

**LEGEND**

- DP DOWN PIPE
- FLOW DIRECTION
- PROPOSED STORMWATER PIPES
- PROPOSED RAINWATER PIPES
- RL PIT SURFACE LEVEL
- IL INVERT LEVEL
- ▣ GRATED INLET PIT
- ⊕ SP SPREADER PIPE
- ▨ GRATE DRAIN

**GROUND FLOOR STORMWATER DRAINAGE CONCEPT PLAN**  
 SCALE 1:100  
 NOTES:  
 1. ALL DOWNPIPE LOCATIONS TO BE CHECKED BY ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.

**STORMWATER DRAINAGE NOTES**

1. ALL LINES ARE TO BE MIN. 100φ UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 300mm COVER IF LOCATED WITHIN PROPERTY (MEASURED FROM THE CROWN OF THE PIPE).
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3:2015 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, HYDRAULIC, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES.
10. ALL PITS WITH DEPTH MORE THAN 1M MUST HAVE IRON STEPS.

**RAINWATER REUSE NOTES**

1. EVERY FIXTURE SERVICED FROM THE RECYCLED WATER SUFWLY MUST BE NOTED WITH A PLAQUE FOR IDENTIFICATION AND MARKED WITH "NOT FOR HUMAN CONSUMPTION" OR "NON-POTABLE WATER".
2. RAINWATER TANK TO BE CONNECTED TO AT LEAST ONE OUTDOOR TAP.
3. OVERFLOW FROM RAINWATER TANK TO BE CONNECTED TO STORMWATER DRAINAGE SYSTEM. NO OTHER CONNECTIONS TO THE OVERFLOW PIPELINE SUCH AS SURFACE WATER INLETS.
4. ALL RECYCLE WATER PIPES TO BE COLOUR CODED FOR IDENTIFICATION.
5. FIRST-FLUSH DEVICES ARE REQUIRED TO BE CHECKED AND CLEANED REGULARLY.
6. WATER AUTHORITY MUST BE CONTACTED REGARDING RECYCLED WATER ON THE BUILDING AND FOR THE BACKFLOW PREVENTION REQUIREMENTS AND TOP-UP SYSTEM.
7. ANY GARDEN OR CARWASH TAPS CONNECTED RECYCLE SYSTEM MUST BE LOCATED 1.5m MIN. ABOVE THE SURFACE.
8. 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.
9. PUMPS AND FILTERS ON OUTLETS FROM RECYCLE SYSTEM TO BE SUFWLIED AS MAY BE REQUIRED.

**SITE CALCULATIONS**

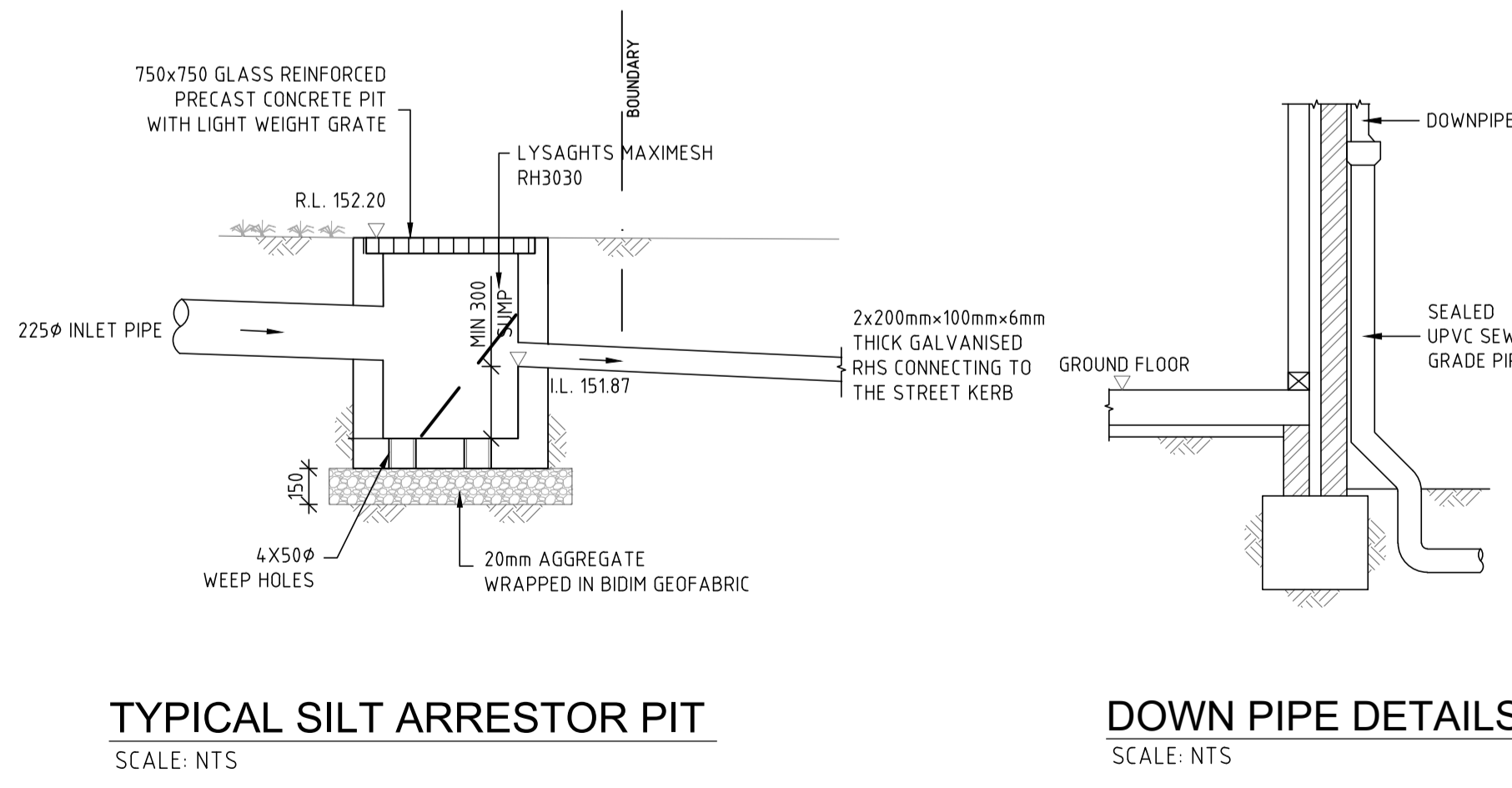
**SITE INFORMATION**

- TOTAL SITE AREA : 1012.6m<sup>2</sup>
- PRE-DEVELOPMENT AREA: 473.9m<sup>2</sup> (46.8%)
- PROPOSED IMPERVIOUS AREA : 710.2 m<sup>2</sup> (70.1%)
- PROPOSED PERVIOUS AREA: 302.4 m<sup>2</sup>

**OSD INFORMATION**

- PERMISSIBLE DISCHARGE RATE: 24L/S (20% AEP FROM PRE-DEVELOPMENT), 20L/S (DISCHARGE TO THE KERB)
- BYPASS AREA: 54.4m<sup>2</sup> (5.4%)
- BYPASS AREA DISCHARGE RATE: 3L/S (1% AEP)
- REQUIRED OSD STORAGE VOLUME: 31.6m<sup>3</sup>
- PROPOSED OSD STORAGE VOLUME: 31.8m<sup>3</sup>
- DESIGN DISCHARGE RATE: 17L/S (CONTROLLED BY 92mmφ ORIFICE)
- SITE TOTAL DISCHARGE RATE: 20L/S

ALL DATA ARE CALCULATED BY DRAINS, SEE DETAIL CALCULATION ON D.030



REVISIONS	No.	BY	DATE	DESCRIPTION	APPD
	A	K.Z.	30-09-2020	FOR D.A. SUBMISSION	O.S.

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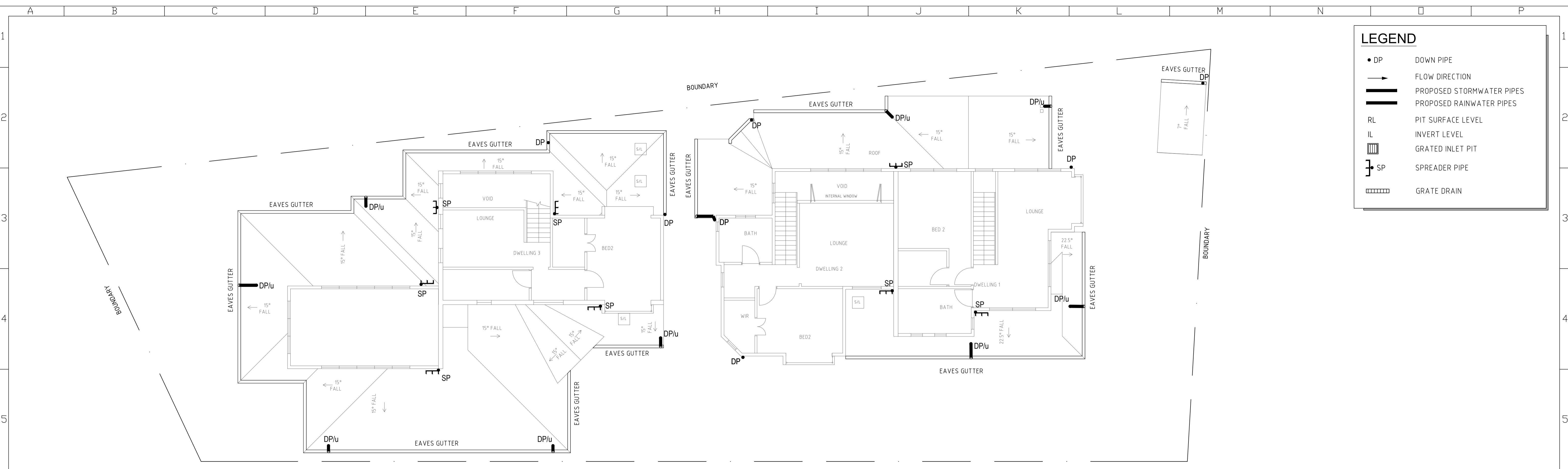
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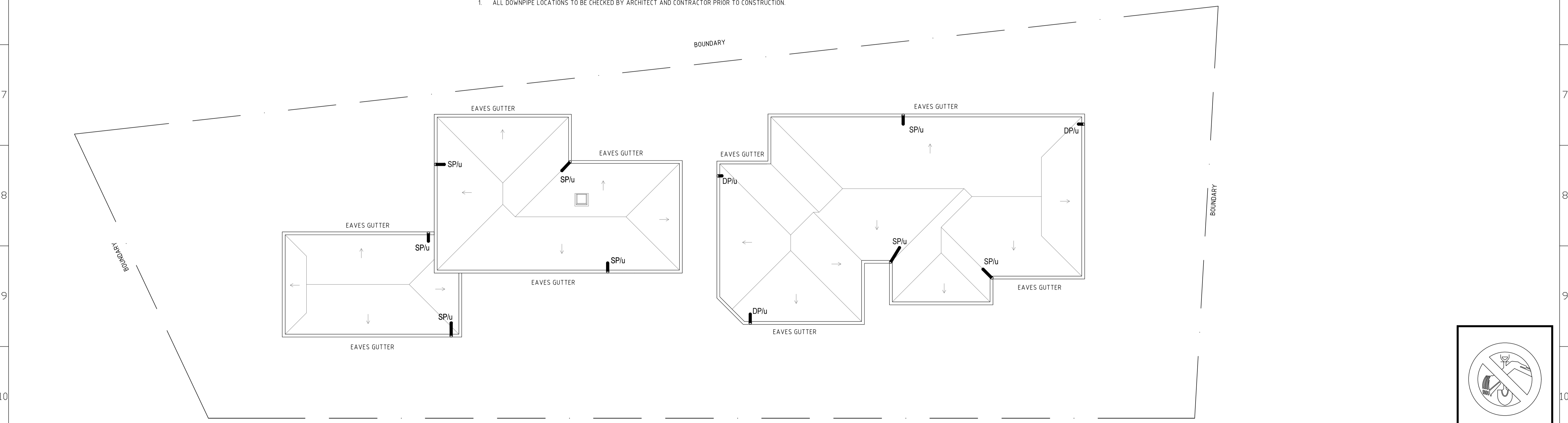
PROJECT					
SENIORS LIVING 58 FOREST WAY FRENCHES FOREST NSW 2086					
DRAWING TITLE					
GROUND FLOOR STORMWATER DRAINAGE CONCEPT PLAN					
Job No	DESIGNED	DRAWN	CHECKED	DRAWING No	SCALE
200124	K.Z.	K.Z.	O.S.	D.010	AS SHOWN
					SIZE
					A1



**LEGEND**

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- FLOW DIRECTION
- PROPOSED STORMWATER PIPES
- PROPOSED RAINWATER PIPES
- RL PIT SURFACE LEVEL
- IL INVERT LEVEL
- ▣ GRATED INLET PIT
- SP SPREADER PIPE
- ▤ GRATE DRAIN

**FIRST FLOOR STORMWATER DRAINAGE CONCEPT PLAN**  
 SCALE 1:100  
 NOTES:  
 1. ALL DOWNPIPE LOCATIONS TO BE CHECKED BY ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.



**ROOF STORMWATER DRAINAGE CONCEPT PLAN**  
 SCALE 1:100  
 NOTES:  
 1. ALL DOWNPIPE LOCATIONS TO BE CHECKED BY ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.



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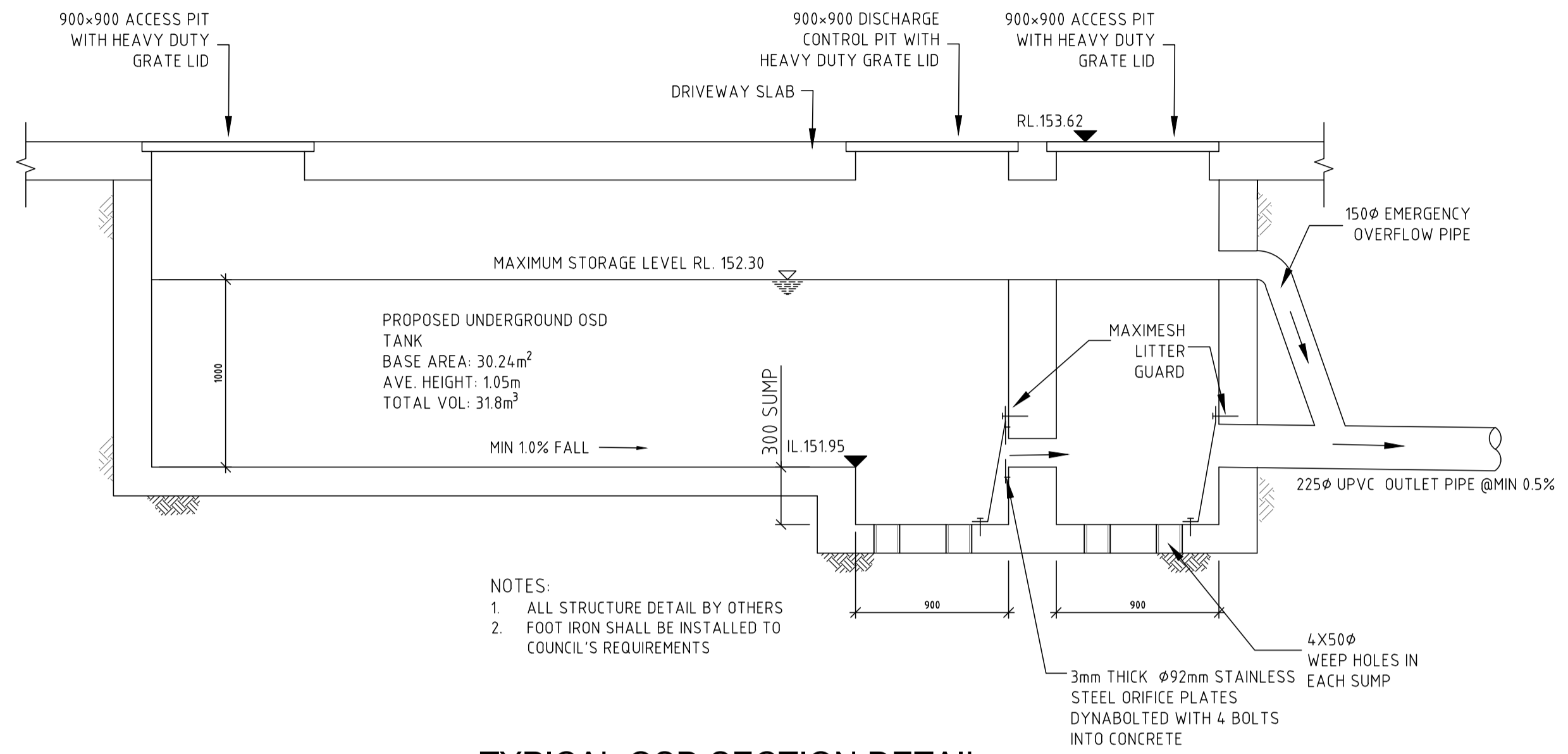
PROJECT  
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 58 FOREST WAY FRENCHES FOREST NSW 2086

DRAWING TITLE  
 ROOF/FIRST FLOOR STORMWATER DRAINAGE CONCEPT PLAN

JOB No	DESIGNED	DRAWN	CHECKED	DRAWING No	SCALE	SIZE
200124	K.Z.	K.Z.	O.S.	D.020	AS SHOWN	A1

**LEGEND**

- DP DOWN PIPE
- SW PROPOSED STORMWATER PIPES
- RW PROPOSED STORMWATER PIPES CONNECT TO RAINWATER TANK
- FLOW DIRECTION
- FW FLOOR WASTE
- RL PIT SURFACE LEVEL
- IL INVERT LEVEL
- GL GROUND LEVEL
- DP DRAINAGE PIT
- SP SPREADER PIPE



**TYPICAL OSD SECTION DETAIL**  
SCALE: NTS

STORMWATER RUN-OFF DATA (1 IN 5 YRS STORM EVENT)							
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
Pre-Dev	0.024	0.013	0.025	5	8	8	2 1 IN 5 YRS, 10 min burst

STORMWATER RUN-OFF DATA (1 IN 100 YRS STORM EVENT)							
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
Pre-Dev	0.056	0.03	0.027	5	8	8	2 1 IN 100 YRS AEP, 10 min burst
Post-Dev	0.061	0.052	0.009	5	8	8	2 1 IN 100 YRS AEP, 5 min burst
Bypass area	0.003	0.003	0	5	8	8	2 1 IN 100 YRS AEP, 5 min burst

DETENTION BASIN DETAILS (1 IN 100 YRS STORM EVENT)					
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
OSD BASIN	1.03	31.6	0.017	0.017	0

**DRAINS MODEL RESULT (OSD CALCULATION)**  
DISCHARGE FROM 1 IN 5 YRS UP TO 1 IN 100 YRS STORM EVENTS

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.

**SAMPLE OSD MAINTENANCE SCHEDULE UPRCT HANDBOOK, 2005**



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DRAWING TITLE

OSD SECTIONS AND CALCULATION DETAILS

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