THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00

PROPOSED DEVELOPMENT

STORMWATER_241012_12 THE STRAND, DEE WHY

GENERAL NOTES

1. THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS.
2. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES.
3. SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS.

STORMWATER CONSTRUCTION NOTES

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES.
2. THE MINIMUM SIZES OF THE STORMWATER DRAINS SHALL NOT BE LESS THAN DN90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY AND SHALL BE SEWER GRADE uPVC TYPE SN8 MIN.
3. THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE.
4. COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED.
5. PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE.
6. ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP.
7. MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK.
8. VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION.
9. SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION.
10. ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY SYJ CONSULTING ENGINEERS PRIOR TO THEIR COMMENCEMENT.

SEDIMENT AND EROSION CONTROL

1. THESE NOTES ARE TO BE READ IN CONJUNCTION WITH LANDCOM'S SOILS AND CONSTRUCTION 'MANAGING URBAN STORMWATER'.
2. SEDIMENT AND EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND MAINTAINED DURING AND AFTER THE CONSTRUCTION WORKS.
3. SOIL AND SEDIMENT CONTROL DEVICES SHALL BE AS SHOWN IN THE DRAWINGS. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES AND REMOVE ACCUMULATED SEDIMENT FROM SUCH DEVICES BEFORE 50% CAPACITY IS USED. ALL THE ACCUMULATED SEDIMENT SHALL BE RE-SPREAD OR REMOVED IN ACCORDANCE WITH THE SUPERINTENDENTS INSTRUCTIONS. THE DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME AS THE DISTURBED AREAS HAVE BEEN REHABILITATED TO A CONDITION SATISFACTORY TO THE SUPERINTENDENT.
4. NO DISTURBANCE OF SITE PERMITTED OTHER THAN THE IMMEDIATE AREA OF THE WORKS.
5. COUNCIL TO RE-INSPECT TREES PRIOR TO THE CONSTRUCTION WORKS COMMENCING.
6. NO TREES ARE TO BE REMOVED WITHOUT PRIOR COUNCIL CONSENT.
7. VEHICULAR ACCESS TO THE SITE SHALL BE CONTROLLED THROUGH THE ACCESS POINTS IDENTIFIED ON THE DRAWINGS. VEHICLES NOT REQUIRED IN THE PERFORMANCE OF THE WORKS SHALL BE PARKED OFF SITE AWAY FROM DISTURBED AREAS.
8. A VEHICLE WASHDOWN BAY INCLUDING A 25mmØ HOSE SHALL BE PROVIDED.
9. THESE PLANS ARE SUPPLEMENTARY TO THE CONTRACTORS EMP FOR CONSTRUCTION AND SHALL BE READ IN CONJUNCTION WITH THE BUILDING CONTRACTORS E&SC PLANS
10. THE CONTRACTOR SHALL ENSURE TEMPORARY CONTROLS DO NOT DAMAGE EXISTING STRUCTURES.
11. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
12. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED FOLLOWING EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED SITE.
13. THE CONTRACTOR SHALL INFORM ALL SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN
14. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF THE DAYS ACTIVITIES.
15. THE CONTRACTOR MUST ENSURE THE SUITABILITY AND INTEGRITY OF ALL WORKS AT THE END OF EACH DAYS WORK.
16. NOMINATED UNDISTURBED AREAS SHALL BE BARRICADED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
17. PUBLIC ROADS ARE TO BE SWEPT FREE OF DEBRIS RESULTING FROM CONSTRUCTION ACTIVITIES. SWEEPING SHALL BE UNDERTAKEN AT A MINIMUM TWICE WEEKLY.
18. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED ON EXISTING ACCESS TRACKS OR ROADWAYS SO AS NOT TO ENCROACH ON TRAFFIC. ALL EROSION CONTROL MEASURES PLACED SHALL BE CLEARLY IDENTIFIABLE DURING BOTH DAY AND NIGHT. EROSION CONTROL MEASURES SHALL BE COORDINATED WITH THE CONTRACTORS TRAFFIC MANAGEMENT PLANS IN ORDER TO LIMIT 'CLUTTERING' OF THE EXISTING TRAFFICABLE AREAS.
19. PROVIDE 150mm TOPSOIL WITH TURF OR GRASS SEEDING ON ALL BATTERS & DISTURBED AREAS.
20. TURFED AREAS ADJACENT TO CONSTRUCTION AREA ARE TO BE MAINTAINED TO PROVIDE A VEGETATED BUFFER STRIP.
21. THE CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL PRIOR TO EXCAVATION OR FILLING. TOPSOIL SHALL BE RESPREAD ON THE COMPLETION OF EARTHWORKS.
22. THE CONTRACTOR SHALL STABILISE ALL DISTURBED AREAS AND STOCKPILES WITHIN 14 DAYS.
23. THE CONTRACTOR SHALL INSTALL A MIN. 300mm WIDE STRIP OF TURF BEHIND THE KERB.
24. THE CONTRACTOR SHALL PROVIDE A MIN. 1m WIDE TURFING AROUND ALL SURFACE INLET PITS.

SITE LOCALITY PLAN
NOT TO SCALE

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client
-

Project
12 THE STRAND
DEE WHY

Sheet Subject
COVER PAGE

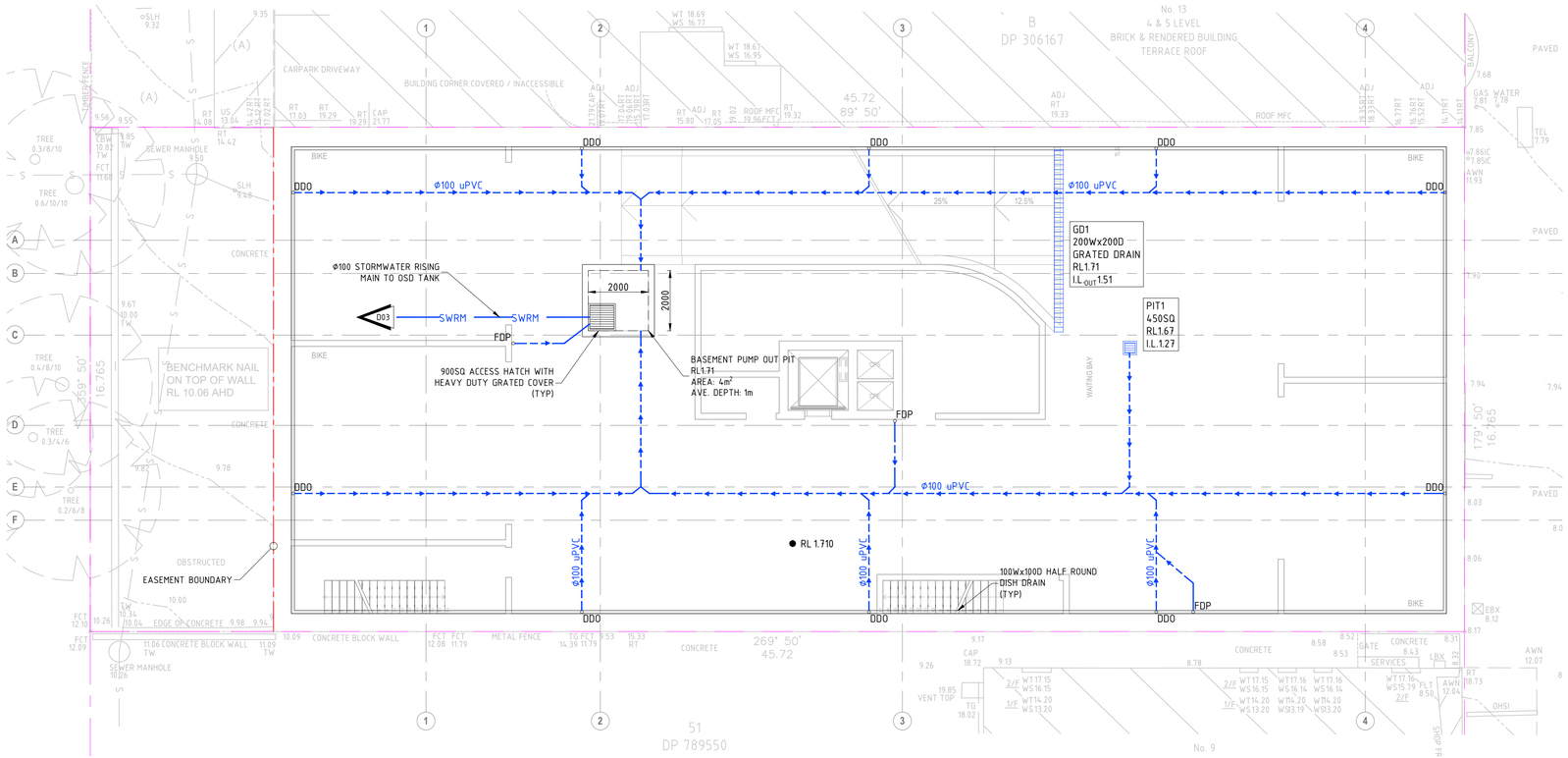
Architect
-

Structural Engineer
SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3566
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D00	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



BASEMENT 02 STORMWATER MANAGEMENT PLAN

1:100

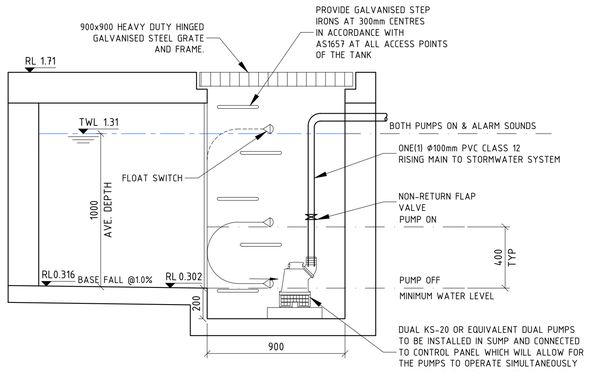
MEMBER SCHEDULE	
MARK	SIZE/TYPE
RWO	RAINWATER OUTLET WITH Ø150 GRATE COVER
FLW	FLOOR WASTE WITH Ø150 GRATE COVER
PD	PLANTER DRAIN

PIPE NOTES:

Ø65 uPVC AT MIN. 1% FALL
Ø90 uPVC AT MIN. 1% FALL
Ø100 uPVC AT MIN. 1% FALL
Ø150 uPVC AT MIN. 1% FALL
Ø225 uPVC AT MIN. 0.5% FALL
Ø300 uPVC AT MIN. 0.4% FALL
UNLESS NOTED OTHERWISE

STORMWATER NOTES

1. ALL PIPES TO BE Ø100mm UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5. ALL PIPES SHOWN ON PLAN ARE SHOWN INDICATIVELY ONLY & MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS3500.
6. ALL DOWN PIPES TO BE Ø100mm UNLESS NOTED OTHERWISE.
7. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
8. PROVIDE CLEANING EYES AT ALL DOWNPIPES U.N.O.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
11. ALL LEVELS SHOWN ARE TO AHD.
12. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
13. EXCAVATION OF TRENCHES ADJACENT TO TREES TO BE CARRIED OUT USING HAND TOOLS ONLY.
14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.
16. THE FOLLOWING ABBREVIATION DENOTES:
    FFL - FINISHED FLOOR LEVEL
    INV - INVERT



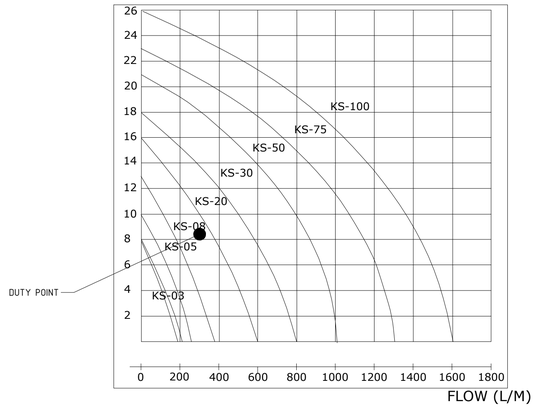
TYPICAL SECTION THROUGH PUMP-OUT PIT
SCALE NTS

NOTES: PUMP WELL:

1. PROVIDE DUAL SUBMERSIBLE, SELF ACTIVATING PUMP SET WITH EACH PUMP RATED AT 5 L/s DISCHARGE RATE OVER 3.2m HEAD.
2. VALUE OF HEAD TO BE CONFIRMED ONCE EXCAVATION COMPLETE & PRIOR TO ORDERING PUMPS.
3. PUMP SIZE AND PRESSURE PIPE DIAMETER TO BE DETERMINED BY PUMP MANUFACTURER.
4. SET PUMPS TO ALTERNATE PUMP ACTIVATION.
5. PROVIDE HIGH LEVEL DUAL PUMP ACTIVATION.
6. PROVIDE VISIBLE ALARM IN CASE OF PUMP FAILURE.
7. PUMPS TO BE FITTED SECURELY INSIDE PUMP OUT WELL.
8. PROVIDE GATE AND NON-RETURN VALVES TO DELIVERY SIDE OF EACH PUMP.
9. LOCATE HIGH AND LOW LEVEL ALARMS CLEAR OF INLETS TO PREVENT FALSE ALARMS.
10. PROVIDE LITTER SCREEN ABOVE PUMP SET.

Type	Output		Outlet		Rated Head Capacity		Maximum Head	Maximum Capacity	Weigh	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM	Kg	L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

HEAD (M)



PUMP STORAGE VOLUME CALCULATION

AREA DRAINING TOWARDS SUMP: 38.7m²
100Yr 2Hr INTENSITY: 46.4mm/hr

Q = CIA/3600 = 1x46.4x38.7/3600 = 0.5L/s

VOLUME REQUIRED: 0.5x2x60x60 = 3600L = 3.6m³

STORAGE PROVIDED: 2x2x1 = 4m³

PUMP OUT RATE BASED ON 100Yr 5MIN. STORM = 262mm/hr

Q = CIA/3600 = 1x262x38.7/3600 = 2.82L/s

PUMP RATE ADOPTED: 10L/s (MIN. REQUIREMENT AS PER AS3500)

DUAL KS-20 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMP TO OPERATE SIMULTANEOUSLY ON HIGH LEVEL AT 10 L/s AT 7m HEAD.

NOTE

BASEMENT DRAINAGE SYSTEM TO BE APPROVED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

NOTE

REFER TO ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS

PUMP OUT PIT NOTES:

THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:

1. THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
2. A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
3. A SECOND FLOAT SHALL BE PROVIDE AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
4. AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
5. A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH BAYSIDE COUNCIL POLICY

WARNING

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

COLOURS :
WARNING - RED
BORDER AND OTHER - BLACK

NOTES:

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT.

A SUITABLE ALARM SYSTEM POSITIONED AT ENTRANCE OF BASEMENT CARPARK TO PROVIDE A FLOOD WARNING IN CASE OF PUMP FAILURE (TO COUNCILS SPEC).

TYPICAL PUMP FAILURE SIGN
SCALE NTS

COLOURS:

"DANGER" AND BACKGROUND	WHITE
ELLIPTICAL AREA	RED
RECTANGLE CONTAINING ELIPSE	BLACK
OTHER LETTERING AND BORDER	BLACK

MATERIALS:
POLYPROPYLENE

TYPICAL CONFINED SPACE WARNING SIGN
SCALE NTS

LEGENDS

- DENOTES PROPOSED STORWMATER TO OSD
- DENOTES PROPOSED STORMWATER TO RWT
- DENOTES PROPOSED STORWMATER BYPASSING OSD
- DENOTES SUBSOIL DRAINAGE LINE
- DENOTES PIPE OVERCROSSING (MIN.150mm CLEARANCE)
- DP — DENOTES ROOF GUTTER DOWNPIPE
- RWO — DENOTES RAINWATER OUTLET
- FLW — DENOTES FLOOR WASTES
- FP — DENOTES FLUSH POINT
- RL 27.6 — DENOTES DESIGN SURFACE LEVELS
- RL 42.5 — DENOTES EXISTING SURFACE LEVELS
- FFL 42.5 — DENOTES DESIGN FLOOR FINISH LEVELS
- $I.L._{IN}$ — DENOTES INLET INVERT LEVELS
- $I.L._{OUT}$ — DENOTES OUTLET INVERT LEVELS
- $I.L._{PIT}$ — DENOTES PIT INVERT LEVELS
- FALL — DENOTES SURFACE FLOW DIRECTION
- DENOTES PROPOSED OSD STORAGE
- DENOTES AREA BYPASSING OSD
- DENOTES MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS
- DENOTES SEDIMENT FENCE

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client
-

Project
12 THE STRAND
DEE WHY

Sheet Subject
BASEMENT 02 STORMWATER MANAGEMENT PLAN

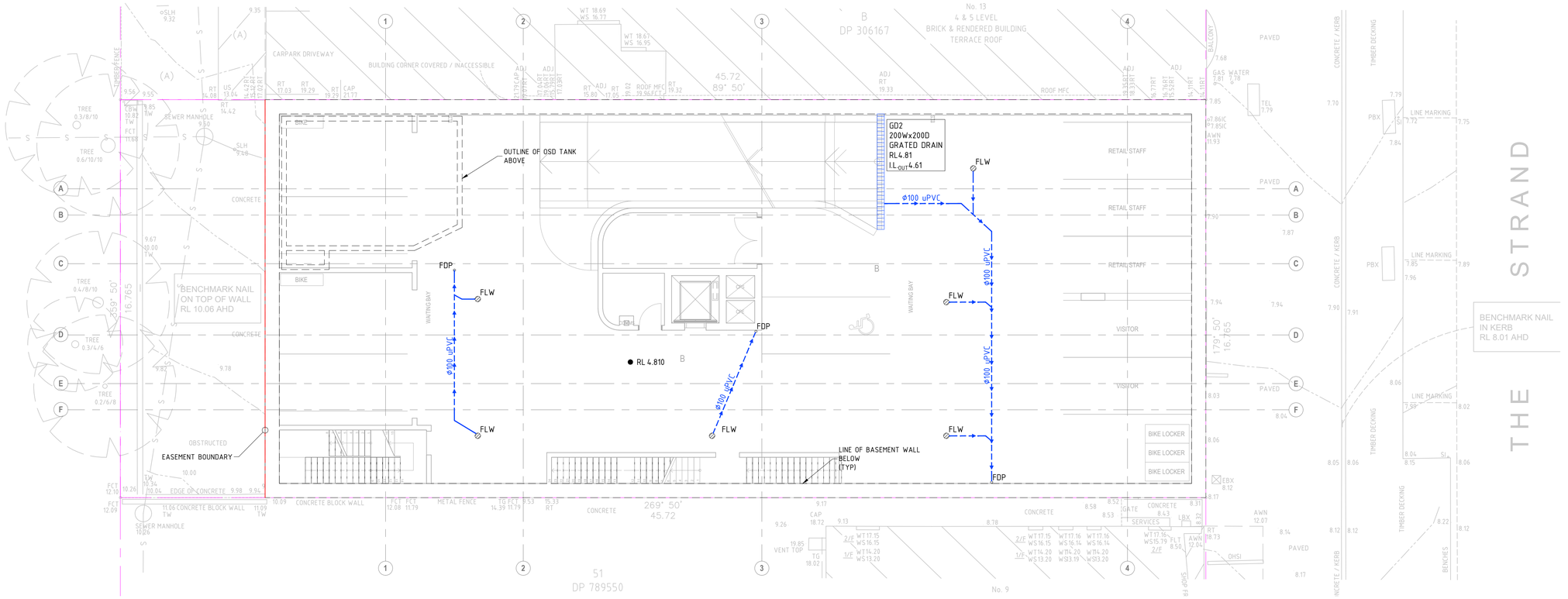
Architect
-

Structural Engineer
SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D01	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



BASEMENT 01 STORMWATER MANAGEMENT PLAN

1:100

MEMBER SCHEDULE	
MARK	SIZE/TYPE
RWO	RAINWATER OUTLET WITH Φ150 GRATE COVER
FLW	FLOOR WASTE WITH Φ150 GRATE COVER
PD	PLANTER DRAIN

PIPE NOTES:

Φ65 uPVC AT MIN. 1% FALL
Φ90 uPVC AT MIN. 1% FALL
Φ100 uPVC AT MIN. 1% FALL
Φ150 uPVC AT MIN. 1% FALL
Φ225 uPVC AT MIN. 0.5% FALL
Φ300 uPVC AT MIN. 0.4% FALL
UNLESS NOTED OTHERWISE

STORMWATER NOTES

1. ALL PIPES TO BE Φ100mm UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5. ALL PIPES SHOWN ON PLAN ARE SHOWN INDICATIVELY ONLY & MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS3500.
6. ALL DOWN PIPES TO BE Φ100mm UNLESS NOTED OTHERWISE.
7. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
8. PROVIDE CLEANING EYES AT ALL DOWNPIPES U.N.O.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
11. ALL LEVELS SHOWN ARE TO AHD.
12. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
13. EXCAVATION OF TRENCHES ADJACENT TO TREES TO BE CARRIED OUT USING HAND TOOLS ONLY.
14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.
16. THE FOLLOWING ABBREVIATION DENOTES:
    FFL - FINISHED FLOOR LEVEL
    INV - INVERT

LEGENDS

- DENOTES PROPOSED STORMWATER TO OSD
- DENOTES PROPOSED STORMWATER TO RWT
- DENOTES PROPOSED STORMWATER BYPASSING OSD
- DENOTES SUBSOIL DRAINAGE LINE
- DENOTES PIPE OVERCROSSING (MIN.150mm CLEARANCE)
- DP — DENOTES ROOF GUTTER DOWNPIPE
- RWO — DENOTES RAINWATER OUTLET
- FLW — DENOTES FLOOR WASTES
- FP — DENOTES FLUSH POINT
- RL 27.6 — DENOTES DESIGN SURFACE LEVELS
- RL 42.5 — DENOTES EXISTING SURFACE LEVELS
- FFL 42.5 — DENOTES DESIGN FLOOR FINISH LEVELS
- $I.L_{IN}$ — DENOTES INLET INVERT LEVELS
- $I.L_{OUT}$ — DENOTES OUTLET INVERT LEVELS
- $I.L_{PIT}$ — DENOTES PIT INVERT LEVELS
- FALL — DENOTES SURFACE FLOW DIRECTION
- DENOTES PROPOSED OSD STORAGE
- DENOTES AREA BYPASSING OSD
- DENOTES MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS
- DENOTES SEDIMENT FENCE

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client

-

Project

12 THE STRAND
DEE WHY

Sheet Subject

BASEMENT 01 STORMWATER MANAGEMENT PLAN

Architect

-

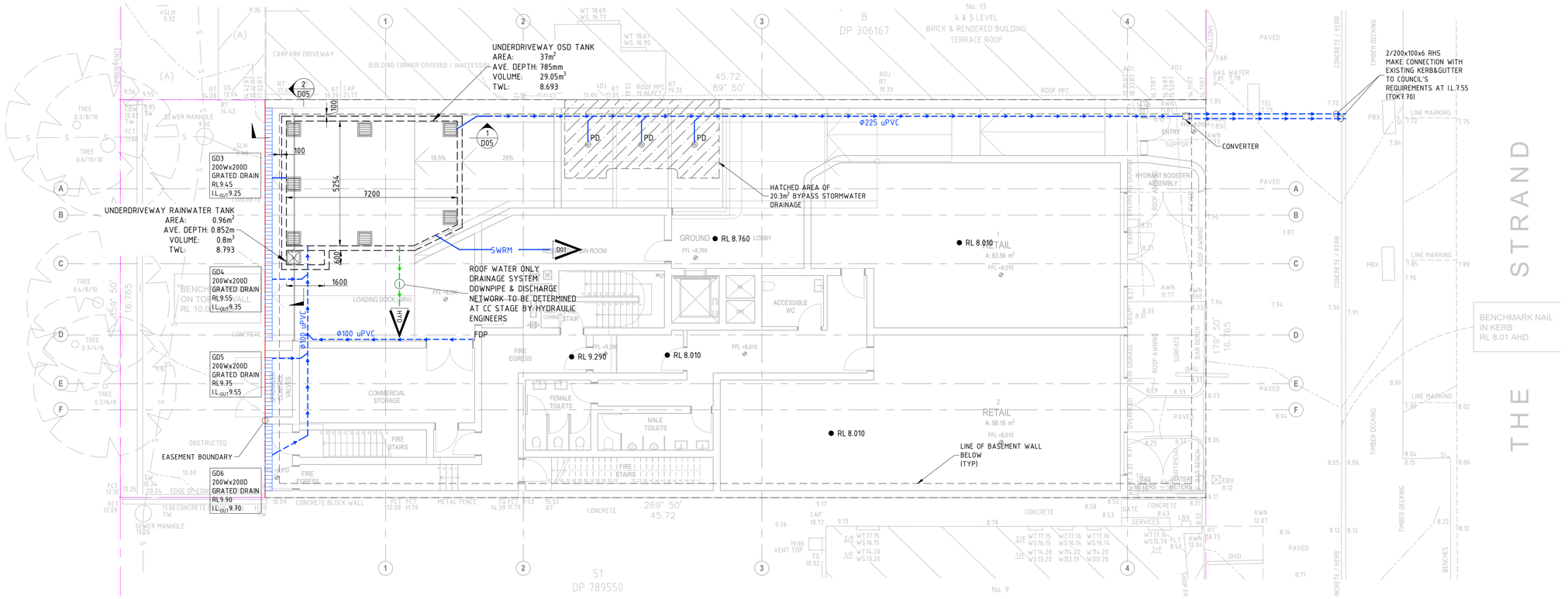
Structural Engineer

SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St,
Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D02	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



SITE STORMWATER MANAGEMENT PLAN

1:100

LEGENDS

- DENOTES PROPOSED STORMWATER TO OSD
- DENOTES PROPOSED STORMWATER TO RWT
- DENOTES PROPOSED STORMWATER BYPASSING OSD
- DENOTES SUBSOIL DRAINAGE LINE
- DENOTES PIPE OVERCROSSING (MIN.150mm CLEARANCE)
- DP — DENOTES ROOF GUTTER DOWNPIPE
- RWO — DENOTES RAINWATER OUTLET
- FLW — DENOTES FLOOR WASTES
- FP — DENOTES FLUSH POINT
- RL 27.6 — DENOTES DESIGN SURFACE LEVELS
- RL 42.5 — DENOTES EXISTING SURFACE LEVELS
- FFL 42.5 — DENOTES DESIGN FLOOR FINISH LEVELS
- $I.L._{IN}$ — DENOTES INLET INVERT LEVELS
- $I.L._{OUT}$ — DENOTES OUTLET INVERT LEVELS
- $I.L._{PIT}$ — DENOTES PIT INVERT LEVELS
- FALL — DENOTES SURFACE FLOW DIRECTION
- DENOTES PROPOSED OSD STORAGE
- DENOTES AREA BYPASSING OSD
- DENOTES MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS
- DENOTES SEDIMENT FENCE

MEMBER SCHEDULE	
MARK	SIZE/TYPE
RWO	RAINWATER OUTLET WITH Φ150 GRATE COVER
FLW	FLOOR WASTE WITH Φ150 GRATE COVER
PD	PLANTER DRAIN

PIPE NOTES:

Φ65 uPVC AT MIN. 1% FALL
Φ90 uPVC AT MIN. 1% FALL
Φ100 uPVC AT MIN. 1% FALL
Φ150 uPVC AT MIN. 1% FALL
Φ225 uPVC AT MIN. 0.5% FALL
Φ300 uPVC AT MIN. 0.4% FALL
UNLESS NOTED OTHERWISE

STORMWATER NOTES

1. ALL PIPES TO BE Φ100mm UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5. ALL PIPES SHOWN ON PLAN ARE SHOWN INDICATIVELY ONLY & MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS3500.
6. ALL DOWN PIPES TO BE Φ100mm UNLESS NOTED OTHERWISE.
7. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
8. PROVIDE CLEANING EYES AT ALL DOWNPIPES U.N.O.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
11. ALL LEVELS SHOWN ARE TO AHD.
12. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
13. EXCAVATION OF TRENCHES ADJACENT TO TREES TO BE CARRIED OUT USING HAND TOOLS ONLY.
14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.
16. THE FOLLOWING ABBREVIATION DENOTES:
    FFL – FINISHED FLOOR LEVEL
    INV – INVERT

DESIGN SUMMARY:

LGA: NORTHERN BEACHES COUNCIL
STORMWATER REGION: REGION 2 – CENTRAL STORMWATER REGION

ACCORDING NORTHERN BEACHES COUNCIL *WATER MANAGEMENT FOR DEVELOPMENT POLICY* SECTION 9.3.2, OSD TO BE DESIGNED IN ACCORDANCE WITH 'SIMPLIFIED METHOD' IN SECTION 9.3.2.4.

SITE AREA: 766.4m²

SITE IMPERVIOUS RATIO: 87%

IN ACCORDANCE WITH TABLE A8-2:

SITE SSR: 28.92m³

SITE PSD: 20L/s

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client

–

Project

12 THE STRAND
DEE WHY

Sheet Subject

SITE STORMWATER MANAGEMENT PLAN

Architect

–

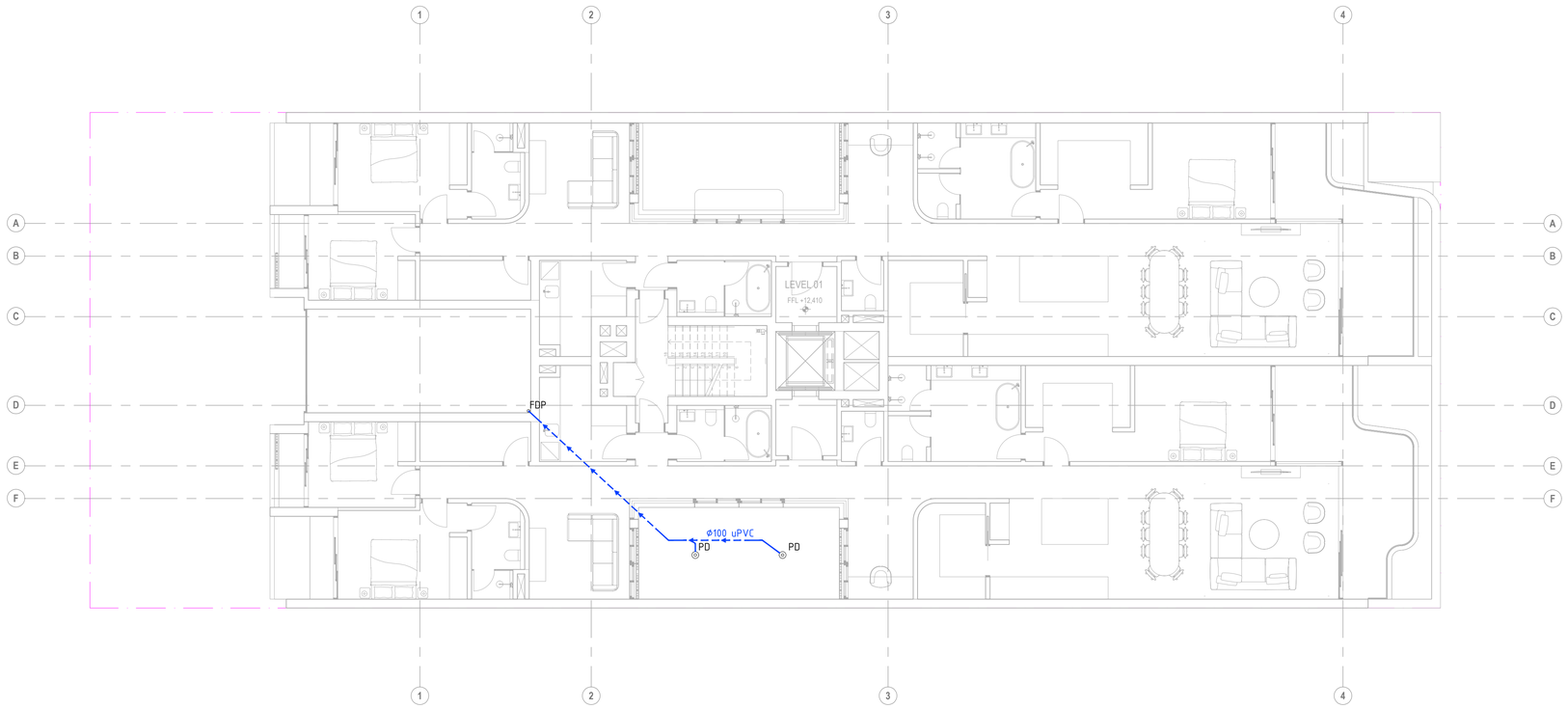
Structural Engineer

SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

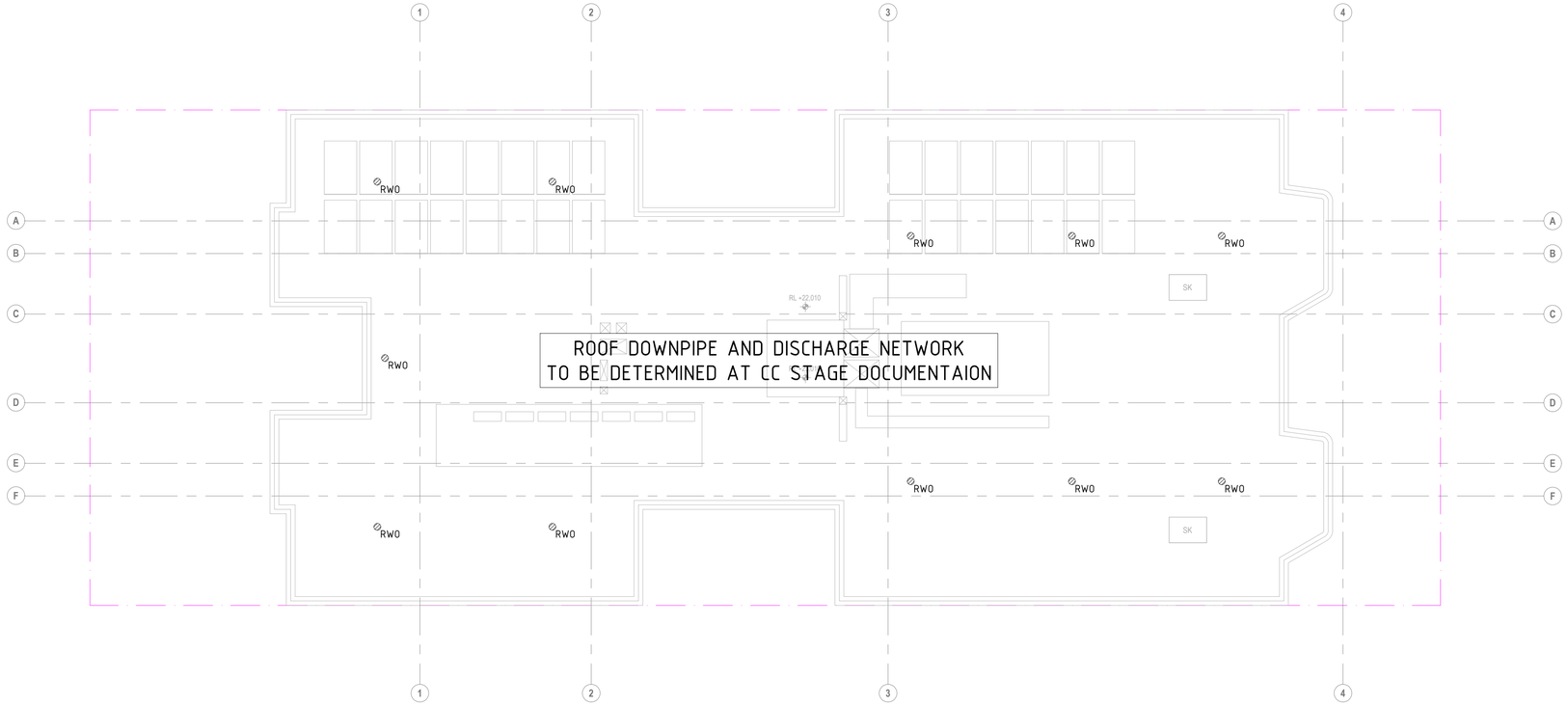
Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D03	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



FIRST FLOOR DRAINAGE PLAN
1:100



ROOF DRAINAGE PLAN
1:100

LEGENDS

- DENOTES PROPOSED STORWMATER TO OSD
- DENOTES PROPOSED STORMWATER TO RWT
- DENOTES PROPOSED STORWMATER BYPASSING OSD
- SSD — SSD — DENOTES SUBSOIL DRAINAGE LINE
- DENOTES PIPE OVERCROSSING (MIN.150mm CLEARANCE)
- DP — DENOTES ROOF GUTTER DOWNPIPE
- RWO — DENOTES RAINWATER OUTLET
- FLW — DENOTES FLOOR WASTES
- FP — DENOTES FLUSH POINT
- RL 27.6 — DENOTES DESIGN SURFACE LEVELS
- RL 42.5 — DENOTES EXISTING SURFACE LEVELS
- FFL 42.5 — DENOTES DESIGN FLOOR FINISH LEVELS
- $I.L_{IN}$ — DENOTES INLET INVERT LEVELS
- $I.L_{OUT}$ — DENOTES OUTLET INVERT LEVELS
- $I.L_{PIT}$ — DENOTES PIT INVERT LEVELS
- FALL — DENOTES SURFACE FLOW DIRECTION
- DENOTES PROPOSED OSD STORAGE
- DENOTES AREA BYPASSING OSD
- DENOTES MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS
- DENOTES SEDIMENT FENCE

MEMBER SCHEDULE	
MARK	SIZE/TYPE
RWO	RAINWATER OUTLET WITH Ø150 GRATE COVER
FLW	FLOOR WASTE WITH Ø150 GRATE COVER
PD	PLANTER DRAIN

PIPE NOTES:

Ø65 uPVC AT MIN. 1% FALL
Ø90 uPVC AT MIN. 1% FALL
Ø100 uPVC AT MIN. 1% FALL
Ø150 uPVC AT MIN. 1% FALL
Ø225 uPVC AT MIN. 0.5% FALL
Ø300 uPVC AT MIN. 0.4% FALL
UNLESS NOTED OTHERWISE

STORMWATER NOTES

1. ALL PIPES TO BE Ø100mm UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5. ALL PIPES SHOWN ON PLAN ARE SHOWN INDICATIVELY ONLY & MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS3500.
6. ALL DOWN PIPES TO BE Ø100mm UNLESS NOTED OTHERWISE.
7. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
8. PROVIDE CLEANING EYES AT ALL DOWNPIPES U.N.O.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
11. ALL LEVELS SHOWN ARE TO AHD.
12. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
13. EXCAVATION OF TRENCHES ADJACENT TO TREES TO BE CARRIED OUT USING HAND TOOLS ONLY.
14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.
16. THE FOLLOWING ABBREVIATION DENOTES:
    FFL - FINISHED FLOOR LEVEL
    INV - INVERT

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client
-

Project
12 THE STRAND
DEE WHY

Sheet Subject
FIRST FLOOR DRAINAGE PLAN
& ROOF DRAINAGE PLAN

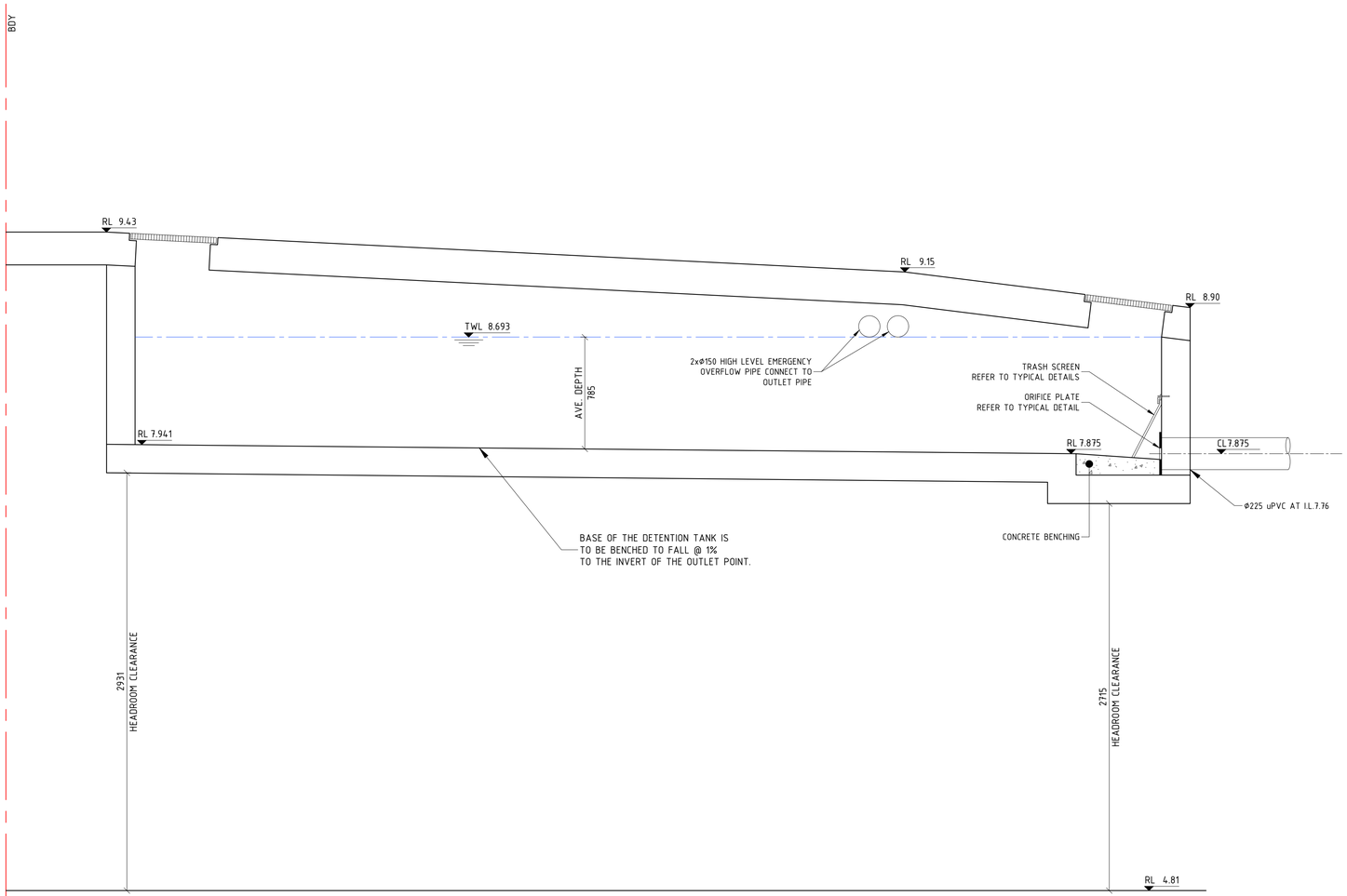
Architect
-

Structural Engineer
SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

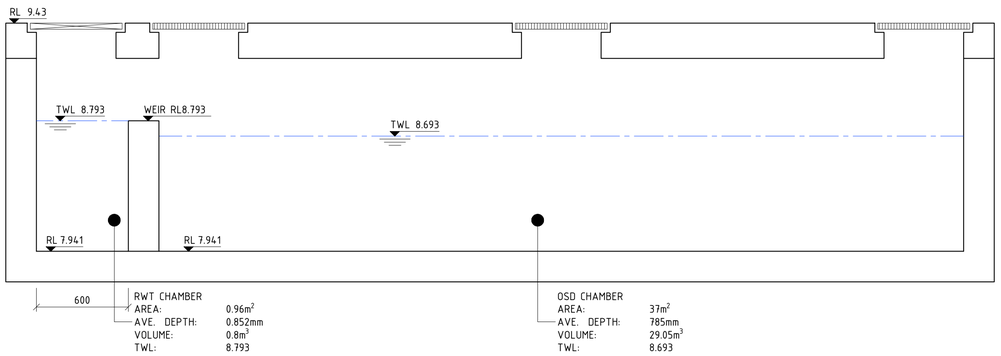
Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D04	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



SECTION 1 D03
SCALE 1:20



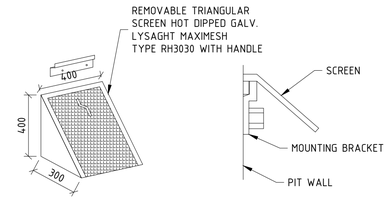
SECTION 2 D03
SCALE 1:20

ORIFICE PLATE (FOR TANK):

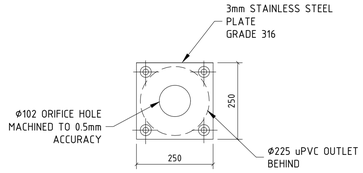
$Q = CA\sqrt{(2gh)}$

Q = SITE PSD = 20L/s
C = 0.6
g = 9.81m/s²
h = 0.818m

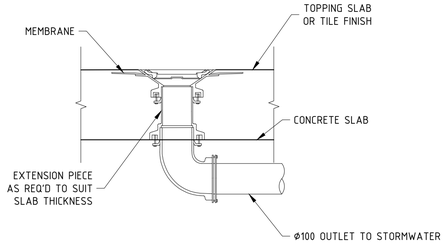
ORIFICE DIAMETER: 102mm



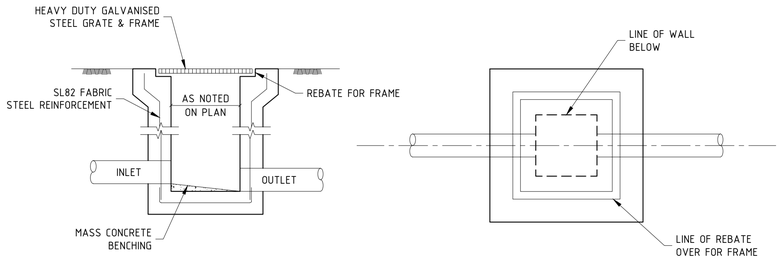
MULTI-PURPOSE FILTER SCREEN
SCALE 1:20



TYPICAL ORIFICE PLATE DETAIL
SCALE 1:10



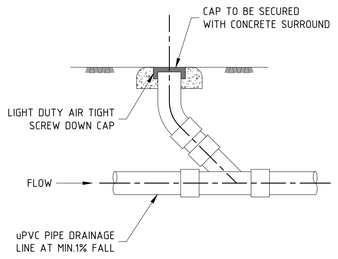
TYPICAL FLOOR WASTE DETAIL
SCALE 1:20



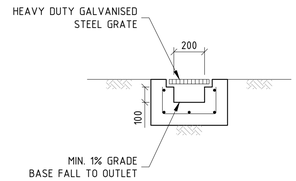
SECTION VIEW

PLAN VIEW WITHOUT GRATE

TYPICAL STORMWATER PIT DETAILS
SCALE 1:20



TYPICAL CLEANING EYE DETAIL
SCALE 1:20



TYPICAL GRATED DRAIN DETAILS
SCALE 1:20

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client

-

Project

12 THE STRAND
DEE WHY

Sheet Subject

STORMWATER DETAILS

Architect

-

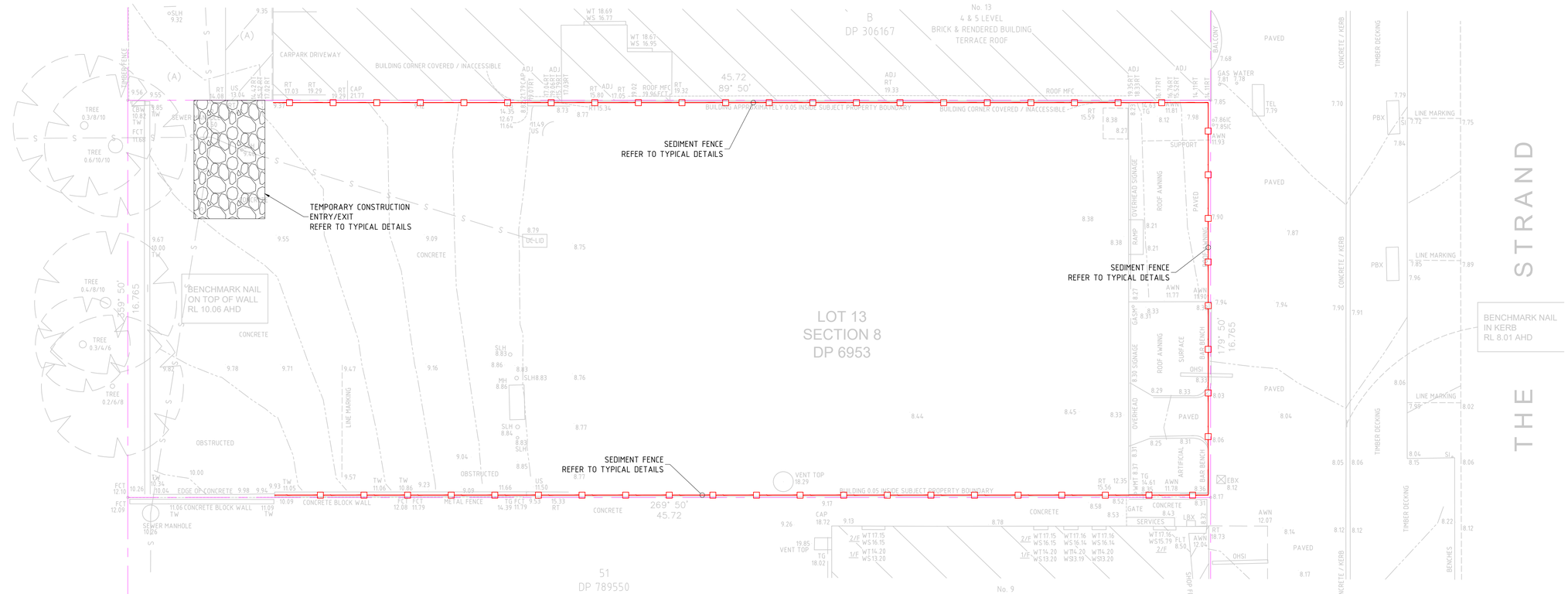
Structural Engineer

SYJ CONSULTING ENGINEERS
STRUCTURAL I CIVIL I FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D05	D

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. D00



SEDIMENT AND EROSION CONTROL NOTES

1. SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.
2. A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.
3. THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENCROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.
4. THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.
5. SEDIMENT FENCING SHALL BE SECURED BY POST (WHERE METAL STAR PICKETS ARE USED PLASTIC SAFETY CAPS SHALL BE USED) AT 2000 INTERVALS WITH GEOTEXTILE FABRIC EMBEDDED 200 IN SOIL.
6. ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

SOIL CONSERVATION NOTE:

1. PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE,' 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.
2. MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP AFTER EACH STORM.

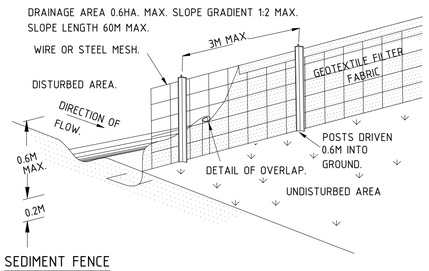
SEDIMENT TRAP

1. 1000 x 1000 WIDE 500 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT.
2. WASHOUT AREA
   TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.

GEOTEXTILE INLET FILTER

- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
- IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING
- DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.
- FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICAL SAG POINT

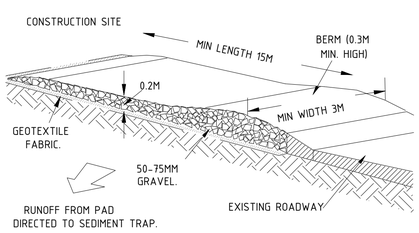
SITE EROSION AND SEDIMENTAL CONTROL PLAN
1:100



SEDIMENT FENCE

CONSTRUCTION NOTES:

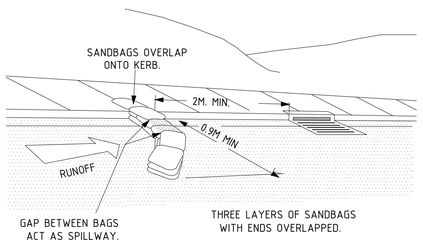
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES or AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.



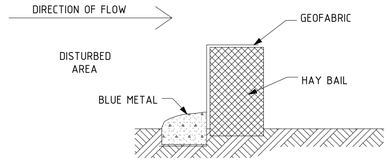
TYPICAL TEMPORARY CONSTRUCTION ENTRY/EXIT DETAIL

CONSTRUCTION NOTES:

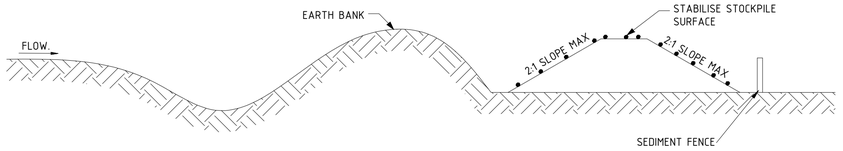
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROADBASE or 30mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO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



SANDBAG KERB INLET SEDIMENT TRAP



REMOVABLE HAY BAIL DETAIL
N.T.S.



STOCKPILES DETAIL
N.T.S.

CONSTRUCTION NOTES:
1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
5. CONSTRUCT EARTH BANK ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

Rev	Description	Eng	Draft	Date
D	ISSUE FOR DA SUBMISSION	J.S.	L.L.	13/05/25
C	ISSUE FOR DA SUBMISSION	J.S.	L.L.	23/04/25
B	ISSUE FOR COORDINATION	J.S.	L.L.	09/04/25
A	ISSUE FOR COORDINATION	J.S.	L.L.	13/06/25

Client

-

Project

12 THE STRAND
DEE WHY

Sheet Subject

SITE EROSION AND SEDIMENTAL CONTROL PLAN

Architect

-

Structural Engineer

SYJ CONSULTING ENGINEERS
STRUCTURAL | CIVIL | FACADE
Suite 604A, 1-5 Railway St, Chatswood NSW 2067
M: (02) 9411 3556
e: jack.shi@syjeng.com.au
w: www.syjeng.com.au

Scale : A1	Drawn	Authorised
As indicated	L.L.	J.S.

Job No	Drawing No	Revision
241012	D06	D