWATER TANK
TD	TRENCH DRAIN
TS	TANGENTIAL SUMPSIN
D.T.U.A.A.	DRAINAGE TURN UP POINT
RWO	RAINWATER OUTLET
RWO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
OFD	OVERFLOW DRAIN OUTLET
ORD	OVERFLOW DRAIN OUTLET
RL	REDUCED LEVEL
IL	INVERT LEVEL
SL	SURFACE LEVEL
FFL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
LL	LOW LEVEL
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
MPH	PRESSURE IN METRE(HEAD
CIS	CAST IN SLAB
CIC	CAST IN THE COLUMN
EX.	EXISTING
DIA.	DIAMETER
TOP	TOP OF
SQ.	SQUARE
U.N.O.	UNLESS NOTED OTHERWISE
SWL	STORMWATER LEVEL (MAINS)
SSR	SITE STORAGE REQUIREMENTS

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place, Frenchs Forest NSW 2086

Client:

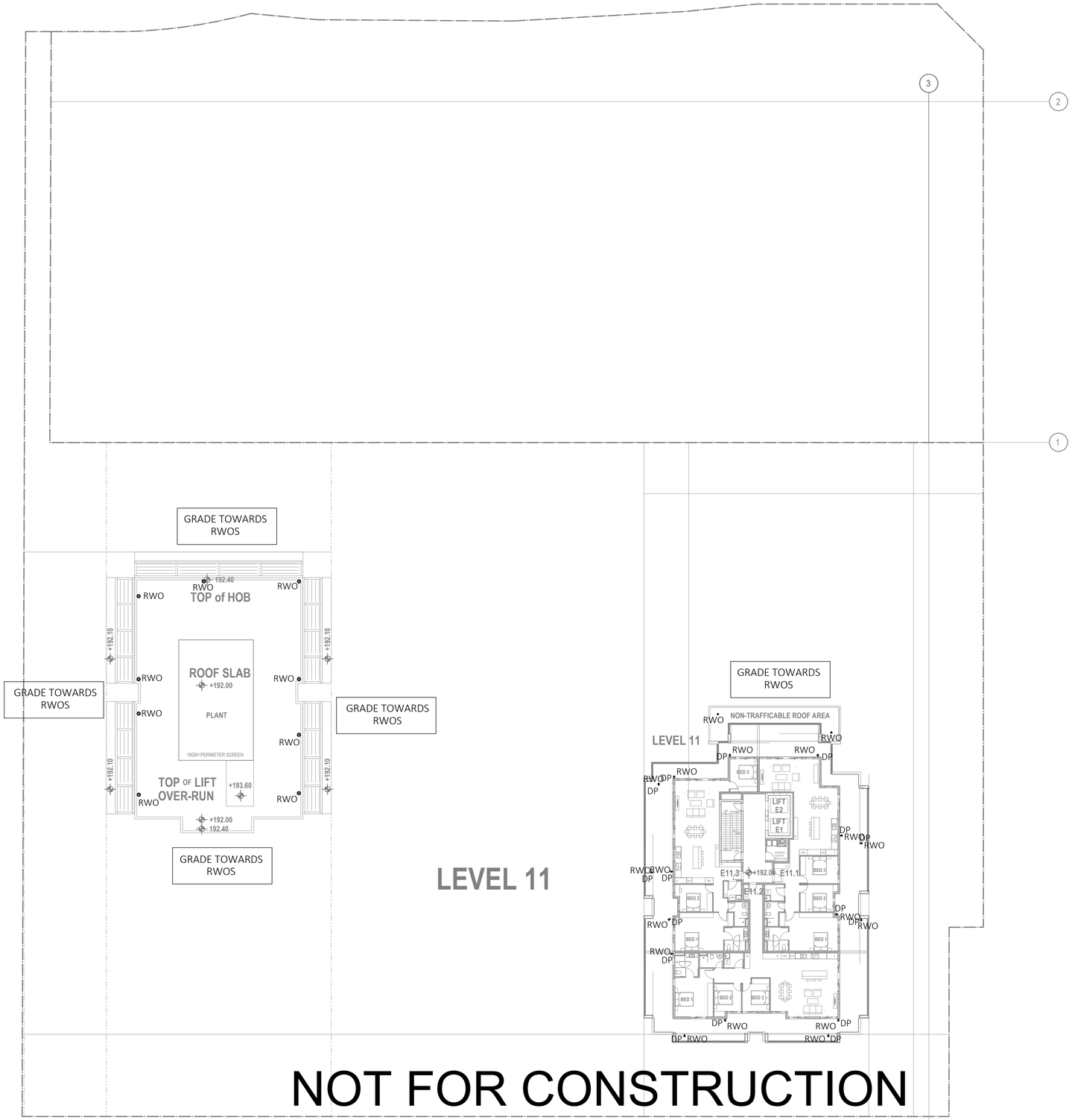
Drawing Title: Level 10 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-15/20 / A



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LEGEND

PIPEWORK:

- 100 DIA. uPVC STORMWATER PIPE
- 150 DIA. uPVC (IN TRENCH 300ML)
- PALISADE FENCE
- TILT AND DUST FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- PROPOSED PIPE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE (DETAIL U.N.O.)
- DOWNPIPE AND SPREADER
- PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (DETAIL U.N.O.)
- GRATED INLET PIT (40DIA) MIN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (300 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHYLENE
FRC	FIBRE REINFORCED CONCRETE
AL	ALUMINIUM
CU	COPPER
DP	DOWNPIPE
DS	DOWNSPOUT
SWSP	SWINGING SPRAYPIPE
RWT	RAINWATER TANK
TP	TRAP PIT
TTG	TRAPPED TUNDISH
D.T.U.R.A.	DRAINAGE TURN-UP POINT
RWO	RAINWATER OUTLET
RWO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
OFO	OVERFLOW OUTLET
SPO	SPIGOT DRAIN OUTLET
RL	REDUCED LEVEL
BL	BOTTOM LEVEL
SL	SURFACE LEVEL
FFL	FINISHED FLOOR LEVEL
FSL	FINISHED SURFACE
LL	LOW LEVEL
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
MPH	PRESSURE IN METRES/HEAD
CO	CAST IN SLAB
CO	CAST IN SITU DRAIN
EX	EXISTING
DIA.	DIAMETER
SQ	SQUARE
SQ	SQUARE
U.N.O.	UNLESS NOTED OTHERWISE
U.O.N.	UNLESS OTHERWISE SHOWN/NOTED
SSR	SITE STORAGE REQUIREMENTS

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

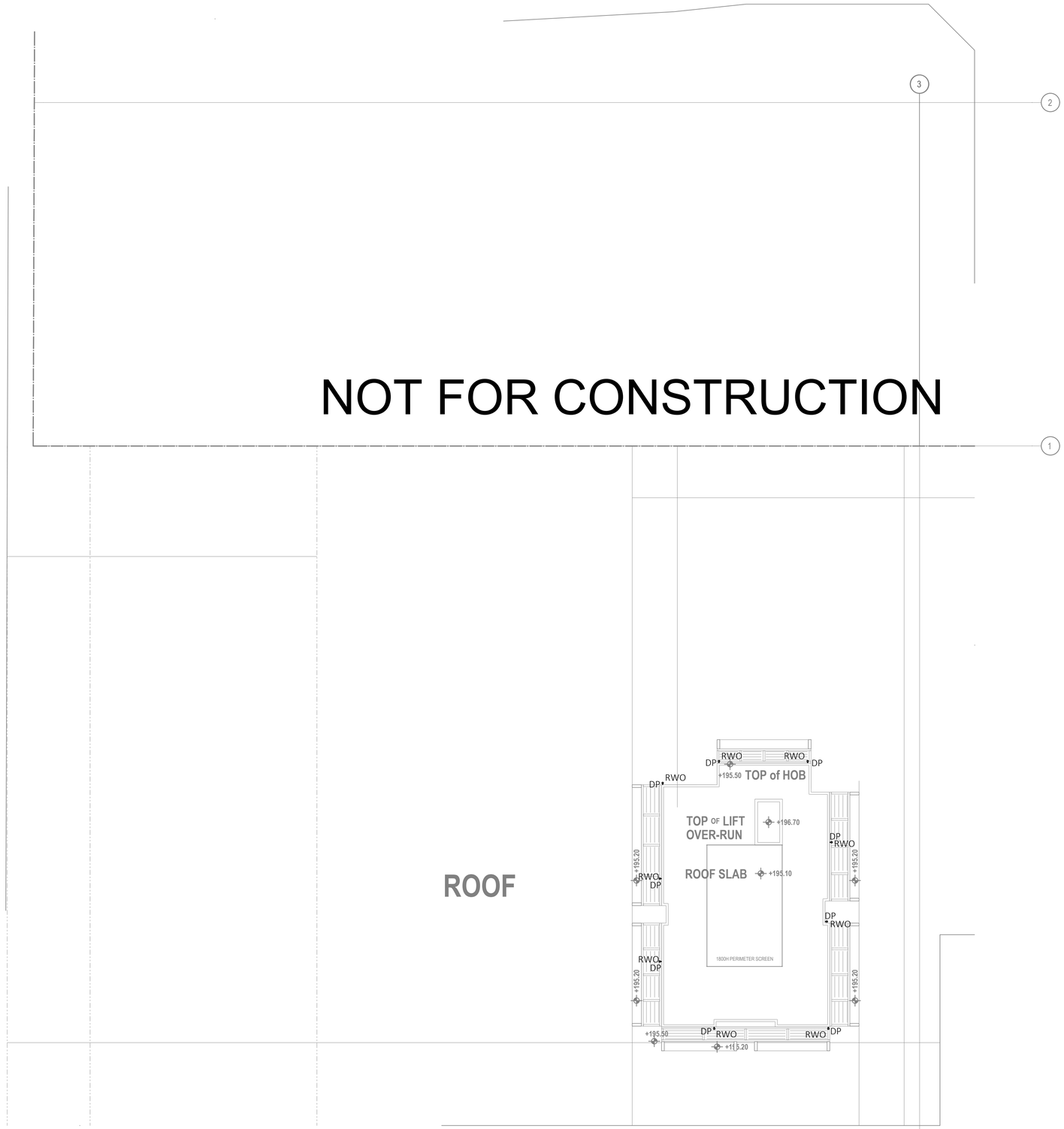
Drawing Title: Level 11 Floor Plan

Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-16/20 / A



LEGEND

PIPEWORK:

- GRAVITY SOIL
- 100 DIA. uPVC STORMWATER PIPE (1:200 MIN. GRADE WHEN.)
- PALING WALL
- TILT AND DUST FENCE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER TO BE REMOVED
- PROPOSED PIPE
- DROP IN SERVICE

SERVICE ACCESSORIES:

- DOWNPIPE (DETAIL U.N.O.)
- DOWNPIPE AND SPRINKLER
- PLANTER BOX DRAINAGE OUTLET 100 DIA. U.N.O.
- RAINWATER OUTLET (150 GRATE U.N.O.)
- BALCONY RAINWATER OUTLET (100 GRATE U.N.O.)
- OVERFLOW SPITTER (DETAIL U.N.O.)
- GRATED INLET PIT (450X1.5MN. U.N.O.)
- CONCRETE COVERED JUNCTION PIT
- GRATED TRENCH DRAIN (300 WIDE U.N.O.)
- KERB INLET PIT
- STORMWATER PUMPWELL
- VEHICULAR CROSSING
- REVISION
- OVERLAND FLOW PATH
- CLEANING EYE

ABBREVIATIONS :

uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
HDPE	HIGH DENSITY POLYETHLENE
FRC	FIBRE REINFORCED CONCRETE
AL	ALUMINIUM
CU	COPPER
DP	DOWNPIPE
RWO	RAINWATER
SVDP	SYPHONIC DOWNPIPE
RWT	RAINWATER TANK
PIT	PITS
TTG	TRAPPED TUNDISH
D.T.U.R.A.	DRAINAGE TURN-UP POINT
RWH	RAINWATER HEAD
RWO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
OFD	OVERFLOW DRAIN
SPD	SPIGOT DRAIN OUTLET
RL	REDUCED LEVEL
FL	FLOOR LEVEL
SL	SURFACE LEVEL
FFL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
LL	LOW LEVEL
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
MPH	PRESSURE IN METRES/HEAD
CIS	CAST IN SLAB
CIW	CAST IN WALL/WAIN
EX	EXISTING
DIA.	DIAMETER
DIA.	DIAMETER
SQ	SQUARE
U.N.O.	UNLESS NOTED OTHERWISE
O.A.D.	OVERLAND FLOW DRAINAGE
S.W.	SITE STORAGE REQUIREMENTS

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E : ken@ingengineers.com.au

Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

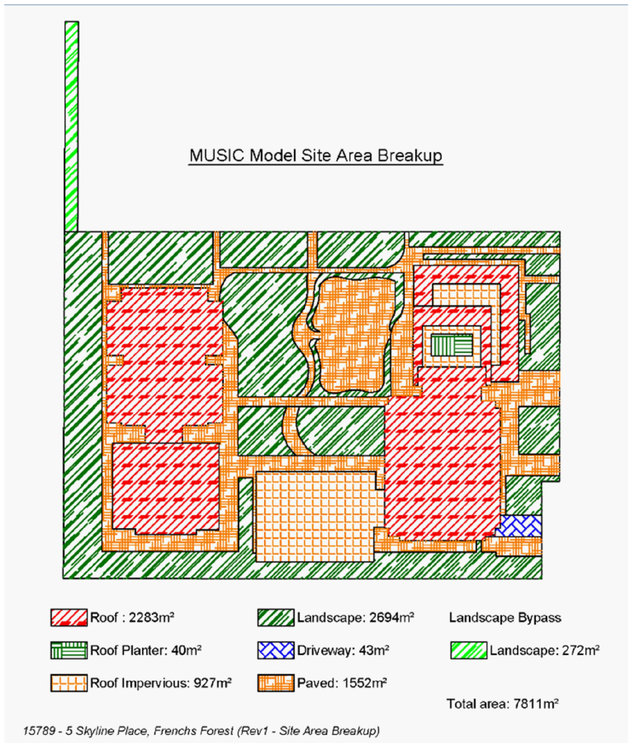
Drawing Title: Roof Plan

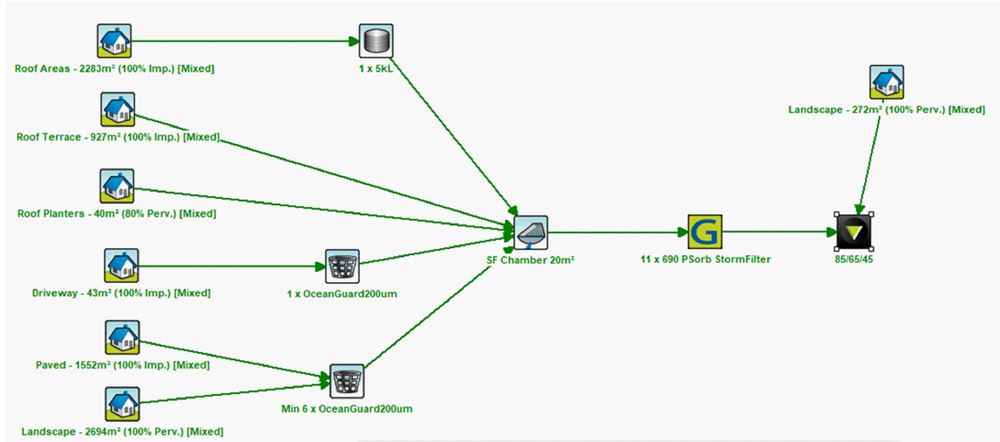
Date: January 2021

Scale: 1 : 250 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-17/20 / A

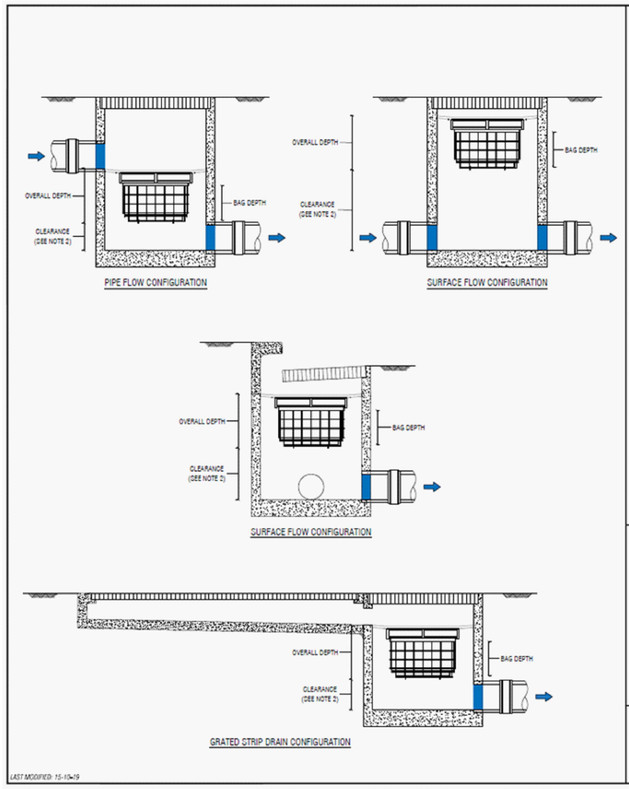




Treatment Train Effectiveness - 85/65/45

	Sources	Residual Load	% Reduction
Flow (ML/yr)	6.71	6.46	3.8
Total Suspended Solids (kg/yr)	681	102	85.1
Total Phosphorus (kg/yr)	1.48	0.404	72.7
Total Nitrogen (kg/yr)	14	6.8	51.3
Gross Pollutants (kg/yr)	139	0	100

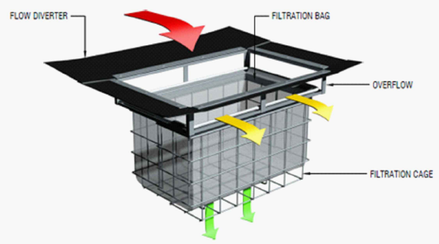
NOT FOR CONSTRUCTION



PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

PLAN ID	DEPTH ID 1	2	3
S	■		
M	■	■	
L	■	■	■
XL	■	■	■

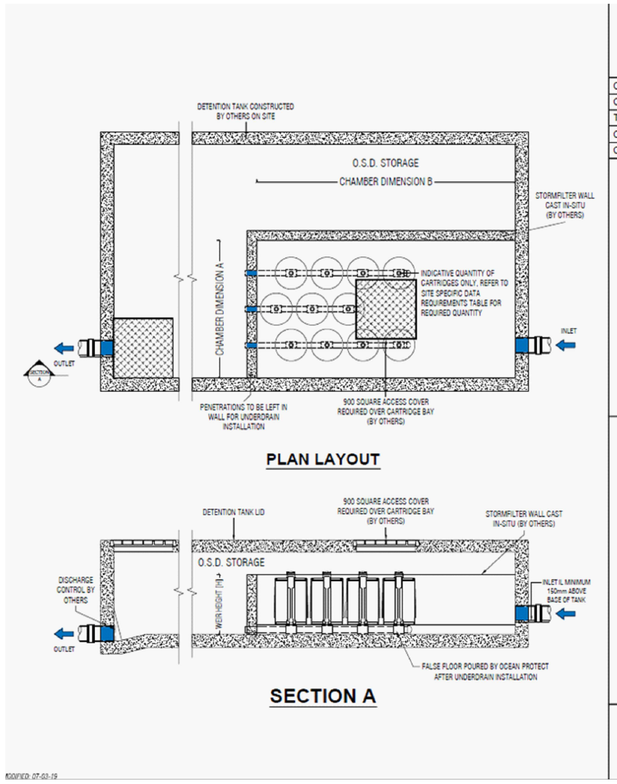


GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES - 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
4. DRAWINGS NOT TO SCALE.

OCEAN PROTECT
PHONE: 1300 364 722 www.oceanprotect.com.au

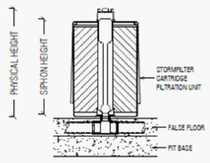
OCEAN PROTECT
OCEANGUARD
TYPCIAL ARRANGEMENTS
SPECIFICATION DRAWING



STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CERTIFYING ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 178mm.

CARTRIDGE NAME / SIPHON HEIGHT (mm)	690	460	310
CARTRIDGE PHYSICAL HEIGHT (mm)	840	600	600
TYPICAL WEIR HEIGHT [H] (mm)	920	690	540
CARTRIDGE FLOW RATE FOR ZPG MEDIA (L/s)	1.6	1.1	0.7
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9	0.46	0.39



STORMFILTER CARTRIDGE DETAIL

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	[ ]
NUMBER OF CARTRIDGES REQ'D	[ ]
SIPHON HEIGHT (310 / 460 / 690)	[ ]
MEDIA TYPE (ZPG / PSORB)	[ ]
WATER QUALITY FLOW RATE (L/S)	[ ]
DIMENSION A	[ ]
DIMENSION B	[ ]

TOTAL CARTRIDGE BAY AREA (A x B) TO MATCH AREA REQUIRED BY MUSIC MODELLING OR COUNCIL SPECIFIC REQUIREMENTS

GENERAL NOTES

1. INLET AND OUTLET PIPES TO BE IN ACCORDANCE WITH APPROVED PLANS.
2. A HIGH FLOW BYPASS ARRANGEMENT OR DISSIPATION STRUCTURE MAY BE REQUIRED TO MINIMISE RE-SUSPENSION OF SOLIDS OR ANY SIGNIFICANT INERTIAL FORCES ON THE CARTRIDGES.
3. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
4. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
5. THE INVERT LEVEL OF THE INLET PIPE MUST BE GREATER THAN THE RL OF THE FALSE FLOOR WITHIN THE CARTRIDGE CHAMBER.
6. CONCRETE STRUCTURE AND ACCESS COVERS DESIGNED AND PROVIDED BY OTHERS. ACCESS COVERS TO BE A MINIMUM 900 X 900 ABOVE CARTRIDGES. OH&S REGARDING ACCESS COVERS AND TANK ACCESS TO BE ASSESSED BY OTHERS ON SITE.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES.
8. DRAWINGS NOT TO SCALE.

INSTALLATION NOTES

1. UNDERDRAIN AND FALSE FLOOR INSTALLED BY OCEAN PROTECT.

OCEAN PROTECT
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OCEAN PROTECT
STORMFILTER SYSTEM
DETENTION TANK ARRANGEMENT
SPECIFICATION DRAWING

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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh
Checked By : N. Evans
Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
(Reg. No. 2206352) RPEQ
Registered Certifier
(Hydraulic (stormwater), Road & Drainage and Stormwater)
NSW Fair Trading (Reg. No. BDC0827)

Designed By
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Project: Proposed Seniors Living (Stage 2)
At: 5 Skyline Place, Frenchs Forest NSW 2086
Client:

Drawing Title: Water Sensitive Urban Design
Date: January 2021
Scale: As Shown @ A1
Project No.: 284012021DA
Drawing & Sheet No./Issue: 28401-18/21 / A

GENERAL NOTES

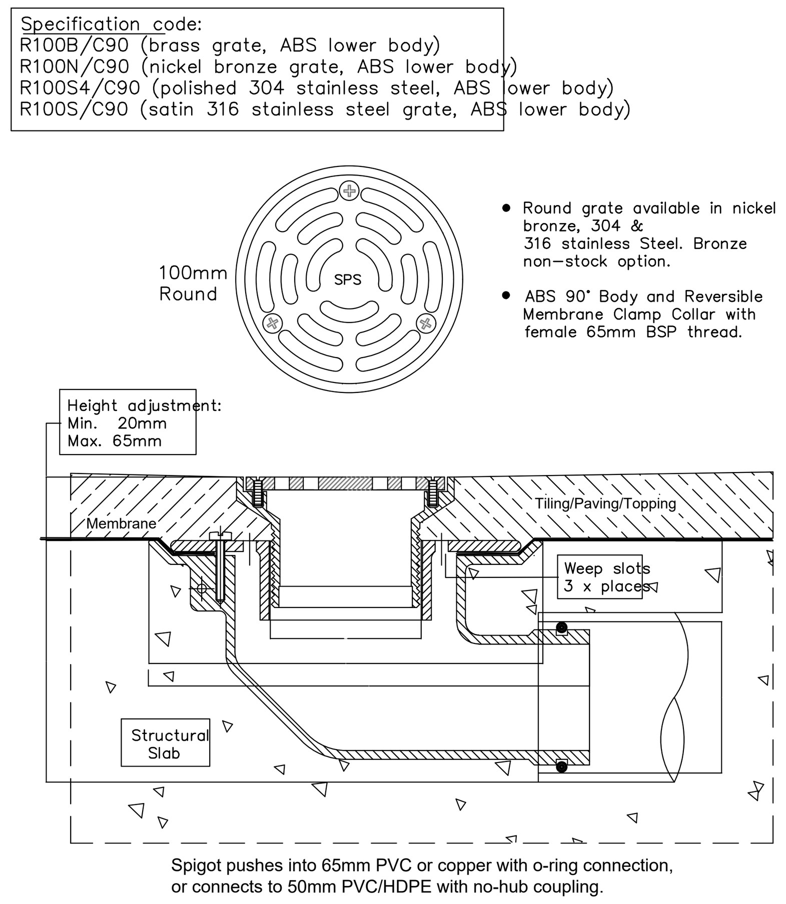
1. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS.
2. ALL WORKS ARE TO BE CARRIED OUT TO THE DETAILS SHOWN ON THE DRAWINGS.
3. THESE PLANS ARE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS.
4. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR SERVICES. NO MECHANICAL EXCAVATION ARE TO BE UNDERTAKEN OVER TELECOMMUNICATION OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS ONLY.
5. DIAL 1100 BEFORE YOU DIG FOR LOCATION OF UNDERGROUND SERVICES PRIOR TO ANY CONSTRUCTION WORKS.
6. SERVICES HAVE NOT BEEN SHOWN ON THIS PLAN. FIELD INVESTIGATIONS ARE TO BE CARRIED OUT SEPARATELY TO DETERMINE EXACT POSITIONS OF SERVICES OR INFORMATION IS TO BE PROVIDED BY THE PROPERTY PROPRIETOR. NOT WITSTANDING THIS, ALL INFORMATION PROVIDED SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
7. THESE DRAWINGS ARE ONLY APPROVED WHEN THEY ARE SIGNED WITH AN ORIGINAL SIGNATURE BY THE ENGINEER.

STORMWATER DRAINAGE

8. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS 3500 AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES.
9. ALL GUTTERS TO BE 100 x 75 MIN. AND DOWNPIPES TO BE 100 x 75 (76 DIA.) UNLESS OTHERWISE NOTED.
10. ALL PIPES TO BE 100mm uPVC SEWER GRADE UNLESS NOTED OTHERWISE.
11. ALL GRADIENTS FOR STORMWATER PIPES TO BE NOT LESS THAN 1.0% UNLESS NOTED OTHERWISE.
12. THE INVERTS OF ALL OUTLET PIPES ARE TO BE INSTALLED FLUSHED WITH THE BASE OF ALL STORMWATER/RAINWATER PIT.
13. ALL FENCES SHALL BE KEPT AT LEAST 100mm ABOVE THE GROUND LEVEL TO FACILITATE THE FREE PASSAGE FOR STORMWATER OVERLAND FLOW.
14. MANUFACTURER'S CERTIFICATE SHALL BE OBTAINED BY THE BUILDER FOR PIPES, PRE-CAST PITS AND GRATES FOR THE STRUCTURAL ADEQUACY RELATING TO ITS LOCATION.
15. AREAS SPREAD WITH BARK SHALL BE BARRICADED TO PREVENT BARK GETTING INTO THE PITS AND STORMWATER SYSTEMS.
16. MINIMUM SLOPE FOR PAVED AREAS SHALL BE 0.5%, FOR LANDSCAPED AREAS MINIMUM SLOPE SHALL BE 1% AND GRADED TOWARDS THE GRATED PITS.
17. ALL EXCAVATIONS WITHIN THE INFLUENCE OF BUILDINGS AND SERVICES SHALL BE UNDERTAKEN WITH THE KNOWLEDGE OF THE HYDRAULIC AND STRUCTURAL ENGINEER.
18. THE DETENTION AND DRAINAGE SYSTEM SHALL BE MAINTAINED AT REGULAR INTERVALS AND THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS.
19. CONNECTION OF DISCHARGE PIPE TO EXISTING COUNCIL KERB AND GUTTER, PIPE OR KERB INLET PIT SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
20. PROVIDE STEP-IRONS 'MASCOT S1:104' OR SIMILAR STAGGERED TO GIVE SPACING 300 VERTICAL AND 220 HORIZONTAL TO ALL PIT DEEPER THAN 1m .
21. SUITABLE AG-LINES SHALL BE PROVIDED AND CONNECTED TO STORMWATER SYSTEM OR AS INSTRUCTED BY THE ENGINEER ON SITE PRIOR TO BACKFILLING.

RAINWATER TANK

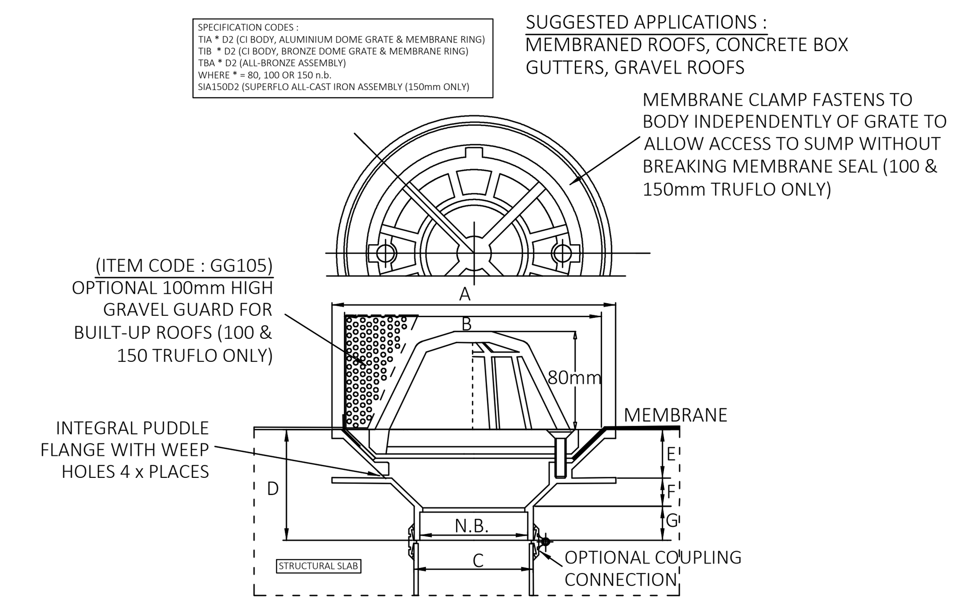
22. DRAWING IS TO BE READ IN CONJUNCTION WITH SYDNEY WATER'S "PLUMBING REQUIREMENTS - GUIDELINES FOR RAINWATER TANKS ON RESIDENTIAL PROPERTIES".
23. ALL PLUMBING WORK UNDERTAKEN ON OR FOR THE TANK THAT AFFECTS THE WATER SERVICE PIPE OR WATER MAIN MUST BE UNDERTAKEN WITH THE CONSENT OF SYDNEY WATER IN ACCORDANCE WITH THE REQUIREMENTS OF SYDNEY WATER, AND THE MANUFACTURER'S SPECIFICATIONS.
24. ALL PLUMBING WORKS UNDERTAKEN SHALL BE UNDERTAKEN BY A LICENSED PLUMBER IN ACCORDNACE WITH THE NEW SOUTH WALES CODE OF PRACTICE - PLUMBING AND DRAINAGE PRODUCED BY THE COMMITTEE ON UNIFORMITY OF PLUMBING AND DRAINAGE REGULATIONS IN NEW SOUTH WALES.
25. ALL PLUMBING MUST BE COMPLETED BY A LICENSED PLUMBER IN COMPLIANCE WITH AS/NZS3500.5, AND ANY OTHER RELEVANT NATIONAL STANDARDS.
26. INLET TO THE RAINWATER TANKS MUST BE SCREENED OR FILTERED TO PREVENT ENTRY OF FOREIGN MATTER AND CREATURES.
27. THE RAINWATER TANKS MUST BE MAINTAINED AT ALL TIMES SO AS NOT TO CAUSE A NUISANCE WITH RESPECT TO MOSQUITO BREEDING OR OVERLAND FLOW OF WATER.
28. A SIGN MUST BE AFFIXED TO THE RAINWATER TANKS CLEARLY STATING THAT THE WATER IN THE TANKS IS RAINWATER.
29. BOTH THE RE-USE AND ANY FITTINGS CONNECTED TO THE RAINWATER TANKS MUST BE LABELED "RAINWATER , NOT SUITABLE FOR DRINKING".
30. ALL ROOF GUTTERS ARE TO BE FITTED WITH LEAF GUARDS AND INSPECTED REGULARLY AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES.
31. PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN.



N.B.	A	B	C	D
50	100	40	180	200
65	105	37	180	200

RAINWATER OUTLET (RWO) (TERRACE AND COURTYARDS)
NOT TO SCALE

SPS TRUFLO & SUPERFLO DOME GRATE RWO
(2-PIECE DOME GRATE, MEMBRANE CLAMP)



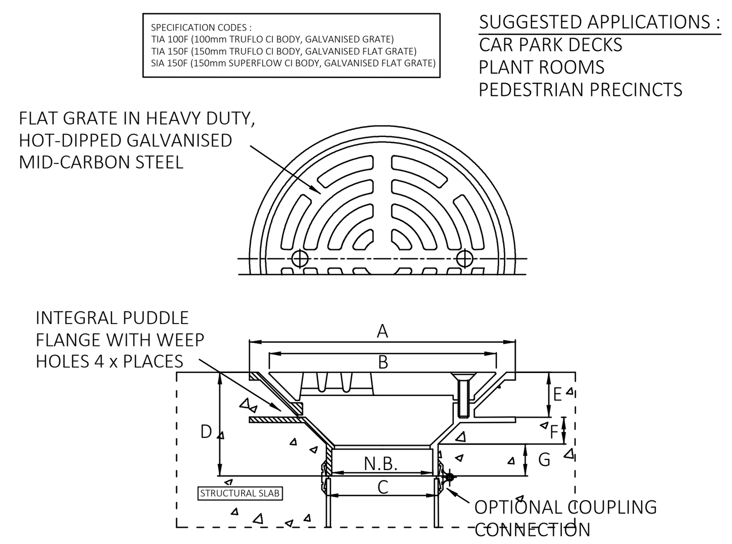
N.B.	A	B	C	D	E	F	G	FLOW RATE* L/S
80	200	180	85	80	33	22	25	
100	260	240	110	95	44	26	25	8.2
150	260	240	160	80	48	4	28	12.25
SUPERFLO**	400	300	160	143	66	39	38	22

*Based on 80mm head of water above surface level. For further data refer to flow charts.
**Superflo available in 150mm outlet only.

SPECIALITY PLUMBING SUPPLIES PTY LTD
TEL : (02) 9416 8031 FAX : (02) 9416 7614 E-MAIL : SPS@BIGPOND.NET.AU

ROOF RAINWATER WATER OUTLET (RWO) 100 TRUFLOW
NOT TO SCALE

SPS TRUFLO & SUPERFLO FLAT GRATE RWO
(1-PIECE GRATE, NO MEMBRANE CLAMP)

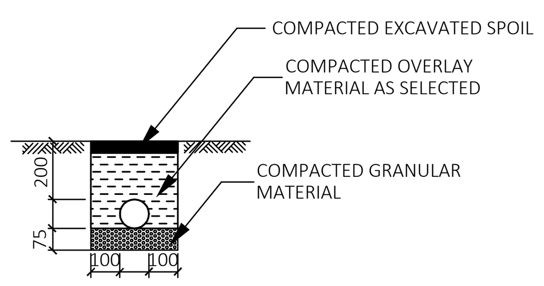


N.B.	A	B	C	D	E	F	G	FLOW RATE* L/S
N.B.	260	200	110	95	44	26	25	8.2
N.B.	260	200	160	80	48	4	28	10.2
SUPERFLO**	400	290	160	143	66	39	38	17

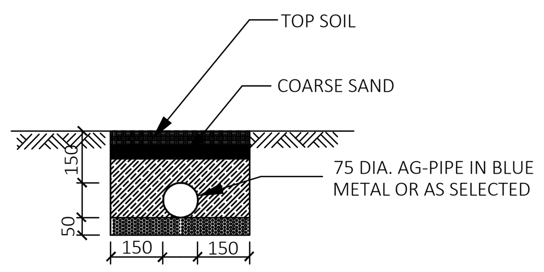
*Based on 80mm head of water above surface level. For further data refer to flow charts.
**Superflo available in 150mm outlet only.

SPECIALITY PLUMBING SUPPLIES PTY LTD
TEL : (02) 9416 8031 FAX : (02) 9416 7614 E-MAIL : SPS@BIGPOND.NET.AU

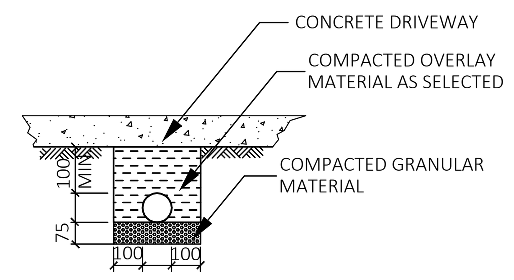
CARPARK TRUFLOW (RWO)
NOT TO SCALE



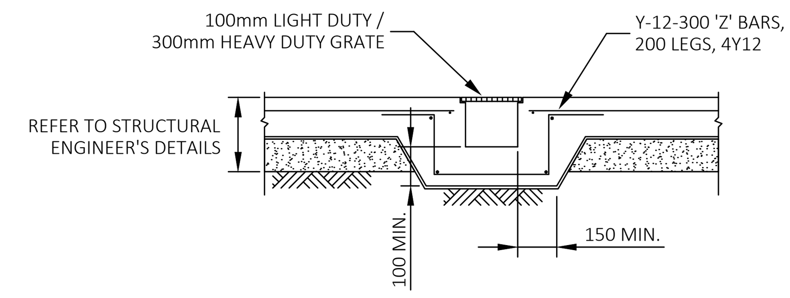
PIPE TRENCH
NOT TO SCALE



AG-LINE TRENCH
NOT TO SCALE



PIPE TRENCH
NOT TO SCALE

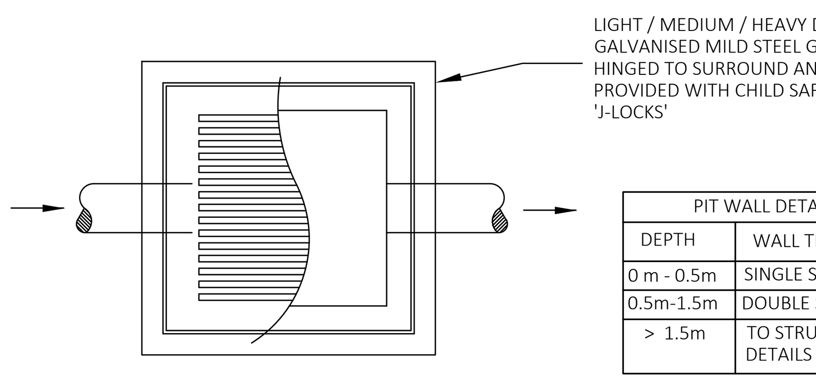


GRATED DRAIN DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

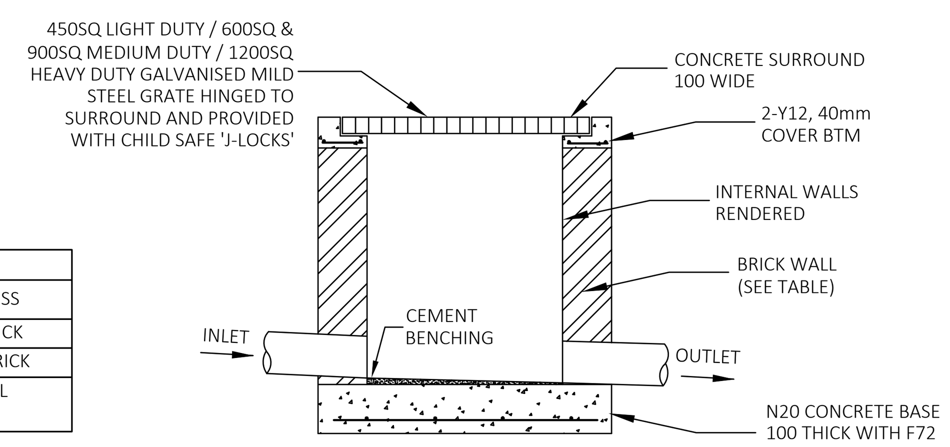
PIT SCHEDULE

1. PROVIDE LIGHT DUTY GRATES FOR NON VEHICULAR TRAFFICKED AREAS.
2. PROVIDE HEAVY DUTY GRATES FOR VEHICULAR TRAFFICKED AREAS.
3. PROVIDE 450 x 450 CLEAR OPENING FOR PIT DEPTHS UP TO 600mm U.N.O.
4. PROVIDE 600 x 600 CLEAR OPENING FOR PIT DEPTHS UP TO 900mm U.N.O.
5. PROVIDE 900 x 900 CLEAR OPENING FOR PIT DEPTHS GREATER THAN 900mm U.N.O.
6. ALL REINFORCED CONCRETE PIPES SHALL BE OF RUBBER RING JOINTS
7. ALL DISCHARGE CONTROL PITS SHALL HAVE A MINIMUM OF 900 x 900 CLEAR OPENING U.N.O.
8. ALL GRATED TRENCH SHALL BE A MINIMUM OF 150(W) x 200(H) U.NO.



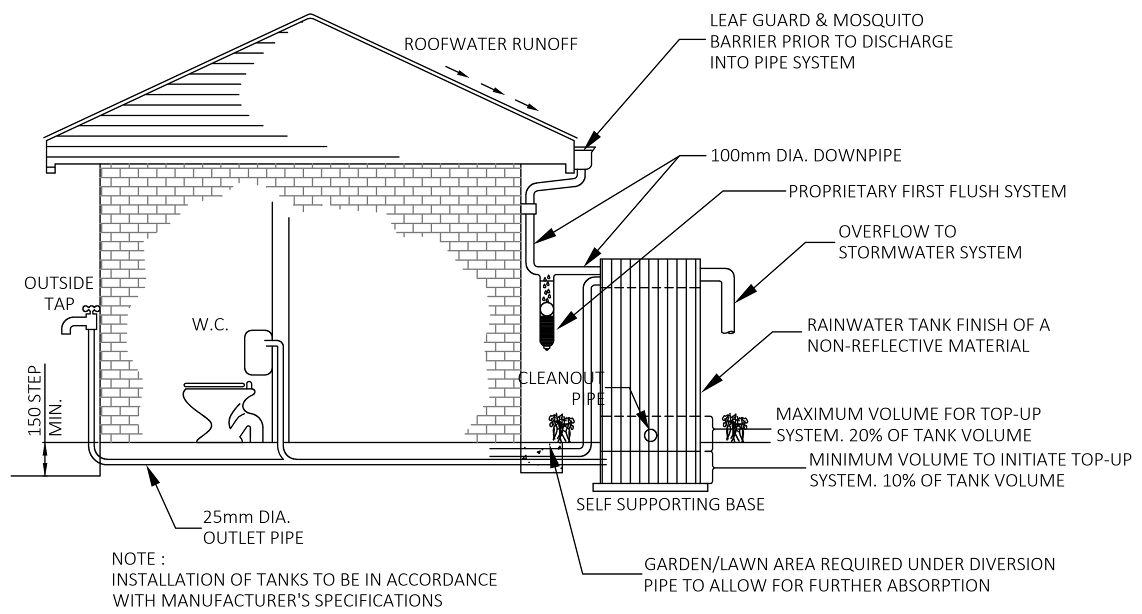
PLAN

PIT WALL DETAILS	
DEPTH	WALL THICKNESS
0 m - 0.5m	SINGLE SKIN BRICK
0.5m-1.5m	DOUBLE SKIN BRICK
> 1.5m	TO STRUCTURAL DETAILS

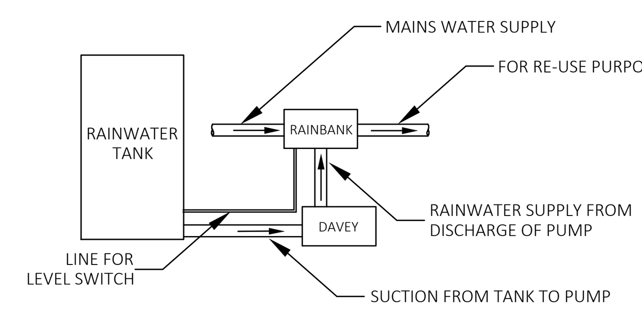


SECTION

TYPICAL INLET PIT DETAIL
NOT TO SCALE



5000 L RAINWATER TANK DETAILS (FOR IRRIGATION ONLY)
NOT TO SCALE



PLAN
NOT TO SCALE

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A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh
Checked By : N. Evans
Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
(Reg. No. 2206352) RPEQ
Registered Certifier
(Hydraulic (stormwater), Road & Drainage and Stormwater)
NSW Fair Trading (Reg. No. BDC0827)

Designed By
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M: 0433 778 109
E : ken@ingengineers.com.au

Project: Proposed Seniors Living (Stage 2)
At: 5 Skyline Place
Frenchs Forest NSW 2086
Client

Drawing Title: Notes & Details
Date: January 2021
Scale: As Shown @ A1
Project No.: 284012021DA
Drawing & Sheet No./Issue: 28401-19/21 / A

CONFINED SPACE SIGNAGE
NOT TO SCALE

110mm X 80mm SIGN TO BE PLACED AT VISIBLE LOCATION AT OSD TANK, TO READ:

THIS IS AN
ON-SITE STORMWATER
DETENTION SYSTEM

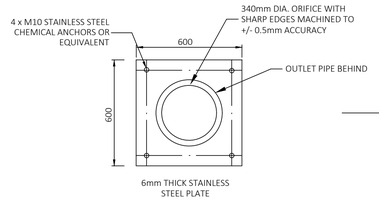
REQUIRED BY NORTHERN BEACHES COUNCIL

IT IS AN OFFENCE TO REDUCE THE VOLUME OF THE TANK OR BASIN OR TO INTERFERE WITH THE ORIFICE PLATE THAT CONTROLS THE OUTFLOW

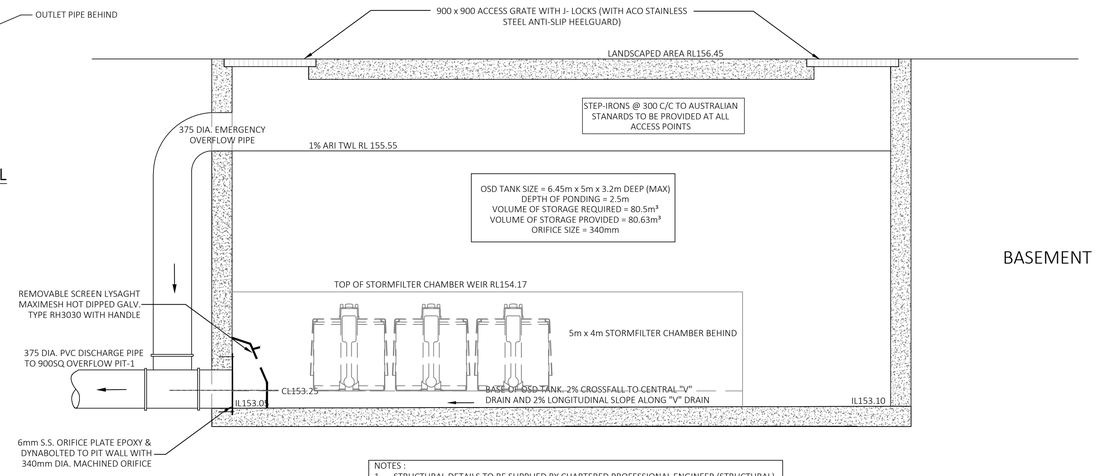
THE BASE OF THE OUTLET CONTROL PIT AND THE DEBRIS SCREEN MUST BE CLEANED OF DEBRIS AND SEDIMENT ON A REGULAR BASIS BY THE OWNER

THIS PLATE MUST NOT BE REMOVED

OSD SIGNAGE
NOT TO SCALE

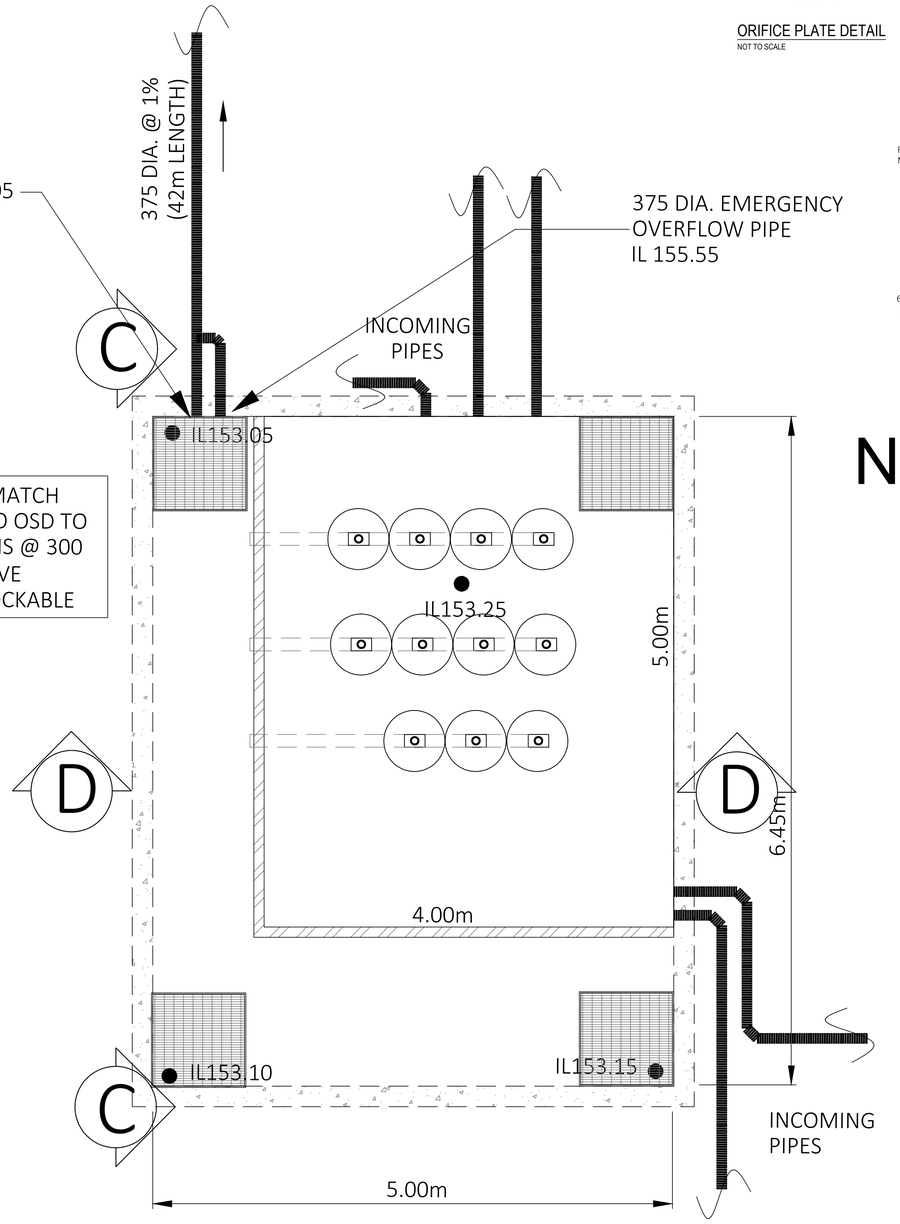


ORIFICE PLATE DETAIL
NOT TO SCALE



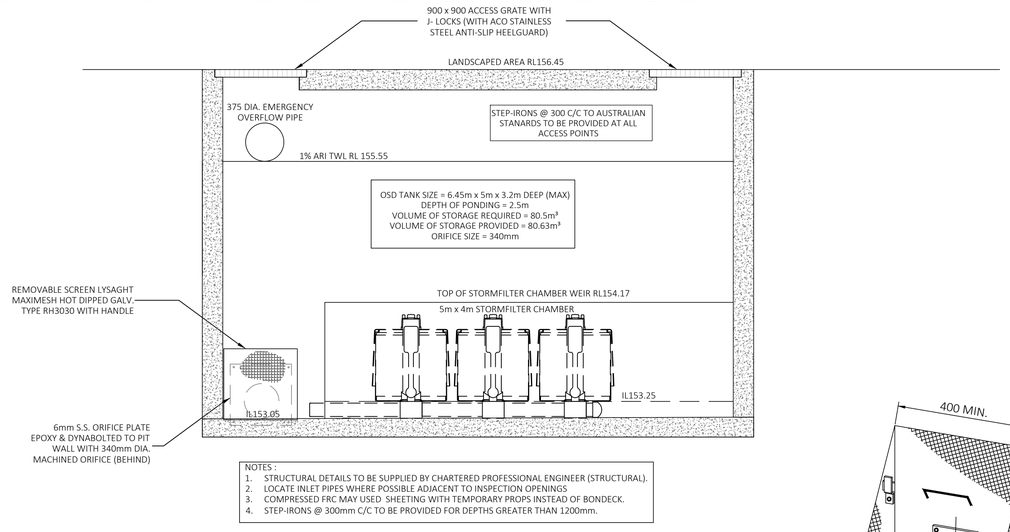
NOTES :
1. STRUCTURAL DETAILS TO BE SUPPLIED BY CHARTERED PROFESSIONAL ENGINEER (STRUCTURAL).
2. LOCATE INLET PIPES WHERE POSSIBLE ADJACENT TO INSPECTION OPENINGS
3. COMPRESSED FRC MAY USED SHEETING WITH TEMPORARY PROPS INSTEAD OF BONDECK.
4. STEP-IRONS @ 300mm C/C TO BE PROVIDED FOR DEPTHS GREATER THAN 1200mm.

SECTION C - C THROUGH ON-SITE DETENTION TANK WITH DISCHARGE CONTROL PIT DETAIL
NOT TO SCALE



900SQ. ACCESS GRATE TO MATCH FINISHED RLS. ALL ACCESSES TO OSD TO BE PROVIDED WITH STEP-IRONS @ 300 C/C AND GRATES TO HAVE ACO-HEELGARDS AND ARE LOCKABLE

NOT FOR CONSTRUCTION



NOTES :
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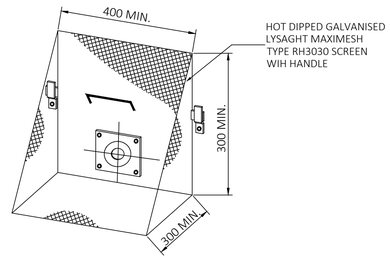
2. LOCATE INLET PIPES WHERE POSSIBLE ADJACENT TO INSPECTION OPENINGS
3. COMPRESSED FRC MAY USED SHEETING WITH TEMPORARY PROPS INSTEAD OF BONDECK.
4. STEP-IRONS @ 300mm C/C TO BE PROVIDED FOR DEPTHS GREATER THAN 1200mm.

SECTION D - D THROUGH ON-SITE DETENTION TANK AND STORMFILTER CHAMBER
NOT TO SCALE



TRASH SCREEN DETAIL
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Issue	Description	Date of Drawing
A	Development Application	28 Jan. 2021

Drawn & Designed By : R. Koh
Checked By : N. Evans
Approved By : Kenneth T. NG
MIEAust CPEng NER APEC Engineer IntPE(Aus)
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Designed By
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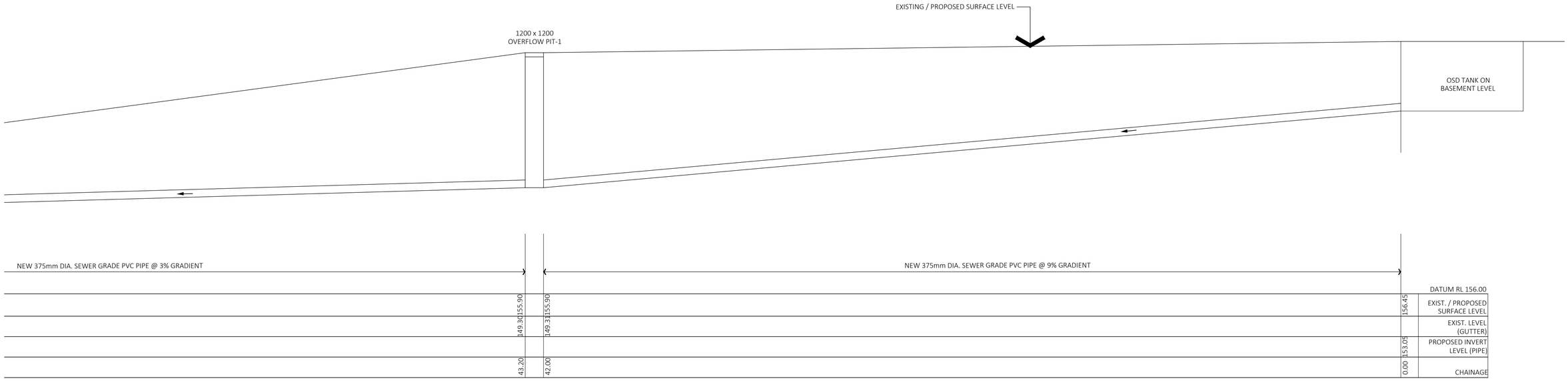
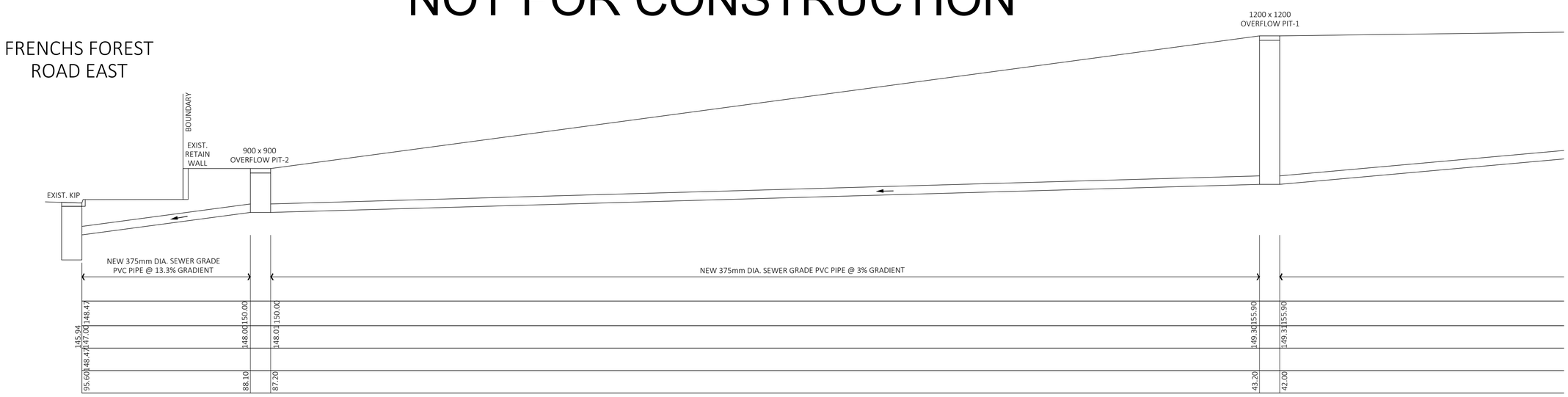
Project: Proposed Seniors Living (Stage 2)
At: 5 Skyline Place, Frenchs Forest NSW 2086
Client:
Drawing Title: Notes & Details 2
Date: January 2021
Scale: As Shown @ A1
Project No.: 284012021DA
Drawing & Sheet No./Issue: 28401-20/21 / A



OSD / PIPE LONGITUDINAL SECTION

SCALE 1 : 100

NOT FOR CONSTRUCTION



OSD / PIPE LONGITUDINAL SECTION (CONTINUE)

SCALE 1 : 100

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Project: Proposed Seniors Living (Stage 2)

At: 5 Skyline Place
Frenchs Forest NSW 2086

Client:

Drawing Title: OSD and Discharge Pipe Long Section

Date: January 2021

Scale: 1 : 100 @ A1

Project No.: 284012021DA

Drawing & Sheet No./Issue: 28401-21/21 / A