

SCHEDULE C1. – SWTC

(Clause 1.1)



Transport
for NSW

- Sydney Metro City & Southwest

Central Station Main Works
Contract Schedules

Schedule C1

- Scope of Works and Technical Criteria

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1 Introduction

1.1 Scope of Works and Technical Criteria (SWTC) Overview

- (a) This SWTC sets out the scope, general requirements and technical requirements for the Project Works, Temporary Works and the CSM Contractor's Activities for the Sydney Metro City & Southwest Central Station main works.
- (b) The SWTC comprises:
 - (i) section 1 which outlines the structure of the SWTC, the project background, objectives and interpretation of the SWTC;
 - (ii) section 2 which includes an overview of the scope of the CSM Contractor's Activities, the Project Works and the Temporary Works;
 - (iii) section 3 which includes the general requirements that the CSM Contractor must comply with;
 - (iv) section 4 which includes the technical requirements including performance criteria for the development of design and construction elements that the CSM Contractor must comply with;
 - (v) section 5 which includes the construction requirements that the CSM Contractor must comply with; and
 - (vi) the following Appendices:
 - A. Appendix A01 which contains definitions of terms and acronyms used in the SWTC;
 - B. Appendix B01 to B16 inclusive which contain technical requirements for the Project Works, the Temporary Works and the CSM Contractor's Activities;
 - C. Appendix C01 to C07 inclusive which contain specifications for the Project Works, the Temporary Works and the CSM Contractor's Activities;
 - D. Appendix D01 which contains the drawings referred to in Sections 1 to 5 inclusive and other Appendices;
 - E. Appendices E01 and E02 which are the Interface Schedules in relation to the Metro Station and Central Station respectively; and
 - F. Appendices F01 to F04 which contains the room schedules and room data sheets referred to in Sections 1 to 5 inclusive and other Appendices.

1.2 Objectives for the Project and the Project Works

- (a) The CSM Contractor is to meet the Program and Project Objectives as listed below.

- (b) The Principal's objectives for the Sydney Metro City & Southwest project are contained in clause 2.1 of the General Conditions.
- (c) The Principal's objectives for the Project Works are contained in clause 2.2 of the General Conditions.
- (d) Additional objectives for the Project Works are to:
 - (i) provide new metro station infrastructure at Central Station which is suitable for integration into the Sydney Metro City & Southwest project
 - (ii) provide all other station infrastructure required to integrate the new metro station into Central Station;
 - (iii) provide an intuitive and easy to use station environment for customers;
 - (iv) accentuate Central Station as a grand heritage asset;
 - (v) re-establish Central Station as an iconic destination within an expanded CBD footprint;
 - (vi) develop a highly functional multi-modal transport Interchange that accommodates long-term demand;
 - (vii) improve accessibility, permeability and connectivity within and across the Station Precinct;
 - (viii) unlock opportunities and stimulate economic activity in and around Central Station;
 - (ix) improve the relationship of Central Station to Belmore Park and Surry Hills, and support the future improvement in the relationship to Haymarket, Darling Harbour, Central Park and Broadway, by delivering an integrated urban outcome;
 - (x) provide an enduring and sustainable legacy;
 - (xi) implement a reasonable and feasible solution within timing constraints that considers environmental and heritage impacts, approval and delivery risks;
 - (xii) achieve architectural blending of the new works with the existing Central Station; and
 - (xiii) maintain acceptable customer amenity and connectivity and transport operations during construction of the Project Works and Temporary Works.

1.3 Purpose and interpretation of SWTC

- (a) The criteria and requirements in this SWTC are minimum criteria and requirements, including technical, operational and performance criteria and requirements for the Project Works, the Temporary Works and the CSM Contractor's Activities which the CSM Contractor must satisfy to fulfil its obligations under the Contract.
- (b) If more than one criterion or requirement applies in respect of any part of the Project Works, the Temporary Works and the CSM Contractor's Activities then all criteria and requirements must be satisfied. If there are criteria and requirements which are mutually exclusive, then the criterion or requirement which delivers the greatest level of service or is of the highest standard, will apply.

- (c) Reference to any work includes any additional activities necessary for the satisfactory completion and performance of that work and full compliance with these criteria and requirements.
- (d) The CSM Contractor bears the risk that compliance with this SWTC will not fulfil the CSM Contractor's obligations under the Contract. In particular, the CSM Contractor will be required to carry out any work, tasks and activities additional to that contemplated by this SWTC to ensure that the CSM Contractor satisfies its obligations under the Contract.

1.4 Definitions and interpretations

- (a) The SWTC (including the Appendices) must be read in conjunction with all other parts of the Contract.
- (b) Unless the context requires otherwise, terms which have a defined meaning in clause 1.1 of the General Conditions have the same meaning where used in this SWTC.
- (c) Appendix A01 contains definitions of terms and acronyms used in this SWTC that are additional to those set out in clause 1.1 of the General Conditions.
- (d) Unless stated otherwise, any reference to a 'section' or 'clause' in this SWTC is a reference to a section or clause of this SWTC.
- (e) Unless stated otherwise, any reference to an 'Appendix' or 'Appendices' in this SWTC is a reference to an appendix or appendices of this SWTC.
- (f) Unless stated otherwise, any reference to a 'Worksite' or 'Worksites' in this SWTC is a reference to a Worksite or Worksites set out in Schedule E1.
- (g) Unless stated otherwise, any reference to an 'existing' item of infrastructure in this SWTC must be read as a reference to the item of infrastructure existing at the date of the Contract.
- (h) Unless stated otherwise, any reference to 'future works' in this SWTC must be read as a reference works that would be delivered after Completion.
- (i) Unless stated otherwise, all reduced levels specified in this SWTC, including those in the Appendices, are to Australian Height Datum (AHD).
- (j) Unless stated otherwise, all survey coordinates specified in this SWTC, including those in the Appendices, are to the Map Grid Australia (MGA-GDA-94).
- (k) References to "Running Tunnel (RT01) axis" and "Running Tunnel (RT02) axis" are references to the Running Tunnel (RT01) axis and the Running Tunnel (RT02) axis as defined on SWTC Drawings NWRLSRT-PBA-SHC-TU-DWG-930050, 930051, 930052, 930053 and 930060.
- (l) References to "Track Formation Control Line (Down MSW)", "Track Formation Control Line (Up MSW)", "Track Formation Control Line (Up MNW)" and "Track Formation Control Line (Down MNW)" are references to the Track Formation Control Line (Down MSW), Track Formation Control Line (Up MSW), Track Formation Control Line (Up MNW) and Track Formation Control Line (Down MNW) as defined on SWTC Drawings NWRLSRT-SCS-RD-DWG-938215 and 938216.

- (m) Kilometrages and chainages identified in the SWTC for the Track Formation Control Line (Down MSW), Track Formation Control Line (Up MSW), Track Formation Control Line (Up MNW), and Track Formation Control Line (Down MNW) are referenced from Central Station existing platform 1 buffer stop.



2 Scope

2.1 General

- (a) The CSM Contractor must undertake the CSM Contractor's Activities in accordance with the requirements of the Contract, including this SWTC, and the Planning Approvals.
- (b) The CSM Contractor must implement a totally integrated approach to the performance of the CSM Contractor's Activities using effective and robust systems which accommodate and address system performance, stakeholder, community, sustainability and environmental requirements.
- (c) In particular the CSM Contractor must:
 - (i) satisfy the technical and procedural requirements of the Principal with respect to investigation, design and construction, testing, commissioning and handover of the Project Works;
 - (ii) demonstrate an appropriate application of whole of life considerations in the design and construction of the Project Works;
 - (iii) develop, implement and maintain workplace initiatives during the performance of the CSM Contractor's Activities including workplace relations and training;
 - (iv) establish and maintain a positive relationship with the Principal, Interface Contractors, stakeholders and the community;
 - (v) ensure that its planning and programming is comprehensive and provides for the concurrent delivery of the performance and environmental requirements of the Contract;
 - (vi) ensure that risks are managed throughout the performance of the CSM Contractor's Activities;
 - (vii) proactively liaise with and satisfy the requirements of all relevant Authorities;
 - (viii) diligently address safety, function, operability, maintainability, durability, sustainability, reliability, aesthetics and heritage in all aspects of the Project Works, the Temporary Works and the CSM Contractor's Activities;
 - (ix) implement a proactive stakeholder and community involvement strategy which enables the CSM Contractor to respond to and accommodate reasonable stakeholder and community expectations in all aspects of the Project Works, the Temporary Works and the CSM Contractor's Activities;
 - (x) ensure a high standard of environmental, sustainability, community, safety and quality performance in the delivery of the CSM Contractor's Activities by developing and implementing effective management plans and providing effective leadership to develop and maintain the culture and values that are consistent with this performance objective;

- (xi) comply with the NSW Code and NSW Guidelines.

2.2 CSM Contractor's Activities

Without in any way limiting the CSM Contractor's obligations under the Contract, the CSM Contractor's Activities include all tasks and things necessary to:

- (a) investigate, design (including prepare prototypes), construct, test and commission the Project Works and any Temporary Works;
- (b) preserve and protect all existing infrastructure including structures, public transport facilities including bus driver amenities and associated facilities, cycleways, footpaths, Utility Services, roads, railways, buildings and improvements, that are affected by the CSM Contractor's Activities, except for the existing infrastructure that is required to be demolished or modified under the Contract;
- (c) demolish existing infrastructure and improvements that are required to be demolished under the Contract;
- (d) handover the Project Works to the Principal or relevant owner by the relevant Dates for Construction Completion in the condition required by the Contract;
- (e) correct all Defects during the Defects Correction Period applicable to the relevant parts of the Project Works;
- (f) secure, maintain, repair, reinstate and hand back, in the specified condition, areas occupied or affected by the Temporary Works;
- (g) prepare all Design Documentation and prepare all CSM Contractor's Programs;
- (h) provide quality assurance of the CSM Contractor's Activities;
- (i) enable the Independent Certifier to perform its functions including those identified in the Independent Certifier Deed and independently certify the Project Works and the Temporary Works;
- (j) enable the Environmental Representative and the Acoustic Advisor to perform their functions;
- (k) mitigate environmental impacts during the design and construction of the Project Works and the Temporary Works;
- (l) develop and implement sustainability strategies and initiatives for the CSM Contractor's Activities, the Project Works and the Temporary Works;
- (m) develop and implement all necessary traffic and transport management methods to effectively manage traffic and transport affected by the construction of the Project Works and the Temporary Works;
- (n) develop, implement and maintain the Contract Management Plans in accordance with the Contract;
- (o) provide effective stakeholder and community involvement, including effective communication, in relation to the Project Works and the Temporary Works and the CSM Contractor's Activities;
- (p) remove and dispose of existing infrastructure made redundant by the CSM Contractor's Activities;

- (q) maintain and repair the Project Works until the relevant Date of Completion;
- (r) maintain and repair the Temporary Works;
- (s) prepare and provide all asset management information in accordance with MR-T;
- (t) prepare and provide all reports and documentation required by the Contract; and
- (u) carry out any Support Services required to be performed in accordance with the Contract.

2.3 Project Works

- (a) The Project Works include all permanent new infrastructure and permanent modifications to existing infrastructure which must be constructed to enable the CSM Contractor to satisfy the requirements of the Contract.
- (b) The Project Works include the following categories of works:
 - (i) Metro Station Works;
 - (ii) Central Station Works; and
 - (iii) Central Walk Works.

2.3.1 Metro Station Works

- (a) The Metro Station Works are the permanent works for a new underground metro station for the Sydney Metro City & Southwest at Central Station (Metro Station) which will interface with train running tunnels RT01 and RT02 and rail infrastructure, tunnel infrastructure, communications systems and control systems to be installed by Interface Contractors.
- (b) The Metro Station Works include:
 - (i) excavation;
 - (ii) demolition of precast linings of train running tunnels RT01 and RT02;
 - (iii) station box and all structural works;
 - (iv) island platform;
 - (v) portal structures at the interface with train running tunnels TSE RT01 and RT02;
 - (vi) provisions for rail infrastructure, tunnel infrastructure, communications systems, control systems and other Metro Station elements (with the infrastructure, systems and other elements to be completed by Interface Contractors as set out in the Interface Schedules), including:
 - A. permanent way;
 - B. overhead wiring (OHW);
 - C. signalling and train control systems;
 - D. Traction Power Supply system;
 - E. combined services routes;

- F. track and tunnel services;
 - G. Platform Screen Doors; (bottom supported)
 - H. central control system;
 - I. communications cabling system;
 - J. passenger information display systems (PIDSs);
 - K. public address (PA) systems;
 - L. audio frequency induction loop system;
 - M. sound system and intercom system for emergency purposes;
 - N. closed circuit television (CCTV) systems;
 - O. Help Point systems;
 - P. infotainment and art/music systems;
 - Q. telephone systems;
 - R. electronic access control systems;
 - S. intruder detection systems;
 - T. local area networks;
 - U. UHF radio systems;
 - V. UHF distributed antenna system;
 - W. train radio communication systems;
 - X. a precise clocks system;
 - Y. an electronic security system;
 - Z. fibre and copper backbone;
 - AA. a high voltage (HV) power supply and distribution system;
 - BB. a tunnel ventilation system;
 - CC. a trackside exhaust system;
 - DD. advertising;
 - EE. public art; and
 - FF. substations;
- (vii) provisions for and adjustments to (including extensions of) existing third party communications systems, including:
- A. emergency services radio (including NSW government radio network and NSW Police radio system); and
 - B. public telecommunications operators radio equipment;
- (viii) civil and structural works for the tunnel ventilation systems, including:

- A. overtrack exhaust duct;
 - B. under platform exhaust duct;
 - C. station platform exhaust duct;
 - D. ventilation plenums;
 - E. draught relief shafts; and
 - F. tunnel vent nozzles.
- (ix) an environmental control system to provide conditioned air to the Metro Station, excluding the rail corridor beyond the Platform Screen Doors;
- (x) Vertical Transport from the Metro Station island platform;
- (xi) fire egress stairs;
- (xii) fire services systems, including:
- A. a fire and smoke detection and alarm system;
 - B. a fire sprinkler system;
 - C. a fire hydrant system;
 - D. a fire hose reel system;
 - E. a gaseous suppression systems;
 - F. portable fire extinguishers; and
 - G. fire blankets;
- (xiii) hydraulic services, including:
- A. a drainage system, including sewer drainage system; and
 - B. water services systems, including potable domestic cold and heated water and rainwater service;
- (xiv) signage, wayfinding and tactile indicators;
- (xv) wall, floor and ceiling finishes;
- (xvi) rooms and spaces, including fitout, suitable for staff, equipment and plant accommodation;
- (xvii) lighting system;
- (xviii) LV power supply and distribution system, including a centralised UPS;
- (xix) earthing, bonding and electrolysis protection systems necessary for the protection of all infrastructure constructed within the Metro Station including stray current collection mats; and
- (xx) building management system.

2.3.2 Central Station Works

- (a) The Central Station Works are the permanent works at Central Station associated with, and to enable, the construction, integration, operation and maintenance of the Metro Station.
- (b) The Central Station Works include:
 - (i) adjustments to existing built features within the Sydney Yard Cess Area, including:
 - A. demolition of the Rolling Stock Officers Building;
 - B. demolition of the Cleaners Amenities Building;
 - C. demolition of the distribution substation associated with the Rolling Stock Officers Building and the Cleaners Amenities Building;
 - D. demolition of hi-rail equipment access point;
 - E. a new hi-rail equipment access point in the Sydney Yard Cess Area; and
 - F.
 - (ii) landscaping at the Regent Street entry to the Sydney Yard Access Bridge;
 - (iii) adjustments to existing platforms 8/9, 10/11, 12/13 and 14/15, including:
 - A. demolition of existing platforms 13 and 14/15 including canopies and any rooms located on the platforms;
 - B. demolition of retail facility located at adjacent to the northern end of existing platforms 11 and 12;
 - C. demolition of Rail Transport Agency facilities located on existing platforms 14/15;
 - D. demolition of the Generator Room and portions of the retaining wall between existing platforms 15 and 16;
 - E. extension to the southern ends of existing platforms 8/9 and 10/11; and
 - F. shortening to the northern ends of existing platforms 8/9 and 10/11;
 - (iv) adjustments to existing tracks 9, 10, 11, 12, 13, 14 and 15 including:
 - A. demolition of portions of existing tracks 12, 13 and 14 and stabling roads including track structure, ballast, track drainage and turnouts, as appropriate;
 - B. demolition of existing track 15 and the Down Shunting Neck including track structure, ballast, track drainage and turnouts, as appropriate
 - C. shortening of the northern end of existing tracks 9, 10 and 11;

- D. new energy absorbent buffer stops to existing tracks 9, 10, 11, 12, 13 and 14;
 - E. track alternations as necessary for the installation of the new energy absorbent buffer stops;
 - F. modifications to associated Rail Systems, including:
 - 1. OHW;
 - 2. signalling and train control systems;
 - 3. traction power supply system;
 - 4. combined services routes; and
 - 5. local service routes;
- (v) new permanent way and associated infrastructure, including:
- A. direct-fixed track structure for new platforms 13 and 14, full depth track formation reconditioning, track drainage and buffer stops, as appropriate;
 - B. new rail systems and associated infrastructure as required for the new portions of tracks 12, 13 and 14;
 - C. new platforms for tracks 12, 13 and 14, including canopies, furniture, lighting and customer service assistance hubs; and
 - D. provisions to safeguard for future works to extend platforms 12, 13 and 14 to 215m long platforms;
- (vi) adjustments to the existing Intercity Concourse and Grand Concourse, including:
- A. a new canopy between the Central Electric Station Building and the northern end of existing platforms 8/9 and 10/11 and new platforms 12/13 and 14;
 - B. a void in the North Concourse in front of the Central Electric Building; and
 - C. an extension of the Intercity Concourse to provide connection with existing platforms 8/9 and 10/11 (as adjusted) and new platforms 12/13 and to provide circulation space at the top of the Vertical Transport connection to the North Concourse;
- (vii) a new “North South Concourse” which will link the Metro Station, the existing North Concourse, a new East Concourse, and the existing Southern Intercity Interchange Tunnel, including:
- A. excavation;
 - B. concourse box and all structural works;
 - C. an environmental control system for the supply of naturally ventilated air;
 - D. signage, wayfinding and tactile indicators;
 - E. fixtures, fittings and equipment;

- F. wall, floor and ceiling finishes;
 - G. new rooms and spaces, including fit out, suitable for staff, equipment and plant accommodation;
 - H. new public toilets;
 - I. new Vertical Transport from the new North South Concourse, including lifts and escalators; and
 - J. security shutters to provide separation of the Metro Station from Central Station;
- (viii) adjustments to the existing Olympic Tunnel, including:
- A. demolition of the western portion of the tunnel as necessary to enable construction of the Metro Station Works and other elements of the Central Station Works; and
 - B. modifications to the portion of the tunnel which is not demolished to convert it into a Back of House Area;
- (ix) adjustments to the existing Devonshire Street Tunnel as required;
- (x) demolition of the Northern Y-Link Tunnel;
- (xi) adjustments to the Southern Suburban Interchange Tunnel;
- (xii) adjustments to the Southern Suburban Baggage Tunnel to convert it into a Back of House Area;
- (xiii) adjustments to the Southern Intercity Interchange Tunnel;
- (xiv) adjustments to the existing Northern Entrance, including:
- A. structural modifications associated with the remodelled Northern Entrance and North Concourse in accordance with drawing NWRLSRT-PBA-SCS-AT-DWG-938151_03;
 - B. provisions to support modifications to the existing Gateline;
 - C. modifications to public information screens;
 - D. new floor, wall and ceiling finishes; and
 - E. new signage, wayfinding and tactile indicators;
- (xv) adjustments to the existing North Concourse, including:
- A. demolition of existing Vertical Transport;
 - B. new Vertical Transport from the existing North Concourse;
 - C. new floor, wall and ceiling finishes in accordance with drawing NWRLSRT-PBA-SCS-AT-DWG-938151_03 ; and
 - D. new signage, wayfinding and tactile indicators;
- (xvi) new rooms, including fitout, for rolling stock officers and Rail Transport Agency personnel;

(xvii) provision of new, and adjustments (including extension) of existing Central Station communications systems, to:

- A. provide coverage for new platforms 12, 13 and 14, the new North South Concourse and new rooms; and
- B. accommodate the adjustments to existing platforms 8/9 and 10/11, the Intercity Concourse, , the Olympic Tunnel, , the Northern Y-Link Tunnel, the Southern Suburban Interchange Tunnel, the Southern Suburban Baggage Tunnel, Southern Intercity Interchange Tunnel, the Northern Entrance and the North Concourse.

The communications systems include:

- C. communications cabling systems (fibre and copper backbones and OCDN);
- D. PIDSs;
- E. PA systems;
- F. SPI (Wi-Fi);
- G. audio frequency induction loop system;
- H. sound system and intercom system for emergency purposes;
- I. CCTV systems;
- J. Help Point systems;
- K. infotainment and art/music systems;
- L. telephone systems;
- M. electronic access control systems;
- N. intruder detection systems;
- O. local area networks;
- P. UHF radio systems;
- Q. UHF distributed antenna system;
- R. the precise clocks system;
- S. electronic security systems; and
- T. fibre and copper backbone; and

(xviii) adjustments (including extension) of existing Central Station third party communications systems to provide:

- A. provide coverage for new platforms 12, 13 and 14, the new North South Concourse and new rooms; and
- B. accommodate the adjustments to existing platforms 8/9 and 10/11, the Intercity Concourse, , the Olympic Tunnel, the Northern Y-Link Tunnel, the Southern Suburban Interchange

Tunnel, the Southern Suburban Baggage Tunnel, Southern Intercity Interchange Tunnel, the Northern Entrance and the North Concourse.

The third party communications systems include:

- C. emergency services radio (including NSW government radio network and NSW Police radio system); and
 - D. public telecommunications operators radio equipment;
- (xix) adjustments (including extension) of existing Central Station electrical systems to:
- A. provide coverage for new platforms 12, 13 and 14, the new North South Concourse and new rooms; and
 - B. accommodate the adjustments to existing platforms 8/9 and 10/11, the Intercity Concourse, the Olympic Tunnel, the Northern Y-Link Tunnel, the Southern Suburban Interchange Tunnel, the Southern Suburban Baggage Tunnel, Southern Intercity Interchange Tunnel, the Northern Entrance and the North Concourse.

The electrical systems include:

- C. low voltage distribution systems and infrastructure including cable containment and service risers;
 - D. normal lighting requirements (internal and external), emergency lighting and feature lighting; and
 - E. UPS systems and redundancy systems;
- (xx) adjustments (including extension) of existing Central Station hydraulics services to:
- A. provide coverage for new platforms 12, 13 and 14, the new North South Concourse and new rooms; and
 - B. accommodate the adjustments to existing platforms 8/9 and 10/11, the Intercity Concourse, the Grand Concourse, the Olympic Tunnel, the Devonshire Street Tunnel, the Northern Y-Link Tunnel, the Southern Suburban Interchange Tunnel, the Southern Suburban Baggage Tunnel, Southern Intercity Interchange Tunnel, the Northern Entrance and the North Concourse.

The hydraulics services include:

- C. the drainage system, including sewer drainage system excluding any upgrades to existing drainage beneath roads 1 to 12; and
 - D. water services systems, including potable domestic cold and heated water and rainwater service;
- (xxi) adjustments (including extension) of existing Central Station fire services systems to:

- A. provide coverage for new platforms 12, 13 and 14, the new North South Concourse and new rooms; and
- B. accommodate the adjustments to existing platforms 8/9 and 10/11, the Intercity Concourse, the Grand Concourse, the Olympic Tunnel, the Devonshire Street Tunnel, the Northern Y-Link Tunnel, the Southern Suburban Interchange Tunnel, the Southern Suburban Baggage Tunnel, Southern Intercity Interchange Tunnel, the Northern Entrance and the North Concourse.

The fire services systems include:

- C. the fire and smoke detection and alarm system;
 - D. the fire sprinkler system;
 - E. the fire hydrant system;
 - F. the fire hose reel system;
 - G. fire mains;
 - H. the gaseous suppression system;
 - I. portable fire extinguishers; and
 - J. fire blankets;
- (xxii) adjustments to the existing Central Station electronic ticketing system, which are required for, or as a consequence of construction of, the other elements of the Central Station Works. The adjustments include modifications to:
- A. ticketing entry gates;
 - B. ticketing equipment – Opal Card system including top up machines; and
 - C. gateline hub;
- (xxiii) provisions for the connection of new Sydney Metro City & Southwest communication systems to Sydney Trains communication systems (with the cabling and termination works to be completed by Interface Contractors);
- (xxiv) adjustments to the local areas and Public Domain required for, or as a consequence of construction of, the other elements of the Central Station Works;
- (xxv) adjustments to adjoining properties required for, or as a consequence of construction of, the other elements of the Central Station Works;
- (xxvi) earthing, bonding and electrolysis protection systems necessary for the protection of all infrastructure constructed or modified by the CSM Contractor;
- (xxvii) a photovoltaic power supply;
- (xxviii) provisions for station assets, including commercial vending machines;

- (xxix) provisions to enable the future installation of retail outlets;
- (xxx) station ICT;
- (xxxi) provisions for public art;
- (xxxii) provisions for advertising;
- (xxxiii) safeguarding provisions to support the future construction and installation of future works;
- (xxxiv) provision of new building management systems, required for, or as a consequence of construction of, the other elements of the Central Station Works; and
- (xxxv) new Utility Services, and adjustments to existing Utility Services, required for, or as a consequence of construction of, the other elements of the Central Station Works, including;
 - A. reconfiguration of the LV supply for Sydney Yard Cess Area, including a new 33Kv/11Kv transformer, a new 11Kv/415v transformer and associated breakers and switchgear in Lee Street substation with the 415v feed to be taken from this new 415v transformer;
 - B. upgrade to the LV power supply, including;
 - 1) provision of electrical equipment rooms adjacent to the existing Chalmers Street entrance sufficient to support the additional electrical loads to effect the Project Works;
 - 2) provision of additional 33kV circuit breaker, new 33/11kV transformer and 11kV switchboards within the Lee Street substation;
 - 3) upgrade of Central No 1 and Central No 2 Substations;
 - 4) adjustment to Sydney Transformer Rooms No 1 and No 2 Distribution Substations;
 - 5) LV rewiring to transfer the existing services from Central No 1 and No 2 Substations, and Sydney Transformer Room No 1 and No 2 Substations to new distribution substations;
 - 6) identify power quality issues at Central Station in accordance with MR-T (see MR-T Appendix C4.1);
 - C. relocation of any Utility Services to enable construction of the Metro Station Works; and
 - D. removal of Utility Services made redundant by the construction of other elements of the Project Works and removal of any existing redundant Utility Services.

2.3.3 Central Walk Works

- (a) The Central Walk Works are permanent upgrade works to Central Station.
- (b) The Central Walk Works include:

- (i) a new “East Concourse” beneath existing platforms 16/17, 18/19, 20/21 and 22/23, which will link the new North South Concourse and the new Eastern Entrance via the existing Eastern Suburbs Railway (ESR) Concourse, including:
 - A. excavation;
 - B. concourse box and all structural works; and
 - C. new Vertical Transport from the East Concourse to the Suburban Platforms (excluding Platforms 24/25);
- (ii) adjustments to the existing ESR Concourse to connect the new Eastern Entrance and new East Concourse including:
 - A. demolition of the ramped floor through the ESR Concourse to provide a consistent grade between the new Eastern Entrance and new East Concourse;
 - B. structural works;
 - C. new Vertical Transport on the ESR Concourse;
 - D. new stairs complete with all necessary finishes, balustrades and handrails to replace the ramp within the existing ESR Concourse; and
 - E. reinstate and make good areas of the Southern Suburban Interchange Tunnel where impacted as a consequence of the CSM Contractor’s Activities.
- (iii) adjustments to existing platforms 16/17, 18/19, 20/21 and 22/23 including:
 - A. platform voids;
 - B. modifications to strengthen the platforms necessary as a consequence of the construction of the new East Concourse, including Vertical Transport from the concourse, where:
 - 1) the limit of strengthening is reflected in Schedule C2 Drawings – CMS-AGJV-SCS-ST-DWG-400001_A and CMS-AGJV-SCS-ST-DWG-400002_ A;
 - 2) the CSM Contractor must apply for ASA concessions for non-compliances as determined by the AEO, for the remainder of the platforms not covered by this section B;
 - 3) the application for concessions must be made in accordance with ASA requirements and will be supported by the Principal;
 - C. adjustment to the canopies on the platforms which are affected by the construction of the East Concourse (including Vertical Transport from the concourse), noting the need to minimise the impact to these structures due to their heritage significance;
 - D. adjustments to platforms to:
 - 1) provide vertical level access from the platform edges to train carriages for the central sections of the platforms

- modified by the installation of the lifts and escalators. IN accordance with drawing – CMS-AGJV-SCS-ST-DWG-400001_A and CMS-AGJV-SCS-ST-DWG-400002_A in Contract Schedule C2;
- 2) provide horizontal level access from the edges to train carriages where the existing curvature of the platform allows;
- 3) provide vertical and horizontal Level Access for the remaining northern and southern sections of the platforms without modifications to track and OHW, where the requirements relating to concessions included in section B (1) above apply.
- 4) modify the surfaces to comply with the gradient requirements of the Building Code of Australia; and
- E. adjustments to the platform drainage and associated track drainage to suit adjustments to the platforms;
- F. refresh of the platforms to provide a consistent finish across those platforms including;
 - 4) new platform furniture;
 - 5) new signage, wayfinding and tactile indicators;
 - 6) repainting of existing canopy structure soffits, fascia's and exposed steelwork including canopy columns and the underside of awnings;
 - 7) new platform, tactile and copping edge tiling; and
 - 8) new platform lighting;
- G. demolition of existing buildings on the platforms;
- H. new customer service assistance hubs on the platforms; and
- I. new stand-by guard rooms to replace demolished rooms;
- (iv) adjustments to infrastructure as required to effect the works set out in section 2.3.3(b)(i) to 2.3.3(b)(iii) including:
 - A. adjustments to track drainage;
 - B. adjustments to associated rail systems including;
 - 1) signalling and train control systems;
 - 2) traction power supply system;
 - 3) combined services routes; and
 - 4) local service routes;
- (v) a new "Eastern Entrance" which will address Chalmers Street, and include:
 - A. demolition of the Bounce Hostel Sydney;
 - B. excavation for the Eastern Entrance structure, including associated retention, support and pilling system;
 - C. a new station entrance structure;

- D. a connection between the new East Concourse through to the new Eastern Entrance and Chalmers Street;
 - E. new Vertical Transport from the new Eastern Entrance;
 - F. provisions for a future connection to the Eastern Entrance from 1-7 Randle Lane;
 - G. architectural and urban design elements;
 - H. new Gateline;
 - I. new rooms and spaces, including fitout, suitable for staff, equipment and plant accommodation;
 - J. street awning; and
 - K. provisions to enable the future construction of an over site development (OSD) which would incorporate the new Eastern Entrance;
- (vi) new rooms, including fitout, suitable for staff, equipment and plant, to service the infrastructure or replace demolished rooms;
- (vii) a new continuous service route connecting the new North South Concourse to the existing ESR 'Ghost Platforms'. The service route shall be sized appropriately to accommodate Utility Services plus provision for future TfNSW Utility Services;
- (viii) adjustments to and extensions of existing Central Station communications systems to provide coverage in the new East Concourse, the new Eastern Entrance and accommodate the adjustments to the ESR Concourse, the South Concourse and the existing platforms and tracks, including:
- A. communications cabling systems (fibre and copper backbones and OCDN);
 - B. PIDSs;
 - C. PA systems;
 - D. SPI (Wi-Fi);
 - E. audio frequency induction loop system;
 - F. sound system and intercom system for emergency purposes;
 - G. CCTV systems;
 - H. Help Point systems;
 - I. infotainment and art/music systems;
 - J. telephone systems;
 - K. electronic access control systems;
 - L. intruder detection systems;
 - M. local area networks;

- N. UHF radio systems;
 - O. UHF distributed antenna system;
 - P. the precise clocks system;
 - Q. electronic security systems; and
 - R. fibre and copper backbone; and
- (ix) adjustments (including extension) of existing Central Station third party communications systems to provide coverage in the new East Concourse and the new Eastern Entrance and accommodate the adjustments to the ESR Concourse, the South Concourse and the existing platforms and tracks, including:
- A. emergency services radio (including NSW government radio network and NSW Police radio system); and
 - B. public telecommunications operators radio equipment;
- (x) adjustments (including extension) of existing Central Station electrical systems to provide coverage in the new East Concourse and the new Eastern Entrance and accommodate the adjustments to the ESR Concourse, the South Concourse and the existing platforms and tracks, including identify power quality issues at Central Station in accordance with MR-T (see MR-T Appendix C4.1);
- (xi) adjustments (including extension) of existing Central Station hydraulics services to provide coverage in the new East Concourse and the new Eastern Entrance and accommodate the adjustments to the ESR Concourse, the South Concourse and the existing platforms and tracks, including:
- A. the drainage system, including sewer drainage system; and
 - B. water services systems, including potable domestic cold and heated water and rainwater service;
- (xii) adjustments (including extension) of existing Central Station fire services systems to provide coverage in the new East Concourse, the new Eastern Entrance and other areas of Central Station east of the Metro Station box and accommodate the adjustments to the ESR Concourse, the South Concourse and the existing platforms (excluding platforms 24/25), new areas of 'ghost' platforms, including:
- A. the fire and smoke detection and alarm system;
 - B. the fire sprinkler system;
 - C. the fire hydrant system;
 - D. the fire hose reel system;
 - E. fire mains;
 - F. the gaseous suppression system;
 - G. portable fire extinguishers; and

- H. fire blankets;
- (xiii) adjustments to the existing Central Station electronic ticketing system, to which are required for, or as a consequence of construction of, the other elements of the Central Walk Works. The adjustments may include modifications to:
 - A. ticketing entry gates;
 - B. ticketing equipment – Opal Card system including top up machines; and
 - C. gateline hub;
- (xiv) new wall, floor and ceiling finishes for new items of infrastructure and to existing areas of Central Station as a consequence of the other elements of the Central Walk Works;
- (xv) signage, wayfinding and tactile indicators;
- (xvi) an environmental control system for the supply of naturally ventilated air to the new East Concourse; .
- (xvii) safeguarding provisions including the construction of a new stub tunnel to enable the future construction of future works, including an extension of the Central Walk through a new “West Concourse” and a new “Western Entrance” for Central Station;
- (xviii) provisions to enable the future installation of retail outlets, including pop-up retail premises in the new East Concourse;
- (xix) earthing, bonding and electrolysis protection systems necessary for the protection of all infrastructure constructed or modified by the CSM Contractor;
- (xx) provisions for public art;
- (xxi) provisions for advertising;
- (xxii) adjustments to Randle Lane, Chalmers Street, and the Public Domain which are required for, or as a consequence of construction of, the other elements of the Central Walk Works. The adjustments may include modifications to:
 - A. street lighting;
 - B. road pavements and line marking;
 - C. signage;
 - D. road furniture;
 - E. kerbs and gutters;
 - F. footpaths;
 - G. Chalmers Street cycleway;
 - H. drainage; and

- I. landscaping works;
- (xxiii) adjustments to adjoining properties which are required for, or as a consequence of construction of, the other elements of the Central Walk Works; and
- (xxiv) provision of new building management systems required for, or as a consequence of construction of, the other elements of the Central Walk Works;
- (xxv) new Utility Services, and adjustments to existing Utility Services, which are required for, or as a consequence of construction, of the other elements of the Central Walk Works, including:
 - A. adjustments to existing Utility Services located in Chalmers Street and Randle Lane.

2.4 Temporary Works

The Temporary Works include:

- (a) temporary arrangements (including wayfinding and signage) to divert and control pedestrians, public transport users, cyclists, public transport and traffic and to provide public access, amenity, security and safety during all stages of design and construction of the Project Works;
- (b) temporary arrangements to replace all passenger and public walkways affected by the construction of the Project Works (e.g. all tunnels that pass east-west across the Metro Station box excavation) with walkways and facilities that provide an equivalent pedestrian circulation space and that minimise any additional walking time for pedestrians using the walkways;
- (c) temporary arrangements for people and vehicles to safely access all property, including publicly accessible space affected by the CSM Contractor's Activities;
- (d) temporary arrangements for people and vehicles to safely access the Site;
- (e) temporary access stairs, walkways and platforms within the Site;
- (f) temporary construction hoardings, fencing, noise walls, access gates and barriers on and around the Site;
- (g) temporary stairs from the Olympic Tunnel to existing platforms 20/21 and 22/23 including:
 - (i) a minimum clear stair width of 1.5m;
 - (ii) compliant landing areas on the platforms;
 - (iii) compliant landing areas outside of the main pedestrian flow of the Olympic tunnel;
 - (iv) stair landings on the platform facing south towards the centre of the platform and be located in the middle (on the centre-line) of the platform; and
 - (v) all necessary finishes, tactiles, balustrades, handrails, lighting and signage required for safe customer use;

- (vi) relocation of any existing services in the Olympic tunnel required for construction;
 - (vii) relocation of any services and customer equipment;
 - (viii) no removal or modification of the structure of the suburban canopies;
 - (ix) utilisation, if required, of the existing lift shaft on the northern side of platform 22/23 linked to the Olympic tunnel;
 - (x) switchbacks, if required to minimise disruption to customers and existing Sydney Trains staff facilities on the platforms;
 - (xi) submission of the design of the temporary stairs to Design Stage 3 only, prior to CCB Gate 3 approval;
- (h) any temporary arrangements to allow the safe operation of 12 operational Intercity Platforms within Central Stations at all times during the construction of the Project Works;
 - (i) any temporary arrangements to allow the safe operation of all Suburban Platforms within Central Station at all times during the construction of the Project Works;
 - (j) all environmental safeguards and measures necessary to mitigate environmental effects which may arise during the design and construction of the Project Works;
 - (k) cleaning, maintenance, repair, replacement and reinstatement, as required, of all areas occupied by the CSM Contractor during design and construction of the Project Works;
 - (l) temporary site facilities required for design and construction of the Project Works, including those set out in section 5.2.2;
 - (m) temporary infrastructure, safety screens and ground support installed or erected to undertake design and construction of the Project Works;
 - (n) temporary arrangements for Utility Services;
 - (o) temporary groundwater and stormwater collection, treatment and discharge systems and measures required to achieve discharge water quality required by all relevant Authorities and Approvals; and
 - (p) all other temporary works and measures required for the construction of the Project Works.
 - (q) retention in situ only if:
 - (i) the end state of the element in the relevant location at completion of the works in no way impacts on the operation, safety or amenity of the location e.g. by burying to a minimum depth of 1.5m or removing part or all of the element to a depth of 1.5m; and
 - (ii) it does not impact upon known future works.

2.5 Interface Works

- (a) The Interface Work includes the works identified in the Interface Schedules (refer Appendices E01 to E02) as being the responsibility of Interface Contractors.

- (b) Without limiting the requirements of the General Conditions, the CSM Contractor must cooperate with Interface Contractors, and do everything reasonably necessary to facilitate the execution of work by Interface Contractors, including undertaking all tasks identified in the Interface Schedules as being the responsibility of the CSM Contractor.
- (c) The CSM Contractor must comply with the requirements for coordination with Interface Contractors in MR-T.

2.6 Existing Assets excluded from Scope of Works

- (a) The reinstatement and upgrade of the following existing assets, beyond that required as a consequence of the CSM Contractors Activities, is excluded from the scope of works:
 - (i) existing mechanical systems;
 - (ii) existing earthing and bonding systems;
 - (iii) existing vertical transport systems.

3 General Requirements

3.1 General

- (a) The CSM Contractor must ensure that all investigation, design and construction activities carried out by the CSM Contractor are entirely integrated and compatible and that together they mutually satisfy all the requirements of the Contract, including this SWTC.
- (b) The required performance of the Project Works and the Temporary Works must be taken into account and addressed during all stages of the CSM Contractor's Activities.
- (c) Safety must be taken into account in all aspects of the Project Works, the Temporary Works and the CSM Contractor's Activities. The CSM Contractor must address the following in the development and production of the Design Documentation:
 - (i) safety during construction, testing, Commissioning and operational readiness;
 - (ii) safety during operation;
 - (iii) safety during maintenance; and
 - (iv) safety during decommissioning.
- (d) Continuing operability and maintainability of Central Station must be taken into account in all aspects of the Project Works, the Temporary Works and the CSM Contractor's Activities. The CSM Contractor must address the following in the development and production of the Design Documentation:
 - (i) operation and maintenance during construction; and
 - (ii) operation and maintenance during decommissioning.
- (e) Environmental and sustainability management must be taken into account in all aspects of the Project Works, the Temporary Works and the CSM Contractor's Activities. The CSM Contractor must address the following in the development and production of the Design Documentation:
 - (i) environmental and sustainability management during construction;
 - (ii) environmental and sustainability management during operation;
 - (iii) environmental and sustainability management during maintenance; and
 - (iv) environmental and sustainability management during decommissioning.
- (f) The Project Works and the Temporary Works must be designed and constructed to deliver the performance requirements of the Contract, including this SWTC.

3.2 Minimum Codes and Standards

- (a) The Project Works, the Temporary Works and the CSM Contractor's Activities must conform to and meet the requirements of all relevant Australian codes and standards (including the publications of Standards Australia (AS, AS/NZS), Austroads, Engineers Australia, ABCB, ISCA, Transport for NSW (including the NSW transport assets which are set and managed by ASA ("ASA Standards"), other NSW Government agencies' etc), and the international codes and standards identified in the Contract.
- (b) If there are:
- (i) no relevant Australian codes and standards; or
 - (ii) no international standards identified in the Contract,
- for an element of the Project Works, the Temporary Works or the CSM Contractor's Activities, the CSM Contractor must use international codes and standards that reflect world's best practice.
- (c) The hierarchy of all applicable Codes and Standards is:
- (i) Acts and secondary legislation;
 - (ii) Transport for NSW codes and other NSW Government agencies' codes and standards (RMS, NSW EPA, Sydney Buses, etc.);
 - (iii) other Australian codes and standards and guidelines (Standards Australia (AS, AS/NZS), Austroads, Engineers Australia, ABCB, ISCA, etc.);
 - (iv) international standards (ISO, IEC, IEEE, CENELEC, ITU, etc);
 - (v) European Norms (EN, TSI); and
 - (vi) other relevant International standards, which must be reviewed by the Principal and approved by the Independent Certifier prior to use.
- (d) Where two or more codes or standards apply to the same issue, or conflicts arise between codes and standards, the more stringent must apply to the extent that section 3.2(c) does not apply to or resolve the conflict.

3.3 Effect of the Project Works, the Temporary Works and the CSM Contractor's Activities

- (a) Subject to section 3.3(b) and except for infrastructure which is to be demolished, the CSM Contractor must ensure the Project Works, the Temporary Works and the CSM Contractor's Activities do not damage or have any adverse impact on the condition or performance of any infrastructure on, in or adjacent to or in the vicinity of the Site (including structures, roads, railways, retaining walls, bridges, Utility Services and buildings) or any existing properties adjacent to or in the vicinity of the Site including any adverse impact on:
- (i) amenity;
 - (ii) aesthetics;
 - (iii) durability;

- (iv) structural integrity;
 - (v) function;
 - (vi) user benefits;
 - (vii) health and safety during construction and operation;
 - (viii) environmental performance; and
 - (ix) access to such infrastructure or existing properties.
- (b) The CSM Contractor may be relieved of the requirements of section 3.3(a) to the extent that it satisfies the requirements of any infrastructure owner, Utility Services owner, property owner or occupier, having regard to relevant Codes and Standards and practices and the nature of the damage or adverse impact.
- (c) The CSM Contractor must undertake a detailed and rigorous engineering analysis (including numerical modelling) to predict the effects (the “Predicted Effects”) of the Project Works, the Temporary Works and the CSM Contractor’s Activities over time on existing ground conditions and infrastructure (including but not limited to structures, roads, railways, retaining walls, bridges, Utility Services and buildings). The analysis must also ensure that the predicted movements, vibration and stray current effects will satisfy the requirements of section 3.3(a) or section 3.3(b). This analysis must be documented in a report and submitted with the Design Documentation.
- (d) The detailed engineering analysis must include consideration of the influence of:
- (i) excavation and earthworks construction;
 - (ii) piling;
 - (iii) cranes and other heavy plant / temporary works;
 - (iv) geological variations;
 - (v) the impact on groundwater;
 - (vi) the effects over time;
 - (vii) stray currents;
 - (viii) vibration from construction and compaction equipment; and
 - (ix) wheel / rail noise and vibration.
- (e) The CSM Contractor must also determine the extent to which the existing ground conditions and infrastructure may be acceptably affected (the “Acceptable Effects”, consistent with satisfying the requirements in subsection 3.3(a) above and the Environmental Documents.
- (f) Throughout the period when the CSM Contractor is undertaking the CSM Contractor’s Activities, the CSM Contractor must monitor continuously over time the actual effects of the Project Works, the Temporary Works and the CSM Contractor’s Activities on the ground conditions and infrastructure and compare the actual effects to both the Predicted Effects and the Acceptable Effects.
- (g) Monitoring of the actual effects of the Project Works, the Temporary Works and the CSM Contractor’s Activities on existing ground and infrastructure must be

undertaken by qualified and experienced surveyors, geologists, geotechnical engineers, structural engineers, noise and vibration specialists and environmental specialists.

- (h) In the event that the actual effects of the Project Works, the Temporary Works and the CSM Contractor's Activities on the existing ground conditions and infrastructure exceed the Predicted Effects or significantly vary over time, the CSM Contractor must review and, if necessary, re-evaluate the Predicted Effects and make any adjustment subsequently necessary to any aspects of the manner in which the CSM Contractor's Activities are undertaken to ensure that the Acceptable Effects are not exceeded and to ensure full compliance with section 3.3(a) above.
- (i) Notwithstanding the Predicted Effects on infrastructure contemplated in section 3.3(c) above, the CSM Contractor must repair and reinstate infrastructure at the earliest opportunity so that the CSM Contractor satisfies the requirements in section 3.3(a) above for each item of infrastructure.
- (j) The CSM Contractor must promptly and progressively provide the Principal's Representative and the Independent Certifier with:
 - (i) analysis and determinations, including any revisions, and re-evaluations of the Predicted Effects and the Acceptable Effects;
 - (ii) results of monitoring the actual effects of the Project Works, the Temporary Works and the CSM Contractor's Activities on the existing ground conditions and infrastructure over time, in a form which is directly comparable to the Acceptable Effects and Predicted Effects;
 - (iii) details of any adjustments to the manner in which the CSM Contractor's Activities are carried out which are necessary as a consequence of any re-evaluation of Predicted Effects; and
 - (iv) details of designs and materials for the repair and reinstatement infrastructure required by section 3.3(i) above.
- (k) The CSM Contractor must submit, prior to the Date of Completion for each Portion, a final updated report detailing the Predicted Effects, Acceptable Effects and actual effects of the Project Works, the Temporary Works and the CSM Contractor's Activities on the existing ground conditions and infrastructure.

3.4 Site Investigation

- (a) The CSM Contractor must undertake all site investigations required for the performance of the CSM Contractor's Activities.
- (b) Geotechnical site investigation work must be undertaken in accordance with AS1726 Geotechnical Site Investigations. The CSM Contractor must maintain records of all tests, site investigation and geotechnical reports (including position and level of test and investigation locations).
- (c) Site investigation work associated with Contamination must be undertaken in accordance with Environment Protection Authority - Contaminated Sites: Sampling Design Guidelines.
- (d) Site investigations, in conjunction with the design process, must identify all ground conditions and infrastructure conditions (including the condition of rail infrastructure,

roads, access driveways, bus stops and associated bus service infrastructure, parks and other publicly accessible areas, footpaths and cycleways, Utility Services, buildings and other structures) which may be affected by the Project Works, the Temporary Works or the CSM Contractor's Activities.

- (e) Where ground conditions or infrastructure are expected to be affected by the Project Works, the Temporary Works or the CSM Contractor's Activities, the CSM Contractor must diligently monitor the actual effects in accordance with the requirements of section 3.3 and section 3.5.
- (f) All site investigations must be included in the Design Documentation in the following electronic formats:
 - (i) .pdf; and
 - (ii) ASCII data file in Association of Geotechnical and Geoenvironmental Specialists (AGS) format.
- (g) In addition to the requirements in section 3.4(e) above, all insitu test results, including cone penetration, stress, packer permeability and pressure meter test results, groundwater monitoring and laboratory test results related to site investigations must be provided in electronic format (either .xls or .xlsx). All Contamination laboratory test results must be provided in ESdat electronic lab data format.
- (h) The CSM Contractor must provide the Principal's Representative with two copies of all site investigation reports, including progressive copies of such documents as each is developed, promptly, and in any event within 5 Business Days of the CSM Contractor receiving such reports.

3.5 Condition Surveys

- (a) The CSM Contractor must undertake pre-construction and post-construction ground and infrastructure condition surveys in accordance with the requirements of MR-PA.

3.6 Survey

- (a) Survey undertaken by the CSM Contractor must comply with the requirements in the MR-PA.
- (b) All survey and design levels must refer to Australian Height Datum ("AHD"). All survey plan coordinates must refer to the MGA -94 Zone 56 coordinates, based on the Geocentric Datum of Australia ("GDA").
- (c) The CSM Contractor must, as a minimum, establish a minimum of three permanent survey marks ("PSMs"), at locations within the Site to be agreed with the Principal.
- (d) The PSM's must be placed in accordance with the requirements of the Surveying Regulation 2006 (NSW).

3.7 Geotechnical Validation

- (a) The CSM Contractor must, as a minimum, during the performance of the CSM Contractor's Activities, identify actual ground conditions encountered during tunnelling and excavations for the Project Works and the Temporary Works and

compare the encountered ground conditions with the expected ground conditions. In the event that the encountered ground conditions are different to the expected ground conditions, the CSM Contractor must make any necessary adjustments required to the CSM Contractor's Activities to ensure full compliance with the Contract.

- (b) Geological mapping and logging of all ground conditions encountered during tunnelling and excavation must be undertaken by a qualified and experienced engineering geologist or geotechnical engineer prior to any application of cast in situ concrete. Where the ground conditions are not exposed, the CSM Contractor must record the ground conditions inferred from probe holes, machine head torque or spoil cuttings.

3.8 Ground Movements

- (a) The CSM Contractor must prepare a "Ground Movements Report" to demonstrate that:
 - (i) the predicted settlements expected during construction will remain within the normal limits specified in RailCorp specifications SPC 207 – Track Monitoring Requirements for Undertrack Excavation; and
 - (ii) speed restrictions are not expected to be required to be put in place during excavation.
- (b) The theoretical effects of these predicted settlements due to the CSM Contractor's proposed construction methods or other influences must be assessed together with the impacts on adjacent Existing Buildings and Structures (EBS) for input in to the EBS plan and design of any remedial/strengthening works.
- (c) The CSM Contractor must liaise with the Principal with regard to the format and content for the Ground Movements Report. At each of the design stages the Ground Movements Report must be submitted and progressively updated.

3.9 Instrumentation and Monitoring

- (a) The CSM Contractor must produce an "Instrumentation and Monitoring Plan" that documents as a minimum:
 - (i) monitoring of key parameters during construction to validate and verify the design assumptions including ground surface and existing track deformation, groundwater levels and flows;
 - (ii) construction monitoring and testing to ensure the required concrete strength and thickness is achieved;
 - (iii) geological face mapping and tunnel face stability assessment reports, where required;
 - (iv) recording and reporting protocols; and
 - (v) requirements for pre-construction baseline monitoring of EBS, ground water levels, flow paths and water quality.

- (b) The Instrumentation and Monitoring Plan must be developed alongside the requirements in the Rail Corridor Monitoring and Contingency Plan set out in the Sydney Metro City & Southwest – Transition Agreement.
- (c) The CSM Contractor must liaise and agree with the Principal the format and content for the monitoring and testing procedures and the Instrumentation and Monitoring Plan.

3.10 Standard and available components and materials

- (a) Where practicable, design and selection components and materials shall incorporate the use of standard and readily available components to facilitate procurement and minimise whole of life costs.

3.11 Sustainability

- (a) The CSM Contractor must ensure that sustainability is addressed throughout the performance of the CSM Contractor's Activities and must comply with the sustainability requirements set out in Appendix B07.

3.12 Systems Assurance

The CSM Contractor must ensure that systems assurance is addressed throughout the performance of the CSM Contractor's Activities in the following areas:

- (a) safety;
- (b) RAMS;
- (c) human factors;
- (d) asset management.

3.13 Durability

- (a) The CSM Contractor must ensure the durability of all Assets and their components. Durability must be considered and addressed throughout the design and construction of all Assets and their components.
- (b) The CSM Contractor must make its own assessment of the performance requirements of the Contract, including this SWTC, in relation to each Asset and its components in terms of:
 - (i) the micro-environment, including ground conditions, groundwater conditions, contamination and exposure conditions including temperature, humidity, CO2 level and atmospheric pollution;
 - (ii) operational conditions including drying and wetting, vibration, heat and stray current effects;
 - (iii) potential deteriorating mechanisms in the micro-environment including penetration of aggressive substances into structural elements through cracks, joints or by wick action;
 - (iv) rate of deterioration;

- (v) the likely material life;
 - (vi) risk and variability of the constructed product;
 - (vii) the feasibility and cost of in-situ monitoring, maintenance and/or repair and replacement;
 - (viii) the necessity of providing additional protection including coatings; and
 - (ix) the significance of failure.
- (c) The CSM Contractor must incorporate all controls necessary to ensure the durability of all Assets and their components and that the specified Design Life for each Asset specified in section 4.2 is met. These controls must be identified in the Design Documentation and the Management Plans.
- (d) The durability portions of the Design Documentation and the Management Plans must demonstrate how the selected design, materials, construction and maintenance methods will achieve the durability requirements for each Asset and its components and the specified Design Life for each Asset specified in section 4.2.

3.14 Noise and Vibration

Without limiting the requirements of the Contract, the CSM Contractor must take all actions necessary during the performance of the CSM Contractor's Activities to comply with the noise and vibration requirements in the Environmental Documents.

3.15 Safety in Design

- (a) Further to the safety in design requirements in Transport for NSW T MU MD 00009 ST AEO Authorisation Requirements and without limiting the requirements of the WHS Legislation, the CSM Contractor must consider and address all safety issues, hazards and risks and requirements relating to safety during construction, commissioning, operation, maintenance and decommissioning of the Project Works and the Temporary Works in the development and production of the Design Documentation, including:
- (i) the identification of all safety issues, hazards and risks involved in the CSM Contractor's Activities, the construction and commissioning of the Project Works and Temporary Works and during their subsequent operation, maintenance and decommissioning;
 - (ii) the identification and management of the requirements of the WHS Legislation, safety goals and objectives and generic hazards associated with the Project Works, the Temporary Works and the CSM Contractor's Activities;
 - (iii) the analysis of safety issues, including generic issues, and hazards and risks associated with the CSM Contractor's Activities;
 - (iv) detailing the principles of the design, the identification of all applicable safety standards and codes of practice to be applied to the design input for each design lot, the identification of hazards and risks which cannot be eliminated, managed or mitigated by the design and the measures to be

- adopted in the construction, operation, maintenance and decommissioning phases to manage and mitigate these hazards and risks;
- (v) the identification of hazards and risks that require the development of specific procedures in the construction, operation, maintenance and decommissioning phases to eliminate the risks to safety, so far as is reasonably practicable and where elimination of a risk to safety is not reasonably practicable, reduce those risks so far as is reasonably practicable;
 - (vi) the consideration of safety issues related to the on-going repair, maintenance, upgrading and decommissioning of the Project Works and Temporary Works;
 - (vii) detailing the issues relating to working adjacent to or with live Utility Services, including high voltages or pressures, overhead clearances, dangerous excavations, contaminated ground or groundwater and asbestos materials;
 - (viii) detailing the hazards and risks identified as part of the risk management process and resultant changes and management measures in the Design Documentation and construction activities;
 - (ix) detailing the safety implications of Temporary Works and the CSM Contractor's Activities including the:
 - (x) positioning and arrangement of site access and egress points;
 - (xi) location of site facilities and accommodation;
 - (xii) location of traffic / pedestrian routes;
 - (xiii) safe work at height requirements; and
 - (xiv) proximity to traffic and railway lines during the performance of the CSM Contractor's Activities; and
 - (xv) the identification of hazards and risks which arise from the materials specified for the Project Works and the Temporary Works and which require precautions either because of the nature of the materials or the manner of their intended use. The materials must be specified in sufficient detail to allow the safe use of the materials, based on precautionary information provided by the suppliers.
- (b) These health hazards include exposure to hazardous substances (including lime as a stabilising agent, preservatives used on timber materials, removal of lead based paint and asbestos) and issues relating to manual handling on the Site.
- (c) The CSM Contractor must hold and document the outcomes of formal workshops, at the start of and progressively at all stages and phases throughout the development period for the Design Documentation, to identify safety issues, hazards and risks.. The formal workshops must be attended by representatives of all the major design disciplines and the lead safety manager. The Principal's Representative must be invited to attend and allowed to participate in the formal workshops.

- (d) The Design Documentation must include specific construction site rules to address safety issues and any other issues that require such rules. These construction site rules must include specific permit-to-work rules and emergency procedures. The CSM Contractor must develop the Design Documentation to assist in the implementation of the construction site rules.

3.16 Commissioning and Testing

- (a) The CSM Contractor must undertake comprehensive testing and commissioning of the Project Works and the Temporary Works to ensure that the Project Works and Temporary Works comply with the requirements of the Contract.
- (b) The testing and commissioning must be carried out progressively to ensure that the Date of Construction Completion of each Portion is not avoidably delayed and to ensure that Completion is achieved by the Date for Construction Completion of each Portion.

4 Technical Requirements

4.1 General requirements

- (a) The Project Works must be designed and constructed to comply with:
 - (i) the criteria specified in this SWTC;
 - (ii) Codes and Standards; and
 - (iii) the requirements of all relevant Authorities.
- (b) The Design Documentation for the Project Works must not depart from the CSM Contractor's Tender Design in a manner that will:
 - (i) increase user costs or whole of life costs; or
 - (ii) reduce the performance of any part of the Project Works including:
 - A. quality and amenity;
 - B. safety;
 - C. durability;
 - D. aesthetics, cleanliness, condition and visible features;
 - E. heritage requirements and values;
 - F. design life;
 - G. maintainability;
 - H. whole of life performance;
 - I. environmental performance;
 - J. sustainability performance;
 - K. user benefits;
 - L. functional performance; or
 - M. security.
- (c) Space provision must be made for the ease, efficiency and safe access to equipment for maintenance. In particular, assets must be designed to allow inspection and maintenance to be undertaken remotely away from the operational railway. Where this is not possible, particular attention should be given in design to the installation of remote condition monitoring equipment.
- (d) The Project Works must be designed to ensure minimal replacement and repair of components.

4.2 Design Life

- (a) In this SWTC “Design Life” means the period for which an Asset or a component of the Asset must be designed to meet the requirements of the Contract (including this SWTC) and perform its intended function, without replacement, unscheduled refurbishment, unscheduled maintenance or unscheduled work that requires the operation of Central Station and the Metro Station to be disrupted.
- (b) The CSM Contractor must ensure that the various Assets, and their components, achieve, as a minimum, the Design Life specified in Table 4-1.

Table 4-1 Design Life

Asset or Asset component	Design Life (years)
Structural	
Retaining structures that support railway embankments or cuttings, including the Metro Station box and the East Concourse and associated permanent ground anchors, rock bolts and waterproofing systems.	120
All other structural elements including retaining structures, rock bolts, rock anchors, sprayed concrete to external retained structures, culverts, tunnel elements, platforms, pre cast and cast in place concrete, track slab, overhead wiring structures, deflection walls, substructure including piling, building transfer systems, buildings, load bearing masonry, steel and other structural load bearing elements	120
Concrete infill elements (ie between permanent linings and existing/new rock faces or surfaces)	120
Inaccessible drainage structures and inaccessible pipe systems	120
Accessible drainage elements	20
Waterproofing systems, including waterproofing membranes	100
Non-load bearing structural elements	50
Signalling structures	50
Sign support structures and other roadside furniture	50
Noise barriers, noise attenuation devices and acoustic panels and support systems	30
Service Building on Platform P14	50
Temporary shaft support structures including pile, pile cap, shotcrete	5
Elastomeric bridge bearings	50
Canopies on platforms	50
Canopy footings	120
Track transition slab (approach slab)	120
Civil	

Asset or Asset component	Design Life (years)
Embankments and cuttings	100
Flood scour protection	50
Road pavements – concrete	50
Flexible (asphalt) road pavements, car park surfaces, external paving, footpaths and hard landscaping features	20
External pedestrian paving (including substrate and paving finish)	30
Railway side barriers and other railway side furniture and fixtures	40
Track	
Permanent way including supports, fixings and fastening systems, turnouts, crossing diamonds, arrestor systems, noise and vibration isolation components.	30
OHW	
Overhead wiring (excluding support structures)	30
Signalling	
Signalling and train control systems, wayside equipment	20
Communications	
Public telecommunications operators communication systems, public information systems, Help Points and security systems	20
PIDSs, PA, Help Points	15
Access control and security systems including CCTV	15
Rail communications systems – fibre and copper back bones	30
All other rail communications systems	15
Cabling, conduits and support systems	30
General Fire, Mechanical and Electrical Control Systems	
Permanent and inaccessible elements of fire protection, mechanical and electrical control systems	50
Electrical	
Electrical supply and traction power supply systems, transformer, main distribution boards, switches and control systems	30
High voltage switchboards, transformers and electrical systems	30
Low voltage switchboards, lighting fixtures and electrical systems	30
Cabling, conduits and support systems	30
Earthing, bonding and electrolysis protection systems (inaccessible)	100
Earthing, bonding and electrolysis protection systems (accessible)	30

Asset or Asset component	Design Life (years)
Mechanical	
Mechanical ventilation systems	30
Fixed elements of water treatment plant and systems	30
Drainage pump systems and associated electrical equipment	30
All other pump systems and associated electrical equipment	30
Pumps, tanks and valves, pump control systems and accessible pipe systems	20
Lifts and escalators	30
Fire Services Systems	
Fire services systems (fixed) – suppression, hydrant and hose reel systems (fixed parts)	30
Fire services systems (non-fixed) – automatic detection and hoses	20
Buildings fixtures, finishes and fit out	
External building roof finishes, glazing and external cladding	25
Platform screen doors – glazing, frames, fixtures and fittings	30
Internal non-structural elements – fit out, building finishes and fixtures	20
External furniture, fittings, fences, screens and security/fire gates or doors	20
Artwork, signage and wayfinding foundation structures and any permanent primary support connections	50
Artwork, signage and wayfinding primary support systems (excluding foundation systems or panel faces/fascia panels)	30
Artwork, signage and wayfinding panel faces and fascia panels (internal and external)	20
Ticketing system - structures, gantries, and other equipment structures not supplied by the Principal	30
Buildings services	
General lighting, electrical, ventilation, fire and other fire life safety services	25
Building services – main switchboards, central systems and plant and reticulation	30
Access control and security systems including CCTV	15
Multi-User-Screens (MUS), UPS batteries, HV/LV switch/control batteries, battery chargers, IT equipment and white goods	5

(c) In relation to the Design Lives specified in Table 4-1:

- (i) The minimum Design Life for Assets, and their components, which are not addressed in Table 4.1 above shall be the typical industry values for similar Assets of a high standard and quality.
- (ii) The design of concrete structures with a Design Life of 100 years or more must be in accordance with durability requirements of AS5100.5:2017. For structures with a Design Life of 50 years or less the durability requirements of AS3600 may be adopted.
- (iii) For concrete structures, the onset of corrosion of the steel reinforcing and prestressing tendons must not have commenced within the specified Design Life.
- (iv) For steel structures, additional steel thickness allowing for no further protective coating within the specified Design Life including additional steel thickness that can be sacrificed due to corrosion must be provided.
- (v) The specified Design Life for civil and structural elements must be based on an allowance for only infrequent, minor and non-disruptive maintenance activities during the Design Life of the element. The protection system must not use active corrosion protection (such as cathodic protection) to achieve the required Design Life.
- (vi) Assets, and their components, must be housed and installed in an environment that supports the specified minimum Design Life.

4.3 Durability

- (a) The CSM Contractor must prepare and submit to the Principal and the Independent Certifier for review an overarching durability assessment report as part of the Design Documentation demonstrating that the durability and the required Design Life for each Asset or component will be achieved.
- (b) The durability assessment report must include all elements of the design and the expected range of environments that the asset elements will be exposed to. The durability assessment report must detail the requirements and methods for future inspection, testing, monitoring and maintenance of all elements of the design.
- (c) The durability assessment report must address the issues of reliability, availability, maintainability and system safety (RAMS) including:
 - (i) the micro environment including soil and water condition, contamination, exposure conditions etc;
 - (ii) the potential deterioration mechanisms in this micro environment;
 - (iii) design life modelling to ascertain the likely rate of deterioration and likely life;
 - (iv) the feasibility and cost of in-situ monitoring and/or replacement during the normal operating period and restricted non-operating period;
 - (v) the necessity and cost benefit analysis of providing additional protection;
 - (vi) the significance of failure; and
 - (vii) inspection and monitoring requirements.

- (d) The micro-environment for each asset element must be determined by implementing site investigation and testing.
- (e) Assets and components must be housed and installed in an environment that supports the specified Design Life.
- (f) Durability statements must be included in each design package or part package and for each submission to the Principal and the Independent Certifier.

4.4 Operating environment ranges

- (a) Where not specified in the Contract or within the Codes and Standards all Assets (including their components) must be able to perform their normal duties or cycles, within the continuous operating environmental ranges specified in Table 4-2.

Table 4-2 External operating environment

Control/environment	Range/commentary
Ambient Air Temperature	-10°C to 55°C dry bulb
Relative Humidity	10% to 95% non-condensing
Rainfall Rate	up to 40mm/hour
Solar Radiation	Up to 1000 W/m ²
Wind Speed	up to 150 km/hr
Dust and Particulates	Subject to local condition investigations by the Operator
Vibration	Not in excess of an acceleration rate of 0.1 G continuously, or 0.25G intermittently in the frequency range of 5 to 25 Hz
Ambient Lighting	10 to 100,000 lux

4.5 Electromagnetic compatibility

- (a) Electromagnetic emissions from equipment and systems must not interfere with medical devices, mobile handheld communications equipment, safety-critical electronic equipment, or the comfort of passengers or staff.
- (b) All items of equipment, systems and integrated systems forming part of the Project Works must be electromagnetically compatible with:
 - (i) each other;
 - (ii) all electrical and mechanical systems provided by Interface Contractors; and
 - (iii) third party systems within and external to the Project Works.
- (c) All Utility Services systems must comply with the 'class A electromagnetic limits' established in:

- (i) AS/NZS CISPR 22:2009 'Information Technology Equipment – Radio disturbance characteristics – Limits and method of measurement'; or
 - (ii) I.S. EN 55022:2010 'Information Technology Equipment – Radio disturbance characteristics – Limits and method of measurement'; and
 - (iii) AS/NZS 61000.6.1:2006 'Electromagnetic Compatibility – Part 6.1 – Generic Standards – Immunity for Residential, Commercial and Light Industrial environments'.
- (d) Where not specified within Codes and Standards the CSM Contractor must comply with the following vibration criteria and assessment requirements:
- (i) assess individual vibration-sensitive equipment where vibration-free performance is essential to the operating outcome, including assessing any construction impact and operational vibration impacts prior to commissioning and at Completion;
 - (ii) assess individual vibration-sensitive equipment using generic 'Vibration Criterion' (VC) curves specified in 'Institute of Environmental Sciences and Technology' (IEST) industry standard IEST-RP-CC012:2007 – 'Considerations in Cleanroom Design'; and
 - (iii) where required by the CSM Contractor's vibration assessment carry out field measurements to confirm conformance with the standards. All field measurements must be in accordance with international standard ISO 8569:1996 'Mechanical vibration and shock – Measurement and evaluation of shock and vibration effects on sensitive equipment in buildings'.

4.6 Architectural

- (a) The building, precinct and Public Domain works must comply with the architectural requirements of Appendix B03.

4.7 Heritage

- (a) The CSM Contractor's Activities must comply with the requirements of Appendix B06.

4.8 Civil and structural

- (a) The civil and structural works must comply with performance and design requirements in Appendix B01.

4.9 Rail, rail systems and communications

- (a) The rail, rail systems and communications works must comply with performance and design requirements in Appendix B02.

4.10 Electrical services

- (a) The electrical services must comply with performance and design requirements in Appendix B04a.

4.11 Mechanical services

- (a) The mechanical services must comply with performance and design requirements in Appendix B04b.

4.12 Metro track and tunnel alignment

- (a) The CSM Contractor must design the Metro Station in accordance with the Running Tunnel (RT01) axis and the Running Tunnel (RT02) axis as defined on SWTC Drawings NWRLSRT-PBA-SHC-TU-DWG-930050, 930051, 930052, 930053 and 930060.
- (b) The CSM Contractor must design the Metro Station in accordance with the Track Formation Control Line (Up MNW) and Track Formation Control Line (Down MNW) as defined on SWTC Drawing NWRLSRT-SCS-RD-DWG-938215 and 938216.

4.13 Fire and life safety

- (a) Fire and life safety must comply with performance and design requirements in Appendix B05.

4.14 Customer Centric Design

- (a) The CSM Contractor must comply with the customer centric design requirements in Appendix B09.

4.15 Wayfinding

- (a) The CSM Contractor must comply with the wayfinding requirements in Appendix B10.

4.16 Public Art

- (a) The CSM Contractor must comply with the requirements for public art in Appendix B11.

4.17 Asset Management

- (a) The CSM Contractor must comply with the asset management information requirements in Appendix B12.

4.18 Security Engineering

- (a) The CSM Contractor must conduct a security risk assessment workshop and document a security risk assessment and as soon as is reasonably practical after the date of the Contract and prior to submission of the Design Stage 1 Design Documentation to the Independent Certifier and the Principal's Representative.
- (b) The CSM Contractor must engage the services of a security consultant with NSW Security Licence Class 2A and include experience in Human factors and CPTED in the security risk assessments. The security consultant must facilitate security risk workshops which include all relevant stakeholders, as agreed with the Principal's Representative.

- (c) The CSM Contractor must consider “crime prevention through environmental design” (CPTED) and its outputs must be incorporated into the design development process. A CPTED report must be included in the Design Stage 1 Design Documentation.
- (d) A second security risk assessment workshop must be conducted to ensure all proposed mitigation strategies are appropriate and agreed by fire stakeholders. The second security risk assessment workshop must be completed prior to the submission of the Design Stage 2 Design Documentation to the Independent Certifier and the Principal’s Representative which must incorporate the mitigation strategies and outcome of the security risk assessment workshops into the design development.
- (e) The security risk assessment must be updated at each Design Stage and any outcomes included in the appropriate design report.
- (f) The CSM Contractor must arrange additional security assessment workshops where required or requested by the Principal’s Representative. These security assessment workshops must be completed using current and accurate crime statistics to inform the process as well as consideration of the security operational plans, procedures and processes of the Existing Operators.
- (g) The security risk assessments must identify, assess and minimise the risk of terrorism and crime occurring on the Site during construction and during operational phase.
- (h) The security risk assessment must assess all relevant security equipment within the design solution, including CCTV, access control, radios and Help Point systems amongst others.
- (i) The design must comply with the minimum security requirements defined under ASA standards and the following design criteria for rail stations:
 - (i) RSS-001 to RS004;
 - (ii) National Surface Transport Security Strategy;
 - (iii) Preventive Security Guide – Counter Terrorism Planning for Rail Operations; and
 - (iv) Crime Prevention Through Environmental Design Guidelines Parts A and B.
- (j) The CSM Contractor must develop a security management plan and security documents in-line with the Sydney Metro Security Framework document.
- (k) The Principal will provide security oversight and guidance for the full life of the project and the CSM Contractor may be required to modify and / or adjust their design / construction to suit current threats to the network and precinct.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

4.22 Safeguarding for Future Works

- (a) The CSM Contractor must design and construct all items of permanent infrastructure required to support the future construction and installation of future works which are specified in the SWTC, including in Appendix B15.
- (b) In developing the design of the Project Works, the CSM Contractor must:
 - (i) consider and accommodate the future construction and installation of the future works specified in the SWTC, including in Appendices B01, B02, B03, B04a, B04b and B15;
 - (ii) demonstrate in the Design Documentation how the future works have been considered and accommodated, including providing details of proposed construction methodologies for those future works that minimise impacts on the operations of the Metro Station and Central Station to the maximum extent possible.

4.23 Rooms

- (a) The CSM Contractor must design and construct all permanent new rooms and permanent adjustments to existing rooms as specified in the Room Schedules.
- (b) Subject to sections 4.23 (c) and 4.23(e), the rooms must comply with the Room Data Sheets.
- (c) Dimensions of new rooms, in plan, must:
 - (i) be not less than any relevant minimum dimensions specified in the Room Data Sheets, except that rooms may be sized to have one side with a dimension which is less than that specified for that side in the Room Data Sheet provided that:
 - A. the total room area is not less than the area determined by multiplication of the minimum room dimensions; and
 - B. the CSM Contractor has obtained written approval by the Operator of the room dimensions;
 - (ii) in the case of rooms in which the CSM Contractor installs all the equipment, be sized to accommodate that equipment; and
 - (iii) comply with the requirements of all relevant Codes and Standards.
- (d) Copies of the Operator's approval of room dimensions, if any, must be submitted to the Principal's Representative and the Independent Certifier with the relevant Design Documentation.
- (e) The Room Data Sheets contain minimum requirements and the CSM Contractor must include additional provisions necessary for compliance with the Contract, Codes and Standard, and the CSM Contractor's fire and life safety strategy.

4.24 Cable Containment for Interface Works

- (a) The CSM Contractor must design and construct all cable containment for Interface Works as specified in the Interface Schedules and in Appendix F06.

5 Construction Requirements

5.1 General

- (a) The CSM Contractor must construct the Project Works and the Temporary Works in a manner and to standards which comply with and meet the requirements of the Contract, including this SWTC.
- (b) The CSM Contractor must provide sufficient design resources during the construction phase to ensure effective monitoring of construction activities including testing and commissioning activities, verification and validation of the integration of all components of the Project Works, clarification of design issues, review of design changes, witnessing of acceptance tests and release of hold points.

5.2 Construction Facilities & Requirements

5.2.1 Temporary site facilities

- (a) All temporary site facilities, including site sheds and the temporary site facilities provided for the Principal, the Independent Certifier and Interface Contractors, must be as-new and must be maintained in excellent condition for the duration of the project.
- (b) Site facilities, including site sheds, must be established at locations and positioned to minimise the impact on adjoining properties and residents. All facilities must be positioned, constructed and maintained in good condition to meet the requirements of relevant Authorities.
- (c) The CSM Contractor must provide shared usage to its site facilities (including site offices, lunch rooms, toilets, and first aid facilities) for the personnel of the Interface Contractors as detailed in section 5.7.2 for the Project Works.
- (d) The CSM Contractor must ensure all site facilities incorporate:
 - (i) energy efficient design features, and best practice energy efficient lighting solutions, light fittings and electrical appliances;
 - (ii) high performance thermal insulation in all walls, ceilings and floors that optimise thermal performance;
 - (iii) natural daylighting;
 - (iv) natural ventilation;
 - (v) water efficient fixtures, fittings and controls;
 - (vi) air conditioning refrigerants with low or zero global warming potential;
 - (vii) bicycle storage facilities, showers and changing room facilities; and
 - (viii) CPTED principles.

- (e) The CSM Contractor must ensure that all new water-using appliances, shower heads, taps and toilets have at least the average Water Efficiency Labelling Scheme (WELS) star rating by product type.
- (f) The CSM Contractor must ensure that all new electrical equipment has at least the market average star rating. In categories where no star ratings are available, electrical equipment must be recognised as high efficiency either by being ENERGY STAR accredited, in a high efficiency band under Australian Standards or being above-average efficiency of Greenhouse and Energy Minimum Standards (GEMS) registered products.
- (g) Any security and warning lighting used by the CSM Contractor must be installed so that light is not directed at neighbouring properties or in such a way that light reflects onto structures or neighbouring properties. Lights must not interfere with train operations, and must not have the ability to be interpreted as signals
- (h) The CSM Contractor must ensure that refrigerants and any fire suppression systems have low or zero global warming potential.
- (i) All temporary site facilities, including site sheds must be maintained free of graffiti and any advertising material not authorised by the Principal's Representative until the Date of Completion of the last Portion to achieve Completion.
- (j) The CSM Contractor must carry out daily inspections of all temporary site facilities, including site sheds. Graffiti and unauthorised advertising identified during the daily inspections must be removed in accordance with MR-C.
- (k) For temporary site facilities (including site sheds) placed in the Sydney Yard Cess Area, the CSM Contractor must undertake an assessment on the impact to existing rail infrastructure such as signal sighting, earthing and bonding. The results of the assessment, including proposed measures to mitigate the impacts of the temporary site facilities, must be submitted to the Principal's Representative for review a minimum of 20 Business Days prior to the commencing the establishment of the facilities.

5.2.2 Site Facilities for the Principal and the Independent Certifier

- (a) From the date that the CSM Contractor establishes its temporary site offices, the CSM Contractor must provide for the exclusive use of the Principal's Representative, the Principal's personnel and the Independent Certifier an integrated, air conditioned open plan office of a standard that is suitable to accommodate 37 full-time persons, that complies with all relevant building codes and health and safety requirements ("Principal's Site Facilities"), according to the following requirements:
 - (i) a total of 37 workstations are required including 23 No. in the CSM shared Contractor's office and 14 No. in Sydney Yard amenities;
 - (ii) the 14 workstations in the Sydney Yard amenities must include a separate area of 6 workstation to be used by the Independent Certifier (or persons in similar role);
 - (iii) of the 23 workstations at the shared CSM Contractor's office, 10 workstations are to be agile/ "hot desks"; and

- (iv) a meeting facility for 8 or less people separate from the CSM Contractor for use by the Principal's Representative. Larger shared meeting rooms must be available for booking from the CSM Contractor.
- (b) The Principal's Site Facilities must be co-located with the CSM Contractor's main site offices.
- (c) The Principal's Site Facilities must include 37 workstations of four square metres each, with an appropriate walkway space. Each workstation must include:
 - (i) a desk;
 - (ii) a lockable pedestal drawer unit;
 - (iii) an office chair;
 - (iv) shelving units;
 - (v) a minimum of four power sockets;
 - (vi) a separate telephone and computer data point;
 - (vii) a minimum 4Mbps (Megabits per second) Internet connection for the Principal's server connection; and
 - (viii) a connection to an 'office standard' printer.
- (d) All equipment, furniture, fittings and finishes provided for the Principal's Site Facilities must be new and of a standard that is suitable for a professional office.
- (e) The CSM Contractor must fully service and maintain the Principal's Site Facilities including undertaking all security, cleaning and maintenance.
- (f) The CSM Contractor must provide the users of the Principal's Site Facilities with access to kitchen facilities and amenities.
- (g) The CSM Contractor must submit a drawing of the proposed Principal's Site Facilities to the Principal's Representative within **90 days** after the date of the Contract.

5.2.3 Hoarding and temporary fencing

- (a) The CSM Contractor must install and maintain temporary hoardings, fencing and walls on and around the Site as necessary to provide safety and security in the performance of the CSM Contractor's Activities. The temporary hoardings, fencing and walls must be erected prior to commencing the CSM Contractor's Activities in the affected areas.
- (b) Hoardings and fencing installed by the CSM Contractor must:
 - (i) be made from new materials;
 - (ii) be structurally sound, including being capable of withstanding construction impact loads;
 - (iii) be at all times be maintained in a neat and tidy condition and be sympathetic with the surroundings.
- (c) The CSM Contractor must carry out daily inspections of all hoardings, fencing and walls.

- (d) Where hoardings are required, the CSM Contractor must provide pedestrian modelling in accordance with MR-PA and section 5.4, and demonstrate that there is sufficient space during Degraded Operations. If existing widths of pedestrian access are maintained (i.e. tunnels, walkways, stairs etc.) no additional pedestrian modelling is required where width-compliance is achieved.
- (e) Any hoarding plans must be approved by Sydney Trains in accordance with MR-C, and must be designed to withstand the wind loads due to trains passing through Central Station.
- (f) Where hoardings are required on public roads or footpaths, the CSM Contractor must obtain all necessary approvals from City of Sydney Council and any other the relevant Authorities.
- (g) The CSM Contractor must provide hoardings which are clean, painted and new when installed and which also comply with the relevant hoarding standards.
- (h) The CSM Contractor must provide hoardings that are designed to appropriate crowd loading, wind loading, dust, noise, fire rating requirements and for the effects of through trains operating at line speed.
- (i) Hoardings must be free of snagging or sharp protrusions on both the worksite side and the public side.
- (j) Where hoardings include access doors, these must be kept securely locked at all times.
- (k) Access doors must be constructed to open inwards to the worksite.
- (l) No gaps should be evident between the edge of the hoarding and any permanent structure.
- (m) If hoardings are not full height due to fire and life safety requirements, the CSM Contractor must provide appropriate netting between the top of the hoarding and the roof to prevent unwanted materials or potential ignition sources being thrown into the construction zone. This netting or barrier must be permeable.
- (n) The CSM Contractor must install and maintain temporary fencing around the Sydney Yard Cess Area during construction.
- (o) The hoarding installed by the CSM Contractor on platforms must:
 - (i) not restrict access to Sydney Trains' operational equipment such as gate attendance cabins;
 - (ii) not impact on the coverage of Sydney Trains' communication systems. The CSM Contractor must relocate communication field devices, as required, to retain coverage;
 - (iii) not exceed a length of 50m per suburban platform outside of Track Possessions;
 - (iv) not impact on the coverage of Sydney Trains' communication systems. The CSM Contractor must relocate any field devices to retain the coverage in accordance with section 5.2.3 (p);
 - (v) for platform 12, be placed at least 2.7m from the outside of the yellow line (3.3m from edge of coping) for the entire length of the platform;

- (vi) for Suburban Platforms, be placed at least:
 - A. 1.8m from the outside of the yellow line; or
 - B. where 5.2.3 (o)(vi)A is not possible, 1.2m from the outside of the yellow line over a maximum length of 6m. This 6m length can be increased if a wheelchair passing bay is created every 6m. The bay must provide 1.8m of clear customer circulation space from the hoarding to the outside edge of the yellow line and be 1.6m in length; or
 - C. where 5.2.3 (o)(vi)B is not possible and subject to section D below, the distance approved by the Principal's Representative. The CSM Contractor must undertake a risk assessment in conjunction with Sydney Trains or NSW TrainLink (dependant on location) and submit a proposed hoarding arrangement to the Principal's Representative for approval.
 - D. Platform 22/23 must not be subject to either section A, B or C in the South East corner of the worksite for a length of approximately 5 metres where the existing canopy columns obstruct the area.

- (p) For each location where the erection of construction hoardings is proposed, the CSM Contractor must undertake an assessment of the impact of the hoardings on the operation and maintenance of Sydney Trains' existing station systems, including communications. The results of the assessment and proposed measures to mitigate the impacts of the hoardings on the systems (which may include temporary and permanent adjustments of the systems, including relation of field devices) must be submitted to the Principal's Representative and the Independent Certifier for review a minimum of 20 Business Days prior to the commencing the erection of the hoardings.

5.2.4 Platform and Tunnel Hoardings

- (a) The CSM Contractor must design, install and remove the following:
 - (i) a temporary fence (1.8 metre high with chain mesh infill) on each side of the Metro Station platforms 2m from the platform coping edge to provide a separate construction zone for handover of the trackway to the Interface Contractors. This fence must include:
 - A. provision for temporary site power along the trackway for use by Interface Contractors;
 - B. provision for Utility Services between the track and station.
 - (ii) The temporary fence in section (a)(i) above must remain in place until the Platform Screen Doors have been installed.

5.2.5 Construction Power

- (a) The CSM Contractor must not use the existing Central Station and future Metro Station power supply for the CSM Contractors Activities and must provide its own construction power.
- (b) Following energisation of the LV and HV Systems, power from the permanent connection is permitted to be used by the CSM Contractor for Testing and Commissioning Activities from the energised system at no cost to the CSM Contractor.

5.2.6 Site Protection and Restoration

- (a) Without limiting the requirements of the Contract, the CSM Contractor must comply with the requirements of the Environmental Documents and ensure that significant trees (based on species, age or size) which may be affected by the CSM Contractor's Activities are identified and appropriate protection management measures implemented including fencing and pruning.

5.3 Construction Management

5.3.1 Demolition

- (a) The CSM Contractor must develop a low impact demolition methodology for the Eastern Entrance. The CSM must consider alternative demolition equipment to mitigate the noise to adjacent property owners.
- (b) Where demolition of infrastructure and buildings is required, the CSM Contractor must:
 - (i) commission any replacement infrastructure or buildings, or establish temporary facilities, prior to the demolition of the relevant infrastructure or buildings;
 - (ii) undertake the demolition work in accordance with AS 2601 The demolition of structures;
 - (iii) provide a levelled site free of depressions and undulations;
 - (iv) disconnect all redundant Utility Services at the Site boundaries in accordance with the requirements of the relevant Utility Service owners;
 - (v) cap all conduits and pipes at the disconnection points to prevent ingress of surface runoff and groundwater;
 - (vi) remove all structures, facilities and debris above ground level;
 - (vii) remove all ground slabs, basement structures, foundations, strip and pad footings, pile caps, tanks and other structures below ground level excluding piles below pile cap level and basement structures that can be utilised as ground support structures;
 - (viii) remove all demolished materials and debris from the Site;

- (ix) backfill all excavations with fill free of deleterious materials and compact to a density consistent with the surrounding ground;
- (x) develop and implement a demolition method that minimises adverse noise, vibration and air quality impacts;
- (xi) prepare the Demolition Management Plan and submit it in accordance with MR-PA;
- (xii) comply with the SafeWork NSW Demolition Work Code of Practice July 2015 and AS2601 – The Demolition of Structures - 2001;
- (xiii) remove and dispose of all hazardous materials in accordance with the Worksafe Australia Code of Practice for the Safe Removal of Asbestos NOHSC (2002(2005));
- (xiv) adopt a risk-based approach to the CSM Contractor's Activities as required by the SafeWork NSW Demolition Work Code of Practice July 2015, and AS2601 (The Demolition of Structures), 2001;
- (xv) design, install and construct all Temporary Works to ensure safe demolition;
- (xvi) undertake all structural design, certification and installation of temporary shoring measures to enable safe demolition below ground levels. The temporary shoring measures are part of the Temporary Works;
- (xvii) prepare and submit to the Principal's Representative a survey plan for each demolition site in accordance with MR-PA detailing the final surface levels, and locations of all disconnected/isolated utility services. The survey plan must include:
 - A. a topographical survey that identifies the final surface levels of each demolition site;
 - B. certification from a licensed electrician, plumber and gas fitter (or supply provider) that all utility services have been disconnected/isolated in accordance with the relevant Australian Standards and the Supply Authority Guidelines;
 - C. video evidence that all retained main sewer and stormwater pipework is clear of debris and rubble created by the CSM Contractor's Activities;
 - D. photographic evidence of the isolation method for each utility service; and
 - E. prepare and submit condition surveys.
- (xviii) prepare and submit to the Principal's Representative demolition methodologies with endorsement from an appropriately qualified demolition structural engineer in accordance with MR-PA;
- (xix) engage appropriately qualified and experienced demolition structural engineers, to certify demolition methodologies, certify Temporary Works designs and inspect the CSM Contractor's Activities to ensure the certified designs and methodologies are being implemented in a safe manner;

- (xx) engage demolition structural engineers to perform design and inspection roles in accordance with the SafeWork NSW Demolition Work Code of Practice July 2015, AS2601 – The Demolition of Structures – 2001, and AS1170 – 0 – 2002, AS1170 – 1, 2002 and AS1170 – 2;
- (xxi) engage demolition structural engineers to undertake designs of the following Temporary Works:
 - A. general demolition Temporary Works for activities including back propping of slabs; modification of structures to allow materials handling and vehicle access through buildings; support of heavy equipment; designs required by Third Party Agreements, etc. (Category A);
 - B. temporary shoring where basements are demolished and required shoring and anchoring, if required, below footpaths/ surrounding ground levels (Category B);
 - C. hoarding (Category C); and
 - D. scaffold (Category D);
- (xxii) implement demolition methodologies that limit the use of hydraulic hammers, rock breakers, and other implements that emit high noise or vibration levels. The demolition methodologies may include:
 - A. the use of hydraulic concrete shears in lieu of hammers/rock breakers;
 - B. measures to minimise structural-borne-noise to buildings that are connected, or to buildings where the cavity between buildings is/or likely to be bridged. Measures may include separating the structural connection prior to demolition through saw cutting/propping, using hand held splitters/pulverisers or hand demolition in short respite periods; and
 - C. installing sound barrier screening to scaffolding/hoarding facing noise sensitive neighbours where the noise and vibration management plan investigations indicate that these properties will receive higher noise levels than permitted by the MRs.
- (c) Demolition Structural Engineers for Categories A and B designs must be a member of the Australian Institute of Engineers with a minimum 15 years' experience in this type of work.
- (d) Demolition structural engineers for Category C and D designs must be suitably qualified with a minimum 5 years relevant experience.
- (e) Demolition structural engineers must:
 - (i) design demolition Temporary Works;
 - (ii) certify demolition methodologies; and
 - (iii) inspect the demolition work to ensure the designs and methodologies are being implemented safely.

- (f) All Category A and B designs by the CSM Contractor's demolition structural engineer must be reviewed by an independent proof engineer.
- (g) For work related to the removal of equipment, fittings and fit out materials from buildings, the CSM Contractor must salvage, reuse and recycle equipment, fittings and materials to the maximum extent practicable, and provide a report to the Principal's Representative on how this has been accomplished.

5.3.2 Acid Sulphate Soils and Rocks

- (a) Without limiting the requirements of the Contract, the CSM Contractor must treat and dispose of any acid sulphate soils and rocks in accordance with:
 - (i) Guidelines for the Management of Acid Sulphate Materials: Acid Sulphate Soils, Acid Sulphate Rock and Monosulfidic Black Ooze, RTA;
 - (ii) Department of Environment, Climate Change and Water requirements;
 - (iii) Acid Sulphate Soil Manual, NSW Acid Sulphate Soils Management Advisory Committee, (August 1998);
 - (iv) NSW Environmental Protection Authority - Assessing and Managing Acid Sulphate Soils; and
 - (v) Environment Protection Authority, Victoria Information Publication 655 - Acid Sulphate Soil and Rock.

5.3.3 Mining Activities

- (a) The construction methodology of the East Concourse must be a mined solution.
- (b) The CSM Contractor must undertake canopy tube installation and mined excavation for the East Concourse during Track Possessions until the CSM Contractor demonstrates that its construction methodology does not exceed the levels specified in the Sydney Metro City & Southwest – Transition Agreement.
- (c) The CSM Contractor must develop an "Emergency Management Plan" for all mining activities under the live operational railway.

5.3.4 Stockpile of materials

- (a) The CSM Contractor must make its own arrangements for temporary and any permanent stockpiles of materials, including earthwork materials and excavated tunnelling materials, arising from the CSM Contractor's Activities which take place or are performed outside of the Site.
- (b) Any materials, including earthwork materials and excavated tunnelling materials, which are surplus to or are not suitable for incorporation in the Project Works must be removed from the Site and properly disposed of in compliance with the requirements of the Contract.
- (c) Stockpiles must not be placed in drainage lines, channels or paths.
- (d) Stockpiles must not obstruct rail access points.

5.3.5 Track Monitoring Requirements

- (a) The CSM Contractor must undertake track monitoring in accordance with the requirements of ASA Standards and the Sydney Metro City & Southwest – Transition Agreement.

5.3.6 Noise and Vibration

- (a) The CSM Contractor must install and maintain acoustic walls and other noise attenuation devices in accordance with the requirements in the Environmental Documents to provide noise mitigation during the performance of the CSM Contractor's Activities. CSM Contractor's Activities that require the installation of acoustic walls or other noise attenuation devices must not commence until the acoustic walls or other noise attenuation devices are erected.
- (b) Acoustic walls and other noise attenuation devices installed by the CSM Contractor must be made from as-new or recycled materials and must at all times be maintained in a neat and tidy condition and be sympathetic with the surroundings.
- (c) The CSM Contractor must notify Sydney Trains at the "Station Precinct Operation Impact Assessment Group" (SPOIAG) meetings of any noisy activities on the platforms or concourses that may affect public announcements. Testing maybe required off peak to determine the announcement volume.
- (d) The CSM Contractor must ensure that noise and vibration impacts from the CSM Contractor's Activities do not impact the operational requirements of Sydney Trains and NSW Trains.
- (e) The CSM Contractor must assess the noise and vibration impacts on the sensitive receivers within the standby guard quiet room inside the "Train Crewing Assignment Centre" (or "TCAC"), at the northern end of platform 14/15. The noise and vibration levels during construction must not impact the operational staff using this room. The CSM Contractor must develop and implement mitigation measures in consultation with Sydney Trains and the Principal's Representative.

5.3.7 Air Quality

- (a) The CSM Contractor must implement measures to maintain air quality for customers during the excavation works of the Metro Station Works.

5.3.8 Metro Station Box Excavation

- (a) The CSM Contractor must use a safe excavation methodology and maintain a safe working distance to the tunnel and station excavation contractor (TSE contractor) during excavation for the Metro Station Works.
- (b) The CSM Contractor must not excavate below a height of 6.4m above the Running Tunnel (RT01) axis and the Running Tunnel (RT02) axis (defined in this section as the TSE Interface Limit) until after the TSE contractor has demobilised from the Central Station section of the tunnels.
- (c) The CSM Contractor must not proceed lower than the TSE Interface Limit without agreement from the Principals Representative.

- (d) The CSM Contractor must submit a methodology for the tunnel ring deconstruction and removal and obtain the Principals approval prior to proceeding lower than the TSE Interface Limit.
- (e) If the CSM Contractor installs plunge columns below the TSE Interface Limit, they must be a minimum horizontal distance of 3.7m from the running tunnel axis.
- (f) All columns installed below the TSE Interface Limit before the TSE contractor has demobilised from the Central Station section of tunnels must cater for 3 MPa gripper pressure from the tunnel boring machine (TBM) during driving of the TBM.
- (g) The CSM Contractor must provide access for the Interface Contractors for general construction access as a result of Interface Work and in the case of an emergency:
 - (i) to the tunnel either side of and through the Metro Station box; and
 - (ii) into the Metro Station box area.

5.3.9 Room relocation requirements

- (a) The CSM Contractor must relocate any rooms as a result of the CSM Contractor's Activities. All wall, floor and ceiling finishes, fittings and fixtures must be built 2 months prior to the original room demolition. Internal furniture and equipment relocation will be undertaken by others.

5.4 Pedestrian management in Central Station

5.4.1 General Requirements

- (a) The CSM Contractor must comply with MR-C and the requirements set out in this section 5.4.1 to minimise the impact of the CSM Contractor's Activities to pedestrians (including customers and Occupants) in and around Central Station.
- (b) The CSM Contractor must produce pedestrian modelling for each stage of construction of the Temporary Works and the Project Works which may impact on the movement of pedestrians in and around Central Station, including changes to width routes through to lifts, run off areas from escalators and other pinch points around the station ("Construction Impact Pedestrian Modelling").
- (c) The Construction Impact Pedestrian Modelling must demonstrate that the CSM Contractor's Activities:
 - (i) do not worsen the existing station conditions of the baseline pedestrian model (being the model of the station prior to commencement of the CSM Contractor's Activities) with the exception that the Fruin levels of the Intercity Platforms and the Suburban Platforms are excluded from this requirement and localised Fruin level around the top and bottom of the stairs and escalators when the LoS is reduced for short periods of time.
 - (ii) allow for the Intercity and Suburban platforms to clear of passengers boarding and disembarking from trains prior to the arrival of the next train, when developed in accordance with the requirements of section 5.2.3(o).
- (d) The model used for the Construction Impact Pedestrian Modelling must:

- (i) be developed using a dynamic simulation modelling software with pedestrian modelling functionality, such as Legion SpaceWorks, Vissim, AnyLogic, or similar;
 - (ii) be validated based on pedestrian movements using physical survey information and Opal gateline count data. The validation must include queue sizes, route selection, passenger counts at gatelines, passenger journey time and level of service;
 - (iii) include all pedestrian areas within and footpaths surrounding Central Station. The boundaries of the model should include footpaths out to Lee Street (including western side of the Henry Deane Plaza subway), Pitt Street, Eddy Avenue and Chalmers Street (including Devonshire St subway exit on at eastern side at Chalmers St);
 - (iv) include different types of passenger (each with different walk speed and spatial occupancy), to represent the population (percentage splits to be agreed with the Principal's Representative) including mobility and vision impaired passengers (such as disabled, elderly, pregnant, with prams, and carrying items such as luggage and surf boards);
 - (v) include the movements of pedestrians throughout Central Station for the AM and PM Peak Hour, including:
 - A. to and from trains (including exits, entries and interchanges); and
 - B. the use of ticketing gates, vertical transport, platforms, concourses and
 - C. passageway areas within the station;
 - (vi) use demand data from the Construction OD Matrices in Appendix 07;
 - (vii) use train arrival and departure stopping pattern based on the 2018 train plan in Appendix 07;
 - (viii) provide outputs which will allow determination of level of service, including crowding throughout the entire station and clearance times on platforms, vertical transfers (stairs and escalators) and gatelines;
 - (ix) allow production of high quality graphics, including LoS heat maps (1 hour peak, 15 minute peak of the peak hour and 5 minute peak of the peak hour) and simulation animations of pedestrian flows (2D or 3D) for the full duration of the model run. The simulation can either produced directly in the model or to be captured via video or gif files. Sub-models may be used to obtain this output, as long as the sub-models capture the full impact of a single model.
- (e) The CSM Contractor must attend weekly Sydney Trains' SPOIAG meetings to communicate the upcoming construction activities to Sydney Trains station staff. Agenda items include:
- (i) presentation of the latest staging diagrams;
 - (ii) 3 month look ahead program review;
 - (iii) detailed 3 week look ahead program review;

- (iv) 1 week look ahead deep dive program review; and
- (v) impact on station operations.
- (f) The CSM Contractor must present and seek endorsement from the SPOIAG for any changes or closures to existing pedestrian pathways including lifts, escalators and stairs prior to the changes being implemented.
- (g) The CSM Contractor must notify the Principal's Representative 30 Business Days before the commencement of any major wayfinding changes at Central Station.
- (h) The CSM Contractor must produce a Customer Impact Assessment for every stage of construction and agreed with Sydney Trains.
- (i) The CSM Contractor must identify activities to Sydney Trains and NSW TrainLink that could impact peak hour Central Station operations.
- (j) The CSM Contractor must install temporary wayfinding signage in accordance with MR-C.

5.4.2 Intercity Concourse

- (a) Lift access from the Intercity Concourse to the North Concourse must remain operational at all times.
- (b) Two escalators between the Intercity Concourse to the North Concourse must remain operational at all times.
- (c) The CSM Contractor's Activities must not reduce the minimum clear width (MCW) of the pedestrian route within the paid area between the existing North Concourse and the Intercity Concourse below 6m in total (2.5m MCW for each occurrence), unless otherwise agreed with the Principal's Representative and justified with pedestrian modelling.

5.4.3 ESR Concourse

- (a) The CSM Contractor's Activities must not impact on the passenger movements using the Vertical Transport (escalators and lifts) between the ESR Concourse and the ESR platforms at any time.
- (b) The CSM Contractor must not move materials and plant on the ESR Concourse during Peak Hours.
- (c) The CSM Contractor's Activities must not reduce the MCW of the pedestrian route of the ESR Concourse below 3m.
- (d) An alternative route compliant with Codes and Standards must be installed prior to removal of the pedestrian ramp near the Gateline in the South Concourse.

5.4.4 Northern Entrance

- (a) The CSM Contractor must not reduce the number of the existing operating gates and wide gates on the Northern Entrance Gateline during Peak Hours.

5.4.5 South Concourse

- (a) The CSM Contractor must not reduce the existing number of gates (including one wide gate) on the South Concourse Gateline during Peak Hours.

5.4.6 Elizabeth Street Entrance

- (a) The CSM Contractor must not reduce the existing number of gates (including and one wide gate) on the Elizabeth Street Entrance Gateline during Peak Hours.

5.4.7 Suburban Platforms

- (a) The CSM Contractor must maintain the operation of any Suburban Platforms and tracks at any time during the construction of the Temporary Works and Project Works.
- (b) The CSM Contractor's Activities must not impact on the existing functionality of the two most northern staircases, lifts and the most southern staircase on each of the existing platforms 16/17, 18/19, 20/21 and 22/23 unless the full platform is under Track Possession.
- (c) The CSM Contractor must only close the existing or temporary staircase(s) to the Olympic Tunnel when an equivalent new East Concourse escalator is open to the public.
- (d) The CSM Contractor must only close the staircase to the Southern Suburban Baggage Tunnel when an equivalent East Concourse escalator is commissioned.
- (e) The CSM Contractor may close the southern staircases to existing platforms 16/17 and 18/19 of the Northern Y-Link Tunnel during the construction works.
- (f) The CSM Contractor must deliver materials and plant to the Suburban Platforms during Track Possessions only.
- (g) The CSM Contractor must not leave any materials or plant on a Suburban Platform outside of a Track Possession, except in a designated hoarded area as agreed with the Principal's Representative.
- (h) If half a platform is included in a Track Possession, all staircases normally available must continue to be available for public use and hoardings installed in accordance with section 5.2.3.
- (i) All platform surfaces impacted by the CSM Contractor's Activities which are used by the public must remain in a safe and acceptable condition at all times.
- (j) The CSM Contractor must maintain access to Sydney Trains operational equipment such as gate attendance cabins (GAC) on the platforms in accordance with Sydney Trains requirements.

5.4.8 Intercity Platforms

- (a) The CSM Contractor may close the southern staircases to the existing platforms 12/13 and 14/15 of the Southern Suburban Interchange Tunnel at the commencement of construction until the platforms return to final state operational service.

5.4.9 Pedestrian Tunnels

- (a) The CSM Contractor must:

- (i) install temporary stairs from the Olympic Tunnel to existing platforms 20/21 and 22/23 prior to commencing any activities which would impact customers using the Olympic Tunnel; and
 - (ii) maintain the temporary stairs until the permanent closure of the Olympic Tunnel.
- (b) The CSM Contractor must not impact the Olympic Tunnel pedestrian access route between the Suburban Platforms and the Intercity Platforms, unless an alternative temporary access route for pedestrians is provided. This existing section of the Olympic Tunnel or alternative temporary access route must be in place and maintained by the CSM Contractor until the following is open to pedestrians:
- (i) all new Vertical Transport between North Concourse and Intercity Concourse;
 - (ii) new North South Concourse from the North Concourse to the new East Concourse, of equivalent width and height as the existing Olympic Tunnel; and
 - (iii) either the northern or southern section of the new East Concourse, including Vertical Transport from the East Concourse to each Suburban Platform.
- (c) Any alternative temporary access route must:
- (i) be at least the same width and height as the existing Olympic Tunnel;
 - (ii) contain adequate lighting;
 - (iii) be free from graffiti and unauthorised advertising;
 - (iv) contain wayfinding signage;
 - (v) include a non-slip walking surface;
 - (vi) be a fully enclosed structure to prevent smoke, odour, noise and weather ingress and also have adequate ventilation for pedestrian movement;
 - (vii) have finishes to a similar standard as the Olympic Tunnel, and maintain the level of presentation and cleanliness; and
 - (viii) have an alignment that eliminates blind spots and sharp turns.
- (d) The CSM Contractor must not impact on the tunnel access for pedestrians from the Intercity platforms to the Suburban platforms via the Southern Intercity Interchange Tunnel and the Southern Suburban Interchange Tunnel, unless an alternative temporary access route for pedestrians is provided. Any alternative temporary access route must:
- (i) be at least the same width and height as the existing Southern Intercity Interchange Tunnel;
 - (ii) contain adequate lighting;
 - (iii) be free from graffiti and unauthorised advertising;
 - (iv) contain wayfinding signage;
 - (v) include a non-slip walking surface;

- (vi) be maintained when open to pedestrians;
 - (vii) be a fully enclosed structure to prevent smoke, odour, noise and weather ingress and also have adequate ventilation for pedestrian movement;
 - (viii) have finishes to a similar standard as the existing tunnel, and maintain the level of presentation and cleanliness: and
 - (ix) have an alignment that eliminates blind spots and sharp turns.
- (e) The CSM Contractor must keep the Southern Suburban Interchange Tunnel operational at all times.
 - (f) The CSM Contractor must keep the Southern Intercity Interchange Tunnel operational at all times.
 - (g) Devonshire Street Tunnel must remain open to pedestrians at all times, other than during the period specified in Schedule E1 to the Contract and except that a 2 week Devonshire Street Tunnel closure will be made available in the month of January each year subject to the approval of City of Sydney Council as the relevant Authority. The CSM Contractor must not undertake any works in the Devonshire Street Tunnel from 05:00 to 21:00 on any day, other than during the period specified in Schedule E1 to the Contract.
 - (h) If Devonshire Street Tunnel works are undertaken in any month other than January, a temporary diversion of equivalent capacity must be installed.
 - (i) The CSM Contractor must only carry out pedestrian tunnel diversion works between the hours of 23.00 and 05.00 Friday to Sunday, except during the full tunnel closure permitted by section 5.4.9(g) above.

5.5 Traffic Management

5.5.1 Road conditions

- (a) The CSM Contractor must ensure that any road, footpath, shared path or cycleway which is open to the public is at all times kept free of any mud, dirt, deleterious material, trip hazards and debris arising from the CSM Contractor's Activities. Any spillage or build-up of such material or debris must be cleaned up immediately and any damage caused by such an occurrence must be immediately repaired.
- (b) The CSM Contractor must, as a minimum, install, maintain and utilise wheel wash facilities and cover all construction vehicles to prevent any loss of fuels, lubricants, load or other substances, whether in the form of dust, liquids, solids or otherwise.
- (c) The CSM Contractor must apply appropriate treatments to roads, footpaths, shared paths or cycle ways that protect the roads, footpaths, shared paths or cycle ways from damage arising from the CSM Contractor's Activities.
- (d) The CSM Contractor must repair immediately any damage to any road, footpath, shared path or cycleway which is open to the public, caused by the CSM Contractor's Activities. The road, footpath, shared path or cycleway must be repaired to a condition at least equivalent to the condition it was in immediately prior to the occurrence of the damage.

- (e) The CSM Contractor must install a sealed haul road surface in the Sydney Yard Cess Area which must be kept free of any mud, dirt, deleterious material, trip hazards and debris arising from the CSM Contractor's Activities. The CSM Contractor must, as a minimum, undertake weekly cleaning of the haul road.

5.5.2 Traffic and Transport Management Procedures

5.5.2.1 General

- (a) Traffic and transport management associated with the CSM Contractor's Activities must be planned to avoid delays and detours that will inconvenience the affected public or road users or interfere with traffic during periods of heavy traffic flows.
- (b) The CSM Contractor must obtain approval from relevant Authorities prior to implementing any changes to traffic flow, vehicle, pedestrian, public transport and bicycle movements or adjustments to arrangements for control of traffic on roads and footpaths.
- (c) All traffic and transport management associated with the CSM Contractor's Activities must comply with the Environmental Documents and the following:
 - (i) RMS Traffic Control at Worksites Manual;
 - (ii) AS 1742.3 Manual of uniform traffic control devices - Traffic control for works on roads;
 - (iii) Austroads: Guide to Traffic Management - Part 2: Traffic Theory;
 - (iv) Construction Traffic Management Framework, notwithstanding section 5.7.1 (b)(ii)B below; and
 - (v) Construction Traffic Management Plan submitted to the satisfaction of the relevant Authorities.
- (d) Copies of any traffic control plans approved by relevant Authorities that set out specific traffic and transport management arrangements to be implemented at specific locations during the construction of the Project Works and Temporary Works must be issued to the Principal's Representative and the Independent Certifier.
- (e) Unplanned traffic management activities, including emergency work due to incidents, must be addressed and covered in the Construction Traffic Management Plan and must be to the satisfaction of the relevant Authorities.
- (f) Where traffic control devices include safety barriers, the safety barriers must:
 - (i) comply with the RTA Traffic Control at Worksite Manual; and
 - (ii) be offset a minimum of 0.5m from the edge of the nearest adjacent traffic lane.
- (g) Temporary traffic lanes on roads must, as a minimum, be 3.5m wide (per lane) and comply with the requirements of all relevant Authorities.
- (h) Vehicles involved in the CSM Contractor's Activities must only enter, operate within or exit from a worksite in a manner which does not endanger the public. The operation of the Sydney Yard Access Bridge (SYAB) must be in accordance with the SYAB Works Authorisation Deed (WAD).

- (i) Community notification must be undertaken by the CSM Contractor to advise the affected public and road users of the proposed changes to traffic flow, vehicle, pedestrian and bicycle movements and arrangements for control of traffic on roads in accordance with the requirements in Management Requirement MR-C.

5.5.2.2 Road and Footpath Occupancies, Detours and Closures

- (a) The CSM Contractor must obtain approval from relevant Authorities for all road and footpath, occupancies, detours and closures. Relevant Authorities may elect to prohibit road and footpath occupancies, detours or closures due to special events or other high traffic demands. An occupancy licence must be obtained from relevant Authorities for all road and footpath occupancies, detours and closures.
- (b) When any unplanned closure of a lane, shoulder or footpath or a restriction in the flow of pedestrians, cyclists, public transport services or traffic occurs, the CSM Contractor must immediately advise the Principal's Representative and the relevant Authorities of the nature of the closure or restriction and of the schedule for reopening of the lanes, shoulders or footpaths. The CSM Contractor must take all required measures to open the lanes, shoulders or footpaths as quickly as possible.

5.5.2.3 Compliance with Traffic Instructions during Construction

- (a) The CSM Contractor must comply with any traffic direction or instruction given by the New South Wales Police Service, a relevant Authority or the Principal's Representative in respect of any traffic and transport management.
- (b) The New South Wales Police Service, a relevant Authority or the Principal's Representative may, at any time, instruct the CSM Contractor to re-open a lane, shoulder or footpath without delay, whether or not that lane, shoulder or footpath was closed by prior agreement. The CSM Contractor must immediately comply with such instructions.

5.5.2.4 Bicycle Provisions

- (a) The CSM Contractor must plan and execute the CSM Contractor's Activities to ensure safe cycling conditions are maintained at all times during the CSM Contractor's Activities. Temporary or modified provisions for bicycles must comply with the requirements of relevant Authorities.

5.5.2.5 Pedestrian Provisions

- (a) The CSM Contractor must plan and execute the CSM Contractor's Activities to ensure safe pedestrian conditions are maintained at all times during the CSM Contractor's Activities. Temporary or modified provisions for pedestrians must comply with the requirements of relevant Authorities.

5.5.2.6 Public Transport Operations

- (a) The CSM Contractor must plan and execute the CSM Contractor's Activities to ensure conditions for safe and efficient road based public transport services and operations are maintained at all times during the CSM Contractor's Activities.
- (b) Bus vehicle access, bus customer access and bus driver requirements must be maintained and met at all times during the CSM Contractor's Activities. Temporary or modified provisions for bus vehicles, supporting infrastructure including stops and

signage, bus customers and bus drivers must comply with the requirements of relevant Authorities and relevant stakeholders including bus operators.

- (c) The CSM Contractor must plan and execute the CSM Contractor's Activities to ensure conditions for safe and efficient use of railway stations by commuters, passengers and other railway station users are maintained at all times during the CSM Contractor's Activities and minimise impact on these commuters, passengers and other railway station users. Temporary or modified provisions for a railway station must comply with the requirements of relevant Authorities and relevant stakeholders.

5.6 Operational Restrictions

5.6.1 General

- (a) The CSM Contractor must undertake the transfer of existing systems to new systems outside of normal operations during Track Possessions. Non-critical staff facilities must be maintained and operable until either the temporary or permanent facilities are completed.
- (b) Central Station access and operational area configuration can only be changed in accordance with the operations configuration change management process and in consultation with Sydney Trains and NSW Trains.

5.6.2 Special Events

- (a) For the purposes of this section 5.6.2 a "Special Event" is a local or regional event which generates increased vehicle and/or pedestrian traffic or reduces traffic speed or lowers the capacity of the road network around the Site or any Extra Land.
- (b) Where Special Events are expected to generate additional vehicle and/or pedestrian traffic in any areas directly or indirectly affected by the Project Works, the Temporary Works and the CSM Contractor's Activities, the CSM Contractor must cooperate with the Principal's Representative and all relevant Authorities and emergency services in relation to the planning and preparation for the Special Event, to facilitate the special event and any associated traffic and pedestrian flows around the Site or any Extra Land.
- (c) The CSM Contractor must modify the CSM Contractor's Activities to accommodate the requirements of Special Events and perform the CSM Contractor's Activities so as to minimise any interference with or disruption to any Special Event or the planning and preparation for any Special Event.
- (d) The CSM Contractor must attend any meeting relating to any Special Event or the planning and preparation for any Special Event as required and requested by the Principal's Representative.

5.7 Access Requirements

5.7.1 Track Access Regime

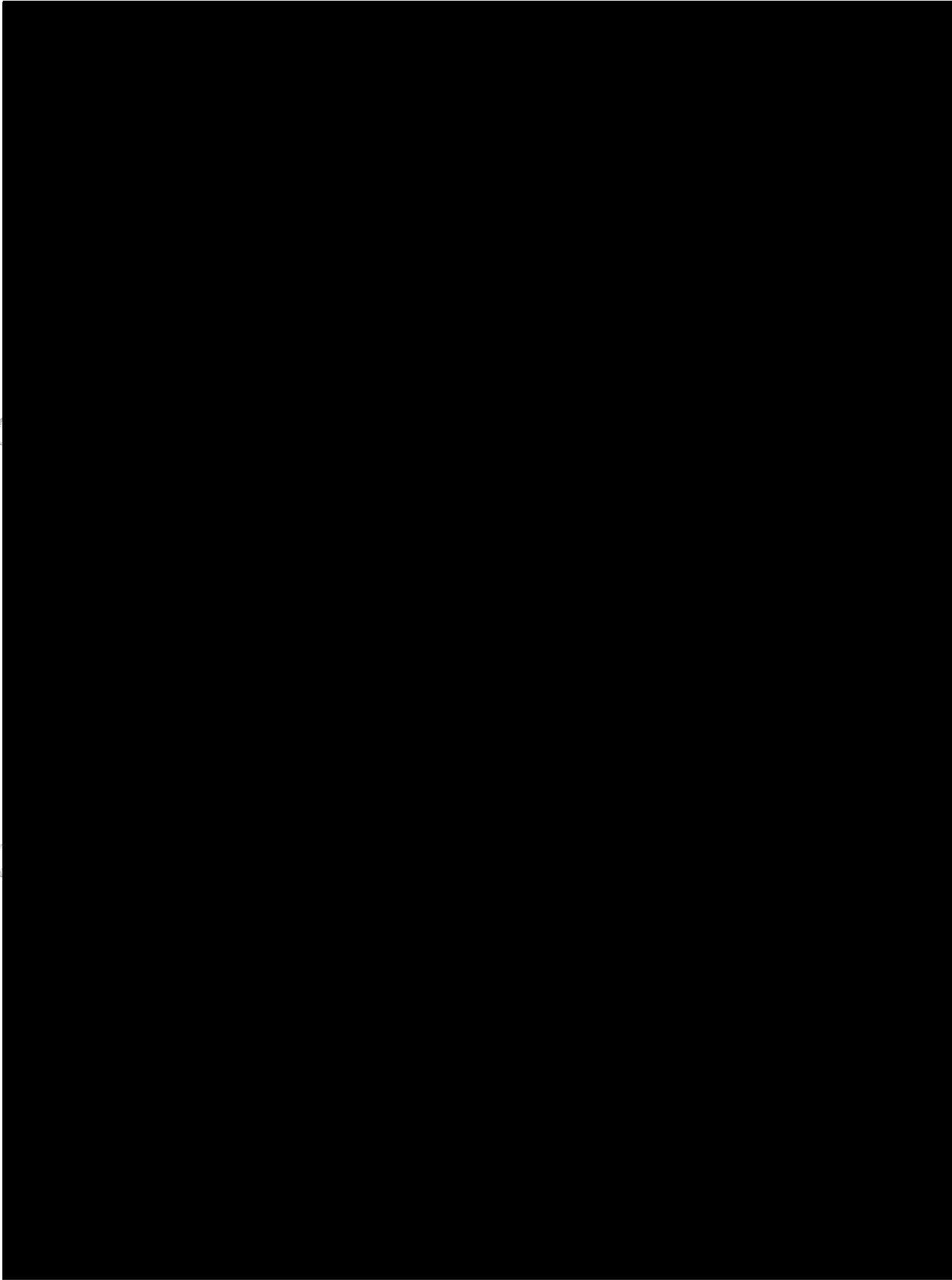
- (a) If access is required across any tracks during normal train operations, a service crossing must be installed and operated in accordance with Sydney Trains requirements.

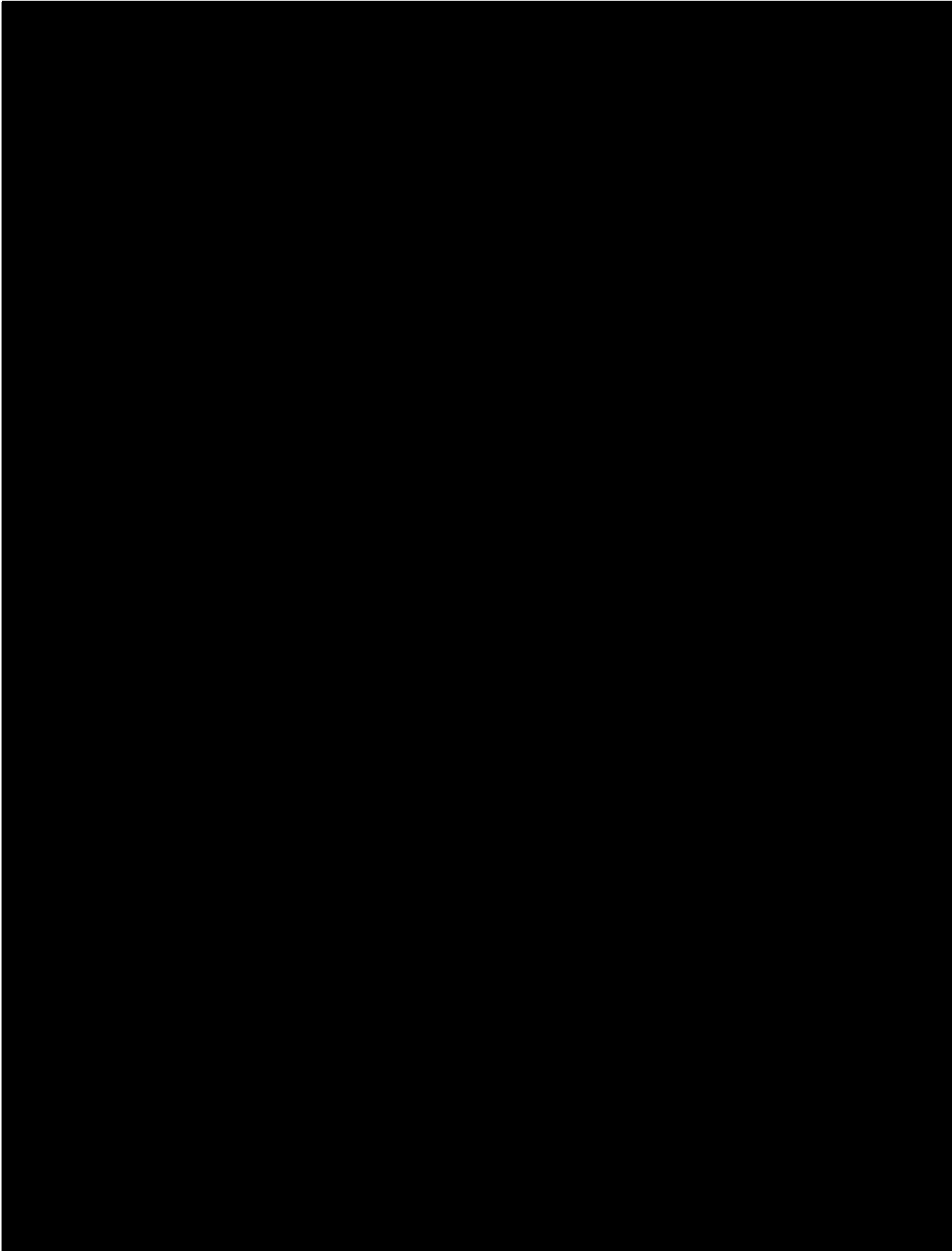
- (b) The CSM Contractor must prepare and implement a SYAB Traffic Management and Safety Plan in accordance with clause 6 of Contract Schedules E4 and use the SYAB as its primary access to the Site, subject to the following requirements:
 - (i) design speeds:
 - A. Regent Street – 60km/h;
 - B. Bridge Speed – 20km/h; and
 - C. turning speed into driveway – 10km/h;
 - (ii) design vehicles for swept path analysis:
 - A. two lane bi-directional operation for 12.5 m rigid truck for the SYAB and approaches only, not a requirement for Regent Street Entrance Road;
 - B. one-directional use of 19m long truck and dog for Regent Street Entrance Road only;
 - C. 25m long low-loader, one-directional use – traffic controls required for this irregular occurrence;
 - (iii) design vehicles for axle loads:
 - A. Austroads T44 truck; and
 - B. AS5100 A14 axle load.
 - (iv) the CSM Contractor does not exceed the maximum number of truck and dog movements (6 per hour) within morning and evening peak periods.
- (c) If access is required from Eddy Avenue to platform 15, there will be a height restriction of 3.85m due to light rail overhead wiring and a weight restriction of 30T gross vehicle mass.
- (d) The CSM Contractor is not permitted to haul material with truck and dogs from the Eastern Entrance site and the Eddy Avenue site
- (e) The CSM Contractor must maintain access for:
 - (i) existing retailers back of house services at the Forecourt Entrance;
 - (ii) NSW Police services at the Forecourt Entrance;
 - (iii) NSW Trains catering contractor at the Forecourt Entrance;
 - (iv) emergency services at the Forecourt Entrance;
 - (v) cash in transit pickups;
 - (vi) train crew allocation centre (TCAC) building;
 - (vii) Sydney Yard Cess Area control building (off existing platform 8);
 - (viii) armed response unit located above the Bradfield Room;
 - (ix) waste disposal via the Southern Baggage Tunnel;
 - (x) all adjacent property owners;

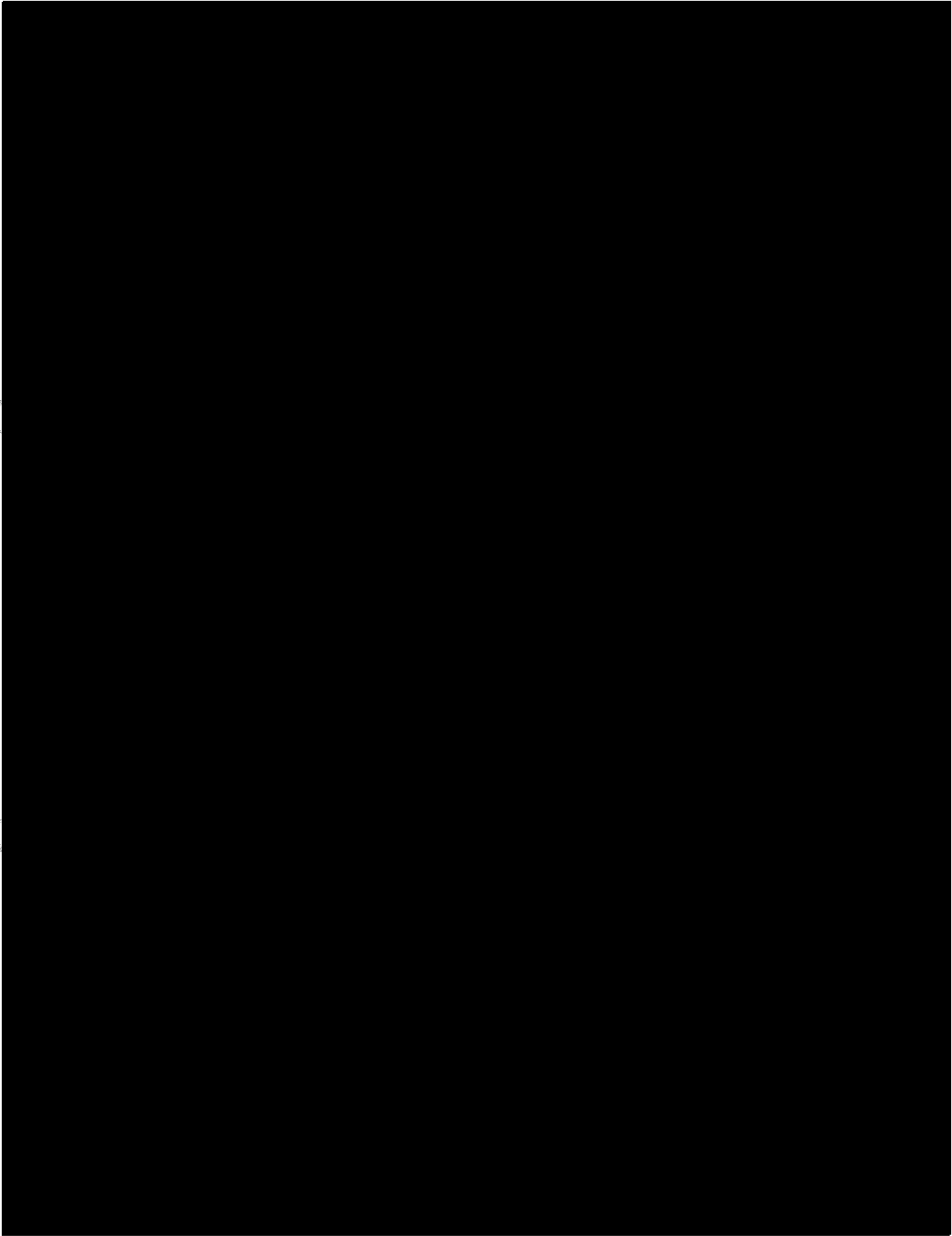
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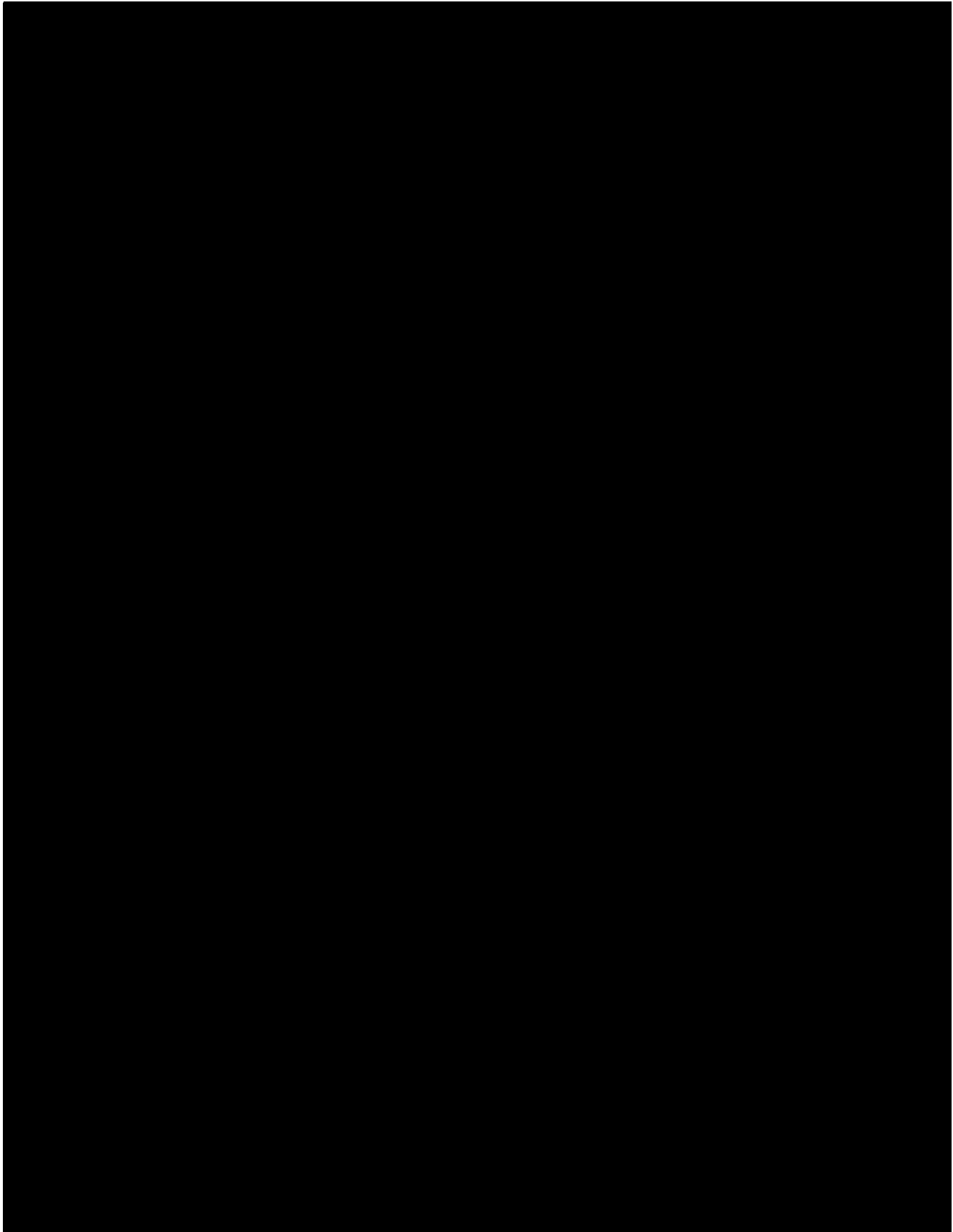
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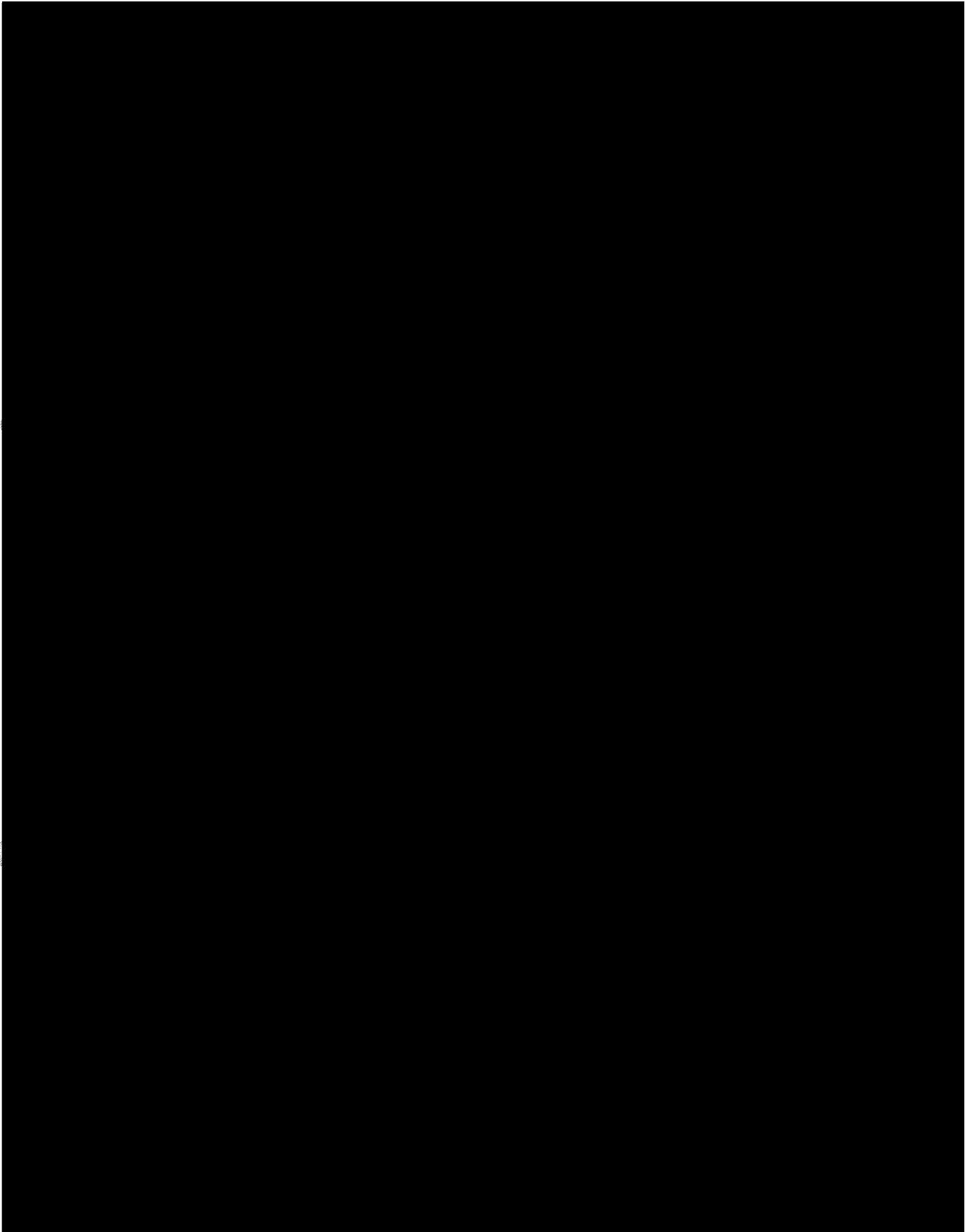


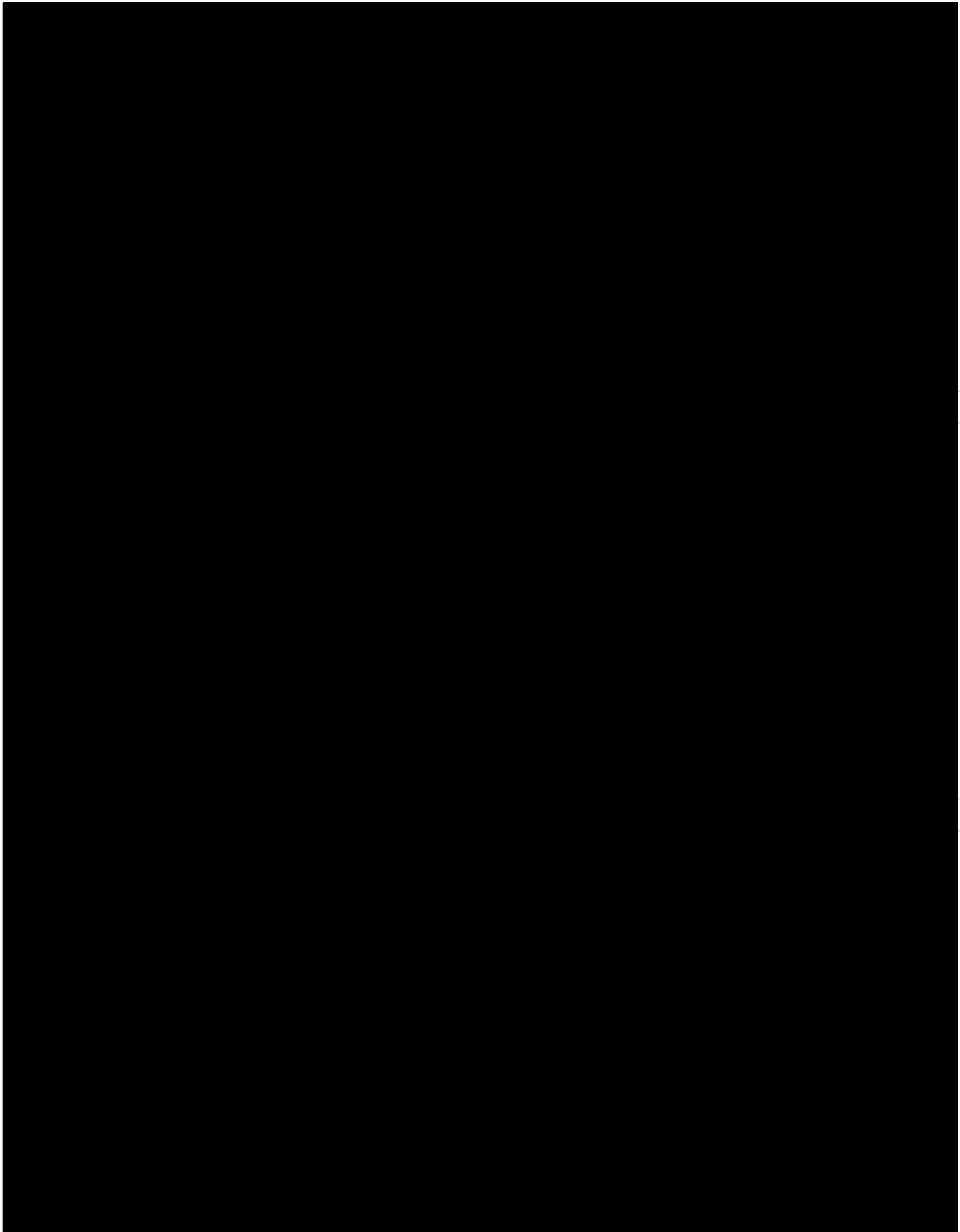














5.7.3 Property Access and Utility Services

- (a) The CSM Contractor must carry out the adjustments to private properties and do all things necessary to satisfy the reasonable requirements of individual owners, occupiers of and visitors to properties, businesses and community facilities affected by the CSM Contractor's Activities in respect of timing, duration and the carrying out of the relevant CSM Contractor's Activities.
- (b) The CSM Contractor must ensure that suitable access is in place at all times to all properties and between severed portions of properties.
- (c) No reduction to the level of access, (vehicular or pedestrian) to any commercial property during its relevant trading hours is permitted without the written agreement of the owner and occupier.
- (d) The CSM Contractor must make all required arrangements with the affected public in relation to the impacts and consequences of the interruption of any Utility Services.

5.8 Security Requirements

- (a) The CSM Contractor must provide security in accordance with MR-S. .
- (b) The CSM Contractor must ensure access and egress is available to Sydney Trains and NSW Trains maintenance contractors to access the station to complete maintenance and repairs to the station and rail systems. Activities of maintenance contractors include rubbish removal and delivery of stock to vending machines.
- (c) The CSM Contractor's security contractor must use a radio communication system during the CSM Contractor's Activities that cannot be accessible by the general public.
- (d) High risk activities (such as craneage, major lifts etc) must use closed loop radio channels that are not accessible to the general public.
- (e) The CSM Contractor must ensure all staff has photo identification clearly on display whilst in the public areas of Central Station at all times.
- (f) The CSM Contractor must provide training on the processes and procedures for dealing with suspicious packages to its staff and Subcontractors working at Central Station.
- (g) The CSM Contractor must familiarise itself with the Sydney Metro City & Southwest Interim Strategy for the Management of Homeless People During Construction to

ensure its staff and Subcontractors can work during Track Possessions safely and ensure the safety of the homeless in and around the Site.

- (h) The CSM Contractor must ensure its staff and Subcontractors are trained in dealing with anti-social behaviour.
- (i) The CSM Contractor must allow moving, adjusting or changing existing CCTV cameras due to construction hoarding, site facilities etc.

5.9 Safety Requirements

5.9.1 Emergency/Incident response

- (a) In an emergency event the CSM Contractor must comply with overarching Sydney Trains Central Station emergency procedures.
- (b) The CSM Contractor must develop an Emergency and Incident response plan, including updating the Central Station specific emergency plans.
- (c) The CSM Contractor will be required to attend Emergency Planning Committee (EPC) meetings and will be required to provide input information for updating the Station Incident Management Plan (SIMP).

5.9.2 Fire Life Safety

- (a) The CSM Contractor must develop a fire and life safety concept of operations during construction and it must be agreed with the Rail Emergency Response Unit (RERU). A draft fire and life safety concept of operations must be submitted to the Principal's Representative for review a minimum of 3 Business Days prior to issue to the RERU. A copy of the agreed fire and life safety concept of operations must be provided to the Principal's Representative.
- (b) The CSM Contractor must obtain approval from Sydney Trains before isolating any alarm devices, loops or sprinklers, unless otherwise agreed in a fire isolation process. All isolations will require permits signed by Sydney Trains. A copy of each signed permit must be submitted to the Principal's Representative a minimum of 3 Business Days prior to implementing the relevant isolation.
- (c) No fire systems isolations are permitted during peak operational hours.
- (d) The Rail Emergency Response Unit (RERU) is responsible for completing all fire isolations on Sydney Trains dry assets. RERU will attend site to complete any isolations and will not complete any shunt isolations remotely.
- (e) The CSM Contractor must carry out regular emergency rehearsals/drills at Central Station with their staff, Sydney Trains and emergency services to test the adequacy of the Fire and Life Strategy and Emergency Procedures.

5.9.3 Chain of Responsibility

- (a) The CSM Contractor must take account of and incorporate all applicable, relevant or necessary requirements in relation to the chain of responsibility provisions of the Heavy Vehicle National Law in all aspects of the CSM Contractor's Activities.
- (b) The CSM Contractor must hold and document the outcomes of formal risk workshops to identify and assess chain of responsibility risks associated with the

CSM Contractor's Activities and develop mitigation strategies. The formal risk workshops must be held at the start of and progressively at all stages and phases throughout the CSM Contractor's Activities, The Principal's Representative must be invited to attend and allowed to participate in the formal workshops.

- (c) All heavy vehicle movements must be coordinated with the CBD Coordination Office.

5.10 Maintenance during construction

5.10.1 General

- (a) The CSM Contractor must:
 - (i) maintain the Site and any other areas affected by the CSM Contractor's Activities in a clean and tidy manner throughout the duration of the CSM Contractor's Activities;
 - (ii) maintain existing landscaping and ground vegetation within the Site; and
 - (iii) maintain and repair the Project Works and Temporary Works within a Portion until the Portion Handover Date for that Portion.
- (b) The CSM Contractor must not dispose of any rubbish, including dust or dirty water into the track drainage system or the Sydney Trains bins.
- (c) The CSM Contractor must ensure that all infrastructure, facilities and amenities in the areas being maintained are at all times fit for their intended purpose (as at the date of the Contract), clean and tidy and in a condition which satisfies the requirements of the Contract.
- (d) Weeds or other undesirable vegetation within the Site must be removed throughout the duration of the CSM Contractor's Activities.
- (e) The extended storage of rubbish or loose items on the Site or elsewhere is not permitted.
- (f) The CSM Contractor must:
 - (i) keep clean any public areas of Central Station affected by the CSM Contractor's Activities;
 - (ii) engage appropriately skilled and experienced cleaners to keep clean the public areas of Central Station affected by the Contractor's Activities;
 - (iii) ensure that any dust created by the CSM Contractor's Activities falling in public areas is removed. Dust entering public areas or areas where it is likely to interfere with operating equipment must be removed at the end of each shift. Every effort must be made to reduce dust emanation from the CSM Contractor's Activities; and
 - (iv) ensure any rubbish, dust, or residue from dirty work boots deposited in public areas or egress areas is removed within 30 minutes.
- (g) The CSM Contractor must produce a Technical Maintenance Plan (TMP) which details maintenance requirements and responsibilities including:

- (i) any temporary public areas required for a Portion as a result of the CSM Contractor's Activities until the Date of Construction Completion for the relevant Portion;
 - (ii) any areas that are temporarily handed back to Sydney Trains until the Date of Construction Completion; and
 - (iii) any systems affected by the CSM Contractor's Activities throughout construction until handover to Sydney Trains at completion of that Milestone or Portion.
- (h) The CSM Contractor must maintain all elements behind the construction hoarding with the exception of temporary lifts.
 - (i) If any systems remain operational behind the construction hoarding, the CSM Contractor must provide shared access for maintenance purposes.
 - (j) The CSM Contractor must provide access for a mobile elevated platform for Sydney Trains around the station for maintenance purposes.
 - (k) The CSM Contractor must ensure that its activities do not interfere with mobile phone coverage within Central Station.

5.10.2 Sydney Yard Cess Area and SYAB

- (a) The CSM Contractor must fence the Sydney Yard Cess Area with temporary fencing and maintain the fencing during the construction of the other elements of the Project Works.
- (b) The fencing must be removable to allow Sydney Trains to access the Intercity Tracks.
- (c) The CSM Contractor must co-ordinate the operations and maintenance of Sydney Yard Cess Area for the duration of the construction of the Project Works.
- (d) The CSM Contractor must maintain the SYAB in accordance with the operation and maintenance manual included in Appendix C06 until the Date of Completion for the last Portion to achieve Completion.
- (e) The CSM Contractor must maintain and keep clean the SYAB entrance on Regent Street.

5.11 Temporary Facilities for Sydney Trains

5.11.1 The Rolling Stock Officers Building

- (a) The Principal's preferred location for the temporary facilities required by sections 5.11.2, 5.11.3 and 5.11.4 is Worksite W1. Access to and the use of this Worksite W1 is subject to the requirements of the deposited plan DP1062447.
- (b) The CSM Contractor must complete all necessary consultation with the relevant stakeholders and Existing Operators prior to construction of new temporary Facilities. CCB Gate 3 approval prior to commencement of construction of new temporary facilities is not required.
- (c) Demolition of existing assets requires CCB approvals as per the ASA guidelines.

5.11.2 The Rolling Stock Officers Building

- (a) The CSM Contractor must temporarily relocate the function of the Rolling Stock Officers Building to temporary facilities until the Date of Construction Completion for the last Portion to achieve Construction Completion.
- (b) The permanent relocation of the function of the Rolling Stock Officers Building will be undertaken by others.
- (c) The CSM Contractor must provide separate accommodation space for the shunters, signalling electricians and train technicians. The total area of this combined space must be a minimum size of 170m² located within 50m of the Intercity Platforms with safe access and egress. Each accommodation space can be separated.
- (d) The CSM Contractor is not permitted to use the existing Central Station power for these temporary facilities unless located on platform zero and unless otherwise agreed with Sydney Trains.
- (e) The CSM Contractor must provide the following for the shunters:
 - (i) secure office space for 7 x Full Time Employees (FTE) with electronic or keypad access control; and
 - (ii) reverse cycle air conditioning with internal wall mounted control.
- (f) The CSM Contractor must provide the following for the signalling electricians:
 - (i) secure office space for 4 x FTE with electronic or keypad access control;
 - (ii) reverse cycle air conditioning with internal wall mounted control;
 - (iii) bench space and seating;
 - (iv) noticeboard;
 - (v) Sydney Trains time clock;
 - (vi) 1 x phone point;
 - (vii) 1 x data point;
 - (viii) 1 x computer workstation;
 - (ix) 1 x train location system (TLS) panel unit;
 - (x) general power outlets (GPOs) of sufficient quantity for the equipment listed above as well as spare and cleaner provisions; and
 - (xi) storage for one safe (1m x 1m x 1m) and racking for emergency spares (3m x 2m x 0.6m) including provision for first aid equipment.
- (g) The CSM Contractor must provide the following for the train technicians:
 - (i) secure office space for 3 x FTE with electronic or keypad access control;
 - (ii) reverse cycle air conditioning with internal wall mounted control;
 - (iii) space for 3 computer workstations, printer, filing cabinets, storage cupboards, tables and desks; and
 - (iv) external phone line.

- (h) The CSM Contractor must provide the following shared amenities for 15 x FTE:
 - (i) adequate toilet facilities for 15 x FTE, including unisex WC complete with signage, exhaust fan, hold/cold wash basin, soap dispenser and paper towel holder;
 - (ii) 2 x shower units including grab rail, soap holder, shower screen, hot water unit; and
 - (iii) a kitchenette including a Zip Tap for hot and cold water, a sink, soap dispenser, hand sanitiser, paper towel holder, microwave, tea towel holder.
- (i) The CSM Contractor must provide a 20 foot container for storage including whirly bird for ventilation adjacent to the site facilities.
- (j) The internal maintenance of the temporary accommodation will be the responsibility of Sydney Trains.
- (k) The external maintenance of the temporary accommodation will be the responsibility of the CSM Contractor.

5.11.3 The Loft Building

- (a) The CSM Contractor must temporarily relocate the function of the Loft Building (drivers, guards and shift manager rooms) to temporary facilities until the Date of Construction Completion for the last Portion to achieve Construction Completion. The total area of these facilities must be a minimum size of 150m² located within 50m of the Intercity Platforms with safe access and egress.
- (b) The permanent relocation of the function of the Loft Building will be undertaken by others.
- (c) The CSM Contractor is not permitted to use the existing Central Station power for these temporary facilities unless located on platform zero and unless otherwise agreed with Sydney Trains.
- (d) The CSM Contractor must provide the following requirements for the temporary building:
 - (i) secure office space for 30 x FTE with electronic or keypad access control;
 - (ii) reverse cycle air conditioning with internal wall mounted control;
 - (iii) adequate toilet facilities for 30 x FTE, including unisex WC complete with signage, exhaust fan, hold/cold wash basin, soap dispenser and paper towel holder;
 - (iv) a kitchen including a Zip Tap for hot and cold water, a sink, soap dispenser, hand sanitiser, paper towel holder, microwave, tea towel holder;
 - (v) bench space and seating;
 - (vi) noticeboard;
 - (vii) Sydney Trains time clock;
 - (viii) 12 x phone points;
 - (ix) 12 x data points;

- (x) 12 x computer workstations;
 - (xi) 3 x wall mounted televisions; and
 - (xii) 2 x TV aerial socket points.
- (e) The CSM Contractor must carry out external maintenance of the temporary accommodation.
- (f) The internal maintenance of the temporary accommodation shall be the responsibility of Sydney Trains.

5.11.4 Meeting Room Facilities

- (a) The CSM Contractor must temporarily relocate the function of the meeting room on the ESR Concourse to temporary facilities of at least 36m² until the Date of Construction Completion of the last Portion to achieve Construction Completion.
- (b) The permanent relocation of the Meeting Room will be undertaken by others.
- (c) The CSM Contractor is not permitted to use the existing Central Station power for these temporary facilities unless otherwise agreed with Sydney Trains.
- (d) The CSM Contractor must provide the following requirements for the temporary building:
- (i) reverse cycle air conditioning with internal wall mounted control;
 - (ii) bench space and seating;
 - (iii) noticeboard;
 - (iv) Sydney Trains time clock;
 - (v) 2 x phone points;
 - (vi) 2 x data points;
 - (vii) 2 x computer workstations;
 - (viii) 1 x computer projector;
 - (ix) 1 x projector screen
 - (x) 2 x wall mounted televisions; and
 - (xi) 2 x TV aerial socket points.
- (e) The CSM Contractor must carry out external maintenance of the temporary accommodation.
- (f) The internal maintenance of the temporary accommodation shall be the responsibility of Sydney Trains.

5.12 Cranage

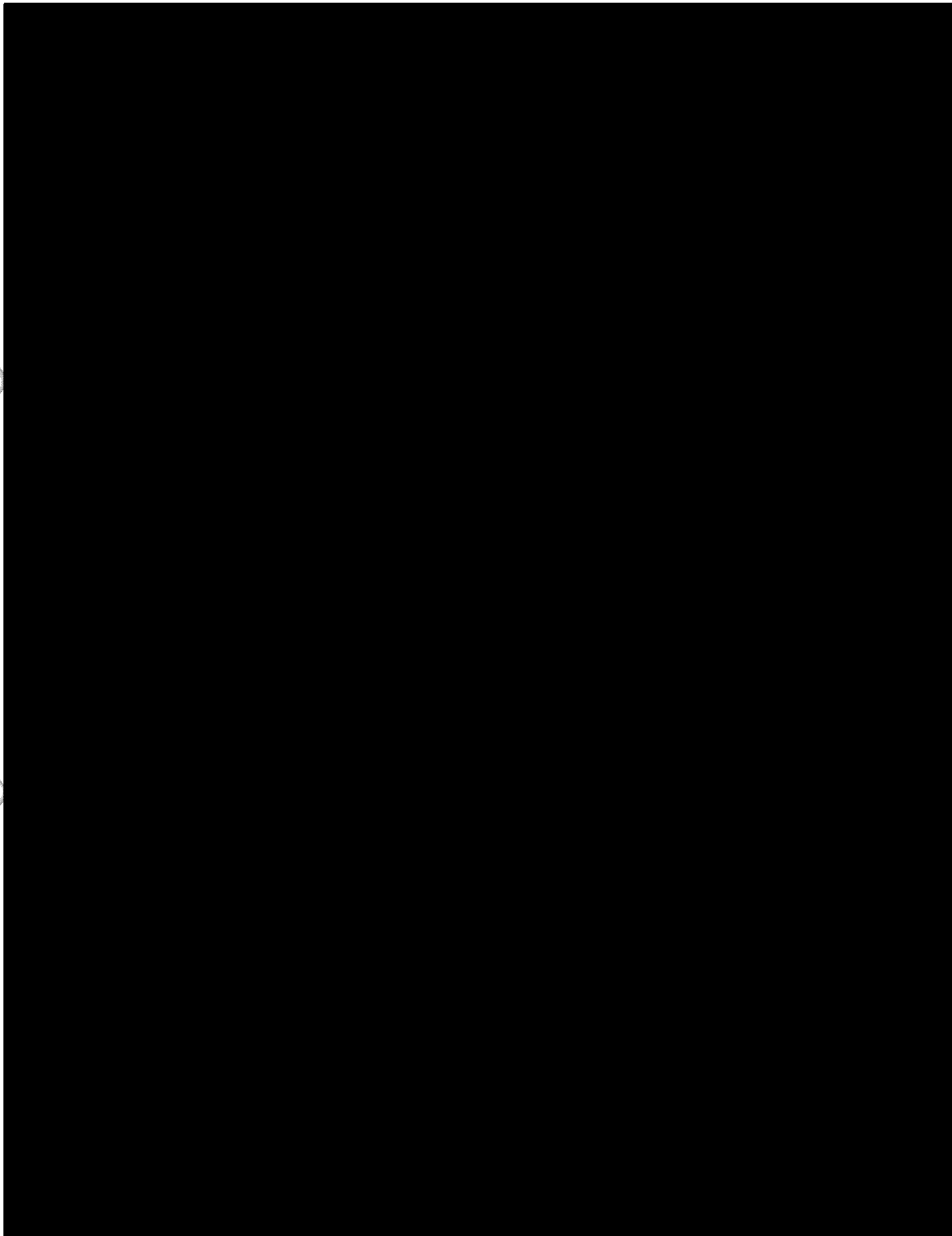
5.12.1 Site Cranage

- (a) CSM contractor is responsible for all cranage on the Site.

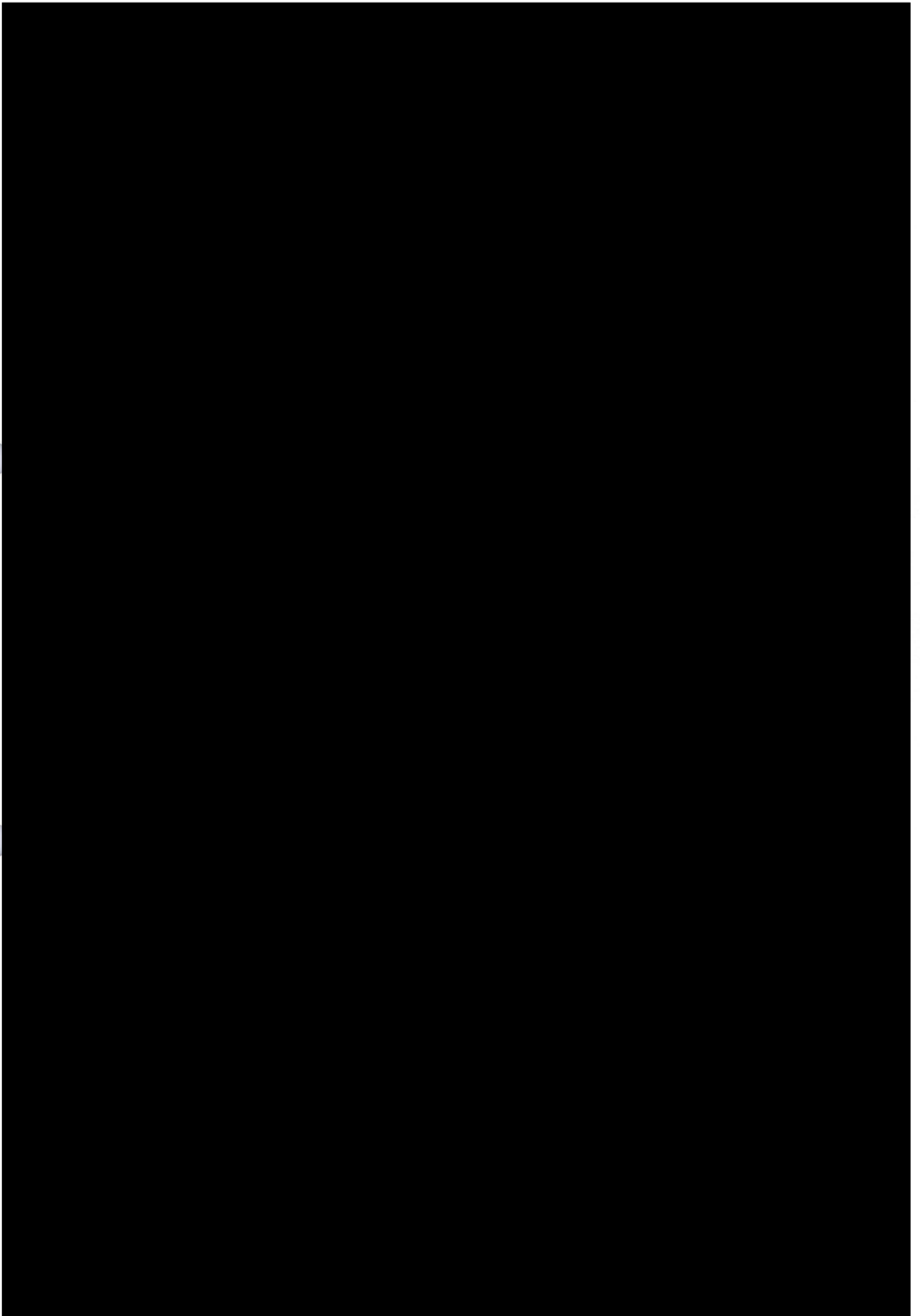
- (b) the use of a tower crane for adjustments to the existing Intercity Concourse and Grand Concourse is not precluded.

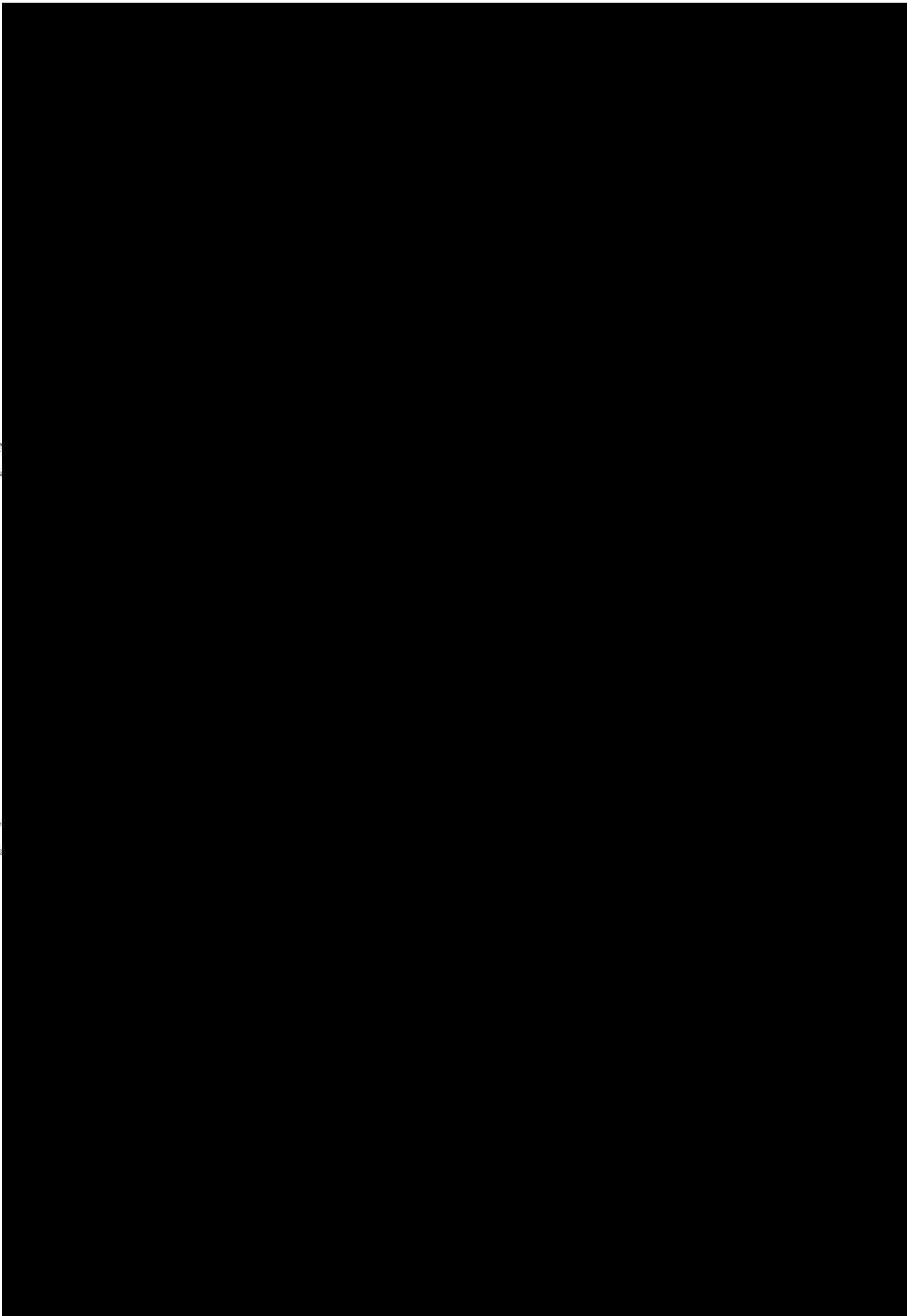


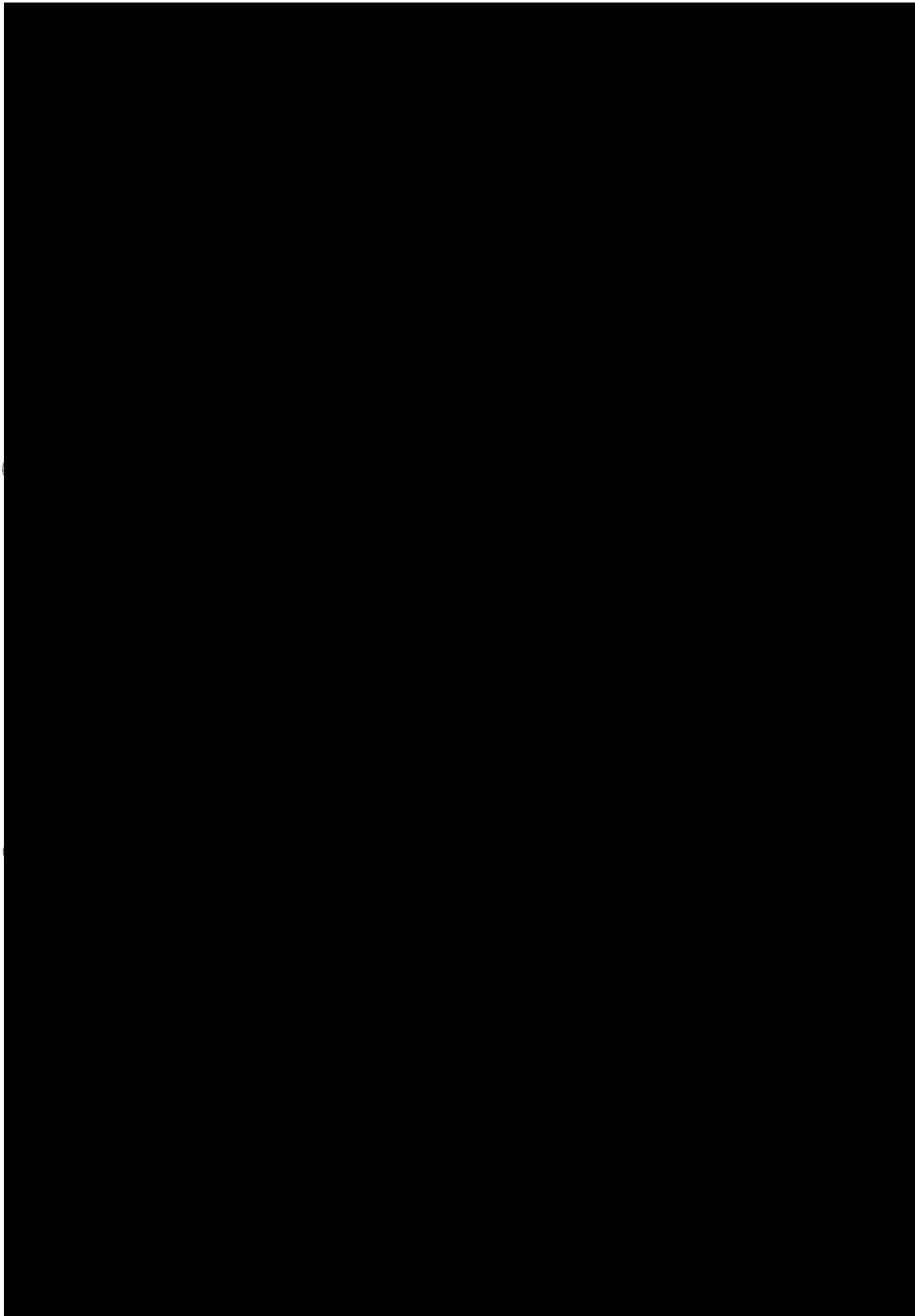
SCHEDULE C2 – CSM CONTRACTOR’S TENDER DESIGN

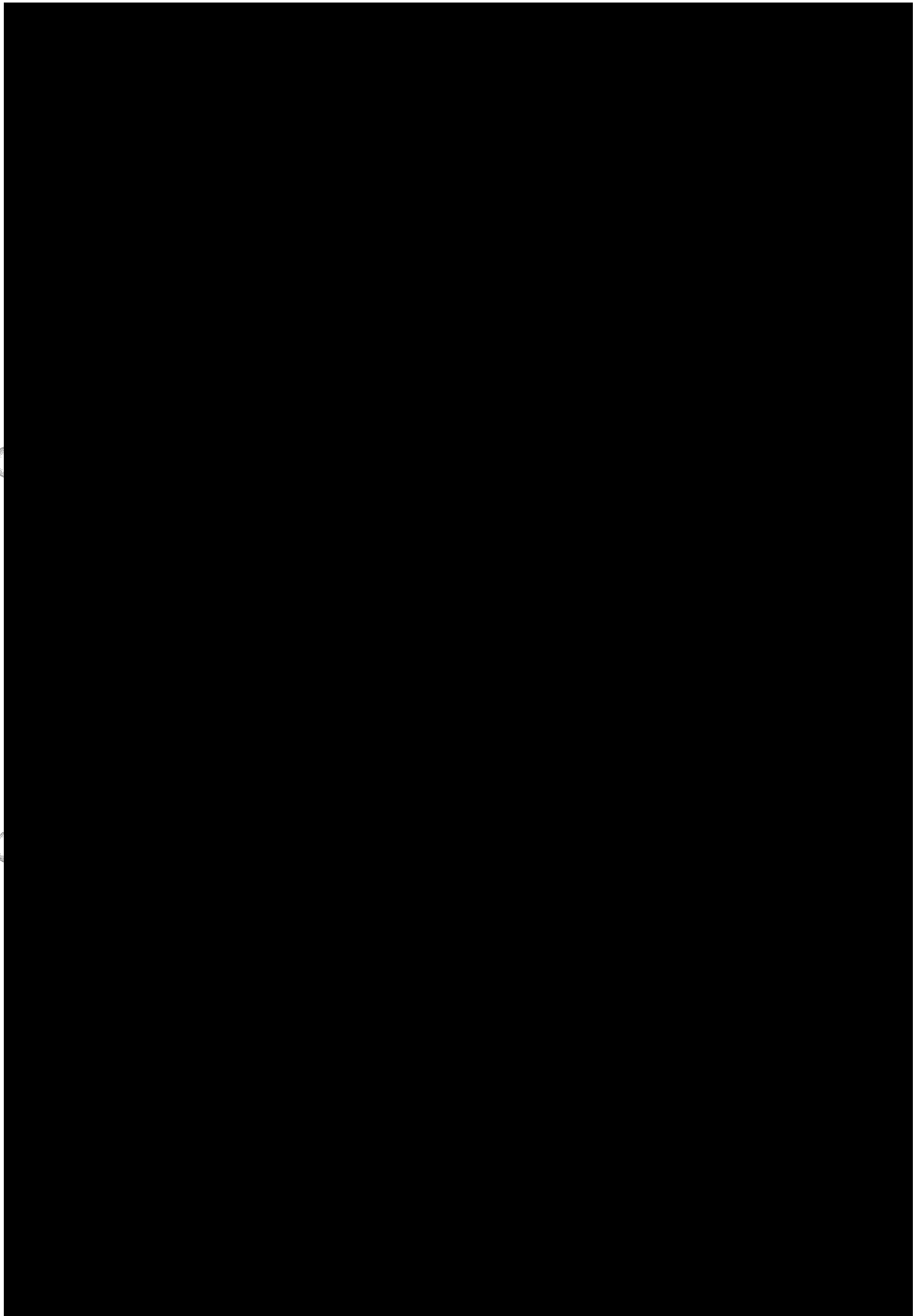


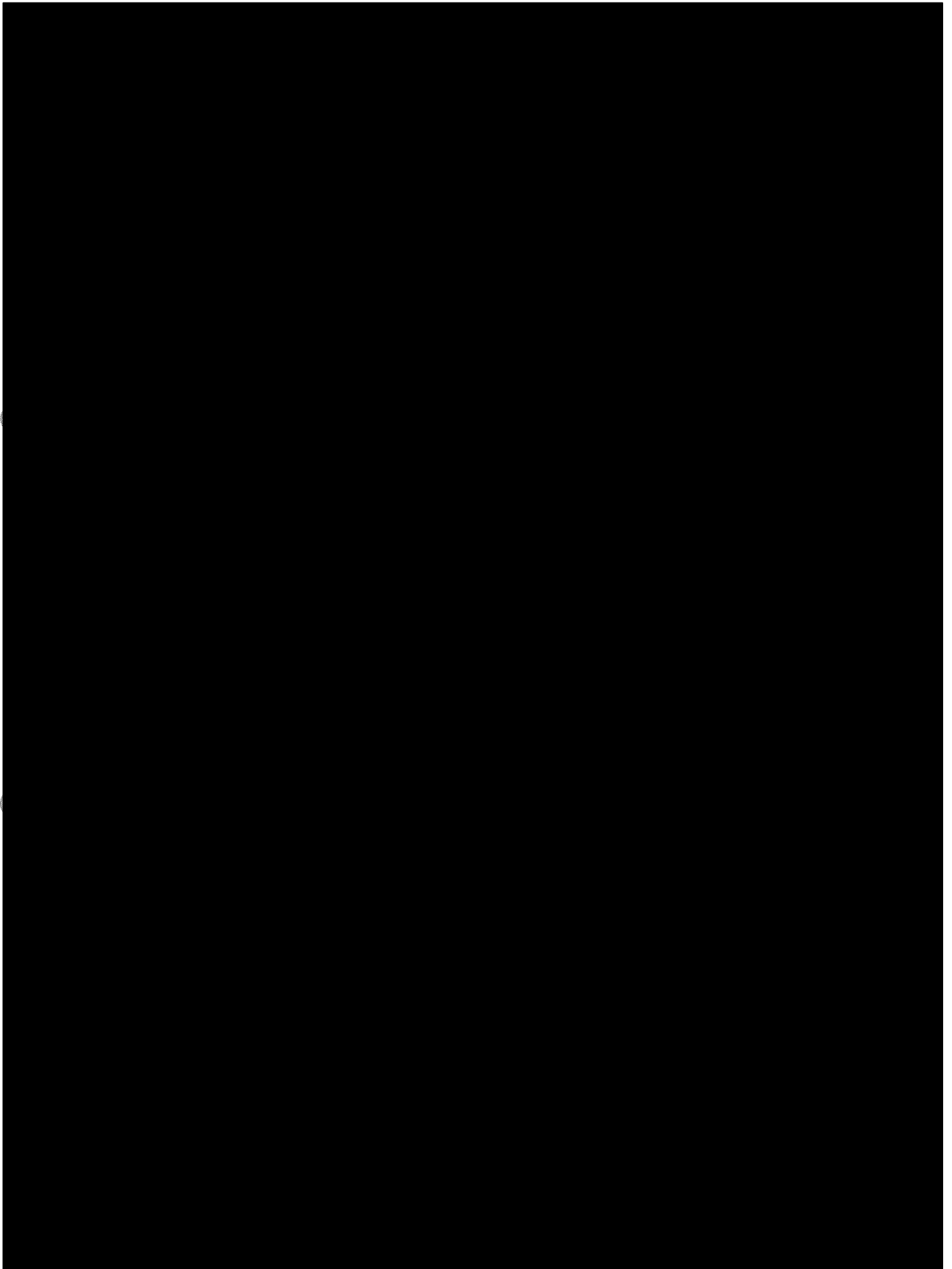


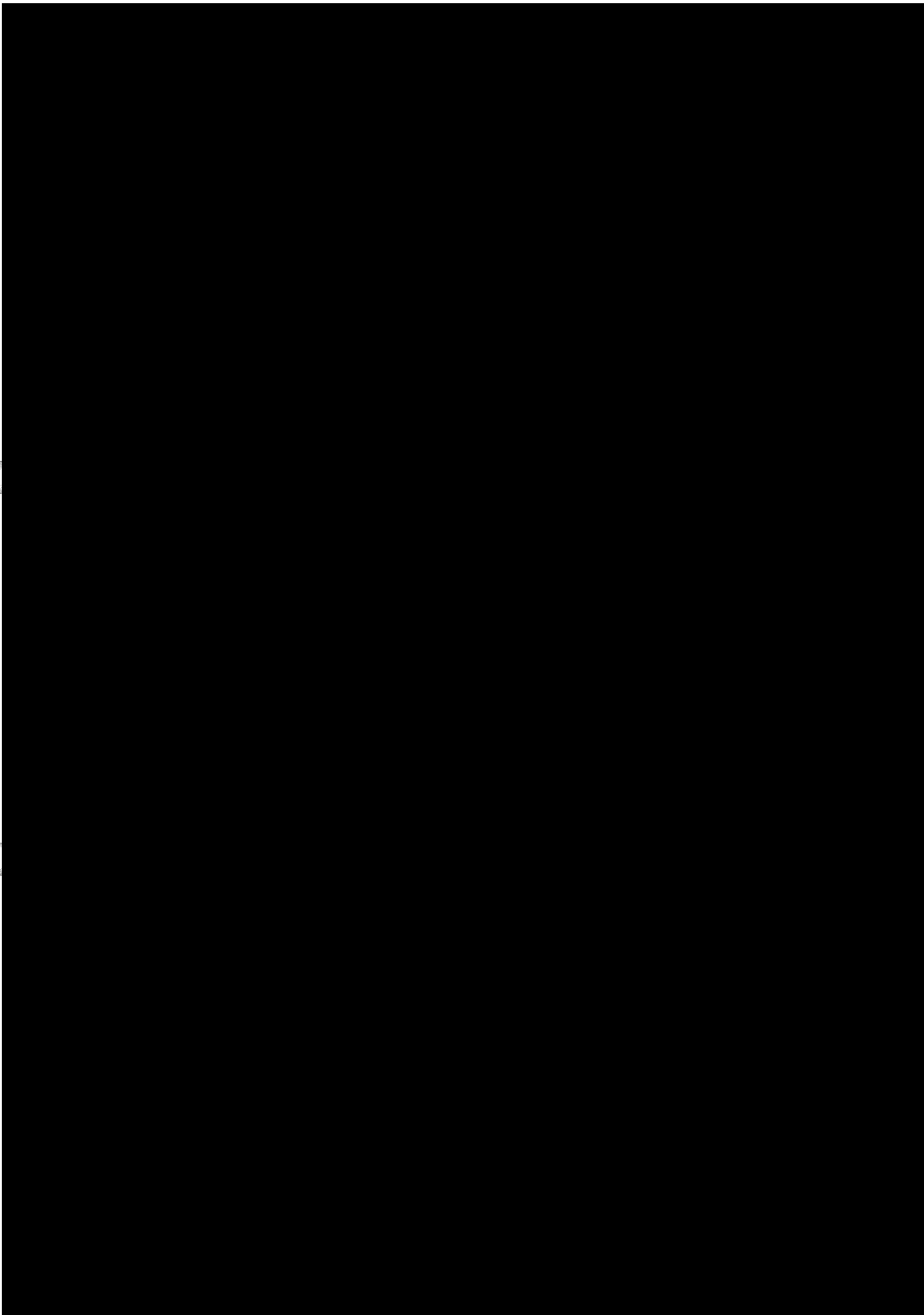


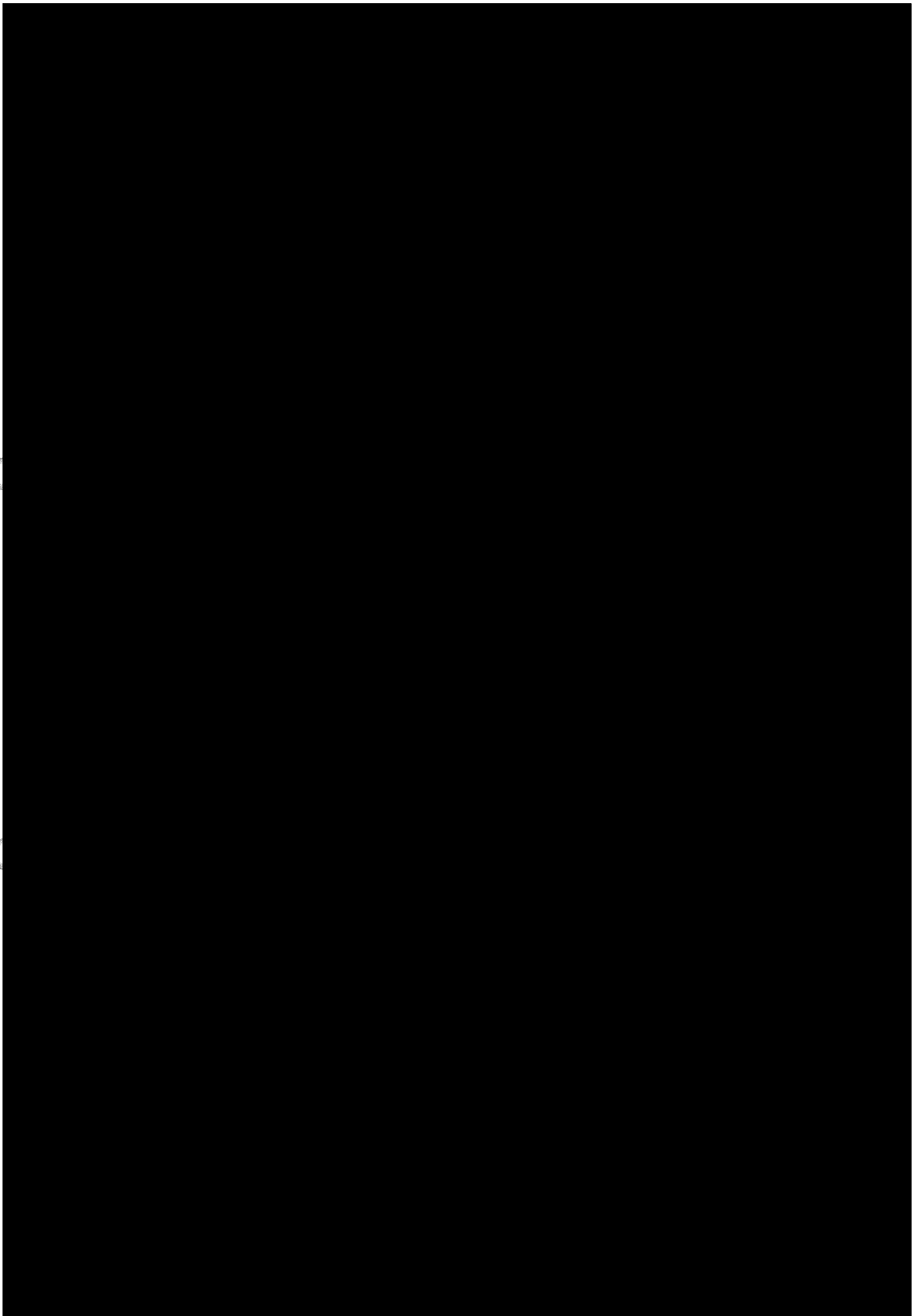


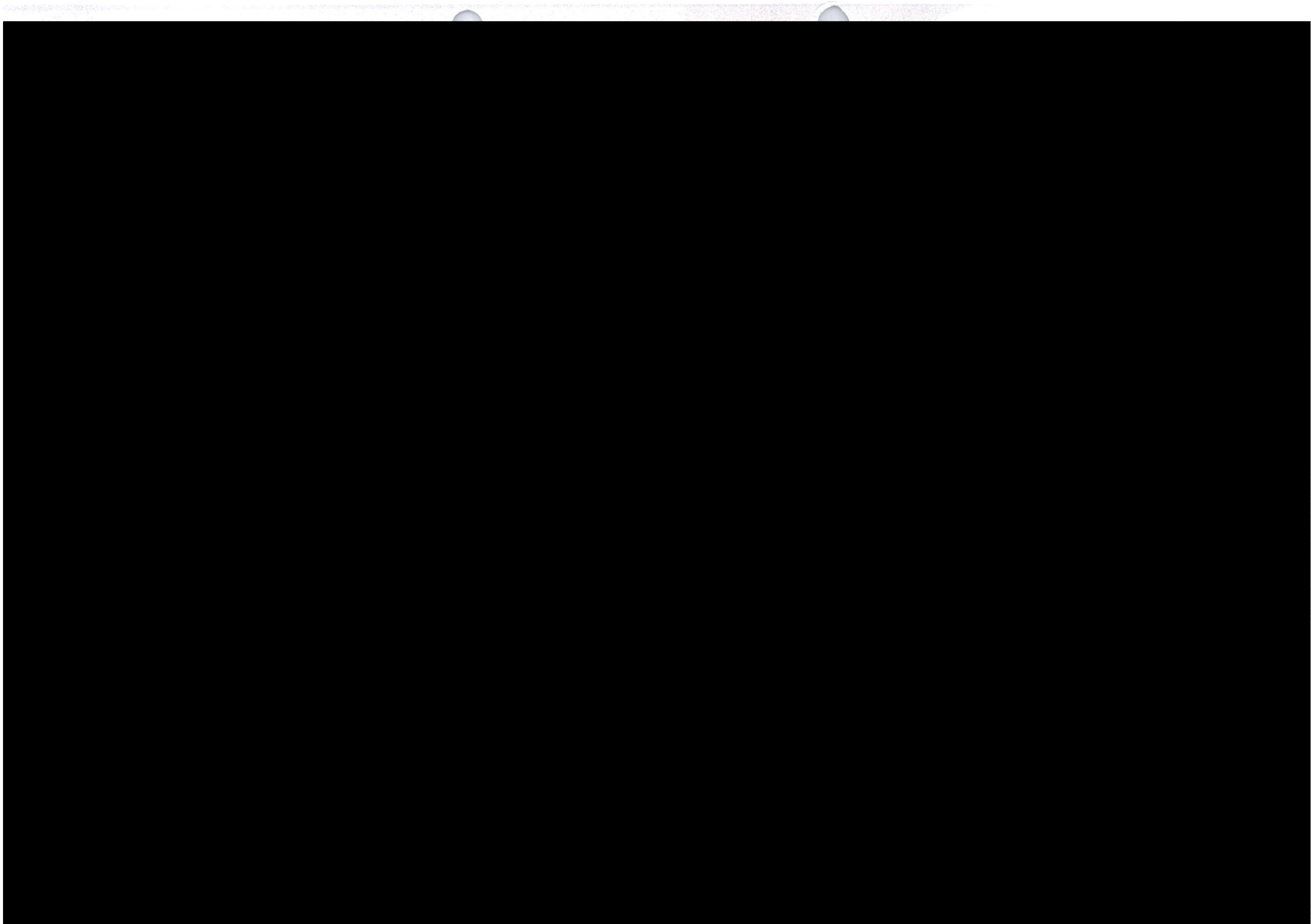


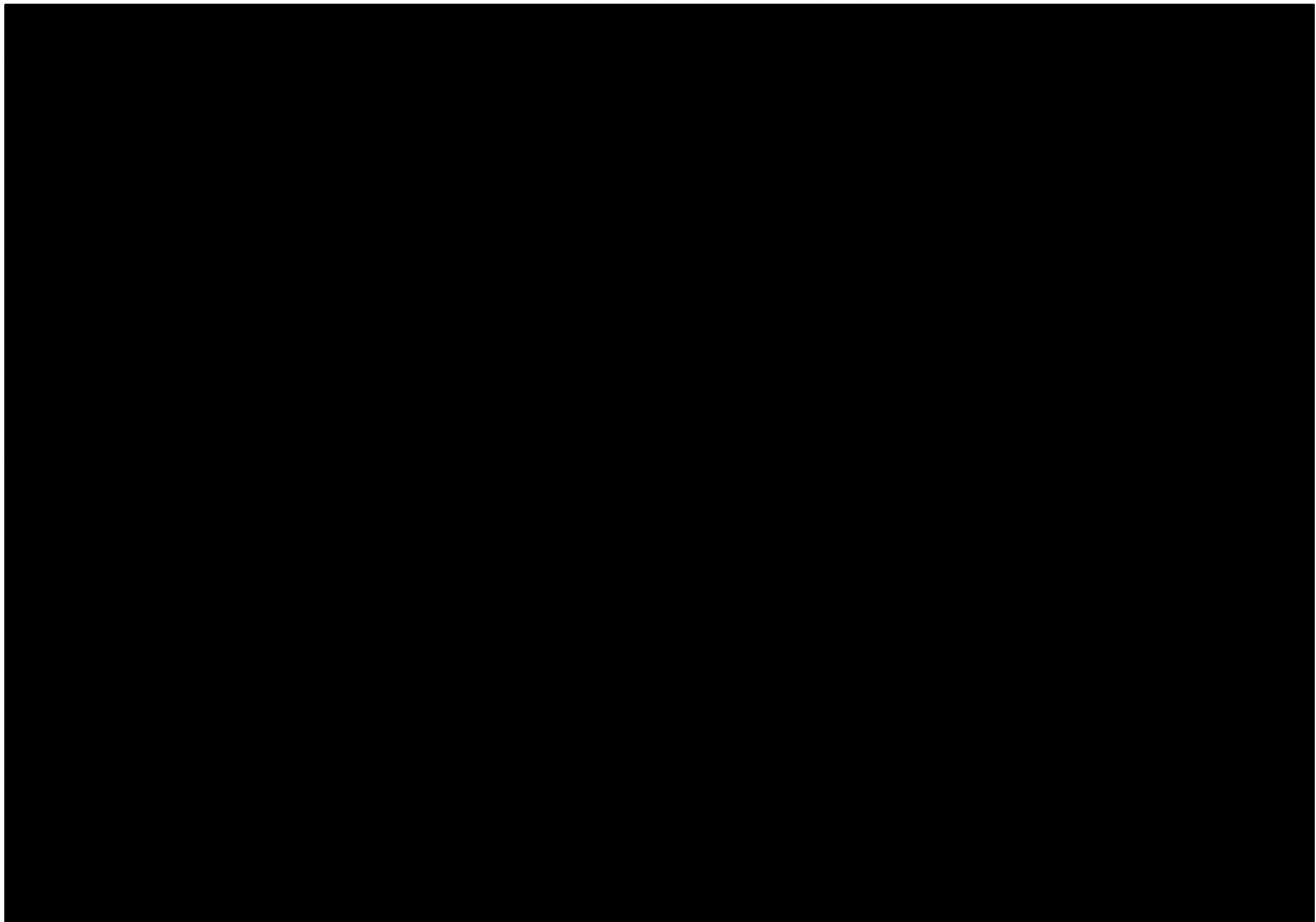


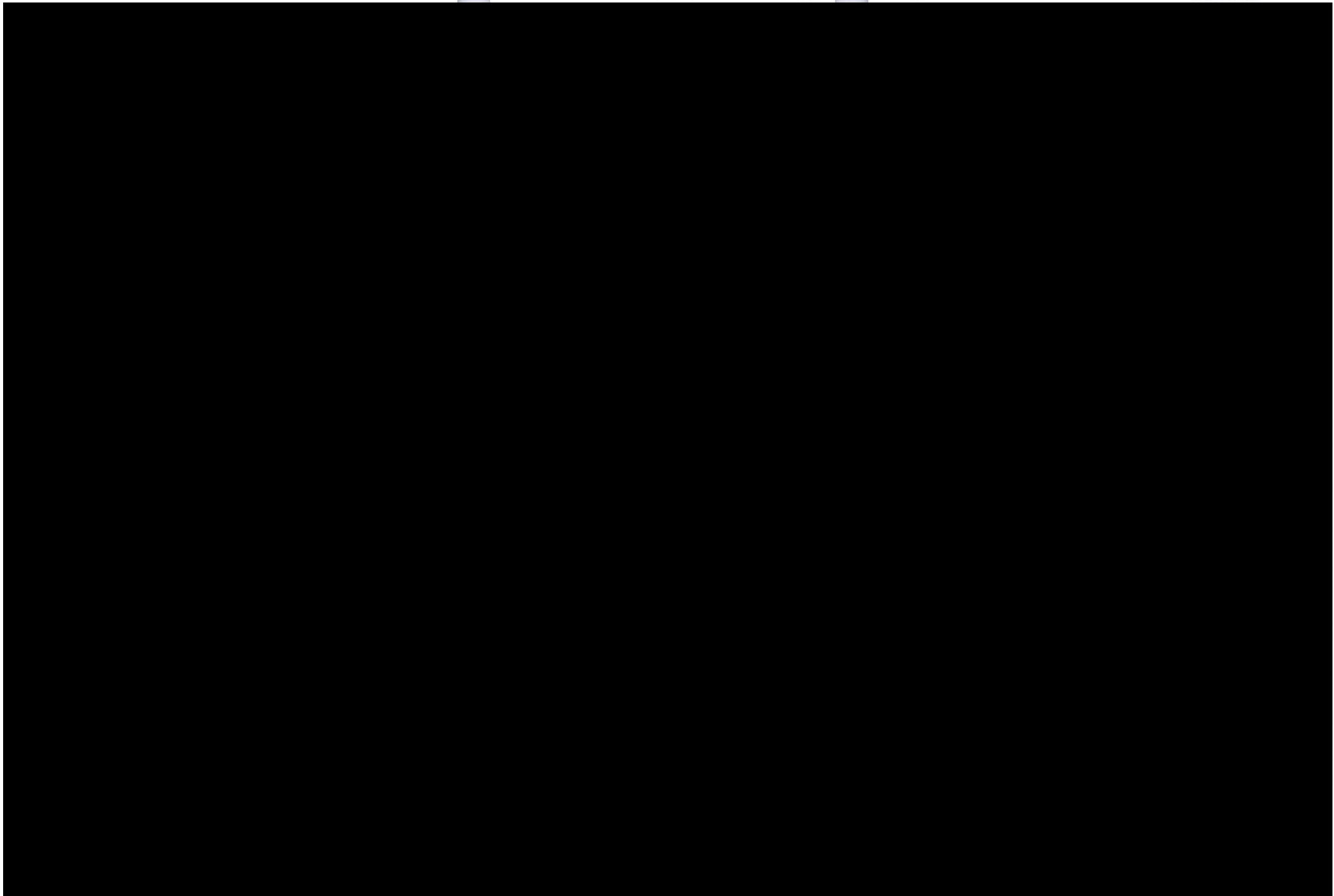


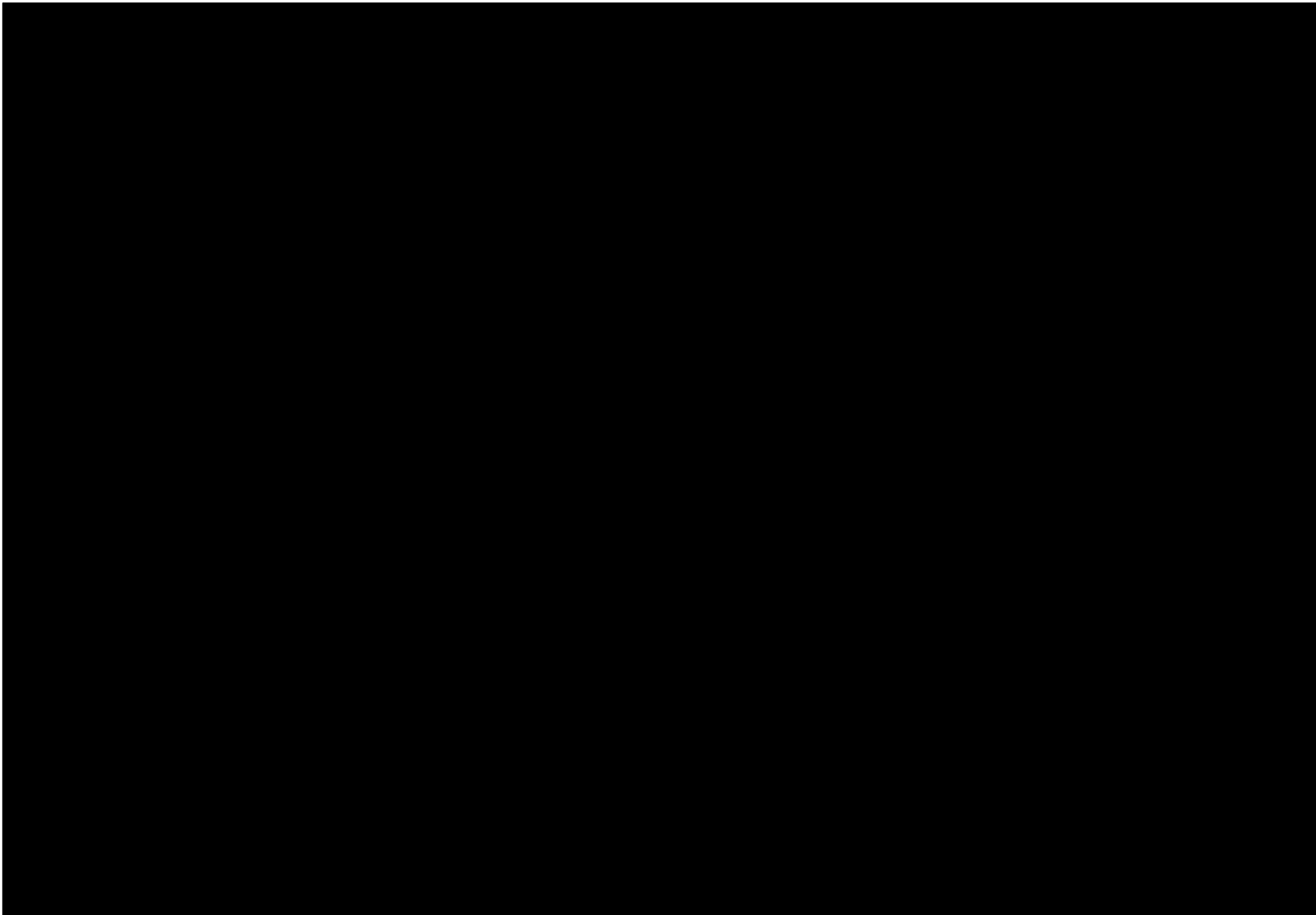


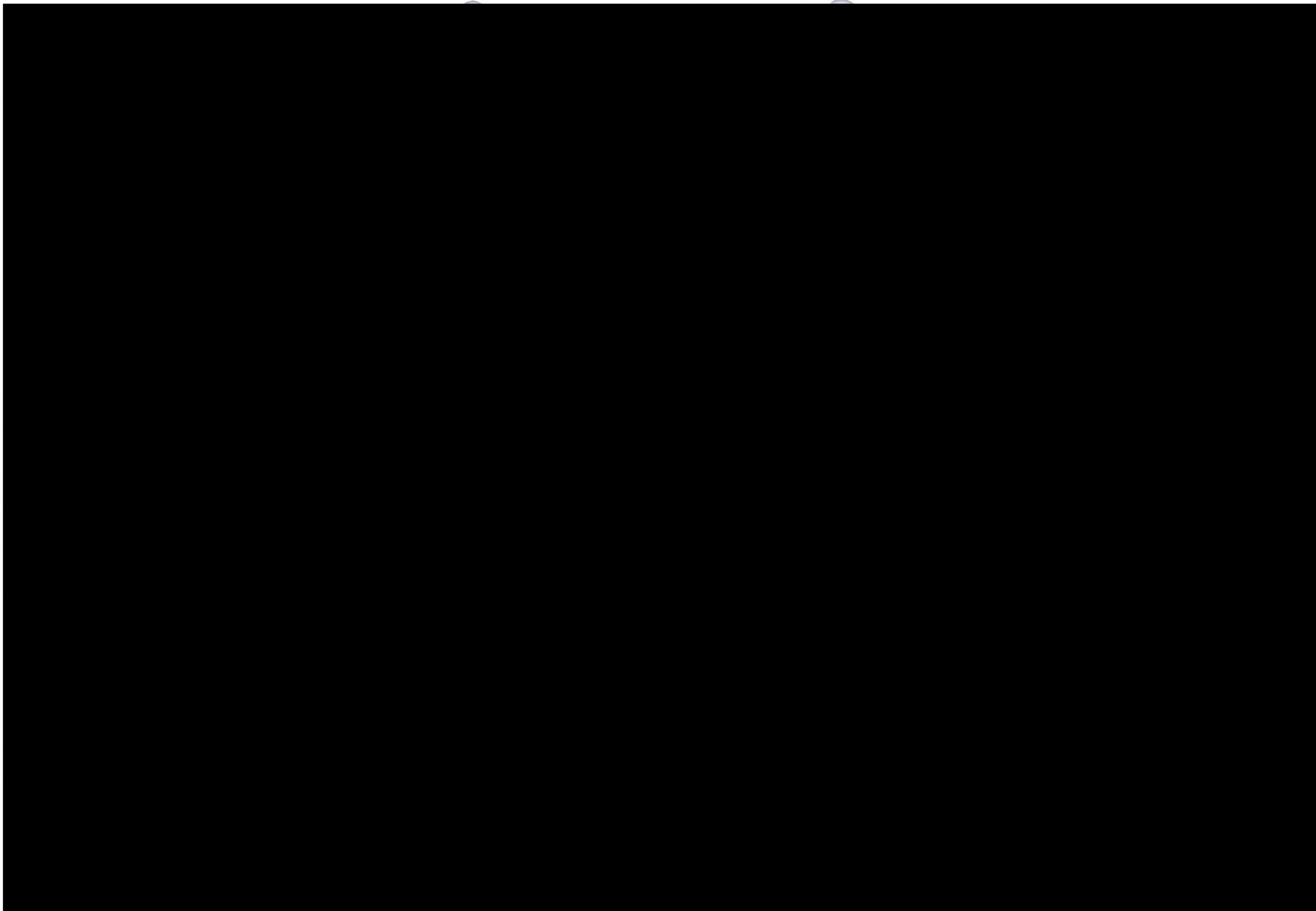


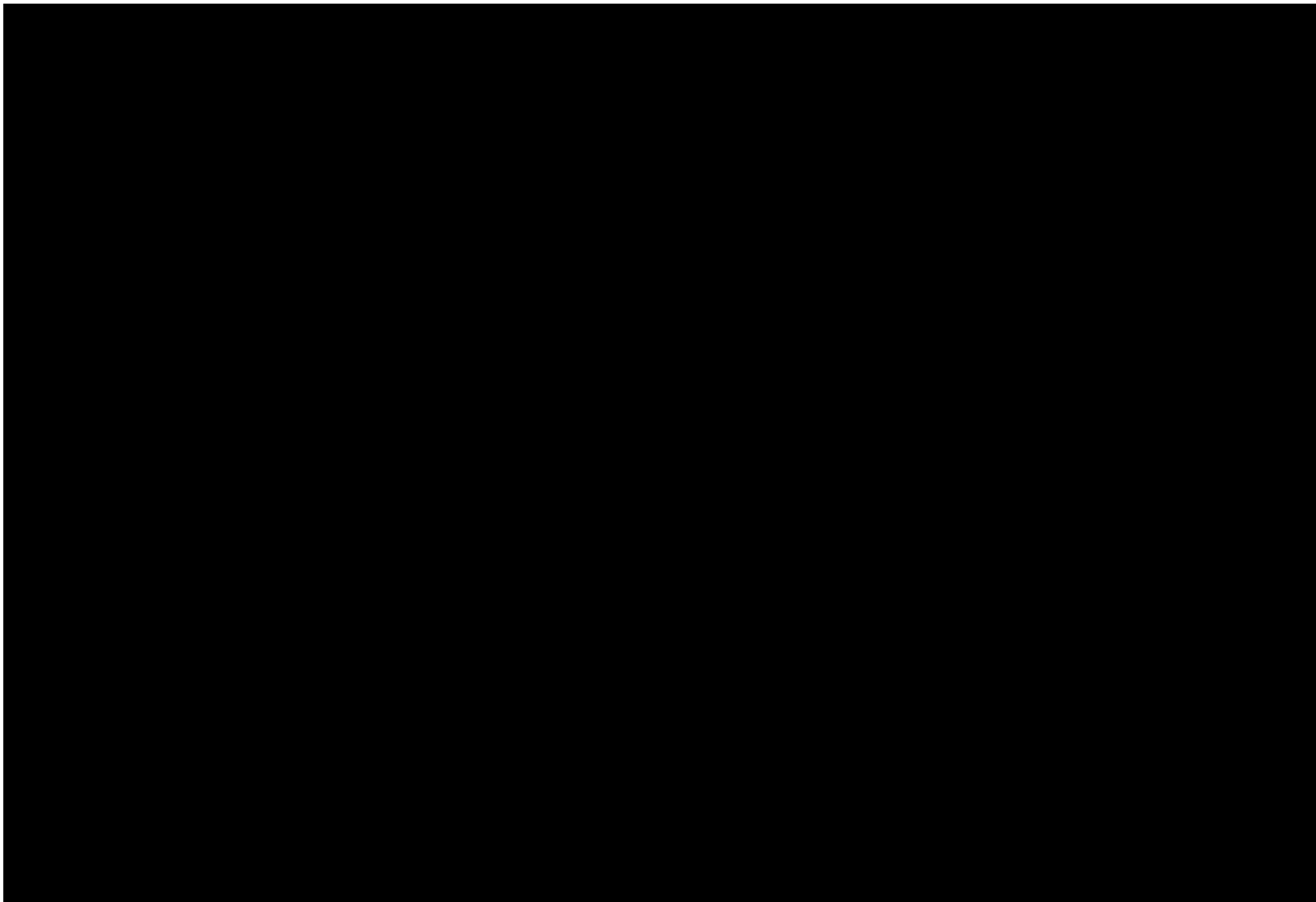


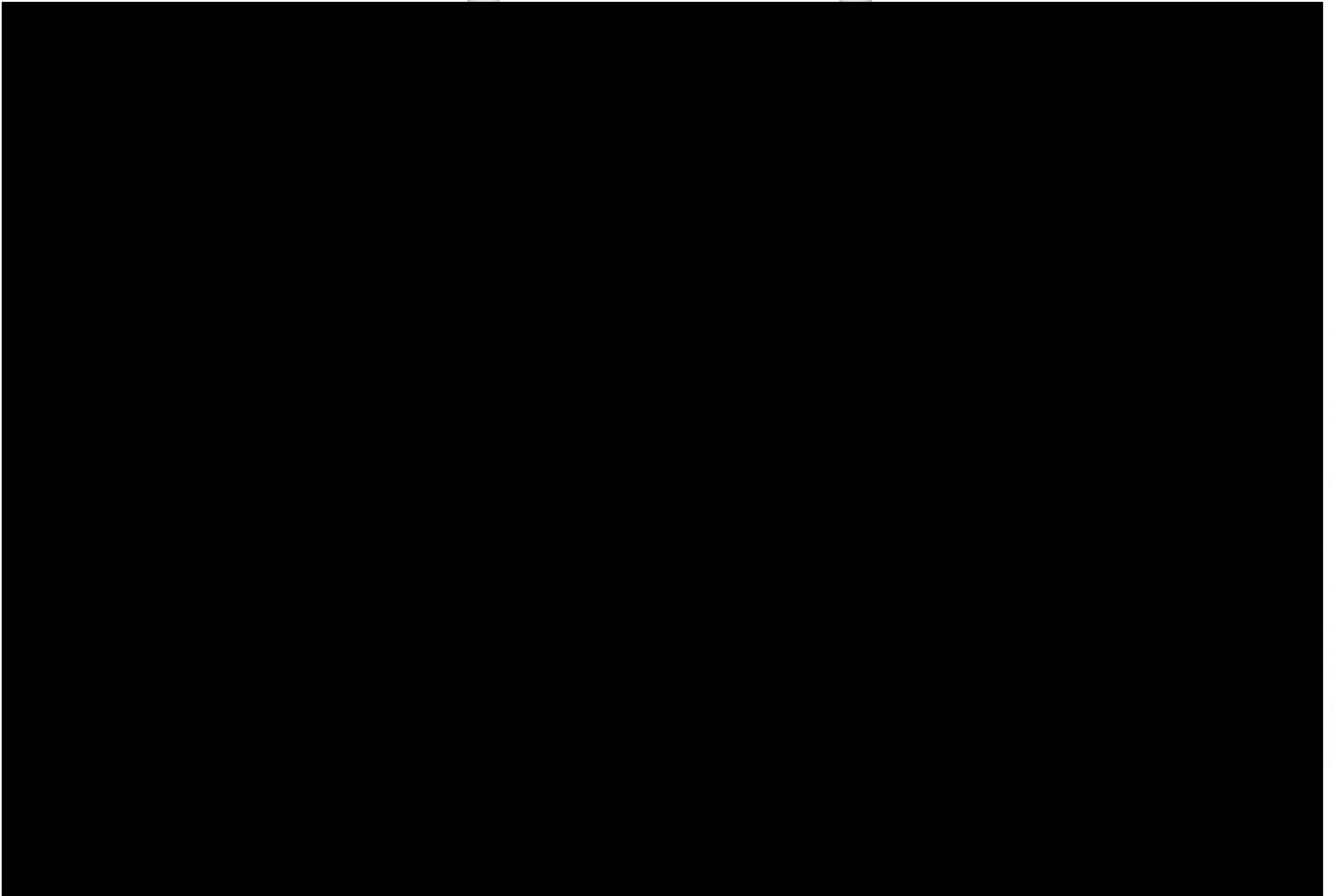


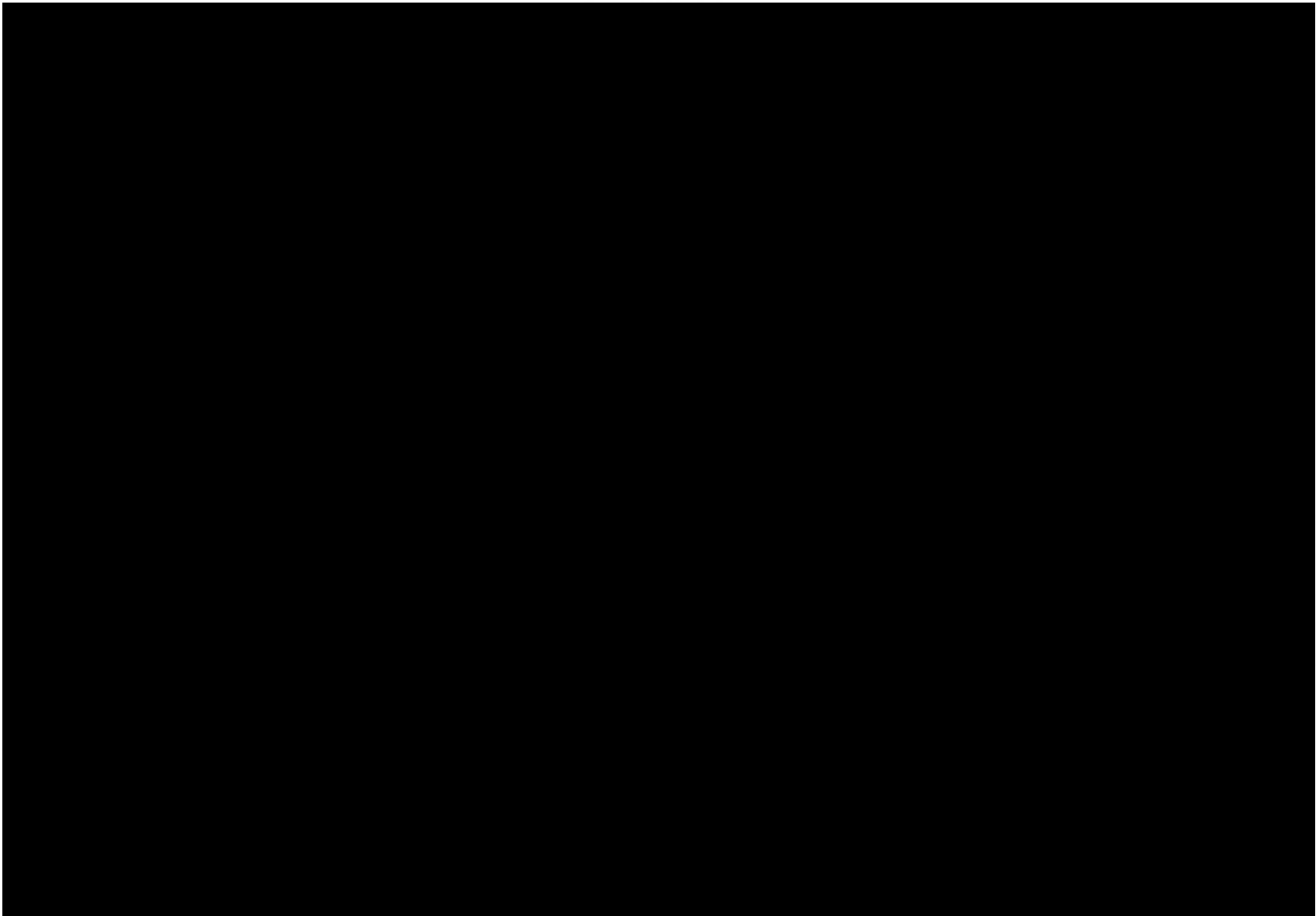


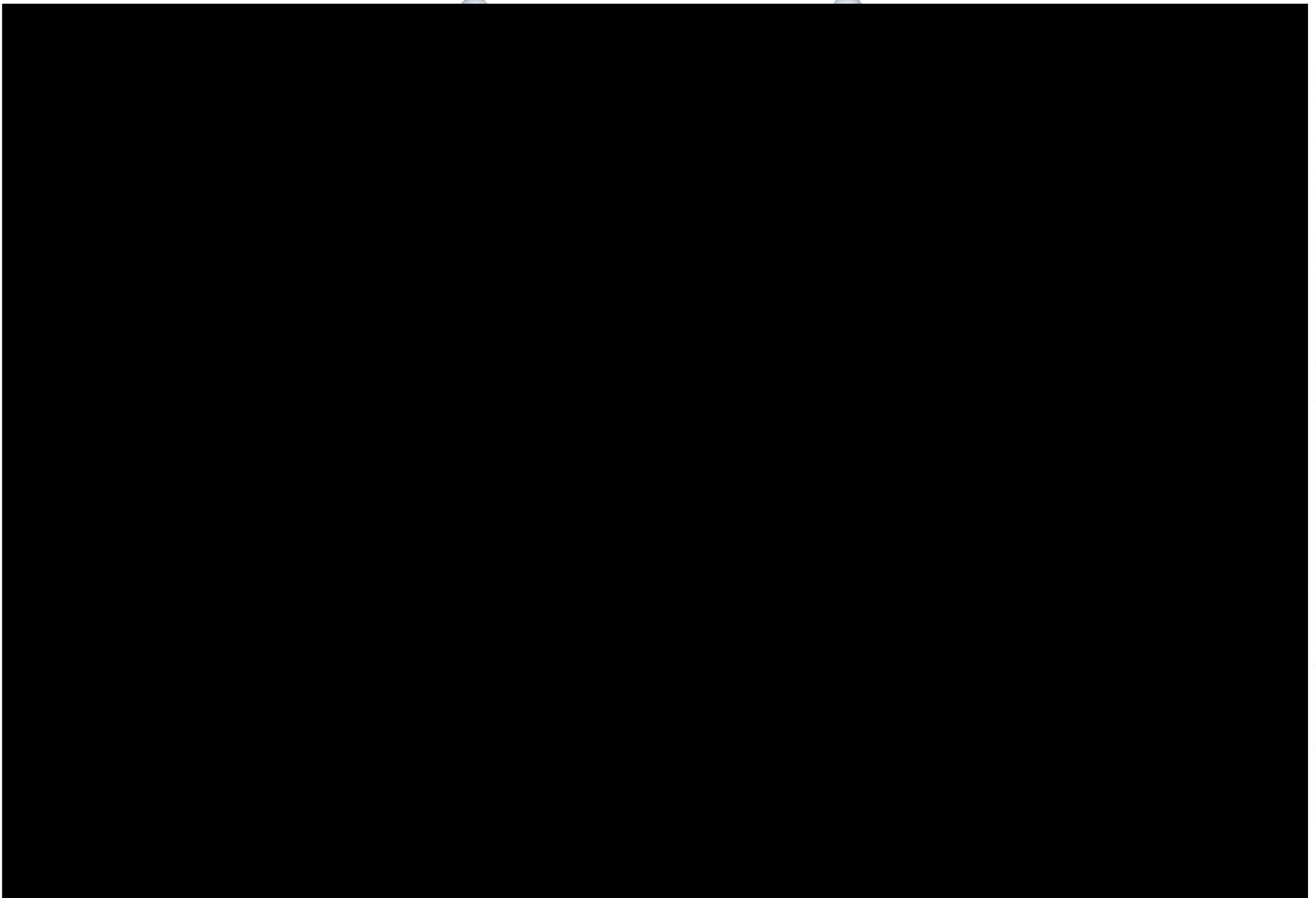


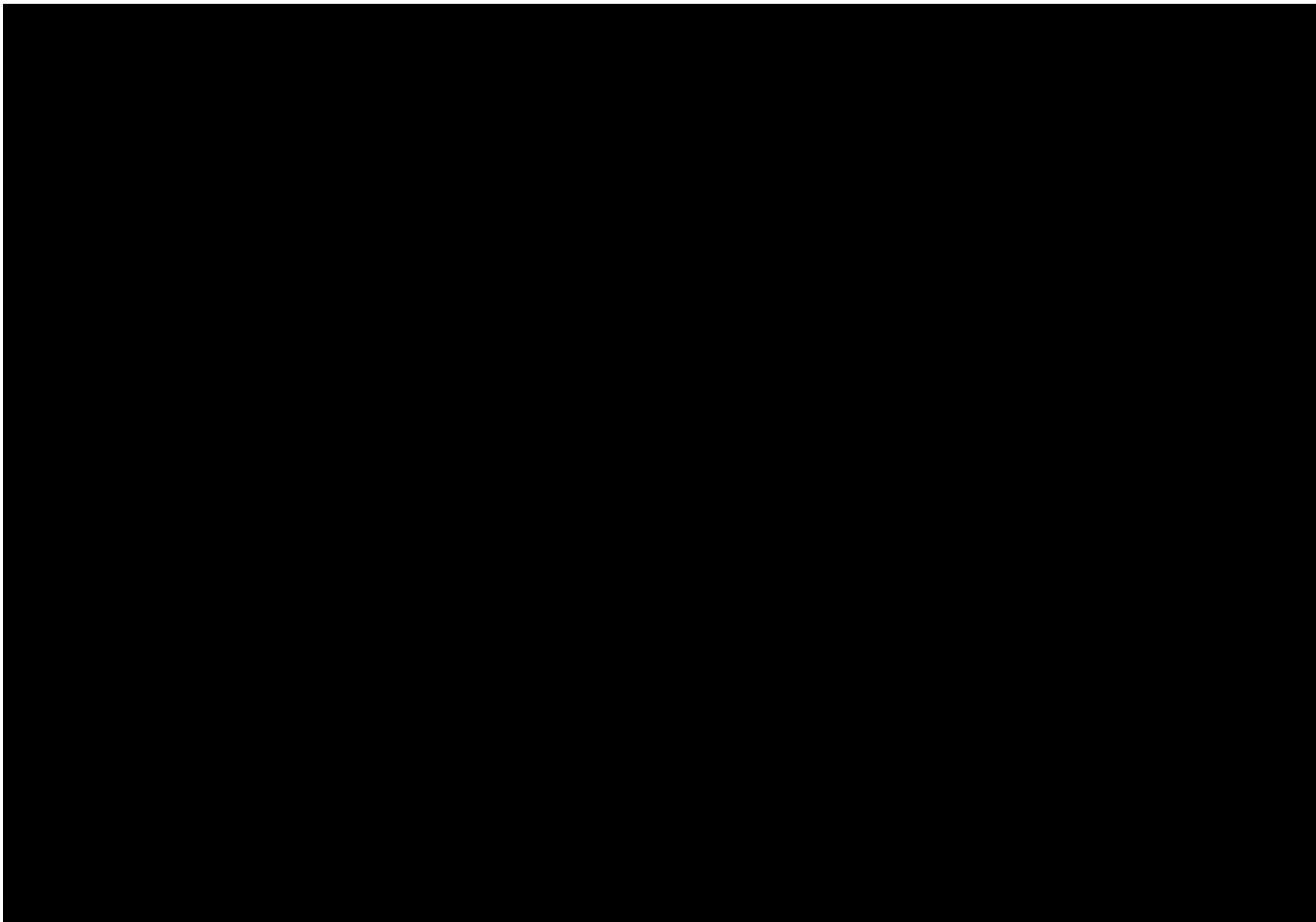


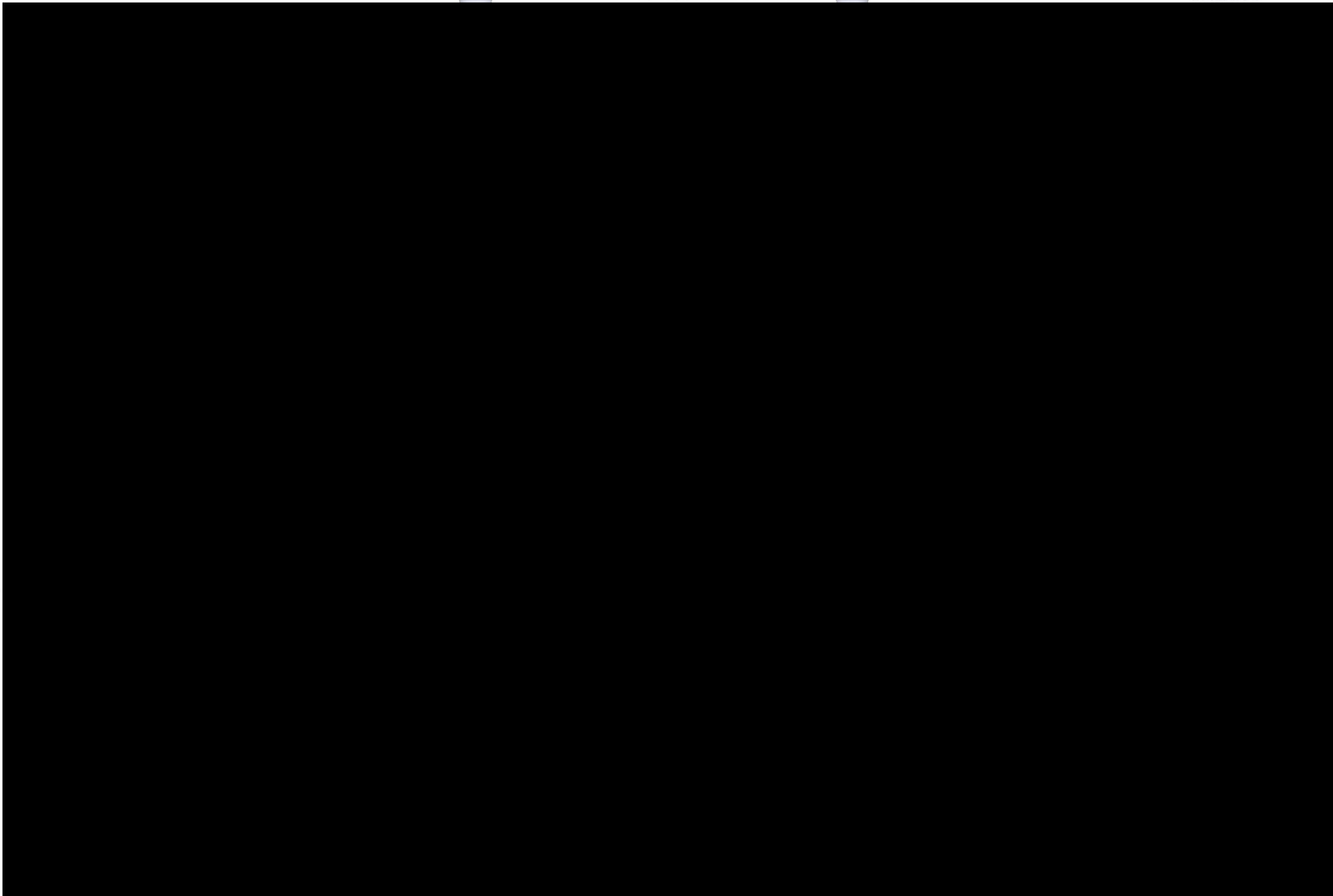


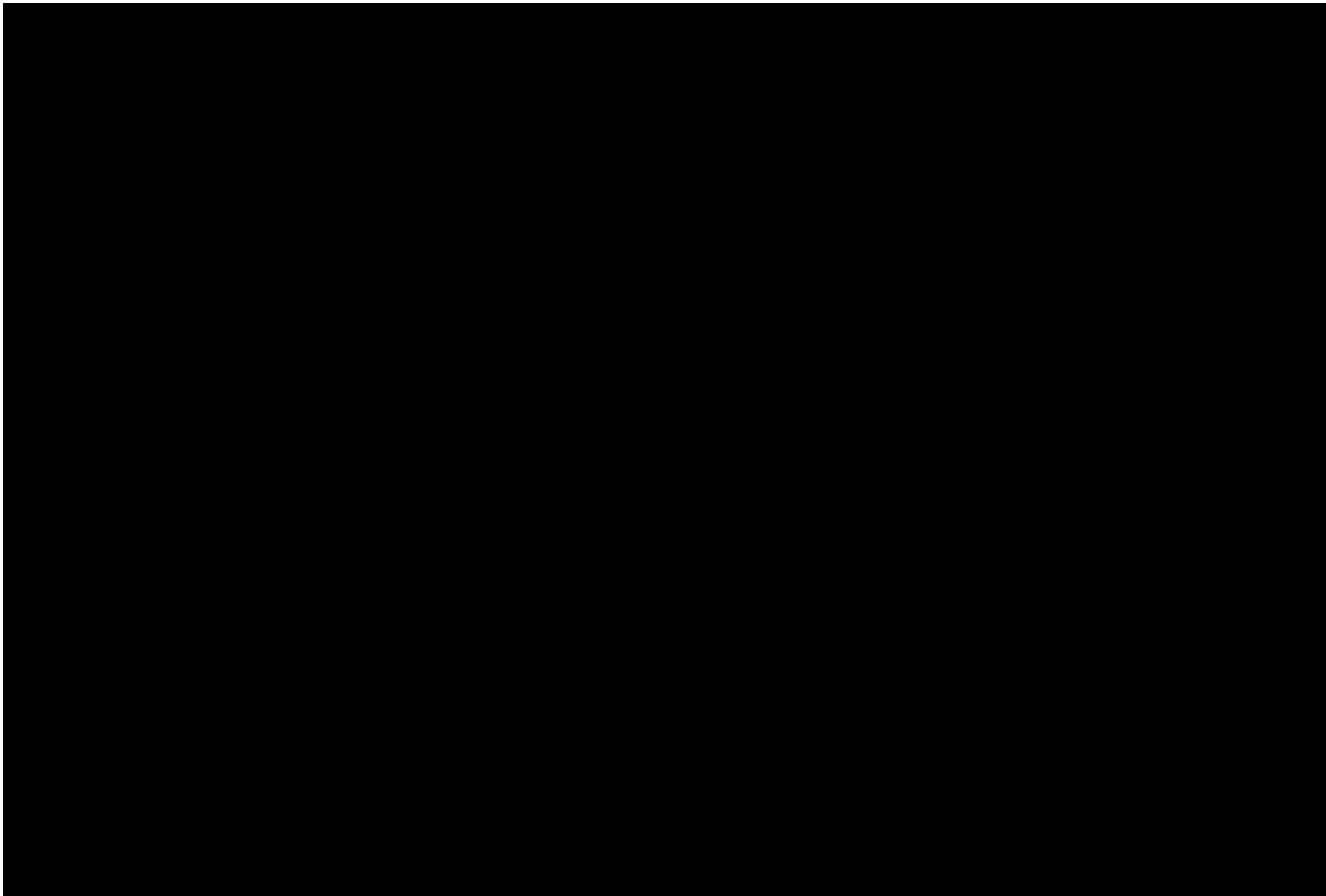


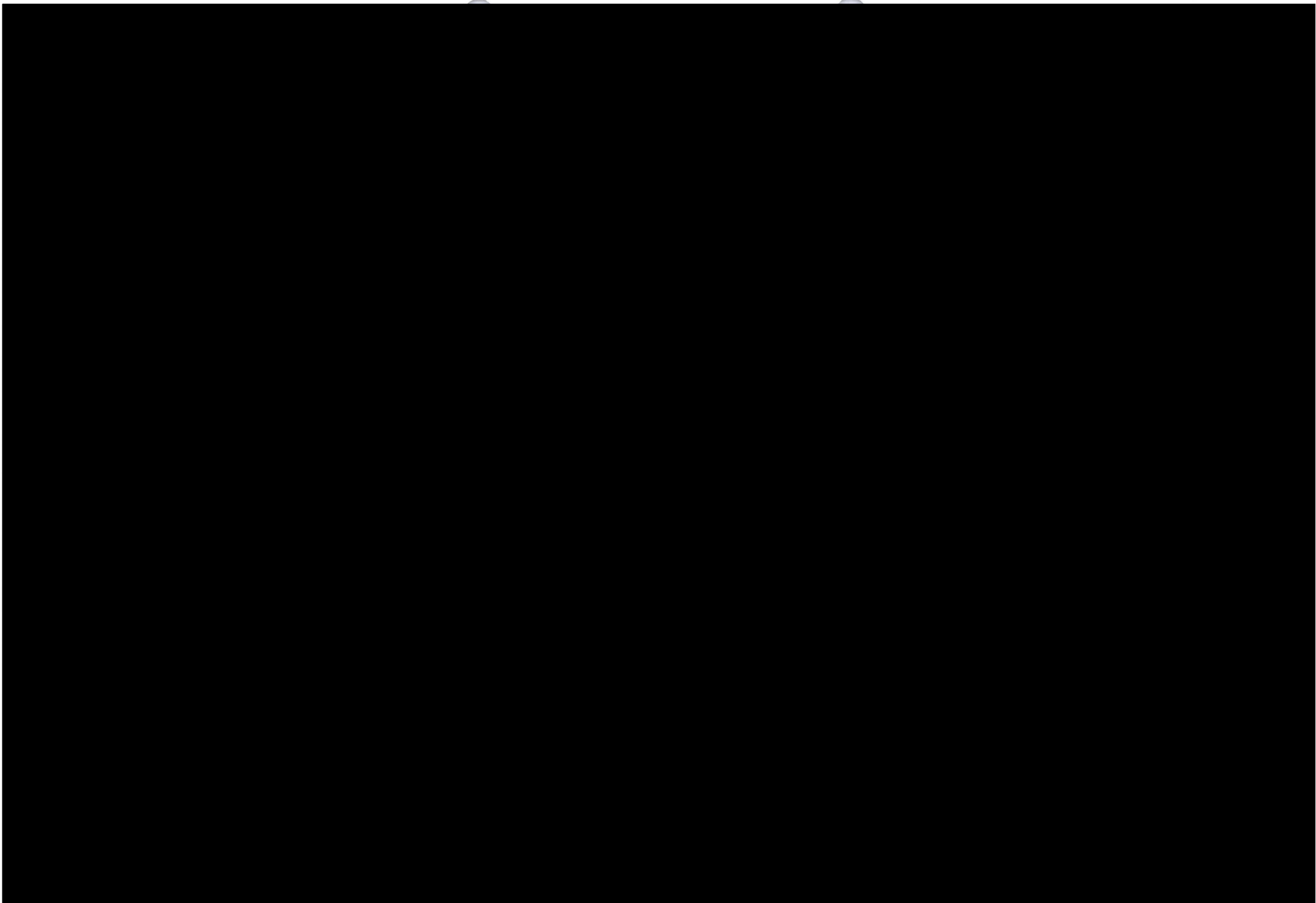


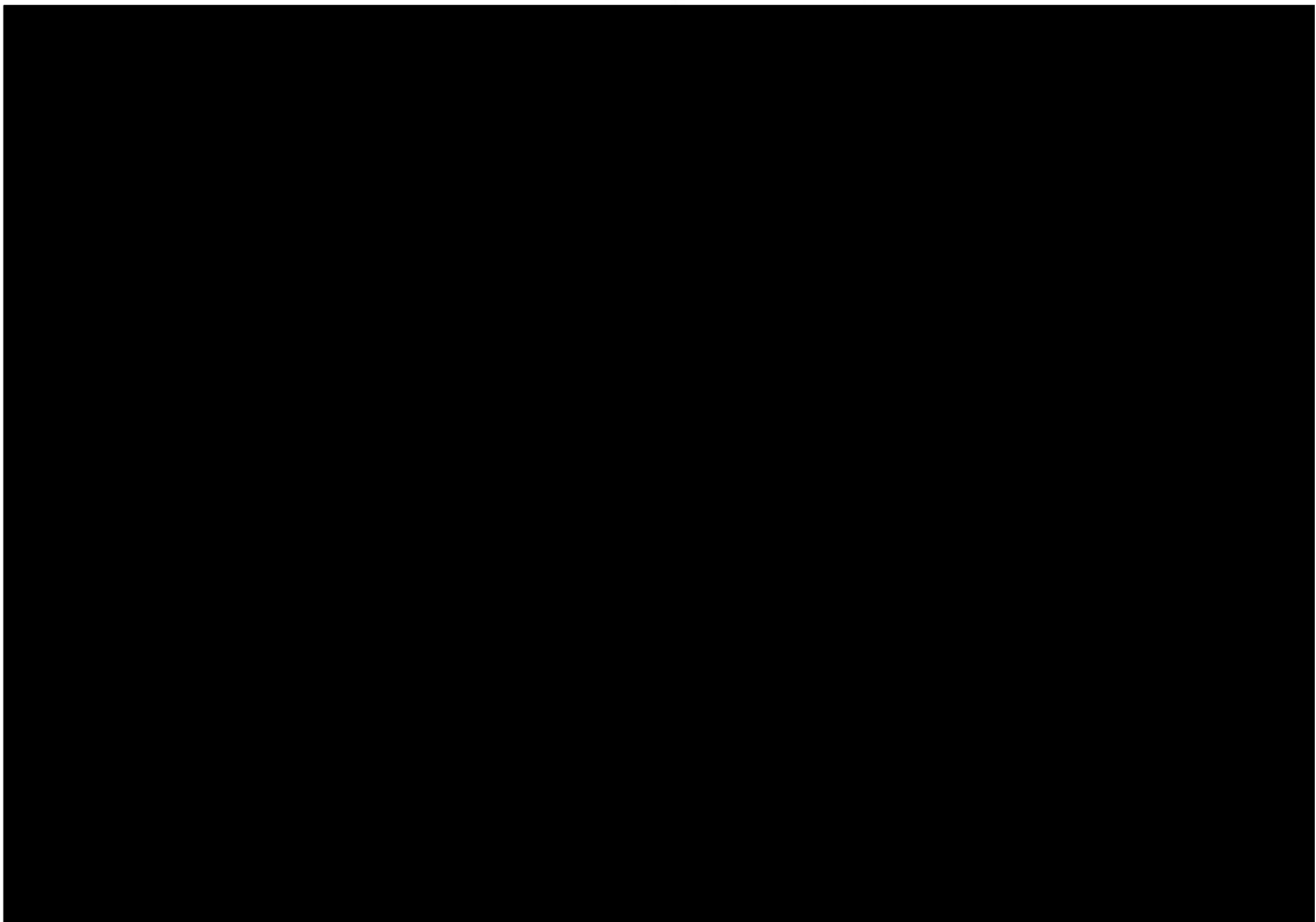


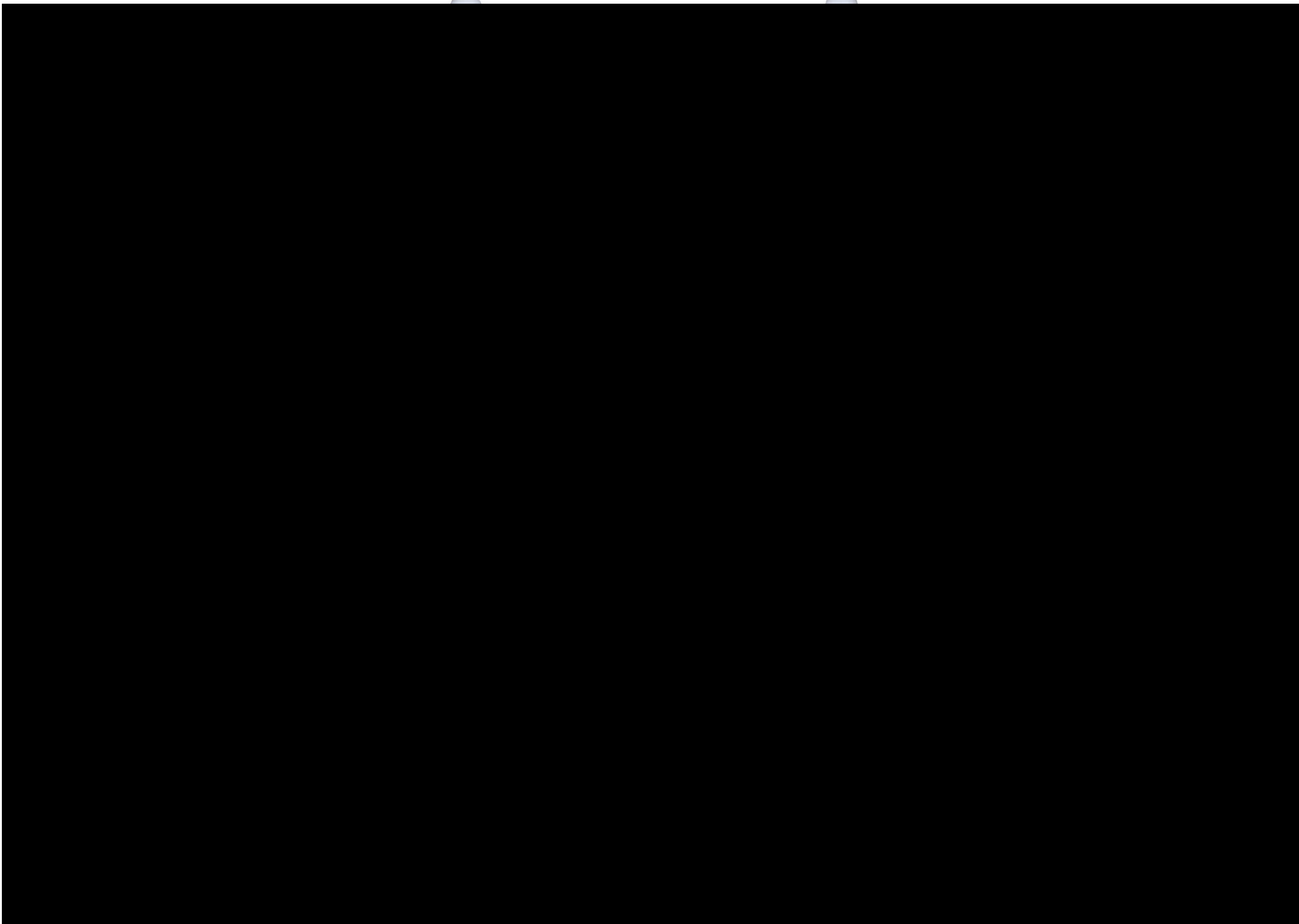


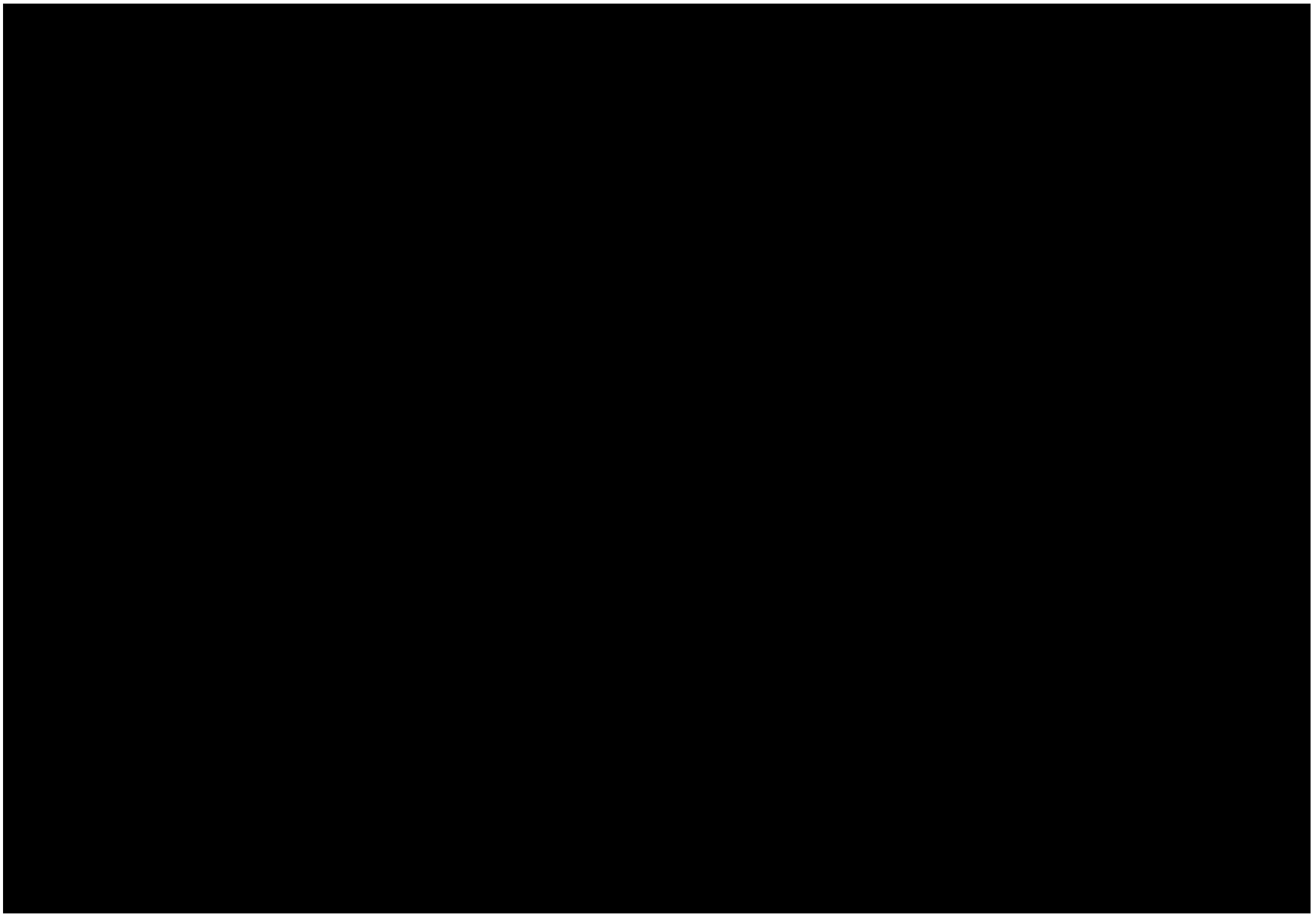


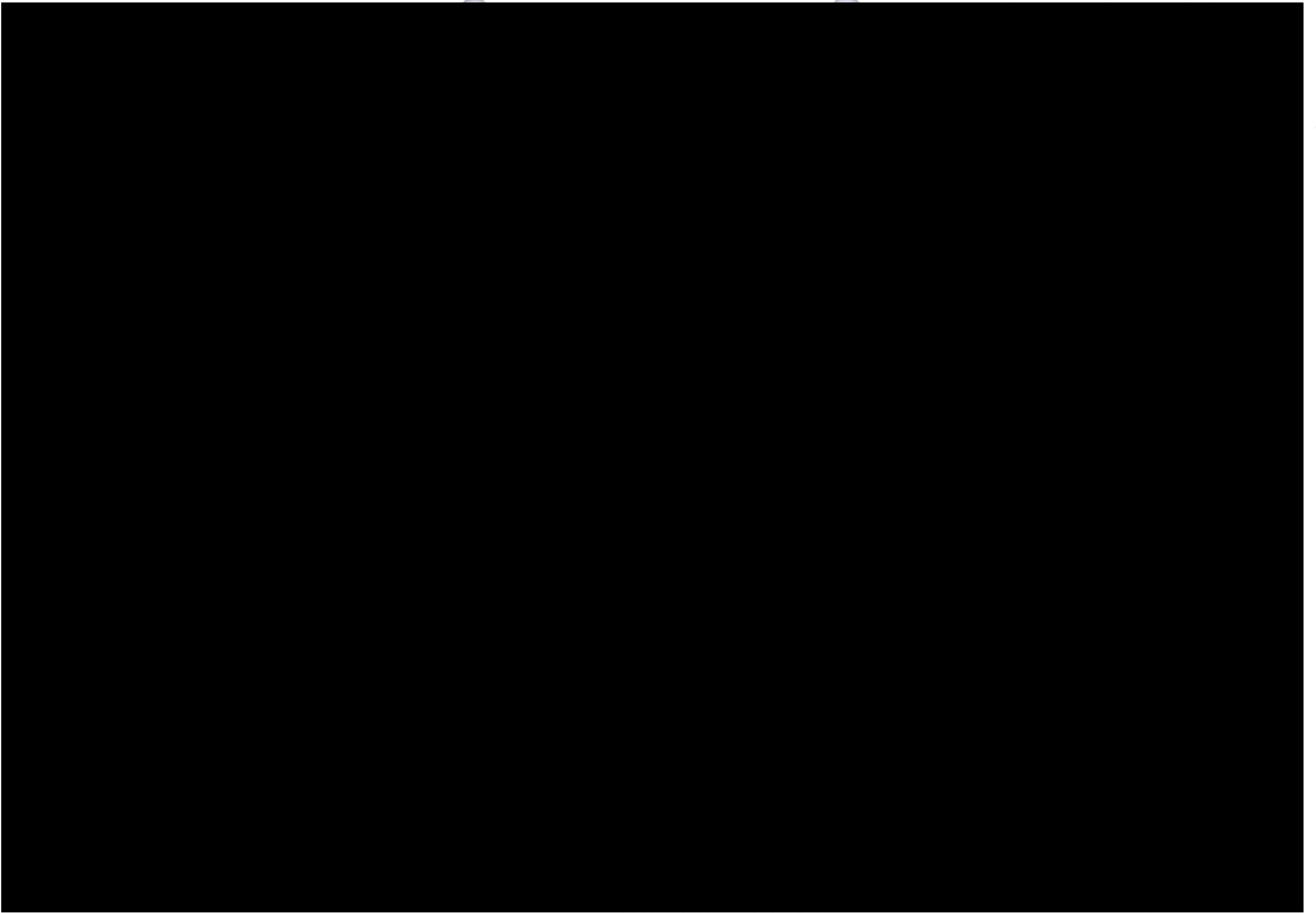


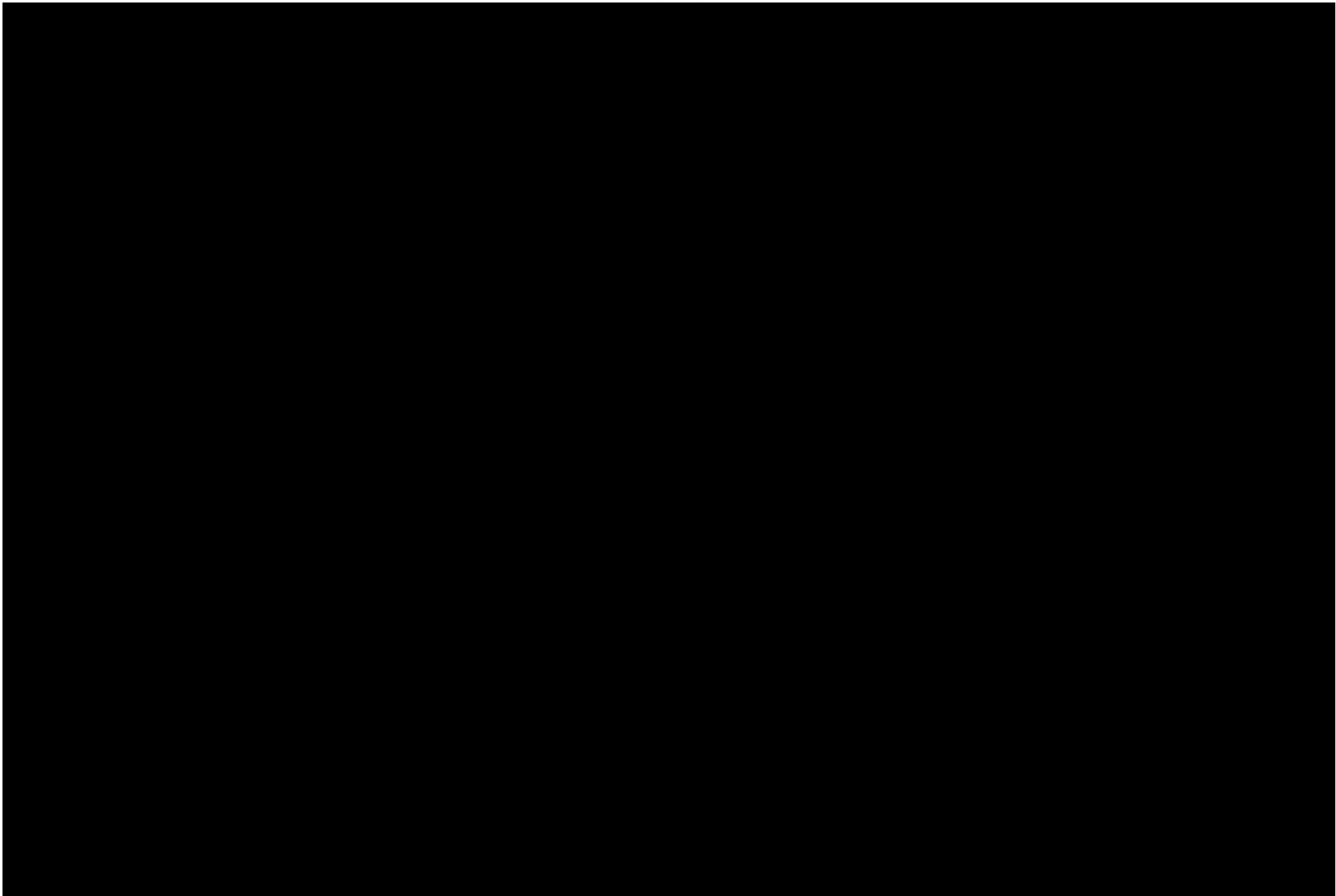


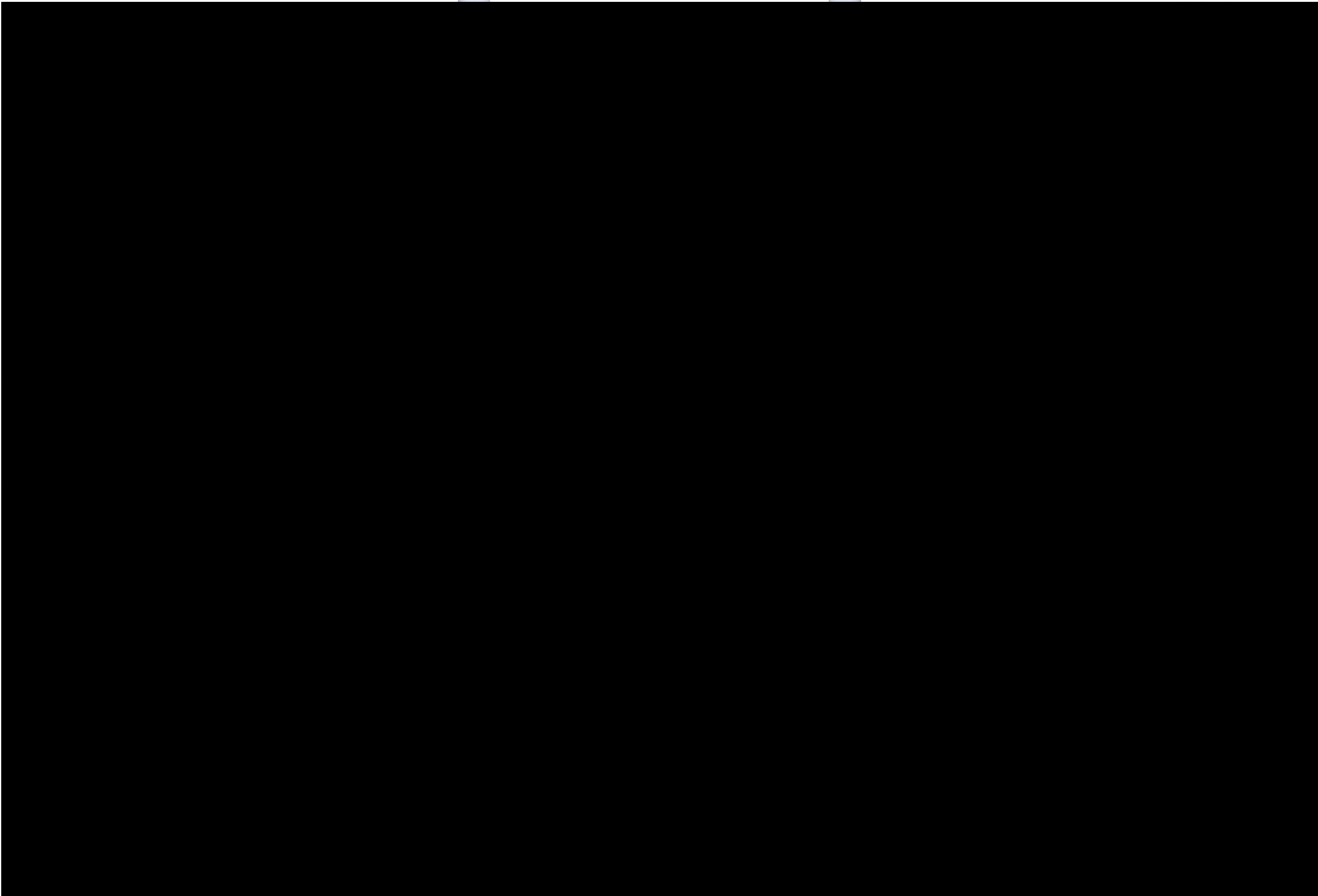


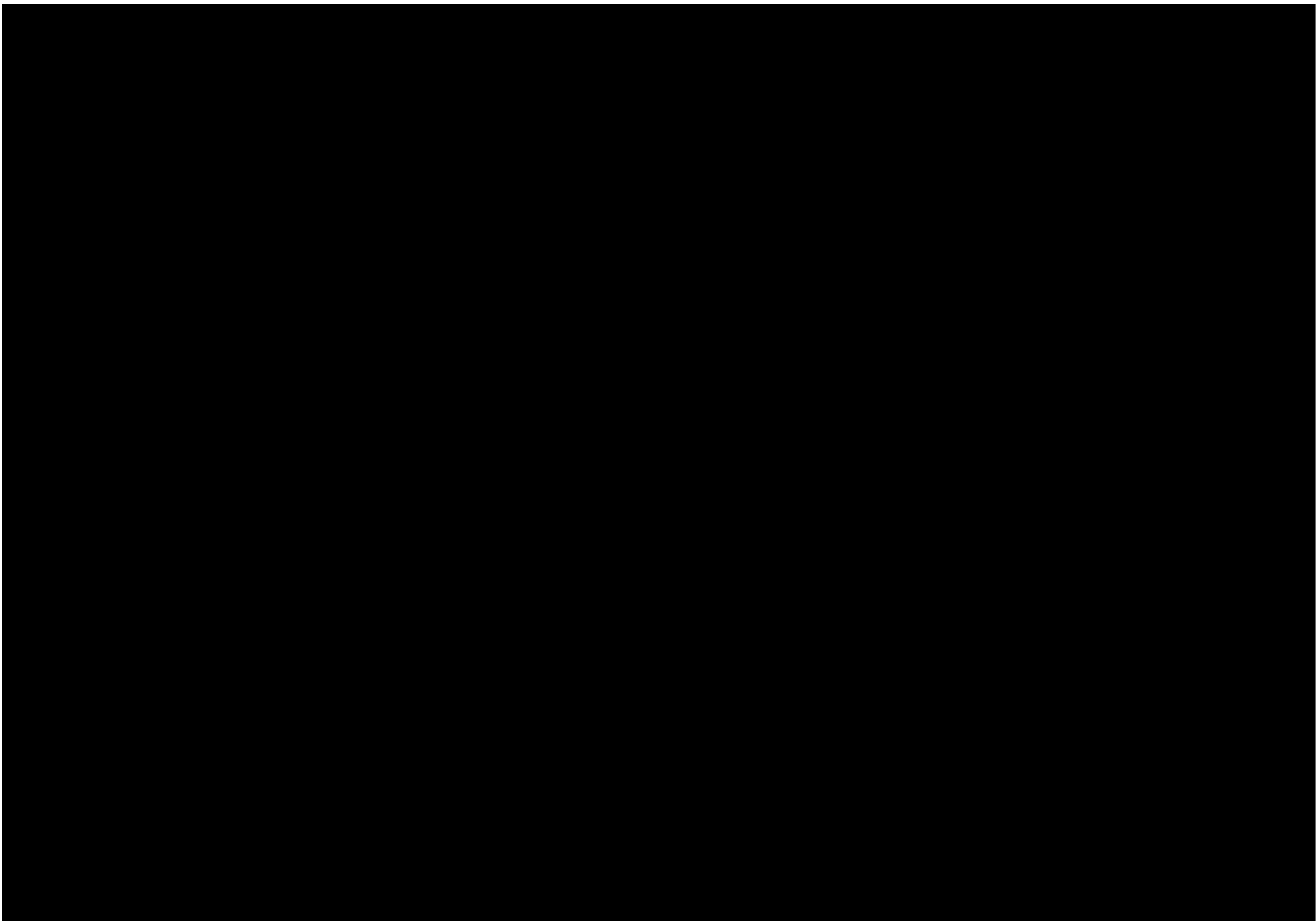




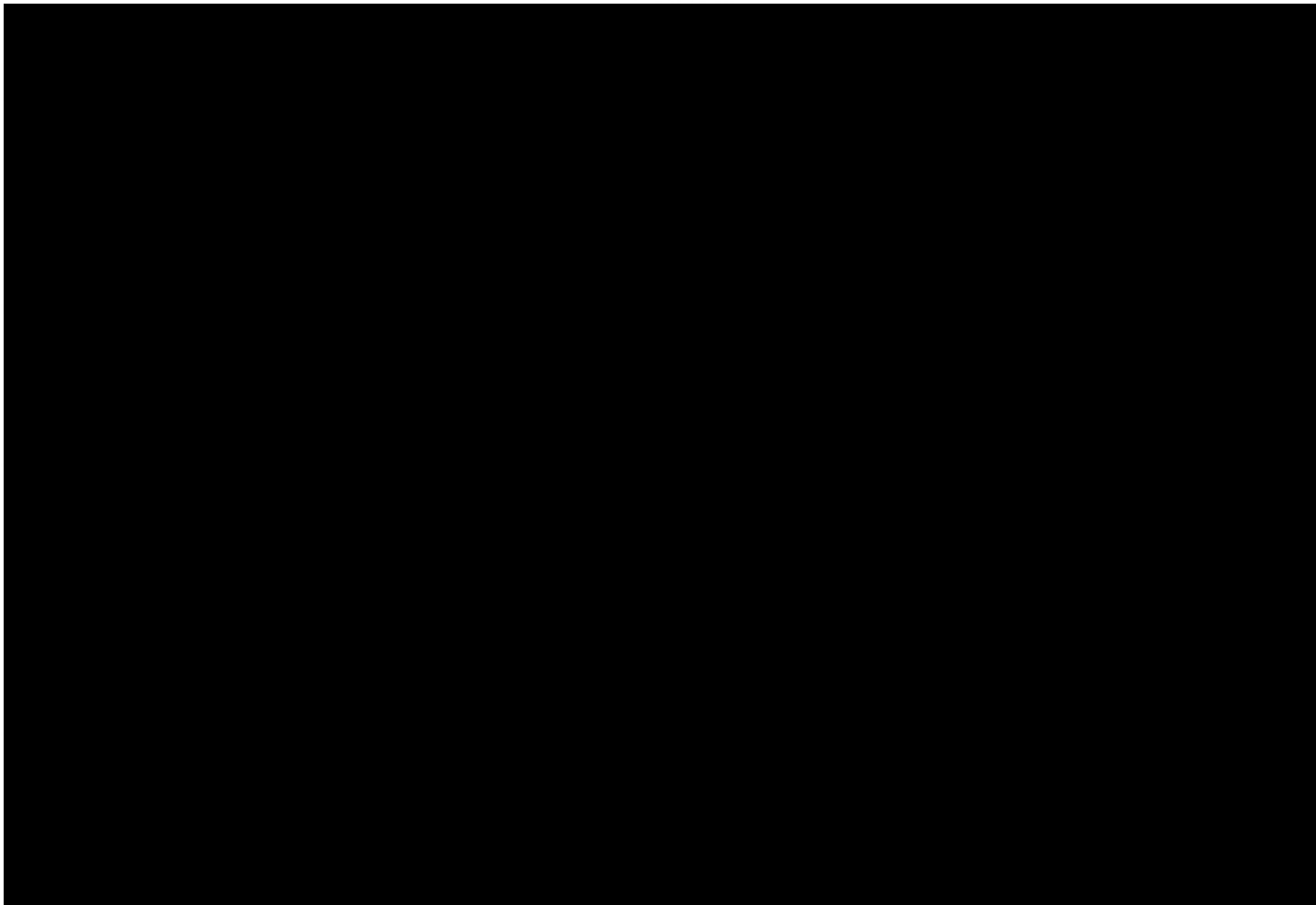


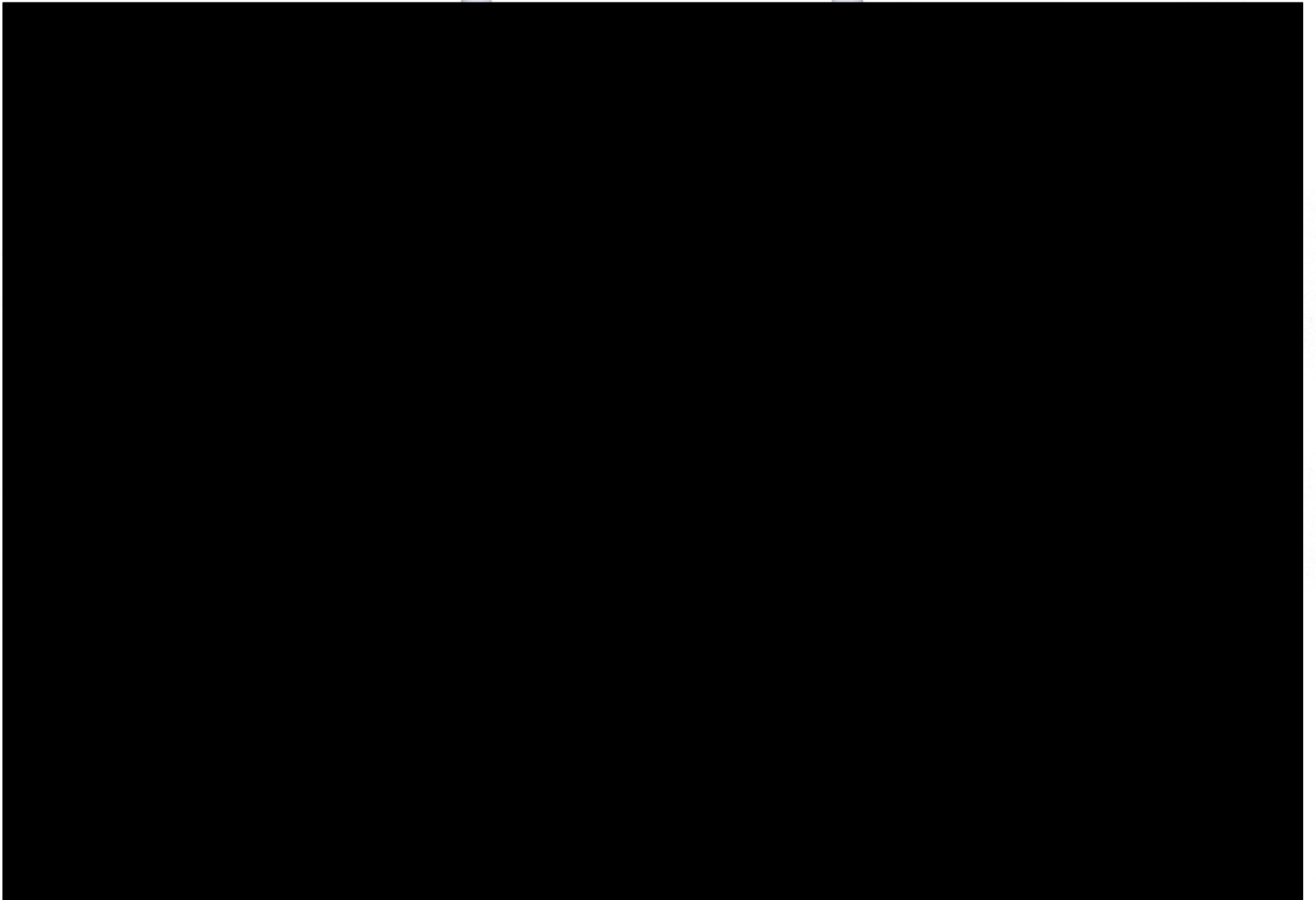


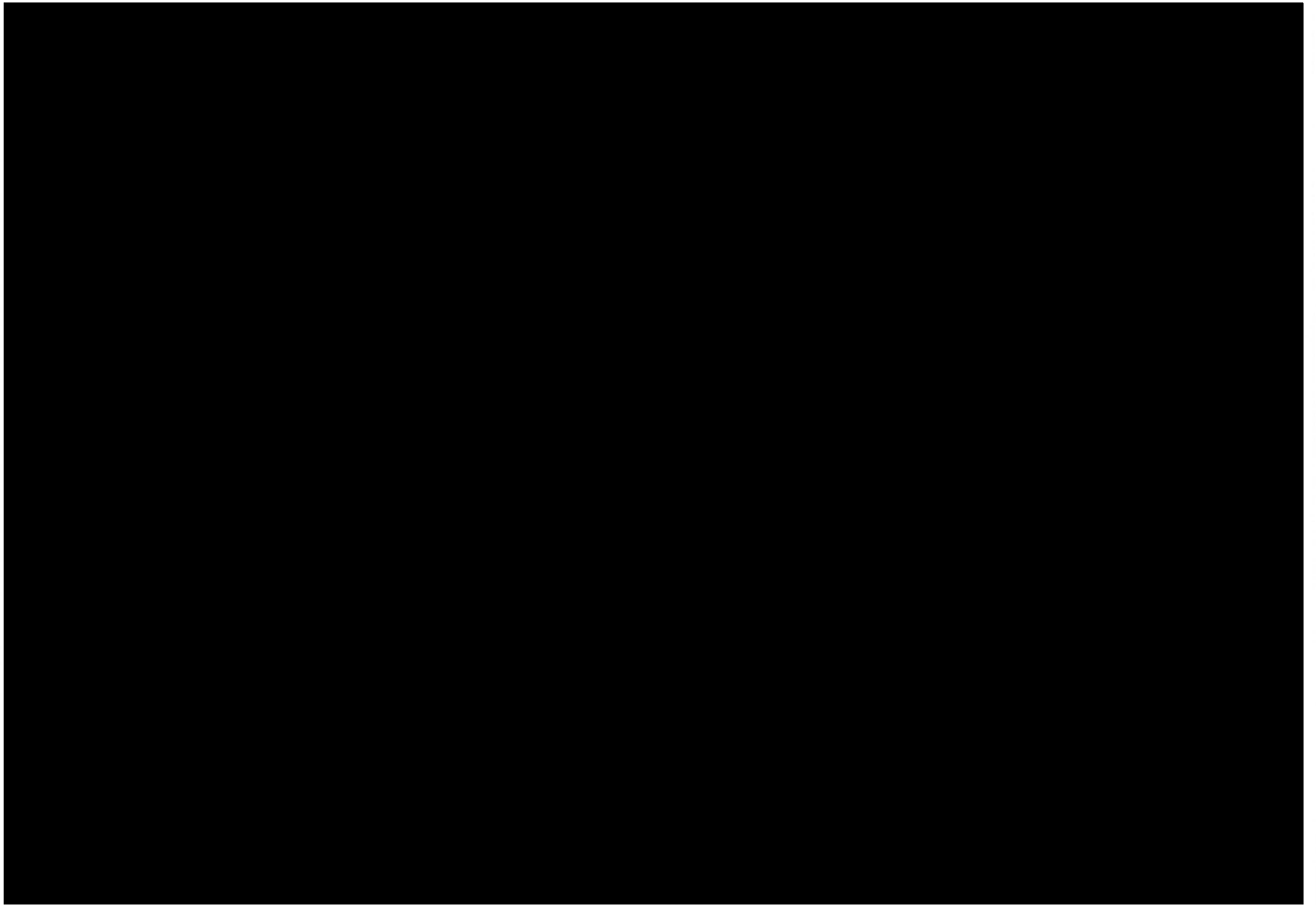




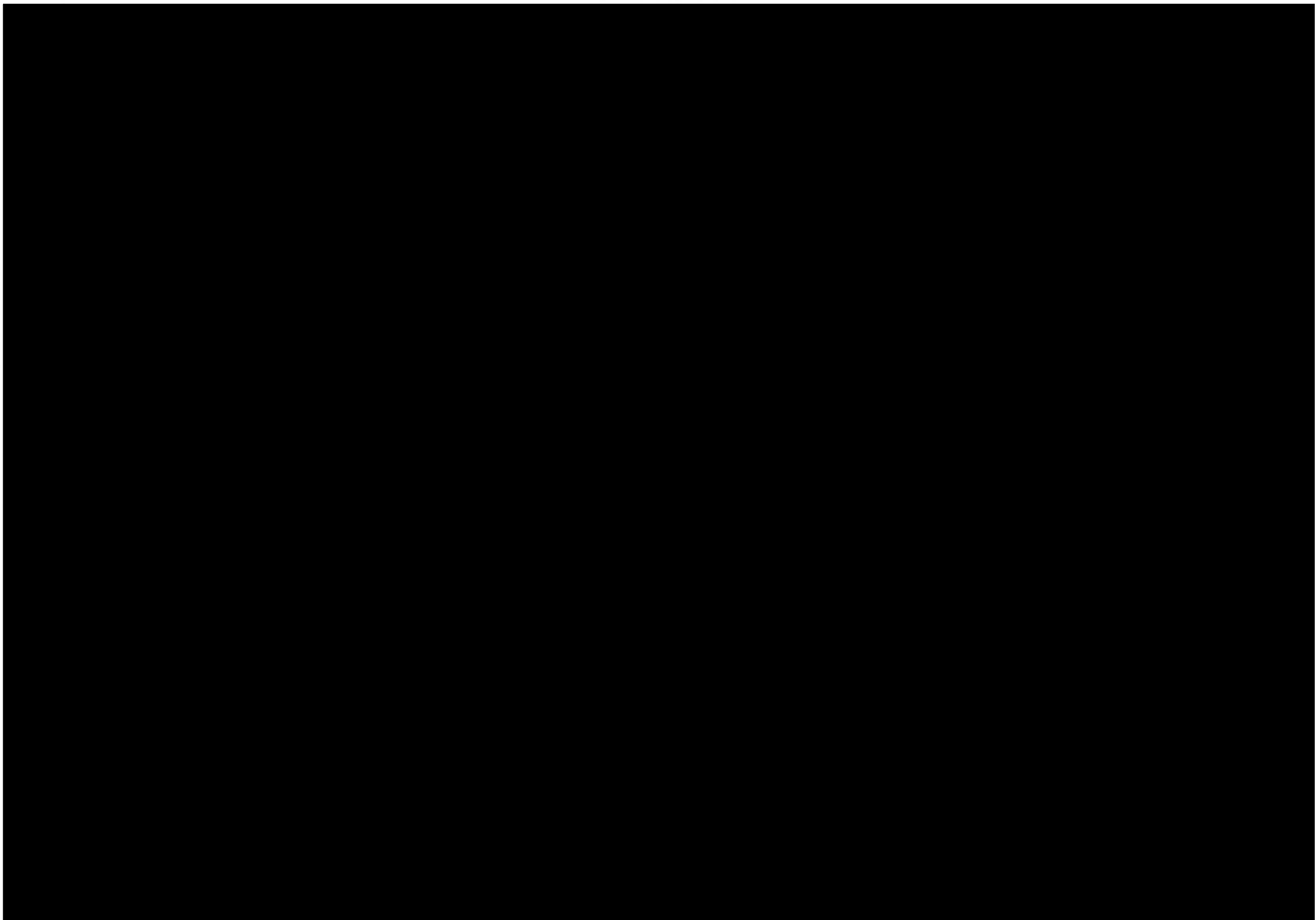




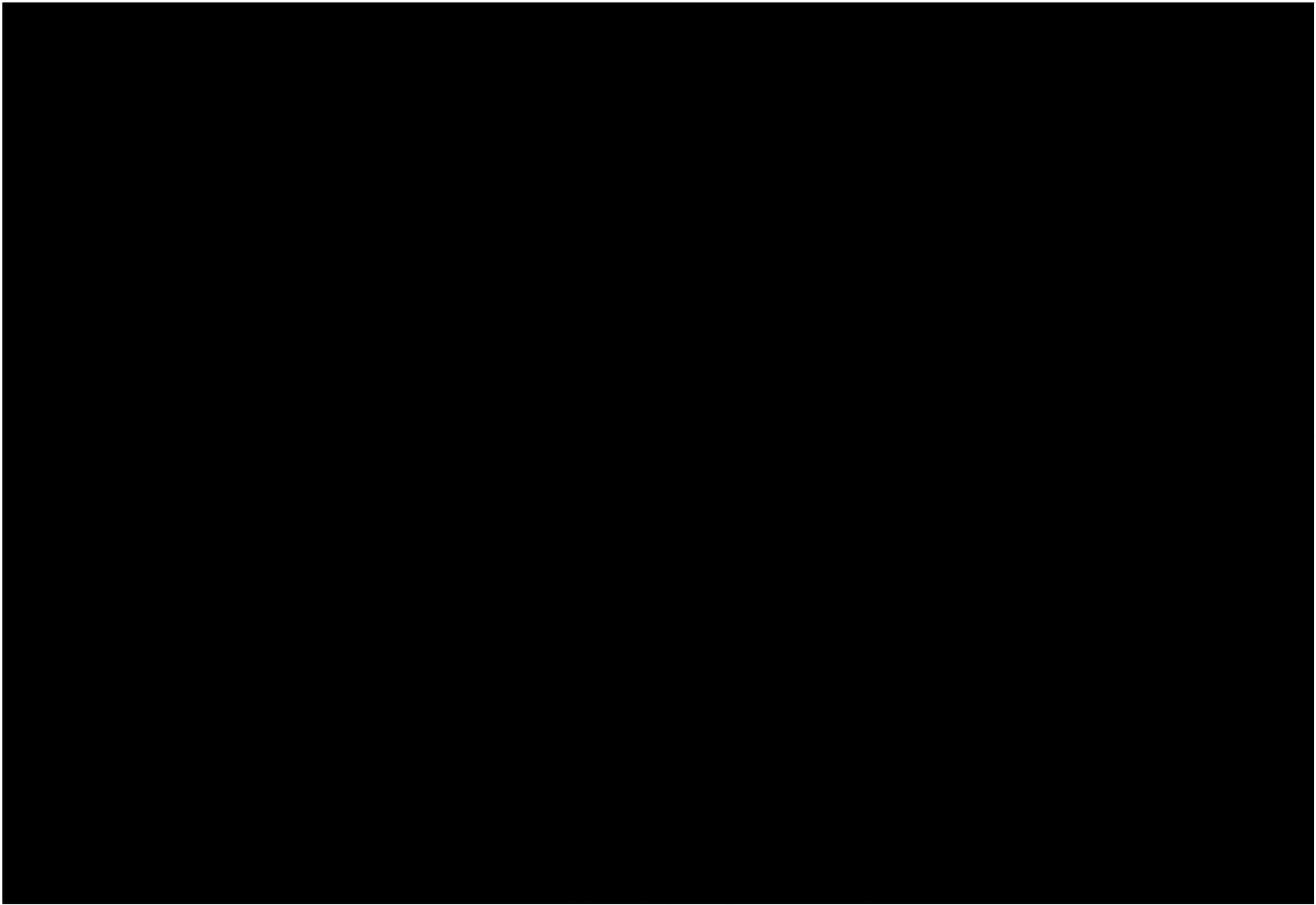


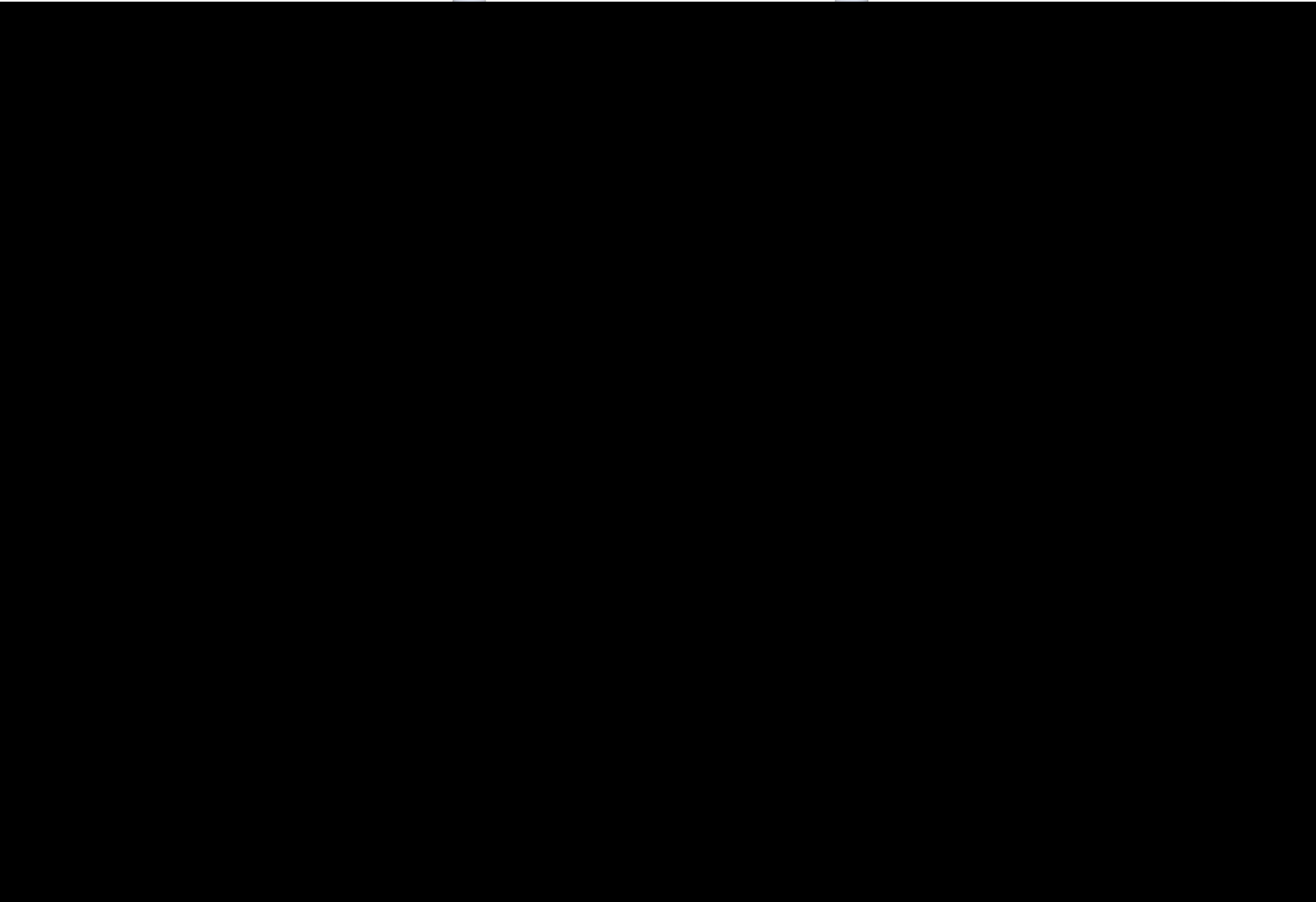


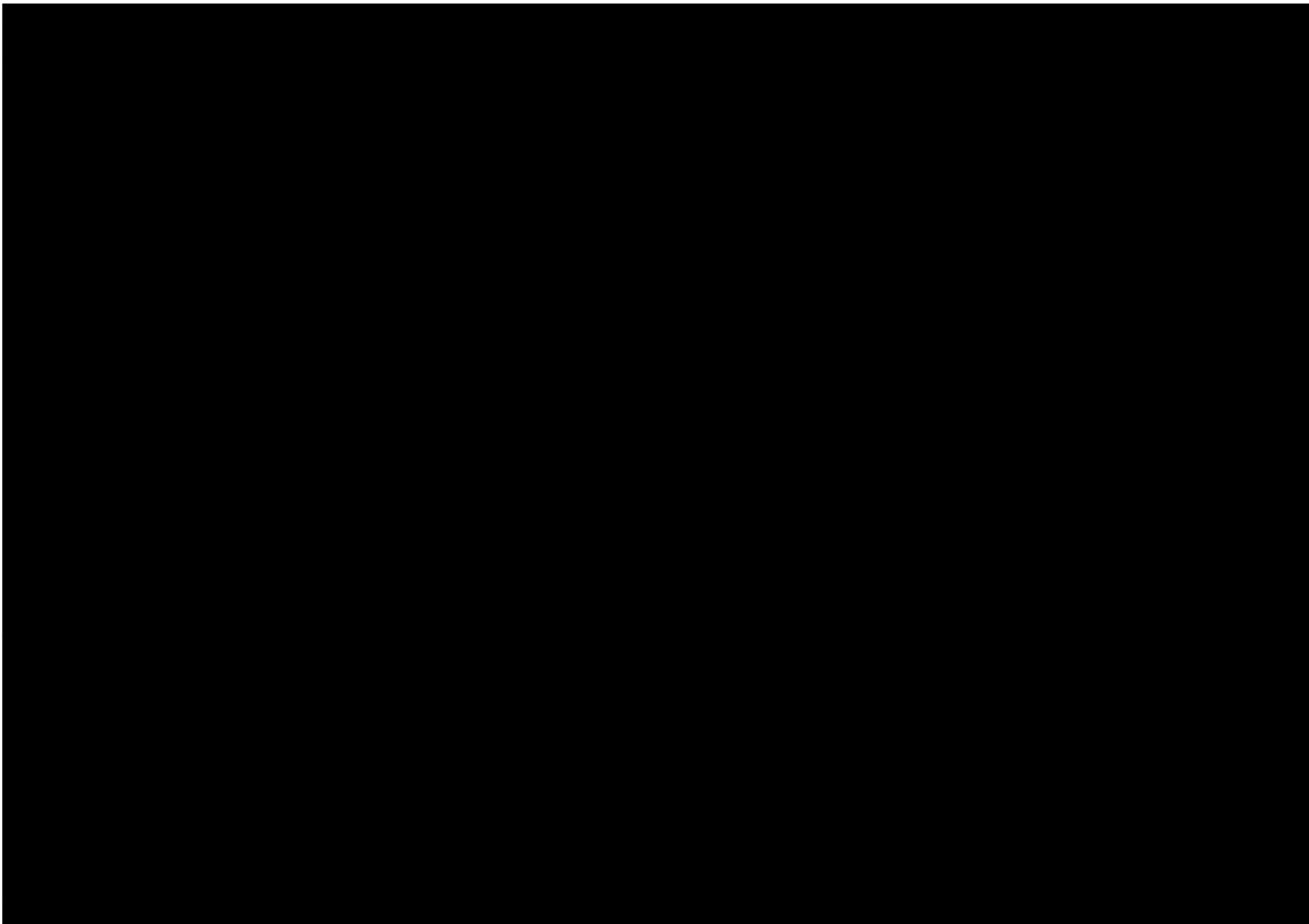


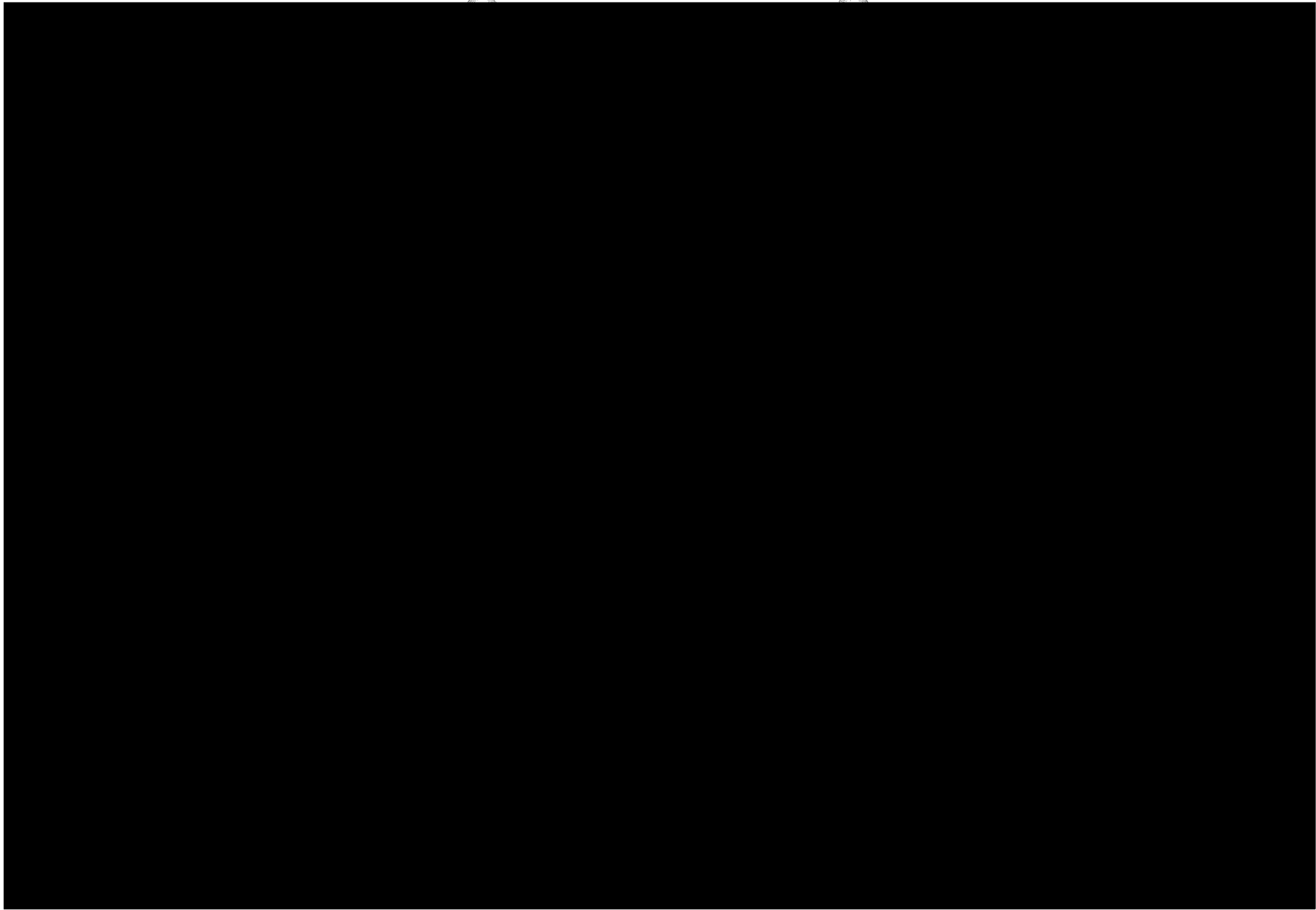


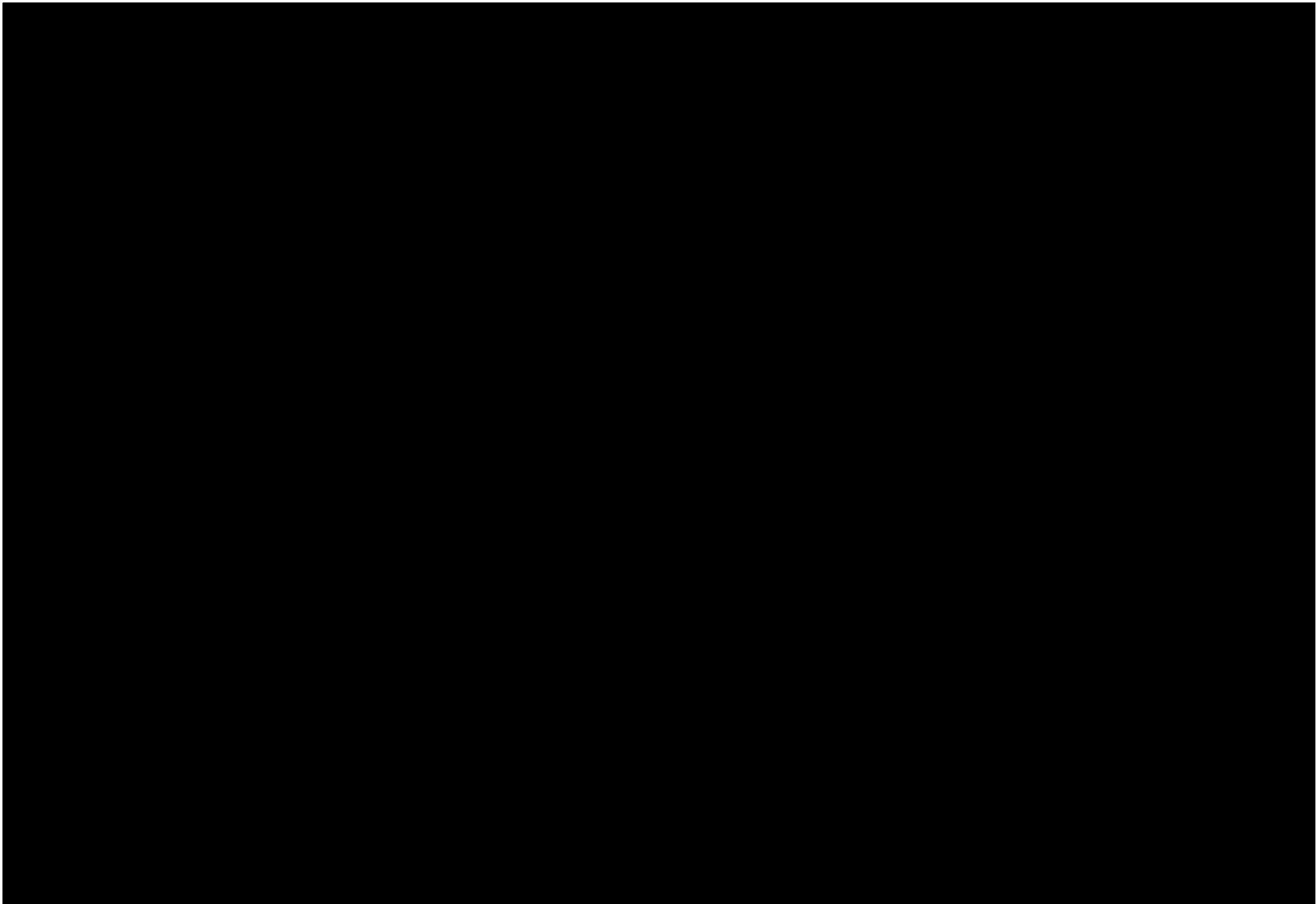


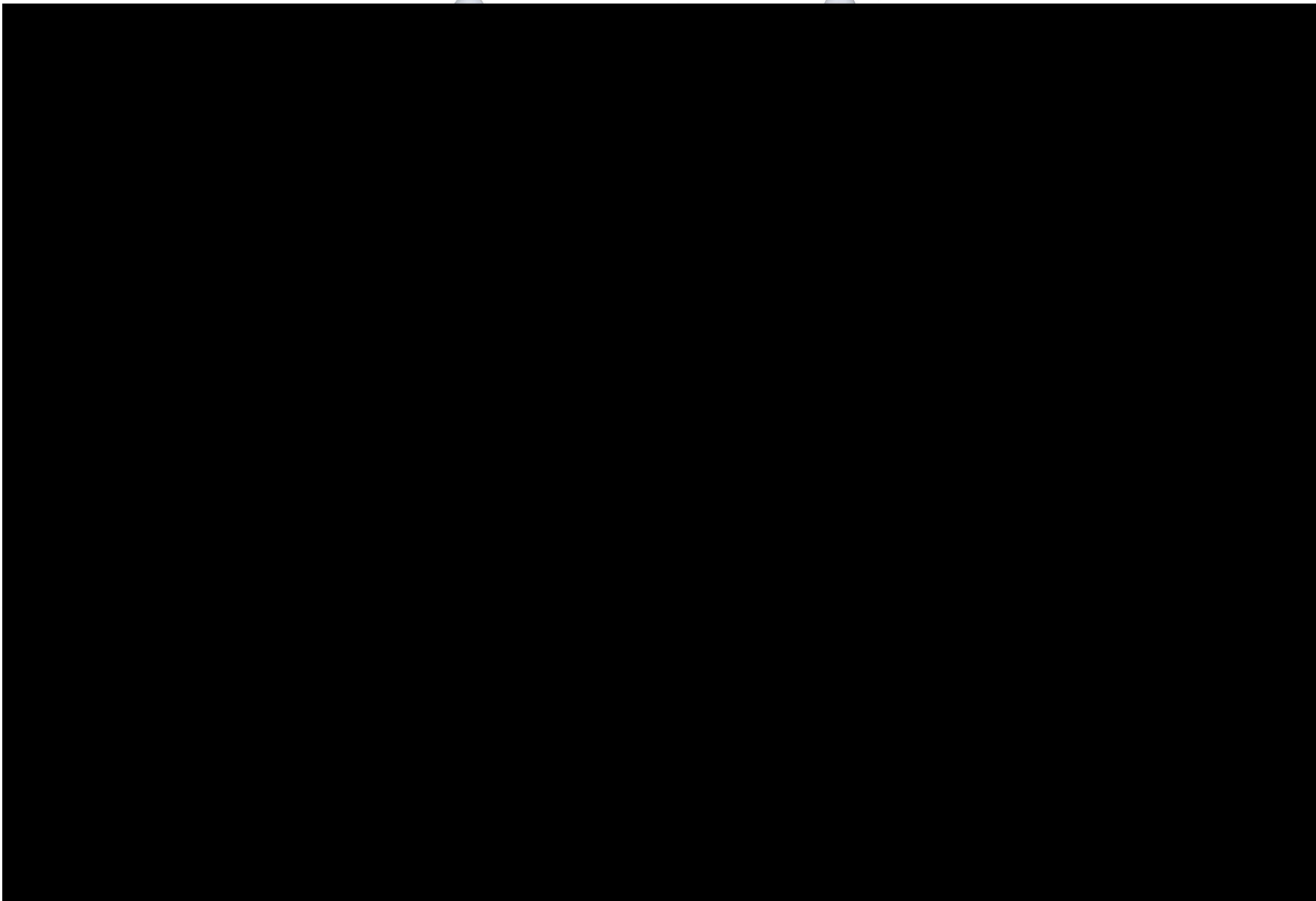


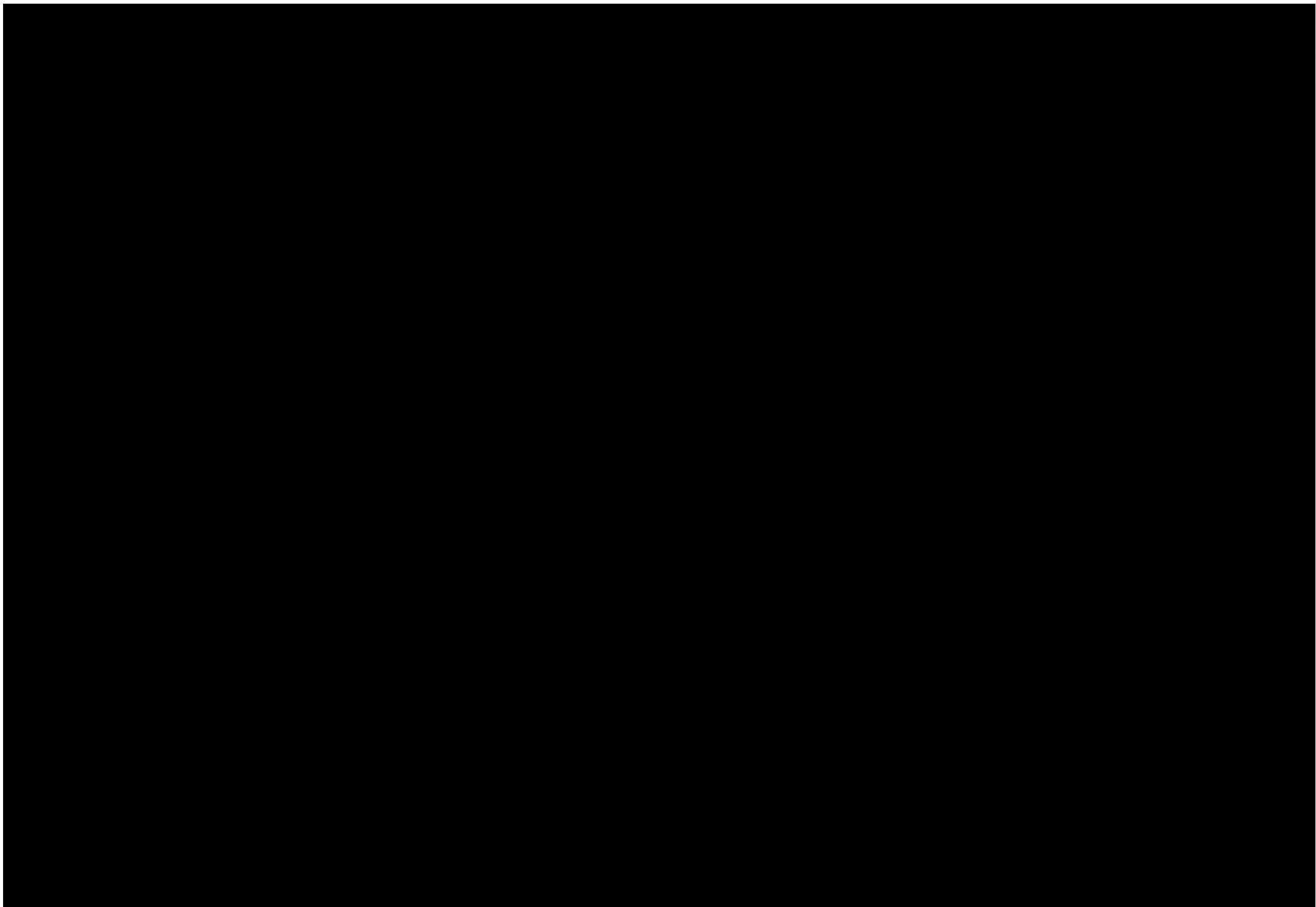


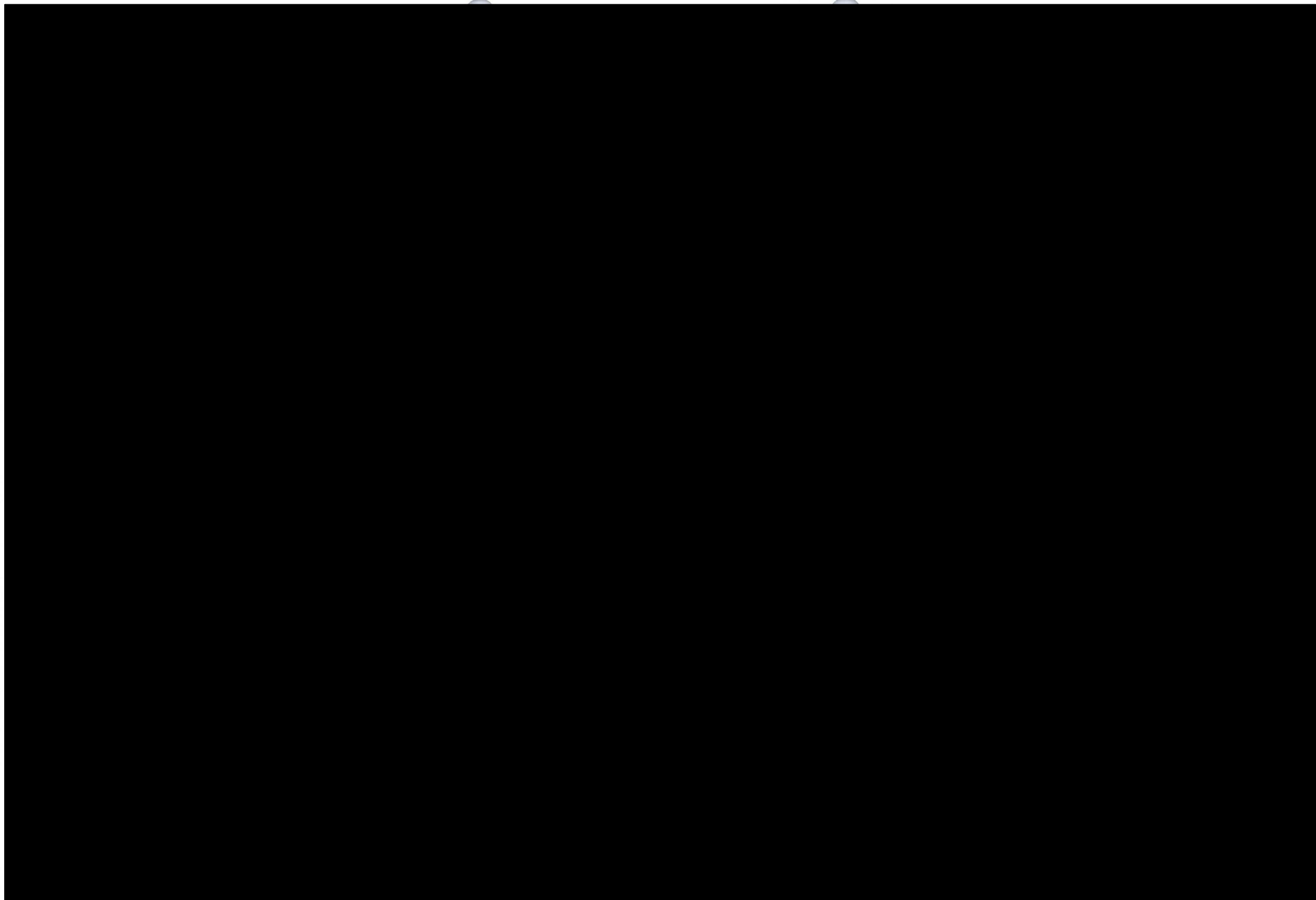


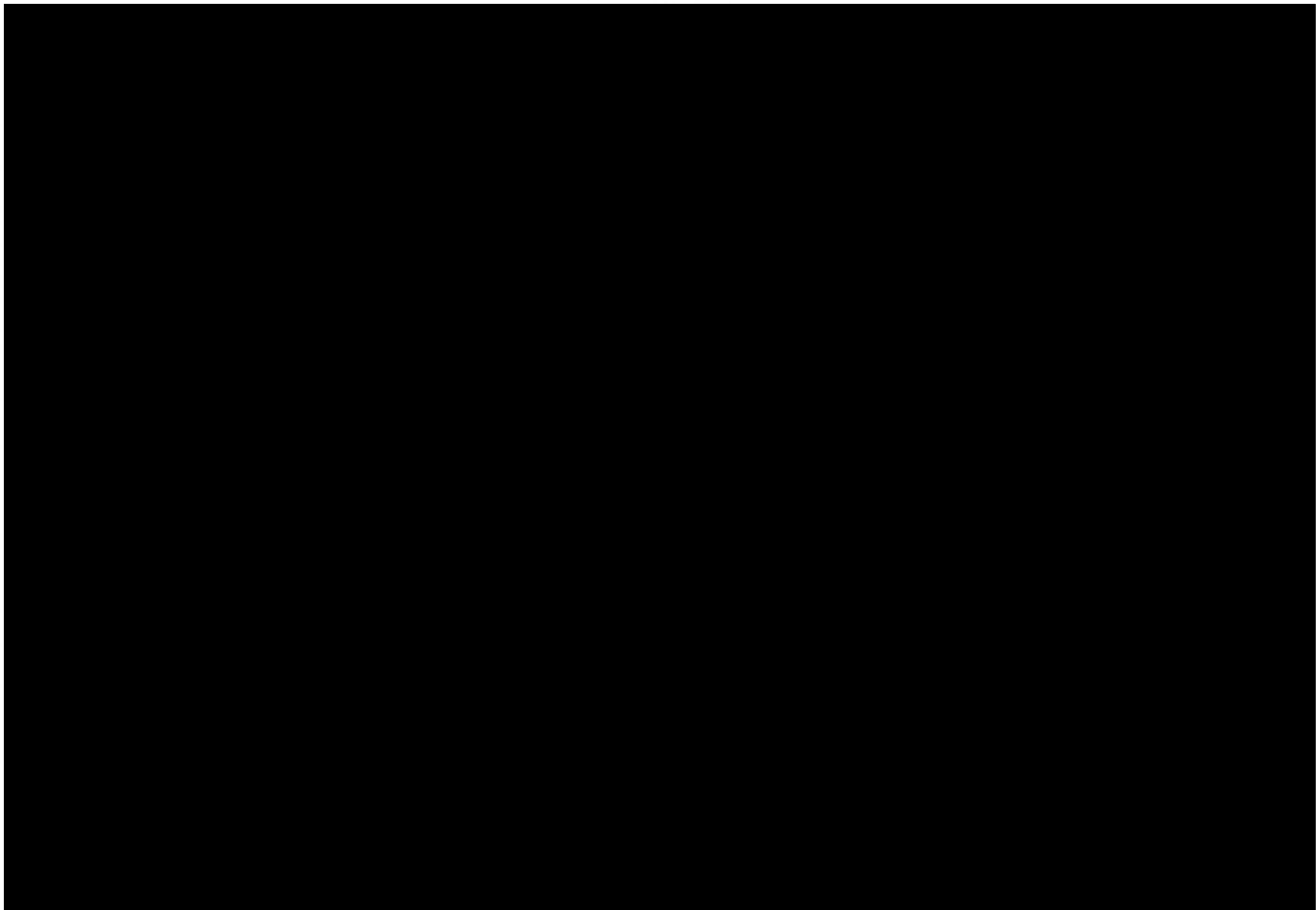


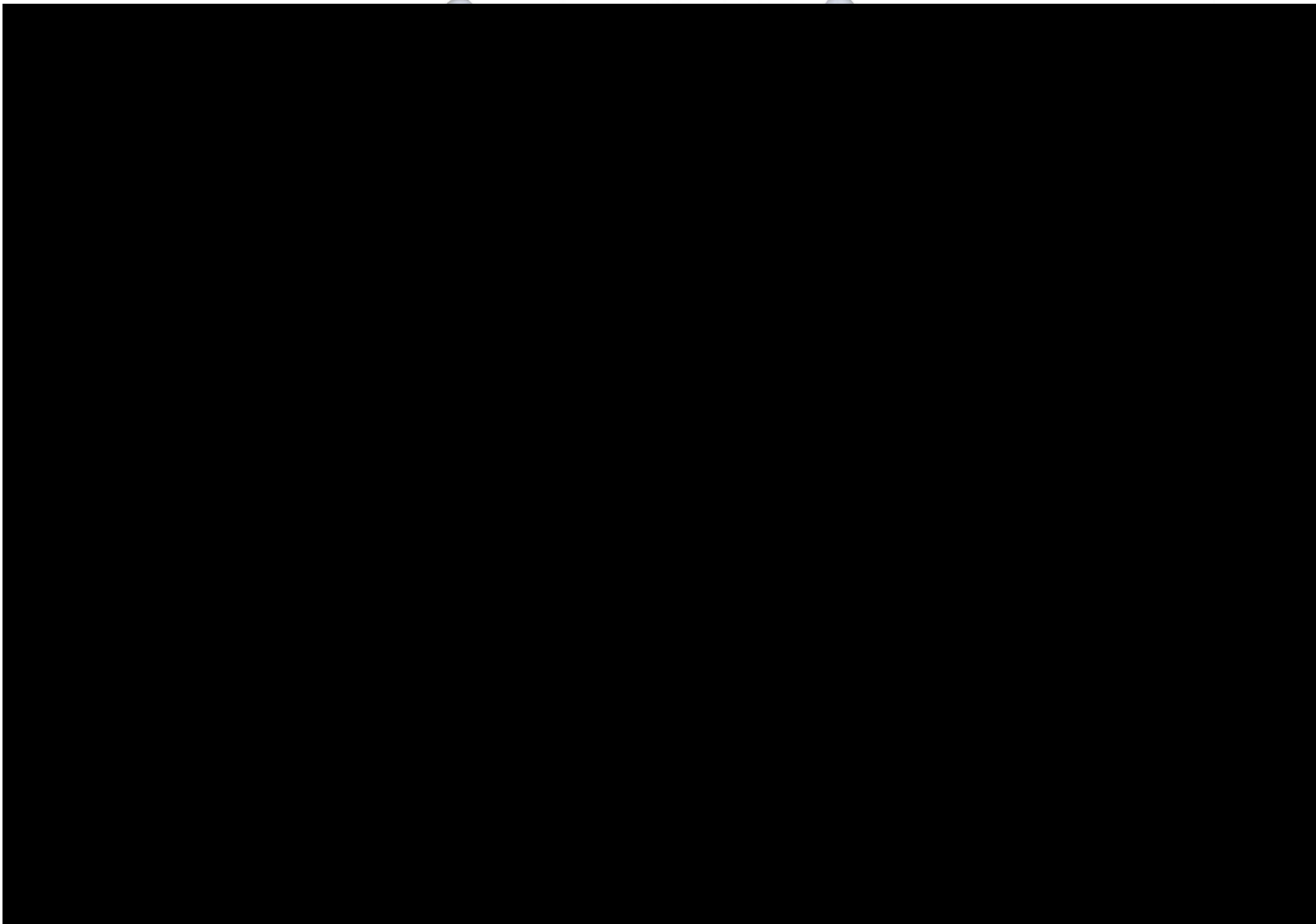


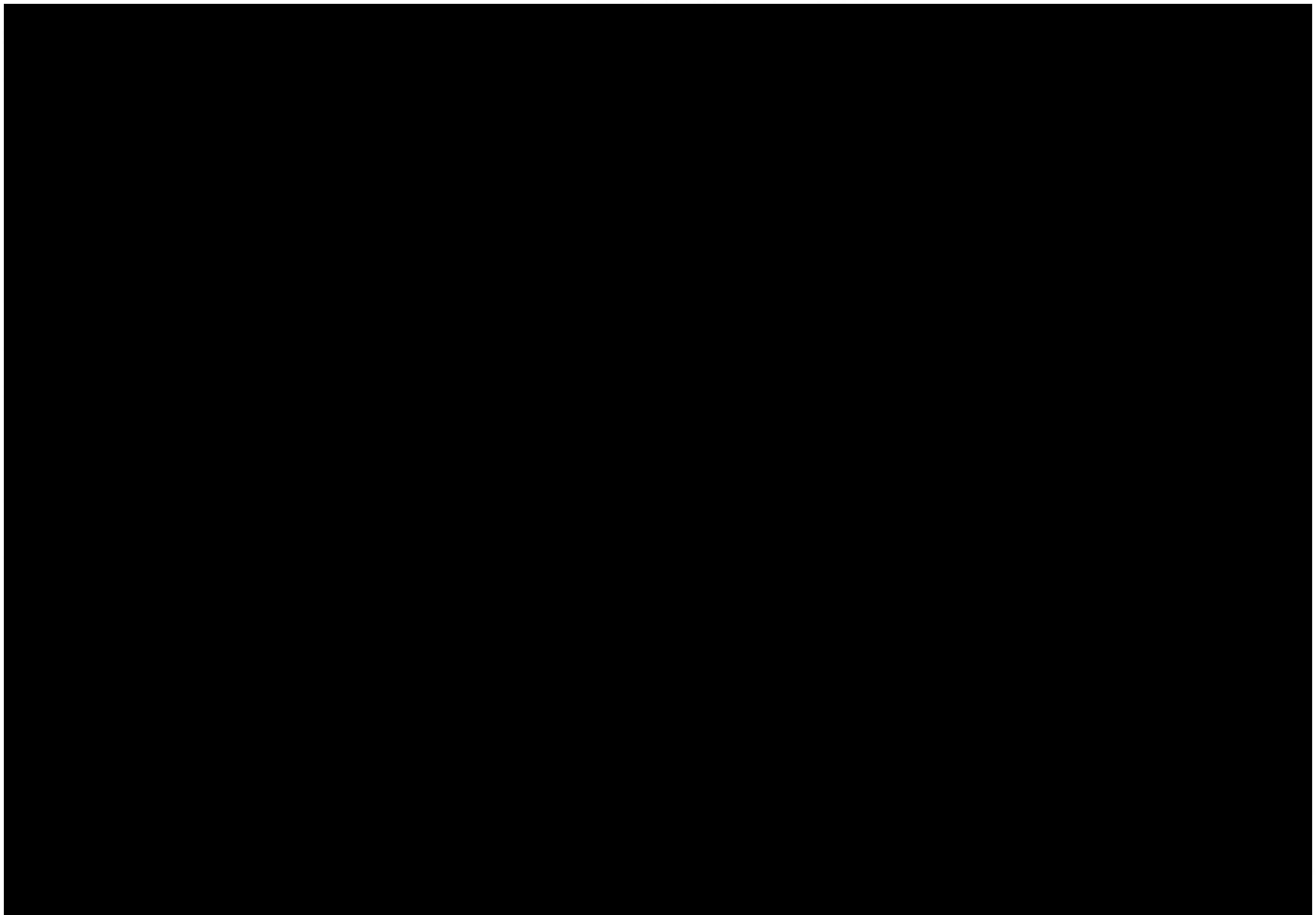


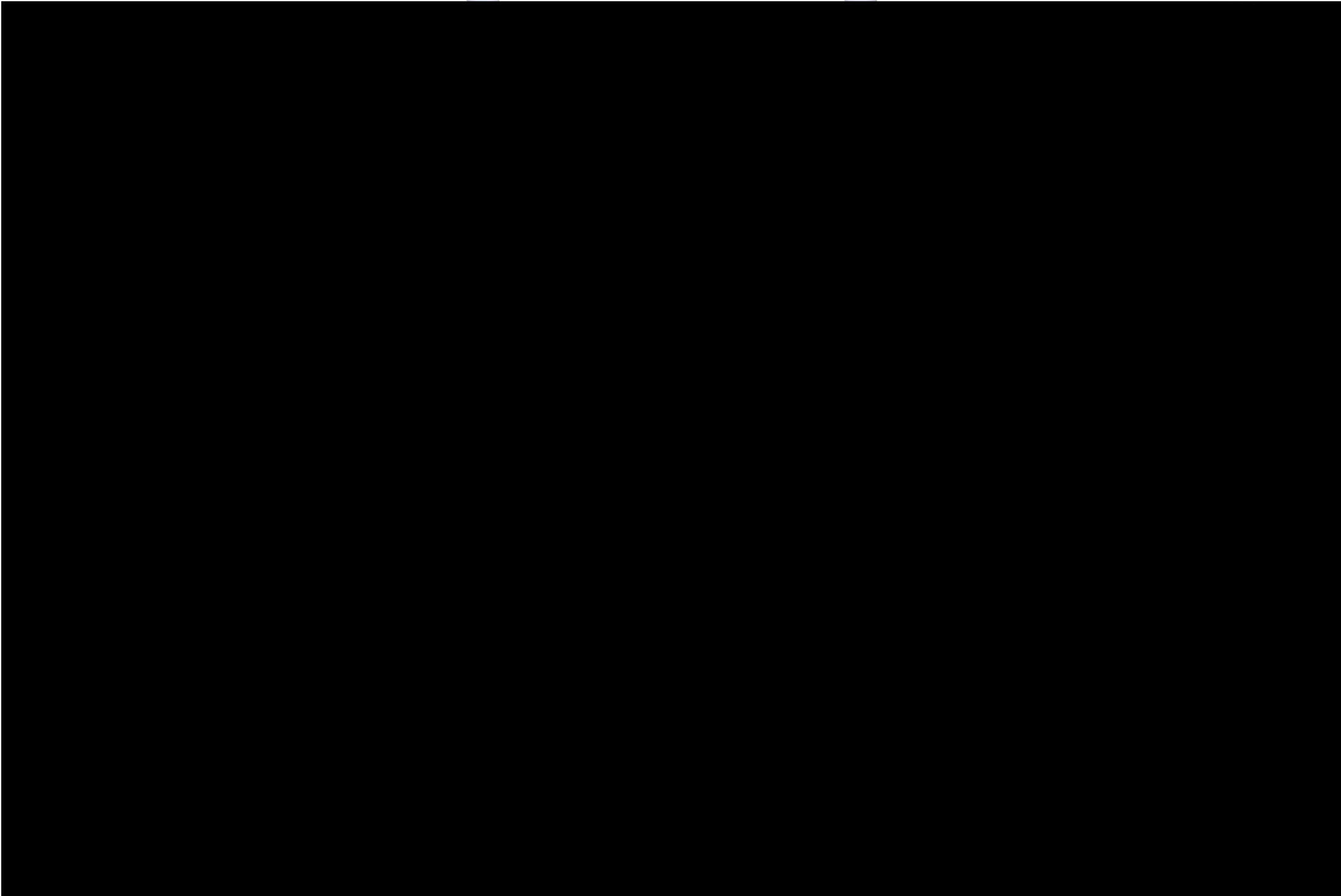


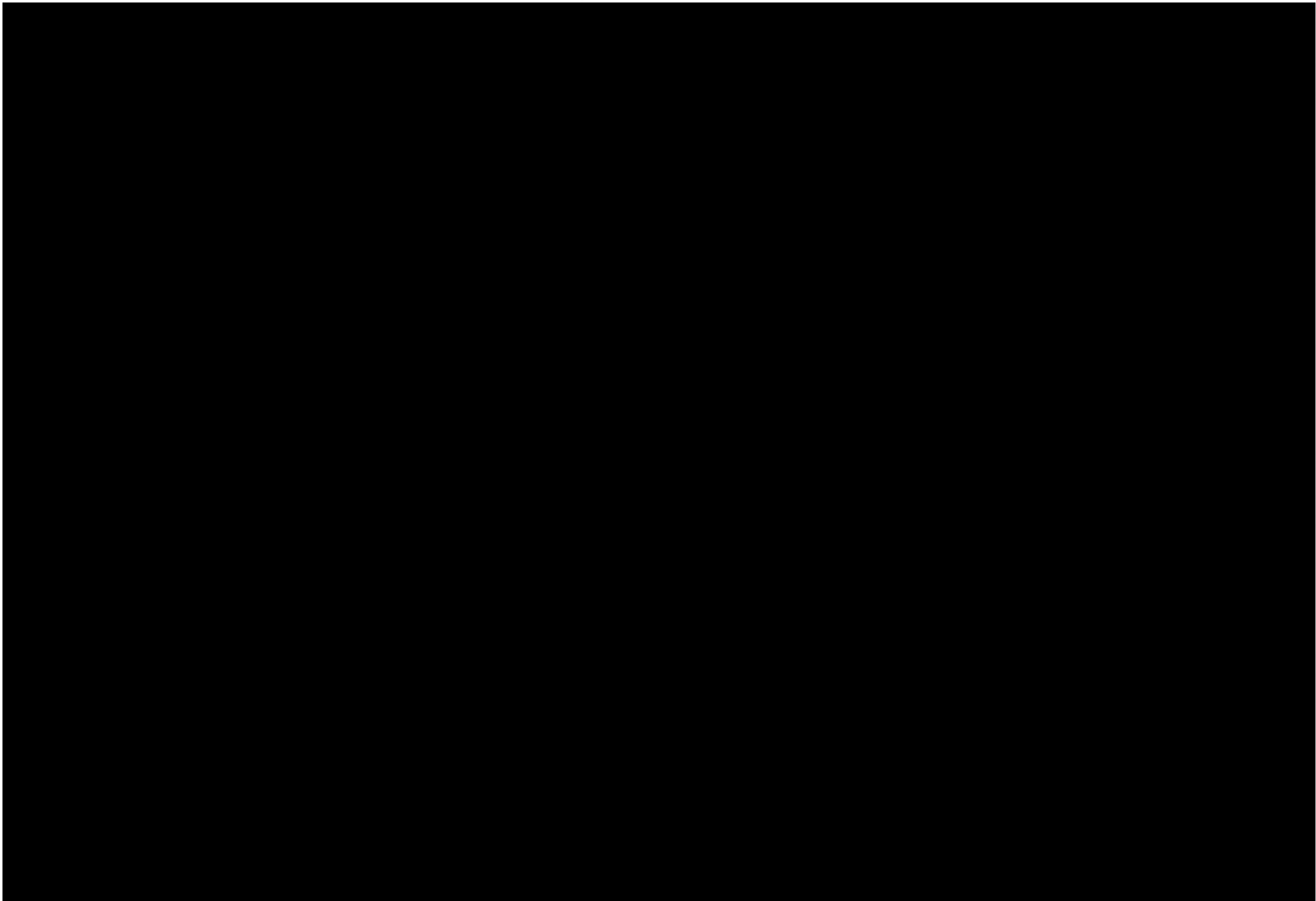


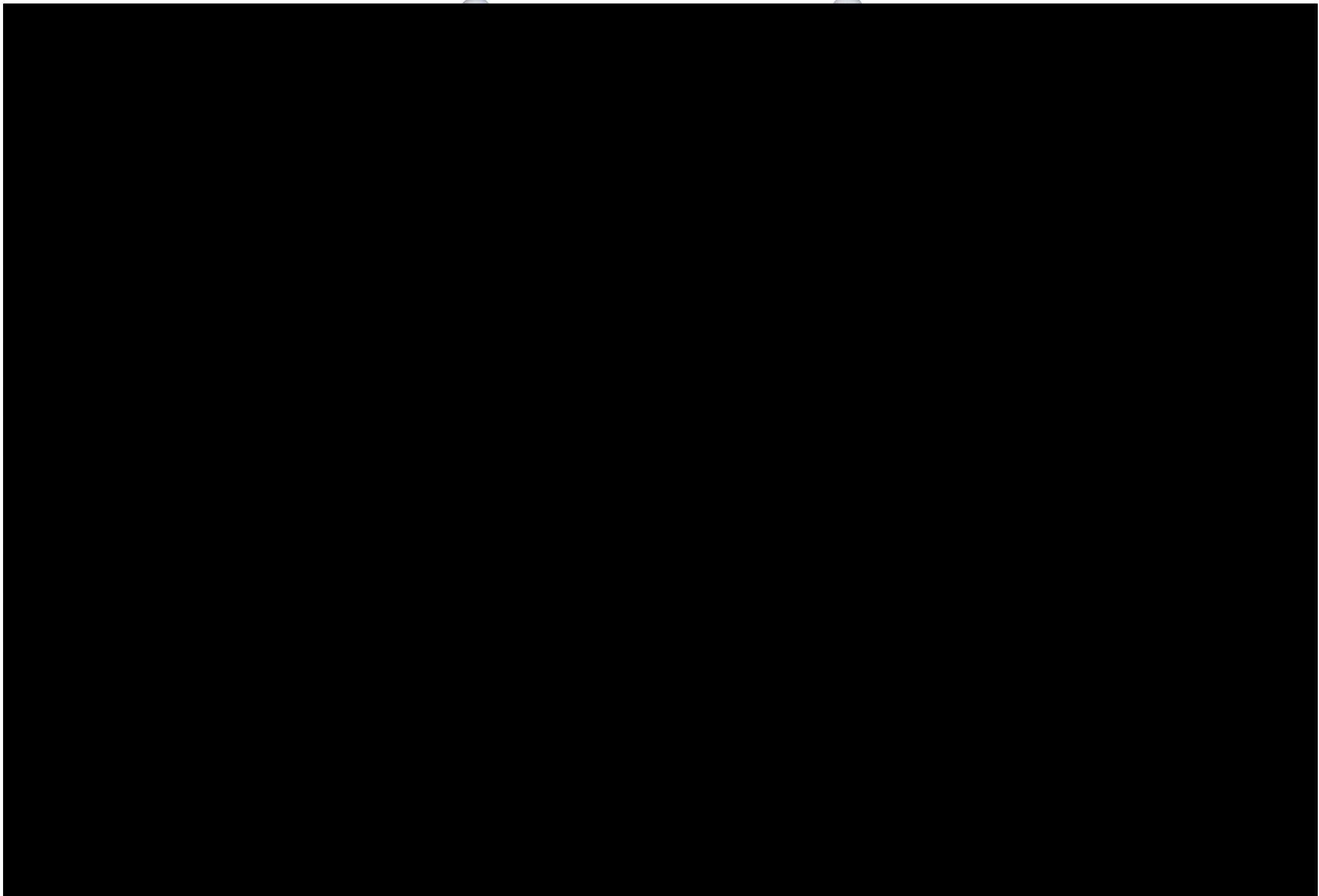


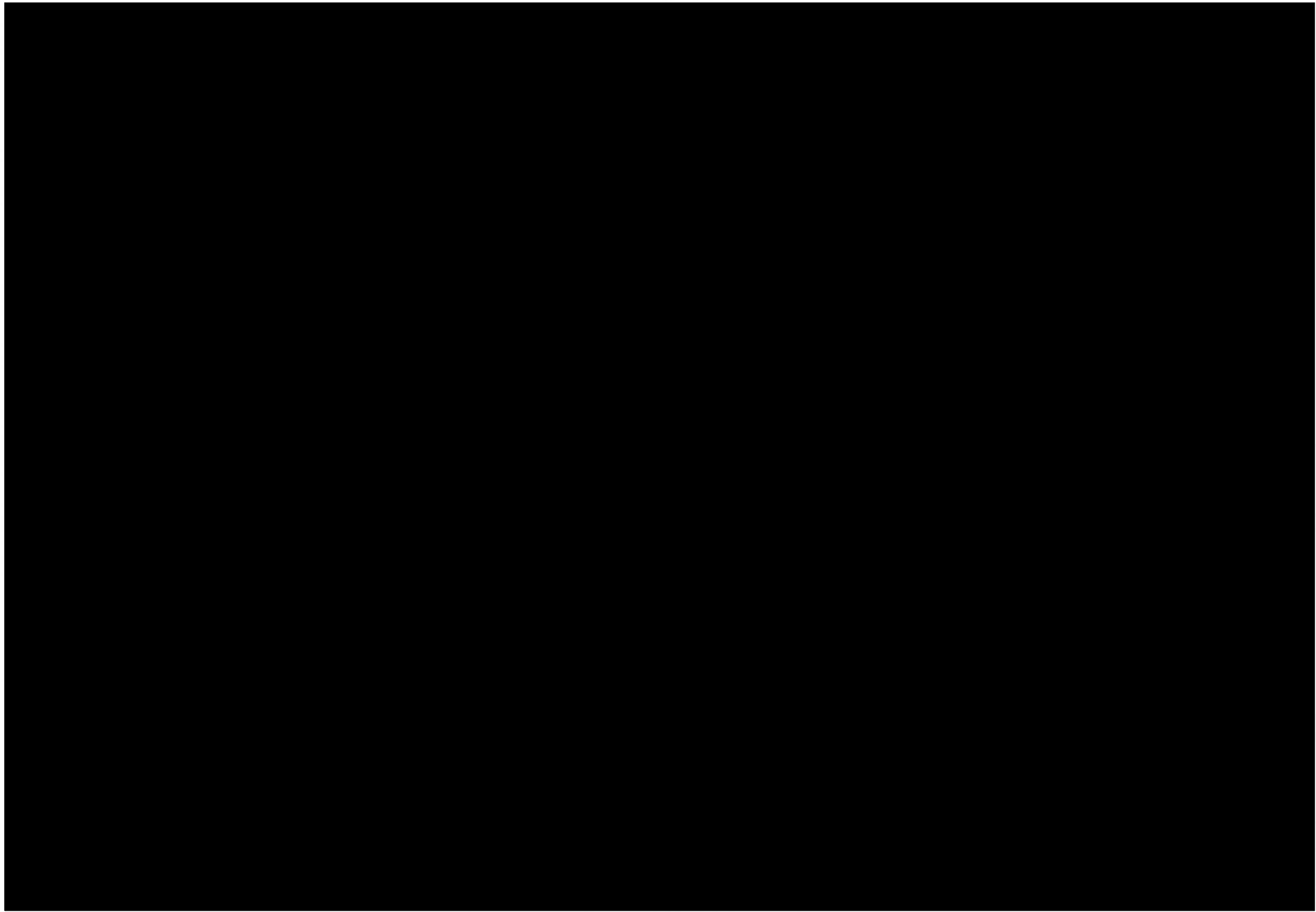


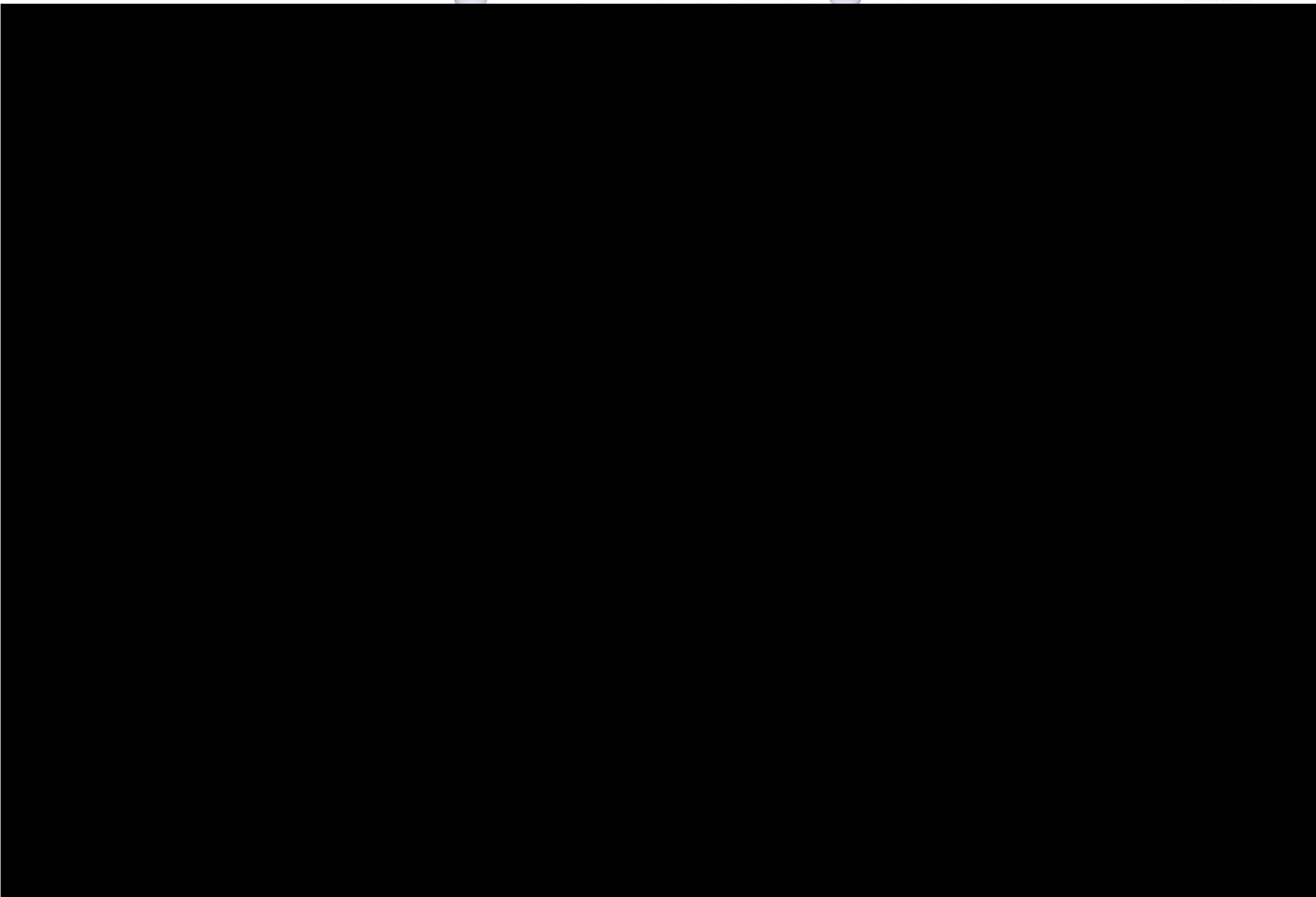


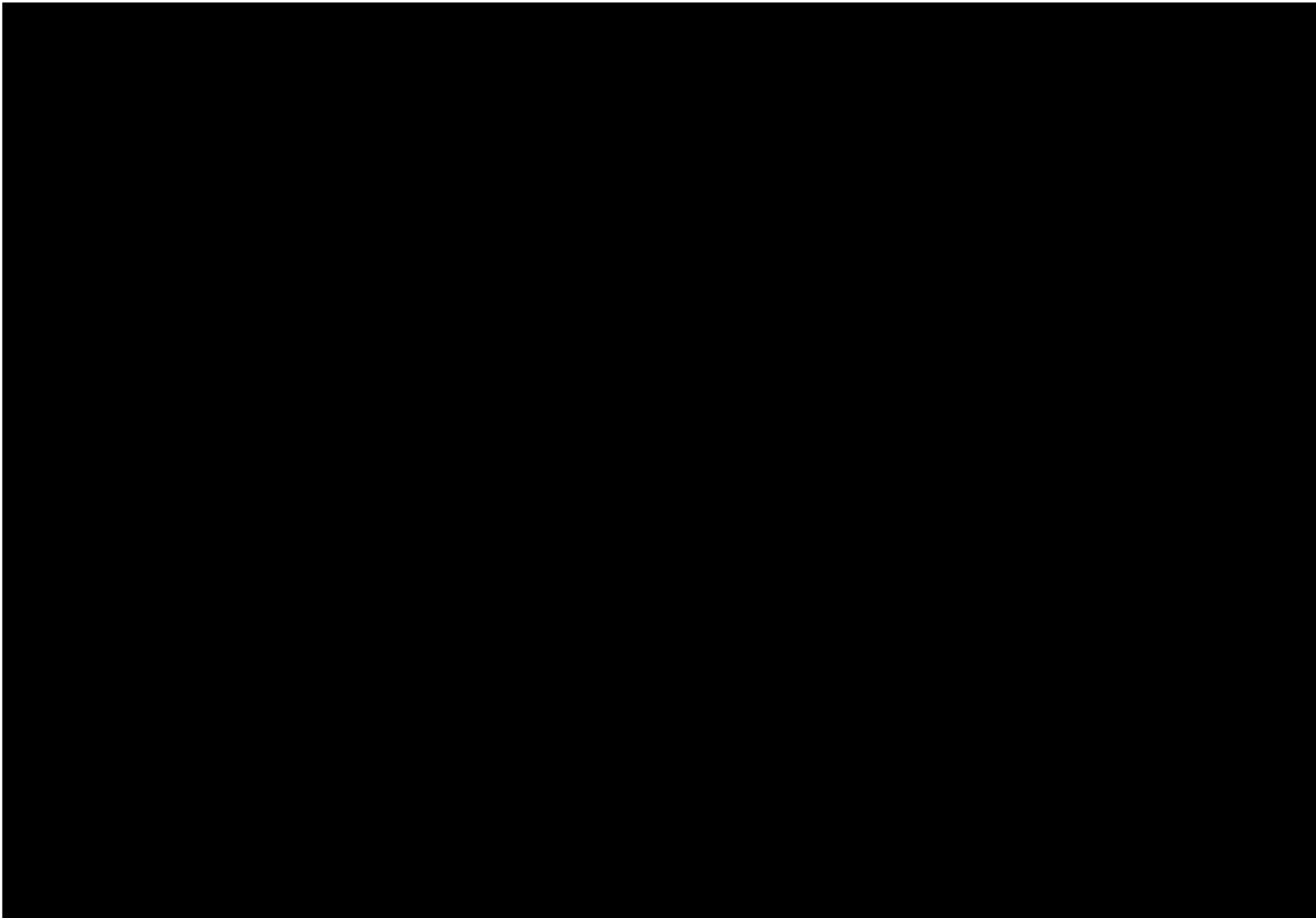


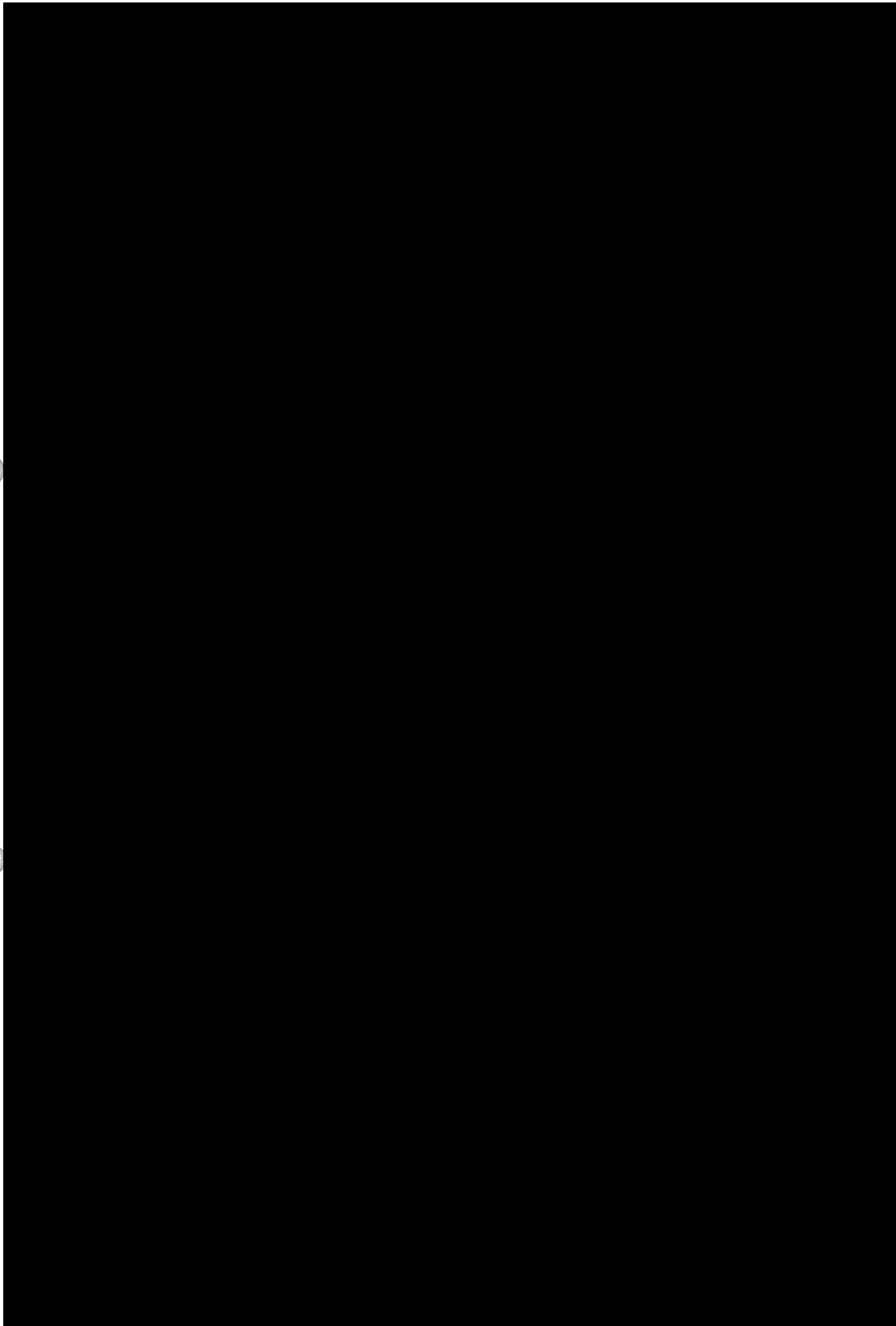


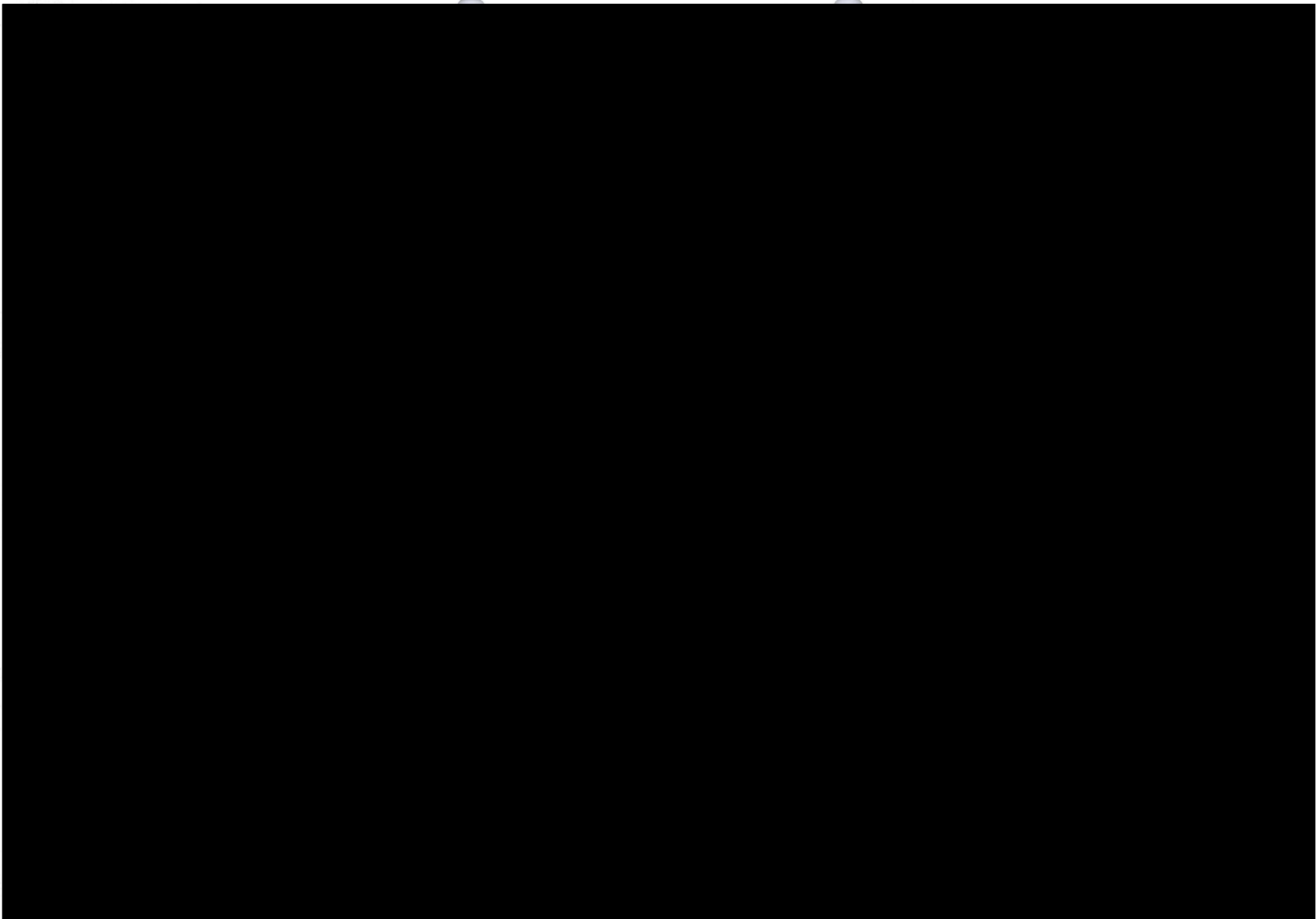




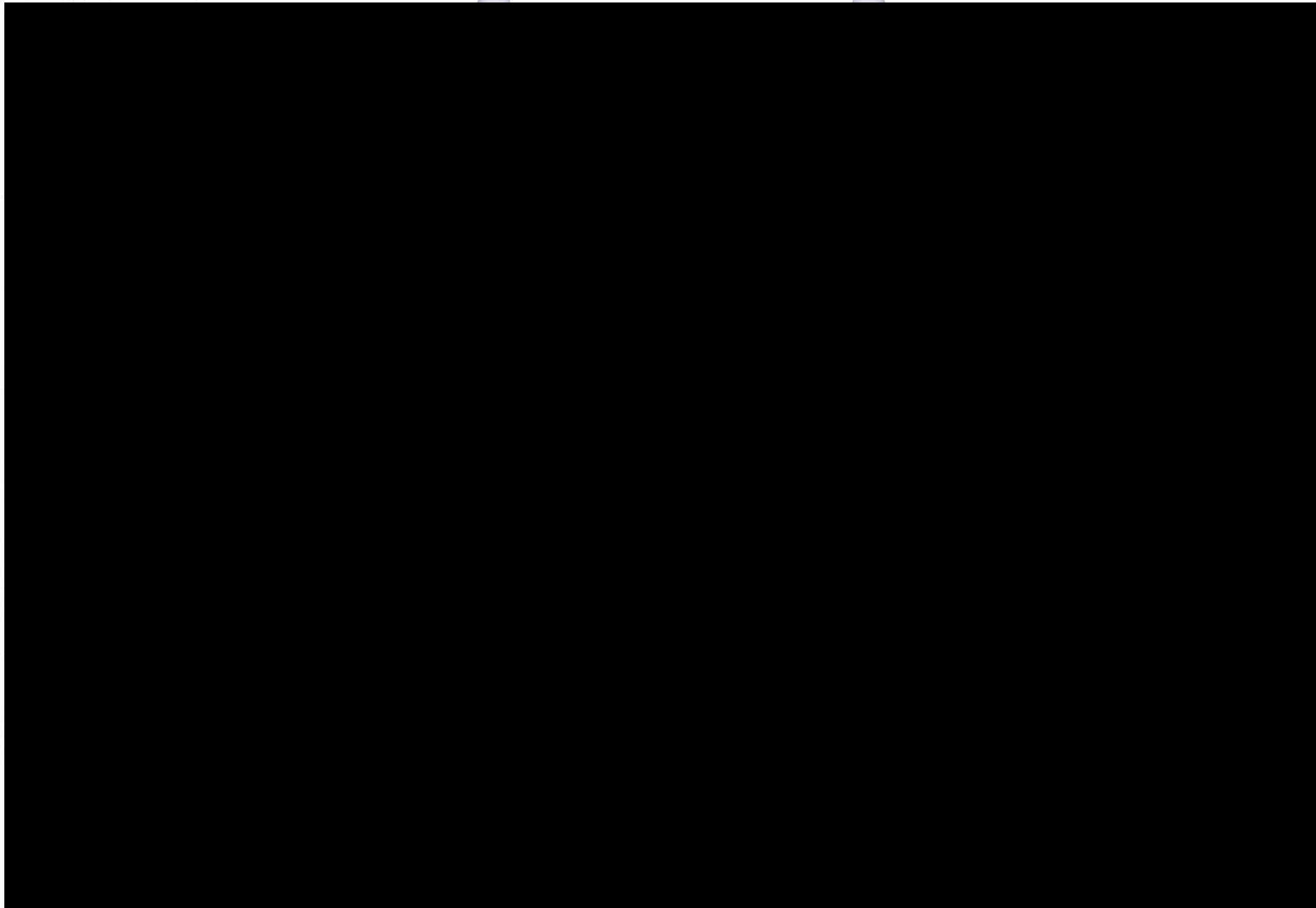


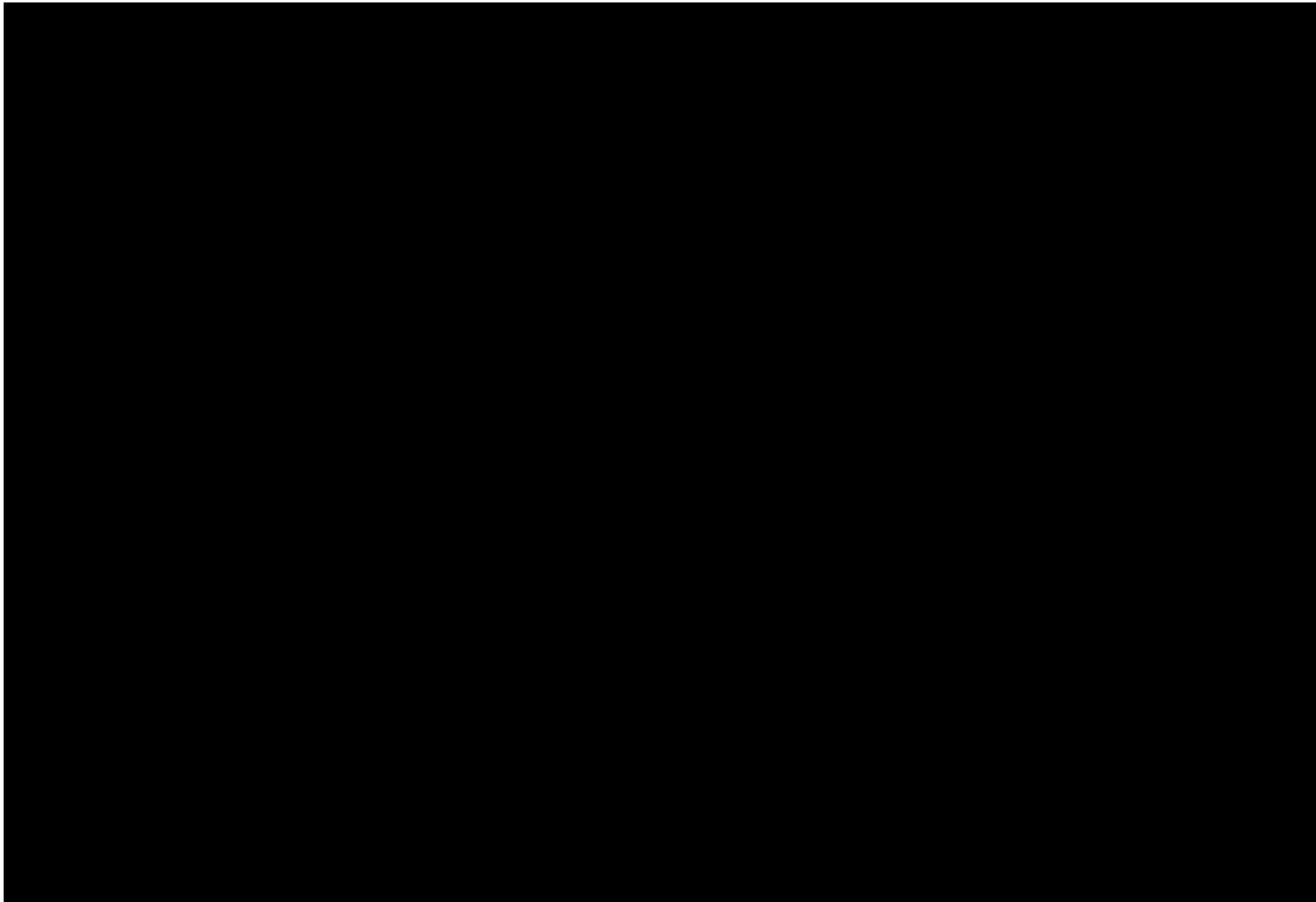


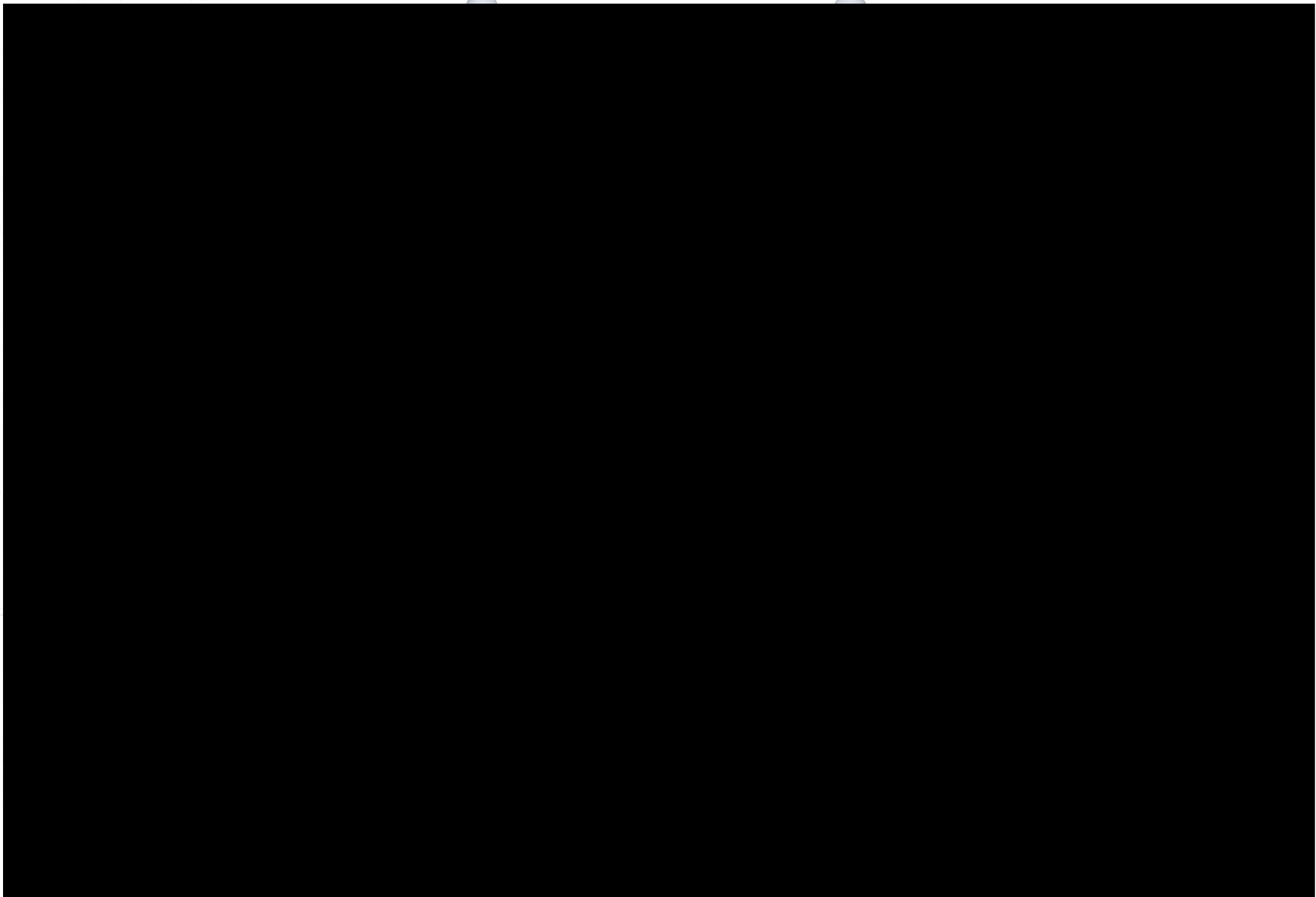


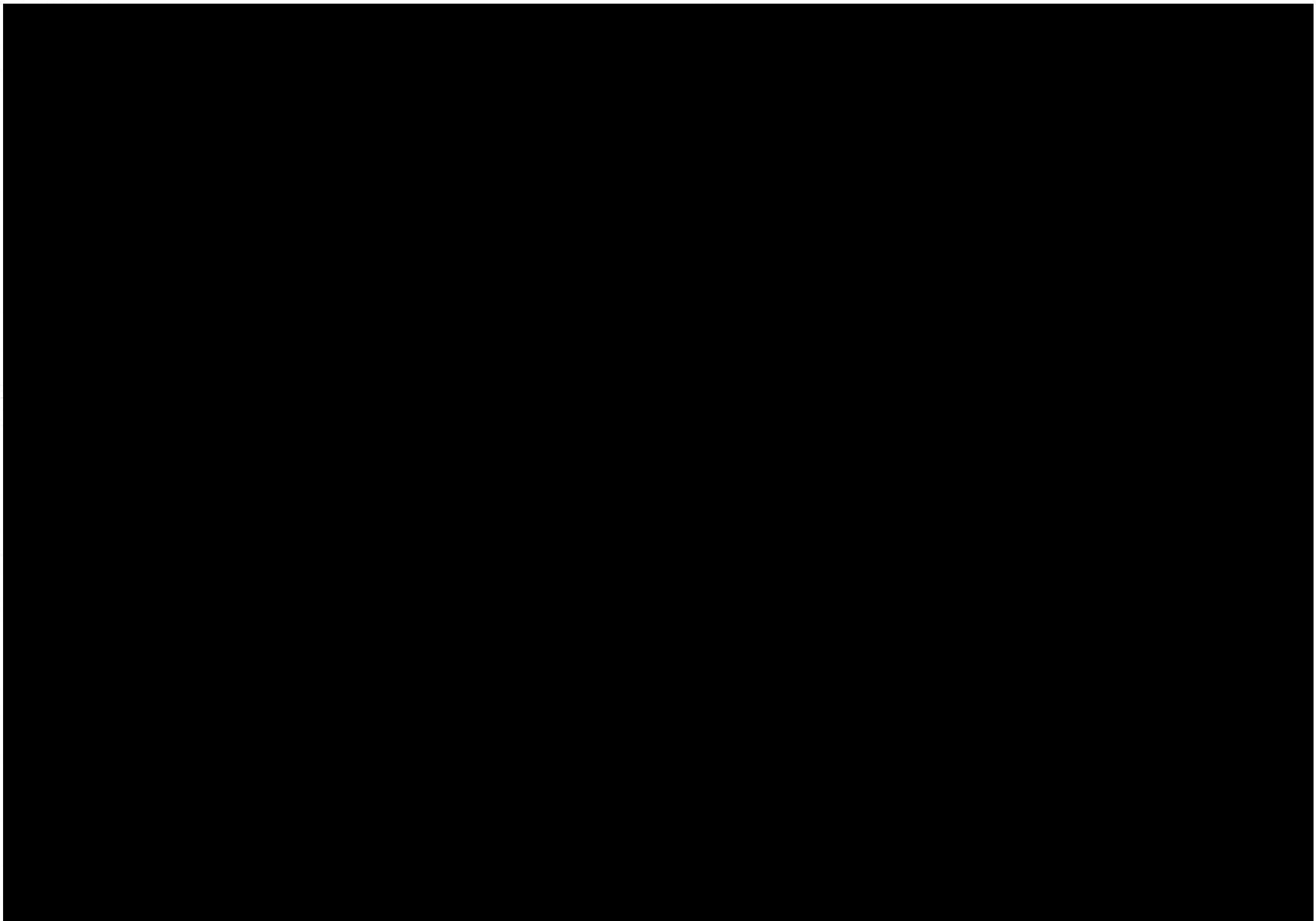


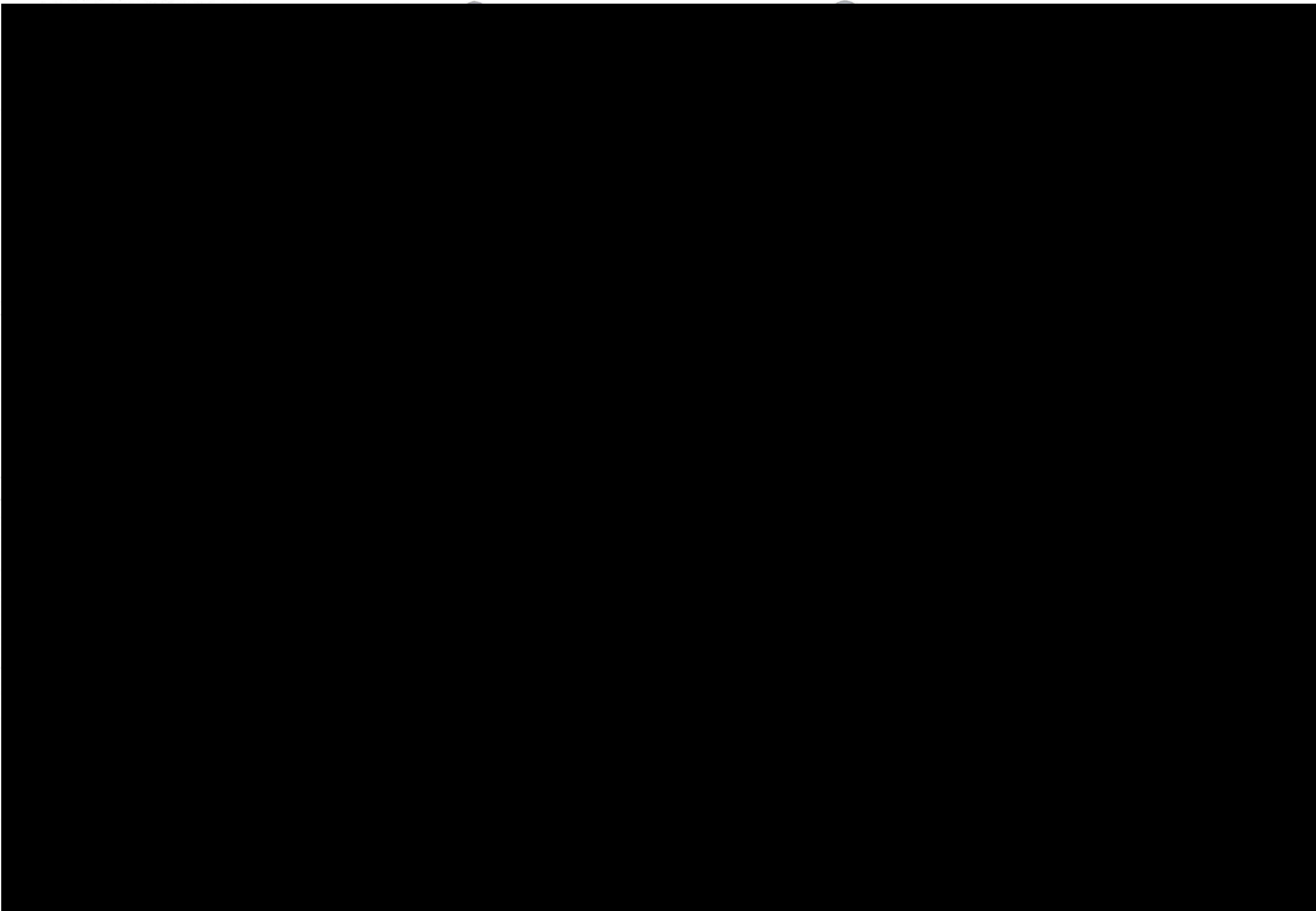


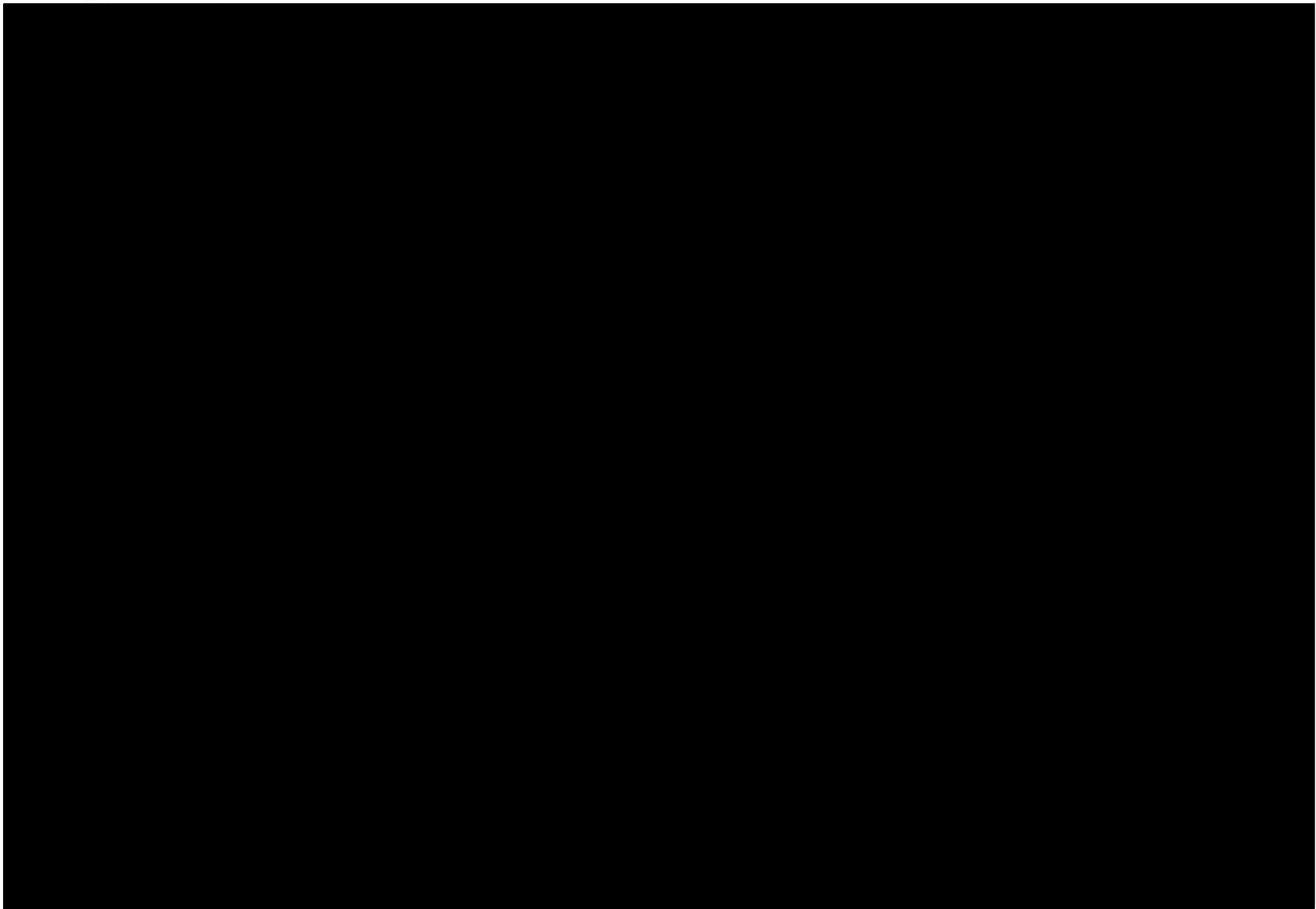


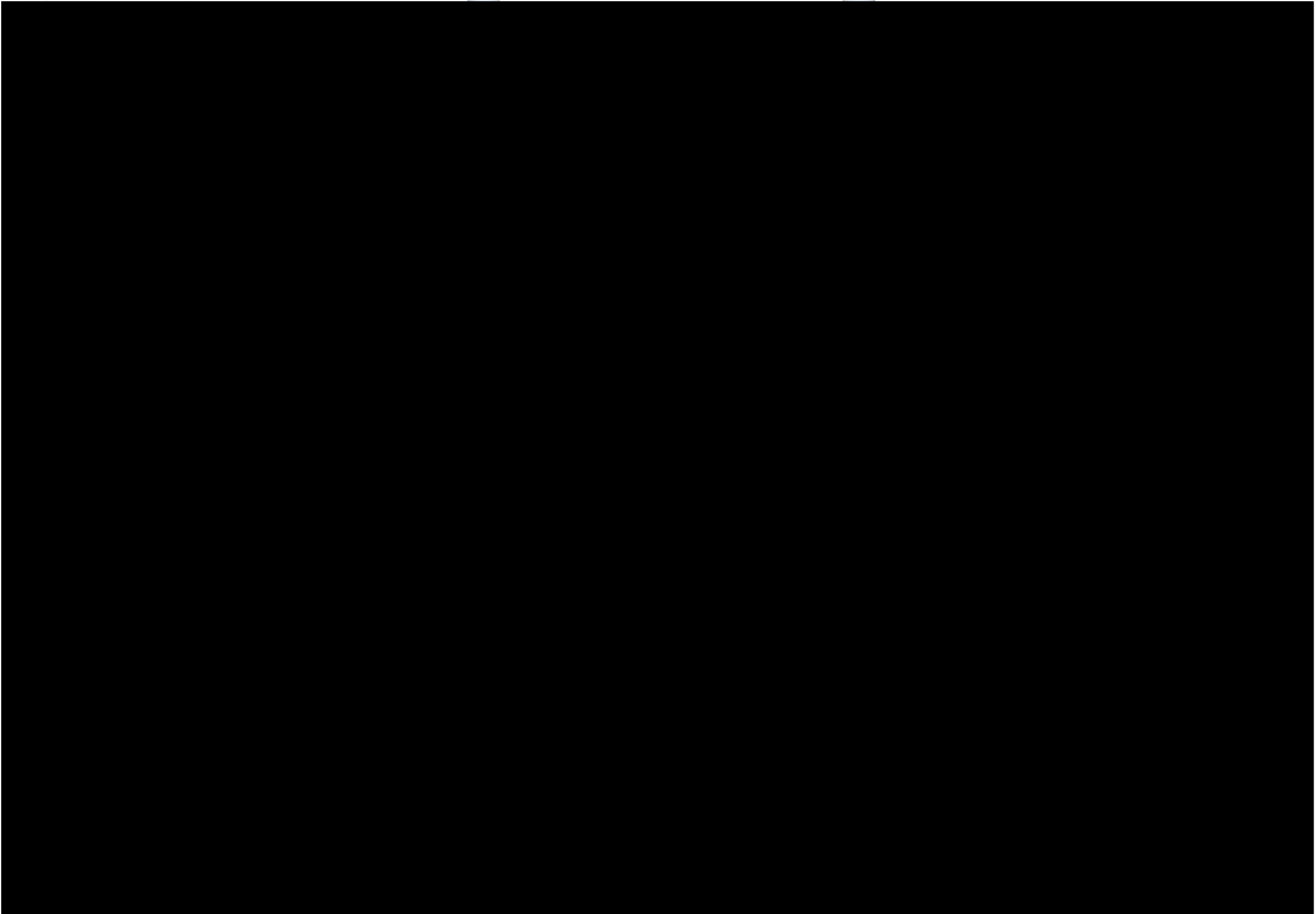


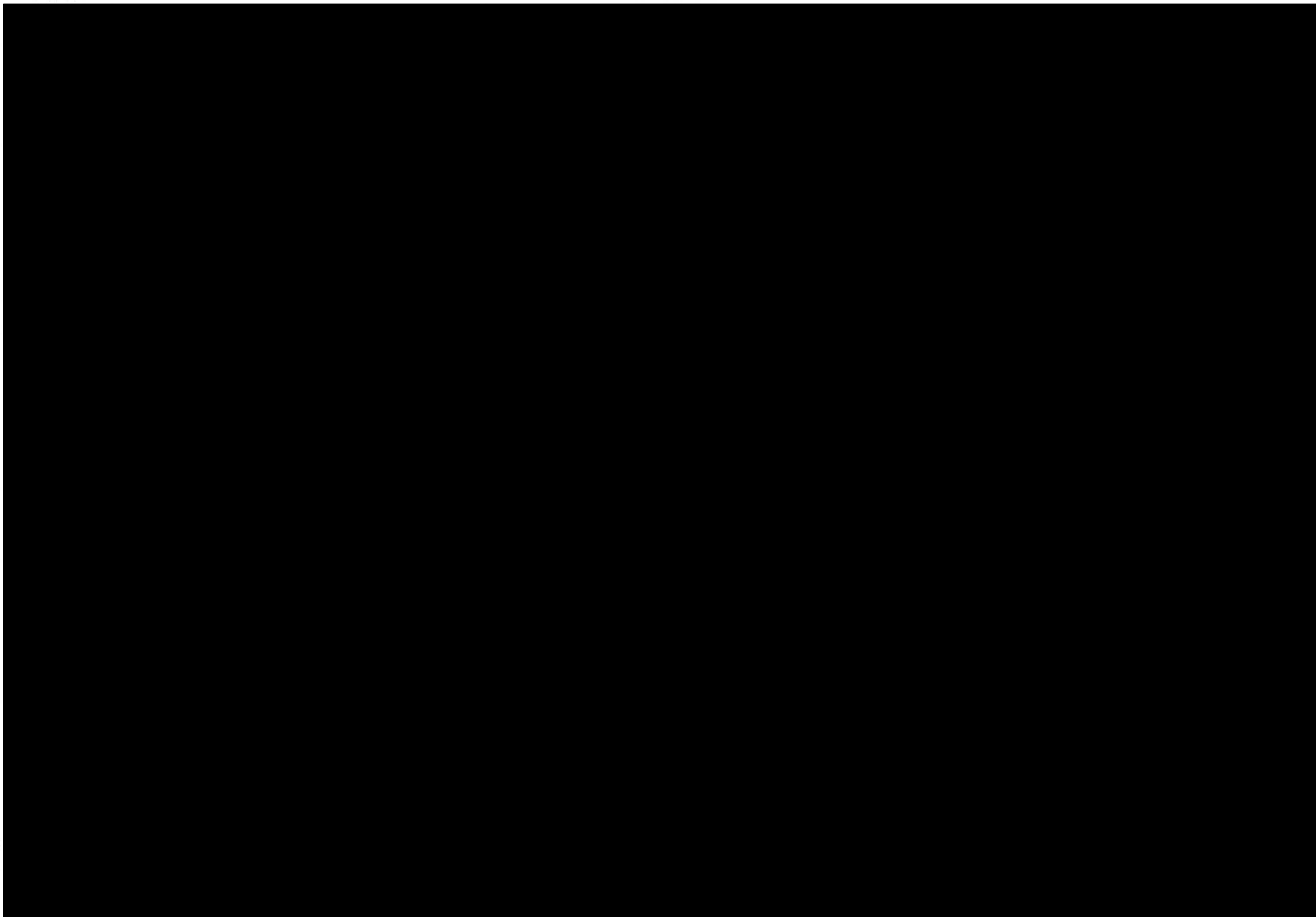


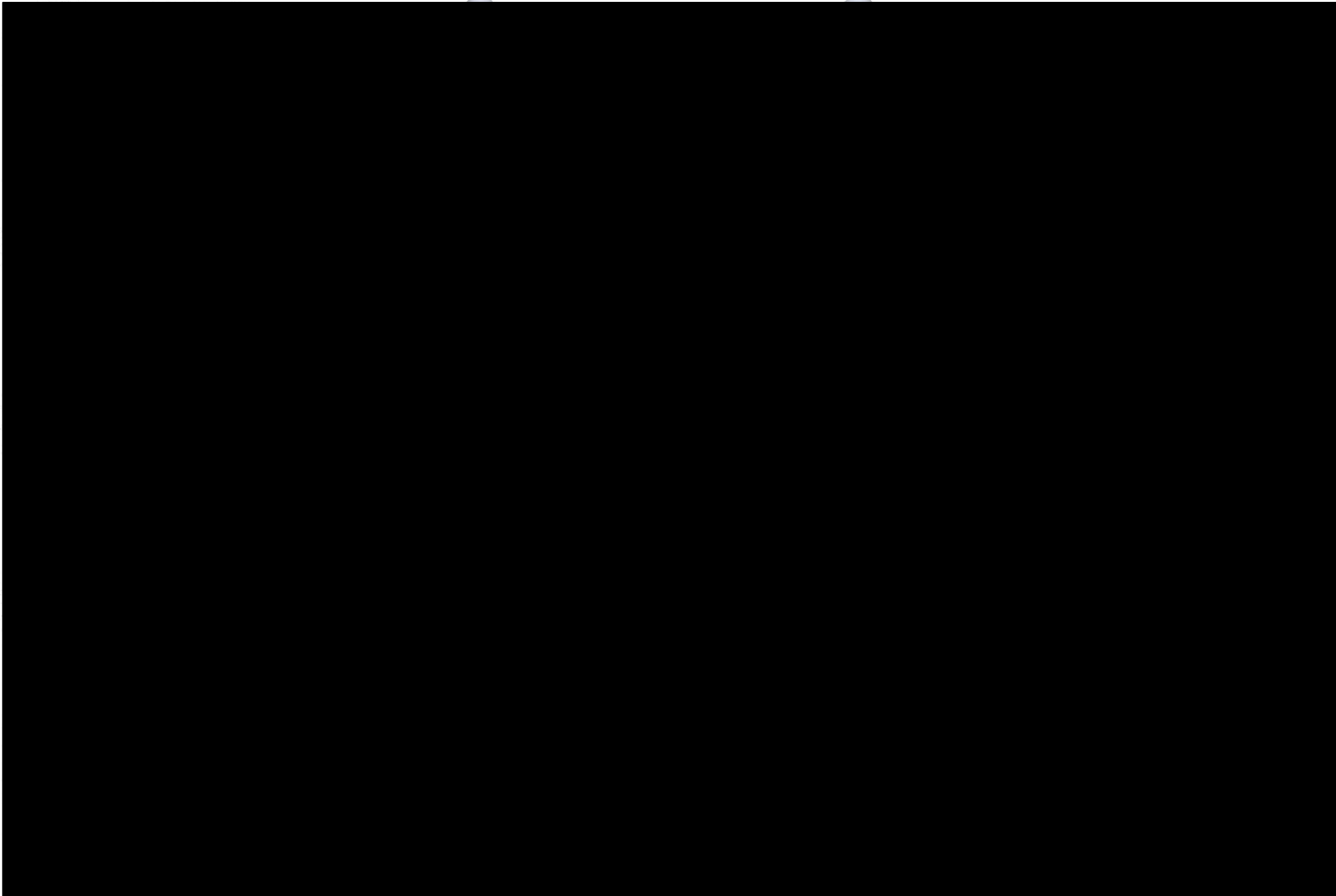


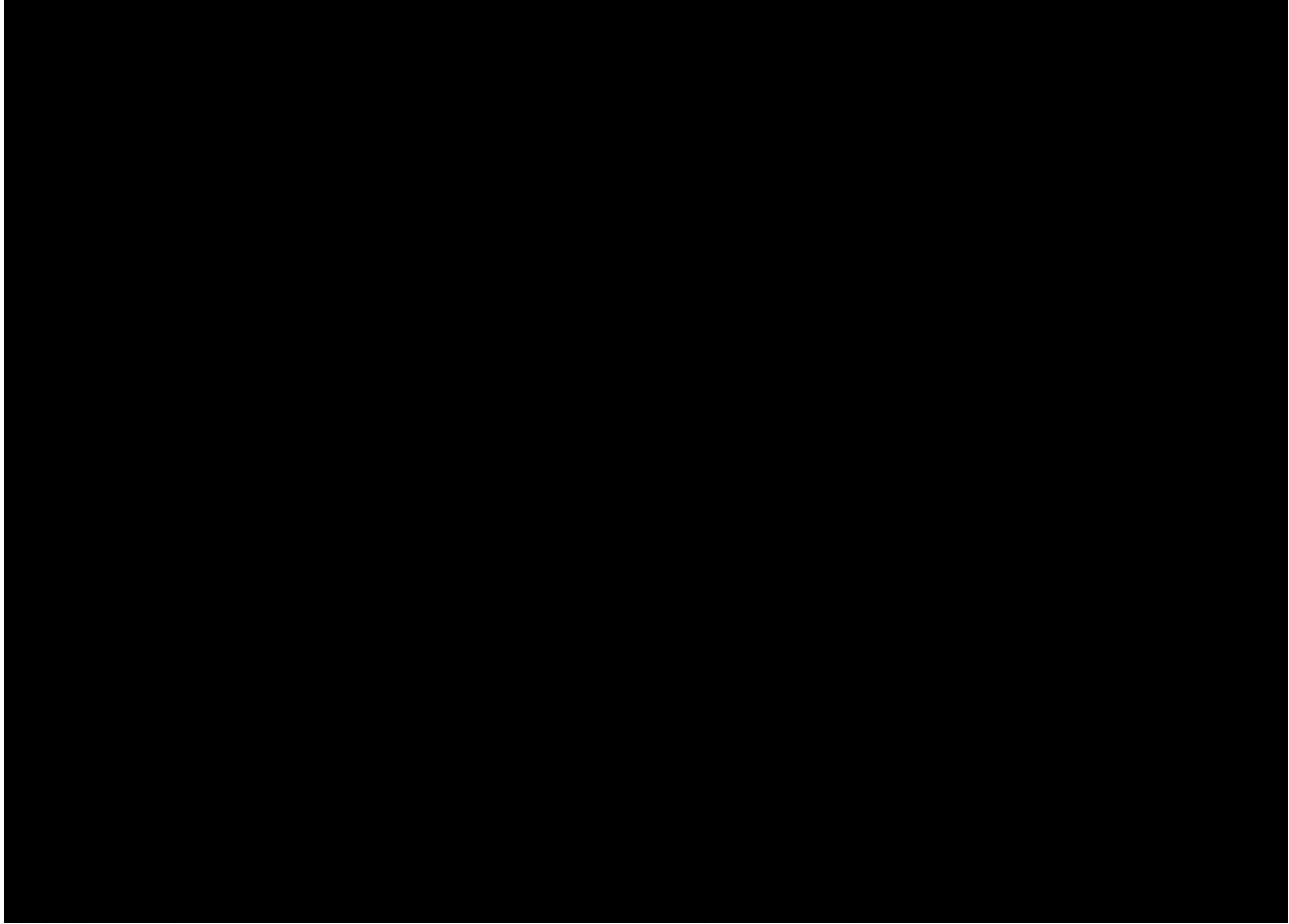


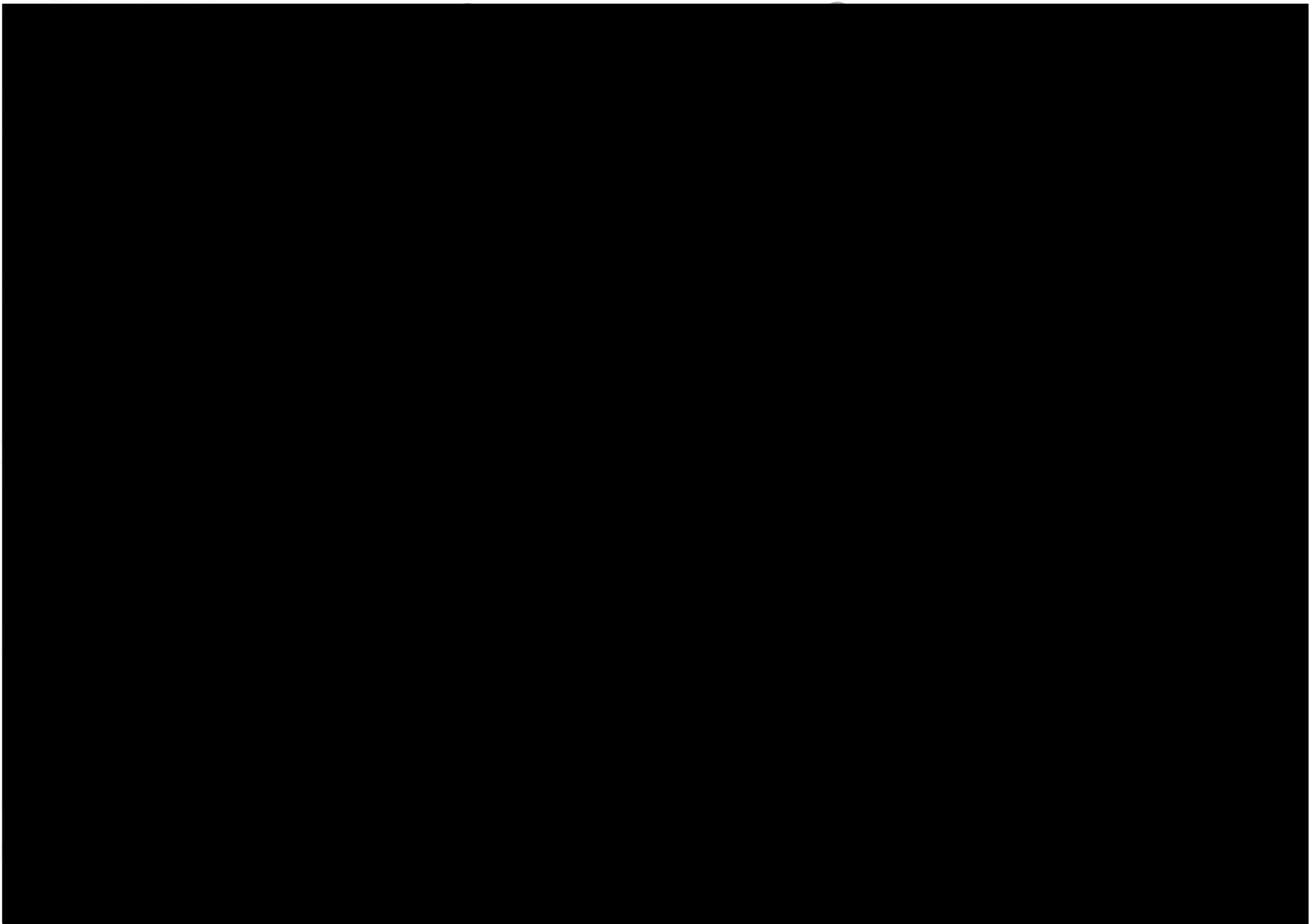


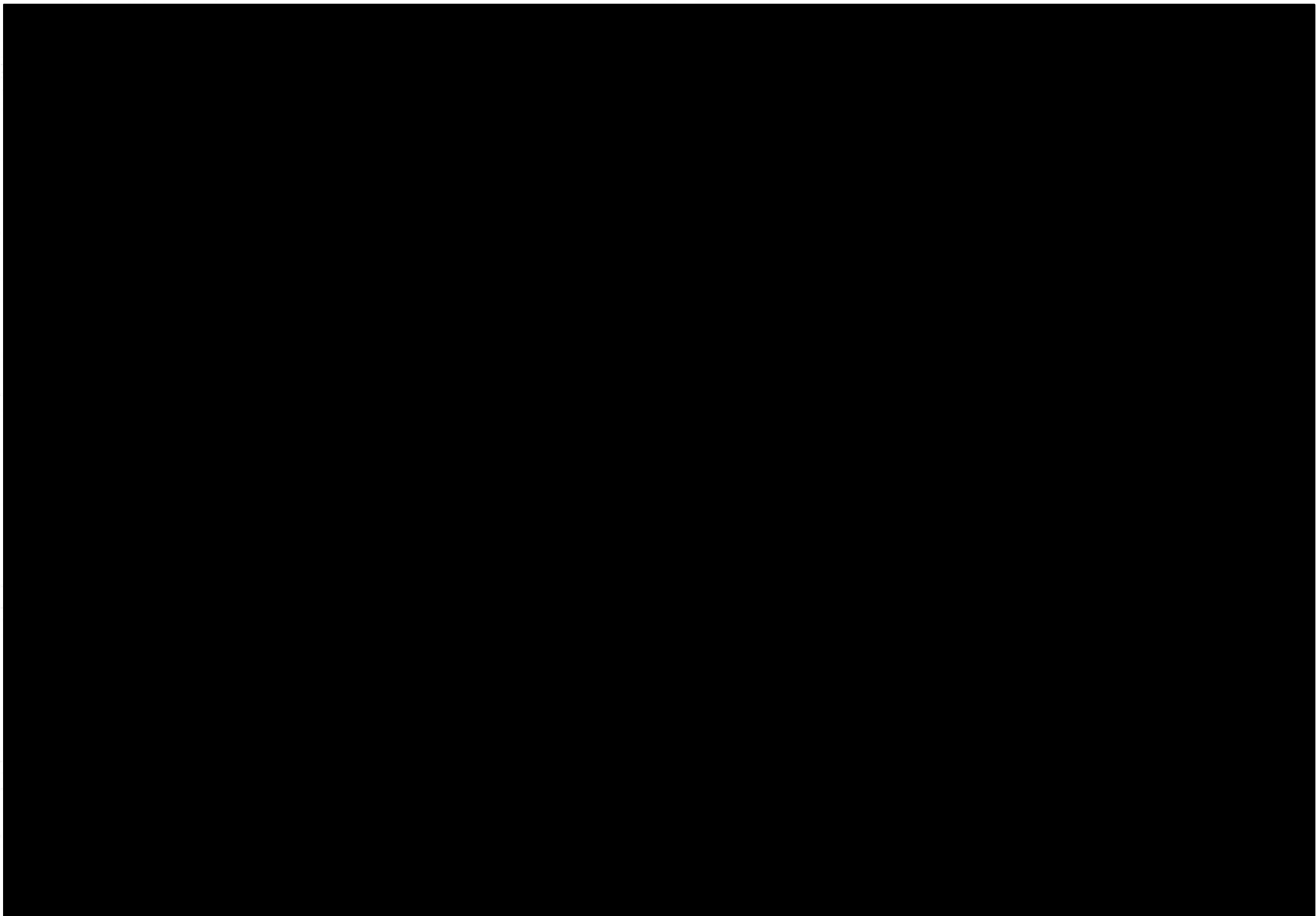


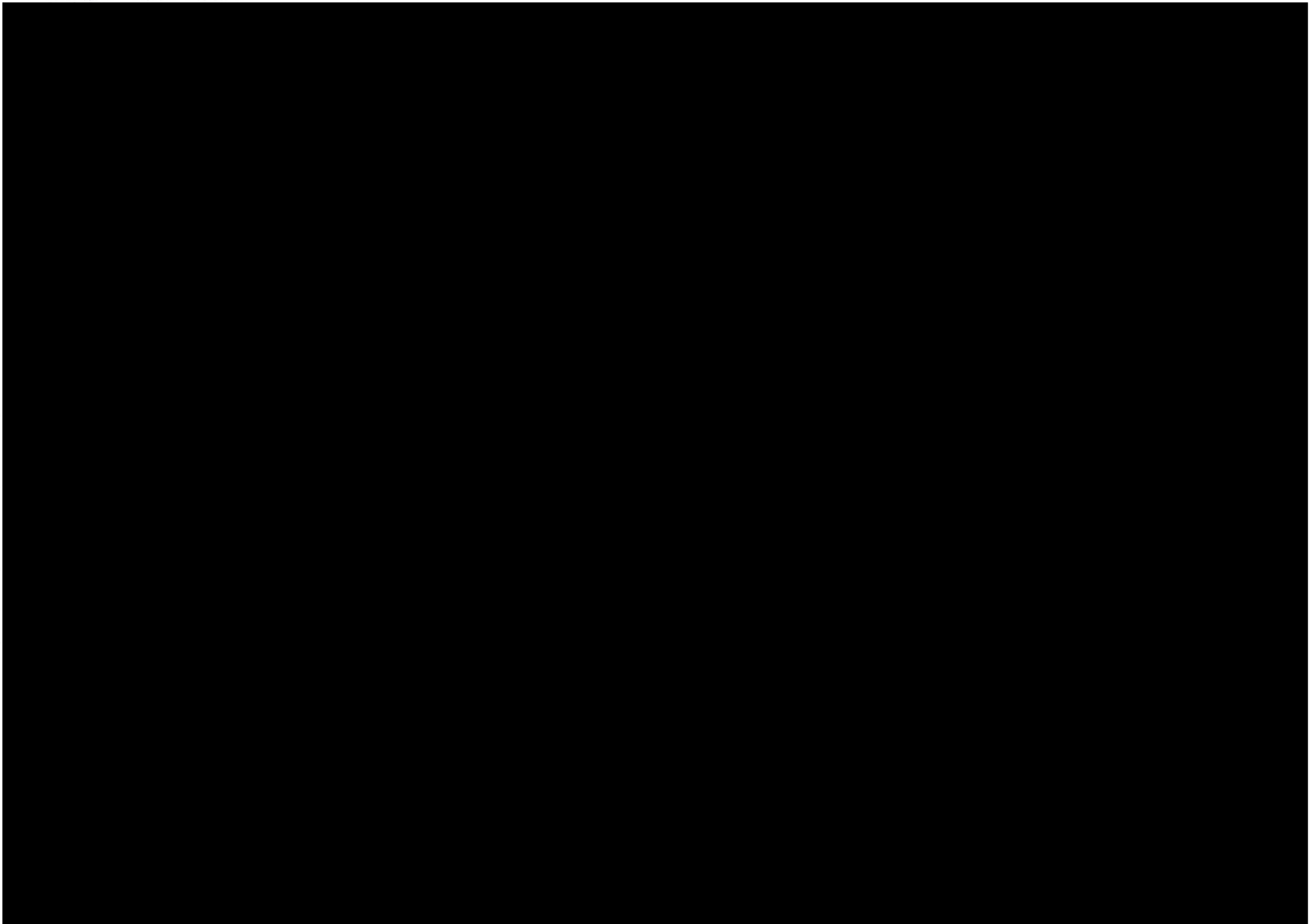






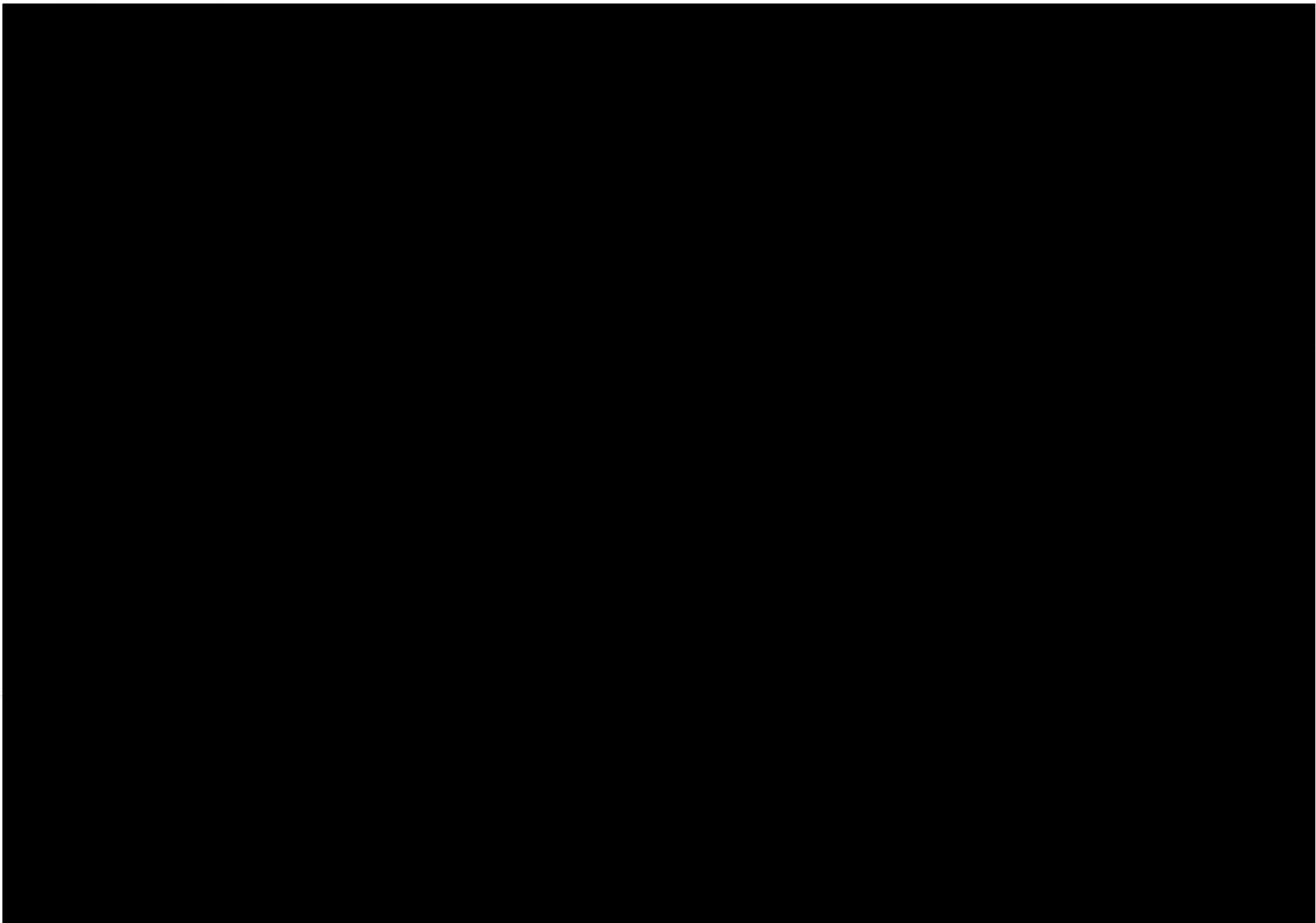


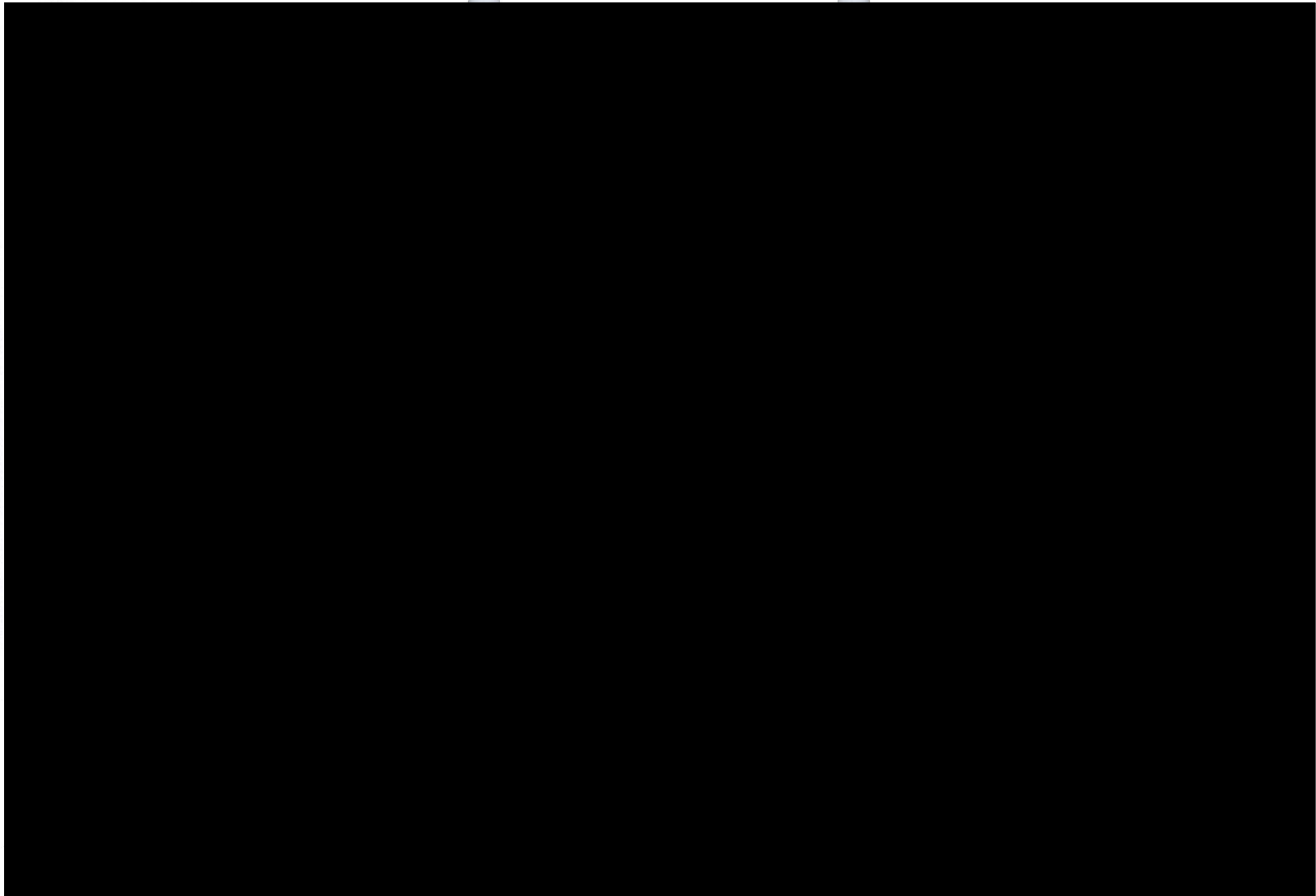




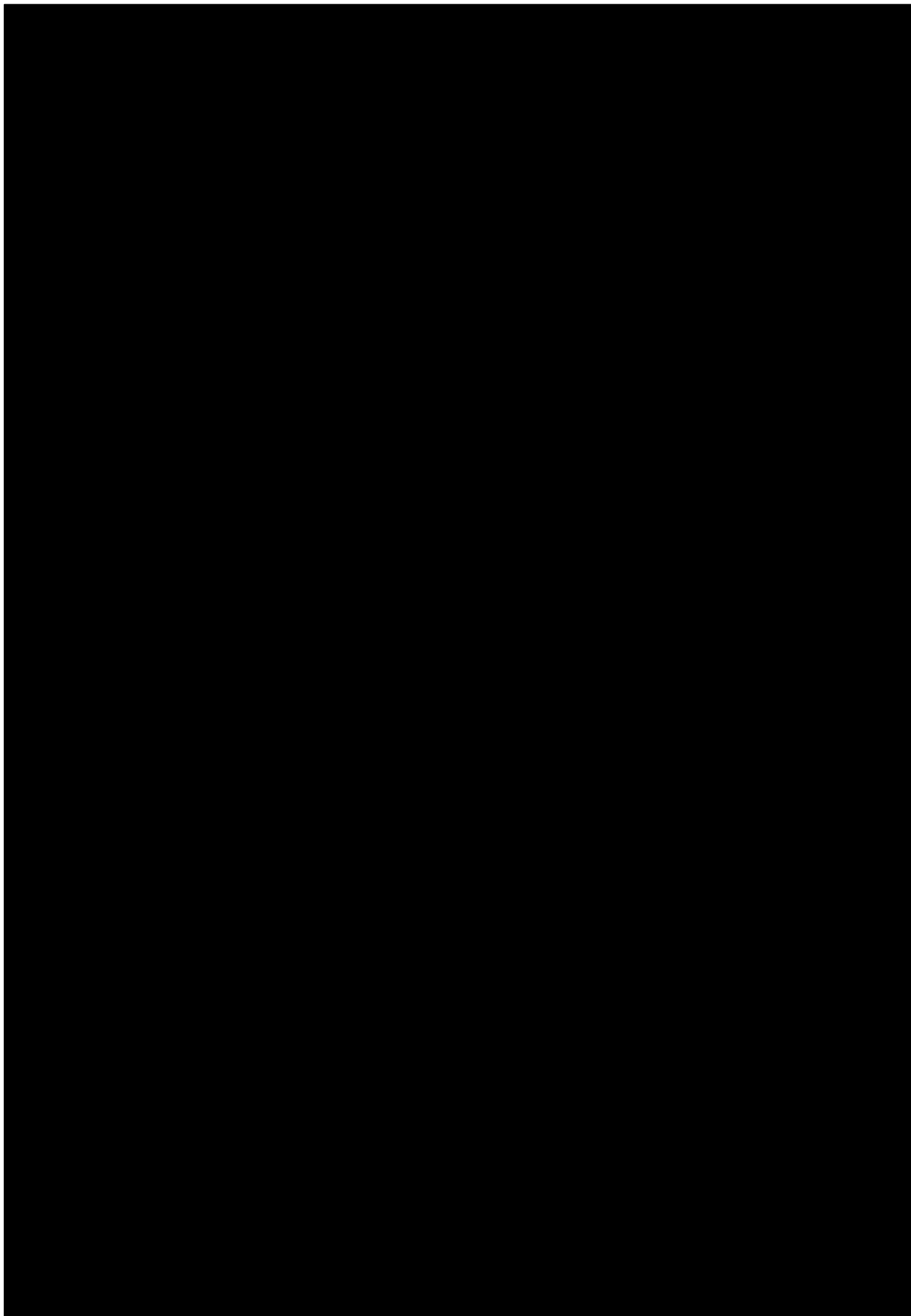


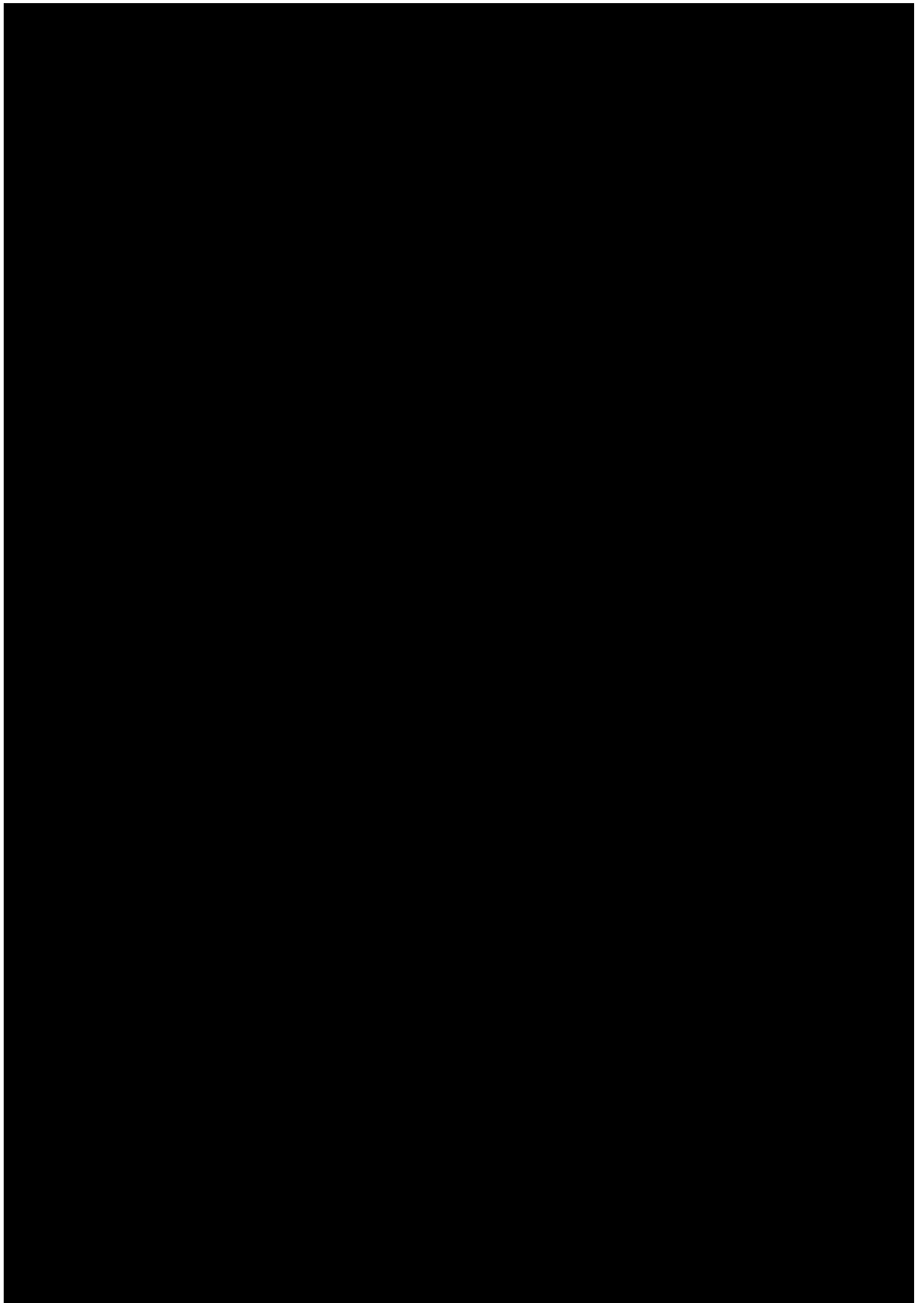


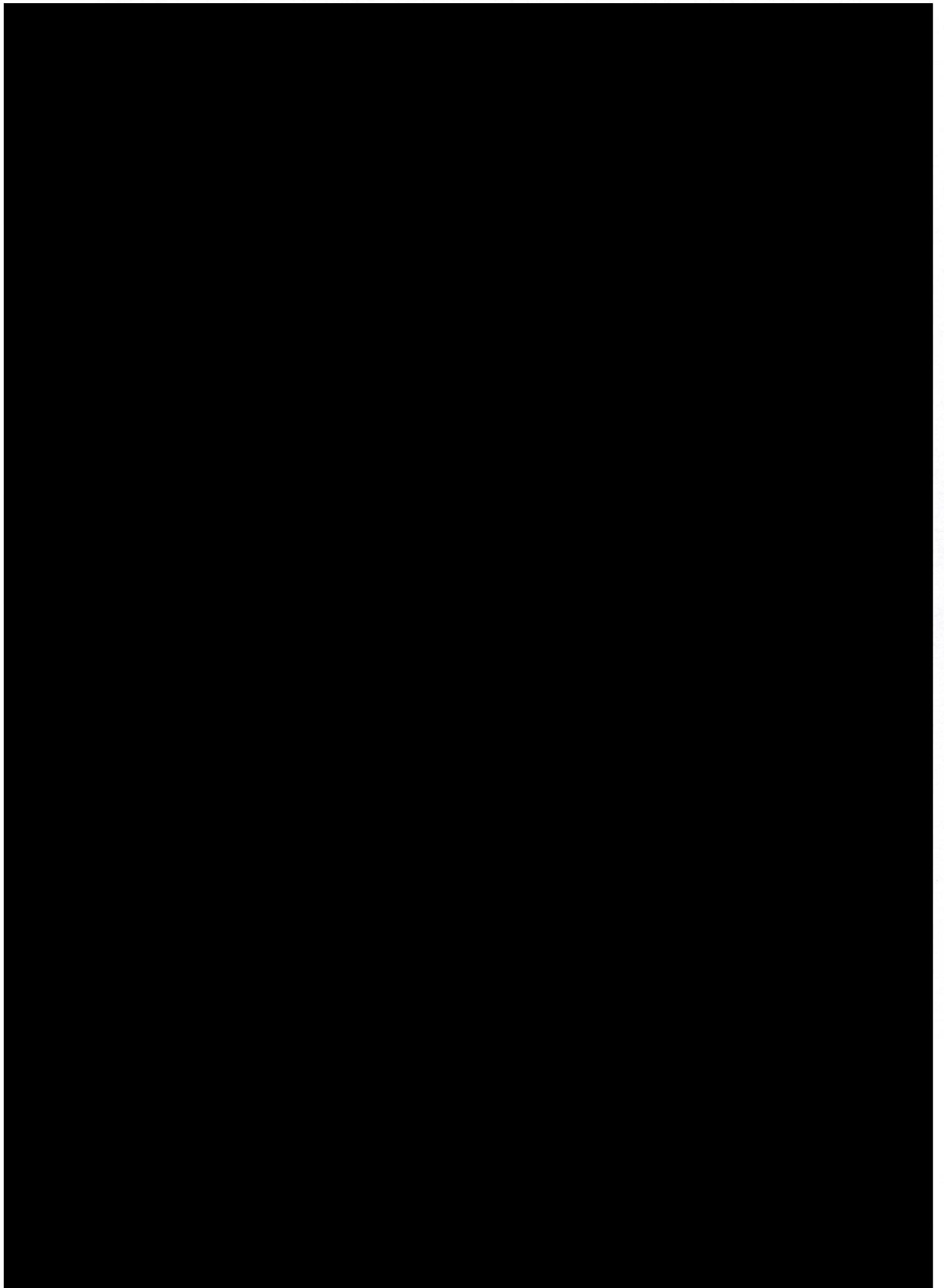


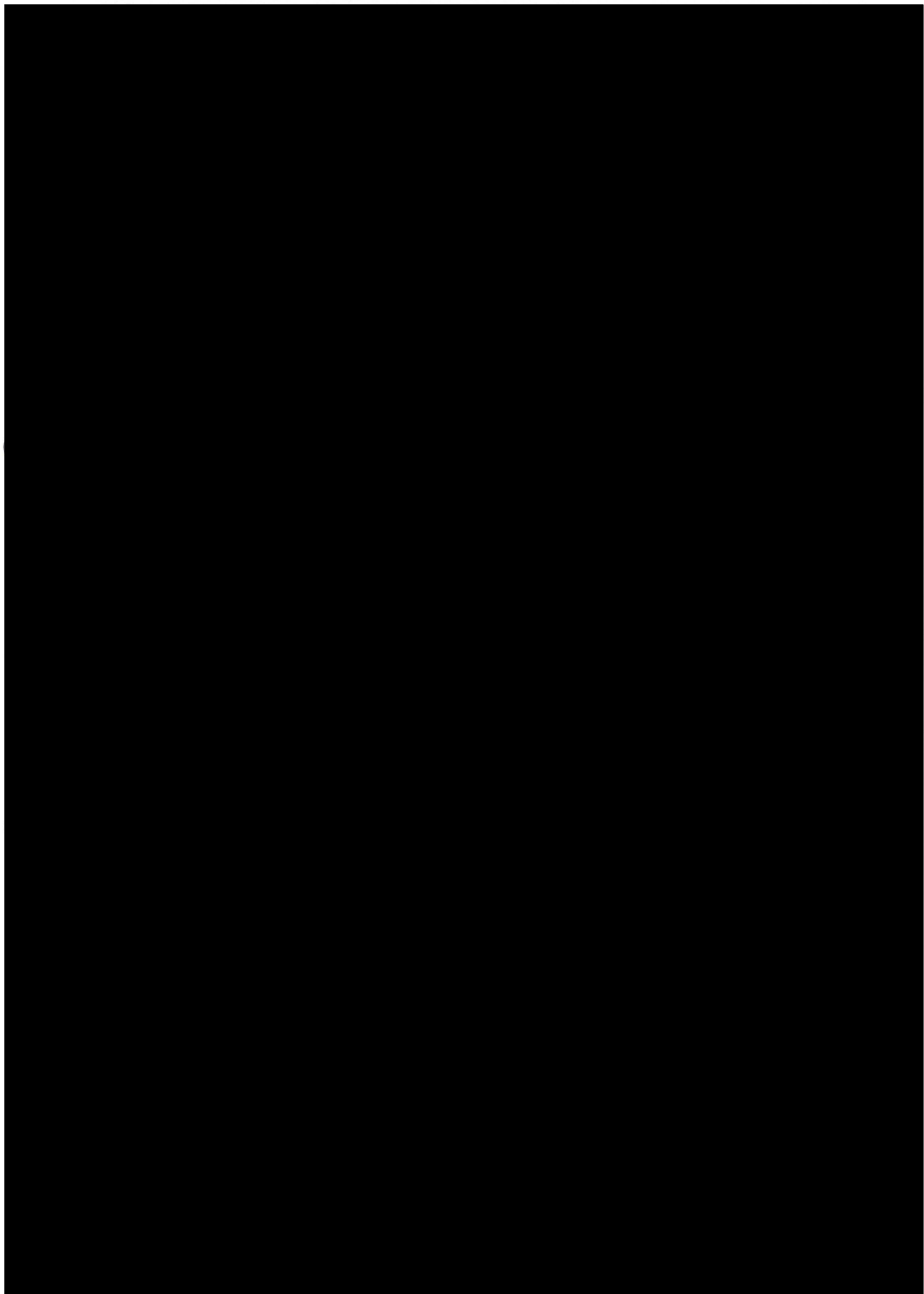


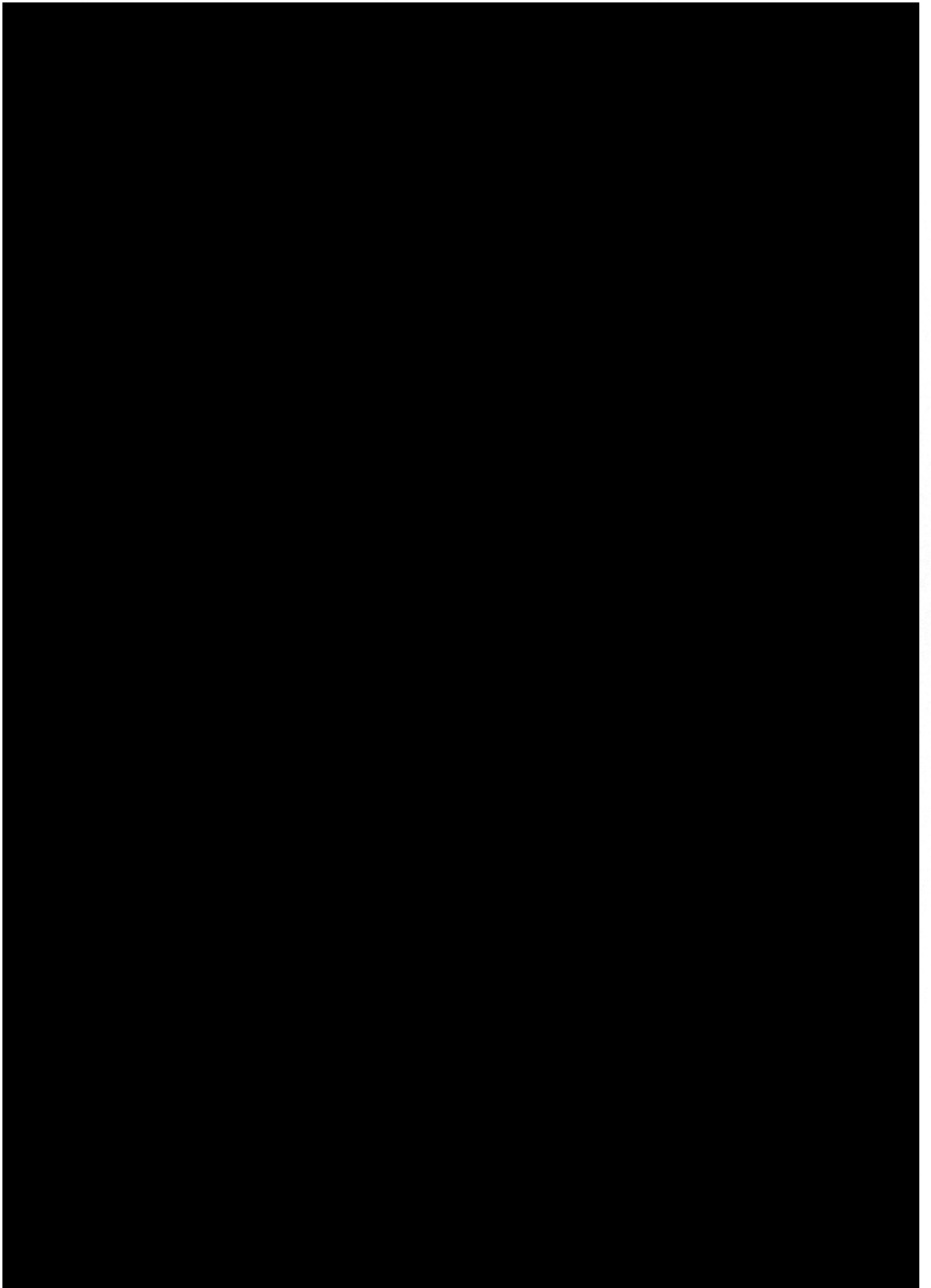


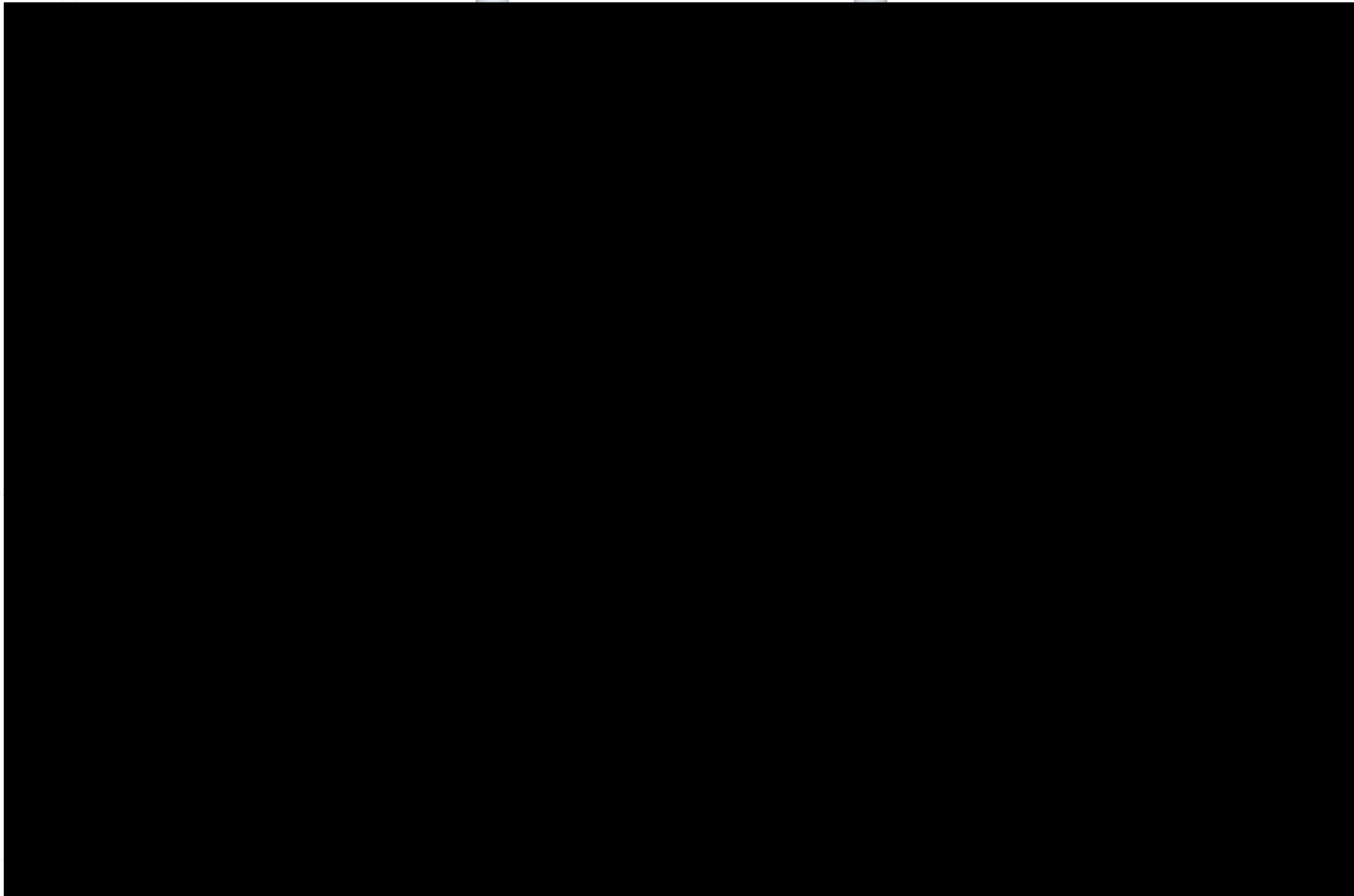




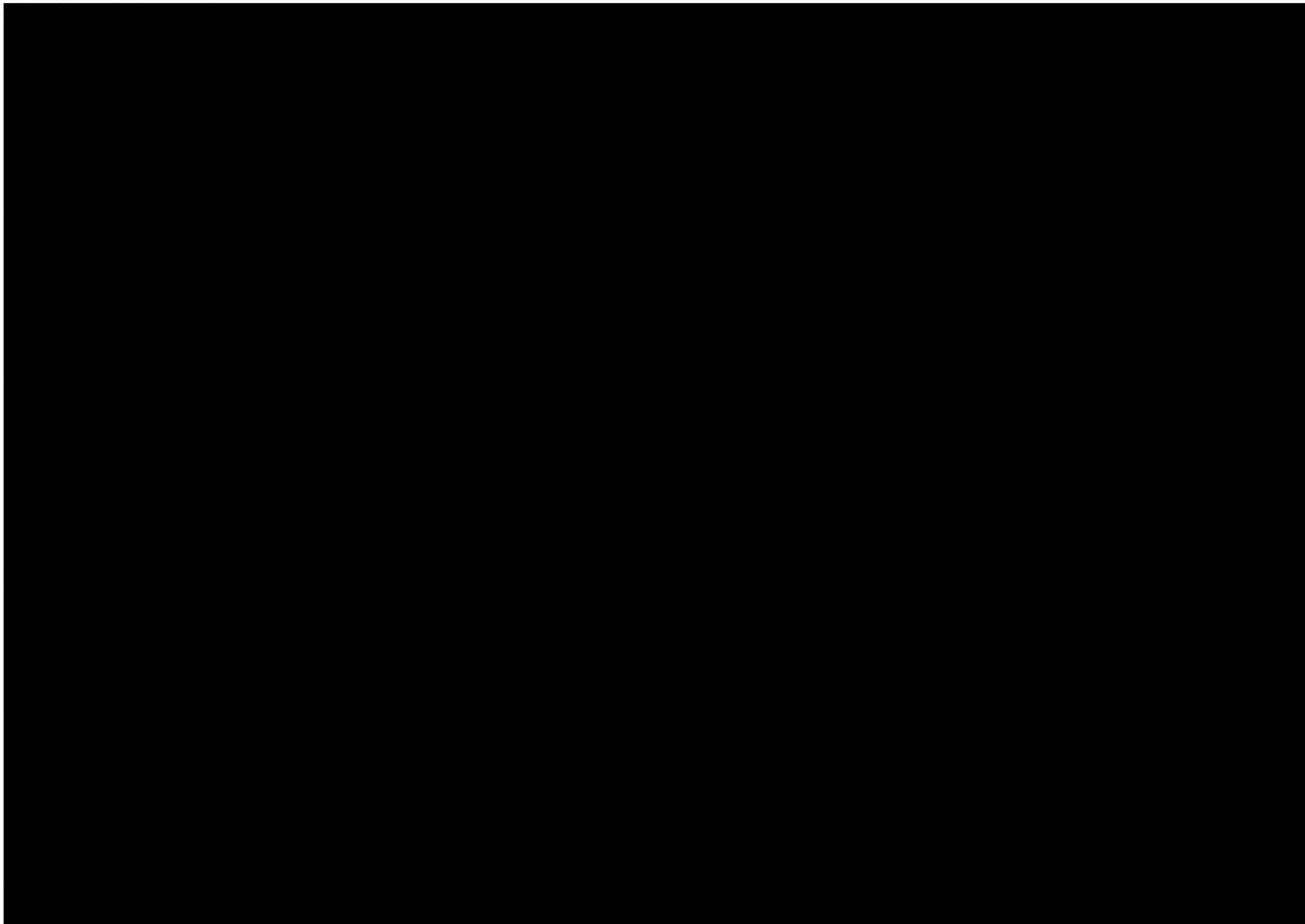








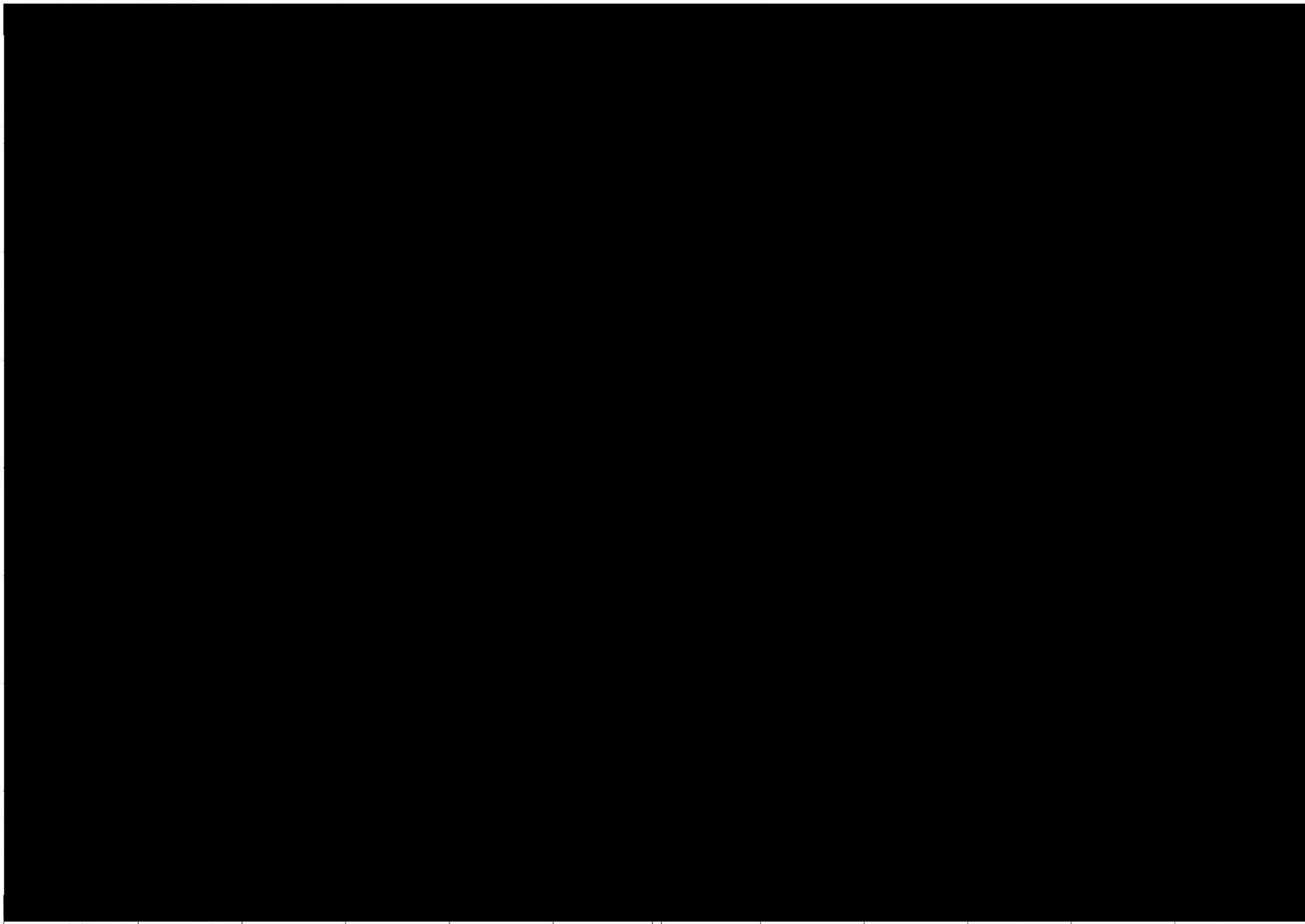


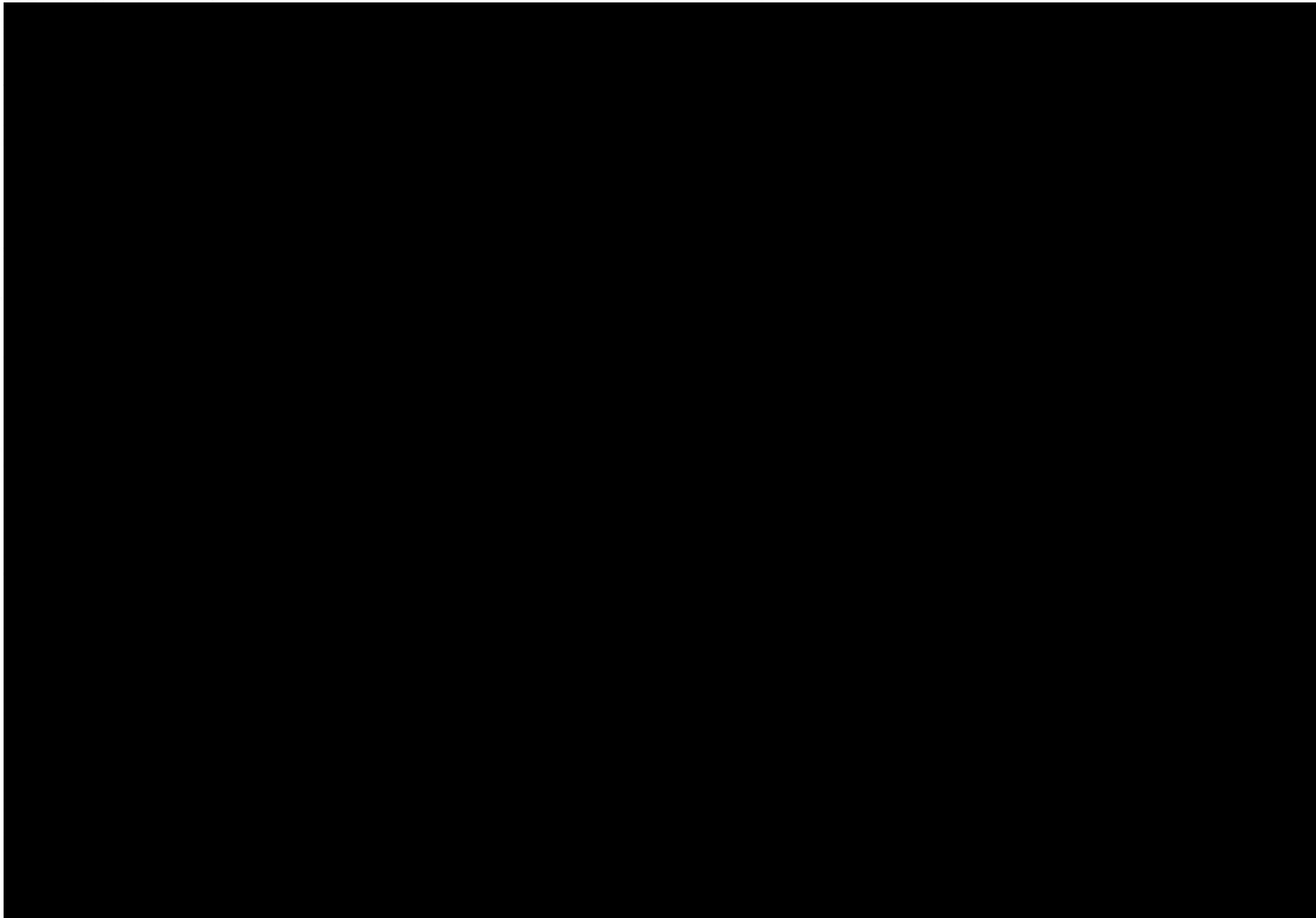






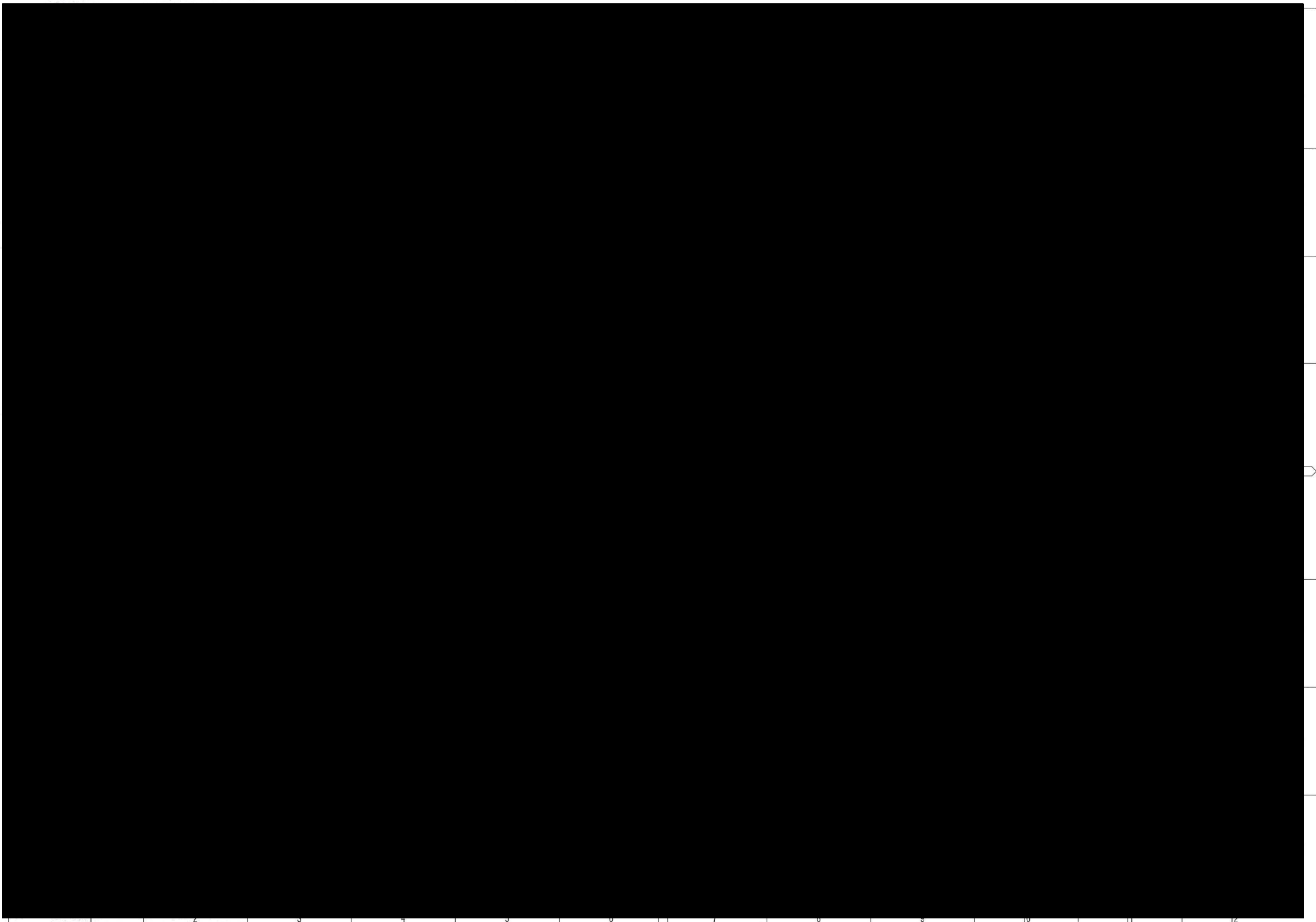




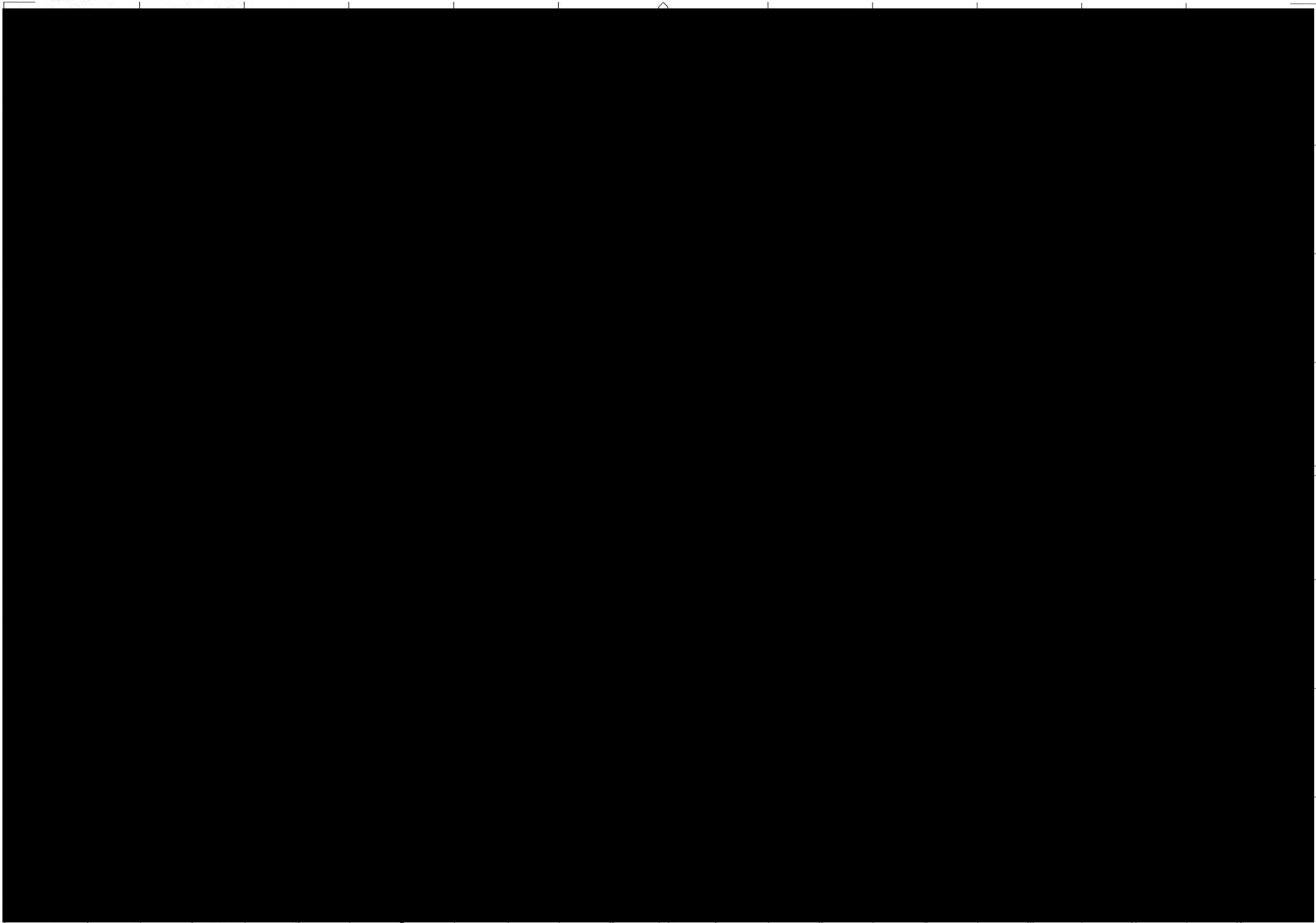




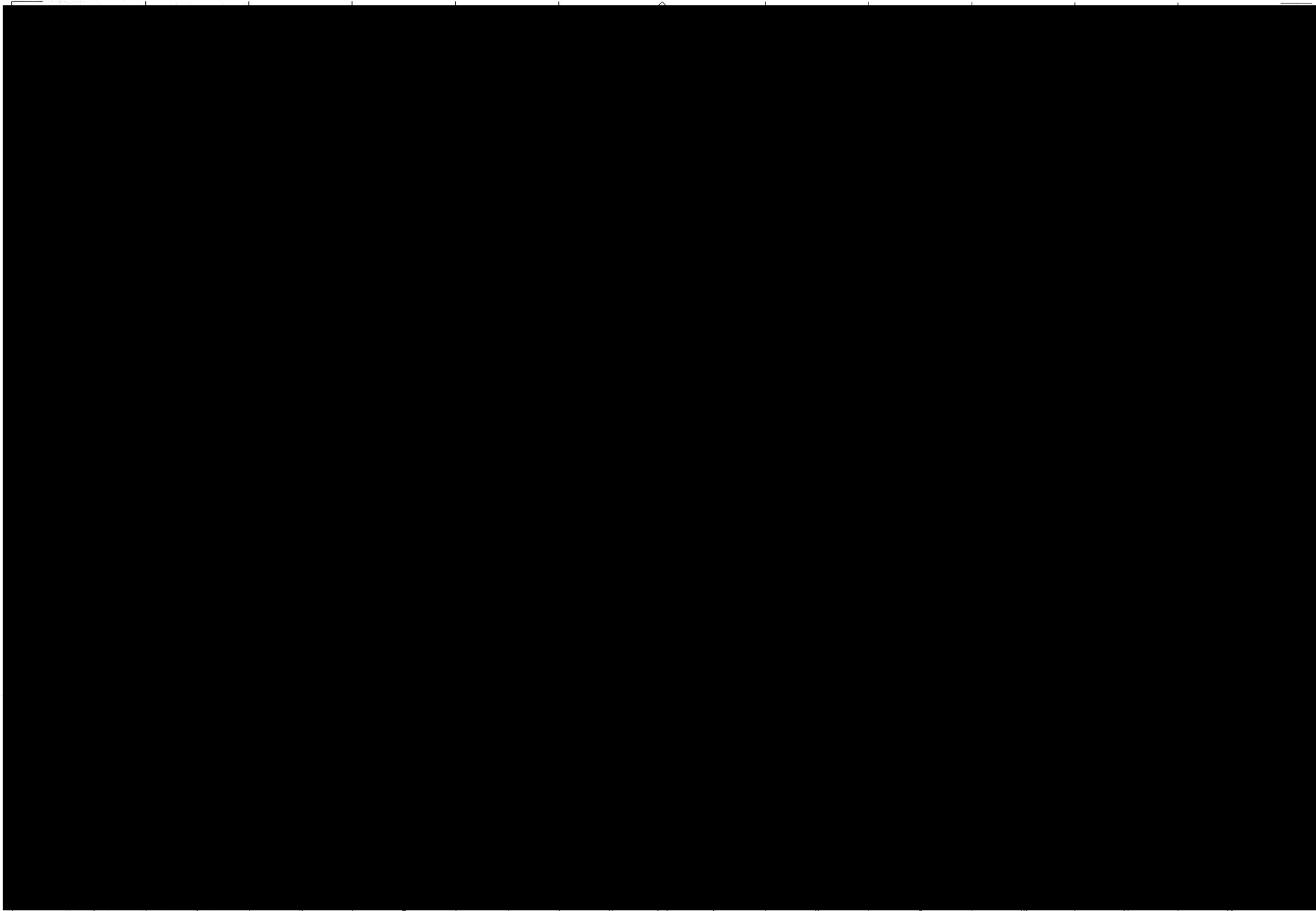




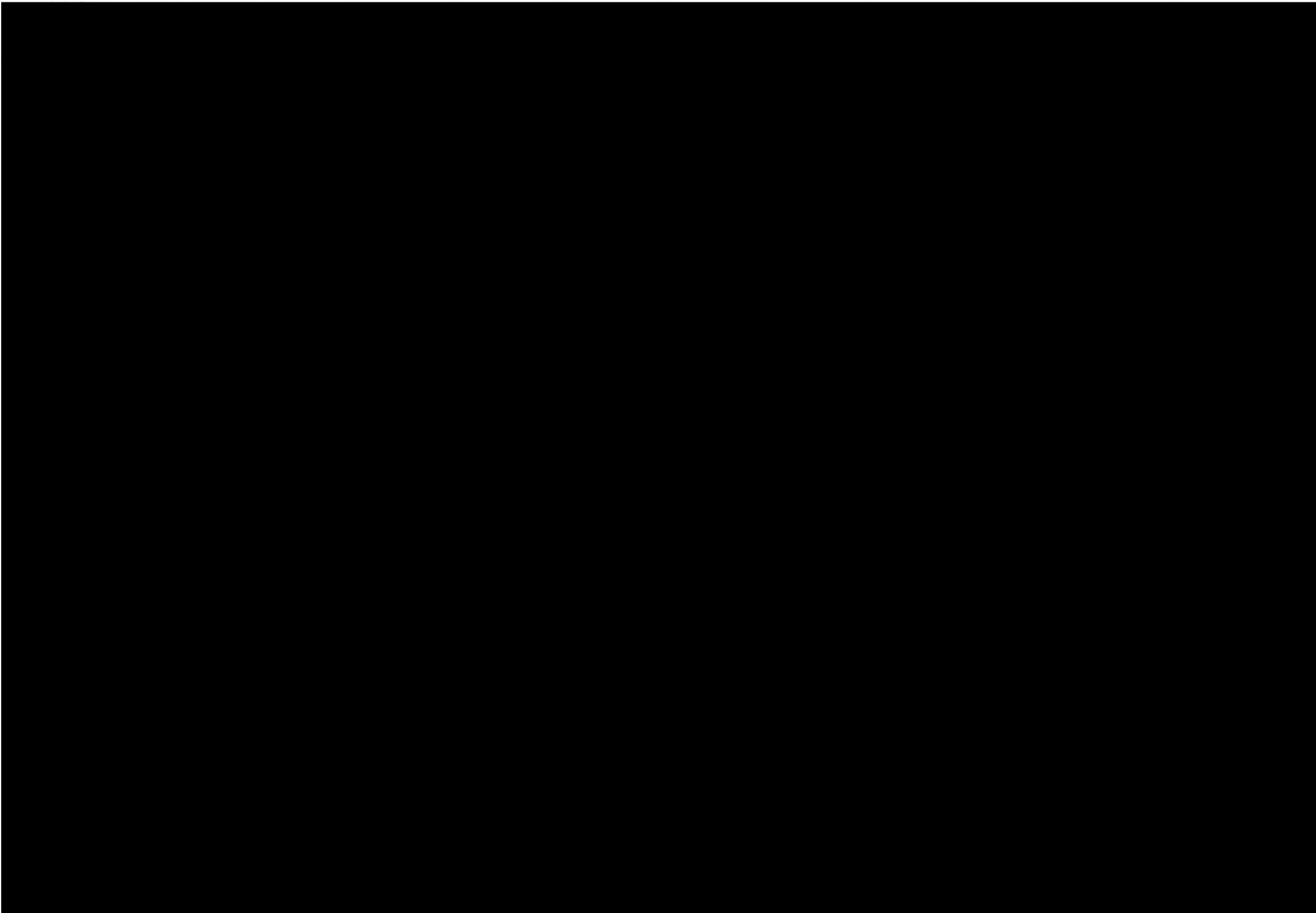




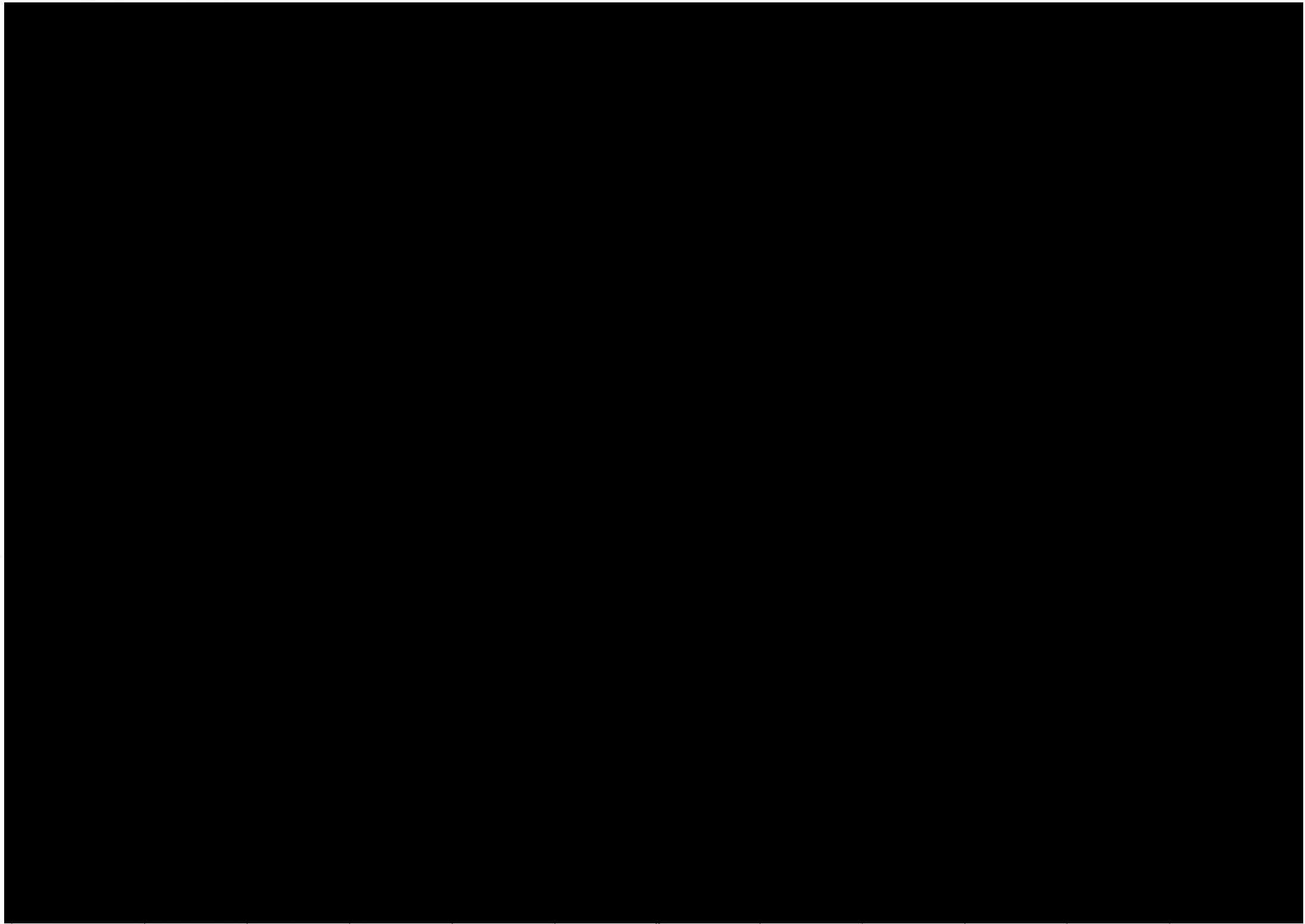








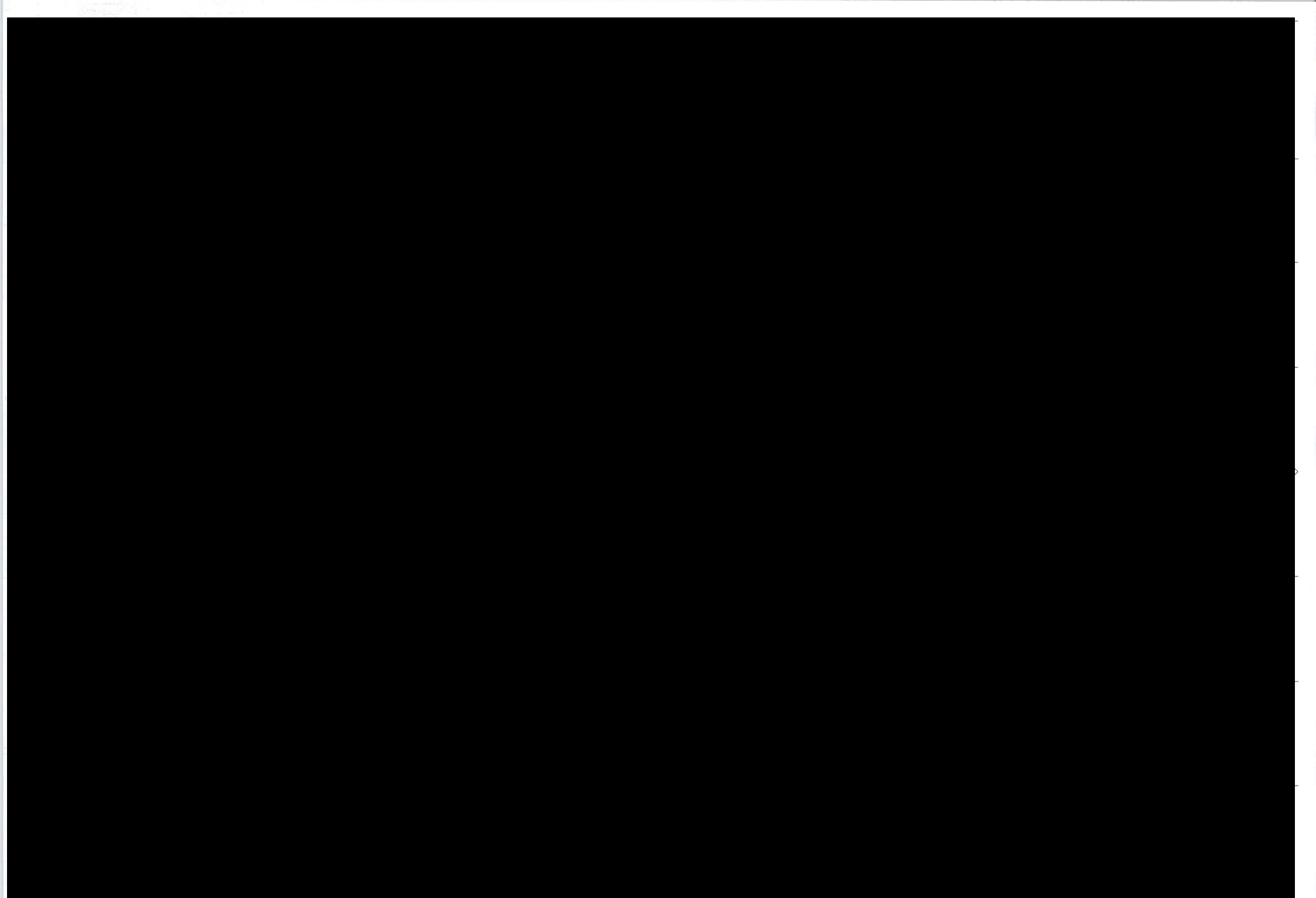






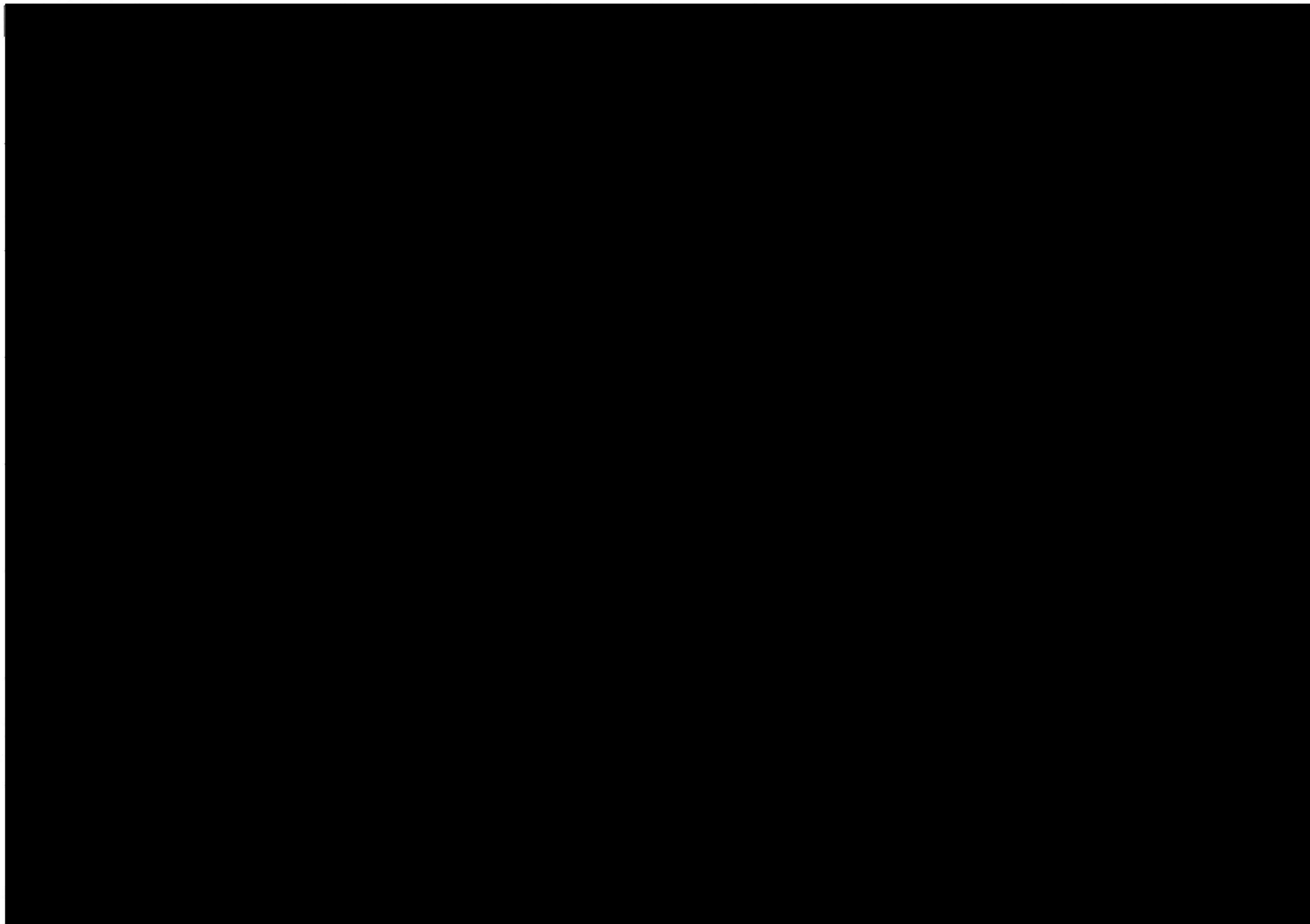




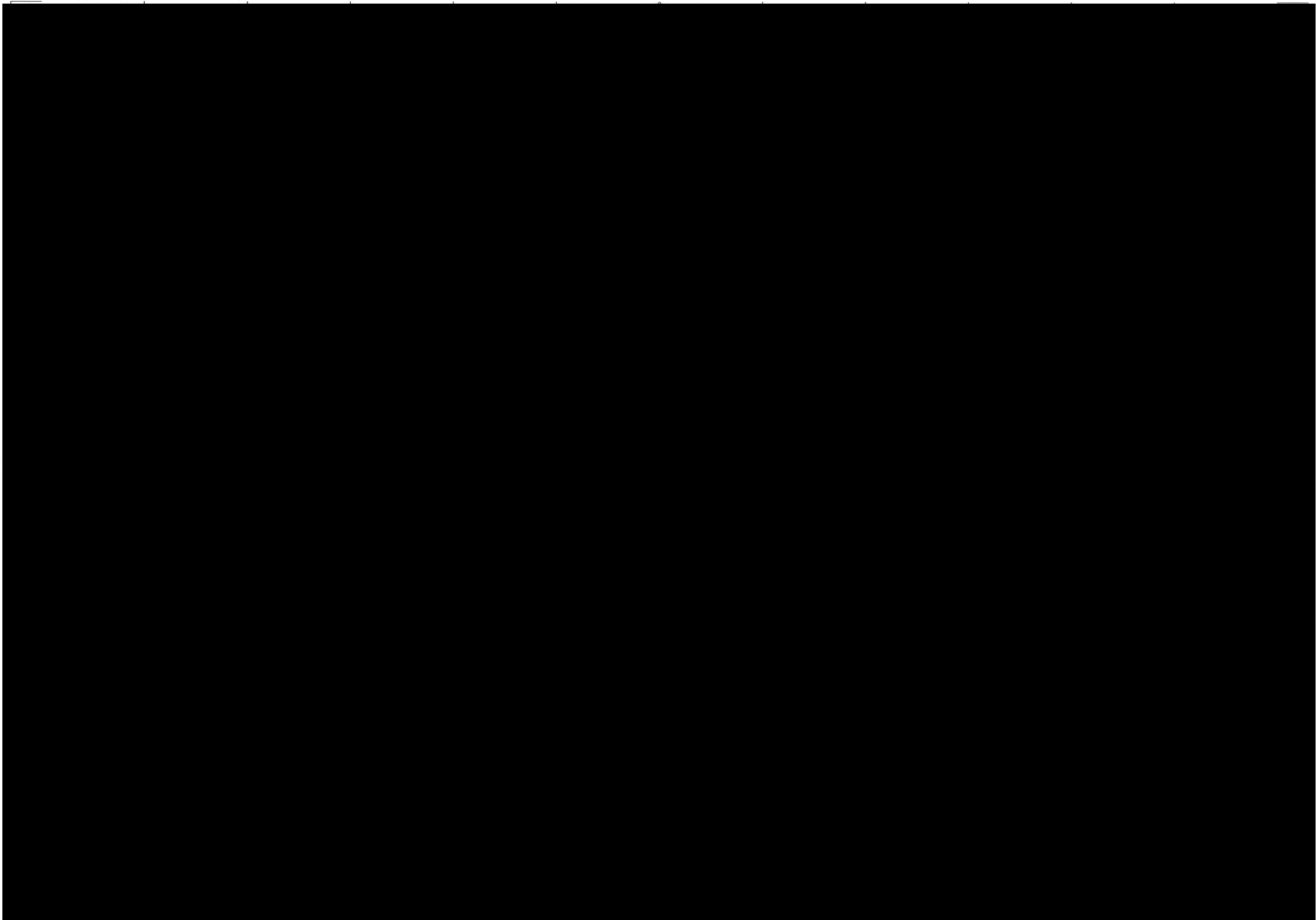


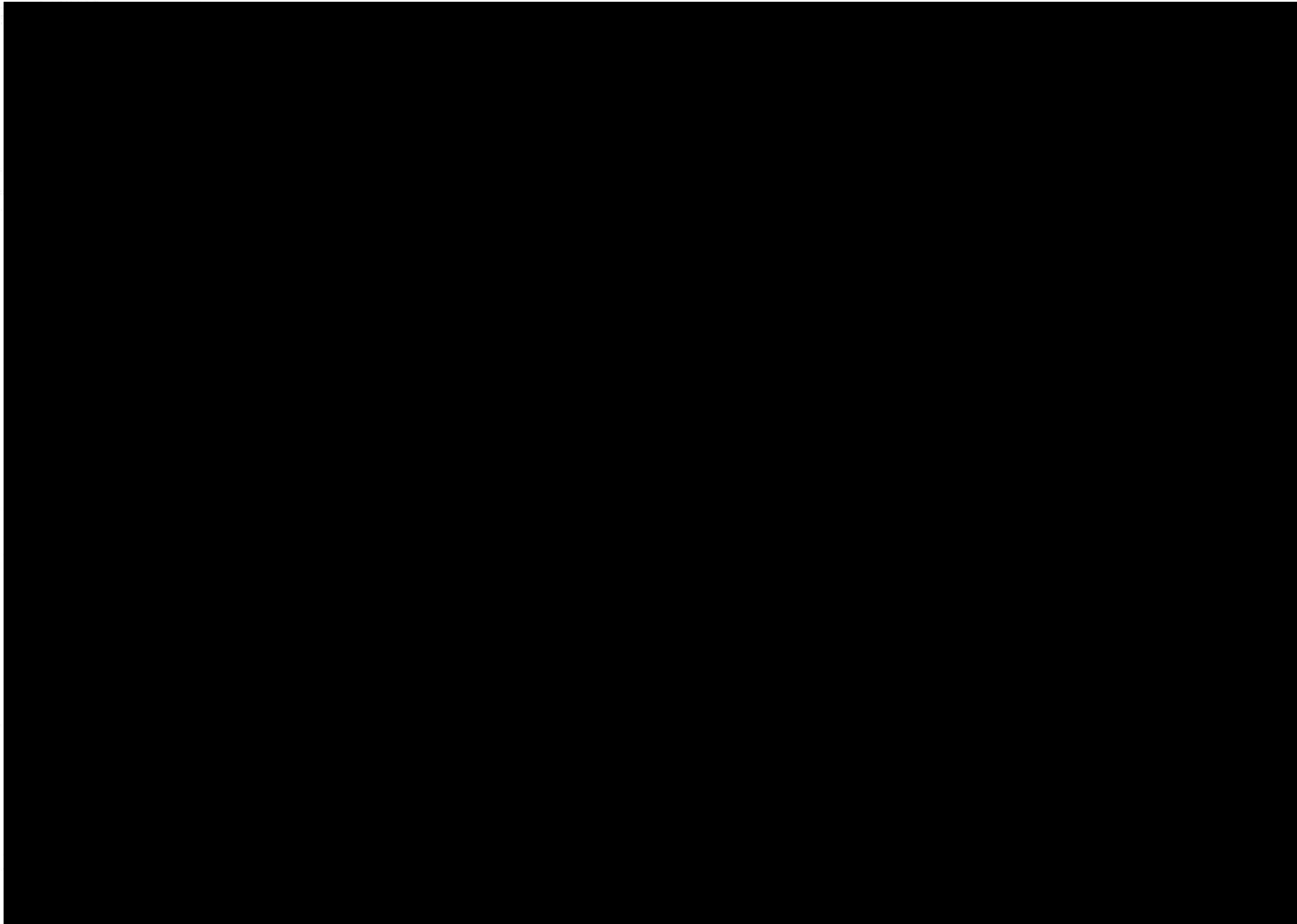




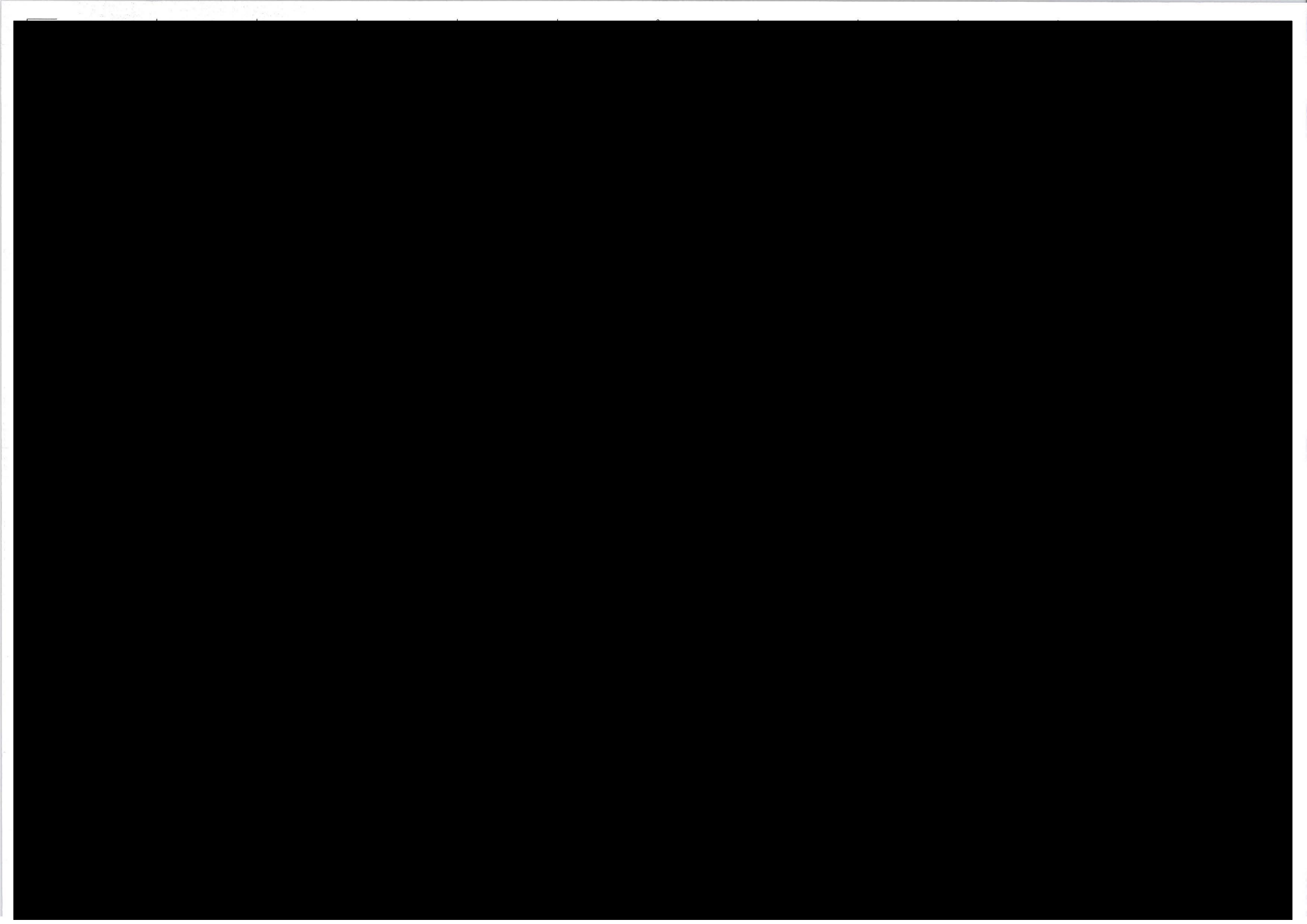


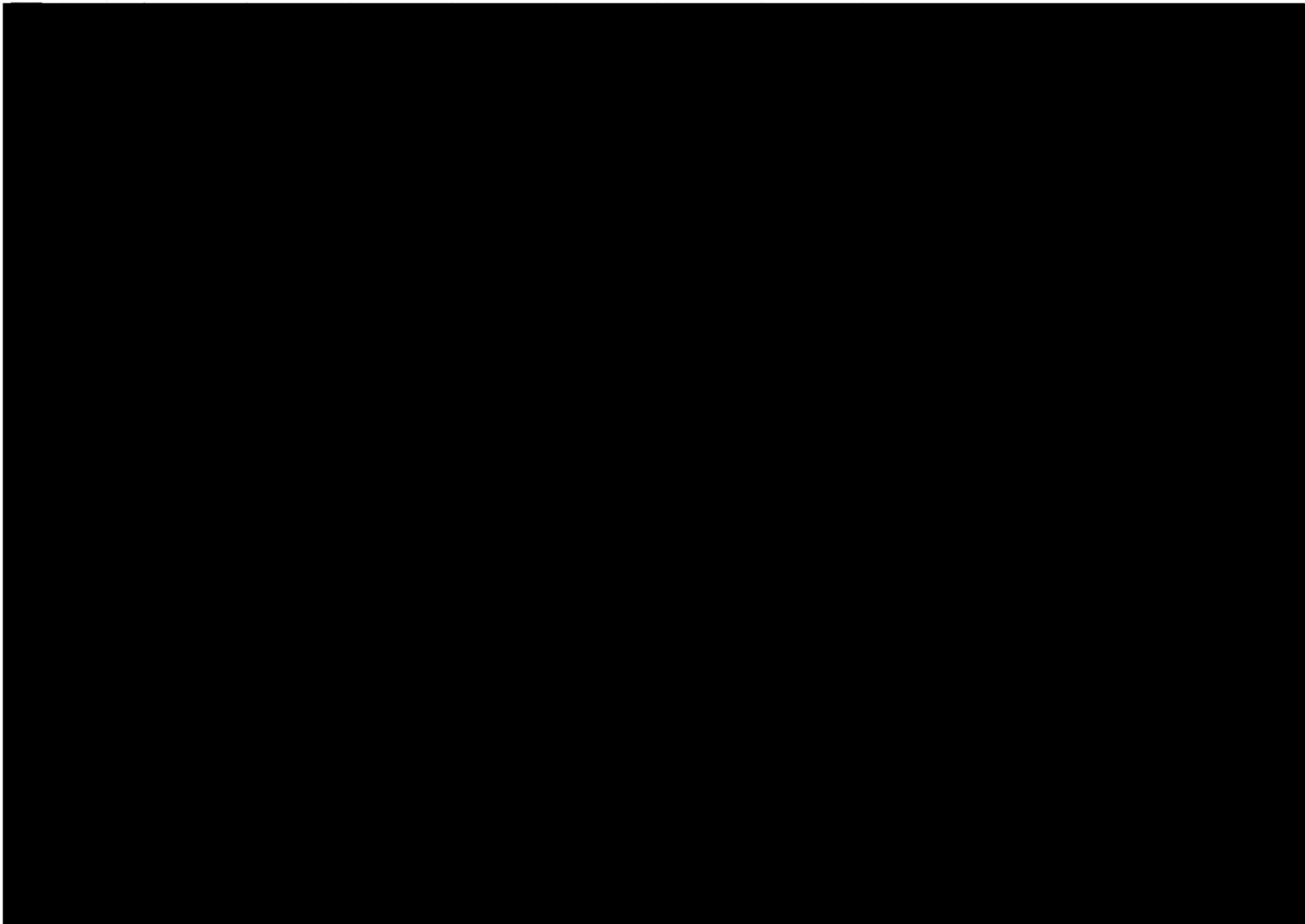


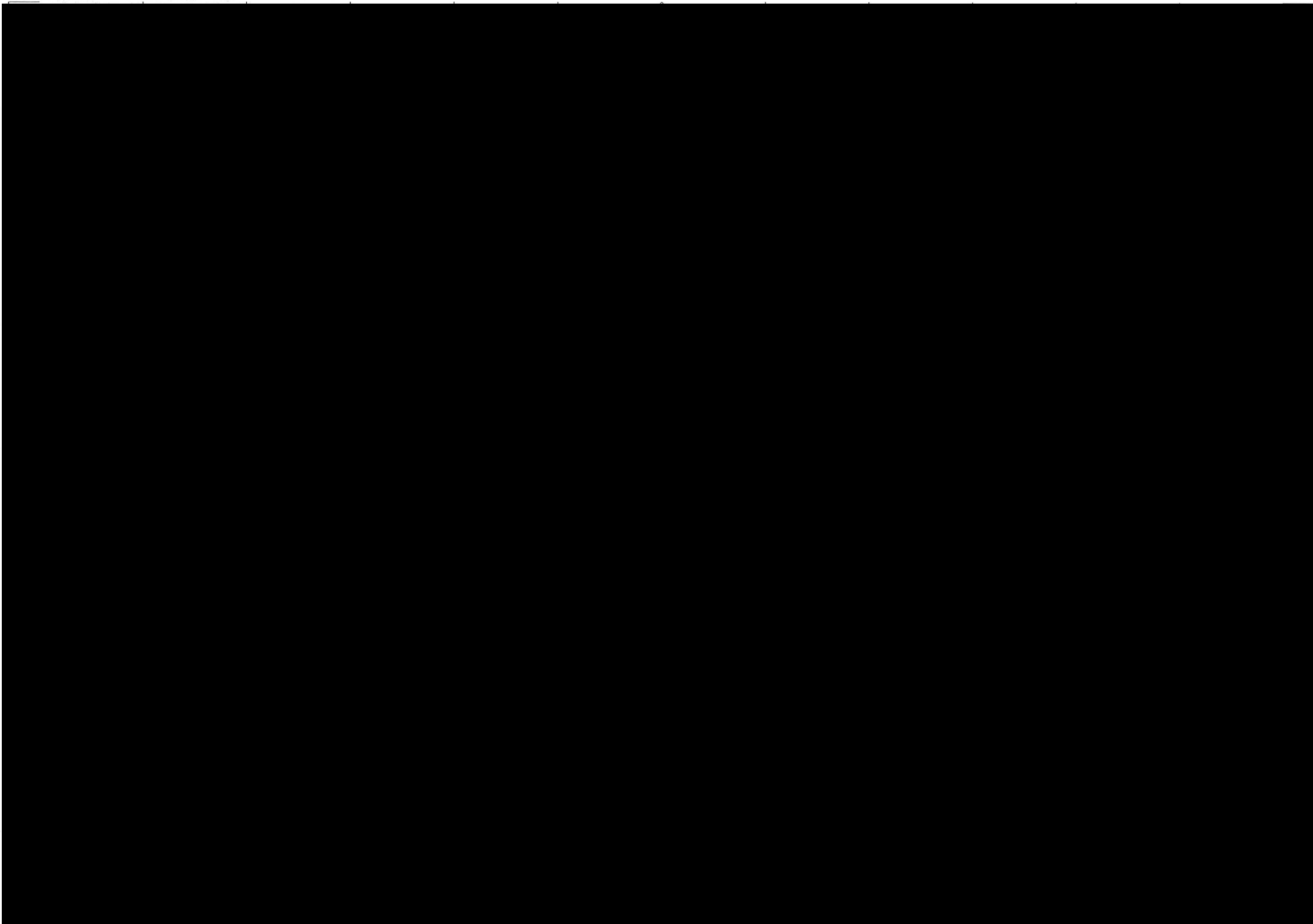


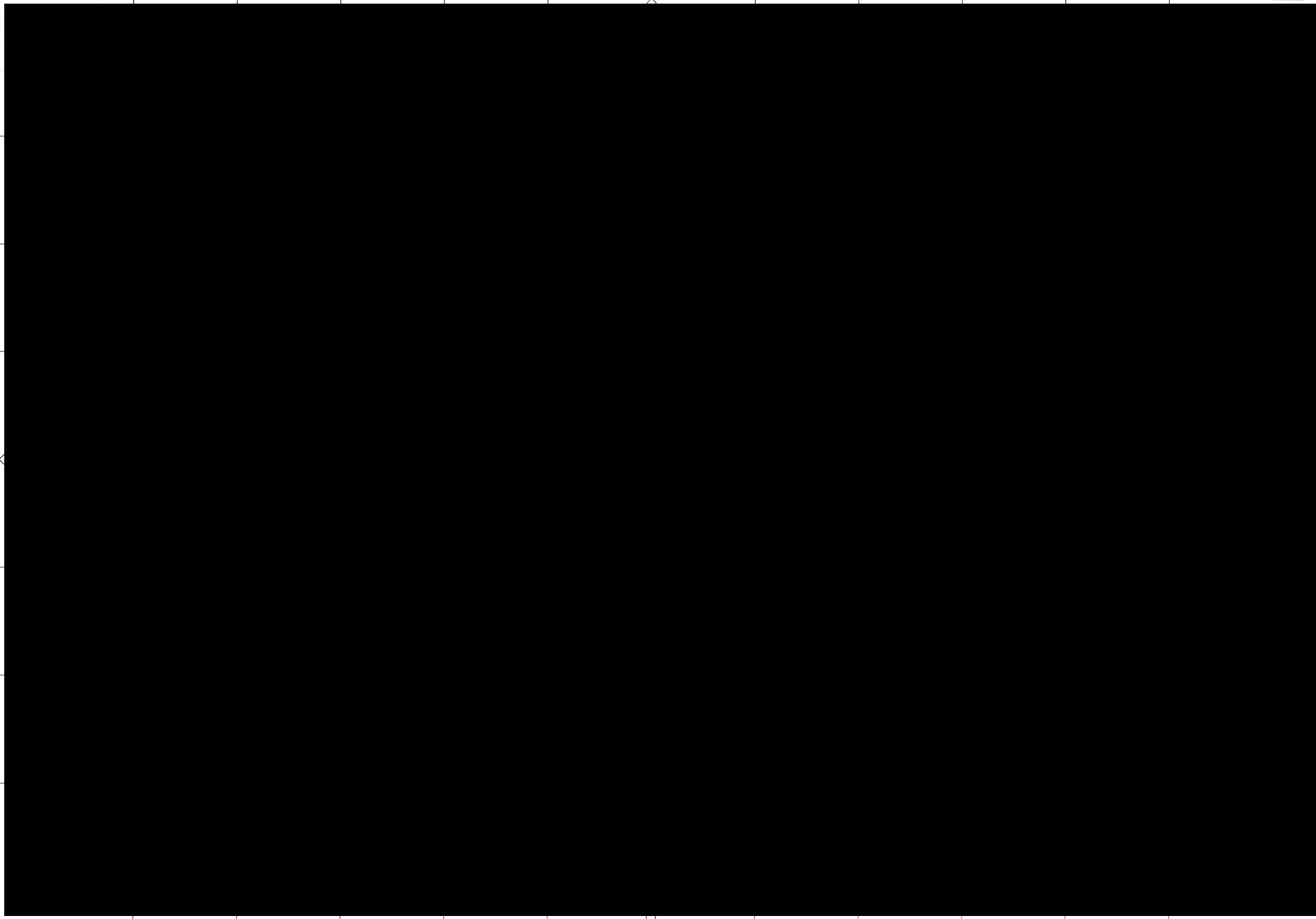


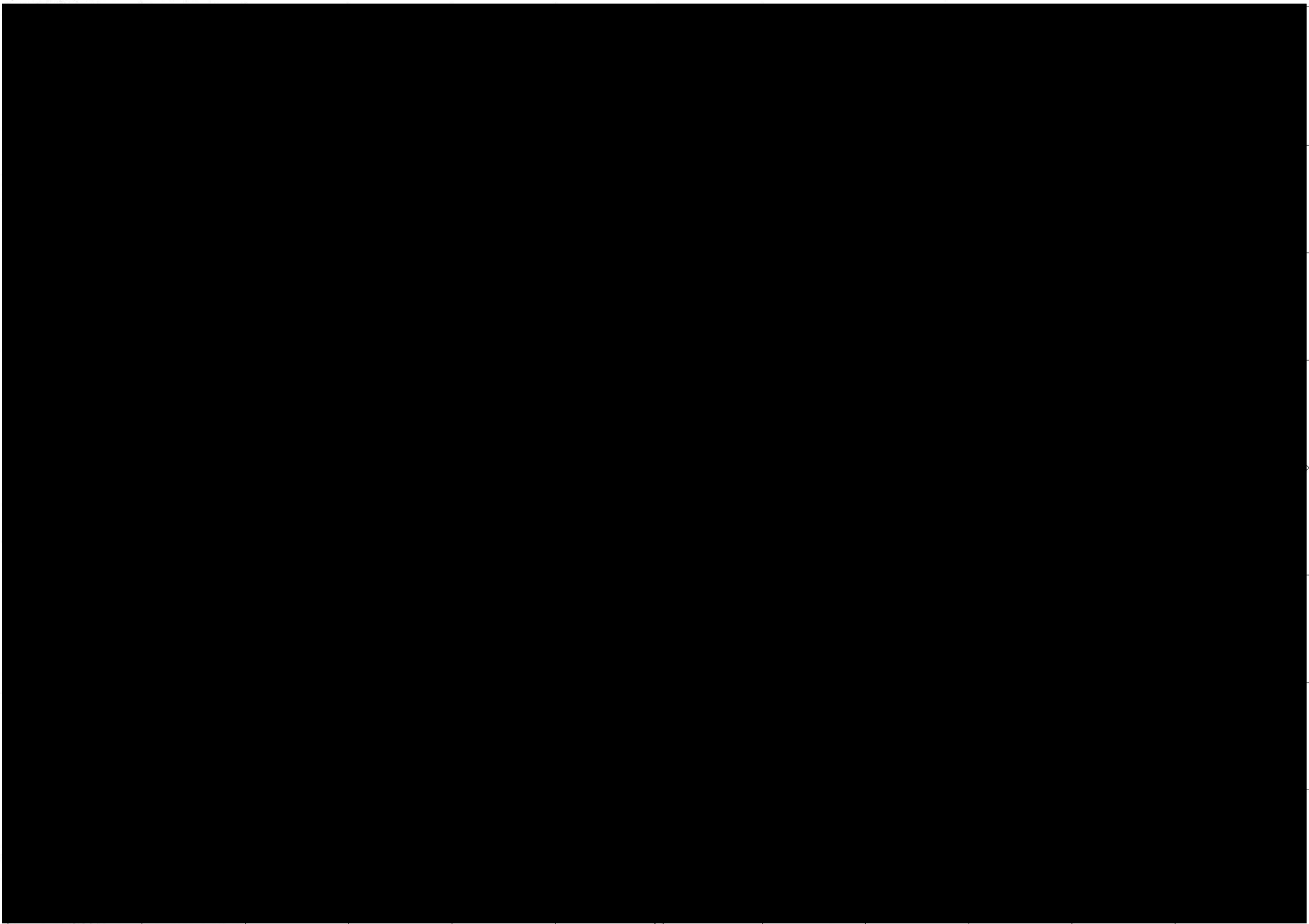


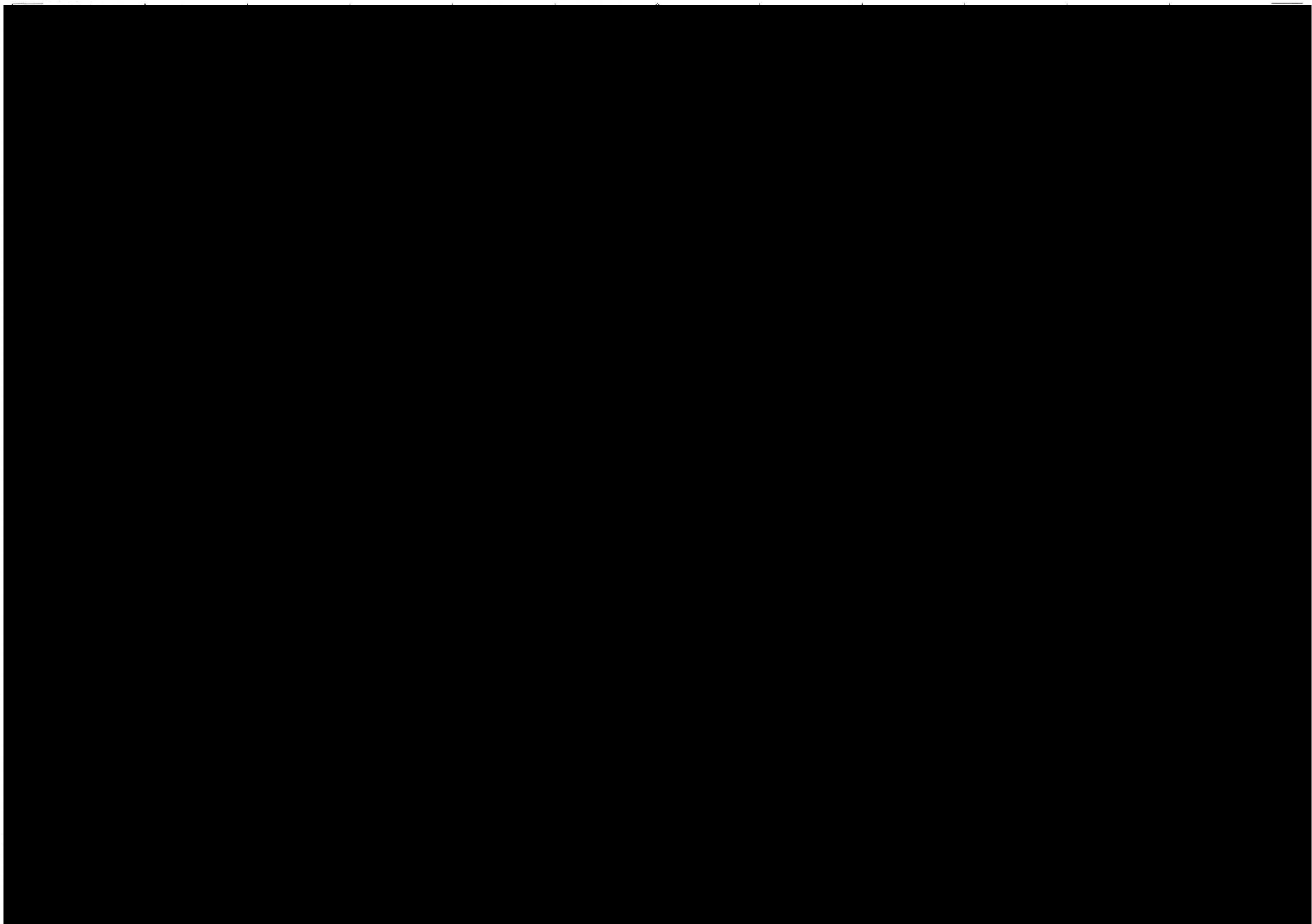


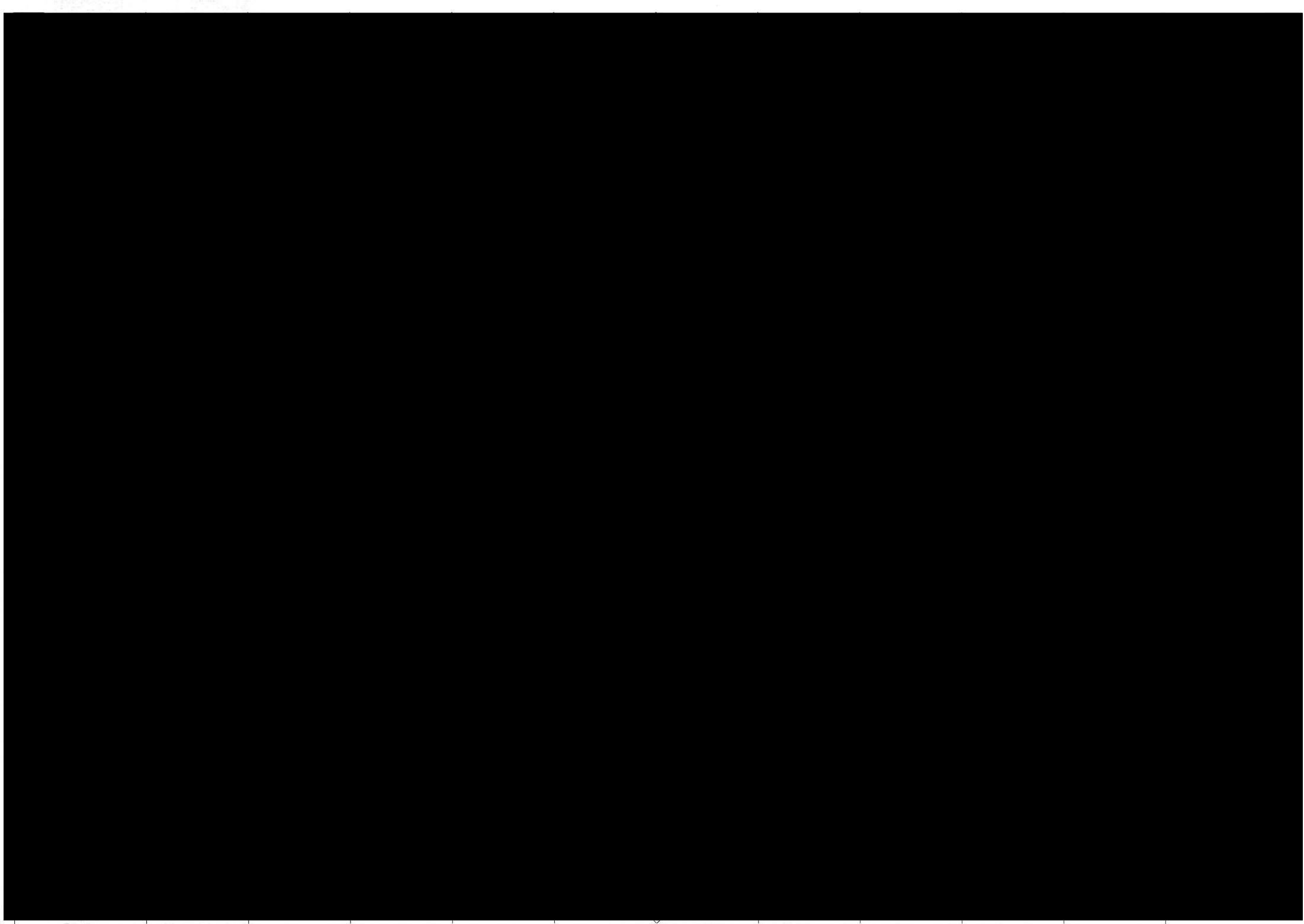


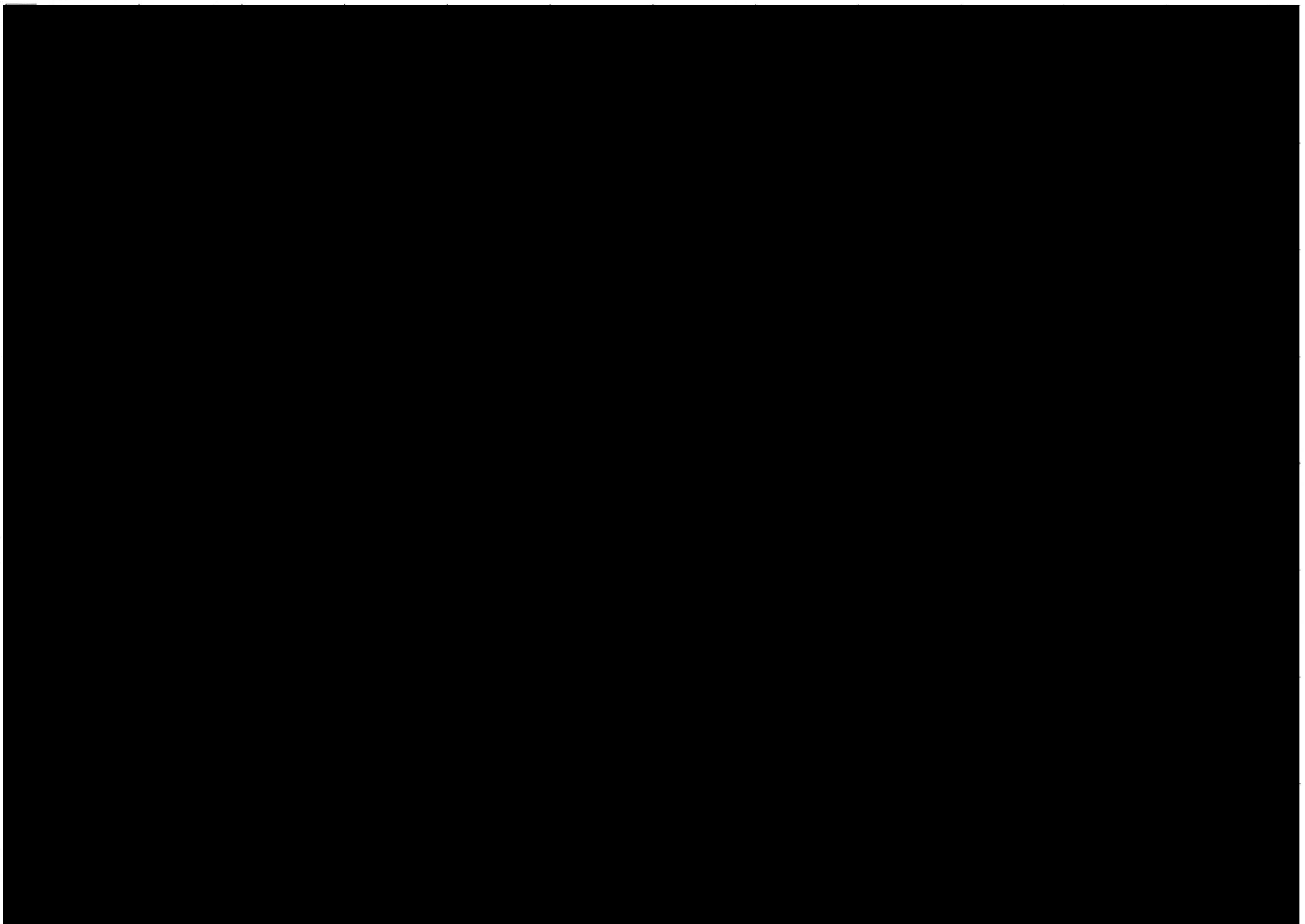


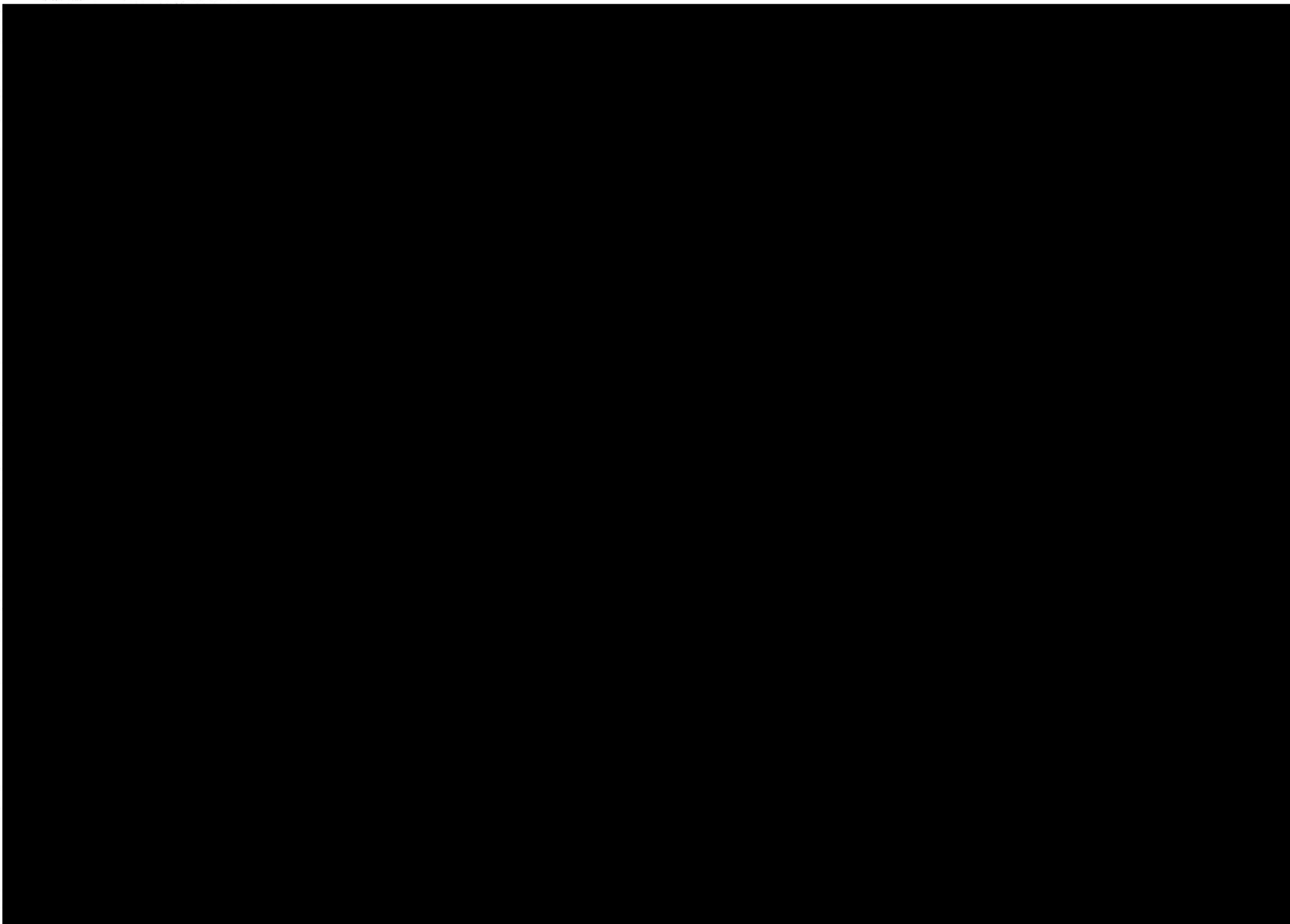




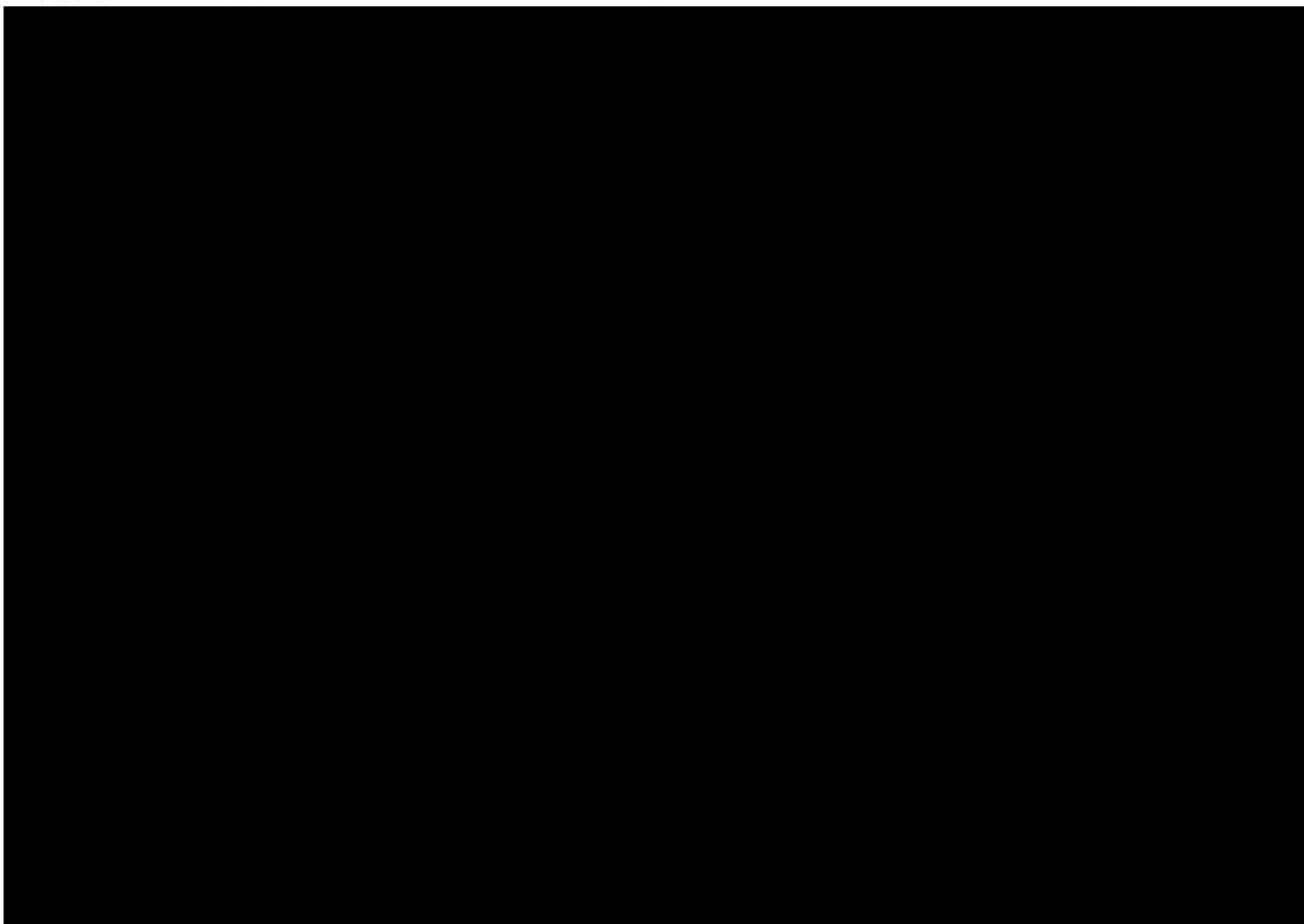




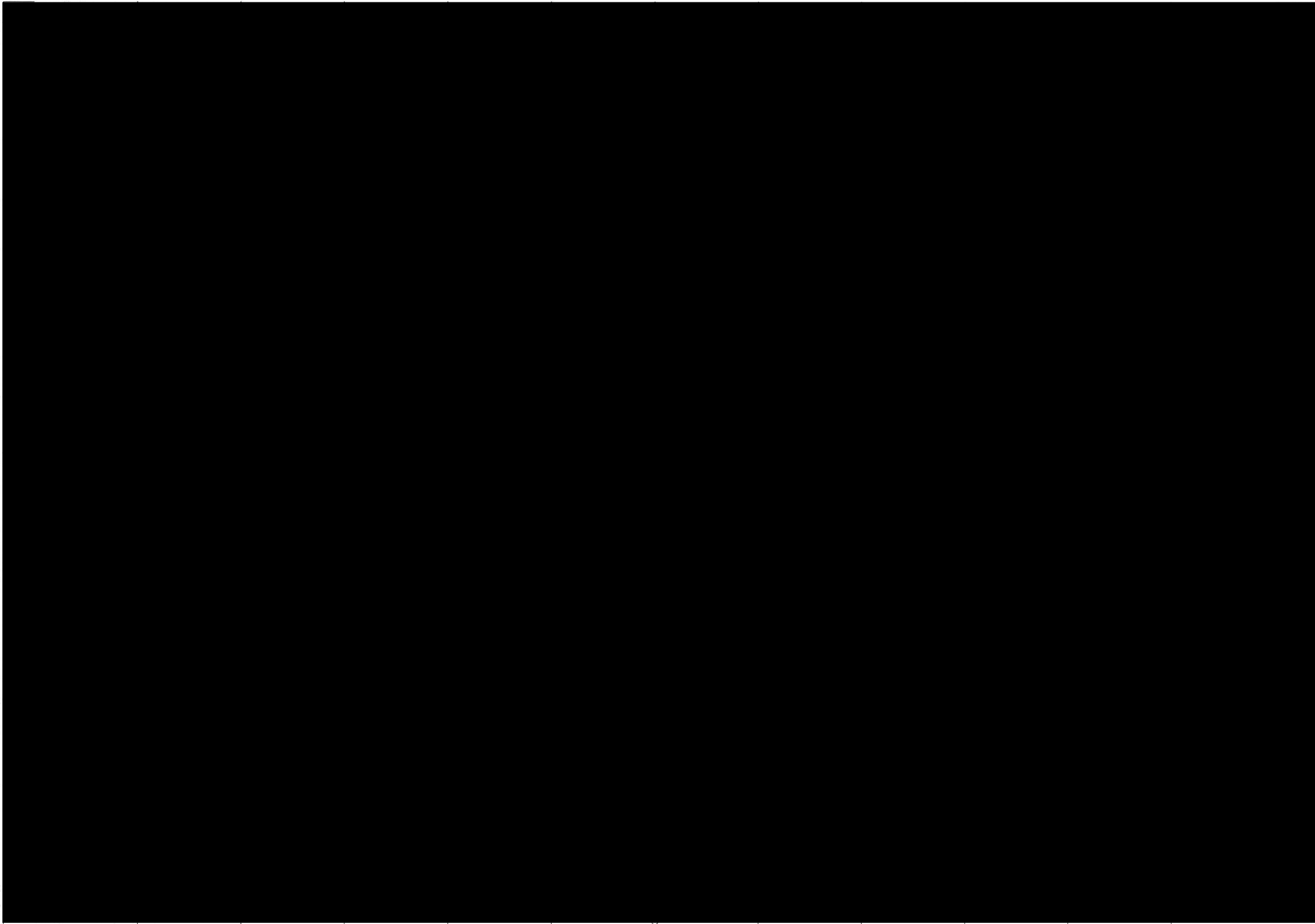




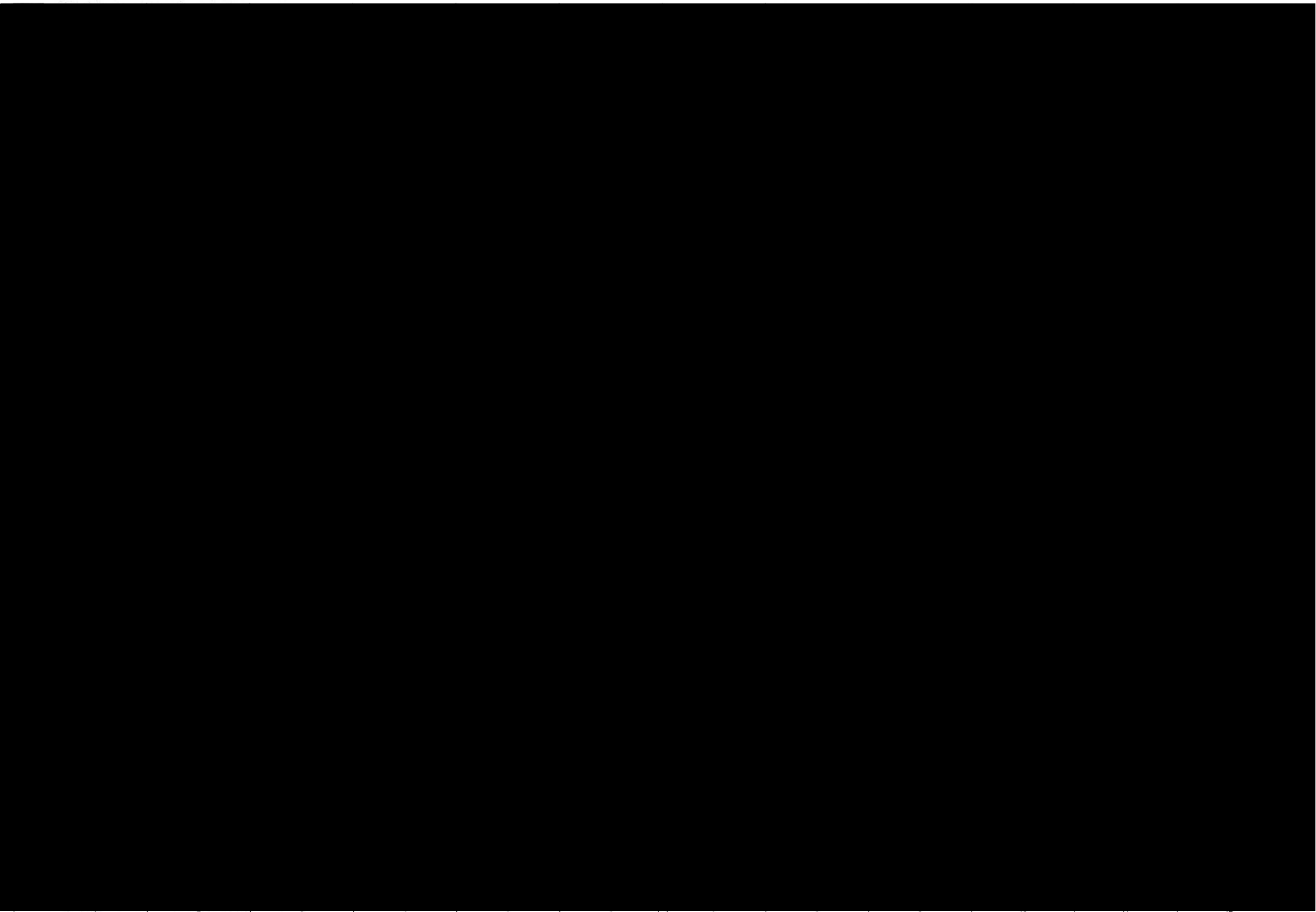




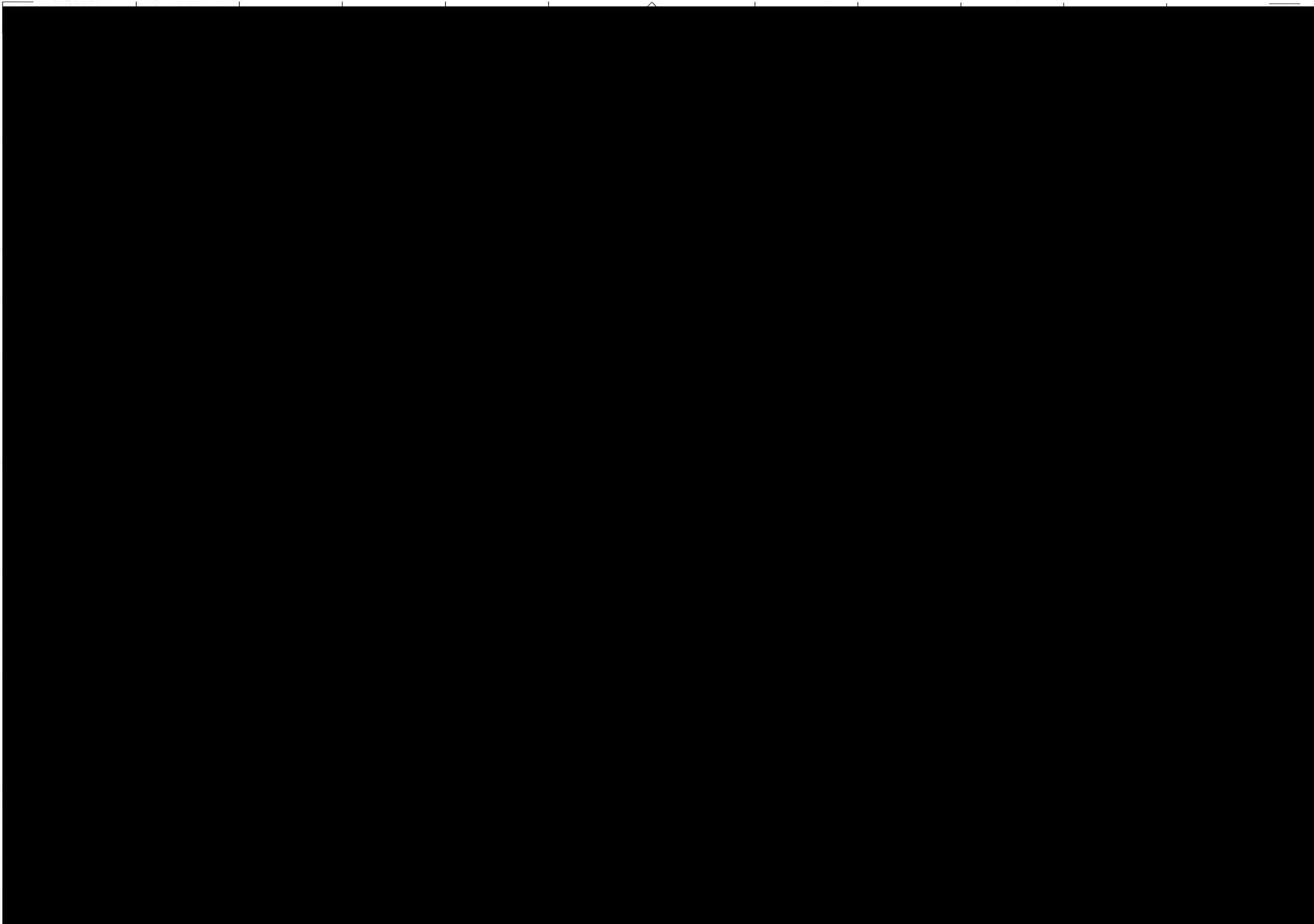




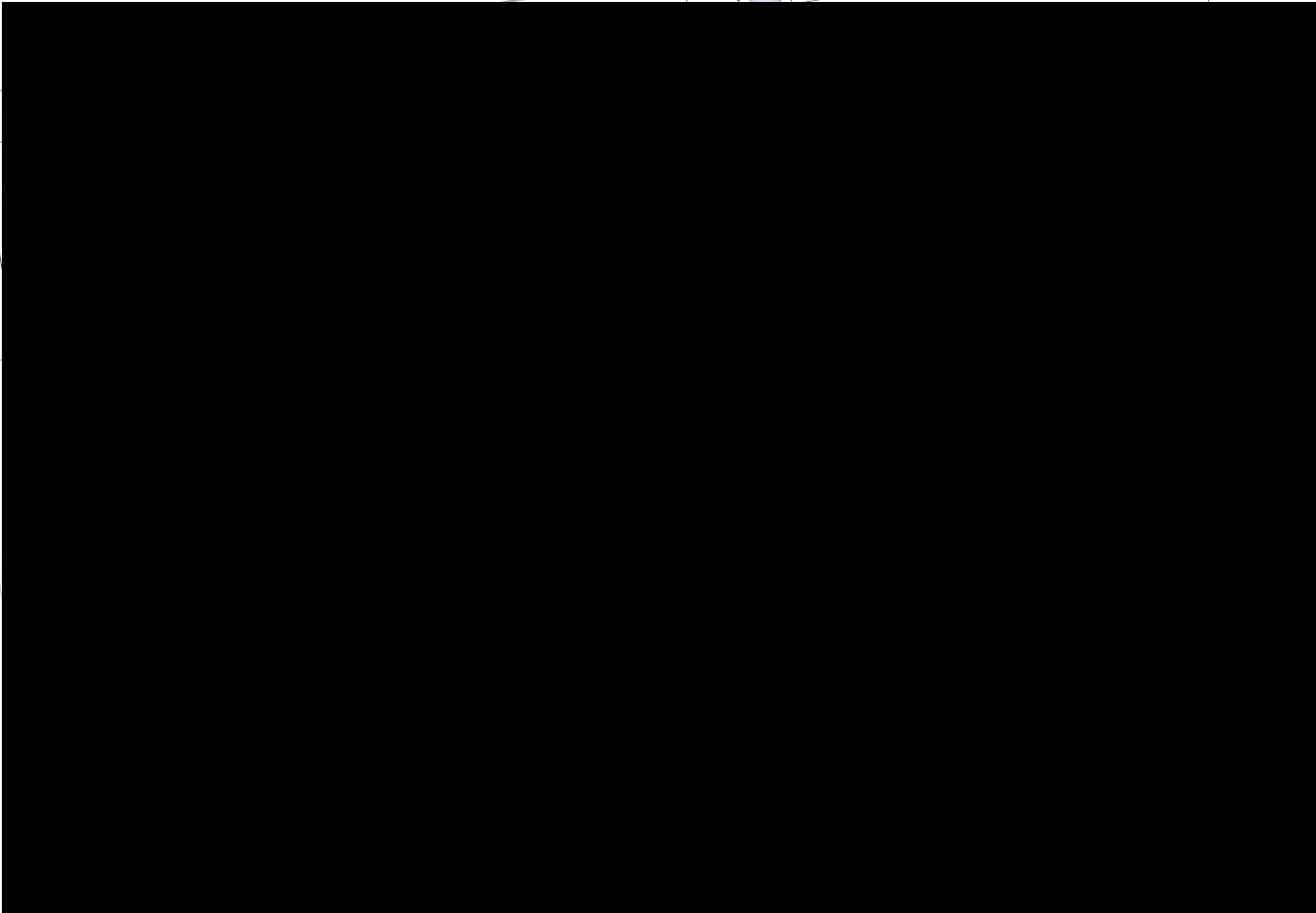


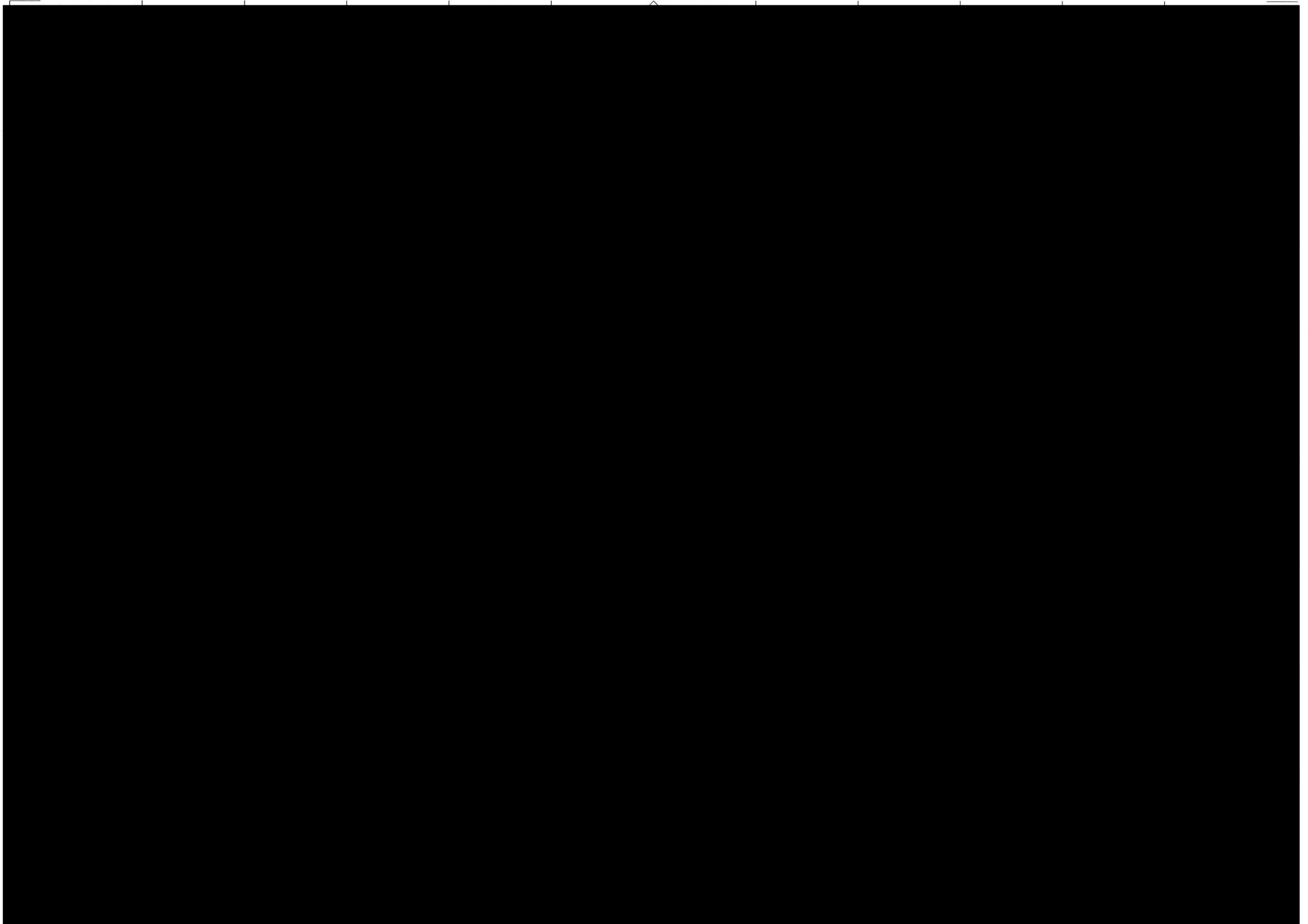


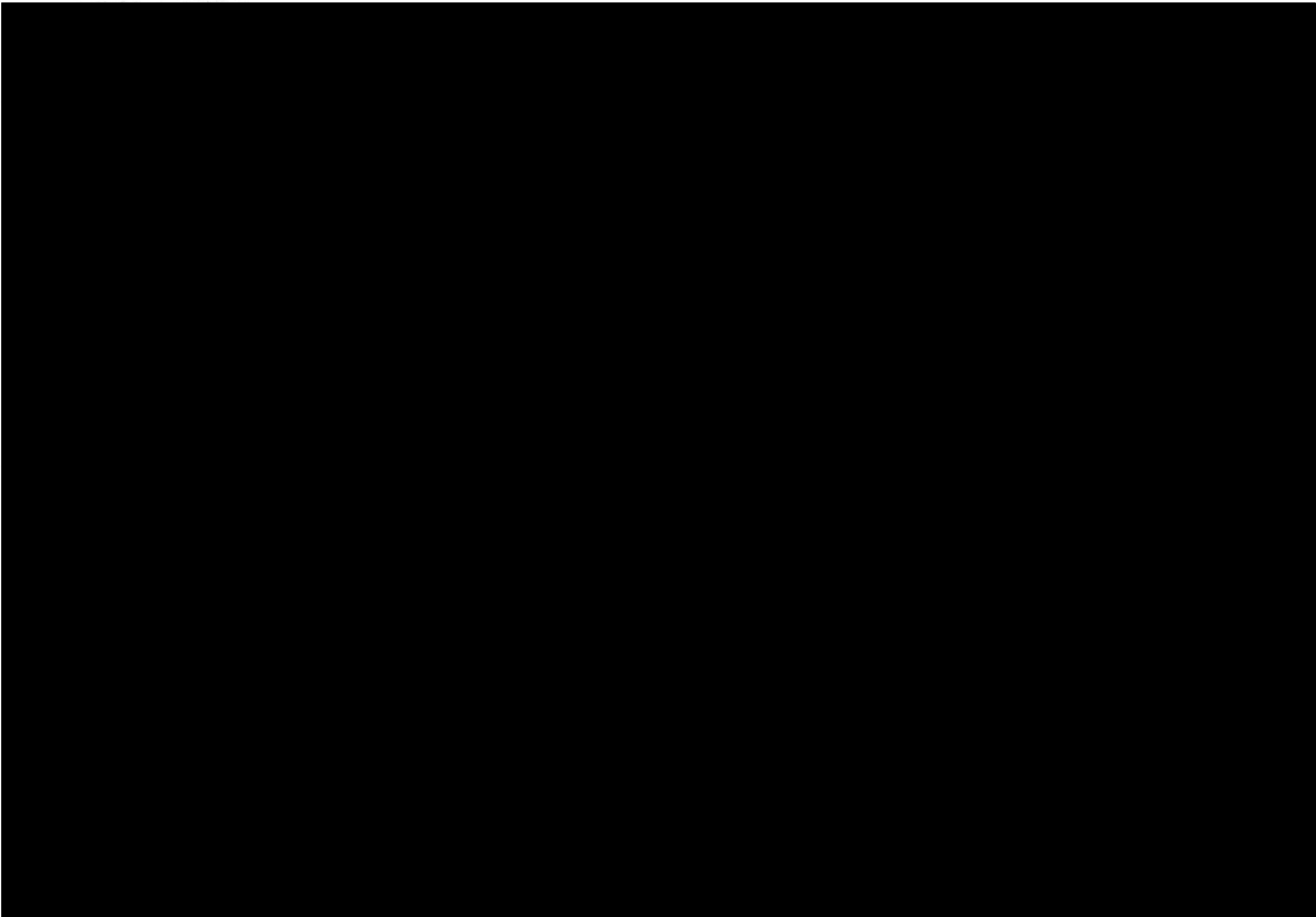




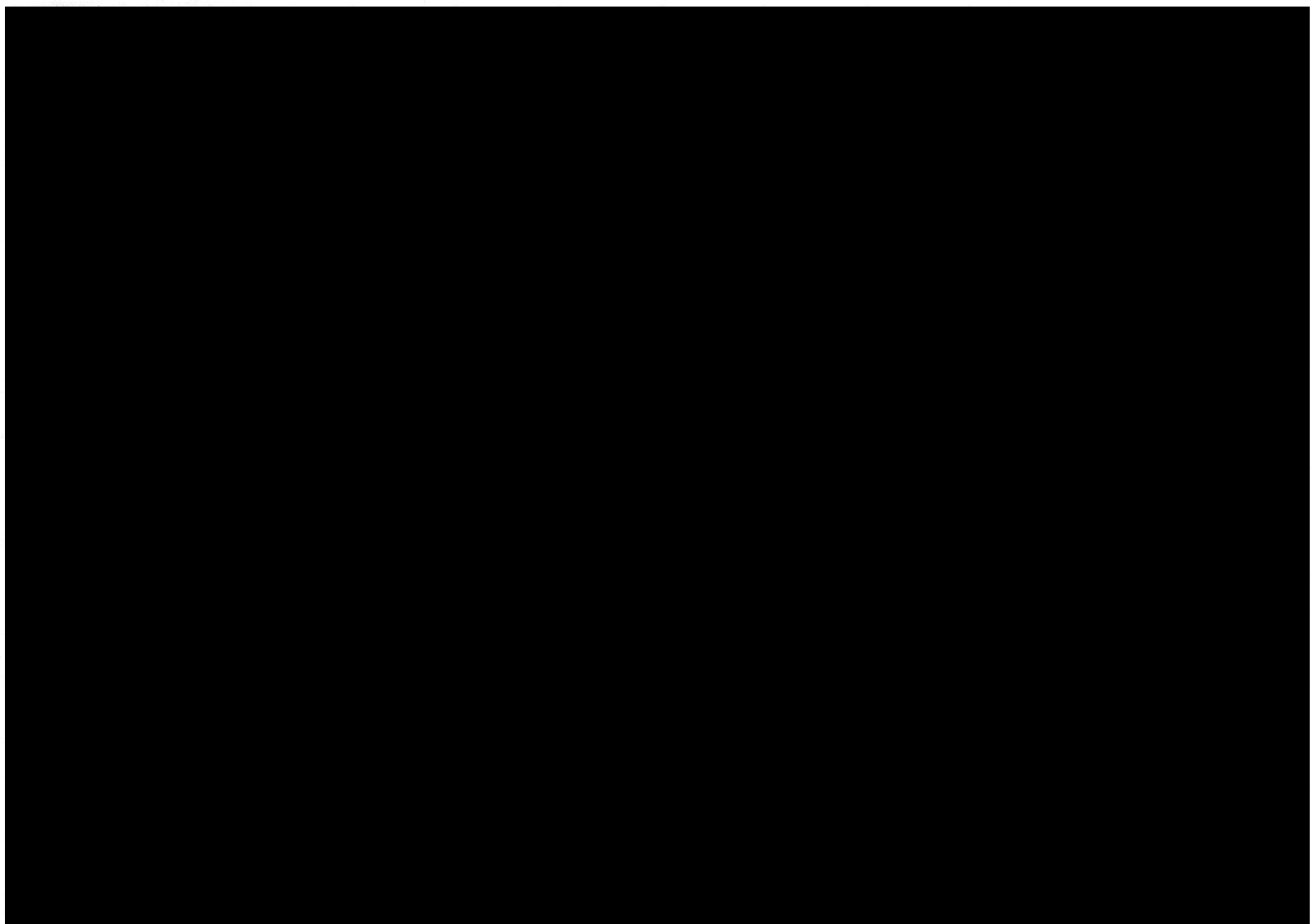




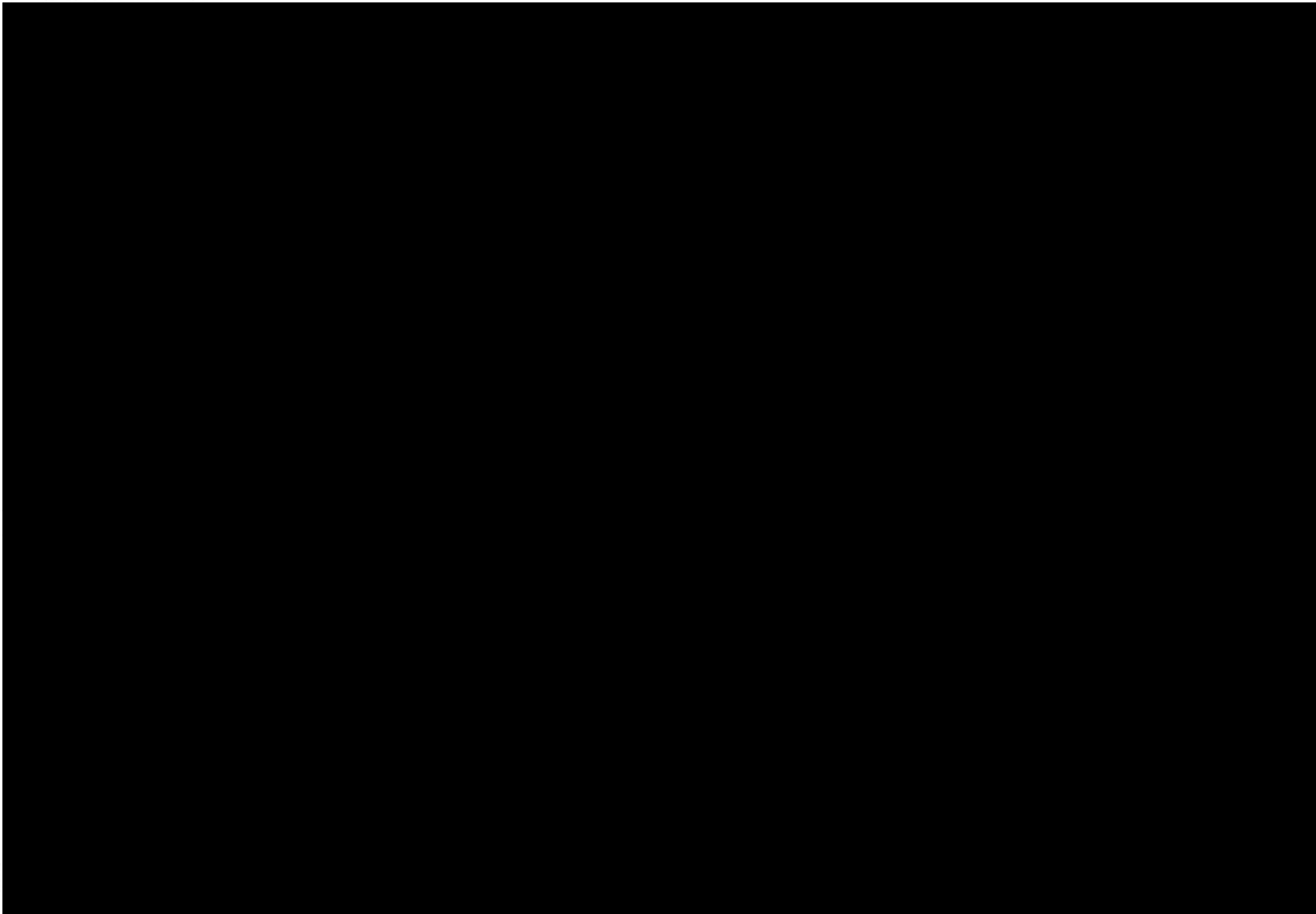


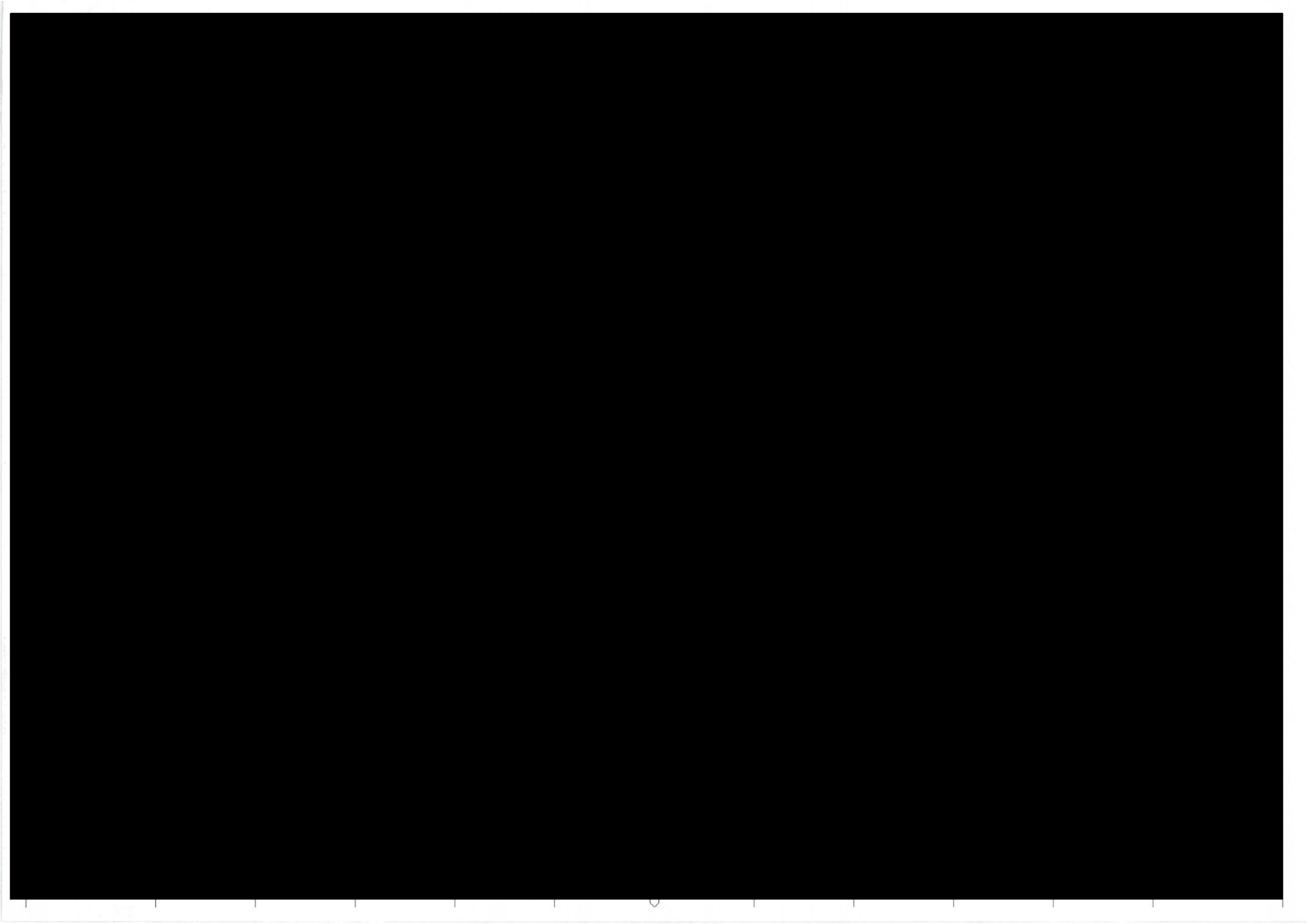










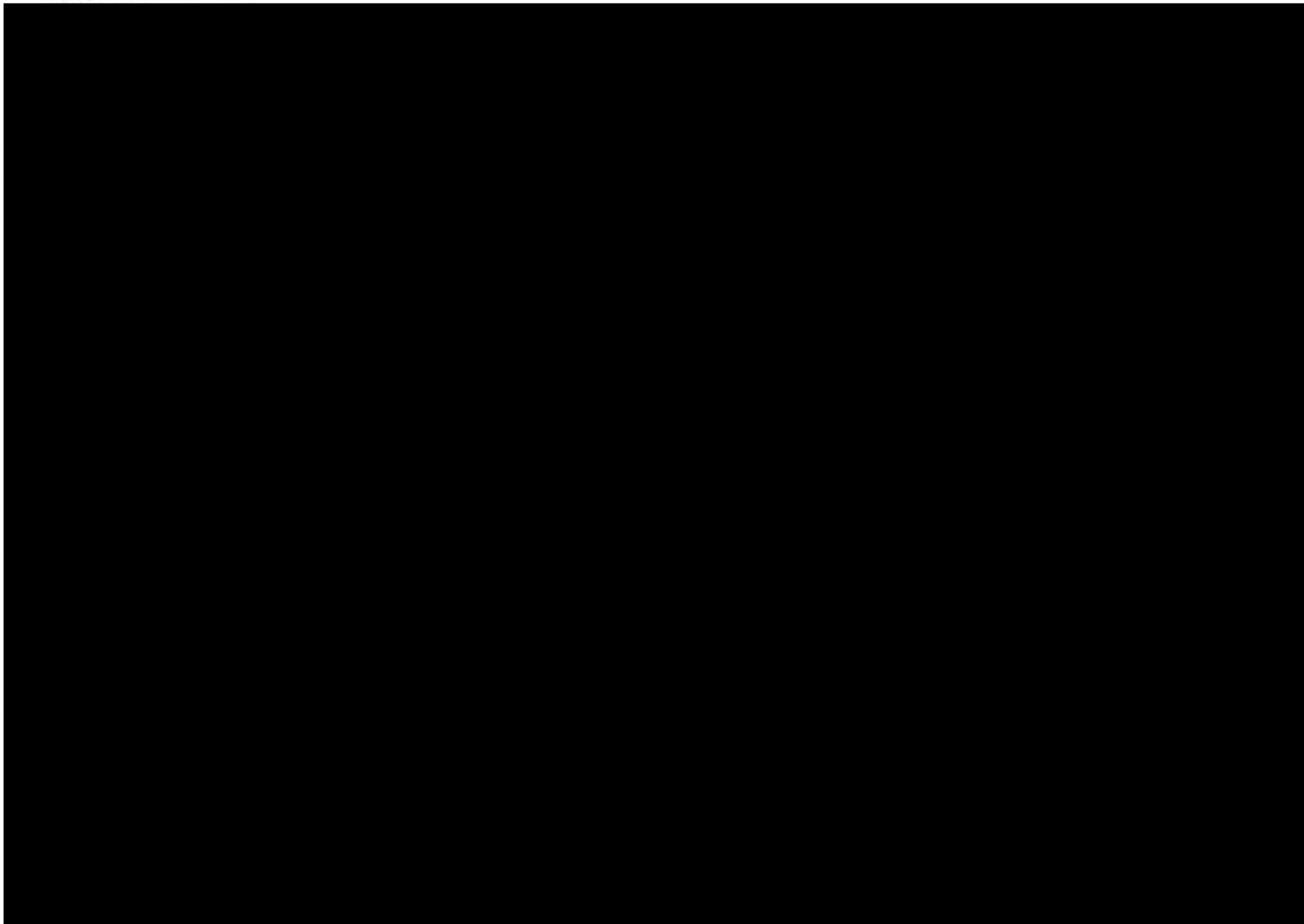




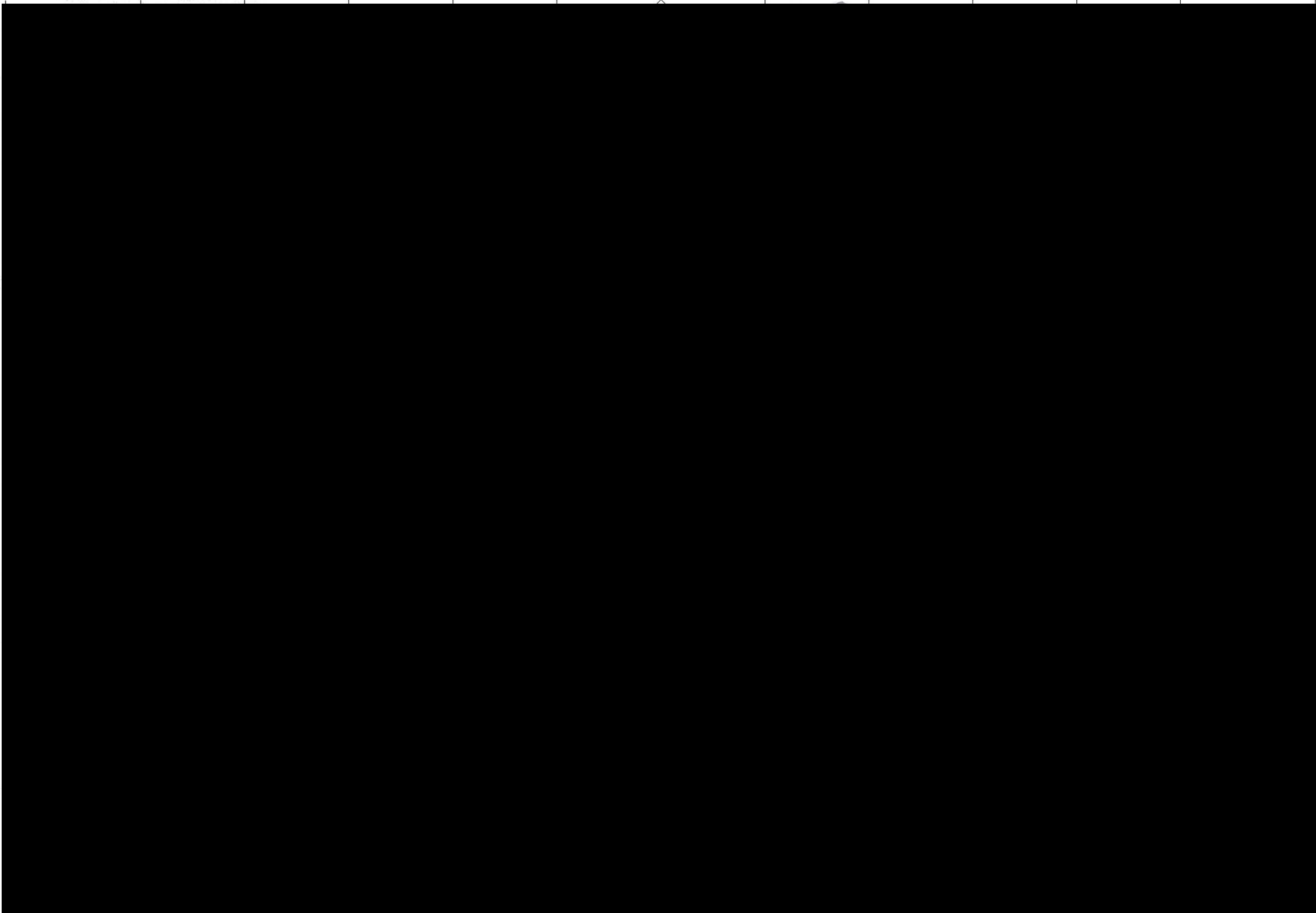




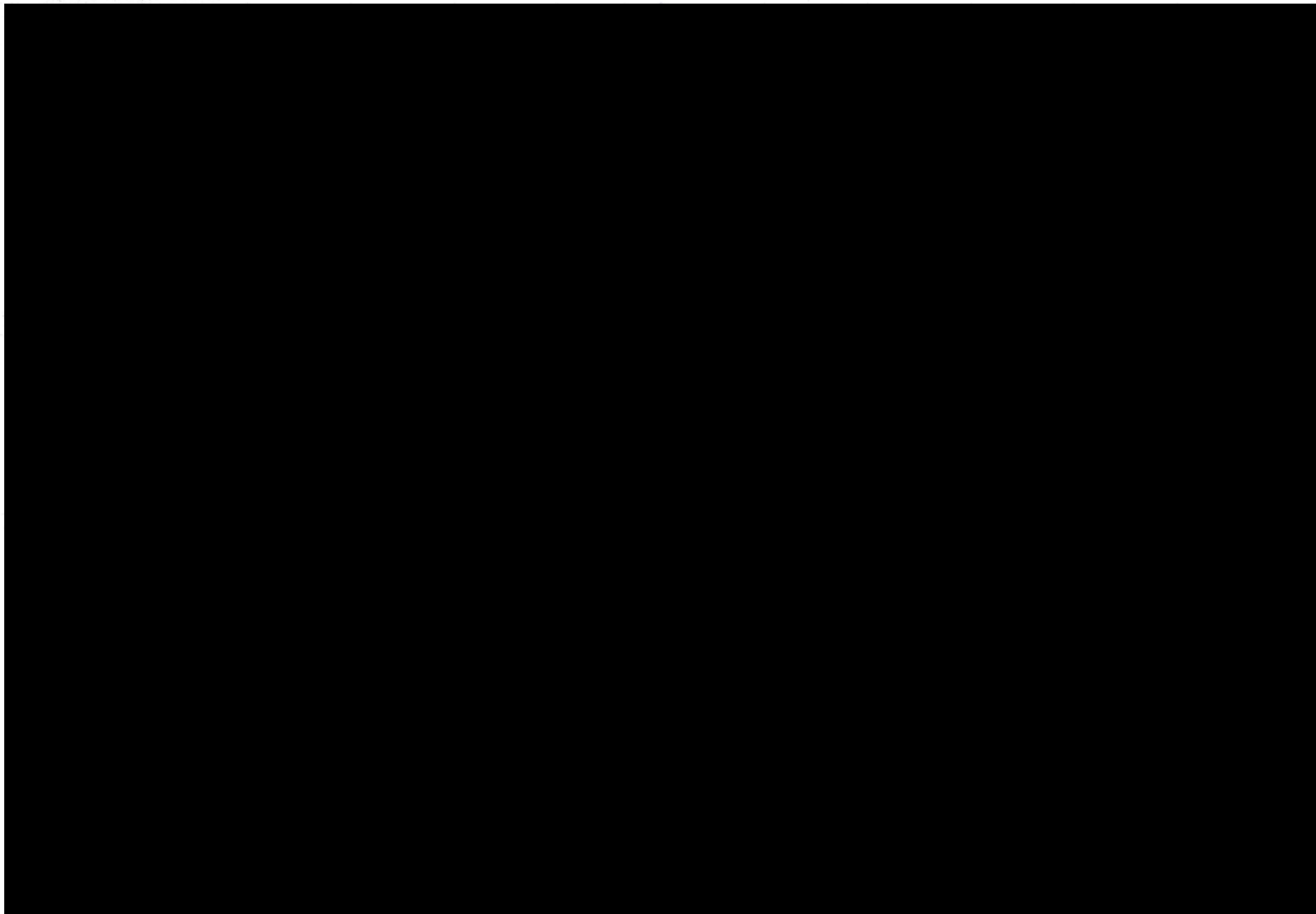


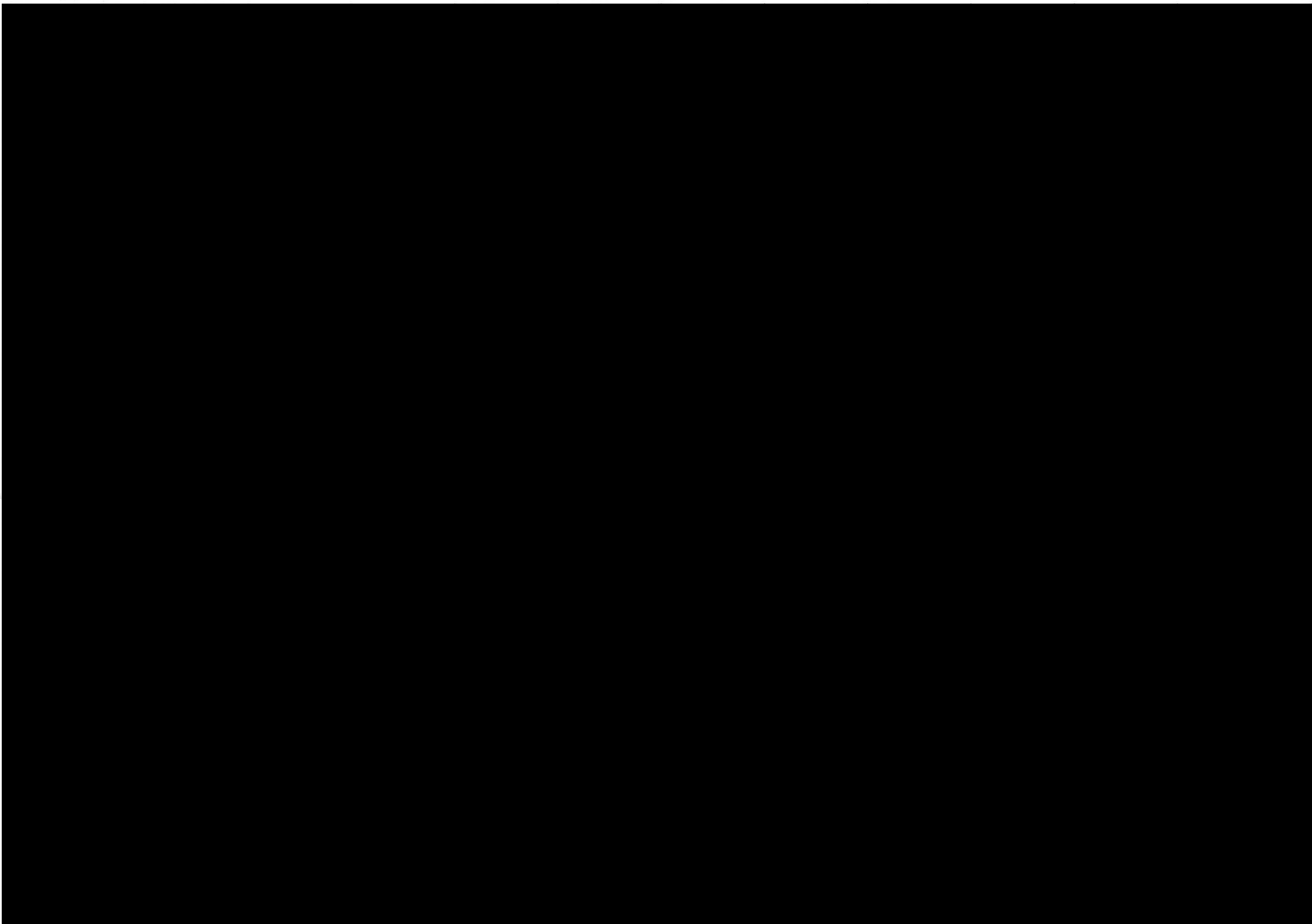


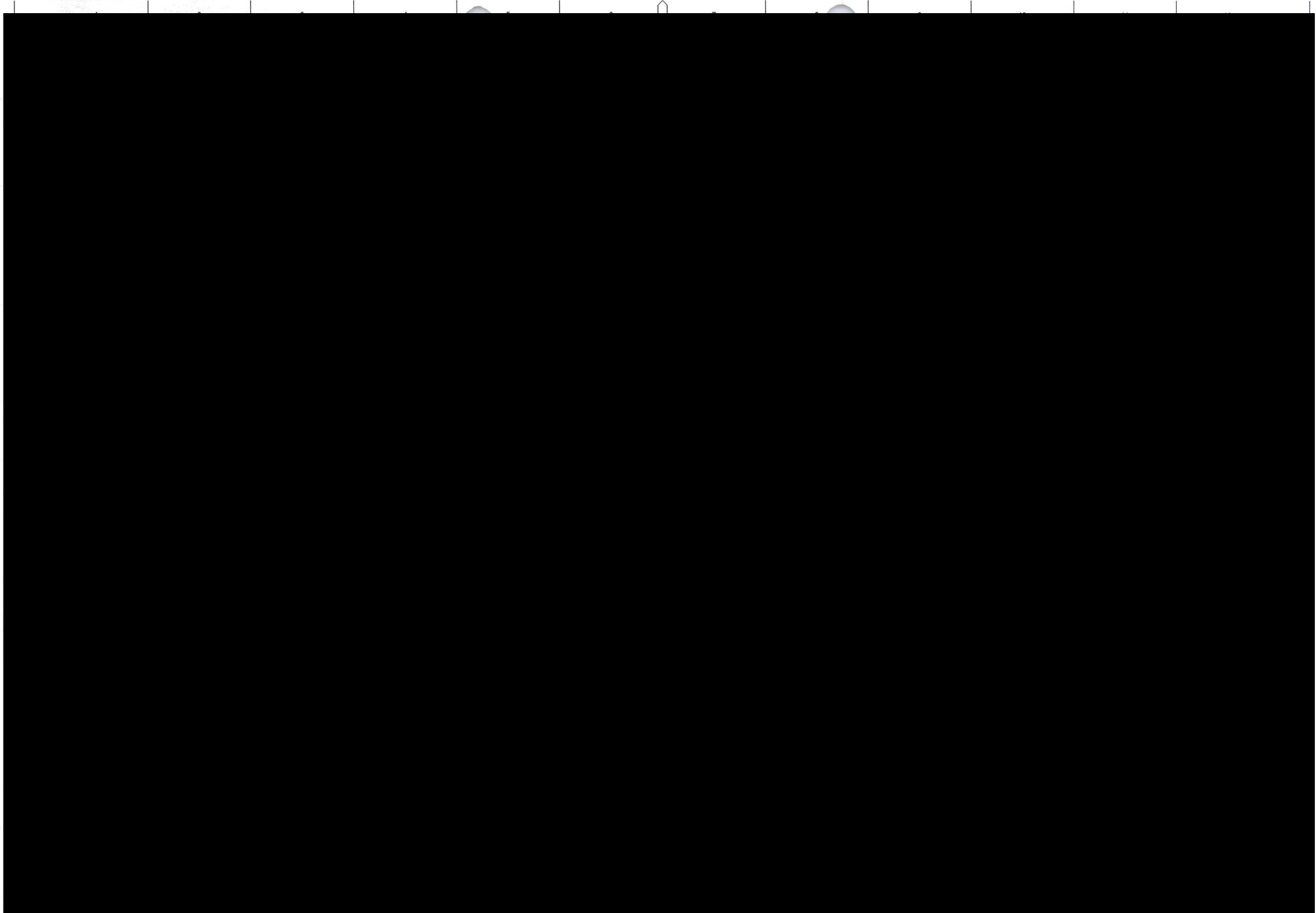


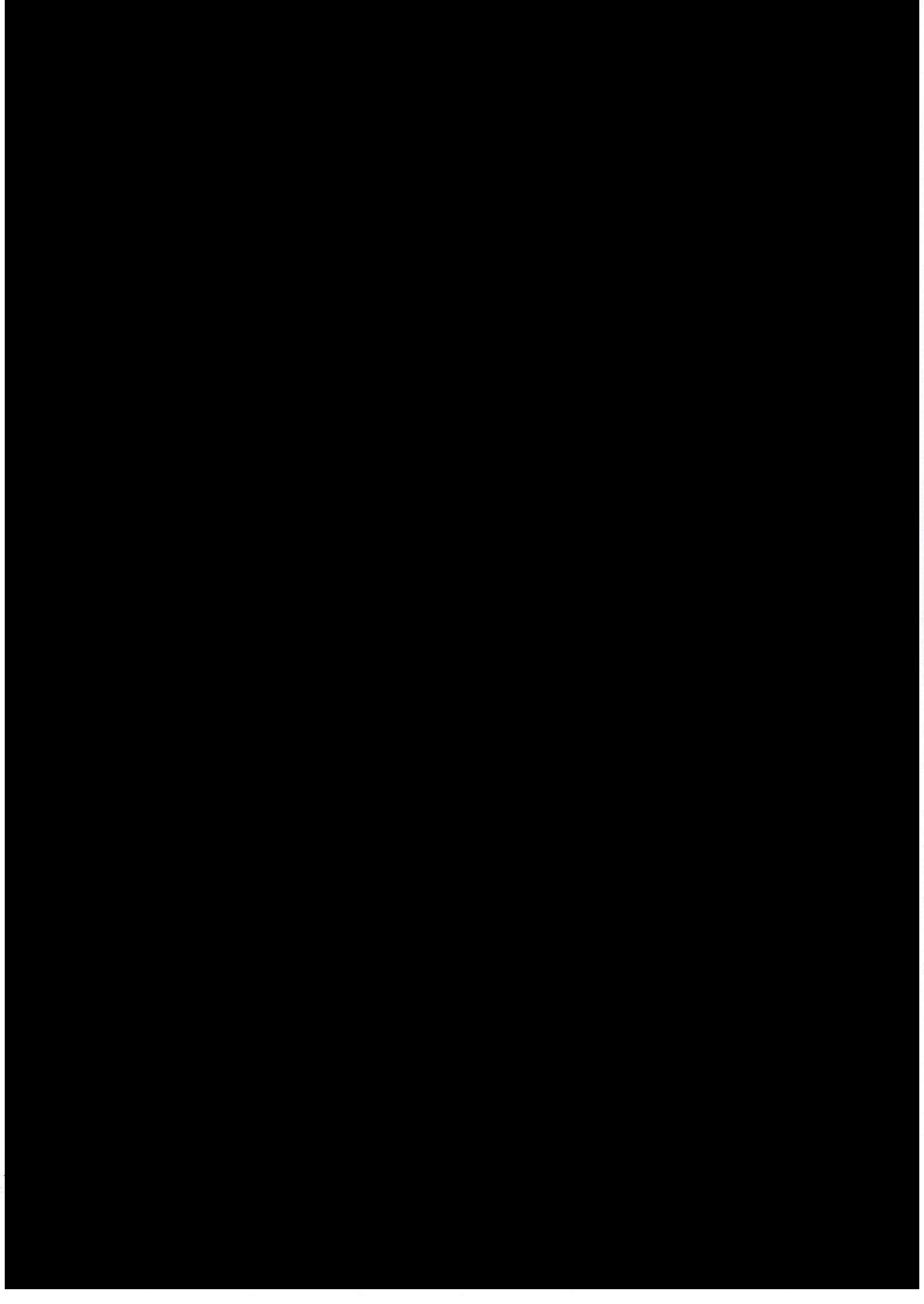




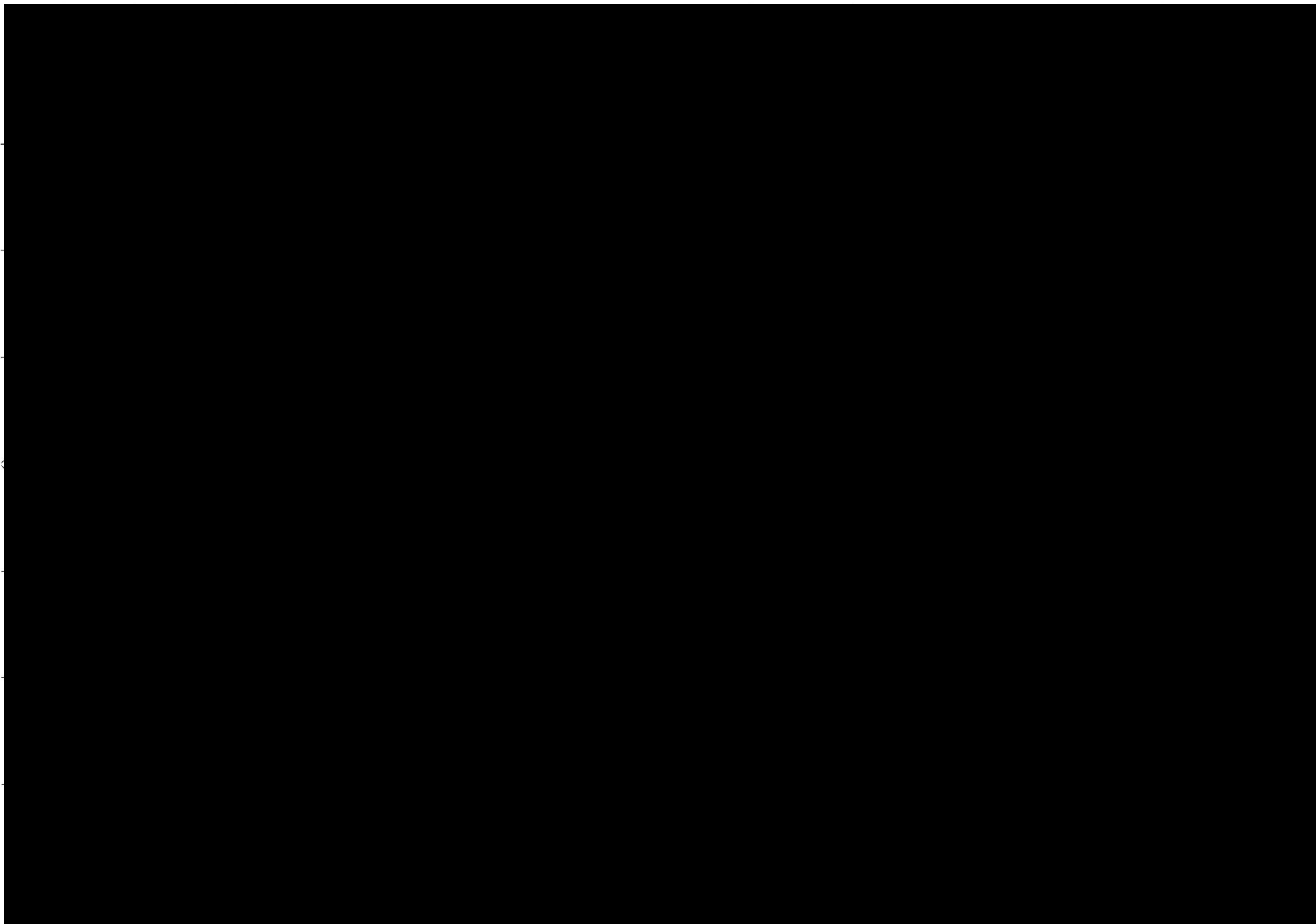












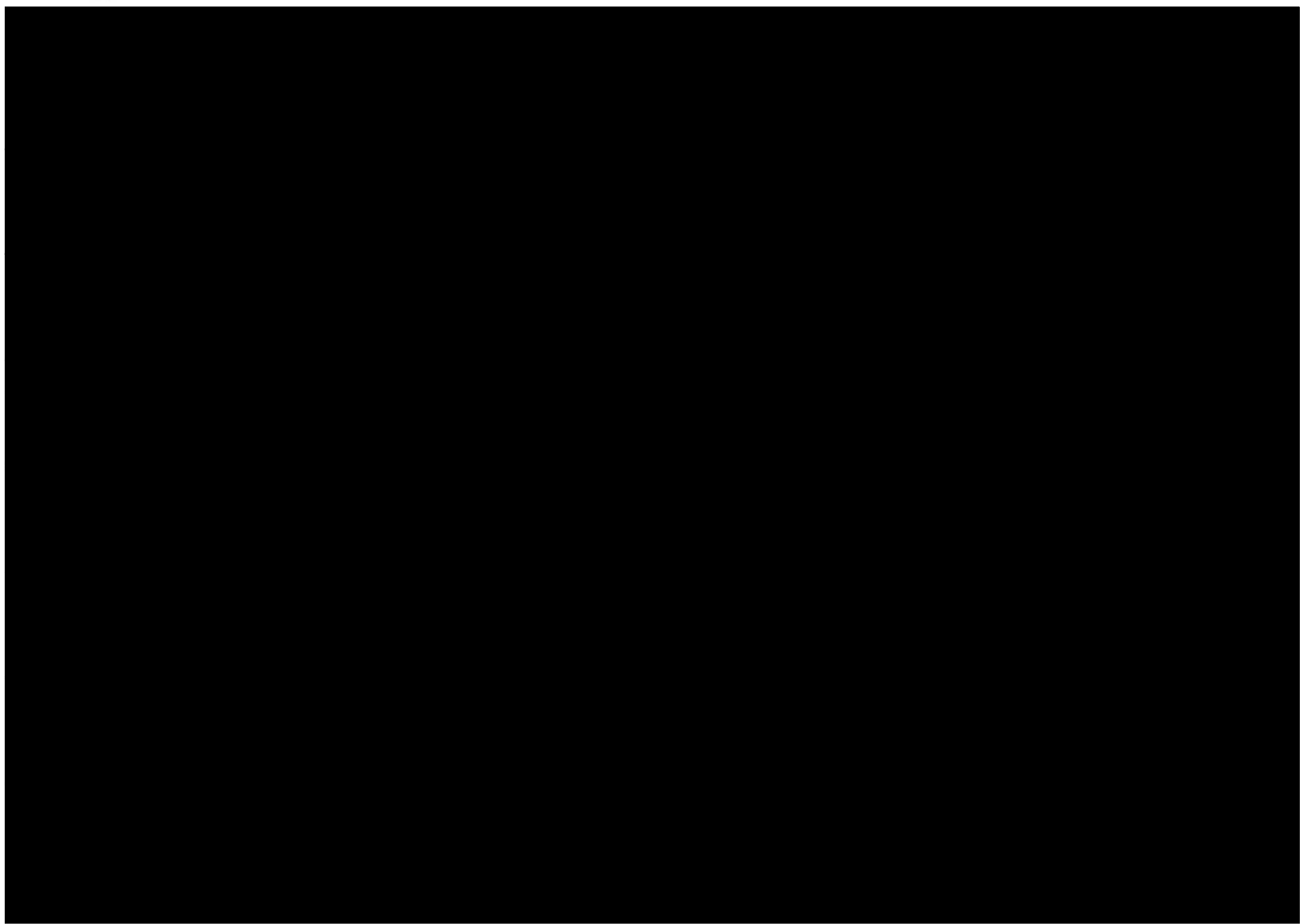


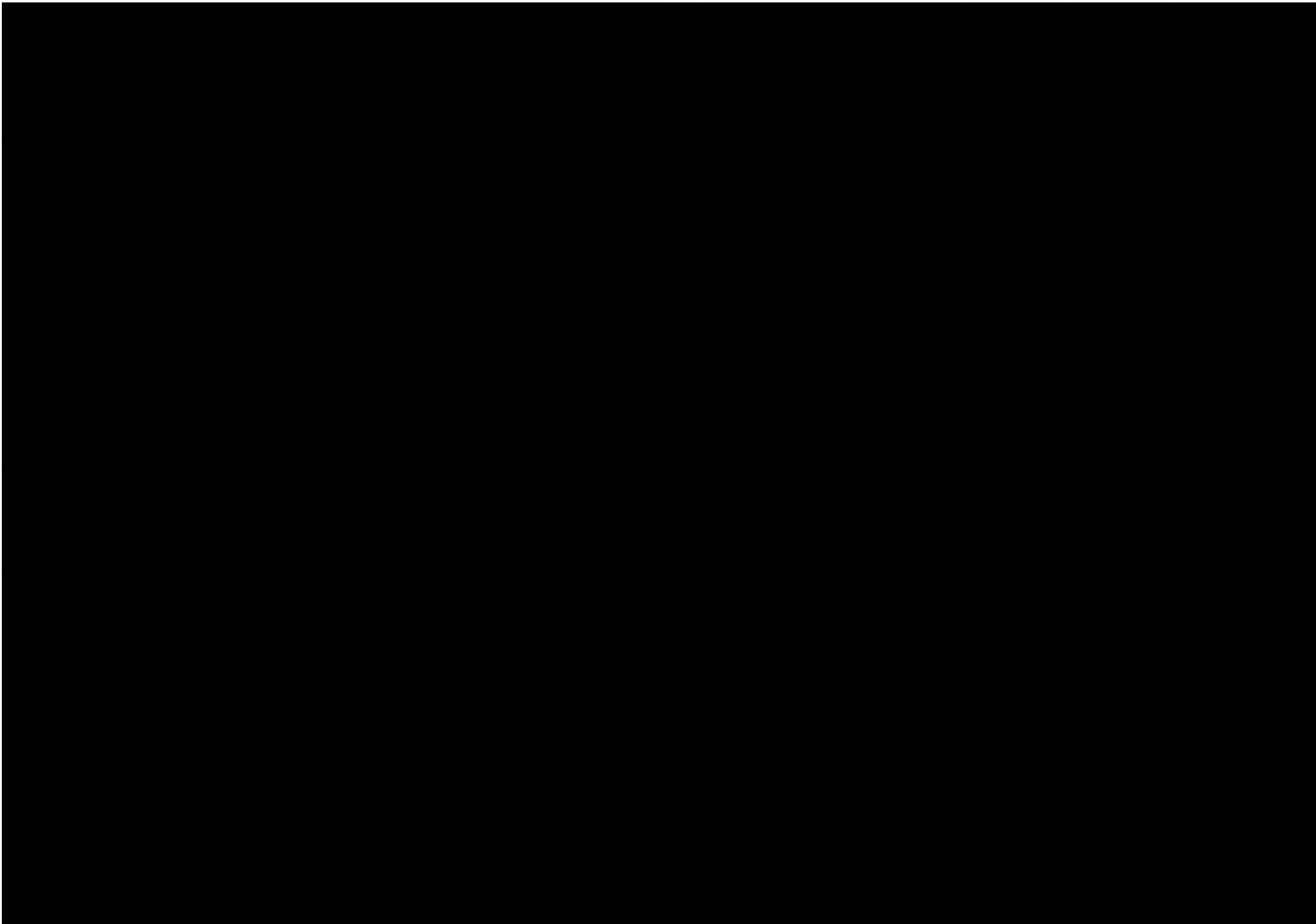


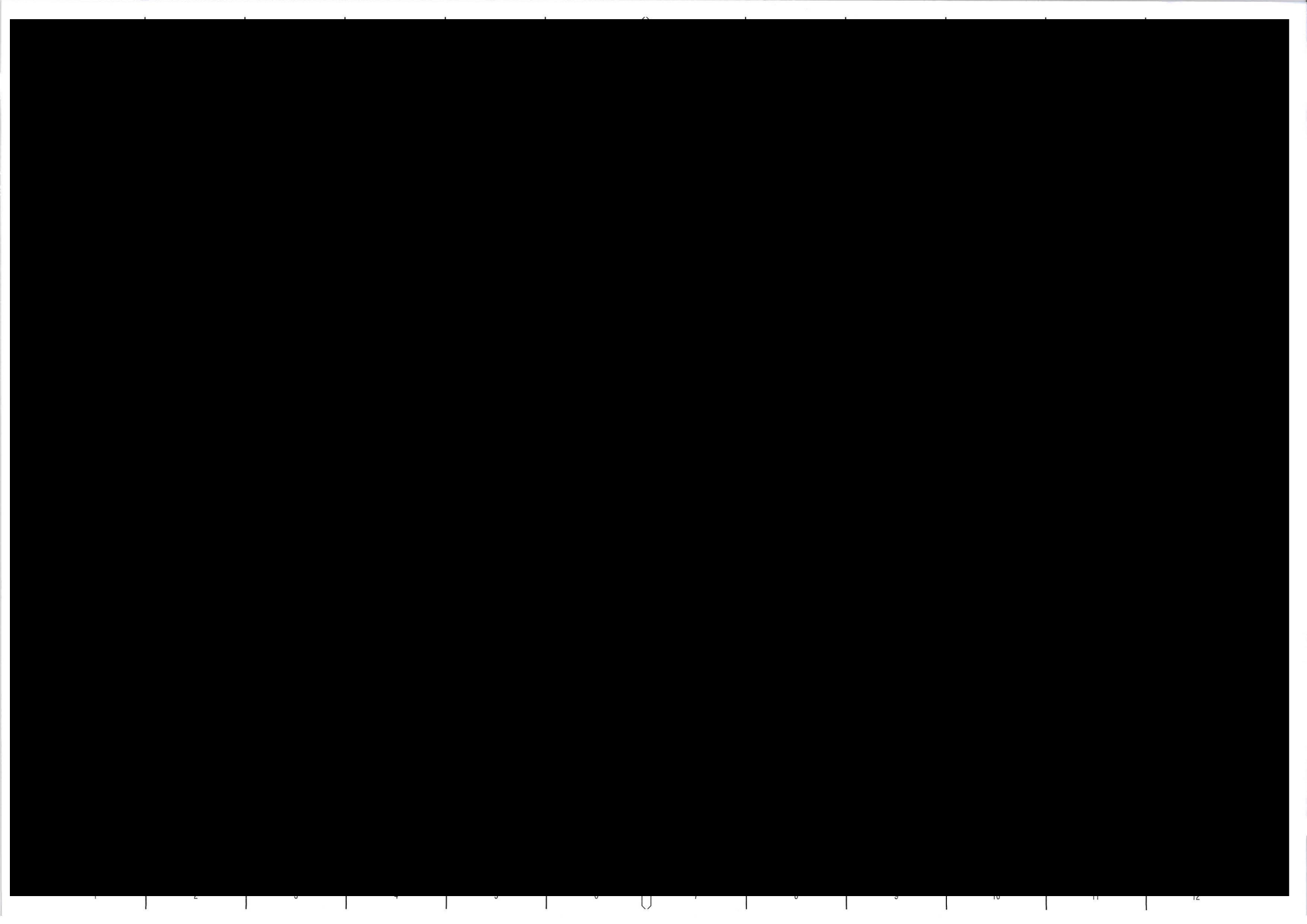


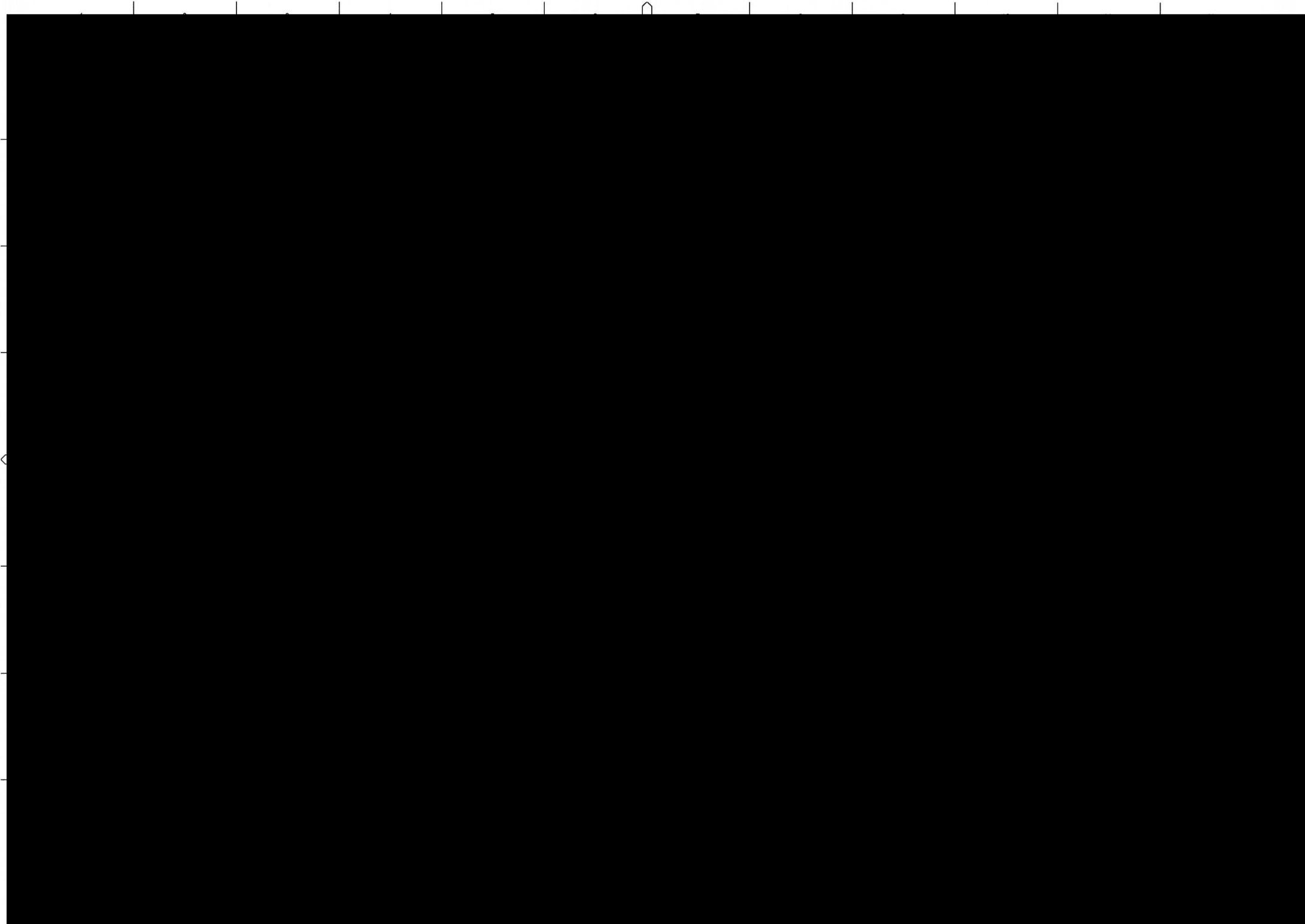


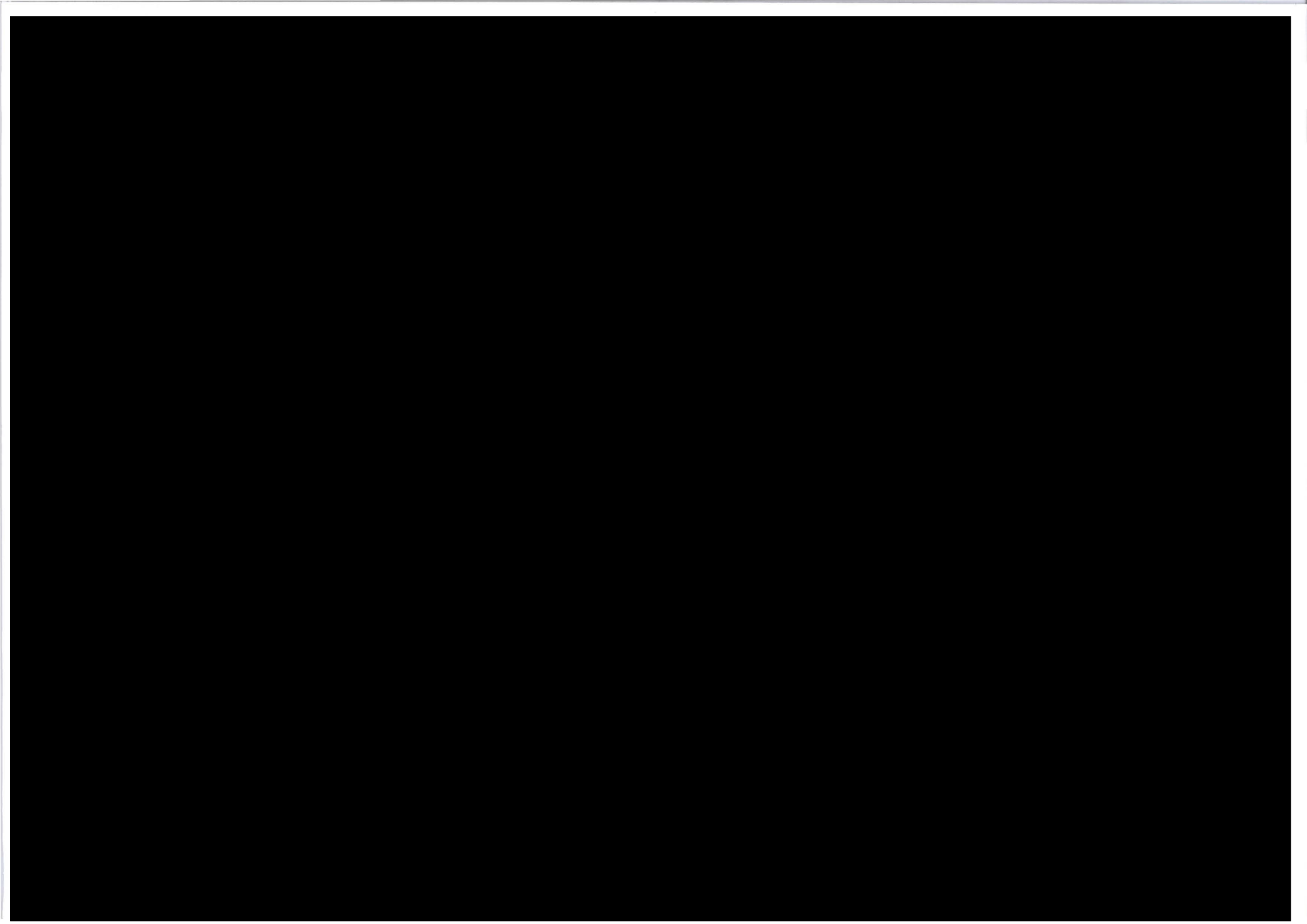












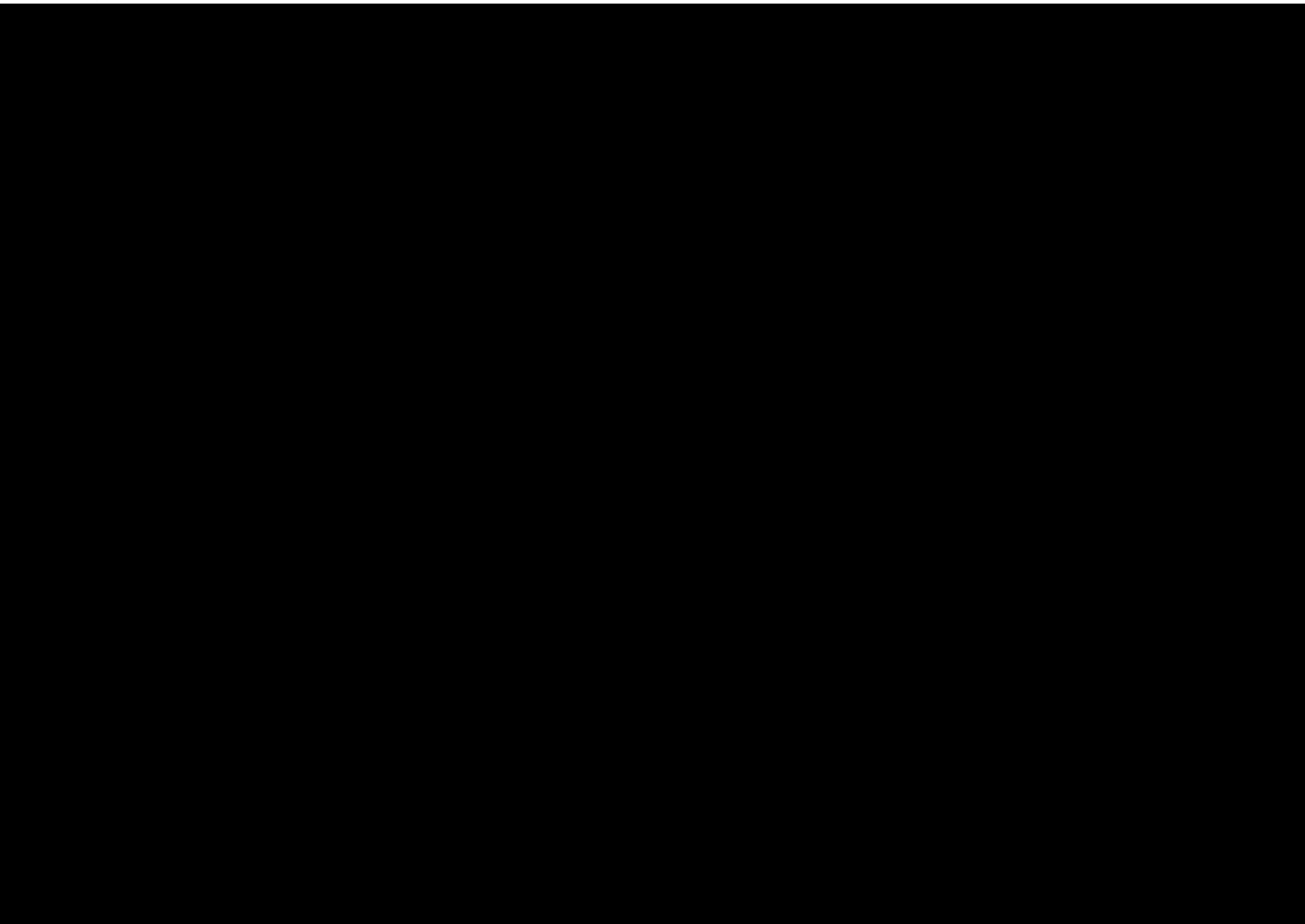


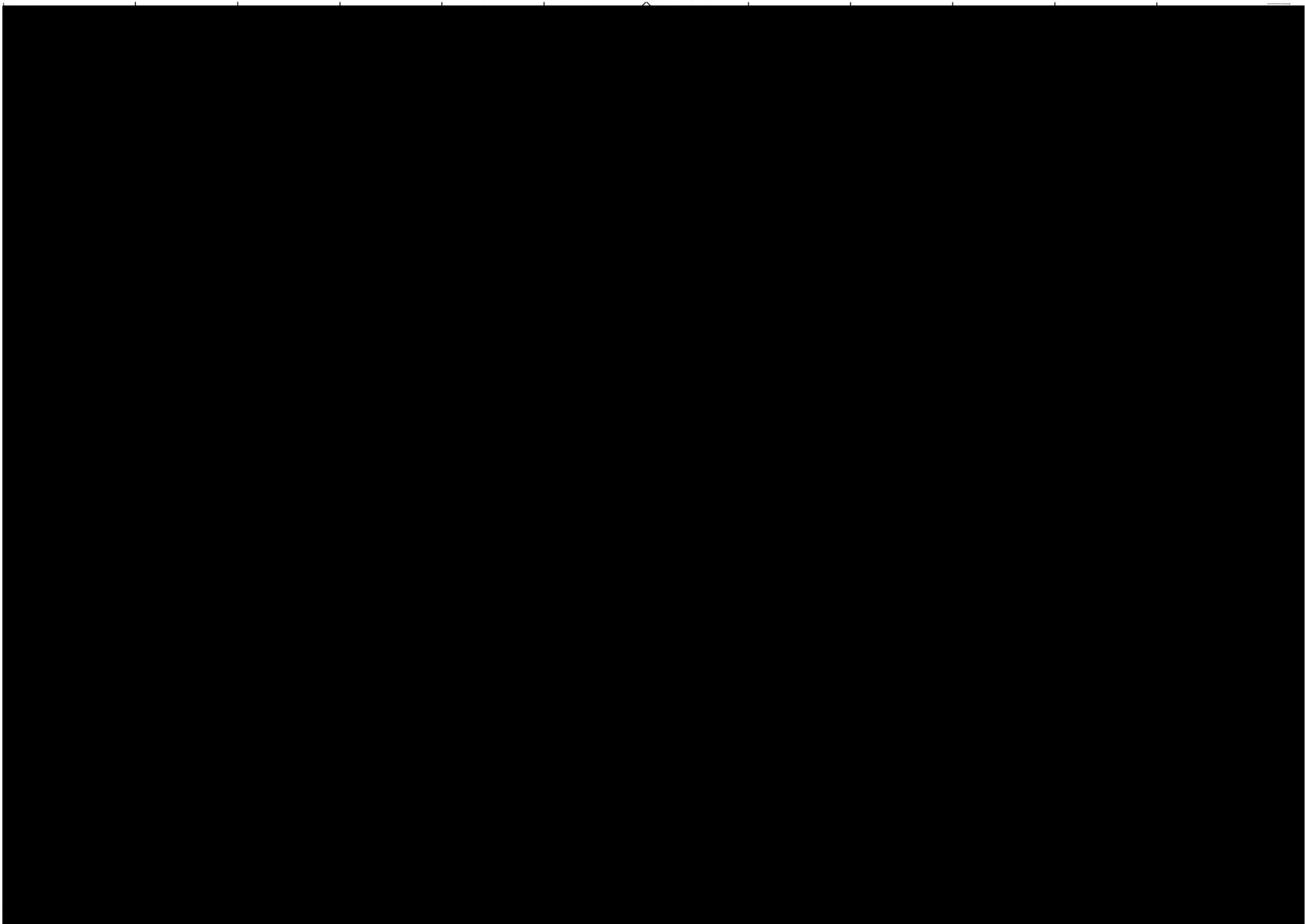














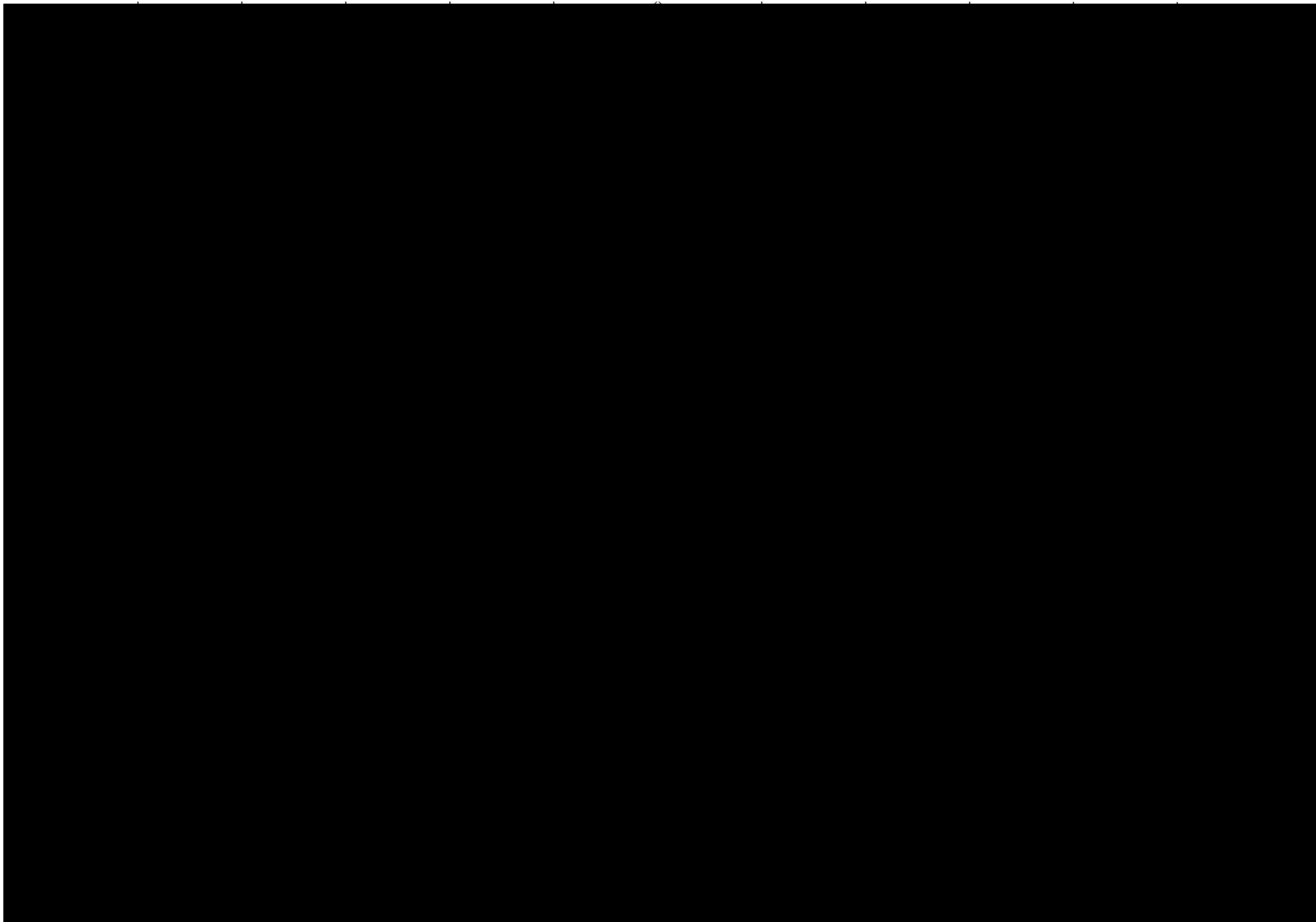




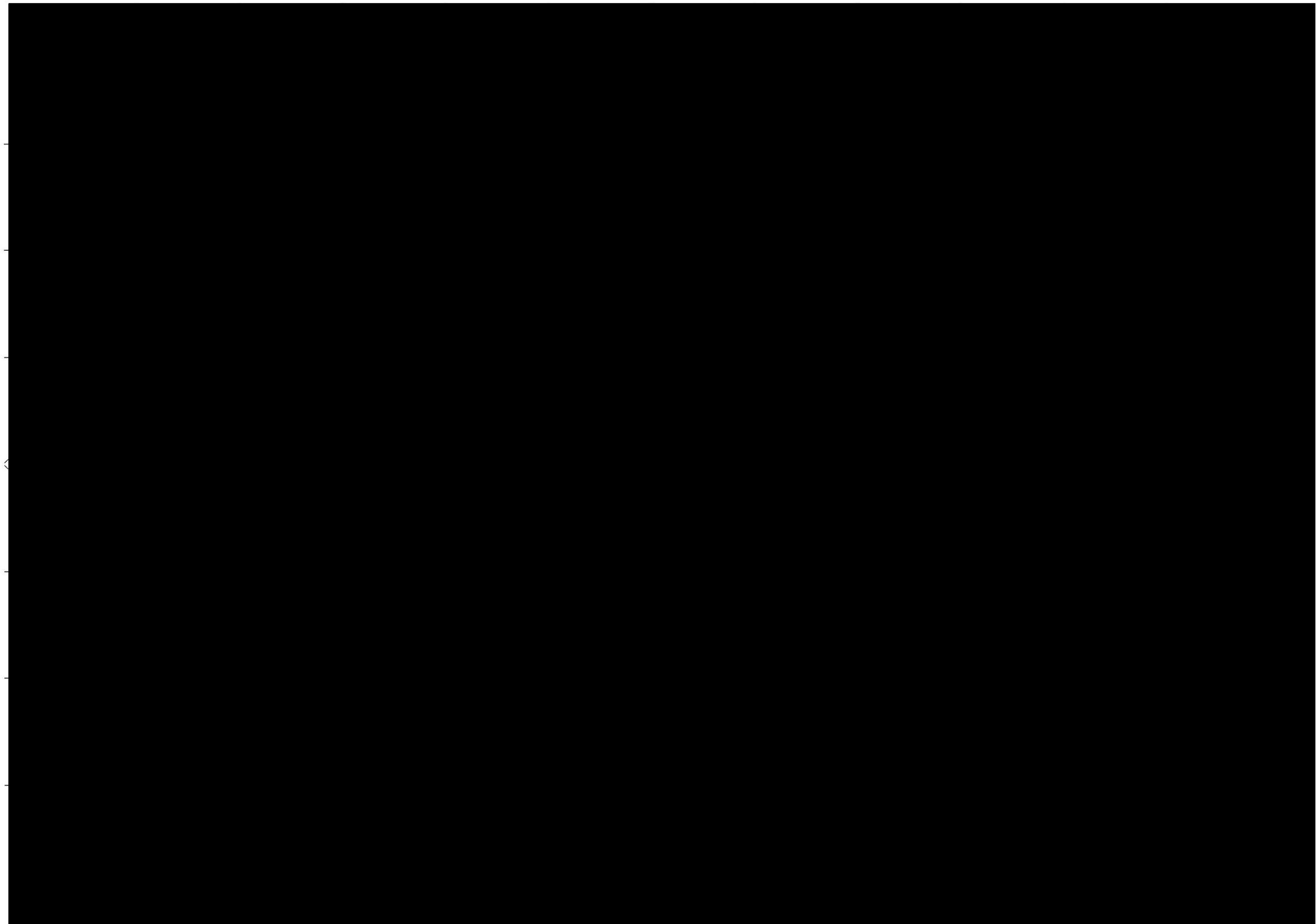


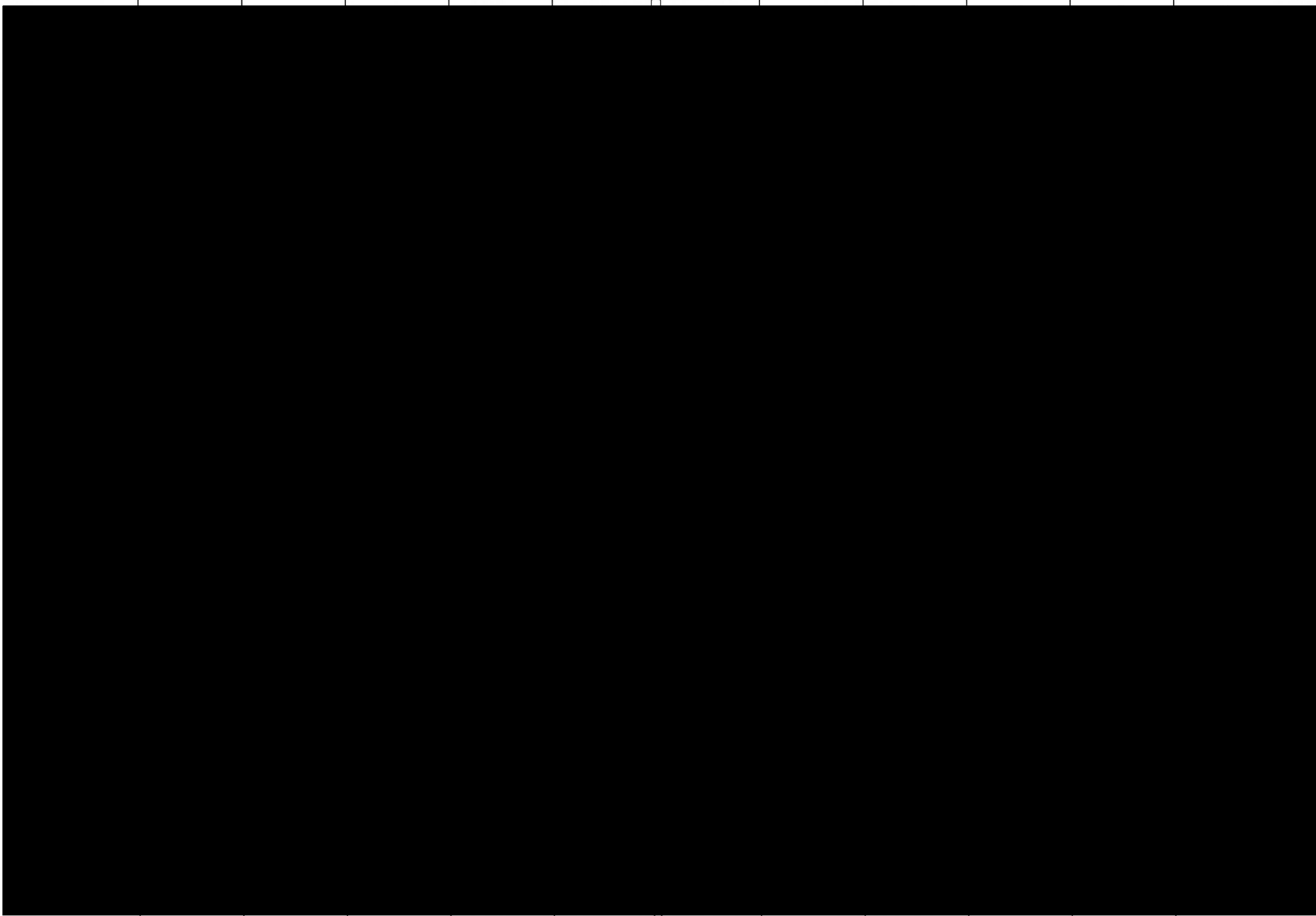








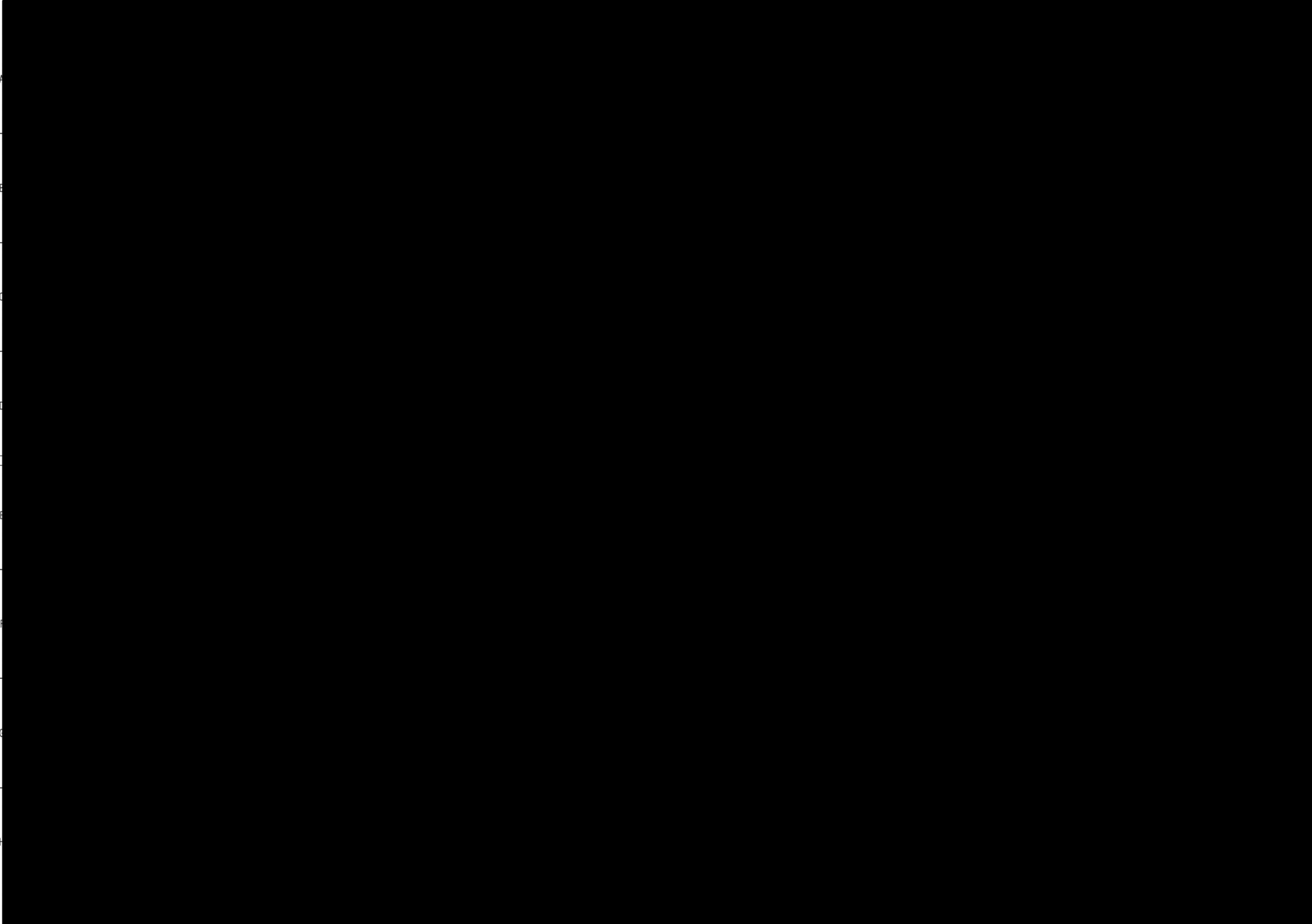












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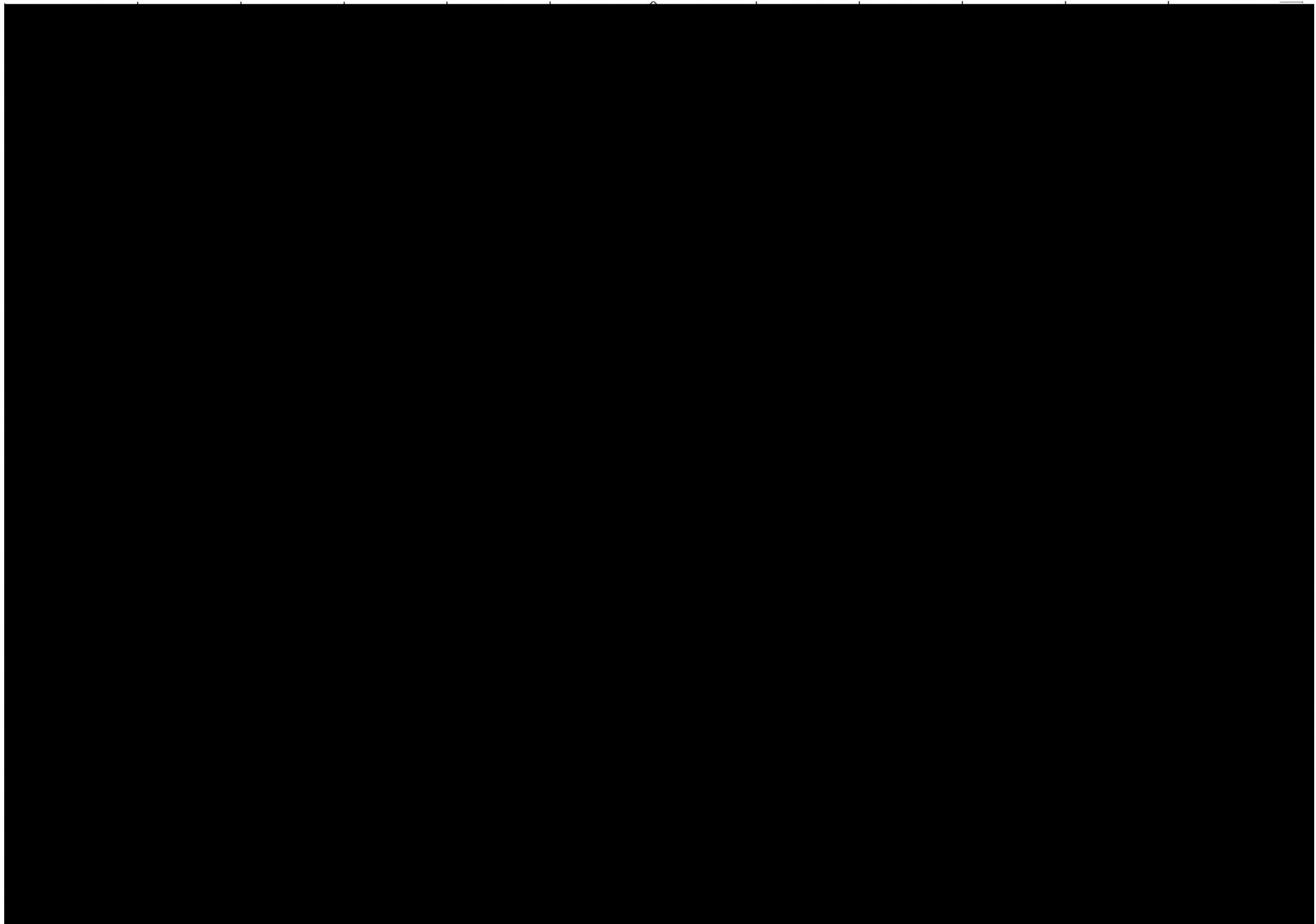
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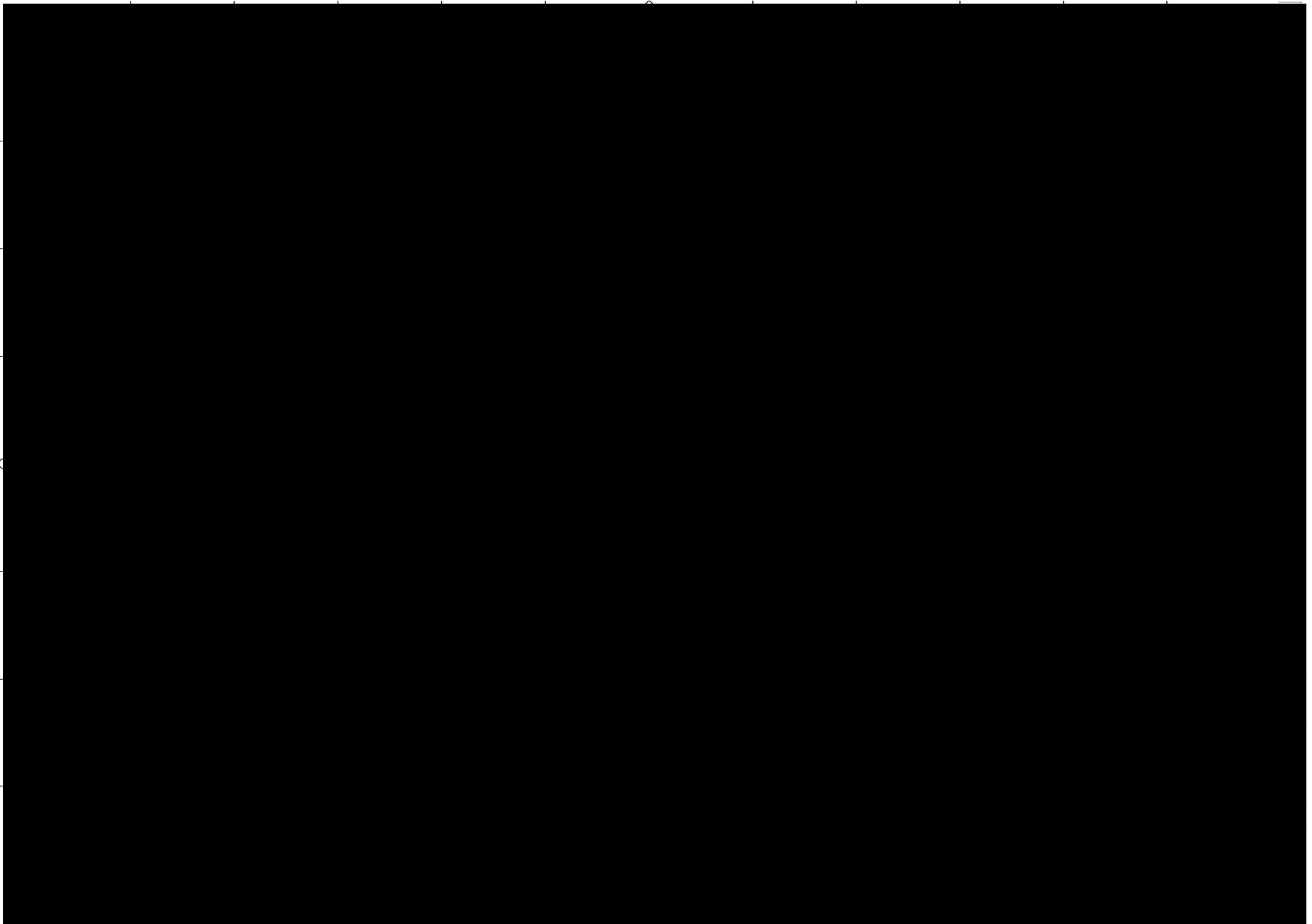
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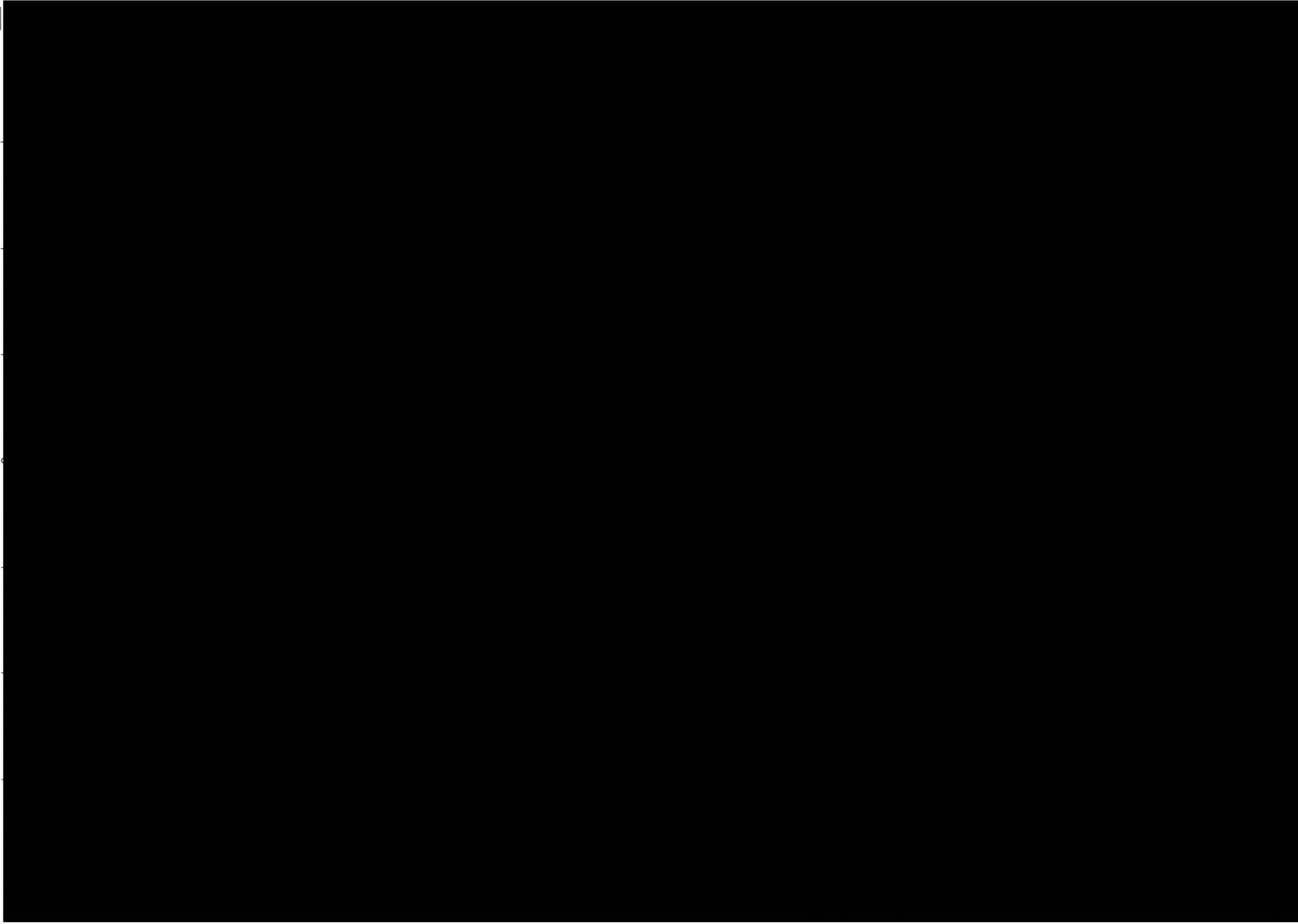








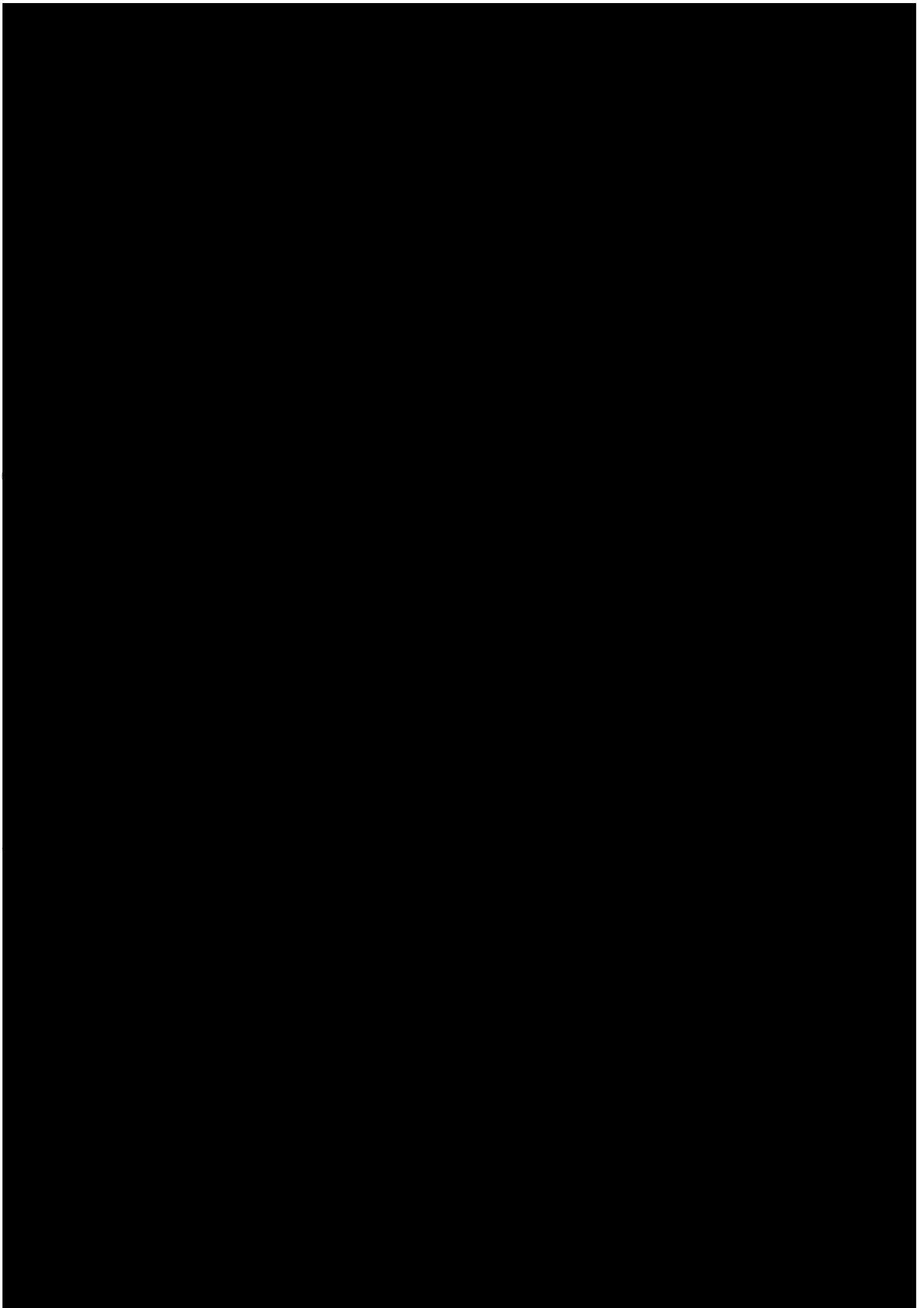


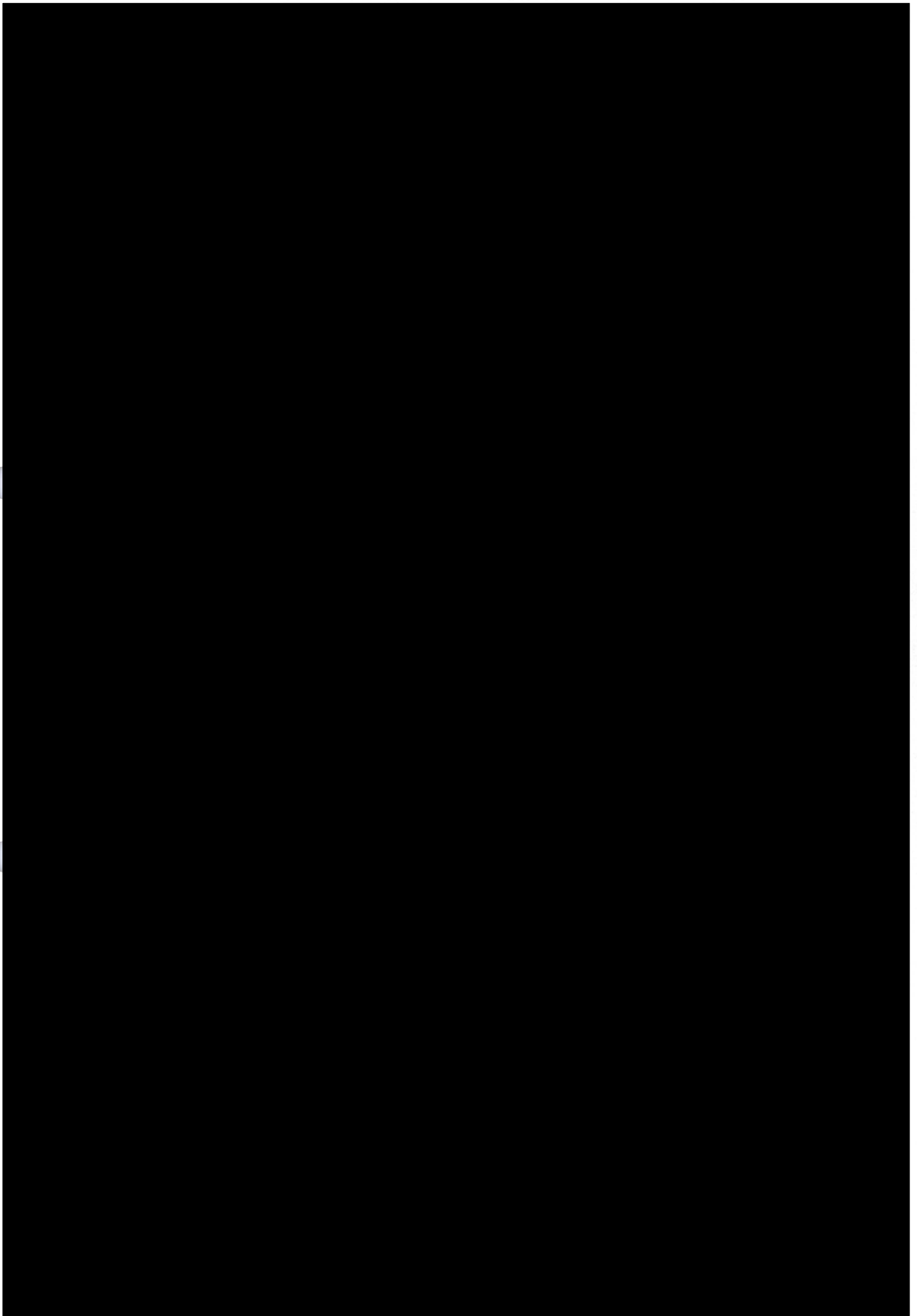


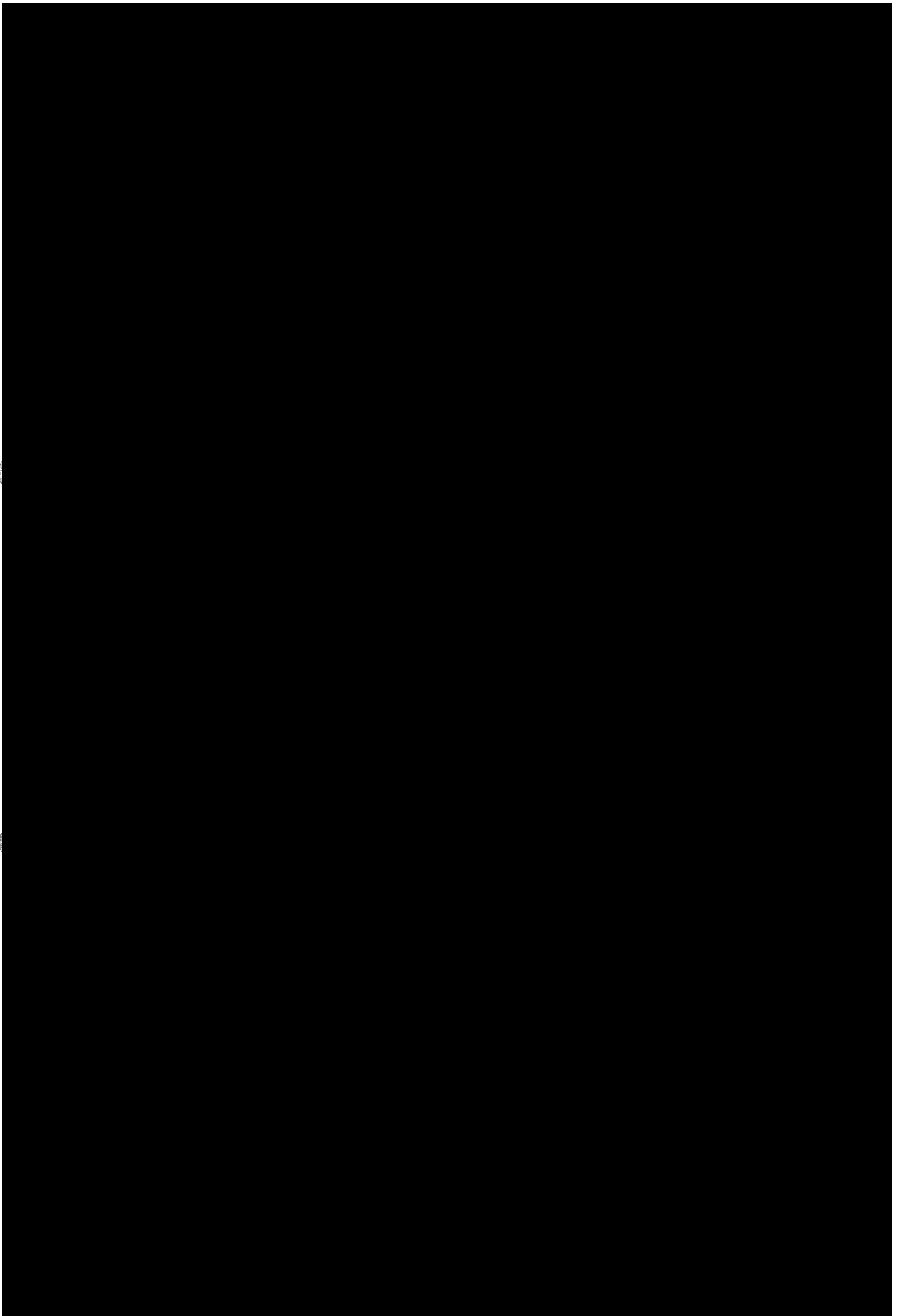


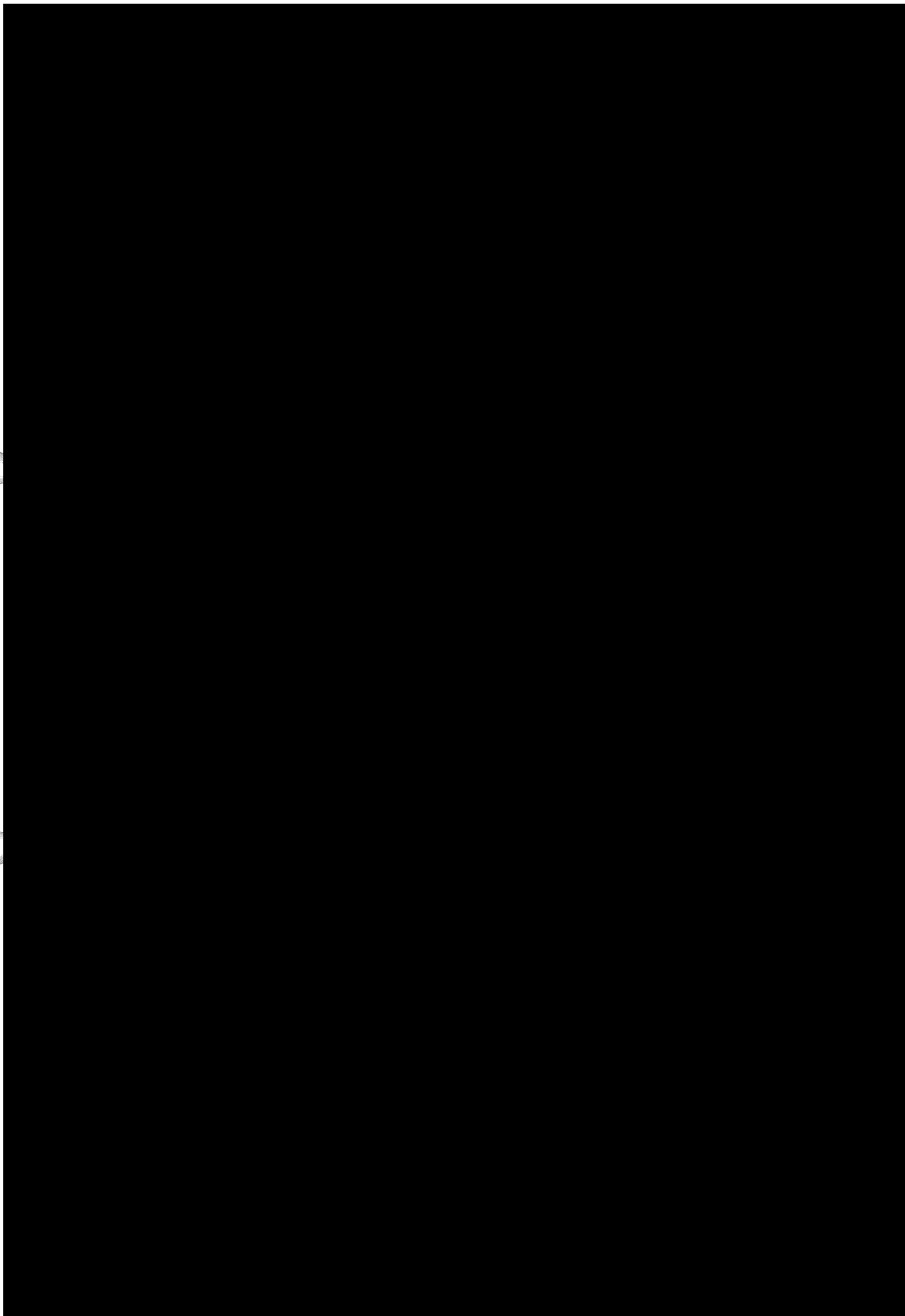


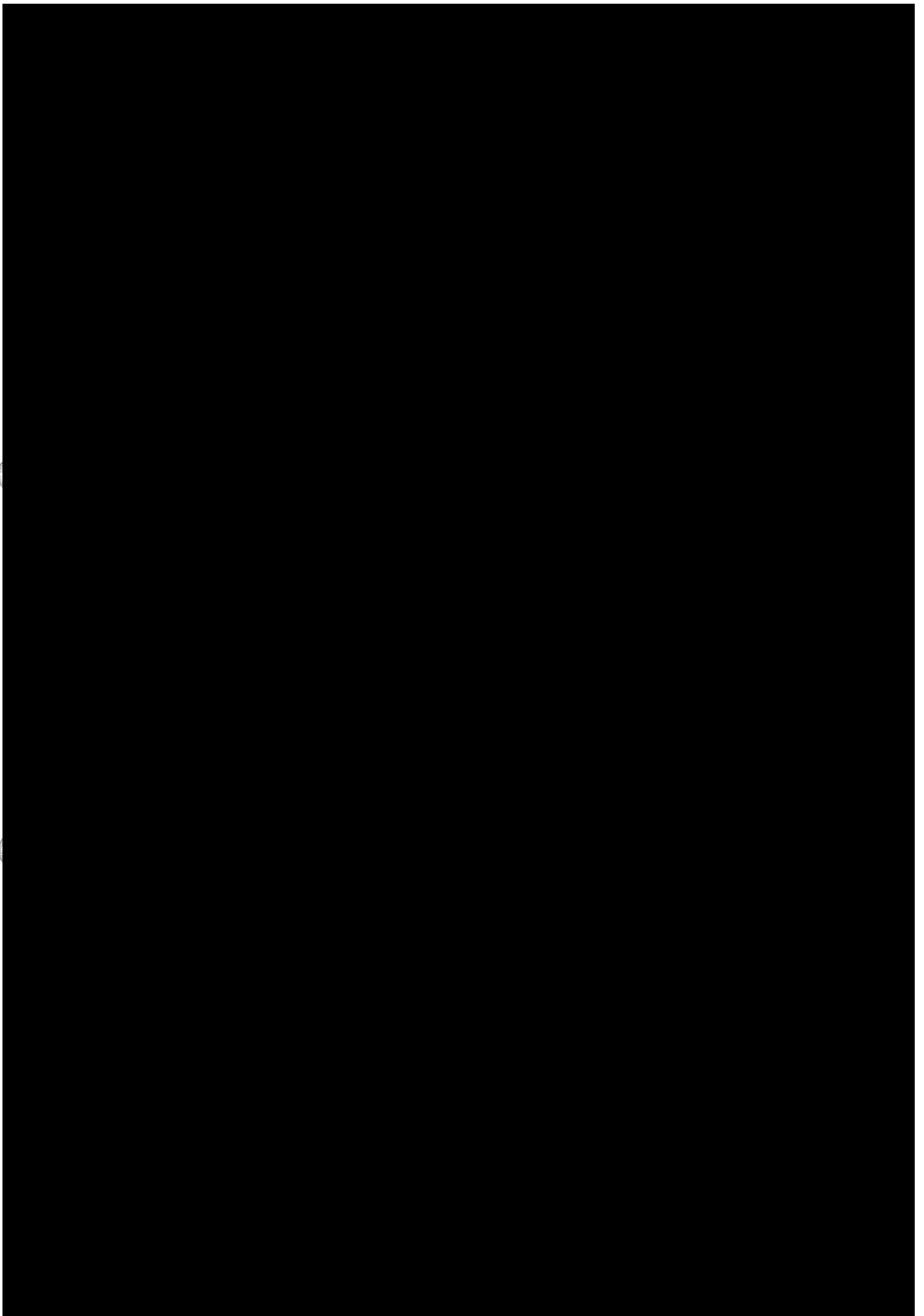


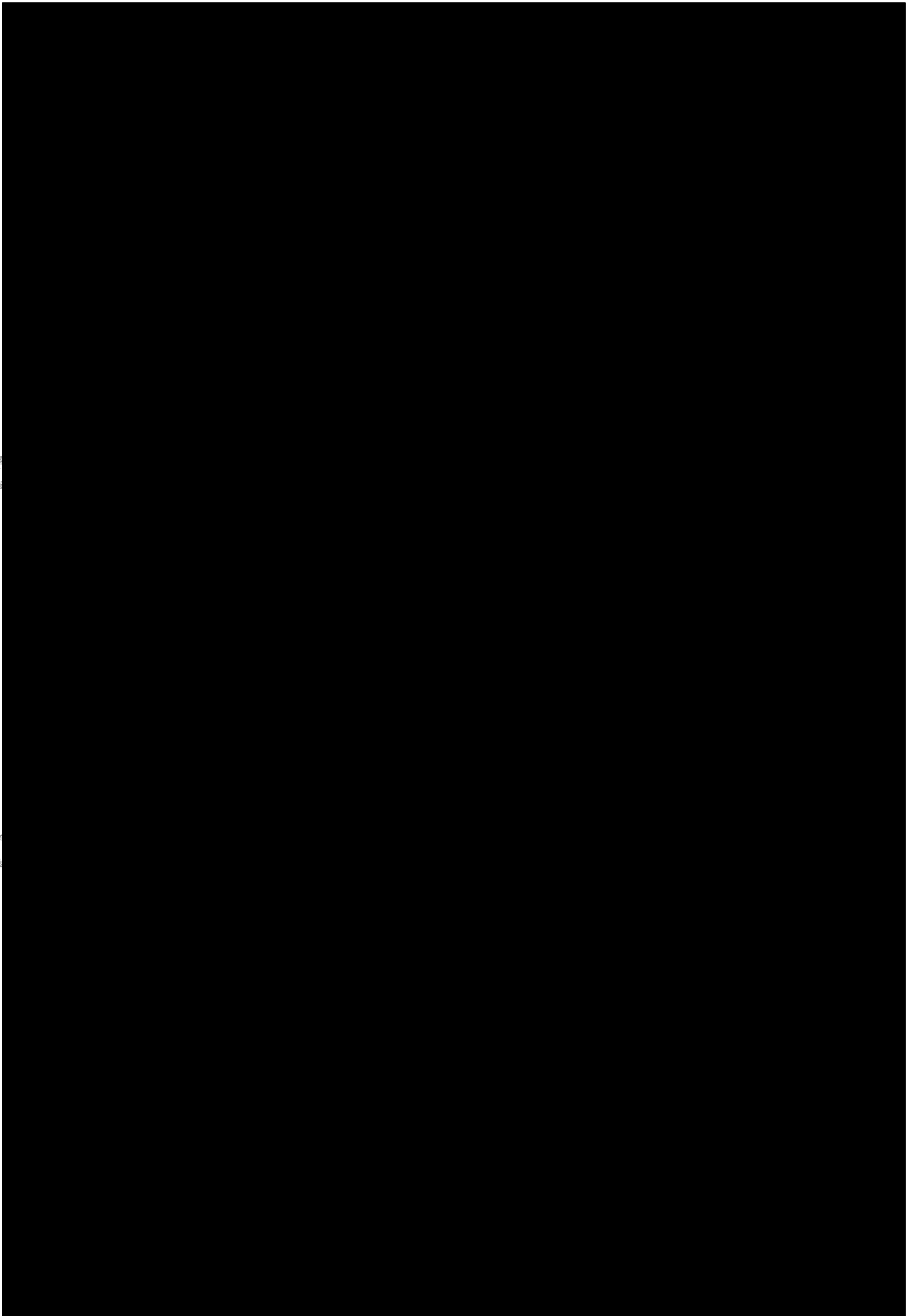


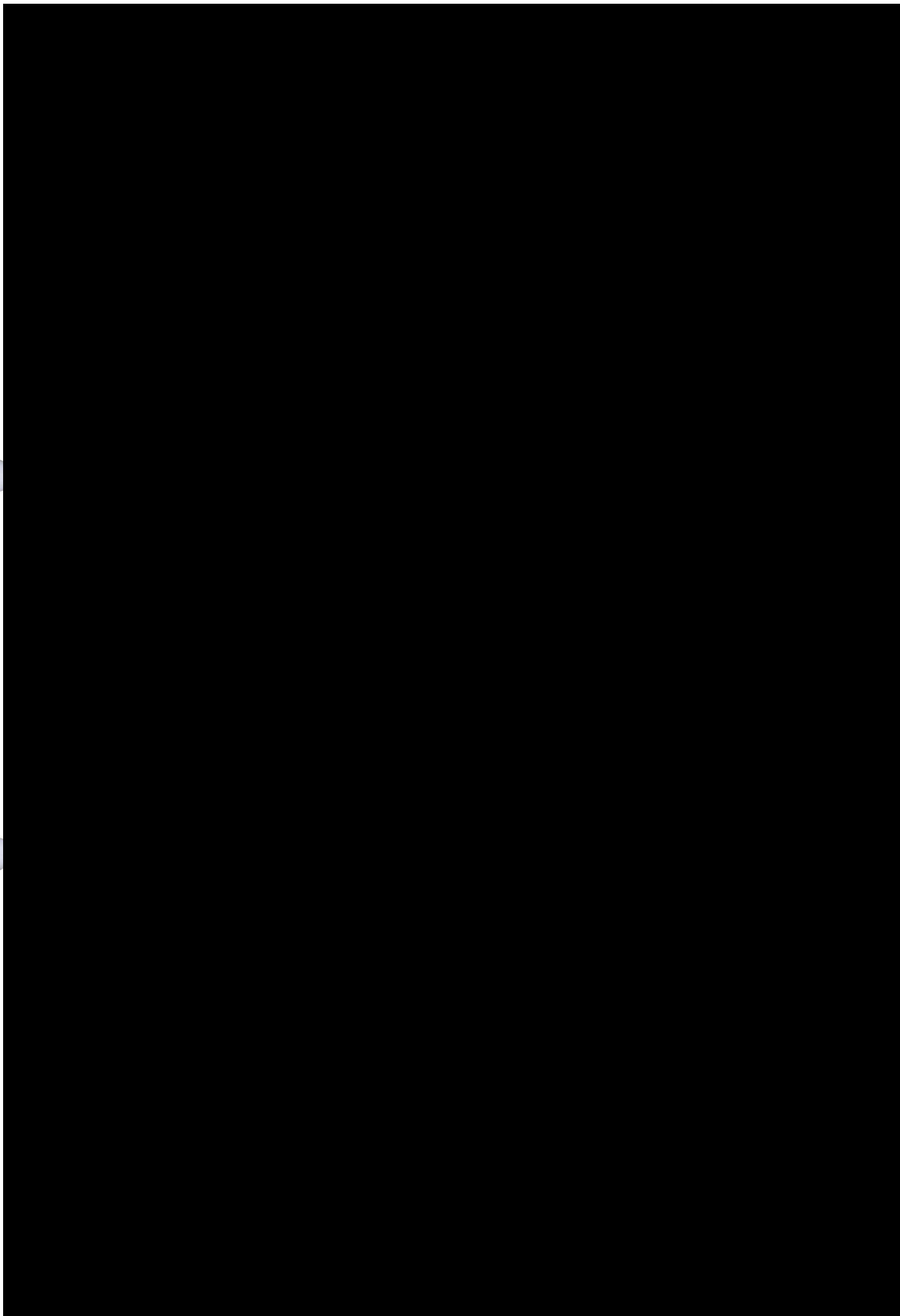


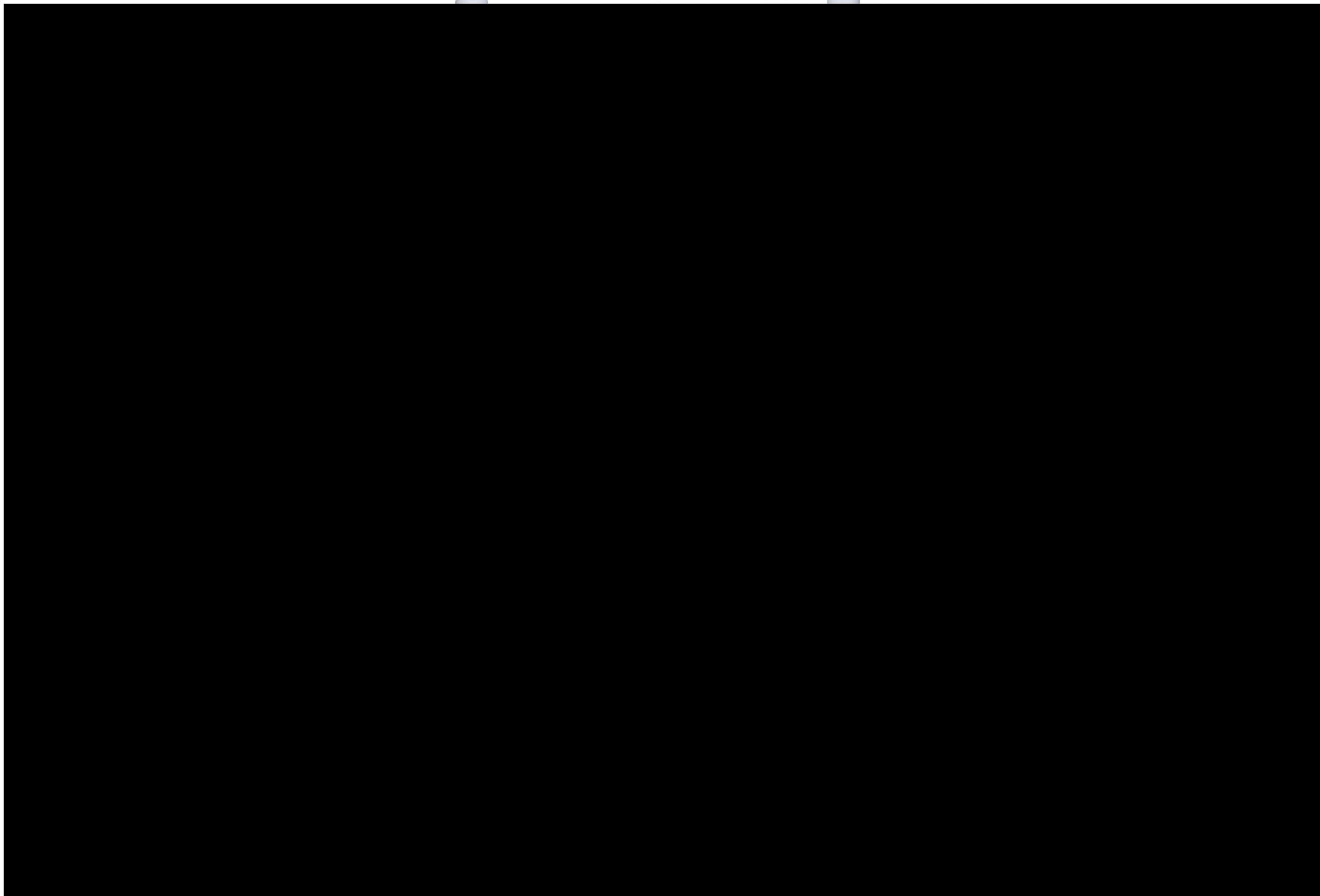




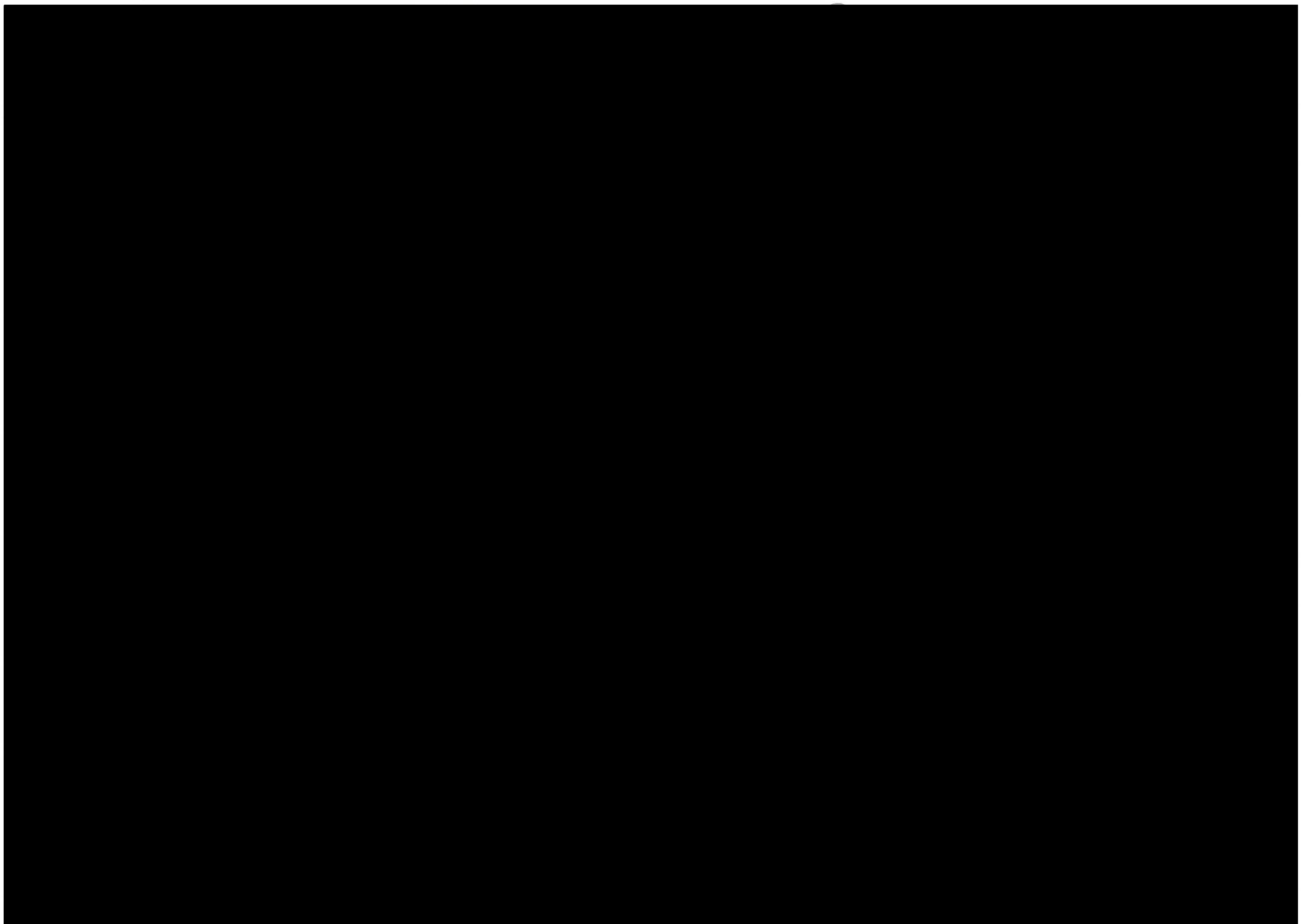


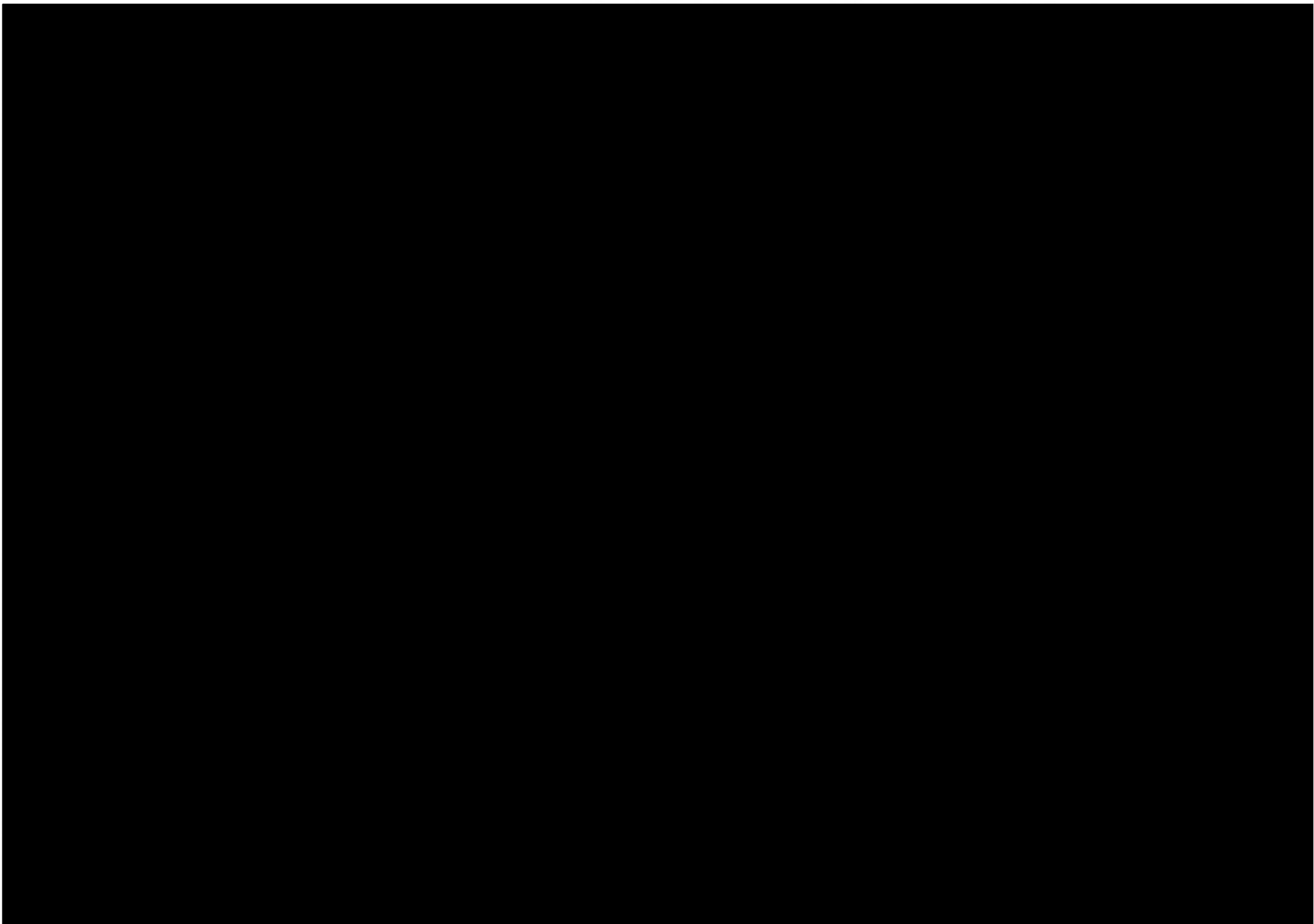


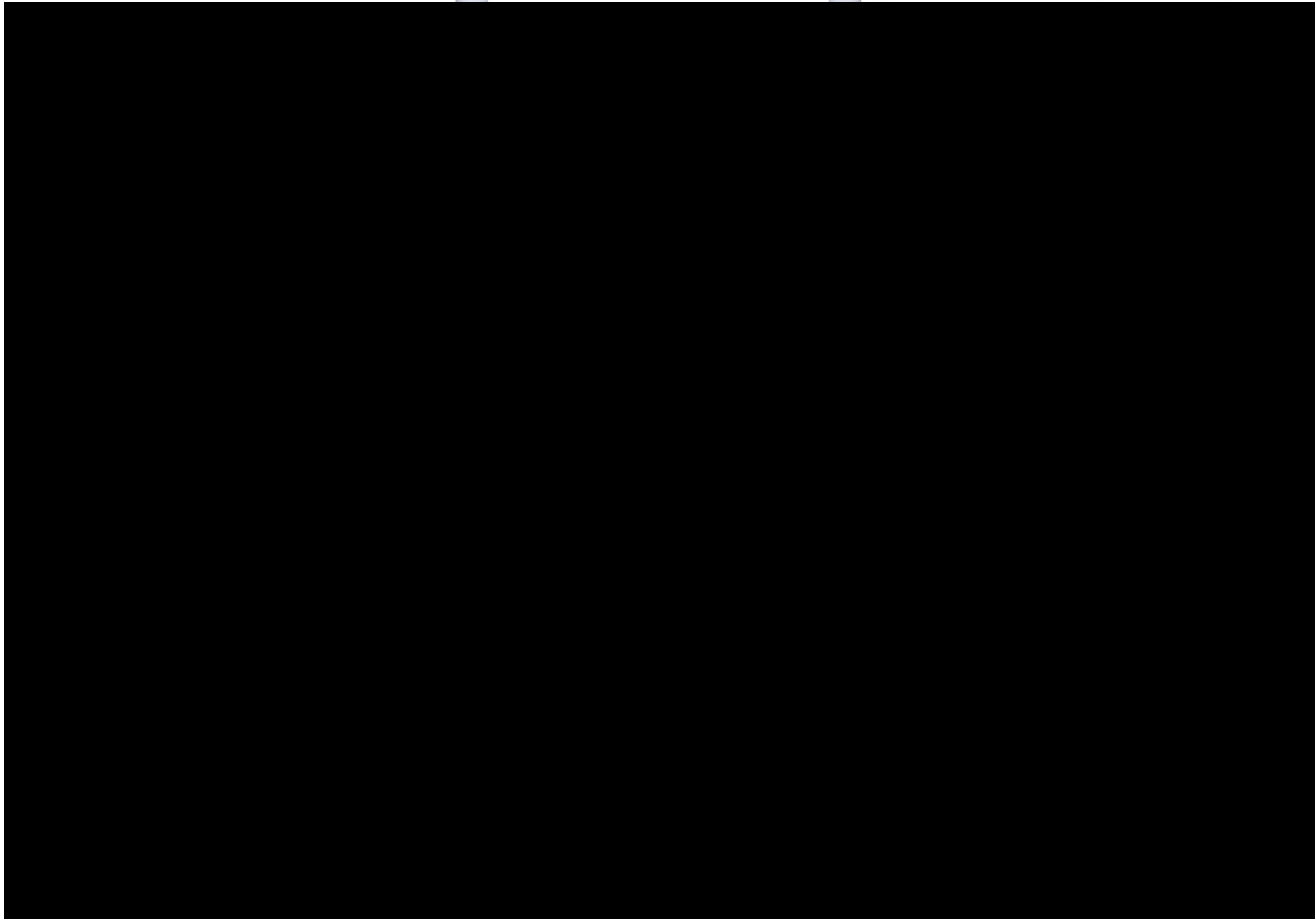


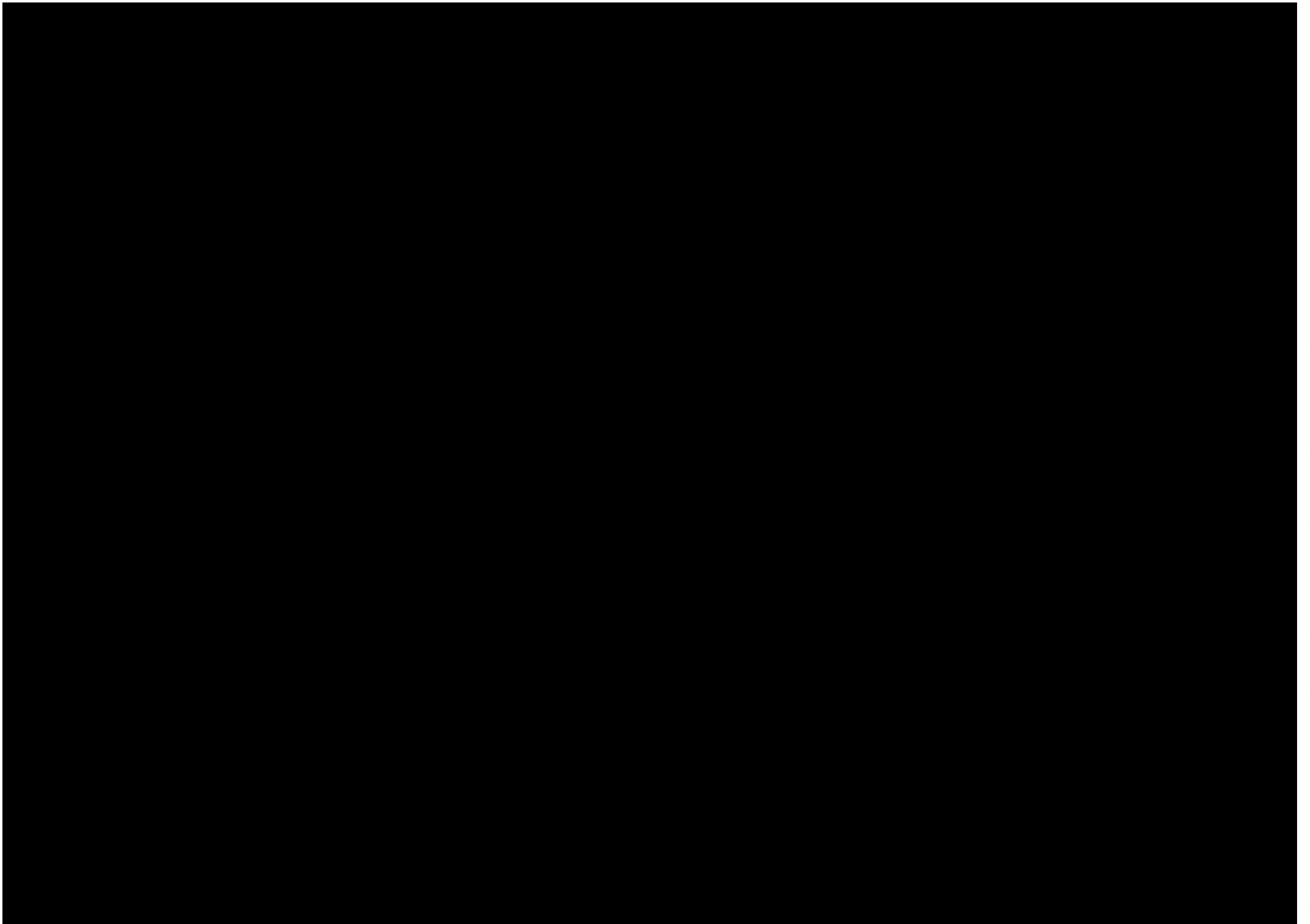


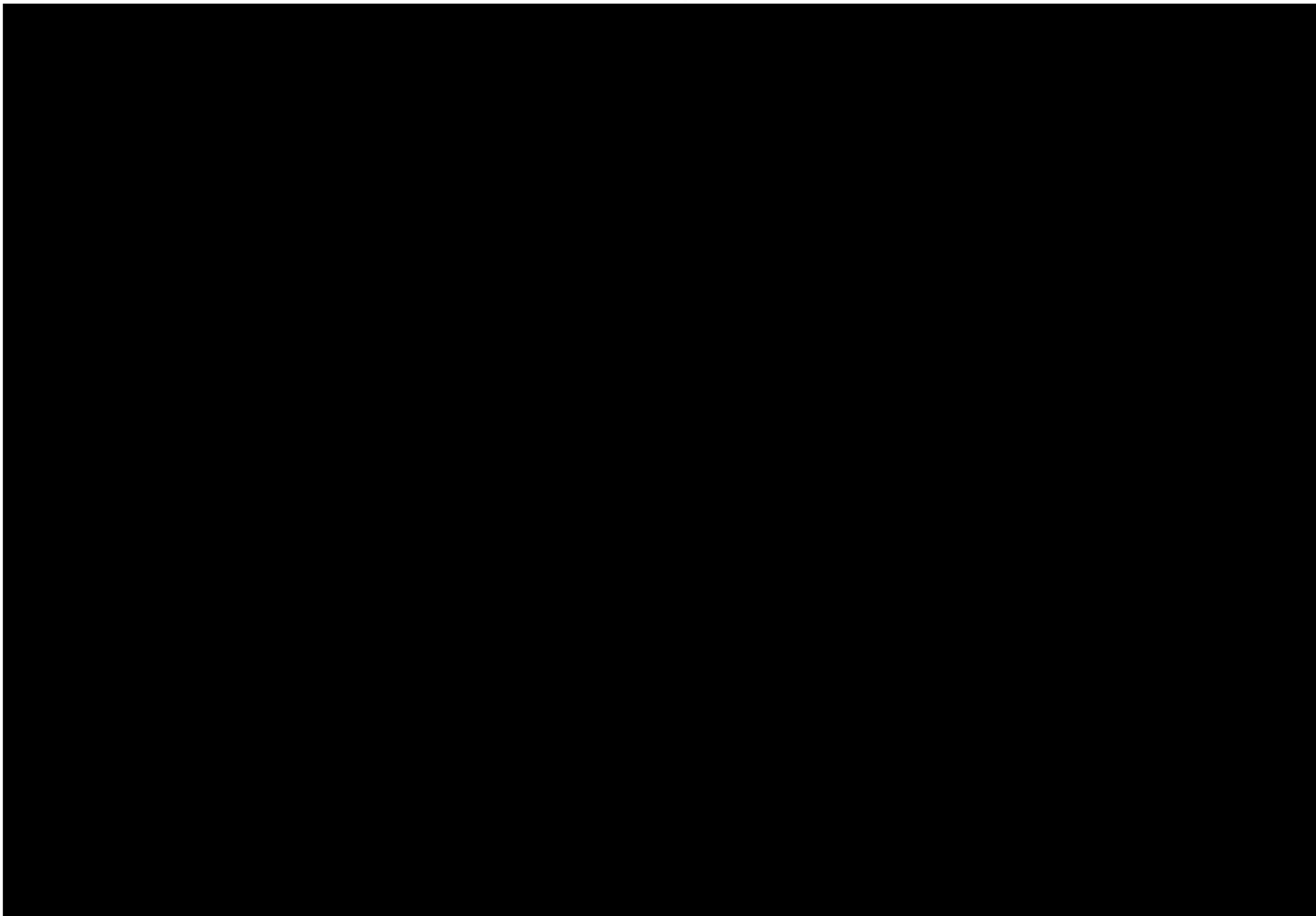




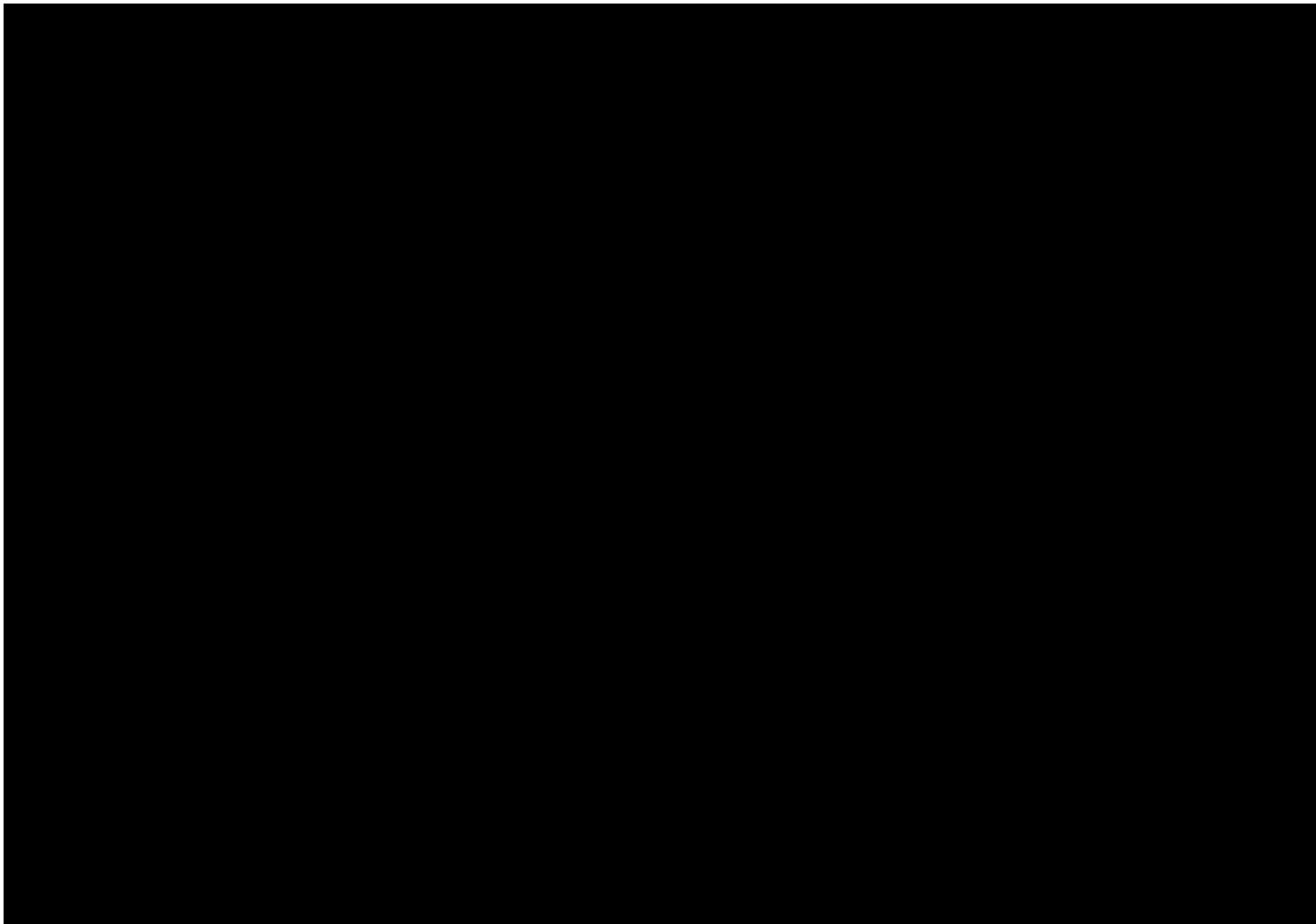




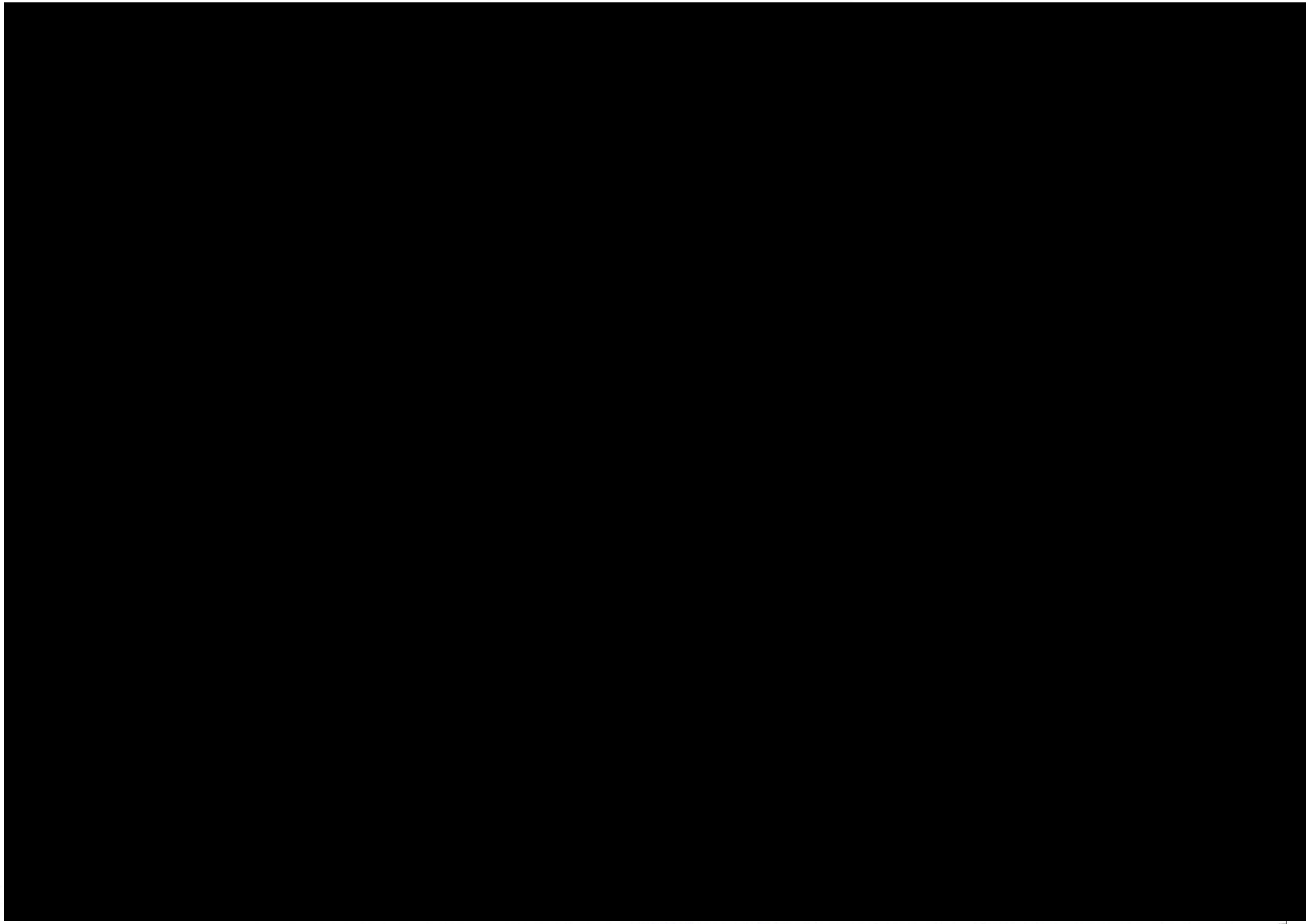


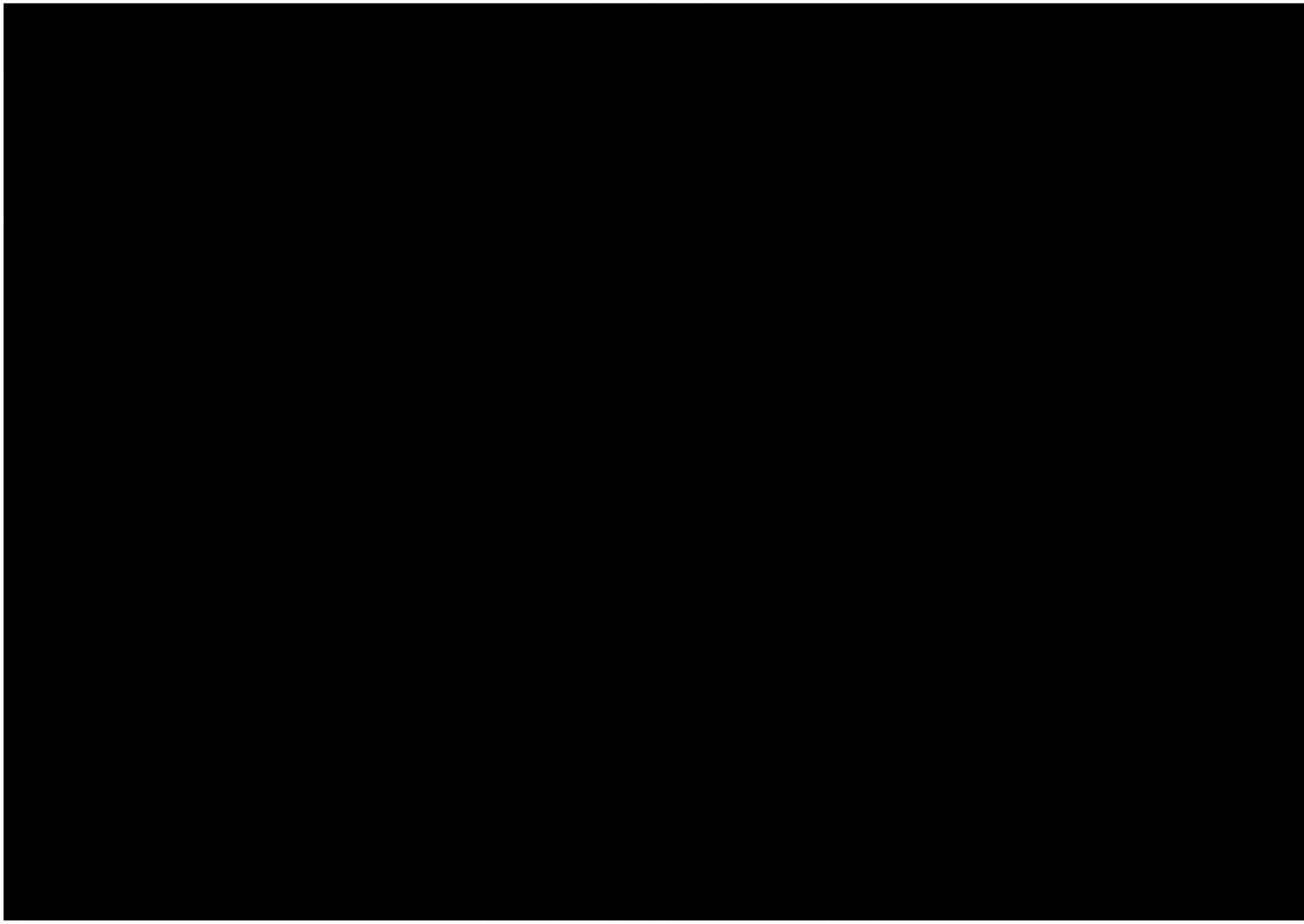




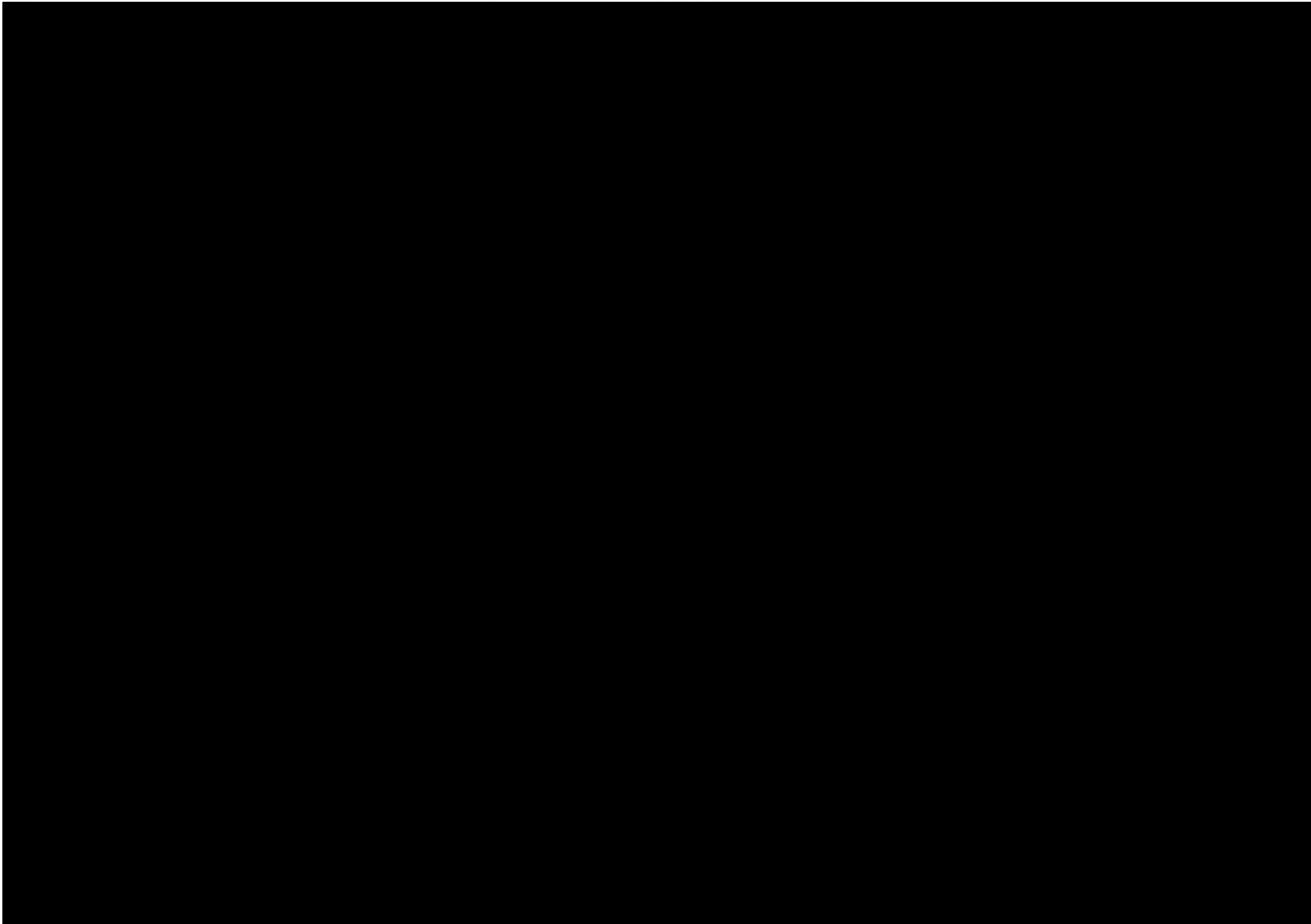


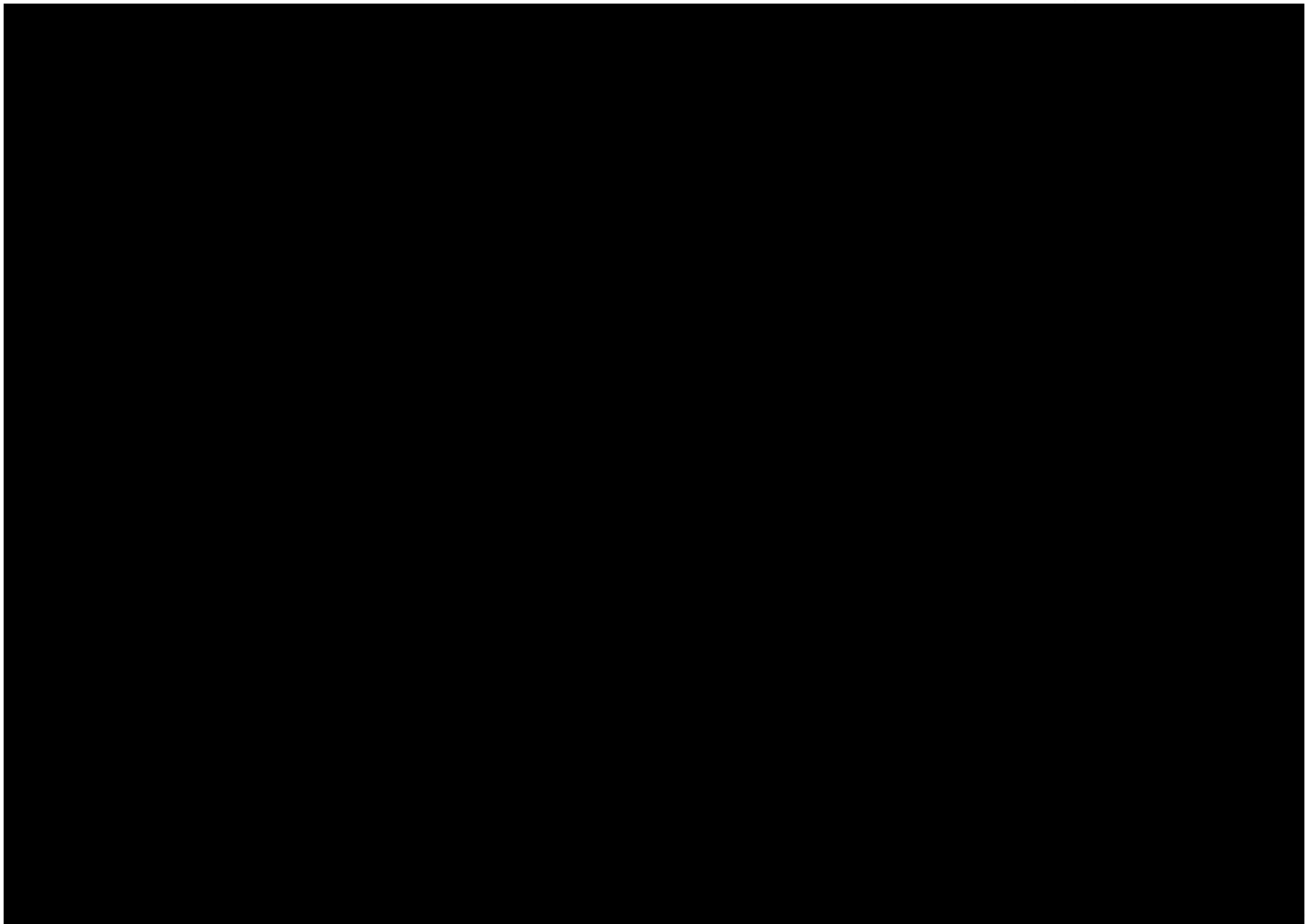






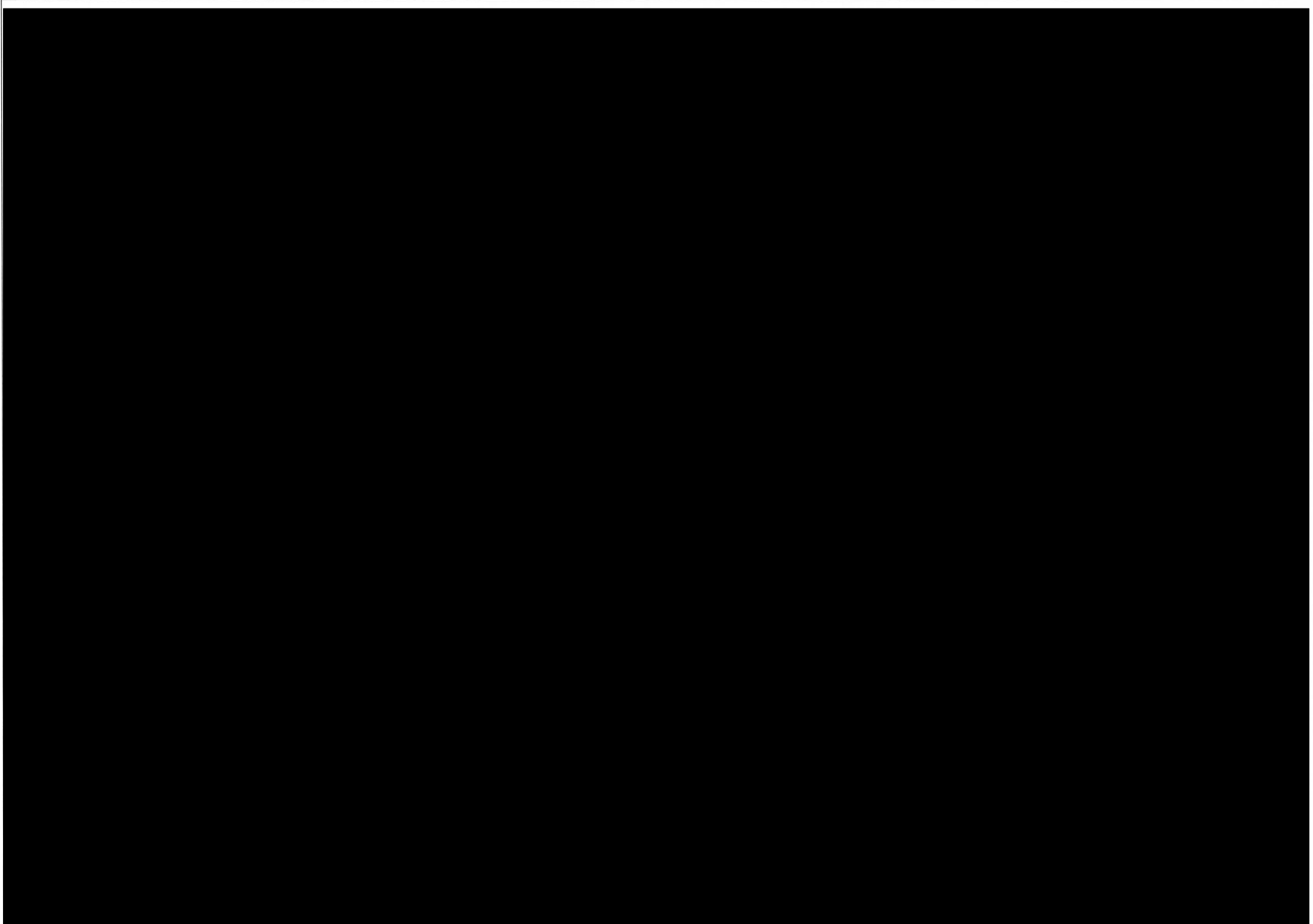


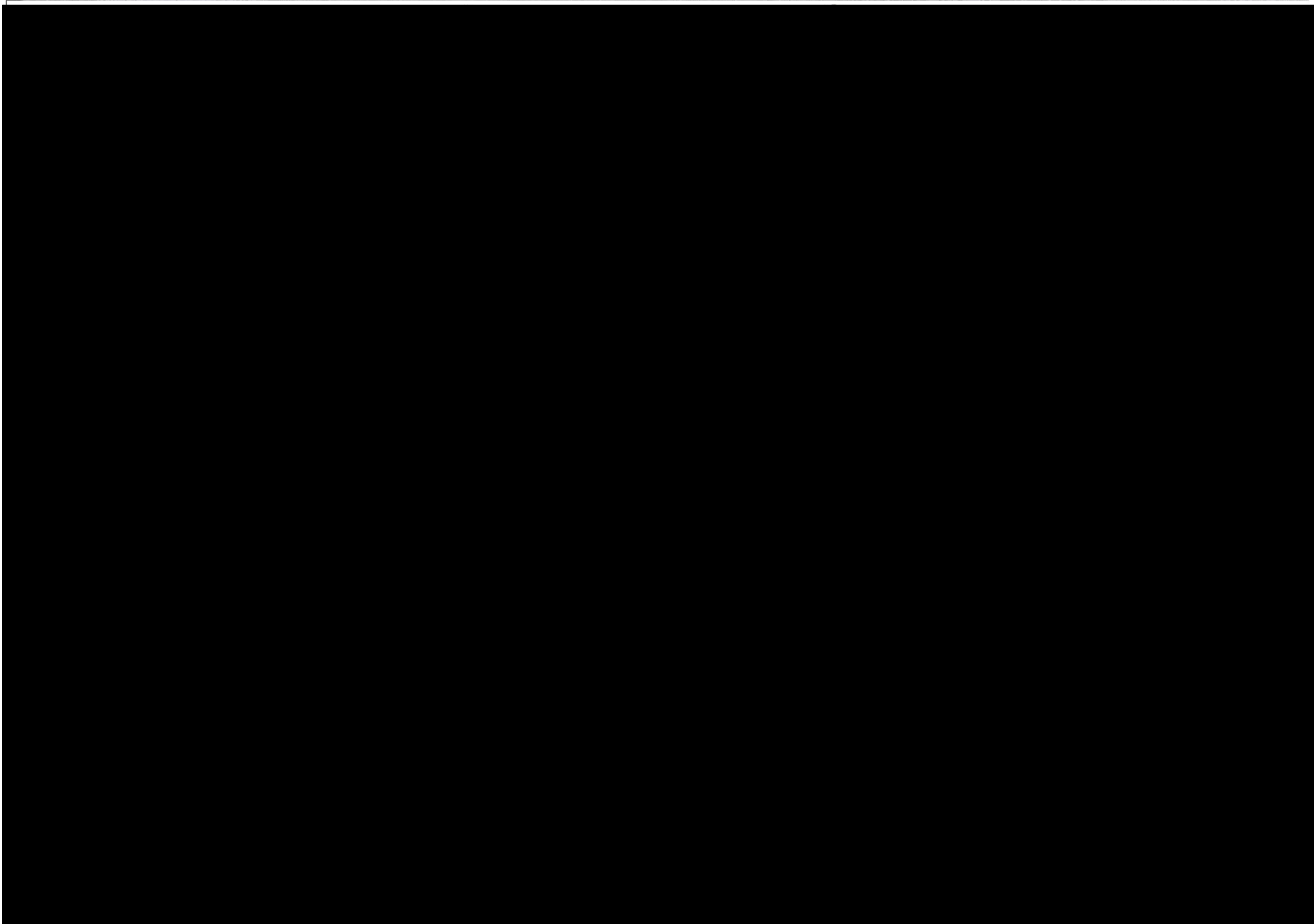


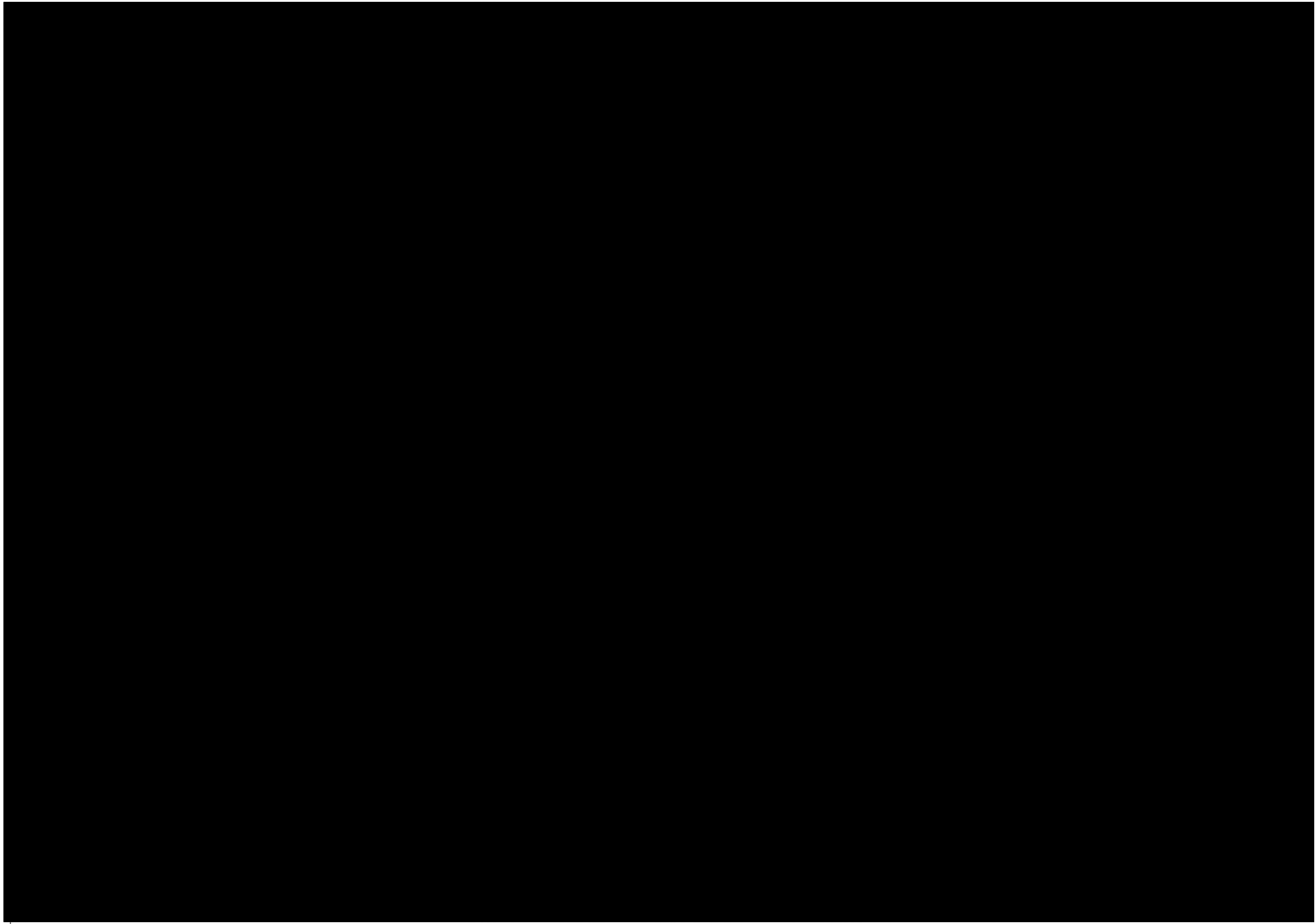


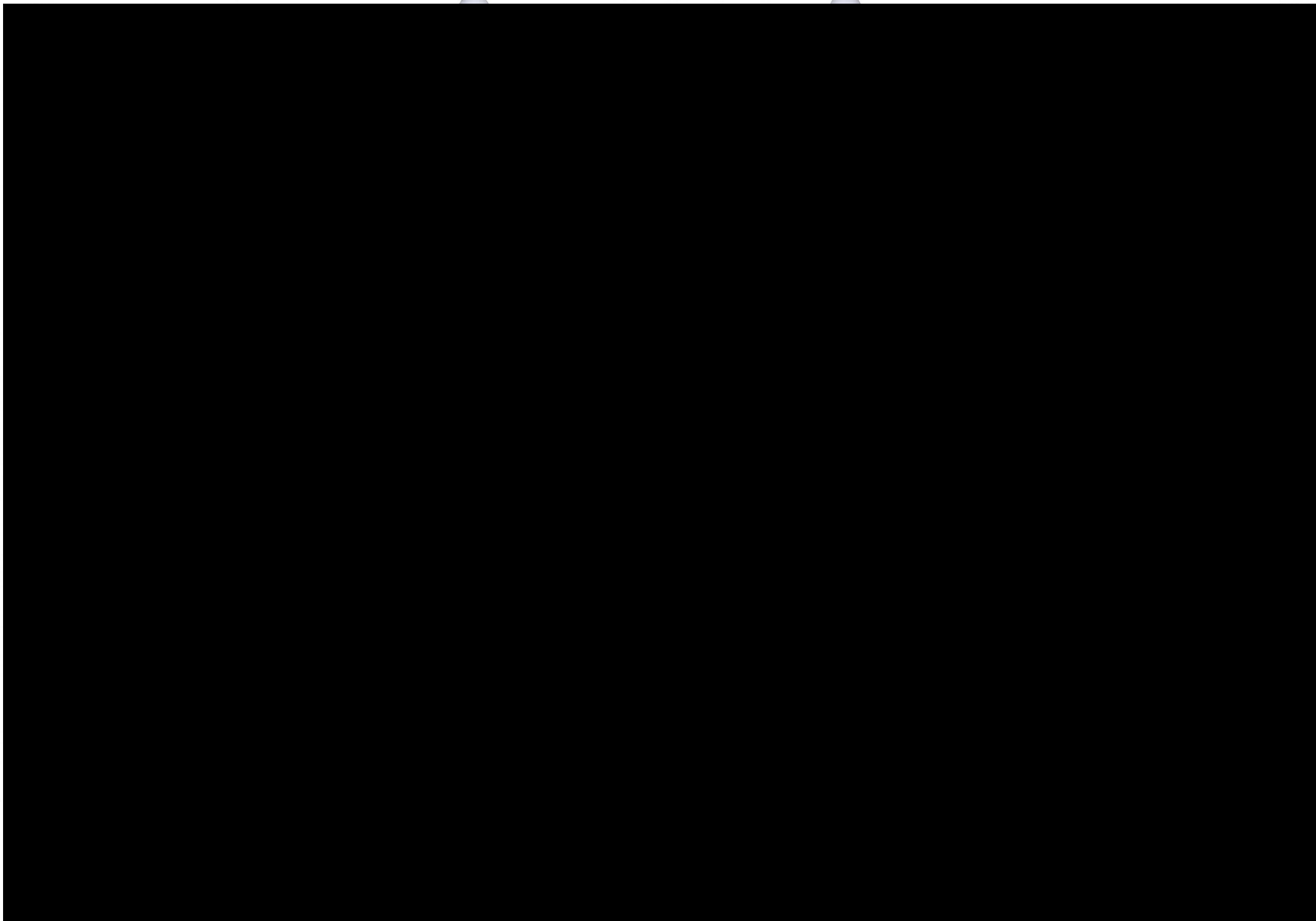


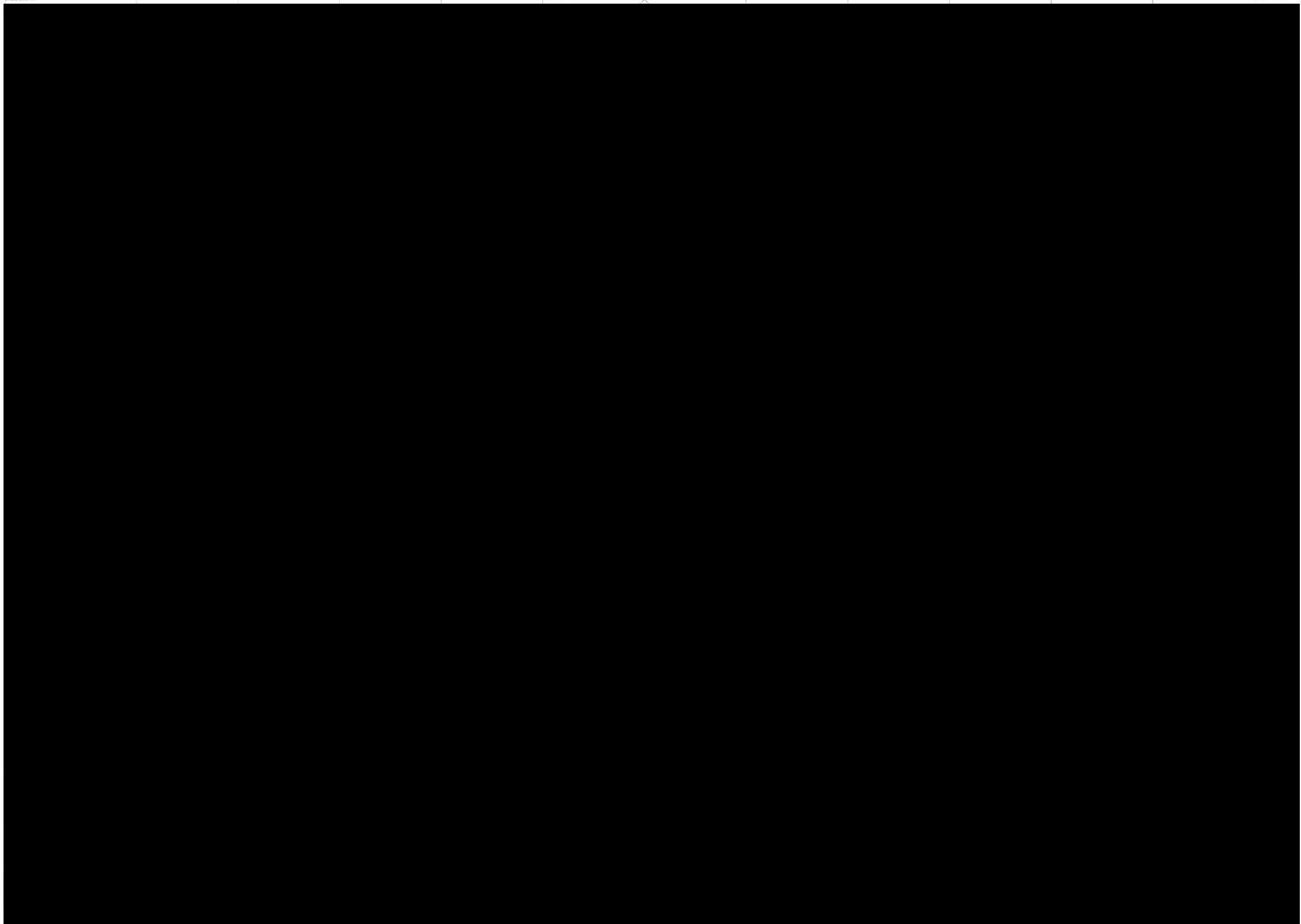


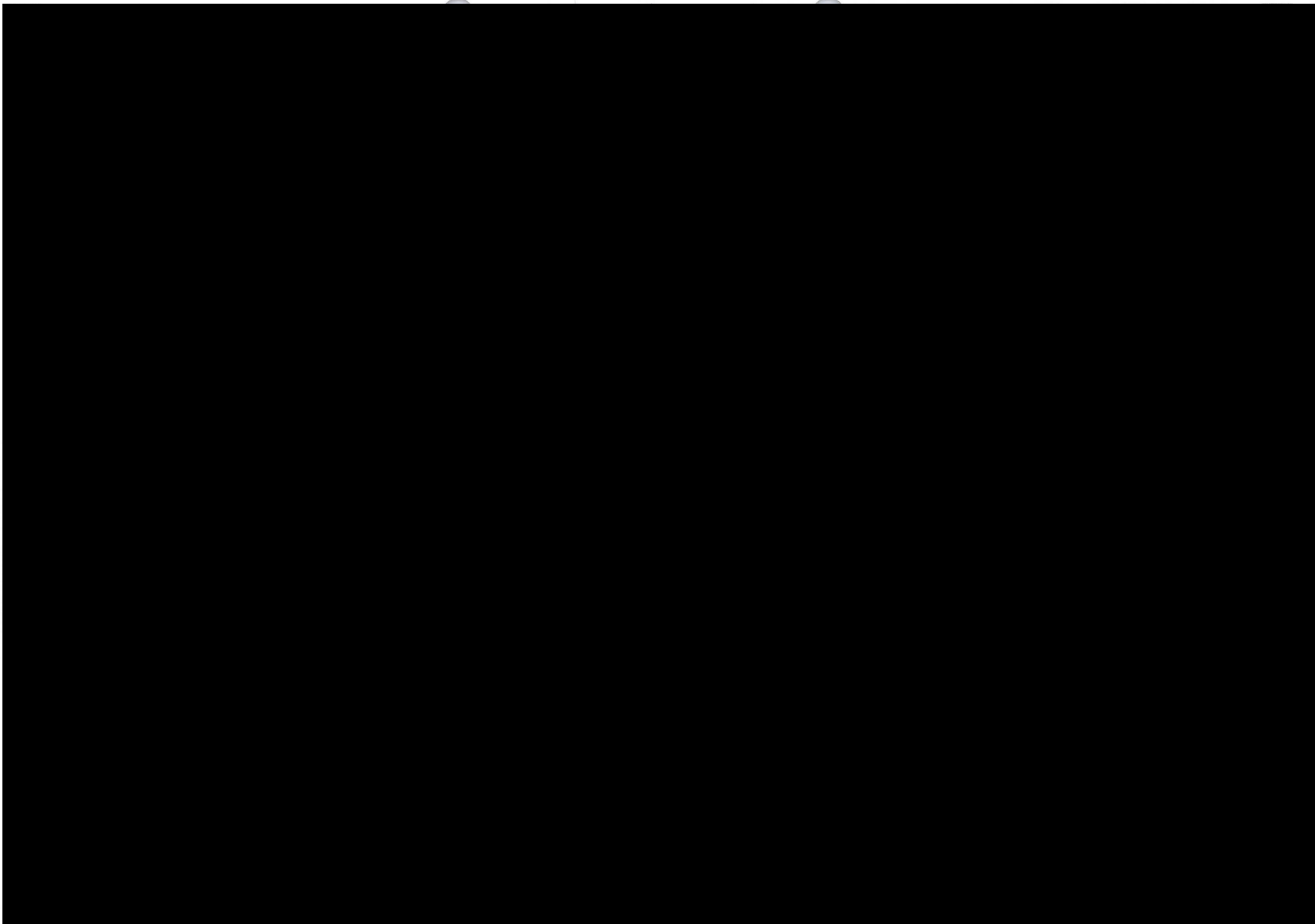


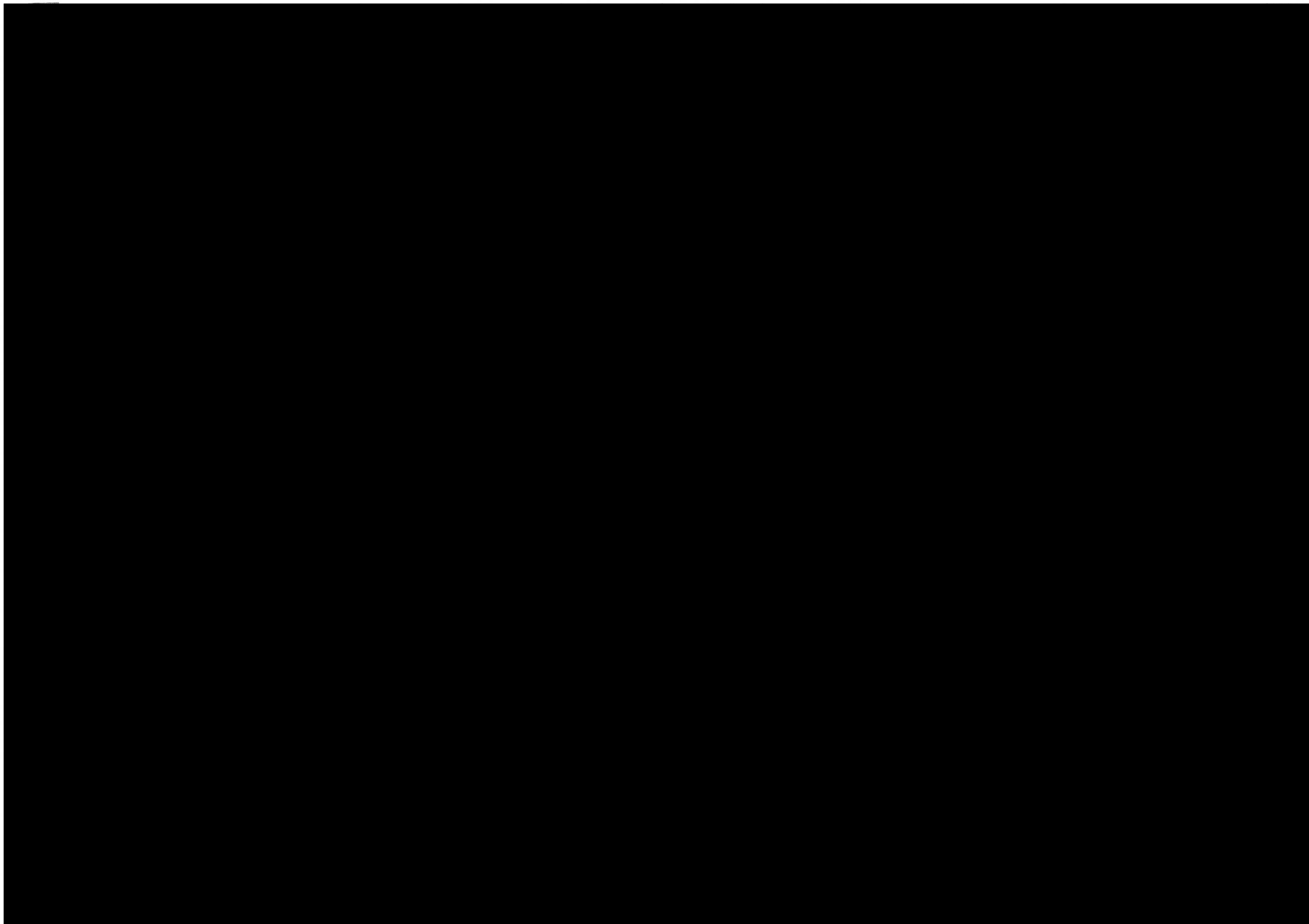


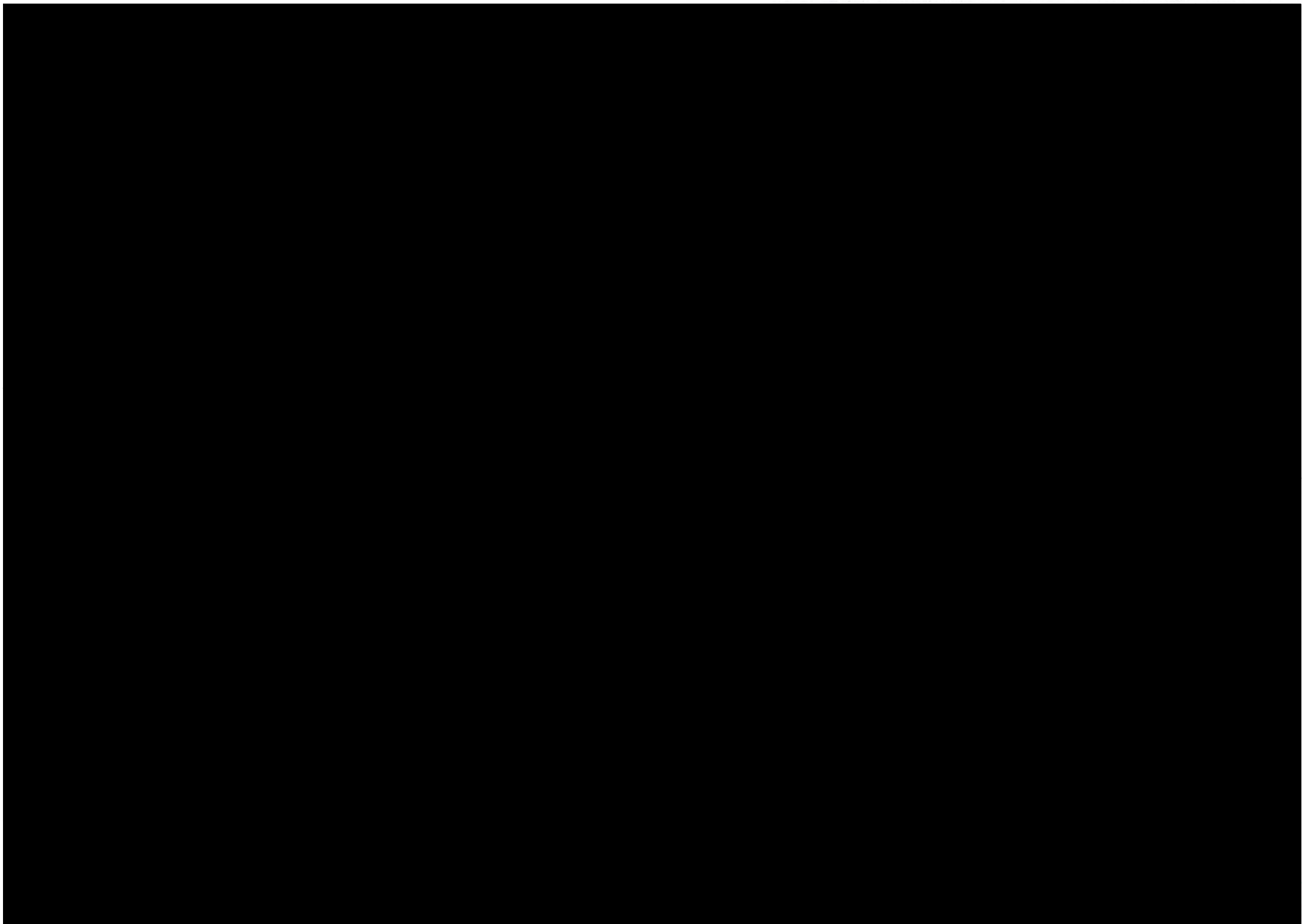


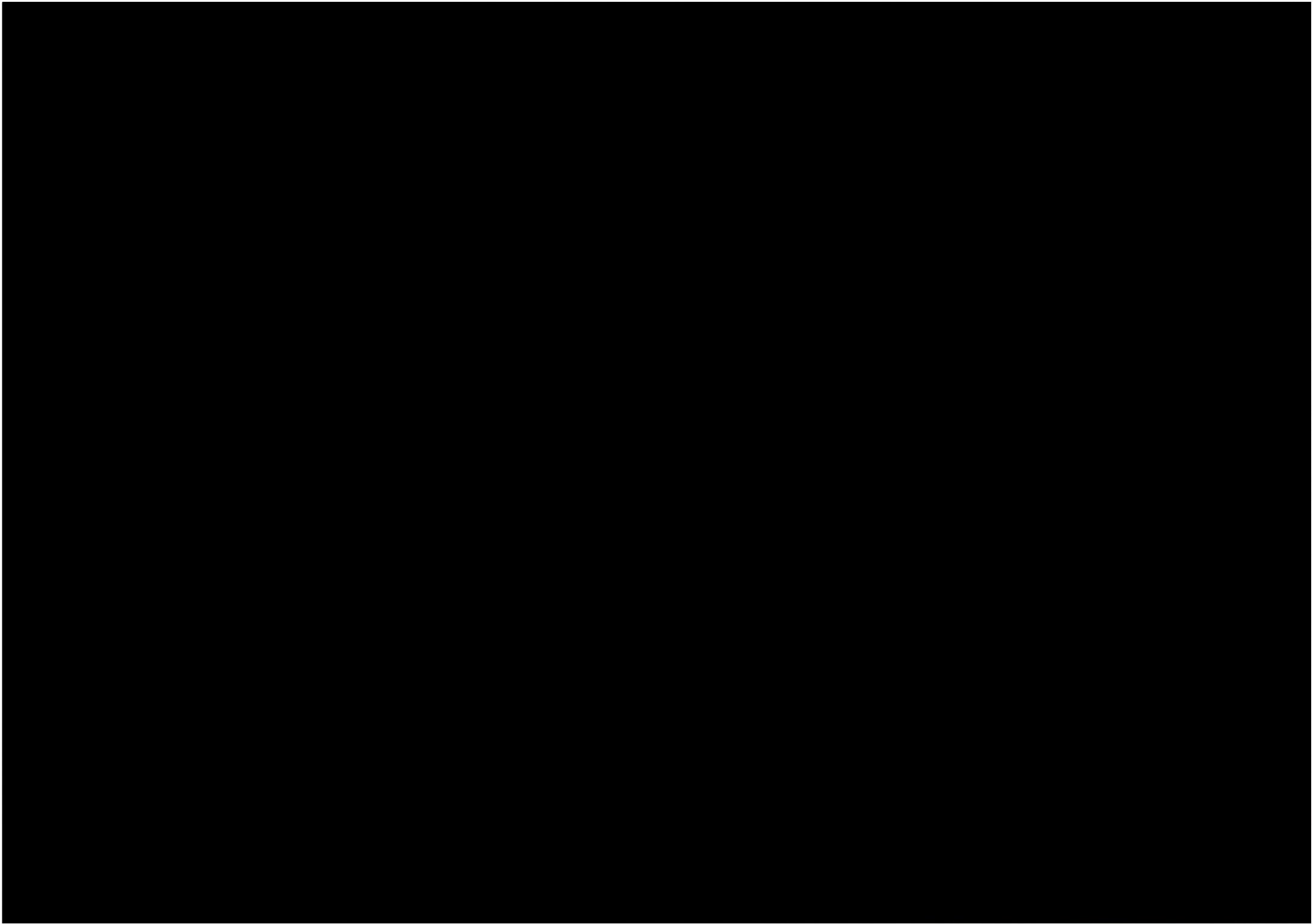


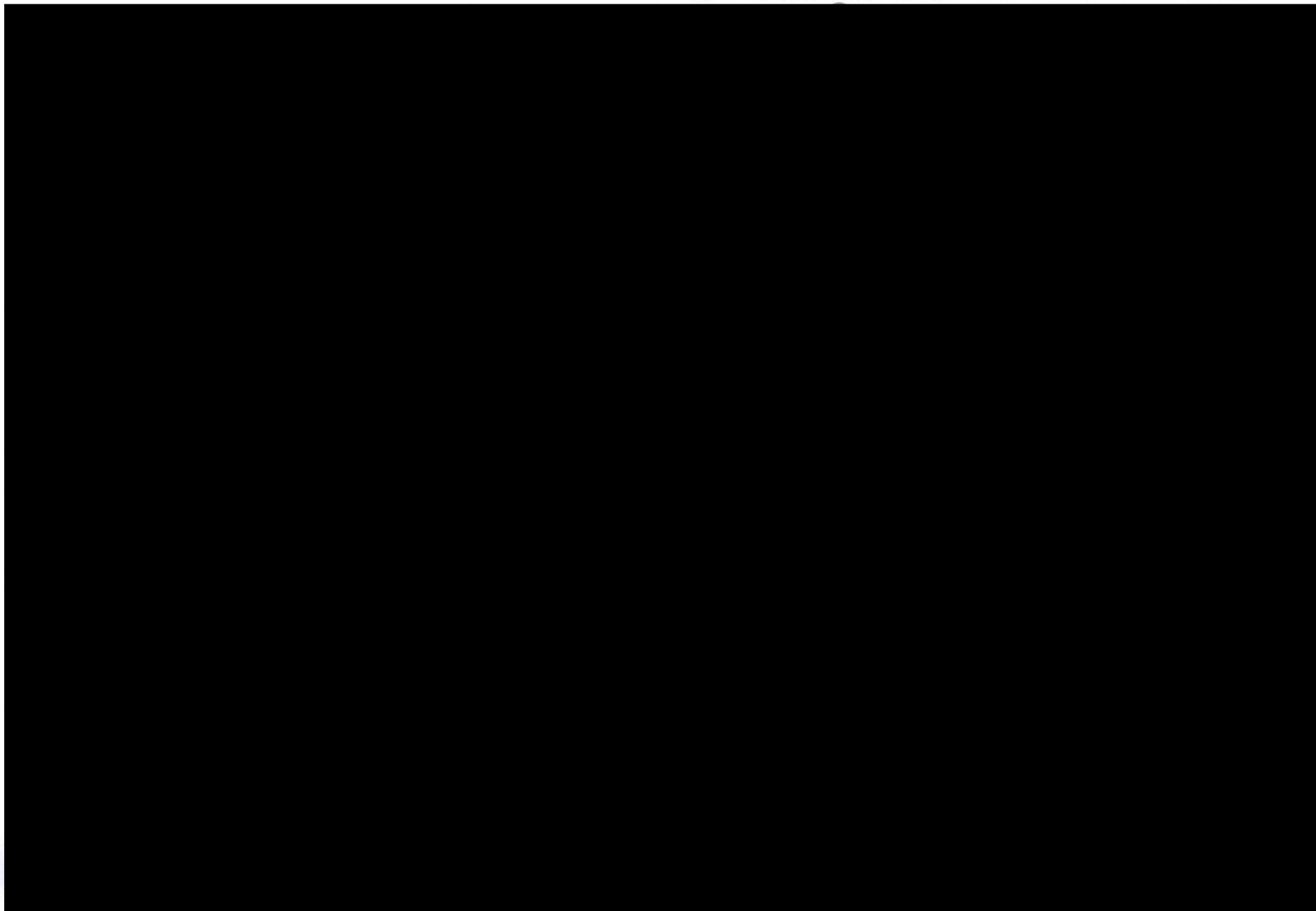


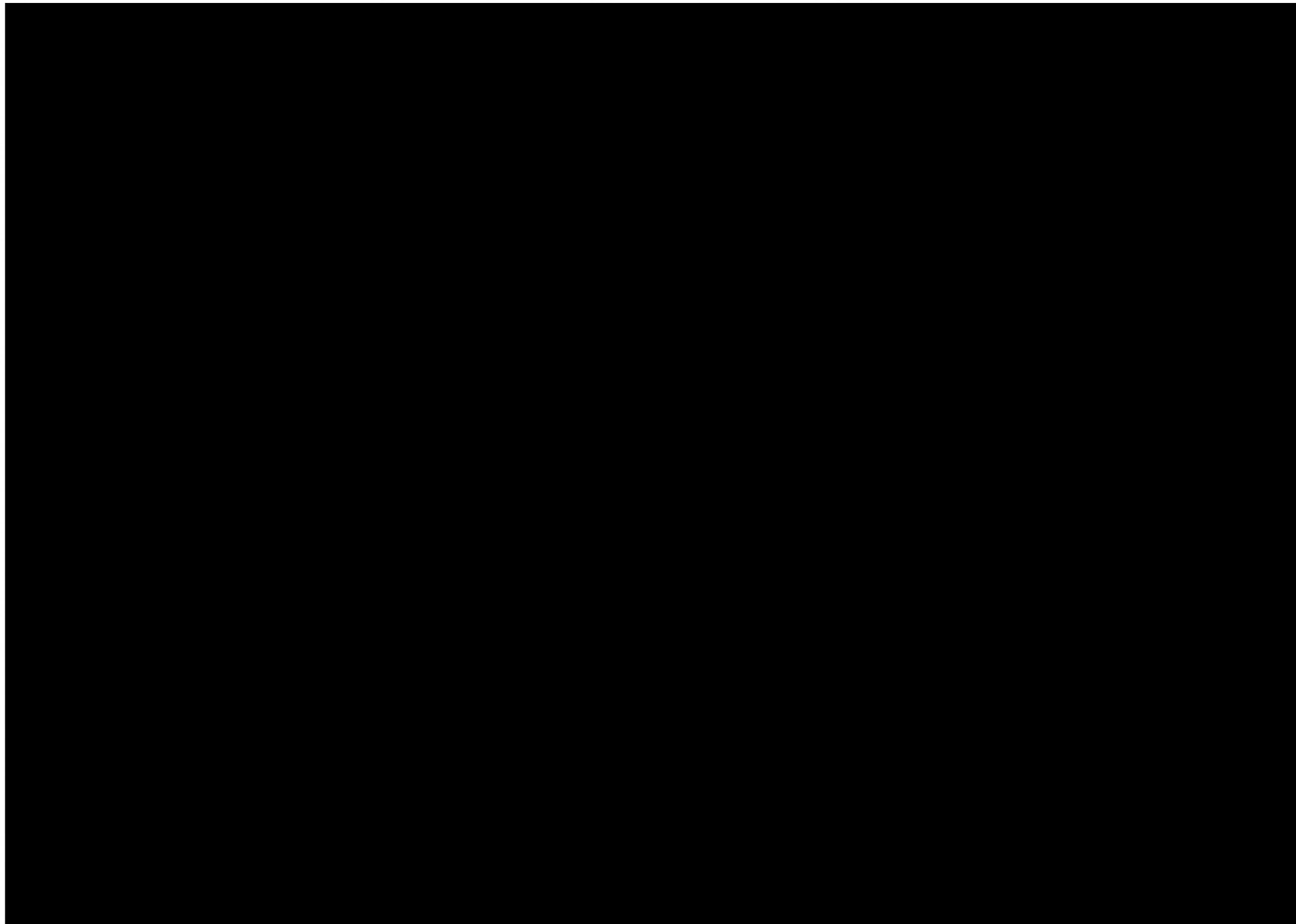


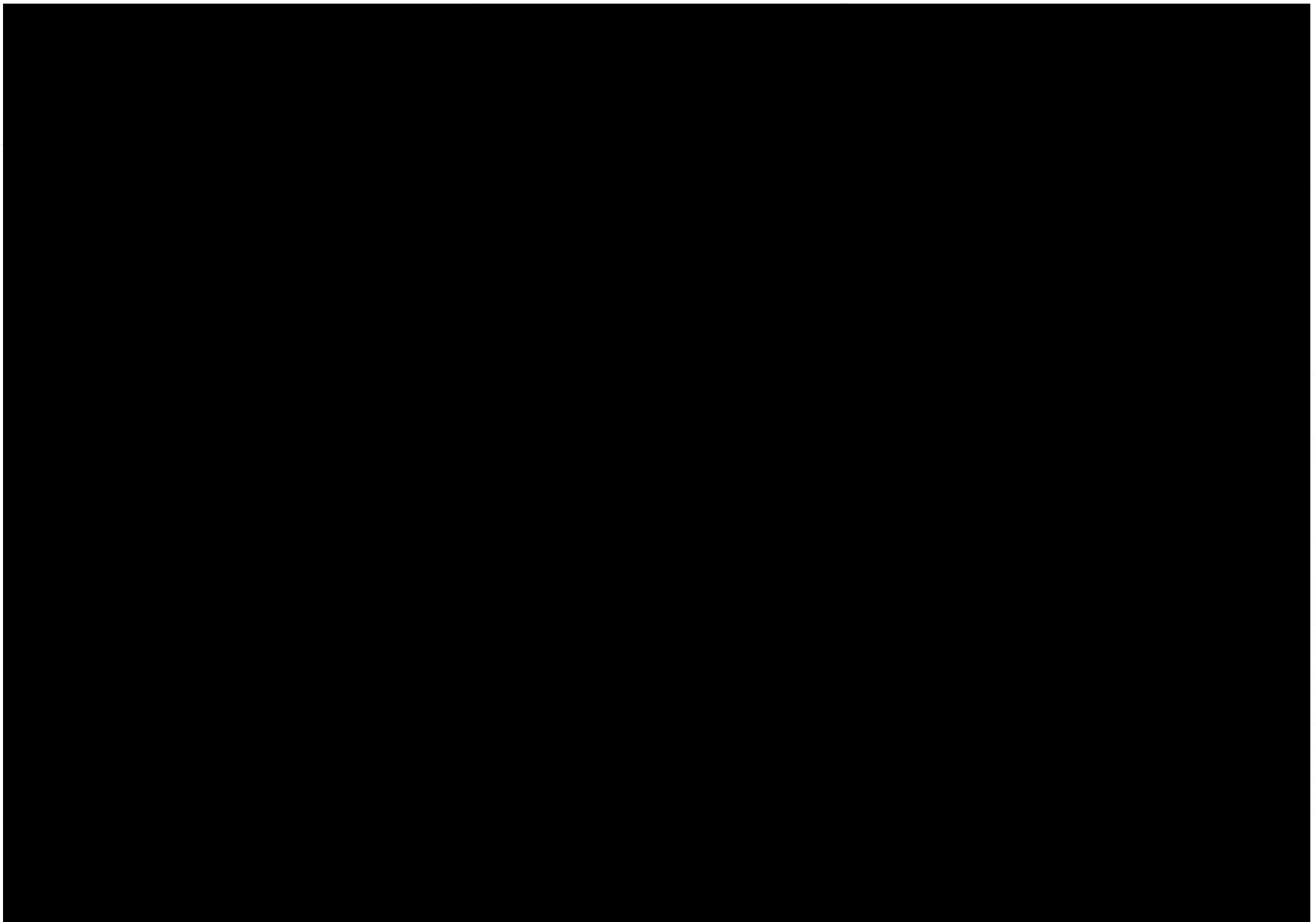


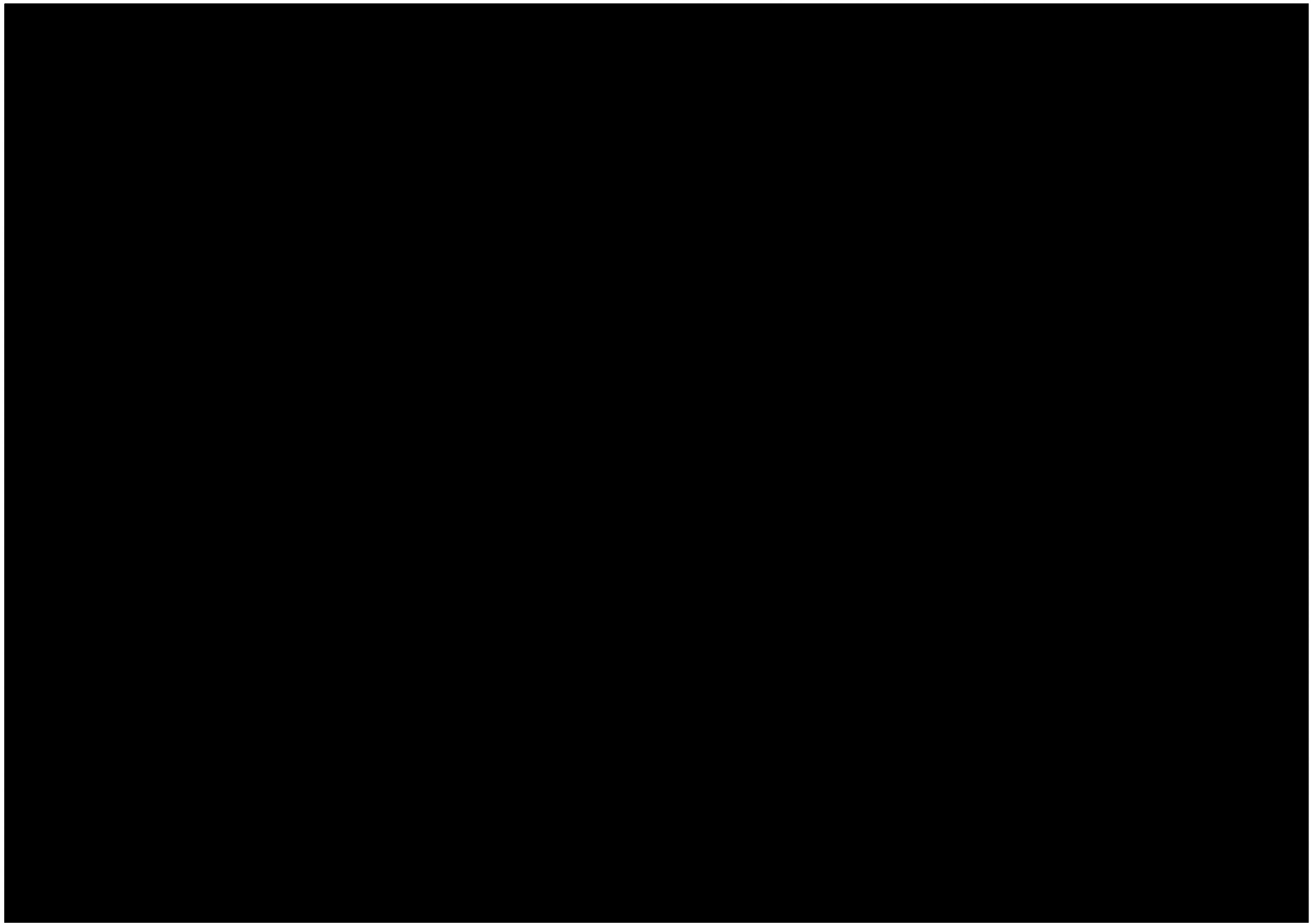


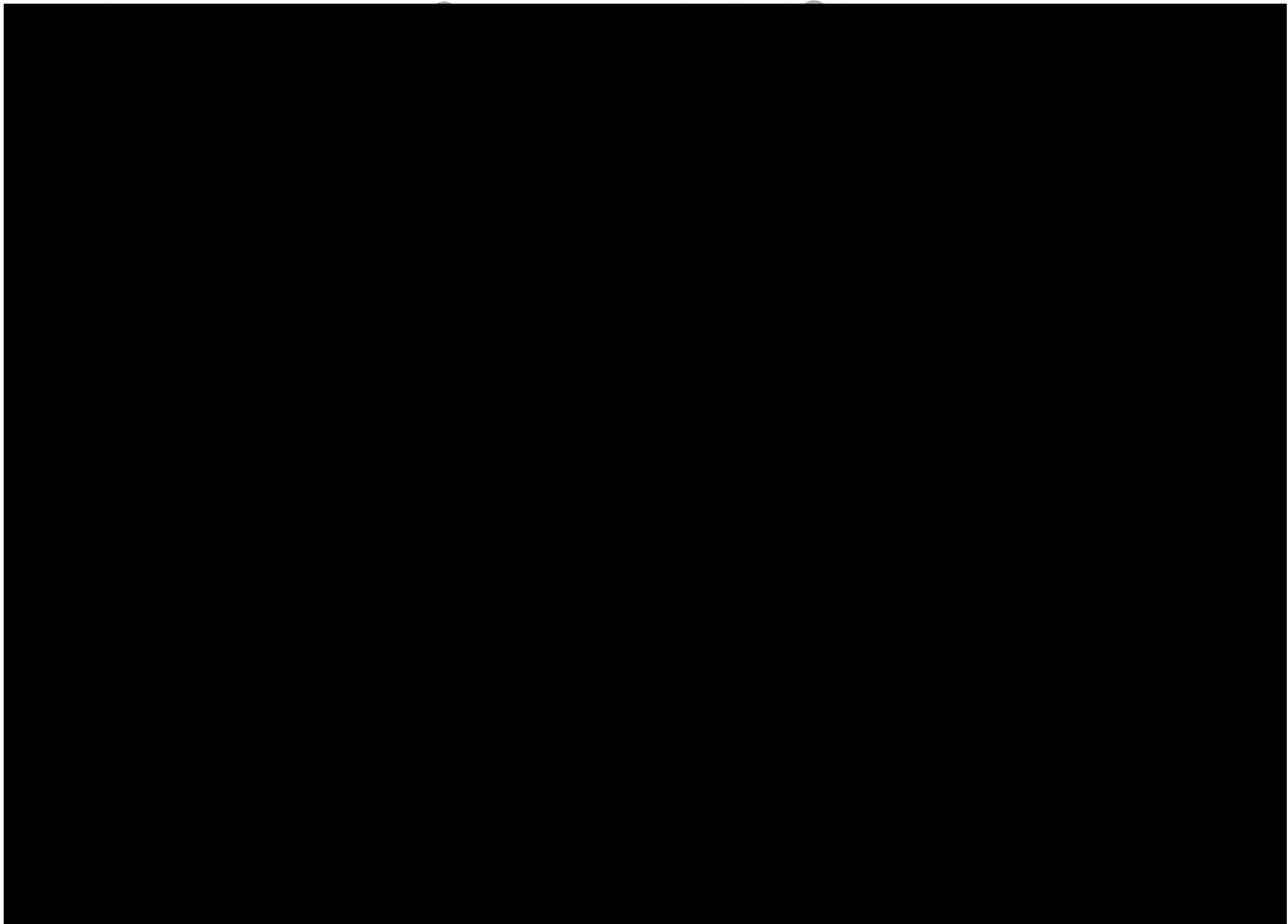




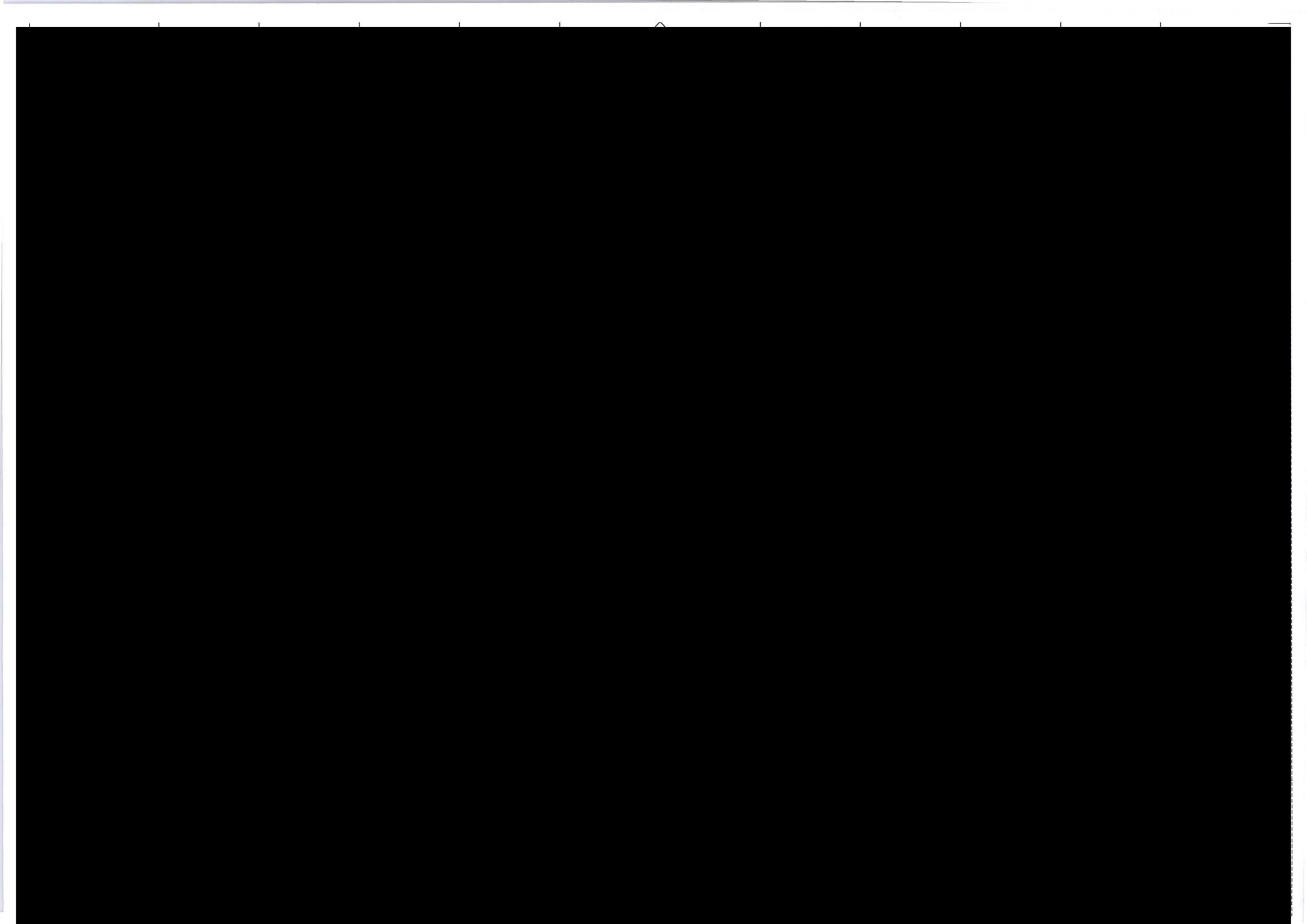




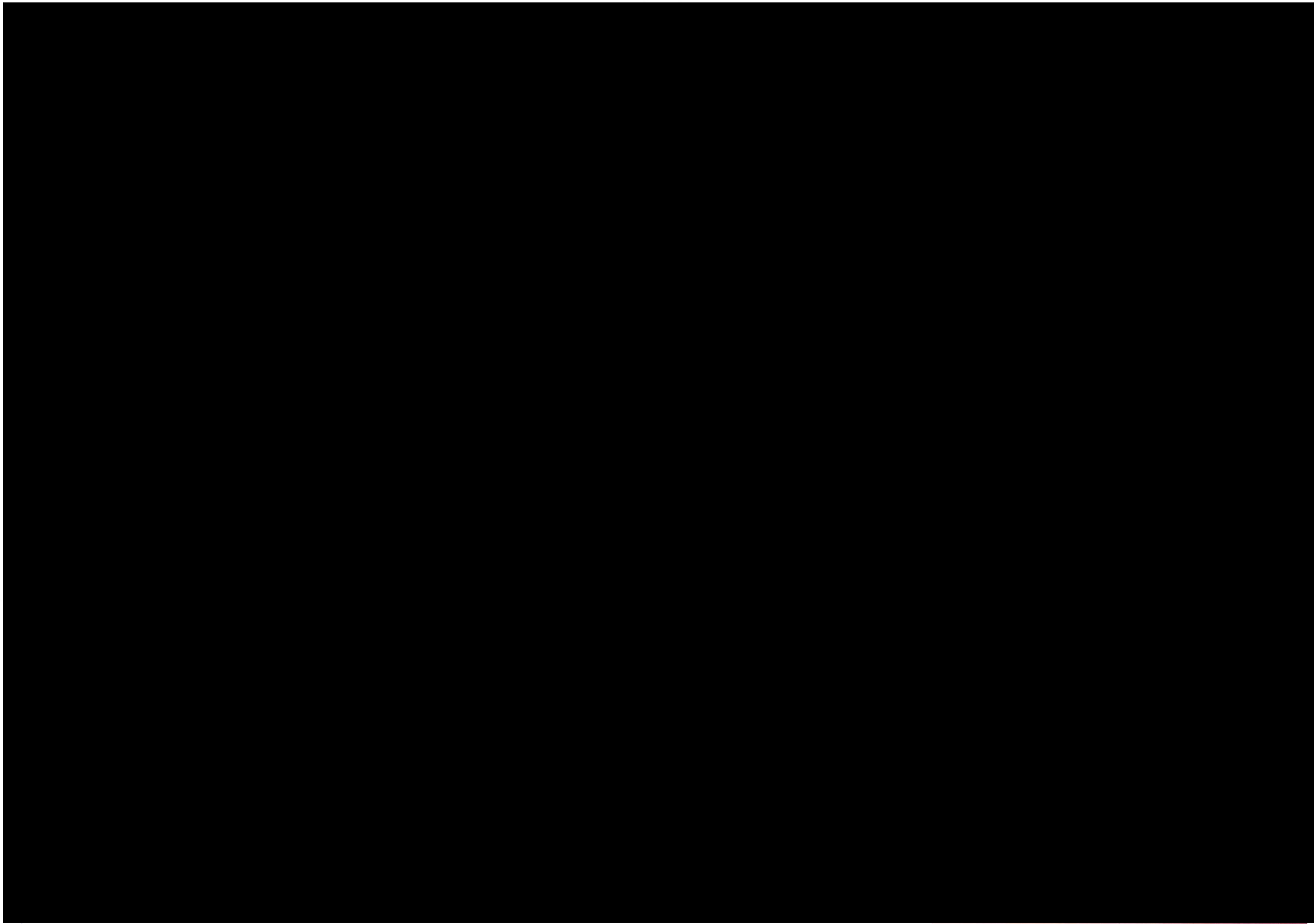


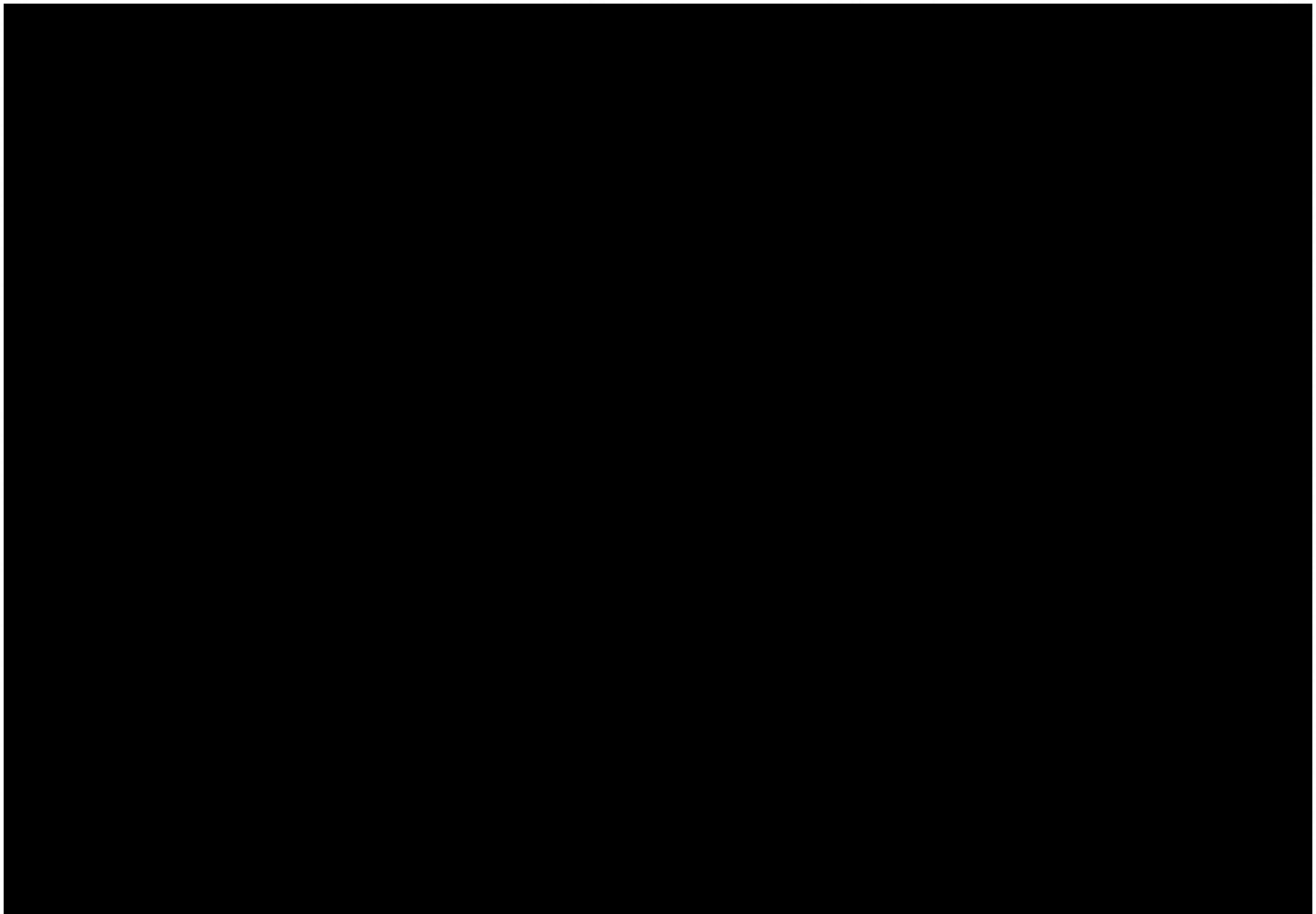


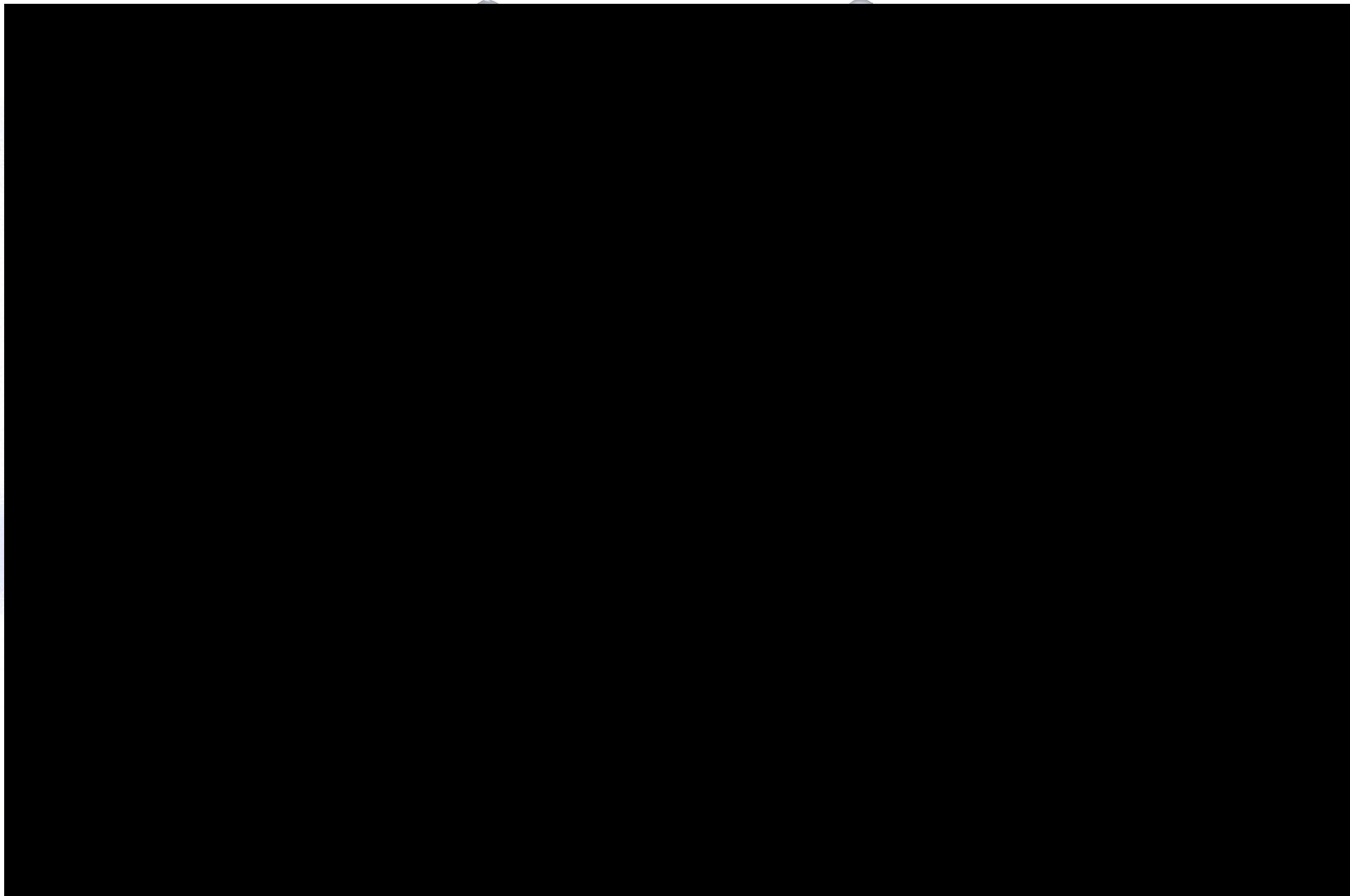


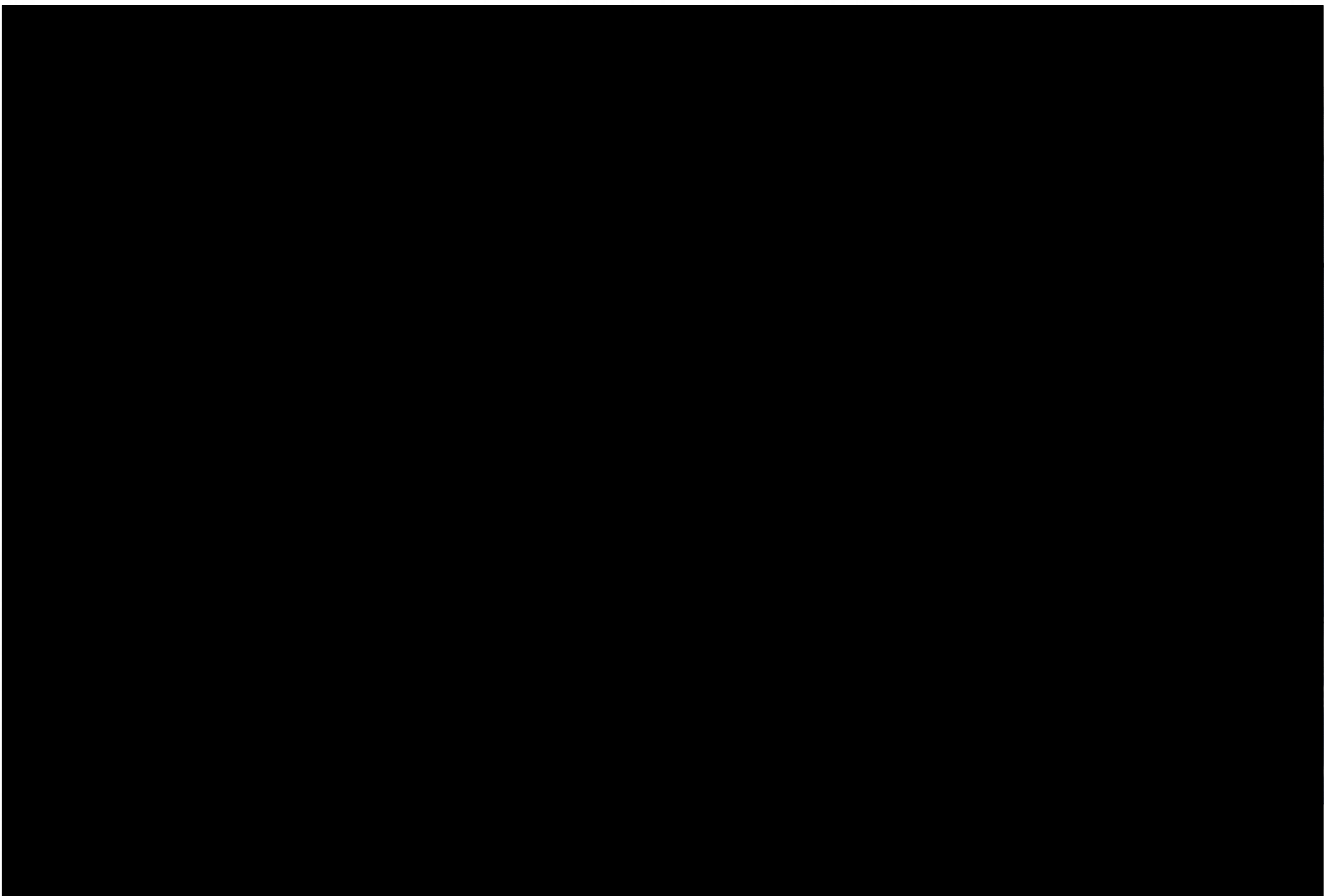




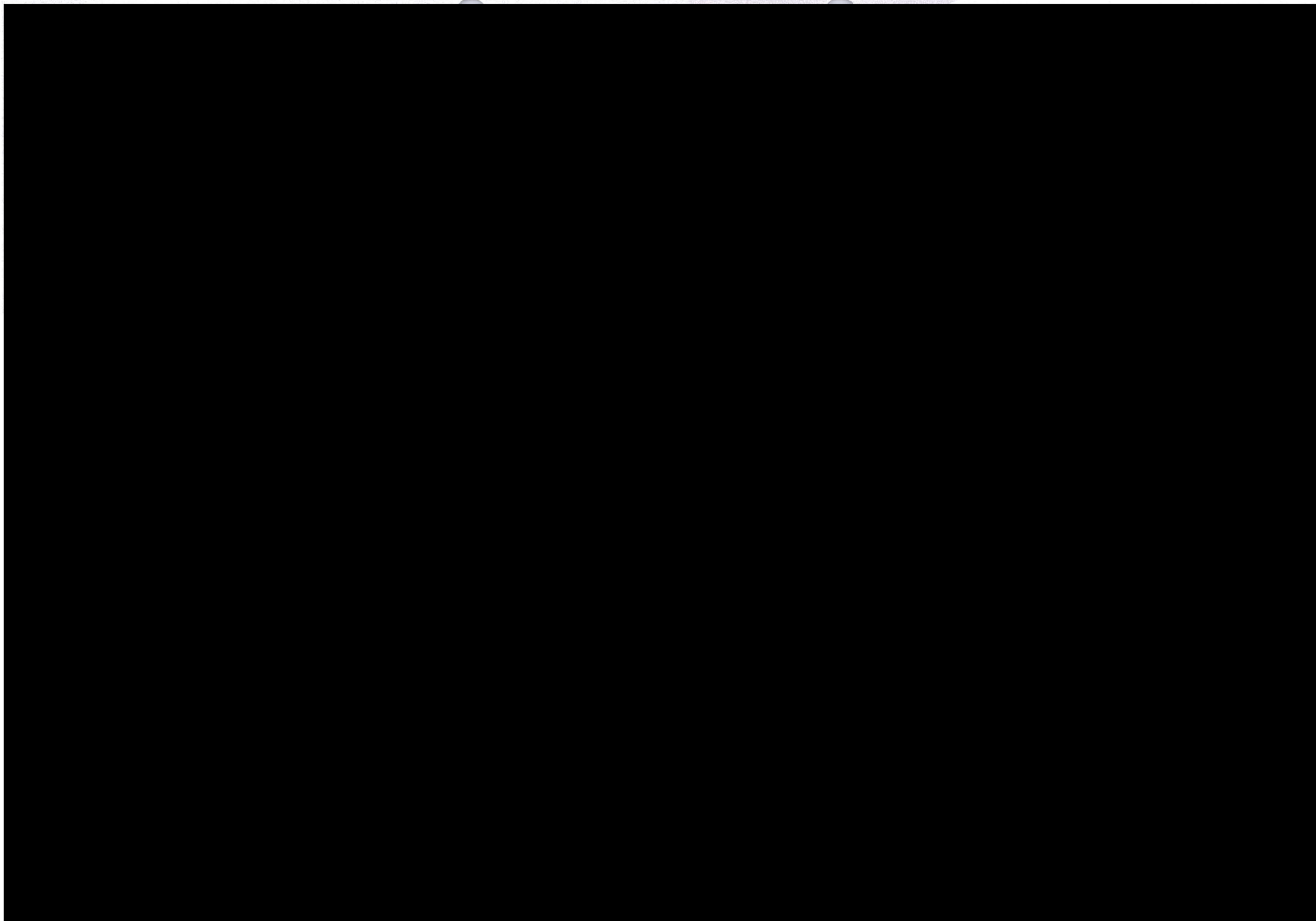






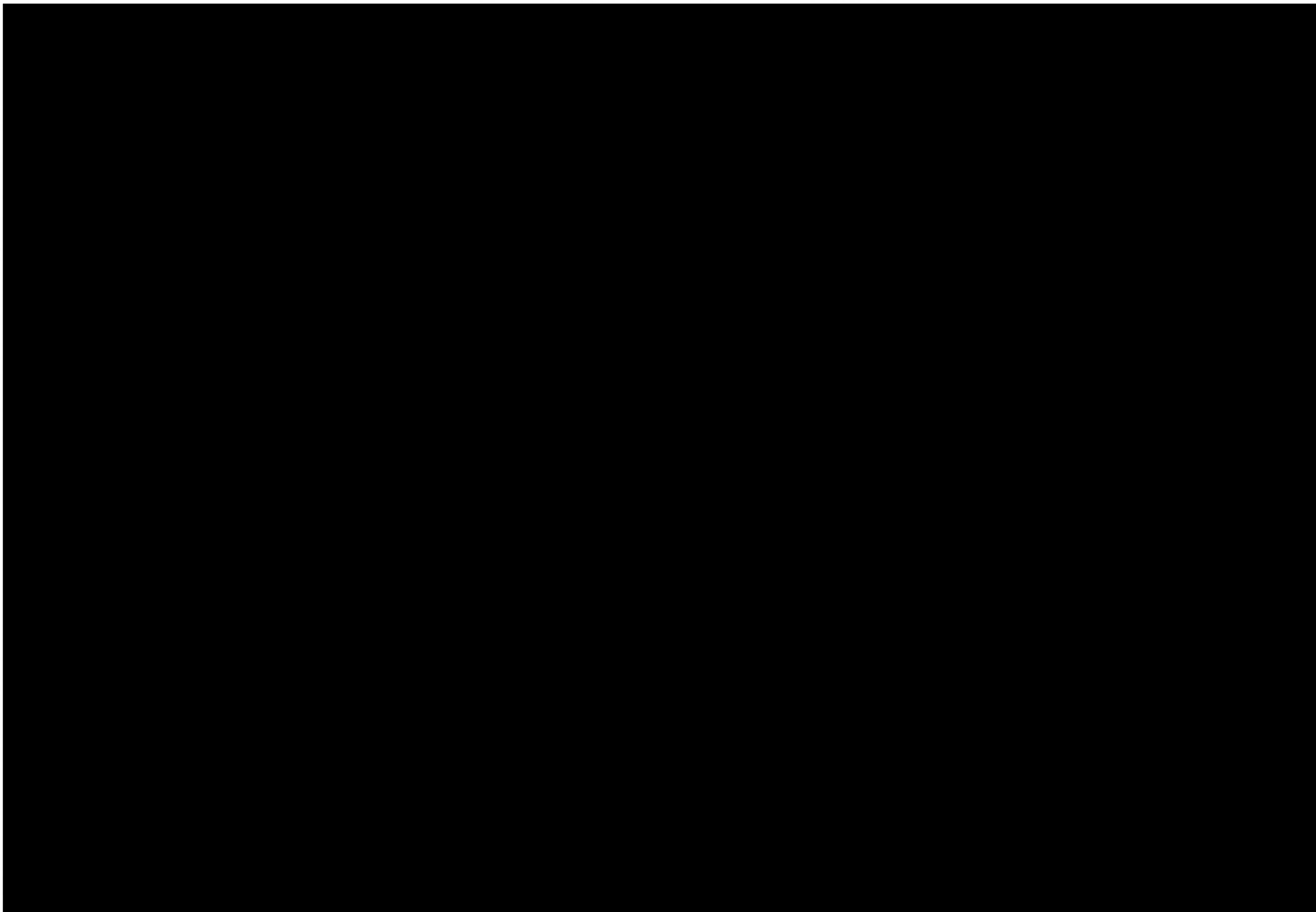


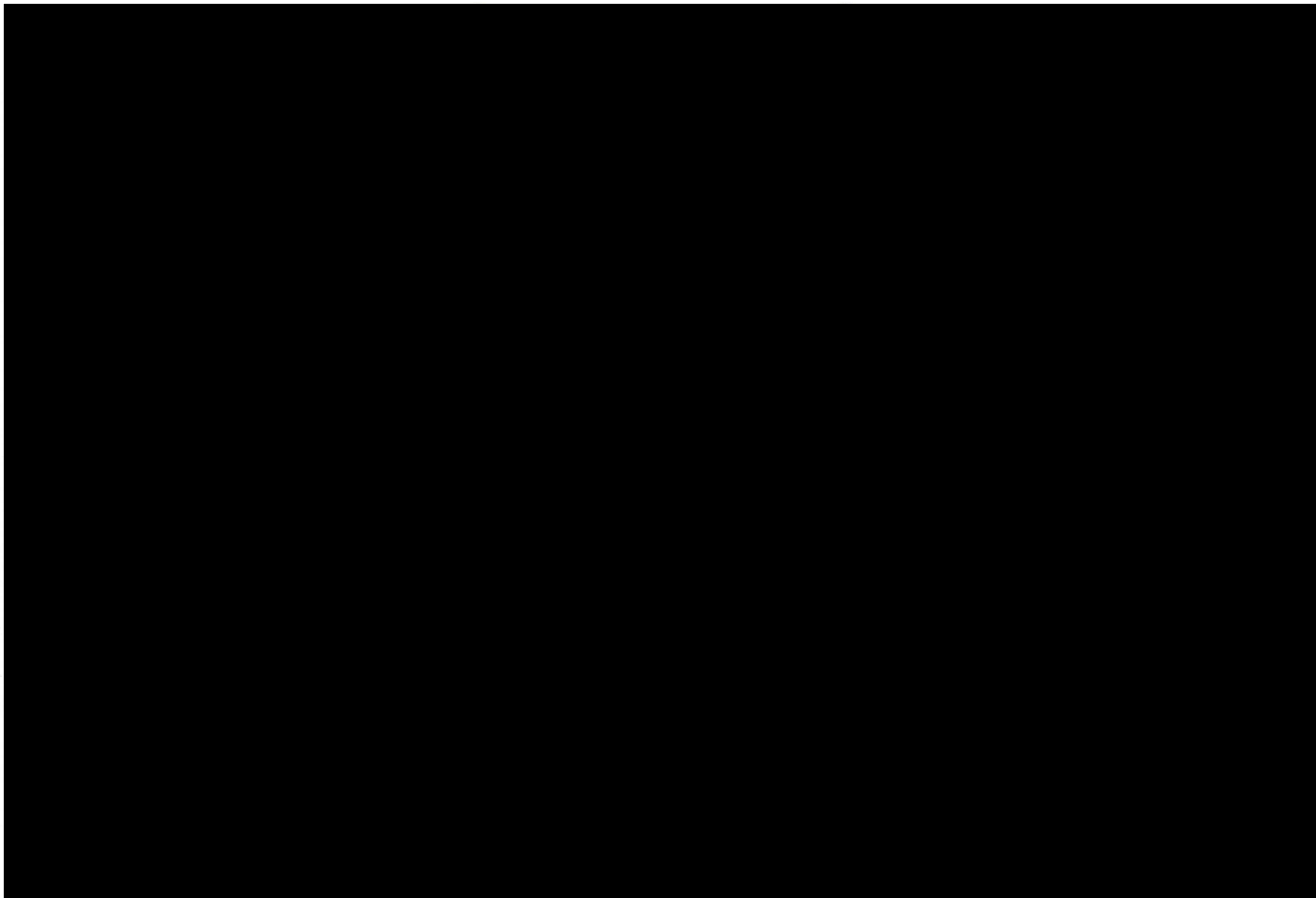


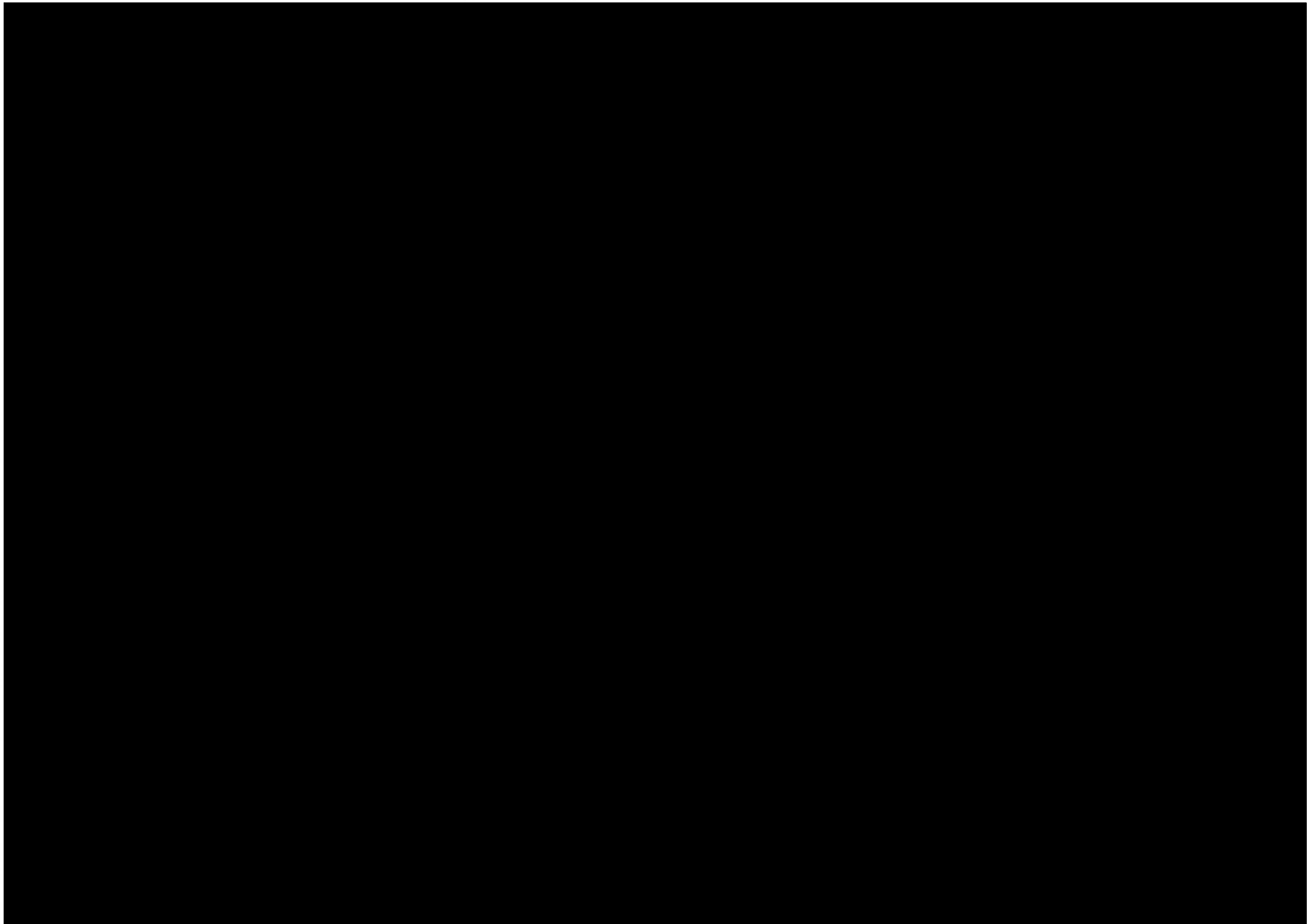


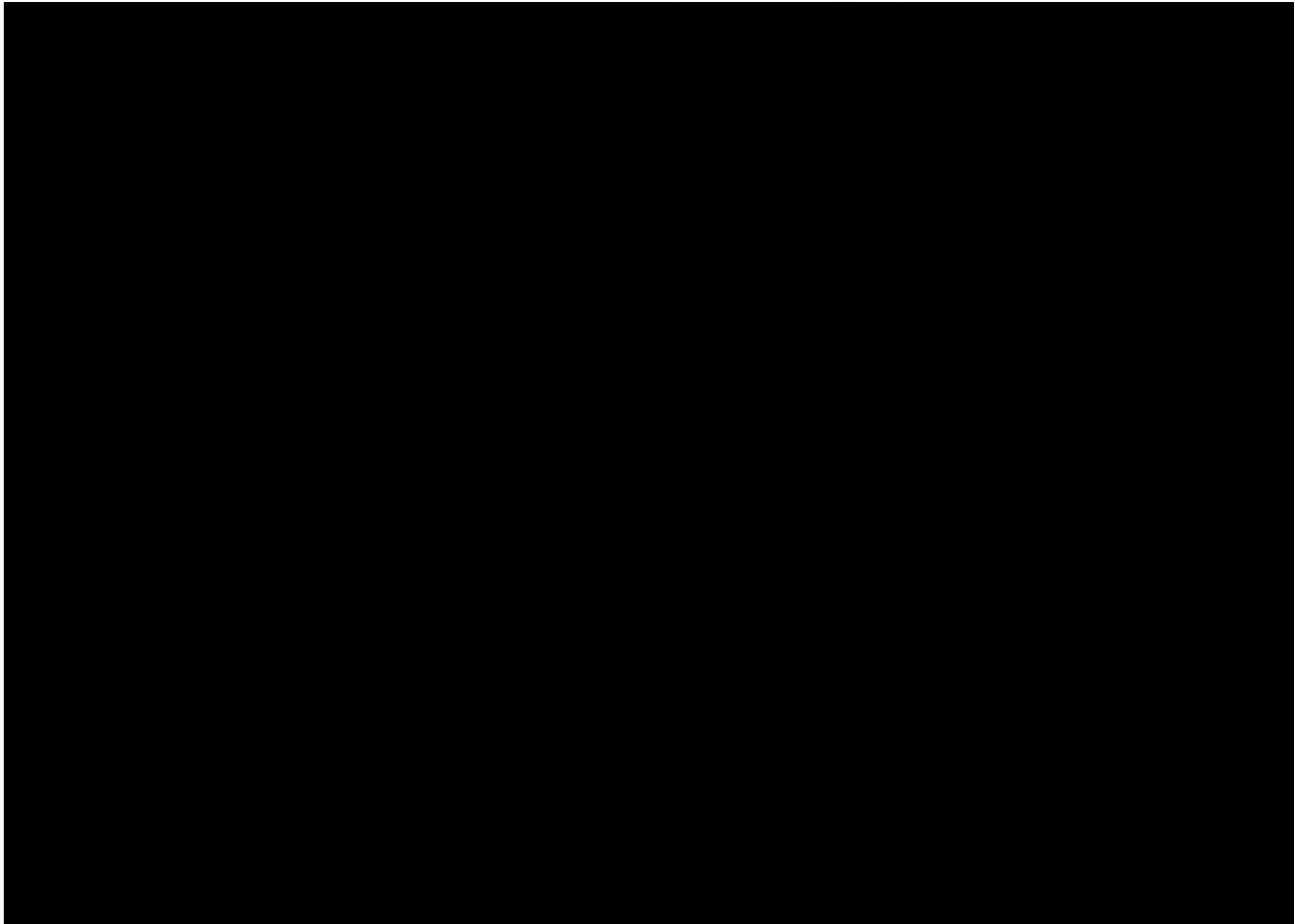


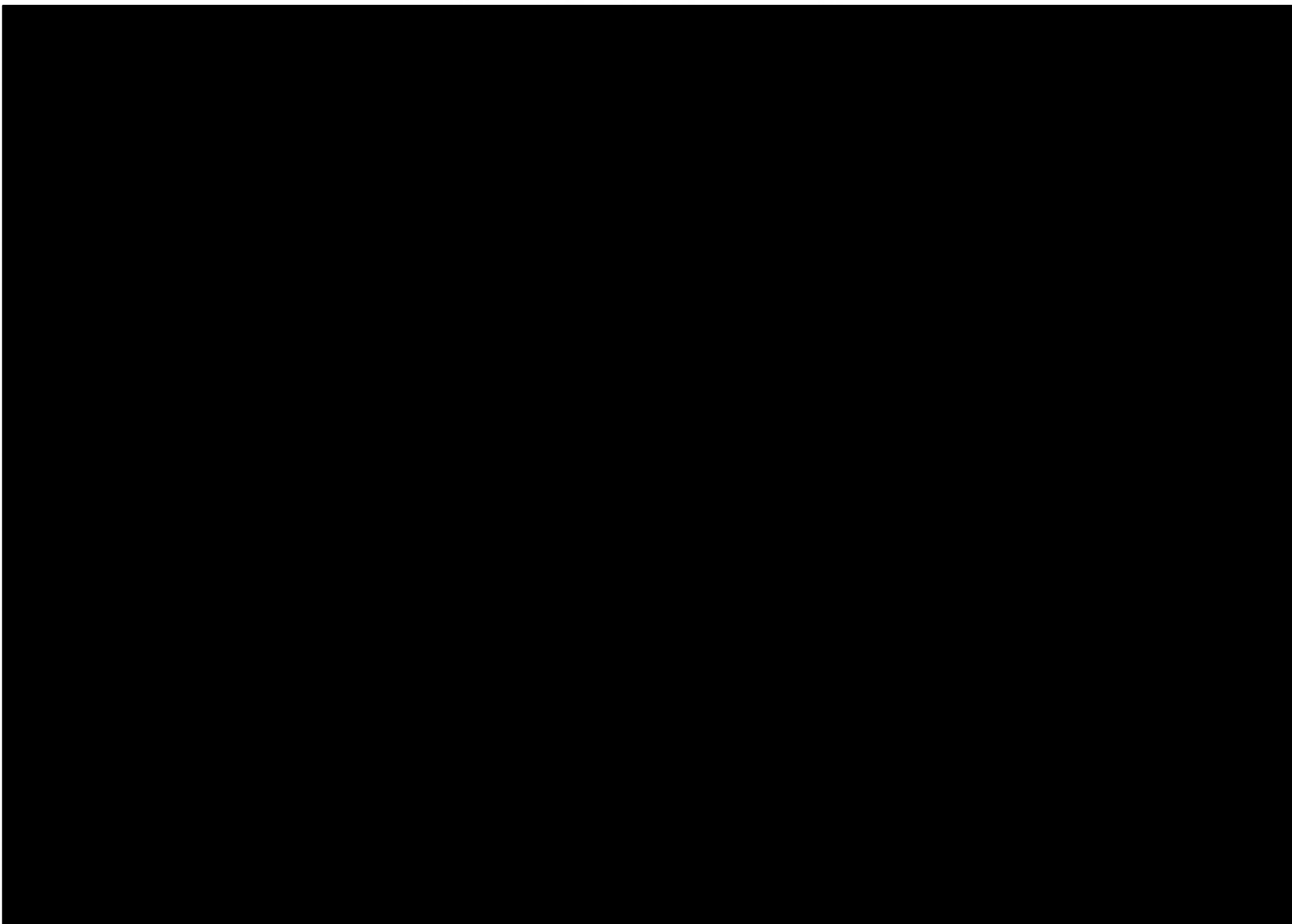


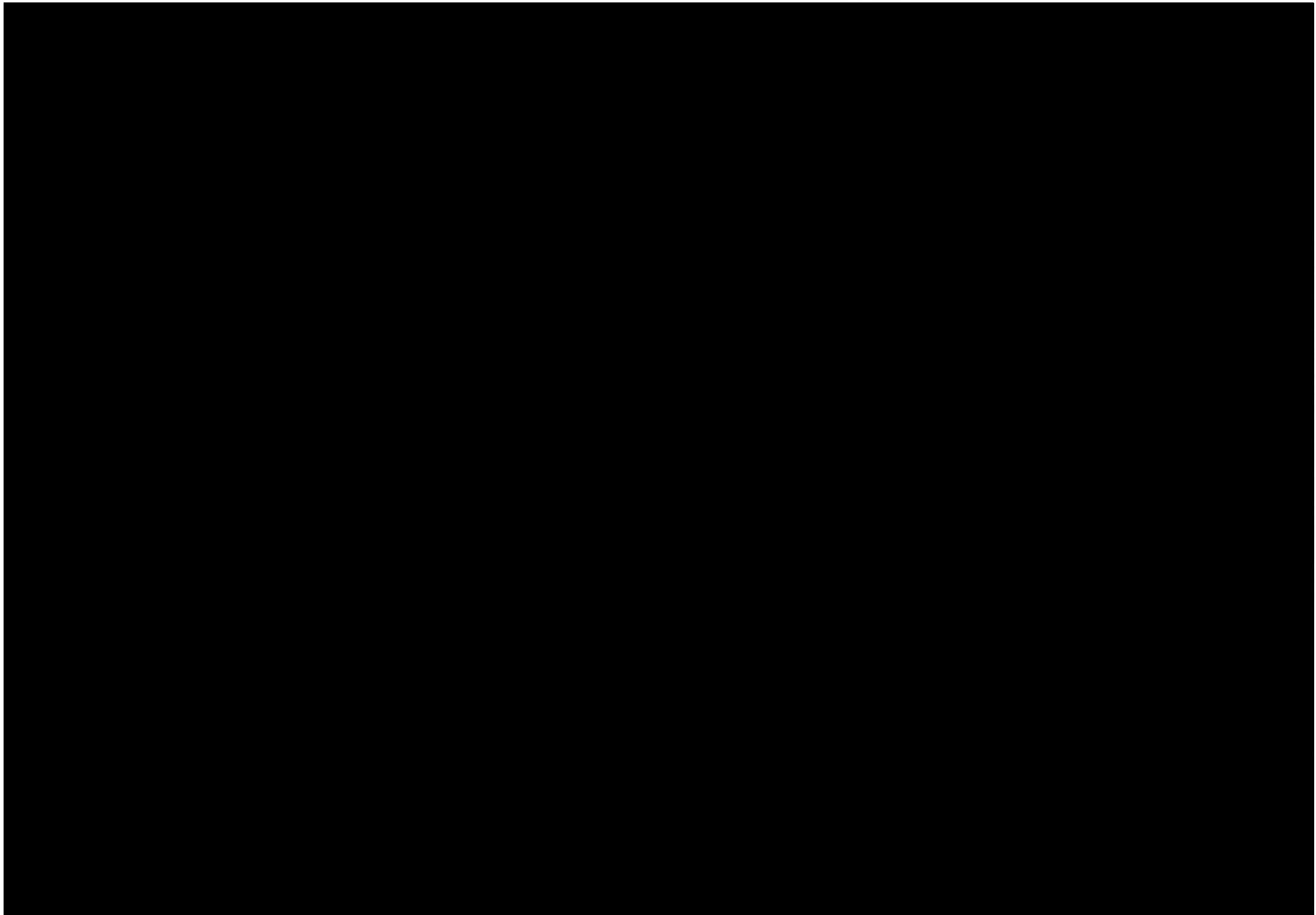


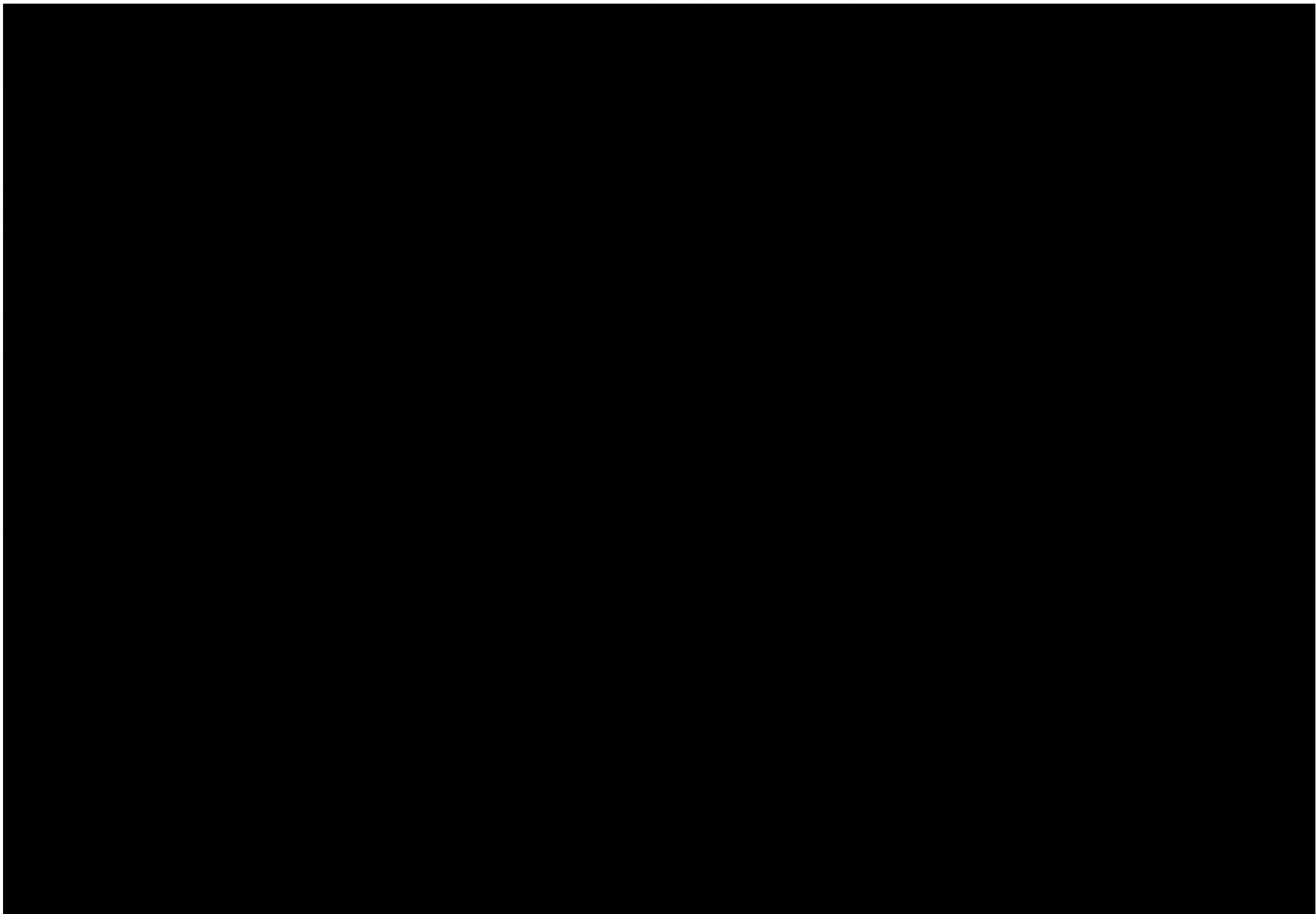


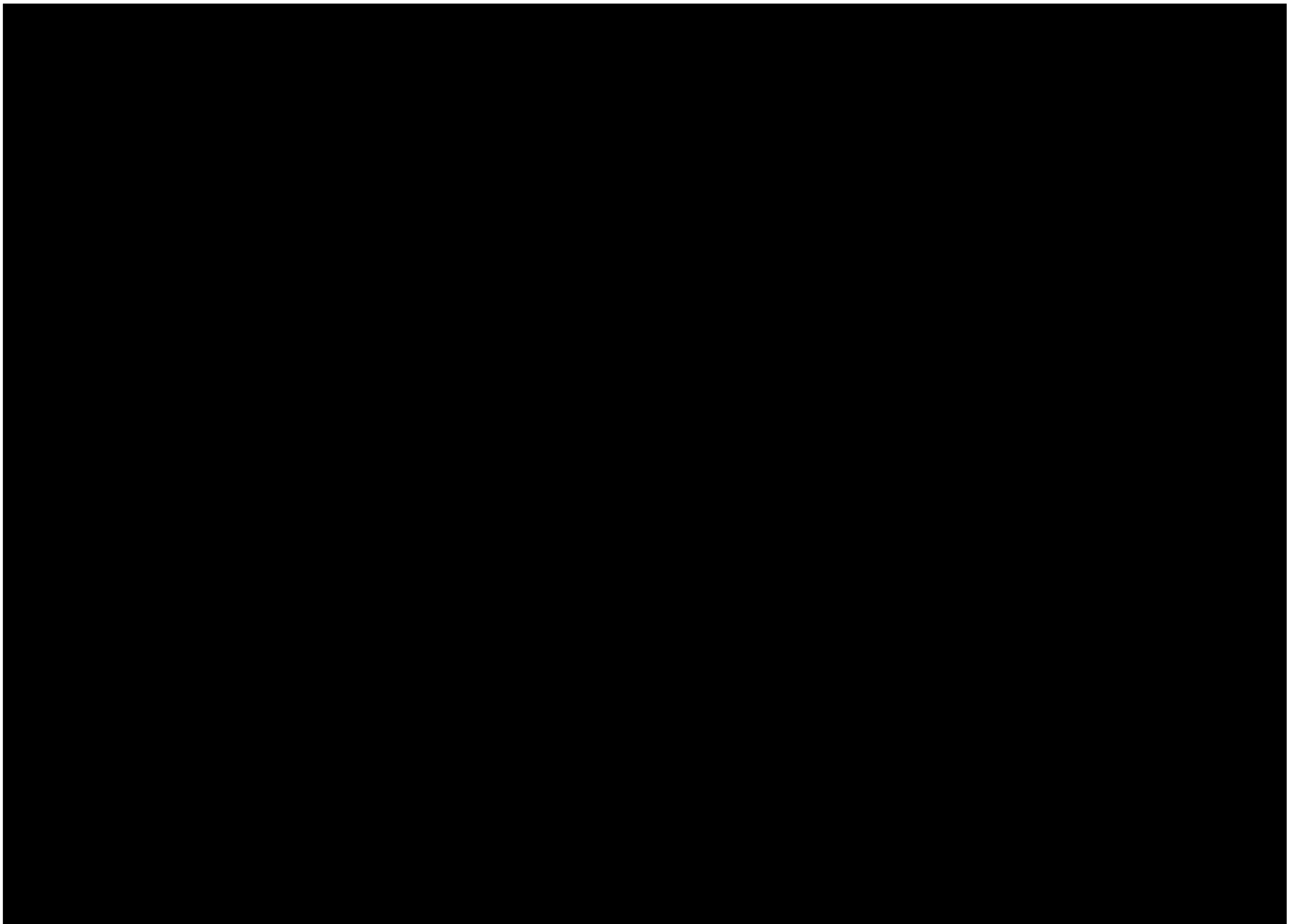


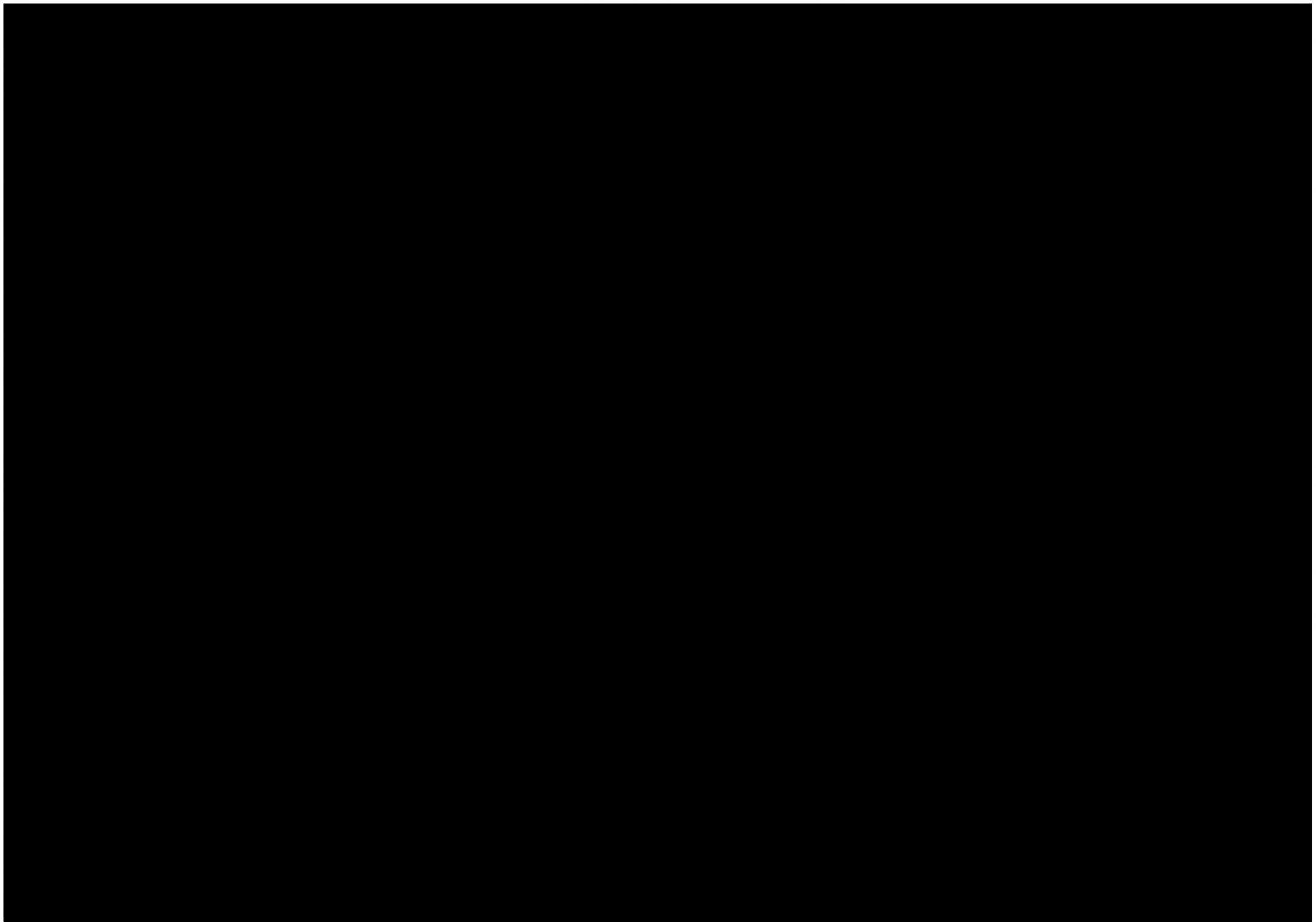


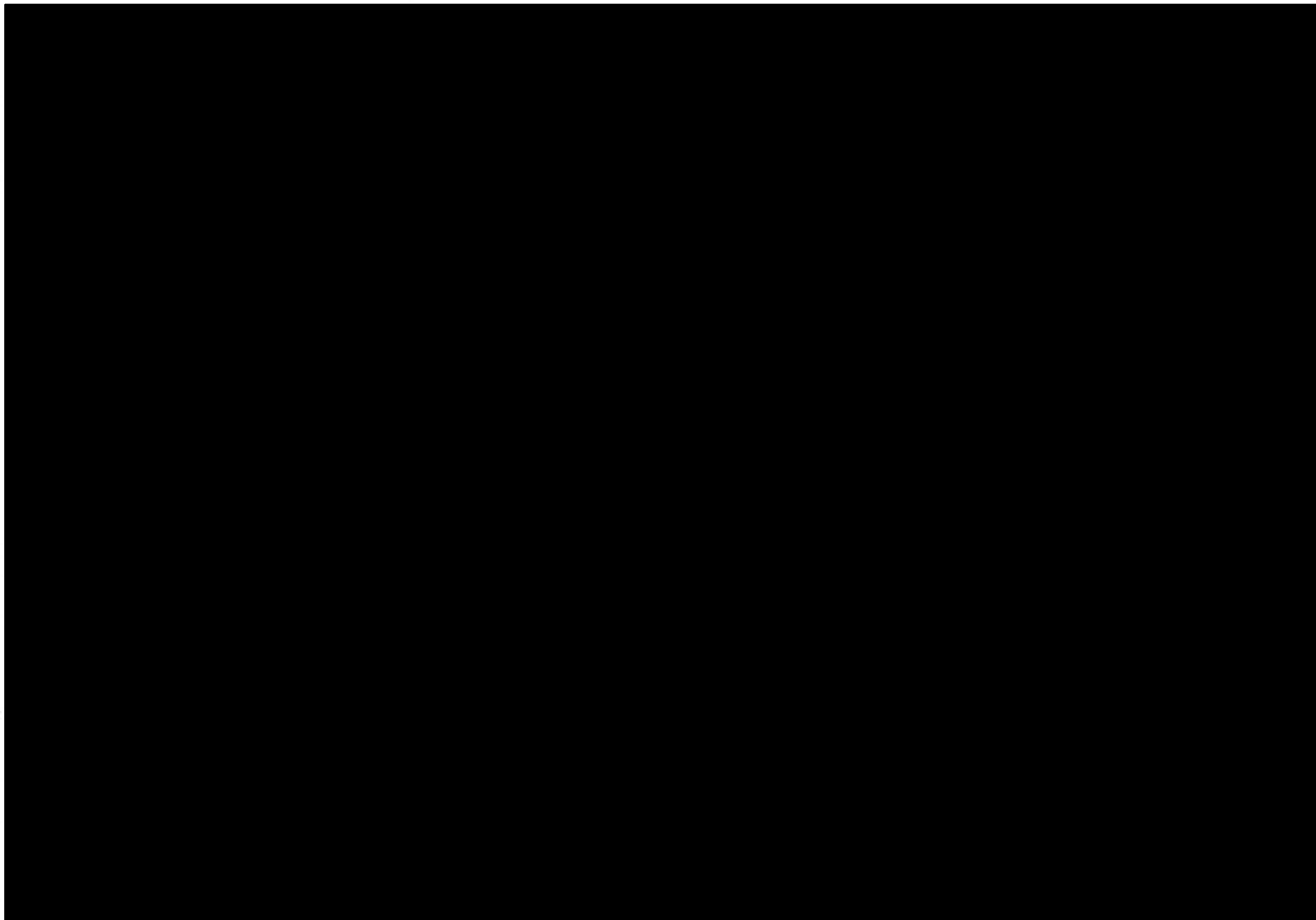


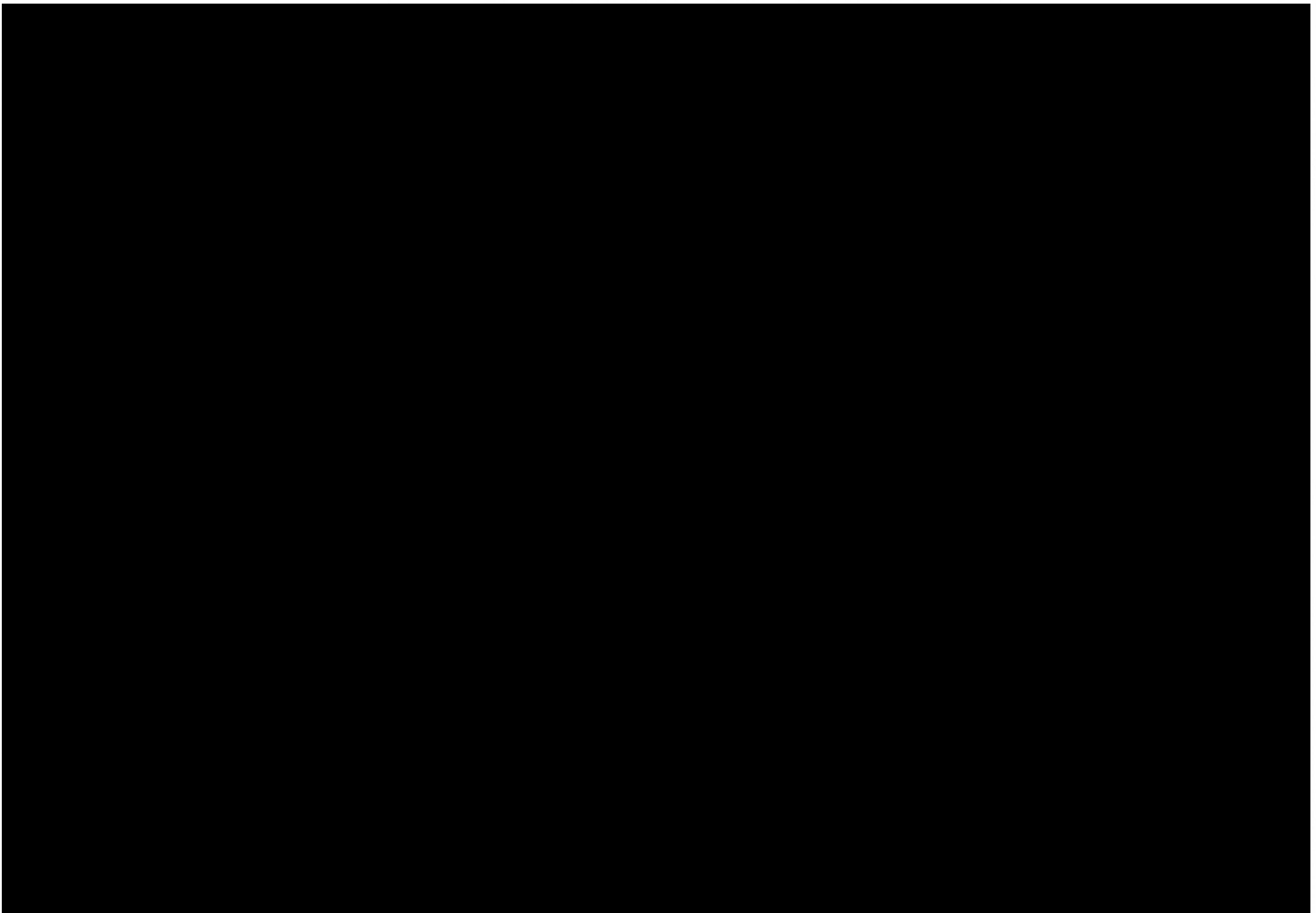


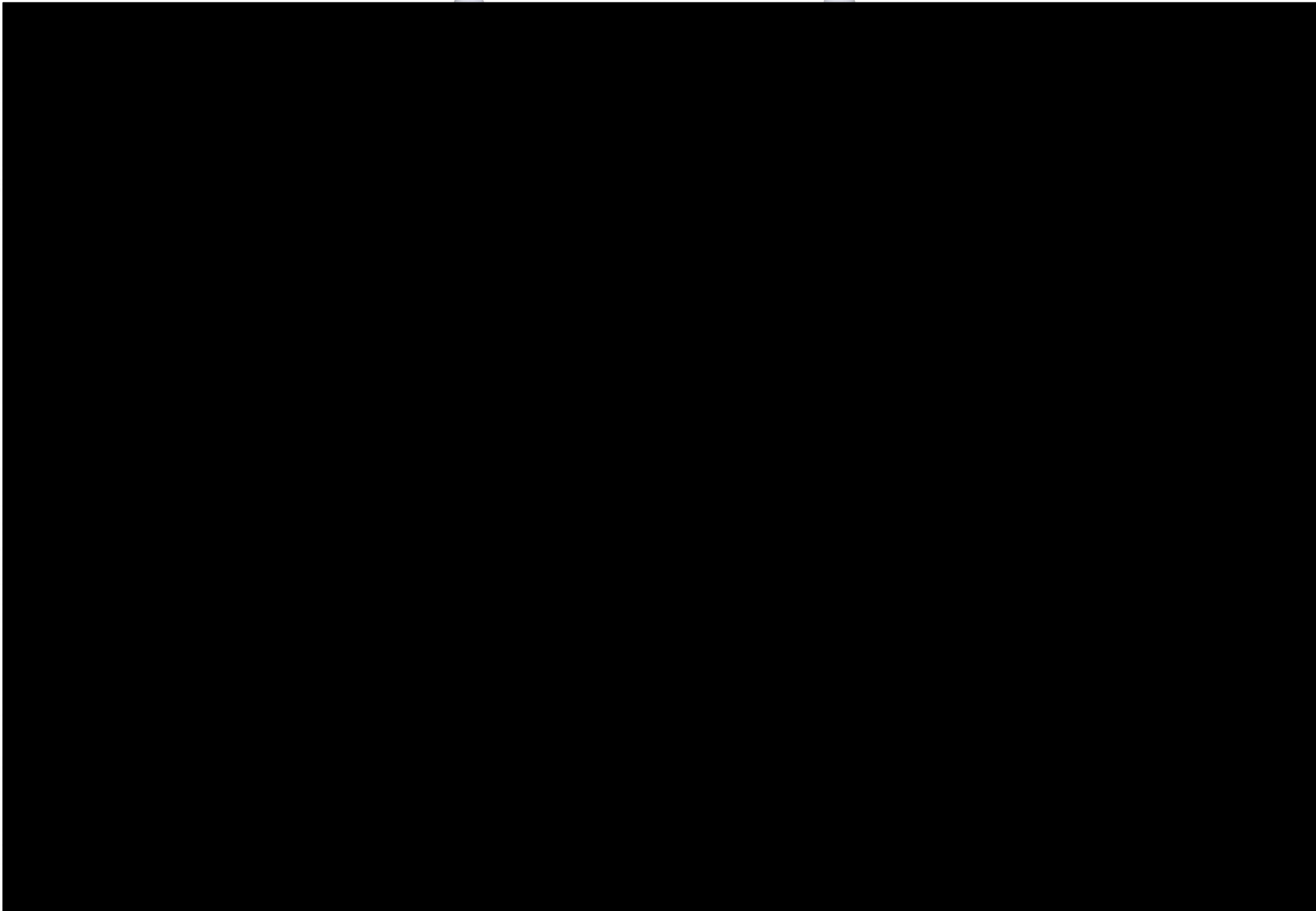


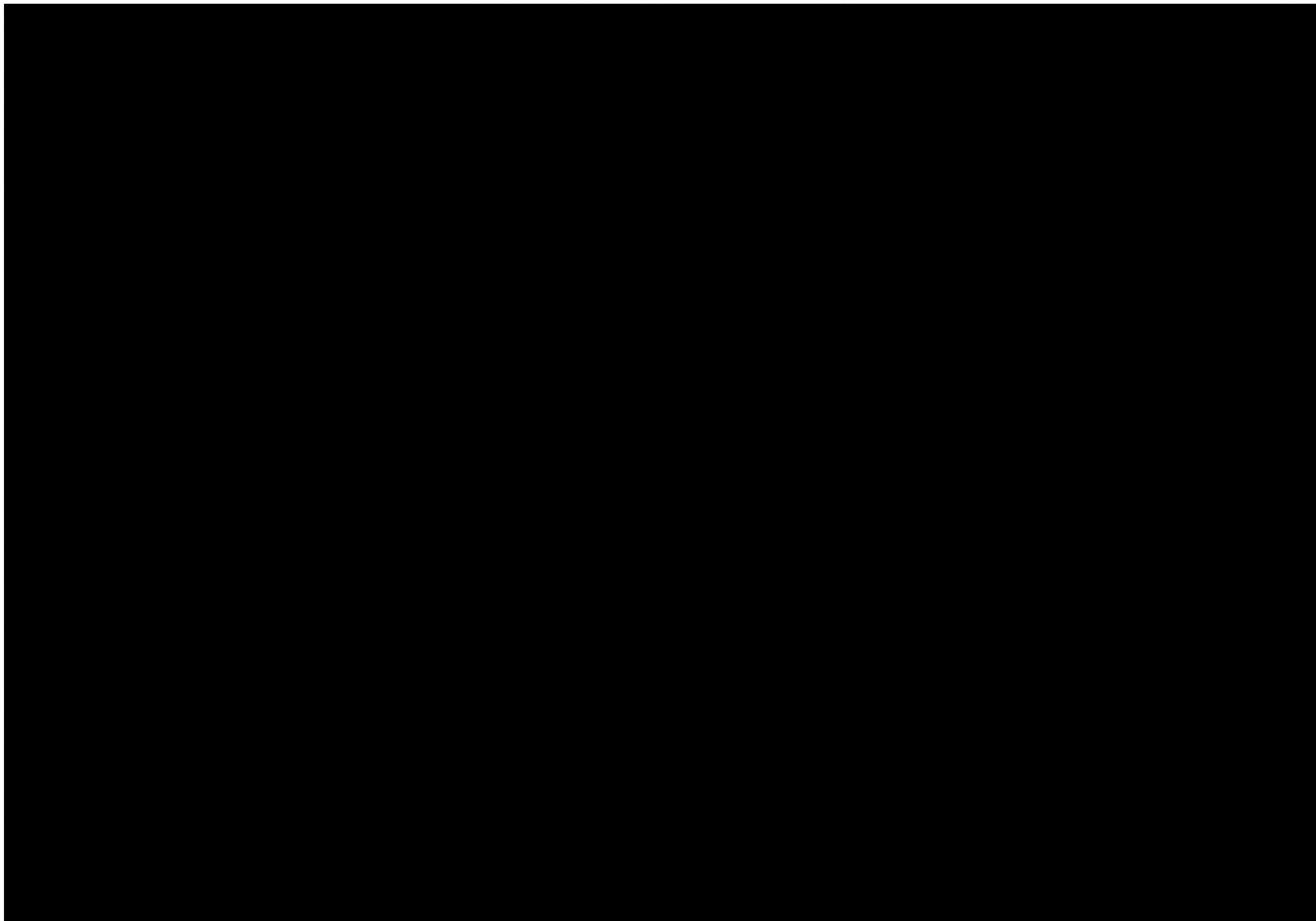


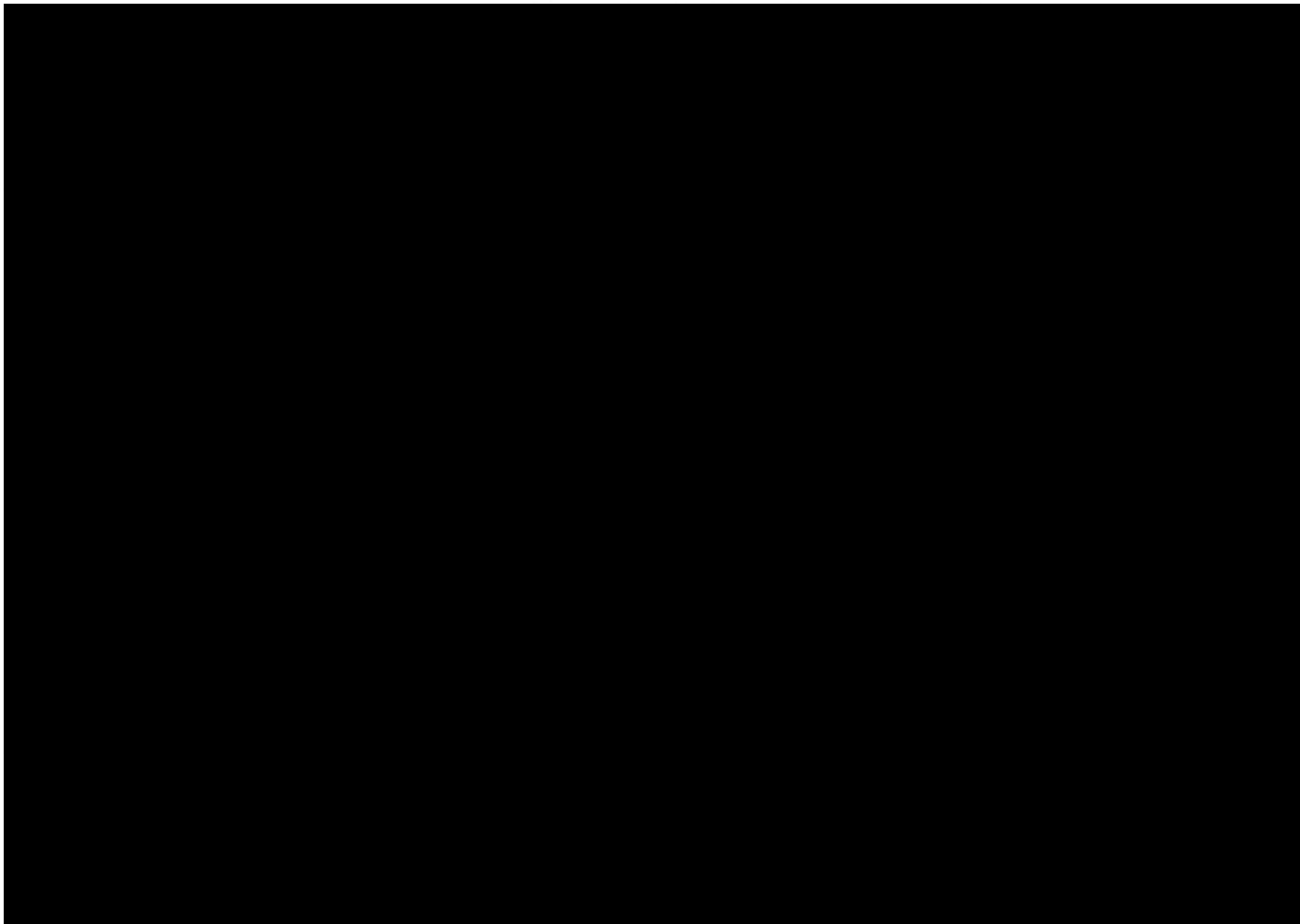


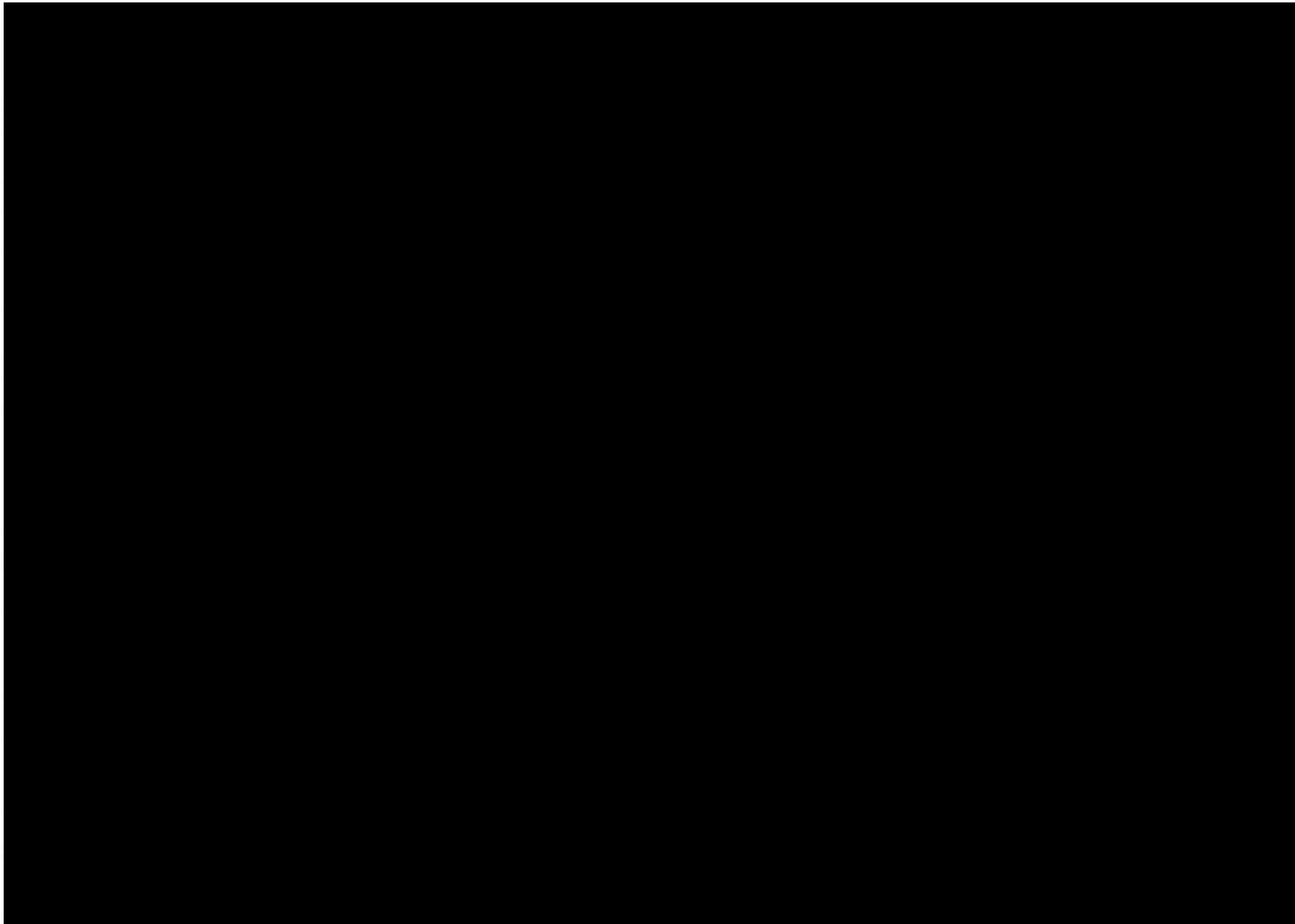




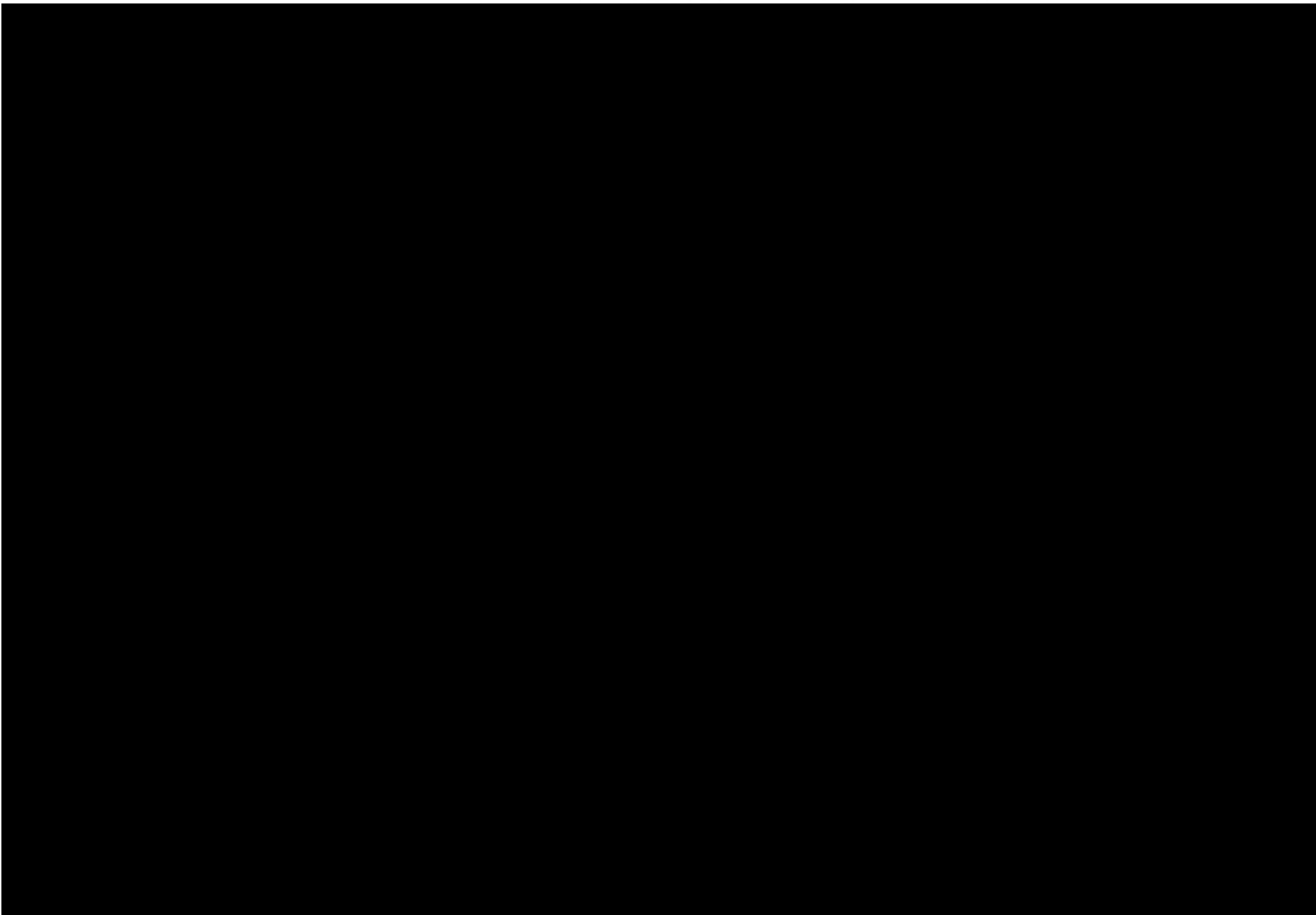


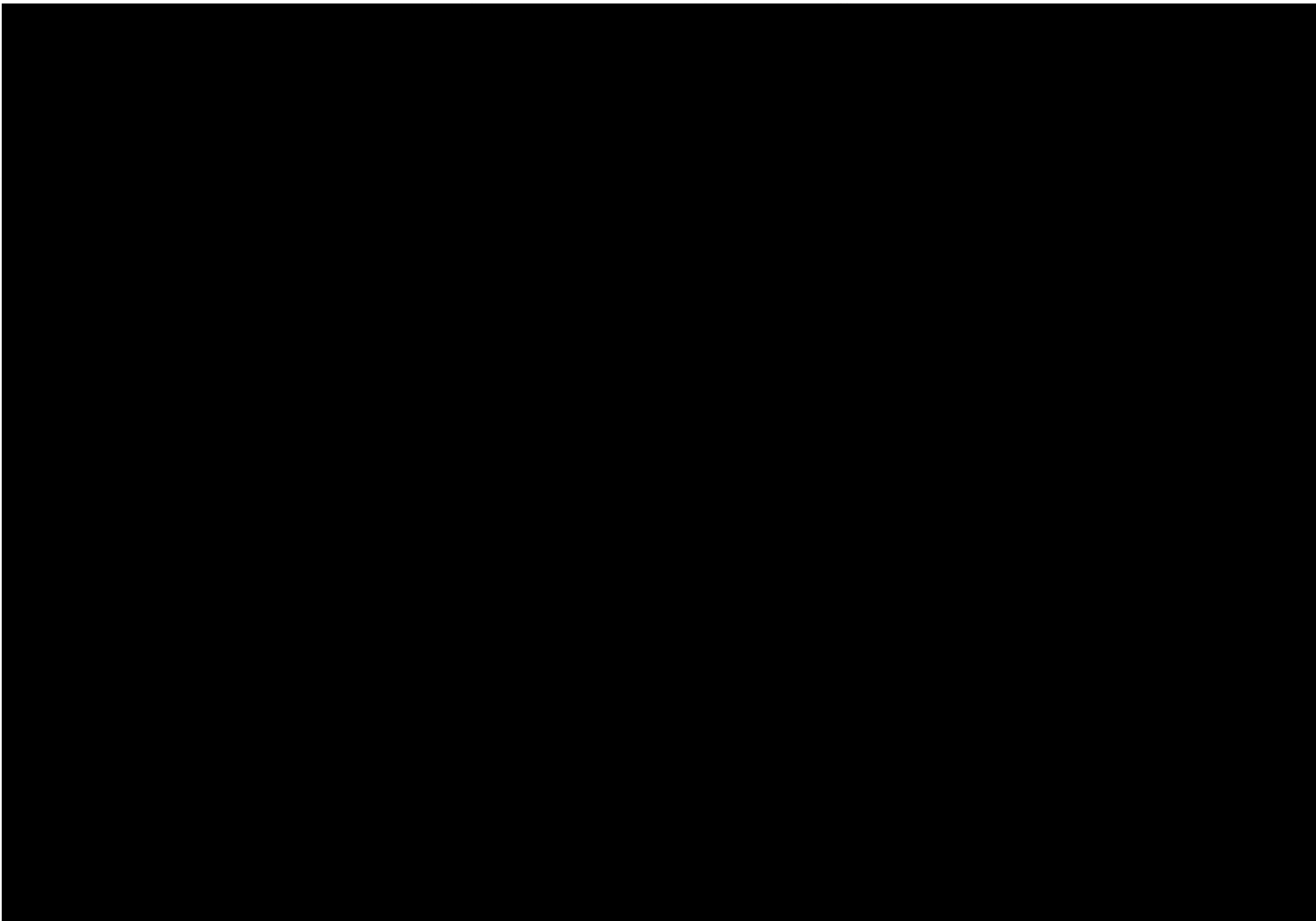




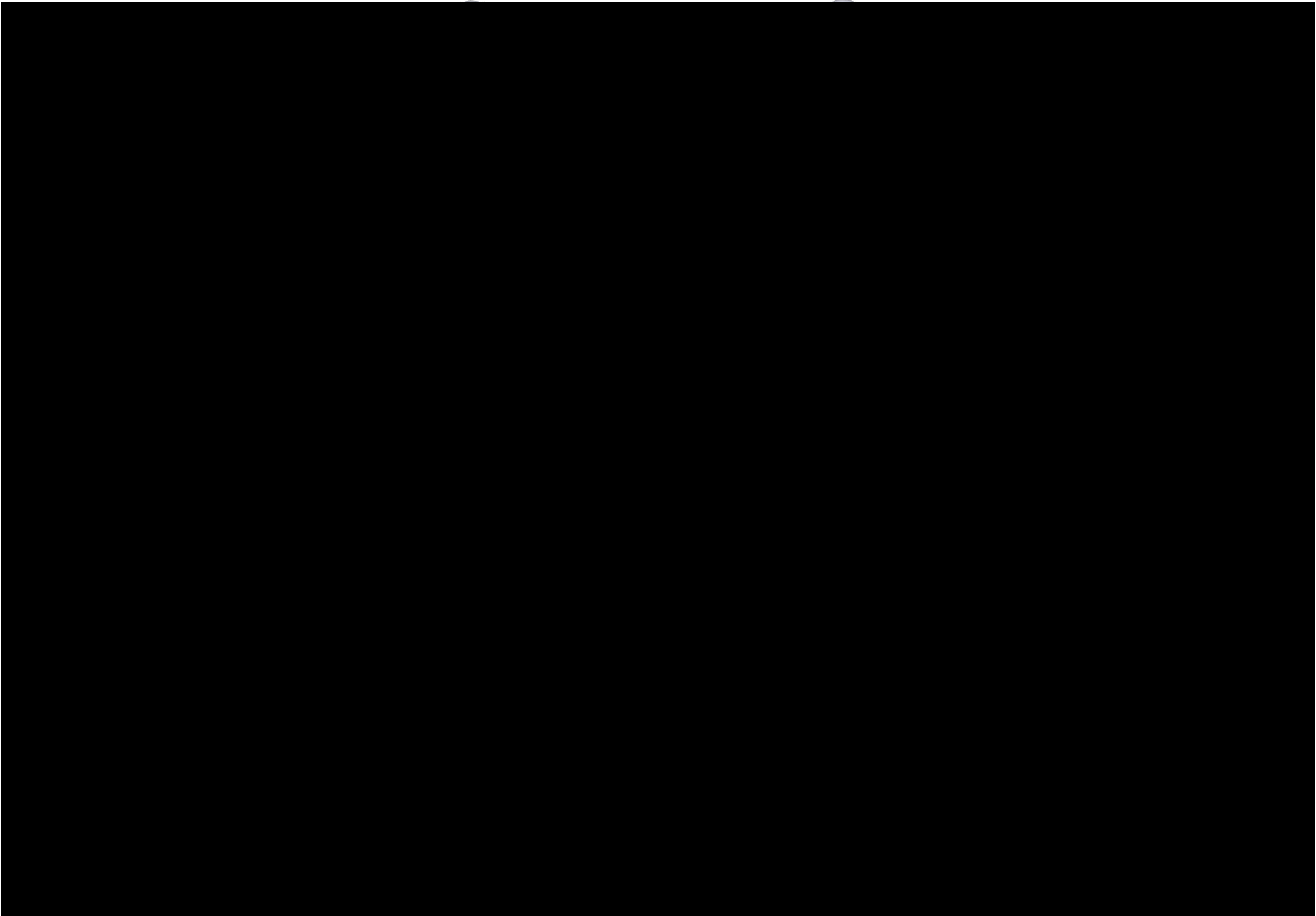


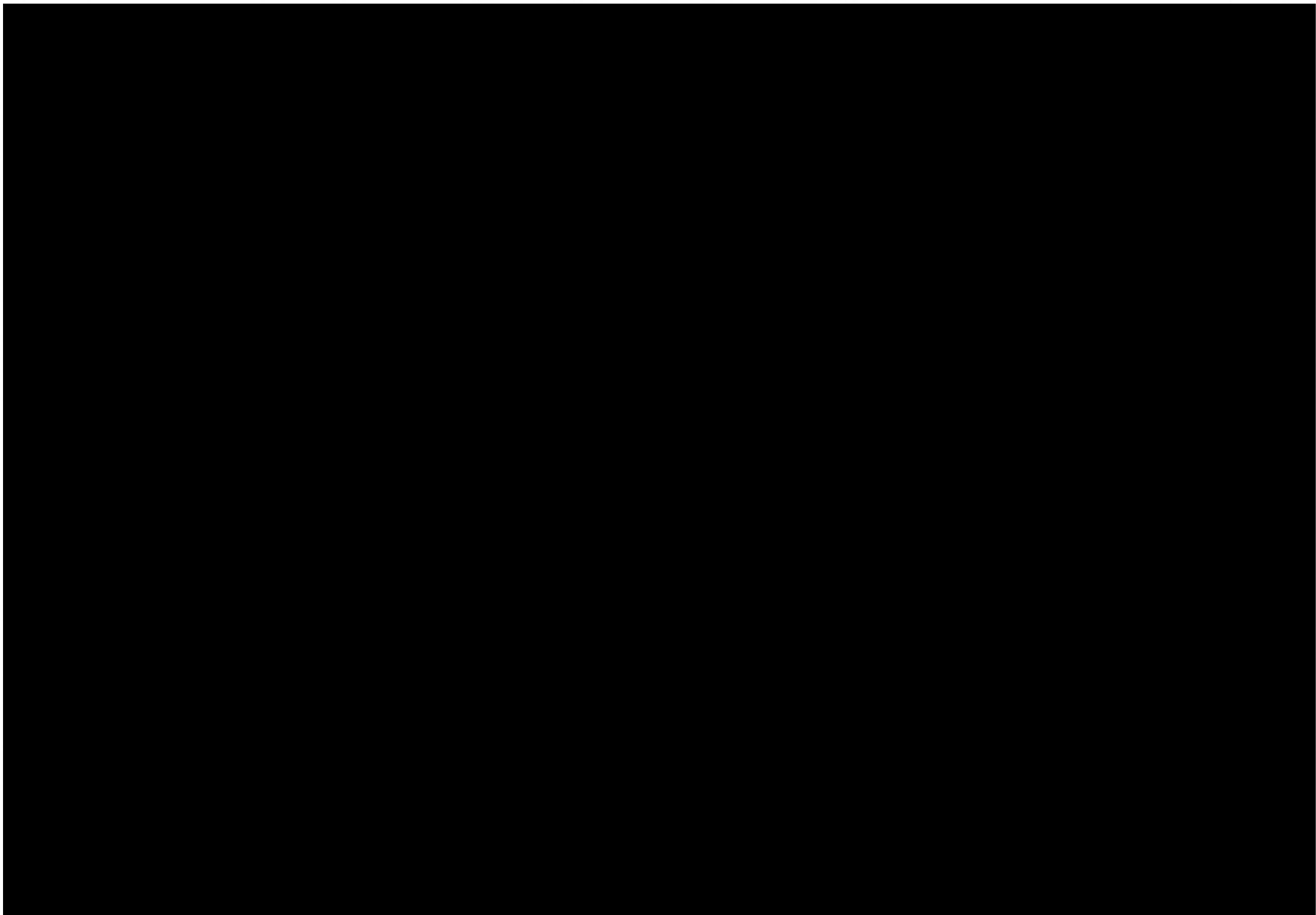


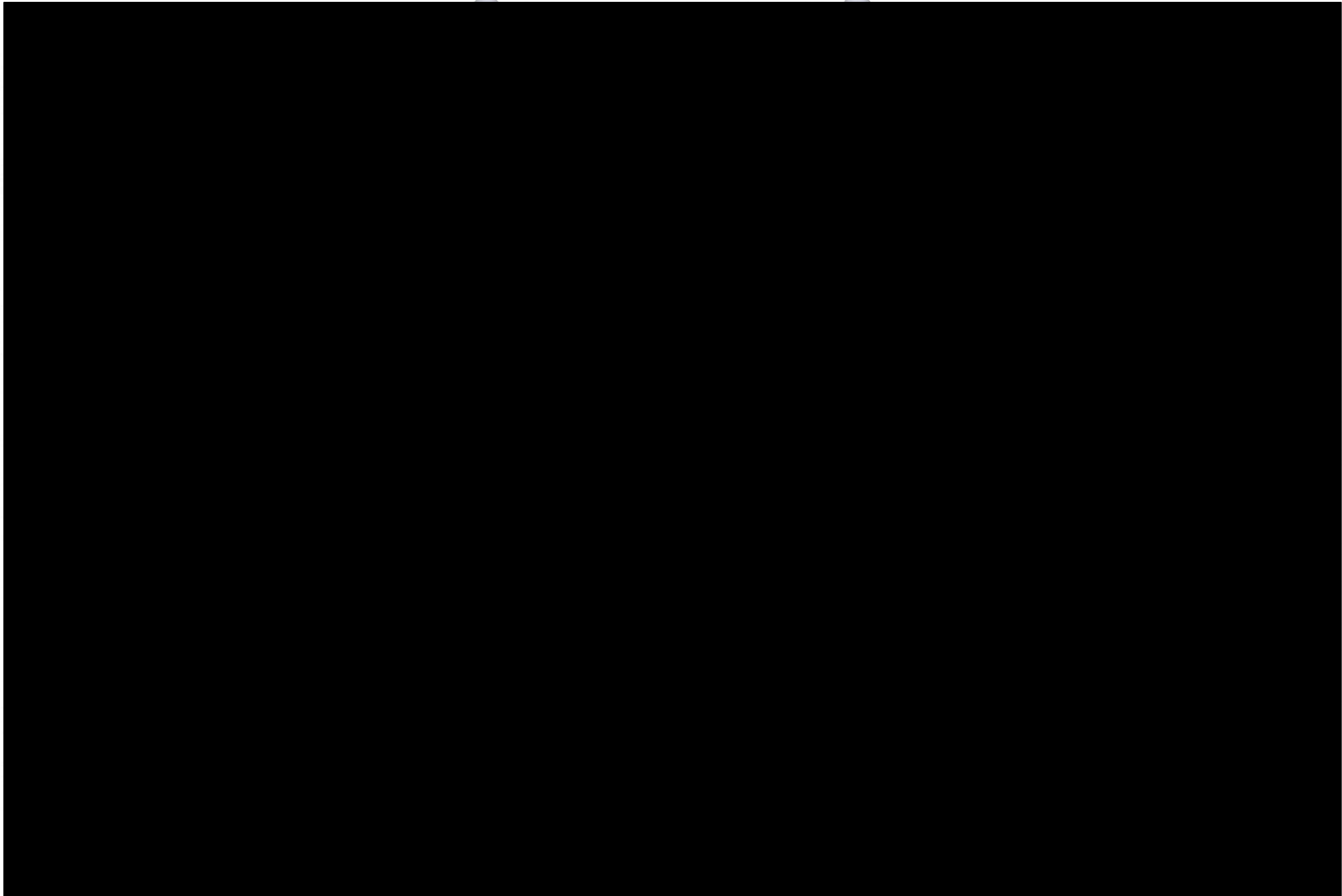


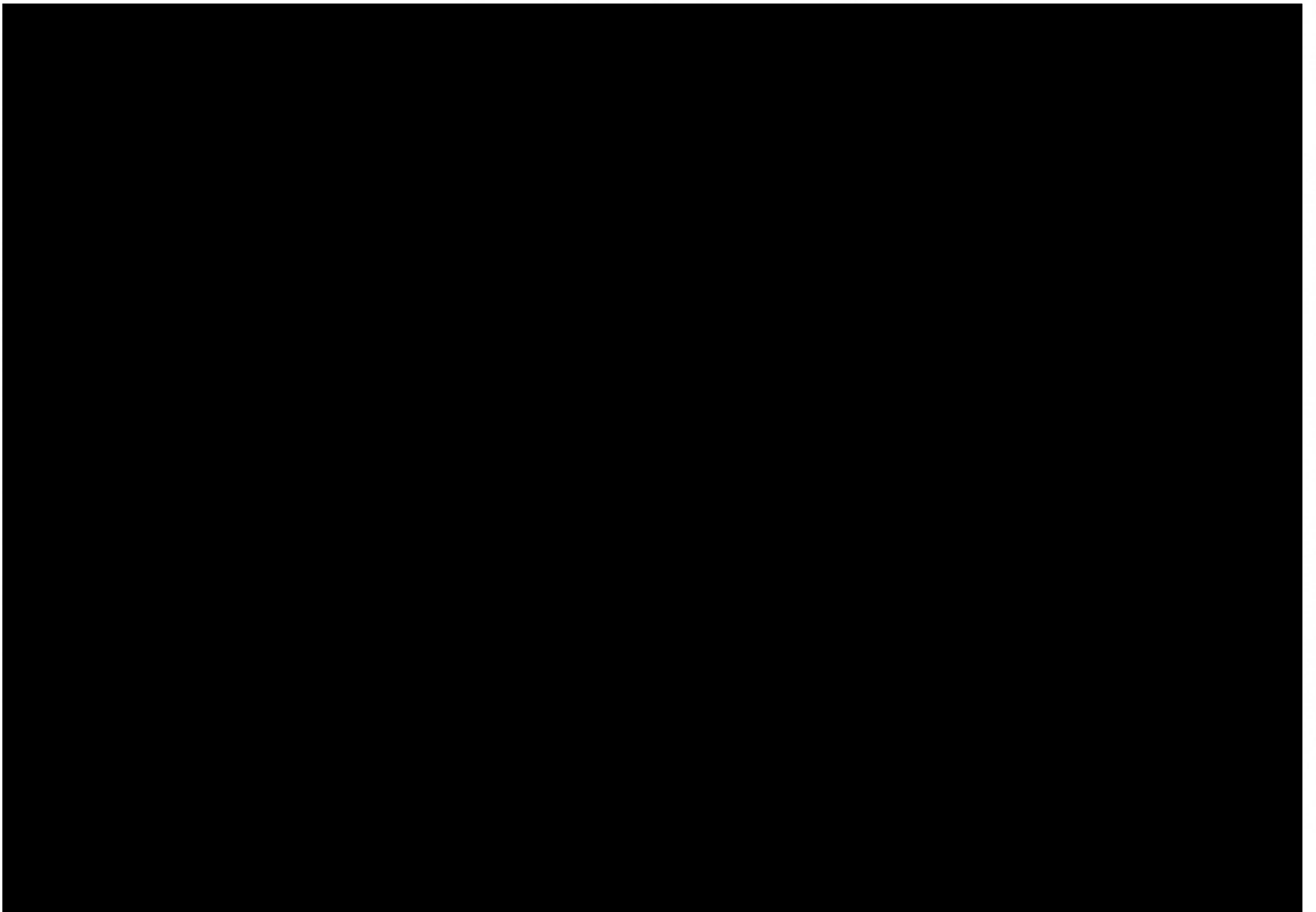


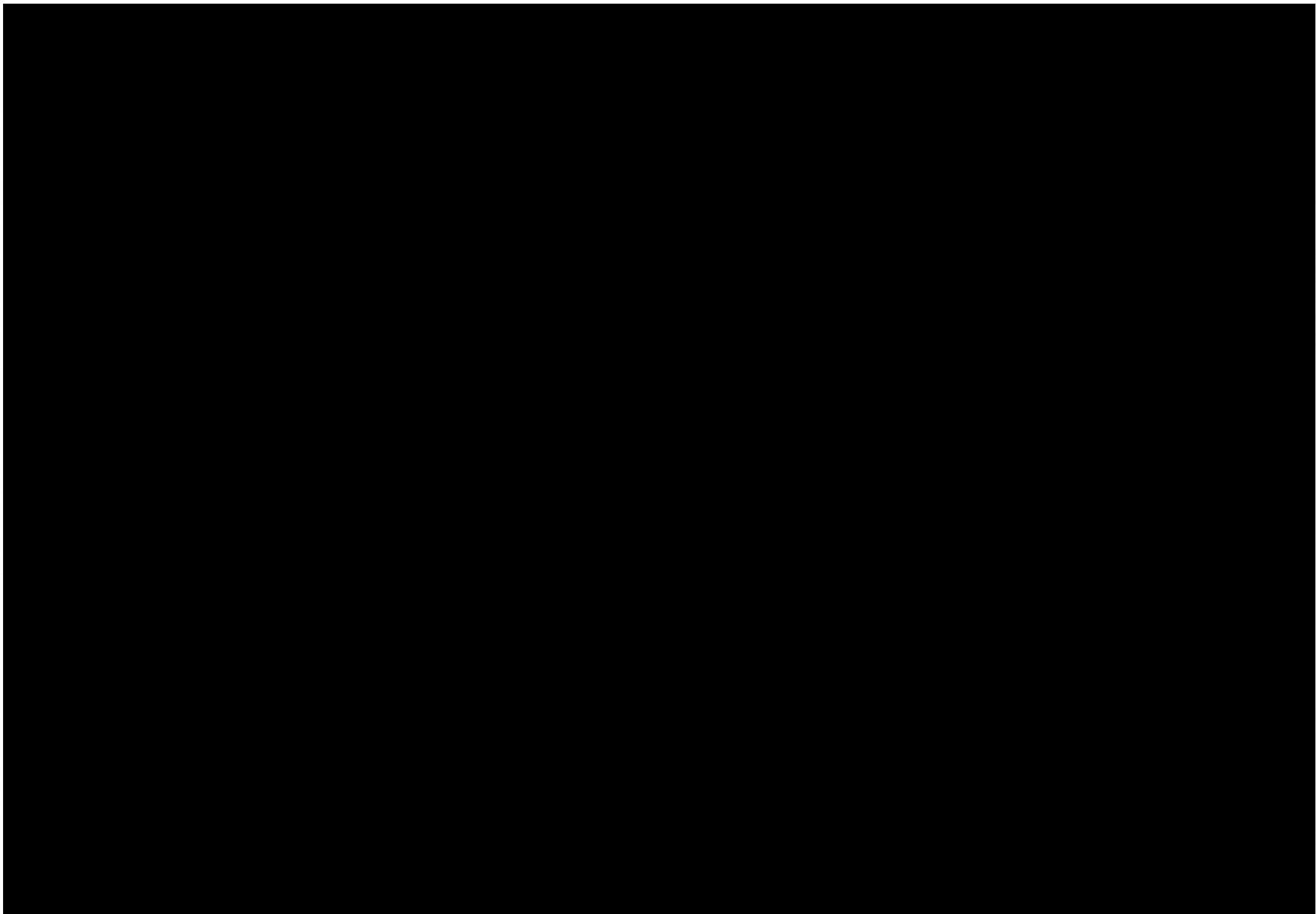


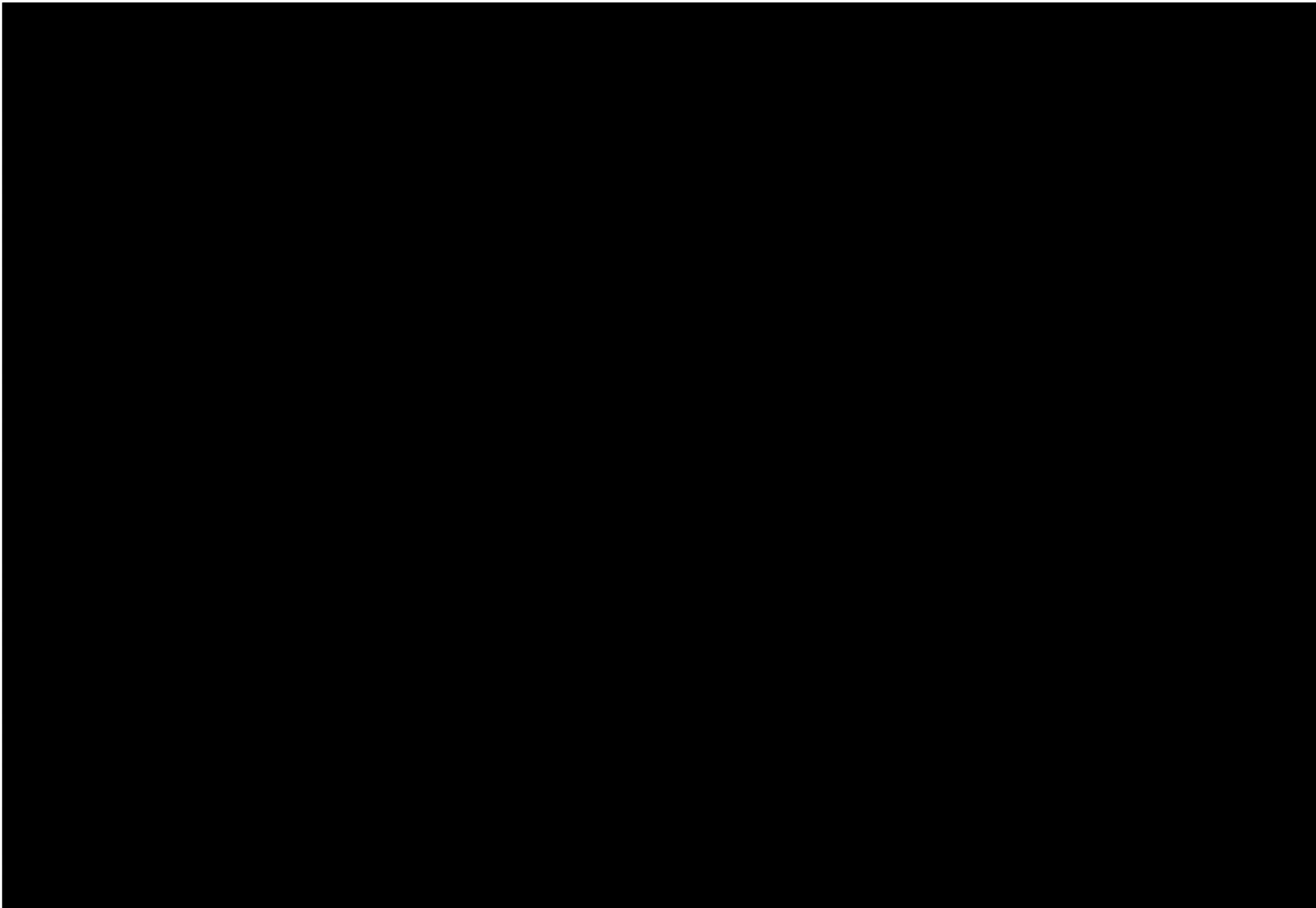


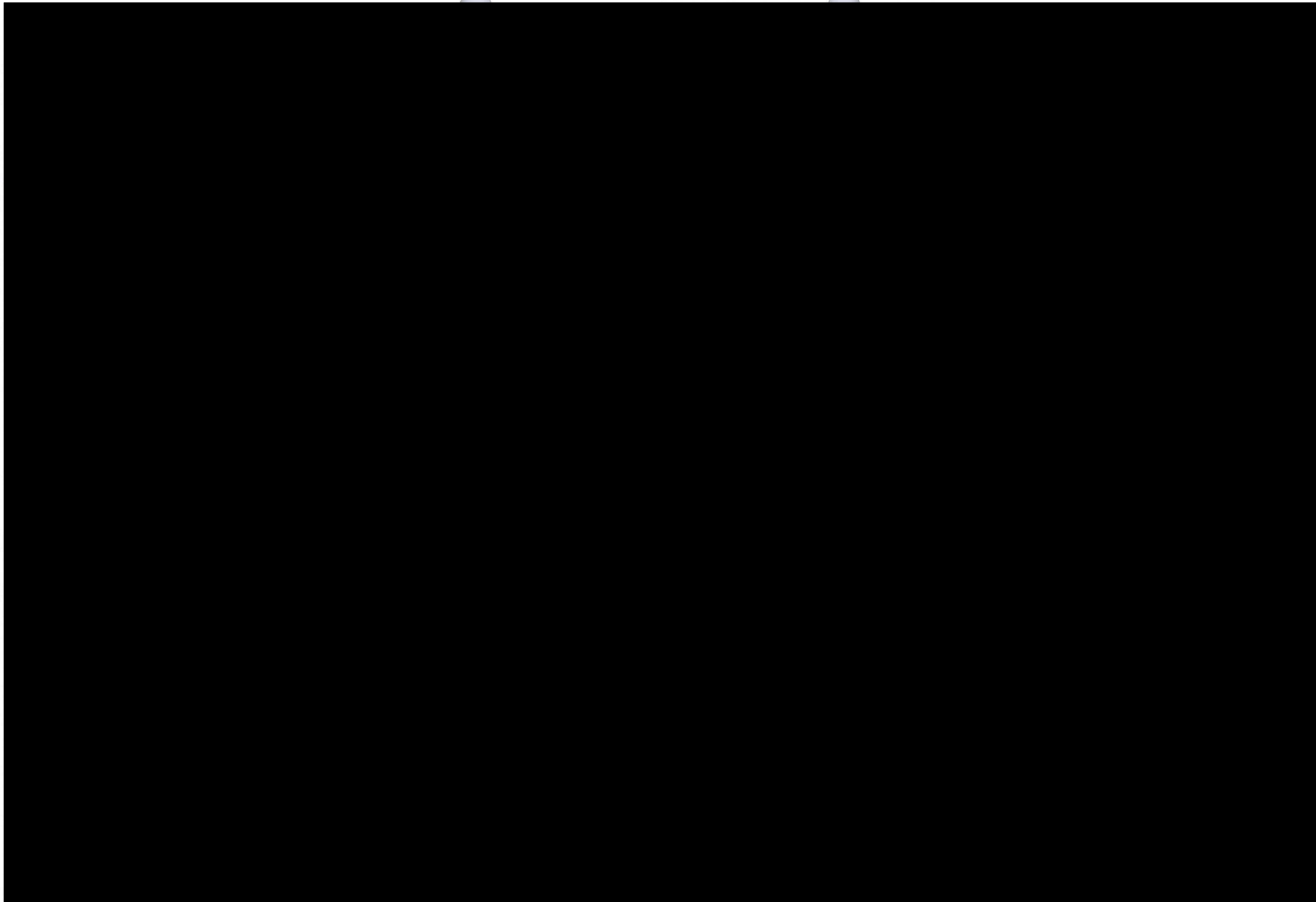


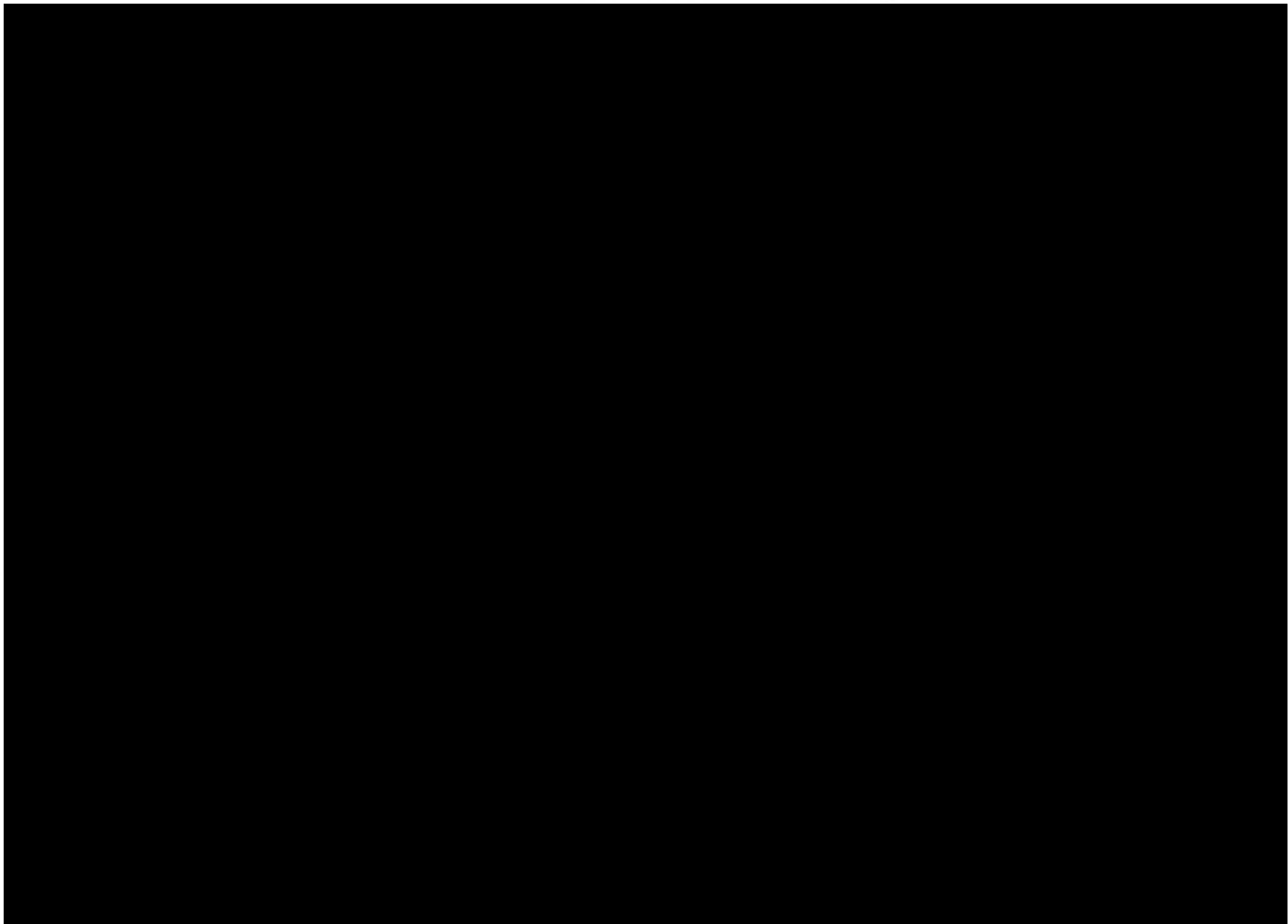


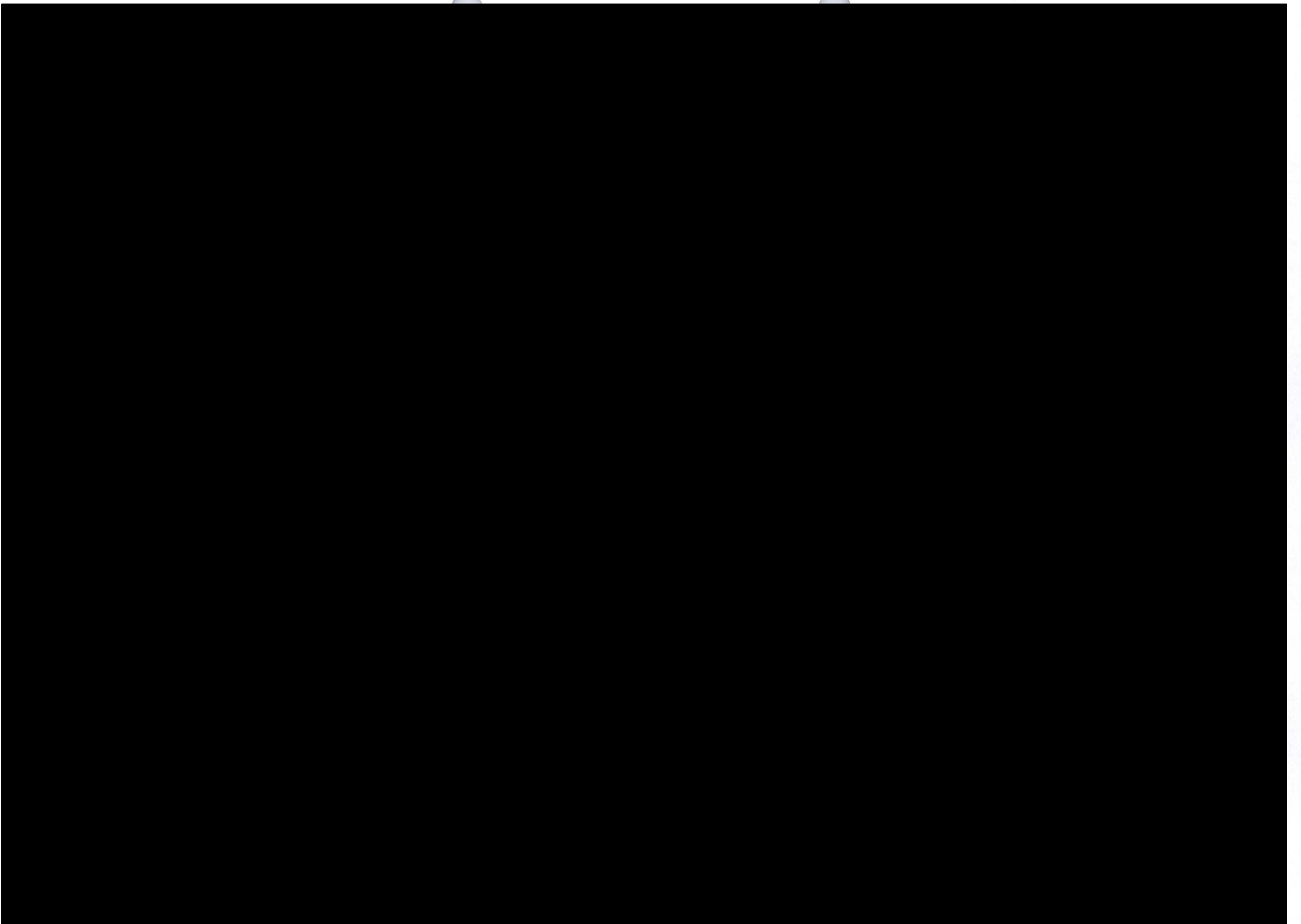


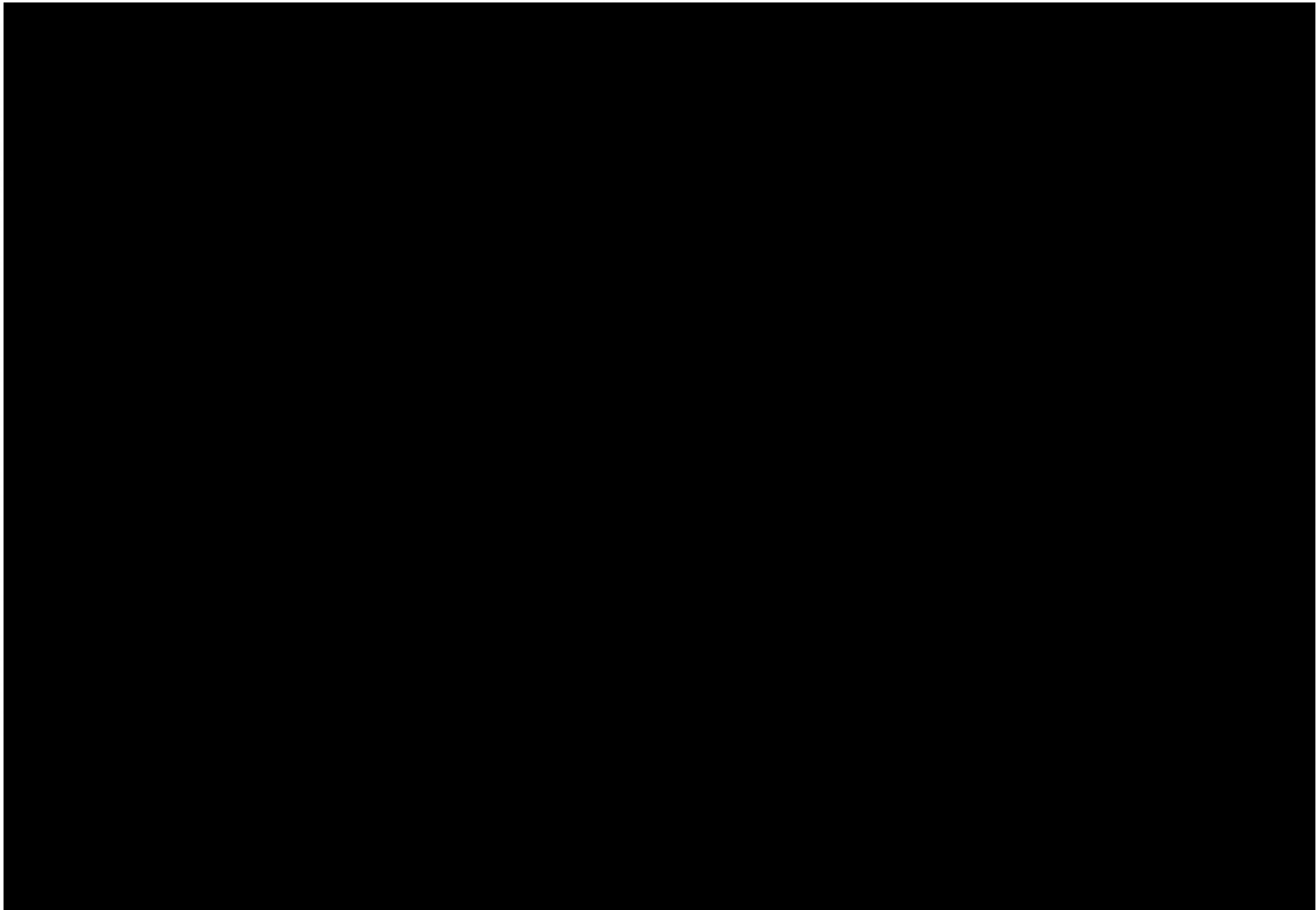


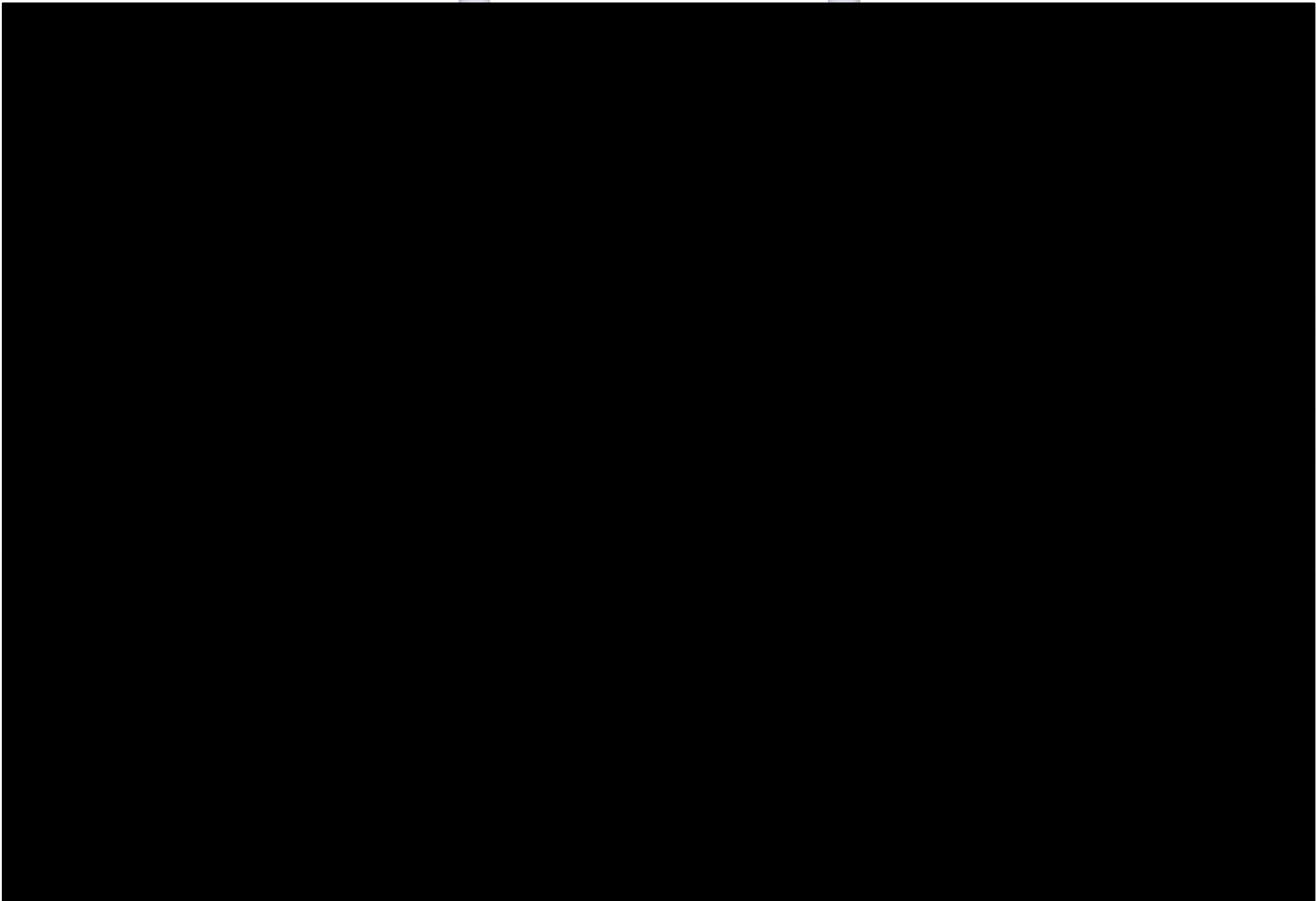


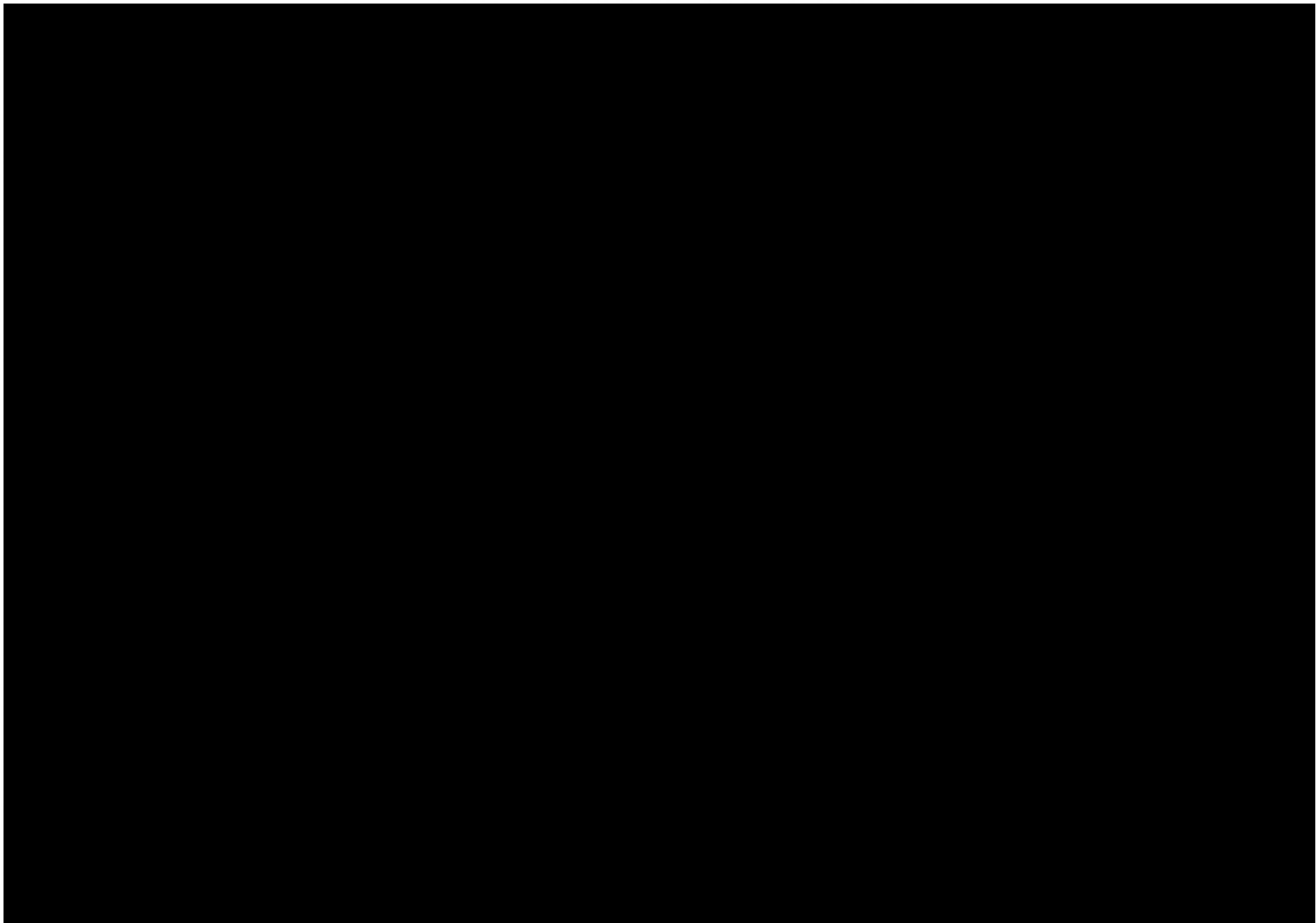


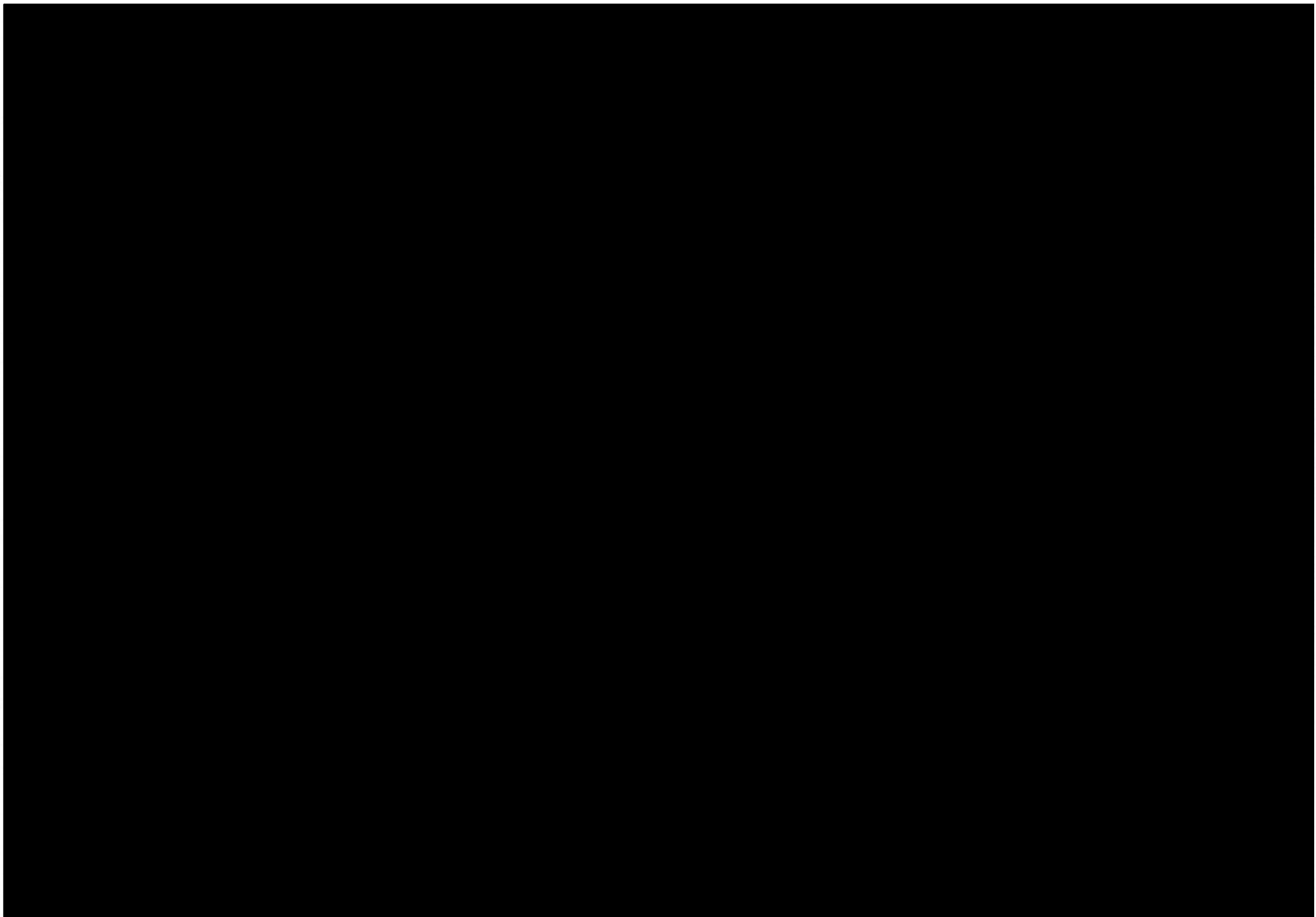


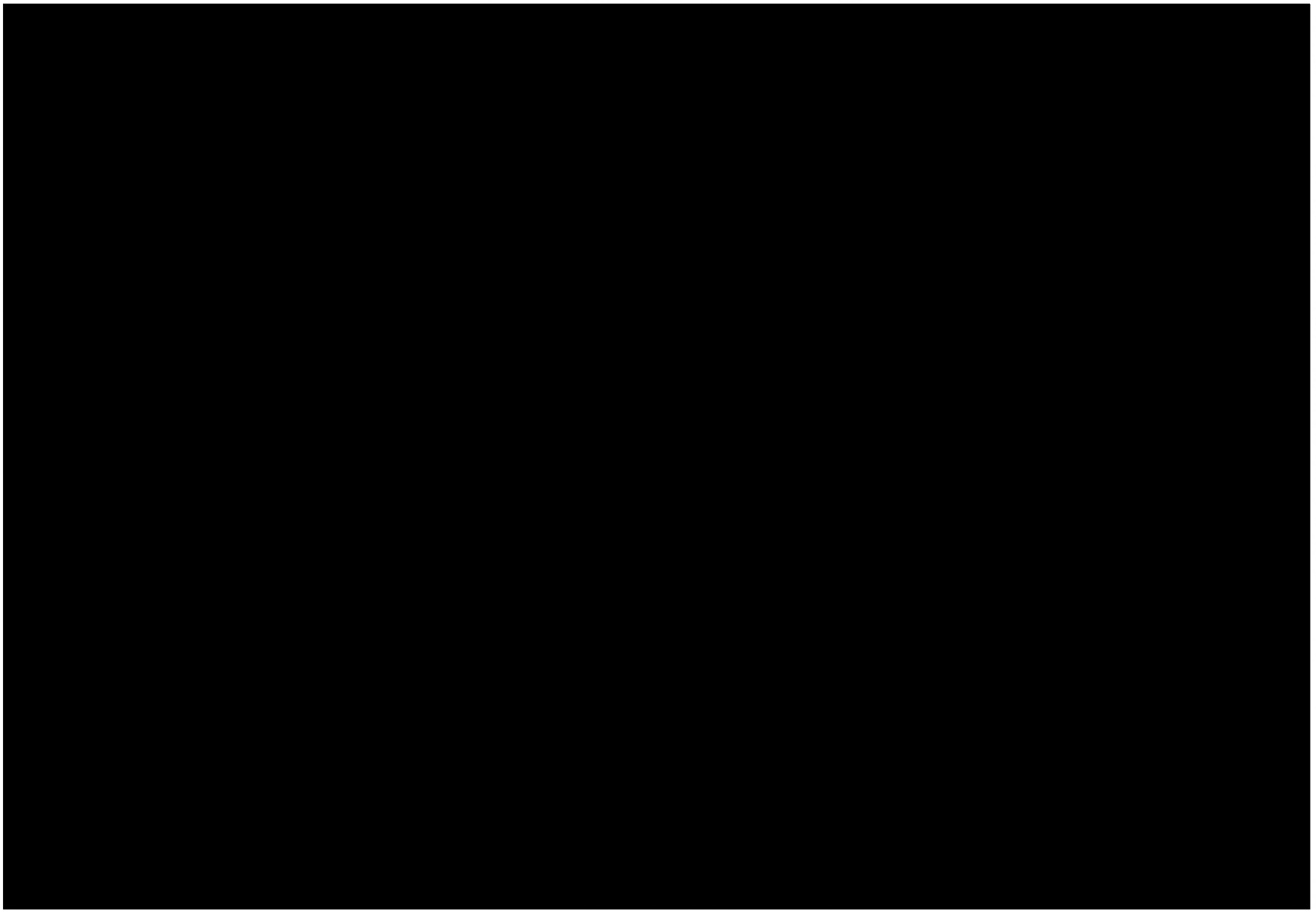


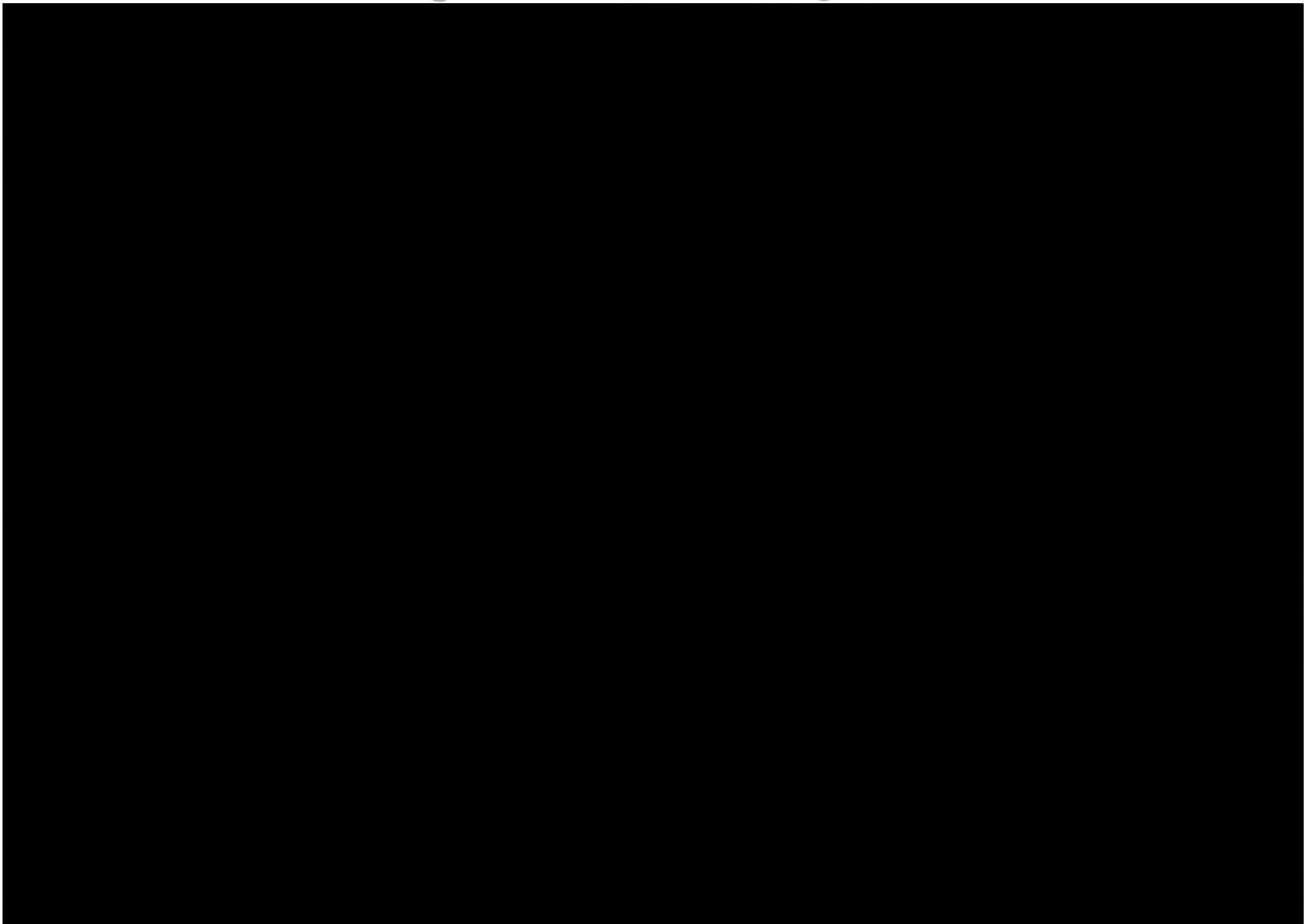


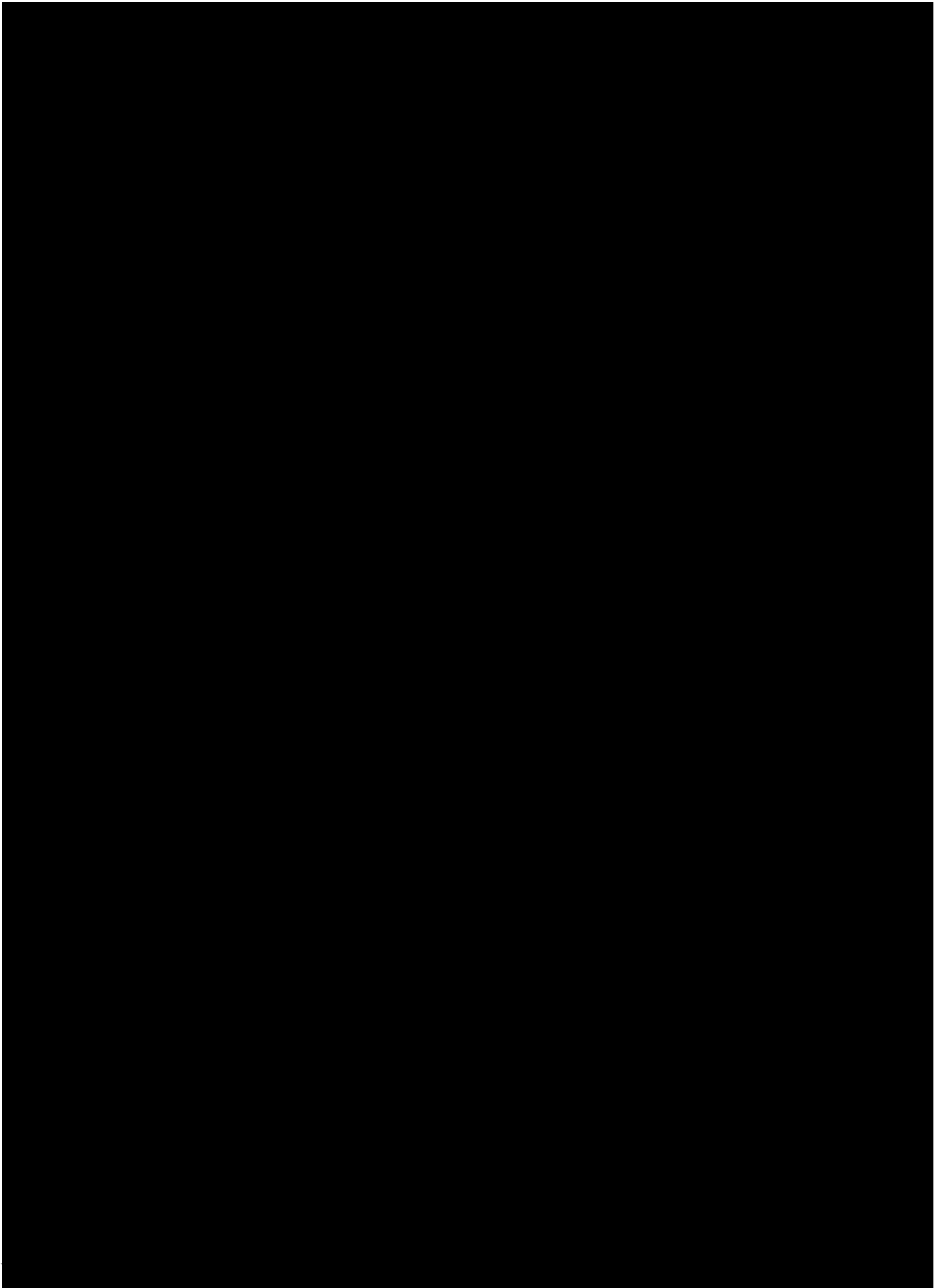


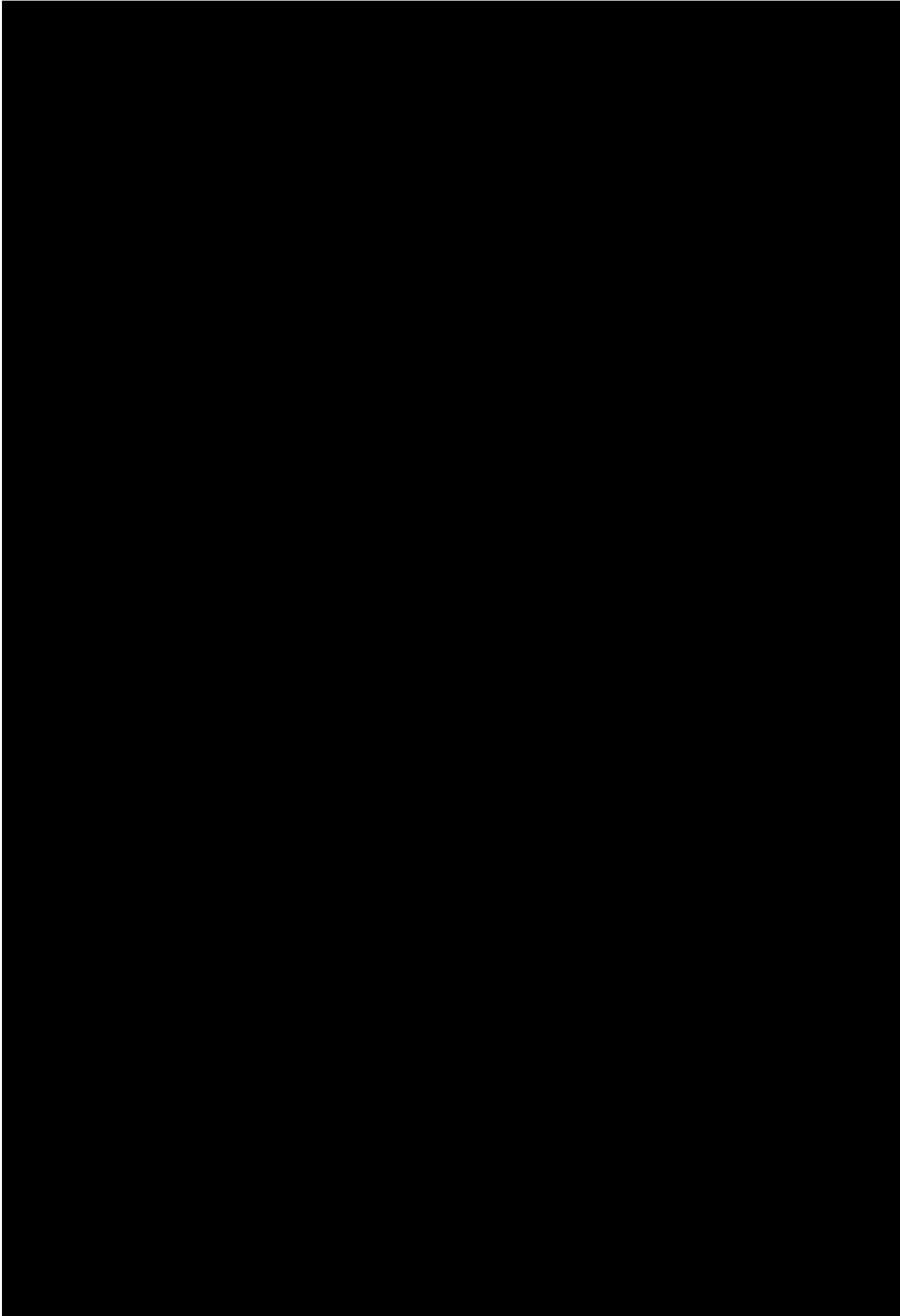


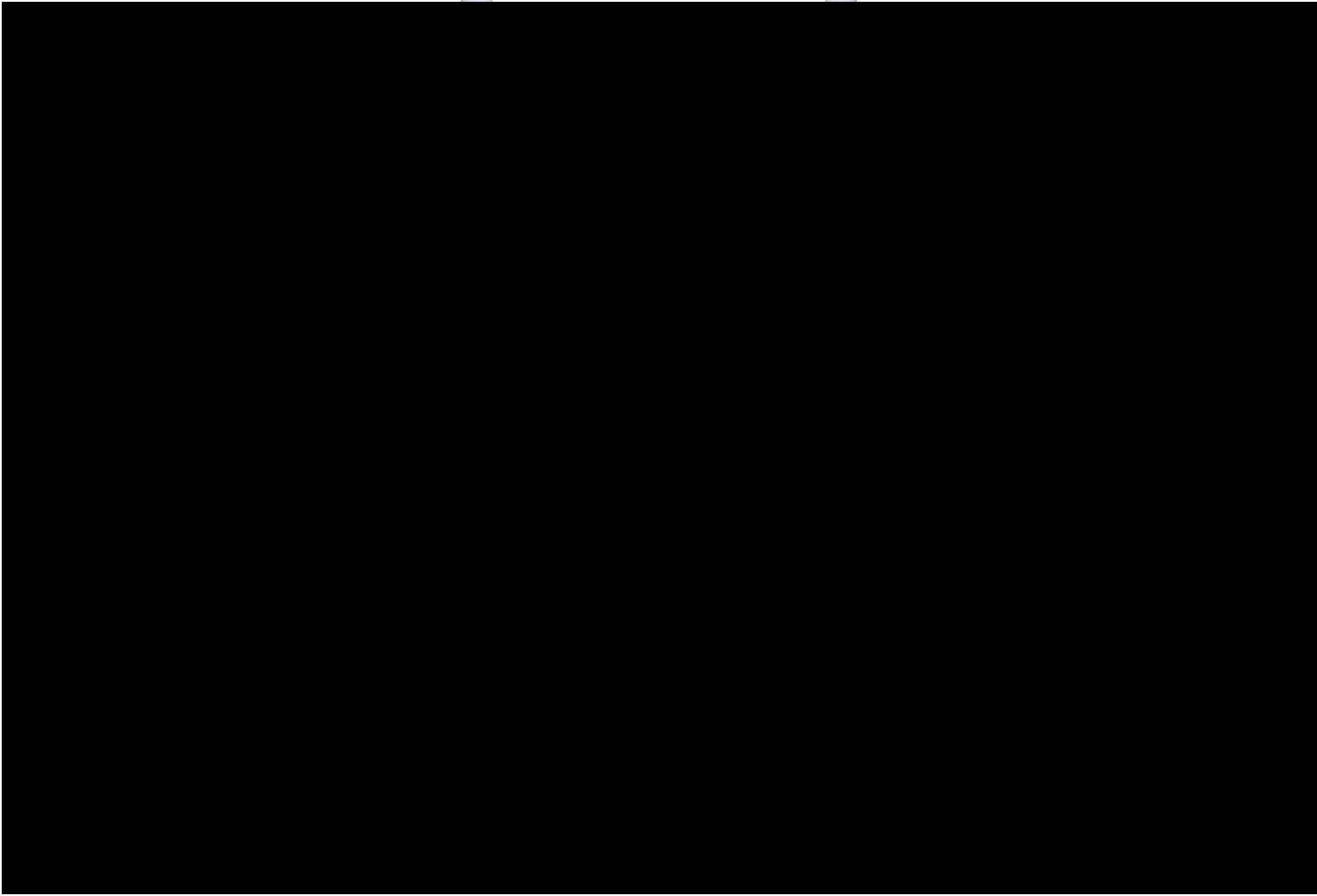


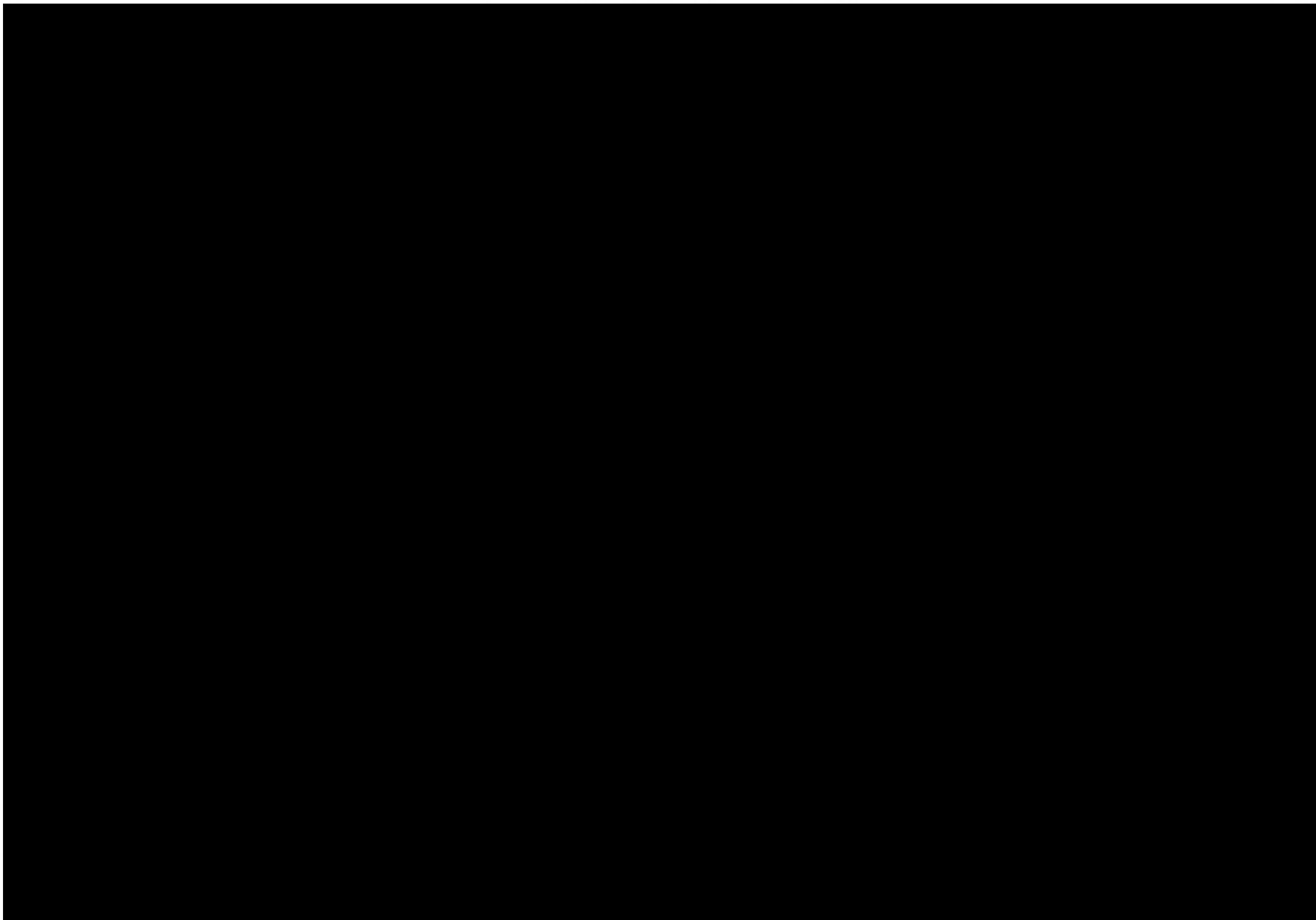








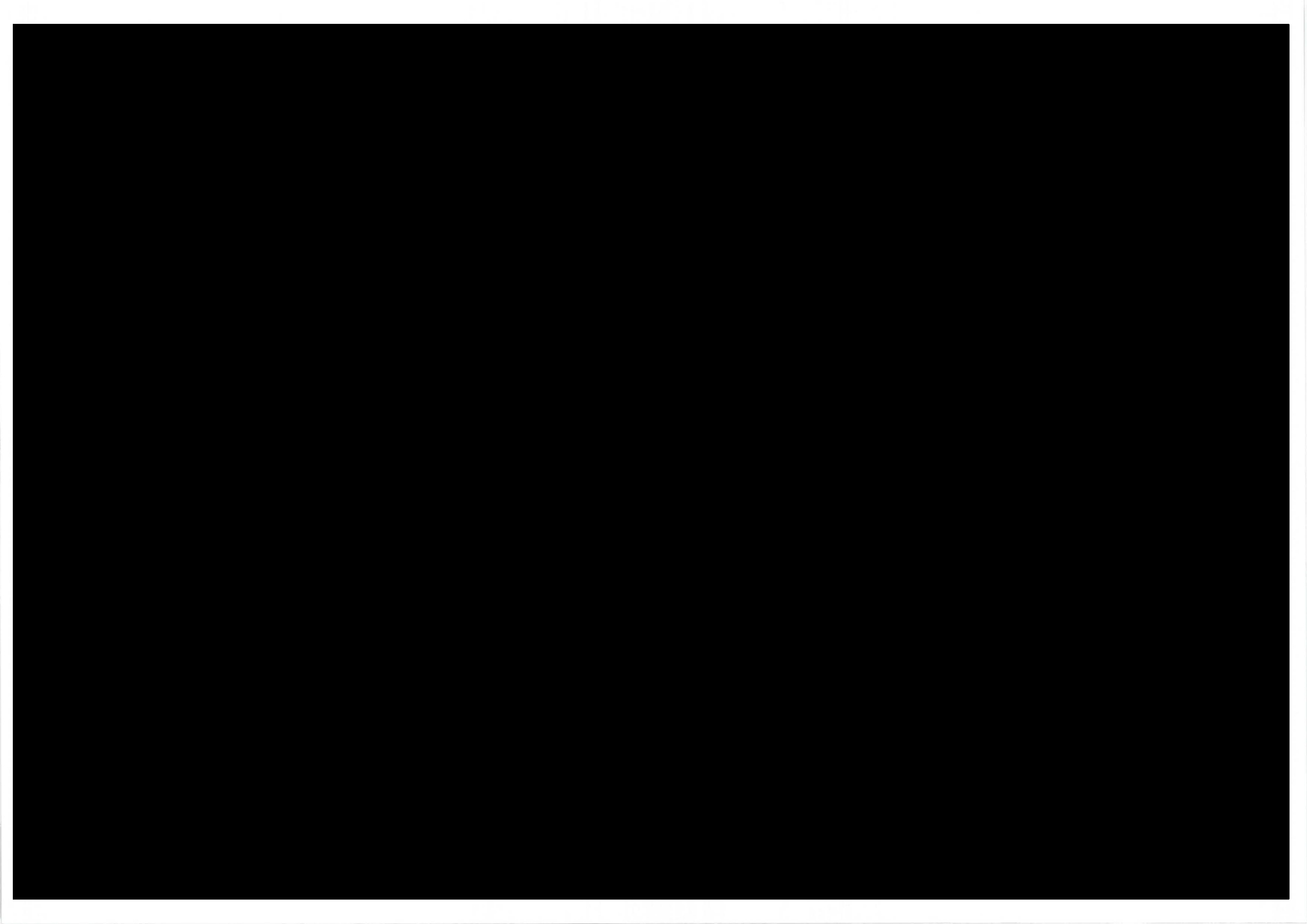














SCHEDULE C3. – PRELIMINARIES

(Clause 1.1)

The Preliminaries generally consist of those functions and tasks, other than as part of the Reimbursable Work, Provisional Sum Work and Design Work, to be performed by the CSM Contractor itself including:

- (a) providing the CSM Contractor's project management team, site supervision, administration (including personnel to administer, supervise, inspect, coordinate and control the Subcontractors) and support staff, including:
 - i. wages and salaries (including all applicable taxes);
 - ii. staff recruitment and relocation costs;
 - iii. all travel costs, including staff travel costs as well as suitable site vehicles (including running and maintenance costs);
 - iv. accommodation and meal allowances;
 - v. communication devices (for example, radios and mobile phones); and
 - vi. WHS and site inductions, training and personal protective equipment;
- (b) providing corporate computer systems, software and support, suitable information technology, document control, stationary and office supplies, administrative systems, communications systems (including faxes, phones, radios and walkie talkies (or similar)), and other Site consumables for use by the CSM Contractor's personnel, Principal's personnel and the Independent Certifier;
- (c) provision, connection and maintenance of site offices, meeting rooms and other accommodation (including any necessary equipment, photocopiers, furniture, lighting, heating and the like) for use by the CSM Contractor's personnel including connection to services and associated ongoing running costs such as power phone, data and water;
- (d) establishing on-Site and providing site amenities, toilets, lunch rooms, crib rooms, water bubblers, and washing facilities for use by the CSM Contractor's personnel, Principal's personnel and the Independent Certifier;
- (e) development of the layout of the site facilities;
- (f) providing site amenities for Subcontractors;
- (g) security, maintenance and cleaning of all site amenities;
- (h) ensuring that the Site is run in a clean, proper and efficient manner:
 - (i) having due regard to the occupation of premises adjacent to or near to the Site; and
 - (ii) so as to ensure that the working areas are kept clean during the progress of the CSM Contractor's Activities and that debris / waste is removed from the Site as it arises and at Construction Completion of the last Portion to reach Construction Completion.
- (i) providing first aid facilities for use by all CSM Contractor's personnel, the Principal's personnel and the Independent Certifier;

- (j) provision of safety and quality services (including provision for external quality and safety audits);
- (k) preparation and updating of management plans;
- (l) provision for public communications and community consultation;
- (m) project related statutory fees and charges including, those referred to in the definition of Authority Approvals;
- (n) carrying out all inductions for all personnel and attendance by the CSM Contractor's personnel at Sydney Trains, NSW Trains or Other Contractors' inductions, as required to complete the CSM Contractor's Activities;
- (o) setting out the Project Works, including provision of all surveying staff and equipment;
- (p) management of the site investigations;
- (q) interfacing with Interface Contractors;
- (r) developing in conjunction with the Principal's Representative an overall construction methodology;
- (s) attending, preparing and presenting information, and chairing formal and informal briefings and meetings including keeping and distributing minutes of the meetings as required;
- (t) small tools, equipment and disposables necessary for the CSM Contractor to discharge its obligations under the MRs;
- (u) carrying out the functions and tasks relating to design management, including:
 - (i) determining in conjunction with the Principal's Representative, the breakup of work into construction packages (including staging of the Project Works);
 - (ii) documenting and managing requests for information (RFIs), ensuring RFIs are sent to the appropriate persons with the ability to correctly supply the information and ensuring the information requested is distributed correctly and in a timely manner;
 - (iii) ensuring the requirements of all relevant Authorities and utility service providers are complied with in the design;
 - (iv) completing a detailed cost estimate of the Design Documentation following each design review stage, ensuring the cost estimate satisfies the Target Cost for construction; and
 - (v) reviewing shop drawings and identifying Defects in the drawings and ensuring those Defects are corrected.
- (v) carrying out the functions and tasks relating to construction management, including:
 - (i) ensuring that all necessary Authority Approvals, certificates, licences, consents, permits and approvals required from relevant Authorities, utility companies and adjoining owners are obtained so building and other certificates, licences, consents, permits and approvals may be obtained in a timely manner;
 - (ii) ensuring the requirements of all relevant Authorities and utility service providers are complied with during the construction of the Works and Temporary Works;

- (iii) advising on the provision and layout of site facilities and site services and obtaining approval from the Principal's Representative to those site facilities and site services to be provided by the CSM Contractor;
- (iv) coordinating and managing of Interface Works and access to worksites and the Site, including as described in Schedule E1;
- (v) monitoring the performance of Subcontractors against the detailed Contractor's Program and Cost Plan to enable corrective action to be taken to minimise stoppages and delays;
- (vi) ensuring that Subcontractors make good any damage caused by them to the Project Works (including the work of other subcontractors) or to the Site or site facilities;
- (vii) initiating a system of documentation and records for recording the performance of all Subcontractors;
- (viii) developing in conjunction with the Principal's Representative an overall construction methodology;
- (ix) managing the staging of the Works ensuring suitability and buildability with effective use of the Track Possessions within the project constraints including liaising with and submitting the plan for review by the Principal's Representative, the proposed staging being designed to maintain all rail and station services required to operate the services in a safe manner;
- (x) carrying out progressive work inspections and tests including Authority and utility company inspections and tests;
- (xi) securing the prompt remedying of all Defects by Subcontractors in accordance with their Subcontracts;
- (xii) securing the prompt remedying of all Defects discovered following Completion of each Portion and during the Defects Liability Period;
- (xiii) effecting and maintaining insurances (other than insurances required to be effected and maintained by the Principal in accordance with clause 18 of the CSM Contract) and allowances for insurance deductibles and excesses; and
- (xiv) provision of security undertakings;
- (w) carrying out the functions and tasks relating to interface management, including:
 - (i) coordinating and managing the Interface Works;
 - (ii) coordinating and managing access to Worksites and the Site for Interface Contractors, including as described in Schedule E1;
- (x) carrying out the functions and tasks relating to the role of principal contractor and in respect to fulfilling the Principal's obligations under the safety interface agreement.
- (y) Protecting and safeguarding the Works, materials and plant against the effects of the weather and against damage, trespass or theft; and
- (z) temporary screens, temporary fencing, hoardings, guard rails, barriers, gantries and the like together with any warning notices, night lighting and the like, in respect of fixed site compounds.

SCHEDULE C4. – DESIGN WORK

(Clauses 1.1, 3.1, 4.3, 9.15, 11.7, 11.12, 11.17, 11.18, 14.1,14.13, 15.1 and 15.2)

1. Detailed Design

The Designer must prepare and complete the design of the Project Works and Temporary Works by preparing the Design Documents so that the documents prepared by the Designer are suitable for construction and are fit for their intended purpose.

The Designer must undertake the following as part of the Design Work:

- (a) development of the management plans as outlined MR-T and in Clause 3.17 of MR-PA in consultation with the CSM Contractor. The Designer must undertake the design development in adherence to these developed plans;
- (b) preparation of designs for the Project Works, including the development of "Approved for Construction" or "AFC" Design Documents, in accordance with the SWTC and MR-T;
- (c) development of design packages to support a construction plan that maximises the use of the planned track possession regime and time periods, including the long track closures (or closedowns);
- (d) responsibility for and coordinating the integration of the design developed by Interface Contractors;
- (e) ensuring that the design is compliant with the conditions of the Planning Approval and providing a compliance report;
- (f) obtaining authority approvals, including from Authorities, and building compliance certification;
- (g) provision of practical and cost effective solutions to issues as part of the Design Work;
- (h) clear and timely identification of any concerns, conflicts or discrepancies which may potentially affect the design or Design Documents;
- (i) ensuring and verifying that the Project Works can be constructed within the Site;
- (j) preparation of design reports and compliance statements for each stage of the design;
- (k) participation in value management workshops, and identification and utilisation of opportunities for value engineering;
- (l) undertaking risk and safety management workshops as part of the design development;
- (m) progressive review of the design of the Project Works to ensure that the Project Works can be effectively maintained;
- (n) reviewing constructability issues, including review of construction methods and material selection, during the design development;
- (o) ensuring that the design and related construction staging minimises the interference with the existing railway network and operators, and involves the minimum practicable (considering safety and reliability) number of dedicated rail track possessions and shared rail track possessions;
- (p) development of a surveillance plan;
- (q) resolution of non-compliances and seeking of waivers if appropriate;
- (r) responding to technical queries;
- (s) effective stakeholder consultation, including utilising stakeholders coordination/consultation meetings and other existing forums;

- (t) presentations to stakeholder(s) at each stage of each design package, in accordance with MR-T;
- (u) addressing all stakeholder requirements in the design;
- (v) closing out comments received on submissions;
- (w) assisting in community liaison activities, including preparation of presentations;
- (x) development of safety assurance documentation in accordance with MR-T and SWTC, including updating and maintaining the project specific risk register;
- (y) updating system requirements compliance statements as part of the detailed design report;
- (z) preparation of tender documents and construction documents in accordance with the agreed delivery strategy; and
- (aa) monitoring and reviewing changes to ASA Standards, including assessment of the impact on the design, whether there are safety issues and advising on implications for compliance.

2. Construction Technical Support

The Designer must undertake the following tasks as part of the construction technical support services to enable the CSM Contractor to complete the CSM Contractor's Activities:

- (a) assist in the definition of contract packages and interfaces with construction;
- (b) provide technical input to the CSM Contractor on subcontractor tender lists, Subcontract Tender Documentation, subcontractor tender assessment, and variations to Approved Subcontract Agreements;
- (c) carry out regular inspections of the project on and off site to verify that the project complies with the design documents, including reviewing quality control records and attendance at hold and witness points;
- (d) review of Temporary Works designed by others;
- (e) provide specialist advice during construction and assist with the realisation of the design through the construction process, including monitoring and review of the CSM Contractor's (including subcontractors') deliverables;
- (f) manage the receipt of, and respond to, the CSM Contractor's queries and requests for information in a timely, effective and complete manner;
- (g) review of the CSM Contractor's schedules, samples, prototypes and testing;
- (h) review and approve for manufacturing all workshop drawings prepared by the CSM Contractor or its nominated subcontractors;
- (i) attend regular meetings of the CSM Contractor and its subcontractors, to answer queries, as necessary;
- (j) liaise with authorities as required;
- (k) provide monthly reports, including details of inspections undertaken, certifications granted, and providing a list of non-compliances and/or Defects identified;
- (l) provide progressive certification of the construction compliance with the design documents;
- (m) provide monthly certification of works in progress in accordance with MRs;
- (n) provide engineering certification (as applicable), prepare work-as-executed drawings and new and/or updated Sydney Trains detailed site survey drawings in accordance with the information provided by the CSM Contractor, and prepare asset management information

and configuration materials in accordance with MR-T, progressively (as elements of the project are completed) and on completion of the Project Works;

- (o) finalise systems engineering and safety assurance documentation;
- (p) assist in the configuration management process;
- (q) assist in the testing, commissioning and completion of the Project Works in accordance with the requirements defined in the SWTC, MR-PA and MR-T; and

provide an appropriately qualified designer to be based on-site full time to aid the management of the above tasks and coordinate the interface between the CSM Contractor and the Designer.

SCHEDULE C5. – NOT USED

SCHEDULE C6. – POST CONSTRUCTION COMPLETION AND POST COMPLETION ACTIVITIES

(Clause 1.1)

Part 1 – Post Construction Completion Activities

- (a) The Post Construction Completion Activities generally consist of those functions and tasks to be undertaken by the CSM Contractor for the Metro Station between Construction Completion of Portion 3 and Completion of Portion 3.
- (b) The Post Construction Completion Activities include:
- (i) provision of HV and LV temporary construction power for all activities by the CSM Contractor, LWC Contractors and the Operator, until energisation of the HV system (by LWC Contractors) and energisation of the LV power supply and distribution system of the Metro Station Works;
 - (ii) testing and energisation of the LV power supply and distribution system of the Metro Station Works on permanent power, following energisation of the permanent HV system by the LWC Contractors;
 - (iii) provision of temporary air conditioning in equipment rooms and a temporary ventilation system for the Metro Station until the environmental control system of the Metro Station Works is set to operation on permanent power;
 - (iv) secure and control access to individual equipment rooms by either the CSM Contractor, the LWC Contractors or the Operator, including through management of a permit system for access;
 - (v) system acceptance testing (in accordance with MR-PA) of the Metro Station Works under permanent power;
 - (vi) attendance at all joint system integration tests and system acceptance tests (in accordance with MR-PA) undertaken with LWC Contractors and the Operator under temporary power;
 - (vii) attendance at all joint system integration tests, system acceptance tests and initial performance tests (in accordance with MR-PA) undertaken with LWC Contractors and the Operator under permanent power, including for all functional tests to meet statutory requirements such as for fire protection and smoke extraction, air conditioning, and track side ventilation;
 - (viii) attendance at tests and drills by the LWC Contractors and the Operator to demonstrate operational readiness;
 - (ix) maintaining the Metro Station Works in accordance with the operation and maintenance manuals developed by the CSM Contractor for the Metro Station Works;
 - (x) liaising with Authorities to undertake all statutory inspections and obtain all necessary Approvals required for the CSM Contractor's Activities for the Metro Station Works;
 - (xi) carrying out the functions and tasks relating to the role of principal contractor in respect of the CSM Contractor's Activities and works by LWC Contractors and the Operator on the Post Construction Completion Site, including undertaking the tasks to obtain access to areas within Central

Station under the procedure SM PS-PW-318 Principal Contractor Process for Construction Works Within Sydney Trains' Railway Stations;

- (xii) coordination with Sydney Trains for activities by the LWC Contractors and the Operator;
- (xiii) providing worksite protection for any activities by the LWC Contractors and the Operator within the Rail Corridor;
- (xiv) coordinating and managing of access to the Post Construction Completion Site for LWC Contractors and the Operator;
- (xv) ensuring that the Post Construction Completion Site is run in a clean, proper and efficient manner, including:
 - (A) having due regard to the occupation of premises adjacent to or near to the Post Construction Completion Site; and
 - (B) so as to ensure that the working areas are kept clean during the progress of the CSM Contractor's activities, LWC Contractor's activities and the Operator's activities and that debris / waste is removed from the Post Construction Completion Site as it arises and at completion of the Post Construction Completion Activities;
- (xvi) maintaining the SYAB in accordance with the operation and maintenance manual included in Appendix C06 of the SWTC;
- (xvii) maintaining the fencing of the Sydney Yard Cess Area;
- (xviii) maintaining and keeping clean the SYAB entrance on Regent Street;
- (xix) security (including security personnel and a site access cabin) and access control, including to restrict the public's access to the entrance to the Post Construction Completion Site from Regent Street, including:
 - (A) installation of construction fencing and access gates; and
 - (B) establishing with Sydney Trains protocols for maintaining security of the access gate and for ensuring access to the Post Construction Completion Site by Sydney Trains, NSW Trains, emergency services and authorised Other Contractors at all times;
- (xx) carrying out the functions and tasks relating to fulfilling the Principal's obligations under the global safety interface agreement;
- (xxi) traffic management within the Post Construction Completion Site (including vehicle and pedestrian movements in/out of the Post Construction Completion Site);
- (xxii) environmental controls for the area of the Post Construction Completion Site that is within the Sydney Yard Cess Area;
- (xxiii) maintaining Post Construction Completion Site survey control, including provision of all surveying staff and equipment;
- (xxiv) attending, preparing and presenting information, and chairing formal and informal briefings and meetings including keeping and distributing minutes of the meetings as required;

- (xxv) provision of WHS and site inductions to personnel of the CSM Contractor, the Principal, the LWC Contractor, the Operator and Other Contractors, and attendance by the CSM Contractor's personnel at Sydney Trains, NSW Trains, the LWC Contractor or the Operator's inductions;
- (xxvi) provision, connection and maintenance of site offices, meeting rooms and other accommodation (including any necessary equipment, photocopiers, furniture, lighting, heating and the like) for use by the personnel of the CSM Contractor, the Principal, the LWC Contractor and the Operator, including connection to services and associated ongoing running costs such as power phone, data and water;
- (xxvii) providing site amenities, toilets, lunch rooms, crib rooms, water bubblers, and washing facilities for use by the personnel of the CSM Contractor personnel, the Principal, the LWC Contractor and the Operator;
- (xxviii) providing suitable information technology, document control, stationary and office supplies, administrative systems, communications systems (including faxes, phones, radios and walkie talkies (or similar)), and other Site consumables for use by the project management personnel of the CSM Contractor, the Principal, the LWC Contractor and the Operator;
- (xxix) providing first aid facilities for use by the personnel of the CSM Contractor, the Principal, the LWC Contractor and the Operator;
- (xxx) security, maintenance and cleaning of all site amenities;
- (xxxi) temporary screens, temporary fencing, hoardings, guard rails, barriers, gantries and the like together with any warning notices, night lighting and the like, in respect of the fixed site compounds;
- (xxxii) small tools, equipment and disposables necessary for the CSM Contractor to discharge its obligations under the MRs;
- (xxxiii) demobilisation of all site facilities prior to the date for Completion of Portion 3; and
- (xxxiv) preparation and updating of management plans and reports required by the MRs.

Part 2 – Post Completion Activities

- (a) The Post Completion Activities generally consist of those functions and tasks to be undertaken by the CSM Contractor for the Metro Station following Completion of Portion 3 up to opening of the Metro Station to the public.
- (b) The Post Completion Activities include:
 - (i) attendance at all performance tests (in accordance with MR-PA) undertaken by LWC Contractors and the Operator;
 - (ii) full clean of the Metro Station required for opening to the public;
 - (iii) attendance at tests and drills by the LWC Contractors and the Operator to demonstrate operational readiness;
 - (iv) maintaining the Metro Station Works in accordance with the operation and maintenance manuals developed by the CSM Contractor for the Metro Station Works;
 - (v) attendance at statutory inspections required by the LWC Contractors or the Operator;
 - (vi) coordination with Sydney Trains for activities by the LWC Contractors and the Operator; and
 - (vii) providing worksite protection for any activities by the LWC Contractors and the Operator within the Rail Corridor.