

PROPOSED RESIDENTIAL APARTMENTS

25-27 WARRIEWOOD ROAD, WARRIEWOOD

STORMWATER CONCEPT DESIGN - STAGE II



LOCALITY PLAN
NOT TO SCALE
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CLIENT :

THE KNOWLES
GROUP- ARCARE

DRAWING REGISTER			
SHEET No.	No.	TITLE	REV
1	SW100	COVER SHEET	D
2	SW101	STORMWATER DRAINAGE DESIGN - SPECIFICATION SHEET	D
3	SW200	STORMWATER DRAINAGE DESIGN - BASEMENT PLAN	D
4	SW201	STORMWATER DRAINAGE DESIGN - GROUND FLOOR PLAN	D
5	SW202	STORMWATER DRAINAGE DESIGN - LEVEL 1 PLAN	D
6	SW203	STORMWATER DRAINAGE DESIGN - LEVEL 2 PLAN	D
7	SW204	STORMWATER DRAINAGE DESIGN - ROOF PLAN	D
8	SW300	STORMWATER DRAINAGE DESIGN - DETAILS SHEET - SHEET 1 OF 2	D
9	SW301	STORMWATER DRAINAGE DESIGN - DETAILS SHEET - SHEET 2 OF 2	D
10	SW400	EROSION AND SEDIMENT CONTROL - PLAN & DETAILS	D
11	SW500	STORMWATER DRAINAGE DESIGN - MUSIC CATCHMENT PLAN	D

GENERAL

- G1 ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS, BUILDING CODE OF AUSTRALIA, NSW CODE OF PRACTICE AND THE TO THE RELEVANT SERVICE CODES.
- G2 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
- G3 ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS (U.N.O.). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OF THESE DRAWINGS. USE FIGURED DIMENSIONS ONLY.
- G4 BENCHMARKS HAVE BEEN ESTABLISHED WHERE INDICATED ON THE DRAWINGS. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.). THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY SURVEY WORK TO ENSURE THAT THE WORKS ARE CONSTRUCTED TO DESIGN LINE AND LEVEL.
- G5 SETTING OUT DIMENSIONS AND LEVELS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.
- G6 ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT SZZ CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.
- G7 IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SAFETY FENCES, WARNING SIGNS, TRAFFIC DIVERSIONS AND THE LIKE DURING CONSTRUCTION. ALL WORKS TO COMPLY WITH WORK HEALTH AND SAFETY REQUIREMENTS AND OTHER RELEVANT AUTHORITY SAFETY REQUIREMENTS.
- G8 NO TREES SHALL BE REMOVED, CUTBACK OR RELOCATED WITHOUT THE WRITTEN INSTRUCTION FROM THE SUPERINTENDENT.
- G9 WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
- G10 ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS.
- G11 DESIGN LEVELS GIVEN ARE TO FINISHED SURFACE LEVEL AND INCLUSIVE OF TOPSOIL. (TOPSOIL DEPTH VARIES)
- G12 THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A N.A.T.A. REGISTERED SURVEYOR.
- G13 CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- G14 THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THE DRAWING HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.
- G15 THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.
- G16 S&G CONSULTANTS DOES NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THE DRAWING SHOWS MORE THAN THE PRESENCE OR ABSENCE OF SERVICES, AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
- G17 IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FROM THE UTILITY SERVICES AUTHORITIES A CURRENT COPY OF UNDERGROUND SERVICES SEARCH FOR THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY. CLEARANCE SHALL BE OBTAINED FROM THE RELEVANT REGULATORY AUTHORITY. CONTRACTOR TO KEEP COPY OF UNDERGROUND SERVICES SEARCH ON SITE AT ALL TIMES. ANY DAMAGES TO SERVICES OR SERVICES ADJUSTMENTS SHALL BE CARRIED OUT BY THE CONTRACTOR OR RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE.
- G18 VISIT THE SITE BEFORE SUBMITTING THE FINAL TENDER PRICE TO ASSESS 'ON SITE' CONDITIONS. FAILURE TO DO SO WILL FORFEIT ANY CLAIM FOR NOT BEING AWARE OF CONDITIONS AFFECTING THE TENDER.
- G19 THE CONTRACTOR SHALL PREPARE ACCURATE WORK-AS-EXECUTED DRAWINGS FOLLOWING THE COMPLETION OF ALL WORKS.
- G20 IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION.
- G21 CONTRACTOR TO PROVIDE WORKSHOP COORDINATED DRAWINGS PRIOR TO COMMENCING WORKS ON SITE. WORKSHOP DRAWINGS TO BE REVIEWED AND APPROVED BY DESIGN ENGINEER.

STORMWATER

- S1 ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE AS3500.3-2003:STORMWATER DRAINAGE .
- S2 FOR STORMWATER DRAINAGE PIPES THAT EXCEED 15 GRADE, REINFORCED CONCRETE ANCHOR BLOCKS SHALL BE INSTALLED. ANCHOR BLOCKS TO BE CONSTRUCTED TO SPECIFICATIONS SET OUT IN AS3500.3-2018 SECTION 8.10
- S3 EXISTING SERVICES SHOWN IN APPROXIMATE LOCATIONS ONLY. CONFIRM EXACT LOCATIONS ON SITE PRIOR TO COMMENCING WORK.
- S4 COORDINATE THE INSTALLATION OF NEW SERVICES WITH ALL NEW & EXISTING SERVICES & STRUCTURAL PROVISIONS AS DETERMINED ON SITE.
- S5 ALL PIPEWORK TO BE SUPPORTED IN ACCORDANCE WITH AS3500.3-2018.
- S6 ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS AS SET DOWN IN AS3500.3-2003. ALL IN-GROUND PIPEWORK TO BE INSPECTED BY THE SUPERINTENDENT UNDER TEST CONDITIONS PRIOR TO BACKFILLING. BACKFILLING AND BEDDING TO AS3500.3-2018.
- S7 PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRE OF THE INLET PIPE INTERSECTS WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.
- S8 BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND 200mm IN ROCK.
- S9 LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS3725-2007:DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES'.
- S10 ALLOW TO TEST ALL PIPES AND PITS TO LOCAL AUTHORITY'S REQUIREMENTS.
- S11 EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INSPECTION WITH REGARD TO REUSE FOR TRENCH BACKFILL. REMAINING MATERIAL TO BE REMOVED FROM SITE.
- S12 BACKFILL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN. TRENCH FILL ABOVE THE EMBEDMENT ZONE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR THE FOOTWAY SHALL BE AS FOLLOW:-

UNDER ROADWAY
TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RMS QA SPECIFICATION 3051 OR SIMILAR.

OTHER THAN ROADWAY
TRENCH MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 25mm AND 75mm AND NONE LARGER THAN 75mm. PRIOR TO USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.
- S13 COMPACT BEDDING. EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLOW:-
EMBEDMENT-
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOIL) e.g. COARSE AGGREGATE FILL, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

TRENCH FILL-
FOR GRANULAR MATERIAL (NON COHESIVE SOILS). THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%. FOR NON-GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.
- S14 EXISTING SERVICES
UTILITY INFORMATION SHOWN ON THE PLANS IS NOT INTENDED TO DEPICT MORE THAN THE PRESENCE OF ANY SERVICES. ACTUAL LOCATIONS SHOULD BE VERIFIED BY HAND EXCAVATION PRIOR TO CONSTRUCTION.
- S15 THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.
- S16 THE CONTRACTOR SHALL ENSURE THAT SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AT ALL TIMES. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING WHERE REQUIRED. ONCE THE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.
- S17 DRAINAGE PIPES
EXISTING PIPES WHICH FORM NO PART OF THE DRAINAGE SYSTEM SHALL BE REMOVED OR SEALED AS INDICATED ON THE PLANS. PIPES UP TO 300mm DIAMETER SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS (U.N.O.). ALL PIPE JOINTIONS AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
- S18 WHERE DOWNPIPES PASS UNDER FLOOR SLABS, SEWER GRADE uPVC WITH RUBBER RING JOINTS ARE TO BE USED.
- S19 MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% (U.N.O.), MIN. SIZE 100mm DIAMETER (U.N.O.).
- S20 PIPES LARGER THAN OR EQUAL TO 300mm DIAMETER TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O.).
- S21 PIPE INSTALLATION UNDER TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALIA PUBLICATION "CONCRETE PIPE SELECTION & INSTALLATION" TYPE H53 SUPPORT.
- S22 EQUIVALENT STRENGTH FRC PIPES MAY BE USED SUBJECT TO AUTHORITY APPROVAL.
- S23 MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE (U.N.O.).

STORMWATER (CONTINUED)

- S24 CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
- S25 PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.
- S26 STORMWATER DRAINAGE CONNECTIONS TO COUNCIL'S SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL.
- S27 DRAINAGE PITS
PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS AT 300 CENTRES TO AS1657-2013:FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION'.
- S28 ALL EXPOSED EDGES TO BE ROUNDED WITH 20mm RADIUS, OR CHAMFERED 20mm x 20mm.
- S29 PIT REINFORCEMENT - MESH SL82 LAP TO BE 400mm MIN. CLEAR COVER 40 MIN. CAST AGAINST BLINDING OR FORMWORK. CORNER RETURNS MAY BE FABRIC OR EQUIVALENT BARS.
- S30 BENCHING TO BE HALF OUTGOING PIPE DEPTH. CONCRETE FOR BENCHING TO BE 20MPa MASS CONCRETE.
- S31 APPROVED PRECAST PITS MAY BE USED.
- S32 100mm DIAMETER HOLE FOR SUBSOIL DRAINAGE OUTLET TO BE LOCATED 100mm ABOVE INVERT OF ALL INLET PIPES. SUBSOIL DRAINAGE TO EXTEND FOR A DISTANCE OF 3m UPSTREAM OF PIT (AT EACH INLET TRENCH) WITH THE UPSTREAM END SEALED.
- S33 ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
- S34 PIT GRATE, FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFIC AREAS AND CLASS D IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996.
- S35 ALL GRATES SHALL BE PROVIDED WITH A LOCKING CLIP.
- S36 MAXIMUM FRONT ENTRY PIPE-
STRAIGHT ENTRY - Ø750
SKEW ENTRY 45° - Ø525
- S37 PIT GRATING TO BE GALVANISED STEEL TYPE 'WELDLOK' OR APPROVED EQUIVALENT.
- S38 SUBSOIL DRAINAGE
SUBSOIL PIPES SHALL BE LAID AT A MIN GRADE OF 0.5% (U.N.O.).
- S39 ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED.
- S40 SUBSOIL PIPES SHALL BE LAID BEHIND KERBS IN CUT AREAS OF THE SITE.
- S41 SUBSOIL DRAINAGE SHALL CONSIST OF A SLOTTED 100mm DIAMETER PLASTIC PIPE WRAPPED IN GEOTEXTILE AND PLACED A MINIMUM OF 600mm BELOW THE SUBGRADE LEVEL AND COVERED WITH 500mm Of 20mm GRAVEL. PROVIDE A MINIMUM OF 150mm GRAVEL AROUND SUBSOIL PIPE. TRENCH TO BE LINED WITH GEOTEXTILE FABRIC TYPE BIDIM A24
- S42 GRATES TO PITS IN FOOTPATH AREAS SHALL BE HEEL SAFE COMPLYING WITH THE DISABLED ACCESS CODE
- S43 CONTRACTOR TO PROVIDE WORKSHOP COORDINATED DRAWINGS PRIOR TO COMMENCING WORKS ON SITE. WORKSHOP DRAWINGS TO BE REVIEWED AND APPROVED BY DESIGN ENGINEER.
- S44 ALL EXTERNAL AREA TO HAVE A MINIMUM 1% FALL TO OUTLETS PROVIDED.
- S45 PROVIDE OVERFLOWS TO ALL AREAS TO ARCHITECT'S SPECIFICATIONS.
- S46 ALL RAINWATER OUTLETS TO OPEN AREAS SHALL BE SPS TRUFLO TYPE T1A100F UNLESS NOTED OTHERWISE. DO NOT INSTALL BALCONY OUTLETS OR SIMILAR IN AREAS SUBJECT TO DIRECT RAINFALL.

EROSION CONTROL

- EC1 BEFORE EARTHWORKS CAN COMMENCE THE EROSION & SEDIMENT CONTROL MEASURES MUST BE IN PLACE.
- EC2 DURING THE CONSTRUCTION PERIOD, THESE CONTROL MEASURES WILL NEED TO BE INSPECTED & MAINTAINED REGULARLY, ESPECIALLY AFTER STORM EVENTS, BY THE CONTRACTOR.
- EC3 ALL WORK IS TO BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION & SEDIMENTATION OF THE STORAGE SITE, SURROUNDING AREAS & DRAINAGE SYSTEMS.
- EC4 MINIMIZE DISTURBED AREA COVERED WITH NATURAL VEGETATION. ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.
- EC5 INSTALL EROSION/SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION OR EXCAVATION OPERATIONS.
- EC6 PROVIDE SILT FENCE/STRAW BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
- EC7 ISOLATE EXISTING STORMWATER PITS WITH STRAW BALES OR SILT TRAPS TO FILTER ALL INCOMING FLOWS.
- EC8 DO NOT STOCKPILE EXCAVATED MATERIAL ON THE ROAD WAY.
- EC9 DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.

EROSION CONTROL (CONTINUED)

- EC10 CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.
- EC11 TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL
- EC12 ADOPT TEMPORARY MEASURES AS MAY BE NECESSARY FOR EROSION & SEDIMENT CONTROL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: -
- DRAINS: TEMPORARY DRAINS AND CATCH DRAINS.
- SPREADER BANKS OR OTHER STRUCTURES: TO DISPERSE CONCENTRATED RUNOFF.
- SILT TRAPS: CONSTRUCTION AND MAINTENANCE OF SILT TRAPS TO PREVENT DISCHARGE OF SCURED MATERIAL TO DOWNSTREAM AREAS.
- EC13 AFTER RAIN, INSPECT, CLEAN, AND REPAIR IF REQUIRED, TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.
- EC14 REMOVE TEMPORARY EROSION & SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED.
- EC15 COMPLY WITH THE REQUIREMENTS OF LANDCOM'S MANAGING URBAN STORMWATER - SOIL AND CONSTRUCTION 'THE BLUE BOOK' LATEST EDITION
- EC16 THE EROSION & SEDIMENT CONTROL PLAN PROVIDED IS ONLY INDICATIVE. THE CONTRACTOR SHOULD PREPARE A DETAILED ESCP SUITABLE FOR THE SPECIFIC SITE CONDITIONS

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DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE
TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

ABBREVIATIONS:

Ø or DIA	DIAMETER
CO	CLEAR OUT
DDO	DISH DRAIN OUTLET
DP	DOWNPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GTD	GRADED TRENCH DRAIN
GSIP	GRADED SURFACE INLET PIT
IL	INVERT LEVEL
KIP	KERB INLET PIT
NGL	NATURAL GROUND LEVEL
OPP	OVERLAND FLOWPATH
OSD	ON-SITE DETENTION
RCP	REINFORCED CONCRETE PIPE
RL	REDUCED LEVEL
RWT	RAINWATER TANK
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
TOK	TOP OF KERB
TOW	TOP OF WALL
UPVC	UNPLASTICISED POLYVINYL CHLORIDE

SITeworks LEGEND

- STORMWATER LINE
- STORMWATER LINE TO RAINWATER TANK
- GRATED DRAIN
- SUBSOIL LINE
- STORMWATER RISING MAIN
- JUNCTION PIT
- GSIP 450x450
- GSIP 600x600
- GSIP 900x900
- DROP PIPE
- DOWN PIPE
- DOWNPIPE CARRYING ROOF WATER ONLY
- RAIN WATER OUTLET
- STORMWATER RISING MAIN
- FIRST FLUSH
- CLEAR OUT
- OVERLAND FLOW PATH
- PLANTER DRAIN
- FLASHING LIGHT

				Reference Coordination Drawing			
				Discipline	Drawing Title and Number	Date	Rev.
D	ISSUE FOR DA	MS	26.05.20	2			
C	ISSUE FOR DA	MS	15.05.20	2	ARCH		
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH		
A	ISSUE FOR DA	RJ	30.04.20	2	STRUCT		
P3	PRELIMINARY ISSUE	MS	24.02.20	1	MECH		
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC		
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD		
Issue	Last revision title	by	Date	Status	FILE		
Issuer internal sequence and revision history							
1-preliminary	2-development application	3-construction certificate	4-tender	5-construction	6-other		
						LANDS	
						CIVIL	
						SURVEY	

	ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER
DIMENSIONS NOT SHOWN TO BE CHECKED ON SITE. DO NOT SCALE OF THE DRAWING. PROVISION OF AUTHORITIES MAINS AND/OR EXISTING SERVICES ARE TO BE CHECKED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE CONSULTING ENGINEER FOR RECORD/CLARIFICATION BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER CONSULTANTS' DRAWINGS.	

QUALITY CONTROL			
DRAWN	MS	DATE	26.05.20
CHECKED	SH	DATE	26.05.20
DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20

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Scales

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ARCHITECT

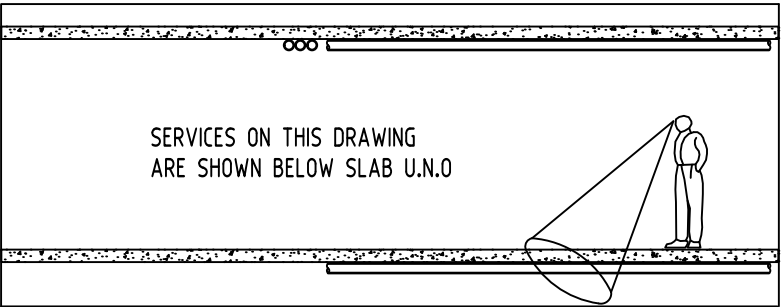


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PROJECT PROPOSED RESIDENTIAL APARTMENTS			
25-27 WARRIWOOD ROAD, WARRIWOOD - STAGE II			
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	2 OF 10	NTS

Drawing Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN SPECIFICATION SHEET		
Project No	Drawing No	Revision No	
20160112	SW101	D	



SUBSOIL DESIGN CALCS:

100yr 2hr ARI STORM= 60.1mm/hr
ARIx2=120.2mm
AREA OF DRIVEWAY
RAMP UNCOVERED= 40.00m²

V=Axd
=40.00x(120.2/1000)
=4.80m³

GEO-TECHNICAL NOTE:

BASEMENT DRAINAGE DESIGN SUBJECT TO
GEOTECHNICAL INVESTIGATION AND
STRUCTURAL DESIGN OF WALLS AND SLABS.

GEO-TECH ENGINEER IS TO CONFIRM IF THE
BASEMENT NEEDS TO BE TANKED.

AS PER THE GEOTECHNICAL REPORT, THE
GROUNDWATER HAS BEEN OBSERVED 7.5m
BELOW NATURAL SURFACE LEVEL. IF
SIGNIFICANT WATER INFLOWS ARE OBSERVED
DURING EXCAVATION, BUILDER SHOULD LET
THE GEOTECHNICAL ENGINEER KNOW
IMMEDIATELY AND CONDUCT FURTHER
ASSESSMENT ON THE SEEPAGE FLOW RATE
AND REPORT BACK TO STORMWATER
ENGINEER TO RESIZE UP THE PUMP OUT PIT.

PUMP-OUT PIT NOTE:

EACH PUMP NEED TO BE INSTALLED FOLLOWING ITEMS:
-900SD HEAVY DUTY CLASS "C" STEEL GRATED LID
FOR ACCESS AND MAINTENANCE PURPOSES.
-CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR
PUBLIC AWARENESS AND WARNING.
-STEP IRONS. REFER SW300 TO DETAILS.
-INSTALL TWO (2) DRE 150/22/GSDH AOCTS
SUBMERSIBLE PUMPS FROM ZENIT PUMPS OR APPROVED
EQUIVALENT WITH A PUMP CAPACITY OF 10L/s FOR 8m
HEAD
-FLOAT SWITCH AND CONTROL PANEL TO
MANUFACTURER'S SPECIFICATIONS.
-ALL STORMWATER PUMPS TO BE CLASS 1 ZONE 2
FLAME SAFE TO ELECTRICAL CONSULTANT'S
REQUIREMENTS.

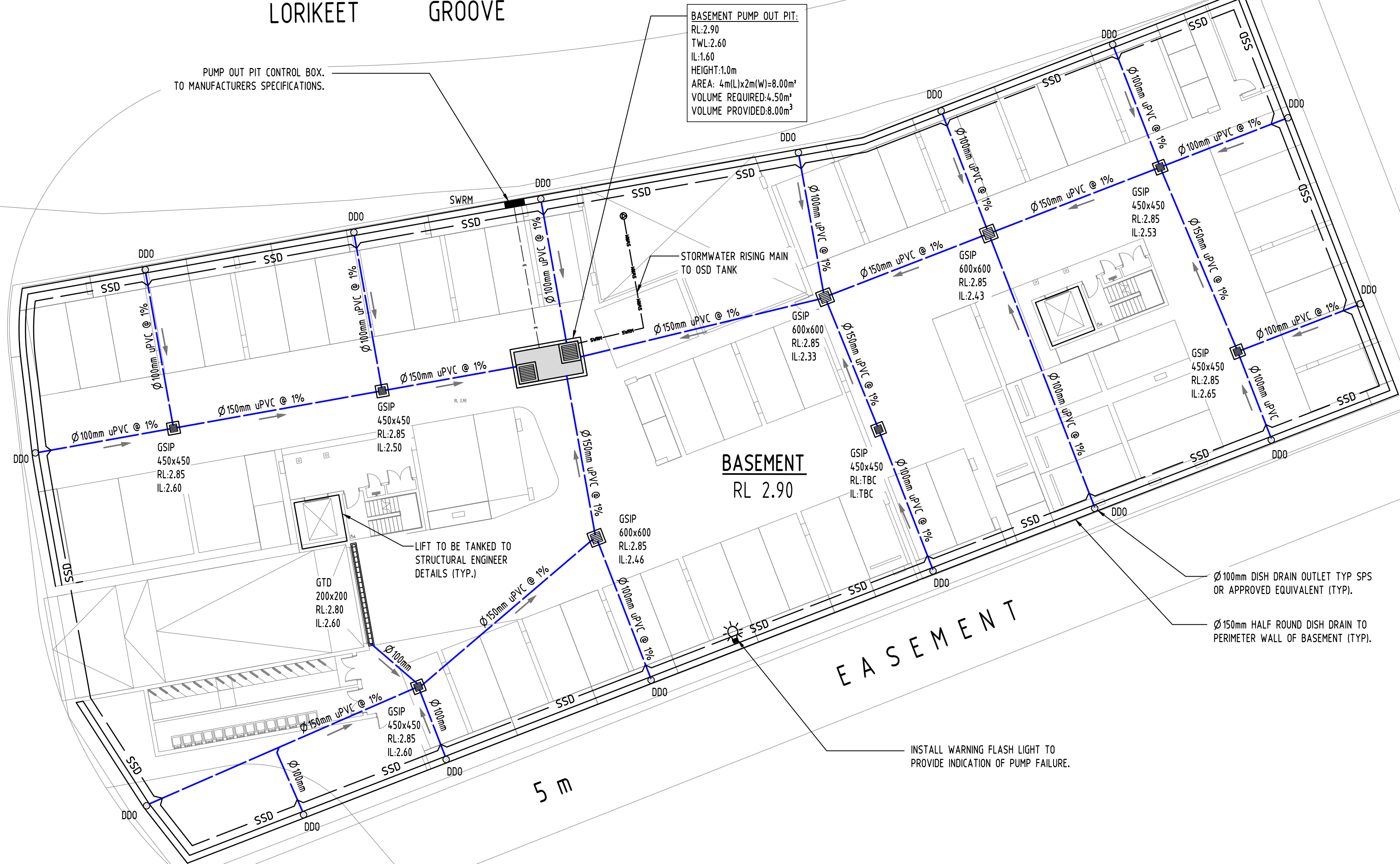
GRADING NOTES:

BASEMENT SLAB TO HAVE 1% MINIMUM FALL TO INLET
PITS TO AS 2890 REQUIREMENTS.

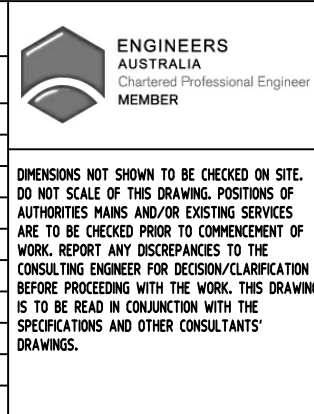
LORIKEET GROOVE

GROOVE

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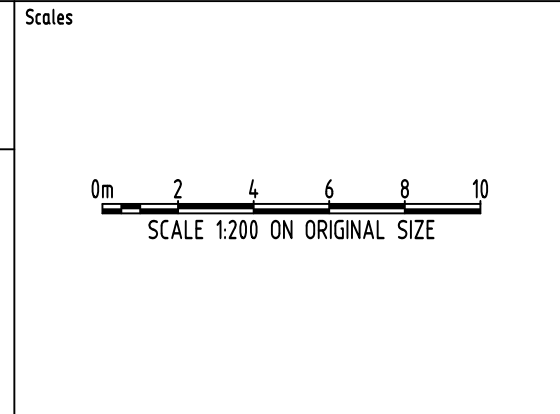


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DESIGNED	MS	DATE	26.05.20
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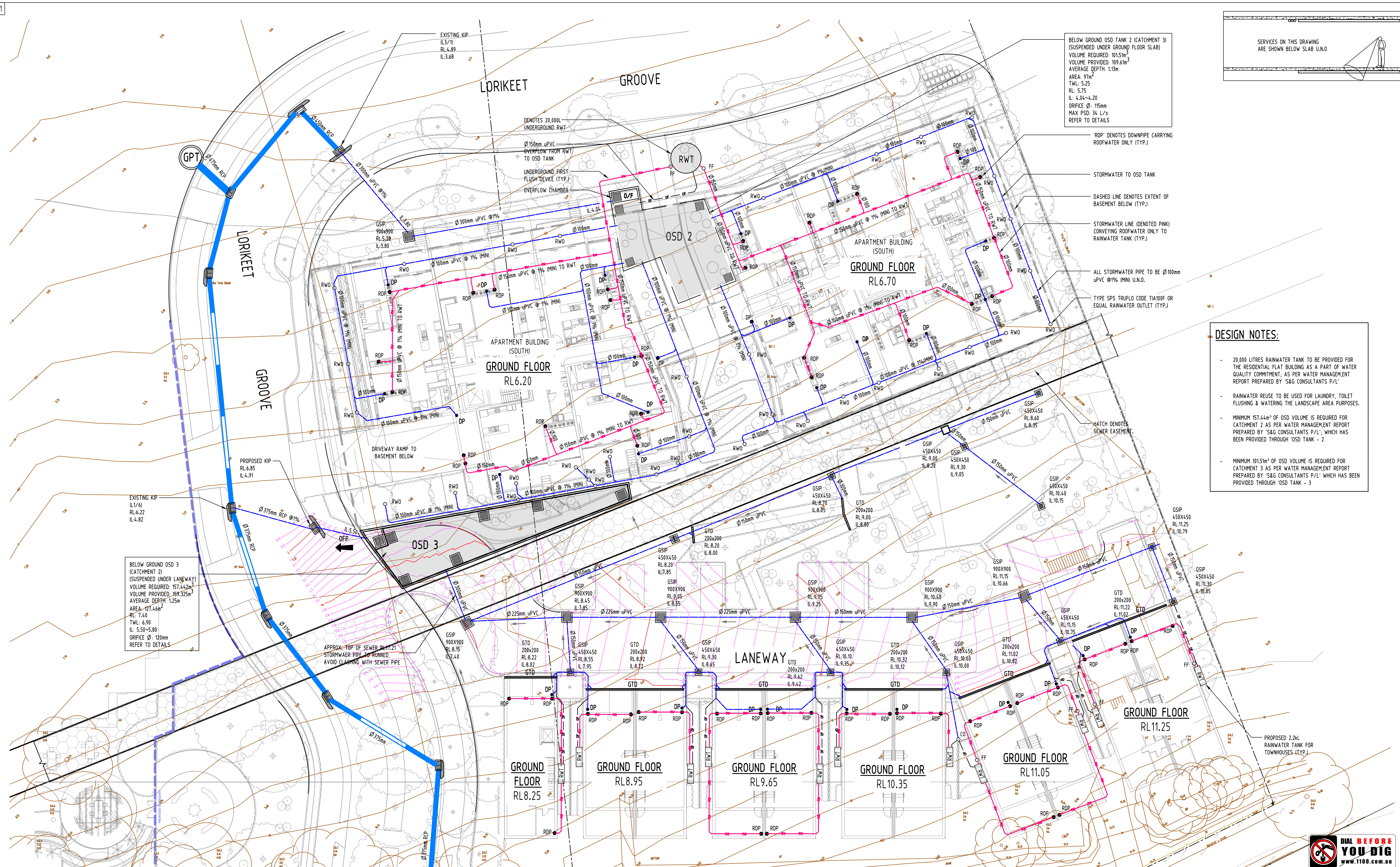
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PROJECT PROPOSED RESIDENTIAL APARTMENTS				Drawing Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES			
25-27 WARRIWOOD ROAD, WARRIWOOD - STAGE II				Drawing Title STORMWATER CONCEPT DESIGN BASEMENT PLAN			
Grid	Datum	Sheet	Scale (at original size)	Project No	Drawing No	Revision No	
-	A.H.D.	3 OF 10	1:200 @ A1	20160112	SW200	D	

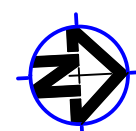


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C	ISSUE FOR DA	MS	15.05.20	2	Discipline	Drawing Title and Number	Date
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH		Rev.
A	ISSUE FOR DA	RJ	30.04.20	2	ARCH		
P4	INT LOCATION ADJUSTED TO SUIT LATEST ARCHS & LANDSCAPE	SH	09.04.20	1	STRUCT		
P3	PRELIMINARY ISSUE	MS	24.02.20	2	MECH		
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC		
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD		
Issue	Last revision title	by	Date	Status	FILE		
Issued internal sequence and revision history 1-preliminary 4-tender 2-development application 5-construction 3-construction certificate 6-other LANDS CIVIL SURVEY							




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DRAWN	MS	DATE	26.05.20
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DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20



Scales



0m 2 4 6 8 10

SCALE 1:200 ON ORIGINAL SIZE

ARCHITECT



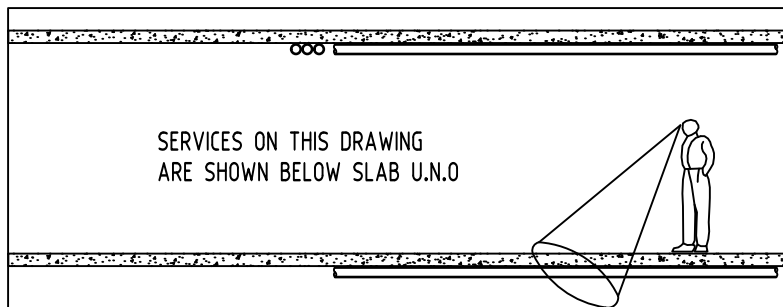
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PROJECT
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25-27 WARRIWOOD ROAD, WARRIWOOD - STAGE II

Drawing Status	FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Drawing Title	STORMWATER CONCEPT DESIGN GROUND FLOOR PLAN		
Project No	Drawing No	Revision No	
20160112	SW201	D	



1. ALL STORMWATER PIPES SHOWN ON PLAN ARE Ø100mm uPVC AND SLOPING AT 1.0% (MIN) U.N.O.
2. INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW IN CASE OF BLOCKAGE DURING HEAVY STORM. PLUMBER/CONTRACTOR TO LOCATION DURING CONSTRUCTION.
3. BALCONY, TERRACE & CONCRETE ROOF AREA TO SLOPE TOWARDS RAINWATER OUTLETS (TYP.)
4. PROVIDE BREAK/CUT IN HOB OR SIMILAR ADEQUATE STORMWATER DRAINAGE FEATURE, WHERE REQUIRED (TYP.)
5. STORMWATER PIPES TO BE CONCEALED WITH FALSE CEILING, COLUMNS AND BULKHEADS, IF REQUIRED.
6. PLUMBER TO PROVIDE SPEARDER DOWNPIPE, WHERE REQUIRED TO DIRECT STORMWATER ONTO LOWER ROOF AREAS.
7. ALL BUILDING & HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES TO ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP.)

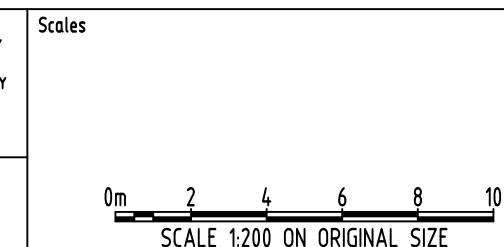
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B	ISSUE FOR DA	RJ	05.05.20	2	ARCH			
A	ISSUE FOR DA	RJ	30.04.20	2	STRUCT			
P3	PRELIMINARY ISSUE	MS	24.02.20	1	MECH			
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC			
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD			
Issue	Last revision title	by	Date	Status	FILE			
Issuer internal sequence and revision history						LANGS		
1-preliminary		2-development application		3-construction certificate		CIVIL		
4-tender		5-construction		6-other		SURVEY		



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CHECKED	SH	DATE	26.05.20
DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20

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PROJECT
PROPOSED RESIDENTIAL
APARTMENTS
25-27 WARRIEWOOD ROAD WARRIEWOOD - STAGE II

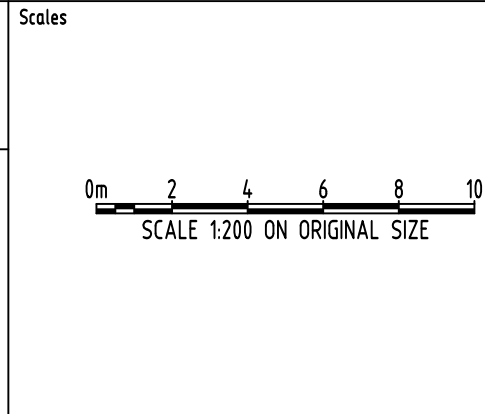
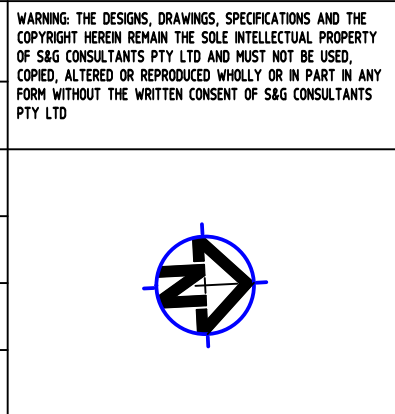
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-	A.H.D.	5 OF 10	1:200 @ A1

Drawing Status	FOR APPROVAL		
	NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN LEVEL 1 PLAN		
Project No	Drawing No	Revision No	
20160112	SW202	D	

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C	ISSUE FOR DA	RJ	15.05.20	2	ARCH					
B	ISSUE FOR DA	RJ	05.05.20	2	STRUCT					
A	ISSUE FOR DA	RJ	30.04.20	2	MECH					
P3	PRELIMINARY ISSUE	MS	24.02.20	1	ELEC					
P2	PRELIMINARY ISSUE	MS	17.01.20	1	HYD					
P1	PRELIMINARY ISSUE	MS	29.11.19	1	FIRE					
Issue Last revision title				by	Date	Status				
Issuer internal sequence and revision history										
1-preliminary				2-development application				3-construction certificate		
4-tender				5-construction				6-other		
								LANDS		
								CIVIL		
								SURVEY		



QUALITY CONTROL			
DRAWN	MS	DATE	26.05.20
CHECKED	SH	DATE	26.05.20
DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20



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25-27 WARRIEWOOD ROAD, WARRIEWOOD - STAGE II

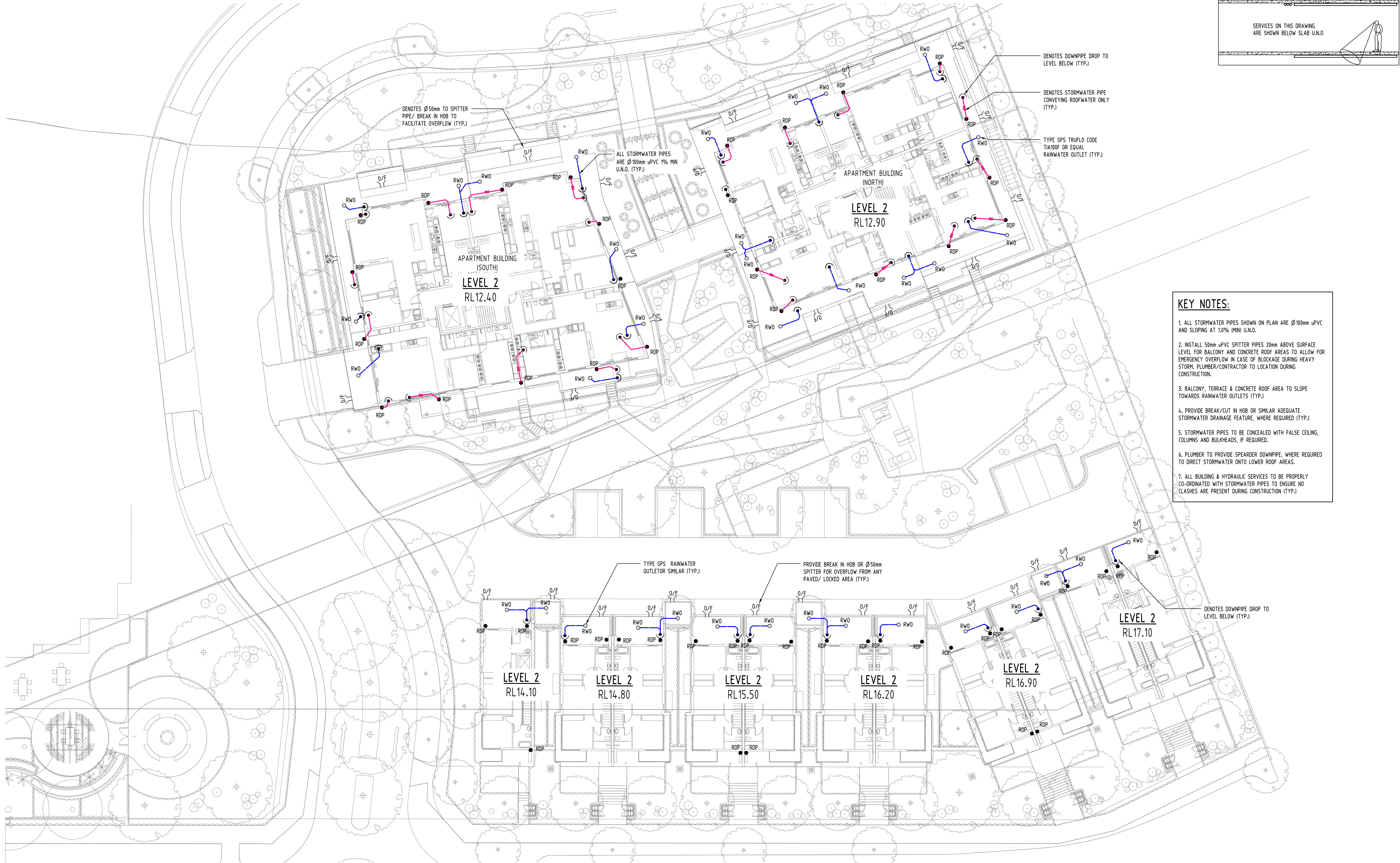
Grid

Datum

Sheet

Scale (at original size)

Drawing Status			FOR APPROVAL		
			NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title			STORMWATER CONCEPT DESIGN		
			LEVEL 2 PLAN		
Project No	Drawing No	Revision No			
20160112	SW203	D			



- KEY NOTES:**
1. ALL STORMWATER PIPES SHOWN ON PLAN ARE Ø100mm uPVC AND SLOPING AT 1.0% (MIN) U.N.O.
 2. INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW IN CASE OF BLOCKAGE DURING HEAVY STORM. PLUMBER/CONTRACTOR TO LOCATION DURING CONSTRUCTION.
 3. BALCONY, TERRACE & CONCRETE ROOF AREA TO SLOPE TOWARDS RAINWATER OUTLETS (TYP.)
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 5. STORMWATER PIPES TO BE CONCEALED WITH FALSE CEILING, COLUMNS AND BULKHEADS, IF REQUIRED.
 6. PLUMBER TO PROVIDE SPEARDER DOWNPIPE; WHERE REQUIRED TO DIRECT STORMWATER ONTO LOWER ROOF AREAS.
 7. ALL BUILDING & HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES TO ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP.)

SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O.



Reference Coordination Drawing					Rev.	Discipline	Drawing Title and Number	Date
Issue	Last revision title	by	Date	Status				
D	ISSUE FOR DA	MS	26.05.20	2		Discipline		
C	ISSUE FOR DA	MS	15.05.20	2		ARCH		
B	ISSUE FOR DA	RJ	05.05.20	2		ARCH		
A	ISSUE FOR DA	RJ	30.04.20	2		STRUCT		
P3	PRELIMINARY ISSUE	MS	24.02.20	1		MECH		
P2	PRELIMINARY ISSUE	MS	17.01.20	1		ELEC		
P1	PRELIMINARY ISSUE	MS	29.11.19	1		HYD		
Issue internal sequence and revision history						LANDS		
1	preliminary					CIVIL		
2	development application							
3	construction certificate							
4	tender							
5	construction					SURVEY		
6	other							

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APPROVED	SH	DATE	26.05.20

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Scales

0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

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PROJECT

PROPOSED RESIDENTIAL
APARTMENTS

25-27 WARRIWOOD ROAD, WARRIWOOD - STAGE II

Drawing Status

FOR APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title

STORMWATER CONCEPT DESIGN
ROOF PLAN

Project No

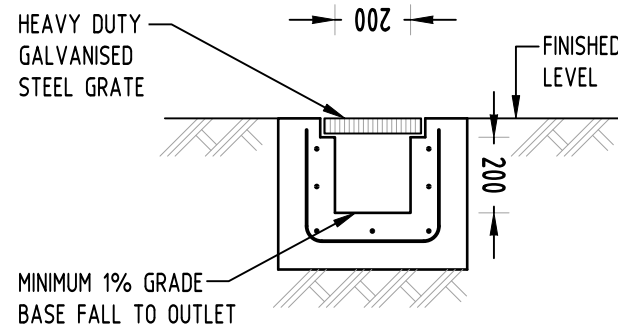
20160112

Drawing No

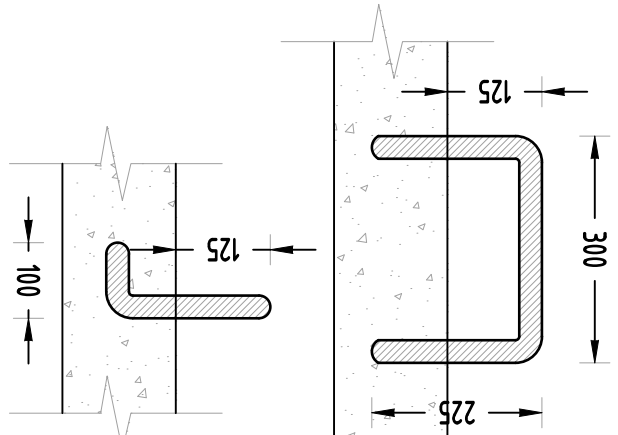
SW204

Revision No

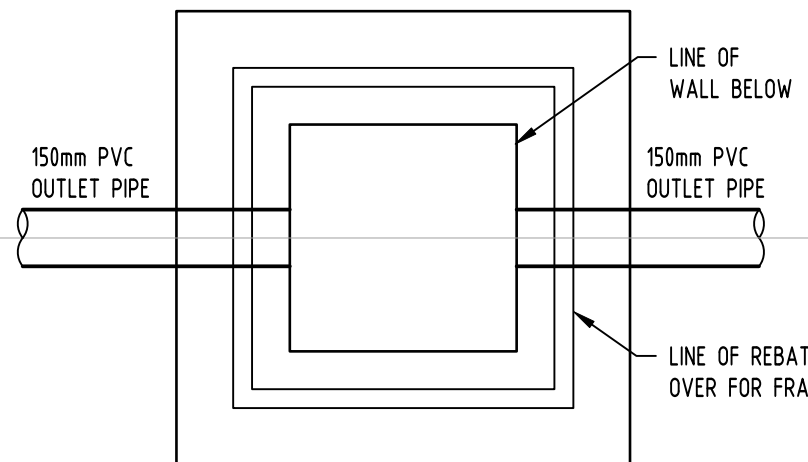
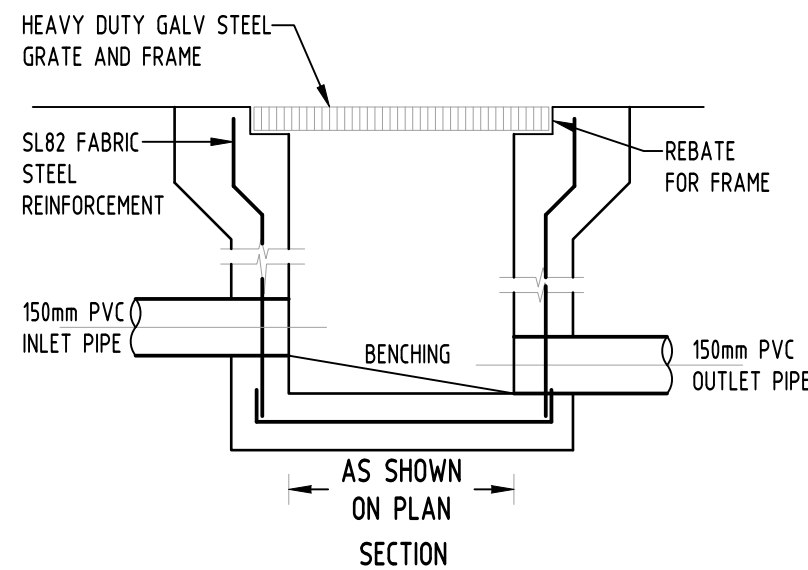
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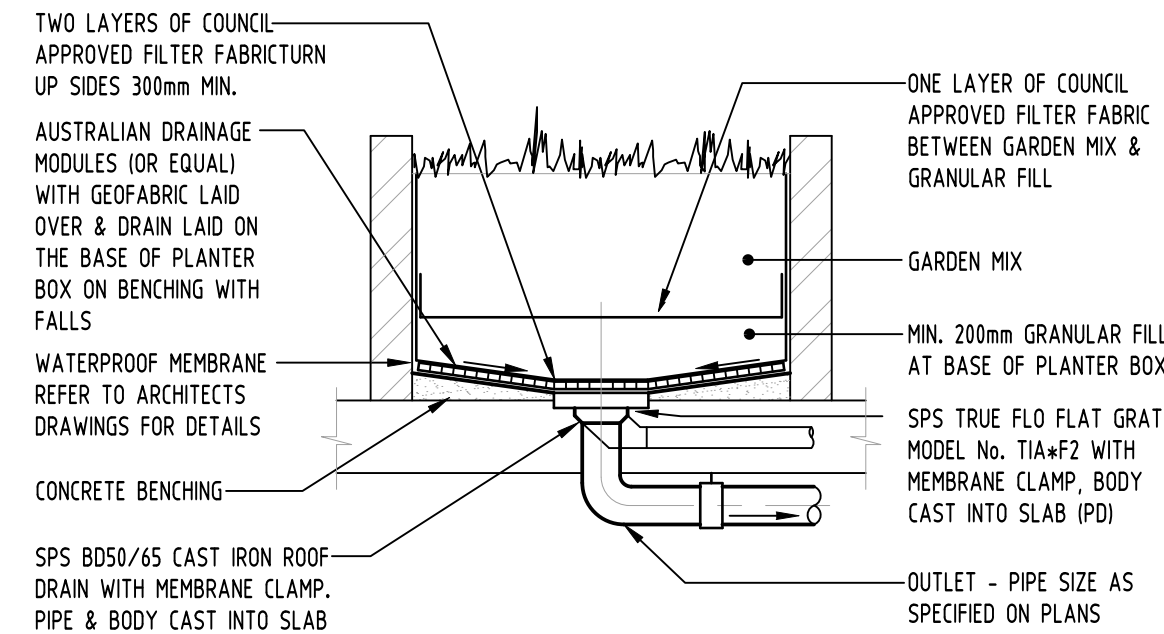
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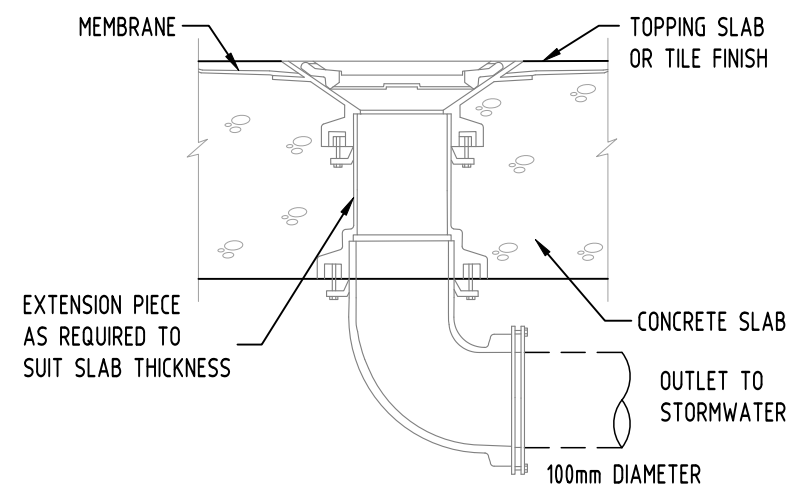
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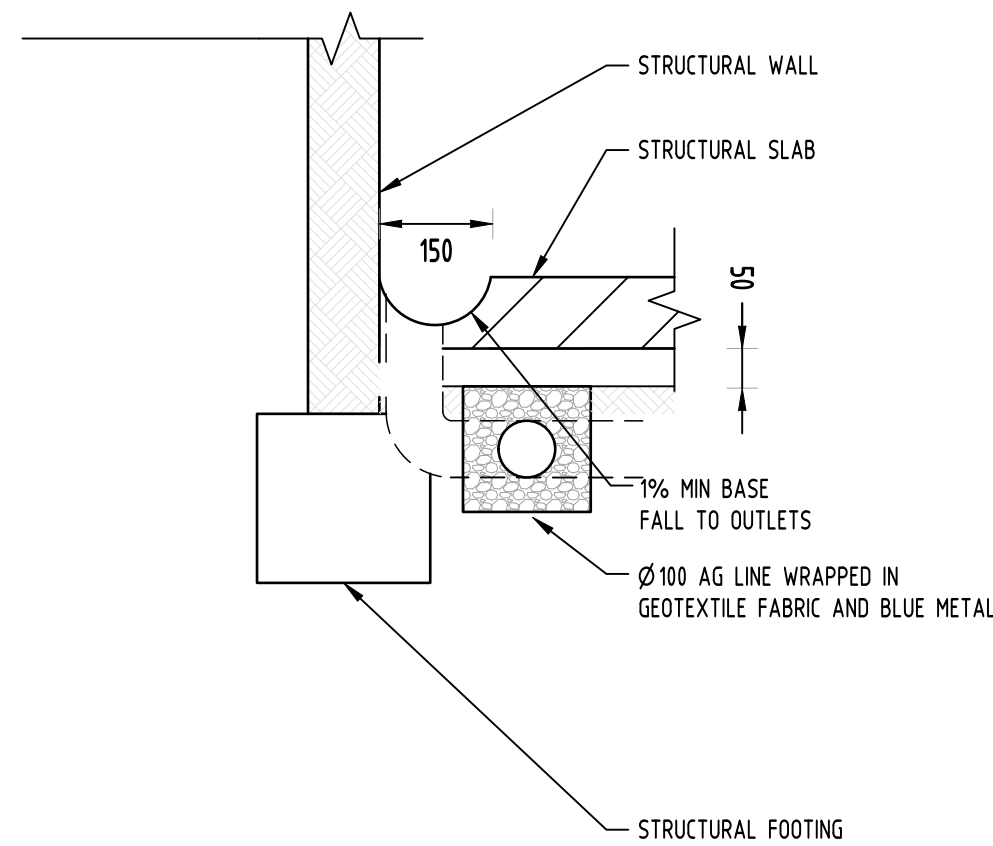
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STORMWATER PIT
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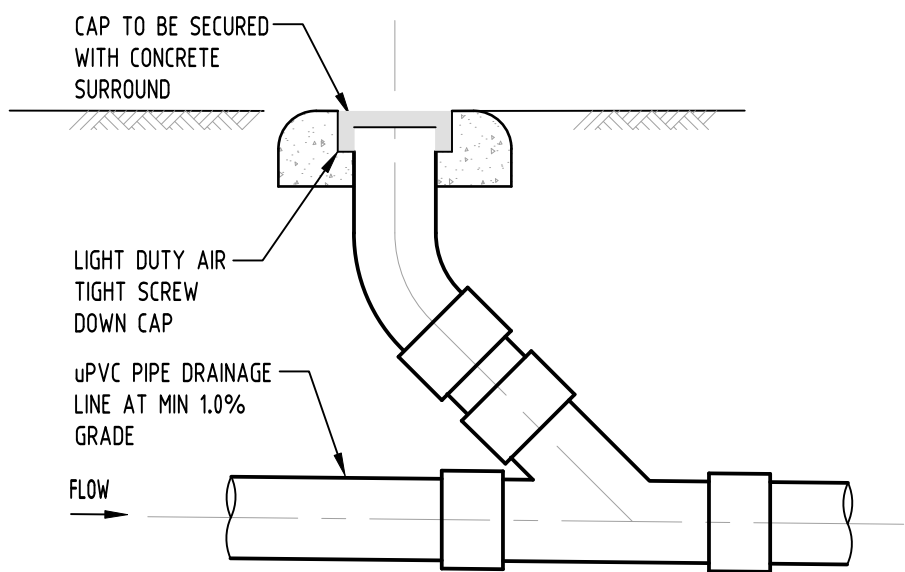
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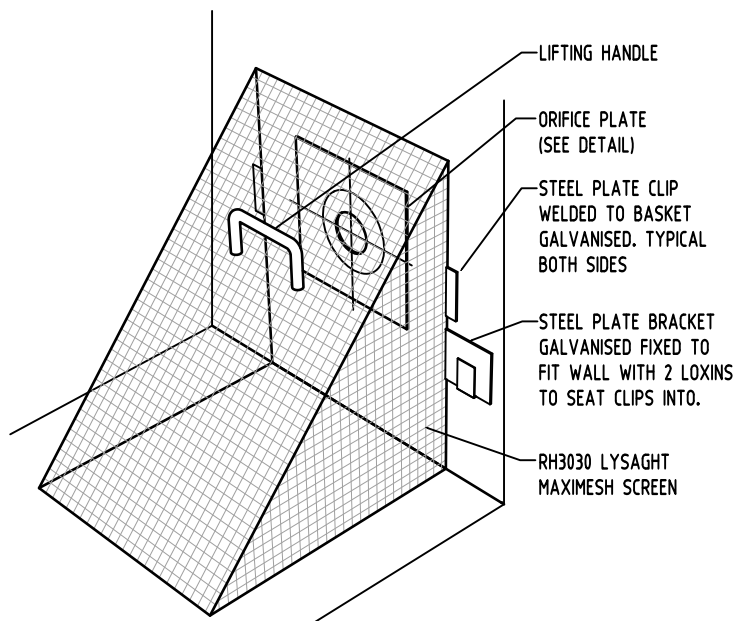
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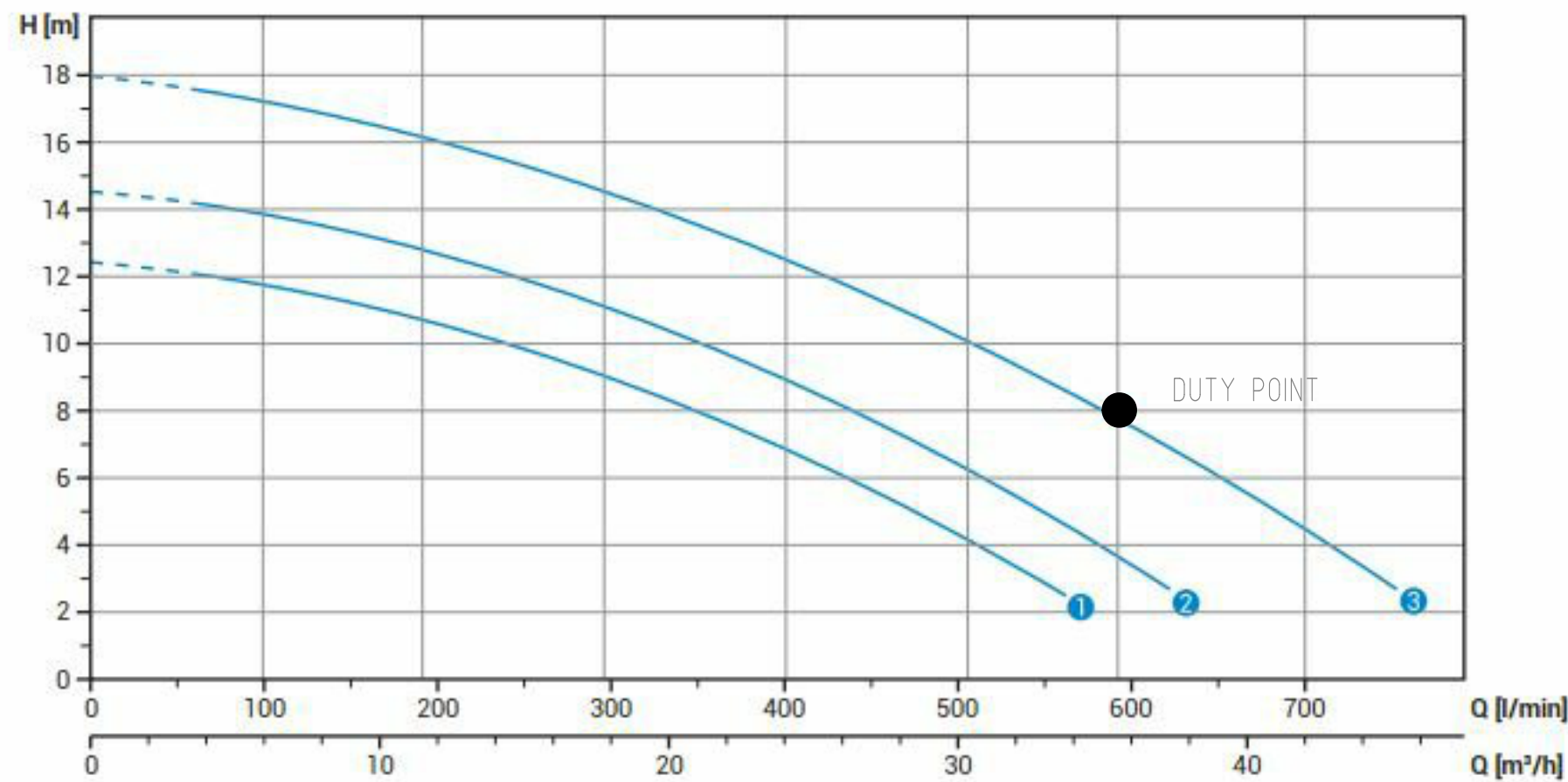
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NOT TO SCALE



CLEANING EYE
NOT TO SCALE



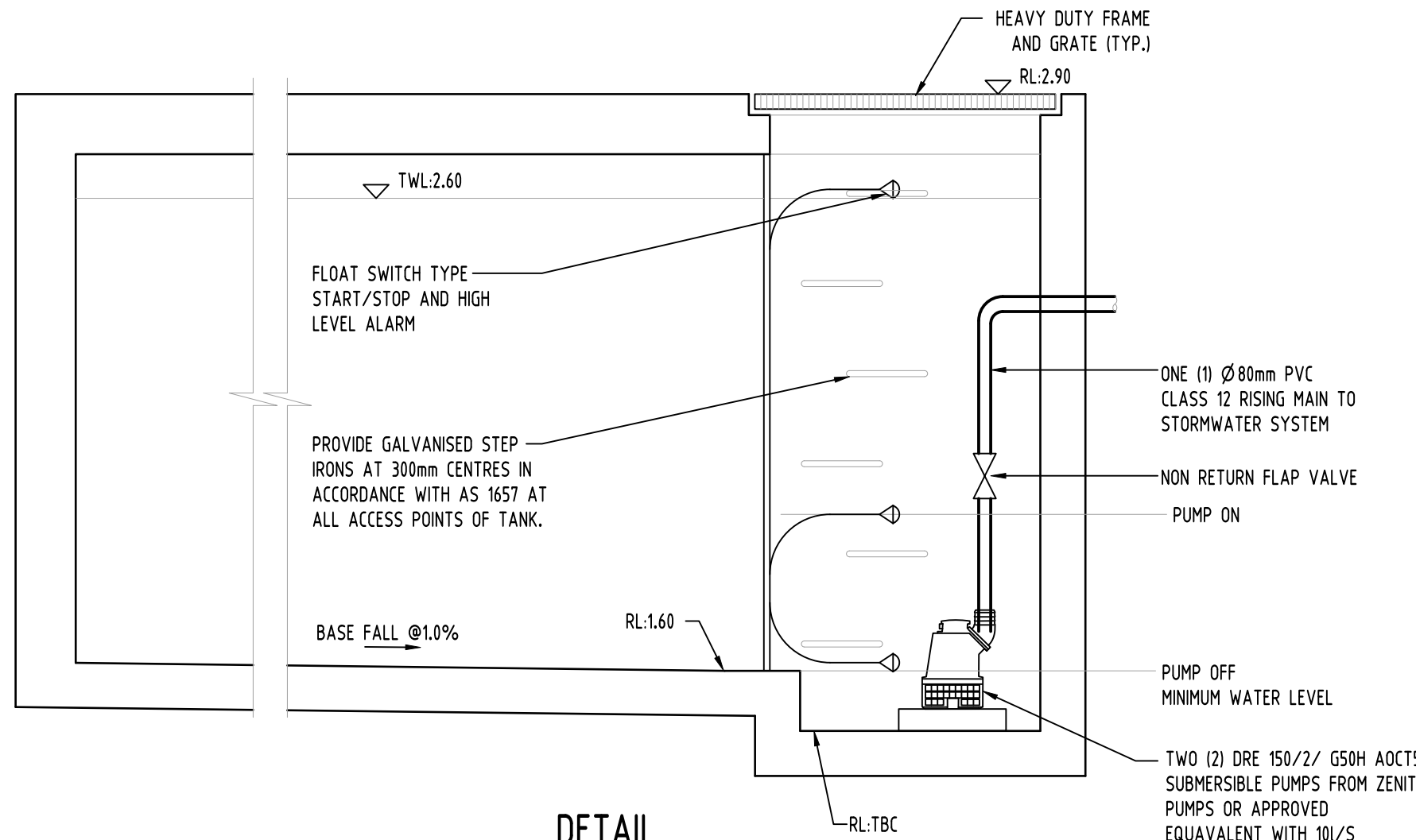
DETAIL
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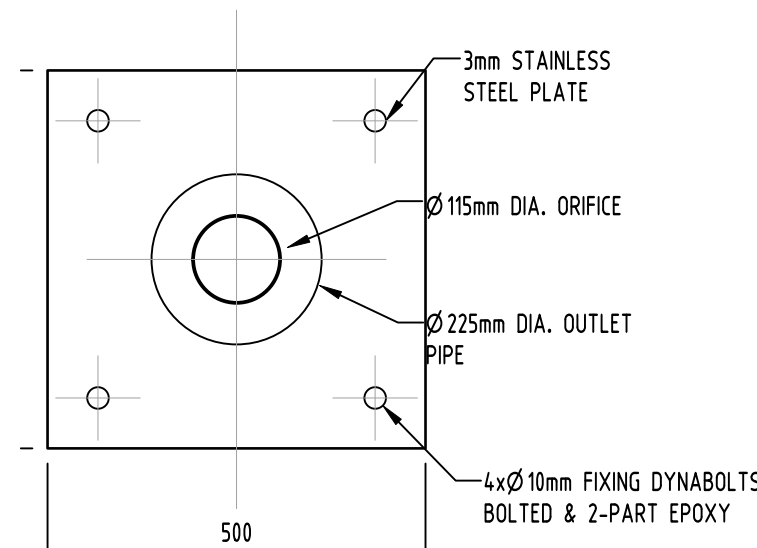
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2 DRE 150/2/G50H AOCM5	230	1	-	1.10	8.2	2900	G 2"- DN50 PN10-16	15 mm
3 DRE 200/2/G50H AOCM5	230	1	-	1.50	9.3	2900	G 2"- DN50 PN10-16	15 mm
1 DRE 100/2/G50H AOCT5	400	3	-	0.88	2.3	2900	G 2"- DN50 PN10-16	15 mm
2 DRE 150/2/G50H AOCT5	400	3	-	1.10	2.7	2900	G 2"- DN50 PN10-16	15 mm
3 DRE 200/2/G50H AOCT5	400	3	-	1.50	3.5	2900	G 2"- DN50 PN10-16	15 mm

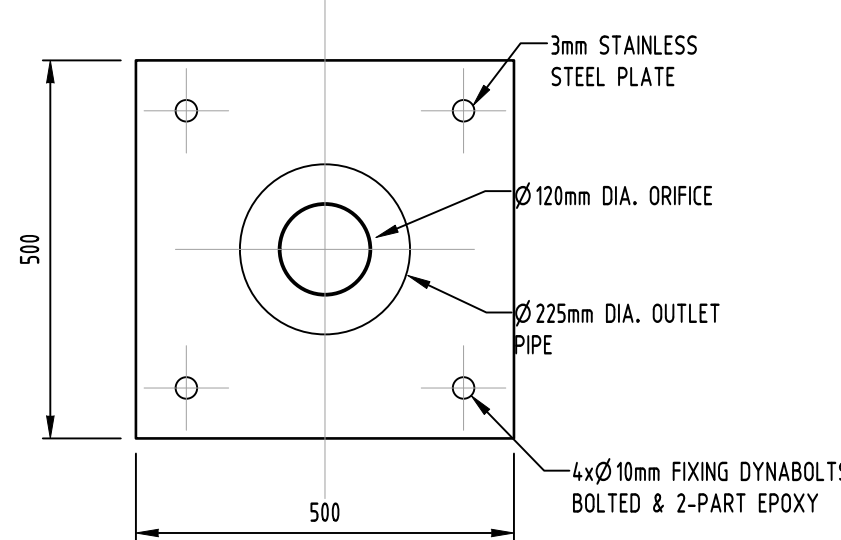
PUMP PERFORMANCE CURVE



DETAIL
BASEMENT PUMP OUT PIT
NOT TO SCALE



DETAIL
ORIFICE PLATE OSD 2
SCALE 1:10



DETAIL
ORIFICE PLATE OSD 3
SCALE 1:10

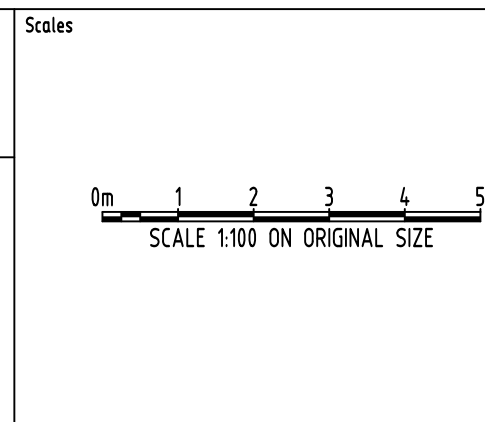
RECOMMENDED
PUMP

				Reference Coordination Drawing				
D	ISSUE FOR DA	MS	26.05.20	2	Discipline	Drawing Title and Number	Date	Rev.
C	ISSUE FOR DA	MS	15.05.20	2	ARCH			
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH			
A	ISSUE FOR DA	RJ	30.04.20	2	STRUCT			
P3	PRELIMINARY ISSUE	MS	24.02.20	1	MECH			
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC			
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD			
Issue	Last revision title	by	Date	Status	FILE			
Issuer internal sequence and revision history					LANDS			
1-preliminary	2-development application	3-construction certificate		CIVIL				
4-tender	5-construction	6-other		SURVEY				

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APPROVED	SH	DATE	26.05.20

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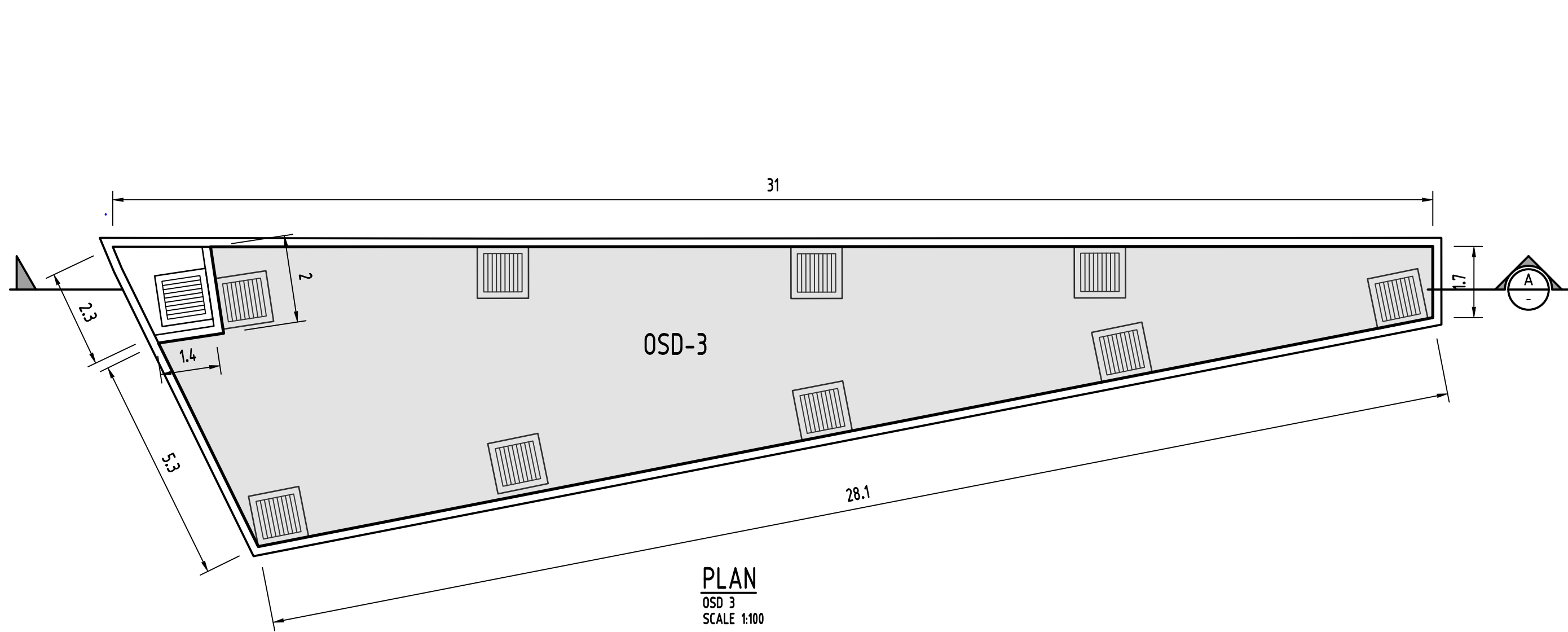
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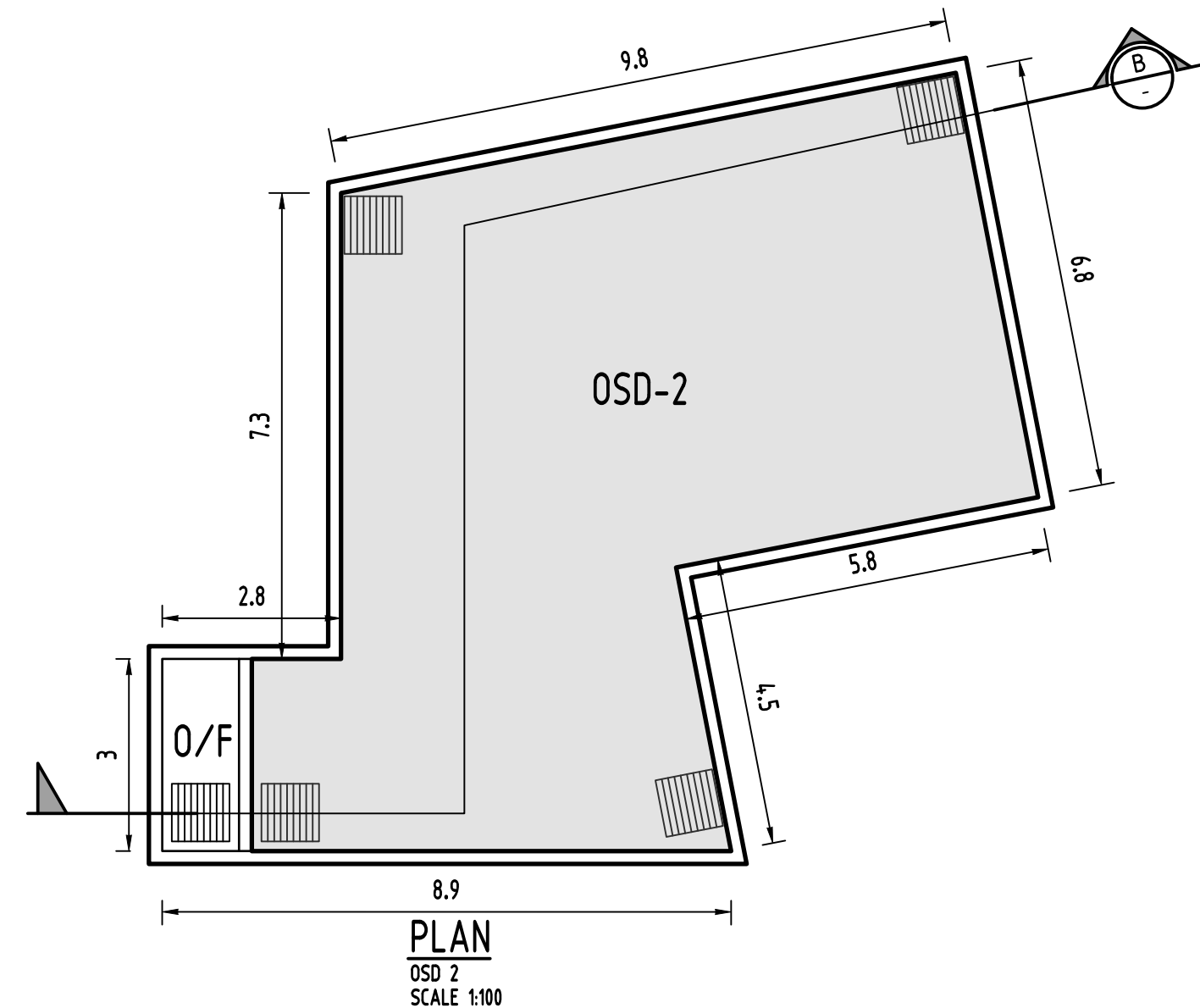
PROJECT
PROPOSED RESIDENTIAL
APARTMENTS
25-27 WARRIEWOOD ROAD, WARRIEWOOD - STAGE II

Drawing Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title STORMWATER CONCEPT DESIGN DETAILS SHEET SHEET 1 OF 2		
Project No 20160112	Drawing No SW300	Revision No D

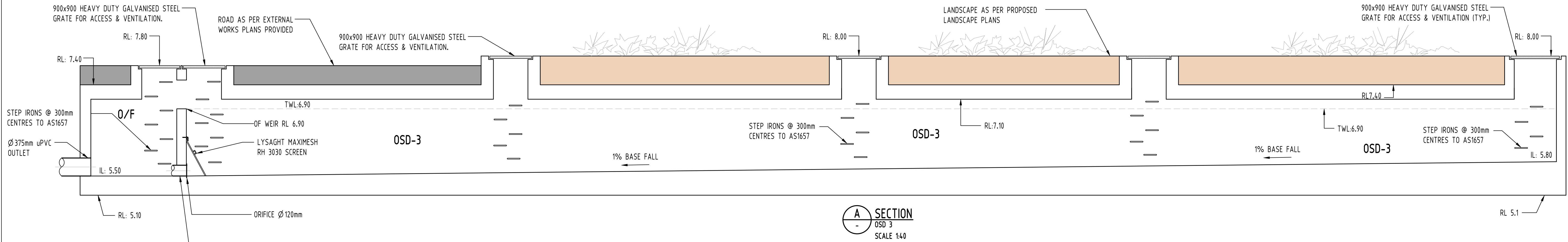
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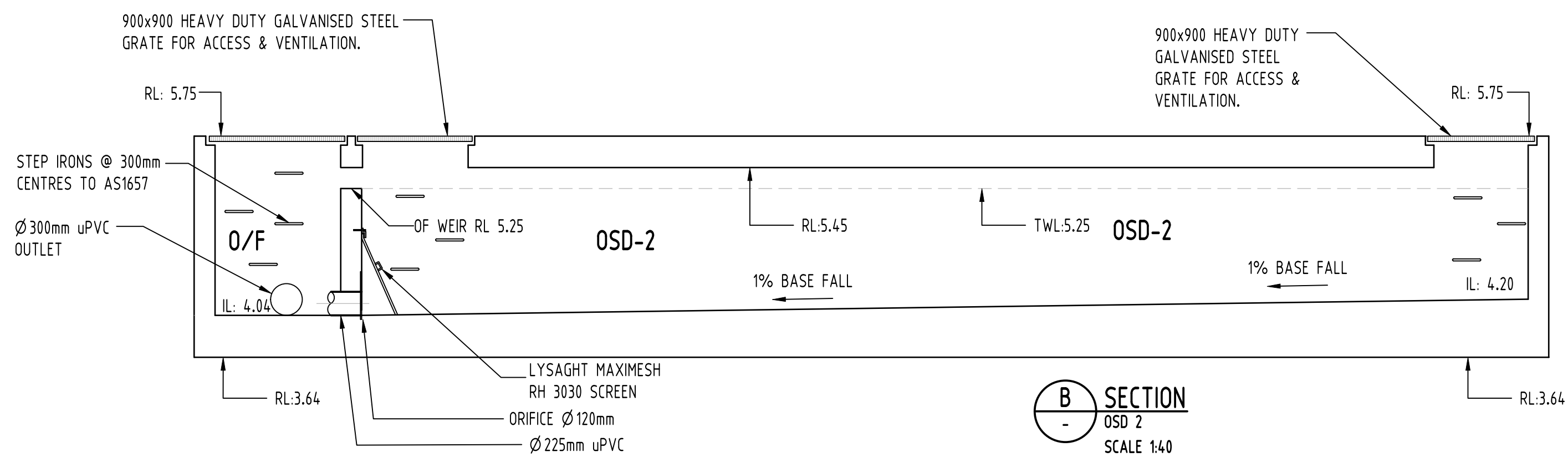
PLAN
OSD 3
SCALE 1:100



PLAN
OSD 2
SCALE 1:100

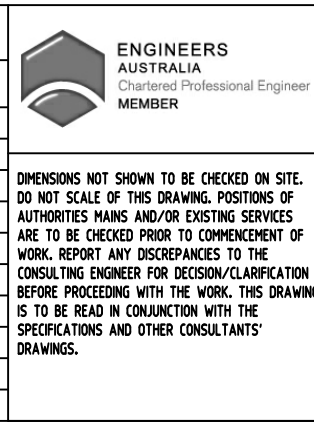


A SECTION
OSD 3
SCALE 1:40



B SECTION
OSD 2
SCALE 1:40

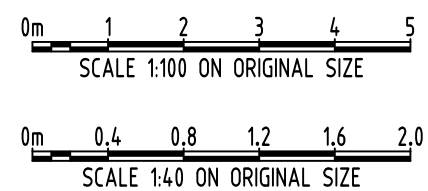
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C	ISSUE FOR DA	MS	15.05.20	2	ARCH	
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH	
A	ISSUE FOR DA	RJ	30.04.20	2	STRUCT	
P3	PRELIMINARY ISSUE	MS	24.02.20	1	MECH	
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC	
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD	
Issue	Last revision title	by	Date	Status	FIRE	
Issuer internal sequence and revision history						
1	preliminary				LANDS	
4	tender				CIVIL	
5	development application					
6	construction				SURVEY	



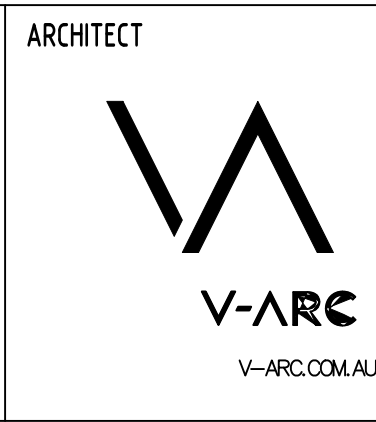
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DRAWN	MS	DATE	26.05.20
CHECKED	SH	DATE	26.05.20
DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20

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Scales



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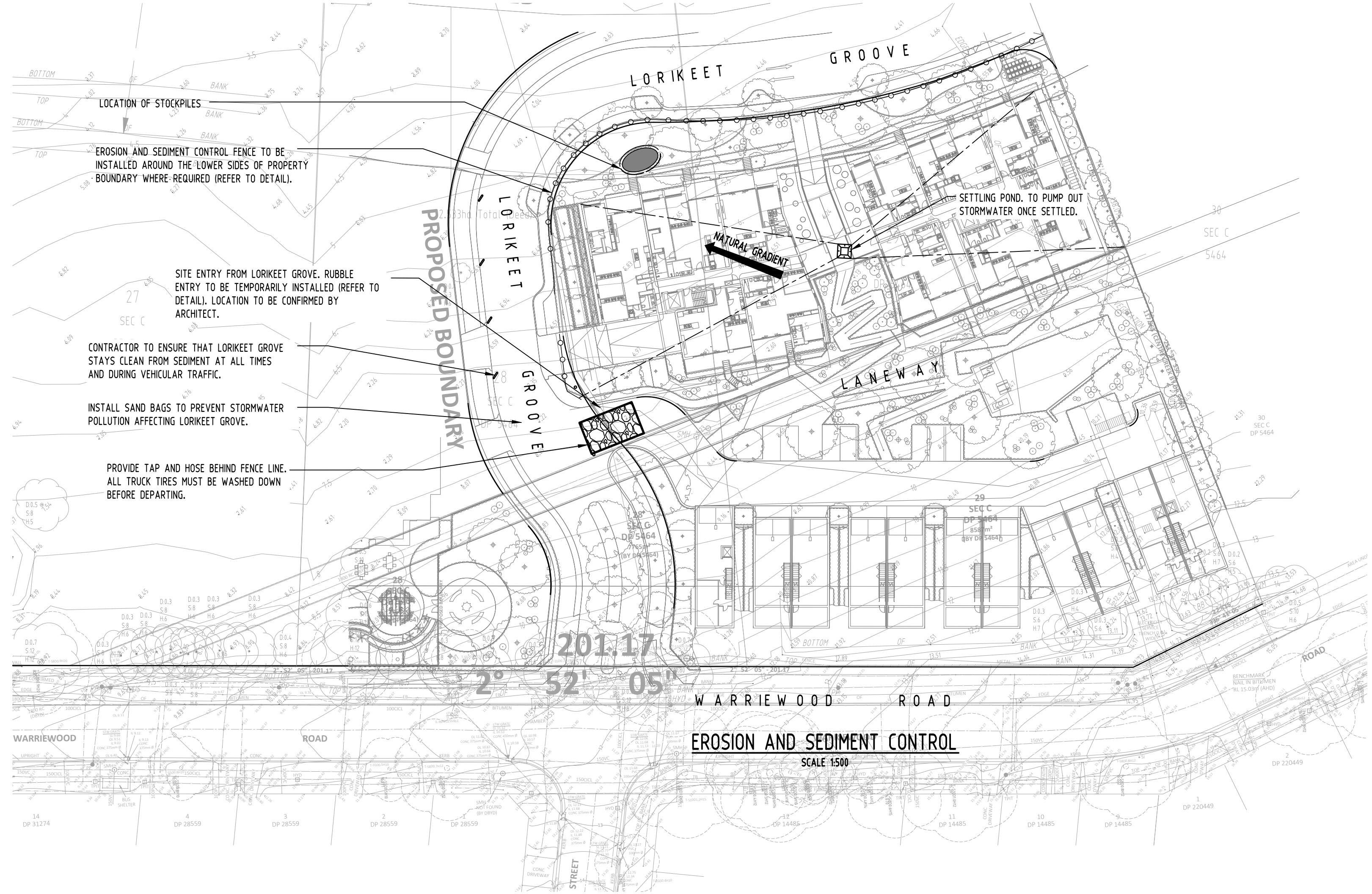
A.B.N. 21 118 222 530

PROJECT
PROPOSED RESIDENTIAL
APARTMENTS

25-27 WARRIEWOOD ROAD, WARRIEWOOD - STAGE II

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	9 OF 10	AS SHOWN

Drawing Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN DETAILS SHEET SHEET 2 OF 2		
Project No	Drawing No	Revision No	
20160112	SW301	D	



EROSION & SEDIMENTATION CONTROL NOTES

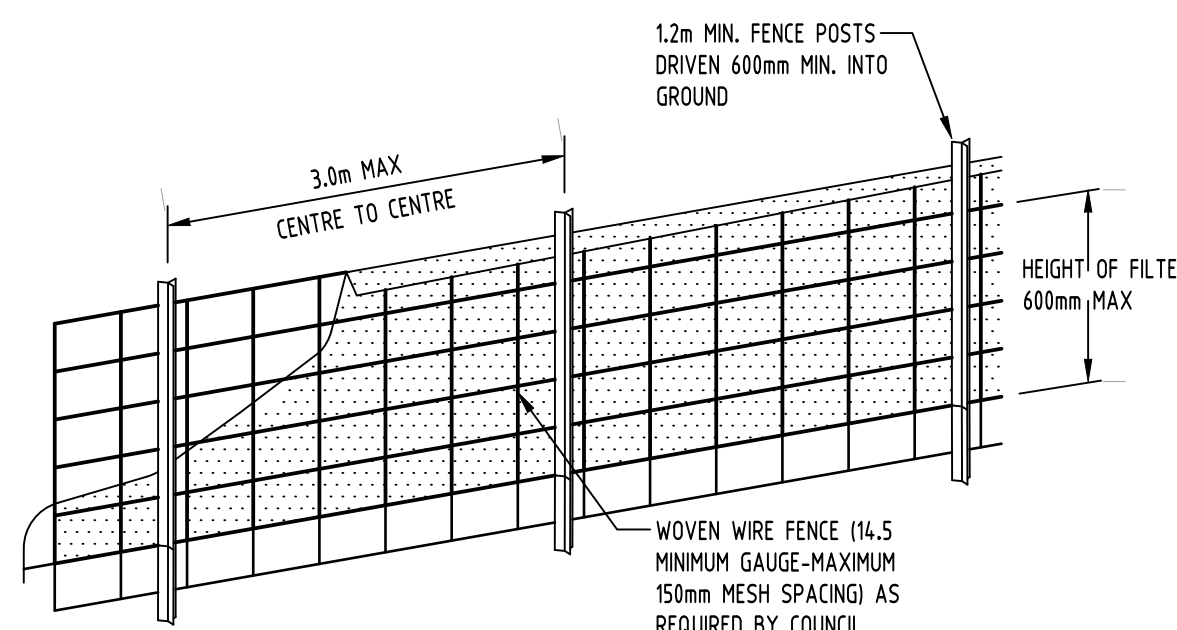
1. CONTRACTOR SHALL PROVIDE SEDIMENT FENCING MATERIAL DURING CONSTRUCTION TO THE LOW SIDE OF THE WORKS. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
2. EXISTING DRAINS LOCATED WITHIN THE SITE SHALL ALSO BE ISOLATED BY SEDIMENT FENCING MATERIAL.
3. NO PARKING OR STOCKPILING OF MATERIALS IS PERMITTED ON THE LOWER SIDE OF THE SEDIMENT FENCE.
4. GRASS VERGES SHALL BE MAINTAINED AS MUCH AS PRACTICAL TO PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
5. CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING & LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

GENERAL NOTES

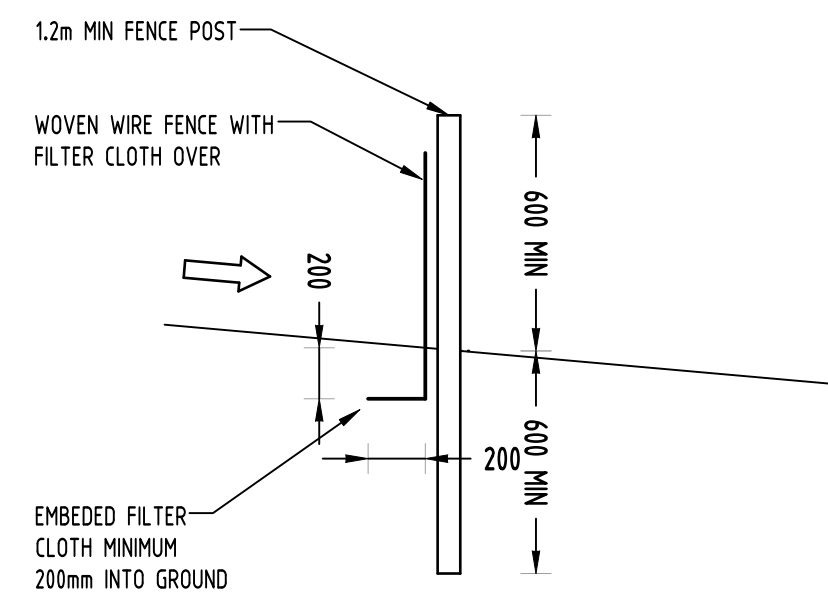
1. THIS PLAN IS A CONCEPT PLAN ONLY FOR STORMWATER DISPOSAL & EROSION CONTROL. IT IS NOT SUITABLE FOR CONSTRUCTION. THIS PLAN SHOULD BE ADAPTED BY THE BUILDER DURING DEMOLITION, EXCAVATION & CONSTRUCTION PHASES TO ENSURE ADEQUATE PERFORMANCE.
2. ALL DRAINAGE LAYOUT & DETAILS ARE DIAGMATIC & INDICATIVE ONLY. ACTUAL LOCATION, SIZES, LEVELS & GRADES MAY ALTER WHEN DETAIL DESIGN WORKS ARE DOCUMENTED.

CLAY SOILS

- A SYSTEM SHALL BE INSTALLED TO EITHER:
1. TRANSPORT STORMWATER RUNOFF WITH SUSPENDED SOLIDS FROM SITE VIA PUMP TRUCKS.
 2. TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL

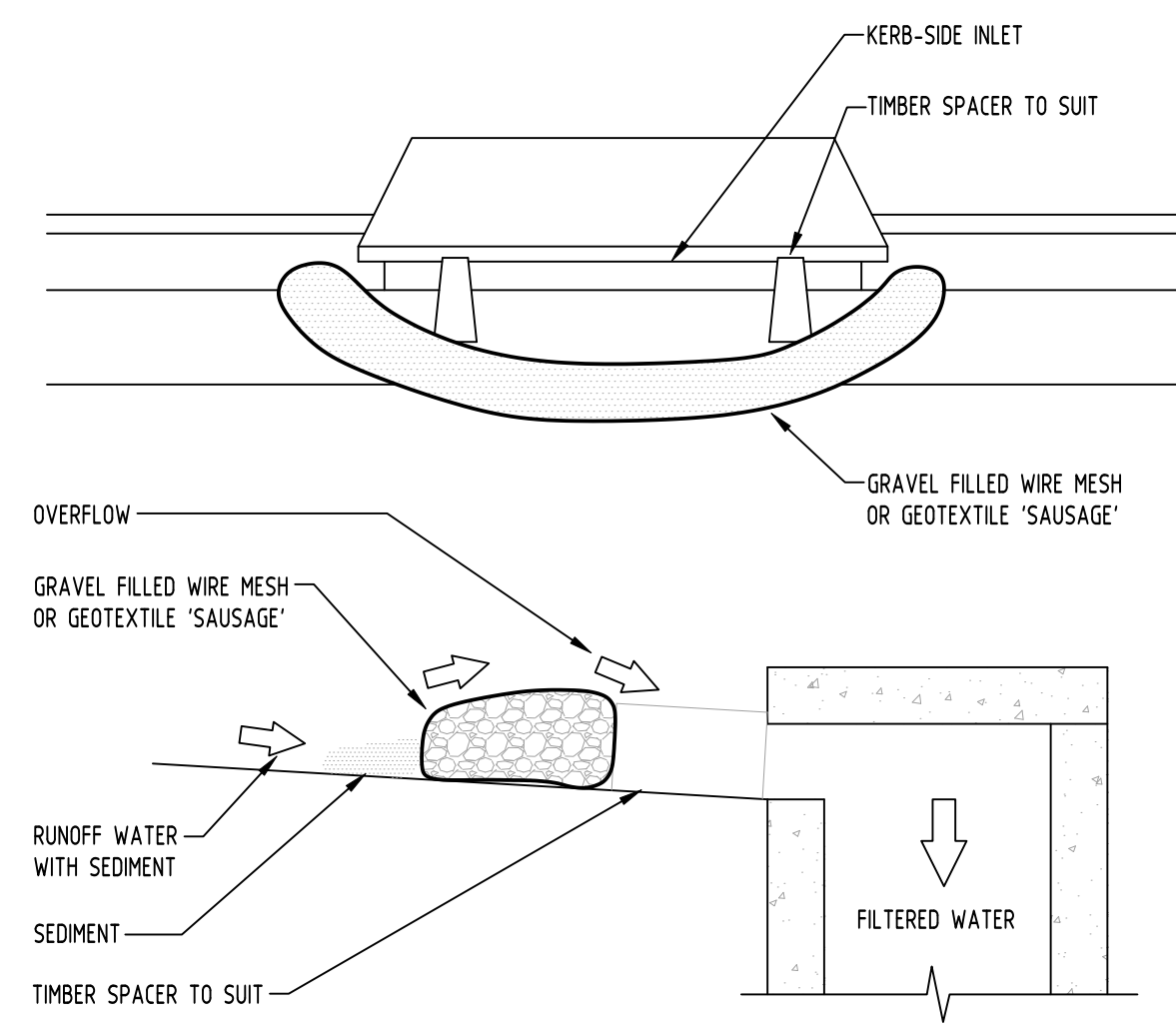


DIAGMATIC VIEW



TYPICAL SECTION

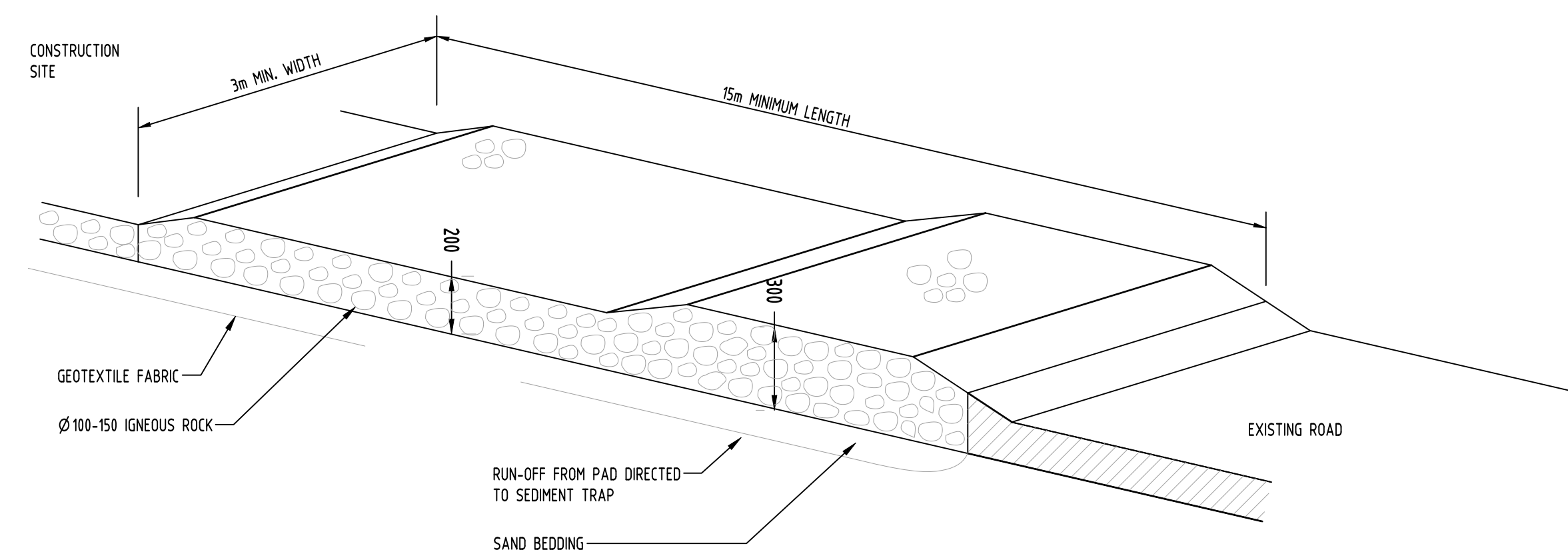
SEDIMENT FENCE NOT TO SCALE



CONSTRUCTION NOTES:

- FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAT THE LENGTH OF THE INLET PIT
- FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL
- FORM AN ELLIPTICAL CROSS-SECTION OF THE KERB INLET LEAVING A 100mm GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY
- MAINTAIN THE OPENING WITH SPACER BLOCKS
- FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER
- FIT TO ALL KERB INLETS AT SAG POINTS

GRAVEL INLET FILTER (SAUSAGE) NOT TO SCALE



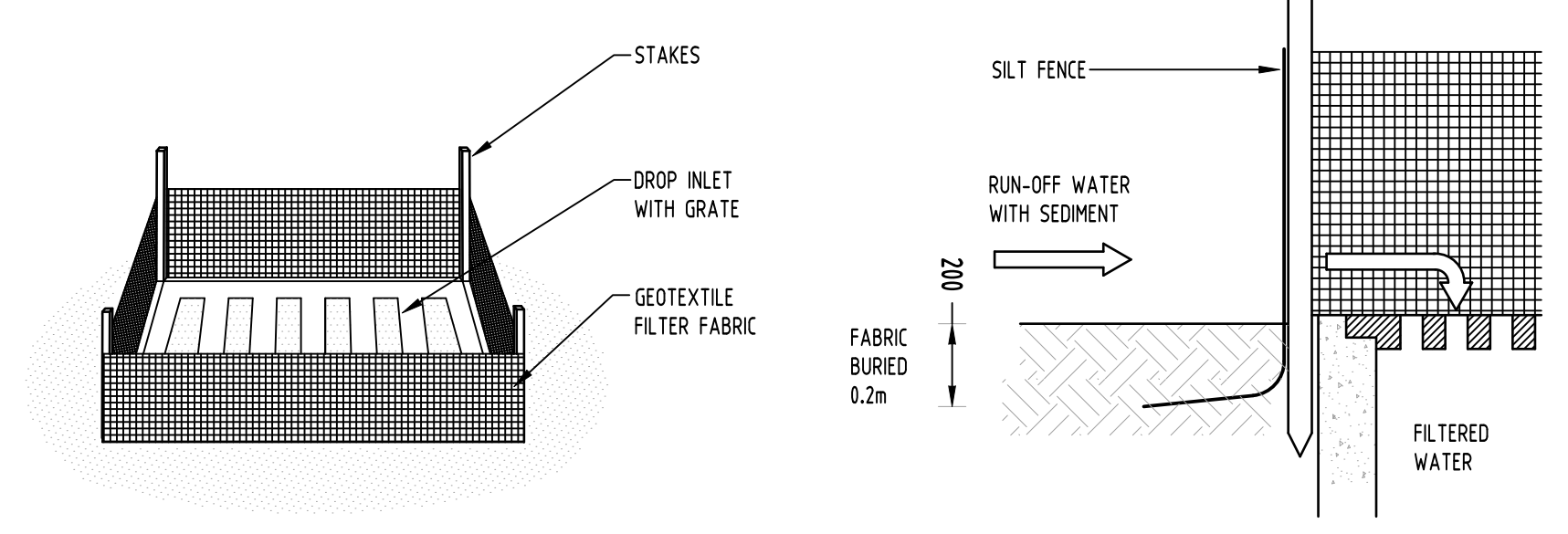
TEMPORARY CONSTRUCTION EXIT RUBBLE ALTERNATIVE NOT TO SCALE

LEGEND

SEDIMENT FENCE

STABILISED SITE ACCESS

SANDBAGS



GEOTEXTILE INLET FILTER NOT TO SCALE

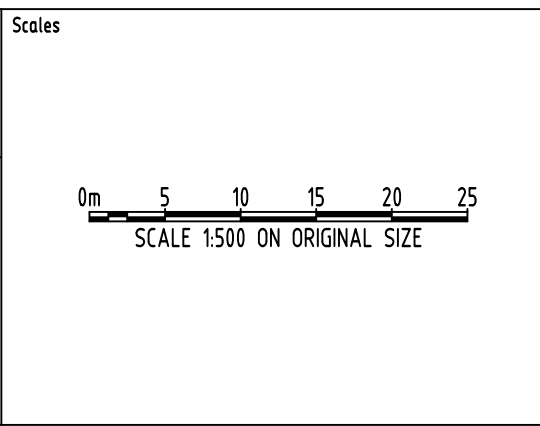
				Reference Coordination Drawing				
D	ISSUE FOR DA	MS	26.05.20	2	Discipline	Drawing Title and Number	Date	Rev
C	ISSUE FOR DA	MS	15.05.20	2	ARCH			
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH			
A	ISSUE FOR DA	RJ	30.04.20	2	STRUCT			
P3	PRELIMINARY ISSUE	MS	24.02.20	1	MECH			
P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC			
P1	PRELIMINARY ISSUE	MS	29.11.19	1	HYD			
Issue	Last revision title	by	Date	Status	FIRE			
Issuer internal sequence and revision history								
1-preliminary	2-development application	3-construction certificate			LANDS			
4-tender	5-construction	6-other			CIVIL			
					SURVEY			

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QUALITY CONTROL			
DRAWN	MS	DATE	26.05.20
CHECKED	SH	DATE	26.05.20
DESIGNED	MS	DATE	26.05.20
VERIFIED	SH	DATE	26.05.20
APPROVED	SH	DATE	26.05.20

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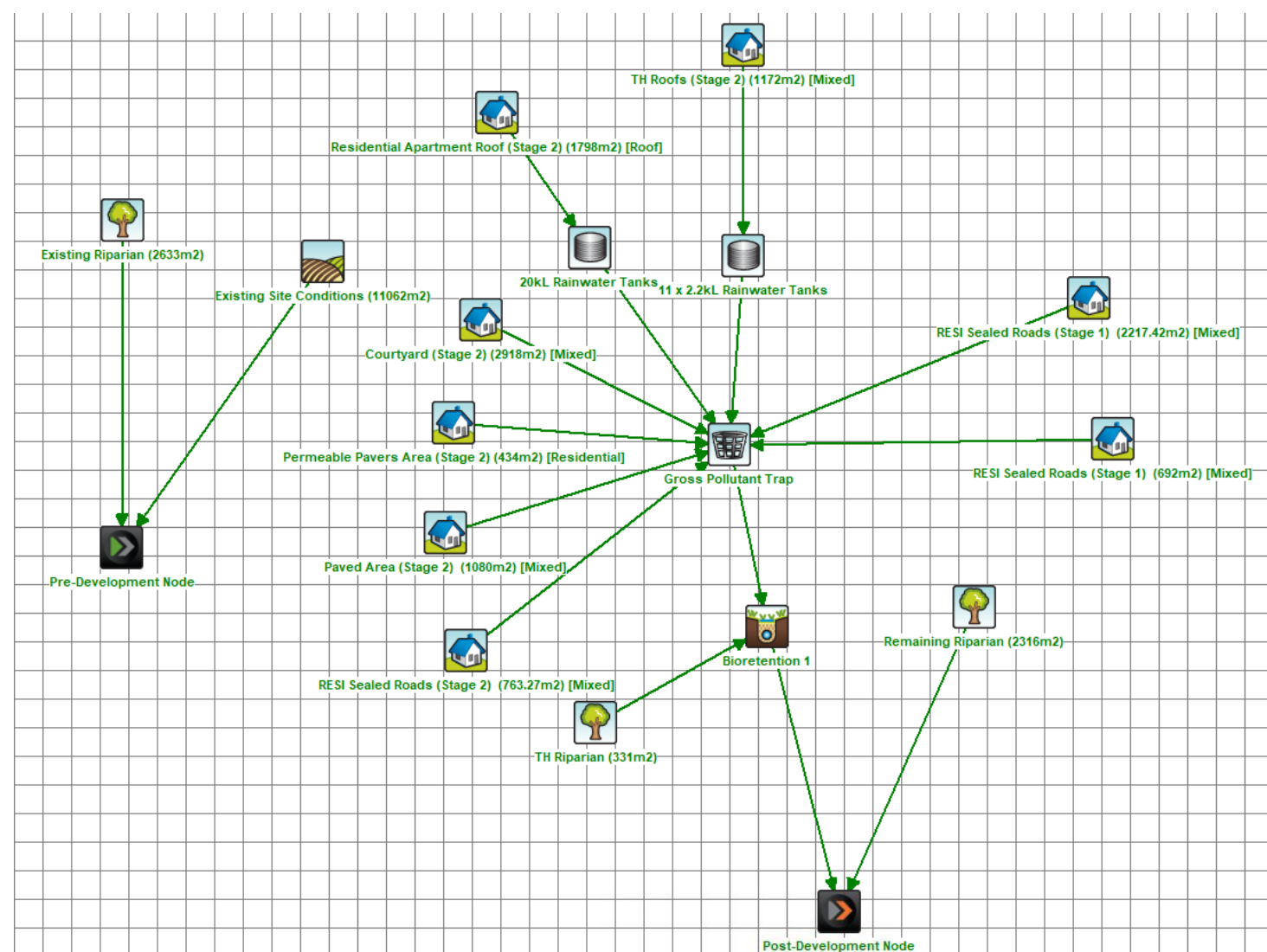
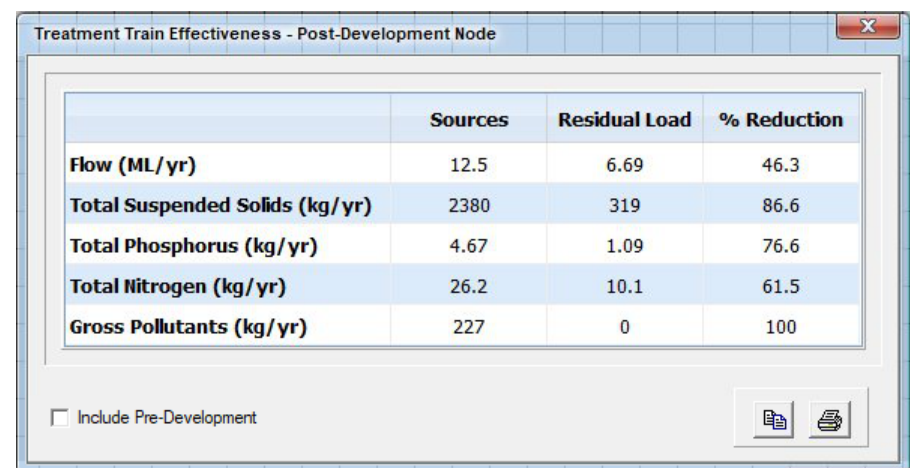
A.B.N. 21 118 222 530

PROJECT

PROPOSED RESIDENTIAL APARTMENTS




23-27 WARRIWOOD ROAD, WARRIWOOD - STAGE II

Drawing Status			FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Drawing Title			EROSION AND SEDIMENT CONTROL PLAN AND DETAILS		
Project No	Drawing No	Revision No			
20160112	SW400	D			
Grid	Datum	Sheet	Scale (at original size)		
-	A.H.D.	9 OF 10	1500 @ A1		



MUSIC MODEL AND RESULT

TOWNHOUSES CATCHMENT (BIORETENTION 1) STAGE 1






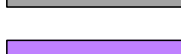

- | | |
|---|--|
|  | RIPARIAN ZONE INTO BIO 1. AREA: 331m ² , 100% PERVIOUS
(OUTSIDE STAGE 2 SITE AREA) |
|  | SEALED ROADS LANDSCAPE INTO GPT & BIO 1. AREA: 692m ² , 100% PERVIOUS |
|  | SEALED ROADS INTO GPT & BIO 1. AREA: 2217m ² , 100% IMPERVIOUS |

AGEDCARE (AC) CATCHMENT (BIORETENTION 2)


STAGE 2 MUSIC CATCHMENT SUMMARY

TOTAL PVIOUS AREA EXCLUDING ROADS (m2)	TOTAL SITE AREA EXCLUDING ROADS (m2)	PVIOUS (%) (OF STAGE 2 SITE AREA)
3353	8187	41.00

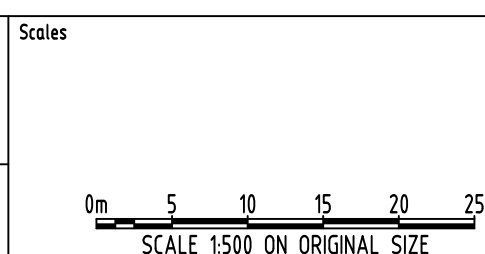
TOWNHOUSE CATCHMENT (BIORETENTION 1) STAGE 2

- | | |
|---|---|
|  | AREA WHICH MUSIC MODEL HAS BEEN APPROVED IN DA N0611/16 |
|  | COURTYARD INTO GPT & BIO 1. AREA: 2918m ² , 100% PERVIOUS |
|  | RESIDENTIAL APARTMENT ROOF INTO 20000L RWT, GPT & BIO 1. AREA: 1798m ² , 100% IMPERVIOUS |
|  | 11 TOWNHOUSES ROOF INTO 11x2200L RWT, GPT & BIO 1. AREA: 1172m ² , 100% IMPERVIOUS |
|  | SEALED ROADS INTO GPT & BIO 1. AREA: 763.3m ² , 100% IMPERVIOUS |
|  | PAVED AREA INTO GPT & BIO 1. AREA: 1082m ² , 100% IMPERVIOUS |
|  | PERMEABLE PAVING INTO GPT & BIO 1. AREA: 434.3m ² , 100% PERVIOUS |

			Reference Coordination Drawing			
D	ISSUE FOR DA	MS	26.05.20	2	Discipline	Date
C	ISSUE FOR DA	MS	15.05.20	2	ARCH	Rev.
B	ISSUE FOR DA	RJ	05.05.20	2	ARCH	
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P2	PRELIMINARY ISSUE	MS	17.01.20	1	ELEC	
P1	PRELIMINARY ISSUE	MS	28.11.19	1	HYD	
Issue	Last revision title	by	Date	Status	PRE	
Issuer internal sequence and revision history 1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other LANS CIVIL SURVEY						

 ENGINEERS AUSTRALIA <small>Engineers' Professional Engineer</small> MEMBER	QUALITY CONTROL			
	DRAWING	MS	DATE	26.05.20
DIMENSIONS NOT SHOWN TO BE CHECKED ON SITE. DO NOT SCALE OF THE DRAWING. POSTING OF AUTHORITIES MARKS AND/OR EXISTING EXPENSES TO BE CHECKED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE CONSULTING ENGINEER IMMEDIATELY ON DISCOVERY BEFORE PROCEEDING WITH THE WORK. THE DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER SPECIAL TENDR DRAWINGS.	CHECKED	SH	DATE	26.05.20
	DESIGNED	MS	DATE	26.05.20
	VERIFIED	SH	DATE	26.05.20
	APPROVED	SH	DATE	26.05.20

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PROJECT
PROPOSED RESIDENTIAL
APARTMENTS & DWELLING/
SEMI-DETACHED DWELLINGS
25-27 WARRIEWOOD ROAD WARRIEWOOD - STAGE II

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	10 OF 10	1:500 @ A1

Drawing Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
Drawing Title	STORMWATER CONCEPT DESIGN MUSIC CATCHMENT PLAN

Project No	Drawing No	Revision No
20160112	SW500	D