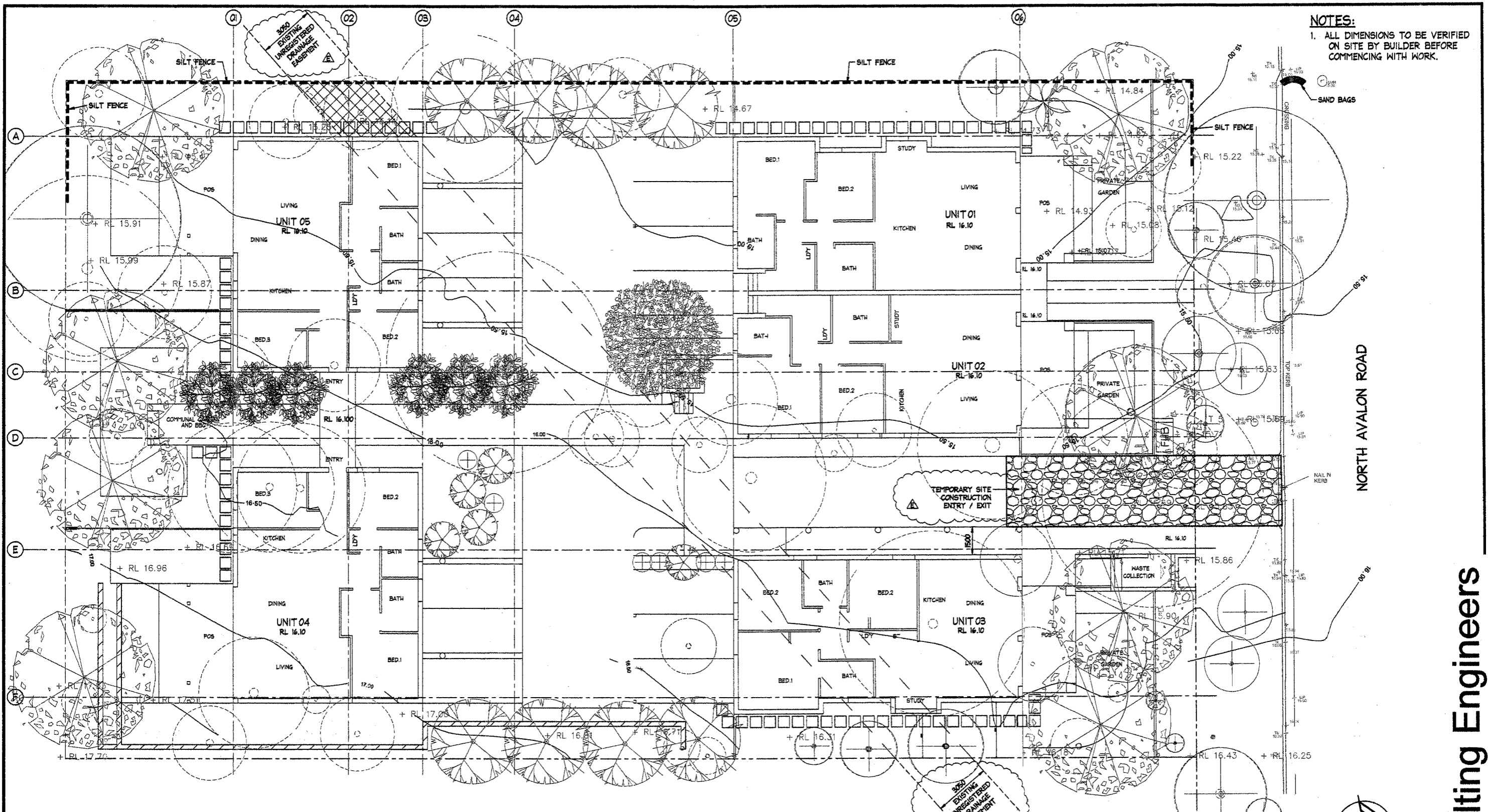
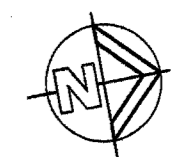


NOTES:
 1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.



SEDIMENT AND EROSION CONTROL PLAN
 SCALE = 1 : 100



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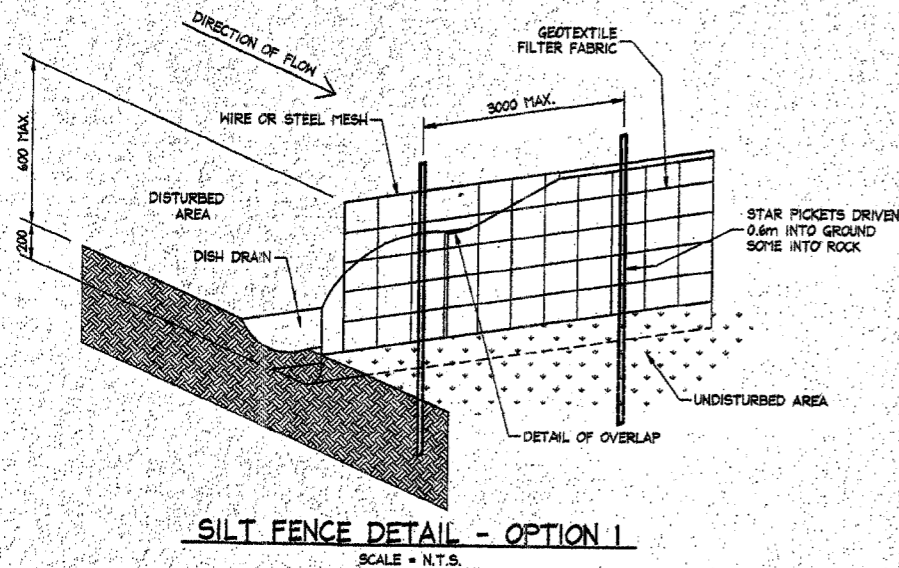


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08.10.2019	E	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - NOTES ALTERED	P.R.B.	M.W.																																		
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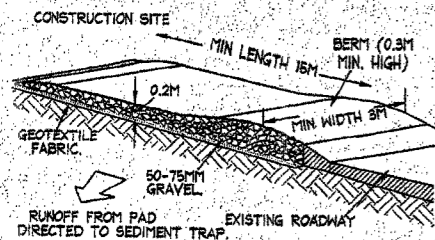
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SEDIMENT CONTROL:

1. INSTALL SEDIMENT CONTROL STRUCTURES IN LOCATIONS INDICATED ON DRAWINGS AND AS OTHERWISE REQUIRED TO CONTROL SEDIMENT DURING ALL EXCAVATIONS AND WHILST AREAS OF THE SITE ARE EXPOSED TO EROSION.
2. CONTROL STRUCTURES TO BE AS DETAILED OR AS OTHERWISE REQUIRED BY CERTIFYING AUTHORITY.
3. REVIEW CONTROL MEASURES AND MAINTAIN STRUCTURES DURING CONSTRUCTION.
4. IF ADDITIONAL MEASURES ARE REQUIRED FOR EROSION CONTROL OR BY COUNCIL REQUIREMENTS REFER TO 'URBAN EROSION AND SEDIMENT CONTROL' GUIDELINES PREPARED BY THE DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT.



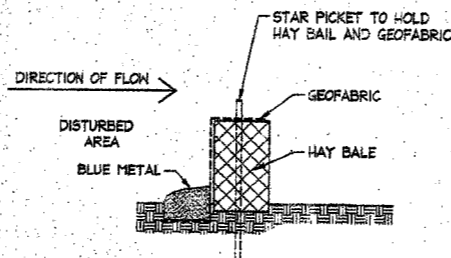
SILT FENCE DETAIL - OPTION 1
SCALE = N.T.S.



TYPICAL TEMPORARY CONSTRUCTION ENTRY/EXIT DETAIL

CONSTRUCTION NOTES:

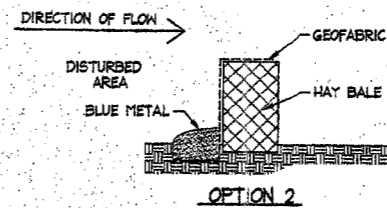
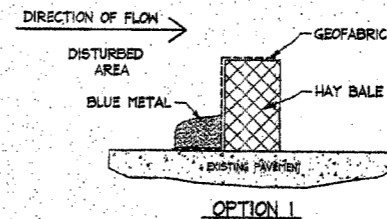
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROADBASE or 50mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITH A BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE or OTHER SEDIMENT TRAP.
6. OR CONSTRUCT A CATTLE GRID LOCATED AT ANY POINT WHERE TRAFFIC ENTERS OR LEAVES THE SITE.



SILT FENCE DETAIL - OPTION 2
SCALE = N.T.S.

SCHEDULE OF WORKS:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.
2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.



REMOVABLE HAY BALE DETAIL
SCALE = N.T.S.

NOTES:

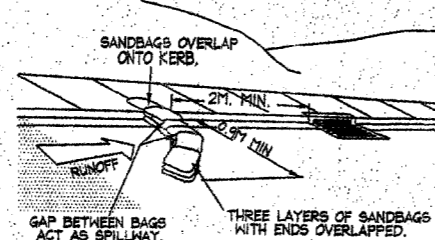
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
2. MINIMISE DISTURBED AREAS.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
5. ROADS AND FOOTPATH TO BE SWEEP DAILY.

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.

GENERAL NOTES:

1. CONSTRUCTION VEHICLES ARE TO LEAVE AND ENTER THE SITE OVER AN ALL WEATHER SURFACE CONSISTING OF COURSE CRUSHED STONE OR BLUE METAL CONSTRUCTED WITHIN THE FRONT SETBACK AREA OPPOSITE THE EXISTING FOOTPATH CROSSING UNLESS NOTED OTHERWISE.
2. EXCAVATION MACHINERY ARE TO BE UNLOADED AND LOADED UPON THIS ALL WEATHER SURFACE. CONCRETE PUMPS AND TRUCKS WILL ALSO UTILISE THE ALL WEATHER SURFACE FOR THEIR OPERATIONS.
3. MATERIALS WILL BE UNLOADED UPON THE ALL WEATHER SURFACE WITHIN THE FRONT SETBACK AREA BY MEANS OF CRANES MOUNTED ON THE BACK OF DELIVERY TRUCKS OR UNLOADED BY HAND. IT IS NOT ENVISAGED THAT A MOBILE CRANE WILL BE REQUIRED DURING THE CONSTRUCTION PROCESS.
4. SOME STOCKPILING OF TOPSOIL REMOVED FROM THE BUILDING AREA MAY BE STORED ON THE SITE DURING THE CONSTRUCTION WITHIN THE PROPERTY IN AN AREA ENCLOSED WITHIN THE SEDIMENT CONTROL FENCING.
5. ALL EXCAVATED & CONSTRUCTION MATERIALS, SHED, SKIP BINS, TEMPORARY WATER CLOSETS, SPOIL AND EQUIPMENT, ETC SHALL BE KEPT WITHIN THE PROPERTY. NO VEHICLES OR MACHINES SHALL BE KEPT WITHIN THE PROPERTY FOR LARGE LENGTHS OF TIME.
6. ALL RUBBISH & RECYCLABLE MATERIAL SHALL BE STOCKPILED IN WASTE BINS IN THE AREA NOMINATED ON THE SITE PLAN WITHIN THE SITE BOUNDARY. PUBLIC PROPERTY SHALL BE KEPT FREE OF RUBBISH AND RECYCLABLES AT ALL TIMES. ANY WASTE MATERIALS SHALL BE REGULARLY COLLECTED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE FASHION.
7. ANY BUILDING / DEMOLITION WORKS INVOLVING ASBESTOS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT STANDARDS.
8. VEHICLES LEAVING THE SITE WILL DO SO VIA THE ALL WEATHER BALLAST DRIVEWAY MADE OF COURSE AGGREGATE OR SIMILAR LOCATED WITHIN THE FRONT SETBACK AREA OF THE DEVELOPMENT. ANY DIRT OR MATERIAL DEPOSITED ON THE ROAD RESERVE OR ROADWAY IS TO BE PROMPTLY CLEANED.
9. ANY EXCAVATED AREA REQUIRED SUPPORT WILL BE UNDERTAKEN BY THE OWNER USING STRUCTURALLY APPROVED RETAINING STRUCTURES.
10. ADEQUATE SAFETY SIGNAGE MUST BE ERECTED IN A PROMINENT POSITION ON THE WORK SITE, WARNING OF UNAUTHORISED ENTRY TO WORK SITE AND INTENDING DANGERS.
11. SAFETY FENCES SHALL BE PROVIDED AROUND ALL EOUNDARIES UNLESS A CONTINUOUS STRUCTURALLY ADEQUATE FENCE PRESENTLY EXISTS. THE FENCING SHALL BE ADEQUATE TO RESTRICT PUBLIC ACCESS TO THE SITE WHEN BUILDING WORK IS NOT IN PROGRESS OR THE SITE IS UNOCCUPIED.
12. NOISE LEVELS SHALL NOT EXCEED COUNCIL REGULATION LEVELS. BUILDING AND DEMOLITION WORKS SHALL ONLY BE CARRIED OUT BETWEEN HOURS AND DAYS SPECIFIED BY COUNCIL.
13. GEOTEXTILE FABRIC SHALL BE PLACED ON THE INSIDE OF THE SITE FENCING PRIOR TO SITE DISTURBANCE TO PREVENT SEDIMENT WASHING FROM CLEARED AND DISTURBED AREAS OF THE SITE INTO THE STORMWATER SYSTEM. DURING CONSTRUCTION UNCONTAMINATED RUNOFF FROM CLEARED OR DISTURBED AREAS IS TO BE DIRECTED TO A TEMPORARY SILT ARRESTOR PIT THAT SHALL BE PROVIDED WITHIN THE SITE AT THE STREET BOUNDARY PROCESSING SITE STORMWATER BEFORE IT IS DISCHARGED TO THE STREET DRAINAGE SYSTEM OR WATERCOURSE.
14. ALL TOP SOIL STRIPPED & STOCKPILED ON SITE IS TO BE PLACED IN NOMINATED AREAS ON PLAN. ALL DISTURBED AREAS ARE TO BE STABILISED UPON THE COMPLETION OF BUILDING WORKS.
15. ALL SEDIMENT CONTROL STRUCTURES ARE TO BE CONTINUALLY MAINTAINED DURING CONSTRUCTION AND INSPECTED FOR STRUCTURAL DAMAGE AFTER EACH RAINFALL EVENT, WITH TRAPPED SEDIMENT BEING REMOVED TO THE TOPSOIL STOCKPILE.
16. WHERE THERE IS THE POTENTIAL OF SITE EROSION TO PRODUCE EXCESSIVE SEDIMENT RUNOFF SUITABLE GEOTEXTILE BARRIERS SHALL BE PLACED TO ALLEVIATE THE RISK ACCORDINGLY. BARE SURFACES SHALL BE KEPT MOIST TO REDUCE DUST LEVELS. GEOTEXTILE FABRIC LOCATED ON THE INSIDE OF FENCES SHALL ALSO BE UTILISED FOR DUST CONTROL WHERE NECESSARY.



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A1

Date	Issue	Description	By	Review	Document Certification	Client	Architect	Project	Date	Design	Drawn	Job No	Drawing No	Issue
08.06.2019	B	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - PROJECT TITLE ALTERED	P.R.B.	M.J.M.		Enviro Studio	SENIORS LIVING	May 2019	L.G.	Paul R Bruce	190247	D02	A	
04.07.2019	A	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION	P.R.B.	M.J.M.		Armada Property Pty Ltd	27-29 North Avalon Road Avalon Beach N.S.W. 2107			AMIEAust.				

DOCUMENT CERTIFICATION

Date: JULY 19
Rick G Wray
BE(CIVIL), CPENG, MIEAust., MBER, RPEQ, QCEP
(Director - NB Consulting Engineers)
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NB Consulting Engineers
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Architect:

Enviro Studio

Client:

Armada Property Pty Ltd

Project:

SENIORS LIVING
27-29 North Avalon Road Avalon Beach N.S.W. 2107

Drawing Title:

SEDIMENT AND EROSION
CONTROL DETAILS

Date:

May 2019

Design:

L.G.

Drawn:

Paul R Bruce

Job No:

190247

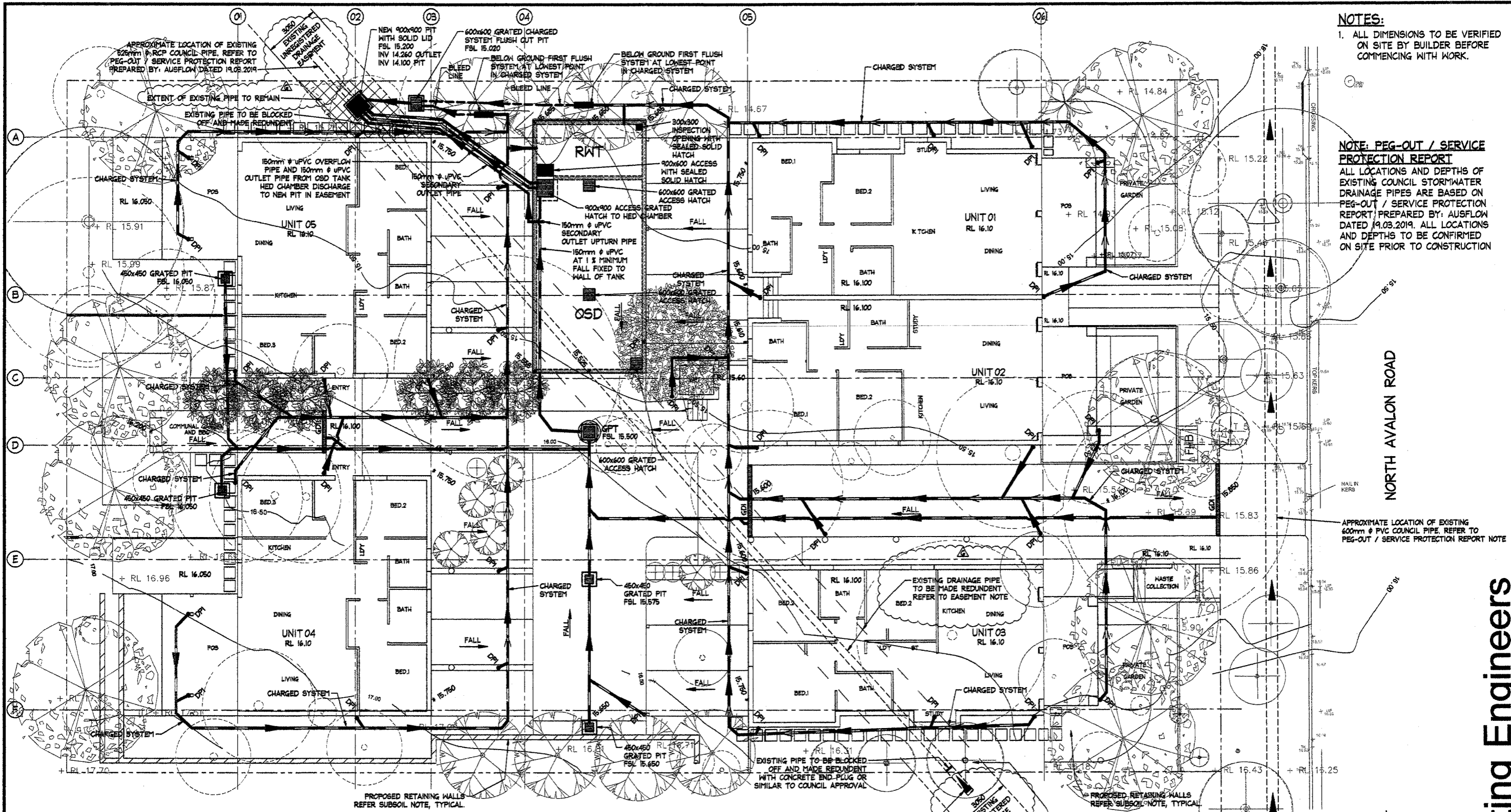
Drawing No:

D02

Issue:

A

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NOTES:
 1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.

NOTE: PEG-OUT / SERVICE PROTECTION REPORT
 ALL LOCATIONS AND DEPTHS OF EXISTING COUNCIL STORMWATER DRAINAGE PIPES ARE BASED ON PEG-OUT / SERVICE PROTECTION REPORT / PREPARED BY: AUSFLOW DATED 19.03.2019. ALL LOCATIONS AND DEPTHS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION

NORTH AVALON ROAD

APPROXIMATE LOCATION OF EXISTING 600mm Ø PVC COUNCIL PIPE. REFER TO PEG-OUT / SERVICE PROTECTION REPORT NOTE

LEGEND

- 100mm Ø DOWNPIPE DISCHARGE TO RWT
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE FALL DIRECTION IN CHARGED SYSTEMS
- PIT - STORMWATER PIT
- GDI - GRATED DRAIN GDI - 150 MIN DEPTH x 200 WIDE GRATED DRAIN
- RWT - RAINWATER TANK TO COLLECT ALL DPI DOWNPIPES. TO BE RE-USED AS PER BASIX REQUIREMENTS LOCAL COUNCIL & SYDNEY WATER REQUIREMENTS RWT = 8,000 L
- OSD - OSD TANK (REFER TO DETAILS) = 39,000 L
- GPT - GROSS POLLUTANT TRAP TO PROVIDE SECONDARY TREATMENT IN ACCORDANCE WITH COUNCIL POLICY. (TO FUTURE DETAILS)

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS. ALL PIPES TO BE 100mm Ø UPVC LAID AT 1% MINIMUM FALL UNLESS NOTED OTHERWISE

LEVEL 1 STORMWATER DRAINAGE PLAN
 SCALE = 1 : 100

NOTE: SUB SOIL DRAINAGE
 PROPOSED RETAINING AND TANKING WALLS TO HABITABLE AREAS WILL REQUIRE SUBSOIL DRAINAGE. DETAIL OF SUBSOIL DRAINAGE WILL REQUIRE CO-ORDINATION WITH STRUCTURAL, GEOTECHNICAL ENGINEERS AND ARCHITECTURAL REQUIREMENTS. SUBSOIL DRAINAGE DETAILS TO BE CO-ORDINATED AND PROVIDED AT CONSTRUCTION ISSUE OF DRAWINGS.

NOTE: EASEMENT (UNREGISTERED)
 EXISTING UNREGISTERED DRAINAGE EASEMENT AND 525mm RCP TO BE REMOVED AFTER PROVIDING EVIDENCE TO COUNCIL SHOWING ONLY 31 NORTH AVALON ROAD DISCHARGES TO THE ABOVE MENTIONED PIPE. RELEVANT PEG-OUT, SURVEYS AND REPORTS TO BE PROVIDED TO COUNCIL FOR REVIEW AND APPROVAL.



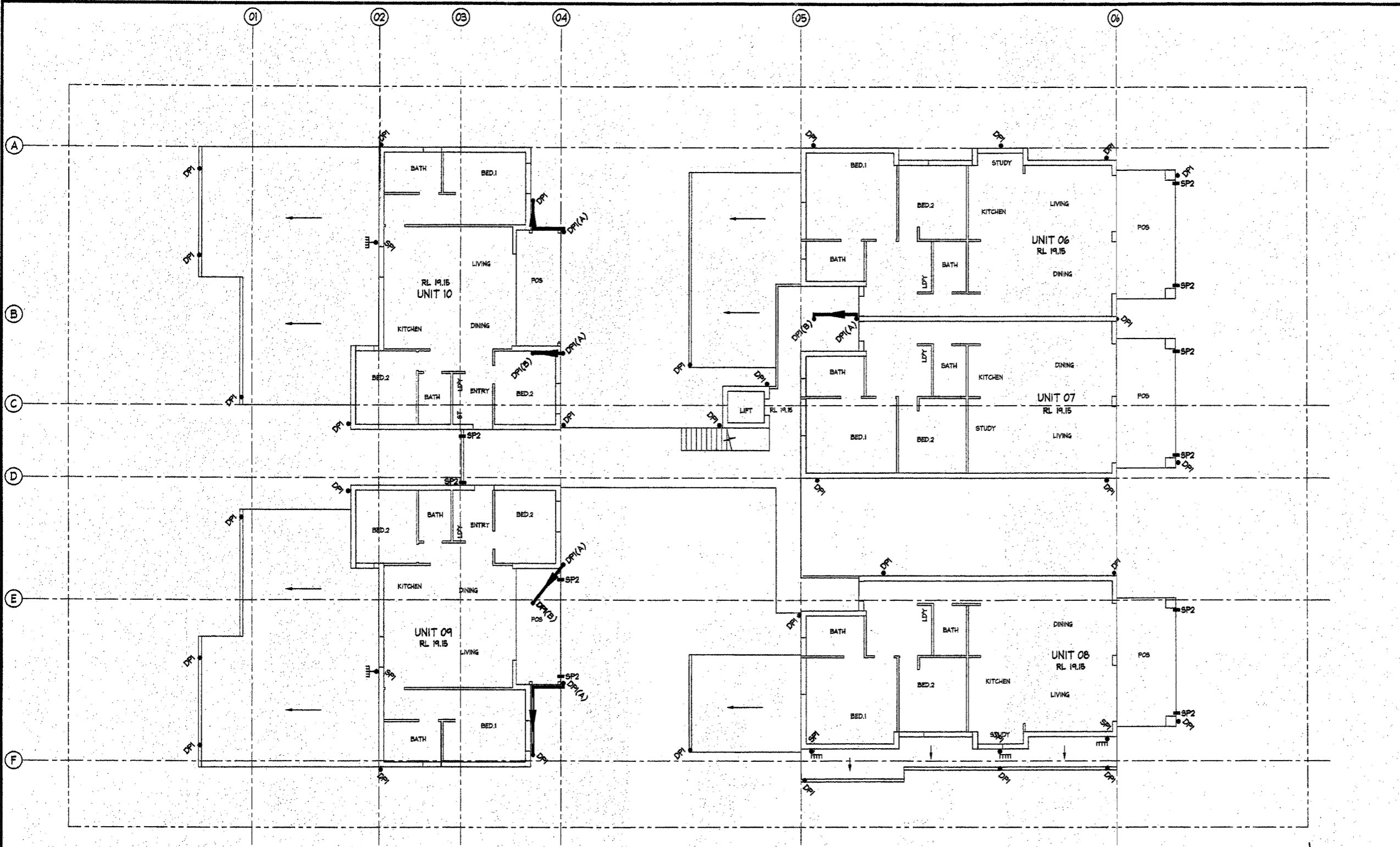
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08.10.2019	G	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - NOTES ALTERED	P.R.B.	M.M.	DOCUMENT CERTIFICATION Date: Rick G Wray BE(Civil), CP(Eng), MIEAust., NER, RP(Eng) 05296. (Director NB Consulting Engineers) The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers	NB Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 078 121 618 A.B.N. 24 078 121 616 Sydney Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast Ph: (07) 5631 4744 Unit 8, 1729 Gold Coast Highway Buralgh Heads QLD 4220 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au	Architect:	Envirova Studio	Project:	SENIORS LIVING 27-29 North Avalon Road Avalon Beach N.S.W. 2107	Date:	May 2019	Design:	L.G.	Drawn:	Paul R Bruce AMEAust.
28.09.2019	F	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - UPDATED TO SUIT LATEST ARCH DRGS	P.R.B.	M.M.			Client:	Armada Property Pty Ltd	Drawing Title:	LEVEL 1 STORMWATER DRAINAGE PLAN	Job No:	190247	Drawing No:	D03	Issue:	G
17.09.2019	E	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - UPDATED TO SUIT LATEST ARCH DRGS	P.R.B.	M.M.												
15.08.2019	D	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - NOTE CLARIFIED	P.R.B.	M.M.												
14.08.2019	C	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - NOTE ALTERED	P.R.B.	M.M.												
Date:	Issue:	Description:	By:	Review:												

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NORTH AVALON ROAD

ALL PIPES TO BE 100mm ϕ uPVC LAID AT 1% MINIMUM FALL UNLESS NOTED OTHERWISE
LEVEL 2 AND LOWER ROOF STORMWATER DRAINAGE PLAN

SCALE = 1 : 100

LEGEND

- 100mm ϕ DOWNPIPE DISCHARGE TO RWY
- DOWN PIPE ABOVE ONLY
- DOWN PIPE BELOW ONLY
- 100mm ϕ DOWNPIPE WITH SPREADER
- BUILDER TO PROVIDE A MINIMUM 100mm W x 30mm H OR 50mm DIA OVERFLOW FOR EVERY 6m² OF EXPOSED TERRACE AREA. THE FULL OVERFLOW DEPTH MUST BE LOCATED BELOW THE ADJACENT INTERNAL FLOOR LEVEL TO PROTECT AGAINST INCIDENTAL FLOODING DUE TO A BLOCKED FLOOR OUTLET.
- STORMWATER PIPE FLOW DIRECTION

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS.



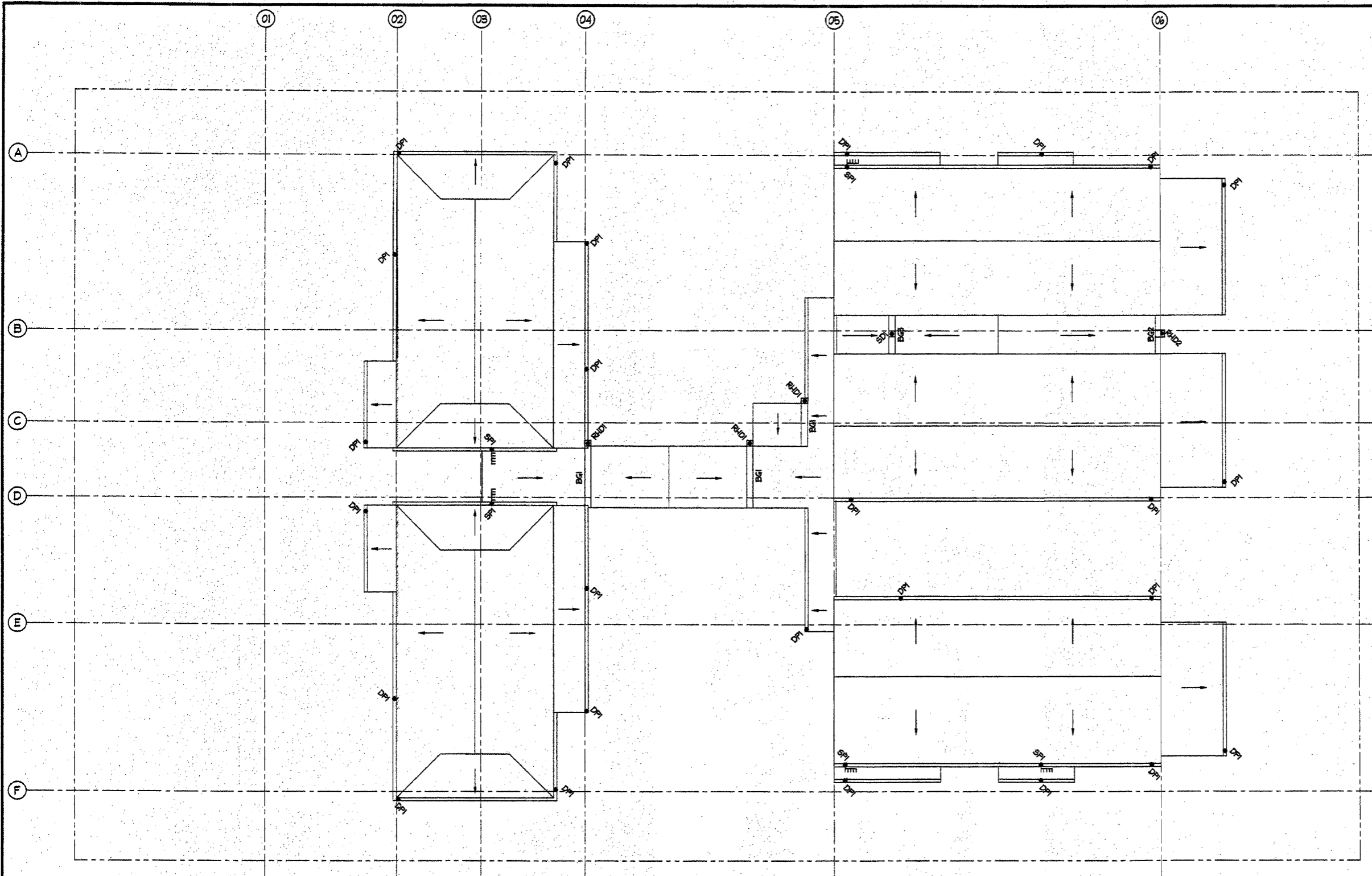
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DOCUMENT CERTIFICATION By: <i>[Signature]</i> Date: <i>20/19</i> Rick G Wray (Director NB Consulting Engineers) <small>The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers</small>		NB Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 078 121 818 A.B.N. 24 076 121 818 Sydney: Ph: (02) 8984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast: Ph: (07) 5631 4744 Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au	Architect: Envirova Studio	Project: SENIORS LIVING 27-29 North Avalon Road Avalon Beach N.S.W. 2107	Date: May 2019	Design: L.G.	Drawn: Paul R Bruce AMEAust.
			Client: Armada Property Pty Ltd	Drawing Title: LEVEL 2 AND LOWER ROOF STORMWATER DRAINAGE PLAN	Job No: 190247	Drawing No: D04	Issue: C
17.09.2019 C ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - UPDATED TO SUIT LATEST ARCH DRGS P.R.B. M.J.W.	06.05.2019 B ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - PROJECT TITLE ALTERED P.R.B. M.J.W.	04.07.2019 A ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION P.R.B. M.J.W.	Data: Issue: Description:				

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NORTH AVALON ROAD

ALL PIPES TO BE 100mm ϕ uPVC LAID AT 1% MINIMUM FALL UNLESS NOTED OTHERWISE

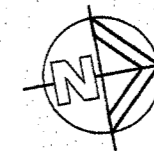
UPPER ROOF STORMWATER DRAINAGE PLAN

SCALE = 1 : 100

LEGEND

- 100mm ϕ DOWNPIPE DISCHARGE TO RWT
- RAINHEAD WITH 100mm ϕ DOWNPIPE. DISCHARGE TO RWT
 SUMP WITH 100mm ϕ DOWNPIPE. DISCHARGE TO RWT
- BOX GUTTER, REFER TO DETAILS
- 100mm ϕ DOWNPIPE WITH A SPREADER PIPE

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS.



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AI		DOCUMENT CERTIFICATION		NB Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 079 121 616 A.B.N. 24 076 121 616		Architect: Envirova Studio		Project: SENIORS LIVING 27-29 North Avalon Road Avalon Beach N.S.W. 2107		Date: May 2019	Design: L.G.	Drawn: Paul R Bruce AMIEAust.	
17.09.2019	C	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - UPDATED TO SUIT LATEST ARCH DRGS	P.R.B	M.J.W.	Date: <i>Sept 19</i> Rick G Wray BE(Civil), CPENG, MIEAust., MER, RPEch 0029 (Director NB Consulting Engineers)	Sydney: Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2088	Client: Armada Property Pty Ltd		Drawing Title: UPPER ROOF STORMWATER DRAINAGE PLAN		Job No: 190247	Drawn No: D05	Issue: C
08.05.2019	B	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - PROJECT TITLE ALTERED	P.R.B	M.J.W.	Unit 8, 1728 Gold Coast Highway Bursleigh Heads QLD 4220 E: rib@nbconsulting.com.au W: www.nbconsulting.com.au	Drawing No: 190247		Issue: D05					
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Date:	Issue:	Description:	By:	Review:									

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STORMWATER NOTES:

- ALL PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE UPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE LAYED AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
- ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.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.
- ALL DOWN PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
- PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER.
CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE.
CAST INSITU PITS GREATER THAN 900 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- THE BOUNDARY OR SILT ARRESTOR PIT SHOULD ALWAYS INCORPORATE A SLUMP AND MASH-SCREEN AS PER LOCAL COUNCIL REQUIREMENTS. HOWEVER, UNLESS SPECIFICALLY REQUIRED BY COUNCILS POLICY OR IF THE SITE CONSISTS OF A CLAY OR ROCK SUBGRADE, ALL OTHER DRAINAGE PITS WILL NOT REQUIRE A SLUMP.
- ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
- PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- ALL LEVELS SHOWN ARE TO AHD
- ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO UPVC.
- ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH AS 8500.3 ALONGSIDE WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.
- IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES OR GUTTER GUARD TO ALL EAVES GUTTERS.
- ORIFICE PLATE MUST BE INSTALLED PRIOR TO INSTALLATION OF THE ROOF DRAINAGE SYSTEM AND CONNECTION OF THE SITE STORMWATER SYSTEM TO THE ON-SITE DETENTION TANK.
- 100mm Ø x 3000 LONG TAIL CUT SUBSOIL LINE TO BE PROVIDED ON THE UPS-REAM SIDE OF ALL PITS. SUBSOIL LINE TO BE COVERED WITH GEO-TEXTILE FILTER SOCK FOR THE FULL LENGTH AND END COVERED.

RAINWATER RE-USE TANKS:

- CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A RAINWATER TANK FOR USE AS PER BASIX REQUIREMENTS, SYDNEY WATER AND NSW HEALTH REQUIREMENTS FOR NON DRINKING USE ONLY AS FOLLOWS:
a) TO WATER GARDEN AREAS b) WASHING CARS c) CONNECT TO M.C.
d) CONNECT TO WASHING MACHINE e) USED IN HOT WATER SYSTEMS.
f) FILLING SHIMMING POOLS, SPAS AND ORNAMENTAL PONDS.
- THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
- REFERENCES:
COOMBS P.J. & KLUCZERA G. (2001), "RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT," STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE.
PATRICK DUPONT & STEVE SHACKEL, "RAINWATER"
AUSTRALIAN GOVERNMENT (2004), "GUIDANCE ON USE OF RAINWATER TANKS"
WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK"
AVAILABLE AT www.sydneywater.com.au
- PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH "BASIX-DESIGN GUIDE FOR SINGLE DWELLINGS" BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES.
- IF NOT SPECIFIED ON PLANS, THE FIRST FLUSH SYSTEM IS TO HAVE A MINIMUM SIZE OF 20L PER 100m2 OF ROOF CATCHMENT AREA PRIOR TO ENTERING THE RAINWATER TANK. INDIVIDUAL SITE ANALYSIS IS REQUIRED IN HEAVILY POLLUTED AREAS TO DETERMINE IF LARGER VOLUMES OF FIRST FLUSH RAINWATER ARE TO BE DIVERTED. IF IN DOUBT, CHECK WITH LOCAL HEALTH AUTHORITIES.
- SCREENED DOWNPIPE RAINWATER HEAD OR OTHER SUITABLE LEAF AND DEBRIS DEVICE TO BE INSTALLED ON EACH DOWNPIPE. SCREEN MESH TO BE 4-6mm AND DESIGNED TO BE SELF-CLEANING.
- FIRST FLUSH DEVICES, OR APPROVED ALTERNATIVE, TO BE INSTALLED WITH AN AUTOMATED DIVERSION AND DRAINAGE SYSTEM, THAT IS, NO MANUAL DIVERSION AND DRAINAGE VALVES. REFER TYPICAL FLUSH OUT PIT FOR DETAILS.
- BEFORE PURCHASING MATERIALS OR PAINT TO BE USED ON ROOF CATCHMENT AREAS, THE MANUFACTURER'S RECOMMENDATIONS ON LABELS AND BROCHURES FOR RAINWATER TANK SUITABILITY TO BE READ AND ADHERED TO.
- PRE-STORAGE PITS FOR UNDERGROUND RAINWATER STORAGE TANKS AND FLUSH OUT PITS MAY ASSIST IN LIMITING SILT, AND PREVENT VERMIN, INSECTS (INCLUDING MOSQUITOES) AND DEBRIS FROM ENTERING THE RAINWATER STORAGE AREA.
- BUILDER/PLUMBER TO ENSURE THE INSTALLATION OF THE RAINWATER TANK SYSTEM IS IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND THE RAINWATER TANK DESIGN AND INSTALLATION HANDBOOK - HB 230-2008. IF IN DOUBT CONTACT ENGINEER.
- RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 230-2008

NOTE:
SURFACE DRAINAGE TO BE PROVIDED IN ACCORDANCE WITH AS 3500.3

NOTE:
SUBSOIL DRAINAGE TO BE INSTALLED WHERE REQUIRED AS PER AS 3500.3

NOTE:
BUILDER TO ENSURE A MINIMUM OF 1.8m BETWEEN INVERT OF EAVES GUTTER AND TOP WATER LEVEL OF OSD BASIN.

NOTE: OSD BASIN
FOR ABOVE GROUND DETENTION BASINS BUILDER IS TO ENSURE VOLUME HAS BEEN ACHIEVED PRIOR TO LANDSCAPING AS A WORKS AS EXECUTED PLAN (WAE) MAY BE REQUIRED BY COUNCIL PRIOR TO CERTIFICATION AND APPROVAL.

NOTE: EXISTING SERVICES
CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED DRAINAGE EASEMENT PIPE LINE.

NOTE: EXCAVATION AROUND TREES
CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF SELECTED TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES ETC MAY BE NECESSARY. REFER ARBORISTS REPORT.

NOTE: CHARGED SYSTEM
ALL PIPE WORK IN CHARGED SYSTEM TO BE 100mm Ø UPVC PRESSURE OR SEWER GRADE PIPES WITH ALL JOINTS PRESSURE SEALED TO 500mm ABOVE INLET LEVEL OF RWT.

NOTE:
ALL DPI DOWN PIPES TO DISCHARGE INTO RAINWATER RE-USE TANK IN ACCORDANCE WITH AS 3500.3

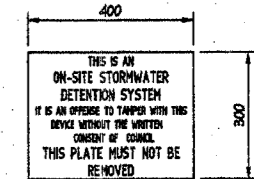


TANK ENTRY SIGN
SCALE = N.T.S.



SIGN FOR RWT AND OUTLETS
SCALE = N.T.S.

LEGEND:
BLACK ON YELLOW BACKGROUND



OSD TANK SIGN
SCALE = N.T.S.

NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.

NOTE:
NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE.
DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.
CARELESS DIGGING CAN:
- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- LEAD TO CRIMINAL PROSECUTION AND DAMAGES CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS
- CUT OFF EMERGENCY SERVICES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED
MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG. - TEL. 1100

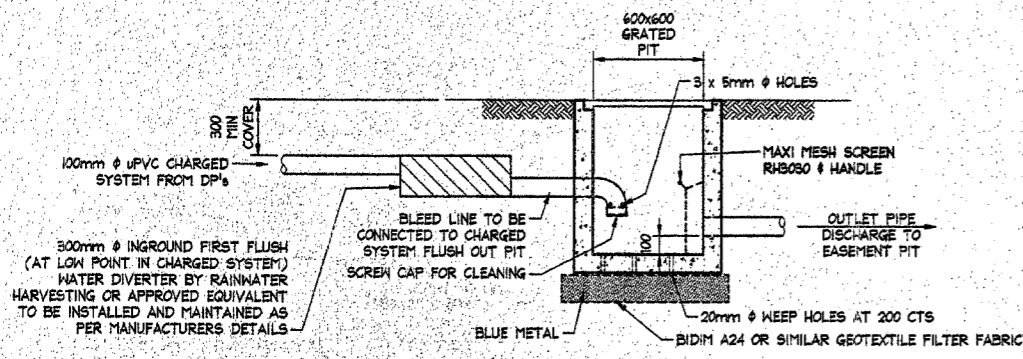
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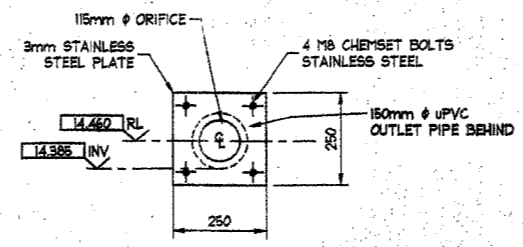


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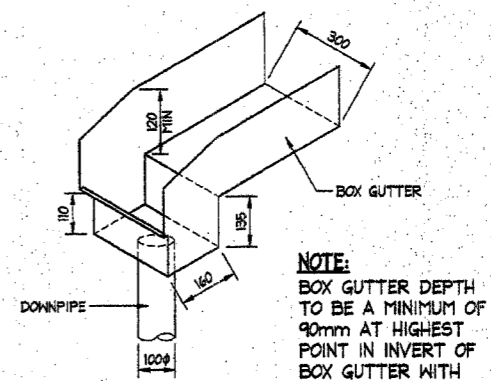
AI		DOCUMENT CERTIFICATION		NB Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 076 121 818 A.B.N. 24 076 121 818		Architect: Envirova Studio		Project: SENIORS LIVING 27-29 North Avalon Road Avalon Beach N.S.W. 2107		Date: May 2019	Design: L.G.	Drawn: Paul R Bruce A1/EAS/...
06.06.2019	B	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - PROJECT TITLE ALTERED	P.R.B.	M.J.M.	Date: July 19 Rick G Wray BE(Civil), CPENG, MIEAust, NER, RPEQ, CPEQ (Director NB Consulting Engineers)	Sydney: Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2089	Client: Armada Property Pty Ltd	Drawing Title: STORMWATER DRAINAGE NOTES	Job No: 190247	Drawing No: D06	Issue: A	
04.07.2019	A	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION	P.R.B.	M.J.M.	Gold Coast: Ph: (07) 5631 4744 Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au							
Date:	Issue:	Description:	By:	Review:	The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Traded as NB Consulting Engineers							



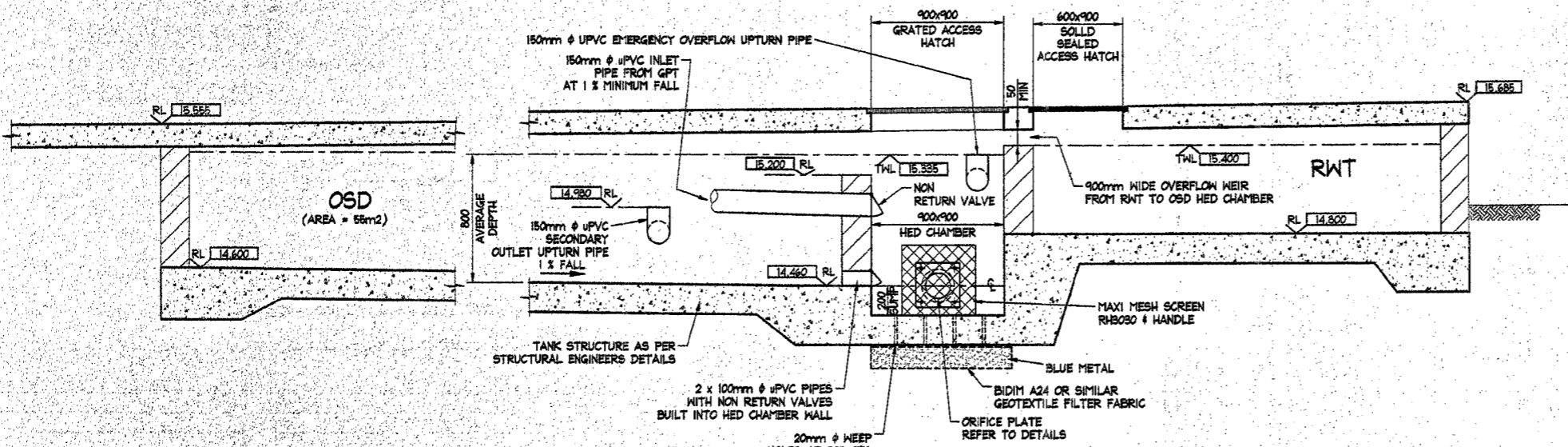
PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES
600x600 CHARGED SYSTEM FLUSH OUT PIT DETAIL
 SCALE = 1 : 20



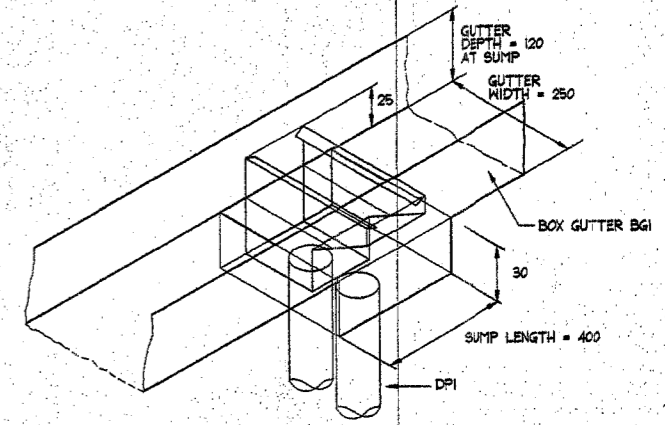
ORIFICE PLATE DETAIL
 SCALE = 1 : 10



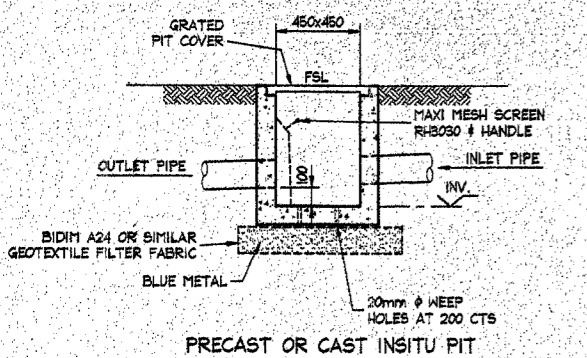
RAINHEAD RHD1 AND BOX GUTTER DETAIL
 SCALE = NTS



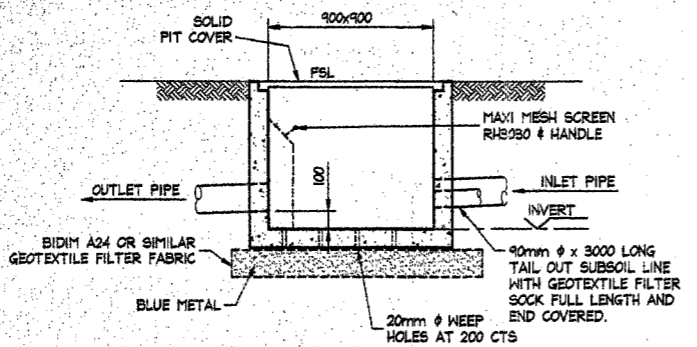
OSD / RWT LONGITUDINAL SECTION
 SCALE = 1 : 20



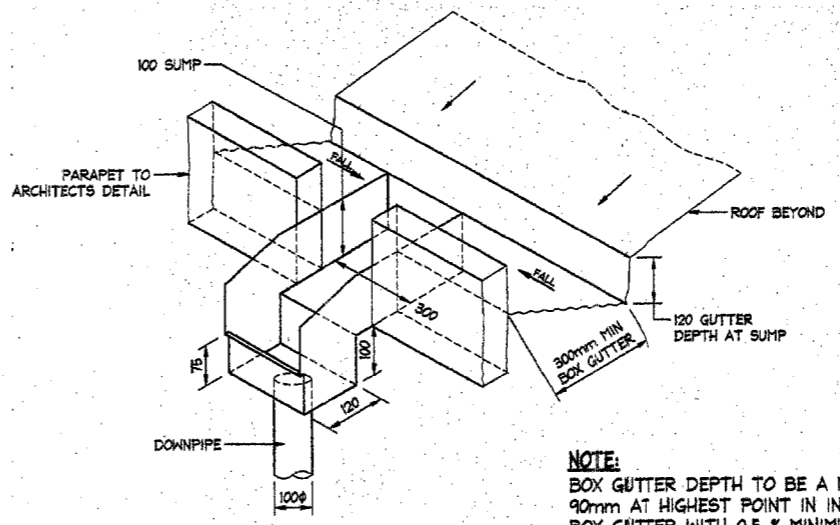
BOX GUTTER BG3 AND SUMP SDI DETAIL
 SCALE = NTS



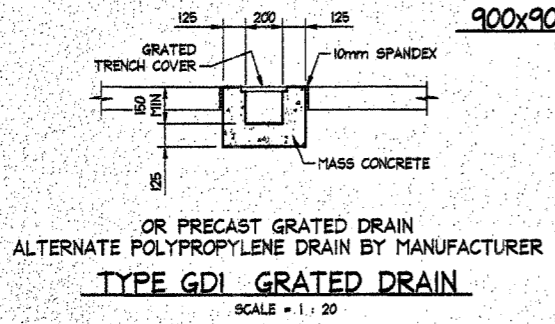
PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES
 ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER
450x450 PIT DETAIL
 SCALE = 1 : 20



PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES
900x900 PIT DETAIL
 SCALE = 1 : 20



RAINHEAD RHD2 AND BOX GUTTER BG2 DETAIL
 SCALE = NTS



OR PRECAST GRATED DRAIN
 ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER
TYPE GDI GRATED DRAIN
 SCALE = 1 : 20

NOTE: BOX GUTTERS
 ALL BOX GUTTER SYSTEMS SHOWN ON THESE PLANS ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE ASSOCIATED DETAILS. IF ANY CHANGE TO THE BOX GUTTER CONFIGURATION IS PROPOSED, NOTIFY THE ENGINEER FOR RE-DESIGN. IF THE INSTALLED BOX GUTTER DOES NOT STRICTLY COMPLY WITH OUR DESIGN, CERTIFICATION OF THE HYDRAULIC SYSTEM MAY BE REFUSED.

NOTE:
 BOX GUTTER DEPTH TO BE A MINIMUM OF 90mm AT HIGHEST POINT IN INVERT OF BOX GUTTER WITH 0.5% MINIMUM FALL TO RAINHEAD.

NOTES:
 1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.



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AI		DOCUMENT CERTIFICATION Date: JULY 19 Rick G Wray BE(CIVIL), CPENG, MIEAust., NER., RPENG. 0629. (Director NB Consulting Engineers) The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd, Trading as NB Consulting Engineers		NB Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 079 121 616 A.B.N. 24 079 121 616 Sydney Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast Ph: (07) 5831 4744 Unit 8, 1728 Gold Coast Highway Burleigh Heads QLD 4220 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au		Architect: Envirova Studio Client: Armada Property Pty Ltd		Project: SENIORS LIVING 27-29 North Avalon Road Avalon Beach N.S.W. 2107 Drawing Title: STORMWATER DRAINAGE DETAILS SHEET 1		Date: May 2019 Design: L.G. Drawn: Paul R Bruce AMIEAust. Job No: 190247 Drawing No: D07 Issue: A	
08.05.2019	B	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION - PROJECT TITLE ALTERED	P.R.B.	M.W.							
04.07.2019	A	ISSUED FOR D.A. SUBMISSION ONLY - NOT FOR CONSTRUCTION	P.R.B.	M.W.							
Date:	Issue:	Description:	By:	Review:							

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