NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

Approval *Issued under Section 4.18(1)(a) of the Environmental Planning and Assessment Act 1979*

Application Number	**DA-104/2022**
Applicant	Mr Timothy James Russell
Land to be developed	Lot 10 DP 837790, Lot 9 DP 837790, Lot 8 DP 837790 23-27 Brissett Street, INVERELL 2360
Approved development	Boundary Adjustment and Construction of Bus Storage Shed
Building Code of Australia Classification	7b
Determination	The determination is **consent granted subject to conditions**.
Determination date	9 November 2022
Consent is to operate from	9 November 2022
Consent will lapse on	9 November 2027 Unless the work or use to which this consent relates has lawfully commenced on-site in accordance with Section 4.53 of Environmental Planning and Assessment Act 1979.

CONDITIONS OF CONSENT

PRELIMINARY

1. Inverell Shire Council issues its consent, subject to conditions stated hereunder, in accordance with Section 4.17 of the *Environmental Planning and Assessment Act 1979.*

   Consent is granted for:

   - A boundary adjustment and consolidation resulting in:
     - Proposed Lot 1 – 23-25 Brissett Street – An approximate 9,176m² lot being a consolidation of Lots 9 and 10 DP 837790 (existing Inverell Bus Service) and undeveloped land from the rear of Lot 8 DP 837790; and
     - Proposed Lot 2 – 27 Brissett Street - An approximate 1,450m² lot containing the existing shed and car parking areas.
   - Construction of a bus storage shed; and
   - Installation of a self-bunded diesel fuel tank within the new bus storage shed.

   To confirm and clarify the terms of consent, the development must be carried out in accordance with the stamped and approved plans (as amended in red), unless modified by any following condition. Any deviation will require the consent of Council.

2. Separate development consent is required for the extension to the existing bus storage shed on Lot 10 DP 837790, 23 Brissett Street, Inverell as noted in red on the approved plans.

3. The applicant must comply with all relevant prescribed conditions as contained in Part 4, Division 2 of the *Environmental Planning & Assessment Regulation 2021*.

CONDITIONS RELATING TO THE BOUNDARY ADJUSTMENT

4. A Subdivision Certificate must be obtained from Council in accordance with the *Environmental Planning and Assessment Act 1979.*

5. Prior to issue of a Subdivision Certificate, all stormwater from proposed Lot 2 must be:

   - Directed to Council's stormwater drainage system in Brissett Street; or
   - Directed to the Council drain within Lot 2 DP 1080168 at the rear of the site, via an easement through proposed Lot 1.

CONDITIONS RELATING TO THE BUS STORAGE SHED

During Construction

6. To safeguard the local amenity, reduce noise nuisance and to prevent environmental pollution during the construction period:
   - Works on site are to be carried out in accordance with the *Protection of the Environment Operations Act 1997* in relation to noise, dust and associated nuisances from the site. The carrying out of works shall not interfere with the quiet enjoyment of the surrounding neighbourhood;
   - Construction may only be carried out between 7.00am and 5.00pm, Monday to Saturday, and no construction is to be carried out at any time on a Sunday or Public Holiday. Council may consent to vary these hours in particular circumstances where it can be demonstrated that it is unavoidable;
   - Stockpiles of topsoil, sand, aggregate, spoil or other material shall be stored clear of any drainage path of easement, natural watercourse, footpath, kerb or road surface and shall implement measures to prevent the movement of such material off site;
   - Building operations such as brick cutting, washing tools, concreting and bricklaying shall be undertaken on the building block. The pollutants from these building operations shall be contained on site;
   - Builders waste must not be burnt or buried on site. All waste (including felled trees) must be contained and removed to a waste disposal depot; and
   - Where the proposed development involves the disturbance of any existing survey monuments, those monuments affected will need to be relocated by a registered surveyor under the *Surveying and Spatial Information Act 2002*. A plan showing the relocated monuments will then be required to be lodged as a matter of public record at the Lands Titles Office.

7. Prior to commencement of works (including earthworks), run-off and erosion control measures must be implemented in accordance with the approved plans to prevent soil erosion, water pollution and the discharge of loose sediment on the surrounding land.

   Run-off and erosion control measures must be in place for the duration of building work and until adequate cover is established on the site.

Prior to Occupation

8. An Occupation Certificate must be issued for the building in accordance with the *Environmental Planning and Assessment Act 1979*.

   Note: Prior to issue of the Occupation Certificate, the Principal Certifying Authority is required to be satisfied, amongst other things, that:
   - *all required inspections (including each applicable mandatory critical stage inspection) have been carried out; and*
   - *any preconditions to the issue of the certificate required by a development consent have been met.*

9. Prior to issue of an Occupation Certificate:

   - The boundary adjustment approved under this consent is to be completed and registered with the NSW Registry Office; or
   - Lots 8, 9 and 10 DP 837790 are to be consolidated into a single allotment, with a plan of consolidation registered with the NSW Registry Office.

10. Prior to issue of an Occupation Certificate, all stormwater shall be drained in accordance with the approved engineering plans.

11. Prior to issue an Occupation Certificate, all car parking is to be constructed, bitumen sealed and line marked in accordance with the approved plans.

12. Prior to issue of an Occupation Certificate, the bitumen sealed hard stand area is to be extended to the new bus storage shed.

13. Prior to issue of an Occupation Certificate, all landscaping is to be completed in accordance with the approved plans.

14. Prior to issue of an Occupation Certificate, the owner of the building must provide Council with a fire safety certificate with respect to each fire safety or other safety measures installed in the building.

15. Prior to issue of an Occupation Certificate, the disconnection of the historic water main through Lot 9 DP 837790 and new internal water connection/s are to be completed in accordance with the approved engineering plans.

    Note: The connection and disconnection costs will be subject to quote from Council's engineering division.

Ongoing Use

16. All landscaping, driveways, car parking and bitumen hard stand areas area are to be maintained in perpetuity in a reasonable manner.

17. The owner of the building must certify to Inverell Shire Council every year that the essential fire safety measures installed in the building have been inspected and are capable of operating to the required minimum standard.

18. All vehicles must enter and leave the site in a forward direction.

19. All fuels, waste oils, hydraulic fluids, etc. are to be stored within the bus storage shed a suitably bunded area. Waste oils, hydraulic fluids, etc. are to be disposed in accordance with the Protection of Environment Operations Act 1997.

    A spill procedure is to be implemented on-site and spills (i.e. fuel, oils, hydraulic fluids) are not to be hosed down drains, driveways or street gutters.

20. The western side of the bus storage shed is not to be enclosed, including the installation of roller/sliding doors, without the prior consent of Council.

REASONS FOR CONDITIONS

The above conditions have been imposed:

1. To ensure compliance with the terms of the applicable environmental planning instruments.

2. Having regard to Council's duties of consideration under Section 4.15 of the *Environmental Planning and Assessment Act 1979*, as well as Section 4.17 which authorizes the imposing of the consent conditions.

3. Having regard to the circumstances of the case and the public interest.

REASONS FOR APPROVAL

1. The development, subject to conditions, is consistent with the objectives of the IN1 General Industrial zone.

2. The boundary adjustment complies with the subdivision controls of the Inverell Development Control Plan 2013.

3. The built form and design of the bus storage shed, subject to conditions is consistent with industrial area and complies with the industrial and parking controls of the Inverell Development Control Plan 2013.

4. The above fuel ground fuel is self-bunded and located within the proposed building. Subject to conditions, it is not considered to have a significant adverse environmental impact.

COMMUNITY CONSULTATION

Neighbour notification was undertaken in accordance with the Inverell Community Participation Plan. No submissions were received.

RIGHT OF APPEAL

If you are dissatisfied with this decision, Division 8.3 of the *Environmental Planning and Assessment Act 1979* gives you the right to appeal to the Land and Environment Court within 6 months after the date on which you receive this notice. You are also advised that Division 8.2 of the *Environmental Planning and Assessment Act 1979* provides that you may apply to Council for a review of this decision subject to the limitations contained in that section and payment of the prescribed fee.

On behalf of Inverell Shire Council

CHRIS FALEY
DEVELOPMENT SERVICES COORDINATOR

Our Ref: DA-104/2022 & CC-87/2022

18 January 2023

Dineen Holdings Pty Limited
37 Mansfield Street
Inverell NSW 2360

Dear Sir/Madam

NOTICE OF DETERMINATION
SECTION 68 PART B APPROVAL – LOCAL GOVERNMENT ACT 1993
LOTS 8, 9 AND 10 DP 837790 – 23-27 BRISSETT STREET, INVERELL

Reference is made to DA-104/2022 and CC-87/2022.

Notice is hereby given that approval is granted under Section 68 of the *Local Government Act 1993*, as per the following particulars:

Property Address: 23-27 Brissett Street, Inverell

Property Description: Lots 8, 9 and 10 DP 837790

Development: The carrying out of:

- Water supply work;
- Sewerage work; and
- Stormwater drainage work.

The works were approved by Council on 18 January 2023 subject to the following conditions:

General

1. The works are to be undertaken in accordance with the approved development application (DA-104/2022) and construction certificate (CC-87/2022) plans.

Prior to the Commencement of Works

2. Prior to the commencement of any water supply and/or sewerage works, a Notice of Work by a licensed plumber is to be submitted to Council.

During Works

3. Council is to undertake the following inspections for sewerage works:

   - Internal drainage; and
   - External drainage.

   Note: Refer to the relevant Construction Certificate or Complying Development Certificate for other mandatory inspections required for the project.

4. To safeguard the local amenity, reduce noise nuisance and to prevent environmental pollution during the construction period:
    - Works on site are to be carried out in accordance with the *Protection of the Environment Operations Act 1997* in relation to noise, dust and associated nuisances from the site. The carrying out of works shall not interfere with the quiet enjoyment of the surrounding neighbourhood.
    - Stockpiles of topsoil, sand, aggregate, spoil or other material shall be stored clear of any drainage path of easement, natural watercourse, footpath, kerb or road surface and shall implement measures to prevent the movement of such material off site.
    - Builders waste must not be burnt or buried on site. All waste (including felled trees) must be contained and removed to a Waste Disposal Depot.
    - Sediment and erosion control measures are to be implemented onsite and maintained until the site is fully stabilised, in accordance with Council's Erosion and Sedimentation Control Policy 2004.
    - Where the proposed development involves the disturbance of any existing survey monuments, those monuments affected will need to be relocated by a Surveyor registered under the Surveyors Act. A plan showing the relocated marks will then be required to be lodged as a matter of public record at the Lands Titles Office.

5. The applicant will:
    - Repair, or pay the full costs associated with repairing any public infrastructure that is damaged by the development, and
    - Relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.

6. All works must be undertaken in accordance with WorkCover requirements.

7. All plumbing and drainage work are to comply with Australian Standard 3500.

Upon Completion of Works

8. Upon completion of water supply and/or sewerage works, a Certificate of Compliance is to be submitted to Council by a licensed plumber.

9. Upon completion of sewerage work, a works-as-executed diagram is to be submitted to Council.

The above conditions have been imposed having regard to Council's duties of consideration under the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*, including:

a) The protection of public health;
b) The protection of the environment;
c) The safeguarding of Council assets; and
d) Matters relevant to the particular circumstances.

Any applicant who is dissatisfied with a determination may appeal to the Land and Environment Court within 12 months after the date on which this notice is received.

If you require any further information of assistance, please do not hesitate to contact Council's Development Services Division by telephoning 67288200.

Yours faithfully

CHRIS FALEY
DEVELOPMENT SERVICES COORDINATOR

KELLEY COVEY
GROUP PTY LTD
Consulting Civil, Structural, Hydraulic, Fire
& Environmental Engineers
Project Management & Planning

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: **CC-87/2022**
Date: **18 January 2023**
Council Officer: .....

162 Marius Street
PO Box 199
Tamworth NSW 2340
Australia
P (02) 6766 1944
E engineers@kelleycovey.com.au
www.kelleycovey.com.au
ABN 37 099 097 800

HYDRAULIC DESIGN CERTIFICATE

BUILDING DESCRIPTION:	**PROPOSED EXTENSION INVERELL BUS SERVICE**
BUILDING OWNER:	**CAVANAGH**
SITE ADDRESS:	**25 BRISSETT STREET INVERELL NSW 2360**
OUR REFERENCE	**JC/BT/T228765–23031CTF**

Kelley Covey Group Pty Ltd, Consulting Engineers, being "Hydraulic Engineers", hereby certify that this office is responsible for the hydraulic design of the design shown on drawings T228765 – Hydraulic Services Sheets 1-7 Revision C dated 19/12/2022 for the proposed redevelopment of the Proposed Extension at Inverell Bus Service.

We also certify that this work was designed and complies with:

Australian Standard AS3500.1 – Water Services
Australian Standard AS3500.2 – Plumbing and drainage Sanitary plumbing and drainage
Australian Standard AS3500.3 – Plumbing and drainage Stormwater drainage

Furthermore, this work is in accordance with sound, widely accepted engineering principles.

SIGNATURE: .....

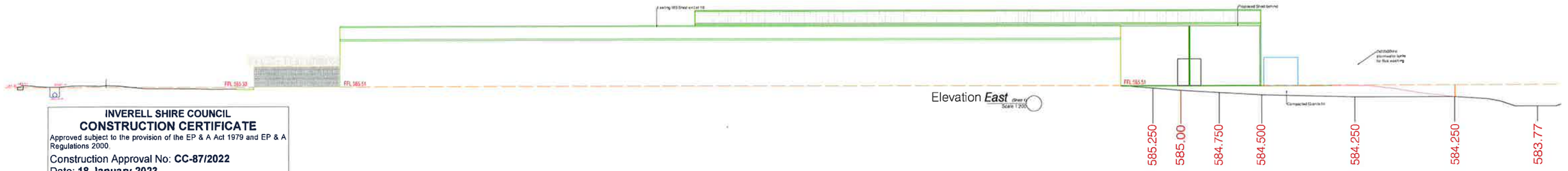
Justin Cant
BEng, CPEng, MIEAust, RPEQ, NER, PE2165, PRE1962

DATE: 09 January 2023

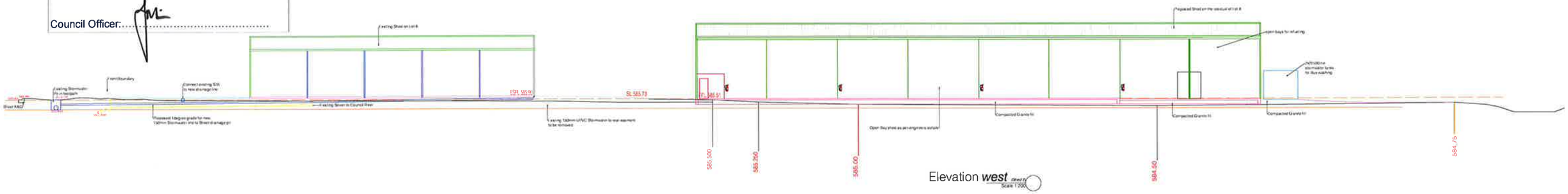
INVERELL SHIRE COUNCIL
DEVELOPMENT APPROVAL
Approved subject to the provisions of the E.P. & A. Act 1979 and any conditions contained in the attached written approval.
Development Approval No: DA-104/2022
Date: 9 NOVEMBER 2022
Council Officer: .....
This is a development approval only and a Construction Certificate must still be obtained for any building work.

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: **CC-87/2022**
Date: **18 January 2023**

Council Officer:.....



Elevation **East** (Sheet 1)
Scale 1:200



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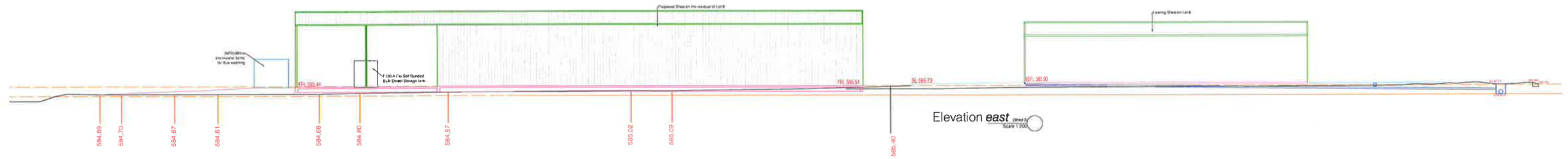
Scale 1:200



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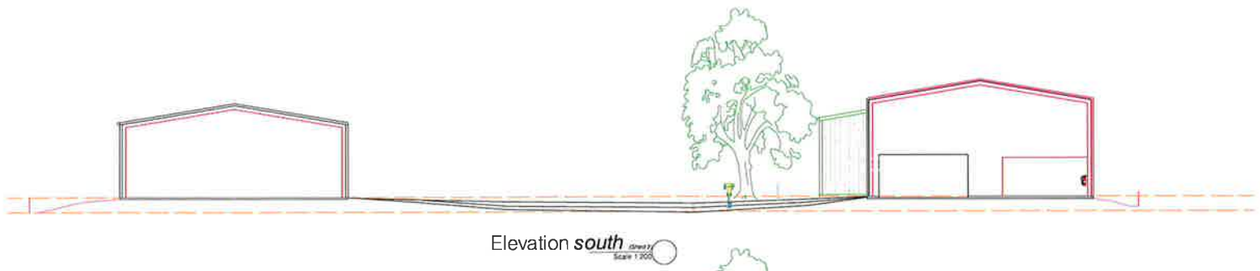
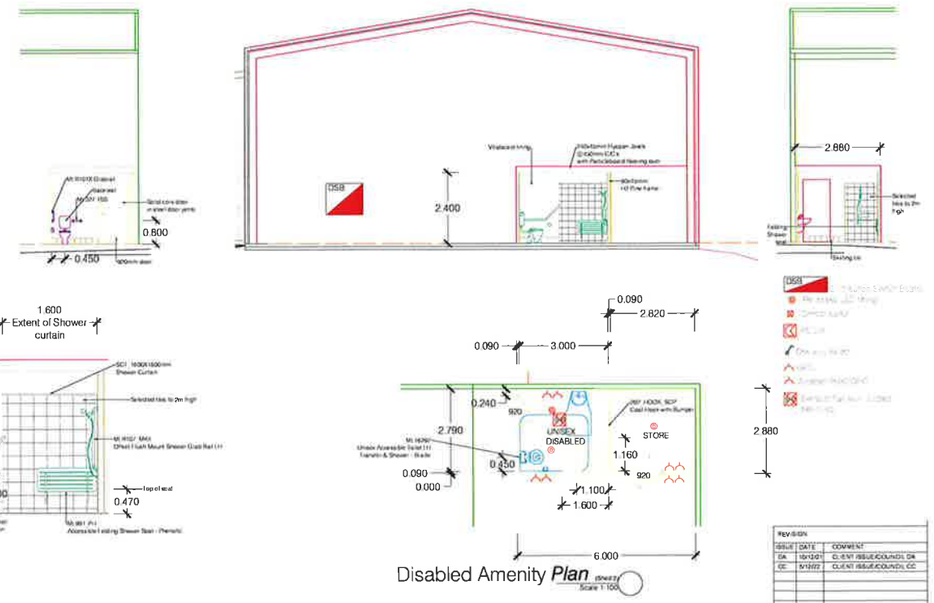
Scale 1:200



Elevation **south** (Sheet 2)
Scale 1:200



Disabled Amenity **Plan** (Sheet 2)
Scale 1:100

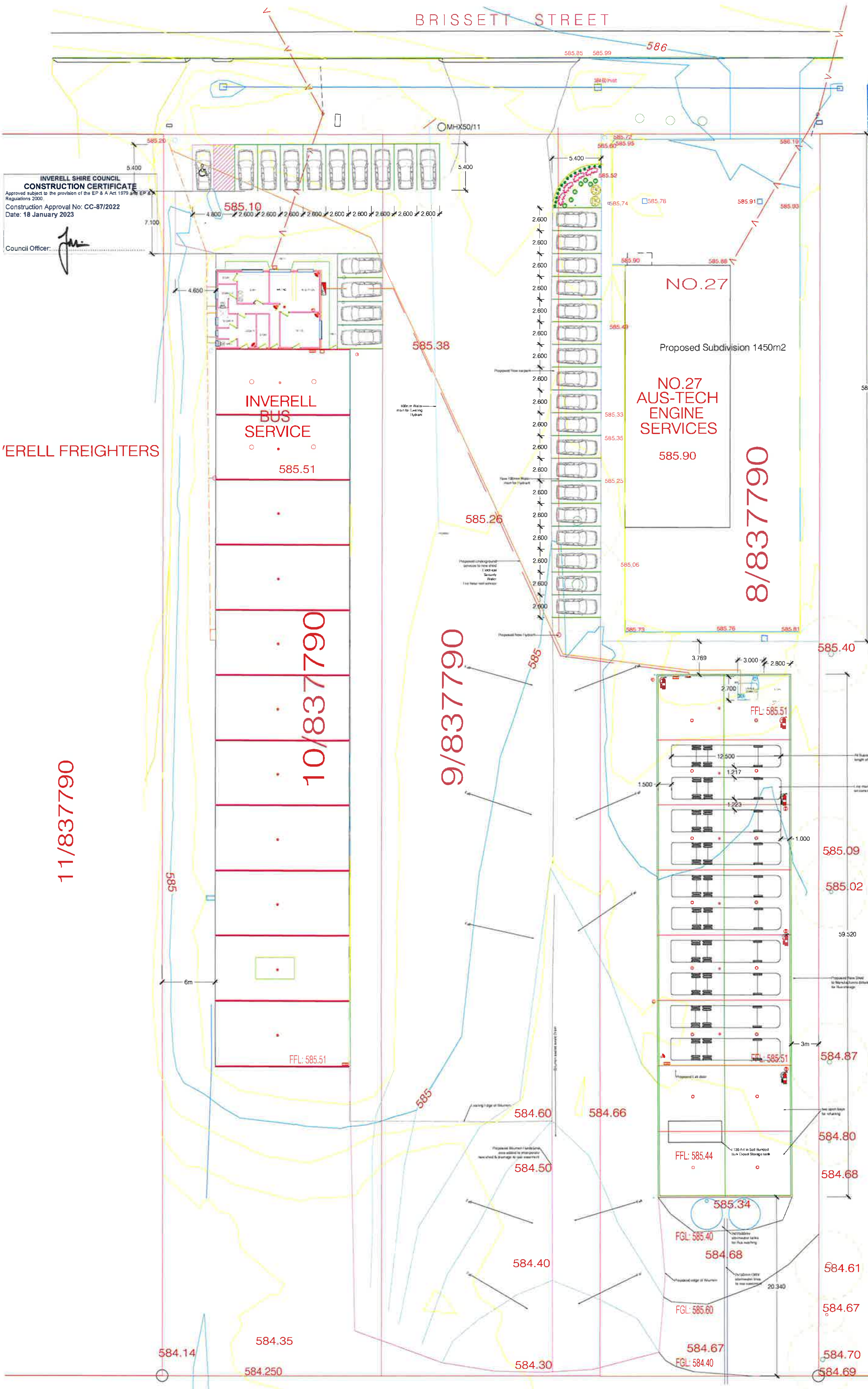
REVISION		
ISSUE	DATE	COMMENT
DA	10/12/21	CLIENT ISSUE/COUNCIL DA
CC	5/10/22	CLIENT ISSUE/COUNCIL CC

INVERELL SHIRE COUNCIL
DEVELOPMENT APPROVAL
Approved subject to the provisions of the E.P. & A. Act 1979 and any conditions contained in the attached written approval.
Development Approval No: DA-104/2022
Date: 9 NOVEMBER 2022
Council Officer:
This is a development approval only and a Construction Certificate must still be obtained for any building work.

DOMINICO blue
BUILDING
4326 Bundarra Rd INVERELL NSW 2360
0412 778 923 | 0267214424

Project:
Proposed Extensions Inverell Bus Service
Brissett St
Inverell NSW 2360

Client: Cavanagh
Authority: ISC
Area: Existing: = 1360m2
New Shed: = 911m2
Sheet No 3 of 4
Scale 1:200
Date 19/3/22
Datum
Dwg: Inverell bus service 21



INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: CC-87/2022
Date: 18 January 2023
Council Officer: [signature]

INVERELL SHIRE COUNCIL
DEVELOPMENT APPROVAL
Approved subject to the provisions of the E.P. & A. Act 1979 and any conditions contained in the attached written approval.
Development Approval No: DA-104/2022
Date: 9 NOVEMBER 2022
Council Officer: [signature]
This is a development approval only and a Construction Certificate must still be obtained for any building work.

DOMINICO blue BUILDING
4226 Bundarra Rd INVERELL NSW 2360

Proposed Site *Plan* (Scale 1:200)

Project:	Client:	Area:	Sheet No	2 of 4
Proposed Extensions Inverell Bus Service, Brissett St, Inverell NSW 2360	Cavanagh	Existing: = 1360m2	Scale	1:200
	Authority: ISC	New Shed: = 911m2	Date	5/4/22
			Datum	
			Dwg: Inverell bus service 21	

PROPOSED EXTENSION INVERELL BUS SERVICE
HYDRAULIC SERVICES
for
CAVANAGH
at
LOT 7 / 837790 AND LOT 10 / 837790 BRISSETT STREET, INVERELL, NSW, 2360

DRAWING SCHEDULE	
DWG. NO.	SERVICES
1OF 7	COVER SHEET & GENERAL NOTES
2 OF 7	SITE PLAN EXISTING
3 OF 7	SITE PLAN PROPOSED
4 OF 7	FLOOR PLAN SANITARY AND WATER
5 OF 7	FIRE SERVICE
6 OF 7	DETAILS
7 OF 7	ARTICULATION DETAILS

INVERELL SHIRE COUNCIL
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Construction Approval No: **CC-87/2022**
Date: **18 January 2023**
Council Officer:.....

LOCALITY PLAN
N.T.S

SCALE 1:100 (A3)

SCALE 1:500 (A1)

LEGEND

- STORMWATER DRAINAGE
- HARVESTED STORMWATER
- CSW — CIVIL STORMWATER
- SUB-SOIL DRAIN
- SANITARY DRAINAGE
- SANITARY VENT PIPE
- RISING MAIN / PUMPED DISCHARGE
- RW — RAINWATER
- CW — COLD WATER
- HW — HOT WATER
- WW — WARM WATER
- FIRE SUPPLY
- FIRE HOSE PATH
- G — GAS LINE
- TW — TRADE WASTE
- PO — PUMP OUT
- eSW — EXISTING STORMWATER
- eRW — EXISTING RAINWATER DRAINAGE
- eSAN — EXISTING SANITARY DRAINAGE
- eTW — EXISTING TRADE WASTE
- eCW — EXISTING COLD WATER SERVICE
- eHW — EXISTING HOT WATER SERVICE
- eWW — EXISTING WARM WATER SERVICE
- eF — EXISTING FIRE SERVICE
- eCOMM — EXISTING COMMUNICATIONS
- eELEC — EXISTING ELECTRICITY
- eSEW — EXISTING SEWER LINE
- eW — EXISTING WATER MAIN
- eGAS — EXISTING GAS
- SERVICE No.
- SERVICE NAME (ST)
- SERVICE SIZE (100)
- DUAL PILLAR FIRE HYDRANT
- FIRE HYDRANT INTERNAL
- FIRE HOSE REEL 'FHR' (36m U.N.O.)
- DISUSED FIRE SERVICE
- RISER
- DROPPER
- TEE DROPPER
- STOP TAP
- CHECK VALVE
- DOUBLE CHECK VALVE
- REDUCED PRESSURE ZONE DEVICE
- GATE VALVE
- GATE VALVE PADLOCKED OPEN
- SOLENOID VALVE
- MONITORED VALVE
- METER
- PUMP
- PRESSURE REDUCTION VALVE
- REDUCER
- TEMPERING VALVE
- FLOOR WASTE
- STACK
- ELEVATED PIPE DROPPER
- TUNDISH
- END CAP
- OVERFLOW RELIEF GULLY
- AIR ADMITTANCE VALCE

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AFFL	ABOVE FINISHED FLOOR LEVEL
AP	ACCESS PANEL
BTH	BATH
BT	BUCKET TRAP AS SPECIFIED
B	BASIN
BWU	BOILING WATER UNIT
CM	COFFEE MACHINE
COMBI	COMBI OVEN
COS	CLEAR OUT TO SURFACE
CV	CHECK VALVE
CW	COLD WATER
CS	CLEANERS SINK
CWD	COLD WATER DROPPER
CWR	COLD WATER RISER
DN	NOMINAL DIAMETER
DG	DISCONNECTOR GULLY
DCV	DOUBLE CHECK VALVE
DP	DOWNPIPE
DPH	DUAL PILLAR HYDRANT
Du-CV	DUAL CHECK VALVE
DSIL	DOWNSTREAM INVERT LEVEL
DW	DISH WASHER
EPD	ELEVATED PIPE DROPPER
F/A	FROM ABOVE
F/B	FROM BELOW
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FU	FIXTURE UNIT
FW	FLOOR WASTE
FFL	FINISHED FLOOR LEVEL
FSL	FINISHED SURFACE LEVEL
FSR	FIRE SERVICE RISER
GV	GATE VALVE
GW	GLASS WASHER
GDO	GRATED DRAIN OUTLET
HT	HOSE TAP
HW	HOT WATER
HWD	HOT WATER DROPPER
HWR	HOT WATER RISER/RETURN
HWU	HOT WATER UNIT
ICE	ICE MACHINE
IL	INVERT LEVEL
IO	INSPECTION OPENING
IOS	INSPECTION OPENING TO SURFACE
IS	INSPECTION SHAFT
IV	ISOLATION VALVE
LT	LAUNDRY TUB, 50mm WASTE AND TRAP
LU	LOADING UNIT
MH	MANHOLE
ND	NON-DRINKING
O/F	OVERFLOW
ORG	OVERFLOW RELIEF GULLY, 100mm TRAP
PE	POLYETHYLENE
RHS	RECTANGULAR HOLLOW SECTION
R	REFRIGERATOR
RPZD	REDUCED PRESSURE ZONE DEVICE
RRJ	RUBBER RING JOINT
RL	REDUCED LEVEL
RW	RAINWATER
RWD	RAINWATER OUTLET
SDO	SPOON DRAIN OUTLET
SEJ	SWIVEL EXPANSION JOINT
SHR	SHOWER
S	SINK
SS	STAINLESS STEEL
ST	STACK
SW	STORMWATER
SWD	STORMWATER DROPPER
T/A	TO ABOVE
T/B	TO BELOW
TD	TUNDISH
TTD	TRAPPED TUNDISH
TG	TEST GATE
TMV	THERMOSTATIC MIXING VALVE
TPV	TEMPERING VALVE
TSK	TEA SINK
USIL	UPSTREAM INVERT LEVEL
UR	URINAL
VP	VENT PIPE
WC	WATER CLOSET, 100mm INTEGRAL TRAP
WDH	WASH DOWN HOSE
WM	WASHING MACHINE

SITE SOIL CLASSIFICATION
SOIL CLASSIFICATION: ***'H1'***

PROVIDE EXPANSION AND SWIVEL JOINTS ON ALL DRAINAGE IN ACCORDANCE WITH SHEET HYD-501

FIRE HYDRANT REQUIREMENT
20L/SEC @ 150kPa

GENERAL NOTES

1. ALL FIXTURES, APPLIANCE AND APPARATUS CONNECTED TO THE PLUMBING SYSTEM ARE TO HAVE WATERMARK CERTIFICATION OR COMPLY WITH THE PLUMBING CODE OF AUSTRALIA PART A2.
2. THE HYDRAULIC SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING & DRAINAGE REGULATION 2019 AND ALL ASSOCIATED DOCUMENTS.
3. OBTAIN ALL NECESSARY APPROVALS FROM ALL AUTHORITIES HAVING JURISDICTION AND PAY ALL FEES DUE.
4. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION AND WITH THE REQUIREMENTS OF ALL RELEVANT AUSTRALIAN STANDARDS.
5. ENSURE ALL INVERT LEVELS AND COVER TO ALL SERVICES ARE OBTAINABLE PRIOR TO COMMENCEMENT.
6. THESE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION OF THE PROPOSED PLUMBING AND DRAINAGE INSTALLATION. USE DIMENSIONED ARCHITECTURAL DRAWINGS FOR SET OUT OF PENETRATIONS IN RELATION TO PLUMBING FIXTURES. IT IS THE RESPONSIBILITY OF THE INSTALLER TO COORDINATE THE ON-SITE INSTALLATION WITH OTHER SERVICES, INSTALLATIONS AND THE LIKE.
7. THE CONTRACTOR SHALL CONFER WITH THE LOCAL AUTHORITY AND PUBLIC UTILITIES TO ASCERTAIN THE LOCATION AND DEPTH OF ANY AND ALL EXISTING SERVICES WITHIN AND EXTERNAL TO THE PROPERTY WHETHER DOCUMENTED OR OTHERWISE.
8. 'AS-CONSTRUCTED' DRAWINGS - WHERE REQUIRED BY THE LOCAL AUTHORITY - ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RECORD ALL CHANGES TO THE ORIGINAL DESIGN AND ALLOW ALL COSTS FOR THE 'AS-CONSTRUCTED' DRAWINGS.
9. AS A CONDITION OF TENDERING, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL BE DEEMED TO BE FULLY AWARE OF THE SITE CONDITION. ANY CLAIM FOR VARIATION ON THE BASIS OF LACK OF KNOWLEDGE OF SITE CONDITIONS SHALL NOT BE ACCEPTED.
10. JOINTS IN PRESSURE WATER SERVICE PIPES UNDER FLOOR SLABS ARE NOT PERMITTED.
11. ALL IN-GROUND VALVES SHALL BE ENCLOSED IN APPROVED PATH BOXES.
12. ALL PLUMBING SERVICES THAT PENETRATE BUILDING ELEMENTS REQUIRED TO HAVE A FRL, MUST BE INSTALLED SO THAT THE FIRE - RESISTING PERFORMANCE IS NOT IMPAIRED.
13. DIMENSIONED ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER SCALED HYDRAULIC DRAWINGS.
14. THE HYDRAULIC SERVICES CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH MECHANICAL & A/C SERVICES ON-SITE.
15. PROTECT ALL PIPEWORK SUBJECT TO VEHICULAR DAMAGE WITH PIPE GUARDS OR BOLLARDS AS APPROPRIATE.
16. COORDINATE & PROVIDE ALL PIPE PENETRATIONS & RECESSES WITHIN THE STRUCTURE (WHETHER DOCUMENTED OR OTHERWISE) TO ENSURE MINIMUM CLEARANCES ARE AVAILABLE.
17. ALL HOT AND COLD WATER SERVICES LOCATED WITHIN A CONCRETE SLAB SHALL BE ONE OF THE FOLLOWING MATERIALS, TYPE B COPPER, TYPE B COPPER ALLOY, STAINLESS STEEL, POLYBUTYLENE, CROSS-LINKED POLYETHYLENE OR POLYETHYLENE AND SHALL BE ENCASED IN CONDUIT FOR THE FULL DISTANCE.
18. CONNECTION OF STORMWATER DRAINS AND WASTE DRAINS SHALL INCLUDE FLEXIBLE CONNECTIONS ON REACTIVE SITES CLASSIFIED AS H OR E. REFER EXPANSION AND SWIVEL JOINTS BY *'STORM PLASTICS'*

WATER SUPPLY NOTES

1. PROVIDE ALL NECESSARY ALLOWANCES FOR THERMAL MOVEMENT OF PIPES.
2. ALL WATER SUPPLY IS TO BE INSTALLED TESTED AND LABELED IN ACCORDANCE WITH AS/NZS 3500.1:2018, AS/NZS 3500.4:2018 AND THE PLUMBING CODE OF AUSTRALIA REQUIREMENTS.
3. MINIMUM PIPE SIZE FOR CONNECTION TO:-
   - 15MM DIA. <3M LENGTH 1 FIXTURE
   - 18MM DIA. <6M LENGTH 1 FIXTURE
   - 20MM DIA. 15 FIXTURES
4. POSITION SERVICES IN CEILING SPACES AND WALL FRAMING U.N.O. & ISOLATE FROM STRUCTURE TO PREVENT NOISE TRANSMISSION
5. WATER SUPPLY PIPE SIZES SPECIFIED ON THESE DRAWINGS ARE BASED ON NOMINAL SIZES (DN) OF COPPER PIPE. FOR DIFFERENT PIPE MATERIALS REFER AS3500.1:2018 'APPENDIX A' FOR SELECTING EQUIVALENT SIZES.
6. PLUMBER TO ALLOW TO INSTALL PRESSURE REDUCING VALVE WHERE PRESSURES WILL EXCEED 500kPa INTERNALLY.
7. PROVIDE PRESSURE LIMITING VALVE AND A COLD EXPANSION VALVE TO EACH HWU
8. PROVIDE TEMPERING VALVES AS SHOWN ON WATER SUPPLY LAYOUTS EQUAL TO RELIANCE HEATGUARD 20.
9. INSULATION FOR ALL HEATED WATER SUPPLIES TO BE FOIL FACED CLOSED CELL FOAM, THERMOTEC 4-ZERO OR EQUIVALENT. MINIMUM WALL THICKNESS OF 20mm. ALL INSULATION TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION.
10. IN-GROUND WATER SUPPLY PIPEWORK FROM RAINWATER HARVESTING AND REUSE TANKS AND THE LIKE, SHALL BE IDENTIFIED AS 'NON DRINKING' WITH A DETECTABLE STRIP OF PLASTIC MARKER TAPE IN THE TRENCH, 200mm ABOVE THE SERVICE.
11. ABOVE-GROUND WATER SUPPLY PIPEWORK FROM RAINWATER HARVESTING AND REUSE TANKS AND THE LIKE, SHALL BE CLEARLY AND PERMANENTLY LABELED 'CAUTION NOT FOR DRINKING' WITH SELF ADHESIVE OUTDOOR GRADE VINYL PIPE MARKERS INSTALLED IN ACCORDANCE WITH AS1345.
12. ALL HOSE TAPS SHALL BE FITTED WITH APPROVED VACUUM BREAKERS.
13. WHERE A HEATED WATER CIRCULATING SYSTEM IS USED IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO ARRANGE AN ALL WEATHER, FADE RESISTANT DIAGRAM IN ACCORDANCE WITH AS3500.4 - PART 9.5

SANITARY DRAINAGE NOTES

1. USE EXISTING SANITARY DRAIN CONNECTION, PAY ANY AND ALL FEES DUE.
2. ALL SANITARY DRAINAGE & PLUMBING IS TO BE INSTALLED TESTED AND LABELED IN ACCORDANCE WITH AS/NZS 3500.2:2018 AND THE PLUMBING CODE OF AUSTRALIA REQUIREMENTS.
3. ALL WORK TO BE TO THE APPROVAL OF THE LOCAL AUTHORITY.
4. PIPES UNDER FOOTINGS SHALL HAVE A MINIMUM CLEARANCE OF 75mm FROM TOP OF PIPE TO UNDERSIDE OF FOOTING.
5. ALL HOUSE DRAINAGE SHALL BE Ø100 AT 1in60 (1.65%) FALL UP TO 16S F.U. OR TO AS/NZS 3500.2
6. ALL UNVENTED BRANCHES TO SINGLE STACKS TO BE 2500mm MAX EXCEPT W.C.'S TO BE 6000mm MAX.
7. ALL BATH'S AND SHOWERS TO FLOOR WASTE TO BE MAX 1200mm UNTRAPPED OR MAX 2500mm TRAPPED.
8. ALL UNVENTED DRAINS MUST CONNECT TO DRAINAGE >500mm DOWNSTREAM AND 500mm UPSTREAM OF STACK CONNECTION TO MAIN DRAIN UP TO 2 STORIES.
9. ALL PIPE PENETRATIONS OF SLABS AND FIRE RATED WALLS ARE TO INCORPORATE APPROVED FIRE COLLARS.
10. ALL VENTS TO TERMINATE IN ACCORDANCE WITH AS/NZS3500.2:2018 SECTION 6.9
11. PROVIDE AND ANTI-FOAMING DEVICE TO ANY FLOOR WASTE GULLY RECEIVING DISCHARGE FROM LAUNDRY TUBS AND/OR WASHING MACHINES

STORMWATER & DOWNPIPES

1. CONTRACTOR SHALL ENSURE THAT THE WHOLE OF THE STORMWATER & RAINWATER DRAINAGE INSTALLATION COMPLIES WITH AS/NZS 3500.3 2018, QUEENSLAND DEVELOPMENT CODE PART 4.0 WHERE APPLICABLE AND LOCAL COUNCIL APPROVAL
2. ALL STORMWATER PIPEWORK AND FITTINGS ON THE INLETS SIDE OF THE STORAGE TANK SHALL BE CLASS DWV HAVING WATER TIGHT JOINTS FORMED WITH THE USE OF SOLVENT CEMENT AND PRIMING FLUID (UNO)
3. PROVIDE WATER TIGHT INLET AND OUTLET CONNECTIONS ON TANKS.
4. SUPPORT THE TANK IN SUCH A MANOR THAT NO LOAD IS TRANSMITTED TO ANY OF THE ATTACHED PIPES.
5. ALLOW TO PROVIDE "GUTTER LEAF GUARD" TO FULL LENGTH OF ALL GUTTERS. GUTTER GUARD SHALL BE SIMILAR OR EQUAL TO "ULTRA GUARD HDPE" TESTED AND IN ACCORDANCE WITH AS1745.
6. PROVIDE FLAP VALVES TO ALL RAINWATER TANK INLETS AND OUTLETS.
7. PROVIDE STORMWATER DRAINS TO CONNECT DOWNPIPES, SURFACE DRAINS, SUBSOIL DRAINS AND DRAINAGE PITS TO THE OUTLET POINT OR POINT OF CONNECTION.
8. ALL STORMWATER DRAINAGE SHALL BE 100 DIA 1% FALL U.N.O.
9. CONNECTION TO KERB TO BE GALVANISED RHS IN ACCORDANCE WITH AS1074 WITH MINIMUM COATING MASS OF 500G/SQR M
10. GRADE TRENCH FLOORS EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL. BED PIPING ON A CONTINUOUS UNDERLAY OF BEDDING MATERIAL, AT LEAST 75 MM THICK AFTER COMPACTION.
11. PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENTS. CONNECT SUBSOIL DRAINS TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.
12. PIPE SURROUNDS - PLACE THE MATERIAL IN THE PIPE SURROUND IN LAYERS 200mm LOOSE THICKNESS, AND COMPACT WITHOUT DAMAGING OR DISPLACING THE PIPING.

FIRE SERVICES NOTES

1. FIRE HOSE REELS TO BE INSTALLED IN ACCORDANCE WITH AS2441. PROVIDE ISOLATION VALVE TO EACH UNIT.
2. FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH AS2419.1
3. FIRE PUMPS TO BE INSTALLED IN ACCORDANCE WITH AS2941
4. PROVIDE APPROVED TESTABLE CHECK VALVE UPSTREAM OF ANY NON CERTIFIED MP52 MATERIAL.
5. FIRE EXTINGUISHES AND FIRE BLANKETS NOT INCLUDED IN THIS DOCUMENTATION.

MATERIALS

HOT & COLD WATER	MATERIALS AND PRODUCTS USED IN THE INSTALLATION OF HOT & COLD WATER SUPPLY SYSTEMS FOR THIS PROJECT SHALL COMPLY WITH AS/NZS 3500.1:2018 (SECTION 2) AND ALL RELEVANT STATUTORY REQUIREMENTS.
SANITARY DRAINAGE	PVC CLASS DWV SN6 & SN8(> 100)
SOIL, WASTE & VENT PIPE	PVC CLASS DWV SN6
DOWNPIPES	PVC CLASS DWV SN6
STORMWATER (up to 225 DIA.)	PVC CLASS SW HEAVY (U.N.O.)
(> THAN 225 DIA.)	POLYPROPYLENE (BLACKMAX) or, CONCRETE (RRJ) CL 3/FRC (SUPERTITE) CLASS 2
FIRE MAIN (>/= 100 DIA.)	CLASS 18 BLUE BRUTE IN GROUND or PE100 SDR11 PN16 (BUTT FUSION WELDED FOR UNSTABLE SOILS) TYPE B COPPER RISERS
	TYPE B COPPER INTERNAL PIPE (IF PROTECTED FROM FIRE EXPOSURE)
	STAINLESS OR GALVANISED STEEL PIPE (IF NOT PROTECTED FROM FIRE EXPOSURE)
TRADE WASTE	ABOVE GROUND - HDPE or POLYPROPYLENE CLASS SN8 or SN12 (PRESSURE PIPE)

INVERELL SHIRE COUNCIL
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Council Officer:.....
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Issue	Date	Description	By
C	19.12.2022	AIR LOCK ADDED	BS
B	02.06.2022	APPROVAL ISSUE	BS
A	24.02.2022	ORIGINAL ISSUE	BS

Checked – JC | Approved – JC
Design – BS | Drawn – TW
Scales – AS NOTED | Date – 08.03.22
Document Stage – APPROVAL

KELLEY COVEY GROUP PTY LTD
Consulting Civil, Structural and Environmental Engineers Project Management, Planning and Landscape Architecture
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MANAGER: JUSTIN CANT BEng,CPEng,MIEAust,NER,RPEQ,EC

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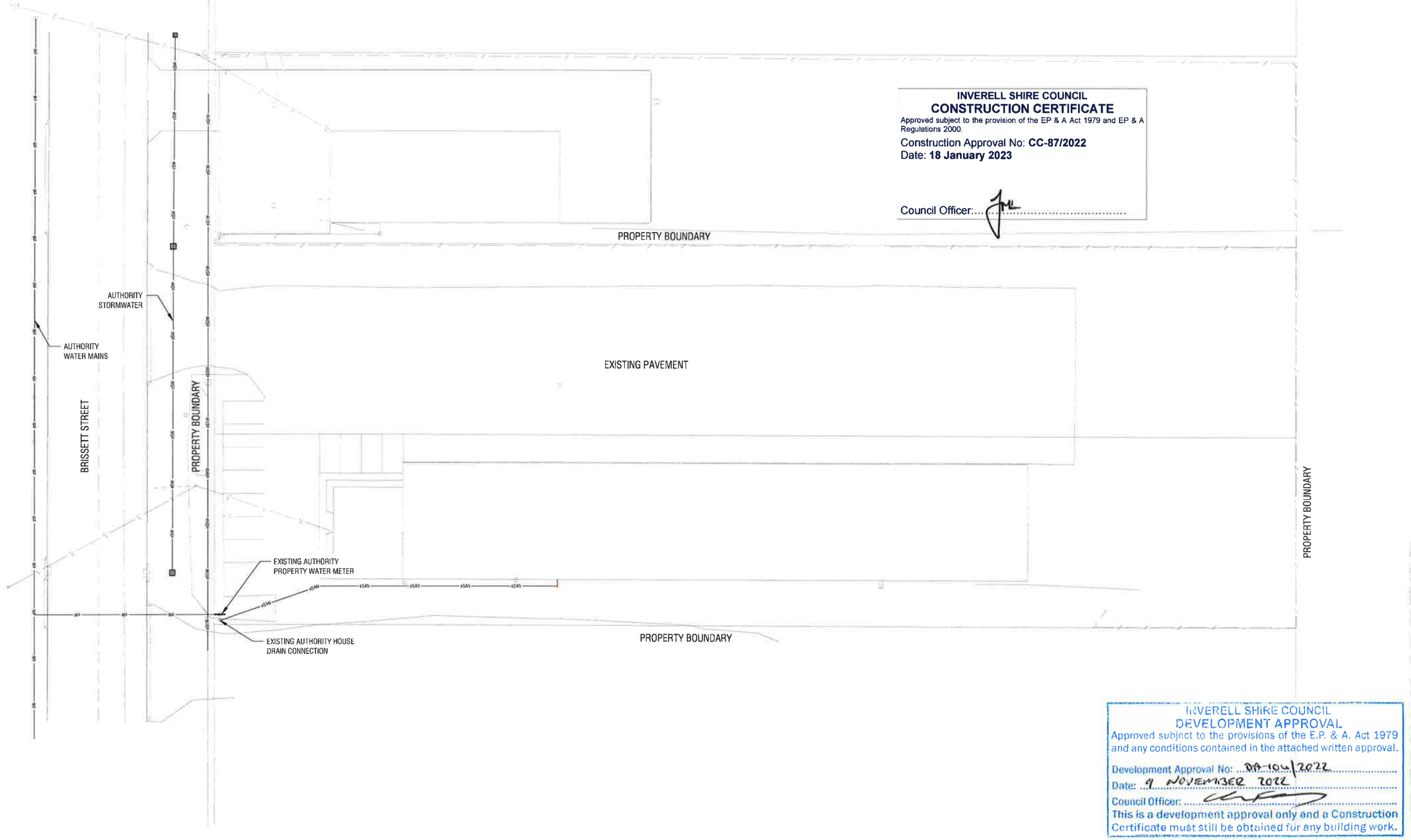
128 DANGAR STREET, UNIT 1, ARMIDALE NSW 2350, P (02) 6766 0266
OFFICES AT: Maroochydore QLD (07) 5443 7777 and Northlakes QLD (07) 30942600
EMAIL: engineers@kelleycovey.com.au www.kelleycovey.com.au

Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH
Site – BRISSETT STREET, INVERELL, NSW 2360
Drawing title – GENERAL NOTES AND LOCALITY

Project T228765 Sheet No. 1 of 7
Digital Ref: Issue C



INVERELL SHIRE COUNCIL
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Construction Approval No: **CC-87/2022**
Date: **18 January 2023**
Council Officer:.....

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0 5m 10m 15m
SCALE 1:250 (A1)

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Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH

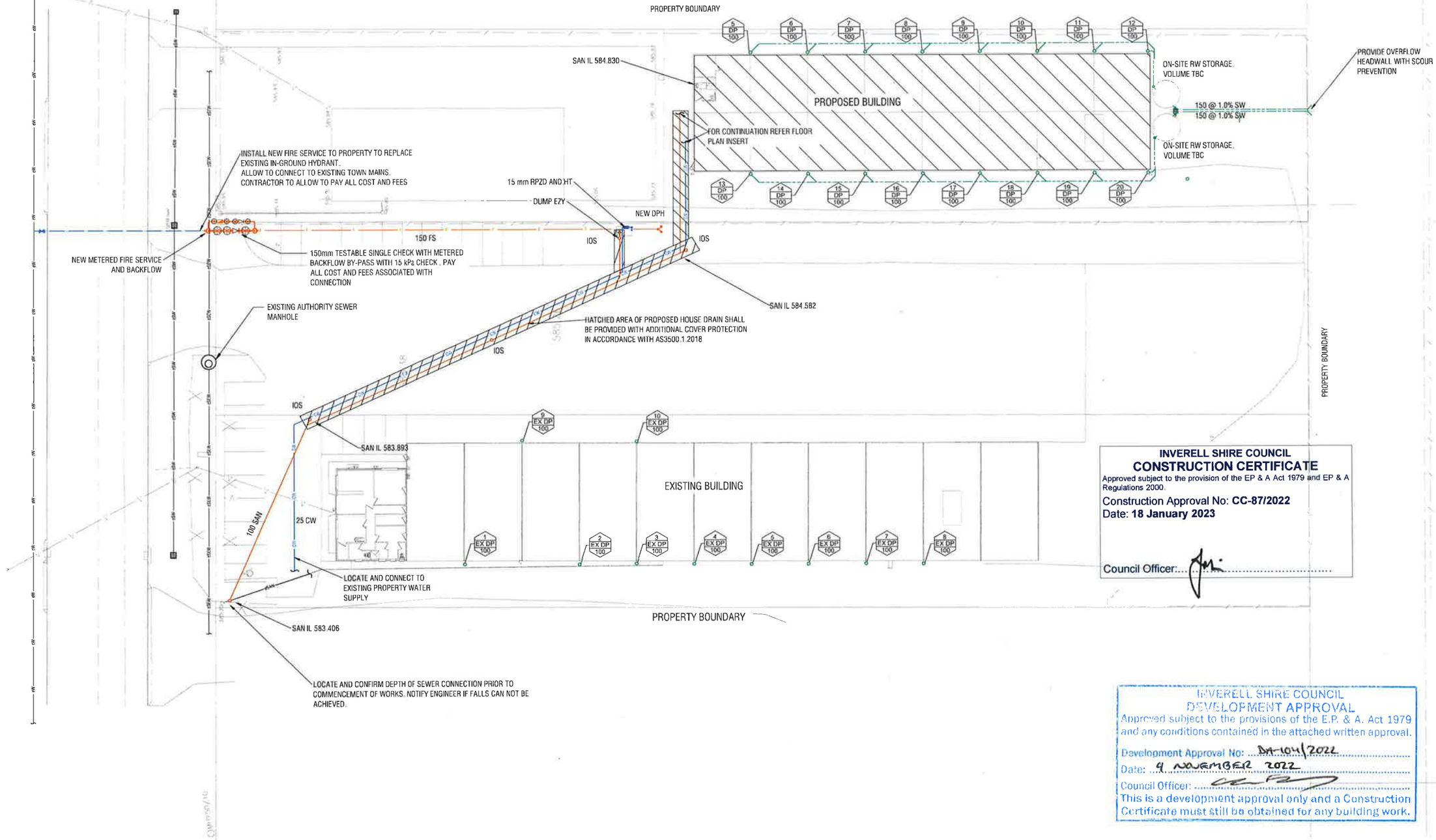
Site – BRISSETT STREET, INVERELL, NSW 2360

Drawing title – SITE PLAN EXISTING

Project T228765 Sheet No. 2 of 7
Digital Ref: Issue : C

NOTES:

1. EAVES GUTTERS HAVE BEEN SIZED IN ACCORDANCE WITH AS3500.3 2018
   MINIMUM GRADE - FLATTER THAN 1 IN 500
   MINIMUM GUTTER CSA - 12,200mm²
   DOWNPIPE SIZE - 100mm



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0 5m 10m 15m
SCALE 1:250 (A1)

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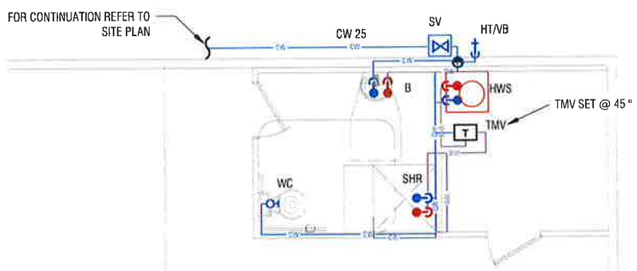
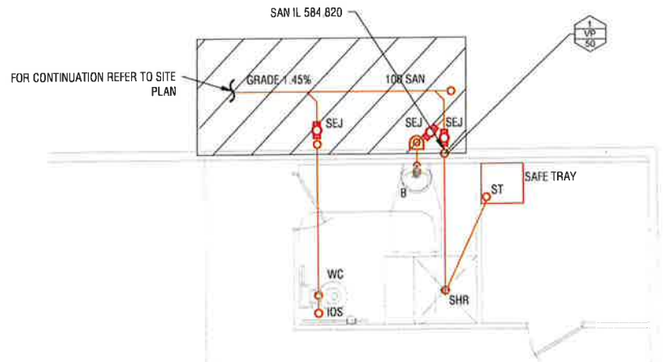
Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH
Site – BRISSETT STREET, INVERELL, NSW 2360
Drawing title – PROPOSED SITE SERVICES

Project T228765 Sheet No. 3 of 7
Digital Ref: Issue : C



FFL 585.1

WATER SUPPLY FLOOR PLAN
SCALE 1:50 (A1)



FFL 585.1

SANITARY DRAINAGE FLOOR PLAN
SCALE 1:50 (A1)

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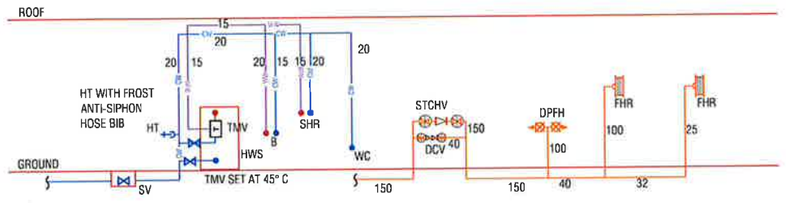

COLD, HOT AND WARM WATER AND FIRE SCHEMATIC
SCALE 1:50 (A1)

SCALE 1:50 (A1)

C	16.12.2022	AIR LOCK ADDED
B	07.06.2022	APPROVAL ISSUE
A	17.02.2021	ORIGINAL ISSUE

Issue Date | Description | By

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Scales – AS NOTED | Date – 08.03.22
Document Stage – APPROVAL

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Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH

Site – BRISSETT STREET, INVERELL, NSW 2360

Drawing title – FLOOR PLAN – WATER SUPPLY AND SANITARY WASTE INSERT

Project T228765 Sheet No. 4 of 7
Digital Ref: Issue : C

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
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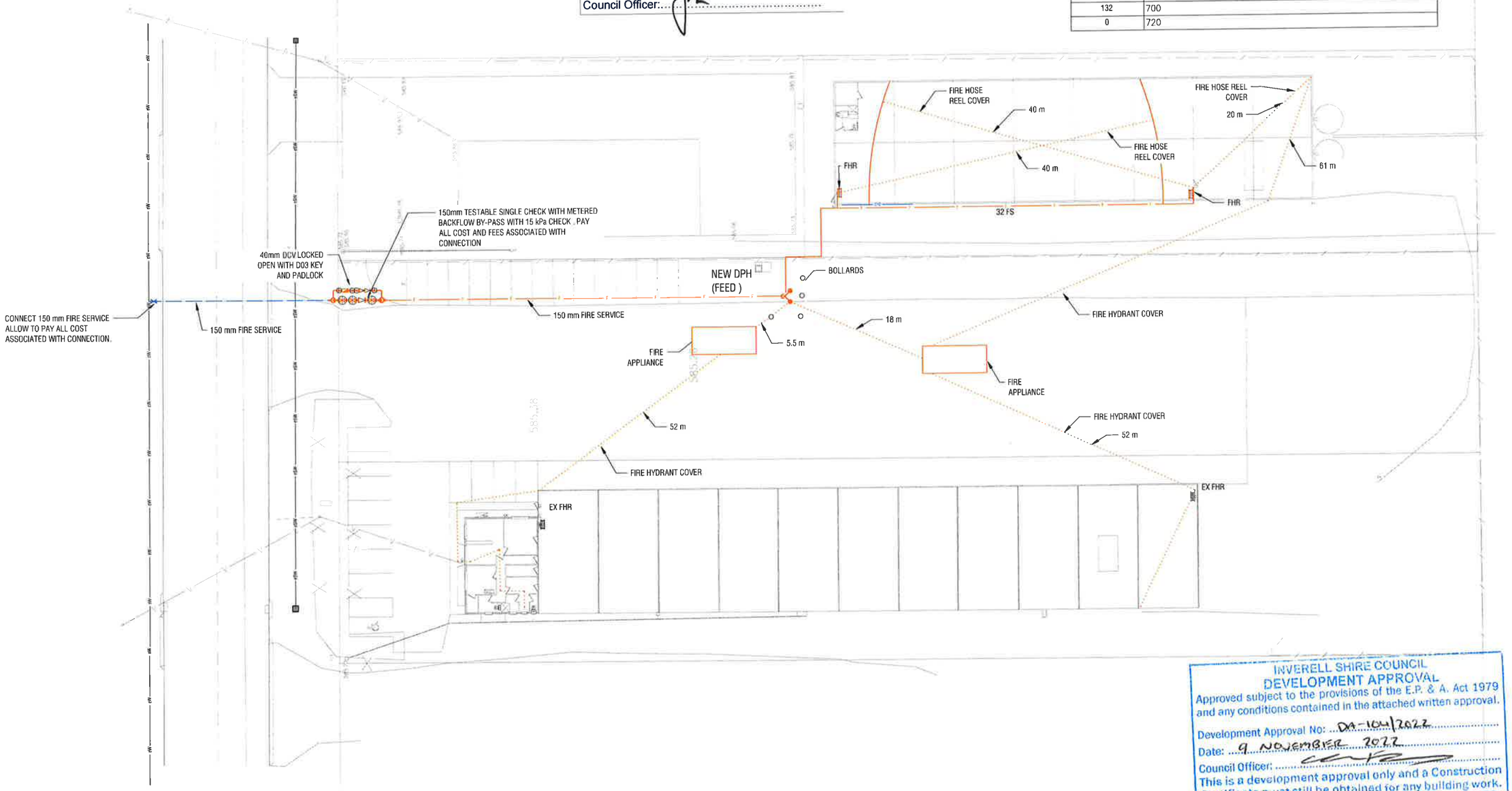
Construction Approval No: **CC-87/2022**
Date: **18 January 2023**

Council Officer:.....

STREET FIRE HYDRANT TEST - SOUTHERN FOOT PATH @ 27 BRISSETTT STREET INVERELL NSW	
DATE: 4 TH MAY 2022 @ 11.00 am	
FLOW (L/min)	PRESSURE (KPA)
1433	0
1383	100
1290	200
1154	300
1005	400
830	500
606	600
132	700
0	720



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SCALE 1:250 (A1)

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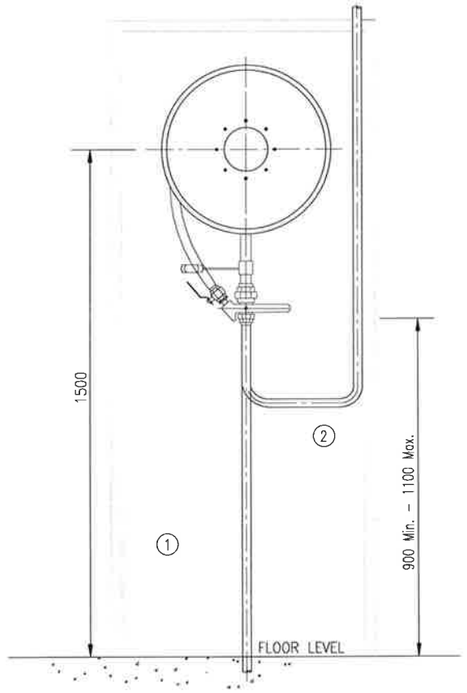
Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH

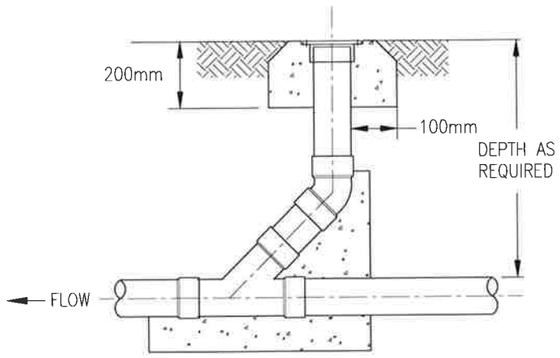
Site – BRISSETT STREET, INVERELL, NSW 2360

Drawing title – FLOOR PLAN – FIRE SERVICE

Project T228765 Sheet No. 5 of 7
Digital Ref: T228765-A-SCW.dwg Issue : C

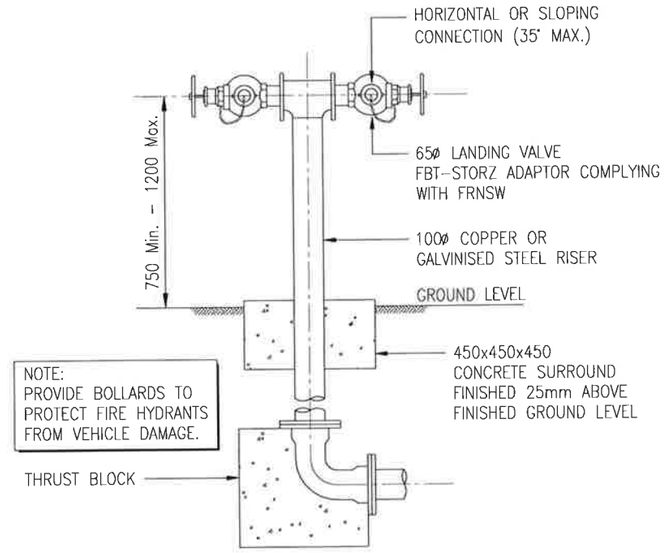


FIRE HOSE REEL DETAIL
N.T.S.



PROVIDE BRASS OR STAINLESS TOP (CLIENT TO ADVISE) TO ALL INTERNAL AREAS AND EXTERNAL WALKWAYS

TYPICAL I.O.S. DETAIL
N.T.S.



DUAL PILLAR FIRE HYDRANT DETAIL
N.T.S.

INVERELL SHIRE COUNCIL
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Construction Approval No: **CC-87/2022**
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Council Officer:.....

INVERELL SHIRE COUNCIL
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NOTE:
THE LOCATIONS OF ALL EXISTING IN GROUND SERVICES HAVE BEEN DETERMINED FROM LIMITED AVAILABLE INFORMATION. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE EXISTING SERVICES INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

Issue	Date	Description	By
B	02.06.2022	APPROVAL ISSUE	BS
A	12.02.2022	ORIGINAL ISSUE	BS

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Scales – AS NOTED | Date – 08.03.22
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Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH
Site – BRISSETT STREET, INVERELL, NSW 2360
Drawing title – DETAILS

Project T228765 Sheet No. 6 of 7
Digital Ref: TT217850-A-SCW.dwg Issue : B

SITE CLASSIFICATION:

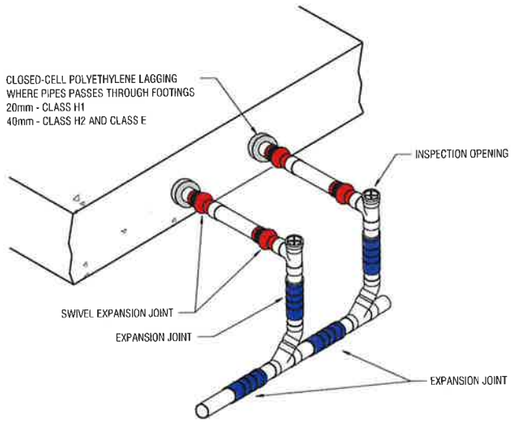
BASED ON THE RESULTS OF THE GEOTECHNICAL INVESTIGATION BY *EAST WEST ENVIROAG PTY LTD , REPORT NUMBER: RGS 33361.1-AA*, THE SITE IS CLASSIFIED AS CLASS **'P'**. BASED ON THE SOIL PROFILES THE SITE WOULD HAVE THE CHARACTERISTICS OF AN **'P'** SITE IN ACCORDANCE WITH AS2870-2011 RESIDENTIAL SLABS AND FOOTINGS.

PS
SOIL CLASSIFICATIONS:
AS2870-2011

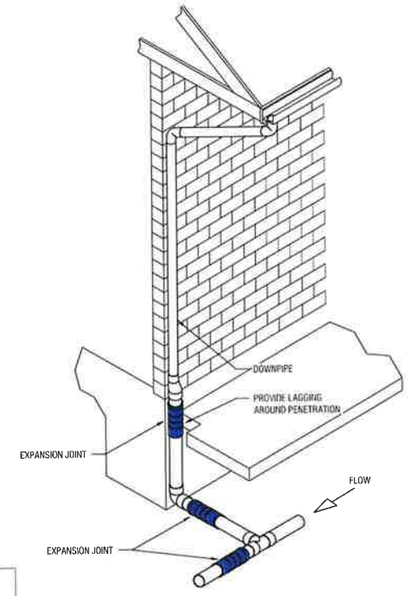
S	= SLIGHTLY REACTIVE	YS ≤20 MM
M	= MODERATELY REACTIVE	20 MM <YS ≤40 MM
H1	= HIGHLY REACTIVE	40 MM <YS ≤60 MM
H2	= HIGHLY REACTIVE	60 MM <YS ≤75 MM
E	= EXTREMELY REACTIVE	YS >75 MM
P	= SOILS AFFECTED BY ABNORMAL MOISTURE CONDITIONS	
P2	= UNCONTOLLED FILL, SOFT SOILS OR COLLAPSING SOILS	

DRAINAGE ARTICULATION NOTES:

1. THE IN-GOUND MOVEMENT EFFECTS ON SANITARY & STORMWATER DRAINAGE IS TO BE CONTROLLED IN ACCORDANCE WITH AS3500 & AS2870. EXPANSION & ARTICULATION JOINTS ARE TO BE INSTALL. THESE PLANS SHALL BE READ IN CONJUNCTION WITH STRUCTURAL ENGINEERS DRAWINGS & GEOTECHNICAL REPORT.
2. 'STORM PLASTICS' EXPANSION & SWIVEL JOINT FLEXIBLE SYSTEMS ARE TO BE USED. FOR FURTHER INFORMATION AND INSTALLATIONS PROCEDURES, CONTACT ' STORM PLASTICS' PHONE: (07) 3865 4811
3. THE BASE OF TRENCHES SHALL BE SLOPED AWAY FROM THE BUILDING. TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300MM WITHIN 1.5M OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPACTED.
4. WHERE PIPES PASS UNDER THE FOOTING SYSTEM, THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO RESTRICT THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM. ALTERNATIVELY, A PLASTIC MEMBRANE ACROSS THE CROSS-SECTION OF THE TRENCH, TAPED TO THE PIPE AND KEYED INTO THE SIDES AND BASE OF THE TRENCH MAY BE USED.
5. PENETRATIONS OF THE EDGE BEAMS OF A RAFT AND PERIMETER STRIP FOOTINGS SHALL BE AVOIDED WHERE PRACTICABLE, BUT WHERE NECESSARY SHALL BE DETAILED TO ALLOW FOR MOVEMENT. CLOSED-CELL POLYETHYLENE LAGGING SHALL BE USED AROUND ALL STORMWATER AND SANITARY PLUMBING DRAIN PIPE PENETRATIONS THROUGH FOOTINGS. THE LAGGING SHALL BE A MINIMUM OF 20mm THICK ON CLASS H1 SITES AND 40 MM THICK ON CLASS H2 AND CLASS E SITES. VERTICAL PENETRATIONS DO NOT REQUIRE LAGGING.
6. DRAINS ATTACHED TO OR EMERGING FROM UNDERNEATH THE BUILDING SHALL INCORPORATE FLEXIBLE JOINTS IMMEDIATELY OUTSIDE THE FOOTING AND COMMENCING WITHIN 1m OF THE BUILDING PERIMETER TO ACCOMMODATE A TOTAL RANGE OF DIFFERENTIAL MOVEMENT IN ANY DIRECTION EQUAL TO THE ESTIMATED CHARACTERISTIC SURFACE MOVEMENT OF THE SITE (YS). THE FITTINGS OR OTHER DEVICES THAT ARE PROVIDED TO ALLOW FOR THE MOVEMENT SHALL BE SET AT THE MID-POSITION OF THEIR RANGE OF POSSIBLE MOVEMENT AT THE TIME OF INSTALLATION, SO AS TO ALLOW FOR MOVEMENT EQUAL TO 0.5YS IN ANY DIRECTION FROM THE INITIAL SETTING. THIS REQUIREMENT APPLIES TO ALL STORMWATER AND SANITARY PLUMBING DRAINS AND DISCHARGE PIPES.
7. WHERE PIERS ARE USED TO SUPPORT A SLAB ON UNCONTROLLED FILL MATERIAL, PLUMBING AND DRAINAGE PIPES FOUNDING WITHIN SUCH FILL SHALL BE HUNG FROM THE SLAB MESH WITH NON-CORROSIVE STRAPS OR ARTICULATION JOINT INSTALLED IN ACCORDANCE WITH 'STORMPLASTICS' TECHNICAL GUIDELINES
8. DETAIL AND SUPPORT OF TRAPS AT THE ORG TO BE CONSIDERED ON-SITE TO ALLOW FOR POTENTIAL MOVEMENTS. THE ORG SHOULD BE CAST INTO CONCRETE MONOLITHICALLY WITH THE FOOTING SYSTEM ON CLASS 'H' AND 'E' SITE.
9. ALL DETAILS ARE INDICATIVE ONLY. FOR DESIGN OF PATHS, FOOTINGS ETC REFER TO STRUCTURAL ENGINEERS DRAWINGS.
10. TERMITE PROTECTIONS NOT SHOWN ON THE DRAWINGS. REFER TO BUILDING DESIGNER.
11. REFER TO HYDRAULIC SERVICES DRAWINGS FOR DRAINAGE ARTICULATION JOINT LOCATIONS.



TYPICAL THROUGH SLAB
N.T.S.



TYPICAL STORMWATER DRAINAGE
N.T.S.

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: **CC-87/2022**
Date: **18 January 2023**
Council Officer:.....

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DEVELOPMENT APPROVAL
Approved subject to the provisions of the E.P. & A. Act 1979 and any conditions contained in the attached written approval.
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Date: 9 NOVEMBER 2022
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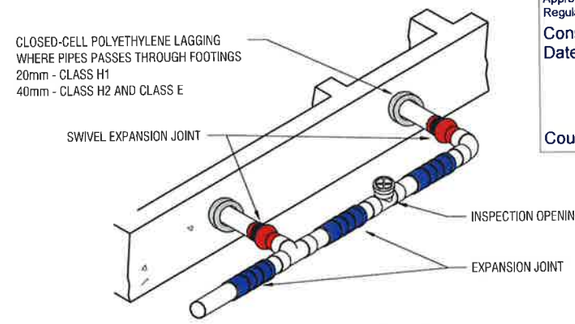
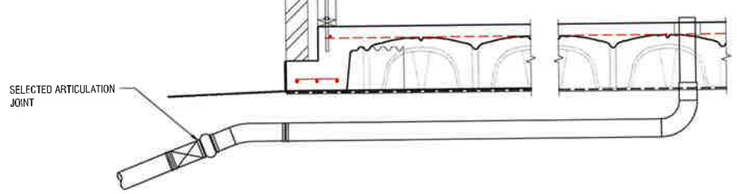
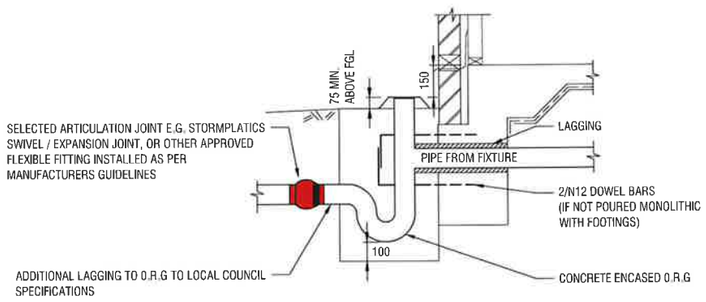


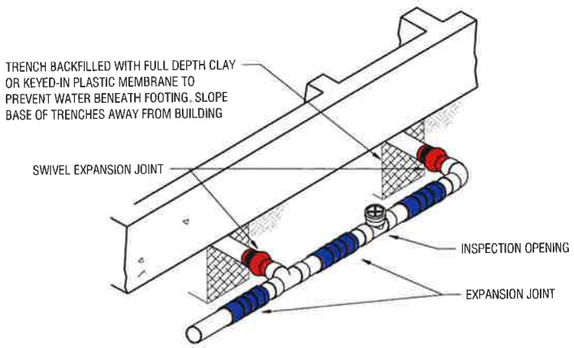
TYPICAL THROUGH SLAB - SHALLOW END
N.T.S.



TYPICAL SERVICE PENETRATION THROUGH SLAB
N.T.S.



TYPICAL SECTION AT O.R.G. TO PREVENT SHEAR AT FOOTING FACE
N.T.S.



TYPICAL UNDER SLAB - SHALLOW END
N.T.S.

NOTE:
THE LOCATIONS OF ALL EXISTING IN GROUND SERVICES HAVE BEEN DETERMINED FROM LIMITED AVAILABLE INFORMATION. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE EXISTING SERVICES INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

Issue	Date	Description	By
B	02.04.2022	APPROVAL ISSUE	BS
A	12.02.2022	ORIGINAL ISSUE	BS

Checked – JC | Approved – JC
Design – BS | Drawn – TW
Scales – AS NOTED | Date – 08.03.22
Document Stage – APPROVAL

KELLEY COVEY GROUP PTY LTD
ACN 099 057 800
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Consulting Civil, Structural and Environmental Engineers Project Management, Planning and Landscape Architecture

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Project – PROPOSED EXTENSION INVERELL BUS SERVICE
Client – CAVANAGH

Site – BRISSETT STREET, INVERELL, NSW 2360

Drawing title – ARTICULATION DETAILS

Project T228765 Sheet No. 7 of 7
Digital Ref: TT217850-A-SCW.dwg Issue : A

JULY 2022
T228765 DRAWING SCHEDULE
DA ISSUE

KELLEY COVEY GROUP PTY. LTD.
Contact No. 02-6766-1944
FOR CAVANAGH PTY LTD

PROPOSED EXTENSIONS, INVERELL BUS SERVICE

AT

INVERELL, NSW

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
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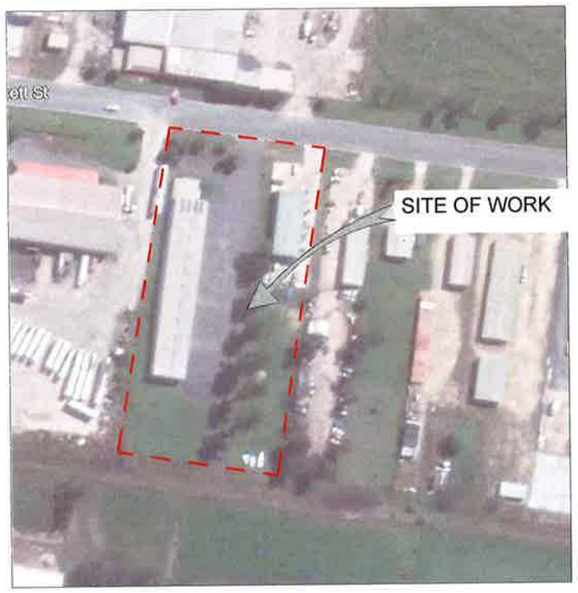
NORTH

SHEET INDEX

CIVIL DRAWING INDEX		
NO.	TITLE	ISSUE
1	TITLE SHEET	A
2	CONSTRUCTION NOTES 1 OF 2	A
3	CONSTRUCTION NOTES 2 OF 2	A
4	SITE PLAN	A
5	STORMWATER DRAINAGE PLAN AND LONGITUDINAL SECTION	A
6	PAVEMENT JOIN PLAN	A
7	EROSION AND SEDIMENT CONTROL PLAN	A



SITE LOCATION PLAN
NOT TO SCALE

INVERELL SHIRE COUNCIL
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KELLEY COVEY GROUP PTY LTD
Consulting Civil, Structural and Environmental Engineers
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ACN 099 097 800
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CONSTRUCTION NOTES

GENERAL NOTES

G1. CONSTRUCTION IS TO BE CARRIED OUT IN SYMPATHY WITH OTHER CONSTRUCTION WORK RELATED TO THIS PROJECT.

G2. ALL EARTHWORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS 3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS.

G3. THE CONTRACTOR IS TO PROVIDE AND MAINTAIN ALL SAFETY PRECAUTIONARY MEASURES WITHIN AND AROUND THE WORK SITE IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY ACT.

G4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE SETTING OUT OF THE WORKS REQUIRED.

G5. THE CONTRACTOR SHALL DURING HIS OPERATIONS TAKE CARE TO AVOID DAMAGING ANY EXISTING STRUCTURE OR SURFACES WITHIN THE WORK SITE. THE CONTRACTOR SHALL MAKE GOOD ANY DAMAGE AS A RESULT OF THEIR OPERATIONS.

G6. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THESE DRAWINGS, CONTRACT SPECIFICATION AND COUNCILS ENGINEERING DESIGN GUIDELINES FOR SUBDIVISIONS & DEVELOPMENTS.

G7. NO TREES ARE TO BE REMOVED OTHER THAN THOSE AFFECTED BY ROAD, LAND FILL (OR CUT) OR DRAINAGE WORKS. THE PROJECT SUPERINTENDENT WILL DETERMINE WHETHER TREES ARE DEEMED TO BE AFFECTED BY THIS CLAUSE.

G8. INSPECTION AND APPROVAL OF THE WORKS IS REQUIRED BY SUPERINTENDENT AT THE FOLLOWING STAGES:

- WHEN DRAINAGE LINES HAVE BEEN LAID, JOINTED AND BEDDED PRIOR TO BACKFILLING.
- WHEN ROADWORKS HAVE BEEN EXCAVATED TO SUBGRADE LEVEL PRIOR TO PLACEMENT OF PAVEMENT MATERIAL.
- WHEN PART (AS SPECIFIED BY COUNCILS SUPERVISING ENGINEER) THE PAVEMENT DEPTH HAS BEEN INSTALLED I.E. SUBBASE & BASE LAYERS .
- AT COMPLETION OF PAVEMENT SHAPING AND CONSOLIDATION PRIOR TO LAYING OF WEARING COURSE.
- AT COMPLETION OF ALL WORK

NOTE: A MIN 24 HOURS NOTICE IS REQUIRED FOR ALL INSPECTIONS

G9. SERVICES WHERE SHOWN ON THE PLAN ARE APPROX. ONLY AND HAVE BEEN LOCATED FROM SITE INVESTIGATION AND THE RELEVANT AUTHORITY. ALL SERVICES ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.

G10. WHERE UNDERGROUND OR OVERHEAD SERVICES EXIST, THE CONTRACTOR SHALL ENSURE THAT SUCH CABLES AND/OR SERVICES ARE NOT DISPLACED OR DAMAGED AS A RESULT OF THEIR OPERATIONS.

G11. WHERE NECESSARY THE CONTRACTOR SHALL LIAISE WITH ESSENTIAL ENERGY & TELSTRA (& ITS CONTRACTOR)

G12. ANY ADJUSTMENT TO PUBLIC UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

G13. PUBLIC UTILITIES SERVICES (STORMWATER, SEWER, WATER, GAS, ELECTRICITY, TELEPHONE, ETC) REQUIRED TO BE INSTALLED IN CONJUNCTION WITH THE WORK, ARE TO BE INSTALLED PRIOR TO THE LAYING OF ANY OTHER ROAD PAVEMENT MATERIAL. A SMOOTH JUNCTION IS TO BE PROVIDED WITH EXISTING WORK.

G14. UNSUITABLE MATERIAL IS TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING.

G15. STRIP AND STOCKPILE TOPSOIL FROM ROADWAYS AND SITE REGRADING AREAS AND RE-SPREAD ON BATTERS AND FILL AREAS TO A MAXIMUM DEPTH OF 300MM WITH A MINIMUM DEPTH OF 100MM.

G16. DURING CONSTRUCTION NOTIFY THE SUPERINTENDENT IF ANY QUERIES ARISE - NEVER ASSUME.

G17. LIMIT OF CONSTRUCTION TO BE AS SHOWN ON PLANS.

G18. ALL REDUCED LEVELS ARE A.H.D METRES, ALL CHAINAGES ARE IN METRES.

G19. CONTRACTOR TO VERIFY WITH ENGINEER PRIOR TO RECYCLED MATERIALS BEING USED ON SITE.

G20. TEMPORARY UTILITY WORKS (STORMWATER, SEWER, WATER, GAS, ELECTRICITY, TELEPHONE, ETC) ARE THE RESPONSIBILITY OF THE CONTRACTOR FOR ALL EXISTING SERVICES.

G21. THE ENTIRE SITE IS TO BE LEFT IN A TIDY STATE TO THE SATISFACTION OF THE SUPERINTENDENT AT THE COMPLETION OF ALL WORKS.

TELSTRA SERVICES

T1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXCAVATION, BACKFILLING AND COMPACTION OF TRENCHES FOR THE INSTALLATION OF TELSTRA CONDUITS.

T2. THE CONTRACTOR SHALL ENGAGE A SUITABLY QUALIFIED SUB-CONTRACTOR TO SUPPLY AND LAY TELSTRA CONDUITS AS PER TELSTRA STANDARDS AND SPECIFICATIONS.

T3. THE INSTALLATION OF TELSTRA CABLES, PITS AND OTHER TELECOMMUNICATIONS INFRASTRUCTURE IS NOT INCLUDED IN THIS CONTRACT.

T4. ALL TRENCHES SHALL BE OF SUCH DEPTH TO ENSURE A MINIMUM OF 450mm COVER & MINIMUM 100mm WIDE.

PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL

A1. PRODUCE INSURANCES AND COMPANY REGISTRATION REQUIRED AS PER CONTRACT DOCUMENTATION.

A2. HAVE SITE MEETING WITH PROJECT MANAGEMENT AND SITE ENGINEER.

A3. INSTALL SEDIMENT AND EROSION CONTROL DEVICES IN ACCORDANCE WITH APPROVED SEDIMENT AND EROSION MANAGEMENT CONTROL PLAN.

A4. THE CONTRACTOR IS TO VERIFY THE LOCATION AND LEVEL OF ALL EXISTING SERVICES BEFORE COMMENCING CONSTRUCTION.

A4. BE AWARE OF THE FOLLOWING:

- THESE NOTES DO NOT REPLACE COUNCILS ENGINEERING DESIGN GUIDELINES.
- THE NEED FOR THE PROVISION OF A WORK-AS-EXECUTED PLAN AND SUPERVISION BY THE PERSON DOING THE WORK-AS-EXECUTED PLAN.
- ERRORS AND OVERSIGHTS ON PLANS ARE TO BE RECTIFIED AT THE SUPERINTENDENT'S DISCRETION.
- TEST RESULTS ARE TO BE SENT TO THE SUPERINTENDENT UPON RECEIPT - IMMEDIATELY.
- PROPOSED VARIATIONS TO THE PLANS ARE TO BE REFERRED BACK TO THE SUPERINTENDENT FOR APPROVAL IN ACCORDANCE WITH THE WORKS CONTRACT BEFORE UNDERTAKING WORKS.
- THE CONTRACTOR SHOULD BE AWARE THAT IF HE PROVIDES THE MAINTENANCE BOND ON BEHALF OF THE PRINCIPAL, THEN IF THIS IS THE ONLY BOND HELD, IT WILL BE USED TO GUARANTEE PERFORMANCE OF ALL WORK REQUIRED FOR THE DEVELOPMENT, REGARDLESS OF WHO WAS RESPONSIBLE FOR CARRYING OUT THE WORK.

A5. UNDERTAKE A DIAL-BEFORE-YOU-DIG SEARCH AND IDENTIFY AND LOCATE ALL EXISTING SERVICES AND UTILITIES ON-SITE.

STORMWATER DRAINAGE NOTES

S1. ALL STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE ISC ENGINEERING DESIGN GUIDELINES AND STANDARD DRAWINGS.

S2. ALL R.C. STORMWATER PIPES TO BE CLASS 2 U.N.O.

S3. ALL PVC-U STORMWATER PIPES TO BE CLASS SH U.N.O.

S4. ALL STORMWATER PIPES TO BE RUBBER RING JOINTED.

S5. PIPE BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH ISC STANDARD DRAWINGS.

S6. TYPE 3 BEDDING TO BE USED TO ALL STORMWATER PIPES UNLESS NOTED OTHERWISE.

S7. MINIMUM TRENCH WIDTH = OUTSIDE DIAMETER OF COLLAR + 200MM

S8. PIPES IN FILL GROUND ARE TO BE PLACED AFTER COMPACTION AND APPROVAL OF FILLING.

S9. FINAL LID AND GRATE LEVELS OF MANHOLES AND PITS TO BE ADJUSTED ON SITE TO SUIT ALL EARTHWORKS AND FINISHED SURFACE LEVELS.

S10. REFER TO MANUFACTURER'S SPECIFICATION FOR INSTALLATION OF GROSS POLLUTANT TRAPS.

S13. UNLESS NOTED OTHERWISE, A MINIMUM COVER OF 600mm SHALL BE MAINTAINED OVER ALL STORMWATER PIPES UNDER ROADWAYS AND A MINIMUM COVER OF 450mm SHALL BE MAINTAINED FOR ALL INTERALLOTMENT DRAINAGE.

S14. INTERALLOTMENT STORMWATER PIPES SHALL BE OFFSET 0.5m OFF PROPERTY BOUNDARY U.N.O.

S15. INTERALLOTMENT STORMWATER PITS TO BE ALIGNED WITH PROPERTY BOUNDARIES.

S16. CONTRACTOR TO MAINTAIN A 0.5m CLEARANCE WITH INTERALLOTMENT STORMWATER PIPES TO SEWER MAINS (O.D. TO O.D.).

S17. ALL REINFORCED CONCRETE IN STRUCTURES TO BE 25 MPa REINFORCEMENT TO BE IN ACCORDANCE WITH AS1302.

REFERENCE MARK DETAILS

REFERENCE MARK - REFER TO CONSTRUCTION DRAWINGS FOR DETAILS.

THE CONTRACTOR SHALL ENGAGE AN APPROPRIATELY QUALIFIED SURVEYOR TO ESTABLISH SITE CONTROL MARKS FROM THE IDENTIFIED REFERENCE MARK.

THE LOCATION AND LEVEL OF THE REFERENCE MARK SHALL BE VERIFIED BY THE SURVEYOR AT THE TIME OF SETTING OUT.

TRAFFIC CONTROL

TC1. THE CONTRACTOR IS TO PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES DURING CONSTRUCTION WHEN REQUIRED IN ACCORDANCE WITH AS1742.3

TC2. CONTRACTOR TO SATISFY COUNCIL AND RMS REQUIREMENTS WITH RESPECT TO WORKING ON PUBLIC AND ARTERIAL ROADS WHEN REQUIRED.

TC3. THE CONTRACTOR IS TO PROVIDE A TRAFFIC CONTROL PLAN, SPEED ZONE RESTRICTION AND ROAD OCCUPANCY LICENCE AS REQUIRED FOR APPROVAL BY THE SUPERINTENDENT AND LOCAL AUTHORITIES PRIOR TO WORKS COMMENCING.

PAVEMENT DETAILS

P1 ALL PAVEMENTS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFIED DESIGN AND COUNCILS ENGINEERING DESIGN GUIDELINES.

P2 ALL DIMENSIONS ON PAVEMENT ARE IN MILLIMETRES.

P3 BASE AND SUB BASE MATERIALS FROM APPROVED UNBOUND NATURAL GRAVELS.

P4 PAVEMENTS ARE TO BE CONSTRUCTED TO THE CHAINAGES SHOWN UNLESS DIRECTED OTHERWISE.

P5 TRANSITION CHANGES IN GRAVEL COURSES OVER 10 METRES.

P6 IF THE ACTUAL SUBGRADE CBR IS FOUND TO BE LESS THAN THAT INDICATED ON THE DRAWINGS, THE TEST RESULTS SHOULD BE SUBMITTED TO THE SUPERINTENDENT WITHIN 24 HOURS OF RECEIPT. PAVEMENT REDESIGN SHALL BE OBTAINED FROM THE SUPERINTENDENT BEFORE CONSTRUCTION PROCEEDS.

P7. PAVEMENT TESTING TO BE CARRIED OUT IN ACCORDANCE WITH SUPERINTENDENT'S REQUIREMENTS AT THE FOLLOWING STAGES:

- SUBGRADE - DENSITY AND PROOF ROLL TESTS AS REQUESTED.
- AT INTERMEDIATE LEVELS (IF REQUIRED BY SUPERINTENDENT) - DENSITY AND BENKLEMAN BEAM TEST.
- AT FINISHED PAVEMENT LEVEL - DENSITY AND BENKLEMAN BEAM TESTS

PAVEMENT TESTING NOTES:

1. THE PROOF ROLL TEST WILL BE CARRIED OUT BY SUPERVISING ENGINEER.
2. DENSITY TEST, BENKELMAN BEAM TESTS AND CBR TESTS ARE TO BE CARRIED OUT BY A NATA REGISTERED LABORATORY).
3. 'STANDARD' COMPACTION TESTING TO BE USED.

P8. IN RELATION TO ROAD PAVEMENT CONSTRUCTION & SUBJECT TO APPROVAL OF THE SUPERINTENDENT:

1. ANY SUBGRADE MATERIAL THAT STILL EXHIBITS SIGNIFICANT DEFLECTION AFTER PROOF ROLLING WILL REQUIRE REMOVAL AND REPLACEMENT WITH SUITABLE MATERIAL.
2. SHOULD SOLID ROCK BE ENCOUNTERED AT A LEVEL ABOVE THE DESIGN SUBGRADE LEVEL THEN GRAVEL PAVEMENT DEPTHS MAY BE VARIED WITH THE APPROVAL OF THE SUPERINTENDENT AND COUNCIL.

EROSION AND SEDIMENT CONTROL

ES1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL TEMPORARY SEDIMENT & CONTROL MEASURES.

ES2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH DEVICES IN ACCORDANCE WITH THE APPROVED SEDIMENT AND EROSION MANAGEMENT CONTROL PLAN AND 'THE BLUE BOOK' LANDCOM - MANAGING URBAN STORMWATER:SOILS AND CONSTRUCTION

ES3. AT START OF CONSTRUCTION ALL TOPSOIL TO BE REMOVED AND STOCKPILED AWAY FROM CONSTRUCTION. N.B - TOPSOIL HEAPS TO BE PROTECTED WITH SILT FENCING TO PREVENT TOPSOIL LOSS.

ES4. AT COMPLETION OF CONSTRUCTION TOPSOIL TO BE REPLACED ON BATTERS, DRAINS AND ALL OTHER DISTURBED AREAS 100-150mm THICK. ALL WATER COURSES TO BE TURFED. GRASS SPECIES OR SPECIES BLEND TO BE DETERMINED BY LOCAL SUPPLIERS AND BASED ON CLIMATE AT TIME OF SEEDING. OTHER AREAS TO BE HYDROMULCHED OR SEEDED AND FERTILIZED AS SPECIFIED BY THE SUPERINTENDENT.

SANITARY SEWER CONSTRUCTION NOTES

1. GENERAL

a) ALL SEWER CONSTRUCTION TO BE IN ACCORDANCE WITH THE ISC ENGINEERING DESIGN GUIDELINES FOR SUBDIVISIONS & DEVELOPMENTS.
b) ALL SEWER PIPELINES AND MAINTENANCE HOLES SHALL BE STATIC TESTED.
c) TESTING OF ALL SEWER CONSTRUCTION TO BE IN ACCORDANCE WITH INVERELL SHIRE COUNCIL GUIDELINES.

2. MAINTENANCE HOLES

a) ALL MAINTENANCE HOLES TO BE 900mm DIAMETER PRECAST UNLESS NOTED OTHERWISE AND TO BE CONSTRUCTED IN ACCORDANCE WITH ISC STANDARD DRAWINGS (WHERE SPECIFIED).
b) CONNECTION OF SEWER PIPES TO MAINTENANCE HOLE TO BE CONSTRUCTED IN ACCORDANCE WITH ISC STANDARD DRAWINGS.
c) THE MINIMUM FALL ACROSS MAINTENANCE HOLES FROM INLET PIPE TO OUTLET PIPE SHALL BE:

DEFLECTION ANGLE	FALL ACROSS MAINTENANCE HOLE
0° to 45°	30mm
46° to 90°	50mm
91° to 135°	100mm

d) ALL MAINTENANCE HOLE BACK DROPS TO BE CONSTRUCTED IN ACCORDANCE WITH ISC STANDARD DRAWINGS.
e) INVERTS AT ALL MAINTENANCE HOLES TO BE BENCHED TO SUIT INLET AND OUTLET PIPES. BENCHING TO BE CONSTRUCTED TO ENSURE UNOBSTRUCTED SEWER FLOW THROUGH THE MANHOLE.
f) ALL MAINTENANCE HOLE LIDS TO BE CONSTRUCTED & INSTALLED IN ACCORDANCE WITH ISC STANDARD DRAWINGS.
g) FINAL SURFACE LEVELS OF MAINTENANCE HOLES TO BE ADJUSTED ON SITE TO SUIT EARTHWORKS LEVELS. FINISHED LEVELS OF MAINTENANCE HOLE COVERS IN RELATION TO SURROUNDING FINISHED SURFACE LEVELS SHALL BE:

LOCATION	FINISHED LEVEL OF MAINTENANCE HOLE
UNDEVELOPED AREAS	100mm PROUD
NEW SUBDIVISIONS	75mm PROUD
ROADS, CONCRETE FOOTPATHS & DRIVEWAYS	FLUSH - COVER ABOVE SURROUNDING SURFACE LEVEL
EXISTING BUILT UP AREAS	25mm PROUD
OTHER	AS SPECIFIED

3. PIPELINES

a) UNLESS NOTED OTHERWISE, TYPE 3 BEDDING TO BE USED IN ACCORDANCE WITH ISC STANDARD DRAWINGS. BEDDING TYPE TO BE CONFIRMED ON SITE BY ENGINEER UPON TRENCH EXCAVATION.
b) BEDDING MATERIAL TO BE WASHED 5mm SCREENINGS UNLESS NOTED OTHERWISE.
c) ALL BACKFILL TO BE COMPACTED TO 95% MAXIMUM DRY DENSITY (STANDARD) FOR COHESIVE SOILS AND TO A DENSITY INDEX OF 70 FOR NON-COHESIVE SOILS.
d) ALL PIPELINES TO BE PVC-U CLASS SN8 UNLESS NOTED OTHERWISE.
e) ALL PIPELINES TO BE R.R.J. (SPIGOT AND SOCKET JOINTED).
f) UNLESS NOTED OTHERWISE, THE MINIMUM COVER OVER SEWER PIPES SHALL BE:

LOCATION	MINIMUM COVER TO TOP OF SEWER (mm)
PRIVATE RESIDENTIAL PROPERTY AND PUBLIC LAND - NO VEHICULAR LOADING	450 FOR EXISTING DEVELOPMENTS
PRIVATE RESIDENTIAL PROPERTY SUBJECT TO VEHICULAR LOADING	750
ROAD CARRIAGEWAYS	750
ARTERIAL ROAD CARRIAGEWAYS	750

g) CONCRETE BULKHEADS TO BE INSTALLED TO ALL SEWERS LAID AT GREATER THAN 15% SLOPE. BULKHEADS TO BE CONSTRUCTED IN ACCORDANCE WITH WSAA DWG No. SEW-1206 AND SEW-1207. REFER TO DESIGN DRAWINGS FOR SPACINGS OF BULKHEADS.

4. PROPERTY CONNECTIONS

a) ALL PROPERTY CONNECTIONS TO BE CONSTRUCTED IN ACCORDANCE WITH ISC STANDARD DRAWINGS.
b) PROPERTY CONNECTIONS SHALL TERMINATE WITH AN INSPECTION OPENING LOCATED A MINIMUM OF 1m WITHIN THE PROPERTY BDY.
c) A RED SURVEY PEG SHALL BE USED TO MARK THE LOCATION OF SEWER JUNCTIONS. THE PEG SHALL BE TIED TO UNDERGROUND IDENTIFICATION TAPE.

5. TESTING

a) GENERAL FORTY EIGHT (48) HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR TO THE ENGINEER IN RESPECT OF EACH OF THE FOLLOWING;

1. OPENING OF TRENCHES READY FOR PIPE LAYING
2. PLACING OF PIPES IN TRENCHES PRIOR TO BACKFILLING
3. TESTING OF SEWER MAINS

WATER RETICULATION CONSTRUCTION NOTES

W1. ALL ROAD CROSSINGS ARE TO BE INSTALLED PRIOR TO THE PLACEMENT OF ROAD SUB-BASE MATERIAL.

W2. ALL WORKS ON EXISTING WATER SUPPLY NETWORK TO BE CARRIED OUT EITHER BY INVERELL SHIRE COUNCIL OR AS AUTHORIZED BY INVERELL SHIRE COUNCIL.

W3. ALL WATER RETICULATION CONSTRUCTION TO BE IN ACCORDANCE WITH THE ISC ENGINEERING DESIGN GUIDELINES FOR SUBDIVISIONS & DEVELOPMENTS.

W4. PRESSURE TESTING SHALL BE UNDERTAKEN ON ALL WATER MAINS.

W5. CONCRETE BULKHEADS & TRENCHSTOPS TO BE INSTALLED TO ALL WATER MAINS LAID AT GREATER THAN 10% SLOPE. TO BE CONSTRUCTED IN ACCORDANCE WITH ISC ENGINEERING DESIGN GUIDELINES.

W6. ALL WATER MAINS ARE TO BE 0.9m BEHIND FACE OF KERB IN ACCORDANCE WITH ISC STANDARD DRAWINGS UNLESS SHOWN OTHERWISE ON CONSTRUCTION DRAWINGS.

W7. FIRE HYDRANTS TO BE LOCATED AS INDICATED ON CONSTRUCTION PLANS WITH 75m MAXIMUM BETWEEN HYDRANT POINTS.

W8. ALL 100 & 150mm DIAMETER WATER MAINS TO BE CONSTRUCTED WITH PVC-O CLASS PN16 SDR37 PIPES UNO.

W9. HYDRANTS AND VALVES NOT TO BE LOCATED IN TRAFFICABLE AREAS.

W10. KERB MARKERS OF APPROVED DESIGN ARE TO BE PROVIDED FOR ALL HYDRANTS AND VALVES.

W11. A METAL DETECTABLE TAPE COMPLYING WITH AS2648 SHALL BE LAID WITH PVC-O WATER MAINS IN ACCORDANCE WITH MANUFACTURER'S S SPECIFICATIONS.

W12. ALL WATER SERVICE CONNECTIONS TO BE A MINIMUM DN 20MM AND ARE TO BE ENCASED IN 50mm DIA. PN9 uPVC CONDUIT, AND TO BE CONSTRUCTED IN ACCORDANCE WITH ISC STANDARD DRAWINGS.

W13. TRENCH AND BEDDING TO BE INSTALLED IN ACCORDANCE WITH ISC STANDARD DRAWINGS. BEDDING TYPE TO BE CONFIRMED ON SITE BY ENGINEER UPON TRENCH EXCAVATION.

W14. ALL BACKFILL TO BE COMPACTED TO 95% MAXIMUM DRY DENSITY (STANDARD) FOR COHESIVE SOILS AND TO A DENSITY INDEX OF 70% FOR NON-COHESIVE SOILS.

W15. MINIMUM COVER TO TOP OF WATER MAIN SHALL BE 500mm FOR FOOTPATHS AND 600mm UNDER ROADWAYS AND PAVEMENTS.

W16. ALL THRUST BLOCKS TO BE INSTALLED AT ALL BENDS & DEAD ENDS IN ACCORDANCE WITH ISC STANDARD DRAWINGS.

W17. THE CONTRACTOR IS REQUIRED TO ESTABLISH THAT ALL MAIN COCKS ARE FULLY OPEN.

W18. FORTY EIGHT (48) HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR TO THE ENGINEER IN RESPECT OF EACH OF THE FOLLOWING;

1. OPENING OF TRENCHES READY FOR PIPE LAYING
2. PLACING OF PIPES IN TRENCHES PRIOR TO BACKFILLING
3. TESTING OF WATER MAINS

INVERELL SHIRE COUNCIL
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Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: **CC-87/2022**
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Council Officer:.....

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Document Stage – ORIGINAL ISSUE

KELLEY COVEY GROUP PTY LTD
Consulting Civil, Structural and Environmental Engineers Project Management, Planning and Landscape Architecture
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DIRECTOR: KEVIN COVEY BEng,CPEng,MIEAust,RPEQ,MSPENG
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Project – PROPOSED EXTENSIONS INVERELL BUS SERVICE
Client – CAVANAGH
Site – 23-27 BRISETT STREET INVERELL, NSW 2360
Drawing title – CONSTRUCTION NOTES 1 OF 2

Project T228765 Sheet No. 2 of 7
Digital Ref: T228765_RevA.dwg Issue : A

CONSTRUCTION NOTES CONTINUED

CONCRETE

C1. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600-2001. CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:-

FOOTINGS	F'c=25 MPA AT 28 DAYS, 20 NOMINAL AGGREGATE 80 SLUMP
SLAB ON GROUND	F'c=32 MPA AT 28 DAYS, 20 NOMINAL AGGREGATE 80 SLUMP
BLOCKWORK/BRICKWORK	F'c=20 MPA AT 28 DAYS, 10 NOMINAL AGGREGATE 200 SLUMP
PRECAST WALL PANELS	F'c=40 MPA AT 28 DAYS, 10 NOMINAL AGGREGATE 200 SLUMP
DRIVEWAY	F'c=32 MPA AT 28 DAYS, 20 NOMINAL AGGREGATE 80 SLUMP
PAVING/KERB/DRAIN	F'C=20 MPA AT 28 DAYS 20 NOMINAL AGGREGATE, 80 SLUMP

ALL CONCRETE SHALL BE MOISTURE CURED FOR (7) DAYS AFTER POURING, BY AN APPROVED METHOD.

C2. EXPOSURE CLASSIFICATION = A2 (INTERNAL WORK) EXPOSURE CLASSIFICATION = A2 (EXTERNAL WORK)

C3. NO ADMIXTURES SHALL BE USED IN THE CONCRETE MIX UNLESS APPROVED BY STRUCTURAL ENGINEER IN WRITING.

C4. SUBMIT FOR APPROVAL THE FOLLOWING TO THE ENGINEER :
CURING PROCEDURE (PVA MEMBRANES NOT PERMITTED)
STRIPPING PROCEDURE DETAILS AND LOCATION OF CAST IN SERVICES CONDUITS, PENETRATIONS AND CONSTRUCTION JOINT LOCATIONS.

C5. FOR TENDER PURPOSES ASSUME MINIMUM STRIPPING TIMES AND EXTENT OF BACK PROPPING AS PER AS3610-1995 SECTION 5.0 AND AS PER GENERAL NOTES FOR FORMWORK AND PROPPING.

C6. FORMWORK FINISH CLASSIFICATION TO AS3600 :

ELEMENT	CLASS
INGROUND FOOTINGS	5
RETAINING WALLS	5 EARTH FACE
RETAINING WALLS	3 EXPOSED FACE
COLUMNS	2
LIFT WALLS	2
BEAMS & SLABS	2
STAIRS	2
GRANO TREATED SURFACES	2

C7. SURFACE FINISHES :

COLUMNS & WALLS	OFF FORM
FLOOR SLABS (U.N.O.)	MACHINE FLOAT
SLABS TO BE TILED	WOOD FLOAT
STAIRS	STEEL TROWEL

C8. INCLUDING FOOTINGS AND SLABS, COMPACT ALL CONCRETE USING MECHANICAL VIBRATORS.

C9. PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM THE STRUCTURAL ENGINEER.

C10. CONCRETE PROFILES :

BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE THE SLAB THICKNESS. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

PROVIDE DRIP GROOVES AT ALL EXPOSED EDGES. CHAMFERS, DRIP GROOVES, REGLETS ETC TO BE TO ARCHITECTS DETAILS.

C11. ALL PENETRATIONS TO HAVE 2/N16 TRIMMER BARS TOP AND BOTTOM TO EACH FACE U.N.O. EXTEND TRIMMERS 600 BEYOND PENETRATION.

C12. SETDOWNS OR FALLS IN FLOOR SURFACES ARE NOT PERMITTED UNLESS SHOWN ON DRAWINGS. MAINTAIN MINIMUM SLAB THICKNESS SHOWN ON PLAN WHERE FALLS OCCUR.

REINFORCEMENT

R1. REINFORCEMENT GRADE IS DESIGNATED AS FOLLOWS:- 'R' DENOTES ROUND MILD STEEL BAR, GRADE 500 'N' DENOTES NORMAL YIELD DEFORMED BAR, GRADE 500 'SL' DENOTES WELDED FABRIC, GRADE 500 'W' DENOTES HARD DRAWN DEFORMED WIRE, GRADE 500.

MINIMUM CLEAR CONCRETE COVER

ELEMENT	FORMED AND SHELTERED LOCATION	FORMED AND EXPOSED TO WEATHER/ EARTH	WITH EARTH AS FORM
FOOTINGS	-	65	75
COLUMNS	40	50	75
WALLS	30	45	65
BEAMS	40	45	65
SLABS	30	45	65

MINIMUM REINFORCEMENT LAPS

MEMBER	LAP	MEMBER	LAP
N12	350	N32	2125
N16	600	LXTM	500
N20	800	MESH	425 end
N24	1200		225 side
N28	1650		

R2. TRENCH MESH IN FOOTING BEAMS TO BE ANCHORED BY THE WIDTH OF THE FABRIC AT 'T' AND 'L' INTERSECTIONS AT 'L' INTERSECTIONS A BENT LAP BAR 500MM LONG ON EACH LEG SHALL BE PROVIDED UNLESS OTHERWISE INDICATED ON THE PLAN

R3. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, AND NOT NECESSARILY IN TRUE PROJECTION. BARS SHOWN ARE INDICATIVE ONLY AND LENGTHS MAY VARY. BEAM ELEVATIONS TAKE PRECEDENCE OVER SECTIONS. SLAB PLANS TAKE PRECEDENCE OVER SECTIONS. REFER TO SECTIONS FOR EXTRA BARS THAT MAY BE REQUIRED.

R4. USE ONLY ALL PLASTIC OR CONCRETE CHAIRS AT EXTERNAL SURFACES.

R5. SITE BENDING OF REINFORCEMENT BARS SHALL BE DONE WITHOUT HEATING USING A RE-BENDING TOOL. THE BARS SHALL BE RE-BENT AGAINST A FLAT SURFACE OR A PIN WITH A DIAMETER NOT LESS THAN THE MINIMUM PIN SIZE.

R6. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN ON THE STRUCTURAL DRAWINGS OR IN POSITIONS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.

R7. FOR LAPS IN MESH REFER TO SLAB ON GROUND NOTES.

R8. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

R9. AT EXTERNALLY EXPOSED SURFACES NO METALLIC ITEMS INCLUDING FORM BOLTS, FORM SPACERS, METALLIC BAR CHAIRS AND TIEWIRE ARE TO BE PLACED IN THE COVER ZONE.

R10. ALL REINFORCEMENT, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION AND INSPECTED BY THE STRUCTURAL ENGINEER PRIOR TO PLACING CONCRETE.

R11. HOLD DOWN BOLTS SHALL BE HOT DIPPED GALVANIZED.

CONCRETE TESTING

1. REQUIREMENT :

- PRODUCTION ASSESSMENT - TESTING TO BE CARRIED OUT BY THE BATCHING PLANT.
- PROJECT ASSESSMENT - TESTING OF SAMPLES TO BE TAKEN ON SITE AT DISCHARGE POINT.

2. PROVIDE EVIDENCE OF PRODUCTION ASSESSMENT TO AS1379 PRIOR TO POURING.

3. CONCRETE SHRINKAGE AND CONCRETE FOR SLABS (UP TO 110MM THICK) ON GROUND, TO BE VERIFIED BY PRODUCTION ASSESSMENT.

4. CARRY OUT PROJECT ASSESSMENT FOR REMAINDER OF CONCRETE AS FOLLOWS:

- SUPPLY OF CONCRETE SHALL BE FROM A CONCRETE BATCHING PLANT, THAT CARRIES OUT PRODUCTION ASSESSMENT, FOR THE GRADES OF CONCRETE SPECIFIED FOR THIS PROJECT.
- CONCRETE SHALL BE SUPPLIED AND TESTED IN ACCORDANCE WITH AS1379 AND AS1012.
- THE ORGANISATION(S) RESPONSIBLE FOR SAMPLING AND TESTING OF CONCRETE TO HAVE RELEVANT 'NATA' LABORATORY REGISTRATION, BE INDEPENDENT, AND USE TRAINED, COMPETENT PERSONNEL FOR THE TAKING OF SAMPLES AND SPECIMENS AND THE PREPARATION OF MATERIALS AND WORK FOR TESTING.

CONCRETE TESTING

- SLUMP AT TIME OF POURING TO BE WITHIN THE PERMISSIBLE TOLERANCE IN AS1379 FOR NOMINAL SLUMP SPECIFIED.
- AT LEAST 1 SAMPLE FOR EVERY 50m3/ SHALL BE TAKEN AT THE SITE, BUT NOT LESS THAN 3 SAMPLES SHALL BE TAKEN PER POUR. FIRST AND LAST BATCH PER DAY TO BE SAMPLED, THE OTHER TAKEN PROGRESSIVELY DURING THE POUR, RECORDING LOCATION IN POUR WHERE SAMPLE WAS TAKEN.
- IT IS PERMISSIBLE TO REDUCE THE NUMBER OF SAMPLES TO 2 FOR POURS OF LESS THAN 30m3/, AND 1 FOR POURS OF LESS THAN 10m3/.
- A SAMPLE CONSISTS OF AT LEAST 3 CYLINDERS. ONE CYLINDER SHALL BE TESTED AT 7 DAYS. TWO CYLINDERS SHALL BE TESTED AT 28 DAYS. 7 & 28 DAY TEST RESULTS TO BE SENT IMMEDIATELY TO THE STRUCTURAL ENGINEER.
- AS1379 CLAUSE B2 SHALL NOT APPLY UNLESS THE SAMPLE CONSISTS OF 6 CYLINDERS MIN. AT EACH TEST AGE.
- IF MORE THAN ONE STRENGTH GRADE IS BEING USED IN A POUR, EACH STRENGTH GRADE SHALL BE CONSIDERED A SEPARATE POUR FOR THE PURPOSES OF TESTING.

CONCRETE MATERIALS

1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600 AND NATSPEC CONCRETE STANDARDS.

2. PORTLAND CEMENT :
- STANDARD - TO AS3972

3. BLENDED CEMENTS :
- STANDARD - TO AS3972
- REQUIREMENT - USE ONLY WHEN SPECIFIED.

4. FLY ASH :
- STANDARD - TO AS3582.1 "FINE GRADE" ONLY.
- REQUIREMENT - ONLY WHEN SPECIFIED. ALTERNATIVE MIX DESIGN WITH FLY ASH WILL BE CONSIDERED, PROVIDED THE CEMENTITIOUS MATERIAL MEETS THE PERFORMANCE REQUIREMENT OF THE CEMENT TYPE SPECIFIED.

5. SILICA FUME :
- STANDARD - TO AS3972
- REQUIREMENT - ONLY WHEN SPECIFIED. ALTERNATIVE MIX DESIGN WITH SILICA FUME WILL BE CONSIDERED, PROVIDED THE CEMENTITIOUS MATERIAL MEETS THE PERFORMANCE REQUIREMENT OF THE CEMENT TYPE SPECIFIED.

6. AGGREGATE :
- STANDARD - TO AS2758.1
- FINE AGGREGATE - DENSE, NATURALLY OCCURING SAND OR ROCK, CRUSHED OR UNCRUSHED, AND EITHER SINGLE SOURCED OR BLENDED, CONFORMING TO GRADING REQUIREMENTS OF 'TABLE 3', UNCRUSHED FINE AGGREGATE OF AS2758.1
- COARSE AGGREGATE - CLEAN, HARD, DURABLE PARTICLES OF DENSE, NATURALLY OCCURING GRAVEL OR ROCK, CRUSHED OR UNCRUSHED, AND EITHER SINGLE SOURCED OR BLENDED, CONFORMING TO GRADING REQUIREMENTS OF 'TABLE 1', 20MM GRADED AGGREGATE OF AS2758.1.
- PARTICLE DENSITY - TO AS2758.1 CLAUSE 8.1, MINIMUM 2100 KG/M3/
- BULK DENSITY - TO AS2758.1 CLAUSE 8.3, MINIMUM 2100 KG/M3/
- WATER ABSORPTION - TO AS2758.1 CLAUSE 8.3, MAXIMUM 2.5%
- DURABILITY - TO AS2758.1 CLAUSE 10 CONCRETE EXPOSURE CLASSIFICATION-"SEVERE".
- ALKALI REACTIVITY - TEST FOR ALKALI REACTIVE MATERIALS TO AS2758.1 CLAUSE 14.3. SEPARATE TESTING REQUIRED ON EACH SINGLE SOURCED AGGREGATE.
- PARTICLE SHAPE - TO AS2758.1 CLAUSE 9.3, AND THE PROPORTION OF MISSHAPEN PARTICLES USING A 2:1 RATIO, NOT EXCEED 35% WHEN DETERMINED IN ACCORDANCE WITH AS:1141, SECTION 14.

FORMWORK

1. THE DESIGN, CERTIFICATION, CONSTRUCTION, INSPECTION AND PERFORMANCE OF THE FORMWORK AND FALSE WORK SHALL BE THE RESPONSIBILITY OF THE FORMWORK SUB-CONTRACTOR, EXCEPT TO THE EXTENT THAT FORMWORK DESIGN IS SHOWN ON THE STRUCTURAL DRAWINGS.

2. FORMWORK SHALL BE CERTIFIED BY A STRUCTURAL ENGINEER EXPERIENCED IN FORMWORK DESIGN IN ACCORDANCE WITH WORKCOVER REGULATIONS AND THE WORKCOVER CODE OF PRACTICE.

3. FORMWORK SHALL BE DESIGNED IN ACCORDANCE WITH AS3610. THE DESIGN SHALL ACCOMMODATE MOVEMENTS AND LOAD RE-DISTRIBUTION DUE TO ANY POST TENSIONING.

4. PROVIDE RESTRAINT OR SUPPORT TO ENSURE STABILITY OF FORMWORK THAT IS INDEPENDENT OF THE PERMANENT STRUCTURE. APPROVAL FROM THE STRUCTURAL ENGINEER IS REQUIRED IF FORMWORK SUPPORT IS REQUIRED FROM THE PERMANENT STRUCTURE.

5. FOUNDATIONS SUPPORTING THE FORMWORK SHALL BE DETERMINED BY THE FORMWORK SUB-CONTRACTOR FROM THE CONDITIONS EXISTING ON SITE AT THE TIME OF CONSTRUCTION. REFER TO THE GEOTECHNICAL REPORT FOR THE SITE.

6. FORMWORK CONSTRUCTION DIMENSIONAL TOLERANCES AND STRIPPING TIMES SHALL COMPLY WITH AS3610 AND AS3600 UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.

7. DURING CONSTRUCTION, SUPPORT PROPPING WILL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN A SLAB OR BEAM WHICH EXCEED THE DESIGN CAPACITY FOR STRENGTH OR SERVICEABILITY LIMIT STATES AT THAT AGE, ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT IN THESE GENERAL NOTES AT ITEM 9.

8. IT IS TO BE ANTICIPATED IN MULTI-STOREY CONSTRUCTION THAT BACK-PROPPING MAY BE REQUIRED TO EXTEND A NUMBER OF LEVELS BELOW THE FLOOR BEING CAST. PROP REMOVAL IS TO BE PROGRAMMED TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS. RE-SHORING OR BACKPROPPING PROPOSALS SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER.

9. FORMED CONCRETE SURFACES SHALL HAVE FORMWORK CLASS AND SURFACE FINISHES IN ACCORDANCE WITH AS3610, AS SPECIFIED BY THE PROJECT ARCHITECT, AND THE STRUCTURAL NOTES, CONCRETE SECTION.

10. DO NOT PLACE PERMANENT LOADS ON THE CONCRETE STRUCTURE UNTIL AFTER FORMWORK AND PROPPING IS REMOVED.

11. REFER TO PROJECT ARCHITECT'S DRAWINGS FOR TEST PANEL REQUIREMENTS. REINFORCEMENT FOR TEST PANELS SHALL BE SIMILAR TO THAT IN THE PERMANENT STRUCTURE REPRESENTED BY THE TEST PANEL.

12. BEFORE PLACING REINFORCEMENT IN THE FORMWORK, APPLY A RELEASE AGENT TO THE FACE OF THE FORMWORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

13. DO NOT APPLY A RELEASE AGENT TO THE FACE OF CONCRETE WHERE CONCRETE SURFACE FINISH OR APPLIED COVERINGS ARE INCOMPATIBLE WITH RELEASE AGENT.

14. CHAMFER RE-ENTRANT ANGLES AND FILLET ALL CORNERS BY 25MM UNO. PROVIDE DRIP GROOVES TO UNDERSIDE OF ALL EXPOSED EDGES.

15. BEFORE PLACING CONCRETE, REMOVE ALL WATER, DUST, AND DEBRIS FROM THE FORMWORK.

16. FILL ALL HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE COLOUR OF THE FINISHED SURFACE.

MASONRY

CM1. MASONRY CONSTRUCTION IS TO CONFORM TO AS3700.

- MORTAR CLASSIFICATION = M3
- DURABILITY CLASSIFICATION OF BUILT-IN COMPONENTS = R2
- DURABILITY GRADE OF EXTERNAL MASONRY UNITS = PROTECTED

CM2. THE CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE 20 MPA OR GREATER.

CM3. BED UNITS IN FRESHLY PREPARED MORTAR, UNIFORMLY MIXED CEMENT, LIME AND SAND IN THE RATIO OF 1:1:6, CONFORMING TO AS3700.

CM4. GROUT FILL FOR BLOCKWORK :
- COMPRESSIVE STRENGTH = 20MPa
- MAXIMUM AGGREGATE SIZE = 10mm
- SLUMP = 200mm
- MINIMUM PORTLAND CEMENT CONTENT = 300kg/m^3

CM5. CONTROL JOINTS IN UNREINFORCED WALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE BCA, BUT GENERALLY AT 5m CENTRES AND NO CLOSER THAN THE HEIGHT OF THE WALL FROM CORNERS. U.N.O. REINFORCEMENT IN ACCORDANCE WITH AS1302.

CM6. CONTROL JOINTS IN REINFORCED WALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE BCA, BUT GENERALLY AT 16.0m CENTRES AND NO CLOSER THAN THE HEIGHT OF THE WALL FROM CORNERS. U.N.O. PROVIDE REINFORCEMENT IN ACCORDANCE WITH AS1302.

CM7. THE BOTTOM COURSE OF ALL REINFORCED BLOCKWORK SHALL CONSISTS OF E SHAPED BLOCKS TO ENABLE CLEANOUT AND TYING OF STEEL. FULLY BED FACE SHELLS ONLY. CLEAN OUT ALL CORES AFTER EACH DAY'S LAYING. ENSURE STARTER BARS ARE CORRECTLY LOCATED IN FOOTINGS.
ALL MASONRY ANCHORS INTO HOLLOW CONCRETE MASONRY SHALL BE HILTI HIT-HY70 CHEMICAL INJECTION ANCHORS OR APPROVED EQUIVALENT AND SHALL BE GALVANIZED STEEL FOR EXTERNAL USE.

CM8. MASONRY TIES SHALL BE GALVANIZED, MINIMUM COATING MASS 600g/m2 PER SIDE AND MEDIUM DUTY CLASSIFICATION UNO. FACE FIXED TIES SHALL BE FIXED USING A SCREW FIXING AND SHALL NOT BE NAILED.

CM9. THE TOP COURSE OF ALL FREESTANDING HOLLOW BLOCK MASONRY SHALL CONSIST OF SOLID CAPPING BLOCKS.

CM10. PROVIDE SLIDING HORIZONTAL TIES ACROSS JOINTS IN WALLS EQUIVALENT TO BRUNSWICK MFA-3 AT 400 CTS VERTICALLY IN EACH FACE OF THE BLOCKS.

CM11. NON-LOADBEARING WALLS SHALL FINISH 20MM SHORT OF SLAB SOFFIT AND SHALL BE FASTENED TO THE SOFFIT USING BRUNSWICK MFA - 4 SLIDING TIES OR APPROVED EQUIVALENT AT 400mm CENTRES U.N.O.

CM12. LOADBEARING HOLLOW BLOCK WALLS SHALL BE CAPPED WITH M.E.T. GRAPHITE GREASED SLIP JOINT OVER TOP COURSE OF BLOCKWORK. CORE FILLED LOAD BEARING WALLS TO BE STEEL TROWELLED LEVEL WITH TWO LAYERS OF ALCOR OVER.

CM13. WHERE MASONRY ADJOINS STRUCTURAL STEEL OR PASSES A RETURN WALL ON THE INNER SKIN, INSTALL MEDIUM DUTY TIES AT 400 MAX. CTS. SHOT FIX TIES TO STEELWORK.

CM14. ALL STEEL LINTELS SUPPORTING BLOCKWORK ARE TO BE HOT DIPPED GALVANIZED.

CM15. MINIMUM COVER TO REINFORCEMENT, FROM THE INSIDE FACE OF THE FACE SHELL, IS TO BE 30mm.

CM16. NO AIR ENTRAINING AGENTS (BYCOL, ETC) ARE TO BE USED WITHOUT PRIOR WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.

CM17. MATERIALS INCLUDING MORTAR, CONCRETE, GROUT SHALL COMPLY WITH SECTION 10 OF AS3700. MASONRY UNITS SHALL COMPLY WITH AS4455. WALL TIES SHALL COMPLY WITH AS2699.

CM18. MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 11 OF AS3700.

CM19. DO NOT CONSTRUCT MASONRY WALLS ON SUSPENDED CONCRETE SLABS UNTIL SLAB HAS BEEN STRIPPED AND DEPROPPED.

CM20. GENERAL : PROVIDE 1 LINTEL TO EACH WALL LEAF, DO NOT CUT ON SITE. KEEP LINTELS 6mm CLEAR OF HEADS AND FRAMES. PACK MORTAR BETWEEN THE ANGLE UPSTAND AND SUPPORT MASONRY UNITS.
- MINIMUM BEARING EACH END :
  - 0mm < SPAN < 1800mm = 200mm
  - 1800mm < SPAN < 3000mm = 400mm
- PROPPING : TO PREVENT DEFLECTION OR EXCESSIVE ROTATION, TEMPORARILY PROP PROPRIETARY COLD-FORMED LINTELS UNTIL THE MASONRY REACHES ITS REQUIRED STRENGTH.
- MINIMUM PROPPING PERIOD = 7 DAYS

EDITING NOTE :
IF BLOCKWORK IS NOT REQUIRED TO BE ARTICULATED, PROVIDE JOINTS AT MAXIMUM 8.0m CENTRES.

INVERELL SHIRE COUNCIL
CONSTRUCTION CERTIFICATE
Approved subject to the provision of the EP & A Act 1979 and EP & A Regulations 2000.
Construction Approval No: **CC-87/2022**
Date: **18 January 2023**
Council Officer: .....

INVERELL SHIRE COUNCIL
DEVELOPMENT APPROVAL
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Development Approval No: DA-104/2022
Date: 9 NOVEMBER 2022
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Checked – MF Approved – JC
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Document Stage – ORIGINAL ISSUE

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Project – PROPOSED EXTENSIONS INVERELL BUS SERVICE
Client – CAVANAGH
Site – 23-27 BRISETT STREET INVERELL, NSW 2360
Drawing title – CONSTRUCTION NOTES 2 OF 2

Project T228765 Sheet No. 3 of 7
Digital Ref: T228765_RevA.dwg Issue : A

SEE CONDITIONS

ROOFWATER FROM SHED TO BE COLLECTED AND DISCHARGED TO PROPOSED ON SITE STORMWATER STORAGE IN ACCORDANCE TO AS 3500.2 (BY OTHERS)

SEPARATE CONSENT REQUIRED FOR EXTENSION

PROVIDE OVERGLOW HEADWALL WITH SCOUR PREVENTION

PIT 4
900x900mm Surface Inlet Pit with Class D Galvanised Steel Grate

SW PIPE - 2xΦ150 UPVC

IP CH 97.24

STORMWATER PIPE - Φ300 UPVC

STORMWATER LINE TO DISCHARGE TO EXISTING SWALE AT REAR OF PROPERTY VIA 2x150Φ uPVC PIPES (CHARGED LINE)

SILT FENCING PLACED ALONG CONTOUR LINE TO REDUCE UPSTREAM FLOW VELOCITIES

PIT 1
900x900mm Surface Inlet Pit with Class D Galvanised Steel Grate

PIT 2
900x900mm Surface Inlet Pit with Class D Galvanised Steel Grate

PIT 3
900x900mm Surface Inlet Pit with Class D Galvanised Steel Grate

STORMWATER LINE - Φ300 UPVC

STORMWATER LINE - Φ300 UPVC

TEMPORARY SILT COLLECTION AREAS TO BE REGULARLY CLEANED AND MAINTAINED TO REMOVE DEPOSITED SILT AND OTHER DELETERIOUS MATERIALS

PROVIDE OVERGLOW HEADWALL WITH SCOUR PREVENTION

PROPOSED EXTENSIONS

EARTHWORKS TO CREATE A LOW LINE TO DIRECT RUNOFF TO PROPOSED STORMWATER SYSTEM

ROOFWATER FROM SHED TO BE COLLECTED AND DISCHARGED TO PROPOSED ON SITE STORMWATER STORAGE IN ACCORDANCE TO AS 3500.2 (BY OTHERS)

11/837790
10/837790
9/837790
8/837790

L FREIGHTERS

BUS SERVICE

ENGINE SERVICES

NORTH

LEGEND OF SYMBOLS & LINETYPES

- PROPOSED SILT FENCE
- PROPOSED DROP INLET SEDIMENT TRAP
- PROPOSED STRAW BALE SEDIMENT FILTER
- PROPOSED STORMWATER NETWORK
- TEMPORARY SILT COLLECTION AREA

INVERELL SHIRE COUNCIL
DEVELOPMENT APPROVAL
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Development Approval No: DA-104/2022
Date: 9 NOVEMBER 2022
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Construction Approval No: CC-87/2022
Date: 18 January 2023
Council Officer:

SCALE 1:200 (A1)

CONTOURS; MAJOR: 1.0m, MINOR: 0.25m

Issue	Date	Description	By
A	08.07.2022	ORIGINAL ISSUE	AH

Checked – MF | Approved – JC
Design – AH | Drawn – AH
Scales – AS NOTED | Date – 18.07.2022
Document Stage – ORIGINAL ISSUE

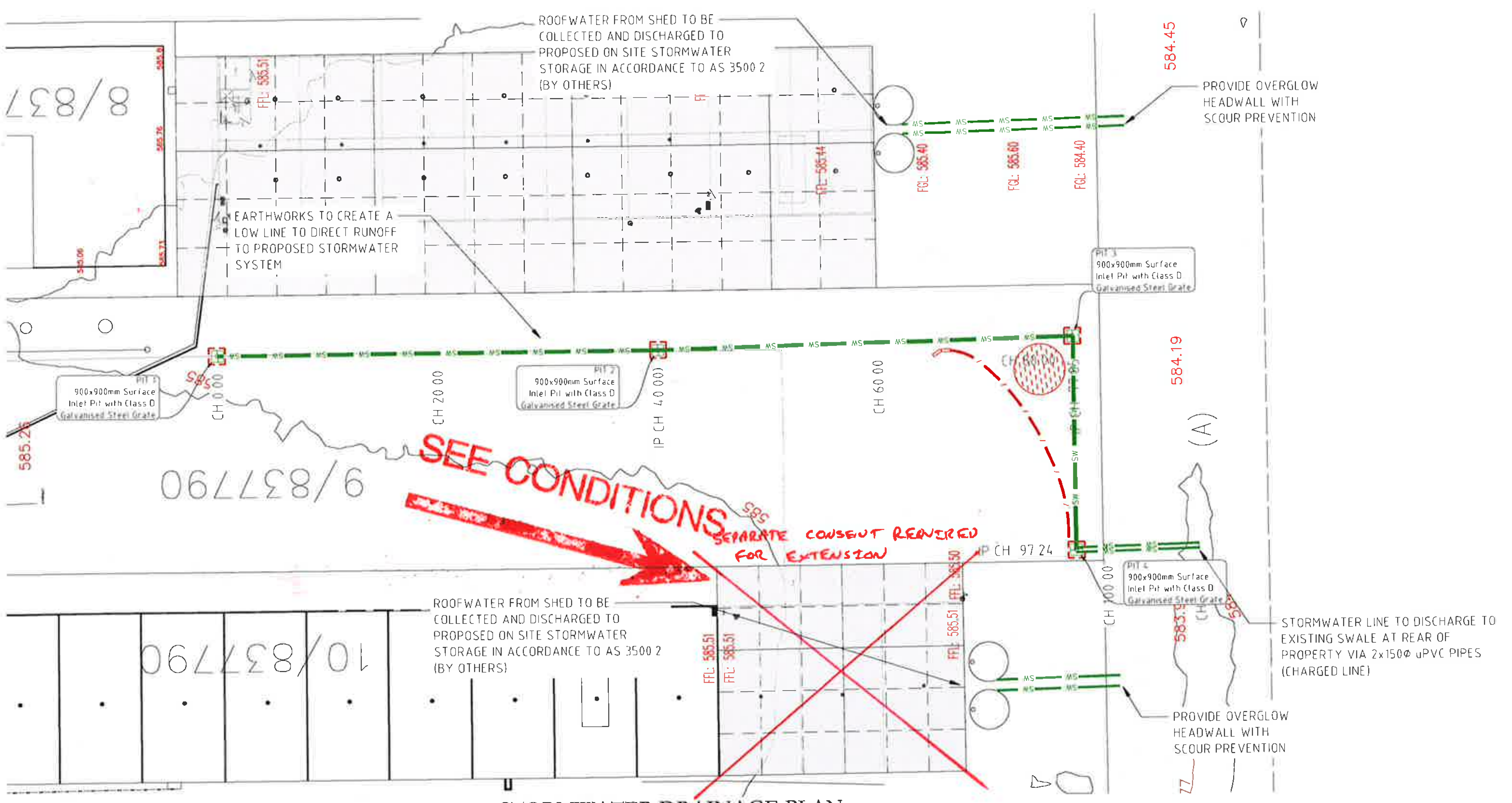
KELLEY COVEY GROUP PTY LTD
Consulting Civil, Structural and Environmental Engineers Project Management, Planning and Landscape Architecture
ACN 099 097 800 ABN 3709 9097 800

DIRECTOR: KEVIN COVEY BEng,CPEng,MIEAust,RPEQ,MSPEPNG
MANAGER: JUSTIN CANT BEng,CPEng,MIEAust,NER,RPEQ,EC

162 MARIUS STREET, PO BOX 199, TAMWORTH NSW 2340, P (02) 6766 1944
128 DANGAR STREET, UNIT 1, ARMIDALE NSW 2350, P (02) 6766 0266
OFFICES AT: Maroochydore QLD (07) 5443 7777 and Northlakes QLD (07) 30942600
EMAIL: engineers@kelleycovey.com.au www.kelleycovey.com.au

Project – PROPOSED EXTENSIONS INVERELL BUS SERVICE
Client – CAVANAGH
Site – 23-27 BRISETT STREET INVERELL, NSW 2360
Drawing title – SITE PLAN

Project T228765 Sheet No. 4 of 7
Digital Ref: T228765_RevA.dwg Issue : A



STORMWATER DRAINAGE PLAN

SCALE 1:250 (A1)

LEGEND OF SYMBOLS & LINETYPES

- PROPOSED SILT FENCE
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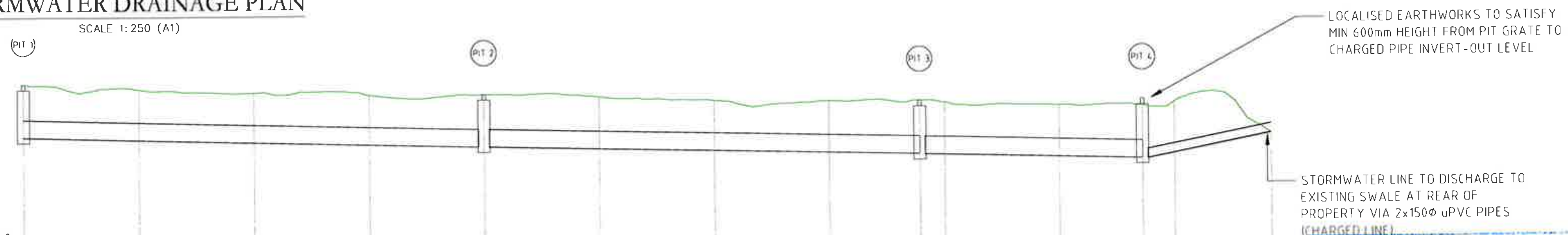

DATUM 582.00

PIPE DATA			300Ø UPVC 39.550m @ 0.54%				300Ø UPVC 37.396m @ 0.50%				300Ø UPVC 18.940m @ 0.55%		2x150Ø UPVC 10.722m @ 4.00%	
INVERT LEVEL AND MINIMUM COVER	583.952 0.61m				0.60m 583.739 / 583.737 0.60m				0.62m 583.550	583.545 0.62m		0.60m 583.441	583.441 0.74m	-0.16m 583.870
DESIGN SURFACE LEVEL	584.874	584.777	584.708	584.652	584.648	584.590	584.505	584.481	584.475	584.434	584.369	584.351	584.420	583.870
EXISTING SURFACE LEVEL	584.87	584.78	584.71	584.65	584.65	584.59	584.50	584.48	584.47	584.43	584.37	584.35	584.42	583.87
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	77.847	80.000	90.000	97.236	100.000	108.409

STORMWATER DRAINAGE LONGITUDINAL SECTION

SCALE HORIZONTAL 1:250; VERTICAL 1:50 (A1)

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SCALE 1:50 (A1)

0.0 2.5m 5.0m 7.5m 10m 12.5m
SCALE 1:250 (A1)

CONTOURS; MAJOR: 1.0m, MINOR: 0.25m

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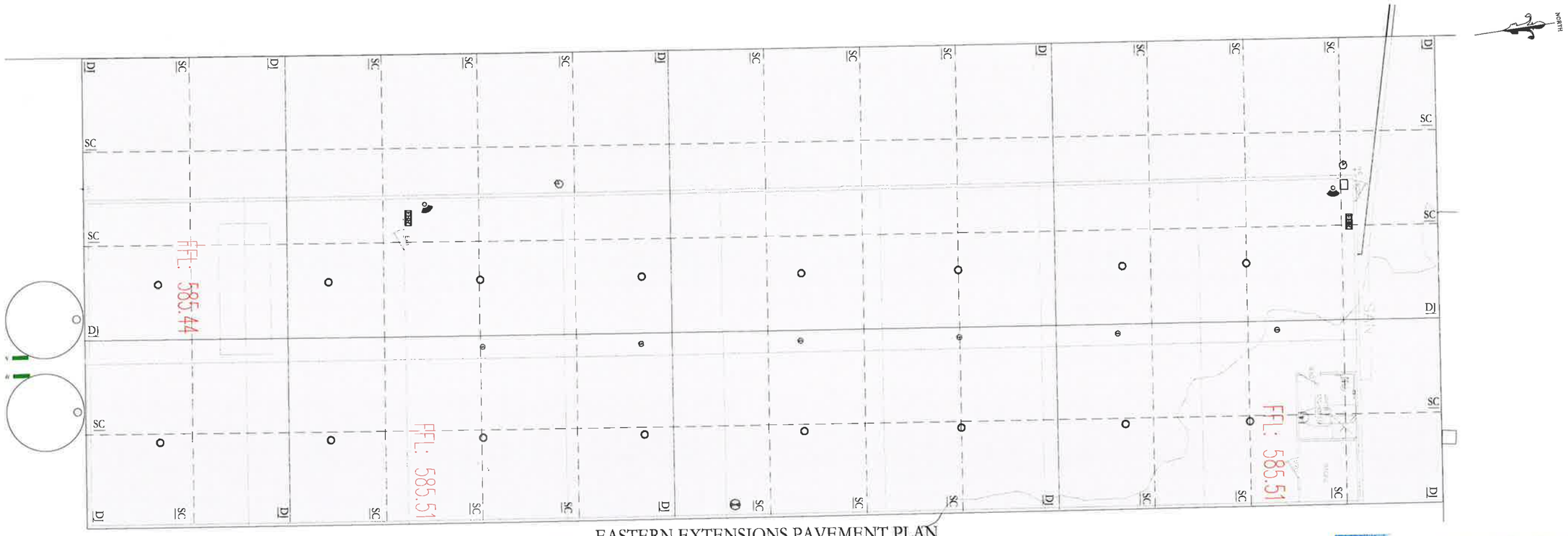
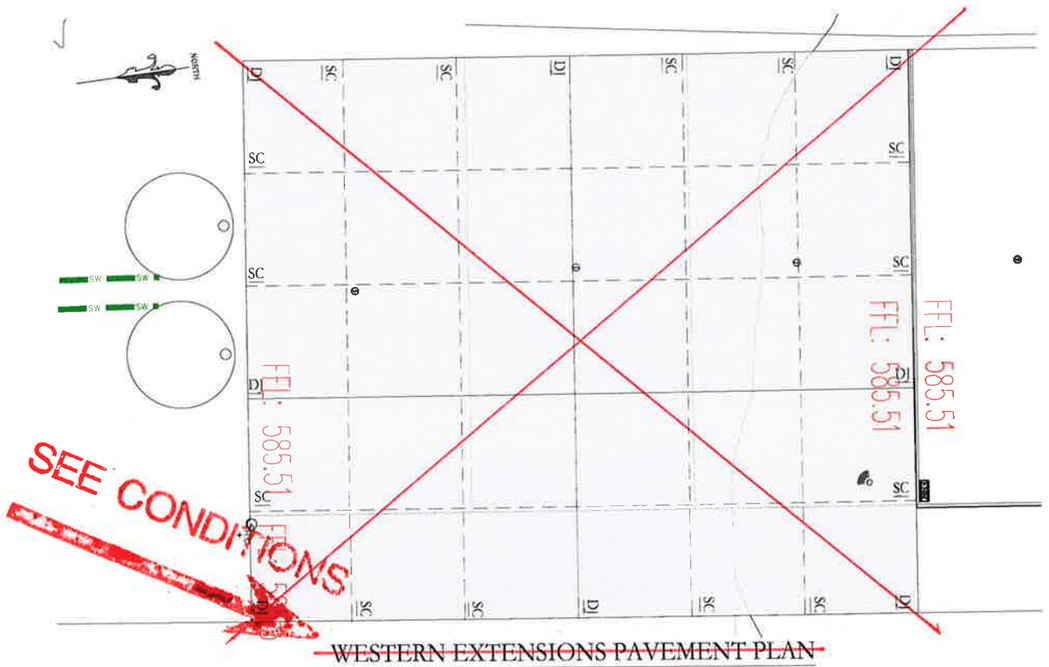
Project – PROPOSED EXTENSIONS INVERELL BUS SERVICE
Client – CAVANAGH
Site – 23-27 BRISETT STREET INVERELL, NSW 2360
Drawing title – STORMWATER DRAINAGE PLAN AND LONGITUDINAL SECTION
Project T228765 Sheet No. 5 of 7
Digital Ref: T228765_RevA.dwg Issue: A



EASTERN EXTENSIONS PAVEMENT PLAN

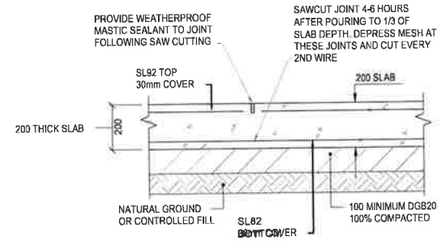
SCALE 1:100 (A1)



~~WESTERN EXTENSIONS PAVEMENT PLAN~~

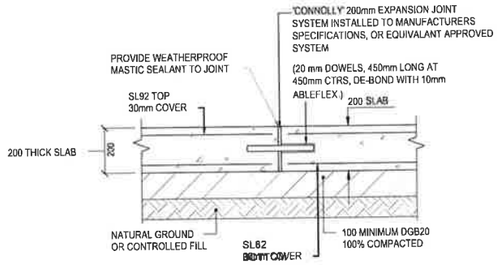
SCALE 1:100 (A1)

SEPARATE CONSENT REQUIRED FOR EXTENSION



TYPICAL SAW-CUT JOINT (SC)

SCALE - NTS



TYPICAL DOWEL JOINT (DJ)

SCALE - NTS

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- PROPOSED SILT FENCE
- PROPOSED DROP INLET SEDIMENT TRAP
- PROPOSED STRAW BALE SEDIMENT FILTER
- PROPOSED STORMWATER NETWORK
- TEMPORARY SILT COLLECTION AREA

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Council Officer:

0 1.0m 2.0m 3.0m 4.0m 5.0m

SCALE 1:100 (A1)

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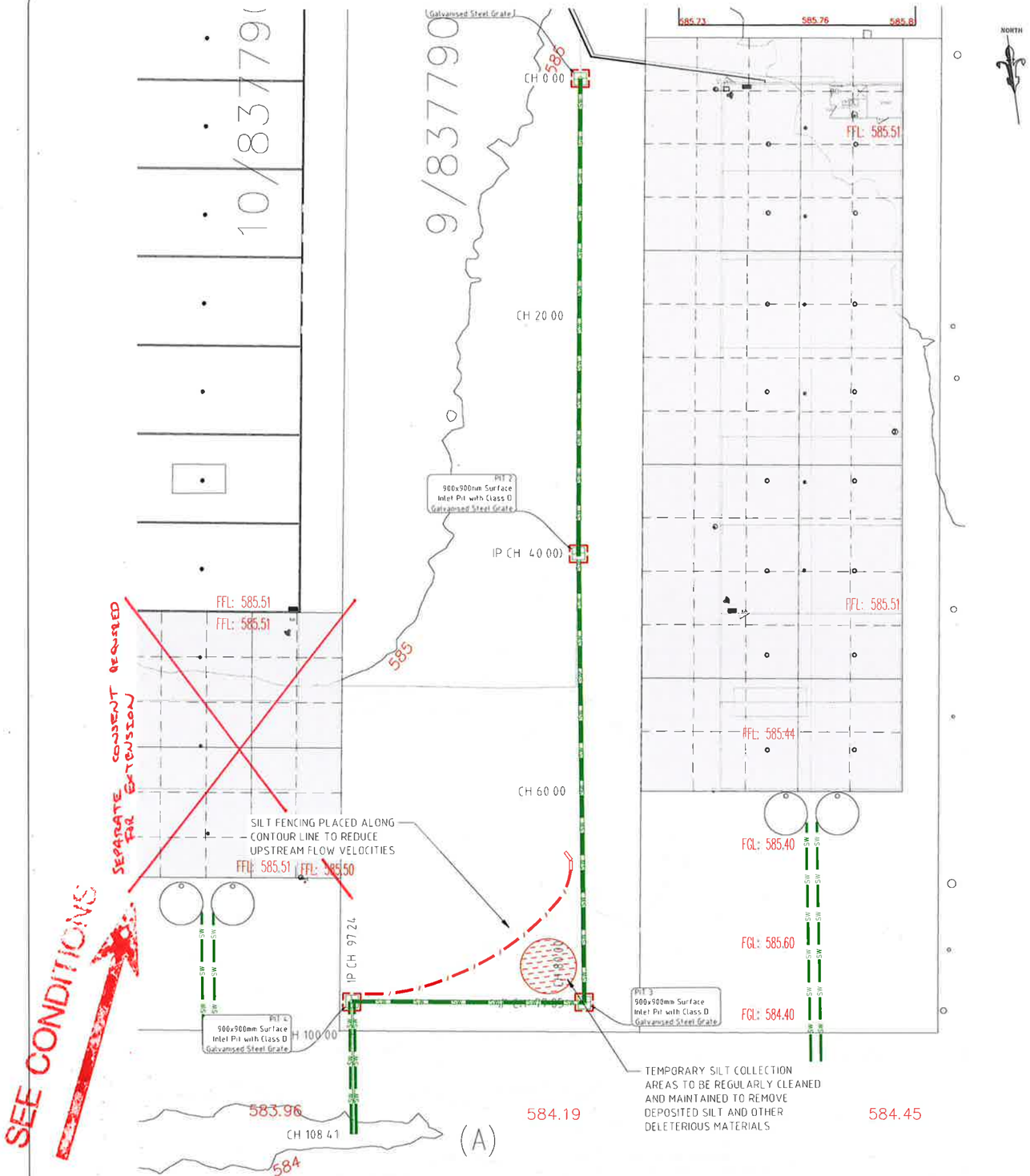
Project – PROPOSED EXTENSIONS INVERELL BUS SERVICE
Client – CAVANAGH
Site – 23-27 BRISETT STREET INVERELL, NSW 2360
Drawing title – PAVEMENT JOINTS PLAN

Project T228765 Sheet No. 6 of 7
Digital Ref: T228765_RevA.dwg Issue : A



EROSION AND SEDIMENT CONTROL PLAN

SCALE 1:200 (A1)

EROSION & SEDIMENTATION CONTROL

DUST NUISANCE MUST BE CONTROLLED BY REGULARLY WATERING HAUL ROADS, ACCESS TRACKS AND CONSTRUCTION AREAS.

ALL DIVERSION BANKS, SILT TRAPS AND SEDIMENT DRAINS SHOWN ON THIS PLAN ARE TO BE CONSTRUCTED PRIOR TO THE REMOVAL OF TOPSOIL AND MAINTAINED FOR THE DURATION OF THE WORKS AND UNTIL SUFFICIENT VEGETATION COVER IS ACHIEVED.

SEDIMENT AND EROSION CONTROL FACILITIES ARE TO BE PROVIDED IN ACCORDANCE WITH DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT. REFER PUBLICATION "URBAN EROSION AND SEDIMENT CONTROL" FOR DETAILS.

THE CONTRACTOR IS TO MINIMISE THE THE AREA OF SOIL EXPOSURE.

WHERE REQUIRED, TOPSOIL IS TO BE STOCKPILED CLEAR OF WATER COURSES OR FLOW PATHS.

SITE FILLED AREAS ARE TO BE TOPSOILED AND REVEGETATED WITHIN FIFTEEN (15) WORKING DAYS OF FINAL SHAPING.

TEMPORARY DIVERSION DRAINS ARE TO BE PROVIDED AT APPROX 2% GRADE ON FILL AREAS AT THE COMPLETION OF DAILY OPERATIONS. THE DRAINS ARE TO EXTEND TO UNDISTURBED AREAS WITH STRAW BALES OR GEOFABRIC BARRIER AT THE DOWNSTREAM END

SEDIMENT CONTROL STRUCTURES ARE TO BE MAINTAINED AT ALL TIMES AND CLEANED AS REQUIRED.

TURF LINING OF CHANNELS AND SWALES TO BE COMPLETED AS SOON AS PRACTICABLE FOLLOWING CONSTRUCTION OF CHANNEL PROFILES SO AS TO MINIMISE POTENTIAL FOR EROSION AND SCOUR.

STRAW BALES AND SEDIMENT FENCING IN CHANNELS TO BE INSTALLED IMMEDIATELY FOLLOWING CONSTRUCTION OF CHANNEL PROFILES AND RE-INSTATED FOLLOWING INSTALLATION OF TURF LINING.

SHOULD WORKS BE STOPPED FOR A PERIOD EXPECTED TO EXCEED TWO MONTHS, TEMPORARY REHABILITATION OF EXPOSED SOILS IS TO BE UNDERTAKEN

LEGEND OF SYMBOLS & LINETYPES

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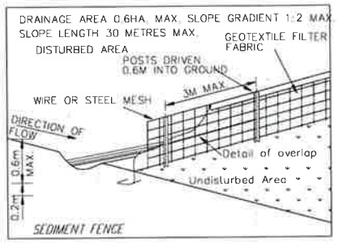
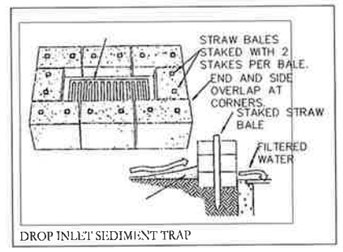
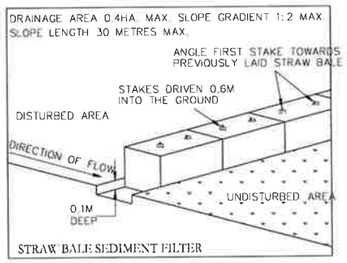
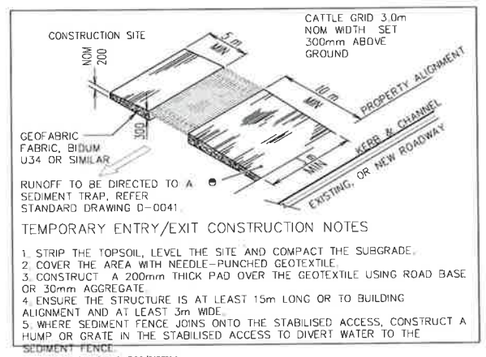
SEDIMENT CONTROL DETAILS









TEMPORARY ENTRY/EXIT CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m WIDE.
5. WHERE SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP OR GRATE IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

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00 2.0m 4.0m 6.0m 8.0m 10m
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Drawing title – EROSION AND SEDIMENT CONTROL PLAN

Project T228765 Sheet No. 7 of 7
Digital Ref: T228765_RevA.dwg Issue : A