GEOFF METZLER
& ASSOCIATES PTY LTD

CONSULTING STRUCTURAL & CIVIL ENGINEERS

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squillace

PROJECT: SQUILLACE

ADDRESS: 29-33 MARKET ST, MERIMBULA

DRAWING TITLE: CIVIL DETAILS

JOB NUMBER: M9358

PAGE NUMBER: 1 OF 7

APPROVED BY

JACK METZLER B.E. MIE. AUST. C.P. ENG.

DATE	DESCRIPTION	ISSUE	DRAWN BY
26.03.2021	CONCEPT DA	A	RN
24.02.2022	DA ISSUE	B	BC

NER: 4225580 | RPEQ: 13719 | RBPVic: EC 40673

GENERAL NOTES

G1 Do not obtain dimensions by scaling these drawings. Only principal structural dimensions are shown. All dimensions are in millimetres
G2 Read these drawings in conjunction with all other contract documents and the requirements of the relevant building authority. Before proceeding with work clarify any discrepancies, verify all setting out dimensions
G3 Maintain the structure in a stable condition during construction. Do not exceed the design live loads shown or cause any element to be overstressed

G4 Design loads in accordance with AS1170 :

Live load		Wind load	
Domestic	1.5kPa	Wind velocity Vu50,Vp41,Vs38 m/s	
Offices, corridor, parking	3kPa	Structural importance multiplier Mi = 1	
Balconies,stairs	4kPa	Terrain category = 2 - Rural	
Factories, plantrooms, shops	5kPa	1 - Urban	
Roofs	0.25kPa		

FOUNDATIONS

F1 Footings have been designed for an allowable bearing pressure of 150 kPa. Obtain approval for the proposed foundation material before placing concrete.
F2 The design only applies for ground and foundation levels as shown on the drawings.
F3 Site classification as to AS 2870 M foundation material CLAY. Backfill foundation walls so that the level of fill on one side of the wall is never more than 450 above the level on the other side, except where detailed retaining walls are used.

CONCRETE

C1 Conform to AS 3600 and the ACSE Concrete Specification except where varied by the contract documents.
C2 Provide concrete with a strength of:
f'c =20 MPa footings f`c= 25 MPa Slab f`c= 32 MPa Polished Slab
f'c =20 MPa Retaining Wall Core Fill f'c =40MPa External Coastal Slab
maximum slump of 80.
maximum aggregate size of 20.
cement type A.
no admixtures or breccia.
C3 Sizes of concrete elements do not include thickness of applied finishes.
C4 Beam depths are written first and include slab thickness.
C5 Do not make any construction joints, holes or chases in the concrete elements unless shown or approved by the Engineer.
C6 Do not place pipes or conduits within the concrete cover to reinforcement.

C7 Reinforcement notation :

N -	Grade D500N deformed bar to AS 4671	T	- top of element
F -	Hard drawn wire reinforcing fabric to AS 4671	B	- bottom
R -	Grade 230 R hot rolled plain bars to AS 4671	ew	- each way
S -	Grade 230 S hot rolled deformed bars to AS 4671	c/s	- courses
W -	Hard drawn plain wire to AS 1303	uno	- unless noted otherwise.

Example: 8-N16@200T denotes 8 deformed bars of 16 diameter at 200 centres placed in the top of the element.

C8 Provide clear concrete cover to reinforcement as follows: uno.

Element	Interior	Exterior	Exterior Against Ground
Footings			50
Columns Pedestals	35	75	
Slabs, Walls	20	40	30 on membrane
Beams	25	65	65
Blockwork 50mm from appropriate outside face			

For slab within 1km from the coast, provide concrete f'c = 32 MPa and 65 cover to exterior exposed surface.

C9 Use maximum bar chair spacing of 60 diameters for supporting bars and 750 for fabric.
C10 Provide laps only at locations shown unless otherwise approved by the Engineer.
C11 For oblong fabrics, place top fabric main wires uppermost and bottom fabric main wires lowermost in direction of arrows.
C12 Supply and lay fabric in flat sheets. Overlap first and second cross wires of each sheet by 30 at laps.
C13 Do not weld reinforcement unless shown or approved by the Engineer.
C14 Tie all unsupported bars to N12@300 all laps 450.
C15 Do not build brick or block work on suspended work until all shoring has been removed.
C16 Prop cantilever slabs and beams from a firm support for a minimum of 28 days.
C17 Provide the Engineer with 24 hours notice of reinforcement being ready for inspection. Do not order concrete until reinforcement has been approved.
C18 Reinforcement is shown diagrammatically and not necessarily in true position.
C19 All concrete shall be placed and cured in accordance with Section 19 AS 3600. Where curing compound is used it must be applied:
(A) onto slabs within 2 hours of finishing operation.
(B) onto walls and columns immediately after removal of framework.
C20 Horizontal framework shall be stripped when approved by the Engineer.
C21 Slabs and beams shall bear on only the beam, walls etc. shown on the drawings; all other building elements shall be kept 15mm clear from soffits of structure.
C22 Where slabs or beams bear on masonry, the top course shall be level, smooth and covered with slip joint as detailed uno.
C23 Slab reinforcement has been provided for minor degree of crack control. Consult engineer where moderate or strong degree of crack control is required.

EARTHWORKS

E1 Strip topsoil and organic material from subgrade.
E2 Cut and fill site to design level -Where controlled fill is specified- select fill to be placed in max. 200mm layers and compacted to min. 95% Standard Proctor Density to AS 1289.
E3 Provide 450 diameter or square piers at 2000mm centres to natural subgrade under perimeter ribs. Provide similar piers under internal ribs where fill beneath ribs exceeds 200mm uno.
E4 If shale is exposed at cut area then all piers must be founded on shale.
E5 Surface drainage shall be provided as required to prevent ponding and divert runoff away from slab and footings.

MASONRY NOTES

M1 All workmanship and materials in accordance with AS 3700 and AS 2733 .
M2 Mortar shall be freshly prepared, uniformly mixed in the following ratio: 1:1/10:3 cement, lime, sand in accordance with ASA 123 and AS 3700 clause 2.2.2.
M3 All perpends,except where required for weepholes,are to be fully filled with mortar.
M4 Bottom course of blocks to have inspection openings to all cores to be grouted. Thoroughly clean all cores prior to reinforcement placing. Tie vertical steel to starters.
M5 Grout all cores with grout strength grade 15. 150mm slump. Max. free drop in any one pour to be 1 metre. Stop pour 50 below top of block
M6 Provide vertical control joints in walls at 8metre max. centres uno.

RETAINING NOTES

R1 For timber retaining walls, all steel posts are galvanised 100UC14.8 sections uno. All corner posts are galvanised double 100PFC sections uno.
R2 Where retaining walls are subject to long term surcharge, consult engineer prior to construction.

STEELWORKS NOTES GENERAL

S1 All workmanship and materials shall be in accordance with current editions of SAA codes AS4100, AS1554 and ACSE Steel Specification,except as varied by the contract documents
S2 Structural grade (Fy 300MPa) quality steel shall be used throughout unless noted otherwise
S3 Submit all shop drawings to the Engineer for approval of general arrangement of structural elements before commencing fabrication
S4 Steelwork not to be encased or not otherwise noted shall be given one coat of approved metallic primer at least 48 hours before dispatch
S5 Steelwork to be encased in concrete shall not be painted but shall be given one coat of cement wash. Members to be wrapped with No. SL62 fabric or 5mm wire at 150mm pitch and encased in 20MPa concrete with minimum 50mm cover
S6 The contractor shall provide and employ any additional temporary bracing etc. necessary to adequately and safely hold steelwork in position during construction
S7 Proprietary items (e.g. purlins, bolts etc.) shall be installed in accordance with manufacturers specifications uno
S8 All exposed steelwork to be hot dipped galvanised.

STEELWORK

S9 Unless noted otherwise use:
10mm thick gusset, fin and end plates, fully welded.
M20 dia blackbolts
6mm continuous fillet weld made with general purpose steel electrodes in accordance with AS 1554
S10 Chip all welds free of slag
S11 Do not grout under base plates until first level steelwork is plumb and fixed by welding or bolting
S12 Bolts to be grade 4.6 Metric Hexagon Commercial Bolts to AS 1111 uno. H.S. Bolt denotes grade 8.8 highstrength steel bolts to AS 1252 - bolting category 8.8/S = snug tight. 8.8/T = fully tensioned.
S13 All cold formed steel shall be in accordance with AS 1538.
S14 Allow minimum 150 end bearing for all galintels uno.

TIMBER

T1 All timber construction to conform with AS 1684 in addition to the details shown.

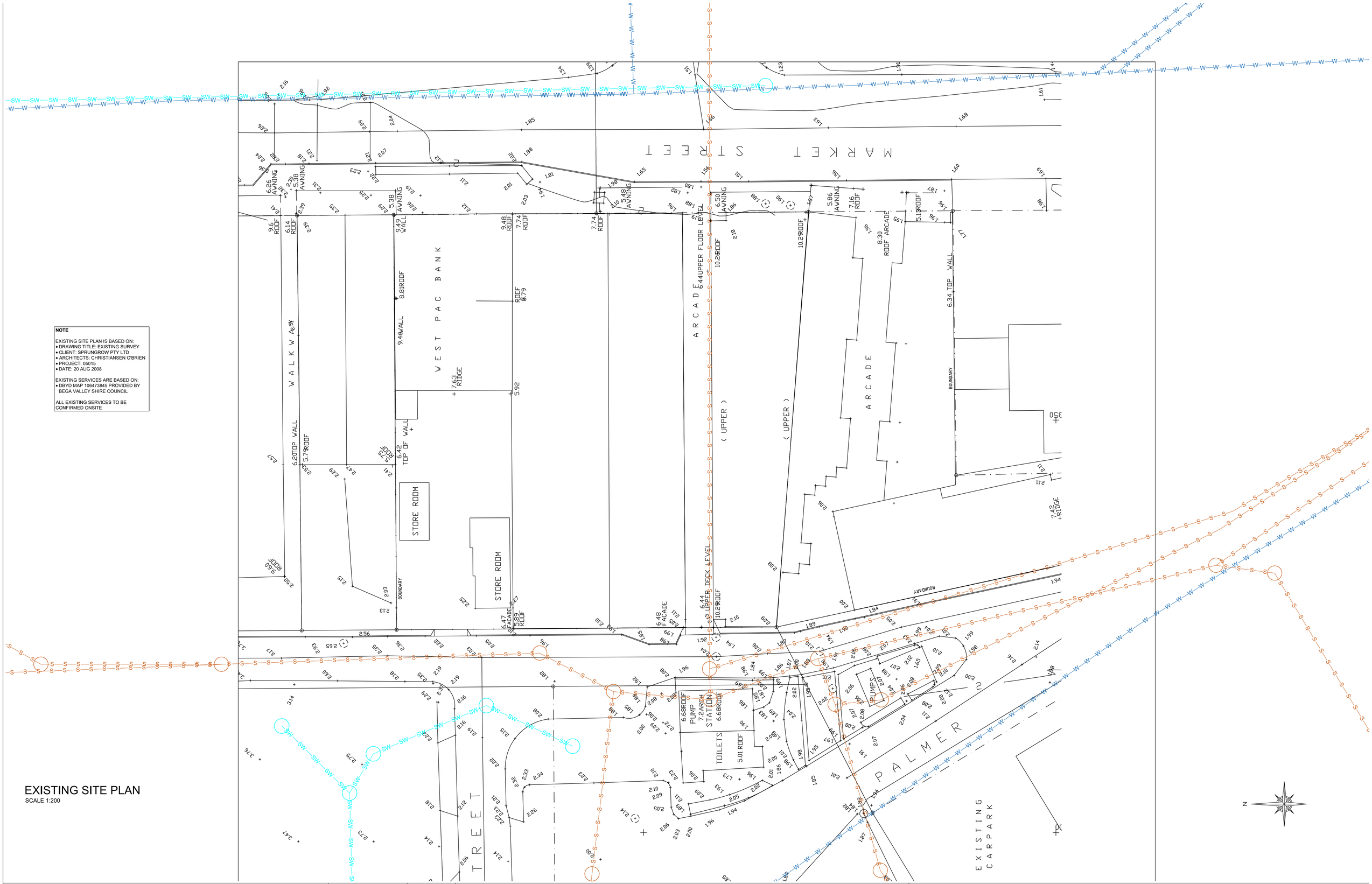
T2 Minimum edge distances for bolted connections (unless noted otherwise):

Bolt size	End grain	Cross grain
M12	75	50
M16	100	70

T3 Bolts to be grade 4.6 Metric Hexagon Commercial Bolts to AS 1111 uno

TIE DOWN

TD1 Roof sheet to battens in accordance with roof sheet manufacturers specification.
TD2 Battens to rafters with 2-3.75 dia x 100 deformed nails, or 1 No 14 Type 17 Bugle screw, 50 embedment.
TD3 Trusses or rafters to top plate or beam with 2 framing anchors per connection. use 4-2.8 dia x 30 flathead nails per member.
TD4 Roof beam and lintels to stud frame with 2-30 x 0.8 galvanised straps each end. Use 6-2.8 x 30 flathead nails each end.
TD5 Top plates to studs with 30 x 0.8 galvanised strap every stud. Use 4-2.8 x 30 flathead nails each end, or looped strap ties, 4 nails per end.
TD6 Bottom plate to studs with 30 x 0.8 galvanised strap every 2nd stud. Use 4-2.8 x 30 flathead nails each end. Studs and lintel support must be strapped.
TD7 Bottom plate to floor structure with 2 No 14 Type 17 screws, or 30 x 0.8 galvanised strap @ 900 crs with 4 nails per end.
Note : At bracing panels fix bottom plate to each joist. Fix bottom plate to slab M10-900 bolts, adjacent to strapped studs. 1-M10 bolt to each side of bracing panels.
TD8 Joist to bearers with 2-3.75 dia x 100 skew nails. Fix Joists to Bearers with 1-framing anchor on both sides of stud tie down points. Use 4-2.8 dia x 30 flathead nails per member.
TD9 External Bearers to be bolted down to Footings at each Pier.
TD10 At each end of Bracing Panels in Internal walls , Joists require Looped Strap tie down or 1 M10 bolt to Bearers and Bearers require tie down to footings similar to External Bearers. Joists with bracing panels across them require Looped Strap tie down at each end.



NOTE

EXISTING SITE PLAN IS BASED ON:
- DRAWING TITLE: EXISTING SURVEY
- CLIENT: SPRUNGROW PTY LTD
- ARCHITECTS: CHRISTIANSEN O'BRIEN
- PROJECT: 05015
- DATE: 20 AUG 2008

EXISTING SERVICES ARE BASED ON:
- DBYD MAP 106473845 PROVIDED BY BEGA VALLEY SHIRE COUNCIL

ALL EXISTING SERVICES TO BE CONFIRMED ONSITE

EXISTING SITE PLAN

SCALE 1:200

AMENDMENTS	DATE	ISSUE
CONCEPT DA	26.03.2021	A
DA ISSUE	24.02.2022	B

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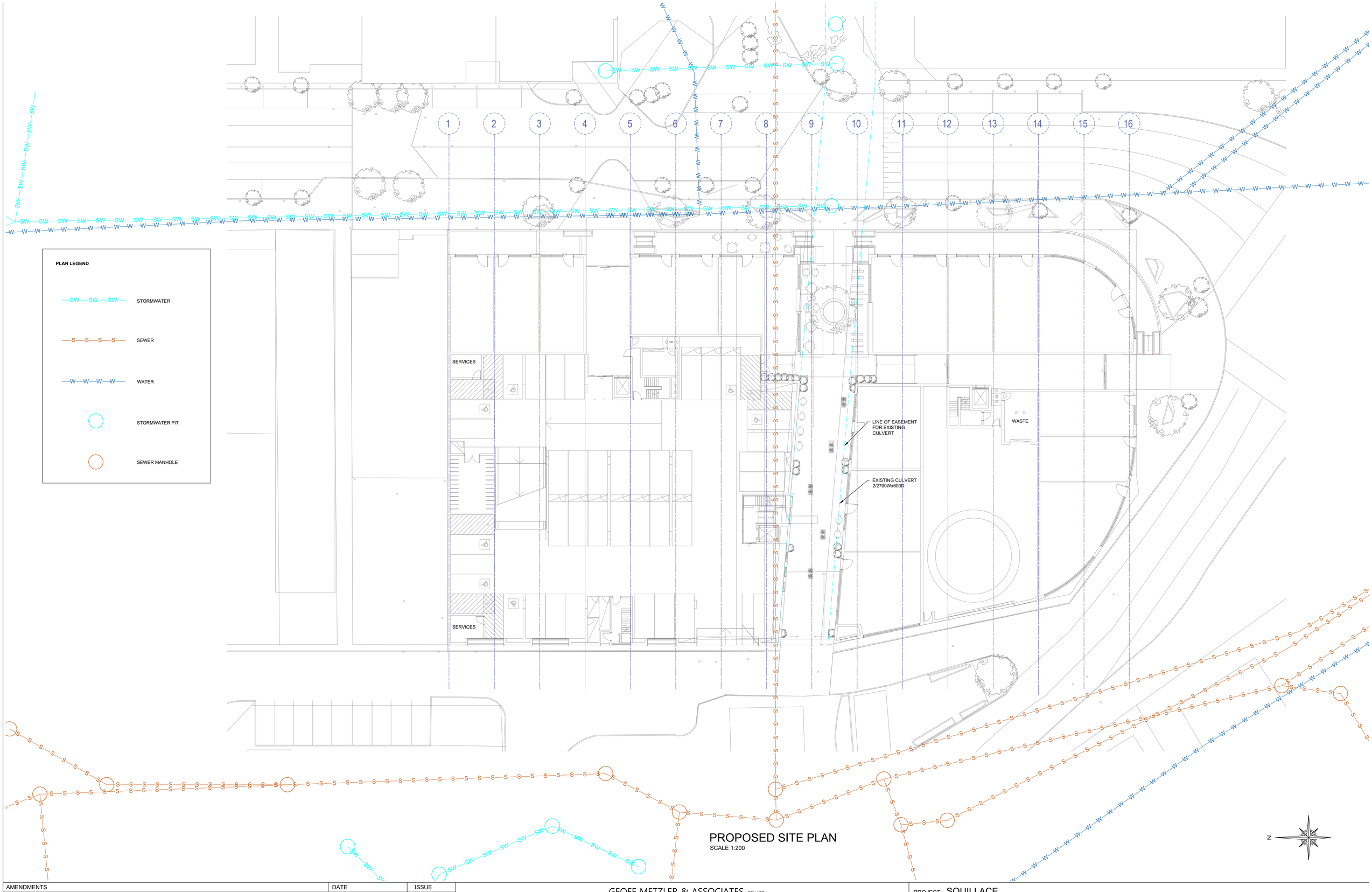
PROJECT - SQUILLACE
ADDRESS - 29-33 MARKET ST, MERIMBULA
DRAWING - EXISTING SITE PLAN
JOB NO - M9358 Sheet No - 2
SCALE: AS SHOWN @ A1
DRAWN BY: -
REVISION B
APPROVED - JACK METZLER - B.E. MIE. AUST. C.P. ENG.



PROPOSED SITE PLAN

SCALE 1:200

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CONCEPT DA	26.03.2021	A
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PROJECT - SQUILLACE

ADDRESS - 29-33 MARKET ST, MERIMBULA

DRAWING - PROPOSED SITE PLAN

JOB NO - M9358 Sheet No - 3

SCALE: AS SHOWN @ A1

DRAWN BY: -

REVISION B

APPROVED - JACK METZLER - B.E. MIE. AUST. C.P. ENG.

CATCHMENT DESIGN INPUTS PRE DEVELOPMENT

PRE DEVELOPMENT CONDITIONS: VACANT GREENFIELD LOT
UNROOFED PERVIOUS CATCHMENT AREA: 4015m²

20 YEAR DESIGN STORM (UNROOFED PERVIOUS)

- $^{20}I_5$: 181mm/h

C_p (UNROOFED PERVIOUS AREA): 0.44
TOTAL FLOW, Q_T: **88.6L/sec**

TOTAL FLOW DISCHARGING OFFSITE = 88.6L/sec

CATCHMENT DESIGN INPUTS POST CONSTUCTION

ROOFED CATCHMENT AREA: 2127m²
UNROOFED IMPERVIOUS CATCHMENT AREA: 1490m²
UNROOFED PERVIOUS CATCHMENT AREA: 398m²

20 YEAR DESIGN STORM (ROOFED IMPERVIOUS)

- $^{20}I_5$: 181mm/h
- C_i (ROOFED IMPERVIOUS AREA): 1.00
- TOTAL FLOW, Q_T: **99.5L/sec**

20 YEAR DESIGN STORM (UNROOFED IMPERVIOUS)

- $^{20}I_5$: 181mm/h
- C_i (UNROOFED IMPERVIOUS AREA): 0.90
- TOTAL FLOW, Q_T: **72.3L/sec**

20 YEAR DESIGN STORM (UNROOFED PERVIOUS)

- $^{20}I_5$: 181mm/h
- C_i (UNROOFED PERVIOUS AREA): 0.90
- TOTAL FLOW, Q_T: **19.8L/sec**

TOTAL COMBINED FLOW = 191.6L/sec

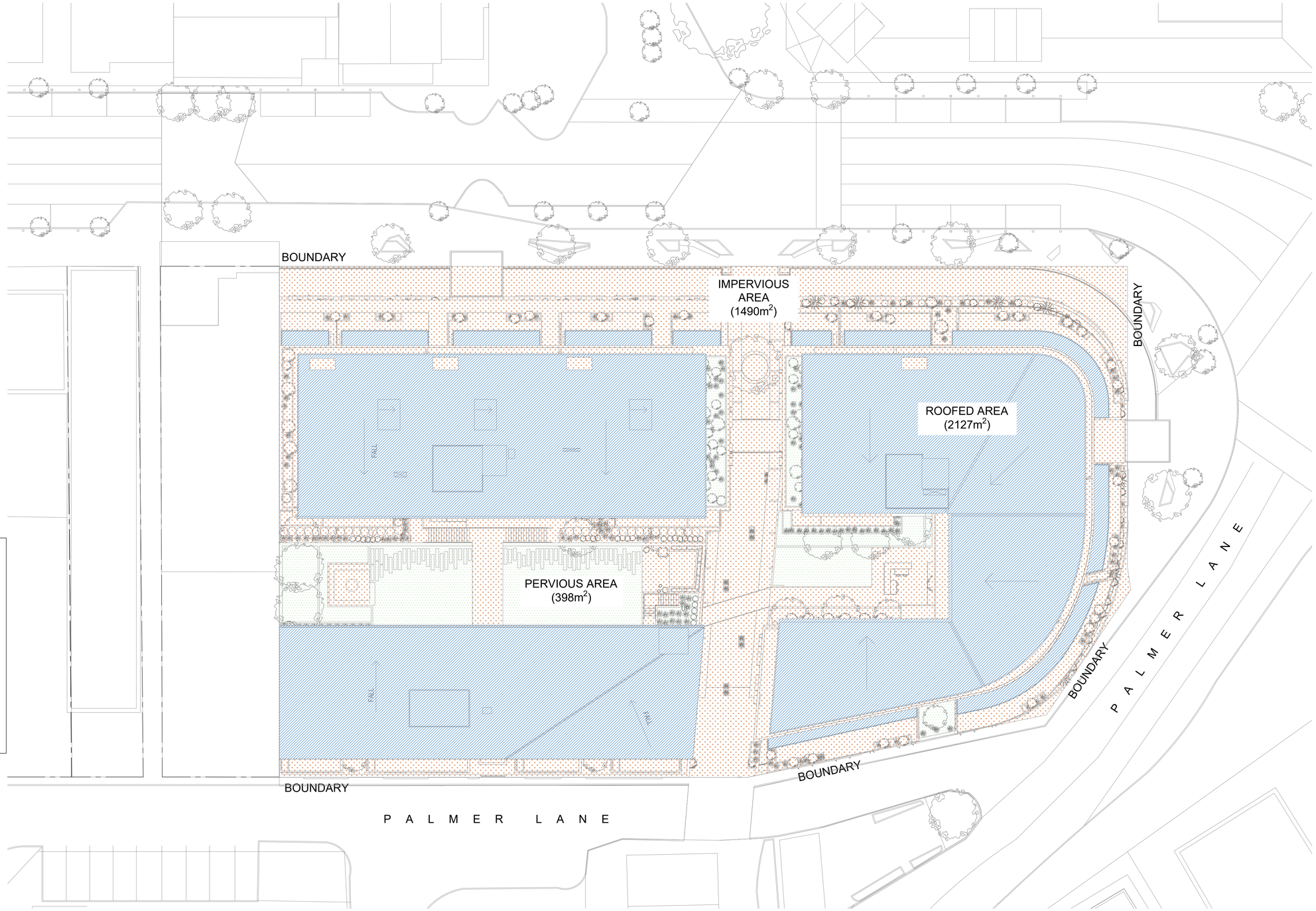
NOTE: RUNOFF FROM UNROOFED PERVIOUS AREA AT FIRST FLOOR LEVEL IS QUANTIFIED USING RUNOFF COEFFICIENT OF 0.9.

CATCHMENT PLAN LEGEND

ROOF

IMPERVIOUS

PERVIOUS



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STORMWATER ANALYSIS PLAN

SCALE 1:200

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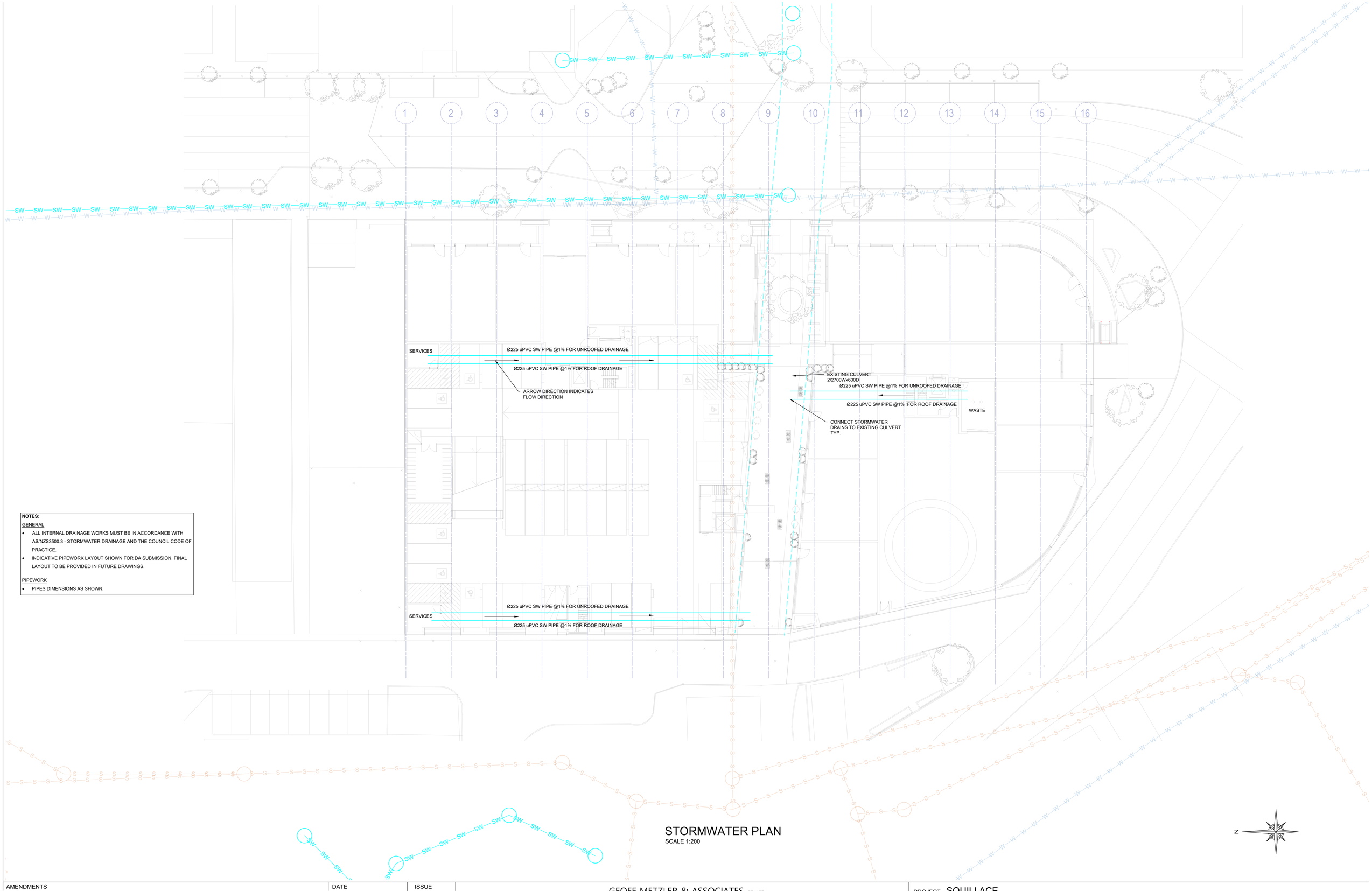
PROJECT - SQUILLACE
ADDRESS - 29-33 MARKET ST, MERIMBULA
DRAWING - STORMWATER ANALYSIS
JOB NO - M9358 Sheet No - 4
SCALE: AS SHOWN @ A1
DRAWN BY: -
REVISION B
APPROVED - JACK METZLER - B.E. MIE. AUST. C.P. ENG.



NOTES:

GENERAL

- ALL INTERNAL DRAINAGE WORKS MUST BE IN ACCORDANCE WITH AS/NZS3500.3 - STORMWATER DRAINAGE AND THE COUNCIL CODE OF PRACTICE.
- INDICATIVE PIPEWORK LAYOUT SHOWN FOR DA SUBMISSION. FINAL LAYOUT TO BE PROVIDED IN FUTURE DRAWINGS.

PIPEWORK

- PIPES DIMENSIONS AS SHOWN.

STORMWATER PLAN

SCALE 1:200

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PROJECT - SQUILLACE

ADDRESS - 29-33 MARKET ST, MERIMBULA

DRAWING - STORMWATER PLAN

JOB NO - M9358 Sheet No - 5

SCALE: AS SHOWN @ A1
DRAWN BY: -

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PROBABLE SIMULTANEOUS DEMAND

• GROUND FLOOR	1.17L/s
• FIRST FLOOR	2.21L/s
• SECOND FLOOR	2.21L/s
• THIRD FLOOR	2.21L/s
• FOURTH FLOOR	1.17L/s
• TOTAL	**8.97**L/s

NOTES:

GENERAL

- ALL INTERNAL DRAINAGE WORKS MUST BE IN ACCORDANCE WITH AS/NZS3500.1 - WATER SERVICES AND THE COUNCIL CODE OF PRACTICE.
- INDICATIVE PIPEWORK LAYOUT SHOWN FOR DA SUBMISSION. FINAL LAYOUT TO BE PROVIDED IN FUTURE DRAWINGS.

PIPEWORK

- PIPES DIMENSIONS AS SHOWN.
- MINIMUM PRESSURE RATING PN16
- MINIMUM COVER 600

WATER PLAN

SCALE 1:200

N

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PROJECT - SQUILLACE

ADDRESS - 29-33 MARKET ST, MERIMBULA

DRAWING - WATER PLAN

JOB NO - M9358 Sheet No - 6

SCALE: AS SHOWN @ A1
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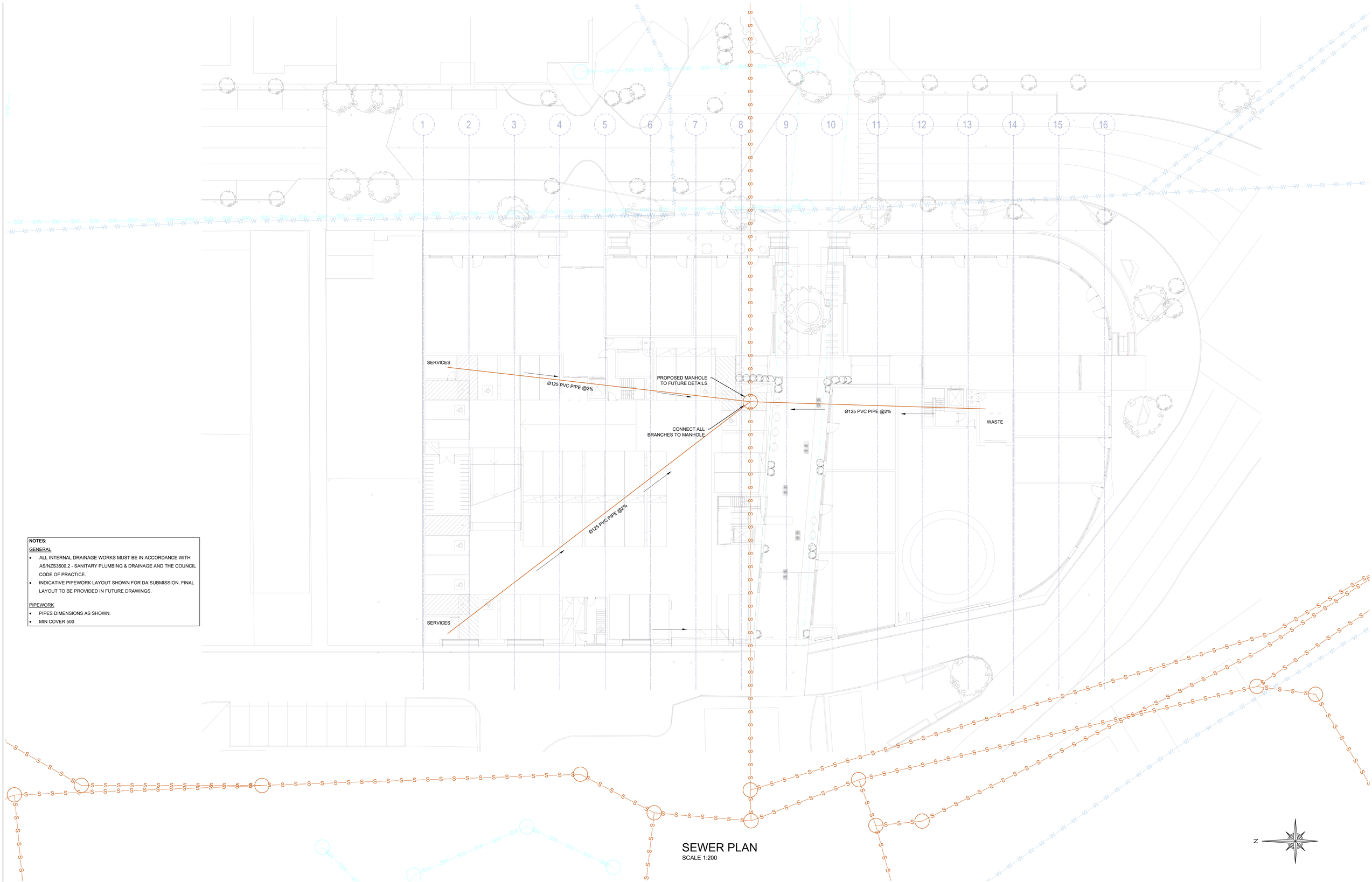

NOTES:

GENERAL

- ALL INTERNAL DRAINAGE WORKS MUST BE IN ACCORDANCE WITH AS/NZS3500.2 - SANITARY PLUMBING & DRAINAGE AND THE COUNCIL CODE OF PRACTICE.
- INDICATIVE PIPEWORK LAYOUT SHOWN FOR DA SUBMISSION. FINAL LAYOUT TO BE PROVIDED IN FUTURE DRAWINGS.

PIPEWORK

- PIPES DIMENSIONS AS SHOWN.
- MIN COVER 500

SEWER PLAN

SCALE 1:200

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PROJECT - SQUILLACE

ADDRESS - 29-33 MARKET ST, MERIMBULA

DRAWING - SEWER PLAN

JOB NO - M9358 Sheet No - 7

SCALE: AS SHOWN @ A1

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