ATTACHMENTS TO

Finance and Facilities Committee Meeting Business Paper

11 February 2026

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MATRYX

Ballina Shire Council
CCTV Recommendations

September 2024

Your security. Your way.

Security that works in your environment.

Ballina Shire Council – Proposed CCTV Report

For: Ballina Shire Council

Site Details: Ballina Central Business District, Ballina NSW 2478

Date: August 2024

Version: 1.0

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The comments and recommendations contained herein are based on information provided to Matryx Consulting by various sources at the time of the report.

Because of the inherent limitations of any internal controls, it is possible that errors or irregularities may occur and not be detected. The matters raised in this report are only those which came to the attention of the author(s) during the course of completing this project and are not necessarily a comprehensive statement of all current matters facing Ballina Shire Council or the site that are the subject of this report.

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1. EXECUTIVE SUMMARY

Matryx Consulting (Matryx) has been engaged by Ballina Shire Council (Council) to provide guidance and recommendations in respect to a CCTV system to Ballina and Lennox Head.

It has been determined by Council and other stakeholders such as Ballina Police that Ballina and its surrounds could benefit from CCTV. A surveillance system such as described herein, would provide operational as well as post-incident review capabilities to Police that are not currently available.

The intended system configuration allows for Police to locally view live cameras from Ballina Police Station. This would give Police the capability to look at reported incidents within the coverage area prior to dispatching resources. Used wisely, CCTV can help with resourcing but also to gain important insights earlier.

They would be also be able to track vehicles and persons of interest within the coverage areas.

We have also planned for the system to have the capability to automatically capture vehicle number plates at three locations. The information from these cameras can be used to generate real-time alerts to Police that a vehicle of interest is in the area.

Further control will be available to Police at the discretion of Council. This could include reviewing and downloading recorded imagery without the need for engaging with Council as would happen today.

We would suggest that any additional control and review capabilities be formally agreed with Police at the appropriate time. This would typically be by way of a Memorandum of Understanding (MOU). We do not have any concerns with arrangements such as this as many Councils allow Police to directly access recorded video because it can hasten investigations.

The data associated with the system will be owned by Council which means that data integrity and compliance with Australian Privacy Principle (APP) 11 will be a mandatory requirement. This should not be particularly onerous as Council will already be meeting these obligations in other areas of the business.

In the forecast project costs, we have also considered maintenance of the system. Once in place the surveillance network will require little ongoing maintenance except cleaning. Communications networks are very reliable and require little ongoing support.

Aside from any formal agreement with Ballina Police, Council will likely need other policy documents to support the proposed CCTV system.

These could include:

- Chain of Custody protocols for the handling of incident footage and its delivery to Police for use.
- Appropriate use policies and guidelines.
- A permission-based access hierarchy for system access and control.

Council may also want to consider the creation of an Independent Audit Committee (IAC) that establishes the purpose of the system and the parameters for its operation.

The value of an IAC is that it can formally determine the need and purpose of the system and its use. While not mandatory, some of the best examples of IAC's include privacy advocates. This can be important in managing community concerns about increased surveillance.

We do not see the creation of an IAC as mandatory, but believe they can add value to Council.

2. PROPOSED SOLUTION

2.1. LOCATIONS

Matryx has identified the following locations as preferred positions for the CCTV cameras.

Location Number	Location
1	Ballina - Martin and River Streets
2	Ballina - Pedestrian Crossing (Fawcett Street) – River Street
3	Ballina - Cherry and River Streets
4	Ballina - Pedestrian Crossing (Wigmore Arcade) – River Street
5	Ballina - Moon and River Streets
6	Ballina - Pedestrian Crossing (Ballina Disposals)
7	Ballina - Grant and River Streets
8	Ballina - Grant and Tamar Streets
9	Ballina - Moon and Tamar Streets
10	Ballina - Cherry and Tamar Streets
11	Ballina - River Street and River Bend Drive
12	Ballina - Tamarind Drive and North Creek Road
13	Ballina - The Coast Road / Angels Beach Drive
14	Lennox Head 1 – Ballina and Byron Streets
15	Lennox Head 2 – Ballina Street Pedestrian Crossing

Proposed locations – Ballina and Ballina Outer

For the purpose of this preliminary design, we have identified locations where there are existing light poles that could be used to support the CCTV infrastructure. However, for costing purposes we have allowed for new CCTV poles to be installed at several locations so that both scenarios are covered in the budget estimates.

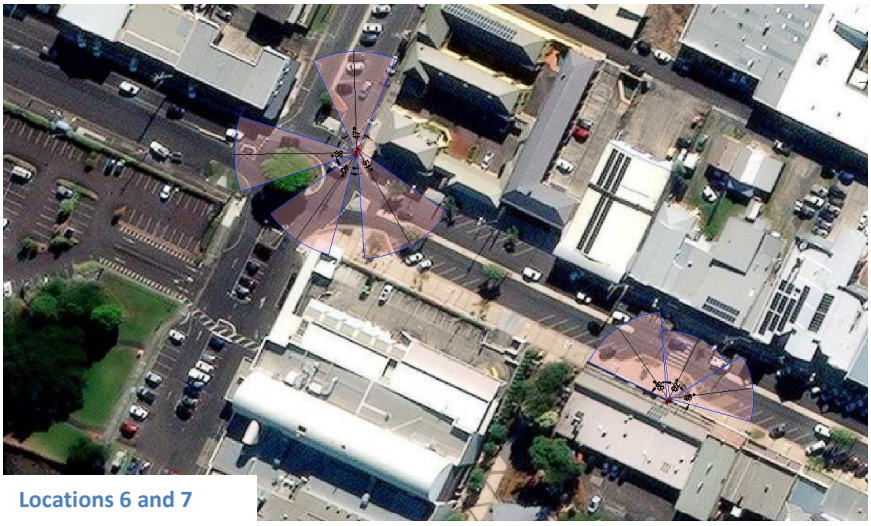
The reason that new poles have been factored into the project costs is because of the potential for excessive movement on light poles when additional infrastructure is affixed to a pole.

The addition of 3 or 4 cameras plus a communications cabinet added to a pole increases the sail area significantly and the opportunity for the wind to impact the performance of the surveillance system.

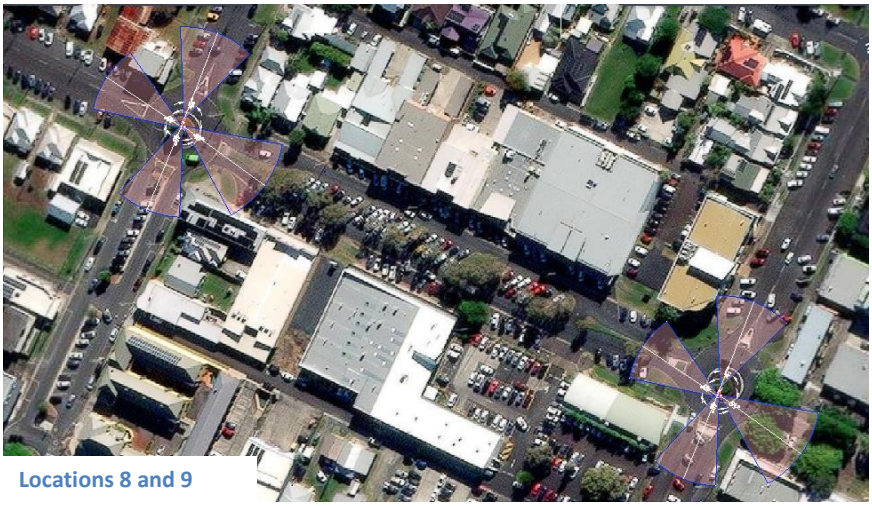
While modern CCTV cameras do include features such as image stabilization, excessive movement in the poles should be avoided where possible.

Locations 1, 2 and 3

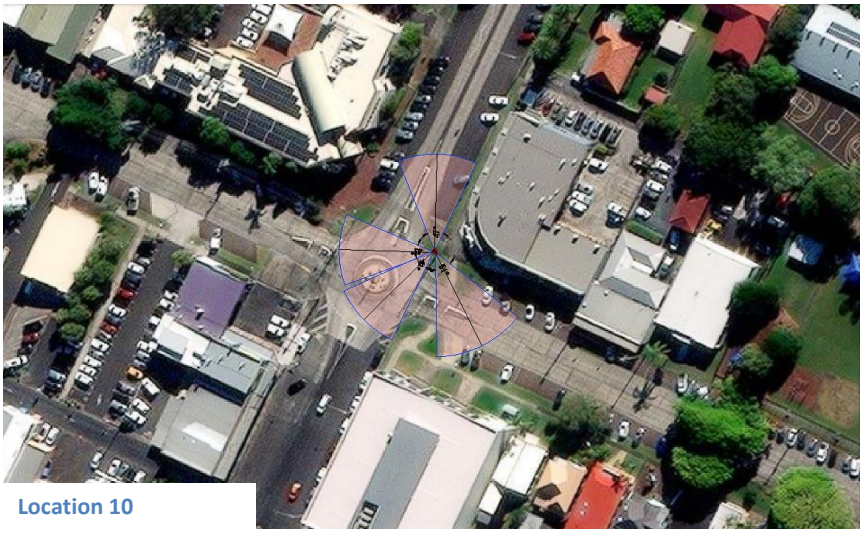
Locations 4 and 5



Locations 6 and 7



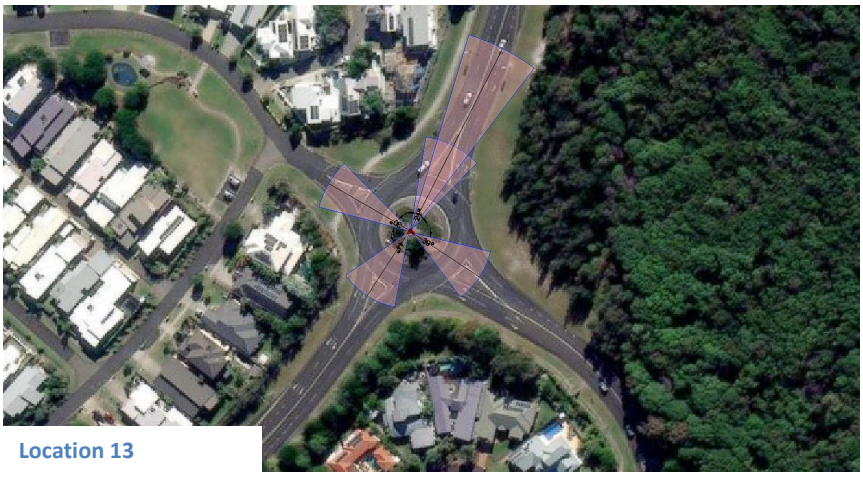
Locations 8 and 9



Location 10

Location 11

Location 12



Location 13

Location 14

Location 15

2.2. COMMUNICATIONS

We have proposed for budgetary purposes that the communications network will be wireless. Due to a lack of existing fibre-optic infrastructure within Ballina and Lennox Head, a wired network is unlikely to be feasible.

During the preliminary surveys, some locations have already been identified that could be used to facilitate the connectivity between Ballina and Lennox Head.

Council also has a capable wireless network in place today and the technology is both reliable and cost effective. We would suggest that Council uses a licensed network which will provide some protection from other network traffic in the area impacting it.

The wireless network can work either as a point-to-point or point-to-multipoint. The final configuration and the path that the data will take between locations will ultimately depend on the path Council elects to take in respect to the rollout.

There is significant flexibility in the way that wireless networks can be configured and in turn, how it can be deployed.

All CCTV we suggest would need to be connected to Council's offices in Ballina. Remote monitoring capability could then be delivered to Ballina Police Station where local Police are proposed to have viewing capability of the camera network.

A fibre-optic solution is of course available to Council but is far more disruptive and costly. There is also less flexibility because of dependencies in respect to the sequence with which the cables are installed to achieve the required connectivity.

2.3. POWER

We have provided costs for the provision of dedicated power supply to each location.

The costs are for unmetered supply which would mean that the running costs would be calculated and agreed with the local energy provider and added to their usual supply charge to Council. We do not believe it is necessary for each location to have its own metered supply because of the low power requirement. This is the most common way of powering street surveillance systems.

This would mean that each CCTV pole is treated much in the same way as a bus shelter or an NBN cabinet would be. Council is best positioned to determine what the ongoing costs will be for this element of the project.

As part of this exercise, we did consider the suitability of solar power to each pole location as an alternative to mains power. While there may have been some minor cost savings, the requirement for large battery boxes at each pole makes them impractical. Also, because of the need for 100% uptime of the cameras, we did not feel this could be guaranteed with solar power.

As such, we have not provided comparative costs for solar power at this time.

3. ESTIMATED COSTS

As the exact configuration of the proposed network is still to be determined with various options available, we are providing indicative costs based by location. This provides flexibility to design the network as needed while having some cost overhead to allow for variations that may ultimately occur.

We have broken the pricing down into zones which are shown below and are colour coded as per the attached tables. This is because it is the most logical path of deployment.

Stage 1 – Ballina CBD
Zone 2 – Ballina Outer
Zone 3 – Lennox Head

By Pole - Wireless									
Location	Pole	Cabinet	Switch	Cameras		Power Supply	Wireless	Install	Total
				Cost	Qty				
1	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
2	-	$1,800	$1,200	$6,500	3	$15,000	$6,500	$5,000	$36,000
3	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
4	-	$1,800	$1,200	$6,500	3	-	-	$5,000	$14,500
5	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
6	-	$1,800	$1,200	$6,500	3	$15,000	$6,500	$5,000	$36,000
7	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
8	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
9	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
10	$3,500	$800	$1,200	$8,000	4	$15,000	$6,500	$5,000	$40,000
11	$3,500	$800	$1,200	$10,000	2	$25,000	$6,500	$5,000	$52,000
12	$3,500	$800	$1,200	$10,000	5	$25,000	$6,500	$5,000	$52,000
13	$3,500	$800	$1,200	$10,000	5	$25,000	$6,500	$5,000	$52,000
14	$3,500	$800	$1,200	$6,500	3	$15,000	$6,500	$5,000	$38,500
15	$3,500	$800	$1,200	$6,500	3	$15,000	$6,500	$5,000	$38,500
*Indicative costs									599,500

Assumptions:

- Each location includes either two or three fixed cameras and one Pan Tilt Zoom (PTZ) camera. This will aid live tracking of individuals and cars within the coverage area when needed.
- Locations 11, 12 and 13 are Automatic Number Plate Recognition (ANPR) locations with all fixed cameras to be ANPR. One PTZ will also be included at each of the three locations.
- Most locations have a dedicated CCTV pole included in the costs. We recommend tapered 16-sided poles are used wherever new poles are required. These poles are less prone to deflection in high wind. Costs will include rag-bolt assemblies which are required for mounting. Ground surveys may be required prior to installation or any civil works. A pole has not been included for location 4 which is Wigmore Arcade. It is anticipated that cameras can be affixed directly to the building because it is a Council owned asset. Poles have also been excluded from locations 2 and 6 because the existing multi-poles are deemed suitable.

- We have made some assumptions on power costs for each location based on past projects we have been involved in. There are many variables associated with power supply so these costs should be validated at the appropriate time.

- Location 4 will use Wigmore Arcade as the host location for the cameras. Here cameras can be affixed to the building rather than requiring additional infrastructure. This building is also already connected to Council's communications network.

Other cost considerations for the project include:

Detail	Indicative Cost
Server, storage and workstations	$25,000
Internal project works	$35,000
Project management	$20,000
Intermediate communications links	$20,000
Ballina Police Station works	$20,000
Ground surveys	$20,000
Total	**$140,000**

This equates to additional indicative costs of $140,000 that will need to be factored into the costs of the project.

For budget purposes, we would also suggest that Council add a 15% contingency to these values to ensure that any variables associated with civil works and force majeure events can be covered.

It may also be sensible to allow for a redundant server and storage to ensure that redundancy is part of the total system design. This should also be a consideration of the network design so that single point of failures are minimised as far as practically possible.

We would suggest Council budget for total project costs of $870,000.

We would anticipate maintenance costs of $40,000 per year to cover camera cleaning and for software maintenance support agreements for the surveillance system.

OTHER CONSIDERATIONS

4.1 DEPLOYMENT TIME

The anticipated deployment time of CCTV systems such as this would be as follows from project commencement:

Wireless	
1 stage – Ballina CBD	20 weeks completion
2 stages – Ballina Outer	24 weeks completion
3 stages – Lennox Head	28 weeks completion

This would allow sufficient time for major equipment items such as the CCTV poles and communication links to be procured and delivered to Ballina. The longest lead time is likely to be the CCTV poles which can be up to 16 weeks as they are manufactured overseas. They can be manufactured locally however locally sourced poles are slightly more expensive.

Council will also need to undertake ground surveys wherever new poles are likely to be required. Costs for this have been factored into our estimates.

4.2 LIFE CYCLE

We would anticipate that the wireless network would have a life cycle of at least 10 years before it would require replacement. The costs for the wireless network at each location are included in the tables on page 13 of this report and could be used to calculate the lifecycle costs of the system.

It should be assumed that the CCTV cameras are replaced every 6 to 7 years.

4.3 FUTURE USES

While the proposed CCTV system will be solely for the purposes of street surveillance, the network, once installed, could be used for additional applications such as:

- Public address
- Public Wi-Fi
- Public audio
- Public help points / duress systems
- Public assistance / visitor information
- Emergency alerts
- MATV
- Advertising

Almost any application that requires a communications network, could be applied to the CCTV network either at deployment or at any time in the future.

4.4 PAST PROJECTS

CCTV is commonly deployed in street surveillance applications using wireless networks.

Matryx was involved in the design and deployment of a wireless CCTV system in 2015 to Sunbury in Victoria. We audit the system every year as part of Hume City Council's advisory team to ensure the system continues to work as intended. It operates very reliably.

Similar projects where wireless networks have been used for street surveillance applications include:

- Brisbane City Council
- Toowoomba City Council
- City of Horsham
- Warrnambool City Council
- Mount Martha Council
- Shire of Roebourne
- Rockdale City Council
- Breakfast Point – NSW
- Leederville City Council (WA)
- Footscray City Council
- Lismore City Council (Nimbin)

Most CCTV systems that have been deployed in local government applications as part of state or federal grants programs use wireless communications.

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Matryx is proud to acknowledge the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of the lands and we pay our respects to Elders past, present and emerging.

Ballina Shire Council

CCTV Design Specification

September 2024

V1.1

1 Contents

1. Preliminaries

1.1. Definitions

The following terms and definitions apply to this specification;

Principal	Ballina Shire Council (Council)
Consultant	Matryx Consulting
Project Manager	Appointed representative of the Principal responsible for contract and/or contract delivery.
Contractor	The security contractor appointed by the Principal to undertake the prescribed works.
Tenderer	A contracting organisation invited to submit an offer to undertake the prescribed works.
Tender	A submission made to the Principal by a tenderer to undertake the prescribed works.
Approved equipment	Equipment formally approved for use by the Principal
Authorities	Statutory bodies or their representatives having jurisdiction over the works under relevant regulations and statutes.
Contract	The documented and signed agreement between the Principal and contractor for the prescribed works.
Instructions	Written instructions provided to the contractor by the Principal, contract manager or consultant.
Provide	Supply, deploy, monitor, install, program, commission.

1.2. Invitation to Tender

By preparing this technical specification and associated documentation, the Principal is inviting submissions from qualified contractors to put forward a tender offer for the prescribed works.

The Principal is making no assurances or undertaking that all or part of the prescribed works will be awarded at the completion of the tender period to the tenderer or any other organisation.

The Principal reserves the right to proceed with, all, part or none of the prescribed works at their absolute discretion. No offer is implied or made by the issuing of this tender documentation.

Tenderers undertake to prepare and submit their offers for the project without cost to the principal.

1.3. Alternative Offers

Alternative offers will be considered if accompanied by a separate compliant offer. Alternative offers that are not accompanied by a separate compliant offer will not be considered.

Alternate offers should be clearly labelled as an alternative offer and identify how they achieve comparable outcomes to those proposed within the primary design. Any benefits to the client such as better value for money, improved outcomes and the like should also be clearly articulated within the alternative submission.

1.4. Copying, Distribution and Reproduction

2. Project Overview

2.1 General

This specification and tender schedules detail the requirements associated with the supply, installation and commissioning of a fully operational and integrated video surveillance system to Ballina Shire Council, NSW.

The specification, drawings and tender schedules detail the whole of the works for this project. Each of these documents will require equal consideration and compliance by the security contractor when preparing their response.

The security contractor shall fully comply with all requirements contained within this specification as well as any and all requirements stipulated within the following Australian Standards and guidelines:

- AS/NZS IEC 60839.11.1:2019 - Alarm and electronic security systems, Part 11.1: - Electronic access control systems - System and components requirements
- AS/NZS IEC 60839.11.2:2019 - Alarm and electronic security systems, Part 11.2: Electronic access control systems Application guidelines
- AS/NZS 2201.1:2007 Intruder Alarm Systems – Client's Premises-Design, Installation, Commissioning and Maintenance
- AS 2201.2-2004 Intruder Alarm Systems - Monitoring Centres
- AS 2201.3-1991 Intruder Alarm Systems - Detection Devices for Internal Use
- AS/NNZS 2201.5:2008 Intruder Alarm Systems - Alarm Transmission Systems
- AS/NZS 62676 Part 1-1: System requirements – General
- AS/NZS 62676 Part 1-2: System requirements – Performance requirements for video transmission
- AS/NZS 62676 Part 2-1: Video transmission protocols – General requirements
- AS/NZS 62676 Part 2-2: Video transmission protocols – IP interoperability implementation based on HTTP and REST services
- AS/NZS 62676 Part 3: Analog and digital video interfaces
- AS/NZS 62676 Part 4: Application guidelines
- AS/NZS 62676 Part 5: Data specifications and image quality performance for camera devices
- AS 60839:2019 – Alarm and Electronic Security Systems
- AS/NZS 3000:2007 Wiring Rules

Any areas of non-compliance must be clearly articulated within the contractor's tender response. Failure to disclose any points of non-compliance will deem the security contractor to have accepted the specification(s) in its entirety.

2.2 Project Brief

The purpose of the project is to provide Council with a fully installed and operational video surveillance system.

It is the intention that the proposed surveillance network will be a dedicated, stand-alone surveillance network that operates independently of any other Council network.

Varying levels of engagement between Council and Matryx Consulting have preceded the issuing of this specification and associated documentation. Over the course of the engagement period, the key outcomes of the project were decided and these are detailed below for information.

- Provide Police with a tool that will aid in the recognition of persons and vehicles in both real-time and post-incident investigation.
- Provide an increased perception of safety to the local community in and around the Ballina Shire.
- Aid in the combating of antisocial behaviour.
- Include active and passive monitoring capability of the surveillance system.
- Assign priority to areas deemed to be known hot-spots for antisocial behaviour.
- Incorporate system capacity for future expansion.

It is the intention that only specialist electronic security contractors will be appointed to undertake the prescribed works for Ballina Shire Council.

2.3 Project Principal

The project Principal will be the Ballina Shire Council and the appointed contractor(s) will be working under the control of the nominated Council contract manager for the duration of the contracted period.

2.4 Site Locations

The services prescribed within this document shall apply to the following Council locations:

- Ballina - Martin and River Streets
- Ballina - Pedestrian Crossing (Fawcett Street) – River Street
- Ballina - Cherry and River Streets
- Ballina - Pedestrian Crossing (Wigmore Arcade) – River Street
- Ballina - Moon and River Streets
- Ballina - Pedestrian Crossing (Ballina Disposals)
- Ballina - Grant and River Streets
- Ballina - Grant and Tamar Streets
- Ballina - Moon and Tamar Streets
- Ballina - Cherry and Tamar Streets
- Ballina – River Street and Burns Point Ferry Road
- Ballina - Tamarind Drive and Noth Creek Road
- Ballina - The Coast Road / Angels Beach Drive
- Lennox Head – Ballina and Byron Streets
- Lennox Head – Ballina Street Pedestrian Crossing

2.5 Scope of Works

The scope of works for this project includes, but is not limited to, the supply, installation and commissioning of the following system equipment:

- Sixteen (16) nodes comprising a combination of camera poles, CCTV cameras, network switches, weatherproof cabinets, power terminations, wireless communications and/or fibre communications links.
- New CCTV server and workstation.
- New workstation and monitor to Ballina Police Station.
- Supply, installation, commissioning, witness testing and hand-over of the prescribed equipment.
- Cables, cable connectors, terminations, conduits, ducts, elbows etc required to complete a compliant and operational surveillance system.
- All permits and fees.
- All system programming as required.
- All lift and hire equipment.
- All civil works as required.
- All traffic management as required.
- A high standard of system installation that complies with all relevant statutory and industry standards.
- Witness testing on completion
- The provision of warranty during the defect's liability period.
- Visio drawings, schematics and technical details of the completed installation.

2.6 Works by Others

The following works are included in the project scope but are not the specific responsibility of the appointed security contractor and may be carried out by others:

- Authority as required to facilitate the works.
- Coordination between Police, utility infrastructure providers and council representatives to facilitate the works.
- Radio spectrum license costs.
- Power supply and terminations to each pole location.
- Supply and installation of new servers and storage of the specified type and capability to support the Video Management System.
- Allocation of IP addresses for all new network componentry.
- Designation of final equipment locations.
- Implementation of supply agreements between Council and their energy provider where required to facilitate the works.
- Clearing of vegetation to optimise camera views if required.
- Project management and coordination of the works.

2.7 Project Completion Date

Ballina Shire Council has nominated a target completion date for the project.

Contractors should keep this date in mind when preparing their submission. Special consideration should also be given to clause referring to Works Program of this document when preparing your response.

2.8 Approved Equipment

As part of the contractor's tender response, a schedule of equipment is to be included for all system components to be provided under this contract. This schedule as a minimum shall include make, model and quantity of the offered equipment.

On acceptance, this schedule will become the approved equipment schedule for the contract.

Only equipment formally approved for use shall be utilised on this contract. Where equipment needs to be substituted due to supply constraints or a specified make or model is no longer available, a request should be made in writing to the appointed Ballina Shire Council contract manager for approval to provide alternates before any such alternate product is installed.

System components installed and found to not be approved product, shall be defected and replaced with approved product by the appointed contractor at the contractor's expense. All equipment offered shall be fit for purpose and of new condition.

2.9 Non-Proprietary Equipment

All equipment proposed to be used on the contract shall be open source, non-proprietary and capable of being serviced and supported by a minimum of three state-based security integrators. Any product offering that is deemed to be proprietary will not be considered.

2.10 Handover and Practical Completion

The Contractor shall allow for a nominated representative of the company to attend site for the purpose of system commissioning and handover to the client once the contractor is satisfied the works are complete and the system is operational. The date by which this must occur will be nominated by the project manager on award of the contract.

Practical completion will be deemed to have been met, once the following has been undertaken:

1. Installation has been completed to the satisfaction of the consultant and any defects rectified.
2. The system has been commissioned, is proven to be operating in accordance with the specification requirements, and cameras are correctly focussed and positioned in accordance with the project managers requirements.
3. Three copies of Operating and Maintenance manuals (electronic and as built Visio) have been provided by the contractor to the project manager.

2.11 Training

The Contractor shall allow for a nominated representative of the company to attend site for the purpose of providing training to Police and Council staff on the newly installed equipment.

This is to occur on the first scheduled work day after works have deemed to be practically complete. As part of the operator training, the contractor shall provide Police and council staff with documentation that outlines the functions of the system that operators can refer to if required.

Training documentation shall be of a suitable standard that operators do not need any external support to operate the CCTV system.

Training shall consist of one session of up to four hours.

The Contractor is to allow a sum for training within their tender submission.

2.12 Warranty and Defects Liability Period

The Contractor shall warrant all works for a period of 12 months from the date of practical completion. Furthermore, the contractor shall attend all warranty calls during the warranty period without additional cost to the client.

Warranty call attendances shall be undertaken by the appointed Security Contractor within four (4) hours of a request for attendance being issued by Council representatives. The Contractor shall provide details within their tender submission how they intend to comply with this requirement considering the regional location of the project.

The Contractor is required to include contact names and numbers that can be used in the event of a service fault occurring during the warranty period within the Operating and Maintenance Manuals provided under this contract.

The Contractor shall be capable of providing business hours and after-hours service and support for the duration of the warranty period.

2.13 Permits

Where permits are required to undertake the works, the cost of these permits shall be the responsibility of the appointed Contractor and included within the tendered price for the works.

2.14 Staff Skills and Capabilities

Contractor staff engaged to undertake the works must be appropriately skilled in the installation and commissioning of complex CCTV systems and their components.

The Contractor shall demonstrate such capabilities within their submission by providing a list of previously completed projects where similar systems and technologies have been deployed.

In addition, it is expected that the contractor be able to demonstrate significant experience in network deployments specific to CCTV applications. Furthermore, the successful contractor should be able to support the entire installation during system deployment and the defects liability period through in-house technical and engineering capabilities.

2.15 Insurances

Prior to commencement, the contractor shall provide to Council's contract manager evidence that the appropriate contract related insurances are in place. This could include:

- Public Liability Insurance $10 m
- Workcare Registration
- Product Liability Insurance

No works shall commence on any Council asset until such time that evidence of insurances has been provided.

2.16 Licensed Personnel

Persons engaged by Ballina Shire Council shall be appropriately licensed to undertake the prescribed works. Evidence of such licences shall be provided for all persons engaged to undertake any works associated with the project.

2.17 Informed

By submitting an offer for the contract, the contractor has deemed themselves to be informed and confident of being able to complete the whole of the works for the tendered price.

It is the responsibility of the contractor to make any such enquiries during the course of the tender period to satisfy themselves of their ability to satisfactorily complete the works.

2.18 General Workplace Health and Safety Requirements

An organisation is obligated to provide and maintain, so far as is practicable, a working environment for its employees and members of the public, that is safe and without risk to health. As a condition of this Contract, Council will require that any of its Contractors that may be engaged to perform a service on its behalf will at all times identify and exercise all necessary precautions for the health and safety of all persons including the Contractor's employees, organisation employees and members of the public who may be affected by the services.

The Contractor will inform itself of all workplace health and safety policies, procedures or measures implemented or adopted by Council and/or the occupiers of any premises at or within which the Contractor will perform services and works under this Contract.

The Contractor will comply with all such policies, procedures or measures; and in the event of any inconsistency, will comply with such procedures or measures as they produce the highest level of health and safety.

The Contractor will forthwith comply with any and all directions by the organisation relating to workplace health and safety.

It is critical to stipulate that the Ballina Shire Council holds Workplace Health and Safety as its number one priority and it is a critical component of this contract that the Contractor embraces this initiative. Any breaches by the Contractor or its staff will result in the immediate removal of the individual or group of individuals responsible for any breach and may result in termination of services.

2.19 Legislative Compliance

The Contractor must comply with and ensure that its employees (including any approved sub-contractors) and agents comply with any Acts, regulations, local laws and by-laws, Codes of Practice, compliance codes, Australian Standards and organisational WHS policy and procedures which are in any way applicable to this Contract or the performance of the services under this Contract.

The security contractor shall be responsible for ensuring that all security work is undertaken in accordance with the appropriate standards and that all Government legislation complied with.

Upon any reasonable request from Council staff the Contractor shall furnish a copy of current licensing documentation/accreditation for specific members of the Contractor's staff as required within 48 hours of such a request. Failure to provide such documentation will constitute a breach of the contracted conditions and may lead to voiding of the contract itself or restitution being sought.

2.20 Contractor WHS Management Systems

The WHS management system of the Contractor must, as a minimum requirement, demonstrate compliance with all duties of an employer specified in the relevant state Workplace Health and Safety Legislation.

The Contractor must, when requested by the Council, submit a complete copy of their company WHS management system documentation that must include as a minimum requirement:

- WHS policy and objectives;
- Organisation structure and responsibilities; and
- Safe work practices and procedures.

2.21 Workplace Health and Safety Plans

Prior to commencing the works under the Contract, the Contractor shall submit to Council a Workplace Health and Safety Plan specific to the Contract and works.

The Plan shall consider and respond to the specific WHS hazards and issues relevant to the Contract Works and shall document the systems and methods to be implemented for the term of the Contract.

The Plan shall be reviewed by Council and formal approval to commence the Contract shall be provided subject to acceptance of the final version of the Workplace Health and Safety Plan.

2.22 Non-Compliance

If, during the performance of works under the Contract, the organisation informs the Contractor that it is the opinion of the organisation that the Contractor is:

- Not conducting the work in compliance with the Contractor's Health and Safety Plan, health and safety management procedures, relevant legislation or health and safety procedures provided by Council from time to time, or
- Conducting the work in such a way as to endanger the health and safety of Contractors employees or organisation or its Contractors' and sub-contactors' employees, plant, equipment or materials.

The Contractor shall promptly remedy that breach of health and safety.

Council may direct the Contractor to suspend the work until such time as the Contractor satisfies the organisation that the work will be resumed in conformity with applicable health and safety provisions. During periods of suspension referred to above, the organisation shall not be required to make any payment whatsoever to the Contractor.

If the Contractor fails to rectify any breach of health and safety for which the work has been suspended, or if the Contractor's performance has involved recurring breaches of health and safety, the organisation may, as its option, terminate the work forthwith, without further obligation to the Contractor.

In this event, the organisation's liability shall be limited to payment for the work performed and costs incurred by the Contractor up to the time of termination or an earlier suspension of works.

2.23 Tender Validity

Tender validity is 180 days from the nominated tender closing date.

3. CCTV

3.1 Video Management System (VMS)

As part of the prescribed works, a new VMS shall be required to be supplied and installed under this contract.

As part of the system installation, the contractor shall allow to:

a) Install a new CCTV server, workstations and storage to accommodate the new cameras.
b) Connect the new cameras to the VMS.
c) Program and name the cameras in accordance with the proposed naming convention.
d) Ensure the cameras can be selected and viewed from the camera "hierarchy tree" within the VMS.
e) Program the cameras to be viewed at the appropriate resolution.
f) Program the cameras to record at the appropriate frame rates and resolution.
g) Include the cameras in any pre-programmed operator displays.
h) Install the required camera licenses.

The security contractor shall demonstrate that this has been undertaken during the witness testing phase of the project.

The VMS shall be a server-based enterprise class, IP enabled security platform provided by a distributor/manufacturer with manufacturer representation in Australia.

Base functionalities available with the VMS shall include:

- Live event monitoring
- Live video monitoring and playback of archived video
- Alarm management
- Reporting, including creating custom report templates and incident reports
- Integration to third party systems and databases via plug-ins (access control, video analytics, ANPR, and more)
- Dynamic graphical map viewing
- Asset management system integration
- Be able to program cameras individually to record at specified frame rates and resolutions
- View cameras at different frame rates and resolutions to those that are being used for recording
- Provide a simple and intuitive user interface to allow the user to undertake all system management functions without the need for external technical support or specialist skills

All communication between the VMS and the client applications shall be based on standard TCP/IP protocol and shall use encryption when enabled by the administrator. The VMS shall include a Server Monitoring Service (Watchdog) that continuously monitors the state of the VMS services and all camera connections.

The VMS shall support a wide selection of camera makes and models.
Application specific features shall include:

- Provide digital storage and transmission of digital video and audio data. The device shall support a vast number of network cameras and encoders of well-known manufacturers including Megapixel- and H.264/265 cameras. The base device shall support one fully synchronized audio input per channel
- Automatic backup on local and / or network data carriers (CD, DVD, Memory stick, JBOD, SAN, NAS, RAID)
- A time or event-triggered backup capability
- An automatic deletion of target drives with integrated alarm notifications
- Exported picture data shall be encrypted in such way that manipulation to picture material is virtually impossible and is detectable
- Include multiple picture display that can be defined as required (full picture, freely scalable and configurable viewer) for the parallel display of live and/or recorded video data from any cameras, and be either switched manually or event triggered
- Three different alarm priority levels shall be available, each individually configurable on a per user basis
- Compliant with data protection laws where parts and areas of the video picture can be individually defined to be blacked out/ hidden from viewing (privacy zones/masking)
- Shall incorporate program menus and comprehensive online help, including animated tutorials that demonstrate setup scenarios
- Supports device or edge recording and the trickle feeding of data from the device to the VMS
- Camera Position Authentication (CPA) providing automatic detection of changes made to the camera's angle of vision
- Health monitoring that will alert operators to any degradation in camera image quality and to issues within the VMS such as hard drive and fan failures

The VMS shall support the configuration and management of users and user groups. A user shall be able to add, delete, or modify a user or user group if he or she has the appropriate privileges.

Common access rights and privileges shared by multiple users shall be defined as User Groups. Individual group members shall inherit the rights and privileges from their parent user groups. User group nesting shall be allowed.

User privileges shall be extensive within the VMS. All configurable entities for the VMS, including shall include administrator definable privileges.

The VMS shall be able to limit what users can view in the configuration database via security partitions (database segments). The administrator, who has all rights and privileges, shall be allowed to segment a system into multiple security partitions.

All entities that are part of the VMS can be assigned to one or more partitions.

A user who is given access to a specific partition shall only be able to view entities (components) within the partition he or she has been assigned. Access to a user is given by assigning the user as an accepted user to view the entities that are members of a particular partition. It shall be possible to specify user

and user group privileges on a per partition basis. Advanced logon options shall be available such as dual logon and more.

Each and every report in the system shall be a VMS task, each associated with its own privilege. A user shall have access to a specific report only if he or she has the appropriate privileges to do so.
The VMS shall support the following types of reports:

- Alarm report
- Video-specific reports (archive, bookmark, motion, and more)
- User activity reports
- Health activity and health statistics reports
- Audit trail reports,
- Incident reports

The VMS shall be capable of creating generic and custom reports and templates. Customisation options shall include setting filters, report lengths, and timeout periods.
All report templates shall be created within the user interface and a log generated of all reports generated within the VMS. These templates can be used to generate reports on a schedule in PDF or Excel formats.

3.2 CCTV user interface

The VMS user interface shall provide a graphical user interface to control and monitor the VMS over any IP network. It shall allow administrators and operators with appropriate privileges to monitor their VMS and attached devices, run reports, and manage alarms.
The VMS interface shall support the following UI concepts to enhance usability and operator efficiency such as

- A dynamic dashboard loaded with entity-specific widgets, e.g., door and camera widget
- Use of transparent overlays that can display multiple data in a seamless fashion
- Tile menus and quick commands easily accessible within every display tile of the user workspace
- Single click functionality for reporting and tracking

The VMS interface shall support single-click reporting for video management as well as single-click tracking of all cameras. It shall also support video bookmarking for one-click “tagging” of footage of interest.

The VMS interface shall dynamically adapt to whatever the operator is doing. This shall be accomplished through the concept of widgets that are grouped within the VMS dashboard. Widgets shall be user configurable and provide users with fast and efficient access to common information and actions.

The VMS shall incorporate workflows that shall be a sequence of operations an operator or administrator shall execute to complete an activity. These workflows shall also be customisable to suit the operators and the application. These workflows shall assist in the generation or printing of a report, setting up or acknowledging an alarm or creating incident reports.

The user interface shall include a logical “tree” where all cameras and zones are grouped in a logical and hierarchical order.
The VMS user interface shall support multiple event lists and display tile patterns, including:

- Event/alarm list layout only
- Display tile layout only
- Display tile and alarm/event list combination
- LPR map and alarm/event list combination
- User workspace customisation
- 1 display tile to 16 display tiles with a variety of user definable configurations

The user shall have full control over the user interface through a variety of user-selectable customisation options. Administrators shall also be able to limit what users and operators can modify in their workspace through privileges. Once customised and appropriately configured, the workspace format will be retained each time the associated user accesses the system.
The VMS interface shall include advanced video capabilities that include:

- Live video viewing functionality
- Archive playing and video playback functionality
- Monitoring and management of video system events and alarms
- Generation of video reports
- Display of all cameras attached to the VMS
- The support of live video monitoring on each and every display tile
- Support for live and uninterrupted video streaming
- Drag and drop functionality of any camera into a display tile for live viewing
- Support for digital zoom on live camera video streams
- Allow operators to bookmark important events for later retrieval on any archiving camera. Operators shall be able to uniquely name each bookmark in order to facilitate future searches
- Allow operators to switch to instant replay of the video for any archiving camera with the simple click of button
- Provide the ability to take snapshots of live video and be able to save or print the snapshots.
- Audio and video playback of any time span
- Video playback on each and every display tile
- Allow the operator to select between instant synch of all video streams in playback mode allowing operators to view events from multiple angles or across several camera fields, or non-synchronous playback
- Allow the operator to simultaneously view the same camera in multiple tiles at different time intervals
- Limit operator viewing capabilities by access permissions decided at system administrator level
- Allow the operator to control the playback with pause, lock speed, forward and reverse playback at: 1x, 2x, 4x, 6x, 8x, 10x, 20x, 40x, 100x, forward and reverse playback frame by frame, slow forward and reverse playback at: 1/8x, 1/4x, 1/3x, 1/2x
- Provide the display of a single timeline, or optionally one timeline for each selected video stream, with which the operator can navigate through the video sequence by simply clicking on any point in the timeline
- Display the level of motion at any point on a timeline

- Clearly display bookmarks events on the timeline(s)
- Undertake queries of archived video using various search criteria, including but not limited to, time, date, camera, and area among others
- Provide a variety of search tools that allow search of video and associated audio on user-defined events or motion parameters

It shall be possible to lock a display tile so that it only tracks the activity of a specific entity, e.g., location or camera view. The user shall be able to drag and drop an event from an event list (or an alarm from an alarm list) onto a display tile to view a given scene or scenes.

The user, with the appropriate privileges, shall be permitted to start or pause the viewing of events within each display tile.

The proposed VMS shall allow remote viewing of live and recorded imagery by way of tablet or mobile device.

3.3 Threat Levels

Threat levels shall be programmed and configured into the VMS as part of the proposed works.

This shall allow the VMS to:

- dynamically change the system behavior to respond to critical events.
- facilitate the activation and deactivation of each respective threat level by a system operator with the appropriate privileges.
- set threat levels to a specific area or the entire system.
- automatically trigger system behaviors by executing any action available in the VMS such as trigger output, start recording, block camera, override recording quality.
- set minimum user level to automatically log out user from the VMS.
- provide a visual notification in all operator workstations when a Threat Level is activated.

The security contractor shall allow for the programming of up to six (6) threat levels into the VMS as part of the prescribed works.

3.4 Visual Tracking

The VMS shall include the programming of all cameras to facilitate visual tracking across the Local Government Area. All cameras installed under this contract will be programmed for visual tracking.

Programming shall include the establishment of semi-transparent shapes or overlays on all cameras. Once active, the system shall support the ability to manually track a moving target with the single click of a button. It shall also allow the ability to switch from one camera view to an adjacent camera which shall be done within a single display tile.

Switching between camera streams shall be accomplished by simply clicking on a semi-transparent shape or overlay. Visual tracking shall be available for both live and recorded video.

3.5 Intelligent Search and Tracking

The VMS shall be programmed to include an intelligent search and tracking functionality that will provide system operators an array of operational and investigative tools.

This application can be either an integrated component of the proposed VMS platform or a third-party application that will interface to the VMS. Where a third-party application is proposed, existing software development kits (SDK's) or application programming interfaces (API's) must already exist between the VMS software and the third-party application.

Furthermore, the SDK's and API's must be fully supported by both vendors and be part of an ongoing and continuing development program.

The base functionality of the intelligent search and tracking feature shall include:

- the ability to group cameras in a logical fashion, so that the primary camera view where a person of interest is displayed, is clustered or grouped with adjacent camera views that form the logical path of travel. As the person of interest walks out of view of the current primary camera and into view of one of the related adjacent camera views, the operator shall be able to select that view which will then become the primary view. The system shall support camera clustering with a minimum of five cameras. This feature shall function on both live and recorded views.
- the ability to "flag" or highlight a person of interest and to retrospectively determine the path of travel of that person by displaying all cameras views that the person of interest appeared in, originating from the location where the flag was attached to the image.
- the ability to create bookmarks where persons of interest or incidents can be quickly and simply referenced at a later date.
- an intelligent search function that allows a rectangular or other shape to be drawn over a live or recorded video tile and for the operators to be able to review all activity associated with the highlighted area for a given period of time. The search function shall be fully flexible and allow for the operators to undertake a search over any period of time.

Appearance Search is a preferred capability of the intelligent Search capabilities. Ballina Shire Council has a requirement to undertake searches for people in the LGA using the VMS such as for missing children and the like.

The requirements for appearance search functionality include:

- The ability to "flag" or otherwise a person of interest and to perform a search of the VMS for that person.
- Where "flagging" an individual is not available, the operator shall be able to enter a range of search criteria into a search field associated with the appearance search function. This shall include a variety of selectable fields such as height, colour of clothing and other visual identifiers.
- Search results shall include both live and recorded footage in the search function.
- Search results shall be displayed either on select monitors within the video wall and/or at the requesting operator's workstation.
- All results will be displayed in a logical timeline that allow the operator to quickly scan the displayed results for visual verification.
- Once a person of interest has been identified by the operator, the operator can then perform an additional search if needed for the selected individual for additional views and times within the area.
- Once the person of interest has been identified, operators shall then be able to track that person within the area to determine their live location or the location where they exited the precinct.

Appearance Search can be achieved by:

- Using specialist Appearance Search cameras where the analytics is performed within the camera (at the edge) or,
- Through the use of a dedicated Appearance Search server and cameras where the analytics is performed at server level, or,
- Within the offered VMS, or
- A combination of both technologies is used.

The contractor shall detail within their submission how this functionality shall be achieved. Furthermore, the contractor shall detail how the functionality is best implemented into an environment of this size and in full consideration of number of cameras in use.

The implementation and programming of the enhanced search and tracking capabilities including Appearance Search is the responsibility of the appointed security contractor.

3.6 Maps and Graphics

The establishment of maps and their associated functionality within the VMS is a requirement of this contract.

The VMS shall incorporate a graphical user interface for the control and monitoring of system functions. It shall be possible to operate the system using mouse clicks only through the graphical user interface. This will be achieved by system operators through the use of interactive, dynamic site plans and icons.

The application shall be able to create any number of linked graphical maps or images that enable the user to achieve complete operation of the system with the exception of system programming changes and investigation. These maps and floor plan shall be able to include a number of layers to represent the different levels of monitoring and management of the system that may be required.

These should include:

- device layer
- location layer
- room layer
- level layer
- building layer
- precinct/campus layer
- suburb layer
- state layer
- country layer
- global layer

Maps shall be dynamic so that they automatically adjust as the user zooms in and out and shall automatically refresh each time a programming change is made to the maps. Control options for icons shall be displayed both by right-clicking on that icon or simply by touching the icon.

The VMS shall allow the creation of maps which comprise multiple layers of objects, each layer containing various icons or elements which may be viewed or hidden from users depending upon the privileges of the user and the layer being viewed.

The system shall be installed with a library of default icons for use on maps or images. These icons can be associated with particular objects within the system and, when placed on a schematics map, will allow the user to view the real time status of that object or to click on or touch the icon to control the associated object or item.

Programming shall include the ability for a user to define a special icon which represents a collection of entities such as cameras or other assets associated with a given area.

Interactive buttons shall also be included on site plans. On activation, the buttons must be capable of performing multiple actions within the VMS simultaneously. This could include the movement of a PTZ camera to a pre-programmed location while commanding opens a gate where such interfaces exist.

All open site plans shall be updated immediately if that site plan is amended by any user.
Icon names shall use the item name by default, but a shortened name shall be configurable so as not to clutter the site plan with text.

A site plan must be established so as to support multiple floor layers in a single site plan item. The purpose of the plans is to simplify operation of the system and increase situational awareness of operators.

In addition, the VMS shall:

- Provide a map centric interface with the ability to command and control all the integrated system capabilities from a full screen map interface.
- Span the map over all screens of the client workstation or video wall. It shall also be possible to navigate the map including pan and zoom, and the map's moves shall be synchronized between all screens. Spanning the map over multiple screens must provide the same command and control capabilities that are available in a single screen display.
- Configure a mixed set of maps made of GIS, online providers and private imported files and link them together.
- Include the ability to draw and display information over the map in the form of vectorial shapes, lines, rectangles, polygons, ellipse, pictures and text to represent each camera view and other required information.
- Provide a means to update a map background without affecting the map object configuration.
- Have the ability to create hierarchies of maps to facilitate navigation within and between various sites and buildings, to define favourites for recurrent position recall and to create links between maps. The map links shall allow the link from one map to multiple maps representing the floors of a building.
- Offer the ability to optionally set a graphical display notification of the motion detection.
- Offer a smart selection tool to access either live or recorded video. By clicking the location, the user wants to see, the PMA will automatically select the cameras that can see this location and move the PTZ towards that location. This smart selection tool shall take obstacles into consideration and not display cameras that cannot see the location because of a wall.
- It shall be possible to access both live and playback video from the map.
- Various actions shall be available within maps for execution through simple and intuitive double-click, right-click, or drag-and-drop functionality. Examples of actions available through maps shall include viewing a camera and acknowledging a motion activated alarm.

The programming of the maps and all the associated feature sets described above, including the creation and importation of maps, interactive and dynamic icons and all camera and alarm zone overlays is the responsibility of the appointed security contractor.

3.7 Integrity Monitoring

The VMS shall be programmed for Integrity Monitoring across all facets of the VMS. Integrity Monitoring shall allow operators to know the status of the VMS at any given time. Integrity Monitoring shall be displayed graphically within the control room either on a selected workstation or a nominated monitor within the video wall.

Integrity Monitoring shall report the status of multiple elements of the VMS which shall include:

- Camera position authentication
- Video loss
- Hardware resource utilisation
- System alarms and warnings
- Storage status

3.8 CCTV Cameras

CCTV cameras shall be high quality and of a recognised manufacture and standard.

- Cameras shall be full-body, bullet or dome type and manufactured by a recognised specialist CCTV supplier with company representation in Australia for both technical support and service capabilities.
- Cameras shall be Onvif compliant and be compatible with all major Video Management Systems available in Australia.
- Cameras that are proprietary in nature or those that only work with Video Management Systems of the same manufacture will not be accepted.

Type 1 Camera

Chassis Type:	Fully Body / Bullet / Dome
Application:	Pedestrian and vehicle
Effective Resolution:	6MP
Image sensor	1/1.8″ Progressive Scan CMOS
Lens:	Varifocal – 3.8 to 9mm
Wide Dynamic Range:	140DB minimum
Minimum Illumination:	0.02 Lux (Colour)
Minimum Illumination:	0.02 Lux (Black and White)
Operating Temperature:	0°C - 60°C
Operating Humidity:	20%~ 85% RH
Transmission Medium:	TCP/IP
Power Supply:	Power over Ethernet
SD Capability:	Yes

Type 2 Camera

Chassis Type:	Pan Tilt Zoom
Application:	Pedestrian and vehicle
Chassis Type:	Dome
Application:	Pedestrian and vehicle
Effective Resolution:	2MP
Zoom:	32x optical
Wide Dynamic Range:	120DB minimum
Minimum Illumination:	0.02 Lux (Colour)
Minimum Illumination:	0.02 Lux (Black and White)
Operating Temperature:	0°C - 60°C
Operating Humidity:	20%~ 85% RH
Transmission Medium:	TCP/IP
Power Supply:	Power over Ethernet
SD Capability:	Yes

3.9 CCTV Lens

CCTV lens shall be high quality glass optics, metal cased and be supplied by a well-recognised and respected specialist optics manufacturer.

Unless specifically nominated, all lenses shall be varifocal. Final focal lengths will be agreed in conjunction with the security consultant and Council representatives to ensure optimum field of views are achieved for all cameras.

Where megapixel cameras have been specified, megapixel appropriate lens shall be used. Where day/night cameras have been nominated, day/night appropriate lens shall be used.

3.10 Camera Housing

Camera housings shall be external weatherproof and rated to a minimum of IP65. Housings shall be sealed so as to keep the housing interior free of dust and to prevent insects from entering the device. All housings shall be constructed from steel or aluminium and be powder coated to resist corrosion.

Camera housings shall incorporate fixings points to maintain the housing and associated camera in a fixed and secure position and include integrated sunshields. Housings shall include tamper resistant fittings which shall make camera access difficult without proper tools.

Housings shall be installed in a manner that eliminates any risk of galvanic corrosion occurring. The contractor shall take this into consideration before deciding on final camera positions.

3.11 SD Cards

Class 10 SD cards shall be supplied and installed to all cameras provided under this contract.

The SD cards shall be a minimum of 128GB and be suitable for high-speed, long-life surveillance applications.

They shall be rated for at least 10,000 write cycles and suitable to operate in temperatures up to 80 degrees Celsius.

SD cards shall be manufactured by Panasonic, Scandisk or Toshiba.

3.12 ANPR

Automatic Number Plate Recognition (ANPR) is a requirement of this project. ANPR cameras have been nominated to be installed at three (3) locations across the network.

These cameras will be dedicated to the automatic capture of vehicle registration plates and allow for the creation of “Black” and “White” lists and for the searching of vehicle details within the Video management System (VMS).

Along with vehicle registrations, the ANPR systems should also be able to identify:

- Vehicle type
- Vehicle colour
- Vehicle direction

ANPR can be achieved by:

- Using specialist ANPR cameras where the analytics is performed within the camera (at the edge) or,
- Through the use of a dedicated ANPR server and cameras where the analytics is performed at server level, or,
- A combination of both technologies is used.

The ANPR shall, once installed and commissioned, read and capture motor vehicle registration plates with a 98% success rate up to a maximum speed of 70kms/hr. The contractor shall be able to demonstrate this performance requirement during the witness testing stage of the project.

The contractor shall detail within their offer what type of ANPR is being proposed.

Where the proposed solution is server based, Council may elect to procure the server themselves. This can be agreed with the preferred contractor prior to final contract acceptance.

ANPR is required at pole locations 11, 12 and 13.

ANPR cameras shall be dedicated to ANPR and will be installed in addition to cameras required for general surveillance, even under circumstances where camera views may be duplicated.

3.13 CCTV Poles

A total of fifteen (15) CCTV poles are required to be supplied and installed under this contract.

The poles shall:

- Have an above ground height of at least 5 metres
- Be hexadecagon (16 sided) in shape to reduce the risk of movement in windy conditions.
- Have a calculable sail area that ensures maximum deflection at the top of the pole does not exceed 1 degree once all communications links, cameras and cabinets to be affixed to the poles have been considered.
- Be stable enough for the surveillance network to operate reliably at winds up to 100 kms/hr.
- Be hot-dipped galvanised steel to resist corrosion in accordance with AS/NZS 4680:2006.
- Include all civil works, footings and rag-bolt assemblies and traffic management as required to facilitate the installation of the poles.

Poles shall be manufactured by a specialist supplier of CCTV poles such as Ingal EPS.

The installation of the poles shall include the supply of rag-bolt assemblies and the associated civil works.

3.14 Dial Before You Dig

A total of twelve (12) CCTV poles are required to be supplied and installed under this contract.

Preferred locations have been nominated for all CCTV poles. These locations have not undergone any preliminary desktop surveys to identify any potential conflicts with services that may already be in the ground. This will need to occur prior to any poles being installed.

It is the appointed contractor's responsibility to undertake all investigations necessary, including Dial Before You Dig to ensure that the proposed locations are free of services and potential conflicts with other services.

The contractor shall liaise with all relevant authorities as well as Council representatives to ensure that the surveillance infrastructure can be installed in the proposed locations.

3.15 CCTV Server

The CCTV server will be provided by Council and is not within the scope of this contract. However, the programming of the server and workstations is the responsibility of the appointed security contractor.

The contractor shall provide to Council the required specifications for servers and workstations required under this contract. The specification for these shall be based on the latest specifications of the vendor of the nominated VMS.

3.16 CCTV Storage

CCTV storage will be provided by Council. The contractor, once appointed, shall assist Council determine what amount of storage will be required to accommodate the new cameras.

3.17 CCTV Workstations

At least two new workstations will be required. One is to be installed at Council's offices where all cameras will ultimately be managed and recorded.

A second workstation and monitor will be installed at Ballina Police Station.

The appointed security contractor is responsible for the installation and programming of the workstations and monitors but supply will be by Council.

3.18 Camera Licenses

Camera software licenses shall be provided by the contractor. This shall apply equally to both surveillance and ANPR cameras. The contractor shall liaise with Council once appointed so that the appropriate number of camera licenses can be procured for the project.

The installation and programming of the camera licenses is the responsibility of the security contractor.

3.19 Naming Conventions

All CCTV cameras are to be named in a manner that is logical and easy to follow by system operators.

Camera names and associated descriptors shall accurately and logically reflect the camera's location and field of view. Camera names and descriptors shall be approved by the project manager prior to being implemented.

4. CCTV Communications Network

4.1 General Network Requirements

The CCTV communications network shall be provided as a stand-alone Local Area Network (LAN) dedicated to the use of the proposed CCTV system. The network infrastructure shall be a managed and monitored Ethernet network that:

- Provides full duplex, high bandwidth, low latency communications and supports multicast CCTV applications.
- Supports PoE (Power-over-Ethernet) devices including CCTV cameras and network switches.
- Has the ability to generate alarms that are associated with network equipment failures.

The communications network shall be a hybrid network comprising both wireless and fibre optic communications links within the Ballina Central Business District (CBD) as shown below.

- Yellow dot is a camera location and a ground cabinet
- Green dot is ground cabinet location only
- Pink line is proposed wireless path
- Blue line is existing fibre conduit
- Green dashed line is future fibre conduit

Ballina Outer (poles 11 – 13) and Lennox Head (poles 14 & 15) will be wireless only.

All network equipment shall be by a recognised specialist manufacturer of network componentry with manufacturer support based in Australia and available for support during normal business hours.

All switches, routes, firewalls and other active components shall be setup with a host name that accurately reflects the device's location. The naming convention used shall be reflected within the operating and maintenance manuals for the project.

Council will supply a logical IP addressing scheme for the entire CCTV network which shall be documented and submitted to the appointed project manager for approval prior to programming commencing.

The entire network must be designed and installed to achieve the following minimum performance requirements:

- 99.9% availability based on a 24 hour, 7 days a week, 52 weeks a year operation.
- Allow for 50% expansion capacity without the need to install additional hardware.
- Incorporate inbuilt redundancy, so that the network is not reliant on a single path of communications.

4.2 Masts and Support Infrastructure

Any masts required to support the proposed wireless network and to enhance line-of sight between locations are the responsibility of the installing security contractor. Mast shall be adequately secured to roof space in an approved manner that complies with all local regulations.

Any fixings that penetrate or affix directly to the roof material will be appropriately flashed and sealed to ensure that joins and seals are water tight. Guyed wires shall be deployed on any masts that exceed two metres in height.

The Contractor shall include within their tender submission details of the proposed masts, fixing methods and proposed locations. The Contractor will need to demonstrate to Council exactly what is to be installed and where before any approval will be given by Council or Police to proceed with the installation.

4.3 Network Switches

Network switches shall be Industrial managed megabit/gigabit ethernet, POE capable, with sufficient inputs to accommodate the future expansion of the system by a minimum of 50%. Furthermore, they shall be designed to operate in demanding environments and shall have an operating temperature rating of at least 75 degrees C.

Network switches shall comply with the following requirements:

- A minimum of eight Ethernet RJ45 connectors. All eight of the connectors shall provide POE capability
- Support a standard Ethernet cable: patch or crossover CAT5/CAT6
- Support 1000BaseT/100BaseT/10BaseT full or half duplex
- Support auto negotiation of the transmission rate

- Support straight through or cross over auto detected cables
- Shall comply with the universal IEEE 802.3af POE standard
- Support PoE power up to 36 watts for each PoE port
- Allow real-time status monitoring of the device
- Support PoE port power feeding priority
- Support 48VDC, redundant power with reverse polarity protection
- Supports Multicast IGMP and MLD snooping and port filtering and VLAN registration

The switch shall be capable of automatically detecting the power characteristics of all POE devices. When a device is connected, the unit shall calculate the total power required with the devices attached. The switch will only supply power to the device if the new total power does not exceed the IEEE 802.3af POE standard.

4.4 Proposed Network Design

The tenderer as part of their tender submission, shall provide a comprehensive overview of the proposed communications network.

The contractor shall provide a table that details each communication nodes proposed location and its applicable design criteria. As a minimum this shall include the node number, the forecast bandwidth requirements for low and high activity levels, the forecast bandwidth budget per camera and the total bandwidth budget for each node in the network.

A sample table has been included below for reference.

Camera Bandwidth Mbps					
Node Number	Low Activity	High Activity	Bandwidth Budget	Camera Qty	Total Bandwidth Budget
1	3	15	15	3	45
2					
3					
4					

In addition, the contractor shall also provide a table that details the proposed communication links for each node and how it meets the specified performance criteria.

A sample table has been included below for reference.

Node	From	To	Total Bandwidth Budget	Downstream Capacity	Upstream capacity	Overhead 50%	Proposed Radio	Band
1	1	2	45	0	45	22.5	67.5	24
2								
3								
4								

5. CCTV Communications Network Installation Requirements and Standards

1.1 Cable Installation

All cables shall be run and installed in a professional manner in accordance with AS/ACIF S009 Wiring Rules for safety and network integrity, and AS/NZS 3080 for performance. All installed works shall meet as a minimum the standards for cable installation and management set by the client.

The Installer shall plan the cabling system and routing ensuring adequate segregation from electrical and hazardous services, ensuring system integrity and performance, ensuring that it does not present problems of maintenance or access, and ensuring there is no conflict with the operation and maintenance of other systems.

All data and telecommunications cables shall be run on its own tray and reticulation system. All main runs shall utilise cable basket and shall be sized to ensure at least 60% spare capacity for future requirements. The baskets shall be of a design and material that minimises zinc whiskers. All pathways shall be earthed as per ACIF/AS S009.

All pathway exit points shall have a bushel to ensure protection of the cable. The cable exiting the pathway shall be managed in a way to prevent excess weight on the cables. Cables shall be secured using Velcro ties (minimum 10 mm wide); no plastic/ nylon cable ties can be used for any data and communication cabling support.

Catenaries can be utilised only for short runs to the recommendations of the cabling system manufacturer. There shall not be any breaks, cuts or repairs in cabling runs. Any site damaged breaks shall be the responsibility of the contractor.

All horizontal cable runs shall be pre measured before installation to ensure no lengths exceed the 90m link distance as specified in AS/NZS 3080. If any lengths are found to exceed 90m the contractor must notify the project manager before cabling commences otherwise, it shall be the responsibility of the contractor to rectify at their own cost. The maximum bundle size of horizontal cables shall not exceed 24 x 4 pair cables.

Cables shall be neatly loomed into racks and be set out in a manner to ensure minimal congestion of cables, utilising cable management as appropriate. Cables shall be installed so as not to exceed the minimum bending radius as specified by the manufacturer.

For Category 6 cable installations, the provision of slack cable should be avoided by good design and careful selection of termination locations. However, if specified on the drawings, allow for approximately two - three metres of slack in cable runs at the FD (by J-bends or U-bends in the cabinet/rack) and possibly at the entry to the service pole or skirting duct containing the TO. Place this slack in such a manner that it is fully supported and that the minimum bending radius is maintained. Spare cable shall not be stored inside service poles or skirting ducts.

Cables shall be installed so as not to exceed the maximum hauling tension as specified by the manufacturer. All necessary pathway penetrations and access between floors is the responsibility of the contractor to provide, and to ensure all penetrations and access holes at the completion of the installation are fully sealed to local authority requirements and fire regulations.

Before cable is installed and after installation, ensure that conduit, trunking and tray is thoroughly clean of any extraneous material such as cable scraps, dust, dirt, construction debris and moisture. Any cable that has been subjected to immersion in fluid shall have the pathway dried and cleaned and the cable shall be completely replaced with new clean dry cable. Consolidation points (CP) if installed, shall be at least 15 metres away from the floor distributor.

1.2 Installation Contractor

The installation and commissioning of the communications cabling shall only be performed by approved contractors. The entire scope of works shall be performed by a single contractor - No sub-contractors are to be used. Contractors should be aware and accepting that quality assurance checks will be made on their work by engineers qualified and recommended by the vendor.

1.3 Cabling Licenses

Contractors must verify that they hold a current certification certificate for all media types from the vendor(s) they are proposing. The contractor and employees must have an ACMA Open Cabling Registration to install any form of structured cabling system within the client's buildings, or the existing communications network within the Ballina LGA. Any individual contractor performing any termination or testing must be fully certified.

1.4 Certification

Provide certification that the design complies with the requirements of AS/ACIF S009 Wiring Rules for safety and network integrity, and AS/NZS 3080 for performance.

Ensure test certificates include:

- Project title
- Details and date of test
- Instruments used, serial numbers, calibration dates
- Signature of those witnessing test
- Contractor's name
- Specific location of the item in the works

All test certificates shall be provided in a form suitable for inclusion in operation and maintenance manuals. Test Certificates are required to be dated and signed by a responsible person shall be supplied in duplicate to the project manager.

1.5 Patch / Fly Leads

Provide sufficient patch leads at each termination point for 100% of terminated jacks/outlets or as approved by the principal. Patch cable type and connector shall match the cable to which they are

connected. Patch leads shall be purchased in required lengths to ensure quality is maintained across the installation. Patch and fly leads shall not be fabricated by the contractor.

1.6 Testing and Commissioning

All cabling links/channels shall be 100% tested to verify performance and compliance under installed conditions to AS/NZS 3080:2003.

All test results shall be presented electronically on a USB in the tester's native format as well as in a pdf format (one page per test result). A copy of the tester software shall be included with the results for ease of access. Results shall also be in hard copy form with a list of the summary results and a full set of detailed results in the format of single page to each result. All test results shall be free of accidental or malicious manipulation.

Copies of all test and commissioning sheets will be included within the maintenance and operating manuals for the project.

1.7 Power Supply

240V power will be required to be supplied to each of the proposed CCTV node locations. This is the responsibility of Council and outside the scope of this project.

Council will undertake to:

1) Provide the required power supply to each pole.
2) Undertake the cabling between the power supply point and the communications cabinet which is to be supplied and installed under this contract.
3) Supply and install a general power outlet within the communications cabinet.
4) Test and certify the power installation.

1.8 Conduits

Where necessary, conduits will be used to maintain the integrity of the installed cables and shall be sized to suit the application. As a guide, conduits with a diameter of less than 20mm shall not be used.

Conduits shall be utilised wherever cables are exposed in the public space. Conduits shall be used where there is a risk of damage to the cables through environmental or other means, and where required under AS/NZS 3000:2007.

1.9 Cable Support Systems

Cable support systems shall be used to properly support all cables installed under this contract. All cable support mechanisms and practices shall strictly comply with AS/NZS 3000:2007.

1.10 Cable and Equipment Labelling

All cables and equipment cabinets installed under this contract shall be labelled to clearly indicate their function and to identify each system component.

All cabling shall be identified using a cable marking system which has been approved by the appointed Ballina Shire Council project manager.

Cable marking shall be in a format that cannot be easily removed or that will fade over time and shall indicate a cable number, a unique device identifier and a location identifier. Each cable and/or control equipment number shall be unique to each cable or device. Where the labelling is associated with a cable that terminates at multiple points, the cable number shall remain consistent.

Each cable shall be easily identifiable at each point of termination with the identification numbers clearly visible.

All cabling and equipment labelling information shall correspond with the as-installed drawings that are to form part of the operating and maintenance manuals for the project.

Each equipment cabinet, rack, and console shall contain a schedule of cable terminations, which shall indicate the purpose, point of origin and termination of each cable contained within the enclosure.

Further, the cabling system shall be fully documented on a cable schedule which shall detail the device location, equipment connection details, any auxiliary cabling and field cabling including cable markings and cable type.

6. Ancillary Equipment and Devices

6.1 Pole Mounted Cabinets

Cabinets will need to be provided by the contractor for the purposes of enclosing and securing the CCTV node network switch and the associated network and power terminations.

The cabinets shall be polycarbonate, rated to a minimum of IP66 and positioned at a height that they will not be subjected to, or at risk of vandalism. Exact cabinet positioning shall be determined in conjunction with the project manager.

Cabinets shall be sized to accommodate the network switch, power outlet and all necessary terminations. Cabinets shall be key lockable with all cabinets keyed alike.

Cabinets should also be ventilated to aid in heat dissipation from the cabinet.

Cabinets should also be installed with an air gap between the pole and the cabinets so as to reduce the risk of heat transfer from the pole into the cabinet and the network switch.

Power supply and terminations within the cabinet by be managed by Ballina Shire Council and are outside the scope of this contract.

6.2 Ground Mounted Cabinets

Ground mounted cabinets will be required at multiple locations within the Ballina CBD. Locations can be found from the proposed network map located on page 28 of this document.

Cabinets shall be BR Enclosures Field FC or equal approved, suitable for surface mounting and shall be manufactured from 1.5mm 316 stainless steel.

Cabinets shall incorporate:

- IP66 protection rating
- Flush front and rear doors with concealed hinges to minimise forced entry
- Lifting lugs (eye bolts) on enclosure top
- Plinths for corrosion protection
- 3-point locking, low profile handle to minimise damage to locking mechanism and key coded locking barrels
- Door stays to retain door in open position
- Rainhood/sunshield to minimise the effect of the elements
- Adjustable internal mounting rail system
- Reversible doors
- 3mm split aluminium gland plate

Cabinets shall be sized in conjunction with Council representatives and consider both current and future uses of the cabinets.

7. Installation - General

7.1 Pre-Approval

Prior to any works commencing, the installing contractor must submit for approval a detailed design of the proposed solution. As a minimum, this shall include a schematic that shows all devices to be installed under the contract, final camera locations and the lens size associated with each camera.

This should be submitted for approval at least one week prior to the scheduled project commencement date.

7.2 Project Management

The security contractor shall appoint a nominated company representative to undertake the role of project manager for the duration of the project. The project manager will be of considerable industry experience and be able to represent the installing contractor in all discussions related to the project including financial, commercial and technical matters.

The project manager shall be appointed on contract award and be available for the duration of the project.

7.3 Safety Management Systems

The contractor shall have in place an extensive safety management system that adequately covers all facets of the prescribed works.

This shall include risk analysis or job safety analysis check sheets for each task to be undertaken which shall be completed by the contractor prior to any works commencing. This is to include detailed traffic management plans and how traffic will be managed during the delivery of this project.

Examples of these check sheets shall be made available to the project manager prior to the works commencing.

7.4 Works Program

Tendering contractors, as part of their tender submissions, are to include a comprehensive works program in an industry recognised format such as a Gantt chart. As a minimum, the works program shall include:

a) Proposed commencement and completions dates.
b) Key milestone dates such as cable rough-in, equipment delivery, installation, system programming, commissioning and hand over.
c) Include milestone dates that the principal will be responsible for meeting such as the issuing of permits or work authorities.
d) Approval of design documentation, drawings and equipment.
e) The total number of works days required to deliver the project and the resources allocated to the delivery of the project.

f) Take into account public holidays, rostered days off and weekends where there will be no activity on the project.

It is the intention of Ballina Shire Council to award this contract on or about …ADD DATE HERE with works to commence immediately. It is intended that the project will be completed by ADD DATE HERE and as such the contractor's works program should reflect these milestone dates.

The contractor should document within their offer any items of equipment or resources that could impact the contractor's ability to meet the proposed completion date.

Please note, that due to the importance of this project and its completion date, Council will be looking for reassurance that the works program can be achieved.

Council may elect to enforce this completion date by:

1) Seeking written undertakings from the appointed company directors that the completion date will be met, and
2) Requesting a 5% contract retention by way of a bank guarantee that would be forfeited if the completion date was missed.
3) Other measures as agreed between both parties.

7.5 Lift and Hire Equipment

To undertake the works, the contractor will be expected to include the provision of booms and/or scissor lifts and any other specialist equipment necessary to complete the whole of the works.

Operators must be appropriately licensed to operate such equipment and evidence of such licenses shall be provided on request.

Use of heavy equipment within trafficable areas will require the appointed contractor to undertake best practice from a pedestrian and vehicle management perspective. Details of how the contractor proposes to undertake traffic management shall be provided as part of the contractor's tender submission for the project.

4.5 Traffic Management

Traffic management is a requirement of this contract and will need to be considered a key component of the overall project.

All poles to be installed under this contract are situated immediately adjacent to roadways. As such, the contractor shall provide with their proposal, a copy of their proposed traffic management plan for the project.

This should detail:

1) The proposed times when traffic lanes will be disrupted.
2) The length of time the disruption is likely to occur.

3) How the lane closures will be managed to ensure the safety of project personnel while minimising disruption to the immediate local area.
4) Who will be overseeing the traffic management while deployed. This should include their past experience and qualifications to manage this task. Where a specialist traffic management organisation is being sub-contracted to provide this service, their details and past experience should be included in the contractor's proposal for the project.

8. System Commissioning and Hand Over

8.1 Witness Testing

At the completion of the works and immediately prior to practical completion being given, the contractor shall undertake witness testing in conjunction with the security consultant and Council representatives.

During the course of this witness testing, the contractor shall demonstrate the system to be fully operational and installed in accordance with the project guidelines and specifications.

This shall include:

- Camera poles are installed.
- Cameras appropriately installed, focussed and with correct fields of view.
- ANPR cameras are operating at the specified performance levels.
- Wireless networks are operational and have been certified by the nominated installer.
- Operating and maintenance manuals have been provided to the client.
- All training has been provided.

During this period, the consultant may request programming or configuration changes to be undertaken in order to achieve the best possible outcome for the client and system operators.

It is envisaged that witness testing will take up to two full days to complete and the contractor is to make an allowance for this within their tender submission.

8.2 Testing and Certification

The successful Contractor shall undertake a comprehensive testing and certification process of the entire installation prior to the new systems being handed over.

Test sheets documenting the testing and certification process shall be submitted as part of the contractors Quality Assurance processes with copies included in the operating and maintenance manuals.

8.3 Operating and Maintenance Manuals

Operating and maintenance manuals shall be provided by the contractor prior to Practical Completion being awarded. These shall be delivered to the nominated project manager on completion of the contracted works.

Manuals shall include:

a) Specification and data sheets for all equipment installed under this contract
b) Shall be bound in three-ring, A4 size hard cover binders with the project name and details clearly displayed on the front cover and spine.
c) Include the names and contact details of the Contractor's key personnel involved in delivery of the project.

d) Include emergency contact details including phone numbers that can be reached on a 24/7 basis should emergency service be required.
e) Schematics and technical documentation that clearly demonstrates how the system has been installed and configured.
f) Operating manuals that clearly explain how to use the system.

A minimum of three hard copies and one soft copy shall be provided.

9. System Maintenance

9.1 Preventative Maintenance

Tenderers shall include within their offer preventative maintenance pricing to be undertaken during the defect's liability period. This shall include the testing of all systems associated with this contract as well as two scheduled visits to undertake the cleaning of all cameras.

The client, at their discretion, may elect to engage the services of the installing contractor for a further period once the defects liability period has expired.

Tenderers should as part of their offer for the project submit an optional price for the preventative maintenance of the entire installation for a further three years.

10. Form of Tender

10.1 Compliance Statement

Tender submissions shall include a compliance statement that clearly identifies any areas of non-compliance with the specifications(s). The contractor shall identify the specific clause within the compliance statement and clearly document the reason for non-compliance.

The tenderer's compliance statement shall indicate the level of compliance with each clause of the specification.

Each clause should be addressed in turn and responded to in the following format:

- Complies – The tenderer fully complies with the associated clause.
- Part Complies – The tender complies but with a level of non-compliance. In this instance the tenderer is to document the level of non-compliance.
- Does Not Comply – The tenderer does not comply at all with the clause.

In the event that a compliance statement is not provided with the contractor's tender submission, the contractor will be deemed to have accepted this specification and associated tender documentation without exception.

10.2 Equipment Schedule

Tender submissions shall include a schedule of all major equipment to be installed under this contract. As a minimum this shall include system components such as CCTV control equipment including servers and external storage, wireless and communications hardware and repeaters, workstations and monitors, VMS software, system licenses, cameras, housings, network switches, media converters, power supplies and equipment racks.

As a minimum, the schedule should include the make, model and quantity of equipment the contractor proposes to use in undertaking the prescribed works. Once approved, equipment shall not be substituted without prior consent of the consultant.

10.3 Unit Rate Schedules

Tender submissions shall include a schedule showing the units rates associated with each item of the contract.

Unit rate pricing shall be provided for equipment specified under the contract as well as labour rates, maintenance rates and any optional items requested be provided.

11. Tender Schedules

11.1 Schedule of Prices – Tender Price Breakdown

This form shall be used as the basis for evaluating tender submissions.

Item	Price
CCTV Communications Network - Complete	$
CCTV Cameras including Housings	$
Network Switches - All	$
CCTV Node Enclosures	$
CCTV poles incl installation	$
System Installation	$
Traffic Management	$
System Commissioning and Programming	$
Witness Testing	$
Project Management	$
Client Training	$
Warranty Provision and DLP Maintenance	$
Travel and Accommodation	$
Sub Total	$
GST	$
Quoted Price	$

Tenderer		Phone	
Address		Email	
Signed		Date	
Witness		Date	

This Tender Form must be completed in full and returned as part of the tender submission.

11.2 Schedule of Prices – Unit Rates

This form shall be used as the basis for evaluating tender submission and assessing costs of variations that may occur during the contract period or as determined by the project manager. Prices shall be quoted exclusive of GST.

Item	Price
Wireless radio link	$
CCTV Camera including Lens and Housings – Type A	$
CCTV Camera including Lens and Housings – Type B	$
CCTV Node Network Switches	$
CCTV Node Enclosures	$
CCTV Pole incl installation	$
Traffic Management	$
Installation Labour per Hour	$
Commissioning Labour per Hour	$
Project Management per Hour	$
Travel rates per Kilometre	$
Accommodation Rates per Night	$

Tenderer _____ Phone _____

Address _____ Email _____

Signed _____ Date _____

Witness _____ Date _____

This Tender Form must be completed in full and returned as part of the tender submission.

11.3 Schedule of Prices – Maintenance Pricing

This form shall be used as the basis for evaluating tender submissions and assessing the current and future costs associated with system maintenance.

Prices quoted shall be exclusive of GST.

Item	Price
Preventive Maintenance during DLP	$
Preventative Maintenance Year 2	$
Preventative Maintenance Year 3	$
Preventative Maintenance Year 4	$
Call out – Business Hours	$
Call Out – After Hours	$
Service Rates – Business Hours	$
Service Rates – After Hours	$

Tenderer		Phone	
Address		Email	
Signed		Date	
Witness		Date	

This Tender Form must be completed in full and returned as part of the tender submission.

11.4 Equipment Schedule

The contractor is to list all major items of equipment proposed to be installed under this contract. As a minimum, the make, model and quantity of the proposed equipment shall be provided.

Description	Make	Model	Quantity Offered

Tenderer _____ Phone _____

Address _____ Fax _____

Signed _____ Date _____

Witness _____ Date _____

This Tender Form must be completed in full and returned as part of the tender submission.

11.5 Statement of Compliance

A comprehensive statement of compliance is to be completed and included with the contractor's tender submission.

The contractor shall attach additional information as required.

Tenderer	_____	Phone	_____
Address	_____	Fax	_____
Signed	_____	Date	_____
Witness	_____	Date	_____

This Tender Form must be completed in full and returned as part of the tender submission.

12. Tender Schedules

12.1 Proposed CCTV Coverage

PNL BAS OR SEC PANEL
DOR DOOR MONITOR CONTACT
SLRT SONALERT *(SCREAMER)*
HDR HEAVY DUTY REED SWITCH
DUR DURESS BUTTON
SEI SEISMIC DETECTOR
HU HOLDUP BUTTON
WL WARNING LIGHT
BGL BREAK GLASS
RAS REMOTE ARMING STATION
PIR 90°MOTION DETECTOR
PIR 360°MOTION DETECTOR

ACCESS CONTROL LEGEND

ACP ACCESS CONTROL PANEL
CRD CARD READER
KEY KEY OVERRIDE
DCP DOOR CODE PAD
REX REQUEST TO EXIT BUTTON
EST ELECTRIC STRIKE LOCK
MAG MAGNETIC LOCK
EML ELECTRIC MORTICE LOCK
SMD SMOKE DETECTOR
IND INDICATOR LIGHT (LED)
PED ACCESS CONTROL PEDESTAL *("D") DUAL HEIGHT)*
LP ENTRY/EXIT LOOP
DOOR TYPE *(REFER DOOR TYPE LEGEND)*

CCTV LEGEND

FXD FIXED CCTV CAMERA
PTZ PAN TILT ZOOM CAMERA
FDC FIXED DOME CAMERA
THM THERMAL CCTV CAMERA
PL CCTV POLE
RPT REPEATER

COMMUNICATIONS LEGEND

M MASTER INTERCOM POINT
INT INTERCOM POINT
VINT VIDEO INTERCOM POINT
MIC MICROPHONE
SPK SPEAKER

CONTROL ROOM LEGEND

MON MONITOR
PVR PERSONAL VIDEO RECORDER
WST WORK STATION
KST KIOSK STATION
PRT PRINTER *(VISITOR MANAGEMENT)*
SWC ETHERNET SWITCH
RCK EQUIPMENT RACK *(NUMBER INDICATES RU UNITS)*
PC COMPUTER
PNL BAS OR SEC PANEL
KEY KEY SAFE
ECR EQUIPMENT COMMS RACK
NVR NETWORK VIDEO RECORDER

VEHICLE ARREST LEGEND

BLD BOLLARD - IMPACT BARRIER
BLD RETRACTABLE
RTP ROAD TRAP

SECURITY LEGEND

RELOCATE	NEW	EXISTING

ACCESS CONTROL LEGEND
CCTV LEGEND
COMMUNICATIONS LEGEND
CONTROL ROOM LEGEND
VEHICLE ARREST LEGEND

DOOR TYPES

xx-x /KO = Key Override (e.g. 1A-E/KO)

DR/TYPE	LEAF	DESCRIPTION	ENTRY EQUIPMENT	LOCK	EQUIPMENT	EXIT EQUIPMENT	SYMBOL
1	SINGLE	SECURITY AND ACCESS CONTROL	CARD READER	MORTICE LOCK	DOTL REED SW	FREE HANDLE	DR TYPE 1
1A	SINGLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	MORTICE LOCK	DOTL REED SW	FREE HANDLE	DR TYPE 1A
2	SINGLE	SECURITY AND ACCESS CONTROL	CARD READER	ELECTRIC STRIKE	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 2
2A	SINGLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	ELECTRIC STRIKE	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 2A
2B	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	CARD READER	ELECTRIC STRIKE	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 2B
2C	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	PIN PROX / KEYPAD	ELECTRIC STRIKE	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 2C
3	SINGLE	SECURITY AND ACCESS CONTROL	CARD READER	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 3
3A	SINGLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 3A
3B	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	CARD READER	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 3B
3C	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	PIN PROX / KEYPAD	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 3C
3D	DOUBLE	SECURITY AND ACCESS CONTROL	CARD READER	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 3D
3E	DOUBLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 3E
3F	DOUBLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	CARD READER	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 3F
3G	DOUBLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	PIN PROX / KEYPAD	MAGNETIC LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 3G
4	SINGLE	SECURITY AND ACCESS CONTROL	CARD READER	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 4
4A	SINGLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 4A
4B	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	CARD READER	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 4B
4C	SINGLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	PIN PROX / KEYPAD	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 4C
4D	DOUBLE	SECURITY AND ACCESS CONTROL	CARD READER	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 4D
4E	DOUBLE	SECURITY AND ACCESS CONTROL	PIN PROX / KEYPAD	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS EGRESS BUTTON	DR TYPE 4E
4F	DOUBLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	CARD READER	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 4F
4G	DOUBLE	SECURITY AND ACCESS CONTROL ANTI PASSBACK	PIN PROX / KEYPAD	ES8000 'V' LOCK	DOTL REED SW	BREAK GLASS CARD READER	DR TYPE 4G

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-07-24	FOR REVISION	RB	LPD
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

NOTES

NOTES

DRAWN BY:	RB	DATE:23-07-2024
DESIGNED BY:	LPD	DATE: XX/XX/XX
VERIFIED BY:	LPD	DATE: XX/XX/XX
SCALE:	XX	DATE: XX/XX/XX

CLIENT

BUILDER

SECURITY CONSULTANT

Matryx Consulting
Melbourne | Sydney | Dubai
PH: 1300 190 160
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PROJECT

Ballina Shire Council

DRAWING TITLE

Legend of Symbols

JOB NO. BSCCCTV		SHEET	1 OF 12
DWG NO. 00		REV 00	SIZE A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
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NOTES

FOCAL LENGTHS SHOWN ARE INDICATIVE ONLY. VARIFOCAL LENSES TO BE USED FOR ALL FIXED CAMERAS.

FIELDS OF VIEW SHOWN REPRESENT RECOGNITION LEVEL COVERAGE. ACTUAL VIEWS WILL EXCEED THOSE SHOWN.

PTZ CAMERA POSITIONS TO BE DECIDED PRIOR TO INSTALLATION.

NOTES

DRAWN BY:	RB	DATE:	23-07-2024
DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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ballina shire council

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PROJECT

Ballina Shire Council

DRAWING TITLE

Locations 1 - 3

JOB NO.	BSCCCTV	SHEET	2 OF 12
DWG NO.	01	REV 02	SIZE A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
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-	-	-	-	-

NOTES

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NOTES

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DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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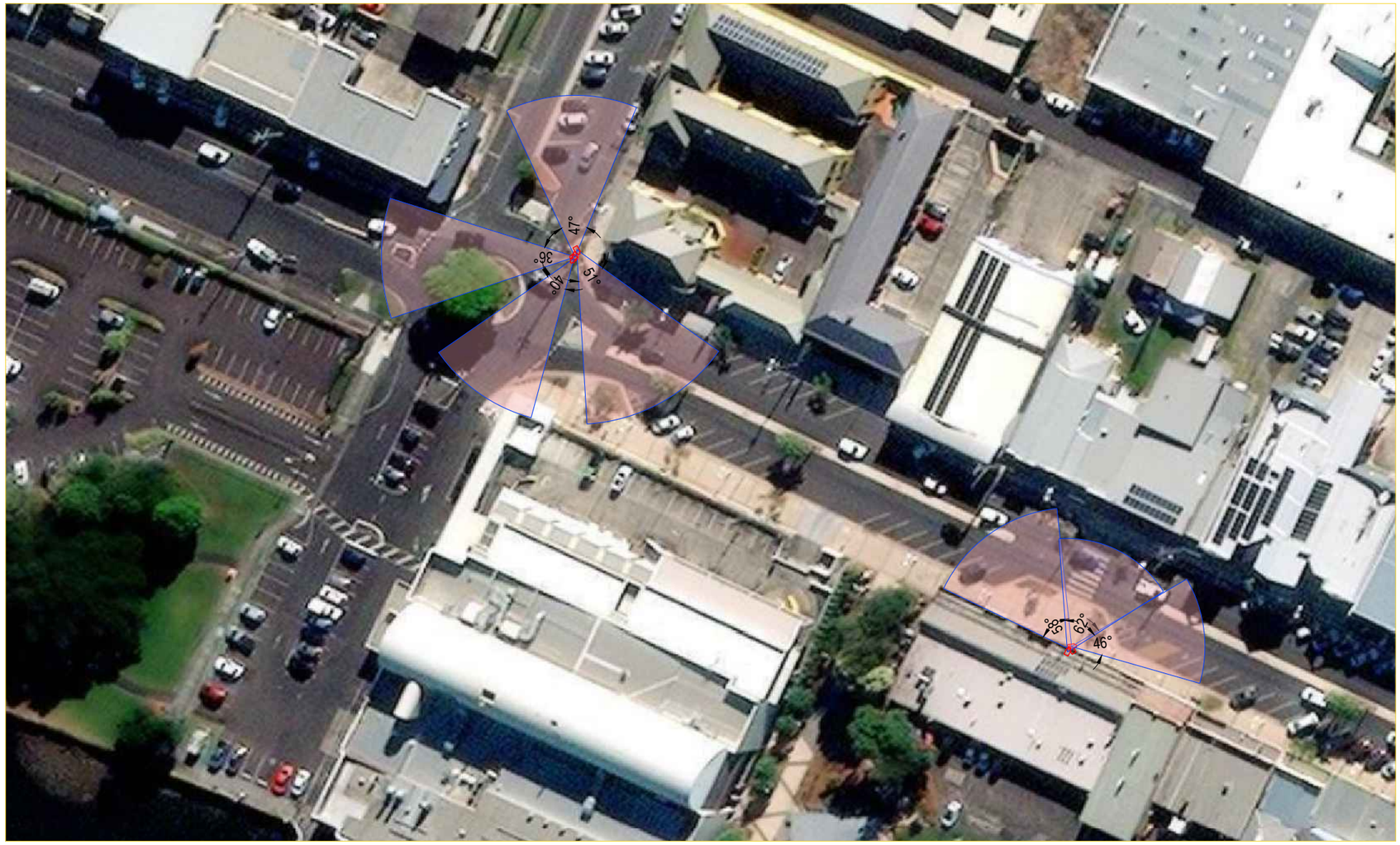
Ballina Shire Council

DRAWING TITLE

Locations 4 & 5

JOB NO. BSCCCTV		SHEET	3 OF 12
DWG NO. 02		REV 02	SIZE A3



REVISIONS

REV	DATE	COMMENT	BY	APP
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-	-	-	-	-
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NOTES

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NOTES

DRAWN BY:	RB	DATE:	23-07-2024
DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Locations 6 & 7

JOB NO.	BSCCCTV	SHEET	4 OF 12
DWG NO.	03	REV 02	SIZE A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
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-	-	-	-	-
-	-	-	-	-
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NOTES

DRAWN BY:	RB	DATE:	23-07-2024
DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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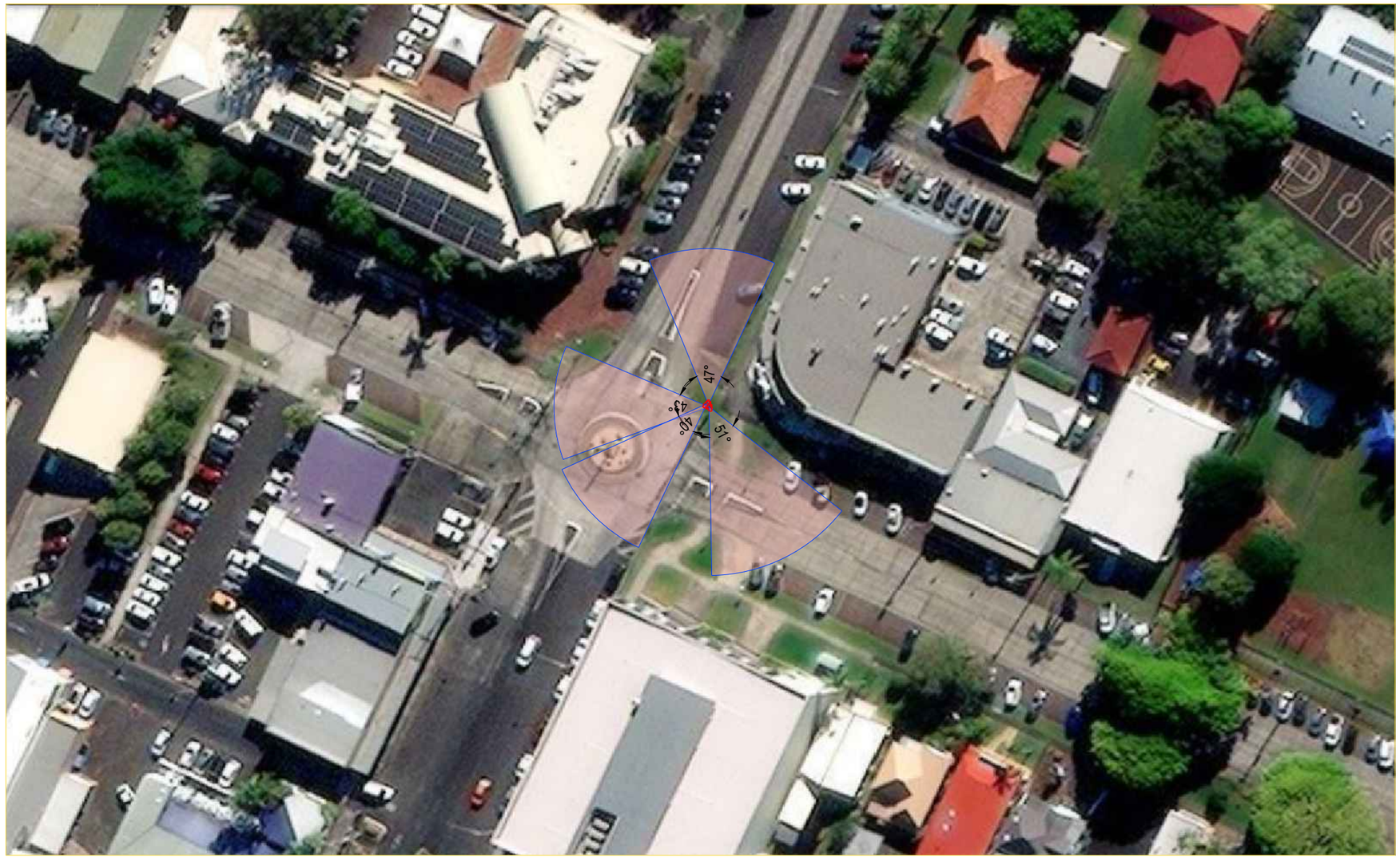
PROJECT

Ballina Shire Council

DRAWING TITLE

Locations 8 & 9

JOB NO.	BSCCCTV	SHEET	5 OF 12
DWG NO.	04	REV 02	SIZE A3



REVISIONS

REV	DATE	COMMENT	BY	APP
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NOTES

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DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Location 10

JOB NO.	BSCCCTV	SHEET	6 OF 12
DWG NO.	05	REV 02	SIZE A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
-	-	-	-	-
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VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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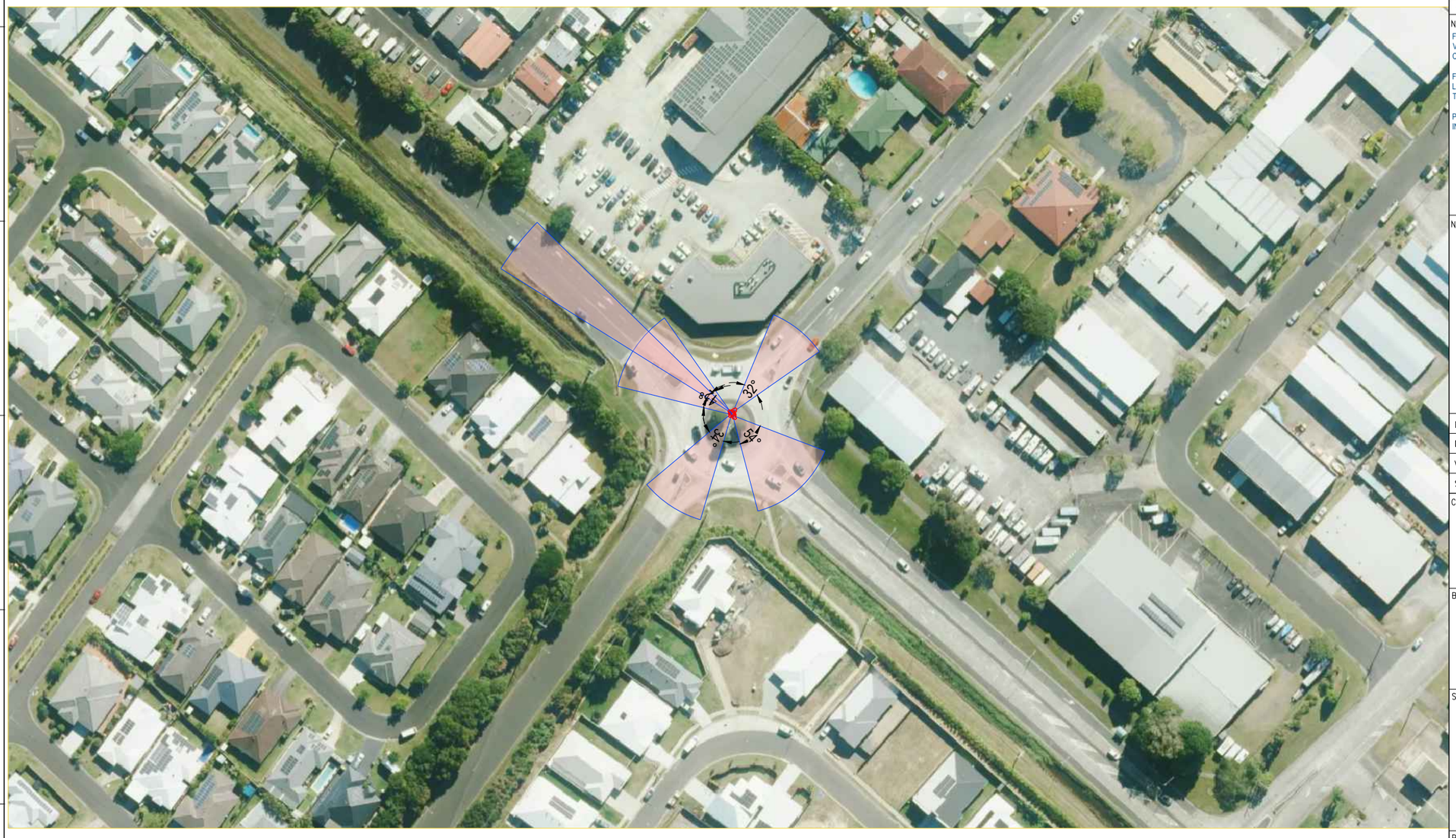
PROJECT

Ballina Shire Council

DRAWING TITLE

Location 11

JOB NO. BSCCCTV		SHEET	7 OF 12
DWG NO. 06		REV 02	SIZE A3



REVISIONS

REV	DATE	COMMENT	BY	APP
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NOTES

DRAWN BY:	RB	DATE:23-07-2024
DESIGNED BY:	LPD	DATE: XX/XX/XX
VERIFIED BY:	LPD	DATE: XX/XX/XX
SCALE:	XX	DATE: XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Location 12

JOB NO. BSCCCTV		SHEET	8 OF 12
DWG NO. 07	REV 02	SIZE	A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
-	-	-	-	-
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DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Location 13

JOB NO.	BSCCCTV	SHEET	9 OF 12
DWG NO.	08	REV 02	SIZE A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
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DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Location 14

JOB NO.	BSCCCTV	SHEET	10 OF 12
DWG NO.	9	REV	02
		SIZE	A3

REVISIONS

REV	DATE	COMMENT	BY	APP
00	23-03-23	FOR REVISION	RB	LPD
-	-	-	-	-
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NOTES

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DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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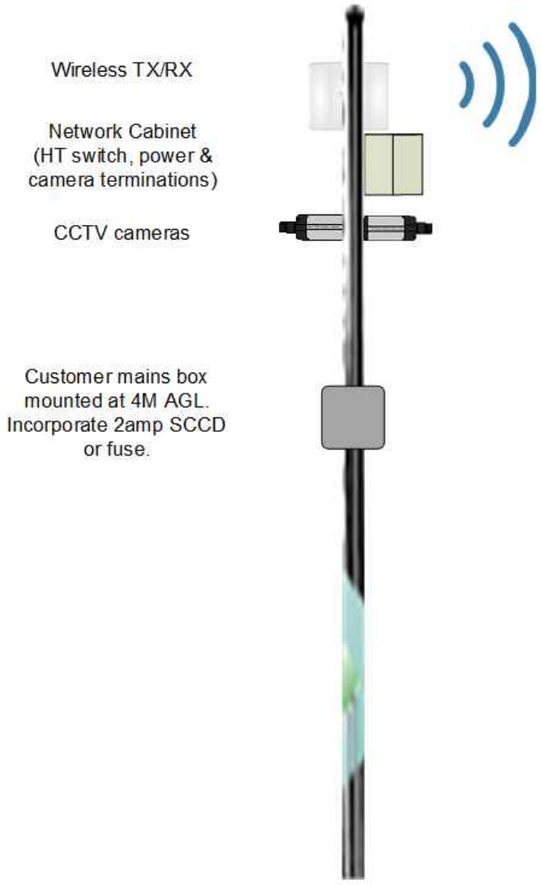
PROJECT

Ballina Shire Council

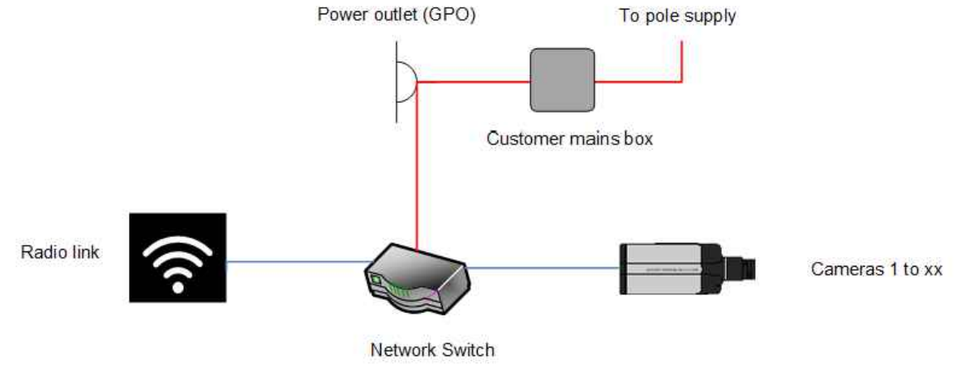
DRAWING TITLE

Location 15

JOB NO.	BSCCCTV	SHEET	11 OF 12
DWG NO.	10	REV 02	SIZE A3



Typical Pole



Legend

Power cabling

Ethernet cabling

REVISIONS				
REV	DATE	COMMENT	BY	APP
00	23-07-24	FOR REVISION	LPD	LPD

NOTES

NOTES

DRAWN BY:	RB	DATE:	23-07-2024
DESIGNED BY:	LPD	DATE:	XX/XX/XX
VERIFIED BY:	LPD	DATE:	XX/XX/XX
SCALE:	XX	DATE:	XX/XX/XX

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PROJECT

Ballina Shire Council

DRAWING TITLE

Typical Pole
Line Diagram

JOB NO.	BSCCCTV	SHEET	13 OF 13
DWG NO.	12	REV	00 SIZE A3

From: LEUT ANC Peter Marsh <[redacted]>
Sent: Monday, 12 January 2026 12:35 PM
To: Katie Miller <[redacted]>
Cc: APS Amanda Lond-Gemmell <[redacted]>; kathryn.sykes[redacted]
Simon van Kempen <[redacted]>; [redacted]; LCDR ANC Matt Neville
<[redacted]>
Subject: CM - Re: Request for Meeting - Unit Committee TS Lismore Incorporated - 26 Endeavour Close Ballina [SEC=OFFICIAL]

OFFICIAL

Good morning Katie,

Thank you for your email. Following from our conversation during your visit to 26 Endeavour Close, Ballina, I wish to formally advise that all the structures on the site, main building, boat shed, outbuildings, smaller sheds, boat ramp and parade ground, were constructed through fund raising by cadets, staff, unit support committee and various groups with an interest in the success of the youth program, naval and veteran associations, Ballina RSL etc, and others within the community, along with sponsorship from local businesses and volunteer labour.

All these structures, erected over many years by donation, fund raising and volunteer work, has substantially increased the value of the property at 26 Endeavour Close, Ballina, to the extent, that Ballina Shire Council, now stands to receive considerable profit from the sale or commercial lease of the property, with these improvements.

In addition, maintenance to these bulidings and structures was initially through community fund raising, which over the years began to degrade. In the last lease period, defence has provided maintence to the buildings as per the lease agreement, further enhancing the value of the property and bringing the property back into a safe and occupyable space.

Whilst the Australian Navy Cadets is proudly sponsored by the Royal Australian Navy, that sponsorship does not extend to funds being allocated to cadet units for land, or buldings. The sponsorship is limited in its scope and provides uniforms, boats, some logisical support for activites, and is the lowest priority in terms of defence spending. Cadet units, specifically TS Lismore are operated primarily through donation of equipment and fund raising within the community, in order to fund some activities, and to purchase items and equipment as required. This fund raising is the responsibility of the Unit Support Committee, and is a registered charity organisation.

With the current lease at 26 Endeavour Close ending in May 2026, defence has decided TS Lismore will be relocated to existing defence estate in Lismore. TS Lismore in effect, has nowhere else to go.

In November 2025, I attended a meeting at 41 Battalion RNSWR, to identify where TS Lismore could occupy space. A demountable building was identified as a location where TS Lismore could conduct its administraive activities, there were no real solutions for storage of uniforms, equiment, boats and trailers, other than on open air structure with a low roof overhead. In effect TS Lismore is forced to downsize our footprint from all the bulidings at 26 Endeavour Close, Ballina, into one demountable building. As afore mentioned, there is no defence funding for any existing, or new buildings, or structures for TS Lismore to move into.

As TS Lismore, the Unit Support Committee, the community and Verteran Organisations, have all over the years, invested large amounts of time and money into the infustracture and buldings at 26 Endeavour Close, Ballina, contributing immensly to the value of the propery, I would ask that Ballina Shire Council consider compensation to TS Lismore to the value of $60,000. This compensation would allow TS Lismore to erect a new boat shed, on a concrete slab, with power and water connected. This shed would then house boats, trailers and equipment currently stored within the boat shed at 26 Endeavour Close, Ballina. Thank you for supporting the youth of the Northern Rivers, submitted for your consideration.

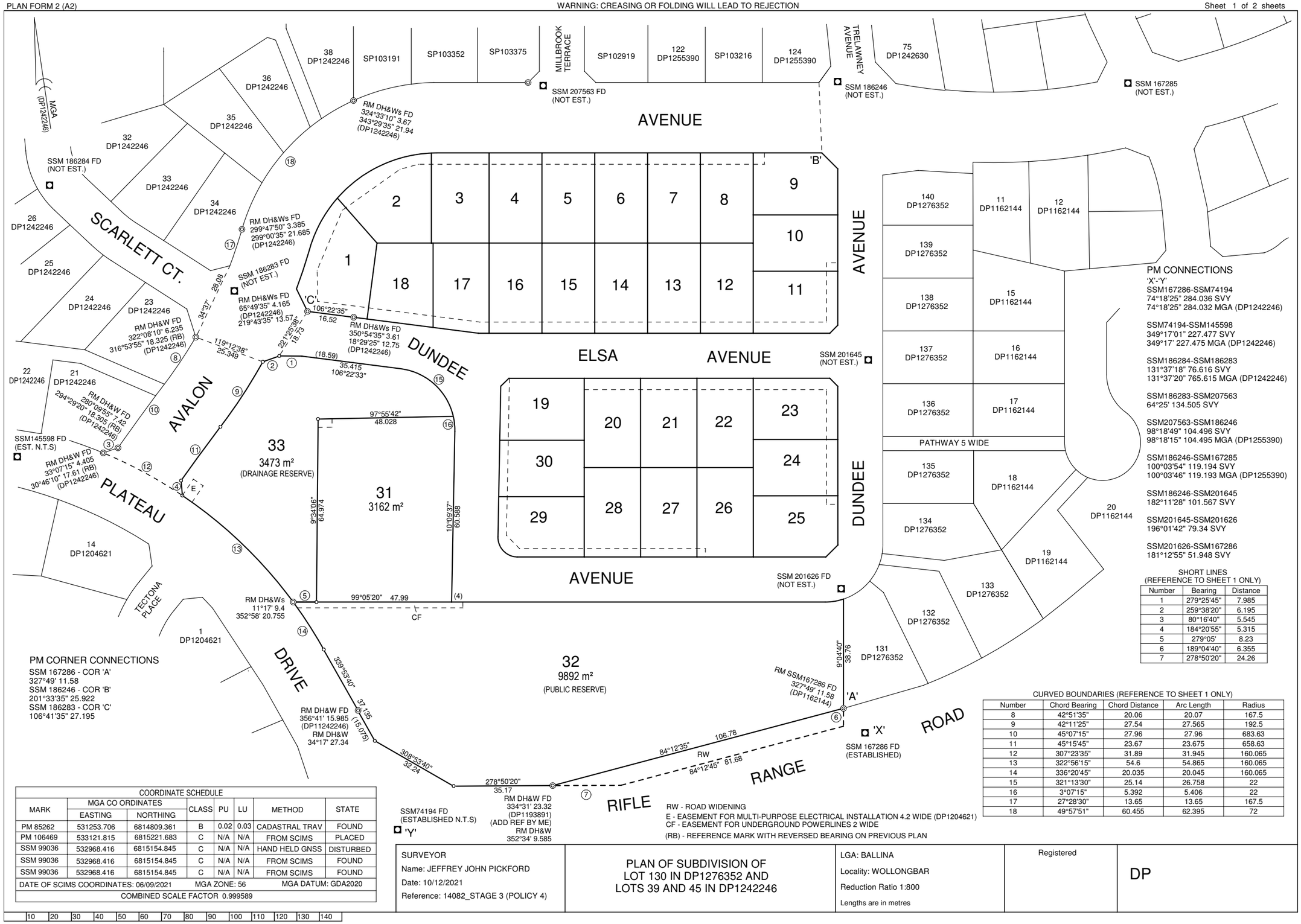
Yours sincerely

Peter Marsh
Lieutenant, ANC
Commanding Officer
Training Ship Lismore | Taipan Flotilla

[redacted]

Service | Courage | Respect | Integrity | Excellence

PLAN FORM 2 (A2) — WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION — Sheet 1 of 2 sheets



PM CONNECTIONS
'X'-'Y'
SSM167286-SSM74194
74°18'25" 284.036 SVY
74°18'25" 284.032 MGA (DP1242246)

SSM74194-SSM145598
349°17'01" 227.477 SVY
349°17' 227.475 MGA (DP1242246)

SSM186284-SSM186283
131°37'18" 76.616 SVY
131°37'20" 765.615 MGA (DP1242246)

SSM186283-SSM207563
64°25' 134.505 SVY

SSM207563-SSM186246
98°18'49" 104.496 SVY
98°18'15" 104.495 MGA (DP1255390)

SSM186246-SSM167285
100°03'54" 119.194 SVY
100°03'46" 119.193 MGA (DP1255390)

SSM186246-SSM201645
182°11'28" 101.567 SVY

SSM201645-SSM201626
196°01'42" 79.34 SVY

SSM201626-SSM167286
181°12'55" 51.948 SVY

SHORT LINES
(REFERENCE TO SHEET 1 ONLY)

Number	Bearing	Distance
1	279°25'45"	7.985
2	259°38'20"	6.195
3	80°16'40"	5.545
4	184°20'55"	5.315
5	279°05'	8.23
6	189°04'40"	6.355
7	278°50'20"	24.26

CURVED BOUNDARIES (REFERENCE TO SHEET 1 ONLY)

Number	Chord Bearing	Chord Distance	Arc Length	Radius
8	42°51'35"	20.06	20.07	167.5
9	42°11'25"	27.54	27.565	192.5
10	45°07'15"	27.96	27.96	683.63
11	45°15'45"	23.67	23.675	658.63
12	307°23'35"	31.89	31.945	160.065
13	322°56'15"	54.6	54.865	160.065
14	336°20'45"	20.035	20.045	160.065
15	321°13'30"	25.14	26.758	22
16	3°07'15"	5.392	5.406	22
17	27°28'30"	13.65	13.65	167.5
18	49°57'51"	60.455	62.395	72

PM CORNER CONNECTIONS
SSM 167286 - COR 'A'
327°49' 11.58
SSM 186246 - COR 'B'
201°33'35" 25.922
SSM 186283 - COR 'C'
106°41'35" 27.195

COORDINATE SCHEDULE

MARK	MGA CO ORDINATES EASTING	MGA CO ORDINATES NORTHING	CLASS	PU	LU	METHOD	STATE
PM 85262	531253.706	6814809.361	B	0.02	0.03	CADASTRAL TRAV	FOUND
PM 106469	533121.815	6815221.683	C	N/A	N/A	FROM SCIMS	PLACED
SSM 99036	532968.416	6815154.845	C	N/A	N/A	HAND HELD GNSS	DISTURBED
SSM 99036	532968.416	6815154.845	C	N/A	N/A	FROM SCIMS	FOUND
SSM 99036	532968.416	6815154.845	C	N/A	N/A	FROM SCIMS	FOUND

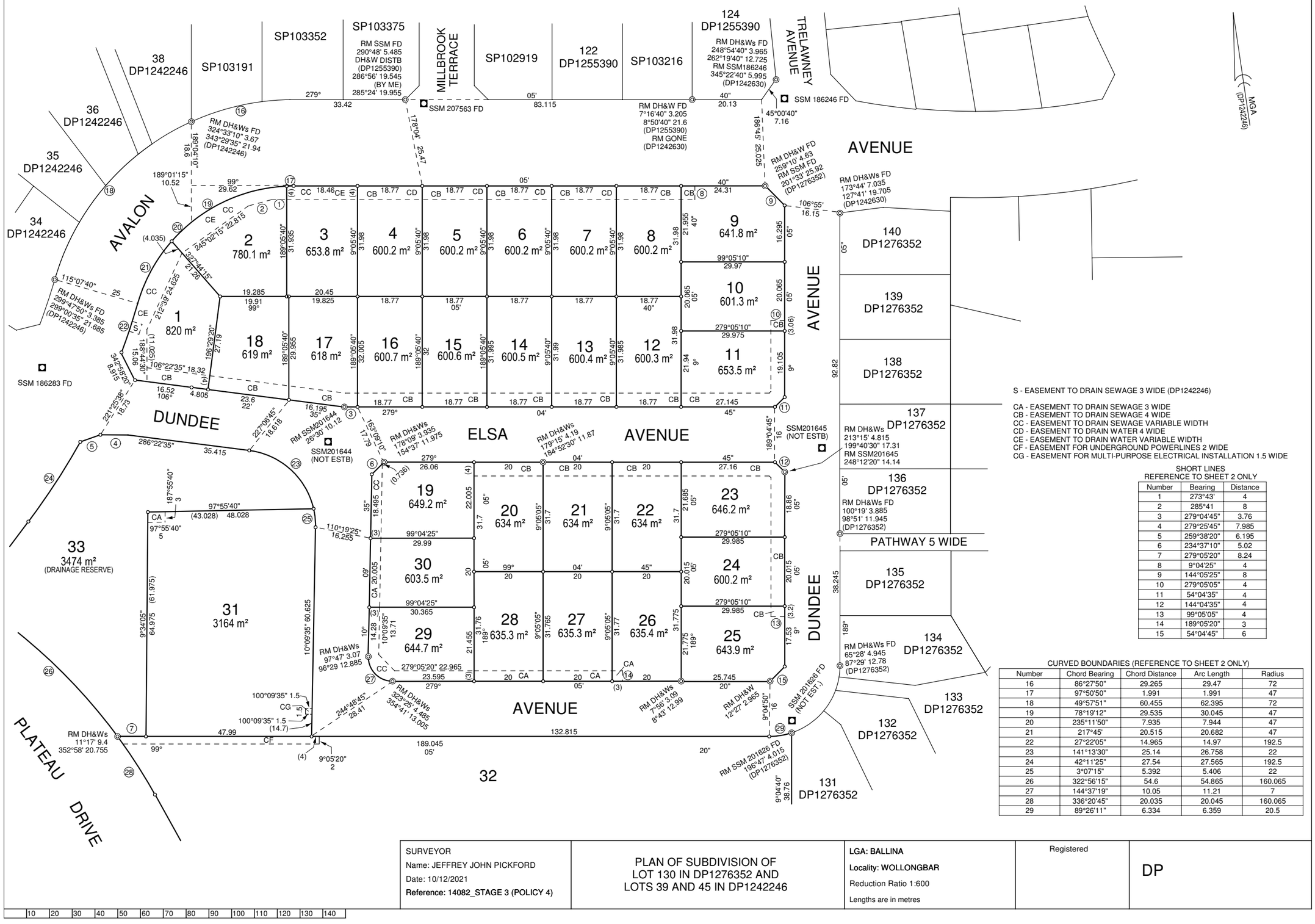
DATE OF SCIMS COORDINATES: 06/09/2021 — MGA ZONE: 56 — MGA DATUM: GDA2020
COMBINED SCALE FACTOR 0.999589

RW - ROAD WIDENING
E - EASEMENT FOR MULTI-PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE (DP1204621)
CF - EASEMENT FOR UNDERGROUND POWERLINES 2 WIDE
(RB) - REFERENCE MARK WITH REVERSED BEARING ON PREVIOUS PLAN

SURVEYOR Name: JEFFREY JOHN PICKFORD Date: 10/12/2021 Reference: 14082_STAGE 3 (POLICY 4)	PLAN OF SUBDIVISION OF LOT 130 IN DP1276352 AND LOTS 39 AND 45 IN DP1242246	LGA: BALLINA Locality: WOLLONGBAR Reduction Ratio 1:800 Lengths are in metres	Registered DP

10 20 30 40 50 60 70 80 90 100 110 120 130 140

PLAN FORM 2 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 2 of 2 sheets



S - EASEMENT TO DRAIN SEWAGE 3 WIDE (DP1242246)

CA - EASEMENT TO DRAIN SEWAGE 4 WIDE
CB - EASEMENT TO DRAIN SEWAGE 4 WIDE
CC - EASEMENT TO DRAIN SEWAGE VARIABLE WIDTH
CD - EASEMENT TO DRAIN WATER 4 WIDE
CE - EASEMENT TO DRAIN WATER VARIABLE WIDTH
CF - EASEMENT FOR UNDERGROUND POWERLINES 2 WIDE
CG - EASEMENT FOR MULTI-PURPOSE ELECTRICAL INSTALLATION 1.5 WIDE

SHORT LINES
REFERENCE TO SHEET 2 ONLY

Number	Bearing	Distance
1	273°43'	4
2	285°41	8
3	279°04'45"	3.76
4	279°25'45"	7.985
5	259°38'20"	6.195
6	234°37'10"	5.02
7	279°05'20"	8.24
8	9°04'25"	4
9	144°05'25"	8
10	279°05'05"	4
11	54°04'35"	4
12	144°04'35"	4
13	99°05'05"	4
14	189°05'20"	3
15	54°04'45"	6

CURVED BOUNDARIES (REFERENCE TO SHEET 2 ONLY)

Number	Chord Bearing	Chord Distance	Arc Length	Radius
16	86°27'50"	29.265	29.47	72
17	97°50'50"	1.991	1.991	47
18	49°57'51"	60.455	62.395	72
19	78°19'12"	29.535	30.045	47
20	235°11'50"	7.935	7.944	47
21	217°45'	20.515	20.682	47
22	27°22'05"	14.965	14.97	192.5
23	141°13'30"	25.14	26.758	22
24	42°11'25"	27.54	27.565	192.5
25	3°07'15"	5.392	5.406	22
26	322°56'15"	54.6	54.865	160.065
27	144°37'19"	10.05	11.21	7
28	336°20'45"	20.035	20.045	160.065
29	89°26'11"	6.334	6.359	20.5

SURVEYOR Name: JEFFREY JOHN PICKFORD Date: 10/12/2021 **Reference: 14082_STAGE 3 (POLICY 4)**	PLAN OF SUBDIVISION OF LOT 130 IN DP1276352 AND LOTS 39 AND 45 IN DP1242246	**LGA: BALLINA** **Locality: WOLLONGBAR** Reduction Ratio 1:600 Lengths are in metres	Registered	DP

10 20 30 40 50 60 70 80 90 100 110 120 130 140