PROPOSED RESIDENTIAL DEVELOPMENT

92 NORTH STEYNE, MANLY NSW 2085

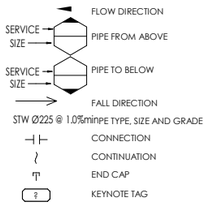
STORMWATER SERVICES

- STORMWATER PIPE
- STORMWATER RISING MAIN PIPE
- EXISTING STORMWATER PIPE
- RAINWATER PIPE
- SUB-SOIL DRAINAGE LINE
- CAST IN SLAB PIPE

STORMWATER LEGEND

- PROPOSED SEALED JUNCTION PIT
- PROPOSED GRATED SUFACE INLET PIT
- EXISTING PIT
- PIT TO BE REMOVED
- PROPOSED KERB INLET PIT
- PROPOSED GRATED DRAIN
- PROPOSED RAINWATER TANK
- DOWNPIPE, RISER OR VERTICAL DROP
- RWO - RAINWATER OUTLET FOR BALCONIES, ROOF, CARPARK ETC
- GS1 - DOWNPIPE WITH RAIN HEAD OVERFLOW
- GS2 - DOWNPIPE WITH SUMP SIDE OVERFLOW
- GS3 - DOWNPIPE WITH SUMP HIGH CAPACITY OVERFLOW
- SWALE DRAIN
- OVERLAND FLOW PATH
- ROOF FALL DIRECTION
- RL 35.05 — PROPOSED PAVEMENT SURFACE LEVEL
- GL 35.05 — PROPOSED PIT SURFACE LEVEL
- IL 34.75 — PROPOSED PIT INVERT LEVEL
- FFL 23.56 — PROPOSED FINISHED FLOOR LEVEL
- +35.11 — EXISTING SURFACE LEVEL
- 36.00 — EXISTING SURVEY CONTOUR
- PROPOSED BUILDING CAVITY DRAINAGE
- PROPOSED BASEMENT PERIMETER DRAINAGE

GENERAL PIPEWORK LEGEND



ENVIRONMENTAL SITE MANAGEMENT LEGEND

- PROPOSED BUILDING LINE
- PROPRIETARY SILT FENCE
- PROVIDE TEMPORARY CHAIN WIRE FENCING (HOARDING) ALONG THE SITE BOUNDARY.
- TEMPORARY STABALISED CONSTRUCTION ENTRY/EXIT. (SHAKER PAD)
- TEMPORARY FILTER TUBE WITH SAFETY BARRICADE TO KERB INLET PITS.
- NOMINATED DISPOSAL ROUTE FOR TRUCK MATERIAL TRANSPORTATION.
- TEMPORARY MASS CONCRETE FOOTPATH CROSSING.
- UNDISTURBED NON-TRAFFICABLE AREA
- DIVERSION BANK
- SURFACE INLET DRAINAGE PIT WITH SURROUNDING FILTER FABRIC INLET SEDIMENT TRAP OR FILTER TUBES (SANDBAGS)
- TEMPORARY GEOTEXTILE WRAPPED HAY BALES/SAND BAGS
- STOCK MATERIALS
- SITE EQUIPMENT LOCATIONS

PROJECT INFORMATION TABLE

THE TABLES BELOW ARE TO BE READ IN CONJUNCTION WITH THE ADJACENT NOTES

GEOTECHNICAL INFORMATION

COMPANY	REPORT No.	DATED
NA	NA	NA

SURVEY INFORMATION

THE SURVEY INFORMATION ON THESE DRAWINGS HAS BEEN PROVIDED BY

COMPANY	DATED
BEE & LETHBRIDGE PTY LTD	06/12/2023

SAFETY IN DESIGN

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING THIS DESIGN THAT ARE TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS.

• JN DO NOT CONSIDER THAT THERE ARE ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN OF THIS PROJECT.

DRAWING STATUS

PRELIMINARY

PRELIMINARY DRAWINGS ARE NOT TO BE USED FOR TENDER OR CONSTRUCTION PURPOSES.

TENDER

TENDER DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES AND ARE INTENDED FOR AN EXTENT OF WORKS. ALL OTHER CONSULTANT DRAWINGS AND CONTRACT DOCUMENTS SHOULD BE READ IN CONJUNCTION WITH THESE DOCUMENTS TO DETERMINE THE FULL EXTENT OF WORKS.

CONSTRUCTION CERTIFICATE

CONSTRUCTION CERTIFICATE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNLESS APPROVED & STAMPED BY THE PCA.

CONSTRUCTION

CONSTRUCTION DRAWINGS CAN BE USED FOR CONSTRUCTION PURPOSES AND/OR FOR THE CREATION OF FABRICATION DRAWINGS.

GENERAL

1. ALL EXISTING LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORKS
2. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE NOMINATED OR APPLICABLE COUNCIL SPECIFICATION. WHERE A SPECIFICATION HAS NOT BEEN NOMINATED THEN THE CURRENT NSW DEPARTMENT OF HOUSING CONSTRUCTION SPECIFICATION IS TO BE USED. THE NOMINATED SPECIFICATION SHALL TAKE PRECEDENCE TO THESE NOTES.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR ON SITE. ENGINEERS DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
4. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS & DRAWINGS FROM OTHER CONSULTANTS.
5. THE CONTRACTOR SHOULD REPORT ANY DISCREPANCIES ON THE DRAWINGS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN.
6. THE CONTRACTOR SHOULD LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND PROTECT AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE AND/OR ADJUST IF NECESSARY. INFORMATION GIVEN ON THE DRAWINGS IN RESPECT TO SERVICES IS FOR GUIDANCE ONLY AND IS NOT GUARANTEED COMPLETE NOR CORRECT.
7. CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER.
8. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED OR REMOVED FROM SITE.
9. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
10. ALL DRAINAGE LINES THROUGH ADJACENT LOTS SHALL BE CONTAINED WITHIN EASEMENTS CONFORMING TO COUNCIL'S STANDARDS.
11. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES AND DEBRIS ETC. TO THE EXTENT SPECIFIED.
12. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED PERSON IN ACCORDANCE WITH RMS REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC ROADS. PLAN TO BE SUBMITTED TO COUNCIL & RMS.

SURVEY

1. JONES NICHOLSON IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY 3RD PARTY INFORMATION PROVIDED ON THIS DRAWING.
2. ALL LEVELS ARE TO A.H.D.
3. ALL CHAINAGES AND LEVELS ARE IN METRES, AND DIMENSIONS IN MILLIMETRES.
4. SET OUT COORDINATES ARE BASED ON SURVEY DRAWINGS PROVIDED FOR THE PURPOSE OF CARRYING OUT THE ENGINEERING DESIGN.
5. CONTRACTOR SHALL VERIFY ALL SET OUT COORDINATES SHOWN ON THE PLANS BY A REGISTERED SURVEYOR
6. CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.
7. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK FOR CONFIRMATION OF THE SURVEY.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS AND COUNCIL'S SPECIFICATION.
2. PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC.
3. PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2 RUBBER RING JOINTED U/NO.
4. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O.
5. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS U/NO.
6. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS.
7. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O.
8. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
9. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200mm LAYERS TO 98% OF STANDARD DENSITY.
10. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS.
11. PITS SHALL BE AS DETAILED WITH METAL GRATES AT LEVELS INDICATED. ALL PITS DEEPER THAN 1200mm TO HAVE CLIMB IRONS.
12. BUILD INTO UPSTREAM FACE OF ALL PITS A 3.0m SUBSOIL LINE FALLING TO PITS TO MATCH PIT INVERTS.
13. ALL COURTYARD & LANDSCAPED PITS TO BE 450 SQUARE LOAD CLASS A UNLESS NOTED OTHERWISE.
14. ALL DRIVEWAY & OSD PITS TO BE 600 SQUARE LOAD CLASS D UNLESS NOTED OTHERWISE.
15. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCIL'S STANDARDS UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
16. PITS & DOWNPIPE LOCATIONS AND LEVELS MAY BE VARIED TO SUIT SITE CONDITIONS AFTER CONSULTING THE ENGINEER.
17. DOWNPIPES SHOWN ARE INDICATIVE ONLY, ALL ROOF GUTTERING AND DOWNPIPES TO THE CURRENT AUSTRALIAN STANDARDS.
18. ALL PLANTER BOXES AND BALCONIES TO BE CONNECTED TO THE PROPOSED STORMWATER DRAINAGE LINE.
19. HAND-EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.
20. FOOTPATH CROSSING LEVELS SHOWN ARE TO BE ADJUSTED TO FINAL COUNCIL'S ISSUED LEVELS.
21. GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR PROTECTION.
22. ALL BASES OF PITS TO BE BENCHED TO HALF PIPE DEPTH AND PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE.
23. SUBSOIL LINE PIPES AND FITTINGS SHALL BE PERFORATED PLASTIC TO CURRENT AUSTRALIAN STANDARDS. LAY PIPES ON FLOOR OF TRENCH GRADED AT 1% MIN. AND OVERLAY WITH FILTER MATERIAL EXTENDING TO WITHIN 200mm OF SURFACE. PROVIDE FILTER FABRIC OF PERMEABLE POLYPROPYLENE BETWEEN FILTER MATERIAL AND TOPSOIL
24. SHOULD THE CONTRACTOR ELECT TO INSTALL PRECAST STORMWATER PITS AND THEY ARE PERMITTED BY COUNCIL AND THE CLIENT, THE PRECAST PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH RMS STANDARDS INCLUDING:
    1. SEAL THE SEGMENTS TOGETHER USING A SITE-APPROVED NON-SHRINK GROUT OR MASTIC-TYPE PRODUCT. APPLY THE SEALANT IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S REQUIREMENTS.
    2. ENSURE THAT NO GAPS REMAIN AND THAT A SMOOTH FACE EXISTS BETWEEN MULTIPLE UNITS.
    3. LEAVE THE SEGMENTS UNDISTURBED UNTIL THE PERIOD OF CURING IS COMPLETED IN ACCORDANCE WITH THE GROUT OR SEALANT PRODUCT MANUFACTURER'S REQUIREMENTS.

EARTHWORKS

1. PROVIDE PROTECTION BARRIERS TO PROTECTED/SENSITIVE AREAS PRIOR TO ANY BULK EXCAVATION.
2. OVER FULL AREA OF EARTHWORKS, CLEAR VEGETATION, RUBBISH, SLABS ETC. AND STRIP TOP SOIL AVERAGE 200mm THICK. REMOVE FROM SITE, EXCEPT TOP SOIL FOR RE-USE.
3. CUT AND FILL OVER THE SITE TO LEVELS REQUIRED.
4. PRIOR TO ANY FILLING IN AREAS OF CUT OR IN EXISTING GROUND, PROOF ROLL THE EXPOSED SURFACE. REFER TO PROJECT INFORMATION TABLES FOR MINIMUM ROLLER WEIGHT AND THE MINIMUM NUMBER OF PASSES.
5. EXCAVATE AND REMOVE ANY SOFT SPOTS ENCOUNTERED DURING PROOF ROLLING AND REPLACE WITH APPROVED FILL COMPACTED IN LAYERS. THE WHOLE OF THE EXPOSED SUBGRADE AND FILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%.
6. FOR ON SITE FILLING AREAS, THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
7. WHERE HARD ROCK IS EXPOSED IN THE EXCAVATED SUB-GRADE, THIS WILL BE INSPECTED AND A DECISION MADE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN.
8. FILL IN 200mm MAXIMUM (LOOSE THICKNESS) LAYERS TO UNDERSIDE OF BASECOURSE USING THE EXCAVATED MATERIAL AND COMPACTED TO 98% STANDARD (AS 1289 5.1.1). MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2% SHOULD THERE BE INSUFFICIENT MATERIAL FROM SITE EXCAVATIONS, IMPORT AS NECESSARY CLEAN GRANULAR FILL TO THE DESIGN ENGINEERS APPROVAL.
9. COMPACTION TESTING TO BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT INFORMATION TABLE. THE COSTS OF TESTING AND RE-TESTING ARE TO BE ALLOWED FOR BY THE BUILDER.
10. BATTERS TO BE AS SHOWN, OR MAXIMUM 1 VERT : 4 HORIZ. ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL PAVEMENT.
11. ALL BATTERS AND FOOTPATHS ADJACENT TO ROADS SHALL BE TOP SOILED WITH 150mm APPROVED LOAM AND SEEDED UNLESS OTHERWISE SPECIFIED.

STORMWATER DRAINAGE INSTALLATION

1. SUPPLY & INSTALLATION OF DRAINAGE WORKS TO BE IN ACCORDANCEWITH THESE DRAWINGS, THE COUNCIL SPECIFICATION AND THE CURRENT APPLICABLE AUSTRALIAN STANDARDS.
2. BEDDING OF THE PIPELINES IS TO BE TYPE 'HS2' IN ACCORDANCE WITH THE STANDARDS AND AS FOLLOWS;
    a. COMPACTED GRANULAR MATERIAL IS TO COMPLY WITH THE FOLLOWING GRADINGS;

SIEVE SIZE (mm)	19	2.36	0.60	0.30	0.15	0.075
% MASS PASSING	100	50-100	20-90	10-60	0-25	0-10

- AND THE MATERIAL PASSING THE 0.075 SIEVE HAVING LOW PLASTICITY AS DESCRIBED IN APPENDIX D OF AS1726.

    b. BEDDING DEPTH UNDER THE PIPE TO BE 100mm.
    c. BEDDING MATERIAL TO BE EXTENDED FROM THE TOP OF THE BEDDING ZONE UP TO 0.3 TIMES PIPE OUTSIDE DIAMETER. THIS REPRESENTS THE 'HAUNCH ZONE.'
    d. THE BEDDING & HAUNCH ZONE MATERIAL IS TO BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL.
    e. COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL DRAINAGE LINES LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR PAVEMENT.
3. BACKFILL SHALL BE PLACED & COMPACTED IN ACCORDANCE WITH THE SPECIFICATION. A GRANULAR GRAVEL AGGREGATE MATERIAL (<10mm) BACKFILL IS RECOMMENDED FOR THE BEDDING, HAUNCH SUPPORT AND SIDE ZONE DUE TO IT'S SELF COMPACTING ABILITY.
4. A MINIMUM OF 150mm CLEARANCE IS TO BE PROVIDED BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL FOR PIPES < 600 DIA. 200mm CLEARANCE FOR PIPES 600 TO 1200 DIA AND D/6 CLEARANCE FOR PIPES > 1200 DIA.

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DATE	16/04/2025
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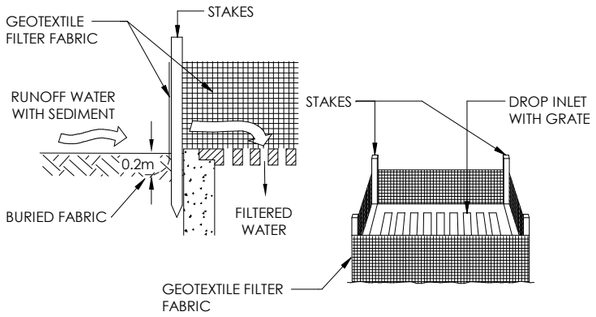
SCALE	NTS
PROJECT MGR	CG

CIVIL DESIGN

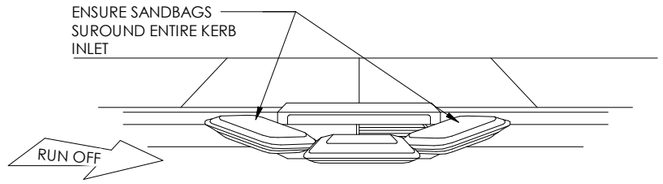
NOTES AND LEGEND

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK001 1

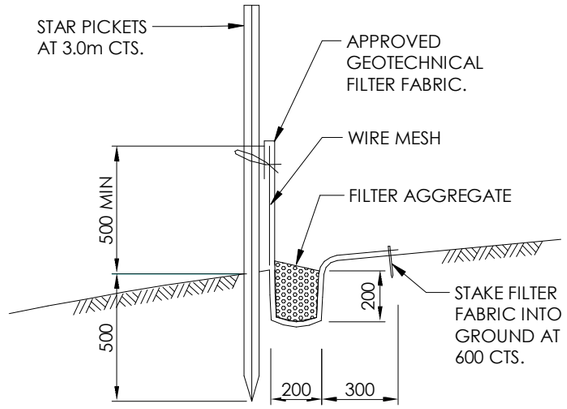


GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP DETAIL



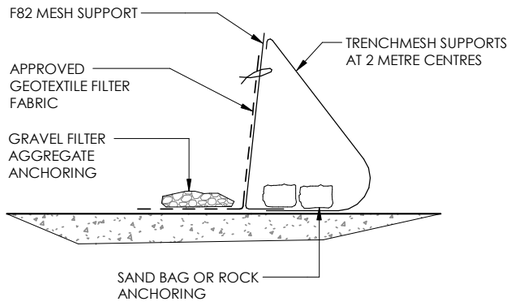
NOTES:
1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
2. FILL THE SLEEVE WITH 25mm TO 50MM GRAVEL.
3. FORM AN ELIPTICAL CROSS SECTION ABOUT 150mm HIGH X 400mm WIDE.
4. PLACE THE FILTER AT THE OPNEING OF THE KERB INLET LEAVING A 100MM GAP AT THE TOP TO ACT AS AN EMERGENCY SPILL WAY.
5. MAINTAIN A CLEAR DISTANCE AWAY FROM THE PIT WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AS SHOWN.

SANDBAG SEDIMENT INLET TRAP



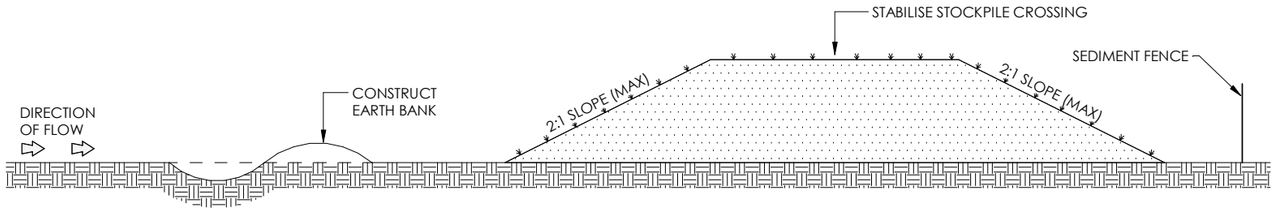
SILT FENCE DETAIL

SEDIMENT SILT FENCE DETAIL



GENERAL CONSTRUCTION NOTES:
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
3. JOIN SECTIONS OF FABRIC AT A SUPPORT WITH A 150mm OVERLAP.
4. REFER TO DETAIL SD 6-9 "BLUE BOOK"

SEDIMENT FENCE - ALTERNATIVE



STOCKPILES

N.T.S

GENERAL CONSTRUCTION NOTES:
1. LOCATE STOCKPILE AT LEAST 5m FROM VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW FLAT ELONGATED MOUND.
3. WHERE THERE IS A SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT. (TO ALLOW AIR VENTILATION FOR FUTURE REUSE)
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 1m TO 2m DOWNSLOPE OF STOCKPILE.

STOCKPILES

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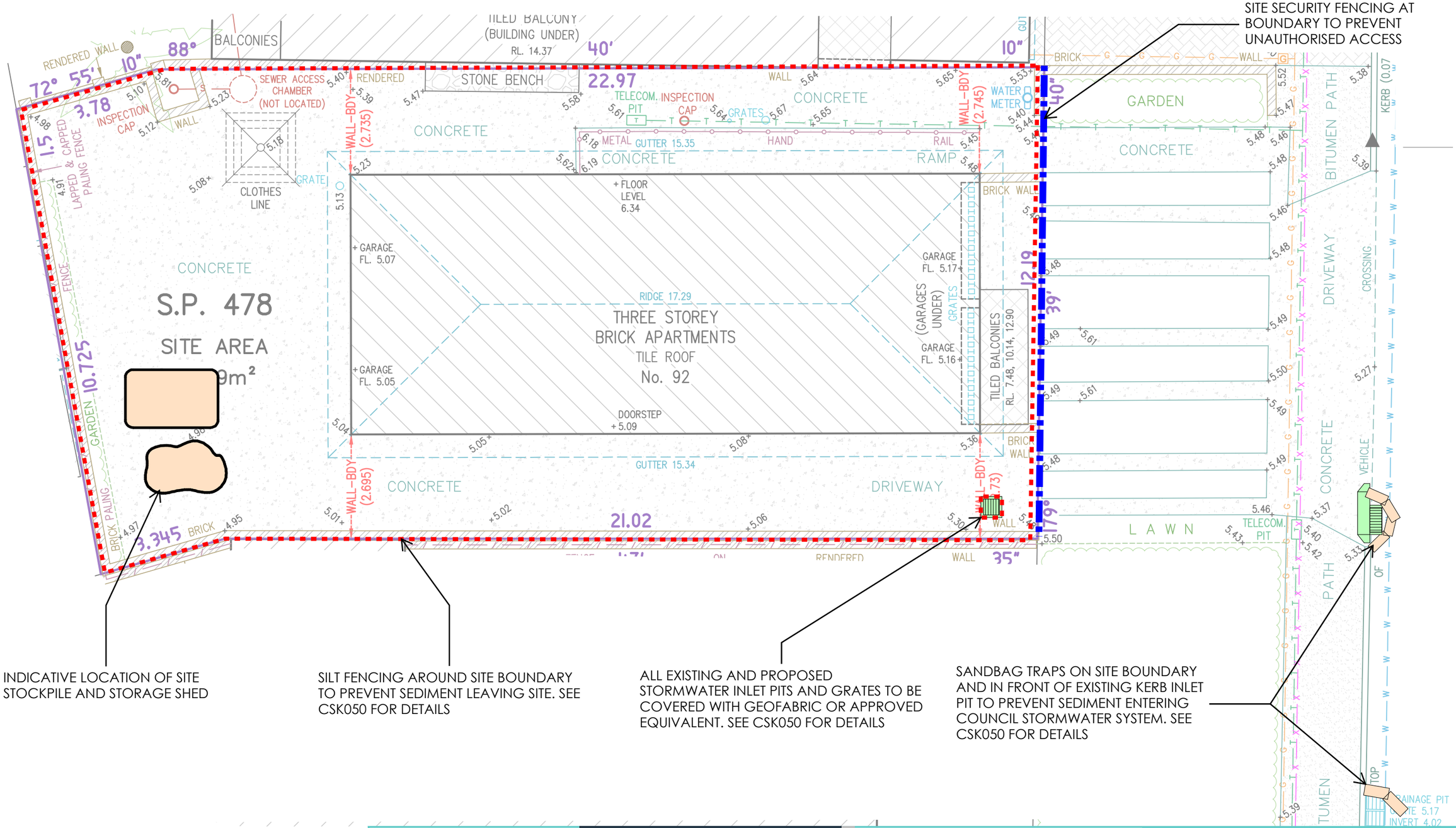
PROJECT MGR	CG

CIVIL SKETCH

EROSION AND SEDIMENT CONTROL DETAILS

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK050 2



INDICATIVE LOCATION OF SITE STOCKPILE AND STORAGE SHED

SILT FENCING AROUND SITE BOUNDARY TO PREVENT SEDIMENT LEAVING SITE. SEE CSK050 FOR DETAILS

ALL EXISTING AND PROPOSED STORMWATER INLET PITS AND GRATES TO BE COVERED WITH GEOFABRIC OR APPROVED EQUIVALENT. SEE CSK050 FOR DETAILS

SANDBAG TRAPS ON SITE BOUNDARY AND IN FRONT OF EXISTING KERB INLET PIT TO PREVENT SEDIMENT ENTERING COUNCIL STORMWATER SYSTEM. SEE CSK050 FOR DETAILS

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EROSION AND SEDIMENT CONTROL PLAN

Proposed Residential Development
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Manly NSW 2095
Lighthouse Project Group

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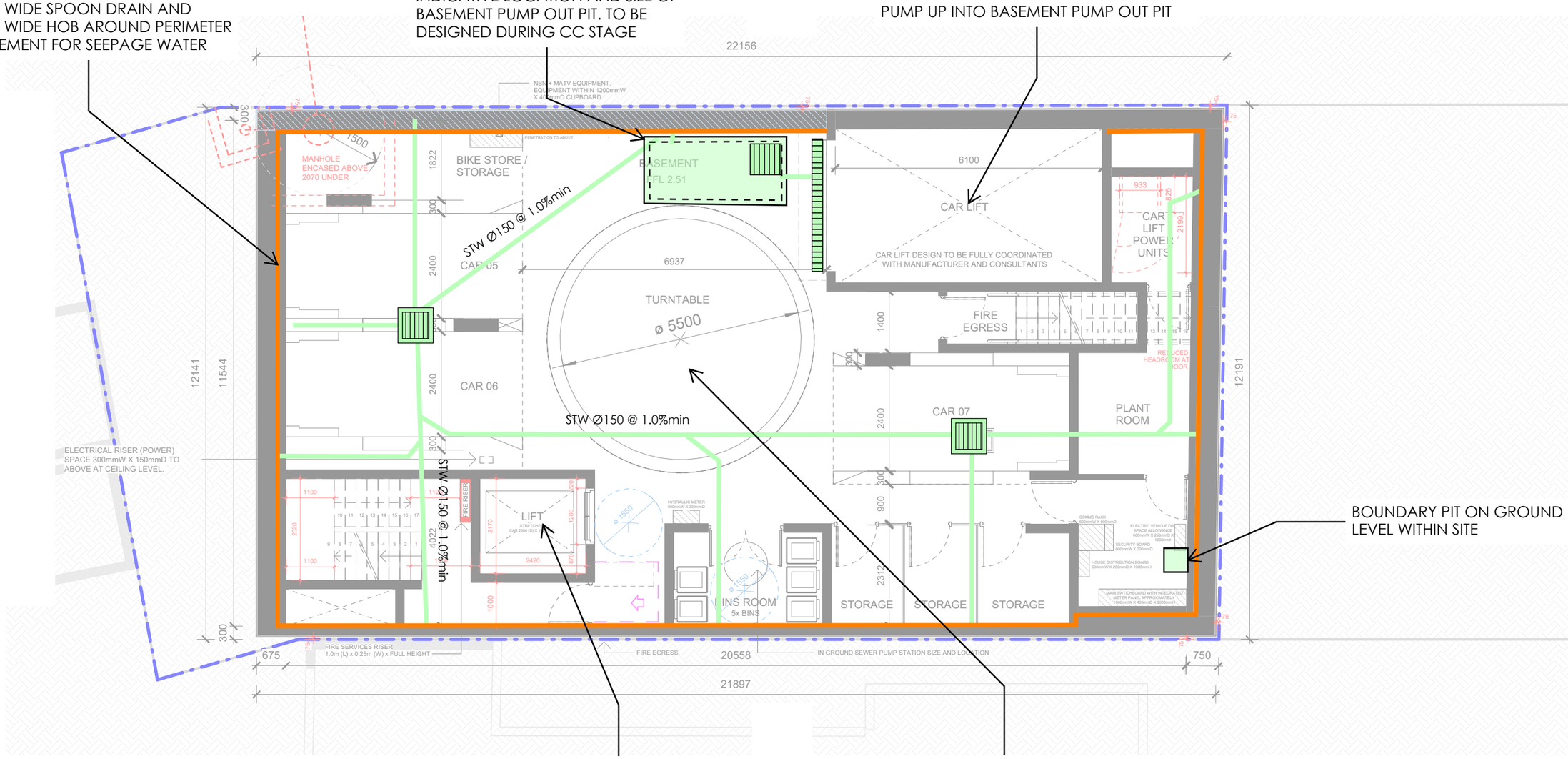
CSK080 2

150mm WIDE SPOON DRAIN AND
150mm WIDE HOB AROUND PERIMETER
OF BASEMENT FOR SEEPAGE WATER

INDICATIVE LOCATION AND SIZE OF
BASEMENT PUMP OUT PIT. TO BE
DESIGNED DURING CC STAGE

CARLIFT PIT TO MANUFACTUER DETAILS. TO
PUMP UP INTO BASEMENT PUMP OUT PIT



BOUNDARY PIT ON GROUND
LEVEL WITHIN SITE

LIFT PIT TO BE PUMPED INTO
BASEMENT PUMP-OUT PIT

DRAINAGE UNDER TURNTABLE TO
MANUFACTUER DETAILS

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STORMWATER BASEMENT PLAN

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CSK100 2

NOTES:
TOTAL SITE AREA = 311sq.m

EMAIL FROM MATTHEW MAKOMASKI OF NORTHERN BEACHES COUNCIL ON 19/12/2024 CONFIRMS THAT INFILTRATION IS NOT APPLICABLE TO SITE DUE TO CONSTRAINTS. INDICATED OSD WAS REQUIRED CONSIDERING EXISTING SITE LIMITED TO 35% IMPERVIOUS.

DUE TO SITE CONSTRAINTS AND LEVELS, BACKYARD TO INFILTRATE INTO THE SOIL, ONLY THE ROOF AREA (150sq.m) IS CONSIDERED

PRE-DEVELOPMENT DISCHARGE (ALLOW 35% IMPERVIOUS)
PSD = 20% AEP = 4 L/s

POST-DEVELOPMENT DISCHARGE
1% AEP = 5 L/s

ORIFICE = 50DIA (CANNOT BE SMALLER AS PER NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY SECTION 9.10.1 ORIFICE PLATES)

ABOVE GROUND OSD/RWT TANK

RAINWATER TANK STORAGE = 2.5 cu.m AS PER BASIX REPORT
WEIR WALL INTO OSD TANK = RL. 6.05

OSD VOLUME REQUIRED = 5.3 cu.m
IL. 5.00
TOP OF TANK = 6.25
ORIFICE = 50DIA (SEE NOTES)
150DIA OVERFLOW PIPE IL. 6.05

1% BASE FALL TO OSD OUTLET

DRAINAGE UNDER TURNTABLE TO MANUFACTUER DETAILS

SERVICES LOCATION TO BE UNDERTAKEN DURING DESIGN DEVELOPMENT TO DETERMINE EXISTING SERVICES TO QL-A

PROPOSED KERB INLET PIT WITH BACK CHAMBER AS PER EXISTING DOWNSTREAM PIT
GL. 5.30
IL. 4.13

STORMWATER PIPE TO RUN UNDER PATH AS PER EXISTING

1 x 690mm PSORB FILTER FOR ROOF AREA WITHIN OSD. TO BE DETAILED AND COORDINATED DURING CC STAGE

SHALLOW BACKYARD PIT FOR BACKYARD SURFACE SUBSOIL DRAINAGE TO CONNECT INTO

TO HAVE OCEANGUARD PIT INSERT UNDER GRATE FOR SURFACE WATER

OSD OUTLET AND OVERFLOW PIPE TO RUN ALONG BASEMENT ROOF TO FRONT BOUNDARY PIT

ENSURE ENTRY AREA FALLS TOWARDS SITE FRONTAGE

BONDARY PIT TO HAVE TRASH RACK PRIOR TO OUTLET

EXISTING KERB INLET PIT
GL. 5.17
IL. 4.03

GL. 5.49
IL. 4.30

STW Ø150 @ 1.0%min

1 x STW Ø100 & 1 x STW Ø150 @ 1.0%min

STW Ø375 RCP @ 1.0%min

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PROJECT MGR	CG

CIVIL SKETCH

STORMWATER GROUND FLOOR PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK200 2

PLANTER OUTLETS WITH OVERFLOW SLOTS DISCHARGING TO THE BACK LANDSCAPE AREA

65DIA BALCONY AND PLANTER OUTLETS. TO BE CAST IN SLAB TO NEAREAST DOWNPIPE

RUN ROOF OUTLETS TOWARDS BACK OF THE BUILDING INTO 100DIA DOWNPIPE TO ENTER ABOVE GROUND OSD

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JN Responsive Engineering

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CIVIL SKETCH

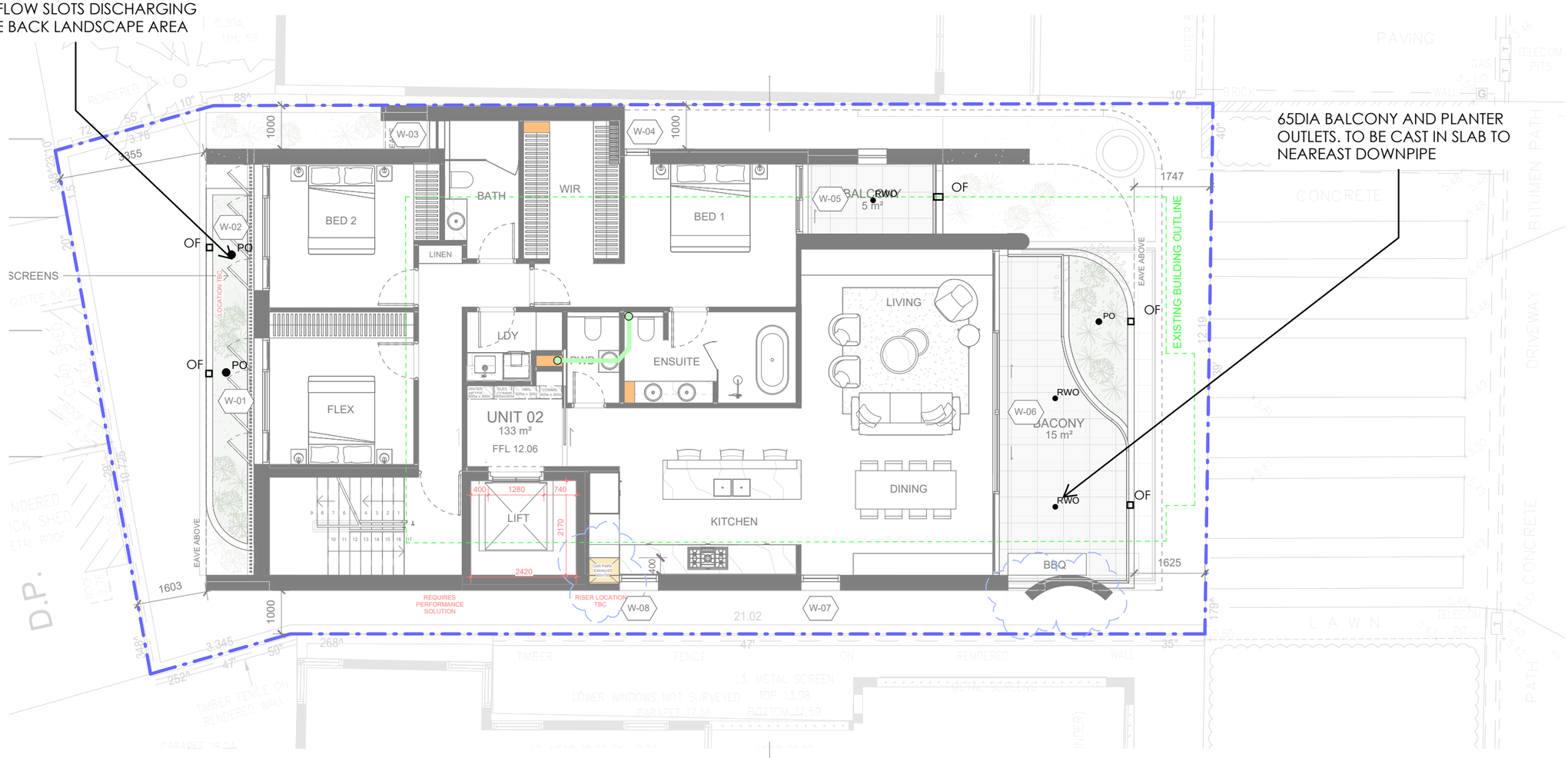
STORMWATER LEVEL 1 PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK210 2

PLANTER OUTLETS WITH OVERFLOW SLOTS DISCHARGING TO THE BACK LANDSCAPE AREA

65DIA BALCONY AND PLANTER OUTLETS. TO BE CAST IN SLAB TO NEAREAST DOWNPIPE



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DESIGN	DJA
DATE	16/04/2025
SIZE	A3
SCALE	1:100
PROJECT MGR	CG

CIVIL SKETCH

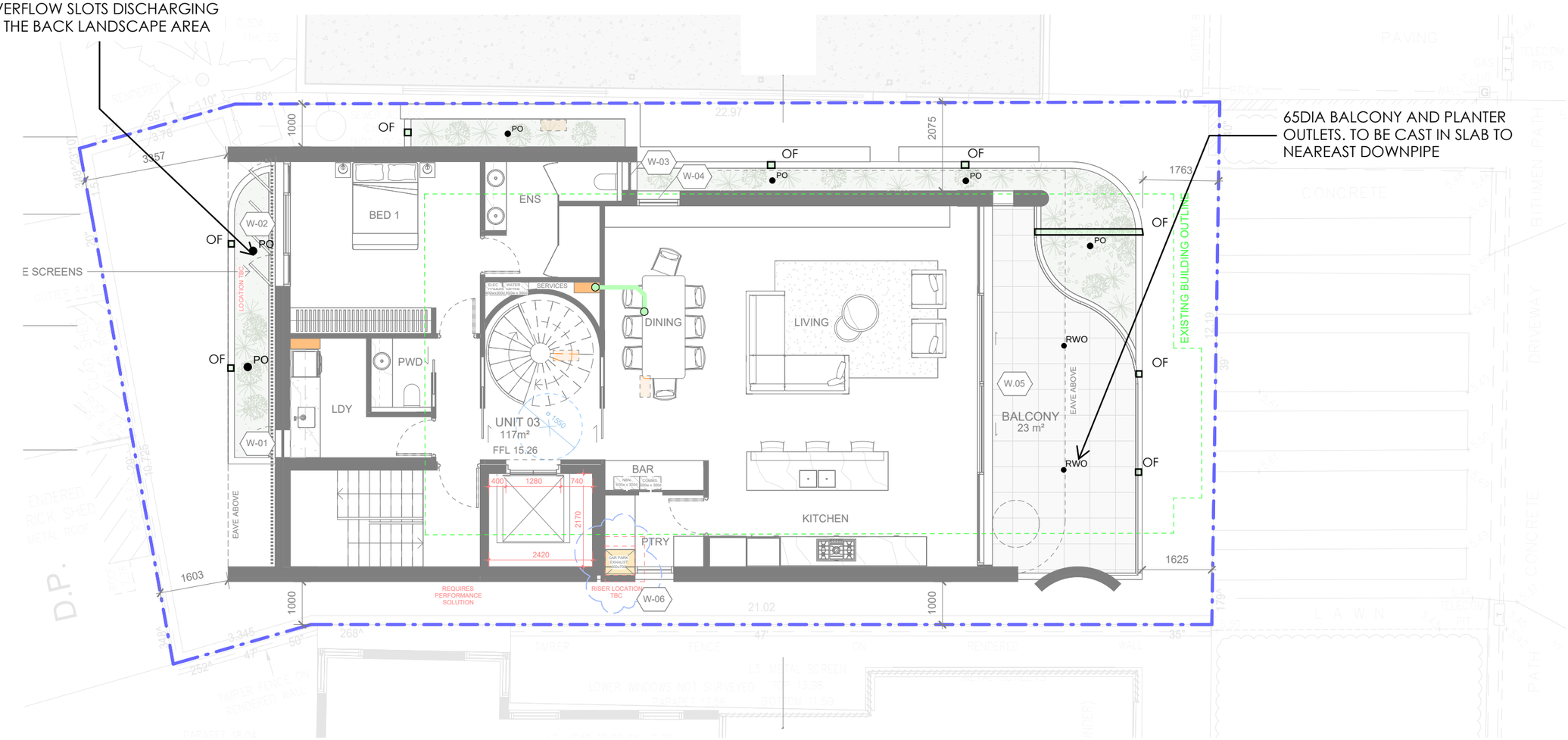
STORMWATER LEVEL 2 PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK220 2

PLANTER OUTLETS WITH OVERFLOW SLOTS DISCHARGING TO THE BACK LANDSCAPE AREA

65DIA BALCONY AND PLANTER OUTLETS. TO BE CAST IN SLAB TO NEAREAST DOWNPIPE



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CIVIL SKETCH

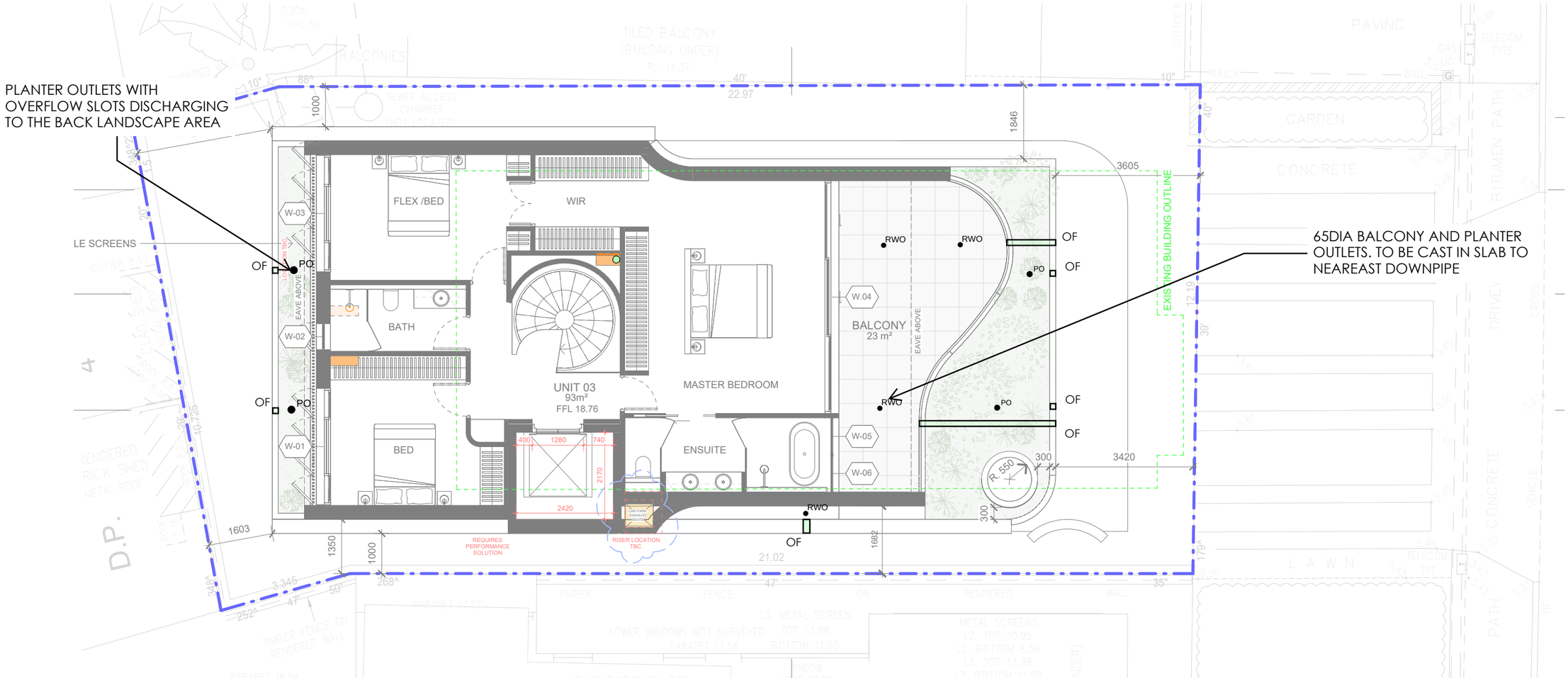
STORMWATER LEVEL 3 PLAN

Proposed Residential Development

92 North Steyne
Manly NSW 2095

Lighthouse Project Group

N0241353
CSK230 2



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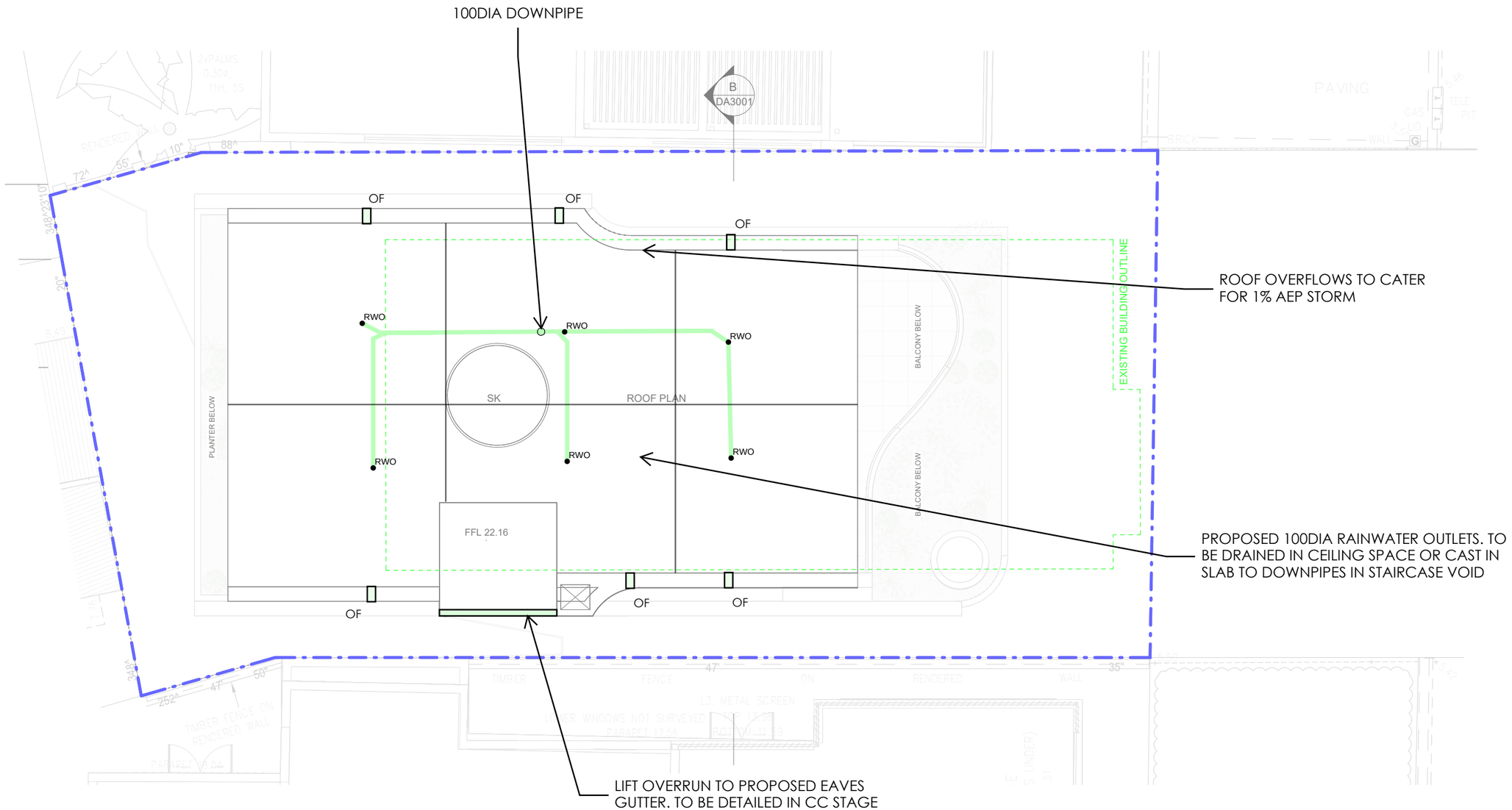
CIVIL SKETCH

STORMWATER LEVEL 4 PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK240 2



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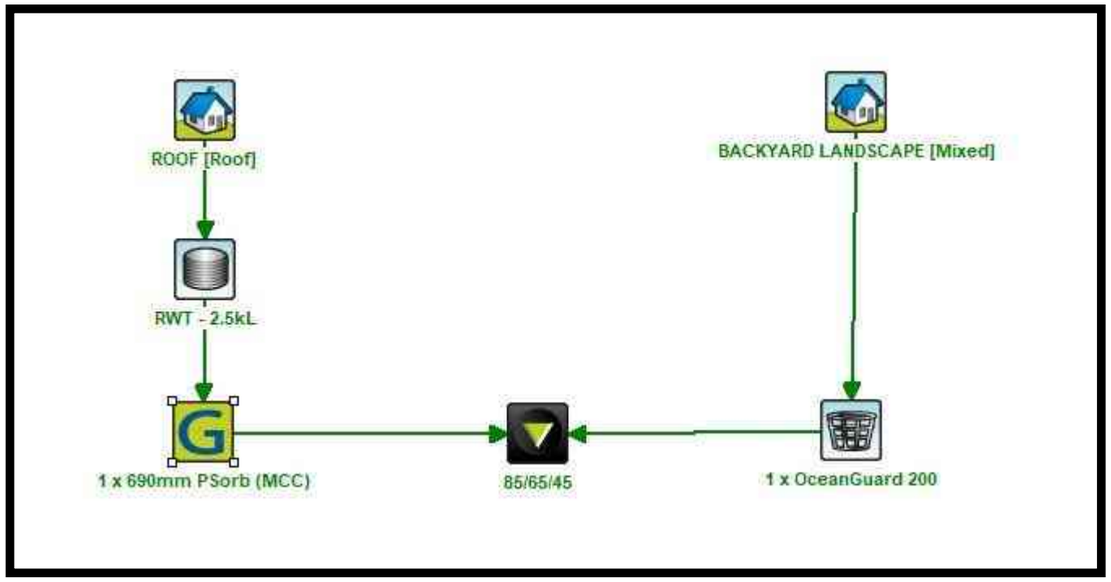
CIVIL SKETCH

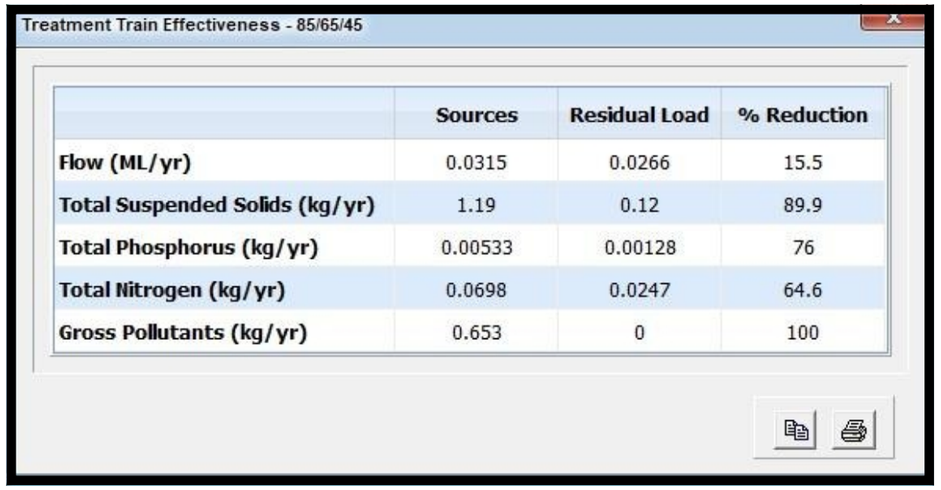
STORMWATER ROOF PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK300 2



MUSIC MODEL


Treatment Train Effectiveness - 85/65/45

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.0315	0.0266	15.5
Total Suspended Solids (kg/yr)	1.19	0.12	89.9
Total Phosphorus (kg/yr)	0.00533	0.00128	76
Total Nitrogen (kg/yr)	0.0698	0.0247	64.6
Gross Pollutants (kg/yr)	0.653	0	100

MUSIC RESULTS

Table 5 – General Stormwater Quality Requirements

Pollutant	Performance Requirements
Total Phosphorous	65% reduction in the post development mean annual load[1]
Total Nitrogen	45% reduction in the post development mean annual load[1]
Total Suspended Solids	85% reduction in the post development mean annual load[1]
Gross Pollutants	90% reduction in the post development mean annual load[1] (for pollutants greater than 5mm in diameter)
pH	6.5 - 8.5
Hydrology	The post-development peak discharge must not exceed the pre-development peak discharge for flows up to the 50% AEP

NORTHERN BEACHES COUNCIL REQUIREMENTS

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CIVIL SKETCH

WSUD PLAN

Proposed Residential Development
92 North Steyne
Manly NSW 2095
Lighthouse Project Group

N0241353
CSK400 2