

COMPLEX PROBLEMS RESOLVED SIMPLY

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PROVISION OF CONSULTING ENGINEERING SERVICES

PROPOSED RESIDENTIAL DEVELOPMENT 96 HORATIO STREET MUDGEE NSW 2850

STORMWATER MANAGEMENT PLAN

28 JUNE 2024 REFERENCE: TX18011.00-01.RPT.JD

SYDNEY | ADELAIDE | BAROSSA | DARWIN | MUDGEE

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PROJECT DESCRIPTION AND BACKGROUND 1

Triaxial have been engaged to prepare a stormwater management plan for the proposed development of 96 Horatio Street, Mudgee.

The development consists of the construction of two new dwellings as documented on architectural plans produced by Giselle Denley Drafting Services drawing number 3847-A01.

This stormwater management plan is in response to a request from Mid Western Regional Council to provide further information on the items below:

- 1) Details addressing flooding information.
- 2) Drainage plans showing where stormwater (roof water and surface water) will be discharged to.

2 **EXISTING SITE**

2.1 **STORMWATER INFRASTRUCTURE**

The existing site is partially developed with an existing residence and shed.

The existing stormwater network nearby includes a pit and pipe street drainage system in Horatio Street that conveys water from the culdesac end of Horatio Street to the West, where a large regional detention basin has been constructed. The detention basin collects stormwater flow from a large upstream catchment and discharges the outflow underneath the adjacent railway line via a concrete box culvert.

A topographic survey of the site was completed by ORyan Geospatial in order to determine site levels, identify existing infrastructure and buildings and any other areas of importance. Existing survey information is shown on Triaxial plan TX18011.00-C2.00.

No site stormwater currently discharges over adjacent private property. The existing residence downpipes discharge stormwater to the kerb and the overland flow occurring on the remainder of the site discharges stormwater to the North, where it is captured by the vacant land adjacent to the railway line before being directed towards the detention basin outlet.



Figure 1. Aerial image of existing site

2.2 EXISTING FLOODING INFORMATION

Correspondence from Mid Western Regional Council engineering staff has identified that the site may be flood affected in the 100yr event.

The site has been classified as being in a Medium Flood Risk zone. As per the Mid Western Regional Council Development Control Plan, residential development is allowable within a Medium Risk zone subject to the following requirements:

- 1) Floor level to be equal or greater than the 100 year flood level plus freeboard.
- 2) All structures are to have flood compatible materials below or at the 100yr flood level plus freeboard.
- 3) Structure must be able to withstand the forces of floodwater, debris and buoyancy up to and including the 100 year flood level plus freeboard.
- 4) Impacts on flooding elsewhere to be considered.
- 5) Reliable access is available for pedestrians or vehicles during a 100 year flood.

The site flood extents are shown in the image below:



Figure 2. Flood inundation in 100yr flood event around site.

Although the site is inundated in the 100yr event, the inundation is relatively minor in terms of severity.

3 **PROPOSED DEVELOPMENT STORMWATER MANAGMENET**

The proposed new buildings will be developed over the existing site and will present a larger roof catchment. It is not proposed to detain this catchment on site as the site will drain to the existing detention basin. The basin has been designed to accommodate the catchment feeding into it based on the land zoning. As this development is not seeking to alter the existing zoning, the on site stormwater is considered to have been allowed for in the function of the regional detention basin.

3.1 SITE WATER DISCHARGE

All site stormwater captured by the new roof area will be discharged to the street and conveyed to the existing street drainage network.

A stormwater management plan TX18011.00-C1.00 showing the proposed layout and sizing of the downpipes and discharge rates has been prepared and is included in Appendix A.

Refer Appendix A

3.2 FLOODING REQUIREMENTS

As mentioned in section 2 of this report, the development is required to comply with the Mid Western Regional Council Development Control Plan matrix for flood prone developments.

The proposed management measures to be implemented to satisfy the DCP flooding requirements are listed in table 1 below.

Item	Requirement	Management Measure
1	Floor level to be equal or greater than the 100 year flood level plus freeboard.	Floor level to be set minimum 300mm above ground level in accordance with Mid Western Regional Council correspondence.
2	All structures are to have flood compatible materials below or at the 100yr flood level plus freeboard.	Building proposed to be constructed from concrete slab on ground at levels greater than the 100yr flood level. Concrete slab and brick veneer walls are flood compatible materials.
3	Structure must be able to withstand the forces of floodwater, debris and buoyancy up to and including the 100 year flood level plus freeboard.	Building will be certified to withstand forces applied up to 100yr level plus freeboard. Forces expected to be negligible or minor.
4	Impacts on flooding elsewhere to be considered.	Impacts on flooding elsewhere have been considered. Overland flow path to be provided either side of development to ensure no water ponds on site or discharges over neighbouring lot. A clear path is to be provided for water to the North. Refer Triaxial plans.
5	Reliable access is available for pedestrians or vehicles during a 100 year flood.	Reliable access is provided via Horatio Street for vehicles and pedestrians. Hazard mapping indicates a level 1 hazard rating, which is acceptable for all pedestrians and small vehicles.

Table 1. DCP requirements and proposed management measures.

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4 SUMMARY

In summary, the stormwater management plan prepared by Triaxial consulting addresses the requirements listed in the Mid-Western Regional Council DCP with respect to flooding and on site stormwater management.

We trust this meets your current requirements and should you wish to discuss the matter further please do not hesitate to contact Triaxial Consulting.

Yours faithfully, TRIAXIAL CONSULTING PTY LTD

James Disher Engineer | Civil Design Team Leader BEng(Civil), ME(Civil and Structural,) CPEng, NER

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APPENDIX A - TRIAXIAL PLANS TX18011.00 - C1.00 THROUGH C4.00

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TX18011.00-01.rpt.jd

RESIDENTIAL DEVELOPMENT LOT 4 DP23796 94 HORATIO STREET, MUDGEE CIVIL DRAWINGS

DRAWINGS LIST

C1.00 COVER SHEET

- GENERAL NOTES C1.01
- C2.00 **EXISTING SITE PLAN**
- C4.00 STORMWATER MANAGEMENT PLAN



			NORTH POINT U.N.O.	ARCHITECT	
				GISELLE DENLEY	
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PROJECT RESIDENTIAL DEVELOPMENT 94 HORATIO STREET, MUDGEE

SIZE

A1

CAD REF

TX18011.00 - C01

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TO BE PRINTED IN COLOUR

DESIGNED DRAWN DATE JUN 24 -----



SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000 PO BOX A203, SYDNEY SOUTH NSW 1235

DRAWING TITLE COVER SHEET

PROJECT No.

CONSULTANT DOCUMENTS:

THIS IS A PLANNING DRAWING ONLY, FOR THE PURPOSE OF CONCEPTUAL DESIGN AND/OR PLANNING. FURTHER DETAILED ENGINEERING DESIGN INCLUDING SPECIFICATIONS, SIZING AND STORMWATER INVERTS TO BE PROVIDED PRIOR TO CONSTRUCTION CERTIFICATE AND FOR CONSTRUCTION ISSUE.

TX18011.00 - C1.00 A

1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE CURRENT VERSION OF CONSULTANT DOCUMENTS ARE

CONSULTANT DATA

REFERENCE

3847

23-1363

DATE/REVISION

DRAWING No. ISSUE

REV A

REV 0

NOTE:

ARCHITECTURAL

PRESENT ON SITE.

SURVEY

GENERAL

- CG1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- CG2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
- CG3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER/CONTRACTOR ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT.
- CG4 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- CG5 ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.
- SURVEY
- SU1 THE EXISTING SITE CONDITIONS SHOWN ON THE DRAWINGS HAVE BEEN INVESTIGATED BY OTHERS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.
- SU2 THE FOLLOWING ENGINEERING SURVEY SHALL NOT BE TAKEN AS A CADASTRAL OR BOUNDARY IDENTIFICATION SURVEY. BOUNDARY DATA SHALL BE TAKEN AS A GUIDE ONLY UNLESS NOTED OTHERWISE.
- SU3 SHOULD DISCREPANCIES BE FOUND BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA THE CONTRACTOR SHALL NOTIFY TRIAXIAL CONSULTING PRIOR TO COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL ACCEPT ALL RESPONSIBILITY FOR ERRORS MADE DURING CONSTRUCTION WHERE SURVEY DISCREPANCIES WERE NOT RELAYED AND RESOLVED BY TRIAXIAL CONSULTING PRIOR TO COMMENCEMENT OF THE WORKS.

EXCAVATION

- EX1 REFER TO REPORT ON GEOTECHNICAL STABILITY ASSESSMENT FOR INFORMATION PERTAINING TO EXISTING SITE STABILITY, EXCAVATION AND GEOTECHNICAL ISSUES.
- EX2 ALL SITE EXCAVATION TO BE PERFORMED IN ACCORDANCE WITH ITEMS NOTED IN THE ABOVE LISTED REPORT.
- EX3 THE EARTHWORKS CONTRACTOR IS TO CONTACT OR MEET WITH THE GEOTECHNICAL ENGINEER PRIOR TO COMMENCEMENT OF ANY EXCAVATION TO DETERMINE APPROPRIATE TECHNIQUES AND HOLD POINTS.
- EX4 TEMPORARY BATTER CUT TO ROCK TO BE FORMED AT NO STEEPER THAN 1 V : 1 H. PERMANENT BATTER TO BE CONFIRMED ON SITE IN CONSULTATION WITH THE GEOTECHNICAL ENGINEER.

EXISTING UNDERGROUND SERVICES

- EU1 THE EXISTING UNDERGROUND SERVICES INDICATED ON THESE DRAWINGS HAVE BEEN OBTAINED FROM SURVEY AND SERVICE AUTHORITY INFORMATION. THE SERVICES INFORMATION SHOWN ARE THOSE OF KNOWN SERVICES ONLY. THE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND MAY NOT BE 'AS CONSTRUCTED' OR ACCURATE. THE PRESENCE OR ABSENCE OF SERVICES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- EU2 THE CONTRACTOR SHALL TAKE ALL DUE CARE WHEN EXCAVATING ON SITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
- EU3 THE CONTRACTOR SHALL CONTACT ALL RELEVANT SERVICE AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION WORKS.
- EU4 THE CONTRACTOR SHALL UNDERTAKE A THOROUGH SERVICES SEARCH PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION WORKS. THE RESULTS OF SERVICES SEARCHES SHALL BE RECORDED AND KEPT ON SITE AT ALL TIMES.
- EU5 THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING POTHOLING TO ESTABLISH AND CONFIRM LOCATIONS AND DEPTHS OF EXISTING UNDERGROUIND SERVICES/UTILITIES PRIOR TO COMMENCEMENT OF WORK ON SITE.

SITE PREPARATION

GENERAL

- SP1 ALL EARTHWORKS, SITE PREPARATION AND MATERIALS TO BE IN ACCORDANCE WITH AS3798 AND THE GEOTECHNICAL ENGINEERS REPORT U.N.O.
- SP2 SEDIMENT AND EROSION CONTROL MEASURES AS DOCUMENTED MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF WORK.

SUBGRADE

- SP3 STRIP EXISTING AREA AS REQUIRED TO CONSTRUCT NEW WORKS, REMOVE ANY TOP SOIL, ALL ORGANIC & DELETERIOUS MATERIAL FROM SITE WORKS AREA.
- SP4 THE CUT AND FILL SURFACE SHALL BE PROOF ROLLED TO ENSURE THAT THE FILL AND NATURAL GROUND FORMING THE SUBGRADE TO SUB-BASE IS AT A SUITABLE DENSITY AND MOISTURE CONTENT.
- SP5 PRIOR TO THE COMMENCEMENT OF ANY CIVIL OR STRUCTURAL CONSTRUCTION THE RELEVANT SITE AREA IS TO BE COMPACTED AND TESTED IN ACCORDANCE WITH AS1289.5.1.1 OR .5.1.2 - 1993 TO PRODUCE THE FOLLOWING: -98.0% STANDARD COMPACTION AT THE SURFACE AND AT 200MM BELOW SURFACE LEVEL. FREQUENCY OF FIELD DENSITY TESTS SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3798 - 2007 TABLE 8.1 TESTING SHALL BE EVENLY SPACED OVER THE ENTIRE SITE, AND AT RANDOM LOCATIONS. TEST RESULTS SHALL BE FORWARDED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
- SP6 PROOF ROLLING SHALL BE CARRIED OUT UNDER THE DIRECTION OF THE CONTRACTOR. A MINIMUM 10 TONNE STATIC MASS SMOOTH DRUMMED ROLLER SHALL BE USED. WHERE THERE IS MOVEMENT UNDER THE ROLLER INDICATING SOFT, WET OR DISTURBED SUBGRADE, THE AREA OF MOVEMENT SHALL BE IDENTIFIED AND THE POOR SUBGRADE MATERIAL REMOVED. ANY REPLACEMENT MATERIAL SHALL BE BACKFILLED WITH APPROVED FILL PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE MEASUREMENT AND IN ACCORDANCE WITH FILLING NOTE SP9 TO 98% OF SDD AND WITHIN ±2% OF STANDARD OPTIMUM MOISTURE CONTENT.
- SP7 WHERE THERE HAS BEEN AN EXTENDED DRY PERIOD THE SUBGRADE SURFACE MAY EXHIBIT DESICCATION CRACKS CONSISTENT WITH NEAR SURFACE DRYING OUT. IF SIGNIFICANT DRYING OUT HAS OCCURRED, MOISTURE CONDITION THE UPPER 200mm OF THE SUBGRADE. THE MATERIAL SHOULD THEN BE COMPACTED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS FOR DENSITY AND MOISTURE CONTENT.

FILL/SUB-BASE

- SP8 COMPACTION TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE ALLOWED FOR IN THE TENDER FOR THE PROJECT. THE CONTRACTOR SHALL ALLOW FOR SOIL COMPACTION TESTING TO ALL FILL FORMATIONS WHICH SUPPORT CONCRETE SLAB ON GROUND TYPE FLOORS AND EXTERNAL PAVEMENTS. TESTS SHALL BE CARRIED OUT BY AN INDEPENDENT 'NATA' REGISTERED LABORATORY IN ACCORDANCE WITH THE REQUIREMENTS OF AS1289. SUBMIT TEST REPORTS TO THE ENGINEER FOR REVIEW.
- SP9 IMPORTED FILL IS TO BE WELL GRADED CRUSHED SANDSTONE, RIPPED SHALE OR APPROVED ALTERNATIVE, WITH A MINIMUM CBR OF 30%, PI 8% AND A MAX PARTICLE SIZE OF 75mm.
- SP10 ALL FILL MATERIAL SHALL BE UNIFORMLY PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE MEASUREMENT.
- SP11 ALL FILL SHALL BE COMPACTED TO 98% STANDARD DRY DENSITY DETERMINED BY METHODS IN ACCORDANCE WITH AS1289. THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADJUSTED TO WITHIN 5% OF THE OPTIMUM MOISTURE CONTENT DURING COMPACTION TO ENSURE THAT THE SPECIFIED COMPACTION IS OBTAINED.

SITEWORKS

- SW1 ALL CONNECTIONS WITH EXISTING WORKS SHALL BE MADE smooth.
- SW2 ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO ACHIEVE A DENSITY EQUIVALENT TO THE ADJACENT MATERIAL.
- SW3 ALL SERVICE TRENCHES SHALL BE BACKFILLED WITH SAND TO A LEVEL 300mm ABOVE THE PIPE. WHERE SERVICE TRENCHES ARE CONSTRUCTED UNDER VEHICULAR PAVEMENTS, BACKFILL THE REMAINDER OF THE TRENCH (TO UNDERSIDE OF PAVEMENT) WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 150mm DEPTH. BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 (CURRENT EDITION) OR A DENSITY INDEX OF NOT LESS THAN 75.
- SW4 PROVIDE A 10mm WIDE EXPANSION JOINT BETWEEN ALL BUILDINGS AND CONCRETE OR UNIT PAVEMENTS.

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STORMWATER DRAINAGE

SD1 PIPES UP TO 300mm DIAMETER SHALL BE SEWER GRADE UPVC WITH SOLVENT WELDED JOINTS.

SD2 ALL "INTERNAL WORKS" WITHIN PROPERTY BOUNDARIES SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 3500.3 (CURRENT EDITION).

SD3 ALL STORMWATER PIPES SHALL BE PROVIDED WITH MINIMUM PIPE COVER TO COMPLY WITH THE REQUIREMENTS OF AS/NZS 3500.3 (CURRENT EDITION).

SD4 INSTALLATION OF ALL BURIED CONCRETE STORMWATER PIPES SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 3725 (CURRENT EDITION) DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES.

SD5 ENLARGERS, CONNECTORS AND JUNCTIONS SHALL BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300mm DIAMETER.

SD6 ALL STORMWATER DRAINAGE LINES SHALL HAVE A MINIMUM FALL OF 1% UNLESS NOTED OTHERWISE ON THE DRAWINGS. CARE SHALL BE TAKEN WITH SETTING LEVELS OF STORMWATER DRAINAGE LINES. GRADES SHOWN ON THE DRAWINGS SHALL NOT BE REDUCED WITHOUT THE WRITTEN CONSENT OF TRIAXIAL CONSULTING.

SD7 GRATES AND COVERS SHALL COMPLY WITH THE REQUIREMENTS OF AS 3996 (CURRENT EDITION).

SD8 AT ALL TIMES DURING THE CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE DOCUMENTED AND EXECUTED TO MITIGATE THE RISK OF PERSONAL INJURY AS A RESULT OF FALLS INTO PITS.

SD9 ALL EXISTING STORMWATER LOCATIONS, INCLUDING INVERTS, TO BE CONFIRMED BY THE BUILDER/CONTRACTOR PRIOR TO THE COMMENCEMENT OF CIVIL WORKS ON SITE.

SD10 ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN SHALL BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDANT/ENGINEER FOR FURTHER DIRECTIONS.

SD11 INSTALLATION OF ALL BURIED FLEXIBLE PIPELINES SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 2566.2.

SD12 SURFACE INSPECTION OPENING - IO - WHERE SHOWN, ARE DIAGRAMMATIC IN NATURE AND TO BE INSTALLED IN ACCORDANCE WITH AS3500.

SEDIMENT AND EROSION CONTROL

SE1 CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" (2004) (THE BLUE BOOK).

SE2 DISTURBANCE SHALL BE KEPT TO A MINIMUM AND WITHIN THE LIMITS OF THE CONSTRUCTION SITE.

SE3 ADDITIONAL CONTROLS SHALL BE INSTALLED AS REQUIRED AND IN ACCORDANCE WITH "THE BLUE BOOK".

SE4 ALL INSTALLED CONTROLS SHALL BE INSPECTED AT LEAST WEEKLY AND IMMEDIATELY FOLLOWING A RAIN EVENT. MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

SE5 COMPLETED AREAS SHALL BE PROGRESSIVELY VEGETATED.

SE6 CONTROL DEVICES, AS DETAILED, SHALL BE INSTALLED TO STORMWATER PITS IMMEDIATELY FOLLOWING THEIR CONSTRUCTION.

CONCRETE

- C1 ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- C2 READYMIX CONCRETE SUPPLY SHALL COMPLY WITH AS1379.
- SPECIFICATION DOCUMENT 1 (EDITION 6), SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE. CONCRETE QUALITY SPECIFICATIONS AS SHOWN ON PLAN.

C3 CONCRETE QUALITY, ALL THE REQUIREMENTS OF THE ACSE

- C4 PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE AS1379.
- C5 NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
- C6 CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS PER CONCRETE COVER SCHEDULE UNLESS SHOWN OTHERWISE.

C7	DURABILITY R	REQUIREMENT	S FOR CONCRETE.
	exposure	MINIMUM	MAXIMUM
	Class. to	CEMENT	W/C
	As3600:	CONTENT:	RATIO:

320

390

450

A1 & A2

B1

B2

C8 ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT 1m MAX. CENTRES BOTH WAYS U.N.O. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS. USE PLASTIC CHAIRS IN EXPOSURE CONDITION GREATER THAN **B1. MINIMUM BAR CHAIR SPACING FOR MESH REINFORCEMENT** SHALL BE:

0.56

0.56

0.46

0.40

SL92, SL102, SL81, RL918:	900 CTS.
SL72, SL82, RL818:	600 CTS.

- C9 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
- C10 CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
- C11 ALL CONCRETE SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.
- C12 THE ENGINEER SHALL BE GIVEN 24 HOURS NOTICE FOR REINFORCEMENT INSPECTIONS AND CONCRETE SHALL NOT BE DELIVERED UNTIL ENGINEERS APPROVAL IS OBTAINED.
- C13 WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
- C14 REINFORCEMENT BARS AND LIGATURES: N HOT ROLLED DEFORMED BAR, GRADE 500 NORMAL DUCTILITY AS4671-DN500N
 - R HOT ROLLED ROUND BAR, GRADE 250 NORMAL DUCTILITY AS4671-R250N
 - W COLD DRAWN ROUND WIRE, GRADE 500 LOW DUCTILITY AS4671-R500L
 - S_ POOL STEEL HOT ROLLED DEFORMED BAR, GRADE 250 NORMAL DUCTILITY AS4671-D250N

NOTE: THE UNDERSCORE REPRESENTS NOMINAL BAR DIAMETER IN ACCORDANCE WITH AS4671

REINFORCEMENT FABRIC: SL_ SQUARE MESH, COLD DRAWN RIBBED WIRE GRADE 500, LOW DUCTILITY AS4671-D500L

- RL_ RECTANGULAR MESH, COLD DRAWN RIBBED WIRE GRADE 500, LOW DUCTILITY AS4671-D500L
- _L_TM TRENCH MESH, COLD DRAWN RIBBED WIRE GRADE 500, LOW DUCTILITY AS4671-D500L
- NOTE: THE UNDERSCORE REPRESENTS VARYING SPECIFICATIONS IN ACCORDANCE WITH AS4671.
- C15 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- C16 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER. LAPS SHALL BE IN ACCORDANCE WITH AS3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.
- C17 STANDARD LAP AND COG LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS:

BAR DIA.	MIN LAP LENGTH (mm)	MIN COG LENGTH (mm)
N12	500	180
N16	750	210
N20	1000	260
N24	1375	310
N28	1560	360
N32	1810	400

CONCRETE (CONTINUED)

- C18 CONCRETE SIZES DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES.
- C19 DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
- C20 REFER TO ARCHITECT'S DETAILS, FOR CHAMFERS, DRIP GROOVES, REGLETS, ETC., MAINTAIN COVER TO REINFORCEMENT AT THESE DETAILS.
- C21 USE ALIPHATIC ALCOHOLS SPRAYED OVER THE SURFACE PRIOR TO AND AFTER FINISHING TO REDUCE RATE OF EVAPORATION FROM THE SURFACE AND HELP CONTROL PLASTIC SHRINKAGE CRACKING. NOTE THAT THE USE OF ALIPHATIC ALCOHOLS IS NOT A SUBSTITUTE FOR CURING
- C22 COMMENCE CURING OPERATIONS PROMPTLY AFTER SURFACE FINISHING IS COMPLETE. CURING COMPOUNDS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND ARE TO BE CHECKED FOR COMPATIBILITY WITH PROPOSED FLOOR FINISHES. SOME COMPOUNDS MAY REQUIRE REMOVAL FOR GLUED DOWN FLOOR COVERINGS OR WET CURING AS DESCRIBED BELOW.

CONCRETE IS TO BE CURED BY KEEPING THE SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTING THE LOSS OF MOISTURE FOR A FURTHER 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT.

- C23 PROPPING WHICH SUPPORTS CONSTRUCTION OVER IS TO BE LEFT IN PLACE AS REQUIRED TO AVOID OVER STRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING.
- C24 CONDUITS, PIPES ETC. SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF SLAB DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS OF THE CONDUIT, PIPES ETC. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT.



4	
	25mm
4	• • • •
	25mm
4	

C26 A 0.2mm POLYETHYLENE MEMBRANE SHALL BE CONTINUOUS UNDER SLAB LAPPED 200mm MIN. WHERE REQUIRED AND TAPED AT ALL SERVICE PENETRATIONS, LAPS AND PUNCTURES THE MEMBRANE IS TO EXTEND UNDER AND TO THE SIDES OF SLABS, BEAMS AND THICKENINGS.

D.D.A. COMPLIANCE:

- D1 ALL ACCESS AND SIGNAGE WORKS TO BE IN ACCORDANCE WITH THE COMMONWEALTH DISABILITY (ACCESS TO PREMISES - BUILDINGS) STANDARDS.
- D2 ALL ACCESS WORKS SHOULD BE IN ACCORDANCE WITH AS1428(SET) DESIGN FOR ACCESS AND MOBILITY SET. INCLUDING AS1428.1 DESIGN FOR ACCESS AND MOBILITY. GENERAL REQUIREMENTS FOR ACCESS - NEW BUILDING WORK.
- D3 ALL ACCESSIBILITY PARKING AREAS SHOULD BE IN ACCORDANCE WITH AS2890(SET) - PARKING FACILITIES SET. INCLUDING AS2890.5 ON STREET PARKING AND ALSO INCLUDING AS2890.6 PARKING FACILITIES OFF-STREET PARKING FOR PEOPLE WITH DISABILITIES.
- D4 DIRECTIONAL TACTILE GROUND SURFACE INDICATORS (DTGI's) SHOULD BE IN ACCORDANCE WITH AS1428.4
- D5 ALL PEDESTRIAN SURFACE MATERIALS SHOULD BE IN ACCORDANCE WITH AS4586 - SLIP RESISTANCE CLASSIFICATIONS OF NEW PEDESTRIAN SURFACE MATERIALS.

ΤO

RESIDENTIAL DEVELOPMENT 94 HORATIO STREET, MUDGEE

DATE

JUN 24

PROJECT

DESIGNED

DRAWN

--



TRIAXIAL CONSULTING SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000 COMPLEX PROBLEMS **RESOLVED SIMPLY**

1300 874 294 | TRIAXIAL.AU

PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

CAD REF SIZE TX18011.00 - C01 A1

ND OF SHEETS

NOTE:

DRAWING TITLE

PROJECT No.

500mm

THIS IS A PLANNING DRAWING ONLY, FOR THE PURPOSE OF CONCEPTUAL DESIGN AND/OR PLANNING. FURTHER DETAILED ENGINEERING DESIGN INCLUDING SPECIFICATIONS, SIZING AND STORMWATER INVERTS TO BE PROVIDED PRIOR TO CONSTRUCTION CERTIFICATE AND FOR CONSTRUCTION ISSUE.

SCALE 1:50 AT A1 SHEET | 1:100 AT A3 SHEET

DRAWING No.

ISSUE

GENERAL NOTES

TX18011.00 -

ISSUED FOR APPROVAL	28.06.24	А	JD
AMENDMENTS	DATE	ISSUE	BY
NOT FOR CONS	TRUC	TIC	N

NORTH POINT U.N.O.

ARCHITECT GISELLE DENLEY DRAFTING SERVICES











TRIAXIAL CONSULTING COMPLEX PROBLEMS RESOLVED SIMPLY

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NOTE:

- THIS IS AN ENGINEERING SURVEY PLAN AND SHALL NOT BE TAKEN AS A CADASTRAL OR IDENTIFICATION SURVEY. BOUNDARY DATA IF SHOWN, SHOULD BE TAKEN AS A GUIDE ONLY.
- REFER TO THE CERTIFICATE OF TITLE FOR EASMENT DETAILS (IF ANY). NO UNDERGROUND SERVICES HAVE BEEN LOCATED.

SURVEY:

- . PROVIDED BY:
- 1.1. DATE/REVISION:
- 1.1. REFERENCE: 1.2. SURVEY DATE:
- 1.3. MGA
- 1.4. LEVELS ORIGIN

SURVEY MARKS			
PM/SSM	EASTING	NORTHING	RL (AHD)

LEGEND - E	LEGEND - EXISTING		
SYMBOL	DESCRIPTION		
+ ⁶ ⁶ ⁶	SPOT LEVEL		
	CONTOUR MAJOR (Xm)		
	CONTOUR MINOR (Xm)		
·\\	FENCE		
· · · ·	BOUNDARY		
— D —	DRAINAGE LINE		
S	SEWER LINE		
W	WATER LINE		
——— E ———	ELECTRICITY UNDERGROUND		
OE	ELECTRICITY OVERHEAD		
— т —	TELSTRA LINE		
GAS	GAS LINE		
	ROAD CENTRELINE		
A.V.	TREE		

1.7m 0.0 3.5 6.9 10.4 13.8 17.3m SCALE 1:173 AT A1 SHEET | 1:346 AT A3 SHEET

DRAWING TITLE EXISTING SITE PLAN

SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000 PO BOX A203, SYDNEY SOUTH NSW 1235

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PROJECT No. DRAWING No. ISSUE



SCHEDULE OF STORMWATER CALCULATIONS							
	ROOF AREA (m²)	FLOWRATE (L/s)	DOWNPIPE SIZE	NO. OF DOWNPIPES	MIN GUTTER AREA (mm²)		
UNIT 1	195	9.5	90	5	8137		
UNIT 2	199	9.7	90	5	8296		

STORMWATER DESIGN NOTES

- EAVES GUTTER AND DOWNPIPES SIZED ACCORDING TO AS/NZS 3500.3:2018
- GUTTER SLOPE ASSUMED LESS THAN 1:500
- CATCHMENT AREA MULTIPLIER = 1.21
- RAINFALL INTENSITY USED IN DOWNPIPE AND GUTTER SIZING = 142mm/hr
- RAINFALL INTENSITY USED IS 5% AEP, 5 MINUTE STORM FOR MUDGEE.
- RAINFALL INTENSITY AS PER BOM IDF (2016) FOR CO-ORDINATES E:732000, N:6392000, ZONE 55 MGA.



etto	RESID 94 HOR	ENTIA atio str	L DEVE EET, MUD	LOPMENT GEE		Т 	A X I A	
	DESIGNED 	DRAWN 	date JUN 24	size A1	cad ref TX18011.00 - C01		COMPLEX	PROBLEMS D SIMPLY

N G SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000 PO BOX A203, SYDNEY SOUTH NSW 1235

LEGEND	- STORMWATER
Symbol	DESCRIPTION
<	DESIGN CONTOUR MAJOR (Xm)
<	DESIGN CONTOUR MINOR (Xm)
— D —	EXISTING STORMWATER LINE
\square	EXISTING PIT
	UPVC STORMWATER PIPE (DOWNPIPE)
	NEW STORMWATER LINE @ 1.0% MIN. FALL U.N.O.
$\rightarrow \rightarrow$	OPEN DRAINAGE CHANNEL (MIN. FALL 1:200 U.N.O.)
O DP	Ø90 UPVC DOWNPIPE
● 10	SURFACE INSPECTION OPENING
📛 GD	GRATED TRENCH DRAIN (GD) (U.N.O.)
	GRATED INLET PIT (GIP) (U.N.O.)
	JUNCTION PIT (JP) (U.N.O.)
	CONCRETE HEADWALL
\$	OVERLAND FLOW PATH
<u>99.99</u> —TK. —WT. —FSL. —CL. —IL. —FFL. —BL. —NSL.	DESIGN LEVEL TOP OF KERB WATER TABLE FINISHED SURFACE LEVEL COVER LEVEL INVERT LEVEL FINISHED FLOOR LEVEL BENCH LEVEL NATURAL SURFACE LEVEL
WARNING	

BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:

- EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED
- BY THIS OFFICE. 2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL
- SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

- OUTFALL PIPE ACROSS FOOTPATH TO COUNCIL

NOTE:
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CONCEPTUAL DESIGN AND/OR PLANNING. FURTHER DETAILED
ENGINEERING DESIGN INCLUDING SPECIFICATIONS, SIZING
AND STORMWATER INVERTS TO BE PROVIDED PRIOR TO
CONSTRUCTION CERTIFICATE AND FOR CONSTRUCTION ISSUE.
5.0m 0.0 10.0 20.0 30.0 40.0 50.0m
SCALE I:500 AT AT SHEET I:1000 AT A3 SHEET
STORMWATER MANAGEMENT

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PROJECT No. DRAWING No. ISSUE TX18011.00 - C4.00 A