

Western Sydney Aerotropolis

Initial Precincts

Draft Aboriginal and Non-Aboriginal Cultural Heritage Assessment

Prepared for Western Sydney Planning Partnership

October 2020 – Draft

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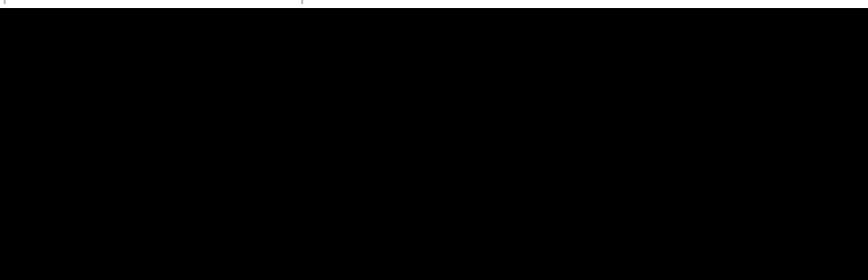
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Executive Summary

This report provides a strategic overview of the Aboriginal, built and historical archaeological heritage issues for the Western Sydney Aerotropolis. This document is principally a desktop study, with limited fieldwork possible due to COVID-19 restrictions during the drafting period. Consultation has also been undertaken with Aboriginal stakeholders and other parties involved in the Aerotropolis project. This document provides a high-level analysis of the key heritage issues identified to date, and areas where further detailed analysis will be required as proposals evolve and develop for the various precincts of the Aerotropolis.

Aboriginal heritage

This phase of ongoing work relating to Aboriginal heritage for the Aerotropolis has involved preliminary research and consultation. This includes a review of previous archaeological studies in the region, historical research, preliminary cultural values mapping, and desktop research. Within the five precincts of the current study there are three registered Aboriginal sites that will create specific constraints on the proposed design works, and one that may introduce specific constraints on the proposed design works, depending on the results of necessary further investigation. Aboriginal community members have already flagged these sites as requiring in situ protection and conservation.

Aboriginal community consultation for the current assessment has been undertaken in accordance with procedures set out in the Aboriginal cultural heritage consultation requirements for proponents

A focus group of Elders and knowledge holders were identified early in the planning process, comprising the primary traditional owner representatives of Darug and Dharawal descendants as well as the Local Aboriginal Land Councils whose land includes portions of the Aerotropolis study area. The aims of the meeting and subsequent cultural values mapping workshop were to identify and understand key social, cultural and intangible values associated with the Aerotropolis region and to identify how the RAPs would like these values to be conserved, remembered and managed throughout this project and into the future. Additional broader consultation was undertaken with the RAPs who registered an interest in the project.

Key issues identified by Aboriginal stakeholders included: the need for further archaeological investigations; a desire to conserve key well-preserved landforms, sites and scarred trees; establishment of a repatriation area for recovered artefactual material; Aboriginal naming of places within the Aerotropolis; the need for further consultation and workshops with a wider group of Aboriginal stakeholders; a need for involvement of Aboriginal stakeholder groups in the development of interpretive stories and media for the precincts; a need for further on-site investigation and face-to-face consultation with Aboriginal stakeholders when the current public health situation allows.

The assessment of Aboriginal heritage within the study area is an ongoing process that will require continuous consultation with the Aboriginal community and additional field survey and archaeological investigation.

Non-Aboriginal heritage

During the initial phase of investigation approximately 130 potential heritage items were identified. This has been reduced to sixty sites (listed and potential) within the precincts and nine sites within the Precinct's buffer zone. Out of the listed site one site (Kelvin Park Group, Bringelly) is on the State Heritage Register and 14 sites are included in LEP environmental heritage schedules and state agencies' registers. There are 45 potential (unlisted) sites that have heritage/archaeological attributes.

Approximately 70 per cent of the identified sites are located immediately adjacent to the main roads that pass through, or define the precinct boundaries (Luddenham Rd, Elizabeth Drive, The Northern Rd, Badgerys Creek Rd and Bringelly Rd). There are large portions of some precincts in which no heritage items have been identified. A noticeable cluster of sites is located within the Agribusiness Precinct, particularly in the vicinity of the village of Luddenham.

There are also several items identified by the study that occupy large tracts of land, these include Fleurs Aerodrome and Fleurs Radio Telescope Site (Badgery's Creek Precinct) the McMaster Field Station (Northern Gateway Precinct), McGarvie Smith Farm (Northern Gateway Precinct), RAAF Bringelly (Aerotropolis Core Precinct) and the former OTC site (Aerotropolis Core Precinct). Heritage assets may survive as discrete locations within these large parcels of land that may be best managed as separate sub-precincts. These large areas also contain assets that may not be directly related to the values for which the sites have been listed but may warrant separate management.

Historical archaeology

Besides the State Heritage listed Kelvin Park Group, the Aerotropolis Precincts include only one item listed for its archaeological significance at a local level: the Lawson Thistle Inn, Luddenham. In addition to these sites, the study area encompasses a number of other sites (both listed and unlisted) that have the potential to contain historical archaeological remains associated with the nineteenth century and early twentieth century development of the district.

The level of archaeological potential will vary across the sites, as is it depends on the type of site and the level of disturbance by various demolition and/or construction activities occurring in the twentieth and twenty-first centuries. Generally, areas within the footprint of modern structures and development have less potential for archaeological evidence than those outside the footprint. Deeper subsurface features, such as cesspits, cisterns, etc would have a greater potential for survival throughout the project boundary.

Four properties identified by this study have the potential to contain State significant archaeological remains (McMaster Field Station [Asset 104], McGarvie Smith Farm [Asset 105], Fleurs Radio Telescope Site [Asset 310] and the Kelvin Park Group [Asset 401]). To this may be added Badgery's Exeter Farm [Asset 201] although this site has been subject to significant disturbance in the recent past. Disturbance or removal of State significant relics would not be permissible. Any development impacts in these areas will require specific management under the current legislative controls Including avoidance of impacts, appropriate conservation and retention in situ A detailed assessment would be required before any proposed development can be considered.

Five properties (mainly large rural or former government sites) have the potential to contain multiple archaeological sites. These potential sites are likely to be dispersed across the large land units and will require further investigation to prepare appropriate curtilages for management for each discrete area.

The existing road grids associated with the mid to late nineteenth century subdivisions (Luddenham village, Exeter Farms subdivision, Devonshire subdivision and the Hutchinson Subdivision) should be maintained as much as possible, as this will reduce impacts on potential archaeological sites.

There are ten locations for which documentary evidence indicates activities undertaken in these locations during the early nineteenth century may have the potential to leave archaeological evidence. These locations cover multiple lots but any potential archaeological remains may be restricted to discrete locations within these lots. These locations should be subject to detailed assessment to determine the precise locations of potential remains, i.e., whether these locations are within the precinct boundaries, and to determine their level of preservation and management strategies.

Built heritage

Built heritage items throughout the precincts are mostly represented by small-scale, locally significant residences and homesteads, with the exception of Kelvin Park which is of State heritage significance. A concentration of these items is located within the historic village of Luddenham, which sits entirely within the Agribusiness Precinct. In addition, there are larger built and landscape elements of significance which mostly relate to government and infrastructure themes, such as the former CSIRO research centres at McGarvie-Smith farm, McMasters Field Station, the Fleurs radio telescope site, and the military facilities at Bringelly. These larger items consist of larger tracts of land containing smaller or discreet elements, or large elements that are iconic within their rural landscape.

Extant local heritage items such as buildings, structures and places are significant pieces of evidence in the historic record of the development of this area from pastoral estates to rural village settlements. With that in mind, in many cases the significance of a place extends beyond the physical evidence and includes the views and settings that contribute to the site's character and former uses. Ultimately, successful heritage management in the face of new development aims to keep heritage relevant and sustainable. To do this, the development of, and around, heritage items needs to accommodate retention and adaptive reuse of the historic features as well as support appropriate new developments, public and private and commercial.

In the particular case of Luddenham Village, the collection of locally significant items enhances their significance from an individual level, and as such conservation management planning for the village itself as well as its position and function within the wider Agribusiness Precinct vision, should be closely considered so that its village quality and character is not overwhelmed by future development.

In the case of the more discreet but significant elements relating to the larger sites, such as the remnant Fleurs radio-physics features and features relating to OTC site and McGarvie Smith Farm, these elements can be conserved and used within the new planned landscape of the

precincts, however they will need to be interpreted in order for their retention and conservation to be fully understood and appropriately highlighted.

Kelvin Park, listed on the State Heritage Register, must be managed in accordance with the provisions of the NSW *Heritage Act 1977*.

Summary Conclusion

Based on these preliminary assessments, a range of further detailed assessments of significance and impacts will be required at the Precinct and sub-precinct level. This will include further on-site consultation with Aboriginal stakeholders, as well as Aboriginal test excavation and further identification of sensitive areas and sites. Where impacts cannot be avoided, detailed impact assessment and mitigation will be required, which may require approvals under the NSW *Heritage Act 1977*, the NSW *National Parks and Wildlife Act 1974* and/or the NSW *Environmental Planning and Assessment Act 1979* or subsidiary environmental planning instruments. Opportunities for interpretation of the study area's history and heritage places should be investigated and integrated into precinct planning as part of the wider conservation strategy for the Aerotropolis as a whole.

Glossary and abbreviations

Adaptation	The process of returning a <i>place</i> to a known earlier state by removing accretions or by reassembling existing elements without the introduction of new material.
Archaeological assessment	A study undertaken to establish the archaeological significance (research potential) of a particular site and to propose appropriate management actions.
Archaeological feature	Any physical evidence of past human activity. Archaeological features include buildings, works, relics, structures, foundations, deposits, cultural landscapes and shipwrecks. During an archaeological excavation the term ‘feature’ may be used in a specific sense to refer to any item that is not a structure, a layer or an artefact
Archaeological resource	The individual and combined elements that constitute an archaeological site, including deposits, structural remains and artefacts.
Archaeological significance	A category of significance referring to scientific value or ‘research potential’ that is, the ability to yield information through investigation by archaeological methods. See also research significance.
Archaeological sites	A place that contains evidence of past human activity. Below-ground archaeological sites include building foundations, occupation deposits, features and artefacts. Above-ground archaeological sites include buildings, works, industrial structures and relics that are intact or ruined.
Archaeological zoning plan	A graphic plan of a place indicating the relative archaeological potential of areas or zones within this. An archaeological zoning plan is prepared by undertaking broad-scale, archaeological assessment over a large area. The plan may be incorporated into the provisions of an environmental planning instrument. See also archaeological management plan.
Archaeology	The scientific study of material remains (including artefacts, structural remains and deposits) of past human life and activities.
Artefacts	Objects produced by human activity. In historical archaeology the term usually refers to small objects contained within occupation deposits. The term may encompass food or plant remains (for example, pollen) and ecological features.
Australia ICOMOS	The national committee of the International Council on Monuments and Sites.
The Burra Charter	<i>The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013a</i>
CHL	Commonwealth Heritage List
Compatible use	A use that respects the <i>cultural significance</i> of a <i>place</i> . Such a use involves no, or minimal impact on cultural significance.
Conservation	Defined in the Burra Charter as ‘all the processes of looking after a place so as to retain its cultural significance’
Conservation management plan	A document explaining the significance of a heritage item, including a heritage conservation area, and proposing policies to retain that significance. It can include guidelines for additional development or maintenance of the place.

Conservation policy	A proposal to conserve a heritage item arising out of the opportunities and constraints presented by the statement of heritage significance and other considerations.
Contemporary community esteem	The valuing of a heritage item by a recognised local, regional or state-wide community because it forms a strong part of their cultural identity.
Contributory values	Values attached to items located within Conservation Zones or Policy Areas that do not have values equivalent to those for which a place is listed, but rather have heritage features that contribute to the general historical quality of the Zone or Policy Area.
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cultural landscapes	Those areas of the landscape which have been significantly modified by human activity. They include rural lands such as farms, villages and mining sites, as well as country towns.
Cultural significance	A term frequently used to encompass all aspects of significance, particularly in guideline documents such as the Burra Charter. Cultural significance is embodied in the <i>place</i> itself, its <i>fabric</i> , <i>setting</i> , <i>use</i> , <i>associations</i> , meanings, records, <i>related places</i> and related objects. Places may have a range of values for different individuals or groups.
DEM	Digital Elevation Model – a 3D computer-generated representation of terrain.
EIS	Environmental Impact Statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth)
Fabric	All the physical material constituting the place including structural elements, fixtures, contents, and objects.
Heritage	Aspects of a culture that are considered important enough to be passed on to future generations.
Heritage Act	<i>NSW Heritage Act 1977</i>
Heritage significance	Historical, scientific, cultural, social, archaeological, natural and/or aesthetic values embodied in a place that are regarded as important enough to be conserved for present and future generations.
Heritage value	Often used interchangeably with the term ‘heritage significance’. The term is used in a general sense to identify cultural and natural aspects of a place that are worthy of being conserved.
Historical archaeology	The study of the human past using both material evidence and documentary sources.
Historical artefacts	Defined in the Agreement between The Commonwealth of Australia and the Administration of Norfolk Island relating to Historic Artefacts made 10 August 1990 as ‘any moveable object relating to the settlement of KAVHA (not being an object that is affixed to a building or forms part of a deposit integral to the land) which has been found or may hereafter be found on land in the KAVHA owned in right of the Commonwealth’
Historical significance	An item having this value is significant because of the importance of its relationship to the evolving pattern of our cultural history.
International Council on Monuments and Sites (ICOMOS)	An international organisation linked to UNESCO that brings together people concerned with the conservation and study of places of cultural significance. There are also national committees in sixty countries including Australia. See also Australia ICOMOS.

In situ	Latin phrase meaning ‘in the original place’
Integrity	A heritage item is said to have integrity if its assessment and statement of significance is supported by sound research and analysis, and its fabric and curtilage are still largely intact.
Item	A building, structure, work, relic, place or group. The generic term used to describe objects structures or places under consideration for heritage significance.
LEP	Local Environmental Plan
LiDAR	LiDAR (L ight D etection A nd R anging) is a surveying technique that measures distance to a target by measuring differences in illumination and reflection of laser light. These differences can then be used to make digital 3-D representations of the target. The major advantage with LiDAR in comparison with photogrammetry is the ability to filter out reflections from vegetation and record terrain surfaces that may otherwise be concealed.
Maintenance	The continuous protective care of a place and its setting. Maintenance is to be distinguished from repair which involves <i>restoration</i> or <i>reconstruction</i> .
Monitoring (archaeology)	Development works during which an archaeologist is present in order to record and manage impacts on the archaeological features and deposits that may be impacted by the works.
NHL	National Heritage List
Occupation deposits (archaeology)	Accumulations of cultural material that result from human activity. They are often associated with domestic and industrial sites, for example, under-floor or yard deposits
Oral histories	The recording of information by interviewing people with knowledge pertinent to a heritage item or place.
OTC	Overseas Telecommunications Commission
Place	A site, area or landscape or group of works, together with associated structures, contents and surroundings. Place may have tangible and intangible dimensions.
Post-excavation (archaeology)	The stage of an archaeological investigation that occurs after completion of an on-site excavation. The post-excavation phase may include further research, artefact cataloguing and analysis, physical conservation, synthesis of findings, presentation and reporting.
Preservation	The process of maintaining a <i>place</i> in its existing state and retarding deterioration.
RAAF	Royal Australian Air Force
Rarity	An item having this value is significant because it represents an uncommon, endangered or unusual aspect of our history or cultural heritage.
Reconstruction	The process of returning a <i>place</i> to a known earlier state and is distinguished from <i>restoration</i> by the introduction of new material.
Register of the National Estate	The register kept by the Australian Heritage Commission listing those places of natural, Aboriginal or historical significance that are part of Australia’s heritage.
Related place	A <i>place</i> that contributes to the <i>cultural significance</i> of another place.
Research design (archaeology)	A set of questions that can be investigated using archaeological evidence and a methodology for addressing them. A research design is intended to ensure that archaeological investigations focus on genuine research needs. It is an important tool that

	ensures that when archaeological resources are destroyed by excavation, the information recovered can be preserved and can contribute to an understanding of the place and its history.
Research excavation (archaeology)	Formal archaeological investigation conducted in order to examine specific research questions. Such investigations may be independent of proposed development works.
Research potential (archaeology)	The ability of a site or feature to yield information through archaeological investigation.
Research significance (archaeology)	The significance of archaeological sites is assessed according to the extent to which their investigation may contribute substantive information in response to properly designed research questions.
Salvage excavation (archaeology)	Formal archaeological excavation in advance of development works in which a site's archaeological potential is realised,
SEPP	State Environmental Planning Policies
Setting	The immediate and extended environment of a <i>place</i> that is part of or contributes to its <i>cultural significance</i> and distinctive character.
Social significance	Items having this value are significant through their social, spiritual or cultural association with a recognisable community.
Statement of heritage impact	Determination of the impact of proposed works on the significance of a heritage item.
Statement of heritage significance	A statement, usually in prose form that summarises why a heritage item or area is of importance to present and future generations.
Statutory	Those matters that occur as a result of an Act of Parliament (for example, statutory instruments such as environmental planning instruments) and thus have legal force.
Technical significance	Items having this value are significant because of their ability to demonstrate a high degree of technical achievement within the local area.
Test excavation (archaeology)	Small-scale, formal archaeological excavation in advance of proposed development work. The intent of testing is to determine if archaeologically sensitive deposits or features are present in the path of proposed development without impacting those deposits or features.
USAAF	United States Army Air Forces (1941-1947)
Use	The functions of a <i>place</i> , including the activities and traditional and customary practices that may occur at the place or are dependent on the place.
WHL	World Heritage List

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1. Introduction

1.1 Project overview

Extent Heritage Pty Ltd has been commissioned by the Western Sydney Planning Partnership to prepare an Aboriginal and non-Aboriginal Cultural Heritage Assessment for the initial precincts within the Western Sydney Aerotropolis. This is an initial high-level analysis designed to guide the precinct planning and highlight key heritage issues and areas of sensitivity.

The Western Sydney Planning Partnership brings together nine local councils, as well as the NSW and Commonwealth governments to deliver commitments that will transform the Western Parkland City over the next twenty years. This partnership has responsibility for delivering integrated land use and infrastructure planning for the Aerotropolis.

An essential part of the new planning approach will be to deliver a joined-up vision through the Precinct Plans, which incorporate a series of desired environmental outcomes that will have a direct effect on the well-being of people in terms of the liveability and sustainability of the area. Aboriginal and non-Aboriginal (European) heritage values will form one of the key environmental influencers that will lead design outcomes. This is reflected in the principles for parkland-orientated development at the heart of the Aerotropolis and expressed using the flood prone land incorporating Wianamatta-South Creek as the landscape spine. This will be used primarily for public amenity and to promote Aboriginal cultural and heritage values in this sensitive area.

This report presents the preliminary findings of the Cultural Heritage Assessment and will inform the development of the initial Precinct Plans within the Aerotropolis. These findings will inform the continued development of the individual Precinct Plans (see Figure 1), which are to be prepared for the Western Sydney Aerotropolis.

There are five initial precincts which are as follows:

- Northern Gateway;
- Agribusiness;
- Badgerys Creek;
- Aerotropolis Core; and
- Wianamatta–South Creek.

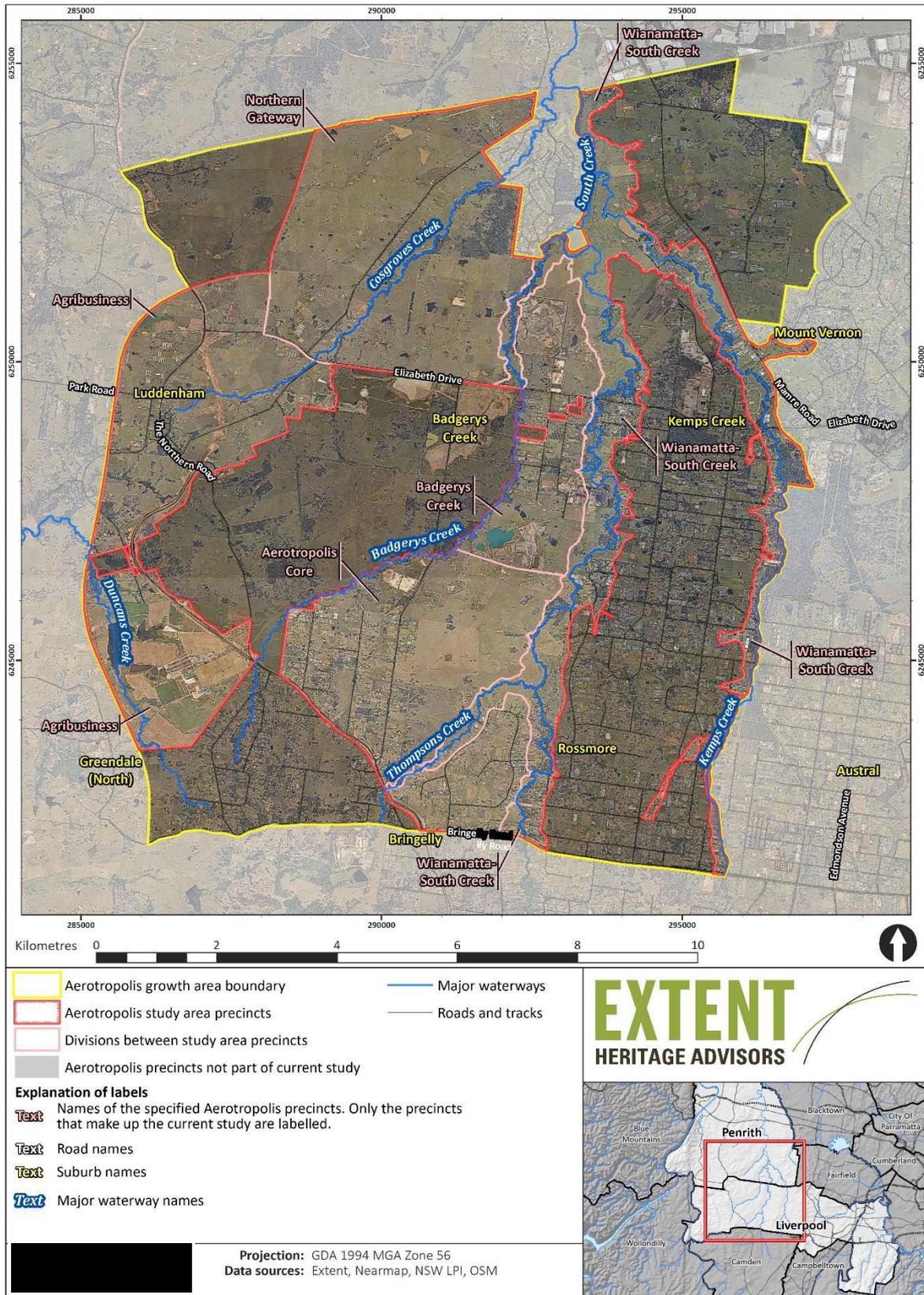


Figure 1. Precinct plan boundaries

1.2 Approach and methodology

The Western Sydney Planning Partnership require a preliminary heritage assessment based on desktop research and targeted site inspections at sites presenting specific risks or elements that require specific management considerations. This analysis of constraints and opportunities provides critical inputs to the Planning Partnership in their consideration and development of individual precinct plans and site controls for the planned precincts around the new Western Sydney Airport. The precinct plans are a dictating factor in how each precinct is designed and function.

This preliminary heritage assessment is an opportunities and constraints analysis which identifies Aboriginal and non-Aboriginal cultural heritage to be considered regarding the development of the precinct plans. This report will outline the heritage significance of the project area and its surrounds, and in response to known significance identify potential risks which should be managed as part of the development process and which will require further, detailed analysis across identified areas. Recommendations for heritage enhancement opportunities throughout the precincts, as well as considerations for site specific mitigations will also be provided.

To undertake the above assessment, the following information has been collated:

- a contextualising history of the project area and of key sites within;
- an identification of key elements in the built and archaeological environment;
- an overview of heritage listings for the place and the immediate vicinity;
- review of key previous studies relevant to the project;
- an overview of statutory controls in relation to heritage approval pathways;
- initial Aboriginal cultural values mapping; and
- an identification of the project's key constraints and opportunities, with recommendations as required to inform the design of precinct plans and the preparation of development controls.

1.3 Limitations

- Face-to-face stakeholder consultation and on-site inspection and investigation were limited due to Covid-19 restrictions.
- Access to sites was arranged through the Western Sydney Planning Partnership. Wherever possible, sites were visually inspected, however in some instances, they could only be inspected from the public domain. There are a number of sites that were not able to be inspected due to various limitations.
- No Aboriginal sites were inspected for the preparation of this report.
- No physical archaeological investigations were undertaken for the preparation of this report.

The historical overview provides sufficient historical background to provide an understanding of the place to support previous assessments of significance and provide relevant recommendations; however, it is not intended as an exhaustive history of the site.

1.4 [REDACTED]

1.5 [REDACTED]

1.6 Terminology

The terminology in this report is consistent with that outlined in the Australia ICOMOS *Burra Charter* (2013). Where possible all current terms and definitions used in to NSW and Commonwealth legislation have been employed.

2. Planning context

The study area is subject to several legislative acts and statutory controls that govern the management of environmental heritage. An overview of the legislation relevant to heritage matters is provided below.

2.1 Commonwealth legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act) took effect on 16 July 2000.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (known as a controlled action under the Act), may only progress with approval of the Commonwealth Minister for the Department of the Environment (DoE). An action is defined as a project, development, undertaking, activity (or series of activities), or alteration. An action will also require approval if:

- it is undertaken on Commonwealth land and will have or is likely to have a significant impact on the environment on Commonwealth land; and
- it is undertaken by the Commonwealth and will have or is likely to have a significant impact.

The EPBC Act defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and historic cultural heritage items. Under the Act protected heritage items are listed on the World Heritage List (WHL), National Heritage List (items of significance to the nation) or the Commonwealth Heritage List (items belonging to the Commonwealth or its agencies). These last two lists replaced the Register of the National Estate (RNE). The RNE is no longer a statutory list; however, it remains available as an archive.

2.2 State legislation

2.2.1 Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979 (NSW)* (EP&A Act) requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine development requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.

- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPs) such as Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs). LEPs commonly identify, and have provisions for the protection of, local heritage items and heritage conservation areas. The LEPs relevant to this project are discussed in section 2.3 below.

2.2.2 Heritage Act 1977 (NSW)

The *Heritage Act 1977* (NSW) (Heritage Act) was enacted to conserve the environmental heritage of NSW. Under section 32, places, buildings, works, relics, moveable objects or precincts of heritage significance are protected by means of either Interim Heritage Orders (IHO) or by listing on the State Heritage Register (SHR), the statutory register under Part 3A of the NSW Heritage Act. Items that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the NSW Heritage Council.

Listing on the SHR means that any proposed works or alterations (unless exempted) to listed items must be approved by the Heritage Council or its delegates. Proposals to alter, damage, move or destroy places, buildings, works, relics; moveable objects or precincts protected by an IHO or listed on the SHR require an approval under section 60 of the Heritage Act. Some of the sites listed on the SHR or on LEPs may either be 'relics' or have relics associated with them. In such cases, a section 60 approval is also required for any disturbance to relics *associated* with a listed item.

The State Heritage Inventory (SHI) is an amalgamated register of items listed on LEPs and/or on a State Government Agency's section 170 register and may include items that have been identified as having state or local level significance, but which are statutorily protected at a local level.

The Relics Provision

Archaeological features and deposits are afforded statutory protection by the 'relics provision'. section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as follows:

any deposit, artefact, object or material evidence that:

- (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- (b) is of State or local heritage significance.

The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW. Therefore, no ground disturbance works may proceed in areas identified as having archaeological potential without first obtaining an Excavation Permit pursuant to section 140 of the Heritage Act, or an archaeological exception, or in the case of places listed on the SHR, an approval under section 60, or an exemption under section 57 of the Heritage Act from the NSW Heritage Council.

2.2.3 State Environmental Planning Policy (Western Sydney Aerotropolis)

The *State Environmental Planning Policy (Western Sydney Aerotropolis)* was gazetted in September 2020 and came into effect on 1 October 2020. It applies to the land within the study area and provides statutory weight to the planning and development of land within the Aerotropolis. Broadly, the Aerotropolis SEPP does the following:

- establishes boundaries for applicable land;
- defines all precincts within the Aerotropolis and their boundaries;
- establishes strategic objectives for the Aerotropolis;
- applies land use zones to the initial precincts (see Figure 7. Topographical map of the study area and its five precincts below);
- sets strategic objectives for future planning within the area;
- outlines planning controls, using mapping for some of those proposed controls;
- implements various clauses and maps;
- protects transport corridors and utility sites required to service the Aerotropolis;
- identifies the types of development applications that are to be referred to Western Sydney Airport;
- ensures there is no intensification in noise sensitive uses within the Australian Noise Exposure Concept (ANEC)/Australian Noise Exposure Forecast (ANEF) 20 and above contours; and
- outlines a framework for planning pathways.

With specific reference to heritage, section 28 of Part 4 of the Aerotropolis SEPP includes objectives and controls for heritage conservation. In addition, the SEPP includes a list of heritage items within the initial Aerotropolis precincts in Schedule 2 and an associated map. Of the items listed within the initial precincts, fourteen are listed as having local significance and one item, 'Kelvin' is listed as State significant.

The objectives of the Aerotropolis SEPP pertaining to heritage conservation as per clause 1 of part 4, section 28 are:

- (a) to conserve the environmental heritage of the land to which this Policy applies, and
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views, and
- (c) to conserve archaeological sites, and
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

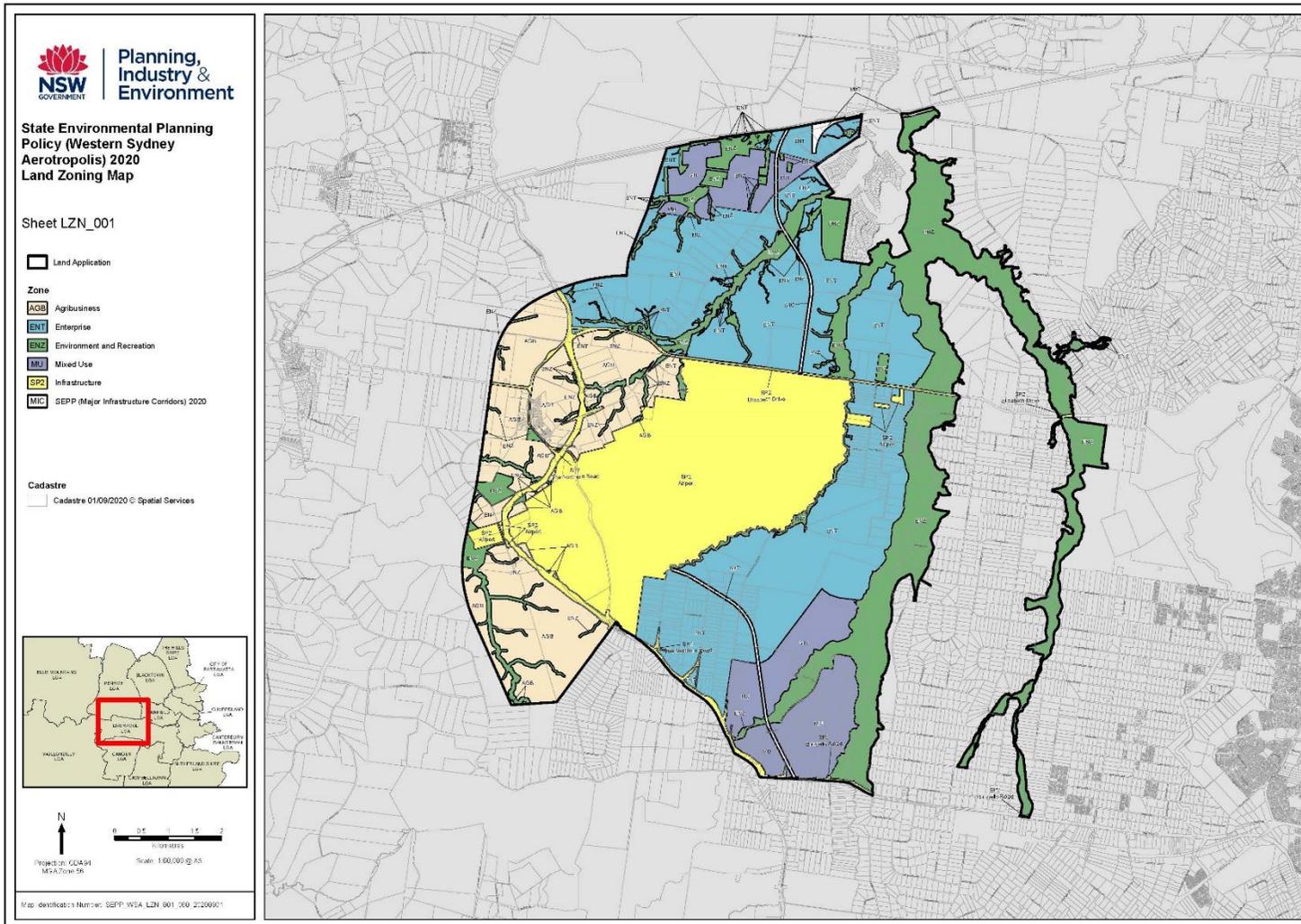


Figure 2. State Environmental Planning Policy (SEPP) 2020 land zoning map.

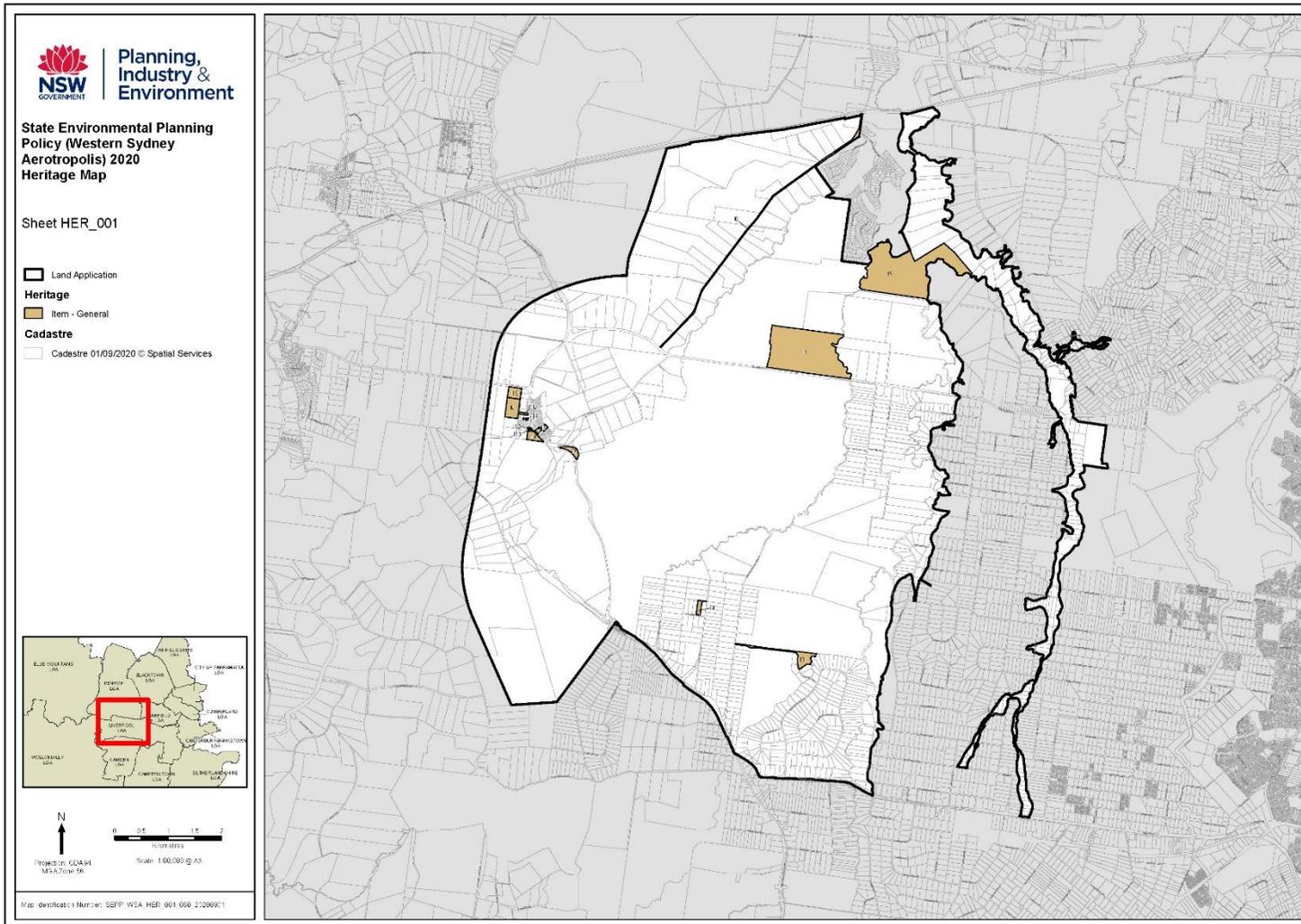


Figure 3. State Environmental Planning Policy (SEPP) 2020 heritage map.

2.2.4 State Environmental Planning Policy (Western Sydney Employment Area) 2009

A dedicated SEPP, the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* was developed for land relating specifically to the Western Sydney Employment Area (WSEA), which generally covers land to the north west of the Aerotropolis around Mamre Road, Eastern Creek, Ropes Creek and south of the Warragamba Pipelines. When the Western Sydney International Airport was announced in 2014, the boundaries of this SEPP were extended to apply to land in the northern portion of the Aerotropolis though it did not include any rezoning of that land at that time. In early 2020 the Mamre Road Precinct was rezoned.

The SEPP (WSEA) requires the preparation of Development Control Plans (DCPs) that address impacts of proposed development on indigenous and non-indigenous heritage values and opportunities to offset impacts on areas of heritage significance while coordinating the planning and development of land use and infrastructure to promote employment in the area.

The consent authority of the SEPP is the council of the local government area in which the land is situated, unless otherwise identified. In the case of lands that relate to both the SEPP and the Aerotropolis, this is either Penrith or Liverpool.

2.2.5 State Environmental Planning Policy (Infrastructure) 2007

The State Environmental Planning Policy (Infrastructure) 2007 (SEPP 2007) was gazetted in 2007 to streamline the development and approval of infrastructure projects undertaken by state agencies or public authorities.

The SEPP 2007 establishes and defines infrastructure development that does not need consent and infrastructure works and activities that are exempt or complying developments. It can only apply where a proposed activity or work is consistent with its specified development controls and standards. Specific exemptions apply to works related to a “airport transport facilities”.

Under part 3, division 1, clause 22 ‘Development permitted without consent’, states:

(1) Development for the purpose of an airport may be carried out by or on behalf of a public authority without consent on land in any of the following land use zones or in a land use zone that is equivalent to any of those zones—

- (a) RU1 Primary Production,
- (b) RU2 Rural Landscape,
- (c) IN4 Working Waterfront,
- (d) SP1 Special Activities,
- (e) SP2 Infrastructure,
- (f) W2 Recreational Waterways,

(g) W3 Working Waterways.

Further to this clause;

(3) A reference in this clause to development for the purpose of an air transport facility includes a reference to development for any of the following purposes if the development is in connection with an air transport facility—

- (a) construction works,
- (b) fencing, drainage or vegetation management.

Clause 23, 'Development permitted with consent' states;

Development for any of the following purposes may be carried out with consent on land within the boundaries of an existing air transport facility if the development is ancillary to the air transport facility—

- (a) passenger transport facilities,
- (b) facilities for the receipt, forwarding or storage of freight,
- (c) hangars for aircraft storage or maintenance,
- (d) commercial premises,
- (e) industries,
- (f) recreation areas, recreation facilities (indoor) or recreation facilities (outdoor),
- (g) residential accommodation,
- (h) tourist and visitor accommodation.

A SEPPI 2007 assessment or approval does not extinguish the requirement for any approval under the Heritage Act that may apply (see SEPPI Part 1 Preliminary).

For items of local heritage, i.e. those listed on an Environmental Planning Instrument, consultation with local government may be required under Clause 14:

14 Consultation with councils—development with impacts on local heritage

(1) This clause applies to development carried out by or on behalf of a public authority if the development—

- (a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a State heritage item, in a way that is more than minor or inconsequential, and
- (b) is development that this Policy provides may be carried out without consent.

(2) A public authority, or a person acting on behalf of a public authority, must not carry out development to which this clause applies unless the authority or the person has—

(a) had an assessment of the impact prepared, and

(b) given written notice of the intention to carry out the development, with a copy of the assessment and a scope of works, to the council for the area in which the heritage item or heritage conservation area (or the relevant part of such an area) is located, and

(c) taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.

The proposed works must comply with the general requirements for exempt development outlined under Clause 20(2):

(e) if it is likely to affect a State or local heritage item or a heritage conservation area, must involve no more than minimal impact on the heritage significance of the item or area, and

(e1) must not involve the demolition of a building or work that is, or is part of, a State or local heritage item.

2.2.6 National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act 1974* (NSW) (NPW Act), administered by Heritage NSW, is the primary legislation for the protection of Aboriginal cultural heritage in NSW. The NPW Act gives the Director General of Heritage NSW responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places', defined under section 5 of the Act as follows:

- an *Aboriginal object* is any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains; and
- an *Aboriginal place* is a place declared so by the Minister administering the NPW Act because the place is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to harm them and includes a 'strict liability offence' for such harm. A 'strict liability offence' does not require someone to know that it is an Aboriginal object or place they are causing harm to be prosecuted. Defences against the 'strict liability offence' in the NPW Act include the carrying out of certain 'Low Impact Activities', prescribed in Clause 80B of the *National Parks and Wildlife Amendment Regulation 2010* (NPW Regulation), and the demonstration of due diligence.

An Aboriginal Heritage Impact Permit (AHIP) issued under section 90 of the NPW Act is required if impacts to Aboriginal objects and/or places cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened. Consultation with Aboriginal communities is required under Heritage NSW policy when an application for an AHIP is considered and is an

integral part of the process. AHIPs may be issued in relation to a specified Aboriginal object, Aboriginal place, land, activity or person or specified types or classes of Aboriginal objects, Aboriginal places, land, activities or persons. Section 89A of the NPW Act requires notification of the location of Aboriginal sites within a reasonable time, with penalties for non-notification.

2.3 Local Environmental Plans

Local Environmental Plans (LEPs) are created under the *Environmental Planning and Assessment Act 1979* (NSW) to guide planning decisions by local councils, such as development applications. Penrith and Liverpool Councils are the relevant councils for which the Aerotropolis study area relates. The LEPs in place for each Council are as follows:

- Penrith Local Environmental Plan 2010; and
- Liverpool Local Environmental Plan 2008.

The objectives of the LEP for each LGA with respect to heritage conservation is provided in Clause 5.10 which (amongst other objectives) aims to conserve identified local heritage places, including archaeological sites, and requires development consent for any works that affect that item. Development consent may be required in the event of major changes to built heritage (such as demolition, alterations, and additions) Consent may also be required if disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged, or destroyed.

Schedule 5 of the LEP lists items of environmental heritage within the LGA, including archaeological sites, buildings, and conservation areas. These items may be of national, state, or local heritage significance.

3. Aboriginal community consultation

3.1 Consultation process in NSW

Aboriginal community consultation for the current assessment has been undertaken in accordance with procedures set out in the Aboriginal cultural heritage consultation requirements for proponents 2010 (Department of Environment, Climate Change and Water [DECCW] 2010a). These guidelines identify a four-stage process of consultation:

Stage 1: Notification of project proposal and registration of interest

- Pre-notification: identification of Aboriginal parties through contacting various relevant government agencies.
- Notification: contacting any Aboriginal community organisations identified to determine their interest (if any) in the project. This includes the placement of an advertisement in local print media seeking expressions of interest from Aboriginal community members.

Stage 2: Presentation of information about the proposed project

- Presentation of project information: briefing registered Aboriginal parties (RAPs) about the scope of the proposed project and the proposed cultural heritage assessment process. This is usually undertaken through written correspondence and/or an on-site visit and may undergo several iterations through the project lifetime as the nature of the assessment changes (e.g. field survey may lead to a requirement for test excavations).

Stage 3: Gathering information about cultural significance

- Seeking cultural information: collection of information identifying any known Aboriginal objects of cultural value or places of cultural significance in the study area.
- Consultation protocols: identification of any protocols that the RAPs would like adopted during the information gathering process, including how sensitive information will be managed.
- Potential impacts and mitigation measures: discussion of potential impacts to heritage and appropriate mitigation options prior to developing the cultural heritage assessment report. This is often undertaken onsite at the end of any field program and/or as part of the overall report review phase.

Stage 4: Review of draft Aboriginal cultural heritage assessment report

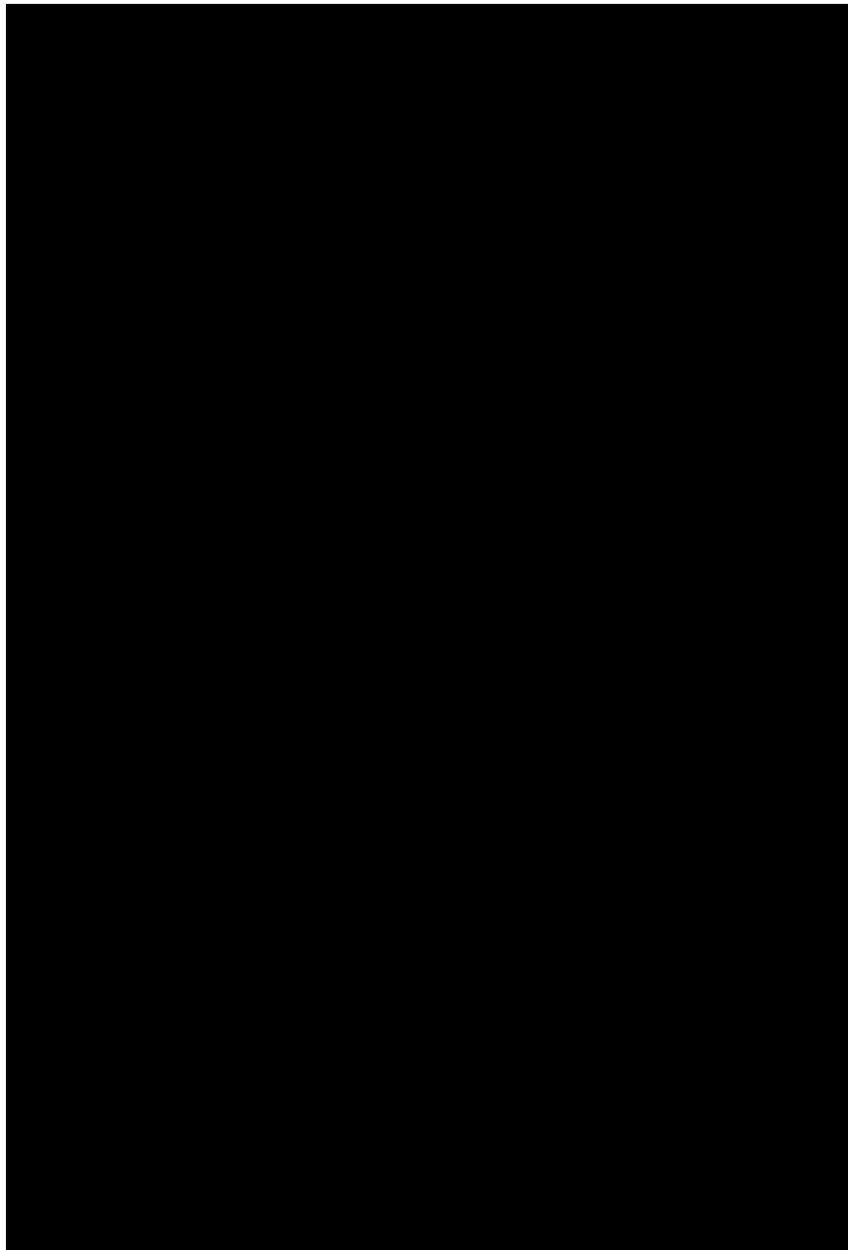
- Review of draft report: review of the draft Aboriginal cultural heritage assessment report (ACHAR) by the RAPs, to provide comments on the overall findings, assessment of cultural significance and recommendations for management of Aboriginal heritage within the study area.

The consultation process for this project has two aims. Firstly, it is designed to comply with the NSW Department of Premier and Cabinet (DPC) consultation procedures to obtain and take into consideration comment and feedback from RAPs regarding our proposed assessment

methodology, our assessment report and its management recommendations. Secondly, through consultation with knowledge holders, the process seeks to accurately identify any Aboriginal cultural places and values that may be affected by proposed development of the study area.

3.2 Identification of RAPs

A log of completed actions and correspondence received during Aboriginal community consultation for the current assessment is included in Appendix C and summarised in table 1 below.



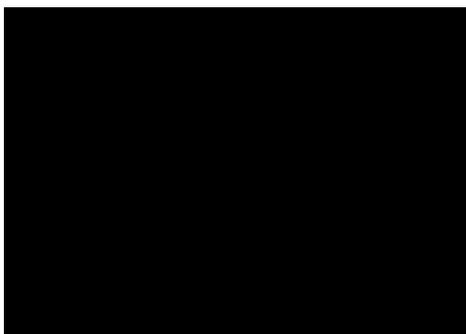


Table 1. Summary of Aboriginal consultation for the project

Consultation stage	Description	Date initiated	Date completed	Details
1	Pre-notification	26 May 2020	8 June 2020	Correspondence and information in Appendix C.
	Notification (including advertisement in the <i>Liverpool Leader and Western Weekender</i> on June 4 2020)	3 June 2020	2 July 2020	Correspondence, newspaper advertisement and information in Appendix C.
2	Presentation of information/assessment methodology	2 July 2020	13 August 2020	Correspondence and information in Appendix C.
3	Report review	16 October 2020	16 November 2020	Correspondence and information will appear in Appendix C once received.

Due to Covid-19, the newspaper advertisements had to be placed as online-only advertisements. This situation was discussed with [REDACTED] on 4 June 2020, who stated that the situation was acceptable and that Heritage NSW would accept online advertisements for notification, provided that it was made clear that the ads were online only and that we had gained permission from Heritage NSW (DPIE).

Note the copy of this report dated 15 October 2020 has been provided for exhibition prior to the formal review of the document by the Aboriginal stakeholders. This document will be amended as required following receipt of Aboriginal stakeholder feedback

3.3 Cultural values engagement

A preliminary cultural values mapping workshop was convened on Tuesday 23rd June 2020 at Liverpool City Council, Liverpool. The aims of the meeting were to identify and understand key social, cultural and intangible values associated with the Aerotropolis region and to identify how the RAPs would like these values to be conserved, remembered and managed throughout this project and into the future.

A focus group of Elders and knowledge holders were identified early in the planning process, comprising the primary traditional owner representatives of Darug and Dharawal descendants as well as the Local Aboriginal Land Councils whose land includes portions of the Aerotropolis study area. The organisations and representatives who were invited and those who were able to participate are shown below (see table 2).

Table 2. Aboriginal community organisation workshop attendees

Organisation	Contact Name	Attendance at Workshop
[Redacted]		

Consultant attendees at the workshop were:

- [Redacted]
- [Redacted]
- [Redacted]

The following key conclusions can be drawn from the cultural values workshop:

- The stakeholders stated that it is too early to comment with certainty on cultural values because the archaeological investigations have not taken place, and large parts of the landscape have not been extensively investigated during prior studies. Traditional owner and Land Council access to walk Country will be needed for subsequent stages of investigation.

- The cumulative impact of the project is a key issue of cultural concern. When the stakeholders were asked what they would most like to see if they were to return to the study area in 50 years, the consensus answer was a large conserved portion of the Cumberland Plain. The consensus was also that this conservation area would not just include conserved creek corridors, but also a representative range of remnant terrain. The stakeholders expressed a strong preference for natural vegetation patterns as opposed to human-designed plantings (e.g., not 'trees planted in rows').
- Unusual and well-preserved landforms such as exposed sandstone outcrops, areas of remnant old growth vegetation and well-preserved creek corridors should be protected where possible.
- There is a need to investigate the results of archaeological assessments undertaken across the Badgerys Creek airport site as they may shed important light on site and settlement patterns in the region.
- The stakeholders present said that it is critical that the traditional owners and LALCs play a key role in future consultation and are given the opportunity to participate in further studies. The stakeholders stated that it is offensive when Aboriginal groups with no connection to country are engaged to do archaeological work.
- Any interpretation and story-telling needs to be reviewed by the traditional owners and LALCs to ensure it is culturally appropriate.
- There are some family connections to this country and nearby, and those should be recognised through further consultation with the key traditional owner and land council stakeholders.
- Section 7.1 of this report outlines the cultural values mapping workshop in more detail.

3.4 Further Aboriginal RAP input

Additional broader consultation was undertaken with the RAPs who registered an interest in the project. This engagement was initiated via post or email and followed up with phone calls. A summary of the main points received during this stage of engagement is as follows:

- A repatriation area should be established in the Aerotropolis where artefacts recovered during archaeological investigations in the development area could be repatriated or held.
- Additional workshops should be held with a wider range of Aboriginal stakeholders
- Aboriginal naming should be undertaken for locations and streets within the Aerotropolis, and even for particular areas of the airport.
- As many heritage sites should be conserved as possible, and some (scarred trees, in particular) should be conserved in situ.

- There should be a diverse range of Aboriginal artwork installed throughout the Aerotropolis. This artwork should represent both tangible and intangible aspects of Aboriginal culture and should be in many forms.
- Large-scale Aboriginal artwork could be installed in the area that was visible from the air to serve as a clear marker for people flying into the airport that this is the Western Sydney airport, and to have a clear point of distinction with the views available when flying into Kingsford-Smith.
- Additional cultural values enquiries must be undertaken face-to-face and while walking on-country.

3.5 Aboriginal RAP Input Following Report Review

NOTE: This section will be completed following a review of the report by RAPs in accordance with the timeframes outlined in Table 1 above. Any further inputs from the RAPs will be incorporated following the conclusion of the consultation period.

4. Existing environment

4.1 Location

The Aerotropolis study area (Figure 1 and Figure 4) is located on the Cumberland Plain, an extensive low-lying sub-region within the wider Sydney Basin bioregion (DAWE n.d.). The study area lies within the boundaries of the Penrith and Liverpool Local Government Areas (LGAs) and the Deerubbin and Gandangara Local Aboriginal Land Councils (LALCs). Elizabeth Drive marks the boundaries between both the LGAs and the LALCs: Penrith LGA and Deerubbin LALC lie to the north, and Liverpool LGA and Gandangara LALC lie to the south (Figure 5). The study area is entirely within the County of Cumberland and covers five parishes: Bringelly, Cabramatta, Claremont, Melville, Mulgoa. The study area is on traditional Darug land.

4.2 Geology and topography

The surface geology underlying the study area is largely characterised by sandstone, siltstone and shale rocks of the Wianamatta Group (Geoscience Australia and Australian Stratigraphy Commission [GAASC] 2017). With a maximum thickness of 300 m, the Wianamatta Group was deposited during the Triassic period (c. 251.9–201.3 Mya) and includes three major geological units: Ashfield Shale (consisting of laminate and dark grey siltstones), Bringelly Shale (consisting of shale with occasional calcareous claystone, laminate and infrequent coal) and Minchinbury Sandstone (consisting of fine to medium-grained quartz lithic sandstone) (GAASC 2017; OEH 2019). Over the course of the Holocene epoch (c. 11,650 cal. BP–present), channel and floodplain alluvium comprising of gravel, sand, silt and clay has also been deposited along the banks of the six major creeks that traverse across the study area (Badgerys, Cosgroves, Duncans, Kemps, South and Thompsons; see Part 4.3 of this document) (GAASC 2017).

Arising from this geological background within the study area are four distinctive natural soil landscapes (OEH 2019): South Creek, Blacktown, Luddenham and Berkshire Park (Figure 4).

The South Creek soil landscape is located along the channels and floodplains of Badgerys, Cosgroves, Kemps, South and Thompsons creeks, as well as that of a minor unnamed watercourse at the northern boundary of the study area (OEH 2019). This landscape comprises flat to gently sloping floodplains and valley flats, drainage depressions and incised channels, with occasional terraces or levees providing low, local reliefs. Its soil generally consists of shallow to deep sediment layers with an A horizon topsoil of brown loam over a B horizon of brown clay. The South Creek soil landscape is an active floodplain that is presently reworked by fluvial processes, resulting in streambank and gully erosion during periods of concentrated flows.

The Blacktown soil landscape is located on higher elevations adjacent to the South Creek soil landscape and characterises most of the study area (OEH 2019). This landscape consists of gently undulating rises with broad crests and ridges that are rounded with convex upper slopes grading into concave lower slopes. Its soil generally consists of shallow to deep layered sediments with an A horizon topsoil of brownish black loam or clay loam over a B horizon subsoil of brown or grey mottled clay. In contrast to the South Creek soil landscape, the erosion hazard

for the Blacktown soil landscape is generally slight to moderate which can increase to moderate or high during periods of concentrated flows.

The Luddenham soil landscape characterises small portions of land on higher elevations along the north-western and north-eastern boundaries of the study area (OEH 2019). Within these boundaries, this soil landscape is surrounded by the Blacktown soil landscape and comprises low rolling to steep low hills, with convex narrow ridges and hillcrests grading into moderately inclined side slopes that have narrow concave drainage lines as well. Its soil consists of shallow to deep layered sediments with an A horizon topsoil of dark brown loam or brown clay loam over a B horizon of coloured to brown and grey clay. The erosion hazard at the Luddenham soil landscape ranges from moderate to very high for non-concentrated flows but increases to high or very high during periods of concentrated flows.

The Berkshire Park soil landscape appears in two small areas at the northeast portion of the study area and straddles the axis of Elizabeth Drive (Figure 5, OEH 2019). Within the study area, the Berkshire Park soil landscape is also surrounded by the Blacktown soil landscape and comprises flat terrace tops that are dissected by small drainage channels and narrow drainage lines, with some remnant surfaces occurring at slightly higher elevations. Its soil consists of moderately to extremely deep and layered sediments with an A horizon topsoil of dark brown sandy loam or brown sandy clay loam over a B horizon of brown sandy variably mottled with ironstone nodules or high chroma clay variably mottled with stones. The erosion hazard in this landscape is low to moderate during periods of non-concentrated flows and can increase to high when concentrated flows occur.

In addition to the four natural soil landscapes abovementioned, a fifth artificial soil landscape referred to as Disturbed Terrain is also present within the Aerotropolis (OEH 2019). Note that the map of soil landscapes presented in Figure 6 was created using data gathered by Soil Conservation Service of NSW in 1989 and does not represent the likely full modern extent of Disturbed Terrain within the Aerotropolis. Disturbed Terrain arises from modern disturbances on natural soil landscapes where the original soil is completely removed, greatly disturbed or buried over. Within the Cumberland Plain, the Disturbed Terrain is typically characterised by artificial fill consisting of dredged sand or mud, rocks and local soil materials, but can also include demolition rubble, industrial and household waste. Specifically, the Disturbed Terrain identified within the study area is a result of a number of sand and stone quarries, as well as waste management facilities such as the Kemps Creek Resource Recovery Park and Elizabeth Drive Landfill Facility presently operated by Suez (Australia and New Zealand). The underlying Wianamatta Group bedrock may also be exposed at quarry sites as well.

4.3 Hydrology

The study area is located within the Hawkesbury-Nepean catchment, which drains into Broken Bay. This catchment is defined primarily by the Hawkesbury and Nepean rivers and an area of ~21,400 km² across the Cumberland Plain and the Blue Mountains (DECCW 2010b; DPI n.d.; Hawkesbury Nepean Catchment Management Authority [HNCMA] 2007).

The Hawkesbury-Nepean catchment itself consists of thirty sub-catchments, and the Aerotropolis lies within the South Creek sub-catchment (HNCMA 2007a, 19; HNCMA 2007b, 7-

102). The South Creek sub-catchment is presently the most degraded sub-catchment due to the dramatic alteration of hydrological and sediment regimes from historical vegetation clearance and increasing urbanisation (HNCMA 2007b, 69). Increasing impervious surfaces in the catchment are causing changes to the hydrology of the sub-catchment which has, in turn, greatly altered the geomorphology and ecology of its watercourses (HNCMA 2007b, 69).

There are six major creeks that run through the study area: Badgerys, Cosgroves, Duncans, Kemps, South, and Thompsons Creek (Figure 1). Cosgroves Creek runs along a north-eastern by south-western axis across the Northern Gateway precinct and into the northern section of the Agribusiness precinct. Duncans Creek runs on a north-western by south-eastern axis along the southwestern boundary of the Agribusiness precinct as well. Badgerys Creek marks the western boundaries of both the Badgerys Creek and Aerotropolis Core precincts as it runs along a northeast-southwestern axis; the Aerotropolis core precinct is also bisected by Thompsons Creek (and a branch of the Wianamatta-South Creek precinct) which runs along a similar axis as Badgerys Creek. The Wianamatta-South Creek precinct is largely defined by the courses of both the South and Kemps Creek which run almost parallel to each other on a broadly north-south axis, with two smaller 'arms' of the precinct following the course of Badgerys and Thompsons Creek.

4.4 Past vegetation

The native vegetation in the study area (Figure 5) and the rest of the Cumberland Plain has been extensively cleared since initial European settlement in the eighteenth century, initially for agriculture and more recently for residential, commercial, and industrial land uses. Consequently, native vegetation has been cleared to such an extent that very little of the pre-Contact vegetation distribution remains, and many of the extant plant communities are now considered under threat of extinction (NPWS 2002, 1).

As the Blacktown soil landscape covers most of the land within the study area, the vegetation landscape of the study area is largely characterised by almost completely cleared open-forest and open woodland (dry sclerophyll forest), with individual trees or small stands of Mugga Ironbark (*Eucalyptus sideroxylon*) found occasionally on crests (OEH 2019). Similarly, vegetation on the Luddenham soil landscape comprise extensively cleared open forest (dry sclerophyll forest), whereas that on the Berkshire Park soil landscape consists primarily of the Broad-leaved Ironbark (*Eucalyptus fibrosa*), Narrow-leaved Apple (*Angophora bakeri*) and Scribbly Gum (*Eucalyptus sclerophylla*) (OEH 2019).

On the other hand, the vegetation on the channels and floodplains of the South Creek soil landscape reflects its frequent inundation (OEH 2019). Common tree species present in this soil landscape include the Broad-Leaved Apple (*Angophora subvelutina*), Cabbage Gum (*Eucalyptus amplifolia*), and Swamp Oak (*Casuarina glauca*), while tall shrublands of paperbarks and tea trees may occur on more elevated streambanks. Exotic species such as the Blackberry (*Rubus vulgaris*) and other weeds are also observed to dominate areas where significant land clearance have occurred.

Typically, the original vegetation on Disturbed Terrain is completely cleared as a result of their land use (i.e., quarries and waste management) (OEH 2019). Some Disturbed Terrain locations may have also been artificially topsoiled and revegetated or covered by concrete and bitumen.

4.5 AHIMS and AHIP Data

4.5.1 AHIMS search results

The AHIMS database is presently managed by DPC and includes spatial and compositional information of Aboriginal sites (i.e., objects, places, and declared Aboriginal Places) previously recorded through academic and compliance-based cultural resource management projects associated with modern various developments.

An extensive search of the AHIMS database was carried out on 19 June 2020 for Aboriginal sites within both the study area, and within a 250 m buffer zone from its boundary in order to capture any objects or sites that may lie on or near the boundaries of the study area. As the study area consist of an irregularly-shaped polygon stretching across a large area in the landscape, it was divided and rationalised into five contiguous search polygons – Search Areas 1 to 5 – to facilitate the extensive search on AHIMS (AHIMS Client Service IDs #514049, #514051, #514054, #514056, and #514057).

A total of 474 unique AHIMS entries were returned in these searches, but only 468 of these were valid: three entries were duplicates and three entries were marked as ‘not a site’ (Table 3; Figure 10). Of the 468 valid sites, 308 lie within the study area, and of those 308 sites, 138 are within the five precincts comprising the study area (Figure 11 and Figure 12)

Among the 138 valid AHIMS sites in the study area precincts (Table 4), the majority (n=115) are identified as ‘artefact’ sites comprising artefact scatters and isolated find(s). The remaining sites largely comprise potential archaeological deposits (PADs) (n=19), most of which (n=15) were found in association with artefacts. Other site types that have been identified within the five precincts include three culturally-modified trees (carved or scarred) and one grinding groove site.

Although the AHIMS results indicate two Aboriginal art sites are within the study area precincts, analysis of the sites’ site cards and further discussion with DPC personnel have resulted in the determination that these sites are actually artefact scatters that were accidentally entered into the AHIMS system as art sites. The information in the AHIMS database has been updated to mark both of these sites as artefact scatters, and in this study (and other studies in the future) they are described and reported upon as artefact scatters.

Table 3. AHIMS extensive search results (19 June 2020)

Site features	All search areas (1–5)	Within Aerotropolis	Within Aerotropolis, outside precincts
Aboriginal resource and gathering, Artefact	1	0	0
Artefact	407 (123 isos ¹)	271 (60 isos)	156 (40 isos)
Artefact, Modified tree (carved or scarred)	1	0	0
Artefact, Potential archaeological deposit (PAD)	33 (18 isos)	22 (15 isos)	7 (3 isos)
Grinding groove	2	2	1
Modified tree (carved or scarred)	7	6	3
Potential archaeological deposit (PAD)	17	7	3
Total	468²	308	170

¹ 'Isos' refers to 'isolated find(s)', typically one to several artefacts found within a locality with no apparent correlation to any specific archaeological feature besides as part of the wider 'background scatter' of artefacts across the landscape.

² Excluding three duplicate entries and three invalidated sites on AHIMS.

Table 4. Distribution of 138 unique and validated sites across the five precincts within the study area

Site features	Aerotropolis Core	Agribusiness	Badgerys Creek	Northern Gateway	Wianamatta-South Creek
Artefact					
Potential archaeological deposit (PAD)					
Artefact; Potential archaeological deposit (PAD)					
Grinding groove					
Modified tree (carved or scarred)					
Total (138 sites)					
Site density	sites/km²	sites/km²	sites/km²	sites/km²	sites/km²

A large number of Aboriginal archaeological sites have been identified across the landscape and concentrated within areas where relatively low amount of land disturbances have occurred (Figure 11 and Figure 12). The wide distribution of artefact sites across various terrains in the landscape is indicative of their nature as part of the wider ‘background scatter’ of artefacts across the landscape within the Aboriginal archaeological record.

As can be expected, culturally modified trees are located in areas where remnant vegetation remains extant (e.g. along creek lines and away from urban areas), whereas grinding groove sites are located close to creek lines due to the need for water in the grinding process.

The known PADs occur most often on lower elevations and along or between creek lines, and few are known in areas of high elevations such as hills or ridgelines. As PADs are typically associated with Aboriginal occupation over a substantial period of time (i.e. campsites), their distribution across the study area is commensurate with the riverine-based subsistence patterns (particularly the staple reliance on yam and other tubers) of inland Darug clans observed in the ethnographic record (Part 6.3.4).

4.5.2 AHIP search results

An AHIP is the legal instrument that the DPC issues under part 6 of the National Parks and Wildlife Act, and section 90 relates specifically to AHIPs. When harm cannot be avoided to Aboriginal objects (registered on AHIMS) and declared Aboriginal Places because of the

planned activity at the site, an AHIP must be applied for and granted before the activity can take place.

The present DPC AHIP public register provides information on all AHIP-related decisions processed after 1 October 2010. This register was similarly searched for AHIPs relevant to the study area on 19 June 2020.

A total of six unique AHIPs has been issued for various public and private projects within the boundary of the study area since 1 October 2010. The details of these six unique AHIPS are provided in Table 5 below.

Table 5. AHIPs relevant to the study area (since 1 October 2010)

AHIP Status	OEH Region	AHIP No.	AHIMS No.	Applicant	Project Name [2.1.1] or (a)	Location [2.1.2] or (b)	LGA [2.1.3] or (c)	Details of AHIP [2.1.4] or (d)	Start date	Published date
Issued	Greater Sydney	C0000436	-	Roads and Maritime Services (RMS)	Bringelly Road Upgrade between Camden Valley Way to the Northern Road	Works are proposed along Bringelly Road between Camden Valley Way and the Northern Road with an extension from the Camden Valley Way to Glen Allen Road.	Liverpool and Camden	Salvage excavations; Community collection; Harm to certain Aboriginal objects through proposed works.	11.09.2014	24 Sep 2014
Issued	Greater Sydney	C0000605	-	Elford Group	Badgerys Creek Quarry and Inert Waste Landfill	Badgerys Creek.	Liverpool	Harm to certain Aboriginal objects through proposed works.	09.10.2014	10 Nov 2014
Issued	Greater Sydney	C0001054	3837	Sydney Water Corporation	Austral Precinct Wastewater Servicing Stage 1, South West Growth Centre	Austral Precinct, South West Growth Centre within the suburbs of Austral and Middleton Grange, NSW.	Liverpool	Salvage excavations; Harm to certain Aboriginal objects through proposed works.	08.05.2015	13 May 2015

AHIP Status	OEH Region	AHIP No.	AHIMS No.	Applicant	Project Name [2.1.1] or (a)	Location [2.1.2] or (b)	LGA [2.1.3] or (c)	Details of AHIP [2.1.4] or (d)	Start date	Published date
Issued	Greater Sydney	C0001407	3894	Roads and Maritime Services (RMS)	The Northern Road Upgrade Stage 2	The Northern Road between Peter Brock Drive, Oran Park and Mersey Road, Bringelly.	Liverpool and Camden	Salvage excavations; Harm to an Aboriginal place.	08.10.2015	12 Oct 2015
Varied	Greater Sydney	C0001407	3894	Roads and Maritime Services (RMS)	The Northern Road Upgrade Stage 2	The Northern Road between Peter Brock Drive, Oran Park and Mersey Road, Bringelly.	Liverpool and Camden	Temporary storage location of objects varied from office of Artefact Heritage to office of AHMS	15.12.2015	15 Dec 2015
Issued	Greater Sydney	C0002788	4103	Roads and Maritime Services (RMS)	The Northern Road Upgrade (TNR2A, TNR2B, TNR2C)	The Northern Road between Peter Brock Drive, Oran Park and Mersey Road, Bringelly.	Liverpool and Camden	Movement only of certain Aboriginal objects; Salvage excavations; Harm to certain Aboriginal objects through proposed works.	18.07.2017	21 Jul 2017
Issued	Greater Sydney	C0003861	4302	Celestino Developments SSP Pty Ltd	Sydney Science Park	565-609 Luddenham Road.	Penrith	Salvage excavations; Harm to certain Aboriginal objects through proposed works.	23.07.2018	27 Jul 2018

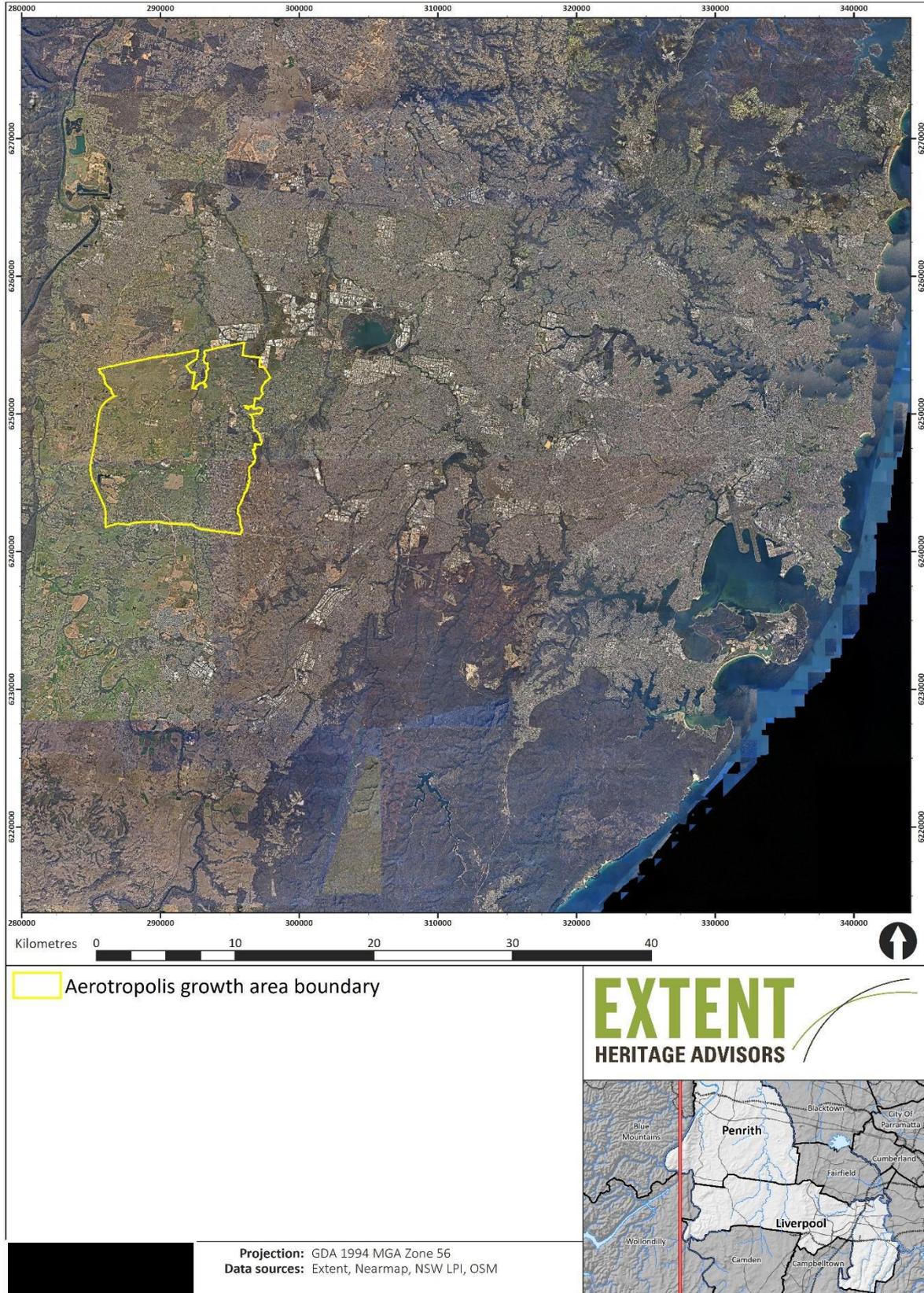


Figure 4. Location of the Aerotropolis within the wider Sydney area

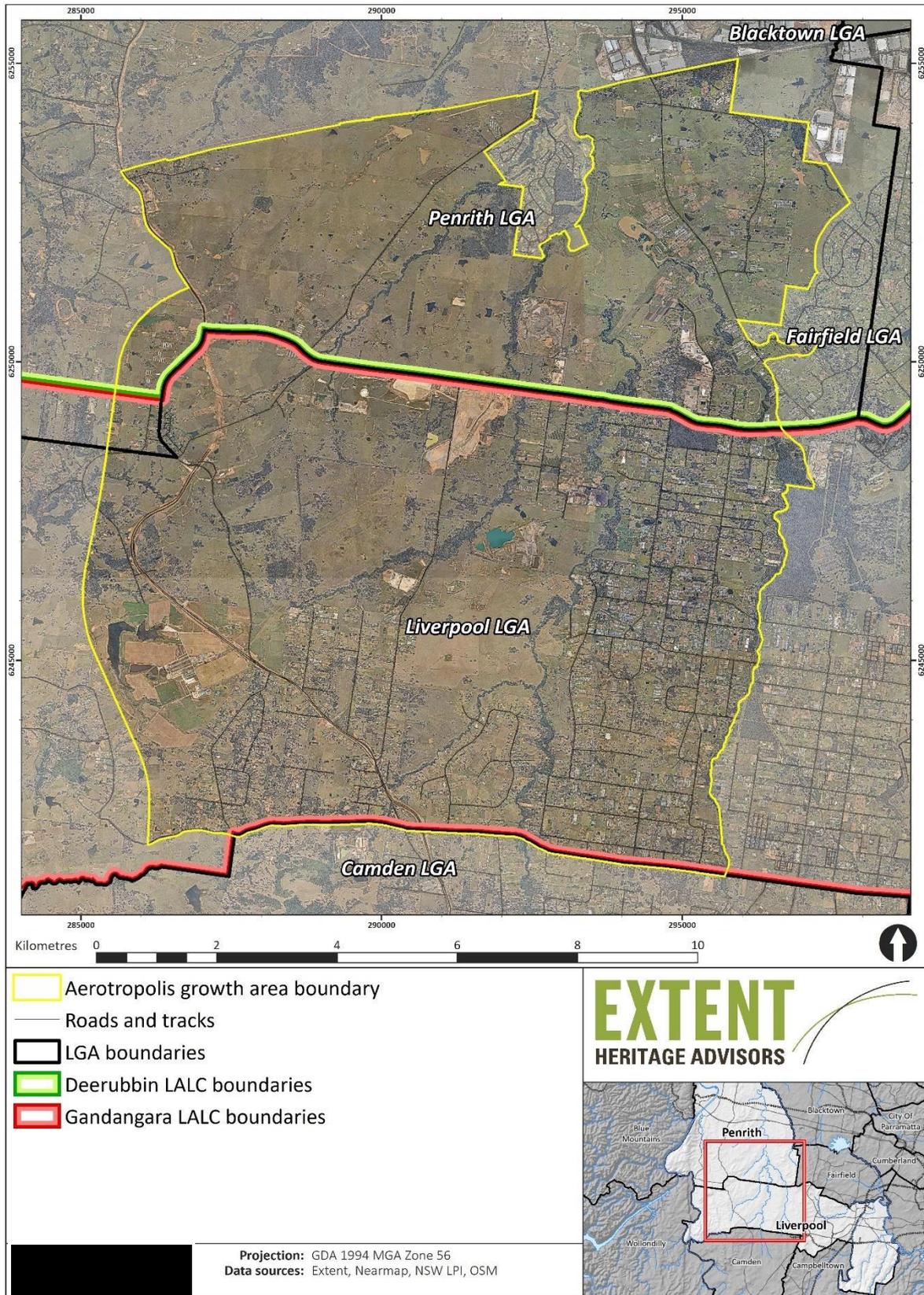


Figure 5. LGA and LALC boundaries in relation to the Aerotropolis

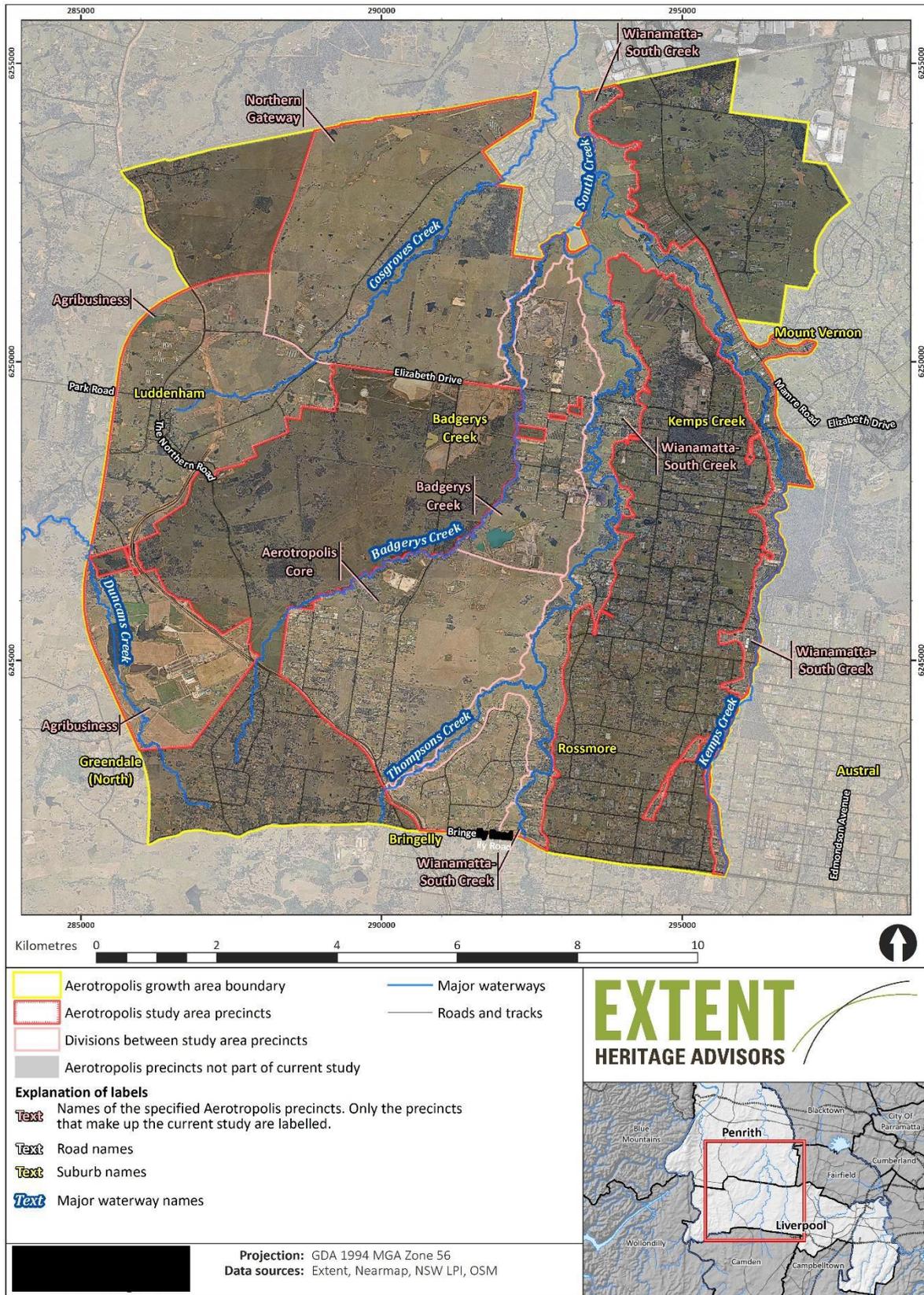


Figure 6. The five Aerotropolis precincts comprising the current study

Note: Shown over recent aerial photography

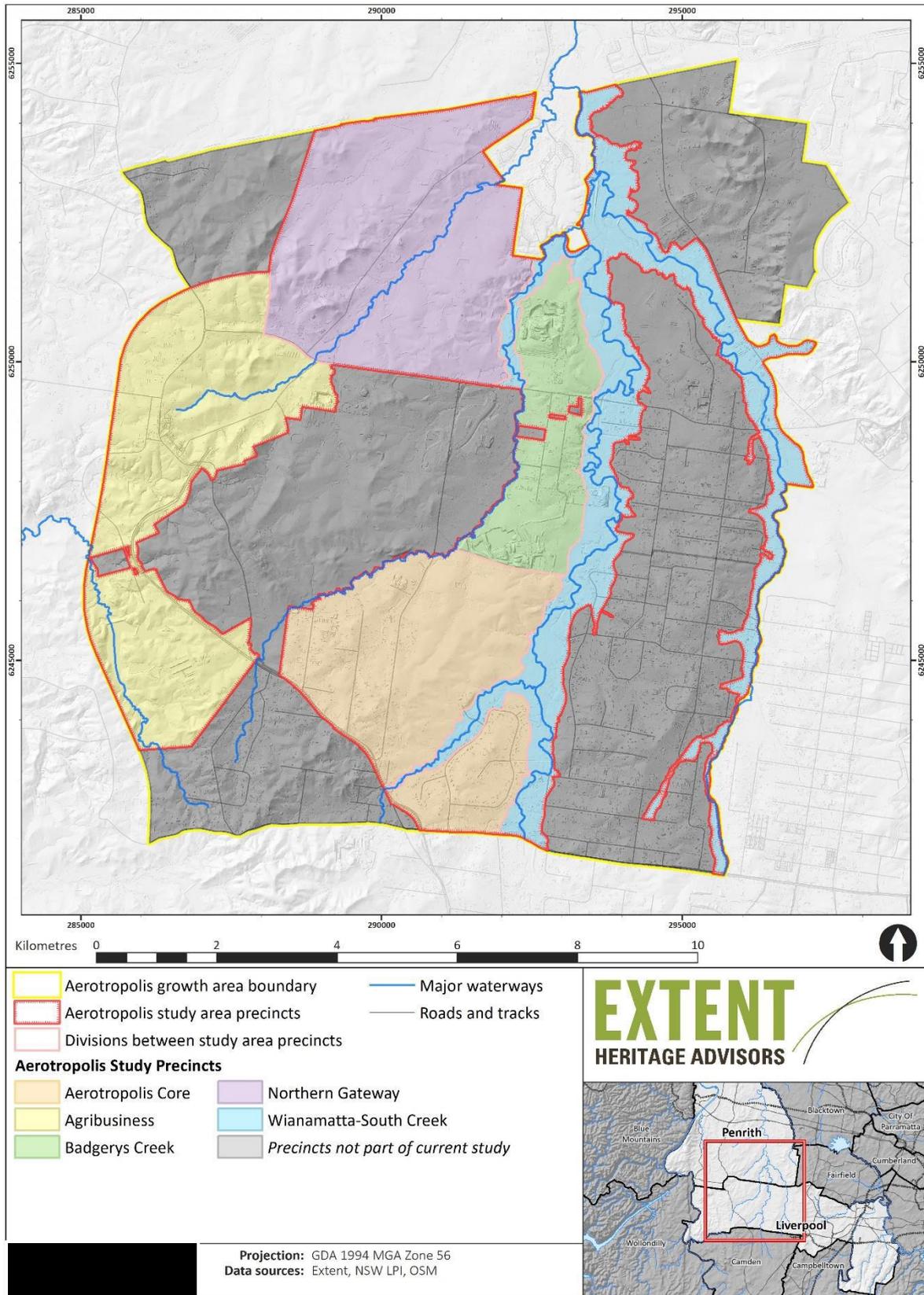


Figure 7. Topographical map of the study area and its five precincts

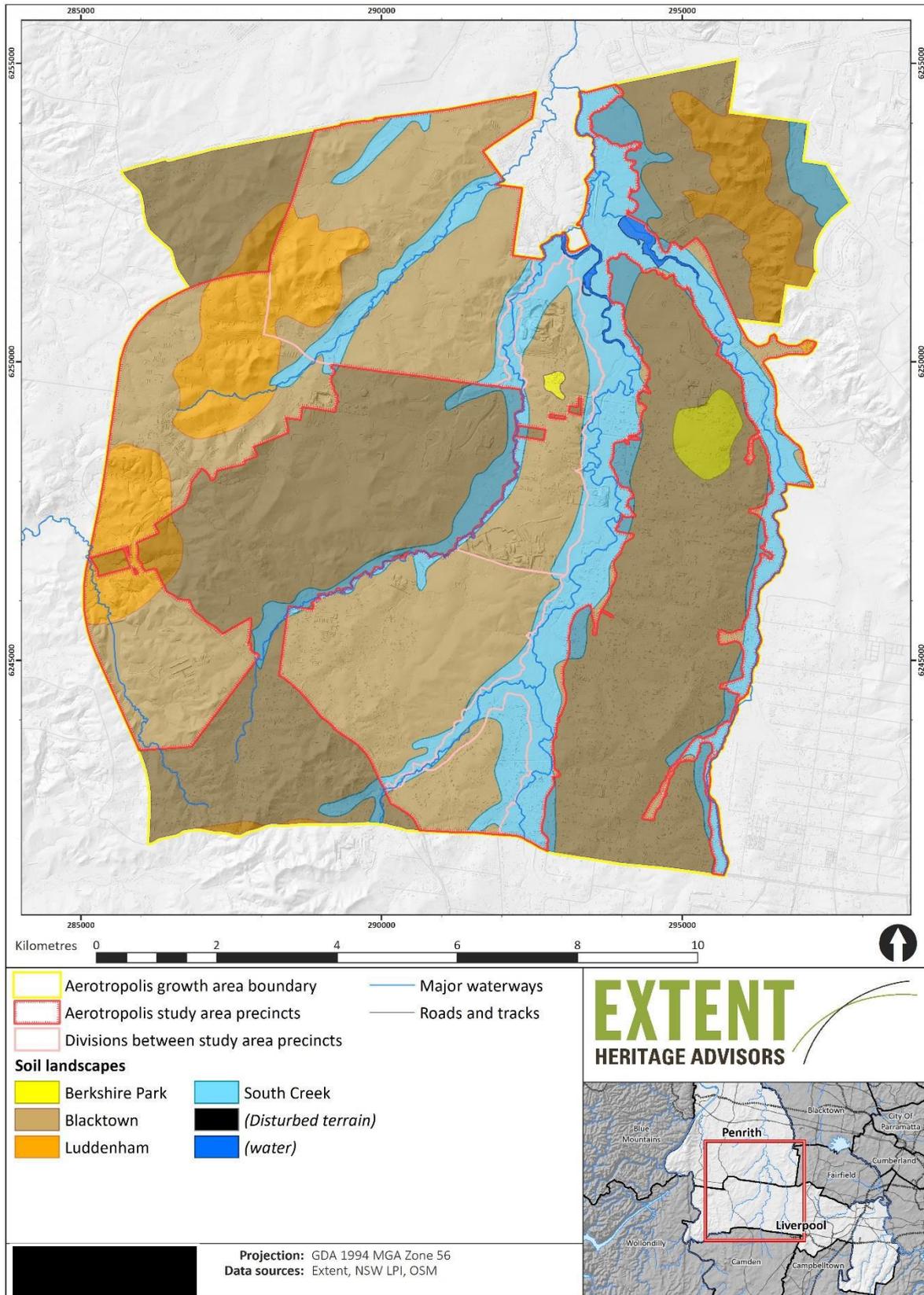


Figure 8. The four natural soil landscapes

Note: South Creek, Blacktown, Luddenham and Berkshire Park are present within the study area

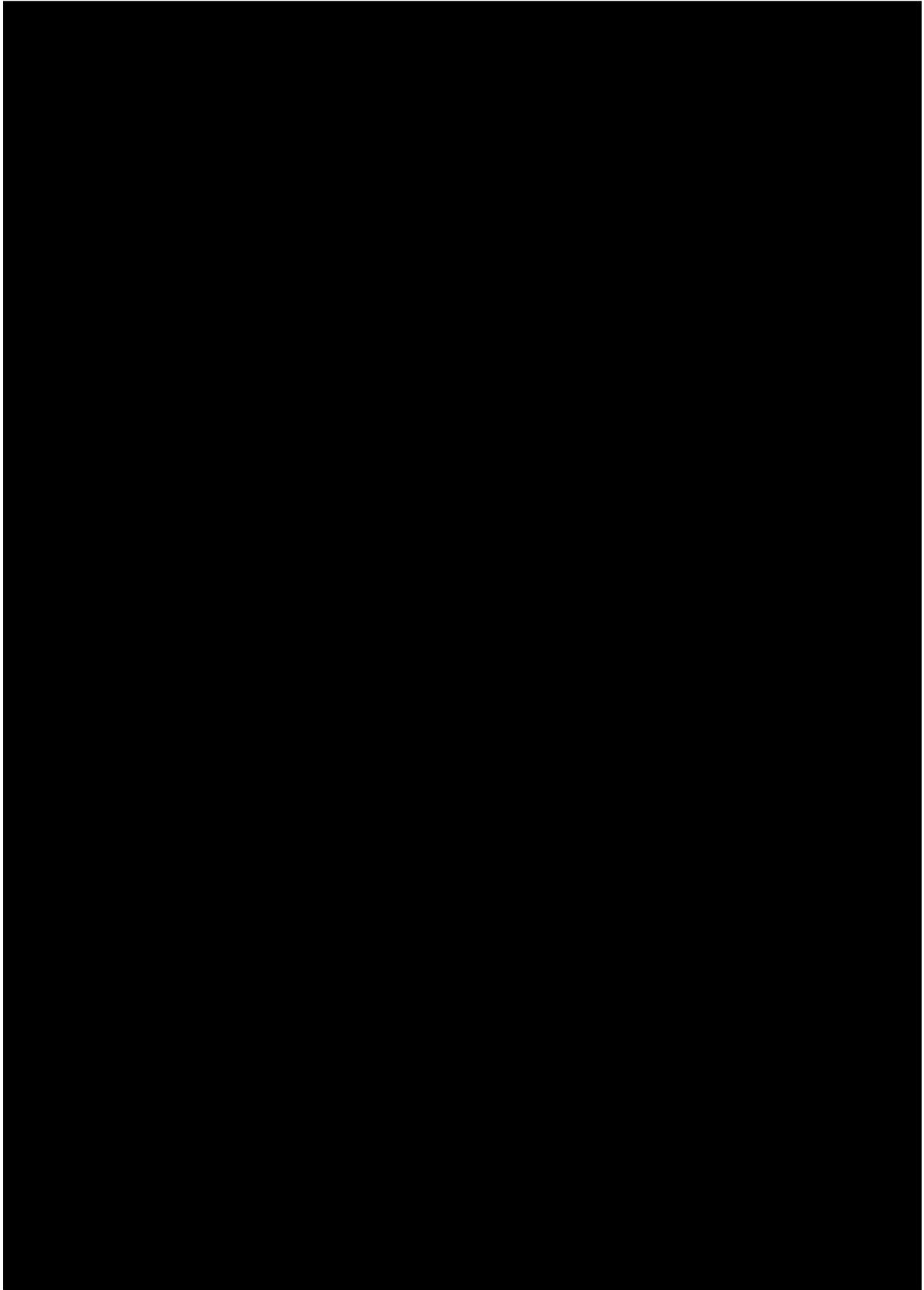


Figure 9. Map of possible remnant vegetation areas within the study area

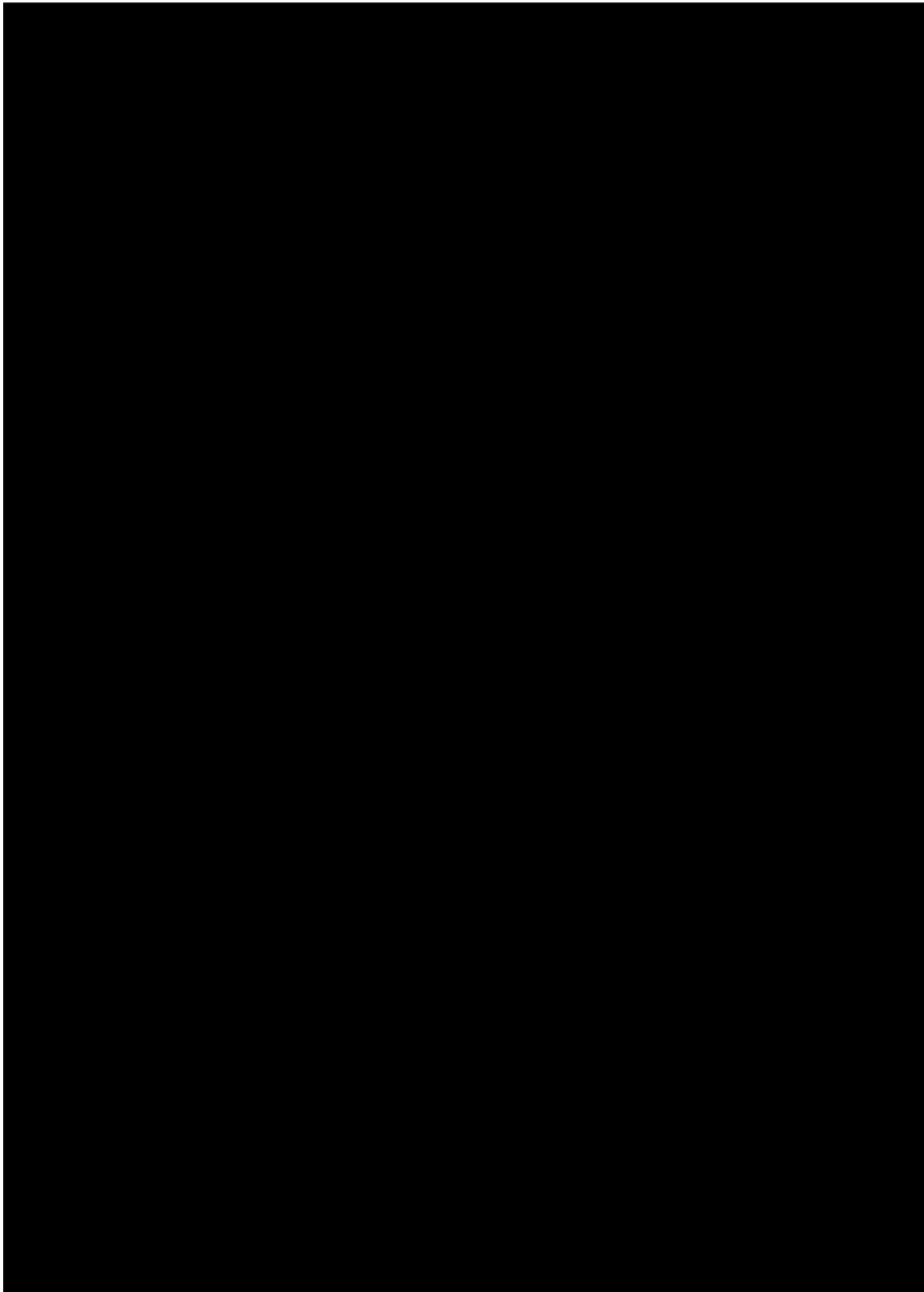


Figure 10. Map of 468 unique and validated Aboriginal sites in and around the study area, showing the regional context of Aboriginal heritage sites

Source: Returned from the extensive AHIMS search, 19 June 2020

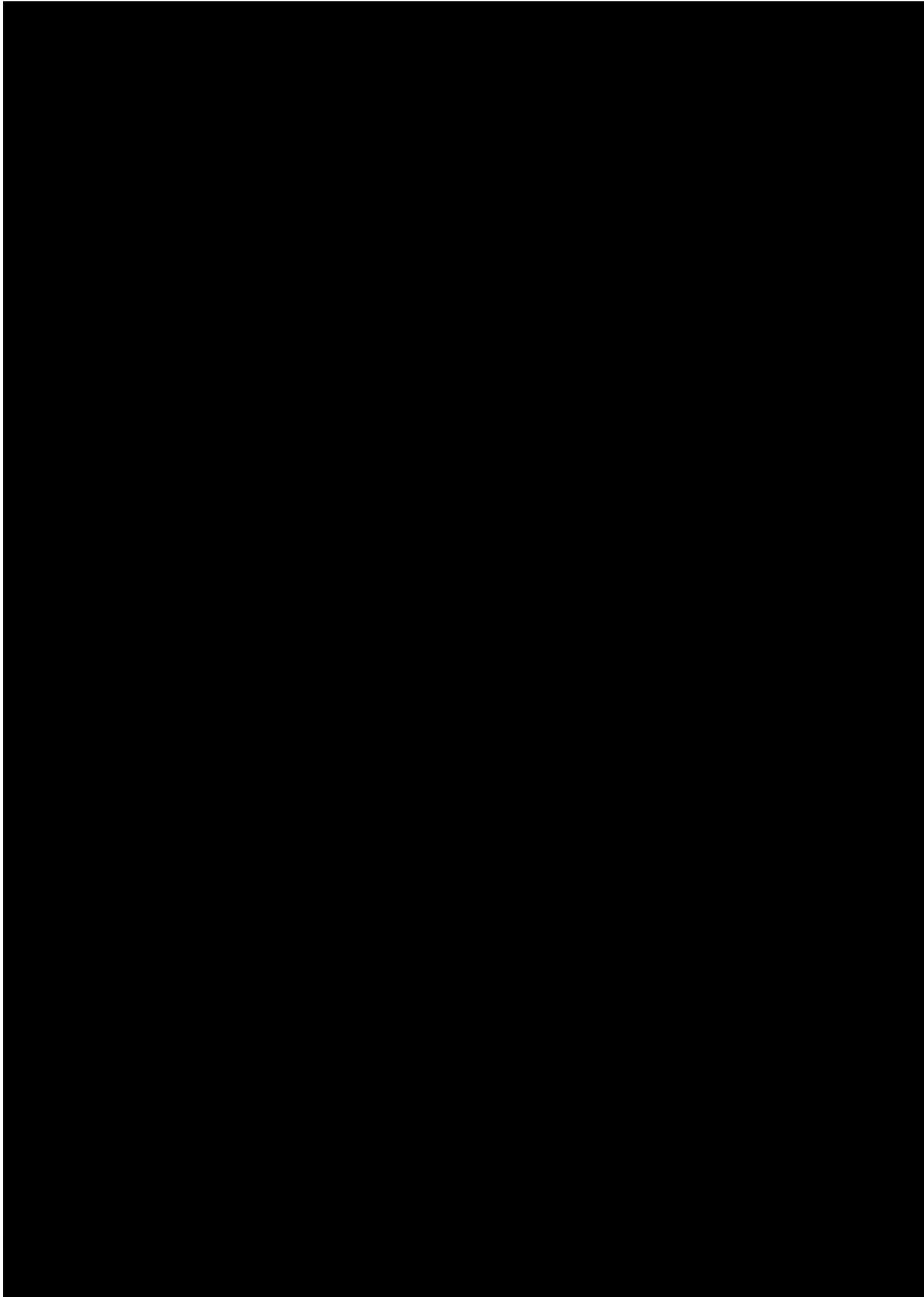


Figure 11. Map of 308 unique and validated Aboriginal sites within the boundary of the study area, showing the overall distribution of sites across the entire Aerotropolis

Source: Returned from the extensive AHIMS search, 19 June 2020

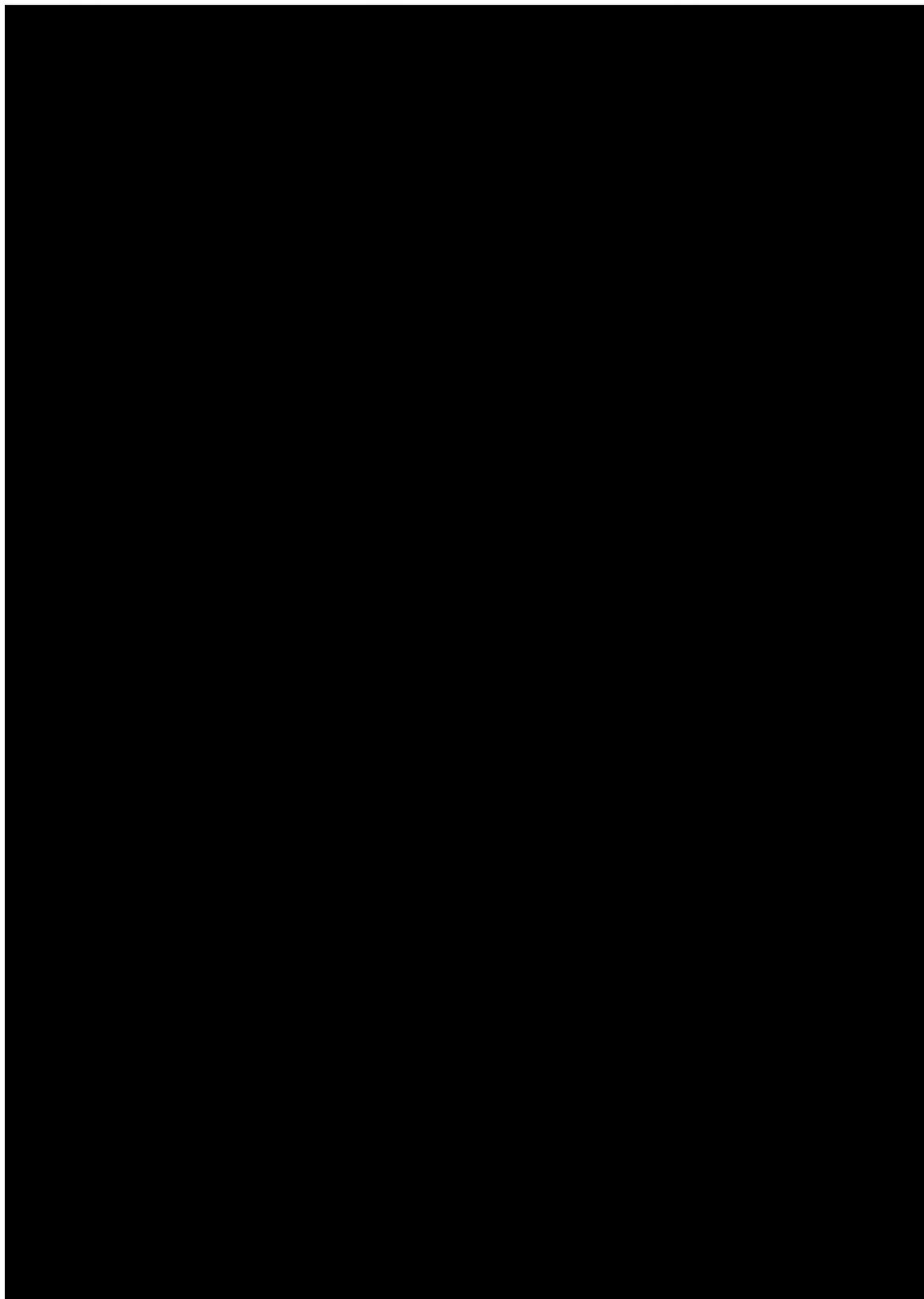


Figure 12. Map of 138 unique and validated Aboriginal sites within the five precincts, showing the distribution of Aboriginal heritage sites within only the study area precincts

Source: Returned from the extensive AHIMS search, 19 June 2020

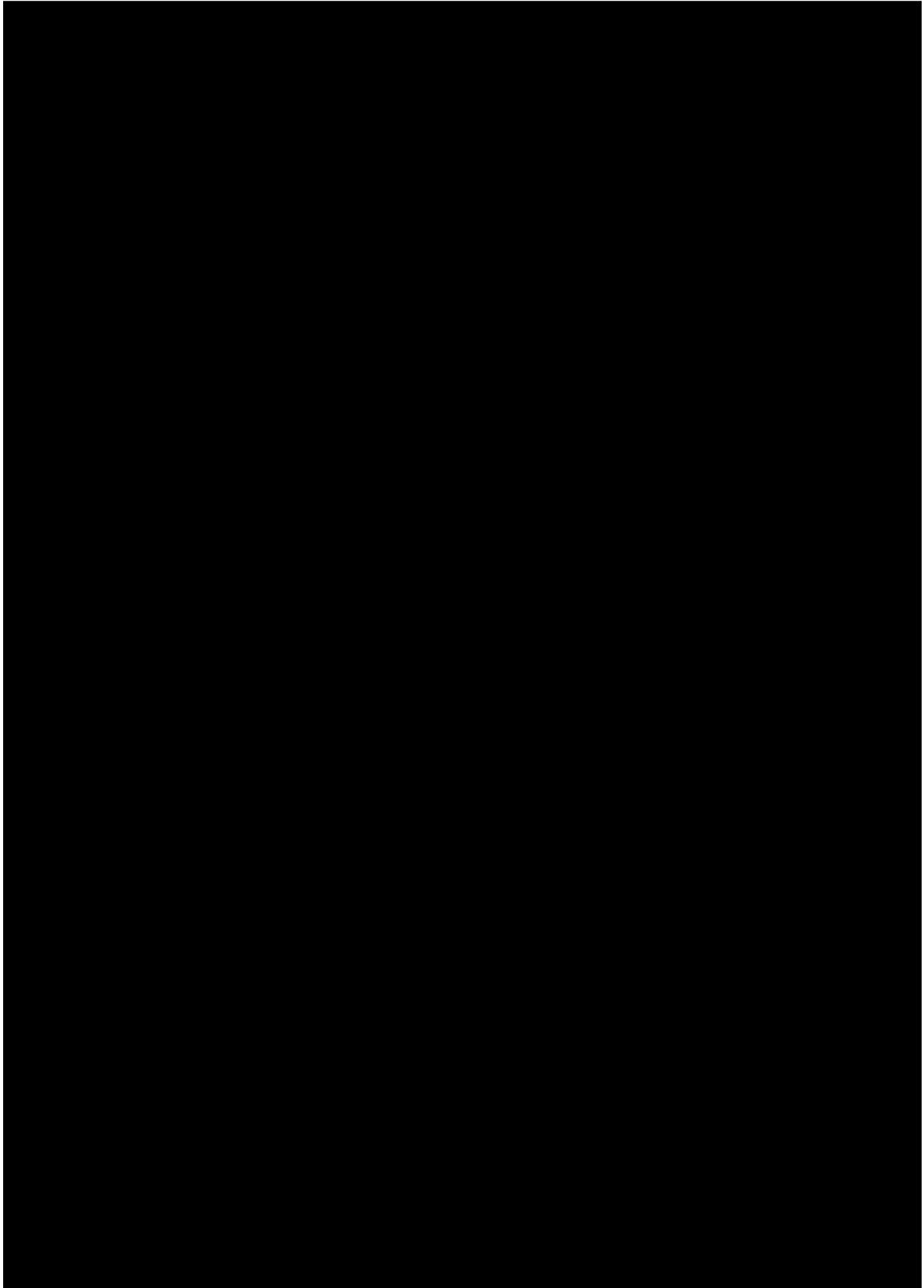


Figure 13. Draft evaluation of Aboriginal heritage sensitivity within the Aerotropolis and five precincts

5. Methodology

5.1 Review of previous studies

5.1.1 Aboriginal heritage

Regional archaeological context

The archaeological record on the Cumberland Plain is well documented by many academic studies, regional management studies and compliance-based cultural heritage assessments over the past thirty years. More than 7,000 sites have been recorded and registered on the DPC Aboriginal Heritage Information Management System (AHIMS) on the Cumberland Plain, reflecting both the wealth of the archaeological record and the number of archaeological investigations undertaken in this region. Consequently, the Cumberland Plain is the most intensively investigated archaeological landscape in Australia.

The most common site types (see Appendix D.1) in the greater Sydney region are artefact scatters and isolated finds (Attenbrow 2010). The next most common site types are PADs, rock shelters, middens, art sites, grinding grooves and culturally modified trees. The landscape of the study area strongly restricts the types of sites that are likely to be found, and it is unlikely that further research will discover any rock shelters, art sites (engraved or carved) or middens. Instead, it is likely that further archaeological investigations within the study area will reveal the location of additional artefact scatters, PADs, culturally modified trees and possibly additional grinding grooves.

The distribution, density and size of sites largely depends on their environmental contexts. For instance, middens are typically found near marine, estuarine and sometimes freshwater bodies. On the other hand, rock shelters are only found in areas of exposed sandstone escarpment, whereas grinding grooves are in areas of exposed flat bedded sandstone near water sources.

Early Aboriginal occupation and the Last Glacial Maximum (c. 30,000–18,000 BP)

Aboriginal occupation of NSW spans at least 40,000 years (Stockton and Holland 1974; Nanson et al. 1987; JMCHM 2005b, 107–125), although older dates have been claimed for artefacts and human remains found within the barrier sands of Lake Mungo in the Willandra Lakes Region (Bowler et al. 2003; Shawcross 1998). Within the Cumberland Plain, Aboriginal occupation dates back into the Pleistocene period (c.2.58 million years ago to 11,700 years before present [BP]) as well. This evidence comes from radiocarbon dating of charcoal retrieved from excavated sites at Cranebrook Terrace, Penrith (41,700 years BP), Shaw's Creek K2 (14,700 BP) and George and Charles Streets, Parramatta (c. 25,000-30,000 BP). As the dating of Cranebrook Terrace is currently under review (Attenbrow 2010, 21; see also Williams et al. 2017), the oldest reliable dates for Aboriginal occupation on the Cumberland Plain are presently derived from the George and Charles Streets site.

The climate gradually became warmer and wetter while sea levels rose at the end of the Last Glacial Maximum (LGM) and Last Glacial Period (LGP) around 15,000 BP (Severinghaus and Brook 1999) which marks the transition from the Pleistocene to Holocene epoch. From this

period onwards, there is a more continuous archaeological record for the Sydney region (Attenbrow 2010, 153). A number of early occupation sites dating to the late Pleistocene/early Holocene have been found in deep stratified rock shelter deposits and within alluvial deposits, particularly on the margins of large rivers such as the Hawkesbury-Nepean and Parramatta Rivers (McDonald 2008, 39-40).

Intensification during the Holocene (c. 12,000 BP–Present)

The archaeological record indicates that significant and widespread changes occurred among Aboriginal cultures during the Holocene (Hiscock 2008). During this period, there appears to be a decline in the use of silicified tuff as the preferred raw material and a greater use of other local materials. There also appears to be a substantial growth, then decline, in the production and use of backed artefacts, as well as the introduction of ground-edged implements (with the peak period being approximately 4,000–1,000 BP). In addition, there appears to be a considerable increase in archaeological evidence of human occupation as well (e.g., McDonald 2008, 36).

Consequently, it has been argued that the Holocene 'intensification' of cultural activity is a result of increased populations during this period (Smith et al. 2008; Williams et al. 2010).

It is also likely that the technological changes and possible population increase were accompanied by broad social changes. Hiscock and Attenbrow (2005) have suggested that changing climate conditions after c.3,000 BP stimulated a change in foraging practice that may have incorporated a shift towards higher mobility. On the other hand, McDonald (2008, 40) suggests that by about 4,000 BP, people occupied smaller territories and used residential bases on a more permanent basis, as well as defined foraging ranges using annual and extended cycles.

Aboriginal sites: regional spatial patterns on the Cumberland Plain

A study of the regional archaeology on the Cumberland Plain by Jim Kohen (1986) demonstrated that water proximity was an important factor in site location patterning in the region. In short, Kohen (1986, 229–275) argued that open artefact scatters in this region are larger, more complex, and more densely clustered along permanent creek and river lines. Kohen (1986, 280–281) also found that while silcrete (51 per cent) and chert (34 per cent) are the most common raw materials used to manufacture stone artefacts, other raw materials that were used include quartz, basalt, and quartzite.

Although these occupation patterns above have been generally supported by subsequent investigations, Kohen's study was limited by its reliance on surface evidence. Extensive excavations across the Cumberland Plain has since demonstrated that areas with no surface evidence often contain sub-surface deposits buried beneath current ground surfaces. This is a critical factor in aggrading soil landscapes which are those commonly found across the Cumberland Plain. In another examination of the archaeological landscape on the Cumberland Plain, McDonald (1997) found that surface evidence (or the absence of surface evidence) does not necessarily indicate the potential, nature or density of sub-surface material. Hence, McDonald's study clearly highlights the limitations of surface surveys in identifying and classifying archaeological deposits and sites. The study also demonstrates the importance of test excavation in establishing the nature and density of archaeological material on the Cumberland Plain.

Significantly, McDonald (1997) also developed a predictive Aboriginal site location model based on previous archaeological studies across the Cumberland Plain, and the results of archaeological survey and excavation across the Australian Defence Industries (ADI) site near St Marys. Using this model, McDonald (1997, 56) predicted that archaeological evidence is likely to occur across the entire landscape. Areas of archaeological potential were predicted wherever there has been limited development prior to surface disturbance.

Also, predicted Aboriginal habitation was focused on major waterways with larger and denser sites evident, while land close to minor waterways and tributaries had smaller and fewer sites. Settlement and evidence of activity was also apparent at creek junctions and on ridgelines (McDonald 1997, 56–57).

Although the patterns described above may provide a useful general guide to predicting site locations and inferred cultural behaviour, there are always exceptions such as large waterholes or wetlands on upper tributaries that were important resource zones and attracted repeated and complex Aboriginal occupation.

More recently, a large-scale excavation of a series of pipelines along major creeks by Archaeological and Heritage Management Solutions (2015b, presently Extent Heritage) contributed further to McDonald's work. Key findings included:

- The characterisation of the archaeology of the Cumberland Plain in the form of a cultural landscape comprising foci of activities set against a low density spread of Aboriginal objects in the background (found across all undisturbed locations) generally in the order of less than six artefacts/m².
- As a result of this characterisation, the proposal that a 'site' (or a place of specific Aboriginal cultural activity) is identified only when this threshold is exceeded. In turn, areas of extensive occupation or repeated use should typically contain densities over 45 artefacts/m² and densities of over 150 artefacts/m² for the largest sites.
- That test excavations at intervals of five or 10 m generally appear to reveal the extent of high artefact densities (i.e. a priori sites). This suggests, in turn, that high density sites typically have an extent between 10-20 m and, assuming a radial distribution of artefacts, an occupation area of between 100–400 m².

Local Aboriginal archaeological context: the Aerotropolis study area

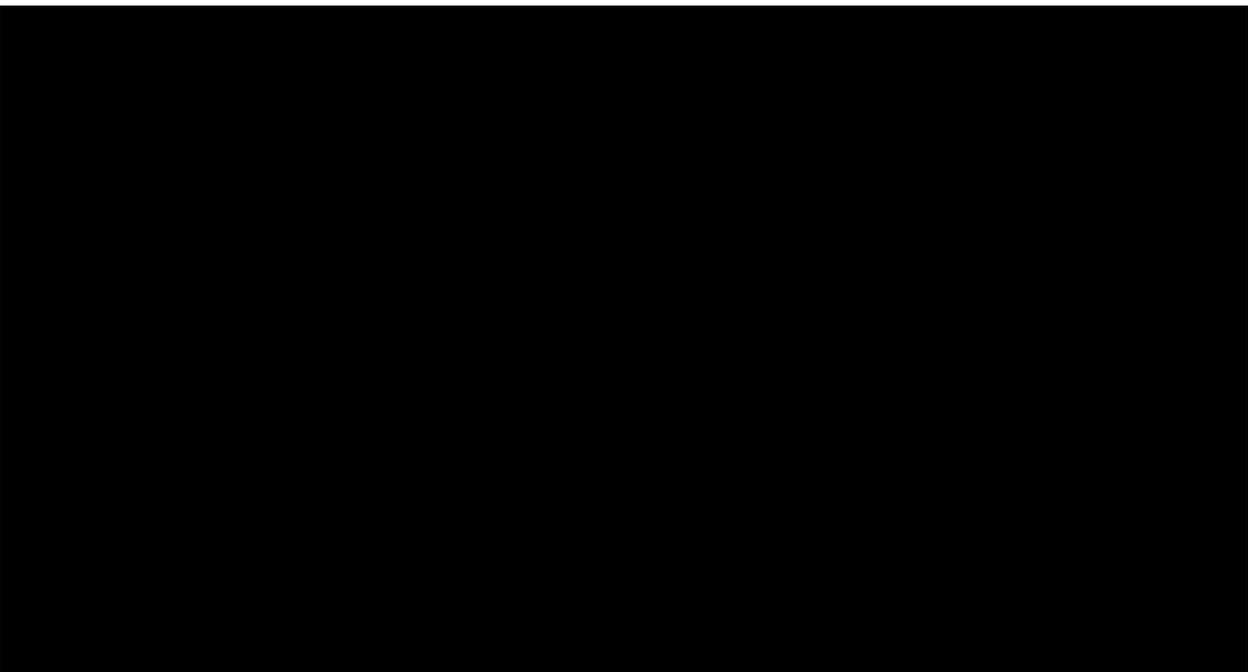
Many Aboriginal archaeological investigations have been conducted in and around the study area since 1978. Aside from documenting various low densities Aboriginal artefact scatters (i.e. various stone flakes, cores and debitage), PADs and culturally modified trees, these studies have also identified the presence of 'open camp' or 'shelter' and art sites, areas of rich natural resources for subsistence and raw material sources for stone tool manufacture (e.g. fine-grained silcrete cobbles) (e.g. Artefact 2015; 2017; 2019a; 2019b; Austral Archaeology 2004; AMC 2014; Biosis 2019a; 2019b; Brayshaw McDonald 1992; 1995; Dominic Steele 1999; 2001; 2007; EMM 2020; Extent Heritage 2019; GML 2013; 2015; Haglund 1978; HLA Envirosiences 1995; Hughes and Lance 1984; MDCA 1988; 1991; Jacobs 2015; Kohen 1991; NHS 1989; PDAS 1991; Rhoads and Dunnett 1985; Stearns 1985).

In general, the raw material utilized in the manufacture of stone tools appear to be predominantly silcrete, but chert, quartz, quartzite, sandstone, petrified wood and mudstone/tuff (also known as 'IMT', 'indurated mudstone/tuff') were found to have been used as well (e.g. Artefact 2015; 2017; 2019a; 2019b; Austral Archaeology; AMC 2014; Biosis 2019a; 2019b; Brayshaw McDonald 1992; Dominic Steele 1999; 2001; 2007; EMM 2020; Extent Heritage 2019; GML 2013; 2015; Hughes and Lance 1984; Jacobs 2015; Kohen 1991; PDAS 1991; Rhoads and Dunnett 1985; Stearns 1985).

Edge-ground artefacts and grinding grooves were found along [REDACTED] while another edge-ground axe was recently recovered with other stone flakes during another survey at [REDACTED]. A fragment of a possible 'microblade' was also identified during a survey of a locality at [REDACTED]. Two 'backed implements' were also identified during another survey on a spur above [REDACTED] whereas an indurated mudstone scraper was recovered during test excavations at the [REDACTED].

Significantly, recent excavations within the study area have also recovered large assemblages of Aboriginal stone artefacts. Excavations across [REDACTED], for instance, recovered a total of 691 artefacts – 666 of which were found within a single artefact scatter site and PAD [REDACTED]. Salvage excavation at seven artefact scatter sites within the riparian corridor of [REDACTED] also uncovered a total of 2,128 artefacts, of which 1,346 artefacts were recovered from a single site [REDACTED].

A selection of key investigations relevant to the study area is summarized as follows:



[Redacted text block]

Table 6. List of local Aboriginal archaeological investigations registered on AHIMS across all five search areas to date

Search Area No.	AHIMS Report ID	Author	Title	Published date
1; 2	1345	Mary Dallas Consulting Archaeologists (MDCA)	Preliminary archaeological study of the Luddenham Equestrian Centre, Luddenham Road, Erskine Park, NSW [report to Douglas Sanger Pty Ltd] by M. Dallas.	1 Jan 1988
1; 2	1539	Mary Dallas Consulting Archaeologists (MDCA)	Appendix C: Site investigation at Luddenham Equestrian Centre, Erskine Park, NSW by Mary Dallas & Laura-jane Smith.	1 Nov 1988
1; 2	4737	Dominic Steele Archaeological Consulting	Archaeological survey report for land between Luddenham and Mamre Roads Luddenham NSW [a report prepared for Camelot Grange Pty Ltd] by Dominic Steele.	1 Sep 1999
1	97496	Dominic Steele Archaeological Consulting	Archaeological Research Design for three sites (#45-6-1772, 1774 & 1777) within land between Luddenham & Mamre Roads. Luddenham, NSW by Dominic Steele.	1 Feb 2001
1	97503	Dr. Jo McDonald	Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision, 'Austral Site', Mamre Road, Erskine Park, NSW by Jo McDonald.	1 Jun 2000
1; 2	98435	John Appleton	The Archaeological Investigation of Lot 2, DP 120673 The Site of a Proposed New Clay and Shale Extraction Area - Old Wallgrove Road Horsley Park, West of Sydney NSW.	1 Jan 2002
1; 2	99352	Dominic Steele Archaeological Consulting	Aboriginal Heritage Conservation Action Plan - Application for a S90 Heritage Impact Permit Consent with Salvage & Collection. Twin Creeks Estate, Luddenham Road, Luddenham, NSW.	1 Sep 2004
1	103482	Alistair Carr; Andrew Costello	St Marys Wastewater System Augmentation Salvage Excavation Report June 2015.	1 Jun 2015
1	103913	Matthew Kelleher; Mark Rawson; Ben Anderson	SYDNEY SCIENCE PARK DEVELOPMENT LUDDENHAM, NSW Aboriginal Archaeological Assessment Test Excavation Report.	1 Apr 2018
1	103914	Matthew Kelleher; Mark Rawson; Cristany Millich; Ben Anderson	SYDNEY SCIENCE PARK DEVELOPMENT LUDDENHAM, NSW Cultural Heritage Assessment Report.	1 Apr 2018

1	104138	Biosis Pty Ltd - Wollongong	Mamre West Precinct Orchards Hills Aboriginal Cultural Heritage Assessment Report Prepared for HB-B on behalf of Altis Property Partners.	28 Jan 2019
1	104331	Fenella Atkinson; Georgia Burnett	Upper Canal Stage 2 Out of Canal mitigation report: Aboriginal Community Collection and Excavation Report (AHIP C0003872).	1 Nov 2019
2	362	Laila Haglund	Archaeological survey of area considered for second airport Northern Zone.	9 Jan 1978
2	961	James Rhoads	Aboriginal resources planning study: City of Penrith [a report prepared by the Dept of Anthropology] by James Rhoads and Gary Dunnett.	9 Jan 1978
2; 3	1018	Dr. Jo McDonald	Archaeological reconnaissance of the proposed Schofield's regional depot at Plumpton, NSW [report prepared for the Metropolitan Waste Disposal Authority, Sydney] by Josephine McDonald.	1 Feb 1986
2	1283	Mary Dallas Consulting Archaeologists (MDCA); M. Hanckel	An archaeological survey at Cecil Park, Penrith by M. Dallas & M. Hanckel.	1 Jul 1985
2	2378	Pam Dean-Jones	Proposed clay/shale extension, Lot DP623799 Adams Rd. Luddenham by Pam Dean-Jones.	1 Dec 1991
2	3346	Helen Brayshaw	Elizabeth drive Upgrade EIS - Archaeological Survey for Aboriginal Sites [report to the RTA] by Helen Brayshaw.	1 Jul 1995
3	3857	Kerry Navin	Cultural heritage assessment provisional olympic shooting venue, Cecil Park, NSW [report to the Olympic Co-ordination Authority] by Kerry Navin.	1 Mar 1997
3	97456	Dr. Jo McDonald	Survey for Aboriginal Sites at 1503 Elizabeth Drive, Kemps Creek (Aug and Oct 2001).	1 Aug 2001
3	98064	Dr. Jo McDonald	Survey for aboriginal sites, 1503 Elizabeth Drive, Kemps Creek, NSW.	1 Oct 2001
3; 4	102196	Australian Museum Consulting (AMC)	Rosehill Recycled Water Scheme Preliminary Cultural Heritage Assessment [for Parson Brinckerhoff Australia Pty Ltd] prepared by Australian Museum Business Services REF A07037 FINAL REPORT.	3 Feb 2008
3	104106	Kinhill Engineers	Review of Environmental Factors. Review of Environmental Factors.	1 Apr 1994
4	2457	Dr. Jo McDonald	Archaeological Survey of the proposed 33kv transmission line between Bringelly and Rossmore, NSW.	1 Dec 1992
4	2499	Dr. Jo McDonald	Archaeological survey of the Rouse Hill infrastructure project (stage1) works along caddies smalls+2nd ponds creeks, Rouse Hill NSW by Brayshaw McDonald Pty Ltd.	1 Mar 1993

4	103124	Urban Tree Management	Arboricultural Assessment of Scarred Trees at 320-400 Badgerys Creek Road Badgerys Creek New South Wales for Elford Group.	23 Jul 2014
4	103783	Tory Stening	ST ANTHONY OF PADUA CATHOLIC SCHOOL, AUSTRAL.	1 Oct 2016
4	103786	Tory Stening	145 GURNER AVENUE, AUSTRAL.	1 Apr 2017
5	104137	Biosis Pty Ltd - Wollongong	230–260 Fifth Avenue Austral Aboriginal Cultural Heritage Assessment Report Prepared for Crownland Leppington No 2 Pty Ltd.	1 Oct 2017
n/a	n/a	NSW Roads and Maritime Services	M12 Motorway Environmental Impact Statement Appendix Aboriginal Cultural Heritage Assessment Report	1 Oct 2019
n/a	n/a	EMM	Mamre Road Precinct Aboriginal Heritage Study	1 Mar 2020

6. Historical context

The following historical context informs the initial findings of the Western Sydney Aerotropolis Aboriginal and Non-Aboriginal Heritage Assessments. It first provides a summary of Aboriginal history in the study area prior to, at and shortly after European colonisation based on ethnographic information contained in early historical documents. Thereafter, it provides an overview of general suburban development towards the west of Sydney since European settlement.

6.1 Aboriginal ethnohistory

Outside of archaeological research, oral histories passed down by Aboriginal families are vital sources of knowledge on the continuous and changing history of Aboriginal people and culture. Since 1788, disparate European sources in the form of diaries, letters, newspaper articles and other colonial records by various settlers, explorers and officials provide some insight into the lives of Aboriginal people. However, the details and descriptions contained within these sources are recorded ad hoc and vary significantly according to the respective interests and agendas of their authors. The European diarists, for instance, had little to say about matters concerning Aboriginal social organisation, ritual and belief systems (Kohen and Lampert 1987, 344).

There are also biases in the historical record that present the story of colonisation primarily from a European perspective. There are also significant omissions. For example, it is unlikely that secret or sacred knowledge would have been handed over readily by the Aboriginal community to colonial officials. Notwithstanding these shortcomings, detailed focused research involving sources such as archival primary sources, oral histories, family history research, can yield new insights. Current emerging historical approaches are also better able to integrate Aboriginal traditional knowledge with the colonial historical record and archaeological research. This project provides an opportunity to take this sort of approach.

6.2 Pre-Contact Aboriginal Settlement in the Sydney Region

Aboriginal people have lived in the area known as NSW for at least 45,000 years (NPWS 2003, 14). To date, more than thirty-eight Aboriginal language groups (previously referred to as 'tribes') have been identified within NSW (NPWS 2003, 14). Examples of these broader cultural-linguistic groups in NSW include the Darug (alternative spellings include 'Dharug,' 'Dharuk' and 'Dharook'), Darkinjung, Gandangara (also spelled as 'Gundungarra'), Tharawal (also referred to as 'Dharawal'), Kuringai and Awabakal (Attenbrow 2010, 23, 32).

The three major Aboriginal languages in the Sydney region were the Darug, Tharawal and Kuringai (Kohen and Lampert 1987, 345). Different dialects were spoken with each language and although they share a common grammar, each dialect has slightly different vocabularies than the others (Kohen and Lampert 1987, 345). Nonetheless, much of the vocabulary was common between the Darug, Tharawal and Kuringai languages, hence the Aboriginal people of these three cultural-linguistic groups could understand each other with little difficulty (Kohen and Lampert 1987, 345). When colonisation commenced in 1788, almost 30 distinct Aboriginal

‘clans’ (smaller, distinct Aboriginal bands within each cultural-linguistic group)—each with their own territory, practices, diet, dress and dialects—were known to have populated the Sydney region (Figure 11).

In 1788, the Aboriginal population for the Sydney region was estimated to be between 5,000 and 8,000 people, of which about 2,000 comprised inland Darug communities: about 1,000 between Parramatta and the Blue Mountains, and about 1,000 between what are now Liverpool and Campbelltown (Murray and White 1988). A more conservative estimate places the overall Aboriginal population between 2,000 and 3,000, with approximately 1,500 people living along the coast between Broken Bay and Botany Bay, and around 1,500 living on the Cumberland Plain (Murray and White 1988).

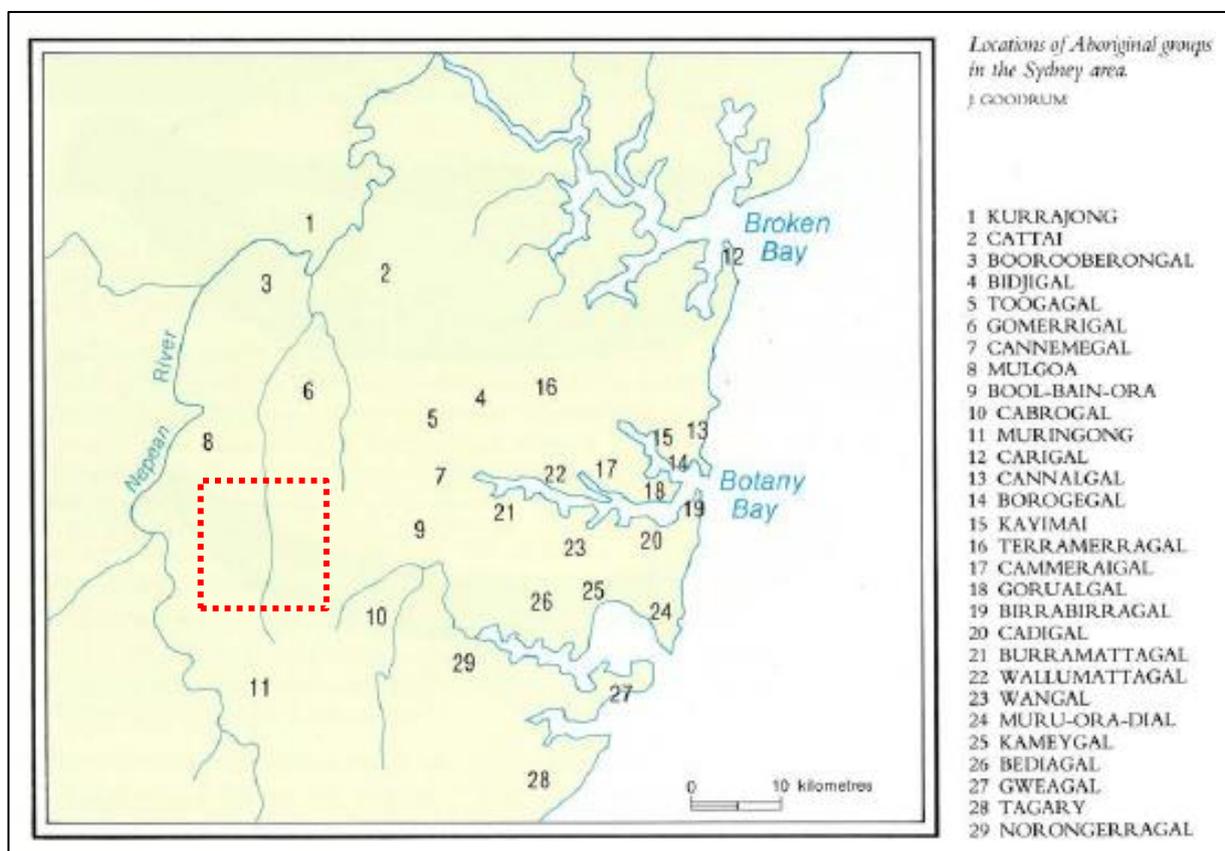


Figure 14. Estimated locations of known Aboriginal clans in the Botany Bay and Cumberland Plain areas
Source: (Kohen and Lampert 1987, 345). Note: The approximate location of the study area is highlighted (in red).

Since the 1970s, archaeologists and anthropologists working in the Sydney region have largely adopted the nomenclature for cultural-linguistic groups compiled by Capell (1970) and amended by Eades (1976) (Attenbrow 2010). In doing so, the study area (present-day Penrith and Liverpool LGAs) is now generally considered to have been occupied by Darug-speaking clans.

Significantly, the southern section of the study area (present-day Liverpool LGA) is also thought to border areas (within c. 30km) occupied by the Gandangara-speaking peoples (present-day Camden LGA) to its southwest and the Tharawal-speaking people (present-day Campbelltown and Sutherland Shire LGAs) to its southeast (Attenbrow 2010; Capell 1970; Eades 1976; Kohen 1986; 1993; Kohen and Lampert 1987; Mathews 1901; Mathews and Everitt 1900; Ross 1976; 1988; Tindale 1974).

The precise geographical boundaries between these three groups at contact, however, cannot be clearly defined and established due to the limitations and paucity of historical records on this matter (Kohen and Lampert 1987, 344; Section 6.1). Nonetheless, 29 named Aboriginal clans and their approximate locations at Contact have been identified within the Botany Bay and Cumberland Plain areas to date (Kohen and Lampert 1987, 345; Figure 11).

Moreover, it is not unreasonable to assume that the study area and the wider Cumberland Plain region would have seen significant interactions between the various Darug, Tharawal and Gandangara clans, including meeting to hunt, feast, conduct business and perform ceremonies. The Darug and Gandangara language families are thought to closely resemble each other (Mathews and Everitt 1900; Wrigley 2001) and hence, would have facilitated easy communication and interactions between their respective clans. The observed gathering of three clans on their way to Camden (c. 20km south of the study area) to learn a new song (Backhouse 1843, 435), for instance, may have been one such example of interactions between the three cultural-linguistic groups.

6.3 Darug People on the Cumberland Plain

6.3.1 Pre-contact Darug Clans

The Darug were the largest of the pre-contact Aboriginal cultural-linguistic groups in the Sydney region, although it is uncertain if this was the actual name its clans used for themselves prior to European colonisation (NPWS 2003, 188); the term 'Darug' (a wild yam) was only applied to the language group after 1870 (Attenbrow 2002, 31).

The Darug people that occupied the Cumberland Plain were referred to as the 'woods tribes' in the records of the early European diarists (Kohen and Lampert 1987, 348). To date, six named Darug clans are known to have been present in this region (Darug Weavers 2005; Kohen and Lampert 1987, 345; Murray and White 1988, 20; Figure 11) prior to the catastrophic impact of the small-pox epidemic, which led to significant social restructuring. The Kurrajong, Cattai and Boorooberongal clans are thought to have occupied the northern areas of the Cumberland Plain along the Nepean River (present-day Hawkesbury and The Hills Shire LGAs), whereas the Muringong clan occupied its southern end between the upper reaches of the Nepean River and South Creek (present-day Camden LGA). The remaining two Darug clans – the Mulgoa and

Gomerrigal – are thought to occupy the central regions of the Cumberland Plain between the Nepean River and Eastern Creek to the west and east of South Creek respectively.

Hence, it is likely that the present study area comprised territories formerly claimed by the Mulgoa, Gomerrigal and Muringong clans given its relative proximity to their estimated locations (within c. 20km) at Contact.

6.3.2 The Darug language

Most of our knowledge of the Darug language comes from the work of pioneer anthropologist Robert Hamilton Mathews who produced ‘Dharruk’ word/vocabulary lists ‘from the lips of old natives acquainted with the language’ at Windsor in the early twentieth century (Mathews and Everitt 1900). Presently, the Darug language group is thought to comprise two dialects; the inland clans to the west around the Hawkesbury, Blue Mountains and Nepean (also known as ‘Muru Murak’ or ‘Mountain Pathway’) districts are thought to have spoken one of these dialects, whereas the other dialect was used in the region east of Parramatta and between Sydney Harbour and Botany Bay (NPWS 2003, 188-189; Murray and White 1988).

Regardless, both dialects of the Darug language are complex with a rich vocabulary and grammar complete with numerous tenses (NPWS 2003, 189). Significantly, the Australian English vocabulary reflects the influence of Darug people and culture of the Sydney Basin in the incorporation of words such as ‘boomerang’, ‘corroboree’, ‘dingo’, ‘koala’, ‘kookaburra’, ‘wallaby’ and the bush call ‘coo-ee’ that were, in turn, derived from Darug languages (NPWS 2003, 189; Troy 1994).

6.3.3 Darug lifestyle and culture

The Darug people are generally thought to have lived in clan-based bands of around fifty members each. Each clan retained its own hunting district and lived a semi-nomadic lifestyle by regularly changing their camping locations within their district (Murray and White 1988). The inland clans, in particular, are also thought to have moved more often according to the season, with summer attracting large numbers of clans to the land around the Nepean and Hawkesbury rivers, and winter dispersing these clans over the plain and into the mountains (Kohen and Lampert 1987, 357).

Typical dwellings were two-sided bark tents (known as ‘gunyahs’ throughout NSW), while sandstone rock shelters were used in harsh weather if they were available (NPWS 2003, 189). In the map of NSW drawn by William Dawes in March 1791, some ‘native hunting huts’ were observed to be present on an area of ‘tolerably good country’ somewhere in Camden near present-day Catherine Field. Collins (1798) described how shelters were made of pieces of bark laid together over a framework of timber to form a low-lying, hut-like shelter that was large enough to hold eight people. According to Tench each hut was ‘nothing more than a large piece of bark, bent in the middle and open at both ends, exactly resembling two cards set up to form an acute angle.’ (Tench 1996, 112)

The typical Aboriginal tool kit on the Cumberland Plain was also observed to comprise stone flakes, ground stone axes, hatchets, spears, clubs and bowls (Tench 1961). Skin cloaks were also made using possum and kangaroo fur (Kohen and Lampert 1987, 357). Canoes were also

used for accessing the major waterways of the Cumberland Plain for hunting and fishing activities. Tench (1996, 112) observed that the canoes used by the inland clans 'differed in no wise from those found on the seacoast'.

Stone tool technology on the Cumberland Plain appears to be dominated by the edge-ground hatchet made of Basalt pebbles recovered from the bed of the Nepean, ground on sandstone outcrops and hafted to a wooden handle with grass-tree resin or native beeswax (Kohen and Lampert 1987, 358). Hundreds of grinding grooves have been cut by grinding basalt pebbles to a sharp edge on one such sandstone outcrop at Castlereagh c. 25km northwest of the study area (Kohen and Lampert 1987, 358). These hatchets were used to cut footholds in trees for climbing hunters, and to enlarge the base of a hollow tree so that fires could be lit to drive possums from their nests (Kohen and Lampert 1987, 358).

Unlike the spears used by the coastal clans, however, the inland clans barbed their spears with stone instead of shell (Kohen and Lampert 1987, 356-357). Flaked chert from gravels at the Nepean River were also hafted on the end of spear throwers to be used as chisels (Kohen and Lampert 1987, 360). 'Red' and 'yellow' silcretes along South and Eastern Creeks were used as the material for both barbs and chisels by the inland clans (Kohen and Lampert 1987, 360).

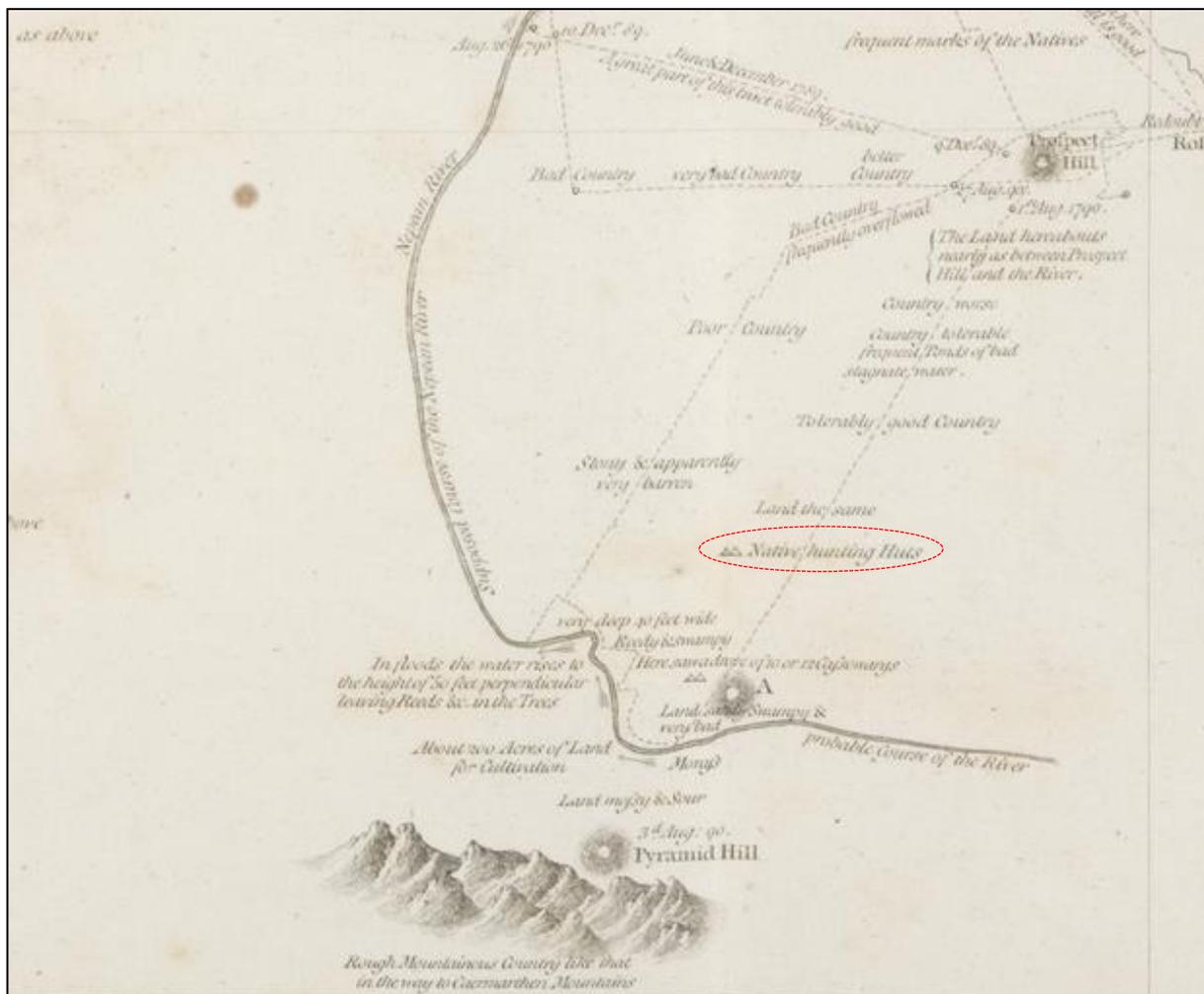


Figure 15. 'Native hunting huts'

Note: Highlighted in red, these were observed to be present on an area of 'tolerably good country' somewhere in present-day Camden near Catherine Field, approximately 6 km southeast of the WSAP study area. Extracted from 'A map of the hitherto explored country contiguous to Port Jackson laid down from actual survey' (Tench 1793). Source: State Library of New South Wales. https://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=FL3536815

6.3.4 Darug subsistence

The Darug 'wood tribes' were observed to be more dependent on small animals and plant food, although freshwater mullet and eels were also seasonally available (Kohen and Lampert 1987, 356). The Mulgoa, Gomerrigal and Muringong people as well as several other clans were specifically thought to have relied entirely on terrestrial and freshwater foods (Kohen and Lampert 1987, 357).

Darug men were generally responsible for hunting possums, fish, birds and kangaroo, and often collaborated with other bands to hunt and eat the larger animals. Fire was also used to reduce undergrowth and to catch game (NPWS 2003, 189); an expedition mounted by George Caley (1801, 47) recorded their encounters with Aboriginal huts, walking tracks and the effects of

burning the local environment between Prospect, South Creek and Cowpastures, observing that fires had left the area like an ‘English Park... with large trees separated by a grassy understorey’ (Keating 1996).

The Darug were also known to have set traps and snares for quail and possums as well as dug pit traps for other small mammals (Kohen and Lampert 1987, 358). Fish traps were also built along rivers and creeks so that mullet and bass could be speared easily with a multipronged fishing spear like that used on the coast (Kohen and Lampert 1987, 358). Other animals that were hunted by the Darug included the platypus, bats, yabbies, freshwater mussels, tortoises and various water birds (Kohen and Lampert 1987, 358).

Nonetheless, the staple diet of the Darug clans consisted largely of yams gathered by the women and children with digging sticks, as well as roots, fruits and other small game (Kohen and Lampert 1987, 357-358; NPWS 2003, 189). The wild yam was so significant to the Darug that they adopted it as a name for themselves (Attenbrow 2002, 31; Pascoe 2014, 26). The banks along the Nepean River were often submerged by floodwaters which produced a rich soil that allowed these yams to grow in abundance (Kohen and Lampert 1987, 357-358). Another plant food, the ‘burrawang’ (*Macrozamia communis*) and a smaller species of macrozamia were also gathered by the Darug (Kohen and Lampert 1987, 357).

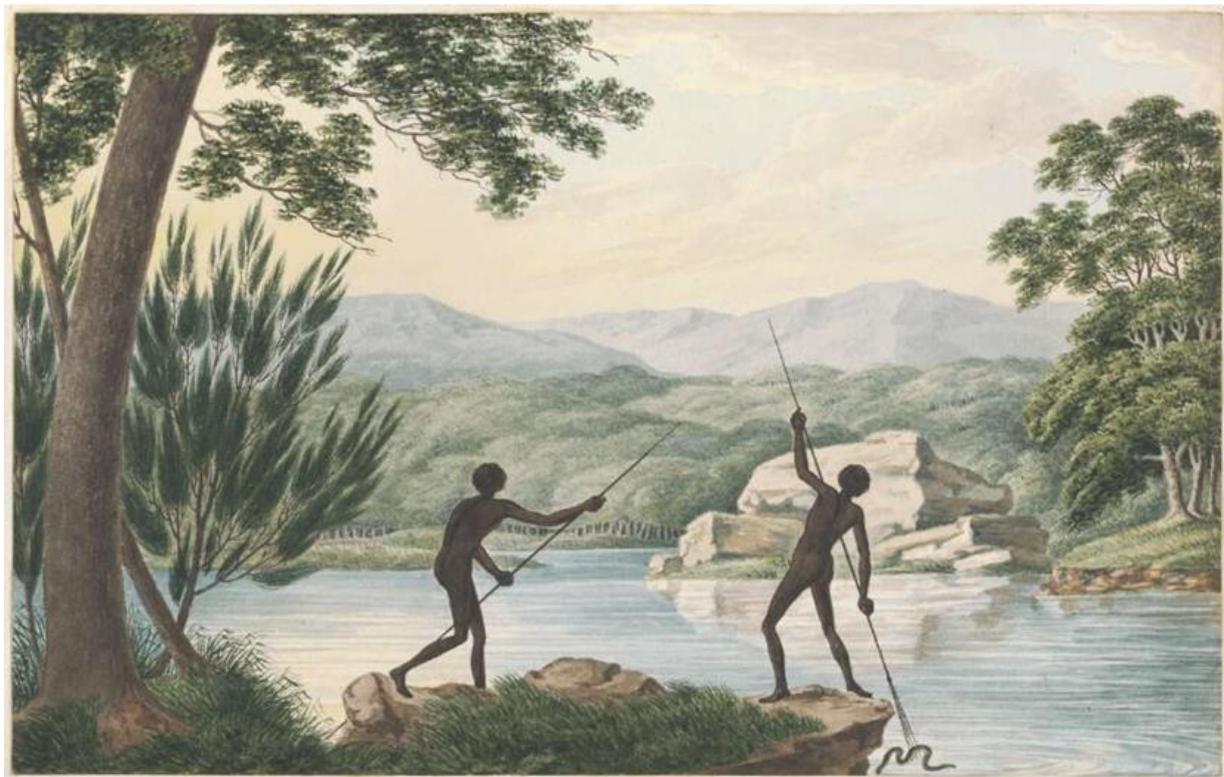


Figure 16. Sketch by Joseph Lycett of two Aboriginal men spearing eels, c. 1817

Source: National Library of Australia, PIC MSR 12/1/4, <http://nla.gov.au/nla.obj-138499671>

6.4 Post-contact Aboriginal settlement

As a result of the smallpox epidemic and subsequent conflicts with European colonisers (see below), many traditional Aboriginal groups in the Sydney Basin had already broken up and scattered or re-aligned themselves into new groups by the time they were documented by colonial diarists, missionaries and early visitors to the area. The various Aboriginal 'tribes' referred to by colonists in the nineteenth century were the result of major post-contact social reorganisation.

The displacement and dislocation of Aboriginal communities from their traditional lands forced remnant Aboriginal clans to merge in order 'to provide mutual protection and to maintain viable social and economic units' (Attenbrow 2010; Kohen 1986). It has since been suggested that pre-contact clans and bands no longer existed as identifiable groups as early as the 1820s (Attenbrow 2010).

Aboriginal people who remained in the Sydney Basin in the early-to-mid-1800s were largely forced to live on the fringes of colonial society. Restricted access to resources and Country meant that they were also forced to become increasingly dependent on welfare (see NSW Legislative Council 1845). Government allocations of blankets and slop clothing, and the bartering of fish and game for sugar, flour and alcohol also reflect the changes that occurred in Aboriginal culture and lifestyle. These changes were likely replicated throughout the greater Sydney region as well.

While many of their kin had either perished or moved away from their traditional lands, there are records of a few Aboriginal people who remained on their Country well into the nineteenth century. Nonetheless, the impact on Aboriginal culture and people in the Sydney Basin had become irreversible. In the words of Mahroot, an Aboriginal man identified by contemporaneous Europeans to be the last of his tribe in the Botany Bay area (that was originally four hundred-strong) sometime in 1845,

Well mither [sic]... all black-fella gone! All this my country! Pretty place Botany! Little Pickaninny, I run about here. Plenty black-fellow then; corrobory; great fight; all canoe about. Only me left now, Mitter – Poor gin mine tumble down. All gone! Bury her like a lady, Mitter -; all put in coffin, English fashion. I feel lump in throat when I talk about her but – I buried her all very genteel, Mitter (Troy 1990, 132-133).

6.4.1 The 1789 smallpox epidemic

The devastating outbreak of smallpox in 1789 forced major reorganisations amongst clan groups. When William Bradley sailed into Sydney in May that year, he recorded the 'dreadful havock' that smallpox had wrought amongst Aboriginal communities, stating that 'we did not see a Canoe or a Native the whole way coming up the Harbour and were told that scarce any had been seen lately except laying dead in and about their miserable habitations' (Bradley 1969).

Traditional burial practices also broke down and clans merged as entire Aboriginal communities were taken by the virus (Hunter 1793). Bodies were found in caves and by streams, around the harbour and all along 'the path between Port Jackson & Broken Bay' (Bradley 1969). The impact

of smallpox continued to ripple across the country, reducing communities in the Hunter ‘from about 200, to 60’ (Backhouse 1843, 401). It is estimated that half of the Aboriginal population of the Sydney region was lost in the 1789 epidemic (Turbet 1989).

6.4.2 Frontier conflict: British invasion and Aboriginal resistance

As the British increasingly encroached on Aboriginal Country and restricted access to resources, mounting tensions arose between the two people. Two years after the arrival of the First Fleet, the Aboriginal warrior Pemulwuy (or ‘Bembilwuyam’, c. 1750–1802) began to resist British incursions on the lands of his people (NMA 2020). Pemulwuy began participating in several raids against colonisers across the Sydney region from 1792 onwards; the first raid was conducted at Prospect (c. 20km from the study area) in May 1792 (NMA 2020).

Pemulwuy continued his campaign of resistance until 1802 when he was killed in an ambush (Kass et al. 1996, 49). Upon his death, Pemulwuy’s head was documented to have been subsequently cut off and sent to Sir Joseph Banks in England for his collection in 1802 (NMA 2020). Thereafter, Pemulwuy’s son, Tedbury, continued his father’s campaign in the Sydney and Parramatta districts. Tedbury was captured in 1805 but freed later that year. Active Aboriginal resistance in Parramatta largely came to an end following Tedbury’s death in 1810 (Kass et al. 1996).

The rapid expansion of the British on the Cumberland Plain in the early nineteenth century also led to clashes between the colonisers and Aboriginal clans in the region. Open skirmishes broke out between the colonisers and the Bediagal clan of the Darug tribe along the Hawkesbury Frontier (Ryan 2013, 224–230). In September 1794, the colony’s judge advocate, a settler and his assigned convict servant were:

nearly murdered in their hut by some natives from the woods, who stole upon them with such secrecy, as to wound and overpower them before they could procure assistance. The servant was so much hurt by them with spears and clubs, as to be in danger of losing his life. A few days after this circumstance, a body of natives having attacked the settlers, and carried off their clothes, provisions and whatever else they could lay their hands on, the sufferers collected what arms they could, and following them, seven or eight of the plunderers were killed on the spot (Collins 1798, 388).

The frontier war between the British and the Bediagal clan was to continue as they ‘killed each other in a spiral of retribution’ (Connor 2002, 48). In less than fifteen years, the Bediagal population at the Upper Hawkesbury fell by about eighty percent to fewer than a hundred individuals from disease and warfare, whereas settler population in the area had increased to more than 2,000 (Caldwell 1987, 25; Connor 2002, 46).

On May 1814, the *Sydney Gazette* reported several attacks on a property owned by George Cox at Mulgoa (c. 5 km northwest of the Northern Gateway precinct) by an unknown Aboriginal group (DPC n.d.a; *Sydney Gazette* 1814a).

A series of conflicts also occurred on various European properties of the Bringelly district along the Nepean River to the west of the study area between 1814 and 1816. Following the clash on the Cox property, the *Sydney Gazette* reported that ‘nearly 400’ ‘mountain natives’ attacked the

Shancomore property owned by J.T. Campbell (c. 6 km southwest of the Agribusiness precinct) whereupon,

the overseer was speared through the shoulder, several pigs were killed, one of which, a very large one, was taken away, together with a quantity of corn, and other provisions; the overseer's wearing apparel, and cooling utensils (Sydney Gazette 1814a)

The following month, the Sydney Gazette reported 'another unhappy instance of the dreadful effects of a warfare with the natives of the interior', whereby two children on the Daly property (c. 4 km west of the Agribusiness precinct) were killed by another raid by an unidentified Aboriginal group from the mountains across the Nepean river (Sydney Gazette 1814b). A year later, another unidentified 'body of natives between 30 and 40' attacked the overseer of Westwood property owned by H. MacArthur (also c. 6 km southwest of the Agribusiness precinct), and his wife and thereafter, 'plundered the hut of five or six bushels of wheat, a steel mill, a sieve, musket and other property,' after stealing a blanket from one of the stockmen on the property a few days earlier (Sydney Gazette 1815).

In 1816, another Aboriginal uprising was reported to have occurred in the Bringelly district where around 20–30 Aboriginal people 'plundered' the servant dwellings on the Pemberton property owned by G. T. Palmer (also c. 4 km west of the Agribusiness precinct) (Sydney Gazette 1816; RPS Manidis Roberts 2015, 20). The following day, a party of seven men crossed the Nepean River in the hope of recovering the stolen property from the raid but were promptly 'perceived and immediately encircled by a large body of natives', resulting in a clash where four Europeans were killed, one was wounded and two escaped (Sydney Gazette 1816).

Some members of this unidentified Aboriginal group pursued the survivors of this party across the river and into the property of S. Fowler (adjacent to Pemberton farm to its south) 'up to the farm residence' (Sydney Gazette 1816). The next day, a group of 60 Aboriginal people attacked the Fowler property and plundered the residence, carrying away a 'great quantity' of standing corn and 'all provisions whatever' (Sydney Gazette 1816).

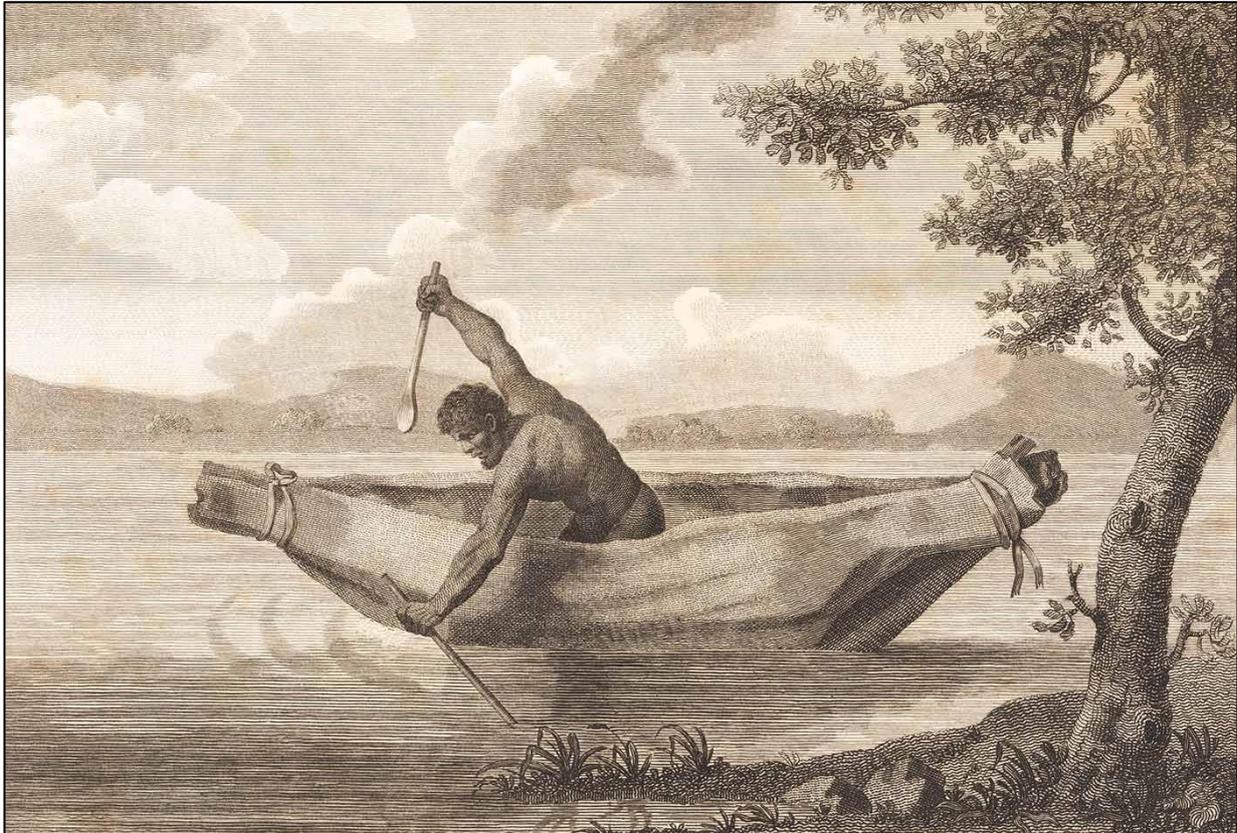


Figure 17. Image of 'Pimblo' by Samuel John Neele

Note: This is believed to be the only known depiction of Pemulwuy. Published in The Narrative of a Voyage of Discovery, Performed in His Majesty's Vessel the Lady Nelson, of Sixty Tons Burthen, with Sliding Keels, in the Years 1800, 1801 and 1802, to New South Wales by James Grant (1803). Source: State Library of New South Wales Q80/18, <https://www.nma.gov.au/defining-moments/resources/pemulwuy>).

6.4.3 The Darug People: Post-contact survival on the Cumberland Plain

In the aftermath of the smallpox epidemic, colonization and frontier violence, the survivors of various Darug clans on the Cumberland Plain were forced to reorganize into new groups and became increasingly dependent on the colonial economy for food and employment. By 1821, all the land within the study area had become the subject of European land grants, with most of the area falling within a 6,710-acre grant made to John Blaxland in 1813 (Robinson 1953). According to Peter Cunningham (1827), groups of Aboriginal people on the Cumberland Plain were already beginning to live and work among European colonisers in the early years of the nineteenth century.

Toward the Hawkesbury and Cowpasture, the aborigines are not nearly so debased as around Sydney, and most of them will live in huts if they are built for them. Many of these too will work at harvest, and attend to other matters about the farm, having been brought up from infancy among the farming whites. (Cunningham 1827, 25)

The names of some of these newly reconstituted clans were documented in various colonial records, and included groups such as the 'Botany Bay tribe', the 'Kissing Point tribe', 'Windsor'

tribe and the 'Broken Bay tribe' (Kohen 1993, 19; Kohen and Lampert 1987, 344). The 1828 Census recorded the 'Parramatta Tribe' as comprising forty-nine people. Blanket Returns for the Parramatta District dating to the 1830s and 1840s, however, make no mention of a distinct 'Parramatta Tribe', but do record groups from Duck River, Prospect, Eastern Creek and Kissing Point visiting Parramatta to collect blankets (Colonial Secretaries Correspondence: Special Bundles (Aborigines) Reel 3076, SR NSW). The 1828 Census also indicated that some clans were still living along the Hawkesbury at Mullet (Danger) Island and at Richmond.

A 'South Creek' tribe was documented by William Walker in 1821 (Kohen 1993, 19) and another Aboriginal group was also documented in the 1828 Census to be present at Mulgoa and other places near the present study area. The 'South Creek' tribe was recorded again in the 'Return of Natives' taken between 1832 and 1843 to provided information on names, numbers, 'tribes' and location of various Aboriginal groups in the wider Sydney region (Kohen 1993, 19).

Traditional Aboriginal practices also appeared to have continued in the first half of the nineteenth century, with various corroborees documented to have occurred on the property owned by John Macarthur (Liston 1988) and the Denbigh homestead in Camden (Hassell 1902; Kohen 1985). A corroboree that occurred at the Denbigh homestead in the mid-1820s is said to have involved over 400 individuals (Hassell 1902).

Study Area Specific ethnohistory

The watercourses on the Cumberland Plain are not only important sources of subsistence, but also hold high cultural significance as well. Running across the present study area, South Creek has also been recently given the dual Indigenous name of 'Wianamatta' which means 'Mother Place' in the Darug language (Balarinji 2018, 27; GNB 2020). Although the evidence for contact between Aboriginal people and the newcomers is limited within the study area, there is some evidence around two locations within and in the vicinity of the study area, Mamre Farm and Exeter Farm (Figure 19).

South Creek Tribe and Mamre Farm

According to Backhouse (1843), the South Creek people lived on a property named 'Mamre' in Orchard Hills (c. 10km north of the study area) in 1835. Owned by Reverend Samuel Marsden and his son, Charles Marsden, Mamre farm was established as a site for early sheep breeding experiments, specifically in the importing and breeding of Merino sheep in Australia (DPC n.d.b; n.d.c). Backhouse (1843) observed that the South Creek people often stayed at the junction of South and Eastern Creeks on the property, and that they 'may be considered as half-domesticated' since they 'often assist in the agricultural operations of the settlers' (Keating 1996; Martin 1988, 80).

Backhouse (1843) also recorded that the wife of his guide – Simeon (who was 'another South Creek Black') – was killed by 'wild natives' two years before his visit and noted that 'these people are afraid of other tribes of their own race' (Penrith City Library n.d.).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Today, the Aboriginal population of Western Sydney is proportionally greater than any other portion of the Sydney Metropolitan area (over 4% of total LGA populations, in some cases).

6.5 Early European settlement 1805–1850

Europeans first explored the Nepean district approximately a decade before they returned to settle permanently in the area. During 1788, Governor Arthur Phillip led parties to explore the outlying regions of Sydney. From a rise near the present Pennant Hills, Phillip first observed the Blue Mountains and the southern portion the Lansdowne Hills. From the rising of these mountains he had no doubt a large river would be found although at the time this search proved unsuccessful (Murray and White, 1988). In June 1789, Captain Watkin Tench (marine in charge of the new outpost at Rose Hill) led an expeditionary party to the banks of the Nepean River ‘through a country untrodden before by a European foot’ (Power, 1983 in RMS 2016, 21). In 1791 Tench undertook a second exploratory journey through the study area travelling from Prospect Hill in a south-southwest direction towards the upper Nepean. The course of his outward journey took him through the lowland near the junction of South Creek and Kemps Creek and then through Bringelly. His return route was east of the assessment area through what is now Leppington and Hoxton Park.

In 1795 Henry Hacking investigated the region of the upper Nepean to confirm reports of the presence of the cattle that had escaped from Sydney Cove in 1788. His journey south took his party along the line of Tench’s return route, that is, along the eastern margin of the study area.

Former convict John Warby received 50 acres at Prospect and in 1803 was appointed stockman of the wild cattle at the Cowpastures. Warby appears to have created a track from Prospect to the Cowpastures. The track passed through country described as the Devil’s Back and established the main route for the movement of Europeans between Parramatta and the Camden district, later formalised as the Cowpasture Road.³

The study area remained relatively undisturbed until 1805 and 1806 at which time James Meehan undertook initial surveys for land grants along South Creek. The district was named Bringelly. The first grants of 1805 included 680 acres to Nicholas Bayly, 300 acres to Richard Fitzgerald and 300 acres to Ezekiel Wood [Wianamatta-South Creek Precinct]. All were located near the junction of South Creek and Badgerys Creek. During the next five years Meehan would lay out grants for Anthony Fenn Kemp (Mt Vernon) and John Driver (200 acres) adjacent to

³ The Devil’s Back now includes the present suburbs of Horsley Park, Cecil Hills and Kemps Creek. The extreme southwestern portion of the Wianamatta-South Creek Precinct is located within the Devil’s Back.

Kemps Creek. All these early grants were within 5km of the only road in the district (Cowpasture Road).

During the interregnum between Bligh's and Macquarie's administration Colonel Paterson, the interim Governor may have granted a considerable quantity of land since Macquarie affirmed grants in excess of 2,200 acres backdated to the first day of his administration (1 January 1810). These grants were in the Badgerys Creek Precinct and the Wianamatta-South Creek Precinct with frontages to South Creek, Kemps Creek and Badgerys Creek.

The greatest land releases in the region were those progressively issued by Macquarie between 1810 and 1822. These were mostly 30 to 500 acres in size but included several very large grants such as 6710 acres to John Blaxland in 1813 (subsequently the Luddenham Estate [Agribusiness Precinct]), 2,500 acres to Darcy Wentworth and 1,500 acres to John Piper in 1816 [Agribusiness Precinct]. The process of granting land had been completed by the mid-1830s.

In November 1810 Macquarie visited the district and noted the following in his journal:

Wednesday 28th.

We passed close to Prospect Hill, and by the Devils Back to Mr. Bayly's Farm near the South Creek; we halted here a little while and admired very much the situation of Mr. Bayly's Farm, and the neatness of his Barn and Stock-Yards; thence passed on across the South Creek to a small Farm belonging to Mr. Gregory Blaxland, at whose Farm Hut we halted to Breakfast. — At ½ past 10. a.m. I set out on Horseback along with Mr. G. Blaxland to see his own and Mr. Badgerys Farms in the Bringelly District; leaving Mrs. M. and the rest of the Party at Mr. Blaxland's Hut where we had Breakfasted.

Called first at Badgerys Farm close on the left Bank of the South Creek, where I was much pleased to find a good Farm House built, a good Garden, and a considerable quantity of ground cleared. — Thence we proceeded to Mr. Blaxland's own Farms, about 5 or six miles distant from the South Creek in a westerly direction. — This is entirely as yet a grazing Farm, with only a miserable Hut for the Stock keepers, and Stock-Yards for the Cattle. — The Land in some parts is tolerably good, and pretty well watered, but is better adapted to grazing than Tillage. We rode back, a different way to what we came, to Mr. G. Blaxland's Farm on the South Creek, through his second large Farm, and a Farm belonging to Doctor Wentworth in the Bringelly District; the Country through this last ride was pretty to look [at] but the Soil generally bad; at 1. P.M. arrived at Mr. Blaxland's Hut, where we rejoined our Friends again.

(Macquarie, Lachlan. Memoranda & Related Papers. 22 December 1808–14 July 1823. SLNSW A772 29f).

The way the region developed during the early nineteenth-century was determined by the size of grants, access to water and access to roads. The district was defined by the Bringelly Road in the south, the Cowpasture Road in the east, the Great Western Road in the north and the Nepean River in the west. A series of informal tracks and bridle paths connected isolated properties with these roads. The most intensive farming was undertaken on the smaller properties (100 acres or less). These properties were most often occupied by the grantee. The larger properties were mostly given over to stock-raising—initially this was a mix of sheep and cattle. A noticeable endeavour was the raising of bloodstock in the South Creek-Badgerys Creek-Kemps Creek area. Neighbours William Emmett, Nicholas Bayly and James Badgerys

were particularly active in the development of the racing industry in New South Wales. James Badgery was a noted stud-master and imported horses to improve local bloodlines (Binney 2005: 95).

By 1821 The Northern Road ('Bringelly' road) had been formed connecting the Camden district with Richmond (Sydney Gazette 15 September 1821, 1). This road also crossed the great Western Road in the north providing access to Penrith and St Marys.

During the mid- to late-1820s several grants were absorbed and consolidated to create large estates, held in the main by absentee landholders. Darcy Wentworth increased his 2,500-acre holdings by absorbing the adjoining properties of Ellis Bent, William Gore, John Piper, John Palmer (Jr) and Mary Birch such that at the time of his death in 1827 his Bringelly holdings consisted of 8,515 acres. Similarly, Captain Philip Parker King purchased or obtained 999-year leases on properties totalling 2,465 acres between 1820 and 1836 (Figure 20- Figure 23).

One of the most important, and only surviving example of building complex associated with a large pastoral estate within the study area is the property now known as Kelvin Park [Asset 401] (Figure 11). This was originally a 600-acre grant made to Thomas Laycock (Jr) in 1818 and known initially as 'Cottage Vale'. The adjoining 600-acre grant to Charles Reid was absorbed and the property became known as 'The Retreat'. The property changed hands in the early 1820s before being acquired by John Thomas Campbell who subsequently leased the property to the Australian Agricultural Company in 1825.⁴ Campbell died in 1830 and in 1837 the property was purchased by Alfred Kennerley from Campbell's heir. The estate remained in the hands of the Kennerley family until 1853 at which time Kennerley returned briefly to England.⁵ The main farm complex and homestead survive substantially intact.



Figure 18. Kelvin Park, main homestead with outbuildings visible in the rear, looking north.

Source: *Extent Heritage*, 2020

⁴ Campbell was Macquarie's secretary and most ardent supporter. His first grants of land in the district were 'Shancomore' (1550 acres) in 1811 and 'Ballynashannon' (470 acres)

⁵ Kennerley returned to Australia in 1857 and settled in Hobart. He was Premier of Tasmania between 1873 and 1876. He died at Hobart in 1897.

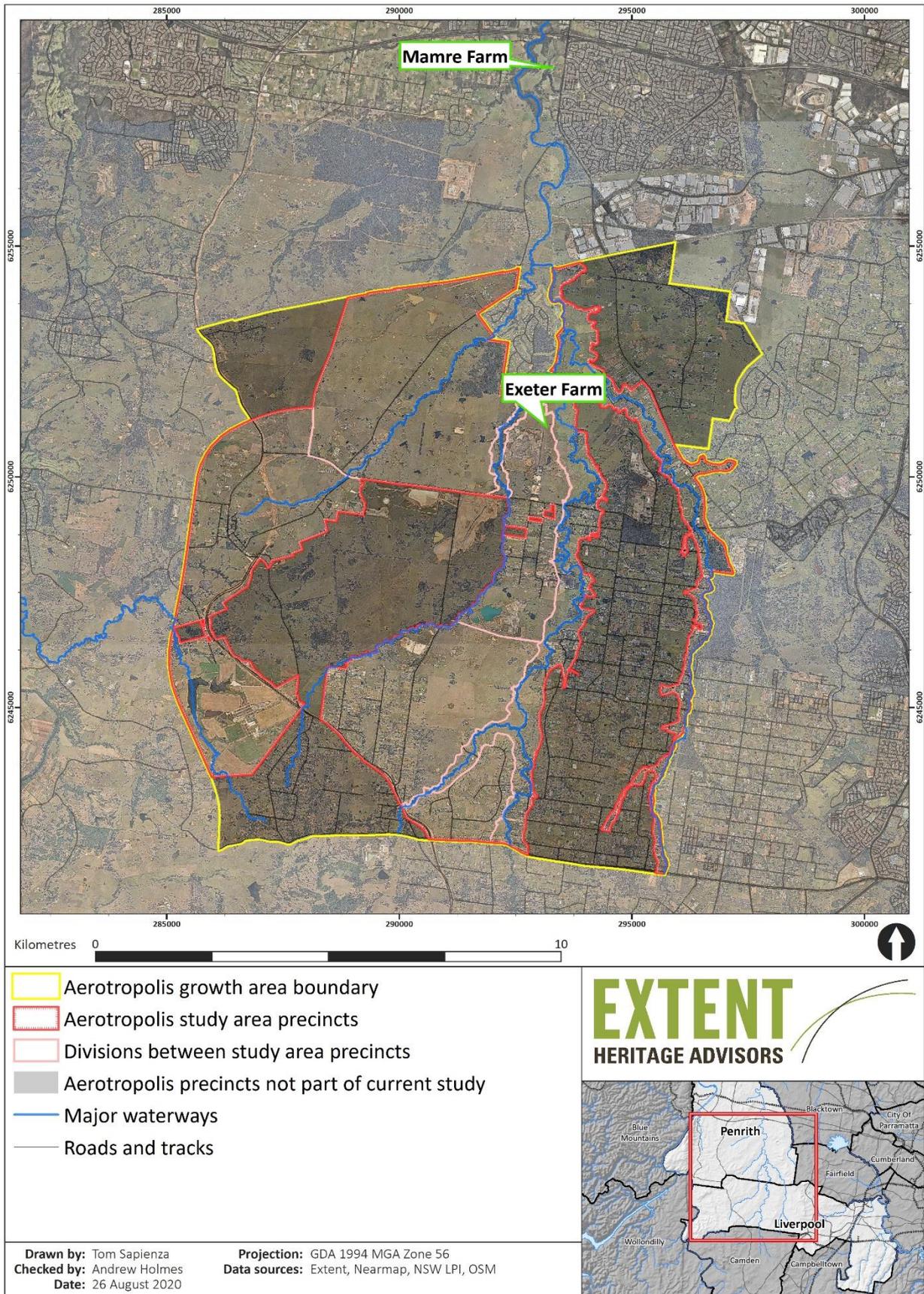


Figure 19. Location of Mamre and Exeter Farms with relation to the Aerotropolis and study precincts

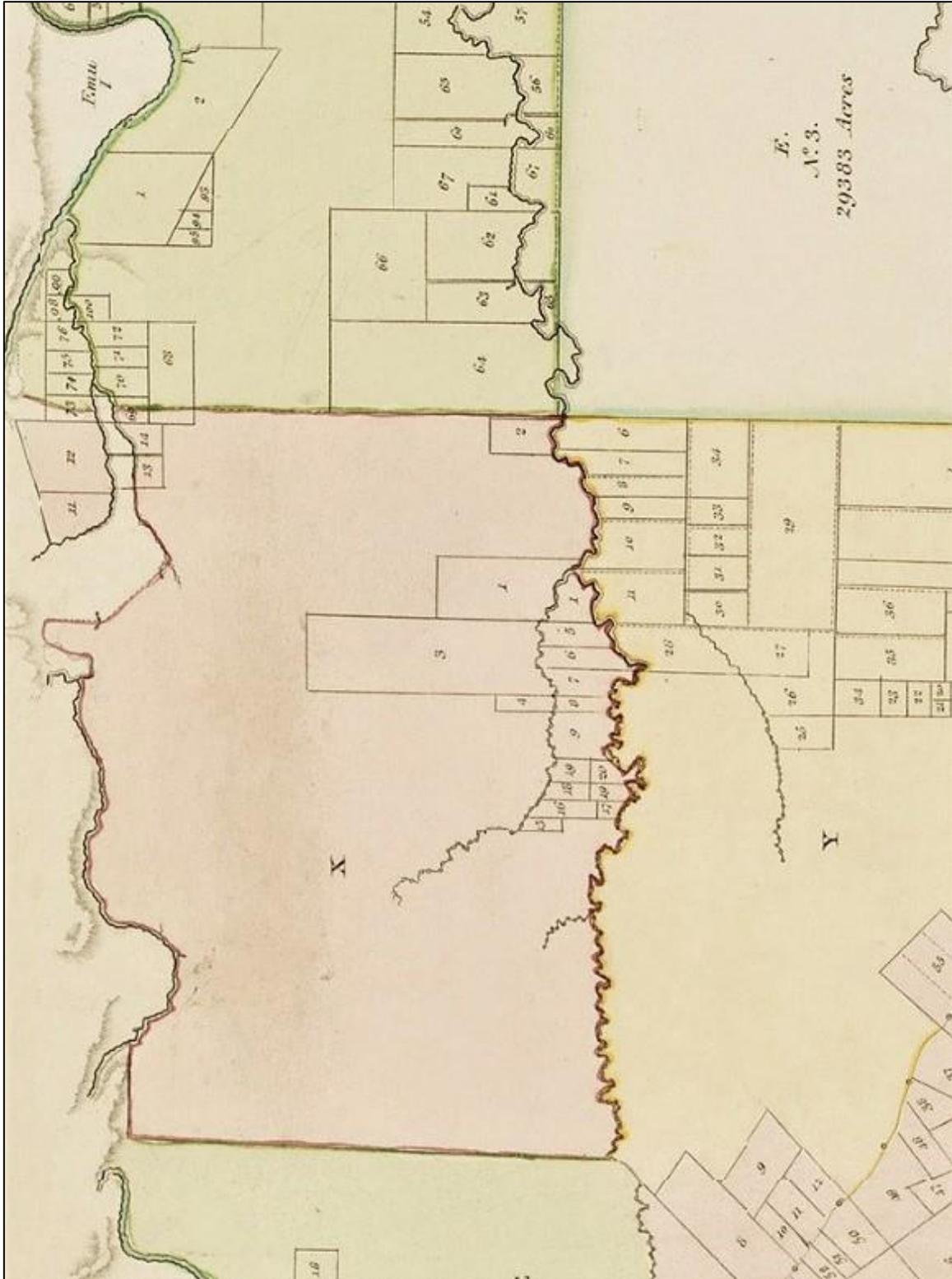


Figure 20. Detail of Plan of the allotments of ground, granted from the Crown in New South Wales

Note: The Bringelly land district is pink (marked 'X'), north at top. The relevant properties shown here are identified in the individual precinct profiles. Source: J. Burr & G. Ballisat. Burr, J.: London, 1814 SLNSW Z/Cb 81/6

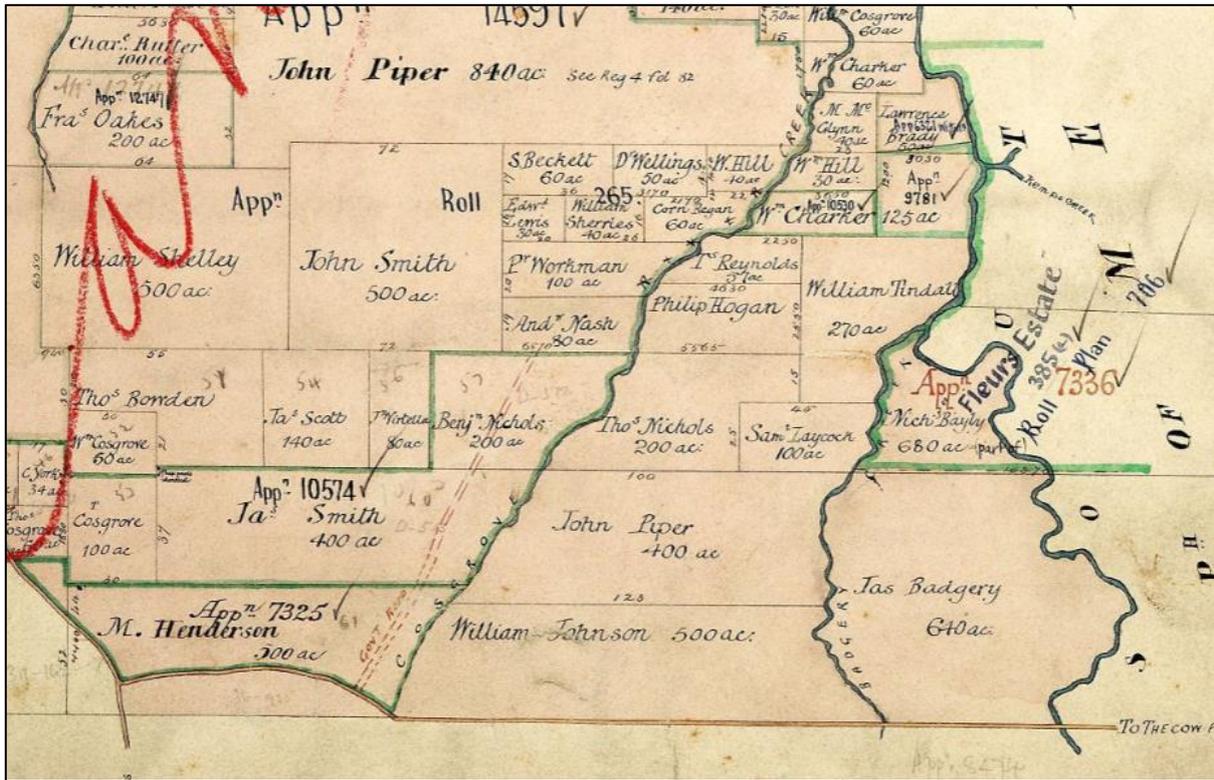


Figure 21. Parish of Claremont, 1898 showing part of Luddenham Road

Note: Marked as 'Govt Road'. Source: LPI HLRV 14070101

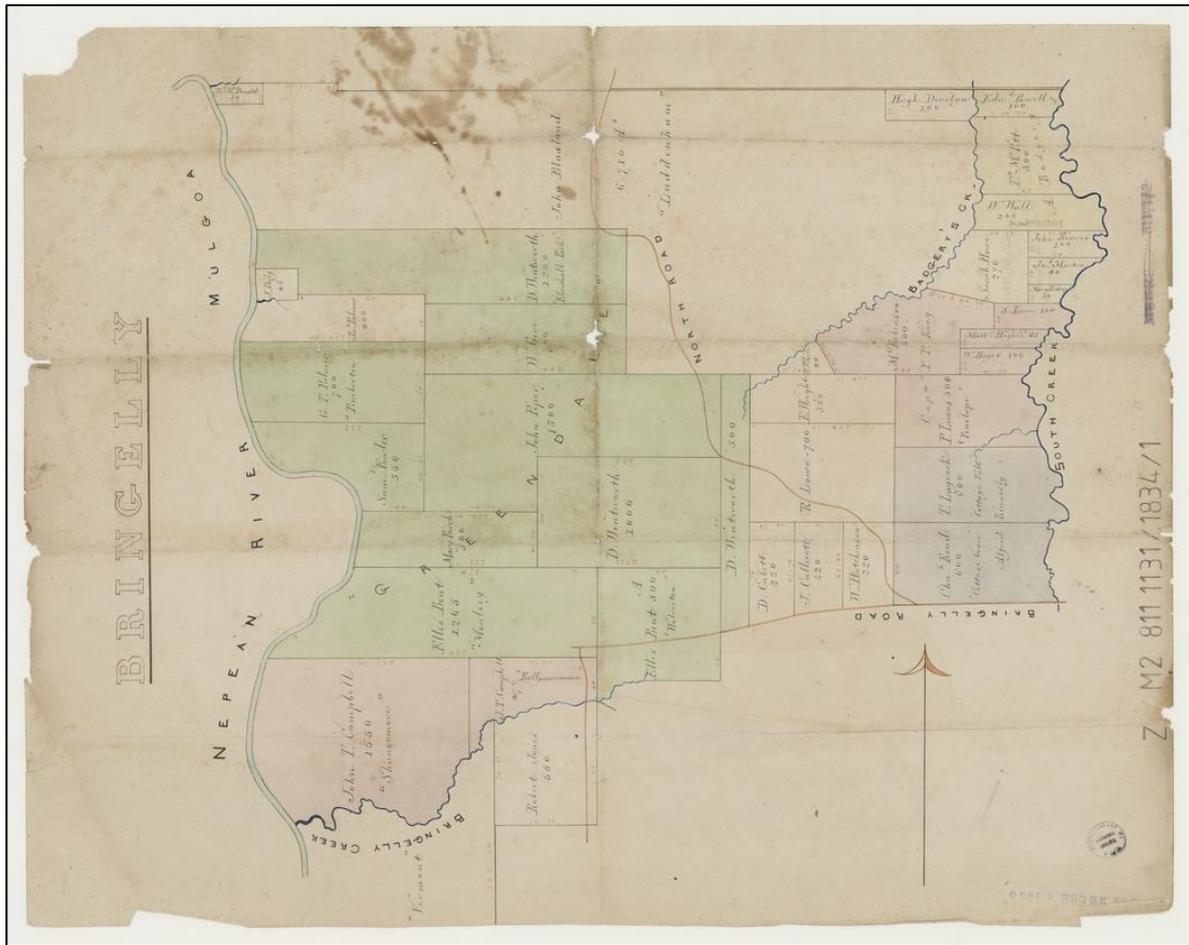


Figure 22. Parish of Bringelly 1834

Source: SLNSW MZ 811.1131/1834/1



Figure 23. Parishes of Cabramatta and Melville, 1831

Note: Detail of Cabramatta township reserve at left. Source: SLNSW M2 811.1128/1831/1

The late 1830s and early 1840s saw a convergence of factors that resulted in a decline in the viability of many large estates. The end of transportation with the resulting loss of cheap labour and severe drought between 1838 and 1840 resulted in extensive crop failures. Falling wool prices contributed to an economic depression during the 1840s that saw capitalists that had borrowed heavily in the 1830s in order to purchase land were unable to service their debts. Some owners of the larger estates sought relief by providing tenancies. The configuration of the tenancies was generally ad hoc in nature.

Luddenham

The suburb of Luddenham is situated on land granted in 1813 to John Blaxland named Luddenham after his home village in England. This land also covered part of the present-day suburb of Badgerys Creek. While some of the land was used to establish Blaxland's business enterprises the larger part was retained for grazing. Blaxland's homestead was in the present-day suburb of Wallacia. In 1841, Blaxland mortgaged Luddenham and following his death in 1845, the estate was taken up by his son Edward who failed to revive the fortunes of the property.

Badgerys Creek

The present-day suburb of Badgerys Creek was formed on a portion of 640 acres of land granted to James Badgery in 1806 between South Creek and what is now known as Badgerys Creek, north of present-day Elizabeth Drive. Badgery's property was named Exeter Farm after his hometown in England and was later enlarged through the acquisition of adjoining properties (RMS 2019, 16–17). The Badgery family continued to expand their holdings with the addition of adjoining properties that were subsequently divided between his family on his death in 1827. Andrew Badgery received the adjoining property to the east of Exeter Farm and established the Spotted Dog Inn on the site.

Bringelly

Most of the large holdings in the Bringelly district survived intact into the second half of the nineteenth century. These included William Hutchinson's 'Hutchinsonian Farm' that was noted for bloodstock breeding. There was no village as such during this period.

Rossmore

The site of Rossmore adjacent to the Bringelly Road was the only Government town reserve within the whole district. No formal gazettal has been located but by the early 1830s it was designated as the township of Cabramatta. The town reserve appears to have been an afterthought since it only appears after all other available ground in the district had been granted. Robert Bell, owner of 'Bellfield' immediately north of the town reserve petitioned Government for purchase of the reserve but was refused. Sales of lots within the reserve did not take place until 1840. Many of the lots were purchased by Robert Bell to provide direct access to Bringelly Road and to incorporate improvements he had undertaken within the village reserve. A temporary church was replaced in 1848 with construction of the Church of the Holy innocents.

Kemps Creek

In 1809, Anthony Fenn Kemp, a soldier in the NSW Corps and a merchant, received an initial grant of 500 acres of land on the eastern side of Kemps Creek and a further grant of 300 acres

in 1820 named Mount Vernon. There was no development of close settlement during this period with the Kemp, Driver and Bayly properties remaining essentially intact. Following Bayly's death his consolidated properties were purchased in 1826 by Sydney merchant Richard Jones, who retained the property until the 1840s. Jones was a noted sheep breeder and a pioneer of high-grade fleece production.

6.6 Nineteenth-century subdivision 1850–1900

During the second half of the nineteenth century many of the large landholders within the study area struggled to maintain their properties as viable concerns. Most grazing properties ceased sheep breeding and moved to agistment and fattening of cattle. There were a number of attempts to promote the district for dairying, but this form of agricultural pursuit required good pasture and a reliable water supply, both of which were absent. The only form of stock-raising that held any promise was horse breeding. The larger estates that did survive the economic difficulties of the 1840s relied in great part on tenancies. The tenancies were usually small family farms that relied primarily on stock raising.

During the final decades of the nineteenth-century St Marys had developed as a regional centre. In 1883 Luddenham was connected to St Marys following the construction of Luddenham Road from the western end of Orphan School Road. This was followed in 1893 by the construction of Mamre Road that extended from the eastern end of Orphan School Road to St Marys.

Luddenham

The Luddenham Estate was sold by the Australian Trust Company in October 1851 to Charles Nicholson. Nicholson established a private village of Luddenham at the eastern end of the estate, on The Northern Road. Tenant farmers occupied much of the farmland within the remainder of the estate.

Land advertised as 'Luddenham Village' located on The Northern Road was offered for sale in 1859. The central and western portions of Luddenham Estate had been consisted of 3,515 acres. In 1862 the balance of the estate, 4,158 acres, was surveyed for subdivision (Figure 24 and Figure 25) . At this time the village consisted of a scatter of cottages along the road as well as a chapel and school at the southern end of the village [Asset 213]. Also present was ex-convict John Lawson's 'Thistle Inn' [Asset 214] located on a bend in The Northern Road (Figure 26). Lawson became a prominent member of the small community and purchased properties around the district (EMM 2017, 13). Immediately adjacent to the village, allotments no larger than 75 acres were offered, while lots of ranging from 100 to 300 acres were offered further east to Badgerys Creek (AMC 2014). By 1872 there were twenty-nine residents in the village providing a range of services including two blacksmiths, a bootmaker and a butcher (Paul Davies Pty Ltd 2007).

The unsold portions of the estate (2233 acres) were sold to a syndicate of land developers in 1885 who subdivided the land into semi-rural allotments and created Park Road. As part of the function of the village as the only point of close settlement within the district a showground for community-organised events was formed with the first show held in there in 1892 (NSW Heritage. n.d. Listing sheet for 'Showground').

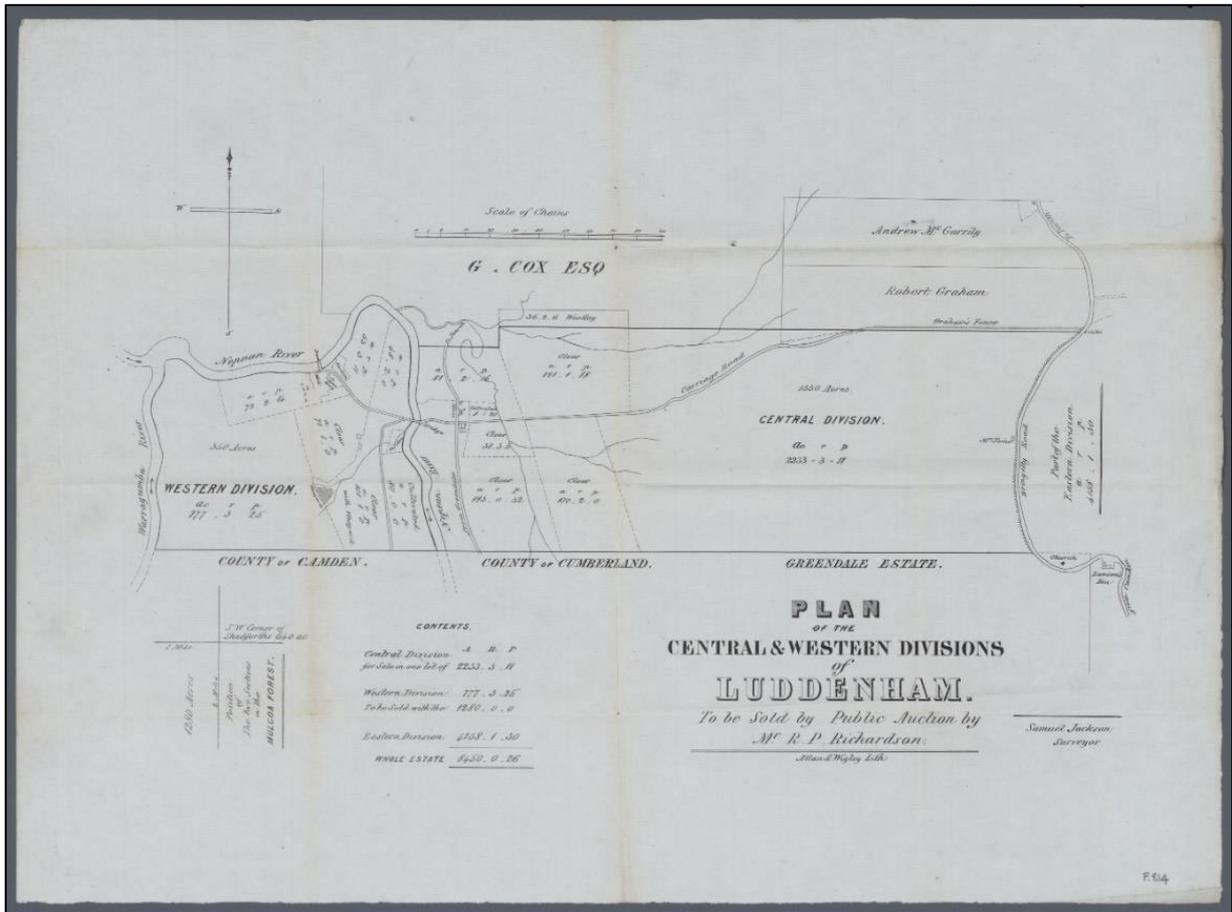


Figure 24. Plan of Luddenham, 1859 showing Central and Western Divisions

Source: NLA MAP F 814

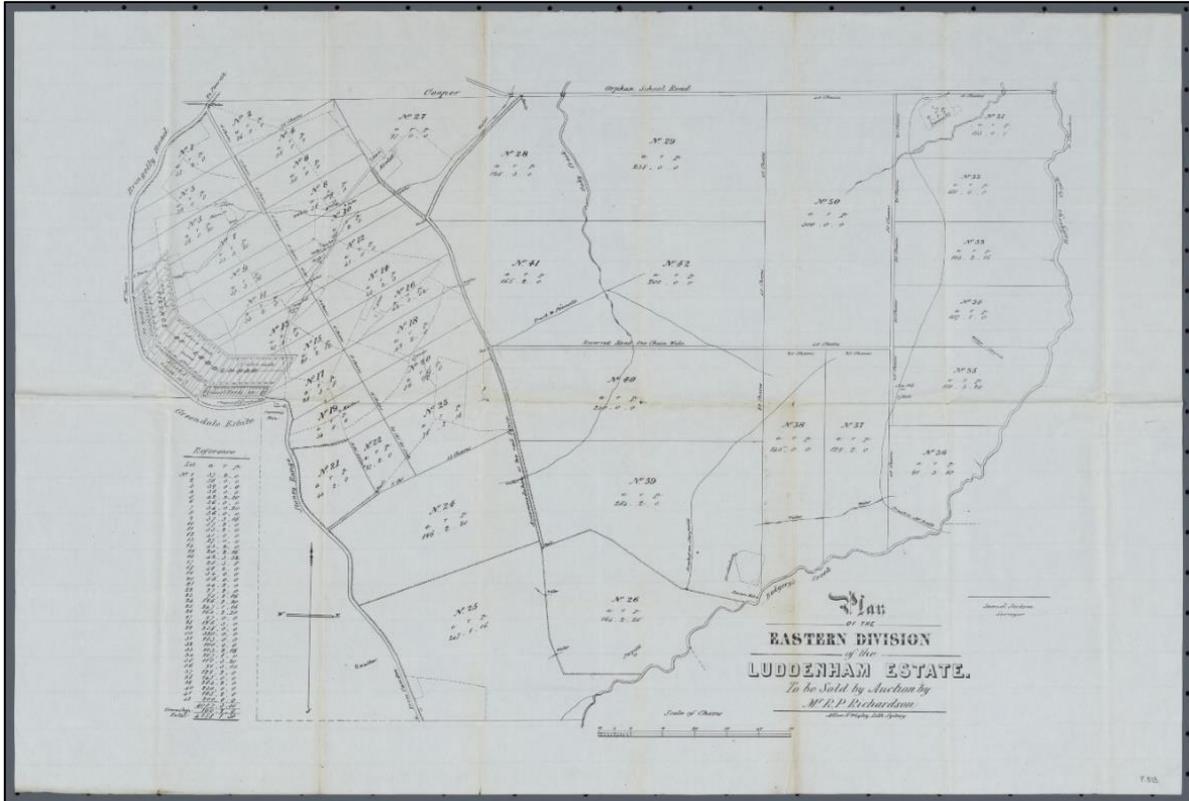


Figure 25. Figure Plan of Luddenham, 1859 showing Eastern Division

Source: NLA MAP F 813

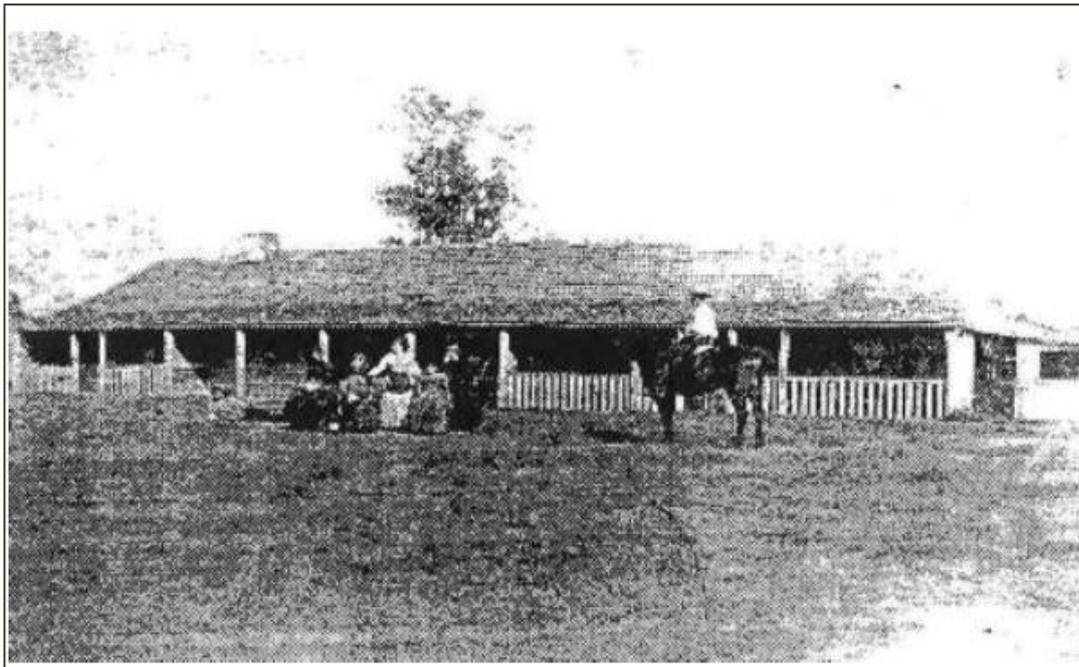


Figure 26 'The Thistle Inn with the Lawson family', n.d.

Source: EMM 2017, 27

Badgerys Creek

In 1892 and 1893 land south of Elizabeth Drive was subdivided into smaller lots, known as the Devonshire Farms and Exeter Farms subdivisions (Sydney Mail 25 November 1893: 1109) (Figure 27 and Figure 28). The subdivisions of these two large holdings opened the area for smaller farms which were used for fruit growing, dairy farming, bee keeping, poultry farming and timber getting. With this increase in population, there was a need for more services and a village (Exeter) was planned south of Elizabeth Drive between Badgerys Creek and South Creek, known as the Exeter Farms subdivision. However, this subdivision never eventuated, possibly owing to the gradual growth of the nearby village of Badgerys Creek. Services established at Badgerys Creek included a butchers' shop in 1842, a school in 1895, as well as post office and general store. A Methodist Church (1898) and Anglican Church (1912) were also built at Badgerys Creek at the instigation of local community members (RPS Manidis Roberts 2015, 31). The buildings that formed Badgerys Creek village were demolished following the resumption of land for the construction of the Western Sydney Airport (RMS 2019, 16–17).

Similarly, in 1895 the eastern portion of the Fleurs Estate was subdivided for sale into blocks varying in size from 7 to 100 acres (Figure 29). This also appears to have failed since the Estate remained substantially intact into the 1940s.

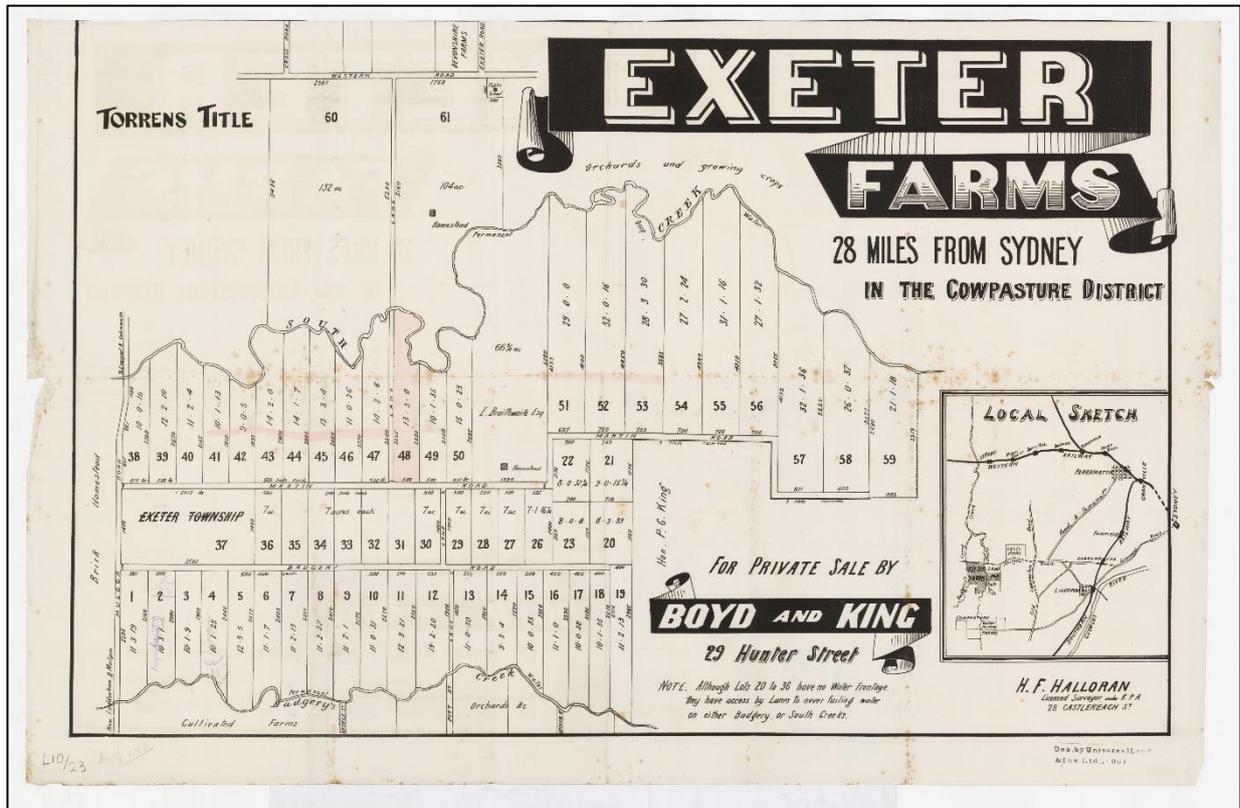


Figure 28 Exeter Farms (1893)

Source: NLA MAP LFSP 434, Folder 33

Subdivision of
**FARM, ORCHARD &
DAIRY LANDS ON THE FAMOUS**
FLEURS ESTATE
ST MARY'S

EDWARD WOOD 300 ac G:
Cosgrove (100) Mc Cook (100)

FOR AUCTION SALE
ON THE GROUND
SATURDAY
23RD FEBRUARY
at 1 O'CLOCK.
Train leaves Sydney at 10.15
SEVERAL HAVE CREEK FRONTAGES.

**RICHARDSON
AND
WRENCH LTD**
AUCTIONEERS.
**TORRENS'
TITLE**

Paris h of Cabramatta

TERMS.
VERY LIBERAL. 10 per cent deposit.
15 per cent in 6 months, balance, 23,
4 & 5 years only.
£4 per cent interest.

Figure 29 Subdivision of farm, orchard, and dairy lands on the famous Fleurs Estate St Mary's, 1895
Source: NLA MAP LFSP 2502, Folder 154

Bringelly

Bringelly had the potential to develop as a regional service town. It was located at the intersection of The Northern Road and Bringelly Road. It was however encircled by the 'Hutchinsonian Estate' that remained in private hands until the 1880s. For much of the later nineteenth century the estate lay fallow resulting in significant regrowth. Portions of the estate were cleared, and the property was subdivided and put up for sale (Figure 30–Figure 39). The initial sale failed, and the property was resurveyed and subdivided and placed on the market in 1892. By this stage Bringelly had a post office (on The Northern Road north of Bringelly Road) and a public school. This subdivision was only partially successful, and few lots were taken up. The village of Bringelly failed to develop.

COWPASTURE FARMS.

LAND CLEARED, MAGNIFICENT SOIL.

20/- AN ACRE DEPOSIT

FREEHOLD TITLE

BALANCE EXTENDING OVER 5 YEARS

Portion colored pink shows the cleared & stumped land - lots green sold

SOLICITOR FOR VENDOR
J. Thompson Esq
VICKERYS Chambers
PITT ST

SEND FOR PAMPHLET CONTAINING VIEWS & ALL PARTICULARS

BOYD & KING
29 HUNTER ST

*Wm. Thompson & Co. Solicitors
Pitt Street Sydney*

Figure 30 Cowpasture Farms: in 7 and 10 acre blocks, 1892

Source: SLNSW DSM/Q981.2/B



Figure 31 Cowpasture Farms: in 7 and 10 acre blocks, cover sheet, 1892

Source: SLNSW DSM/Q981.2/B

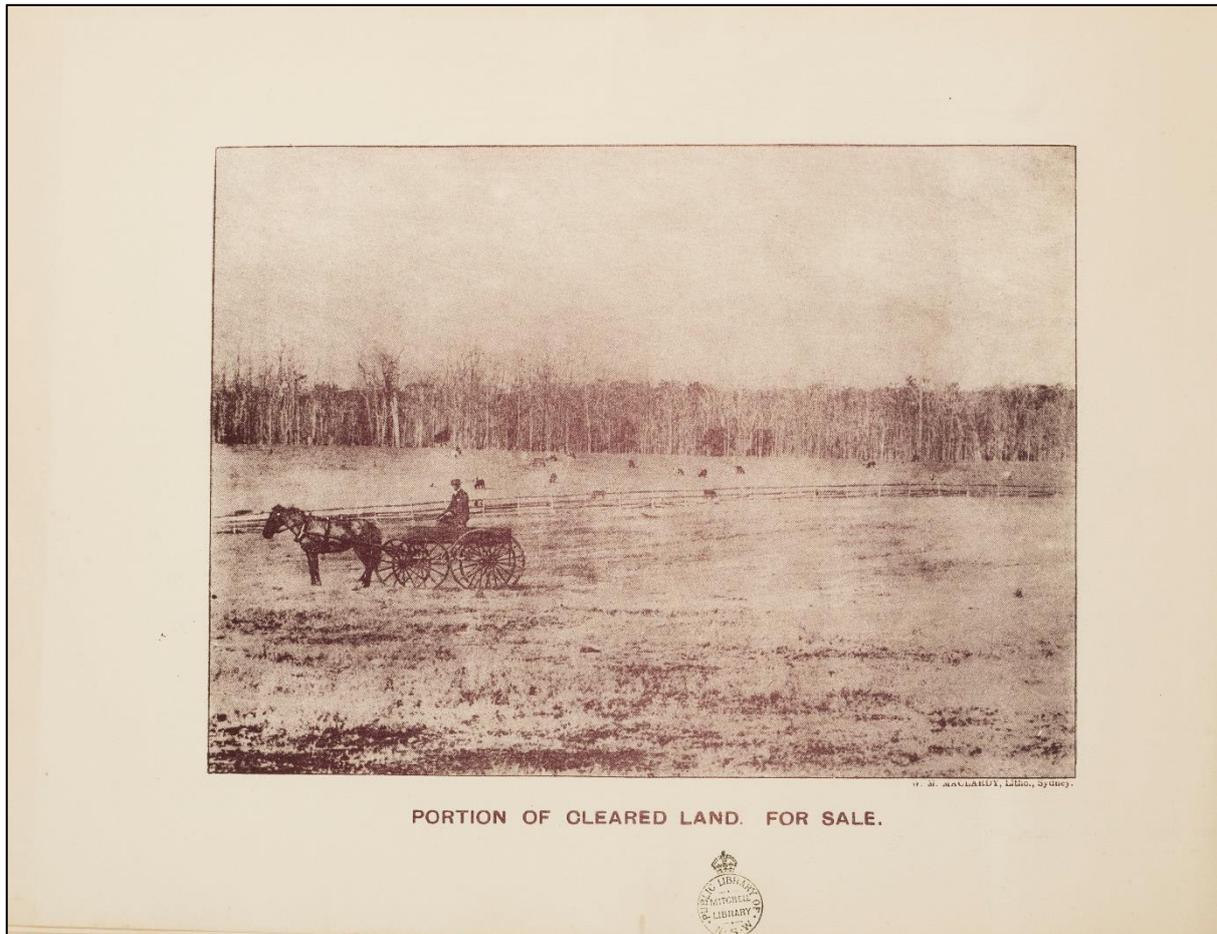


Figure 32 Cowpasture Farms : in 7 and 10 acre blocks, 1892

Note: Portion of cleared land for sale. Source: SLNSW DSM/Q981.2/B



Figure 33 Cowpasture Farms in 7 and 10 acre blocks, view of property from main road, 1892

Note: Bringelly Road looking west. Source: SLNSW DSM/Q981.2/B

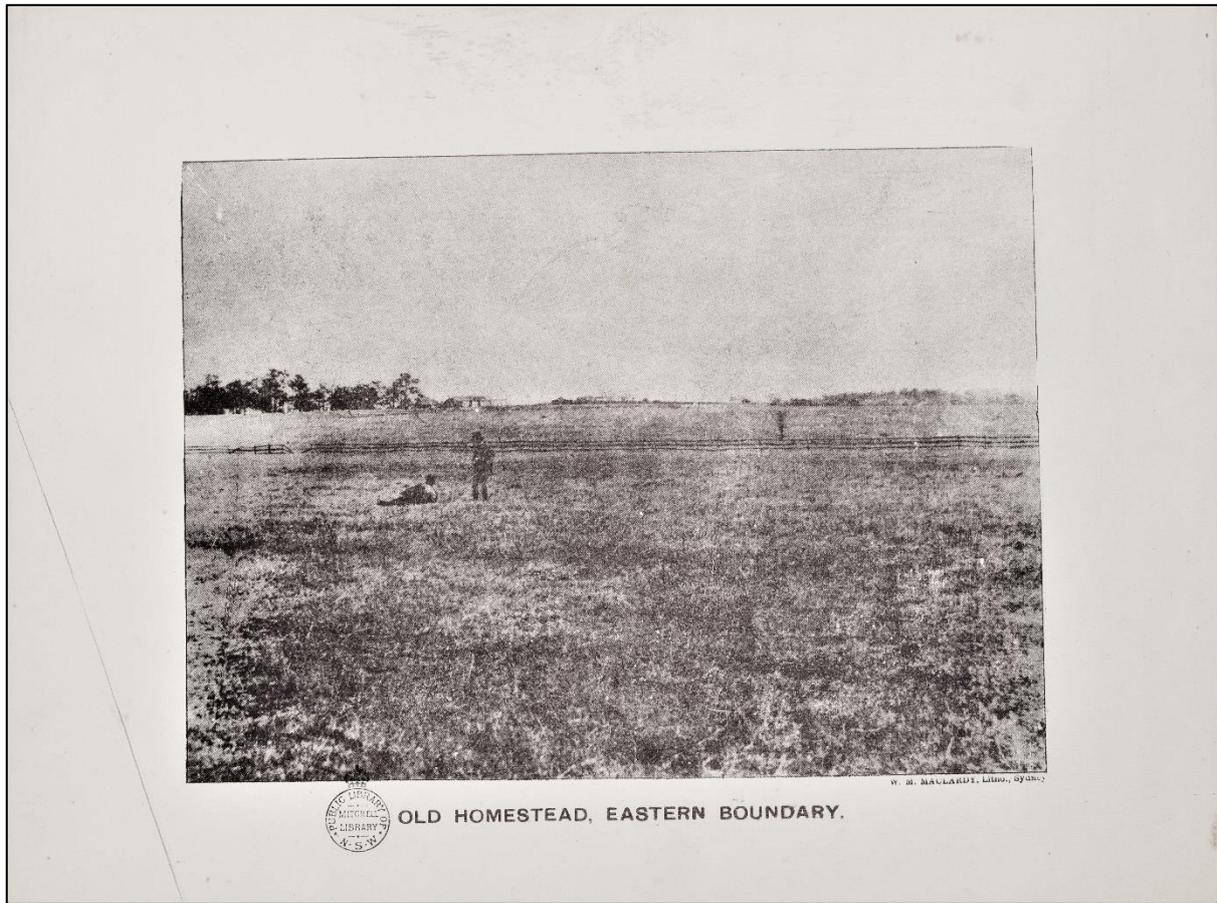


Figure 34 Cowpasture Farms : in 7 and 10 acre blocks, 1892

Note: Old homestead [Kelvin?] eastern boundary. Source: SLNSW DSM/Q981.2/B

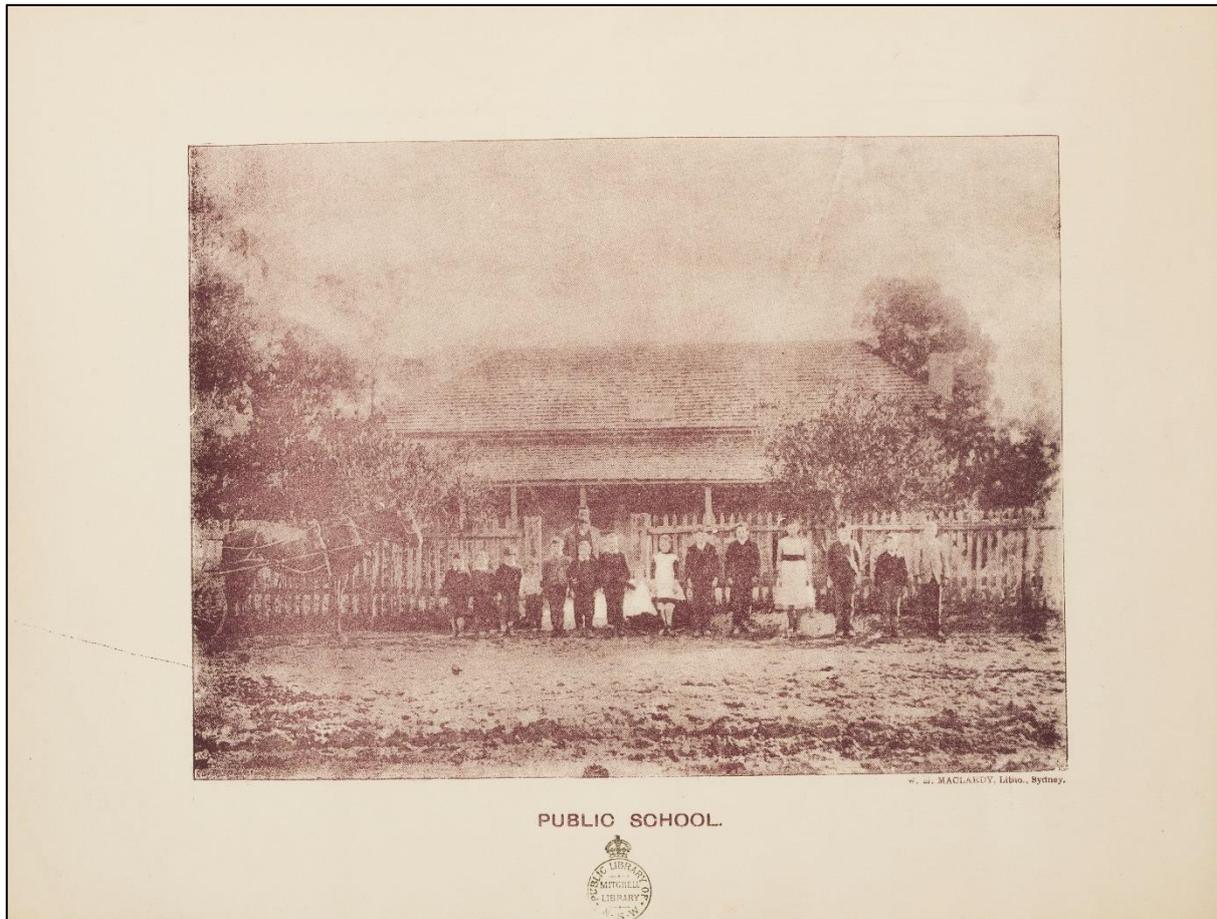


Figure 35 Cowpasture Farms: in 7 and 10 acre blocks (Bringelly) Public School, 1892

Source: SLNSW DSM/Q981.2/B



Figure 36 Cowpasture Farms: in 7 and 10 acre blocks, (Bringelly) Post Office, 1892

Source: SLNSW DSM/Q981.2/B

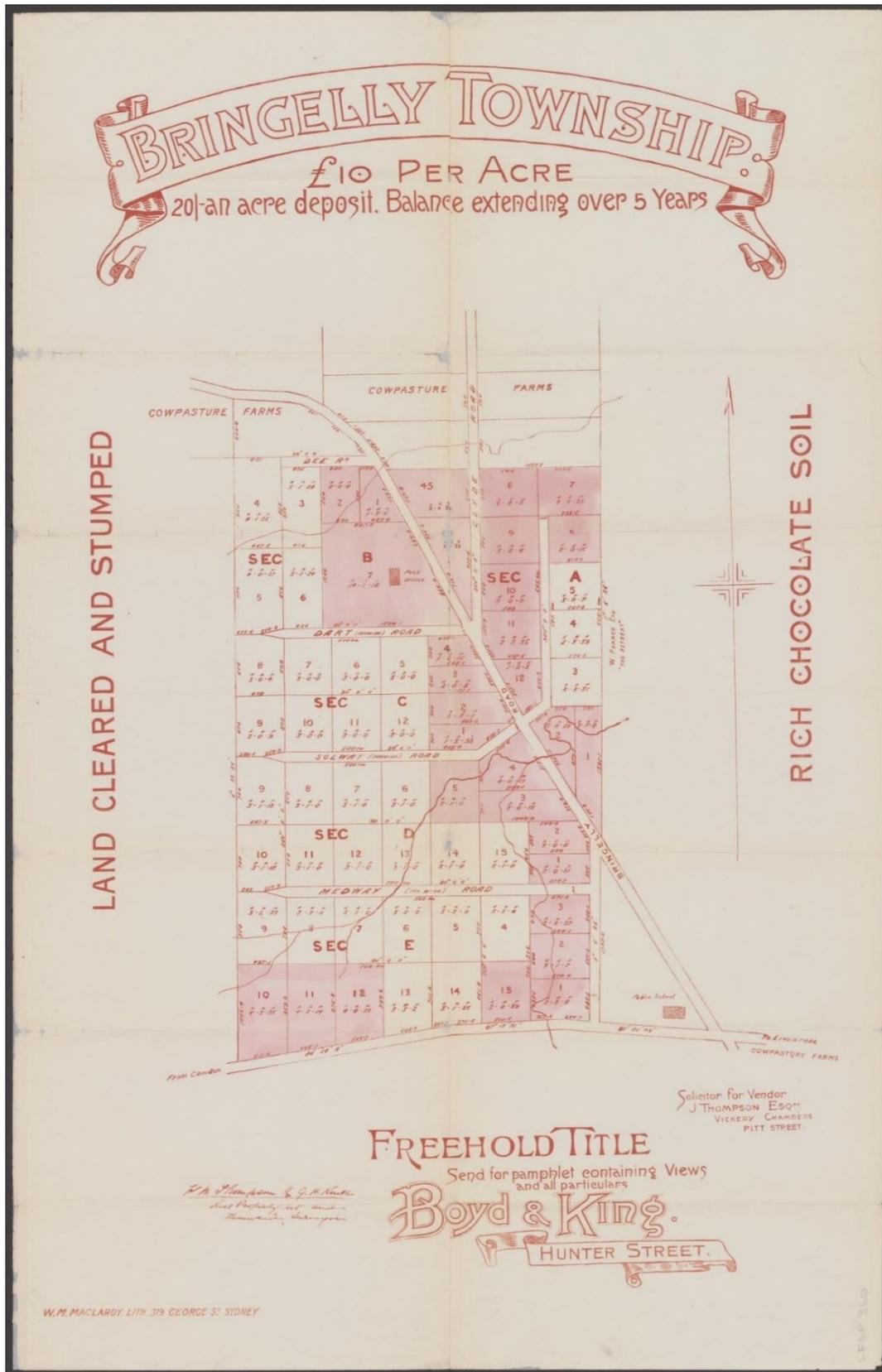


Figure 37 Bringelly Township, 1892

Source: NLA MAP LFSP 360, Folder 28

LFSP 2504

COWPASTURE FARMS.

LAND CLEARED, MAGNIFICENT SOIL.

20/- AN ACRE DEPOSIT

BALANCE EXTENDING OVER 5 YEARS

FREEHOLD TITLE

SOLICITOR FOR VENDOR

SEND FOR PAMPHLET CONTAINING
VIEWS & ALL PARTICULARS

J. Thompson Esq
VICKERYS
Chambers
PITT ST

BOYD & KING
29 HUNTER ST

*Wm. Thompson Esq
Real Estate and Survey
Business Agency*

Figure 38 Cowpasture Farms, 1899

Source: NLA MAP LFSP 2504, Folder 154



Figure 39 Cowpasture Farms Second Subdivision 1899

Source: NLA MAP LFSP 2504, Folder 154

Kemps Creek

During the final decades of the nineteenth century land holdings, such as Mount Vernon, were subdivided into smaller lots. These included Amy Park, formerly Henry Marr's 'Cooloo' located south of Elizabeth Drive in the vicinity of the current village of Kemps Creek (Figure 40). The first school in the Kemps Creek area was constructed in 1885. Six schools have since serviced the Kemp Creek community, with the last one built in Cross Street. In 1908, the foundation stone was laid for the St Andrews Church, and a post office opened in 1927. Although the Kemps Creek area remains largely rural, several small shops and commercial businesses can be found in the area today. Residential development of Mount Vernon dates to after 1970 with no extant historical buildings remaining (RMS 2019, 17–18).

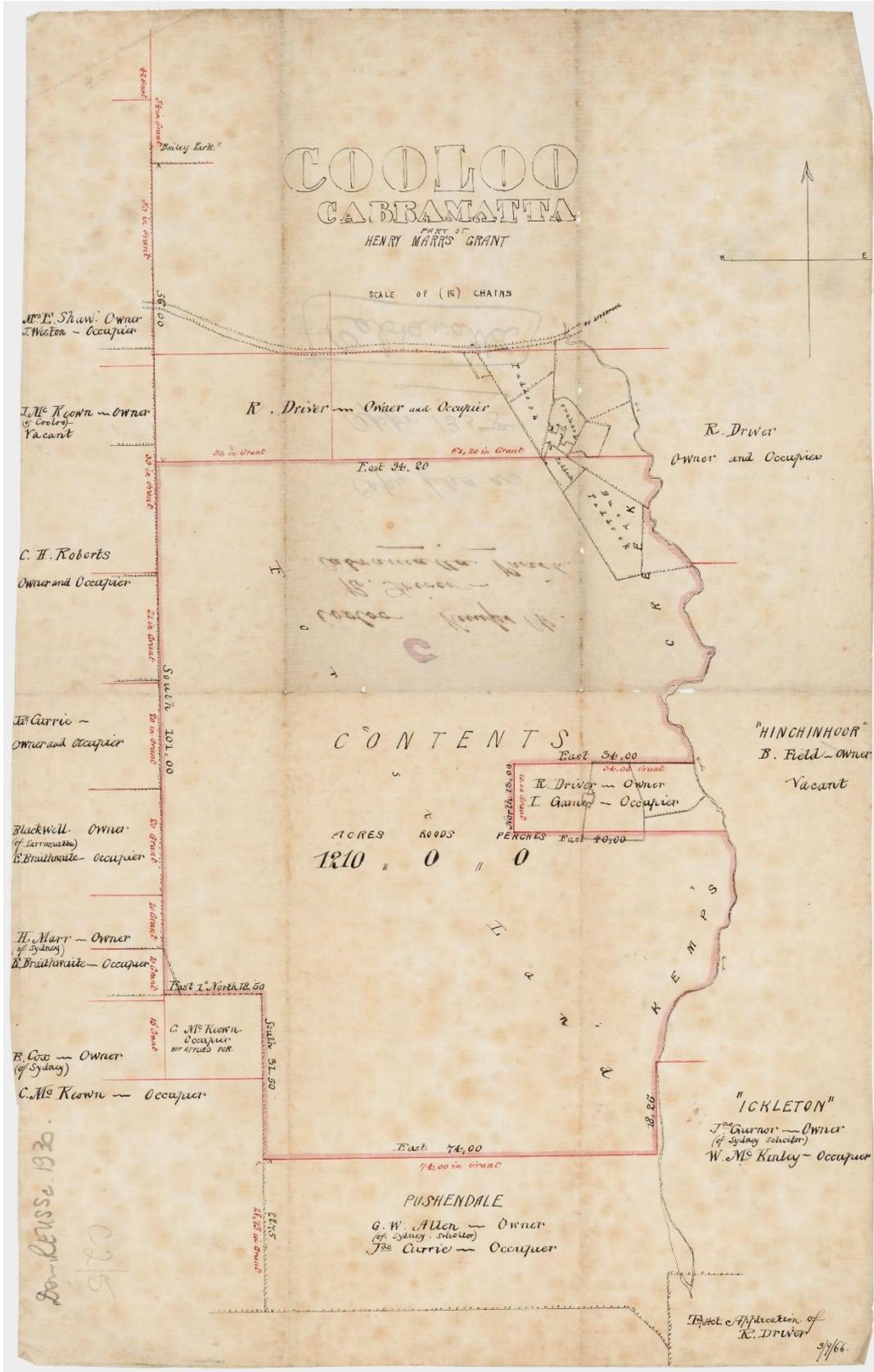


Figure 40 Henry Marr's 'Cooloo' (n.d.)

Source: SLNSW Z/SP/C2/5 - Cooloo Cabramatta

Rossmore

Rossmore, formerly the township of Cabramatta failed to develop following the subdivision and sale in 1840. The village was provided with a parish hall and later with a post office and public school. In 1893 a butter factory was established on 'Bellfield' adjacent to the western end of the village reserve (Austral 2011: 54). There were few private residences within the town reserve (Figure 41).

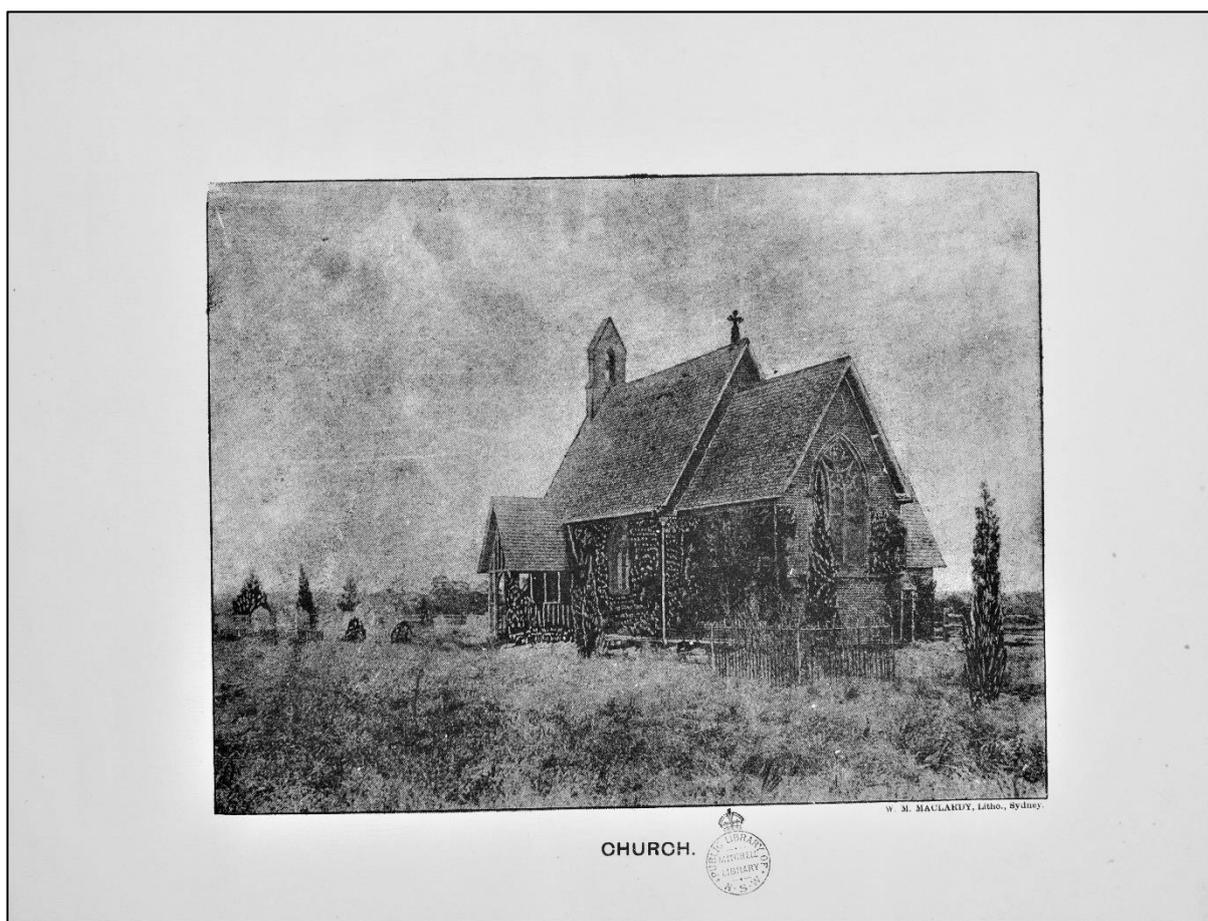


Figure 41 Cowpasture Farms: in 7 and 10 acre blocks (n.d.) Church of the Holy Innocents, 1892

Source: SLNSW DSM/Q981.2/B

6.7 Early twentieth century development 1900–1945

By 1900 the second generation of large landowners had subdivided most of their properties. Many of the smaller lots had been purchased by local families that had been former tenants. During this period these holdings were consolidated and expanded with the names Braithwaite, Adams, Nobbs, McKaughan, Sales, and Hughes (Figure 42–Figure 45).

The principal agricultural activities undertaken within the district included dairying, orcharding, pig-raising, potato-growing, grazing and grain production. Industrial activities were mainly associated with the processing of agricultural products. A small abattoir was located at

Luddenham and a butter factory at Rossmore. Bacon-curing was also undertaken on a number of larger properties including Fleurs. One of the principal activities undertaken in the first two decades of the twentieth century was wood-cutting. The dereliction of many of the larger grazing properties during the latter part of the nineteenth century saw regrowth of native timbers suitable for use as firewood. These activities formed the main stay of the local economy until the Second World War.

The presence of large tracts of cleared land close to the main settled district in New South Wales also saw the Commonwealth take notice. In 1920 and 1923 two large sections of James Badgery's Exeter Farm was gazetted for use as part of the soldier settlement scheme. The subdivision into small farming blocks did not progress and the property was eventually reconsolidated by the Nobbs family. The property was described in 1922 in the following manner:

Comprises generally clayey to sandy soil; about 57 acres flat land cleared for cultivation ; about 85 acres partly cleared and about 25 acres at one time ring-barked (but now fairly scrubby), for grazing; remainder about 190 acres inferior ironbark and ti-tree country, suitable only for rough grazing; good permanent water supply in Badgery and South Creeks fronting the land. (NSW Government Gazette, 18 July 1922, No 79, 3117)

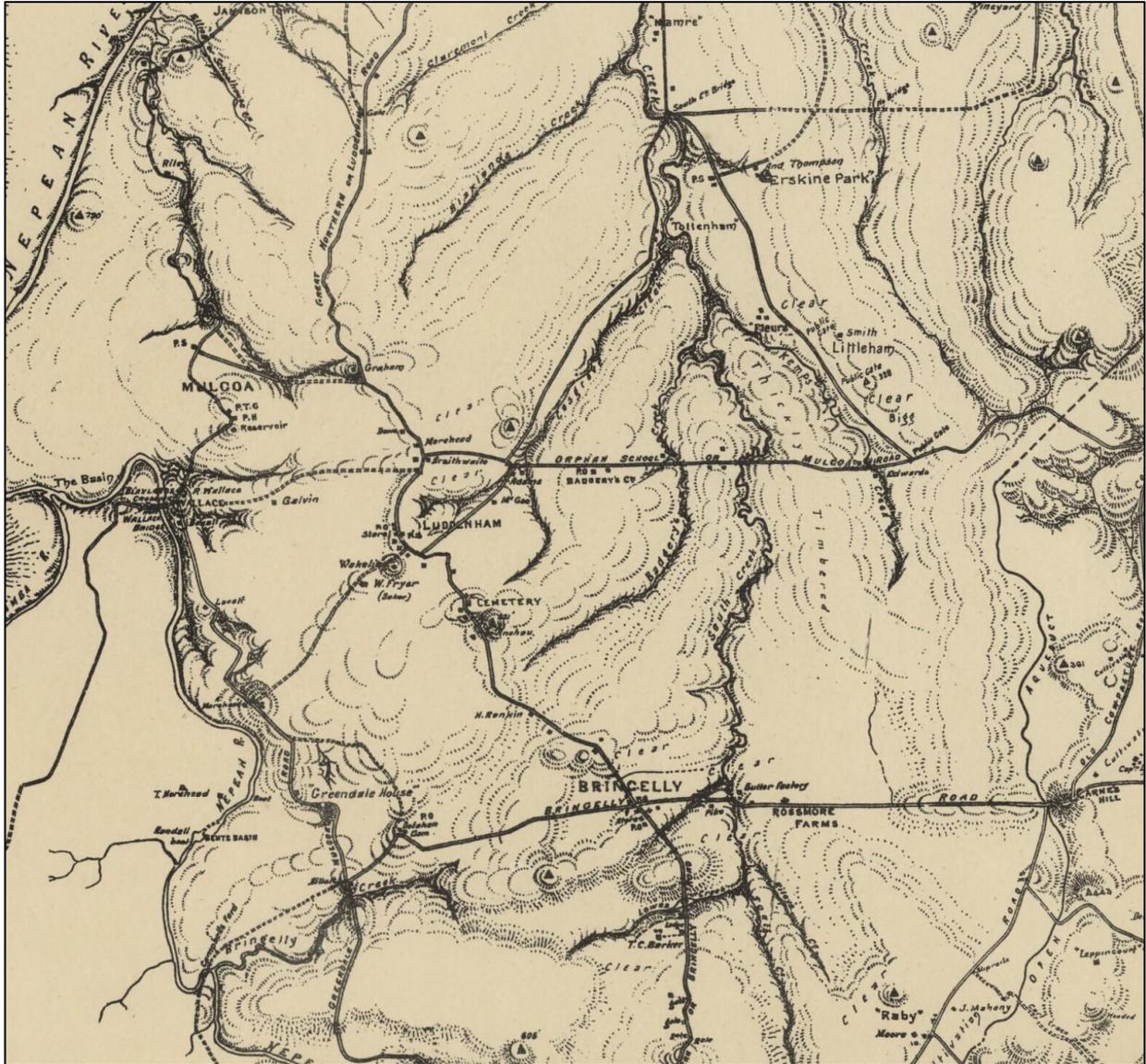


Figure 42 Map of the manoeuvre area Liverpool NSW, 1906

Source: NLA nla.obj-232733847

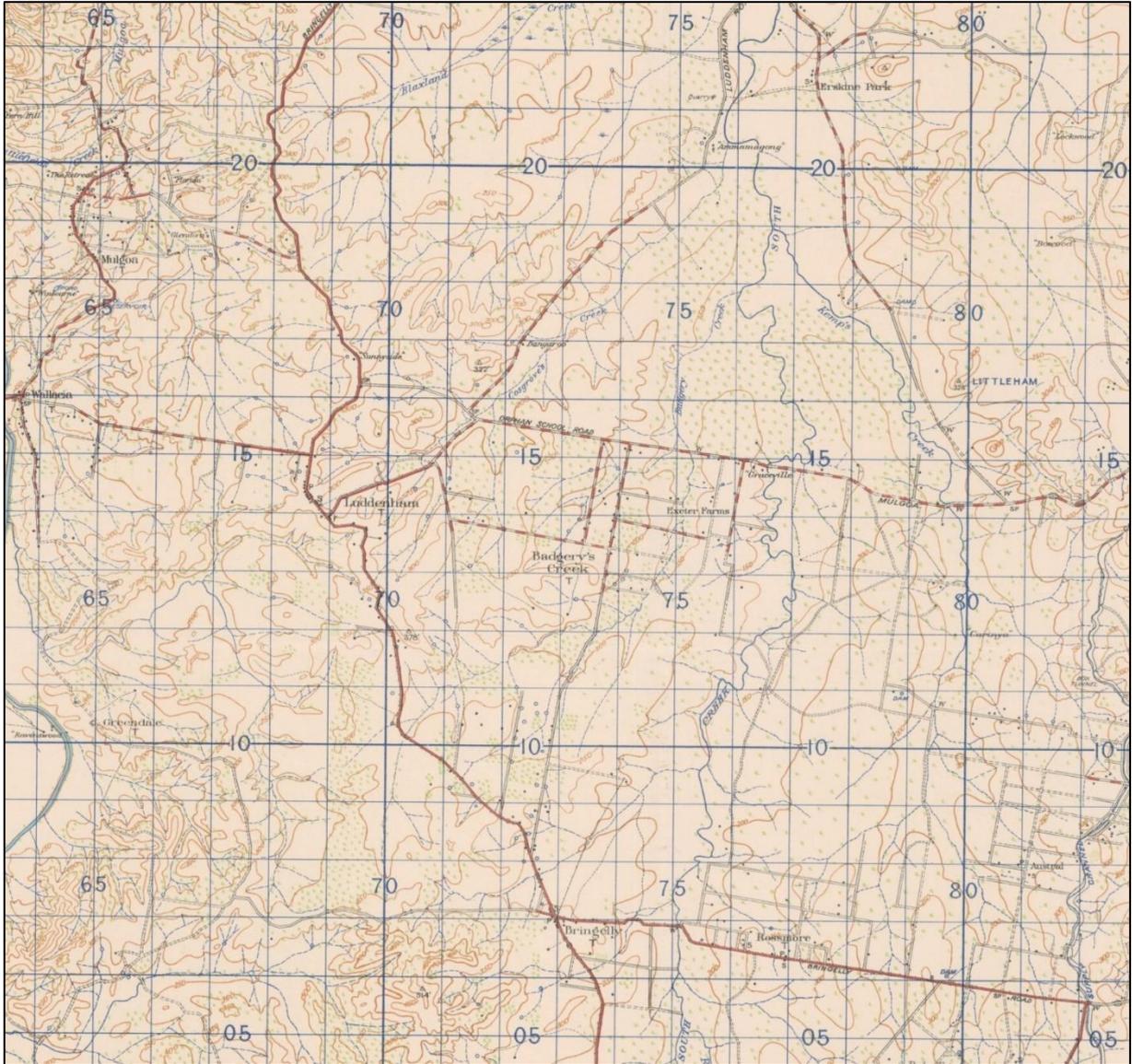


Figure 43 Liverpool NSW, 1935 (Information to 1927) detail

Source: NLA nla.obj-446266912



Figure 44 Luddenham Post Office, c.1910 [Asset 225]

Source: NAA B5919, 4/91



Figure 45 Luddenham Post Office, 1950 [Asset 225]

Source: NAA C4077

The generally undeveloped nature of the area also attracted the use of land for scientific agricultural research.

McGarvie-Smith Farm

The McGarvie-Smith Animal Husbandry Farm [Asset 105] was developed initially as a veterinary research centre for the University of Sydney in 1936. The facility provided field training for veterinarians. During the late 1940s and early 1950s the range of works undertaken on the facility expanded to include the application of science to farm management. A key aspect of this work was H. J. Geddes' creation of the practice of water harvesting. Agriculture in this portion of the Sydney region had always been subject to the unreliability of rainfall – unpredictable periods of heavy rainfall interspersed with long periods of inadequate rainfall. Under Geddes a system of containing water on the farm for use during dry periods was developed. This became the basis for a system that had international application and is still in use. The facility also tested P. A. Yeoman's keyline design that sought to optimise irregular rainfall through gradual release into the soil by landscape design. The favourable results of the testing encouraged the wider use of the system to the extent that it became a key concept in Permaculture. The farm experimented with fodder crops throughout the 1940s and 1950s in association with the use of rotational grazing methods such as strip-grazing. The facility also tested and refined innovations developed overseas. These included the use of wheel-line irrigation systems in the early 1950s. The wider (post-war) availability of aluminium for equipment such as pipes made such portable and cost-efficient systems possible (Figure 46–Figure 49).

The two oldest buildings on the complex are McGarvie Smith Farm 1 and McGarvie Smith Farm 2. The farm's educational function and reputation for experimentation makes it a significant site in the history of the development of agriculture. The farm was a leader in the mid-twentieth century in finding solutions to long-standing problems associated with agriculture and pastoralism.

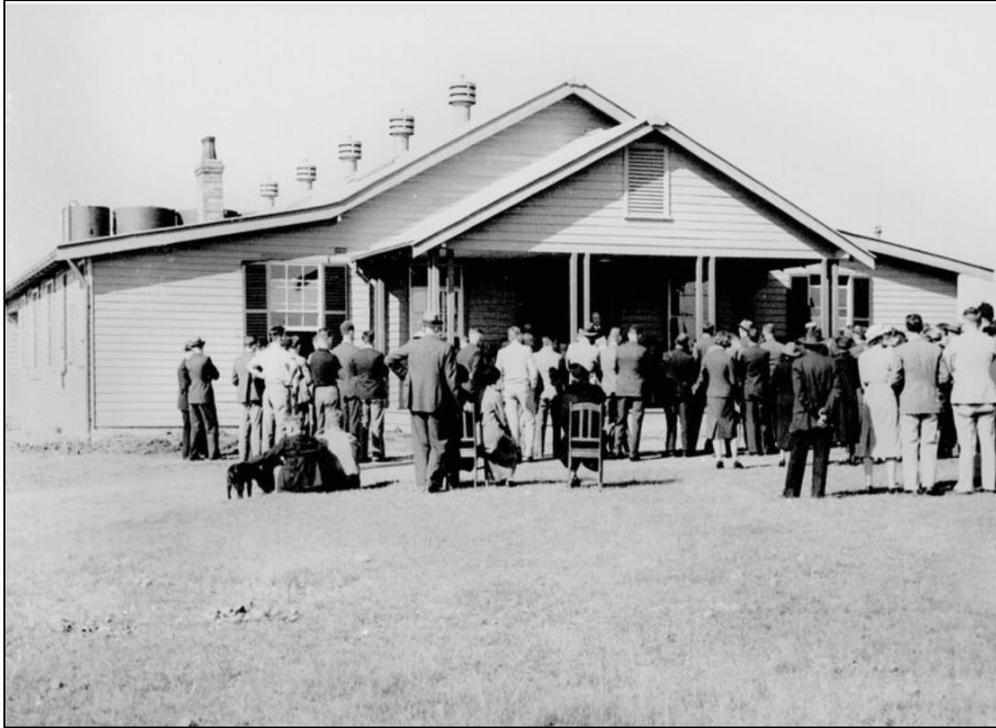


Figure 46 Opening of the McGarvie Smith Animal Husbandry Farm, Badgerys Creek, 1938. Source: University of Sydney Archives G3_224_0935



Figure 47 Indian farmers at the McGarvie Smith Animal Husbandry Farm

Note: Farmers studying farm methods under the Colombo Plan, 1955. Source: NAA Number A1501:A250/2),

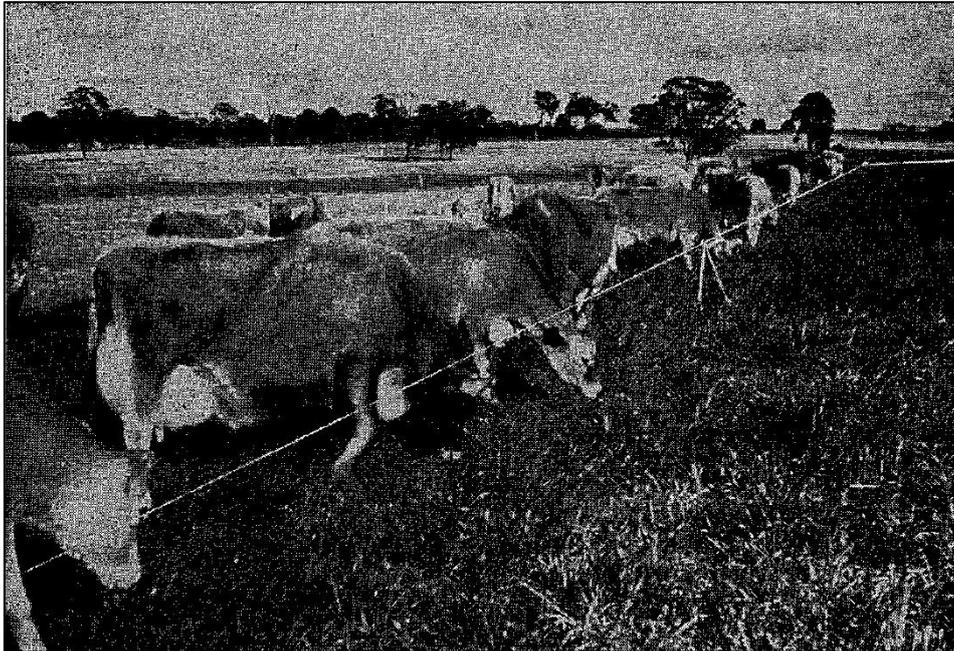
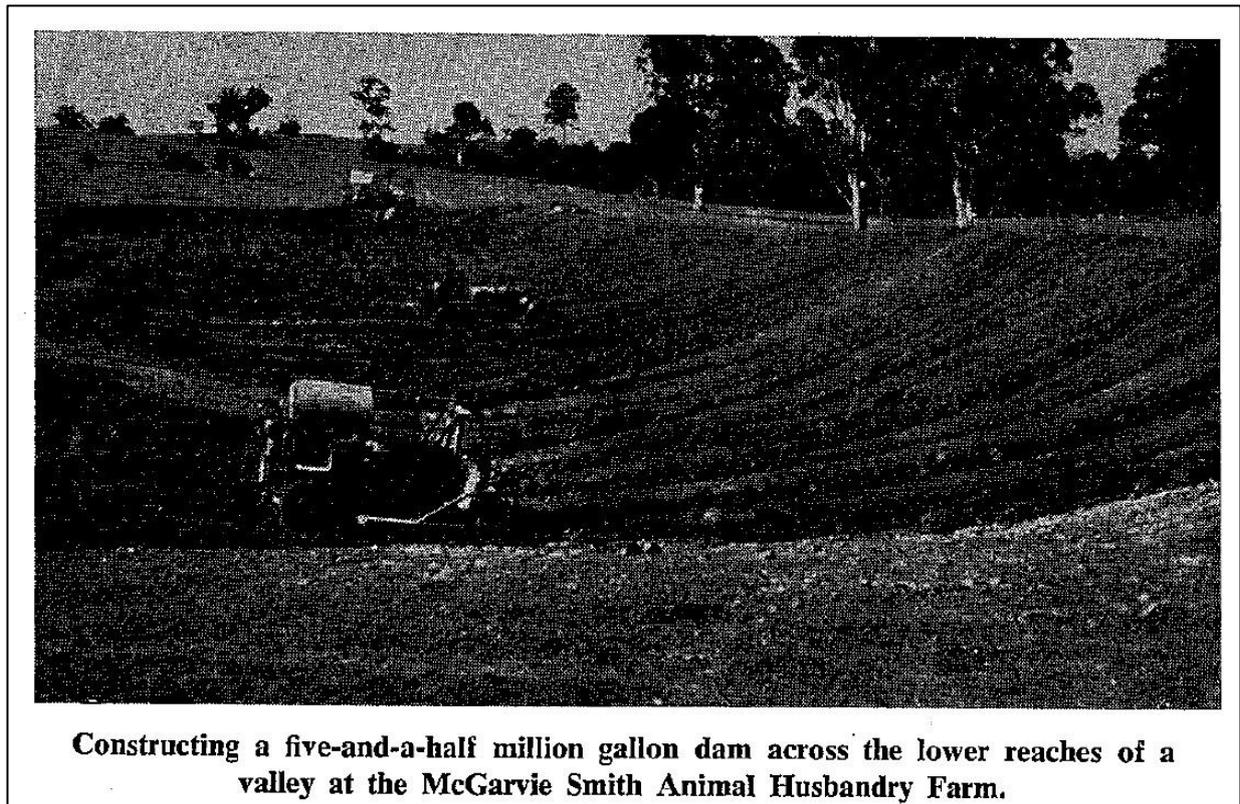


Figure 48 Strip grazing, McGarvie Smith Farm. Source: Geddes 1960



Constructing a five-and-a-half million gallon dam across the lower reaches of a valley at the McGarvie Smith Animal Husbandry Farm.

Figure 49. Construction of the main turkey nest dam at the McGarvie Smith Farm, 1953. The dam still survives intact. Source: Geddes 1960.

McMaster Field Station

The McMaster Field Station was formed for after the property was purchased in 1923 by the Commonwealth Government as land reserved for pastoral and agricultural research undertaken by CSIRO. The field station is associated with the University of Sydney's Sir Frederick Duncan McMaster. His original gift to CSIRO in 1929, for the construction of the Division of Animal Health's first laboratory marked the beginning of a new era of veterinary research in Australia and the development of an international reputation for excellence in veterinary research. The site contained two principal dams and fourteen smaller dams. Several hundred head of stock were present on the site at any one time (Figure 50–Figure 55).

The field station was divided into two sections – the Division of Animal Health (DAH) in the west and the Division of Animal Production (DAP) in the east. Each section contained a cluster of principal buildings surrounded by paddocks and yards. Buildings in the DAH section dated from the late 1930s to the 1980s and buildings in the DAP section dated from the late 1940s to the 1980s. As the facility was downgraded in the late 1980s and early 1990s a number of buildings were demolished and contamination removal was undertaken.



Figure 50 Animal Health/McMaster Field Station [Asset 104]

Note: General view of property, 1923–1932. Source: NAA B5626, 426



Figure 51. Animal Health/McMaster Field Station [Asset 104].

Note: Experimental sheep yards 1923-1932. Source: NAA B5626, 427

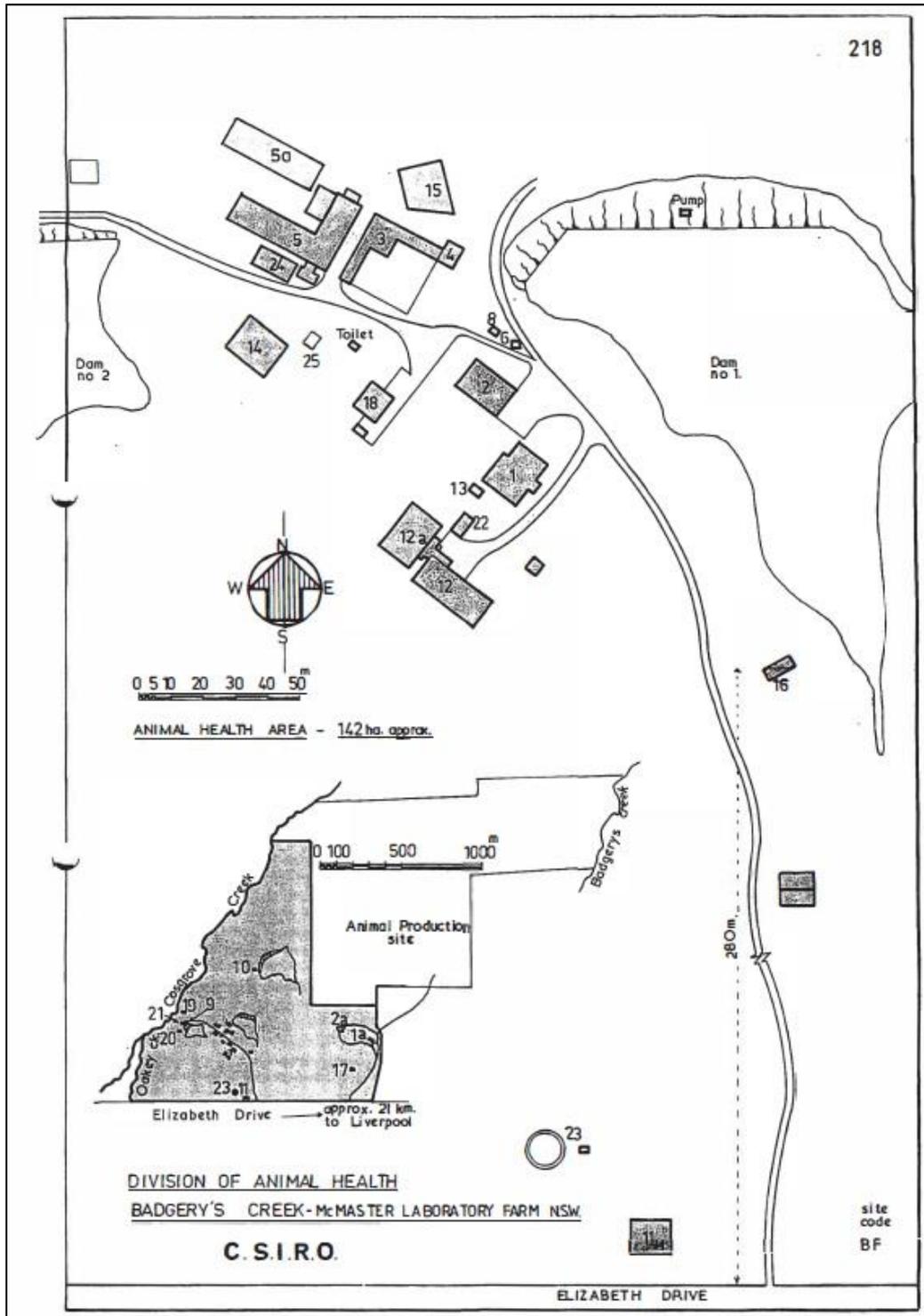


Figure 52 CSIRO Badgerys Creek McMaster Laboratory – building layout Division of Animal Health, 1995 (Source: CSIRO (2020): Document part 17)

Site No:	218				
Site Code:	BF				
<u>BADGERY'S CREEK, NSW</u>					
McMaster Laboratory Farm					
ANIMAL HEALTH (IAPP)					
Tenure:	CSIRO Title				
Assets Equity:	CSIRO				
Area of Site:	142Ha				
Staff Numbers:	3				
No. of Buildings	24				
Bld No	Building	Gross Area in sq m	Construction	Levels	Year Built
1	Laboratory	238.00	Brick	1	1966
1A	Buffier Memorial Laboratory	150.00	Weatherboard	1	1938
2	Implement Shed/Workshop	100.00	Corr GI	1	1961
2A	4BR Residence	186.00	Weatherboard	1	1939
3	Sheep Yards	180.00	Corr GI	1	1957
4	Sheep Shed	27.87	AC Sheet	1	1960
5	Sheep/Shearing Shed	420.00	Corr GI	1	1963
5A	Sheep Shed	270.00	Corr GI	1	1980
6	Flammable Liquid Store	6.00	Brick	1	1961
8	Pump House	5.95	Corr GI	1	
9	Pump House	5.95	Corr GI	1	
10	Pump House	5.95	Corr GI	1	
11 w	House (Superintendent)	136.00	Brick Veneer	1	1966
12/12A	Small Animal Building	479.00	Brick	1	1975
13	Cold Room	6.00	Aluminium	1	1971
14	Hayshed	200.00	Corr GI	1	1971
15	Sheep Shed	90.00	Corr GI	1	1975
16	Glasshouse	85.00	Steel/Glass	1	1975
17	Covered Sale Yards	250.00	Corr GI	1	1969
18	Incinerator	60.00	Brick Veneer	1	1979
19	Sheep Shelter	90.00	Corr GI	1	1972
20	Sheep Shelter	90.00	Corr GI	1	1972
21	Farm Machinery Shed	110.00	Corr GI	1	1977
22	Storage Shed	110.00	Corr GI	1	1976
23	Water Storage/Pump House	18.00	Steel	1	1980
24	Chaff Cutting Building	72.00	Corr GI	1	1982
25	Flammable Liquids Store	30.00	Brick	1	
Total Area of Buildings:		3,661.72	sq m		

Figure 53 CSIRO Badgerys Creek McMaster Laboratory – building schedule Division of Animal Health, 1995 (Source: CSIRO (2020): Document part 17)

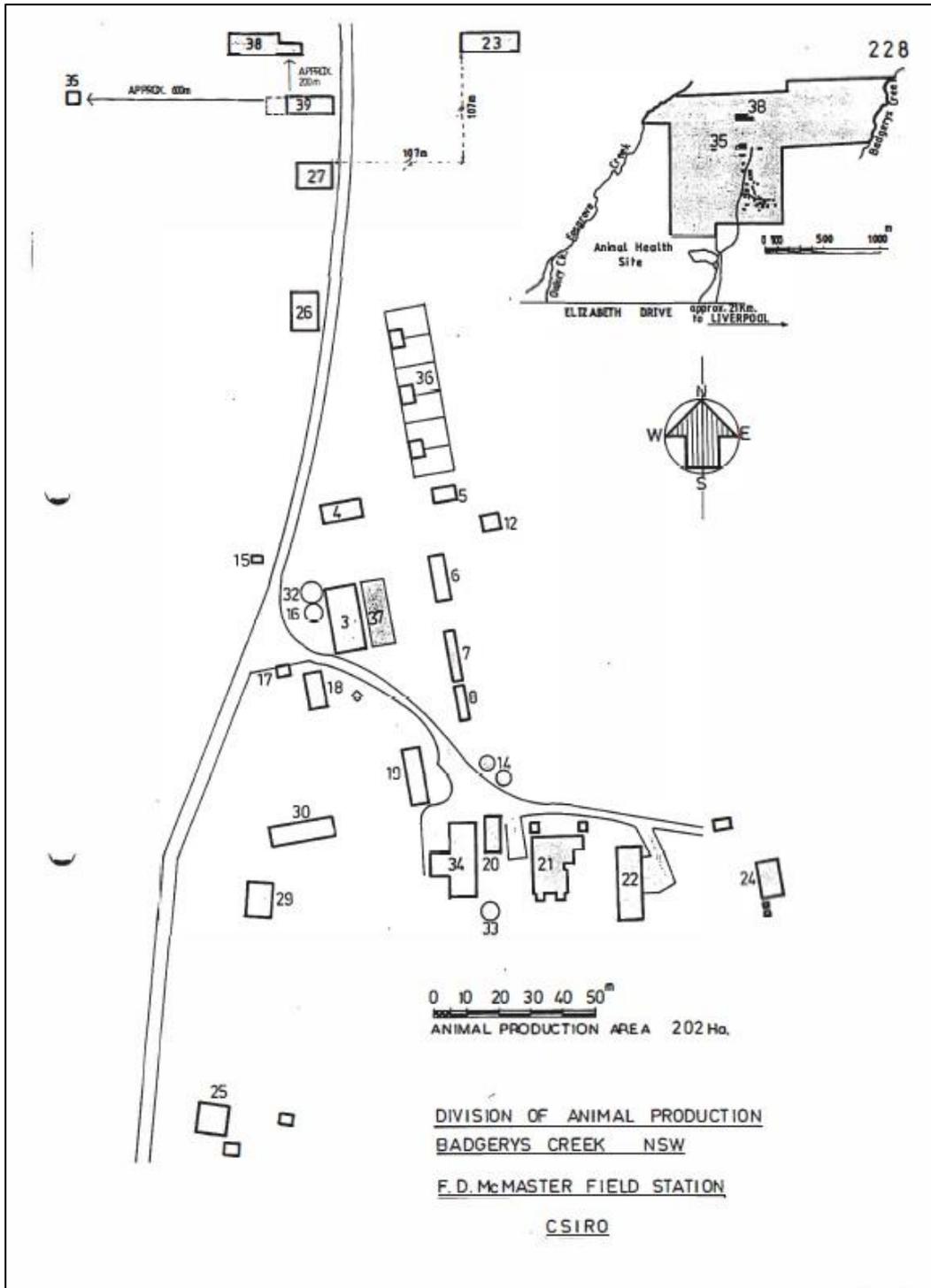


Figure 54 CSIRO Badgerys Creek McMaster Laboratory – building layout Division of Animal Production, 1995 (Source: CSIRO (2020): Document part 17)

Site No:	228				
Site Code:	BB				
<u>BADGERYS CREEK, NSW</u>					
Elizabeth Drive					
FD McMaster Field Station					
ANIMAL PRODUCTION (IAPP)					
Tenure:	CSIRO Title				
Assets Equity:	CSIRO				
Area of Site:	202Ha				
Staff Numbers:					
No. of Buildings	29				
Bld No	Building	Gross Area in sq m	Construction	Levels	Year Built
3	Feed Shed/Bails	372.00	Timber/Corr GI	1	1956
4	Dairy/Milking Shed	65.00	Brick	1	1949
5	Bull Feeding Shed	32.00	Timber/Corr GI	1	1961
6	Bull Feeding Shed/Field Lab	65.00	Timber/Corr GI	1	1963
7	Bull Feeding Shed	78.00	Timber/Corr GI	1	1967
14	Grain Silos (2 x 1000 Bushel)	35.00	Steel	1	1961
15	Amenities Building	14.00	AC Sheet	1	1957
16	Grain Silo (5000 Bushel)	28.00	Steel Prefab	1	1963
17	Flammable Liquids Store	19.00	Corr GI	1	1961
18	Farm Workshop	74.32	Corr GI	1	1968
19	Pig Breeding Facility	195.09	Corr GI/Canvas	1	1946
20	Machinery Storage	74.32	Timber	1	1940
21	3 Hot Rooms/Dairy	321.00	Timber/Corr GI	1	1965
22	Hayshed	214.00	Timber/Corr GI	1	1952
23	Shearing Shed	111.00	Timber/Corr GI	1	1960
24	3BR Residence	102.00	Weatherboard	1	1963
25	3BR Residence	139.00	Timber/AC Sheet	1	1955
26	4BR Residence	139.35	Weatherboard	1	1937
27	3BR Residence	158.00	Corr GI	1	1951
29	Climate Room/Office/Lab	112.00	Concrete Block	1	1970
30	Light Control Building	167.00	Corr GI	1	1969
32	Grain Silo	28.00	Steel	1	1971
33	Grain Silo	28.00	Steel	1	1971
34	Climate Laboratory Complex	275.00	Concrete	1	1974
35	Field Hut	7.00	Timber/AC Sheet	1	1976
36	Cattle Holding Facilities	50.00	Timber/Colourbond	1	1979
37	Endoscopy Shed	90.00	Corr GI	1	1986
38	Deer Facility	416.00	Timber	1	1987
39	Hay Shed	200.00	Gal Iron	1	1986
Total Area of Buildings:		3,609.08	sq m		
Printed December 1995		FOR CSIRO USE ONLY			

Figure 55. CSIRO Badgerys Creek McMaster Laboratory – building schedule Division of Animal Production, 1995 (Source: CSIRO (2020): Document part 17)

Fleurs Aerodrome

Fleurs Aerodrome was constructed on the Fleurs Estate in early 1942 by the NSW department of Main Roads (Figure 56 and Figure 57). The site operated as a parent airfield forming an integral part of Sydney's air defence and aircraft dispersal system. Three strips were contemplated but only one was constructed and became operational. The only known structures built to serve the airfield were eight camouflaged hideouts for aircraft. An existing farmhouse and outbuildings served the airfield. During 1942 the airfield was home of the 41st Pursuit Squadron 35th Fighter Group USAAF (Figure 57–Figure 61). The aerodrome was occupied by a number of different squadrons throughout the Second World War. The airfield was subsequently downgraded to serve as an Emergency Landing Ground (Figure 62). The existing grass strip is a rare survival in the Sydney region.



Figure 56 Fleurs Aerodrome under construction, June 1942 [Asset 503].

Source: *SLNSW Government Printing Office 1 – 24177*



Figure 57 Fleurs Aerodrome under construction, June 1942 [Asset 503]

Source: SLNSW Government Printing Office 1 – 23755

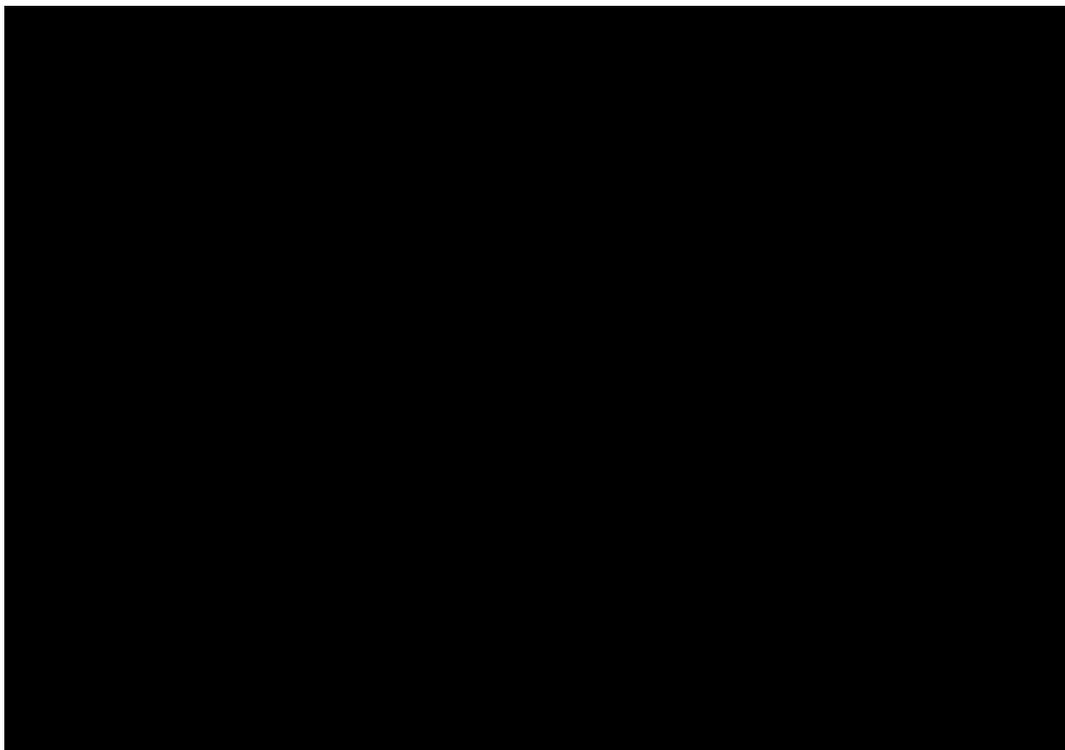


Figure 58 [REDACTED]

Source: [REDACTED]

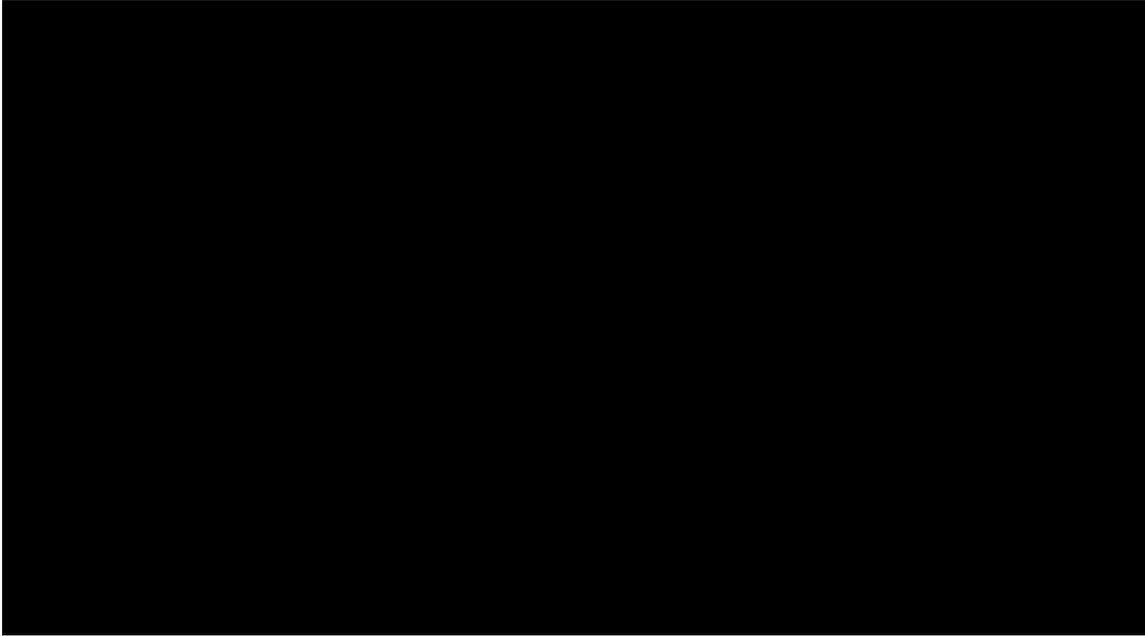


Figure 59 [REDACTED]

Source: [REDACTED]

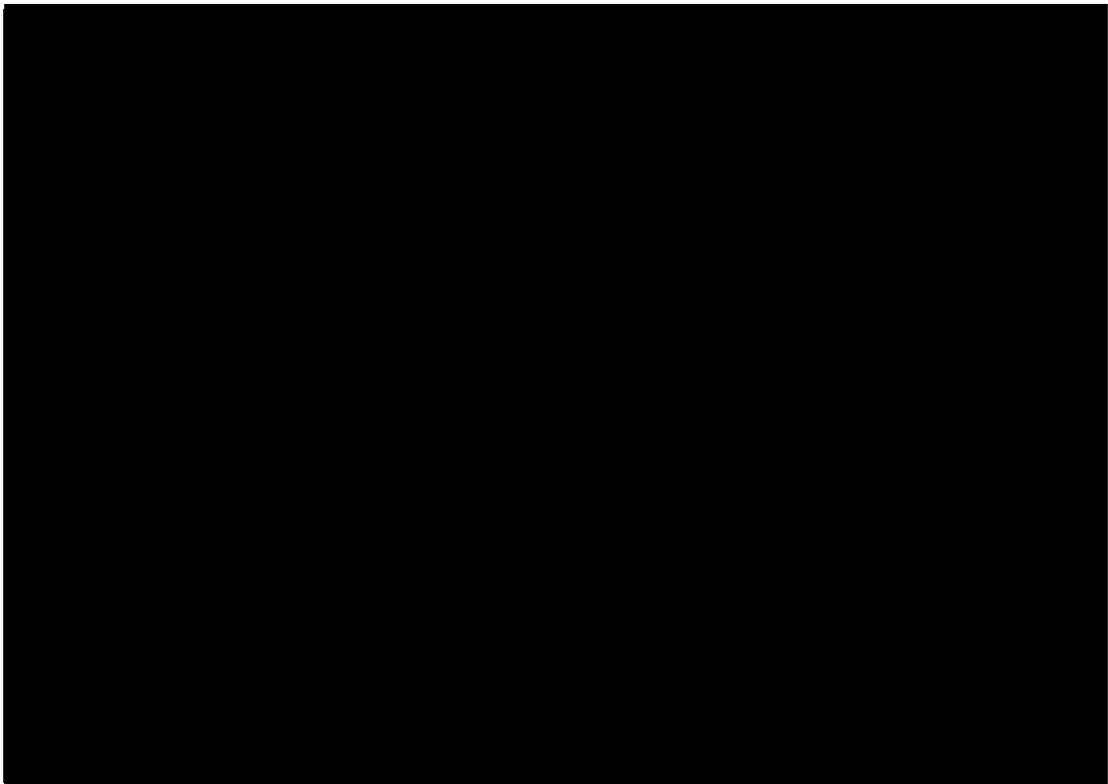


Figure 60 [REDACTED]

Note: Farmhouse at southern end of strip in background. Source: [REDACTED]

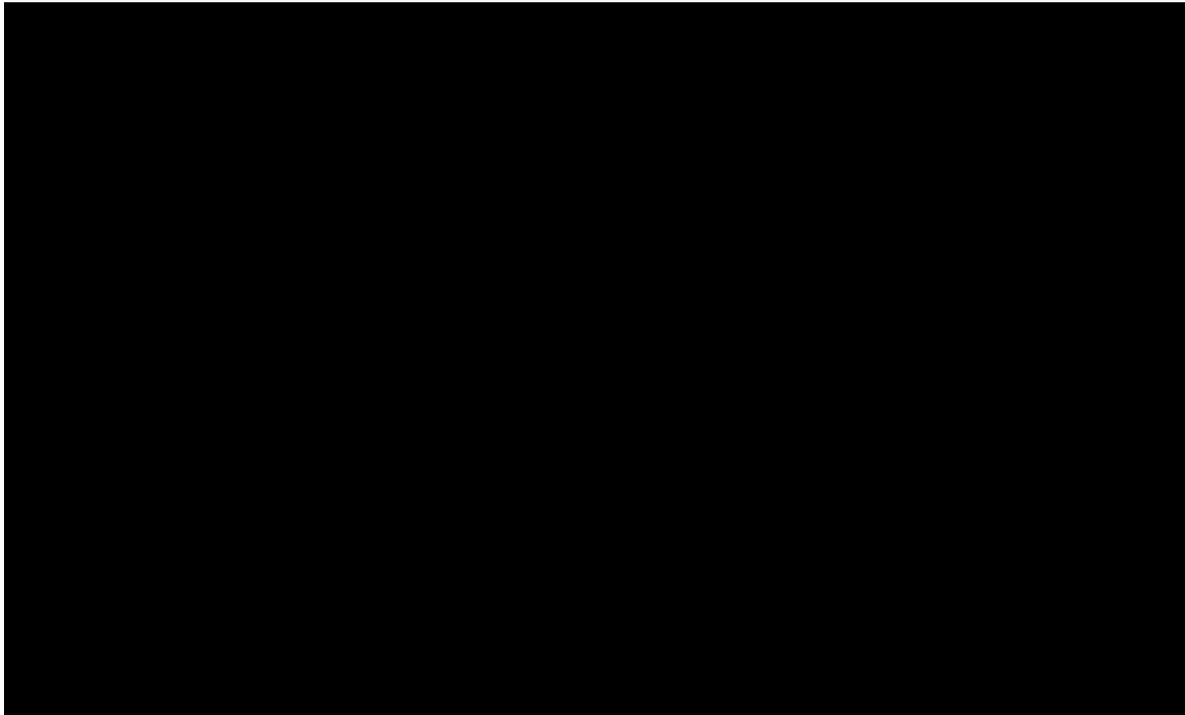


Figure 61 [REDACTED]

Source: [REDACTED]



Figure 62 Fleurs Aerodrome, 1955

Note: Farmhouse and outbuildings in lower right-hand corner. Source: Portal.Spatial.NSW

6.8 Late twentieth-century development 1945–2000

Following the Second World War the region returned to primarily agricultural activities (Figure 63). The introduction of the County of Cumberland Planning Scheme placed the study area within the rural zone adjacent to the green belt that was to encircle Sydney (Figure 64 and Figure 65). The County of Cumberland Council, tasked with implementing the scheme, sought to address the problems associated with the rapid development of the County within an unplanned framework. The key problems identified were over-centralisation and congestion of industry, congested traffic, slum housing, conflicting land uses, unregulated residential sprawl, the provision of basic infrastructure and the destruction of the natural beauty of the County

(Abercrombie 2008, 25). The Scheme meant that subdivisions within the study area could not be smaller than 5-acres. This resulted in a spate of 5-acre subdivisions during the early 1950s, many of these lots were taken up by migrant families with poultry production and market-gardening being the main agricultural enterprises. A great many lots were also taken up as 'hobby farms' and suburbs such as Kemps Creek, Bringelly and Badgerys Creek became dormitory suburbs. The main developments within the region in the immediate post-war years were associated with technology, communications and defence. These facilities took advantage, in part, of lands acquired by the Commonwealth during the Second World War. The County of Cumberland Planning Scheme would also retard any encroachment on these facilities by urbanisation.

There was a further intensification of settlement as post-war migrants that settled in Australia experienced a period of economic growth and an economy with a need for labour and increased demand for housing (Gwyther 2008). The County of Cumberland Planning Scheme had succeeded in many of its objectives in restricting growth areas to nominated zones and the development of satellite centres such as Penrith, St Marys and Campbelltown. The plan was based on conservative population growth figures that could be accommodated by a flexible application of the guiding principles of the Scheme. This flexible principle, although stated as part of the operation of the Scheme, was not adopted by the Council in the face of greatly increased rates of immigration. State Government sought the release of more land to accommodate this growth. The failure by the Council to accede to these demands ultimately resulted in the State abolishing the Council in 1963 (Abercrombie 2008, 43–44).

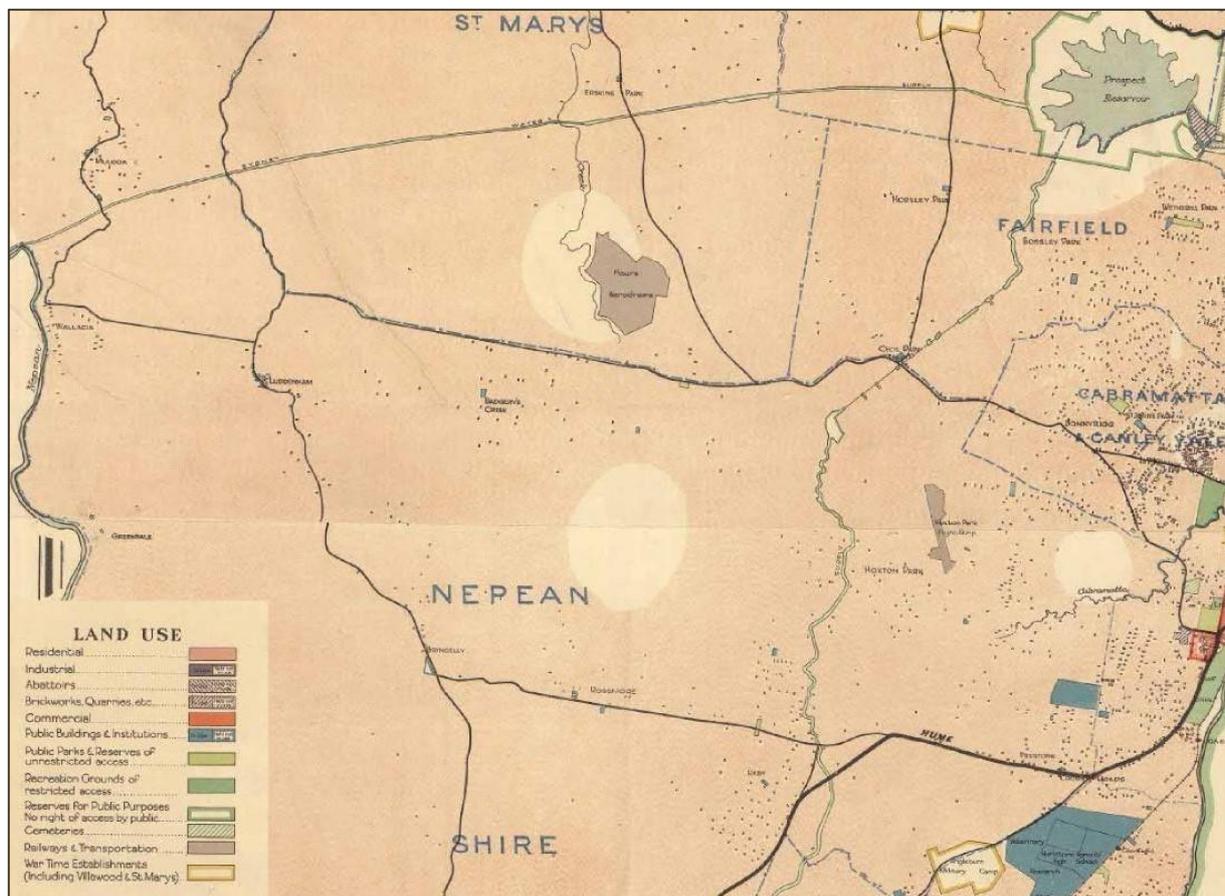


Figure 63 Map of existing land use in the County of Cumberland, 1945

Source: City of Sydney Archives

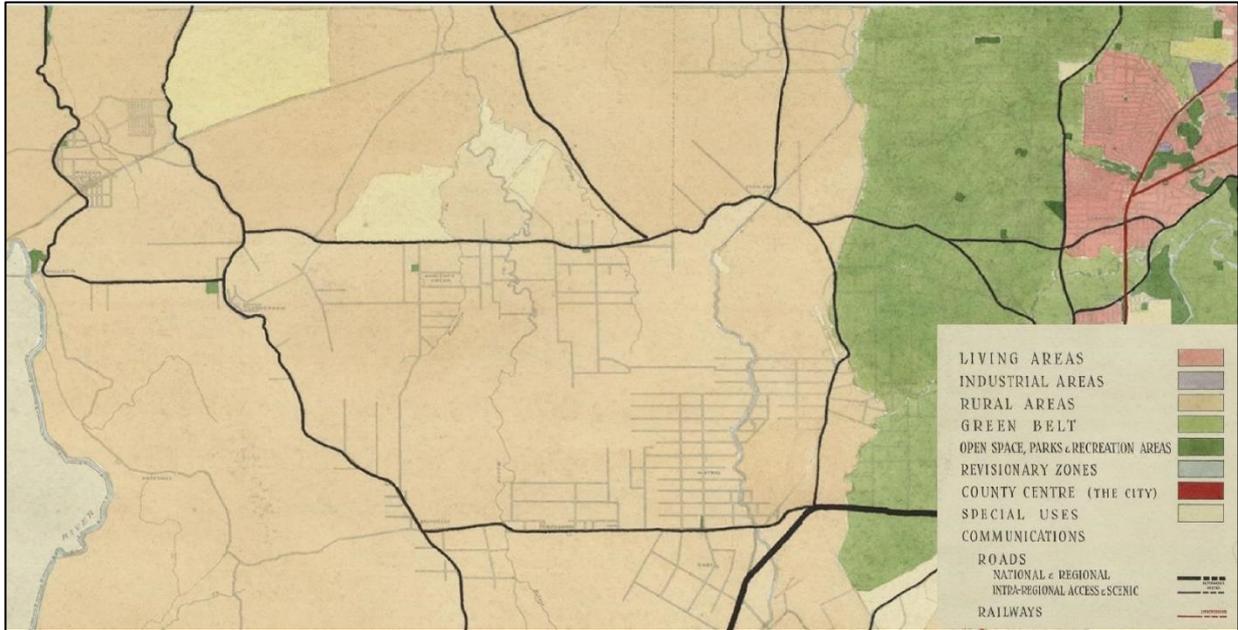


Figure 64 County of Cumberland Planning Scheme map, 1948 (detail)

Source: City of Sydney Archives

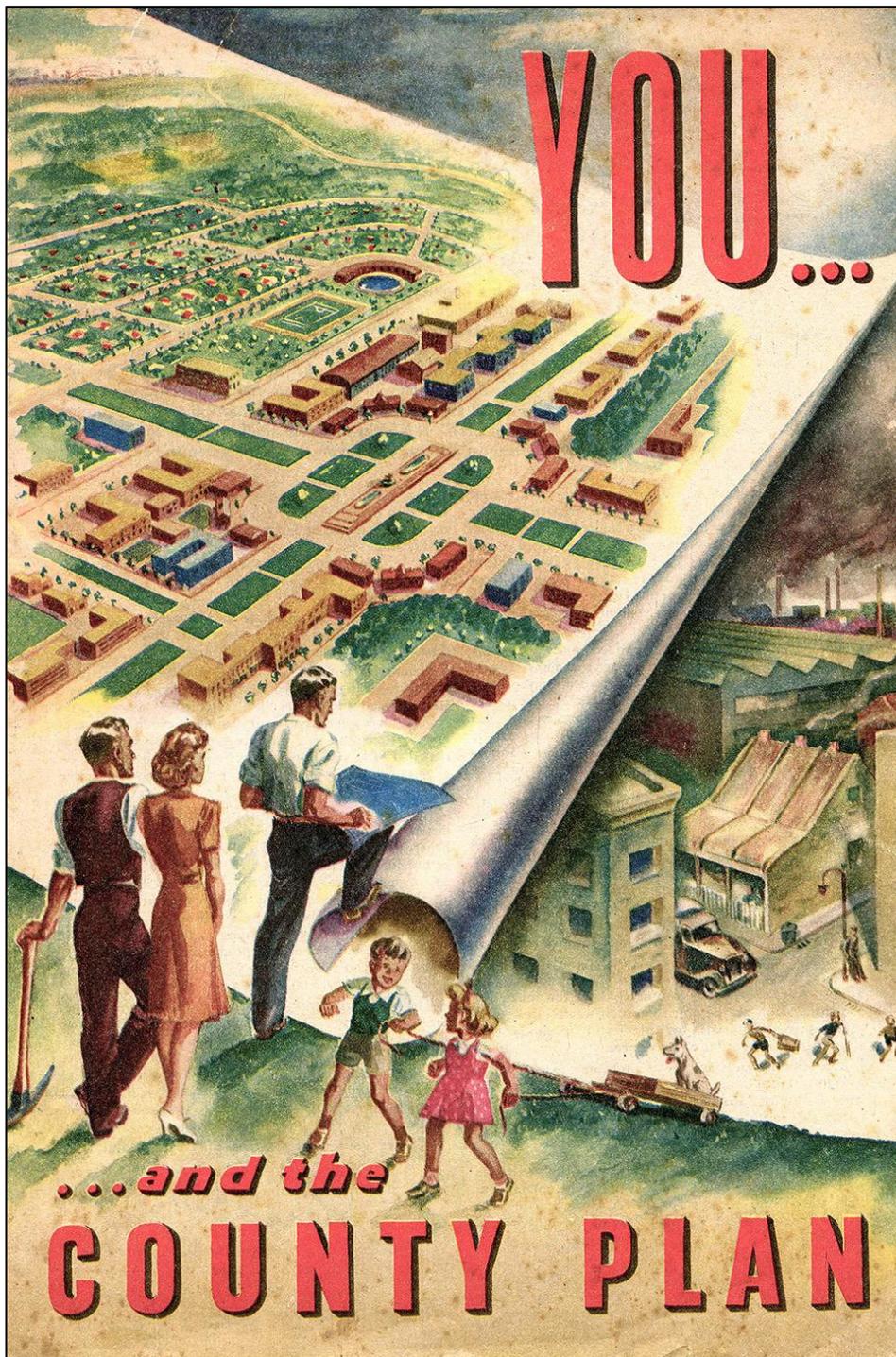


Figure 65 The County of Cumberland Planning Scheme vision. *You... and the County Plan*, 1945
Source: *City of Sydney Archives [SRC vertical files, 'County of Cumberland Scheme']*

In 1964 the State Planning Authority was established as a State Government body subject to the control and direction of the Minister for Planning. The primary planning document for the County of Cumberland was the Sydney Region Outline Plan created in 1968 (Figure 66).

The key objectives of the Sydney Region Outline Plan were developed in order to guide and promote the development of the Sydney Region from 1970 to 2000. The key objectives of the Plan were; the development of Sydney should be integrated with the development of the State as a whole; Sydney should be reinforced as Australia's most important city; Sydney-Newcastle-Wollongong should be regarded as a single entity; industrial land should be made available for expansion; a higher quality of urban design and landscaping should be encouraged; the Sydney CBD should be provided with a comprehensive plan; greater investment in public infrastructure should be made; employment should be more evenly distributed across the region, the Plan should be flexible; and long-term growth must be accommodated (Abercrombie 2008: 64-65). The Plan attempted to develop a reinforce existing urban centres in order to address the problem of concentration of employment within the city centre. These urban centres such as Parramatta, Chatswood and Campbelltown were located on major transport corridors. The Study Area had no major transport corridors and no existing urban centres of any size. In effect the SROP maintained the non-urban character of the Study Area without any appreciable development of infrastructure or close settlement. The SROP had been based on population projections and by 1988 it was clear that these projections had been overestimated.

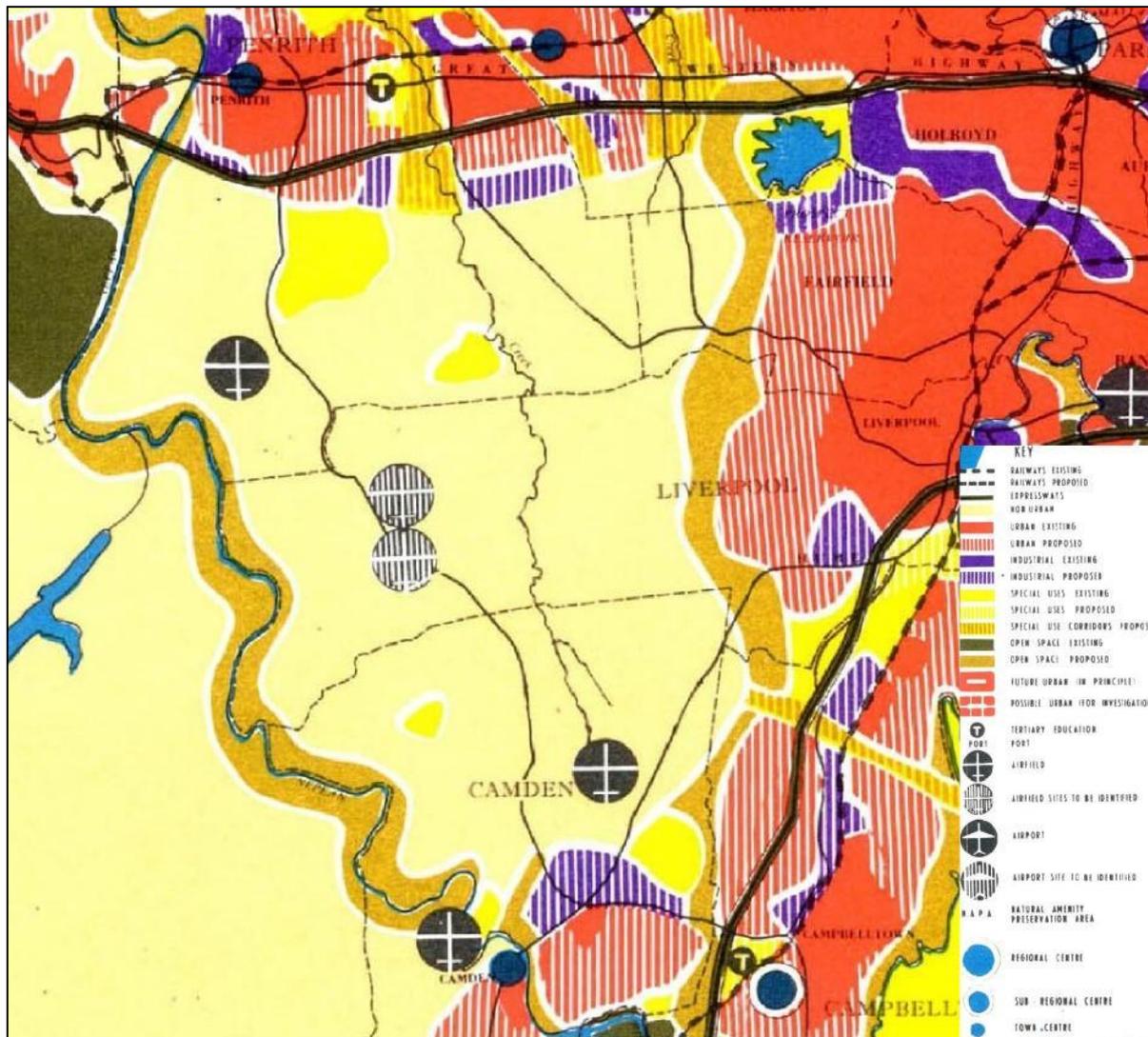


Figure 66 Sydney Region Outline Plan (detail)

Source: Abercrombie 2008, 52

In 1988 the Metropolitan Strategy: Sydney Into Its Third Century was developed in order to provide guiding principles for a Sydney region that was struggling with a slower economic growth than predicted and an inadequate transport network (Figure 67). The Strategy was intended to function as a structure plan that provided an overall framework for land uses, the administration and detailed planning were to be left with local councils (Abercrombie 2008: 76-78). The primary objectives of the Strategy were to provide access to a variety of housing types and tenures including a variety of multi-unit housing for the entire population of the region; to maintain and improve the environmental qualities within the region; to encourage a more even dispersal of office jobs to the regional and subregional centres; and to encourage retailing as a vital component of the centres. For the Study Area the Strategy recognised the location of Sydney's second airport at Badgerys Creek and an expansion of the urban fringe into the Bringelly region with the creation of a regional centre at Kemps Creek.

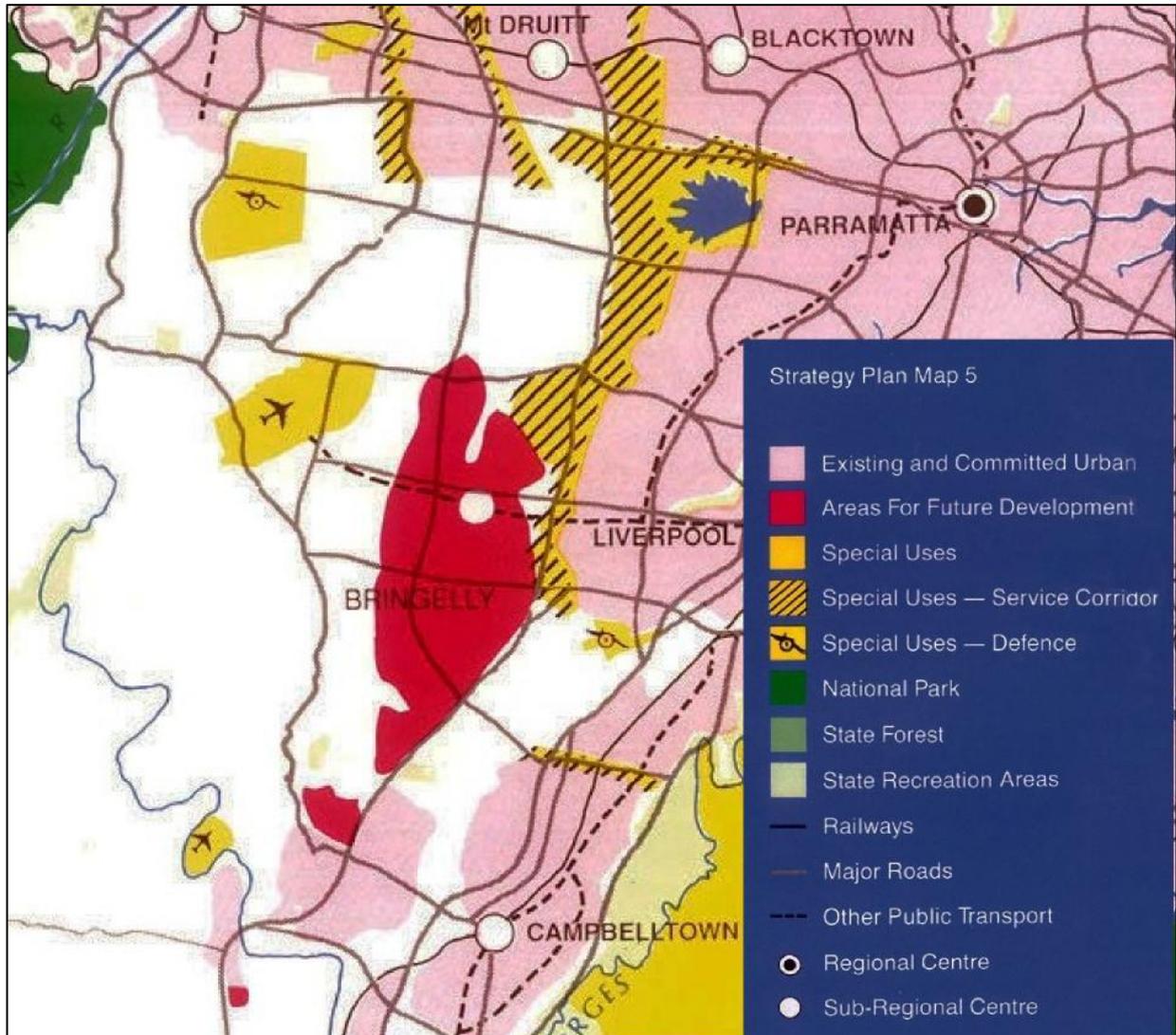


Figure 67 Metropolitan Strategy: Sydney Into Its Third Century – Strategy Map 5

Source: Abercrombie 2008: 77

OTC Bringelly Radio Receiving Station

The Bringelly Radio Receiving Station Complex formed an important part international telecommunications services into, through and out of Australia (Figure 68–Figure 71). The Bringelly station was one of only three pairs of public stations in Australia and the only receiving station in NSW. It was opened in October 1955 and was the last of the type built and the last receiving station in operation. The station consisted of a main administration building with a complex of staff housing at the Badgerys Creek Road entrance. The main complex was surrounded by a field array of aerials. Various built elements of the Station have been removed over time, with a small number of disconnected, isolated structures remaining in situ.



Figure 68. Main receiving station of the Overseas Telecommunications Commission at Bringelly (n.d.).

Source: NAA Image Number A1200:L19703



Figure 69. OTC main building, 1991

Source: Liverpool City Library HL001500-154



Figure 70. OTC main building and portion of field array, 1970

Source: *Portal spatial NSW Penrith 1 Jan 1970, run 19 frame 5038 - detail*

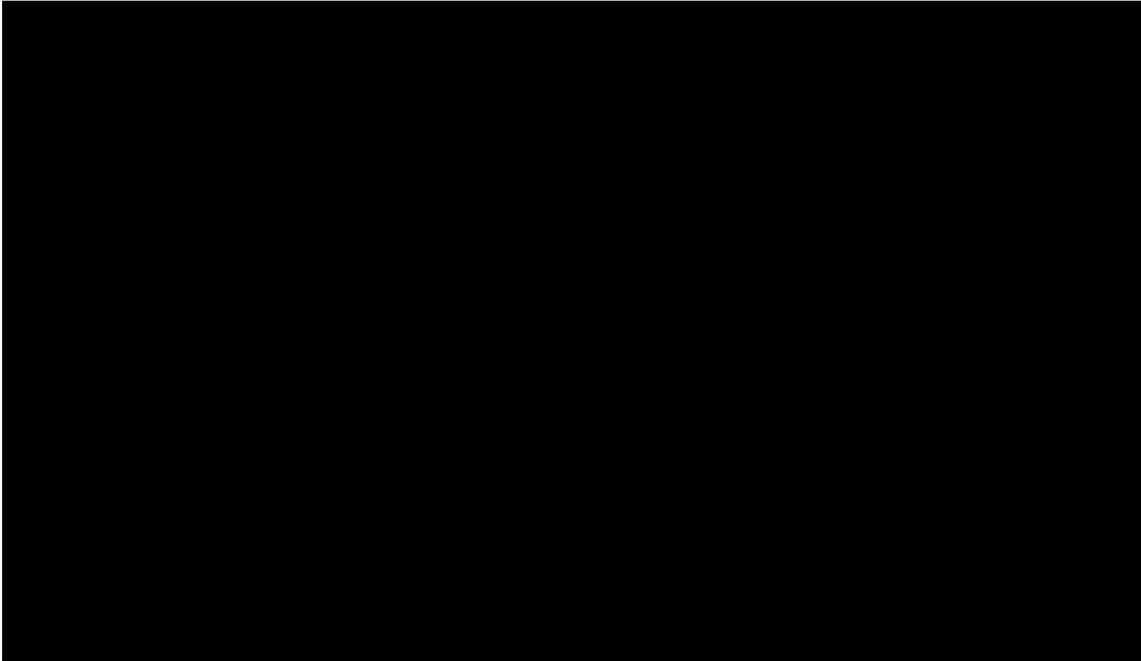


Figure 71. [REDACTED]

Source: [REDACTED]

Flours Radio Telescope

In 1954 the CSIRO's Division of Radiophysics established its principal field station at Flours and was home to three innovative cross-type radio telescopes, the Mills Cross, Shain Cross and the Chris Cross (Figure 72–Figure 74). All three telescopes played important roles in furthering international radio astronomy. During its ten-years of operation, Flours was one of the world's leading radio astronomy field stations, and it played an important role in furthering solar and non-solar radio astronomy. In 1963 the field station was taken over and developed further by the School of Engineering at the University of Sydney. After the Flours Synthesis Telescope was closed in 1988, the site passed to the Engineering Faculty at the University of Western Sydney and was used primarily as a teaching facility. During this period the Mills and Shain Crosses rapidly deteriorated and the Chris Cross dishes, and larger antennas of the Flours Synthesis Telescope continued to decay. The elements that remained in 2002 were elements of the Chris Cross aerials, and a small reconstructed section of the Mills Cross N-S arm, plus the rusting remains of the six 13.7-m Flours Synthesis Telescope dishes (Orchiston, Wayne and Slee, B. 2002 : 12-15).

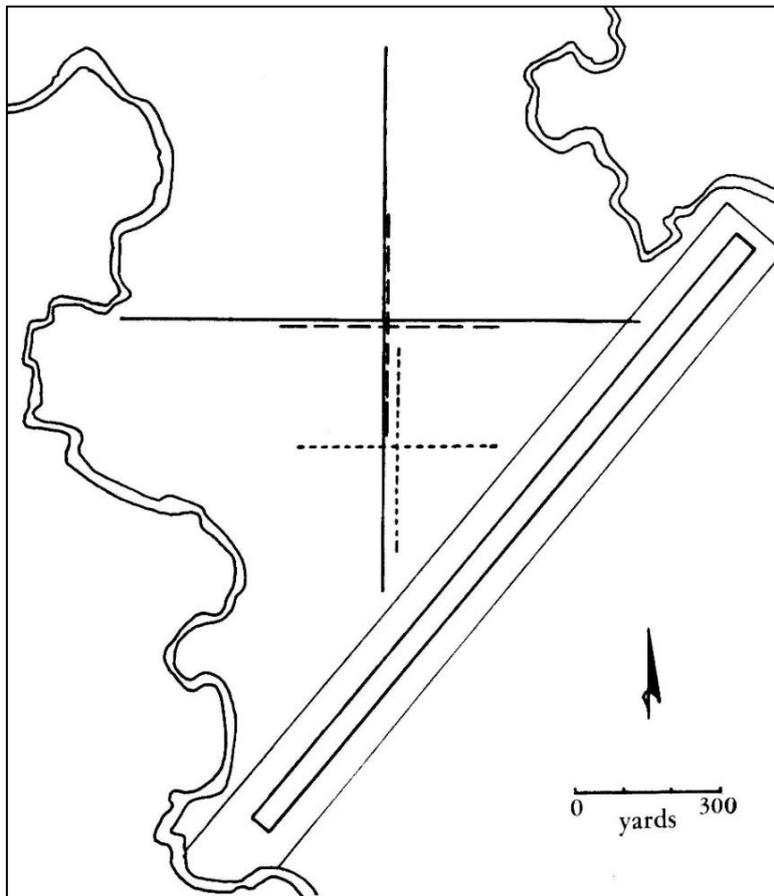


Figure 72. The Flours field station

Note: Showing the old air strip between Kemps Creek (on the east) and South Creek. The Mills Cross is indicated by dashes, the much larger Shain Cross by solid lines, and the Chris Cross by dots. Source: ATNF Historic Photographic Archive: 9087-11 in Australia Telescope National Facility Newsletter June 2002 Figure 1.

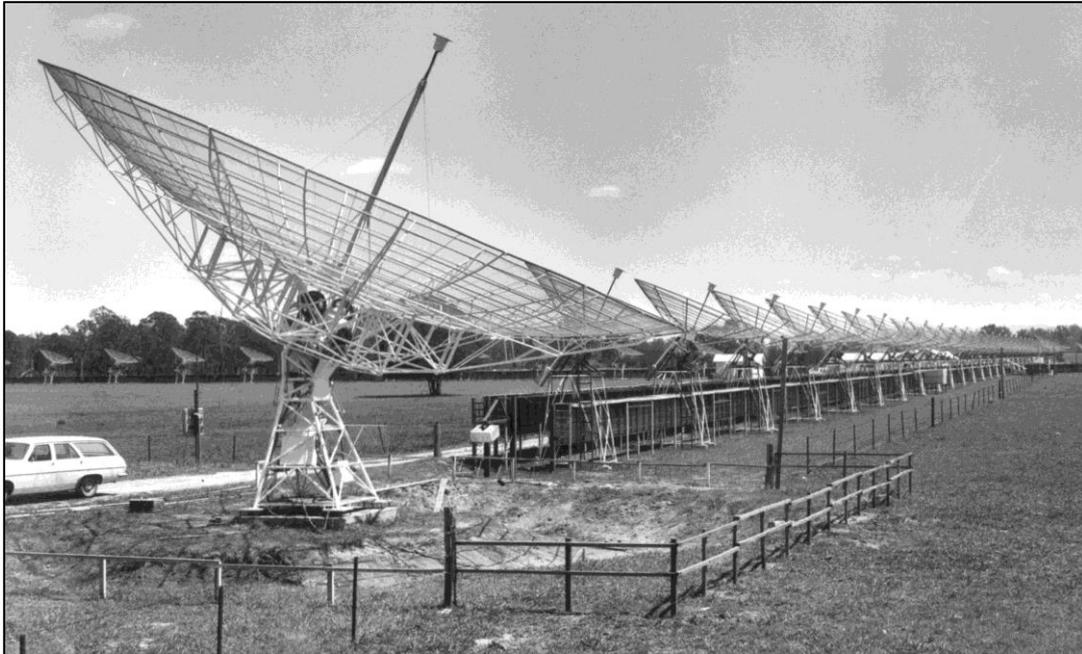


Figure 73. View of part of the Fleurs Synthesis Telescope

Note: Showing one of the 13.7-m antennas and a section of the E-W arm of the Chris Cross. Source: ATNF Historic Photographic Archive: 9087-11 in Australia Telescope National Facility Newsletter June 2002 Figure 5.

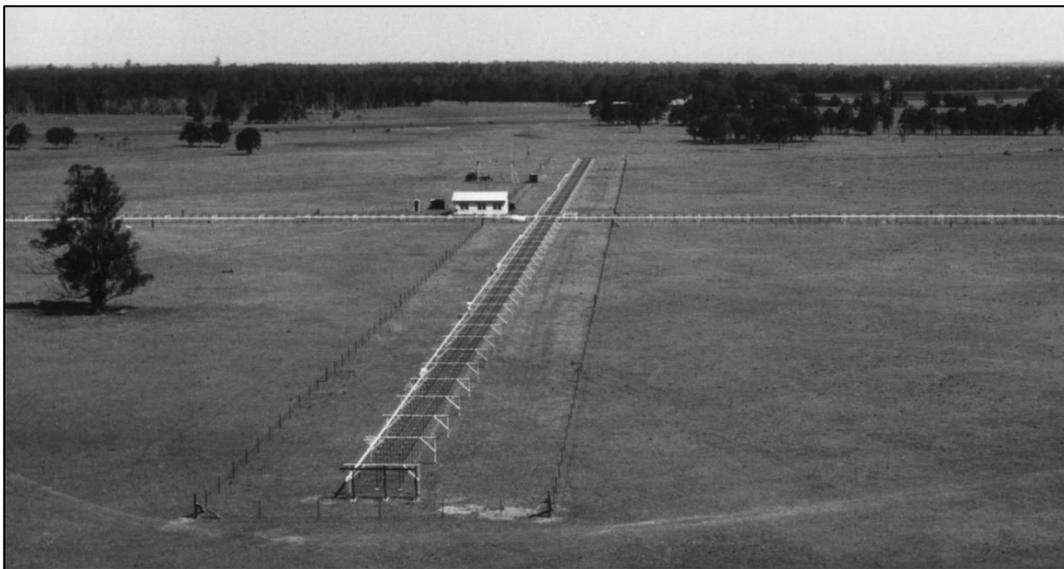


Figure 74. View looking south

Note: Showing the N-S arm and most of the E-W arm of the Mills Cross, with the receiver hut at the centre of the array. Source: ATNF Historic Photographic Archive: 3476-3 in Australia Telescope National Facility Newsletter June 2002 Figure 2

RAAF Bringelly Receiving Station

During the Second World War RAAF was developed as an Emergency Landing Ground, this was essentially a grass strip with little or no associated infrastructure. In 1954 the Commonwealth commenced purchasing of land for the construction of a RAAF Radio Receiving

Station immediately adjacent to the OTC station. Delays in purchasing the properties resulted in construction commencing in 1959 (Godden Mackay 1997: 5-8). The radio receiving station was designed to receive international radio telegrams and telephone calls and from ships at sea. The station replaced an earlier station at La Perouse and featured thirty-two rhombic aerials on masts from 70 to 120 feet high. The station was to operate in concert with RAAF Londonderry Transmitting Station and subordinate to RAAF Glenbrook (Godden Mackay 1997: 5-8). Advances in technology rendered the radio receiving station obsolete and was downgraded in the late 1980s (AMC 2014: 28). During the 1990s and into the 2000s buildings and infrastructure were progressively removed leaving only the core structures and the main aerial intact.

6.9 Post-2000 intensive development

In the period after 2000 the study area has undergone significant changes in select areas. Regarding agriculture there has been a significant growth in market-gardening along South Creek and a general decline in grazing. Similarly, there has been an increase in the use of glasshouses and a general intensification of cultivation where soils and water permit.

There has also been significant upgrading of existing main roads, particularly The Northern Road and Bringelly Road. Access to main roads has also seen the development of warehousing and transport facilities on former rural properties.

The area will be transformed significantly over the coming decades with the development in the initial Aerotropolis precincts, including a new city centre in the Aerotropolis Core Precinct at Bringelly. The Western Sydney International Airport will act as a catalyst for this development and is currently under construction with the first runway set to open in 2026. The region will also gain its first rail link with the construction of the Sydney Metro-Western Sydney Airport line from St Marys to the Aerotropolis Core. Further major road links are proposed with the construction of the M12 and Outer Sydney Orbital.

7. Assessment of key issues

7.1 Aboriginal Heritage

7.1.1 Cultural values mapping workshop

Approach and methodology

This section of the report provides a summary of a preliminary cultural values mapping workshop undertaken with the Local Aboriginal Land Councils within the study area and the primary traditional owners with a focus group of key traditional owners and Local Aboriginal Land Council Elders and knowledge holders. The goal of this workshop was to start the process of learning identifying and understanding about the Aboriginal cultural values of the Aerotropolis, in order that these values can inform strategic precinct planning design and identifying necessary future stages of Aboriginal community engagement required at the master planning stages. be conveyed to planners and designers and Aboriginal cultural values can be incorporated into the design of the Aerotropolis from the beginning of the design process.

The cultural values mapping workshop was designed to identify key values that are important to the Aboriginal community based on oral information provided by Elders and [REDACTED] [REDACTED] Workshop attendees are listed in Section 3.2, places and intangible heritage values within the Aerotropolis precincts and discuss how they might be best conserved and managed in early precinct planning work, and to discuss future detailed cultural values assessment and mapping that will be needed to support future stages of planning at the precinct master planning and development approval stages.

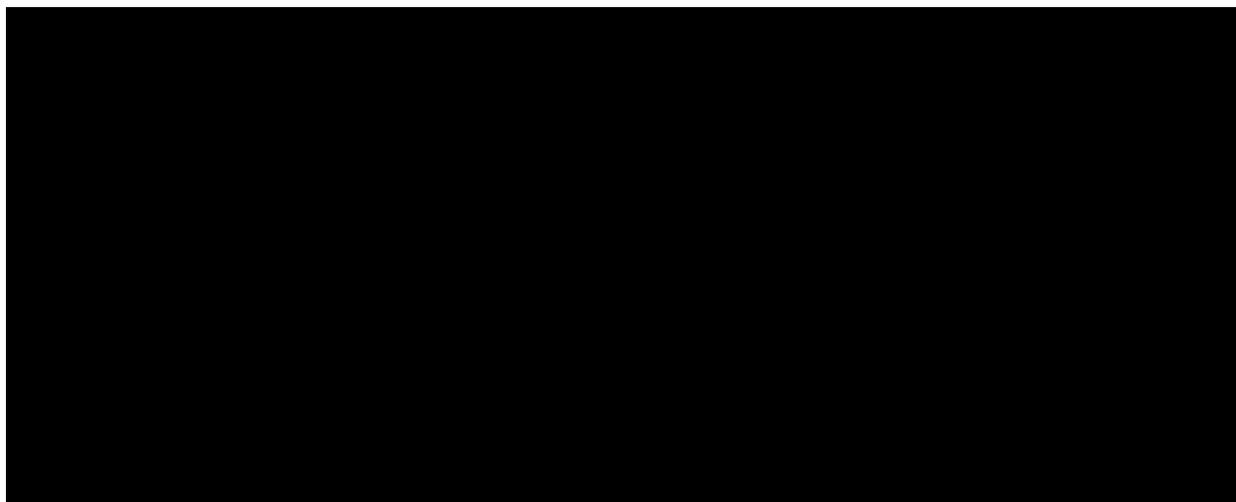
The aims of the cultural values mapping were to identify:

- traditional values and places;
- historical values and places;
- contemporary values and places; and
- views of the Elders, knowledge holders and representatives regarding future management and interpretation of those values.

Cultural values mapping workshop

The preliminary cultural values mapping workshop was held on 23 June 2020 at [REDACTED] [REDACTED].

Table 7 Record of Registered Aboriginal Parties.



The workshop began with a presentation by [REDACTED] of historical research and project background information.

A discussion of the presented material followed the presentation, and this led to a semi-structured group discussion of cultural values, places and stories that relate to the Aerotropolis region.

The workshop concluded with a cultural values tree and mapping exercise designed to understand and prioritise values, places, issues, aspirations and concerns through these visualisation exercises.

The outcomes of the cultural values discussion are presented summarised below.

Types of values

Aboriginal traditional owner claimants and knowledge holders have considerable knowledge about use of traditional lands before and after British colonisation, and the landscape continues to hold cultural values that are important to the Aboriginal community. The Aboriginal community collectively holds values and knowledge that relate to:

- Traditional values: these are passed down by family and community as part of ancient tradition.
- Historical values: these are passed down by family and community and relate to the eras since colonisation; these may include information gained from historical source documents.
- Contemporary values: these are values of modern importance and relevance for Aboriginal stakeholder groups.

There is often no clear demarcation between these values. They collectively co-exist and are of equal importance in forming the value that Aboriginal people place on landscape, cultural heritage, intangible values and particular landforms or parts of the landscape.

Ancestral connections

The Elders and knowledge holders emphasised the violence towards and displacement of Aboriginal people that occurred within and around the study area.

[REDACTED] spoke about specific conflicts within the study area and how there have been attempts to write the conflicts out of history:

- John Macarthur influenced Governor Macquarie before the Appin massacre of 1816.
- Governor Macquarie was the first to take Aboriginal children and institutionalise them.
[REDACTED]
- Macquarie refers to these children and Aboriginal people as prisoners of war, acknowledging that there was war, even though it has been attempted to be written out of history.
- This history has not been taught in schools and it should be.

- [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

The workshop participants emphasised that the Cumberland Plain is imbued with stories of dispossession and disconnection of Aboriginal people from their traditional lands and their families after European occupation. [REDACTED]

[REDACTED] stated that cultural genocide should not be forgotten, both stories and physical remains of structures and other contact artefacts or objects should be preserved where possible. This should be led by Aboriginal people.

The stakeholders said that they would like more time to talk to their community members and families, and that they would be able to provide further stories and values at a later date. The importance of walking country and visiting the precincts was also noted. All agreed further detailed on Country investigation by the traditional owners and Land Councils was essential to fully understanding the cultural values and places within the Aerotropolis, and the stakeholders emphasised the need for detailed archaeological investigation – particularly given the relative lack of prior investigation work across large portions of the Aerotropolis study area.

Inter-generational equity: Conservation of Landscape

A significant issue of cultural concern for each of the Aboriginal stakeholder groups was the cumulative impact of future urban development proposed as part of the Aerotropolis project. All the groups emphasised that the Cumberland Plain is very important to local Aboriginal people and that this project should involve conservation of a representative range of remnant terrain and environment, not simply (in the words of one participant) ‘trees planted in rows’. This value includes an understanding of the importance of retaining areas of native bushlands and grasslands and the essential habitat it provides to native animals being able to live on the Cumberland Plain.

Stakeholders highlighted the importance of preserving all creek corridors within the study area and keeping them as open space. These creek corridors are culturally significant as resource, mythological and transit places and the stakeholders stated that there is archaeological potential along the creek corridors even in areas where if no sites have been previously recorded. The example of Duck Creek, running from Clyde to Guildford, was given as what the stakeholders did not want to happen within the study area. Duck Creek has been channelised and no traces of the natural creek line remain. The stakeholders emphasised that unusual and well-preserved landforms such as exposed sandstone outcrops, areas of remnant old growth vegetation and well-preserved creek corridors should be protected where possible as should priority conservation areas identified early in strategic planning work.

Preservation of rare and culturally significant archaeological sites

Every stakeholder emphasised the paramount importance of ensuring development works will not impact grinding grooves, modified trees [REDACTED]

[REDACTED]

A concern reiterated throughout the workshop was that these sites, cultural connections and conflict histories were going to be lost, and that one possible counter to this loss could take place through the conservation of a large portion of the study area.

Stakeholder involvement

The Stakeholders discussed the importance of being on Country to talk about and see the archaeological sites and landscapes being discussed, and that this is an important aspect of the consultation process. The Stakeholders strongly emphasised that it was important that any other Aboriginal parties who are involved in the project should be comprised of people from the local area represented by the Land Councils and traditional owners of the region who are Darug and Dharawal descendants. The stakeholders stated that care for culture is paramount to the cultural values surviving into the future.

[REDACTED] stated the importance of consulting with the Local Aboriginal Land Councils on all projects within their boundaries and that no earth should be moved without consultation with registered Aboriginal

parties (RAPs). [REDACTED] stated that the consultation process should be adhered to during construction projects within the Aerotropolis and that there should be deadlines for registration of interest, in order to avoid an overwhelming number of groups joining a project over its lifetime.

The Stakeholders stated the importance of the LALCs and traditional owners of the area being consulted before any works are undertaken on any Aerotropolis project, and through the entirety of the project's lifetime.

Further research

The workshop attendees identified key areas for which additional research would be desirable:

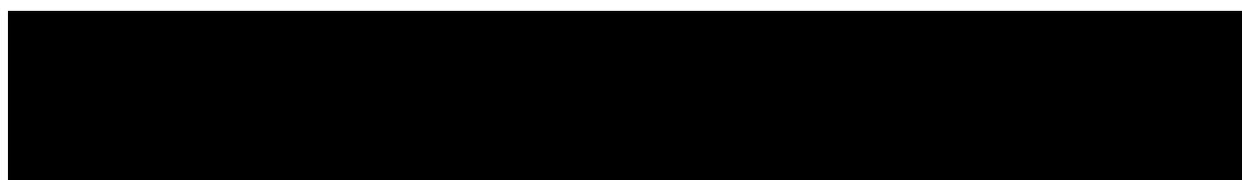
- [REDACTED]
- discussions between the Stakeholders and other LALC members and Elders, to gather stories and values from a larger group of traditional owners;
- [REDACTED]
- continuing investigations into the ethnohistory of the study area;
- on-Country cultural values mapping with the key Elders and knowledge holders; and
- detailed archaeological investigation and ground truthing.

Cultural values tree

At the conclusion of the cultural values workshop the stakeholders were engaged in a cultural values 'tree mapping' visualisation exercise. In this exercise, Stakeholders were invited to write down key values their most important values, places or stories associated with the Aerotropolis region on small cards, each of which represented the leaf of a tree.

The workshop participants were asked to pin the 'leaves' to a cultural values tree diagram depicting the branches of a tree to visually represent the importance of values, stories and any other culturally significant ideas. The stakeholders were asked to place their 'leaves' at points on the branches of the tree depending on how vulnerable they felt the value to be. The robust and enduring values at the strong base of the tree trunk and the more vulnerable values on the outer branches and limbs.

The cultural values tree exercise is designed to tease out and order the key values associated with a place and to ensure the views of participants who prefer to contribute in writing, rather



than through discussion, are properly heard and documented. It also acts as a good device for generating and focusing group discussion.

The stakeholders were initially reserved about placing their notes on the tree diagram. All of the stakeholders reiterated that the whole tree is in danger – a consensus conclusion that ties back into the theme of cumulative impact across the Cumberland Plain and how the progressive development of Western Sydney has removed all but a small portion of the original environment of the Cumberland Plain. While the stakeholders included some high-level values on the cultural values tree, the general consensus was that they needed to go out from the meeting and talk to elders and members of the communities before providing any more cultural values input. And all the stakeholders emphasised the need to get on country to take the cultural values mapping to the next stage of detail needed for master planning.

The cultural values tree prepared by the stakeholders is shown Figure 75 below.

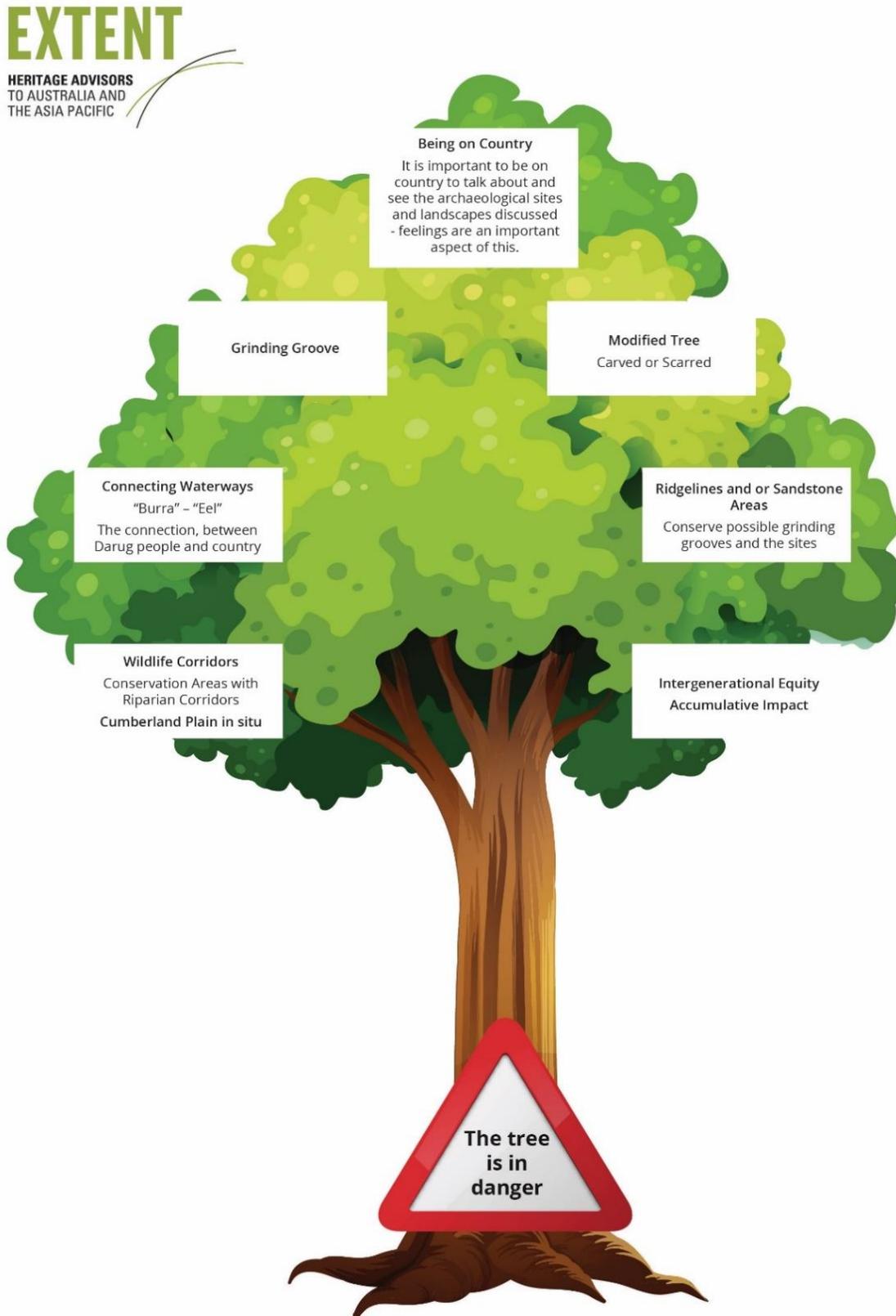


Figure 75. Representation of the tree created by the stakeholders during the cultural values mapping workshop

7.1.2 Cultural values enquiries

A packet of information was posted or emailed to all RAPs to solicit any information about the Aboriginal cultural values of the Aerotropolis that they might be willing to share (Appendix C.5). This enquiry was sent with a four-week deadline, and was intentionally broad, to spur as many possible responses as possible. Prior to the conclusion of the deadline, each RAP was telephoned to check if there was information, they would be more comfortable to relay by voice rather than in writing.

Comments with cultural values information were received from five RAPs. The full written responses, with certain information redacted for privacy, are reproduced in Appendix C.5. The written and oral responses are summarised below.

- A single location should be established within the Aerotropolis where all artefacts recovered during archaeological investigations could be repatriated or held. This would allow all artefacts to be reburied on Country near where they were recovered and would also provide a central location for Aboriginal community members to visit.
- This artefact repatriation location or “keeping place” could even be established as a memorial park where Aboriginal community members could go for the foreseeable future to feel connections with past and present Aboriginal people and with Aboriginal culture.
- Additional workshops should be established to allow inputs from a wider range of Aboriginal stakeholders. It was felt that this would be a better approach for soliciting cultural values information than via written responses.
- Aboriginal naming should be undertaken for locations and streets within the Aerotropolis. Because the airport will be the first point of contact with Aboriginal culture for many visitors, as they arrive, it is essential that Aboriginal naming should also be undertaken for the airport and even specific locations within the airport (e.g., arrival halls, concourses).
- All modified and scarred trees must be conserved in situ.
- There is an unregistered resource gathering sites (i.e., ochre source) in the Aerotropolis that should be investigated and conserved as much as possible.
- As many other known Aboriginal heritage sites should be preserved as possible.
- There should be specific education locations to educate residents and visitors about Australia’s past, the history of Aboriginal people in the area and the current lives of Aboriginal people in the Aerotropolis.
- A range of Aboriginal artwork should be installed in the Aerotropolis. This artwork should depict both tangible and intangible aspects of traditional Aboriginal culture and should be undertaken in a diverse range of traditional and modern media.

- Any interpretive signs or historical information regarding Aboriginal cultural values should not shy away from the truth about the effects of colonisation on Aboriginal people. This subject can be quite disturbing and must be approached respectfully and with great sensitivity.
- As much as possible, natural areas should be conserved as they are.
- While working with Aboriginal people in the Aerotropolis, cultural intellectual property should be respected.
- Aboriginal art should be located in more places than just highway sound barriers (as is seen elsewhere in Sydney). The Aerotropolis should deeply incorporate of Aboriginal stories and art into all manner of infrastructure, from the very large (the airport) to the very small (e.g., bus shelters). If the Aerotropolis is to have Aboriginal Cultural Values at its core, these values and their representation in art should infuse as many aspects of the Aerotropolis as possible.
- Given that the focus of the Aerotropolis region is the central airport, there should be an effort made to create large-scale Aboriginal artwork that is primarily visible from the air. This art would capitalise on the unique aerial viewpoints that people will have of this region of Sydney; it could also serve as a clear marker of the unique nature of the Western Sydney Airport. When people fly into Kingsford-Smith Airport, they expect to see the Sydney Opera House and the Harbour Bridge; these are both large-scale European features. In contrast, when people fly into Nancy-Bird Airport, they should see expressions of Aboriginal culture across the landscape. This would provide a clear distinction between the two airports and be representative of the importance of Aboriginal Cultural Values in the Aerotropolis planning process.
- It is essential that additional cultural values inputs take place via face-to-face conversations held on Country.

7.1.3 Walking on Country

At the inception of this project, there was the hope that it would be possible for the cultural values consultation work to include walks on Country in the Aerotropolis with Elders and nominated knowledge holders. However, these walks were cancelled due to health risks and other concerns arising from the COVID-19 pandemic. Had they taken place, these walks would have provided further opportunity to discuss features of the place and details of the proposed project.

Once the COVID-19 health risks have abated, any future work should include on Country consultation and discussions with Elders and nominated knowledge holders.

7.1.4 Conclusions

This initial workshop has revealed some cultural values of the Aerotropolis region held by the Aboriginal stakeholders, as well as several concerns the stakeholders have regarding the project and the current level of historical and archaeological information in the area.

Key conclusions that can be drawn from the cultural values workshop include:

- The stakeholders stated that it is too early to comment with certainty on cultural values because there has not been an opportunity to walk Country and there have been no archaeological field investigations, and large parts of the landscape have not been extensively investigated during prior studies.
- The cumulative impact of the project is a key issue of cultural concern. When the stakeholders were asked what they would most like to see if they were to return to the study area in 50 years, the consensus answer was the retention of a significant portion of the Cumberland Plain particularly where original terrain, landscape and environment elements are best preserved. The consensus was also that this conservation area would not just include conserved creek corridors, but also contain a representative range of remnant terrain, emphasising the importance of retaining the Cumberland Plain Woodland rather than simply replacing with rows of trees for example. Some possible examples of such conservation corridors are provided in section 7.1.5.
- Unusual and well-preserved landforms such as exposed sandstone outcrops, areas of remnant old growth vegetation, well preserved creek corridors, should be protected where possible.
- There is a need to investigate the results of archaeological assessments undertaken across the Badgerys Creek airport site as they may shed important light on site and colonisation patterns in the region.
- The stakeholders present said that it is critical that the traditional owners and LALCs play a key role in future consultation and are given the opportunity to participate in further studies. The stakeholders stated that it is offensive when Aboriginal groups with no connection to country are engaged to do archaeological work.
- Any interpretation and story-telling needs to be undertaken in consultation with the traditional owners and LALCs to ensure it is culturally appropriate.
- There are some family connections to this country and nearby, and those should be recognised through acknowledgment in the studies done of the area as well as further interpretation through consultation with the traditional owners and LALCs.

7.1.5 Potential conservation corridors

There is a clear recognition among traditional owners and knowledge holders consulted to date for a significant portion of remnant Cumberland Plain to be retained and conserved within the Aerotropolis precincts in conditions as close to original / unmodified as possible. Ideally, this area should comprise a regional park incorporating a representative range of landforms and environments of the Cumberland Plain and the consideration of curtilage, view lines and amenity are important. The goal would be for a visitor to be able to experience a sense of what the Cumberland Plain was originally like.

A set of possible locations for conservation corridors or parks are shown in Figure 76. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



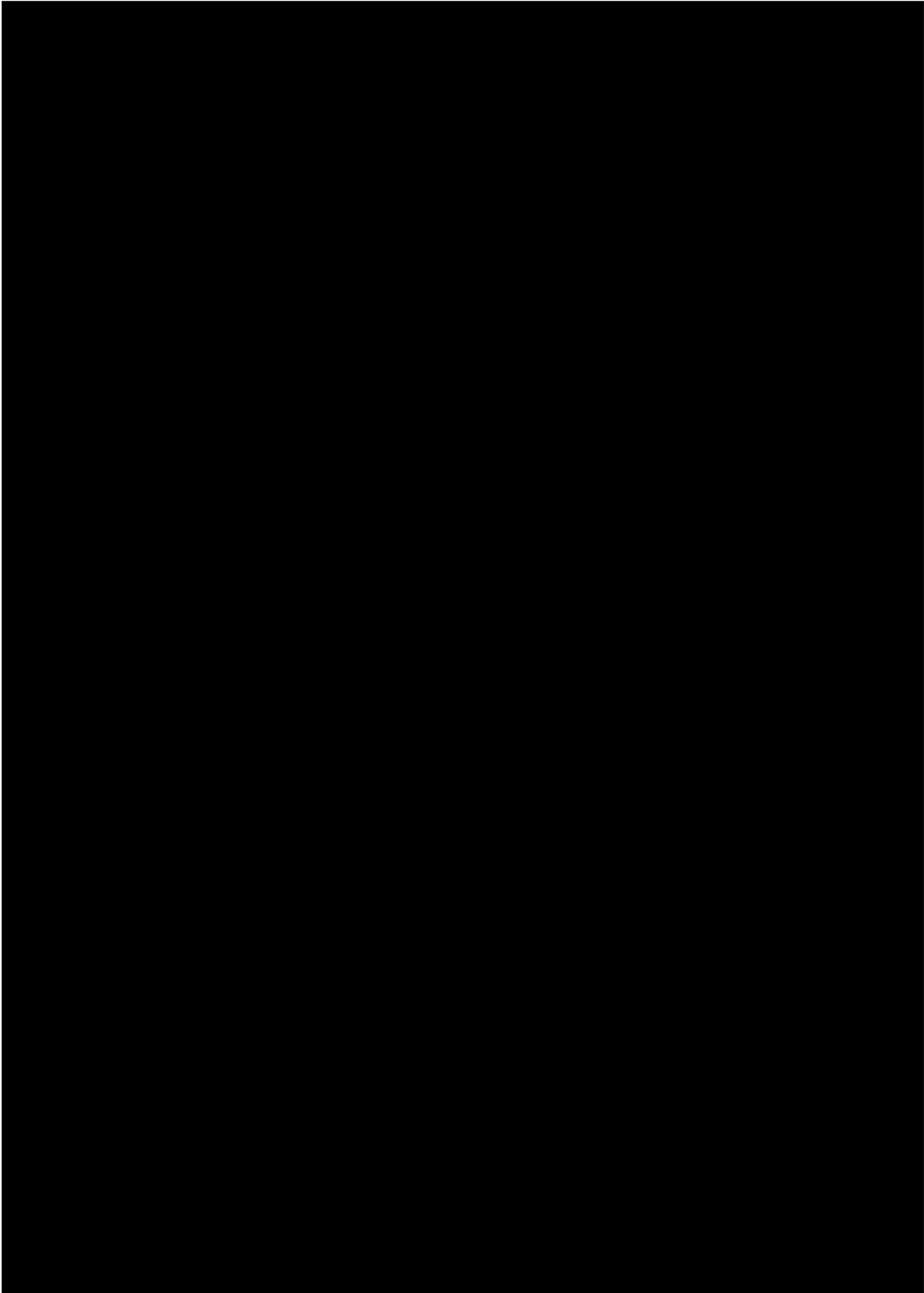


Figure 76. [REDACTED]

7.2 Non-Aboriginal heritage

The following part provides an overview of the physical setting of the proposed landscape of the assessment area associated with the Western Sydney Aerotropolis and identifies the key heritage items and potential heritage items located in the project boundary.

Non-Aboriginal heritage assets are currently being assessed for all precincts and a 200 m buffer around each precinct. The buffer is designed to identify heritage assets that may be indirectly impacted by actions undertaken within the precincts, such as view lines. These potential and known sites include built elements, historical archaeological sites and landscape elements, including former road alignments.

Data gathering has consisted of an examination of existing documents such as all listing schedules and heritage studies. The region has been subject to several heritage investigations associated with significant developments that have been undertaken or are in progress. All relevant sites have been incorporated into the schedule for this project and include built elements, landscape and potential historical archaeological sites. All sites identified by listing documents and by project assessments are in the process of being reviewed to determine integrity. There has been a delay in adjusting listed sites to reflect their current physical condition. For example, there is at least one site that is currently listed as an element of built heritage that has been modified (since listing) to the extent that it is now a subsurface archaeological site. Inconsistencies in the mapping of listed sites and modifications to curtilages resulting from motorway developments are also being adjusted to reflect their current status. The study has been informed by site inspections of many of the properties through preliminary pedestrian survey. Detailed recording of individual elements was not undertaken at this stage.

This landscape analysis was based on a desktop review of statutory and non-statutory heritage registers. This included the National Heritage Database, State Heritage Register, State Heritage Inventory, Schedule 5 of Local Environmental Plans (LEP) for Penrith and Liverpool, and National Trust of Australia (NSW) Register.

This data is visually displayed below on an aerial photograph of the project area with the heritage data overlaid. The maps below identify State heritage items, local heritage items, archaeological items within the assessment area.

The schedule of listed sites and potential sites identified above has also been supplemented by an analysis of primary data including maps, aerial photographs and written documents. The physical integrity of these sites is currently being assessed. During the initial phase of investigation approximately 130 potential heritage assets were identified. This has been reduced to 60 sites (listed and potential) within the precincts and 9 sites within the buffer.

The sites within the precincts consist of the following:

Table 8. Heritage items within the Aerotropolis initial precincts

Listings	Number of Heritage items	Controls
SHR listed sites	1	Subject to strict statutory controls

Listings	Number of Heritage items	Controls
LEP/SEPP/s170 listed sites	14	Subject to local/agency controls
Unlisted sites and previously unidentified sites	45	May be subject to the 'relics' provisions of the NSW Heritage Act

The sites within the buffer consist of the following:

Table 9. Heritage items within the buffer of the Aerotropolis initial precincts

Listings	Number of Heritage Items	Controls
SHR listed sites	0	-
LEP/s170 listed sites	1	Subject to local/agency controls
Unlisted sites and previously unidentified sites	8	May be subject to the 'relics' provisions of the NSW Heritage Act

A schedule of sites is presented in Appendix B.

In terms of precincts the distribution of sites is as follows:

Table 10. Summary of Heritage Items by precinct

Aerotropolis Precinct	Sites within precinct	Sites within buffer
Northern Gateway	5	1
Agribusiness	26	1
Aerotropolis Core	11	0
Badgerys Creek	8	0
Wianamatta-South Creek	10	7

Approximately 70 per cent of the identified sites are located immediately adjacent to the main roads that pass through, or define the precinct boundaries (Luddenham Rd, Elizabeth Drive, The Northern Rd, Badgerys Creek Rd and Bringelly Rd). There are large portions of some precincts in which no heritage items have been identified. A noticeable cluster of sites is located within the Agribusiness Precinct, particularly in the vicinity of the village of Luddenham.

There are also several items identified by the study that occupy large tracts of land, these include Fleurs Aerodrome and Fleurs Radio Telescope Site (Badgery's Creek Precinct) the McMaster Field Station (Northern Gateway Precinct), McGarvie Smith Farm (Northern Gateway

Precinct), RAAF Bringelly (Aerotropolis Core Precinct) and the former OTC site (Aerotropolis Core Precinct). Heritage assets may survive as discrete locations within these large parcels of land that may be best managed as separate sub-precincts. These large areas also contain assets that may not be directly related to the values for which the sites have been listed but may warrant separate management.

7.2.1 Key Heritage Items

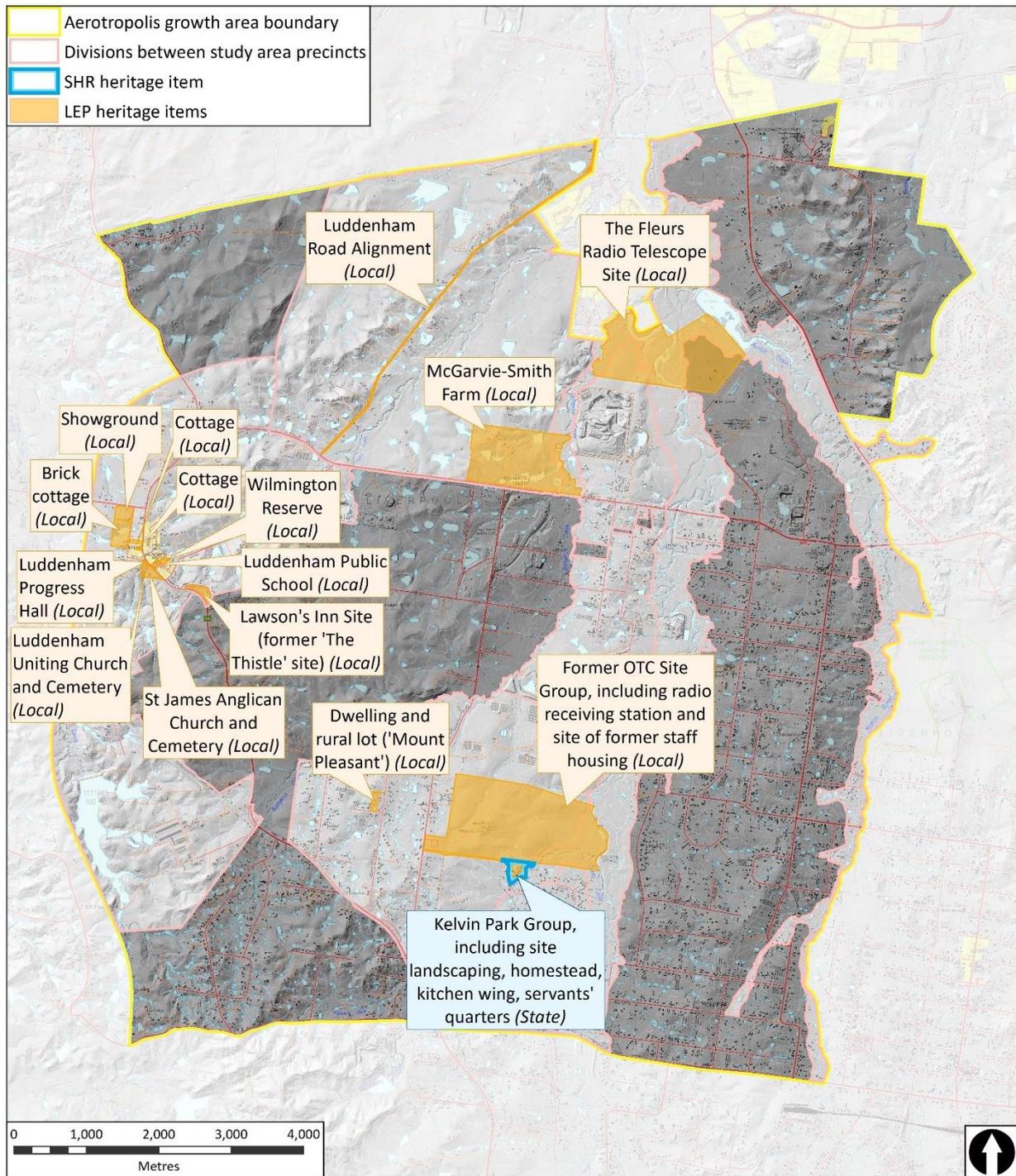


Figure 77. Location of heritage items listed in an LEP, SEPP and/or State Heritage register.

Summary of all known and potential heritage items

All heritage items, and potential heritage items, identified by this study are tabulated and mapped below. Details for all identified assets, including curtilages are provided in Appendix E as individual inventory sheets.

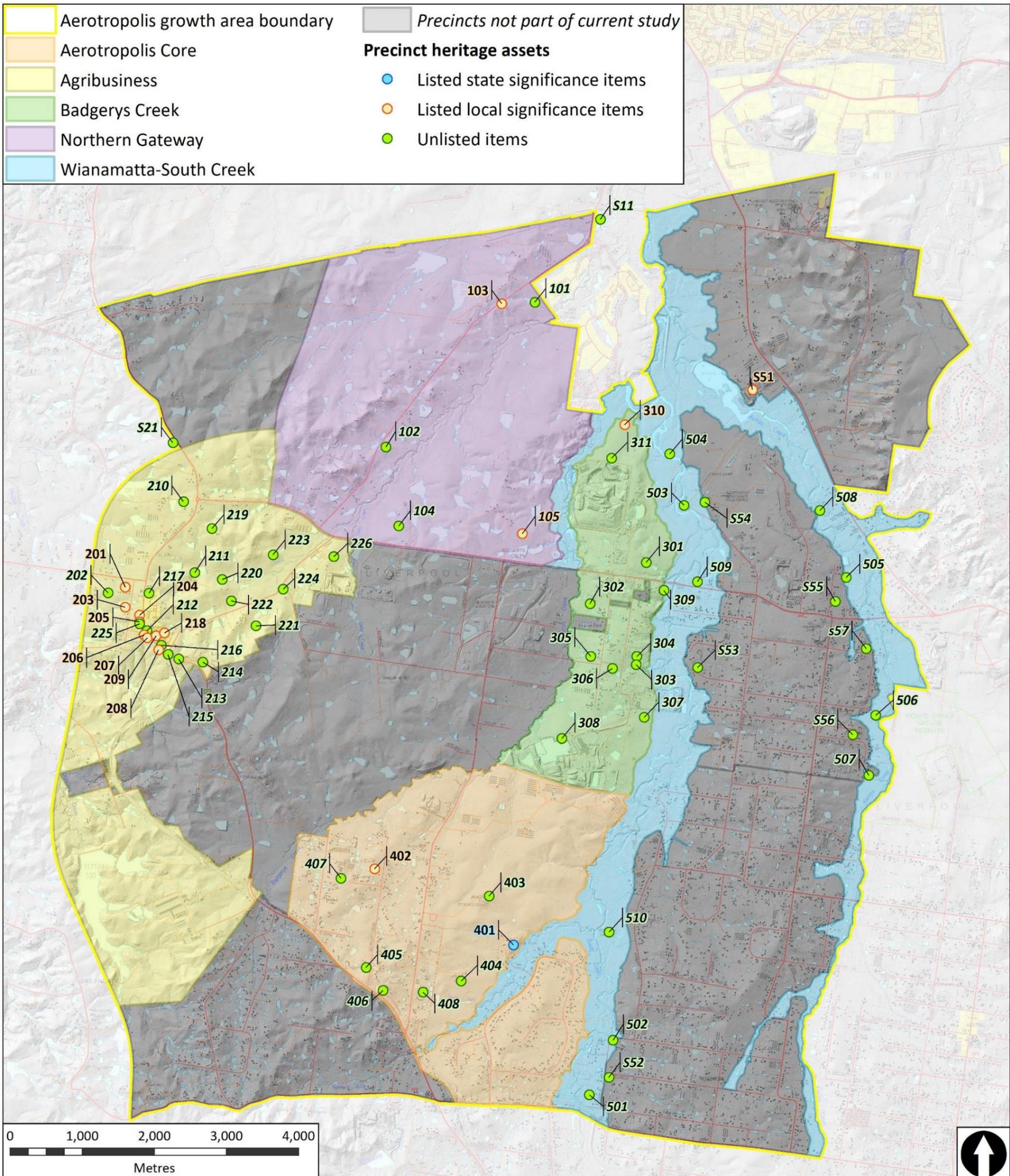


Figure 78. Locations of all known and potential heritage places and sites

Statutory listings

Table 11. Statutory listings

Heritage item name	Asset no.	LGA	Item type	Group/collection	Category	Level of significance	Address	Precinct
World Heritage List								
N/A.	-	-	-	-	-	-	-	-
National Heritage List								
N/A	-	-	-	-	-	-	-	-
Commonwealth Heritage Register								
N/A	-	-	-	-	-	-	-	-
State Heritage Register								
Kelvin – item 00046	401	Liverpool	Landscape	Farming and Grazing	Homestead Complex	State	30 The Retreat, Bringelly	Aerotropolis Core, Wianamatta - South Creek
Government Agency Heritage and Conservation Register								
Luddenham Public School -Building B00C – item 5064557	209	Penrith	Built	Education	School-State (public)	State (S.170 Education)	2158 The Northern Road, Luddenham	Agribusiness
Locally Listed Heritage Items								
Luddenham Road Alignment item 843	103	Penrith	Built	Transport - Land	Road	Local	Luddenham Road, Luddenham	Northern Gateway
McGarvie-Smith Farm – item 857	105	Penrith	Built	Farming and Grazing	Homestead Complex	Local	1793–1951 Elizabeth Drive, Badgerys Creek	Northern Gateway, Wianamatta-South Creek
The Fleurs Radio Telescope Site – item 832	310	Penrith	Landscape	Scientific Facilities	Space Communication Site	Local	885a Mamre Road, Kemps Creek	Badgerys Creek, Wianamatta-South Creek
Brick cottage item 117	203	Penrith	Built	Residential Buildings (private)	Cottage	Local	21–55 Campbell Street, Luddenham	Agribusiness
Weatherboard Cottage – item 678	204	Penrith	Built	Residential Buildings (private)	Cottage	Local	3065–3067 The Northern Road, Luddenham	Agribusiness
Weatherboard Cottage item 118	205	Penrith	Built	Residential Buildings (private)	Cottage	Local	3075 The Northern Road, Luddenham	Agribusiness
Showground – item 679	201	Penrith	Complex/ Group	Community Facilities	Showground	Local	428–452 Park Road, Luddenham	Agribusiness
Luddenham Uniting Church and Cemetery – item 120	207	Penrith	Complex/ Group	Cemeteries and Burial Sites	Church	Local	3097–3099 The Northern Road, Luddenham	Agribusiness

St. James Anglican Church and Cemetery – item 122	208	Penrith	Complex/ Group	Religion	Church	Local	3101–3125 The Northern Road, Luddenham	Agribusiness
Luddenham Progress Hall – item 119	206	Penrith	Built	Community Facilities	Hall Public	Local	3091–3095 The Northern Road, Luddenham	Agribusiness
Kelvin Park Group, including site landscaping, homestead, kitchen wing, servants' quarters, coach house, 2 slab barns and other works and relics – item 8	401	Liverpool	Landscape	Farming and Grazing	Homestead Complex	State	30 The Retreat, Bringelly	Aerotropolis Core, Wianamatta-South Creek
Former OTC Site Group, including radio receiving station and site of former staff housing – item 5 ⁷	403	Liverpool	Built	Communications	Telecommunications Facilities	Local	225-245 Badgerys Creek Road, Bringelly	Aerotropolis Core, Wianamatta-South Creek
Dwelling and rural lot ('Mount Pleasant') – item 6	402	Liverpool	Complex/ Group	Farming and Grazing	Homestead Complex	Local	3 Shannon Road, Bringelly	Aerotropolis Core
"Lawson's Thistle Inn" site "item 53 ⁸	214	Liverpool	Archaeological - Terrestrial	Community Facilities	Inn/Tavern	Local	2215 The Northern Road, Luddenham	Agribusiness
Luddenham Public School – item 52	209	Liverpool	Complex/ Group	Education	School-State (public)	Local	The Northern Road, Luddenham	Agribusiness
Wilmington Reserve – item 50	218	Liverpool	Landscape/s	Parks, Gardens and Tree	Other - Parks, Gardens & Trees	Local	17 Jamieson Street, Luddenham	Agribusiness

⁷ Includes the location, in part, of the former listing of two water tanks (RAAF receiving station site and former water supply to OTC staff) – Liverpool LEP item 4

⁸ Formerly misidentified and mapped as 2155 The Northern Road, Luddenham

Non-statutory listings

Table 12. Non-statutory listings

Item name	Asset No.	LGA	Item type	Group/collection	Category	Level of significance	Address	Precinct
Register of the National Estate								
Bringelly Radio Receiving Station Complex (also known as Former OTC site Group) – item 100263	403	Liverpool	Built	Postal Communications	Telecommunications Facilities	Indicative Place	Badgerys Creek Road, Bringelly	Aerotropolis Core, Wianamatta-South Creek
Kelvin, Outbuildings and Curtilage – item 3298	401	Liverpool	Landscape	Farming and Grazing	Homestead Complex	State	30 The Retreat, Bringelly	Aerotropolis Core, Wianamatta - South Creek
National Trust of Australia (NSW) Register								
Kelvin ETC*/The Retreat – item 8643	401	Liverpool	Landscape	Farming and Grazing	Homestead Complex	State	Bringelly Road, Bringelly	Aerotropolis Core, Wianamatta - South Creek

7.2.2 Potential heritage items

Table 13. Potential heritage Items

Item name	Asset no.	LGA	Item type	Description	Identified by	Address	Precinct
Cottage/farm buildings?	101	Penrith	Potential archaeological site	Site of pre-1917 structures.	This study	480-544-Luddenham Road, Luddenham	Northern Gateway
'Karingal' (formerly 'Bangaroo'?)	102	Penrith	Extant structures and potential archaeological site	Mid-20th century riding stables – pre-1927 farm site 'Bangaroo'. Several buildings (stables and sheds) on the property.	(M12 EIS)	752-810 Luddenham Road, Luddenham	Northern Gateway
McMaster Field Station/McMaster Farm	104	Penrith	Extant structures, potential archaeological sites, landscape elements	1938 CSIRO animal health research facility. Several buildings, silos, animal pens and stockyards, dams, ditches, concrete remnants, bricks and earthworks present.	(Penrith Heritage Study 2007) (M12 EIS)	1853-2109 Elizabeth Drive, Badgerys Creek	Northern Gateway
Former Brick Cottage	202	Penrith	Potential archaeological site	Formerly listed as Penrith LEP item 830. Site delisted following demolition of structure	(Penrith Heritage Study 2007)	406 Park Road, Luddenham	Agribusiness
Cottage site	210	Penrith	Potential archaeological site – possibly compromised	Cottage pre-1906	This study	2859-2901 The Northern Road, Luddenham	Agribusiness
Harris Farm site	211	Liverpool	Potential archaeological site – possibly compromised	pre-1859 tenant farm	This study	2292 The Northern Road, Luddenham	Agribusiness

Item name	Asset no.	LGA	Item type	Description	Identified by	Address	Precinct
Campbell cottage site	212	Liverpool	Potential archaeological site – compromised – site is now a car park	Pre-1900 cottage within village	This study	2174 The Northern Road, Luddenham	Agribusiness
Former church and school site	213	Liverpool	Potential archaeological site – possibly compromised	Pre-1859 church and school – possibly temporary structures	This study	2130 The Northern Road, Luddenham	Agribusiness
Forge site	215	Liverpool	Compromised potential archaeological site	Pre-1927 forge – possibly later converted into a garage. Site is currently the post office car park.	This study	2130 The Northern Road, Luddenham	Agribusiness
Cottage and outbuilding site	216	Liverpool	Potential archaeological site	Pre-1859 cottage	This study	2150 The Northern Road, Luddenham	Agribusiness
Barn site	217	Liverpool	Potential archaeological site – possibly compromised	Pre-1859 barn – predating Luddenham subdivision.	This study	2230 The Northern Road, Luddenham	Agribusiness
'Pleasantview' Cottage	219	Liverpool	Potential archaeological site	Cottage incorporating Llandilo School of Arts Hall (c.1915). Reconstructed in this location between 1927 and 1955.	This study	140 Adams Road, Luddenham	Agribusiness
Hughes Farm	220	Liverpool	Extant structures and potential archaeological sites.	220a Hughes farmstead pre-1859. 220b Dairy (timber slab) - standing structure with associated cistern. 220c Waters Farm – pre-1859. Two buildings on single property. 220d McNamy Farm – pre-1859.	This study GML 1997) (COMMONWEALTH 2016 2016)	140 Adams Road, Luddenham	Agribusiness
Allen Farm site	221	Liverpool	Potential archaeological site	Homestead and outbuilding pre-1859	This study	145 Adams Road, Luddenham	Agribusiness
Roots Farm site	222	Liverpool	Potential archaeological site	Pre-1859 farm complex	This study	180 Adams Road, Luddenham	Agribusiness
Howlett Farm site	223	Liverpool	Potential archaeological site	Homestead and outbuilding pre-1859	This study	230 Adams Road, Luddenham	Agribusiness
Magee's farm site	224	Liverpool	Potential archaeological site	Cottage pre-1906	This study	Adams Road Luddenham	Agribusiness
Former Luddenham Post Office site	225	Penrith	Potential archaeological site.	Site of former Luddenham Post Office (potentially pre-1870). Building demolished between 1965 and 1986. Site is likely to have been compromised.	This study	3077 The Northern Road, Luddenham	Agribusiness
Adam's farm	226	Liverpool	Possible extant structures. Potential archaeological site – possibly compromised	Cottage pre-1906	This study	2470 Elizabeth Drive, Luddenham	Agribusiness

Item name	Asset no.	LGA	Item type	Description	Identified by	Address	Precinct
Exeter House site	301	Penrith	Potential archaeological site and extant landscape elements	c.1810 James Badgery's residence. Exeter House demolished before 1980. Several other buildings, including a residence survived until 2010.	(Penrith Heritage Study 2007)	1669-1723 Elizabeth Drive, Badgerys Creek	Badgerys Creek
Stainton homestead site	302	Liverpool	Potential archaeological site – much of the site removed	Pre-1859 possibly c.1812. Possibly the site of Thomas Matcham Pitt's homestead on 'Nelson and Bronte' Farm. Demolished between 1955 and 1961.	This study	65 Lawson Road, Badgerys Creek	Badgerys Creek
Braithwaite homestead site	303	Liverpool	Homestead destroyed – potential peripheral surviving elements	Pre-1899 Site has been subject to intensive tilling	This study	150 Martin Road, Badgerys Creek	Badgerys Creek
Cottage	304	Liverpool	Potential extant structure	Pre-1917 cottage	This study	140 Martin Road, Badgerys Creek	Badgerys Creek
Cottage	305	Liverpool	Extant	Pre-1917 cottage	This study	165 Lawson Road, Badgerys Creek	Badgerys Creek
Unidentified building site	306	Liverpool	Potential archaeological site	Pre-1917 structure	This study	140 Lawson Road, Badgerys Creek	Badgerys Creek
Unidentified building site	307	Liverpool	Potential archaeological site - site compromised	Pre-1917 structure	This study	230 Martin Road, Badgerys Creek	Badgerys Creek
Farm complex site	308	Liverpool	Potential early standing structures and archaeological potential	Pre-1917	This study	225 Martin Road, Badgerys Creek	Badgerys Creek
Unidentified building site	309	Liverpool	Potential archaeological site	Pre-1917	This study	1910 Elizabeth Drive, Badgerys Creek	Badgerys Creek
Exeter Farms Archaeological Site (Artefact Scatter and Trees)	311	Penrith	Potential archaeological site and landscape elements	A row of trees forming a hedge that may be Osage-orange trees (<i>Maclura pomifera</i>) and an associated artefact scatter.	(M12 EIS)	885A Mamre Road, Kemps Creek	Badgerys Creek
RAAF Bringelly ⁹	404	Liverpool	Site of nineteenth century structure now occupied by former RAAF aerial and structures	225-245 Badgerys Creek Road, Bringelly	This study	Site of nineteenth century structure now occupied by former RAAF aerial and structures	Aerotropolis Core
Evergreen Homestead	405	Liverpool	Extant	1432 The Northern Road, Bringelly (addresses Derwent Road, Bringelly)	(GML 1997) (COMMONWEALTH 2016 2016)	Cottage of unknown date	Aerotropolis Core

⁹ Includes the location, in part, of the former listing of two water tanks (RAAF receiving station site and former water supply to OTC staff) – Liverpool LEP item 4

Item name	Asset no.	LGA	Item type	Description	Identified by	Address	Precinct
Unidentified building site	406	Liverpool	Structure may survive within existing cottage or has been replaced by extant structure.	1402 The Northern Road, Bringelly	This study	Pre-1927 building	Aerotropolis Core
Former slab cottage	407	Liverpool	Potential archaeological site	Slab cottage identified in 1998 as potential heritage item, demolished before 2002	This study	95 Mersey Road, Bringelly	Aerotropolis Core
Farmstead ('ruin' in 1955]	408	Liverpool	Potential archaeological site	85 & 95 Badgerys Creek Road, Bringelly,	This study	Farmstead, post-1892 Cowpasture Farms subdivision	Aerotropolis Core
Butter Factory site	501	Liverpool	Potential archaeological site	Pre-1893 butter factory	(Bringelly Road upgrade AA)	25 May Avenue, Rossmore	Wianamatta – South Creek
Cottage site	502	Liverpool	Potential archaeological site	Pre-1927 cottage	This study	46 Wynyard Avenue, Rossmore	Wianamatta – South Creek
Fleurs Aerodrome	503	Penrith	Extant landscape feature	A parent airfield constructed in 1942 - three sections of the former airstrip present.	(M12 EIS)	949A Mamre Road, Kemps Creek	Wianamatta – South Creek
South Creek Bridge	504	Penrith	Remnants of structure	Bridge of unknown date – possibly associated with the operation of the Fleurs Estate.	(M12 EIS)	885A Mamre Road, Kemps Creek	Wianamatta – South Creek
Potential archaeological site Artefact Scatter, Salisbury Avenue	505	Penrith	Potential archaeological site	A diffuse scatter of artefacts east of Salisbury Avenue.	(M12 EIS)	12-20 Salisbury Avenue, Kemps Creek	Wianamatta – South Creek
Building and tank site	506	Penrith	Site heavily compromised – tree growth and later agricultural activity	Pre-1917 structure immediately adjacent to creek	This study	175-185 Exeter Road, Kemps Creek	Wianamatta – South Creek
Hut and yards site	507	Penrith	Potential archaeological site – possibly compromised	Pre-1892 farmhouse	This study	150 Floribunda Road, Kemps Creek, 154 Floribunda Road, Kemps Creek	Wianamatta – South Creek
Bridge	508	Penrith	Potential survival of remnants	Pre-1895 bridge site	This study	316 Clifton Avenue, Kemps Creek	Wianamatta – South Creek
'Spotted Dog' Inn site	509	Penrith	Potential archaeological site	'Spotted Dog' Inn, later 'Woodbine Cottage'. Constructed prior to 1839 and occupied by the Badgery and Roberts families.	This study	1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek	Wianamatta – South Creek
Unidentified building site	510	Liverpool	Potential archaeological site	Pre-1927 unidentified building	This study	40 Ramsay Road, Rossmore	Wianamatta – South Creek

7.2.3 Heritage items adjacent to the initial precincts

Table 14. Heritage Items adjacent to the initial precincts

Item name	Asset no	LGA	Item type	Description	Identified by	Address	Precinct
'Ammamagong' homestead	S11	Penrith	Potential archaeological site	Pre-1906 homestead complex.	This study	336-348 Luddenham Road, Luddenham	Northern Gateway
Dawe's (?) cottage	S21	Penrith	Extant	Pre-1906	This study	2785-2787 The Northern Road, Luddenham	Agribusiness
Cottage site	S52	Liverpool	Potential archaeological site	Pre-1927 cottage site	This study	8 May Avenue, Rossmore	Wianamatta – South Creek
Unidentified building site	S53	Liverpool	Potential archaeological site - compromised	Pre-1927 unidentified building	This study	40 Ramsay Road, Rossmore	Wianamatta – South Creek
Homestead site	S54	Penrith	Potential archaeological site, potential standing structures	Nineteenth century farmhouse and outbuildings. Residence demolished but some outbuildings may survive. Site was used as part of the operation of the Fleurs aerodrome during the Second World War.	This study	1468 Clifton Avenue, Kemps Creek	Wianamatta – South Creek
Cottage site	S55	Penrith	Potential archaeological site	Pre-1917 cottage site	This study	22-66 Salisbury Avenue, Kemps Creek	Wianamatta – South Creek
Unidentified building site	S56	Penrith	Potential archaeological site	Pre-1917 unidentified structure.	This study	155 Tavistock Road, Kemps Creek	Wianamatta – South Creek

7.2.4 Heritage items within the precinct buffer

In addition to listed sites located within the 200m precinct buffer there are several listed items within the immediate vicinity of the precincts. These items are located within Aerotropolis but outside the initial precincts.

Table 15. Other Heritage Items adjacent to the initial precincts

Item name	Register	Item no.	Address	Distance from precinct boundary	Nearest initial precinct
Vicary's Winery Group	Liverpool LEP 2008	51	1935 The Northern Road, Bringelly	520 m	Agribusiness
Bringelly Public School	Liverpool LEP 2008 Department of Education's Section 170 Register	7	1205 The Northern Road, Bringelly	260 m	Aerotropolis Core
Cottage	Camden LEP 2010	2	1186 The Northern Road, Bringelly	210 m	Aerotropolis Core
Church of the Holy Innocents Group	SHR Liverpool LEP 2008	02005 60	130 Rossmore Avenue West, Rossmore	570 m	Wianamatta-South Creek
'Allenby'	Camden LEP 2010	139	661 Bringelly Road, Rossmore	930 m	Wianamatta-South Creek
'Bellfield'	Liverpool LEP 2008	61	130 Rossmore Avenue West, Rossmore	680 m	Wianamatta-South Creek
Rossmore Public School Group	Camden LEP 2010 Department of Education's Section 170 Register	138	629-633 Bringelly Road, Rossmore	870 m	Wianamatta-South Creek
Gateposts to Colesbrook	Penrith LEP 2010	105	269 Aldington Road, Kemps Creek	210 m	Wianamatta-South Creek
Brick Farmhouse	Penrith LEP 2010	106	282 Aldington Road, Kemps Creek	700 m	Wianamatta-South Creek

7.2.5 Unlocated (potential) sites

The following properties are known to have been occupied and farmed in the period between 1805 and 1830 but for which the precise locations of farmhouses and associated farm buildings has not been determined (Figure 79). Documentary evidence for the presence of these dwellings is derived primarily from newspaper reports regarding property sales, births and deaths in which the residence is mentioned, sales of effects as a result of death or financial need and police reports regarding criminal activities including theft and murder. Should any physical evidence archaeological remains having a high degree of integrity such remains are likely to be considered State significant. All properties listed below should be assessed prior to any development taking place to identify archaeologically sensitive areas and manage them appropriately.

7.2.6 Non-Aboriginal heritage significance advisory note

The study area has been subject to several heritage assessments in recent years. The level of investigation that determined heritage significance has been dependent on the size of the project being assessed and the type of outcome required by the nature of the project. This has resulted in several instances where the level of heritage significance is at variance with listed significance. The following table summarises the listed and assessed levels of heritage significance of heritage items within the preliminary precincts. Future detailed assessment and physical investigation of some elements may result in a down-grading of significance. This is particularly the case if items have been compromised by recent site formation processes or surviving remains fail to meet thresholds for local or State significance. The current study has identified several inconsistencies in both listings and assessments. Site 103 for example – the Luddenham Road Alignment (Penrith LEP 843) is a poorly-framed and inaccurate listing and is not capable of managing the primary value (rural landscape) for which the listing was made since this value lies outside the nominated curtilage.

Table 16. Listed and assessed heritage significance of sites located within Aerotropolis Precincts

Site ID	Name	Precinct	Listing	Listed significance	Significance as assessed by this report
101	Cottage/farm buildings?	Northern Gateway		-	Local
102	'Karingal' (formerly 'Bangaroo')	Northern Gateway		-	Local*
103	Luddenham Road Alignment	Northern Gateway	Penrith LEP 843	Local	-
104	McMaster Field Station/McMaster Farm	Northern Gateway		-	State
105	McGarvie Smith Farm	Northern Gateway	Penrith LEP 857	Local	State
S11	'Ammamagong' homestead	Northern Gateway (buffer)		-	Local

Site ID	Name	Precinct	Listing	Listed significance	Significance as assessed by this report
201	Showground	Agribusiness	Penrith LEP 679	Local	Local
202	Former Brick Cottage, 406 Park Road	Agribusiness		-	Local
203	Brick cottage	Agribusiness	Penrith LEP 117	Local	Local
204	Weatherboard cottage	Agribusiness	Penrith LEP 118	Local	Local
205	Weatherboard cottage	Agribusiness	Penrith LEP 678	Local	Local
206	Luddenham Progress Hall	Agribusiness	Penrith LEP119	Local	Local
207	Luddenham Uniting Church and Cemetery	Agribusiness	Penrith LEP 170	Local	Local
208	St James Anglican Church and Cemetery	Agribusiness	Penrith LEP122	Local	Local
209	Luddenham Public School	Agribusiness	Liverpool LEP52	Local	Local
210	Cottage site	Agribusiness		-	Local
211	Harris Farm site	Agribusiness		-	Local
212	Campbell cottage site	Agribusiness		-	Local
213	Former church and school site	Agribusiness		-	Local
214	Lawson's Thistle Inn site	Agribusiness	Liverpool LEP53	Local	Local
215	Forge site	Agribusiness		-	Local
216	Cottage and outbuilding site	Agribusiness		-	Local
217	Barn site	Agribusiness		-	Local
218	Wilmington Reserve	Agribusiness	Liverpool LEP50	Local	Local
219	'Pleasantview' Cottage	Agribusiness		-	Local
220	Hughes Farm	Agribusiness		-	Local
221	Allen Farm	Agribusiness		-	Local
222	Roots Farm	Agribusiness		-	Local
223	Howlett Farm site	Agribusiness		-	Local

Site ID	Name	Precinct	Listing	Listed significance	Significance as assessed by this report
224	Magee's farm	Agribusiness		-	Local
225	Former Luddenham Post Office	Agribusiness		-	Local
226	Adam's farm	Agribusiness		-	Local
S21	Dawe's (?) cottage	Agribusiness (buffer)		-	Local
301	Exeter House	Badgerys Creek		-	Local
302	Stainton homestead	Badgerys Creek		-	Local
303	Braithwaite homestead	Badgerys Creek		-	Local
304	Cottage	Badgerys Creek		-	Local
305	Cottage	Badgerys Creek		-	Local
306	Unidentified building site	Badgerys Creek		-	Local
307	Unidentified building site	Badgerys Creek		-	Local
308	Farm complex	Badgerys Creek		-	Local
309	Unidentified building site	Badgerys Creek		-	Local
310	Fleurs Radio Telescope Site	Badgerys Creek	Penrith LEP 832	Local	State
311	Exeter Farms Archaeological Site (Artefact Scatter and Trees)	Badgerys Creek		-	Local
401	Kelvin Park Group	Aerotropolis Core	Liverpool LEP8	State	State
402	Dwelling and rural lot (Mt Pleasant)	Aerotropolis Core	Liverpool LEP6	Local	Local
403	Bringelly Radio Receiving Station Complex (also known as Former OTC site Group)	Aerotropolis Core		-	Local
404	RAAF Bringelly	Aerotropolis Core		-	Local
405	'Evergreen' Homestead	Aerotropolis Core		-	Local
406	Unidentified building site	Aerotropolis Core		-	Local
407	Former slab cottage	Aerotropolis Core		-	Local
408	Farmstead ('ruin' in 1955]	Aerotropolis Core		-	Local

Site ID	Name	Precinct	Listing	Listed significance	Significance as assessed by this report
501	Butter Factory (site)	Wianamatta South Creek		-	Local
502	Cottage	Wianamatta South Creek		-	Local
503	Fleurs Aerodrome	Wianamatta South Creek		-	Local
504	South Creek Bridge	Wianamatta South Creek		-	Local*
505	Potential archaeological site Artefact Scatter, Salisbury Avenue	Wianamatta South Creek		-	Local*
506	Building and tank site	Wianamatta South Creek		-	Local
507	Hut and yards site	Wianamatta South Creek		-	Local
508	Bridge site	Wianamatta South Creek		-	Local
509	'Spotted Dog' Inn site	Wianamatta South Creek		-	Local
510	Unidentified building site	Wianamatta South Creek		-	Local
S51	'Bayly Park' complex	Wianamatta South Creek (buffer)	Penrith LEP104	Local	Local
S52	Cottage site	Wianamatta South Creek (buffer)		-	Local
S53	Homestead site	Wianamatta South Creek (buffer)		-	Local
S54	Homestead site	Wianamatta South Creek (buffer)		-	Local
S55	Cottage site	Wianamatta South Creek (buffer)		-	Local
S56	Unidentified building site	Wianamatta South Creek (buffer)		-	Local
S57	'Cooloo' homestead	Wianamatta South Creek (buffer)		-	Local

* assessed in the M12 EIS as having no significance

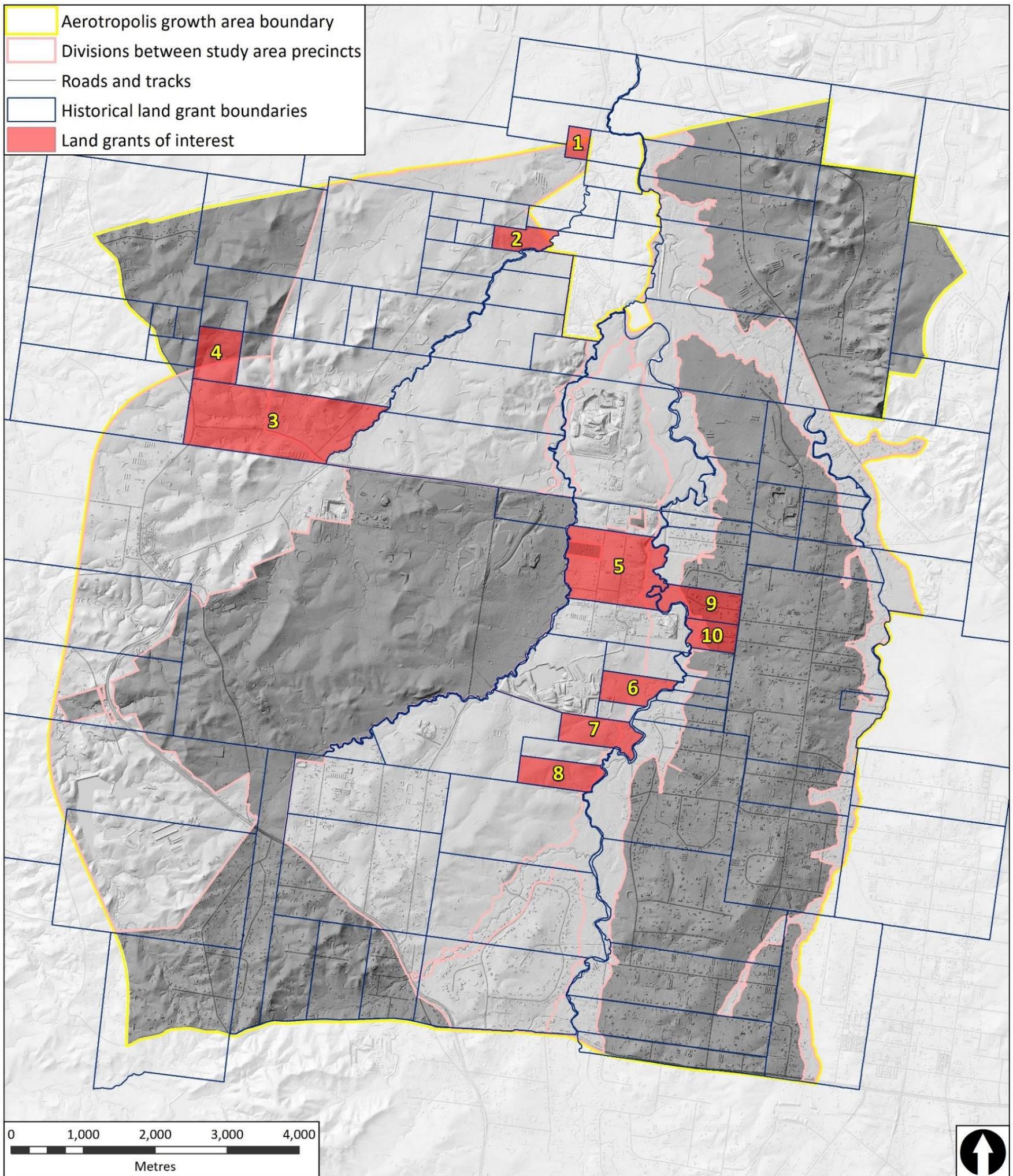


Figure 79. Properties with known occupation. Precise locations yet to be determined.

Table 17 List of known historical owners within the five precincts

Number	Name	Period	Precinct
1	Mary Crooke	1823-1840	Northern Gateway
2	Cornelius Ryan	1823-1840	Northern Gateway
3	Michael Henderson	1819-1850	Northern Gateway/Agribusiness
4	Thomas Cosgrove	1819-1840	Agribusiness
5	Thomas Matcham Pitt	1810-1830	Badgerys Creek
6	James Martin	1819-1840	Badgerys Creek
7	Gustavus A Low	1817-1830	Aerotropolis Core
8	William Hayes	1818-1830	Aerotropolis Core
9	Robert Turnbull	1812-1830	Wianamatta - South Creek
10	John Brackfield	1818-1830	Wianamatta - South Creek

8. Precinct profiles

8.1 Northern Gateway Precinct

Setting

The Northern Gateway Precinct consists of a low range of hills flanking Cosgroves Creek and a low ridge between Cosgroves Creek and Badgerys Creek. The precinct is predominantly rural properties that vary from 10 ha to 3 km². The main road through the precinct is Luddenham Road. This was upgraded (in part) in 2018.

Early land grants

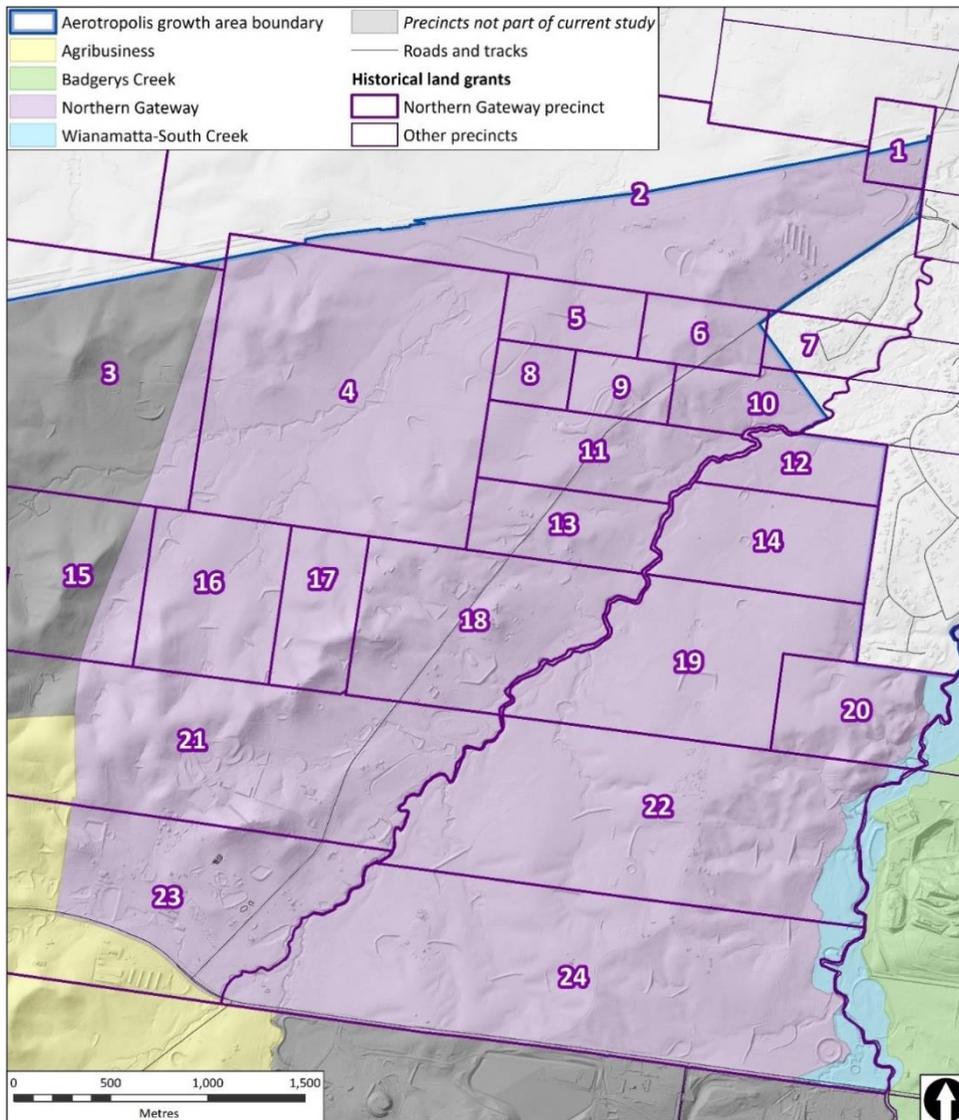


Figure 80. Land Grants: Northern Gateway Precinct

Table 18. Early land grants, Northern Gateway precinct

No.	Grantee	Area	Parish	Portion	Date	Estate	Notes
1	Mary Crooke	30	Claremont	25	30/6/1823		John Cosgrove purchased the farm of Mary Crooke more than 40 yrs. ago - Joseph Chaulker (Statutory Declaration 9 August 1889)
2	John Piper	840	Claremont	1	19/10/1831		
3	William Shelly	500	Claremont	18	13/1/1818		
4	John Smith	500	Claremont	19	-	Close House Farm	
5	James Beckett	60	Claremont	36	30/6/1823		
6	Daniel Wellings	50	Claremont	35	30/6/1823		
7	William Hill	40	Claremont	34	30/6/1823	Hills Farm	
8	Edward Lewis	30	Claremont	37	30/6/1823		
9	William Sherries	40	Claremont	38	30/6/1823		
10	Cornelius Ryan (Regan)	60	Claremont	39	30/6/1823		
11	Peter Workman	100	Claremont	40	30/6/1823		
12	Thomas Reynolds	57	Claremont	42	10/6/1815	<i>Reynolds Farm</i>	
13	Andrew Nash	80	Claremont	41	30/6/1823		Formerly Darcy Wentworth Bringelly Parcel 1
14	Philip Hogan	120	Claremont	43	13/1/1818		Formerly Darcy Wentworth Bringelly Parcel 1

No.	Grantee	Area	Parish	Portion	Date	Estate	Notes
15	Thomas Bowden	200	Claremont	51	5/4/1821		
16	James Scott	140	Claremont	54	5/4/1821		
17	Joseph Vertills	80	Claremont	56	5/4/1821		
18	Benjamin Nichols	200	Claremont	57	13/1/1818	<i>Kington</i>	Formerly Darcy Wentworth Bringelly Parcel 1
19	Thomas Nichols	200	Claremont	58	13/1/1818	<i>Ham Farm</i>	Formerly Darcy Wentworth Bringelly Parcel 1
20	Samuel Laycock	100	Claremont	59	1816		Formerly Darcy Wentworth Bringelly Parcel 1
21	James Smith	400	Claremont	60	31/8/1819		Formerly Gregory Blaxland Bringelly Parcel 3
22	John Piper	400	Claremont	62	15/12/1830	<i>Blackford Farm</i>	Formerly Gregory Blaxland Bringelly Parcel 3
23	Michael Henderson	500	Claremont	61	31/8/1819	<i>The Filly Paddock</i>	Formerly Gregory Blaxland Bringelly Parcel 3
24	William Johnston	500	Claremont	63	31/8/1819		Formerly Gregory Blaxland Bringelly Parcel 3

Table 19. Assets within the Northern Gateway Precinct

Asset No.	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site Type	Physical Description	Historical notes
101	Cottage/farm buildings?	480-544-Luddenham Road, Luddenham	Lot 7 DP255578				Local	Potential archaeological site	Site is now a paddock – no visible remains	Site of pre-1917 structures
102	'Karingal' (formerly 'Bangaroo'?)	752-810 Luddenham Road, Luddenham	Lot 1 DP235124				Local	Extant structures Potential archaeological site	Mid-20 th century riding stables –. Several buildings (stables and sheds) on the property.	pre-1927 farm site 'Bangaroo'
103	Luddenham Road Alignment	-	Road reserve	LEP	Penrith LEP	843	Local	Extant line of road	Extant line of road - Luddenham Road comprises modern asphalt with no remnants of the original road visible.	line opened in 1993
104	McMaster Field Station/McMaster Farm	1853-2109 Elizabeth Drive, Badgerys Creek	Lot 101 DP848215				Local	Extant structures Potential archaeological sites, landscape elements	A number of buildings, silos, animal pens and stockyards, dams, ditches, concrete remnants, bricks and earthworks present.	1938 CSIRO animal health research facility.

Asset No.	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site Type	Physical Description	Historical notes
105	McGarvie Smith Farm	1793-1951 Elizabeth Drive, Badgerys Creek	Lot 62 DP 1087838 Lot 63 DP1087838	National Heritage List LEP	106032 Penrith LEP	857	Local	Extant structures Potential archaeological sites,	A number of farm buildings, silo, concrete remnants, timber posts, sheds, dams, earth ditches and other features present.	This farm was the first veterinary farm established by the Sydney University. The first vets at Sydney University were trained at this facility.

Table 20. Assets adjacent to the Northern Gateway Precinct

Asset No	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site Type	Physical Description	Historical notes
S11	'Ammamagong' homestead	336-348 Luddenham Road, Luddenham	Lot 222 DP270417				Local	Potential archaeological site	The site is currently a paddock although physical remains of the homestead complex are visible. These remains include a beehive cistern that has been subject to recent, partial demolition.	Pre-1906 homestead complex.

8.2 Agribusiness Precinct

Setting

The Agribusiness Precinct is located almost entirely on elevated ground that forms the watershed between South Creek in the east and the Nepean River in the west. The precinct is mostly rural in nature with most properties being smaller than 20ha. The most densely occupied section of the precinct is the village of Luddenham.

The main roads through the precinct are The Northern Road and Elizabeth Drive. The Northern Road is in the process of being upgraded with the addition of motorway access to the Western Sydney Airport. The principal local roads are Park Road and Adams Road.

Early land grants

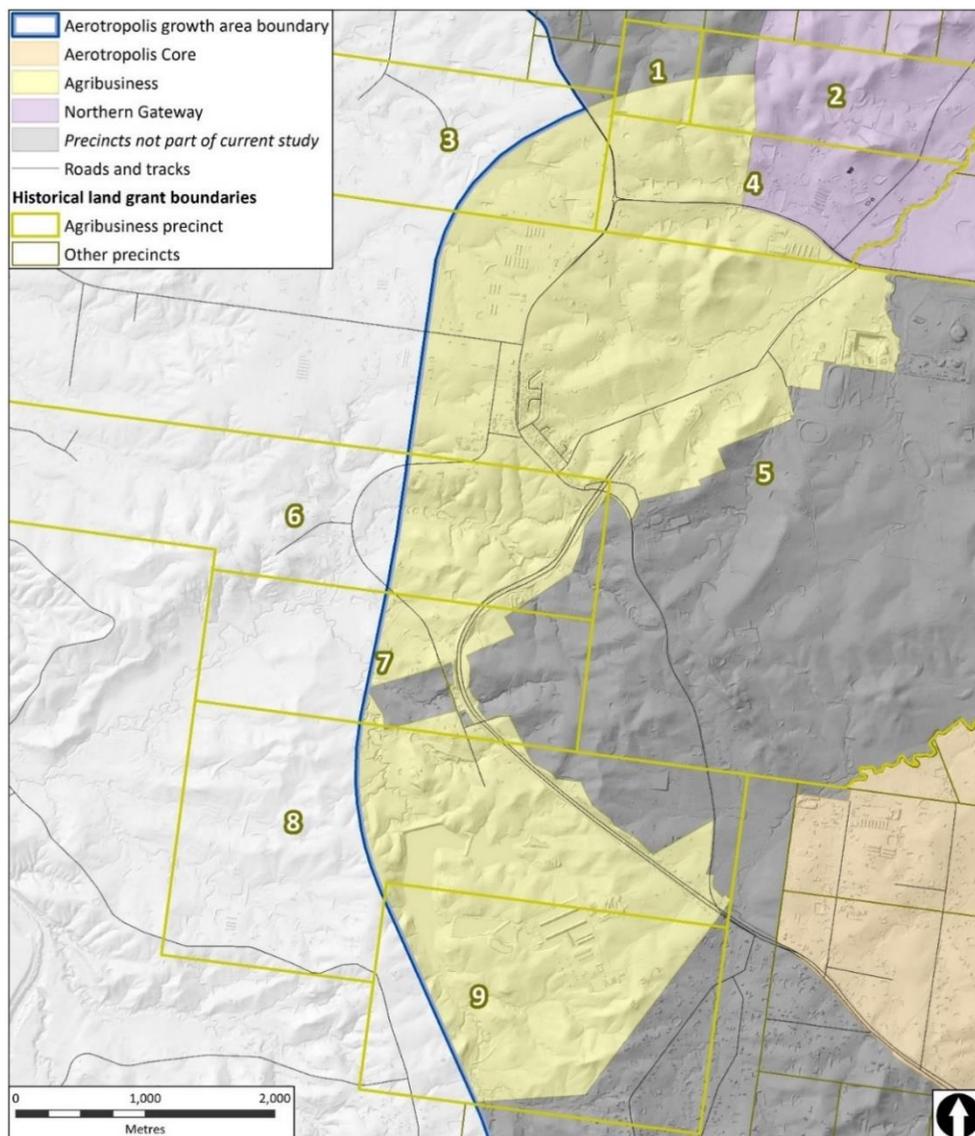


Figure 82. Land grants, Agribusiness Precinct

Table 21. Early land grants, Agribusiness Precinct

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
1	Thomas Cosgrove	100	Claremont	53	31/8/1819		Formerly Gregory Blaxland Bringelly Parcel 3
2	James Smith	400	Claremont	60	31/8/1819		Formerly Gregory Blaxland Bringelly Parcel 3
3	John Blaxland	600	Mulgoa	50	31/8/1819	<i>Stockwood Farm</i>	
4	Michael Henderson	500	Claremont	61	31/8/1819	<i>The Filly Paddock</i>	Formerly Gregory Blaxland Bringelly Parcel 3
5	John Blaxland	6710	Bringelly	1	30/11/1813	<i>Luddenham</i>	
6	Darcy Wentworth	1200	Bringelly	2	8/10/1816	<i>Elmshall Park</i>	
7	William Gore	700	Bringelly	5	2/6/1815	<i>Greendale</i>	Later Darcy Wentworth's <i>Elmshall Park</i>
8	John Piper	1500	Bringelly	7	20/8/1816	<i>Bathurst Farm</i>	Later Darcy Wentworth's <i>Elmshall Park</i>
9	Darcy Wentworth	1000	Bringelly	10	20/6/1816		Later Darcy Wentworth's <i>Elmshall Park</i>

Identified Heritage Assets

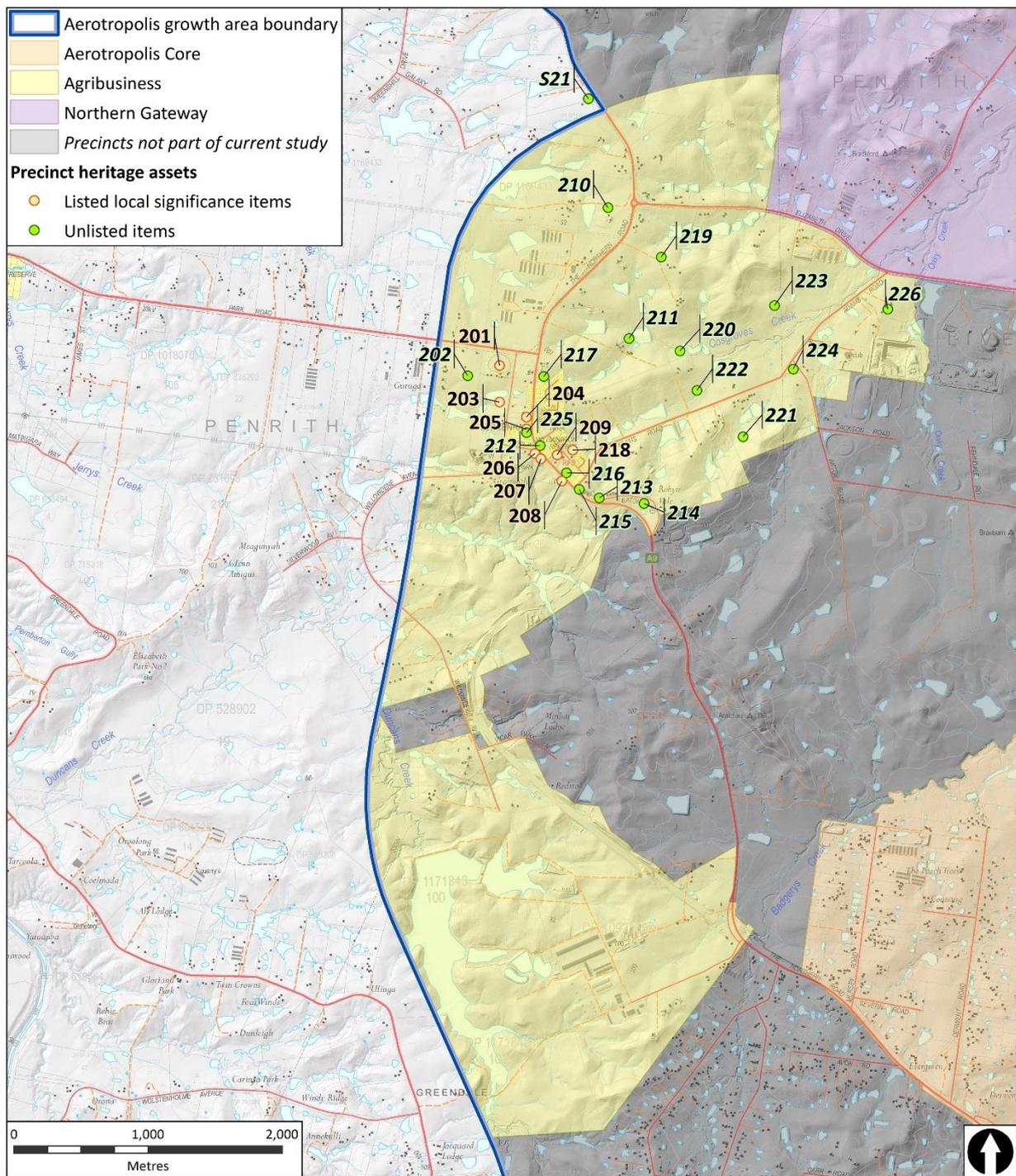


Figure 83. Heritage items sites within and adjacent to the Agribusiness Precinct

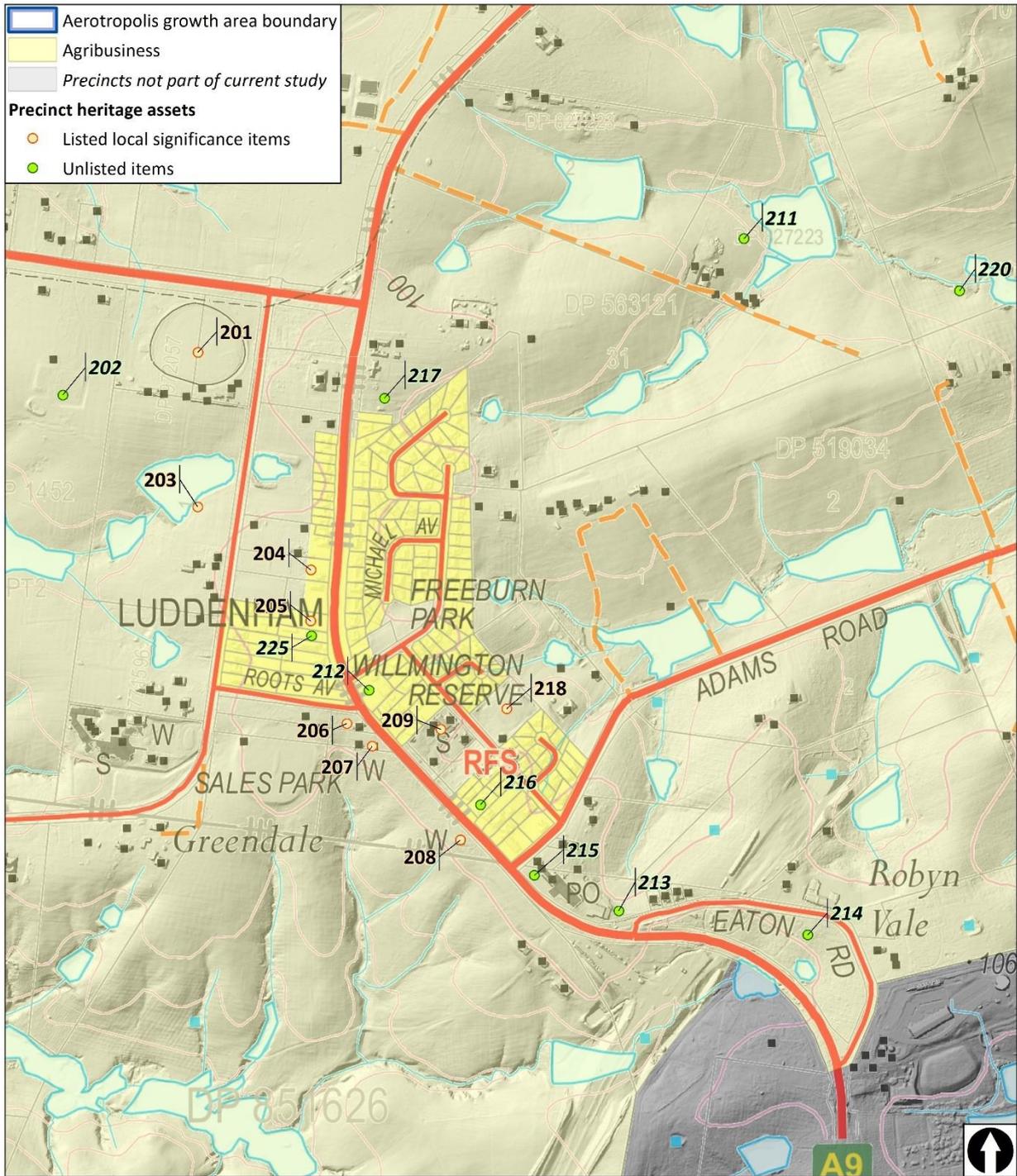


Figure 84. Detail of heritage items sites within the village of Luddenham (Agribusiness Precinct)

Table 22. Assets within the Agribusiness Precinct

Asset no.	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site type	Physical description	Historical notes
201	Showground	442-452 Park Road, Luddenham (address in LEP 428-452 Park Road, Luddenham)	Lot 1 DP931631 Lot 2 DP972057	LEP	Penrith LEP	679	Local	Extant showground and buildings	Showground and buildings	Dating from 1892 onwards.
202	Former Brick Cottage, 406 Park Road	406 Park Road, Luddenham	Lot 2 Sec A DP1452				Local	Potential archaeological site	Location of cottage now turfed over.	Formerly listed as a standing structure (Penrith LEP 830) – building demolished in 2009/2010. Site has been delisted.
203	Brick cottage	21-55 Campbell Street, Luddenham	Lot 1 DP972057	LEP	Penrith LEP	117	Local	Extant structures	Brick gable-ended cottage with wide wraparound verandah	Dating from the late nineteenth century, building contributes to the rural settlement of the area.
204	Weatherboard cottage	3065-3067 The Northern Road, Luddenham	Lot 1 DP930372	LEP	Penrith LEP	118	Local	Extant structures	Weatherboard cottage with galvanised hipped roof with gablet and wide bullnose verandah	Dating from the late nineteenth century, building contributes to the rural settlement of the area.
205	Weatherboard cottage	3075 The Northern Road, Luddenham	Lot 1 DP304800	LEP	Penrith LEP	678	Local	Extant structures	Weatherboard house with high pitched hipped roof. Simple façade with straight verandah to the front.	Dating from the late nineteenth century, building contributes to the rural settlement of the area.
206	Luddenham Progress Hall	3091-3095 The Northern Road, Luddenham	Lot 7 DP1655	LEP	Penrith LEP	119	Local	Extant structures	Brick rendered Progress Hall with gable ended galvanised roof and timber windows	The Luddenham Progress Hall was built in 1886, initially serving as the Luddenham Protestant Hall.
207	Luddenham Uniting Church and Cemetery	3097-3099 The Northern Road, Luddenham	Lot 8 DP1655	LEP	Penrith LEP	170	Local	Extant structures	Rendered brick and built in a simple Gothic style, retains much of its form and detailing.	Built in 1886 as the Primitive Methodist Church, the building reflects a typical style for a rural church from the late-nineteenth century.
208	St James Anglican Church and Cemetery	3101-3125 The Northern Road, Luddenham	Lot 2 DP529143	LEP	Penrith LEP	122	Local	Extant structures	Sandstone church in simple gothic style with original detailing including stained glass windows. Cemetery to the south.	The oldest church in the district, this building reflects the establishment and early growth of the village of Luddenham. The church also has associations with several significant local landowners, most notably Sir Charles Nicholson, who founded the village of Luddenham.
209	Luddenham Public School	The Northern Road, Luddenham	Lot 1 DP194409	LEP Education s170	Liverpool LEP Building B00C	52 5064557	Local	Extant structures	Weatherboard schoolhouse building facing The Northern Road. School buildings ranging from 1950s to modern.	Luddenham Public School has operated as a public school since 1914. However, the school grounds themselves have been used as an educational facility since 1860. Original school buildings have all been demolished.

Asset no.	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site type	Physical description	Historical notes
210	Cottage site	2859-2901 The Northern Road, Luddenham	Lot 1 DP1169433				Local	Potential archaeological site	Site is now the location of a small cottage/shed – the integrity of earlier structural remains and deposits may have been compromised.	Cottage pre-1906
211	Harris Farm site	2292 The Northern Road, Luddenham	Lot 2 DP1240511				Local	Potential archaeological site	Site has been subject to significant, recent ground modification – the integrity of earlier structural remains and deposits may have been compromised	pre-1860 farm
212	Campbell cottage site	2174 The Northern Road, Luddenham	Lot 19 DP575503				Local	Potential archaeological site	Site is now an asphalted car park	Pre-1900 cottage within village
213	Former church and school site	2130 The Northern Road, Luddenham	Lot 25 DP700302				Local	Potential archaeological site	Site is a well-maintained turfed area.	Pre-1859 church and school – possibly temporary structures
214	Lawson's Thistle Inn site	2215 The Northern Road, Luddenham	Lot 3 DP1234822				Local	Potential archaeological site	Site currently turfed over	c.1858/1859 roadside inn
215	Forge site	2130The Northern Road, Luddenham	Lot 25 DP700302				Local	Potential archaeological site	Site is currently the post office car park.	Pre-1927 forge – possibly later converted into a garage.
216	Cottage and outbuilding site	2150 The Northern Road, Luddenham	Lot 22 DP1036912 (and road reserve)				Local	Potential archaeological site	Site partially covered by a twentieth century dwelling – any archaeological remains may be significantly compromised.	Pre-1859 cottage
217	Barn site	2230 The Northern Road, Luddenham	Lot 31 DP563121				Local	Potential archaeological site	Site is a well-maintained grazing paddock	Pre-1859 barn – predating Luddenham subdivision.
218	Wilmington Reserve	17 Jamison Street, Luddenham	Lot 7004 DP93052	LEP	Liverpool LEP	50	Local	Extant structures	Water reserve.	Building present on site in 1859.
219	'Pleasantview' Cottage	2422-2430 The Northern Road, Luddenham	Lot 7 DP1240511				Local	Extant structures	Site not accessed for this study. Original Llandilo School of Arts Hall may still be intact within modern extensions.	Cottage incorporating Llandilo School of Arts Hall (c.1915). Reconstructed in this location between 1927 and 1955.
220	Hughes Farm	140 Adams Road, Luddenham	Lot 3 DP1240511				Local	Extant structures Potential archaeological sites	220a Hughes farmstead pre-1859 – currently paddock 220b Dairy (timber slab) - standing structure with associated cistern located at the rear of the main farmhouse 220c Waters Farm – pre-1859. Two buildings on	This lot formed part of the Luddenham Estate and prior to the 1859 subdivision was occupied by a number of small tenancies.

Asset no.	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site type	Physical description	Historical notes
									single property – site now a paddock 220d McNamy Farm – pre-1859 - site now a paddock	
221	Allen Farm	145 Adams Road, Luddenham	Lot 5 DP250030				Local	Potential archaeological site	Site now a well-maintained grazing paddock.	Homestead and outbuilding pre-1859
222	Roots Farm	180 Adams Road, Luddenham	Lot 30 DP1251450				Local	Potential archaeological site	Paddock – partly covered by scrub.	Pre-1859 farm complex
223	Howlett Farm site	230 Adams Road, Luddenham	Lot 106 DP846962				Local	Potential archaeological site	Site now a paddock that appears to have been ripped – archaeological remains likely to have been compromised	Homestead and outbuilding pre-1859
224	Magee's farm	Adams Road Luddenham	Portion of road reserve intersection of Adams Road and Anton Road, Luddenham				Local	Potential archaeological site	Site now covered by trees and low scrub	Cottage pre-1906
225	Former Luddenham Post Office	3077 The Northern Road, Luddenham	Lot 2 DP510238				Local	Potential archaeological site	Site is likely to have been compromised.	Site of former Luddenham Post Office (potentially pre-1870). Building demolished between 1965 and 1986.
226	Adam's farm	2470 Elizabeth Drive, Luddenham	Lot 281 DP571171				Local	Potential extant structures. Potential archaeological site	Site occupied by a late nineteenth or early twentieth century cottage as well as later outbuildings and dwellings	Cottage pre-1906

Table 23. Assets adjacent to precinct

Asset no	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
S21	Dawe's cottage (?)	2785-2787 Northern Luddenham The Road,	Lot 502 DP580982				Local	Extant structures	Weatherboard cottage with mixed hipped roof with gablets on ends and over front entry.	Pre-1906 cottage

8.3 Badgerys Creek Precinct

Setting

The Badgerys Creek Precinct is located on relatively low, level ground at the confluence of South Creek and Badgerys Creek. The precinct consists primarily of small rural/residential blocks apart from three industrial/former industrial areas. The industrial areas consist of the former Boral Badgerys Creek Brickworks (225 Martin Road, Badgerys Creek) approximately 1.1km², Badgerys Creek Landfill Depot (1725A Elizabeth Drive, Badgerys Creek) approximately 75ha and Australian Native Landscapes Pty Ltd (210 Martin Road, Badgerys Creek) approximately 20ha. The precinct contains a many market gardens adjacent to South Creek.

The Precinct is crossed by Elizabeth Drive in the north. All other roads are local roads mostly associated with the post-1880 subdivisions of Badgerys Creek.



Figure 85. Boral Badgerys Creek Brickworks, 2009 prior to closure

Source: *Nearmap*

Early land grants

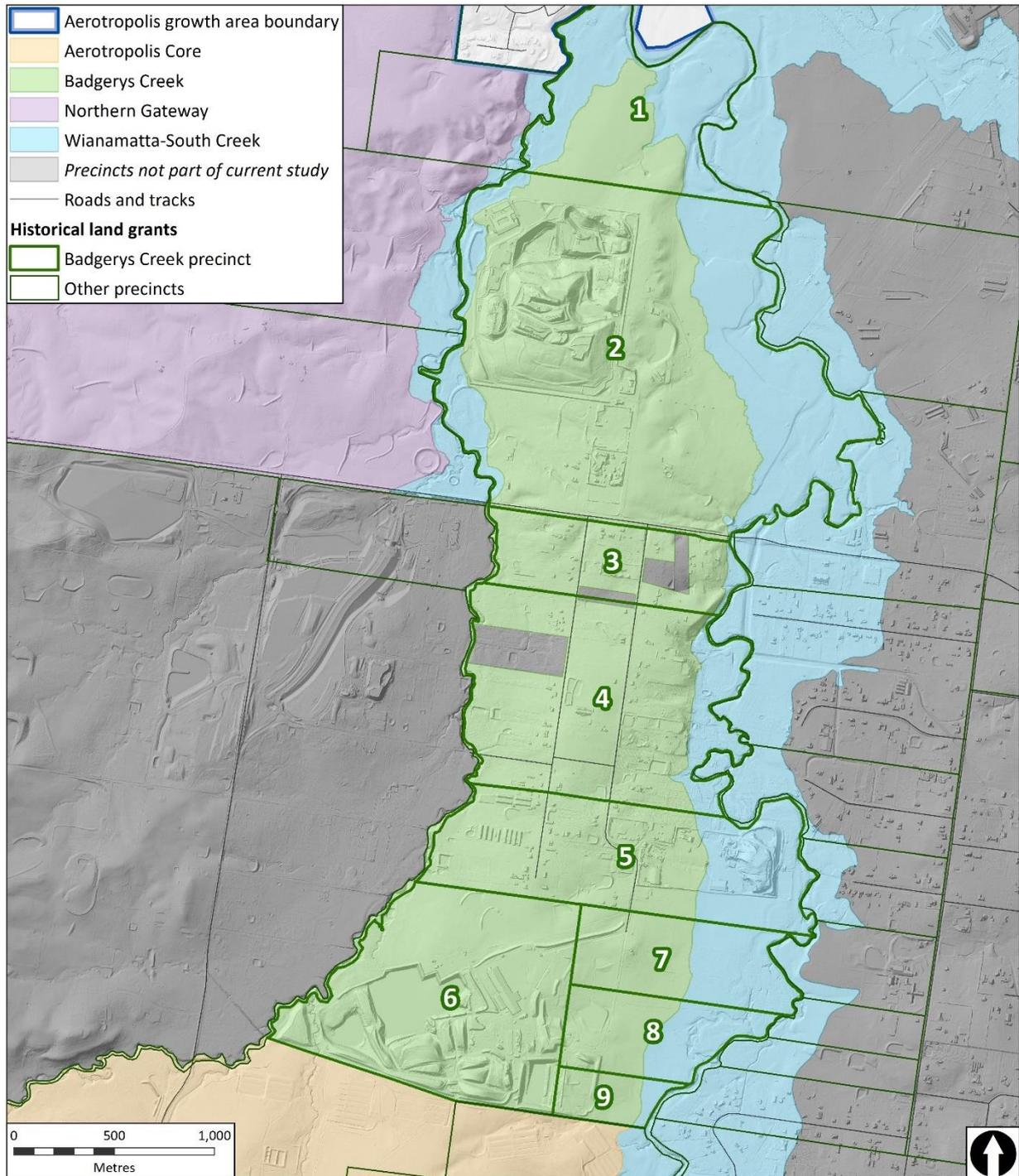


Figure 86. Land Grants: Badgerys Creek Precinct

Table 24. Early land grants, Badgerys Creek precinct

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
1	Nicholas Bayly	680	Claremont	55	18/12/1805	<i>Kings Down</i>	Later <i>Fleurs</i>
2	James Badgery	680	Claremont	31	8/1812	<i>Exeter Farm</i>	
3	Edward Powell	100	Bringelly	32	1/1/1810		
4	Thomas Matcham Pitt	300	Bringelly	31	1/1/1810	<i>Nelson and Bronte Farm</i>	SG 20 Feb 1813 p 3 Marriage between T. M Pitt of Nelson and Bronte Farm and Elizabeth Laycock of King's Grove Farm
5	William Wall	200	Bringelly	30	1/1/1810	<i>Greys</i>	
6	Sarah Howe	270	Bringelly	34	31/8/1819		
7	John Reeve	100	Bringelly	29	13/1/1818	<i>Reeves Farm</i>	
8	James Martin	80	Bringelly	28	25/8/1812	<i>Martins Farm</i>	
9	Mary Bishop	30	Bringelly	27	25/8/1812	<i>Bishops Farm</i>	

Table 25. Assets within the Badgerys Creek precinct

Asset no	Name	Address	Lot/DP	Register	Listing Title	Listing No.	Significance	Site Type	Physical Description	Historical notes
301	Exeter House	1669-1723 Elizabeth Drive, Badgerys Creek	Lot 5 DP860456				Local	Potential archaeological site	Site has been subject to recent modifications – some plantings and fence lines as well as the site of Exeter House may survive	c.1810 James Badgerys residence.
302	Stainton homestead	75 Lawson Road, Badgerys Creek	Lot 5 DP3050				Local	Potential archaeological site	Site is now a turfed yard attached to a dwelling	Pre-1859 possibly c.1812. Possibly the site of Thomas Matcham Pitt's homestead on 'Nelson and Bronte' Farm. Demolished between 1955 and 1961.
303	Braithwaite homestead	150 Martin Road, Badgerys Creek	Lot 49 DP3050				Local	Potential archaeological site	Site has been subject to intensive tilling	Pre-1899 homestead
304	Cottage	140 Martin Road, Badgerys Creek	Lot 48 DP3050				Local	Potential extant structures	Site now a heavy vehicle storage yard with hardstand over most of the property – archaeological remains may have been compromised	Pre-1917 cottage
305	Cottage	165 Lawson Road, Badgerys Creek	Lot 5 DP226912				Local	Extant structures	Fibro cottage with broken hipped roof over a possibly enclosed verandah, gable roof over projected front wing room.	Pre-1917 cottage
306	Unidentified building site	140 Lawson Road, Badgerys Creek	Lot 29 DP3050				Local	Potential archaeological site	Site covered by dense timber intersperse with scrub	Pre-1917 building
307	Unidentified building site	230 Martin Road, Badgerys Creek	Lot A DP406215				Local	Potential archaeological site	Site is now a paddock	Pre-1917 building
308	Farm complex	225 Martin Road, Badgerys Creek	Lot 1 DP1035249				Local	Potential extant structures Potential archaeological site	Site is now a paddock	Pre-1917 farm
309	Unidentified building site	1910 Elizabeth Drive, Badgerys Creek	Lot 2 DP553886				Local	Potential archaeological site	Turfed yard attached to dwelling	Pre-1917 building

Asset no	Name	Address	Lot/DP	Register	Listing Title	Listing No.	Significance	Site Type	Physical Description	Historical notes
310	Fleurs Radio Telescope Site	885A Mamre Road, Kemps Creek	Lot 21 DP258414	LEP	Penrith LEP	832	Local	Extant structures Potential archaeological sites, landscape elements	310a Several buildings, remains of antennae, antenna footing trenches, concrete plinths, cabling, signal boxes, and demolition material present. 310b hut (possibly nineteenth century) archaeological site 310c former bridge site	Fleurs Radio Telescope site was constructed in 1954 and operated through to 1988. At the time of its construction, Fleurs Radio Telescope was considered one of the world's leading radio astronomy field stations. Much of this equipment was relocated for continuing research in 1988. The site utilised three innovative cross-type radio telescopes, the Mills Cross, Shain Cross and the Chris Cross.
311	Exeter Farms Archaeological Site (Artefact Scatter and Trees)	885A Mamre Road, Kemps Creek	Lot 1 DP74574				Local	Potential archaeological sites	Site is now a paddock	A row of trees forming a hedge that may be Osage-orange trees (<i>Maclura pomifera</i>) and an associated artefact scatter.

Assets adjacent to precinct

Not applicable – there are no identified sites within the buffer.

8.4 Aerotropolis Core Precinct

Setting

The Aerotropolis Core Precinct is located north of Bringelly Road and east of The Northern Road. The topography consists of low hills and flat land between Badgerys Creek and South Creek. The precinct is cut by Thompsons Creek, a feeder stream for South Creek. Land-use is a mix of large, single-dwelling blocks, small sections of grazing land. There are also a number of intensively farmed agricultural complexes. There are also two large properties consisting of open grassland associated with Commonwealth sites – RAAF Bringelly and the former OTC station.

Early Land Grants

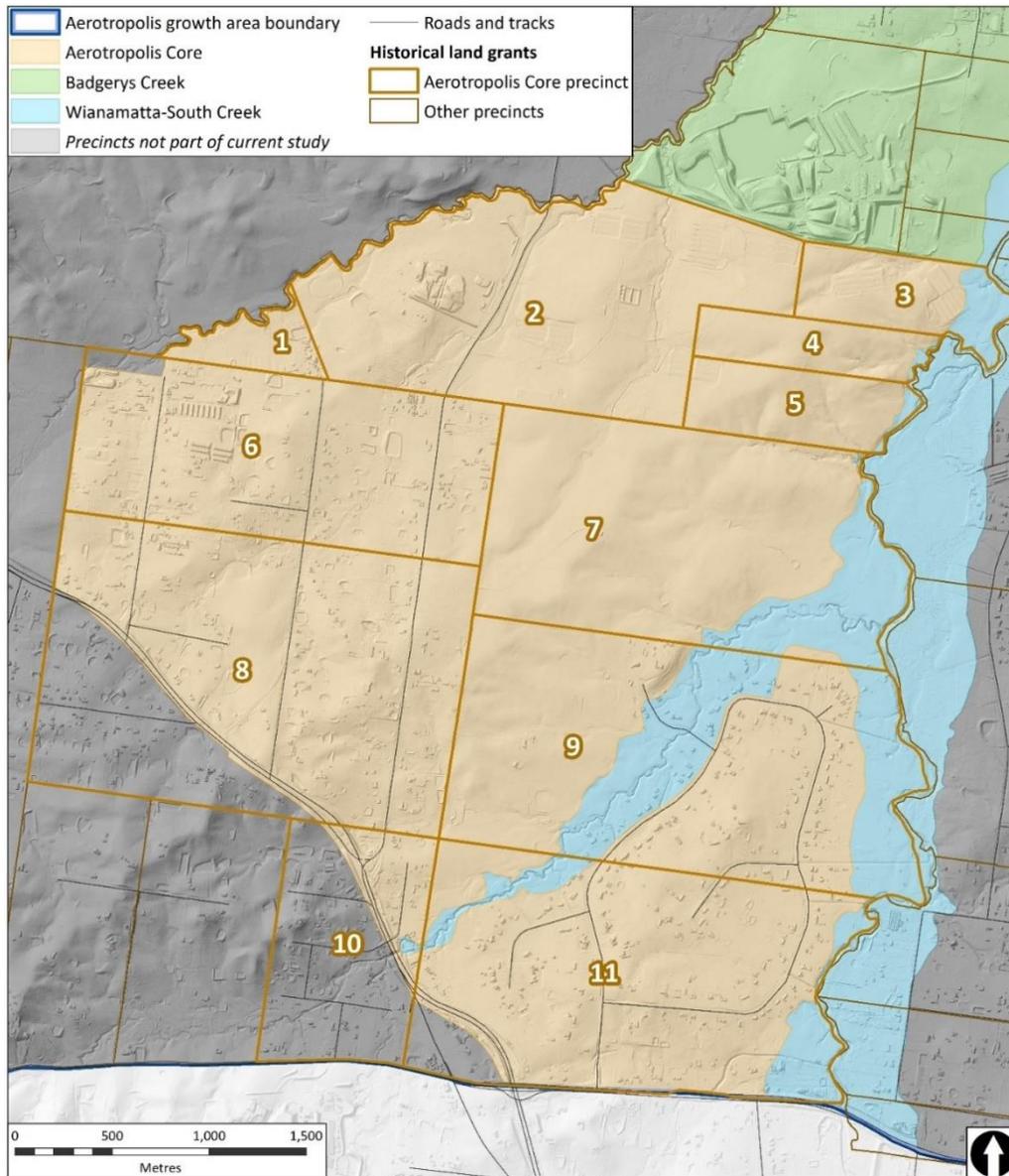


Figure 88. Land Grants: Aerotropolis Core Precinct

Table 26. Early Land Grants within the Aerotropolis Precinct

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
1	William White	40	Bringelly	36	11/9/1817		
2	Michael Robinson	500	Bringelly	35	11/9/1817	<i>St Aubyns</i>	Later P. P. King <i>Belle Vue Estate</i>
3	Gustavus A Low	100	Bringelly	26	11/9/1817	<i>Low Brook</i>	Later P. P. King <i>Belle Vue Estate</i>
4	Matthew Hughes	65	Bringelly	25	8/10/1816		Later P. P. King <i>Belle Vue Estate</i>
5	William Hayes	100	Bringelly	24	12/3/1818	<i>Bally-hayes</i>	Later P. P. King <i>Belle Vue Estate</i> . Hayes became Kin's tenant and served as King's estate manager. House robbed 26 Jan 1826 (SG 4 Mar 1826 p3)
6	Edward Wright	350	Bringelly	16	5/4/1821		
7	Penelope Lucas	500	Bringelly	23	26/11/1818	<i>Lucas Farm</i>	Later P. P. King <i>Belle Vue Estate</i>
8	William Hutchinson	700	Bringelly	17	30/6/1823		Subdivided as Cowpasture Farms
9	Thomas Laycock	600	Bringelly	22	26/11/1818	<i>Cottage Vale</i>	Later <i>Kelvin Park</i>
10	William Hutchinson	220	Bringelly	20	13/1/1818		
11	Charles Reid	600	Bringelly	21	26/11/1818	<i>Cottage Grove</i>	

Identified Heritage Assets

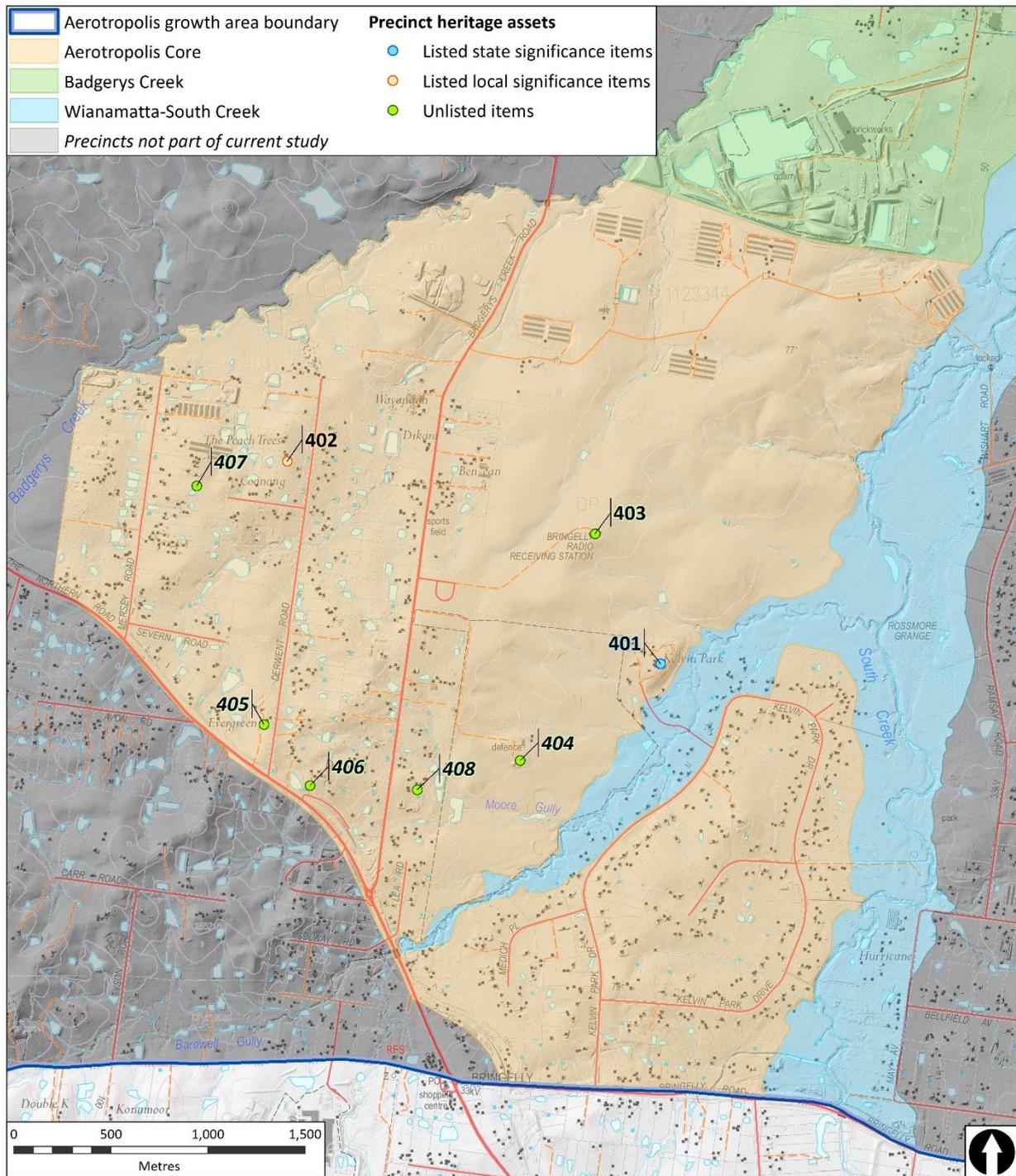


Figure 89. Heritage items sites within and adjacent to the Aerotropolis Core Precinct

Table 27. Assets within the Aerotropolis Core Precinct

Asset no	Name	Address	Lot/DP	Register	Listing Title	Listing No	Significance	Site Type	Physical Description	Historical notes
401	Kelvin Park Group	30 The Retreat, Bringelly	Lots 2711–2714 DP 1128906	RNE SHR LEP National Trust	Kelvin, Outbuildings and Curtilage Kelvin Liverpool LEP Kelvin	3298 00046 8 8643	State	Extant structures Landscape, potential archaeological sites	Kelvin Park Group, including site landscaping, homestead, kitchen wing, servant's quarters, coach house, 2 slab barns and other works and relics (formerly "The Retreat", "Cottage Vale", stables and lock-up)	Early Colonial farm complex, an example of an 1820's homestead and associated outbuildings. Kelvin Park stands on was originally part of a 600 acre land grant to Thomas Laycock Jr in 1818 known as Bringelly.
402	Dwelling and rural lot (Mt Pleasant)	3 Shannon Road, Bringelly	Lot 44 DP 581187	LEP	Liverpool LEP	6	Local	Extant structures	Weatherboard house with galvanised broken hipped roof over deep wraparound verandah. Thick landscaping surrounding property, accessed by Derwent Road.	Structure of unknown date.
403	Bringelly Radio Receiving Station Complex (also known as Former OTC site Group)	225-245 Badgerys Creek Road, Bringelly	Lot 1 DP 109666	RNE	Bringelly Radio Receiving Station Complex	100263	Local	Extant structures Landscape, potential archaeological sites	Site is currently a paddock – this has recently been heavily ploughed or ripped. Formerly listed in the Liverpool LEP as item 5 (local significance)	Former OTC Site Group, including radio receiving station and site of former staff housing
404	RAAF Bringelly	215 Badgerys Creek Road, Bringelly	Lot 10 DP 1235662				Local	Potential archaeological sites	Site is currently a paddock	Site of nineteenth century structure now occupied by former RAAF Bringelly (aerial and structures). Site of satellite airfield. Pre-1927 structure and former water tank
405	'Evergreen' Homestead	1432 The Northern Road, Bringelly (addresses Derwent Road, Bringelly)	Lot 6 DP1217247				Local	Extant structures	Weatherboard original building with fibro extensions to side and front.	Cottage of unknown date
406	Unidentified building site	1402 The Northern Road, Bringelly	Lot 2 DP233269				Local	Potential extant structures	Extant modern cottage	Pre-1927 building Structure may survive within existing cottage or has been replaced by extant structure.
407	Former slab cottage	95 Mersey Road, Bringelly	Lot 11 Sec 2 DP2650				Local	Potential archaeological site	Site consists of heavy disturbed land interspersed with trees	Site identified in 1998, building demolished before 2002
408	Farmstead ('ruin' in 1955]	85 & 95 Badgerys Creek Road, Bringelly,	Lot 4 & Lot 3 DP244113				Local	Potential archaeological site	Site is currently a paddock	Farmstead, post-1892 Cowpasture Farms subdivision

Assets adjacent to Precinct

Not applicable – there are no identified sites within the buffer.

8.5 Wianamatta-South Creek Precinct

Setting

The Wianamatta-South Creek Precinct consists of the valleys and flood plain of the northward-flowing system of creeks – Kemps Creek, South Creek and Badgerys Creek. The propensity for the creeks to flood was recognised during the first phases of European occupation. Access to the permanent water afforded by the main creeks determined to a significant extent the configuration of the earliest land grants. The creeks also formed boundaries between properties with the result that this precinct contained portions of more than fifty early land grants

Early land grants

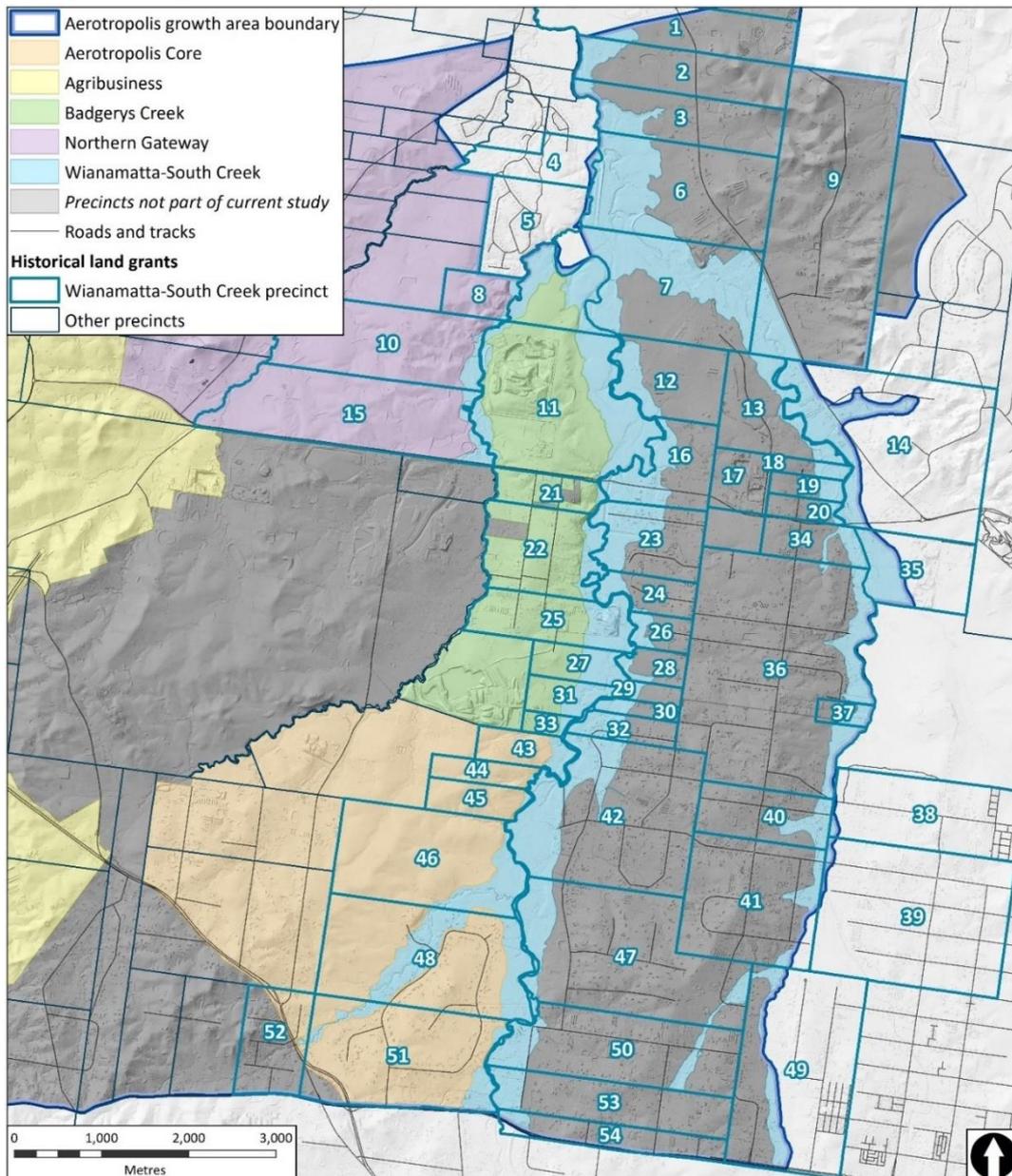


Figure 90. Land Grants: Wianamatta-South Creek Precinct

Table 28. Early land grants, Wianamatta-South Creek Precinct

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
1	James Scott	360	Melville	51	9/1/1821		
2	Ezekiel Wood	300	Melville	52	18/12/1805	<i>Kings Wood</i>	
3	Richard Fitzgerald	300	Melville	53	18/12/1805	<i>Restitution Farm</i>	
4	William Charker	125	Claremont	29	13/1/1818		
5	William Tindale	270	Claremont	30	5/4/1821		
6	Nicholas Bayly	550	Melville	54	1/1/1810	<i>Bayly Park</i>	Later <i>Fleurs</i>
7	Nicholas Bayly	680	Claremont	55	18/12/1805	<i>Kings Down</i>	Later <i>Fleurs</i>
8	Samuel Laycock	100	Claremont	59	1816		
9	Nicholas Bayly	1070	Melville	61	1/1/1810	<i>Macquarie Place</i>	
10	John Piper	400	Claremont	62	15/12/1830	<i>Blackford Farm</i>	
11	James Badgery	680	Claremont	31	8/1812	<i>Exeter Farm</i>	
12	George Chartres	200	Melville	56	11/9/1817	<i>Chartres Farm</i>	
13	Nicholas Bayly	200	Melville	65		Razeville	
14	Anthony Fenn Kemp	800	Melville	66	11/11/1808	<i>Mount Vernon</i>	Two separate grants 500 acres and 300 acres issued as one
15	William Johnston	500	Claremont	63	31/8/1819		
16	Charles Grey	200	Melville	57	11/9/1817		
17	Richard Driver	110	Melville	61	30/6/1823		
18	John Reynolds	40	Melville	68	30/6/1823		
19	Loughlin Monaghan	50	Melville	69	30/6/1823		
20	William Walsh	50	Melville	70	30/6/1823		
21	Edward Powell	100	Bringelly	32	1/1/1810		
22	Thomas Matcham Pitt	300	Bringelly	31	1/1/1810	<i>Nelson and Bronte Farm</i>	
23	William Wall	200	Cabramatta	55	1/1/1810	<i>Sumbray</i>	

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
24	Robert Turnbull	100	Cabramatta	54	25/8/1812		1823 Robert Turnbull resident on property [SG 21 Aug 1823 p5] later Badgery
25	William Wall	200	Bringelly	30	1/1/1810	Greys	
26	John Brackfield	50	Cabramatta	53	13/1/1818		12/11/1824 John Brackfield murdered on the property by his convict servants (five later hanged), 18/1/1825 property let by order of the Supreme Court
27	John Reeve	100	Bringelly	29	13/1/1818	Reeves Farm	
28	Patrick Purcell	60	Cabramatta	52	19/10/1831		Later Blackwell
29	John Butler	30	Cabramatta	53	14/9/1831		Later Blackwell
30	J Lynch	50	Cabramatta	54	14/9/1831		Later Mrs Marr
31	James Martin	80	Bringelly	28	25/8/1812	Martins Farm	
32	Patrick Purcell	60	Cabramatta	49	19/10/1831		Later Mrs Marr
33	Mary Bishop	30	Bringelly	27	25/8/1812	Bishops Farm	
34	Henry Marr	100	Cabramatta	58	30/6/1823	Cooloo	Later Richard Driver, then Sadler and Edwards
35	John Driver	200	Cabramatta	62	1/11/1809	Macquarie Farm	
36	Henry Marr	1100	Cabramatta	59	30/6/1823	Cooloo	later 'Amy Park' – subdivided as Devonshire Farms

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
37	Michael Grant	50	Cabramatta	60	30/6/1823		Later Richard Driver
38	John Gurner	400	Cabramatta	44	13/1/1818	<i>Ickleton</i>	
39	James K Williamson	800	Cabramatta	43	13/1/1818	<i>Dungarthell Plain</i>	Later J Terry
40	James K Williamson	200	Cabramatta	48	30/6/1823		Later Pendray
41	John Atkinson	500	Cabramatta	45	13/1/1818	<i>Atkinson Farm</i>	Later PP King <i>Belle Vue Estate</i>
42	Matthew James Whittaker	700	Cabramatta	47	11/9/1817	<i>Whittaker Farm</i>	Later Cox
43	Gustavus A Low	100	Bringelly	26	11/9/1817	<i>Low Brook</i>	Later PP King <i>Belle Vue Estate</i>
44	Matthew Hughes	65	Bringelly	25	8/10/1816		Later PP King <i>Belle Vue Estate</i>
45	William Hayes	100	Bringelly	24	12/3/1818	<i>Bally-hayes</i>	Later P King <i>Belle Vue Estate</i>
46	Penelope Lucas	500	Bringelly	23	26/11/1818		Later P King <i>Belle Vue Estate</i>
47	William Emmett	700	Cabramatta	46	13/1/1818	<i>Emmett's Farm</i>	Later P King <i>Belle Vue Estate</i>
48	Thomas Laycock	600	Bringelly	22	26/11/1818	<i>Cottage Vale</i>	
49	Urban Fidkin	700	Cabramatta	32	19/10/1831	<i>Stanfield Park</i>	Later Charles Wilford
50	Sophia Allen (Mrs John Tyre)	497	Cabramatta	31	25/8/1830	<i>Glen Allen</i>	Granted as marriage portion (married 10 April 1830 Liverpool) in lieu of 1280 acres previously selected. Later subdivided as Rossmore Farms

No	Grantee	Area	Parish	Portion	Date	Estate	Notes
51	Charles Reid	600	Bringelly	21	26/11/1818	<i>Cottage Grove</i>	
52	William Hutchinson	220	Bringelly	20	13/1/1818		
53	Robert Bell	320	Cabramatta	30	23/8/1839	<i>Bellfield</i>	Robert Bell 320 acres parish of Cabramatta, part of the vacant land at the south-west corner of the parish. Promised by Sir Ralph Darling, on 13 May 1830, and possession given on 20 September of the same year.
54	Township Reserve	120	Cabramatta	-	Before 1830		Reserve for Township of Cabramatta. Gazettal not located.

Identified heritage assets

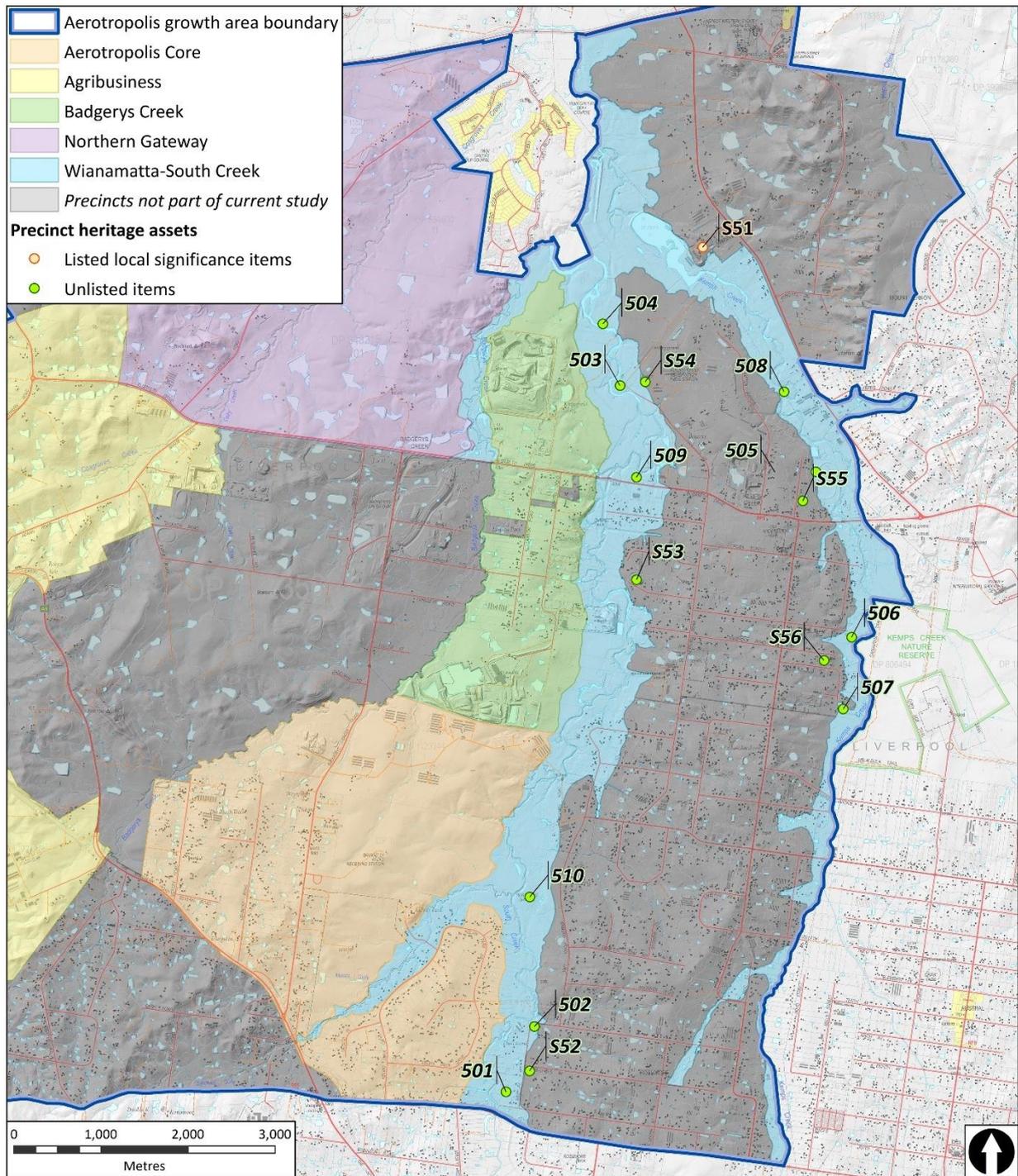


Figure 91. Heritage items sites within and adjacent to the Wianamatta-South Creek Precinct

Table 29. Assets within the Wianamatta-South Creek Precinct

Asset no.	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
501	Butter Factory (site)	25 May Avenue, Rossmore	Lot 24 DP2217				Local	Potential archaeological site	Site partly occupied by modern agricultural structures	Pre-1893 butter factory
502	Cottage	46 Wynyard Avenue, Rossmore	Lot 11 DP788314				Local	Potential archaeological site	Turfed yard attached to dwelling	Pre-1927 cottage
503	Fleurs Aerodrome	949A Mamre Road, Kemps Creek	Lot 2 DP88836				Local	Extant landscape feature	Operational grass airstrip	A parent airfield constructed in 1942 - three sections of the former airstrip present.
504	South Creek Bridge	885A Mamre Road, Kemps Creek	Lot 21 DP258414				Local	Extant structure	Remains of bridge timbers in creek	Bridge of unknown date – possibly associated with the operation of the Fleurs Estate.
505	Potential archaeological site Artefact Scatter, Salisbury Avenue	12-20 Salisbury Avenue, Kemps Creek	Lot 2 DP736951				Local	Potential archaeological site	A diffuse scatter of artefacts east of Salisbury Avenue.	Developmental history unknown

Asset no.	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
506	Building and tank site	175-185 Exeter Road, Kemps Creek	Lot 2622 DP811282				Local	Potential archaeological site	Site heavily compromised – tree growth and later agricultural activity	Pre-1917 structure immediately adjacent to creek
507	Hut and yards site	150 Floribunda Road, Kemps Creek, 154 Floribunda Road, Kemps Creek, 10 Grants Close, Kemps Creek	Lot 141 DP1070752, Lot 142 DP1070752, Lot 15 DP733714,				Local	Potential archaeological site	Site occupied by three suburban dwellings – any archaeological remains are likely to have been compromised	Michael Grant's, then Richard Driver
508	Bridge site	316 Clifton Avenue, Kemps Creek	Lot 6 DP812284				Local	Potential archaeological site	Site heavily timbered	Pre-1895 bridge site
509	'Spotted Dog' Inn site	1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek	Lots 1 and 3 DP255566 and Lot 21 DP601022				Local	Potential archaeological site	Site has been subject to intensive agricultural activity – archaeological remains are	'Spotted Dog' Inn, later 'Woodbine Cottage'. Constructed prior to 1839 and occupied by the Badgerys and Roberts families.

Asset no.	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
									possibly compromised	
510	Unidentified building site	40 Ramsay Road, Rossmore	Lot 1016 DP258344				Local	Potential archaeological site	Paddock with interspersed stands of timber	Pre-1927 unidentified building

Table 30. Assets adjacent to precinct

Asset no.	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
S51	'Bayly Park' complex	919-929 Mamre Road, Kemps Creek	Lot 35 DP258414	LEP	Penrith LEP	104	Local	Extant structures	Standing house and outbuildings – yard areas have been recently excavated to depth around the main dwelling	By 1814 Nicholas Bayly had constructed a house described 'as a noble mansion with gardens and cultivated grounds. The property was referred to as Bayly Park and later as Fleurs.
S52	Cottage site	8 May Avenue, Rossmore	Lot 1 DP531947				Local	Potential archaeological site	Turfed yard attached to dwelling	Pre-1927 cottage site
S53	Homestead site	11 Turnbull Avenue, Kemps Creek	Lot 7 DP739051				Local	Potential archaeological site	Site subject to significant disturbance and later building activity	Pre-1899 homestead.

Asset no.	Name	Address	Lot/DP	Register	Listing title	Listing no.	Significance	Site type	Physical description	Historical notes
S54	Homestead site	1468 Clifton Avenue, Kemps Creek	Lot 1 DP587135				Local	Potential archaeological site	Turfed yard attached to dwelling	Nineteenth century farmhouse and outbuildings. Residence demolished but some outbuildings may survive. Site was used as part of the operation of the Fleurs aerodrome during the Second World War.
S55	Cottage site	22-66 Salisbury Avenue, Kemps Creek	Lot 401 DP812923				Local	Potential archaeological site	Site has been subject to recent, intensive agricultural activity – archaeological remains are likely to have been compromised	Pre-1917 cottage site
S56	Unidentified building site	155 Tavistock Road, Kemps Creek	Lot 50 B DP2566				Local	Potential archaeological site	Bush block	Pre-1917 unidentified structure.
S57	'Cooloo' homestead	170 & 180 Cross Street, Kemps Creek	Lot 24 & Lot 25 DP29832				State	Potential archaeological site	Site now covered by agricultural buildings	'Cooloo; homestead, outbuildings and yards, post-1823. Henry Marr later Sadler then Edwards. Demolished before 1955.

9. Constraints and opportunities analysis

9.1 Aboriginal heritage

The assessment of Aboriginal heritage within the study area is an ongoing process that will require continuous consultation with the Aboriginal community. The desktop review and cultural values engagement have demonstrated that as the project progresses several things must occur: consultation must continue, portions of the study area must be conserved, and previously recorded heritage sites must be ground-truthed.

The following preliminary high-level recommendations are made in relation to the preliminary design impacts of the study area:

- The design should be guided by continued consultation with the Aboriginal community in conjunction with the sensitivity modelling shown in Figure 11 and explained as follows:
 - Development in areas of High sensitivity should be avoided where possible. These locations would be best kept as open space with passive uses in order to minimise impacts. If development impacts are unavoidable, further investigations (e.g., ACHAR) should be undertaken.
 - Development in areas of Moderate sensitivity should seek to minimise impacts where possible. If development impacts are unavoidable, further investigations (e.g., ACHAR) should be undertaken.
 - Development should be focused in areas of Low and Very Low sensitivity. Unless there are known Aboriginal sites or places within a proposed development area in these areas, development can generally commence with no further work. However, all development proposals should be assessed on a case-by-case basis in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process, in order to determine if further investigation is warranted.
- Development in any areas identified by Aboriginal stakeholders as places of identified cultural values should be avoided where possible. If development impacts in these areas are unavoidable, further investigations (e.g., ACHAR) should be undertaken.
- The consultation carried out to date with the Aboriginal community has already shown that there is a strong desire within the community for the conservation of a large portion of the study area in the form of a regional park. Creek corridor green space and passive open space should also be heavily emphasised in strategic planning. A concern reiterated throughout the workshop was that Aboriginal sites, cultural connections and conflict histories were going to be lost, and that one possible counter to this loss could take place through the conservation of a large portion (or portions) of the study area.
- With regard to registered Aboriginal heritage sites, all modified tree and grinding groove sites should be protected and development impacts on these sites should be avoided.

- Unusual and well-preserved landforms should be protected, where possible. Examples of such landforms include exposed sandstone outcrops, areas of remnant old growth vegetation and well-preserved creek corridors.
- There is a significant amount of vegetation in the design area that appears to also be present in aerial photographs from 1947. Investigations in these vegetation areas should be undertaken to determine if other modified or scarred trees are present.
- There is a need to investigate the results of archaeological assessments undertaken across the Badgerys Creek airport site, as these investigations may shed important light on site and colonisation patterns in the region.

Specific Aboriginal heritage constraints

Within the five precincts of the current study there are three registered Aboriginal sites that will create specific constraints on the proposed design works, and one that may introduce specific constraints on the proposed design works, depending on the results of necessary further investigation. These are listed in the following table. Aboriginal community members have already flagged these sites as requiring in situ protection and conservation.

Site ID	Name	Precinct	Site type	Lot/DP

All four of these sites were recorded prior to the availability of GPS positioning, and the coordinates for each site are based on hardcopy topographic maps. As a result, the accuracy of each site’s location as presented in the AHIMS data should be considered indicative only.

The following section includes a brief description of each site, a discussion of any potential complications in how the site’s location is current represented, and a description of constraints and opportunities for each site with regard to the proposed precinct designs.

██████████ (Grinding groove)

██████████ is a grinding groove site recorded in ██████████

██████████ The following is the original description of the site from the site card:

[REDACTED]

No photo is present in the site card, and the copy of the original report held by Heritage NSW no longer contains this information.

[REDACTED]

Opportunities and constraints

- The site [REDACTED] will be able to be conserved in situ as [REDACTED]
- The site presents a useful opportunity for public outreach and education.
- [REDACTED] care will need to be taken to protect the site from wilful or accidental damage by people [REDACTED]

[REDACTED] (Modified tree [carved or scarred])

[REDACTED] was a scarred tree [REDACTED]
[REDACTED]
[REDACTED] No photo is present in the site card.

Communications undertaken with DPIE in mid-October 2020 have revealed that this scarred tree was destroyed without an AHIP at some point between 2007 and 2009.

Opportunities and constraints

- The site [REDACTED] would have been in a central location for public outreach and education opportunities, had it not been destroyed.
- The site may present a good opportunity for public education opportunities regarding the need for protecting rare and significant Aboriginal heritage sites, particularly as land clearance and development destroy additional sites.
- As the site no longer exists, it presents no constraints to development.

[REDACTED] (Modified tree [carved or scarred])

[REDACTED] is a scarred tree [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED] It appears likely that this scarred tree is still alive and in relatively good health.

Opportunities and constraints:

- [REDACTED]
[REDACTED]
- The site presents clear constraints on development and design work, and any proposed developments at the tree must provide an adequate buffer around the tree to ensure its survival. In addition, work must be undertaken to determine a way to manage it and protect it from wilful or accidental damage.

[REDACTED] (Modified tree [carved or scarred])

[REDACTED] is a scarred tree [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] field investigation will be required to determine precisely which tree is the scarred tree.

Opportunities and constraints

- [REDACTED] if the tree is still alive, it would be in a central location for public outreach and education opportunities.
- If the tree is still alive, the site will present clear constraints on development and design work, and any proposed developments at the tree would need to provide an adequate buffer around the tree to ensure its survival, and work must be undertaken to determine a way to manage it and protect it from wilful or accidental damage.
- If the tree has died, the site would present only short-term constraints on development, until appropriate management options could be determined with the Aboriginal community. It is possible that the best option would be to remove the tree to another location to preserve the scarring.

9.2 Non-Aboriginal heritage

9.2.1 Historical archaeology

Previous archaeological assessments

The region has been subject to a number of non-Aboriginal heritage studies that include historical archaeology as part of the assessment process. These have been associated primarily with major developments and upgrades of main roads.

In 2011 Austral Archaeology undertook an assessment of the Bringelly Road upgrade and identified a number of potential sites within the upgrade corridor and immediately adjacent to it (Austral Archaeology *MR 647 Bringelly Road Upgrade, Camden Valley Way, Leppington to The Northern Road, Bringelly. Heritage Assessment and Statement of Heritage Impact*. July 2011).

In 2017 EMM assessed the historical archaeological potential of The Northern Road upgrade that included the identification of the 'Thistle Inn' site at the southern end of Luddenham village (EMM *The Northern Road Upgrade. Item 10 - Lawson's Thistle Inn and store archaeological site, Archaeological assessment & research design*. Prepared for Roads and Maritime Services, 16 October 2017).

In 2019 RMS prepared an EIS for the preferred M12 route. The historical archaeological survey identified a number of sites on the former Fleurs Estate and on the McMaster Field Station (RMS. M12 Motorway Environmental Impact Statement. Volume 7 Appendix J Non-Aboriginal Heritage Assessment Report).

One of the most extensive studies that included the assessment of potential historical archaeological sites associated with the Western Sydney Airport development. The first of these was a study undertaken in 1997 by Godden Mackay (Godden Mackay *Technical Paper 12 - Non-Aboriginal Cultural Heritage: Proposal for a Second Sydney Airport at Badgerys Creek or Holsworthy Military Area*. Consultancy report to PPK Environment & Infrastructure Pty Ltd). This was supplemented by an EIS prepared in 2016 by the Commonwealth (Commonwealth Department of Infrastructure and Planning (CDIP), *Western Sydney Airport Environmental Impact Statement*, September 2016). The assessment included the airport precinct with a wide buffer that included portions of the initial precincts that form part of the current study.

Archaeological phasing

Based on the historical research undertaken to date, the following broad historical phases of site development have been identified:

Phase 1: Early European Settlement: 1805–1850

The five precincts incorporate several significant early pastoral estates granted between 1805 and 1818. These early pastoral estates consisted primarily of grazing lands with varying degrees of development. For many of these larger grants, particularly those with absentee owners, the extent of building consisted of huts for stockkeepers. However, there were a small number of homesteads constructed during this period that had associated outbuildings and structures relating to agriculture and industry. During the latter part of this phase several the larger estates

were split into small tenancies. Each tenancy is likely to have had an associated farmhouse and outbuildings.

The archaeological potential of many of these early sites has been impacted by later suburban development and major infrastructure works such as motorway construction. Generally, it is likely that heritage items that are located on large pastoral estates that are still extant will have a higher historical archaeological potential.

The potential historical archaeological remains from this phase are considered to have some potential to reveal evidence regarding early land-use practices, including landscape modification and the development of internal infrastructure, such as roads and bridges. It is likely that deeper subsurface features (for example, cesspits and wells) are likely to survive. The potential for wall footings, fencing, artefact scatters and other structural elements relating to agriculture to survive is dependent on impacts associated with later phases of development.

Phase 2: Nineteenth-Century Subdivision 1850–1900

Throughout the second half of the nineteenth century there were attempts to create formal subdivisions within the larger estates. This resulted in the development of the village of Luddenham and the creation of the present street networks in Badgerys Creek, Bringelly and Kemps Creek.

There is likely to be some historical archaeological potential along these subdivisions including infrastructure associated with urban housing in Luddenham and small-scale farming and orcharding in Badgerys Creek and Bringelly. The material evidence would likely include remnant fencing, artefact scatters and other structural elements relating to agriculture or industry.

Phase 3: Early Twentieth-Century development 1900–1945

The early twentieth century residential development within the precincts was modest in scale and had little impact on the landscape. Any archaeological evidence associated with this phase of development is likely to have limited research potential and is replicated across the Sydney Basin. The most significant developments to take place in the region during this period were associated with the McGarvie-Smith, McMaster Field Station and Fleurs Aerodrome. There are certainly physical elements associated all three sites and a more detailed analysis is required to determine their significance. In all three instances most of the heritage values attached to the sites are landscape elements.

Phase 4: Late Twentieth-century development 1945–2000

The region underwent few changes prior to 1950 and retained much of its rural character that had evolved during the previous phase. The most significant developments were those associated with the development of the Fleurs Radio Telescope, the OTC receiving station and the RAAF Bringelly receiving station. The determination of significance of any surviving elements requires specialist input.

Historical Archaeological potential

The table below lists the potential archaeological remains from all phases of historical development with summarised formation process, which may have affected the survival of those

relics. Their likelihood of survival is graded in accordance with the following classification: Nil, Low, Moderate, High and Extant.

Table 31. Potential archaeological sites or activities

Phase	Site feature or site activities	Potential remains	Level [or likelihood] of survival
1: Early European Settlement: 1810 – 1850	Land clearing	Removal of trees, burnt soil	Dependent on later development on or around the area: Low to nil (High Density residential areas)
	Development of farmsteads	Structure remains (brick, stone, timber) Cesspits, wall footings, fencing, artefact scatters and other structural elements relating to agriculture, industry	Moderate-High (Known Archaeological Items)
2: Nineteenth-Century Subdivision 1850-1900	Development of villages and small-scale farming properties	Structure remains (brick, stone, timber) Cesspits, wall footings, fencing, artefact scatters and other structural elements relating to agriculture	Low-Moderate
3: Early Twentieth-Century development 1900 - 1945	Operation of surviving large estates and development of Fleurs, McGarvie Smith, McMaster Field Station.	Structural elements including infrastructure associated with Fleurs aerodrome and landscape elements associated with experimental developments at the McMaster Field Station	Moderate-High
4: Late Twentieth-century development 1945-2000	Operation of OTC Bringelly receiving station, operation of RAAF Bringelly and operation of the Fleurs Radio Telescope	Sub-surface remains associated with operational infrastructure as well as former structures	Moderate – High
5: Post-2000 development	Residential and infrastructure developments	n/a	–n/a

The precincts encompass sites that have the potential to contain historical archaeological remains associated with the nineteenth century and early twentieth century development of the district. Broadly, the level of survival of these items will vary across the sites, and is dependent

on the type of site, the methods of demolition, later phases of construction and the impact of service installation in the twentieth and twenty-first centuries. Four properties identified by this study have the potential to contain State significant archaeological remains (McMaster Field Station [Asset 104], McGarvie Smith Farm [Asset 105], Fleurs Radio Telescope Site [Asset 310] and the Kelvin Park Group [Asset 401]). Any impacts in these areas will require specific management due to specific legislative controls. A detailed assessment would also be required before any proposed development can be considered. Generally, areas within the footprint of modern structures and development have less potential for archaeological material than those outside the footprint. Deeper subsurface features, such as cesspits, would have a greater potential for survival throughout the project boundary.

Five properties (mainly large rural or former government sites) have the potential to contain multiple archaeological sites. These potential sites are likely to be dispersed across the large land units and will require further investigation to prepare appropriate curtilages for management for each discrete area.

The existing road grids associated with the mid to late nineteenth century subdivisions (Luddenham village, Exeter Farms subdivision, Devonshire subdivision and the Hutchinson Subdivision) should be maintained as much as possible, as this will reduce impacts on potential archaeological sites.

Constraints arising from World heritage listing status

The study area contains no sites with World Heritage listing status. Therefore, any World Heritage constraints to the WSAP are nil. Some areas within the initial precincts have views towards the World Heritage listed Greater Blue Mountains Area to the west.

Constraints arising from National heritage listing status

The study area contains no items registered on the National Heritage List. Therefore, any NHL constraints to the WSAP are nil.

Constraints arising from Commonwealth heritage listing status

The study area contains no sites with Commonwealth Heritage listing status. Therefore, any constraints to the WSAP are nil.

Constraints arising from State heritage listing status

The study area includes one item listed on the SHR:

Site ID	Name	Precinct	Listing	Address	Lot/DP
401	Kelvin Park Group	Aerotropolis Core	Liverpool LEP8	30 The Retreat, Bringelly	Lots 2711–2714 DP 1128906

Any ground disturbance is subject to the provisions of the Heritage Act. Any excavation works should be preceded by an assessment of impacts that may require permitting or other forms of management depending on the scale and type of works.



State Heritage Register
Kelvin
30 The Retreat, Bringelly
SHR 00046. Plan 216

Gazettal Date: 02 April 1999

0 50 100 150 200
Metres

Scale: 1:3,500

Datum/Projection: GCS GDA 1994



Legend

- SHR Curtilage
- Land Parcels
- Railways
- Roads
- LGAs
- Suburbs

Figure 92. State Heritage Register curtilage map for Kelvin.

Source: NSW State Heritage Inventory database.

Constraints arising from local heritage listing status

The study area includes one item listed for its archaeological significance at a local level:

Site ID	Name	Precinct	Listing	Address	Lot/DP
214	Lawson's Thistle Inn site	Agribusiness	Liverpool LEP53	2215 The Northern Road, Luddenham	Lot 3 DP1234822

Any ground disturbance is subject to the provisions of the Heritage Act. Any excavation works should be preceded by an assessment of impacts that may require permitting or other forms of management depending on the scale and type of works.

The following sites are listed at a local level for values other than those associated with their archaeological potential. These sites have been identified in this study as having the potential to contain archaeological remains that may be subject to the relics' provisions of the Heritage Act. Any excavation works should be preceded by an assessment of impacts to determine if permitting or other forms of management are required.

Site ID	Name	Precinct	Listing	Address	Lot/DP
105	McGarvie Smith Farm	Northern Gateway	Penrith LEP 857	1793-1951 Elizabeth Drive, Badgerys Creek	Lot 62 DP 1087838 Lot 63 DP1087838
310	Fleurs Radio Telescope Site	Badgerys Creek Precinct	Penrith LEP 832	885A Mamre Road, Kemps Creek	Lot 21 DP258414

Constraints arising from identification of sites by this study

This study has identified the following locations that have the potential to contain archaeological remains that may subject to the relics' provisions of the Heritage Act. Any excavation works should be preceded by an assessment of impacts to determine if permitting or other forms of management are required.

Table 32. Sites with archaeological potential

Site ID	Name	Precinct	Listing	Address	Lot/DP
101	Cottage/farm buildings?	Northern Gateway	-	480-544-Luddenham Road, Luddenham	Lot 7 DP255578
102	'Karingal' (formerly 'Bangaroo'?)	Northern Gateway	-	752-810 Luddenham Road, Luddenham	Lot 1 DP235124
104	McMaster Field Station/McMaster Farm	Northern Gateway	-	1853-2109 Elizabeth Drive, Badgerys Creek	Lot 101 DP848215
202	Former Brick Cottage, 406 Park Road	Agribusiness	-	406 Park Road, Luddenham	Lot 2 Sec A DP1452
210	Cottage site	Agribusiness	-	2859-2901 The Northern Road, Luddenham	Lot 1 DP1169433
211	Harris Farm site	Agribusiness	-	2292 The Northern Road, Luddenham	Lot 2 DP1240511
212	Campbell cottage site	Agribusiness	-	2174 The Northern Road, Luddenham	Lot 19 DP575503
213	Former church and school site	Agribusiness	-	2130 The Northern Road, Luddenham	Lot 25 DP700302
215	Forge site	Agribusiness	-	2130The Northern Road, Luddenham	Lot 25 DP700302
216	Cottage and outbuilding site	Agribusiness	-	2150 The Northern Road, Luddenham	Lot 22 DP1036912 (and road reserve)
217	Barn site	Agribusiness	-	2230 The Northern Road, Luddenham	Lot 31 DP563121
220	Hughes Farm	Agribusiness	-	140 Adams Road, Luddenham	Lot 3 DP1240511
221	Allen Farm	Agribusiness	-	145 Adams Road, Luddenham	Lot 5 DP250030
222	Roots Farm	Agribusiness	-	180 Adams Road, Luddenham	Lot 30 DP1251450
223	Howlett Farm site	Agribusiness	-	230 Adams Road, Luddenham	Lot 106 DP846962

Site ID	Name	Precinct	Listing	Address	Lot/DP
224	Magee's farm	Agribusiness	-	Adams Road Luddenham	Portion of road reserve intersection of Adams Road and Anton Road, Luddenham
225	Former Luddenham Post Office	Agribusiness	-	3077 The Northern Road, Luddenham	Lot 2 DP510238
226	Adam's farm	Agribusiness	-	2470 Elizabeth Drive, Luddenham	Lot 281 DP571171
301	Exeter House	Badgerys Creek Precinct	-	1669-1723 Elizabeth Drive, Badgerys Creek	Lot 5 DP860456
302	Stainton homestead	Badgerys Creek Precinct	-	75 Lawson Road, Badgerys Creek	Lot 5 DP3050
303	Braithwaite homestead	Badgerys Creek Precinct	-	150 Martin Road, Badgerys Creek	Lot 49 DP3050
306	Unidentified building site	Badgerys Creek Precinct	-	140 Lawson Road, Badgerys Creek	Lot 29 DP3050
307	Unidentified building site	Badgerys Creek Precinct	-	230 Martin Road, Badgerys Creek	Lot A DP406215
308	Farm complex	Badgerys Creek Precinct	-	225 Martin Road, Badgerys Creek	Lot 1 DP1035249
309	Unidentified building site	Badgerys Creek Precinct	-	1910 Elizabeth Drive, Badgerys Creek	Lot 2 DP553886
311	Exeter Farms Archaeological Site (Artefact Scatter and Trees)	Badgerys Creek Precinct	-	885A Mamre Road, Kemps Creek	Lot 1 DP74574
403	Bringelly Radio Receiving Station Complex (also known as Former OTC site Group)	Aerotropolis Core	-	225-245 Badgerys Creek Road, Bringelly	Lot 1 DP 109666
404	RAAF Bringelly	Aerotropolis Core	-	215 Badgerys Creek Road, Bringelly	Lot 10 DP 1235662

Site ID	Name	Precinct	Listing	Address	Lot/DP
407	Former slab cottage	Aerotropolis Core	-	95 Mersey Road, Bringelly	Lot 11 Sec 2 DP2650
408	Farmstead ('ruin' in 1955]	Aerotropolis Core	-	85 & 95 Badgerys Creek Road, Bringelly,	Lot 4 & Lot 3 DP244113
501	Butter Factory (site)	Wianamatta-South Creek	-	25 May Avenue, Rossmore	Lot 24 DP2217
502	Cottage	Wianamatta-South Creek	-	46 Wynyard Avenue, Rossmore	Lot 11 DP788314
503	Fleurs Aerodrome	Wianamatta-South Creek	-	949A Mamre Road, Kemps Creek	Lot 2 DP88836
505	Potential archaeological site Artefact Scatter, Salisbury Avenue	Wianamatta-South Creek	-	12-20 Salisbury Avenue, Kemps Creek	Lot 2 DP736951
506	Building and tank site	Wianamatta-South Creek	-	175-185 Exeter Road, Kemps Creek	Lot 2622 DP811282
507	Hut and yards site	Wianamatta-South Creek	-	150 Floribunda Road, Kemps Creek, 154 Floribunda Road, Kemps Creek, 10 Grants Close, Kemps Creek	Lot 141 DP1070752, Lot 142 DP1070752, Lot 15 DP733714,
508	Bridge site	Wianamatta-South Creek	-	316 Clifton Avenue, Kemps Creek	Lot 6 DP812284
509	'Spotted Dog' Inn site	Wianamatta-South Creek	-	1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek	Lots 1 and 3 DP255566 and Lot 21 DP601022
510	Unidentified building site	Wianamatta-South Creek	-	40 Ramsay Road, Rossmore	Lot 1016 DP258344

Part 7.2.5 Unlocated (potential) Sites identified ten locations for which documentary evidence indicates activities undertaken in these locations during the early nineteenth century may have the potential to leave archaeological evidence. These locations cover multiple lots but any potential archaeological remains may be restricted to discrete locations within these lots. These locations should be subject to detailed assessment to determine the precise locations of potential remains, to determine if these locations are within the precinct boundaries and to determine if these potential remains have been compromised by later developments. Appropriate management measures can then be identified.

9.2.2 Built heritage

Constraints arising from World heritage listing status

The study area contains no sites with World Heritage listing status. Therefore, any World Heritage constraints to the WSAP are nil.

Constraints arising from National heritage listing status

The study area contains no items registered on the National Heritage List. The McGarvie-Smith Farm site has been nominated for the National Heritage List a number of times, albeit unsuccessfully, and while it is currently ineligible for consideration by the Australian Heritage Council, there is no limit to the number of times the site may be re-nominated for National heritage listing. Nevertheless, presently the constraints to the WSAP with regards to items on the National Heritage List are nil.

Constraints arising from Commonwealth heritage listing status

The study area contains no sites with Commonwealth Heritage listing status. Therefore, any constraints to the WSAP are nil.

Constraints arising from State heritage listing status

The study area includes one item listed on the SHR.

Kelvin, item #0046 is a colonial homestead group of structures with historical, associative, and representative values as an early Georgian farmstead. The existing landscaping around the house, and its setting on a knoll above a creek, is a significant part of its character. The site is also noted to have a high archaeological potential.

This item is protected under the provisions of the Heritage Act, which requires any change that affects the item's significance to be subject to assessment and approval by the NSW Heritage Council. Some minor impacts that are considered maintenance and basic repairs might qualify as exempt works, however notification and concurrence that the work is exempt will still be required from Heritage NSW. Any major changes such as structural alterations and extensions, demolition or relocation would require approval for major works. Assessments must consider the extent of impact that the work will have on the significance of the place and what mitigations should be considered to reduce those impacts where possible. Mitigations could include archival recording, salvage, adaptive reuse, interpretation, or commitments to conservation planning to ensure significance is maintained.

Constraints arising from local heritage listing status

Most heritage listed items within the study area are items of local heritage listing status, meaning that they are included in local government Environmental Planning Instruments (EPIs). The local heritage items included in the study area are listed on either the Penrith LEP 2010, or the Liverpool LEP 2008. Recently, these items have also been included and mapped in the Aerotropolis SEPP. These items have been identified as being of significance to the local community.

Major works and developments to items on an LEP will need to be undertaken in accordance with the requirements of the EP&A Act with regards to environmental assessment and consent.

Like the management of items on the SHR, consideration towards how impacts may be mitigated, such as through recording, salvage, and commitments to conservation planning would be favourable.

The collection of local heritage items is quite varied in the types of items and their value as locally significant items. What does become apparent are that the items listed relate to particular themes that are prevalent throughout the area. Using the NSW Historical Themes framework, local heritage relates to:

Table 33. List of National Themes

National theme	NSW theme	Local theme	Example site(s)
Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	<ul style="list-style-type: none"> ▪ Kelvin Park Group
	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use	<ul style="list-style-type: none"> ▪ McGarvie Smith farm
	Science	Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	<ul style="list-style-type: none"> ▪ McMaster Field Station ▪ Fleurs Radio Telescope site
	Technology	Activities and processes associated with the knowledge or use of mechanical arts and applied sciences	<ul style="list-style-type: none"> ▪ Fleurs Radio Telescope site ▪ Former OTC Site
	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	<ul style="list-style-type: none"> ▪ Luddenham Road alignment ▪ Fleurs aerodrome
Building settlements, towns and cities	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	<ul style="list-style-type: none"> ▪ Various villages throughout the study area
	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	<ul style="list-style-type: none"> ▪ Original subdivisions of land
Educating	Educating	Activities associated with teaching and learning by children and adults, formally and informally.	<ul style="list-style-type: none"> ▪ Luddenham Public School

National theme	NSW theme	Local theme	Example site(s)
Governing	Defence	Activities associated with defending places from hostile takeover and occupation	<ul style="list-style-type: none"> Fleurs Aerodrome
Developing Australia's cultural life	Domestic life	Activities associated with creating, maintaining, living in and working around houses and institutions	<ul style="list-style-type: none"> Kelvin Park
	Religion	Activities associated with particular systems of faith and worship	<ul style="list-style-type: none"> Luddenham Uniting Church St James Anglican Church
	Social Institutions	Activities and organisational arrangements for the provision of social activities	<ul style="list-style-type: none"> Luddenham Progress Hall
Marking the phases of life	Birth and death	Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead.	<ul style="list-style-type: none"> Luddenham Uniting Church cemetery

Based on the above, several heritage-listed sites represent the theme of the developing village or rural community, and that agriculture and farming is an important part of the social identity in this area. The local themes also demonstrate that applied sciences, technology and research have also made a physical imprint on the cultural landscape of the area.

These themes are formative in understanding some of the local and social significant values of the area. With that in mind, consideration of these themes in the long-term planning outcomes of the Aerotropolis precincts will ensure that these values are maintained and understood for future audiences.

Constraints arising from potential heritage items

Several potential heritage items have been identified through our desktop analysis of previous assessments. Many of these sites relate to the early twentieth century development of the area and may be represented by both extant (built) structures, or archaeological potential. Further assessment of these individual sites needs to be undertaken to determine their intactness and significance, the risk being that historically significant material is irreversibly impacted or lost prior to proper analysis.

Site specific constraints

We identify several special sites and areas where on account of their significance should warrant specific consideration in terms of what the Precinct Plans should work to accommodate.

The Fleurs Radio Telescope Site

The Fleurs Radio Telescope Site is a local heritage item on Schedule 5 of the Penrith LEP. The Fleurs Radio telescope site is a highly significant cultural landscape for its role in the development and innovation of radio astronomy in Australia. The site was acquired by the Commonwealth Scientific and Industry Research Organisation (CSIRO) in 1954 and became the leading field station of the Radiophysics division which utilised three innovation cross-type radio telescopes; the Mills Cross, Shain Cross and the Chris Cross.

A field survey and heritage assessment undertaken in 2019 identified that significant elements relating to the Fleurs Radio Telescope field station functions are extant, and consist of two parabolic antennae, signal boxes, sheds that contain remnant equipment or services, foundations and isolated sites of services. There are several substantial buildings still standing although in poor condition and foundations of several more. (CRM, 2018 p.13). Also evident in the landscape are more esoteric elements that are not immediately visible but is a significant feature of the Radio Telescope function, the cross alignments. The archaeological resource for Fleurs Radio Telescope Site has the potential to contain extensive sub-surface features such as cables, services and hydraulics that enabled the above ground operation of the site.

The report notes that the extant fabric that does remain on site has been greatly reduced and its ability to demonstrate aspects of the cultural significance of the place has been severely compromised. It also notes that due to the fragmented nature of the resource, the sub-surface features are unlikely to yield information that will contribute to the understanding of the Fleurs Field Station that is not already available. Furthermore, these material remains are works associated with demolished buildings which provide evidence of prior occupation, but do not qualify as 'relics' as defined by the Act.

Opportunities and Constraints:

- The site is suggested as being of National level of significance due to the role it played amongst other similar sites in the development of radio-physics, theory and technology. With this potential level of significance being highlighted, there is the possibility that the site maybe nominated/recommended for consideration for State or National Heritage listing.
- There are extant buildings, structures and remnant features that relate to the former use of this site and should be considered part of its significance.
- The Aerotropolis project should consider how the Precinct Plans can highlight or feature the significant elements of this site.
- Remnant elements can be salvaged and integrated into adaptive reuse and landscape and urban design interpretation opportunities.
- Wider interpretation opportunities can include historical and educational resources.

McGarvie-Smith Farm (Item 857)

The McGarvie-Smith Farm is a local heritage item listed on Schedule 5 of the Penrith LEP for its use as a veterinary research centre for Sydney University since 1936, that contains buildings that demonstrate representative qualities of an Inter-War research facility.

The 1930s buildings are representative examples of Inter-War design applied to rural research buildings. The office building uses good proportions in a symmetrical design composed of primary and secondary roof forms and regular door and window openings. The scale, proportions and regular pattern of openings is continued in the less formal student accommodation building. These buildings are the only known example of rural research institution buildings in the Penrith City Council area.

Opportunities and Constraints:

- The area, which has been previously impacted by the widening of Elizabeth Drive, retains its rural aesthetic and landscape qualities through the revegetation of the area. This includes the large open spaces with rolling hills. Given its former use as an agricultural research facility, this landscape contributes to that function.
- There are extant buildings, structures and remnant features that relate to the former use of this site and should be considered part of its significance.
- The Aerotropolis project should consider how the Precinct Plans can highlight or feature the significant elements of this site.
- Remnant elements can be salvaged and integrated into adaptive reuse and landscape and urban design interpretation opportunities.
- Wider interpretation opportunities can include historical and educational resources.

McMaster Field Station/McMaster Farm (unlisted)

The McMaster Field Station was originally part of Exeter Estate, the portion fronting South Creek being purchased by the Commonwealth Government as land set aside for pastoral and agricultural research undertaken by CSIRO from the mid-1930s. This experimental farm worked collaboratively with McGarvie-Smith and cultivated fields, built dams, livestock yards, dwellings, farm buildings and other infrastructure such as sheep dips. As such the land was culturally modified for work specific to this agricultural research. For some time, parts of this item were also used in radio-astronomy research.

Opportunities and Constraints:

- The site currently has no statutory requirements with regards to heritage approval and management.
- However, its relationship to the adjacent research facilities indicates that it should be considered contributory to the wider significance of research facilities in the area.
- The site retains its rural aesthetic and landscape qualities through the revegetation of the area. This includes the large open spaces with rolling hills. Given its former use as an agricultural research facility, this landscape contributes to that function.
- A heritage assessment of the site will ascertain the site's significance as an individual place, and within its wider context. The heritage assessment will be able to establish gradings of significance, which will assist in determining the correct conservation management recommendations for the place and individual elements, if necessary.

Luddenham Road Alignment (item 843)

The Luddenham Road alignment is a local listed heritage item on Schedule 5 of the Penrith LEP. The significance of the road is derived from the alignment, which was a historically significant link for pastoral activities in the nineteenth century between Bringelly and St Marys. The roadway has been upgraded over time and now comprises of an asphalted two-lane road.

Opportunities and Constraints:

- While there are a number of roads throughout the area that are significant as historic transport viaducts (such as The Northern Road, Mamre Road, Mulgoa Road, Elizabeth Drive), perhaps

because of its heritage listing, the original alignment of Luddenham Road has been substantially maintained. Other major roads such as The Northern Road, etc have undergone major upgrades and realignments.

- Potentially, this means that the archaeological resource relating to this item is more intact.
- The Aerotropolis project should consider how the Precinct Plans can maintain this item and highlight its significance.

Luddenham Village

There are several listed (and potential heritage significant) elements that form part of the area of Luddenham village, despite most of the village consisting of typical late twentieth century residences. The landscape and setting of the village itself are noteworthy, being located on an elevated hill overlooking large areas of rural landscape representative of the Cumberland Plain. Specific heritage items of note are as follows:

Showground (item 679)

The Luddenham showground is a traditional rural showground reserve listed as a local heritage item on Schedule 5 of the Penrith LEP. The item is listed for landscape qualities that contains several mature native and exotic trees within its curtilage and along the Park Road boundary. It still contains buildings and structures relating to its agricultural functions, such as sheds and stock runs.

St James Anglican Church and Cemetery (Item 122)

The St James Anglican Church is of local significance as a fine example of a rural church constructed in the mid-19th century constructed by the local gentry to service tenant farmers of the area. It is a prominent feature of the village landscape and of the wider landscape, sitting at the top of the rise on The Northern Road. It demonstrates the pattern of village settlement as an important focal point for the community. The site includes the main church building constructed of sandstone, and a cemetery reserve adjacent.

Luddenham Uniting Church and Cemetery (Item 120)

The Luddenham Uniting Church is of local significance as a church built for Primitive Methodists in the area, built in 1886. It is a prominent feature of the village landscape and of the wider landscape, sitting at the top of the rise on The Northern Road adjacent to the St James Anglican Church. It demonstrates the pattern of village settlement as an important focal point for the community. The site includes the main church building constructed of rendered brick, and a cemetery reserve adjacent.

Luddenham Progress Hall (Item 119)

The Luddenham Progress Association Hall is of local significance as a unique example of an extant former Protestant Hall in the area, and demonstrates the development of a village at Luddenham in the late nineteenth century and the commencement of the provision of community services. The site includes a modest brick hall with gabled roof was completed in 1886 as the Protestant Hall. The external walls are cement rendered and lined as fine ashlar stone masonry.

Luddenham Public School (Item 52)

The Luddenham Public School classroom is of local significance as a representative example of pre-war rural school architecture. The two-room weatherboard building is still in use as a school building.

Late-19th to Early 20th century residences

There are a number of cottages that are good examples of late-Victorian and federation rural residential architecture, providing an insight into the evolution of residential development in Luddenham following the release of freehold land in the 1880s. The scale, material and style of these residences contribute to the typical rural village aesthetic that is one of the primary characteristics of Luddenham defining village setting.

Opportunities and Constraints:

- The village quality and character of Luddenham are an important part of its historical, social and aesthetic significance. Opportunities for development should try to maintain or highlight this character where possible.
- Opportunities to increase activation in this area should consider whether it will allow for continued growth of the village or change the character of the place that is not reflective of its significance as a historic pastoral village.
- Controls for Luddenham Village must consider how it can allow/accommodate for viable development and commercial activities that do not feel limited in their own opportunities for growth.
- Given the extensive changes that are proposed in the immediate area of Luddenham Village, development controls specific to the village should be prepared so that the village itself, in its character and growth, is specifically considered and distinct from the development of the wider Agribusiness Precinct.

Lawson's Inn Site

The site of Lawson's Inn at Luddenham demonstrates the history of the early settlement of the area. The Inn formed the nucleus of the development of Luddenham which was laid out adjacent to the site in 1864. The site's location beside a major road is indicative of the importance of the early transport networks in facilitating settlement and development and is representative of early Inn and Hotel sites throughout the Sydney region. There is the potential to gain more information on the site from further archaeological and documentary research.

Opportunities and Constraints:

- Adequate research and assessment need to be undertaken on this site to determine the extent and significance of the archaeological resource, and the appropriate conservation recommendations.
- The development and statutory controls must consider and support the recommendations of the archaeological assessment to ensure the protection of relics.

Exeter Farm (unlisted)

Exeter Farm was the property and residence of James Badgery, who was granted 840 acres of land along South Creek (now Badgerys Creek). He called his property Exeter Farm after his hometown in England. James continued to expand his holdings, buying up other properties on what is now the southern side of Elizabeth Drive. These properties were subdivided in the 1880s as the Exeter Farms subdivision. Badgery built a homestead on this farm which he did occupy with this family. Recent aerial imagery shows that the homestead structure was extant until the late 2000's, at which point the structure was demolished completely.

The site was also the location of a small soldier's settlement.

- Development and statutory controls must consider the significant archaeological potential at this site.
- Historic landscape elements such as intact rows of trees and fences that represent how the land has been used in the past are intact. Development controls should consider how these features can be retained and highlighted in any future urban landscape.

Opportunities and Constraints:

- The site has the potential to yield archaeological significant relics of local and State significance depending on its intactness.
- Adequate research and assessment need to be undertaken on this site in order to determine the extent and significance of the archaeological resource, and the appropriate conservation recommendations.
- The development and statutory controls must consider and support the recommendations of the archaeological assessment to ensure the protection of relics.

Kelvin Park

Kelvin Park can demonstrate the pastoral development of Bringelly from 1818. Although only a small remnant (7ha) of the original 1200 acre site remains intact, the homestead and farm buildings in their current setting with extensive views over rural land, is still able to demonstrate the principles of 19th century farm estate architecture, planning and design.

The homestead, complete with the Georgian single-storey gentleman residence, service wings and servants' quarters, farm buildings and landscaping strongly represent the form, relationship and function of colonial Georgian and Victorian farm complexes, and are a rare example of continuity of land used for farming over 200 years.

The homestead of Kelvin Park retains important historic views to the east to Thompson's Creek and beyond to South Creek. The site also retains views of other historically related rural landscapes beyond the current boundaries such as the pasture and stands of trees to the north. Both views contribute to the site's significance and maintain the context of the homestead group.

Opportunities and Constraints:

- The form of Kelvin Park, regarding setting on the hill with open surrounding views particularly to Thompsons Creek, and the extant buildings onsite, is of State significance.
- The existing State Heritage Register Curtilage for the place should be considered a constraint in that it is subject to the provisions of the *Heritage Act (NSW) 1977*.
- Under the provisions of the *Heritage Act 1977 (NSW)*, any change that affects the item's significance is subject to assessment and approval by the NSW Heritage Council. Major changes would constitute works such as structural alterations and extensions, ground-disturbing works, demolition, relocation or changes to its curtilage, requiring an approval in accordance with section 60 of the Heritage Act.
- Any modifications to the site must qualify as an exemption, or otherwise will require approval, prior to undertaking the work.
- While it is noted that new subdivision and residential developments have encroached on the wide-open landscape immediately surrounding Kelvin Park, development controls should try to maintain wider views by keeping building densities low, particularly in the immediate area.

Bringelly Radio Receiving Station Complex (Former OTC Site)

The Bringelly Radio Receiving Station Complex represented an important period in the development of the technology of the overseas telecommunications network. It was one of only three pairs of public stations in Australia of the period and the only receiving station in NSW. It was the last of the type built and the last receiving station in operation, which was an important aspect of the site's significance. There were a number of structures associated with the site such as masts, staff housing, operational buildings, and a distinct brick entrance in a post-war "Googie" architectural style.

Opportunities and Constraints:

- Access to this site was not available.
 - Recent aerial photography shows that many of the structures on the site have been demolished and cleared, reducing the site's capability to represent its historically significant functions.
 - The brick entrance has been retained however has sustained damage/vandalism and requires continuing conservation and maintenance.
 - The brick entrance has a contemporary at Bungaribee where there was a parallel OTC site. The brick entrance at Bungaribee, although quite orphaned in its location, has been restored. There is an opportunity to interpret the relationship between these two sites and its significance as a wider technological operation.
-

9.2.3 Preferred precinct planning scenarios

The preferred planning direction for each of the precincts in the Aerotropolis has been prepared and provided for this assessment. The preferred direction provides the desired zoning and land use outcomes for areas within each precinct, which thereby gives us an indication of the future urban landscape for that precinct.

The following part outlines the vision and proposed planning direction for each of the five initial precincts taken from the Draft WSAP (2019), and a high-level comment on the potential implications that vision may have, directly or indirectly, on heritage items, historic landscapes, and heritage significance.

Northern Gateway Precinct

Vision	Desirable Land Uses	Heritage Constraints
<ul style="list-style-type: none"> ▪ Area will have a major airport interface, creating the main link to the airport from the Western Parkland City metropolitan area. ▪ Supported by fast and frequent transport connections. ▪ Current approval for Sydney Science Park development. ▪ New industries and commercial opportunities with potential for estimated 20,000 jobs. ▪ Residential areas close to transport but outside of aircraft noise impact areas, with the potential for up to 10,000 residents. ▪ Interface with riparian and green corridors 	<ul style="list-style-type: none"> ▪ Will evolve as a centre focused on high technology incorporating health, education, knowledge and research. ▪ Projected industries - high technology commercial enterprise/industry, warehousing and logistics, ▪ Community resources - education, corporate offices, retail, residential, health services, entertainment, tourism facilities, cultural and creative industries, green public and private open spaces, recreation and visitor accommodation. 	<ul style="list-style-type: none"> ▪ Planning proposal seeks to transform the existing rural landscape into a heavily subdivided residential area with areas for parks and recreation particularly framing the natural corridors. ▪ This area is currently rural and largely undeveloped with residences positioned closer to the main arterial roads that currently surround the precinct (The Northern Road, Elizabeth Drive, Luddenham Road). ▪ The road alignments are not only key routes but are also historic road alignments from the early settlement of the area. Luddenham Road is a listed heritage item, while a number of heritage properties border Elizabeth Drive and The Northern Road. ▪ This planning intent will intersect with heritage sites such as the Fleurs Radio Telescope Site and Aerodrome, McMaster and McGarvie-Smith farms, which has a number of remnant features that are rare as representations of the former uses of the site, and with the potential for national significance

Vision	Desirable Land Uses	Heritage Constraints
		<p>(identified in previous studies for the site).</p> <ul style="list-style-type: none"> There are opportunities to create a cohesive and consolidated planning and design response with other major infrastructure projects that will interface with this precinct, like the M12 project.

Agribusiness

Vision	Desirable Land Uses	Heritage Constraints
<ul style="list-style-type: none"> The Precinct will build on existing agricultural operations and natural landscape character for production and enabling connections to a 24/7 international airport. A hub that will meet national and international demands for high-quality fresh food, meals and flowers. High-technology precinct that will facilitate first class research, technology and processes focused on agriculture and fresh food. Proximity to airport will open it up to tourism. Adjacent to the urban residential areas in the Northern Gateway, it will provide opportunities for flexible employment uses. New industries and commercial opportunities with potential for estimated 10,000 jobs. Minimal new residential areas. 	<ul style="list-style-type: none"> Agribusiness, Agriculture, Intensive fresh and value-added food production, Food innovation technology and research, Food production and processing, Warehousing and logistics, Integrated logistics hub, High technology Industry, Complementary offices and retail, Community resources – Education, Fresh food produce markets, Ancillary rural residential, 	<ul style="list-style-type: none"> The Agribusiness precinct involves a mix of agricultural uses and commercial uses, emulating its current agricultural uses. There is a concentration of commercial development, high technology industry and complementary offices proposed around the village of Luddenham with an adjacent research and market areas to the north. Surrounding the precinct will be greenhouses and warehousing to support the agricultural activities. The village has a high concentration of local heritage, as well as a picturesque and idyllic landscape. The heritage items in this village are representative of the European settlement and rural development of the area from an early period. Planning the commercial precinct within the town centre will effectively preclude no further organic residential/local growth of this village. Furthermore, development for commercial functions risks diluting and obscuring the village quality of this area,

Vision	Desirable Land Uses	Heritage Constraints
		<p>which is an important part of this area's historic development and landscape.</p> <ul style="list-style-type: none"> Precinct planning and controls must be very carefully considered and place-based to ensure the existing local heritage is highlighted as one of the few surviving early colonial settlement villages in the area that still retains its accompanying rural landscape, and growth and visitation can be somewhat organic.

Badgerys Creek

Vision	Desirable Land Uses	Heritage Constraints
<ul style="list-style-type: none"> This precinct will support the adjoining Airport to the east, and new urban centres at Aerotropolis Core to the south and Northern Gateway to the west. Expected high demand for commercial and industrial uses that are not noise-sensitive and do not require high-frequency direct access public transport. Expected to be use for infrastructure that initially enables the Airport construction but transformed into higher order uses in the long term. New industries and commercial opportunities with potential for estimated 10,000 jobs. No additional dwellings in this area. Green setting with green linkages. 	<ul style="list-style-type: none"> Will evolve from an existing rural industry to industries enabling the Airport construction. A mix of commercial and light industrial activities to support the Airport which can adapt to higher order uses over time. High technology industrial development which may include defence and aerospace to support the operations in the Aerotropolis Core. Projected industries - Defence and aerospace, advanced manufacturing activity, high technology industry, airport supporting development, Aerotropolis enabling industries, modernised resource recovery industries, light industrial. Community resources – Local retail and social infrastructure. 	<ul style="list-style-type: none"> Planning proposal seeks to transform the Badgerys Creek precinct for enterprise and business use. Expectation for a gradual, supportive transformation of an existing semi-rural landscape towards higher-order commercial and business hubs. Development itself is not expected to have any impact on listed non-Aboriginal heritage items, however there are a number of potential historic archaeological sites requiring further investigation.

Aerotropolis Core

Vision	Desirable Land Uses	Heritage Constraints
<ul style="list-style-type: none"> ▪ A global, first class airport city with attractive places for workers, residents and visitors. ▪ A new employment-focused metropolitan centre with an industry focus on advanced manufacturing, research and development and industry led educational facilities. ▪ Centred around a new Sydney Metro station supported by retail, creative industries, civil and cultural facilities, and world-class public open spaces. ▪ New industries and commercial opportunities with potential for estimated 60,000 jobs. ▪ Residential areas close to transport but outside of aircraft noise impact areas, with the potential for up to 24,000 residents. ▪ Interface with the riparian and shaded green corridors in the Wianamatta-South Creek area will be central to the lifestyle appeal of the place. 	<ul style="list-style-type: none"> ▪ High technology industrial development which may include defence and aerospace to support the operations in the Aerotropolis Core, advanced manufacturing, defence and aerospace, research and development activity ▪ Education and research (vocational and tertiary). ▪ Commercial and professional activities – business incubator hubs, creative industries including ‘pop-up installations’ and festivals/events, commercial offices, food and beverage, indoor and outdoor recreation and sports facilities. ▪ Residential - medium to high density residential near the Metro station ▪ Community resources – civic, entertainment, cultural facilities; green open and public space on public and private lands; public and private medical services, visitor accommodation. 	<ul style="list-style-type: none"> ▪ The planning proposal will transform the precinct from a largely semi-rural landscape into a heavily activated commercial and mixed-use urban centre. ▪ This will impact on several heritage items, include one State listed item (Kelvin Park). However, there are opportunities for the urban design to respond to these heritage items through landscaping and sympathetic land use that would rather highlight these items.

Wianamatta-South Creek

Vision	Desirable Land Uses	Heritage Constraints
<ul style="list-style-type: none"> ▪ The Precinct will retain a water-focused landscape, protected remnant native vegetation and Aboriginal heritage sites. ▪ Park and recreational development will create the blue-green grid that is a key spatial landscape that the Aerotropolis will be designed around. ▪ Blue–Green Grid will provide multiple opportunities for residents, workers and visitors to the area to benefit from improved amenity and liveability outcomes. ▪ The Wianamatta-South Creek and cross tributaries into adjacent precincts will extend the green corridors across the Aerotropolis. ▪ Minimal new jobs and no additional residences. 	<ul style="list-style-type: none"> ▪ Water management, Open space, Recreation facilities, Pedestrian and cycle connectivity, Community and cultural facilities, environment protection, water management and restaurants or cafes. 	<ul style="list-style-type: none"> ▪ This precinct will maintain and rehabilitate the blue corridor around the creek and tributaries, as well as develop the green corridor for parks and recreation. ▪ Built heritage is unlikely to be impacted through this precinct. ▪ There are positive opportunities for interpretation and innovative heritage landscape design that can highlight the natural, Aboriginal and historical land use of the Aerotropolis precincts.

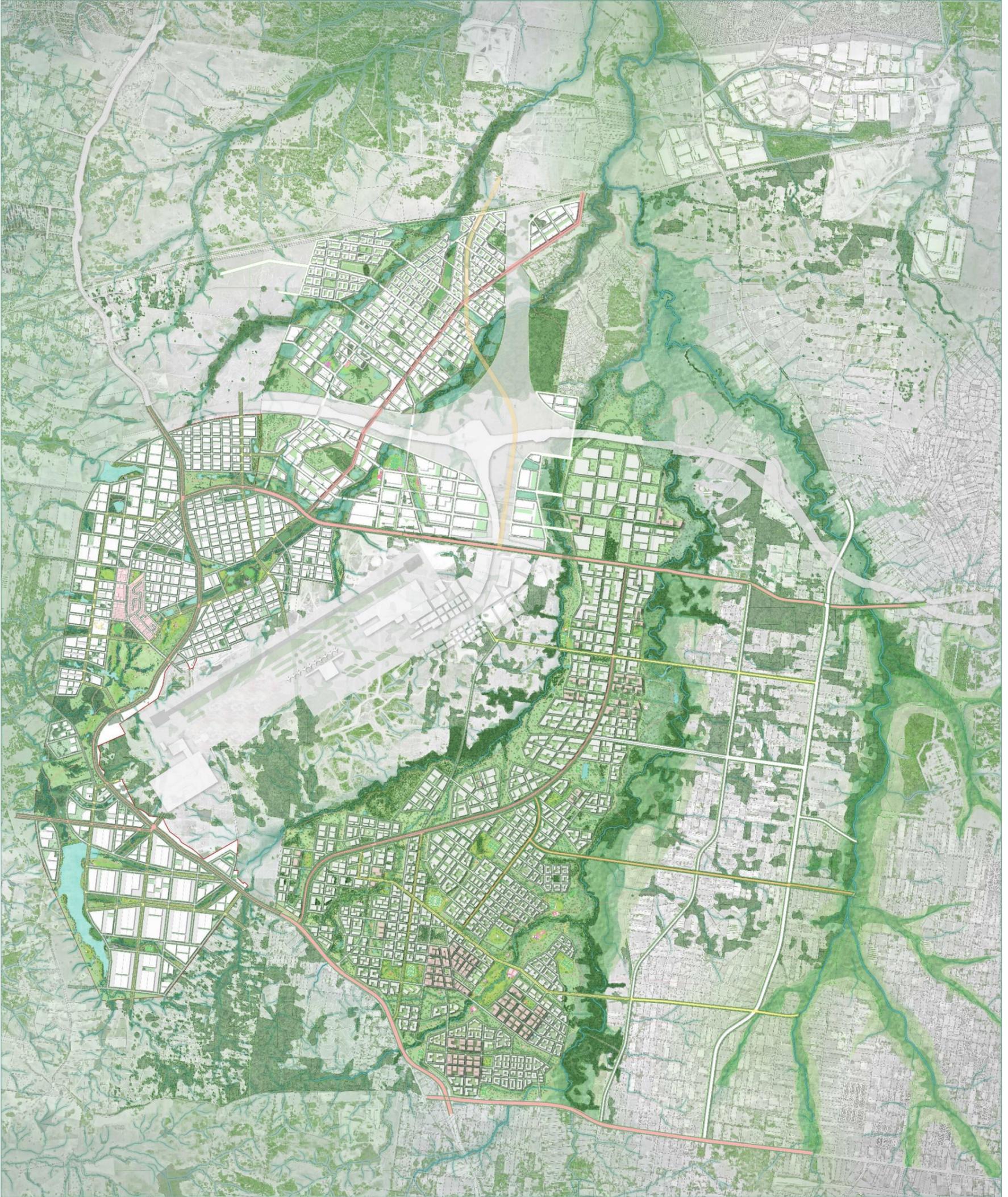


Figure 93. Preferred Planning Direction for initial precincts, prepared by Hassell, Hill Thalys, Studio Hollenstein (12 October 2020).

10. Conclusions and recommendations

10.1 Vision: Recommended Objectives

10.1.1 Aboriginal heritage

- The importance of the waterways in the study area has been emphasised [REDACTED]
 - [REDACTED]
- A section of remnant Cumberland woodland running from hill crest down slope to creek should be identified and placed into conservation – views and curtilage are important considerations in this too. This approach is preferable to a lot of small pocket reserves scattered across the precincts.
- Strategic planning should be undertaken in conjunction with the sensitivity mapping undertaken for this report (Figure 13). Broadly, development should be avoided in areas of High sensitivity, minimised in areas of Moderate sensitivity, and focused in areas of Low and Very Low sensitivity.
- Development should be avoided by design in and around specific Aboriginal heritage site types, such as modified trees (carved or scarred) and grinding grooves.
- The stakeholders stated that it is too early to comment with certainty on cultural values because the archaeological investigations have not taken place, and large parts of the landscape have not been extensively investigated during prior studies. Therefore, continued consultation, on Country walks and ground truthing of archaeological sites is required in order to gain more of an understanding of cultural values, stories and places.
- The need for further and ongoing in-depth consultation with the Aboriginal community stakeholders and knowledge holders was highlighted. This includes, but is not limited to:
 - Regular updates to registered stakeholders of developments in the Aerotropolis and changes to the overall study area designs
 - All heritage investigations should follow the guidelines in the DECCW *Aboriginal cultural heritage consultation requirements for proponents 2010*.
- The stakeholders present at the Cultural Values Workshop said that it is critical that the traditional owners and LALCs play a key role in future consultation and are given the

opportunity to participate in further studies. The stakeholders stated that it is offensive when Aboriginal groups with no connection to country are engaged to do archaeological work.

- Any interpretation and story-telling needs to be undertaken in consultation with the traditional owners and LALCs to ensure it is culturally appropriate.
- There are some family connections to this country and nearby, and those should be recognised through acknowledgment in the studies done of the area as well as further interpretation through consultation with the traditional owners and LALCs.

10.1.2 Non-Aboriginal heritage

Most of the known and potential historical archaeological sites date to the period after 1860 and are primarily related to small dwellings on rural lots or residential sites within the village of Luddenham or with tenant farms scattered through the Luddenham Estate.

Four properties identified by this study have the potential to contain State significant archaeological remains (McMaster Field Station [Asset 104], McGarvie Smith Farm [Asset 105], Fleurs Radio Telescope Site [Asset 310] and the Kelvin Park Group [Asset 401]). To this may be added Badgery's Exeter Farm [Asset 201] although this site has been subject to significant disturbance in the recent past.

Lots containing potential items can be managed in several ways. If they are to be impacted, then they should be subject to detailed assessment to determine the level of archaeological intervention required.

Intervention may include:

- Unexpected finds procedure
- Monitoring during works
- Formal salvage excavation

There are also several large tracts of land that may contain discrete areas of archaeological potential. Such areas should be subject to detailed assessment to determine how the potential archaeological resources are to be managed rather than placing the whole area under an archaeological management procedure.

Extant local heritage items such as buildings, structures and places are significant pieces of evidence in the historic record of the development of this area from pastoral estates to rural village settlements. With that in mind, in many cases the significance of a place extends beyond the physical evidence and includes the views and settings that contribute to the site's character and former uses. Ultimately, successful heritage management in the face of new development aims to keep heritage relevant and sustainable. To do this, the development of, and around, heritage items needs to accommodate retention and adaptive reuse of the historic features as well as support appropriate new developments, public and private and commercial.

10.2 Principles

10.2.1 Recommended development controls for Aerotropolis SEPP

The *State Environmental Planning Policy (Western Sydney Aerotropolis)* was gazetted in September 2020 and applies to the land within the study area. It provides statutory weight to the planning and development of land within the Aerotropolis. Broadly, the Aerotropolis SEPP does the following:

- establishes boundaries for applicable land;
- defines all precincts within the Aerotropolis and their boundaries;
- establishes strategic objectives for the Aerotropolis;
- applies land use zones to the initial precincts;
- implements various clauses and maps;
- protects transport corridors and utility sites;
- identifies the types of development applications that are to be referred to Western Sydney Airport;
- ensures there is no intensification in noise sensitive uses within the Australian Noise Exposure Concept (ANEC)/Australian Noise Exposure Forecast (ANEF) 20 and above contours; and
- outlines a framework for planning pathways.

The *Aerotropolis SEPP*, Schedule 2 includes a list of heritage items within the initial Aerotropolis precincts. Of the items listed within the initial precincts, 14 are listed as having local significance and one item, 'Kelvin' is listed as State significant.

With specific reference to heritage, section 28, part 4 of the *Aerotropolis SEPP* includes objectives and controls for heritage conservation. These objectives are:

- a. to conserve the environmental heritage of the land to which this Policy applies, and
- b. to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views, and
- c. to conserve archaeological sites, and
- d. to conserve Aboriginal objects and Aboriginal places of heritage significance.

Based on these objectives, we have developed some key requirements for conservation management that should be considered as controls for the *Aerotropolis SEPP*, to achieve those objectives.

Requirements	Measures/Actions
Conserve the environmental heritage of the Aerotropolis.	<ul style="list-style-type: none"> Conserve the significance of heritage items and their associated landscape, settings and views. Conserve archaeological sites, including Aboriginal places and objects of significance. Curtilages of heritage items should be considered protected zones until further site-specific assessments are made.
Heritage assessment is required to assess impacts of changes and developments to heritage significance.	<ul style="list-style-type: none"> Significant sites should be supported by conservation planning documentation so that changes can be managed according to their significance. Heritage assessments must consider the impact of works on heritage significance, prior to granting consent. Any works that may impact a known, or potential archaeological site must have an archaeological assessment undertaken to determine the significance and correct management requirements.
Obtain assessment and development consent for works to heritage places.	<ul style="list-style-type: none"> Items on the State Heritage Register require consent in accordance with the Heritage Act. Items on an LEP heritage schedule require consent in accordance with the EP&A Act. Aboriginal places and objects Works are protected in accordance with the NPW Act. Works include demolition, alterations, extensions, disturbing or excavating a known archaeological site or place, disturbing an Aboriginal place or object, subdivision.
Some works with no impact to heritage significance may be considered exempt from requiring approval.	<ul style="list-style-type: none"> An assessment demonstrating no impact to heritage must first be made and submitted to the approval authority. The works are minor and in the nature of maintenance for that heritage item, building, object or place.

10.2.2 Recommended objectives and controls for precinct DCPs

The Precinct Plans will bring together the vision and outcomes of several projects and stakeholders. This reveals opportunities for integration with other major infrastructure projects in the immediate vicinity or taking place within the Aerotropolis precincts themselves in terms of heritage and conservation approach, recording and documentation consistency, interpretive vision and cohesion, and a relationship between the new urban landscape and the critical infrastructure services being delivered that is considerate the heritage landscape that has prevailed throughout this area from pre-colonial contact, to the post-colonial agricultural and scientific themes.

The following controls for each precinct have been developed in response to the thorough historical research that has informed the assessment of significance of each area, the extant

and potential heritage and archaeological resource, and our understanding of the future planning vision. These precinct-tailored objectives should be considered for inclusion in future planning instruments including the *Aerotropolis SEPP*, Precinct DCPs and any place-based master planning documentation.

Northern Gateway Precinct

To achieve the vision and desirable land uses of the Northern Gateway Precinct, the following objectives and controls can be considered.

Vision	Controls
<p>A major airport interface, creating the main link to the airport from the Western Parkland City metropolitan area and supported by fast and frequent transport connections.</p>	<ul style="list-style-type: none"> ▪ Historical road alignments should be maintained as main arterial roads connecting people from within the precinct to other precincts in the aerotropolis. ▪ New roads names can use the historic themes, sites, places, people and events relevant to the area as a reference. ▪ Subdivision and secondary road alignments can reference / follow significant historical allotments. ▪ The urban design and landscape for transport corridors and allotments should consider how it can achieve cohesion, as well as distinction from concurrent major infrastructure projects such as Sydney Metro and the New M12 Motorway.
<p>Provision of new employment opportunities.</p>	<ul style="list-style-type: none"> ▪ The requirements of new industries should not impact on significant places or material. ▪ New industrial and commercial areas must not impact on significant views and landscapes, especially around the blue-green corridors. ▪ Design of new industrial and commercial buildings should be of a contemporary design in recessive colours and materials that do not overwhelm any adjacent heritage items.
<p>Provision of new residential areas supported by community facilities and resources.</p>	<ul style="list-style-type: none"> ▪ Subdivision of heritage listed items will require heritage assessment and consent. ▪ Subdivisions of land must protect significant views. ▪ In the former CSIRO areas (Fleurs, McGarvie-Smith) development in the area should be low-rise so that a sense of the natural topography for which the land was used historically is still present. ▪ In the former CSIRO areas (Fleurs, McGarvie-Smith), built and landscape features such as remnant radio-telescope equipment and installations, the Fleurs aerodrome, and radio-telescope “cross” alignments should be retained, salvaged and incorporated or interpreted into the urban design. ▪ Open spaces should be planned around heritage items in order to ensure it maintains its prominent siting and encourage opportunity for active and passive interaction with the place.

Vision	Controls
	<ul style="list-style-type: none"> ▪ Locate urban hubs where there is higher visitation and people traffic near to publicly accessible heritage places. These places can be supported by interpretation that enhances the understanding of heritage. ▪ New development on existing heritage sites should be designed in a manner that does not subtract from the heritage item.

Badgerys Creek Precinct

To achieve the vision and desirable land uses of the Badgerys Creek Precinct, the following objectives and controls can be considered.

Vision	Controls
<p>Commercial and industrial uses that are not noise-sensitive and do not require high-frequency direct access public transport to support the adjacent airport and Aerotropolis Core and Northern Gateway.</p>	<ul style="list-style-type: none"> ▪ The requirements of new industries should not impact on significant places or material. ▪ New industrial and commercial areas must not impact on significant views and landscapes, especially around the blue-green corridors. ▪ Design of new industrial and commercial buildings should be of a contemporary design in recessive colours and materials that do not overwhelm any adjacent heritage items. ▪ New road names can use the historic themes, sites, places, people and events relevant to the area as a reference. ▪ The setback and siting of industrial hubs should be such that the public domain setting retains a low, wide and open space impression.
<p>Initial developments that support the Airport construction, with a view to higher order uses for the long term.</p>	<ul style="list-style-type: none"> ▪ Planning for staged development of the area must consider how minimal impacts to significant material can be achieved. This is particularly pertinent with regards to ground disturbing works and archaeological places.
<p>Green setting with green linkages.</p>	<ul style="list-style-type: none"> ▪ Development within the blue-green corridors must consider impacts to Aboriginal cultural heritage. ▪ Development surrounding the blue-green corridors should be stepped where open spaces and low-level development provide a buffer zone to high-level developments. ▪ Landscaped linkages should include heritage interpretation in appropriate areas to optimise engagement with active and passive audiences. ▪ New development within the immediate vicinity of blue-green corridors should utilise recessive colours and materials that do not overwhelm or detract from the natural landscape.

Aerotropolis Core Precinct

To achieve the vision and desirable land uses of the Aerotropolis Core Precinct, the following objectives and controls can be considered.

Vision	Controls
<p>A new employment-focused metropolitan centre.</p> <p>Industry focussed on advanced manufacturing, research and development and industry led educational facilities.</p>	<ul style="list-style-type: none"> ▪ The requirements of new industries should not impact on significant places or material. ▪ New industrial and commercial areas must not impact on significant views and landscapes, especially around the blue-green corridors. ▪ Design of new industrial and commercial buildings should be of a contemporary design in recessive colours and materials that do not overwhelm any adjacent heritage items. ▪ New road names can use the historic themes, sites, places, people and events relevant to the area as a reference. ▪ The setback and siting of industrial hubs should be such that the public domain setting retains a low, wide and open space impression.
<p>Centred around a new Sydney Metro station supported by retail, creative industries, civil and cultural facilities, and world-class public open spaces</p>	<ul style="list-style-type: none"> ▪ Highly activated urban areas in the vicinity of a heritage item must be carefully and respectfully sited, designed and landscaped to ensure protection of the heritage values of the heritage item. ▪ Subdivisions of land must protect significant views. ▪ New buildings, in form, scale, height and materiality should complement the area's natural topography for which the land was used historically is still present. ▪ The urban design should consider how it can achieve cohesion as well as distinction from concurrent major infrastructure projects such as Sydney Metro and the Airport.
<p>Medium and high-density residential areas close to transport but outside of aircraft noise impact areas, with the potential for up to 24,000 residents.</p>	<ul style="list-style-type: none"> ▪ In residential zones where a higher density is permitted, new development adjoining/adjacent to a heritage item should avoid incorporating large unbroken wall areas. ▪ Where new development is necessarily larger than its surrounding development, the bulk can be reduced by breaking long walls into bays or by arranging the openings in the wall so that their size and shape reflect the structure and the openings of its neighbours. ▪ Development in the vicinity of Kelvin Park must maintain sufficient distance and form to retain the open space and views that are part of its significance. ▪ Development relating to Kelvin Park should be specifically designed to accommodate the preservation and use of Kelvin Park as a historical resource. Provisions should allow for residential and residential-related uses, while ensuring that any future alterations are compatible with

Vision	Controls
<p>Interface with the riparian and shaded green corridors in the Wianamatta-South Creek Precinct.</p>	<p>the architectural elements and historical significance of the place.</p> <ul style="list-style-type: none"> ▪ Development within the blue-green corridors must consider impacts to Aboriginal cultural heritage. ▪ Development surrounding the blue-green corridors should be stepped where open spaces and low-level development provide a buffer zone to high-level developments. ▪ Landscaped linkages should include heritage interpretation in appropriate areas to optimise engagement with active and passive audiences. ▪ New development within the immediate vicinity of blue-green corridors should utilise recessive colours and materials that do not overwhelm or detract from the natural landscape.

Agribusiness Precinct

To achieve the vision and desirable land uses of the Agribusiness Precinct, the following objectives and controls can be considered.

Vision	Controls
<p>Agricultural operations enabling connections to a 24/7 international airport.</p> <p>A hub that will meet national and international demands for high-quality fresh food, meals and flowers.</p> <p>High-technology precinct that will facilitate first class research, technology and processes focused on agriculture and fresh food.</p>	<ul style="list-style-type: none"> ▪ The requirements of new industries should not impact on significant places or material. ▪ New industrial and commercial areas must not impact on significant views and landscapes. ▪ Transformation
<p>Adjacent to the urban residential areas in the Northern Gateway, it will provide opportunities for flexible employment uses including light industrial and commercial.</p>	<ul style="list-style-type: none"> ▪ The requirements of new industries should not impact on significant places or material. ▪ New industrial and commercial areas must not impact on significant views and landscapes. ▪ Design of new industrial and commercial buildings should be of a contemporary design in recessive colours and materials that do not overwhelm any adjacent heritage items. ▪ New road names can use the historic themes, sites, places, people and events relevant to the area as a reference. ▪ The setback and siting of industrial hubs should be such that the public domain setting retains a low, wide and open space impression.

Vision	Controls
<p>Commercial precinct and hub centred around the existing village of Luddenham.</p>	<ul style="list-style-type: none"> ▪ The village of Luddenham should undergo a master-planning exercise to ensure that new development responds appropriately to the significance of a place, in particularly its rural village character. ▪ Market style uses and low-scale development that promotes a more organic visitation that can still align with the village character of the place, as opposed to commercial, nine-to-five uses which will overlay a type of activation to the place that is not typical of the village character. ▪ Planning around the village should seek a balance between not obscuring or diluting the extant heritage fabric, but at the same time promoting viable commercial opportunities through activated spaces. ▪ Planning around the village should take advantage of opportunities for interpretation which will enhance the understanding of the place’s significance. ▪ For areas where there is a clear historic setting or character, development controls must consider how new development is sensitively integrated with the historic character and fabric of the area. This could include heights, setbacks, architectural detailing, public domain landscaping, etc. ▪ For conservation works to heritage items, adopt the conservation approach, “as much as necessary, as little as possible” in order to maintain as much of the significant fabric and features as possible. Detailing should be in keeping with the heritage character, but still distinguishable on close inspection. ▪ For new developments to heritage items, ensure the design is sympathetic to the significance of the item, and works to enhance that significance rather than obscure it. Detailing should be in keeping with the heritage character, but still distinguishable on close inspection. ▪ Landscapes, gardens and trees that are a significant feature of a heritage item should be maintained.

Wianamatta-South Creek Precinct

To achieve the vision and desirable land uses of the Agribusiness Precinct, the following objectives and controls can be considered.

Vision	Controls
<p>The Precinct will retain a water-focused landscape, protected remnant native vegetation and Aboriginal heritage sites.</p> <p>Park and recreational development will create the blue-green grid that is a key spatial landscape that the Aerotropolis will be designed around.</p>	<ul style="list-style-type: none"> ▪ Development within the blue-green corridors must consider impacts to Aboriginal cultural heritage. ▪ An assessment of remnant landscapes should be undertaken to identify any significant natural features to be protected. ▪ Development surrounding the blue-green corridors should be stepped where open spaces and low-level development provide a buffer zone to higher-level developments in adjacent precincts. ▪ Landscaped linkages should include heritage interpretation in appropriate areas to optimise engagement with active and passive audiences. ▪ New development within the immediate vicinity of blue-green corridors should utilise recessive colours and materials that do not overwhelm or detract from the natural landscape.
<p>Blue–Green Grid will provide multiple opportunities for residents, workers and visitors to the area to benefit from improved amenity and liveability outcomes.</p>	<ul style="list-style-type: none"> ▪ Identify positive opportunities for interpretation and innovative heritage landscape design that can highlight the natural, Aboriginal and historical land use of the Aerotropolis precincts through development of a Heritage Interpretation Strategy or Plan. ▪ Community and visitor amenities should utilise any opportunity for heritage interpretation and landscape design to highlight the significance of the natural landscape.

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Appendix A.

Appendix B. Non-Aboriginal Heritage Schedule

Table 34. Sites located within Aerotropolis Initial Precincts

Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
101	Cottage/farm buildings?	1		Potential archaeological site	480-544-Luddenham Road, Luddenham	Lot 7 DP255578	Site of pre-1917 structures	
102	'Karingal' (formerly 'Bangaroo'?)	1		Extant structures and potential archaeological site	752-810 Luddenham Road, Luddenham	Lot 1 DP235124	Mid-20 th century riding stables – pre-1927 farm site 'Bangaroo'. Several buildings (stables and sheds) on the property.	(M12 EIS)
103	Luddenham Road Alignment	1	Penrith LEP 843	Extant line of road (significantly modified in the north)	-	Road reserve	Extant line of road - Luddenham Road comprises modern asphalt with no remnants of the original road visible.	(Penrith Heritage Study 2007) (M12 EIS)
104	McMaster Field Station/McMaster Farm	1		Extant structures, potential archaeological sites, landscape elements	1853-2109 Elizabeth Drive, Badgerys Creek	Lot 101 DP848215	1938 CSIRO animal health research facility. A number of buildings, silos, animal pens and stockyards, dams, ditches, concrete remnants, bricks and earthworks present.	(Penrith Heritage Study 2007) (M12 EIS)
105	McGarvie Smith Farm	1	Penrith LEP 857	Extant structures, potential archaeological sites, landscape elements	1793-1951 Elizabeth Drive, Badgerys Creek	Lot 62 DP 1087838 Lot 63 DP1087838	A number of farm buildings, silo, concrete remnants, timber posts, sheds, dams, earth ditches and other features present.	(Penrith Heritage Study 2007) (M12 EIS) (COMMONWEALTH 2016 2016)
S11	'Ammamagong' homestead	1a		Potential archaeological site	336-348 Luddenham Road, Luddenham	Lot 222 DP270417	Pre-1906 homestead complex.	
201	Showground	2	Penrith LEP 679	Extant showground and buildings	442-452 Park Road, Luddenham (address in LEP 428-452 Park Road, Luddenham)	Lot 1 DP931631 Lot 2 DP972057	Showground and buildings dating from 1892 onwards.	(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
202	Former Brick Cottage, 406 Park Road	2		Potential archaeological site.	406 Park Road, Luddenham	Lot 2 Sec A DP1452	Formerly listed as a standing structure (Penrith LEP 830) – building demolished in 2009/2010. Site has been delisted.	(Penrith Heritage Study 2007)
203	Brick cottage	2	Penrith LEP 117	Extant	21-55 Campbell Street, Luddenham	Lot 1 DP972057		(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
204	Weatherboard cottage	2	Penrith LEP 118	Extant	3065-3067 The Northern Road, Luddenham	Lot 1 DP930372		(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
205	Weatherboard cottage	2	Penrith LEP 678	Extant	3075 The Northern Road, Luddenham	Lot 1 DP304800		(Penrith Heritage Study 2007)

Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
								(COMMONWEALTH 2016 2016)
206	Luddenham Progress Hall	2	Penrith LEP119	Extant	3091-3095 The Northern Road, Luddenham	Lot 7 DP1655		(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
207	Luddenham Uniting Church and Cemetery	2	Penrith LEP 170	Extant	3097-3099 The Northern Road, Luddenham	Lot 8 DP1655		(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
208	St James Anglican Church and Cemetery	2	Penrith LEP122	Extant	3101-3125 The Northern Road, Luddenham	Lot 2 DP529143		(Penrith Heritage Study 2007) (COMMONWEALTH 2016 2016)
209	Luddenham Public School	2	Liverpool LEP52	Extant	The Northern Road, Luddenham	Lot 1 DP194409		(COMMONWEALTH 2016 2016)
210	Cottage site	2		Potential archaeological site – possibly compromised	2859-2901 The Northern Road, Luddenham	Lot 1 DP1169433	Cottage pre-1906	
211	Harris Farm site	2		Potential archaeological site – possibly compromised	2292 The Northern Road, Luddenham	Lot 2 DP1240511	pre-1860 farm	
212	Campbell cottage site	2		Potential archaeological site – compromised – site is now a car park	2174 The Northern Road, Luddenham	Lot 19 DP575503	Pre-1900 cottage within village	
213	Former church and school site	2		Potential archaeological site – possibly compromised	2130 The Northern Road, Luddenham	Lot 25 DP700302	Pre-1859 church and school – possibly temporary structures	
214	Lawson's Thistle Inn site	2	Liverpool LEP53	Potential archaeological site	2215 The Northern Road, Luddenham	Lot 3 DP1234822	C. 1858/1859 roadside inn	(COMMONWEALTH 2016 2016)
215	Forge site	2		Potential archaeological site – possibly compromised by later development	2130 The Northern Road, Luddenham	Lot 25 DP700302	Pre-1927 forge – possibly later converted into a garage. Site is currently the post office car park.	
216	Cottage and outbuilding site	2		Potential archaeological site	2150 The Northern Road, Luddenham	Lot 22 DP1036912 (and road reserve)	Pre-1859 cottage	
217	Barn site	2		Potential archaeological site – possibly compromised	2230 The Northern Road, Luddenham	Lot 31 DP563121	Pre-1859 barn – predating Luddenham subdivision.	
218	Wilmington Reserve	2	Liverpool LEP50	Extant	17 Jamison Street, Luddenham	Lot 7004 DP93052	Water reserve. Building present on site in 1859.	(COMMONWEALTH 2016 2016)
219	'Pleasantview' Cottage	2		Extant	2422-2430 The Northern Road, Luddenham	Lot 7 DP1240511	Cottage incorporating Llandilo School of Arts Hall (c.1915). Reconstructed in this location between 1927 and 1955.	TNR

Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
220	Hughes Farm	2		Extant structures and potential archaeological sites.	140 Adams Road, Luddenham	Lot 3 DP1240511	220a Hughes farmstead pre-1859. 220b Dairy (timber slab) - standing structure with associated cistern. 220c Waters Farm – pre-1859. Two buildings on single property. 220d McNamy Farm – pre-1859.	GML 1997) (COMMONWEALTH 2016 2016)
221	Allen Farm	2		Potential archaeological site	145 Adams Road, Luddenham	Lot 5 DP250030	Homestead and outbuilding pre-1859	
222	Roots Farm	2		Potential archaeological site	180 Adams Road, Luddenham	Lot 30 DP1251450	Pre-1859 farm complex	
223	Howlett Farm site	2		Potential archaeological site	230 Adams Road, Luddenham	Lot 106 DP846962	Homestead and outbuilding pre-1859	
224	Magee's farm	2		Potential archaeological site	Adams Road Luddenham	Portion of road reserve intersection of Adams Road and Anton Road, Luddenham	Cottage pre-1906	
225	Former Luddenham Post Office			Potential archaeological site	3077 The Northern Road, Luddenham	Lot 2 DP510238	Site of former Luddenham Post Office (potentially pre-1870). Building demolished between 1965 and 1986. Site is likely to have been compromised.	
226	Adam's farm	2		Possible extant structures. Potential archaeological site – possibly compromised	2470 Elizabeth Drive, Luddenham	Lot 281 DP571171	Cottage pre-1906	
S21	Dawe's (?) cottage	2a		Extant	2785-2787 The Northern Road, Luddenham	Lot 502 DP580982	Pre-1906	
301	Exeter House	3		Potential archaeological site and extant landscape elements	1669-1723 Elizabeth Drive, Badgerys Creek	Lot 5 DP860456	c.1810 James Badgery's residence.	(Penrith Heritage Study 2007)
302	Stainton homestead	3		Potential archaeological site – much of the site removed	75 Lawson Road, Badgerys Creek	Lot 5 DP3050	Pre-1859 possibly c.1812. Possibly the site of Thomas Matcham Pitt's homestead on 'Nelson and Bronte' Farm. Demolished between 1955 and 1961.	
303	Braithwaite homestead	3		Homestead destroyed – potential peripheral surviving elements	150 Martin Road, Badgerys Creek	Lot 49 DP3050	Pre-1899 Site has been subject to intensive tilling	
304	Cottage	3		Potential extant structure	140 Martin Road, Badgerys Creek	Lot 48 DP3050	Pre-1917 cottage	

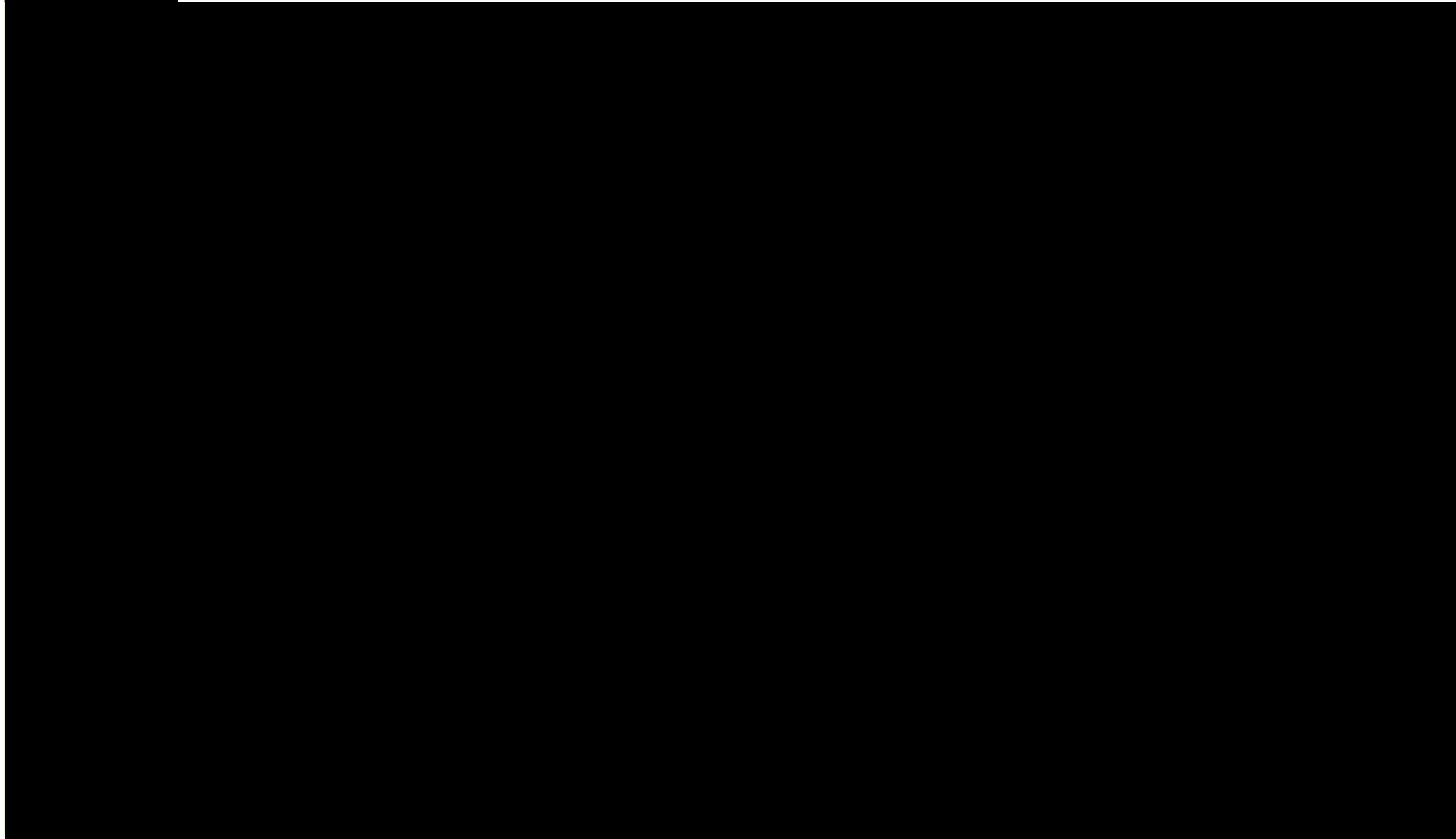
Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
305	Cottage	3		Extant	165 Lawson Road, Badgerys Creek	Lot 5 DP226912	Pre-1917 cottage	
306	Unidentified building site	3		Potential archaeological site	140 Lawson Road, Badgerys Creek	Lot 29 DP3050	Pre-1917 building	
307	Unidentified building site	3		Potential archaeological site - site compromised	230 Martin Road, Badgerys Creek	Lot A DP406215	Pre-1917	
308	Farm complex	3		Potential early standing structures and archaeological potential	225 Martin Road, Badgerys Creek	Lot 1 DP1035249	Pre-1917	
309	Unidentified building site	3		Potential archaeological site	1910 Elizabeth Drive, Badgerys Creek	Lot 2 DP553886	Pre-1917	
310	Fleurs Radio Telescope Site	3	Penrith LEP 832	Extant structures, potential archaeological sites, landscape elements	885A Mamre Road, Kemps Creek	Lot 21 DP258414	310a A number of buildings, remains of antennae, antenna footing trenches, concrete plinths, cabling, signal boxes, and demolition material present. 310b hut (possibly nineteenth century) archaeological site 310c former bridge site	(Penrith Heritage Study 2007) (M12 EIS) (Gorman 2018).
311	Exeter Farms Archaeological Site (Artefact Scatter and Trees)	3		Site and landscape elements, potential archaeological site	885A Mamre Road, Kemps Creek	Lot 1 DP74574	A row of trees forming a hedge that may be Osage-orange trees (<i>Maclura pomifera</i>) and an associated artefact scatter.	(M12 EIS)
401	Kelvin Park Group	4	Liverpool LEP8	Extant structures and landscape, potential archaeological site	30 The Retreat, Bringelly	Lots 2711–2714 DP 1128906	Kelvin Park Group, including site landscaping, homestead, kitchen wing, servant's quarters, coach house, 2 slab barns and other works and relics (formerly "The Retreat", "Cottage Vale", stables and lock-up)	(COMMONWEALTH 2016 2016)
402	Dwelling and rural lot (Mt Pleasant)	4	Liverpool LEP6	Extant	3 Shannon Road, Bringelly	Lot 44 DP 581187	Structure of unknown date.	(COMMONWEALTH 2016 2016)
403	Bringelly Radio Receiving Station Complex (also known as Former OTC site Group)	4		Landscape and potential archaeological site	225-245 Badgerys Creek Road, Bringelly	Lot 1 DP 109666	Former OTC Site Group, including radio receiving station and site of former staff housing	(COMMONWEALTH 2016 2016)
404	RAAF Bringelly	4		Extant structures, landscape and potential archaeological site	215 Badgerys Creek Road, Bringelly	Lot 10 DP 1235662	Site of nineteenth century structure now occupied by former RAAF Bringelly (aerial and structures). Site of satellite airfield.	
405	'Evergreen' Homestead	4		Extant and potential archaeological site	1432 The Northern Road, Bringelly (addresses Derwent Road, Bringelly)	Lot 6 DP1217247	Cottage of unknown date	(GML 1997) (COMMONWEALTH 2016 2016)

Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
406	Unidentified building site	4		Structure may survive within existing cottage or has been replaced by extant structure.	1402 The Northern Road, Bringelly	Lot 2 DP233269	Pre-1927 building	
407	Former slab cottage	4		Potential archaeological site	95 Mersey Road, Bringelly	Lot 11 Sec 2 DP2650	Slab cottage identified in 1998 as potential heritage item, demolished before 2002	
408	Farmstead ('ruin' in 1955]	4		Potential archaeological site	85 & 95 Badgerys Creek Road, Bringelly,	Lot 4 & Lot 3 DP244113	Farmstead, post-1892 Cowpasture Farms subdivision	
501	Butter Factory (site)	5		Potential archaeological site	25 May Avenue, Rossmore	Lot 24 DP2217	Pre-1893 butter factory	
502	Cottage	5		Potential archaeological site	46 Wynyard Avenue, Rossmore	Lot 11 DP788314	Pre-1927 cottage	
503	Fleurs Aerodrome	5		Extant landscape features, potential archaeological site	949A Mamre Road, Kemps Creek	Lot 2 DP88836	A parent airfield constructed in 1942 - three sections of the former airstrip present.	(M12 EIS)
504	South Creek Bridge	5		Remnants - potential archaeological site	885A Mamre Road, Kemps Creek	Lot 21 DP258414	Bridge of unknown date – possibly associated with the operation of the Fleurs Estate.	(M12 EIS)
505	Potential archaeological site Artefact Scatter, Salisbury Avenue	5		Potential archaeological site	12-20 Salisbury Avenue, Kemps Creek	Lot 2 DP736951	A diffuse scatter of artefacts east of Salisbury Avenue.	(M12 EIS)
506	Building and tank site	5		Potential archaeological site	175-185 Exeter Road, Kemps Creek	Lot 2622 DP811282	Pre-1917 structure immediately adjacent to creek	
507	Hut and yards site	5		Potential archaeological site – possibly compromised	150 Floribunda Road, Kemps Creek, 154 Floribunda Road, Kemps Creek, 10 Grants Close, Kemps Creek	Lot 141 DP1070752, Lot 142 DP1070752, Lot 15 DP733714,	Michael Grant's, then Richard Driver	
508	Bridge site	5		Potential archaeological site	316 Clifton Avenue, Kemps Creek	Lot 6 DP812284	Pre-1895 bridge site	
509	'Spotted Dog' Inn site	5		Potential archaeological site	1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek	Lots 1 and 3 DP255566 and Lot 21 DP601022	'Spotted Dog' Inn, later 'Woodbine Cottage'. Constructed prior to 1839 and occupied by the Badgery and Roberts families.	
510	Unidentified building site	5		Potential archaeological site	40 Ramsay Road, Rossmore	Lot 1016 DP258344	Pre-1927 unidentified building	
S51	'Bayly Park' complex	5a	Penrith LEP104	Extant structures, potential archaeological site	919-929 Mamre Road, Kemps Creek	Lot 35 DP258414	By 1814 Nicholas Bayly had constructed a house described 'as a noble mansion with gardens and cultivated grounds. The property was referred to as Bayly Park and later as Fleurs.	

Site ID	Name	Initial Precinct	Listing	Status	Address	Lot/DP	Description	Previous studies
S52	Cottage site	5a		Potential archaeological site - compromised	8 May Avenue, Rossmore	Lot 1 DP531947	Pre-1927 cottage site	
S53	Homestead site	5a		Potential archaeological site	11 Turnbull Avenue, Kemps Creek	Lot 7 DP739051	Pre-1899 homestead. Site subject to significant disturbance and later building activity	
S54	Homestead site	5a		Potential archaeological site, potential standing structures	1468 Clifton Avenue, Kemps Creek	Lot 1 DP587135	Nineteenth century farmhouse and outbuildings. Residence demolished but some outbuildings may survive. Site was used as part of the operation of the Fleurs aerodrome during the Second World War.	
S55	Cottage site	5a		Potential archaeological site	22-66 Salisbury Avenue, Kemps Creek	Lot 401 DP812923	Pre-1917 cottage site	
S56	Unidentified building site	5a		Potential archaeological site - compromised	155 Tavistock Road, Kemps Creek	Lot 50 B DP2566	Pre-1917 unidentified structure.	
S57	'Cooloo' homestead	5a		Potential archaeological site	170 & 180 Cross Street, Kemps Creek	Lot 24 & Lot 25 DP29832	'Cooloo; homestead, outbuildings and yards, post-1823. Henry Marr later Sadler then Edwards. Demolished before 1955.	

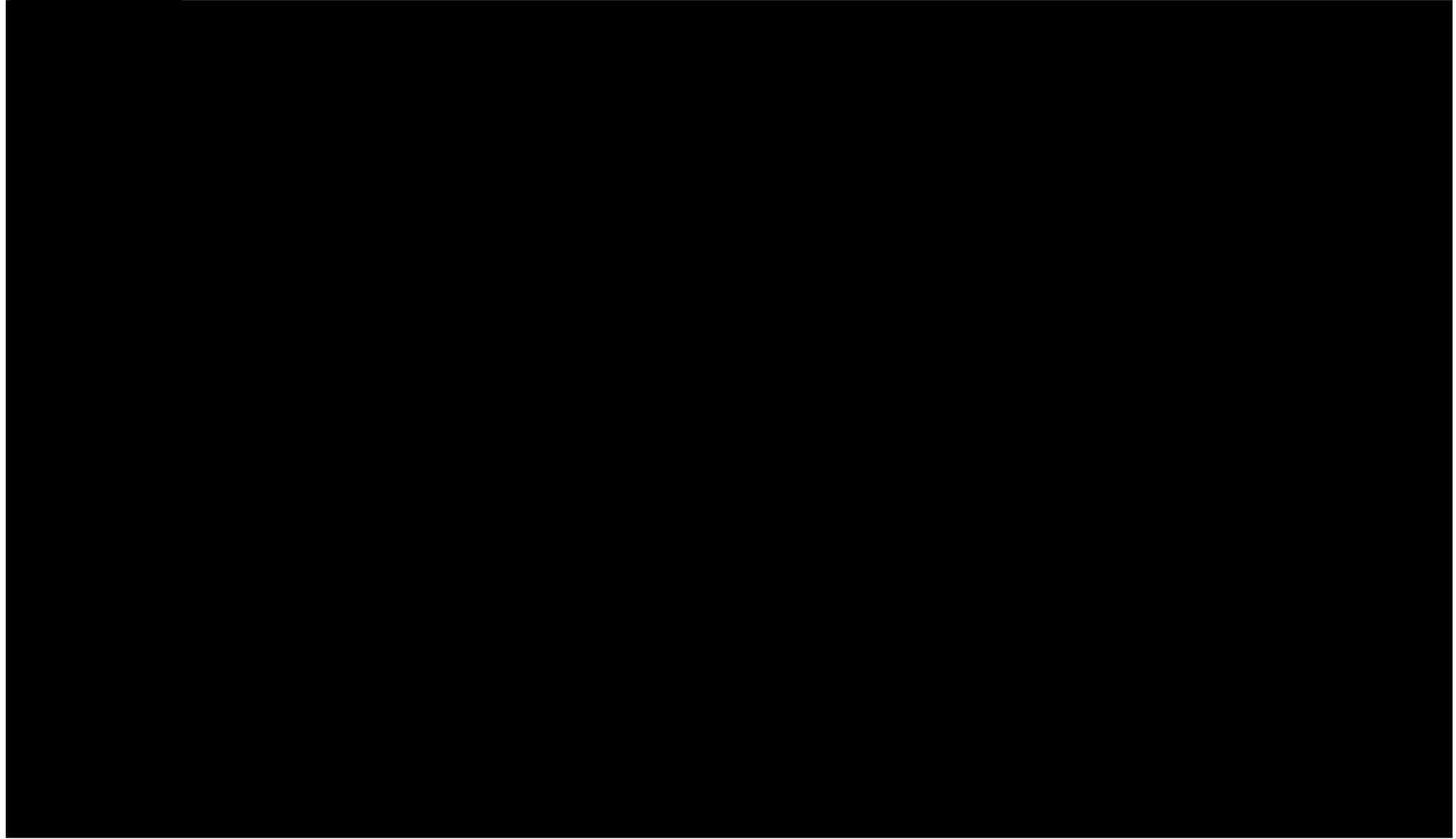
Appendix C. Aboriginal consultation

Appendix C.1 Consultation log

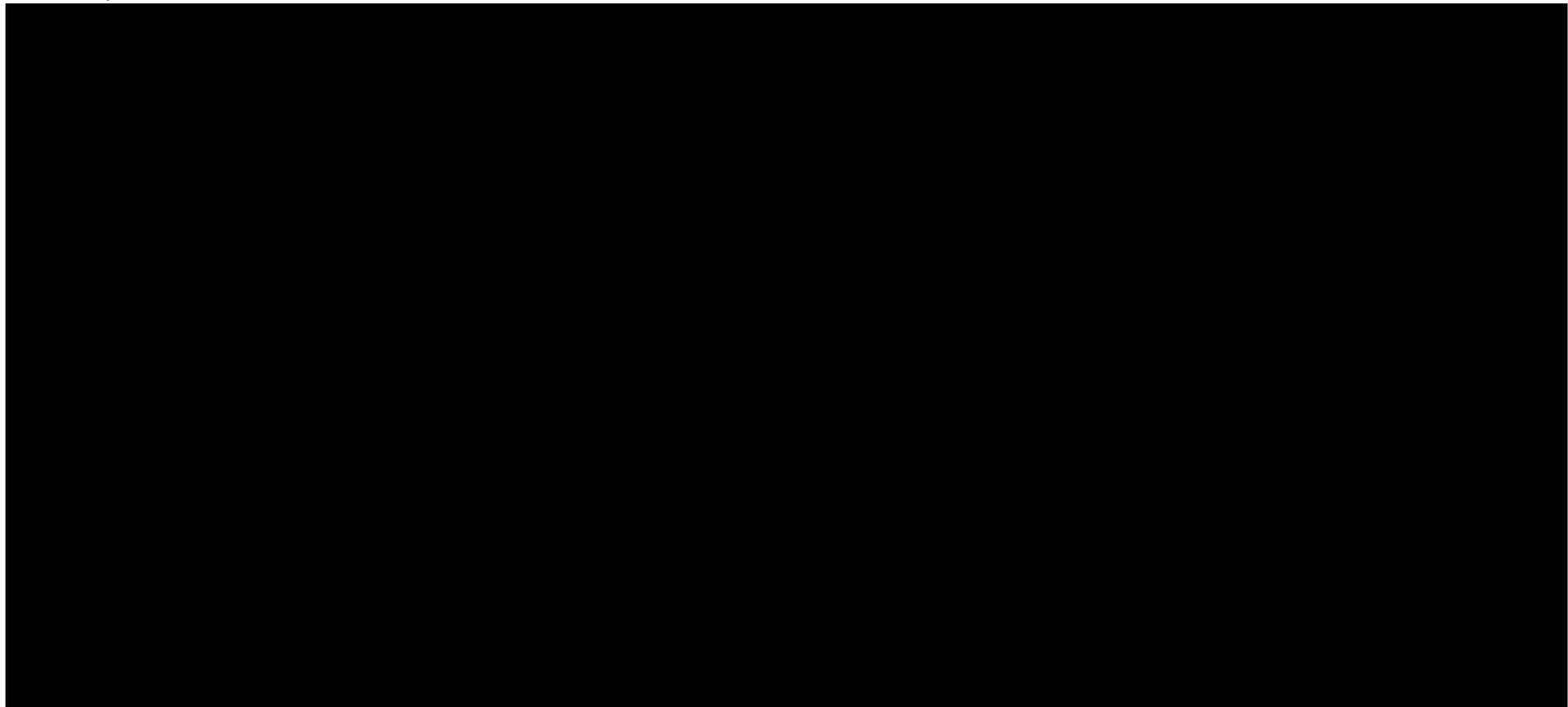




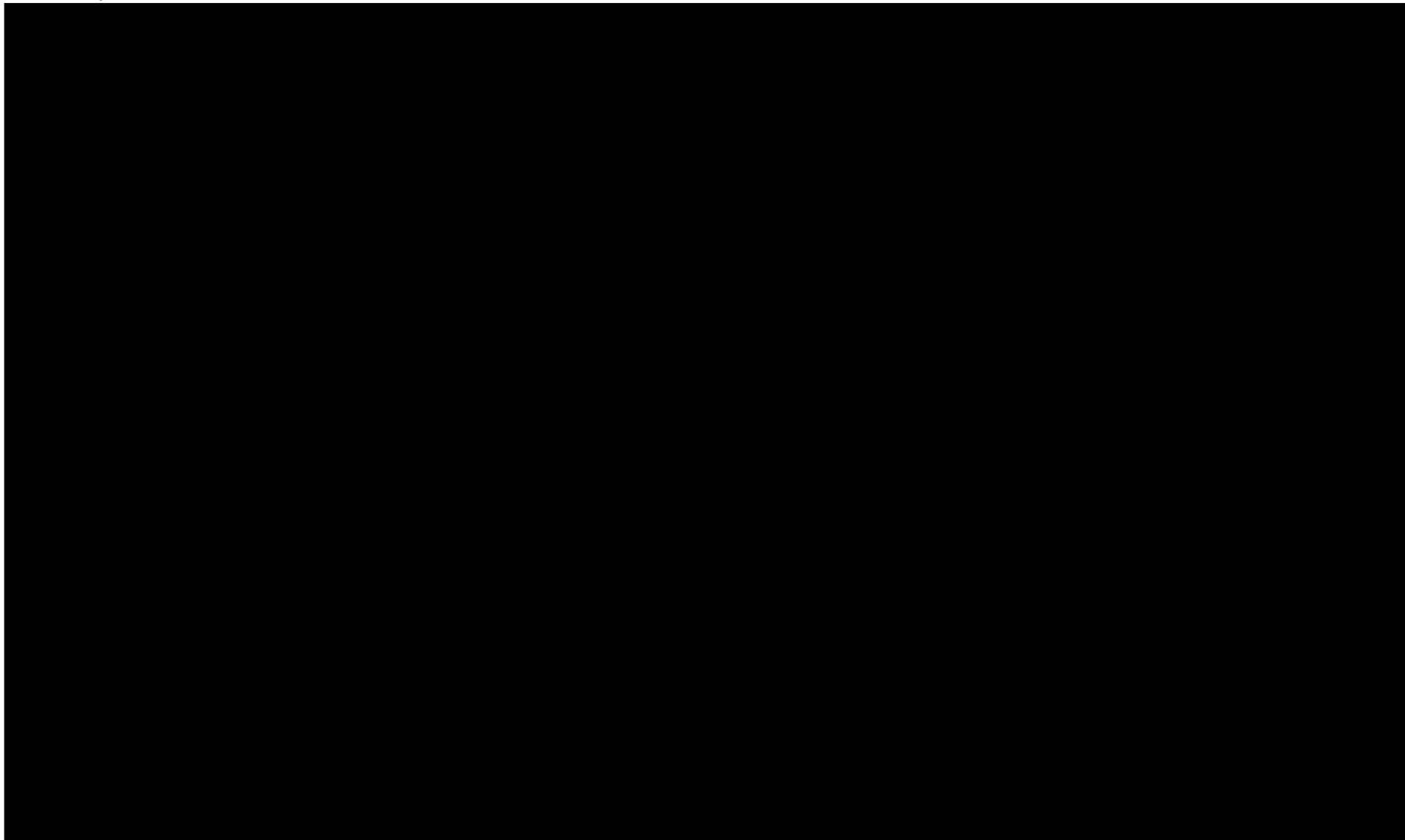




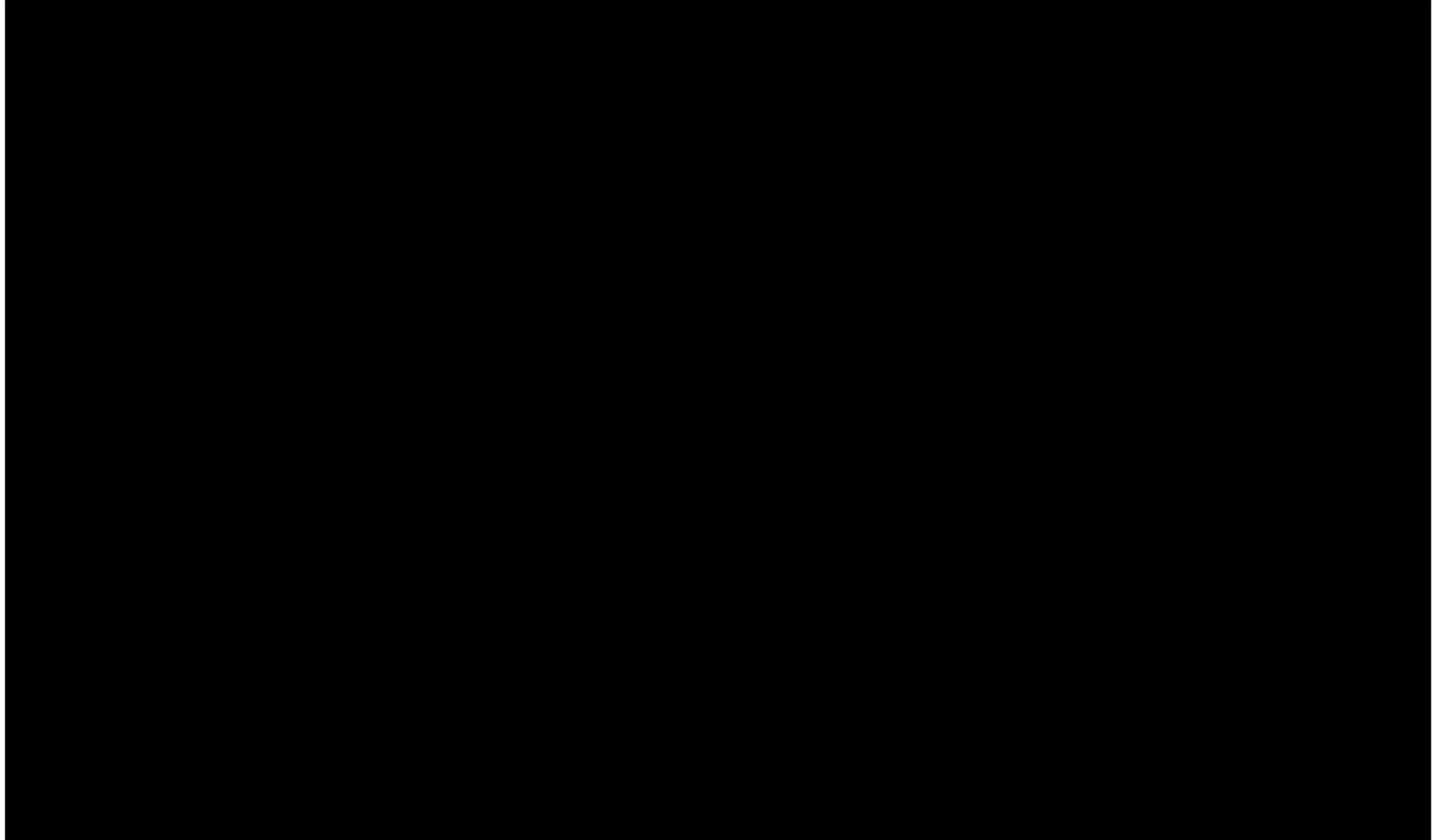


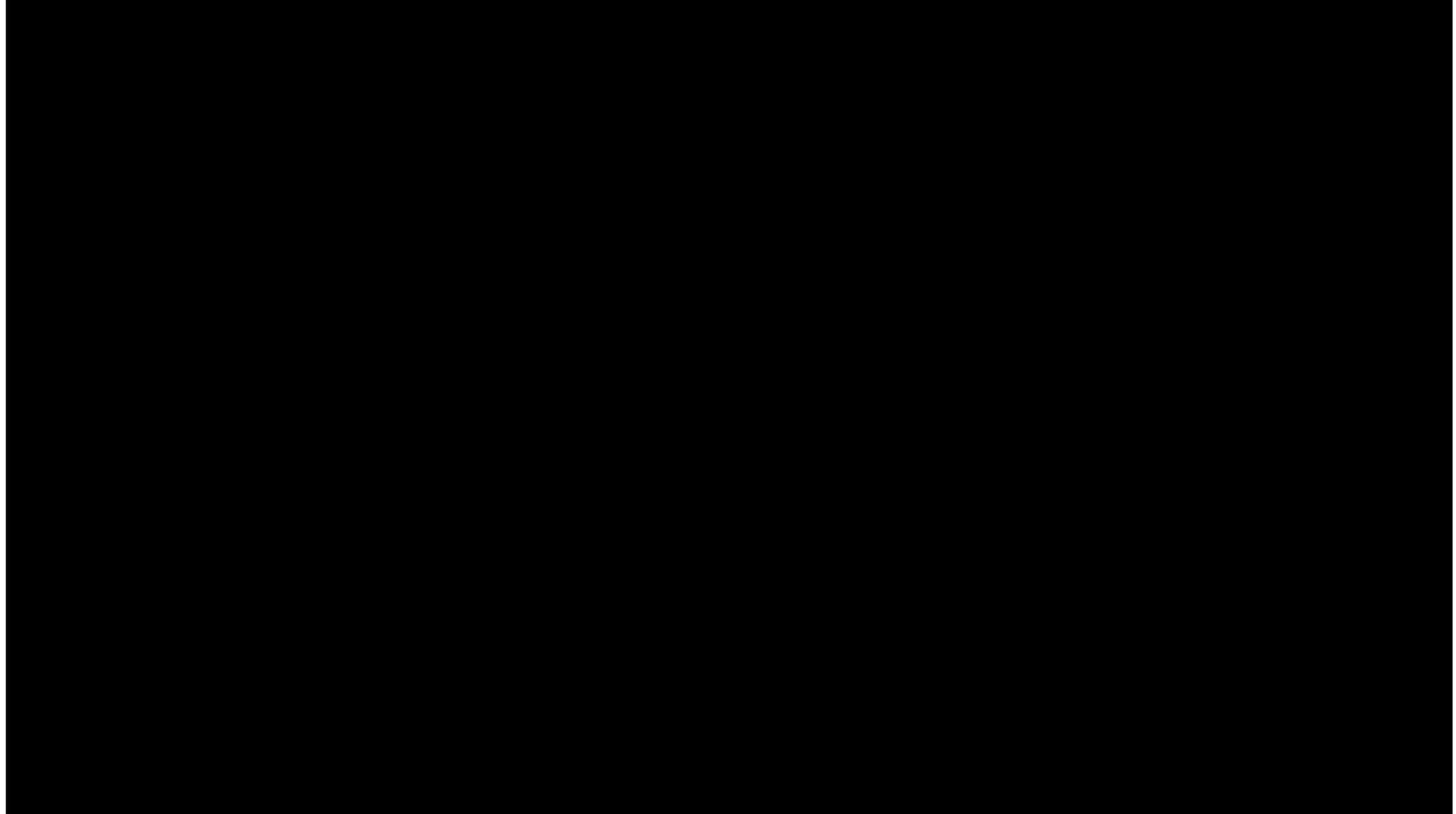


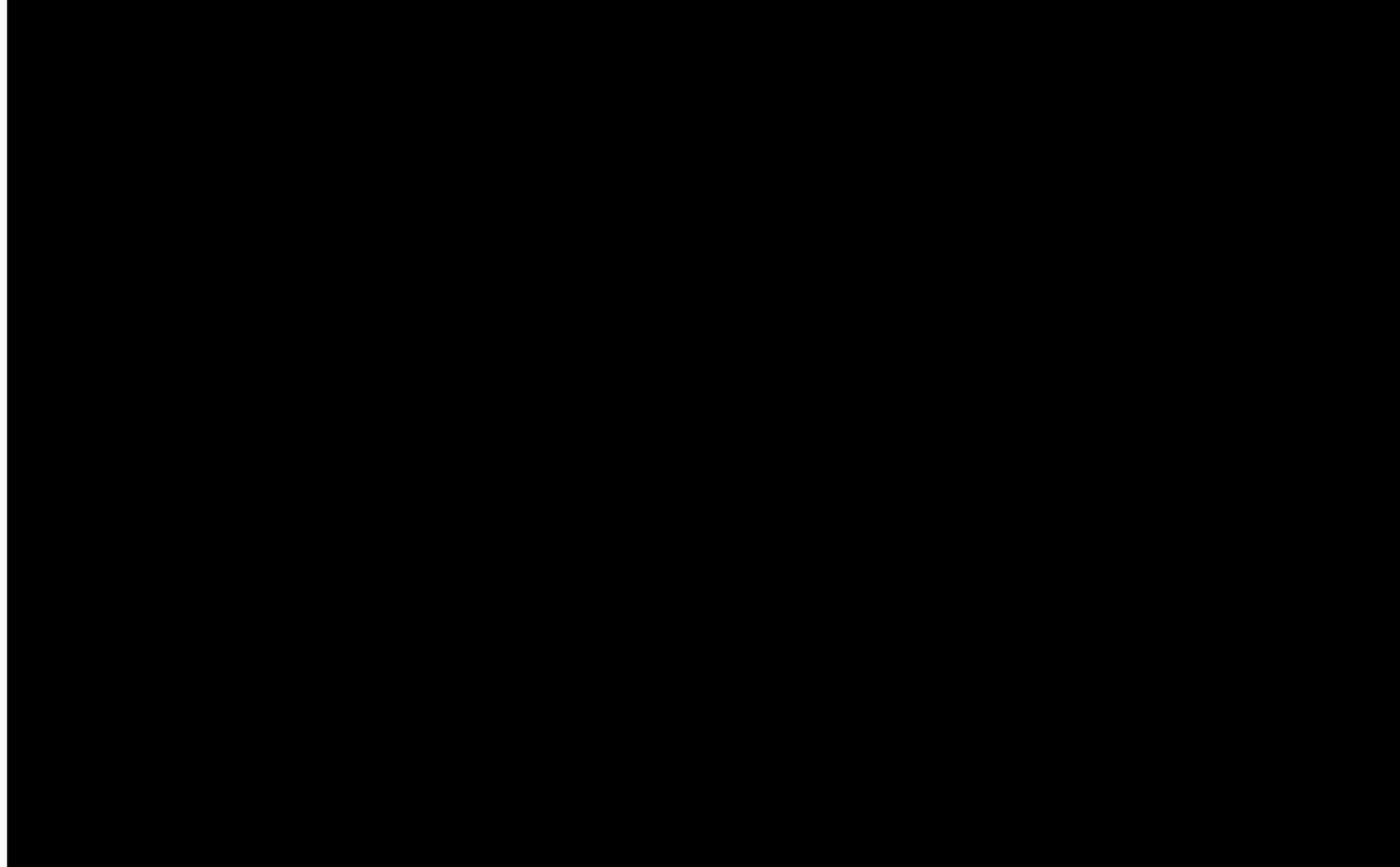


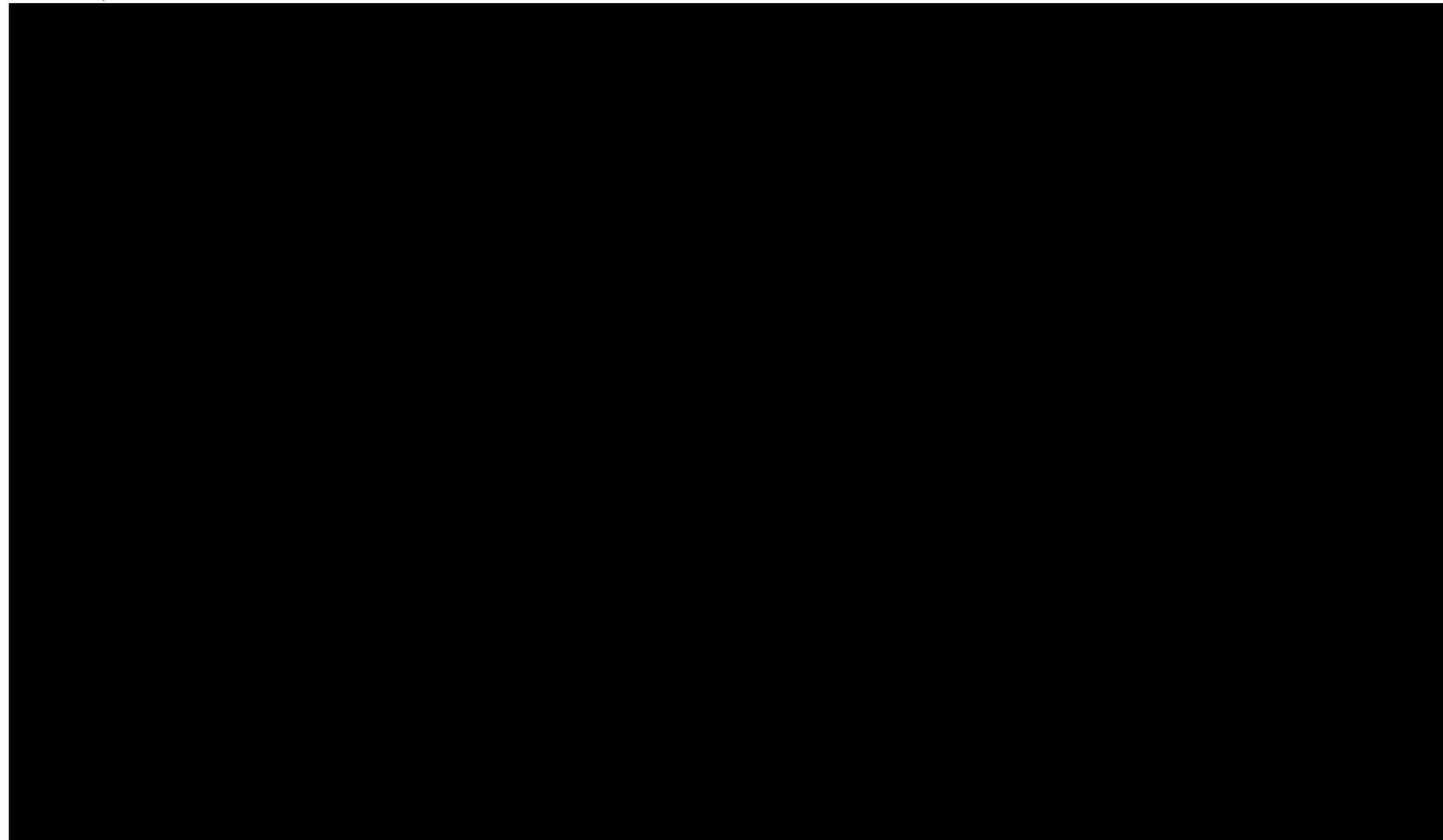


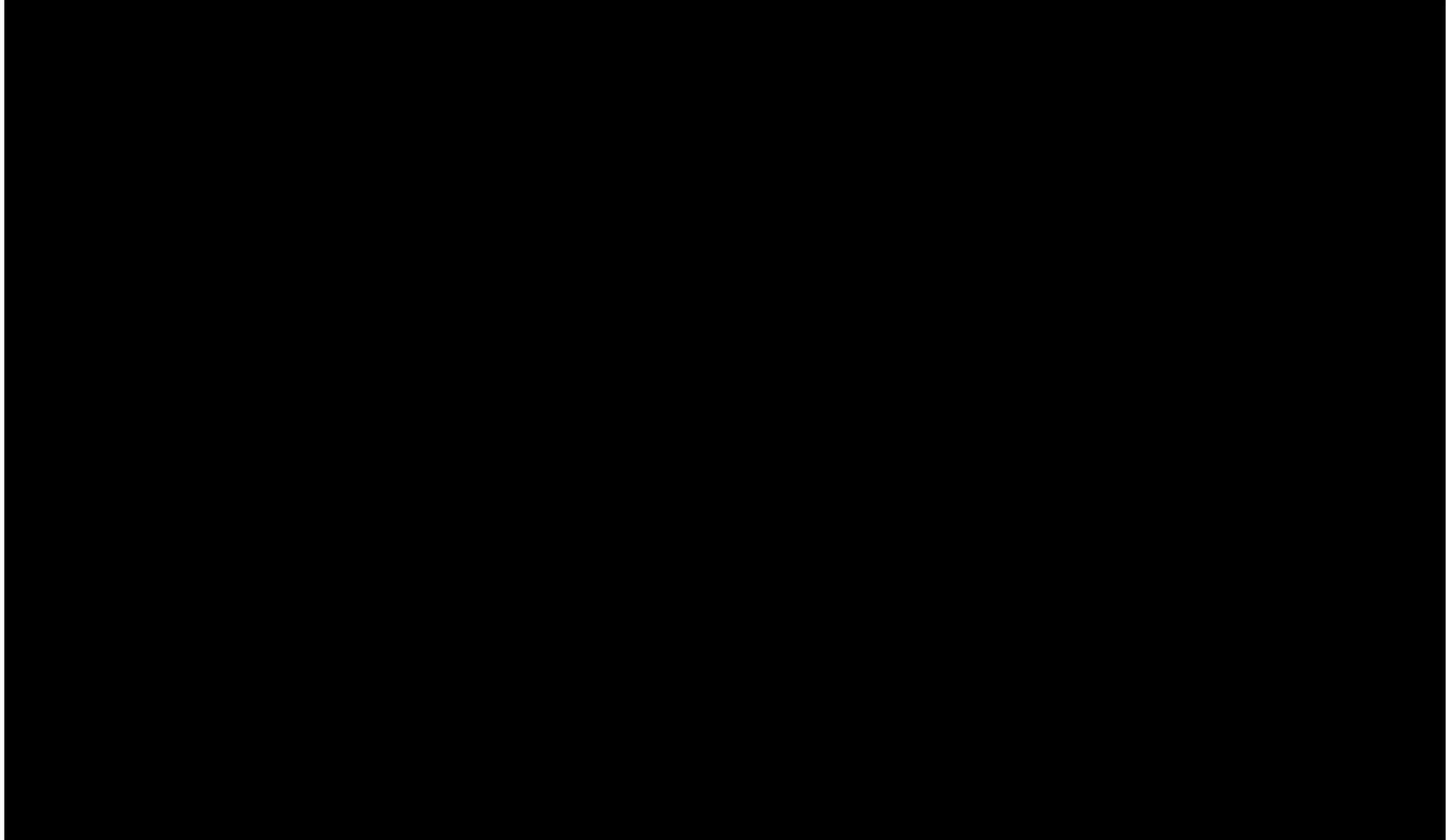


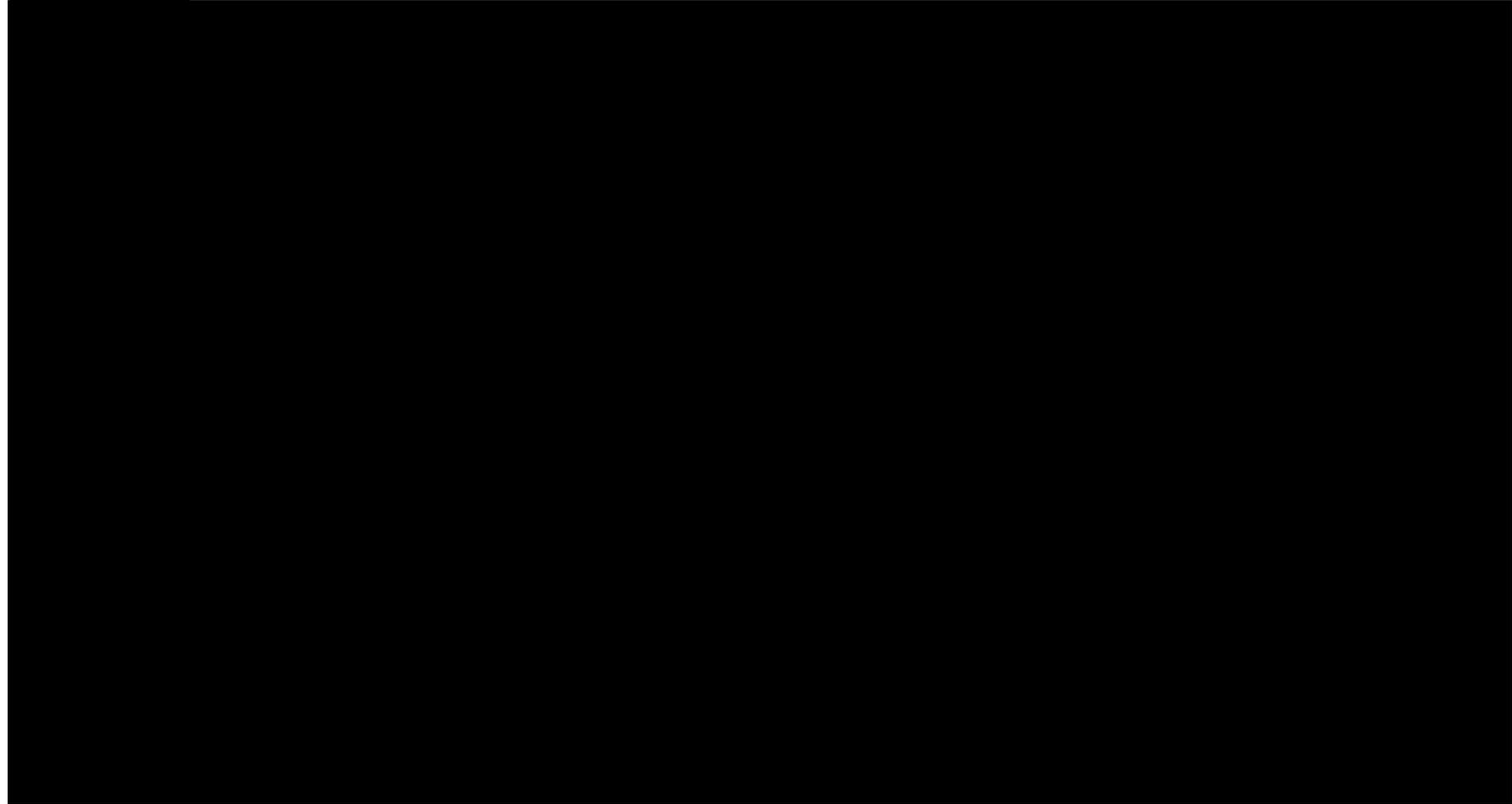


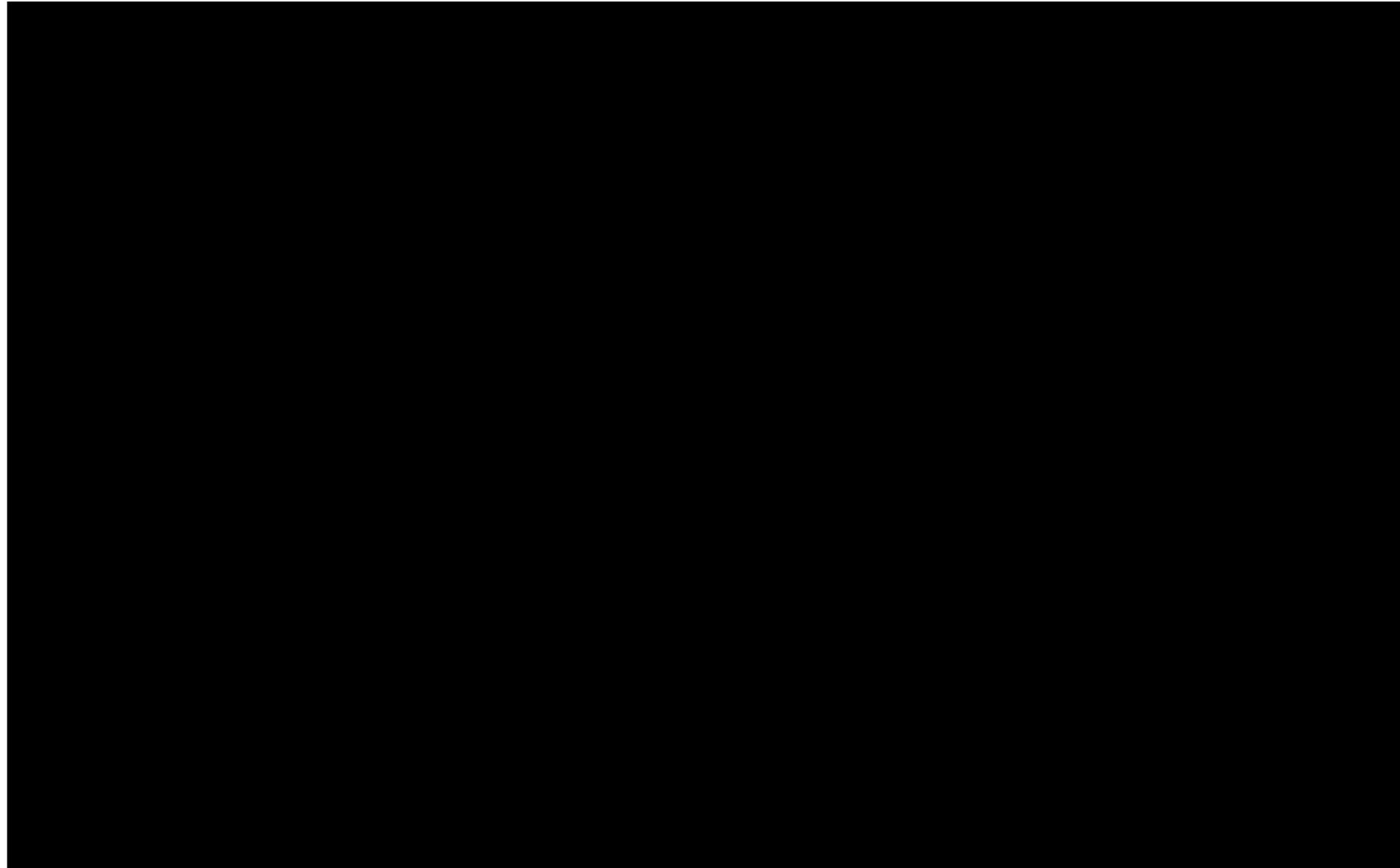




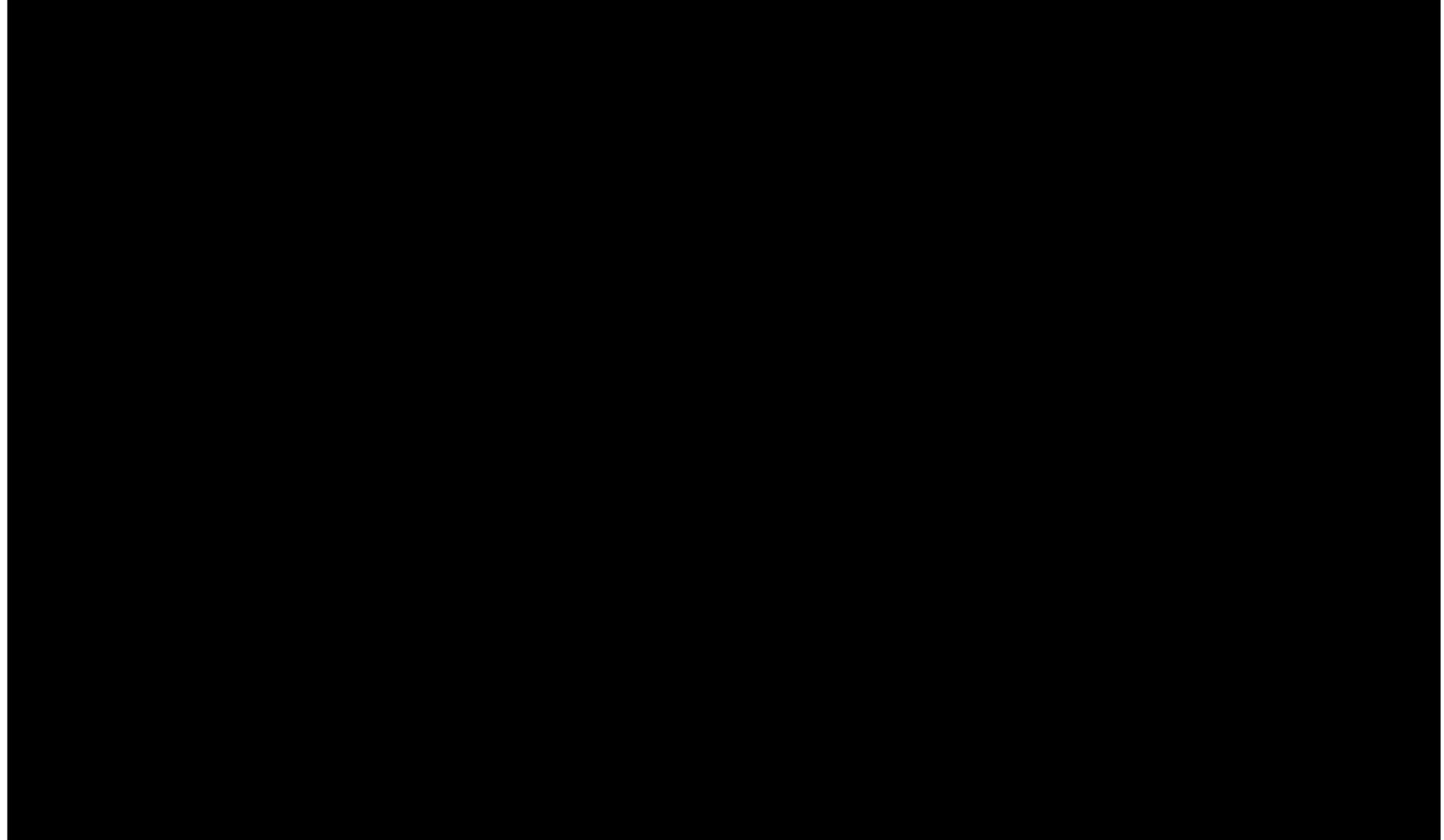




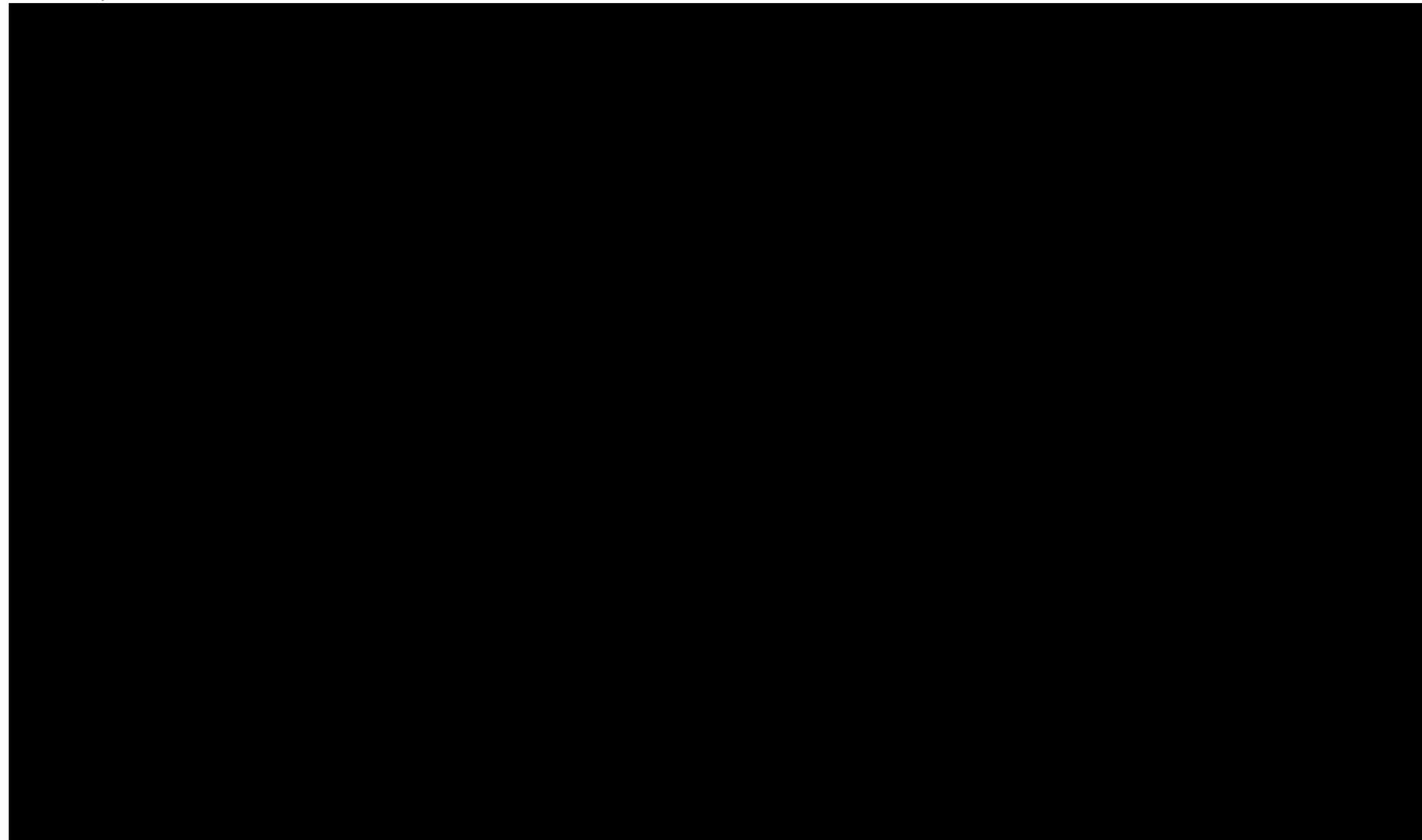


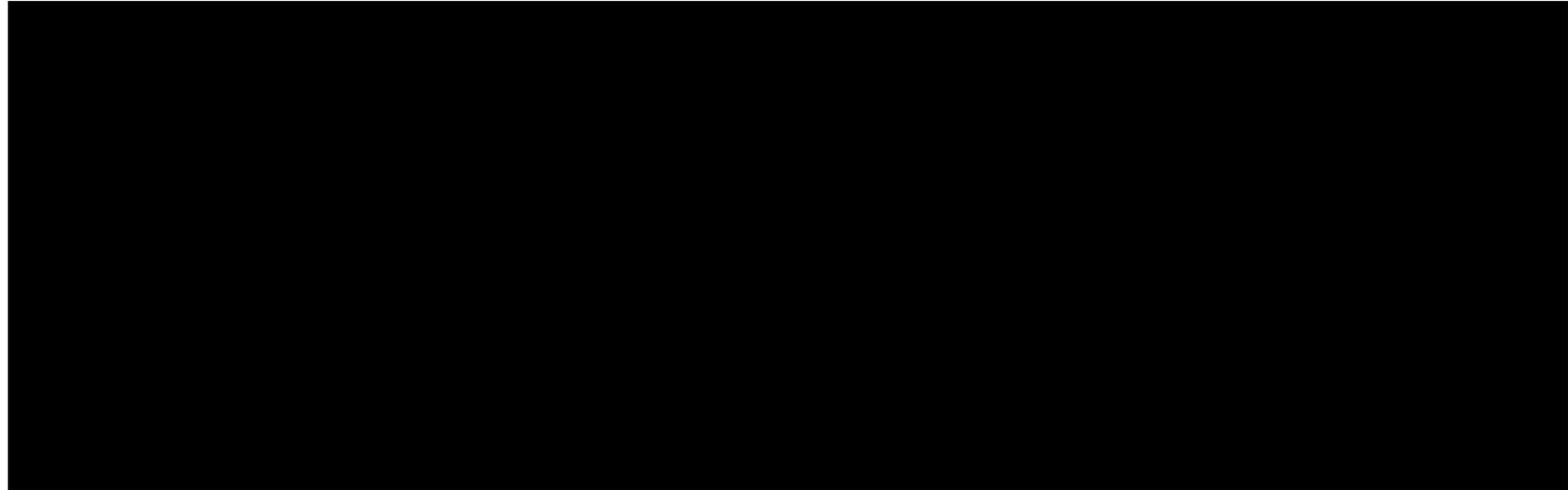


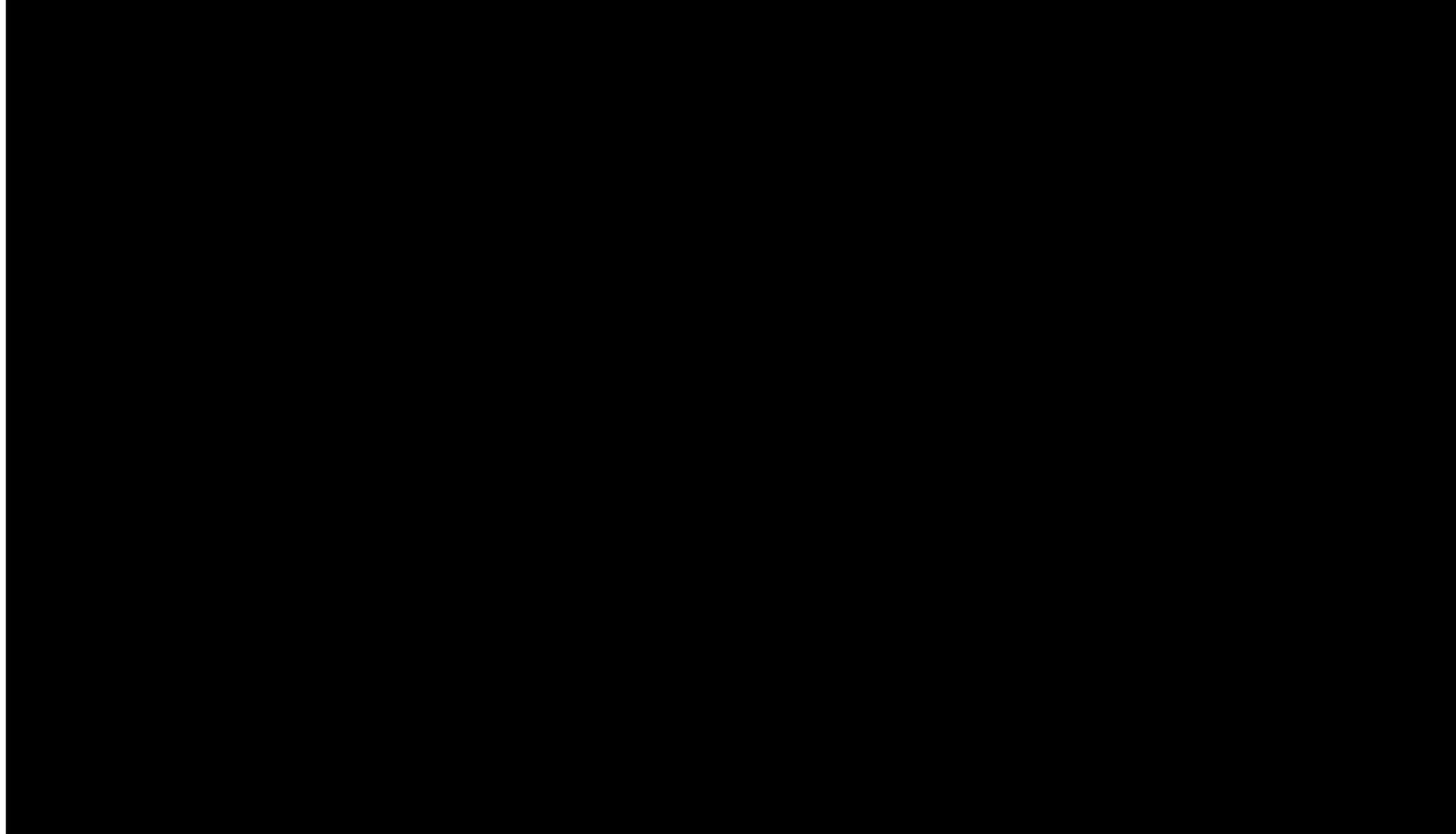


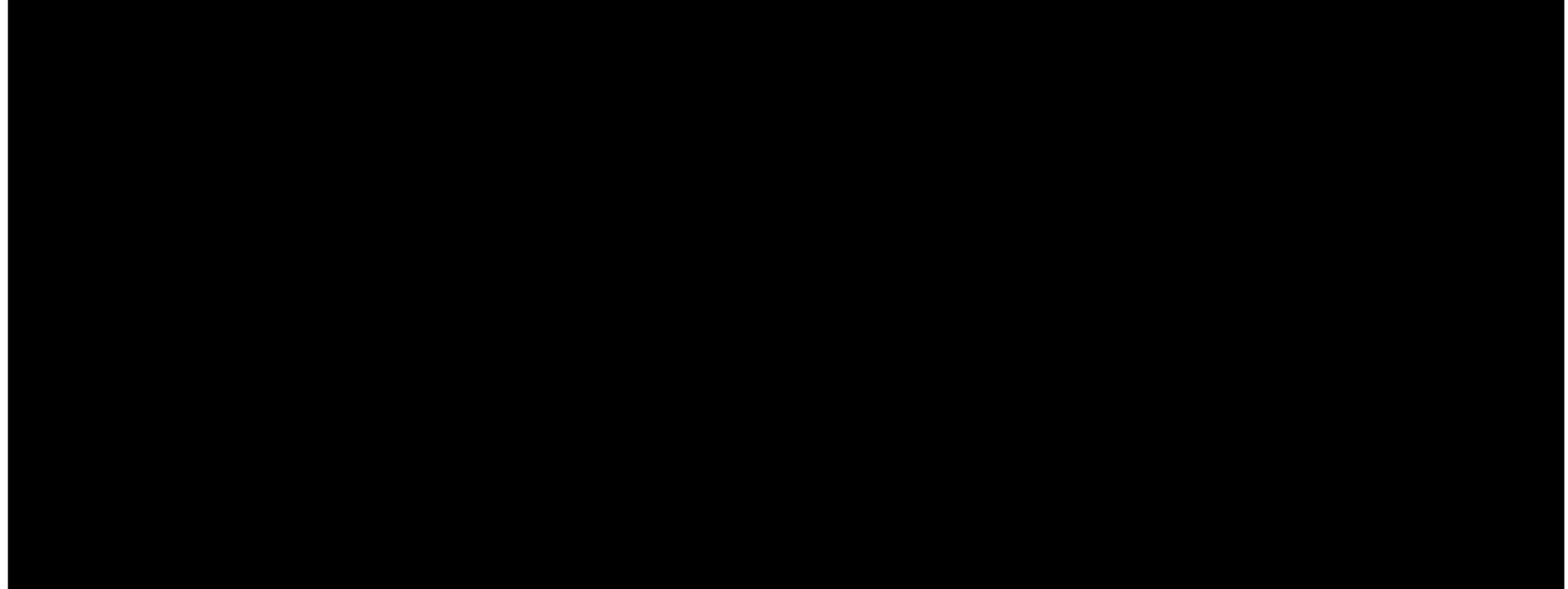






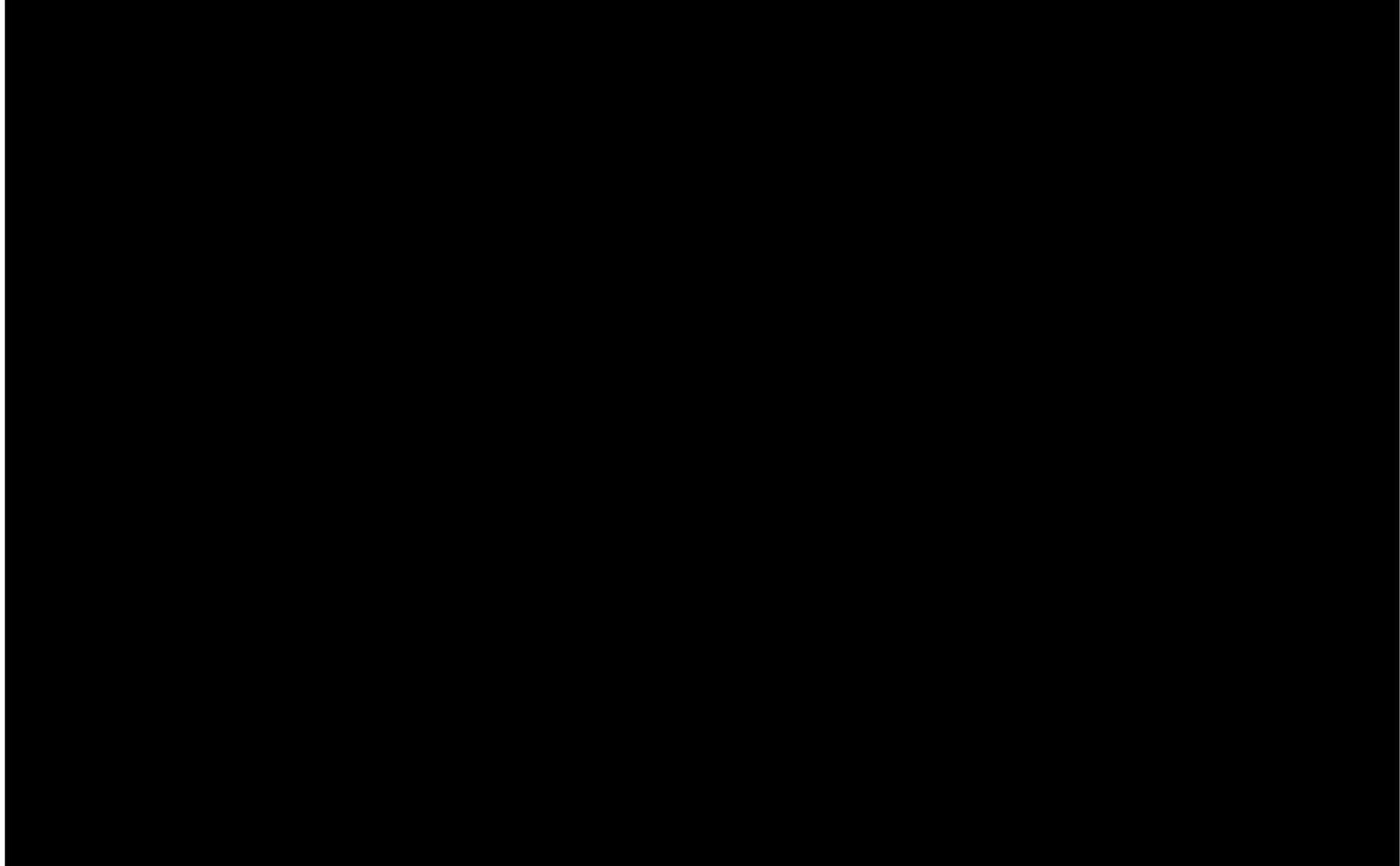


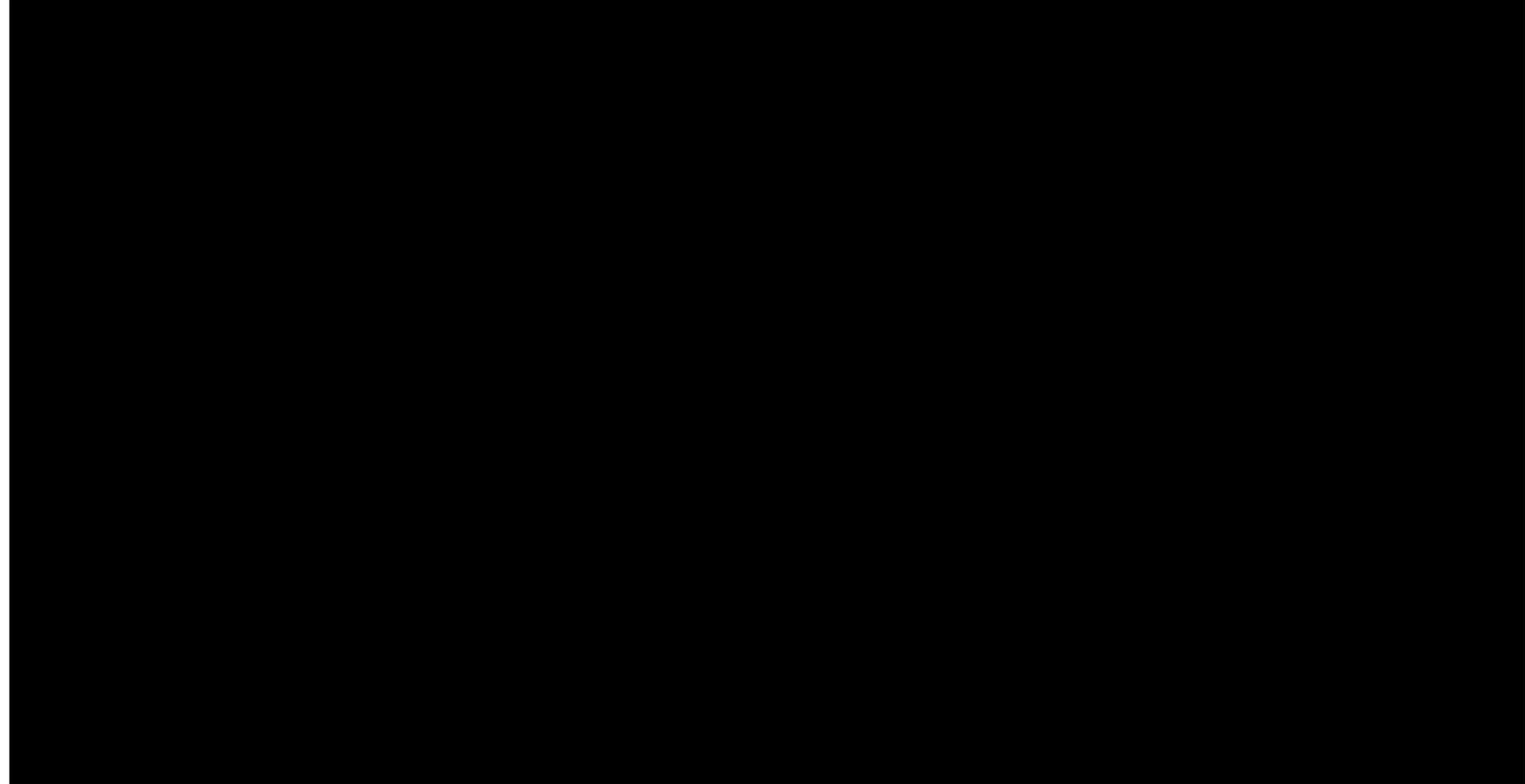




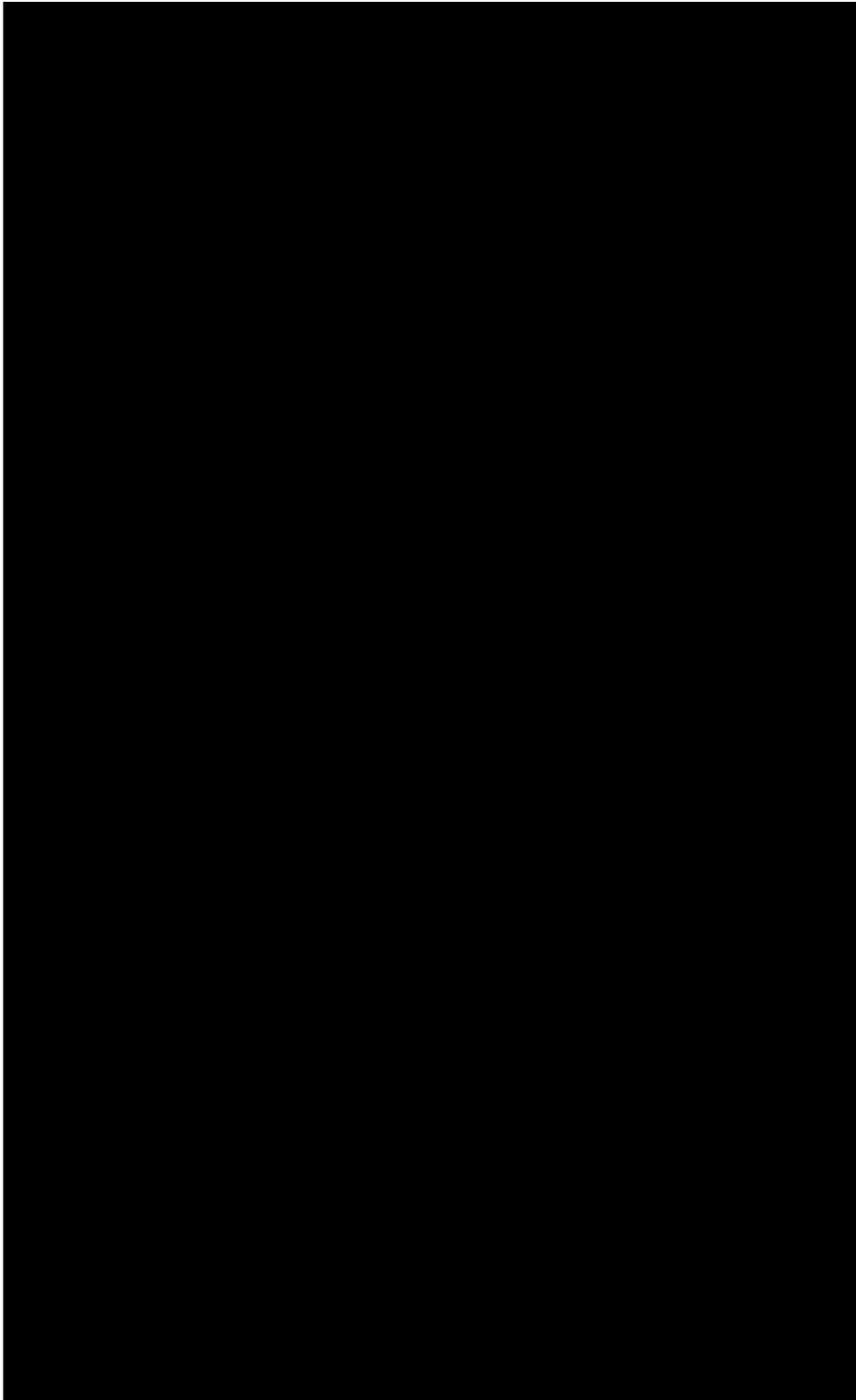




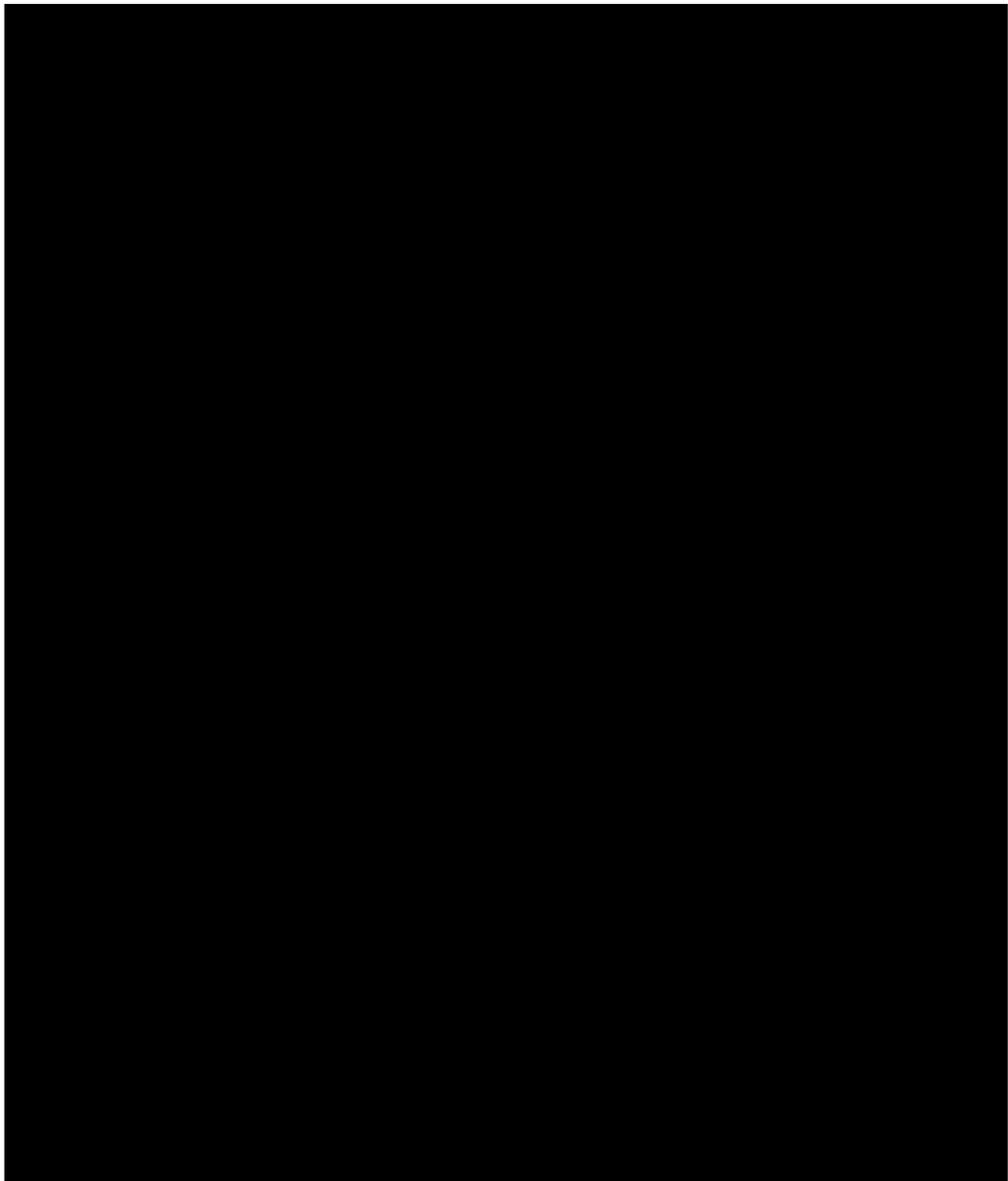


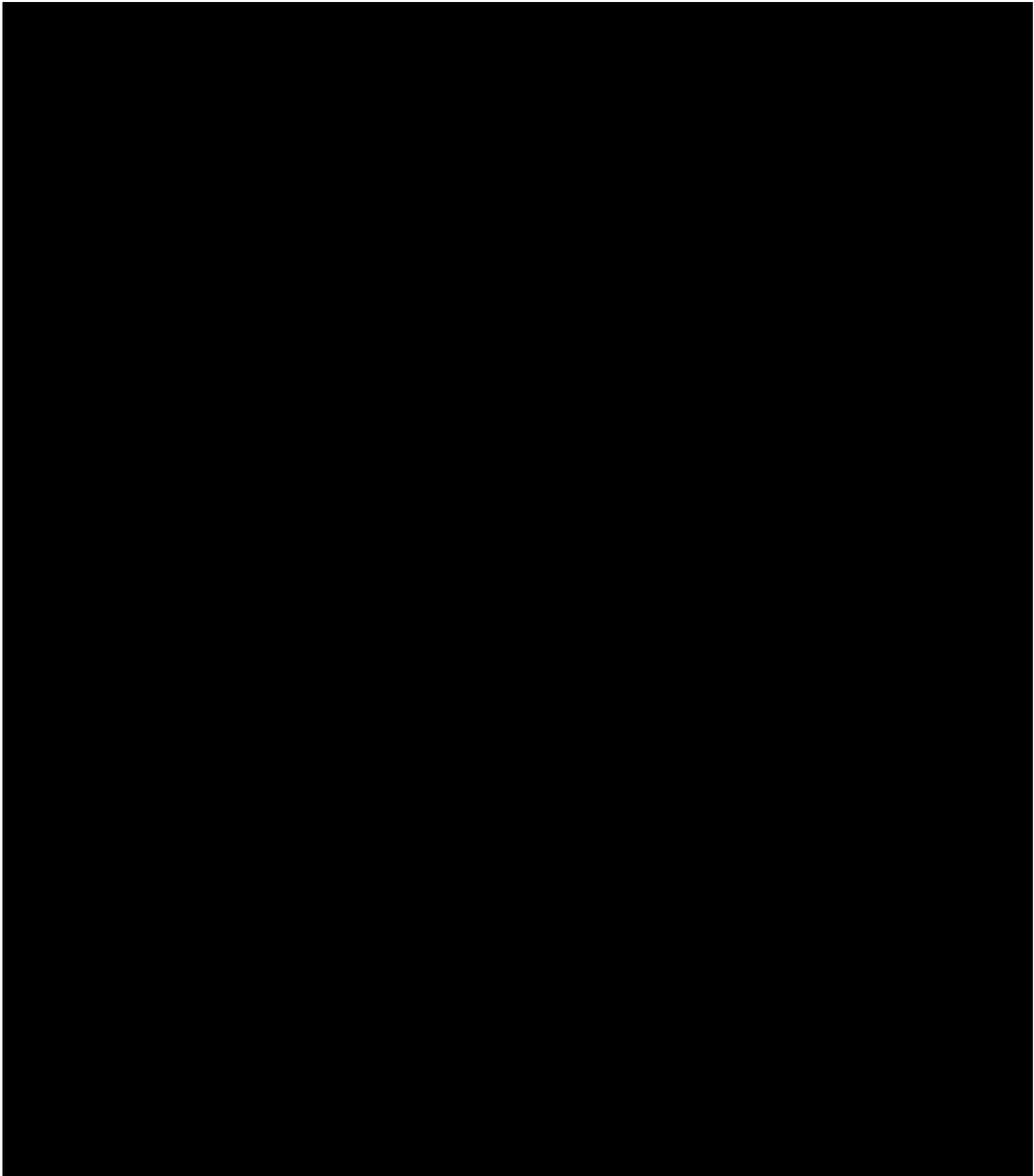


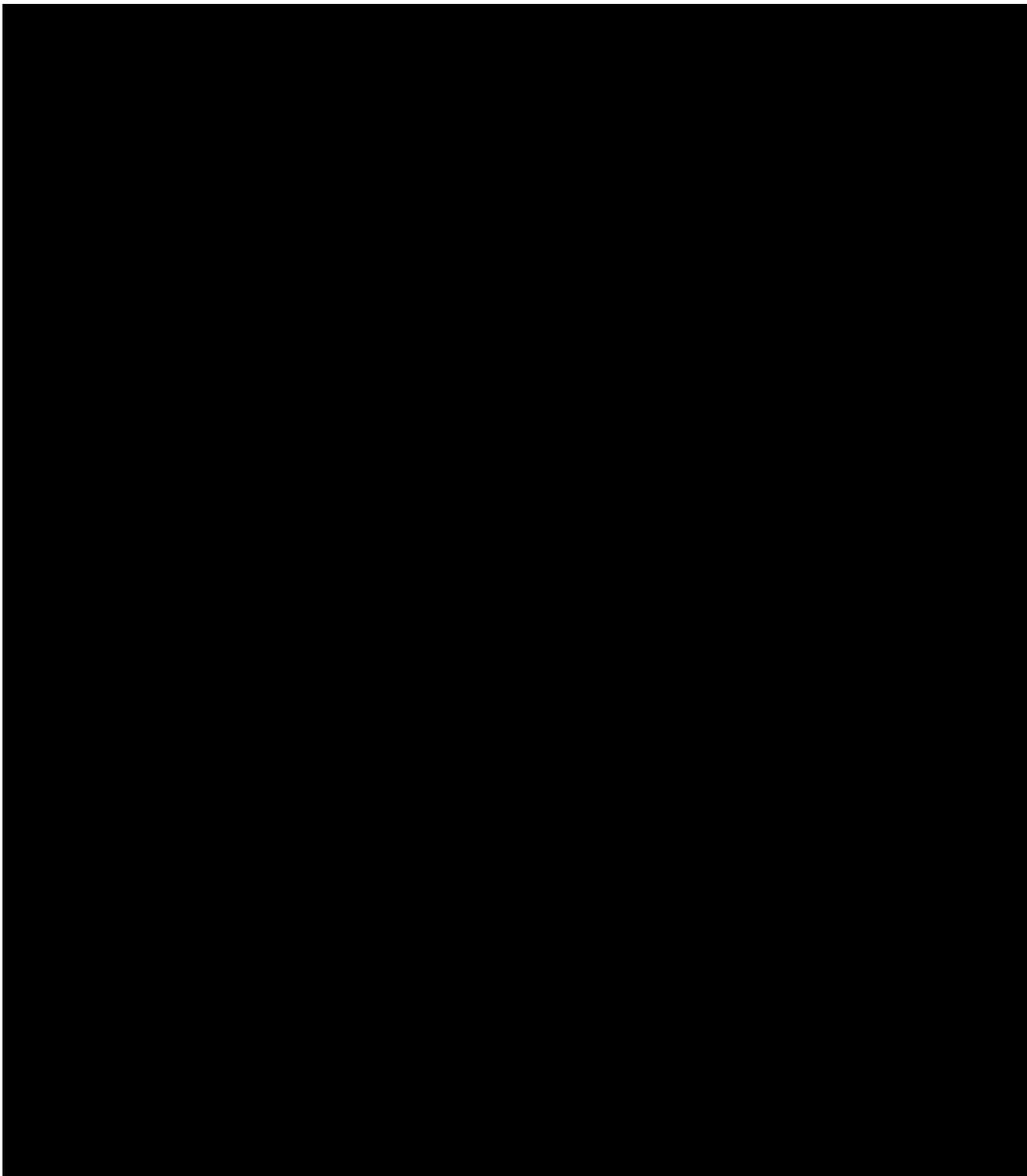
Appendix C.2 Pre-notification consultation sent and responses received

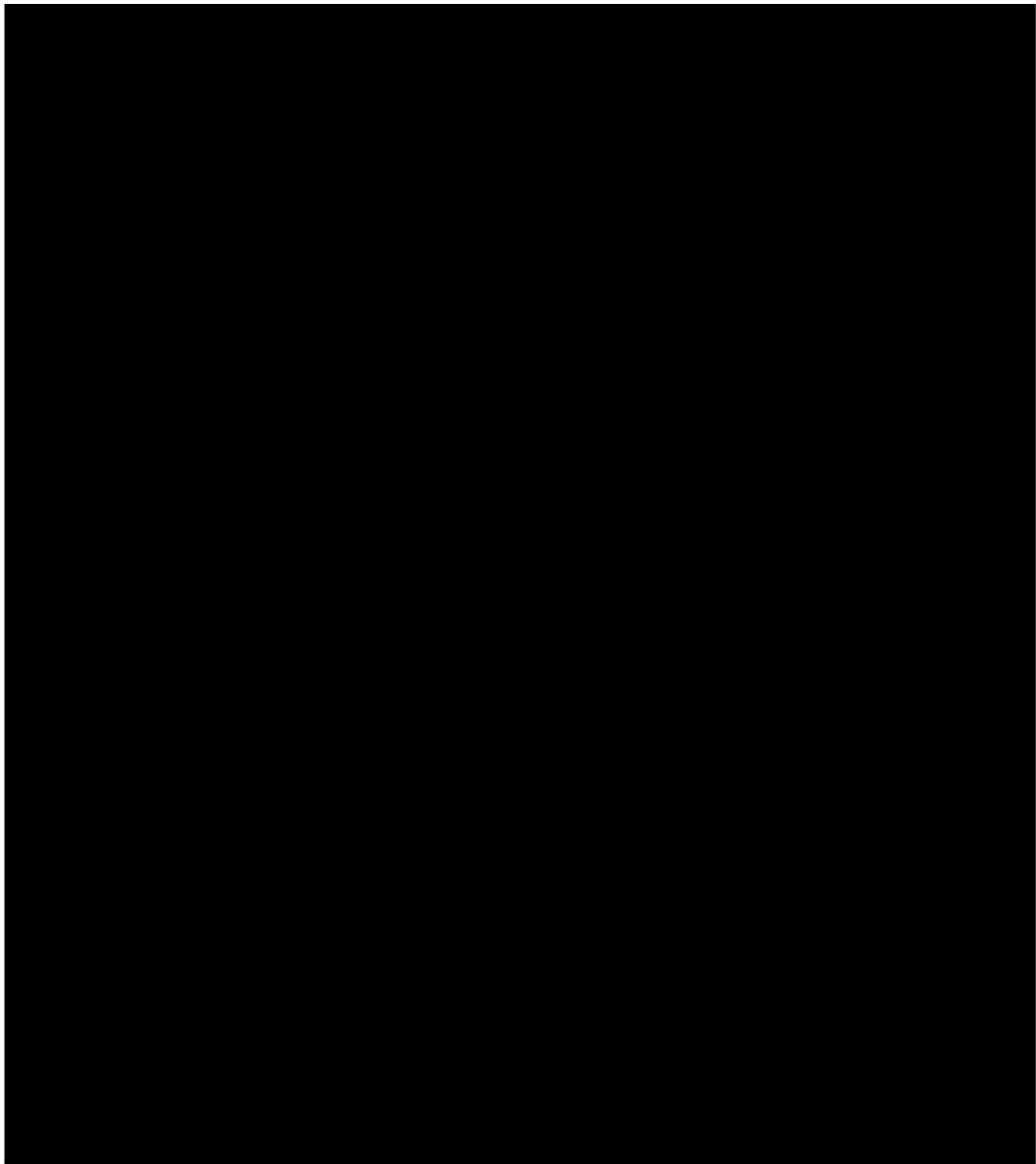


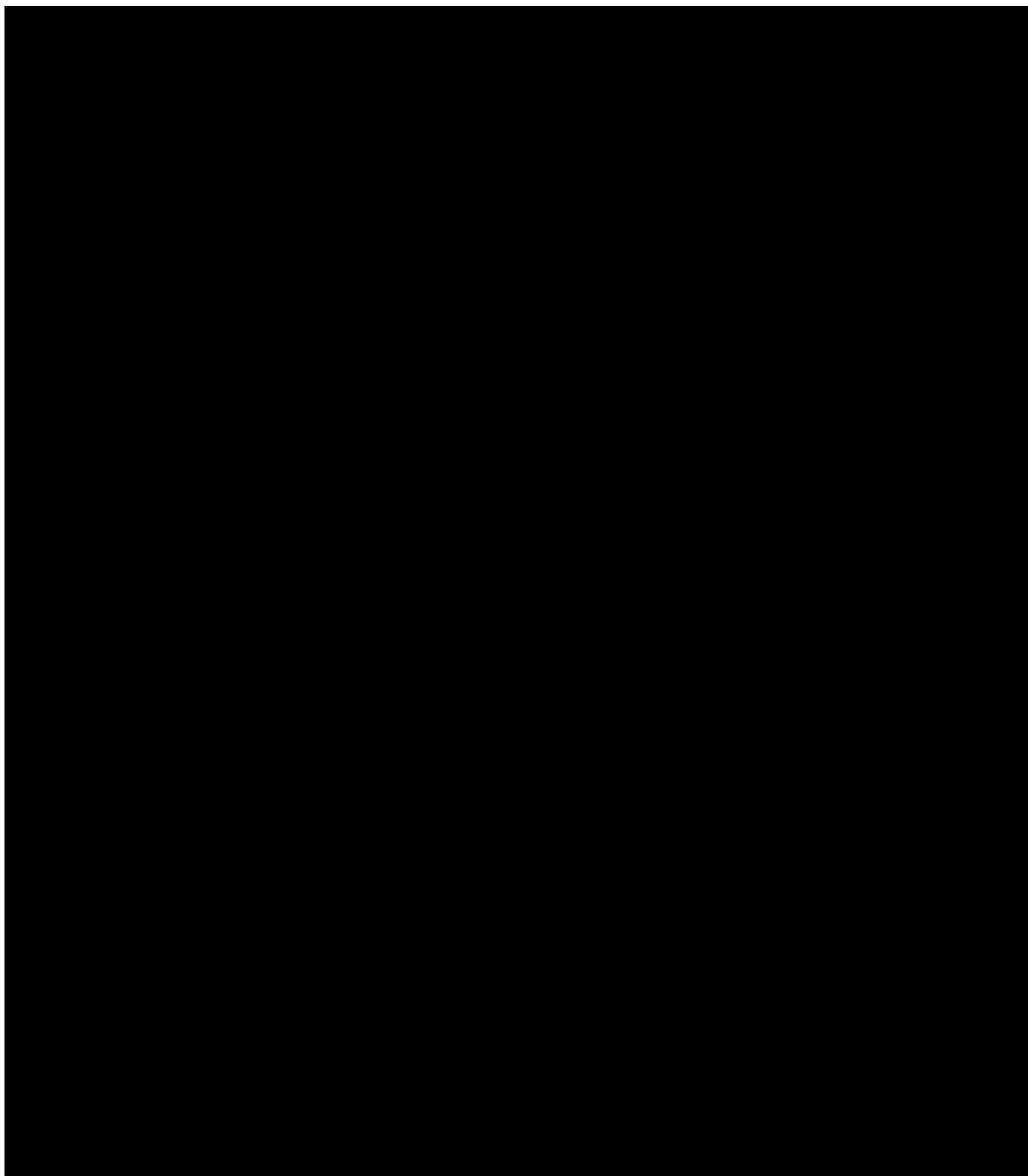


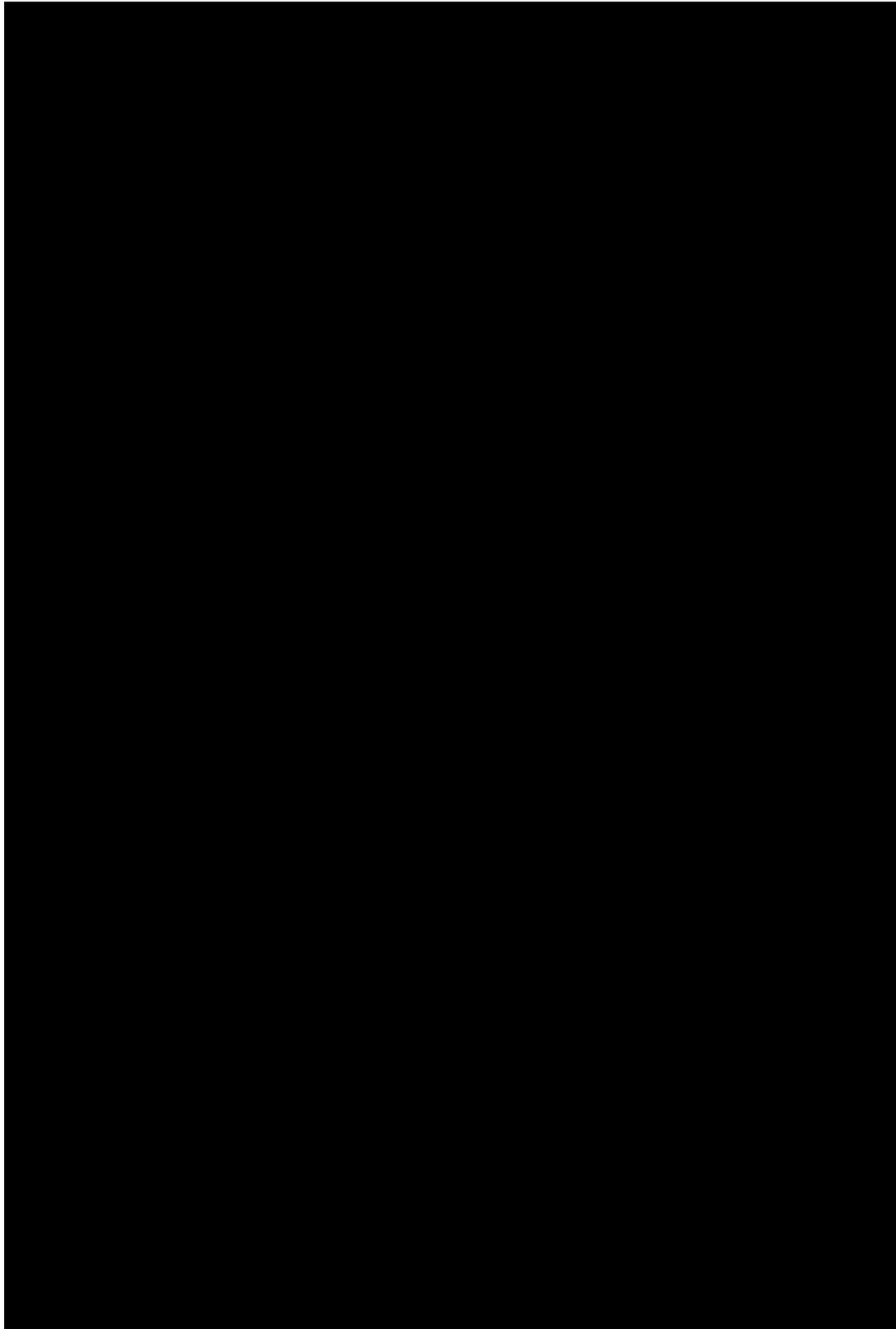




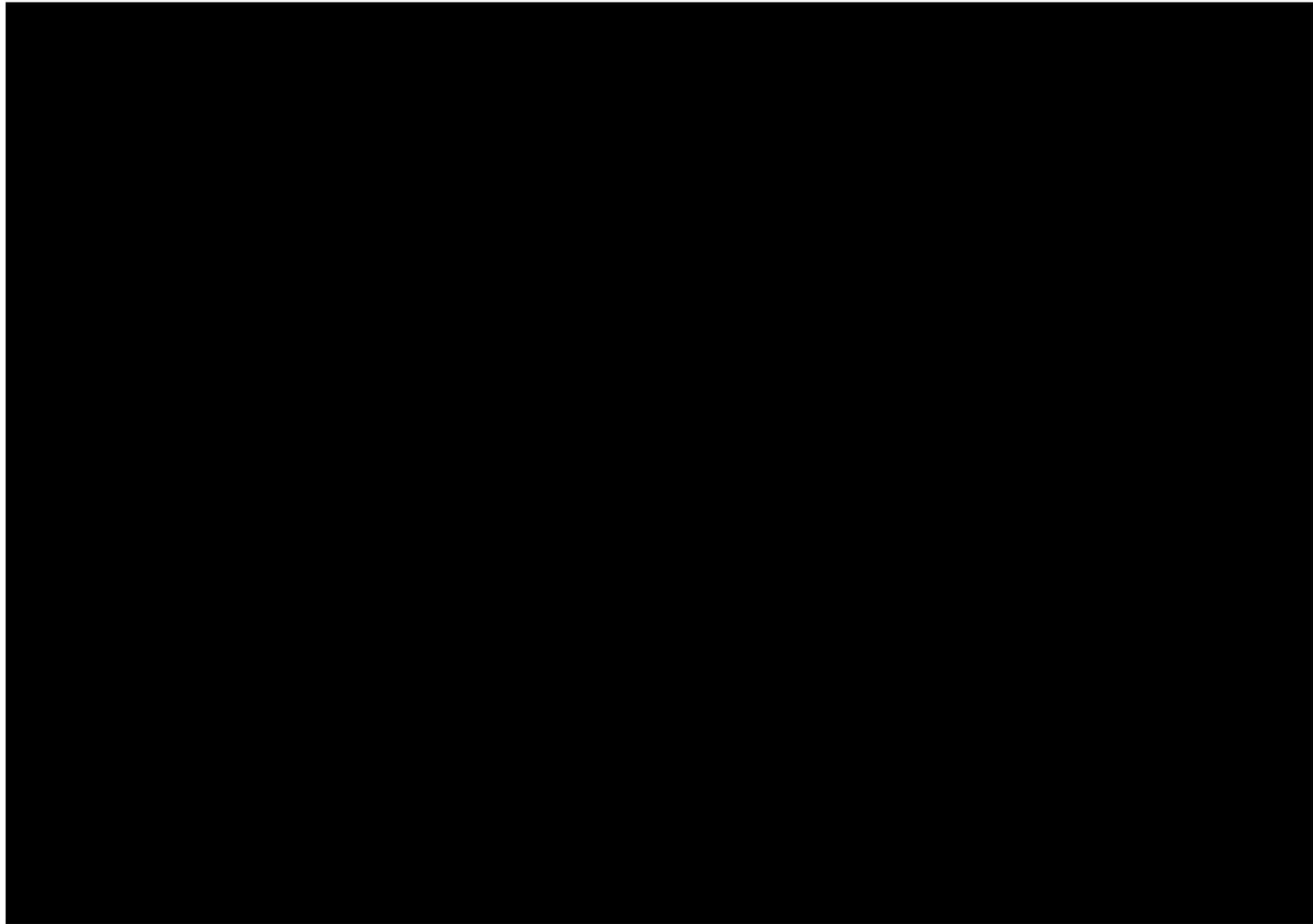


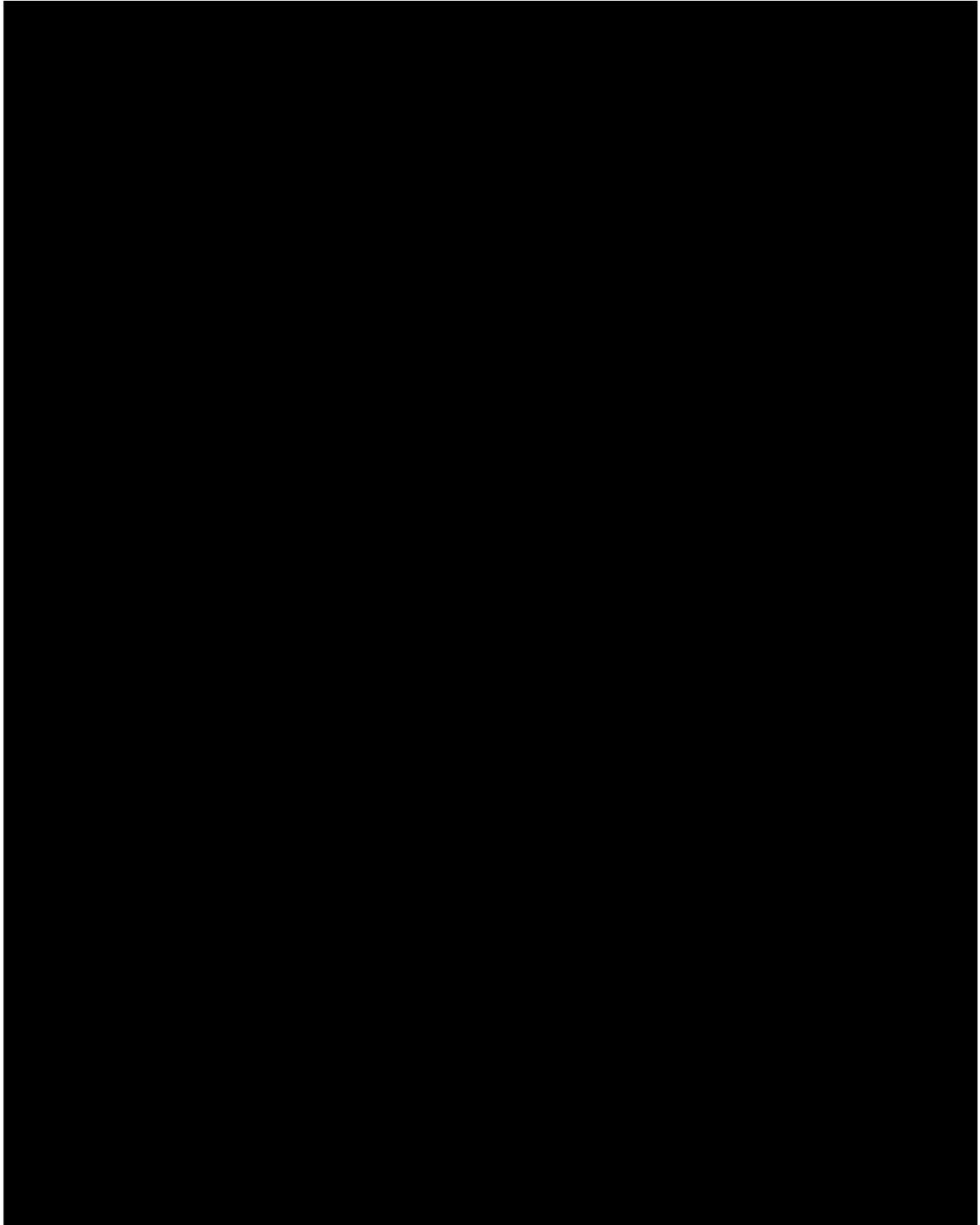


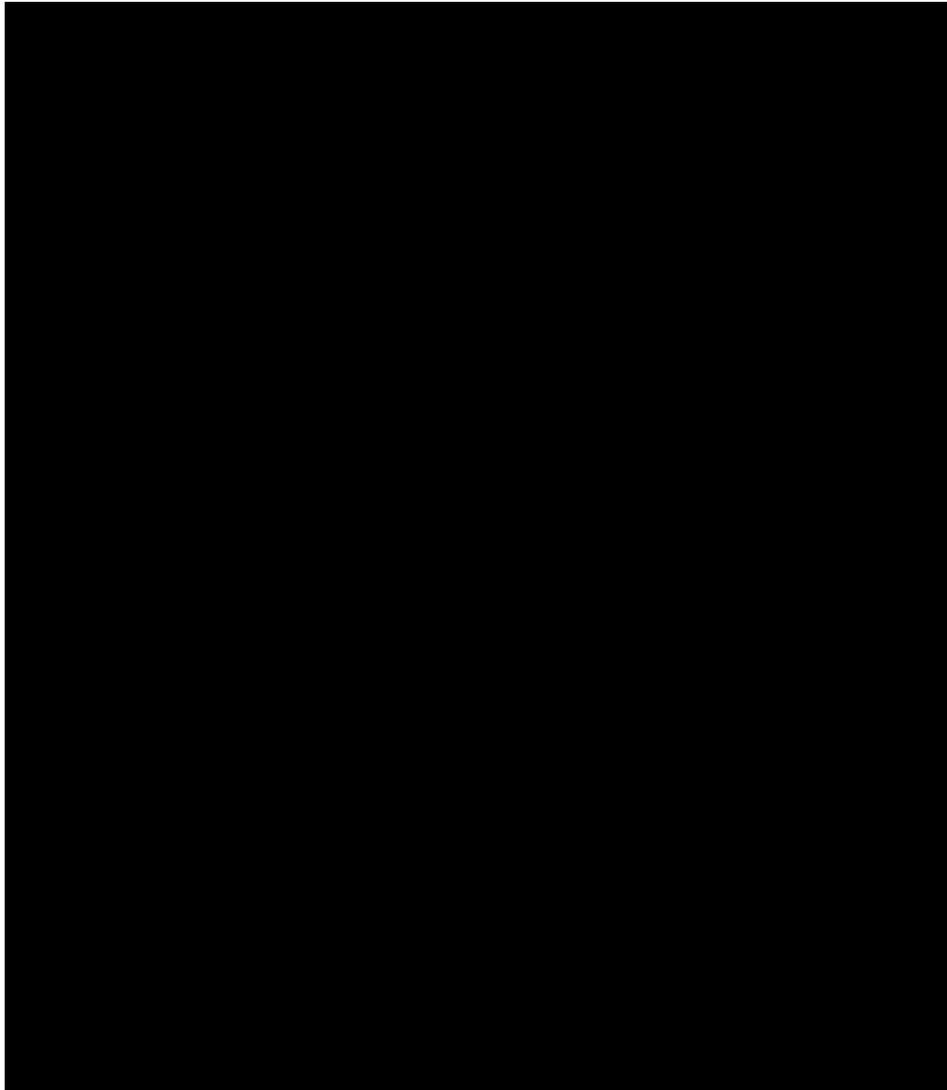


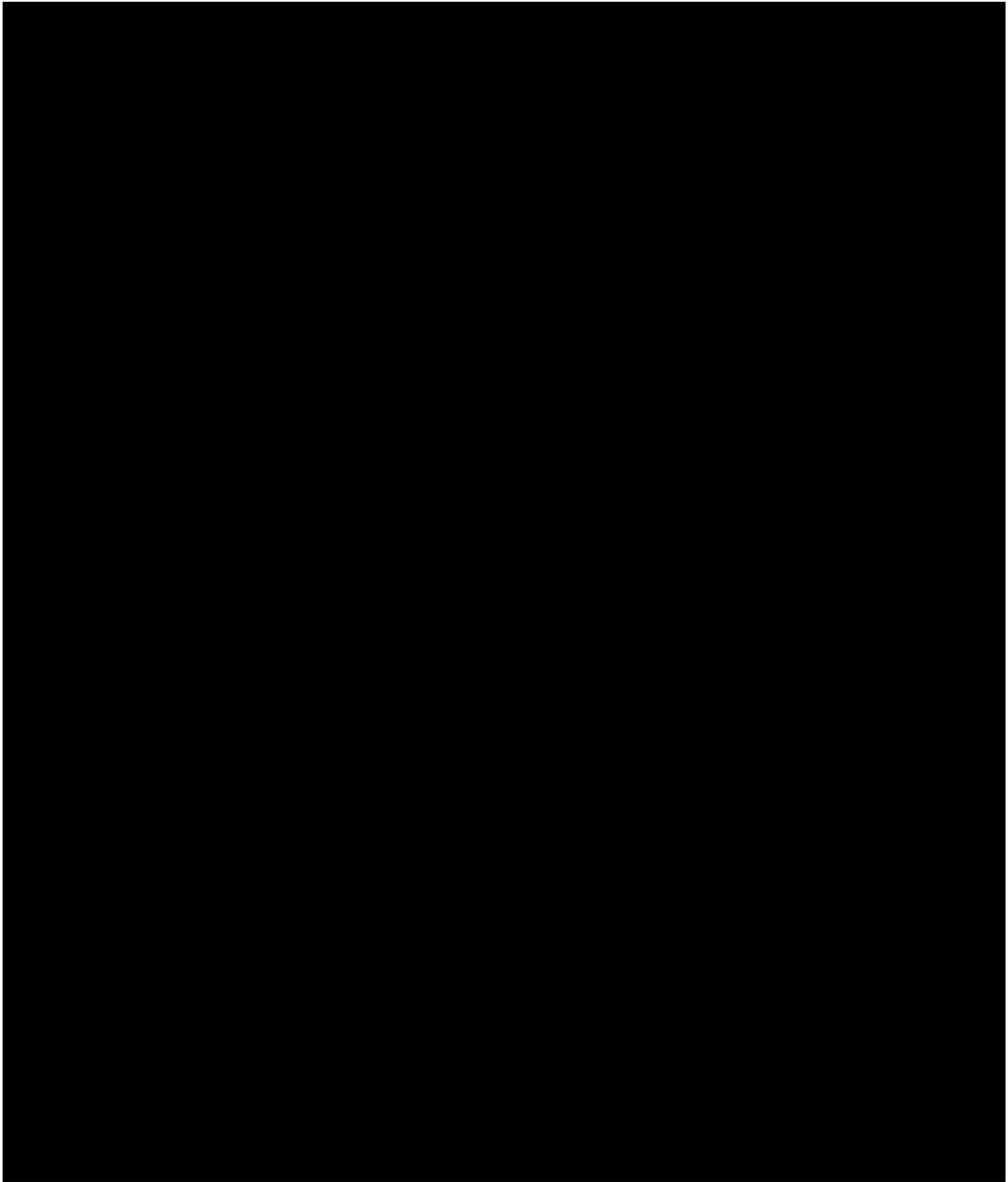


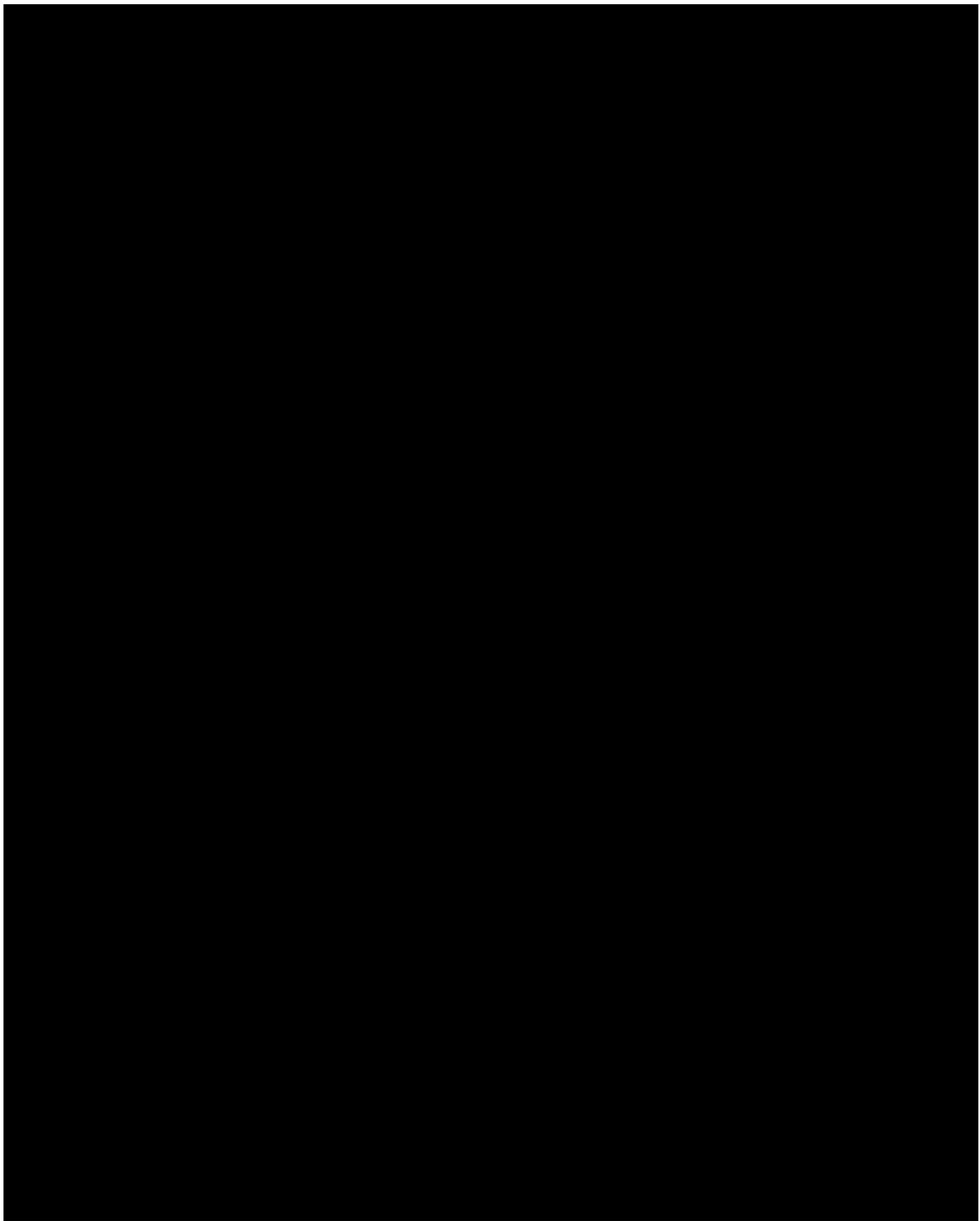


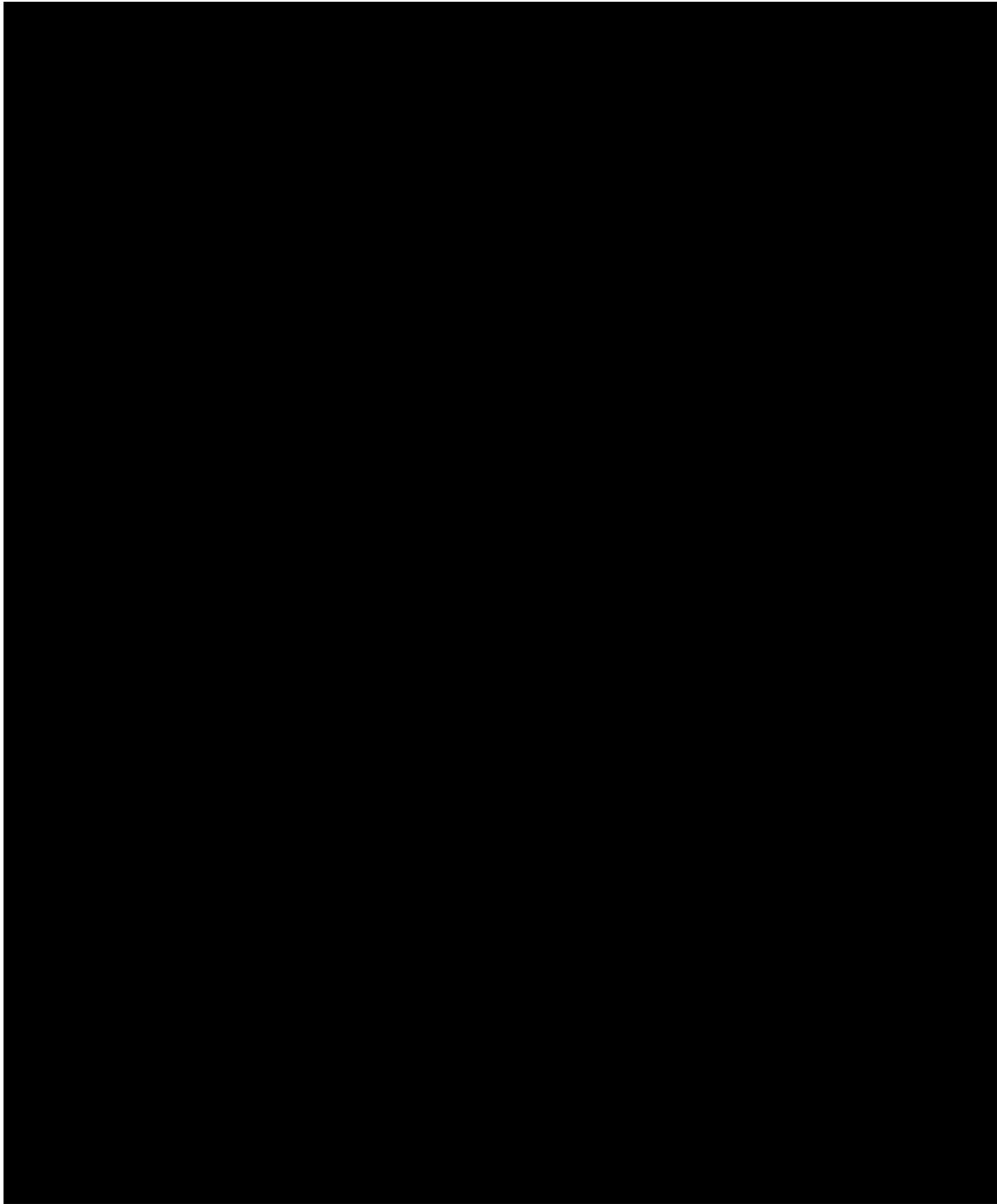


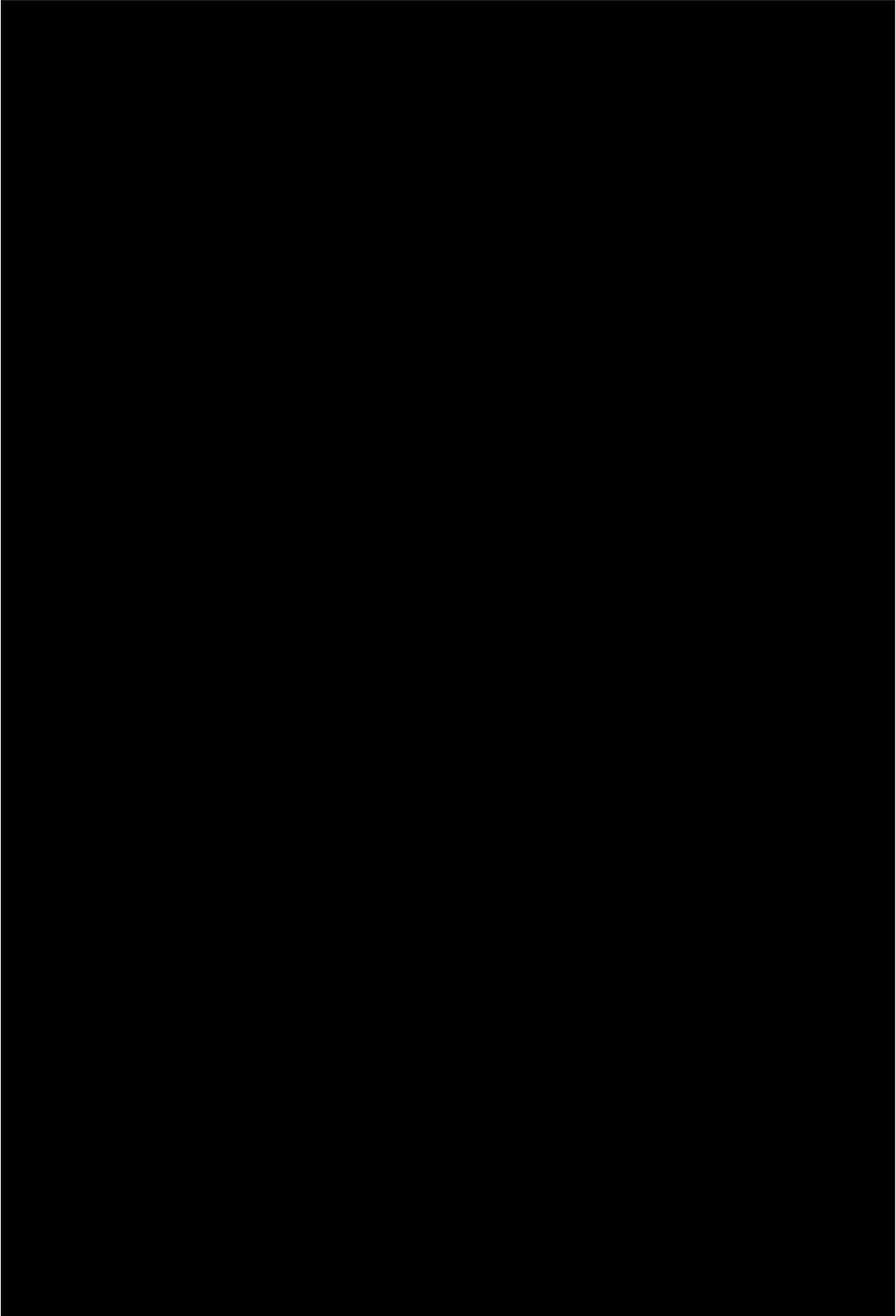




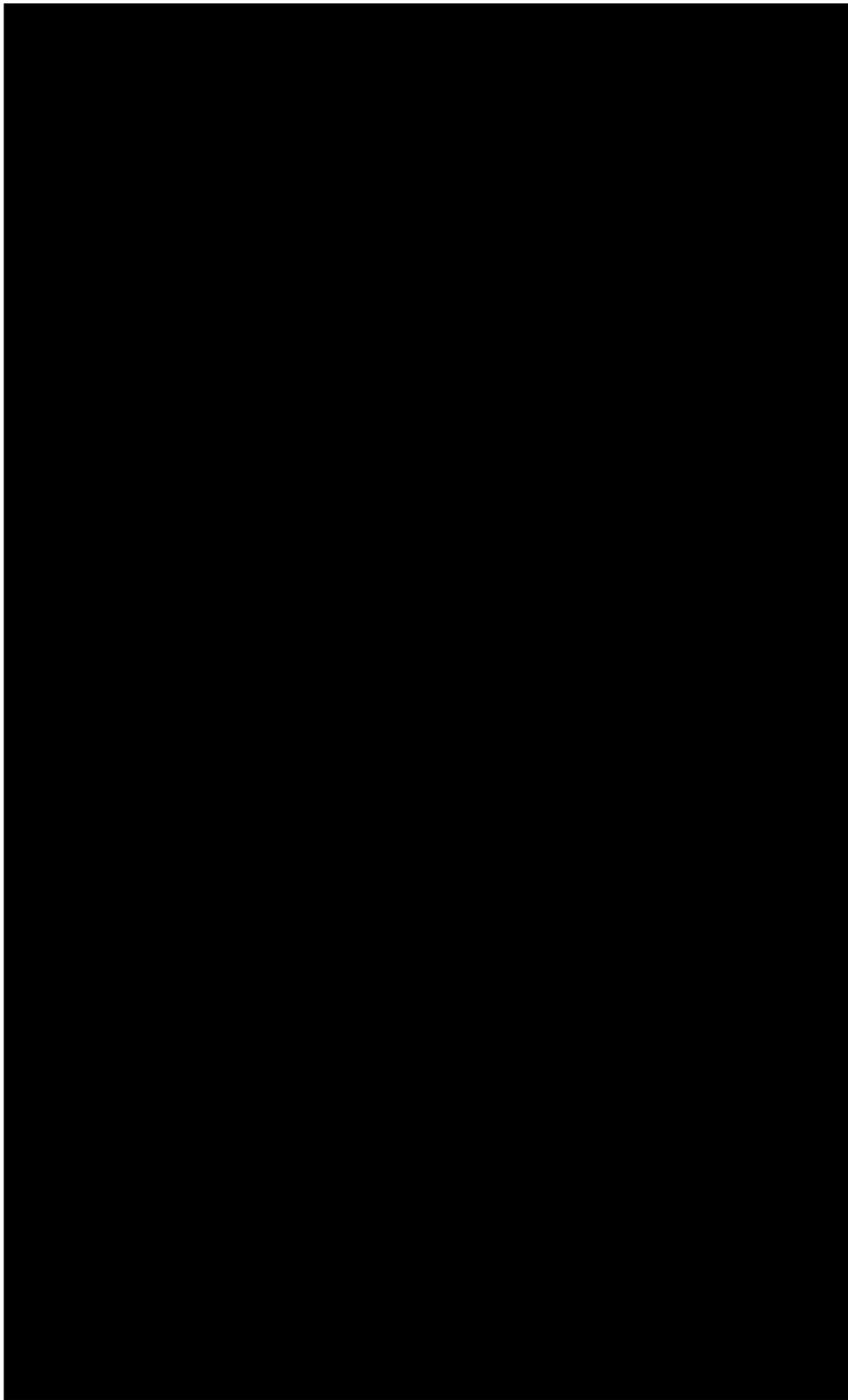


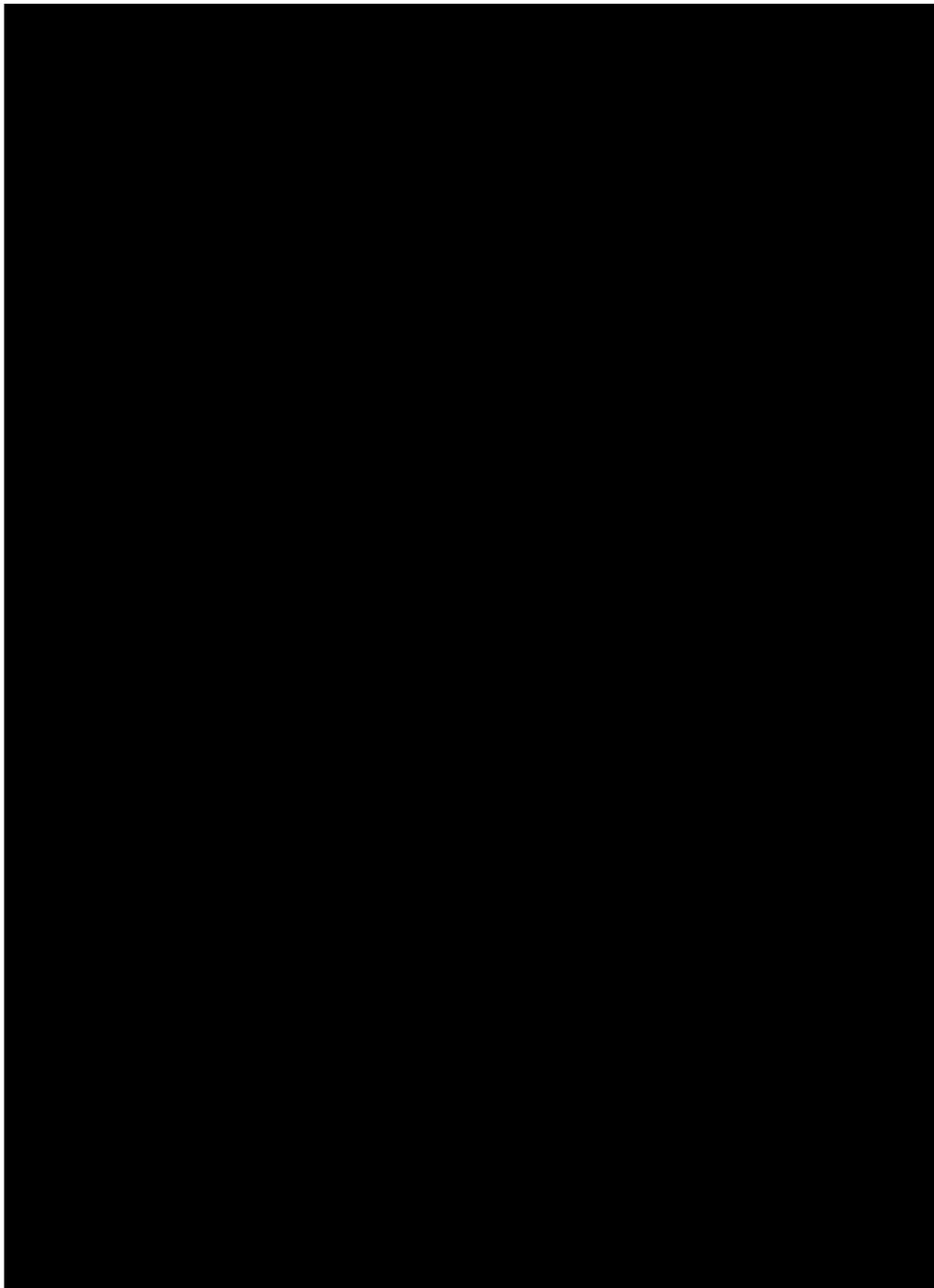


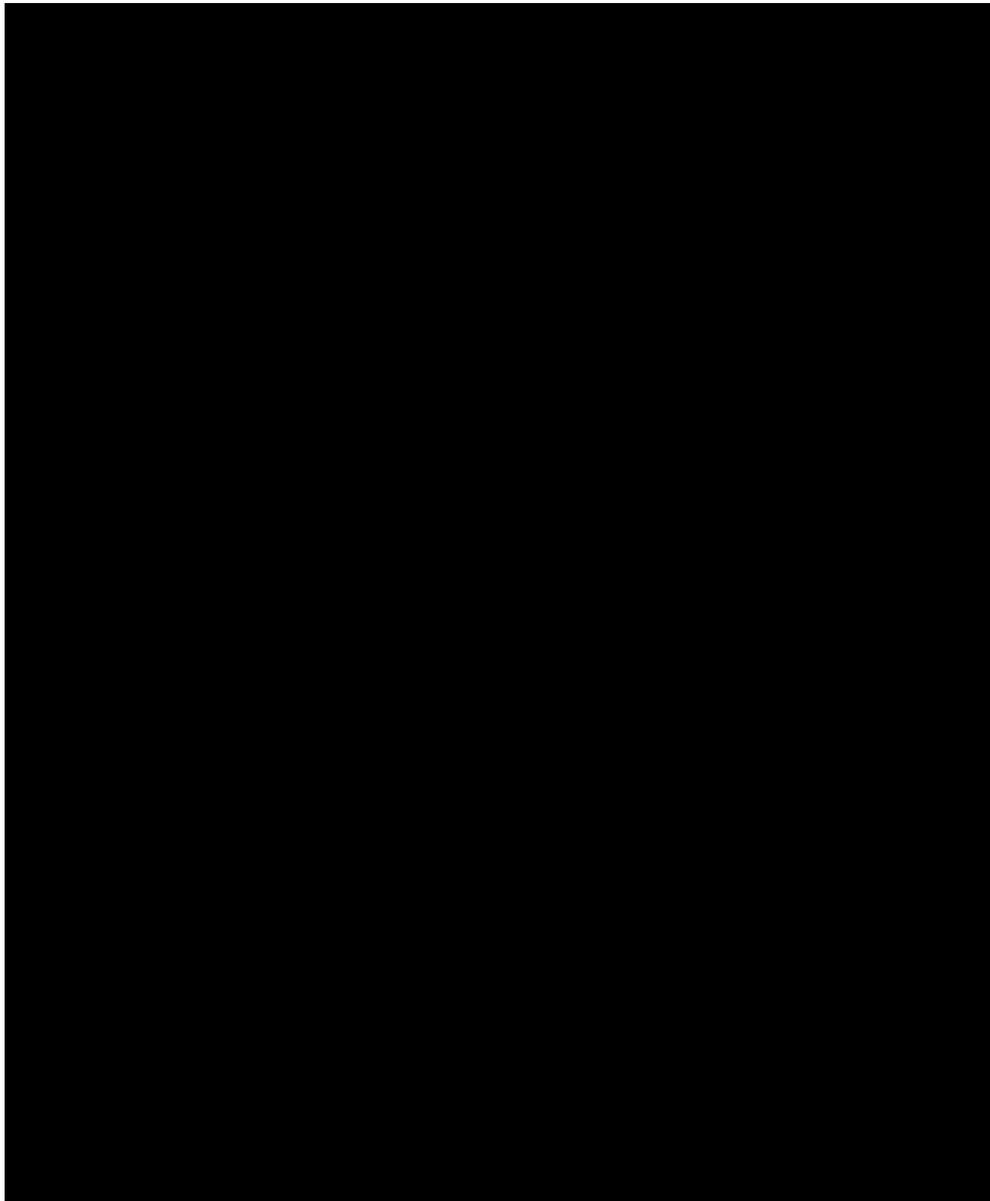


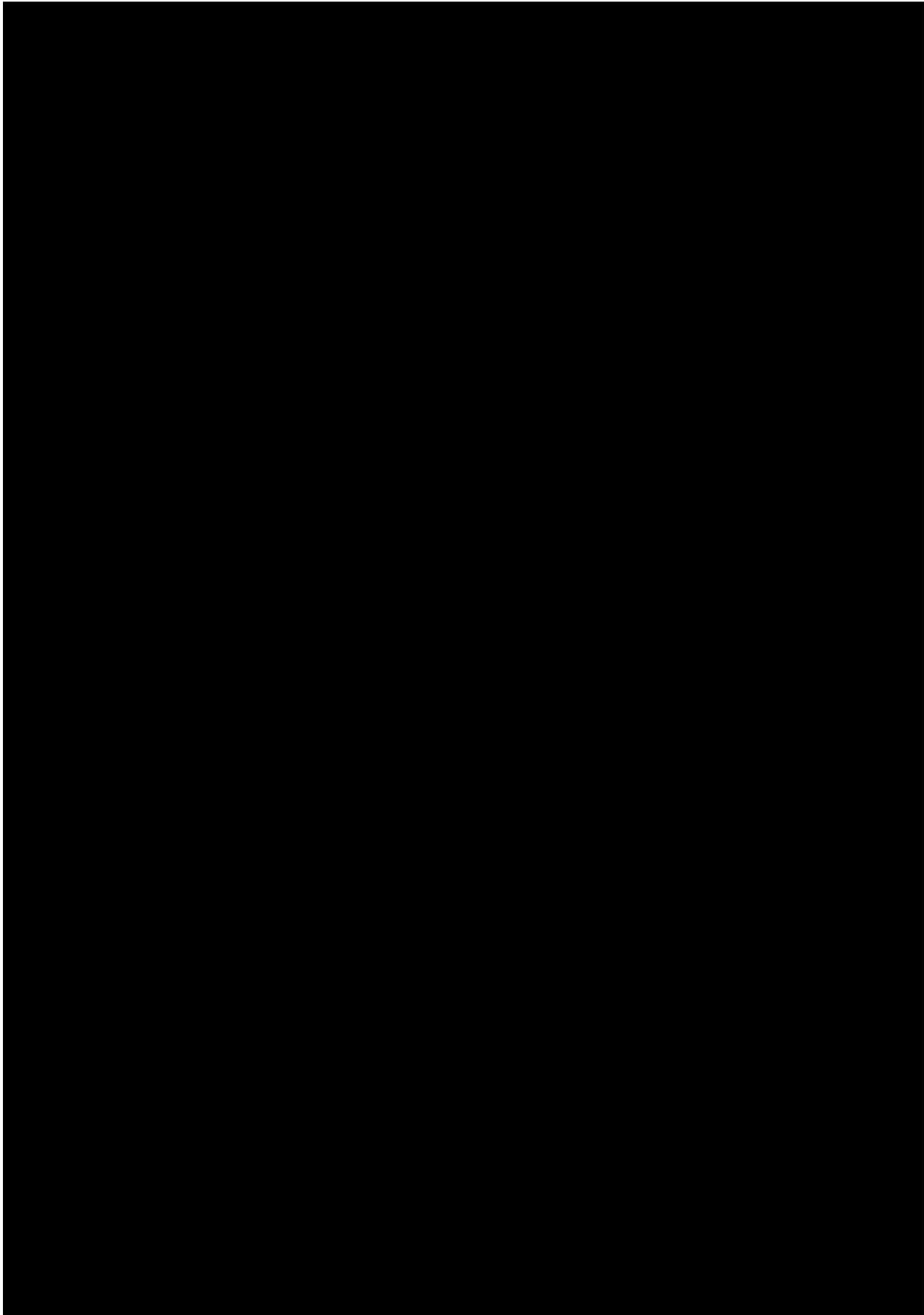


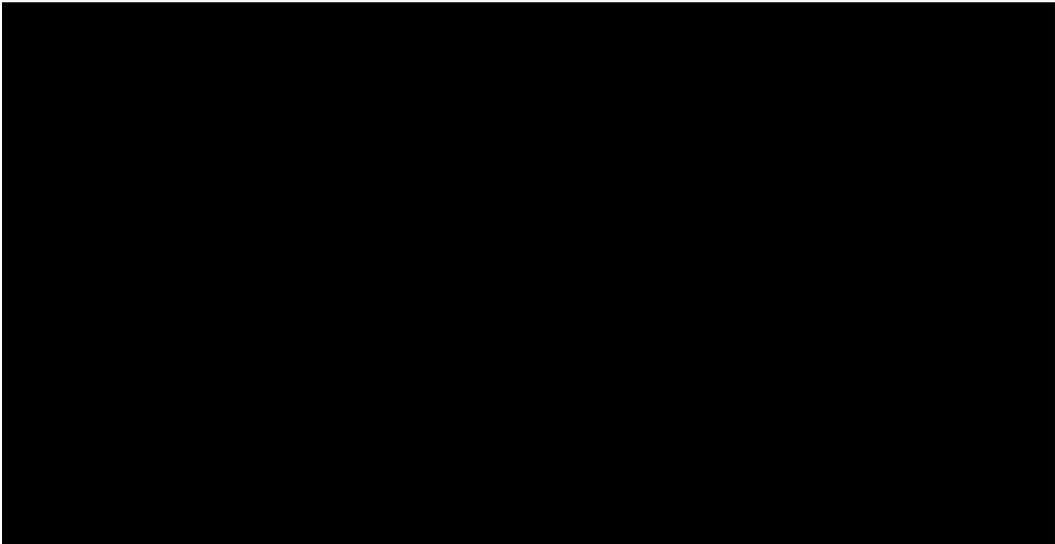
Appendix C.3 Example of initial emails/post seeking registrations of interest by RAPs, newspaper ads, and feedback received

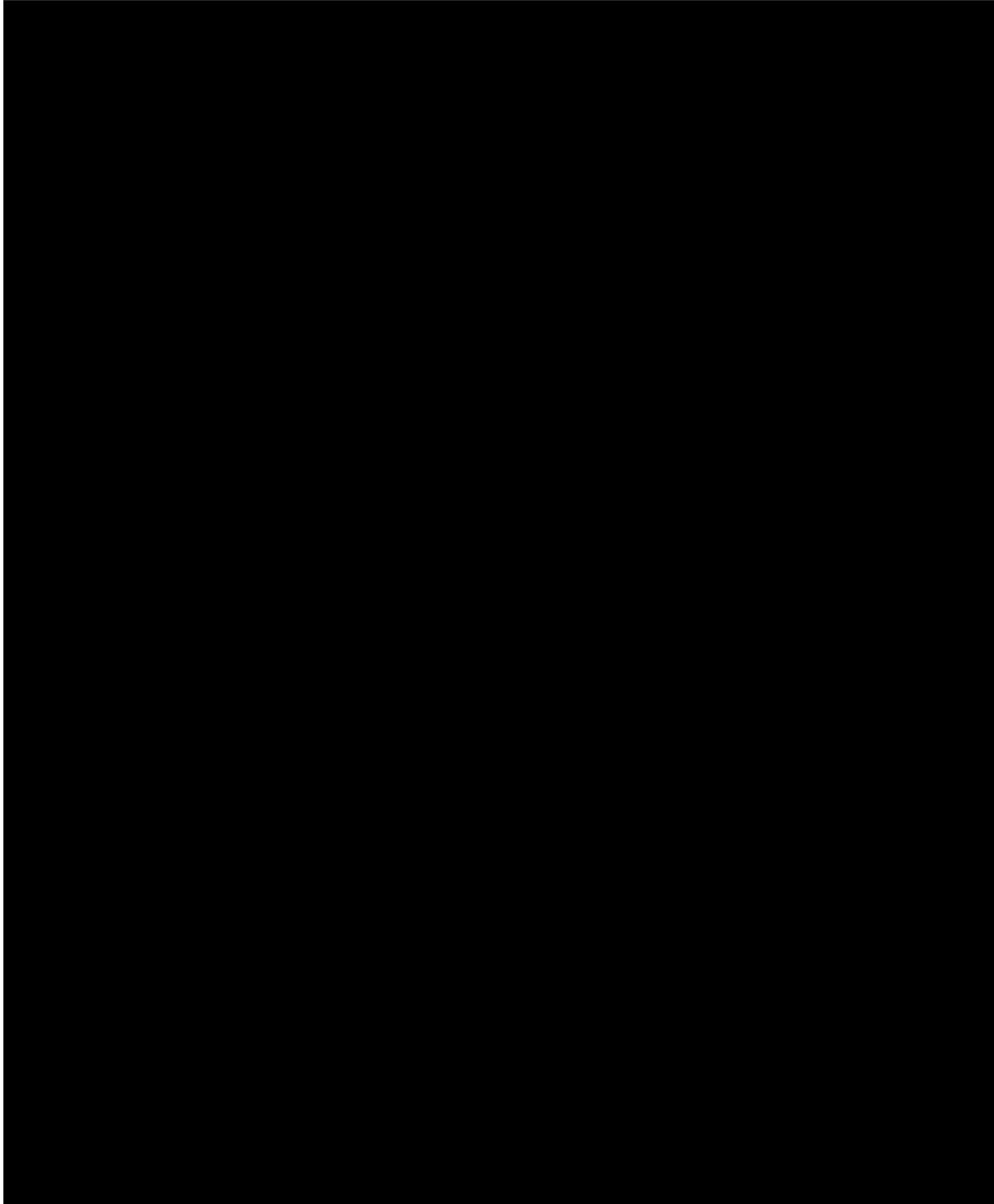


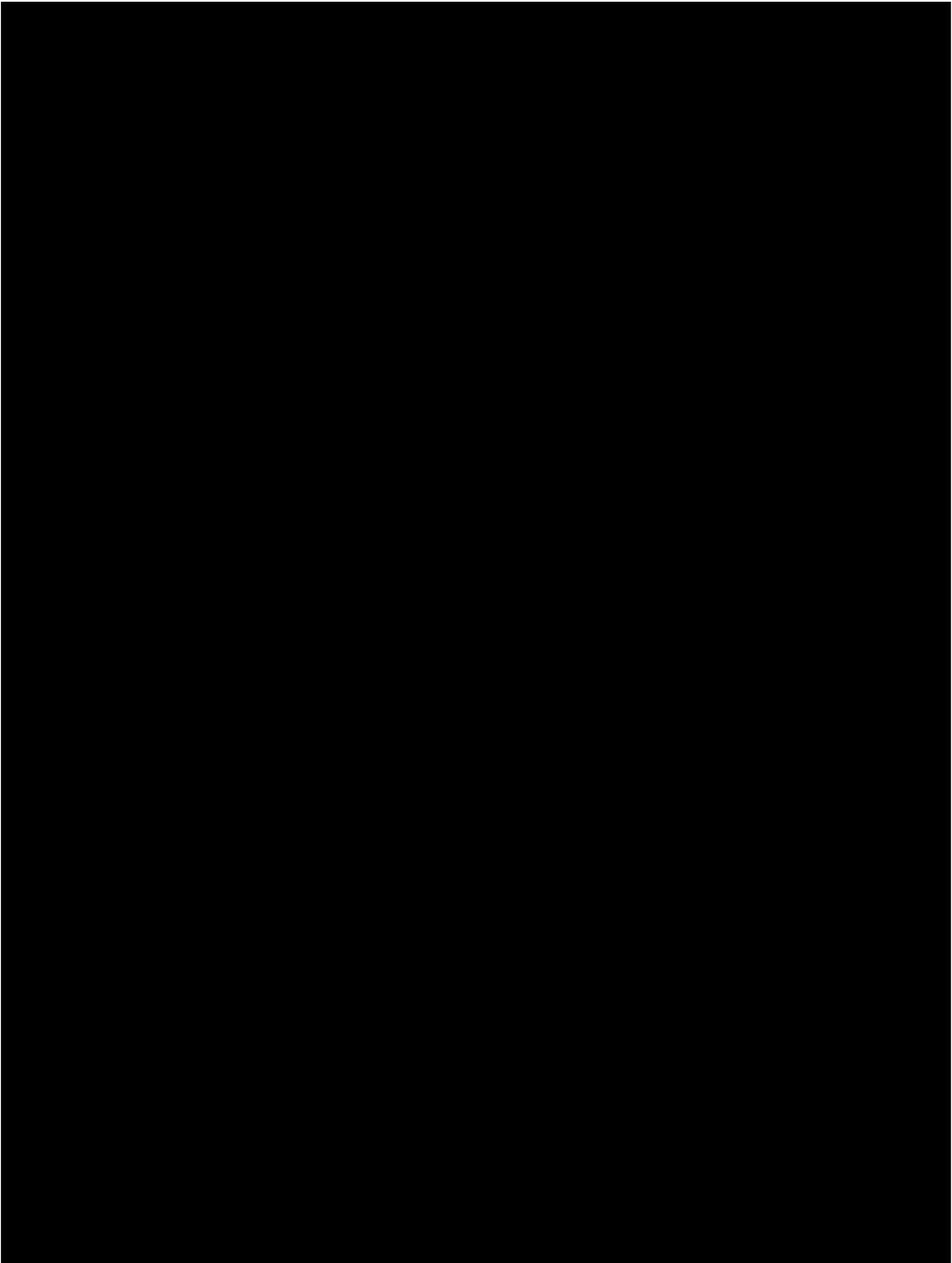


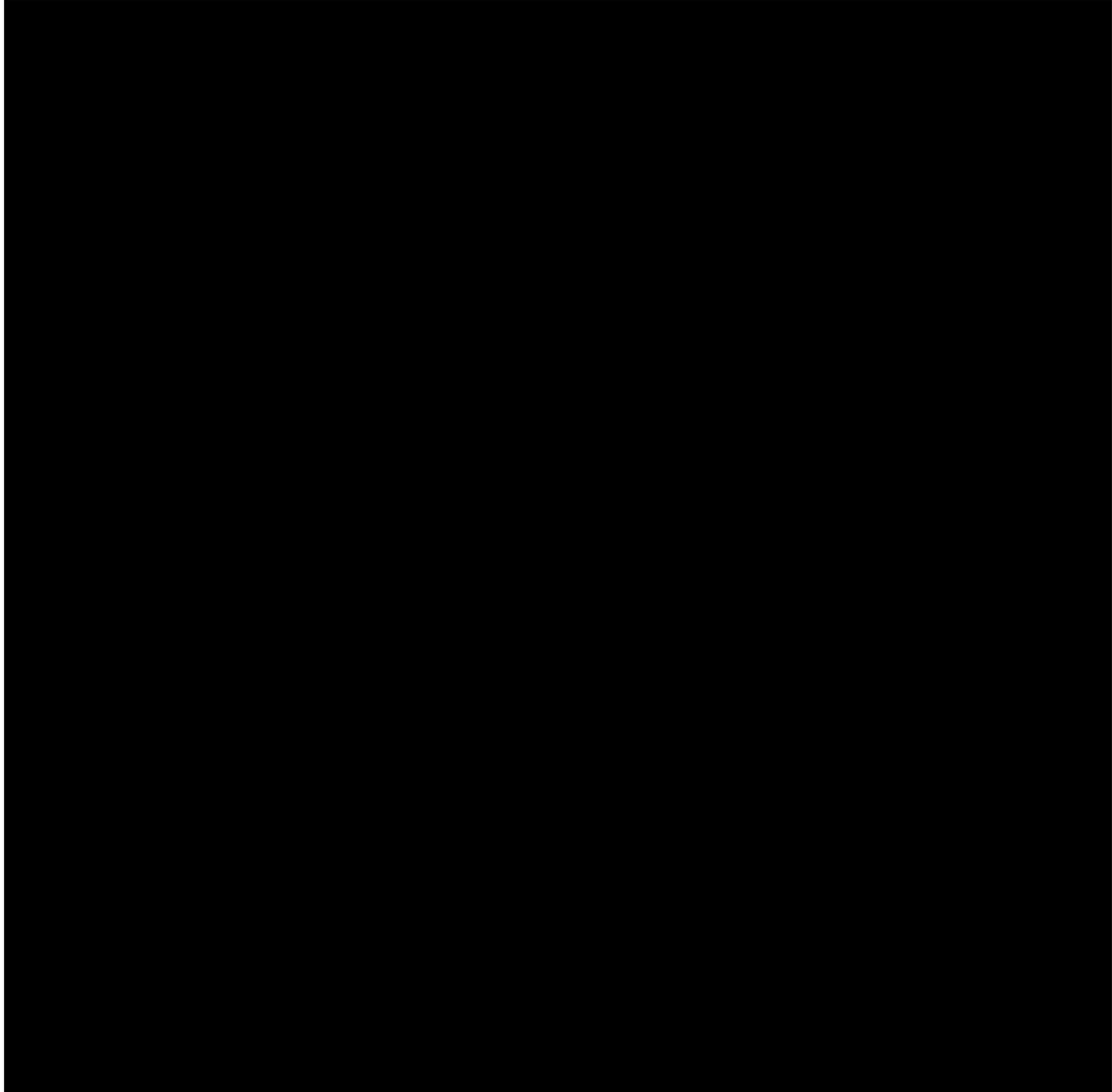


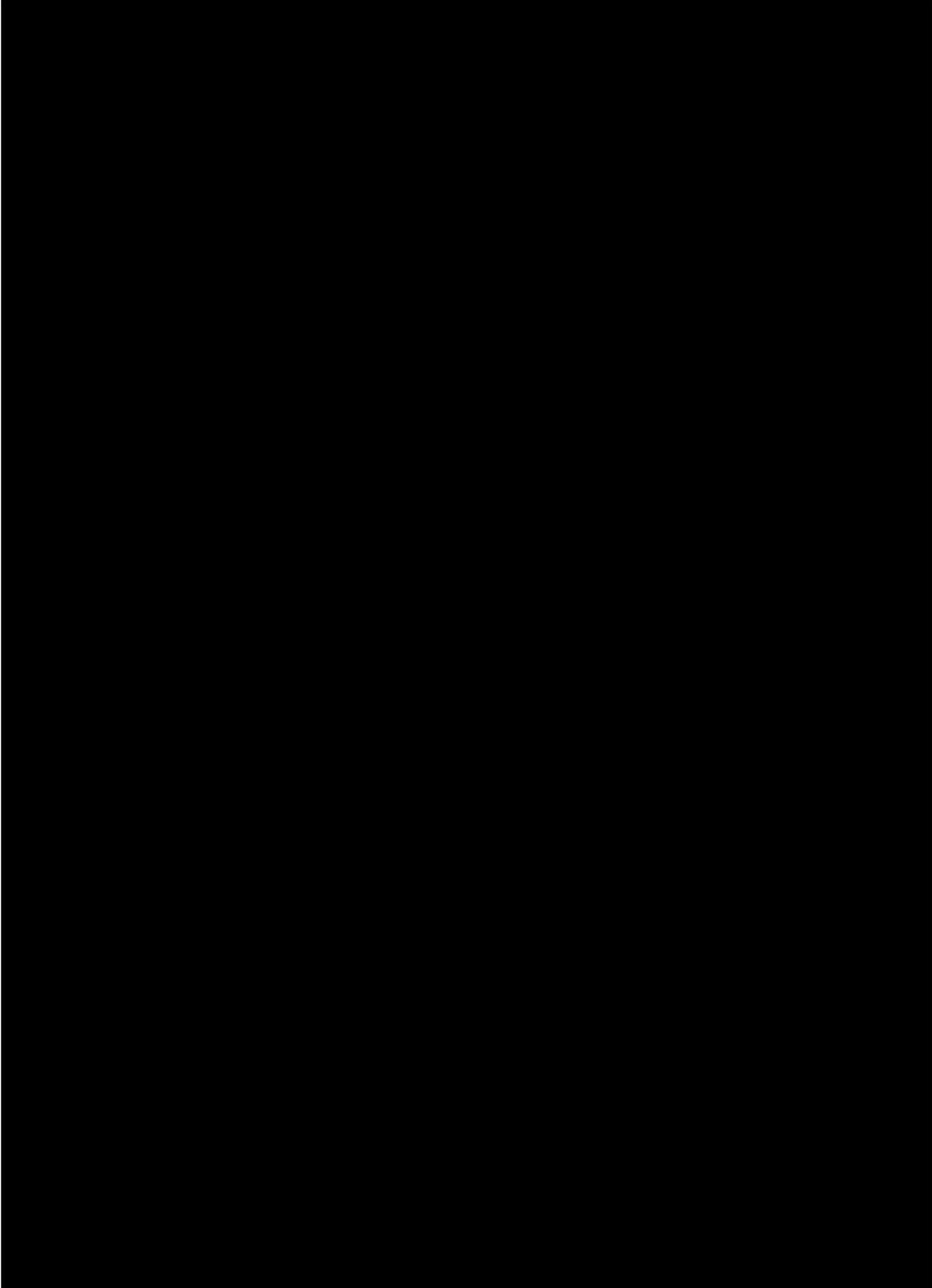


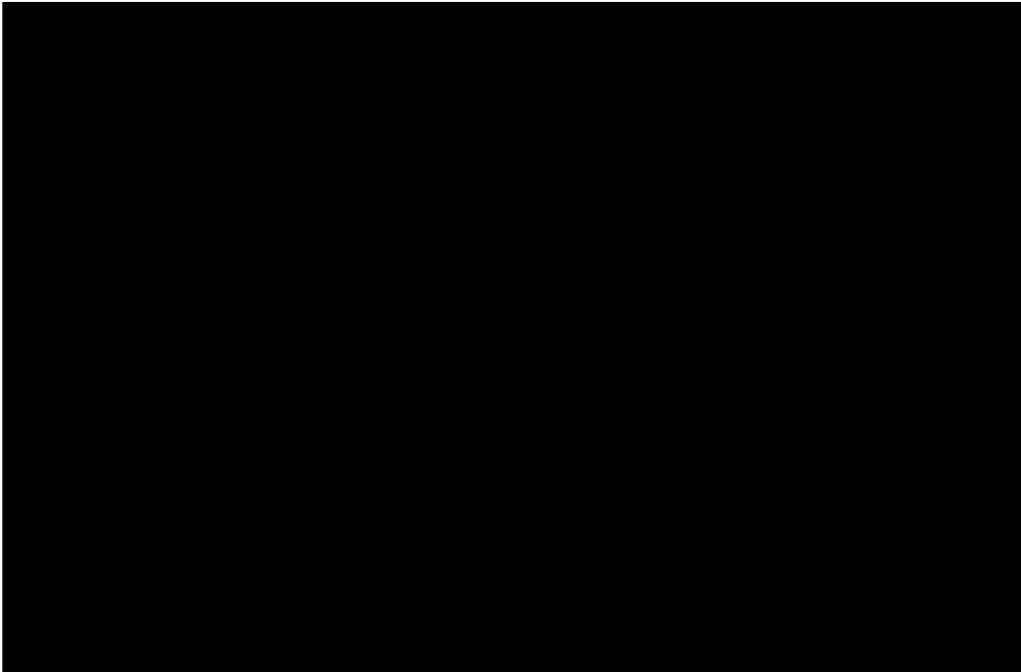


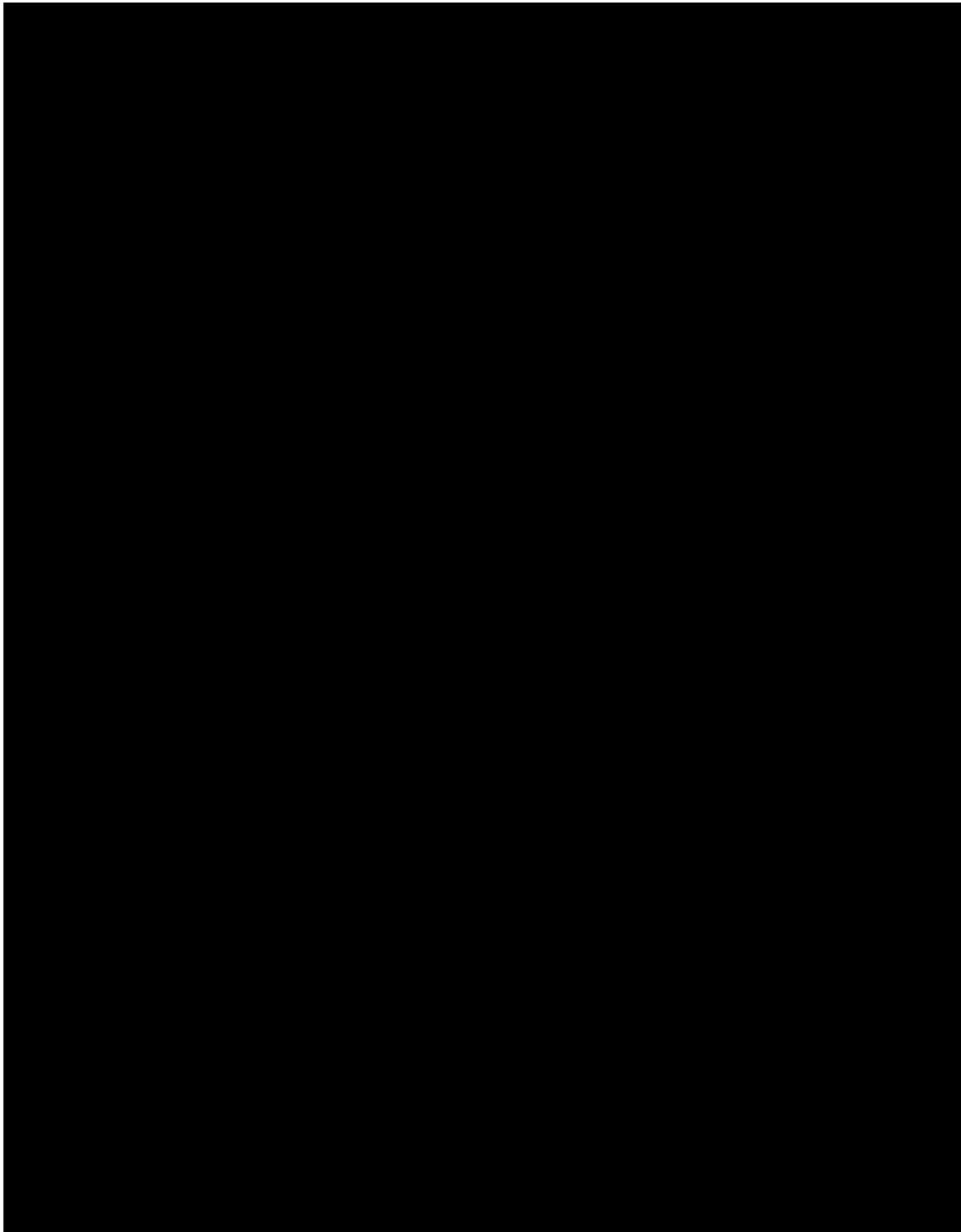




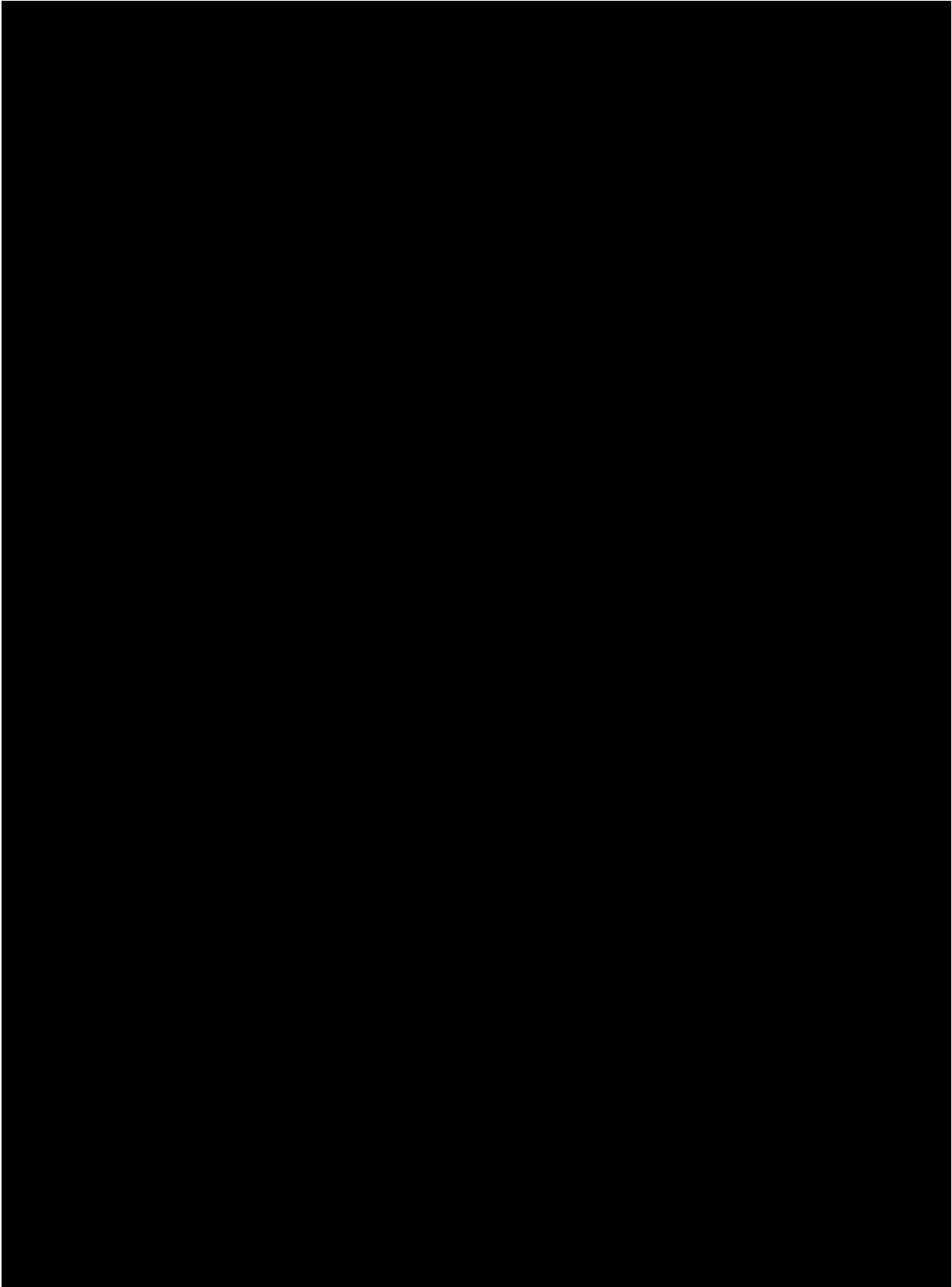


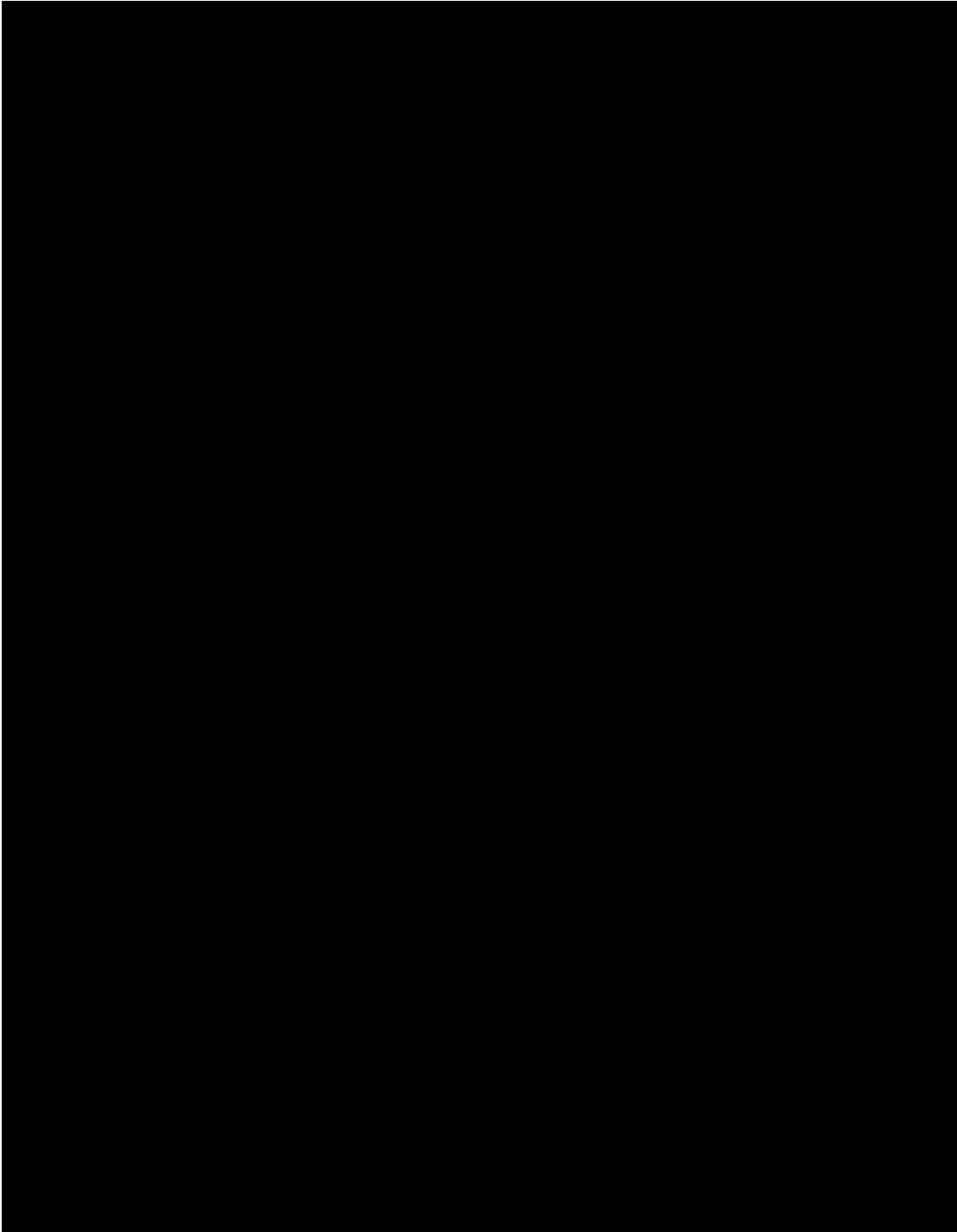


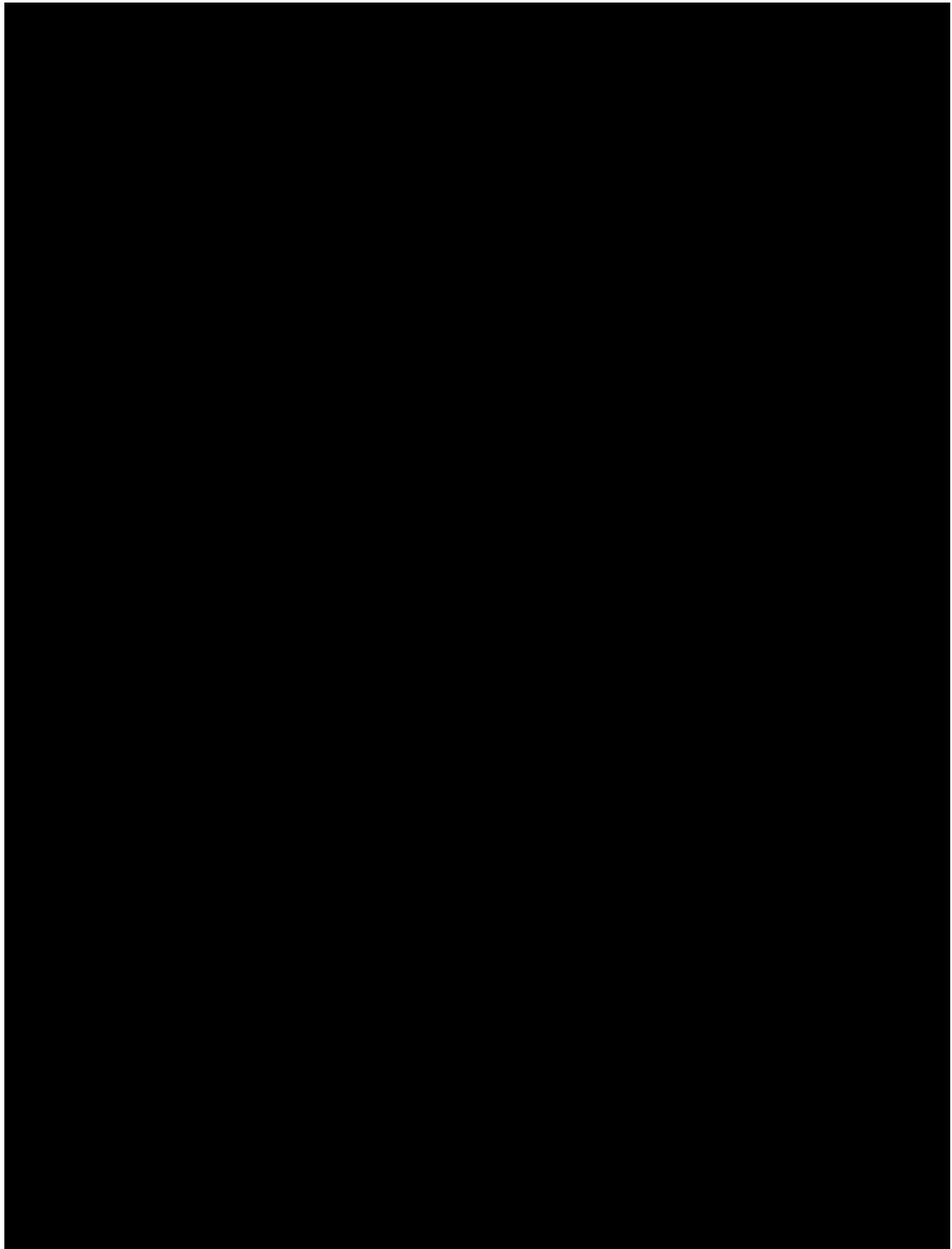


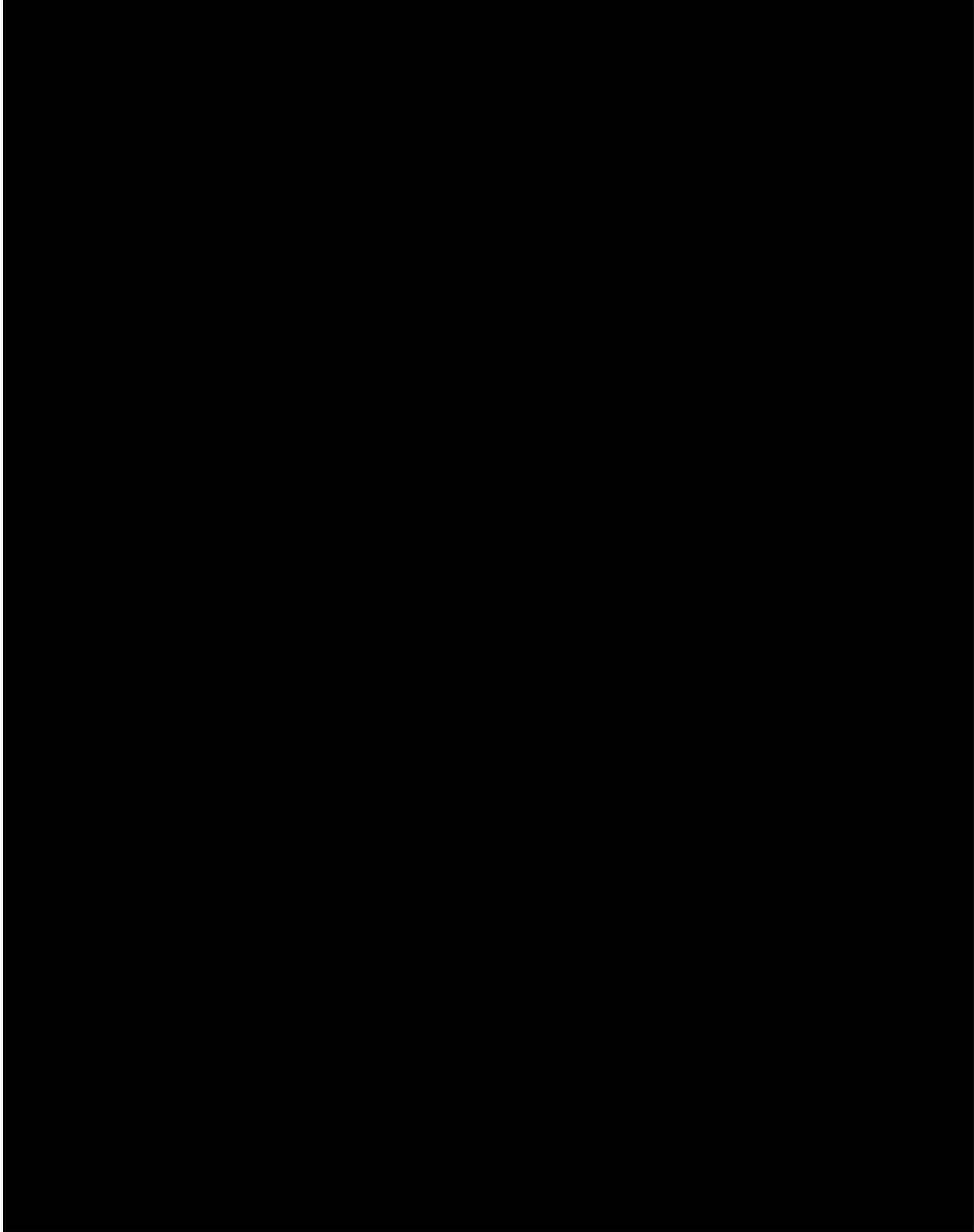




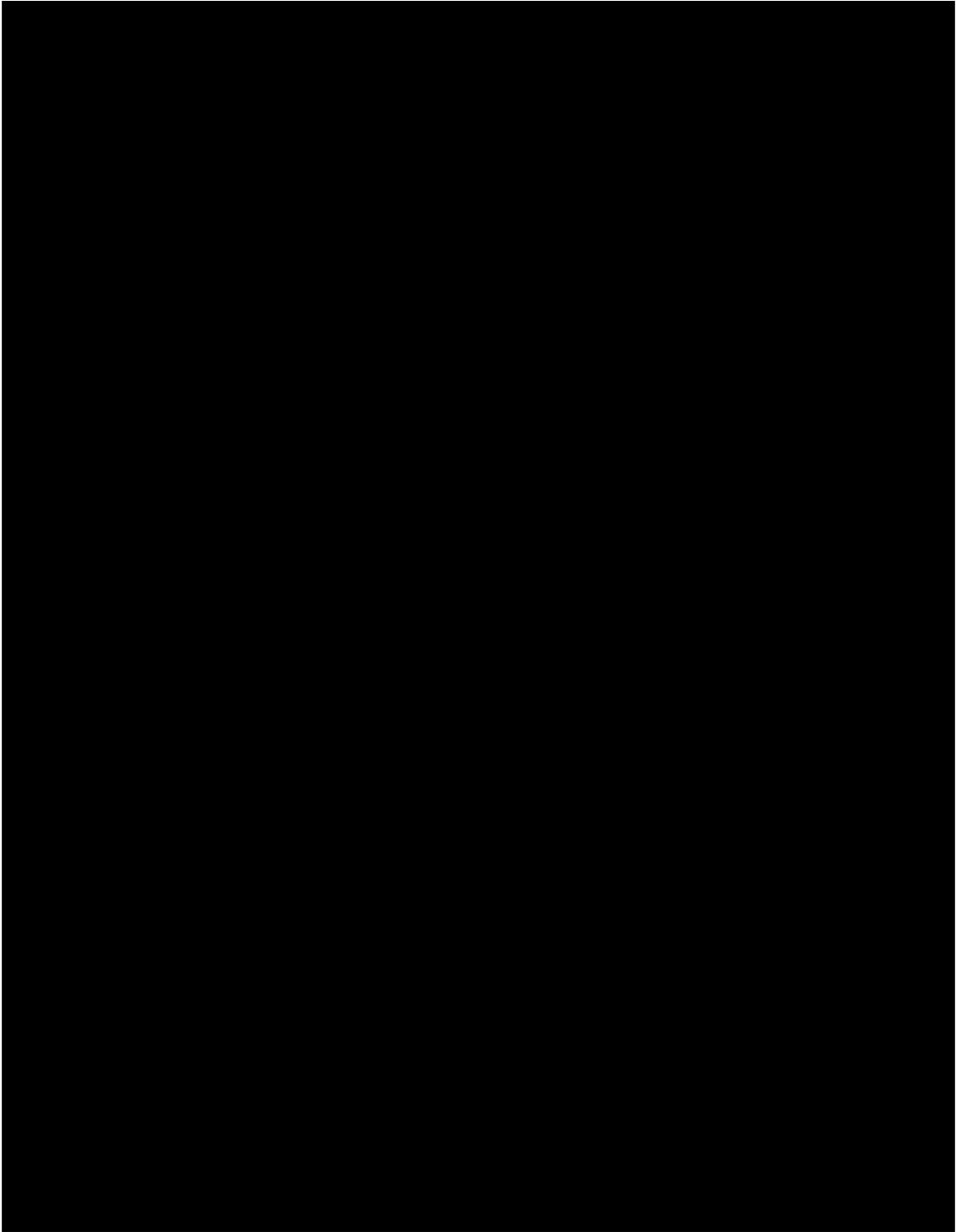


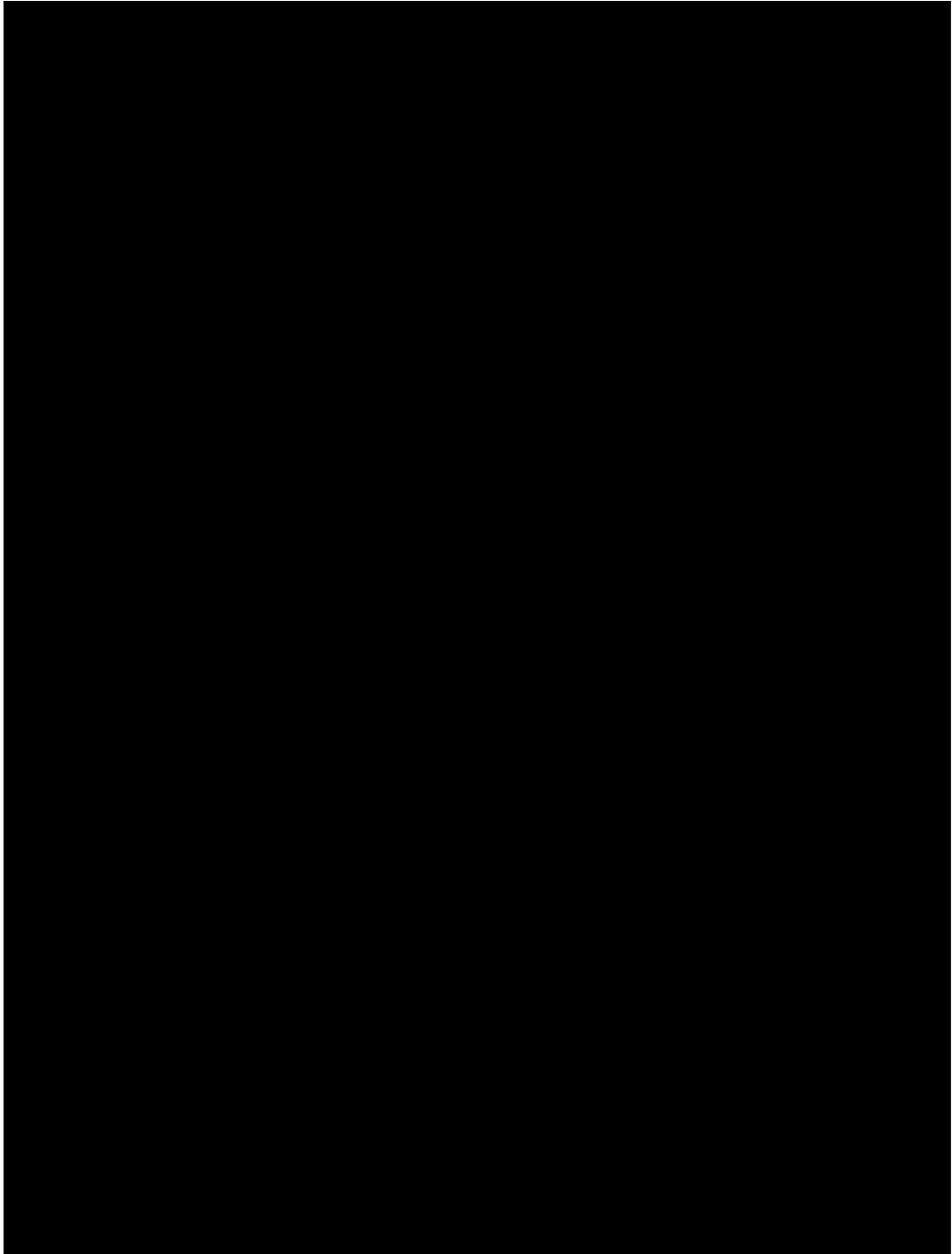


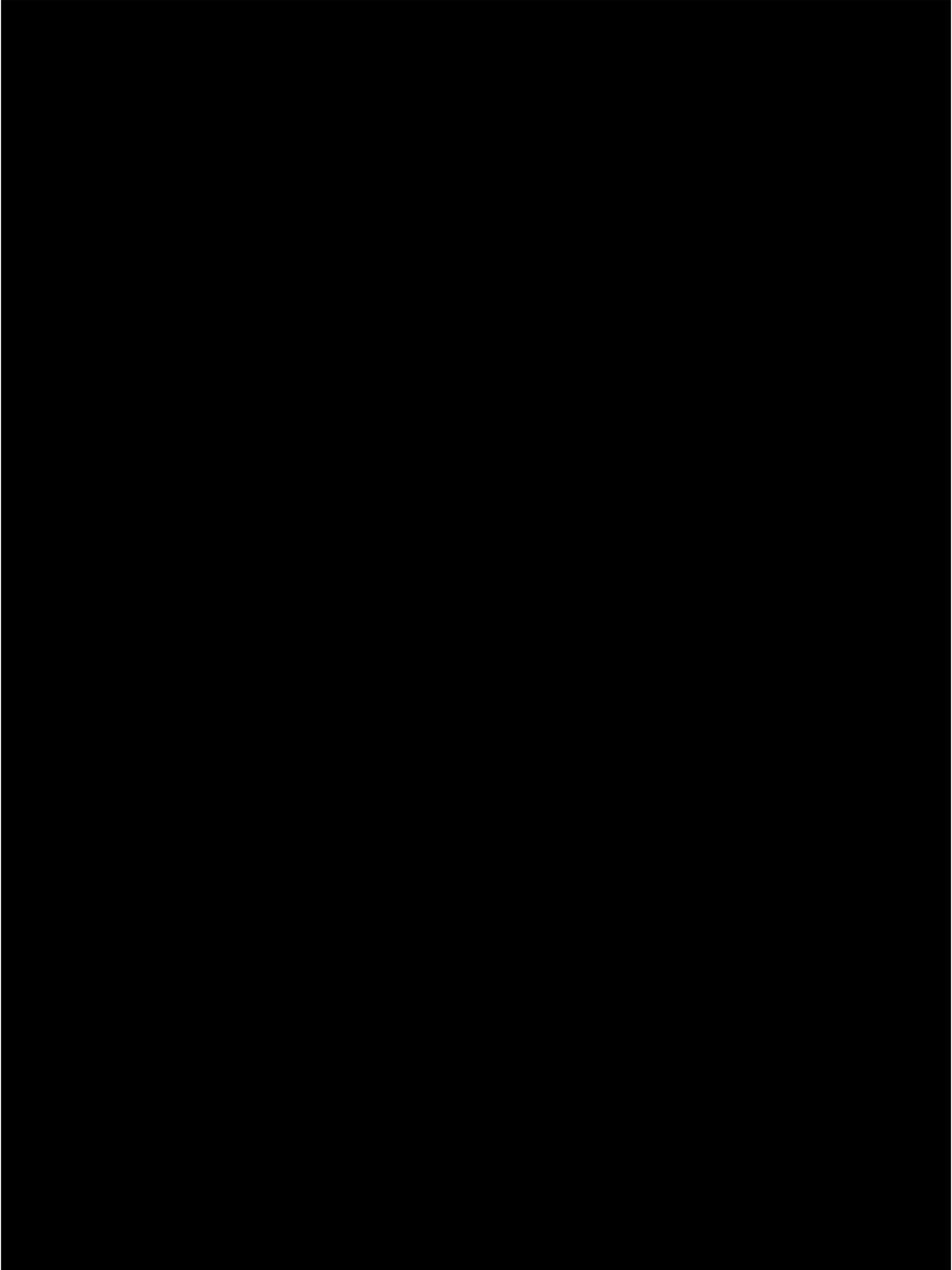


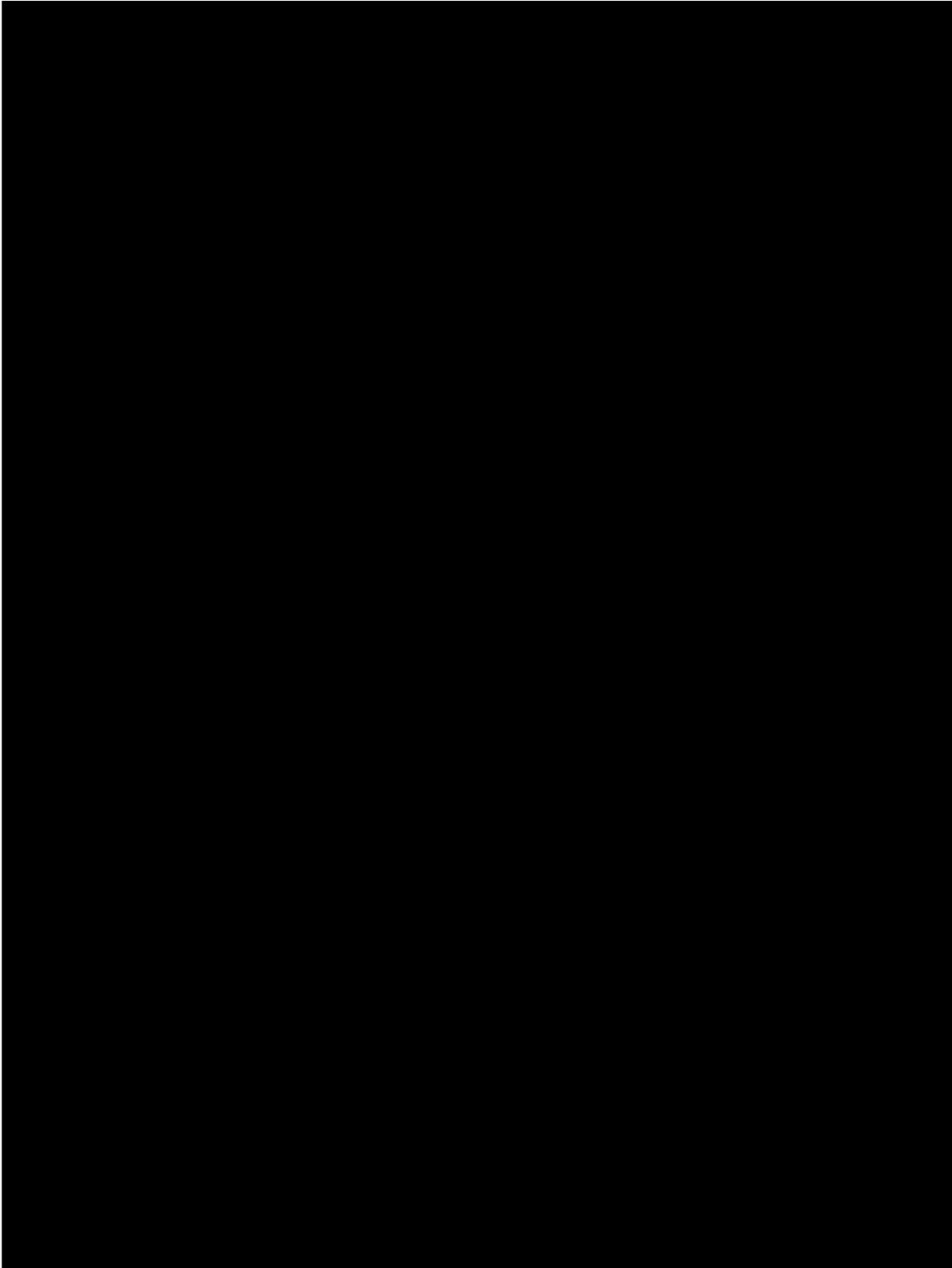


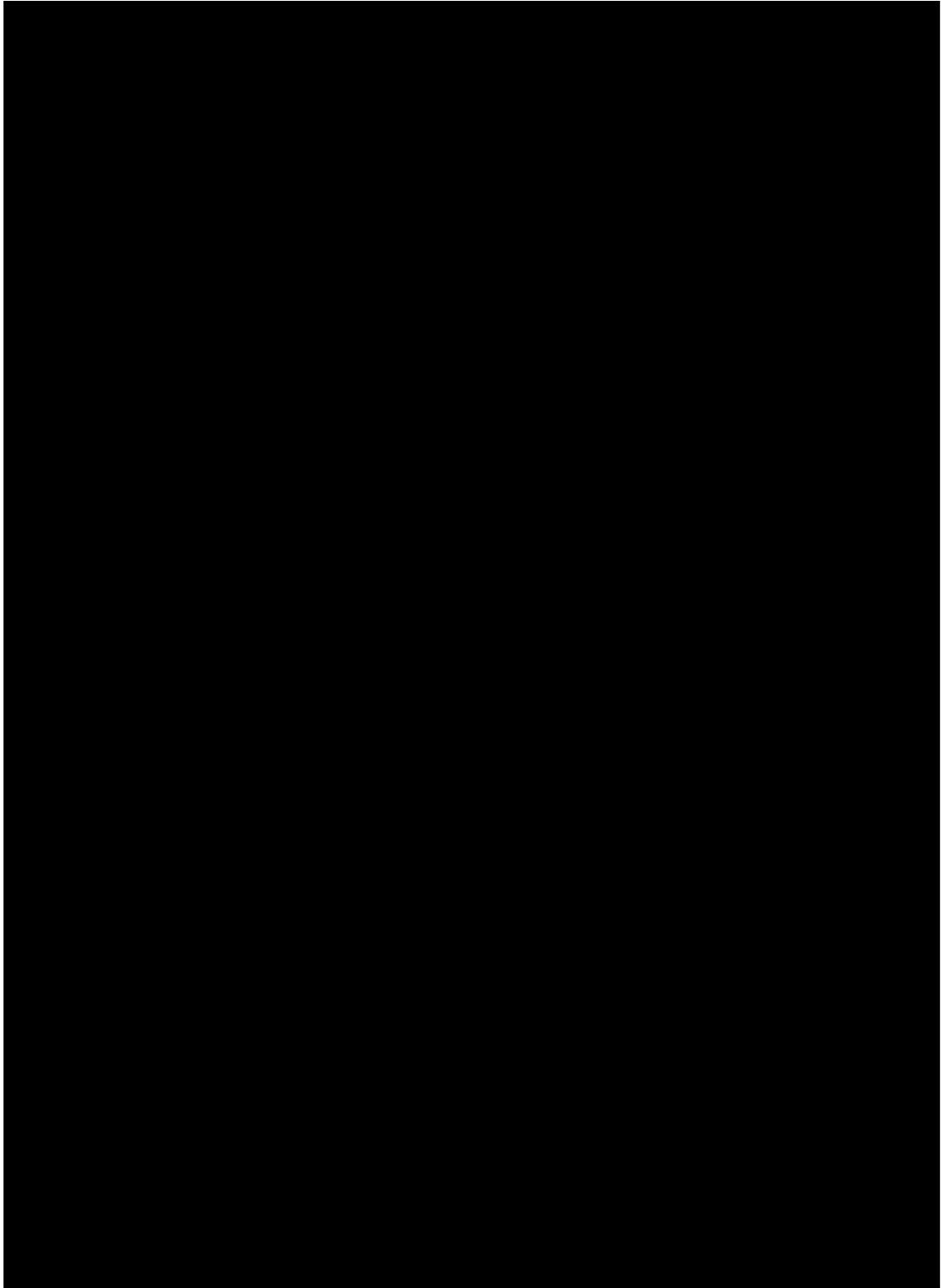


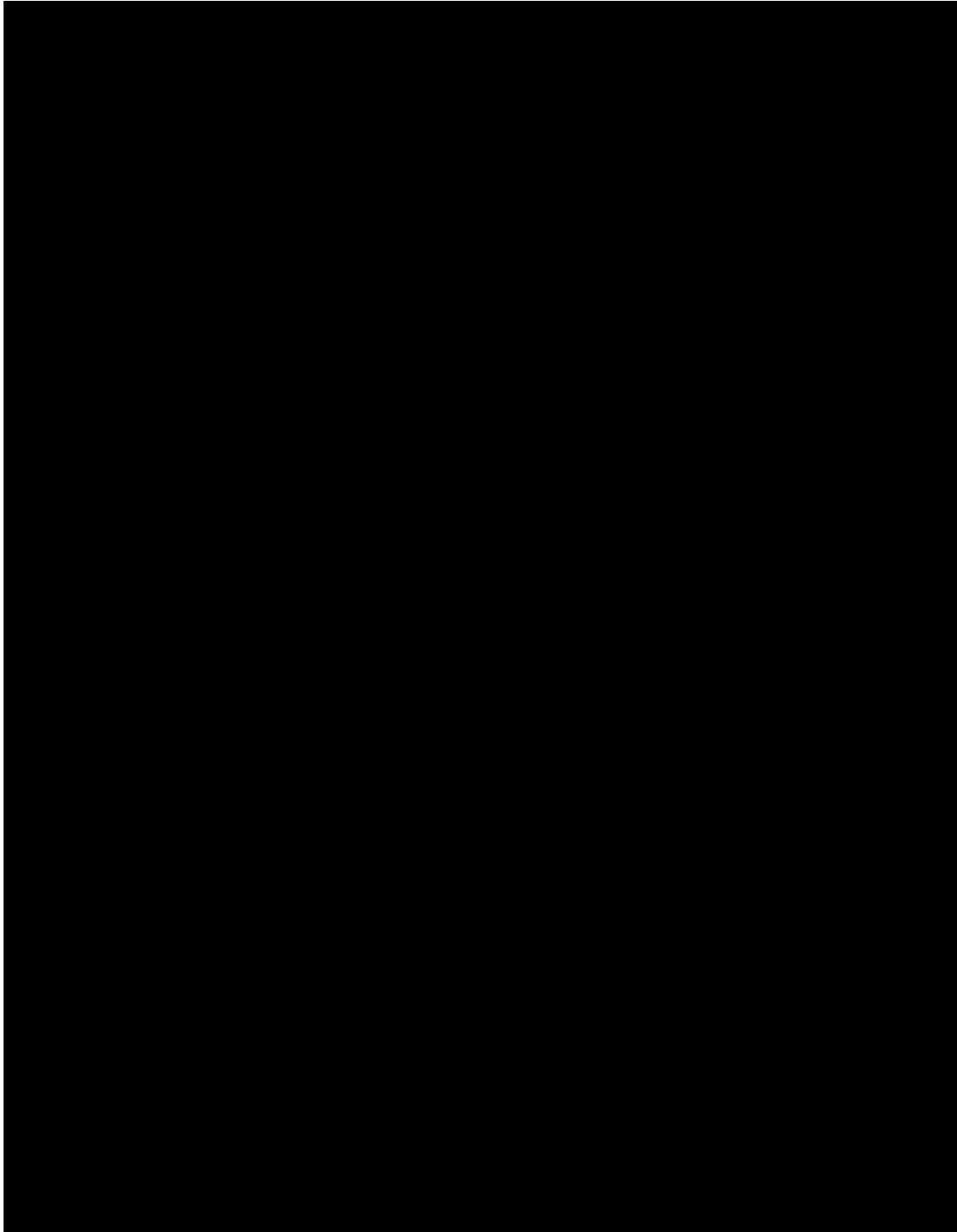


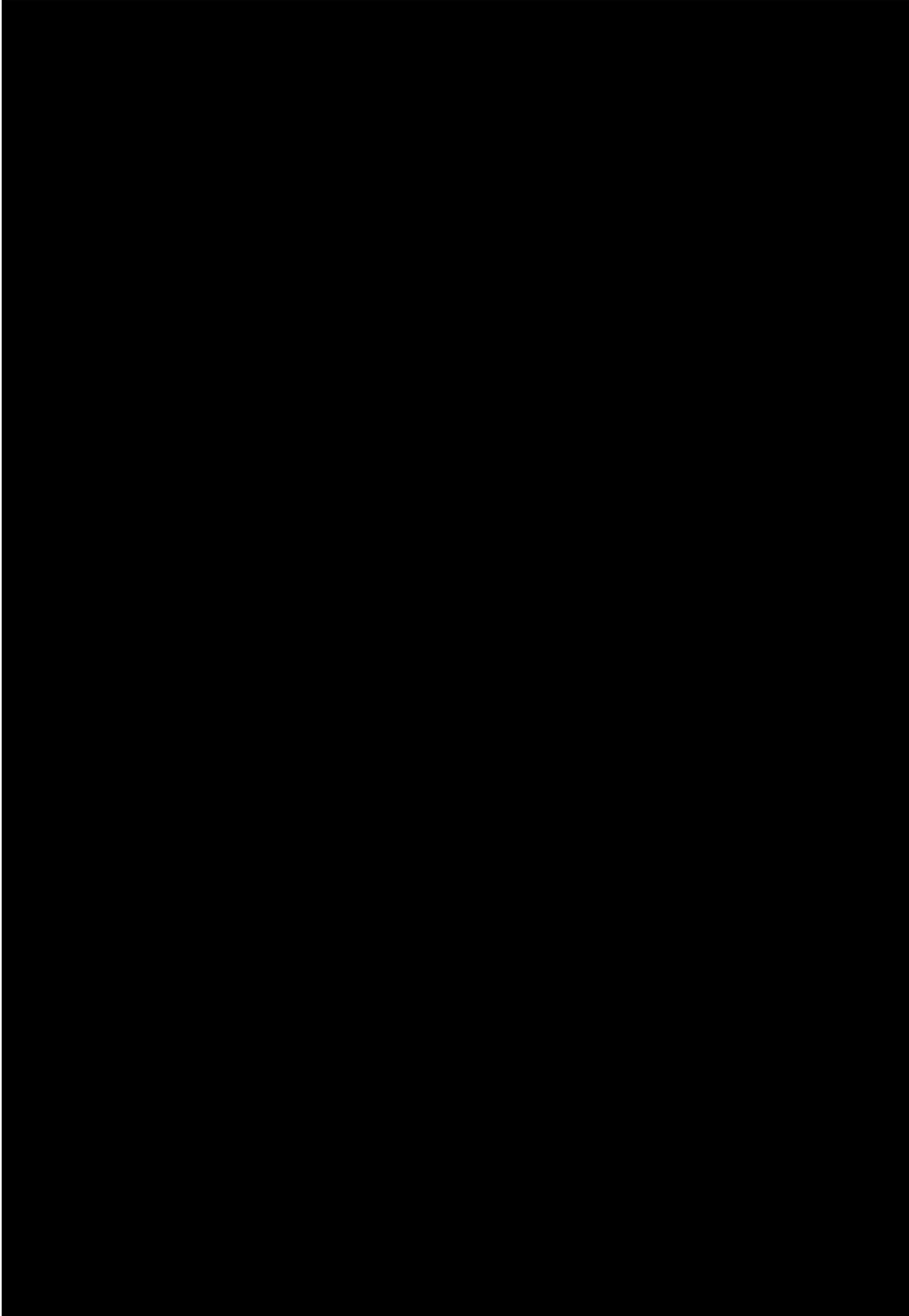


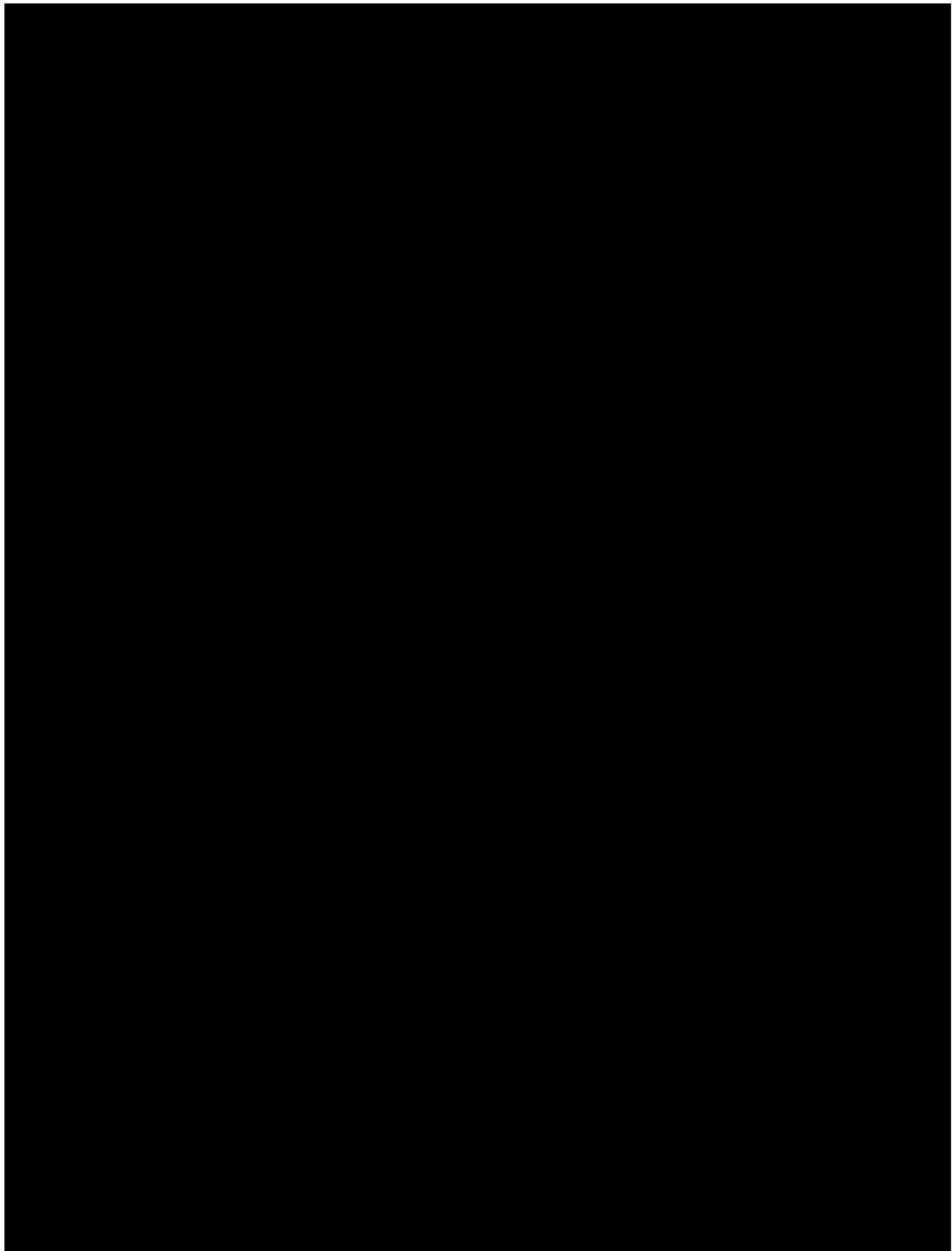


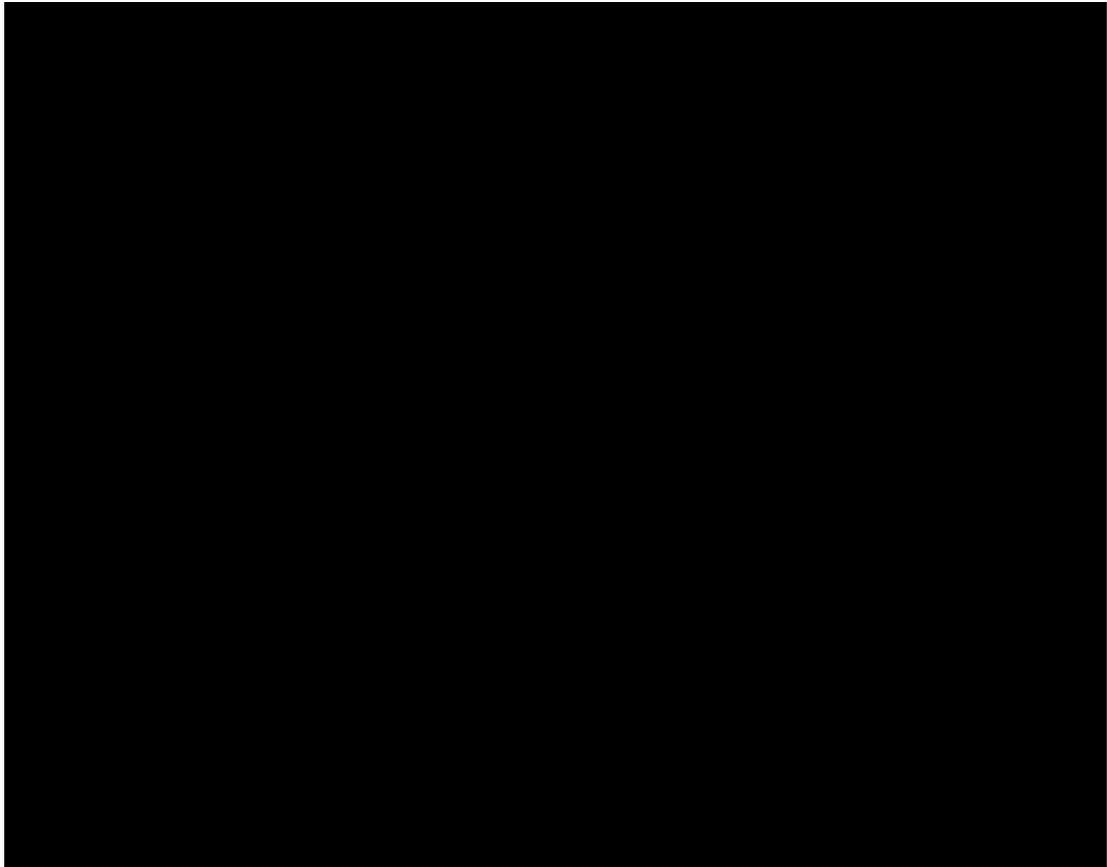


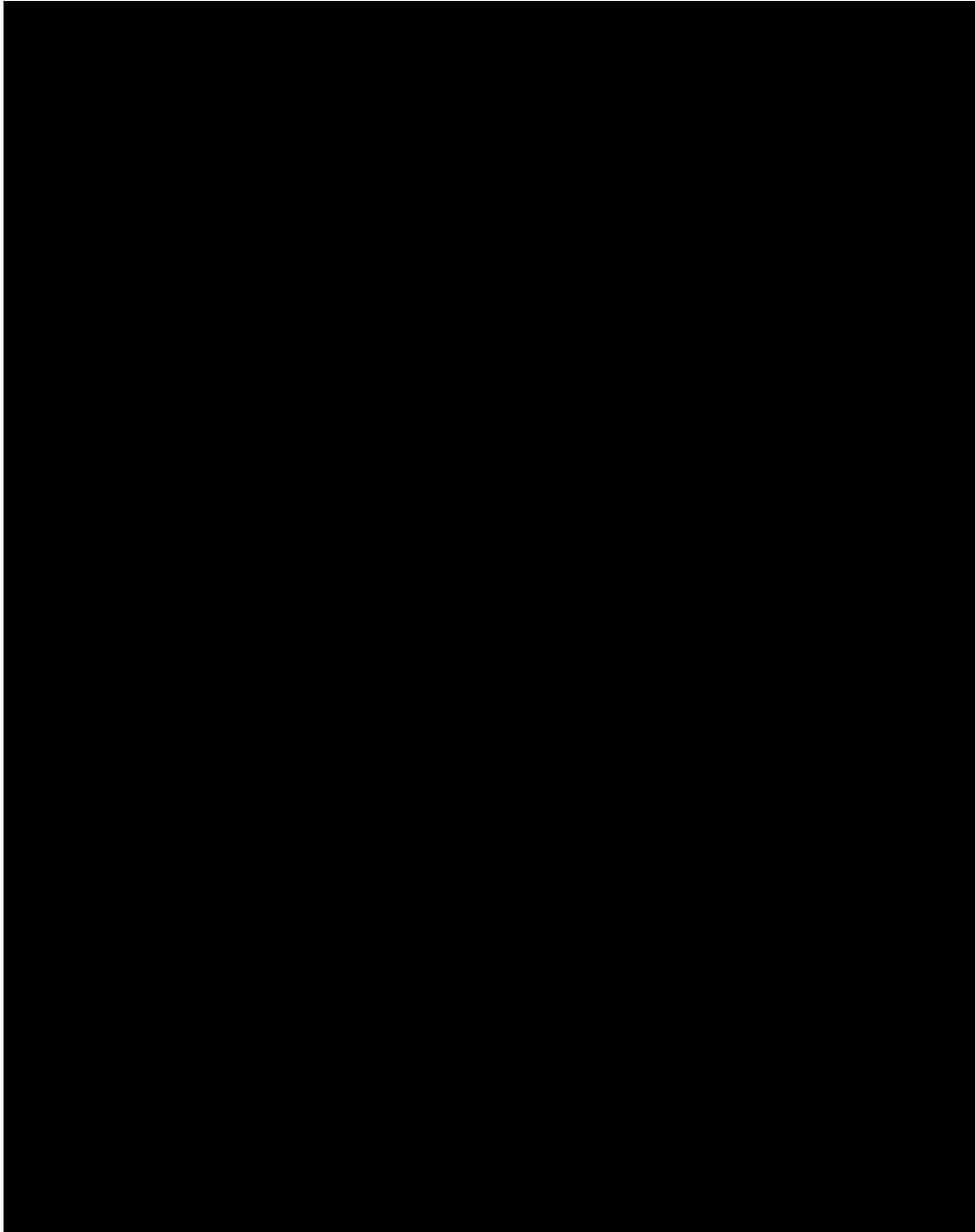


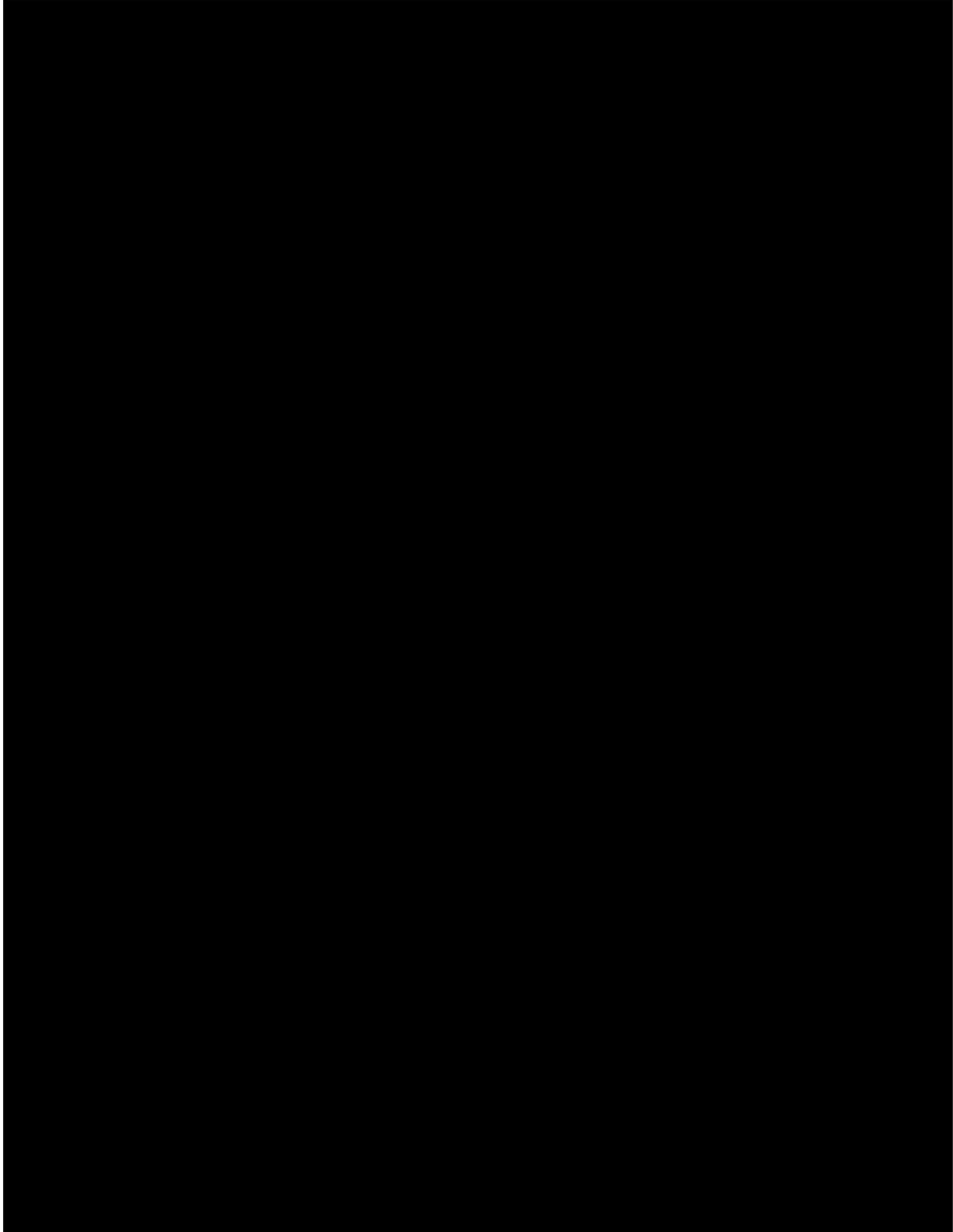


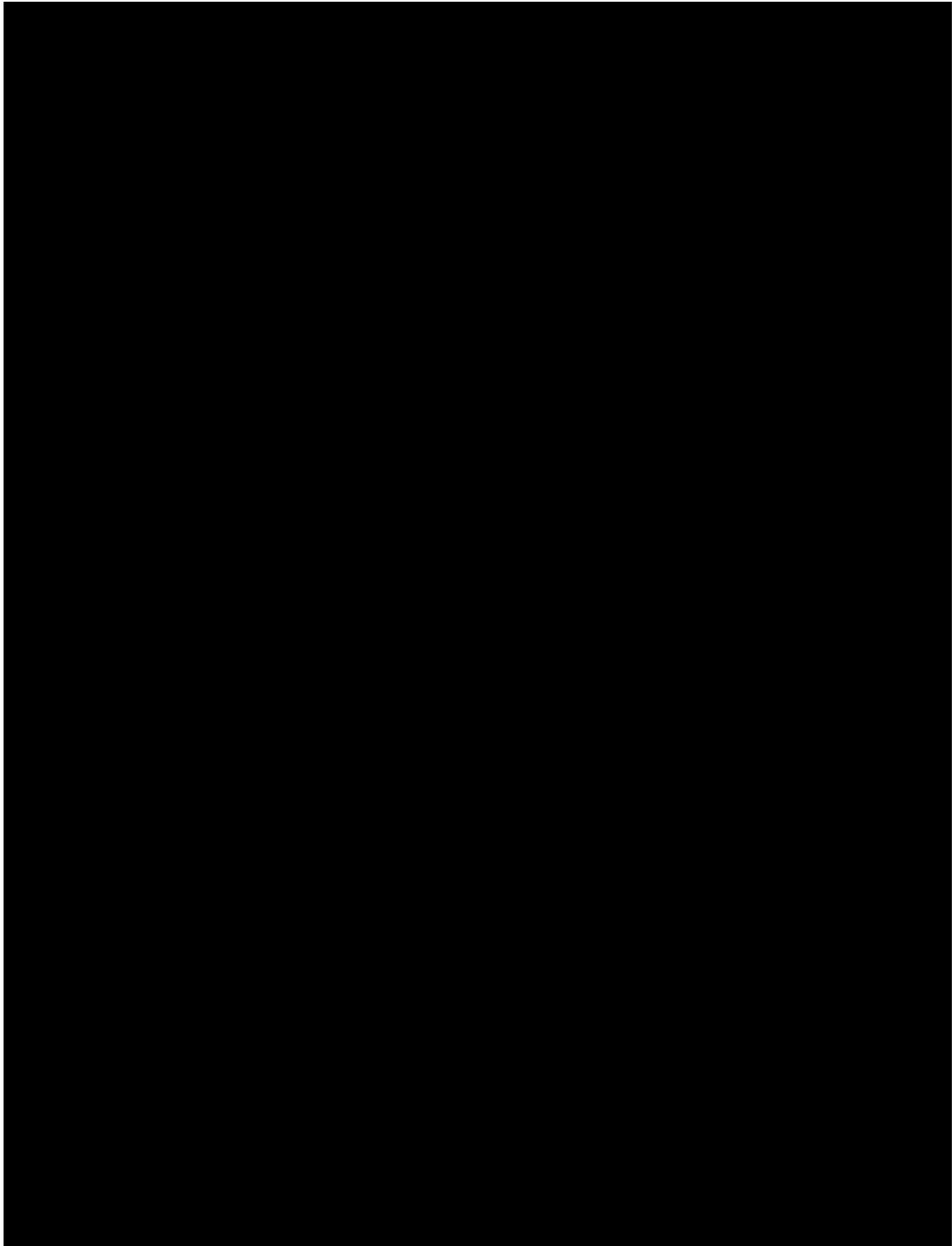


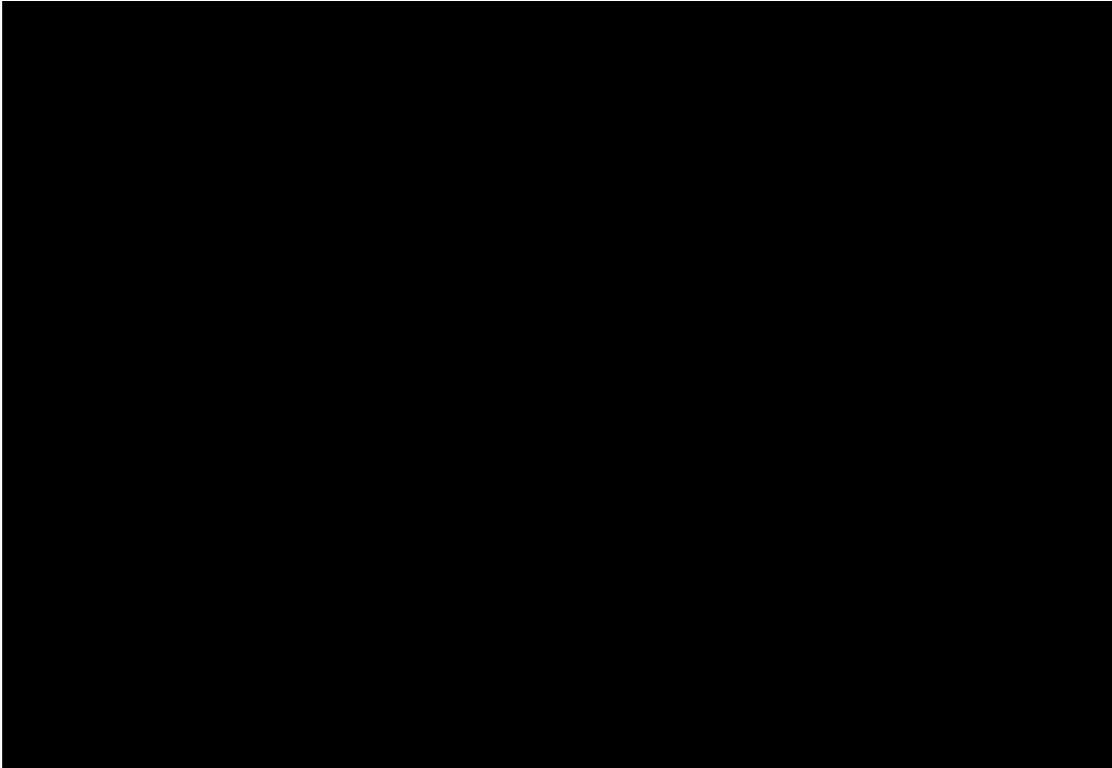


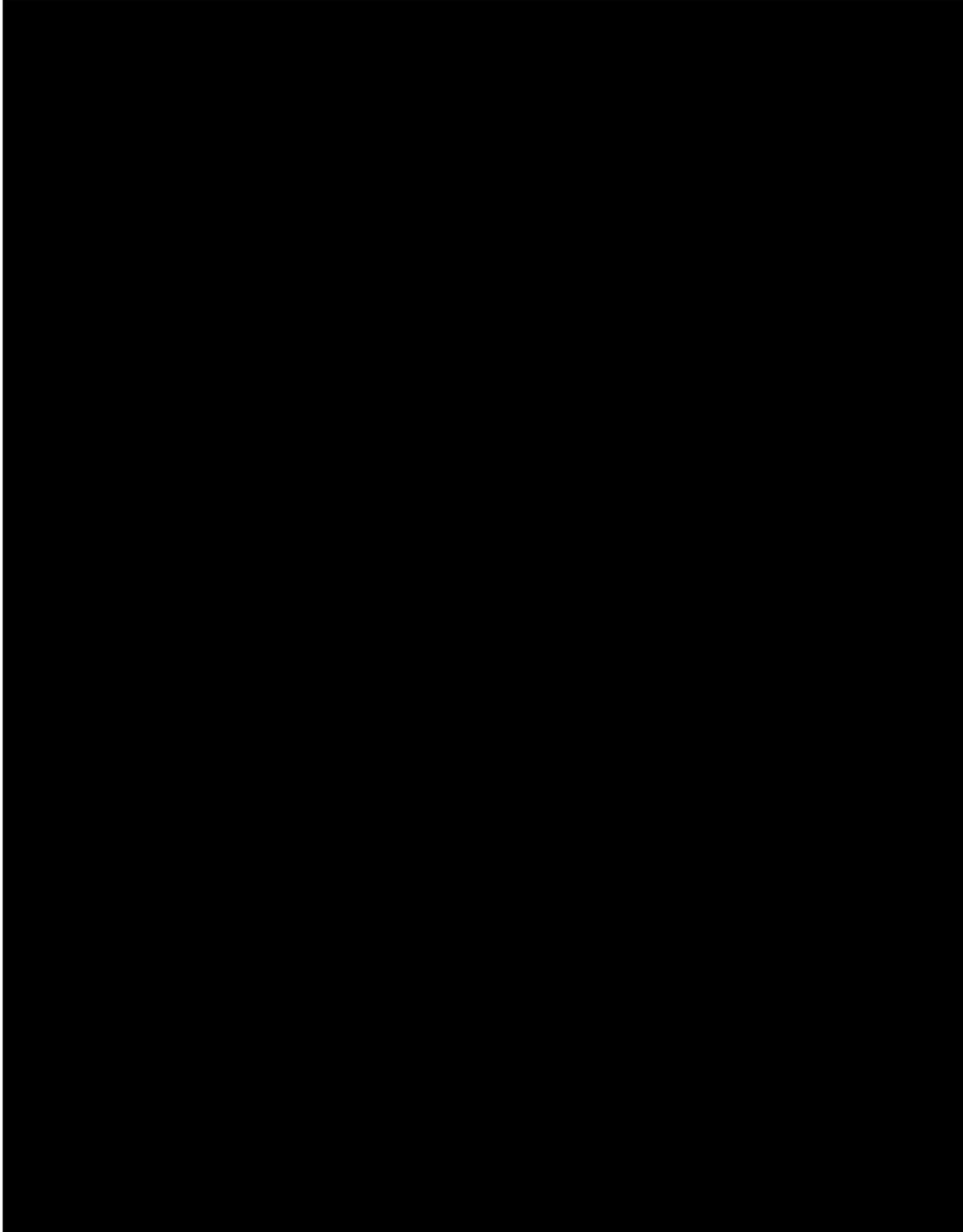


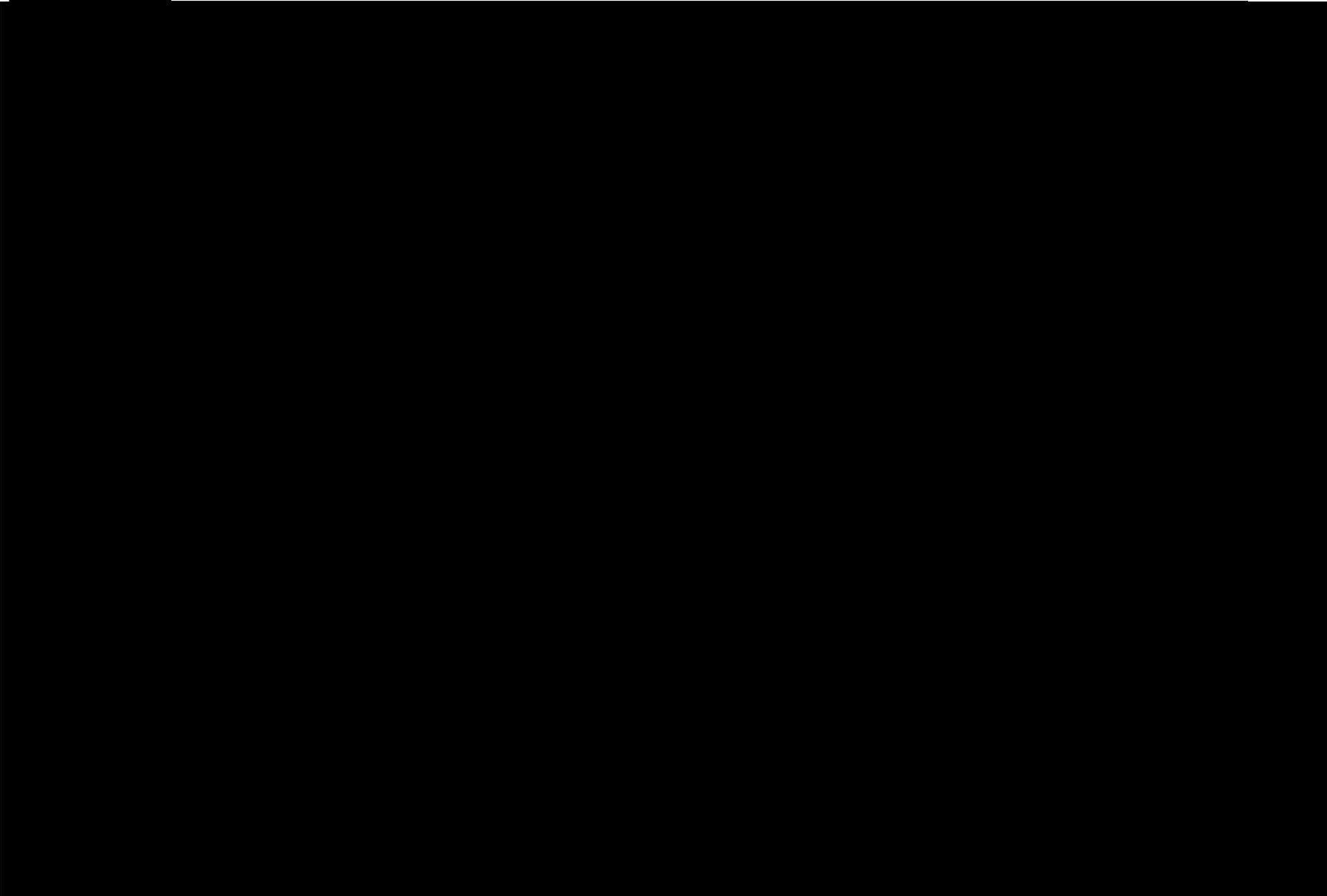


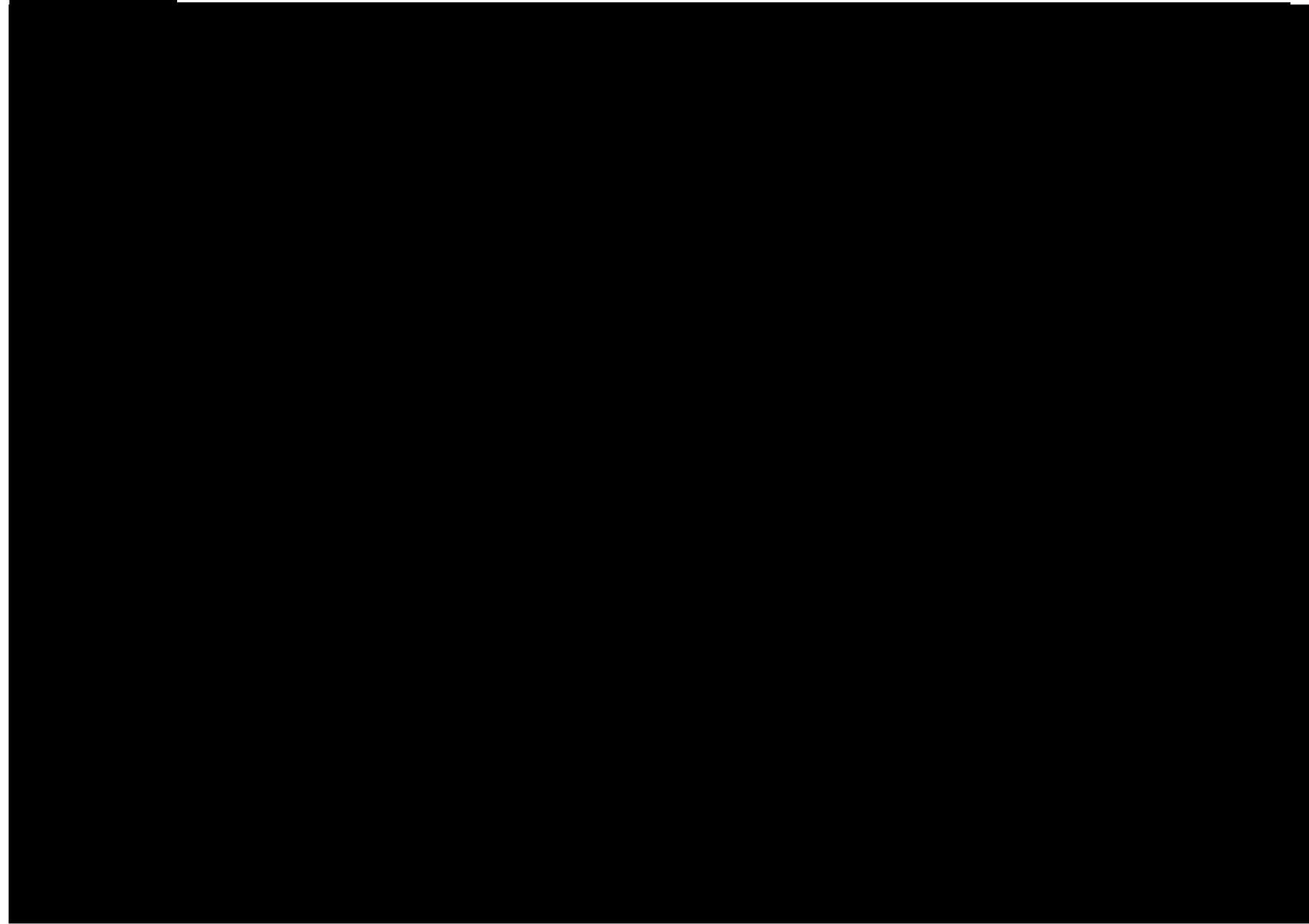




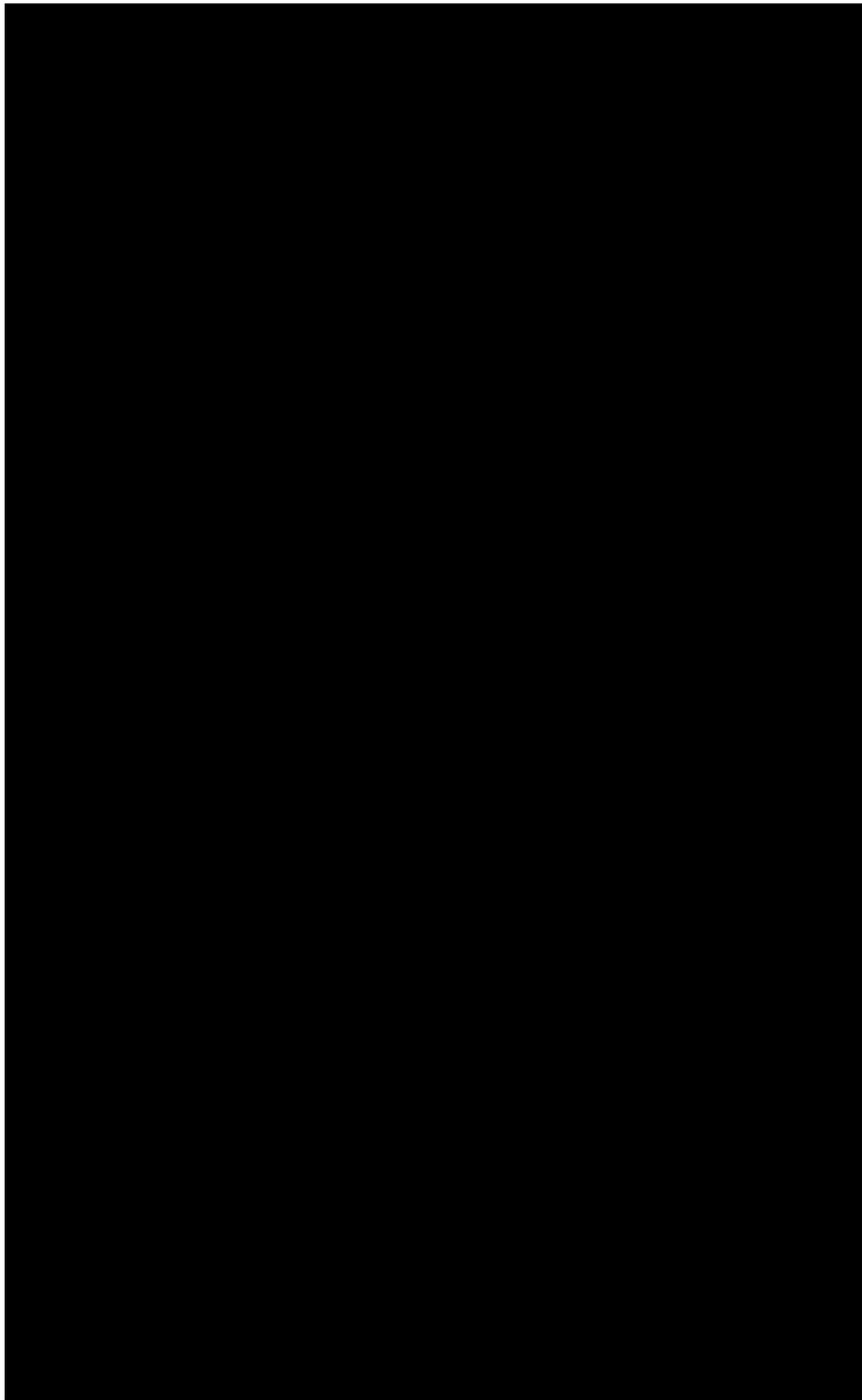


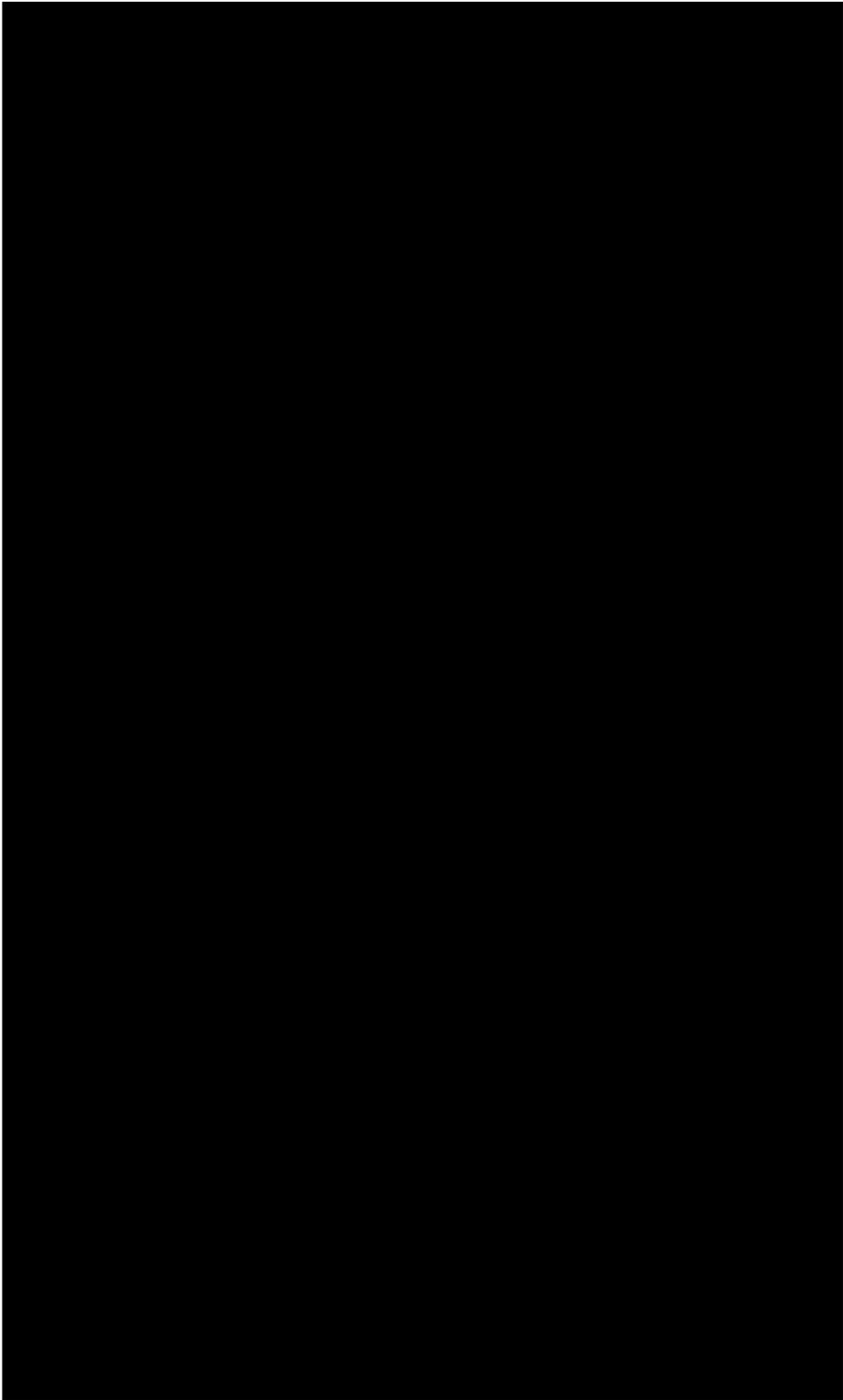


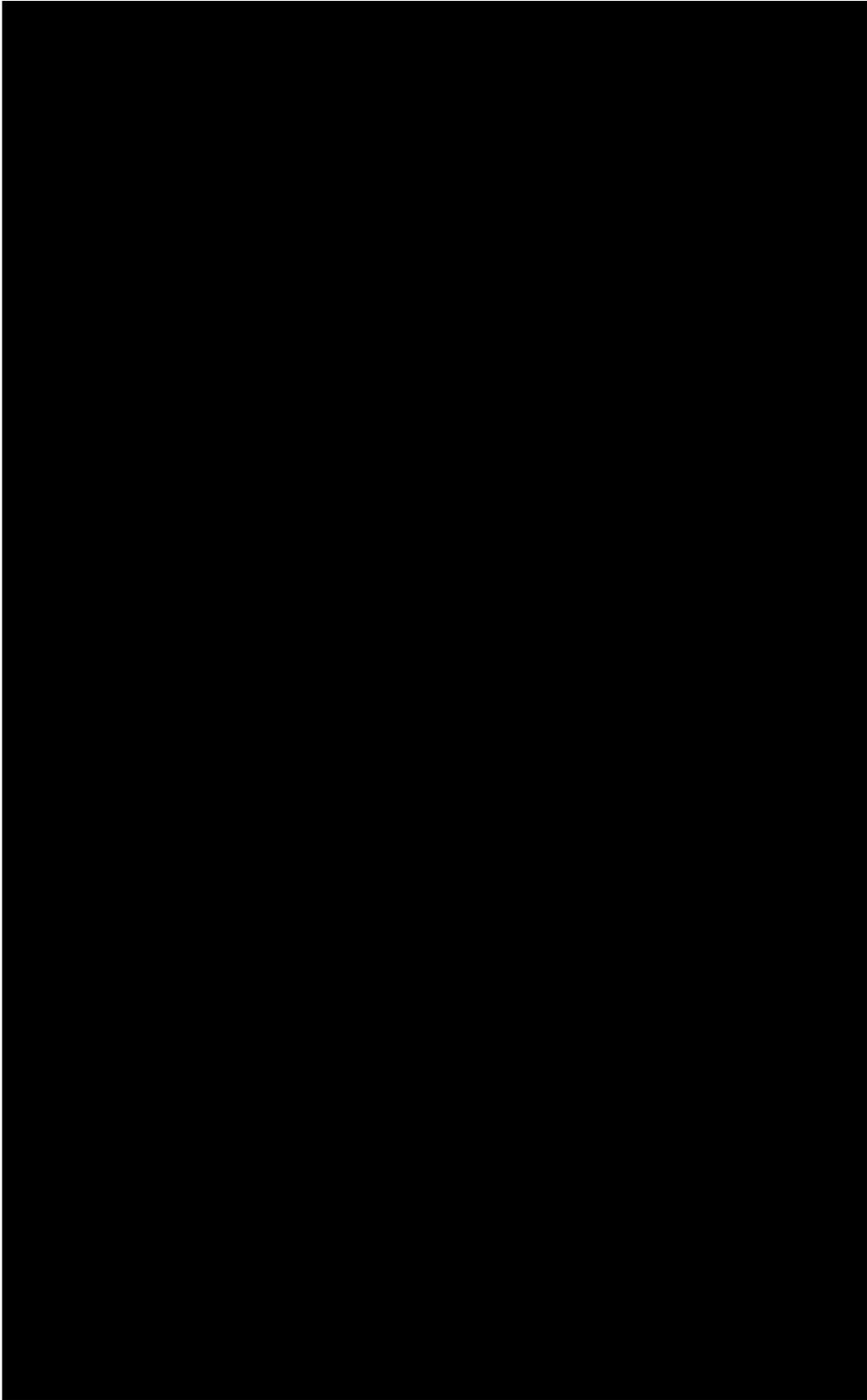


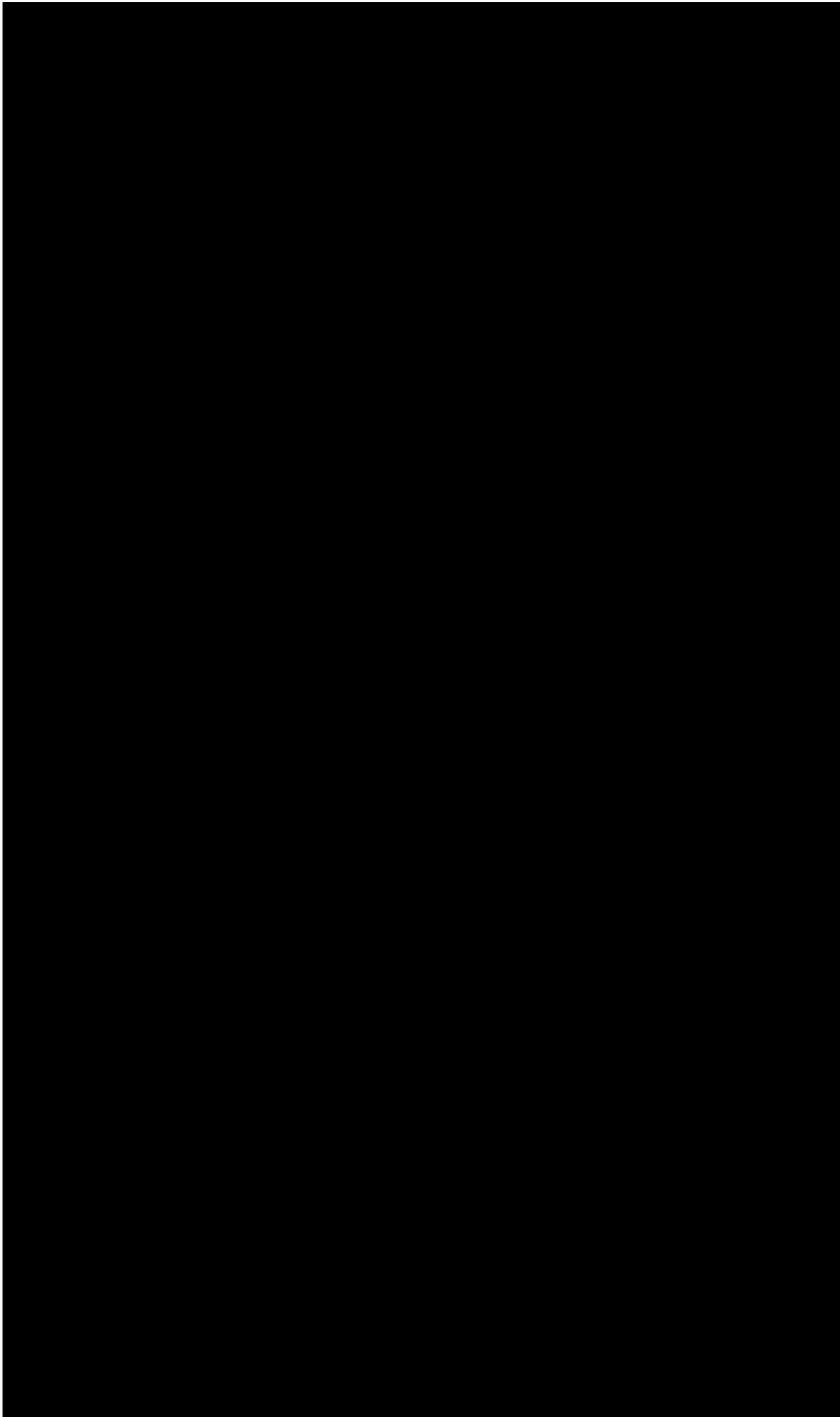


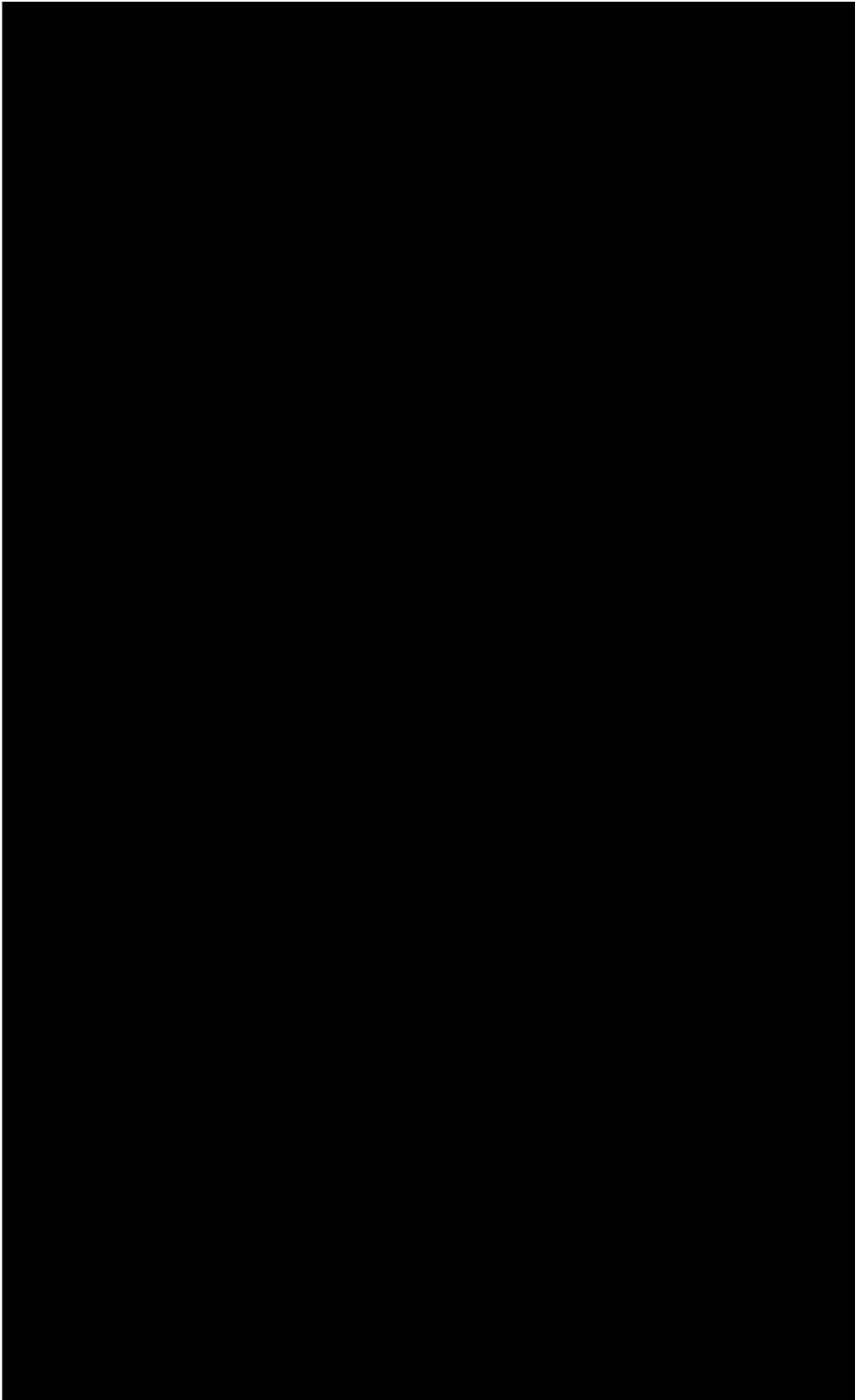
Appendix C.4 Example of cultural values query emails/post with any feedback received



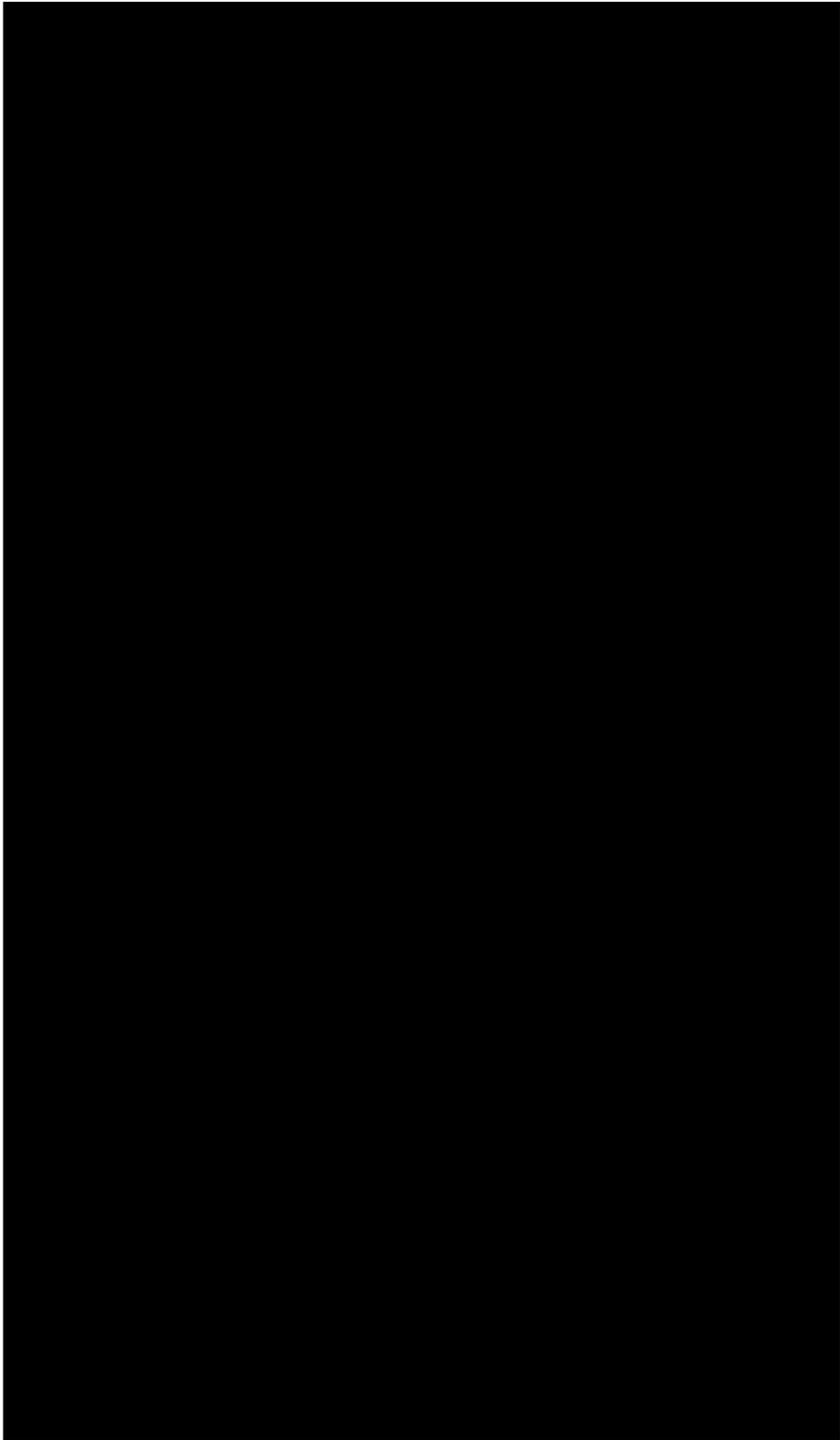


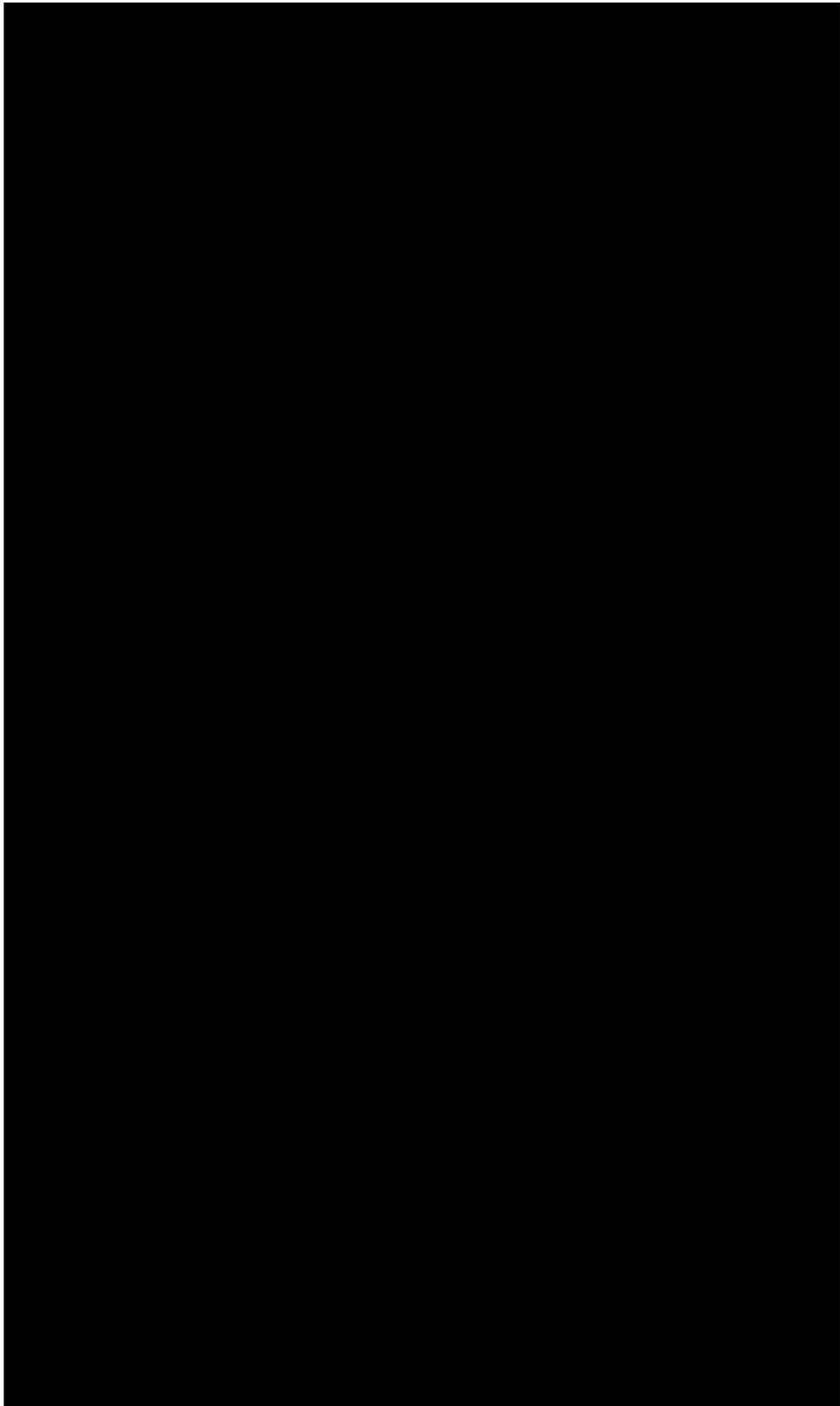


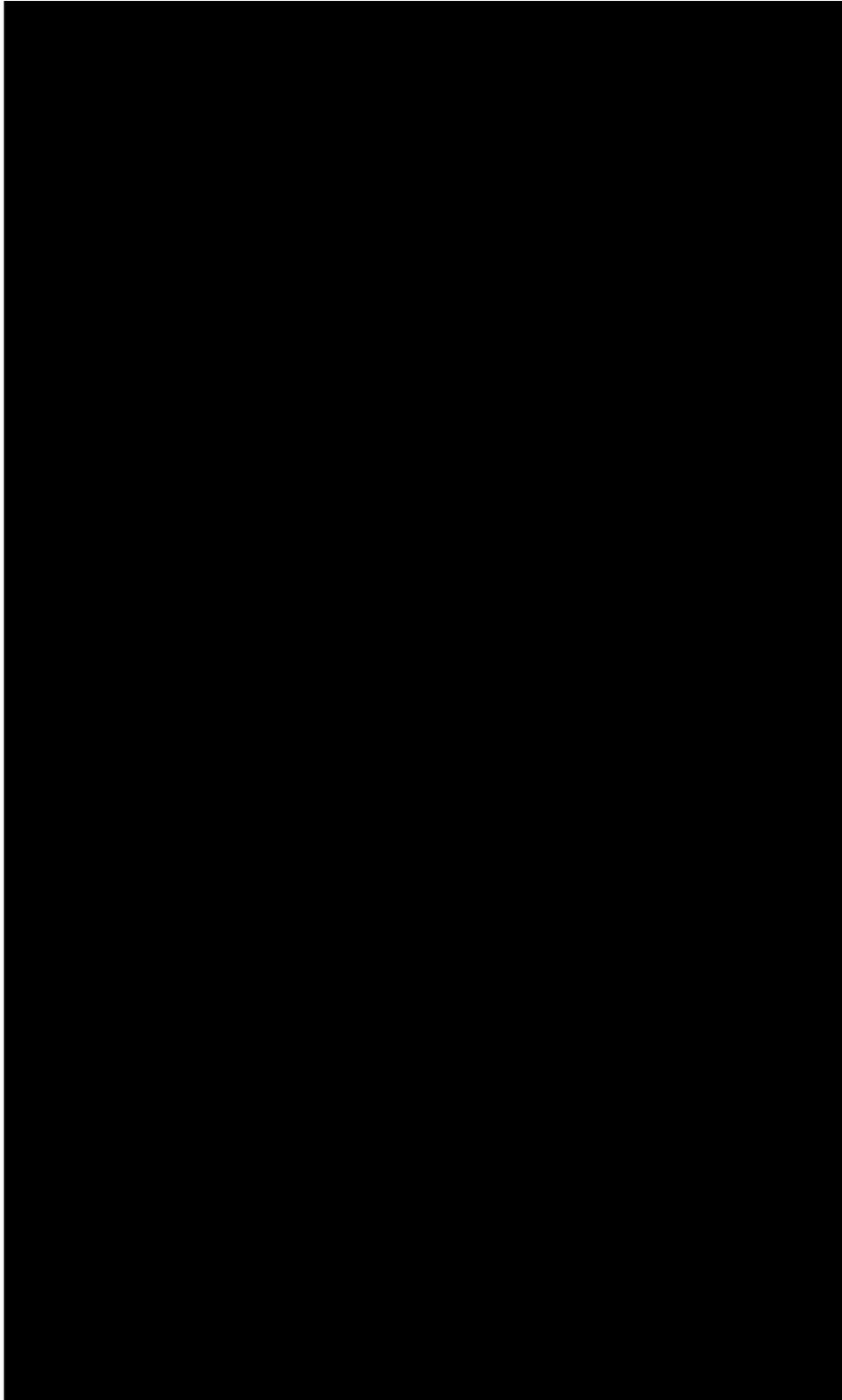


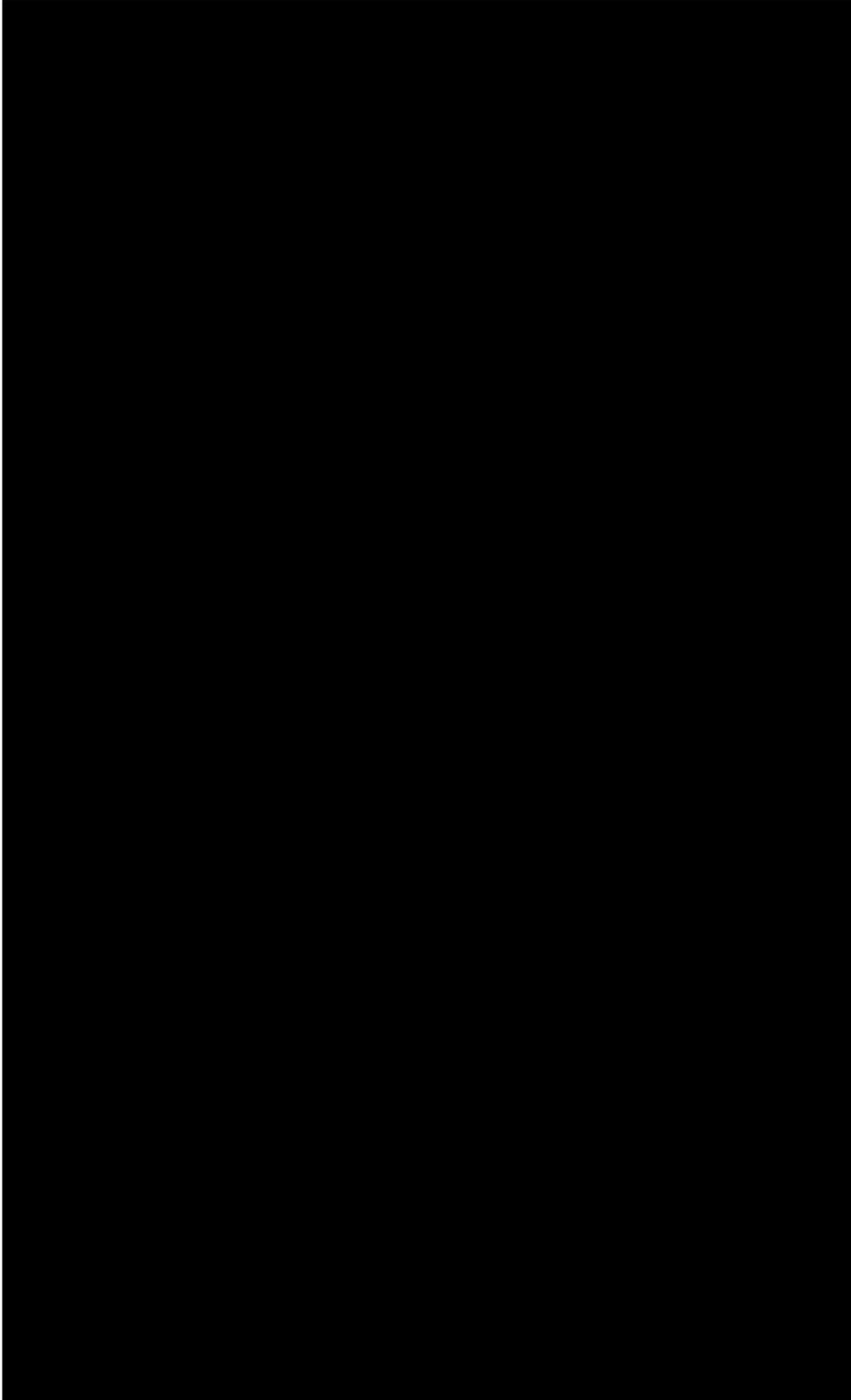


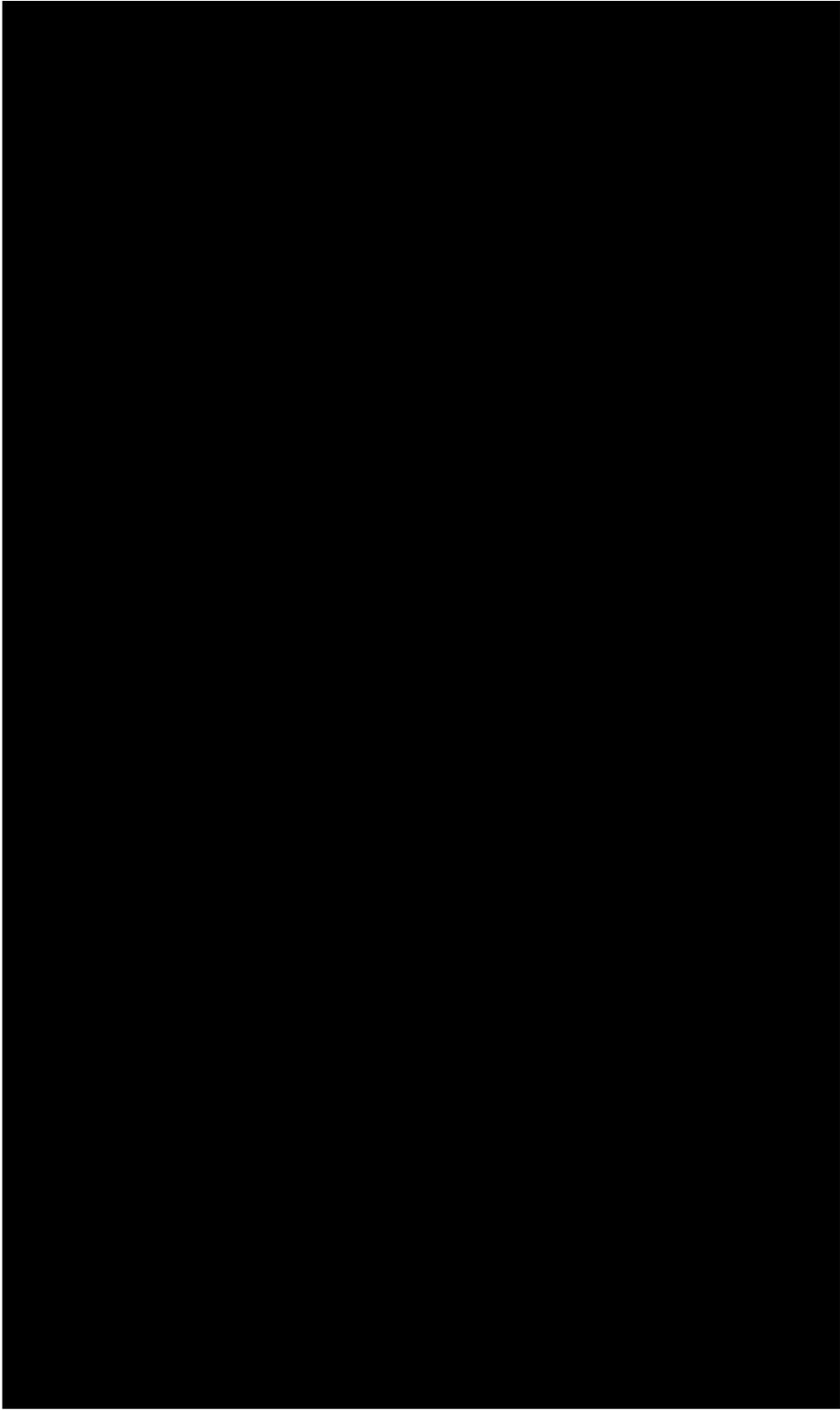


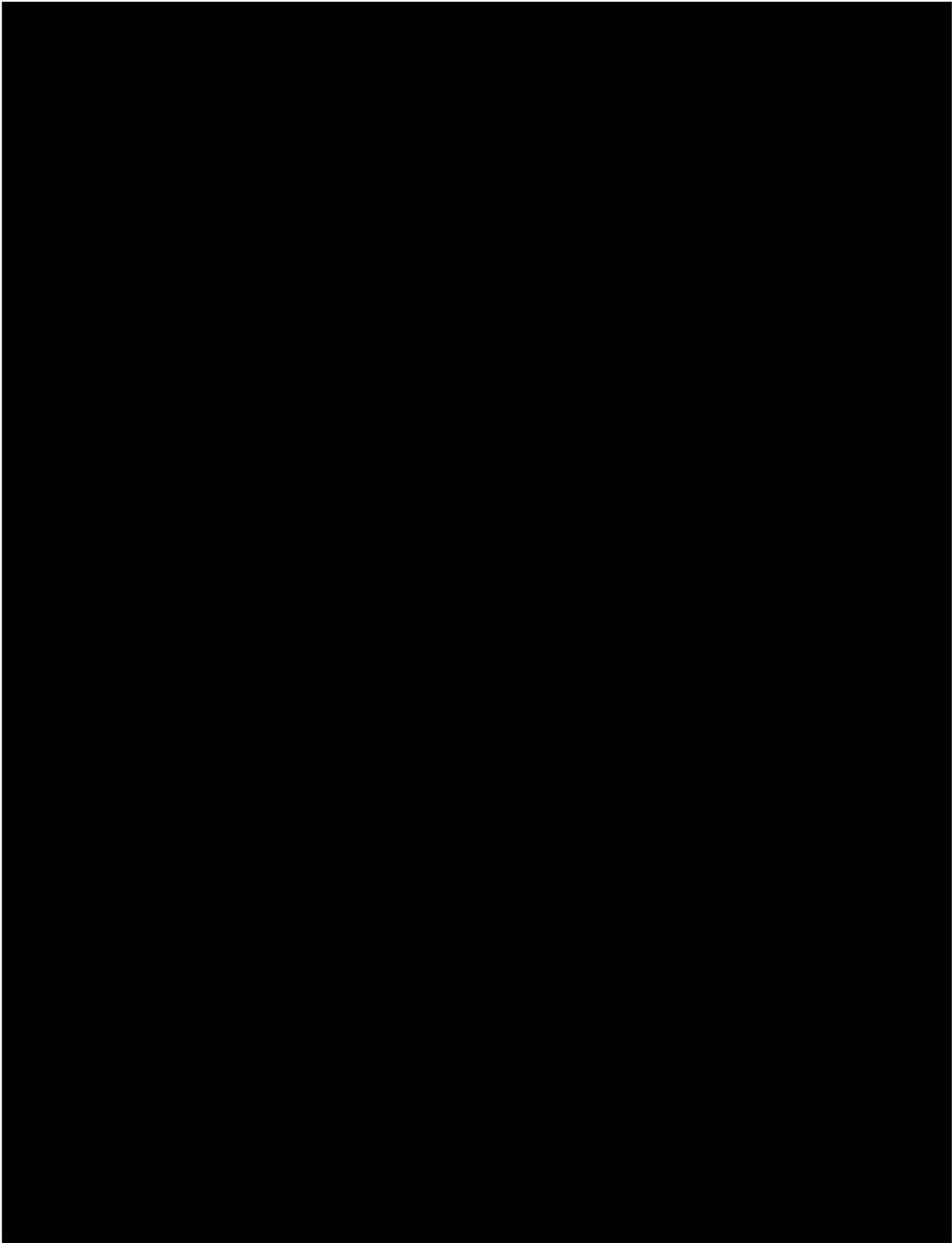


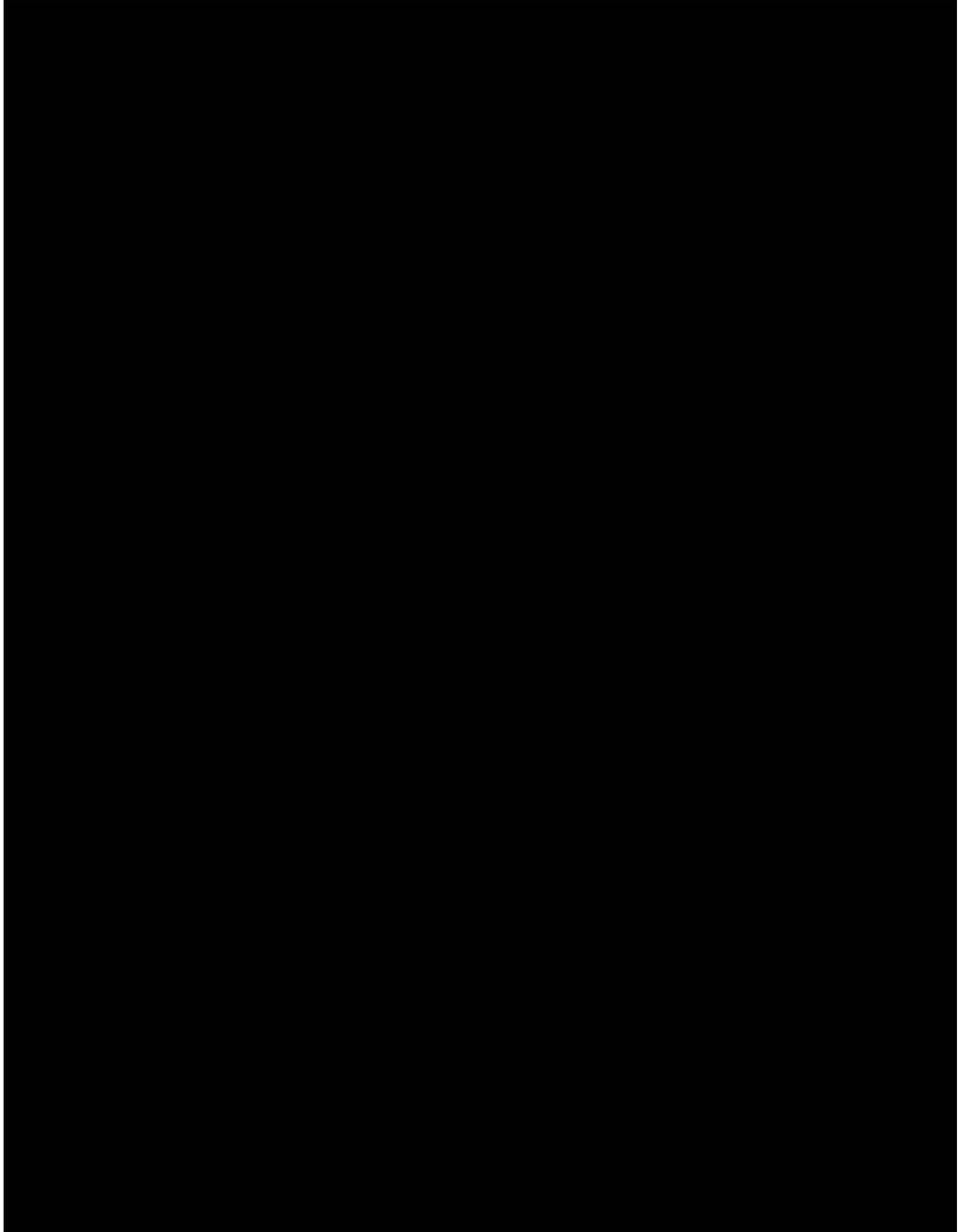


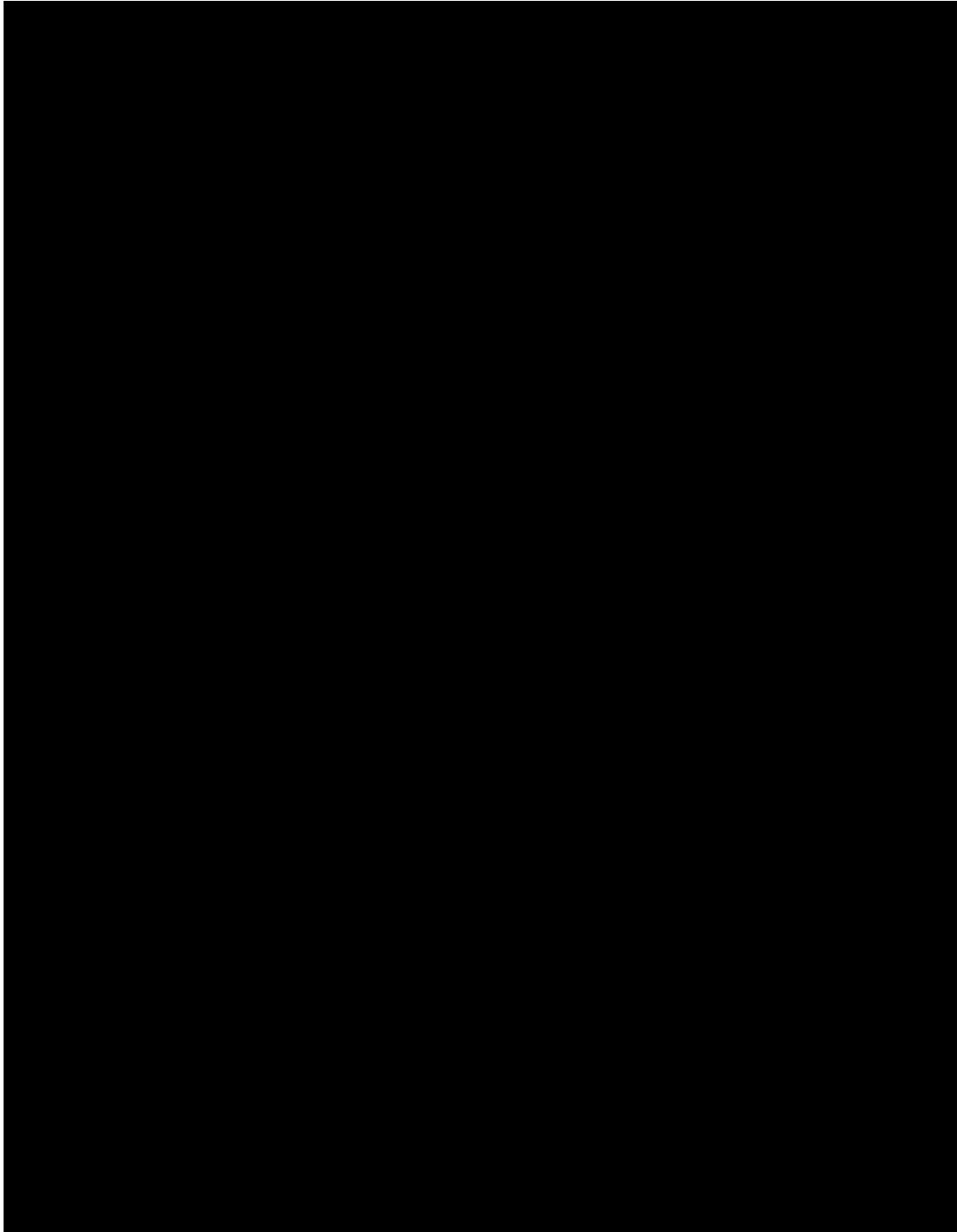


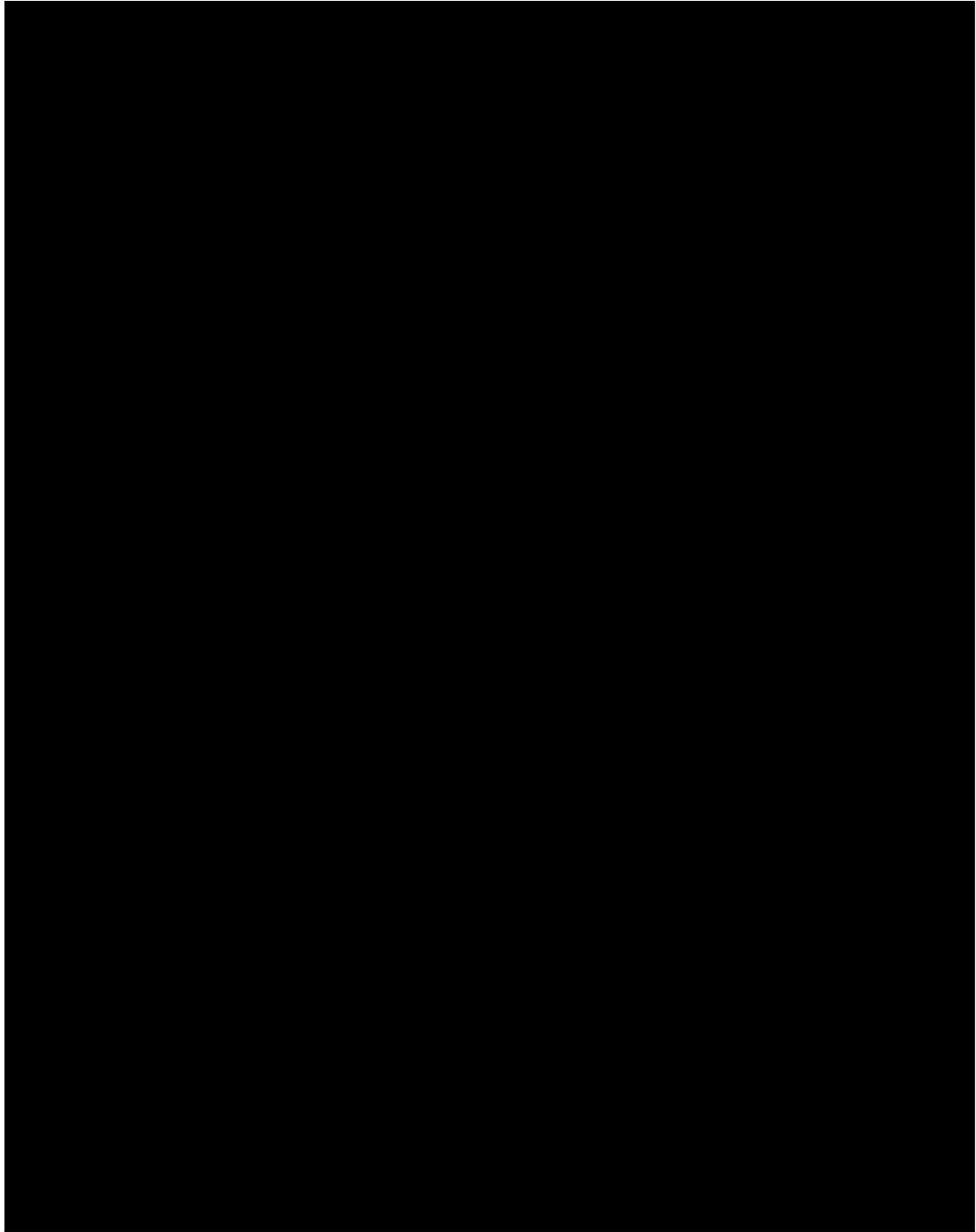


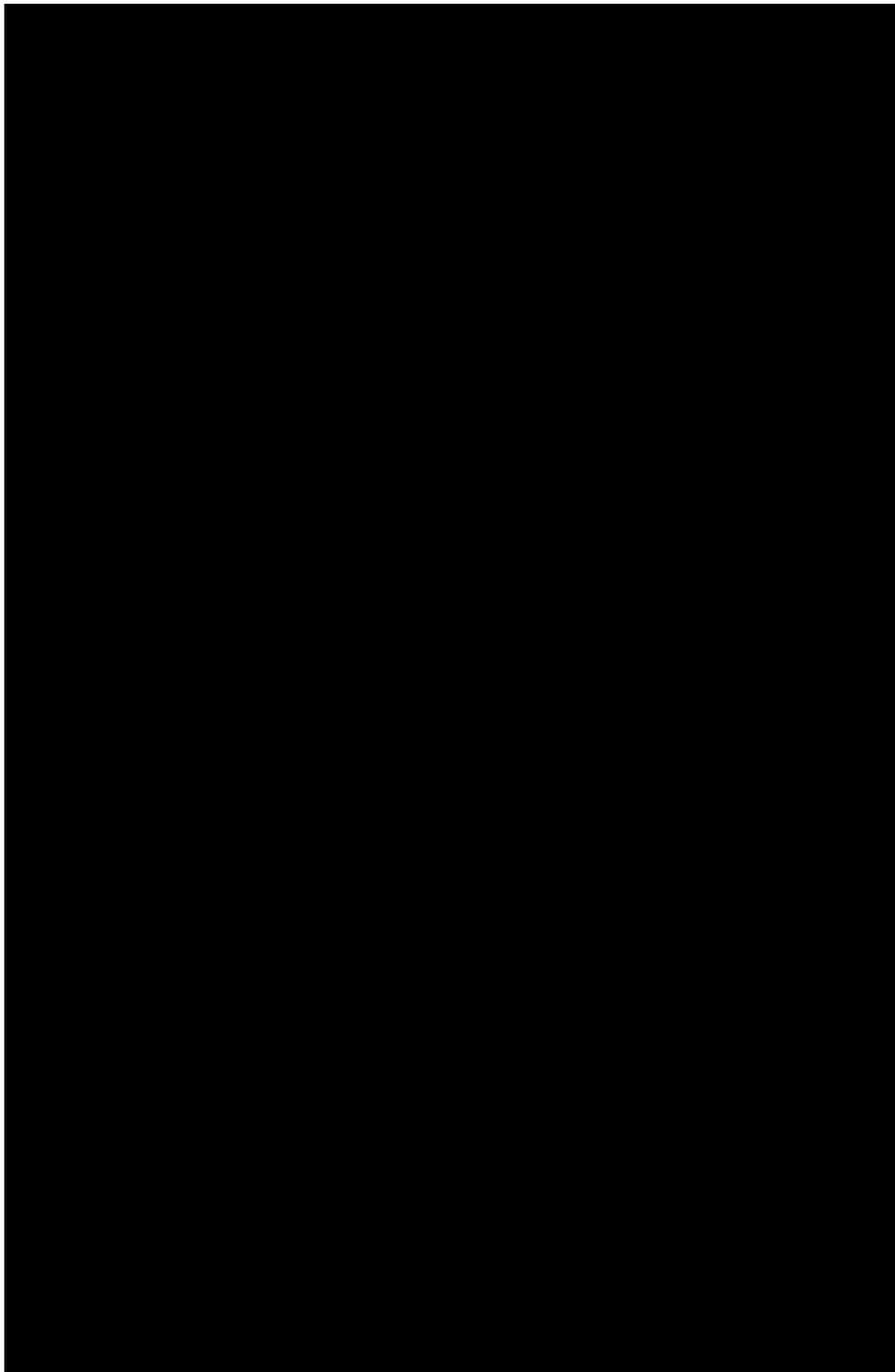


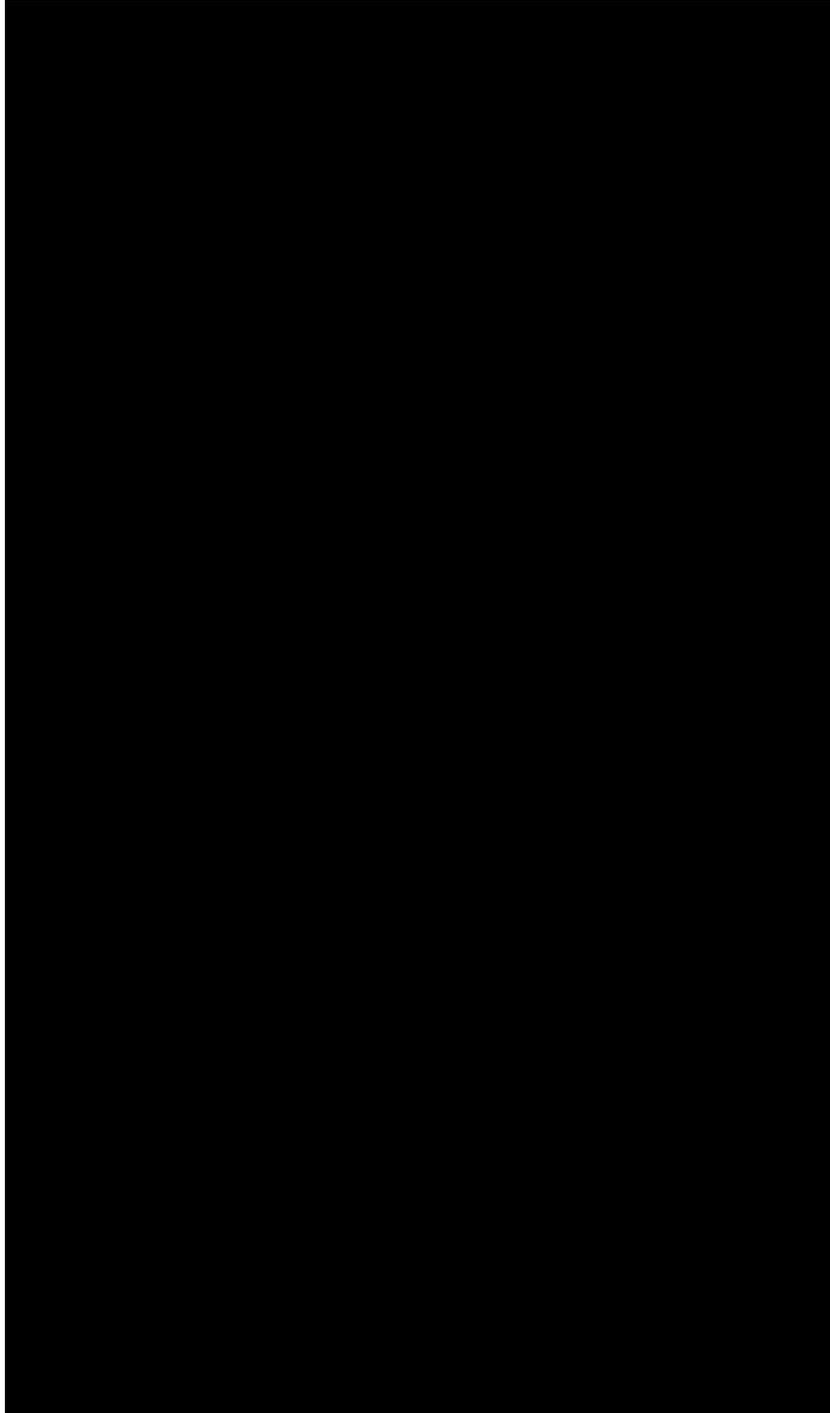


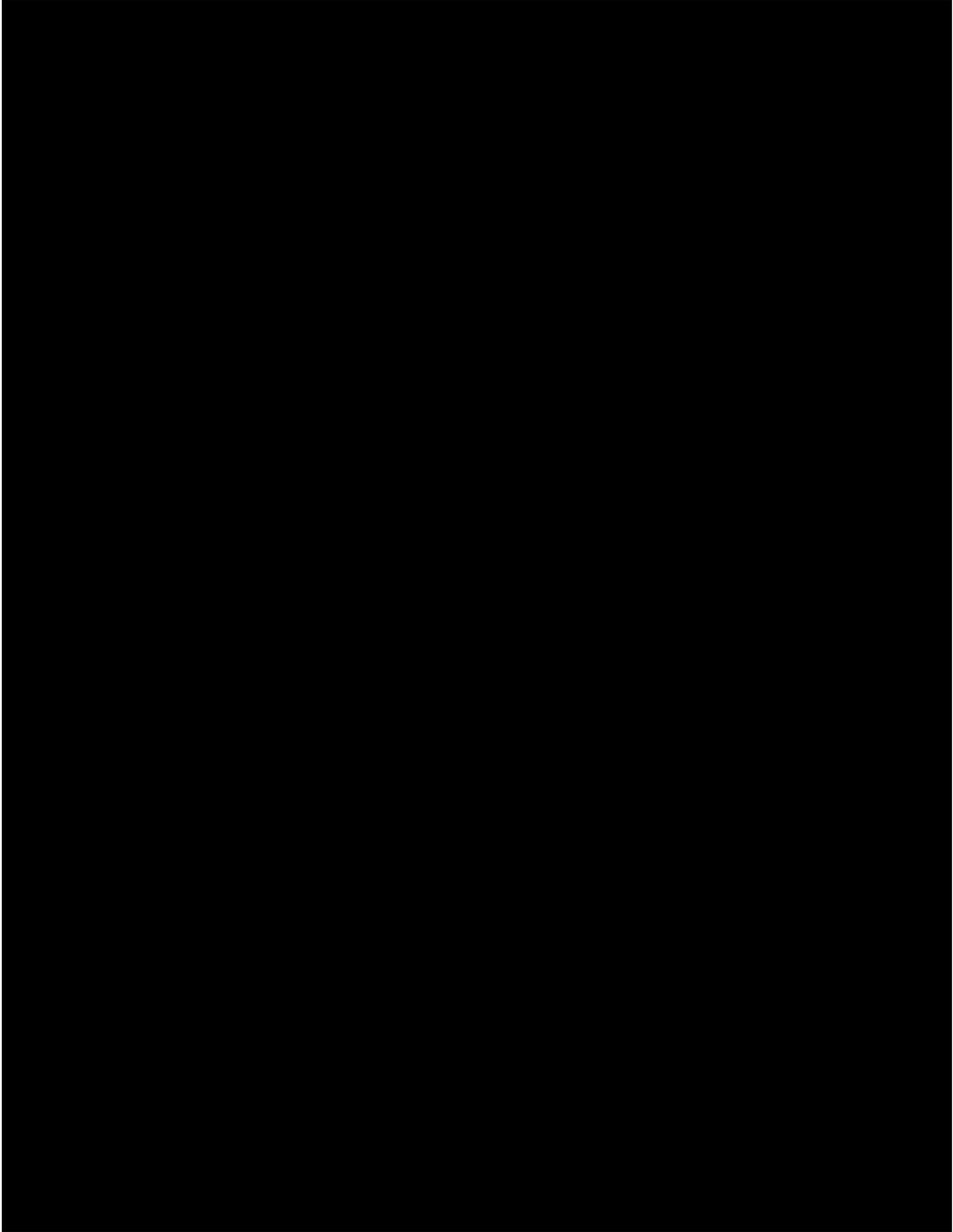


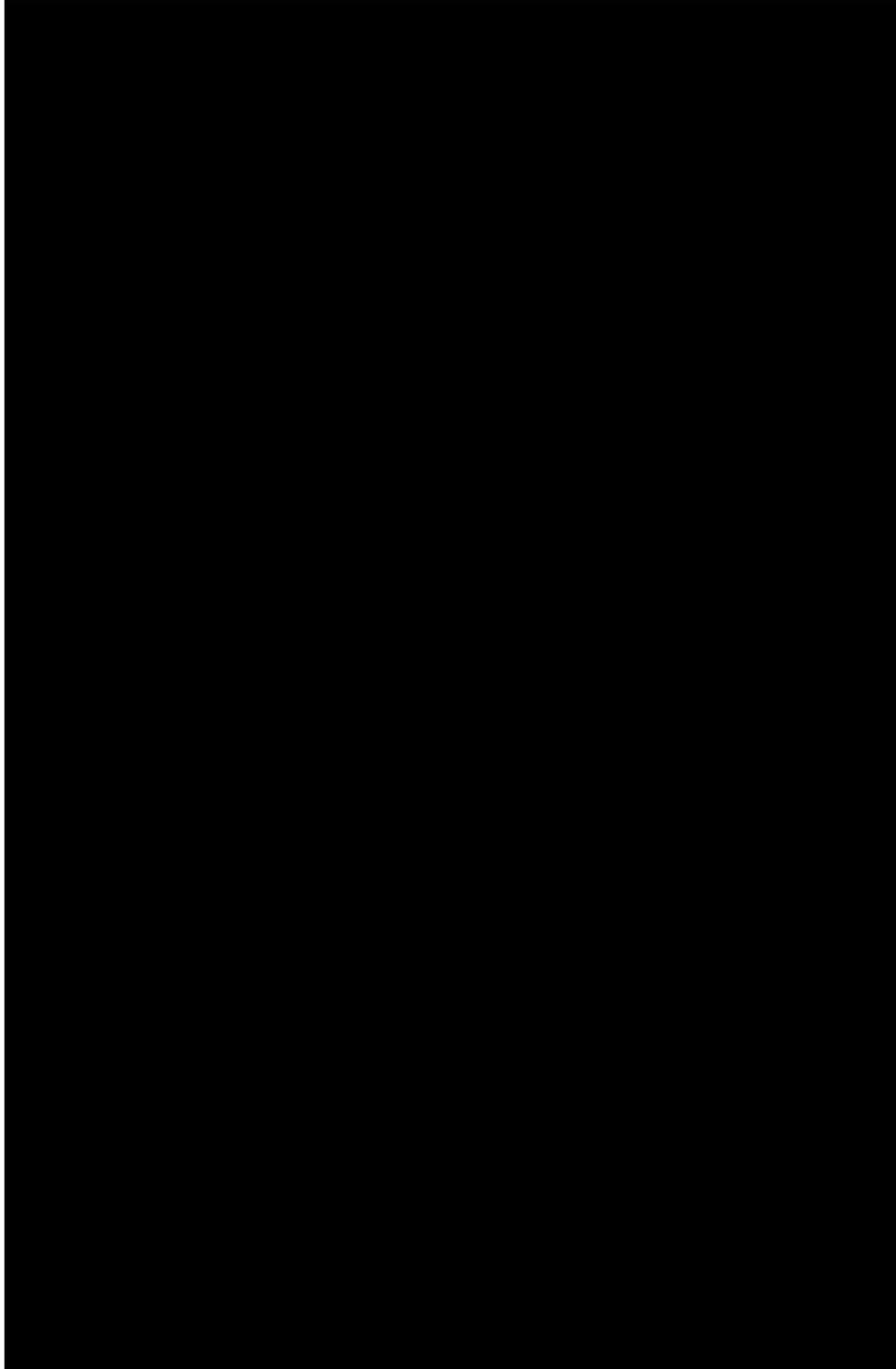


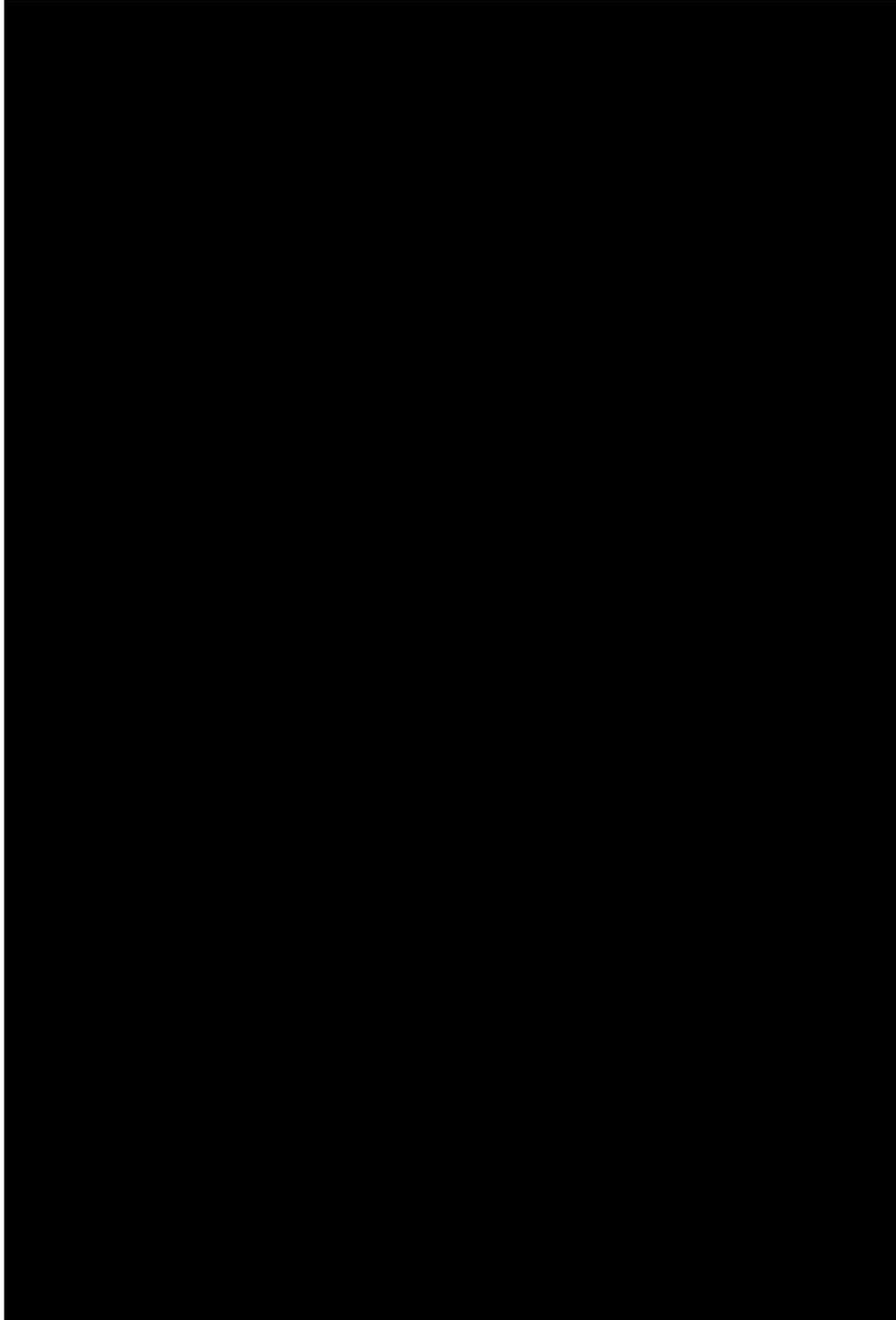


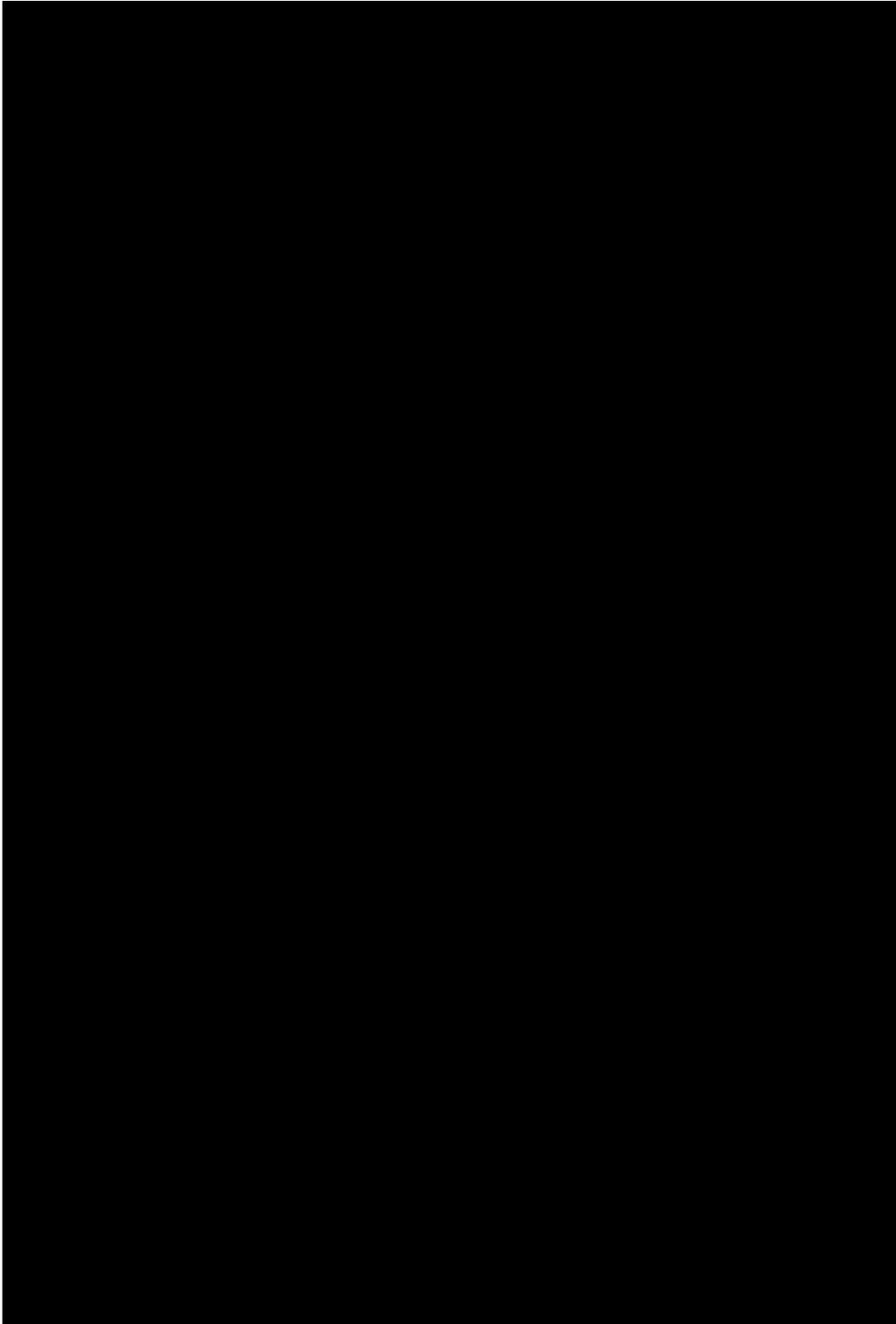


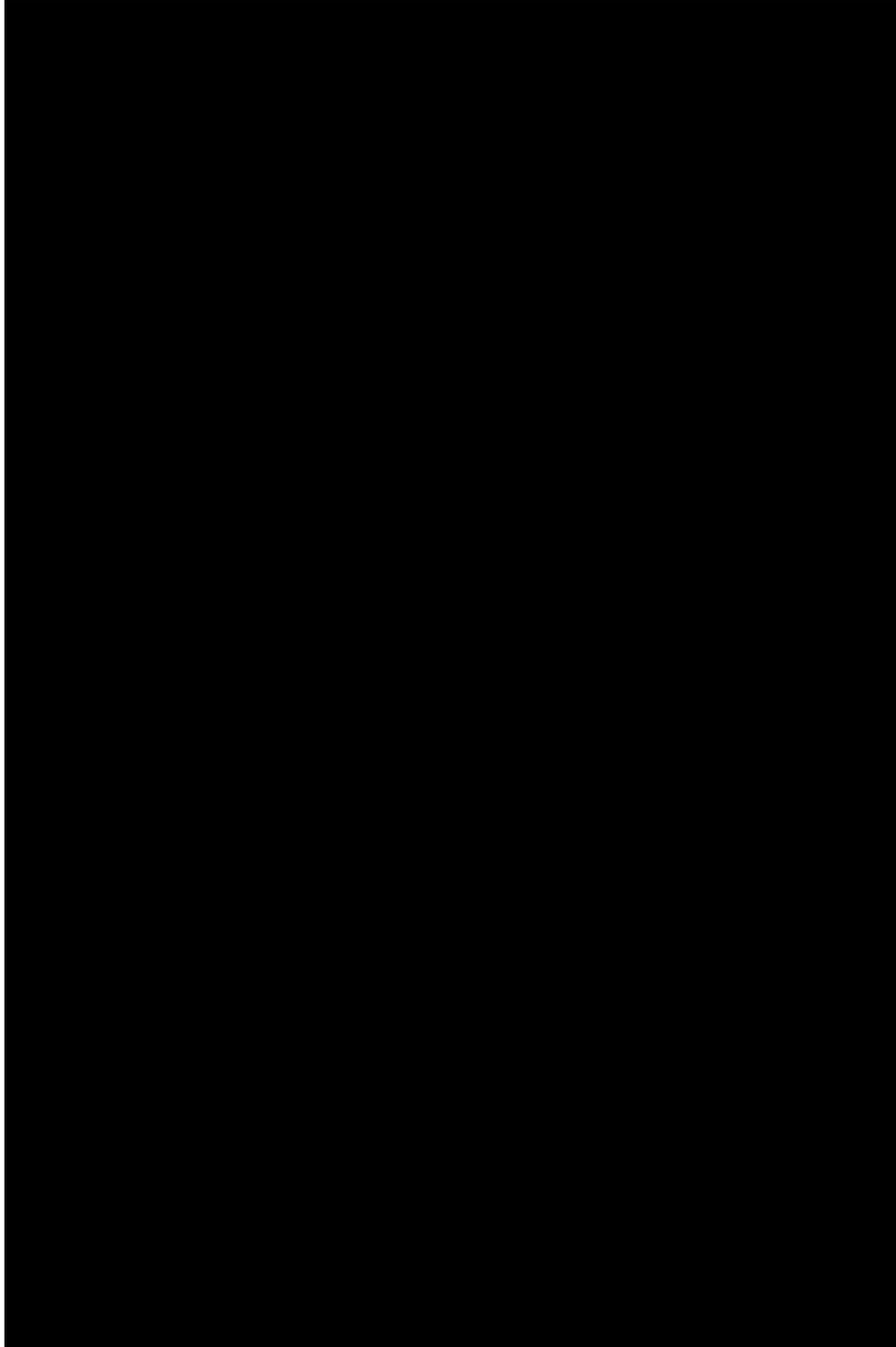




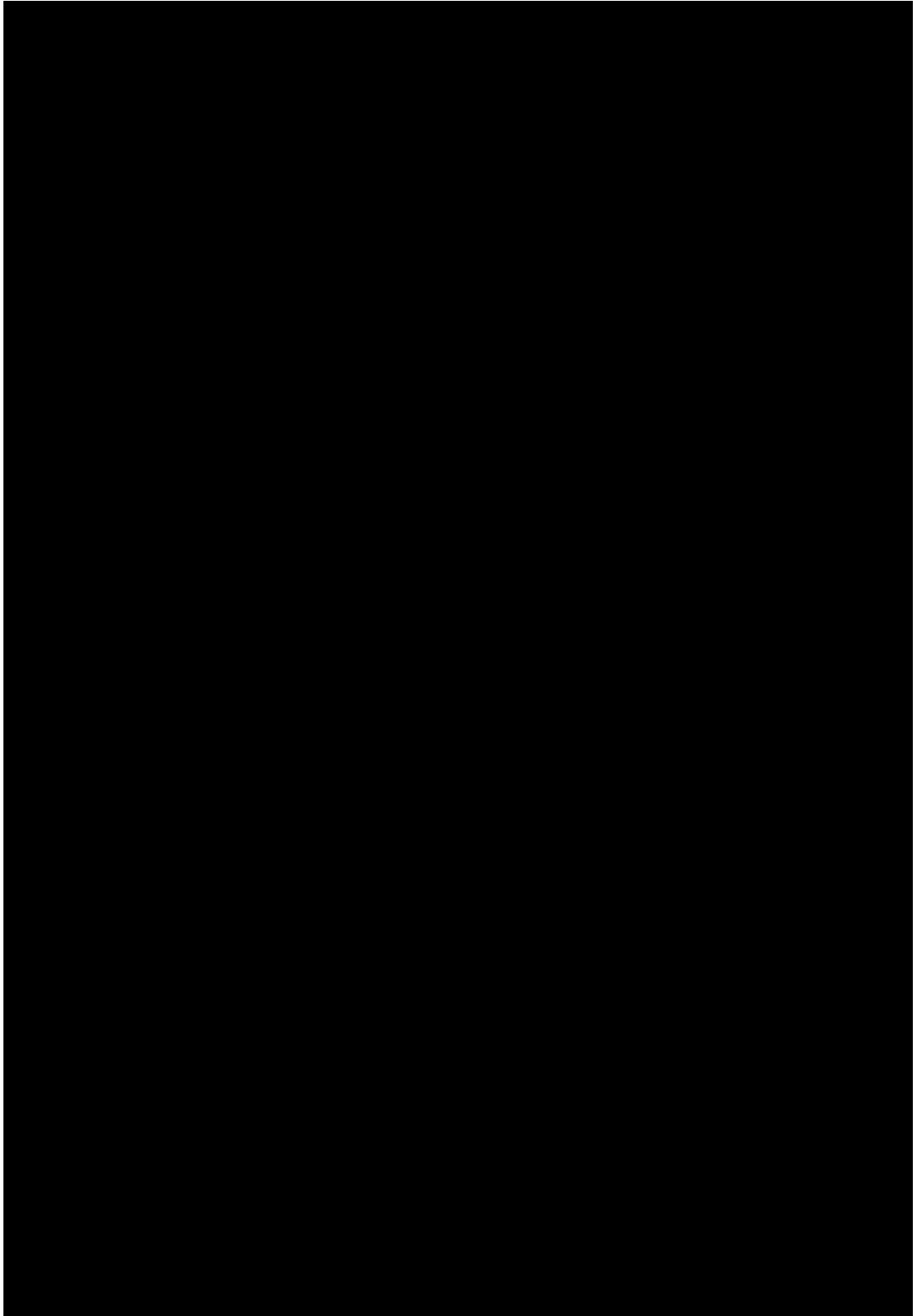


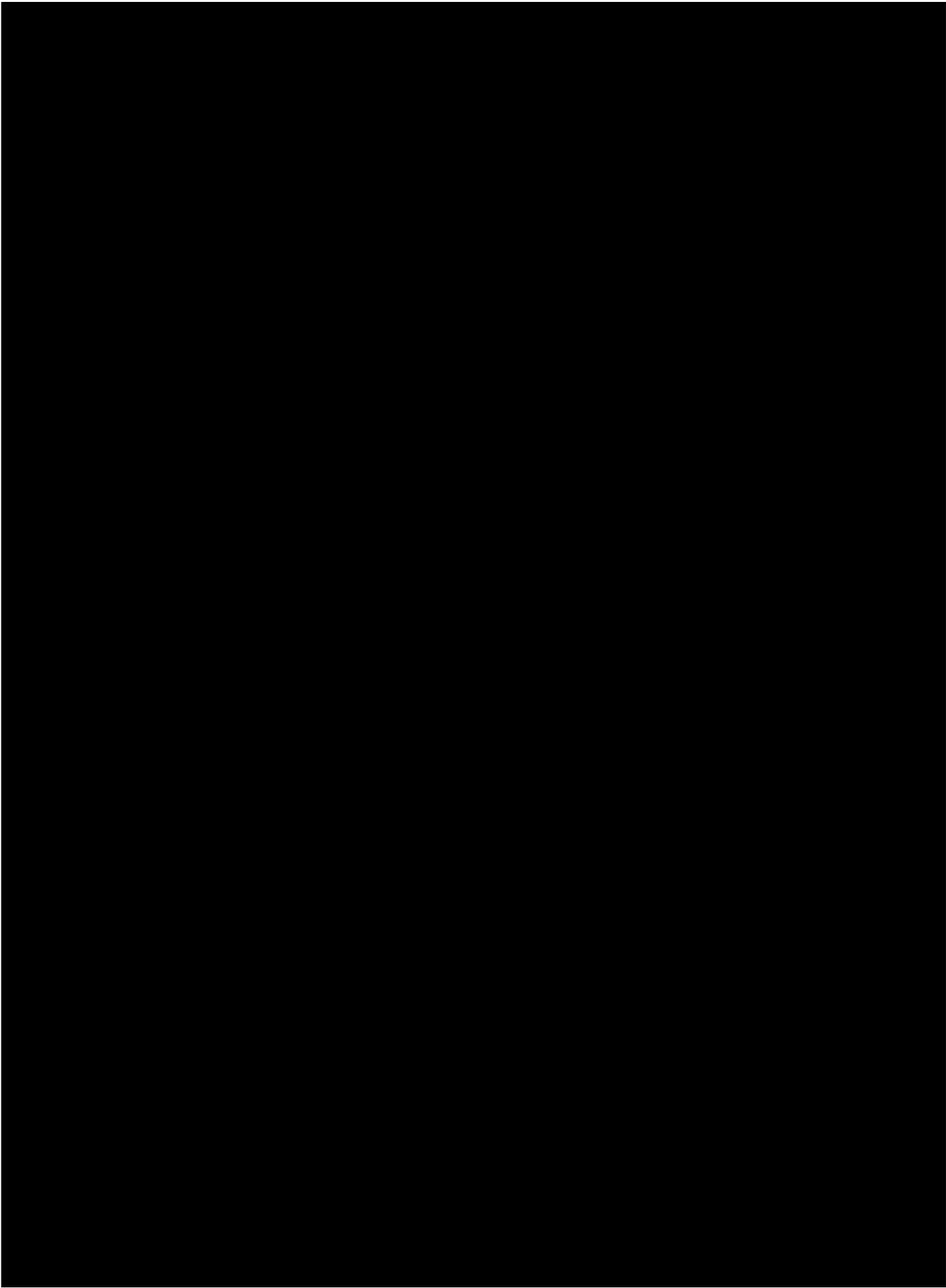


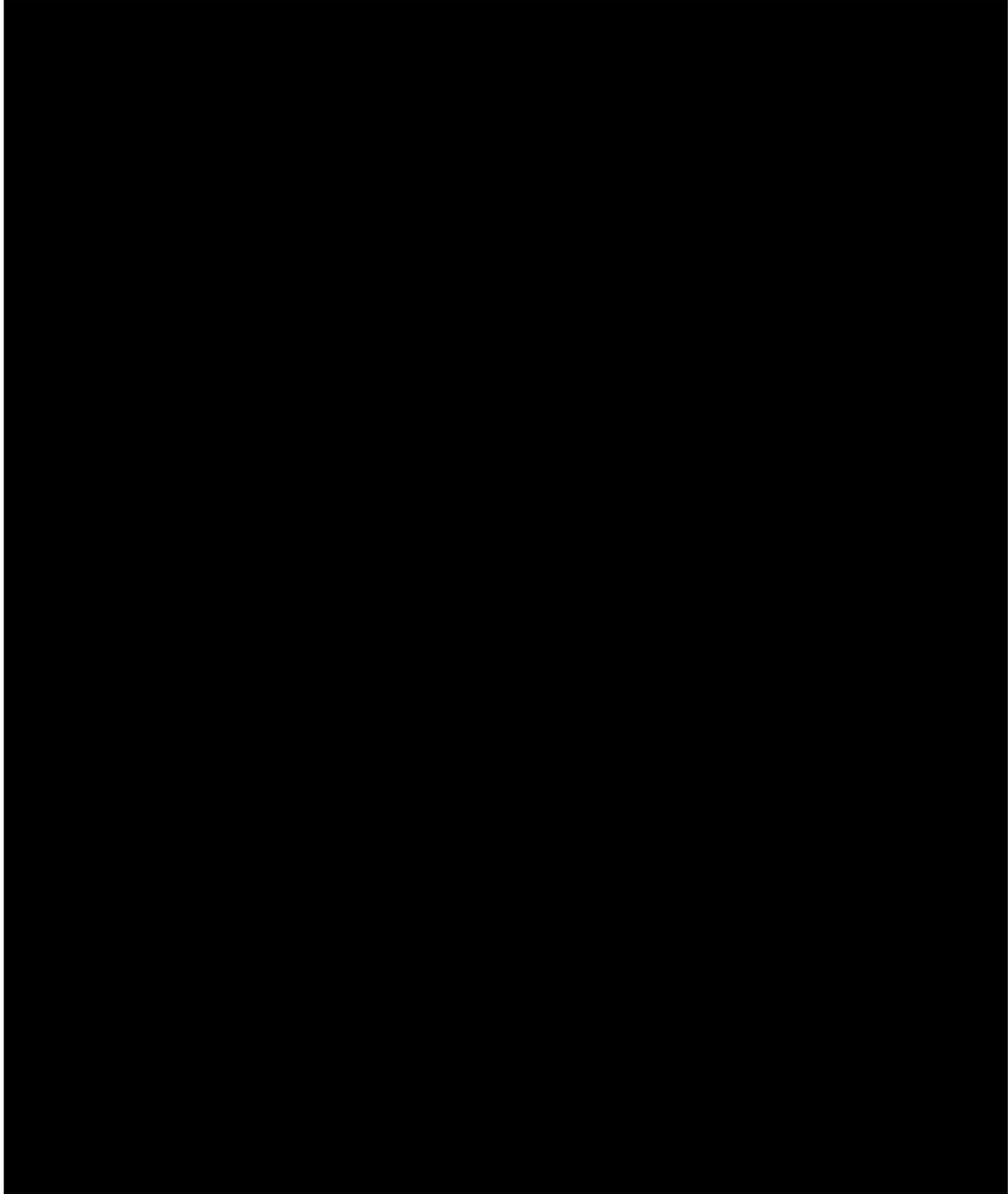


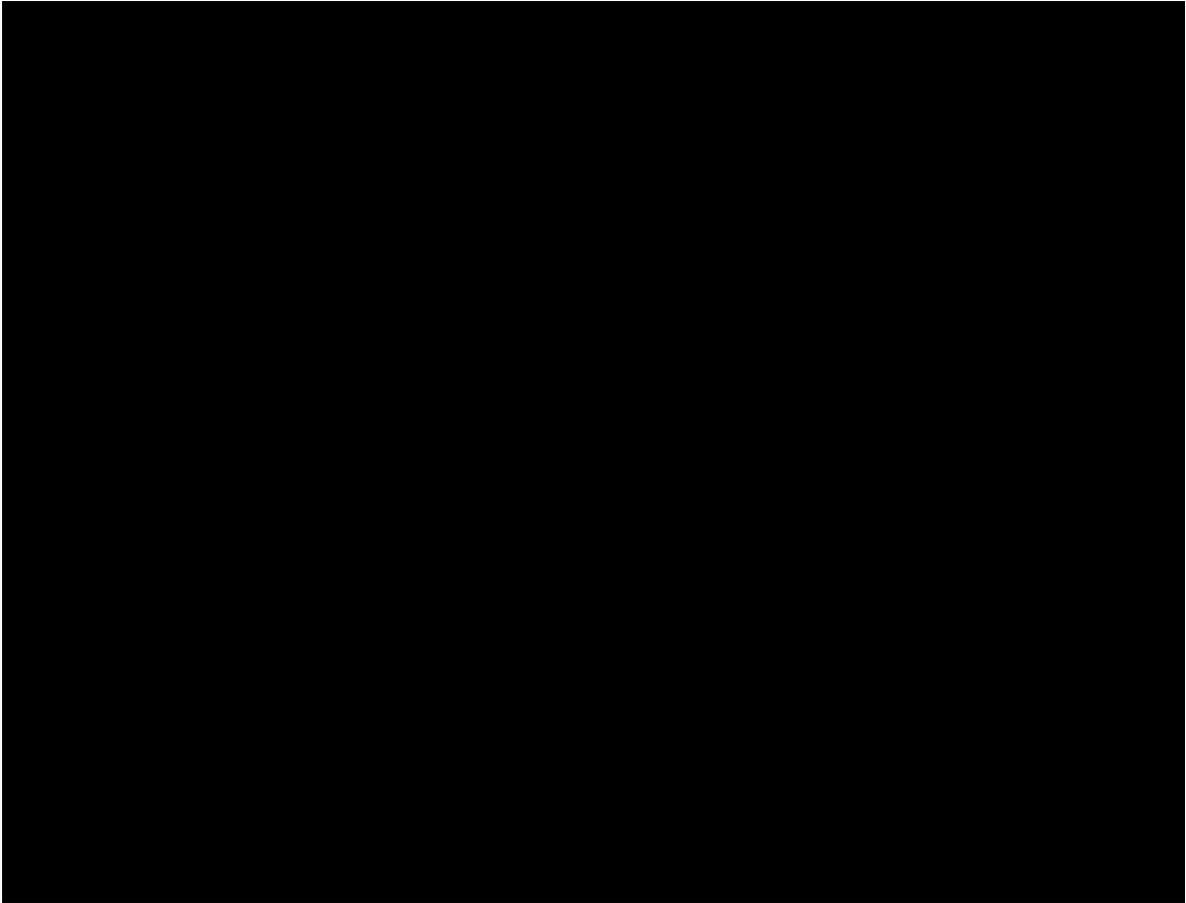


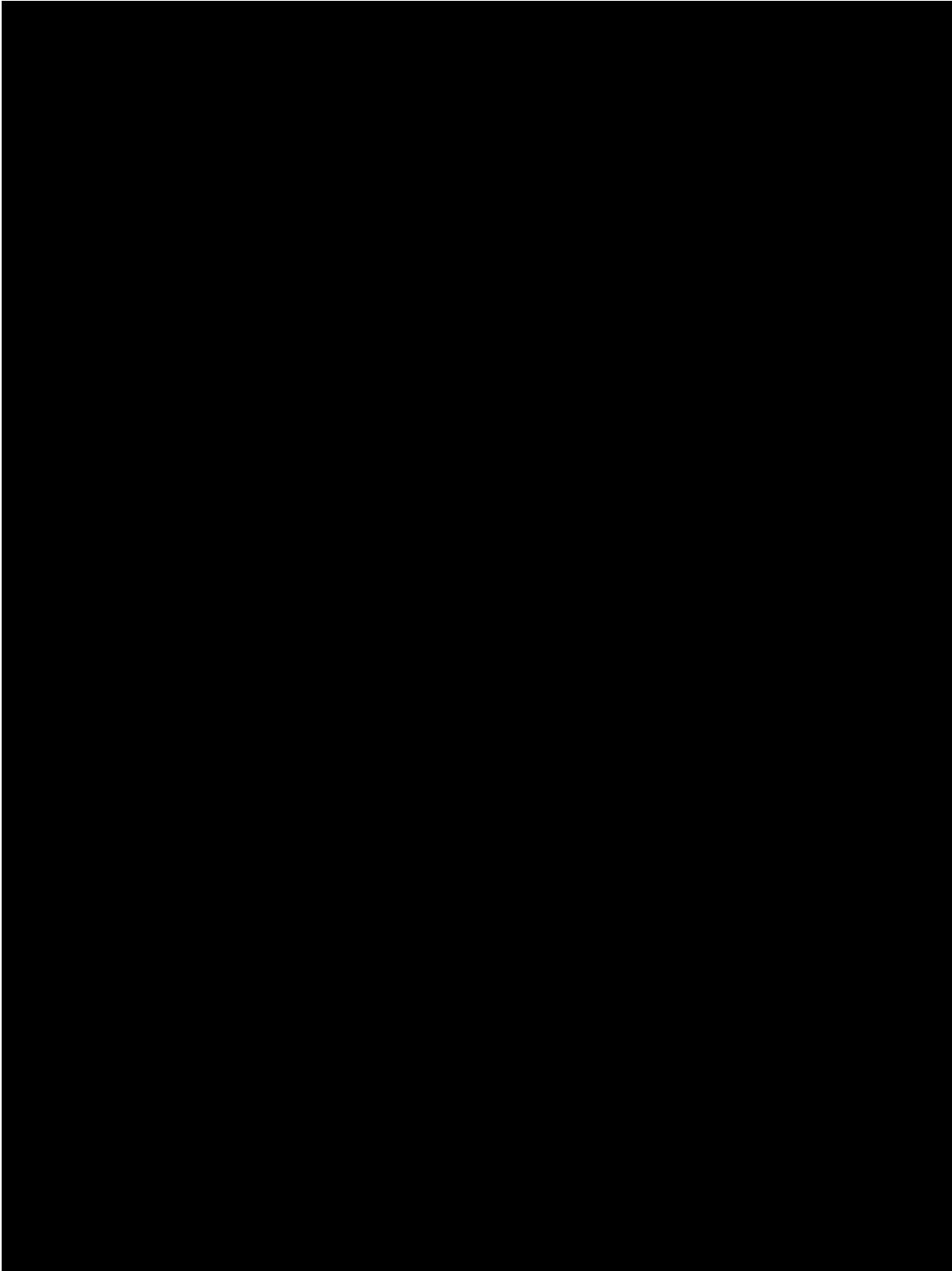


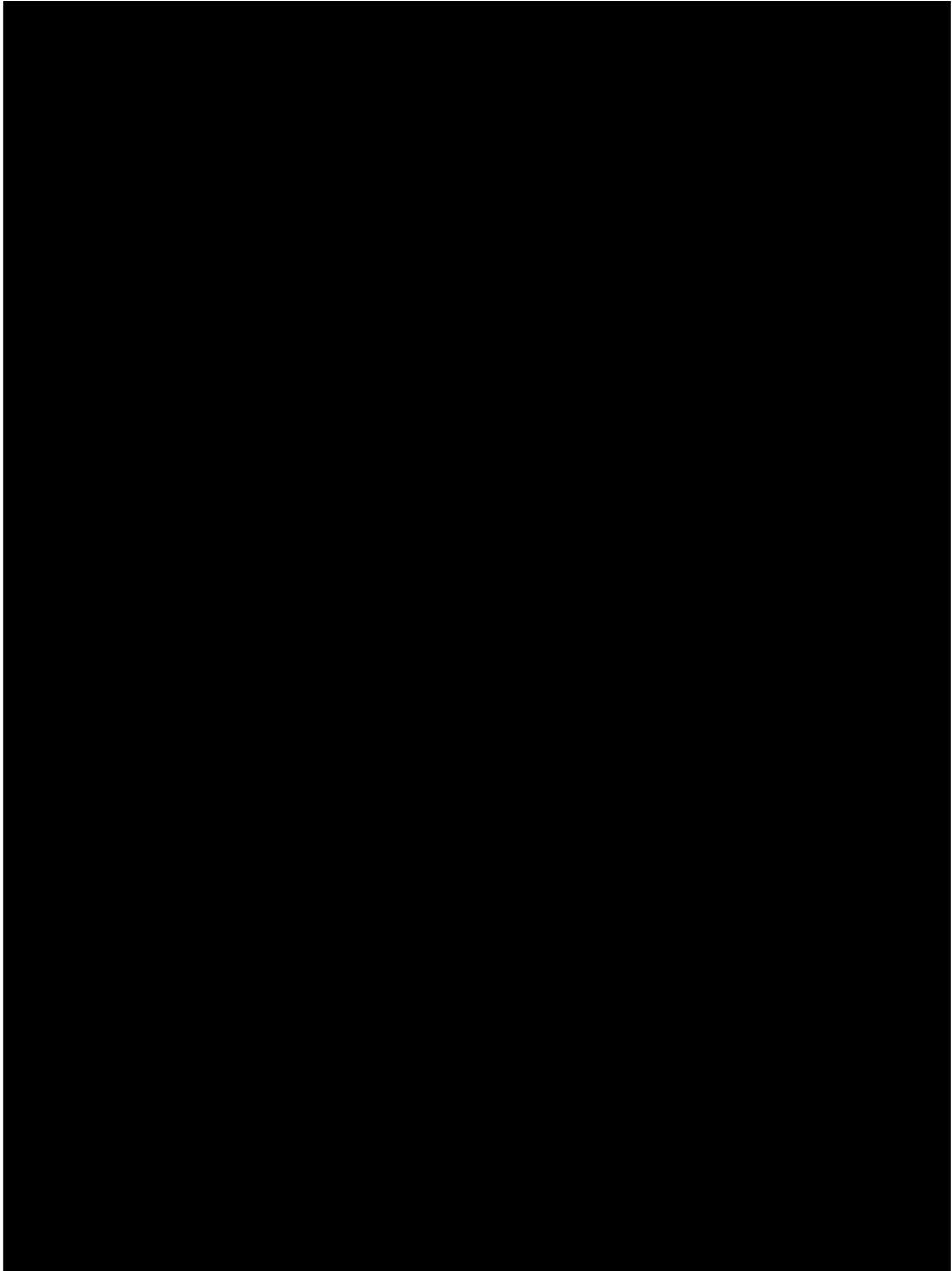


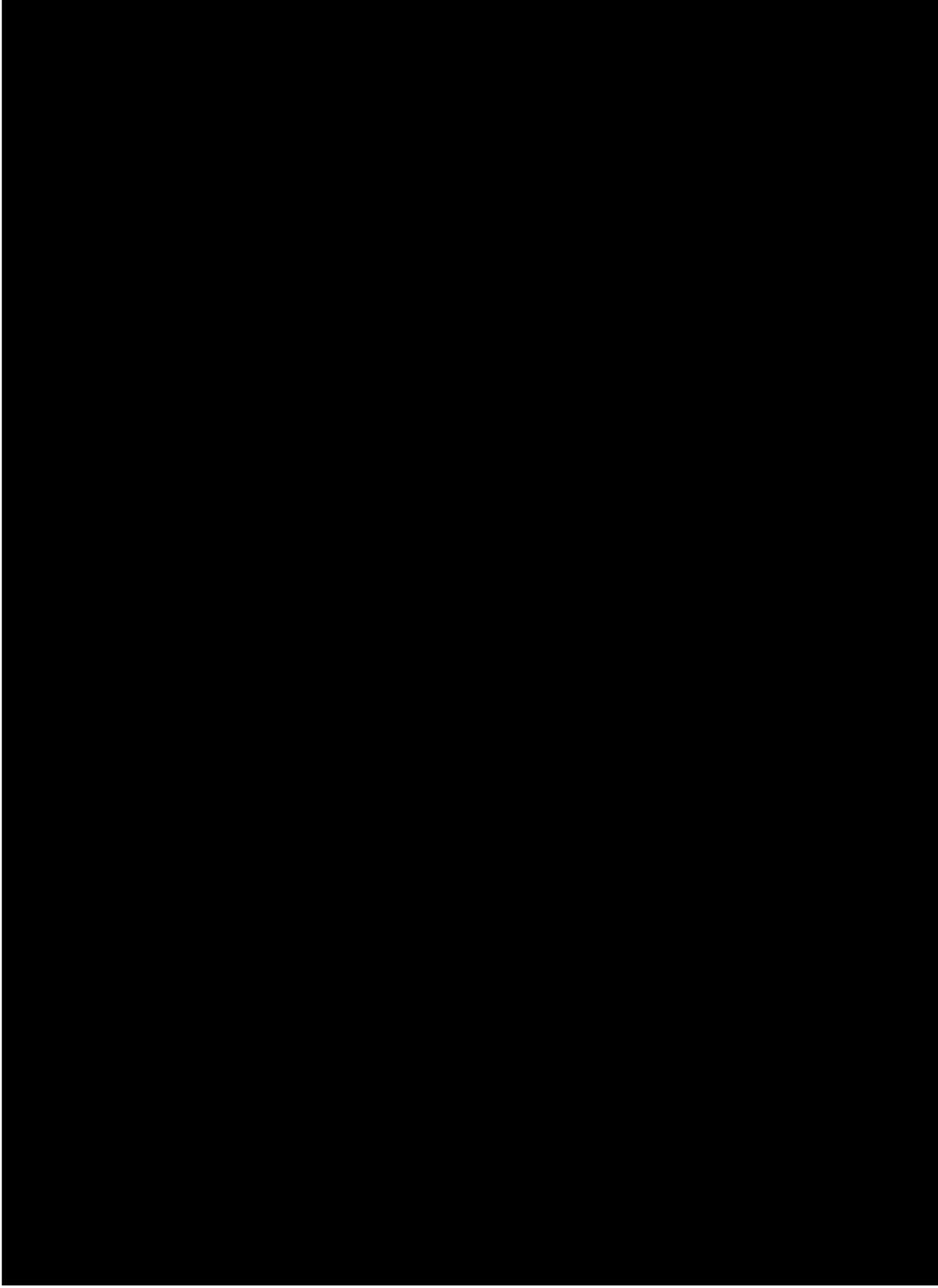


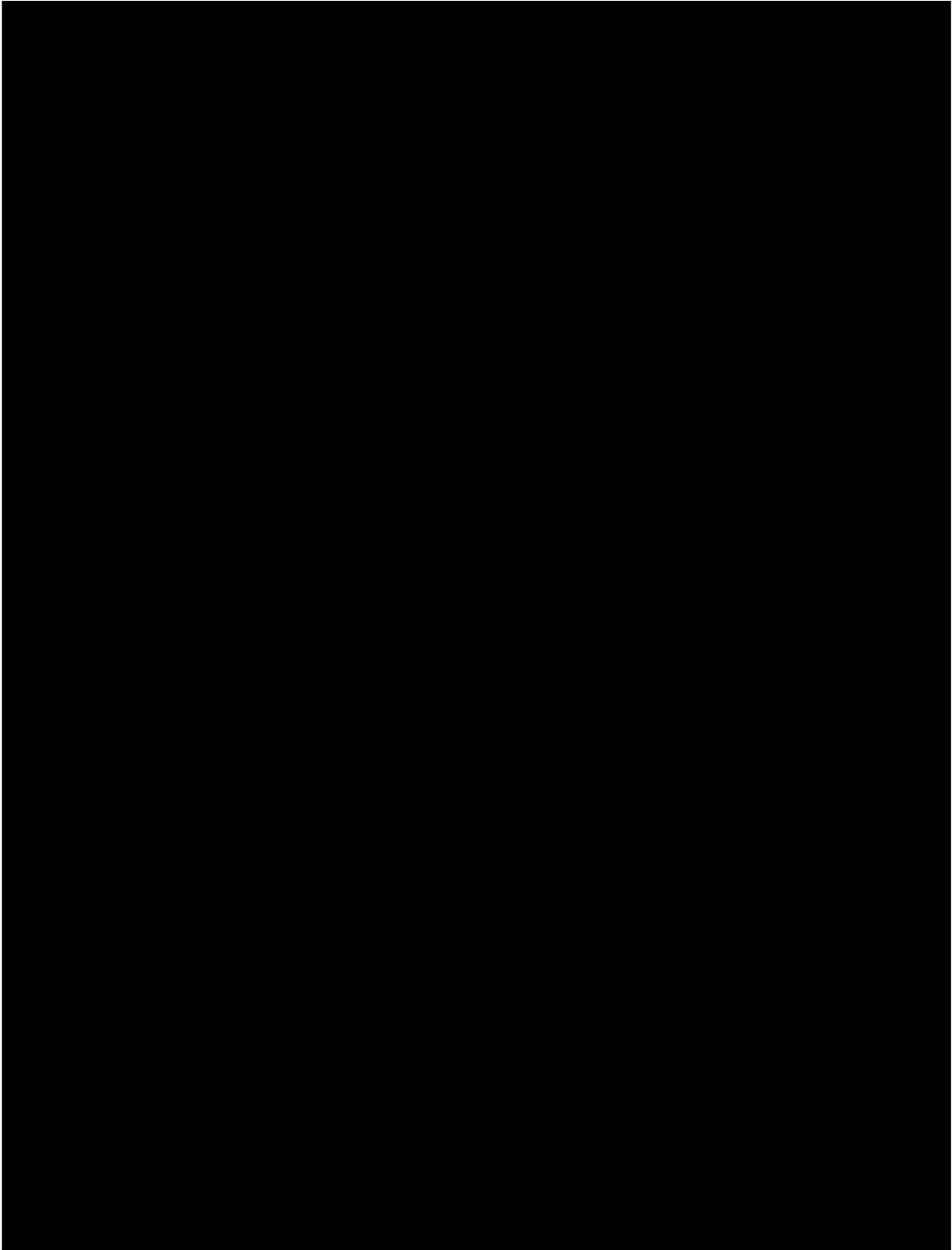


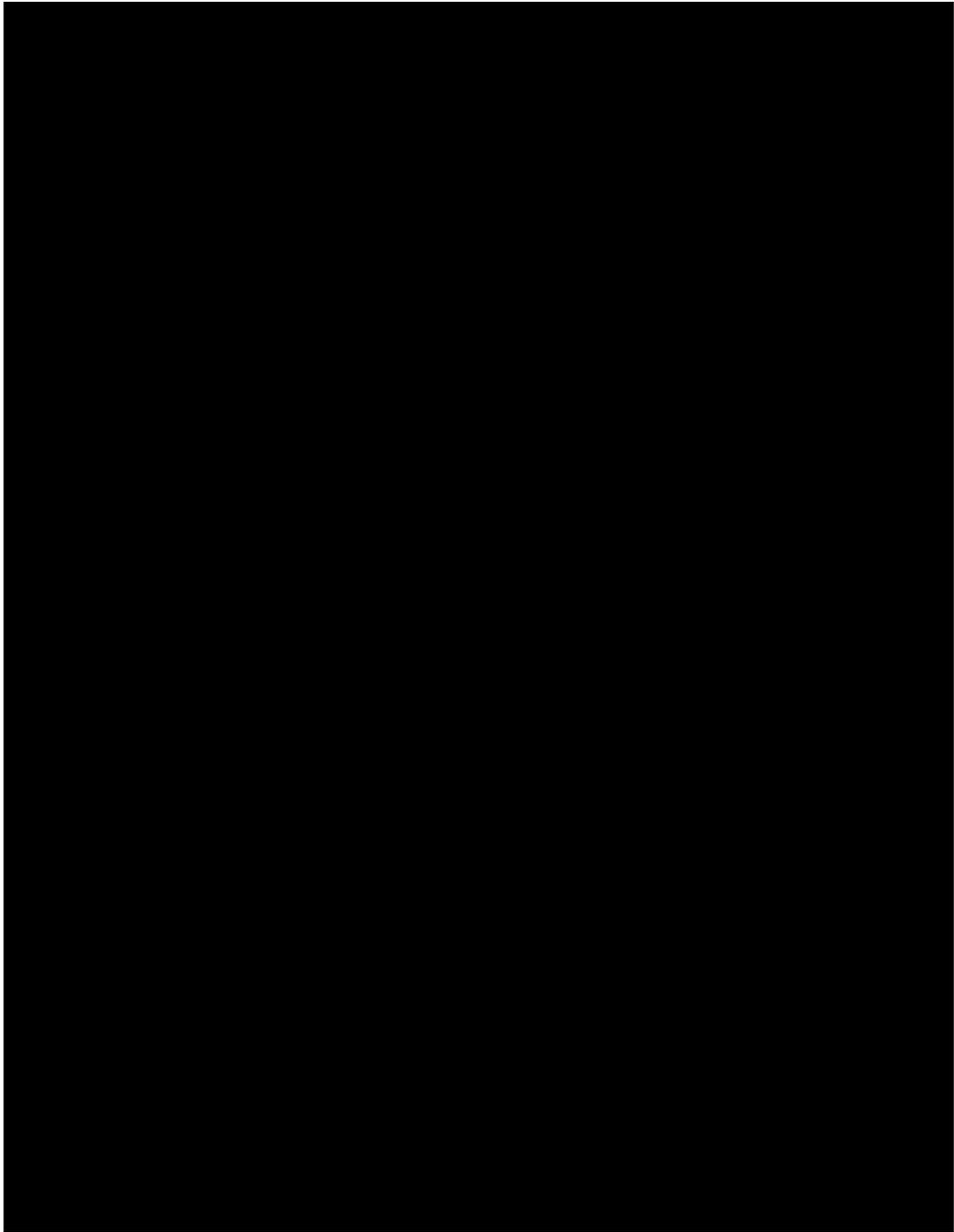


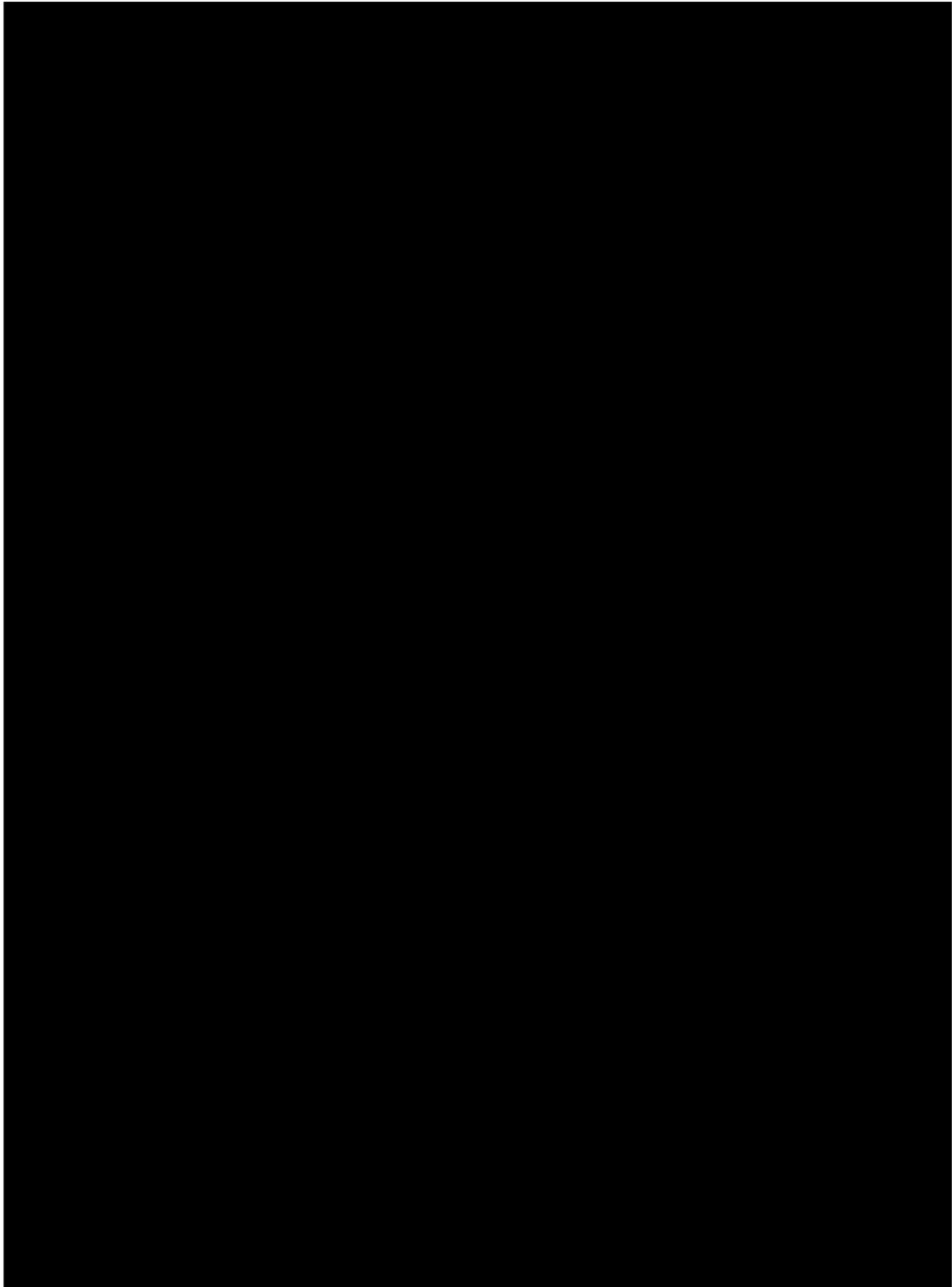


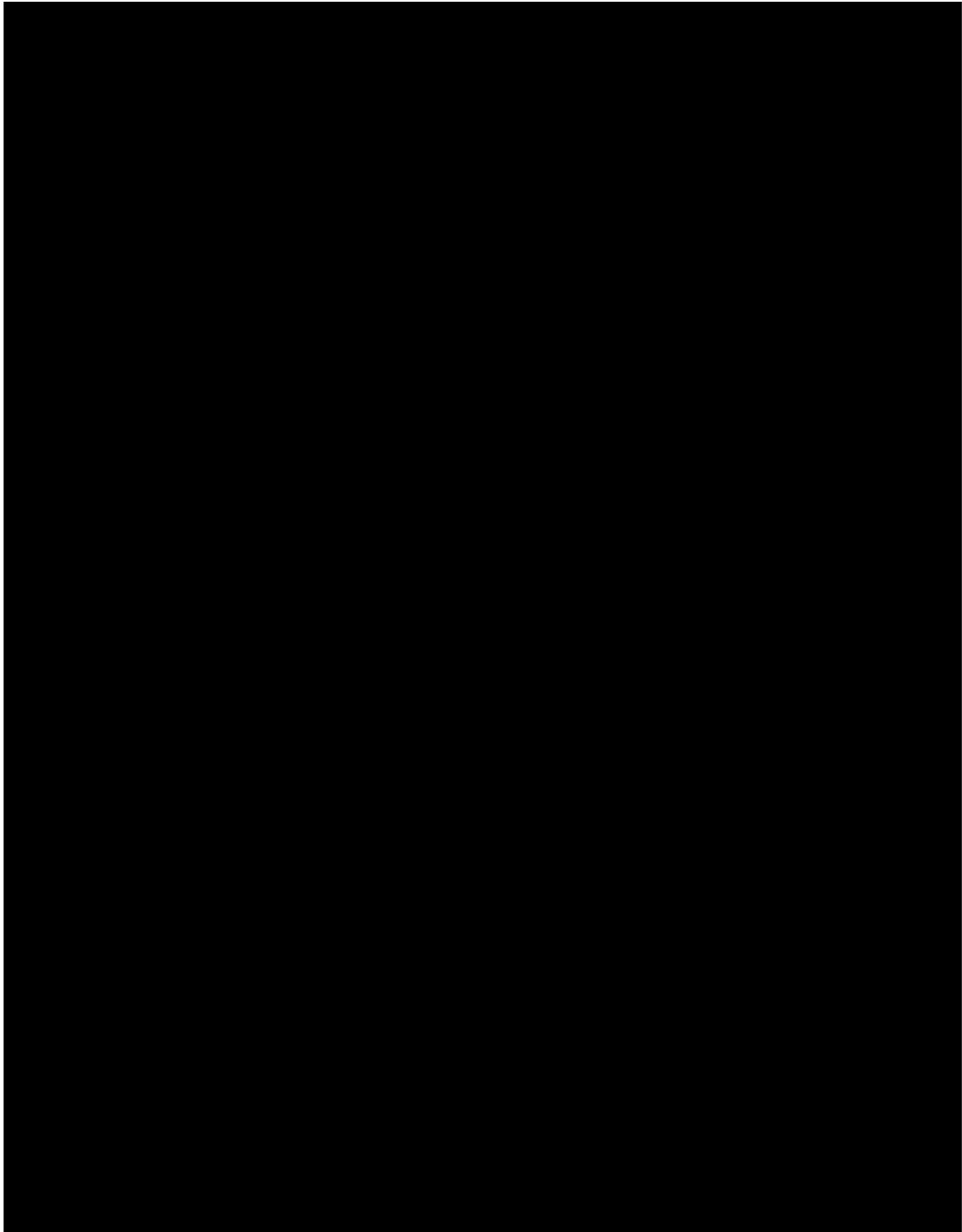


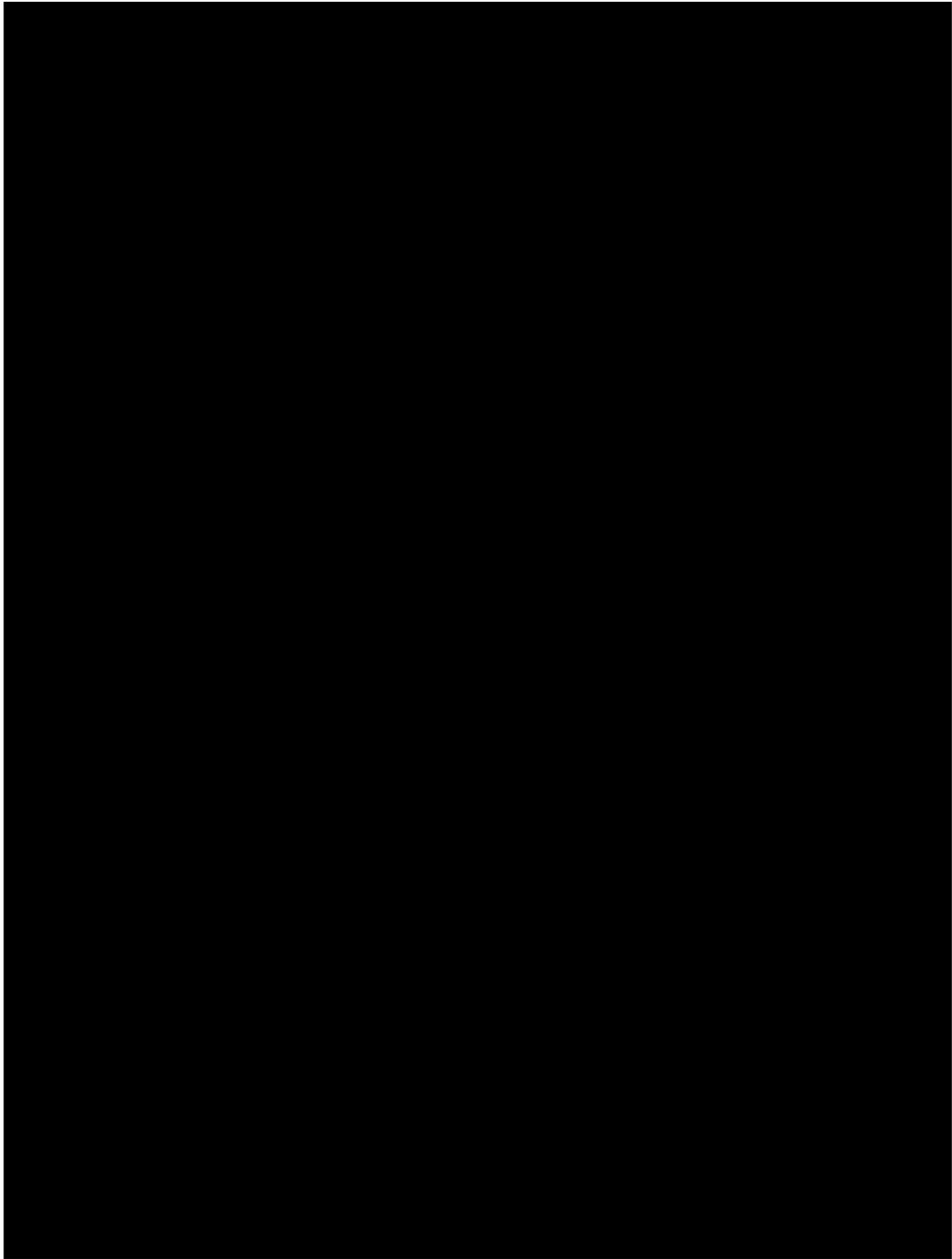


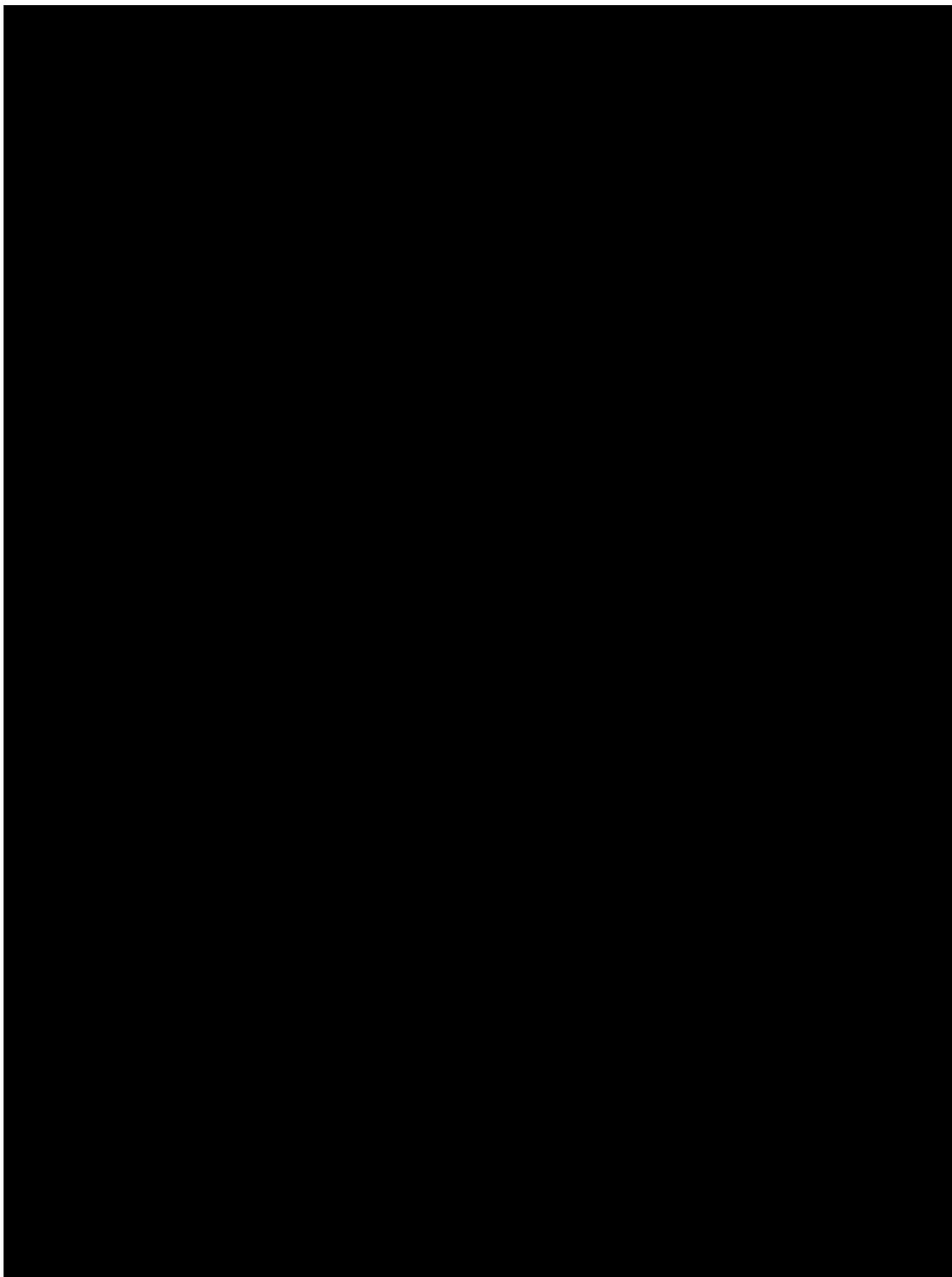


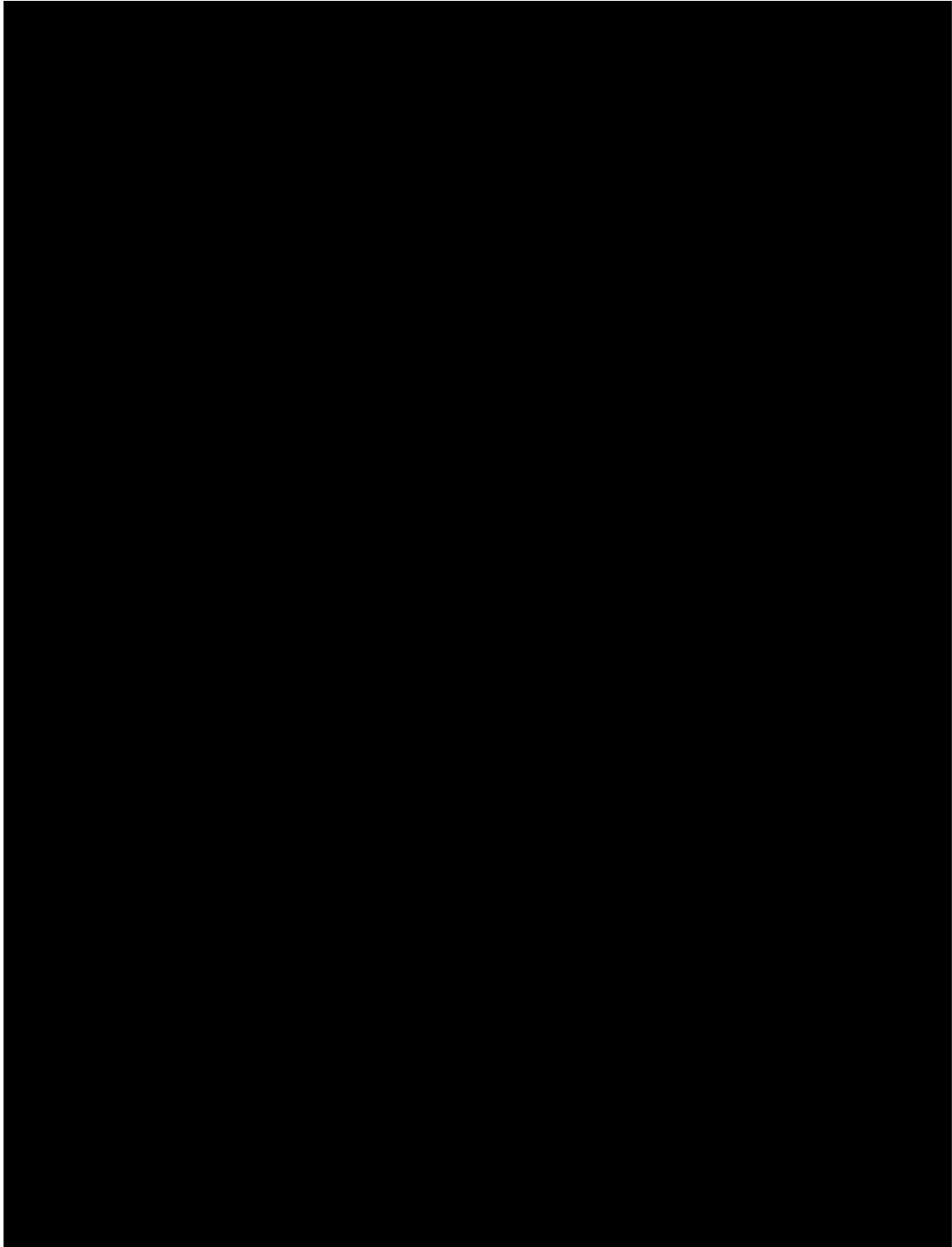












Appendix D. Aboriginal archaeology

Appendix D.1 Site type information

Aboriginal sites

Aboriginal sites are classified in several ways. At the most basic level, sites are recorded as ‘closed sites’ or ‘open sites’. Closed sites are associated with rock shelters, and include other evidence of Aboriginal occupation that may be present, such as accumulated cultural deposit within the shelter (‘potential archaeological deposit’ or PAD), faunal remains (animal bone or shell), and rock art on the shelter walls (paintings or engravings). Open sites are broadly defined and encompass all other types of Aboriginal sites identified where there is no rock shelter.

The most common types of open sites found in NSW include artefacts, which can occur almost anywhere in the landscape, grinding grooves, rock art across formations, culturally modified trees, and shell deposits (middens) (OEH 2012, 7-10). The presence or absence of stone artefacts is often a defining factor, although it is worth pointing out that almost any site is likely to have at least some associated artefacts, as discard or loss of this most ubiquitous and practically indestructible marker of Aboriginal archaeology is likely to have occurred anywhere that Aboriginal people stopped or gathered for any length of time.

Any one site (or group of linked sites described as a ‘site complex’) can contain several different site features. For example, a shelter may have art on the walls, artefacts on the floor surface or outside the shelter, and be predicted to contain faunal remains and further artefacts in the accumulated deposit inside.

A description of terms used to describe different Aboriginal site features in NSW is provided in Table AD-1. Other features or types of Aboriginal cultural sites that do not necessarily leave physical evidence may exist or have once existed in the landscape as well; however, such sites have not been recorded previously which reflects the archaeological focus of past studies and the loss of traditional knowledge of such places in this area. Similarly, there may be places of contemporary significance to Aboriginal people in the study area and this will require consultation with the Aboriginal community to identify such places.

Table 35. Aboriginal site feature definitions

Site feature	Definition
Artefact	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people.
Potential archaeological deposit (PAD)	An area where Aboriginal objects may occur below the ground surface. The term ‘potential archaeological deposit’ was first applied in Sydney regional archaeology in the 1980s, and referred to rock shelters that were large enough and with enough accumulated deposit to allow archaeologists to presume that subsurface cultural material was highly likely to be present. Since then it has come to include open sites where the same prediction can be made.

Site feature	Definition
Modified tree (carved or scarred)	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers.
Stone quarry	Usually a source of good quality stone which is quarried and used to produce stone tools
Burial	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked, e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc.

Source: OEH (2012, 8-10).

Stone artefacts

Aboriginal stone artefacts are important sources of archaeological information because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres often decay. Stone artefacts provide valuable information about technology, economy, cultural change through time and settlement patterning. Stone has also been used for 'relative' dating of sites where direct methods such as radiocarbon dating cannot be applied.

A technological sequence for stone artefacts for the region was first described in the late 1940s by Fred McCarthy and has since been refined over time by Hiscock and Attenbrow (2005) into the 'Eastern Regional Sequence':

- Capertian—Distinguished by large uniface pebble tools, core tools, horse-hoof cores, scrapers and hammerstones. Backed artefacts occasionally present. Generally, dates to before 5,000 years BP.
- Early Bondaian—Aspects of the Capertian assemblage continue but backed artefacts and ground-edged artefacts increase. Artefacts during this period were predominantly made from fine-grained siliceous stone such as silcrete and tuff. Generally dated from 5,000 BP to 2,800 BP.
- Middle Bondaian—Characterised by backed artefacts, particularly Bondi Points and ground-edged artefacts. Artefacts made from siliceous materials; however, quartz becomes more frequent. Generally dated from 2,800 BP to 1,600 BP.
- Late Bondaian—Characterised by bipolar technology, eloueras, ground-edged artefacts, and bone and shell artefacts. Bondi points are virtually absent, and artefacts are predominantly made from Quartz. Generally dated from 1,600 BP to European contact.

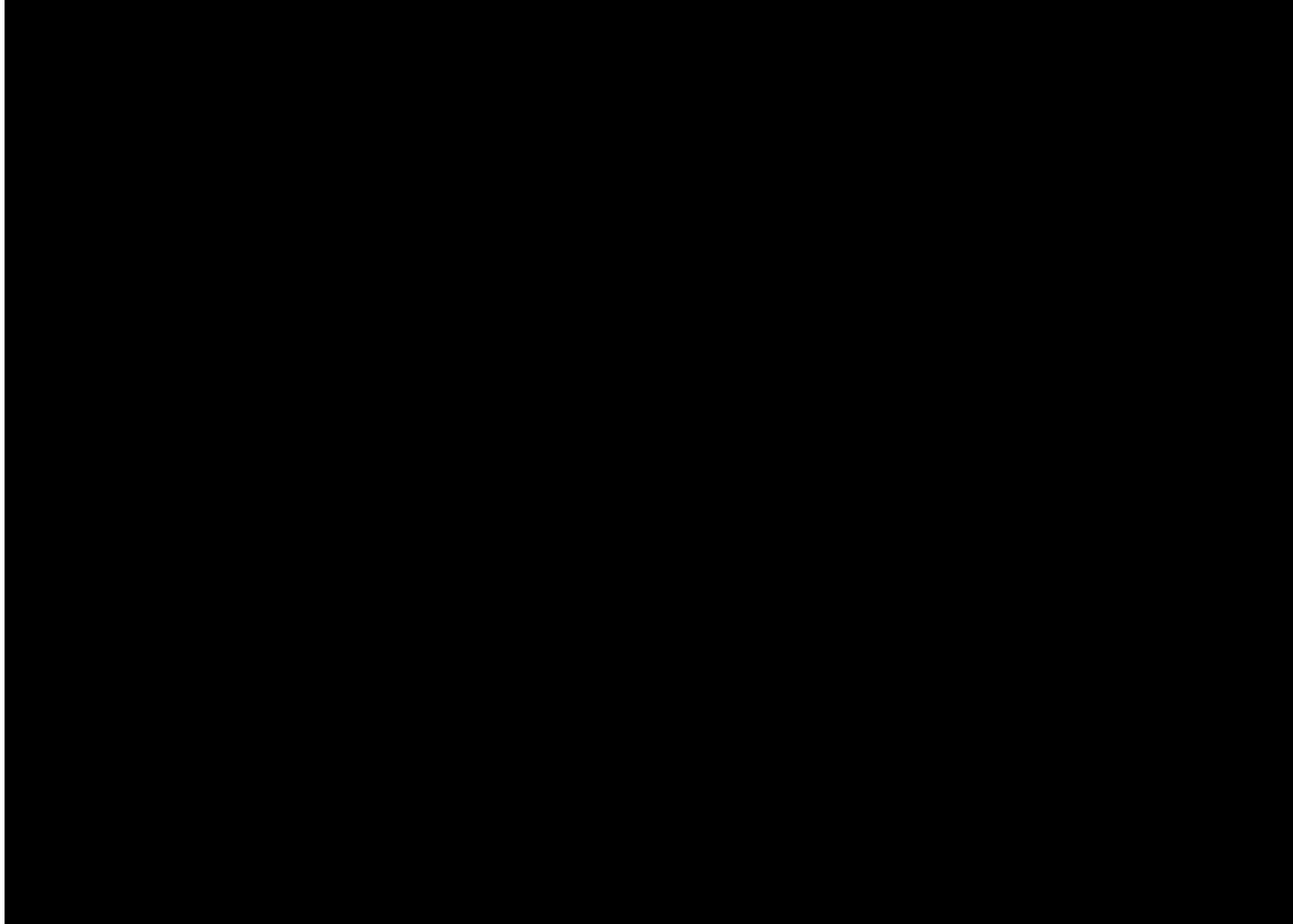
Preservation of the archaeological record

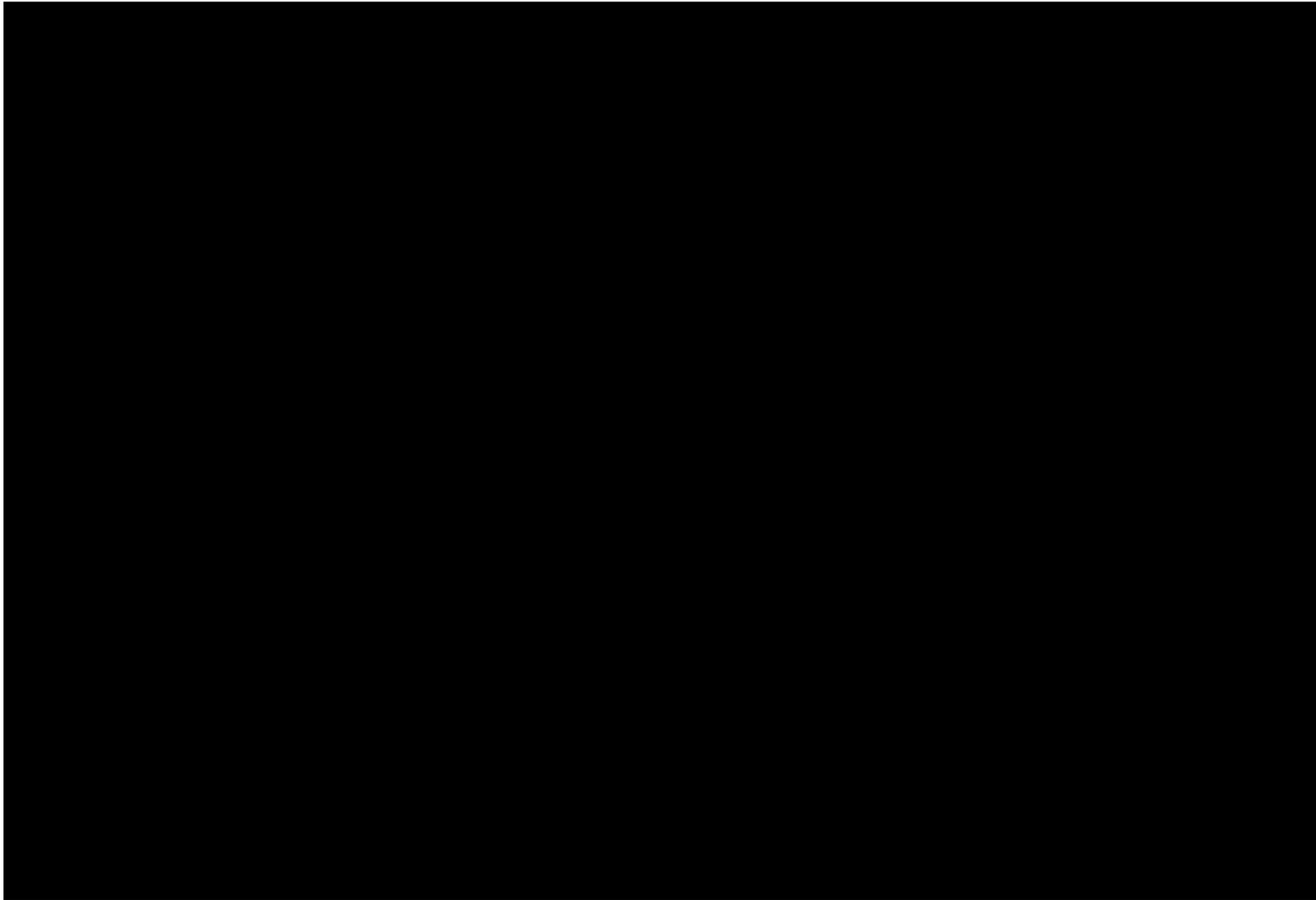
The following observations can be made about the nature and preservation of the archaeological record across the Cumberland subregion:

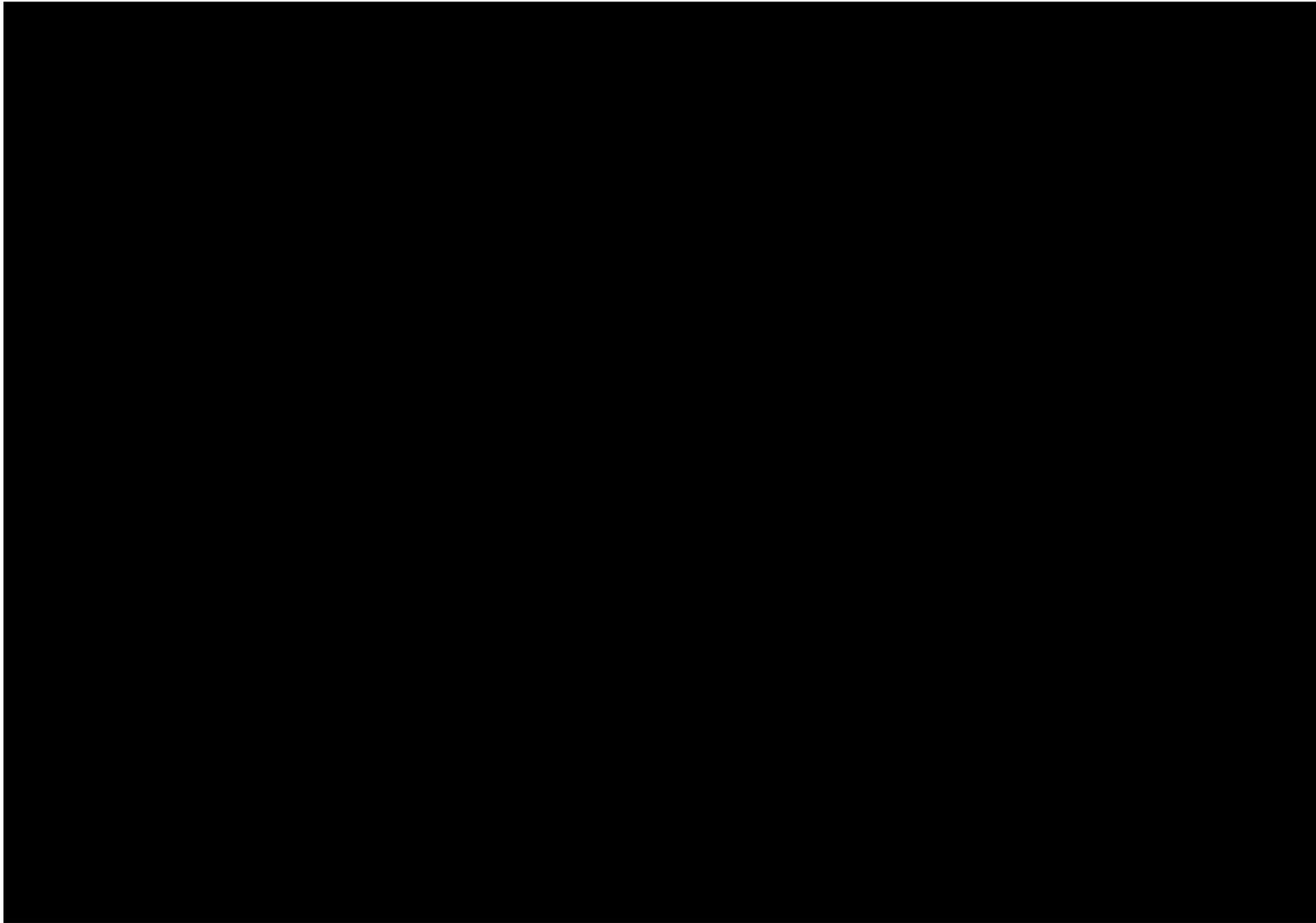
- Archaeological material is often found in areas of sub-surface exposure, such as those caused by erosion.
- Surface evidence (or the absence of surface evidence) does not necessarily indicate the potential, nature or density of sub-surface material. Extensive excavations have shown that areas with no surface evidence often contain sub-surface deposits buried beneath current ground surfaces (e.g. Kohen et al. 1984).
- Due to the limitations of surface surveys, test excavation is often required to establish the nature and density of archaeological material.
- Aboriginal cultural material is more likely to survive in areas that contain remnant portions of the pre-European soil profile, in contrast to landforms that have been impacted by historical or recent disturbances.
- The potential for survival of any archaeological sites will largely depend on the degree of past disturbance.
- Past disturbance to the soil profile can be due to European activity such as clearing, ploughing, grazing, and urban development and/or due to environmental factors such as flooding events, erosion and colluvial movement. These activities may disturb, erode or remove the natural soil profile completely.
- Aboriginal stone artefacts are more likely to survive because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres decay.
- A major impact of more than 200 years of post-contact settlement on Aboriginal sites would have been the destruction of carved and scarred trees, which would have been removed as part of clearing for agricultural activities and the construction of infrastructure such as buildings and roads. However, there is some potential for culturally modified trees to survive in areas where there are stands of remnant native vegetation.

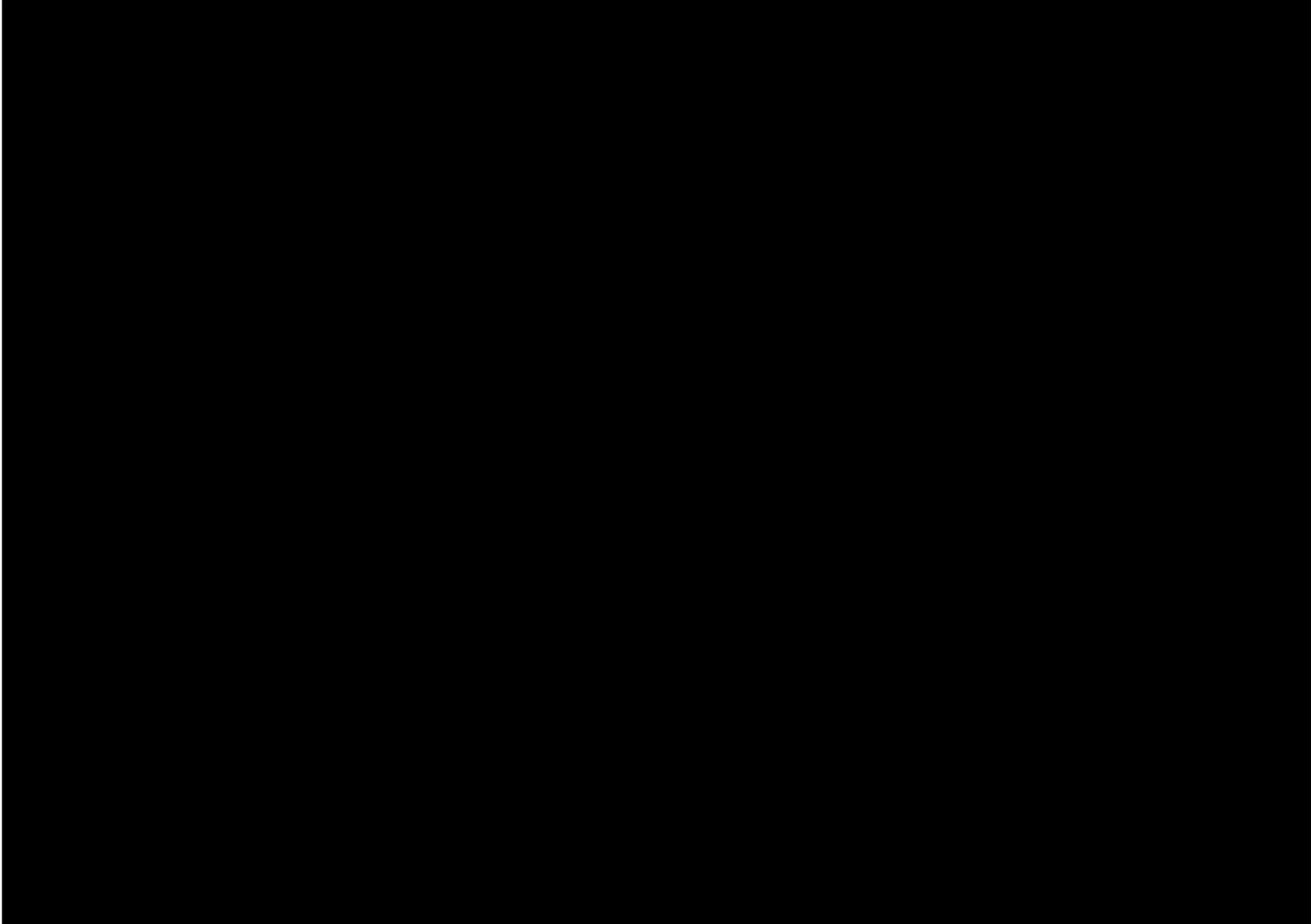
Appendix D.2 AHIMS Search

A copy of the results from the search for Aboriginal sites on AHIMS in the study area is provided in the following pages.





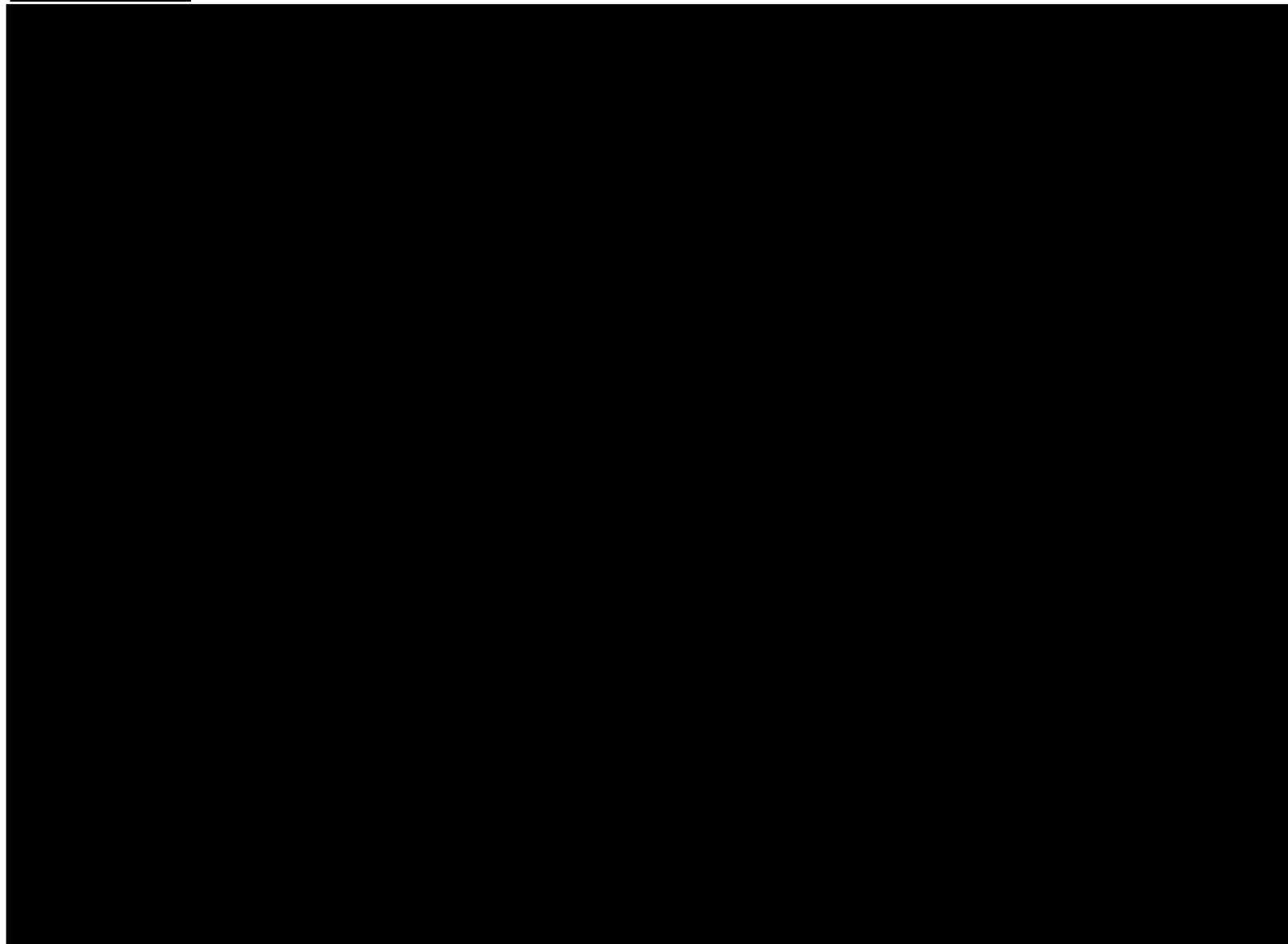


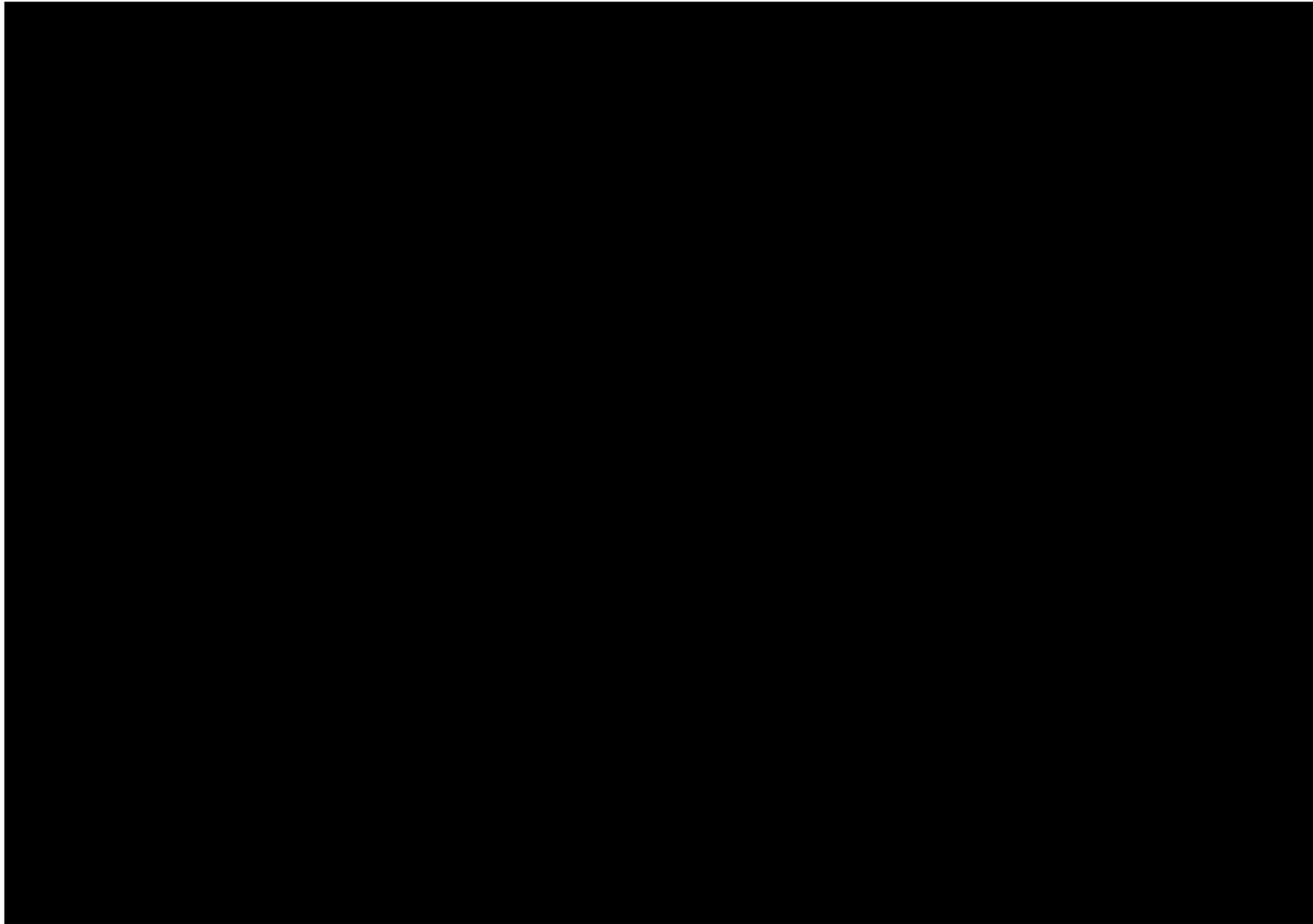






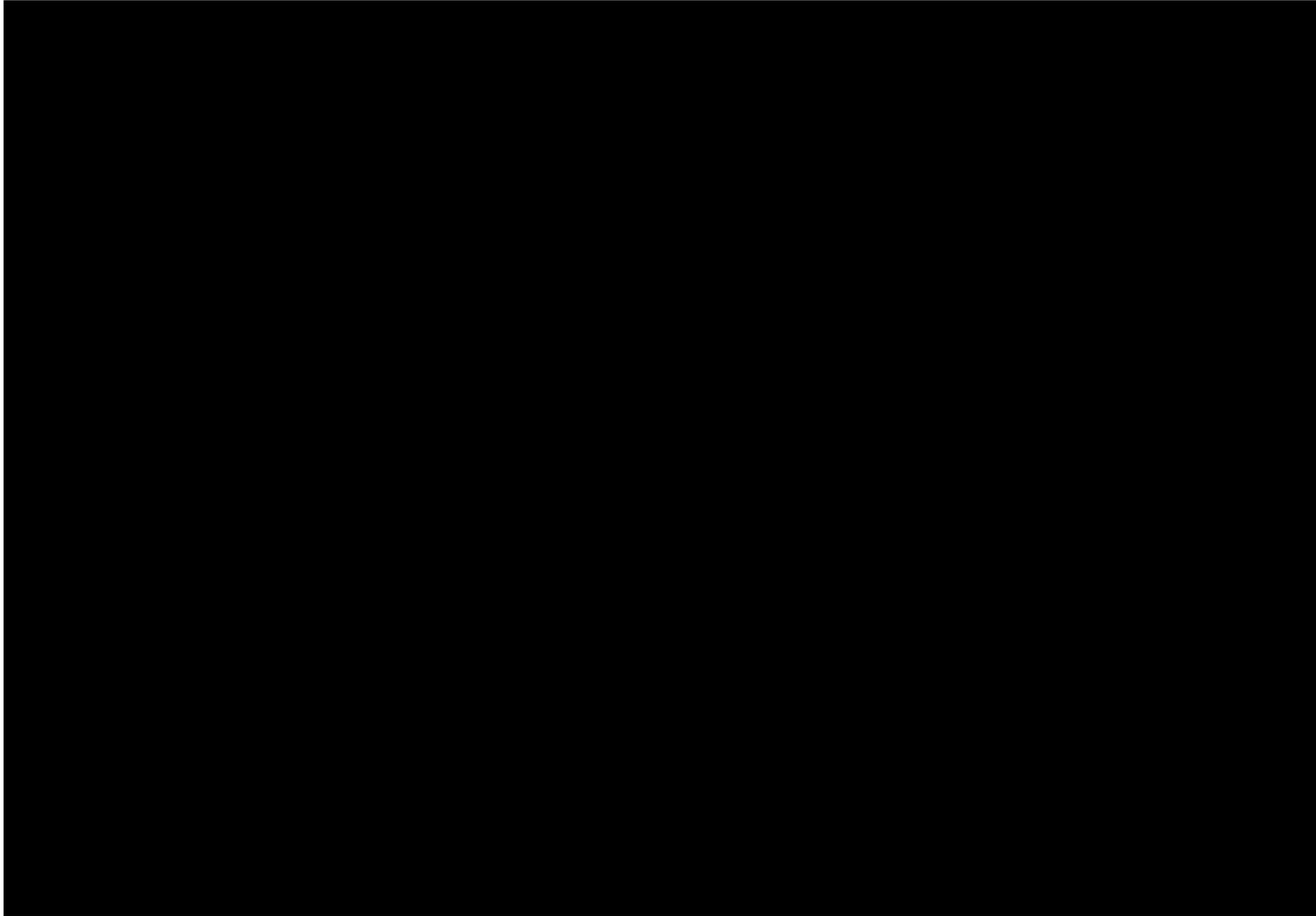






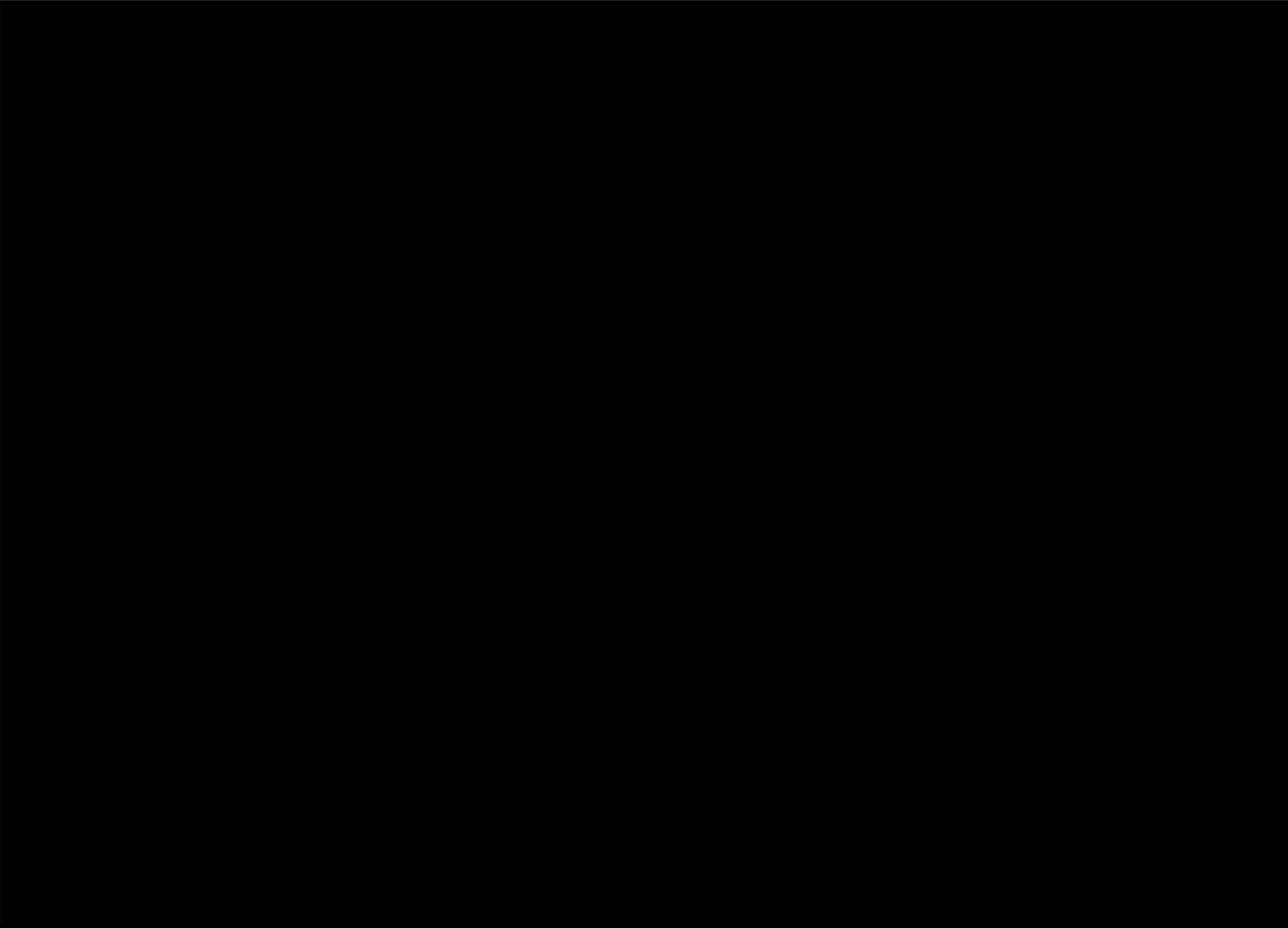


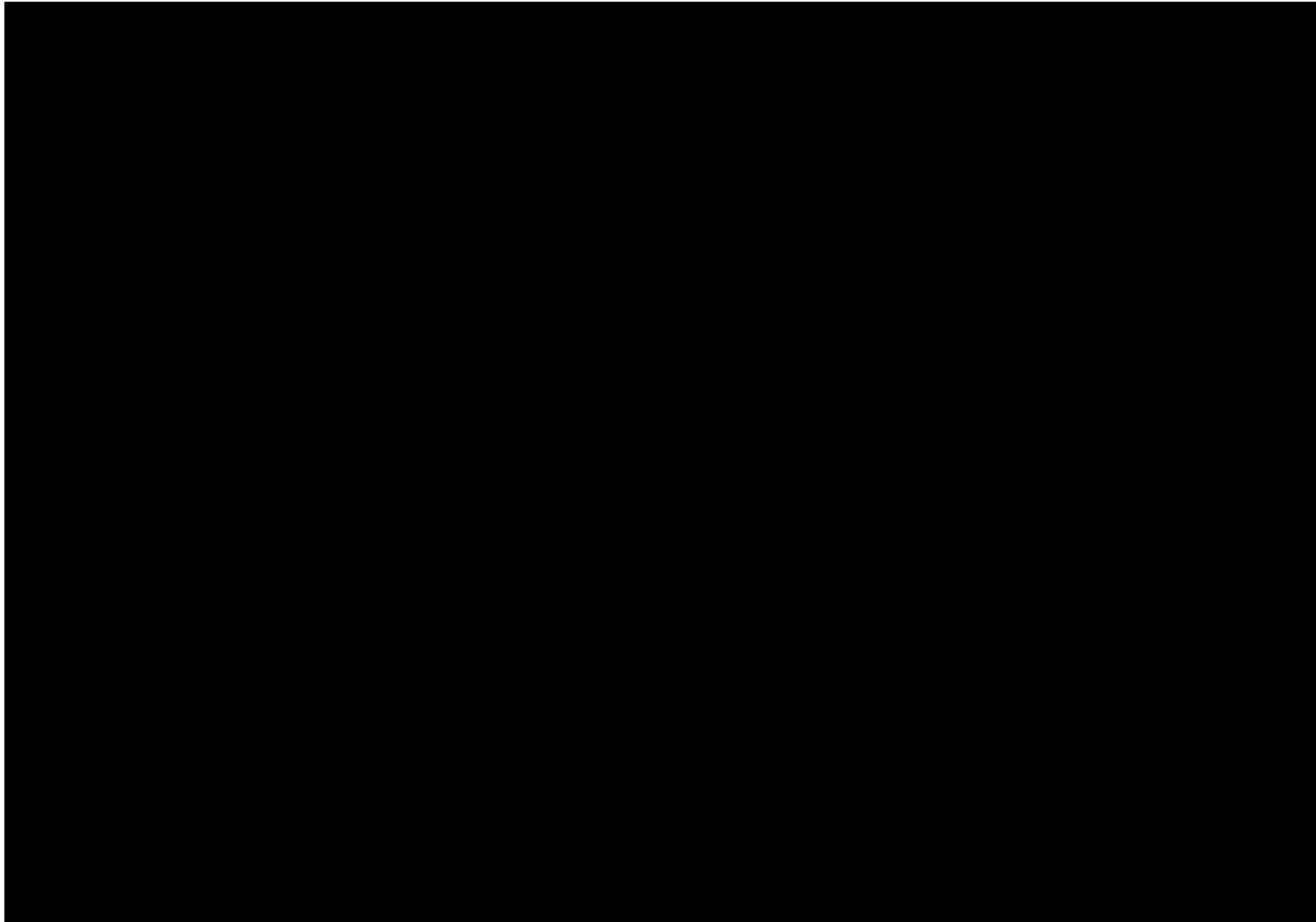








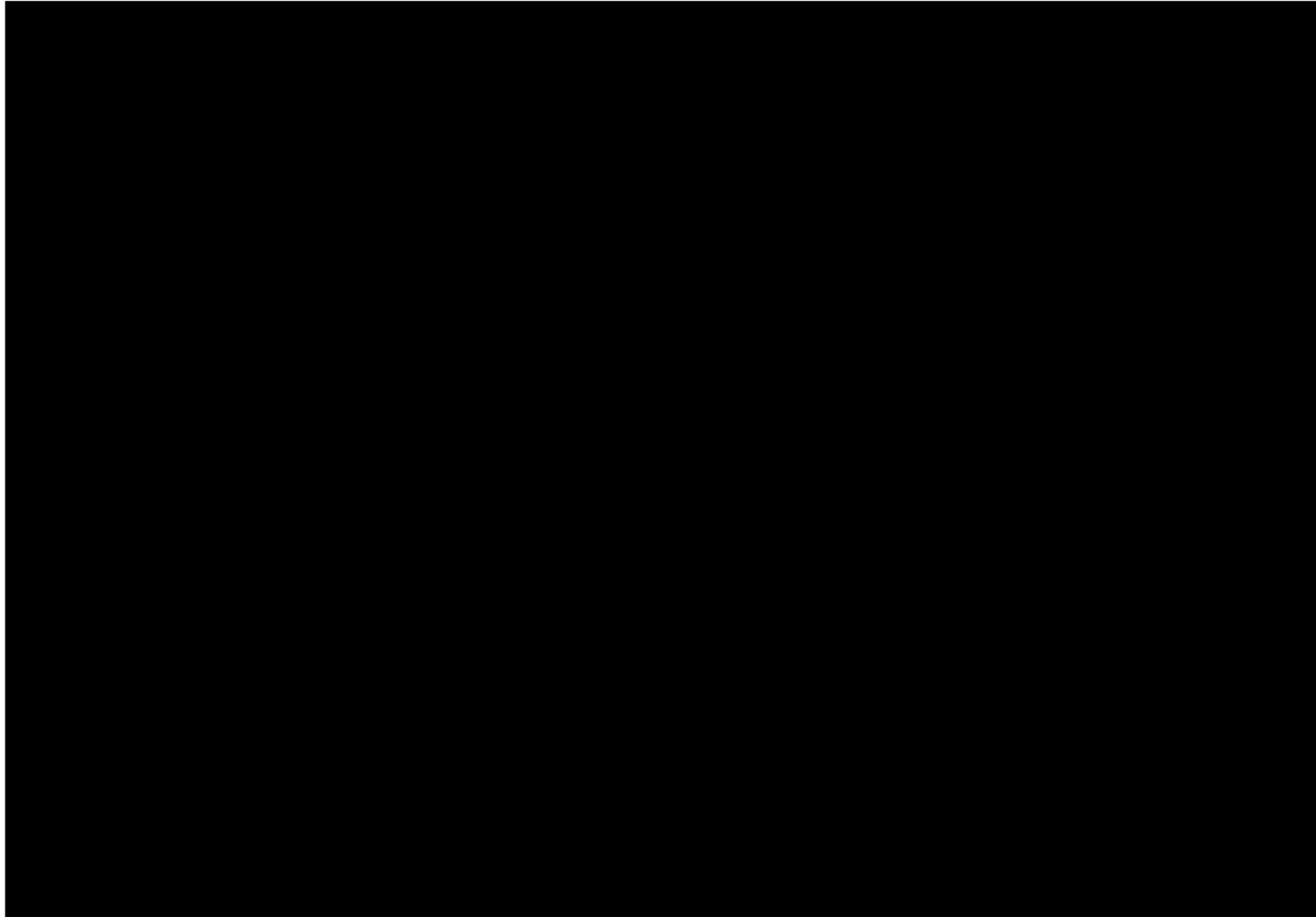


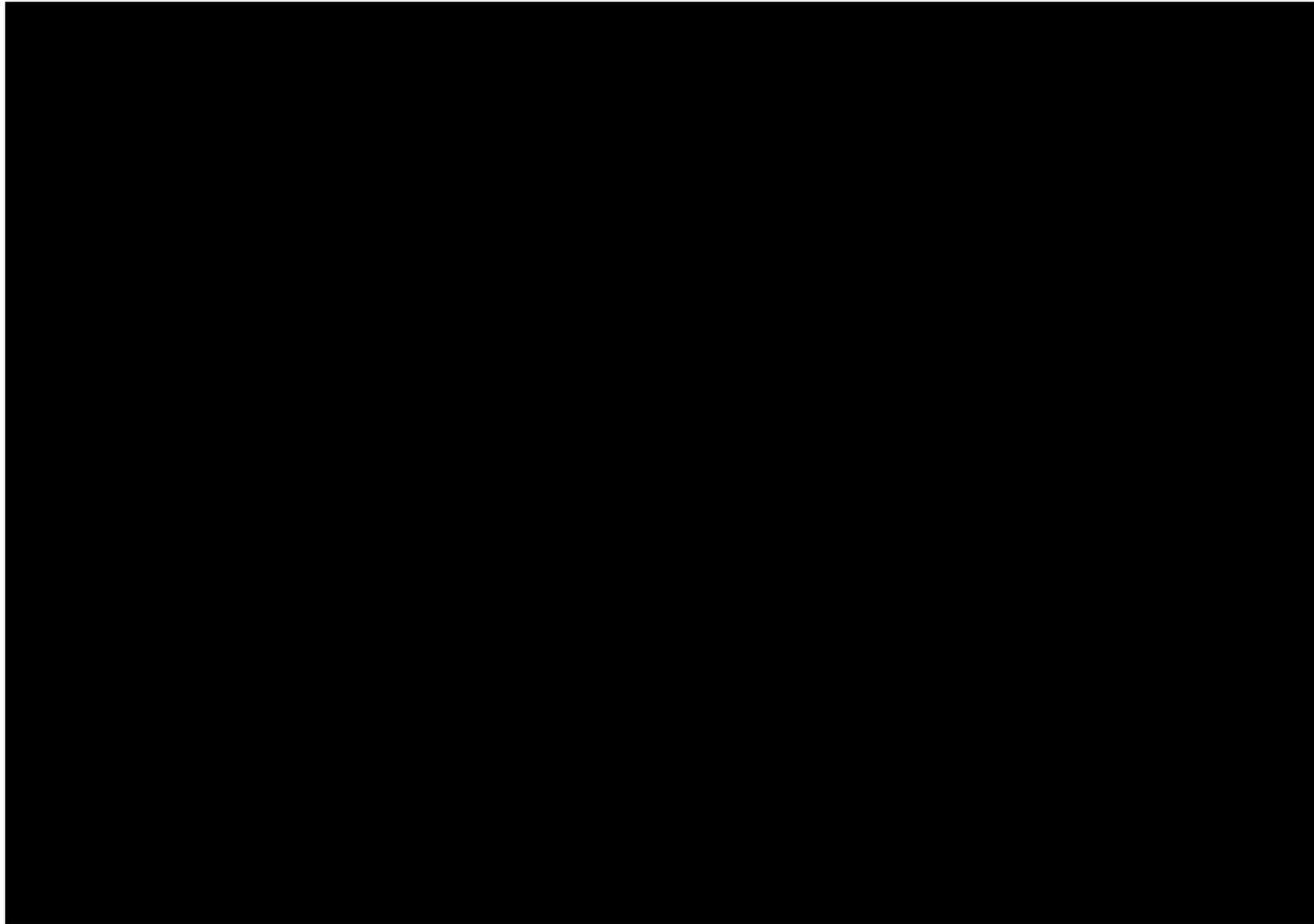










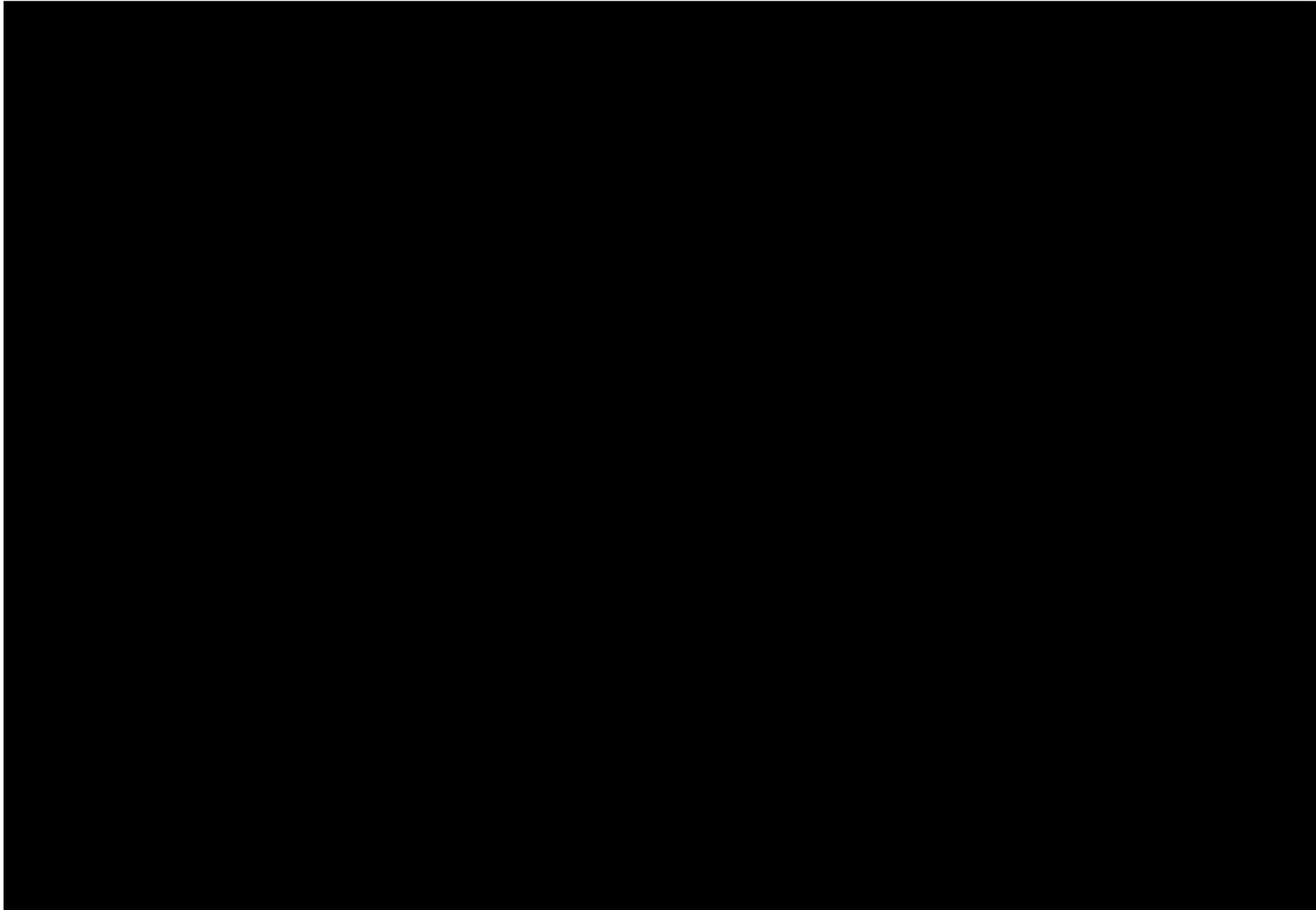


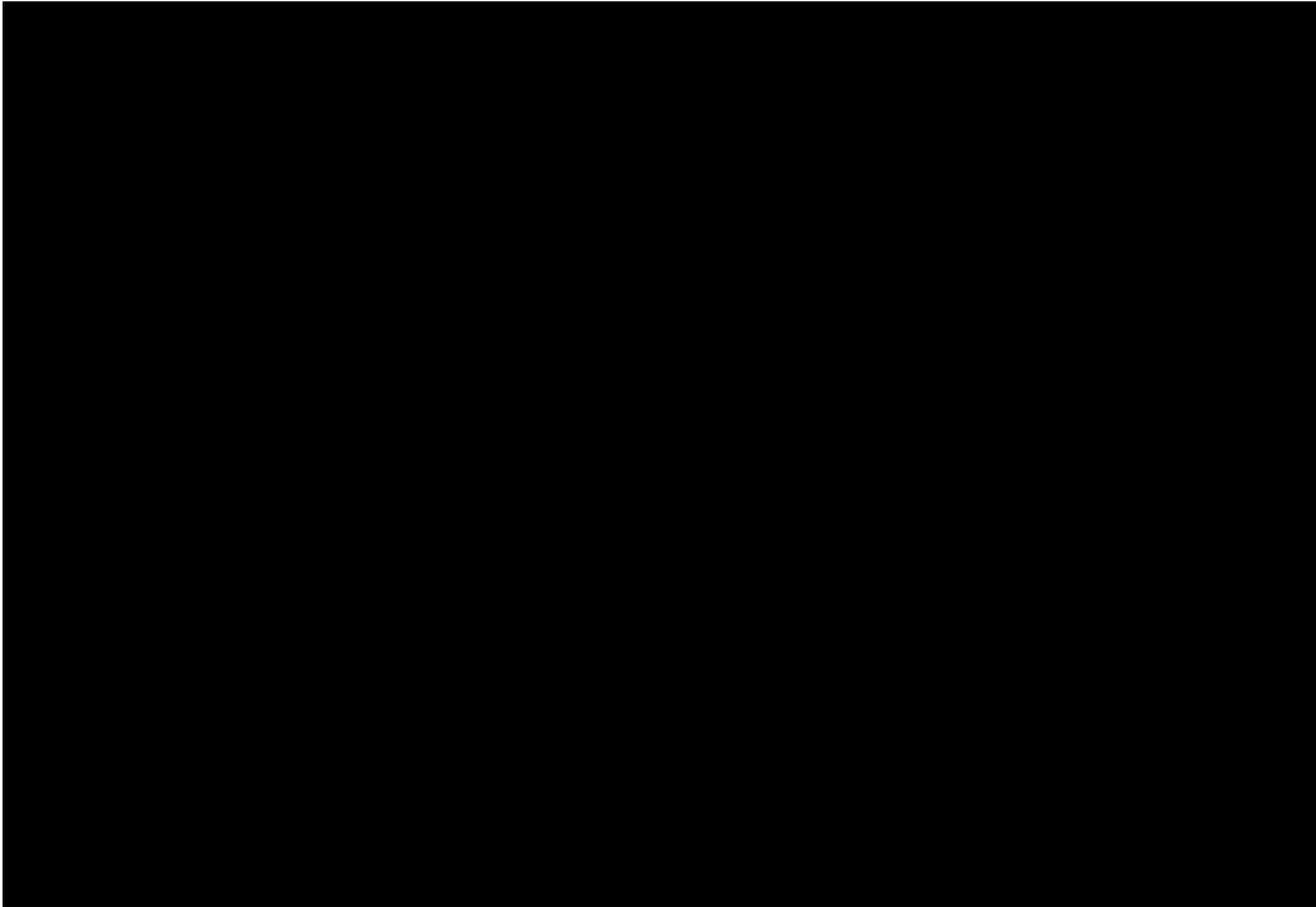


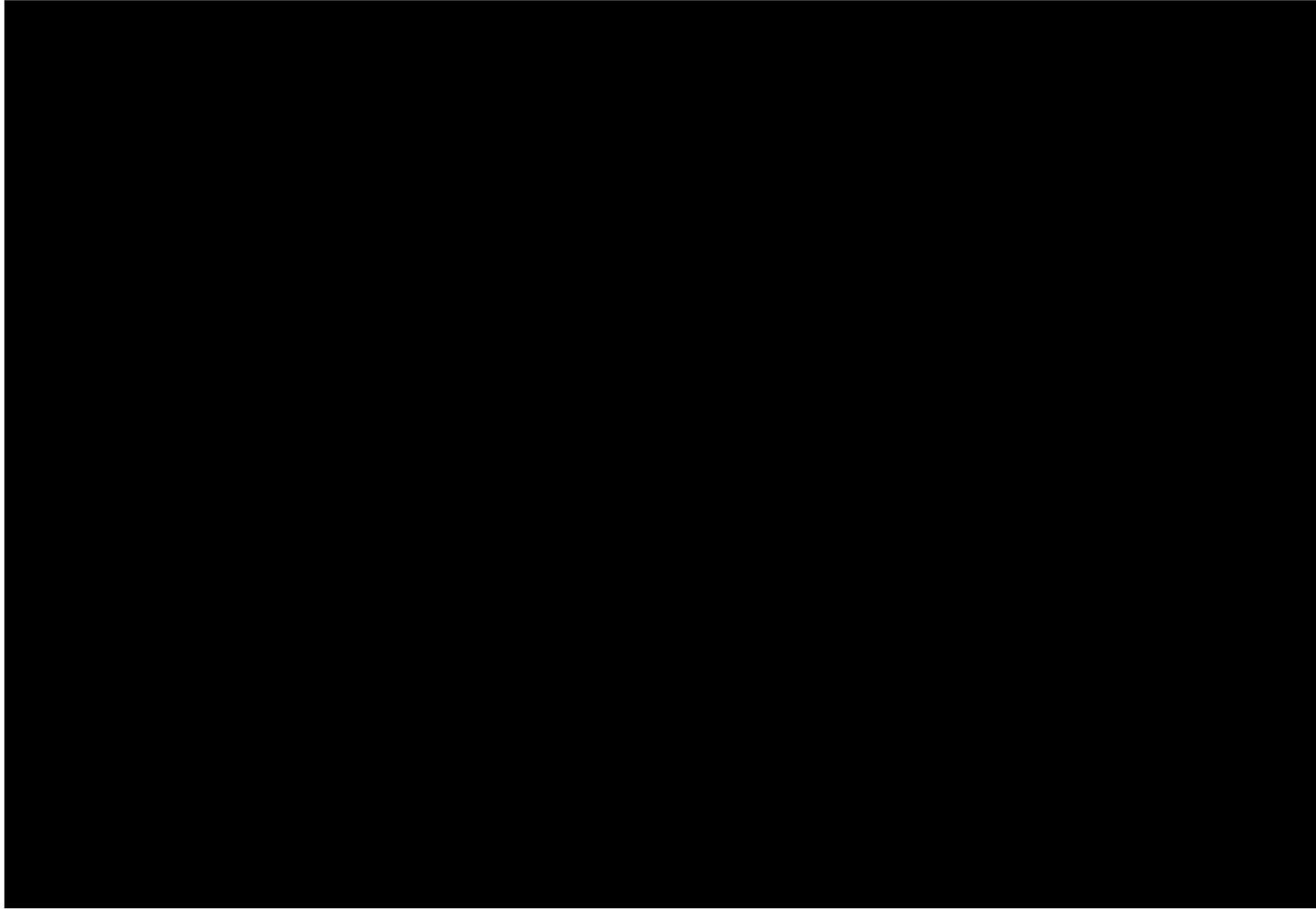


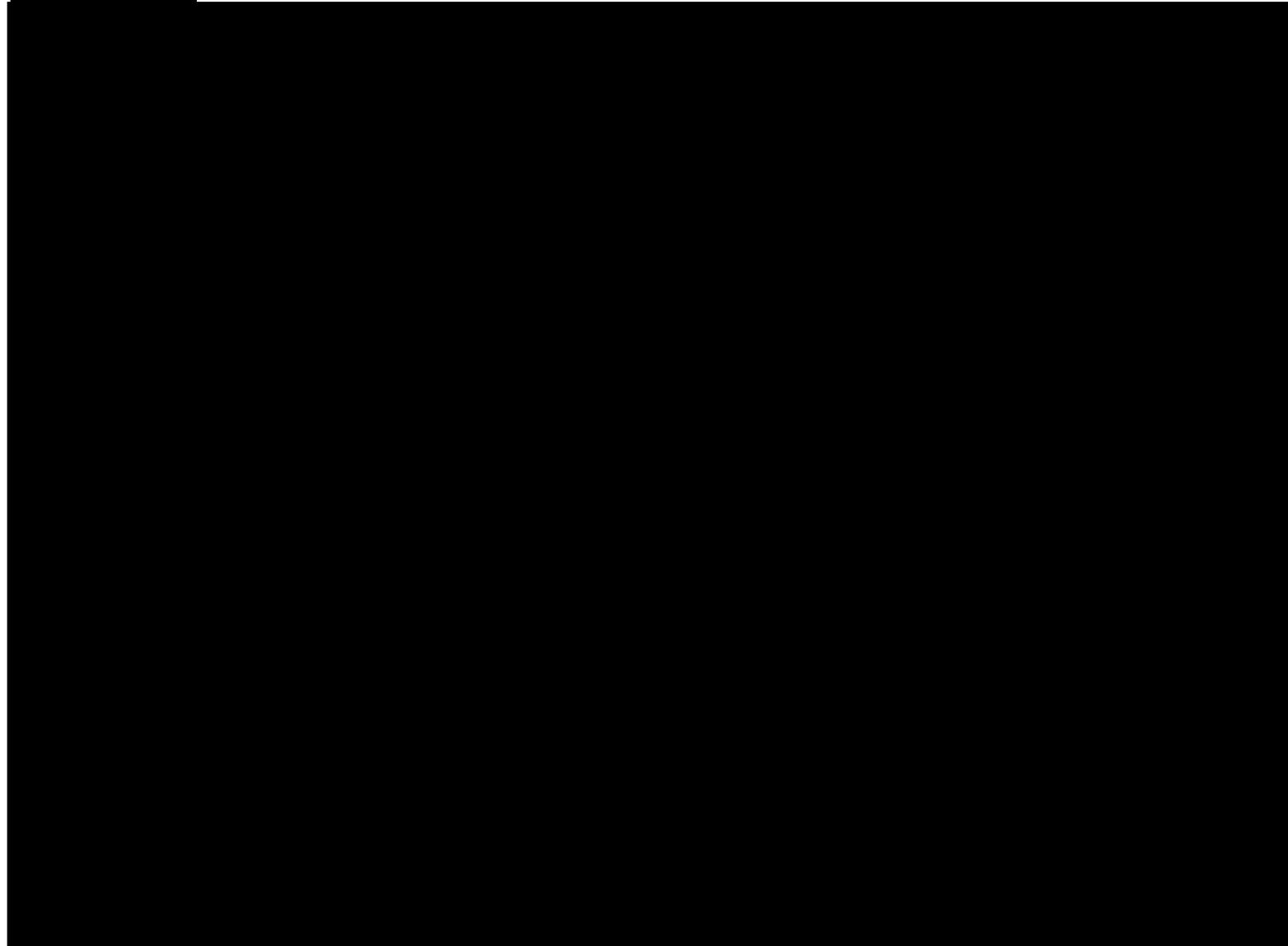










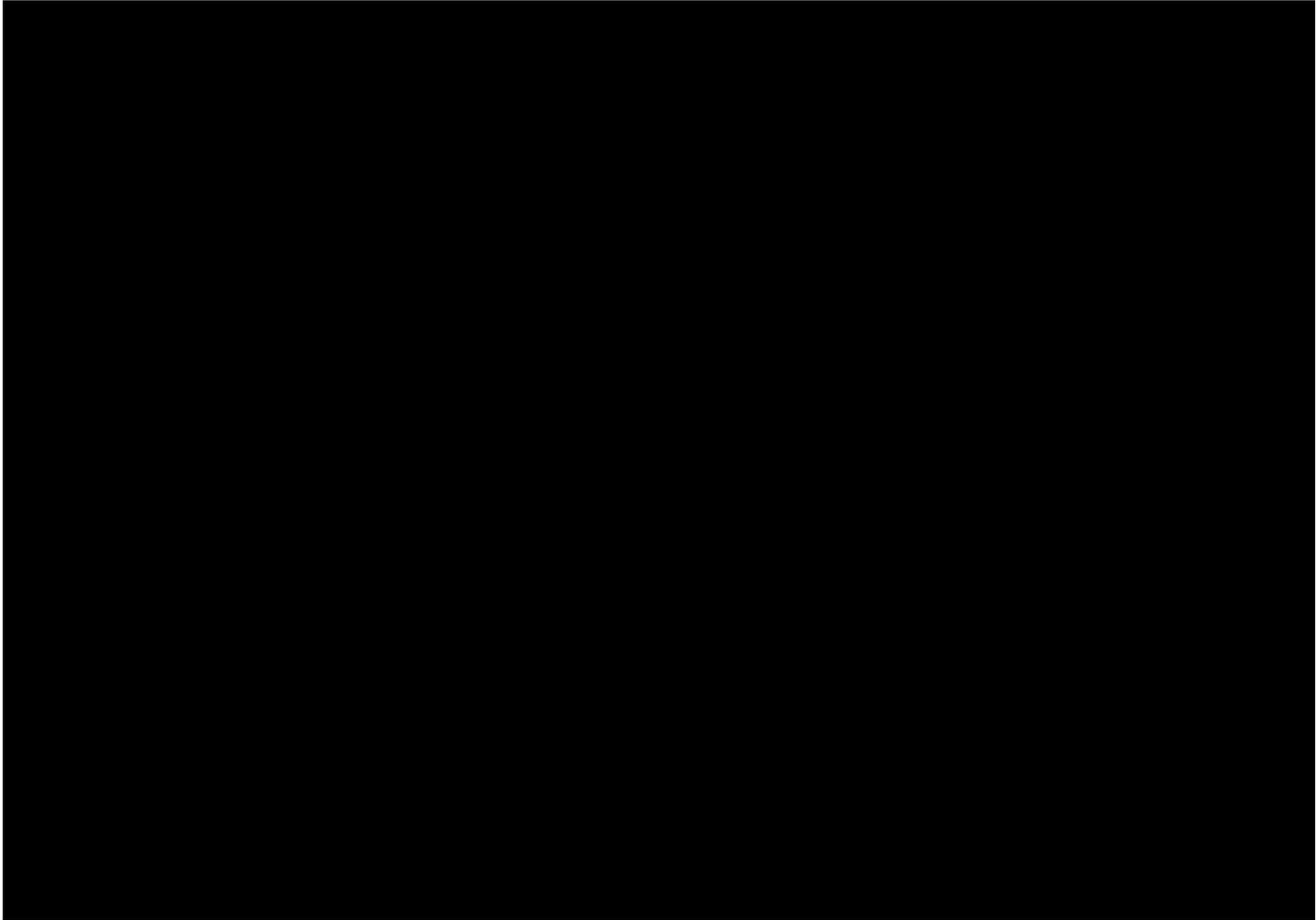






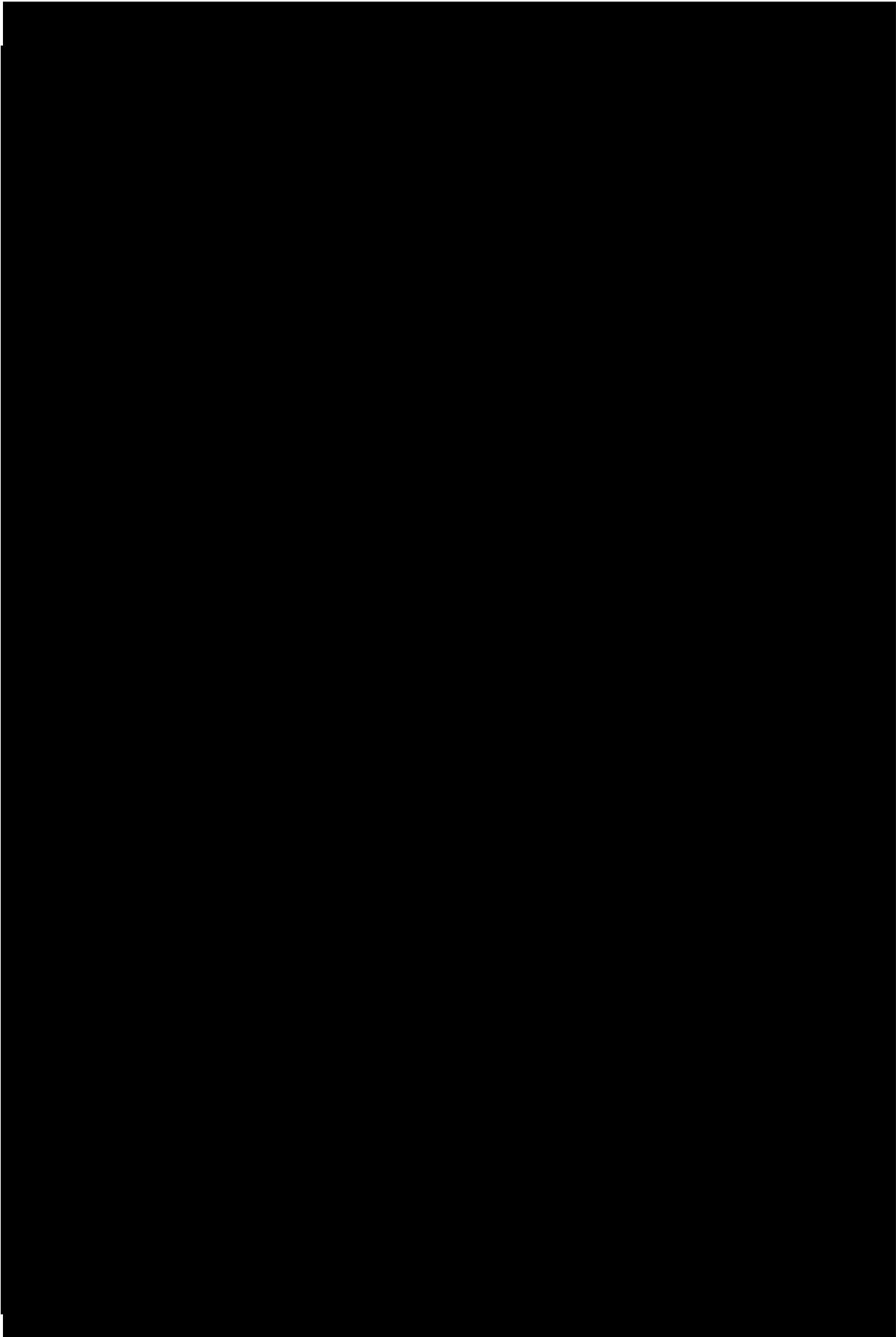


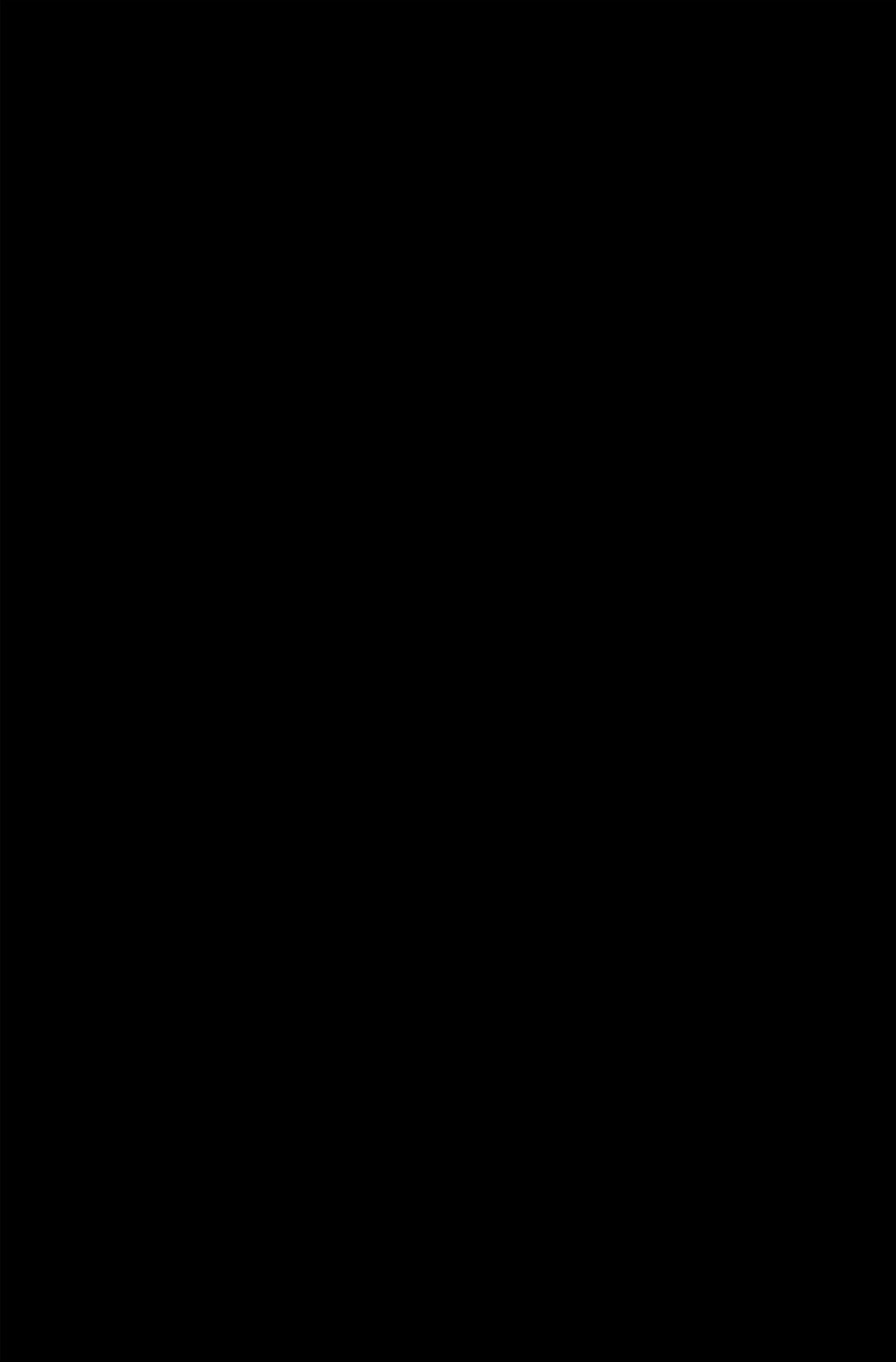


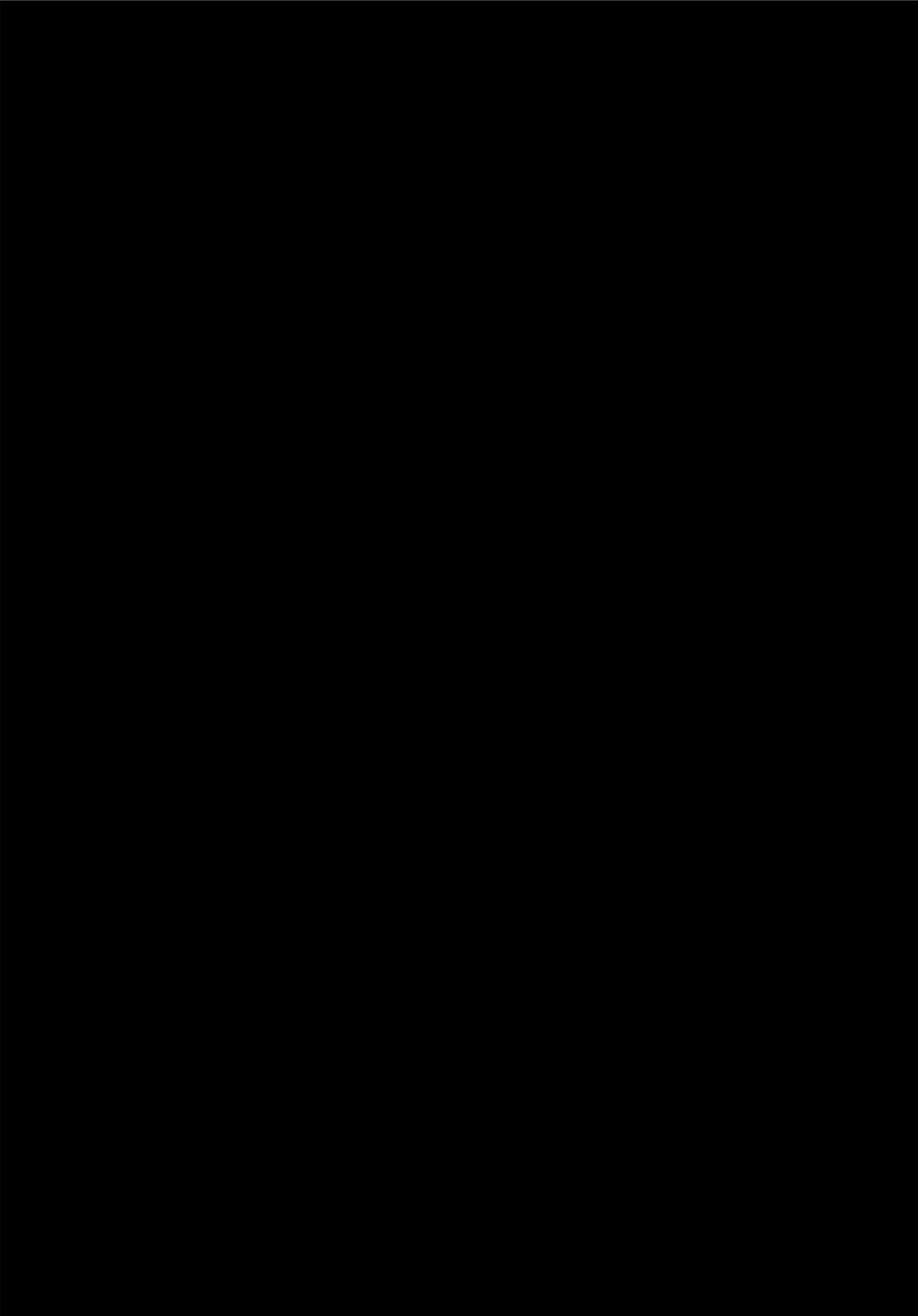


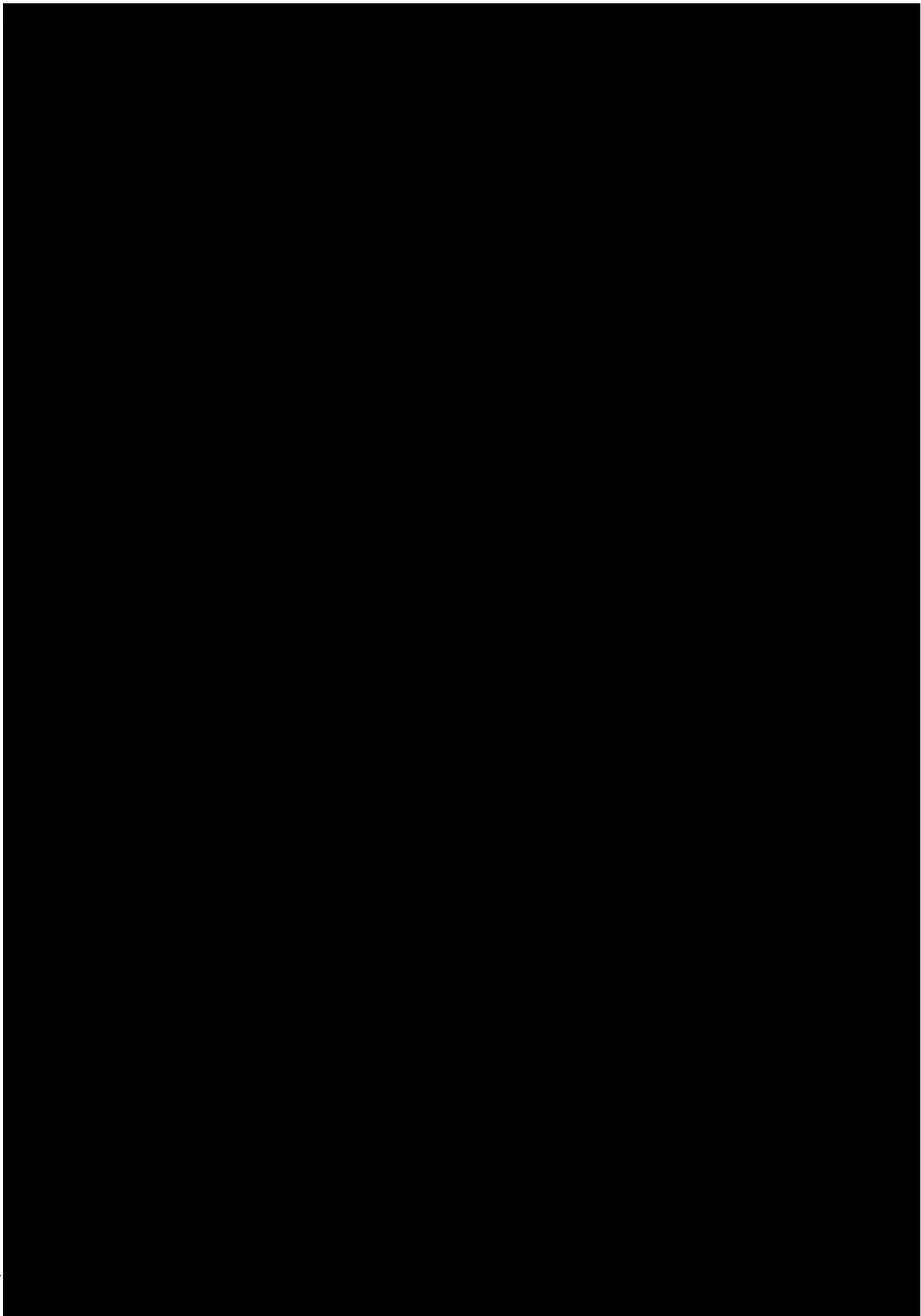


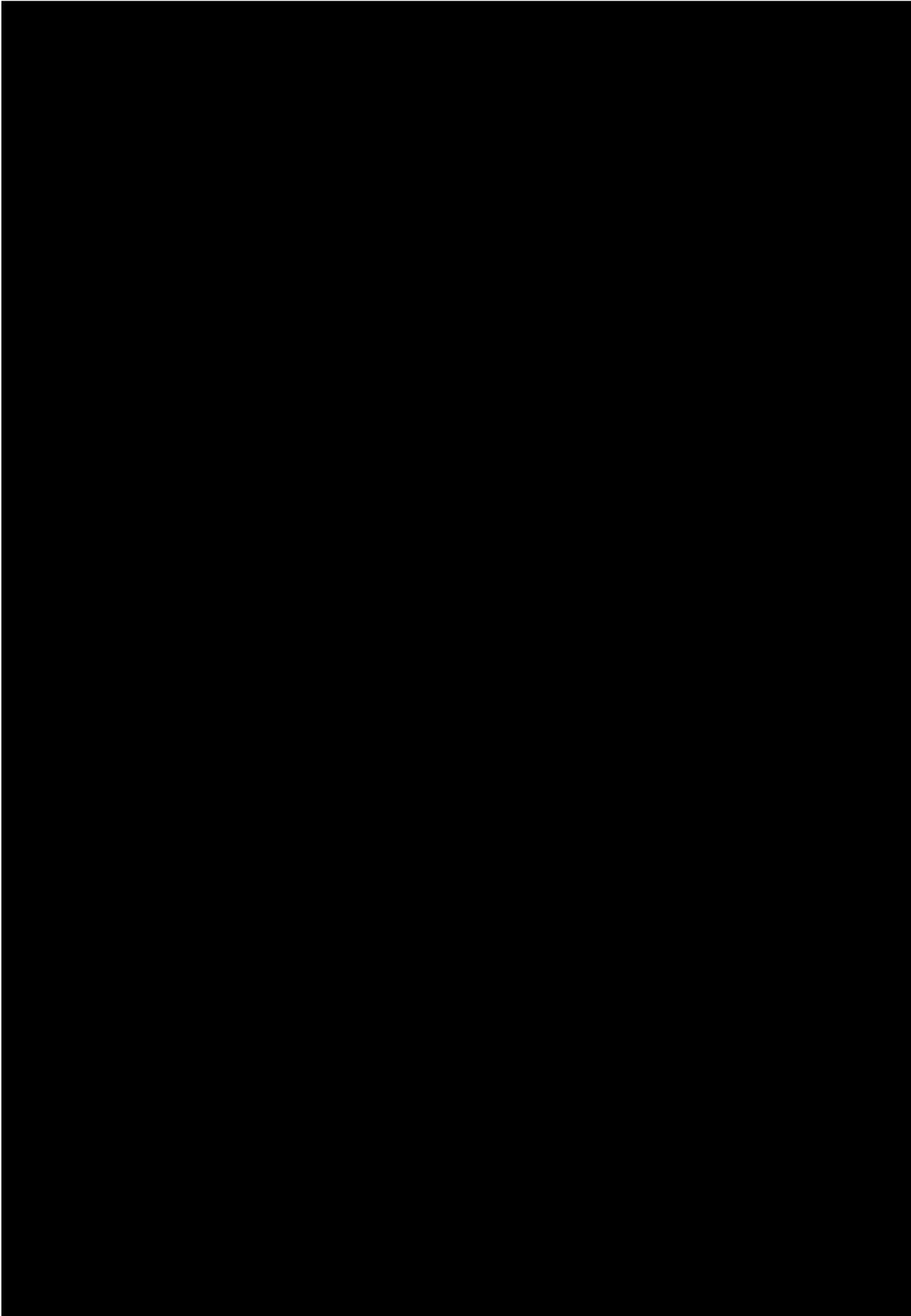
Appendix D.3 Individual Site Cards

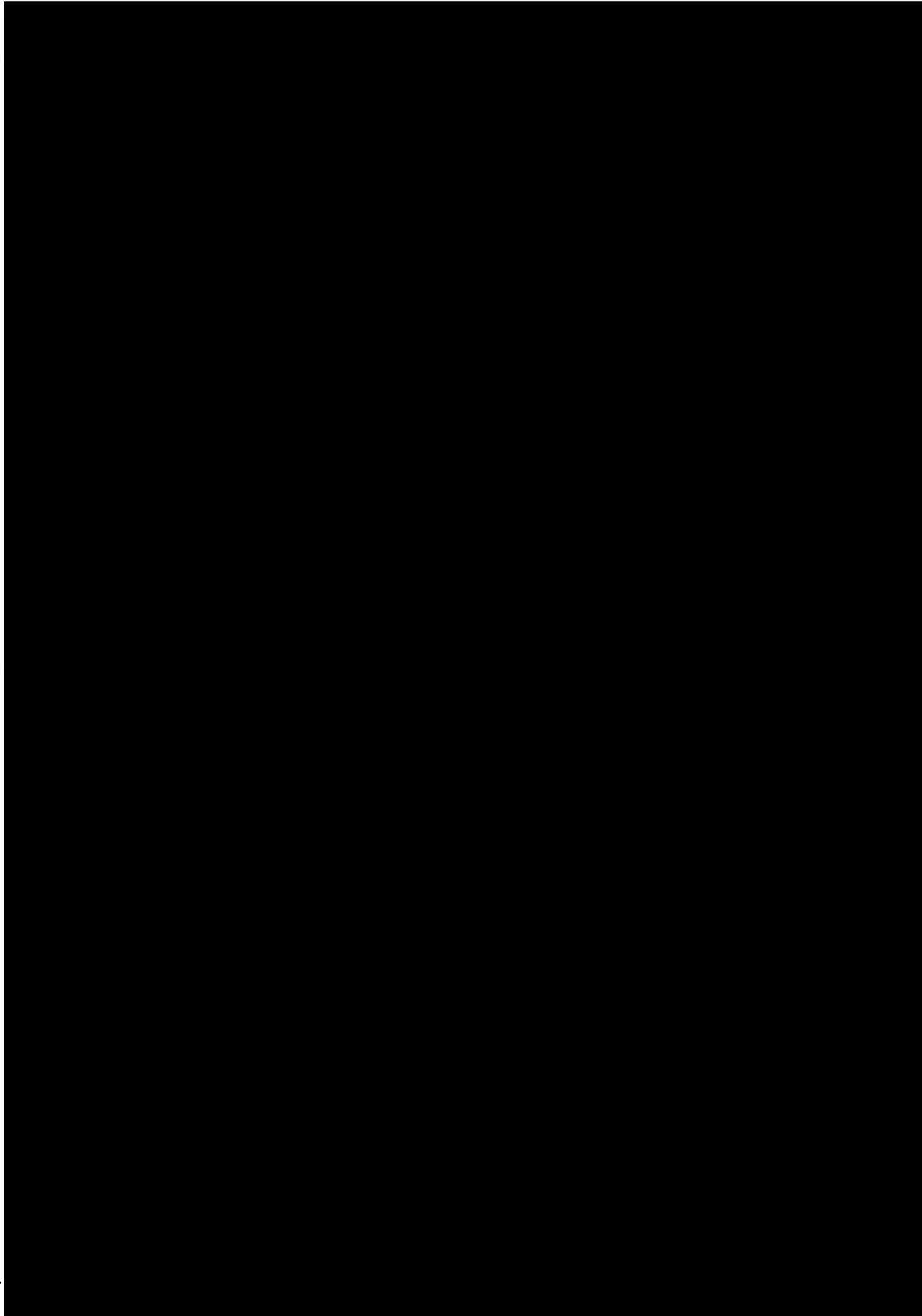


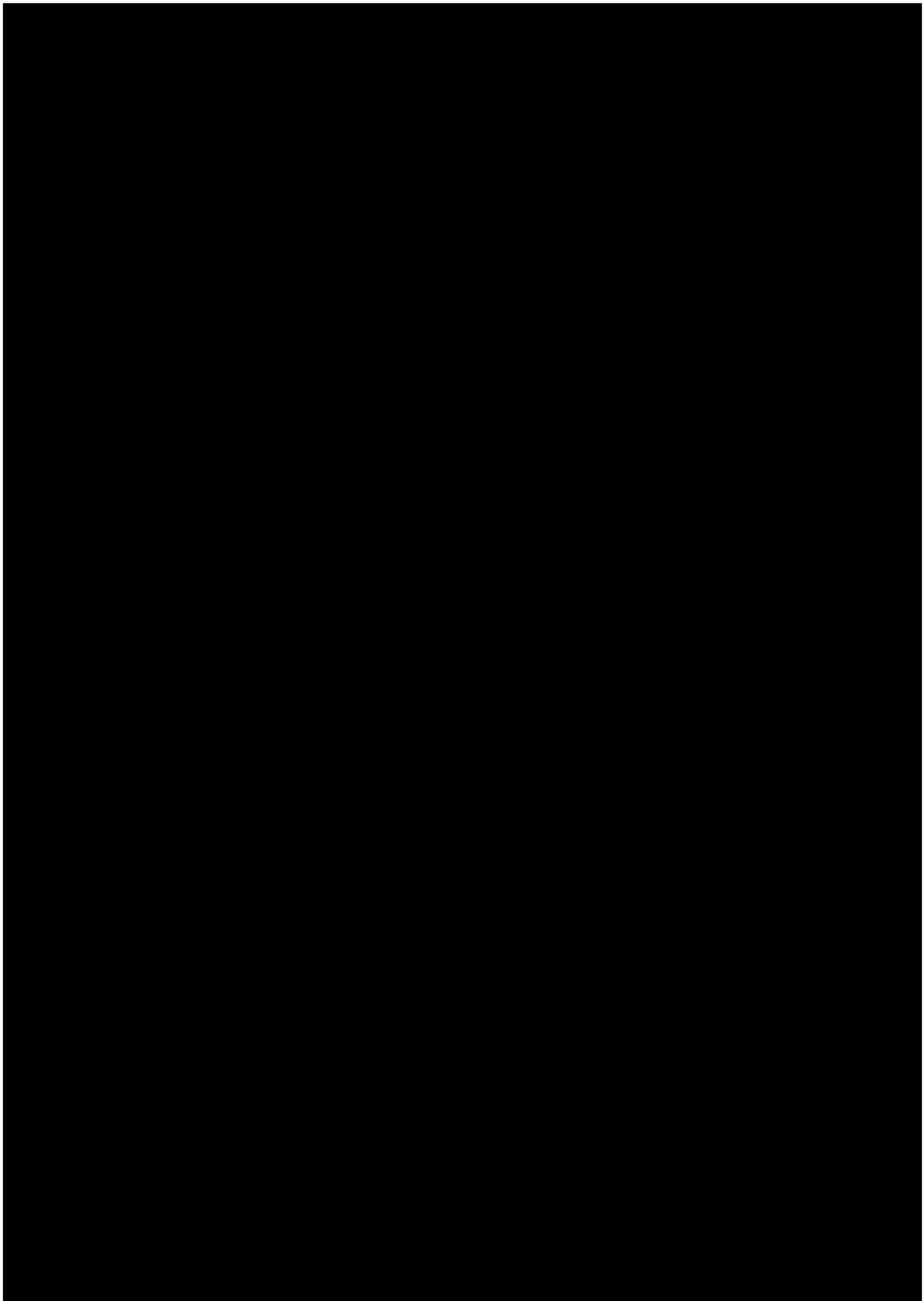


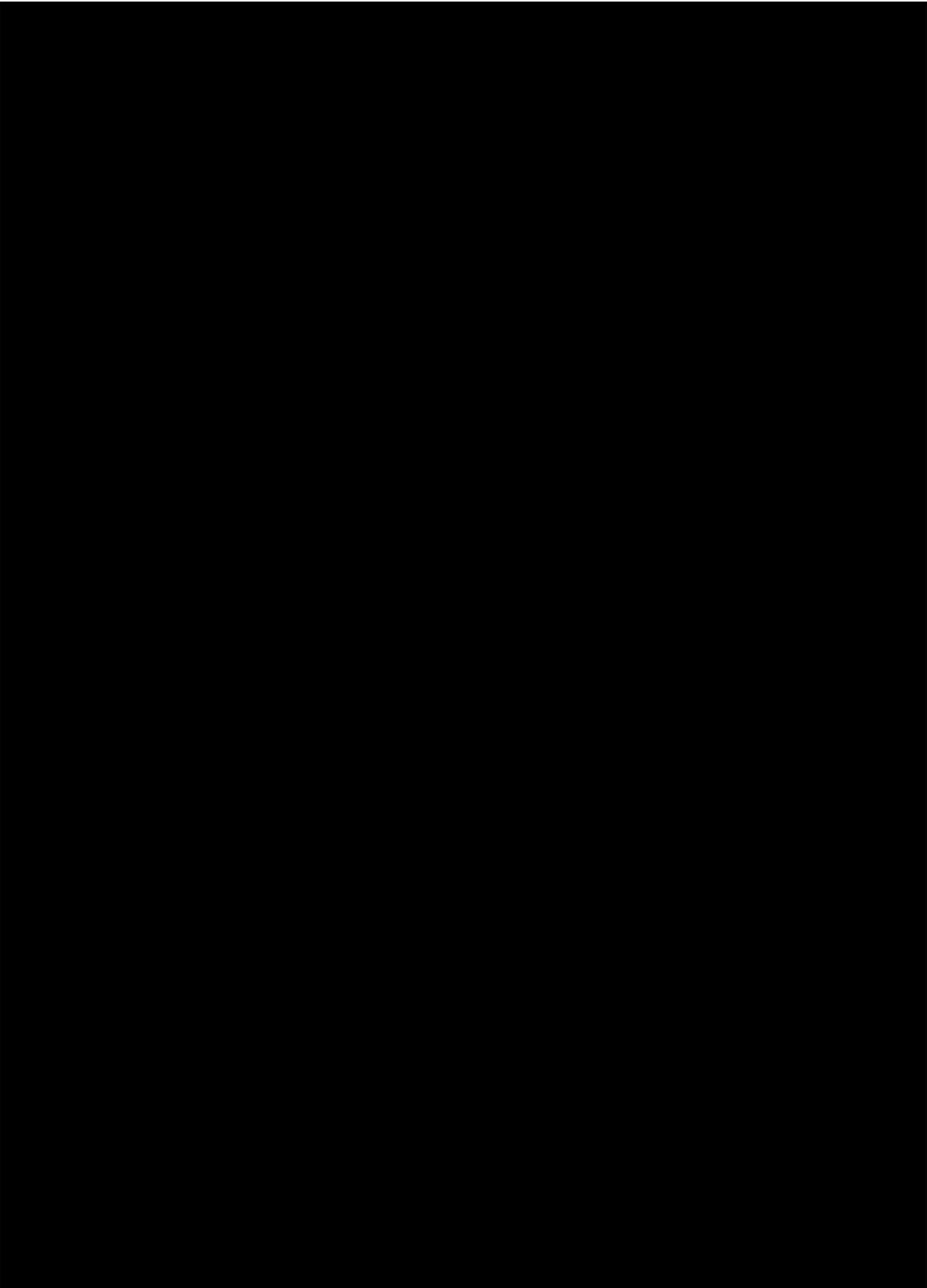


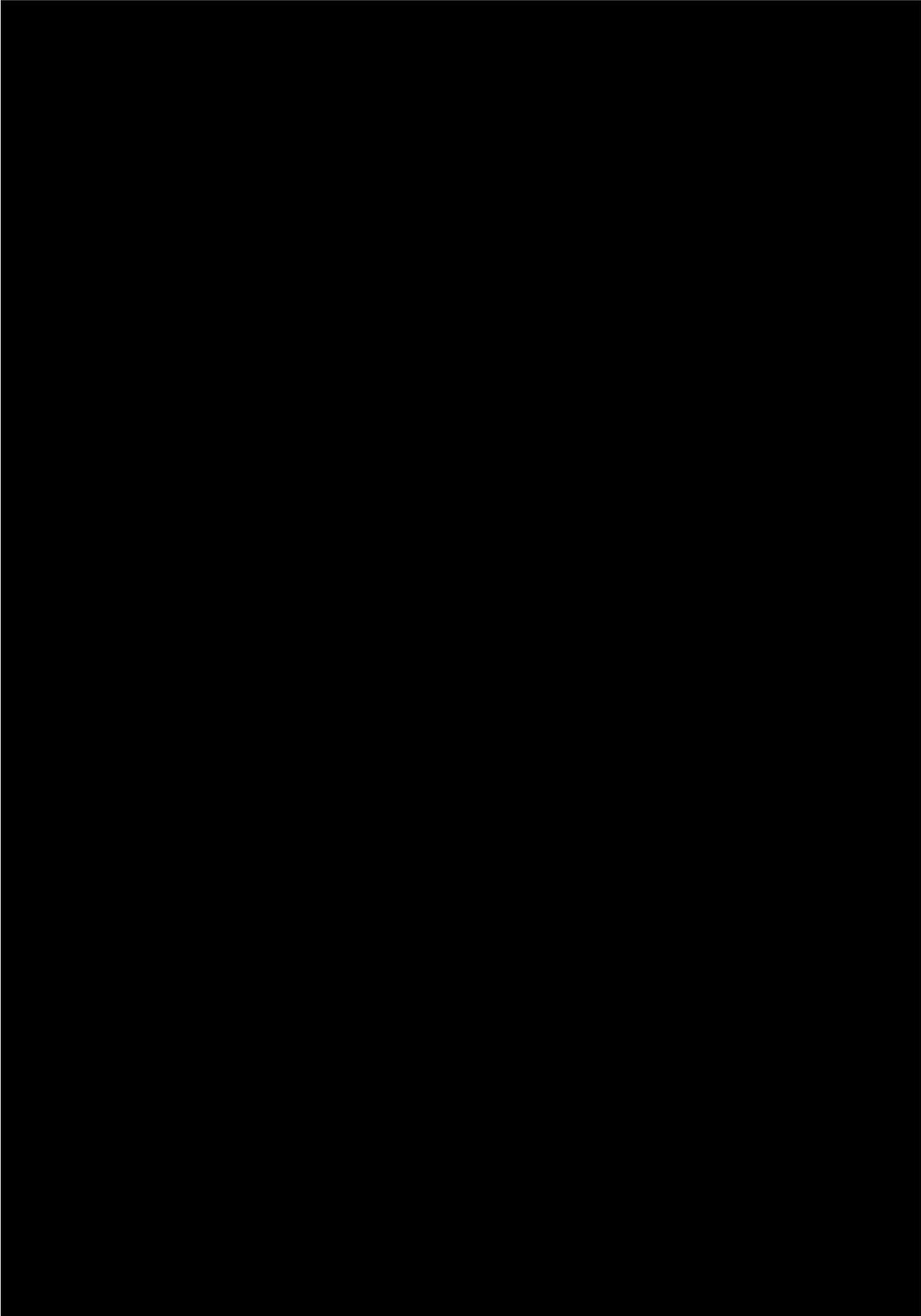


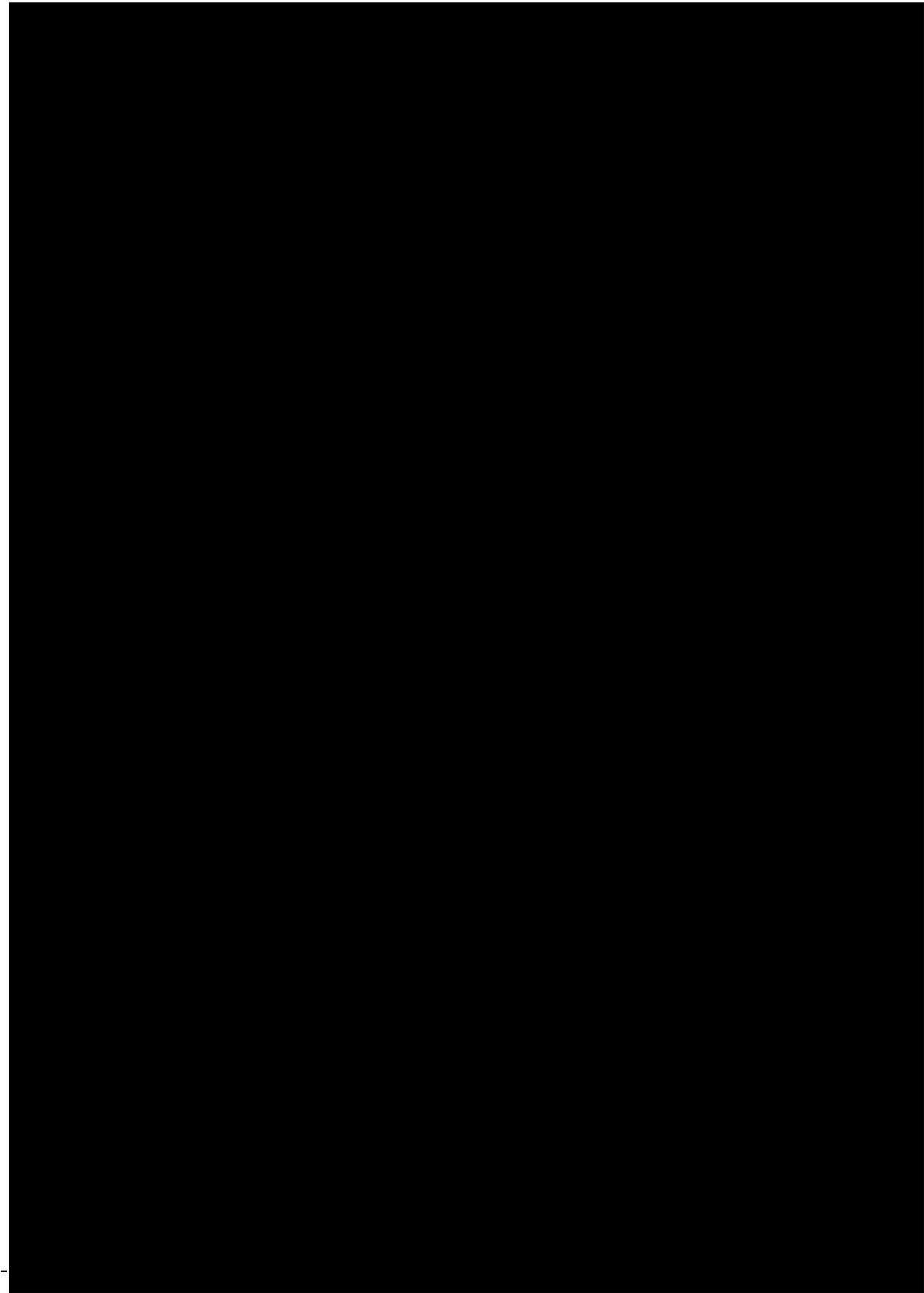


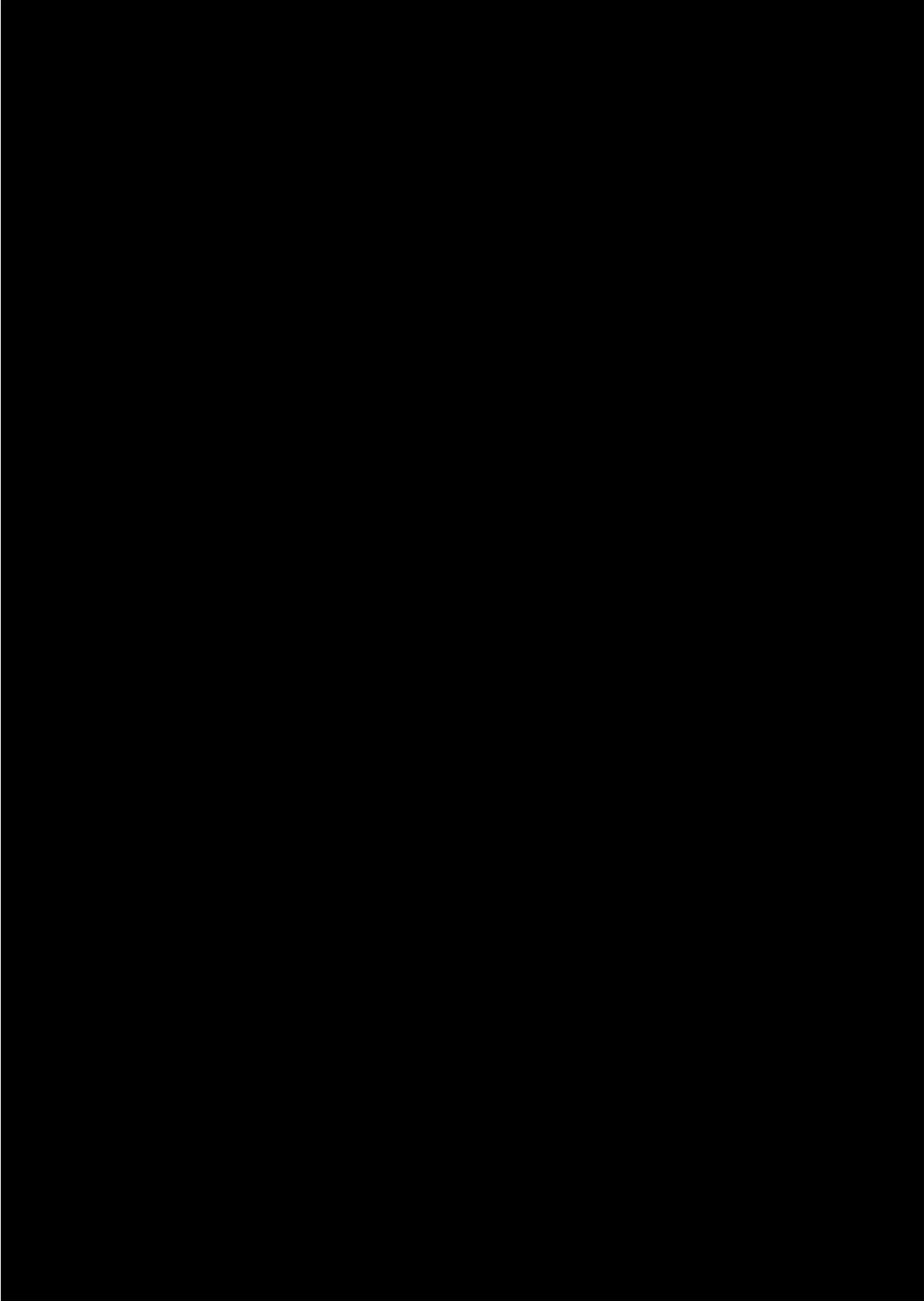


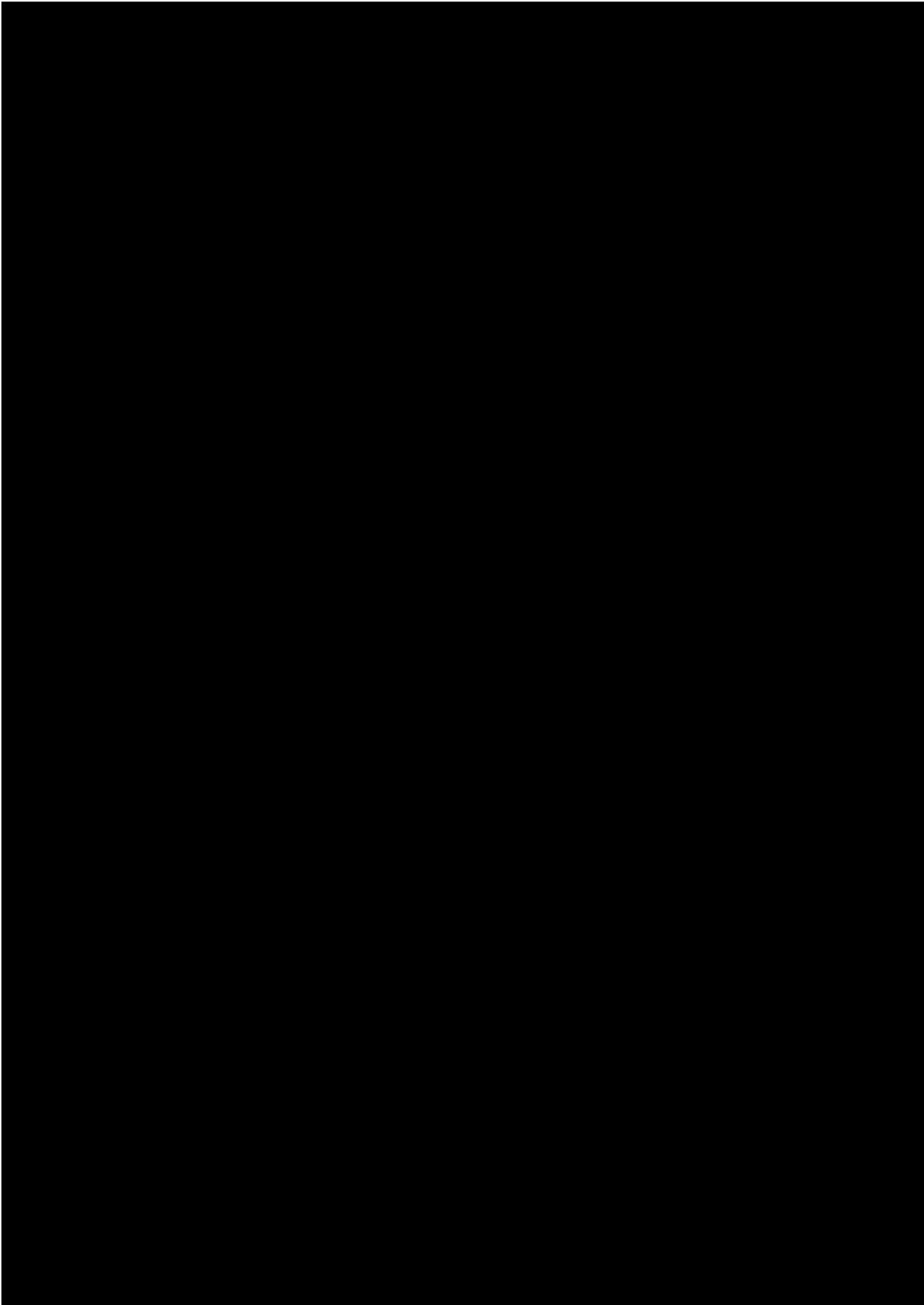


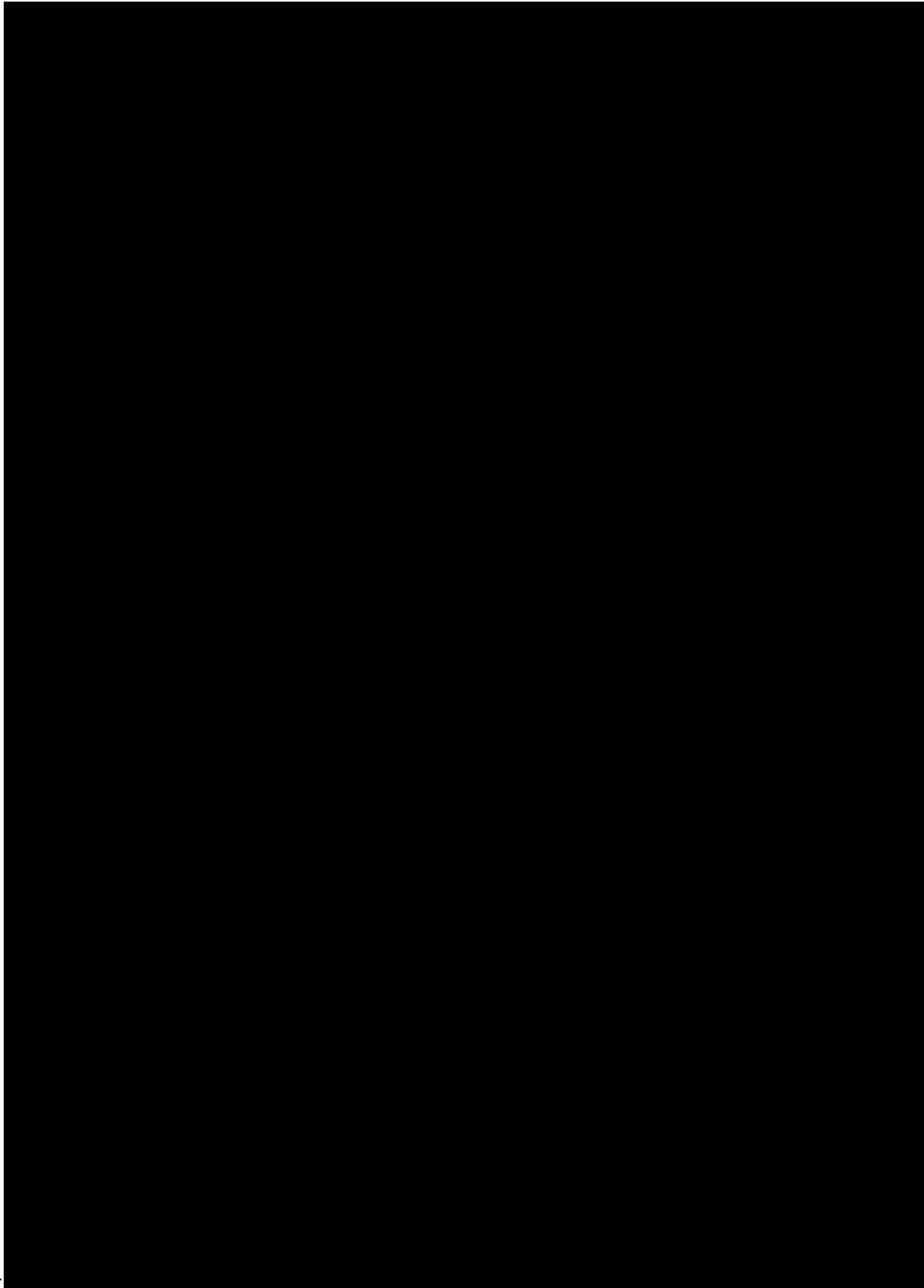


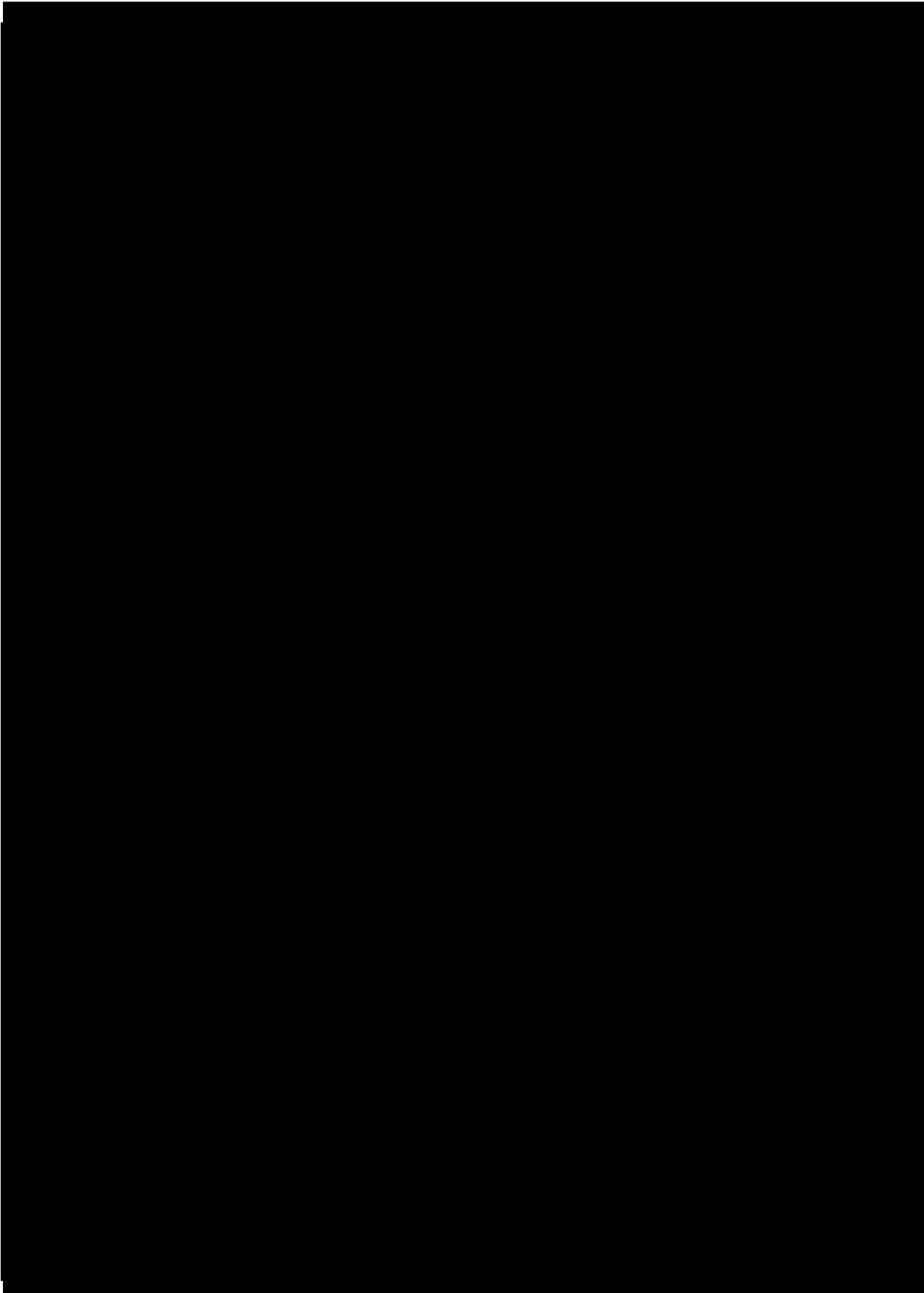


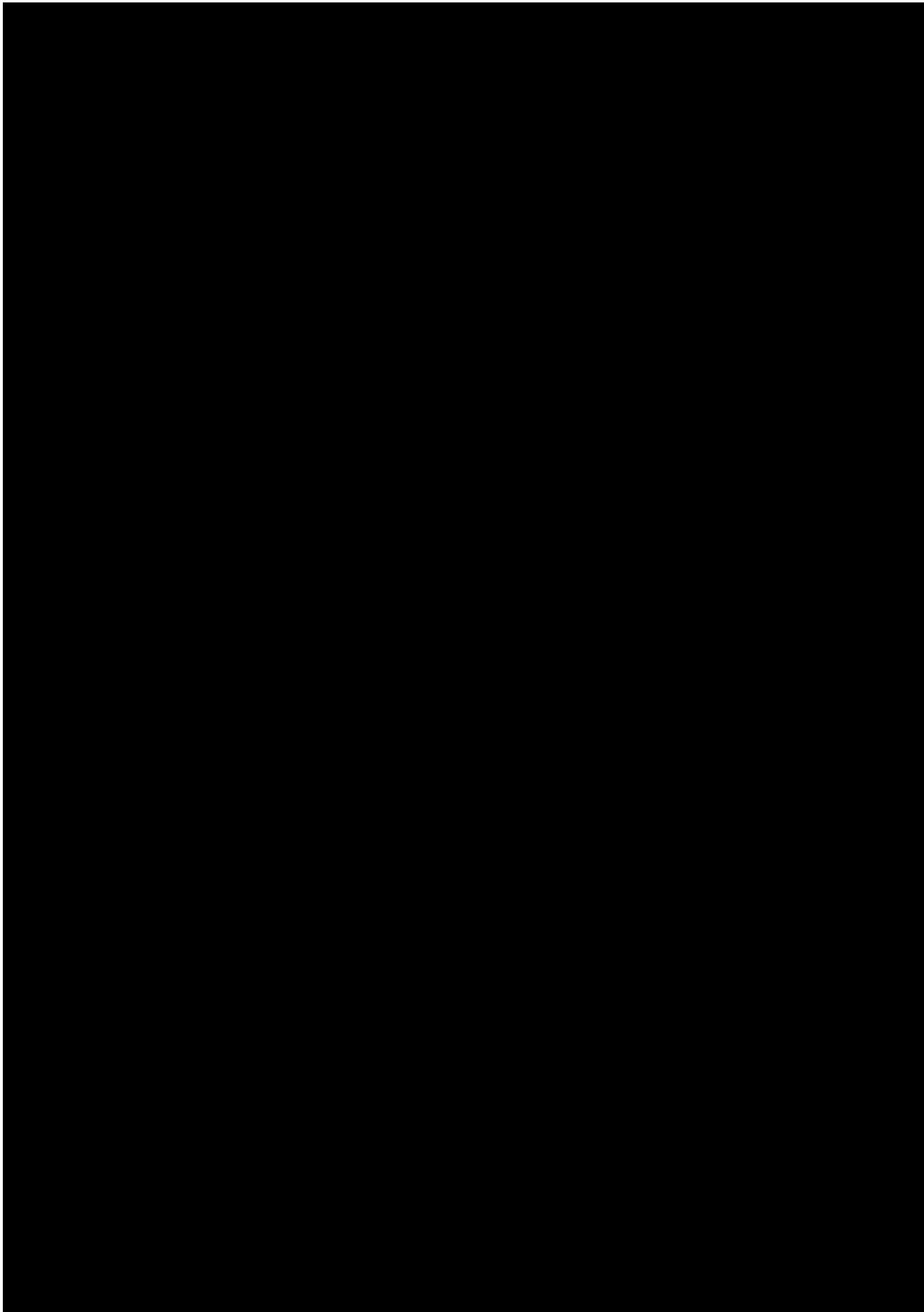


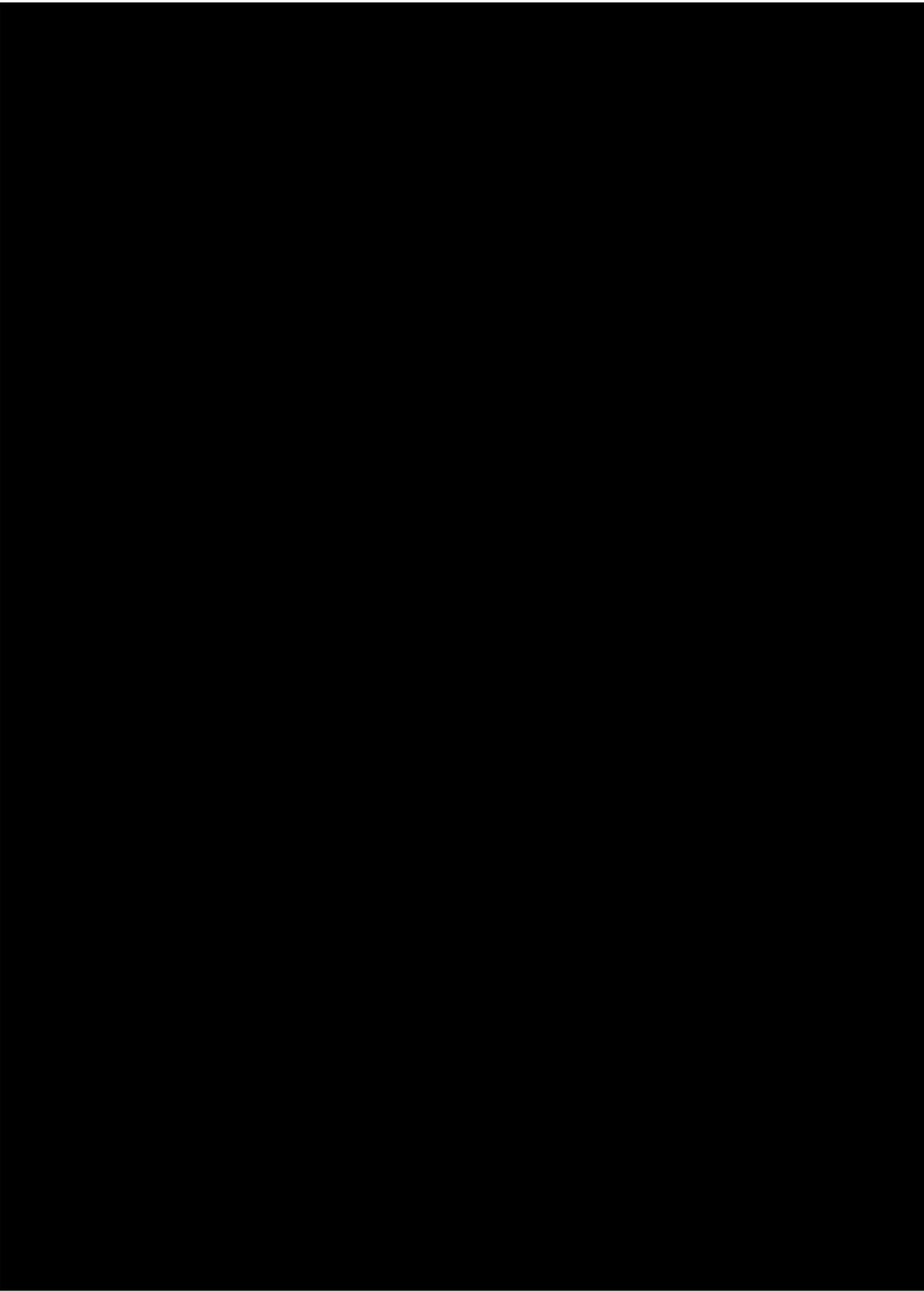


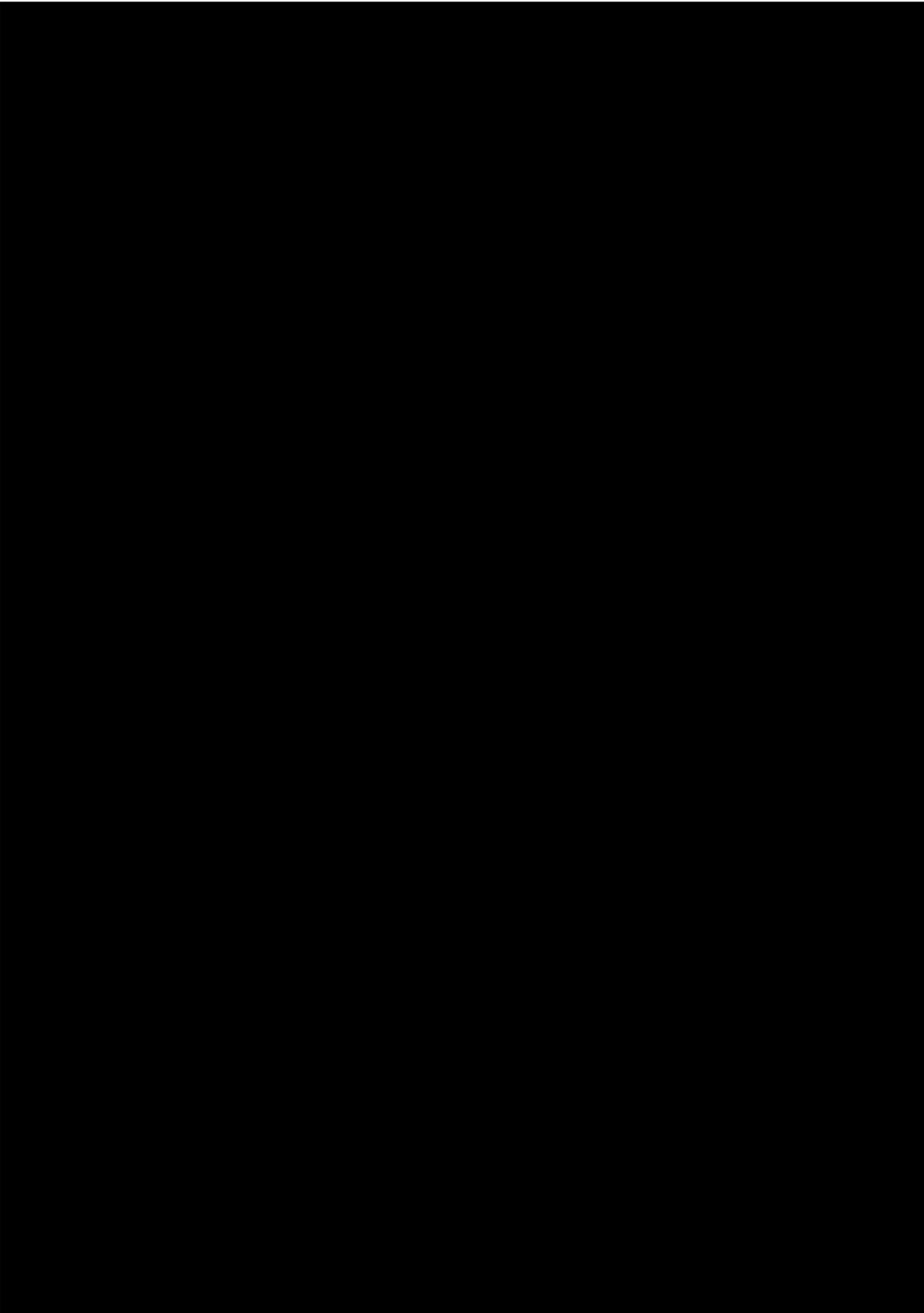








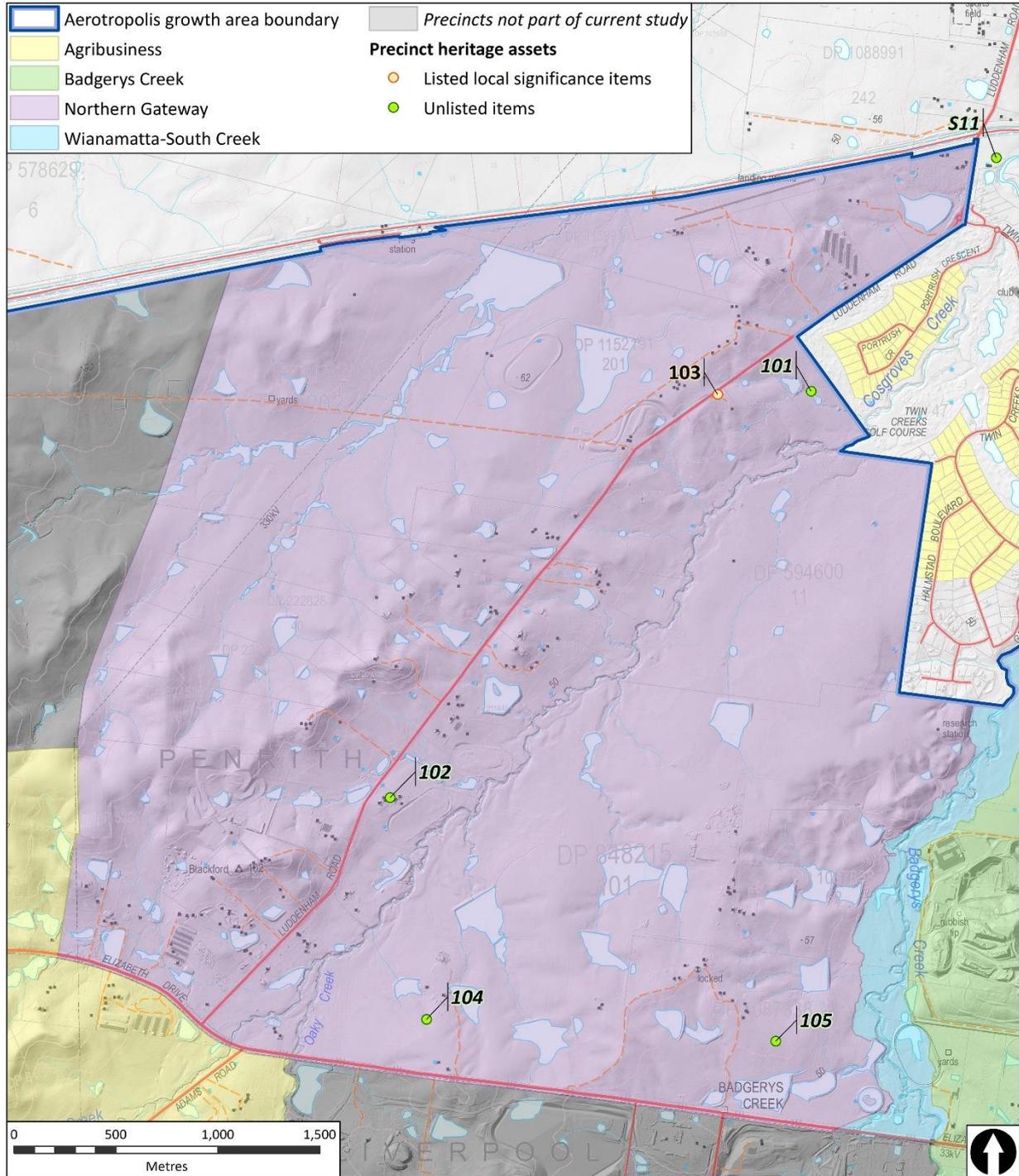




Appendix E. Heritage items inventory sheets

Preliminary Non-Aboriginal site inventory sheets

Northern Gateway Precinct



Heritage items sites within and adjacent to the Northern Gateway Precinct

Heritage Inventory Sheet			
Site ID No.	101		
Item Name	Cottage/farm buildings		
Address	480-544-Luddenham Road, Luddenham		
Lot/Section/DP	Lot 7 DP255578		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site currently a paddock – no visible remains

Historical Notes

- This site is home to several pre-1917 structures.
- In 1823 the land was granted to Cornelius Ryan.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	102		
Item Name	'Karingal' (formerly 'Bangaroo')		
Address	752-810 Luddenham Road, Luddenham		
Lot/Section/DP	Lot 1 DP235124		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	Potential archaeological site	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Mid-20th century riding stables –. Several buildings (stables and sheds) on the property.

Historical Notes

- The site, now known as Karingal, is a 20th century riding stable but is home to a pre-1927 farm site 'Bangaroo'.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

- It is unclear at this stage if earlier structures survive within the existing buildings (including the residence)

Previous Studies & References

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	103		
Item Name	Luddenham Road Alignment		
Address	-		
Lot/Section/DP	Road reserve		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	843
	Heritage Study		
	National Trust Australia Register		
Significance Level	STATE/LOCAL		
Site Type	Level 1	Extant line of road	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item does not meet this criterion.
b) Associative	The item does not meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item does not meet this criterion.

Physical Description

Extant line of road - Luddenham Road comprises modern asphalt with no remnants of the original road visible. Sections of the road have been subject to recent works.

Historical Notes

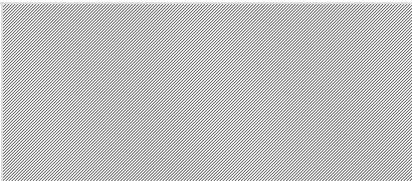
- The line of road was formed in 1883
- The road also served as a link for pastoral activities between Bringelly and St Mary's in the nineteenth century.
- Over time the road has been expanded and sealed and now comprises of a two-lane asphalt road.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.

The condition of this item is poor. Condition and maintenance should be monitored.



Other recommendations and/or comments:

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Previous Studies & References

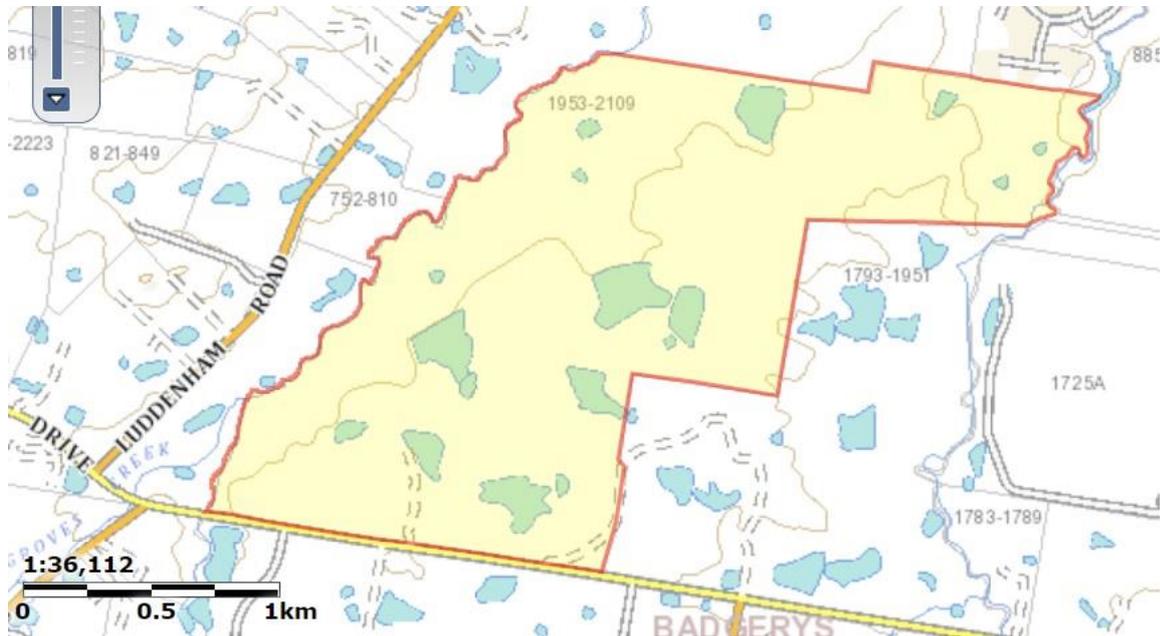
(Penrith Heritage Study 2007)

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	104		
Item Name	McMaster Field Station/McMaster Farm		
Address	1853-2109 Elizabeth Drive, Badgerys Creek		
Lot/Section/DP	Lot 101 DP848215		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	STATE		
Site Type	Level 1	Extant structures	
	Level 2	Potential archaeological sites, landscape elements	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item may meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item may meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

A number of buildings, silos, animal pens and stockyards, dams, ditches, concrete remnants, bricks and earthworks present.

Historical Notes

- Purchased in 1923 by the Commonwealth, an animal health research station was established by the CSIRO in 1938.
- The site was sold by the CSIRO in 1996.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

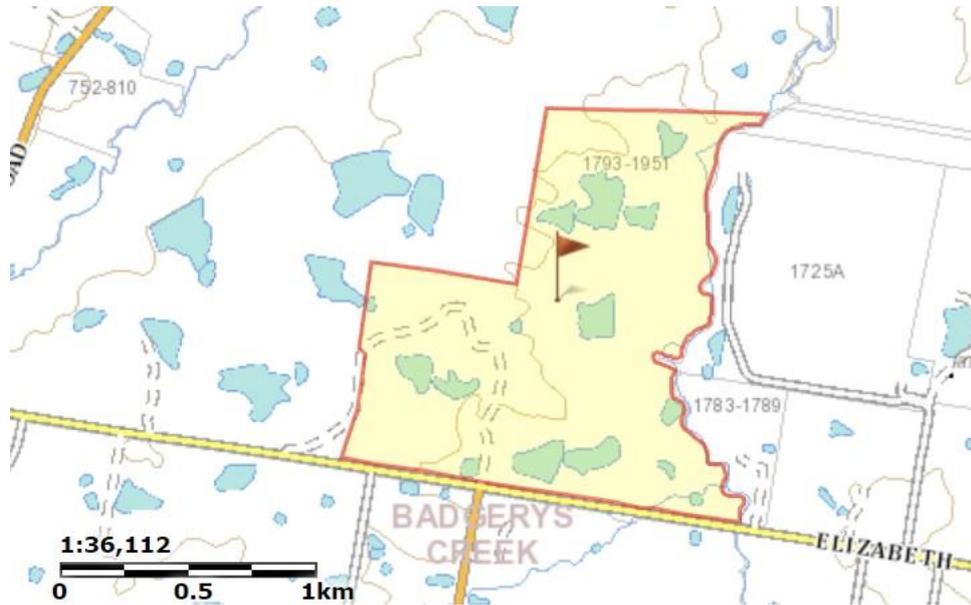
(Penrith Heritage Study 2007)

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	105		
Item Name	McGarvie Smith Farm		
Address	1793-1951 Elizabeth Drive, Badgerys Creek		
Lot/Section/DP	Lot 62 DP 1087838 Lot 63 DP1087838		
Statutory Listings	Register	Listing Title	Listing Number
	National Heritage List	Nominated	106032
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	857
	Heritage Study		
	National Trust Australia Register		
Significance Level	STATE		
Site Type	Level 1	Extant structures and landscape	
	Level 2	Potential archaeological sites	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item may meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item may meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item does not meet this criterion.

Physical Description

A number of farm buildings, silo, concrete remnants, timber posts, sheds, dams, earth ditches and other features present. The surviving dams and infrastructure associated with the first water harvesting experiments survive substantially intact.

Historical Notes

- This land was purchased in 1936 by Sydney University in association with the McGarvie Smith Institute for the training of veterinary students.
- This farm was the first veterinary farm established by Sydney University and was used for training in animal husbandry.
- The first veterinarians to graduate from Sydney University were trained at this property.
- The first scientific approach to water harvesting were undertaken on this site.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

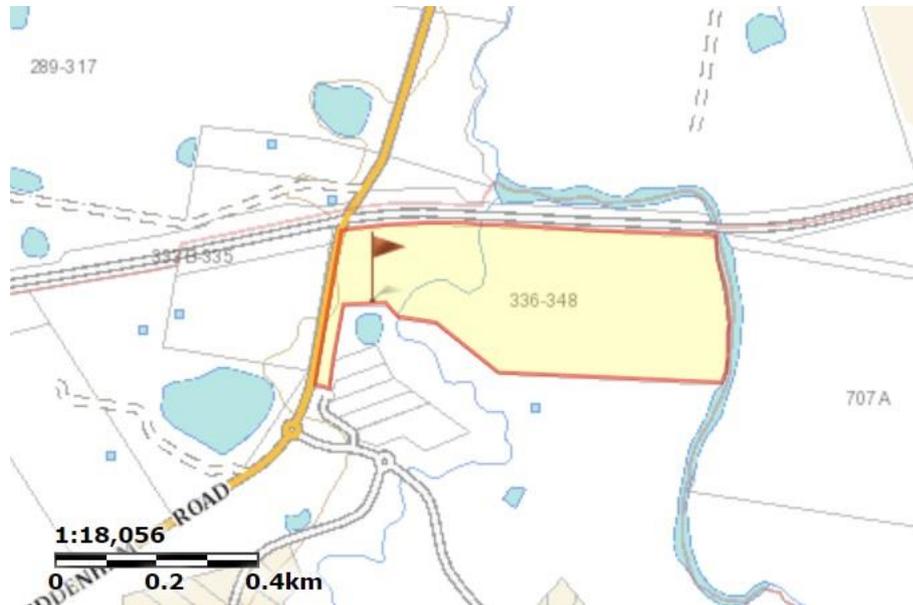
(M12 EIS)

(WSA EIS)

Heritage Inventory Sheet

Site ID No.	S11		
Item Name	'Ammamagong' homestead		
Address	336-348 Luddenham Road, Luddenham		
Lot/Section/DP	Lot 222 DP270417		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

The site is currently a paddock although physical remains of the homestead complex are visible. These remains include a beehive cistern that has been subject to recent, partial demolition.

Historical Notes

- A pre-1906 homestead complex.
- The suburb of Luddenham is built on land originally granted to John Blaxland in 1813. The area is named Luddenham after Blaxland's home village in England. In 1851 Blaxland's estate was sold to Charles Nixon who established the village of Luddenham, on the eastern end of the estate, on the Northern Road.
- In the latter half of the nineteenth century, Luddenham flourished both as a private village and as a syndicate of Sydney land. Unlike other settlements in the area, Luddenham developed a clearly defined village centre.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

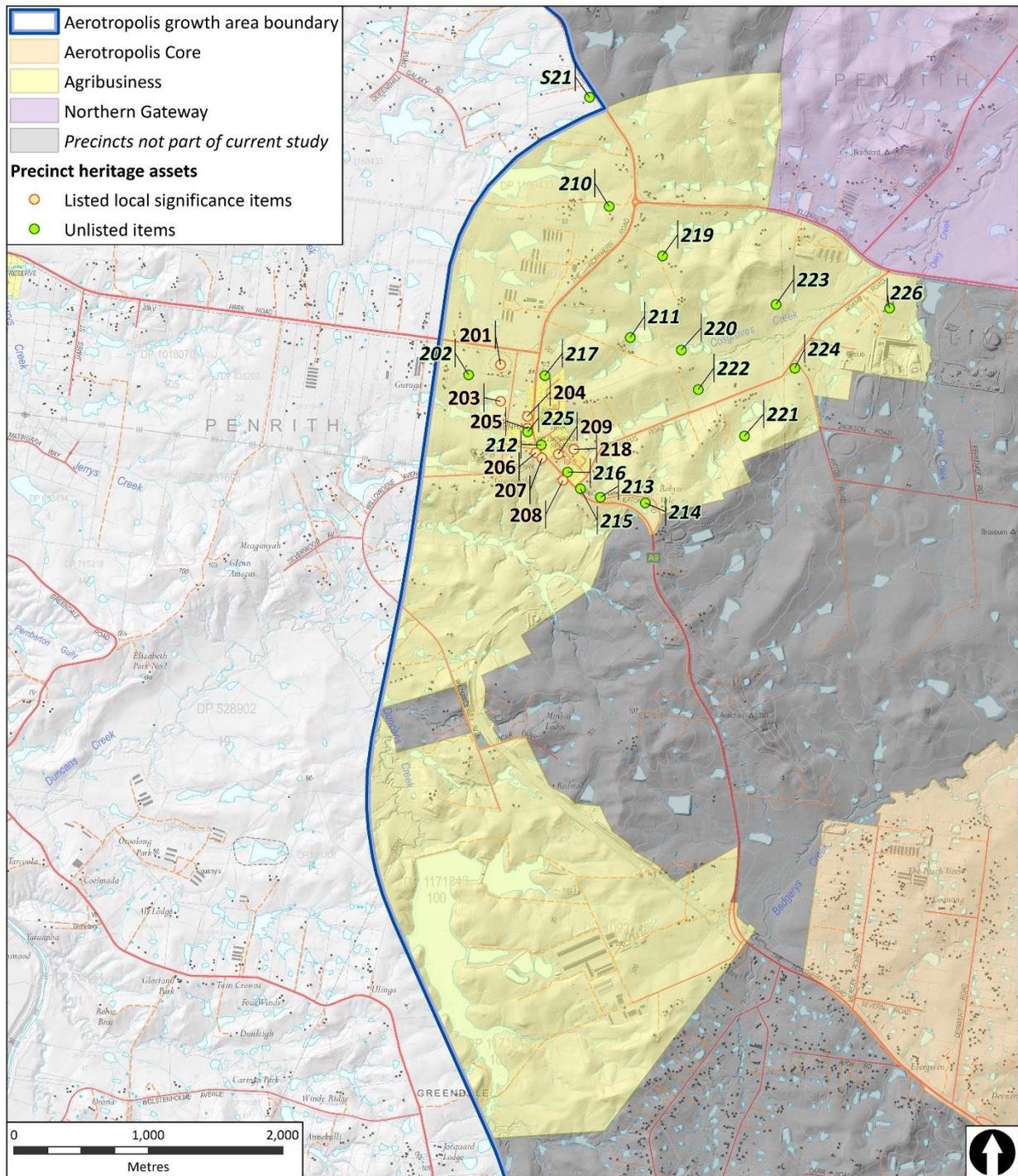
Other recommendations and/or comments:

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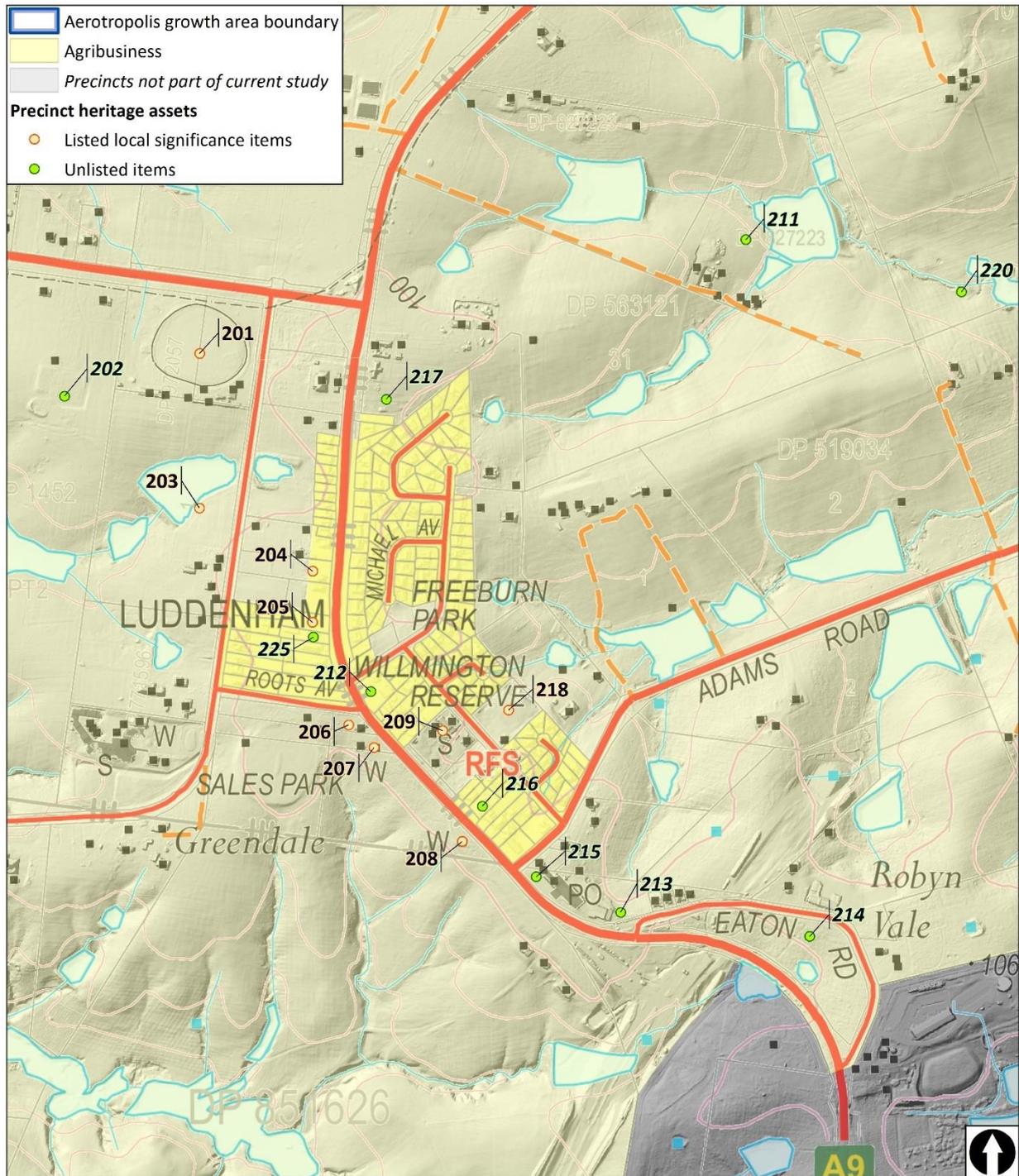
Previous Studies & References

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Agribusiness Precinct



Heritage items sites within and adjacent to the Agribusiness Precinct

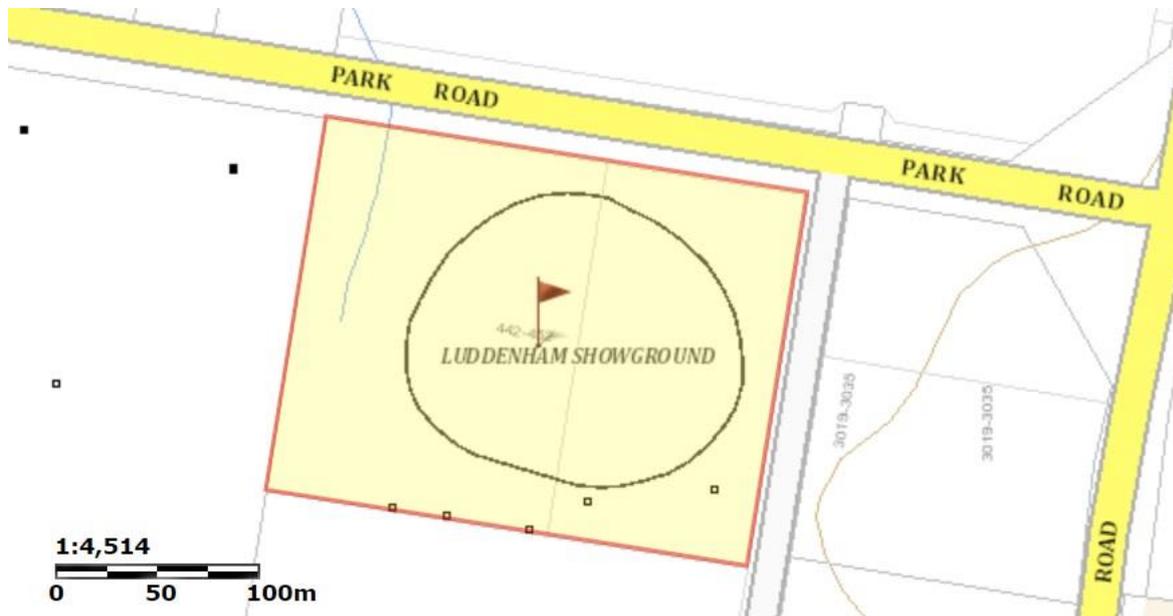


Detail of heritage items sites within the village of Luddenham (Agribusiness Precinct)

Heritage Inventory Sheet

Site ID No.	201		
Item Name	Showground		
Address	442-452 Park Road, Luddenham (address in LEP 428-452 Park Road, Luddenham)		
Lot/Section/DP	Lot 1 DP931631 Lot 2 DP972057		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	679
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant showground and buildings	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item may meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Showground and buildings.

Historical Notes

- Indicative of the rural nature of Luddenham village, these lands functioned as a showground for community organised events, with the first show being held in 1892.
- The Luddenham Showground is a surviving example of a traditional rural showground reserve. The grounds maintain their use to this day and still form a part of the local culture of the suburb.
- The Showground houses several traditional corrugated metal sheds and timber framed stands as well as clusters of mature native and exotic shade trees.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images

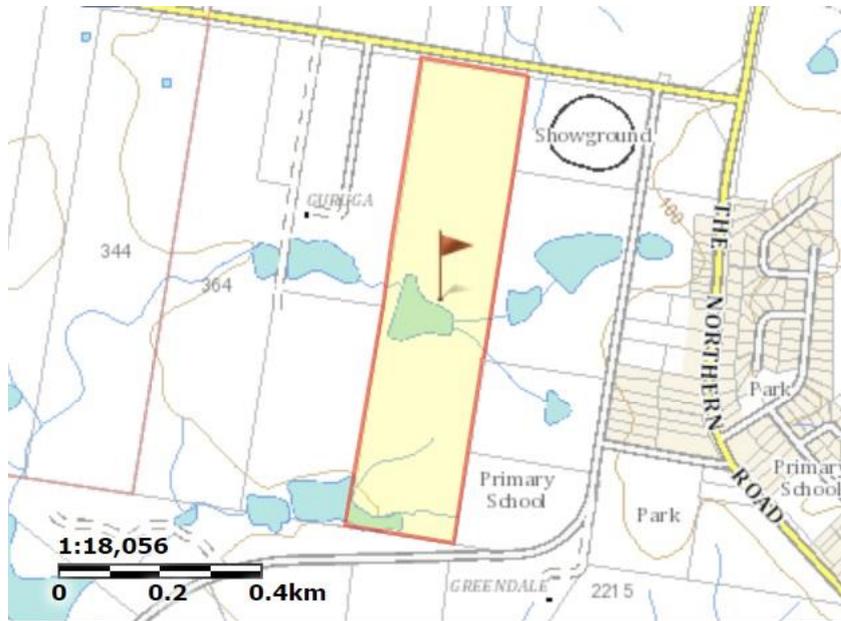


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	202		
Item Name	Former Brick Cottage, 406 Park Road		
Address	406 Park Road, Luddenham		
Lot/Section/DP	Lot 2 Sec A DP1452		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Location of cottage now turfed over.

Historical Notes

- Formerly listed as a standing structure (Penrith LEP 830) – building demolished in 2009/2010. Site has been delisted.
- The previous structure was a brick cottage associated with tenant farmer settlement of the mid-nineteenth century and may still hold some archaeological significant in understanding settlement in the area in the nineteenth century.
- The suburb of Luddenham is built on land originally granted to John Blaxland in 1813. The area is named Luddenham after Blaxland’s home village in England.
- In 1851 Blaxland’s estate was sold to Charles Nicholson who established the village of Luddenham, on the eastern end of the estate, on the Northern Road.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

Heritage Inventory Sheet

Site ID No.	203		
Item Name	Brick cottage		
Address	21-55 Campbell Street, Luddenham		
Lot/Section/DP	Lot 1 DP972057		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	117
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Brick gable-ended cottage with wide wraparound verandah. Modern modifications include new windows and doors, new roof sheeting.

Historical Notes

- Likely built in the late nineteenth century, this building can offer insight into the process of late nineteenth century settlement.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images

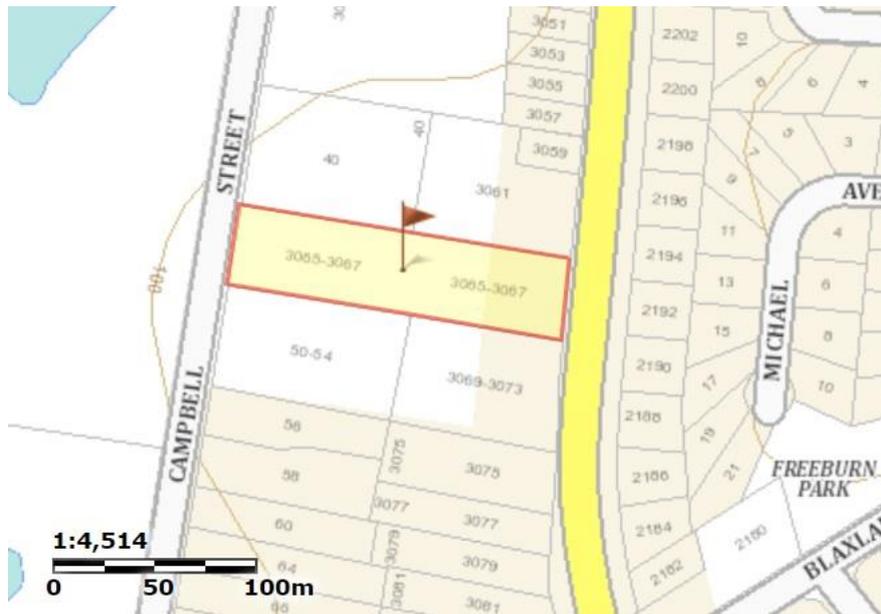


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	204		
Item Name	Weatherboard cottage		
Address	3065-3067 The Northern Road, Luddenham		
Lot/Section/DP	Lot 1 DP930372		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	118
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard cottage with galvanised hipped roof with gablet and wide bullnose verandah.

Historical Notes

- This weatherboard cottage was built in the late nineteenth century. Its materials, form and location can offer insight into late-nineteenth century settlement in the area.
- The suburb of Luddenham is built on land originally granted to John Blaxland in 1813. The area is named Luddenham after Blaxland's home village in England. In 1851 Blaxland's estate was sold to Charles Nicholson who established the village of Luddenham, on the eastern end of the estate, on the Northern Road.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images

Site

Images



(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	205		
Item Name	Weatherboard cottage		
Address	3075 The Northern Road, Luddenham		
Lot/Section/DP	Lot 1 DP304800		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	678
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard house with high pitched hipped roof. Simple façade with straight verandah to the front.

Historical Notes

- This cottage was built in the late nineteenth century. Its materials, form and location can offer insight into late-nineteenth century settlement in the area.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images



(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	206		
Item Name	Luddenham Progress Hall		
Address	3091-3095 The Northern Road, Luddenham		
Lot/Section/DP	Lot 7 DP1655		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	119
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Brick rendered Progress Hall with gable ended galvanised roof and timber windows.

Historical Notes

- The Luddenham Progress Hall was built in 1886, initially serving as the Luddenham Protestant Hall.
- The building served as a quasi-public space for the community and is indicative of the beginnings of community services in the Luddenham village. This development of community services reflects the development and growth of a village settlement.
- The building is still in use as a part of the community and exists as one of three church related buildings.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images

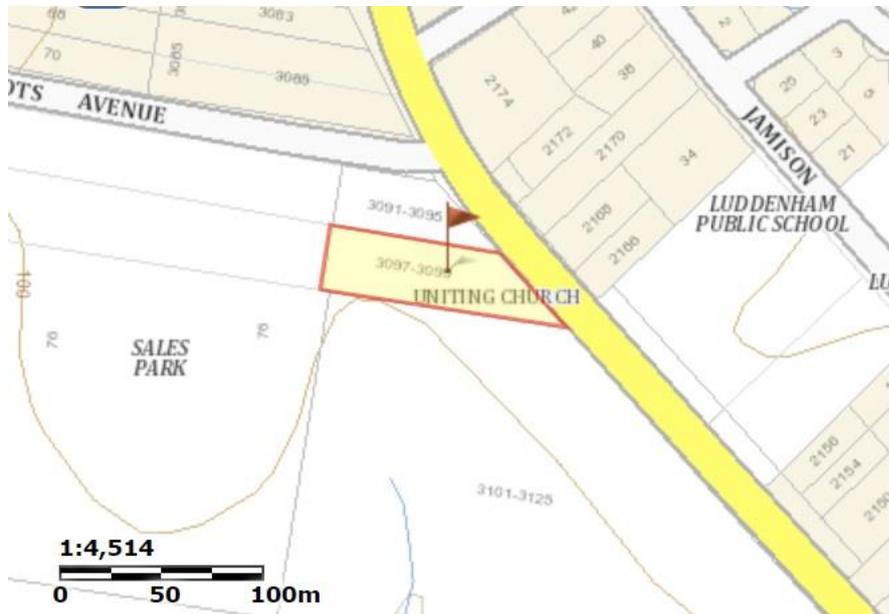


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	207		
Item Name	Luddenham Uniting Church and Cemetery		
Address	3097-3099 The Northern Road, Luddenham		
Lot/Section/DP	Lot 8 DP1655		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	170
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Rendered brick and built in a simple Gothic style, retains much of its form and detailing.

Historical Notes

- Built in 1886 as the Primitive Methodist Church, the building reflects a typical style for a rural church from the late-nineteenth century. The church itself, made of rendered brick and built in a simple Gothic style, retains much of its form and detailing.
- The cemetery, while small, offers insight into the development of the village and is the resting place for many early settlers to the region. This serves the dual purpose of being of sentimental value to any descendants of the people interred there and a historical source for identifying the people who first settled in the region.
- The building is still in use as a part of the community and exists as one of three church related buildings.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for	The condition of this item is poor. Condition and maintenance should be monitored.	

heritage management on this site.

Other recommendations and/or comments:

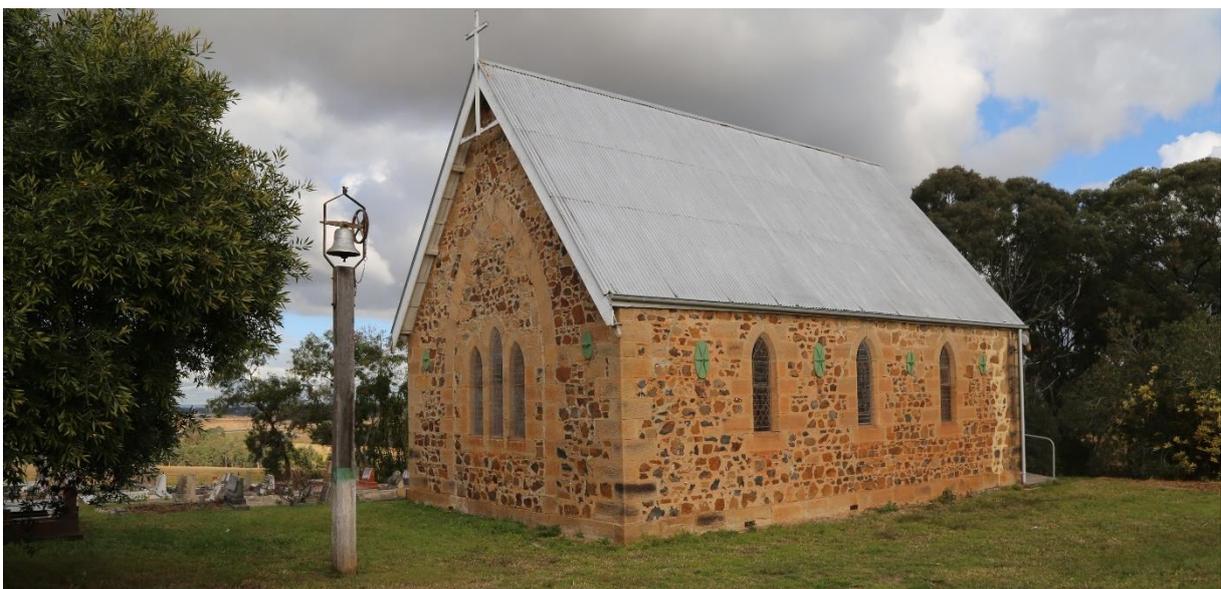
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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images

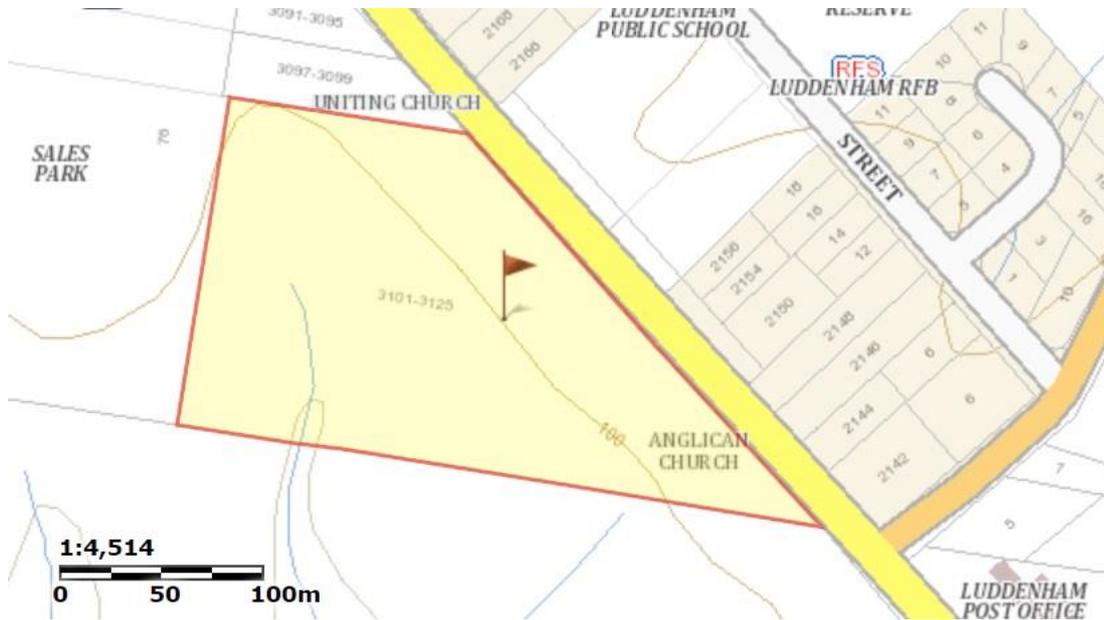


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	208		
Item Name	St James Anglican Church and Cemetery		
Address	3101-3125 The Northern Road, Luddenham		
Lot/Section/DP	Lot 2 DP529143		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	122
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Sandstone church in simple gothic style with original detailing including stained glass windows. Cemetery to the south.

Historical Notes

- Built in 1870, this church is built from sandstone in a simple Gothic design typical of rural churches of the nineteenth century.
- The oldest church in the district, this building reflects the establishment and early growth of the village of Luddenham. The church also has associations with several significant local landowners, most notably Sir Charles Nicholson, who founded the village of Luddenham.
- The cemetery, while small, offers insight into the development of the village and is the resting place for many early settlers to the region. This serves the dual purpose of being of sentimental value to any descendants of the people interred there and a historical source for identifying the people who first settled in the region.
- The building is still in use as a part of the community and exists as one of three church related buildings.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.

Conservation management documentation should be prepared and implemented for heritage management on this site.

The condition of this item is poor. Condition and maintenance should be monitored.

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(WSA EIS)

Site Images



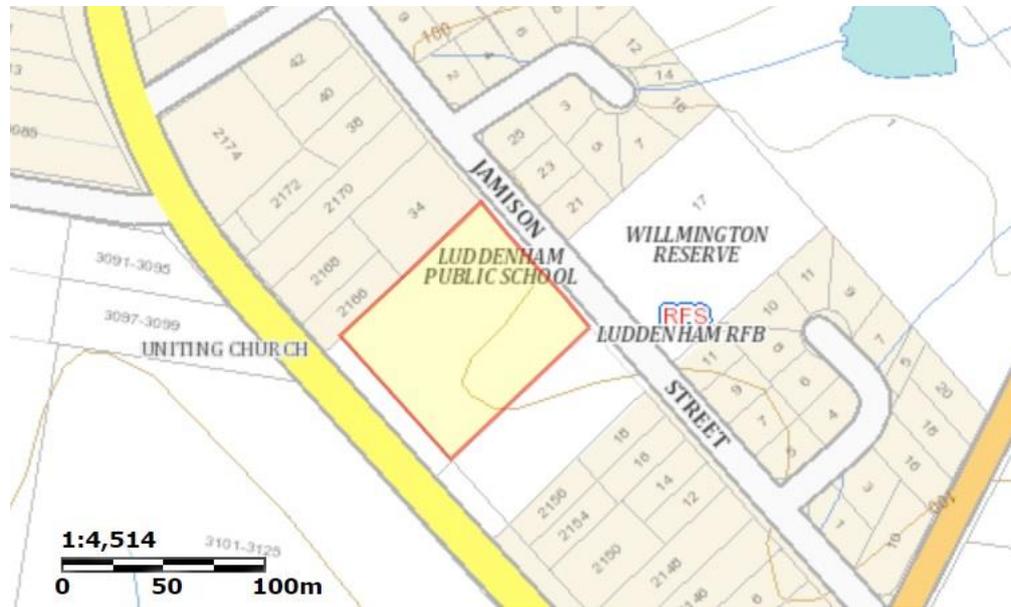


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	209		
Item Name	Luddenham Public School		
Address	The Northern Road, Luddenham		
Lot/Section/DP	Lot 1 DP194409		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Liverpool LEP	52
	Education Heritage and Conservation Register	Building B00C	5064557
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	School	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard schoolhouse building facing The Northern Road. School buildings ranging from 1950s to modern.

Historical Notes

- Luddenham Public School has operated as a New South Wales public school since 1914. However, the school grounds themselves have been used as an educational facility since 1860.
- The simple design of the school reflects the aesthetic of schoolhouses at the time, which were designed with natural light and ventilation as priorities over outward aesthetics. The simplicity also reflects the budget allocated to building schoolhouses at the time.
- Many of the original structures have been demolished including the original brick schoolhouse from 1860, the toilet block and the headmaster's residence.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(WSA EIS)

Site Images

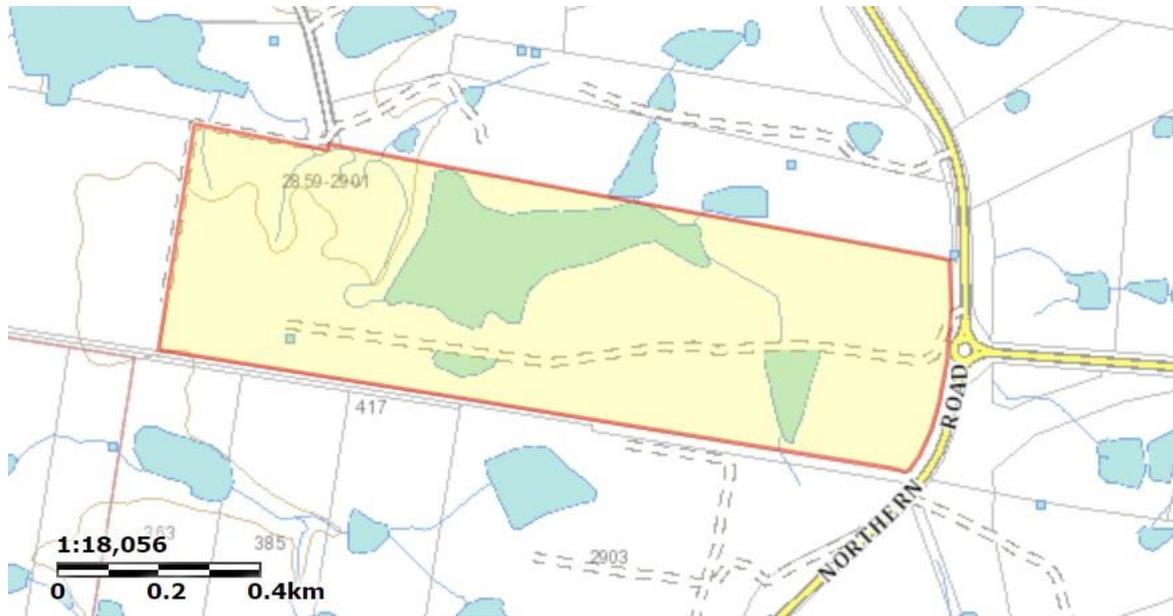


Source: Extent 2020

Heritage Inventory Sheet

Site ID No.	210		
Item Name	Cottage site		
Address	2859-2901 The Northern Road, Luddenham		
Lot/Section/DP	Lot 1 DP1169433		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is now the location of a small cottage/shed – the integrity of earlier structural remains and deposits may have been compromised.

Historical Notes

- A cottage occupied this site prior to 1906.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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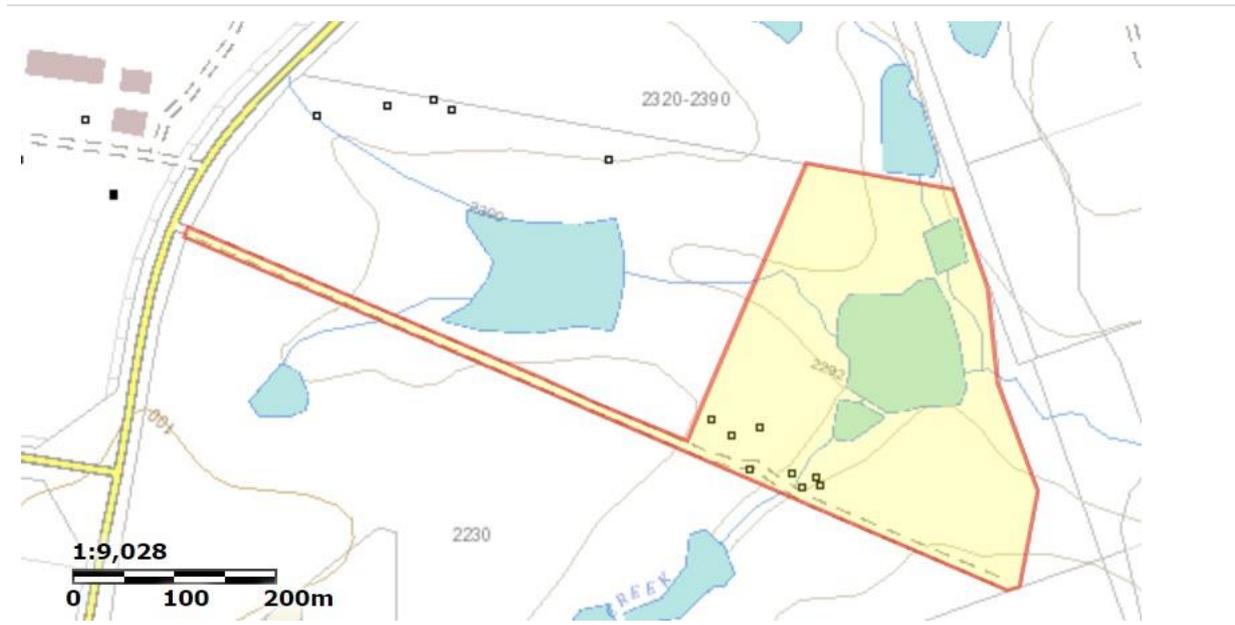
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	211		
Item Name	Harris Farm site		
Address	2292 The Northern Road, Luddenham		
Lot/Section/DP	Lot 2 DP1240511		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site has been subject to significant, recent ground modification – the integrity of earlier structural remains and deposits may have been compromised.

Historical Notes

- The site was a farmstead that was established sometime before 1860.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	212		
Item Name	Campbell cottage site		
Address	2174 The Northern Road, Luddenham		
Lot/Section/DP	Lot 19 DP575503		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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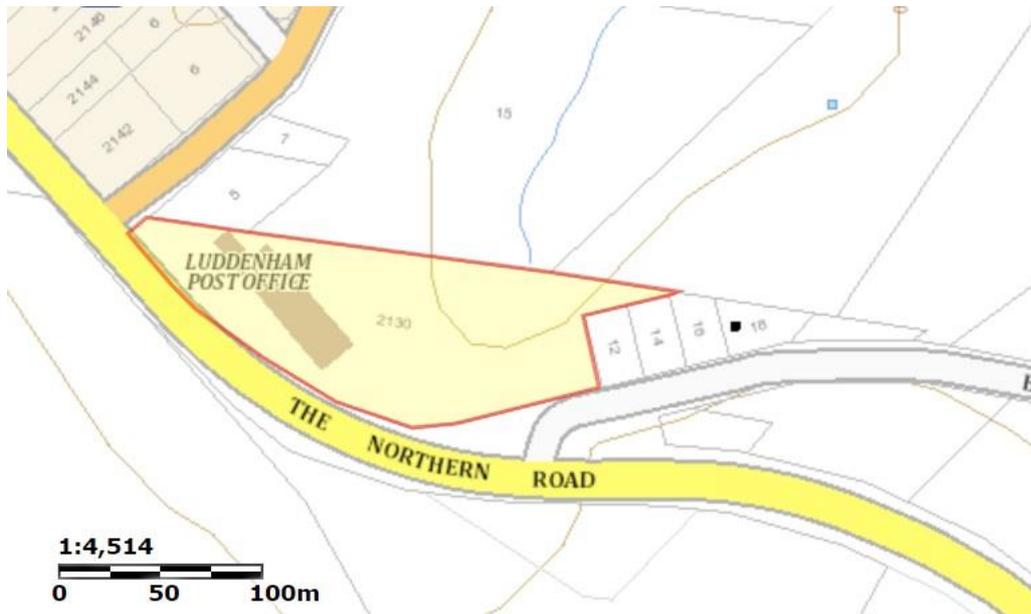
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	213		
Item Name	Former church and school site		
Address	2130 The Northern Road, Luddenham		
Lot/Section/DP	Lot 25 DP700302		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item may meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is a well-maintained turf area.

Historical Notes

- Pre-1859 church and school – possibly temporary structures
- The church was replaced by the Methodist chapel- now Uniting Church [Asset 207] in 1886

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	214		
Item Name	Lawson's Thistle Inn site		
Address	2215 The Northern Road, Luddenham		
Lot/Section/DP	Lot 3 DP1234822		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Liverpool LEP	53
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Archaeological	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item may meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

The site is now a paddock. It has been subject to intensive cultivation the site was until recently a Christmas tree farm. The original lot is now bisected by a motorway.

Historical Notes

- Lawson's Thistle Inn (Lawson's Inn) at Luddenham was central to the history of how the settlement of Luddenham developed.
- Lawson's Inn was central, both geographically and metaphorically to the town and understanding its settlement. Its placement on a major road reflects the importance of transport for establishing settlements.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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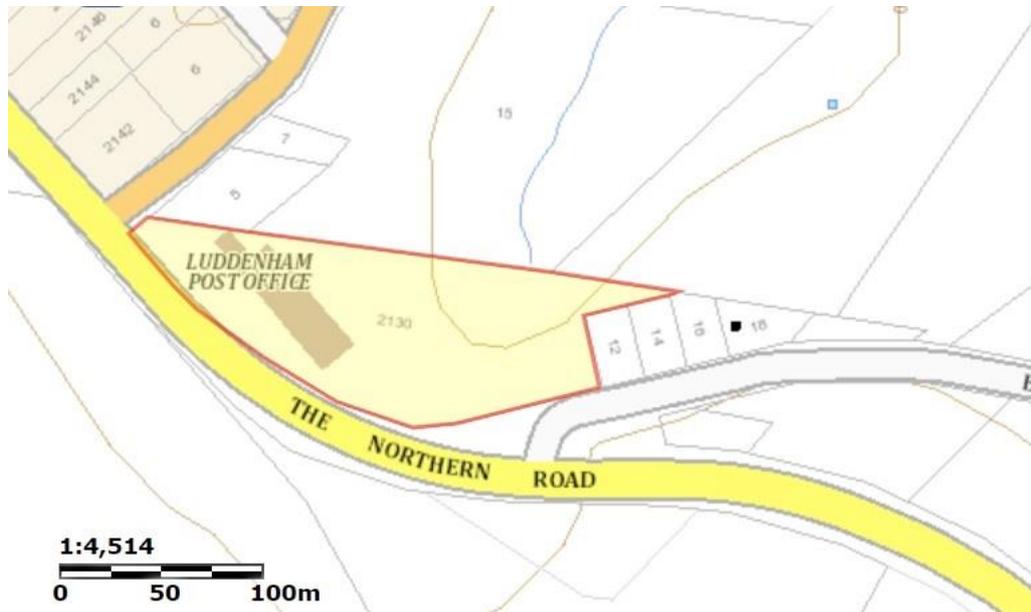
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	215		
Item Name	Forge site		
Address	2130The Northern Road, Luddenham		
Lot/Section/DP	Lot 25 DP700302		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item does not meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item does not meet this criterion.

Physical Description

Site is currently the post office car park.

Historical Notes

- Once a forge constructed before 1927, it was possibly later converted into a garage.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	216		
Item Name	Cottage and outbuilding site		
Address	2150 The Northern Road, Luddenham		
Lot/Section/DP	Lot 22 DP1036912 (and road reserve)		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site partially covered by a twentieth century dwelling – any archaeological remains may be significantly compromised.

Historical Notes

- The site is a cottage constructed sometime before 1859.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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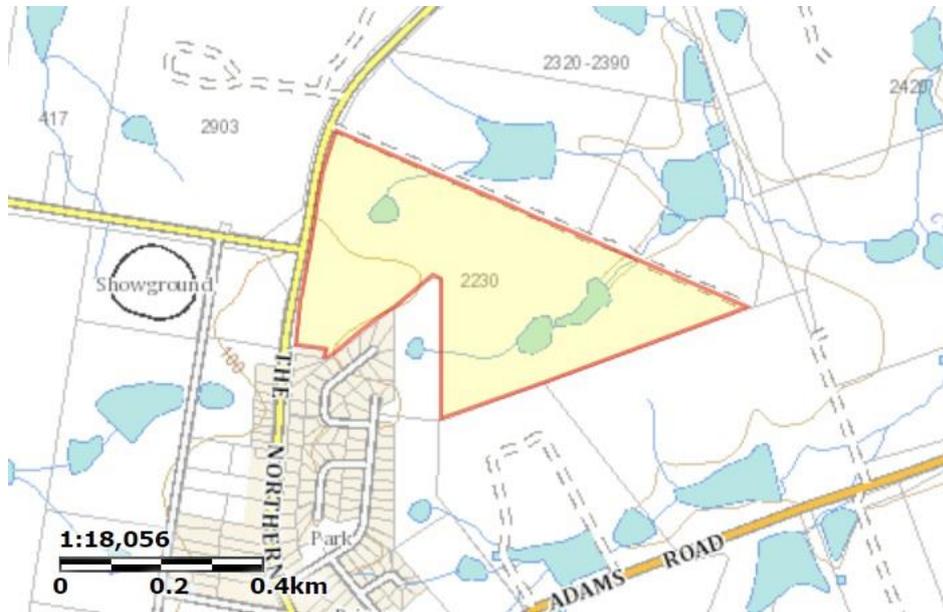
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	217		
Item Name	Barn site		
Address	2230 The Northern Road, Luddenham		
Lot/Section/DP	Lot 31 DP563121		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is a well-maintained grazing paddock.

Historical Notes

- The site is a barn constructed before 1859, predating the subdivision of the Luddenham estate.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	218		
Item Name	Wilmington Reserve		
Address	17 Jamison Street, Luddenham		
Lot/Section/DP	Lot 7004 DP93052		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Liverpool LEP	50
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Water reserve now playing field with boundary plantings.

Historical Notes

- The building was present on this site in 1859.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(WSA EIS)

Site Images

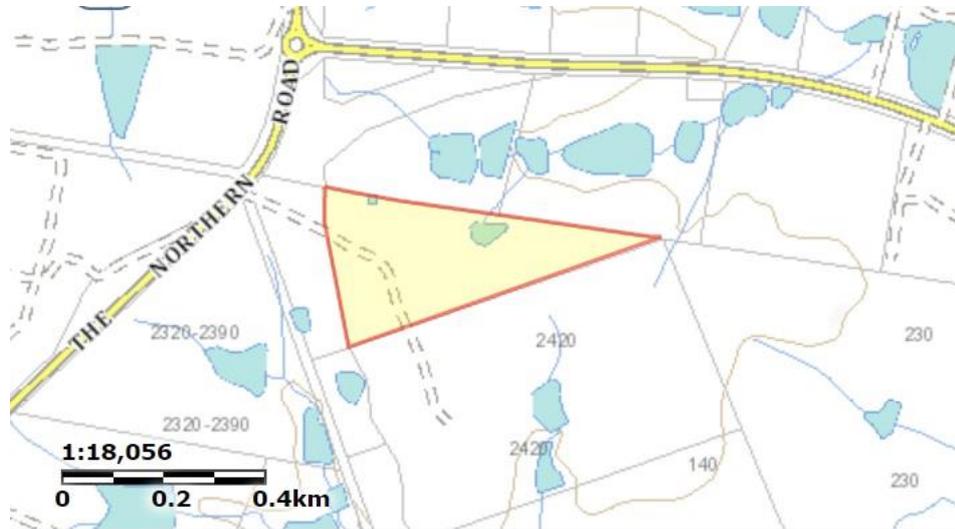


(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	219		
Item Name	'Pleasantview' Cottage		
Address	2422-2430 The Northern Road, Luddenham		
Lot/Section/DP	Lot 7 DP1240511		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site not accessed for this study. Original Llandilo School of Arts Hall may still be intact within modern extensions.

Historical Notes

- A cottage incorporating the Llandilo School of Arts Hall (c.1915). It was later reconstructed in this location between 1927 and 1955.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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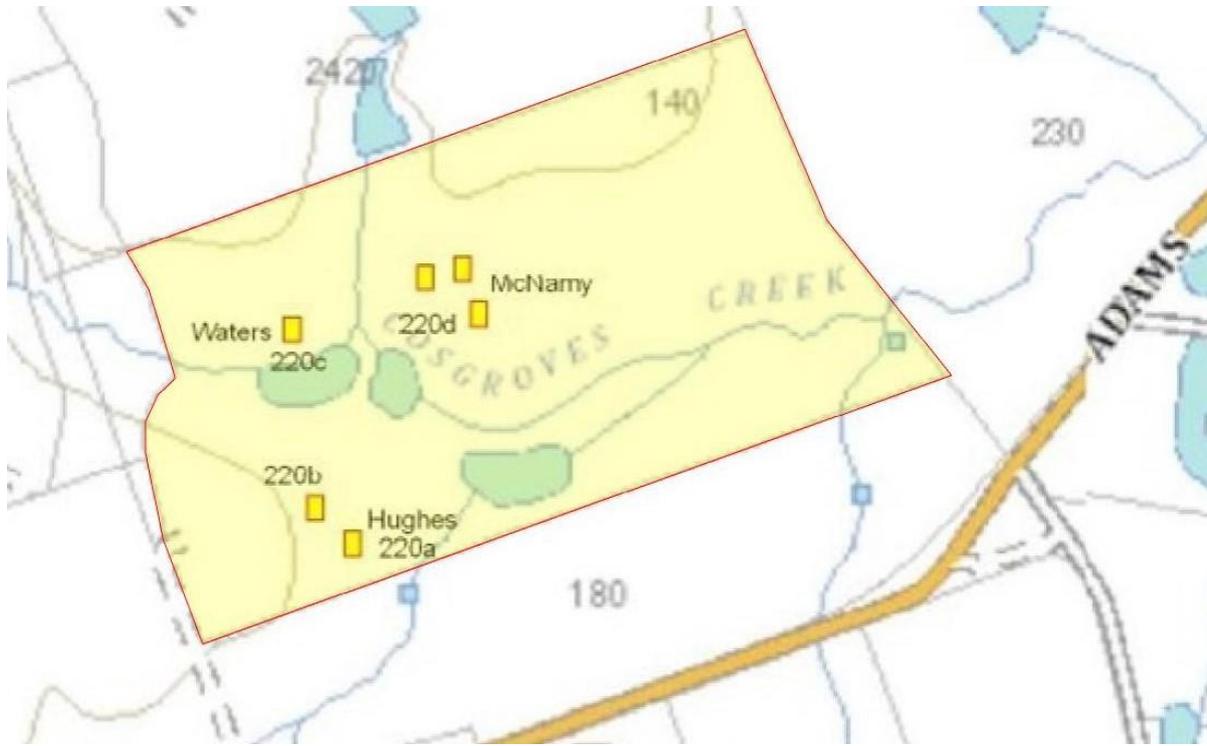
Previous Studies & References

TNR

Heritage Inventory Sheet

Site ID No.	220		
Item Name	Hughes Farm		
Address	140 Adams Road, Luddenham		
Lot/Section/DP	Lot 3 DP1240511		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	Potential archaeological sites	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

220a Hughes farmstead pre-1859 – currently paddock

220b Dairy (timber slab) - standing structure with associated cistern located at the rear of the main farmhouse

220c Waters Farm – pre-1859. Two buildings on single property – site now a paddock

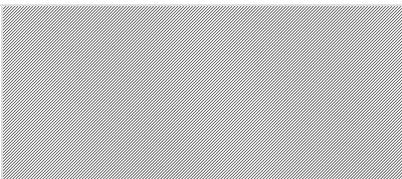
220d McNamy Farm – pre-1859 - site now a paddock

Historical Notes

- This site contains several structures of historical relevance.
- The Hughes Farm (site), constructed before 1859.
- The dairy that still remains as a standing structure with an associated cistern.
- The Waters Farm (site) built before 1859, that contained two buildings on a single property.
- The McNamy Farm (site), constructed before 1859.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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<p>Conservation management documentation should be prepared and implemented for heritage management on this site.</p>	<p>The condition of this item is poor. Condition and maintenance should be monitored.</p>	
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Other recommendations and/or comments:

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Previous Studies & References

GML 1997)

(WSA EIS)

Heritage Inventory Sheet

Site ID No.	221		
Item Name	Allen Farm		
Address	145 Adams Road, Luddenham		
Lot/Section/DP	Lot 5 DP250030		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site now a well-maintained grazing paddock.

Historical Notes

- The Allen Farm site is a pre-1859 tenant farm consisting of the main homestead and an outbuilding.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

Site Images

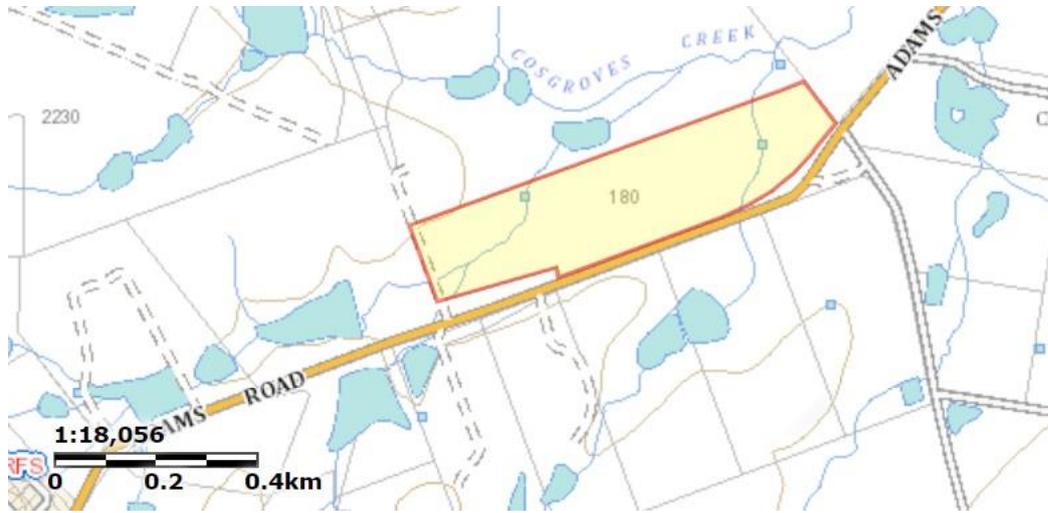


(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	222		
Item Name	Roots Farm		
Address	180 Adams Road, Luddenham		
Lot/Section/DP	Lot 30 DP1251450		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Paddock – partly covered by scrub.

Historical Notes

- Roots Farm is the site of a pre-1859 farm complex.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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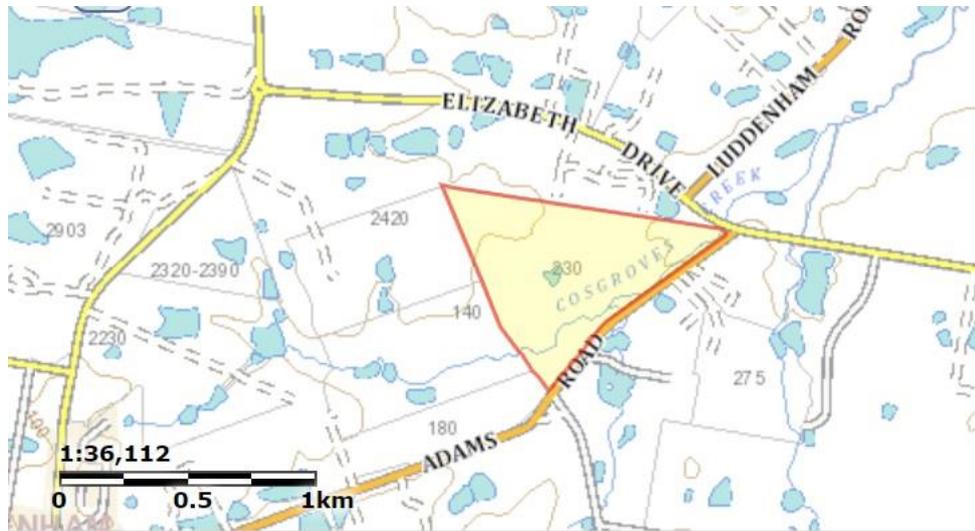
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	223		
Item Name	Howlett Farm site		
Address	230 Adams Road, Luddenham		
Lot/Section/DP	Lot 106 DP846962		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site now a paddock that appears to have been ripped – archaeological remains likely to have been compromised.

Historical Notes

- Howlett Farm site was constructed prior to 1859 and consists of a homestead and outbuilding.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	224		
Item Name	Magee's farm		
Address	Adams Road Luddenham		
Lot/Section/DP	Portion of road reserve intersection of Adams Road and Anton Road, Luddenham		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site now covered by trees and low scrub.

Historical Notes

- Magee's farm is the site of a cottage constructed before 1906.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).

The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	225		
Item Name	Former Luddenham Post Office		
Address	3077 The Northern Road, Luddenham		
Lot/Section/DP	Lot 2 DP510238		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is likely to have been compromised.

Historical Notes

- Site of former Luddenham Post Office opened in 1872. The building was demolished between 1965 and 1986.
- A post office was an essential part of establishing settlements, as they play an essential role in development of communication services not only within the town, but the surrounding area. The establishment of a post office also meant that a settlement was a hub that had the

- established infrastructure and population to accommodate the addition of a post office, reflecting the faith people had in the Luddenham Village.
- Between 1865 and 1890, one hundred and sixty nine post offices and telegraph offices were built and maintained by the Colonial Architects Office.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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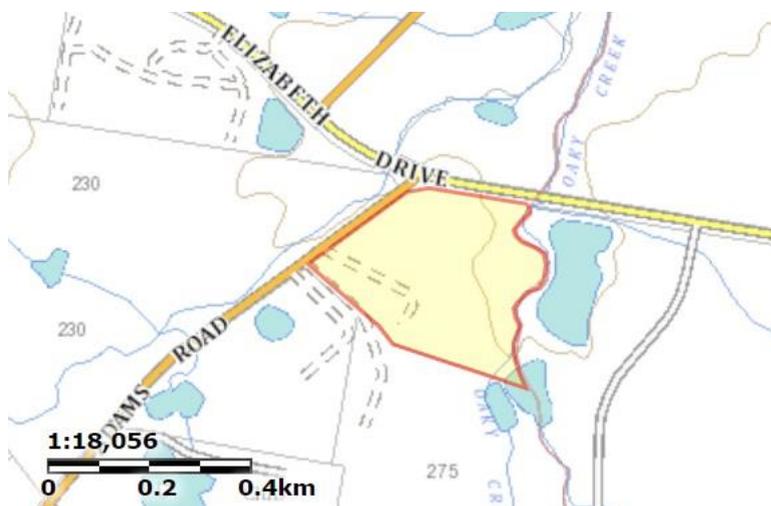
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	226		
Item Name	Adam's farm		
Address	2470 Elizabeth Drive, Luddenham		
Lot/Section/DP	Lot 281 DP571171		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential extant structures.	
	Level 2	Potential archaeological site	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site occupied by a late nineteenth or early twentieth century cottage as well as later outbuildings and dwellings.

Historical Notes

- The site was a cottage that was constructed prior to 1906.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).

Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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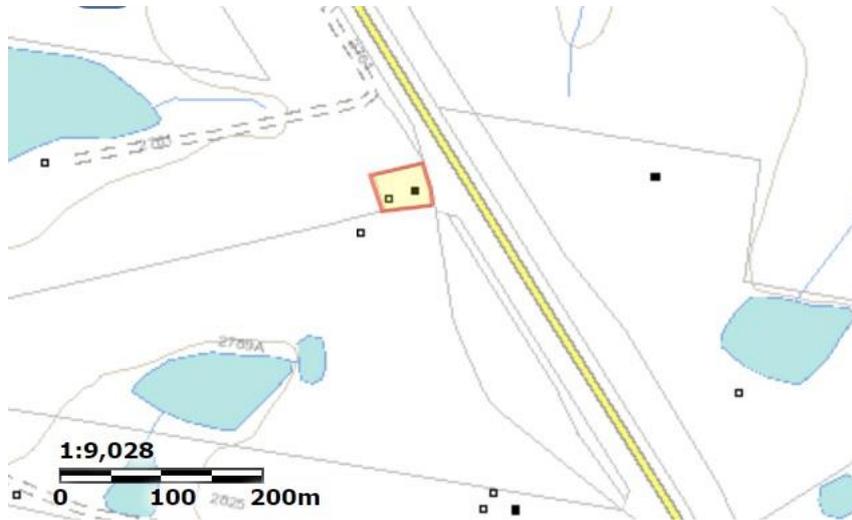
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S21		
Item Name	Dawe's (?) cottage		
Address	2785-2787 The Northern Road, Luddenham		
Lot/Section/DP	Lot 502 DP580982		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard cottage with mixed hipped roof with gablets on ends and over front entry.

Historical Notes

- Pre-1906 cottage

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

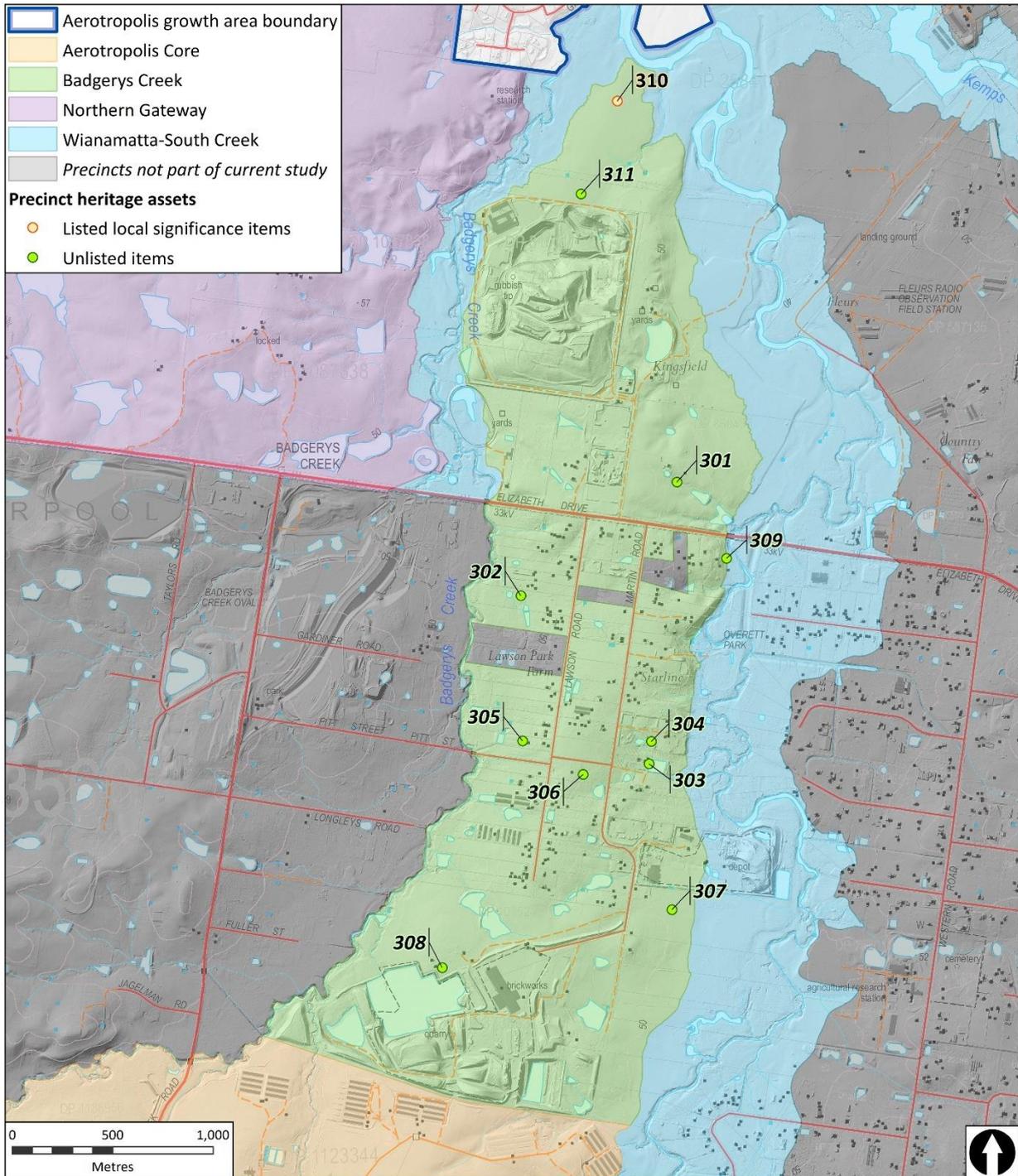
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Site Images



(Source: Extent Heritage, 2020)

Badgerys Creek Precinct



Heritage items sites within and adjacent to the Badgerys Creek Precinct

Heritage Inventory Sheet

Site ID No.	301		
Item Name	Exeter House		
Address	1669-1723 Elizabeth Drive, Badgerys Creek		
Lot/Section/DP	Lot 5 DP860456		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site has been subject to recent modifications – some plantings and fence lines as well as the site of Exeter House may survive.

Historical Notes

- Exeter House was the residence of James Badgery in approximately 1810. The lands owned by Badgery and his descendants are the source of the name Badgery's Creek.
- Badgery was a racing enthusiast and stud-master of some skill. Badgery, along with William Emmett and Nicholas Bayly played a notable role in the development of the racing industry in NSW.
- The main house may have been demolished prior to 1974 at which time it was partially excavated in a search for relics.
- An ancillary residence remained intact until its removal in 2010

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

Heritage Inventory Sheet

Site ID No.	302		
Item Name	Stainton homestead		
Address	75 Lawson Road, Badgerys Creek		
Lot/Section/DP	Lot 5 DP3050		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is now a turfed yard attached to a dwelling.

Historical Notes

- The site was developed before 1859, with some indicators that it may be closer to 1812. The site could be the location of Thomas Matcham Pitt's homestead on 'Nelson and Bronte' Farm, which was demolished between 1955 and 1961.
- Thomas Matcham Pitt arrived in Australia in 1801 at twenty years of age with his mother, Mary Pitt, and three sisters. As the only surviving son, Thomas and his mother were both granted 100 acres of land on adjoining grants.
- At the time of his death in 1821, Thomas Matcham Pitt owned 400 acres of land at Kurrajong.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Other recommendations and/or comments:

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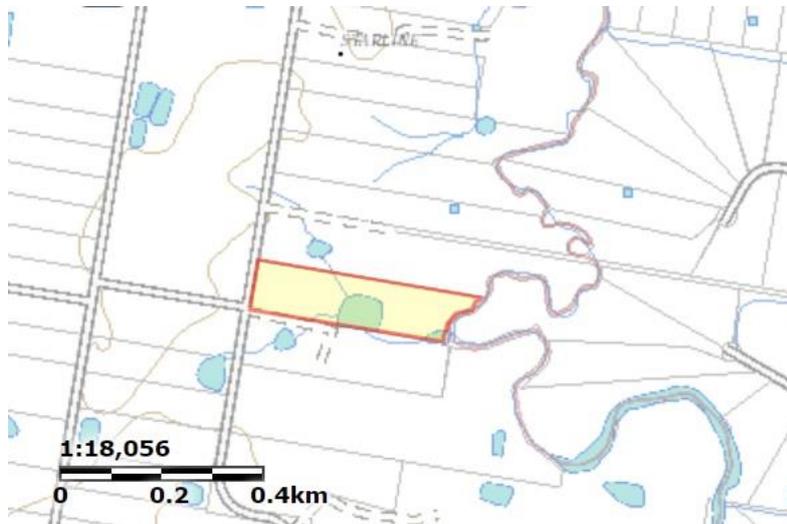
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	303		
Item Name	Braithwaite homestead		
Address	150 Martin Road, Badgerys Creek		
Lot/Section/DP	Lot 49 DP3050		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site has been subject to intensive tilling – any archaeological remains are likely to have been compromised.

Historical Notes

- The site was a homestead that was built prior to 189 and occupied by the Braithwaite family.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	304		
Item Name	Cottage		
Address	140 Martin Road, Badgerys Creek		
Lot/Section/DP	Lot 48 DP3050		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site now a heavy vehicle storage yard with hardstand over most of the property – archaeological remains associated with the cottage may have been compromised.

Historical Notes

- The cottage that stands on the site was constructed prior to 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Other recommendations and/or comments:

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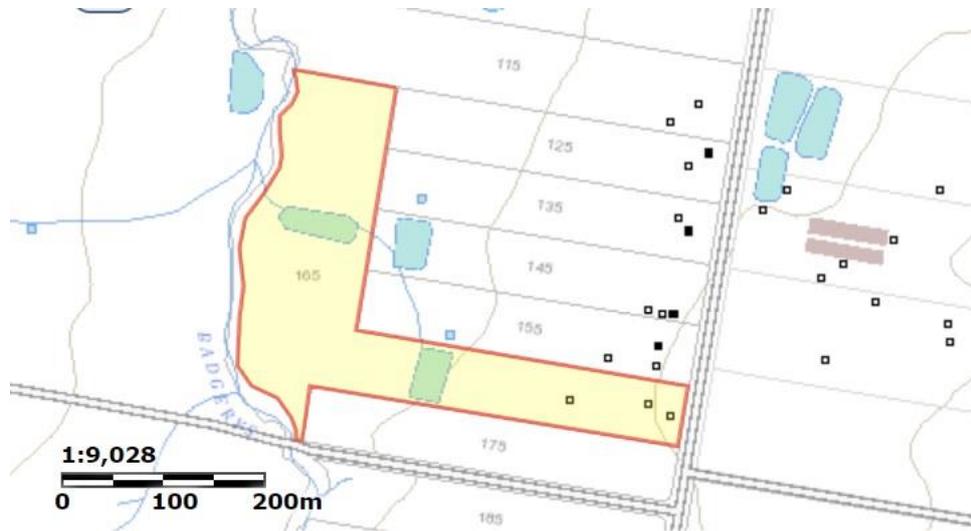
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	305		
Item Name	Cottage		
Address	165 Lawson Road, Badgerys Creek		
Lot/Section/DP	Lot 5 DP226912		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Fibro cottage with broken hipped roof over a possibly enclosed verandah, gable roof over projected front wing room.

Historical Notes

- The site is a cottage erected before 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Site Images



(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	306		
Item Name	Unidentified building site		
Address	140 Lawson Road, Badgerys Creek		
Lot/Section/DP	Lot 29 DP3050		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site covered by dense timber interspersed with scrub.

Historical Notes

- This unidentified building site is home a structure which was constructed prior to 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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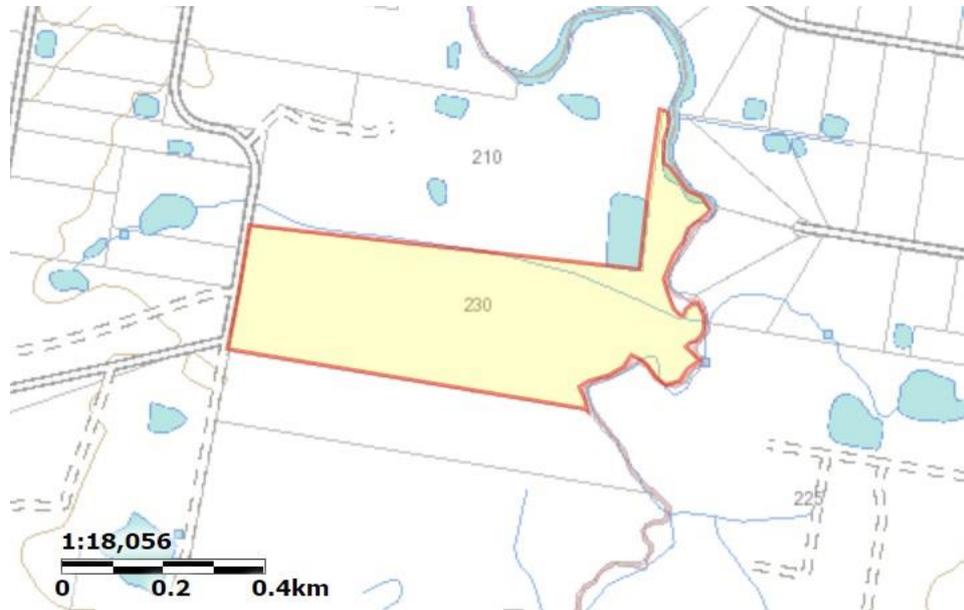
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	307		
Item Name	Unidentified building site		
Address	230 Martin Road, Badgerys Creek		
Lot/Section/DP	Lot A DP406215		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is now a paddock.

Historical Notes

- This is the site of an unidentified structure built before 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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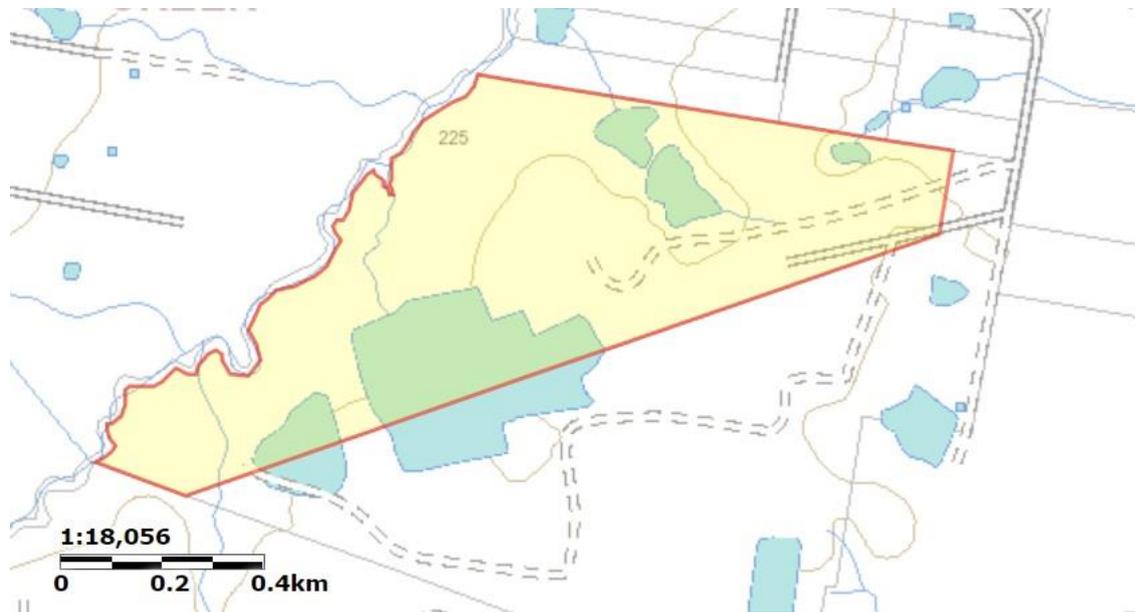
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	308		
Item Name	Farm complex		
Address	225 Martin Road, Badgerys Creek		
Lot/Section/DP	Lot 1 DP1035249		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential extant structures	
	Level 2	Potential archaeological site	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

A number of farm buildings of undetermined date are present in two concentrations – the remainder of the site is now a paddock

Historical Notes

- The site contains a farm complex that may have been constructed prior to 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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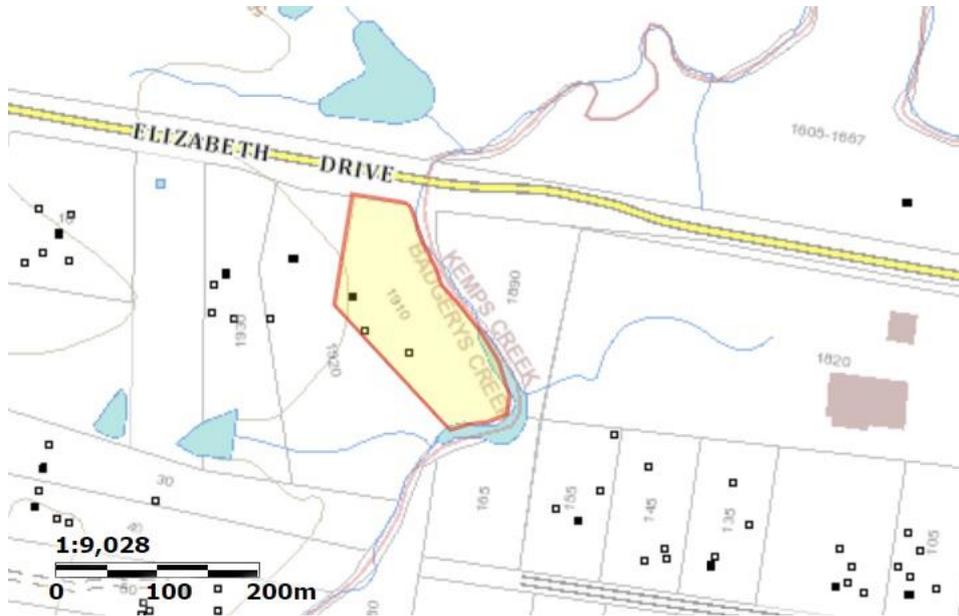
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	309		
Item Name	Unidentified building site		
Address	1910 Elizabeth Drive, Badgerys Creek		
Lot/Section/DP	Lot 2 DP553886		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Turfed yard attached to dwelling.

Historical Notes

- This is the site of an unidentified building constructed prior to 1917.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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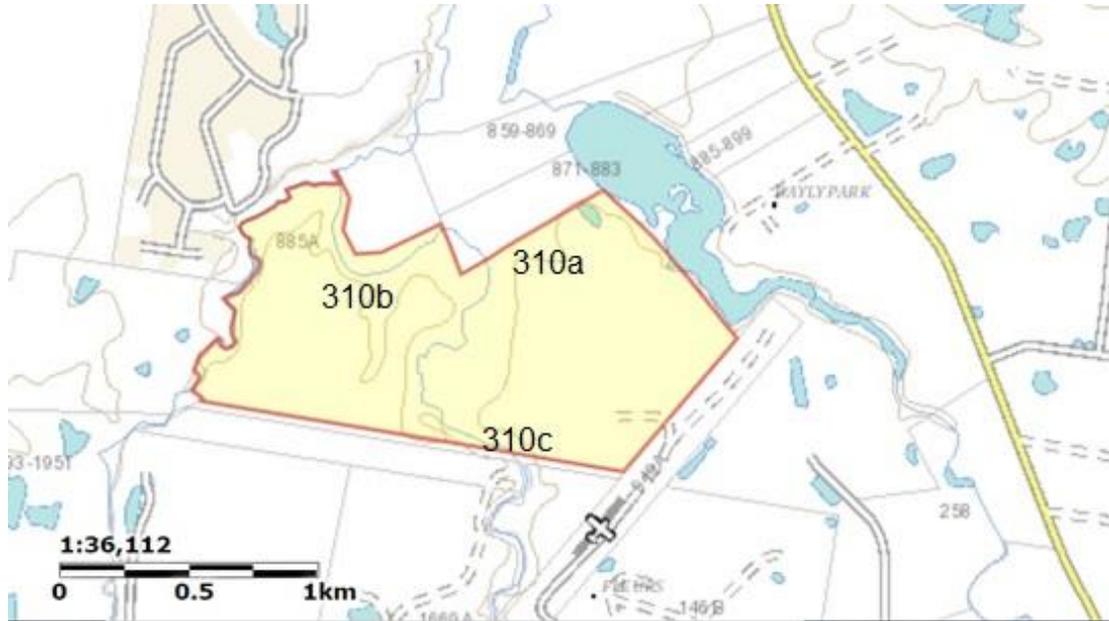
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	310		
Item Name	Fleurs Radio Telescope Site		
Address	885A Mamre Road, Kemps Creek		
Lot/Section/DP	Lot 21 DP258414		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	832
	Heritage Study		
	National Trust Australia Register		
Significance Level	STATE/LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	Potential archaeological sites, landscape elements	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item may meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item may meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

310a A number of buildings, remains of antennae, antenna footing trenches, concrete plinths, cabling, signal boxes, and demolition material present.

310b hut (possibly nineteenth century) archaeological site – visible remains on surface.

310c former bridge site

Historical Notes

- Fleurs Radio Telescope site was constructed in 1954 and operated through to 1988. At the time of its construction, Fleurs Radio Telescope was considered one of the world's leading radio astronomy field stations. Much of this equipment was relocated for continuing research in 1988.
- The site utilised three innovative cross-type radio telescopes, the Mills Cross, Shain Cross and the Chris Cross.
- While most of the equipment has been removed from the site, there are several structures which remain. The structure for the Mills and Shain telescopes, the bases of the Chris Cross telescopes and the dishes of the Fleurs Synthesis telescope still remain at the site.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(Penrith Heritage Study 2007)

(M12 EIS)

(Gorman 2018)

Site Images



310b



310c

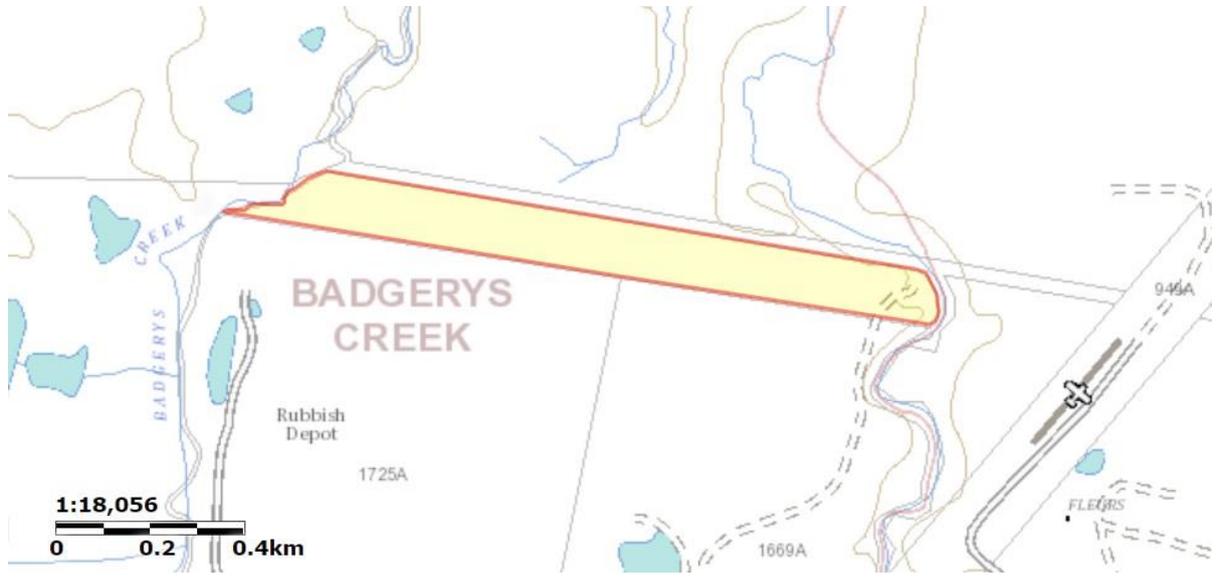


(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	311		
Item Name	Exeter Farms Archaeological Site (Artefact Scatter and Trees)		
Address	885A Mamre Road, Kemps Creek		
Lot/Section/DP	Lot 1 DP74574		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological sites	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

*A row of trees forming a hedge that may be Osage-orange trees (*Maclura pomifera*) and an associated artefact scatter.*

Historical Notes

- Although described as Exeter Farms site this may be associated with a tenant farm on Badgery's Exeter Farm and not with the Exeter Farms subdivision

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

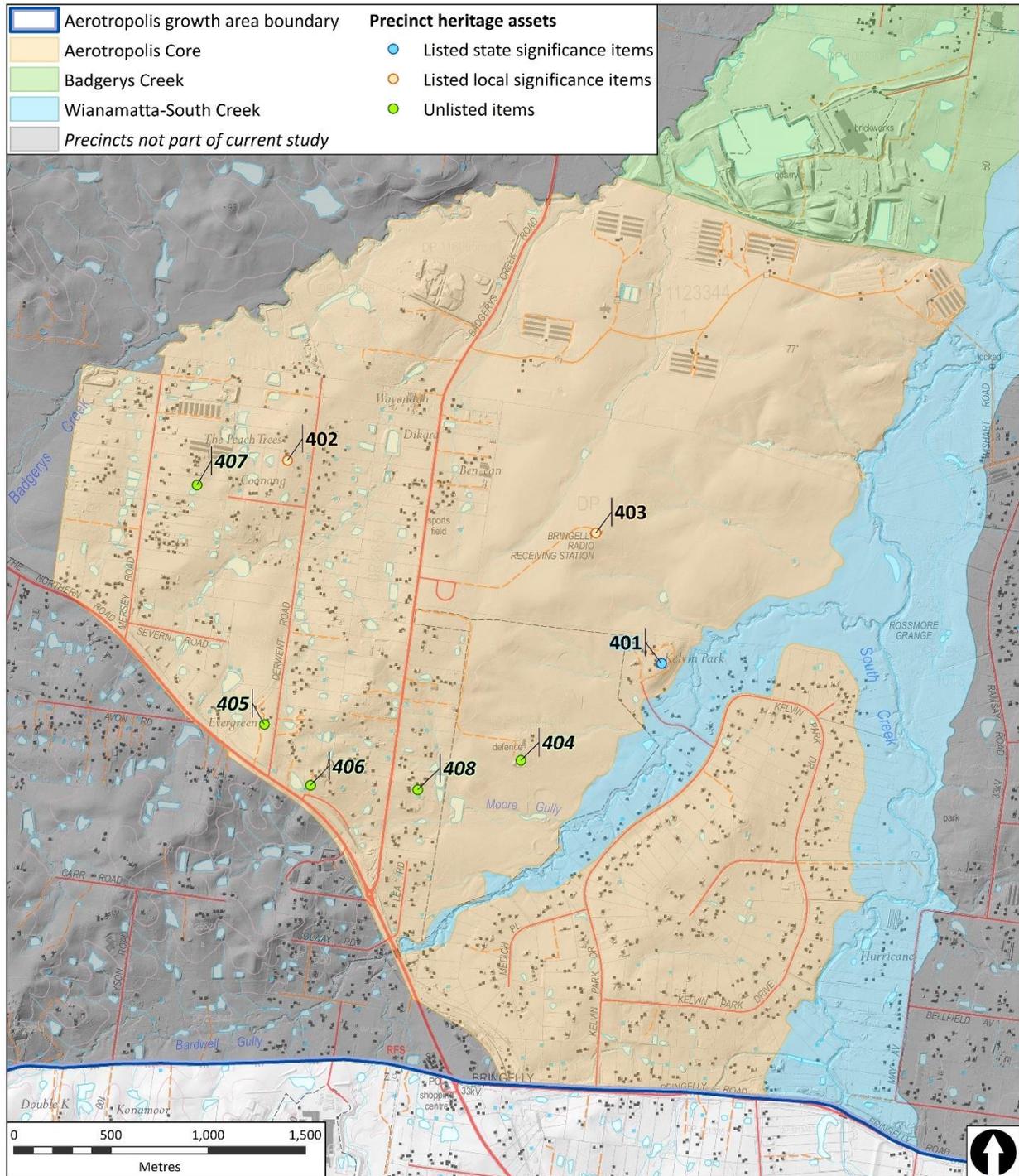
Other recommendations and/or comments:

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Previous Studies & References

(M12 EIS)

Aerotropolis Core Precinct

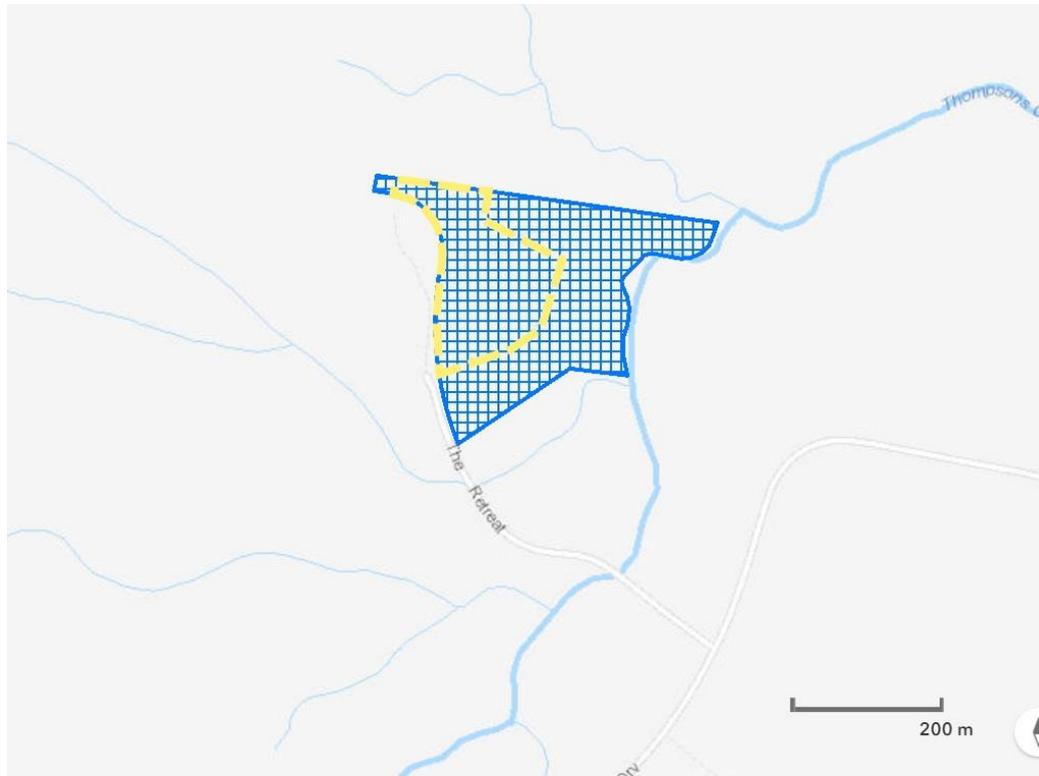


Heritage items sites within and adjacent to the Aerotropolis Core Precinct

Heritage Inventory Sheet

Site ID No.	401		
Item Name	Kelvin Park Group		
Address	30 The Retreat, Bringelly		
Lot/Section/DP	Lots 2711–2714 DP 1128906		
Statutory Listings	Register	Listing Title	Listing Number
	Register of the National Estate	Kelvin, Outbuildings and Curtilage	3298
	Heritage Act – State Heritage Register	Kelvin	00046
	Local Environmental Plan	Liverpool LEP	8
	Heritage Study		
	National Trust Australia Register	Kelvin	8643
Significance Level	STATE		
Site Type	Level 1	Extant structures	
	Level 2	Landscape, potential archaeological sites	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item may meet this criterion.
d) Social	The item may meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Kelvin Park Group, including site landscaping, homestead, kitchen wing, servant's quarters, coach house, 2 slab barns and other works and relics (formerly "The Retreat", "Cottage Vale", stables and lock-up).

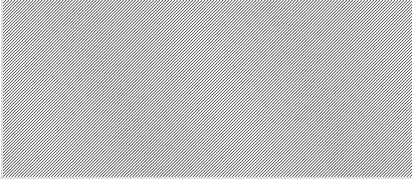
Historical Notes

- The Kelvin Park Group is a complex of early Colonial farm buildings, which serves as an example of an 1820's homestead and associated outbuildings.
- The land that Kelvin Park Group stands on was originally part of a 600 acre land grant to Thomas Laycock Jr in 1818 known as Bringelly. After his death in 1823 the property was sold the next year and has changed hands numerous times since.
- Thomas Laycock Jr's grant was one of several large grants made by Governor Lachlan Macquarie in the region. Macquarie saw the region as a new frontier with fertile soil and open forest and thought that these large grants would best develop the region.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.

Conservation management documentation should be prepared and implemented for heritage management on this site.

The condition of this item is poor. Condition and maintenance should be monitored.



Other recommendations and/or comments:

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Previous Studies & References

(WSA EIS)

Site Images



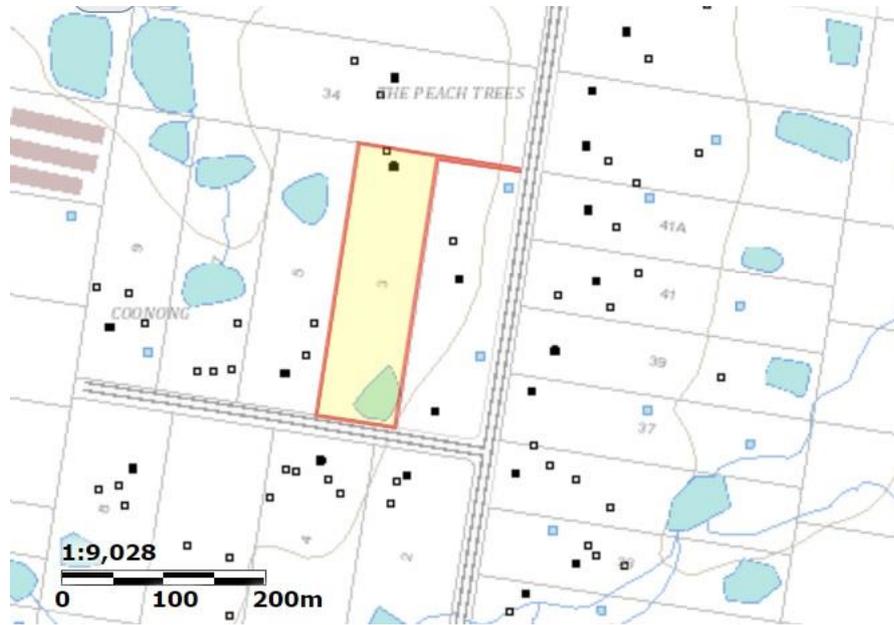


Source: Extent Heritage 2020

Heritage Inventory Sheet

Site ID No.	402		
Item Name	Dwelling and rural lot (Mt Pleasant)		
Address	3 Shannon Road, Bringelly		
Lot/Section/DP	Lot 44 DP 581187		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Liverpool LEP	6
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard house with galvanised broken hipped roof over deep wraparound verandah. Thick landscaping surrounding property, accessed by Derwent Road.

Historical Notes

- The structure of this location was constructed at an unknown date.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(WSA EIS)

Site Images

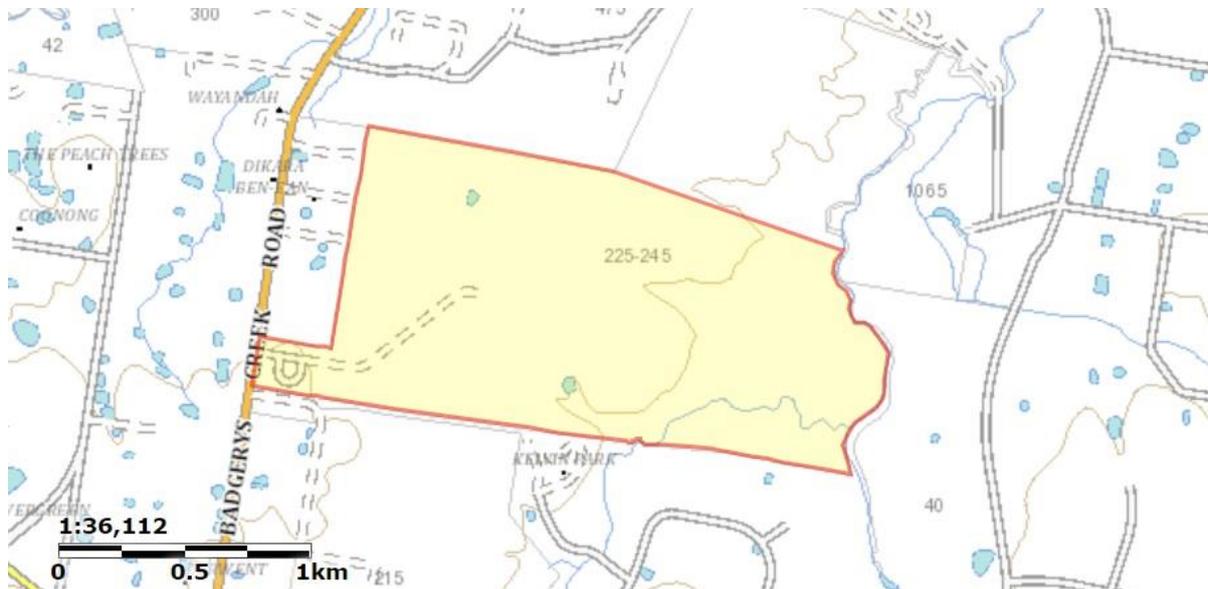


(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	403		
Item Name	Bringelly Radio Receiving Station Complex (also known as Former OTC site Group)		
Address	225-245 Badgerys Creek Road, Bringelly		
Lot/Section/DP	Lot 1 DP 109666		
Statutory Listings	Register	Listing Title	Listing Number
	Register of the National Estate	Bringelly Radio Receiving Station Complex	100263
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	Landscape, potential archaeological sites	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is currently a paddock – this has recently been heavily ploughed or ripped. There are some remnant roadways associated with the staff housing compound near the Badgerys Creek Road entrance.

Historical Notes

- Former OTC Site Group, including radio receiving station and site of former staff housing.
- Opened in 1955, The Bringelly Radio Receiving Station Complex formed an important part international telecommunications services into, through and out of Australia. The Bringelly station was one of only three pairs of public stations in Australia and the only receiving station in NSW.
- While the station was initially manned by staff housed at the facility, the station became fully automated by 1969, rendering the housing redundant. Some staff chose to continue living on premises even after this. By 1996, with the building in disrepair and the function of the receiving station being made increasingly redundant by satellite technology, the facility was decommissioned.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(WSA EIS)

Site Images





(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	404		
Item Name	RAAF Bringelly		
Address	215 Badgerys Creek Road, Bringelly		
Lot/Section/DP	Lot 10 DP1235662		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2	Potential archaeological sites	

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item may meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item may meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

*Site of nineteenth century structure now occupied by former RAAF Bringelly (aerial and structures).
Site of satellite airfield. Pre-1927 structure and extant OTC infrastructure.*

Historical Notes

- Once the site of a nineteenth century structure, the RAAF Bringelly receiving station was developed in the Second World War as an Emergency Landing Ground. This mostly amounted to a grassy strip with negligible associated infrastructure.
- In 1955 the RAAF Radio Receiving Station was constructed adjacent to the OTC station. The RAAF station's purpose was to receive international radio telegrams and telephone calls as well as contact ships at sea.
- This station continued to operate in this manner until the late 1980s when advancement in communications technology rendered the station obsolete.
- The main structure is still present and well-maintained – most ancillary buildings and structures have been removed

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	405		
Item Name	'Evergreen' Homestead		
Address	1432 The Northern Road, Bringelly (addresses Derwent Road, Bringelly)		
Lot/Section/DP	Lot 6 DP1217247		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Weatherboard original building with fibro extensions to side and front.

Historical Notes

- The site is a cottage with an unknown date of construction.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

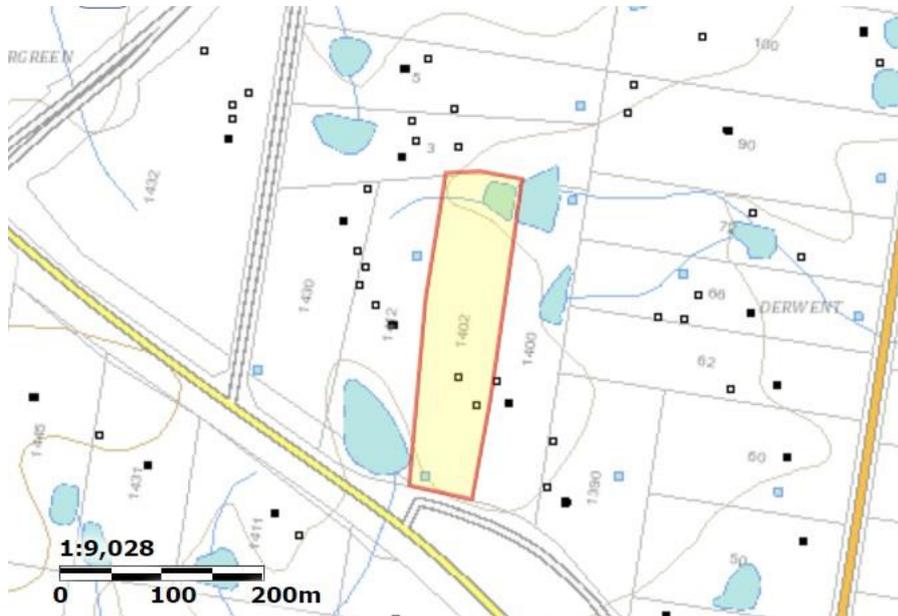
(GML 1997)

(WSA EIS)

Heritage Inventory Sheet

Site ID No.	406		
Item Name	Unidentified building site		
Address	1402 The Northern Road, Bringelly		
Lot/Section/DP	Lot 2 DP233269		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Modern structure that may have been constructed around, or on the site of an early twentieth century cottage

Historical Notes

- A pre-1927 building structure may still survive within the existing cottage. Or the structure has been replaced by an extant structure.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Site Images

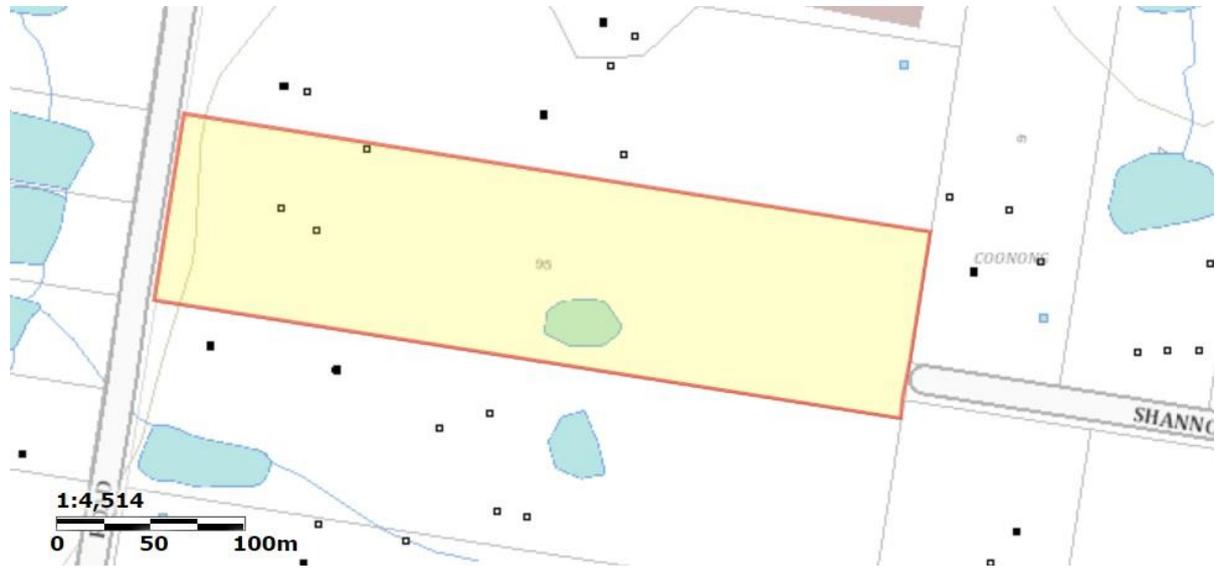


(Source: Extent Heritage, 2020)

Heritage Inventory Sheet

Site ID No.	407		
Item Name	Former slab cottage		
Address	95 Mersey Road, Bringelly		
Lot/Section/DP	Lot 11 Sec 2 DP2650		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site consists of heavy disturbed land interspersed with trees.

Historical Notes

- The site was identified in 1998, however, the building was demolished before 2002.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	408		
Item Name	Farmstead ('ruin' in 1955)		
Address	85 & 95 Badgerys Creek Road, Bringelly		
Lot/Section/DP	Lot 4 & Lot 3 DP244113		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site is currently a paddock with adjacent dwellings.

Historical Notes

- A farmstead constructed following the 1892 Cowpasture Farms subdivision.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

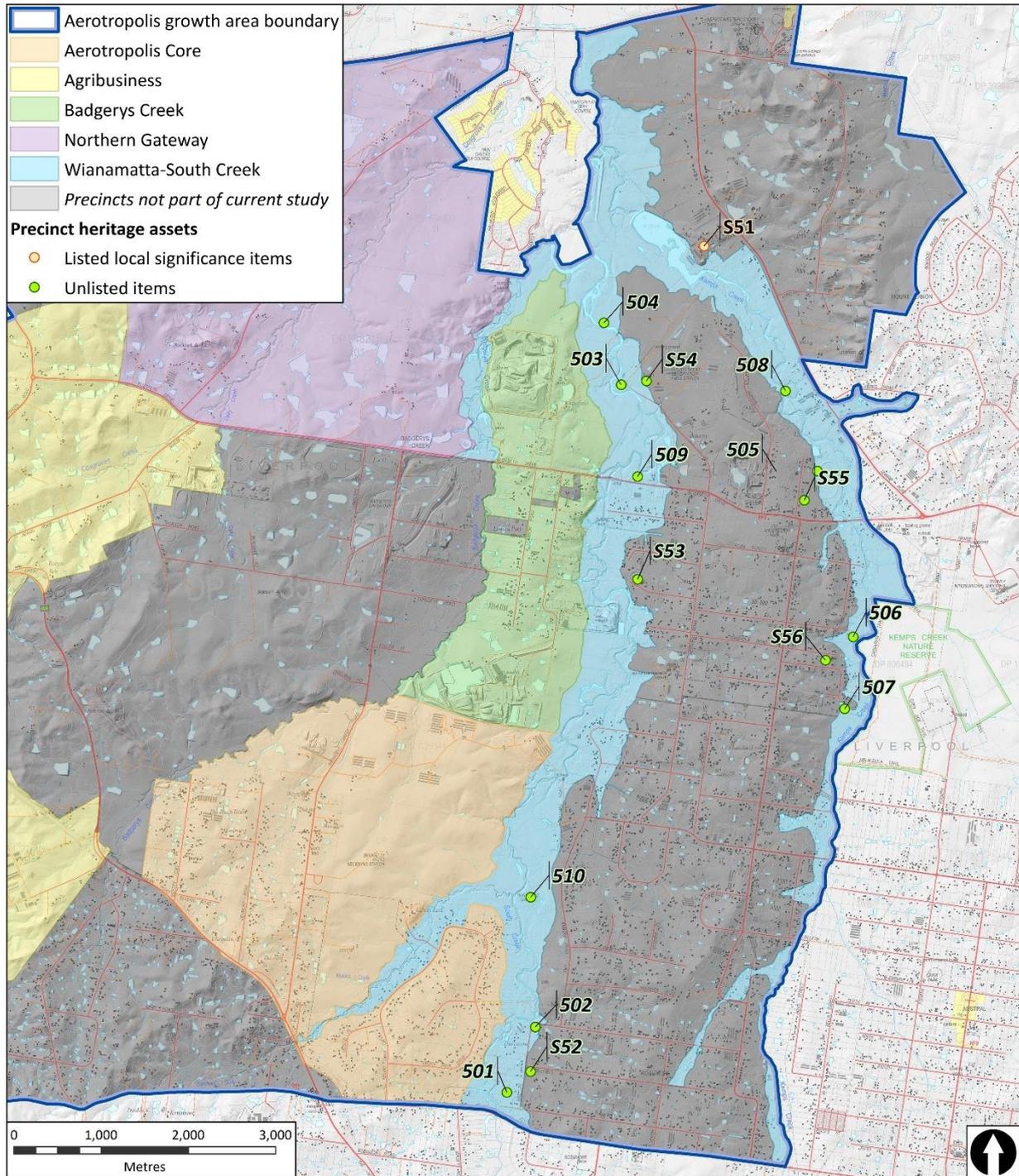
Other recommendations and/or comments:

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Previous Studies & References

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Wianamatta - South Creek Precinct

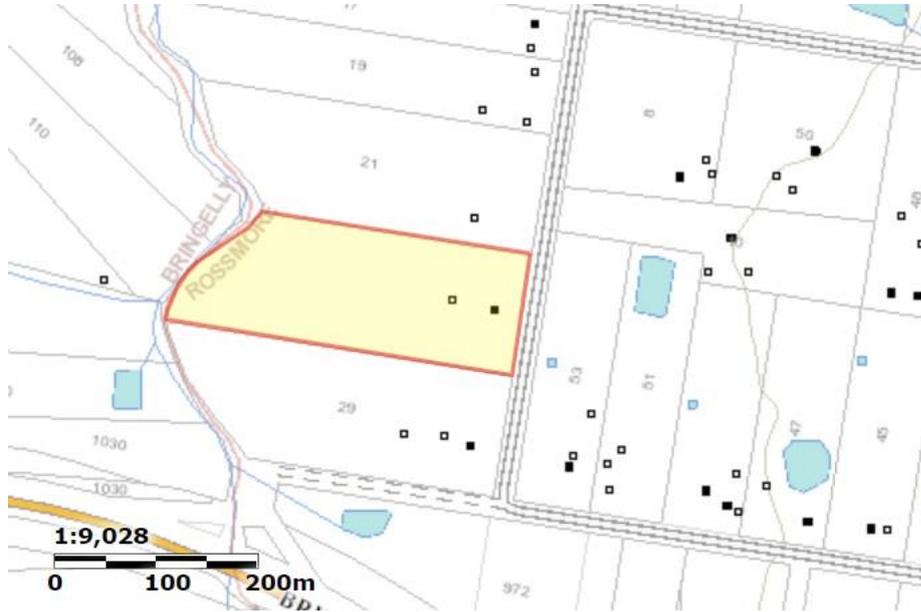


Heritage items sites within and adjacent to the Wianamatta-South Creek Precinct

Heritage Inventory Sheet

Site ID No.	501		
Item Name	Butter Factory (site)		
Address	25 May Avenue, Rossmore		
Lot/Section/DP	Lot 24 DP2217		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site partly occupied by modern agricultural structures.

Historical Notes

- The site is a pre-1893 butter factory associated with the former 'Bellfield' estate and later Rossmore Farms.
- Rossmore, situated adjacent to the Bringelly Road, was the only Government town reserve in the district.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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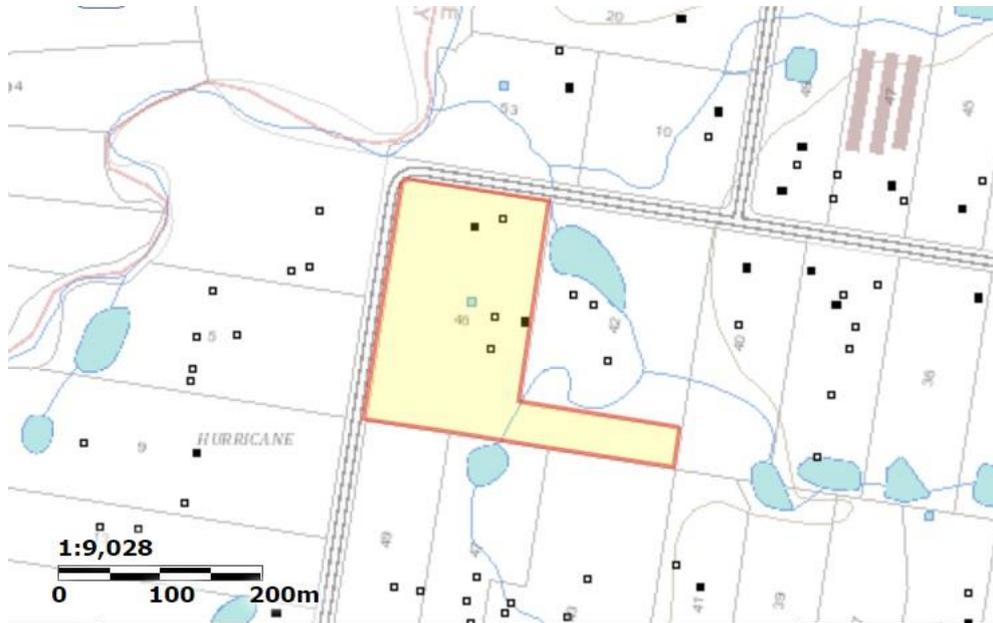
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	502		
Item Name	Cottage site		
Address	46 Wynyard Avenue, Rossmore		
Lot/Section/DP	Lot 11 DP788314		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Turfed yard attached to dwelling.

Historical Notes

- The site of a cottage which has been constructed before 1927.

- Rossmore, situated adjacent to the Bringelly Road, was the only Government town reserve in the district.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	503		
Item Name	Fleurs Aerodrome		
Address	949A Mamre Road, Kemps Creek		
Lot/Section/DP	Lot 2 DP88836		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant landscape feature	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Operational grass airstrip.

Historical Notes

- A parent airfield constructed in 1942, with three sections of the former airstrip still present.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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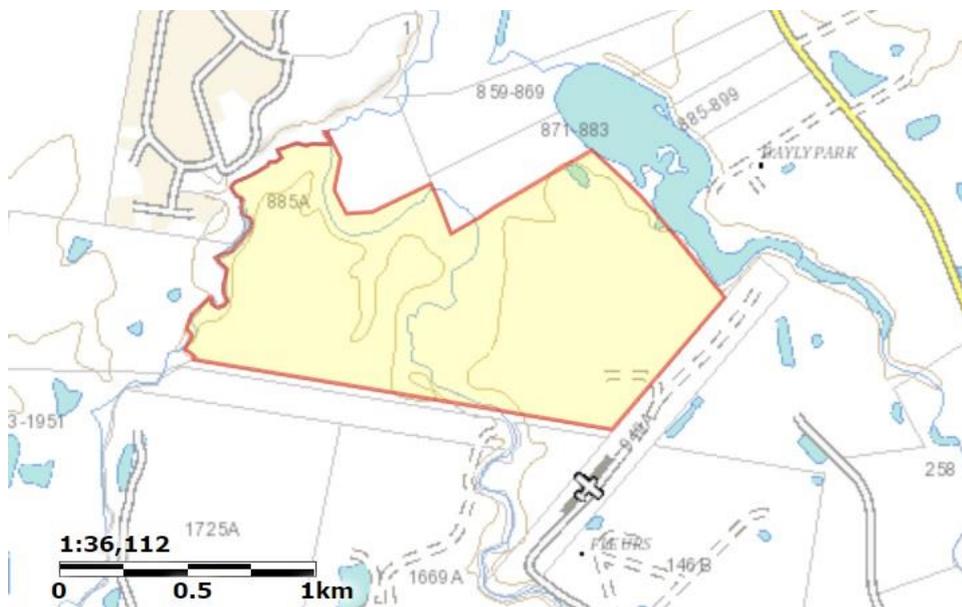
Previous Studies & References

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	504		
Item Name	South Creek Bridge		
Address	885A Mamre Road, Kemps Creek		
Lot/Section/DP	Lot 21 DP258414		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structure	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Remains of bridge timbers in creek.

Historical Notes

- A bridge of an unknown date. It is possibly associated with the operation of the Fleurs Estate.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	505		
Item Name	Potential archaeological site Artefact Scatter, Salisbury Avenue		
Address	12-20 Salisbury Avenue, Kemps Creek		
Lot/Section/DP	Lot 2 DP736951		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

A diffuse scatter of artefacts east of Salisbury Avenue.

Historical Notes

- This site contains a scattering of artefacts that may be a potential archaeological site.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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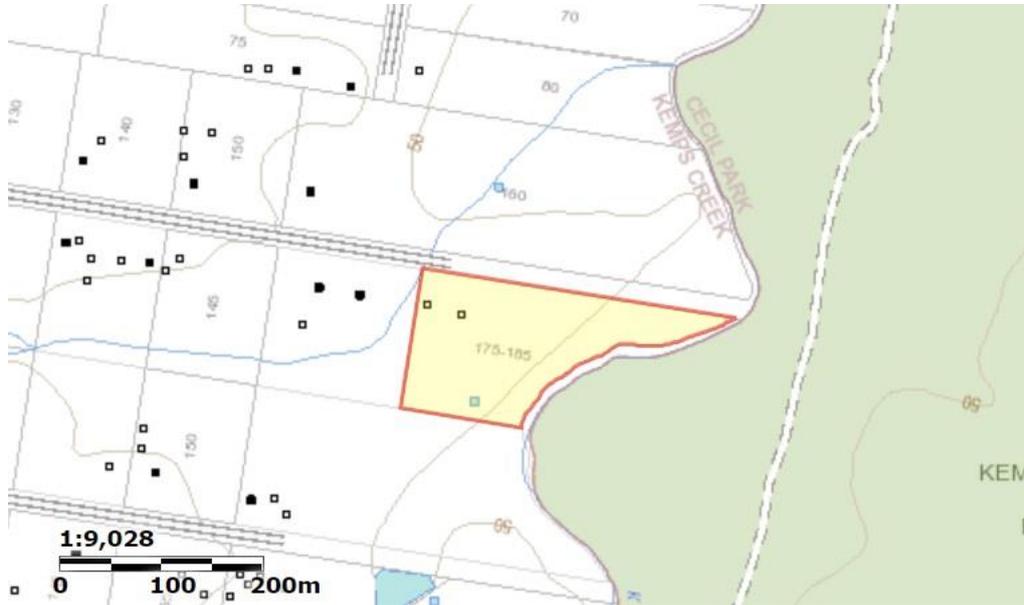
Previous Studies & References

(M12 EIS)

Heritage Inventory Sheet

Site ID No.	506		
Item Name	Building and tank site		
Address	175-185 Exeter Road, Kempas Creek		
Lot/Section/DP	Lot 2622 DP811282		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site heavily compromised – tree growth and later agricultural activity.

Historical Notes

- A pre-1917 structure that is immediately adjacent to a creek

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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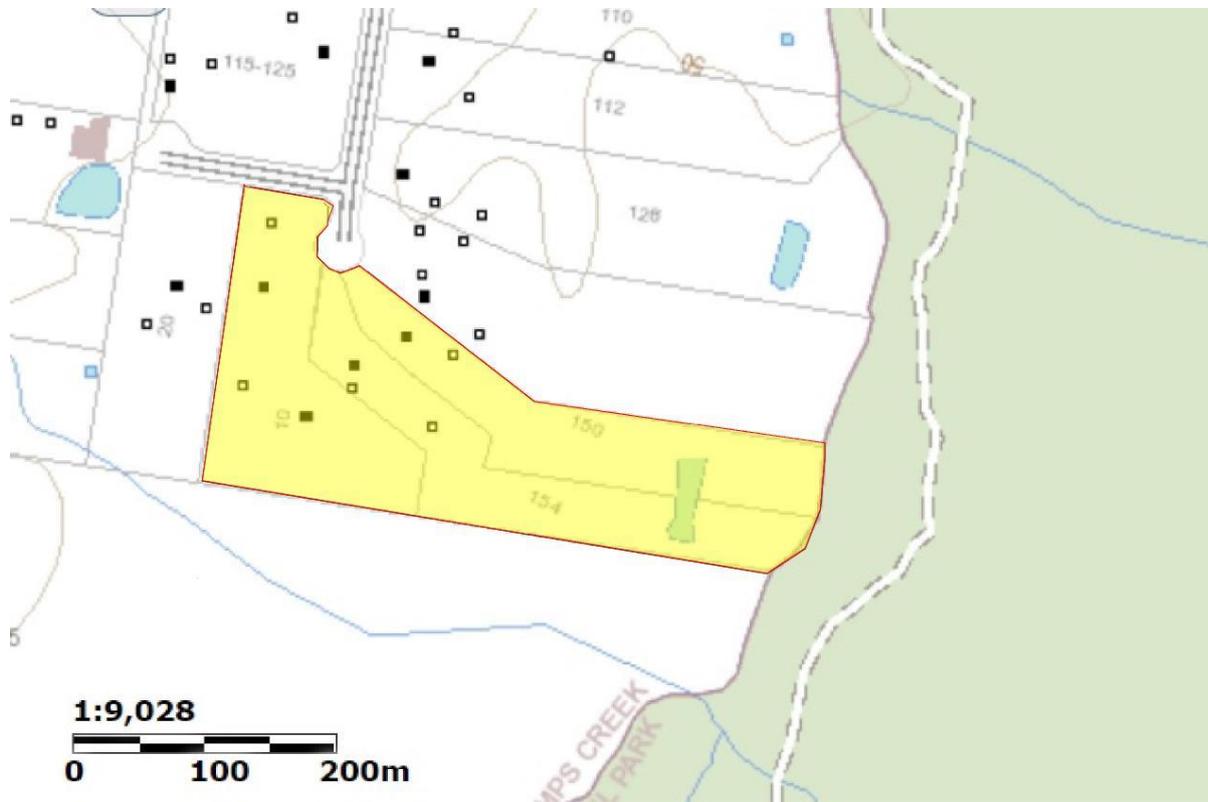
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	507		
Item Name	Hut and yards site		
Address	150 Floribunda Road, Kemps Creek, 154 Floribunda Road, Kemps Creek, 10 Grants Close, Kemps Creek		
Lot/Section/DP	Lot 141 DP1070752, Lot 142 DP1070752, Lot 15 DP733714,		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

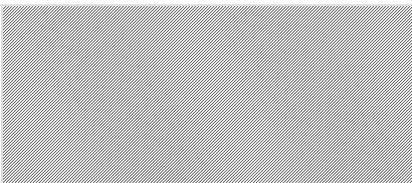
Site occupied by three suburban dwellings – any archaeological remains are likely to have been compromised.

Historical Notes

- This property first was granted to Michael Grant in 1823. The property later was the property of Richard Driver.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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<p>Conservation management documentation should be prepared and implemented for heritage management on this site.</p>	<p>The condition of this item is poor. Condition and maintenance should be monitored.</p>	
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Other recommendations and/or comments:

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Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	508		
Item Name	Bridge site		
Address	316 Clifton Avenue, Kemps Creek		
Lot/Section/DP	Lot 6 DP812284		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site heavily timbered.

Historical Notes

- The site is a bridge constructed prior to 1895.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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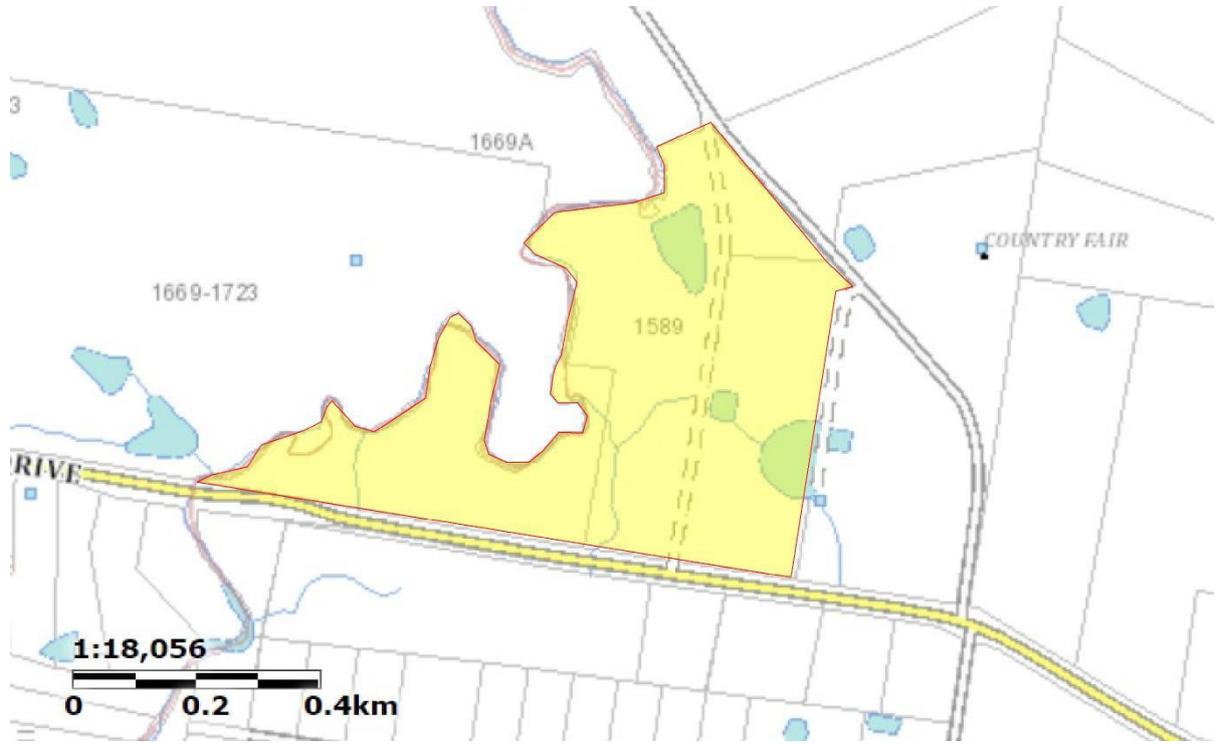
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	509		
Item Name	'Spotted Dog' Inn site		
Address	1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek		
Lot/Section/DP	Lots 1 and 3 DP255566 and Lot 21 DP601022		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item may meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site has been subject to intensive agricultural activity – archaeological remains are possibly compromised.

Historical Notes

- The 'Spotted Dog' Inn, which later changed its name to the 'Woodbine Cottage'. It was constructed prior to 1839 and occupied by the Badgery and Roberts families.
- James Badgery acquired the site for his son Andrew

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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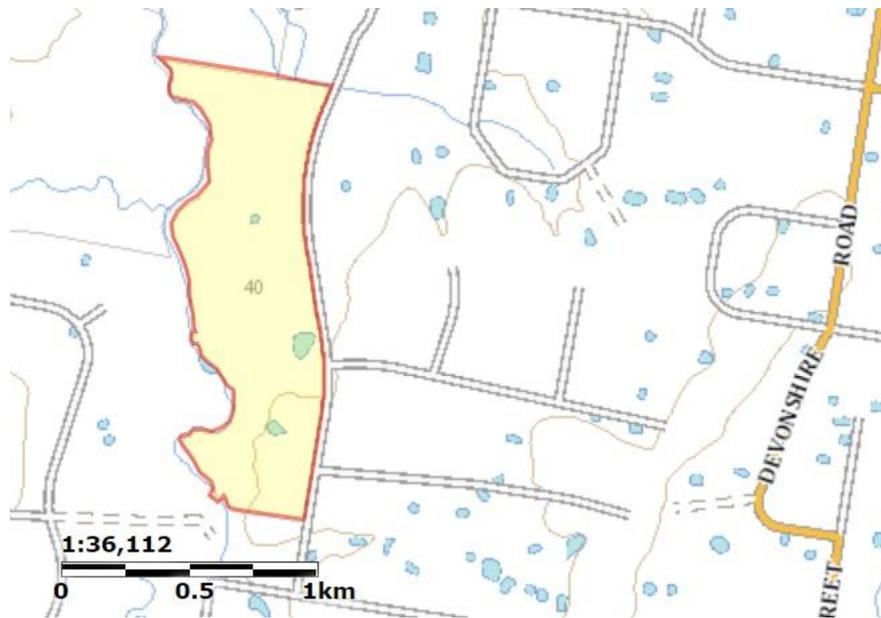
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	510		
Item Name	Unidentified building site		
Address	40 Ramsay Road, Rossmore		
Lot/Section/DP	Lot 1016 DP258344		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Paddock with interspersed stands of timber.

Historical Notes

- The site is an unidentified building which was built prior to 1927.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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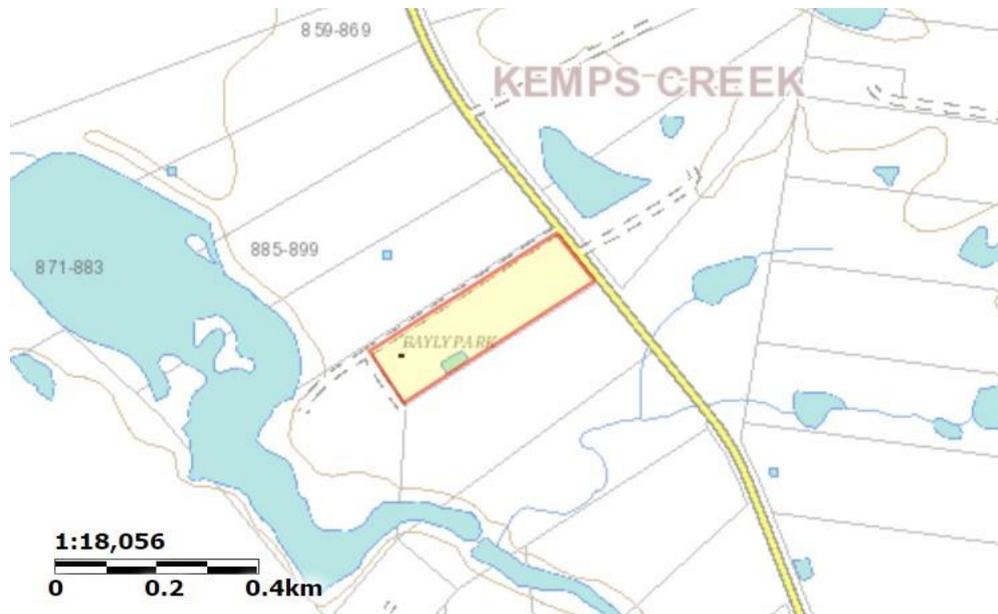
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S51		
Item Name	'Bayly Park' complex		
Address	919-929 Mamre Road, Kemps Creek		
Lot/Section/DP	Lot 35 DP258414		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan	Penrith LEP	104
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Extant structures	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Standing house and outbuildings – yard areas have been recently excavated to depth around the main dwelling.

Historical Notes

- By 1814 Nicholas Bayly had constructed a house described as a 'noble mansion with gardens and cultivated grounds.' The property was initially known as Bayly Park but later known as Fleurs.
- After Bayly's death in 1823, the property was bought by Richard Jones in 1826. Jones wished to be a pioneer in the wool industry by importing pure-bred Saxon sheep into Australia, which he kept at Fleurs.
- In the following years, Fleurs changed hands multiple times, until the land was subdivided in 1883 and later sold to land speculators.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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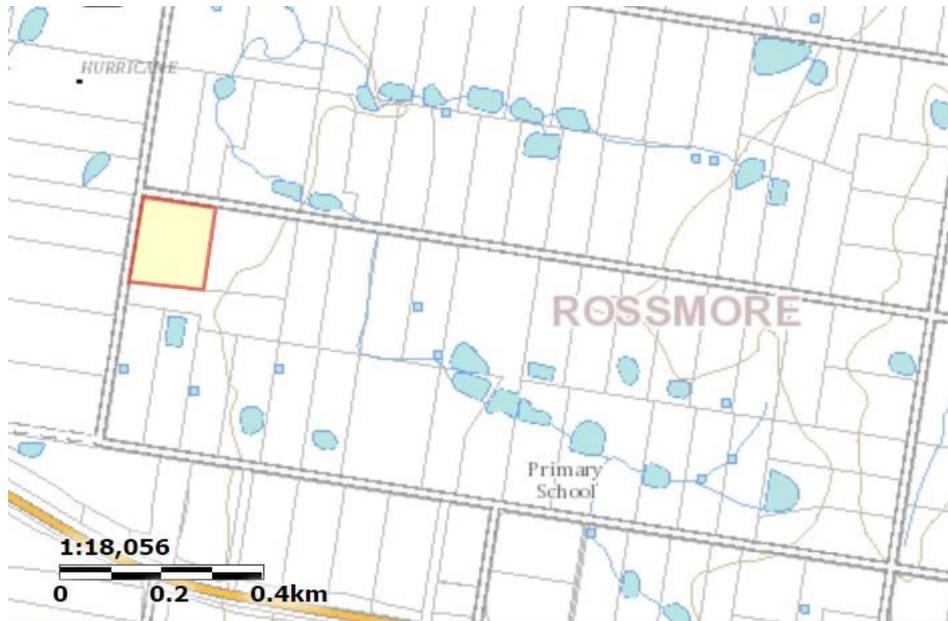
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S52		
Item Name	Cottage site		
Address	8 May Avenue, Rossmore		
Lot/Section/DP	Lot 1 DP531947		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Turfed yard attached to dwelling.

Historical Notes

- Site of a cottage constructed before 1927.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
Consider delisting as an individual item from the LEP.	Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).	Future development on this site must consider potential archaeological impacts.
Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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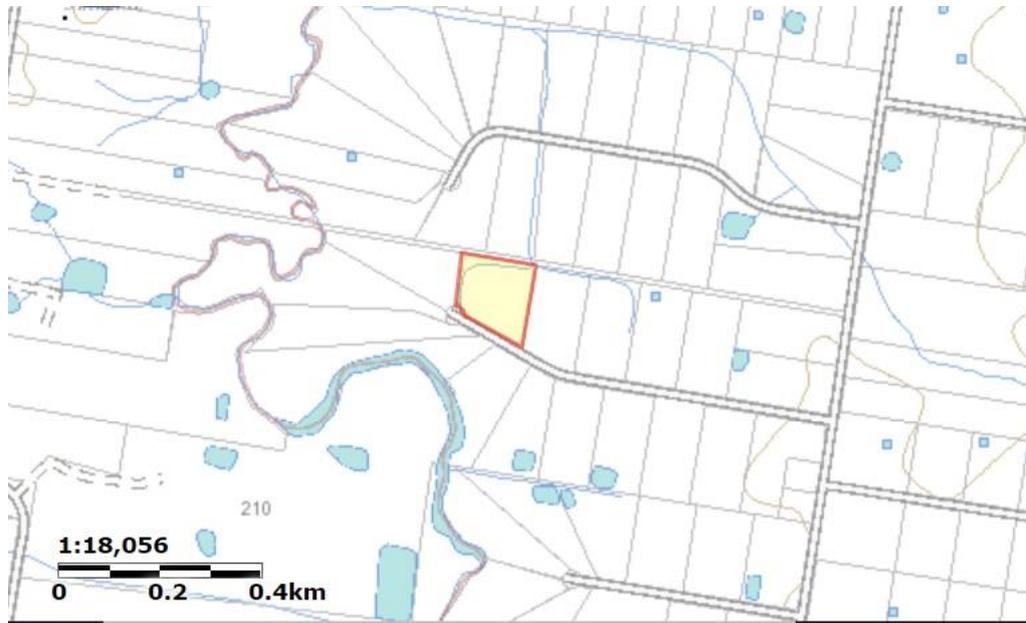
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S53		
Item Name	Homestead site		
Address	11 Turnbull Avenue, Kemps Creek		
Lot/Section/DP	Lot 7 DP739051		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site subject to significant disturbance and later building activity.

Historical Notes

The site is a homestead dating before 1899.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

Heritage Inventory Sheet

Site ID No.	S54		
Item Name	Homestead site		
Address	1468 Clifton Avenue, Kemps Creek		
Lot/Section/DP	Lot 1 DP587135		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Turfed yard attached to dwelling.

Historical Notes

- A nineteenth century farmhouse with outbuildings. While the residence has been demolished, some of the outbuildings may survive.
- This site was used as part of the operation of the Fleurs aerodrome during the Second World War.

Recommendations

Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item's current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
The heritage curtilage for this item should be revised/reduced.	There are heritage landscape elements and schemes that can be maintained.	Future uses for this item should be compatible with its historical functions/ associations.
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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Site images



(Source: Extent Heritage, 2020)

Surviving structure present during the Second World War

Heritage Inventory Sheet

Site ID No.	S55		
Item Name	Cottage site		
Address	22-66 Salisbury Avenue, Kemps Creek		
Lot/Section/DP	Lot 401 DP812923		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site has been subject to recent, intensive agricultural activity – archaeological remains are likely to have been compromised.

Historical Notes

- The site of a pre-1917 cottage.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
Maintain this item’s current heritage listing or inclusion within a Heritage Conservation Area	Unsympathetic alterations that detract from the cultural significance of the item can be removed.	Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
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Undertake additional research and assessment to determine physical condition and heritage significance.	New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements)	Neighbouring and wider precinct development should consider impacts to significant view corridors to and/or from heritage item.
Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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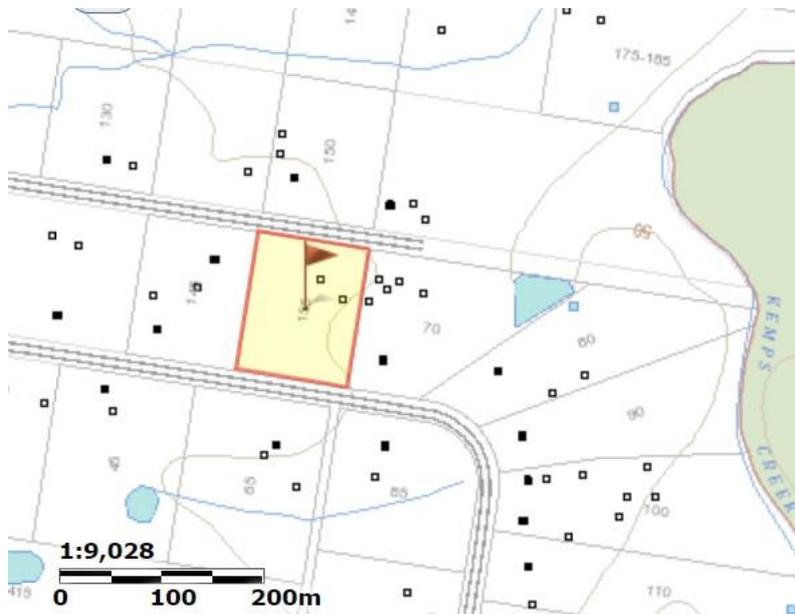
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S56		
Item Name	Unidentified building site		
Address	155 Tavistock Road, Kemps Creek		
Lot/Section/DP	Lot 50 B DP2566		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Bush block.

Historical Notes

- Site of a pre-1917 unidentified structure.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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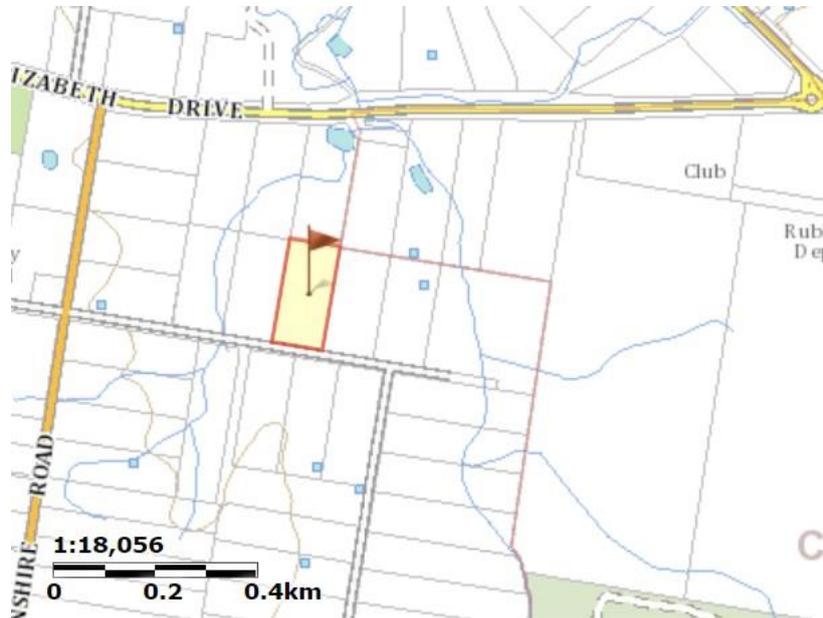
Previous Studies & References

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Heritage Inventory Sheet

Site ID No.	S57		
Item Name	'Cooloo' homestead		
Address	170 & 180 Cross Street, Kemps Creek		
Lot/Section/DP	Lot 24 & Lot 25 DP29832		
Statutory Listings	Register	Listing Title	Listing Number
	Heritage Act – State Heritage Register		
	Local Environmental Plan		
	Heritage Study		
	National Trust Australia Register		
Significance Level	LOCAL		
Site Type	Level 1	Potential archaeological site	
	Level 2		

Curtilage Map



Preliminary Statement of Significance

Criteria Assessment

a) Historic	The item may meet this criterion.
b) Associative	The item may meet this criterion.
c) Aesthetic/Technical	The item does not meet this criterion.
d) Social	The item does not meet this criterion.
e) Scientific	The item does not meet this criterion.
f) Rarity	The item does not meet this criterion.
g) Representativeness	The item may meet this criterion.

Physical Description

Site now covered by agricultural buildings.

Historical Notes

- The 'Cooloo' homestead consisted of the main homestead, as well as a complex of outbuildings and yards, constructed after 1823. Originally owned by Henry Marr the property changed hands several times before being demolished in 1955.

Recommendations		
Heritage Management	Planning controls – built and landscape elements	Planning controls – neighbouring and future development
This item should be considered for listing on a statutory register.	Original fabric is highly significant and should be maintained.	New neighbouring development should maintain the existing setting of the heritage item, (form, scale, bulk, setback and height).
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Conservation management documentation should be prepared and implemented for heritage management on this site.	The condition of this item is poor. Condition and maintenance should be monitored.	

Other recommendations and/or comments:

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Previous Studies & References

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