CONCEPT STORMWATER DRAWINGS FOR PROPOSED NEW DUAL OCCUPANCY

DRAWING LIST	
DRAWING NUMBER	DRAWING NAME
D00	COVER SHEET, LEGEND & DRAWING SCHEDULE
D01	BASEMENT STORMWATER DRAINAGE PLAN
D02	GROUND FLOOR STORMWATER DRAINAGE PLAN
D04	ROOF STORMWATER DRAINAGE PLAN
D05	PRE & POST DEVELOPMENT CATCHMENT ANALYSIS
D10	STORMWATER DRAINAGE SECTIONS AND DETAILS SHEET 1
D11	STORMWATER DRAINAGE SECTIONS AND DETAILS SHEET 2
D15	EROSION AND SEDIMENT CONTROL PLAN AND DETAILS

NOTES

1. ALL LINES ARE TO BE MIN. 100Ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3 (CURRENT EDITION), COUNCIL SPECIFICATIONS, RELEVANT VOLUME OF NCC (NATIONAL CONSTRUCTION CODE)
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. ALL STORWMATER LINES' JOINTS BE FULLY SEALED AND WATERTIGHT IN ACCORDANCE WITH AS3500.3.2021
8. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL AND ALL OTHER RELEVANT CONSULTANT'S PLANS.
9. ALL RAINWATER TANKS TO BE FITTED WITH A FIRST FLUSH DEVICE TO PREVENT POTENTIAL CONTAMINANTS FROM ENTERING THE TANKS.
10. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
11. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
12. ALL LIFT PITS ARE TO BE FULLY TANKED UNLESS NOTED OTHERWISE.
13. CHILD -PROOF LOCKING SYSTEM MUST BE EMPLOYED FOR ALL GRATES AND LIDS IN COMMON AREAS
14. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES
15. PROVIDE EMERGENCY OVERFLOW TO ALL PLANTER BOX AND BALCONIES.
16. ALL PITS WITH DEPTH MORE THAN 900mm MUST HAVE IRON STEPS AND TO BE BENCHED AND STREAMLINED
17. PROVIDE STORMWATER GRATE 200Wx200D AT THE BASE OF ALL MECHANICAL SHAFTS AND UNCOVERED STAIRS OR OPENINGS.
18. PRESSURIZED PIPES / RISING MAINS FROM PUMP OUT TANK TO BE CONNECTED DIRECTLY AND INDEPENDENTLY TO EITHER OSD TANK OR BOUNDARY PIT AS PER DESIGN PLANS.
19. ENSURE ALL DRAINAGE WORKS ARE AWAY FROM TREE ROOTS
20. SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATION AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT AND CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION.
21. ALL VARIATIONS TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY SMART STRUCTURES AUSTRALIA PRIOR TO COMMENCEMENT OF WORKS.
22. 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
23. ALL STORMWATER DRAINAGE PITS IN GARDEN OR TURFED AREAS TO BE FITTED WITH PERFORATED GALVANISED STEEL MESH UNDER THE LIDS TO PREVENT DEBRIS ENTERING STORMWATER NETWORK.
24. PIPE INSTALLATION TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT AS3500.3 AND RELEVANT VOLUME OF NCC (NATIONAL CONSTRUCTION CODE). THIS IS CONTRACTOR'S RESPONSIBILITY TO CHECK IMPACT OF PIPE TRENCHING TO SURROUNDING STRUCTURAL AND NON STRUCTURAL ELEMENTS.

AS 3500.3- TABLE 8.2
SIZE OF MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

DEPTH OF INVERT OF OUTLET	MINIMUM INTERNAL DIMENSIONS (mm)		
	RECTANGULAR		CIRCULAR
	WIDTH	LENGTH	DIAMETER
≤450	350	350	
≤600	450	450	600
>600 ≤900	600	600	900
>900 ≤1200	600	900	1000
>1200	900	900	1000

SYMBOLS

RL	PIT SURFACE LEVEL	PG	PLANTER GRATE
IL	INVERT LEVEL	DP	DOWN PIPE
TK	TOP OF KERB	CO	CLEAN OUT
B.O.W	BOTTOM OF WALL	IO	INSPECTION OPENING
T.O.W	TOP OF WALL	VD	VERTICAL DROP
SW SW	STORMWATER DRAINAGE PIPE	VR	VERTICAL RISER
RWT RWT	DOWNPIPE TO RAINWATER TANK	OF	OVERFLOW (DOME TYPE)
SW SW	OVERFLOW PIPE FROM RAINWATER TANK		CONCRETE COVER JUNCTION PIT
	Ø100 SUBSOIL PIPE		GRATED INLET PIT
S S	Ø100 SUBSOIL PIPE		WIDE GRATED DRAIN
FW	FLOOR WASTE 150X150		OVERLAND FLOW PATH
FW	FLOOR WASTE 150Ø	SW SW	CAST IN SLAB PIPE
RWO	RAINWATER OUTLET 300Ø		

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IMPORTANT:
CONTRACTOR TO OBTAIN CURRENT SET OF "DIAL BEFORE YOU DIG" PLANS ON SITE ALL TIMES AND PRIOR TO CONSTRUCTION WORKS

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CLIENT
MR & MRS BRYDEN

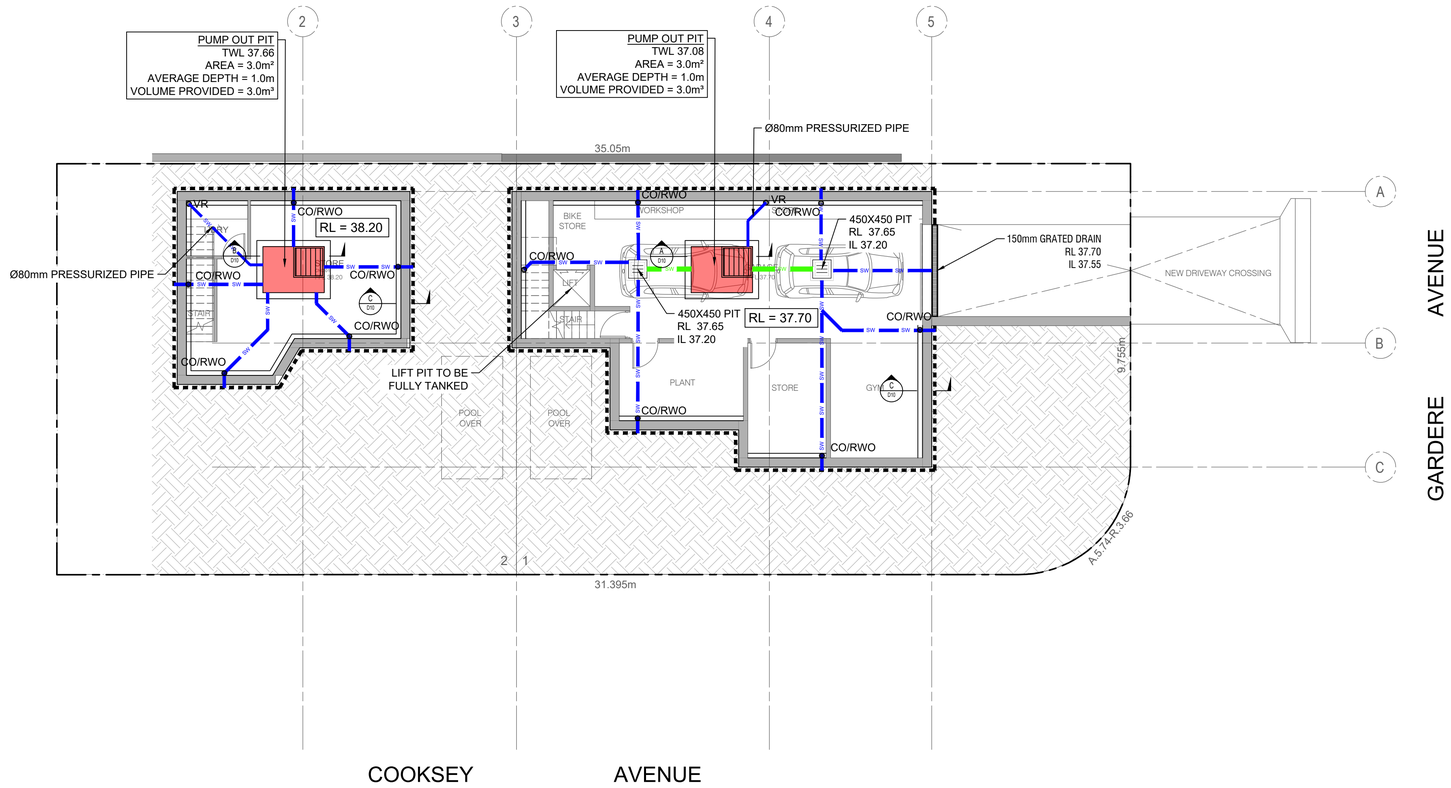
ARCHITECT
ALEX BRYDEN ARCHITECTURE

Revision
A

Project Number
250091

Address
54 GARDERE AVENUE, CURL CURL NSW 2096

Sheet Number
D00



BASEMENT STORMWATER DRAINAGE PLAN

SCALE 1: 100

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Start Date: APRIL 2024

Project No. 250091

Client: MR & MRS BRYDEN

Architect: ALEX BRYDEN ARCHITECTURE

Approved by: K.E.

Internal Revisions:

Rev. #	Drafter	Engineer	Date
	Revision Description		
A	F.E.	K.E.	17.04.25
	ISSUE FOR D.A.		

Notes

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PRELIMINARY
NOT FOR CONSTRUCTION

Project North

Scale @ A1: AS SHOWN

Sheet Name: BASEMENT STORMWATER DRAINAGE PLAN

Sheet Number: D01

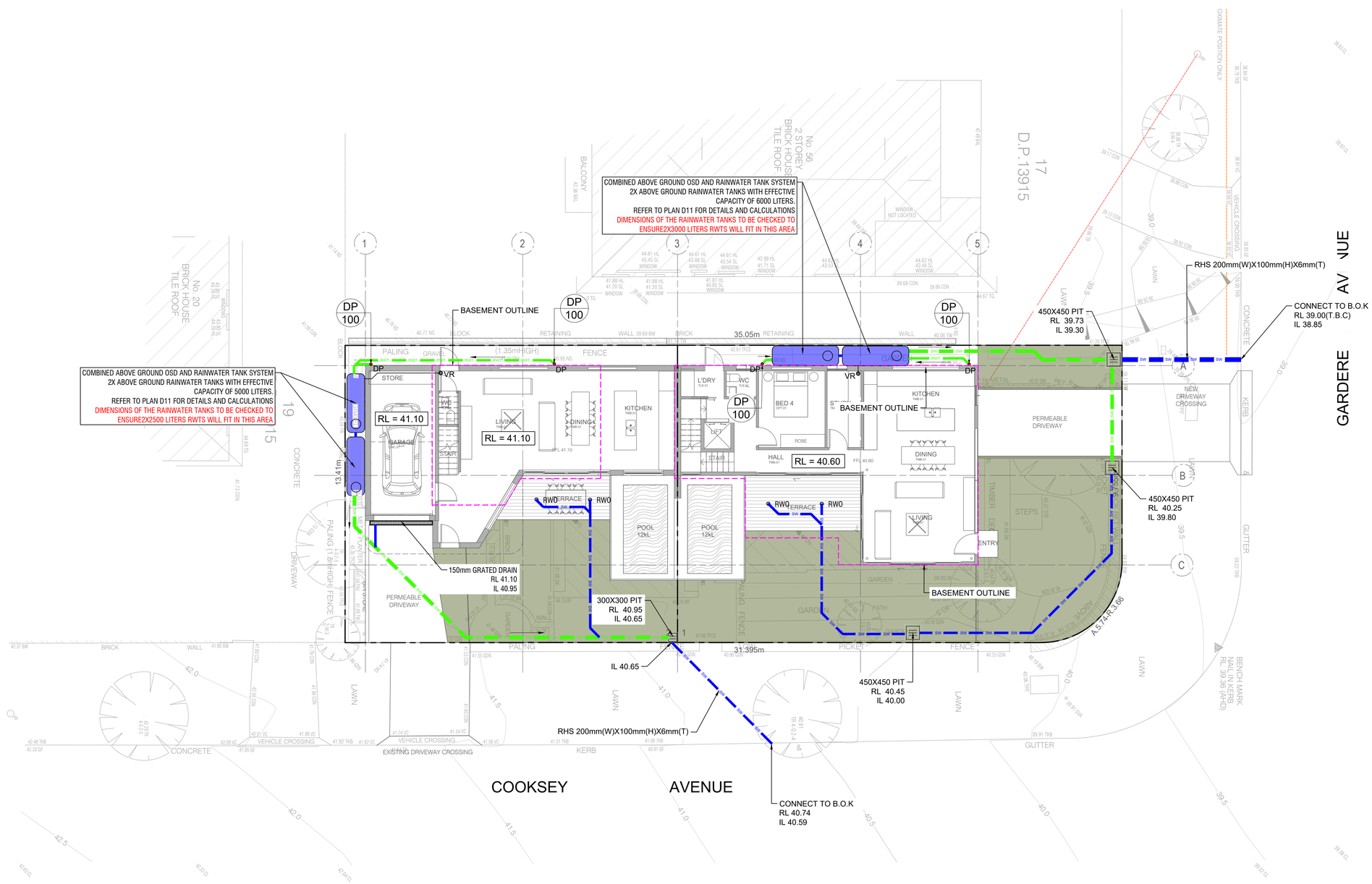
Revision: A

1:20 0 0.1 0.2 0.5 1 2
1:50 0 0.25 0.5 1.25 2.5 5
1:100 0 0.5 1 2.5 5 10
1:200 0 1 2 5 10 20

PIPE LEGEND (U.N.O):

Ø100mm STORMWATER PIPE

Ø150mm STORMWATER PIPE



GROUND FLOOR STORMWATER DRAINAGE PLAN

SCALE 1: 100

1:20 1:50 1:100 1:200

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PRELIMINARY
NOT FOR CONSTRUCTION

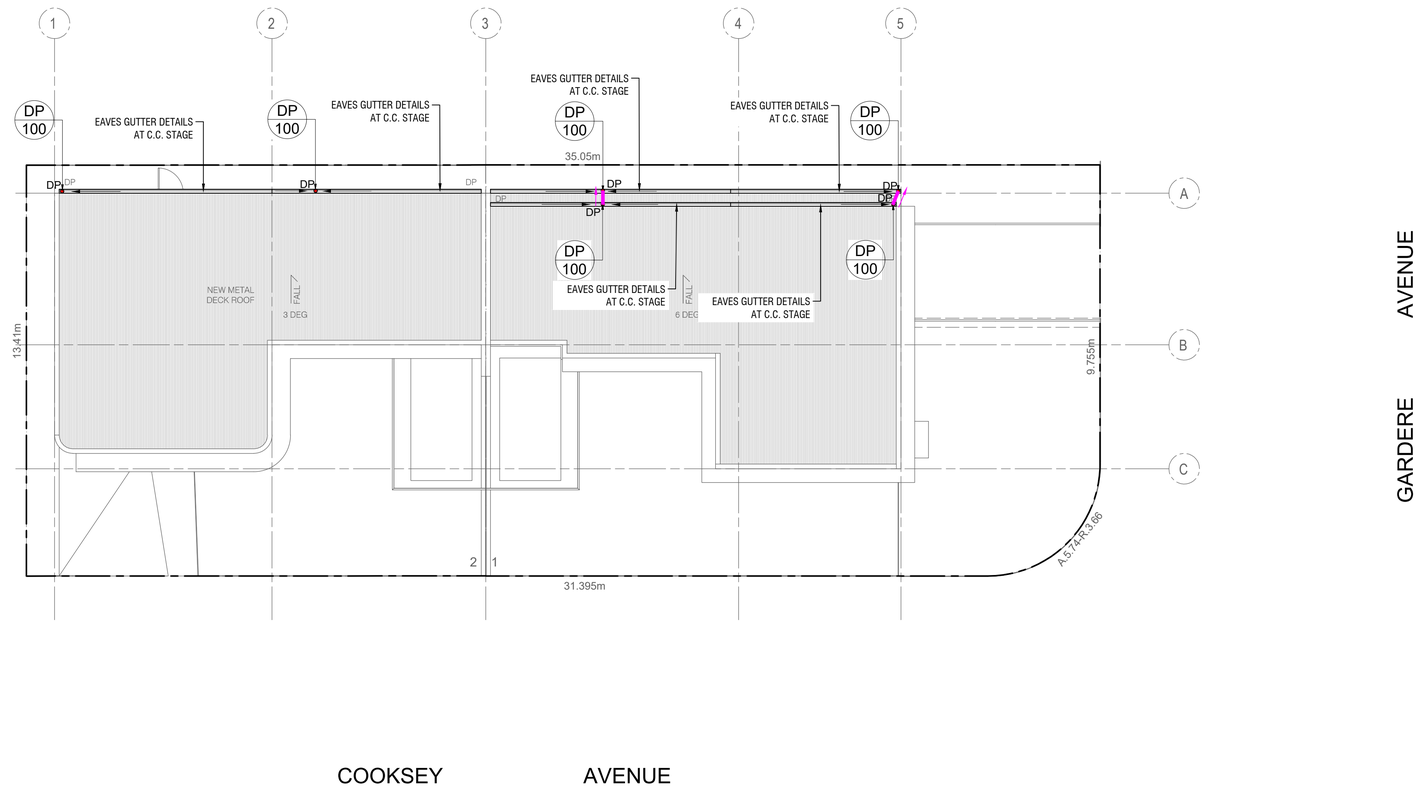
Project North

Scale @ A1: AS SHOWN

Sheet Name: GROUND FLOOR STORMWATER DRAINAGE PLAN

Sheet Number: D02

Revision: A



ROOF STORMWATER DRAINAGE PLAN

SCALE 1: 100

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Project North

Scale @ A1: AS SHOWN

Sheet Name: ROOF STORMWATER DRAINAGE PLAN

Sheet Number: D04

Revision: A

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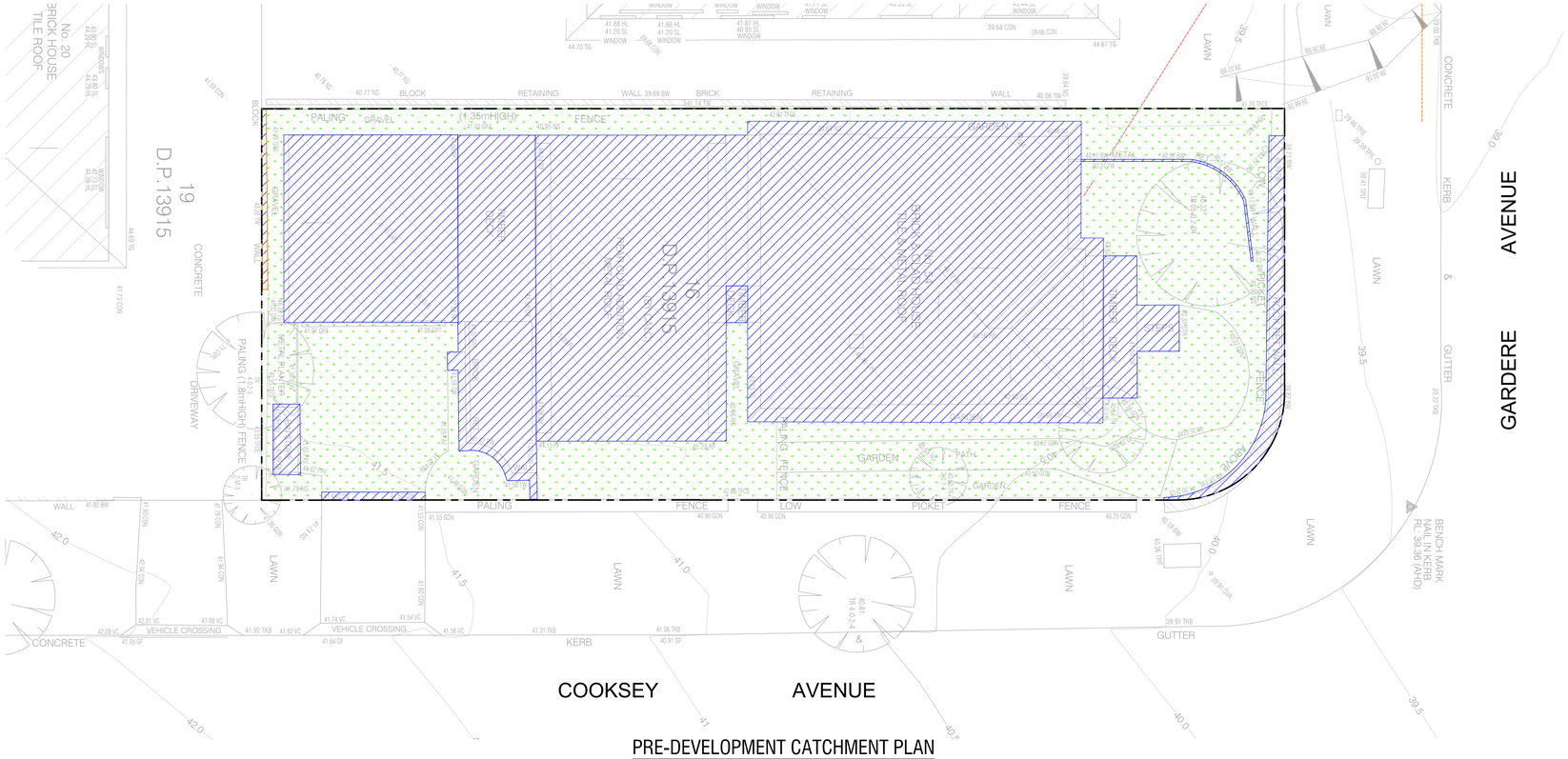
1:100 0 0.5 1 2.5 5 10
1:200 0 1 2 5 10 20

PRE DEVELOPMENT CATCHMENT ANALYSIS:

TOTAL SITE AREA:	467.34 m²
HARDSTAND	285.28 m²
LANDSCAPE	182.06 m²

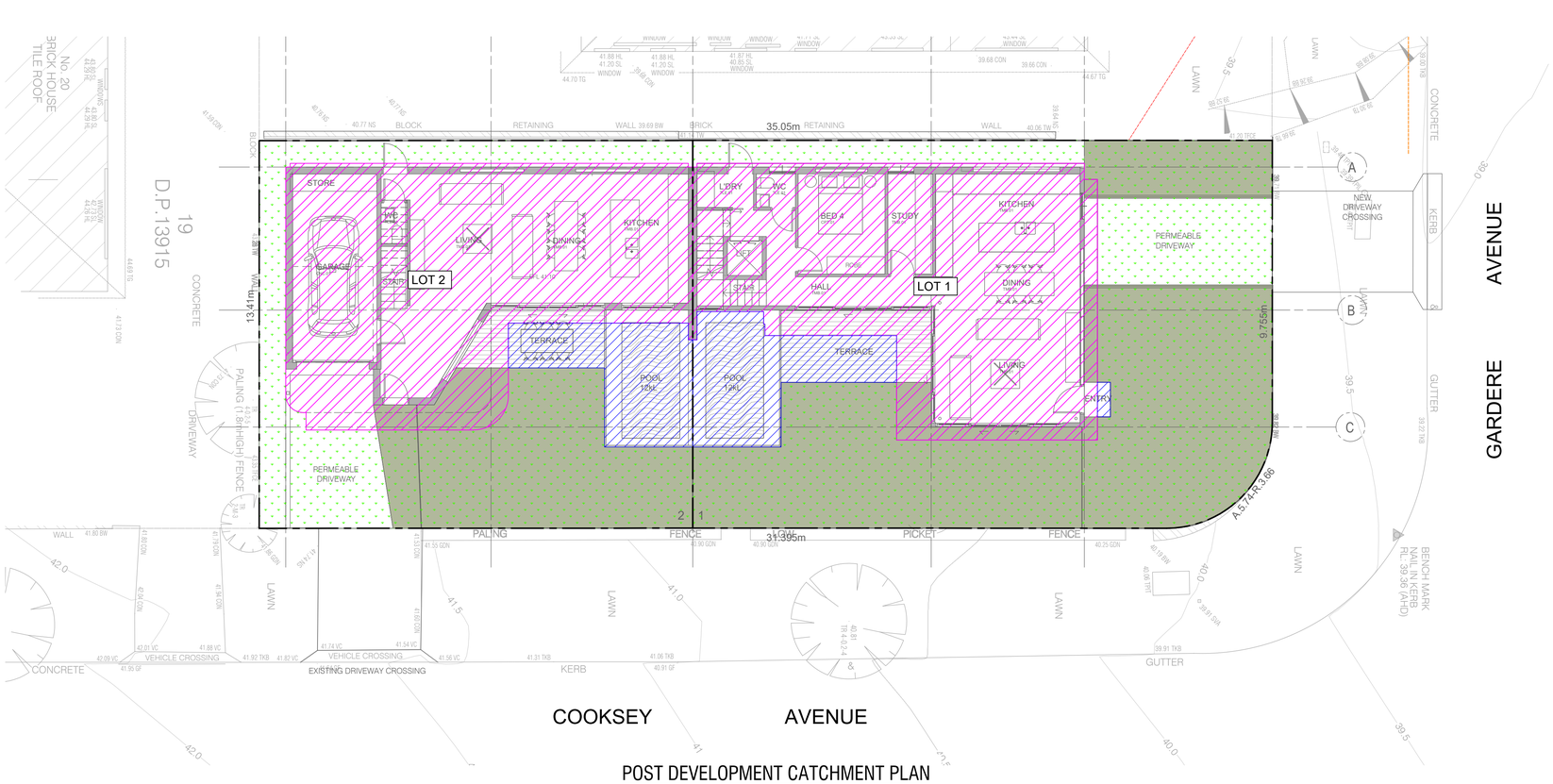


PRE-DEVELOPMENT CATCHMENT PLAN

SCALE 1: 100

POST DEVELOPMENT CATCHMENT ANALYSIS:

TOTAL SITE AREA:	467.35 m²
LOT 1 AREA:	266.10 m²
ROOF	106.33 m²
HARDSTAND	20.70 m²
LANDSCAPE	139.10 m²
LOT 2 AREA:	201.25m²
ROOF	105.50 m²
HARDSTAND	18.15 m²
LANDSCAPE	77.60 m²



POST DEVELOPMENT CATCHMENT PLAN

SCALE 1: 100

1:20 1:50 1:100 1:200

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Scale @ A1: AS SHOWN

Sheet Name: PRE & POST DEVELOPMENT CATCHMENT ANALYSIS

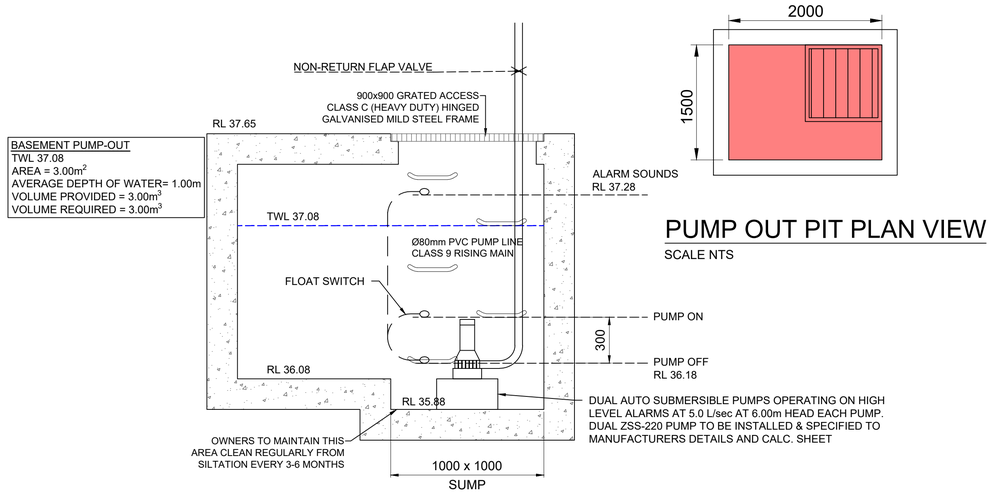
Sheet Number: D05

Revision: A

PUMP SPECIFICATIONS
STANDARD PUMP-OUT NOTES

THE PUMP-OUT SYSTEM IS DESIGNED TO WORK IN THE FOLLOWING MANNER -

1. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD LOW LEVEL FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMP AND TO SET 100mm ABOVE BOTTOM OF TANK TO ALLOW 100mm DEPTH OF WATER MAINTAINED AT ALL TIMES.
2. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL (I.E. 300mm ABOVE LOWER LEVEL FLOAT), WHEREBY THE PUMP WILL OPERATE & DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
3. A THIRD FLOAT SHALL BE SET NOT HIGHER THAN 100mm ABOVE THE INVERT OF THE INLET PIPE. THIS FLOAT SHOULD ACTIVATE THE ALARM.
4. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT ALARM AND AN AUDIBLE ALARM 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. THE PUMP CONTROLS SHALL BE SET UP TO ENABLE ALTERNATE PUMP OPERATION AT EACH START. IN THE EVENT A PUMP FAILS TO OPERATE WHEN THE WATER LEVEL IN THE WET WELL REACHES THE PUMP START, THE OTHER PUMP SHALL BE ACTIVATED, AND A FLASHING STROBE LIGHT ALARM INITIATED. IN THE EVENT THAT BOTH PUMPS FAIL TO OPERATE, AN AUDIBLE ALARM SHALL BE INITIATED.
6. PUMPS SHALL BE FITTED WITH A GATE VALVE AND NON-RETURN VALVE ON THE DELIVERY SIDE OF EACH PUMP. THE VALVES SHOULD BE ACCESSIBLE WITHOUT HAVING TO ENTER THE WELL.



PUMP OUT PIT PLAN VIEW
SCALE NTS

A / D01 SECTION THROUGH PUMP OUT PIT
SCALE: NTS

PUMP WELL DETAILS

MIN. VOLUME REQUIRED BY AS 3500= 3.00 m^3
STORAGE PROVIDED 2.0x1.50x1.0m= 3.00 m^3
MIN. PUMP CAPACITY BY AS 3500 = 10.0 L/s
DUAL ZSS-220 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMPS TO OPERATE SIMULTANEOUSLY ON HIGH LEVEL ALARMS AT 5.0L/sec (PER PUMP) AT 7.00m HEAD.

- Heavy duty submersible drainage pumps for pumping drainage and stormwater
- High efficiency pump design
- Suited to industrial and municipal applications
- Ideal for stormwater pump stations and contractor dewatering

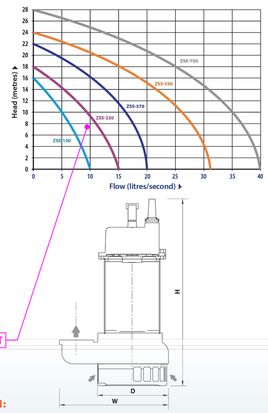
Four Models Available:

ZSS-150-3 415 volt, 1.5 kW, Manual
ZSS-220-3 415 volt, 2.2 kW, Manual
ZSS-370-3 415 volt, 3.7 kW, Manual
ZSS-550-3 415 volt, 5.5 kW, Manual
ZSS-750-3 415 volt, 7.5 kW, Manual

FEATURES:

- Stainless steel, cast iron industrial construction
- Stainless steel motor shaft
- Double mechanical shaft seal
- ZSS-150 suits Guide Rail Kit ZGRK-80
- ZSS-220 and ZSS-370 suit Guide Rail Kit ZGRK-80/100
- ZSS-550 and ZSS-750 suit Guide Rail Kit ZGRK-100

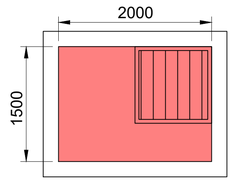
PUMP PERFORMANCE:



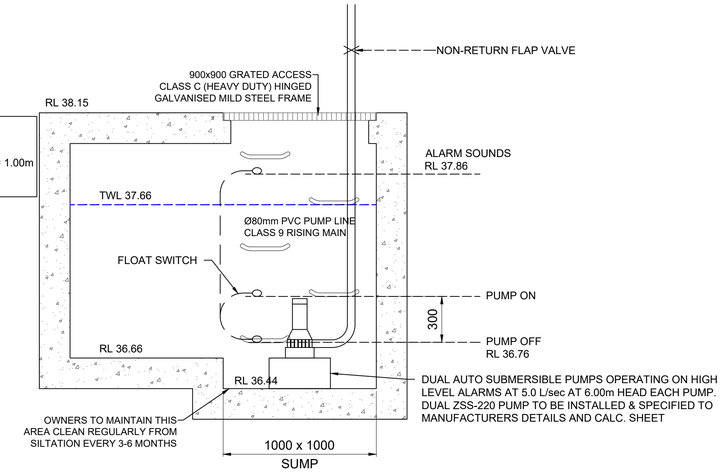
DUTY POINT FOR BASEMENT PUMP-OUT

SPECIFICATION:

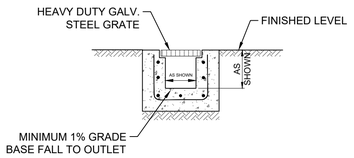
Model Name	Outlet Size	Maximum Flow rate	Maximum Head	Motor Size	Weight	Dimensions W x D x H
ZSS-150	80 mm	10 L/sec	16 m	1.5 kW	31 kg	278 x 182 x 475 mm
ZSS-220	80 mm	15 L/sec	18 m	2.2 kW	42 kg	390 x 250 x 450 mm
ZSS-370	100 mm	20 L/sec	22 m	3.7 kW	48 kg	450 x 240 x 530 mm
ZSS-550	100 mm	31 L/sec	24 m	5.5 kW	60 kg	550 x 310 x 590 mm
ZSS-750	100 mm	40 L/sec	28 m	7.5 kW	70 kg	550 x 310 x 610 mm



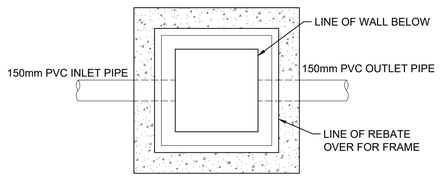
PUMP OUT PIT PLAN VIEW
SCALE NTS



B / D01 SECTION THROUGH PUMP OUT PIT
SCALE: NTS

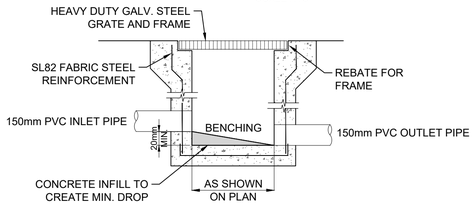


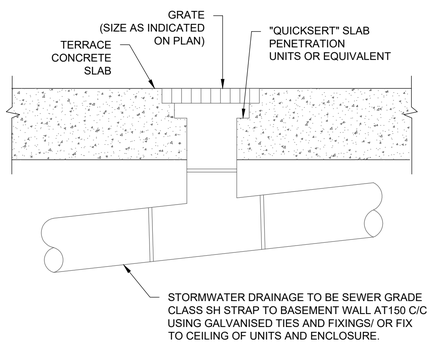
DETAIL
GRATED TRENCH DRAIN
SCALE NTS



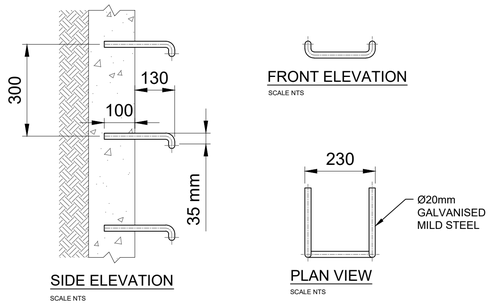
PLAN WITHOUT GRATE

DETAIL
STORMWATER PIT
SCALE NTS





RAINWATER OUTLET DETAIL
SCALE N.T.S.



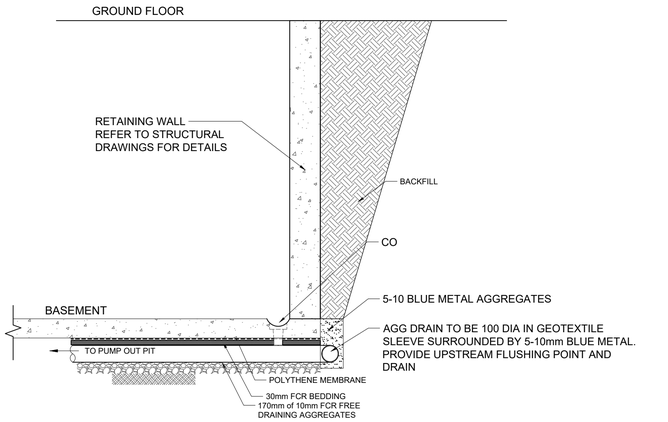
FRONT ELEVATION
SCALE NTS

SIDE ELEVATION
SCALE NTS

PLAN VIEW
SCALE NTS

STEP IRON DETAIL
SCALE NTS

NOTE: INSTALL WHERE PITS ARE DEEPER THAN 900



TYPICAL BASEMENT SECTION C / D01
SCALE NTS

1:20 1:50 1:100 1:200

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Scale @ A1: AS SHOWN

Sheet Name: STORMWATER DRAINAGE SECTIONS AND DETAILS SHEET 1

Sheet Number: D10

Revision: A

OSD DESIGN DETAILS

BASED ON Northern beaches COUNCIL'S water managment development policy 2021,(REGION2-CENTRAL CATCHMENT 9.3.2.3) OSD VOLUME REQUIRED IS CALCULATED AS PER BELOW:

TOTAL SITE AREA-LOT1: 266.10m^2

SSR: 200X0.0266=5.322m^3
PSD: 400X0.0266=10.644 l/s
ADJUSTED OSD VOLUME: 5.32-2.5=2.82m^3
OSD VOLUME PROVIDED: 5.12m^3
OSD VOLUME PROVIDED: 2.5 m^3

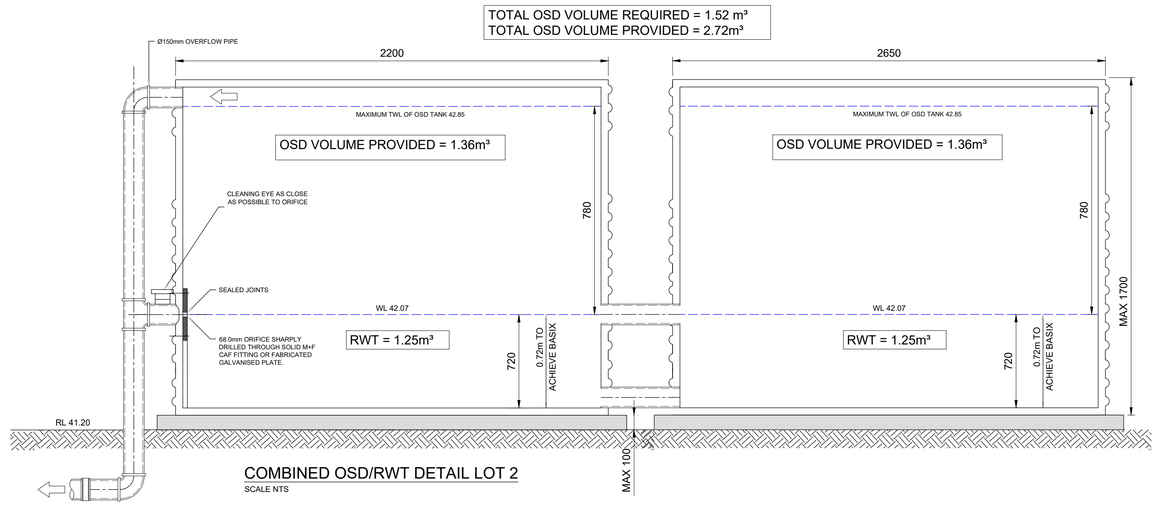
2X 3000 LITER COMBINED OSD/RWT SYSTEM ARE PROPOSED FOR LOT 1 TO SATISFY COUNCIL'S REQUIREMENTS.

TOTAL SITE AREA-LOT2: 201.25m^2

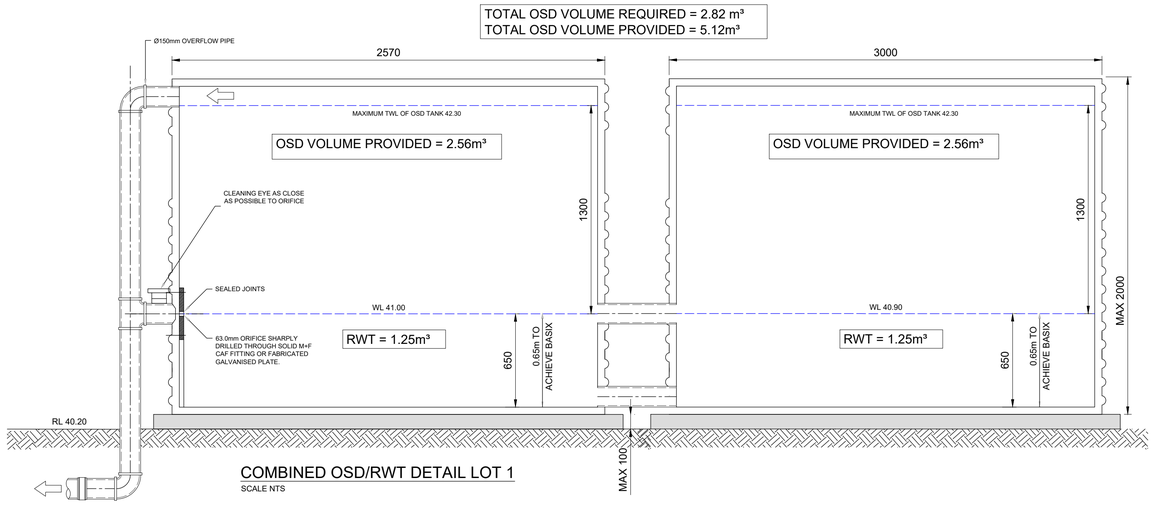
SSR: 200X0.0201=4.025m^3
PSD: 400X0.0201=8.05 l/s
ADJUSTED OSD VOLUME: 4.025-2.5=1.52m^3
OSD VOLUME PROVIDED: 2.72m^3
RWT VOLUME PROVIDED: 2.50m^3

2X 2500 LITER COMBINED OSD/RWT SYSTEM ARE PROPOSED FOR LOT 2 TO SATISFY COUNCIL'S REQUIREMENTS.

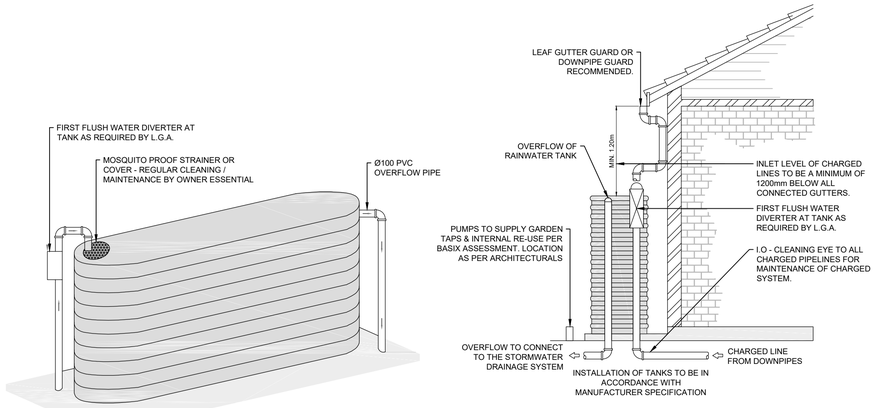
AS PER SECTION 9.3.2.1 , TO ACHIEVE A FULL CREDIT AGAINST THE DETERMINED OSD VOLUME RAINWATER REUSE MUST BE USED FOR FLUSHING OF TOILETS AS A MINIMUM, HOWEVER RAINWATER CAN BE USED FOR NON-POTABLE USAGE SUCH AS WATERING OF GARDENS, WASHING CARS, CLOTHES WASHING ETC.



COMBINED OSD/RWT DETAIL LOT 2
SCALE NTS



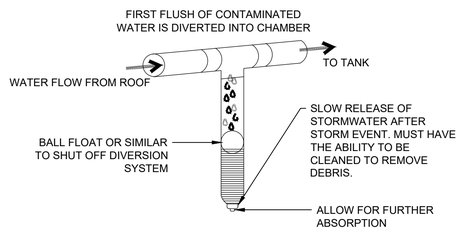
COMBINED OSD/RWT DETAIL LOT 1
SCALE NTS



RAINWATER TANK DETAIL
SCALE NTS

RAINWATER TANK

TANK DETAILS SHOWN ARE A SUGGESTED CONFIGURATION ONLY. ANY MODIFICATION TO TANK VOLUME OR INLET AND OUTLET LEVELS MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION. TANK SHAPE , & DEVICES SHOWN ARE DIAGRAMMATIC ONLY. MINIMUM OF 450 CLEARANCE (UNLESS L.G.A. REQUIRES LARGER SETBACK) TO SIDE BOUNDARIES MUST BE MAINTAINED.
CLIENT IS RESPONSIBLE TO ENSURE COMPLIANCE WITH THIS IN THE INSTALLED STATE.
CHARGED STORM WATER LINES FROM ROOF AREAS ONLY TO RAINWATER TANK.
ALL JOINTS TO BE SOLVENT WELDED. ALL EXPOSED PIPEWORK TO BE PAINTED TO WITHSTAND EXTERNAL ELEMENTS.
FIRST FLUSH WATER DIVERTER AT TANK TO COMPLY WITH SYDNEY WATER AND COUNCIL DCP'S. AN APPROVED SWITCH SYSTEM SIMILAR TO 'RAINBANK' TO BE USED VIA MAINS. PUMPS TO MANUF. SPECS.
RAIN TANK TO BE INSTALLED AND MAINTAINTED TO MANUFACTURER'S SPECIFICATIONS AND TO COMPLY WITH ALL SYDNEY WATER GUIDELINES.
CLIENT TO BE RESPONSIBLE FOR MAINTENANCE SYSTEM OF CHARGED PIPELINES. DEBRIS ACCUMULATION SIGNIFICANTLY AFFECT SYSTEMS PERFORMANCE. MAINTENANCE PROGRAM ESSENTIAL.
STRUCTURAL DETAILS FOR TANK BASE BY MANUFACTURERS OR OTHERS.



FIRST FLUSH WATER DIVERTER DETAIL
NTS

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1:50 0 0.25 0.5 1.25 2.5 5
1:100 0 0.5 1 2.5 5 10
1:200 0 1 2 5 10 20

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Start Date: APRIL 2024
Project No. 250091

Client: MR & MRS BRYDEN

Architect: ALEX BRYDEN ARCHITECTURE

Approved by: K.E.

Internal Revisions:

Rev. #	Drafter	Engineer	Date
	Revision Description		
A	F.E.	K.E.	17.04.25
	ISSUE FOR D.A.		

Notes

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2. Refer to architectural drawings for all setout, levels.
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PRELIMINARY
NOT FOR CONSTRUCTION

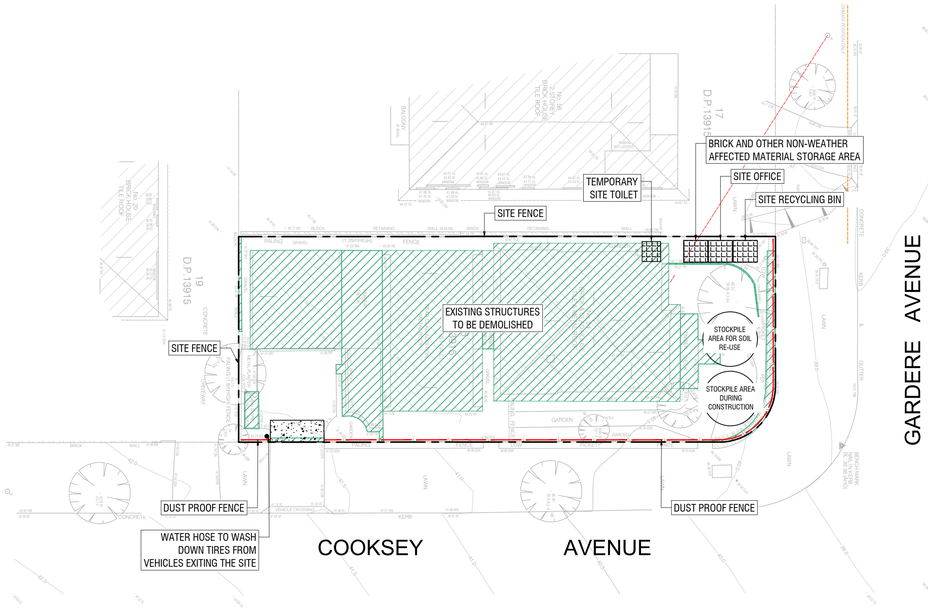
Project North

Scale @ A1: AS SHOWN

Sheet Name: STORMWATER DRAINAGE SECTIONS AND DETAILS SHEET 2

Sheet Number: D11

Revision: A



EROSION AND SEDIMENT CONTROL PLAN

SCALE 1:200

SYMBOLS

31.09TK — EXISTING LEVELS

SILT FENCE

DUST PROOF FENCE

SITE FENCE

STABILISED SITE ACCESS

EXISTING STRUCTURE TO BE DEMOLISHED

EROSION CONTROL NOTES

1. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH 'MANAGING URBAN STORMWATER, 3RD EDITION' PRODUCED BY THE NSW DEPARTMENT OF HOUSING.
2. ALL EROSION AND SILTATION CONTROL DEVICES ARE TO BE PLACED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND REMOVED REGULARLY DURING CONSTRUCTION
3. ALL TREES ARE TO BE PRESERVED UNLESS INDICATED OTHERWISE ON THE ARCHITECT'S OR LANDSCAPE ARCHITECT'S DRAWINGS. EXISTING GRASS COVER SHALL BE MAINTAINED EXCEPT IN AREAS CLEARED FOR BUILDINGS, PAVEMENTS ETC- CONTRACTOR TO MINIMISE DISTURBED AREAS.
4. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADDEN WATER
5. NOT WITHSTANDING DETAILS SHOWN, IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO ENSURE THAT ALL SITE ACTIVITIES COMPLY WITH THE REQUIREMENTS OF THE CLEAN WATERS ACT.
6. ALL DISTURBED AREAS AND STOCKPILES TO BE STABILISED WITHIN 14 DAYS. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTERS AND FOOTPATHS.
7. TOPSOIL TO BE STRIPPED, STOCKPILED AND RE-SPREAD ON COMPLETION OF EARTHWORKS. NONE TO BE REMOVED.
8. NO DISTURBANCE OF SITE PERMITTED OTHER THAN IMMEDIATE AREA OF THE WORKS.
9. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE. NON-COMPLIANCE MAY RESULT IN A $1500 FINE

GENERAL INSTRUCTIONS:

SWM01
THESE PLANS PRESENT A CONCEPTUAL SOIL AND WATER MANAGEMENT PLAN (SWMP) ONLY AND SHOWS A POSSIBLE WAY OF MANAGING SOIL AND EROSION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT AND MANAGEMENT OF THE SITE AND PREPARING A DETAILED PLAN AND OBTAINING APPROVAL FROM THE RELEVANT AUTHORITY PRIOR TO THE COMMENCEMENT OF ANY WORKS.

SWM02
THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND ANY OTHER PLANS, WRITTEN INSTRUCTIONS, SPECIFICATION OR DOCUMENTATION THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT OF THE SUBJECT SITE.

SWM03
THE CONTRACTOR WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE CONSISTENT WITH ' MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION' - ALSO KNOWN AS ' THE BLUE BOOK'.

SWM04
ALL BUILDERS AND SUB-CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

EROSION CONTROL:

SWM05
WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNTIL SEDIMENT CONCENTRATION IS LESS THEN OR EQUAL TO 50MG/L, IE THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/ OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AND APPROVED STRUCTURE.

SWM06
ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD THE SURFACE WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

SWM07
ACCEPTABLE RECEPTORS WILL BE CONSTRUCTED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.

SWM08
'SEDIMENT' FENCING WILL BE INSTALLED AS INDICATED ON THE PLANS AND AT THE DIRECTION OF SITE SUPERINTENDENT TO ENSURE CONTAINMENT OF SEDIMENT. THE SEDIMENT FENCING WILL OUTLET OR OVERFLOW UNDER STABILISED CONDITIONS INTO THE SEDIMENT BASIN, TO SAFELY CONVEY WATER INTO A SUITABLE FILTERING SYSTEM SHOULD THE PORES IN THE FABRIC BLOCK.

SWM09
THE SEDIMENT BASINS WILL BE CONSTRUCTED WITH THE MINIMUM WET SEDIMENT CAPACITY OF CUM CUBIC METERS AND DESIGNED TO REMAIN STABLE IN AT LEAST THE 1 IN CDSE YEAR CRITICAL DURATION STORM EVENT. ARTIFICIAL FLOCCULATION OF THE FINER PARTICLES MAY NOT BE NECESSARY IN THIS INSTANCE.

SWM10
STOCKPILES SHOULD NOT BE LOCATED WITHIN 5M OF TREES AND HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, DRAINAGE LINES, PAVED AREAS AND DRIVEWAYS. WHERE THEY ARE WITHIN 5M FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSTREAM WATERS. MEASURE SHOULD ALSO BE APPLIED TO PREVENT THE EROSION OF THE STOCKPILE.

SWM11
ALL CUT AND FILL BATTERS ARE TO BE SEEDED AND MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION.

SWM12
ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY -
A. PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE,
B. ENSURING THAT NOTHING IS NAILED TO THEM,
C. PROHIBITING PAVING GRADING SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS :
1. ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER,
2. A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH,
3. CARE IS TAKEN.

SWM13
DURING WINDY WEATHER, LARGE DISTURBED UNPROTECTED AREAS SHOULD BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

SWM14
TEMPORARY PROTECTION FROM EROSIVE FORCES WILL BE UNDERTAKEN ON LANDS WHERE FINAL SHAPING HAS NOT BEEN COMPLETED BUT WORKS ARE UNLIKELY TO PROCEED FOR PERIODS OF TWO MONTHS OR MORE (EG. ON TOP SOIL STOCKPILES). THIS MAY BE ACHIEVED WITH A VEGETATIVE COVER. A RECOMMENDED LISTING OF PLANT SPECIES FOR SOIL AND WATER MANAGEMENT NOTES:
TEMPORARY COVER IS -
I) AUTUMN/WINTER SOWING -OATS/RYECORN AT 20KG/HA
-JAPANESE MILLET AT 10KG/HA
II) SPRING/SUMMER SOWING -JAPANESE MILLET AT 20KG/HA
- OATS/RYECORN AT 10 KG/HA

SWM15
DIVERSION BANKS/ CHANNELS WILL BE REHABILITATED AS SOON AS POSSIBLE AND WITHIN 5 WORKING DAYS FROM THEIR FINAL SHAPING. OTHER THAN IN THE WINTER MONTHS, SUITABLE MATERIALS'S INCLUDE TURF GRASSES SUCH S COUCH OR KIKUYU. DURING WINTER, OR AT OTHER TIMES WHEN TEMPORARY REHABILITATION (MORE THAN 3 MONTHS) IS REQUIRED, IT IS SUGGESTED THAT HESSIAN CLOTH IS USED BUT ONLY IF TACKED WITH APPROPRIATE PEGS AND AN ANIONIC BITUMEN EMULSION. FOOT AND VEHICULAR TRAFFIC SHOULD BE KEPT AWAY FROM THESE AREAS.

SWM16
UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

CONSTRUCTION SEQUENCE

SWM17
WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHOULD BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE -
I) INSTALL INLET SEDIMENT TRAPS TO ALL GULLY PITS FRONTING THE SITE,
II) INSTALL A 1.8M CHAIN WIRE FENCE AROUND THE BOUNDARIES AND ATTACH HESSIAN CLOTH OR SIMILAR TO IT ON THE WINDWARD SIDE (TIES AT THE TOP, CENTRE AND BOTTOM AND AT 1M INTERVALS OR AS INSTRUCTED BY THE SUPERINTENDENT),
III) INSTALL GEOFABRIC SEDIMENT FENCE AND SEDIMENT TRAPS AROUND ALL PERMANENT STORMWATER RETICULATION STRUCTURES AS SHOWN ON THE PLAN,
IV) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE AS SHOWN ON THE PLAN OR TO LOCATION AS DETERMINED BY SUPERINTENDENT,
V) INSTALL DIVERSION BANKS ALONG THE BOUNDARY WHERE REQUIRED, REHABILITATE DISTURBED LANDS DOWNSLOPE FROM THE BASINS WITHIN 20 WORKING DAYS,
VI) ENSURE THAT THE SEDIMENT BASIN IS DIRECTED ONTO A TURFED AREA AND DRAINS TO A SUITABLE LOCATION. A TEMPORARY STORMWATER LINE MAY BE NECESSARY TO CONVEY THE FLOWS TO THIS LOCATION. CONSTRUCT DIVERSION CHANNELS AT THE BOUNDARY TO DRAIN INTO THE SEDIMENT BASIN AS SHOWN ON PLANS.
VII) AT COMPLETION STABILISE SITE AND DECOMMISSION SEDIMENT BASIN AND ALL EROSION CONTROL DEVICES.

SWM18
TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

SWM19
FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

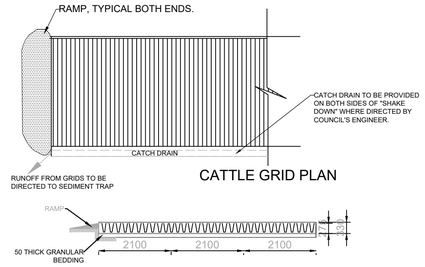
SITE INSPECTION AND MAINTENANCE

SWM 20
AT LEAST WEEKLY AND AFTER EVERY RAIN FALL EVENT, THE CONTRACTOR WILL INSPECT THE SITE AND ENSURE THAT -
I) DRAINS AND ALL SEDIMENT CONTROL DEVICES OPERATE EFFECTIVELY AND INITIATE REPAIR OR MAINTENANCE AS REQUIRED,
II) RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANOR APPROVED BY THE SUPERINTENDENT,
III) SPILL SAND (OR OTHER MATERIALS) IS REMOVED FROM HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, GUTTERS, PAVED AREAS AND DRIVEWAYS,
IV) SEDIMENT IS REMOVED FROM BASINS AND / OR TRAPS WHEN LESS THAN 20M^3 OF TRAPPING CAPACITY REMAIN PER 1000M^2 OF DISTRIBUTED LANDS, AND OR LESS THAN 500 DEPTH REMAINS IN THE SETTLING ZONE. ANY COLLECTED SEDIMENT WILL BE DISPOSED IN AREAS WHERE FURTHER POLLUTION TO DOWN SLOPE LANDS AND WATERWAYS IS UNLIKELY,
V) REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND INITIATE UPGRADING OR REPAIR AS APPROPRIATE.

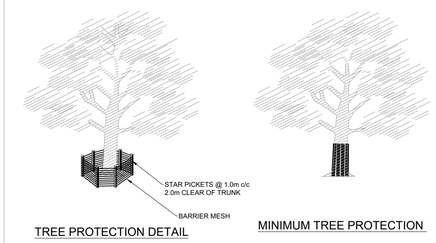
SWM 21
THE CONTRACTOR SHALL PROVIDE ALL MONITORING CONTROL AND TESTING.

NOTES THIS DRAWING

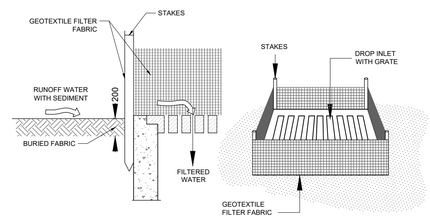
1. ALL DOCUMENTS WILL BE SUBMITTED TO COUNCIL FOR APPROVAL.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE.
3. INSTALLATION OF SILT FENCING, SEDIMENTATION BARRIERS AROUND DRAINS.
4. FENCING IS TO BE 1.8m(min) HEIGHT, PLACED AROUND THE SITE UNTIL THE WORK COMPLETE.
5. THE SITE GATES WILL BE LOCATED AT COOKSEY AVENUE.
6. THE HARDSTAND AREAS OR CATTLE GRIDS WILL BE PLACED AT THE SITE ENTRANCES AND EXITS. TO REMOVE THE BULK OF DIRT AND MUD THAT MAY ACCUMULATE ON TRUCK TYRES.
7. CONTRACTOR WILL CONDUCT REGULAR STREET SWEEPS ALONG THE ACCESS ROUTE TO ENSURE THE ROADS ADJACENT TO THE SITE ENTRANCES ARE KEPT CLEAN OF ANY DIRT AND DEBRIS.
8. REGULAR ENVIRONMENTAL INSPECTIONS WILL BE CARRIED OUT BY CONTRACTOR'S PERSONNEL TO ENSURE COMPLIANCE WITH THIS PLAN.



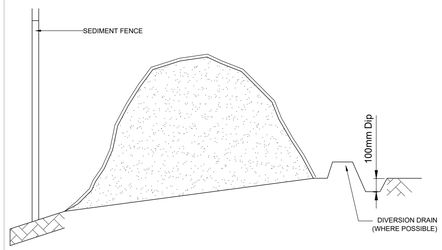
CATTLE GRID ALTERNATIVE



TREE PROTECTION DETAIL

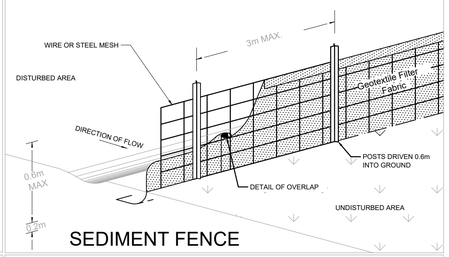


GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP

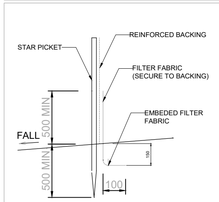


SOIL STOCK PILE

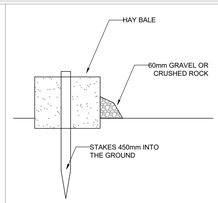
DRAINAGE AREA 0.4Ha MAX. SLOPE GRADIENT 1:2 MAX.
SLOPE LENGTH 60m MAX.



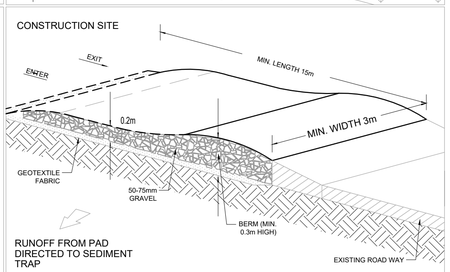
SEDIMENT FENCE



SILT FENCE DETAIL

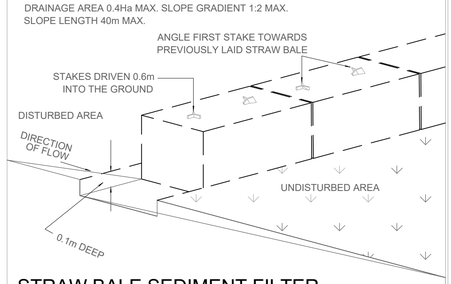


HAY BALE DETAIL

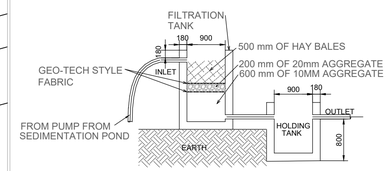


TEMPORARY CONSTRUCTION EXIT

DRAINAGE AREA 0.4Ha MAX. SLOPE GRADIENT 1:2 MAX.
SLOPE LENGTH 40m MAX.



STRAW BALE SEDIMENT FILTER



NOTE: HAY TO BE CHANGED EVERY DAY
GEO-TECH, SAND, AND BLUE METAL, TO BE CHANGED WEEKLY

TYPICAL DETAIL OF FILTRATION UNIT

1:20 0 0.1 0.2 0.5 1 2
1:50 0 0.25 0.5 1.25 2.5 5
1:100 0 0.5 1 2.5 5 10
1:200 0 1 2 5 10 20

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Sheet Name: EROSION AND SEDIMENT CONTROL PLAN AND DETAILS

Sheet Number: D15

Revision: A