



## **East London Line Project**

# **Rolling Stock - Manufacture and Supply Agreement (MSA)**

ELM-COM-109-45-06-0001 Issue 01

September 2006

Confidential

**Part 1 – Document details**

<b>Title of document</b> Rolling Stock – Manufacture and Supply Agreement (MSA)		
<b>Document number</b> ELM-COM-109-45-06-0001	<b>Issue</b> 01	<b>Date</b> 06.09.2006
<b>Configuration Item (CI) - (Yes/No)</b> Yes		

**Part 2 – Final approvals**

<b>East London Line project team</b>			
Approver's name	Function	Signature of approval	Date
[Redacted]	Head of Engineering	[Redacted]	06/09/06
[Redacted]	Head of Commercial	[Redacted]	6/9/06

<b>TfL corporate management</b>			
Approver's name	Function	Signature of approval	Date

<b>Stakeholders</b>			
Approver's name	Function	Signature of approval	Date

**Part 3 – Final authorization**

*Not to be authorized until part 2 is complete.*

Authorizer's name	Function	Signature of approval	Date
[Redacted]	ELLP Project Director	[Redacted]	7/9/06
The authorizer is normally the ELLP Project Director.			

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Client                   Transport for London  
Project                 East London Line Project  
Report no.             ELM-COM-109-45-06-0001 Issue 01  
Title                   Rolling Stock - Manufacture and Supply Agreement (MSA)

Issue record

<i>Issue</i>	<i>Date</i>	<i>Author</i>	<i>Approved</i>	<i>Description</i>
01	06.09.2006			Issued as the record of the Manufacture and Supply Agreement at signature.

*Note:* this report is uncontrolled when printed.

## Summary

This report records the Rolling Stock Manufacture and Supply Agreement (MSA) as signed by Transport Trading Limited, Bombardier Transportation UK Limited, and London Underground Limited on 30 August 2006.

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# Rolling Stock - Manufacture and Supply Agreement (MSA)

## 1 Introduction

This report records the Rolling Stock Manufacture and Supply Agreement (MSA) as signed by Transport Trading Limited, Bombardier Transportation UK Limited, and London Underground Limited on 30 August 2006.

Schedule 1 to the MSA (Rolling Stock Requirements – Technical) is held separately in Livelink as document ELM-COM-109-32-05-0002. Issue 05 of that document corresponds in content to Schedule 1 within this document.

The Train Services Agreement (TSA) between Transport Trading Limited and Bombardier Transportation UK Limited is recorded in document ELM-COM-109-45-06-0002.

The documents produced by the parties as Conditions Precedent to both the MSA and TSA are recorded in document ELM-COM-109-45-06-0003.

It is not intended that this report will be updated following issue.

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## 2 Content of the Agreement

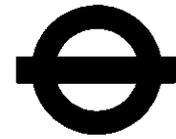
The content of the MSA (and this document) are on the following page. The Schedules to the MSA then follow. Each Schedule is bookmarked within the .pdf file.

## **MSA Final Document Numbers**

<b>Document Description or Schedule Number</b>	
	<b>Main Body</b>
<b>1</b>	<b>Rolling Stock Requirements - Technical</b>
<b>2</b>	<b>Technical Description</b>
	Annex
<b>3</b>	<b>Rolling Stock Requirements - Assurance</b>
	Appendix A
	Appendix B
	Appendix C
	Appendix D
	Appendix E
	Appendix F Part A Appendix F Part B
	Appendix G
	Appendix H (Vehicle Design Area Breakdown Structure)
	Appendix I
	Appendix J (Example Unit Log Book)
<b>4</b>	<b>Project Programme</b>
<b>5</b>	<b>Delivery Schedule</b>
<b>6</b>	<b>Training Services</b>
<b>7</b>	<b>Manuals</b>
	Appendix A
<b>8</b>	<b>Spares &amp; Special Tools</b>
<b>9</b>	<b>Options</b>
<b>10</b>	<b>NXG Facility</b>
	Annexes
	Annex 2

<b>Document Description or Schedule Number</b>	
<b>11</b>	<b>Pricing, Payment &amp; Security</b>
<b>12</b>	<b>Contract Management</b>
<b>13</b>	<b>Variation Procedure</b>
<b>14</b>	<b>Equality and Inclusion Requirements</b>
	Appendix A
	Appendix B
	Appendix C
<b>15</b>	<b>Insurance</b>
<b>16</b>	<b>Plans</b>
	A
	B
	C
	D Appendix 1 Appendix 2 Appendix 3 Appendix 4 Appendix 5 Appendix 6 i Appendix 6 ii Appendix 6 iii Appendix 7 i Appendix 7 i Appendix 7 iii
	E
<b>17</b>	<b>Dispute Resolution Procedure</b>
Pt A	Fast Track DRP Schedule

<b>Document Description or Schedule Number</b>	
<b>18</b>	<b>Agreed Form Documents</b>
A	Form of Compliance
B	Form of Commencement
C	Form of Escrow Agreement
D	Form of Parent Company Guarantee
E	Form of Bonding Guarantee
F	Form of Delivery Note
G	Form of Request for Approval
H	Form of Provisional Acceptance
I	Form of Final Acceptance
J	Loss of Qualifying Status Notice
K	Form of Qualified Provisional Acceptance
<b>19</b>	<b>Permitted Design Change</b>
<b>20</b>	<b>Approved Contractors</b>
<b>21</b>	<b>Routes</b>



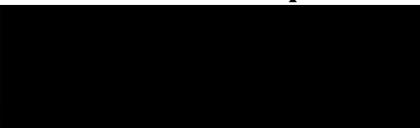
Windsor House,  
42-50 Victoria Street,  
London SW1H  
Reg No: 03914810

**CERTIFICATE OF COMMENCEMENT**

**Manufacture and Supply Agreement dated 30 August 2006 and made between Transport Trading Limited, Bombardier Transportation Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Certificate of Commencement and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Certificate of Commencement.
2. This certificate constitutes a Certificate of Commencement under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited hereby:
  - 3.1 acknowledge and agree that the conditions precedent set out in Clause 2.1 of the Manufacture and Supply Agreement have been satisfied (or agree to their waiver or deferral, as applicable); and
  - 3.2 notify you, Bombardier Transportation Limited that the Commencement Date shall be 30 August 2006

Signed for and on behalf of Transport Trading Limited

Signature 

Name.....

Position.....

Date .....

August 2006

We refer to the Manufacturing and Supply Agreement and Train Services Agreement being entered into by Bombardier Transportation UK Limited, Transport Trading Limited and London Underground Limited today (the "**Agreements**").

We acknowledge and agree that, given the complex negotiations required to agree the terms of the Agreements by today, there has not been sufficient time available to conduct a thorough administrative review of the Agreements before execution.

We therefore agree that Herbert Smith should conduct a review of the Agreements to ensure that:

1. any typographical errors are corrected;
2. cross references are checked and corrected;
3. the list of definitions in each Agreement is correct, exhaustive and complete.

The product of that exercise will be reviewed and agreed with Bombardier legal and amended and restated Agreements will be entered into reflecting any necessary amendments.

We agree that this procedure will take place outside the variation procedures set out in the Agreements.

  
.....  
For and on behalf of  
**Transport for London**

  
.....  
For and on behalf of  
**Bombardier Transportation UK Limited**

Herbert Smith

**DATED** **2006**

**TRANSPORT TRADING LIMITED**

and

**BOMBARDIER TRANSPORTATION UK LIMITED**

and

**LONDON UNDERGROUND LIMITED**

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**MANUFACTURE AND SUPPLY  
AGREEMENT**

**for new Electric Multiple Unit Trains**

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Herbert Smith LLP

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**BETWEEN:**

- (1) **TRANSPORT TRADING LIMITED** (Registered No: 03914810) a company incorporated under the laws of England and Wales whose registered office is at Windsor House, 42-50 Victoria Street, London, SW1H 0TL ("**Purchaser**");
- (2) **BOMBARDIER TRANSPORTATION UK LIMITED**, (Registered No: 02235994) a company incorporated under the laws of England and Wales whose registered office is at Litchurch Lane, Derby, Derbyshire, DE24 8AD ("**Manufacturer**"); and
- (3) **LONDON UNDERGROUND LIMITED**, (Registered No: 1900907) a company incorporated under the laws of England and Wales whose registered office is at 55 Broadway, London, SW1H 0BD ("**LUL**").

**WHEREAS:**

- (A) LUL currently operates passenger services on the East London Line as part of the London underground railway services. LUL has previously obtained orders under the Transport and Works Act 1992 authorising a northern and southern extension to the East London Line.
- (B) As part of the Mayor of London's transport strategy, Transport for London is sponsoring a project to extend the existing East London Line and enhance the level of passenger services operating on it. The project will result in the existing East London Line being closed and its infrastructure converted to national rail standards. Transport for London has also been delegated the responsibility by the Secretary of State for Transport for procuring the operation of passenger service on the North London Railway.
- (C) Transport for London has determined that new rolling stock will be required to support the enhanced level of passenger services to be operated on the East London Railway and the North London Railway and has held a competition, in accordance with the Utilities Contracts Regulations 1996, to identify the most economically advantageous means of procuring the supply of the rolling stock which meets the necessary technical, financial and operational requirements.
- (D) The Parties wish to enter into this Agreement to record the terms on which the Manufacturer will design, build, test, commission and supply rolling stock and the related equipment for use in the provision of passenger services on the East London Railway and the North London Railway and provide other related services.

**IT IS AGREED:**

**1. DEFINITIONS AND INTERPRETATION**

**1.1 Definitions**

In this Agreement the following words and expressions shall have the following meanings save where the context requires otherwise:

"**Acceptance**" means:

- (a) in respect of any ELR Unit, Provisional Acceptance (or, where applicable, Deemed Acceptance) of that Unit;
- (b) in respect of any NLR Unit, Qualified Provisional Acceptance of that Unit; and
- (c) in respect of any other item of Purchased Equipment, that such Purchased Equipment has been accepted by the Purchaser or its nominee, which acceptance shall occur immediately prior to the signing of a Delivery Note in respect of that item of Purchased Equipment;

and "Accept" and "Accepted" shall be construed accordingly;

**"Acceptance Procedures"** means the procedures for Acceptance of an item of Purchased Equipment set out in Appendix D to Schedule 3;

**"Acquired WIP"** has the meaning ascribed to it in Clause 30.10;

**"Act"** means the Railways Act 1993;

**"Additional ELR Unit"** means an ELR Unit, other than an ELR Unit forming part of the Initial Order which is to be supplied by the Manufacturer pursuant to an Option Notice served by the Purchaser;

**"Additional NLR Unit"** means an NLR Unit, other than an NLR Unit forming part of the Initial Order which is to be supplied by the Manufacturer pursuant to an Option Notice served by the Purchaser;

**"Additional NLR Vehicle"** means an additional railway vehicle to be supplied by the Manufacturer pursuant to an Option Notice served by the Purchaser;

**"Additional Spares"** means those Spares, other than Initial Spares which the Purchaser has ordered from the Manufacturer pursuant to paragraph 4 of Schedule 9;

**"Additional Unit Option"** means the option that may be exercised in accordance with paragraphs 1 and 2 of Schedule 9;

**"ADR Notice"** has the meaning ascribed to it in paragraph 1.5 of Schedule 17;

**"Agreed Diversity Training Plan"** means the diversity training plan set out in Appendix B to Schedule 14;

**"Agreed Equality Policy"** means the equality and diversity policy set out in Appendix A to Schedule 14;

**"Agreed Supplier Diversity Plan"** means the supplier diversity plan set out in Appendix C to Schedule 14;

**"Agreement"** means this Agreement including the Schedules;

**"ALARP"** has the meaning ascribed to it in paragraph 5.4.3(B) of Schedule 3;

**"Applicable Laws"** means, as the context may require, all or any laws, statutes, by-laws, codes of practice which have force of law, directives, regulations, statutory instruments, rules, orders, rules of court, delegated or subordinate legislation, rules of common law or any European Union legislation at any time or from time to time in force in the United

Kingdom or the European Union and which are or may become applicable to this Agreement, any agreement or document referred to herein, any item of Purchased Equipment, the Training Services and/or the Manufacturer's obligations (including their performance) under this Agreement;

**"Approved Contractor"** means in relation to a Subsystem described in Schedule 20 the proposed Subcontractors for that Subsystem;

**"As Built Drawings"** has the meaning ascribed to it in paragraph 1.2.11 of Schedule 7;

**"Assurance Acceptance"** means the approval given by the Purchaser or its nominee in accordance with the procedure described in paragraph 1.3 of Schedule 3;

**"Auditor General"** means the person appointed from time to time under section 6 of the Exchequer and Audit Departments Act 1866 and section 1 of the National Audit Act 1983;

**"Automatic Warning System"** means the automatic and enforceable warning system in the form of a track mounted, non-contact inductor;

**"Base Product"** means class 376 or class 377 "Electrostar" rolling stock produced by the Manufacturer;

**"Black and Minority Ethnic Business"** or **"BME"** has the meaning ascribed to it in Appendix 1 to Schedule 14;

**"Bond Provider"** means the Qualifying Issuer who is providing a Bonding Guarantee;

**"Bonding Guarantee"** means a bonding guarantee in the form set out in Part E of Schedule 18 (Agreed Form Documents);

**"Cab Simulator As Built Drawings"** has the meaning ascribed to it in paragraph 1.7.3(F) of Schedule 7;

**"Cab Simulator Fault Finding and Test Arising"** has the meaning ascribed to it in paragraph 1.7.3(E) of Schedule 7;

**"Cab Simulator Illustrated List of Parts"** has the meaning ascribed to it in paragraph 1.7.3(D) of Schedule 7;

**"Cab Simulator Manuals"** has the meaning ascribed to it in paragraph 1.7.2 of Schedule 7;

**"Cab Simulator Option"** means the option numbered B7 in Appendix 5 to Schedule 9;

**"Cab Simulator Technical Information Manual"** has the meaning ascribed to it in paragraph 1.7.3(A) of Schedule 7;

**"Cab Simulator Unit"** means the simulator equipment described in the Rolling Stock Requirements - Technical;

**"Category A Comments"** has the meaning ascribed to it in paragraph 1.3.12 of Schedule 3;

**"Category B Comments"** has the meaning ascribed to it in paragraph 1.3.12 of Schedule 3;

**"Category C Comments"** has the meaning ascribed to it in paragraph 1.3.12 of Schedule 3;

**"Certificate of Approval"** has the meaning ascribed to it in paragraph 1.3.2 of Schedule 10;

**"Certificate of Authority to Operate"** has the meaning ascribed to it in Railway Group Standard RT/GM 8270, Issue 1, February 2003 (as may be amended from time to time) and includes any other equivalent certificate or document (of whatever name) which may replace the same;

**"Certificate of Commencement"** means the certificate in the form or substantially in the form set out in Part B of Schedule 18;

**"Certificate of Compliance"** means the declaration to be given by a director of the Manufacturer to the Purchaser in the form or substantially in the form set out in Part A of Schedule 18;

**"Certificate of Conformity"** has the meaning ascribed to it in the Railways (Interoperability) Regulations 2006;

**"Certificate of Engineering Acceptance"** has the meaning given to such term in Railway Group Standard GM/RT2000, Issue 2, October 2000;

**"Certificate of Technical Acceptance"** has the meaning ascribed to it in Railway Group Standard RT/GM 8270, Issue 1, February 2003 (as may be amended from time to time) and includes any other equivalent certificate or document (of whatever name) which may replace the same;

**"Change Control Process"** has the meaning ascribed to it in paragraph 2.2.1 of Schedule 3;

**"Change in Law"** means the application to any person of any Applicable Law or Standard which did not previously apply to such person, or any change (whether with immediate, prospective or retrospective effect) in, or any change in application of, any Applicable Law or Standard (including any Applicable Law or Standard ceasing to apply, being withdrawn or not being renewed, being introduced or varied and any change in interpretation of any Applicable Law or Standard by any Competent Authority);

**"Clearances"** has the meaning ascribed to it in Railway Group Standard GC/RT5212, Issue 1, February 2003;

**"Close Out Meeting"** has the meaning ascribed to it in paragraph 1.1.6 of Schedule 3;

**"Commencement Date"** means the date specified in the Certificate of Commencement;

**"Competent Authority"** means any legislative, judicial, regulatory or administrative body or agency (or any subdivision of them) of the United Kingdom or the European Union or any supranational body which has rule-making power or whose directions, instructions, rulings, laws or regulations are directly enforceable against a Party in connection with the performance of this Agreement;

**"Component Exchange Instructions"** has the meaning ascribed to it in paragraph 1.2.6 of Schedule 7;

**"Component Overhaul Instructions"** has the meaning ascribed to it in paragraph 1.2.7 of Schedule 7;

**"Competent Person"** has the meaning given to such term in the Railway and Other Guided Transport Systems (Safety) Regulations 2006;

**"Competitor"** means any person conducting large-scale manufacturing of rolling stock and supply of such rolling stock in or into the United Kingdom and who directly competes with the Manufacturer in the United Kingdom in such business;

**"Confidential Information"** has the meaning ascribed to it in Clause 34.1;

**"Configuration Management Plan"** has the meaning ascribed to it in paragraph 2.1.2 of Schedule 3;

**"Conformance Certification Body"** has the meaning ascribed to it in Railway Group Standard GM/RT 2000;

**"Consequential Loss"** means in relation to a breach of this Agreement or other circumstances in which an Indemnified Party is entitled to recover any costs, expenses or liabilities suffered or incurred, any

under other agreements or liability to third parties from such breach and whether or not the Party committing the breach knew, or ought to have known, that such loss would be likely to be suffered as a result of such breach;

**"Contingency Maintenance Facility"** has the meaning ascribed to the term Contingent Maintenance Facility in Schedule 10;

**"Contract Price"** means:

- (a) in relation to an ELR Unit or a NLR Unit forming part of the Initial Order, the price to be paid in respect of such Unit as set out in Appendix 2 to Schedule 11;
- (b) in relation to an item of Purchased Equipment forming part of the Initial Order (other than the Units), the price to be in respect of such item of Purchased Equipment as set out in Appendix 2 to Schedule 11; and
- (c) in relation to any Option, the Total Option Price to be paid in respect of that Option in accordance with Schedule 9;

as the same may be amended, supplemented or varied from time to time pursuant to the Variation Procedure, together in each case with any VAT chargeable in accordance with Clause 26;

**"Contract Progress Report"** has the meaning ascribed to it in paragraph 2.3.1 of Schedule 12;

**"Contractual Acceptance Date"** means:

- (a) in relation to an ELR Unit forming part of the Initial Order, the intended date of issue of a Provisional Acceptance Certificate for such ELR Unit as set out in the Project Programme;

- (b) in relation to a NLR Unit forming part of the Initial Order, the intended date of issue of a Qualified Provisional Acceptance Certificate for such NLR Unit as set out in the Project Programme;
- (c) in relation to any item of Purchased Equipment comprising the Initial Order (other than an ELR Unit or a NLR Unit), the intended date for that item to be Accepted by the Purchaser, as set out in the Project Programme; and/or
- (d) in relation to an Option (including an Additional Unit Option) the intended date for the item which is the subject of the Option to be Accepted by the Purchaser as set out in the Project Programme;

in each case as may be amended, supplemented or varied from time to time in accordance with the Variation Procedure and/or Clause 13.4;

**"Core ELL Infrastructure"**

- (a) means that part of the Railway Infrastructure comprising the upgraded East London Line as described by the routes listed in table 1 of Schedule 21 (Routes) and the ELR Carriage Servicing Depot; and
- (b) where such Railway Infrastructure exists, that part of the railway Infrastructure between Dalston Junction and the connection to the North London Railway near Canonbury.

**"Core ELL Test Plan"** has the meaning ascribed to it in paragraph D.3.3 of Appendix D to Schedule 3;

**"Corrective Action"** has the meaning ascribed to it in Clause 9.6.1;

**"Deemed Acceptance"** means Acceptance of an ELR Unit pursuant to paragraph D.7.9(A) of Appendix D to Schedule 3;

**"Deemed Stage 2 Completion Date"** means the date on which the Stage 2 Delay Period exceeds 60 days, which date shall be at least 60 days after the Proposed Stage 2 Completion Date;

**"Deemed Stage 3 Delay Period"** has the meaning ascribed to it in paragraph D.7.9(C) of Appendix D to Schedule 3;

**"Default Interest"** means interest on late payment at the rate of two per cent per annum above LIBOR (calculated on the basis of the actual number of days elapsed and a year of 365 days);

**"Defect"** has the meaning ascribed to it in Clause 16.1;

**"Defect Rectification Period"** has the meaning ascribed to it in Clause 16.1;

**"Delay Period"** has the meaning ascribed to it in Clause 11.1;

**"Delivery"** means the passing of possession of a Unit, other item of Purchased Equipment or Moveable Asset and **"Deliver"** and cognate terms shall be construed accordingly;

**"Delivery Note"** means a delivery note in the form or substantially in the form of Part F of Schedule 18;

**"Delivery Schedule"** means the schedule for the Delivery of the Units set out in Schedule 5;

**"Delivery Week"** has the meaning ascribed to it in Clause 11.7.1;

**"Design"** means the design of the Units;

**"Design and Endemic Defect"** has the meaning ascribed to it in Clause 16.1;

**"Design Freeze Date"** means in relation to a Permitted Design Change the date specified as the "Design Freeze Date" for that Permitted Design Change in Schedule 19;

**"Design Phase"** means the period starting on the Commencement Date and ending on the date of the notice served by the Purchaser pursuant to paragraph B.8 of Appendix B to Schedule 3 and includes the Preliminary Design Phase and the Detailed Design Phase;

**"Design Review"** means the process by which the design for the NLR Units and the ELR Units undergoes a detailed analysis and examination by persons with appropriate knowledge and competence followed by a meeting to review any comments made by the Purchaser;

**"Design Review Process"** means the process for review of the design of the Units as described in Appendix B to Schedule 3;

**"Design Submission Programme"** has the meaning ascribed to it in paragraph B.3.1(B) of Appendix B to Schedule 3;

**"Detailed Design"** means the detailed design of the ELR Units and the NLR Units and the production of each the items described in paragraphs B.5.1 and B.8 of Appendix B to Schedule 3 undertaken by the Manufacturer pursuant to this Agreement;

**"Detailed Designs"** has the meaning ascribed to it by paragraph 1.4.1 of Schedule 10;

**"Detailed Design Phase"** means that part of the Design Phase commencing on the expiry of the Preliminary Design Phase and ending on the date of the notice served by the Purchaser pursuant to paragraph B.5.2 of Appendix B to Schedule 3;

**"Detailed Design Submissions"** has the meaning ascribed to it in paragraph B.5.1 of Appendix B to Schedule 3;

**"Detailed Design Technical Case"** has the meaning ascribed to it in paragraph B.5.1(E) of Appendix B to Schedule 3;

**"Disposal Notice"** has the meaning ascribed to it in Clause 23.1;

**"Dispute"** means a difference or dispute of whatever nature between the Manufacturer and either or both of the Purchaser and LUL arising under, out of or in connection with this Agreement (including any question of interpretation);

**"Diverse Supplier"** has the meaning ascribed to it in Appendix 1 to Schedule 14;

**"Diversity Infraction"** has the meaning ascribed to it in paragraph 1.12 of Schedule 14;

**"DRACAS"** has the meaning ascribed to it in paragraph 2.3.1 of Schedule 3;

**"Draft Manuals Date"** has the meaning ascribed to it in paragraph 1.4.1 of Schedule 7;

**"Driver Simulator Maintenance and Overhaul Instructions"** has the meaning ascribed to it in paragraph 1.7.3(C) of Schedule 7;

**"Driver Simulator Maintenance and Overhaul Procedures"** has the meaning ascribed to it in paragraph 1.7.3(C)(19) of Schedule 7;

**"Driver Simulator Maintenance Schedule"** has the meaning ascribed to it in paragraph 1.7.3(B) of Schedule 7;

**"Driver Simulator Operating Manual"** has the meaning ascribed to it in paragraph 1.7.3(G) of Schedule 7;

**"D Stage Engineering Safety Case"** means the safety justification to demonstrate that the Units have been designed to be compatible with the relevant Railway Infrastructure, and to show that all risks associated with the Units are being managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"D Stage Operational Safety Case"** means the safety justification produced at design stage to demonstrate that the operation of the Units will be compatible with the relevant Railway Infrastructure, and to show that all risks associated with the operation of the Units are being managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"East London Line"** means that part of the London Underground Railway Infrastructure between Shoreditch and New Cross, and Shoreditch and New Cross Gate commonly known as the "East London Line";

**"East London Railway"** means a combination of the routes on:

- (a) the ELR Network; and
- (b) the Core ELL Infrastructure;

**"ELL Project"** has the meaning ascribed to it in paragraph 1.1.4 of Schedule 3;

**"ELLP Hazard Identification Procedures"** means the procedure of the same name set out in Appendix G to Schedule 3 as may be amended from time to time;

**"ELLP Hazard Management Procedures"** means the procedures set out in Appendix G to Schedule 3 as may be amended from time to time;

**"ELLP Safety Risk Assessment Procedure"** means the procedures set out in Appendix I to Schedule 3 as may be amended from time to time;

**"ELR Network"** means a combination of the routes listed in table 2 of Schedule 21 (Routes) being a combination of the following routes on the national rail network:

- (a) the route between New Cross Gate and West Croydon;
- (b) the route between New Cross Gate and Crystal Palace; and
- (c) routes for diversions, ancillary movements and visits to light maintenance depots;

**"ELR Unit"** means an electric multiple unit in 4 car formation to be operated by the Operator initially on the East London Railway and if fitted with dual voltage equipment to operate on the North London Railway, ordered from the Manufacturer under this Agreement (whether as part of the Initial Order or pursuant to an Option Notice);

**"Endorsed"** has the meaning given to such term in Railway Group Standard GE/RT8270 and **"Endorsement"** shall be construed accordingly;

**"Environmental Condition"** means:

- (a) any Environmental Damage; or
- (b) any event, circumstance, condition, operation or activity which it is reasonably foreseeable as likely to result in Environmental Damage which in the Purchaser's reasonable opinion could result in the Purchaser, the Owner, the Operator, TfL or any member of the TfL Group incurring any material liability or being subject to the direction of any Competent Authority;

**"Environmental Damage"** means any material injury or damage to persons, living organisms or property (including offence to man's senses) or any pollution or impairment of the environment resulting from the discharge, emission, escape or migration of any substance or energy, noise or vibration save to the extent any of the foregoing are within the requirements of Schedule 1;

**"Equality and Inclusion Requirements"** means those requirements set out in Schedule 14;

**"Escalation Notice"** has the meaning ascribed to it in paragraph 1.2 of Schedule 17;

**"Escalation Procedure"** means the procedure set out in Part A of Schedule 17;

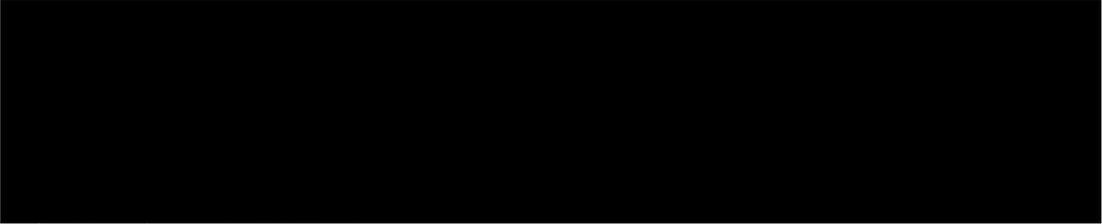
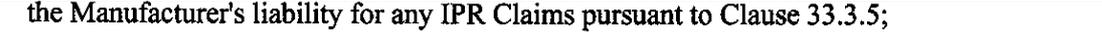
**"Escrow Agreement"** means an agreement in the form or substantially in the form set out in Part C of Schedule 18;

**"Event of Loss"** means, with respect to a Unit:

- (a) the actual or constructive total loss, or destruction, of such Unit or its being damaged beyond repair or rendered permanently unfit for normal use for any reason whatsoever, including any destruction or damage caused by a Force Majeure Event or requisition for use or hire which, in either case, results in an insurance settlement on the basis of a total loss;
- (b) the requisition of title, or other compulsory acquisition, requisition, expropriation or confiscation for any reason of such Unit by any Competent Authority, other than the Purchaser, TfL or other member of the TfL Group but excluding acquisition for use or hire not involving requisition of title; or
- (c) the condemnation, confiscation, capture, deprivation, seizure or requisition for use or hire of such Unit (other than requisition for use or hire by any Competent Authority) which deprives any person permitted by this Agreement to have possession and/or use of such Unit its possession and/or use for more than 180 days;

**"EWLD Notice"** has the meaning ascribed to it in Clause 12.5.1;

**"Excepted Liabilities"** means:

- (a) the Manufacturer's liability for death or personal injury;
- (b) the Manufacturer's liability for loss suffered or incurred by the Owner or any other person (including LUL, in any capacity), to the extent such loss is or is required to be insured by the Manufacturer in accordance with the provisions of Clause 15;
- (c) the Manufacturer's liability on termination or cancellation (in whole or in part) of this Agreement or otherwise to refund or pay to the Purchaser all sums previously paid by the Purchaser in respect of any Purchased Equipment which is the subject of a termination or cancellation in accordance with this Agreement, (together with all interest payable on any such refund or payment) as such refund is calculated in accordance with Clause 21, Clause 30 and/or Clause 32;
- (d) the Manufacturer's liability to refund and pay to the Purchaser all payments previously made, together with all interest payable thereon (as calculated in accordance with this Agreement), in respect of any Purchased Equipment which is returned to the Manufacturer pursuant to a Minimum Fleet Handback Notice in accordance with Clause 20.
- (e) 
- (f) 
- (g) the Manufacturer's liability for any IPR Claims pursuant to Clause 33.3.5;
- (h) (except to the extent already provided for under sub-paragraphs (c) and (d) of this definition) the Manufacturer's liability to refund or reimburse as expressly provided in this Agreement but for the avoidance of doubt excluding the Maintainer's liability to indemnify;
- (i) the Manufacturer's liability to pay any Taxes as expressly provided by this Agreement or as required by Applicable Law; and/or
- (j) any Default Interest on any payments falling within (a) to (j) above;

**"Exception Report"** has the meaning ascribed to it in paragraph 2.2.3 of Schedule 12;

**"Excluded Assets"** has the meaning ascribed to it in paragraph 3.7.2 of Schedule 10;

**"Exercise Period"** means in respect of an Option, the period of time specified in Schedule 9 during which the Purchaser may exercise that Option;

**"Expert Procedure"** means the procedure set out in Part B of Schedule 17;

**"Expert"** has the meaning ascribed to it in paragraph 2.4 of Schedule 17;

**"Expert Notice"** has the meaning ascribed to it in paragraph 2.2 of Schedule 17;

**"Expired Option"** has the meaning ascribed to it in Schedule 9 (Options);

**"Expiry Date"** means the date specified in paragraph 4 of the Bonding Guarantee;

**"Facility Test"** has the meaning ascribed to it in paragraph 2.4.1 of Schedule 10;

**"Factory Acceptance Test" or "FAT"** has the meaning ascribed to it in paragraph C.1.1(D) of Appendix C to Schedule 3;

**"Fault Finding and Tests Arising"** has the meaning ascribed to it in paragraph 1.2.10 of Schedule 7;

**"Fault Free"** means without a fault which would constitute a Delay Incident (as defined in the Train Services Agreement) were it to occur during a passenger service;

**"Fault Free Running"** means distance accumulation running of a Unit in actual or simulated passenger service operation without the occurrence during that running of a fault which constitutes a Delay Incident (as defined in the Train Services Agreement) or which would constitute a Delay Incident (as defined in the Train Services Agreement) were it to occur during passenger service;

**"Final Acceptance"** means, in respect of each Unit, that the Unit complies with the Final Acceptance Criteria as evidenced by and occurring upon the issue of a Final Acceptance Certificate for that Unit;

**"Final Acceptance Backstop Date"** means 31<sup>st</sup> May 2010 or such later date as shall be substituted by virtue of the operation of paragraph D.7.9(G) of Appendix D of Schedule 3;

**"Final Acceptance Certificate"** means a certificate in the form or substantially in the form of Part I of Schedule 18 issued by the Purchaser in respect of any Unit;

**"Final Acceptance Criteria"** means each of the criteria for issue of a Final Acceptance Certificate set out in paragraph D.10.1 of Appendix D to Schedule 3;

**"Fit for Purpose"** means, in relation to any asset or service to be provided under this Agreement:

- (a) that it complies with all applicable requirements and provisions of this Agreement including the Rolling Stock Requirements - Technical;
- (b) that it complies with all Applicable Laws, Relevant Consents and applicable Standards and, to the extent that there is non-compliance with an applicable Standard, that there is a valid derogation from that Standard;
- (c) where it is a Unit, that it is fit for operation and/or use in Unrestricted Passenger Revenue-Earning Service;
- (d) that it is capable of satisfying the performance requirements which the Maintainer is required to satisfy under the Train Services Agreement; and
- (e) where the item is a Unit, it complies with the aesthetic condition requirements specified in Appendix 2 of Schedule 2 (Maintenance and Cleaning Services) of the TSA such that were any Unit to be assessed against the provisions of Appendix 2 of Schedule 2 (Maintenance and Cleaning Services) of the TSA relating to external cleanliness, internal state of repair and external state of repair that Unit would score the highest possible score;

- (f) where it is a Part, Spare, and/or any Major Component, that if such Part, Spare, and/or any Major Component is incorporated into a Unit, such incorporation does not prevent such Unit from complying with (a) to (e) above;

**"Fit Out Specification"** has the meaning ascribed to it by paragraph 3.1.1(A) of Schedule 10;

**"Fit Out Works"** has the meaning ascribed to that term in paragraph 3.1.1. of Schedule 10;

**"Fixed Assets"** has the meaning ascribed to it in paragraph 3.6 of Schedule 10;

**"FM Affected Party"** has the meaning ascribed to it in Clause 32.1.1;

**"FM Notice"** has the meaning ascribed to it in Clause 32.4;

**"FOI Legislation"** has the meaning ascribed to it in Clause 35.1.1;

**"Force Majeure Event"** means any:

- (a) fire, earthquake or flood;
- (b) act of terrorism;
- (c) war, invasion, acts of foreign enemies, hostilities, civil war, revolutions, insurrection, riots or civil unrest; and/or
- (d) strikes, lock outs or other industrial action not solely affecting the Manufacturer's and/or their Subcontractors' employees or those of any of its Subcontractors.

save to the extent that such event is caused by the Manufacturer, any Subcontractor, or their respective agents, officers and/or employees;

**"Foreseeable Change in Law"** means the coming into effect [REDACTED] forming part of the Initial Order, of any Applicable Law or Standard (whether by means of any enactment repeal or amendment) to the extent that that Applicable Law or Standard has been published on or before the date of the Agreement in substantially the same form and/or with substantially the same effect as the relevant Applicable Law or Standard when it comes into legal effect:

- (a) in a draft bill as part of a government department consultation paper;
- (b) in a bill;
- (c) in a draft statutory instrument;
- (d) published as a proposal in the Official Journal of the European Union or as a common position adopted by the European Parliament; or
- (e) in a draft Standard that has been published by:
  - (1) the RSSB (and any successor) in relation to Railway Group Standards;
  - (2) Network Rail (and any successor) in relation to Network Rail Company Standards;

- (3) BSI Group Limited (and any successor) in relation to British standards;
- (4) the European Committee for Standardization (and any successor) in relation to European standards;
- (5) the International Organisation for Standardization (and any successor) in relation to international standards; or
- (6) the European Rail Agency (and any successor) in relation to TSIs; or
- (7) the Secretary of State for Transport (and any successor) in relation to a Notified National Technical Rule;

**"Free Issue Materials"** means those items of equipment provided by the Purchaser to the Manufacturer at no cost to the Manufacturer for the purposes of Clause 23.4;

**"Gangway Screen Option"** means the Wide Gangway Technical Option referred to in Schedule 9 (Options) to replace inter-vehicle gangways with gangway screen;

**"Gauging Costs"** has the meaning ascribed to it in Clause 5.8.2(C);

**"Greater London Authority"** means the authority established by section 1 of the Greater London Authority Act 1999 and its successors;

**"Group"** means, in relation to any company (which for the purposes of this Agreement shall include TfL), that company and any company which is a holding company or subsidiary of that company and any subsidiary of any such holding company; for which purposes **"subsidiary"** and **"holding company"** have the meanings respectively given to them by sections 736 and 736A of the Companies Act 1985 as supplemented by section 144 of the Companies Act 1989;

**"Guarantee"** means the guarantee to be provided by the Guarantor in favour of the Purchaser in the form set out in Part D of Schedule 18;

**"Guaranteed Amount"** has the meaning ascribed to it in paragraph 3 of the Bonding Guarantee;

**"Guarantor"** means Bombardier Inc, a company incorporated under the laws of Canada whose registered office is at 800 Rene-Levesque Blvd West, Montreal, Quebec, Canada, H3B 1Y8;

**"Hazard Log"** has the meaning ascribed to it in paragraph 5.3.1 of Schedule 3;

**"HMRI"** means Her Majesty's Railway Inspectorate and any successor body;

**"Indemnified Parties"** has the meaning ascribed to it in Clause 33.3;

**"Illustrated List of Parts"** or **"ILOP"** has the meaning ascribed to it in paragraph 1.2.8 of Schedule 7 (Manuals);

**"Infrastructure Manager"** has the meaning given to that term under the Railways and Other Guided Transport Systems (Safety) Regulations 2006;

**"Infrastructure Proving Tests"** has the meaning ascribed to it in paragraph D.11.2 of Appendix D to Schedule 3;

**"Initial Infrastructure Tests"** has the meaning ascribed to it in paragraph D.3.1(B) of Appendix D to Schedule 3;

**"Initial Order"** has the meaning ascribed to it in Clause 4.1;

**"Initial Spares"** means all of those items listed in Part A of Schedule 8 and **"Initial Spare"** shall mean any one of them;

**"Initial Special Tools"** means all of the items listed in Part B of Schedule 8 and **"Initial Special Tool"** shall mean any one of them;

**"Initial Type Tests"** has the meaning ascribed to it in paragraph D.3.1(A) of Appendix D to Schedule 3;

**"Insurances"** has the meaning ascribed to it in paragraph 1 of Appendix 1 to Schedule 15;

**"Insolvency Event"** in relation to any person means:

- (a) such person stopping or suspending or threatening to stop or suspend payment of all or a material part of its debts, or becoming unable to pay its debts, or being deemed unable to pay its debts under section 123(1) or (2) of the Insolvency Act 1986;
- (b) any step being taken by any person with a view to the winding up of such person or any person presenting a winding-up petition in respect of such person which is not dismissed within 7 days;
- (c) any step being taken to enforce security over or a distress execution or other similar process being levied or served out against the whole or a substantial part of the assets or undertaking of such person;
- (d) a receiver, administrative receiver, administrator, compulsory manager or other similar officer being appointed in respect of such person;
- (e) such person ceasing or threatening to cease to carry on all or a material part of its business, except for the purpose of and followed by a reconstruction, amalgamation, reorganisation, merger or consolidation on terms approved by the Purchaser (in its absolute discretion) before that step is taken;
- (f) the making by such person of a general assignment or an arrangement or composition with or for the benefit of creditors; or
- (g) any event occurring which, under the laws of any relevant jurisdiction other than England and Wales, has an analogous or equivalent effect to any of the events listed above;

**"Intellectual Property Rights"** means all intellectual property rights in any part of the world, including any patent, patent application, trade mark, trade mark application, registered design, registered design application, utility model, trade name, discovery, invention, process, formula, specification, copyright (including rights in Software and database and topography rights) or unregistered design rights;

**"Interior and Exterior Cleaning Instructions"** has the meaning ascribed to it in paragraph 1.3.3 of Schedule 7;

**"IPR Claim"** has the meaning ascribed to it in Clause 29.5;

**"Joint Proving Tests"** has the meaning ascribed to it in paragraph D.3.1 of Appendix D to Schedule 3;

**"Key Subcontract"** means a Subcontract for the supply of a Subsystem listed in Schedule 20;

**"Key Subcontractor"** means a Subcontractor that is party to a Key Subcontract;

**"KPIs"** has the meaning ascribed to it in paragraph 6.3.1 of Schedule 3;

**"LD Notice"** has the meaning ascribed to it in Clause 11.7.1;

**"Level 1 Technical Case"** has the meaning ascribed to it in paragraph 3.1.2 of Schedule 3;

**"Level 2 Technical Case"** has the meaning ascribed to it in paragraph 3.1.2 of Schedule 3;

**"LFEPA"** means the London Fire and Emergency Planning Authority and any successor body;

**"LIBID"** means:

- (a) the rate (to the nearest four decimal places) at which sterling deposits are bid by prime banks as published or reported by the British Bankers Association Interest Settlement Rate days as displayed on the appropriate page of the Reuters service ("**LIBID Screen Rate**"); or
- (b) if the LIBID Screen Rate is unavailable, the arithmetic mean of the rates (rounded to the nearest four decimal places) quoted to the Purchaser at its request in the London interbank market,

as at 11.00am on the relevant Quotation Day for bids for the taking of deposits in sterling and for a period of 90 days;

**"LIBOR"** means:

- (a) the applicable Screen Rate; or
- (b) (if no Screen Rate is available for sterling) the arithmetic mean of the rates rounded upwards to four decimal places) quoted to the Purchaser at its request in the London interbank market,

as of 11.00 am on the Quotation Day for the offering of deposits in sterling and for a period of 90 days;

**"Line of Route Manual"** has the meaning ascribed to it in paragraph 1.3.4 of Schedule 7;

**"Loss of Qualifying Status Notice"** means the loss of qualifying status notice in the form or substantially in the form of Part J of Schedule 18;

**"LUL Acceptance Panel"** has the meaning ascribed to it in paragraph B.7.2 of Appendix B to Schedule 3;

**"LUL D Stage Engineering Safety Case"** has the meaning ascribed to it in paragraph B.7.3 of Appendix B to Schedule 3;

**"LUL Information"** has the meaning ascribed to it in Clause 35.1.4;

**"LUL Information Request"** has the meaning ascribed to it in Clause 35.1.5;

**"LUL S Stage Engineering Safety Case"** has the meaning ascribed to it in paragraph D.6.7(B) of Appendix D to Schedule 3;

**"LUL T Stage Engineering Safety Case"** has the meaning ascribed to it in paragraph D.2.4 of Appendix D to Schedule 3;

**"LUL D Stage Operational Safety Case"** means the D Stage Operational Safety Case submitted by the Purchaser to the LUL Acceptance Panel;

**"Maintainer"** means the person appointed by the Purchaser to provide maintenance and other services in accordance with the Train Services Agreement;

**"Main Works Contract"** means the contract between LUL and the Main Works Contractor under which the Main Works Contractor shall undertake certain upgrades, renewals and extensions to the Railway Infrastructure on the East London Line including the construction of the New Cross Gate Facility;

**"Main Works Contractor"** means the person appointed by LUL to carry out certain upgrades, renewals and extensions to the existing Railway Infrastructure on the East London Line;

**"Main Works Contractor Fit Out Works"** has the meaning ascribed to it in paragraph 3.4 of Schedule 10;

**"Main Works Infrastructure Requirements – Technical"** has the meaning ascribed to it under the Main Works Contract;

**"Maintenance Facility"** means the facility at New Cross Gate where the Maintainer may undertake stabling, cleaning and maintenance of the ELR Units and/or the NLR Units and/or such other facility or facilities as may be agreed between the Manufacturer and the Purchaser from time to time;

**"Maintenance Facility Constraints"** has the meaning ascribed to it in paragraph 1.1.1(C) of Schedule 10;

**"Maintenance Facility Specification"** means the specification set out in Annex 1 to Schedule 10;

**"Maintenance Plan"** means the plan set out in Part D of Schedule 16 as amended from time to time in accordance with this Agreement;

**"Major Components"** means each of the items set out in column 1 of the table set out in paragraph (a) of the definition of Defect Rectification Period;

**"Manuals"** has the meaning ascribed to it in paragraph 1.1.2 of Schedule 7;

**"Manufacturer Event of Default"** means any of the events or circumstances listed in Clause 30.1;

**"Manufacturer Fit Out Works"** has the meaning ascribed to it in paragraph 3.1.1(B) of Schedule 10;

**"Manufacturer Group"** means the Manufacturer, the Guarantor and any member of their/its Group from time to time;

**"Manufacturer IPR"** has the meaning ascribed to it in Clause 29;

**"Manufacturer Notice of Proposed Variation"** has the meaning ascribed to it in paragraph 4.1 of Schedule 13;

**"Manufacturer Termination Notice"** has the meaning ascribed to it in Clause 30.8;

**"Manufacturer's Project Manager"** has the meaning ascribed to it in paragraph 3.1.2(A) (Manufacturer's Project Team) of Schedule 12;

**"Manufacturer's Records"** has the meaning ascribed to it in Clause 9.3.1 (A);

**"Manufacturer's Works"** means the Manufacturer's premises at Litchurch Lane, Derby, DE24 8AD;

**"Manufacturer's Project Team"** has the meaning ascribed to it in paragraph 3.1.2(B) (Manufacturer's Project Team) of Schedule 12;

**"Manufacturing Programme"** means the programme described in paragraph C.1.1(A) of Appendix C to Schedule 3;

**"Manufacturing Tooling"** means:

- (a) all jigs, fixtures and patterns required for forming and/or moulding parts or laminating elements, dies for hot and/or cold treated shape sections and tooling for pressed parts; and
- (b) all other tools and/or equipment used in the production of a Unit including all related manuals and other related documentation

and the Intellectual Property Rights to the same;

**"Maximum Guaranteed Amount"** has the meaning ascribed to it in paragraph 3 of the Bonding Guarantee;

**"Maximum Liability"** has the meaning ascribed to it in Clause 33.5;

**"Mayor of London"** means the person elected to hold the office as Mayor of London with the powers and function set out in the Greater London Authority Act 1999;

**"Method Statement"** means a statement prepared by or on behalf of the Manufacturer setting out the appropriate timing and methods by which the Manufacturer intends to commence and execute the Manufacturer Fit Out Works;

**"MF Preliminary Design"** has the meaning ascribed to it by paragraph 1.2.1(A) of Schedule 10;

**"Milestone"** means the completion of a specified activity or collection of activities or the occurrence of an event defined or identified as such in the Schedule of Milestones;

**"Milestone Certificate"** means the certificate to be issued by the Purchaser in accordance with paragraph 1.5 of Part B of Schedule 11;

**"Milestone Payment"** means the sum payable to the Manufacturer in respect of each Milestone in accordance with Schedule 11;

**"Minimum Fleet"** has the meaning ascribed to it in Clause 20.1;

**"Minimum Fleet Handback Date"** has the meaning ascribed to it in Clause 20.3.2;

**"Minimum Fleet Handback Trigger"** has the meaning ascribed to it in Clause 20.2;

**"Minimum Fleet Handback Notice"** has the meaning ascribed to it in Clause 20.3;

**"Minimum Records"** has the meaning ascribed to it in paragraph 1.13.4 of Schedule 14;

**"Modification"** means any modification or addition to any Unit;

**"Moveable Assets"** has the meaning ascribed to it in paragraph 3.7.1 of Schedule 10;

**"Network Change"** has the meaning ascribed to it in Part G of the Network Code;

**"Network Code"** means the document commonly known as the "Network Code" and formerly known as the Railtrack Track Access Conditions 1995;

**"Network Rail"** means Network Rail Infrastructure Limited a company incorporated under the laws of England (registered number 2904587), whose registered office is at 40 Melton Street, London, NW1 2EE and any successors to its functions or any relevant part thereof;

**"Network Rail Company Standards"** means a standards document issued by Network Rail that is applicable to the East London Line Railway and/or the North London Railway;

**"Network Rail Infrastructure"** means those aspects and facets of the East London Railway and/or the North London Railway in which a Unit must operate for which Network Rail is Infrastructure Manager including gauging and power supply;

**"NLR Unit"** means an electric multiple unit initially in 3 car formation to be operated by the Operator on the North London Railway and the East London Railway, ordered from the Manufacturer under this Agreement (whether as part of the Initial Order or pursuant to an Option Notice) and includes any Additional NLR Vehicle;

**"North London Railway"** means the routes listed in table 3 of Schedule 21 (Routes) and being a combination of the following routes on the national rail network:

- (a) the route commonly known as the North London Line between Richmond and Stratford; and
- (b) the routes between:
  - (1) Willesden Junction and Clapham Junction via Mitre Bridge Junction;
  - (2) Watford Junction and Euston; and
- (c) routes for ancillary movements, diversions, and visits to light maintenance depots;

**"Notified Body"** has the meaning ascribed to it in section 2 of the Railways (Interoperability) Regulations 2006;

**"Notified National Technical Rules"** has the meaning ascribed to it in section 2 of the Railways (Interoperability) Regulations 2006;

**"NR Infrastructure"** has the meaning ascribed to it in paragraph B.6.1 of Appendix B to Schedule 3;

**"NR Test Plan"** has the meaning ascribed to it in paragraph D.1.1 of Appendix D to Schedule 3;

**"NRAB"** means the Network Rail Acceptance Board and includes any successor to all or any of its functions;

**"On Train Monitoring Recorder"** means the black box recorder used to record each state change of all monitored signals;

**"Operator"** means the person (s) appointed by TfL or a subsidiary of TfL to provide the passenger services with the Units on the East London Line Railway and/or the North London Railway;

**"Option"** means as the context requires an Additional Unit Option, a Technical Option or the Cab Simulator Option and **"Options"** means all of them;

**"Option Notice"** has the meaning ascribed to it in Schedule 9 (Options);

**"Owner"** means the Purchaser or such other person nominated by the Purchaser in accordance with Clauses 14.4 and 39.2 to take title to, have supplied to it, and own, the Purchased Equipment;

**"Part"** means any component, furnishing or equipment forming part of a Unit, Major Component, Initial Spare, Initial Special Tool, Additional Spare, Additional Special Tool or the Cab Simulator Unit;

**"Partial Stage 3 Delay Period"** has the meaning ascribed to it in paragraph D.7.9(C) of Appendix D to Schedule 3;

**"Party"** means each of:

- (a) the Purchaser;
- (b) the Manufacturer; and
- (c) London Underground Limited;

and **"Parties"** shall be construed accordingly;

**"Permitted Delay Event"** has the meaning given to it in Clause 13.1;

**"Permitted Design Change"** means any of the changes identified as "Permitted Design Changes" in Schedule 19;

**"Permitted Restriction"** means in respect of a Certificate of Authority to Operate, a Certificate of Technical Acceptance or a Certificate of Engineering Acceptance, as the case may be, a restriction:

- (a) as to duration;

- (b) in the case of an ELR Unit, as to operation on routes other than the East London Railway (including, for the avoidance of doubt, as to operation on the North London Railway save for where the Purchaser exercises the relevant Technical Options);
- (c) in the case of an NLR Unit, as to operation on routes other than the North London Railway (and the East London Railway);
- (d) as to operation that does not prevent the Units operating in accordance with the requirements of this Agreement; or
- (e) a restriction as to operation over any route listed in Schedule 21 (Routes) that is consistent with but not more restrictive as to operation than the restriction(s) (if any) listed for that route in the "Notes (1)" column of Schedule 21 (Routes);

**"Persistent Breach"** has the meaning ascribed to it in Clause 30.1A;

**"Plan"** means any of the plans, procedures, statements, policies and/or other documentation required to be produced by the Manufacturer in accordance with Schedule 3 and Schedule 12;

**"PPP Company"** has the meaning ascribed to it in section 210(5) of the Greater London Authority Act 1999;

**"Preliminary Design"** means the preliminary design of the ELR Units and the NLR Units and the production of each of the items described in paragraph B.4.1 of Appendix B to Schedule 3 undertaken by the Manufacturer pursuant to this Agreement;

**"Preliminary Design Phase"** means that period starting on the Commencement Date and ending on the date of the notice served by the Purchaser pursuant to paragraph B.4.2 of Appendix B to Schedule 3;

**"Preliminary Design Submissions"** has the meaning ascribed to it in paragraph B.4.1 of Appendix B to Schedule 3;

**"Preliminary Design Technical Case"** has the meaning ascribed to it in paragraph B.4.1 of Appendix B to Schedule 3;

**"Primary Assembly and Manufacture"** means the assembly of each modular body shell, the installation of all Subsystems within each body shell, and the routine testing of all final assembled vehicles;

**"Primary Party"** means each of the Purchaser and the Manufacturer and **"Primary Parties"** shall be construed accordingly;

**"Proceedings"** has the meaning ascribed to it in Clause 52.2;

**"Progressive Assurance"** has the meaning ascribed to it in paragraph 1.1.1 of Schedule 3;

**"Prohibited Act"** has the meaning ascribed to it in Clause 37.1;

**"Project Board Meeting"** has the meaning ascribed to it in paragraph 2.6.1 of Schedule 12;

**"Project Definition Statement"** means the statement set out in Part C of Schedule 16;

**"Project Programme"** means the programme set out in Schedule 4 as may be amended from time to time in accordance with this Agreement;

**"Project Review Meeting"** has the meaning ascribed to it in paragraph 2.5.1 of Schedule 12;

**"Project Safety Committee"** has the meaning ascribed to it in paragraph 5.4.1 of Schedule 3;

**"Proposed Stage 2 Completion Date"** means the date of proposed completion of the Stage 2 Core ELL Test Plan as set out in the Project Programme or, if later, the date which is 57 days after the Manufacturer has made three ELR Units available in accordance with paragraph D3.3;

**"Provisional Acceptance"** means, in relation to any Unit, that the Unit complies fully with the Provisional Acceptance Criteria as evidenced by and occurring upon the issue of a Provisional Acceptance Certificate for that Unit;

**"Provisional Acceptance Certificate"** means a certificate in the form of Part H of Schedule 18, issued by the Purchaser in respect of a Unit, certifying that such Unit complies with the Provisional Acceptance Criteria;

**"Provisional Acceptance Criteria"** means, in respect of any Unit, each of the criteria for issue of a Provisional Acceptance Certificate set out in paragraph D.7.1 of Appendix D to Schedule 3;

**"Purchased Equipment"** means each item comprising the Initial Order and any Additional ELR Units, Additional NLR Units, Additional NLR Vehicles, Additional Spares, Additional Special Tools, the Cab Simulator Unit other Spares, other Special Tools ordered from the Manufacturer in accordance with this Agreement;

**"Purchaser Delay"** has the meaning ascribed to it in paragraph D7.9 of Appendix D to Schedule 3;

**"Purchaser Event of Default"** means any of the events or circumstances listed in Clause 30.3;

**"Purchaser Information"** has the meaning ascribed to it in Clause 35.1.2;

**"Purchaser Information Request"** has the meaning ascribed to it in Clause 35.1.3;

**"Purchaser Notice of Proposed Variation"** means the form set out in Annex 1 of Schedule 13;

**"Purchaser's Project Team"** has the meaning ascribed to it in paragraph 1.1.1 of Schedule 12;

**"Purchaser's Representative"** has the meaning ascribed to it in Clause 2A;

**"Purchaser's Rolling Stock Manager"** has the meaning ascribed to it in paragraph 1.1.4 of Schedule 12;

**"Purchaser Termination Notice"** has the meaning ascribed to it in Clause 30.4.2;

**"Qualified Provisional Acceptance"** means in relation to a NLR Unit that the Unit complies fully with the Provisional Acceptance Criteria other than those set out in paragraphs D.7.1(C) and (D) of Appendix D to Schedule 3 of this Agreement as evidenced by and occurring upon the issue of a Qualified Provisional Acceptance Certificate for that Unit;

**"Qualified Provisional Acceptance Certificate"** means a certificate in the form of Part K of Schedule 18 issued by the Purchaser in respect of a NLR Unit, which certified that such Unit complies with the Provisional Acceptance Criteria other than those set out in paragraphs D.6.1(C), (D) and (L) of Appendix D to Schedule 3 of this Agreement;

**"Qualifying Change in Law"** [REDACTED]

[REDACTED]

**"Qualifying Issuer"** means, at anytime, a bank or financial institution which satisfies the following conditions:

[REDACTED]

**"Quality Management Systems"** has the meaning ascribed to it in paragraph 6.2.1 of Schedule 3;

**"Quotation Day"** means, in relation to any period for which an interest rate is to be determined, the first day of that period;

**"Railway Group Standards"** means:

- (a) technical standards with which railway assets, or equipment used as part of railway assets, must conform; and
- (b) operating procedures with which the operation of railway assets must comply,

in each case as issued by the Rail Safety and Standards Board and authorised pursuant to the document known as the Railway Group Standards Code;

**"Railway Infrastructure Criteria"** means in relation to Railway Infrastructure that such Railway Infrastructure is:

- (a) compliant with Railway Group Standards, including Railway Group Standard GC/RT5212, issue 1, dated February 2003;
- (b) compliant with the railway infrastructure assumptions set out in Schedule 1 (save where expressly provided to the contrary);

**"Railway Strategic Safety Plan"** means the plan of that name issued by the RSSB;

**"Regulatory Documents"** means the contracts and licences (whether now concluded or granted or yet to be concluded or granted) by which the Purchaser, TfL or any member of the TfL Group is permitted and/or empowered or will be permitted and/or empowered to provide or procure the provision of the passenger services on the East London Railway and/or the North London Railway;

**"Relevant Consents"** has the meaning ascribed to it in Clause 5.5;

**"Relevant Options"** has the meaning ascribed to it in paragraph D1.1 of Appendix D to Schedule 3;

**"Relevant Purchased Equipment"** has the meaning ascribed to it in paragraph 1.1.1 of Schedule 15;

**"Remedial Plan"** has the meaning ascribed to it in Clause 30.4.2(B);

**"Remedy Notice"** has the meaning ascribed to it in Clause 30.4.2;

**"Repaired Part"** has the meaning ascribed to it in Clause 16.3;

**"Replacement Event"** means the occurrence, at any time prior to the Step-Down Date of the Required Bonding Guarantee of one or more of the following events:

- (a) the Required Bonding Guarantee is rescinded, becomes illegal, unlawful or unenforceable or is terminated for whatsoever reason or howsoever; or
- (b) the Required Bonding Guarantee ceases for any reason to constitute the legal, valid, binding and enforceable obligation of the Bond Provider; or
- (c) the Required Bonding Guarantee does not constitute an on demand, irrevocable and unconditional standby guarantee; or
- (d) there has been a failure to obtain any consents necessary to permit an intended assignment of the Required Bonding Guarantee;

**"Request for Approval"** means a document of that name as shall be agreed between the Purchaser and the Manufacturer from time to time;

**"Required Bonding Guarantee"** has the meaning ascribed to it in paragraph 1.1 of Part A of Schedule 11 (Pricing, Payment and Security);

**"Required Bonding Guarantee Costs"** means the cost to the Manufacturer of maintaining the Required Bonding Guarantee;

**"Required Insurance"** has the meaning ascribed to it in Clause 30.1.8;

**"Required Variation"** means a Variation required in order to implement or comply with a Change in Law;

**"Requirements"** means each of the Rolling Stock Requirements – Technical, the Rolling Stock Requirements – Contract Management and the Rolling Stock Requirements – Assurance and **"Requirement"** shall be construed as meaning any one of them;

**"Requirements Management System"** has the meaning ascribed to it in paragraph 2.5.1 of Schedule 3;

**"Rescue and Recovery Manual"** has the meaning ascribed to it in paragraph 1.3.2 of Schedule 7;

**"Retail Price Index" or "RPI"** means the "all items" RPI figure excluding mortgage payments (RPI(x)) published on a monthly basis by the Office for National Statistics;

**"Retention Amount"** has the meaning ascribed to it in paragraph 1.5 of Part A of Schedule 11;

**"Retention Period"** has the meaning ascribed to it in Clause 9.3.1 (B);

**"RIDDER"** means the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995;

**"ROGS"** means the Railways and Other Guided Transport Systems (Safety) Regulations 2006;

**"Rolling Stock Assurance Plan"** means the plan set out in Part A of Schedule 16 as may be amended from time to time in accordance with this Agreement;

**"Rolling Stock Requirements – Assurance"** means the requirements set out in Schedule 3;

**"Rolling Stock Requirements – Contract Management"** means the requirements set out in Schedule 12;

**"Rolling Stock Requirements – Technical"** means the requirements set out in Schedule 1;

**"Rolling Stock Technical Case"** has the meaning ascribed to it in paragraph 3.1.2 of Schedule 3;

**"Route Acceptance"** has the meaning ascribed to that term in Railway Group Standard GE/RT8270, issue 1, dated February 2003;

**"Route Acceptance Safety Case"** has the meaning ascribed to it in Railway Group Standard GE/RT8270 (issue 1, February 2003, as may be amended from time to time);

**"RSSB"** means the Rail Safety and Standards Board and any successor body;

**"Rules"** has the meaning ascribed to it in paragraph 9 of the Bonding Guarantee;

**"Rules of the London Stock Exchange"** means the market rules of the same name enforced by the London Stock Exchange as amended from time to time;

**"Safety Authorisation"** has the meaning ascribed to it in the Railways and Other Guided Transport Systems (Safety) Regulations 2005;

**"Safety Certificate"** has the meaning ascribed to it in the Railways and Other Guided Transport Systems (Safety) Regulations 2005;

**"Safety Defects"** has the meaning ascribed to it in paragraph D.7.1(J) of Appendix D to Schedule 3;

**"Safety Management System"** has the meaning ascribed to that term in the Railways and Other Guided Transport Systems (Safety) Regulations 2006;

**"Safety Certificate"** has the meaning ascribed to it in the Railways and Other Guided Transport Systems (Safety) Regulations 2005;

**"Safety Obligations"** means all applicable obligations concerning health and safety (including any duty of care arising at common law, and any obligation arising under statute, statutory instrument or mandatory code of practice in Great Britain or other applicable jurisdiction);

**"Schedule of Milestones"** means the document as set out in Appendix 1 to Schedule 11 as may be amended from time to time in accordance with this Agreement;

**"Screen Rate"** means the British Bankers' Association Interest Settlement Rate for sterling for a period of 90 days displayed on the appropriate page of the Reuters screen. If the agreed page is replaced or service ceases to be available, the Purchaser may specify another page or service displaying the appropriate rate after consultation with the Manufacturer;

**"Security"** means:

- (a) any right of ownership, lien, mortgage, charge, pledge, hypothecation, attachment, security interest, assignment by way of security, right of possession, right of detention or other encumbrance; or
- (b) any other preferential arrangement resulting in a secured transaction or having the same economic or legal effect as any of the foregoing; or
- (c) any agreement to give any of the foregoing; or
- (d) any arrangement to prefer one creditor over another creditor; or
- (e) the interest of the vendor or lessor under any conditional sale agreement, lease, hire purchase agreement or other title retention arrangement; or
- (f) any interest described in (a) to (e) above over any interest described in (a) to (e) above;

**"Signal Passed At Danger"** relates to the occasion where a train passes a red signal at which it should have stopped;

**"Small Medium Enterprise"** or **"SME"** has the meaning ascribed to it in Appendix 1 to Schedule 14;

**"Software"** means, as may be developed, enhanced, modified, adapted, altered or updated from time to time, the lists of instructions, stored in permanent or semi-permanent form, used:

- (a) to define the functions of microprocessors and similar devices installed on any Purchased Equipment or any part thereof or in equipment to be used in conjunction with, or for the operation, testing, commissioning, modification

and/or refurbishment of, any Purchased Equipment or any part thereof (including the Fixed Assets and/or Moveable Assets); and/or

- (b) to run programmes, spreadsheets and/or databases in connection with the operation, testing, commissioning, modification and/or refurbishment of the Purchased Equipment, in each case except for such as are standard commercial products, usable as made, and which have not been modified in order to perform any of the tasks set out in sub-clause (a) above;

**"Source Code"** means the source code version of any Software which is licensed to the Purchaser in a form capable of being read and interpreted by humans, together with related interpretative documentation and material;

**"Spares"** means all spare parts of any description including fluids, parts and assemblies required in connection with the Units supplied or to be supplied by the Manufacturer or any Subcontractor under this Agreement;

**"Special Tools"** means each Initial Special Tool, Additional Special Tool and/or any other special tool to be supplied by the Manufacturer under this Agreement;

**"SQE"** has the meaning ascribed to it in paragraph 4.1.1 of Schedule 3;

**"SQE Plan"** means the plan set out in Part E of Schedule 16 as amended from time to time in accordance with this Agreement;

**"SQEMS"** has the meaning ascribed to it in paragraph 4.2.1 of Schedule 3;

**"Stabling Preliminary Design"** has the meaning ascribed to it in paragraph 1.3.1 of Schedule 10;

**"S Stage Engineering Safety Case"** means the safety justification produced at service stage to demonstrate that all risks associated with the service operation of the relevant Units will be managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"S Stage Operational Safety Case"** means the safety justification produced at service stage to demonstrate that the operation of the relevant Units during service will be compatible with the relevant Railway Infrastructure, and to show that all risks associated with the operation of the relevant Units in service are being managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"Stage"** has the meaning ascribed to it in paragraph 1.1.4 of Schedule 3;

**"Stage 1 Core ELL Test Plan"** has the meaning ascribed to it in paragraph D.4.2 of Appendix D to Schedule 3;

**"Stage 2 Core ELL Test Plan"** has the meaning ascribed to it in paragraph D.2.3 of Appendix D to Schedule 3;

**"Stage 3 Core ELL Test Plan"** has the meaning ascribed to it in paragraph D.6.2 of Appendix D to Schedule 3;

**"Stage 2 Delay Period"** has the meaning ascribed to it in paragraph D.7.7 of Appendix D to Schedule 3;

**"Stage Gate Reviews"** has the meaning ascribed to it in paragraph 1.1.4 of Schedule 3;

**"Standards"** means the relevant Network Rail Company Standards, British, European and international standards each as specified in this Agreement (together with any other individual Standard specified in this Agreement), TSIs, Notified National Technical Rules, Railway Group Standards and/or any equivalent standard or any standard amending replacing or superseding any of the foregoing;

**"Standards Matrix"** has the meaning ascribed to it in paragraph 2.4.1(A) of Schedule 3;

**"Statement"** has the meaning ascribed to it in paragraph 2.3.1 of Part B of Schedule 11;

**"Step-Down Date"** has the meaning ascribed to it in paragraph 1.2 of Part A of Schedule 11 (Pricing, Payment and Security);

**"Subcontract"** means any contract (a subcontract) awarded by, or to be awarded by, the Manufacturer and any contract awarded by any person who is a party to a subcontract with the Manufacturer or awarded by any party to a subcontract with a Subcontractor, and so on, in relation to, or connected with, the carrying out of the obligations of the Manufacturer under this Agreement;

**"Subcontractor"** means any party to a Subcontract, other than the Manufacturer and for the avoidance of doubt include an Approved Contractor;

**"Subcontractor Assessment and Audit Plan"** means the plan described in paragraph C.1.1(C) of Appendix C to Schedule 3;

**"Subsystems"** means in the context of a Unit, each of the following:

- (a) watertight bodyshell;
- (b) DC traction equipment;
- (c) dual voltage equipment;
- (d) bogie equipment;
- (e) brakes and air supply;
- (f) electrical systems;
- (g) pipe and wire and general underframe equipment;
- (h) heating, ventilation and air-conditioning equipment;
- (i) exterior power doors;
- (j) passenger environment;
- (i) inter-vehicular connections;
- (k) cab external equipment;
- (l) cab internal equipment;
- (m) electronic and safety systems;
- (n) audio/visual communication and train management equipment;

(o) emergency equipment;

**"Suitable Lessor"** means a person (other than a Competitor) approved by the Manufacturer (such approval not to be unreasonably withheld or delayed) as having the capability to meet any payment obligations under this Agreement as may be transferred to it and in circumstances where such person does not have the capability to satisfy such payment obligations, then any such person (other than a Competitor) whose payment obligations are supported by the Purchaser in a manner acceptable to the Manufacturer (acting reasonably);

**"Systems Engineering"** means the branch of engineering concerned with the development of large and complex systems, where a system is an assembly or combination or interrelated elements or parts working together towards a common objective;

**"Taxes"** means all present and future taxes, charges, imposts, duties or levies of any kind whatsoever, payable at the instance of or imposed by any Competent Authority, together with any penalties, additions, fines, surcharges or interest relating thereto and **"Tax"** and **"Taxation"** shall be construed accordingly;

**"TC Component"** has the meaning ascribed to it in paragraph 3.1.1 of Schedule 3;

**"Technical Case"** has the meaning ascribed to it in paragraph 3.1.1 Schedule 3;

**"Technical Case Plan"** means the document set out in Part B of Schedule 16;

**"Technical Description"** means the document in Schedule 2 (Technical Description);

**"Technical File"** has the meaning ascribed to it in the Railways (Interoperability) Regulations 2006;

**"Technical Option"** has the meaning ascribed to it in Schedule 9 (Options);

**"Technical Information Manual"** has the meaning ascribed to it in paragraph 1.2.1 of Schedule 7;

**"Test Procedures"** means the procedures describing the manner in which the Manufacturer shall conduct each of the Factory Acceptance Tests;

**"Test Running"** means the operation of the Units for the purpose of undertaking the Joint Proving Tests, and the tests described in the Stage 1 Core ELL Test Plan, the Stage 2 Core ELL Test Plan and the Stage 3 Core ELL Test Plan;

**"TfL"** or **"Transport for London"** means the body established pursuant to section 154 of the Greater London Authority Act 1999 and any successor body;

**"TfL Group"** means Transport for London and any member of its Group;

**"TfL Group Beneficiaries"** has the meaning ascribed to it in paragraph 1.1 of part D of Schedule 18 (Agreed Form Documents);

**"Third Party IPR"** has the meaning ascribed to it in Clause 29.2.2;

**"Total Contract Price"** means the amount specified in Appendix 2 to Schedule 11 as the **"Total Contract Price"** of the Purchased Equipment comprising part of the Initial Order;

**"Total ELR Contract Price"** means the amount specified as such in the Initial Order Price List set out in Appendix 2 of Schedule 11 (Pricing, Payment and Security);

**"Total NLR Contract Price"** means the amount specified as such in the Initial Order Price List set out in Appendix 2 of Schedule 11 (Pricing, Payment and Security);

**"Total Option Price"** means in respect of an Option the total amount to be paid by the Purchaser to the Manufacturer following the exercise of an Option in respect of that Option;

**"Training Services"** means those services specified in Schedule 6;

**"Train Crew Manual"** has the meaning ascribed to it in paragraph 1.3.1 of Schedule 7;

**"Train Protection Warning System"** means the developed version of the Automatic Warning System which automatically applies a train's brakes on approach to a signal, speed restrictions and/or buffer stops if required;

**"Train Services Agreement"** or **"TSA"** means the agreement under which the Maintainer undertakes maintenance and other services in respect of the Units;

**"Trial Operations"** means train operations that will be carried out using the full fleet of ELR Units and for some operations a number of passengers, in order to simulate the operation of the full passenger train service;

**"Train Operating Manual"** has the meaning ascribed to it in paragraph 1.3.1 of Schedule 7 (Manuals);

**"Trigger Event"** means the date on which the provider of the Bonding Guarantee ceases to satisfy any of the requirements for a Qualifying Issuer;

**"TSA Bonding Guarantee"** has the meaning ascribed to the term "Bonding Guarantee" under the Train Services Agreement;

**"TSIs"** has the meaning ascribed to it in section 2 of the Railways (Interoperability) Regulations 2006;

**"T Stage Engineering Safety Case"** means the safety justification produced to demonstrate that all risks associated with the testing of the relevant Units will be managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"T Stage Operational Safety Case"** means the safety justification produced to demonstrate that the operation of the relevant Units during testing will be compatible with the relevant Railway Infrastructure, and to show that all risks associated with the operation of the relevant Units during testing are being managed to a level that is demonstrably tolerable and as low as reasonably practicable;

**"Type Tests"** means testing carried out by the Manufacturer on one or more components, Subsystems, systems, vehicles or Units, to demonstrate the compliance of that item with the relevant requirements, and in such a manner that the test may be regarded as representative of all items of that type, and **"Type Testing"** shall be construed accordingly;

**"Type Test Programme"** means the programme prepared by the Manufacturer in accordance with paragraph B.6.1 of Appendix B of Schedule 3 setting out the proposed timeframes for conducting each of the Type Tests;

**"Unit Log Book"** has the meaning ascribed to it in paragraph C.3 of Appendix C to Schedule 3;

**"Units"** means an ELR Unit and/or a NLR Unit;

**"Unrestricted Passenger Revenue-Earning Service"** means the operation without restriction other than Permitted Restrictions of a Unit on the East London Railway and/or on the North London Railway in connection with the carriage of passengers by railway;

**"Updated Project Programme"** has the meaning ascribed to it in paragraph 2.2.1 of Schedule 12;

**"Variation"** means any change or amendment of whatever scope and/or nature to this Agreement, including any changes to the requirements (including timing) of an item of Purchased Equipment;

**"Variation Order"** has the meaning ascribed to it in paragraph 3.3.1 of Schedule 13;

**"Variation Procedure"** means the procedure set out in Schedule 13;

**"Variation Response"** means a written response made by the Manufacturer to a Purchaser Notice of Proposed Variation as set out in Annex 1 of Schedule 13;

**"VAT"** means value added tax as provided for in the Value Added Tax Act 1994 and legislation supplemental thereto and any similar sales, consumption or turnover tax replacing or introduced in addition thereto;

**"Vehicle Acceptance Body"** means any person authorised by the RSSB to issue a Certificates of Engineering Acceptance;

**"Vehicle Design Area"** has the meaning ascribed to it in paragraph B.2.1(A) of Appendix B to Schedule 3;

**"Vehicle Design Area Breakdown Structure"** means the document set out in Appendix H of Schedule 3 as may be amended in accordance with this Agreement;

**"Vehicle Log Book"** has the meaning ascribed to it in paragraph C.3.1 of Appendix C to Schedule 3;

**"Vehicle Maintenance Instructions"** has the meaning ascribed to it in paragraph 1.2.3 of Schedule 7;

**"Vehicle Maintenance Procedures"** has the meaning ascribed to it in paragraph 1.2.4 of Schedule 7;

**"Vehicle Maintenance Schedule"** has the meaning ascribed to it in paragraph 1.2.2 of Schedule 7;

**"Vehicle Overhaul Instructions"** has the meaning ascribed to it in paragraph 1.2.5 of Schedule 7;

**"Verification and Validation Plans"** has the meaning ascribed to it in paragraph 3.4.1 of Schedule 3;

**"Voluntary Termination"** has the meaning given to the term in Clause 30.2;

**"Wide Gangway Approval"** means evidence reasonably satisfactory to the Manufacturer that HMRI or any successor body has no objection to the concept of wide inter-vehicle gangways as set out in the Technical Description;

**"Working Day"** means a weekday (other than a Saturday or Sunday or other public holiday) on which banks are open for domestic business in the City of London; and

**"Yellow Book"** has the meaning ascribed to it in paragraph 2.1.1 of Schedule 3.

## 1.2 Interpretation

In this Agreement, except where the context otherwise requires:

- 1.2.1 any reference to this Agreement includes the Schedules, Appendices and Annexes to it each of which forms part of this Agreement for all purposes;
- 1.2.2 a reference to an enactment, statutory provision or standard shall unless otherwise expressly specified in this Agreement include a reference to any subordinate legislation made under the relevant enactment, statutory provision or standard and unless otherwise expressly specified in this Agreement is a reference to that enactment, statutory provision, standard or subordinate legislation as from time to time amended, consolidated, modified, reenacted or replaced;
- 1.2.3 words in the singular shall include the plural and vice versa;
- 1.2.4 references to one gender include other genders;
- 1.2.5 a reference to a person shall include a reference to a firm, a body corporate, an unincorporated association, a partnership, limited partnership, limited liability partnership or to an individual's executors or administrators;
- 1.2.6 a reference to a Clause or Schedule (other than to a schedule to a statutory provision) shall be a reference to a clause or schedule (as the case may be) of or to this Agreement and a reference in a Schedule to a paragraph, Annex or Appendix shall mean references to that paragraph, annex or appendix of that Schedule;
- 1.2.7 if a period of time is specified as "from" or "within" a given day, or "from" or "within" the day of an act or event, it shall be calculated exclusive of that day;
- 1.2.8 references to any English legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or any legal concept or thing shall in respect of any jurisdiction other than England be deemed to include what most nearly approximates the English legal term in that jurisdiction and references to any English statute or enactment shall be deemed to include any equivalent or analogous laws or rules in any other jurisdiction;
- 1.2.9 references to writing shall include any modes of reproducing words in any legible form and shall exclude email except where expressly stated otherwise;
- 1.2.10 a reference to "includes" or "including" shall mean "includes without limitation" or "including without limitation";

- 1.2.11 the contents page and headings in this Agreement are for convenience only and shall not affect its interpretation;
- 1.2.12 references to this Agreement include this Agreement as amended or supplemented in accordance with its terms;
- 1.2.13 words and expressions defined in the Railways Act 1993 shall, unless otherwise defined in this Agreement or unless the context otherwise requires, have the same meaning in this Agreement;
- 1.2.14 a reference to the "Purchaser", the "Manufacturer" or "LUL" includes their respective (and any subsequent) successor(s) in title, and their respective permitted transferee(s) or assignee(s);
- 1.2.15 references in the Agreement to costs, expenses and losses which are to be indemnified to, or recovered by, the person incurring the same shall be construed as references to an amount equal to the amount of such costs, expenses and losses together with any amount that represents VAT or other similar tax properly chargeable therein in any jurisdiction;
- 1.2.16 references to amounts expressed to be "Indexed by RPI" are references to such amounts multiplied by:  

- 1.2.17 reference to a "third party" is a reference to any person who is not a Party;
- 1.2.18 references in this Agreement to any other agreement or other instrument (other than an enactment or statutory provision) shall be deemed to be references to that agreement or instrument as from time to time amended, varied, supplemented, substituted, novated or assigned;
- 1.2.19 references to "otherwise" and words following "other" shall not be limited by any foregoing words where a wider construction is possible;
- 1.2.20 save to the extent expressly defined in this Agreement (or where the context otherwise so requires) words and expressions defined in the TSA shall have the same meaning when used in this Agreement;
- 1.2.21 reference to a "nominee" of the Purchaser shall mean a Purchaser's Representative appointed by the Purchaser from time to time in accordance with Clause 2A.

## **2. CONDITIONS PRECEDENT**

### **2.1 Manufacturer Conditions Precedent**

Subject to Clause 2.2.1, the Manufacturer shall provide to the Purchaser:

- 2.1.1 a copy of the Guarantee duly executed by the Guarantor;
- 2.1.2 the Certificate of Compliance duly executed by the Manufacturer;
- 2.1.3 the Required Bonding Guarantee duly executed by a Qualifying Issuer with a Guaranteed Amount which complies with the provisions of paragraph 1.1 of Part A of Schedule 11 (Pricing, Payment and Security);
- 2.1.4 the Train Services Agreement duly executed by the Maintainer;
- 2.1.5 a certified copy of:
  - (A) a resolution of the board of directors of the Manufacturer or where the Manufacturer is not incorporated in England and Wales, an equivalent statement of authority (in either case in a form and substance satisfactory to the Purchaser) passed at a duly convened and held meeting:
    - (1) approving the terms of, and the transactions contemplated by this Agreement and all the other related documents to which it is a party; and
    - (2) authorising a specified person to approve amendments to, and execute, this Agreement and all the other related documents to which it is a party;
  - (B) a resolution of the board of directors of the Guarantor or where the Guarantor is not incorporated in England and Wales an equivalent statement of authority (in either case in a form and substance satisfactory to the Purchaser) passed at a duly convened and held meeting:
    - (1) approving the terms of and the transaction contemplated by the Guarantee; and
    - (2) authorising a specified person to approve amendments to, and execute, the Guarantee; and
  - (C) certified copies of the most recent:
    - (1) statutory audited accounts;
    - (2) memorandum of association; and
    - (3) articles of association,(or the equivalent documentation in any jurisdiction other than England and Wales) in respect of the Manufacturer and the Guarantor;
- 2.1.6 a legal opinion (in a form and substance satisfactory to the Purchaser) that the Guarantor has the requisite power and authority to execute the Guarantee and that

following such execution the terms of the Guarantee will be binding on and enforceable against the Guarantor;

- 2.1.7 evidence that the insurances that the Manufacturer is required to take out and maintain in accordance with this Agreement are in full force and effect and a letter of undertaking in the form set out in Appendix 1 to Schedule 15 (Insurance); and
- 2.1.8 to the extent not addressed in the Project Definition Statement and/or the Rolling Stock Assurance Plan:
  - (A) a plan describing the tests that the Manufacturer will undertake on the Cab Simulator Unit to ensure that it is free from Defects and fully operational, if the Purchaser exercises the Cab Simulator Option; and
  - (B) a plan in respect of each Technical Option describing the process the Manufacturer will follow in modifying the ELR Units and/or the NLR Units, including a description of the testing the Manufacturer will conduct on the ELR Units and/or the NLR Units following the completion of such modifications to ensure that they continue to satisfy the requirements set out in this Agreement.

#### **2.1A Purchaser Condition Precedent**

Subject to Clause 2.2.2, the Purchaser shall provide to the Manufacturer a certified copy of a resolution of the board of directors of the Purchaser passed at a duly convened and held meeting:

- 2.1A.1 approving the terms of, and the transactions contemplated by, this Agreement and all the other related documents to which it is a party; and
- 2.1A.2 authorising a specified person to approve amendments to, and execute, this Agreement and all the other related documents to which it is a party.

#### **2.2 Waiver**

- 2.2.1 The Purchaser may, by written notice to the Manufacturer, waive any condition precedent specified in Clause 2.1 in whole or in part.
- 2.2.2 The Manufacturer may, by written notice to the Purchaser, waive any condition precedent specified in Clause 2.1A in whole or in part.

#### **2.3 Satisfaction of Conditions Precedent**

The Manufacturer shall use its best endeavours to satisfy or procure as soon as possible the satisfaction of any condition precedent set out in Clause 2.1 not already satisfied or waived. The Purchaser shall use its best endeavours to satisfy or procure as soon as possible the satisfaction of any condition precedent set out in Clause 2.1A not already satisfied or waived.

#### **2.3A Original Guarantee**

The Manufacturer undertakes to provide to the Purchaser the original of the duly executed Guarantee within 3 Working Days of the date of this Agreement.

## 2.4 Certificate of Commencement

On the later of:

- 2.4.1 the Purchaser being satisfied that each of the conditions precedent set out in Clause 2.1 has been satisfied, waived or deferred; and
- 2.4.2 the Manufacturer being satisfied that each of the conditions precedent set out in Clause 2.1A has been satisfied, waived or deferred,

the Purchaser shall issue to the Manufacturer a Certificate of Commencement which shall specify the Commencement Date. The obligations of the Purchaser, LUL and the Manufacturer under this Agreement (other than this Clause 2, Clause 1, Clauses 34 to 38 and Clauses 40 to 52, which shall come into effect on the date of this Agreement), shall come into effect on the Commencement Date.

## 2.5 Information

If at any time the Manufacturer becomes aware of any matter that might prevent or delay a condition precedent in Clause 2.1 from being satisfied, it shall inform the Purchaser as soon as is reasonably practicable. If at any time the Purchaser becomes aware of any matter that might prevent or delay a condition precedent set out in Clause 2.1A from being satisfied it shall inform the Manufacturer as soon as is reasonably practicable.

## 2.6 Representations and Warranties

The Manufacturer makes the representation and warranty described in Clause 37.3 and represents and warrants to the Purchaser as at the date of this Agreement that:

- 2.6.1 it is a corporation, duly incorporated and validly existing under the laws of England and Wales and that it has the power to own its assets and carry on its business as it is being conducted;
- 2.6.2 the execution by it of this Agreement does not contravene any provision of:
  - (A) any existing law, treaty or regulation in force and binding on the Manufacturer;
  - (B) the memorandum of association or articles of association of the Manufacturer or their equivalent in a jurisdiction other than England and Wales;
  - (C) any order or decree of any Court or arbitrator existing as at the date of this Agreement and binding on the Manufacturer; or
  - (D) any obligation which is binding upon the Manufacturer or upon any of its assets or revenues;
- 2.6.3 it has the requisite power and authority to enter into, perform and deliver, and has taken all necessary action to authorise its entry into, performance and delivery of this Agreement and the transactions contemplated by this Agreement;
- 2.6.4 it has obtained all necessary shareholder and board approvals in respect of the execution of this Agreement and the performance of its obligations under it;

- 2.6.5 its obligations under this Agreement are valid, binding and enforceable at law and in equity in accordance with its terms;
- 2.6.6 so far as it is aware, no litigation, arbitration or administrative proceeding is current, pending or threatened to restrain the entry into, exercise of any of its rights under and/or performance or enforcement of or compliance with any of its obligations under this Agreement;
- 2.6.7 no meeting has been convened or is intended to be convened and/or so far as it is aware, no petition, application or the like is outstanding with a view to its winding-up;
- 2.6.8 the certified copies of the most recent statutory audited accounts, memorandum of association and articles of association (or the equivalent documentation in any other jurisdiction other than England and Wales) of the Manufacturer delivered to the Purchaser under Clause 2.1.5(C) are true and accurate and that no proposals are outstanding to amend those documents;
- 2.6.9 the Manufacturer (and/or the relevant Subcontractors) is/are the absolute and unencumbered proprietor of all Intellectual Property Rights described in Clause 29 or (where such Intellectual Property Rights are licensed) has/have the right to exercise those Intellectual Property Rights and grant the relevant licences of those Intellectual Property Rights to the Purchaser as contemplated by this Agreement in each case to the extent that such Intellectual Property Rights exist as at the date of this Agreement; and
- 2.6.10 the entering into or performance of its obligations or exercising of its rights under this Agreement or any related document will not be in breach of, or cause to be breached, any restriction (whether arising in contract or otherwise) binding on the Manufacturer or any Subcontractor or any of their respective assets or undertakings.

## 2.7 **Repetition of Warranties**

The Parties agree that the representations and warranties set out in Clause 2.6 shall be deemed to be repeated by the Manufacturer on the Commencement Date and on each date the Manufacturer receives an Option Notice in accordance with this Agreement.

## 2A **EXERCISE OF RIGHTS AND PERFORMANCE OF OBLIGATIONS BY A THIRD PARTY**

- 2A.1 The Manufacturer acknowledges and agrees that the Purchaser may nominate certain persons ("**Purchaser Representatives**") at any time to exercise some or all of its rights or perform some or all of its obligations in connection with this Agreement, in which case the Manufacturer will perform its obligations under this Agreement in accordance with the relevant provisions of this Agreement as if Purchaser Representatives were, to the extent notified, the Purchaser, and, to that extent, accept the instructions, requests, notifications, claims and demands of the Purchaser's Representative in substitution for the Purchaser accordingly subject to the Purchaser providing the Manufacturer with at least five (5) Working Days' written notice countersigned by the nominated person and setting out the extent to which such person shall be entitled to exercise the Purchaser's rights and/or perform the Purchaser's obligations.

2A.2 The Manufacturer shall be entitled to rely and act upon the exercise by a Purchaser Representative of any right permitted in accordance with Clause 2A.1 and any performance by a Purchaser Representative of any obligation on the part of the Purchaser shall contribute good and valid discharge of the Purchaser's obligation in question.

### **3. PRIORITY OF DOCUMENTS**

#### **3.1 Priority of contract documents**

Unless expressly stated otherwise, where there is a conflict or other discrepancy between the Requirements and the Technical Description, the Requirements shall prevail.

#### **3.2 Priority of provisions in the Agreement**

Unless expressly stated otherwise, where there is a conflict or other discrepancy between a Clause of this Agreement and the provisions of a Schedule, the provisions of the Clause of this Agreement shall prevail.

#### **3.3 Manufacturer's acknowledgements regarding discrepancies and errors**

The Manufacturer confirms to the Purchaser that as at the Commencement Date:

3.3.1 it has considered in detail this Agreement and has satisfied itself that no discrepancies or errors exist within the Agreement;

3.3.2 it has:

(A) obtained all necessary information as to risk, contingencies and all other circumstances which may influence or affect the level of payment arising under or in connection with this Agreement; and

(B) satisfied itself that the performance of its obligations under and in accordance with this Agreement will be in accordance with all Applicable Laws.

#### **3.4 Notification of errors and inconsistencies**

Without prejudice to the provisions of Clause 3.6, the Purchaser and the Manufacturer shall notify the Manufacturer or the Purchaser (as the case may be) in writing forthwith upon becoming aware of a discrepancy or error within the Agreement and the party in receipt of such notice shall provide proposals for resolving such error or inconsistency. Without prejudice to Clause 3.5, the Purchaser and the Manufacturer shall consult with each other and seek to agree the manner in which any error or discrepancy should be resolved.

#### **3.5 Exclusions of Claims or Relief**

The Manufacturer acknowledges and agrees that it shall not be entitled to;

3.5.1 propose a Variation; or

3.5.2 make any claim against the Purchaser for any additional payment or compensation or any extension of time or any relief from the due performance of its obligations,

in respect of any of the matters set out in Clause 3.3.

### **3.6 Discrepancies**

The Manufacturer acknowledges and agrees that:

- 3.6.1 where there is a discrepancy or error within the Technical Description and/or the Project Programme, the Manufacturer shall at its own cost resolve such discrepancy or error and submit such revised Technical Description and/or Project Programme to the Purchaser or its nominee for Assurance Acceptance; and
- 3.6.2 the resolution by the Manufacturer of any discrepancy or error pursuant to Clause 3.6.1 shall not constitute a Variation, nor constitute a Permitted Delay Event or otherwise entitle the Manufacturer to any extension of time or any adjustment to the Total Contract Price, the Contract Price of any item of Purchased Equipment or any adjustment to the Total Option Price for any Option.

## **4. INITIAL ORDER AND OPTIONS**

### **4.1 Initial Order**

The Manufacturer shall supply each item of the Initial Order to the Purchaser by the relevant Contractual Acceptance Date for that item in consideration for the Purchaser procuring payment to the Manufacturer of the Contract Price in respect of each item of the Initial Order in each case in accordance with the terms of this Agreement. The Initial Order shall comprise:

- 4.1.1 20 ELR Units;
- 4.1.2 24 NLR Units;
- 4.1.3 the Initial Spares;
- 4.1.4 the Initial Special Tools; and
- 4.1.5 the Manuals.

### **4.2 Options**

The Purchaser and the Manufacturer shall comply with Schedule 9 (Options).

## **5. MANUFACTURER'S GENERAL OBLIGATIONS**

### **5.1 General Undertaking and Warranties**

The Manufacturer undertakes and warrants to the Purchaser, for the benefit of the Purchaser, LUL (in relation to the Fixed Assets and the Moveable Assets) and the Owner (where it is not the Purchaser), that it shall design, manufacture, supply, test, commission, and deliver (whether by Delivery or otherwise) the Fixed Assets, the Moveable Assets, each item of Purchased Equipment, the Training Services and any other item, goods or services to be supplied pursuant to this Agreement:

- 5.1.1 so that it is Fit for Purpose;

- 5.1.2 so that, in relation to the Units, each Unit satisfies the Provisional Acceptance Criteria and the Final Acceptance Criteria;
- 5.1.3 so that in relation to the Units, each Unit is manufactured in accordance with the design agreed in accordance with this Agreement and has a design life of at least [REDACTED] years;
- 5.1.4 in accordance with, and so that the Units shall function in accordance with, sound modern design and engineering principles and practices in the rail industry except where this would conflict with Clauses 5.1.1 and 5.1.2;
- 5.1.5 in accordance with the Technical Description (to the extent that the Technical Description is not inconsistent with the Requirements) and the Project Programme so as to achieve Acceptance of the item of Purchased Equipment on the Contractual Acceptance Date for that item;
- 5.1.6 in compliance with all Applicable Laws and all applicable Standards;
- 5.1.7 in accordance with good industry practice and with all due skill, care and diligence to be expected of appropriately qualified and experienced professional designers and engineers with experience in carrying out work of a similar scope, type, nature and complexity to that required under this Agreement;
- 5.1.8 in a safe manner reducing any risk to the health and well being of persons using, operating, maintaining, or involved in the management of the Units as low as reasonably practicable, and free so far as is reasonably practicable (taking into account the Manufacturer's obligations under this Agreement) from any risk of Environmental Damage;
- 5.1.9 using materials and goods which comply with the Requirements and the Standards, and which are of satisfactory quality such that the Purchaser Equipment (save for NRN radios) and the Initial Spares will be of new manufacture and, with respect to compliance with the Requirements, will be of satisfactory quality;
- 5.1.10 in accordance with the requirements of any Variation Order and in all other respects in accordance with this Agreement;
- 5.1.11 in respect of the Initial Spares and the Initial Special Tools, so that those Initial Spares and Initial Special Tools are sufficient and adequate to enable maintenance to be carried out on the Units comprising the Initial Order in accordance with the Train Services Agreement; and
- 5.1.12 in accordance with the requirements of each of the Plans,

provided always that the Manufacturer and the Purchaser acknowledge that certain Parts will require repair and/or replacement as a result of wear and tear during the 35 year design life of the Units and that the Manufacturer's liability relating to the rectification of Defects will expire at the end of the applicable rectification periods set out in Clause 16.

## 5.2 Compliance

- 5.2.1 In performing its obligations under this Agreement, the Manufacturer shall:

- (A) comply with the current version of the Project Programme and each of the Plans;
- (B) comply with all relevant requirements of the Health and Safety at Work etc. Act 1974 and/or any Safety Management System applicable to the testing of the Units on the ELR Network, the North London Railway and/or the Core ELL Infrastructure;
- (C) comply with all Applicable Laws, all applicable Standards and all directions of Network Rail, LUL or such other person (in its role as Infrastructure Manager of the Core ELL Infrastructure), LFEPA, HMRI, or any other Competent Authority;
- (D) comply with the Equality and Inclusion Requirements; and
- (E) comply with the requirements of Schedule 3 (Rolling Stock Requirements - Assurance) and Schedule 12 (Rolling Stock Requirements – Contract Management).

5.2.2 The Manufacturer shall and shall procure that each Key Subcontractor and their respective directors, agents, officers, representatives and/or employees comply with their respective Safety Obligations and perform their obligations in a manner which would be adopted by a reasonably diligent contractor acting in accordance with good industry practice.

### 5.3 General Assistance

- 5.3.1 The Manufacturer shall, at its own cost, provide all reasonable assistance and/or information reasonably requested from time to time by the Purchaser in relation to any Purchased Equipment.
- 5.3.2 The Purchaser shall, at its own cost, provide all reasonable assistance and/or information reasonably requested from time to time by the Manufacturer in relation to any item of Purchased Equipment.
- 5.3.3 The Manufacturer shall, at its own cost, co-operate fully with any reasonable request made by the Purchaser or its nominee in connection with the design, construction, testing and commissioning of the Core ELL Infrastructure and related Railway Infrastructure or any part thereof.

### 5.4 Change in Law

- 5.4.1 The Manufacturer acknowledges and agrees that any Change in Law other than a Qualifying Change in Law shall be at the sole risk and cost of the Manufacturer.
- 5.4.2 The Manufacturer shall take all steps necessary to ensure that it performs all of its obligations under this Agreement in accordance with the terms of this Agreement following any Change in Law.
- 5.4.3 Subject to Clauses 5.4.7 and 5.4.8, on the occurrence of any Qualifying Change in Law, the Primary Parties shall be entitled to seek adjustments to the Contract Price and/or the Total Option Price to compensate for any increase or decrease (as the case may be) in the net cost to the Manufacturer of performing its obligations

under this Agreement. Such adjustments (if any) will be calculated in accordance with (and subject to) Clauses 5.4.4 to 5.4.10.

- 5.4.4 Either of the Purchaser or the Manufacturer may give notice to the other of the purported occurrence of the Qualifying Change in Law.
- 5.4.5 The Purchaser and the Manufacturer shall meet within twenty (20) Working Days following the notice referred to in Clause 5.4.4 to consult and seek to agree the effect of the Qualifying Change in Law. If within twenty (20) Working Days following this meeting the Primary Parties have not agreed the occurrence and/or the effect of the Qualifying Change in Law, either the Purchaser or the Manufacturer may refer the dispute as to the occurrence of a Qualifying Change in Law and/or the effect of any Qualifying Change in Law for determination in accordance with Clause 36.
- 5.4.6 Where it is agreed or determined that a Qualifying Change in Law has occurred, within ten (10) Working Days following the agreement or determination of the effect of the Qualifying Change in Law referred to in Clause 5.4.5 above, the Purchaser shall issue a Purchaser Notice of Proposed Variation and the relevant provisions of Schedule 13 (Variation Procedure) shall apply.
- 5.4.7 The Manufacturer shall, without prejudice to its general obligation to comply with the terms of this Agreement:
- (A) use its reasonable endeavours to mitigate the adverse effects of any Qualifying Change in Law and take all reasonable steps to minimise any increase in costs arising from such Qualifying Change in Law; and
  - (B) use its reasonable endeavours to take advantage of any positive or beneficial effects of the Qualifying Change in Law and take all reasonable steps to maximise any reduction in costs arising from such Qualifying Change in Law.
- 5.4.8 Any adjustment to the Contract Price and/or the Total Option Price shall be calculated in accordance with Clauses 5.4.9 and 5.4.10 provided that the amount of any adjustment to the Contract Price and/or the Total Option Price shall not take into account any amounts incurred or to be incurred as a result of the Manufacturer's failure to comply with Clause 5.4.7 above.
- 5.4.9 The Primary Parties shall adjust the Contract Price and/or the Total Option Price by the amount calculated pursuant to Clause 5.4.10. The Manufacturer shall not be entitled to any other payment or compensation or, save as expressly provided otherwise in this Agreement, relief in respect of such Qualifying Change in Law or associated Variation (or the consequence of either) and the provisions of this Agreement shall be construed accordingly.
- 5.4.10 In relation to any adjustment to the Contract Price and/or Total Option Price, pursuant to this Clause 5.4, the increase or decrease in the net cost to the Manufacturer of performing its obligations under this Agreement shall be calculated on the basis that the Manufacturer shall be placed in no better or worse position that it would have been in had the Qualifying Change in Law not occurred, and any assessment of whether the Manufacturer is in a better or worse

position shall take account (inter alia) of the provisions of Clause 5.4.7 and Clause 5.4.8 and:

- (A) any decrease in its costs resulting from any Qualifying Change in Law; and
- (B) any amount which the Manufacturer will recover under any Required Insurance as a result of such Qualifying Change in Law (or would have recovered if it had complied with the requirements of this Agreement or of any policy of insurance required under this Agreement) excluding the amount of any excess deductible.

#### 5.5 Licences and Consents

The Manufacturer shall obtain and maintain all consents, approvals, authorisations, acceptances, certificates, licences, exemptions, registrations, filings, permits and other matters, give all notices and pay all fees, in each case which are required or necessary for the proper performance of the Manufacturer's duties and obligations under this Agreement ("**Relevant Consents**") and the Manufacturer shall obtain and maintain at all times any Relevant Consents which the Manufacturer shall be required to hold under the Act.

#### 5.6 Tax Allowances

The Manufacturer undertakes and confirms to the Purchaser that neither it nor any other person which is a member of the Manufacturer Group, a Subcontractor, a supplier or a provider of finance to the Manufacturer or any of those persons has claimed and that it will not claim and shall procure that no such other person shall claim any capital allowances or analogous Tax allowances in respect of any Unit, any other item of Purchased Equipment, any Moveable Asset or Fixed Asset.

#### 5.7 Route Acceptance

The Manufacturer acknowledges and agrees that it will at its risk and cost do all things necessary to obtain Route Acceptance of the NLR Units on the East London Railway and the North London Railway and the ELR Units on the East London Railway and, where the Relevant Options have been exercised in accordance with Schedule 9 (Options), the North London Railway in accordance with and subject to Schedule 3 (Rolling Stock Requirements – Assurance) subject to Clause 5.8 and as follows:

- 5.7.1 The Purchaser shall procure that an Operator is appointed in sufficient time to facilitate the timely completion of Route Acceptance and intermediate stages leading thereto;
- 5.7.2 The Purchaser shall:
  - (A) where the Purchaser is reasonably able to do so in relation to the NR Infrastructure and where requested to do so by the Manufacturer (so far as is reasonably practicable), obtain and provide or procure the provision to the Manufacturer; and
  - (B) in relation to the Core ELL Infrastructure, procure the provision by LUL to the Manufacturer,

of all documents and information relating to the Railway Infrastructure required to be provided by the relevant infrastructure controller in accordance with Railway Group Standard GE/RT8270 dated February 2003, and otherwise reasonably required by a designer and manufacturer of rolling stock in preparing a submission for Route Acceptance;

5.7.3 The Purchaser shall procure that the Operator performs with reasonable diligence and expedition those things in relation to Route Acceptance which only the Operator, in its capacity as an operator of passenger carrying rolling stock, is able to undertake including the preparation and approval of the Operator's Safety Management System in relation to the testing and passenger service of the Units provided that the Manufacturer promptly provides the Purchaser with all necessary documentation and information regarding the Units that is reasonably necessary for the Operator to prepare its Safety Management System;

5.7.4 The Purchaser shall procure that the Core ELL Infrastructure is constructed and upgraded such that it complies with the applicable Railway Infrastructure Criteria in sufficient time to facilitate the Manufacturer's timely completion of Route Acceptance on the Core ELL Infrastructure as set out in Schedule 3 (Rolling Stock Requirements – Assurance);

## 5.8 Infrastructure Criteria and Alterations

5.8.1 If the Purchaser and the Manufacturer agree, or it is otherwise determined that the Clearances of the Units operating on the North London Railway (as determined in accordance with Railway Group Standard GC/RT5212, Issue 1, February 2003) are such that the Units would not achieve Route Acceptance, the Purchaser shall procure such modifications are made to the relevant Railway Infrastructure on the North London Railway that are necessary for the Units to achieve the minimum Clearances required to obtain Route Acceptance.

5.8.2



5.8.3

5.8.4

## 5.9 Provision of Initial Spares

5.9.1 The Purchaser shall be entitled at any time prior to the 1<sup>st</sup> of May 2007 to modify Part A of Schedule 8 (Spares and Special Tools) by:

- (A) changing the quantity of any Initial Spare categorised as a "Damage & Vandalism Spare" and/or an "Incident Spare"; and
- (B) amending the list of Initial Spares categorised as "Damage & Vandalism Spares" and/or "Incident Spares" by adding any Spare not included in such list as at the Commencement Date and/or by deleting reference to any item included in such list,

provided that the Purchaser shall not be entitled to alter or otherwise amend Part A of Schedule 8 (Spares and Special Tools) if such alterations or amendments would result in any net decrease to the Contract Price for the Initial Spares as set out in Appendix 2 of Schedule 11 (Pricing, Payment and Security).

5.9.2 If the Purchaser wishes to exercise its rights under Clause 5.9.1 it shall give written notice to the Manufacturer describing the amendments it wishes to make to Part A of Schedule 8 accompanied by a revised version of Part A of Schedule 8 (Spares and Special Tools) that incorporates the relevant modifications. In the absence of any dispute as to the proposed modifications to Part A of Schedule 8 (Spares and Special Tools) and/or the quantum of any increase to the Contract Price for the Initial Spares, the notice served pursuant this Clause 5.9.2 and the revised version of Part A of Schedule 8 (Spares and Special Tools) shall together be deemed a complete Variation Order which shall be deemed confirmed immediately and the relevant provisions of paragraph 7.4.1 of Schedule 13 (Variation Procedure) shall apply accordingly.

5.9.3 Where the Manufacturer disputes whether any of the amendments to Part A of Schedule 8 (Spares and Special Tools) and/or any change to the Contract Price for the Initial Spares have been made in accordance with Clause 5.9.1 either the Manufacturer or the Purchaser may refer the matter or matters in dispute to expert determination pursuant to Schedule 17A (Fast Track Dispute Resolution Procedure). Following the determination of any dispute in accordance with this Clause 5.9.3 the modifications to Part A of Schedule 8 (Spares and Special Tools) and/or any increase to the Contract Price for the Initial Spares as so shall be deemed to be a complete Variation Order which shall be deemed confirmed immediately and the relevant provisions of paragraph 7.4.1 of Schedule 13 (Variation Procedure) shall apply accordingly.

5.9.4 The Manufacturer shall, upon written request by the Purchaser, provide the Purchaser with such assistance (including the provision of technical advice in relation to Spares, including the differences between the same type of Spares and the preferred configuration of Spares to be held as stock items) and/or information (including information in respect of Spares in an ILOP equivalent format and information relating to the price of any Spare not listed in Part A of Schedule 8), in each case as may be reasonably necessary for the Purchaser to understand the pricing, technical and/or logistical aspects of exercising its rights under Clause 5.9.1 and/or exercising its right to order Additional Spares pursuant to paragraph 4 of Schedule 9 (Options).

- 5.9.5 The Manufacturer shall ensure that:
- (A) each of the Initial Spares is a brand new part manufactured from materials of sound and satisfactory quality and is Fit for Purpose;
  - (B) to the extent of good industry practice, each Initial Spare has a serial number which is clearly identifiable; and
  - (C) each Initial Spare is clearly labelled or otherwise identifiable as being the property of the Purchaser.
- 5.9.6 Without prejudice to the provisions of Schedule 12 (Rolling Stock Requirements – Contract Management), the Manufacturer shall include in each Contract Progress Report:
- (A) a description of the type and quantity of Initial Spares that have been delivered to the Manufacturer and, to the extent applicable, the serial numbers of such Initial Spares since the previous Contract Progress Report; and
  - (B) a cumulative list of each of the Initial Spares (and their respective serial numbers) that are in the custody or possession of the Manufacturer as at the date of the Contract Progress Report.
- 5.9.7 Without prejudice to Clause 14.1 the Manufacturer shall be responsible for the safe custody, transit and insurance of the Initial Spares and/or Initial Special Tools until they are Accepted by the Purchaser. Where the Purchaser has Accepted an Initial Spare and/or an Initial Special Tool pursuant to paragraph D7.5 of Appendix D to Schedule 3 (Rolling Stock Requirements – Assurance) the storage, safety and/or maintenance of that Initial Spare and/or Initial Special Tool (as the case may be) shall be the responsibility of the Maintainer in accordance with the provisions of the Train Services Agreement.
- 5.9.8 Where any Additional Spares are acquired by the Purchaser pursuant to the exercise of an Option, the Manufacturer acknowledges and agrees that the provisions of Clauses 5.9.1 to 5.9.3 shall apply to those Additional Spares as if they were Initial Spares.
- 5.9.9 Without prejudice to Clause 5.1, the Manufacturer shall supply the Initial Spares and Initial Special Tools to the Purchaser by no later than the Contractual Acceptance Date for such items as specified in the Project Programme.
- 5.9.10 At the same time that the Manufacturer places orders for the Initial Spares, the Manufacturer shall advise the Purchaser in writing of the breakdown of the items being ordered by the Manufacturer within the areas described at the time of this Agreement in the list of Initial Spares as "additional overhaul float items not specified = [REDACTED]" and "additional failure items not specified = [REDACTED]". This breakdown shall be provided in the same format as the list of Initial Spares being, for each part, item description, quantity per Unit, quantity of Initial Spares, unit price of the item and total price for that item.

## **6. DEVELOPMENT OF DESIGN**

### **6.1 Design Procedures**

The Manufacturer shall undertake the design of the Units in accordance with the requirements of this Agreement including the Rolling Stock Requirements – Technical, the Rolling Stock Requirements – Assurance and the Project Programme.

### **6.2 Permitted Design Change**

6.2.1 The Purchaser shall be entitled to make a Permitted Design Change at any time prior to the Design Freeze Date applicable to that Permitted Design Change by serving written notice on the Manufacturer.

6.2.2 A notice served by the Purchaser pursuant to Clause 6.2.1 shall:

(A) identify the Permitted Design Change the Purchaser requires the Manufacturer to implement; and

(B) describe, in reasonable detail, the scope and nature of the change required by the Purchaser.

6.2.3 Where the Purchaser serves written notice on the Manufacturer pursuant to Clause 6.2.1 the Manufacturer shall notify the Purchaser in writing within ten (10) Working Days of receipt of such notice whether it considers that the Permitted Design Change required by the Purchaser (as described pursuant to Clause 6.2.2(B)) is within the scope of and consistent with the Rolling Stock Requirements – Technical and the Technical Description.

6.2.4 If the Manufacturer does not respond to the Purchaser within the period of time specified in Clause 6.2.3:

(A) the Purchaser and the Manufacturer shall be deemed to have agreed that the Permitted Design Change (as described pursuant to Clause 6.2.2(B)) is within the scope of and consistent with the Rolling Stock Requirements – Technical and the Technical Description; and

(B) the Purchaser and the Manufacturer shall act in accordance with Clause 6.2.6.

6.2.5 If the Manufacturer considers that the Permitted Design Change required by the Purchaser is outside the scope of and/or inconsistent with the Rolling Stock Requirements – Technical and/or the Technical Description:

(A) the Manufacturer shall describe, in the notice given pursuant to Clause 6.2.3 and in reasonable detail those elements of the Permitted Design Change which are outside the scope of and/or or inconsistent with the Rolling Stock Requirements – Technical and/or the Technical Description; and

(B) the Purchaser and the Manufacturer shall meet within three (3) Working Days of receipt by the Purchaser of the notice given by the Manufacturer pursuant to Clause 6.2.3 and seek to agree whether the Permitted Design Change is within the scope of and consistent with the Rolling Stock

Requirements – Technical and the Technical Description. If the Purchaser and the Manufacturer are unable to reach agreement within ten (10) Working Days of first meeting then either the Purchaser or the Manufacturer may refer the matter to expert determination pursuant to Schedule 17A (Fast Track Dispute Resolution Procedure).

6.2.6 If it is determined pursuant to Clause 6.2.5(B) that the Permitted Design Change is within the scope of and consistent with the Rolling Stock Requirements – Technical and the Technical Description or if the implementation of any Permitted Design Change pursuant to this Clause 6.2.6 is otherwise required under Clause 6.2:

- (A) the Manufacturer shall:
  - (1) comply with and implement the Permitted Design Change in the design, manufacture, and commissioning of the Units;
  - (2) revise the Technical Description to take into account the Permitted Design Change and submit the revised Technical Description by the Manufacturer to the Purchaser for Assurance Acceptance no later than ten (10) Working Days following such agreement or determination; and
- (B) the Purchaser shall revise the Rolling Stock Requirements – Technical to include the Permitted Design Change.

6.2.7 If the Purchaser and the Manufacturer agree or it is otherwise determined that a Permitted Design Change is outside the scope of and/or inconsistent with:

- (A) the Rolling Stock Requirements – Technical, the Purchaser shall be entitled to:
  - (1) revise the form and scope of the Permitted Design Change and resubmit the revised Permitted Design Change to the Manufacturer in accordance with Clause 6.2.1, provided that the Design Freeze Date for the Permitted Design Change has not occurred; or
  - (2) issue a Notice of Proposed Variation to modify the Rolling Stock Requirements – Technical to the extent necessary for it to be consistent with the Permitted Design Change;
- (B) the Technical Description (but not the Rolling Stock Requirements – Technical), the Purchaser shall be entitled to:
  - (1) revise the form and scope of the Permitted Design Change and resubmit the revised Permitted Design Change to the Manufacturer in accordance with Clause 6.2.1, provided that the Design Freeze Date for the Permitted Design Change has not occurred; or
  - (2) instruct the Manufacturer to implement the Permitted Design Change in accordance with Clause 6.2.6.

- 6.2.8 The Purchaser and the Manufacturer acknowledge and agree that :
- (A) any amendment to the Rolling Stock Requirements – Technical by reason of the implementation of a Permitted Design Change; and/or
  - (B) the serving of a notice by the Purchaser pursuant to Clause 6.2.1;

shall not:

- (1) except to the extent expressly provided for in Clause 6.2.7(A), constitute a Proposed Variation or a Required Variation under the Variation Procedure;
  - (2) constitute a Permitted Delay Event and entitle the Manufacturer to an extension of time to the Contractual Acceptance Date for any item of Purchased Equipment or otherwise entitle the Manufacturer to any adjustment to the Project Programme or the Delivery Schedule; or
  - (3) in any way affect the Contract Price for any item of Purchased Equipment, the Total Contract Price, the Total Option Price for any Option, the Schedule of Milestones, or otherwise entitle the Manufacturer to be reimbursed for any costs and expenses incurred or otherwise compensated in any form or manner.
- 6.2.9 Any change to this Agreement other than a Permitted Design Change including without limitation any change to the Rolling Stock Requirements - Technical and (except as provided for in Clause 7.3) the Technical Description shall be made in accordance with the Variation Procedure, save for any such changes pursuant to the provisions of Schedule 3 (Rolling Stock Requirements – Assurance).

### **6.3 Design Risk**

All design risks in relation to a Unit and/or any other item of Purchased Equipment shall be borne by the Manufacturer regardless of any Assurance Acceptances that may be given by the Purchaser.

## **7. PROJECT DOCUMENTATION**

### **7.1 Project Programme**

- 7.1.1 The Manufacturer undertakes to carry out the design, manufacture, testing and supply of the Units and the other items of Purchased Equipment in accordance with the Project Programme.
- 7.1.2 Unless expressly stated otherwise, the Project Programme shall not be amended in any manner or form without the Purchaser or its nominee granting Assurance Acceptance to such amendment.
- 7.1.3 The matters set out in the Project Programme shall be wholly without prejudice to the Manufacturer's obligation to achieve Acceptance for each Unit and each other item of Purchased Equipment on the Contractual Acceptance Date for that Unit or item of Purchased Equipment.

## **7.2 Rolling Stock Requirements – Technical**

The Manufacturer acknowledges and agrees that it has reviewed and considered the Rolling Stock Requirements – Technical and is satisfied:

- 7.2.1 as to the feasibility of the Rolling Stock Requirements – Technical with respect to the design, manufacture, testing, commissioning and supply of the ELR Units and the NLR Units;
- 7.2.2 that the Technical Description for the ELR Units and the NLR Units conform with the Rolling Stock Requirements – Technical; and
- 7.2.3 that the Manufacturer will be able to implement the Technical Description within the timescales set out in the Project Programme.

## **7.3 Technical Description**

- 7.3.1 The Manufacturer shall comply with the Technical Description as may be amended from time to time in accordance with Clause 7.3.2.
- 7.3.2 Subject to Clause 6.2 and unless expressly stated otherwise, the Manufacturer shall not amend the Technical Description without obtaining the prior Assurance Acceptance of the Purchaser or its nominee to such amendments. Any Assurance Acceptance given by the Purchaser shall be without prejudice to the Manufacturer's obligation to ensure that each Unit and any other item of Purchased Equipment complies with the Requirements and Clause 5.1.

## **7.4 Rolling Stock Plans**

- 7.4.1 The Manufacturer shall comply with each of the Plans, including the Project Definition Statement and the Rolling Stock Assurance Plan as may be amended from time to time in accordance with Clause 7.4.2.
- 7.4.2 Unless expressly stated otherwise the Manufacturer shall not be entitled to amend any Plan in any manner or form without obtaining the prior Assurance Acceptance of the Purchaser or its nominee to such amendments.

## **7.5 No Extension of Time**

The Manufacturer acknowledges and agrees that compliance with its obligations in the Rolling Stock Requirements – Assurance shall not entitle it to:

- 7.5.1 any extension of time to the Contractual Acceptance Date in respect of any item of Purchased Equipment or otherwise entitle the Manufacturer to any adjustment to the Project Programme or the Delivery Schedule;
- 7.5.2 any adjustment to:
  - (1) the Contract Price for any item of Purchased Equipment;
  - (2) the Total Option Price for any Option;
  - (3) the Total Contract Price and/or the Schedule of Milestones; or

7.5.3 be reimbursed for any costs and expenses incurred or otherwise be compensated in any form or manner.

## 7.6 **Liability for Performance**

Notwithstanding any other provision of this Agreement, no examination or lack of examination and/or Assurance Acceptance given by the Purchaser or its nominee of any document submitted by the Manufacturer in accordance with the requirements of the Rolling Stock Requirements – Assurance shall in any respect relieve or absolve the Manufacturer from any obligation or liability under or in connection with this Agreement whether in relation to accuracy, safety, suitability, adequacy or performance, time or otherwise.

## 8. **MAINTENANCE FACILITY**

Each Party shall comply with its respective obligations as set out in Schedule 10 (Maintenance Facility).

## 9. **MANUFACTURING FACILITIES AND RIGHTS OF AUDIT**

### 9.1 **Manufacturing Facilities**

The Manufacturer shall ensure that the Primary Assembly and Manufacture of the Units shall be carried out by the Manufacturer at the Manufacturer's Works and the Manufacturer shall not use any other manufacturing facility for the Primary Assembly and Manufacture of the Units without the prior agreement of the Purchaser.

### 9.2 **Access to Facilities for Purpose of Audits**

To the extent necessary for the purpose of exercising any of the rights granted under Clause 9.3 or any rights of audit set out in Schedule 3 (Rolling Stock Requirements – Assurance) the Purchaser or its nominee shall at its own cost be granted access on reasonable prior notice to any of the Manufacturer's premises involved in the design, manufacture, testing, certification, commissioning and Delivery of the Units and/or any other item of Purchased Equipment including the Manufacturer's Works and, to the extent that the Manufacturer using reasonable endeavours can procure such access, to those premises of its agents and Key Subcontractors.

### 9.3 **Right of Audit**

9.3.1 The Manufacturer shall, and shall procure that its Key Subcontractors shall:

- (A) maintain a complete and correct set of records pertaining to all activities relating to the performance of the Manufacturer's obligations under this Agreement and all transactions and Subcontracts entered into by the Manufacturer for the purposes of performing its obligations under this Agreement (in respect of the Manufacturer) and the performance by the Key Subcontractor of its obligations under its Key Subcontract (in respect of the Key Subcontractor) (the "**Manufacturer's Records**"); and
- (B) retain all the Manufacturer's Records until the earlier of the expiry of the Defect Rectification Period for each Major Component and/or Unit and the end of a period of not less than 6 years (or such longer period as may

be required by law) following termination of this Agreement (the "**Retention Period**").

9.3.2 Notwithstanding any other right of audit that the Purchaser is entitled to under this Agreement, in order to verify the Manufacturer's performance of and compliance with the Agreement, the Purchaser shall be entitled on reasonable notice (whether in writing or verbally), either itself or using such agents or representatives as it may authorise:

- (A) to audit, inspect or witness any aspects of the manufacturing, testing or commissioning of the Units or any other item of Purchased Equipment or any of their Parts and to audit the design and certification thereof including being present at, and participating in, amongst other things:
  - (1) any inspection and conformance control of Subsystems supplied by Key Subcontractors;
  - (2) any inspection and conformance control of a Unit construction at stages to be agreed between the Purchaser and the Manufacturer;
  - (3) any system tests (at stages to be agreed) during construction;
  - (4) any dynamic run testing of completed Units; and
  - (5) any inspection and certification of each Unit's compliance with the Requirements and Technical Description after completion of assembly and dynamic testing;
- (B) to inspect the sub-assembly of each Unit;
- (C) to inspect any and all of the Manufacturer's Records during the Retention Period reasonably necessary to investigate the Manufacturer's (and any Key Subcontractor's) performance of its obligations under this Agreement;
- (D) to audit the management systems of the Manufacturer and those of any Key Subcontractor;
- (E) to inspect and/or audit compliance by the Manufacturer and its Key Subcontractors with the Manufacturer's obligations under this Agreement,

provided that each of the audits and inspections described in paragraphs (A) to (E) shall not unreasonably disrupt the commercial and industrial operation of the Manufacturer or its Key Subcontractors.

9.3.3 The Manufacturer acknowledges and agrees that the Purchaser may nominate the Auditor General to exercise any or all of the rights granted to the Purchaser under this Clause 9, and the Manufacturer shall produce oral and/or written responses (as requested) to any of his questions.

#### 9.4 **Co-operation with Audit Procedure**

To the extent necessary for the purpose of exercising any of the rights granted under Clause 9.3.2 the Manufacturer shall provide, and shall procure that its Key Subcontracts shall provide, all reasonable co-operation to the Purchaser and/or its nominee including:

- 9.4.1 ensuring that appropriate security systems are in place to prevent unauthorised access to, extraction of and/or alteration to any of the Manufacturer's Records;
- 9.4.2 subject to Clause 9.3.2(C), making the Manufacturer's Records available for inspection and upon request from the Purchaser, acting reasonably, providing electronic or paper copies of any Manufacturer's Records required for the purposes of Clause 9.3.2(C) free of charge and within a reasonable time if requested; and
- 9.4.3 making the Manufacturer's employees available for discussion with the Purchaser or its nominee.

#### 9.5 **No Claim for Relief**

Any audit, inspection and/or testing by the Authority pursuant to Clause 9.3.2 shall not relieve the Manufacturer (nor any of its Key Subcontractors) from any of its obligations under this Agreement or prejudice any right, power and/or remedy of the Purchaser against the Manufacturer.

#### 9.6 **Corrective Actions Arising**

9.6.1 Any actions found to be reasonably necessary having regard to the Manufacturer's obligations under this Agreement as a consequence of the Purchaser or its nominee undertaking any inspections or audits shall be carried out by the Manufacturer (a "**Corrective Action**"). The Manufacturer shall acknowledge formally within two (2) Working Days receipt of any request for a Corrective Action raised by the Purchaser and/or its nominee, together with the Manufacturer's confirmation of the timescale allocated by the Purchaser and/or its nominee for the Manufacturer to close out the Corrective Action. The Manufacturer shall advise the Purchaser and/or its nominee upon its close-out of the Corrective Action, together with details of the Corrective Action applied. The Purchaser shall be entitled to undertake a further audit of any Corrective Actions on the same basis as set out in Clauses 9.2 to 9.5.

9.6.2 If the Manufacturer (acting reasonably) disputes any Corrective Action it shall notify the Purchaser whereupon the Manufacturer and the Purchaser shall consult with each other and seek to resolve such dispute and in default of such resolution either the Purchaser or the Manufacturer may refer the dispute for determination in accordance with Clause 36.

#### 9.7 **Plans for Remedial Action**

If at any time in the course of any participation or inspection by the Purchaser in accordance with Clauses 9.3 and 9.6, the Purchaser reasonably determines that any item of Purchased Equipment does not, or is unlikely in the future to comply with any of the Requirements or Clause 5.1 the Purchaser shall notify the Manufacturer of such determination. The Purchaser and the Manufacturer shall thereafter use all reasonable endeavours to agree a plan for necessary remedial action to be implemented by the

Manufacturer, at the Manufacturer's cost, to ensure that that the item of Purchased Equipment does or will conform to the Requirements and Clause 5.1.

## **10. TESTING, ACCEPTANCE AND DELIVERY PROCEDURE**

### **10.1 Compliance with the Programmes and Procedures**

The Manufacturer shall ensure that:

10.1.1 the Units and other items of Purchased Equipment are delivered, tested and made ready for Acceptance by the Purchaser in accordance with the Technical Description, the Project Programme, and the procedures set out in the Rolling Stock Requirements – Assurance ("**Acceptance Procedures**");

10.1.2 no Unit or other item of Purchased Equipment is delivered to the Purchaser prior to its Contractual Acceptance Date unless otherwise agreed by the Purchaser; and

10.1.3 the rate of Delivery of the Units and other items of Purchased Equipment is as specified in Schedule 5 (Delivery Schedule).

### **10.2 Appointment of Vehicle Acceptance Body**

The Manufacturer shall appoint, at its own cost, a Vehicle Acceptance Body to whom the Manufacturer shall in carrying out the design, manufacture, testing and commissioning of the Units, seek the applicable consents and approvals and following such appointment the Manufacturer shall promptly notify the Purchaser of the identity of the Vehicle Acceptance Body.

### **10.3 Appointment of Notified Body**

The Purchaser shall appoint, at its own cost, a Notified Body and shall upon the appointment of such Notified Body promptly notify the Manufacturer of the identity of such Notified Body. The Manufacturer shall and shall procure that the Vehicle Acceptance Body appointed pursuant to Clause 10.2 (or any replacement of the same) provide such Notified Body in a timely manner with all information relevant to any application made by the Manufacturer for a consent or approval in accordance with Clause 10.2 and as otherwise required by the Notified Body in carrying out its function in respect of the Units.

## **11. LATE DELIVERY**

### **11.1 Liquidated Damages for Delay**

Where a Unit fails to be Accepted by the Purchaser in accordance with the Acceptance Procedures on the Contractual Acceptance Date for that Unit, the Manufacturer shall pay to the Purchaser:

11.1.1 liquidated damages calculated in accordance with Clause 11.2.1 if the Unit is an ELR Unit; and

11.1.2 liquidated damages calculated in accordance with Clause 11.2.2 if the Unit is a NLR Unit,

and in either case, for the period commencing on the Contractual Acceptance Date for that Unit and ending on the actual date when the Unit is Accepted by the Purchaser ("**Delay**")

Period") which liquidated damages shall (without prejudice to Clause 20 and Clause 30) be the sole and exclusive remedy of the Purchaser and LUL in respect of such late delivery.

## 11.2 Calculation of Liquidated Damages

### 11.2.1 *ELR Units*

Subject to Clause 11.3, any liquidated damages incurred by the Manufacturer pursuant to Clause 11.1.1 in each week shall be determined as follows:

$$(A-B) \cdot C$$

where:

**A** means the total number of ELR Units that should have been Accepted by the Purchaser by 17.00 hours on the first Working Day of that week as set out in column 3 of the table in Schedule 5 (Delivery Schedule);

**B** means the actual total number of ELR Units Accepted by the Purchaser by 17.00 hours on the first Working Day of that week;

**C** means:

(1) in relation to ELR Units forming part of the Initial Order:

(a) the rate of [REDACTED] per ELR Unit per week or part of a week in respect of each week prior to 15 August 2009;

(b) the rate of [REDACTED] per ELR Unit per week or part of a week in respect of each week in the period commencing on 15 August 2009 and ending on 16 October 2009; and

(c) the rate of [REDACTED] per ELR Unit per week or part of a week in respect of each week on and from 17 October 2009; and

(2) in relation to Additional ELR Units the subject of an Additional Unit Option which has been exercised by the Purchaser in accordance with Schedule 9 (Options), the rate of [REDACTED] per Additional ELR Unit per week or part of a week.

### 11.2.2 *NLR Units*

Subject to Clause 11.3, any liquidated damages incurred by the Manufacturer pursuant to Clause 11.1.2 in each week shall be determined as follows:

$$(D-E) \cdot F$$

where:

**D** means the total number of NLR Units that should have been Accepted by the Purchaser by 17.00 hours on the first Working Day of that week as set out in column 5 of the table in Schedule 5 (Delivery Schedule);

**E** means the actual total number of NLR Units Accepted by the Purchaser by 17.00 hours on the first Working Day of that week; and

**F** means:

- (1) in relation to NLR Units forming part of the Initial Order the rate of [REDACTED] per NLR Unit per week or part of a week; and
- (2) in relation to Additional NLR Units the subject of an Additional Unit Option which has been exercised by the Purchaser in accordance with Schedule 9 (Options), the rate of [REDACTED] per Additional NLR Unit per week or part of a week; and
- (3) in relation to the Additional NLR Vehicles, the subject of an Additional Unit Option which has been exercised by the Purchaser in accordance with Clause 4.2, the rate of [REDACTED] per Additional NLR Vehicle per week or part of a week.

11.2.3 Where a Variation Order or the grant by the Purchaser of an extension of time in accordance with Clause 13.4 changes the Contractual Acceptance Date of an ELR Unit and/or a NLR Unit, the dates from which the values specified in Clause 11.2.1 or 11.2.2 apply shall be amended to the extent necessary to reflect any revised Contractual Acceptance Date or changes to the Delivery Schedule and so that the Manufacturer shall be in no better and no worse position than it would otherwise have been had the Variation Order or the matter giving rise to the grant of an extension of time not occurred.

### **11.3 Late Delivery Liquidated Damages Cap**

11.3.1 Subject to Clause 11.3.2 the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to this Clause 11 shall not exceed [REDACTED] per cent of the aggregate of the Contract Price (exclusive of VAT) of each of the Units forming part of the Initial Order.

11.3.2 Where the Purchaser has served an Option Notice in respect of an Additional Unit Option the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to this Clause 11 shall increase from the date of receipt by the Manufacturer of a revised Schedule 5 (Delivery Schedule) from the Purchaser or its nominee in accordance with Clause 11.4.2 by an amount equivalent to [REDACTED] per cent of the Total Option Price of the Additional Unit Option (exclusive of VAT).

### **11.4 Application of Liquidated Damages to Options**

Where the Purchaser has served an Option Notice in respect of an Additional Unit Option:

11.4.1 the Purchaser shall promptly revise the Delivery Schedule to take into account each of the Contractual Acceptance Dates for the Additional ELR Units, Additional NLR Vehicles and/or the Additional NLR Units to be supplied by the Manufacturer in respect of that Additional Unit Option and notify the Manufacturer of the same; and

11.4.2 upon receipt by the Manufacturer of a notice given pursuant to Clause 11.4.1, the revised Delivery Schedule attached to the notice shall supersede and replace the

existing Delivery Schedule and shall be incorporated in and form part of this Agreement.

#### **11.5 Consequence of a Variation**

Where as a consequence of a Variation or the grant of an extension of time in accordance with Clause 13.4, the Contractual Acceptance Date of a Unit is changed by more than seven (7) days:

11.5.1 the Purchaser shall promptly prepare a revised Delivery Schedule which takes into account all of the changes to the Contractual Acceptance Date of the affected Units and notify the Manufacturer of the same; and

11.5.2 upon receipt by the Manufacturer of a notice given pursuant to Clause 11.5.1, the revised Delivery Schedule attached to the notice shall supersede and replace the existing Delivery Schedule and shall be incorporated and form part of this Agreement.

#### **11.6 Genuine Pre-Estimate of Loss**

The Manufacturer acknowledges and agrees that the liquidated damages specified in this Clause 11 represent a genuine pre-estimate of the Purchaser's losses arising from late delivery and/or Acceptance of any such Unit.

#### **11.7 Determination and Payment of Liquidated Damages**

11.7.1 No later than 10 Working Days after the last Working Day of a week specified in Schedule 5 and each subsequent week where a Unit has not been Delivered by its Contractual Acceptance Date ("**Delivery Week**") the Purchaser shall be entitled to determine in accordance with this Clause 11 the amount of liquidated damages (if any) that the Manufacturer incurred in relation to that Delivery Week and shall notify the Manufacturer in writing of such amount of liquidated damages together with sufficient information to enable the Manufacturer, acting reasonably, to understand how such amount was determined (a "**LD Notice**").

11.7.2 The Manufacturer shall within 5 Working Days of receipt of a LD Notice notify the Purchaser whether it agrees or disagrees with the amount of liquidated damages specified in the LD Notice.

11.7.3 Where the Manufacturer agrees with the amount of liquidated damages specified in the LD Notice, the Purchaser shall be entitled to deduct the amount of liquidated damages from any subsequent Milestone Payments to the Manufacturer.

11.7.4 Where the Manufacturer disagrees with the amount of liquidated damages specified in the LD Notice, the Manufacturer shall in the notice given to the Purchaser in accordance with Clause 11.7.2 set out the amount of liquidated damages (if any) it considers that it has incurred in the relevant Delivery Week together with sufficient information to enable the Purchaser acting reasonably to understand how such amount was calculated.

11.7.5 If the Manufacturer fails to respond to a LD Notice within the timeframe specified in Clause 11.7.2 the Manufacturer shall be deemed to have agreed with the amount of liquidated damages specified in the LD Notice.

## 12. EXCESS WEIGHT

### 12.1 Liquidated Damages for Excess Weight

12.1.1 Where it is agreed or determined in accordance with this Agreement that the average tare weight of a NLR Unit and/or an ELR Unit exceeds the tare weight of the NLR Unit or the ELR Unit (as the case may be) specified in the Rolling Stock Requirements – Technical (as may be adjusted pursuant to Schedule 9 following the exercise of a Technical Option) by an amount which is less than ■■■% of such tare weight, the Manufacturer shall pay to the Purchaser liquidated damages calculated in accordance with Clause 12.2.

12.1.2 Where it is agreed or determined in accordance with this Agreement that the average tare weight of a NLR Unit and/or an ELR Unit exceeds the tare weight of the NLR Unit or the ELR Unit (as the case may be) specified in the Rolling Stock Requirements – Technical (as may be adjusted pursuant to Schedule 9 following the exercise of a Technical Option) by an amount which is equal to or greater than ■■■% of such tare weight then the Purchaser may in its absolute discretion elect:

(A) to require the Manufacturer to pay to the Purchaser liquidated damages calculated in accordance with Clause 12.2; or

(B) to refuse to issue a Provisional Acceptance Certificate (in respect of an ELR Unit) and/or a Qualified Provisional Acceptance Certificate (in respect of an NLR Unit).

12.1.3 Where the Manufacturer is required pursuant to paragraph 12.1.1 or as a result of the Purchaser's election under paragraph 12.1.2 (A) to pay liquidated damages to the Purchaser in respect of a NLR Unit and/or an ELR Unit such liquidated damages shall be the sole and exclusive remedy of the Purchaser in respect of the Unit's non-compliance with the weight requirements set out in the Rolling Stock Requirements - Technical, and any NLR Unit and/or ELR Unit in respect of which such liquidated damages have been paid shall be treated, for the purposes of whether such Unit is Fit for Purpose, as complying with the weight requirements as set out in the Rolling Stock Requirements – Technical (but without prejudice to the Purchaser's right to refuse to issue a Provisional Acceptance Certificate (in respect of an ELR Unit) and/or a Qualified Provisional Acceptance Certificate (in respect of a NLR Unit) if the relevant Unit does not comply with the Rolling Stock Requirements - Technical or is otherwise not Fit for Purpose other than in relation to the weight of such Unit).

### 12.2 Calculation of Liquidated Damages

Any liquidated damages incurred by the Manufacturer pursuant to Clause 12.1 shall be determined from the formula:

$$EWLD = A \cdot (B-C) \cdot D$$

where:

**EWLD** means the amount of liquidated damages incurred by the Manufacturer pursuant to Clause 12.1 and if a negative number shall be deemed to be zero;

**A** means:

- (1) in relation to an ELR Unit the amount of [REDACTED]; and
- (2) in relation to a NLR Unit the amount of [REDACTED]

**B** means:

- (1) in respect of an ELR Unit the average tare weight in tonnes of the first five ELR Units to be Accepted by the Purchaser; and
- (2) in respect of a NLR Unit the average tare weight in tonnes of the first five NLR Units to be Accepted by the Purchaser;

**C** means:

- (1) in relation to an ELR Unit, the weight of an ELR Unit as specified in the Rolling Stock Requirements-Technical (as may be varied in accordance with this Agreement); and
- (2) in relation to a NLR Unit, the weight of a NLR Unit as specified in the Rolling Stock Requirements-Technical (as may be varied in accordance with this Agreement); and

**D** means subject to Clause 12.3:

- (1) in relation to an ELR Unit the number of ELR Units forming part of the Initial Order; and
- (2) in relation to a NLR Unit the number of NLR Units forming part of the Initial Order.

### **12.2A Excess Weight Liquidated Damages Cap**

12.2A.1 Subject to Clause 12.2A.2 the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to this Clause 12 shall not exceed [REDACTED] per cent of the aggregate of the Contract Price (exclusive of VAT) of each of the Units forming part of the Initial Order.

12.2A.2 Where the Purchaser has served an Option Notice in respect of an Additional Unit Option the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to this Clause 12 shall increase by an amount equivalent to [REDACTED] per cent of the Total Option Price of the Additional Unit Option (exclusive of VAT).

### **12.3 Application of Liquidated Damages to Option**

Where the Purchaser exercises an Additional Unit Option in accordance with Schedule 9 (Options) of this Agreement in respect of Additional ELR Units, Additional NLR Units and/or Additional NLR Vehicles, the Purchaser shall be entitled to calculate the amount of additional liquidated damages payable by the Manufacturer pursuant to Clause 12.1 in respect of those Additional ELR Units, Additional NLR Units and/or Additional NLR Vehicles and for the purposes of this Clause 12.3, the Purchaser and the Manufacturer agree that:

- 12.3.1 in respect of Additional ELR Units, references in the definition of "D" to "the number of ELR Units forming part of the Initial Order" shall be interpreted as meaning the number of Additional ELR Units the subject of the Additional Unit Option that has been exercised by the Purchaser;
- 12.3.2 in respect of Additional NLR Units references in the definition of "D" to "the number of NLR Units forming part of the Initial Order" shall be interpreted as meaning the number of Additional NLR Units the subject of the Additional Unit Option that has been exercised by the Purchaser; and
- 12.3.3 in respect of Additional NLR Vehicles:
- (A) references in the definitions of "A" and "C" to "in relation to a NLR Unit" shall be interpreted as meaning "in relation to an Additional NLR Vehicle";
- (B) the definition of "B" shall be amended by inserting the following wording:
- "(3) in respect of an Additional NLR Vehicle the average tare weight in tonnes of the first 5 additional NLR Vehicles Accepted by the Purchaser"; and
- (C) references in the definition of "D" to "the number of NLR Units forming part of the Initial Order" shall be interpreted as meaning the quantity of Additional NLR Vehicles.

#### **12.4 Genuine Pre-Estimate of Loss**

The Manufacturer acknowledges and agrees that the liquidated damages specified in Clause 12 represent a genuine pre-estimate of the Purchaser's losses arising from the weight of a NLR Unit and/or an ELR Unit being in excess of the maximum permitted weight specified in the Technical Description.

#### **12.5 Determination and Payment of Liquidated Damages**

- 12.5.1 The Purchaser shall be entitled at any time after it has accepted five ELR Units and/or five NLR Units to determine in accordance with this Clause 12 the amount of liquidated damages (if any) that the Manufacturer incurred in relation to the ELR Units and/or NLR Units (as the case may be) and shall notify the Manufacturer in writing of such amount of liquidated damages together with sufficient information to enable the Manufacturer, acting reasonably, to understand how such an amount was determined (an "EWLD Notice").
- 12.5.2 The Manufacturer shall within 5 Working Days of receipt of an EWLD Notice notify the Purchaser whether it agrees or disagrees with the amount of liquidated damages specified in the EWLD Notice.
- 12.5.3 Where the Manufacturer agrees with the amount of liquidated damages specified in the EWLD Notice, the Purchaser shall be entitled to deduct the amount of liquidated damages from any subsequent Milestone Payments to Manufacturer.
- 12.5.4 Where the Manufacturer disagrees with the amount of liquidated damages specified in the EWLD Notice, the Manufacturer shall in the notice given to the

Purchaser in accordance with Clause 12.5.2 set out the amount of liquidated damages (if any) it considers that it has incurred in respect of the ELR Units and/or the NLR Units together with sufficient information to enable the Purchaser acting reasonably to understand how such amount was calculated.

- 12.5.5 If the Manufacturer fails to respond to an EWLD Notice within the timeframe specified in Clause 12.5.2 the Manufacturer shall be deemed to have agreed with the amount of liquidated damages specified in the EWLD Notice.
- 12.5.6 The exercise by the Purchaser of its rights under this Clause 12.5 in respect of the ELR Units or the NLR Units shall not prevent, restrict or otherwise prejudice the right of the Purchaser to exercise its rights under this Clause 12.5 in respect of any other Units.

### **13. EXTENSIONS OF TIME**

#### **13.1 Permitted Delays**

For the purposes of this Agreement, the occurrence of one or more of the following shall constitute a "**Permitted Delay Event**":

- 13.1.1 a Force Majeure Event which prevents the Manufacturer from performing its obligations under this Agreement;
- 13.1.2 any breach by the Purchaser of an express obligation under this Agreement but excluding any matter contemplated by paragraphs D.7.7 and/or D.7.9 of Appendix D to Schedule 3 for which provision in those paragraphs is made in full compensation and satisfaction of any loss sustained or sustainable by the Manufacturer in respect of those matters;
- 13.1.3 the suspension of this Agreement in accordance with Clause 18 (other than where the suspension results from the circumstance in Clause 18.3.1 and/or 18.3.2);
- 13.1.4 not used;
- 13.1.5 not used;
- 13.1.6 not used;
- 13.1.7 any materially adverse circumstances directly affecting the Manufacturer arising from any act or omission by a driver supplied by the Purchaser or the Operator during driver training or testing of the Units provided that, at the relevant time, such driver was not following (i) instructions given by the Manufacturer, or (ii) good industry practice in relation to the testing of new rolling stock or to the extent that it is not consistent with (i) and (ii) operating the Units in accordance with the Manuals;
- 13.1.8 collision of any Unit with another train or with infrastructure caused by any person other than the Manufacturer during the NLR Fault Free Running, the Joint Proving Tests, the Core ELL test Plan or the Infrastructure Proving Tests, except in the case where such collision occurs because the driver of the Unit is acting on or in accordance with instructions of the Manufacturer or otherwise operating the Units in accordance with the Manuals;

- 13.1.9 vandalism to any Unit which occurs during the Infrastructure Proving Tests, save where the Units are, at the time of such vandalism, in the custody and control of the Manufacturer;
- 13.1.10 the rejection or non-acceptance by the LUL Acceptance Panel of a submission in relation to Route Acceptance that has been accepted by Network Rail in relation to the same matter, save where there are reasonable grounds for the LUL Acceptance Panel to reject such a submission,

but in each case

- (A) only insofar as any of the events described in Clauses 13.1.1 to 13.1.10 has a direct and material adverse effect on the Manufacturer's ability to achieve Acceptance of a NLR Unit, an ELR Unit and/or any other item of Purchased Equipment by the Contractual Acceptance Date in relation to such NLR Unit, ELR Unit and/or item of Purchased Equipment (as the case may be) and not caused or contributed to by the act, omission or default of the Manufacturer; and
- (B) excluding any matter contemplated by paragraphs D.7.7 and/or D.7.9 of Appendix D to Schedule 3 for which provision in those paragraphs is made in full compensation and satisfaction of any loss, sustained or sustainable by the Manufacturer in respect of those matters.

## 13.2 **Qualification to Permitted Delays**

Where any delay in achieving a Contractual Acceptance Date for a NLR Unit, ELR Unit or any other item of Purchased Equipment arises or will arise, the Manufacturer shall be entitled to an extension to the Contractual Acceptance Date for that NLR Unit, ELR Unit or that item of Purchased Equipment (as the case may be) only to the extent that such delay is directly caused by a Permitted Delay Event and provided that the Manufacturer:

- 13.2.1 notifies the Purchaser of the Permitted Delay Event in accordance with Clause 13.3 and subsequently provides such further information as the Purchaser may reasonably require regarding the nature and likely duration of such event;
- 13.2.2 provides the Purchaser with reasonable access to the Manufacturer's facilities and/or the facilities of its Subcontractors for investigating the validity of the potential Permitted Delay Event;
- 13.2.3 uses its reasonable endeavours to mitigate the delay to the Contractual Acceptance Date for that NLR Unit, ELR Unit or item of Purchased Equipment (as the case may be); and
- 13.2.4 shall not be entitled to an extension of time to the extent that the Permitted Delay Event was caused by or resulted from any act, neglect or default of the Manufacturer, its Subcontractors and/or employees and/or any breach of this Agreement by the Manufacturer, its Subcontractors and/or employees.

## 13.3 **Notification of Permitted Delay Event**

The Manufacturer shall give notice to the Purchaser as soon as it can reasonably foresee a Permitted Delay Event occurring, or if such event is not reasonably foreseeable, as soon as it becomes aware of the occurrence of a Permitted Delay Event and in any event no later

than 15 Working Days after the Manufacturer becomes aware of the occurrence of the Permitted Delay Event. Any notice given under this Clause 13.3 shall specify:

- 13.3.1 the Permitted Delay Event upon which the claim for an extension of time is based;
- 13.3.2 full and detailed particulars of the cause and extent of the delay and the effect of the Permitted Delay Event on the Manufacturer's ability to comply with its obligations under this Agreement;
- 13.3.3 details of the documents and records which the Manufacturer will rely upon to support its claim for an extension of time; and
- 13.3.4 details of the measures which the Manufacturer has adopted and/or proposes to adopt to mitigate the consequences of the Permitted Delay Event.

If the Manufacturer fails to notify the Purchaser of any Permitted Delay Event within 15 Working Days of becoming aware of it, the Manufacturer shall not be entitled to request an extension of time for that Permitted Delay Event and such event shall not constitute a Permitted Delay Event.

#### **13.4 Grant of Extension of Time**

Subject to the Manufacturer complying with the requirements of this Clause 13 and the Purchaser acting reasonably being satisfied that a Permitted Delay Event has occurred the Purchaser shall, as soon as reasonably practicable, agree with the Manufacturer a reasonable extension of time to the Contractual Acceptance Date (whether on an interim or final basis) and any such extension shall amend the Delivery Schedule, the Project Programme, the Minimum Fleet Handback Trigger, the Final Acceptance Backstop Date and each relevant Contractual Acceptance Date accordingly.

#### **13.5 Extensions of Time – Costs & General**

13.5.1 Any extension of time agreed by the Purchaser and the Manufacturer under this Clause 13 to a Contractual Acceptance Date shall not of itself entitle the Manufacturer to any extension to any other Contractual Acceptance Date. The Manufacturer must make a claim under this Clause 13 for an extension of time to each date or period to which it considers it is, or may become, entitled under this Clause 13 provided that where the grant of an extension of time in accordance with this Clause 13 changes any Contractual Acceptance Date of a NLR Unit or an ELR Unit the Minimum Fleet Handback Trigger and the Final Acceptance Backstop Date shall be amended to the extent necessary to reflect any revised Contractual Acceptance Date and so that the Manufacturer shall be in no better or no worse position than it would otherwise have been had the matter giving rise to the extension of time not occurred.

13.5.1A Where a Permitted Delay Event of the type described in Clause 13.1.2 causes the costs to the Manufacturer of completing its obligations under this Agreement to be increased (in so far as such costs are documented and are reasonably, properly and directly incurred) the Total Contract Price and / or the Total Option Price (as the case may be) shall be increased by the same or lesser amount (such increase being determined as a Variation pursuant to the Variation Procedure) so that the

Manufacturer shall be in no worse or no better position than it would have been had the Permitted Delay Event not occurred.

- 13.5.1B Where a Permitted Delay Event of the type referred to in Clause 13.1.1 occur the Total Contract Price and / or the Total Option Price (as the case may be) shall be increased by the amount of half the Required Bonding Guarantee Costs that accumulate during such event.
- 13.5.2 Except as expressly provided elsewhere in this Agreement, any extension of time agreed between the Purchaser and the Manufacturer pursuant to this Clause 13.5 shall together with any increase in Total Contract Price and / or the Total Option Price pursuant to Clauses 13.5.1A or other payment pursuant to Clause 13.5.1B, be in full compensation and satisfaction for any loss sustained or sustainable by the Manufacturer in respect of any Permitted Delay Event in connection with which that extension is granted.
- 13.5.3 The Purchaser shall only be liable to pay any increased costs arising as a result of any Permitted Delay Event agreed pursuant to this Clause 13 to the extent specified in this Clause 13 and only to the extent that the Manufacturer uses all reasonable endeavours to mitigate any such costs or to the extent the Manufacturer is unable to claim under a Required Insurance in respect of the Permitted Delay Event and/or the effects of that Permitted Delay Event (except where and only to the extent that such inability arises from the failure by the Manufacturer to comply with the provisions of this Agreement or the terms of any Required Insurance).
- 13.5.4 Where an extension of time has been agreed in accordance with this Clause 13 the Purchaser shall amend the Project Programme to reflect such extension of time.

## **14. TRANSFER OF TITLE AND RISK**

### **14.1 Title to Items of Purchased Equipment**

Where an item of Purchased Equipment (including a Unit) has been Accepted by the Purchaser, immediately thereupon the Manufacturer shall Deliver that item of Purchased Equipment to the Purchaser or, at the Purchaser's Option, the Owner (where it is not the Purchaser). The title to such item of Purchased Equipment shall pass to the Purchaser or the Owner (where it is not the Purchaser) (as the case may be) immediately on Delivery of the item of Purchased Equipment and such title shall be full encumbered legal and beneficial title to that item of Purchased Equipment. Risk of loss, theft, damage or destruction of an item of Purchased Equipment shall pass to the Purchaser or the Owner (where it is not the Purchaser) (as the case may be) at the time at which title to such item is transferred to the Purchaser or the Owner (where it is not the Purchaser) (as the case may be).

### **14.2 Warranty in respect of Title**

The Manufacturer warrants to the Purchaser that the title to each NLR Unit, ELR Unit and each other item of Purchased Equipment transferred to it under this Agreement shall be with full title guarantee and free and clear of all Security.

**14.3 Prohibition on Creating Security**

The Manufacturer undertakes that it shall not, at any time, create or purport to create any Security over any NLR Unit, ELR Unit and/or any other item of Purchased Equipment (including any Manual or other documentation) Delivered in accordance with this Agreement and which has been, or is to be, supplied to the Purchaser under and in accordance with the terms of this Agreement.

**14.4 Ownership of Purchased Equipment**

14.4.1 Not used

14.4.2 Without prejudice to Clause 39.2.2 any reference in this Agreement to items of Purchased Equipment or other assets being supplied to, delivered (whether by Delivery or otherwise) to and/or owned by the Purchaser shall in the event that another person has become the Owner be construed as a reference to items of Purchased Equipment or other assets being supplied to, delivered to or owned by such person.

**15. INSURANCE**

Each Primary Party shall comply with the requirements of the insurance regime set out in Schedule 15.

**16. DEFECT RECTIFICATION**

**16.1 Definitions**

For the purpose of this Agreement;

**"Defect"** means, in relation to any item of Purchased Equipment (including any Unit), any fault or discrepancy in such item such that the item is not Fit for Purpose or otherwise constitutes or results in a breach by the Manufacturer of its obligations under this Agreement whether such fault or discrepancy arises as a consequence of:

- (a) faulty design;
- (b) faulty materials;
- (c) negligence which is attributable to the Manufacturer, its Subcontractors, its suppliers, directors, agents, representatives or the employees of any of them;
- (d) bad workmanship which is attributable to the Manufacturer, its Subcontractors, its suppliers, directors, agents, representatives or the employees of any of them; or
- (e) any other reason attributable to any of the persons identified in (c) and/or (d) above.

and is not principally caused by:

- (1) any failure by the Purchaser or any third party appointed by the Purchaser (other than the Maintainer prior to the earlier of the cessation, termination or expiry of the TSA whether or not such failure becomes apparent prior to, on or after such cessation, termination or expiry of the TSA) to use, operate and/or maintain the

item of Purchased Equipment in accordance with the Manuals and/or any Applicable Laws and applicable Standards;

- (2) fair wear and tear; or
- (3) vandalism, suicide, collision or accidental damage caused by any person other than the Manufacturer, its Subcontractors, its suppliers, directors, agents, representatives or the employees of any of them;
- (4) any damage or excessive or unusual wear and tear caused to the Units as a direct result of any Railway Infrastructure (other than Railway Infrastructure maintained by the Maintainer under the TSA) being in a condition which is worse than that to be expected of it assuming that such Railway Infrastructure is being maintained by a competent maintenance contractor having regard to (i) Railway Group Standards applicable to such Railway Infrastructure which is controlled by Network Rail and such applicable standards (to be determined by LUL) in relation to the Core ELL Infrastructure which shall be controlled by LUL and (ii) the condition of such Railway Infrastructure (if such Railway Infrastructure exists) at the date of this Agreement taking into account that the condition of certain parts of such Railway Infrastructure may not be compliant with Railway Group Standards. For the avoidance of doubt in the event that the Manufacturer believes that a Defect pursuant to this Clause 16.1(4) has occurred it shall be required to prove that the alleged damage or excessive or unusual wear and tear has been caused by circumstances falling within this Clause 16.1 (4) including, if required by the Purchaser, providing to the Purchaser written evidence from a reputable and independent third party with relevant experience.

**"Defect Rectification Period" means:**

- (a) in relation to a Major Component (and those Parts forming part of that Major Component) forming part of a Unit, the period commencing on the date the Purchaser has Accepted that Unit and ending on the anniversary of that date as specified for that Major Component in the table below:

Major Component	Defect Rectification Period
[Redacted]	[Redacted]


- (b) in relation to (i) a Unit forming part of the Initial Order, or (ii) a Part of a Unit forming part of the Initial Order to the extent that such Part is not, and does not form part of, a Major Component, the period commencing on the date the Purchaser has Accepted such Unit and ending on the date which is the [redacted] anniversary of that date.;
- (c) to the extent not addressed by paragraphs (a) and (b) above, in relation to any other item of Purchased Equipment (including any Additional ELR Unit, Additional NLR Unit, Additional NLR Vehicle or a Part of the same to the extent that such Part is not and does not form Part of a Major Component), the period commencing on the date of Acceptance by the Purchaser of that item of Purchased Equipment and ending on the [redacted] anniversary of that date.

**"Design and Endemic Defect"** means a Defect in the same component performing the same function which, during any consecutive [redacted] month period, is identified in:

- (a) at least [redacted] percent of such components in all ELR Units;
- (b) [redacted] percent of such components in all NLR Units; and/or
- (c) [redacted] percent of such components in all Units.

**16.2 Rectification of Defects**

16.2.1 The Manufacturer shall, at its own cost, rectify each Defect which arises, occurs or becomes apparent in relation to any item of Purchased Equipment (including an ELR Unit or a NLR Unit), Part and/or Major Component during the Defect Rectification Period for that item, Part and/or Major Component (as the case may be), and where necessary shall execute or procure the execution by another of all works of repair, modification, amendment and/or rectification.

16.2.2 Where the Purchaser identifies a Defect in an item of Purchased Equipment (including an ELR Unit or a NLR Unit), Part, and/or a Major Component, the Purchaser shall notify the Manufacturer of such Defect within a reasonable time of its discovery. The Manufacturer shall, after consultation with the Purchaser, determine how the Defect is to be remedied, whether by the repair or replacement of such item or otherwise.

16.2.3 The Manufacturer shall commence the rectification of any Defect without delay and complete the rectification within a reasonable period having regard to the circumstances provided that if any Defect is not such as to adversely affect the safety and/or reliability of an ELR Unit and/or a NLR Unit (as applicable) or the Manufacturer has carried out temporary work so that the Defect does not adversely affect the safety and/or reliability of that ELR Unit and/or NLR Unit (as applicable), rectification of the Defect may be deferred until such time as may

be determined by the Manufacturer but in any case shall not be deferred for a period of more than 20 Working Days.

### 16.3 Application to Repaired Equipment

Where an ELR Unit, NLR Unit, Major Component and any other item of Purchased Equipment and/or any Part of the same is repaired or replaced due to a Defect (the "Repaired Part") the Defect Rectification Period for the Repaired Part shall (in the case of repair) be the remainder of the applicable Defect Rectification Period of the Unit, Major Component, Part and/or any other item of Purchased Equipment that was repaired or (in the case of replacement) commence on the date it is replaced (in respect of a Unit) or other item of Purchased Equipment or fitted (in respect of a Major Component or Part) and continue for the remainder of the Defect Rectification Period applicable to the Part, Major Component, Unit, or other item of Purchased Equipment it replaced.

### 16.4 Extensions to Defect Rectification Period

16.4.1 Where a Defect has been identified in an ELR Unit and/or a NLR Unit which the Manufacturer is obliged to remedy in accordance with this Clause 16 and that ELR Unit and/or NLR Unit is not for any continuous period in excess of 5 calendar days as a result of such Defect able to be used by the Operator in the provision of passenger services the Defect Rectification Period for that ELR Unit and/or NLR Unit shall be extended by the full period for which that ELR Unit and/or NLR Unit is not able to be used as a result of such Defect.

16.4.2 If, on the date which the Defects Rectification Period would end for a Repaired Part, a Major Component, an ELR Unit, a NLR Unit, an Additional ELR Unit, an Additional NLR Unit, an Additional NLR Vehicle or other item of Purchased Equipment, any Defect:

- (A) has been identified by the Manufacturer prior to that date; or
- (B) has been notified by the Purchaser to the Manufacturer

and in either case, remains unremedied, the Defects Rectification Period for that Repaired Part, Major Component, ELR Unit, NLR Unit, Additional NLR Unit, Additional NLR Vehicle or item of Purchased Equipment shall be extended until the Defect has been remedied.

### 16.5 Rectification by the Purchaser

16.5.1 The Manufacturer may request the Purchaser (which may reject such request at its absolute discretion) to perform or procure the performance of any rectification work which the Manufacturer is required to undertake pursuant to this Clause 16 provided that:

- (A) such rectification work is carried out by suitably qualified employees or contractors approved by the Manufacturer; and
- (B) the Purchaser is paid on the basis of a labour rate of [REDACTED] per hour exclusive of VAT and Indexed by RPI.

16.5.2 Where the Manufacturer is obliged to remedy a Defect in accordance with this Clause 16 but has not, for any reason, commenced any rectification work in

relation to that Defect within 20 Working Days of being notified of such Defect by the Purchaser or the Operator, the Purchaser may rectify that Defect using its own or third party personnel or resources.

- 16.5.3 All costs and expenses properly and reasonably incurred (including labour at the Purchaser's hourly rate of [REDACTED] (Indexed by RPI)) by the Purchaser in undertaking any work pursuant to Clause 16.5.2, together with VAT chargeable thereon shall be recoverable by the Purchaser within 10 Working Days of demand from the Purchaser as a debt due and owing from the Manufacturer.
- 16.5.4 If the Purchaser or a third party authorised by the Purchaser remedies a Defect pursuant to Clause 16.5.1, Clause 16.5.2 or any other provision of this Agreement the provisions of this Clause 16 shall not apply to the extent that any subsequent Defect is a direct result of such remedy or to the extent that the original Defect is exacerbated by such remedy.

## 16.6 Design and Endemic Defects

Where a Design and Endemic Defect arises, occurs or becomes apparent:

- 16.6.1 solely in respect of the ELR Units, during the period commencing on the date that the Purchaser issues a Provisional Acceptance Certificate in respect of the first ELR Unit forming part of the Initial Order and ending on the date which is the [REDACTED] anniversary of the date that the Purchaser issues a Provisional Acceptance Certificate in respect of the last ELR Unit forming part of the Initial Order;
- 16.6.2 solely in respect of the NLR Units during the period commencing on the date that the Purchaser issues a Qualified Provisional Acceptance Certificate in respect of the first NLR Unit forming part of the Initial Order and ending on the [REDACTED] anniversary of the date that the Purchaser issues a Provisional Acceptance Certificate in respect of the last NLR Unit forming part of the Initial Order; and
- 16.6.3 in respect of the ELR Units and the NLR Units during the period commencing on the date that the Purchaser Accepts the first Unit forming part of the Initial Order and ending on the date which is the [REDACTED] anniversary of the date that the last Unit forming part of the Initial Order is Accepted by the Purchaser,

the Manufacturer shall:

- 16.6.4 if required by the Purchaser, conduct a detailed investigation to ascertain the cause of the Design and Endemic Defect;
- 16.6.5 develop and agree with the Purchaser a plan to rectify the Design and Endemic Defect and comply with such plan; and
- 16.6.6 rectify, at its own costs and in accordance with the plan agreed pursuant to Clause 16.6.5, the Design and Endemic Defect and undertake all necessary works of repair, modification and/or rectification to all Units (whether or not such Design and Endemic Defect has become apparent in those Units).

## 16.7 Application to Repaired Units

Where the Manufacturer rectifies a Design and Endemic Defect pursuant to Clause 16.6 by repairing, modifying or replacing any Part and/or Major Component the Manufacturer shall be liable for any Design and Endemic Defect arising, occurring or becoming apparent in the repaired, modified or replaced Part and/or Major Component during the period described in Clause 16.6.1, 16.6.2 or 16.6.3 as the case may be.

## 16.8 Liquidated Damages for Defect Rectification

16.8.1 Without prejudice to the Manufacturer's other obligations under this Agreement, if an ELR Unit or a NLR Unit is taken out of revenue earning service to rectify a Defect (including a Design and Endemic Defect), that the Manufacturer is obliged to remedy in accordance with this Clause 16, the Manufacturer shall pay the Purchaser liquidated damages at the rate of ██████ for each day from the day upon which the ELR Unit or NLR Unit (as the case may be) is removed from revenue earning service and as a result there are insufficient Units Available (as defined in the TSA) to the Operator until the date upon which that ELR Unit or NLR Unit is returned to the Purchaser or the Operator in a condition which enables the Purchaser or the Operator to operate the ELR Unit or NLR Unit (as the case may be) in revenue earning service which liability for liquidated damages shall be in full and final settlement of any losses suffered by the Purchaser or the Operator as a result of the Purchaser or the Operator being unable to operate the ELR Unit or NLR Unit (as the case may be) in revenue earning service including any delays to the service after revenue-earning service, but without prejudice to the Manufacturer's obligation to rectify the Defect. The Manufacturer acknowledges and agrees that the liquidated damages specified in this Clause 16.8 represent a genuine pre-estimate of the Purchaser's loss arising from the default to which they relate.

16.8.2 Clause 16.8.1 shall apply from the earlier of any termination or cessation of the Train Services Agreement (other than as a result of the default of the Purchaser (as defined in the TSA)) until the date the Train Services Agreement would have expired but for such early termination or cessation.

16.8.3 Subject to Clause 16.8.4 the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to Clause 16.8.1 shall not exceed ██████ per cent of the aggregate of the Contract Price (exclusive of VAT) of each of the Units forming part of the Initial Order.

16.8.4 Where the Purchaser has served an Option Notice in respect of an Additional Unit Option the maximum liability of the Manufacturer to make payment of liquidated damages incurred pursuant to Clause 16.8.1 shall increase by an amount equivalent to ██████ per cent of the Total Option Price of the Additional Unit Option (exclusive of VAT).

## 16.9 Reduction in Passenger Services

The Manufacturer acknowledges and agrees that when it wishes to take an ELR Unit or a NLR Unit out of revenue earning service to rectify a Defect under this Clause 16, then unless the Manufacturer is able to demonstrate to the Purchaser that any work required to rectify such Defect can be carried out without the Operator having to cancel or reschedule

any revenue earning passenger services no work shall be undertaken on the ELR Unit or NLR Unit to remedy the Defect unless:

16.9.1 at least 2 weeks' notice has been given to the Purchaser in writing of the date on which such work is to begin; and

16.9.2 the Purchaser has agreed the timetable for the work to remedy the Defect including the maximum downtime each ELR Unit or NLR Unit will be away and unavailable for revenue earning service.

**16.10 Interaction with Train Services Agreement**

The provisions of this Clause 16 shall not apply to the extent the Maintainer is obliged to rectify and does rectify any Defect or Design and Endemic Defect under the Train Services Agreement and performs its obligations in accordance with the requirements of the Train Services Agreement in this respect.

**17. RIGHT OF THE PURCHASER TO AUTHORISE WORK BY OTHERS**

**17.1 Right of the Purchaser to Perform Work**

Without prejudice to any other right or remedy of the Purchaser under this Agreement if the Manufacturer fails to provide any item of Purchased Equipment in accordance with, or fails to carry out any of its obligations under, this Agreement, the Purchaser may give the Manufacturer notice requiring the Manufacturer to supply that item of Purchased Equipment or carry out the relevant obligation within 30 days of the date of the notice. If the Manufacturer fails to supply the item of Purchased Equipment or carry out the relevant obligation the Purchaser may procure (providing he is acting reasonably) the supply of that item of Purchased Equipment or perform such obligation using its own or third party personnel and resources.

**17.2 Recovery of Costs**

All costs and expenses properly and reasonably incurred (including labour at the Purchaser's hourly rate of █████(Indexed by RPI) by the Purchaser pursuant to Clause 17.1, together with VAT chargeable thereon, shall be recoverable by the Purchaser within 10 Working Days of a demand from the Purchaser as a debt due and owing from the Manufacturer together with Default Interest from the date of demand until payment in full by the Manufacturer.

**17.3 Relationship with Defect Rectification Obligations**

Subject to Clause 16.5.4 any remedial work undertaken by the Purchaser or a third party authorised by the Purchaser pursuant to this Clause 17 shall not affect or relieve the Manufacturer of its obligation to comply with the requirements of Clause 16 or any other provision of this Agreement, provided that the Manufacturer shall have the right to supervise any Defect rectification work subject to the Purchaser's reasonable requirements.

**18. SUSPENSION**

**18.1 Right to Suspend Work**

The Purchaser may at any time instruct the Manufacturer to suspend:

18.1.1 the design, manufacture, testing, commissioning or supply of the ELR Units, the NLR Units and/or any other item of Purchased Equipment and/or;

18.1.2 the performance of the Manufacturer Fit Out Works and/or any other obligation it has under Schedule 10.

## 18.2 **Protection of Work in Progress**

The Manufacturer shall during any such suspension take reasonable steps to protect and secure:

18.2.1 the ELR Units, the NLR Units and/or any other items of Purchased Equipment affected at the Manufacturer's premises (or other location agreed with the Purchaser);

18.2.2 any plant equipment and/or other materials required for undertaking the Manufacturer Fit Out Works at a location agreed with the Purchaser against any deterioration, loss or damage.

## 18.3 **Entitlement to Costs**

If a suspension occurs the additional reasonable and documented costs incurred by the Manufacturer (including those costs incurred in protecting, securing and insuring the items described in Clause 18.2) shall be reimbursed by the Purchaser (and shall be determined and be payable in accordance with Clause 13.5.1A) save that the Manufacturer shall not be entitled to be paid any additional costs:

18.3.1 where the suspension arises by reason of material default on the part of the Manufacturer or any of its Subcontractors;

18.3.2 arising from remedying any deterioration, defect or loss caused by the Manufacturer's faulty workmanship or materials or by the Manufacturer's failure to comply with Clause 18.2; or

18.3.3 arising from the non-availability of the parts of the Core ELL Infrastructure described in paragraphs (B) and (C) of the definition of Core ELL Infrastructure at the date when the Manufacturer commences Test Running, where any payment arising as a result of such non-availability is due or has been made under paragraph D7.7 of Appendix D to Schedule 3,

and unless otherwise agreed, if any suspension lasts for 180 or more days the Purchaser shall, if requested to do so by the Manufacturer, terminate this Agreement in accordance with Clause 30.2 (Voluntary Termination).

## 19. **HEALTH AND SAFETY**

Where the Manufacturer or any of its Subcontractors carries out any work, including testing and commissioning work on an ELR Unit and/or a NLR Unit at a Maintenance Facility of LUL or of any other member of the TfL Group or their respective contractors or any other site under the control or supervision of the Purchaser or LUL, the Manufacturer shall and shall procure that its Subcontractors shall:

- 19.1.1 comply with all applicable Standards and Applicable Laws and carry out such work in a manner which would be adopted by a reasonably diligent and skilled contractor; and
- 19.1.2 comply with any direction or instruction (whether written or oral) given by the Purchaser or LUL (as the case may be) or their respective employees, contractors or agents, including any direction to cease working.

## **20. MINIMUM FLEET HANDBACK**

### **20.1 Minimum Fleet**

The Manufacturer acknowledges and agrees that the minimum number of Units necessary to operate a viable passenger service on the East London Railway is 15 Units (the "Minimum Fleet").

### **20.2 Minimum Fleet Handback Trigger**

Where the Purchaser has not Accepted [REDACTED] by [REDACTED] (the "Minimum Fleet Handback Trigger"), the Purchaser shall be entitled at any time thereafter to terminate this Agreement in respect of the design, build, testing, commissioning and supply of the ELR Units pursuant to Clause 20.3.

### **20.3 Termination for Lack of Minimum Fleet**

Where the Purchaser elects to exercise its rights pursuant to Clause 20.2, it shall serve a notice on the Manufacturer (a "Minimum Fleet Handback Notice") specifying:

- 20.3.1 the date on which the Agreement shall terminate in respect of the ELR Units;
- 20.3.2 if different from the date specified in Clause 20.3.1, the date on which the Purchaser shall deliver to the Manufacturer the ELR Units it has Accepted on or prior to the date of termination of the Agreement (the "Minimum Fleet Handback Date");
- 20.3.3 the proposed location where the delivery of the ELR Units will occur;
- 20.3.4 a statement showing the aggregate of all payments and other amounts the Purchaser has paid to the Manufacturer in respect of the ELR Units the subject of the Minimum Fleet Handback Notice; and
- 20.3.5 the painted number of each of the ELR Units to be delivered to the Manufacturer on the Minimum Fleet Handback Date.

### **20.4 Delivery of Purchased Equipment**

On the Minimum Fleet Handback Date, the Purchaser shall deliver to the Manufacturer each of the ELR Units identified in the Minimum Fleet Handback Notice at the location specified in that Minimum Fleet Handback Notice. Legal and beneficial title to each ELR Unit delivered by the Purchaser in accordance with this Clause 20.4 shall pass to the Manufacturer immediately by delivery free from any Security and with full title guarantee.

**20.5 Refund of Contract Price**

Immediately upon delivery of the ELR Units described in the Minimum Fleet Handback Notice the Manufacturer shall pay to the Purchaser the aggregate of all amounts paid by the Purchaser to the Manufacturer in respect of the ELR Units which have been delivered to the Manufacturer pursuant to Clause 20.4 and all other reasonable costs suffered or incurred by the Purchaser in respect of the handback of the ELR Units together with Default Interest from the Commencement Date to the Minimum Fleet Handback Date.

**21. TOTAL AND PARTIAL LOSS OF UNIT**

**21.1 Consequence of an Event of Loss**

21.1.1 Without prejudice to Clause 36, in the event that any ELR Unit or any NLR Unit suffers an Event of Loss at any time prior to Acceptance, the Purchaser shall be entitled:

- (A) where the Event of Loss was caused directly by a Force Majeure Event to proceed in accordance with Clause 32.4; and
- (B) where Clause 21.1.1(A) does not apply:
  - (1) to agree with the Manufacturer:
    - (a) a revised Contractual Acceptance Date in respect of a replacement ELR Unit (where an ELR Unit was the subject of an Event of Loss); or
    - (b) a revised Contractual Acceptance Date in respect of a replacement NLR Unit (where a NLR Unit was the subject of an Event of Loss); or
  - (2) to cancel this Agreement with respect to the ELR Unit or the NLR Unit which is the subject of the Event of Loss.

21.1.2 The Purchaser and the Manufacturer agree that the occurrence of an Event of Loss will not entitle the Manufacturer to:

- (A) any increase in:
  - (1) the Contract Price for the ELR Unit or NLR Unit the subject of the Event of Loss;
  - (2) the Total Contract Price or the Contract Price for any other item of Purchased Equipment; or
  - (3) the Total Option Price of any Option;
- (B) any acceleration of the payments due to be made under this Agreement; or
- (C) any other compensation in any form or manner.

21.1.3 If the Purchaser elects to cancel this Agreement in respect of an ELR Unit or a NLR Unit which is the subject of an Event of Loss:

- (A) the Purchaser shall have no further liability to pay the Manufacturer any sum which would have been due and payable to the Manufacturer had this Agreement not been so cancelled in respect of that ELR Unit or NLR Unit; and
- (B) the Manufacturer shall, on the date of any cancellation of this Agreement under Clause 21.1.3(A), pay to the Purchaser an amount (determined by the Purchaser) equal to all sums previously paid by the Purchaser to the Manufacturer under this Agreement in respect of the ELR Unit or the NLR Unit the subject of an Event of Loss, together with Default Interest thereon for the period since the Purchaser's payment of such sums to the Manufacturer.

21.1.4 Upon payment in full by the Manufacturer of all sums due to the Purchaser pursuant to Clause 21.1.3 and subject to Clause 36, the obligations of each of the Manufacturer and the Purchaser shall cease in respect of the ELR Unit or NLR Unit that has been cancelled in accordance with this Clause 21.

## 21.2 **Consequence of Partial Loss**

In the event that an ELR Unit or a NLR Unit suffers any damage which does not constitute an Event of Loss at any time prior to its Acceptance, the Manufacturer shall be obliged to repair such damage as soon as reasonably practicable (but in any event no later than the Contractual Acceptance Date (as extended by any Permitted Delay Event in respect of which an extension of time has been granted pursuant to Clause 13) for such ELR Unit or NLR Unit).

## 22. **MANUALS**

The Purchaser and the Manufacturer shall comply with the requirements set out in Schedule 7.

## 23. **MANUFACTURING TOOLING AND FREE ISSUE MATERIALS**

### 23.1 **Disposal of Manufacturing Tooling**

The Manufacturer shall not dispose and shall use reasonable endeavours to procure that no Key Subcontractor shall dispose of any Manufacturing Tooling (other than where obsolete, defunct, damaged beyond repair, worn out or faulty and replaced by a comparable item of Manufacturing Tooling) without the Manufacturer serving notice to the Purchaser a reasonable period in advance of the proposed disposal (a "**Disposal Notice**"). Upon receipt of a Disposal Notice the Purchaser may either:

- 23.1.1 require the Manufacturer to manufacture or procure the manufacture of a quantity of Spare(s) of a type or types comprising the Initial Spares and/or Initial Special Tool(s) specified by the Purchaser using such Manufacturing Tooling and offer to sell such spares and/or Special Tools to the Purchaser; or
- 23.1.2 request the Manufacturer to sell the relevant Manufacturing Tooling to the Purchaser or its nominee.

## **23.2 Final Run of Spares and/or Special Tools**

- 23.2.1 If the Purchaser notifies the Manufacturer within 90 days of receipt of a Disposal Notice that the Purchaser wishes to purchase a specified quantity of Spares and/or Special Tools of the same type as pursuant to Clause 23.1.1, the Manufacturer shall not be entitled to dispose of the relevant Manufacturing Tooling until the relevant quantity of Initial Spares and/or Initial Special Tools has been produced.
- 23.2.2 The Manufacturer shall supply the specified quantity of Spare(s) and/or Special Tool(s) in accordance with the instructions of the Purchaser.
- 23.2.3 The Purchaser shall pay the Manufacturer an amount equivalent to the sum of:
- (A) the price for each Spare (by reference to the relevant price set out in Part A of Schedule 8) ordered by the Purchaser multiplied by the quantity of that Initial Spare specified by the Purchaser; and
  - (B) the price for each Special Tool (by reference to the relevant price as set out in Part B of Schedule 8) ordered by the Purchaser multiplied by the quantity of that Initial Special Tool specified by the Purchaser,
- immediately following the Delivery of such Spares and/or Special Tools.
- 23.2.4 Legal and beneficial title to the Spares and/or the Special Tools supplied by the Manufacturer pursuant to this Clause 23 shall pass to the Purchaser by Delivery, free from any Security and with full title guarantee.

## **23.3 Sale and Purchase of Manufacturing Tooling**

- 23.3.1 If the Purchaser notifies the Manufacturer within 90 days of receipt of a Disposal Notice that the Purchaser or its nominee wishes to acquire the Manufacturing Tooling the Manufacturer shall provide such Manufacturing Tooling to the Purchaser in consideration of the Purchaser paying the Manufacturer the amount of [REDACTED] or such higher amount representing its fair market value that the Manufacturer is able to demonstrate has been offered by a prospective arms-length purchaser who has the capacity to pay such higher price.
- 23.3.2 Upon notification by the Purchaser in accordance with Clause 23.3.1, the Manufacturer shall immediately deliver the Manufacturing Tooling to any location specified by the Purchaser or its nominee. Legal and beneficial title to the Manufacturing Tooling shall pass to the Purchaser by Delivery, free from any Security and with full title guarantee.

## **23.4 Free Issue Material**

If the Purchaser requires the installation in any ELR Unit and/or any NLR Unit of any Free Issue Materials, the Purchaser shall be entitled to invoke the Variation Procedure in order to secure installation.

## **24. TRAINING SERVICES**

The Purchaser and the Manufacturer shall comply with the provisions relating to Training Services set out in Schedule 6.

**25. PRICING, PAYMENT AND SECURITY**

The Purchaser and the Manufacturer shall comply with the provisions of Schedule 11.

**26. VAT**

**26.1 Payment of VAT**

Where any taxable supply for VAT purposes is made under or in connection with this Agreement by one Party to another the payer shall, in addition to any payment required for that supply, pay such VAT as is chargeable in respect of it.

**26.2 Reimbursement of VAT**

Where under this Agreement one Party is to reimburse or indemnify another Party in respect of any payment made or cost incurred by the other Party, the first Party shall also reimburse any VAT paid by the other Party in question which forms part of its payment made or cost incurred to the extent such VAT is not available for credit for the other Party in question (or for any person with whom the indemnified party is treated as a member of a group for VAT purposes) under sections 25 and 26 of the Value Added Tax Act 1994.

**26.3 VAT Credit Note to be Issued on Repayment**

Where under this Agreement any rebate or repayment of any amount is payable by one Party to another Party, and the first Party is entitled as a matter of law or of HM Revenue and Customs practice to issue a valid VAT credit note, such rebate or repayment shall be paid together with an amount representing the VAT paid on that part of the consideration in respect of which the rebate or repayment is made, and the first Party shall issue an appropriate VAT credit note to the other Party in question.

**27. GUARANTEE**

The performance of the Manufacturer's obligations under this Agreement shall be guaranteed by the Guarantor pursuant to the Guarantee.

**28. VARIATION PROCEDURE**

The Purchaser and the Manufacturer shall comply with the procedure specified in Schedule 13 (the "**Variation Procedure**").

**29. INTELLECTUAL PROPERTY RIGHTS**

"**Manufacturer IPR**" means any existing or new Intellectual Property Rights owned by the Manufacturer which:

- (A) are used for; or
- (B) arise in connection with;

the performance by the Manufacturer of its obligations under this Agreement, including design, manufacture, testing, commissioning, and sale of the Units and/or any other item of Purchased Equipment but excludes:

any confidential information or know-how owned by the Manufacturer which relates predominantly to the operation of the business of the Manufacturer which is used, or arises, incidentally to the performance by the Manufacturer of its obligations under this Agreement ("Manufacturer Know-how").

**29.1 Ownership of Intellectual Property Rights**

Save to the extent otherwise provided for in this Agreement, each Party acknowledges and agrees that the Manufacturer IPR and Manufacturer Know-how shall remain the property of the Manufacturer.

**29.1A Subcontractors**

The Manufacturer agrees to use reasonable endeavours to ensure that all Subcontracts entered into by the Manufacturer shall permit the Manufacturer to assign or novate its rights and obligations under such agreement relating to any Intellectual Property Rights to the Purchaser without the consent of the relevant Subcontractor and such Subcontracts shall specify the Purchaser as a permitted assignee.

**29.2 Licences**

The Manufacturer hereby:

29.2.1

29.2.2

and in respect of each of the licences in Clauses 29.2.1 and 29.2.2, solely and to the extent reasonably necessary for the purposes of:

29.2.3

29.2.4

29.2.5

29.2.6

29.2.7 training personnel to carry out any of the activities described in Clause 29.2.3, 29.2.4 and 29.2.6;

29.2.8 inviting tenders for any of the activities described in Clause 29.2.3 to 29.2.7 inclusive; and

29.2.9

29.2.10

29.2.11 the Purchaser and/or LUL performing its obligations under this Agreement, together with the right to sub license or sub sub license (as the case may be) for the purposes of Clauses 29.2.3 to 29.2.9 above.

### 29.3 Documentation

The Manufacturer shall execute such further documents, and do such other things, as the Purchaser may reasonably request, in order to obtain for the Purchaser the full benefit of this Clause 29 at no cost to the Purchaser.

### 29.4 Warranties

The Manufacturer represents and warrants to the Purchaser that:

29.4.1 the Manufacturer is the sole legal and beneficial owner and, where applicable, the sole registered proprietor of all Manufacturer IPR and Manufacturer owned Software existing at the date of this Agreement and such rights are not subject to any encumbrances.

29.4.2 the Manufacturer has the right and power to grant the licence set out in Clause 29.2.1;

The Manufacturer agrees that upon the date of Acceptance of any item of Purchased Equipment it shall represent and warrant to the Purchaser in respect of such item of Purchased Equipment that :

29.4.3 the Manufacturer is the sole legal and beneficial owner and, where applicable, the sole registered proprietor of the relevant Manufacturer IPR and Manufacturer owned Software and such rights are not subject to any encumbrances;

29.4.4 the Manufacturer IPR, the Software and the Third Party IPR constitute all the Intellectual Property Rights required by the Purchaser for the purposes set out in Clause 29.2.3 to 29.2.9;

- 29.4.5 to the best of the Manufacturer's knowledge, information and belief (having made all reasonable and prudent enquiries) the Manufacturer is entitled, without the need for the consent or waiver or any third party, to grant the sub-licence of Third Party IPR (and the right to sub sub licence the same) granted pursuant to Clause 29.2.2; and
- 29.4.6 to the best of the Manufacturer's knowledge, information and belief (having made all reasonable and prudent enquiries), the design, manufacture, testing, commissioning and supply of the Units by the Manufacturer and the use and exploitation by the Purchaser of any of the Purchased Equipment and/or any other item to be supplied pursuant to this Agreement, the Manufacturer IPR, the Third Party IPR and/or the Software under and in accordance with this Agreement (including pursuant to this Clause 29) will not result in the infringement of any rights in or to intellectual property belonging to any third party.

## 29.5 Notification and Handling of Claims

If either Party becomes aware of a matter which might give rise to a claim by the Purchaser under Clause 33.3.5 ("IPR Claim"):

- 29.5.1 such Party shall notify the other Party promptly of the scope and nature of the proposed claim and the grounds on which it is based;
- 29.5.2 if the IPR Claim is against the Purchaser, the Purchaser shall, at the Manufacturer's cost:
- (A) take such action as the Manufacturer may reasonably request to:
    - (1) dispute, resist, appeal, compromise, defend, remedy or mitigate the IPR Claim; or
    - (2) enforce the Purchaser's rights in relation to the IPR Claim; and
  - (B) in connection with proceedings related to the IPR Claim, if the Manufacturer so requests, allow the Manufacturer exclusive conduct of those proceedings,

in each case subject to the Manufacturer indemnifying the Purchaser against any damage, loss, liability, claim, action, cost, expense, proceedings, demand, Tax or charge whether arising under statute, contract or at common law and whether direct or consequential incurred by the Purchaser as a result of a request or choice made by the Manufacturer;

- 29.5.3 the Purchaser may not admit liability in respect of or settle any IPR Claim without first obtaining the Manufacturer's prior written consent, such consent not to be unreasonably withheld; and
- 29.5.4 where the Manufacturer exercises its right pursuant to Clause 29.5.2(B) to exclusive conduct of any proceedings the Manufacturer shall keep the Purchaser informed of the progress of the IPR Claim, and the Purchaser shall be entitled to be consulted by the Manufacturer and given a reasonable opportunity to express their opinions prior to the Manufacturer taking any decision material to the conduct of the IPR Claim including any admission of liability by the Manufacturer or the settlement or compromise by the Manufacturer of the IPR Claim.

## 29.6 Remedy for Infringement

If the use of the Manufacturer IPR, the Software, the Third Party IPR, any Unit, any Part or Major Component forming part of a Unit and/or any other item of Purchased Equipment or part thereof is, or in the reasonable opinion of the Purchaser is likely to become, an infringement of the Intellectual Property Rights of another person, the Manufacturer shall, at its expense, either:

- 29.6.1 procure for the Purchaser the right to continue to use that Unit, Part, Major Component, item of Purchased Equipment, the Manufacturer IPR, the Software, and/or the Third Party IPR; or
- 29.6.2 modify the Unit, Part, Major Component and/or item of Purchased Equipment so that it no longer infringes those rights, or replace the item of Purchased Equipment with a non infringing Unit, Part, Major Component and/or item of Purchased Equipment (or part thereof) provided however that the modified or replacement Unit, Part, Major Component and/or item of Purchased Equipment (as the case may be) shall at all times comply with all the requirements of this Agreement.

## 29.7 Software

- 29.7.1 The Manufacturer shall ensure in respect of all Software that is used for the design, manufacture, testing, commissioning, supply, operation, maintenance, modification, refurbishment or sale of a Unit and/or any Part or Major Component forming part of an ELR Unit and/or a NLR Unit and/or any other item of Purchased Equipment:
  - (A) that there is orderly documented progress from the functional requirements to the final code and provision for regular verification and testing at each stage of the design process;
  - (B) that the documentation for Software is such as to enable an appropriately qualified person (who was not involved in the original design) to relate the Software to the performance of the relevant equipment under normal and fault conditions, and to verify its compliance with the functional requirements of that equipment; and
  - (C) that where no particular Standard is specified by the Requirements or the Technical Description, it is designed and documented following a nationally or internationally recognised standard using recognised quality control methods.
- 29.7.2 The Manufacturer shall in respect of Manufacturer owned Software only, at all times during the period from the Commencement Date until the end of the [REDACTED] year economic life of each ELR Unit and each NLR Unit:
  - (A) retain updated "as made" copies, in machine readable form, of the final structure of the Software, and of the intermediate stages leading to it (including Source Code and object codes);
  - (B) retain updated usable copies of any ancillary computer programmes used to generate such codes (such as, without limitation, compilers);

- (C) subject to the provisions of any Escrow Agreement entered into under Clause 29.9.1 keep copies of the materials referred to in this Clause 29.7.2 in a secure manner and place such that they will not deteriorate;
- (D) retain the Software designed by the Manufacturer;
- (E) allow the Purchaser reasonable access to the Software (excluding Source Code) and its documentation.

## **29.8 Cessation of Software Support**

If the Manufacturer or any Subcontractor supplying any of the Software stops trading or makes known its intention to withdraw support for that Software, the Manufacturer shall, without additional charge (save for where the Subcontractor stops trading or makes such intention to withdraw support known in which case the Purchaser shall pay the reasonable and properly incurred costs of the Manufacturer in complying with this Clause 29.8), use reasonable endeavours to procure the transfer to the Purchaser of all rights in and to the Software in question for the relevant type of Purchased Equipment.

## **29.9 Source Code**

29.9.1 Within 20 Working Days of the Commencement Date the Manufacturer shall execute the Escrow Agreement. The Manufacturer shall place Manufacturer owned Source Code and use reasonable endeavours to place Source Code owned by a Third Party in escrow with the Escrow Agent on the terms set out in the Escrow Agreement. The Manufacturer shall place such Source Code in escrow as soon as reasonably possible after its completion and in any event within 20 Working days of the commencement of the Type Acceptance Test Programme. The Manufacturer and the Purchaser shall pay all fees of the Escrow Agent in connection with the placement, storage and release of the Source Code in equal shares.

29.9.2 The Manufacturer hereby grants to the Purchaser a perpetual, non-exclusive, irrevocable, royalty-free licence to use, reproduce, modify, adapt and enhance the Source Code and to authorise a third party to do so. The Purchaser shall be entitled to grant sub-licences and to assign this licence provided that the licence granted under this Clause 29.9.2 shall only become effective if the Purchaser becomes entitled to obtain access to Source Code pursuant to the terms of the Escrow Agreement.

## **29.10 Survival**

Each licence granted under this Clause 29 and/or any liability arising in connection with the same shall survive the termination of this Agreement.

## **30. TERMINATION**

### **30.1 Manufacturer Events of Default**

The occurrence of one or more of the following shall constitute a Manufacturer Event of Default:

30.1.1 the Manufacturer commits a material breach of its obligations under this Agreement;

- 30.1.2 the Manufacturer commits a Persistent Breach;
- 30.1.3 the maximum amount of liquidated damages payable by the Manufacturer pursuant to Clause 11 shall have accrued;
- 30.1.4 an Insolvency Event occurs in relation to the Manufacturer or the Guarantor;
- 30.1.5 the Manufacturer fails to make payment of any sum (including any liquidated damages) not in dispute when due and payable to the Purchaser in accordance with this Agreement within 30 days of a written demand for payment;
- 30.1.6 the Guarantor or a Bond Provider fails to comply with any payment or performance obligations expressed to be assumed by it in the Guarantee or any Required Bonding Guarantee.
- 30.1.5A the Guarantee or any Required Bonding Guarantee ceases to be valid and enforceable by the Purchaser and in the case of the Guarantee ceasing to be valid and enforceable the Manufacturer fails within 7 days to procure a replacement Guarantee on terms reasonably satisfactory to the Purchaser;
- 30.1.7 the Manufacturer commits a Diversity Infraction that is not remedied in accordance with paragraph 1.12 of Schedule 14;
- 30.1.8 the Manufacturer fails to take out and/or maintain the insurances as specified in Schedule 15 (each a "**Required Insurance**");
- 30.1.9 the Manufacturer commits a breach of Clause 9.1;
- 30.1.10 the Manufacturer fails to extend or replace any Required Bonding Guarantee or provide alternative security in each case as required by the relevant provisions of Part A of Schedule 11;
- 30.1.11 Acceptance of all Units comprising the Initial Order shall not have occurred by the date which is 15 months after the latest Contractual Acceptance Date of the Units in respect of the Initial Order; or
- 30.1.12 the Manufacturer breaches its undertaking in Clause 2.3A.

### 30.1A **Persistent breach**

- 30.1A.1 If the Manufacturer breaches any of its obligations (where those obligations are of the same type or nature) under this Agreement, more than twice in any nine (9) month period, then the Purchaser may serve a notice on the Manufacturer:
  - (a) specifying that it is a formal warning notice;
  - (b) giving reasonable details of such breach; and
  - (c) stating that such breach is a persistent breach which, if it continues unremedied or a breach of the same type or nature occurs within six (6) months of the date of service of the notice, it may result in a termination of this Agreement in accordance with this Clause 30.1A.
- 30.1A.2 If, following service of such a warning notice pursuant to Clause 30.1A.1 the breach specified has continued unremedied or a breach of the same type or nature

has occurred within the six (6) months following the date of service of such notice, then the Purchaser may, no later than the date falling seven (7) months following the date of service of the warning notice pursuant to Clause 30.1A.1 serve another notice on the Manufacturer:

- (a) specifying that it is a final warning notice; and
- (b) stating that if such failure continues unremedied or a breach of the same type or nature occurs within the six (6) month period after the date of service of the final warning notice, this Agreement may be terminated.

30.1A.3 The continuance of any failure to remedy specified in the final warning notice or any further breach of the same type or nature within six (6) months after service of the final warning notice in accordance with Clause 30.1A.2 shall constitute a "**Persistent Breach**" for the purposes of Clause 30.1.2.

## 30.2 Voluntary Termination

The Purchaser may terminate this Agreement without cause at any time ("**Voluntary Termination**") by giving notice to the Manufacturer of such termination and the date when such termination shall become effective.

## 30.3 Purchaser Event of Default

30.3.1 A Purchaser Event of Default shall occur when:

- (A) the Purchaser fails to make payment of any sum which is due and payable to the Manufacturer in accordance with this Agreement and not in dispute and such amount is not paid within thirty (30) days following a subsequent written demand for payment;
- (B) an Insolvency Event occurs in relation to the Purchaser;
- (C) the cap on the Purchaser's maximum liability under this Agreement (as specified in Clause 33.8) has been reached and the Purchaser has not elected to increase the maximum liability cap specified in clause 33.8;
- (D) the Purchaser exercises any rights accruing to the Purchaser pursuant to Clause 29 relating to the Manufacturer IPR, the Third Party IPR, Software and/or Source Code in breach of the provisions of Clause 29; or
- (E) the Purchaser discloses any Confidential Information in breach of the provisions of Clause 34.

## 30.4 Procedures in relation to Termination for a Manufacturer Event of Default

30.4.1 The Manufacturer shall notify the Purchaser promptly on the Manufacturer becoming aware of the occurrence of a Manufacturer Event of Default.

30.4.2 Following the occurrence of a Manufacturer Event of Default which is continuing, the Purchaser may by notice in writing to the Manufacturer signed on behalf of the Purchaser ("**Purchaser Termination Notice**") specifying the Manufacturer Event of Default in question terminate this Agreement either in respect of the whole of the Purchased Equipment which has not been Accepted or

(as specified in the notice) in relation to specific items of Purchased Equipment which have not been Accepted and so that such termination shall take effect from the date specified in the Purchaser Termination Notice (being not less than 7 days after the date of the Purchaser Termination Notice or, in the case of Insolvency, forthwith) provided that in respect of a Manufacturer Event of Default under Clause 30.1.1 which is capable of remedy and is not a Persistent Breach, the Purchaser shall by notice in writing to the Manufacturer signed on behalf of the Purchaser (a "**Remedy Notice**") to the Manufacturer require the Manufacturer either:

- (A) to remedy such breach(es) referred to in the Remedy Notice within 30 Working Days of that notice; or
- (B) within 10 Working Days of the Remedy Notice, to put forward a plan (a "**Remedial Plan**") to remedy the breaches referred to in the Remedy Notice which shall be in writing and shall specify the proposed remedy in reasonable detail and the latest date by which it is proposed that that remedy will be completed, in which case Clause 30.5 shall apply.

### 30.5 Remedial Plan

30.5.1 Where the Manufacturer puts forward a Remedial Plan in accordance with Clause 30.4.2, the Purchaser shall have 20 Working Days after receipt of it in which to notify the Manufacturer in writing that they do not accept it, failing which the Purchaser shall be deemed to have accepted that Remedial Plan.

30.5.2 If the Purchaser notifies the Manufacturer that it does not accept that Remedial Plan, the Purchaser and the Manufacturer (each acting reasonably) shall endeavour in the following 5 Working Days to agree any necessary amendments to that plan in order for it to be acceptable to the Purchaser. In the absence of agreement in that period of 5 Working Days, the Purchaser may treat the Manufacturer Events Default as not being capable of remedy and terminate this Agreement in accordance with Clause 30.4.2. Where the Purchaser and the Manufacturer agree the form of the Remedial Plan the Manufacturer shall implement such plan and comply with its terms.

30.5.3 If any breach specified in a Remedy Notice served under Clause 30.4.2 is not remedied:

- (A) before the expiry of the period referred to in Clause 30.4.2(A) (if applicable); or
- (B) where the Manufacturer puts forward a Remedial Plan (which has been accepted or been deemed to be accepted by the Purchaser pursuant to this Clause 30.5), in accordance with that Remedial Plan, or the Manufacturer otherwise fails to comply with the terms of the Remedial Plan;

then the Purchaser may exercise its rights under Clause 30.4.2 as if the Manufacturer Event of Default is not capable of remedy.

### 30.6 Consequences of Termination

Where the Purchaser has served a Purchaser Termination Notice in accordance with Clause 30.4.2 (and, where relevant, the Manufacturer Event of Default has not or is not being remedied pursuant to Clause 30.4.2(A) or is not the subject of an extent Remedial Plan) or a notice of termination under Clause 37.6 the Purchaser shall be entitled (in its absolute discretion) to:

- 30.6.1 procure the completion of all partially complete Units and other items of Purchased Equipment such that they have satisfied the conditions necessary for the passing of title to the Purchaser and, upon completion, pay to the Manufacturer that part of the Contract Price for each such Unit or other item of Purchased Equipment not yet paid as at the date of termination less the cost of completion including procurement of the same. Subject to Clause 33.5 where this gives rise to a negative figure, the corresponding positive amount will be paid by the Manufacturer to the Purchaser together with Default Interest (calculated from the date of termination of this Agreement to the date of payment by the Manufacturer); or
- 30.6.2 be reimbursed for all payments made to the Manufacturer in relation to the supply of Units and other items of Purchased Equipment (other than in respect of Units or other items of Purchased Equipment where title has transferred to the Purchaser pursuant to Clause 14) but without prejudice to the Purchaser's obligation to pay that part of the Contract Price not yet paid (if any) in respect of Units and other items of Purchased Equipment, title to each of which has passed to the Purchaser. The amount to be reimbursed shall attract Default Interest (calculated from the date of termination of this Agreement to the date of payment by the Manufacturer).

### 30.7 Additional Remedies

Without prejudice to Clause 42, where this Agreement has been terminated pursuant to Clause 30.4 or Clause 37.6 the Purchaser shall be entitled to require the Manufacturer:

- 30.7.1 to assign the benefit of any assignable warranties which have been given by a third party or Subcontractor to the Manufacturer in respect of the Purchased Equipment; or
- 30.7.2 to provide all drawings of all Parts and/or Major Components, all design, technical and maintenance records relating to the Purchased Equipment including all Manuals relating to the Purchased Equipment such as to enable the carrying out of heavy and light maintenance and to maintain safety standards for operating the Purchased Equipment in Unrestricted Passenger Revenue - Earning Service to the extent the same have not been provided in accordance with this Agreement and such information shall be treated as Manufacturer IPR for the purposes of this Agreement.

### 30.8 Procedures in relation to Termination for a Purchaser Event of Default

On the occurrence of a Purchaser Event of Default, if the Manufacturer wishes to terminate this Agreement, the Manufacturer may by notice to the Purchaser (a "**Manufacturer Termination Notice**") terminate this Agreement and such termination shall take effect from the date specified in the Manufacturer Termination Notice.

**30.9 Consequences of Voluntary Termination or Termination for a Purchaser Event of Default**

30.9.1 The Manufacturer and the Purchaser agree to notify each other of the occurrence of any Purchaser Event of Default as soon as they become aware of such occurrence.

30.9.2 Where this Agreement is terminated by the Purchaser in accordance with Clause 30.2 or where the Manufacturer terminates this Agreement following the occurrence of any Purchaser Event of Default:

(A) the Purchaser shall pay to the Manufacturer:

- (1) an amount equivalent to the amount that would be payable by the Purchaser to the Manufacturer in respect of a termination as a result of a Force Majeure Event in accordance with Clause 30.10 irrespective of whether the Purchaser has elected to take title pursuant to Clause 30.9.2(B) (provided that where the amount would be a negative figure, the corresponding positive amount shall be paid by the Manufacturer to the Purchaser on the same basis as set out in Clause 30.10); and
- (2) subject to Clause 30.9.4 the costs, expenses and other liabilities reasonably and properly incurred by the Manufacturer as a direct result of the termination of this Agreement provided that the Manufacturer shall use all reasonable endeavours to mitigate such costs, expenses and/or other liabilities; and
- (3) liquidated damages in respect of the loss of return on capital employed in relation to each Unit (a "Non-Accepted Unit") which has not been Accepted by the Purchaser but which has been wholly or partially designed and/or manufactured by the Manufacturer in accordance with this Agreement of and being the amount equivalent to the aggregate of the liquidated damages calculated for each Non-Accepted Unit existing as at the date of termination of this Agreement in accordance with the following formula:

$$L = N \times (A \times B)$$

where:

L is the liquidated damages payable by the Purchaser in relation to a Non-Accepted Unit;

N is the lesser of:

- (i) A and
- (ii) the number of whole calendar months between the date of termination of this Agreement and the proposed Contractual Acceptance Date for that Non-Accepted Unit

B is the aggregate number of vehicles comprised in the Non-Accepted Unit

(B) the Purchaser may, at its own option, elect whether or not to acquire and take title to any partially completed Units or other items of Purchased Equipment.

30.9.3 Where the Purchaser elects not to acquire and take title to any partially completed Units or other items of Purchased Equipment, pursuant to Clause 30.9.2(B), the Manufacturer shall account to the Purchaser for the proceeds of any subsequent disposal of any such Units or items or subsequently completed Units or items after deducting its costs and expenses in completing the Units and in effecting disposal, provided that the amount to be paid to the Purchaser by the Manufacturer does not exceed the amount paid by the Purchaser upon termination pursuant to Clause 30.9.2(A).

30.9.4 The Purchaser shall be entitled to appoint a suitably qualified independent person ("**Independent Auditor**") to audit any or all of the costs, expenses and/or other liabilities incurred by the Manufacturer as a direct result of termination of this Agreement and determine whether the amount of such costs, expenses and/or liabilities were properly and reasonably incurred by the Manufacturer as a direct result of the termination of this Agreement.

30.9.5 Where the Purchaser exercises its rights pursuant to Clause 30.9.4 it shall give written notice to the Manufacturer identifying the Independent Auditor appointed by the Purchaser, the terms of the Independent Auditor's appointment and the proposed timeframes for undertaking the audit. The Manufacturer shall cooperate with the Independent Auditor and grant the Independent Auditor the same rights of audit as the Purchaser enjoys under this Agreement.

30.9.6 The Purchaser shall procure that the Independent Auditor provides a copy of its decision in writing (together with reasons for its decisions) to the Manufacturer at the same time as the decision is provided to the Purchaser. Where the Independent Auditor determines that some or all of a specific cost, expense and/or liability was not properly and reasonably incurred by the Manufacturer as a direct result of termination of this Agreement the Purchaser shall not be obliged to pay such amount to the Manufacturer.

30.9.7 The costs incurred by the Independent Auditor in undertaking the audit shall be borne by the Purchaser save where the Independent Auditor determines that some or all of a specific cost, expense and/or liability was not properly and reasonably incurred by the Manufacturer, in which case the costs incurred by the Independent Auditor in undertaking the audit shall be borne by the Manufacturer.

30.9.8 In the event the Manufacturer disputes any findings of the Independent Auditor such Dispute shall be referred for resolution in accordance with Clause 36.

### 30.10 **Consequences of Termination for Force Majeure**

Where this Agreement is terminated in whole or in part by the Purchaser as a result of a Force Majeure Event in accordance with Clause 32, the Purchaser will acquire each partially completed Unit or item of Purchased Equipment the subject of the FM Notice (the "**Acquired WIP**") at its fair value (which in respect of a Unit or other item of Purchased

Equipment which is not complete and ready for delivery as specified in Clause 10 shall be less than the Contract Price for that Unit or item) less the amount of progress or advance payments made in respect of such Acquired WIP. Where this gives rise to a negative figure, the corresponding positive amount shall be paid by the Manufacturer to the Purchaser on the same basis as set out in Clause 30.6.1.

#### **30.11 Consequences of Termination for Prohibited Acts**

Where this Agreement is terminated by the Purchaser as a result of the occurrence of a Prohibited Act pursuant to Clause 37.6, the provisions of Clause 30.6 and 30.7 shall apply.

### **31. SURVIVAL OF CLAUSES**

#### **31.1 Consequence of Termination or Expiry**

Upon termination or expiry of this Agreement, whether in respect of any one item of Purchased Equipment or all Purchased Equipment, the obligations of the Parties under this Agreement in respect of the terminated Purchased Equipment shall cease except for:

- 31.1.1 any rights and obligations arising as a result of any antecedent breach of this Agreement or any rights and obligations which shall have accrued or become due prior to the date of termination; and
- 31.1.2 the provisions of Clauses 1, 3, 9.2 to 9.7 inclusive, 16, 17, 20, 21, 25, 26, 27, 31, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 50 and 52 and the related Schedules referred to in or required to give effect to those Clauses which shall survive the termination or expiry of this Agreement and continue in full force and effect.

### **32. FORCE MAJEURE**

#### **32.1 Consequence of a Force Majeure Event and Notification Requirements**

No Party shall be in breach of an obligation under this Agreement to the extent that it is unable to perform that obligation in whole or in part by reason of the occurrence of a Force Majeure Event provided that:

- 32.1.1 if any Party seeks to rely on this Clause 32 (the "FM Affected Party"), as soon as reasonably practicable and in any event no more than 5 Working Days after the start of the claimed Force Majeure Event the FM Affected Party shall notify the other Parties in writing of the act, event or circumstance relied on as a Force Majeure Event; and
- 32.1.2 within a further 5 Working Days the FM Affected Party shall notify the other Parties in writing of the date on which such act, event or circumstance commenced, including an estimate of the period of time required to overcome it and its effects, details of any failure by the FM Affected Party to perform its obligations under this Agreement, the effect on the FM Affected Party's ability to perform its obligations under this Agreement and the action being taken to mitigate its consequences in accordance with Clause 32.2 below.

## **32.2 Mitigation**

32.2.1 The FM Affected Party shall make all reasonable efforts to mitigate the effects of the claimed Force Majeure Event (including, in the case of the Manufacturer, complying with the requests of the Purchaser's Rolling Stock Manager and, in relation to the Maintenance Facility, using all reasonable endeavours to find alternative facilities at which to carry out its obligations), to continue to perform its obligations under this Agreement and to resume performance as soon as possible and shall furnish written reports every 30 days to the other Parties on its progress in doing so, and any proposals to mitigate the effect of the claimed Force Majeure Event, including any reasonable alternative means for performance of the affected obligations and provide any information relating to the claimed Force Majeure Event and its effects that other Party may reasonably request.

32.2.2 The FM Affected Party shall not be relieved from liability under this Agreement to the extent that it is not able to perform its obligations under this Agreement due to its failure to comply with its obligations under Clause 32.2.1 above.

## **32.3 Extensions of Time for Force Majeure**

Subject to Clauses 32.2 and 32.4 the occurrence of a Force Majeure Event which directly causes delay to the supply of a Unit and/or any other item of Purchased Equipment will entitle the Manufacturer to an extension of time as set out in Clause 13.

## **32.4 Termination for Force Majeure**

Notwithstanding the provision of Clause 32.3 entitling the Manufacturer to an extension of time the Purchaser shall nevertheless be entitled to terminate this Agreement (in whole or in part) by notice in writing (a "FM Notice") to the Manufacturer:

32.4.1 in respect of any Units or other items of Purchased Equipment, the Acceptance of which has been delayed for more than a total of 180 days as the sole and exclusive result of a Force Majeure Event following the Contractual Acceptance Date which applied immediately prior to the occurrence of the Force Majeure Event in question; or

32.4.2 in respect of an ELR Unit and/or an NLR Unit which has suffered an Event of Loss prior to Acceptance

and the provisions of Clause 30.10 shall apply in respect of such termination.

## **32.5 Effect on payments**

If a Force Majeure Event results in the Manufacturer being unable to carry out its obligations, the Purchaser shall cease to be liable to make any payment which would otherwise have been due on fulfilment of that obligation until and to the extent that the Manufacturer performs the obligation.

## **32.6 Cessation of Force Majeure**

Immediately after the end of the Force Majeure Event, the FM Affected Party shall notify the other Parties in writing that the Force Majeure Event has ended and shall resume performance of its obligations under this Agreement in so far as the Agreement has not been terminated or varied in accordance with Clause 32.4 or 32.7.

**32.7 Variation and Termination**

In the event this Agreement is terminated pursuant to Clause 32.4 in respect of some of the Units or items of Purchased Equipment, this Agreement shall be deemed to be varied in accordance with Clause 28, to the extent of the Units or other items of Purchased Equipment terminated, forthwith upon receipt by the Manufacturer of the FM Notice.

**32.8 Continuing Obligations**

The Parties shall not be released from any of their obligations under this Agreement as a result of a Force Majeure Event, and this Agreement shall, subject to Clause 32.4 remain in effect for the duration of a Force Majeure Event.

**33. INDEMNITIES AND LIMITATIONS ON LIABILITY**

**33.1 Application**

The provisions of this Clause 33 shall apply notwithstanding any other provision of this Agreement.

**33.2 Discharge of Liability**

The Manufacturer covenants for the benefit of the Purchaser, the Owner, LUL and any Operator that, if the Manufacturer's (or any other person's on the Manufacturer's behalf) performance or non-performance of, and under, this Agreement or any act, omission, breach or neglect on the part of the Manufacturer, or any member of its Group, or of its Guarantor (or any of their respective employees, agents or representatives) causes loss or damage to any third party other than the Purchaser, the Owner, LUL or an Operator (in their respective capacities under this Agreement but not otherwise) or any property or rights of any such third party or person, or causes any liability or penalty to any Competent Authority or breaches any Applicable Law, Standard or Relevant Consent, the Manufacturer shall promptly and fully discharge all such losses, damages and liabilities for which the Manufacturer is legally liable.

**33.3 General Indemnity**

The Manufacturer shall be liable for, and shall, within 5 Working Days of receipt of a written demand, indemnify [REDACTED]

(together the "**Indemnified Parties**") against [REDACTED]

whatsoever suffered or incurred by the [REDACTED]

in respect of:

33.3.1 death or personal injury to any person or damage to any property or assets (including the Core ELL Infrastructure, the ELR Network, the North London Railway, the Maintenance Facility and any Unit or other item of Purchased Equipment) arising from or in connection with:

- (A) the Manufacturer's testing and commissioning of the Units (and/or any Subsystem, Part or Major Component forming part of any Unit) and/or any other items of Purchased Equipment; and/or

(B) not used;

(C)

33.3.2

33.3.3 not used;

33.3.4 any Environmental Damage arising from the acts or omissions of the Manufacturer, its Subcontractors or their respective directors, agents, servants, officers, representatives or employees, or occurring during the design, manufacture, supply, testing, commissioning, Delivery and/or use of a Unit and/or any other item of Purchased Equipment, or the taking of any steps by the Operator, the Owner, the Purchaser or any member of the TfL Group to prevent, mitigate or remedy an Environmental Condition which exists as a result of the acts or omissions of the Manufacturer or its Subcontractors and their respective directors, agents, servants, officers, representatives or employees;

33.3.5 any claim for infringement of any rights in or to intellectual property (including any Intellectual Property Rights) arising out of the use or exploitation by the Purchaser of any item of Purchased Equipment (including any ELR Unit, NLR Unit and/or any Part, Subsystem, or Major Component forming part of an ELR Unit and/or a NLR Unit) any other item to be supplied pursuant to this Agreement and/or the use of Manufacturer IPR, the Software and/or the Third Party IPR in accordance with the licence granted pursuant to Clause 29.2 (and subject to Clause 29.2) including any costs and expenses incurred in defending a claim for infringement and in obtaining such rights, replacement rights or modifications to the existing rights so as to eliminate or avoid the infringement; and

#### 33.4 **Qualifications**

33.4.1 The Manufacturer shall not be liable to indemnify any Indemnified Party under the indemnity in Clause 33.3:

- (A) to the extent that the Purchaser has been compensated for such expense, liability, loss or claim by the payment of liquidated damages pursuant to Clauses 11, 12 and/or 16;
- (B) in the case of any loss referred to in Clauses 33.3.1, 33.3.2 and 33.3.4 to the extent that it results from negligence or breach of duty on the part of any Indemnified Party;
- (C) to the extent such Indemnified Party fails to use reasonable endeavours to mitigate its loss.

### 33.5 **Limitation on Manufacturer's Liability**

33.5.1 Subject to Clause 33.5.2 the Manufacturer's liability (the "**Maximum Liability**") to the Indemnified Parties under this Agreement (whether arising in contract, tort (including negligence), breach of statutory duty or otherwise),

(A) shall, in respect of any liability to the extent that it is caused by Environmental Damage, not exceed an amount equivalent to [REDACTED] percent of the Total Contract Price; and

(B) shall, in respect of any liability to the extent that it is not caused by Environmental Damage, not exceed an amount equivalent to [REDACTED] percent of the Total Contract Price,

provided that the Manufacturer's total liability to the Indemnified Parties under this Agreement (whether arising in contract, tort (including negligence), breach of statutory duty or otherwise) shall not in aggregate exceed an amount equivalent to [REDACTED] percent of the Total Contract Price.

33.5.2 The Manufacturer's liability to the Indemnified Parties under this Agreement in respect of the Excepted Liabilities shall not be subject to the limits referred to in Clause 33.5.1.

33.5.3 On and from the date the Purchaser serves the Manufacturer with an Option Notice, the Maximum Liability of the Manufacturer shall increase by an amount equivalent to [REDACTED] per cent of the Total Option Price for the Option the subject of the Option Notice.

### 33.6 **Reduction of Maximum Liability**

The Purchaser agrees that a claim by it in respect of an amount, which does not constitute one or more of the Excepted Liabilities shall reduce (by the amount paid in respect of such claim) the amount of the Maximum Liability that would otherwise be available in respect of subsequent claims by the Purchaser and/or LUL save for where the amount claimed by the Purchaser and/or LUL arises in connection with or as a result of the repudiation and/or abandonment of this Agreement or the wilful default by the Manufacturer of any obligation.

### 33.7 **Consequential Breach and Loss**

33.7.1 The Manufacturer, LUL and/or the Purchaser (except as between the Purchaser and LUL) shall not be treated as being in breach of this Agreement if such breach arises as a direct, necessary and inevitable consequence of the occurrence of a breach thereof on the part of another Party.

33.7.2 Other than to the extent provided for in Clause 30.9.2(A)(2) following a Voluntary Termination, in no event shall any Party be liable to any Indemnified Party for any matter howsoever arising out of or in connection with this Agreement in respect of any Consequential Loss suffered by such Indemnified Party. Each Party respectively undertakes not to sue any other Party, the Operator, the Owner, TfL or any member of the TfL Group in respect of such Consequential Loss.

**33.8 Limitation on the Purchaser's Liability**

Save for its express obligations to make payment under this Agreement (including without limitation those obligations provided for in Clauses 25, 30.9.2(A), and Schedule 11), and any liability in relation to death or personal injury, the Purchaser's liability to the Manufacturer under this Agreement (whether arising in contract, tort (including negligence), breach of statutory duty or otherwise) shall not exceed [REDACTED]. The Purchaser shall at any time be entitled to increase its maximum liability by not less than [REDACTED].

**33.9 Reduction of Purchaser's Liability**

The Manufacturer agrees that a claim by it in respect of an amount shall reduce (by the amount paid in respect of such claim) the amount specified in Clause 33.8 that would otherwise be available in respect of subsequent claims by the Manufacturer save for where the amount claimed by the Manufacturer arises in connection with or as a result of the repudiation and/or abandonment of this Agreement or the wilful default by the Purchaser of any obligation.

**33.10 Limitation on LUL's Liability**

LUL shall have no liability to the Manufacturer under this Agreement (whether arising in contract, tort (including negligence), breach of statutory duty or otherwise) save for liability in relation to death and personal injury.

**33.11 Purchaser Indemnity**

The Purchaser shall be liable for, and shall, within five (5) Working Days of receipt of a written demand, indemnify the Manufacturer including any of its respective employees, servants, agents, subcontractors, directors and officers against all expenses, liabilities, losses, damages, claims, costs, demands, proceedings and Taxes whatsoever suffered or incurred by the Manufacturer in respect of which LUL would, but for Clause 33.10, otherwise be liable to the Manufacturer.

**34. CONFIDENTIALITY**

**34.1 Obligations of Confidentiality**

Subject to Clause 34.2 the contents of this Agreement, any documents referred to in this Agreement and any information whether written or oral, provided by the Purchaser and/or LUL to the Manufacturer or by the Manufacturer to the Purchaser and/or LUL in connection with this Agreement shall be treated by the Manufacturer and/or LUL and the Purchaser as confidential ("**Confidential Information**"). The Purchaser, LUL and the Manufacturer shall not (and shall procure that their respective officers, employees, advisers and agents and the officers, employees, advisers and agents of its Subcontractors do not) without the prior written consent of the other Parties or by failure to exercise due care or otherwise by any act or omission:

34.1.1 disclose Confidential Information to any person whomsoever;

34.1.2 use or exploit Confidential Information commercially for its or their own purposes other than in connection with the performance of this Agreement; or

34.1.3 use Confidential Information otherwise than for the purpose for which it was provided.

## 34.2 Permitted Disclosure

This Clause 34 shall not preclude LUL or the Purchaser from disclosing Confidential Information:

- 34.2.1 in accordance with any requirement under any Applicable Law or Standard to do so;
- 34.2.2 to their respective professional advisers and auditors who are bound to such Party by a duty of confidentiality which applies to any information disclosed;
- 34.2.3 for the purposes of exercising its obligations under the Train Services Agreement or to the Maintainer (or its successors and/or assigns);
- 34.2.4 to any banks and financial institutions providing finance, or advising on or envisaging the provision of finance for any purpose in connection with this Agreement;
- 34.2.5 to Network Rail or any Competent Authority;
- 34.2.6 to the Mayor of London and/or the Greater London Authority;
- 34.2.7 to an Operator, any person participating in a tender to appoint the Operator, the financier of an Operator (if not the Purchaser) or the Owner (if not the Purchaser);
- 34.2.8 to any member of the TfL Group and the Main Works Contractor;
- 34.2.9 to Tube Lines Limited, Metronet Rail SSL Limited or Metronet Rail BCV Limited or any other PPP Company (each a "PPP Contractor") provided that no information relating to payment under the MSA or the TSA is contained in such disclosure;
- 34.2.10 to CityLink Telecommunications Limited, EDF Energy Powerlink Limited or Transaction Systems Limited or their respective successors and/or assigns (each a "PFI Contractor") provided that no information relating to payment under the MSA or the TSA is contained in such disclosure;
- 34.2.11 to the extent that the relevant Confidential Information is in the public domain otherwise than by breach of this Agreement by the Purchaser or LUL;
- 34.2.12 which was made available to the disclosing Party on a non-confidential basis;
- 34.2.13 which is required in connection with a disposition or other transfer of rights permitted in accordance with this Agreement;
- 34.2.14 which is required by law or by order of a Court of a competent jurisdiction (but only to the extent required by such law or order) to be disclosed in connection with any Dispute, litigation or other dispute resolution procedure;

- 34.2.15 which is required to be disclosed under the Rules of the London Stock Exchange or the rules of any other recognised investment exchange in force from time to time;
- 34.2.16 to any replacement contractor appointed by the Purchaser and its professional advisers provided that no information relating to payment under the MSA or the TSA is contained in such disclosure; or
- 34.2.17 to any member of the Manufacturer Group for the purposes of the performance by the Manufacturer of its obligations under this Agreement,

nor shall it preclude the Manufacturer, subject to Clause 34.2A, from disclosing Confidential Information for the purposes set out in and in accordance with Clauses 34.2.1, 34.2.2, 34.2.3, 34.2.4, 34.2.5, 34.2.7, 34.2.8, 34.2.10, 34.2.11, 34.2.13, 34.2.14 and 34.2.16.

34.2A If LUL notifies in writing or otherwise indicates to the Manufacturer that any Confidential Information is connected with a PFI Contractor and/or PPP Contractor, the Manufacturer shall not be permitted to disclose such Confidential Information without LUL's written consent.

#### 34.3 Confidentiality Undertaking

Where disclosure is permitted under Clause 34.2, other than Clauses 34.2.1, 34.2.2, 34.2.11, 34.2.12, and 34.2.15, the Party disclosing the Confidential Information shall procure that the recipient of the Confidential Information shall be subject to the same obligation of confidentiality as that contained in this Agreement.

#### 34.4 Prior Notice of Disclosure

If a Party becomes required in circumstances contemplated by Clauses 34.2.1 to 34.2.16 to disclose any Confidential Information, such Party shall give to the other Parties as much notice as is practical in the circumstances of such disclosure and shall co-operate with the other Parties, having due regard to the other Parties' views, and take such steps as the other Parties may reasonably require in order to enable it to mitigate the effect of, or avoid the requirements for, any such disclosure. Where the disclosing Party giving notice is the Purchaser and/or LUL, it shall only be obliged to give notice to, co-operate with, have due regard to the views of, and take steps as reasonably required by, the Manufacturer.

#### 34.5 Standard of Care

In fulfilling its obligations under this Clause 34, each Party shall be required to use the same degree of care to prevent unauthorised disclosure of such Confidential Information as it would use to prevent the disclosure of its own commercial and financial information of the same or similar nature and which it considers proprietary or confidential.

#### 34.6 Announcements

The Manufacturer shall not (and shall procure that each Subcontractor does not) without the consent of the Purchaser (such consent not to be unreasonably withheld or delayed) advertise or otherwise give any publicity in any form to any matter relating to this Agreement or announce their involvement in the design, development, manufacture, supply, commissioning or support of any Purchased Equipment.

#### **34.7 Reputation**

The Manufacturer shall not knowingly do or omit to do anything in relation to this Agreement which may bring the standing or reputation of any other Party into disrepute or otherwise attract adverse publicity in relation to the other Parties.

### **35. FREEDOM OF INFORMATION ACT**

#### **35.1 Freedom of Information Act Definitions**

For the purposes of this Agreement:

- 35.1.1 **"FOI Legislation"** means the Freedom of Information Act 2000, all regulations made under it and the Environmental Information Regulations 1992 and any amendment or re-enactment of any of them, and any guidance issued by the Information Commissioner, the Department for Constitutional Affairs, or the Department for Environment Food and Rural Affairs (including in each case its successors) in relation to such legislation;
- 35.1.2 **"Purchaser Information"** means information recorded in any form held by the Purchaser or by the Manufacturer on behalf of the Purchaser;
- 35.1.3 **"Purchaser Information Request"** means a request for any Purchaser Information under the FOI Legislation;
- 35.1.4 **"LUL Information"** means information recorded in any form held by LUL or by the Manufacturer on behalf of LUL; and
- 35.1.5 **"LUL Information Request"** means a request for any LUL Information under the FOI Legislation.

#### **35.2 Acknowledgement of Application of Act**

The Manufacturer acknowledges and agrees that:

- 35.2.1 LUL and the Purchaser are each subject to the FOI Legislation and agrees to assist and co-operate with each of LUL and the Purchaser to enable LUL and the Purchaser to comply with their respective obligations under the FOI Legislation, including providing to the Purchaser (as the case may be) all information it may reasonably request;
- 35.2.2 the Purchaser may be obliged under the FOI Legislation to disclose Purchaser Information without consulting or obtaining consent from the Manufacturer; and
- 35.2.3 LUL may be obliged under the FOI Legislation to disclose LUL Information without consulting or obtaining consent from the Manufacturer.

#### **35.3 Manufacturer Freedom of Information Act Obligations**

Without prejudice to the generality of this Clause 35, the Manufacturer shall:

- 35.3.1 transfer to such person as may be notified by the Purchaser to the Manufacturer each Purchaser Information Request relevant to this Agreement, as soon as practicable and in any event within 2 days of receiving such Purchaser Information Request;

- 35.3.2 in relation to Purchaser Information held by the Manufacturer on behalf of the Purchaser, provide the Purchaser with details about and/or copies of all such Purchaser Information that the Purchaser requests and such details and/or copies shall be provided within 5 days of a request from the Purchaser (or such other period as the Purchaser may reasonably specify), and in such forms as the Purchaser may reasonably specify;
- 35.3.3 transfer to such person as may be notified by LUL to the Manufacturer each LUL Information Request relevant to this Agreement, as soon as practicable and in any event within 2 days of receiving such LUL Information Request; and
- 35.3.4 in relation to LUL Information held by the Manufacturer on behalf of LUL, provide LUL with details about and/or copies of all such LUL Information that LUL requests and such details and/or copies shall be provided within 5 days of request from LUL (or such other period as LUL may reasonably specify), and in such forms as LUL may reasonably specify.

#### **35.4 Confidential Information and Information Requests**

- 35.4.1 The Purchaser shall be responsible for determining whether Purchaser Information is exempt information under the FOI Legislation and for determining what Purchaser Information will be disclosed in response to a Purchaser Information Request in accordance with the FOI Legislation, save that, where any Purchaser Information Request relates to Confidential Information disclosed by the Manufacturer under this Agreement, the Purchaser shall, where practicable, in advance of making any disclosure under the FOI Legislation, acting reasonably, take due account of all reasonable representations by the Manufacturer that such Confidential Information is exempt information. The Manufacturer shall not itself respond to any person making a Purchaser Information Request, save to acknowledge receipt, unless authorised in writing to do so by the Purchaser; and
- 35.4.2 LUL shall be responsible for determining whether LUL Information is exempt information under the FOI Legislation and for determining what LUL Information will be disclosed in response to a LUL Information Request in accordance with the FOI Legislation, save that, where any LUL Information Request relates to Confidential Information disclosed by the Manufacturer under this Agreement, shall, where practicable, in advance of making any disclosure under the FOI Legislation, acting reasonably, take due account of all reasonable representations by the Manufacturer that such Confidential Information is exempt information. The Manufacturer shall not itself respond to any person making a LUL Information Request, save to acknowledge receipt, unless authorised in writing to do so by LUL.

### **36. DISPUTE RESOLUTION**

#### **36.1 Dispute Resolution Procedure**

Save for where it is expressly provided that a Dispute shall be referred to expert determination in accordance with Schedule 17A (Fast Track Dispute Resolution Procedure) if any Dispute should arise under this Agreement, the Parties shall refer the Dispute, by an Escalation Notice, to the Escalation Procedure at Part A of Schedule 17.

## **37. PROHIBITED ACTS**

### **37.1 Prohibited Act**

Neither the Manufacturer nor any person acting on its behalf (including employees of the Manufacturer or those employed within the Manufacturer's Group) shall commit a Prohibited Act. The expression "**Prohibited Act**" means:

- 37.1.1 offering, giving or agreeing to give to any of personnel of the Purchaser, TfL and/or a member of the TfL Group, or any other person any gift or consideration of any kind as an inducement or reward for doing, or not doing, or for having done or not having done any act in relation to the obtaining or performance of this Agreement or any other contract with the Purchaser, TfL and/or a member of the TfL Group, or for showing or not showing favour or disfavour to any person in relation to this Agreement, or any other contract with the Purchaser;
- 37.1.2 entering into this Agreement (or any other contract with the Purchaser, TfL and/or a member of the TfL Group) in connection with which commission has been paid or agreed to be paid by it or on its behalf or to its knowledge unless before this Agreement was entered into particulars of any such commission and of the terms and conditions of any contract for the payment thereof have been disclosed in writing to the Purchaser;
- 37.1.3 committing any offence:
  - (A) under the Prevention of Corruption Acts 1889 – 1916;
  - (B) under any Applicable Laws creating offences in respect of fraudulent acts; or
  - (C) at common law in respect of fraudulent acts in relation to this Agreement or any other contract with the Purchaser; or
- 37.1.4 defrauding or attempting to defraud or conspiring to defraud the Purchaser, TfL or any member of the TfL Group.

### **37.2 Audit**

The Purchaser shall have the right to audit the Manufacturer's records in order to monitor compliance with Clause 37.1 until a Final Acceptance Certificate has been given in respect of the last Unit and for 3 years thereafter.

### **37.3 Manufacturer Warranty**

The Manufacturer represents and warrants that in entering into this Agreement it has not committed any Prohibited Act.

### **37.4 Associated Companies and Subcontractors**

The Manufacturer shall use its best endeavours to procure that neither any member of the Manufacturer's Group nor any Subcontractor of the Manufacturer shall commit any Prohibited Act.

### **37.5 Permitted payments**

- 37.5.1 Nothing in this Clause 37 shall prevent the Manufacturer from paying any proper commission or bonus to its officers, employees, contractors or agents pursuant to the terms of their employment or engagement.
- 37.5.2 Nothing in this Clause 37 shall prevent any Subcontractor from paying any proper commission or bonus to its officers, employees, contractors or agents pursuant to the terms of their employment or engagement.

### **37.6 Termination for Prohibited Act**

- 37.6.1 If the Manufacturer or any Subcontractor (or anyone employed by or acting on behalf of any of them) or any of its or their agents or contractors commits any Prohibited Act, then the Purchaser shall be entitled to act in accordance with Clauses 37.6.2 to 37.6.6 below.
- 37.6.2 If a Prohibited Act is committed by the Manufacturer or by an employee not acting independently of the Manufacturer, then the Purchaser may immediately terminate the Agreement by giving notice to the Manufacturer.
- 37.6.3 If the Prohibited Act is committed by an employee of the Manufacturer acting independently of the Manufacturer, then the Purchaser may give notice to the Manufacturer of termination and this Agreement will immediately terminate, unless within 30 days of receipt of such notice the Manufacturer terminates the employee's employment and (if necessary) procures the performance by another person of such part of the work carried out by that employee.
- 37.6.4 If the Prohibited Act is committed by a Subcontractor or by an employee of that Subcontractor not acting independently of that Subcontractor, then the Purchaser may give notice to the Manufacturer of termination and this Agreement will immediately terminate, unless within 30 days of receipt of such notice the Manufacturer terminates the relevant Subcontract and procures the performance by another person of such part of the work carried out by that Subcontractor.
- 37.6.5 If the Prohibited Act is committed by an employee of a Subcontractor acting independently of that Subcontractor, then the Purchaser may give notice to the Manufacturer of termination and this Agreement will immediately terminate, unless within 30 days of receipt of such notice the Subcontractor terminates the employee's employment and (if necessary) procures the performance by another person of such part of the work carried out by that employee.
- 37.6.6 If the Prohibited Act is committed by any other person not specified in Clauses 37.6.2 to 37.6.5 above, then the Purchaser may give notice to the Manufacturer of termination and the Agreement will immediately terminate, unless within 30 days of receipt of such notice, the Manufacturer procures the termination of such person's employment and of the appointment of their employer (where not employed by the Manufacturer or the Subcontractor) and (if necessary) procures the performance by another person of such part of the work carried out by that person.
- 37.6.7 Any notice of termination under this Clause shall specify:
  - (A) the nature of the Prohibited Act;

- (B) the identity of the party whom the Purchaser believes has committed the Prohibited Act; and
- (C) the date on which the Agreement will terminate, in accordance with the applicable provision of this Clause.

37.6.8 The Purchaser shall exercise any rights arising out of this Clause 37.6 in a manner that is proportionate to the events that have occurred with regard to their effects on the Purchaser's confidence in the business integrity of its relationship with the Manufacturer.

## **38. ASSIGNMENT, TRANSFER AND SUB-CONTRACTING BY THE MANUFACTURER**

### **38.1 Subcontracting**

The Manufacturer may sub-contract its obligations under this Agreement either in whole or in part to any Subcontractor provided that:

- 38.1.1 the liability of the Manufacturer to perform its obligations under this Agreement shall in no way be affected by the Manufacturer having entered into any such Subcontract, whether disclosed or not; and
- 38.1.2 the written consent of the Purchaser is obtained by the Manufacturer prior to the Manufacturer entering into any Key Subcontract with any person other than an Approved Subcontractor which consent shall not be unreasonably withheld or delayed and it shall be reasonable for the Purchaser to withhold its consent where it considers that Clause 38.1.1 is not satisfied.

### **38.2 Assignment**

Without prejudice to Clause 38.1, the Manufacturer shall not assign (whether absolutely or by way of security and whether in whole or in part), transfer, mortgage, charge, declare itself a trustee for a third party of, or otherwise dispose of (in any manner whatsoever) its rights and/or obligations under this Agreement:

- 38.2.1 to any member of the Manufacturer's Group unless the Guarantor has to the reasonable satisfaction of the Purchaser provided a guarantee in the form of the Guarantee in respect of the assignee's rights and obligations;
- 38.2.2 to any other person without the prior written consent of the Purchaser (acting in its absolute discretion);

and any purported dealing in contravention of this Clause 38 shall be ineffective.

## **39. ASSIGNMENT AND NOVATION OR GRANTING OF SECURITY BY THE PURCHASER**

### **39.1 Transfers to Third Parties**

Subject to Clause 39.2, the Purchaser shall not assign (whether absolutely or by way of security and whether in whole or in part), transfer, mortgage, charge, declare itself a trustee for a third party of, or otherwise dispose of its rights and/or obligations under this Agreement without the prior written consent of the Manufacturer such consent not to be

unreasonably withheld or delayed and any purported dealing in contravention of this Clause 39 shall be ineffective.

## **39.2 Permitted Transfers**

39.2.1 The Purchaser shall be entitled, without the consent of the Manufacturer:

- (A) to assign (whether absolutely or by way of security and whether in whole or in part) transfer, novate, mortgage, charge or otherwise dispose of its rights and/or obligations under this Agreement to any member of the Tfl Group; or
- (B) to assign (whether absolutely or whether in whole or in part), transfer, novate, mortgage, charge or otherwise dispose of any or all of its rights and/or obligations under this Agreement (including its payment obligations) to a third party provided that such third party is a Suitable Lessor.

39.2.2 The Purchaser shall be entitled, subject to the Manufacturer giving its consent (such consent not to be unreasonably withheld or delayed) to assign (whether absolutely or by way of security and whether in whole or in part), transfer, mortgage, charge or otherwise dispose of its rights and/or obligations to a third party for the purposes of financing its obligations under this Agreement provided that it retains its payment obligations under this Agreement.

## **39.3 Implementation of Transfers**

39.3.1 If the Purchaser wishes to deal with its rights and/or obligations in this Agreement (either in whole or in part) pursuant and subject to Clauses 39.1 or 39.2, the Manufacturer shall execute such documents and do such other things as the Purchaser may reasonably request in order to facilitate and perfect such dealing.

39.3.2 The Purchaser shall indemnify the Manufacturer on an after tax basis against any costs, expenses and liabilities it would not have incurred but for an assignment charge or other dealing in accordance with Clause 39.1 or Clause 39.2.

39.3.3 The Manufacturer shall indemnify the Purchaser on an after tax basis against any costs, expenses and liabilities it would not have incurred but for an assignment, charge or other dealing in accordance with (and to the extent permitted under) Clause 38.2.

## **40. NOTICES**

### **40.1 Form of Communications**

A notice (including any approval, consent or other communication) in connection with this Agreement:

40.1.1 must be in writing; and

40.1.2 must be left at the address of the addressee or sent by pre-paid first class post (airmail if posted to or from a place outside the United Kingdom) to the address of the addressee or sent by facsimile to the facsimile number of the addressee in

each case which is specified in this Clause 40.1 in relation to the Party to whom the notice is addressed, and marked for the attention of the person so specified, or to such other address or facsimile number in England or Wales, and/or marked for the attention of such other person as the relevant Party may from time to time specify by notice given in accordance with this Clause 40.1.

The relevant details of each Party at the date of this Agreement are:

**Purchaser**

Address: Transport for London  
15 Bonhill Street  
London  
EC2A 4DN

Facsimile: [REDACTED]

Attention: [REDACTED]

**Manufacturer**

Address: Bombardier Transportation UK Limited  
Litchurch Lane  
Derby  
Derbyshire  
DE24 8AD

Facsimile: [REDACTED]

Attention: [REDACTED]

**London Underground Limited**

Address: 55 Broadway  
London  
SW1H 0BD

Facsimile: [REDACTED]

Attention: [REDACTED]

**40.2 Time of Receipt**

Each such communication shall, unless otherwise shown, be deemed to have been received:

- 40.2.1 if personally delivered, at the time of delivery;
- 40.2.2 if sent by first class post, on the third Working Day following the date on which it was posted or, if posted to or from a place outside the United Kingdom, the seventh Working Day after posting; and
- 40.2.3 in the case of a facsimile, on production of a transmission report from the machine from which the facsimile was sent which indicates that the facsimile was sent in its entirety to the facsimile number of the recipient.

### **40.3 Receipt on a Non-Working Day**

A notice received or deemed to be received in accordance with Clause 40.2 above on a day which is not a Working Day or after 5.00 p.m. on a Working Day according to local time in the place of receipt, shall be deemed to be received on the next following Working Day.

### **40.4 Change of Address**

Each Party undertakes to notify immediately the other Parties by notice served in accordance with this Clause 40 if the address specified herein is no longer an appropriate address for the service of notice.

## **41. ENTIRE AGREEMENT**

### **41.1 Whole Agreement**

Each Party confirms that this Agreement and any other documents referred to in this Agreement represents the entire understanding, and constitutes the whole agreement, in relation to its subject matter and supersedes any previous agreement between the Parties with respect thereto.

### **41.2 Non Reliance**

Each Party acknowledges and agrees that:

41.2.1 in entering into this Agreement it has not relied on any representation, warranty, assurance, covenant, indemnity, undertaking or commitment which is not expressly set out or referred to in this Agreement or any other documents referred to in this Agreement; and

41.2.2 no Party has any other right or remedy in respect of the matters set out in Clause 41.2.1 (whether by way of a claim for contribution or otherwise) in tort (including negligence) or for misrepresentation (whether negligent or otherwise, and whether made prior to, and/or in, this Agreement) save for any liability for fraudulent misrepresentation or fraudulent misstatement.

## **42. RIGHTS CUMULATIVE WITH THOSE AT LAW**

### **42.1 Rights Cumulative**

Except where expressly stated to the contrary the powers, rights and remedies conferred on the Parties herein shall be in addition and without prejudice to all other powers, rights and remedies available to the Parties by law.

### **42.2 Equitable Remedies**

Without prejudice to any other rights or remedies that the Parties may have, the Parties acknowledge and agree that the remedies of injunction and specific performance as well as any other equitable relief for any threatened or actual breach of the provisions of this Agreement by any Party shall be available to the Parties and that no proof of special damages shall be necessary for the enforcement of the provisions of this Agreement.

**43. FURTHER ASSURANCE**

Each Party to this Agreement shall (at its own cost) do and execute, or arrange for the performance and execution of, each necessary act or document to implement its obligations under this Agreement.

**44. SET-OFF**

The Purchaser shall be entitled to withhold from any sum or sums expressed in this Agreement to be payable by it to the Manufacturer, any amounts due or expressed to be due by the Manufacturer to the Purchaser. Any payment payable by the Manufacturer under this Agreement shall be made in full without any set-off or counterclaim howsoever arising and shall be free and clear of, and without deduction of, or withholding for or on account of, any amount which is due and payable to the Manufacturer under this Agreement.

**45. NO WAIVER**

The rights and remedies of the Parties shall not be affected by any failure to exercise or delay in exercising any right or remedy or by the giving of any indulgence by the other Party or by anything whatsoever except a specific waiver or release in writing and any such waiver or release shall not prejudice or affect any other rights or remedies of the Parties. No single or partial exercise of any right or remedy shall prevent any further or other exercise thereof or the exercise of any other right or remedy.

**46. SEVERANCE**

If any provision or part of this Agreement is void or unenforceable due to the operation of any Applicable Law, it shall be deemed to be deleted and the remaining provisions of this Agreement shall continue in full force and effect.

**47. COSTS**

Each Party shall be responsible for their own costs (including legal costs) in relation to the negotiation and execution of this Agreement.

**48. LANGUAGE**

This Agreement is executed in English and all communications under this Agreement shall be made in English.

**49. CURRENCY AND EXCHANGE RATE**

All payments under this Agreement shall be made in pounds sterling. All risks associated with movements in foreign currency exchange rates and/or the costs of activities performed outside of the United Kingdom shall be borne by the Manufacturer.

**50. CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999**

With the exception of the right of:

- 50.1 TfL and any member of the TfL Group that lets the concession (other than LUL, Party to this Agreement);
- 50.2 any Operator;
- 50.3 the Owner (where it is not the Purchaser); or
- 50.4 any person expressly stated to be indemnified by a Party,

to enforce any term of this Agreement which either expressly or by implication confers any benefit upon such person, no term of this Agreement is enforceable under the Contracts (Rights of Third Parties) Act 1999 by a person who is not a signatory to this Agreement. The Parties to this Agreement may, in accordance with Schedule 13, rescind or vary any term of this Agreement without the consent of the persons identified in Clauses 50.1, 50.2, 50.3 and 50.4.

## **51. COUNTERPARTS**

This Agreement may be executed in any number of counterparts and by the Parties to it on separate counterparts, each of which when so executed and delivered shall be an original, but all the counterparts shall together constitute one and the same instrument.

## **52. GOVERNING LAW AND JURISDICTION**

### **52.1 Governing Law**

This Agreement shall be governed by, and construed in accordance with, English law.

### **52.2 Exclusive Jurisdiction**

Subject to the terms of Clause 36, the English Courts have exclusive jurisdiction in relation to any claim, dispute or difference ("**Proceedings**") concerning this Agreement and any matter arising from it. For these purposes, each Party irrevocably submits to the jurisdiction of the English Courts.

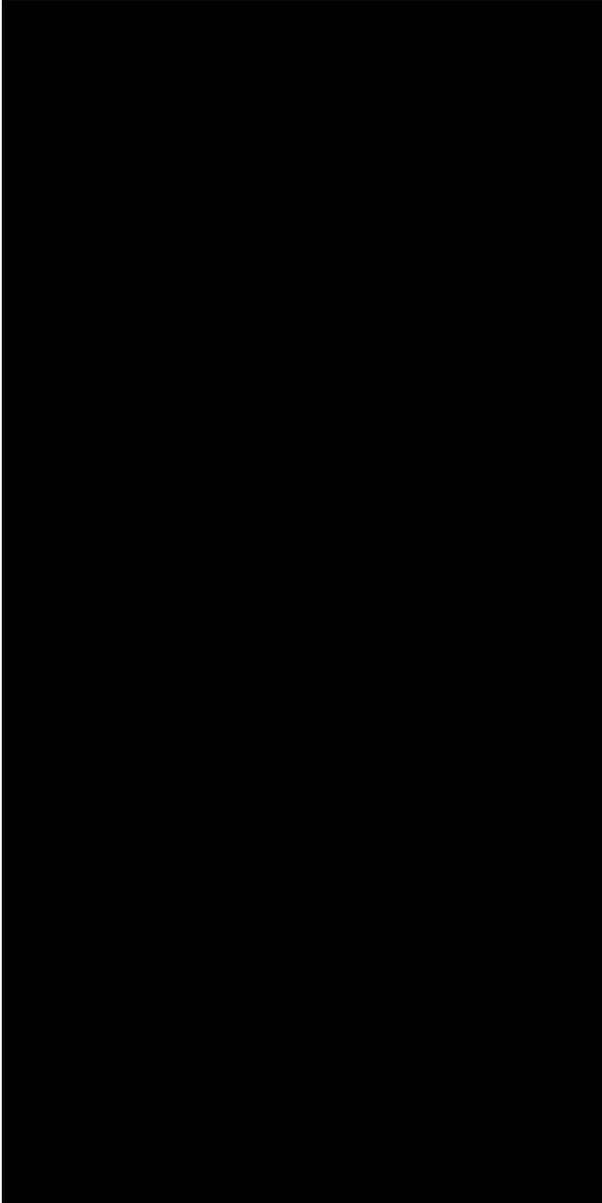
### **52.3 Forum**

Each Party irrevocably waives any right that it may have to object to any Proceedings being brought in the English Courts, to claim that the Proceedings have been brought in an inconvenient forum, or to claim that the English Courts do not have jurisdiction.

**EXECUTED** for and on behalf of )  
**BOMBARDIER TRANSPORTATION** )  
**UK LIMITED** acting by a Director and )  
Secretary or two Directors )

**EXECUTED** for and on behalf of )  
**TRANSPORT TRADING LIMITED** acting by )

**EXECUTED** for and on behalf of )  
**LONDON UNDERGROUND LIMITED** )  
acting by )



**SCHEDULE 1: ROLLING STOCK REQUIREMENTS - TECHNICAL**



## **East London Line Project**

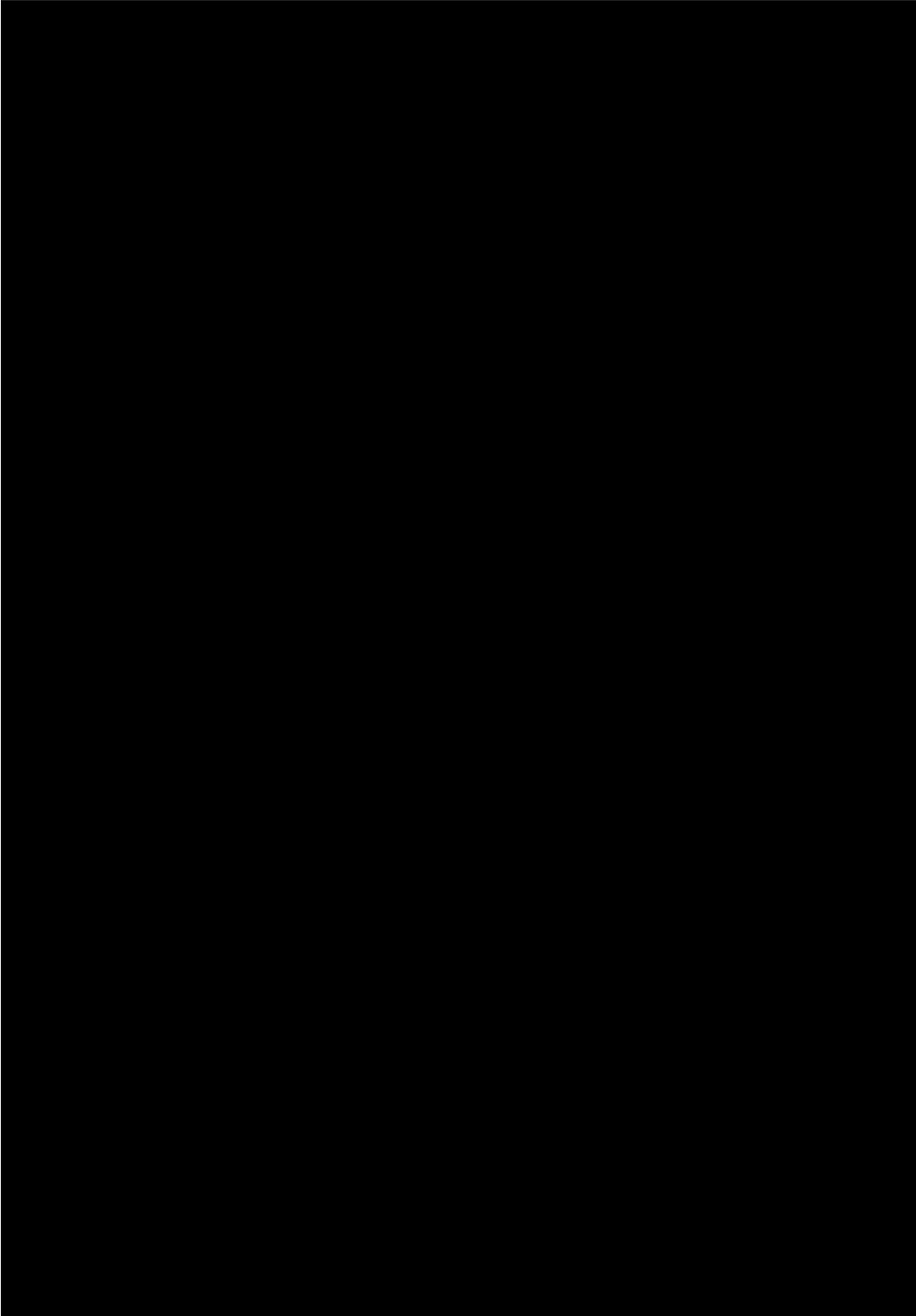
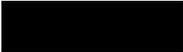
# **Manufacturing and Supply Agreement for New Electric Multiple Unit Trains**

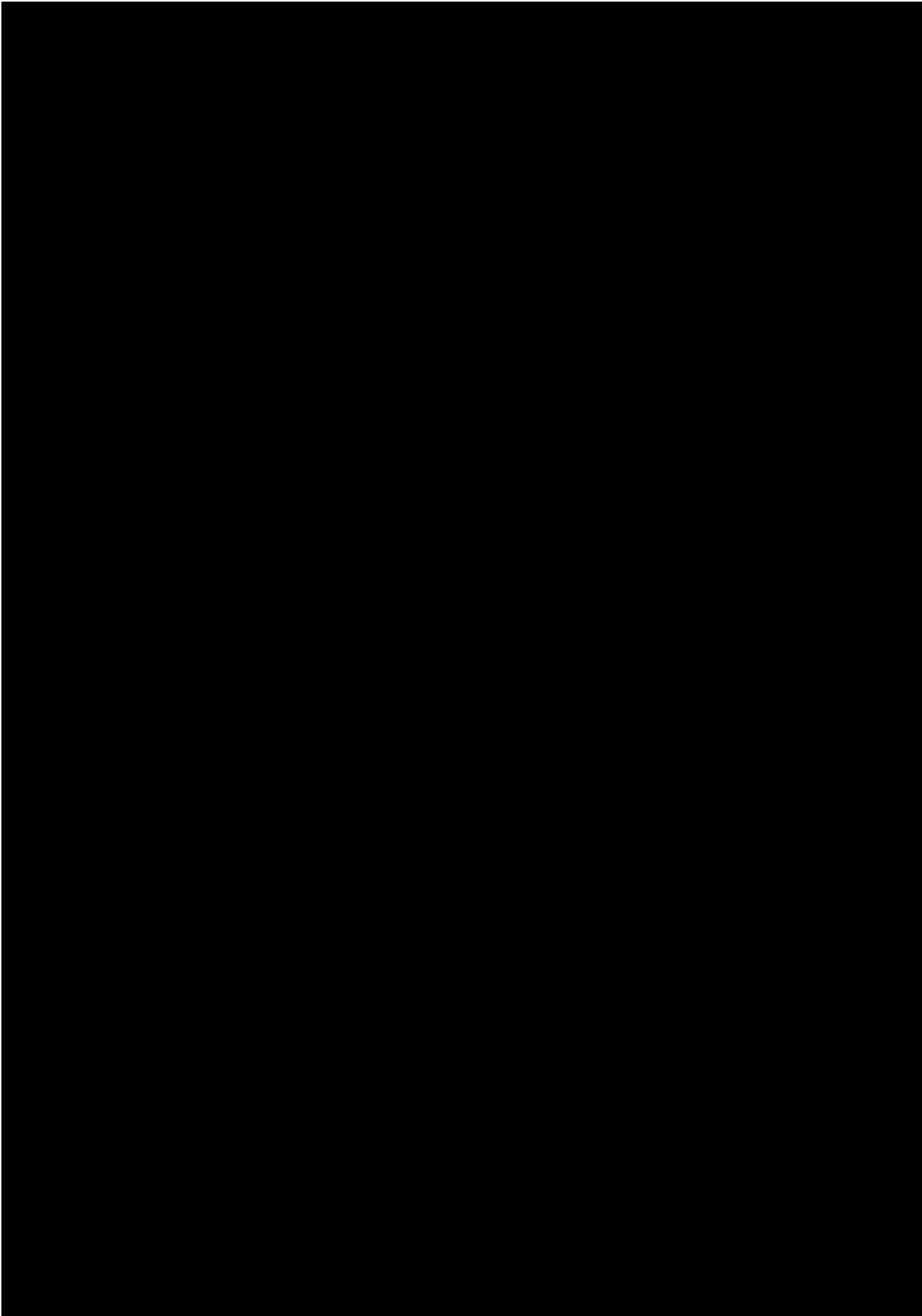
## **Schedule 1 - Rolling Stock Requirements Technical**

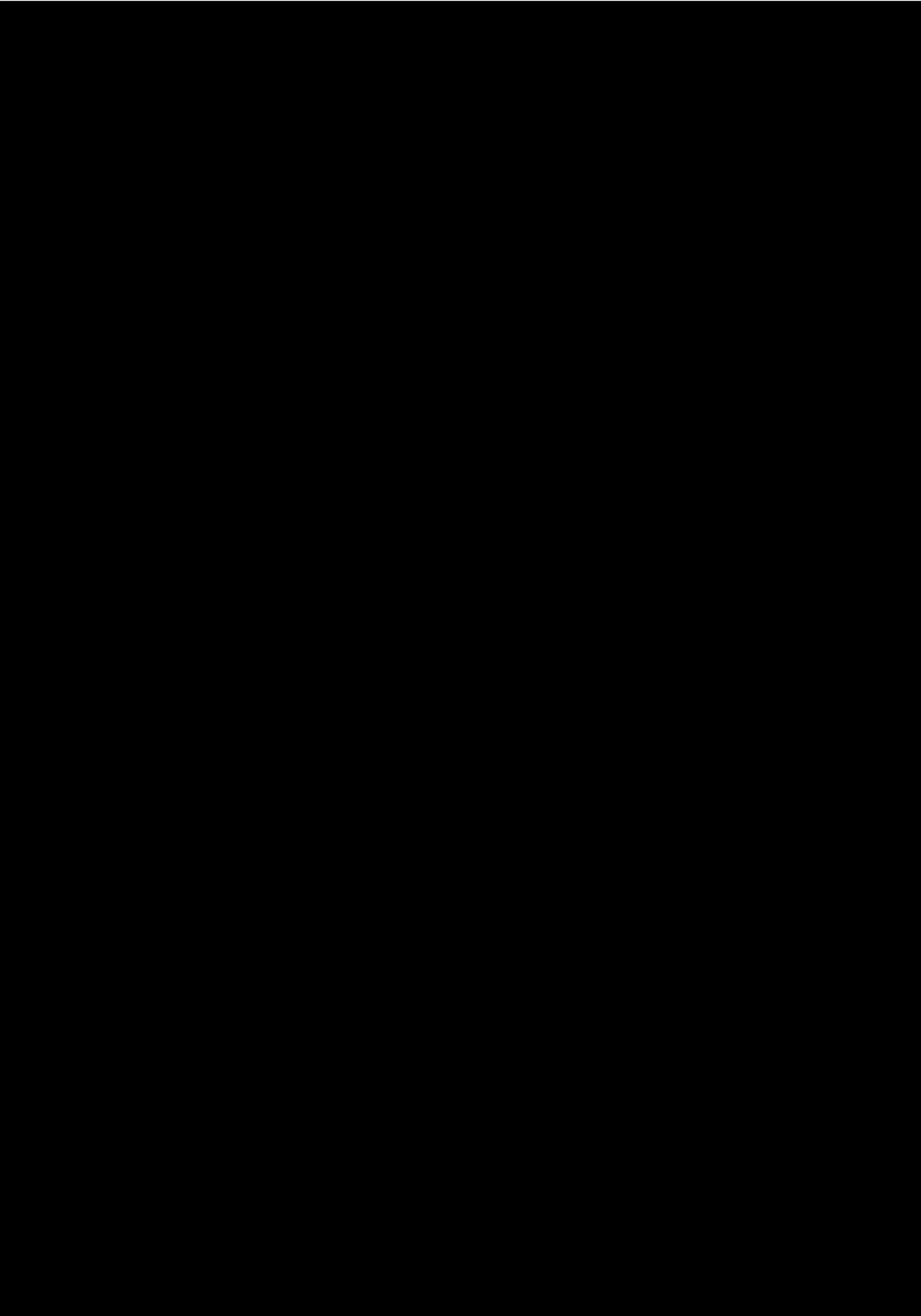
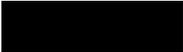


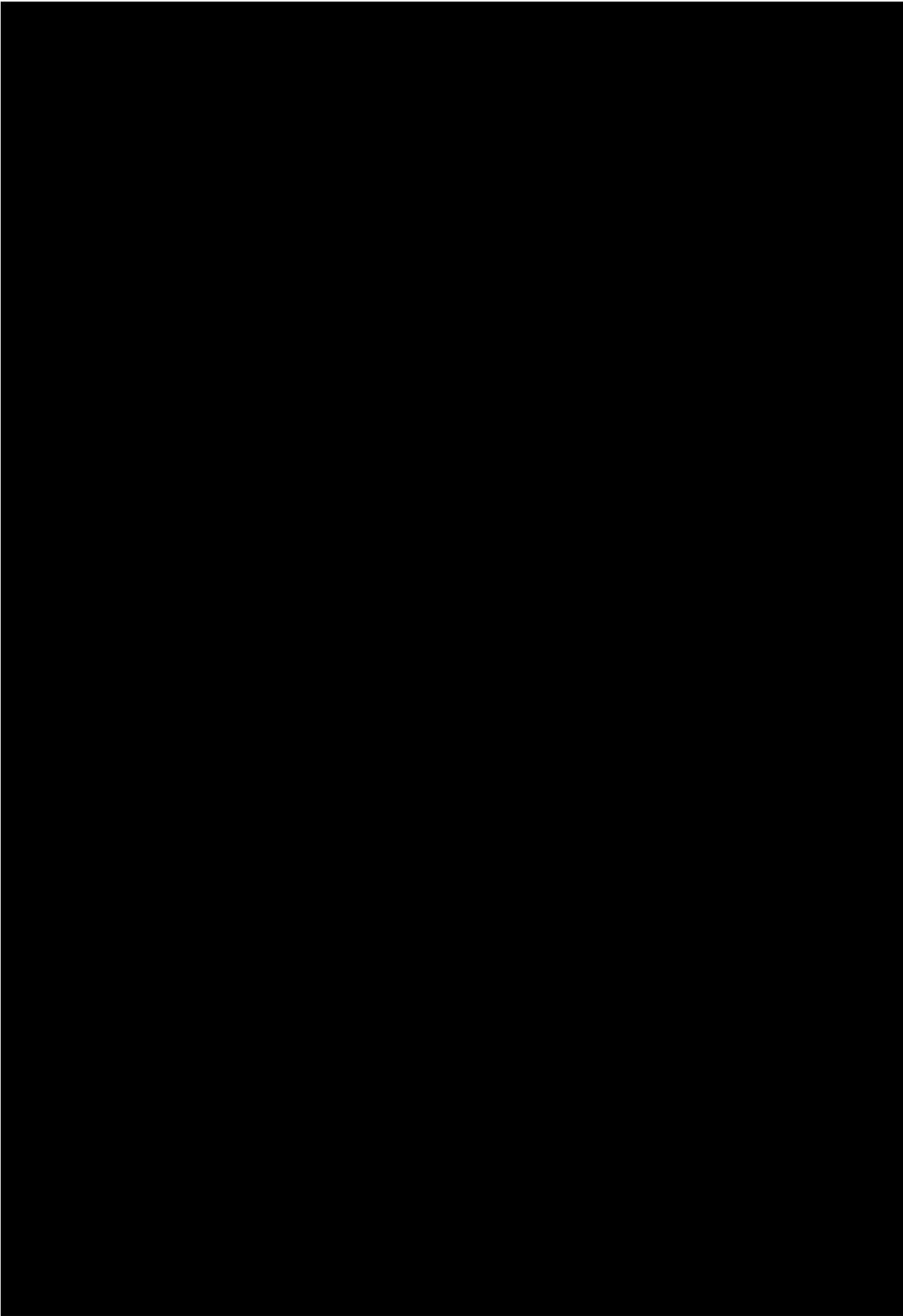
# Schedule 2

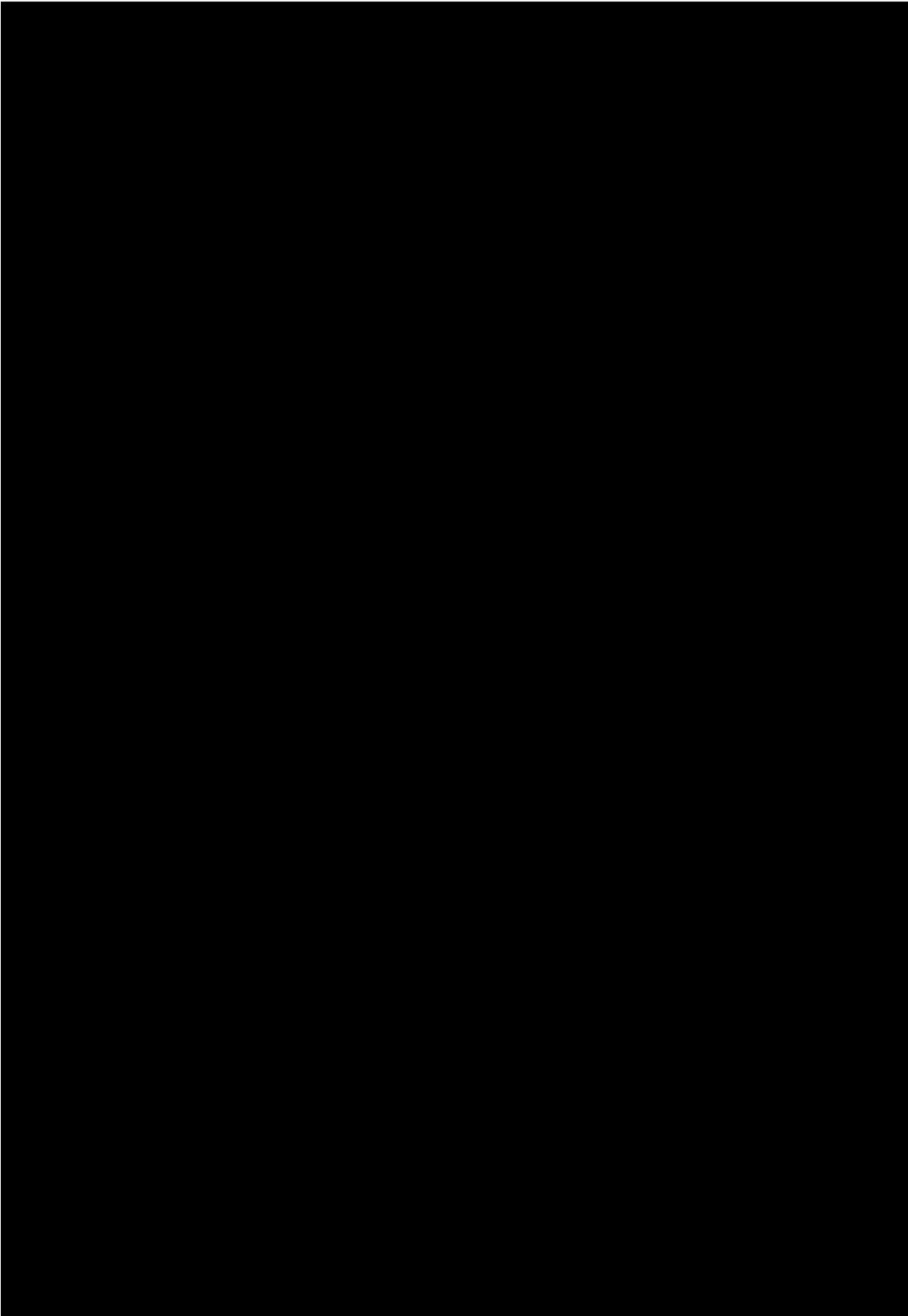
# Technical Description

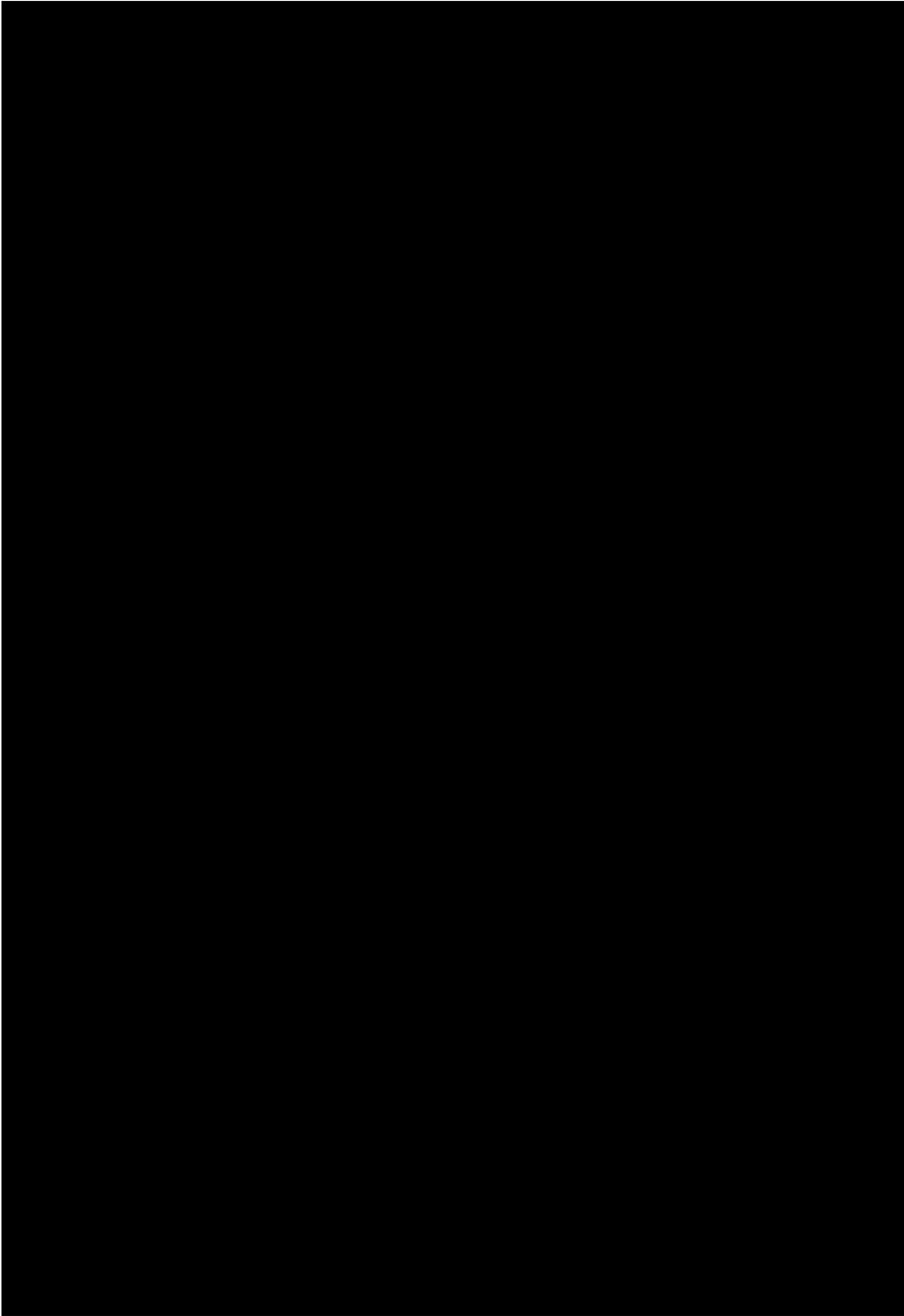


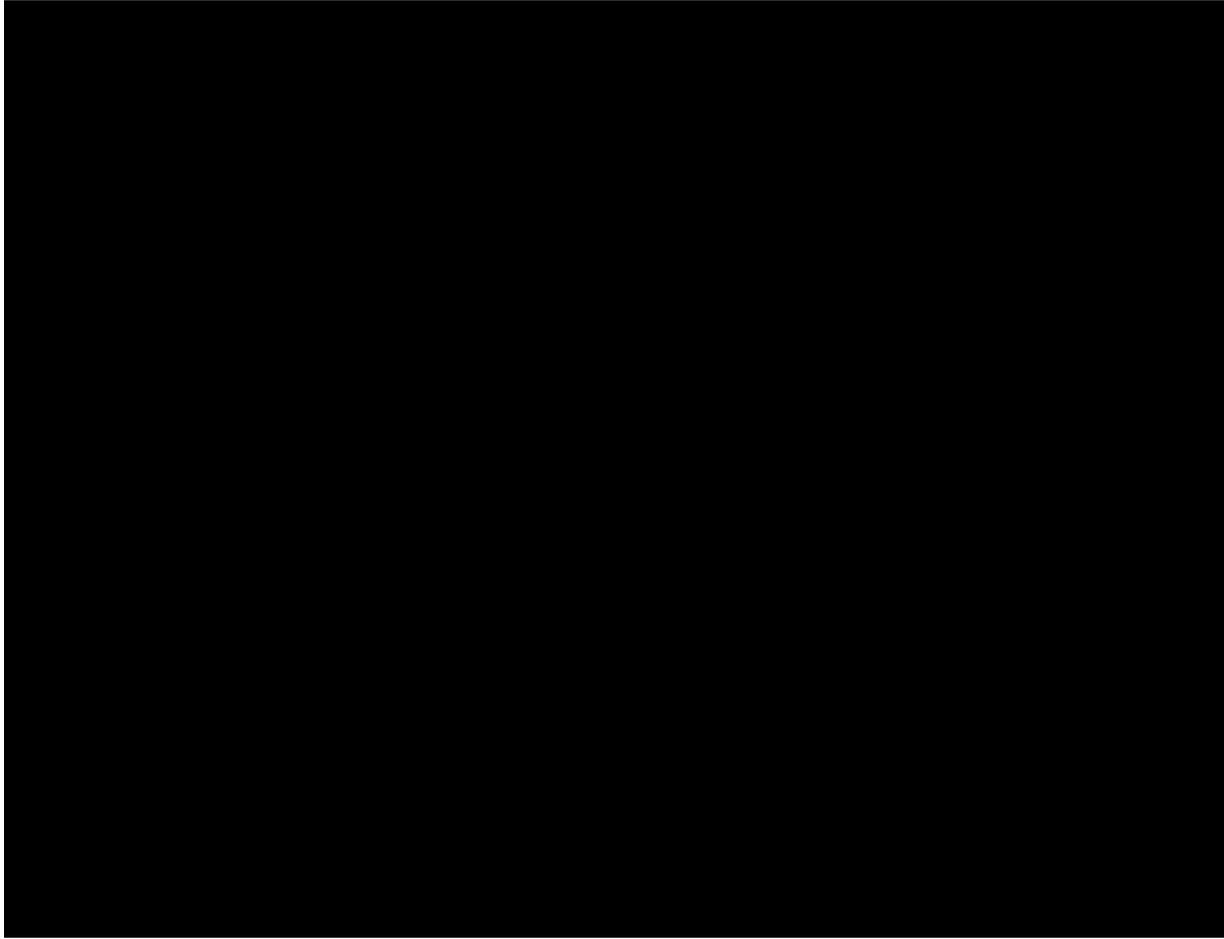
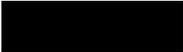


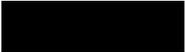






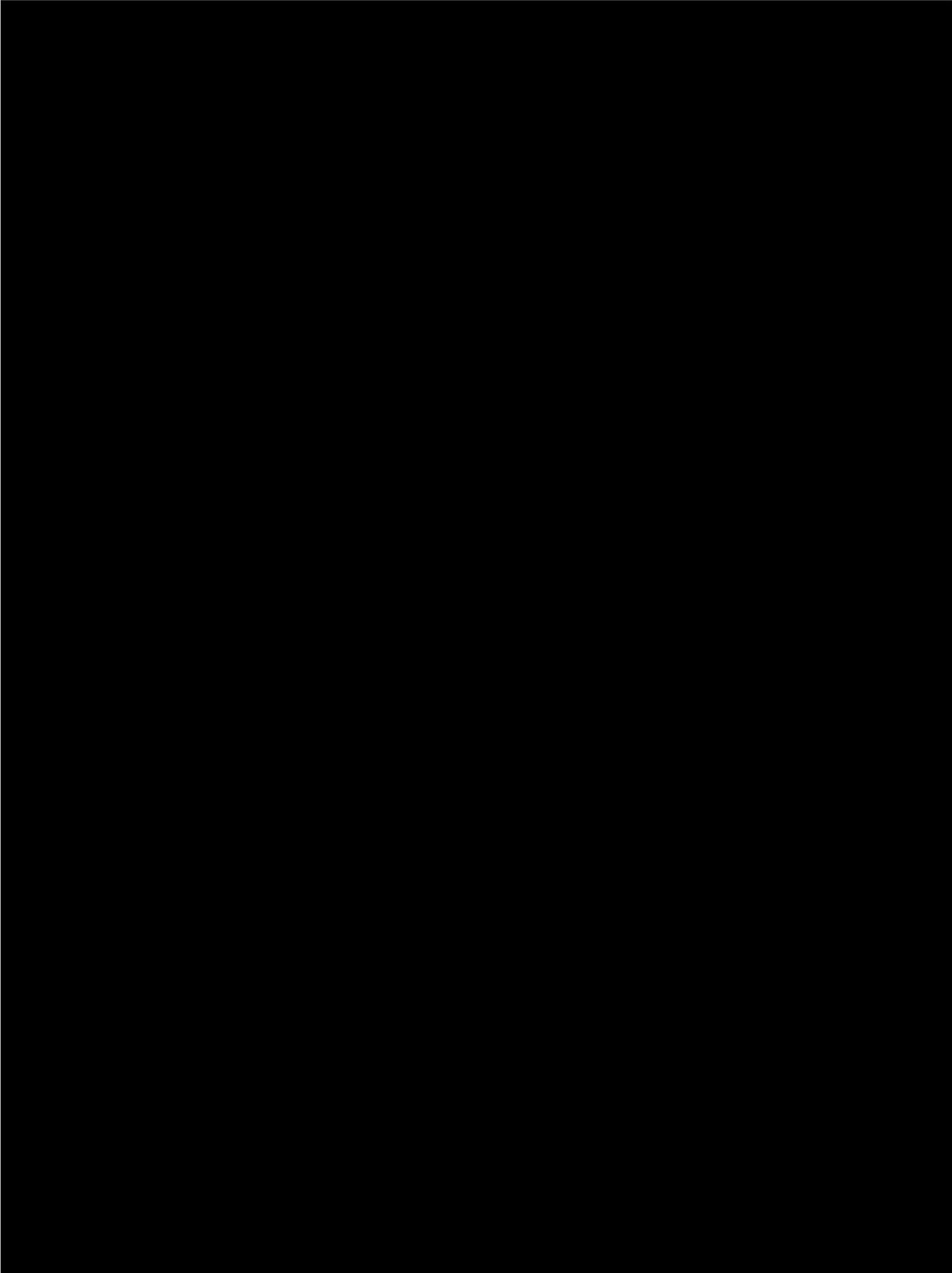






**Schedule 2 – Technical Description**

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[REDACTED]

[REDACTED]

[REDACTED]

**SCHEDULE 3: ROLLING STOCK REQUIREMENTS - ASSURANCE**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 3 – Rolling Stock Requirements - Assurance**

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# 1 Systems Engineering

## 1.1 Engineering Life-Cycle

- 1.1.1 The Manufacturer shall, at all times in performing its obligations under this Agreement, implement and manage a process of progressive assurance as described in this Schedule 3 ("**Progressive Assurance**").
- 1.1.2 During the period commencing on the Commencement Date and ending on the date of Final Acceptance of the last Unit the Manufacturer shall implement Systems Engineering techniques to control and reduce the risks associated with the interaction between the Units, the North London Railway and the East London Railway and their effective integration. The Manufacturer shall perform its obligations under this Agreement in a manner that minimises, to the extent reasonably practicable, such risks and facilitates the Acceptance of the Units by the Purchaser.
- 1.1.3 During the period commencing on the Commencement Date and ending on the date of Final Acceptance of the last Unit the Manufacturer shall implement a 'V' lifecycle model in accordance with BS EN 50126: 1999, "*Railway Applications – The specification and demonstration of Reliability, Availability and Maintainability and Safety*", in performing its obligations under this Agreement.
- 1.1.4 In complying with paragraph 1.1.3 the Manufacturer shall conduct reviews ("**Stage Gate Reviews**") at the end of each of the stages it has identified in its lifecycle 'V' model ("**Stage**") in respect of the design, manufacture, testing, commissioning and supply of the Units so as to ensure that Progressive Assurance is being conducted effectively and to enable co-ordination with the Purchaser's management of the project ("**ELL Project**") to upgrade the infrastructure of the East London Line and enhance the level of passenger services operating on it. As a minimum the Manufacturer shall conduct a Stage Gate Review at the end of each of the following Stages:
- (A) Preliminary Design (as described in Appendix B);
  - (B) Detailed Design (as described in Appendix B);
  - (C) manufacture (as described in Appendix C);
  - (D) testing of the first Unit on the NR Infrastructure (as described in Appendix D);
  - (E) successful completion of the tests described in Stage 2 Core ELL Test Plan (as described in Appendix D);
  - (F) Acceptance of the first NLR Unit (as described in Appendix D);
  - (G) Acceptance of the first ELR Unit (as described in Appendix D);
- 1.1.5 The Manufacturer shall obtain Assurance Acceptance from the Purchaser prior to commencing a Stage, unless the Manufacturer (acting reasonably) considers that obtaining Assurance Acceptance from the Purchaser is not appropriate for the commencement of that Stage. Where the Manufacturer determines in accordance with this paragraph 1.1.5 not to obtain Assurance Acceptance prior to commencing a Stage, the Manufacturer shall notify the Purchaser in writing of its decision and the reasons for such decision at least 15 Working Days prior to commencing that Stage.
- 1.1.6 As part of the Systems Engineering techniques implemented by the Manufacturer in accordance with paragraph 1.1.2, the Manufacturer shall at the end of each Stage undertake as part of the Stage Gate Review to be conducted pursuant to paragraph 1.1.5 an interdisciplinary review of each Subsystem, so as to ensure their effective integration and/or interaction with the other

Subsystems and so that evidence is available to confirm to the reasonable satisfaction of the Purchaser the completion of all of the deliverables and any outstanding issues for the relevant Stage. The Manufacturer shall notify the Purchaser in writing when it has completed a Stage Gate Review and upon receipt of such notice the Purchaser shall promptly arrange a meeting ("**Close-Out Meeting**") with the Manufacturer to confirm that all relevant deliverables and outstanding issues (if any) have been completed to the reasonable satisfaction of the Purchaser.

- 1.1.7 The Manufacturer shall assist the Purchaser with (i) the integration of the Units and the Core ELL Infrastructure, and (ii) the commencement of passenger services by the Operator. Such assistance shall include as a minimum, and without prejudice to the Rolling Stock Requirements – Contract Management:
- (A) the provision of requested information and data (including interface data) to the Purchaser;
  - (B) the review of information and data (including interface data) provided by the Purchaser; and
  - (C) the attendance by the Manufacturer (and, where appropriate, any of its Key Subcontractors) at meetings with the Purchaser, and/or the Main Works Contractor and/or the Operator.

## 1.2 Rolling Stock Assurance Plan

- 1.2.1 The Manufacturer shall regularly review and update the Rolling Stock Assurance Plan as the design, manufacture, testing and supply of the Units progresses, including as a minimum at the end of each Stage. The Manufacturer shall ensure that the Rolling Stock Assurance Plan, as amended from time to time pursuant to this paragraph 1.2.1, shall satisfy at all times the requirements set out in this Schedule 3. Where the Manufacturer has updated or otherwise amended the Rolling Stock Assurance Plan, it shall submit the modified Rolling Stock Assurance Plan to the Purchaser for Assurance Acceptance.
- 1.2.2 The Rolling Stock Assurance Plan shall describe the Systems Engineering techniques (including the 'V' lifecycle model prepared in accordance with paragraph 1.1.3) and the manner in which the concept of Progressive Assurance will be implemented by the Manufacturer to systematically manage the risks described in paragraph 1.1.2 and provide the necessary assurance to the Purchaser.
- 1.2.3 The Rolling Stock Assurance Plan shall:
- (A) describe each of the proposed Stage Gate Reviews and deliverables associated with each Stage Gate Review; and
  - (B) describe how the Technical Cases are to be produced/delivered with reference to the Technical Case Plan as defined in Clause 3.2.1
- 1.2.4 The Rolling Stock Assurance Plan shall be consistent with, and take into account, all railway approval processes required by an Applicable Law (including the Railways (Interoperability) Regulations 2006 and the Railways and Other Guided Transport Systems (Safety) Regulations 2006) and/or by any applicable Standard and conform to the requirements of any Relevant Consents.
- 1.2.5 The Rolling Stock Assurance Plan shall list and describe the processes to be adopted by the Manufacturer in implementing Progressive Assurance, including as a minimum:
- (A) requirements management (as described in paragraph 2.5);
  - (B) information and knowledge management;
  - (C) technical change control (as described in paragraph 2.2);
  - (D) configuration management (as described in paragraph 2.1);

- (E) DRACAS reporting (as described in paragraph 2.3);
- (F) submission programme (as described in paragraph 1.2.6);
- (G) document management;
- (H) design, manufacturing and test reviews;
- (I) competency management;
- (J) Standards management (as described in paragraph 2.4);
- (K) surveillance and audit (as described in paragraph 2.6); and
- (L) management of non-compliance.

1.2.6 The Rolling Stock Assurance Plan shall contain a programme for the submission by the Manufacturer of the information and/or documentation that will be submitted to the Purchaser for Assurance Acceptance. The Manufacturer shall ensure that, to the fullest extent possible, the programme is structured to: (i) allow regular intervals between the submission of information and/or documents to the Purchaser; (ii) takes into account any timeframes and/or approval periods specified in any Applicable Law and/or applicable Standard; and (iii) be consistent with the Project Programme.

1.2.7 The Rolling Stock Assurance Plan shall contain an organisation chart showing:

- (A) the employees of the Manufacturer that will be responsible for Progressive Assurance; and
- (B) the manner in which those employees will be independent from the other employees of the Manufacturer undertaking the design, manufacture, testing and commissioning of the Units and other items of Purchased Equipment.

1.2.8 The Rolling Stock Assurance Plan shall set out the curriculum vitae of each of the employees of the Manufacturer that will be responsible for Progressive Assurance, details of their qualifications and the manner by which their relevant experience matches the competency requirements of their proposed role.

1.2.9 The Manufacturer shall ensure that following any amendment to this Agreement (including any amendment to a Plan) the level of independence of the Manufacturer's employees responsible for Progressive Assurance is not reduced in any manner from the level of independence enjoyed by such employees as at the Commencement Date

### 1.3 Assurance Acceptance Process

1.3.1 Where the Manufacturer is required to submit information, drawings and/or documents to the Purchaser for Assurance Acceptance, the Manufacturer shall comply with the requirements described in this paragraph 1.3 provided that any Plan or other document that is included in a Schedule or otherwise exhibited to this Agreement as at the Commencement Date shall be deemed to have Assurance Acceptance but without prejudice to (i) the requirements of this Agreement and (ii) the obligations of the Manufacturer to revise and/or resubmit such Plans or other documents for Assurance Acceptance as required by this Agreement.

1.3.2 All submissions to the Purchaser for Assurance Acceptance shall be in the English language.

1.3.3 The Manufacturer shall ensure that each drawing, document and/or other information submitted to the Manufacturer for Assurance Acceptance:

- (A) is complete in writing, and of good readable quality;
- (B) is in triplicate;

- (C) in the case of drawings and documents, is titled, numbered and dated in a manner approved by the Purchaser and where applicable shall incorporate a graphic scale, definitions and/or any other appropriate guide for interpretation;
- (D) in the case of general arrangement and layout drawings, contain details of Parts and materials including space requirements for installation, maintenance and replacement, details of the service connections required, environmental requirements and weight and fixing detail;
- (E) in the case of schematics or diagrams, is accompanied by all necessary supplementary information to describe the function and operation of the relevant part of the ELR Units and/or NLR Units and/or other item of Purchased Equipment;
- (F) in the case of revised or re-submitted drawings and/or documents, clearly shows the revisions and the drawing number containing a revised letter or number;
- (G) is in accordance with any other requirements specified in this Agreement in respect of such drawing, document and/or information;
- (H) is:
  - (1) left at the address of the Purchaser;
  - (2) sent by pre-paid first class post or by airmail if posted to or from a place outside the United Kingdom to the address of the Purchaser;
  - (3) sent by facsimile to the facsimile number of the Purchaser; or
  - (4) sent by email or other form of electronic communication to the email address of the Purchaser,

in each case as specified in paragraph 1.3.5 and marked "For the attention of: The Rolling Stock Project Manager" (being, at the date of this Agreement, Philip Clarke); and

- (I) is accompanied by a Request for Approval.

1.3.4 The Manufacturer shall ensure that each Request for Approval contains, to the extent applicable, the following information:

- (A) the submission number (which shall be independent of any drawing number as referred to in paragraph 1.3.3(C));
- (B) the drawing and/or document number, including where relevant the revision letter or number;
- (C) the drawing title and/or title of the document;
- (D) the date of submission;
- (E) details of approval sought; and
- (F) any supplementary information which is necessary to enable the Purchaser to make a decision in accordance with paragraph 1.3.6 (including, where relevant, a description of the latest revision).

1.3.5 For the purposes of paragraph 1.3.3(H), the relevant details as at the date of this Agreement are:

Transport Trading Limited

Address: Transport for London, 15 Bonhill Street, London EC2A 4DN

Facsimile: 0845 458 0957

Email: ELLPDocumentController@tfl.gov.uk

- 1.3.6 The Purchaser shall promptly notify the Manufacturer in writing by notice served in accordance with Clause 40 if any of the details specified in paragraph 1.3.5 cease to be correct.
- 1.3.7 Where the Purchaser has received drawings, documents and/or information that have been submitted for Assurance Acceptance in accordance with the requirements of this paragraph 1.3, the Purchaser shall promptly acknowledge receipt of such submission (and in any event no later than 3 Working Days from receipt of such submission) by signing, dating and returning to the Manufacturer a copy of the Request for Approval for that submission:
- (A) by leaving it at the address of the Manufacturer;
  - (B) by sending it by pre-paid first class post or by airmail if posted to or from a place outside the United Kingdom to the address of the Manufacturer;
  - (C) by sending it by facsimile to the facsimile number of the Manufacturer; or
  - (D) by sending it by email or other form of electronic communication to the email address of the Manufacturer,
- in each case as specified in paragraph 1.3.8 and marked "For the attention of: Project Engineer, NLR/ELR Project".
- 1.3.8 For the purposes of paragraph 1.3.7, the relevant details of the Manufacturer as at the date of this Agreement are:
- Bombardier Transportation UK Limited
- Address: J Shop, Litchurch Lane, Derby DE24 8AD
- Facsimile: 01332 251889
- Email: [REDACTED]
- 1.3.9 The Manufacturer shall promptly notify the Purchaser in writing by notice served in accordance with Clause 40 if any of the details specified in paragraph 1.3.8 cease to be correct.
- 1.3.10 The Purchaser and the Manufacturer agree that save to the extent expressly provided for in this paragraph 1.3, Clause 40 shall not apply to any drawings, documents and information submitted by the Manufacturer for Assurance Acceptance by the Purchaser.
- 1.3.11 The Manufacturer shall be responsible for ensuring that the Purchaser receives each submission made by the Manufacturer for Assurance Acceptance (as evidenced by the Manufacturer receiving a copy of the Request for Approval countersigned by the Purchaser) and the date on which the Purchaser signs a copy of the Request for Approval shall be the date on which, for the purposes of this paragraph 1.3, the Purchaser shall be deemed to have received the submission for Assurance Acceptance.
- 1.3.12 Where the Manufacturer has submitted information, drawings and/or documents for Assurance Acceptance, the Purchaser shall review and consider such information, drawing and/or document, and shall categorise any comments it has on such submission as:
- "**Category A Comments**" where there are concerns, errors, omissions or questions that have a direct bearing on the acceptability of the information, drawing and/or document (as the case may be) which it is necessary to resolve immediately;
  - "**Category B Comments**" where there are concerns, errors, omissions or questions that require satisfactory resolution within a defined time period (not to exceed 20 Working Days);

**"Category C Comments"** where there are minor errors, syntax, spelling and/or minor technical errors which have no direct significant implications. For clarity, the Manufacturer shall correct such error and retain the corrected version of the document and, if requested by the Purchaser, provide the Purchaser with a copy of the same.

- 1.3.13 Where the Purchaser, acting reasonably, considers that the complexity, detail, scope and/or nature of the drawings, documents and/or information submitted by the Manufacturer for Assurance Acceptance means that it may not be able to respond to the Manufacturer within 20 Working Days of receipt by it of such submission, the Purchaser shall be entitled to an additional period of time of no more than 15 Working Days to consider the submission provided that the Purchaser notifies the Manufacturer in writing (at the address in paragraph 1.3.8 but otherwise in accordance with Clause 40) within 7 Working Days of the date the Purchaser received the submission that the Purchaser is exercising its rights under this paragraph 1.3.13. Each notice served by the Purchaser pursuant to this paragraph 1.3.13 shall specify:
- (A) the details of the relevant submission;
  - (B) the additional period of time required by the Purchaser (not to exceed 15 Working Days); and
  - (C) a description in reasonable detail, as to the reasons why the additional time is required.
- 1.3.14 Within 20 Working Days of the date the Purchaser received a submission from the Manufacturer for Assurance Acceptance (or such later date as notified to the Manufacturer in accordance with paragraph 1.3.13) the Purchaser shall review the information, drawing and/or document that has been submitted or re-submitted by the Manufacturer and return one copy of the same stamped or marked:
- “Category I – No Assurance Acceptance”;
- “Category II – Assurance Acceptance Granted with comments”; or
- “Category III – Assurance Acceptance Granted”.
- 1.3.15 The Manufacturer shall undertake the following actions in relation to the information, drawing and/or document (as the case may be) that has been returned to it by the Purchaser in accordance with paragraph 1.3.14:
- (A) if such information has been stamped “Category I – No Assurance Acceptance”, the Manufacturer shall immediately review and revise the relevant drawing, documents and/or information taking into account the comments made by the Purchaser pursuant to paragraph 1.3.14 and shall resubmit such information for Assurance Acceptance by the Purchaser in accordance with this paragraph 1.3;
  - (B) if such information has been stamped “Category II – Assurance Acceptance Granted with comments”, the Manufacturer shall be entitled to proceed on the basis of the drawing, documents and/or information as amended to incorporate the comments made by the Purchaser and re-submitted for Assurance Acceptance by the Purchaser pursuant to paragraph 1.3.14; and
  - (C) if such information has been stamped “Category III – Assurance Acceptance Granted”, the Manufacturer shall be entitled to proceed on the basis of drawing, documents and/or information submitted to the Purchaser,
- 1.3.16 If the Purchaser does not respond within the timeframes set out in paragraph 1.3.14, the Manufacturer shall be entitled to treat the information submitted to the Purchaser as "Category III – Assurance Acceptance Granted" provided that the Purchaser has signed and returned a copy of

the Request for Approval in respect of that submission of that information for Assurance Acceptance.

- 1.3.17 In considering which category to stamp or mark a document, drawing or item of information that has been submitted for Assurance Acceptance, the Purchaser shall be entitled to take into account the number of "Category A Comments", "Category B Comments" and/or "Category C Comments" it has on such item and where there is a significant number of "Category B Comments" and/or "Category C Comments" consider whether in totality such comments represent sufficient residual risk that they are equivalent to a "Category A Comment" and/or "Category B Comment".
- 1.3.18 Unless otherwise required by the Purchaser, the Manufacturer shall only be required to submit one example of any sample, pattern or model.
- 1.3.19 The Purchaser shall be entitled, at any time and on reasonable notice (and in any event not less than 2 Working Days from the date of such notice) to:
- (A) request the Manufacturer to submit any further document, information, design, drawing, calculation, schedule, sample, pattern or model necessary to clarify, support and/or justify any submission for Assurance Acceptance; and
  - (B) notwithstanding the Rolling Stock Requirements - Contract Management require (acting reasonably) the Manufacturer and/or any of its Key Subcontractors to attend a meeting to discuss any aspect of the drawings, documents and/or information submitted for Assurance Acceptance,

and the Manufacturer shall comply with any such request by the Purchaser.

- 1.3.20 The Purchaser shall act reasonably, taking into account the requirements of this Agreement, when considering which category of response to give pursuant to paragraph 1.3.14 to a submission by the Manufacturer for Assurance Acceptance.

## 2 Assurance Processes

### 2.1 Configuration Management

- 2.1.1 The Manufacturer shall establish and implement until Final Acceptance of the last Unit a configuration management system that complies with the requirements of ISO 10007:2003 "*Quality management systems. Guidelines for configuration management*", and, to the extent applicable, the requirements of "*The Yellow Book: Engineering Safety Management*" ("**Yellow Book**").
- 2.1.2 The Rolling Stock Assurance Plan shall contain a plan that describes the configuration management system proposed to be established and implemented by the Manufacturer in accordance with paragraph 2.1.1 ("**Configuration Management Plan**").

### 2.2 Technical Change Control

- 2.2.1 The Manufacturer shall establish and implement until Final Acceptance of the last Unit a process ("**Change Control Process**") that is consistent with the Variation Procedure and the process for implementing Permitted Design Changes pursuant to Clause 6.2. The Change Control Process shall enable the Manufacturer to manage, in a structured manner, any change to the scope, function, timeframes, cost and/or and technical aspect of any item of Purchased Equipment as a result of a Variation or otherwise. The Rolling Stock Assurance Plan shall describe the Change Control Process.
- 2.2.2 The Manufacturer shall ensure that the Change Control Process includes a process for the categorisation of technical changes which is consistent with the Vehicle Design Area Breakdown Structure and the Technical Case Plan.
- 2.2.3 Where a document, drawing and/or other information that has been granted Assurance Acceptance by the Purchaser requires amendment in connection with a Variation, a Permitted Design Change or other requirement of this Agreement, the Manufacturer shall make such amendments as it considers necessary and resubmit the amended drawing, document and/or information to the Purchaser for Assurance Acceptance.

### 2.3 DRACAS

- 2.3.1 The Manufacturer shall establish and implement until Final Acceptance of the last Unit a data recording and corrective action system that records and enables analysis of all relevant information and data created by the Manufacturer and/or its Subcontractors in performing its obligations under this Agreement ("**DRACAS**").
- 2.3.2 The Manufacturer shall ensure that DRACAS records all actual or suspected errors, non-conformances, failures, Defects and incidents and accidents arising in relation to, or in connection with, any item of Purchased Equipment and/or any process relating to the design, manufacturing, testing, commissioning and supply of any item of Purchased Equipment together with details of any remedial actions taken by the Manufacturer and/or its Subcontractors.
- 2.3.3 The Rolling Stock Assurance Plan shall describe the process for DRACAS to be implemented by the Manufacturer.

### 2.4 Standards Management

- 2.4.1 The Manufacturer shall establish and implement until Final Acceptance of the last Unit a Standards management process that:

- (A) includes the creation and maintenance of a matrix that lists all Standards that apply to the performance by the Manufacturer of its obligations under this Agreement ("**Standards Matrix**");
- (B) includes a process for the establishment and subsequent management of recording changes to the Standards using the Standards Matrix to identify the Standards that have changed after a specified date and the version of each Standard being complied with by the Manufacturer at any point in time;
- (C) enables evidence of compliance by the Manufacturer with each of the Standards listed in the Standards Matrix to be provided as part of a Technical Case; and
- (D) includes a process for identifying any derogations or concessions to the Standards set out in the Standards Matrix that need to be obtained.

The Manufacturer shall include the standards management process it has established in accordance with this paragraph 2.4.1 as part of the Rolling Stock Assurance Plan.

2.4.2 Subject to paragraph 2.4.3 the Manufacturer undertakes to minimise the number of derogations or concessions required from any Standard and shall submit any request for a derogation or deviation, with a detailed description as to why such derogation or concessions is required, to the Purchaser for Assurance Acceptance. Where Assurance Acceptance has been granted by the Purchaser in respect of a proposed derogation or concession from a Standard, the Manufacturer shall use reasonable endeavours to obtain that derogation or concession from the relevant Competent Authority.

2.4.3 The Manufacturer shall be entitled, in respect of the Units to seek from the relevant Competent Authority any of the following derogations:

- (A) in relation to Railway Group Standards, a derogation from:
  - (1) 03/099/DGN in relation to visibility from driving cab (376). (This is still required if the cab is deemed to be non gangwayed despite the addition of end detrainment.)
  - (2) 03/163/NC in relation to AWS receiver sensitivity. (This is required to support use of the solid state receiver that has provided improved reliability.)
  - (3) GE/RT 8060 (Issue 1; June 2003) as referenced in Schedule 1 relating to "Technical Requirements for Dispatch of Trains from platforms" in relation to the CCTV system.
- (B) in relation to the Rail Vehicle Accessibility Regulations 1998 (as may be amended from time to time):
  - (1) an exemption that permits a grabpole to be fitted above a wheelchair location as required by the operator. (This exemption is required to address the apparent inconsistency with HMRI guidance that there should be a grabpole over the wheelchair position especially for use when that location is fully occupied by passengers who are standing).

2.4.4 The Manufacturer acknowledges and agrees that:

- (A) the granting of any derogation or concession by a Competent Authority shall be at its risk;
- (B) the failure of a Competent Authority to grant a derogation or concession to a Standard shall not:
  - (1) constitute a Proposed Variation or a Required Variation under the Variation Procedure;

- (2) constitute a Permitted Delay Event or otherwise entitle the Manufacturer to an extension of time to the Contractual Acceptance Date for any item of Purchased Equipment or any adjustment to the Project Programme or the Delivery Schedule;
- (3) in any way affect the Contract Price for any item of Purchased Equipment the Total Option Price for any Option, the Schedule of Milestones, or otherwise entitle the Manufacturer to be reimbursed for any costs and expenses incurred or otherwise compensated in any form or manner; or
- (4) entitle the Manufacturer to any relief from any of its obligations under this Agreement including compliance with the Applicable Law or applicable Standard for which it sought the derogation.

## 2.5 Requirements Management

- 2.5.1 The Manufacturer shall establish and implement until Final Acceptance of the last Unit a management system that records the Manufacturer's compliance with each of the requirements set out in the Rolling Stock Requirements - Technical and, where appropriate, to generate more detailed requirements to be used in the design of the Units ("**Requirements Management System**").
- 2.5.2 The Manufacturer shall ensure that the Requirements Management System is consistent with the requirements of Clause 6.2 including the right of the Purchaser to make Permitted Design Changes to the Rolling Stock Requirements –Technical.

## 2.6 Assurance Audit Requirements

- 2.6.1 The Manufacturer shall undertake internal audits and audits of its Key Subcontractors to support the submission of each of its Technical Cases for Assurance Acceptance. All such audits shall be formally recorded and the records retained by the Manufacturer for a minimum of 12 years from Final Acceptance of the last Unit. The Manufacturer shall make the results of such audits and/or any related records or documents available to the Purchaser upon request.
- 2.6.2 The Manufacturer shall conduct the audits described in paragraph 2.6.1 at least every 6 months and in accordance with the programme and audit procedures that have been granted Assurance Acceptance by the Purchaser. Where an audit of a Key Subcontractor has identified areas of non-compliance the Manufacturer shall audit that Key Subcontractor more frequently and the Manufacturer shall remedy (in relation to an internal audit) and shall procure that the Key Subcontractor remedies (in relation to an audit of a Key Subcontractor) any areas of non-compliance identified at no cost to the Purchaser.
- 2.6.3 The Manufacturer shall submit a programme for undertaking the audits to be conducted pursuant to this paragraph 2.6 and a detailed description of the audit procedures to be followed to the Purchaser for Assurance Acceptance within 20 Working Days of the Commencement Date. Where the Manufacturer, for any reason, modifies the programme of audits and/or the audit procedures to be adopted by the Manufacturer that have been granted Assurance Acceptance by the Purchaser the Manufacturer shall submit such modified audit programme and/or procedures to the Purchaser for Assurance Acceptance.

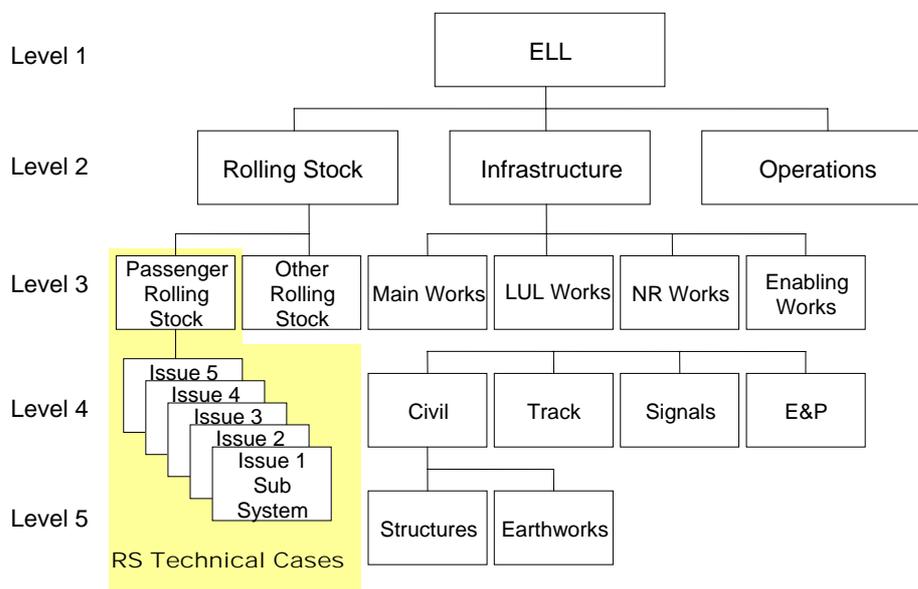
### 3 The Rolling Stock Technical Case

#### 3.1 Rolling Stock Technical Case

3.1.1 The Manufacturer shall be responsible for preparing each of the technical cases described in the Technical Case Plan (a "**Technical Case**"). The Manufacturer shall ensure that each Technical Case contains, or references, such information and other evidence as is necessary to demonstrate to the Purchaser's reasonable satisfaction that the Units and/or its Parts and/or Subsystems (as described in the Technical Case Plan) (each a "**TC Component**") the subject of the Technical Case comply with:

- (A) the Rolling Stock Requirements Technical;
- (B) all Applicable Laws, applicable Standards, and Relevant Consents; and
- (C) all other requirements set out in this Agreement.

3.1.2 The Manufacturer acknowledges and agrees that the Purchaser intends to use the technical case prepared in relation to the Units ("**Rolling Stock Technical Case**") in preparing a technical case relating to the rolling stock operating on the East London Railway ("**Level 2 Technical Case**") and a technical case relating to the overall operation of the East London Railway ("**Level 1 Technical Case**"). For information purposes only, this has been represented diagrammatically in the figure below.



*Figure 1: Simplified Technical Case Structure and Levels  
Showing Manufacturer's Technical Case Scope*

3.1.3 The Manufacturer shall use reasonable endeavours to ensure that the Rolling Stock Technical Case is compatible with the Level 1 Technical Case and the Level 2 Technical Cases provided to it by the Purchaser from time to time such that the Rolling Stock Technical Case may be integrated with the Level 1 Technical Case and the Level 2 Technical Case. Where either the Level 1 Technical Case and/or the Level 2 Technical Case is amended by the Purchaser and the Manufacturer is able to demonstrate to the reasonable satisfaction of the Purchaser that the

Rolling Stock Requirements – Technical, the Technical Description and/or a design or a Technical Case which has previously been granted Assurance Acceptance should be amended in order to continue to be consistent with the Level 1 Technical Case and the Level 2 Technical Case, the Purchaser shall implement the necessary amendments to the Rolling Stock Requirements – Technical through the Variation Procedure.

- 3.1.4 The Manufacturer shall structure each Technical Case upon the argument based in the technical case prepared by the Purchaser, which is “the successful delivery of fully integrated railway services”.
- 3.1.5 In preparing each Technical Case, the Manufacturer shall present the information and other evidence using goal structured notation (as described, for information purposes only, in Appendix E), supported by tabular and textual information as necessary.
- 3.1.6 The Manufacturer shall manage each Technical Case and progressively revise at the end of each Stage the same so that together they satisfy the requirements of Progressive Assurance during the design, manufacture, testing, commissioning and supply of the Units.

## 3.2 Technical Case Plan

- 3.2.1 The Manufacturer shall ensure that the Technical Case Plan:
  - (A) describes the manner in which the Manufacturer shall demonstrate to the reasonable satisfaction of the Purchaser that the TC Component satisfies the relevant requirements specified in this Agreement; and
  - (B) identifies the information and/or evidence that will need to be provided and at which Stage a particular piece of information and/or evidence will be able to be included in a Technical Case.

## 3.3 Technical Case Management

- 3.3.1 Without prejudice to the Manufacturer's obligations under this Schedule 3, the Manufacturer shall implement management systems that are compatible with standard commercially available software, including Fault Tree +, Microsoft Office, Adobe Acrobat, Tag Image File format and JPEG file interchange format and that enable the information and/or evidence produced by the Manufacturer in its Technical Cases to be used and edited by the Purchaser in the Level 1 Technical Case and Level 2 Technical Case. The Manufacturer shall use its reasonable endeavours and cooperate with the Purchaser to mitigate any incompatibility between the Purchaser's and the Manufacturer's respective management systems.

## 3.4 Validation and Verification of Technical Cases

- 3.4.1 The Manufacturer shall develop a set of verification and validation plans for each of the Technical Cases that describe the means (whether by testing, certification or otherwise) by which the Manufacturer proposes to demonstrate to the Purchaser that a particular requirement (whether statutory, regulatory, contractual or otherwise) has been satisfied ("**Verification and Validation Plans**"). The Rolling Stock Assurance Plan shall include the Verification and Validation Plans.

## 3.5 Review of Technical Cases

- 3.5.1 The Manufacturer shall submit each Technical Case to the Purchaser for Assurance Acceptance before proceeding to the next Stage and on the dates shown in the Project Programme. Each Technical Case submitted to the Purchaser shall be progressively revised to include additional information and/or evidence that has been obtained during each of the Stages prior to the Technical Case being submitted to the Purchaser for Assurance Acceptance.

- 3.5.2 In undertaking Assurance Acceptance of a Technical Case, the Purchaser shall be entitled to review all evidence included or referenced in the Technical Case through Design Review. The form and manner of the Design Reviews undertaken by the Purchaser shall reflect the Purchaser's consideration of the novelty and risks associated with the design. Where a Design Review identifies any non-compliance (including any errors, omissions, ambiguities and/or inconsistencies) with the requirements of this Agreement in respect of the design of the NLR Units and/or the ELR Units the Purchaser shall inform of the Manufacturer of those non-compliances (including any errors, omissions, ambiguities and/or inconsistencies) as part of its comments on the Technical Case in accordance with paragraph 1.3.12 and (without prejudice to paragraph 1.3.20) the Manufacturer shall amend the Technical Case in accordance with paragraph 1.3.15 to address any comments made by the Purchaser.
- 3.5.3 The verification of each Technical Case by the Purchaser shall be based upon the evaluation of the information and/or evidence contained in the Technical Case that shows that TC Component satisfies all the relevant requirements.

### 3.6 Provision of Evidence

3.6.1 The Manufacturer shall ensure that each Technical Case is supported by evidence that demonstrates to the reasonable satisfaction of the Purchaser that the TC Component satisfies the relevant requirements.

3.6.2 Where:

- (A) a TC Component is an existing component of the Base Product; and
- (B) the Manufacturer is able to demonstrate to the reasonable satisfaction of the Purchaser that the technical, safety and operational functions of the TC Component in respect of the Base Product are the same as those specified in the Rolling Stock Requirements-Technical,

the Manufacturer shall be entitled to submit as supporting evidence to the Technical Case for that TC Component any certificates, consents, approvals and/or other equivalent information provided by a Vehicle Acceptance Body, a Notified Body, or a Competent Authority and/or any other evidence acceptable to the Purchaser (acting reasonably) in respect of that TC Component.

3.6.3 As part of the audits undertaken by the Purchaser pursuant to this Schedule 3, the Purchaser shall undertake audits of the Manufacturer to ensure the adequacy and relevance of the evidence that supports the Technical Cases.

3.6.4 Where the Manufacturer submits the Rolling Stock Technical Case to the Purchaser for Assurance Acceptance at the end of the Stage for Detailed Design the Manufacturer shall ensure that such submission is accompanied by evidence of independent peer review of the Rolling Stock Technical Case. The Manufacturer shall be entitled to appoint a suitably qualified and experienced employee identified in its Rolling Stock Assurance Plan to undertake the independent peer review of the Rolling Stock Technical Case

## 4 Management Systems

### 4.1 General

4.1.1 The purpose of this paragraph 4 is to describe the activities the Manufacturer shall undertake to develop and maintain formal safety, quality and environmental management systems ("**SQE**").

4.1.2 This paragraph 4 also: (i) outlines the certification that the Manufacturer shall obtain and maintain in respect of its management systems until Final Acceptance of the last Unit; and (ii) describes the principal activities that are to be addressed by each of the management systems. Further requirements for safety management, quality management and environmental management are described in paragraphs 5, 6 and 7 respectively.

### 4.2 General Requirements

#### **SQE Management System Requirements**

4.2.1 The Manufacturer shall establish, implement and maintain a SQE management system ("**SQEMS**") that complies with the latest versions of BS EN ISO 14001, OHSAS 18001, BS 8800 and ISO 9001. The Manufacturer shall obtain certification of the SQEMS' compliance with the requirements of ISO 9001 from an accredited body approved by the Purchaser within 16 weeks of the Commencement Date save to the extent that the SQEMS has been certificated by an appropriate accreditation body as complying with the requirements of ISO9001 prior to the Commencement Date and such certificate is valid on the Commencement Date. The Manufacturer shall maintain certification of the SQEMS' compliance with ISO9001 until Final Acceptance of the last Unit.

4.2.2 The SQEMS shall be structured so as to enable the Manufacturer to demonstrate by self-certification that each of the SQE requirements described in this Schedule 3 and all relevant Standards, Applicable Laws and Relevant Consents are being satisfied. The SQEMS shall be co-ordinated between and across the safety, quality and environment elements and shall comply with each of the requirements specified in paragraphs 4, 5, 6 and 7.

#### **SQE Management System Documentation**

4.2.3 The Manufacturer shall ensure that the SQE Plan (as may be amended from time to time), satisfies at all times the requirements set out in this paragraph 4. Where the SQE Plan has been amended, the Manufacturer shall submit the revised SQE Plan to the Purchaser for Assurance Acceptance.

4.2.4 The SQE Plan shall document the SQEMS to be implemented by the Manufacturer in accordance with paragraph 4.2.1. The SQE Plan shall describe how the Manufacturer proposes to comply with the requirements set out in this paragraph 4.2, including its arrangements for:

- (A) organisation;
- (B) interfacing;
- (C) quality management;
- (D) assurance activities;
- (E) management of accidents, incidents and non-conformance;
- (F) improvement management;
- (G) auditing; and

(H) management system review.

### 4.3 SQE Policy

- 4.3.1 The Manufacturer acknowledges and agrees that the Purchaser's SQE policy (as set out in Appendix A) contains a public commitment that safety has the highest priority and provides that no action will be taken that compromises any aspect of safety.
- 4.3.2 The Manufacturer shall ensure that its SQEMS is compliant with the Purchaser's SQE policy set out in Appendix A.
- 4.3.3 The Manufacturer shall, and shall procure that each of its Key Subcontractors shall, comply with the SQE policy set out in Appendix A
- 4.3.4 Notwithstanding paragraph 1.6 of Schedule 14, the Manufacturer shall establish a drugs and alcohol policy at least as rigorous as the LUL drugs and alcohol policy (set out in Appendix F) to operate when its employees, agents and/or Subcontractors engaged in the performance of this Agreement are under the control of the Purchaser and/or are working, operating and/or are located at any premises or Railway Infrastructure owned or controlled by the Purchaser or any other member of the TfL Group (whether temporary or permanently).
- 4.3.5 Without prejudice to paragraph 1.6 of Schedule 14, the Manufacturer shall establish a drugs and alcohol policy at least as rigorous as the Network Rail drugs and alcohol policy to operate when its employees, agents and/or Subcontractors engaged in the performance of this Agreement are under the control of the Purchaser are working or operating and/or are located on Network Rail owned or controlled Railway Infrastructure or premises.
- 4.3.6 The Manufacturer shall submit the drugs and alcohol policies it has prepared in accordance with paragraphs 4.3.4 and 4.3.5 to the Purchaser for Assurance Acceptance by no later than 16 weeks after the Commencement Date.

### 4.4 SQE Planning

#### **SQE Objectives**

- 4.4.1 The Manufacturer shall develop SQE objectives and targets consistent with the requirements set out in this Agreement. The Manufacturer shall set out such SQE objectives and targets in the SQE Plan.

### 4.5 Implementation and Operation

#### **Structure and Responsibility**

- 4.5.1 The Manufacturer shall nominate suitably qualified and experienced safety, quality and environmental manager(s), who will be responsible for managing the SQEMS implemented by the Manufacturer. The Manufacturer shall submit the proposed SQE manager(s)' CVs to the Purchaser for Assurance Acceptance. The Purchaser shall be entitled to object to a proposed SQE manager where the Purchaser, acting reasonably, considers that the proposed SQE manager is not appropriately qualified and/or experienced to undertake the necessary activities in connection with this Agreement. The Manufacturer shall not appoint any person as an SQE manager without obtaining the Purchaser's prior written consent and Assurance Acceptance.
- 4.5.2 The SQE manager shall be responsible for ensuring that all staff for who he is responsible are competent and are suitably qualified and experienced.

### **Training, Awareness and Competence**

- 4.5.3 The Manufacturer shall establish and operate a formal competence management system to ensure that any employee, agent and/or Subcontractor performing tasks for it or on its behalf are fully competent to fulfil their intended roles. The Manufacturer shall ensure that any work on Network Rail and LUL controlled Railway Infrastructure shall only be carried out by employees, agents and/or Subcontractors who satisfy the competence requirements of Network Rail or LUL, as appropriate.

### **Emergency Preparedness and Response**

- 4.5.4 In the event of an accident or an incident reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1994 on LUL and/or Network Rail controlled Railway Infrastructure and/or premises, the Manufacturer shall notify the Purchaser within one Working Day of the occurrence of such an accident or incident.

- 4.5.5 If an accident or incident occurs on Network Rail or LUL controlled Railway Infrastructure and/or premises, the Purchaser may decide to initiate a formal investigation in accordance with:

- (A) LUL procedures for the management and investigation of accidents and incidents where the accident or incident occurred on LUL controlled Railway Infrastructure and/or premises; or
- (B) Network Rail procedures where the accident or incident occurred on Network Rail controlled Railway Infrastructure and/or premises,

the Manufacturer shall co-operate fully in the investigation process (whether conducted by Network Rail or LUL) and may be required by the Purchaser to carry out all or part of the investigation.

### **Procurement and Supply Chain**

- 4.5.6 The Manufacturer shall include SQE criteria in any pre-contractual assessment of Subcontractors and suppliers and as part of any contractual performance regime. The Manufacturer shall ensure that the activities of all Subcontractors and suppliers are consistent with the SQEMS implemented by the Manufacturer.

## **4.6 Checking and Corrective Action**

### **Records and Records Management**

- 4.6.1 From the Commencement Date the Manufacturer shall establish and maintain a register of records until Final Acceptance of the last Unit. This register shall be made available to the Purchaser upon reasonable notice (and in any event not less than 2 Working Days from the date of such request). The register shall be kept up to date as the Manufacturer performs its obligations under this Agreement. As a minimum the register shall include:

- (A) register of Applicable Laws and the Standards Matrix;
- (B) design compliance sign-offs;
- (C) training records;
- (D) minutes of meetings with the Purchaser's stakeholders;
- (E) correspondence with Competent Authorities relating to this Agreement;
- (F) non-conformance records;
- (G) specialist procedures requirements (testing, commissioning, surveys, etc.);
- (H) audits; and
- (I) management reviews.

## **Audit**

- 4.6.2 Without prejudice to the rights of the Purchaser to conduct audits and assessments in accordance with Clause 9, the Purchaser shall be entitled to audit the Manufacturer's compliance with this Schedule 3. The Purchaser shall be entitled to conduct the first audit within 3 months of the date of this Agreement and shall be entitled to conduct further audits at least every 6 months. The frequency of such audits will be determined by the Purchaser depending on the findings of the first or subsequent audit(s). These audits may address, but shall not be limited to:
- (A) management systems for safety, quality and the environment;
  - (B) the Manufacturer's own contract management processes and procedures;
  - (C) assurance activities; and
  - (D) improvement activities, including performance measurement techniques such as benchmarking (KPIs).
- 4.6.3 The Manufacturer shall make available and submit to the Purchaser on request any documents and records that may be required for audits undertaken by Purchaser pursuant to this paragraph 4, including the results of the Manufacturer's own audits. The Manufacturer shall make available to the Purchaser any employees, agents and/or Key Subcontractors that the Purchaser reasonably considers to be necessary to participate in such audit.
- 4.6.4 The Purchaser shall issue the Manufacturer with an audit plan at least 2 weeks in advance of each proposed audit to be undertaken pursuant to this paragraph 4 and shall issue to the Manufacturer a formal audit report containing the results of the audit and any recommendations within 4 weeks of the conclusion of the audit.

## 5 Safety Management

### 5.1 General

5.1.1 The purpose of this paragraph 5 is to describe the safety activities to be undertaken by the Manufacturer. These activities are in addition and without prejudice to the requirements described in paragraph 4 (Management Systems).

### 5.2 General Requirements

5.2.1 In producing the Rolling Stock Technical Case the Manufacturer shall include such information and evidence as is necessary to demonstrate to the Purchaser that the Units satisfy each of the safety targets set out in this Agreement.

5.2.2 In preparing the Rolling Stock Technical Case the Manufacturer shall provide evidence that the NLR Units and the ELR Units (and their constituent TC Components) comply with the relevant safety requirements, including all Applicable Laws and applicable Standards. This evidence shall include:

- (A) all Certificates of Engineering Acceptance (including any interim certificates) issued by the Vehicle Acceptance Body appointed by the Manufacturer in relation to the NLR Units and the ELR Units;
- (B) a Certificate of Conformity and a Technical File issued by the Notified Body appointed by the Purchaser in relation to the ELR Units; and
- (C) a Certificate of Conformity and a Technical File issued by the Notified Body appointed by the Purchaser in relation to the NLR Units.

5.2.3 The Manufacturer and the Purchaser shall each use its reasonable endeavours to obtain the agreement of the Notified Body appointed by the Purchaser to issue a single Certificate of Conformity and a single Technical File that addresses both the ELR Units and the NLR Units.

5.2.4 The development and preparation of the Manufacturer's safety documentation shall be iterative, starting at the Stage of Preliminary Design, and being progressively developed until the Acceptance of the last Unit by the Purchaser.

#### **Railways (Interoperability) Regulations**

5.2.5 Without prejudice to Clause 5.5, the Manufacturer undertakes to do all things necessary in order for the Notified Body appointed by the Purchaser to prepare a Technical File and issue a Certificate of Conformity in relation to the ELR Units and the NLR Units;

### 5.3 Safety Planning

5.3.1 A Hazard Log has been established by the Purchaser as the means of managing all hazards and safety risks ("**Hazard Log**"). The Purchaser shall hold the Hazard Log and shall provide reasonable access to the Manufacturer upon being given reasonable notice in writing (and in any event not to be less than 2 Working Days from the date of receipt of such notice). The Manufacturer shall use the Hazard Log in accordance with the ELLP Hazard Management Procedure (as set out in Appendix G) to track and manage those hazards which have been properly allocated to it in accordance with the ELLP Hazard Management Procedure. The Manufacturer shall submit any new hazards identified to the Purchaser in accordance with the ELLP Hazard Management Procedure.

## 5.4 Implementation and Operation

### **Consultation and Communication**

- 5.4.1 Without prejudice to the Rolling Stock Requirements – Contract Management, the Purchaser will manage a bimonthly committee ("**Project Safety Committee**"), which brings together all persons on the ELL Project with responsibility or accountability for safety. The Manufacturer shall ensure that a suitably qualified and competent representative attends each meeting of the Project Safety Committee unless otherwise agreed with the Purchaser.

### **Management System Documentation**

- 5.4.2 Without prejudice to the Manufacturer's obligation pursuant to paragraph 4, the Manufacturer shall undertake all safety aspects of the SQEMS and all safety analyses in accordance with the Yellow Book and applicable Standards. The Manufacturer shall adopt a co-ordinated approach to safety and adopt best practice.

- 5.4.3 The Manufacturer shall ensure that the SQEMS includes safety processes consistent with the fundamentals described in the Yellow Book. Without prejudice to the Manufacturer's obligations pursuant to paragraph 4, the following fundamentals of safety management shall be addressed in the SQEMS to be implemented by the Manufacturer pursuant to this Schedule 3:

- (A) all assumptions, dependencies and caveats shall be explicitly identified in all safety documentation.
- (B) the "As Low as Reasonably Practicable (ALARP)" principle shall be demonstrated and documented in all hazards undertaken by the Manufacturer.
- (C) all safety documentation and analyses shall be carried out by the Manufacturer in accordance with the Yellow Book and the relevant Railway Group Standards and other applicable Standards.
- (D) a competence management system shall be operated.
- (E) hazard identification shall be performed. The ELLP Hazard Identification Procedure set out in Appendix G is included as an example of good practice. The Manufacturer shall ensure that hazard identification procedures shall include the following principles:
  - (1) design, manufacture, acceptance, maintenance and subsequent operation of the Units on the North London Railway and/or the East London Railway;
  - (2) the interaction between the Units and the Railway Infrastructure on the East London Railway and/or Railway Infrastructure on the North London Railway;
  - (3) health and safety aspects, including functional safety implications; and
  - (4) all hazards arising from the operation of the Units, whether identical or similar to other parts of the national rail network or unique to the Core ELL Infrastructure.
- (F) hazard identification shall utilise more than one methodology to identify hazards. In particular, hazard and operability studies alone will not be sufficient.
- (G) safety risk assessment shall be performed. The Manufacturer shall undertake a comprehensive risk assessment in respect of the design and manufacture of the Units and implement appropriate safety measures so:
  - (1) risk to passengers from train overcrowding;
  - (2) risk to passengers from passenger on-train incident;
  - (3) risk to passengers from passenger falls when boarding or alighting from train;

- (4) risk of route crime in line with the Railway Strategic Safety Plan issued by the RSSB; and
- (5) risk to personal security in line with the Railway Strategic Safety Plan issued by the RSSB,

is reduced to levels as low as reasonably practicable.

(H) the ELLP Safety Risk Assessment Procedure set out in Appendix I is included as an example of good practice. The Manufacturer shall ensure that its safety assessment procedures include the following principles:

- (1) degraded modes and emergency operations shall be considered as well as normal operations;
- (2) safety risk assessment shall utilise more than one methodology to assess risks;
- (3) safety risk assessment shall include the consideration of dependent failures, in particular the interdependencies between the communication, traction power and signalling and control systems;
- (4) safety risk assessment shall include evidence from many sources including (from preferred to least preferred):
  - (a) collation of safety evidence, including:
    - (i) estimation from performance in previous usage;
    - (ii) analysis of test and trial results; and
    - (iii) assessment of design and other calculations;
  - (b) compliance with applicable Standards, Applicable Laws, Relevant Consents and guidelines;
  - (c) expert review, best practice and certification;
  - (d) modelling and safety analysis;
  - (e) simulation; and
- (5) the hierarchy of hazard control and mitigation shall be as follows (from preferred to least preferred):
  - (a) re-design or elimination through design;
  - (b) incorporation of automatic safety features;
  - (c) incorporation of warnings and alarms that indicate a potential unsafe condition;
  - (d) notices/procedures that require people to act; and
- (6) the safety risk assessment effort will be focused on highest risks, with appropriate effort being expended on all identified hazards.

## 5.5 Checking and Corrective Action

### **Performance Measurement and Monitoring**

5.5.1 Without prejudice to its obligations under paragraph 4 the Manufacturer shall monitor and report to the Purchaser on its performance against each of the KPIs set out below, in accordance with the four weekly report requirements described in the Rolling Stock Requirements - Contract Management.

<b>KPI</b>	<b>KPI Benchmark</b>	<b>Comment</b>
Fatal accidents	None	To be reported as total numbers and relative to hours worked and train kilometres if appropriate.
Accidental major injury.	No greater than one in 750 employees per annum	To be reported as total numbers and relative to hours worked.
RIDDOR reportable accidents.	No more than 0.59 per 100,000 hours worked.	To be reported as total numbers and relative to hours worked.
Fire risks and significant fires.	No more than 1 confirmed fire per year	To be reported as total numbers and relative to hours worked. A confirmed fire is one that requires extinguishing by LFEPA (or the equivalent outside of London) or the Manufacturer's staff and which has been reported through the DRACAS.

## 5.6 Other Safety Issues

### **Her Majesty's Railway Inspectorate**

- 5.6.1 The Purchaser has established and conducted formal liaison with the relevant parts of HMRI. The Manufacturer acknowledges and agrees that the Purchaser shall continue to be the principal contact with the HMRI. The Manufacturer shall not and shall procure that its Subcontractors do not contact or otherwise communicate with the HMRI in connection with any aspect of this Agreement and that all communications of whatever form or nature are made through the Purchaser.

### **The Management of interfaces**

- 5.6.2 The Manufacturer acknowledges that the management of interfaces is a particular issue affecting the safety of the rail industry. The Manufacturer shall produce a description of each of the interfaces including where appropriate those with Network Rail and/or LUL and submit the same to the Purchaser for Assurance Acceptance by no later than 16 weeks after the Commencement Date.
- 5.6.3 The Manufacturer shall demonstrate to the Purchaser that all the risks associated with these interfaces have been reduced to a level as low as reasonably practicable in the Rolling Stock Technical Case.
- 5.6.4 In each safety analysis and assessment conducted by the Manufacturer, the Manufacturer shall consider the interface between the design of the Units and the Railway Infrastructure on the North London Railway and the Railway Infrastructure on the East London Railway. In particular the Manufacturer shall ensure that the design of the Units shall not adversely affect the ability of the Operator to obtain a Safety Certificate in relation to operating the Units on the East London Railway and the North London Railway and/or adversely affect the ability of LUL to obtain Safety Authorisation for the operation of the Core ELL Infrastructure.

### **Electromagnetic Compatibility**

- 5.6.5 The Manufacturer shall ensure the Units comply with all Applicable Laws and applicable Standards and shall co-operate with the Purchaser to ensure that all electrical and electromagnetic effects (including electromagnetic compatibility, electromagnetic emission and stray currents) are managed so that they are reduced to levels compliant with applicable Standards.

#### **Hazardous Materials**

- 5.6.6 The Manufacturer shall produce upon request by the Purchaser a hand-over report recording any hazardous materials or substances used in the design, manufacturing testing, commissioning and supply of the Units and/or the other items of Purchased Equipment, the safety assessments that were made and the remedial actions taken at any premises owned or controlled by the Manufacturer, the Purchaser, TfL and any member of the TfL Group, and/or Network Rail.

#### **Independent Safety Auditing and Assessment**

- 5.6.7 The Manufacturer shall ensure that all documents required to be submitted by the Manufacturer to the Purchaser for Assurance Acceptance forming part of each stage of:
- (A) the Route Acceptance Safety Case for Route Acceptance of the NLR Units on the North London Railway and the ELR Network and for Route Acceptance of the ELR Units on the ELR Network and, where the relevant Technical Options have been exercised by the Purchaser, the North London Railway; and
  - (B) the Route Acceptance Safety Case for Route Acceptance of the ELR Units and NLR Units on the Core ELL Infrastructure,
- are each accompanied by an independent safety assessor report.

- 5.6.8 The Manufacturer shall be entitled to appoint the same person to prepare each of the independent safety assessor reports for both of the Route Acceptance Safety Cases described in paragraph 5.6.7 (A) and (B) above who may (without prejudice to the requirements of paragraph 5.6.7) if appropriate prepare one consolidated report covering both Route Acceptance Safety Cases.

#### **Hazard Allocation and the ALARP Principle**

- 5.6.9 Where a hazard has been allocated in accordance with the ELLP Hazard Management Procedure, as the sole responsibility of the Manufacturer, the Manufacturer shall be required, in accordance with the requirements of this Agreement to demonstrate that it has managed the risks associated with the hazard such that those risks are as low as reasonably practicable.
- 5.6.10 Where a hazard has been allocated in accordance with the ELLP Hazard Management Procedure as being the responsibility of the Manufacturer and another person, the Manufacturer shall be responsible for reaching agreement with that other person as to an appropriate strategy for managing the risks associated with the hazard such that those risks are as low as reasonably practicable and where such other person is the Purchaser, the Operator, LUL or the Main Works Contractor, the Purchaser shall where it is that other person act reasonably and shall otherwise use its reasonable endeavours to procure that such other person acts reasonably, in reaching and implementing such agreement subject in each case to the Manufacturer itself acting reasonably.

## 6 Quality Management

### 6.1 General

The purpose of this paragraph 6 is to describe the requirements for the quality management activities to be undertaken by the Manufacturer. These activities are in addition, and without prejudice, to the requirements described under paragraph 4 (Management Systems).

### 6.2 Quality Management Systems

6.2.1 The Manufacturer shall implement, operate and maintain quality management systems that comply with the requirements of ISO 9001 ("**Quality Management Systems**"). The Manufacturer shall obtain certification of its Quality Management Systems from an accredited body approved by the Purchaser within 16 weeks of the Commencement Date save to the extent that such systems have been certified as complying with ISO9001 requirements prior to the Commencement Date and such certificate is valid on the Commencement Date. The Maintainer shall maintain such certification until Final Acceptance of the last Unit by the Purchaser.

6.2.2 The Manufacturer shall procure that:

- (A) all Key Subcontractors shall implement, operate and maintain quality management systems that have been certified by an accredited body approved by the Purchaser as satisfying the requirements of ISO 9001; and
- (B) all other suppliers and Subcontractors in the supply chain shall implement, operate and maintain quality management systems that are consistent with the principles of ISO 9001, though such systems need not be certified by an accredited body as meeting that Standard. The Manufacturer shall, in accordance with paragraph 2.6.1, audit such quality management systems on a regular basis and make available to the Purchaser all records and results of such audits during any audit undertaken by the Purchaser.

### 6.3 Improvement Management

6.3.1 In undertaking the design, manufacture, testing, commissioning and supply of the Units and other items of Purchased Equipment the Manufacturer shall implement a range of management improvement techniques appropriate to such activities including the use of quality objectives and targets (as described in paragraph 4) and key performance indicators ("**KPIs**"), covering each of the safety, quality, and environmental tasks.

6.3.2 The Manufacturer shall ensure that the KPIs and the method of reporting against each KPI shall be consistent with those notified in writing by the Purchaser acting reasonably.

6.3.3 The Manufacturer shall submit its range of improvement management tools and techniques including quality objectives and targets, and KPIs to the Purchaser for Assurance Acceptance by no later than 16 weeks after the Commencement Date.

### 6.4 Quality Records

6.4.1 The Manufacturer shall maintain all information and records relating to the operation of the Quality Management System until Final Acceptance of the last Unit comprising the Initial Order. No later than 10 Working Days following Final Acceptance of the last Unit comprising the Initial Order the Manufacturer shall:

- (A) provide the Purchaser with a copy of all audit reports and inspection and test plans accompanied by all certificates of conformance (or equivalent documentation) for materials and components used by the Manufacturer in the construction of the Units; and
- (B) to the extent not provided by the Manufacturer in accordance with sub-paragraph (A), above make available to the Purchaser for inspection all other information and records relating to the operation of the quality management system and where the Purchaser (acting reasonably) requests, provide a copy of any such requested information and/or records,

in each case to the extent not already provided within a Unit Log Book. Where the Purchaser exercises an Option for Additional Units, paragraph 6.4.1(A) and (B) shall apply to such Additional Units on Acceptance by the Purchaser of the last Additional Unit forming part of the order.

6.4.2 The Manufacturer shall address as Corrective Actions any problems with the Units identified by the Quality Management System and, where appropriate, in accordance with the configuration control process described in the Configuration Management Plan. The Manufacturer shall maintain a register of all Corrective Actions undertaken by the Manufacturer to each Unit pursuant to this paragraph 6.4.2 and shall make such register available to the Purchaser promptly upon receipt of written request by the Purchaser (and in any event no later than 3 Working Days following receipt of such request). Where the Quality Management System identifies a safety related problem with a Unit, the Manufacturer shall promptly notify the Purchaser after becoming aware of such problem (and in any event no later than 5 Working Days following the Manufacturer becoming aware of the problem).

## 6.5 Independence in Rolling Stock Quality Evaluations

6.5.1 The Manufacturer shall ensure that the persons responsible for conducting quality evaluations of the Units and other items of Purchased Equipment are not the same persons who developed the Units or items, and/or who have responsibility for the management of the design, manufacture, testing, commissioning and supply of the Units and other items of Purchased Equipment. This paragraph 6.5.1 does not preclude such persons from participating in any quality evaluations conducted by the Manufacturer.

6.5.2 The Manufacturer shall ensure that the persons responsible for assuring compliance with this Agreement and the Rolling Stock Requirements – Technical have the resources, responsibility, authority, and organisational freedom to undertake objective quality evaluations of the Units and other items of Purchased Equipment and to initiate and verify any corrective actions.

## 7 Environmental Management Assurance

### 7.1 General

7.1.1 The purpose of this paragraph 7 is to state the environmental management activities that the Manufacturer shall undertake. These activities are in addition, and without prejudice, to the requirements described under paragraph 4 (Management Systems).

### 7.2 Environmental Management

7.2.1 The Manufacturer shall prepare and implement an environmental report that:

- (A) identifies all applicable environmental requirements set out in (i) the Rolling Stock Requirements – Technical; and (ii) any Applicable Law and/or applicable Standard;
- (B) describes the monitoring and testing that the Manufacturer will undertake to verify compliance with each of the requirements identified in sub-paragraph (A);
- (C) describes any proposals and/or measures the Manufacturer has implemented and/or will implement as described in the Technical Description in relation to the Units and/or the Base Product (including any environmental objectives and/or environmental targets) so as to improve the environmental performance and minimise the environmental impact of the Units during their manufacture, operation and maintenance;
- (D) identifies, any environmental impact (both positive and negative) which will or is reasonably likely to arise from, or in connection with, the operation and maintenance of the Units on the North London Railway and the East London Railway and any measures that should be implemented by the Purchaser following Acceptance of the Units to minimise any risk of adverse environmental impact.

7.2.2 In preparing the environmental report the Manufacturer shall consider:

- (A) all types and sources of emissions and/or discharges (including noise and vibration, and use of oils and other lubricants) that may result from the normal operation and maintenance of a Unit;
- (B) the materials to be used by the Manufacturer in performing its obligations under this Agreement;
- (C) the amounts and types of energy predicted to be used by the Unit during normal operation and maintenance of a Unit; and
- (D) any material which may be discharged or altered as a result of an incident, accident or fire and which may cause an impact to the environment.

7.2.3 The Manufacturer shall submit the environmental report to the Purchaser for Assurance Acceptance, within 16 calendar weeks of the date of this Agreement.

## Appendix A SQE Policy



## Safety, Quality and Environment Policy Statement

The East London Line Project (ELLP) is committed to delivering the project on time, within agreed budgets, fulfilling the ELLP Development Remit and satisfying the project objective while maintaining or improving the overall Business Case. The ELLP will implement a policy for safety, quality and environment (SQE) in support of the Transport for London (TfL) Health, Safety and Environment Policy, our commitment to stakeholders and the Railway Group Safety Plan. Accordingly, we understand it is our responsibility to provide effective management and delivery of the ELLP.

This Policy establishes the framework for the management of SQE throughout the ELLP lifecycle. While the Project Director is ultimately responsible for setting and assessing performance against the obligations contained within this policy, all project staff, contractors and the supply chain have a responsibility to fulfill the commitments below.

The ELLP is committed to complying with the TfL Health, Safety and Environment Policy and will specifically:

- Provide appropriate resources to operate, monitor, audit and review the effectiveness of the ELLP SQE Management Systems, including this policy, and undertake improvement activities where required to achieve the principles of continuous improvement;
- Understand, examine, evaluate and recommend controls and mitigation for safety and environment risks at all stages of the project;
- Comply with legal and other requirements and prevent environmental pollution, damage to property, premises and the environment and excessive disruption to our stakeholders and neighbours;
- Evaluate the team's success against a number of key performance indicators and critical success factors that have been specifically identified for the ELLP;
- Adopt the European Foundation for Quality Management (EFQM) Excellence Model.

## A SQE Policy

*To be inserted*

## Appendix B Design Phase

## B Design Phase

### B.1 General Requirements for Design

B.1.1 Throughout the Design Phase the Manufacturer shall use Progressive Assurance to demonstrate to the reasonable satisfaction of the Purchaser that the proposed design of the Units satisfies the requirements specified in the Rolling Stock Requirements – Technical.

B.1.2 In order to gain sufficient confidence that the design meets the Purchaser's requirements, the Manufacturer shall submit design information to the Purchaser in a two stage process as follows:

- (A) a Preliminary Design Phase;
- (B) a Detailed Design Phase.

B.1.3 The detail scope of each of the Preliminary Design Phase and the Detailed Design Phase is described below in paragraphs B.4 and B.5.

### B.2 Vehicle Design Area Breakdown Structure

B.2.1 The Manufacturer represents and warrants to the Purchaser that:

- (A) the Vehicle Design Area Breakdown Structure constitutes the complete design of the vehicles that will comprise the Units broken down in to discrete design areas (each a "**Vehicle Design Area**"); and
- (B) the scope of each Vehicle Design Area has been chosen in order that the design of the vehicles may be fully reviewed in discrete manageable packages in the necessary detail required by the Purchaser.

### B.3 Design Submission Programme

B.3.1 No later than 20 Working Days from the Commencement Date the Manufacturer shall submit to the Purchaser for Assurance Acceptance:

- (A) a description of the mechanical and/or electrical systems and other Subsystems covered by each Vehicle Design Area; and
- (B) a programme for the preparation and completion of the design of the ELR Units and the NLR Units ("**Design Submission Programme**") which:
  - (1) is consistent with the Project Programme and indicates the proposed dates when the Manufacturer intends to submit the Preliminary Design Submissions and the Detailed Design Submissions to the Purchaser for Assurance Acceptance; and
  - (2) indicates the proposed duration of the Preliminary Design Phase and the Detailed Design Phase.

### B.4 Preliminary Design Phase

B.4.1 During the Preliminary Design Phase the Manufacturer shall submit the relevant submission ("**Preliminary Design Submissions**") to the Purchaser for Assurance Acceptance in accordance with the Design Submission Programme. The Preliminary Design Submissions, as a minimum, shall include each Technical Case, updated to show the current status of the information and evidence described in the Technical Case in respect of the Preliminary Design and to the extent not expressly addressed in the Technical Cases shall include:

- (A) a list of the requirements to be adopted by the Manufacturer in undertaking the design of the ELR Units and the NLR Units;
- (B) a justification that the requirements specified in sub-paragraph (A) above are consistent with the Rolling Stock Requirements – Technical, the applicable Standards and Applicable Laws that the Manufacturer proposes to comply with in designing, manufacturing, commissioning and testing the ELR Units and the NLR Units;
- (C) a description of the overall concept of the design together with evidence that it satisfies the requirements specified in sub-paragraph (A) above;
- (D) the planned verification of the requirements specified in sub-paragraph (A) above;
- (E) a list of the Key Subcontractors and other suppliers that will be involved in the design, manufacture, commissioning and supply of the ELR Units and the NLR Units; and
- (F) a summary of any new or novel technology to be utilised in the ELR Units and/or the NLR Units and evidence that such technology does not materially affect the risk of the Manufacturer being unable to perform its obligations under this Agreement.

B.4.2 Where the Manufacturer has submitted each of the Preliminary Design Submissions, and such Preliminary Design Submissions have each been granted Assurance Acceptance by the Purchaser, the Manufacturer and the Purchaser shall hold a Close Out Meeting. Unless agreed by the Manufacturer and the Purchaser at the Close Out Meeting held pursuant to this paragraph B.4.2 no later than 5 Working Days after the completion of the Close Out Meeting the Purchaser shall notify the Manufacturer in writing that the Preliminary Design Phase has been completed, together with any outstanding Category B Comments or Category C Comments to be addressed by the Manufacturer.

## B.5 Detailed Design Phase

B.5.1 During the Detailed Design Phase the Manufacturer shall submit the submissions described in this paragraph B.5.1 ("**Detailed Design Submissions**") to the Purchaser for Assurance Acceptance in accordance with the Design Submission Programme. The Detailed Design Submissions as a minimum shall include each Technical Case updated to show the current status of the information and evidence described in the Technical Case in respect of the Detailed Design and to the extent not expressly addressed in the Technical Cases or earlier design review/submission shall include:

- (A) visual representations (such as drawings) of sufficient detail to allow the detailed review of the design of the Units by the Purchaser;
- (B) evidence that the design of the Units satisfies the Rolling Stock Requirements - Technical, applicable Standards and Applicable Laws and the other requirements specified in this Agreement;
- (C) design assurance documentation to the reasonable satisfaction of the Purchaser and if part of the design is service-proven, previous service history and evidence in accordance with paragraph 3.6.2 (A) and (B) and other supporting evidence as described in paragraph 3.6.2 to demonstrate that the part of the design is compatible with the intended application; and
- (D) an outline of the Maintenance Plan.

B.5.2 Where the Manufacturer has submitted each of the Detailed Design Submissions and such Detailed Design Submissions have each been granted Assurance Acceptance by the Purchaser, the Manufacturer and the Purchaser shall hold a Close Out Meeting. Unless agreed by the Manufacturer and the Purchaser at the Close Out Meeting held pursuant to this paragraph B.5.2 no later than 5 Working Days after the completion of the Close Out Meeting the Purchaser shall notify the Manufacturer in writing that the Detailed Design Phase has been completed.

## B.6 Type Test Programme

B.6.1 Prior to completion of the Detailed Design Phase the Manufacturer shall submit a programme ("**Type Test Programme**") to the Purchaser for Assurance Acceptance. The Type Test Programme shall:

- (A) describe all tests (whether Type Tests or otherwise) that are to be undertaken by the Manufacturer on the NLR Units and the ELR Units in order to demonstrate to the Purchaser that the Units satisfy each of the requirements specified in this Agreement including those relating to the NLR Units obtaining Route Acceptance on the North London Railway and the East London Railway and the ELR Units obtaining Route Acceptance on the East London Railway and, where the relevant Technical Options have been exercised, Route Acceptance on the North London Railway;
- (B) describe those Type Tests or other tests to be conducted on the Units (such as ride quality and emergency brake testing) and those Type Tests to be conducted in relation to a particular Subsystem (such as body shell strength bogie fatigue testing); and
- (C) identify any testing (whether Type Tests or otherwise) to be undertaken in relation to the ELR Units and the NLR Units on:
  - (1) the North London Railway, the ELR Network and/or any other Railway Infrastructure controlled and/or operated by Network Rail ("**NR Infrastructure**"); and
  - (2) the Core ELL Infrastructure.

B.6.1A The Manufacturer shall ensure that the Type Test Programme clearly identifies which Type Tests are to be undertaken only in relation to a NLR Unit, which Type Tests are to be undertaken only in relation to a ELR Unit and which Type Tests are to be undertaken in relation to both NLR Units and ELR Units.

B.6.2 Prior to the completion of the Detailed Design Phase the Manufacturer shall:

- (A) prepare and agree with Network Rail the NR Test Plan in accordance with paragraph D.1 of Appendix D; and
- (B) prepare and agree with LUL the Stage 2 Core ELL Test Plan in accordance with paragraph D.2 of Appendix D.

B.6.3 The Manufacturer shall conduct each of the Type Tests in accordance with the Type Test Programme that has been granted Assurance Acceptance by the Purchaser provided that the Manufacturer may submit previous Type Test results if it is able to demonstrate to the satisfaction of the Purchaser that such Type Test results (and the Type Test itself) satisfy the requirements for the Units set out in this Agreement, including the Rolling Stock Requirements - Technical.

B.6.4 At least 2 months prior to the conduct of any scheduled Type Test the Manufacturer shall submit the proposed test procedure with clearly defined pass/fail criteria to the Purchaser for Assurance Acceptance.

## B.7 Design Submissions to Infrastructure Managers (Network Rail and LUL)

B.7.1 The Manufacturer shall support the Purchaser's submissions to the NRAB in accordance with Railway Group Standard GE/RT8270, issue 1, February 2003 (as amended from time to time) by producing a D Stage Engineering Safety Case in respect of the ELR Units and the NLR Units. The Manufacturer shall submit the D Stage Engineering Safety Case to the Purchaser for Assurance Acceptance in accordance with the timeframes specified in the Project Programme and in any event so as to enable the Purchaser to submit a D Stage Operational Safety Case (that will consist

in part of the D Stage Engineering Safety Case) to the NRAB prior to the commencement of the manufacture of the first Unit or other item of Purchased Equipment. The Manufacturer shall ensure that the D Stage Engineering Safety Case incorporates evidence from the Technical Cases and demonstrates that the NLR Units have been designed as being compatible with the ELR Network and the North London Railway and the ELR Units have been designed as being compatible with the ELR Network and, where the relevant Technical Options have been exercised, the North London Railway and the associated risks are demonstrably tolerable and ALARP.

- B.7.2 The Purchaser shall procure that LUL establishes a panel by 31<sup>st</sup> January 2008 to consider whether the Units should be authorised to operate on the Core ELL Infrastructure ("**LUL Acceptance Panel**"). The Purchaser shall procure that the LUL Acceptance Panel act with reasonable expedition in accordance with the principles set out in Railway Group Standard GE/RT8270, Issue 1, February 2003 (as amended from time to time) in relation to the role of "infrastructure controller" and will if reasonably practicable procure that a member of the LUL Acceptance Panel will sit as an observer at meetings of the NRAB that consider any submission relating to Route Acceptance of the Units.
- B.7.3 The Manufacturer shall support the Purchaser's submission to the LUL Acceptance Panel in accordance with Railway Group Standard GE/RT8270, Issue 1, February 2003 (as amended from time to time) by producing a D Stage Engineering Safety Case in respect of the ELR Units and the NLR Units. The Manufacturer shall ensure that the D Stage Engineering Safety Case produced pursuant to this paragraph B.7.3 ("**LUL D Stage Engineering Safety Case**"):
- (A) incorporates evidence from the Technical Cases and demonstrates that the ELR Units and the NLR Units have been designed as being compatible with the Core ELL Infrastructure and the associated risks demonstrably tolerable and ALARP; and
  - (B) addresses issues specific to the Core ELL Infrastructure, including issues affecting adjacent premises or operations.
- B.7.4 The Manufacturer shall submit the LUL D Stage Engineering Safety Case to the Purchaser for Assurance Acceptance in accordance with the timeframes specified in the Project Programme and in any event so as to enable the Purchaser to submit a D Stage Operational Safety Case (that will consist in part of the LUL D Stage Engineering Safety Case) to the LUL Acceptance Panel prior to the commencement of manufacture of the first ELR Unit or NLR Unit or other item of Purchased Equipment.
- B.7.5 The Manufacturer acknowledges and agrees that the Design Phase shall not be complete until (i) the NRAB and the LUL Acceptance Panel have Endorsed the submissions made by the Purchaser pursuant to paragraphs B.7.1 and B.7.4 including the D Stage Engineering Safety Case (in the case of the NRAB) and the LUL D Stage Engineering Safety Case (in the case of the LUL Acceptance Panel) and each of the other requirements described in paragraph B.8 have been satisfied.
- B.8 Design Phase Deliverables
- B.8.1 The Manufacturer and the Purchaser each acknowledge and agree that the Design Phase shall be complete when each of the following requirements have been satisfied:
- (A) the Preliminary Design Phase has been completed in accordance with paragraph B.4.2;
  - (B) the Detailed Design Phase has been completed in accordance with paragraph B.5.2;
  - (C) the Type Test Programme has been granted Assurance Acceptance;
  - (D) Endorsement from each of the NRAB and the LUL Acceptance Panel of the Purchaser's D Stage submissions to the respective bodies;

- (E) the NR Test Plan has been agreed with Network Rail (as described in Appendix D); and
- (F) the Initial Type Tests and the Stage 2 Core ELL Test Plan have each been agreed with LUL (as described in Appendix D).

B.8.2 Where Preliminary Design Phase and the Detailed Design Phase have each been completed and the Purchaser acting reasonably considers that each of the matters described in paragraph B.8.1 has been satisfied, the Purchaser shall notify the Manufacturer in writing that the Design Phase has been completed.

## Appendix C Manufacture

## C Manufacture

### C.1 General Requirements for the Manufacture of Rolling Stock

C.1.1 At least 3 months prior to the commencement of the manufacture of the initial Unit or other item of Purchased Equipment (whichever is earlier), the Manufacturer shall submit the following documentation to the Purchaser for Assurance Acceptance:

- (A) a manufacturing programme that sets out the proposed timeframes for each stage of the manufacture of the Units and other items of Purchased Equipment and that is consistent with the Project Programme;
- (B) a manufacturing quality plan that describes the manner by which the Manufacturer proposes to implement the quality management requirements to the manufacture of the Units and other items of Purchased Equipment;
- (C) a Subcontractor assessment and audit plan that is consistent with the Manufacturer's quality management system as described in this Schedule 3 and paragraph 2.6 and describes the proposed audits and other assessments that the Manufacturer intends to undertake on its Key Subcontractors;
- (D) a test plan and test procedures that describes the routine tests ("**Factory Acceptance Tests**") to be undertaken by the Manufacturer during manufacture of the Units to confirm quality, functionality and safety of the Unit.

C.1.4 The Manufacturer shall note in the relevant Unit Log Book any Corrective Actions that have been notified to it by the Purchaser pursuant to Clause 9.6 in respect of a vehicle comprised in that Unit but which have not been resolved. The Purchaser reserves the right not to Accept any Unit where the Unit (or any vehicle comprising that Unit) has any unresolved issues noted in the Unit Log Book and such issues constitute a non-compliance with all or some of the applicable Provisional Acceptance Criteria

C.1.5 The Purchaser reserves the right to specify any additional Factory Acceptance Tests where the Purchaser reasonably considers further evidence is required that the vehicle and/or Unit (as the case may be) has satisfied any of the requirements specified in this Agreement.

C.1.6 The Manufacturer shall ensure that the vehicles shall be configured into a Unit and Factory Acceptance Tests shall be performed on the Unit prior to the delivery of the Unit at the Manufacturer's Works to demonstrate functionality of the Unit and all Subsystems. The configuration of the individual vehicles into a Unit for the undertaking of the Factory Acceptance Tests shall be the configuration which is to be delivered and offered to the Purchaser for Acceptance as a Unit. Any deviation from this requirement shall be agreed between the Manufacturer and the Purchaser prior to Acceptance of the relevant Unit.

C.1.7 Where the Purchaser exercises a Technical Option and/or an Option for Additional NLR Vehicles, the Manufacturer shall revise the documents described in paragraphs C.1.1(A) to (D) to address the implementation of the relevant Technical Option and/or the Option for Additional NLR Vehicles (as the case may be) and submit the revised documentation to the Purchaser for Assurance Acceptance.

### C.2 The Purchaser's Resident Engineer

C.2.1 The Purchaser shall be entitled to locate a resident engineer at the Manufacturer's Works at any time from the commencement of the manufacture of the Units or other items of Purchased Equipment until Acceptance of the last Unit.

C.2.2 Where the Purchaser exercises its right under paragraph C.2.1 to locate a resident engineer, the Manufacturer shall provide the resident engineer with unrestricted access to any documentation and records relating to the manufacture of the Units and/or other items of Purchased Equipment.

C.2.4 The Manufacturer shall be responsible for providing the Purchaser's resident engineer with suitable office accommodation (consisting of desks, chairs, pedestal drawers, telephone handsets with power sockets and two phone lines (one with broadband capability)) and any necessary training they may require to access the Manufacturer facilities.

### C.3 Unit Log Book

C.3.1 The Manufacturer shall be responsible for the production and maintenance of a log book for each Unit, which shall comply with the configuration management requirements described in paragraph 2.1 ("**Unit Log Book**"). Each Unit Log Book shall include as a minimum the following details for each vehicle forming part of that Unit:

- (A) build records including technical data such as reference sheets for build records, dimensional and setting checks, and for signed off inspection and Factory Acceptance Test documentation including electro-magnetic compatibility testing;
- (B) equipment serialisation of serial-numbered components (including mechanical, pneumatic and electrical items, and any other items agreed by the Purchaser and the Manufacturer) and configuration charts;
- (C) reference sheets for functional test records;
- (D) reference sheets for Type Test records;
- (E) reference sheets for commissioning test records and records of maintenance carried out by the Manufacturer prior to Acceptance;
- (F) the status of modifications and variations, including records of software version numbers.
- (G) certificates issued by the Vehicle Acceptance Body, Conformance Certification Body or other approval body
- (H) records of Fault-Free Running tests.
- (I) records of any agreed derogations or concessions
- (J) work required to be carried out prior to Acceptance of the Unit.
- (K) status of fleet checks applicable to that Unit.

C.3.2 The Manufacturer shall ensure that the Unit Log Book for a Unit accompanies that Unit when it is Delivered to the Purchaser.

C.3.3 The format of the Unit Log Book shall be similar to that in Appendix J, supplemented by any additional information as defined in this paragraph C.3. The contents, format and presentation media for the Unit Log Books shall be agreed between the Purchaser and the Manufacturer prior to the Manufacturer commencing the manufacture of the first vehicle and shall include both paper and electronic versions

C.3.4 Each reference sheets in a Unit Log Book shall include, as a minimum, the following information:

- (A) the date of each test,
- (B) the test procedure number and issue level for the relevant test, and

(C) the result of that test.

## Appendix D Testing

## D Testing

### D.1 Testing on Network Rail Infrastructure

D.1.1 Prior to completion of the Detailed Design Phase the Manufacturer shall agree with Network Rail the nature and form of the tests to be undertaken in relation to the ELR Units and the NLR Units (identified in the Type Test Programme or otherwise required to be conducted on NR Infrastructure) in order for the NLR Units to obtain Route Acceptance on the North London Railway and the ELR Network and the ELR Units to obtain Route Acceptance on the ELR Network and, (where the Technical Options which are necessary to render an ELR Unit compatible with the Railway Infrastructure on the North London Railway (the "**Relevant Options**") have been exercised in accordance with Schedule 9), Route Acceptance on the North London Railway subject only to Permitted Restrictions and shall produce a plan describing, in respect of each proposed test, the test procedure and pass/fail criteria and a programme showing the proposed timeframes for conducting such test ("**NR Test Plan**").

D.1.1A The Manufacturer shall:

- (A) structure the tests to be carried out pursuant to the NR Test Plan to reflect the Contractual Acceptance Dates of the NLR Units being earlier than the Contractual Acceptance Dates for the ELR Units;
- (B) separately identify in the NR Test Plan:
  - (1) those tests that will be undertaken on the NLR Units (such that the NLR Units shall be able to obtain Route Acceptance subject to Permitted Restrictions on the North London Railway and the ELR Network; and
  - (2) assuming the successful completion of each of the tests identified in paragraph (A) above, any additional tests that are required to be undertaken on the ELR Units in order for such ELR Units to obtain Route Acceptance subject to Permitted Restrictions on the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, Route Acceptance subject to the Permitted Restrictions on the North London Railway.

D.1.2 Subject to paragraph D.1.5 the Purchaser shall provide such reasonable assistance as the Manufacturer may request in agreeing the NR Test Plan with Network Rail.

D.1.3 The Manufacturer shall provide the Purchaser with a copy of the NR Test Plan that has been agreed with Network Rail within 5 Working Days of such NR Test Plan being agreed. The Manufacturer shall promptly give written notice to the Purchaser of any changes to the NR Test Plan (including any changes to the test programme) that have been agreed with Network Rail in respect of the NLR Units and/or the ELR Units (and in any event no later than 3 Working Days after such amendments have been agreed).

D.1.4 Prior to implementing the NR Test Plan in respect of the NLR Units the Manufacturer shall support the Purchaser's submissions to the NRAB in accordance with Railway Group Standard GE/RT8270, issue 1, February 2003 (as amended from time to time) by producing a T Stage Engineering Safety Case in respect of the NLR Units. The Manufacturer shall submit the T Stage Engineering Safety Case to the Purchaser for Assurance Acceptance in accordance with the timeframes specified in the Project Programme and in any event so as to enable the Purchaser to submit a T Stage Operational Safety Case in respect of the NLR Units (that will consist in part of the T Stage Engineering Safety Case) to the NRAB prior to the commencement of testing of the NLR Units pursuant to the NR Test Plan. The Manufacturer shall ensure that the T Stage

Engineering Safety Case incorporates evidence from the Technical Cases and demonstrates that the risks associated with testing the NLR Units on the ELR Network and the North London Railway are demonstrably tolerable and ALARP.

- D.1.5 The Manufacturer shall ensure that the Purchaser or its representatives shall be entitled to witness any test of the NLR Units conducted on the NR Infrastructure and the Purchaser shall notify the Manufacturer in writing as to which tests the Purchaser wishes to witness in person. The Manufacturer shall conduct each of the tests described in the NR Test Plan in respect of the NLR Units and shall promptly and in any event no later than 10 Working Days following the conduct of a test in respect of a NLR Unit on the NR Infrastructure provide the Purchaser with a summary of the results of that test and whether the NLR Unit passed or failed the test.
- D.1.6 Following the successful completion of each of the tests identified in the NR Test Plan in respect of the NLR Units the Manufacturer shall:
- (A) promptly apply to Network Rail for the issue of a Certificate of Technical Acceptance in respect of the operation of the NLR Units on the North London Railway and the ELR Network. The Manufacturer shall ensure that Certificate of Technical Acceptance issued by Network Rail is not subject to any restrictions other than the Permitted Restrictions;
  - (B) undertake 10 consecutive miles of Fault Free Running in simulated passenger operation on each NLR Unit;
  - (C) prepare and submit to the Purchaser for Assurance Acceptance a S Stage Engineering Safety Case in respect of the non-passenger operation of the NLR Units on the North London Railway and the ELR Network. The Manufacturer shall ensure that the S Stage Engineering Safety Case incorporates evidence from the Technical Cases and demonstrates that the risks of the NLR Units operating on the ELR Network and the North London Railway are demonstrably tolerable and as low as reasonably practicable. The Manufacturer shall produce the S Stage Engineering Safety Case in accordance with the timeframes specified in the Project Programme and in any event so as to enable the Purchaser to submit a S Stage Operational Safety Case for the non-passenger operation of the NLR Units to the NRAB (that will consist in part of the S Stage Engineering Safety Case) by no later than the date defined in the Project Programme; and
  - (D) the Manufacturer shall, upon the request of the Purchaser, repeat the process in this paragraph D.1.6(C) and revise the S Stage Engineering Safety Case to the extent necessary to address the passenger operation of the NLR Units on the North London Railway and the ELR Network. The Manufacturer shall revise its S Stage Engineering Safety Case in accordance with any timeframes specified by the Purchaser (acting reasonably).
- D.1.7 The Manufacturer shall repeat the process described in paragraphs D.1.4 to D.1.6 in respect of the ELR Units to the extent applicable to obtain Route Acceptance of the ELR Units on the ELR Network and where the Relevant Options have been exercised in accordance with Schedule 9, Route Acceptance on the North London Railway and in accordance with the timeframes specified in the Project Programme and for the purposes of this paragraph D.1.7 all references to "NLR Unit" shall be treated as if they were references to the "ELR Units".
- D.1.8 The Manufacturer acknowledges and agrees that subject to Clause 5.7:
- (A) it is responsible for agreeing the NR Test Plan with Network Rail and all subsequent testing of the NLR Units and ELR Units on the NR Infrastructure, including:
    - (1) being granted the necessary access rights to the relevant parts of the NR Infrastructure, including the movement of the Units for testing and to and from the

stabling facility each day to and from (as the case may be) the agreed delivery location at the agreed time;

- (2) the provision of persons necessary to conduct and supervise a test (including drivers) and to perform all of the activities described in this paragraph D.1.8(A);
  - (3) the provision of any equipment Spares, and Special Tools necessary to conduct and/or monitor the tests to be performed by the Manufacturer and to undertake the activities under this paragraph D.1.8(A);
  - (4) maintenance of the NLR Units and the ELR Units prior to and after the conduct of a test and the repair and/or rectification of any Defects, faults and/or damage;
  - (5) the security of the Units when such Units are under the supervision and/or control of the Manufacturer
  - (6) obtaining any necessary consents and approvals required by any Applicable Law and/or applicable Standard;
  - (7) the provision of suitable stabling for the relevant NLR Units and ELR Units; and
  - (8) conducting [REDACTED] miles of Fault Free Running on each Unit; and
- (B) it is responsible for obtaining a Certificate of Technical Acceptance from Network Rail subject only to any Permitted Restriction in relation to both the NLR Units and the ELR Units including producing the S Stage Engineering Safety Case.

D.1.9 The Manufacturer acknowledges and agrees that, without prejudice to the requirement that a Unit has completed [REDACTED] miles of Fault Free Running:

- (A) where the Unit is a NLR Unit it shall not be permitted on to the Core ELL Infrastructure for testing unless and until the Manufacturer has obtained a Certificate of Technical Acceptance (subject only to Permitted Restrictions) from Network Rail in respect of the North London Railway and the ELR Network for that NLR Unit; and
- (B) where the Unit is an ELR Unit it shall not be permitted on to the Core ELL Infrastructure for testing unless and until the Manufacturer has obtained a Certificate of Technical Acceptance (subject only to Permitted Restrictions) from Network Rail in respect of the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, the North London Railway,

and the Purchaser shall procure that a Unit with such a Certificate of Technical Acceptance and which has completed [REDACTED] miles of Free Fault Running shall be permitted access on to the Core ELL Infrastructure for the conduct of the Joint Proving Tests and, where the Joint Proving Tests and the tests identified in the Stage 1 Core ELL Test Plan have been completed successfully, the conduct of the tests identified in the Stage 2 Core ELL Test Plan.

## D.2 ELR Testing Strategy

D.2.1 The Manufacturer and the Purchaser shall have the following responsibilities during testing of the ELR Units on the Core ELL Infrastructure save for where the ELR Units have obtained Deemed Acceptance whereupon the responsibilities of the Manufacturer shown in the table below shall become the responsibilities of the Purchaser:

Responsibility	Test Running of ELR Unit on Core ELL Infrastructure			
	Joint Proving Tests	Stage 1	Stage 2	Stage 3
Unit Owner & Insurer	Manufacturer	Manufacturer	Manufacturer	Manufacturer
Provider of drivers	Purchaser	Purchaser	Purchaser	Purchaser
Rolling Stock maintenance	Manufacturer	Manufacturer	Manufacturer	Manufacturer
Core ELL Infrastructure maintenance	Purchaser	Purchaser	Purchaser	Purchaser
Provision of rolling stock stabling	Manufacturer	Manufacturer	Manufacturer	Manufacturer
Infrastructure Safety Management System	Purchaser	Purchaser	Purchaser	Purchaser
Train Operator Safety Management System	Purchaser	Purchaser	Purchaser	Purchaser

D.2.2 The Purchaser shall be responsible for co-ordinating and controlling the communication and documentation between the Manufacturer and the Main Works Contractor. The Manufacturer shall direct all communication intended for the Main Works Contractor to the Purchaser.

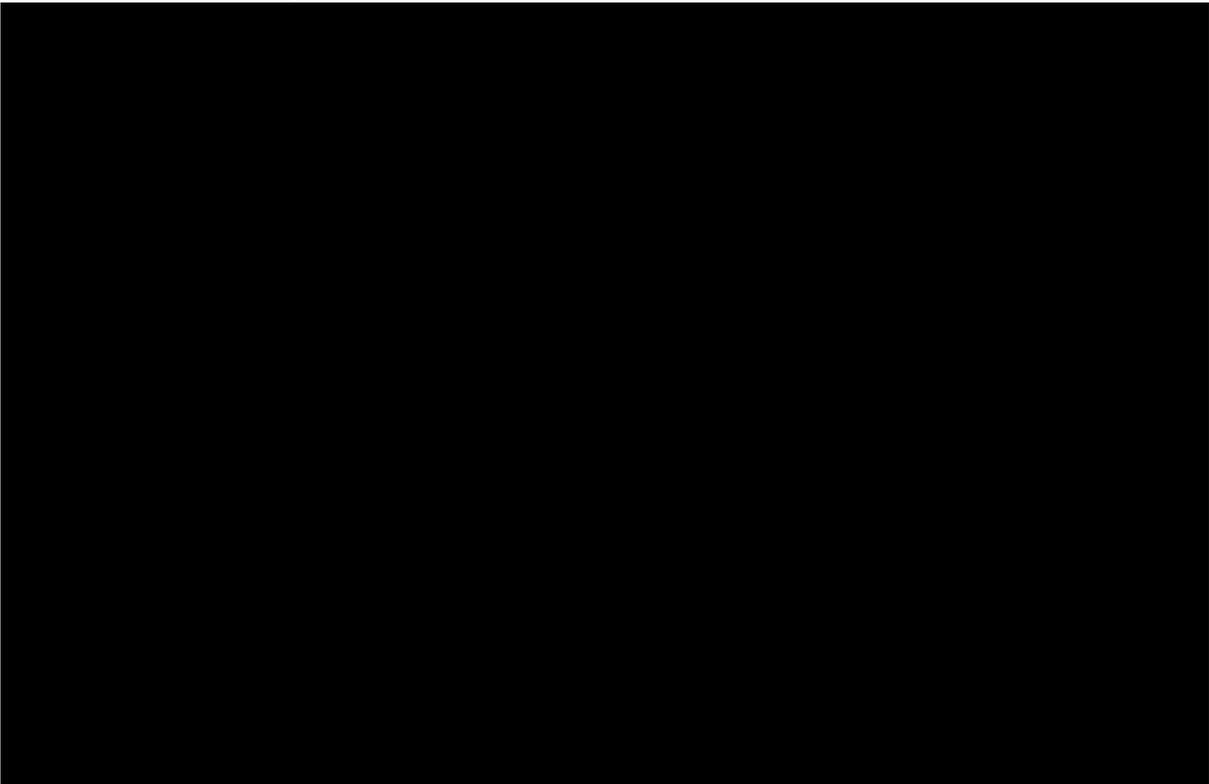
D.2.3 Prior to completion of the Detailed Design Phase the Manufacturer shall agree with LUL the nature and form of the tests to be undertaken in relation to the ELR Units (identified in the Type Test Programme or otherwise required to be conducted on the Core ELL Infrastructure) in order for the ELR Units to obtain Route Acceptance on the Core ELL Infrastructure subject only to Permitted Restrictions and shall produce a plan describing, in respect of each test, the proposed test procedures and pass/fail criteria and a programme showing the proposed timeframes for conducting such tests ("**Stage 2 Core ELL Test Plan**"). The Manufacturer shall submit the Stage 2 Core ELL Test Plan to the Purchaser for Assurance Acceptance.

D.2.4 The Manufacturer shall support the Purchaser's submission to the LUL Acceptance Panel in accordance with Railway Group Standard GE/RT8270, Issue 1, February 2003 (as amended from time to time) by producing a T Stage Engineering Safety Case in respect of the ELR Units. The Manufacturer shall ensure that the T Stage Engineering Safety Case produced pursuant to this paragraph D.2.4 ("**LUL T Stage Engineering Safety Case**"):

- (A) incorporates evidence from the Technical Cases and demonstrates that the risks associated with testing the ELR Units on the Core ELL Infrastructure is demonstrably tolerable and ALARP; and
- (B) addresses issues specific to the Core ELL Infrastructure, including issues affecting adjacent premises or operations.

- D.2.5 The Manufacturer shall produce the LUL T Stage Engineering Safety Case in accordance with the timeframes specified in the Project Programme and in any event so as to enable the Purchaser to submit a T Stage Operational Safety Case to the LUL Acceptance Panel in respect of the ELR Units (that will consist in part of the LUL T Stage Engineering Safety Case) prior to proposed date for commencing the Joint Proving Tests of the ELR Units on the Core ELL Infrastructure.
- D.2.6 The Manufacturer acknowledges and agrees that LUL shall not be the Infrastructure Manager of the Core ELL Infrastructure during Test Running and that the Main Works Contractor will be in control of the Core ELL Infrastructure during Test Running and that the Stage 2 Core ELL Test Plan and LUL T Stage Engineering Safety Case forming part of the T Stage Operational Safety Case prepared by the Purchaser pursuant to paragraph D.2.5 needs to be accepted by the Main Works Contractor prior to the commencement of the Joint Proving Tests. Accordingly the Purchaser shall procure that the Main Works Contractor will review the ELL Test Plan the LUL T Stage Engineering Safety Case and the Purchaser's T Stage Operational Safety Case in a timely manner having regard to the Project Programme.
- D.2.7 No later than 20 Working Days prior to the proposed date in the Project Programme for the commencement of the Joint Proving Tests:
- (A) the Manufacturer shall provide evidence based on the LUL T Stage Engineering Safety Case or otherwise, to demonstrate to the reasonable satisfaction of the Purchaser that the ELR Units are in a condition that enables the undertaking of:
    - (1) the Joint Proving Tests; and
    - (2) if each of the Joint Proving Tests are successful, the tests described in the Stage 2 Core ELL Test Plan;
  - (B) the Purchaser shall provide evidence to demonstrate to the Manufacturer's reasonable satisfaction that the Core ELL Infrastructure is in a condition that enables the undertaking of each of the tests described in the Joint Proving Tests and, if the Joint Proving Tests are successful, the tests described in the Stage 1 Core ELL Test Plan, Stage 2 Core ELL Test Plan and the Stage 3 Core ELL Test Plan:

D.2.8



### D.3 Joint Proving Tests

D.3.1 No later than 40 Working Days prior to the commencement of the tests described in the Stage 1 Core ELL Test Plan the Manufacturer and the Purchaser (each acting reasonably) shall meet and seek to agree:

- (A) those Type Tests in the Type Test Programme and any other tests ("**Initial Type Tests**") that are necessary to demonstrate to the reasonable satisfaction of the Purchaser that the Units are in a condition consistent with the applicable T Stage Engineering Safety Case;
- (B) those tests on the Core ELL Infrastructure using ELR Units ("**Initial Infrastructure Tests**") that are necessary to demonstrate to the reasonable satisfaction of the Purchaser that the Core ELL Infrastructure is ready to proceed with Test Running.

(together the "**Joint Proving Tests**") that shall be conducted prior to the commencement of the tests in the Stage 1 Core ELL Test Plan;

D.3.2 If the Manufacturer and the Purchaser are unable to agree the scope and nature of the Joint Proving Tests that address the matters described in paragraph D.3.1(A) and/or (B) either the Manufacturer or the Purchaser may refer the matter or the matters in dispute to expert determination in accordance with Schedule 17A (Fast Track Dispute Resolution Procedure).

D.3.3 The Manufacturer shall make available 3 ELR Units that have obtained a Certificate of Technical Acceptance (subject only to the Permitted Restrictions) from Network Rail in respect of Route Acceptance on the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, in respect of Route Acceptance on the North London Railway and subject only to the Permitted Restrictions and that have each undertaken [REDACTED] miles of Fault Free Running for the conduct of the Joint Proving Tests on or before 14<sup>th</sup> May, 2009. The Manufacturer shall conduct each of the Initial Type Tests and provide the Main Works Contractor all reasonable access to observe the same and the Purchaser shall procure that the Main Works Contractor conducts the Initial Infrastructure Tests and provides the Manufacturer all reasonable access to observe the same.

D.3.4 The following is a non-exhaustive list of indicative Joint Proving Tests (with the proposed responsible party identified) that it is envisaged that the Manufacturer, Main Works Contractor and Purchaser may wish to conduct on the Core ELL Infrastructure:

- (A) third rail ramps and gapping (Purchaser);

- (B) train with neighbours – Network Rail, LUL, DLR (Manufacturer);
- (C) gauging and platform – train interface (Purchaser);
- (D) East London Line specific infrastructure (Manufacturer);
- (E) train EMC with power related infrastructure (Manufacturer);
- (F) radio – GSMR (Purchaser); and
- (G) emergency procedures for Test Running (Main Works Contractor).

D.3.5 The Manufacturer shall promptly and in any event no later than 10 Working Days following the conduct of each Initial Type Test provide the Purchaser with a summary of the results of that Initial Type Test and whether the ELR Unit passed or failed that Initial Type Test. The Purchaser shall promptly notify the Manufacturer in writing when the Joint Proving Tests have been completed successfully.

#### D.4 Testing on ELL Infrastructure Stage 1: by the Main Works Contractor

D.4.1 Where the Purchaser has notified the Manufacturer pursuant to paragraph D.3.5 that the Joint Proving Tests have been completed successfully, the Purchaser shall authorise the Main Works Contractor to commence the tests described in the Stage 1 Core ELL Test Plan.

D.4.2 The Manufacturer shall make available 5 ELR Units that have obtained a Certificate of Technical Acceptance (subject only to the Permitted Restrictions) from Network Rail in respect of Route Acceptance on the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, in respect of Route Acceptance on the North London Railway and that have each undertaken [REDACTED] miles of Fault Free Running on or before 19<sup>th</sup> June, 2009 to enable the Main Works Contractor to undertake dynamic testing of the Core ELL Infrastructure in accordance with the test plan (“**Stage 1 Core ELL Test Plan**”) prepared by the Main Works Contractor to demonstrate to the Purchaser or its representative that the Core ELL Infrastructure operates correctly with the ELR Units.

D.4.3 Under the terms of the Main Works Contract, the Main Works Contractor will:

- (A) conduct a series of dynamic tests on the Core ELL Infrastructure to demonstrate to the Purchaser and/or its representative that the system is compliant with the requirements specified in the Main Works Contract, as specified in the Stage 1 Core ELL Test Plan; and
- (B) prepare test specifications to be adopted for each of the tests proposed in accordance with paragraph D.4.3(A).

D.4.4 The Purchaser shall provide the Manufacturer with a copy of the Stage 1 Core ELL Test Plan that has been submitted to the Purchaser for approval. If the Manufacturer, acting reasonably, has any concerns regarding any of the proposed tests described in the Stage 1 Core ELL Test Plan it shall notify the Purchaser in writing within 5 Working Days of receipt of the Stage 1 Core ELL Test Plan. The Purchaser shall use its reasonable endeavours to procure the agreement of the Main Works Contractor to amend the Stage 1 Core ELL Test Plan to take into account the concerns notified by the Manufacturer. Where the Stage 1 Core ELL Test Plan is amended pursuant to this paragraph D.4.4 or otherwise, the Purchaser shall provide a copy of the amended Stage 1 Core ELL Test Plan to the Manufacturer.

- D.4.5 The Manufacturer shall:
- (A) provide all reasonable technical, maintenance and operational support requested by the Purchaser to assist the tests being conducted by the Main Works Contractor; and
  - (B) where relevant, undertake fault identification and resolution.
- D.4.6 The following is a non-exhaustive list of indicative tests that it is envisaged that the Main Works Contractor may wish to conduct on the Core ELL Infrastructure as part of its Stage 1 Core ELL Test Plan and for which the Manufacturer may be requested by the Purchaser to provide assistance:
- (A) signalling system, functionality and performance from control centre to trackside;
  - (B) St Mary's Curve / District Line interface;
  - (C) traction power under load;
  - (D) degraded traction power modes;
  - (E) traction power under full load;
  - (F) structure dynamics tests;
  - (G) final signal sighting;
  - (H) tunnel telephone alignment;
  - (I) friction modifiers;
  - (J) interface with NR infrastructure at New Cross Gate;
  - (K) customer information systems;
  - (L) noise and vibration; and
  - (M) stray current measurement.
- D.4.7 The Purchaser shall promptly notify the Manufacturer in writing when the Stage 1 Core ELL Test Plan has been completed successfully.
- D.5 Testing on ELL Infrastructure Stage 2: Testing by the Manufacturer
- D.5.1 Following receipt of the notice served by the Purchaser in accordance with paragraph D.4.7 the Manufacturer shall be entitled to conduct each of the tests described in the Stage 2 Core ELL Test Plan.
- D.5.2 The Manufacturer shall ensure that it makes available sufficient ELR Units that have obtained a Certificate of Technical Acceptance (subject only to the Permitted Restrictions) in respect of Route Acceptance on the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, in respect of Route Acceptance on the North London Railway and that have each undertaken [REDACTED] miles of Fault Free Running in order for it to conduct each of the tests described in the Stage 2 Core ELL Test Plan within the period allocated for such tests in the Project Programme.
- D.5.3 Where the Purchaser, acting reasonably, requests the Manufacturer to modify part of the Stage 2 Core ELL Test Plan, the Manufacturer shall act reasonably, consider such request on its merits, and shall promptly give written notice to the Purchaser as to whether the Manufacturer is able to accommodate the Purchaser's request accompanied by a description, in reasonable detail, of the reasons for its decision.

- D.5.4 The Manufacturer shall promptly, and in any event no later than 10 Working Days following the conduct of each test described in the Stage 2 Core ELL Test Plan provide the Purchaser with a summary of the results of that test and whether the ELR Unit passed that test..
- D.5.5 The Purchaser shall notify the Manufacturer in writing when the Stage 2 Core ELL Test Plan has been completed successfully.
- D.6 Testing on ELL Infrastructure Stage 3: by the Main Works Contractor
- D.6.1 Where the Purchaser has notified the Manufacturer pursuant to paragraph D.5.5 that the tests described in the Stage 2 Core ELL Test Plan have been completed successfully, the Purchaser shall authorise the Main Works Contractor to commence the tests described in the Stage 3 Core ELL Test Plan.
- D.6.2 The Manufacturer shall make available to the Main Works Contractor 20 ELR Units that have obtained a Certificate of Technical Acceptance (subject only to the Permitted Restrictions) from Network Rail in respect of Route Acceptance on the ELR Network and, where the Relevant Options have been exercised in accordance with Schedule 9, in respect of Route Acceptance on the North London Railway and that have each undertaken [REDACTED] miles of Fault Free Running on or before 13<sup>th</sup> July, 2009 to undertake system integration testing of the Core ELL Infrastructure in accordance with the test plan ("**Stage 3 Core ELL Test Plan**") prepared by the Main Works Contractor to demonstrate to the Purchaser or its representative that the Core ELR Infrastructure operates correctly as a system.
- D.6.3 Under the terms of the Main Works Contract, the Main Works Contractor will:
- (A) conduct a series of system integration tests on the Core ELL Infrastructure to demonstrate to the Purchaser and/or its representative that the system is fully operational by operating all of the ELR Units that would be used by the Operator in providing scheduled services, including peak demand and design capacity. The intentional disruption of the service shall also be tested by the Main Works Contractor to demonstrate operational stability of the system under adverse conditions;
  - (B) prepare test specifications to be adopted for each of the tests proposed in accordance with paragraph D.6.3(A).
- D.6.4 The Purchaser shall provide the Manufacturer with a copy of the Stage 3 Core ELL Test Plan that has been submitted to the Purchaser for approval. If the Manufacturer, acting reasonably, has any concerns regarding any of the proposed tests described in the Stage 3 Core ELL Test Plan, the Manufacturer shall notify the Purchaser in writing within 5 Working Days of receipt of the Stage 3 Core ELL Test Plan. The Purchaser shall use its reasonable endeavours to procure the agreement of the Main Works Contractor to amend the Stage 3 Core ELL Test Plan to take into account the concerns notified by the Manufacturer. Where the Stage 3 Core ELL Test Plan is amended pursuant to this paragraph D.6.4 or otherwise the Purchaser shall provide a copy of the amended Stage 3 Core ELL Test Plan to the Manufacturer.
- D.6.5 The Manufacturer shall:
- (A) provide all reasonable technical, maintenance and operational support requested by the Purchaser to assist the tests being conducted by the Main Works Contractor are properly executed; and
  - (B) where relevant, undertake fault identification and resolution.

D.6.6 The following is a non-exhaustive list of indicative tests that it is envisaged that the Main Works Contactor may wish to conduct on the Core ELL Infrastructure as part of its Stage 3 Core ELL Test Plan and for which the Manufacturer may be requested by the Purchaser to provide assistance:

- (A) emergency procedures for test running (prior to the below points);
- (B) radio functionality;
- (C) noise and vibration;
- (D) train operator's CCTV;
- (E) system headway;
- (F) train protection warning system (TPWS);
- (G) electrical regeneration;
- (H) electro-magnetic compatibility;
- (I) wheel rail interface; and
- (J) degraded and emergency modes (technical).

D.6.7 Following the successful completion of each of the tests identified in the Stage 3 Core ELL Test Plan the Manufacturer shall:

- (A) promptly apply to the LUL Acceptance Panel for the issue of a Certificate of Technical Acceptance in respect of the operation of the ELR Units on the Core ELL Infrastructure. The Manufacturer shall ensure that a Certificate of Technical Acceptance issued by the LUL Acceptance Panel is not subject to any restrictions other than the Permitted Restrictions;
- (B) prepare and submit to the Purchaser for Assurance Acceptance a S Stage Engineering Safety Case in respect of the non-passenger operation of the ELR Units on the Core ELL Infrastructure. The Manufacturer shall ensure that the S Stage Engineering Safety Case produced pursuant to this paragraph D.6.7(B) ("**LUL S Stage Engineering Safety Case**") incorporates evidence from the Technical Cases and demonstrates that the risks of the ELR Units operating on the Core ELL Infrastructure are demonstrably tolerable and as low as reasonably practicable. The Manufacturer shall produce the LUL S Stage Engineering Safety Case in accordance with the timeframes specified in the Project Programme and so as to enable the Purchaser to submit a S Stage Operational Safety Case for the non-passenger operation of the ELR Units to the LUL Acceptance Panel (that will consist in part of the S Stage Engineering Safety Case); and
- (C) the Manufacturer shall, upon the request of the Purchaser, repeat the process in this paragraph D.6.7 and revise the LUL S Stage Engineering Safety Case to the extent necessary to address the passenger operation of the ELR Units on the Core ELL Infrastructure. The Manufacturer shall revise its S Stage Engineering Safety Case in accordance with any timeframes specified by the Purchaser (acting reasonably).

D.6.8 The Purchaser shall promptly notify the Manufacturer in writing when each of the tests described in the Stage 3 Core ELL Test Plan has been completed successfully.

## D.7 Provisional Acceptance

D.7.1 Subject to paragraph D.7.2 and D.7.9 the following are Unit acceptance criteria ("**Provisional Acceptance Criteria**"):

- (A) successful completion of each of the Type Tests specified in the Type Test Programme (including those tests specified in the NR Test Plan) as applying: (i) in respect of a NLR Unit (if the Unit offered for Acceptance is a NLR Unit); or (ii) in respect of ELR Units (if the Unit offered for Acceptance is a ELR Unit);
- (B) subject to the provisions of paragraph D.7.4A, the issue by the NRAB of a Certificate of Technical Acceptance (subject to any Permitted Restriction imposed by NRAB) and the Endorsement by the NRAB of the S Stage Engineering Safety Case in respect of the Unit;
- (C) successful completion of each of the Joint Proving Tests and each of the tests specified in the Stage 1 Core ELL Test Plan, Stage 2 Core ELL Test Plan and the Stage 3 Core ELL Test Plan;
- (D) subject to the provisions of paragraph D.7.4B, the issue by the LUL Acceptance Panel of a Certificate of Technical Acceptance (subject to any Permitted Restrictions imposed by the LUL Acceptance Panel) in respect of the Unit and the Endorsement by the LUL Acceptance Panel of the LUL S Stage Engineering Safety Case;
- (E) the Unit has successfully completed [REDACTED] consecutive miles of Fault Free Running;
- (F) the Unit is Fit for Purpose and is free from Defects;
- (G) the Unit complies with all Applicable Laws, applicable Standards and all Relevant Consents;
- (H) there are no Defects affecting the safe operation of a Unit ("**Safety Defects**") in any of the Units that have been Accepted by the Purchaser and where there are Defects (other than Safety Defects) of the same type that have arisen in 5 or more Units that have been Accepted by the Purchaser, the Manufacturer has demonstrated to the satisfaction of the Purchaser (acting reasonably) that the Defect is not and will not be present in the relevant Unit offered for Acceptance and/or will be remedied within 10 Working Days;
- (I) the Purchaser has received the Unit Log Book for that Unit and there are no material unresolved issues noted in the Unit Log Book;
- (J) where:
  - (1) the Unit is an NLR Unit, and provided that the Purchaser has given notice to the Manufacturer in accordance with paragraph 1.4.1 of Schedule 10 and made either or both of the Base Ilford Investment and/or the Enhanced Ilford Investment no later than 25 April 2008, evidence to the reasonable satisfaction of the Purchaser that the works required at the Ilford Facility have been completed and that the NLR Units may be maintained at such facility; and
  - (2) the Unit is an ELR Unit, evidence to the reasonable satisfaction of the Purchaser and LUL that the Manufacturer Fit Out Works have been completed and the Units may be maintained at such facility save where the Manufacturer Fit Out Works have not been completed and/or the NXG Facility is not available and such non-completion and/or non-availability is attributable to circumstances outside the control (and in no respect caused by the acts and/or omissions) of the Manufacturer and/or its Subcontractors;
- (K) a Milestone Certificate has been issued by the Purchaser in respect of each Milestone prior to the Milestone for Acceptance of the Units;
- (L) the Manuals and all items of Purchased Equipment comprising the Initial Order (other than the Units) have been Accepted by the Purchaser; and
- (M) the Purchaser has received the TSA Bonding Guarantee duly executed by a Qualifying Issuer which complies with the requirements of the Train Services Agreement.

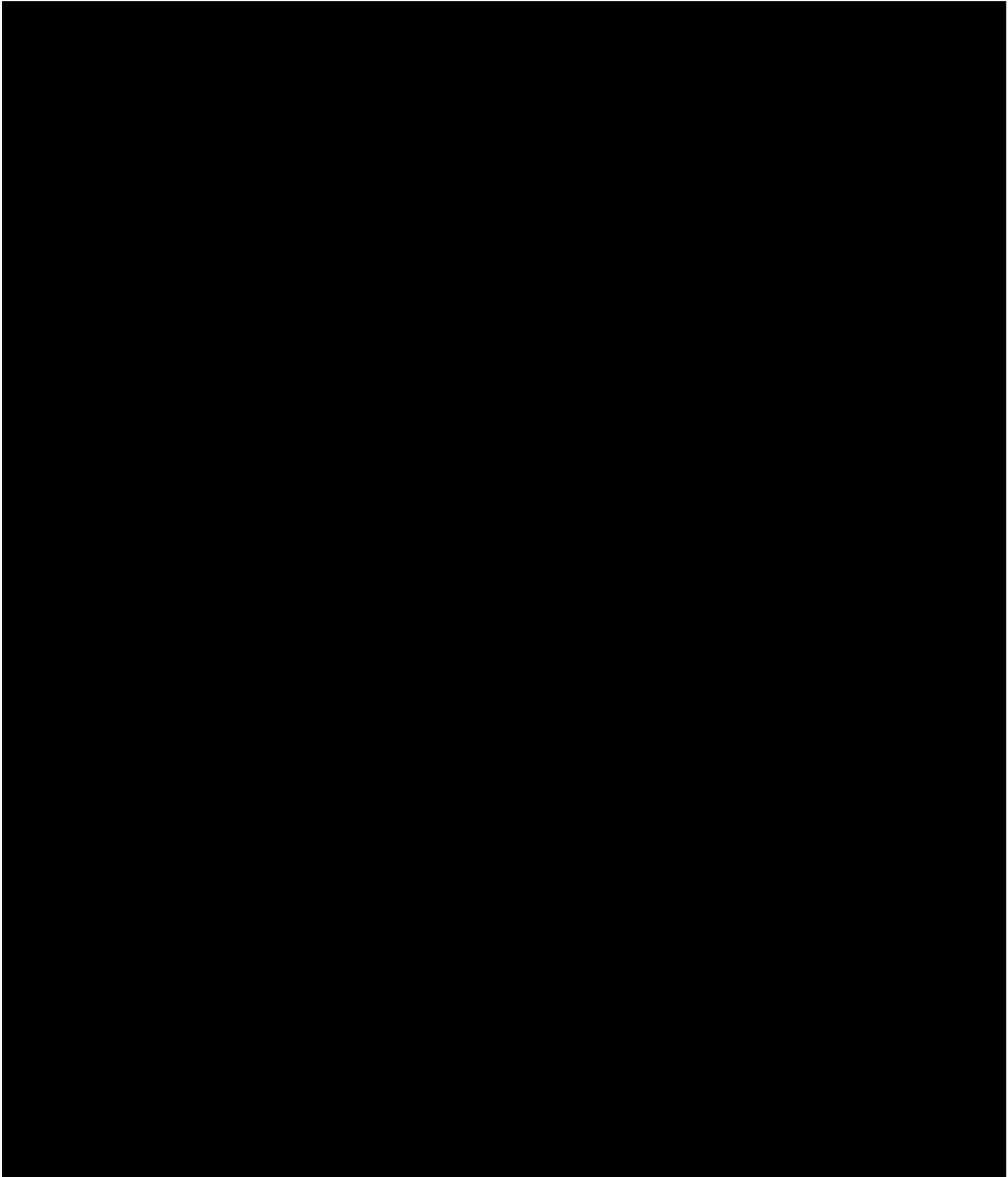
- D.7.2 Where in respect of an ELR Unit each of the Provisional Acceptance Criteria has been satisfied and where in respect of a NLR Unit each of the Provisional Acceptance Criteria has been satisfied other than those set out in paragraphs D.7.1.(C) and (D) above:
- (A) the Manufacturer shall offer the relevant Unit for Acceptance by the Purchaser at the agreed delivery location on its Contractual Acceptance Date in accordance with the Delivery Schedule; and
  - (B) the Purchaser shall, if it considers (acting reasonably) that the relevant Provisional Acceptance Criteria have been satisfied, issue to the Manufacturer a Provisional Acceptance Certificate (in relation to an ELR Unit) or a Qualified Provisional Acceptance Certificate (in relation to a NLR Unit).
- D.7.3 Where a Unit has been Accepted by the Purchaser (including Acceptance pursuant to paragraph D.7.9(A)) title to such Unit shall transfer to the Purchaser or the Owner (where it is not the Purchaser) in accordance with Clause 14.1. The maintenance of a Unit that has been Accepted by the Purchaser shall be the responsibility of the Maintainer in accordance with the provisions of the Train Services Agreement.
- D.7.4 If the Purchaser considers that a Unit would satisfy the applicable Provisional Acceptance Criteria but for certain minor aesthetic-related defects the Purchaser may Accept such Unit subject to the Manufacturer rectifying such minor aesthetic-related defects as soon as reasonably practicable (and in any event no later than 10 Working Days from the date of Acceptance of that Unit).
- D.7.4A The criteria relating to Certificate of Technical Acceptance in paragraph D.7.1(B) shall be deemed to have been met if:
- (A) the Certificate of Technical Acceptance described in paragraph D.7.1(B) has been issued by NRAB for the routes concerned with the exception only of the following routes:
    - (1) West Croydon station to West Croydon reversing siding;
    - (2) Lea Interchange CSD;
    - (3) Stratford Platforms 13 and 14; and
  - (B) to the extent that the routes listed in paragraph D.7.4A(A) have been built to comply with the Railway Infrastructure Criteria at the date of commencement of:
    - (1) NLR Unit testing on the North London Railway in respect of paragraphs D.7.4A(2) and (3); and
    - (2) ELR Unit testing on the ELR Network in respect of paragraph D.7.4A(1),  
the Manufacturer has used all reasonable endeavours to have each of those routes included within the Certificate of Technical Acceptance.
- D.7.4B The criteria relating to Certificate of Technical Acceptance in paragraph D.7.1(D) shall be deemed to have been met if:
- (A) the Certificate of Technical Acceptance described in paragraph D.7.1(D) has been issued by LUL for the routes concerned with the exception only of the route comprising Dalston Junction to a connection with the North London Line near Canonbury; and
  - (B) to the extent that the route in paragraph D.7.4B(A) has been built at the date of commencement of testing in accordance with the Stage 2 Core ELL Test Plan, the Manufacturer has used all reasonable endeavours to have that route included within the Certificate of Technical Acceptance.

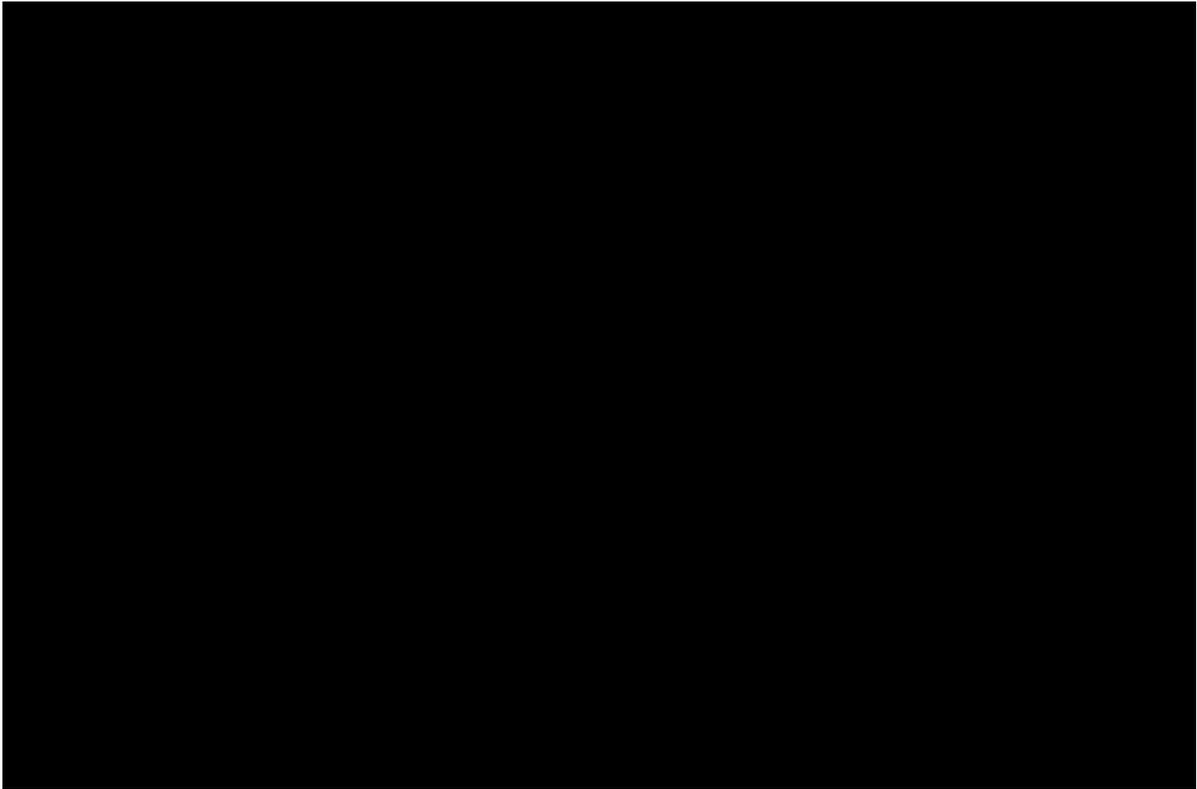
**Acceptance of Purchased Equipment (other than Units)**

- D.7.5 Where the Manufacturer considers that any item of Purchased Equipment (other than a Unit) satisfies each of the requirements for that item specified in this Agreement;
- (A) the Manufacturer shall be entitled to offer that item of Purchased Equipment for Acceptance by the Purchaser or the Owner (where it is not the Purchaser) at the agreed delivery location on the Contractual Acceptance Date for that item; and
  - (B) the Purchaser shall, if it considers, (acting reasonably), that the item of Purchased Equipment (other than a Unit) satisfies each of the applicable requirements, issue to the Manufacturer a Delivery Note in respect of such item.
- D.7.6 Where an item of Purchased Equipment (other than a Unit) has been Accepted by the Purchaser title to such item shall transfer to the Purchaser in accordance with Clause 14.

**Deemed Completion of Stage 2 Testing**

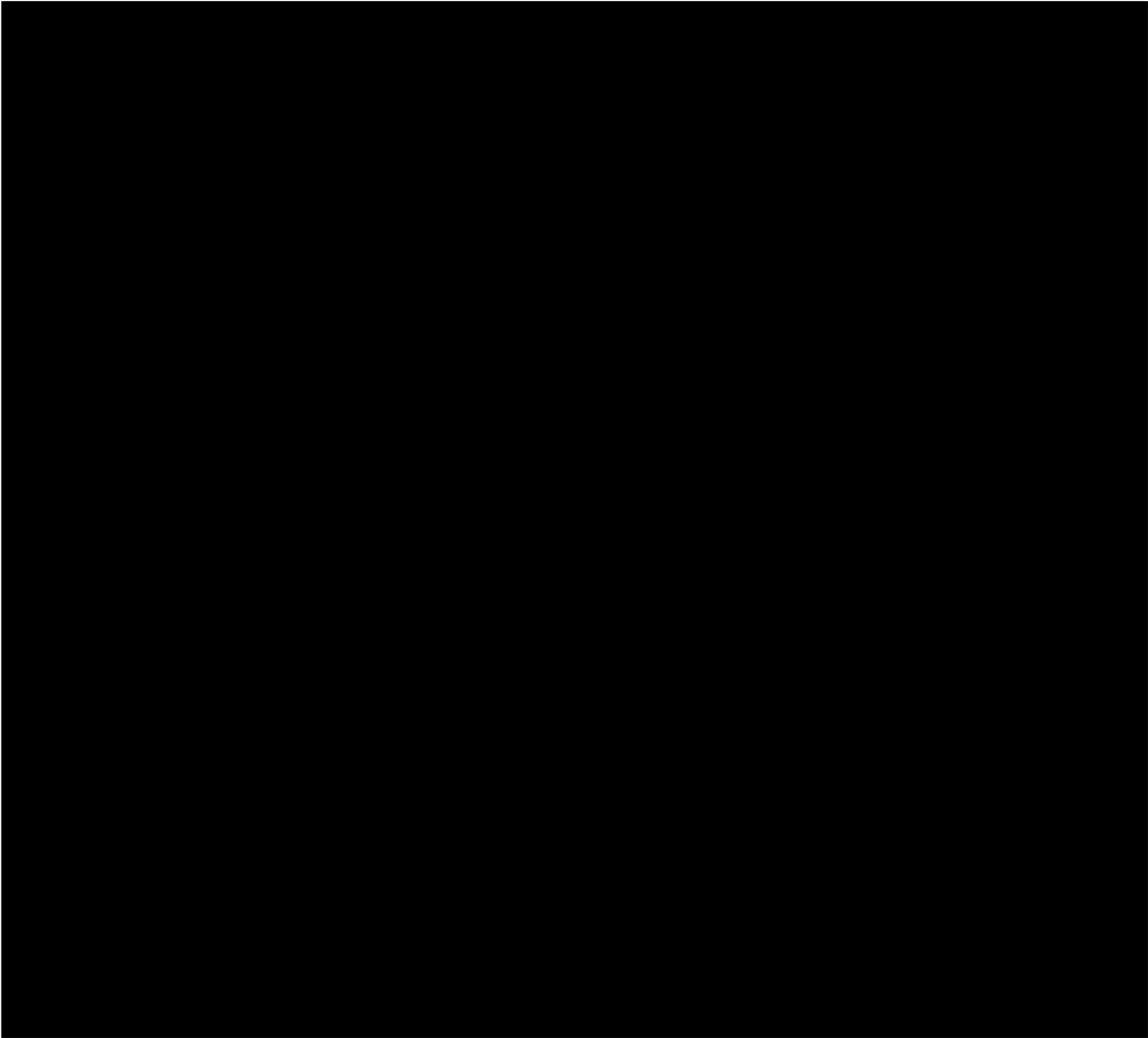
D.7.7

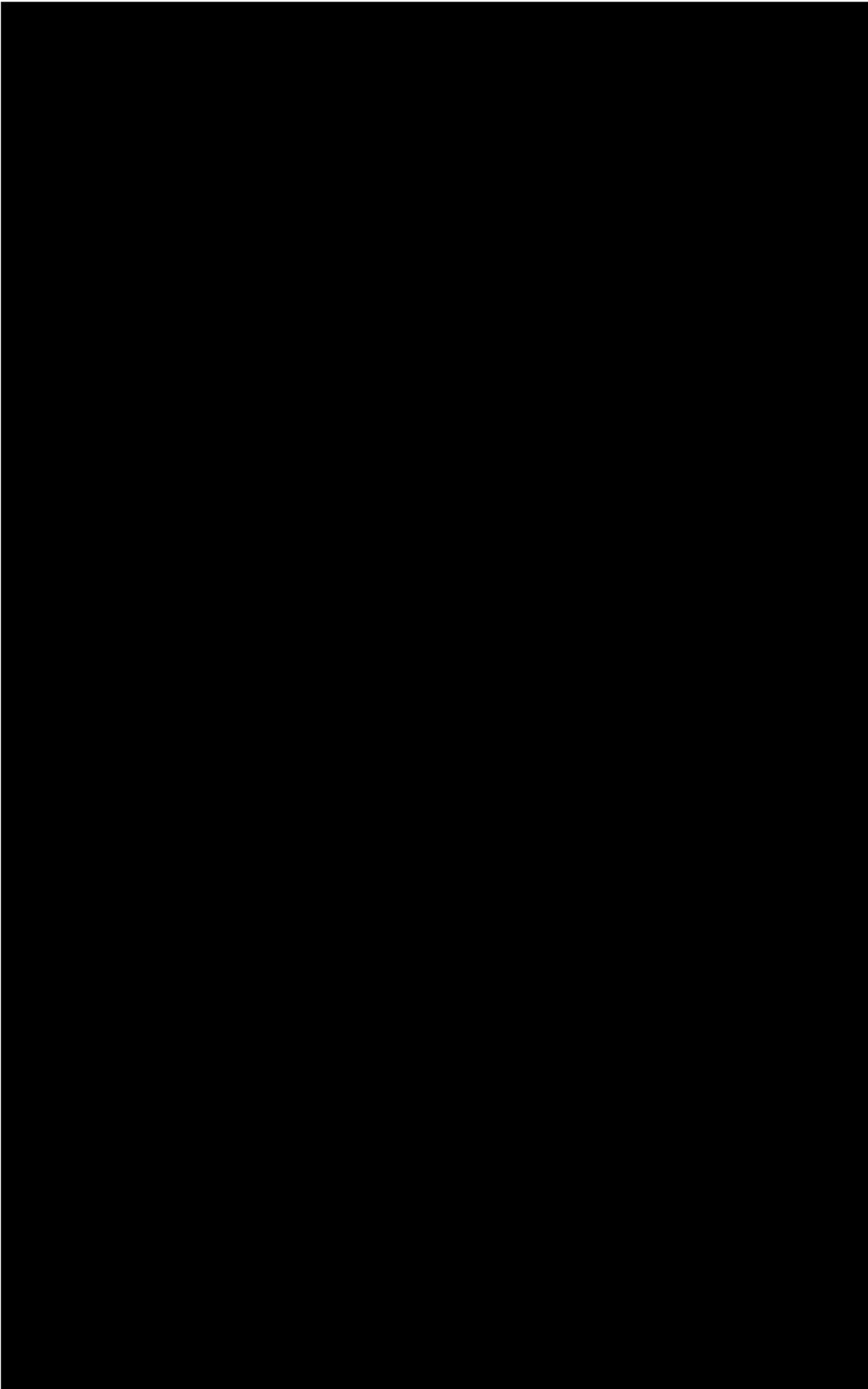


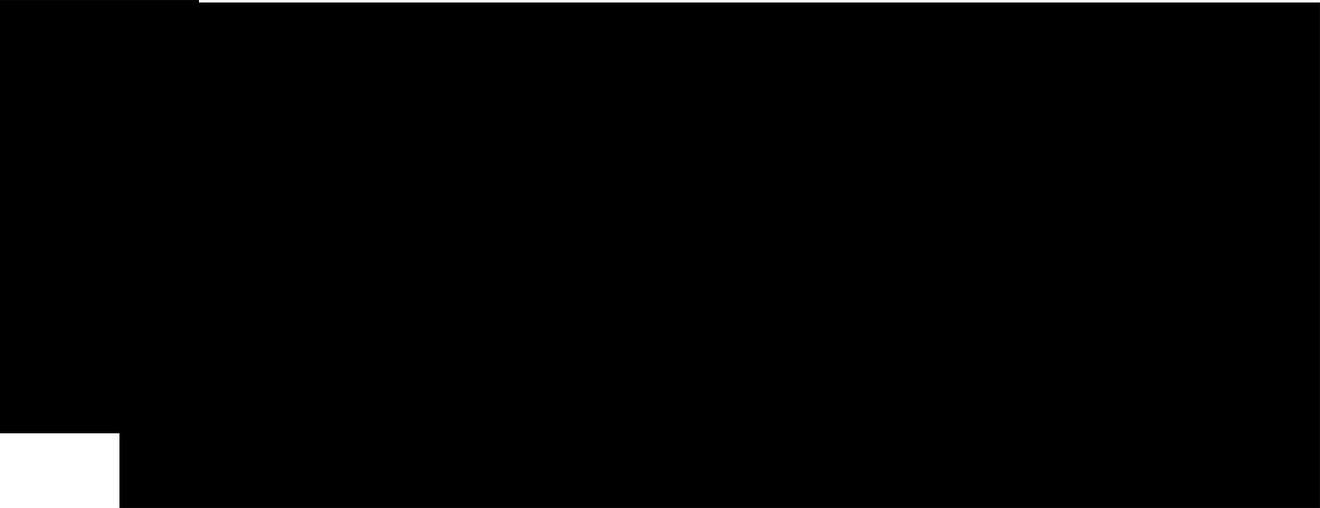


**Deemed Acceptance of ELR Units**

D.7.9







## D.8 Transfer to Trial Operations

- D.8.1 Following successful completion of the tests described in paragraph D.6 or otherwise as provided for in paragraph D.7, the Manufacturer shall complete the Rolling Stock Technical Case to allow the undertaking of Trial Operations and submit the Rolling Stock Technical Case to the Purchaser for Assurance Acceptance and the Purchaser shall use reasonable endeavours to procure the undertaking of Trial Operations.
- D.8.2 The Manufacturer shall provide reasonably necessary support and assistance in relation to the Units (including the provision of any information and/or other evidence requested by the Purchaser or the Operator) in connection with the Operator obtaining the approval of Network Rail and LUL in respect of its operational Safety Management System.
- D.8.3 By no later than 30 November 2009 the Manufacturer shall obtain Route Acceptance (subject only to the Permitted Restrictions) of the NLR Units on the Core ELL Infrastructure and obtain a Certificate of Technical Acceptance from the LUL Acceptance Panel in respect of the NLR Units operating on the Core ELL Infrastructure (subject only to the Permitted Restrictions) provided that if the LUL Acceptance Panel determines that particular Type Tests are required to be conducted on the NLR Units in conjunction with the Core ELL Infrastructure in order to obtain Route Acceptance on the Core ELL Infrastructure the Purchaser shall cooperate with the Manufacturer in arranging access to the Core ELL Infrastructure for the undertaking of such tests.

## D.9 Certificate of Authority to Operate

- D.9.1 Following Acceptance of each Unit the Manufacturer shall provide all necessary support and assistance including the provision of all documentation which is within the control and/or possession of the Manufacturer and/or its Subcontractors in relation to such Unit that the Purchaser and/or the Operator in the case of an NLR Unit may request in connection with the Operator making a submission for an unrestricted Certificate of Authority to Operate from Network Rail (save for any Permitted Restrictions imposed by Network Rail) relating to such Unit in revenue earning passenger service on the North London Railway and the ELR Network and a submission for an unrestricted Certificate of Authority to Operate from LUL (save for any Permitted Restrictions imposed by LUL) relating to such Unit operating on the Core ELL Infrastructure and in the case of an ELR Unit making a submission for an unrestricted Certificate of Authority to Operate from Network Rail (save for any Permitted Restrictions imposed by Network Rail) relating to such Unit in revenue earning passenger service on the ELR Network and (where the Relevant Options have been exercised in accordance with Schedule 9) on the North London Railway and a submission for an unrestricted Certificate of Authority to Operate from LUL (save for any Permitted Restrictions imposed by LUL) relating to such Unit operating on the Core ELL Infrastructure.

D.9.2 The Purchaser shall procure that the Operator shall make a submission for a Certificate of Authority to Operate to Network Rail in respect of the ELR Units and the NLR Units operating on the North London Railway and the ELR Network as appropriate and a submission for a Certificate of Authority to Operate to the LUL Acceptance Panel in respect of the ELR Units and the NLR Units operating on the Core ELL Infrastructure as soon as all relevant documentation has been received from the Manufacturer.

#### **NLR Units Provisional Acceptance**

D.9.3 Where an NLR Unit has satisfied each of the Provisional Acceptance Criteria set out in paragraphs D.7.1(C) and (D) above:

- (A) the Manufacturer shall offer the relevant Unit for Provisional Acceptance by the Purchaser; and
- (B) the Purchaser shall, if it considers (acting reasonably) that the Unit satisfies the relevant Provisional Acceptance Criteria, issue to the Manufacturer a Provisional Acceptance Certificate in relation to such NLR Unit.

### **D.10 Final Acceptance**

D.10.1 The Manufacturer shall be entitled to offer a Unit for Final Acceptance by the Purchaser once each of the following criteria ("**Final Acceptance Criteria**") has been satisfied:

- (A) the Unit has from the date of its Acceptance successfully completed a further [REDACTED] consecutive miles of Fault Free Running [or has been free from Defects during any period of [REDACTED] months;
- (B) in the case of a NLR Unit, the NLR Unit has met the Provisional Acceptance Criteria set out in paragraphs D.7.1(C) and (D) above as evidenced by the issue by the Purchaser of a Provisional Acceptance Certificate in respect of that Unit;
- (C) subject to the provisions of paragraph D.10.4, the Unit has obtained a Certificate of Authority to Operate in unrestricted revenue earning passenger service from Network Rail subject only to the Permitted Restrictions;
- (D) subject to the provisions of paragraph D.10.5, the Unit has obtained a Certificate of Authority to Operate in unrestricted revenue earning passenger service from LUL subject only to the Permitted Restrictions; and
- (E) the Manufacturer has completed, to the reasonable satisfaction of the Purchaser, any rectifications work arising pursuant to paragraph D.7.4.

D.10.2 Where the Manufacturer considers that a Unit has satisfied the Final Acceptance Criteria the Manufacturer shall notify the Purchaser of the same attaching evidence sufficient to enable the Purchaser to determine whether the Final Acceptance Criteria have been satisfied.

D.10.3 Where the Manufacturer has not obtained Final Acceptance in respect of a Unit by the Final Acceptance Backstop Date and this has been caused by the unavailability and/or condition of the Core ELL Infrastructure as referred to in paragraphs D.7.7 and/or D.7.9 which, in either case is solely attributable to circumstances outside the reasonable control of the Manufacturer and/or its Subcontractors and is in no respect caused by the Units and/or the acts and/or omissions of the Manufacturer and/or its Subcontractors and subject to the Manufacturer having used its reasonable endeavours to mitigate the consequences of such unavailability and/or condition of the Core ELL Infrastructure, the Manufacturer shall be deemed to have obtained Final Acceptance in respect of that Unit on the Final Acceptance Backstop Date.

D.10.4 The criteria relating to Certificate of Authority to Operate in paragraph D.10.1(C) shall be deemed to have been met if:

(A) the Certificate of Authority to Operate described in paragraph D.10.1(C) has been issued by Network Rail for the routes concerned with the exception only of the following routes:

- (1) West Croydon station to West Croydon reversing siding;
- (2) Lea Interchange CSD;
- (3) Stratford Platforms 13 and 14; and

(B) to the extent that the routes listed in paragraph D.10.4(A) have been built to comply with the Railway Infrastructure Criteria at the date of Final Acceptance, the Manufacturer has used all reasonable endeavours to have each of those routes included within the Certificate of Authority to Operate.

D.10.5 The criteria relating to Certificate of Authority to Operate in paragraph D 10.1(D) shall be deemed to have been met if:

(A) the Certificate of Authority to Operate described in paragraph D.10.1(D) has been issued by LUL for the routes concerned with the exception only of the route comprising Dalston Junction to a connection with the North London Line near Canonbury; and

(B) to the extent that the route in paragraph D.10.5(A) has been built at the date of Final Acceptance, the Manufacturer has used all reasonable endeavours to have that route included within the Certificate of Authority to Operate.

## D.11 Conduct of Testing by Operator

D.11.1 The Purchaser shall procure that the Operator shall hold all such insurance that an operator of trains acting in accordance with prudent business practice should hold in respect of damage to property and persons and third party liability.

D.11.2 The Purchaser will be responsible for, and will indemnify the Manufacturer, for all losses and claims of third parties arising as a consequence of the Initial Infrastructure Tests, The Stage 1 Core ELL Test Plan and the Stage 3 Core ELL Test Plan (the "**Infrastructure Proving Tests**") provided and to the extent that such losses or claims are attributable to acts or omissions of the Main Works Contractor, the Operator or the Purchaser.

## Appendix E Information – Goal Structured Notation

## E Information – Goal Structured Notation

### E.1 Purpose

- E.1.1 This Appendix provides information on the use of goal structured notation (GSN) and is for informative purposes, but does not purport to be comprehensive or contain all of the information that the Manufacturer may require.
- E.1.2 The Purchaser accepts no responsibility or liability (other than in respect of fraudulent misrepresentation) in relation to, nor makes any representation or warranty (express or implied) as to, the accuracy, reasonableness or completeness of the information contained in this Appendix.

### E.2 Scope

- E.2.1 The Manufacturer shall use GSN to present the arguments for each Technical Case prepared in accordance with paragraph 3.

### E.3 Description

- E.3.1 GSN is a graphical technique for the description of arguments and uses standard symbols to represent the argument and the evidence available to provide assurance that the argument has been made. It was developed to assist in providing safety assurance to complex high-integrity systems where the complexity of the safety argument meant that it was often difficult to follow if provided purely as a written safety case.

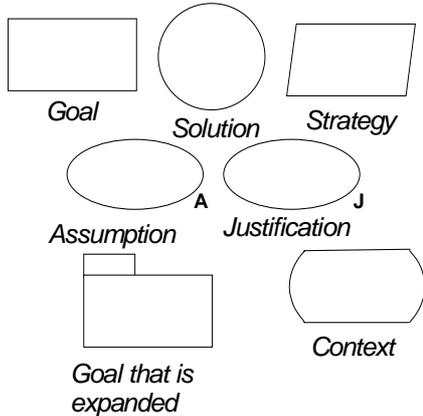
### E.4 General Benefits of GSN

- E.4.1 The main benefits of using GSN are:
  - (A) to assist in making an argument clear;
  - (B) to enable an argument to be defended;
  - (C) to facilitate mutual understanding of the argument; and
  - (D) to present how an argument will be made before the evidence is available.
- E.4.2 GSN makes the argument clear as it provides a visual representation of the argument and how it is constructed. It also shows how the different parts of the argument relate to each other and the constraints on, and context of, each part of the argument. It therefore allows those managing and preparing the argument to understand the argument and provides those reviewing the argument with a clear and more readily understandable layout.
- E.4.3 GSN enables the argument to be defended by showing how goals are successively broken down into sub-goals so that arguments can be supported by direct reference to available evidence (solutions). Through this decomposition, using GSN can clarify the argument (strategies) adopted, the rationale for the approach and the context in which goals are stated. The effect of changing the assumptions or context of the argument can thus be clearly analysed. GSN also facilitates the identification of unnecessary tasks by demonstrating how if the task does not contribute to the argument, it need not be executed.
- E.4.4 GSN facilitates mutual understanding of the argument through a visual representation rather than the possible misinterpretation and ambiguity associated with written argument.
- E.4.5 GSN allows the structure of the argument to be developed at an early stage in the project, before the evidence is available. Plans can then be made to ensure that the evidence is provided, by scheduling the necessary testing and analysis from an early stage in the project. The progress

towards completing the argument can then be monitored as the project progresses and steps taken to ensure that the necessary evidence is provided in a cost-effective and timely manner. GSN is therefore a key to the implementation of Progressive Assurance.

## E.5 GSN Symbols

E.5.1 GSN uses a standard set of symbols to represent the different elements of the argument. These are shown below.



GSN is a graphical notation for the description of arguments.

The purpose of a goal structure is to show how *goals* are broken down into sub-goals, and eventually supported by evidence (*solutions*) whilst making clear the *strategies* adopted, the rationale for the approach (*assumptions, justifications*) and the *context* in which goals are stated.

## E.6 Structure of the Rolling Stock Technical Case

E.6.1 The Manufacturer shall demonstrate that the design, manufacture, testing, commissioning and supply of the Units and other items of Purchased Equipment has been undertaken safely and satisfies the requirements of Progressive Assurance.

E.6.2 To these ends the Rolling Stock Technical Case will have two main components: i) the Unit, Subsystem or module shall satisfy each of the requirements set out in the Rolling Stock Requirements – Technical (including safety targets), shall comply with all Applicable Laws, applicable Standards, and Relevant Consents and the other requirements of this Agreement; and ii) an appropriate series of processes shall have been executed by trained, experienced and competent personnel.

## Appendix F Drugs and Alcohol Policy

## F Drugs and Alcohol Policy

### **Part A: LUL Alcohol and Drugs Policy**

# Standard



**Category:** 1  
**Number:** 2-02201-000  
**Issue no:** A1  
**Issue date:** 28 October 2002

**London Underground Limited**  
**Human Resources**

## Alcohol and Work

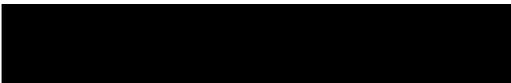
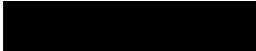
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### A Standard is defined as:

*A mandatory document which sets out minimum requirements expressed as outputs; or a mandatory document which defines an interaction or commonality which meets a defined LUL requirement.*

<b>Authorised by:</b>		
<b>Approved by:</b>		
<b>Custodian:</b>		<b>Date:</b> August 2002

## 1.0 Purpose

- 1.0.1 The purpose of this Standard is to support the London Underground Limited (LUL) policy that employees shall be required to ensure that their work performance is not affected in any way by consumption of alcohol. Breaches of this Standard may lead to disciplinary action. Where such breaches are deemed to be gross misconduct, disciplinary action may result in dismissal.

## 2.0 Scope

- 2.0.1 This Standard applies to all employees of LUL and subsidiary companies. LUL also requires any Contractors, Consultancies and Agencies to ensure that their employees who are engaged on work for LUL comply with its provisions.
- 2.0.2 This Standard shall be enforceable from 28/10/02.

## 3.0 Requirements

- 3.0.1 All Employees must be aware that:
- The consumption of alcohol, even in very small quantities, may adversely affect their safety, performance, conduct or efficiency as well as the safety and wellbeing of other employees and customers.
  - Carrying out work for LUL whilst they may be under the influence of alcohol, or behaviour connected with alcohol consumption which may reflect adversely on the reputation of LUL, are contrary to company standards.
- 3.0.2 To achieve the aims of the LUL policy the following requirements shall apply:
- All Employees are required:
    - not to consume alcohol whilst on duty, during breaks in the working day, including meal breaks spent away from company premises, or when rostered on call and thus liable to be required to work for the company at short notice;
    - neither to buy alcohol whilst on duty nor bring alcohol on to company operational premises;
    - to limit their consumption of alcohol whilst off duty to ensure that they are not under the influence of alcohol in any way when reporting for duty or carrying out work for the company;
    - to avoid buying or consuming alcohol when off duty whilst wearing a company uniform, name badge or other form of company identification;
    - to co-operate fully with the company's alcohol screening arrangements if they are involved in a dangerous incident<sup>1</sup> at work or where there is reasonable suspicion that alcohol has been consumed.
  - In order to exercise the duty of due diligence placed on LUL by the provisions of the Transport and Works Act 1992, employees who are required to perform safety critical activities as part of their job are classified as safety critical. In

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<sup>1</sup> A dangerous incident is defined as "An incident causing or having the potential to cause death or major injury or substantial damage to property".

addition to the requirements outlined above, safety critical employees are required to co-operate fully with unannounced alcohol screening arrangements.

- In the event of any breach of this Standard, the normal disciplinary procedures shall apply to LUL employees, which may result in charges of gross misconduct and dismissal. (NB: Safety critical employees who test positive for alcohol will be disciplined and are likely to be dismissed.)
- LUL shall endeavour to assist a LUL employee who, prior to breaches of this Standard, admits to an alcohol dependency problem to address the issue. However, such an admission shall not give immunity from disciplinary action once a breach of this Standard has occurred.

## **4.0 Responsibilities**

### **4.1 All Employees**

- Shall understand and accept their responsibility to comply with the requirements outlined in this standard and the supporting guidelines.
- Shall seek help immediately if they believe they have or are developing an alcohol dependency problem.
- Shall avoid covering up or colluding with colleagues whose behaviour and performance is affected by alcohol.
- Shall urge colleagues to seek help if they have problems arising from the use of alcohol and alert a supervisor or manager if safety could be compromised.

### **4.2 All LUL Managers**

- Shall be familiar with and enforce this standard by ensuring the requirements outlined above are met in their areas of control. This includes initiating disciplinary action where breaches of the Standard occur.
- Shall undertake investigations where an employee's performance appears to be affected by alcohol, and take appropriate action, including making arrangements for employees to undergo alcohol screening tests where they are involved in a dangerous incident at work or where there is reasonable suspicion that alcohol has been consumed.
- Shall co-operate with the local Human Resources (HR) Office in carrying out unannounced alcohol tests and with LUL Occupational Health in arranging alcohol screening to monitor employees who have undergone rehabilitation for alcohol abuse.
- Shall assist employees on a confidential basis who seek help with an alcohol-related problem.
- Shall monitor the application of unannounced and for cause testing for ethnic and gender bias, taking corrective action if appropriate.

## 4.2 Private Finance Initiatives, Infracos and Individual Contractors and Sub-contractors of these parties and of LU

- Shall be familiar with and enforce this standard by ensuring the requirements outlined above are met. This includes removing employees from Underground work who test positive for alcohol.
- Shall ensure appropriate arrangements are made for unannounced alcohol testing to take place of a minimum of 5% of safety critical employees per annum.

## 4.4 General Manager HR

- Shall review the effectiveness of this Standard and audit compliance with the requirements stated therein.

## 5.0 Appendix – Supporting information

### 5.1 Supporting and other Relevant Documents

Company Employment Policy  
Drugs and Work Standard  
Code of Conduct Standard  
Alcohol and Drugs Guidelines  
Alcohol and Drugs Guidelines for Managers  
Alcohol and Drugs Guidance for Contractors

## 6.0 Appendix – Informative references

### 6.1 Definitions

For the purposes of this Standard, Employees shall be taken as being those in the direct employ of London Underground Limited (and any subsidiary companies), Private Finance Initiatives, Infracos and any individual contractors and sub-contractors of any of these parties.

### 6.2 Document history

Reference & revision no.	Date	Changes	Author
HRP/AW1	24.01.02	Draft 1	
HRP/AW1	01.02.02	Draft 2 - Revisions from consultation	
HRP/AW1	14.02.02	Draft 3 - Revisions from consultation	
HRP/AW1	07.03.02	Draft 4 - Revisions from consultation	
HRP/AW1	18.03.02	Draft 5 - Revision from consultation	
HRP/AW1	02.05.02	Draft 6 – Revision from PSC Consultation	
HRP/AW1	21.08.02	Final version	
2-02201-000 A1	28.10.02	Document re-numbered	

### 6.3 Document index data / properties

<b>Date created:</b>	24.01.02
<b>Reference number:</b>	2-02201-000
<b>Revision number:</b>	A1
<b>Title:</b>	Alcohol and Work
<b>Custodian:</b>	HR Policy and Reward Manager
<b>Location of document:</b>	HR Policy Section
<b>Digital file reference:</b>	Alcohol Standard
<b>LUL functional unit name:</b>	Human Resources

# Standard



**Category:** 1  
**Number:** 2-02207-000  
**Issue no:** A1  
**Issue date:** 28/10/02

**London Underground Limited**  
**Human Resources**

## Drugs and Work

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<b>Authorised by:</b> _____	<b>Date:</b> <u>August 2002</u>
<b>Approved by:</b> _____	<b>Date:</b> <u>August 2002</u>
<b>Custodian:</b> _____	<b>Date:</b> <u>August 2002</u>

## 1.0 Purpose

- 1.0.1 The purpose of this Standard is to support the London Underground Limited (LUL) policy that employees shall be required to ensure that their work performance is not affected in any way by use of drugs. Breaches of this Standard may lead to disciplinary action. Where such breaches are deemed to be gross misconduct, disciplinary action may result in dismissal.

## 2.0 Scope

- 2.0.1 This Standard applies to all employees of LUL and subsidiary companies. LUL also requires any Contractors, Consultancies and Agencies to ensure that their employees who are engaged on work for LUL comply with its provisions.
- 2.0.2 The term 'drugs' used in this Standard shall be deemed to include illegal substances, drugs and medication taken for reasons other than medically prescribed purposes, and other substances of abuse such as solvents. Where indicated, it also covers drugs and medications, whether prescribed or available without prescription, which have the potential to affect work performance.
- 2.0.3 This Standard shall be enforceable from 28/10/02.

## 3.0 Requirements

- 3.0.1 All Employees must be aware that:
- The consumption or use of any drugs or other medication may adversely affect their safety, performance, conduct or efficiency as well as the safety and wellbeing of other employees and customers.
  - Carrying out work for LUL whilst they may be under the influence of drugs, or behaviour connected with the use of drugs which may reflect adversely on the reputation of LUL, are contrary to company standards.
- 3.0.2 To achieve the aims of the LUL policy the following requirements shall apply:
- All Employees are required:
    - not to consume or use illegal drugs at any time, whether on duty or not, so as to ensure they are not under their influence when reporting for duty, carrying out work for the company or when on company premises;
    - not to possess, store or sell illegal drugs on company premises or bring the company into disrepute by being involved in such activities outside of work;
    - when requiring medication, to find out if there may be side effects likely to impair their work performance and safety from the drug or other medication concerned, whether prescribed or available without prescription, and, where this is the case, to seek advice regarding alternatives; additionally to advise their manager when reporting for work;
    - to co-operate fully with the company's drugs screening arrangements if they are involved in a dangerous incident<sup>1</sup> at work or where there is reasonable suspicion that drugs have been consumed or used.

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<sup>1</sup> A dangerous incident is defined as "An incident causing or having the potential to cause death or major injury or substantial damage to property".

- In order to exercise the duty of due diligence placed on LUL by the provisions of the Transport and Works Act 1992, employees who are required to perform safety critical activities as part of their job are classified as safety critical. In addition to the requirements outlined above:
  - Employees are required to undergo screening for drugs prior to appointment, transfer or promotion to a post in which they will be classified as safety critical.
  - Safety critical employees are required to co-operate fully with unannounced drugs screening arrangements.
  - Contractors who are classified as safety critical are additionally required to carry a current certificate whilst engaged on work for LUL, issued by a LUL approved laboratory, certifying that they have undergone screening for drugs which proved negative within the previous twelve months.
- In the event of any breach of this Standard, the normal disciplinary procedures shall apply to LUL employees, which may result in charges of gross misconduct and dismissal. (NB: Safety critical employees who test positive for drugs will be disciplined and are likely to be dismissed.)
- LUL shall endeavour to assist a LUL employee who, prior to breaches of this Standard, admits to a drugs dependency problem to address the issue. However, such an admission shall not give immunity from disciplinary action once a breach of this Standard has occurred.

## **4.0 Responsibilities**

### **4.1 All Employees**

- Shall understand and accept their responsibility to comply with the requirements outlined in this standard and the supporting guidelines.
- Shall seek help immediately if they believe they have or are developing a drugs dependency problem.
- Shall avoid covering up or colluding with colleagues whose behaviour and performance is affected by drugs.
- Shall urge colleagues to seek help if they have problems arising from the use of drugs and alert a supervisor or manager if safety could be compromised.

### **4.2 All LUL Managers**

- Shall be familiar with and enforce this standard by ensuring the requirements outlined above are met in their areas of control. This includes initiating disciplinary action where breaches of the Standard occur.
- Shall undertake investigations where an employee's performance appears to be affected by drugs, and take appropriate action, including making arrangements for employees to undergo drugs screening tests where they are involved in a dangerous incident at work or where there is reasonable suspicion that drugs have been consumed or used.
- Shall ensure drugs screening takes place as appropriate for employees prior to their undertaking posts in which they will be classified as safety critical.

- Shall co-operate with the local Human Resources (HR) Office in carrying out unannounced drugs tests and with LUL Occupational Health in arranging drugs screening to monitor employees who have undergone rehabilitation for drug abuse.
- Shall assist employees on a confidential basis who seek help to overcome a drugs-related problem.
- Shall monitor the application of unannounced and for cause testing for ethnic and gender bias, taking corrective action if appropriate.

#### **4.3 Private Finance Initiatives, Infracos and Individual Contractors and Sub-contractors of these parties and of LU**

- Shall be familiar with and enforce this standard by ensuring the requirements outlined above are met. This includes removing employees from Underground work who test positive for drugs.
- Shall ensure drugs screening takes place as appropriate for employees prior to their undertaking posts in which they will be classified as safety critical and on an annual basis.
- Shall ensure appropriate arrangements are made for unannounced drugs testing to take place of a minimum of 5% of safety critical employees per annum.

#### **4.4 General Manager HR**

- Shall review the effectiveness of this Standard and audit compliance with the requirements stated therein.

### **5.0 Appendix – Supporting information**

#### **5.1 Supporting and other Relevant Documents**

Company Employment Policy

Alcohol and Work Standard

Code of Conduct Standard

Alcohol and Drugs Guidelines for Employees

Alcohol and Drugs Guidelines for Managers

Alcohol and Drugs Guidance for Contractors

## 6.0 Appendix – Informative references

### 6.1 Definitions

For the purposes of this Standard, unless otherwise stated, Employees shall be taken as being those in the direct employ of London Underground Limited (and any subsidiary companies), Private Finance Initiatives, Infracos and any individual contractors and sub-contractors of any of these parties.

### 6.2 Document history

Reference & revision no.	Date	Changes	Author
HRP/DW1	24.01.02	Draft 1	
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HRP/DW1	14.02.02	Draft 3 - Revisions from Consultation	
HRP/DW1	07.03.02	Draft 4 - Revisions from Consultation	
HRP/DW1	18.03.02	Draft 5 - Revisions from Consultation	
HRP/DW1	02.05.02	Draft 6 – Revised from PSC Consultation	
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## F Drugs and Alcohol Policy

### **Part B: Network Rail Alcohol and Drugs Policy**

## Appendix G ELLP Hazard Management Procedure



## **East London Line Project**

# **Hazard Management Procedure**

ELM-TEC-214-18-05-0002 Issue 01.1

April 2006

**Part 1 – Document details**

<b>Title of document</b> Hazard Management Procedure		
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<b>East London Line project team</b>			
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<b>TfL corporate management</b>			
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<b>Stakeholders</b>			
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*Not to be authorized until part 2 is complete.*

Authorizer's name	Function	Signature of approval	Date

*Note:* for information about the use of this form, refer to the Document Production, Review and Approval procedure (ELM-TEC-224-18-05-0002).

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Title                        Hazard Management Procedure

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## Summary

TfL is managing activities on the East London Line Project (ELLP), which is primarily the incorporation of a current London Underground Limited (LUL) route into the National Rail Network (NRN) in accordance with the Development Remit.

This document describes the key activities, procedures and responsibilities with respect to hazard management for the ELLP, which the ELLP shall follow throughout the project lifecycle. This procedure shall be followed by all parties working on the ELLP.

## Definitions

**Accident** is an unintended event or series of events that result in death, injury, loss of a system or service, or environmental damage (EN 50129).

**Risk** is the probable rate of occurrence of a hazard causing harm and the degree of severity of the harm (EN 50126).

**Hazard** is a condition that can lead to an accident (EN 50129).

**Safety** is the freedom from unacceptable levels of risk (EN 50129).

**Safety (Risk) Assessment** is the process of analysis to determine whether a system, product or other change to the railway has met its Safety Requirements and that the Safety Requirements are adequate (Yellow Book3).

## Abbreviations

ALARP	As Low As Reasonably Practicable
ELLP	East London Line Project
ESM	Engineering Safety Management
HAZID	Hazard Identification
ITN	Invitation to Negotiate
LUL	London Underground Limited
NRN	National Rail Network

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# Hazard Management Procedure

## 1 Introduction

### 1.1 ELLP Aims and Objectives

The East London Line Project (ELLP) will modify the existing London Underground Limited (LUL) East London Line (ELL) to be in accordance with Railway Group Standards and Network Rail Company Standards. During Phase 1 the line will be extended north to Dalston (the “Northern Extension”). In the south, a junction will be made at New Cross Gate with the Brighton Main Line (the “Southern Extension”), allowing through services to destinations including Crystal Palace and West Croydon. The completed line will be operated by Network Rail. Phase 2 will extend the line north from Dalston to Highbury and Islington and south to Clapham Junction.

### 1.2 Document Aims and Objectives

Engineering Safety Management (ESM) for ELLP is to be carried out in accordance with best practice, as described in the Engineering Safety Management Fundamentals and Guidance (Yellow Book 3) [1].

This document describes the key activities, procedures and responsibilities with respect to Hazard Management for the ELLP, which the team shall follow. The procedure is presented as examples of good practice as applied to the ELLP.

This procedure is one of three covering the safety activities, which between them broadly follow the seven-step process given in the Yellow Book. The other two procedures are:

- ELLP Hazard Identification Procedure [2];
- ELLP Safety Assessment Procedure [3].

These procedures are concerned with the identification, management and assessment of accidents, ie events that can cause harm to people, and the hazards that can lead to these accidents. The ELLP Risk Management procedure deals with risks to the successful commercial completion of the project and, while the procedures are as similar as possible, they are not identical or interchangeable.

### 1.3 Document Purpose

The purpose of the hazard management procedures presented in this document is to fulfil the following safety fundamentals (drawn from the Yellow Book [1]):

- Section 3.2.6 “Your organisation must convince itself that risk associated with a change has been reduced to an acceptable level. It must support its arguments with objective evidence, including evidence that it has met all safety requirements.”

- Section 3.3.4 “Your organisation must have configuration management arrangements that cover everything, which is important to achieve safety or to demonstrate safety.”
- Section 3.3.5 “Your organisation must keep full and auditable records of all project Engineering Safety Management activities.”

#### 1.4 Document Scope

This document describes the Hazard Management procedure for use on the ELLP. The ELLP Safety Advisors and other members of the ELLP team shall follow these procedures when undertaking safety risk assessments.

The procedures are concerned with identifying all hazards relating to the construction and operation of the ELLP and throughout the lifetime of the programme. The procedures will be applied to all hazard management, however carried out, and will include the management of changes promulgated through ELLP change control.

This document describes the following hazard management processes:

- The registration of a hazard or safety concern into the ELLP Hazard Log;
- Allocation of identified hazards to a “Hazard Owner”;
- Tracking the resolution of hazards within the ELLP and between Stakeholders.
- Transferring hazards between Stakeholders

For each hazard management process step the individual(s) responsible for the completion of the task has been identified.

#### 1.5 Document Structure

The remainder of this document is structured as follows:

- Section 2 overviews the structure and content of the Hazard Log;
- Section 3 identifies the various roles involved in the Hazard Management process;
- Section 4 defines the circumstances under which the process is invoked;
- Section 5 contains a Process Flow Diagram that provides an overview of the Hazard Management process;
- Section 6 contains a description of the key elements of the Hazard Management process referring back to the diagram in section 4 as appropriate;
- Appendix A lists the contents of the Hazard Log tables and presents a cross-reference to the Yellow Book requirements;
- Appendix B lists the hazards used in the Hazard Log, along with the Hazard ID;

- Appendix C contains the accidents used in the Hazard Log and their ID number;
- Appendix D contains the safety risk assessment tables to be used in the Hazard Log.

## 2 ELLP Hazard (Risk) Log

### 2.1 Overview

In accordance with the co-ordinated approach to safety adopted on the ELLP, the Hazard Log will be compatible with the ELLP Risk Register and has been designed to utilise the same fields, wherever possible. Subject to agreement on security issues it is planned that all ELLP staff will have read-only access to the ELLP Hazard Log and will have the ability to enter hazard information as “new”.

Subject to agreement on security issues, it is intended to have the ELLP Hazard Log networked or available in a web-based form to all the organisations involved in the ELLP. The ELLP Hazard log will be available as read-only but will include the ability to enter hazard information as “new”.

Hazard information is fed into this process from work undertaken in accordance with the Hazard Identification [2] and Safety Assessment [3] procedures. The Hazard Log is required to capture all hazard information. The ELLP Safety Advisors will establish the ELLP Hazard Log. This will be a centralised database where details of ALL identified hazards shall be stored. The ELLP Hazard Log shall be the only Hazard Log for the ELLP project.

On Transfer of the ELLP to LUL, the safety documentation, including the Hazard Log will be transferred to LUL.

### 2.2 Hazard Log Structure

There will be one Hazard table containing all hazards with links to the accidents that could be caused by that hazard. There will be an Accident table for each accident, containing an entry for each hazard that can contribute to the accident. Risk will be aggregated for each accident and assessed for tolerability at the accident level.

The ELLP Hazard Log will be a Microsoft Access database, similar in content and structure to the ELLP Risk Register database. A “Hazard” flag and a unique set of reference numbers will be used to distinguish Hazard Log items from other project risks. Any member of the project may raise hazards for entry into the Hazard Log; however the ELLP Hazard Log Manager and the ELLP Safety Manager are the only individuals who are authorised to accept hazards.

### 2.3 Hazard Log Contents

Appendix A contains details of the fields in the Hazard Log, plus a table mapping the proposed contents to the requirements of the Yellow Book [1].

Appendix B lists the hazards used in the Hazard Log, along with the Hazard ID number.

Appendix C contains the current list of the accidents for the ELLP. Only the ELLP Safety Manager or Hazard Log Manager may add additional accidents to the Hazard Log.

Appendix D contains the safety risk assessment tables to be used in the Hazard Log.

## 2.4 Hazard and Accident Status

Hazards and accidents in the Hazard Log will have a status chosen from one of the following options.

Table 1 Hazard Log Hazard and Accident Status Definitions

<b>Status</b>	<b>Meaning</b>
New	Hazard/accident has been entered into the Hazard Log but has not been reviewed and accepted.
Draft	Hazard/accident has been reviewed and accepted by Safety/Hazard Log Manager. Control and mitigation measures have not yet been proposed.
Active	Hazard/accident has been reviewed and accepted by Project Safety Committee. Control and mitigation measures have been proposed but not analysed.
Resolved	Control and mitigation measures have been proposed that will reduce the level of accident risk to tolerable levels. Analysis has been performed. Such a hazard is still “active”.
ALARP (Accidents only)	Control and mitigation measures have been proposed that will reduce the level of accident risk to As Low As Reasonably Practicable (ALARP). Analysis has been performed. Such an accident is still “active”.
Closed	The control and mitigation measures have been proven to be effective and no further work is required. Hazards that are not credible will be “cancelled” and not “deleted”.
Cancelled	The hazard has been included within, or is covered by, another hazard, or has been determined not to be credible.
Deleted	Hazard/accident not analysed further. Used for entries made in error or duplicates.

## 2.5 Risk Rating

The Qualitative Safety Risk Assessment technique is provided in the Safety Risk Assessment procedure [3] and is repeated in Appendix D for information.

Initially all identified hazards and accidents shall be assessed using the Qualitative Safety Risk Assessment technique described in Appendix D of this document. Assessments shall be undertaken both before and after risk control and mitigation measures are proposed and implemented in order to demonstrate the effectiveness of the measures.

However, risks that are identified to have a ranking of greater than or equal to 8 (see Table 10) shall be assessed using Quantitative Safety Analysis at the earliest possible stage of the project. Risks that have a ranking of greater than 15 (see Table 10) are unacceptable and **MUST** be reduced.

All accidents shall be assessed quantitatively before Transfer to Network Rail, or arguments presented as to why qualitative assessment is appropriate.

## 2.6 Control and Mitigation of Safety Risk

The following measures, in order of priority, shall be used to reduce the level of safety risk to ALARP:

- Re-design or elimination through design;
- Incorporation of automatic safety features;
- Incorporation of warnings and alarms that indicate a potential unsafe condition;
- Notices/procedures that require people to act.

Note: It is unlikely that risk control and mitigation based solely upon changes to operating or maintenance procedures will be acceptable for safety approval to be granted by the approvals bodies such as HMRI.

This order reflects the effectiveness of the measures in the reduction of risk; for example re-designing a system can reduce the likelihood of occurrence of a hazard to zero whereas fixing a warning notice is only effective if people read the notice and act in the correct manner.

Therefore, risk reduction measures that prevent the hazard, or reduce the hazard frequency, shall be sought and implemented in preference to measures that prevent the hazard becoming an accident. This means that measures which re-design the system to remove the hazard or reduce its likelihood shall be considered first before measures which manage or control the outcome.

The level of mitigation required in order to reduce the level of safety risk to ALARP shall be described in the Safety Assessment Report, along with an assessment of the effectiveness of the mitigation measures.

## 3 Roles

The following roles are responsible for carrying out the procedures described in this document:

*ELLP Safety Manager*

Responsible for the management of the entire suite of safety processes.

### *ELLP Hazard Log Manager*

Responsible for managing information concerning hazards accurately in the ELLP Hazard Log, working closely with ELLP Safety Advisors and Contractor Safety teams.

### *ELLP Safety Advisors*

ELLP Safety Advisors will manage the Hazard Log. The ELLP Safety Advisors shall be responsible for identifying and logging hazards in the ELLP Hazard Log. The ELLP Safety Advisors shall be responsible for entering Safety Requirements accurately into the requirements repository, working closely with the Hazard Log Manager.

### *ELLP Personnel*

ELLP personnel shall be responsible for maintaining a “Safety Culture” for the ELLP. The ELLP Hazard Log Manager/Safety Manager shall enter any safety concerns that are identified by ELLP personnel into the ELLP Hazard Log for perusal and acceptance. Hazards raised by ELLP shall be assigned a “new” status in the “Status” field of the Hazard Log, so that the hazard is “flagged-up” to the Hazard Log Manager for acceptance.

### *ELLP Project Safety Committee*

The ELLP Project Safety Committee shall be responsible for reviewing the ELLP Hazard Log and for agreeing the changes of status of the ELLP hazards and accidents. The ELLP Project Safety Committee shall be responsible for agreeing when hazard status is “closed” and accident status is “ALARP”.

### *Contractor Safety Teams*

The Contractors’ Safety Assessors shall be responsible for identifying hazards and entering the hazard information into the ELLP Hazard Log. Hazards raised by the Contractors shall be assigned a “new” status in the “Status” field of the Hazard Log, so that the hazard is ‘flagged-up’ to the Hazard Log Manager for acceptance.

## 4 Process Initiation

The hazard management process is initiated as required and requires hazard identification, hazard analysis and hazard management to commence as early as possible and throughout the lifecycle of the project.

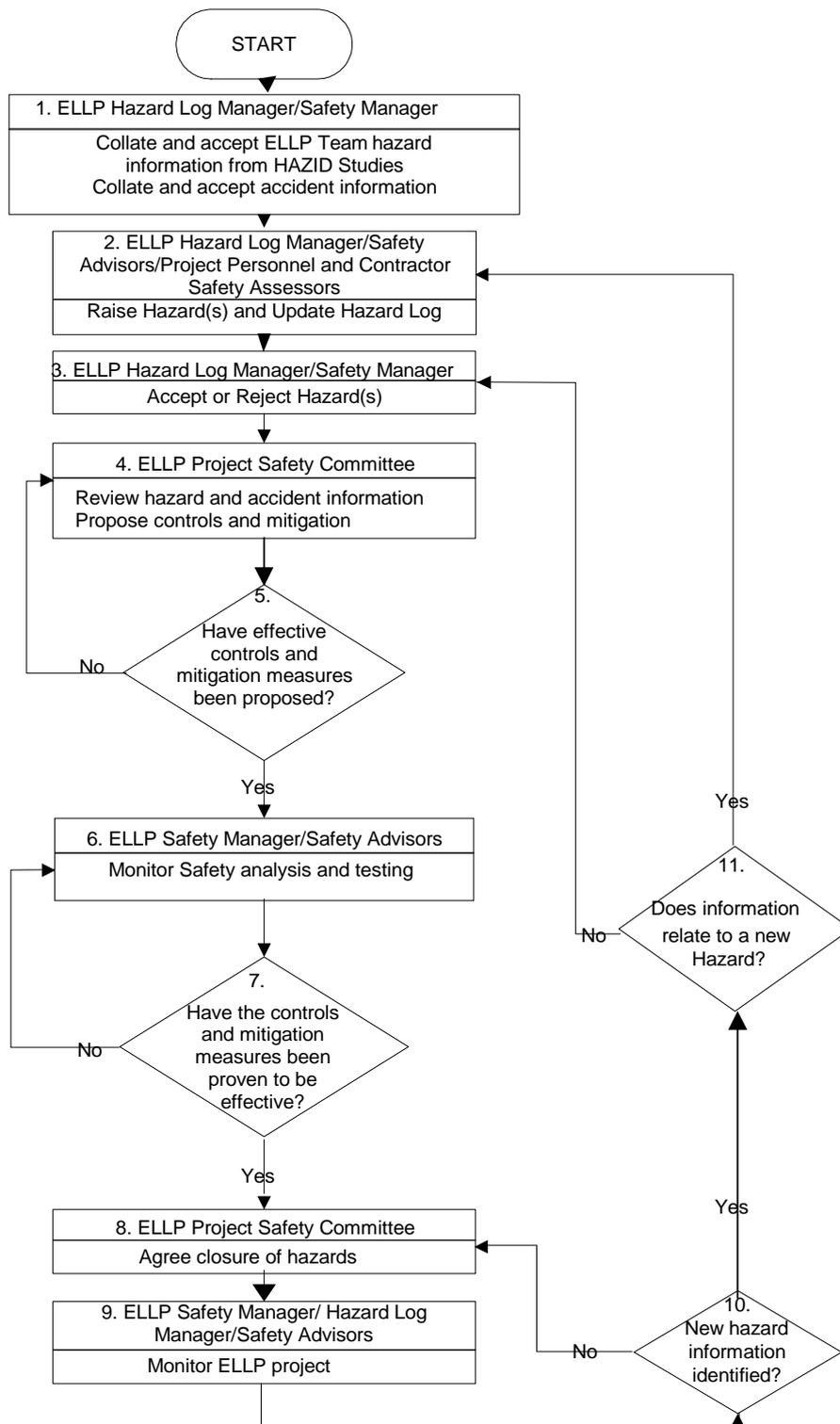
Safety Requirements shall be developed following the guidance in the Yellow Book 3 [1] with the objective of achieving an acceptable level of risk for all accidents. Where this cannot be carried out, hazard management shall be applied to reduce risks. This shall be in accordance with the ALARP principle.

## 5 Process Flow Diagrams and Overview

Hazard Management for the ELLP aims to achieve the following:

- The compilation of one complete record of ELLP hazards, in the ELLP Hazard Log presented by the introduction of the ELLP.
- To provide a means of managing ELLP hazards between the ELLP stakeholders.

Fig. 1 The ELLP Hazard Management Process.1



<sup>1</sup> The party responsible for the successful completion of each process step is identified in the top of each box. In addition to the flow chart above a more detailed explanation of each step is provided in section 5.

## 6 Process Description

	<b>Description</b>
1.	<p><b>Collate and accept hazard and accident information</b></p> <p>The ELLP Hazard Log Manager/Safety Manager are the single central point of contact for hazard matters and as such will;</p> <ul style="list-style-type: none"> <li>• Collate hazard information internally from within the ELLP Team and the Contractors.</li> <li>• Rationalise information to ensure there is no duplication</li> </ul> <p>The main sources of hazard information will be:</p> <ul style="list-style-type: none"> <li>• ELLP Team Hazard Identification Studies</li> <li>• Contractor Hazard Identification Studies.</li> </ul> <p>All hazard information provided following the initial hazard identification exercises shall be formally submitted to the ELLP Hazard Log Manager for input into the Hazard Log.</p> <p>The ELLP Hazard Log Manager/Safety Manager shall enter accident information to the Hazard Log.</p>
2.	<p><b>Raise Hazards and update Hazard Log</b></p> <p>Hazard information will include, but is not limited to, a summary of causal and consequence analysis and information.</p> <p>The Hazard Log Manager will enter hazards identified at the HAZID studies (described in 1) into the ELLP Hazard Log.</p> <p>In addition to hazards identified at HAZID studies, the ELLP Hazard Log Manager/Safety Advisors/Project Personnel and the Contractors may also raise and enter hazards into the ELLP Hazard Log. Hazards raised in this way shall be assigned a “new” status in the “Status” field of the ELLP Hazard Log, so that the hazard is ‘flagged-up’ to the Hazard Log Manager for acceptance as described in 3.</p> <p>Each hazard will be assigned a unique reference number. These will start at 10,000 for the ELLP hazards.</p>

	<b>Description</b>
3.	<p><b>Accept or Reject Hazards</b></p> <p>Hazards shall be reviewed by the ELLP Hazard Log Manager and Safety Manager to assess whether they constitute new hazards. If they do, then the ELLP Safety Manager will authorise the ELLP Hazard Log Manager to accept the hazards. The hazards will be marked “draft”.</p> <p>If the hazards do not constitute new hazards then they will reject the hazards and inform the person who raised the hazard. The hazard will be marked “cancelled” or “deleted”. If the Hazard Log Manager and Safety Manager deem the hazards not to be credible, they will be recorded and marked as “cancelled”, along with details of the rationale for the decision.</p> <p>Once the hazard is accepted, the ELLP Safety Manager will assign the hazard to a “Hazard Owner”, who will be responsible for progressing the hazard to closure and monitoring the system development to identify changes that could affect the hazard.</p> <p>The “Hazard Owner” will be identified against the hazard within the ELLP Hazard Log.</p>
4.	<p><b>Project Safety Committee review</b></p> <p>The ELLP Project Safety Committee will review all hazards, expressly considering risk control and mitigation measures and links to safety requirements to assess whether a hazard is resolved.</p> <p>For a hazard to be “active” there must exist risk control and mitigation measures which when implemented will form a safety argument that will eliminate or reduce the risk associated with the accident or hazard to an acceptable level.</p>
5.	<p><b>Assess whether all hazards are “resolved”</b></p> <p>The ELLP Safety Manager will authorise the ELLP Hazard Log Manager to mark the hazards in the ELLP Hazard Log as “resolved” once it is determined by analysis or engineering judgement that these risk control and mitigation measures are likely to be effective.</p> <p>For the accidents, the accident will be marked as “ALARP” when measures have been introduced to reduce the risk ALARP and an ALARP argument can be made for the system.</p>
6.	<p><b>Monitor implementation of Safety Verification and Validation</b></p> <p>The ELLP Safety Manager and Safety Advisors will review information provided from Verification &amp; Validation processes, to ensure that the risk control and mitigation measures are included in any testing and trialling of the ELLP.</p>

	<b>Description</b>
7.	<p><b>Controls and Mitigation proven?</b></p> <p>The ELLP Safety Manager and Hazard Log Manager will review the results of all ELLP Verification &amp; Validation activities to determine whether the effectiveness of the risk control and mitigation measures has been proven. They will prepare submissions for the ELLP Project Safety Committee to show that the hazard or accident may be marked as “closed”.</p>
8.	<p><b>Agree closure of hazards</b></p> <p>Once the ELLP Project Safety Committee are satisfied that all the safety arguments are complete for a hazard or accident, then the ELLP Project Safety Committee will authorise the ELLP Hazard Log Manager to “close” the hazard in the ELLP Hazard Log.</p> <p>The Hazard Log Manager will then “close” the hazard in the ELLP Hazard Log and advise all appropriate hazard owners.</p> <p>Note: Only the ELLP Project Safety Committee shall authorise the closure of a hazard.</p>
9.	<p><b>Monitor ELLP project</b></p> <p>The ELLP Safety Manager and ELLP Hazard Log Manager/Safety Advisors shall review all project information, including every implemented Change Request, for implications that could affect existing hazards or generate new hazards.</p> <p>In addition the ELLP Hazard Log Manager will co-ordinate input from the Hazard Owners as they have a responsibility to ensure that a periodical review is undertaken of the hazards that are allocated to him/her to manage. The ELLP Hazard Log Manager will actively chase Hazard Owners for resolution of hazards. Any information that is identified during this process, which requires a new hazard or a hazard to be closed, shall be reviewed by the ELLP Safety Manager, who will authorise update of the ELLP Hazard Log as appropriate.</p>
10.	<p><b>New hazard information identified</b></p> <p>If new hazard-related information is identified it will be reviewed by the ELLP Safety Manager, who will authorise update of the ELLP Hazard Log as appropriate.</p> <p>Note: Only the ELLP Project Safety Committee may authorise the revision or re-opening of a hazard.</p>
11.	<p><b>Does information relate to a new hazard?</b></p> <p>If the output from stage 10 pertains to a new hazard then the ELLP Hazard Log Manager is then required to raise a hazard following the process defined in stage 2, otherwise the Hazard Log Manager is required to inform the previous hazard owner that the hazard has been revised and follow the process detailed in stage 3.</p>

## 7 References

1. Yellow Book 3, Engineering Safety Management Fundamentals and Guidance.
2. For information only - ELLP Hazard Identification Procedure, ELM-TEC-214-18-05-0001, Issue 1, January 2005.
3. For information only - ELLP Safety Assessment Procedure, ELM-TEC-214-18-05-0003, Issue 1, January 2005.

# Appendix A

## Hazard Log Contents

## Hazard Log Contents

This Appendix maps the contents of the Hazard Log to the ELLP Risk Register and Yellow Book 3.

Table 2 ELLP Risk Register entries mapped to Hazard Log – Hazard Table

Hazard Log Field Name	Hazard Log Contents	Application to the Hazard Log
RBS		Does this identify the system, sub-system, etc.? May be useful to filter particular types of hazard.
ID	Unique reference number for each Hazard.	Use new sequences of serial numbers for Hazard Log.
Old ID	Unique reference for past hazards.	Convert this field from a number field to a text field to incorporate the old Hazard references, which have the form H1.1 etc.
Type	Whether hazard occurs in infrastructure, rolling stock or construction.	Used with some additions to the Risk Register pick list.
Status	Current status of the Hazard.	Used with some additions to the list.
Created	Date Hazard Log entry created.	Used unchanged.
Closed	Date Hazard Log entry closed.	Used unchanged.
Owner	Owner of the Hazard and responsible for hazard management.	Used with some additions to the list.
Title	Text description of the Hazard.	Used unchanged. Create pick list of hazard titles.
Cause	Description of the precursors to the hazard.	Used unchanged.
Consequence	Description of accidents arising from the hazard.	Used unchanged.

<b>Hazard Log Field Name</b>	<b>Hazard Log Contents</b>	<b>Application to the Hazard Log</b>
Control	Description of control measures to remove or reduce the likelihood of the Hazard.	Used unchanged.
ThreatOpp	Not used.	Not meaningful in the context of the Hazard Log.
ImpactBefore	Hazard frequency before controls on the hazard.	Values taken from Risk Rating tables.
ImpactAfter	Hazard frequency after controls on the hazard.	Values taken from Risk Rating tables.
Notes	Text field for any descriptive information.	Used unchanged.
Study	Text field containing details of Hazard Identification and Risk Assessment studies relevant to the Hazard.	Used unchanged.
CostSeverity	Not used.	Not meaningful in the context of the Hazard Log.
TimeSeverity	Not used.	Not meaningful in the context of the Hazard Log.
Accident	Accident ID(s) for those accident(s) that the Hazard can contribute to.	New field. Link to AccID in Accident Table.

Table 3 Risk Register entries mapped to Hazard Log – Accidents table(s).

Field Name	Data Type	Description
AccID	AutoNumber	Table key
HazID	Number	Link(s) to the <b>Hazard</b> table. A number of different Hazards could contribute to each accident and therefore there will be more than one HazID entry for each accident.
Status	Text	Current status of the accident.
Title	Text	Short descriptive title of the accident.
Sequence	Memo	Summary of the sequence of events leading from the hazard(s) to the accident.
Mitigation	Memo	Description of mitigation measures (specific to this accident) that are intended to reduce the frequency of the accident occurring or mitigate its severity.
LikelihoodBefore Q	Text	Qualitative ranking of the accident probability before mitigation measures applied. Values taken from Risk Rating tables.
LikelihoodBefore	Number	Quantitative value of the accident probability before mitigation measures applied.
Likelihood U	Text	Units of the quantitative value. Primarily used to distinguish between frequencies and probabilities.
SeverityBefore Q	Text	Qualitative ranking of the accident severity before mitigation measures applied. Values taken from Risk Rating tables.
SeverityBefore	Number	Quantitative value of the accident severity before mitigation measures applied.
SeverityBefore U	Text	Units of the quantitative value (e.g. equivalent fatalities).
RiskBefore Q	Text	Qualitative ranking of the level of risk from the accident before mitigation measures applied. Values taken from Risk Rating tables. Risks must be aggregated for all Hazards that could contribute to the accident.
RiskBefore	Number	Quantitative value of the level of risk from the accident before mitigation measures applied. Risks must be aggregated for all Hazards that

Field Name	Data Type	Description
		could contribute to the accident.
Risk U	Text	Units of the quantitative value. Could also be used to distinguish between individual level of risk and collective level of risk.
LikelihoodAfter Q	Text	Qualitative ranking of the accident likelihood after mitigation measures applied. Values taken from Risk Rating tables.
LikelihoodAfter	Number	Quantitative value of the accident probability after mitigation measures applied.
SeverityAfter Q	Text	Qualitative ranking of the accident severity after mitigation measures applied. Values taken from Risk Rating tables.
SeverityAfter	Number	Quantitative ranking of the accident severity after mitigation measures applied.
RiskAfter Q		Qualitative value of the level of risk from the accident after mitigation measures applied. Risks must be aggregated for all Hazards that could contribute to the accident.
RiskAfter	Number	Quantitative value of the level of risk from the accident after mitigation measures applied. Risks must be aggregated for all Hazards that could contribute to the accident.
Notes	Memo	A set of dated statements describing how the values have changed (e.g. due to modified assumptions or introduction of additional control measures).
Study	Text	References to risk assessment studies.

It is anticipated that the accident table would initially be populated with qualitative risk rankings, and quantitative values added as the analysis was developed. Note that there are no "target" fields for individual accidents. Tolerability of level of risk will be determined across a wider range of accidents.

Table 4 Hazard Log mapping to Yellow Book

Yellow Book Requirement	ELLP Hazard Log Field(s) Meeting this Requirement
a unique reference	HazID and AccID
a brief description of the hazard ...	Title
the causes identified for the hazard	Cause from Hazard Table

Yellow Book Requirement	ELLP Hazard Log Field(s) Meeting this Requirement
a reference to the full description and analysis of the hazard	Study from Hazard and Accident Table
assumptions on which the analysis is based and limitations of the analysis	Could be included in Study field, but should be listed in each study report.
the severity of the related accident,	Severity from Accident Table
the likelihood of the hazard occurring and	Likelihood from Hazard Table
the likelihood of an accident occurring with the hazard as a contributing factor	Likelihood from Accident Table
the predicted [ <i>level of</i> ] risk associated with the hazard	Risk from Accident Table
target likelihood for its occurrence	<i>see footnote 2</i>
the status of the hazard ...	Status from Hazard Table
... the name of the person or company who is responsible for progressing it towards closure	Owner from Hazard Table
a description of, or a reference to, the action to be taken to remove the hazard, or reduce the [ <i>level of</i> ] risk from the system to an acceptable level ...	Control from Hazard Table and Mitigation from Accident Table

#### Footnotes to Table

- (1) The level of risk is associated with the accidents arising from the hazard, not the hazard itself. Once a comprehensive QRA had been performed it may be meaningful to describe the total level of risk associated with all of the accidents arising from a hazard, but that information could only be added to the hazard log retrospectively. This information could be extracted from the proposed **Accidents** table.
- (2) A hazard is a state not an event. Target likelihoods expressed as frequencies should be assigned to accidents rather than hazards.

## Appendix B Hazard Types

## Hazard Types

Table 5 contains the list of hazards that will be utilised on the ELLP, along with their Identification number. The causes of each hazard will be referenced using Hazard Id Hy.xxx, where y is the overall hazard Id and xxx is a sequential list.

Table 5 Hazard "Old ID" and Hazard Titles

Hazard Id	Hazard title
H1	Inappropriate separation between trains
H2	Onset of fire / explosion
H3	Loss of train guidance
H4	Uncontrolled approach to buffers / terminus
H5	Unsound / unsecured structure
H6	Objects / animals on the track (and operational railway)
H7	Abnormal / rapid deceleration
H8	Abnormal or criminal behaviour
H9	Passenger crowding
H10	Train door / window opening while train is moving
H11	Passengers / workers in path of closing / opening train doors at stand
H12	Loss of balance
H13	Inappropriate separation between running railway and passengers / public / workers
H14	Inappropriate separation between live conductors and people
H15	Passengers / workers protruding beyond train gauge during movements
H16	Insecure object at height
H17	Inappropriate separation between the public / passengers / workers and other non-rail vehicles
H18	Handling heavy loads
H19	Incompatibility of train with structure gauge or trains moving on parallel track
H20	Crossing running railways
H21	Contaminated water and / or land
H22	Electromagnetic interference caused by the operation of the railway system
H23	Impact from railway construction work to the public / workers
H24	Objects / debris falling / thrown from moving trains
H25	Unsound / unsecured machinery or materials
H26	Work in restricted spaces
H27	Inappropriate working methods / environment
H28	Worker in proximity to harmful substances
H29	Road vehicle accidents
H30	Onset of flooding
H31	Construction Health and Safety – no longer used, combined with H23
H32	Hazards identified from Reference Design Workshops – no longer used, moved to relevant hazard.

## Appendix C

### Accident Types

## Accident Types

Table 6 describes some types of accident that could occur as a result of the implementation of the ELLP, which has been derived from the tables of accidents described in the Network Rail Railway Safety Case and the LUL Quantified Risk Assessment that could be expected to result from system hazards. These are associated with the population potentially injured in these accidents. A hazard or hazard cause may give rise to more than one accident and most accidents will be caused by more than one hazard.

Table 6 Accident Types, and population at risk

Accident ID	Accident Type	Population at risk		
		Passengers	Staff	Non-travelling public
01	Collision between trains	✓	✓	
02	Derailment	✓	✓	✓
03	Out of gauge collision	✓	✓	
04	Collision with buffer	✓	✓	
05	Abnormal dynamic forces	✓	✓	✓
06	Collision with object on line	✓	✓	✓
07	Train fire	✓	✓	✓ (if fire spreads)
08	Structural collapse	✓	✓	✓
09	Explosion	✓	✓	✓
10	Pedestrian on level crossing – but no level crossings on ELL			✓
11	Vehicle on level crossing – but no level crossings on ELL	✓	✓	✓
12	Platform Train Interface	✓	✓	✓
13	Fall from train	✓	✓	
14	Person struck by object	✓	✓	✓
15	Trips, slips and falls and other worker injuries		✓	

Accident ID	Accident Type	Population at risk		
		Passengers	Staff	Non-travelling public
16	Electric shock	✓	✓	
17	Worker trapped in machinery		✓	
18	Other Fires	✓	✓	✓ (if fire spreads)
19	Flood	✓	✓	✓
20	Other passenger accidents		✓	✓
21	Personnel accident external to railway			✓

## Appendix D

### Qualitative Safety Risk Assessment Tables

## Qualitative Safety Risk Assessment Tables

Qualitative Safety Risk Assessment for the project will be carried out according to the methodology outlined in this section, and the preliminary ranking will be performed during Safety Risk Assessment and entered in the Hazard Log. Subsequent analysis will refine these risk rankings and thus those hazards that require the closest scrutiny will be identified.<sup>2</sup>

Three risk factors are combined to produce a Risk Rating:

- **Hazard Frequency.** How often the hazard may be presented.
- **Accident Severity.** The severity of a potential accident leading from the hazard.
- **Accident Probability.** The likelihood that the hazard will lead to the envisaged accident.

The ratings are defined in Table 7 to Table 10.

Table 7 Hazard Frequency Ratings:

Probability of Hazard Occurrence	Frequency of Hazard Occurrence	Rating
Never	Less than once in 1000 years or Never	0
Less than 1%	Once in 1000 years	1
1% to 30%	Once in 100 years	2
30% to 50%	Once in 10 years	3
50% to 70%	Once per year	4
Greater than 70%	10 times per year	5

Table 8 Accident Severity Ratings:

Accident Severity	Equivalent Fatalities	Rating
No injuries	0	0
Up to 1 minor injuries	0.01	1
Single major injury or up to 20 minor injuries	0.1	2
Multiple major injuries	1	3
Single fatality	1	4
Multiple fatalities	10	5

<sup>2</sup> The methodology described here has the same purpose as the 'Likelihood/Severity matrix often used. It is believed that this methodology is superior in that it allows better modelling of potential hazard and accident sequences.

Table 9 Accident probability ratings:

<b>Probability of hazard leading to accident</b>	<b>Rating</b>
Never; no potential for hazard to lead to accident.	0
Hazard will lead to accident one time in 1000	0.25
Hazard will lead to accident one time in 100	0.5
Hazard will lead to accident one time in 10	0.75
Hazard will always lead to accident.	1

The ratings described in Table 7 to Table 9 above have been selected to be logarithmic in nature. The product of the three elements will provide a sound ranking score that expresses the risk associated with a single hazard. If any of the scores is zero, then this strategy is invalidated and the total ranking score for the hazard is also zero. However, experience has shown that the zero cases are unlikely to be justifiable and any assessment that used a zero figure would be subject to considerable scrutiny. Table 10 expresses the acceptability of risk using this ranking methodology.

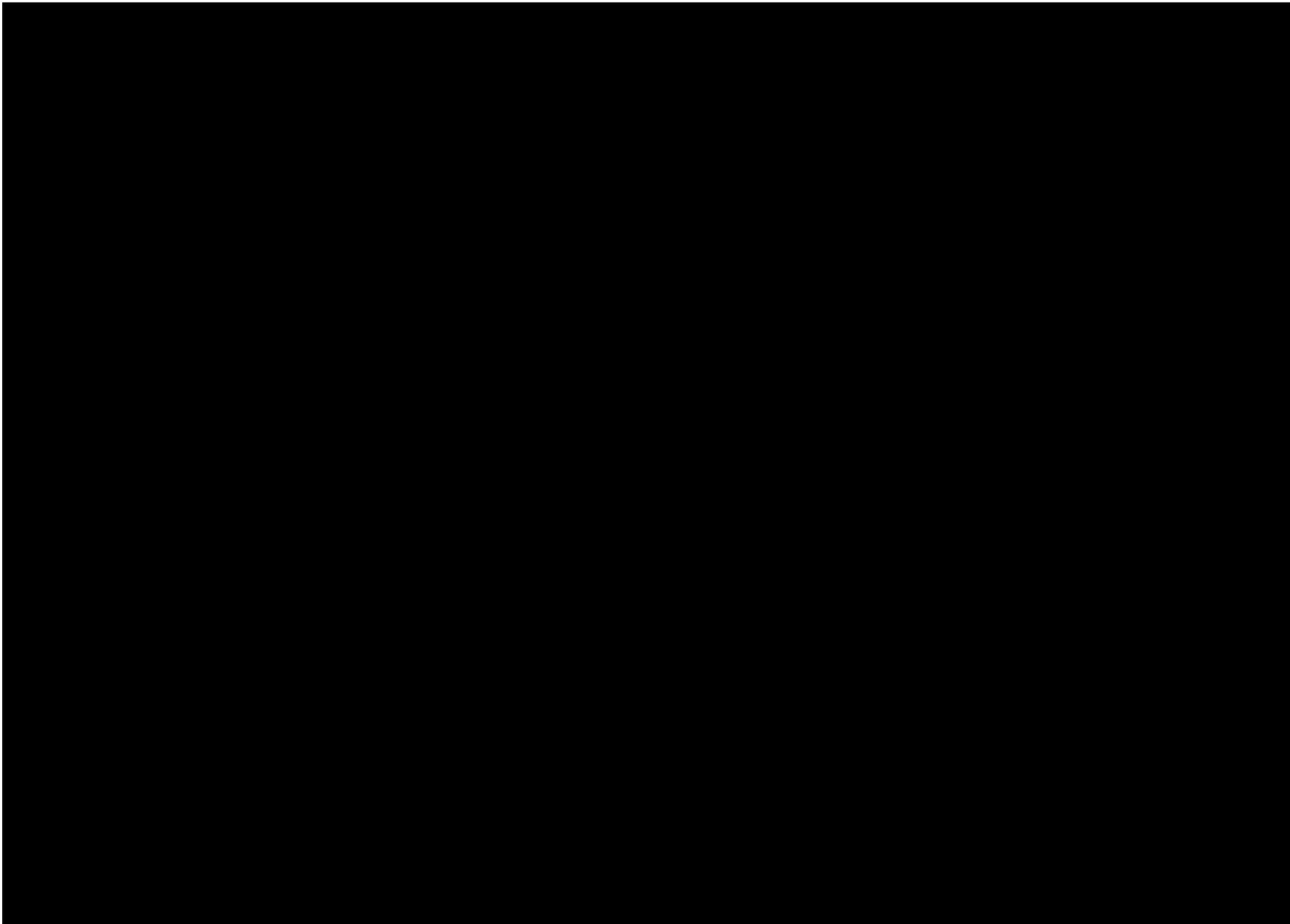
Table 10 Ascertaining Acceptability of Risks

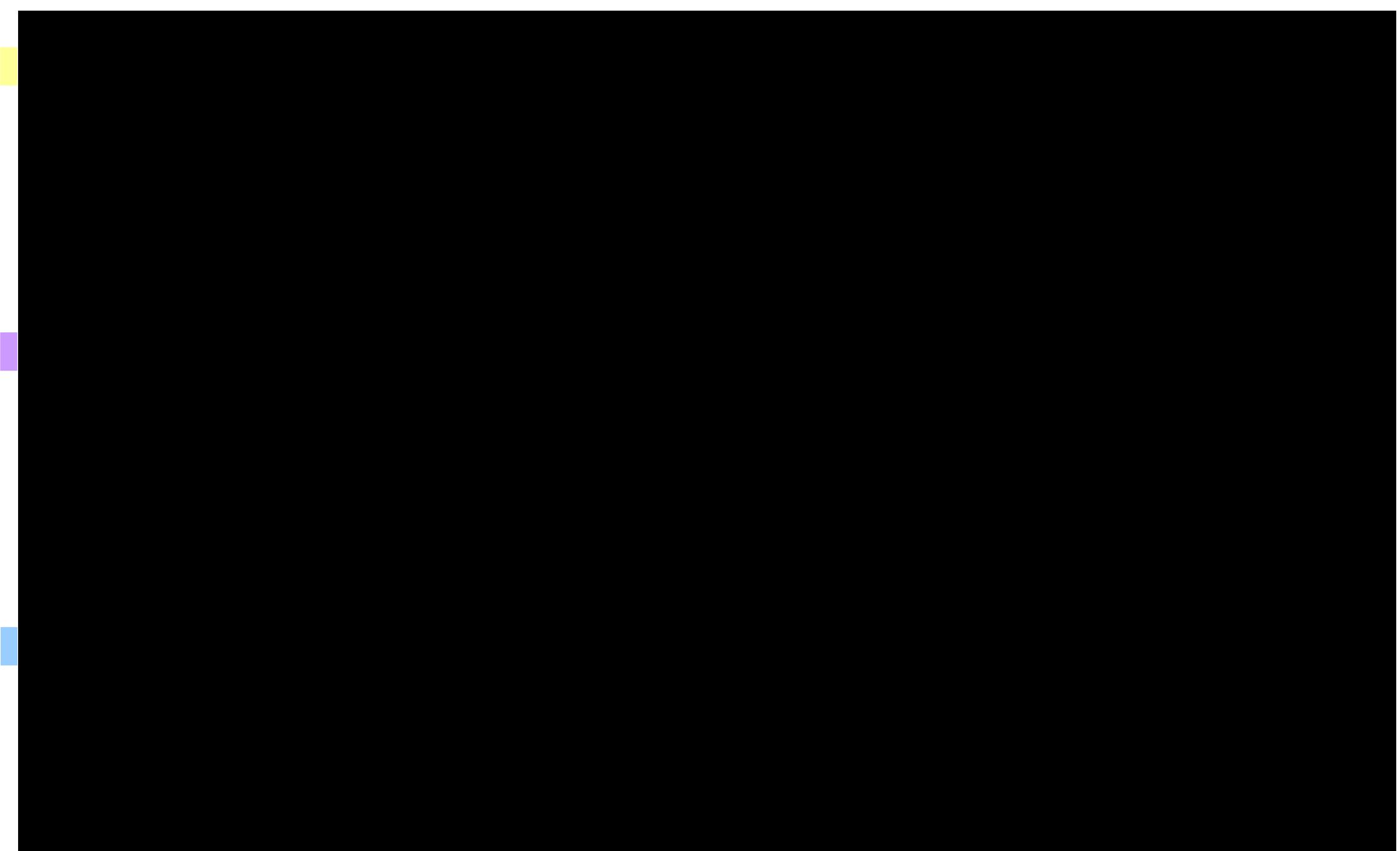
<b>Product of Risk Rating scores</b>	<b>Acceptability of Risk</b>
> 15	Risk is intolerable and <i>must</i> be reduced
8 - 15	Risk is tolerable, but must be reduced As Low As Reasonably Practicable
< 8	Risk is broadly acceptable

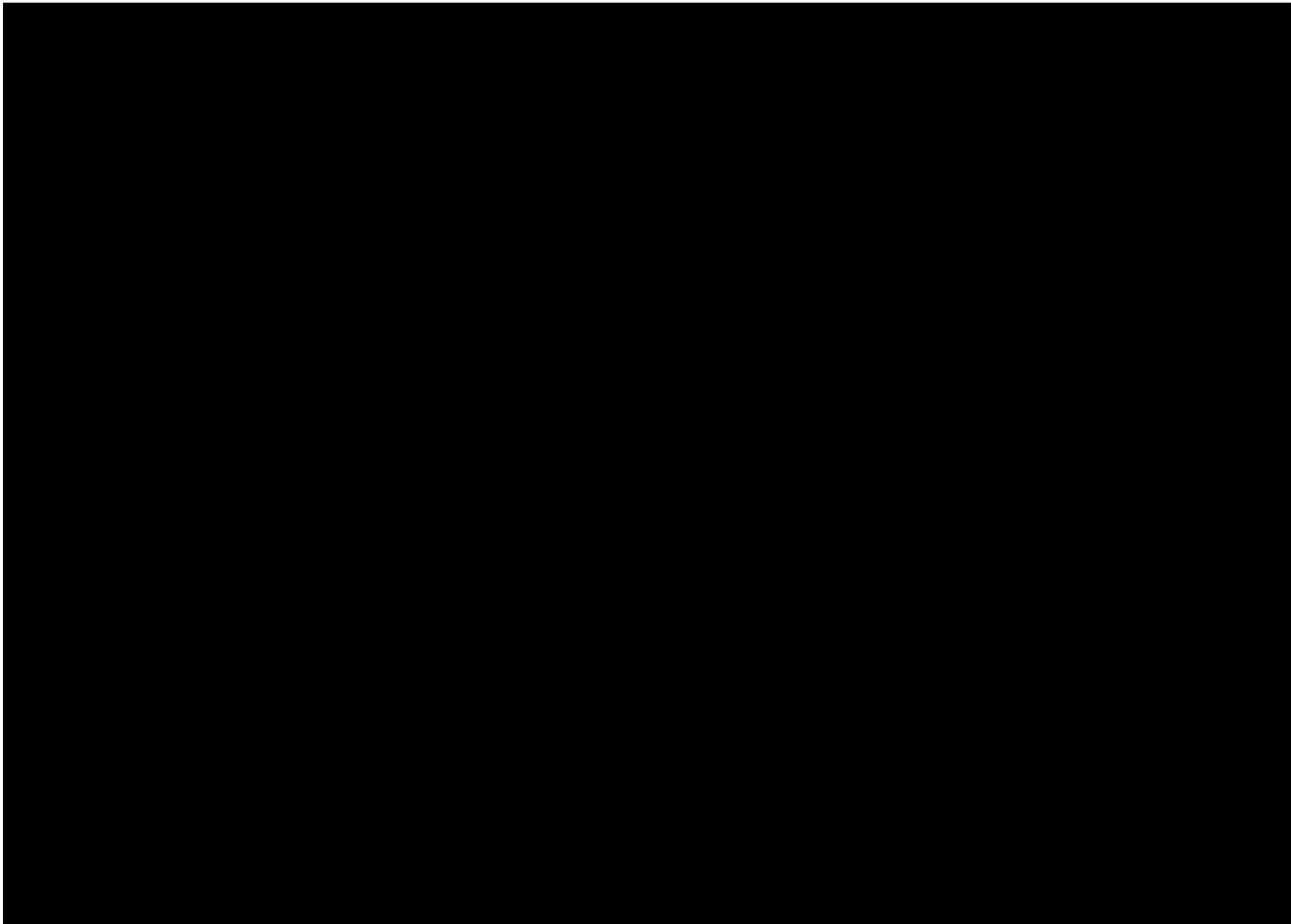
## G ELLP Hazard Management Procedure

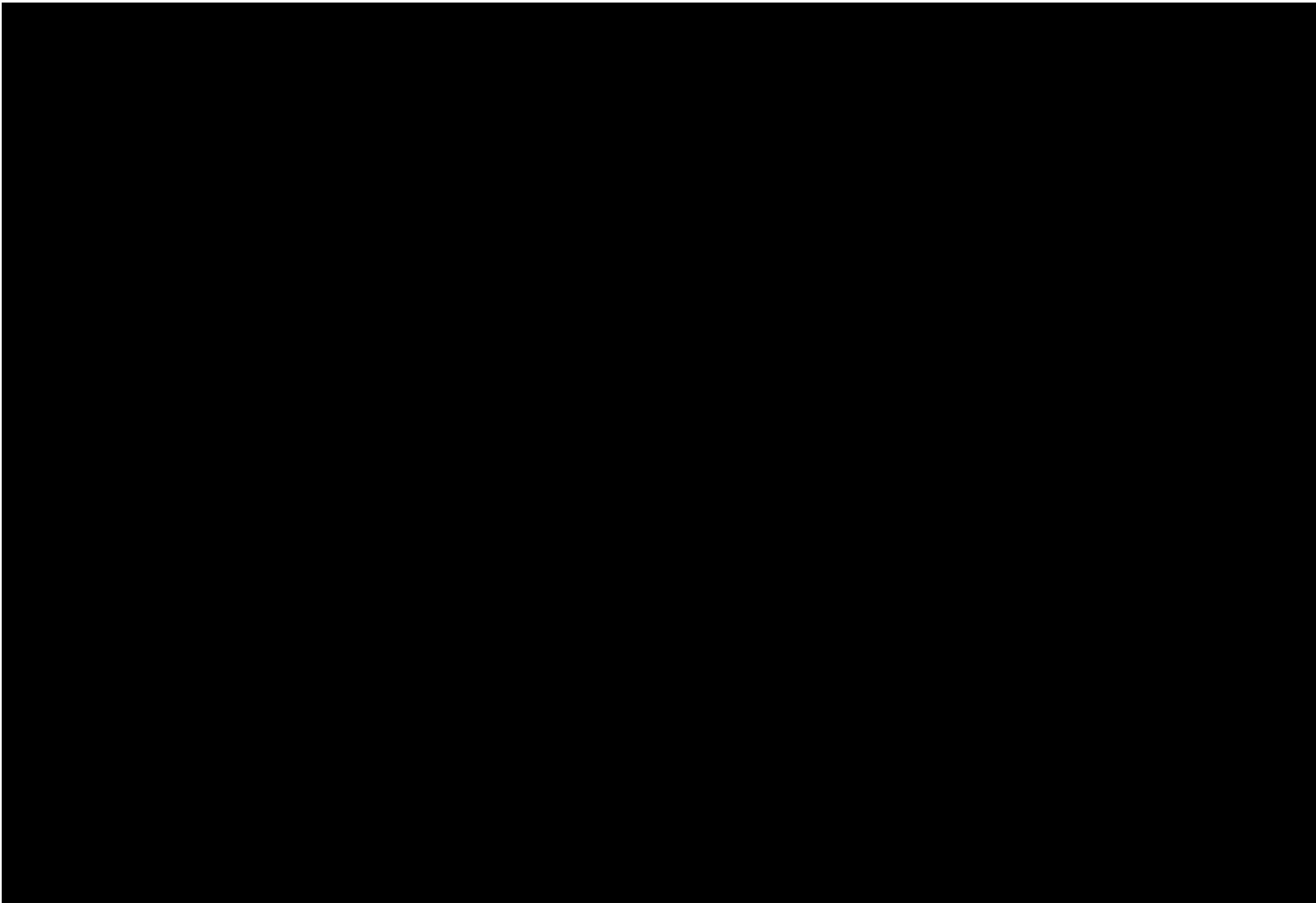
*To be inserted*

## Appendix H Vehicle Design Area Breakdown Structure









## H Vehicle Design Area Breakdown Structure

*To be inserted*

## Appendix I ELLP Safety Assessment Procedure



## **East London Line Project**

# **Safety Risk Assessment Procedure**

ELM-TEC-214-18-05-0003 Issue 01.01

April 2006

**Part 1 – Document details**

<b>Title of document</b> Safety Risk Assessment Procedure		
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**Part 2 – Final approvals**

<b>East London Line project team</b>			
Approver's name	Function	Signature of approval	Date
[Redacted]			

<b>TfL corporate management</b>			
Approver's name	Function	Signature of approval	Date

<b>Stakeholders</b>			
Approver's name	Function	Signature of approval	Date

**Part 3 – Final authorization**

*Not to be authorized until part 2 is complete.*

Authorizer's name	Function	Signature of approval	Date
[Redacted]			

*Note: for information about the use of this form, refer to the Document Production, Review and Approval procedure (ELM-TEC-224-18-05-0002).*

Client                      Transport *for* London  
Project                     East London Line Project  
Report no.                ELM-TEC-214-18-05-0003 Issue 01.01  
Title                        Safety Risk Assessment Procedure

Issue record

<i>Issue</i>	<i>Date</i>	<i>Author</i>	<i>Approved</i>	<i>Description</i>
1	31.01.05	██████████	██████████	Replaces 213-35-09-0002 Issue 1. Updated for TfL project.
1.1	20.04.06	██████████	██████████	Updated for MW ITT

## Summary

TfL is managing activities on the East London Line Project (ELLP), which is primarily the incorporation of a current London Underground Limited (LUL) route into the National Rail Network (NRN).

This document describes the key activities, procedures and responsibilities with respect to safety risk assessment for the ELLP, which the ELLP shall follow throughout the project lifecycle. This procedure is presented as an example of good practice as applied to the ELLP.

## Definitions

**Accident** is an unintended event or series of events that result in death, injury, loss of a system or service, or environmental damage (EN 50129).

**Risk** is the probable rate of occurrence of a hazard causing harm and the degree of severity of the harm (EN 50126).

**Hazard** is a condition that can lead to an accident (EN 50129).

**Safety** is the freedom from unacceptable levels of risk (EN 50129).

**Safety Analysis** is a general term encompassing identifying hazards, analysing hazards and assessing risk (Yellow Book).

**Safety (risk) assessment** is the process of analysis to determine whether a system, product or other change to the railway has met its Safety Requirements and that the Safety Requirements are adequate (Yellow Book).

## Abbreviations

ALARP	As Low As Reasonably Practicable
DRACAS	Data Recording and Corrective Action System
ELLP	East London Line Project
ESM	Engineering Safety Management
ETA	Event Tree Analysis
FMEA	Failure Modes and Effects Analysis
FTA	Fault Tree Analysis
ITN	Invitation to Negotiate
LUL	London Underground Limited
NRN	National Rail Network
QRA	Quantitative Risk Assessment
RAMS	Reliability, Availability, Maintainability and Safety

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# Safety Risk Assessment **Procedure**

## 1 Introduction

### 1.1 ELLP Aims and Objectives

The East London Line Project (ELLP) will modify the existing London Underground Limited (LUL) East London Line (ELL) to be in accordance with Railway Group Standards and Network Rail Company Standards. During Phase 1 the line will be extended north to Dalston (the “Northern Extension”). In the south, a junction will be made at New Cross Gate with the Brighton Main Line (the “Southern Extension”), allowing through services to destinations including Crystal Palace and West Croydon. The completed line will be operated by Network Rail. Phase 2 will extend the line north from Dalston to Highbury and Islington and south to Clapham Junction.

### 1.2 Document Aims and Objectives

Engineering Safety Management (ESM) for ELLP is to be carried out in accordance with best practice, as described in the Engineering Safety Management Fundamentals and Guidance (Yellow Book 3) [1].

This document describes the key activities, procedures and responsibilities with respect to safety risk assessment for the ELLP that the ELLP team shall follow. The procedure is also presented to the contractors as examples of good practice as applied to the ELLP.

This procedure is one of three covering the safety activities, which between them broadly follow the seven-step process given in the Yellow Book. The other two procedures are:

- ELLP Hazard Identification Procedure [2];
- ELLP Procedure for Hazard Management [3].

These procedures are concerned with the identification, management and assessment of accidents, ie events that can cause harm to people, and the hazards that can lead to these accidents. The ELLP Risk Management procedure deals with risks to the successful commercial completion of the project and, while the procedures are as similar as possible, they are not identical or interchangeable.

### 1.3 safety risk assessment Purpose

The purpose of the safety risk assessment procedures presented in this document is to fulfil the following safety fundamentals (drawn from the Yellow Book [1]):

- Section 3.2.3 “Your organisation must assess the effect of any proposed change on overall system risk.”.

- Section 3.2.4 “Your organisation must carry out a thorough search for measures which reduce risk, within its area of responsibility. It must decide whether each measure is reasonable, and if so, it must take it. If your organisation finds that risk is still intolerable, it must not accept it.”.

The purpose of safety risk assessment is to estimate the tolerability of the risks arising from the accidents that may be a consequence of the identified hazards. Further information on the purpose and timing of safety risk assessment can be found in the Yellow Book [1] and British and European standards [4].

This document describes the different activities that shall be performed by the ELLP team and provides processes for their completion. This procedure includes guidance on the appropriate safety risk assessment activities and will require additional safety evidence, over and above modelling and analysis, in any safety approvals document.

The ELLP Safety Advisors will perform safety risk assessments prior to the Invitation to Tender (ITT). The Contractors shall appoint Safety Assessors (Safety Engineers), to undertake safety risk assessments in accordance with the Yellow Book [1] Sections 3.2.3 and 3.2.4 described above subsequent to ITT.

#### 1.4 Document Scope

This document describes the safety risk assessment procedures for use on the ELLP. The ELLP Safety Advisors and other members of the ELLP team shall follow these procedures when undertaking safety risk assessments.

The procedures are concerned with safety risk assessment relating to the construction and operation of the ELLP and throughout the lifetime of the programme. The procedures will be applied to all safety risk assessment, however carried out, and will include the assessment of the effects of changes promulgated through ELLP change control.

The procedure is offered to the Contractors as an example of good practice as applied to the ELLP.

#### 1.5 Document Structure

The remainder of this document is structured as follows:

- Section 2 describes the roles and responsibilities of people involved in ELLP safety risk assessments;
- Section 3 describes how the process is to be initiated;
- Section 4 describes the safety risk assessment activities that shall be undertaken by the Contractors;
- Section 5 contains details of the safety risk assessment activities and references to the relevant standards;
- Section 6 contains a list of references;
- Appendix A provides the contents of the safety risk assessment report;

- Appendix B shows the Qualitative safety risk assessment Tables for use on the ELLP;
- Appendix C provides a list of Accident Types.

## 2 Safety Risk Assessment Roles and Responsibilities

The ELLP Safety Advisors and other members of the ELLP team shall conduct safety risk assessments in accordance with this document. The outputs of safety risk assessment should include assessments on whether or not the risk associated with the ELLP is (or will be) reduced to a tolerable level and recommendations made for corrective action if necessary.

If the risk is not assessed as tolerable then re-assessment and corrective action will need to be undertaken before the system can be accepted.

All staff shall be competent for their roles.

### *Safety Manager*

Responsible for the management of the entire suite of safety processes.

### *Safety Assessors/Engineers*

Members of the Safety team that carry out the safety risk assessments. They shall be familiar with:

- The Hazard Log, the procedures for Hazard Identification [2] and Hazard Management [3];
- The findings and recommendations of any previous safety risk assessments or safety audits.

The Contractors' Safety Assessors shall prepare Safety Plans, carry out the safety risk assessments (described in Section 4) and produce the subsequent Safety Risk Assessment Reports (Appendix A provides the detail to be included in the Safety Risk Assessment Report).

## 3 Process Initiation

The safety risk assessment processes are initiated as required. Safety risk assessment shall be performed as early as possible in the project lifecycle and repeated whenever necessary following changes to the project's scope.

Safety risk assessment shall be performed as an integral part of the design process and shall inform the direction of any design changes. It is not acceptable for safety risk assessments to only be undertaken only towards the end of the design process or after the design is complete.

## 4 Safety Risk Assessment Activities

### 4.1 Safety Risk Assessment Methodology

The active management of the ELLP safety risk consists of three inter-related strands of work:

- Safety requirements management;
- Hazard management, which includes hazard identification, recording, development of close-out strategies and tracking (through the Hazard Log);
- Safety risk assessment, in which evidence is gathered to provide the basis for judgement that system safety risk is tolerable and has been reduced to 'As Low As Reasonably Practicable' (ALARP). If the total residual risk after applying ALARP does not meet the derived safety targets and requirements further risk reduction measures shall be recommended and the evidence updated.

Safety risk assessment describes the activities necessary to gather the evidence and assess whether the ELLP meets its safety requirements. These activities are dependent upon the system being analysed, the stage in the lifecycle and the hazards that need to be analysed, but include the following, shown in order of precedence:

- Collation of safety evidence, including:
  - Estimation from performance in previous usage;
  - Analysis of test and trial results;
  - Assessment of design and other calculations;
  - Compliance with standards, regulations and guidelines;
  - Expert review, best practice and certification.
- Simulation;
- Modelling and safety analysis;
- Preparation of the qualitative safety arguments in the relevant approvals document (safety risk assessment Report).

The ELLP Safety Manager shall have the final say as to what safety risk assessment data sources can be accepted and whether safety risk analyses are acceptable.

The risks calculated in the safety risk assessments shall be for the accidents arising from the hazard(s) (i.e. events where harm occurs).

The safety risk assessment methodology that shall be adopted by the ELLP will be based closely on the process described in Yellow Book 3 [1]. These processes will be supported where necessary by the standards BS EN 50126 [1], 50128 [5] and 50129 [6] and others. Safety risk assessment shall consider all modes of operation of the ELLP, including degraded modes and emergency

conditions as well as both construction, operation and decommissioning of the railway.

Prior to ITT the following safety risk assessment activities shall be performed by the ELLP Safety Advisors:

- Safety risk assessment of those hazards that are different from the normal hazards associated with NRN railway operations and which are peculiar to the ELLP. (It will be assumed that those hazards that are no different to the normal risks of running an operational railway will be controlled and managed in accordance with normal operating principles that have already been assessed to be ALARP);
- Qualitative assessment of the accidents arising from all the identified hazards (Refer to the procedure for Hazard Identification [2] and Appendix B) and the likelihood of the events occurring;
- Concept Safety Report detailing the safety arguments that ELLP can be constructed and operated safely. This report will be clear as to the assumptions upon which the assessment is based.

The Contractors shall provide details of their proposed safety risk assessment activities in their respective Safety Plans. These Safety Plans will be accepted by the ELLP Safety Manager prior to contract award.

#### 4.2 Quantitative And Qualitative Safety Risk Assessment

The safety risk assessment may be qualitative or quantitative, depending upon the stage of the project.

##### *Qualitative Safety Risk Assessment*

The qualitative safety risk assessment rankings are provided in Appendix B.

Initially all identified hazards shall be assessed using the Qualitative safety risk assessment rankings described in Appendix B of this document. However, risks that are identified to have a ranking of greater than or equal to 8 (see Table 4) shall be assessed using Quantitative Safety Analysis at the earliest possible stage of the project. Risks that have a ranking of greater than 15 (see Table 4) are unacceptable and **MUST** be reduced.

All accidents shall be assessed quantitatively before Transfer to Network Rail, or arguments presented as to why qualitative assessment is appropriate.

##### *Quantitative Safety Risk Assessment*

Quantitative safety risk assessment (modelling) shall be carried out to assess the ELLP related risk and evaluate risk-reduction options. Quantitative safety risk assessment is described in detail in Appendix D of the Yellow Book [1]. The quantitative safety risk assessment modelling shall be based on hazards identified and will aim to capture, sufficiently accurately, the relationship between hazards, and the consequential accidents. These accidents shall be consistent with the accidents analysed in the LUL Quantitative Risk Assessment (QRA) Model, Railway Safety Risk Models and the Network Rail Railway Safety Case. The accident list is presented in Appendix C.

Standard hazard analysis methods such as Fault Tree Analysis (FTA) and Event Tree Analyses (ETA) for quantitative safety risk assessment, but will also include other techniques such as human error analysis. The choice of techniques will depend upon the hazards identified in the updated Hazard Identification process. The models shall take into account risk to passengers, the workforce and neighbours. The scope and complexity of models shall be based on existing information and issues that are of most concern at different phases of the project.

The data sources used in all quantitative safety risk assessments shall be stated in the safety risk assessment Report, along with a justification of the applicability of the source and the accuracy of the data. All quantitative analyses shall include an assessment of the effects of errors and uncertainty in the data and the results presented shall reflect this, ie the results shall not be presented to many significant figures when the source data is only accurate to one order of magnitude.

Before Transfer of the ELLP to Network Rail, full quantitative safety risk assessment shall have been undertaken on **ALL** identified hazards.

#### 4.3 Evolution In Design

A change/progression in design implies a possible change in the level of safety risk of a system. Therefore safety risk assessments shall be conducted and updated as the design progresses or following any major change. If it is found from the safety risk assessments that there is an increase the level of safety risk, then the reasons for the design change need to be clearly given and be subject to ELLP team agreement.

#### 4.4 Control and Mitigation of Safety Risk

The following measures, in order of priority, shall be used to reduce the level of safety risk to ALARP:

- Re-design or elimination through design;
- Incorporation of automatic safety features;
- Incorporation of warnings and alarms that indicate a potential unsafe condition;
- Notices/procedures that require people to act.

Note: It is unlikely that risk control and mitigation based solely upon changes to operating or maintenance procedures will be acceptable for safety approval to be granted by the approvals bodies.

This order reflects the effectiveness of the measures in the reduction of risk; for example re-designing a system can reduce the likelihood of occurrence of a hazard to zero whereas fixing a warning notice is only effective if people read the notice and act in the correct manner.

Therefore, risk reduction measures that prevent the hazard, or reduce the hazard frequency, shall be sought and implemented in preference to measures

that prevent the hazard becoming an accident. This means that measures which re-design the system to remove the hazard or reduce its likelihood shall be considered first before measures which manage or control the outcome.

The level of mitigation required in order to reduce the level of safety risk to ALARP shall be described in the Safety Assessment Report, along with an assessment of the effectiveness of the mitigation measures.

#### 4.5 Post safety risk assessment Activities

##### *safety risk assessment Report*

Following qualitative and quantitative safety risk assessment, and any other activities to gather safety evidence, Safety Risk Assessment Report(s) shall be prepared along with related safety approvals documents.

##### *Review and Checking Process*

The ELLP Safety Manager shall review and approve the Contractors' safety risk assessments and Safety Risk Assessment Reports prior to contract award and throughout the project lifecycle and before submission to the Compliance Review Group. An Independent Safety Auditor may be used as an external source of safety advice.

## 5 Safety Risk Assessment Techniques

### 5.1 Overview

The use of field data should be the primary source of safety evidence, provided that the usage and functionality of the source system are applicable to the ELLP. Data shall have been collected in a recognised Data Recording and Corrective Action System (DRACAS) and analysed in accordance with recognised standards.

The choice of safety risk analysis technique depends upon a number of different factors, including the system under review, the stage of the project, previous analyses and the use to which the results will be put. The ELLP Safety Manager will have final approval of the choice of safety risk assessment techniques.

### 5.2 Fault Tree Analysis

Fault Tree Analysis (FTA) shall be performed in accordance with Annex E of Volume 2 of the Yellow Book and BS 5760 Part 7 [7].

### 5.3 Failure Modes and Effects Analysis

Failure Modes and Effects Analysis (FMEA) shall be performed in accordance with Annex E of Volume 2 of the Yellow Book and BS 5760 Part 5 [8] and the new European standard due to be issued in 2005 [9].

## 5.4 Event Tree Analysis

Event Tree Analysis (ETA) shall be performed in accordance with BS5760 Part 2 [10].

## 5.5 Other Analysis Techniques

Other analysis techniques used in the safety risk assessment of the ELLP shall follow recognised standards. These include BS 5760 Parts 2 [10], 5 [8], 8 [11], 12 [12] and 15 [13] and BS EN 61078 [14].

## 6 References

The following provide supporting information.

1. Yellow Book 3, Engineering Safety Management Fundamentals and Guidance.
2. For information only - ELLP Hazard Identification Procedure, ELM-TEC-214-18-05-0001, Issue 01, January 2005
3. ELLP Hazard Management Procedure, ELM-TEC-214-18-05-0002, Issue 01, January 2005
4. BS EN 50126, Railway Applications. The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS).
5. BS EN 50128, Railway Applications – Software for Railway Control and Protection Systems.
6. BS EN 50129, Railway Applications – Safety-related electronic systems for Signalling.
7. BS 5760 Part 7, Reliability of Systems, Equipment and Components. Guide to Fault Tree Analysis.
8. BS 5760 Part 5, Reliability of Systems, Equipment and Components. Guide to Failure Mode, Effects and Criticality Analysis (FMECA).
9. IEC 60812, Analysis Techniques for System Reliability – Procedure for Failure Mode and Effects Analysis (FMEA), in preparation.
10. BS 5760 Part 2, Reliability of Systems, Equipment and Components. Guide to the Assessment of Reliability.
11. BS 5760 Part 8, Reliability of Systems, Equipment and Components. Guide to the Assessment of Systems containing Software.
12. BS 5760 Part 12, Reliability of Systems, Equipment and Components. Guide to the Presentation of Reliability, Maintainability and Availability Predictions.
13. BS 5760 Part 15, Reliability of Systems, Equipment and Components. Guide to the Application of Markov techniques.

14. BS EN 61078, Reliability of Systems, Equipment and Components. Guide to the Block Diagram Technique.

## Appendix A

# Contents of the Safety Risk Assessment Report

The Safety Risk Assessment Report should concentrate on the findings and recommendations of the assessment. The following sections shall be included in the Safety Risk Assessment Report.

<b>Summary</b>	Management summary of rest of document.
<b>Assumptions</b>	This section should state the assumptions, dependencies and caveats used in the analysis and how and when they will be validated.
<b>Requirements</b>	This section should state the assessment requirements as described in the safety requirements and identify areas where the assessment deviated from the requirements.
<b>Assessment Methodology</b>	This section should provide details of the conduct of the safety risk assessment. It should also describe the technique used for safety risk assessment, e.g. Fault Tree Analysis and other evidence used. This section shall also contain the details of the internal acceptance process.
<b>Results</b>	This section should list the results and should discuss their impact. Details of design changes that have been made that either increase or decrease risk shall be discussed here with reasoning. Evidence to support each result should be given.
<b>Conclusions &amp; Recommendations</b>	This section should state degree of compliance of the ELLP with its safety requirements in one of the following four forms: <ol style="list-style-type: none"><li>1. The ELLP meets its Safety Requirements.</li><li>2. The ELLP will meet its Safety Requirements</li></ol>

provided specific recommendations are carried out and without further assessment.

3. The assessment to date cannot provide the evidence that the ELLP will meet its Safety Requirements. Further evidence or analysis is required.
4. The ELLP cannot meet its Safety Requirements without major redesign.

The reasons for the conclusions should be stated along with discrepancy between the safety requirements and the assurance achieved. A further assessment should be required before safety approval is sought.

The conclusions may also contain a numbered, prioritised list of proposed actions that should be carried out to resolve findings.

The conclusions should also provide suggestions for emergency and contingency arrangements to deal with accidents, should they occur.

The critical and most sensitive arguments of the document should be clearly and concisely highlighted and a professional opinion should be given as to the robustness of the argument. A professional opinion should also be given, with regard to the railway system as a whole, as to the practicality of any measures used to mitigate against the hazards raised. The assessment should identify any non-compliances with respect to relevant standards and legal requirements.

## Appendix B

### Qualitative Safety Risk Assessment Tables

Qualitative safety risk assessment for the project will be carried out according to the methodology outlined in this section, and the preliminary ranking will be performed during safety risk assessment and entered in the Hazard Log . Subsequent analysis will refine these risk rankings and thus those hazards that require the closest scrutiny will be identified.<sup>1</sup>

Three risk factors are combined to produce a Risk Rating:

- **Hazard Frequency.** How often the hazard may be presented.
- **Accident Severity.** The severity of a potential accident leading from the hazard.
- **Accident Probability.** The likelihood that the hazard will lead to the envisaged accident.

The ratings are defined in Table 1 to Table 4:

Table 1 Hazard Frequency Ratings:

<b>Probability of Hazard Occurrence</b>	<b>Frequency of Hazard Occurrence</b>	<b>Rating</b>
Never	Less than once in 1000 years or Never	0
Less than 1%	Once in 1000 years	1
1% to 30%	Once in 100 years	2
30% to 50%	Once in 10 years	3

---

<sup>1</sup> The methodology described here has the same purpose as the 'Likelihood/Severity' matrix often used. It is believed that this methodology is superior in that it allows better modelling of potential hazard and accident sequence.

Probability of Hazard Occurrence	Frequency of Hazard Occurrence	Rating
50% to 70%	Once per year	4
Greater than 70%	10 times per year	5

Table 2 Accident Severity Ratings:

Accident Severity	Equivalent Fatalities	Rating
No injuries	0	0
Up to 1 minor injuries	0.01	1
Single major injury or up to 20 minor injuries	0.1	2
Single fatality or multiple major injuries	1	3
Single fatality	1	4
Multiple fatalities	10	5

Table 3 Accident probability ratings:

Probability of hazard leading to accident	Rating
Never; no potential for hazard to lead to accident.	0
Hazard will lead to accident one time in 1000	0.25
Hazard will lead to accident one time in 100	0.5
Hazard will lead to accident one time in 10	0.75
Hazard will always lead to accident.	1

The ratings described in Table 1 to Table 3 above have been selected to be logarithmic in nature. The product of the three elements will provide a sound ranking score that expresses the risk associated with a single hazard. If any of the scores is zero, then this strategy is invalidated and the total ranking score for the hazard is also zero. However, experience has shown that the zero cases are unlikely to be justifiable and any assessment that used a zero figure would be subject to considerable scrutiny. Table 4 expresses the acceptability of risk using this ranking methodology:

Table 4 Ascertaining Acceptability of Risks

Product of Risk Rating scores	Acceptability of Risk
> 15	Risk is intolerable and <i>must</i> be reduced
8 - 15	Risk is tolerable, but must be reduced As Low As Reasonably Practicable

< 8	Risk is broadly acceptable
-----	----------------------------

## Appendix C

### Accident Types

Table 5 describes some types of accident that could occur as a result of the implementation of the ELLP, which has been derived from the tables of accidents described in the Network Rail Railway Safety Case and the LUL Quantified Risk Assessment that could be expected to result from system hazards. These are associated with the population potentially injured in these accidents. A hazard or hazard cause may give rise to more than one accident and most accidents will be caused by more than one hazard.

Table 5 Accident Types, and population at risk

Accident ID	Accident Type	Population at risk		
		Passengers	Staff	Non-travelling public
01	Collision between trains	✓	✓	
02	Derailment	✓	✓	✓
03	Out of gauge collision	✓	✓	
04	Collision with buffer	✓	✓	
05	Abnormal dynamic forces	✓	✓	✓
06	Collision with object on line	✓	✓	✓
07	Train fire	✓	✓	✓ (if fire spreads)
08	Structural collapse	✓	✓	✓
09	Explosion	✓	✓	✓

Accident ID	Accident Type	Population at risk		
		Passengers	Staff	Non-travelling public
10	Pedestrian on level crossing – but no level crossings on ELL			✓
11	Vehicle on level crossing – but no level crossings on ELL	✓	✓	✓
12	Platform Train Interface	✓	✓	✓
13	Fall from train	✓	✓	
14	Person struck by object	✓	✓	✓
15	Trips, slips and falls and other worker injuries		✓	
16	Electric shock	✓	✓	
17	Worker trapped in machinery		✓	
18	Other Fires	✓	✓	✓ (if fire spreads)
19	Flood	✓	✓	✓
20	Other passenger accidents		✓	✓
21	Personnel accident external to railway			✓

# I ELLP Safety Risk Assessment Procedure

*To be inserted*

## Appendix J Example Unit Log Book

## **SCHEDULE 5**

### **Delivery Schedule**

<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>	<b>Column 4</b>	<b>Column 5</b>
<b>First Working Day of week following Project Programme Date</b>	<b>Number of ELR Units due to be Accepted during previous week</b>	<b>Total number of ELR Units to be Accepted by 17:00 hours</b>	<b>Number of NLR Units due to be Accepted during previous week</b>	<b>Total number of NLR Units to be Accepted by 17:00 hours</b>
27/10/08	0	0	2	2
03/11/08	0	0	4	6
10/11/08	0	0	2	8
17/11/08	0	0	2	10
24/11/08	0	0	2	12
01/12/08	0	0	2	14
08/12/08	0	0	2	16
15/12/08	0	0	2	18
22/12/08	0	0	2	20
29/12/08	0	0	1	21
05/01/09	0	0	0	21
12/01/09	0	0	2	23
17/01/09	0	0	1	24
17/08/09	20	20	0	24

**SCHEDULE 6: TRAINING SERVICES**



# **East London Line Project**

## **Rolling Stock Manufacture and Supply Agreement**

### **Schedule 6 – Training Services**

# **SCHEDULE 6**

## **Training Services**

# 1 Training of Operator's Trainers

The Manufacturer shall provide the following training in accordance with the Project Programme to the nominated employees of the Purchaser and/or the Operator and/or the Infrastructure Managers who will act as trainers in respect of other employees of the Purchaser and/or the Operator and/or the Infrastructure Managers, as follows:

## 1.1 Training of Driver Trainers

1.1.1 The Manufacturer shall provide training for up to 24 driver trainers who shall in turn provide training to the drivers of the ELR Units and/or the NLR Units. The training provided by the Manufacturer shall enable the driver trainers to train the proposed drivers of the ELR Units and/or the NLR Units and assess their competence in accordance with all Applicable Laws and applicable Standards including Railway Group Standard GO/RT3551 "Train Driving" and Railway Safety Approved Code of Practice GO/RC 3551 "Approved Code of Practice – Train Driving".

1.1.2 The Manufacturer shall train the driver trainers in the relevant aspects of a Unit's systems and equipment, and the processes for operating such equipment and systems relating to the activities required by the applicable Standards. This training shall include:

- (A) preparation and mobilisation of ELR Units and NLR Units, including all checks necessary to establish the fitness of such Unit for service;
- (B) safety systems and equipment, and checks of the availability of safety systems;
- (C) coupling and uncoupling of ELR Units and NLR Units;
- (D) driving, controlling, monitoring and managing ELR Units and NLR Units;
- (E) interfaces with passengers and operations/infrastructure staff (e.g. use of communication equipment);
- (F) warning and fault indication systems, fault diagnosis and reporting;
- (G) Defect rectification in appropriate areas;
- (H) operation, and management of ELR Units and NLR Units in both normal and foreseeable degraded and abnormal conditions. Responding to foreseeable emergency situations, including Defects and failures in service, and hazards on the line;
- (I) interface of ELR Units and NLR Units with the power supply, including abnormal conditions;
- (J) ELR Unit and NLR Unit evacuation and protection;
- (K) disposal of ELR Units and NLR Units;
- (L) immobilising ELR Units and NLR Units and handing over in service;

- (M) the handover and handback procedure agreed between the Maintainer and the Operator;
- (N) recovery of an ELR Unit and/or a NLR Unit following a flat battery on the relevant Unit or Units;
- (O) recovery of an ELR Unit utilising another ELR Unit and recovery of an NLR Unit utilising another NLR Unit;
- (P) familiarisation with available system isolations and their respective consequences;
- (Q) understanding of the wheel-slide protection equipment, adverse weather driving techniques (including wet or icy conditions) and operation of Units fitted with de-icing equipment;
- (R) ELR Unit, NLR Unit, coach, bogie, wheel-set and door identification; and
- (S) on train monitoring recorder analysis.

1.1.2A The Manufacturer shall develop a training course for the purpose of undertaking the training referred to in paragraphs 1.1.1 and 1.1.2. The Manufacturer shall ensure that the training course corresponds to the content of the "Train Operating Manual" prepared in accordance with paragraph 1.3.1 of Schedule 7 (Manuals) and shall in accordance with paragraph 3 provide training documentation in such manner and format so as to enable the driver trainers to train the proposed drivers of the ELR Units and/or the NLR Units. In addition, the training documentation shall include a compact sized card to serve as a memory aid covering basic and commonly used information (including cab set-up and selective door operation) which the Operator shall be entitled to create copies of to issue to proposed drivers as part of their training. The content of the card shall be agreed with the Operator and shall comply with the requirements set out in relevant schedules of the TSA (including Schedule 14 (Fault Notification Procedure)).

1.1.3 The Manufacturer shall train driver trainers in accordance with paragraphs 1.1.1 and 1.1.2 using a combination of:

- (A) static training on an ELR Unit and/or a NLR Unit;
- (B) a cab simulator unit (or if the Cab Simulator Option has been exercised, the Cab Simulator Unit); and
- (C) the handling of an ELR Unit and a NLR Unit, such as on a test-track.

1.1.4 Training by the Manufacturer of the driver trainers on a cab simulator unit (including, where applicable the Cab Simulator Unit if the Cab Simulator Option has been exercised) shall include:

- (A) the driver trainer operating the cab simulator unit as the "driver"; and
- (B) the driver trainer operating the cab simulator unit as "instructor", for the purposes of training and assessing drivers.

1.1.5 The Manufacturer shall provide 6 courses for the driver trainers. It is envisaged that each course will be attended by 4 driver trainers.

- 1.1.6 The duration of the driver trainers course shall be 10 Working Days for each group of four driver trainers during which period access to a Unit for handling is envisaged to require 3 days although this may be reduced in the event that the Cab Simulator Option has been exercised.
- 1.1.7 The first three courses to be provided by the Manufacturer shall commence simultaneously in accordance with the Project Programme. Thereafter the Manufacturer shall provide three courses in parallel until the six courses have been provided in accordance with the Project Programme.
- 1.1.8 Up to 4 driver trainers shall be nominated by the Operator or the Purchaser as "senior driver trainers". These senior driver trainers shall form part of the overall group of 24 driver trainers and will receive the same courses from the Manufacturer as the driver trainers. The Purchaser intends that the senior driver trainers shall have specific authoritative responsibilities in the successful introduction of the ELR Units and the NLR Units. To this end, the Manufacturer shall provide the senior driver trainers with reasonable access to the ELR Units and the NLR Units during manufacture and testing, for the purpose of the senior driver trainers gaining extra familiarity with, and knowledge of, the ELR Units and the NLR Units.

## **1.2 Training of the Operator's Control Staff Trainers**

- 1.2.1 The Manufacturer shall provide all applicable training in accordance with the Project Programme for up to 4 proposed control staff trainers nominated by the Operator and/or the Purchaser, in order that the control staff trainers shall be able to provide training to the Operator's control room staff. These control room staff shall interface with other operating staff (including drivers and signallers) and with the Maintainer, and require a level of knowledge of an ELR Unit and a NLR Unit in order to facilitate efficient operation and to manage recovery from perturbed operations.
- 1.2.2 The control room staff to be trained by the control staff trainers shall range from staff generally controlling operations to those involved at the interface between the operations and maintenance of the ELR Units and NLR Units.
- 1.2.3 The Manufacturer shall provide a standard course for the control staff trainers in sufficient depth for the Operator's control staff trainers to provide courses to those control staff involved in the maintenance interface of the ELR Units and NLR Units.
- 1.2.4 The Manufacturer shall ensure that the control staff trainers will (i) be able to demonstrate an ELR Unit and a NLR Unit to the emergency services who may become involved in incidents and/or accidents; and (ii) give guidance to the emergency services in areas such as general layout, communication methods, access/egress etc.
- 1.2.5 The course to be provided to the control staff trainers by the Manufacturer shall cover:
  - (A) vehicle systems;
  - (B) ELR Unit and NLR Unit to infrastructure interfaces and equipment;
  - (C) passenger facilities and doors;

- (D) diagnostic facilities available;
- (E) communication facilities;
- (F) ability to isolate equipment, overview of performance and operating implications;
- (G) emergency equipment, emergency access/egress including cab end unit-to-unit and unit-to-ground egress;
- (H) multiple working capability, assistance of failed ELR Units and NLR Units, couplers etc.;
- (I) system redundancy, passenger facilities/duration available in failure situation;
- (J) CCTV;
- (K) Defect reporting;
- (L) scheduled maintenance arrangements;
- (M) cleaning arrangements;
- (N) ELR Unit, NLR Unit, coach, bogie, wheel-set and door identification; and
- (O) ELR Unit and NLR Unit preparation arrangements, and procedures agreed for handover/handback of the ELR Units and NLR Units nightly.

1.2.6. The Manufacturer shall provide 1 course for the control staff trainers which may be attended by up to 4 trainers. The course shall be of 8 Working Days duration.

### **1.3 Training of the Operator's Station Staff Trainers**

1.3.1 The Manufacturer shall provide training for up to 4 station staff trainers nominated by the Operator and/or the Purchaser in accordance with the Project Programme, in order that those station staff trainers will be able to provide training to the Operator's station staff. The station staff will require an understanding of the basic functions of an ELR Unit and a NLR Unit as far as it affects their station duties, and in order that they can assist effective recovery of perturbed operation.

1.3.2 The content of the course to be provided by the Manufacturer to the station staff trainers will be as follows:

- (A) overview of an ELR Unit and a NLR Unit;
- (B) passenger facilities;
- (C) doors, door control positions;
- (D) multipling and splitting of Units;
- (E) communication facilities;
- (F) emergency equipment, emergency access/egress;

- (G) arrangements and equipment for access for disabled passengers;
- (H) overview of assistance of failed Units;
- (I) CCTV;
- (J) ELR Unit, NLR Unit, coach, and door identification.

1.3.3 The Manufacturer shall provide 1 course which may be attended by up to 4 station staff trainers. The course shall be of 3 Working Days duration.

## **2 Training of Infrastructure Managers' Trainers**

2.1.1 The Manufacturer shall provide all applicable training in accordance with the Project Programme for up to 4 Infrastructure Manager trainers nominated by Network Rail, LUL and/or the Purchaser in order that the Infrastructure Manager trainers shall be able to train the Infrastructure Managers' staff. The staff of the Infrastructure Manager require an overview of the basic functions of an ELR Unit and a NLR Unit as far as it affects their role in managing issues arising in relation to the infrastructure or the operation of the East London Railway and/or the North London Railway, particularly in perturbed operation. The Infrastructure Managers' staff to be trained by the trainers will include signallers, electrical control room operators, Infrastructure Managers' control room staff and Infrastructure Managers' managers.

2.1.2 A standard course shall be provided by the Manufacturer to the Infrastructure Managers' trainers, who will then tailor the course content for the different groups of staff. The courses to be provided for the staff by the Infrastructure Manager trainers will typically be of one-day duration.

2.1.3 Content of the courses to be provided by the Manufacturer to the Infrastructure Managers' trainers shall include:

- (A) power supply interface and equipment, including regeneration;
- (B) overview of protection arrangements on an ELR Unit and a NLR Unit;
- (C) signalling equipment interface;
- (D) fault indication and diagnostic systems;
- (E) ability to isolate systems, performance implications;
- (F) emergency equipment, emergency access/egress including cab end unit-to-unit and unit-to-ground egress;
- (G) multiplying of ELR Units and NLR Units;
- (H) assistance of failed ELR Units and NLR Units; and
- (I) ELR Unit, NLR Unit, coach, bogie, wheel-set and door identification.

2.1.4 The Manufacturer shall provide 1 off site course and may be attended by up to 4 Infrastructure Manager trainers. The course shall be of 5 Working Days duration.

### **3. Training content and documentation**

- 3.1.1 The Manufacturer shall document and agree the detailed content of the training courses in paragraph 1 above with the Operator, and shall submit the training documentation for the review and Assurance Acceptance by the Purchaser prior to commencing the relevant training course.
- 3.1.2 The Manufacturer shall document and agree the detailed content of each of the training courses in paragraph 2 above with Network Rail and LUL via the Purchaser, and shall submit the training documentation for their review and approval prior to commencing the training course.
- 3.1.3 In each case the communications in paragraphs 3.1.1 and 3.1.2 shall be through the Purchaser.
- 3.1.4 The Manufacturer shall provide each person attending a course with one set of course notes, in hard copy and one set of course notes in PDF electronic format.
- 3.1.5 The Manufacturer shall confirm to the Purchaser the names of all trainees who complete each course, and shall advise the Purchaser details of the issue of course notes to each trainee, including version level. The Manufacturer shall supply one master set of the documentation issued, in hard copy and electronic format, to the Purchaser. Upon any revision of the documentation prior to Acceptance of the last Unit comprised in the Initial Order, the Manufacturer shall supply a master set of the revised documentation, in hard copy and electronic (Microsoft Word) format to the Purchaser.
- 3.1.6 Without prejudice to the rights of the Purchaser under Clause 29, the Purchaser, Operator, LUL and Network Rail shall have the right to copy, adapt, extend (particularly in respect of operating rules) and distribute the training documentation provided by the Manufacturer, for the purpose of creating information for further staff to be trained within their organisations (or in relevant organisations such as the emergency services). The Manufacturer shall not be liable for the implications to the performance of the Units of any change made to this documentation unless the content of such change has been agreed with the Manufacturer, such consent not to be unreasonably withheld or delayed, save that changes which relate to the formatting, layout and/or presentation of the documentation and/or to any typographical errors may be made without the Manufacturer's consent.

### **4. Training of Maintenance Staff**

- 4.1.1 The Manufacturer shall supply to the Purchaser a detailed schedule of training arrangements for the Maintainer's staff (including, as appropriate, employees, agents and/or subcontractors) who will undertake the maintenance of the ELR Units and the NLR Units. The schedule of training arrangements shall include details of:
  - (A) training needs analysis;
  - (B) references to appropriate national occupational standards;
  - (C) identification of safety-critical elements;

- (D) training programme;
- (E) competence standards to be met; and
- (F) method of competence assessment.

4.1.2 The Manufacturer undertakes to provide the training required to the Maintainer's staff. The Manufacturer shall assess the competence of the Maintainer's staff and shall provide the assessment report, and confirm results of the competence assessments, to the Purchaser. The Manufacturer shall undertake the training and competence assessment throughout the duration of the Train Services Agreement, in respect of new employees of the Maintainer or as otherwise required. The Manufacturer shall provide the Purchaser with updated information relating to these ongoing competence assessments.

4.1.3 The Manufacturer acknowledges that the information supplied by it pursuant to paragraphs 3.1.1 and 3.1.2 will be passed by the Purchaser to the Operator, to enable the Operator to comply with the requirements in Railway Group Standard GM/RT 2004. The information supplied by the Manufacturer shall be adequate for the Operator successfully to meet these requirements.

4.1.4 For the purposes of this Schedule 6 references to "maintenance" include all of the activities to be carried out by the Maintainer, including scheduled and un-scheduled maintenance, fault-finding, post-incident investigation, damage and vandalism repairs, cleaning of Units, operation of plant (cranes, wheel lathe etc), safety of activities, and attendance to defects on line of route.

## **5 General**

5.1.1 Where the Purchaser wished the Manufacturer to provide further training, the Manufacturer shall provide such training on the following basis:

- (A) for additional courses already developed, the Manufacturer's price for the course will be ██████████ per day duration of the course; and
- (B) for new courses not already developed, the Manufacturer's price for the course will be ██████████ per day duration of the course plus a sum for the development of the course to be agreed in accordance with the Variation Procedure.

5.1.2 For the avoidance of doubt, the provisions of this paragraph 5 shall not be applied to the Manufacturer's obligations to train or assess the employees of the Maintainer pursuant to paragraph 4.

## **SCHEDULE 7: MANUALS**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 7 – Manuals**

# **SCHEDULE 7**

## **Manuals**

## MANUFACTURER'S OBLIGATIONS

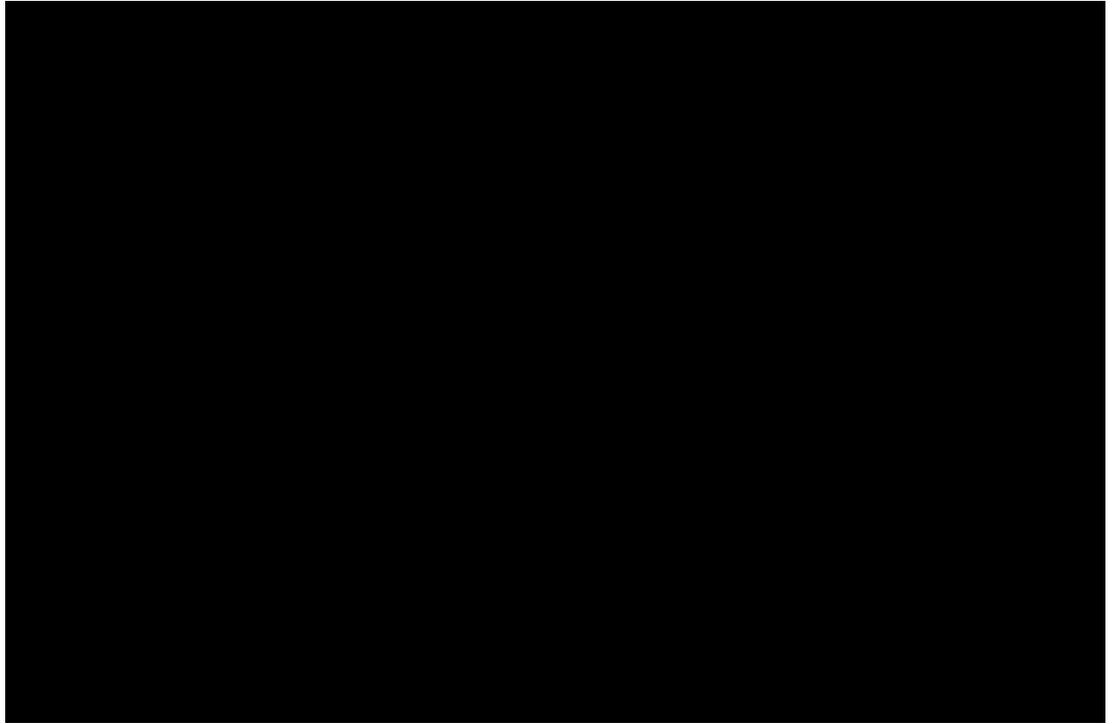
### 1.1 Provision of Documentation

- 1.1.1 The Manufacturer shall provide the Purchaser with all documentation necessary to facilitate the operation, maintenance and overhaul of the Units and to enable the Maintainer to perform its obligations under the Train Services Agreement, including the provision of the Services (as defined in the Train Services Agreement).
- 1.1.2 The Manufacturer shall ensure that all documentation provided by the Manufacturer in accordance with paragraph 1.1.1 including those documents described in paragraphs 1.2.1 to 1.2.11, and 1.3.1 to 1.3.4 (each a "**Manual**") provide full and complete operating and technical information to permit the Purchaser (and/or any nominee) to operate, maintain and overhaul the Units without recourse to the Manufacturer. The Manufacturer shall include any relevant reference calculations and computer simulations.
- 1.1.3 Without prejudice to the requirements of this Schedule 7, the Manufacturer shall submit to the Purchaser a Maintenance Plan in relation to the Units that complies with the requirements for such plan as described in Railway Group Standard GM/RT 2004. The Manufacturer shall initially submit the Maintenance Plan to the Purchaser for approval under the Assurance Acceptance process described in Schedule 3. Following granting of Assurance Acceptance by the Purchaser, the Manufacturer shall submit the Maintenance Plan to a Conformance Certification Body for certification (or its equivalent). A certified Maintenance Plan (free of limitations on the certificate save for those limitations inherently associated with the star chart being an initial star chart as described in paragraph 1.2.2) shall be supplied to the Purchaser by the Manufacturer, for incorporation by the Operator into the Operator's Maintenance Policy, as described in Railway Group Standard GM/RT 2004. If the Manufacturer believes that it is appropriate to issue the Maintenance Plan in more than one stage, where some limitations on certification may exist in the early stages, this shall be proposed to the Purchaser as a submission for Assurance Acceptance prior to the submission of the Maintenance Plan. Any Assurance Acceptance by the Purchaser of a submission in relation to staging shall not relieve the Manufacturer of its obligation to supply the Purchaser with a certified Maintenance Plan which is free of limitations on the certificate.
- 1.1.4 The Manufacturer shall also supply relevant information and inputs to the Purchaser, as the Purchaser may request (either for itself or on behalf of the Operator), for incorporation into the Operator's Maintenance Policy (as listed in sections 5 and 6 of GM/RT 2004 issue 2).

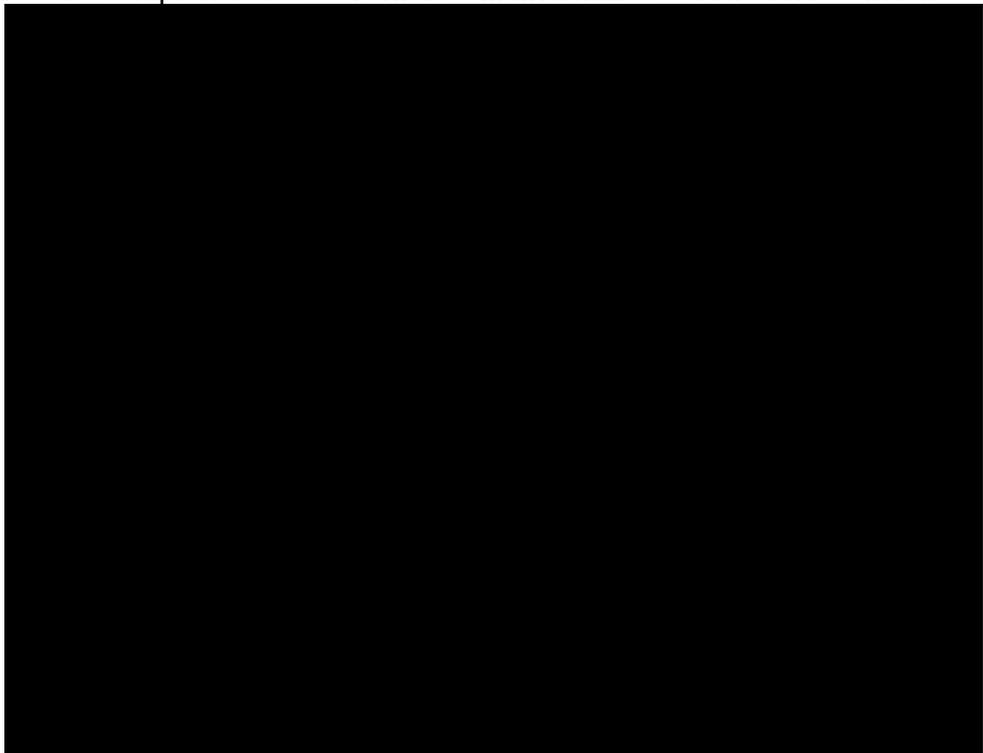
## 1.2 Technical Manuals

Without prejudice to paragraph 1.1, the Manufacturer shall provide to the Purchaser in accordance with the requirements of this Schedule 7:

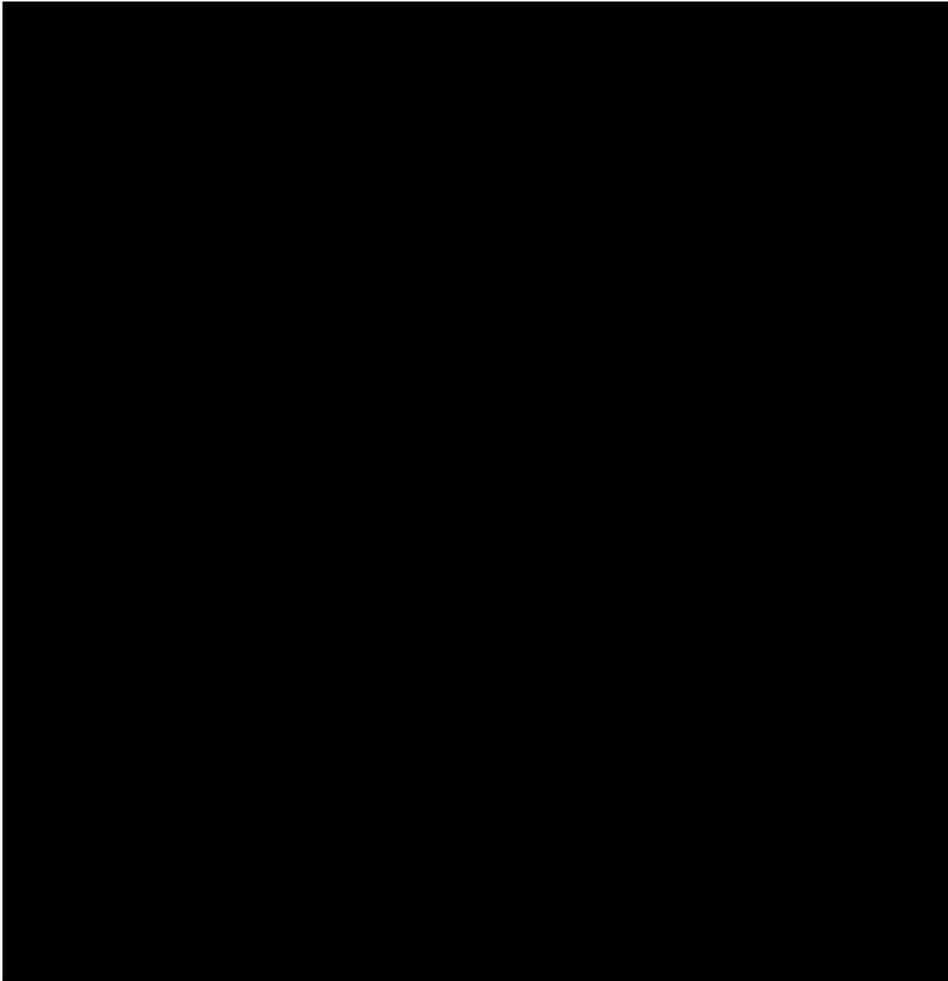
- 1.2.1 a comprehensive "**Technical Information Manual**" which contains:



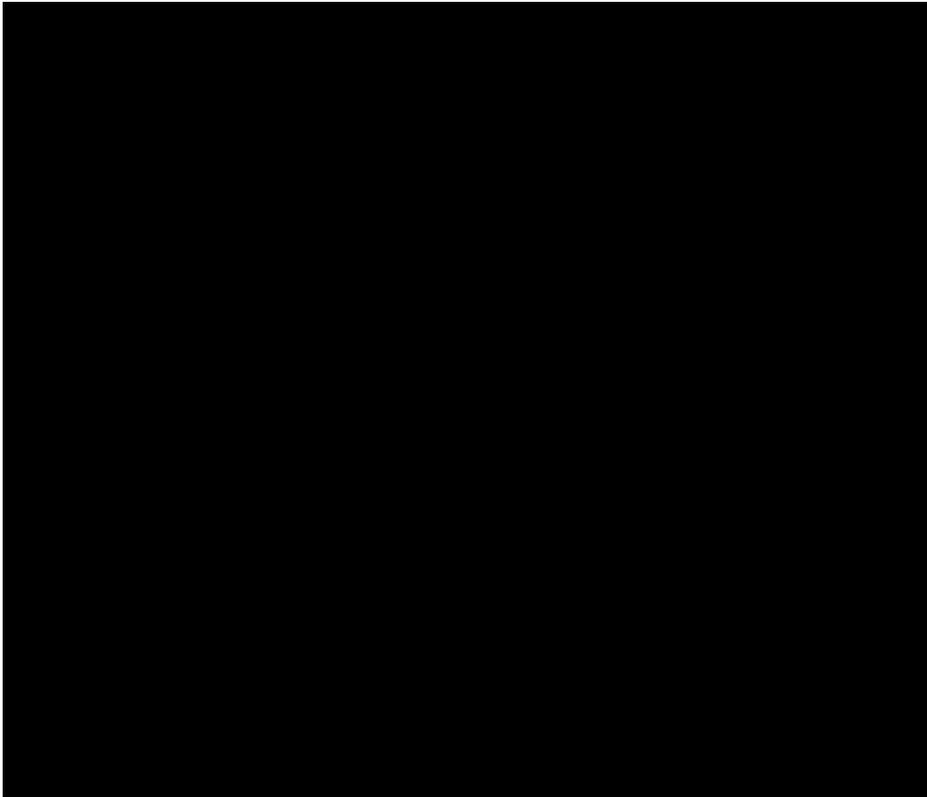
- 1.2.2 a comprehensive "**Vehicle Maintenance Schedule**" which



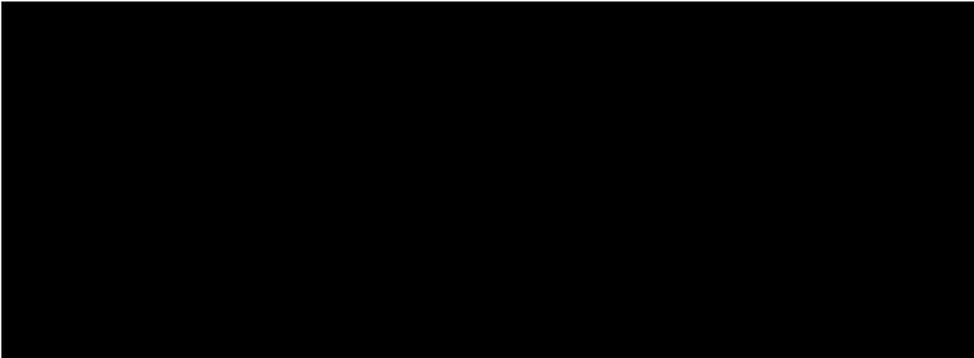
account of specific factors associated with the fleet introduction.



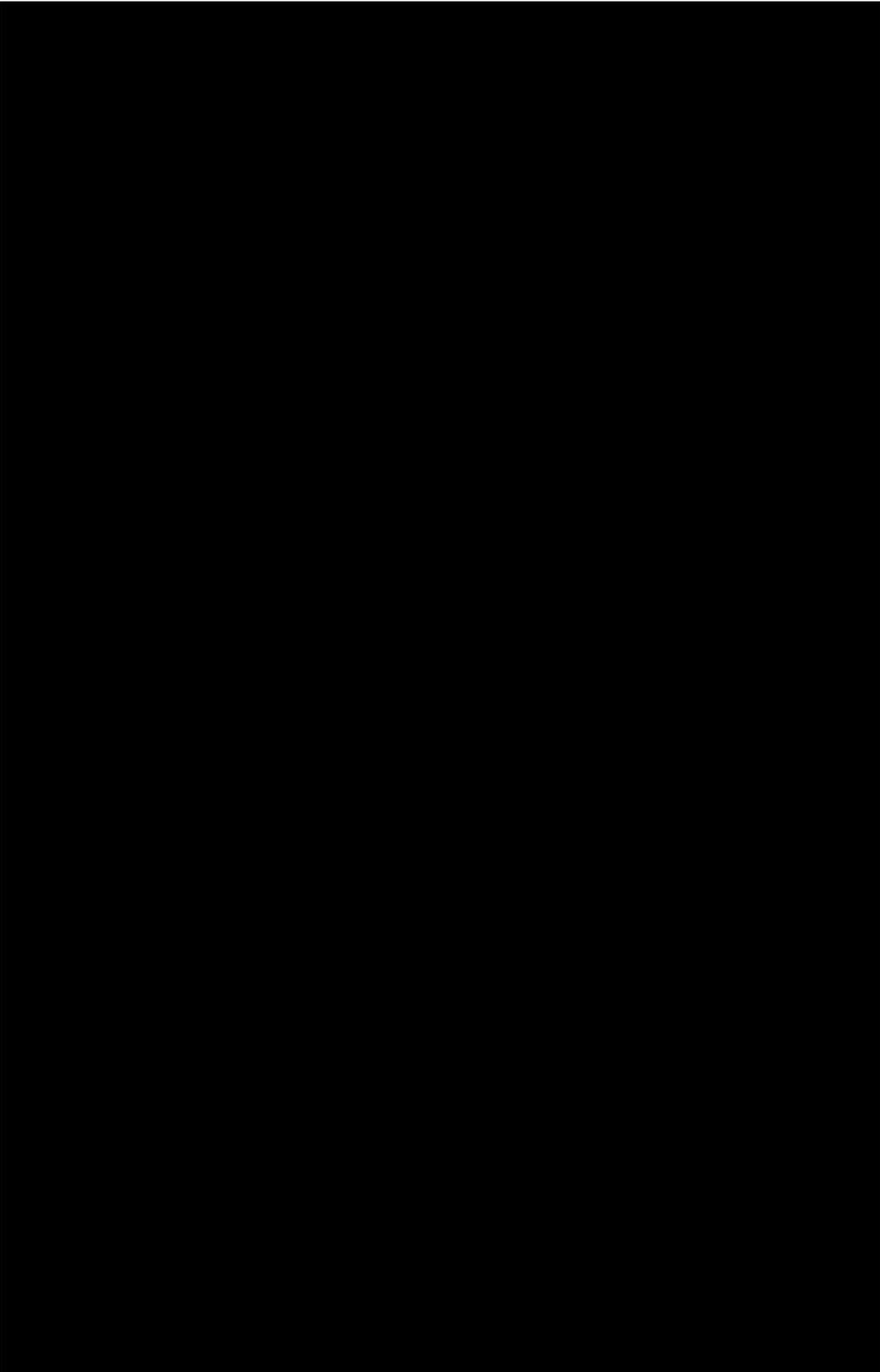
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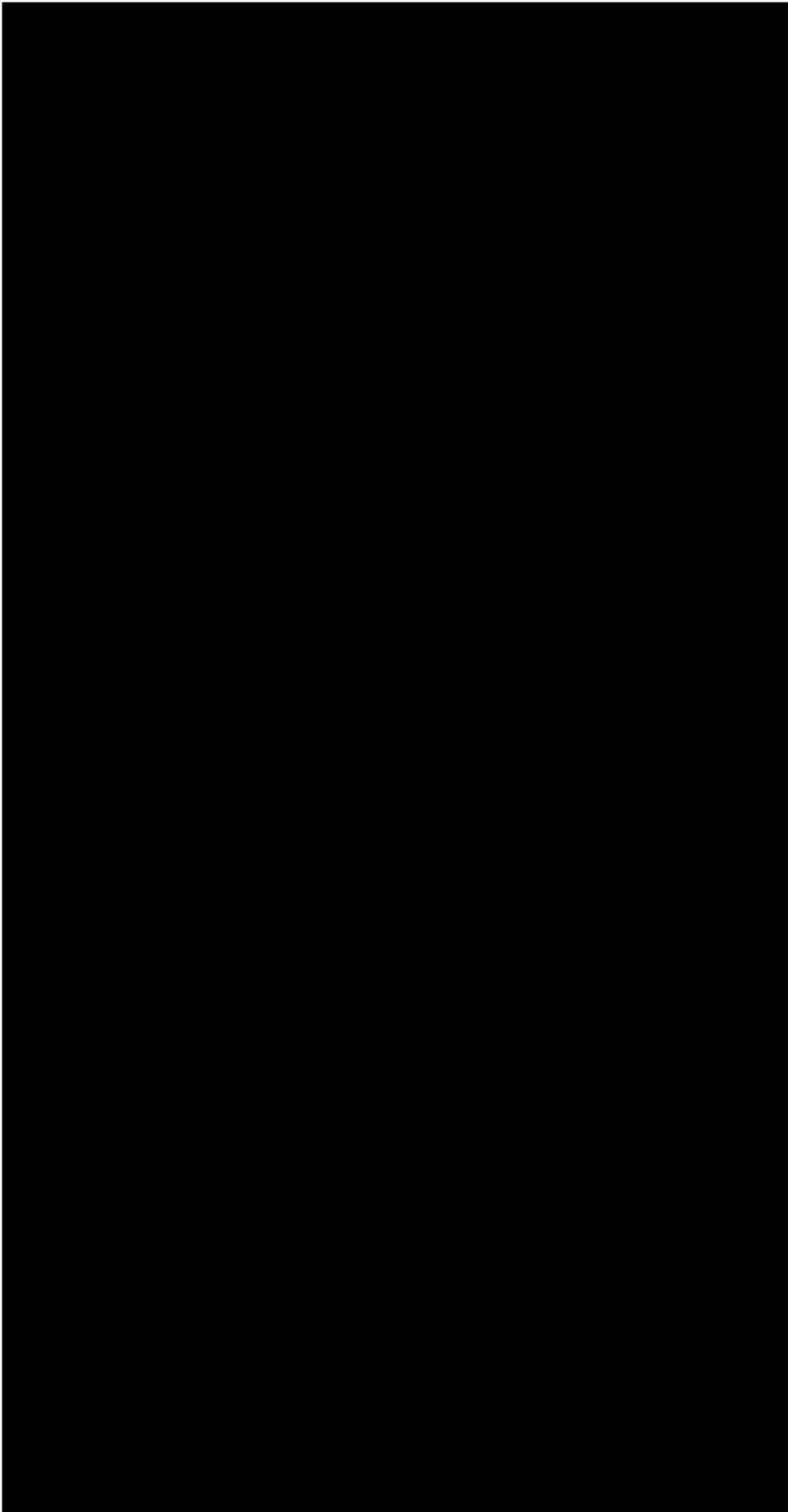


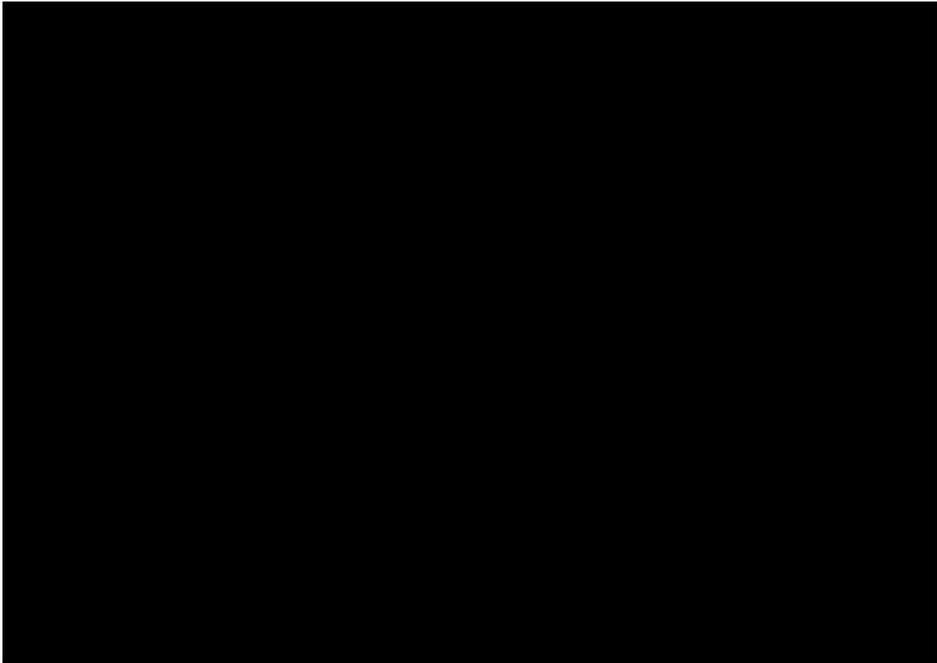




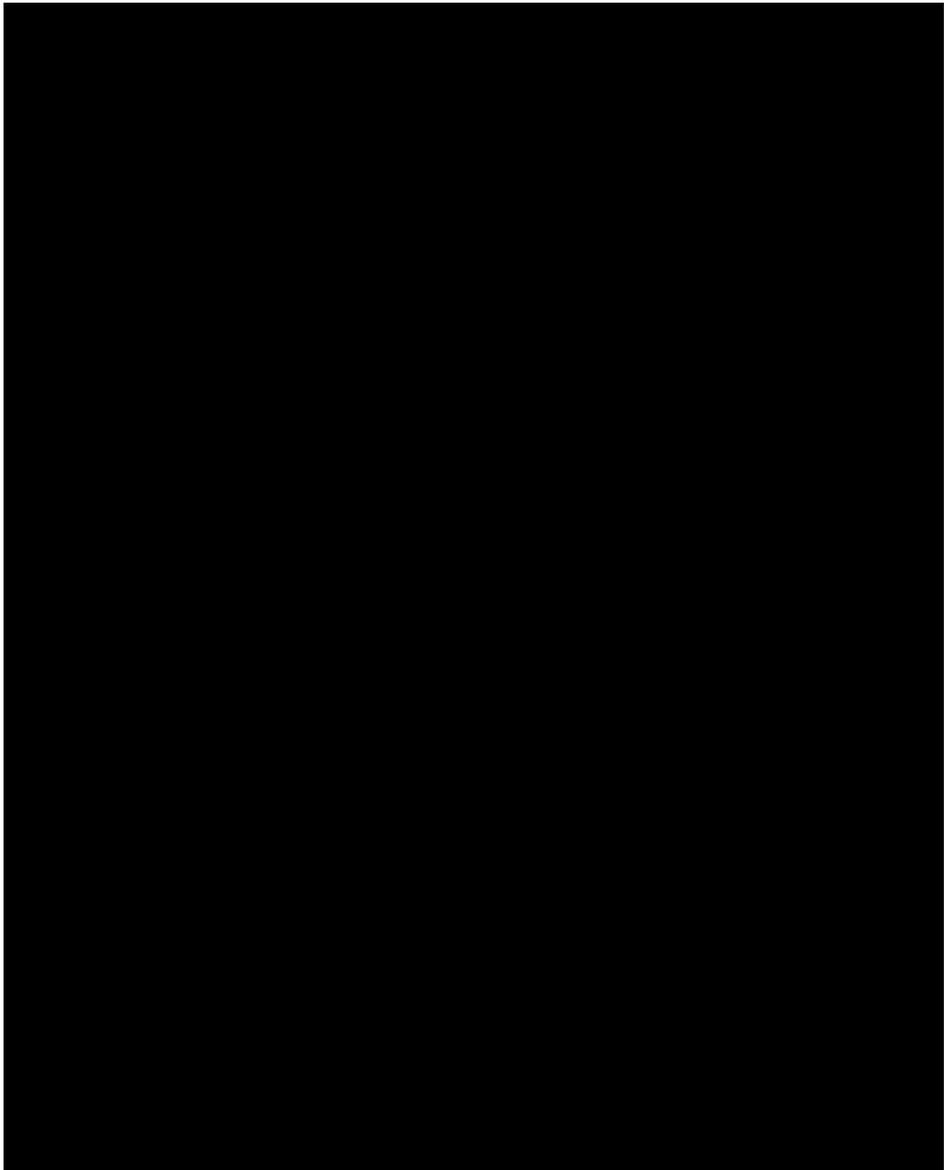
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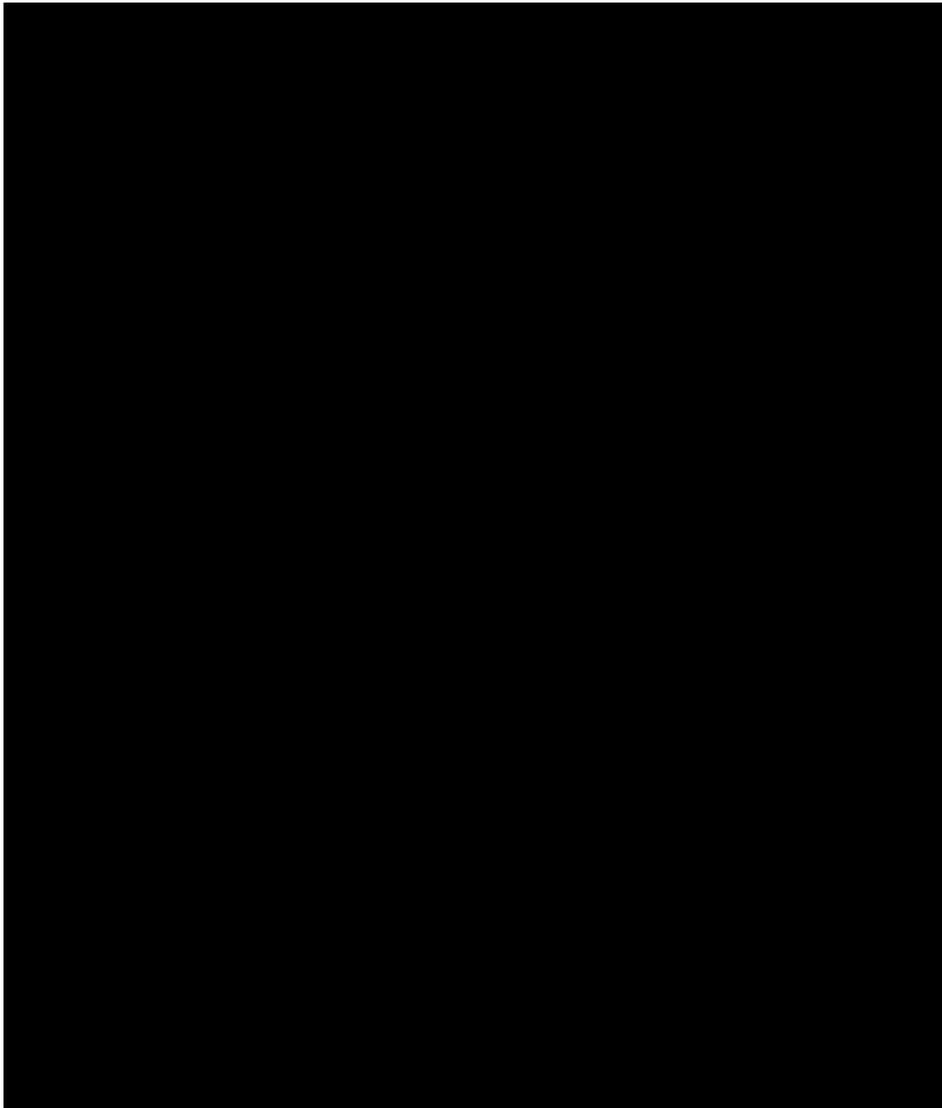




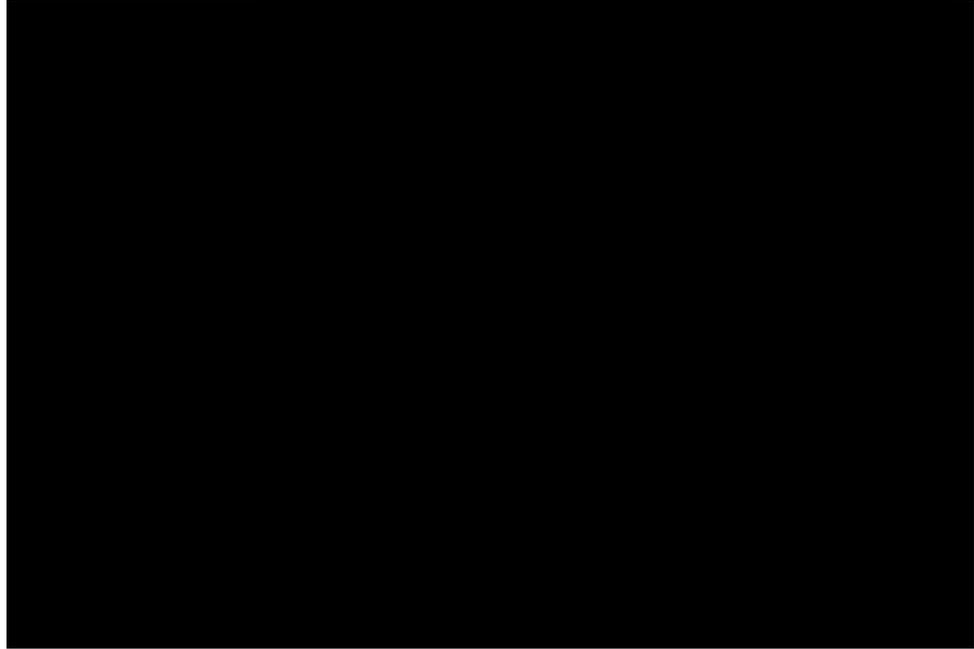


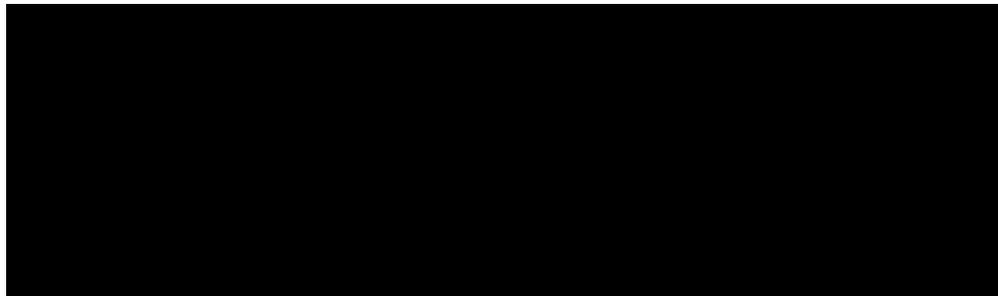
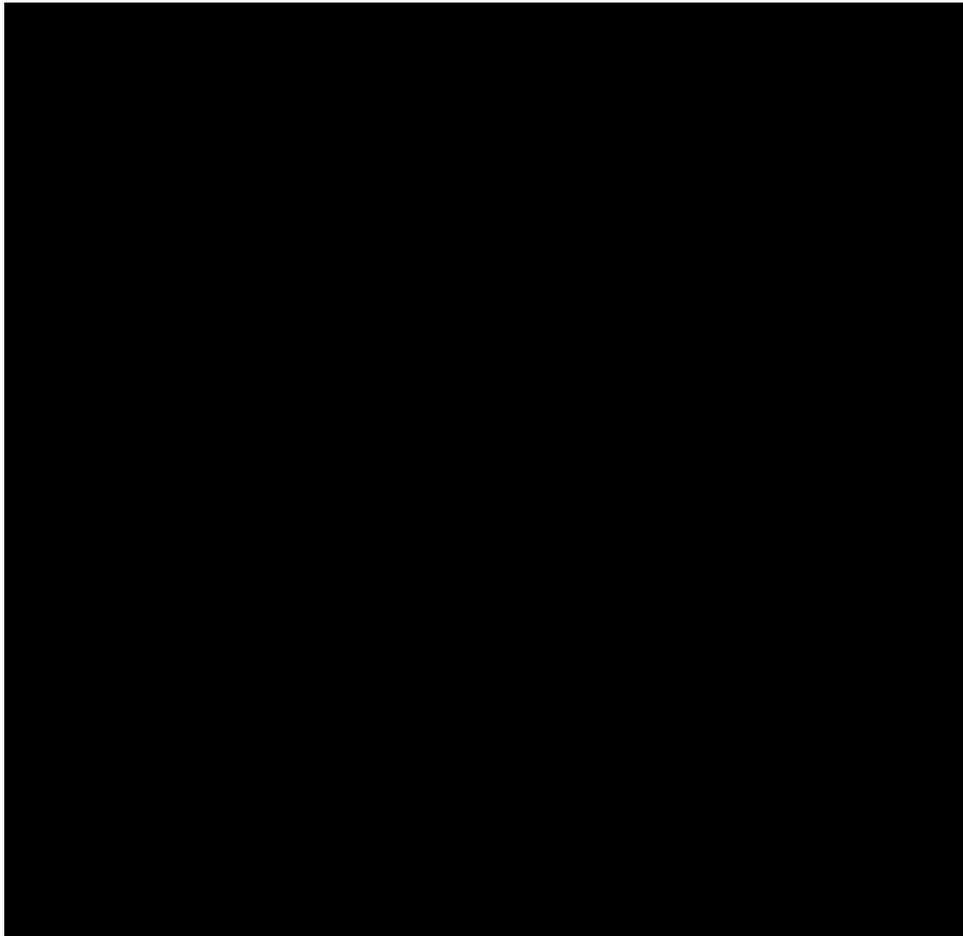
1.2.5



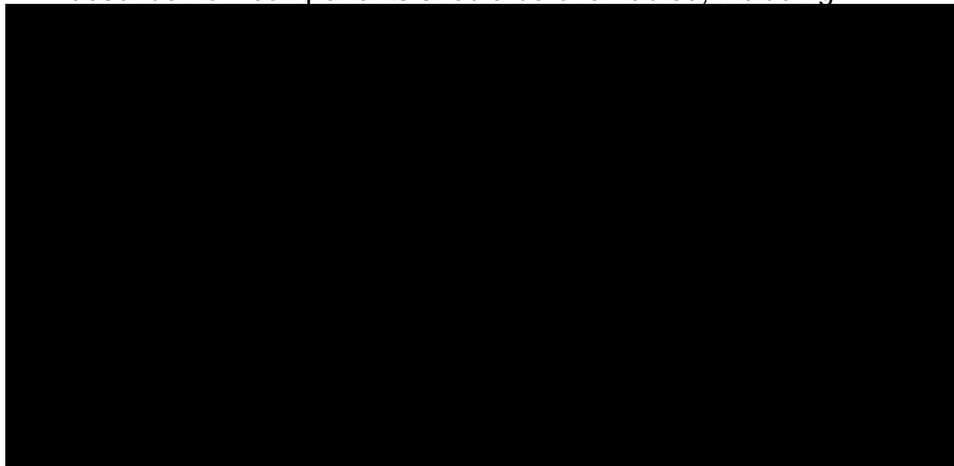


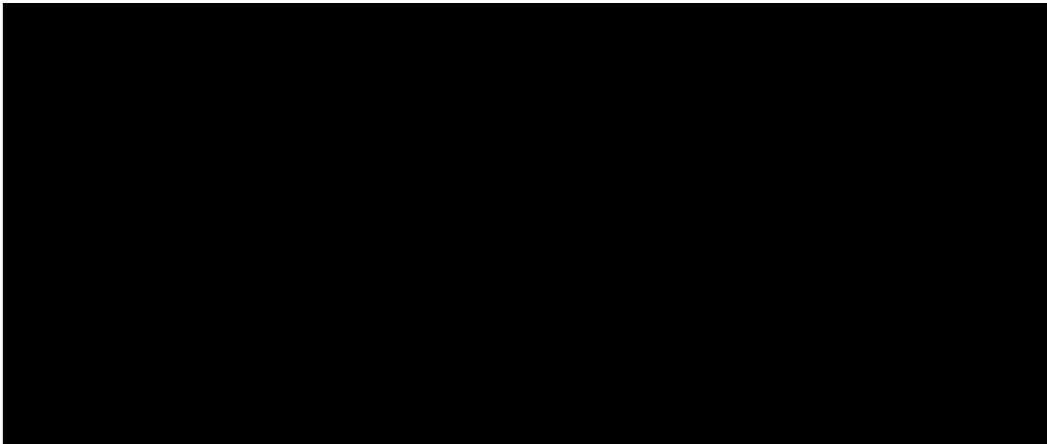
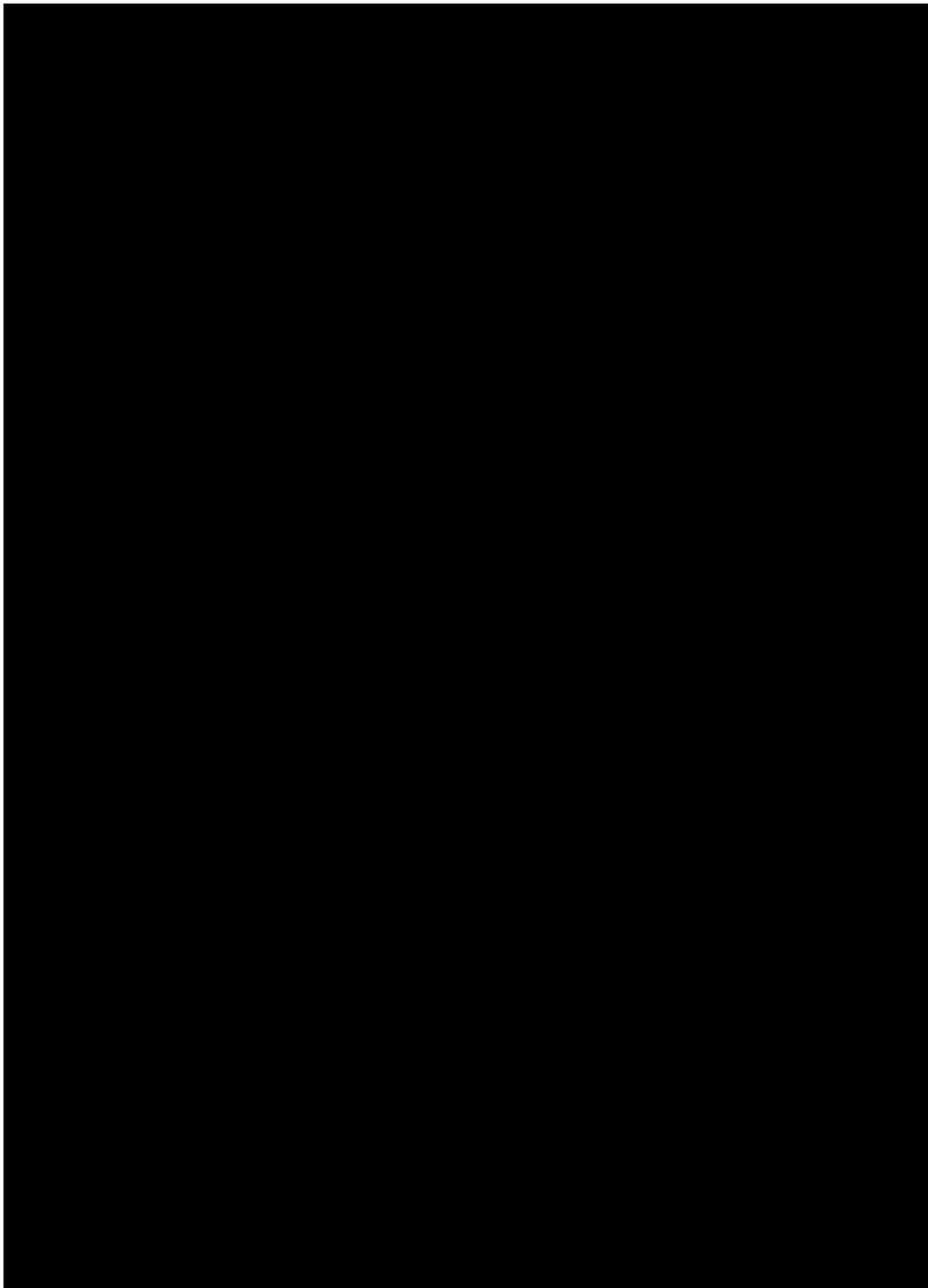
1.2.6 comprehensive "**Component Exchange Instructions**" which describe how to





1.2.7 (subject to the following provisions of this paragraph 1.2.7), comprehensive "**Component Overhaul Instructions**" which describe how components should be overhauled, including:



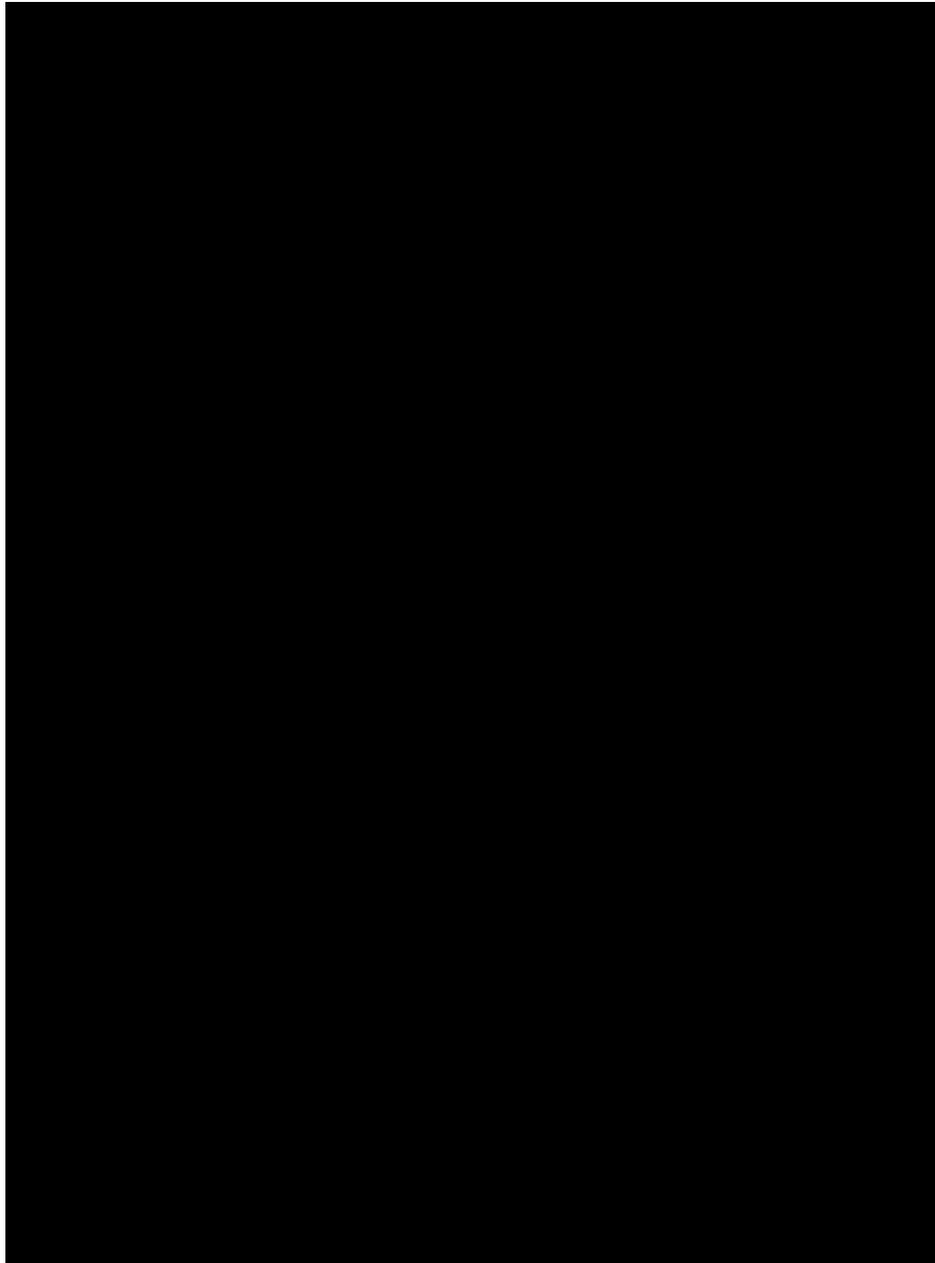


1.2.8 an **"Illustrated List of Parts"** which includes pictorial material identification diagrams detailing equipment assemblies and/or

modules, component parts of the equipment assemblies and/or modules with a level of detail covering the lowest replaceable unit from the Unit such as all parts and/or user replaceable parts, details of the fixing arrangements to connect and/or secure to the Unit. The Manufacturer shall ensure that the Illustrated List of Parts includes (1) details of the Manufacturer supplier part numbers shall be provided with descriptions and quantities for the Unit and/or assembly; and (2) details of the relevant Initial Special Tools required for access and/or removal and assembly and/or disassembly of components and/or equipment;

1.2.9 not used;

1.2.10 **"Fault Finding and Tests Arising"** manuals which describe the process for finding Defects and undertaking any related tests in sufficient detail to enable functionality and logic to be understood, and for Defects to be quickly identified.





1.2.11 **"As Built Drawings"**. A full set of drawings shall be supplied which shall be actual as built design and constructional drawings, data, diagrams and schematic drawings. The drawings to be supplied shall include detailed and general arrangements, Unit and module assembly, component and sub-assemblies, electrical wiring diagrams and electrical schematics, pneumatic diagrams and pneumatic schematics, hydraulic diagrams and hydraulic schematics sufficient for the requirements of paragraph 1.1.2. For the avoidance of doubt these shall represent the as built status of the Units. Drawings and data to be supplied shall be suitable to support the Illustrated List of Parts requirements of paragraph 1.2.8 and any maintenance and overhaul of the Units, finding of Defects, correction of Defects, refurbishment and repair (including repair of collision damage). Electrical system schematic and wiring diagrams, and pneumatic and hydraulic schematic and piping layout drawings, the Intellectual Property Rights of which are owned by the Manufacturer, shall be provided. As Built Drawings are to be supplied in hard copy and in .pdf format.

### 1.3 **Manuals for Operating and Cleaning**

Without prejudice to paragraph 1.1, the Manufacturer shall provide to the Purchaser in accordance with the requirements of this Schedule 7 the following:

- 1.3.1 a **"Train Operating Manual"** which provides the Operator with an introduction to the Unit, safety precautions and information, driver static duties, driving instructions, passenger and driver communication facilities, other relevant train crew duties, Defect rectification instructions and recovery instructions. The Manufacturer shall ensure that the Train Operating Manual includes the appropriate requirements set out in the Fault Notification Procedure contained in Schedule 14 of the Train Services Agreement;
- 1.3.2 a **"Rescue and Recovery Manual"** which provides (1) a full description of how to rescue a failed Unit with another Unit or another type of train using appropriate coupler adaptors, or vice versa; and (2) data and instructions to assist re-railing crews in how to re-rail a derailed vehicle or Unit safely and without causing damage to the vehicle and/or Unit. The Manufacturer shall ensure that these instructions include the lifting of the vehicle by jacking or craning, illustration of lifting points and a description of the applicable safety precautions; and
- 1.3.3 comprehensive **"Interior and Exterior Cleaning Instructions"** which provide a detailed description of how cleaning tasks should be carried out, including:

- (A) safety information and warnings (including vehicle safety conditions, isolation of on-train equipment, specific hazards and occupational safety and health);
- (B) process description;
- (C) staff training required and work content (man hours);
- (D) special facilities and equipment (including plant, access equipment and side or other pits) required;
- (E) materials or chemicals required, with full safety data sheets;
- (F) performance pass/fail criteria;
- (G) post-process checks;
- (H) data to be recorded and follow-up action;
- (I) sign-off procedures; and
- (J) an appendix containing procedures and criteria for the assessment of the Cleaning Standard as defined in Schedule 2 of the Train Services Agreement.

The Manufacturer shall ensure that the Interior and Exterior Cleaning Instructions shall include:

- (1) instructions in the use, set-up and calibration of any Initial Special Tools; and
- (2) instructions for graffiti removal and cleaning after fatalities.

The Manufacturer shall ensure that in relation to areas of a Unit that may be affected by damage and vandalism which cannot be rectified and/or removed in accordance with the Interior and Exterior Cleaning Instructions, Vehicle Maintenance Procedures shall be provided in respect of the unscheduled removal of fittings and equipment (including interior panels glazing, seating and signage) for the rectification of the damage and vandalism.

The Manufacturer shall ensure that the Interior and Exterior Cleaning Instructions are compatible with Schedule 2 (Maintenance and Cleaning Services) of the Train Services Agreement.

- 1.3.4 a "**Line of Route Manual**" which provides Maintenance staff with an introduction to the Unit, safety precautions and information, and sufficient information to attend to Defects and rectify problems on the "line of route". Instructions for assisting and recovering a defective Unit shall be included. The Manufacturer shall ensure that the Line of Route Manual includes appropriate requirements set out in the Fault Notification Procedure and In-service Support Procedure contained in Schedules 14 and 17 respectively of the Train Services Agreement.

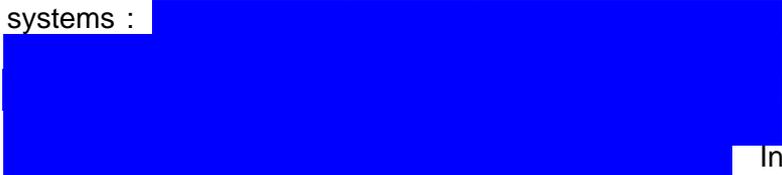
## 1.4 Provision of Manuals

### 1.4.1 Draft Manuals

The Manufacturer shall prepare and submit two copies of the first version of each of the Manuals to the Purchaser or its nominee for Assurance Acceptance in CD-ROM read only format but otherwise under the procedure set out in Schedule 3, no later than the dates defined in paragraph 1.4.4 (the "**Draft Manual Delivery Dates**")

### 1.4.2 Revision and Supply of Manuals

The Purchaser, acting reasonably, shall provide a response to the Manufacturer under the Assurance Acceptance procedure as described in Schedule 3, including providing comments as described in Schedule 3. The Manufacturer shall promptly make any amendments arising from the Purchaser's response and shall resubmit the Manuals to the Purchaser under the Assurance Acceptance procedure. Within 20 Working Days after the Purchaser has confirmed that each Manual is Assurance Accepted the Manufacturer shall provide:

- (A) 5 hard copies of that Manual in durable ring binders;
- (B) 5 electronic copies of that Manual on CD-ROM; and
- (C) any applicable train based or diagnostic software (other than embedded software) including at least the following systems :  
  
In addition to the above such software as is required for the Purchaser to review or analyse Unit fault data or other data originating from the Unit, to the extent such review or analysis is provided for by this Agreement, including software allowing Train Management System fault codes to be interpreted.
- (D) The Manuals to be provided to the Purchaser in (B) above shall be provided in an editable format. The Purchaser and Manufacturer shall agree the detail of the format.

### 1.4.3 Amendments to Manuals

Notwithstanding any Assurance Acceptance given in accordance with paragraph 1.4.2. the Manufacturer shall, at its own cost, make any amendments to the Manuals required due to inaccuracies in the Manuals or modification of the Units, until Provisional Acceptance of the final Unit.

If the Purchaser exercises any Technical Option, the Manufacturer shall at its own cost make any amendments to the Manuals required to reflect the exercise of such Technical Option.

The manufacturer will submit amendments to the Manuals for Assurance Acceptance.

#### 1.4.4 **Draft Manual Delivery Dates**

- 1.4.4.1 The Manufacturer shall submit the Technical Information Manual, Vehicle Maintenance Schedule, Vehicle Maintenance Instructions, Vehicle Maintenance Procedures, Illustrated List of Parts, Fault Finding and Tests Arising, Train Operating Manual, Rescue and Recovery Manual, and Interior and Exterior Cleaning Instructions (the “**Batch 1 Manuals**”) to the Purchaser in accordance with paragraph 1.4.1 no later than 1 February 2008.
- 1.4.4.2 The Manufacturer shall submit the Vehicle Overhaul Instructions, Component Exchange Instructions, Component Overhaul Instructions (the “**Batch 2 Manuals**”) to the Purchaser in accordance with paragraph 1.4.1 no later than 1 April 2008.
- 1.4.4.3 Final versions of Manuals shall be supplied to the Purchaser in the timescales described in 1.4.2 above.
- 1.4.4.4 The As-Built Drawings shall be supplied to the Purchaser prior to Acceptance of the first Unit.

#### 1.5 **Sufficiency of Manuals**

- 1.5.1 The Manuals shall be sufficient to ensure:
  - (a) that maintenance of the Units in accordance with the Manuals shall not cause the Units to cease to operate in accordance with the performance and design life criteria for the Units specified in the Requirements, or all Safety Obligations and other Standards relating to safety generally adhered to at the date of the Provisional Acceptance Certificate, subject in either case to the Units being operated in accordance with Applicable Laws and Standards and the Manuals
  - (b) that the Purchaser (and/or any third party nominee of the Purchaser) is able to operate, maintain, dismantle, overhaul, repair, re-assemble and adjust each part of the Units save only to the extent that a Component Overhaul Instruction is not provided by the Manufacturer to the Purchaser where the Manufacturer has complied in all respects with paragraph 1.2.7A of this Schedule.
- 1.5.2 Notwithstanding any Assurance Acceptance or other consent which the Purchaser gives pursuant to this Schedule 7, the responsibility for the sufficiency of the Manuals (as set out in this paragraph 1.5) shall remain solely at the risk and cost of the Manufacturer and the Purchaser shall have no liability for the sufficiency of, or errors or omissions in, the Manuals.

## 1.6 Errors or Inaccuracies

In the event that the Manufacturer becomes aware of any material error or inaccuracy in any Manual, it shall promptly notify the Purchaser thereof and the Manufacturer shall rectify such Manual.

## 1.7 Provision of Documentation for Cab Simulator Unit

1.7.1 If the Purchaser exercises the Cab Simulator Option, the Manufacturer shall provide the Purchaser with all documentation necessary to facilitate the installation, operation and maintenance of the Cab Simulator Unit.

1.7.2 The Manufacturer shall ensure that all documentation provided by the Manufacturer in accordance with paragraph 1.7.1 provides full and complete installation, operating and technical information to permit the Purchaser (and/or any nominee) to install, operate and maintain the Cab Simulator Unit without recourse to the Manufacturer (the "**Cab Simulator Manual**"). The Cab Simulator Manuals shall include any reference calculations and computer simulations.

1.7.3 Without prejudice to paragraphs 1.7.1 and 1.7.2, the Manufacturer shall provide to the Purchaser in accordance with the requirements of this Schedule 7 the items (A) to (G) below:

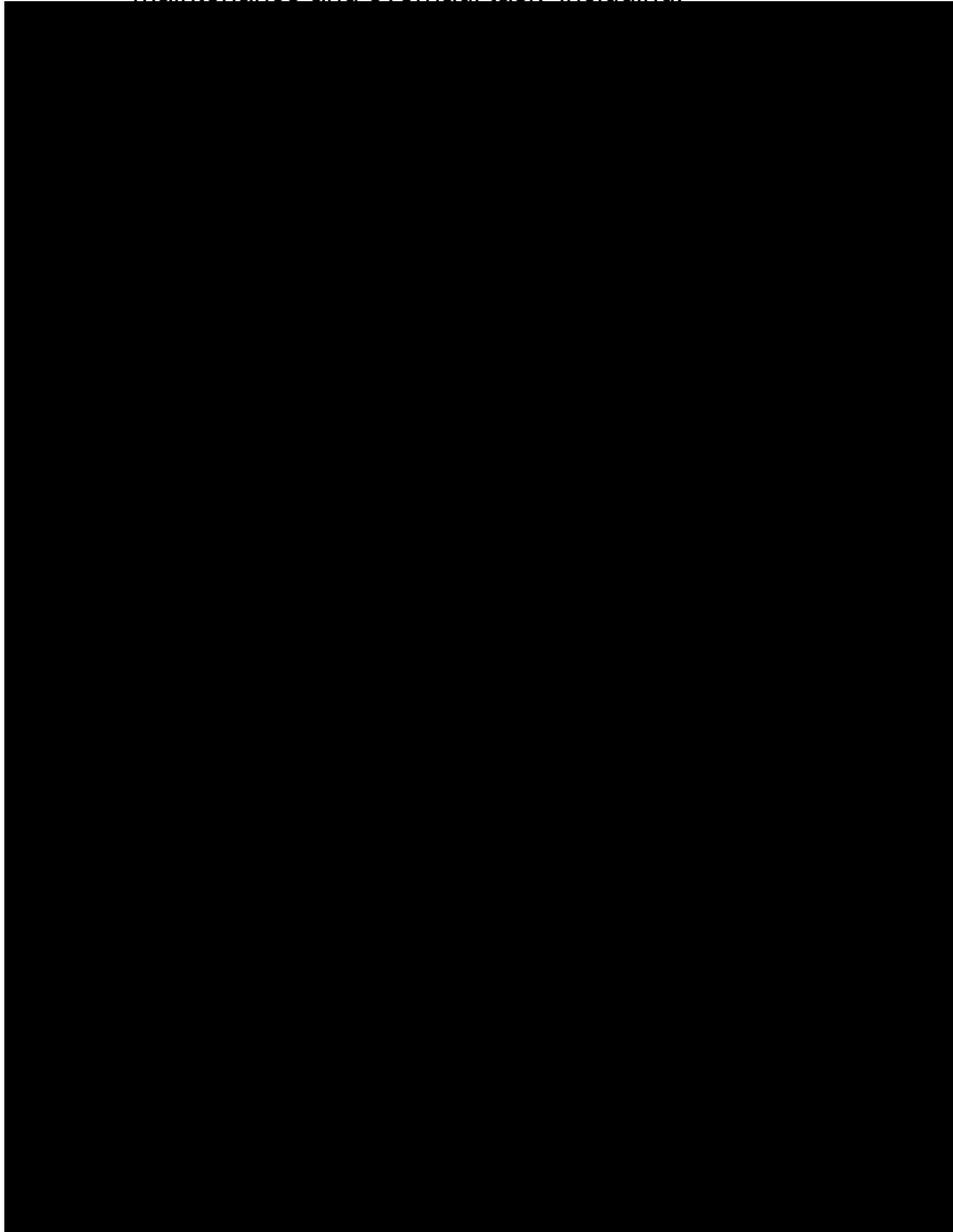
(A) comprehensive "**Cab Simulator Technical Information Manual**" which contains:

(1) a general and full technical description of the operation and function of the Cab Simulator Unit, including a list of all systems and/or components having software-based diagnostic or configuration functionality, with full details of:

- (i) the software applicable;
- (ii) the external hardware (if applicable) requirements (including minimum PC specification, operating system requirements and compatibility) for running the software;
- (iii) the connection format (dedicated connection lead, USB, wireless etc); and
- (iv) instructions on installing the software;

(B) comprehensive "**Driver Simulator Maintenance Schedule**" which lists, in star chart format, the periodicities required for maintenance tasks detailed within the Driver Simulator Maintenance and Overhaul Instructions as described in paragraph 1.7.3(C). Each task description, periodicity for the task description and applicable examination designation assigned shall be identified;

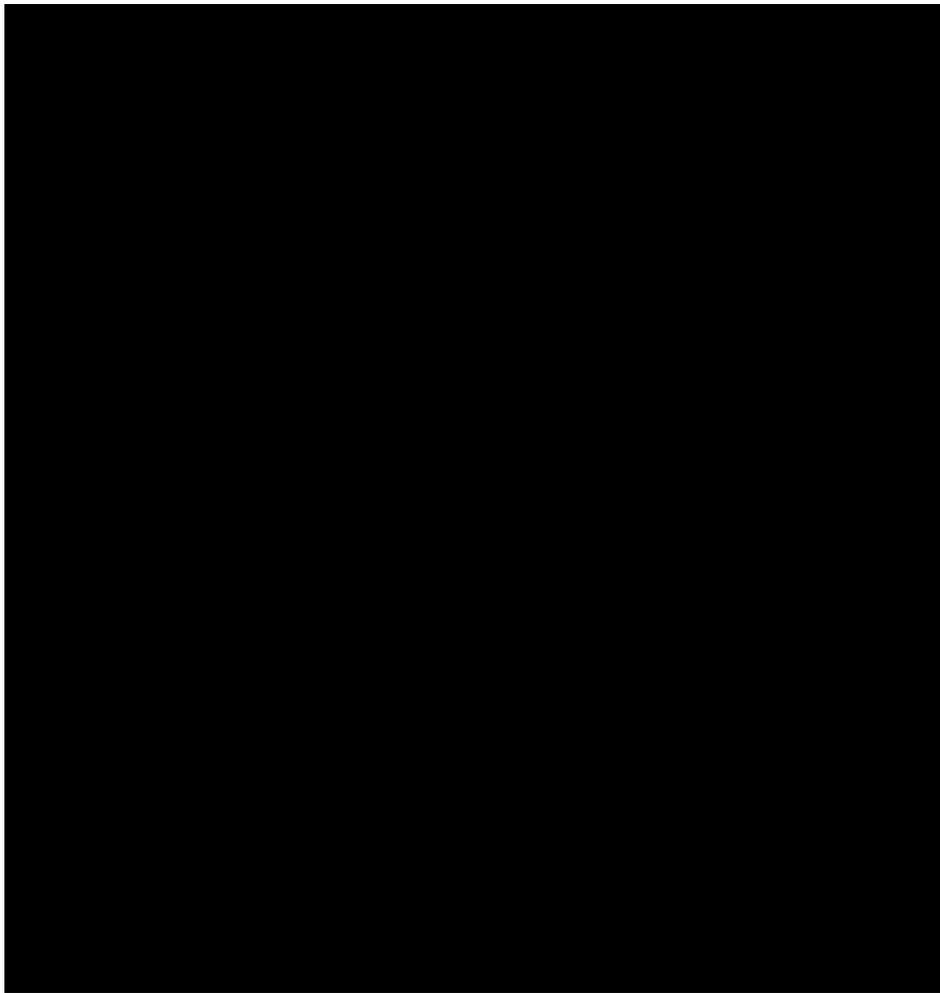
- (C) comprehensive "**Driver Simulator Maintenance and Overhaul Instructions**" which contains details of each maintenance and overhaul task including:



- (19) "**Driver Simulator Maintenance and Overhaul Procedures**" which provide details of any additional or rectification work requirements identified by maintenance/overhaul tasks within the Driver Simulator Maintenance and Overhaul Instructions, and which include details as listed in (1) to (18) above;
- (D) a "**Cab Simulator Illustrated List of Parts**", which includes pictorial material identification diagrams detailing equipment assemblies and/or modules, component parts of the equipment assemblies and/or modules with a level of detail covering the lowest replaceable unit from the Cab Simulator Unit such as all parts and/or user replaceable parts, lubrication requirements, details of the fixing arrangements to

connect and/or secure to the Cab Simulator Unit. The Manufacturer shall ensure that the Cab Simulator Illustrated List of Parts includes (1) details of the Manufacturer supplier part numbers shall be provided with descriptions and quantities for the Unit and/or assembly; and (2) details of the relevant Initial Special Tools required for access and/or removal and assembly and/or disassembly of components and/or equipment;

- (E) **"Cab Simulator Fault Finding and Tests Arising"** manuals for the Cab Simulator Unit which describe the process for finding Defects and undertaking any related tests in sufficient detail to enable functionality and logic to be understood, and for Defects to be quickly identified. The Manufacturer shall ensure that the Cab Simulator Fault Finding and Tests Arising



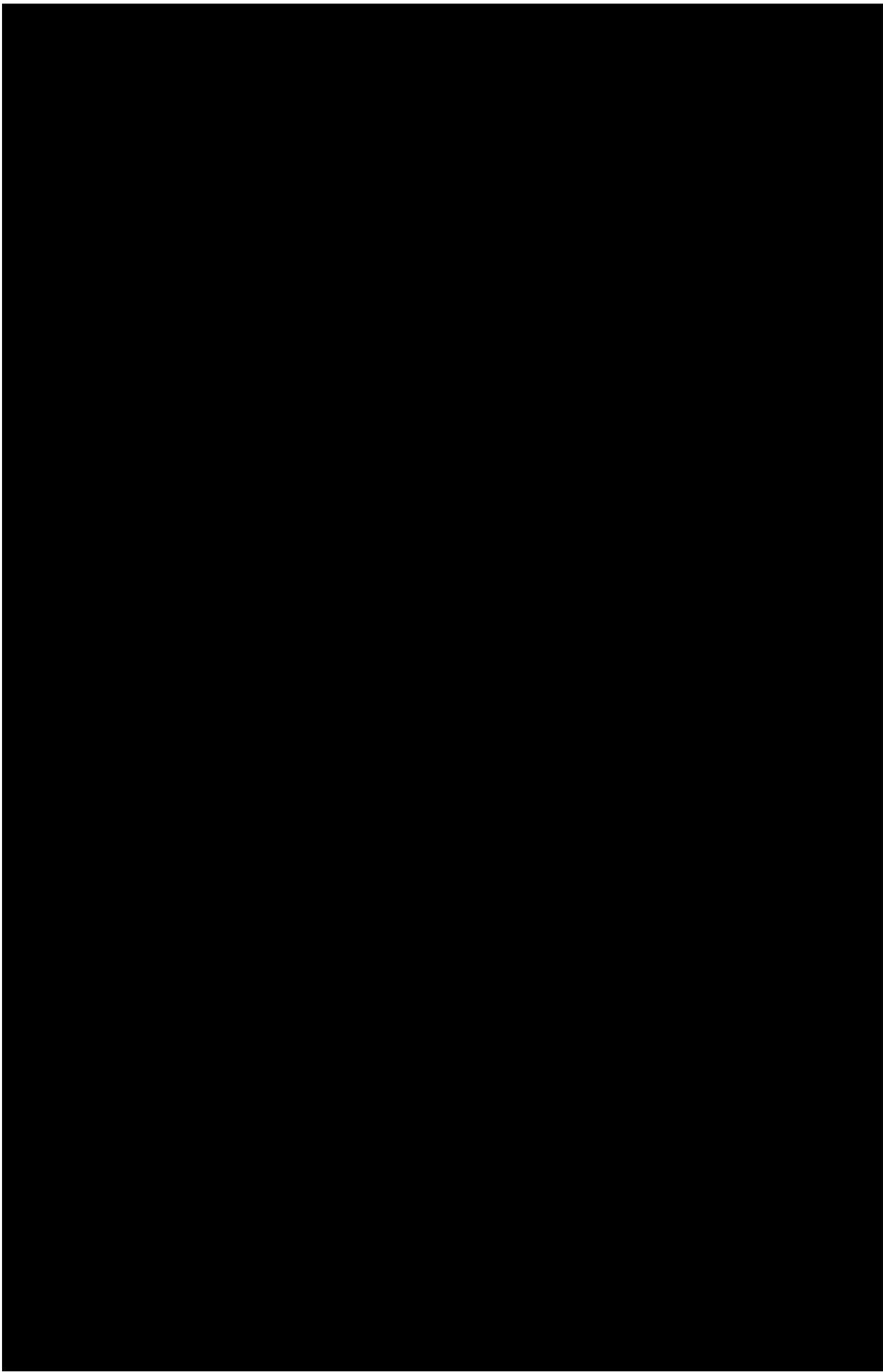
- (F) **"Cab Simulator As Built Drawings"**. A full set of Cab Simulator As Built Drawings shall be supplied for the Cab Simulator Unit which shall be actual design and constructional drawings, data, diagrams and schematic drawings. Constructional drawings to be supplied shall include (without limitation) general arrangements, and arrangements and details in a hierarchical format derived from the general arrangements. Drawings and data to be supplied shall be suitable to support any maintenance and overhaul of the

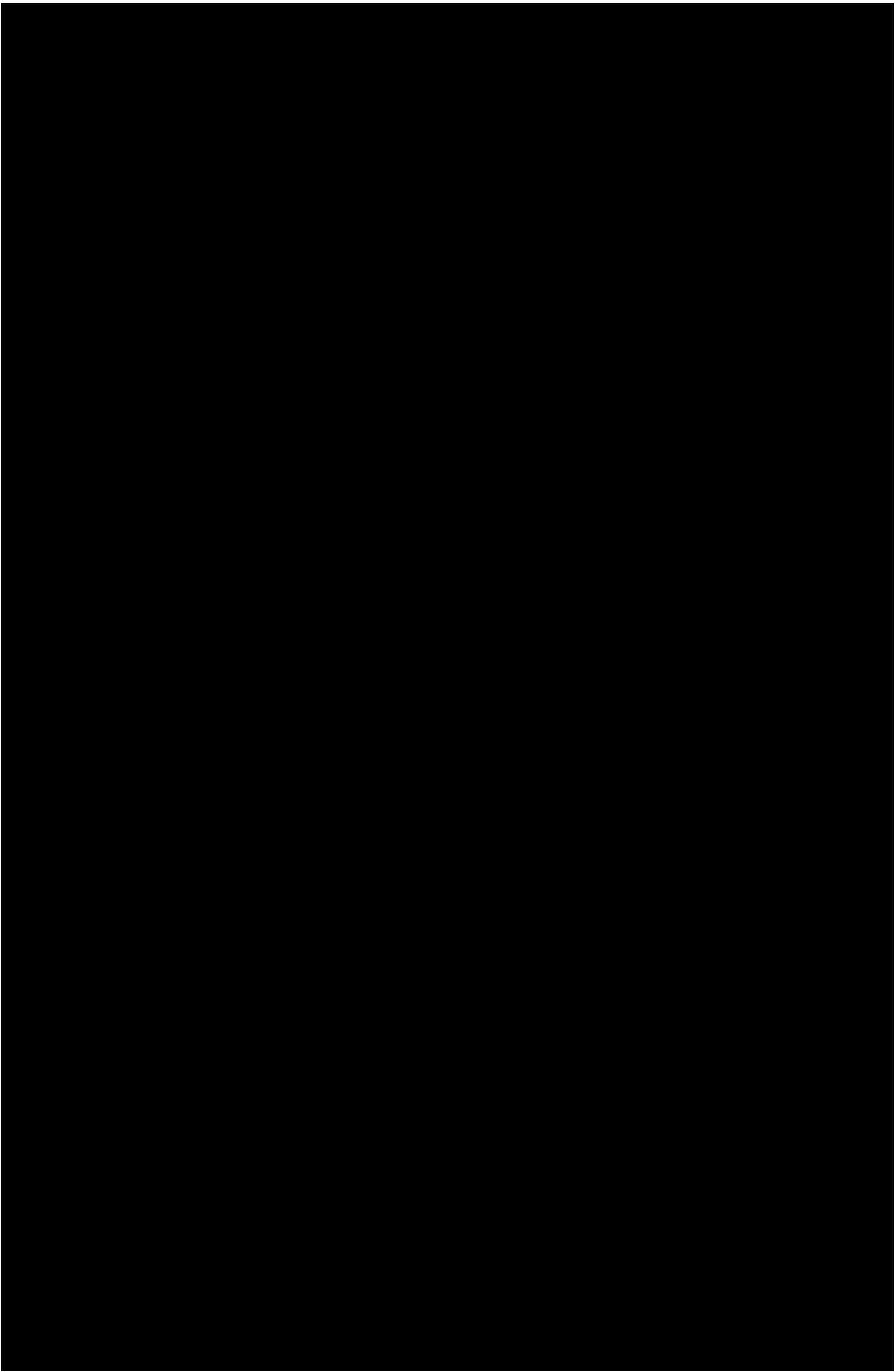
Units, finding of Defects and correction of Defects, refurbishment and repair. Books shall be provided of electrical system schematic and wiring diagrams, and pneumatic/hydraulic schematic and piping layout drawings. Drawings are to be supplied as hard copies and in .pdf format,; and

- (G) a "**Driver Simulator Operating Manual**" which provides the Operators with an introduction to the Cab Simulator Unit, safety precautions and information, and full operating details and instructions. The instructions are to cover operation of the Cab Simulator Unit by both a "learner driver" and "driver trainer", to include input by the instructor of variable conditions and simulated faults, and generation and interpretation of reports.

1.7.4 The arrangements for the provision of the Cab Simulator Manuals shall be as described for the Manuals in paragraphs 1.4 to 1.6 above.

## Appendix A





**SCHEDULE 8: SPARES AND SPECIAL TOOLS**

**SCHEDULE 8**  
*Initial Spares and Initial Special Tools*

**Part A: Initial Spares**

**Table 1: D&V Spares**

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Emergency Hammer (Cab back wall)	D & V	EMERGENCY				
	D & V	EMERGENCY				
Vestibule Steplight Assembly	D & V	LIGHTING				
Fluorescent Light Tube	D & V	LIGHTING				
Fluorescent Light Tube 5' (ceilings)	D & V	LIGHTING				
Cab Notice Board Lamp	D & V	LIGHTING				
Fluorescent Tube 225mm	D & V	LIGHTING				
Fluorescent Lamp Drive Unit 110V DC 18W	D & V	LIGHTING				
Std Class Seat Bumper	D & V	SEATS				
VISOR-SUN CAB DRIVERS SIDE BLACK SECURING CLIP	D & V	CAB				
Sponge Blocks (x2 per cover rail) (Appears to indicate 1 cover rail per Hopper Window)	D & V	GLASS				
Saloon Passenger Emergency Passcomm cover	D & V	EMERGENCY				
CANISTER-DETONATOR ASSY CLEAR CANNISTER & CAP	D & V	CAB				
Detonator Canister – Clear Canister & Cap	D & V	EMERGENCY				
Flag Stick	D & V	EMERGENCY				
Detonator Canister – Red Canister & Cap	D & V	EMERGENCY				
Red Flag	D & V	EMERGENCY				
Detonator (Yellow)	D & V	EMERGENCY				
Passenger seat Cushion fixing kit	D & V	SEATS				

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
9 LED Indicator Panel (Driver Display Panel)	D & V	EMERGENCY		8		
Coat Hook	D & V	CAB		20		
Security Seal (Tag)	D & V	EMERGENCY		100		
Burst Through Door, Lock cover and fixings	D & V	CAB		20		
Emergency Hammer (cab back wall)	D & V	EMERGENCY		20		
Disconnecting Bar (DMOS A Only)	D & V	EMERGENCY		10		
First Aid Box & Equipment	D & V	EMERGENCY		10		
VISOR-SUN CAB DRIVERS SIDE BLACK	D & V	CAB		8		
Std Class Armrest Cover	D & V	SEATS		30		
Emergency Egress Handle Perspex Cover	D & V	EMERGENCY		100		
Driver Seat Armrest Left	D & V	CAB		10		
Pass Comm Perspex Cover	D & V	EMERGENCY		100		
Emergency Cupboard – Shoe gear Cable Ties	D & V	EMERGENCY		100		
Outer Seal Strip (A/R) (Draft text states 'directly from reel')	D & V	GLASS		80		
Hose – W/Wiper	D & V	CAB		20		
Emergency Cupboard – Sledge Hammer	D & V	EMERGENCY		20		
Power Socket Cleaners (Single)	D & V	MISC		40		
Passenger seat Backrest fixing kit	D & V	SEATS		80		
Saloon Doorway Reflector	D & V	DOORS		20		
Information Clip	D & V	CAB		10		
Drivers Cup Holder	D & V	CAB		10		
Inertia Reel Belt Assembly Mounting Bracket	D & V	MISC		20		
Weatherseal Strip (Draft text states 'cut a sufficient length of weatherseal strip', which indicates that this is not supplied in pre-cut lengths – therefore it is possible that this too, is supplied on a reel).	D & V	GLASS		80		
Wheelchair Ramp	D & V	EMERGENCY		1		
Driver Seat Armrest right	D & V	CAB		10		
CAB SUNBLIND (NDS SMALL) – CLASS 376 (Parameters & Interface)	D & V	CAB		8		
CAB SUNBLIND (CENTRE) –CLASS 376 (Parameters & Interface)	D & V	CAB		8		

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
SUNBLIND DS+NDS BLIND(LARGE)-CLASS 376 (Parameters & Interface)	D & V	CAB		8		
Brake Hose Blanking Plug (DMOS A Only)	D & V	EMERGENCY		10		
Heater/Vesti Window Perch Seat Cushion (& cover all one item)	D & V	EMERGENCY		8		
Hammer Emergency (with holster) red	D & V	EMERGENCY		100		
Track Circuit Operating Clip	D & V	EMERGENCY		20		
Std Class Seat Base Cover	D & V	SEATS		40		
Std Class Headrest Cover	D & V	SEATS		40		
Grabrail & waste bin Perch Seat Cushion (& cover all one item)	D & V	EMERGENCY		10		
Cab & TMO 2ltr Fire Extinguisher	D & V	EMERGENCY		40		
Std Class Backrest Cover	D & V	SEATS		40		
CCTV Camera Lens	D & V	MISC		40		
Bicycle Restraint Complete with Upper Fixing Clip (Male Connector)	D & V	MISC		20		
Ladder	D & V	EMERGENCY		8		
Std Class Armrest Complete	D & V	SEATS		60		
Saloon Door Leaf RH	D & V	DOORS		8		
Travelling Nozzle Assy. (Driver's Side) – W/Wiper	D & V	CAB		20		
Travelling Nozzle Assy. (Non-Driver's Side and Centre) – W/Wiper	D & V	CAB		20		
Passenger seat Side feature (Grab hold)	D & V	SEATS		80		
Passenger seat Anti pick-pocket device	D & V	SEATS		80		
Cab Fire Extinguishers, 6 litre	D & V	EMERGENCY		20		
Cab Valance Centre (DMOS only)	D & V	CAB		8		
Emergency Brake Hose (DMOSA Only)	D & V	EMERGENCY		10		
Co-Driver Seat Backrest	D & V	CAB		10		
Drivers Desk Dimmer Switch	D & V	CAB		40		
Cab Light Selector	D & V	CAB		40		
PA Handset	D & V	CAB		20		
Passenger seat top grab handle	D & V	SEATS		80		

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Driver Seat Cushion	D & V	CAB		10		
Std Class Headrest Complete	D & V	SEATS		60		
Short Circuiting Bar	D & V	EMERGENCY		10		
Wiper Arm complete with protective cover	D & V	CAB		20		
Std Class Seat Base Foam	D & V	SEATS		60		
Fire Extinguisher With Fixing Bracket 6 Litre AFFF	D & V	EMERGENCY		40		
Std Class Backrest Foam	D & V	SEATS		60		
Co-Driver Seat , Seat base	D & V	CAB		10		
Driver Seat Backrest	D & V	CAB		10		
Std Class Backrest Priority Complete	D & V	SEATS		40		
Std Class Backrest Fold Down Complete	D & V	SEATS		40		
Shoe Collector	D & V	SHOEGEAR		80		
Saloon Doorway Photo cell	D & V	DOORS		20		
Co-Driver Seat Complete	D & V	CAB		10		
Cab Emergency Egress Handle	D & V	DOORS		20		
Std Class Seat Base Complete	D & V	SEATS		90		
Medium Hopper Window – Vent Glass (A/R) (DMOS 2 off / MOS nil / PTOS nil)	D & V	GLASS		80		
Saloon Door Leaf LH	D & V	DOORS		8		
Large Hopper Window – Vent Glass (A/R) (DMOS 8 off / MOS 10 off / PTOS 10 off)	D & V	GLASS		80		
Cab Backwall Door	D & V	DOORS		12		
Cab Valance B (non-driver's side) (DMOS only)	D & V	CAB		8		
PIS Interior Display Screen	D & V	MISC		8		
Cab Valance A (driver's side) (DMOS only)	D & V	CAB		8		
Driver Seat complete	D & V	CAB		10		
Fixed Window Glass (A/R) (DMOS 10 off / MOS 12 off / PTOS 12 off)	D & V	GLASS		80		
Windscreen – Drivers Side (LH)	D & V	GLASS		8		
Windscreen – Non-Drivers Side (RH)	D & V	GLASS		8		

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Shoe Gear Support Bracket (Frangible Link)	D & V	SHOEGEAR		130		
Std Class Backrest Complete	D & V	SEATS		200		
Medium Hopper Window – Lower Glass (A/R) (DMOS 2 off / MOS nil / PTOS nil)	D & V	GLASS		80		
Large Hopper Window – Lower Glass (A/R) (DMOS 8 off / MOS 10 off / PTOS 10 off)	D & V	GLASS		80		
Front facing Destination Indicator	D & V	MISC		8		
Saloon Emergency Egress Handle	D & V	DOORS		60		
CCTV hard Disk float (evidence reasons)	D & V	EMERGENCY		16		
Shoe, Frangible Link + Shoe Arm Assembly	D & V	SHOEGEAR		360		
Vestibule Window Complete – Left	D & V	GLASS		80		
Vestibule Window Complete – Right	D & V	GLASS		80		
Hopper vent – Medium (A/R) (DMOS 2 off / MOS nil / PTOS nil)	D & V	GLASS		80		
Hopper Vent – Large (A/R) (DMOS 8 off / MOS 10 off / PTOS 10 off)	D & V	GLASS		80		
Labels General	D & V	LABELS				

**Table 2: Incident Spares**

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Brake Resistor	INCIDENT			6		
Cab Backwall Door	INCIDENT			4		
Cab Bodyshell Moulding	INCIDENT			0		
DC Contactor Box	INCIDENT			4		
DC Line Inductor	INCIDENT			4		
Door Motor Assembly	INCIDENT			8		
Gangway Door Complete	INCIDENT			4		
Main Compressor	INCIDENT			6		
MCM Inductor	INCIDENT			4		
Traction Motor	INCIDENT			16		
Union Nut & Compression Ferrule - Ø10mm (HEAVY TYPE) - Brake hoses	INCIDENT			1		
Union Nut & Compression Ferrule - Ø15mm (LIGHT TYPE) - Brake hoses	INCIDENT			1		
Union Nut & Compression Ferrule - Ø10mm (LIGHT TYPE) - Brake hoses	INCIDENT			1		
Union Nut & Compression Ferrule - Ø15mm (HEAVY TYPE) - Brake hoses	INCIDENT			1		
Hose Separator - Bogie pipes & hoses	INCIDENT			1		
Cleat - Autocoupler Flying Hose Separator	INCIDENT			1		
Hose: 3/8" BSP Parking Brake - Rel.; End: 90° Bogie 90° Actuator - Service / Parking Brake Actuators (Trailer Bogies Only). 2 Inner Ends:	INCIDENT			1		
Hose: 3/8" BSP Parking Brake - Rel.; End: 90° Bogie Straight Actuator - Service / Parking Brake Actuators (Trailer Bogies Only). 2 outer Ends:	INCIDENT			1		
Downstop Mounting Backing Plate	INCIDENT			2		
Hose: 3/8" BSP Parking Brake - Rel.; End: Straight Bogie Straight U/Frame	INCIDENT			1		
Debris Guard Clamp (fits both horns)	INCIDENT			1		
Hose: 3/8" BSP Parking Brake - Rel.; End: 90° Bogie 90° Actuator- Service / Parking Brake Actuators (Trailer Bogies Only). 2 Inner Ends:	INCIDENT			1		

Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Hose: 1/4" BSP Shoe gear- Lower; End: Straight Bogie 90 U/Frame	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: 90 Bogie 90 Actuator - Service / Parking Brake Actuators (Trailer Bogies Only). 2 Inner Ends:	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: 90 Bogie Straight Actuator - Service / Parking Brake Actuators (Trailer Bogies Only). 2 outer Ends:	INCIDENT			1		
Hose: 1/4" BSP Shoe gear- Lower; End: 90 Bogie 90 Actuator - Shoe gear actuators (trailer bogie)	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: 45 Bogie 90 Actuator - Service Brake Actuators (Power Bogies Only). 1 Inner & Outer Ends:	INCIDENT			1		
Hose: 3/8" BSP Parking Brake - Rel.; End: 90 Bogie Straight U/Frame	INCIDENT			1		
Cover Test Valve and Chain (schrader)	INCIDENT			2		
Drain Plug (Brake Supply Reservoir and Main Air Reservoir)	INCIDENT			2		
Hose: 1/2" BSP Service Brake - Apply; End: Straight Bogie 90 U/Frame	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: 90 Bogie 90 Actuator - Service / Parking Brake Actuators (Trailer Bogies Only). 2 Inner Ends:	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: 45 Bogie 90 U/Frame	INCIDENT			1		
cable earth assy	INCIDENT		1	1		
Hose: 1/2" BSP Service Brake - Apply; End: 45 Bogie 90 U/Frame	INCIDENT			1		
Hose: 1/2" BSP Service Brake - Apply; End: Straight Bogie Straight U/Frame	INCIDENT			1		
Drain Cock Surge Reservoir / Drain Cock Auxiliary Main Reservoir	INCIDENT			2		
cable earth assy	INCIDENT		1	1		
Limit Switch, Cab Door	INCIDENT			1		
Emergency Egress bowden cable, Cab Door	INCIDENT			1		
Fixing Kit (frangible screws (if required) - Drivers step light	INCIDENT			2		
Autocoupler Uncoupler Cylinder (Class 375) - Flexible air hose	INCIDENT			1		
Autocoupler MR Pipe (Class 375) - Flexible air hose	INCIDENT			1		
Downstop Mounting Plate	INCIDENT			2		

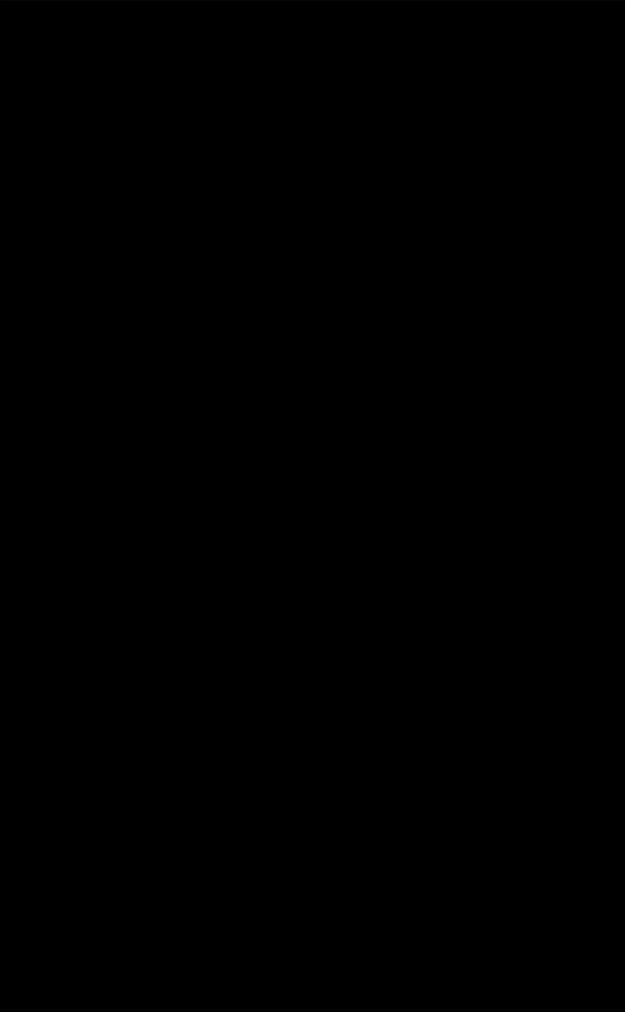
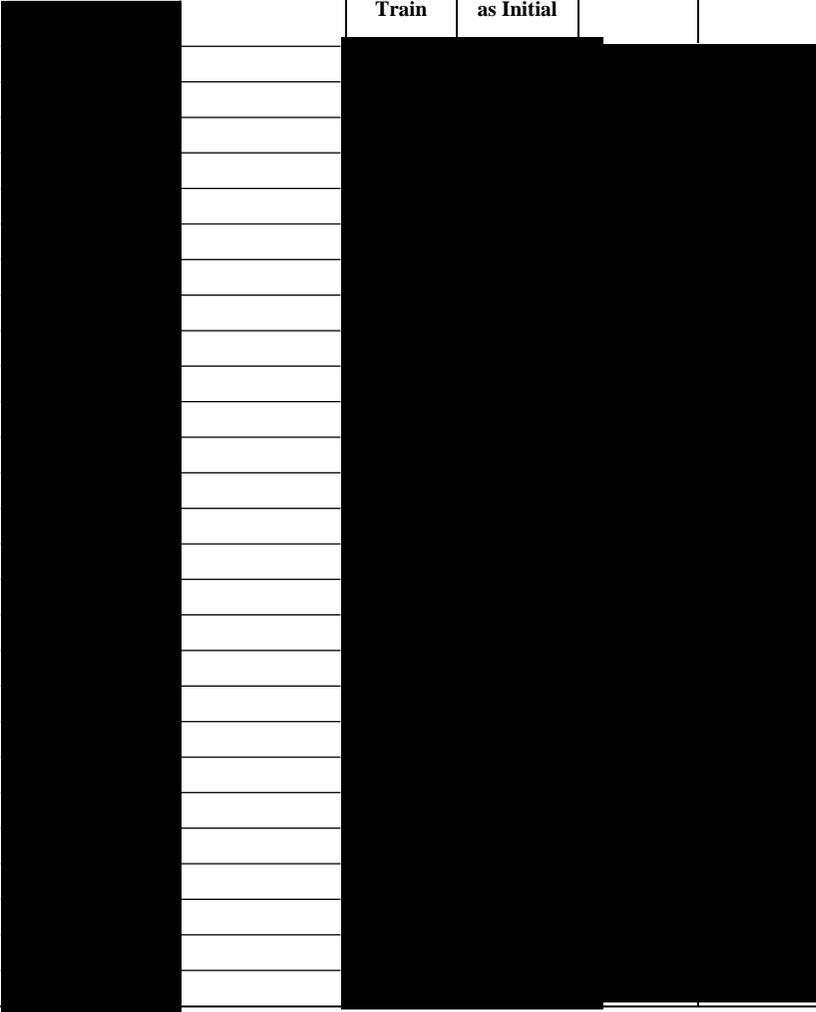
Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Quick Release Emergency Connector (schrader)	INCIDENT			1		
Traction motor Speed Probe Clamping Plate	INCIDENT			1		
Earth Cable (Fig. 1, Item 1) Ident HV1031, 2030 mm long - Axle end earth cable	INCIDENT			1		
Earth Cable (Fig. 1, Item 2) Ident HV1032, 2030 mm long - Axle end earth cable	INCIDENT			1		
Earth Cable (Fig. 1, Item 3) Ident HV1033, 2030 mm long - Axle end earth cable	INCIDENT			1		
Earth Cable (Fig. 1, Item 4) Ident HV1034, 2030 mm long - Axle end earth cable	INCIDENT			1		
Conical Debris Filter (large)	INCIDENT			1		
Conical Debris Filter (small)	INCIDENT			1		
Shoegear Torsion Spring 'A', (RH)	INCIDENT			1		
Shoegear Torsion Spring 'B', (LH)	INCIDENT			1		
Emergency Access bowden cable, Cab Door	INCIDENT			1		
Levelling Valve Rod	INCIDENT			1		
WSP End Cover	INCIDENT			1		
bus bar	INCIDENT			2		
bus bar	INCIDENT			2		
Shoegear Inter vehicle coupling hose assy	INCIDENT			1		
750v Shoe Cable assembly, crimped	INCIDENT			2		
750v Shoe Cable assembly, crimped	INCIDENT			2		
Compressor Delivery - Flexible air hose	INCIDENT			1		
BC Release Valve	INCIDENT			1		
Shoe gear Cable Assembly RH (Trailer Bogie)	INCIDENT			1		
Shoe gear Cable Assembly LH (Trailer Bogie)	INCIDENT			1		
WSP Intermediate Cover	INCIDENT			1		
Shoe gear Cable Assembly RH (Power Bogie)	INCIDENT			1		
Shoe gear Cable Assembly LH (Power Bogie)	INCIDENT			1		
Depot unit Whistle	INCIDENT			1		
WSP Sensor External Cable Assembly	INCIDENT			1		

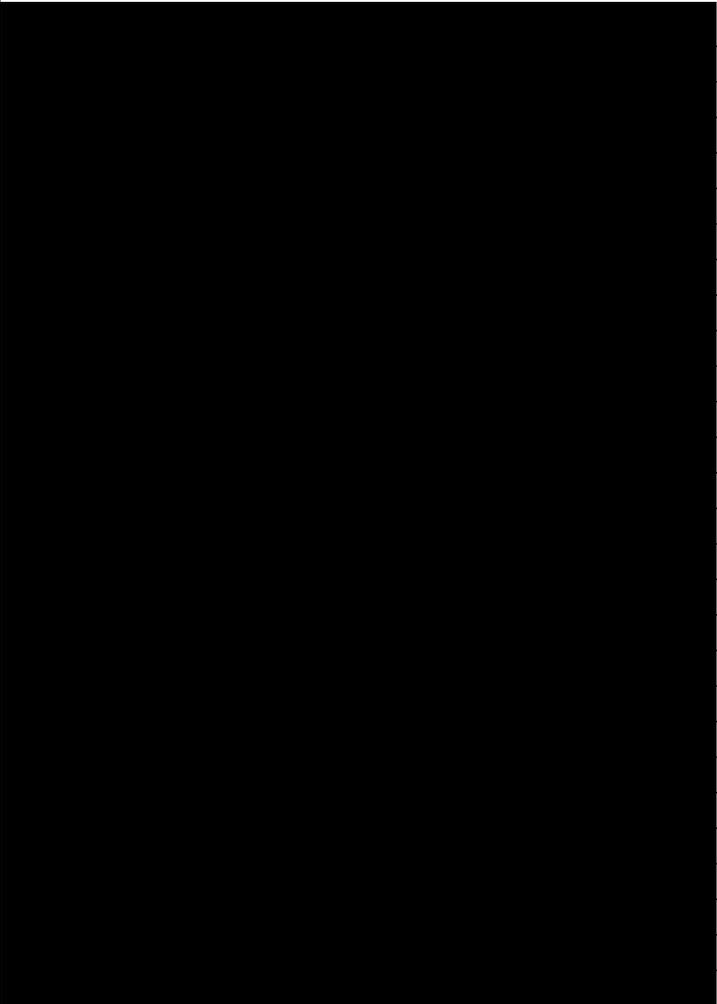
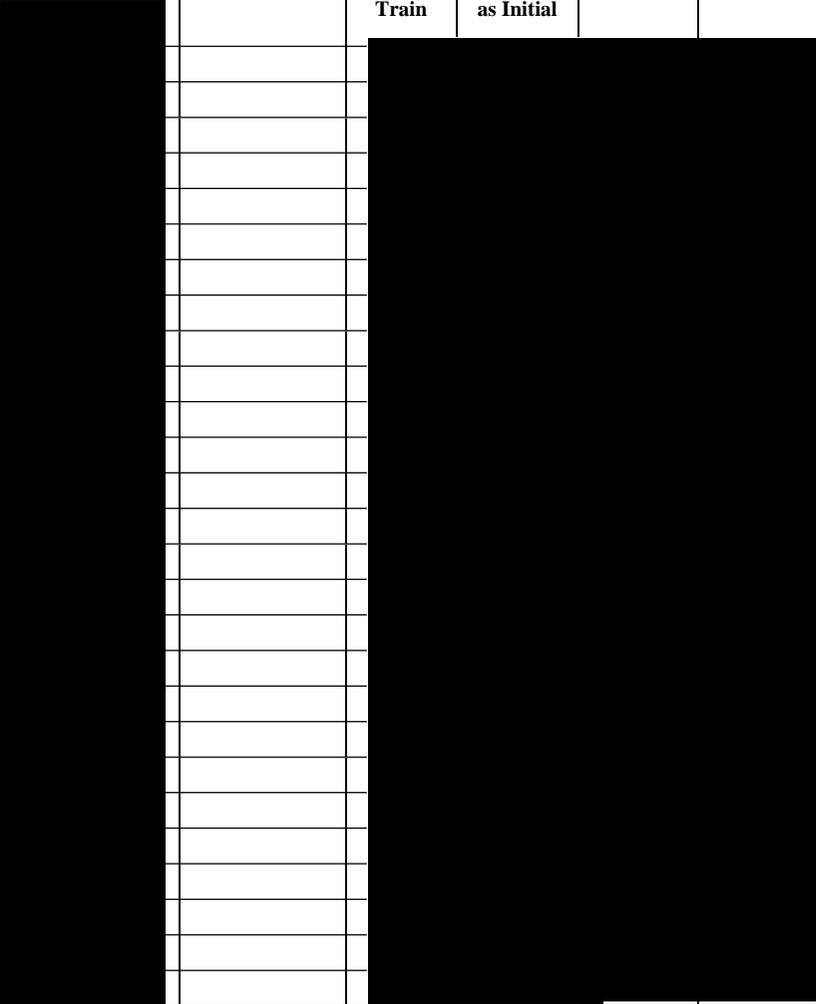
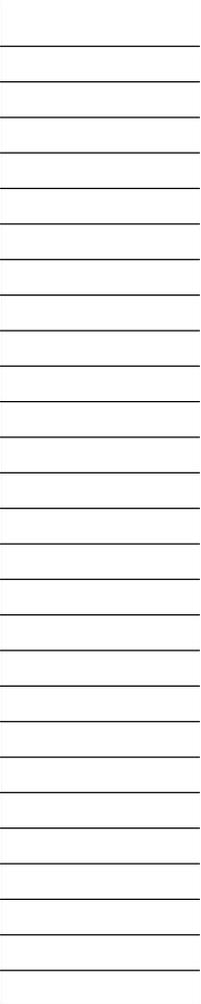
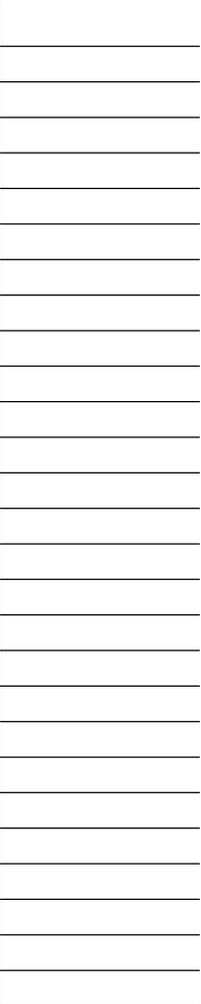
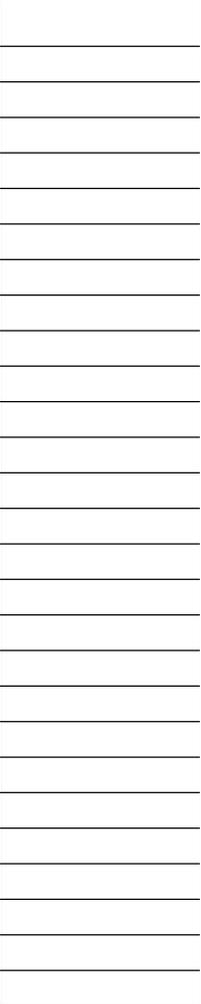
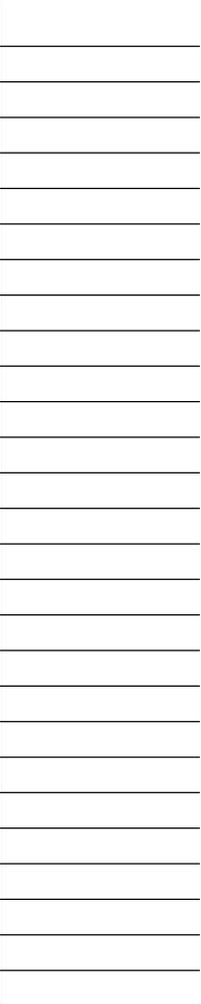
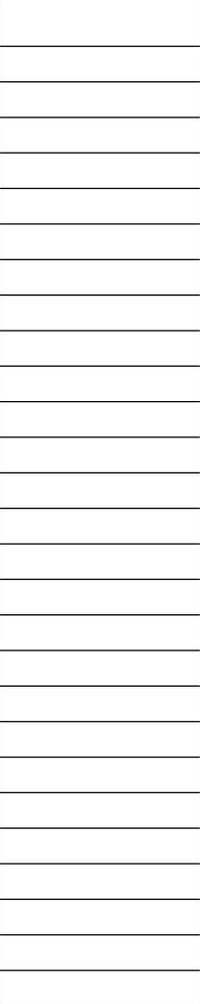
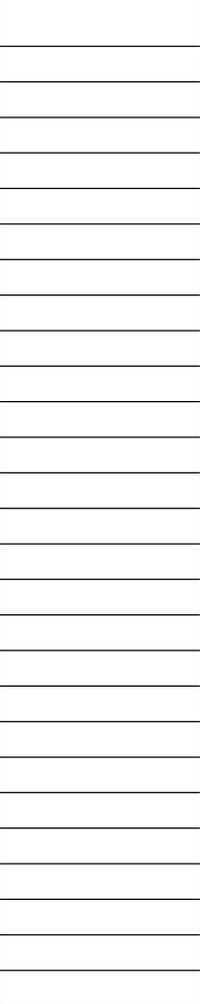
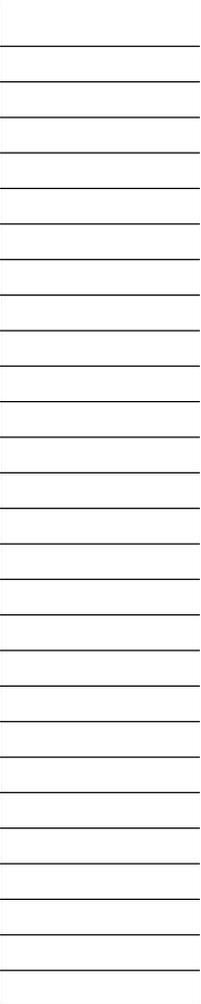
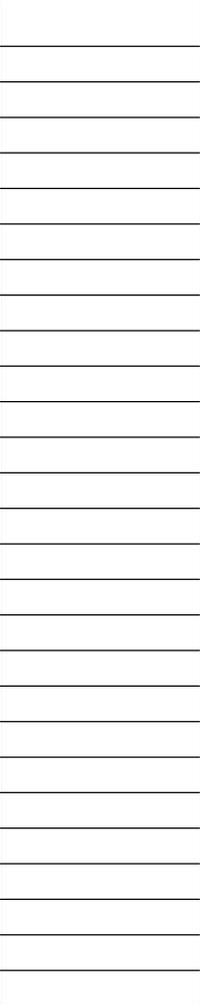
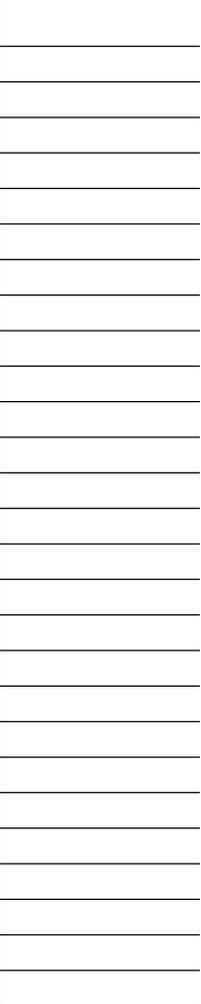
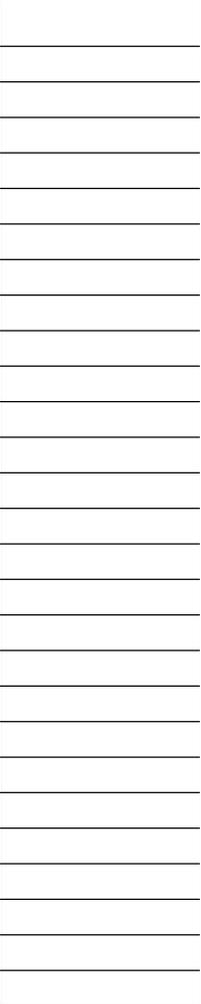
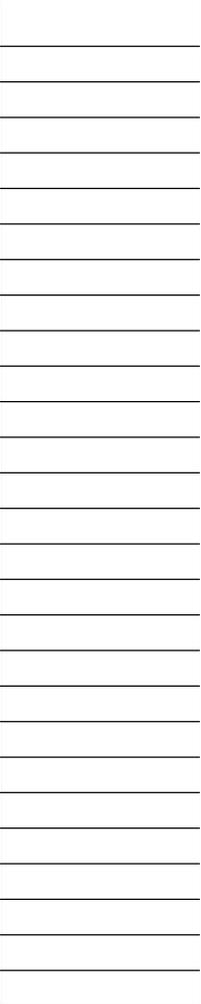
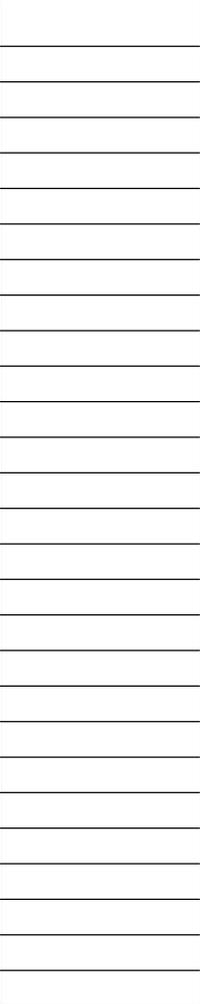
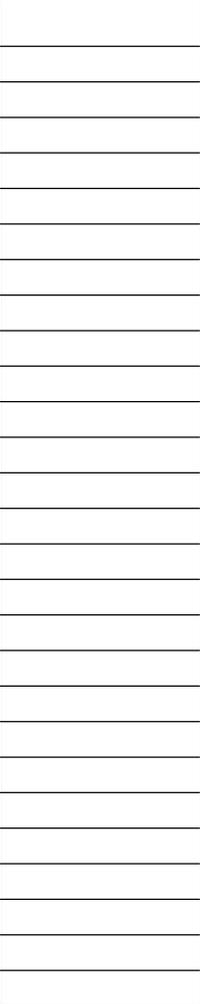
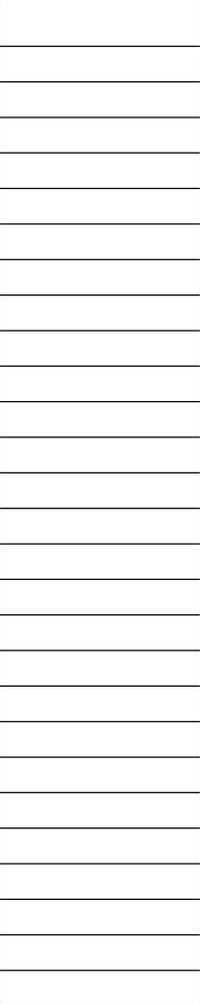
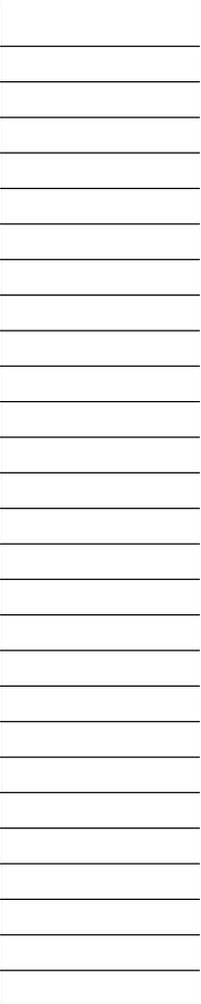
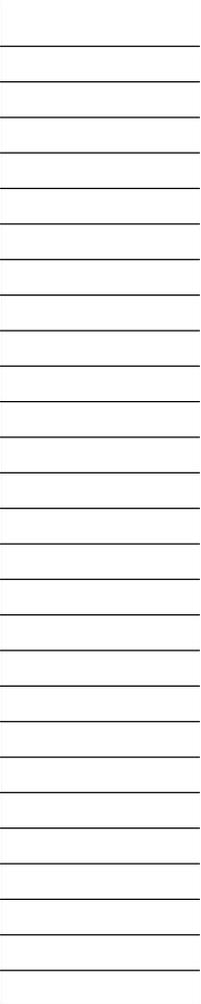
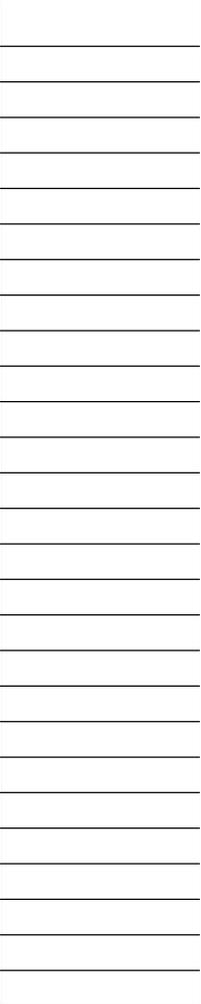
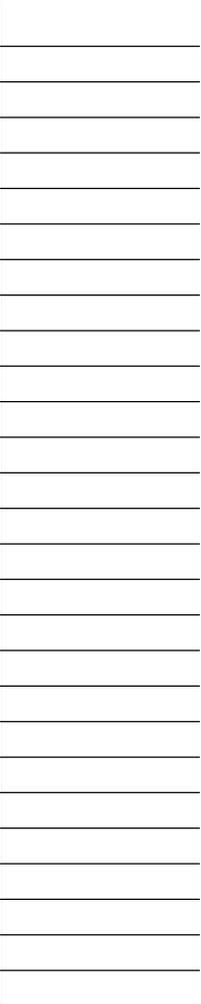
Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Emergency Coupling (Class 375) - Flexible air hose	INCIDENT			1		
Lever Operated Horn Valve	INCIDENT			1		
Footstep Assembly (Driver's Side)	INCIDENT			1		
Footstep Assembly (Non-Driver's Side)	INCIDENT			1		
Conditioning Pad Half (30 mm thick) - scrubber	INCIDENT			8		
Conditioning Pad Half (30 mm thick) - Scrubber	INCIDENT			8		
Air Horn High Tone (small)	INCIDENT			1		
Air Horn Low Tone (large)	INCIDENT			1		
WSP Sensor Internal Cable Assembly	INCIDENT			1		
Shoegear Splash guard Assembly 'A' (RH)	INCIDENT			2		
Shoegear Splash guard Assembly 'B' (LH)	INCIDENT			2		
Lifeguard LH (Drivers Side)	INCIDENT			2		
Lifeguard RH (Non-Drivers Side)	INCIDENT			2		
Shoebear Mounting Bracket	INCIDENT			2		
Primary Damper Complete	INCIDENT			4		
Shoebear Link Assembly	INCIDENT			2		
Drivers Step Light L/H	INCIDENT			1		
Drivers Step Light R/H	INCIDENT			1		
Traction motor Speed Probe and Cable Assembly	INCIDENT			1		
Lateral Damper	INCIDENT			4		
Cable Harness (DMOS) - (Inner or Outer Traction Motor) HA-UFRhv16	INCIDENT			1		
Cable Harness (DMOS) - (Inner or Outer Traction Motor) HA-UFRhv17	INCIDENT			1		
Cable Harness (MOS)/(MOSL) - (Inner or Outer Traction Motor) HA-UFRhv16	INCIDENT			1		
Cable Harness (MOS)/(MOSL) - (Inner or Outer Traction Motor) HA-UFRhv17	INCIDENT			1		
Shoegear Arcshield Assembly 'A' (RH)	INCIDENT			2		
Shoegear Arcshield Assembly 'B' (LH)	INCIDENT			2		
Radio Head	INCIDENT			1		

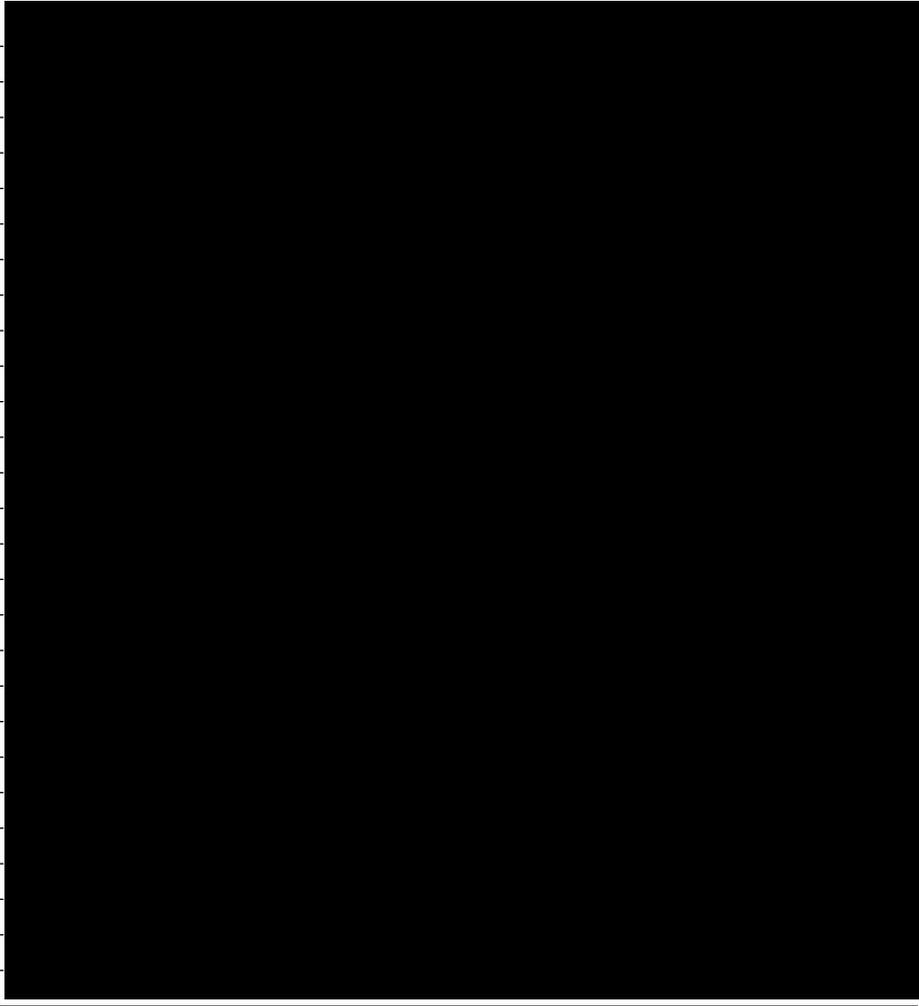
Part Description			Quantity Per 4-Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
Service Brake Actuator - (power bogies only)(Figure 2, Item 2)	INCIDENT			1		
Pantograph foot insulator	INCIDENT			4		
Pantograph horn	INCIDENT			8		
Service Brake Actuator - (power bogies only)(Figure 2, Item 1)	INCIDENT			1		
Shoegear DTL Air Cylinder	INCIDENT			1		
Shoegear DTL Downstop Bracket	INCIDENT			1		
Sand Hopper (Non Drivers side)	INCIDENT			1		
Shoebear Sub Assy.(RH)	INCIDENT			1		
Service and Spring Parking Brake Actuator (Figure 2, Item 3) (trailer bogies only)	INCIDENT			1		
Cab Door Leaf (LH)	INCIDENT			1		
Cab Door Leaf (RH)	INCIDENT			1		
Shoebear sub assembly 'B', LH	INCIDENT			2		
Shoebear sub assembly 'A', RH	INCIDENT			2		
HT bush and cable assy	INCIDENT			1		
pantograph earthing switch	INCIDENT			1		
pantograph ac main circuit breaker assy	INCIDENT			1		
<b>Traction Motor - with Couplings - NEW ENTRY</b>	<b>INCIDENT</b>			<b>16</b>		
cab end door with detrainment ramp	INCIDENT			2		
Pantograph (Inclusive of Carbon Carriers and Head Assembly)	INCIDENT			4		
Intermediate coupler	INCIDENT			3		
Gangway System	INCIDENT			6		
Complete Battery System / Tray	INCIDENT			4		
Autocoupler	INCIDENT			4		
P2 Power Bogie	INCIDENT			2		
T1 Trailer Bogie	INCIDENT			2		
T3 Trailer Bogie	INCIDENT			2		
Bodyside Door Complete	INCIDENT			4		

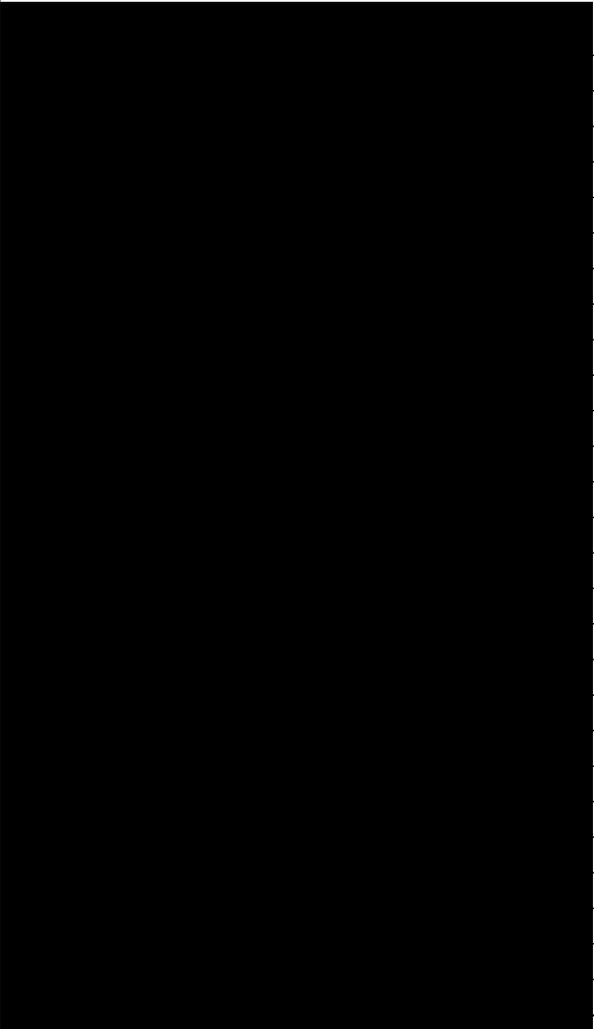
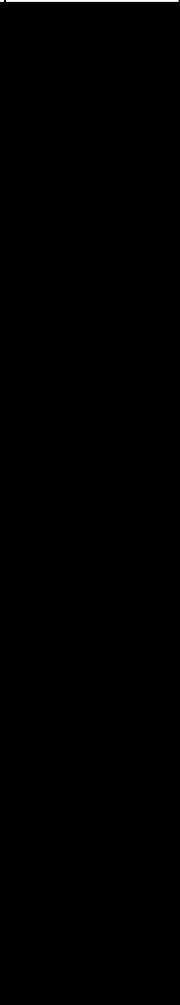
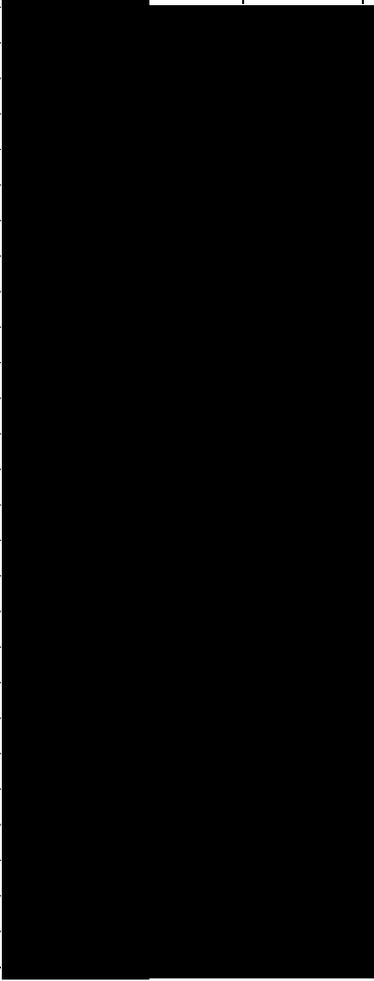
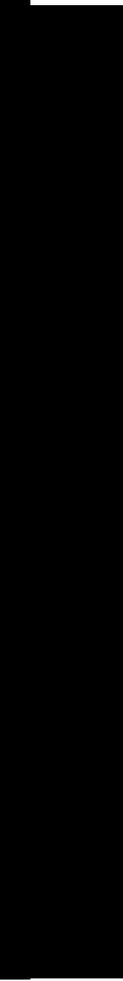
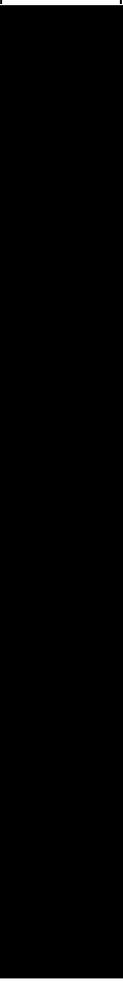
<b>Part Description</b>			<b>Quantity Per 4-Car Train</b>	<b>Quantity to be Supplied as Initial Spares</b>	<b>Unit Price (£ GBP)</b>	<b>Total Price (£ GBP)</b>
Brake Control Unit	INCIDENT			8	[REDACTED]	
Motor Converter Module	INCIDENT			6		
Trailer Wheelset inc. Disc and Bearings	INCIDENT			16		
High Voltage Box	INCIDENT			8		
Power Wheelset inc Disc Bearing, gearbox + coupling half	INCIDENT			18		
Auxiliary Converter Module	INCIDENT			8		
Bodywork Assemblies	INCIDENT		Varies	Varies		
Intermediate Bodyend GRP	INCIDENT			2		



Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial	Unit Price (£ GBP)	Total Price (£ GBP)	
							

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Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
						

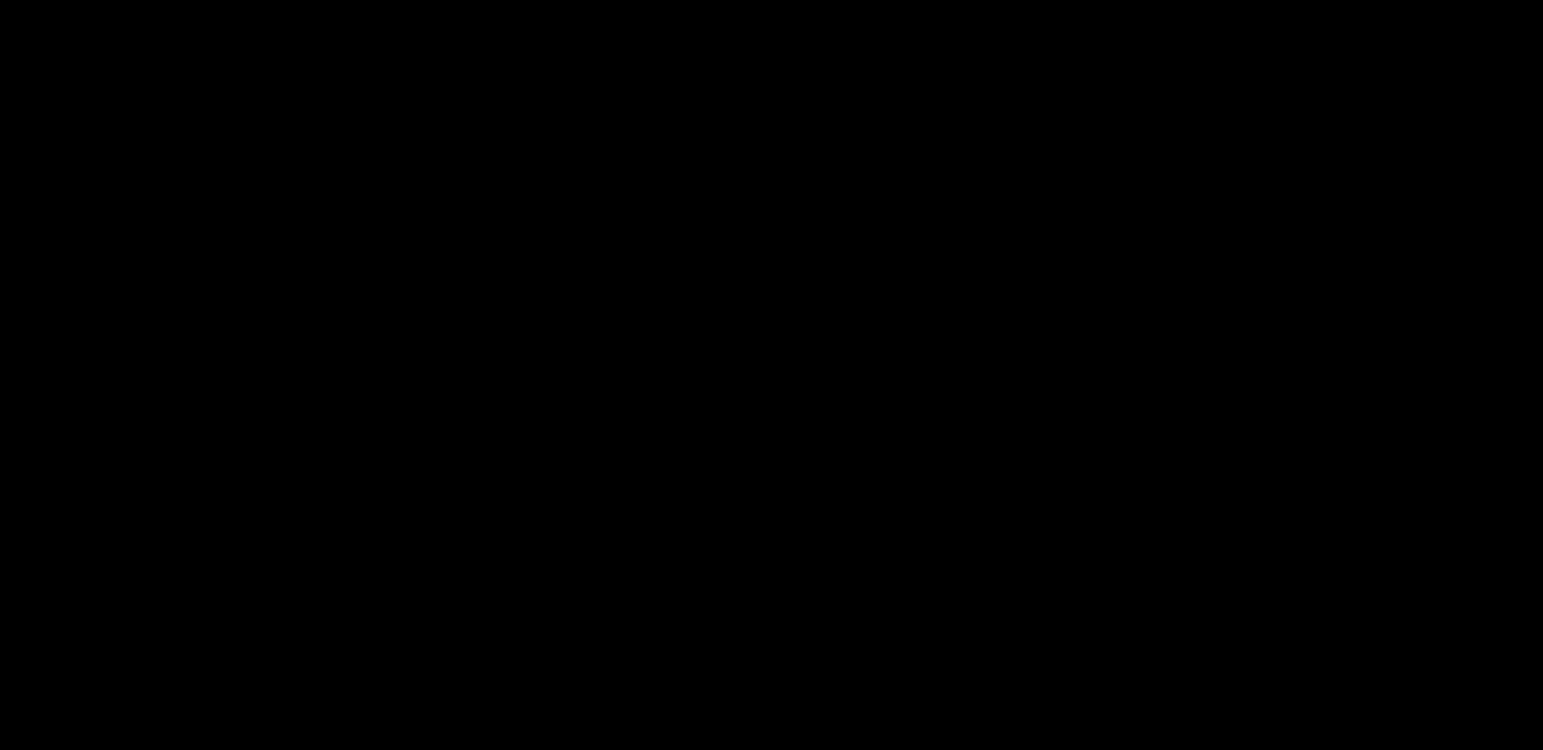
Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial	Unit Price (£ GBP)	Total Price (£ GBP)	
							

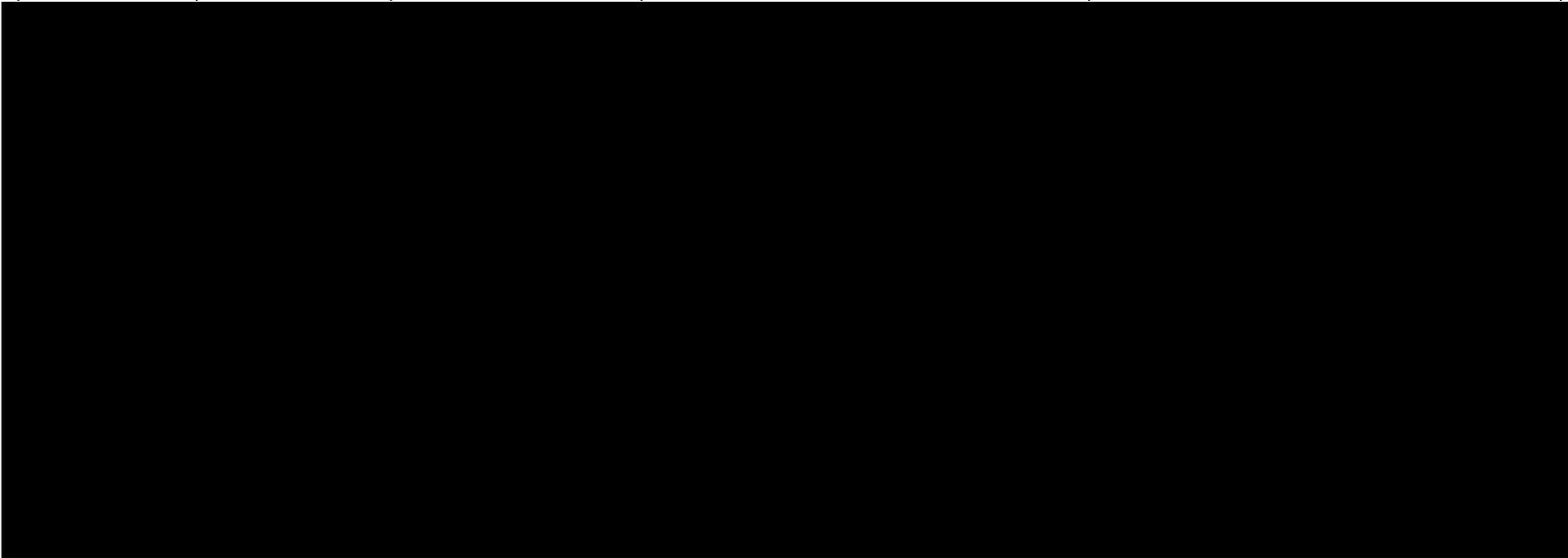
Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial	Unit Price (£ GBP)	Total Price (£ GBP)	

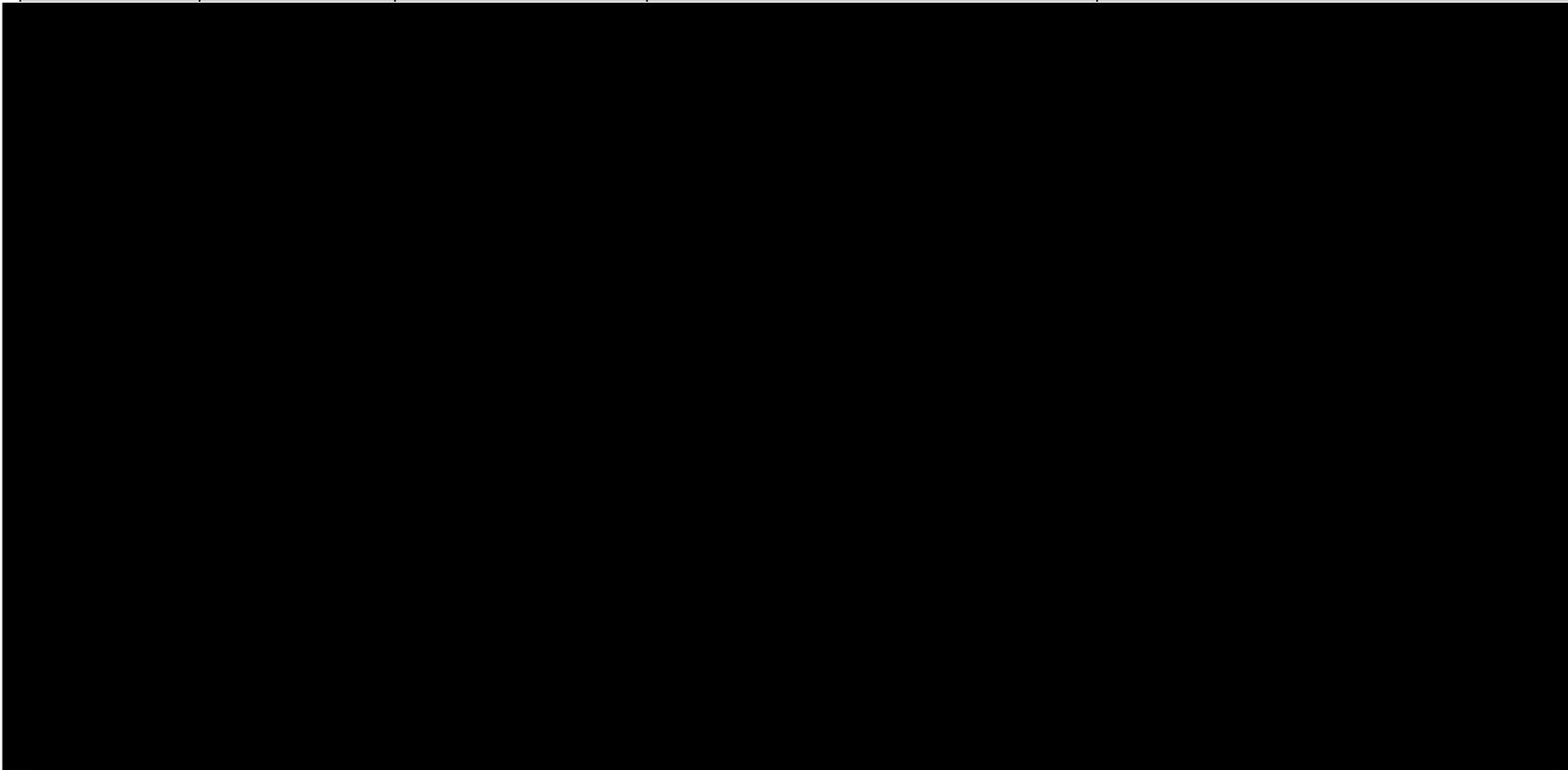
Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
			[REDACTED]			
			[REDACTED]			
			[REDACTED]			
			[REDACTED]			
			[REDACTED]			
			[REDACTED]			
			[REDACTED]			
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			[REDACTED]			
			[REDACTED]			

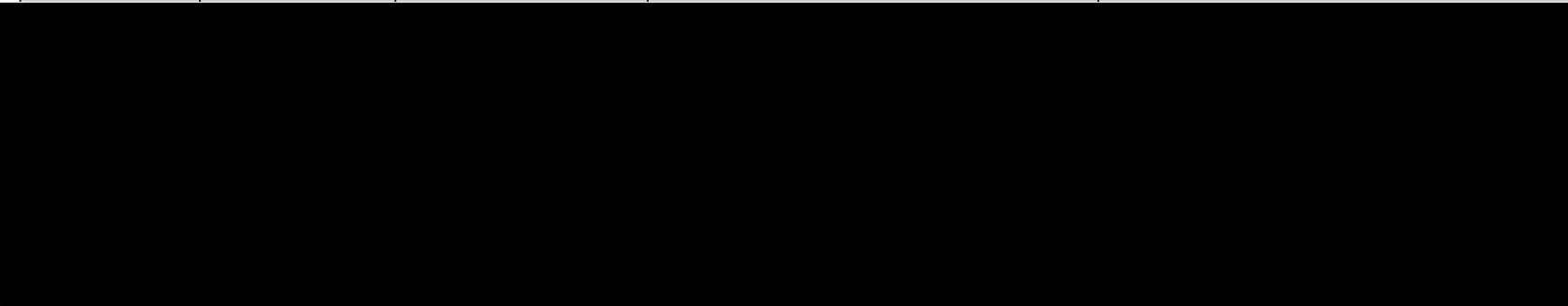
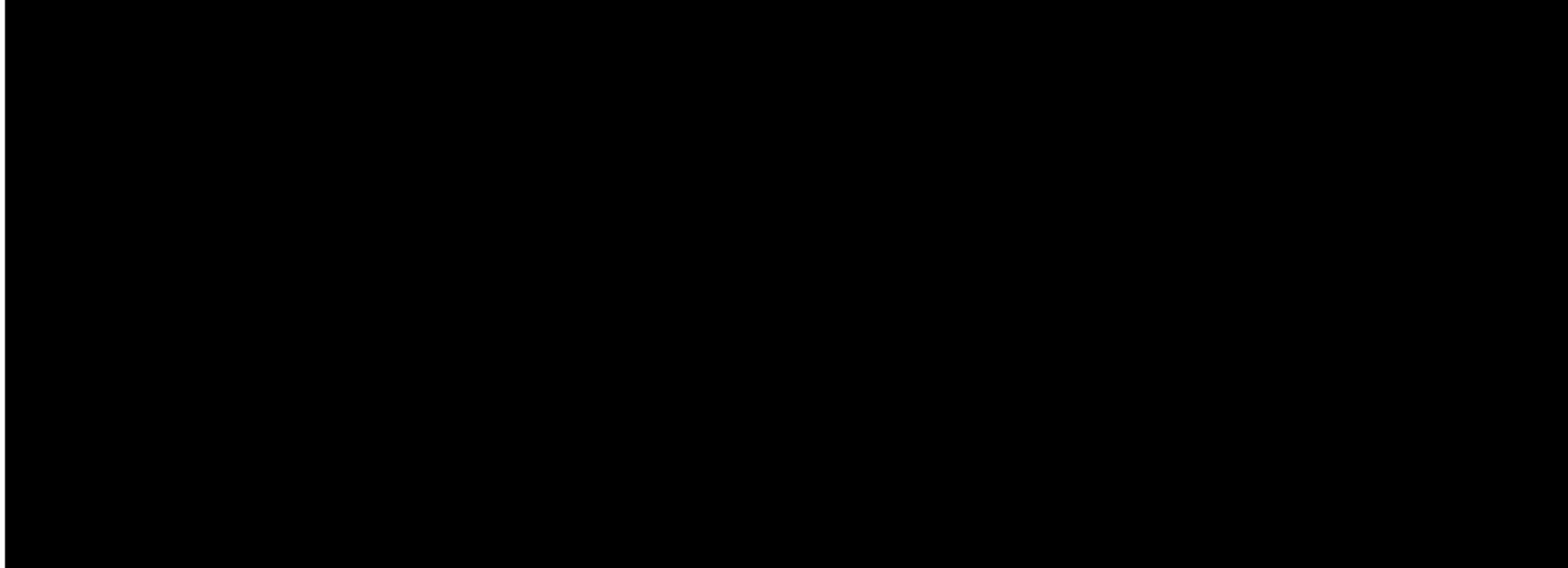
Part Description			Quantity Per 4- Car Train	Quantity to be Supplied as Initial Spares	Unit Price (£ GBP)	Total Price (£ GBP)
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
			[Redacted]			
			[Redacted]			
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**Part B: Initial Special Tools**

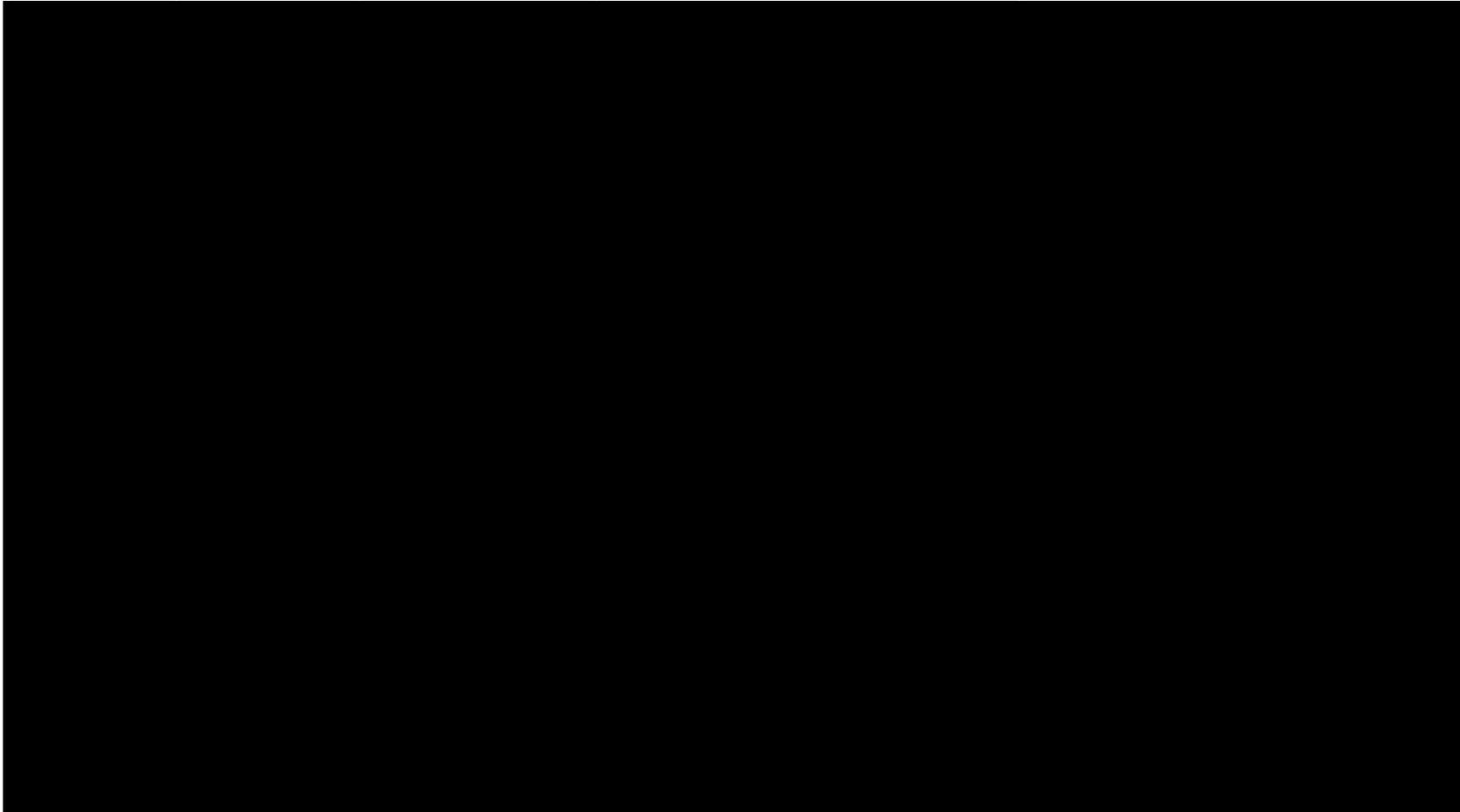
<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
<b>Carbody</b>				
				

<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
				
				

<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
				
<b>Power supply</b>				
				

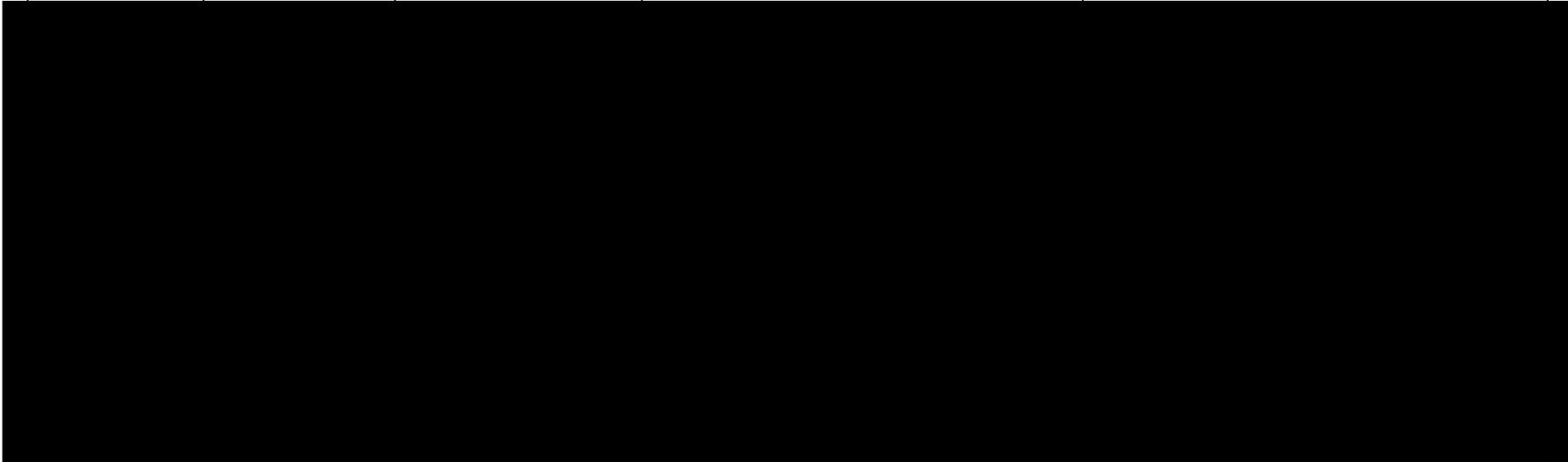
<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
				
<b>Propulsion</b>				
				

<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
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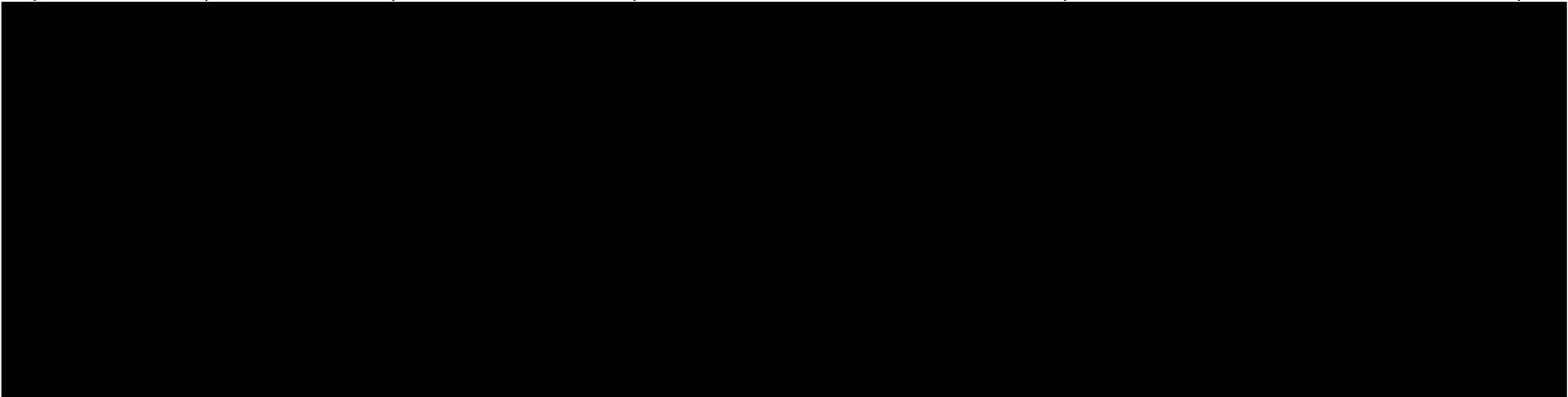


Tool	DC or DV	Job Title	Used For	Quantity.
[Redacted]				
<b>Auxiliaries</b>				
[Redacted]				
<b>Braking</b>				
[Redacted]				
<b>Interiors</b>				
[Redacted]				

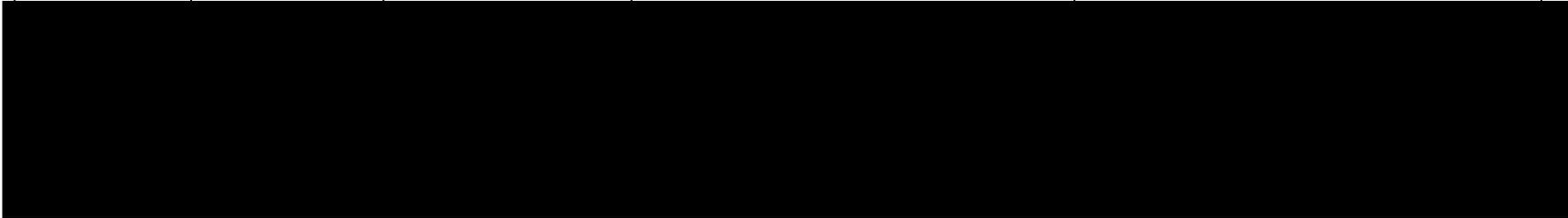
<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
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**Control & Communication**



<b>Tool</b>	<b>DC or DV</b>	<b>Job Title</b>	<b>Used For</b>	<b>Quantity.</b>
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## **SCHEDULE 9: OPTIONS**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 9 - Options**

# SCHEDULE 9

## Options

### DEFINITIONS

**"Affected Unit"** means where the Technical Option relates to ELR Units, all of the ELR Units in the Initial Order and in respect of which an Option Notice has already been served, and where the Technical Option relates to NLR Units, all of the NLR Units in the Initial Order and in respect of which an Option Notice has already been served, unless in either case a price for a lesser number of Units is indicated in Appendix 5 of this Schedule 9;

**"Break In Production"** means a break in production after completion of the assembly of the last Vehicle comprised in any orders placed by the Purchaser with the Manufacturer under this Agreement (including the Initial Order and any subsequent orders);

**"Exercise Date"** means in relation to a Technical Option or Retrofit Technical Option, the date specified in Appendix 5 as the "exercise date" for that Technical Option or Retrofit Technical Option;

**"Primary Exercise Period"** means the period starting on the Commencement Date and ending on 1<sup>st</sup> May 2007;

**"Retrofit Technical Option"** means the Options identified as such in Appendix 5, which in relation to Initial Units or Vehicles (but not necessarily the Additional Units or Vehicles) will be implemented after Acceptance;

**"Secondary Exercise Period"** means the period starting on the first day after the Primary Exercise Period and ending on 1 May 2009;

### 1. OPTION FOR ADDITIONAL ELR UNITS

1.1 The Manufacturer hereby grants the Purchaser an option to purchase up to [REDACTED] Units. The Purchaser may exercise the option granted pursuant to this paragraph 1.1 from time to time and at any time prior to [REDACTED] by serving a notice substantially in the form set out in Appendix 1 to this Schedule 9 ("**Option Notice**") on the Manufacturer specifying the quantum of ELR Units (the "**Additional ELR Units**") required by the Purchaser. The Manufacturer and the Purchaser each acknowledge and agree that an Option Notice must be served by the Purchaser in respect of the Additional ELR Units during the Primary Exercise Period if:

1.1.1 the programme for the manufacture of the Units is to be preserved; and/or

1.1.2 the Contract Price for the Additional ELR Units is to remain unchanged.

1.2 Upon receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 1.1, the Manufacturer shall be liable to supply the quantum of Additional ELR Units specified in the Option Notice in accordance with the provisions of this Schedule 9 and the requirements of this Agreement, provided that in no circumstances shall the Manufacturer be liable for supplying the Purchaser with

more than [REDACTED] Additional ELR Units notwithstanding the number of Option Notices served by the Purchaser pursuant to paragraph 1.1.

1.3 Within 28 days of receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 1.1, the Purchaser and the Manufacturer, each acting reasonably, shall meet and seek to agree within a further 28 day period the following matters:

1.3.1 where the Option Notice is served during the Primary Exercise Period, a programme for the manufacture, commissioning and supply of the ordered Additional ELR Units and the Contractual Acceptance Date for each of such Additional ELR Units which reflects:

- (A) a lead time of [REDACTED] weeks from the date of the Option Notice for the first Additional ELR Units to be delivered to the Purchaser for Acceptance and if, on the basis of the principle described in this paragraph 1.3.1(A) the Contractual Acceptance Date for the first Additional ELR Unit would be the same as or earlier than the Contractual Acceptance Date for the last Unit comprising part of the Initial Order and/or an Option Unit, the Contractual Acceptance Date for the Additional ELR Unit shall be delayed by 7 calendar days;
- (B) a maximum delivery rate of [REDACTED] Additional ELR Units or [REDACTED] vehicles per calendar month taking into account the cumulative effect of deliveries of Units comprising the Initial Order and/or deliveries of any Option Units;
- (C) the Contractual Acceptance Dates for the Units comprising the Initial Order; and
- (D) the Contractual Acceptance Dates for any Additional ELR Units, Additional NLR Units and/or Additional NLR Vehicles previously ordered by the Purchaser in accordance with this Schedule 9 (an "Option Unit"),

and the Manufacturer shall prior to meeting with the Purchaser pursuant to this paragraph 1.3 provide the Purchaser with a draft programme and a schedule of proposed Contractual Acceptance Dates for the Additional ELR Units together with the detailed reasoning for its proposals;

1.3.2 where the Option Notice is served during the Secondary Exercise Period, a programme for the manufacture, commissioning and supply of the Additional ELR Units and the Contractual Acceptance Date for each of the Additional ELR Units (in each case in accordance with the principles set out in paragraph 1.3.1) and which minimises the lead time from the date of service of the Option Notice until Acceptance of the first Additional ELR Unit) and the Manufacturer shall prior to meeting with the Purchaser pursuant to this paragraph 1.3 provide a draft programme and schedule of Contractual Acceptance Dates for the Additional ELR Units together with the detailed reasoning and justification (including, details of its reasonable estimate of the time and work required to commence operation of the production line (if any)) for its proposals; and

- 1.3.3 any amendments to this Agreement which are required solely as a direct consequence of the exercise of the option granted pursuant to paragraph 1.1 by the Purchaser (or as a result of any indexation or adjustment to the Contract Price of the Additional ELR Units which may be applicable pursuant to paragraph 1.7).
- 1.4 Where the Purchaser and the Manufacturer are unable to agree any of the matters referred to in paragraph 1.3 within a period which expires on the twenty-eighth day following the first meeting between the Purchaser and the Manufacturer pursuant to paragraph 1.3 either the Manufacturer or the Purchaser may refer the matter or matters in dispute to expert determination pursuant to Schedule 17A (Fast Track Dispute Resolution Procedure).
- 1.5 Where the Manufacturer and the Purchaser have agreed the matters described in paragraph 1.3 or they have been determined pursuant to paragraph 1.4, those matters shall be recorded in writing within five (5) days of such agreement or determination. The record produced pursuant to this paragraph 1.5 shall be deemed to be a complete Variation Order which shall be deemed confirmed immediately and the provisions of paragraph 7.4.1(A),(B) and (C) of Schedule 13 shall apply accordingly.
- 1.6 The Manufacturer and the Purchaser agree that each Additional ELR Unit ordered pursuant to an Option Notice shall be subject to all the terms and conditions of this Agreement as amended pursuant to paragraph 1.5 and that notwithstanding paragraph 1.3.3 it will be a Provisional Acceptance Criteria for each Additional ELR Unit that the Manufacturer procures the relevant increase in the Guaranteed Amount (as defined in the Train Services Agreement) under the Required Bonding Guarantee (as defined in the Train Services Agreement) as determined in accordance with the provisions of the Train Services Agreement.
- 1.7 The Manufacturer confirms that the Contract Prices specified in Appendix 2 of this Schedule 9 for Additional ELR Units are fixed and firm from the Commencement Date until 31 December 2009 and based on potential order dates that allow the Manufacturer to achieve continuous production.
- 1.8 Where:
- 1.8.1 any Additional ELR Units are ordered by the Purchaser during the Primary Exercise Period any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional ELR Units shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and
- 1.8.2 any Additional ELR Units are ordered by the Purchaser during the Secondary Exercise Period:
- (A) any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional ELR Units shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and
- (B) the Purchaser shall pay the Manufacturer the amount of Remobilisation Costs as determined in accordance with Part B of Appendix 6 to this Schedule 9 following a Break In Production of more than [REDACTED] Working Days, due to the Purchaser not

exercising any Options in a way to allow the Manufacturer to maintain a period of continuous build.

- 1.9 Where the Purchaser has served the Manufacturer with an Option Notice pursuant to paragraph 1.1 (whether during the Primary Exercise Period or the Secondary Exercise Period) for Additional ELR Units the Option Notice Price in respect of the exercise of the option shall be calculated on the basis of the quantum of Additional ELR Units specified in the Option Notice and the corresponding Contract Price for that quantum of Additional ELR Units specified in Appendix 2 of this Schedule 9 and for the avoidance of doubt regardless of the number of Additional ELR Units previously ordered in a previous Option Notice.

## 2. OPTIONS FOR ADDITIONAL NLR UNITS

- 2.1 The Manufacturer hereby grants the Purchaser an option to purchase up to [REDACTED] NLR Units. The Purchaser may exercise the option granted pursuant to this paragraph 2.1 from time to time and at any time prior to [REDACTED] by serving an Option Notice on the Manufacturer specifying the quantum of NLR Units (the “**Additional NLR Units**”) required by the Purchaser. The Manufacturer and the Purchaser each acknowledge and agree that an Option Notice must be served by the Purchaser in respect of the Additional NLR Units during the Primary Exercise Period if:

2.1.1 the programme for the manufacture of the Units is to be preserved; and/or

2.1.2 the Contract Price for the Additional NLR Units is to remain unchanged.

- 2.2 Upon receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 2.1, the Manufacturer shall be liable to supply the quantum of Additional NLR Units specified in the Option Notice in accordance with the provisions of this Schedule 9 and the requirements of this Agreement, provided that in no circumstances shall the Manufacturer be liable for supplying the Purchaser with more than 10 Additional NLR Units notwithstanding the number of Option Notices served by the Purchaser pursuant to paragraph 2.1.

- 2.3 Within 28 days of receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 2.1, the Purchaser and the Manufacturer, each acting reasonably, shall meet and seek to agree within a further 28 day period the following matters:

2.3.1 where the Option Notice is served during the Primary Exercise Period, a programme for the manufacture, commissioning and supply of the Additional NLR Units ordered and the Contractual Acceptance Date for each of such Additional NLR Units which reflects:

- (A) a lead time of [REDACTED] weeks from the date of the Option Notice for the first Additional NLR Unit to be delivered to the Purchaser for Acceptance and if, on the basis of the principle described in this paragraph 2.3.1(A) the Contractual Acceptance Date for the first Additional NLR Unit would be the same as or earlier than the Contractual Acceptance Date for the last Unit comprising part of the Initial Order and/or an Option Unit, the Contractual Acceptance Date for the Additional NLR Unit shall be delayed by 7 calendar days;

- (B) a maximum delivery rate of [redacted] Additional NLR Units or [redacted] vehicles per calendar month taking into account the cumulative effect of deliveries of Units comprising the Initial Order and/or deliveries of any Option Units;
- (C) the Contractual Acceptance Dates for the Units comprising the Initial Order; and
- (D) the Contractual Acceptance Dates for any other Option Units,

and the Manufacturer shall prior to meeting the Purchaser pursuant to this paragraph 2.3 provide the Purchaser with a draft programme and a schedule of proposed Contractual Acceptance Dates for the Additional NLR Units together with the detailed reasoning for its proposals;

2.3.2 where the Option Notice is served during the Secondary Exercise Period, a programme for the manufacture, commissioning and supply of the Additional NLR Units and the Contractual Acceptance Date for each of the Additional NLR Units (in each case in accordance with the principles set out in paragraph 2.3.1) and which minimises the lead time from the date of service of the Option Notice until Acceptance of the first Additional NLR Unit) and the Manufacturer shall prior to meeting with the Purchaser pursuant to this paragraph 2.3 provide a draft programme and schedule of Contractual Acceptance Dates for the Additional NLR Units together with the detailed reasoning for its proposals (including, details of its reasonable estimate of the time and work required to commence operation of the production line (if any)); and

2.3.3 any amendments to this Agreement which are required solely as a direct consequence of the exercise of the option granted pursuant to paragraph 2.1 (or as a result of any indexation or adjustment to the Contract Price of the Additional NLR Units which may be applicable pursuant to paragraph 2.7).

2.4 Where the Purchaser and the Manufacturer are unable to agree any of the matters referred to in paragraph 2.3 within a period which expires on the twenty-eighth day following the first meeting between the Purchaser and the Manufacturer pursuant to paragraph 2.3, either the Manufacturer or the Purchaser may refer the matter or matters in dispute to expert determination pursuant to Schedule 17A (Accelerated Expert Determination)

2.5 Where the Manufacturer and the Purchaser have agreed the matters described in paragraph 2.3 or they have been determined pursuant to paragraph 2.4, those matters shall be recorded in writing within five (5) days of such agreement or determination. The record produced pursuant to this paragraph 2.5 shall be deemed to be a complete Variation Order which shall be deemed confirmed immediately and the provisions of paragraph 7.4.1(A),(B) and (C) of Schedule 13 shall apply accordingly.

2.6 The Manufacturer and the Purchaser agree that each Additional NLR Unit ordered pursuant to an Option Notice shall be subject to all the terms and conditions of this Agreement as amended pursuant to paragraph 2.5 and that notwithstanding paragraph 2.3.3 it will be a Provisional Acceptance Criteria for each Additional NLR Unit that the Manufacturer procures the relevant increase in the Guaranteed Amount (as defined in the Train Services Agreement) under the Required Bonding Guarantee (as defined in the Train Services Agreement) as determined in accordance with the provisions of the Train Services Agreement.

- 2.7 The Manufacturer confirms that the Contract Prices specified in Appendix 3 of this Schedule 9 for Additional NLR Units are fixed and firm from the Commencement Date until 31 December 2009 and based on potential order dates that allow the Manufacturer to achieve continuous production.
- 2.8 Where:
- 2.8.1 any Additional NLR Units are ordered by the Purchaser during the Primary Exercise Period any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional NLR Units shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and
- 2.8.2 any Additional NLR Units are ordered by the Purchaser during the Secondary Exercise Period:
- (A) any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional NLR Units shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and
- (B) the Purchaser shall pay the Manufacturer the amount of Remobilisation Costs as determined in accordance with Part B of Appendix 6 to this Schedule 9 following a Break In Production of more than [REDACTED] Working Days, due to the Purchaser not exercising any Options in a way to allow the Manufacturer to maintain a period of continuous build.
- 2.9 Where the Purchaser has served the Manufacturer with an Option Notice pursuant to paragraph 2.1 (whether during the Primary Exercise Period or the Secondary Exercise Period) for Additional NLR Units the Option Notice Price in respect of the exercise of the option shall be calculated on the basis of the quantum of Additional NLR Units specified in the Option Notice and the corresponding Contract Price for that quantum of Additional NLR Units specified in Appendix 3 of this Schedule 9 and for the avoidance of doubt regardless of the number of Additional ELR Units previously ordered, in a previous Option Notice.

### **3. OPTION FOR ADDITIONAL NLR VEHICLES**

- 3.1 The Manufacturer hereby grants the Purchaser an option to purchase up to [REDACTED] vehicles ("Additional NLR Vehicles") to be fitted to the NLR Units. The Purchaser may exercise the option granted pursuant to this paragraph 3.1 from time to time and at any time prior to [REDACTED] by serving an Option Notice on the Manufacturer specifying the quantum of Additional NLR Vehicles required by the Purchaser. The Manufacturer and the Purchaser each acknowledge and agree that an Option Notice must be served by the Purchaser in respect of the Additional NLR Vehicles during the Primary Exercise Period if:
- 3.1.1 the programme for the manufacture of the Units is to be preserved; and/or
- 3.1.2 the Contract Price for the Additional NLR Vehicles is to remain unchanged.
- 3.2 Upon receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 3.1, the Manufacturer shall be liable to supply the quantum of Additional NLR Vehicles specified in the Option Notice in accordance with the

provisions of this Schedule 9 and the requirements of this Agreement, provided that in no circumstances shall the Manufacturer be liable for supplying the Purchaser with more than 34 Additional NLR Vehicles notwithstanding the number of Option Notices served by the Purchaser pursuant to paragraph 3.1.

3.3 Within 28 days of receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 3.1, the Purchaser and the Manufacturer, each acting reasonably, shall meet and seek to agree within a further 28 day period the following matters:

3.3.1 where the Option Notice is served during the Primary Exercise Period, a programme for the manufacture, commissioning and supply of the ordered Additional NLR Vehicles and the Contractual Acceptance Date for each of such Additional NLR Vehicles which takes into account the requirement for a NLR Unit that has been Accepted by the Purchaser to be delivered to the Manufacturer's Works for commissioning of the Additional NLR Vehicles and which reflects:

- (A) a lead time of [REDACTED] weeks from the date of the Option Notice for the first Additional NLR Vehicle (fitted to a NLR Unit) to be delivered to the Purchaser for Acceptance and if, on the basis of the principle described in this paragraph 3.3.1(A) the Contractual Acceptance Date for the first Additional NLR Vehicle would be the same as or earlier than the Contractual Acceptance Date for the last Unit comprising part of the Initial Order and/or an Option Unit, the Contractual Acceptance Date for the Additional NLR Vehicle shall be delayed by 7 calendar days;
- (B) a maximum delivery rate of [REDACTED] Additional NLR Vehicles per calendar month taking into account the cumulative effect of deliveries of Units comprising the Initial Order and/or deliveries of any Option Units;
- (C) the Contractual Acceptance Dates for the Units comprising the Initial Order; and
- (D) the Contractual Acceptance Dates for any other Option Units,

and the Manufacturer shall prior to meeting the Purchaser pursuant to this paragraph 3.3 provide the Purchaser with a draft programme and a schedule of proposed Contractual Acceptance Dates for the Additional NLR Vehicles together with the detailed reasoning for its proposals;

3.3.2 where the Option Notice is served during the Secondary Exercise Period a programme for the manufacture, commissioning and supply of the Additional NLR Vehicles and the Contractual Acceptance Date for each of the Additional NLR Vehicles (in each case in accordance with the principles set out in paragraphs 3.2.1) and which minimises the lead time from date of service of the Option Notice until Acceptance of the first Additional NLR Vehicle and the Manufacturer shall prior to meeting the Purchaser pursuant to this paragraph 3.3 provide a draft programme and schedule of Contractual Acceptance Dates for the Additional NLR Vehicles together with the detailed reasoning for its proposals (including, details of its reasonable estimate of the time and work required to commence operation of the production line(if any));

- 3.3.3 any amendments to this Agreement which are required solely as a direct consequence of the option for Additional NLR Vehicles being exercised by the Purchaser (or as a result of any indexation or adjustment to the Contract Price of the Additional NLR Vehicles which may be applicable pursuant to paragraph 3.6) including the arrangements for taking NLR Units out of passenger revenue-earning service to allow the Additional NLR Vehicles to be fitted to the NLR Units; and
- 3.3.4 any amendments that are required to the Train Services Agreement which are required solely as a direct consequence of the option for Additional NLR Vehicles being exercised by the Purchaser.
- 3.4 Where the Purchaser and the Manufacturer are unable to agree any of the matters referred to in paragraph 3.3 within a period which expires on the twenty-eighth day following the first meeting between the Purchaser and the Manufacturer pursuant to paragraphs 3.3, either the Manufacturer or the Purchaser may refer the matter or matters in dispute to expert determination pursuant to Schedule 17A (Accelerated Expert Determination).
- 3.5 Where the Manufacturer and the Purchaser have agreed the matters described in paragraph 3.3 or they have been determined pursuant to paragraph 3.4, those matters shall be recorded in writing within five (5) days of such agreement or determination. The record produced pursuant to this paragraph 3.5 shall be deemed to be a complete Variation Order which shall be deemed confirmed immediately and the provisions of paragraph 7.4.1(A),(B) and (C) of Schedule 13 shall apply accordingly.
- 3.6 The Manufacturer and the Purchaser agree that each Additional NLR Vehicle ordered pursuant to an Option Notice shall be subject to all the terms and conditions of this Agreement as amended pursuant to paragraph 3.5 and that notwithstanding paragraph 3.3.3 it will be a Provisional Acceptance Criteria for each Additional NLR Vehicle that the Manufacturer procures the relevant increase in the Guaranteed Amount (as defined in the Train Services Agreement) under the Required Bonding Guarantee (as defined in the Train Services Agreement) as determined in accordance with the provisions of the Train Services Agreement.
- 3.7 The Manufacturer confirms that the Contract Prices specified in Appendix 4 of this Schedule 9 for Additional NLR Vehicles are fixed and firm from the Commencement Date until 31 December 2009 and based on potential order dates that allow the Manufacturer to achieve continuous production.
- 3.8 Where:
  - 3.8.1 any Additional NLR Vehicles are ordered by the Purchaser during the Primary Exercise Period any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional NLR Vehicles shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and
  - 3.8.2 any Additional NLR Vehicles are ordered by the Purchaser during the Secondary Exercise Period:
    - (A) any Milestone Payment that becomes due and payable by the Purchaser on or after 1 January 2010 in respect of those Additional NLR Vehicles shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9; and

(B) the Purchaser shall pay the Manufacturer the amount of Remobilisation Costs as determined in accordance with Part B of Appendix 6 to this Schedule 9 following a Break In Production of more than [REDACTED] Working Days, due to the Purchaser not exercising any Options in a way to allow the Manufacturer to maintain a period of continuous build.

3.9 Where the Purchaser has served the Manufacturer with an Option Notice pursuant to paragraph 3.1 (whether during the Primary Exercise Period or the Secondary Exercise Period) for Additional NLR Vehicles the Option Notice Price in respect of the exercise of the option shall be calculated on the basis of the quantum of Additional NLR Vehicles specified in the Option Notice and the corresponding Contract Price for that quantum of Additional NLR Vehicles specified in Appendix 4 of this Schedule 9 and for the avoidance of doubt regardless of the number of Additional ELR Vehicles previously orders in a previous Option Notice.

#### 4. OPTIONS FOR TECHNICAL FEATURES

4.1 The Manufacturer hereby grants the Purchaser, in respect of each technical feature described in Appendix 5 of this Schedule 9, the option ("**Technical Option**") to require the Manufacturer to modify the relevant Units to incorporate the technical feature described in that Technical Option, or in the case of the Technical Options relating to the Cab Simulator Unit and the Additional Spares<sup>1</sup>, to supply such item or items. The Purchaser may exercise a Technical Option from time to time and at any time prior to the Exercise Date specified for that Technical Option by serving an Option Notice on the Manufacturer specifying the Technical Option being exercised and in relation to the Technical Option for Additional Spares, the quantity of each type of Spare required by the Purchaser, provided that in the case of Additional Spares the Purchaser shall only be entitled to require quantities which are reasonably sufficient for the total number of Units ordered (including Option Units).

4.2 Upon receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 4.1, the Manufacturer shall be liable to modify the relevant Units to incorporate the technical feature described in the Technical Option, or in the case of the Technical Options relating to the Cab Simulator Unit and the Additional Spares, to supply such item or items.

4.3 The Manufacturer and the Purchaser each acknowledge and agree that:

4.3.1 the Contract Price specified in Appendix 5 of this Schedule 9 for each of the Technical Options<sup>2</sup> applies only to those Units where the Technical Option is exercised prior to the Exercise Date for that Technical Option; and

4.3.2 where the Purchaser aspires to exercise a Technical Option in relation to any Units or Vehicle (including Additional ELR Units, Additional NLR Units and/or Additional NLR Vehicles) after the Exercise Date of the relevant Technical Option, the Purchaser shall be entitled to propose a Variation in respect of the implementation of that Unit Technical Option.

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<sup>1</sup> BT notes that this drafting implies that unlimited numbers of Additional Spares may be ordered. Please confirm that this is acceptable.

<sup>2</sup> The carve out for Retrofit Technical Options has been deleted, as the deadline for these Options is set out in 4.4.2(B)

- 4.4 Within 28 days of receipt by the Manufacturer of an Option Notice served by the Purchaser pursuant to paragraph 4.1, the Purchaser and the Manufacturer, each acting reasonably, shall meet and seek to agree within a further 28 day period the following matters:
- 4.4.1 where the Option Notice relates to a Technical Option (save for the Retrofit Technical Option and the Technical Options relating to the Cab Simulator Unit and the supply of Additional Spares), the quantity and type of Affected Units, any additional testing that the Manufacturer should undertake to comply with any Applicable Laws or applicable Standards and the Manufacturer shall provide the Purchaser with a list of proposed Affected Units, and a draft testing regime and test programme prior to meeting the Purchaser pursuant to this paragraph 4.4;
- 4.4.2 where the Option Notice relates to a Retrofit Technical Option (i) the matters described in paragraph 4.4.1; and (ii) a programme for the modification of the relevant Units which is consistent with:
- (A) any arrangements agreed by the Purchaser and the Maintainer under the Train Services Agreement, each acting reasonably, in connection with the withdrawal of those Units from passenger revenue-earning service including suitable access arrangements at a suitable location;
- (B) the relevant Retrofit Technical Option being implemented:
- (1) no earlier than [redacted] months after the Exercise Date for that Retrofit Technical Option and no later than 30<sup>th</sup> November 2011; and
- (2) in relation to Initial Units at a rate of up to [redacted] Units per months and in any event no later than 30 April 2012; and the Manufacturer shall provide the Purchaser with its proposals in relation to the matters described in (i) and (ii) above prior to meeting the Purchaser pursuant to this paragraph 4.4;
- (3) in relation to any Additional Units at a rate of [redacted] Units per month until completion of the fleet,
- 4.4.3 where the Option Notice relates to the Technical Option for the Cab Simulator Unit (i) any relevant testing that the Manufacturer should undertake to ensure that the Cab Simulator Unit complies with any Applicable Laws or applicable Standards, (ii) any relevant acceptance criteria; and (iii) a programme for the testing and delivery of the Cab Simulator Unit, and the Manufacturer shall provide the Purchaser with its proposals for the matters described in (i) to (iii) above prior to meeting the Purchaser pursuant to this paragraph 4.4;
- 4.4.4 where the Option Notice relates to the Technical Option for Additional Spares (i) the proposed delivery dates for each of the Additional Spares ordered by the Purchaser, and (ii) any relevant acceptance criteria; and the Manufacturer shall provide the Purchaser with its proposals for the matters described in (i) and (ii) above prior to meeting the Purchaser pursuant to this paragraph 4.4; and

- 4.4.5 any amendments to this Agreement which are required solely as a direct consequence of the exercise of the relevant Technical Option by the Purchaser (or as a result of any indexation or adjustment which may be applicable pursuant to paragraph 4.6), including any amendments to the Manuals, the Rolling Stock Requirements – Technical and/or the Technical Description to reflect the consequences of the implementation of the relevant Technical Option on the:
- (A) the weight of the Units;
  - (B) the estimated run times of the Units;
  - (C) the level of power consumed by the Units;
  - (D) the type and quantity of Spares required to maintain the Units; and/or
  - (E) the reliability of the relevant Units.
- 4.5 Where the Purchaser and the Manufacturer are unable to agree any of the matters referred to in paragraph 4.4 within a period which expires on the twenty-eight day following the first meeting between the Purchaser and the Manufacturer pursuant to paragraph 4.4 either the Manufacturer or the Purchaser may refer the matter or matters in dispute to expert determination pursuant to Schedule 17A (Accelerated Expert Determination).
- 4.6 Where the Manufacturer and the Purchaser have agreed the matters described in paragraph 4.2 or they have been determined pursuant to paragraph 4.3, those matters shall be recorded in writing within five (5) days of such agreement or determination. The record produced pursuant to this paragraph 4.6 shall be deemed to be a complete Variation Order which shall be deemed confirmed immediately and the provisions of paragraph 7.4 of Schedule 13 shall apply accordingly.
- 4.7 The Manufacturer and the Purchaser agree that each Technical Option exercised pursuant to an Option Notice shall be subject to all the terms and conditions of this Agreement as amended pursuant to paragraph 4.6.
- 4.8 The Manufacturer confirms to the Purchaser that the Contract Price for each Technical Option is fixed and firm from the Commencement Date to 31 December 2009.
- 4.9 Where any payment becomes due and payable by the Purchaser on or after 1 January 2010 in respect of any Technical Option (other than a Retrofit Technical Option) specified in the Option Notice, such payment shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9 (Production Indexation).
- 4.10 Where the Purchaser has exercised a Retrofit Technical Option and that Retrofit Technical Option is to be implemented in whole or in part after 1<sup>st</sup> January 2010 then the Total Option Price for that Retrofit Technical Option shall be adjusted in accordance with the methodology set out in Part A of Appendix 6 to this Schedule 9 (Production Indexation) to the extent necessary to reflect that the number of Units that will have the Retrofit Technical Option implemented on or after 1<sup>st</sup> January 2010

*Wide Gangways*

- 4.11 If the Purchaser has not provided evidence to the reasonable satisfaction of the Manufacturer that the HMRI (or any successor body) has no objection to the proposed wide inter-vehicle gangways as described in the Technical Description, prior to the Exercise Date for the Technical Option relating to the reversion from wide gangways to conventional gangways (Option Ref B6) ("**Wide Gangway Technical Option**"), the Purchaser shall be deemed to have served an Option Notice on the Manufacturer in relation to the Wide Gangway Technical Option on the Exercise Date for that Technical Option; and the Purchaser and the Manufacturer shall comply with the requirements of this paragraph 4 (in relation to the implementation of the Wide Gangway Technical Option).
- 4.12 Where the Purchaser has served the Manufacturer with an Option Notice pursuant to paragraph 4.1 for a Technical Option the Total Option Price in respect of the exercise of the option shall be calculated on the basis of the terms set out in Appendix 5 of this Schedule 9 in relation to the relevant technical feature required and the corresponding Contract Price.

## **5. PAYMENT TERMS**

- 5.1 Where the Purchaser has served on the Manufacturer an Option Notice in respect of (i) a Retrofit Technical Option, (ii) the Technical Option relating to the provision of a Cab Simulator Unit or (iii) the Technical Option relating to the supply of Additional Spares, the Purchaser shall pay the Manufacturer the Option Notice Price (as adjusted) for the relevant Technical Option on Acceptance by the Purchaser of the modifications to the Affected Units or in the case of the Cab Simulator Unit or Additional Spares, Acceptance by the Purchaser of that item.
- 5.2 Where the Purchaser has served on the Manufacturer an Option Notice in respect of Additional ELR Units, Additional NLR Units, Additional NLR Vehicles or a Technical Option (other than as provided for in paragraph 5.1):
- 5.2.1 the Total Contract Price shall increase by the amount of the Option Notice Price and:
- (A) where the Option Notice relates to the supply of Additional ELR Units the Total ELR Contract Price shall increase by the amount of the Option Notice Price;
  - (B) where the Option Notice relates to the supply of Additional NLR Units or Additional NLR Vehicles the Total NLR Contract Price shall increase by amount of the Option Notice Price; and
  - (C) where the Option Notice relates to the implementation of a Technical Option (other than a Retrofit Technical Option):
    - (1) the Total ELR Contract Price shall increase by the proportion of the Option Notice Price which is referable to the Affected Units which are ELR Units; and
    - (2) the Total NLR Contract Price shall increase by the proportion of the Option Notice Price which is referable to the Affected Units which are NLR Units;

- 5.2.2 the Manufacturer shall be entitled, from the date that the terms of the relevant Option<sup>3</sup> are confirmed in accordance with paragraph 1.5, 2.5, 3.5 or 4.6 (as the case may be) to give written notice to the Purchaser stating which Milestones Payments have been paid in relation to the Initial Order and the additional amount which is payable in respect of those Milestone Payments following the increase of the Total ELR Contract Price and/or Total NLR Contract Price pursuant to paragraph 5.2.1 and, in the absence of any error or dispute as to the quantum of the additional amount payable, the Purchaser shall pay the Manufacturer the additional amount specified in the notice within 20 Working Days of receipt by the Purchaser of such notice. Where there is a dispute as to the quantum of the additional amount payable the Purchaser shall pay the Manufacturer any undisputed amount of the additional amount payable within 20 Working Days of receipt by the Purchaser of the notice served by the Manufacturer pursuant to this paragraph 5.2.1 and upon resolution of such dispute shall promptly pay any additional sum determined or agreed to be properly payable to the Manufacturer together with Default Interest thereon in accordance with paragraph 3.2 of Schedule 11; and
- 5.2.3 without prejudice to paragraph 5.2.2 the Purchaser shall pay the Manufacturer in accordance with Part B of Schedule 11 subject always to the Manufacturer complying with its obligations under Part A of Schedule 11.

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<sup>3</sup> "Option" means any of the options granted by the Manufacturer to the Purchaser pursuant to Schedule 9.

**Appendix 1**  
**Form of Option Notice**

*[To be issued to the Manufacturer on the Purchaser's headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited, Bombardier Transportation UK Limited] and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Option Notice and the terms of the Manufacture and Supply Agreement (including Clause 52 (Governing Law and Jurisdiction)) shall, as applicable, apply to this Option Notice.
2. This document constitutes an Option Notice under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited hereby exercise an Option pursuant to Schedule 9 of the Manufacture and Supply Agreement for the purchase of *[insert number of Additional ELR Units/NLR Units or NLR Vehicles; and for a Technical Option describe the Technical Feature or Additional Spare]*.
4. *[If this Option Notice is used for a Technical Option:*
  - 4.1 *save for Technical Options described in paragraphs 4.2 and 4.3 below, identify the Affected Units;*
  - 4.2 *in relation to a Technical Option for Additional Spares, specify the quantity of each type of Spare required;*
  - 4.3 *in relation to a Technical Option for a Cab Simulator Unit, [provide the specification for the Cab Simulator Unit].*
5. The Contract Price for each *[ELR/NLR Unit or NLR Vehicle or technical feature]* is £[            ].
6. The Total Option Price for this Option is £[            ].

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**Appendix 2**

**Terms of Additional ELR Units Option**

<b>Option Ref</b>	<b>Terms of Option</b>	<b>Specification of Option</b>
<b>A1</b>	(a) Number of Additional ELR Units:	Up to [REDACTED] Additional ELR Units
	(b) Contract Price (exclusive of VAT): (i) [REDACTED] (ii) [REDACTED] (iii) [REDACTED] (iv) [REDACTED] (v) [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

**Appendix 3**

**Terms of Additional NLR Units Option**

<b>Option Ref</b>	<b>Terms of Option</b>	<b>Specification of Option</b>
A2	(a) Number of Additional NLR Units:	Up to [REDACTED] Additional NLR Units
	(b) Contract Price (exclusive of VAT): (i) [REDACTED] (ii) [REDACTED] (iii) [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]

**Appendix 4**

**Terms of Additional NLR Vehicles Option**

<b>Option Ref</b>	<b>Terms of Option</b>	<b>Specification of Option</b>
<b>A3</b>	(a) Number of Additional NLR Vehicles:	Up to [REDACTED] Additional NLR Vehicles
	(b) Contract Price (exclusive of VAT): (i) [REDACTED] (v) [REDACTED] (vi) [REDACTED] (vii) [REDACTED] (viii) [REDACTED] (ix) [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

## Appendix 5

### Terms of Technical Options

Option Ref	Terms of Option	Specification of Option
<b>B1</b>	(a) Description of Technical Feature:	Supplying the ELR Units equipped for dual voltage operation
	(b) Contract Price (exclusive of VAT) for each ELR Unit	██████████ per ELR Unit
	(c) Exercise Date	██████████
<hr/>		
<b>B2</b> <b>Retrofit Technical Option</b>	(a) Description of Technical Feature:	Converting the ELR Units to dual voltage operation within 5 years
	(b) Contract Price (exclusive of VAT) for each ELR Unit	██████████ per ELR Unit
	(c) Exercise Date	██████████
<hr/>		
<b>B3</b>	(a) Description of Technical Feature:	Modifying the ELR Units and the NLR Units to include emergency lighting system compliant with RSSB T314
	(b) Contract Price (exclusive of VAT): (i) for each ELR Unit (ii) for each NLR Unit	██████████ per ELR Unit ██████████ per NLR Unit
	(c) Exercise Date	██████████
<hr/>		
<b>B4A</b>	(a) Description of Technical Feature:	Fitting NLR Units with tripcocks
	(b) Contract Price (exclusive of VAT) for each NLR Unit subject to minimum order of 20 Units	██████████ per NLR Unit
	(c) Exercise Date	██████████

Option Ref	Terms of Option	Specification of Option
<b>B4B</b> <b>Retrofit Technical Option</b>	(a) Description of Technical Feature:	Fitting ELR Units with tripcocks
	(b) Contract Price (exclusive of VAT) for each ELR Unit subject to minimum order of 20 Units	██████████ 324 per ELR Unit
	(c) Exercise Date	██████████
<b>B5A</b>	(a) Description of Technical Feature:	ELR Units to be fitted with sleet brushes and de-icing equipment
	(b) Contract Price (exclusive of VAT):for fitment of sleet brushes for each ELR Unit	██████████ per ELR Unit
	(c) Contract Price (exclusive of VAT):for fitment of de-icing equipment per ELR Unit	██████████ per ELR Unit (applies to 5 Units only)
	(d) Exercise Date	██████████
<b>B5B</b>	(a) Description of Technical Feature:	NLR Units to be fitted with sleet brushes and de-icing equipment
	(b) Contract Price (exclusive of VAT):for fitment of sleet brushes for each NLR Unit	██████████ per NLR Unit
	(c) Contract Price (exclusive of VAT):for fitment of de-icing equipment per NLR Unit	██████████ per NLR Unit (applies to 5 Units only)
	(d) Exercise Date	██████████
<b>B6</b>	(a) Description of Technical Feature:	Reverting from wide gangway design to conventional design
	(b) Contract Price (exclusive of VAT): (i) Cost of inserts for each Wide Gangway End as part of Build;	██████████ per intermediate end
	(c) Exercise Date	

Option Ref	Terms of Option	Specification of Option
<b>B7</b>	(a) Item to be delivered:	1 Cab Simulator Unit as described in Rolling Stock Requirements – Technical.
	(b) Contract Price (exclusive of VAT) for Cab Simulator Unit	£ [REDACTED]
	(d) Exercise Date	[REDACTED]
<b>B8</b>	(a) Description of Technical Feature:	Raised glazing level in passenger doors
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B9</b>	(a) Description of Technical Feature:	Door open pushbutton to be fitted on each pair of passenger doors with a “flush” mounted button and bezel
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B10</b>	(a) Description of Technical Feature:	Trim around the perch seats to be made in a “moulded 3D sculpted” appearance
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B11</b>	(a) Description of Technical Feature:	Draughtscreens to be fitted at end of seating (scope includes glass and clamps and brackets)

Option Ref	Terms of Option	Specification of Option
	(b) Contract Price (exclusive of VAT) for each vehicle  (i) Cost of draughtscreens with anti graffiti film ;  (ii) Cost of draughtscreens without anti graffiti film ;	[REDACTED] per vehicle  [REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B12</b>	(a) Description of Technical Feature:	Agreed exterior paint and decals scheme
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle [REDACTED] per vehicle – decals) [REDACTED] per vehicle - fitting)
	(c) Exercise Date	[REDACTED]
<b>B13</b>	(a) Description of Technical Feature:	Interior advert panels added (simplified arrangement)
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B14</b>	(a) Description of Technical Feature:	Passenger saloon external glass to be low “E” type to reduce solar gain
	(b) Contract Price (exclusive of VAT) for each vehicle	[REDACTED] per vehicle
	(c) Exercise Date	[REDACTED]
<b>B15</b>	(a) Description of Technical Feature:	Additional Spares
	(b) Contract Price (exclusive of VAT)	As set out in Schedule 8
	(c) Exercise Date	[REDACTED]

Option Ref	Terms of Option	Specification of Option
<b>B16</b> <b>Retrofit Technical Option</b>	(a) Description of Technical Feature:	Retrofitting NRN radios to ELR Units
	(b) Contract Price (exclusive of VAT)	██████ per ELR Unit
	(c) Exercise Date	██████████
<b>B17</b>	(a) Description of Technical Feature:	Revert back to standard Electrostar busbar and shoe gear arrangement
	(b) <u>Reduction</u> in Contract Price (exclusive of VAT)	██████ in respect of the Total Contract Price
	(c) Exercise Date	██████████

## Appendix 6

### Indexation and Price Adjustment Methodologies

#### PART A: PRODUCTION INDEXATION METHODOLOGY

Where, pursuant to this Schedule 9, a Milestone Payment is subject to indexation pursuant to this Part A of Appendix 6, the amount of that Milestone Payment following indexation shall be determined as follows:

$$\text{Indexed Amount} = [(\text{Indexable Amount} \times A) / B]$$

where:

A is the value of Retail Price Index (excluding mortgage interest payments) for the month immediately after the Indexation date;

B is the value of Retail Price Index (excluding mortgage interest payments) published for January 2010;

Indexable Amount is the amount of the applicable Milestone Payment; and

Indexation date means the Milestone Payment Date for the applicable Milestone Payment if such date falls beyond 31<sup>st</sup> December 2009

#### PART B: REMOBILISATION COSTS

Where, pursuant to this Schedule 9, the Purchaser is required to pay Remobilisation Costs to the Manufacturer the amount of such costs shall be equal to:

- (i) £ [REDACTED] where there is a Break In Production greater than or equal to [REDACTED] calendar month but less than or equal to [REDACTED] calendar year;
- (ii) [REDACTED] where there is a Break In Production greater than [REDACTED] calendar year but less than [REDACTED] calendar years;
- (iii) where there is a Break In Production greater than [REDACTED] calendar years the amount of the Remobilisation Costs shall be determined pursuant to the Variation Procedure.

#### PART C: ADDITIONAL SPARES INDEXATION METHODOLOGY

Where, pursuant to this Schedule 9, the Contract Price for Additional Spares is subject to indexation pursuant to this Part C of Appendix 6, the amount of that Contract Price following indexation shall be adjusted at the Commencement Date and thereafter adjusted at each applicable Milestone Payment Date by multiplying the Contract Price by the Price Adjustment Factor which shall be determined in accordance with the following formula:

$$\text{Price Adjustment Factor A} = 1 + [(L - B) / B]$$

where

B is the value of the Retail Price Index (excluding mortgage interest payments) published on or immediately before 30<sup>th</sup> June 2005; and

L is value of Retail Price Index (excluding mortgage interest payments) published immediately before the date of the relevant Milestone Payment Date.

## **PART D: GENERAL**

### **1. Changes To The Indices**

If the indices referred to in this Appendix 6 cease to be published, then such other appropriate index as may be published in place thereof shall apply or, in the absence of an appropriate replacement index, such index shall apply as the Purchaser and the Manufacturer may agree.

### **2. Base Date of Indices**

If any index specified in this Appendix 6 is superseded by an index with a base date which is later than the base date of the index detailed above, the superseding index shall be used or an index with a later base date, as the case may require.

### **3. Provisional Indices**

Where an index is published as “provisional” and is subsequently amended, then:

- 3.1 the calculation of any applicable adjustment may be undertaken using the published provisional index and invoices may be rendered accordingly;
- 3.2 any published amendment to the provisional index shall result in recalculation of any applicable adjustment; and
- 3.3 such recalculation shall be retrospective for the relevant period, and the Purchaser or the Manufacturer (as the case may be) disadvantaged by the amendment to the provisional index shall be entitled to recover the difference in the value of any invoice calculated on the basis of an amended provisional index.

### **4. Decimal Places and Rounding**

All calculations pursuant to this Appendix 6 shall be to two decimal places rounding up at 0.xx5 or above and rounding down otherwise (for example, 10.375 = 10.38 and 10.374 = 10.37).

**SCHEDULE 10: MAINTENANCE FACILITY**

## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 10 – NXG Facility**

ELM-COM-109-09-06-0013

Issue : Engrossment

August 2006

Confidential

**Client** Transport for London  
**Project** East London Line Project  
**Document No.** ELM-COM-109-09-06-0013  
**Title** Rolling Stock Manufacture and Supply Agreement –  
Schedule 10 – Maintenance Facility

## SCHEDULE 10

### Maintenance Facilities

#### 1. COMMERCIAL ARRANGEMENTS FOR MAINTENANCE FACILITY

##### 1.1 Definitions

1.1.1 The following phrases shall where the context admits have the meaning set out below for all the purposes of the Schedule 10:

- (1) **Alternative Facility** shall mean such alternative facility for the performance of the Services meeting the NXG Facility Conditions as the Purchaser may in consultation with the Manufacturer choose to procure, or to construct and complete and in either case to provide for the performance of the Services.
- (2) **Base Ilford Investment** shall mean a payment by the Purchaser to the Manufacturer of £[REDACTED] to facilitate upgrades to the Ilford Maintenance Facility.
- (3) **Certificate of Approval** shall mean a completed certificate in the applicable form set out at Annex 7 to this Schedule 10.
- (4) **Contingent Maintenance Facility** shall mean any one or more of the, Selhurst Facility, the Stewarts Lane Facility and any other similar railway maintenance facility agreed between the Manufacturer and the Purchaser .
- (5) **Dalston Link** shall mean the proposed rail connection between Dalston Junction station on the Core ELL Infrastructure and Dalston Western Junction (dc lines) on the North London Railway
- (6) **Detailed Design** shall have the meaning ascribed to it in paragraph 2.13 of this Schedule 10.

- (7) **Enhanced Ilford Investment** shall mean a payment by the Purchaser to the Manufacturer of [REDACTED] or if the Base Ilford Investment has already been made, [REDACTED] to facilitate upgrades to the Ilford Maintenance Facility.
- (8) **Facility Design** shall have the meaning ascribed to it in paragraph 2.9 of this Schedule 10.
- (9) **Facility Test** shall have the meaning ascribed to it in paragraph 3.4.2 of this Schedule 10.
- (10) **Fit Out Specification** shall have the meaning ascribed to it in paragraph 4.1.1(A) of this Schedule 10.
- (11) **Fixed Assets** shall have the meaning ascribed to it in paragraph 4.5.1 of this Schedule 10.
- (12) **Ilford Facility** shall mean the railway maintenance facility at Ilford whose address is Bombardier Transportation, Ley Street, Ilford, IG1 4BP
- (13) **Maintenance Information** shall mean all information concerning the design and/or maintenance of the Units and/or the Base Product as is readily available to the Manufacturer at any time.
- (14) **Main Works Contractor** shall mean the person appointed by LUL to carry out certain upgrades, renewals and extensions to the existing Railway Infrastructure on the East London Line.
- (15) **Main Works Contractor Fit Out Works** shall have the meaning ascribed to it in paragraph 4.4.1 of this Schedule 10.
- (16) **Manufacturer Fit Out Works** shall have the meaning ascribed to it in paragraph 4.1.1(B) of this Schedule 10.
- (17) **Method Statement** shall have the meaning ascribed to it in paragraph 4.1.1(B) of this Schedule 10.
- (18) **Moveable Assets** shall have the meaning ascribed to it in paragraph 4.6.1 of this Schedule 10.

- (19) **NLR Design Brief** shall have the meaning ascribed to it in paragraph 5.3.3 of this Schedule 10.
- (20) **NLR Satellite Maintenance Facility** shall mean a maintenance facility for the performance of aspects of the Services to be situated at a location yet to be determined adjacent and connected to the routes commonly known as the North London Line between Richmond and Stratford which the Purchaser will (subject to this Agreement) construct and complete and provide for the performance of the Services.
- (21) **NLR Satellite Maintenance Facility Objective** shall have the meaning ascribed to it in paragraph 5.1 of this Schedule 10.
- (22) **NLR Satellite Maintenance Facility Output Specification** shall have the meaning ascribed to it in paragraph 5.3.1(B) of this Schedule 10.
- (23) **NXG Facility** shall mean the NXG Maintenance Facility and the NXG Stabling.
- (24) **NXG Facility Condition** shall have the meaning ascribed to it in paragraph 1.2.1 of this Schedule 10.
- (25) **NXG Facility Constraints** shall mean the other information provided by the Purchaser as referred to at Annex 4 of this Schedule 10;
- (26) **NXG Facility Consultation Notice** shall have the meaning ascribed to it in paragraph 1.3.2 of this Schedule 10.
- (27) **NXG Facility Functional Output Specification** shall have the meaning ascribed to it in paragraph 2.2.1 of this Schedule 10.
- (28) **NXG Facility Layout Drawing** shall have the meaning ascribed to it in paragraph 2.1.1 of this Schedule 10.
- (29) **NXG Facility Relief Event** shall have the meaning ascribed to it in paragraph 1.3.1 of this Schedule 10.
- (30) **NXG Facility Remedial Notice** shall have the meaning ascribed to it in paragraph 1.3.4 of this Schedule 10.

- (31) **NXG Facility Specification** shall have the meaning ascribed to it in paragraph 2.11.1 of this Schedule 10.
- (32) **NXG Facility Standards** shall mean the Standards save where the requirements for standards set out in the NXG Facility Constraints require the use of other standards.
- (33) **NXG Maintenance Facility** shall mean shall mean a maintenance facility for the performance of the Services to be situated at the Site and connected to the East London Line which the Purchaser and/or (without prejudice to the Purchaser's obligation under paragraph 3.1.1 of this Schedule 10) LUL will (subject to this Agreement) construct and complete and provide for the performance of the Services.
- (34) **NXG Reference Design** shall have the meaning ascribed to it in paragraph 2.5.1 of this Schedule 10.
- (35) **NXG Reference Specification** shall have the meaning ascribed to it in paragraph 2.7 of this Schedule 10.
- (36) **NXG Stabling** shall mean a stabling to be situated at the Site directly connected to the NXG Maintenance Facility and the East London Line which the Purchaser and/or (without prejudice to the Purchaser's obligation under paragraph 3.1.1 of this Schedule 10) LUL will (subject to this Agreement) construct and complete.
- (37) **Selhurst Facility** shall mean the railway maintenance facility at Selhurst whose address is Selhurst Road, London SE25 6LJ.
- (38) **Stewarts Lane Facility** shall mean the railway maintenance facility at Stewarts Lane Dickens Street, Battersea, London SW8 5EP.
- (39) **Verification Exercise** shall mean the design review exercise to review and validate the NXG Layout Drawing and the NXG Facility Functional Output Specification and other reviews and investigations referred to in Clause 2.3 below.

## 1.2 Suitability of NXG Facility

1.2.1 The "**NXG Facility Condition**" is that the NXG Facility shall be sufficient, adequate and/or complete in all respects such that the Maintainer shall be able to perform the Services (as defined in the Train Services Agreement):

- (A) at the NXG Facility insofar as required by the Train Services Agreement;
- (B) in a safe, economical and efficient manner;
- (C) so as to achieve the levels of Availability of the Units required by the Train Services Agreement; and
- (D) otherwise in accordance with the Maintainer's obligations in the Train Services Agreement;

1.2.2 The Manufacturer hereby confirms and warrants to the Purchaser and to LUL that if the proposed NXG Facility is constructed, completed and fitted-out in a manner consistent with the NXG Facility Functional Output Specification, it will not thereby be prevented from satisfying the NXG Facility Condition in all respects.

## 1.3 Mutual Relief From NXG Facility Obligations

1.3.1 The occurrence of one or more of the following shall constitute a NXG Facility Relief Event:

- (A) the Verification Exercise is carried out and the Parties or any of them discover that the NXG Facility is legally or physically impossible to construct on or before 31 December 2011; or
- (B) the NXG Facility is not completed by 31 December 2011.

1.3.2 The Parties shall promptly notify one another on becoming aware of a NXG Facility Relief Event giving full details and specifying the occurrences and events which it considers to constitute the NXG Facility Relief Event and which of the matters set out in clause 1.3.1 of this Schedule 10 it considers has occurred ("**NXG Facility Consultation Notice**"). No Party shall serve an NXG Facility Consultation Notice vexatiously or without reasonable and proper grounds.

1.3.3 After receipt of any NXG Facility Consultation Notice the Parties shall consult together with a view to mitigating the effects of the NXG Facility Relief Event stated in that notice and any other NXG Facility Relief Event that may have

occurred and agreeing a plan to achieve the design, construction and completion of the NXG Facility in accordance with the NXG Facility Condition.

1.3.4 The Purchaser shall within 10 Working Days of the receipt of any NXG Facility Consultation Notice provide to the other Parties a written plan giving full details of its proposals for mitigating the effects of any NXG Facility Relief Event and for achieving at the Purchaser's cost and risk the design, construction and completion of the NXG Facility in accordance with the NXG Facility Condition ("**NXG Facility Remedial Notice**"). Any NXG Facility Remedial Notice shall give details of the estimated cost of the measures it proposes and the date by which they would permit the completion of the NXG Facility and may additionally provide equivalent details of any proposed Alternative Facility.

1.3.5 After receipt of any NXG Facility Remedial Notice the Parties shall further consult together and meet to discuss the proposals in any NXG Facility Remedial Notice with a view to mitigating the effects of any NXG Facility Relief Event and agreeing a plan to achieve the design, construction and completion of the NXG Facility in accordance with the NXG Facility Condition or the construction of any Alternative Facility.

1.3.6 Unless the Parties otherwise agree, if any NXG Facility Relief Event has occurred and a NXG Facility Consultation Notice has been given in respect of that NXG Facility Relief Event, then 25 Working Days after the receipt of that NXG Facility Consultation Notice:

- (A) the Parties shall be relieved of their obligations under Clauses 2 (Design) and 3 (Construction) of this Schedule 10 to design, construct, and complete the NXG Facility;
- (B) the Purchaser shall procure that the Maintainer is permitted to make use of the applicable Contingent Maintenance Facility for the purposes of performing the Services (as defined in the Train Services Agreement) for the duration of the TSA or (if earlier) until an Alternative Facility is completed and made available to the Manufacturer for the performance of the Services and the Manufacturer shall give all reasonable Maintenance Information and assistance in furtherance of this objective;
- (C) the Purchaser shall be entitled (but not otherwise obliged) to design, construct, complete, commission, fit-out and provide an Alternative Facility (in accordance with the NXG Facility Functional Output Specification and the NXG Facility Condition) whether on the site at New Cross Gate or such alternative site suitable for the purpose as they may select in consultation with the Manufacturer and which meets the NXG Facility Functional Output Specification.

(D) to the extent that any NXG Facility Relief Event has been caused or occasioned by any breach or default of the Manufacturer, the Manufacturer shall indemnify the Purchaser and LUL for all costs, losses liabilities, expenses and claims whatsoever and howsoever arising which arise from or in connection with the NXG Facility Relief Event including without limitation:

(1) any costs incurred by the Purchaser in and about the use of the Contingent Maintenance Facility in accordance with this Agreement;

#### 1.4 **Contingent Maintenance Facilities**

1.4.1 The Purchaser shall be responsible for the provision of Contingent Maintenance Facilities at its own cost and risk.

As an alternative to procuring a Contingent Maintenance Facility in respect of the NLR Units, the Purchaser shall have an option to make either or both of the Base Ilford Investment and Enhanced Ilford Investment subject as follows:

(A) The Base Ilford Investment must be made no later April 25<sup>th</sup> 2008 if the Enhanced Ilford Investment has not already been made;

(B) If the Enhanced Ilford Investment is made later than October 26<sup>th</sup> 2007 the Maintainer shall be relieved of its obligations under the Performance Regime (as defined in the TSA) for a period equivalent to the delay after October 26<sup>th</sup> 2007 in the receipt by the Manufacturer of such Enhanced Ilford Investment.

1.4.2 In consideration for the Purchaser electing the relevant option and making the relevant investment pursuant to 1.4.1 above the Manufacturer shall procure the use of the Ilford Facility in order that the Maintainer can undertake its obligations under the Train Services Agreement on the NLR Units up to:

(A) 31<sup>st</sup> December 2011 if the Enhanced Ilford Investment is made; or

(B) 31<sup>st</sup> August 2009 if the Base Ilford Investment is made .

1.4.3 Before the NXG Facility is brought into use, or if the NXG Facility is for any reason impaired or incapable of use, the Purchaser shall procure at its cost the use of a Contingent Maintenance Facility (which may be the Selhurst Facility or the Stewarts Lane Facility or another facility) in order that the Maintainer can undertake its obligations under the Train Services Agreement.

1.4.4 Save in circumstances where the use of a Contingent Maintenance Facility arises from any breach or default of the Manufacturer, the Purchaser shall procure

at its cost the delivery and collection of the Units to and from Ilford and the applicable Contingent Maintenance Facility.

## 1.5 General Provisions

- 1.5.1 Any of the Purchaser, LUL and the Manufacturer may at any time refer any dispute or difference under this Schedule 10 to an adjudicator appointed in accordance with Part II of the Housing Grants, Construction and Regeneration Act 1996 and the adjudication shall be governed by the adjudication provisions of the Scheme for Construction Contracts.
- 1.5.2 If Part II of the Housing Grants, Construction and Regeneration Act 1996 does not apply to the dispute or difference in question, the parties hereby agree to treat it as though it were adjudicable under Part II of the Housing Grants, Construction and Regeneration Act 1996 and in accordance with the Scheme for Construction Contracts.
- 1.5.3 The parties agree to accept the decision of an adjudicator in such adjudication as finally determining the dispute or difference between them in respect of the matters under this Schedule 10 (save in the case of fraud) unless or until the Parties agree otherwise, or the Dispute is finally determined by the High Court of England & Wales as provided by paragraph 4 of Schedule 17.
- 1.5.4 Any adjudicator shall give reasons for his decision in writing.
- 1.5.5 No consent, approval, review, verification, permission or inspection by the Purchaser and/or LUL shall in any way reduce or vitiate the obligations of the Manufacturer.
- 1.5.6 The Manufacturer shall provide such Maintenance Information to the Purchaser and other persons acting on their behalf during the preparation and completion of the designs referred to in this Schedule 10 and the construction, completion and fitting-out of the NXG Facility or an Alternative Facility and in the obtaining of any necessary or associated regulatory, environmental or planning consents if required by the Purchaser and/or LUL. Such assistance shall without limitation include providing Maintenance Information and all ancillary or associated documentation.

## 2. DESIGN

### 2.1 NXG Facility Layout Drawing

2.1.1 The Parties have reviewed and considered the layout drawing showing land near New Cross Gate (the “Site”) and numbered P – E030 – DP – 520 – 00001 Revision B and which is appended to this Schedule 10 as Annex 2 (“**NXG Facility Layout Drawing**” and this expression shall also refer to any further or revised drawing agreed between the Parties). In respect of this drawing the Parties acknowledge and agree that:

- (A) it is a development of the layout drawing reviewed by the Parties during the New Cross Gate workshop meeting on 7 July 2006;
- (B) it includes allowance for the footprint areas (as to orientation) proposed by the Manufacturer for a combined wheel lathe/heavy cleaning facility (to include wash plant room, personnel facilities, offices and stores), maintenance facility building, train wash area (including an allowance for the location of a 25kV OHLE testing facility) and the NXG Stabling including track access to the NXG Stabling;
- (C) it includes allowance for an infrastructure maintenance building that the Purchaser or LUL may or may not, at their absolute discretion, construct and complete as part of the NXG Facility in addition to the facilities in the NXG Facility Functional Output Specification.

### 2.2 NXG Facility Functional Output Specification

2.2.1 The Manufacturer confirms and warrants to the Purchaser and to LUL that the specification for the NXG Facility set out in Annex 3 to this Schedule 10 (“**NXG Facility Functional Output Specification**”):

- (A) is based upon the NXG Facility Layout Drawing;
- (B) is such that if the NXG Facility is constructed so as to comply with it, the NXG Facility will not be prevented from meeting the NXG Facility Condition;
- (C) is such that if the NXG Facility is constructed so as to comply with it, subject to adequate Detailed Designs, the NXG Facility will not pose any material risk and/or hazard to any person and/or any property.

### 2.3 Verification Exercise

2.3.1 Without prejudice to the Manufacturer's obligations under paragraph 2.2 above, immediately following the date of this Agreement:

- (A) the Manufacturer shall provide reasonable Maintenance Information to the Purchaser so that it shall be able to undertake a design review exercise to review and validate the NXG Layout Drawing and the NXG Facility Functional Output Specification and such other reviews and investigations as the Purchaser may (in consultation with the Manufacturer) elect; and
- (B) The Purchaser and the Manufacturer shall convene meetings through appropriately skilled and experienced technical and professional staff to review the NXG Facility Constraints and the Purchaser shall, in consultation with the Manufacturer, identify such elements of the NXG Facility Constraints as may affect the intended NXG Reference Design, the intended NXG Reference Specification and the intended NXG Facility Specification in each case by reference to the applicable document page number and (as the case may be) clause or paragraph reference, (the "Designated Elements of the NXG Facility Constraints") and provide such explanation as a maintainer of trains may reasonably require to understand the nature of such affect;
- (C) The Purchaser shall determine the dimensions of the Site and the feasible size of the NXG Maintenance Facility building;  
  
(together, the "**Verification Exercise**").

2.3.2 Those elements of the Verification Exercise set out in sub-paragraphs (B) and (C) of Clause 2.3.1 shall be completed by 15<sup>th</sup> September 2006, in order that the Manufacturer can provide the NXG Reference Design and NXG Reference Specification by 16<sup>th</sup> October 2006.

2.3.3 The Verification Exercise shall be completed to the Purchaser's reasonable satisfaction by no later than 25 Working Days following the date of execution of this Agreement.

2.3.4 The Purchaser shall warrant that the NXG Facility Constraints and/ or any of its or LUL's existing obligations (whether statutory contractual or otherwise) shall not prevent the NXG Facility being designed, constructed and fitted out in accordance with the NXG Facility Functional Output Specification or satisfying the NXG Facility Condition in all respects.

## 2.4 **Results of Verification Exercise**

2.4.1 After the Verification Exercise has been completed the Purchaser shall notify the Manufacturer of the results of the Verification Exercise including full details of the Designated Elements of the NXG Facility Constraints and any

proposed changes to the NXG Layout Drawing; the NXG Facility Functional Output Specification, and any related or ancillary documents such that those documents:

- (A) will allow the Purchaser to achieve construction of an NXG Facility that meets the NXG Facility Condition before 31<sup>st</sup> March 2009;
- (B) are adequate to describe all the intended maintenance activities as demonstrated by means of a comprehensive simulation exercise undertaken by the Manufacturer to the Maintainer's reasonable satisfaction;
- (C) do not contravene any Applicable Laws, the terms of any Relevant Consents and/or any applicable NXG Facility Standards; and
- (D) comply with (or will allow the Purchaser and/or LUL to comply with) all NXG Facility Constraints and Regulatory Documents;

provided that if such proposed changes could in the Purchaser's and/or the Maintainer's reasonable opinion be expected to have a material adverse effect on the Purchaser's ability to achieve the NXG Facility Condition under (A) above or if they result in an adverse change in the NXG Facility Functional Output Specification the parties shall agree a Variation Order determined in accordance with Schedule 13

2.4.2 Upon completion of any applicable Variation required under 2.4.1 or otherwise as soon as reasonably practical the Purchaser shall issue amended versions of the NXG Layout Drawing; the NXG Facility Functional Output Specification, and any related or ancillary documents to the Manufacturer and after such amendments have been made, any reference in this Schedule 10 to the NXG Layout Drawing; the NXG Facility Functional Output Specification, and any related or ancillary documents shall be deemed to be a reference to that document as amended pursuant to this Clause 2.4.2.

2.4.3 The Purchaser shall make available to the Manufacturer the results of any surveys for contamination carried out on the site intended for the NXG Facility and the NXG Stabling together with, any information about planned remediation works.

## 2.5 Reference Design of NXG Facility

2.5.1 The Manufacturer shall develop and document an outline scheme design to the level equivalent to beyond RIBA Workstage C and working towards achieving RIBA Workstage D or equivalent GRIP 4, for the NXG Maintenance Facility buildings. This outline scheme design (“**NXG Reference Design**”) shall show the

dimensions and orientation of all train maintenance (excluding operational or infrastructure maintenance) buildings included in the NXG Facility. This outline scheme design shall be based on the NXG Facility Functional Output Specification.

2.5.2 The NXG Reference Design shall be such that it:

- (A) is based upon, and not incompatible with, the Designated Elements of the NXG Facility Constraints;
- (B) is such that if the NXG Facility is constructed so as to comply with it, the NXG Facility will not be prevented from meeting the NXG Facility Condition;
- (C) is such that if the NXG Facility is constructed in principle so as to comply with it, the NXG Facility, subject to adequate Detailed Design, it will not pose any material risk and/or hazard to any person and/or any property;
- (D) will not cause the Purchaser and/or LUL to be in breach of any of its existing obligations (whether statutory, contractual or otherwise) where these have been specifically notified prior to September 15<sup>th</sup> 2006 to the Manufacturer by the Purchaser from time to time and includes the obligations of the Purchaser and/or LUL under this Agreement and the obligations of the Purchaser under the Train Services Agreement; and
- (E) is in conformity with the NXG Facility Standards.

2.5.3 The Manufacturer shall provide a copy of the completed NXG Reference Design to the Purchaser as soon as possible and no later than 16<sup>th</sup> October 2006.

## 2.6 Approval of NXG Reference Design

2.6.1 Following completion of the NXG Reference Design the Manufacturer shall promptly submit the NXG Reference Design to the Purchaser for acceptance.

2.6.2 Within 20 Working Days of receiving the NXG Reference Design, the Purchaser shall notify the Manufacturer in writing as to whether it accepts or rejects the NXG Reference Design. The Purchaser shall not act unreasonably in making any rejection. Where the Purchaser accepts the NXG Reference Design it shall provide the Manufacturer with a written statement to this effect. Where the Purchaser rejects the NXG Reference Design, the Purchaser shall provide the Manufacturer with (in reasonable detail) a complete list of the grounds on which it has rejected the NXG Reference Design. Where the Purchaser has not accepted the NXG Reference Design the Manufacturer shall procure that the NXG Reference Design is revised to take into account each of the reasonable grounds set out by the

Purchaser and shall submit the revised designs to the Purchaser for acceptance in accordance with this paragraph 2.6.2.

2.6.3 For the purposes of paragraph 2.6.2 the parties shall agree that it shall be unreasonable for the Purchaser to reject the NXG Reference Design where it is not able to demonstrate to the reasonable satisfaction of the Manufacturer that revisions to the NXG Reference Design are necessary to

- remedy any breach of any Applicable Laws, Relevant Consents and/or applicable NXG Facility Standards; or
- satisfy a requirement described in the NXG Facility Functional Output Specification
- satisfy a requirement described in the NXG Facility Condition

2.6.4 If the Purchaser does not respond to the Manufacturer in accordance with the timeframe set out in paragraph 2.6.2, the Manufacturer shall be entitled to proceed as if the Purchaser had approved the NXG Reference Design.

2.6.5 If and to the extent that the Manufacturer proposes any changes to the NXG Reference Design after the Purchaser has approved that NXG Reference Design the provisions of paragraph 2.6.2 shall apply.

## 2.7 **Reference Specification for NXG Facility**

2.7.1 In addition to the NXG Reference Design the Manufacturer shall provide the information listed in Annex 10 to this Schedule 10 ("**NXG Reference Specification**") to assist LUL and/or the Purchaser in obtaining the relevant consents and approvals for the overall facility. The NXG Reference Specification shall be based on the NXG Facility Functional Output Specification.

2.7.2 The NXG Reference Specification shall be such that it:

- (A) is fully co-ordinated in all respects with the NXG Reference Design;
- (B) is based upon, and not incompatible with, the Designated Elements of the NXG Facility Constraints;
- (C) is such that if the NXG Facility is constructed so as to comply with it, the NXG Facility will not be prevented from meeting the NXG Facility Condition;

- (D) is such that if the NXG Facility is constructed so as to comply with it, the NXG Facility, subject to adequate Detailed Design will not pose any material risk and/or hazard to any person and/or any property;
- (E) will not cause the Purchaser and/or LUL to be in breach of any of its existing obligations (whether statutory, contractual or otherwise) where these have been specifically notified to the Manufacturer prior to September 15<sup>th</sup> 2006 by the Purchaser from time to time and includes the obligations of the Purchaser and/or LUL under this Agreement and the obligations of the Purchaser under the Train Services Agreement;
- (F) is in conformity with the NXG Facility Standards; and

2.7.3 The Manufacturer shall provide a copy of the completed NXG Reference Specification to the Purchaser as soon as possible and no later than 16th October 2006.

## 2.8 **Approval of NXG Reference Specification**

2.8.1 Following completion of the NXG Reference Specification the Manufacturer shall promptly submit the NXG Reference Specification to the Purchaser for acceptance.

2.8.2 Within 20 Working Days of receiving the NXG Reference Specification the Purchaser shall notify the Manufacturer in writing as to whether it accepts or rejects the NXG Reference Specification. The Purchaser shall not act unreasonably in making any rejection. Where the Purchaser accepts the NXG Reference Specification it shall provide the Manufacturer with a written statement to this effect. Where the Purchaser rejects the NXG Reference Specification, the Manufacturer shall provide the Purchaser with (in reasonable detail) a complete list of the grounds on which it has rejected the NXG Reference Specification. Where the Purchaser has not accepted the NXG Reference Specification, the Manufacturer shall procure that the NXG Reference Specification is revised to take into account each of the reasonable grounds set out by the Purchaser and shall submit the revised designs to the Purchaser for acceptance in accordance with this paragraph 2.8.2.

2.8.3 For the purposes of paragraph 2.8.2 the parties shall agree that it shall be unreasonable for the Purchaser to reject the NXG Reference Specification where it is not able to demonstrate to the reasonable satisfaction of the Manufacturer that revisions to the NXG Reference Specification are necessary to

- remedy any breach of any Applicable Laws, Relevant Consents and/or applicable NXG Facility Standards; or

- satisfy a requirement described in the NXG Facility Functional Output Specification
- satisfy a requirement described in the NXG Facility Condition

2.8.4 If the Purchaser does not respond to the Manufacturer in accordance with the timeframe set out in paragraph 2.8.2, the Manufacturer shall be entitled to proceed as if the Purchaser had approved the NXG Reference Specification.

2.8.5 If and to the extent that the Purchaser proposes any changes to the NXG Reference Specification after the Purchaser has approved the NXG Reference Specification, and such proposed changes could in the Purchaser's and/or the Maintainer's reasonable opinion be expected to have a material adverse effect on the Purchaser's ability to achieve the NXG Facility Condition under (A) above or if they result in an adverse change in the NXG Facility Functional Output Specification such changes shall be given effect by means of a Variation determined in accordance with Schedule 13 and the provisions of paragraph 2.8.2 shall apply.

## 2.9 Facility Design

2.9.1 The Purchaser shall use the NXG Reference Design and the NXG Reference Specification to develop and document a design for the NXG Facility to a level equivalent to GRIP 4 (or other such level that may be required to achieve the necessary approvals for the NXG Facility) including the NXG Maintenance Facility and the NXG Stabling ("**Facility Design**").

## 2.10 Approval of Facility Design

2.10.1 Following completion of the Facility Design, the Purchaser shall promptly submit the Facility Design to the Manufacturer for acceptance.

2.10.2 Within 20 Working Days of receiving the Facility Design, the Manufacturer shall notify the Purchaser in writing as to whether it accepts or rejects the Facility Design. Where the Manufacturer (acting reasonably) accepts the Facility Design it shall provide the Purchaser with a completed Certificate of Approval in the form set out in Annex 7. Where the Manufacturer rejects the Facility Design, the Manufacturer shall provide the Purchaser with (in reasonable detail) a complete list of the grounds on which it has rejected the Facility Design. Subject to paragraph 2.10.3 where the Manufacturer has not accepted the Facility Design the Purchaser shall procure that the Facility Design is revised to take into account each of the grounds set out by the Manufacturer and shall again submit the revised Facility

Design to the Manufacturer for acceptance in accordance with this paragraph 2.10.2

2.10.3 The Manufacturer shall only be entitled to reject the Facility Design pursuant to paragraph 2.10.2 where it is able to demonstrate to the reasonable satisfaction of the Purchaser that revisions to Facility Design are necessary to:

- (A) remedy any breach of any Applicable Laws, Relevant Consents and/or applicable NXG Facility Standards; or
- (B) satisfy a requirement described in the NXG Reference Design or NXG Reference Specification
- (C) satisfy a requirement described in the NXG Facility Condition.

2.10.4 If the Manufacturer does not respond to the Purchaser in accordance with the timeframe set out in paragraph 2.10.2, the Purchaser shall be entitled to proceed as if the Manufacturer had approved the Facility Design.

2.10.5 If and to the extent that the Purchaser approves any changes to the Facility Design after the Manufacturer has issued a Certificate of Approval in respect of that Facility Design and such proposed changes could in the Purchaser's and/or the Maintainer's reasonable opinion be expected to have a material adverse effect on the Purchaser's ability to achieve the NXG Facility Condition under (A) above or if they result in an adverse change in the NXG Facility Functional Output Specification such changes shall be given effect by means of a Variation determined in accordance with Schedule 13 and the provisions of paragraphs 2.10.1 to 2.10.4 shall apply.

## 2.11 **NXG Facility Specification**

2.11.1 The Manufacturer shall develop and document a specification for the NXG Maintenance Facility and the NXG Stabling based the NXG Reference Specification ("**NXG Facility Specification**") such that it:

- (A) is fully co-ordinated in all respects with the NXG Reference Design;
- (B) is based upon, and not incompatible with, the Designated Elements of the NXG Facility Constraints;
- (C) is such that if the NXG Facility is constructed so as to comply with it, the NXG Facility will meet the NXG Facility Condition;
- (D) is such that if the NXG Facility is constructed so as to comply with it, subject to adequate Detailed Design, the NXG Facility will not pose any material risk and/or hazard to any person and/or any property;

- (E) will not cause the Purchaser and/or LUL to be in breach of any of its existing obligations (whether statutory, contractual or otherwise) where these have been specifically notified to the Manufacturer prior to September 15<sup>th</sup> 2006 by the Purchaser from time to time and includes the obligations of the Purchaser and/or LUL under this Agreement and the obligations of the Purchaser under the Train Services Agreement;
- (F) is in conformity with the NXG Facility Standards; and
- (G) contains detailed particulars of all the Fixed Assets and Moveable Assets which the Manufacturer requires to be included in the Main Works Contractor Fit Out Works.

2.11.2 The Parties acknowledge and agree that the NXG Facility Specification prepared by the Manufacturer shall contain full details of all the aspects that are important for the Maintainer to undertake its train maintenance obligations under the Train Services Agreement and/or which may affect the Services or the Availability of the Units.

2.11.3 For the avoidance of doubt the NXG Facility Specification shall not contain the specifications or testing necessary for the construction or longevity of the NXG Facility and the Parties agree that such specifications shall be produced or procured separately by LUL or the Purchaser as a part of the Detailed Design.

2.11.4 The Manufacturer shall provide in the NXG Facility Specification the preliminary information in respect of the principles of the completion tests that will be performed by the Main Works Contractor which the Manufacturer requires to be carried out on the Maintenance Facility to demonstrate that completion has occurred. This preliminary information will include sufficient information to allow the Purchaser to determine the duration of time required to conduct each test and the facilities or equipment required to conduct each test. If a Unit is required to conduct any test, the Manufacturer shall state this in the NXG Facility Specification.

2.11.5 The Manufacturer shall provide a copy of the completed NXG Facility Specification to the Purchaser no later than 19<sup>th</sup> December 2006.

## 2.12 **Approval of NXG Facility Specification**

2.12.1 Following completion of the NXG Facility Specification the Manufacturer shall promptly submit the NXG Facility Specification to the Purchaser for acceptance.

2.12.2 Within 20 Working Days of receiving the NXG Facility Specification the Purchaser shall notify the Manufacturer in writing as to whether it accepts or

rejects the NXG Facility Specification. For avoidance of doubt the Purchaser shall not act unreasonably in making any rejection. Where the Purchaser accepts the NXG Facility Specification it shall provide the Manufacturer with a written statement to this effect. Where the Purchaser rejects the NXG Facility Specification, the Purchaser shall provide the Manufacturer with (in reasonable detail) a complete list of the grounds on which it has rejected the NXG Facility Specification. Where the Purchaser has not accepted the NXG Facility Specification the Manufacturer shall procure that the NXG Facility Specification is revised to take into account each of the reasonable grounds set out by the Purchaser and shall submit the revised designs to the Purchaser for acceptance in accordance with this paragraph 2.12.2.

2.12.3 For the purposes of paragraph 2.12.2 the parties shall agree that it shall be unreasonable for the Purchaser to reject the NXG Facility Specification where it is not able to demonstrate to the reasonable satisfaction of the Manufacturer that revisions to the NXG Facility Specification are necessary to:

- remedy any breach of any Applicable Laws, Relevant Consents and/or applicable NXG Facility Standards; or
- satisfy a requirement described in the NXG Reference Specification and NXG Reference Design
- satisfy a requirement described in the NXG Facility Functional Output Specification; or
- satisfy a requirement described in the NXG Facility Condition

2.12.4 If the Purchaser does not respond to the Manufacturer in accordance with the timeframe set out in paragraph 2.12.2, the Manufacturer shall be entitled to proceed as if the Purchaser had approved the NXG Facility Specification.

2.12.5 . If and to the extent that the Purchaser requires any changes to the NXG Facility Specification after the Purchaser has issued a Certificate of Approval in respect of that NXG Facility Specification, such changes shall be given effect by means of a Variation determined in accordance with Schedule 13 and the provisions of paragraphs 2.12.2 shall apply

## 2.13 Detailed Designs

2.13.1 The Purchaser shall procure the preparation of the detailed design of the NXG Facility and any accompanying stabling ("**Detailed Designs**") based on the

designs contained within the Facility Design and the NXG Facility Specification producing a design to the equivalent of GRIP level 5. Following completion of the Detailed Designs the Purchaser shall promptly submit the Detailed Designs to the Manufacturer for acceptance in an electronic format with a .DGN file format readable by Bentley Microstation Version 8.

2.13.2 Within 20 Working Days of receiving the Detailed Designs the Manufacturer shall notify the Purchaser in writing as to whether it accepts or rejects the Detailed Designs. Where the Manufacturer accepts the Detailed Designs it shall provide the Purchaser with a Certificate of Approval in respect of the Detailed Designs. Where the Manufacturer (acting reasonably) rejects the Detailed Designs, the Manufacturer shall provide the Purchaser with (in reasonable detail) a complete list of the grounds on which it has rejected the Detailed Designs. Subject to paragraph 2.13.3 where the Manufacturer has not accepted the Detailed Designs the Purchaser shall procure that the Detailed Designs are revised to take into account each of the grounds set out by the Manufacturer and shall submit the revised Detailed Designs to the Manufacturer for acceptance in accordance with this paragraph 2.13.2.

2.13.3 The Manufacturer shall only be entitled to reject the Detailed Designs pursuant to paragraph 2.13.2 where it is able to demonstrate to the reasonable satisfaction of the Purchaser that revisions to the Detailed Designs are necessary to:

- (A) remedy any breach of any Applicable Law, Relevant Consent and/or applicable NXG Facility Standards;
- (B) satisfy a requirement described in the NXG Facility Specification, the NXG Reference Specification and/or the NXG Reference Design;
- (C) provide sufficient details for the Manufacturer to be able to agree the interfaces between the Manufacturer Fit Out Works and the works described in the Detailed Designs; or
- (D) satisfy a requirement described in the NXG Facility Condition.

2.13.4 If the Manufacturer does not respond to the Purchaser in accordance with the timeframe set out in paragraph 2.13.2, the Purchaser shall be entitled to proceed as if the Manufacturer had approved the Detailed Designs.

2.13.5 If and to the extent that the Purchaser requires any changes to the Detailed Designs after the Manufacturer has issued a Certificate of Approval in respect of the Detailed Designs and such proposed changes could in the Purchaser's and/or the Maintainer's reasonable opinion be expected to have a material adverse effect on the Purchaser's ability to achieve the NXG Facility Condition under (A) above

or if they result in an adverse change in the NXG Facility Functional Output Specification such changes shall be given effect by means of a Variation determined in accordance with Schedule 13 and the provisions of paragraph 2.13 shall apply

2.13.6 Subject to Clause 2.13.7, 40 Working Days after the first provision of the Detailed Designs the Manufacturer shall submit full details of the tests that the Manufacturer requires to be undertaken by the Purchaser as part of the completion of the NXG Facility including without limitation:

- (A) the nature of each test and the criteria for successful completion of each test;
- (B) the duration of time required for conducting each test;
- (C) any equipment or facilities required for conducting each test (and in particular whether a Unit is required); and
- (D) any analysis or professional opinion required for the assessment of the results of any test

2.13.7 The Manufacturer shall not propose or require any test which is technically inappropriate, unreasonable or unnecessary, or which is not in general commercial use within the railway or construction industry in the United Kingdom.. For avoidance of doubt such tests from the Manufacturer shall not contain the testing necessary merely to demonstrate the construction or longevity of the NXG Facility, these tests shall be specified by the Purchaser and shall be at least to a standard of good industry practice.

2.13.8 Subject to the provisions of paragraph 4 of this Schedule 10, the Purchaser acknowledges that for the purposes of this Schedule 10 it is responsible for coordinating the interaction between the Main Works Contractor and the Manufacturer in connection with the design and construction of the Maintenance Facility.

### **3. CONSTRUCTION**

#### **3.1 Construction of the Maintenance Facility**

3.1.1 The Purchaser shall take reasonable steps (but without incurring additional expenditure) to procure that the NXG Facility is constructed so as to achieve completion on or before 31st March 2009 and in accordance with the NXG Facility

Specification and the Detailed Designs which has been approved by the Manufacturer, subject to:

- (A) any changes in the Applicable Laws which may require an alteration to the Detailed Designs;
- (B) any requests of the Manufacturer to which the Purchaser agrees and which may require an alteration to the Detailed Designs;
- (C) any changes to the terms of any Relevant Consents and/or the applicable NXG Facility Standards which may require an alteration to the Detailed Designs; and
- (D) any other circumstances beyond Purchaser's control.

3.1.2 If at any time the Manufacturer or the Purchaser becomes aware of any facts or matters likely to delay the construction, completion, fit out and putting in to use and/or use of the NXG Facility the relevant Party shall promptly inform the other Parties in writing giving all details.

3.1.3 If at any time the Manufacturer becomes aware of any Change in Law which may require an alteration to the Detailed Designs or affect the Fit Out Specification or the Manufacturer Fit Out Works and putting in to use and/or use of the NXG Facility the Manufacturer shall promptly inform the Purchaser in writing giving all details.

3.1.4 Where the Purchaser or LUL modifies the Detailed Designs pursuant to a notice given by the Manufacturer in accordance with paragraph 3.1.2 or otherwise, the Purchaser shall submit the revised Detailed Designs to the Manufacturer for its approval and the provision of paragraphs 2.13.2 to 2.13.4 shall apply.

3.1.5 The Manufacturer acknowledges that it shall be responsible for any failure to identify and notify the Purchaser, in accordance with paragraph 3.1.2 of any modifications to the Fit Out Specification, the Manufacturer Fit Out Works arising from, or in connection with, a Change in Law.

## 3.2 Site Visits

3.2.1 Where the Manufacturer wishes to visit the site of the NXG Facility as part of the process of approving the Detailed Designs and/or during the construction of the NXG Maintenance Facility, the Manufacturer shall give the Purchaser written notice of:

- (A) the proposed date when the Manufacturer would like to visit the site and the likely duration of such visit;

- (B) the identity of the representatives of the Manufacturer who will carry out such visit; and
- (C) an explanation as to the rationale for such visit.

3.2.2 Following receipt of a notice served pursuant to paragraph 3.2.1, the Purchaser shall use its reasonable endeavours to provide the Manufacturer with access to the site of the NXG Facility as requested in the notice, and shall notify the Manufacturer at least a reasonable period prior to the proposed date of the visit as to whether the visit is able to proceed or whether alternative arrangements need to be agreed.

3.2.3 The grant of any access to the site of the NXG Facility by the Purchaser pursuant to paragraph 3.2.2 is subject to the Manufacturer complying with, and procuring that each of its representatives (including any Subcontractor) complies with any requirement, instruction and/or condition the Purchaser considers reasonably necessary to address any requirement of any insurer any risk to the safety of persons and/or property and/or to comply with any Applicable Laws, any Relevant Consents and/or any applicable NXG Facility Standards.

### 3.3 **Instructions to Contractors and Information**

3.3.1 The Manufacturer shall not, and shall procure as far as reasonably practical that its Subcontractors shall not, at any time give any oral or written instructions to the Main Works Contractor regarding the NXG Facility for any reason. The Manufacturer acknowledges and agrees that only the Purchaser or LUL may give instructions to the Main Works Contractor.

3.3.2 The Purchaser or LUL shall, and shall procure that the Main Works Contractor shall promptly upon request give all reasonable information to the Manufacturer that it needs to perform its obligations.

3.3.3 The Manufacturer shall be entitled to notify the Purchaser in writing of any information likely to be in the possession of their subcontractors including the Main Works Contractor that the Manufacturer, acting reasonably, considers it requires in order to perform its obligations described in this Schedule 10. Upon receipt of such notice, the Purchaser shall use its reasonable endeavours to procure the provision of such information.

3.3.4 LUL and/or the Purchaser shall be entitled to convene such meetings between the Manufacturer and the Main Works Contractor as it/they consider necessary or desirable to ensure that the design, construction and fit out of the NXG Facility occurs in a safe, efficient and coordinated manner, and the

Manufacturer shall attend and participate in all such meetings. LUL and the Purchaser each reserve the right to attend and participate in such meetings.

3.3.5 The Manufacturer shall, and shall procure that its Subcontractors shall, promptly upon request give all reasonable information in writing to LUL and/or the Purchaser in connection with the NXG Facility and:

- (A) any matter to do with the health and safety of any person;
- (B) any information required by Network Rail and/or in connection with any railway possession;
- (C) any change to the Detailed Designs;
- (D) resolving any inconsistency or ambiguity in the Detailed Designs; and/or
- (E) queries as to the intended fit out and use of the Maintenance Facility,

and any other information in connection with or otherwise relating to the NXG Facility and required under any Applicable Laws, applicable NXG Facility Standards and/or Relevant Consents.

#### 3.4 **Practical Completion**

3.4.1 Where the Purchaser considers that the construction of either the NXG Maintenance Facility or the NXG Stabling is complete it shall notify the Manufacturer and the provisions of Clauses 3.4.2 to 3.4.7 shall apply.

3.4.2 The Purchaser shall conduct or shall procure that another conducts each of the tests specified by the Manufacturer under Clause 2.13.6 of this Schedule and any static tests that would normally be expected of a competent depot constructor / designer taking into account the detailed design of the NXG Maintenance Facility or the NXG Stabling as the case may be ("**Facility Test**").

3.4.3 The Purchaser shall notify, provide method statements and details of the proposed Facility Tests to the Manufacturer at least 10 Working Days in advance of conducting each Facility Test and the Manufacturer or its nominee shall be entitled to attend the conduct of such Facility Test and be provided with a copy of the results of each Facility Test as soon as reasonably practicable after they become available. If the Manufacturer provides any comments on the proposed tests a reasonable time in advance of the tests taking place, then the Purchaser shall where reasonable take these comments into account in carrying out the Facility Tests.

3.4.4 Where the Purchaser considers that the NXG Maintenance Facility or the NXG Stabling (as the case may be) or a part of them has passed the applicable Facility Tests, the Purchaser shall give written notice to the Manufacturer setting

out details of each of the applicable Facility Tests that have been conducted on the NXG Maintenance Facility or the NXG Stabling (as the case may be) and a summary of the results of such Facility Tests.

3.4.5 If the Manufacturer considers (acting reasonably) that the NXG Maintenance Facility or the NXG Stabling (as the case may be) or the relevant part of them has not successfully passed any of the Facility Tests it shall give notice to the Purchaser setting out in detail its reasons for such objection within 5 Working Days after receipt of the notice served by the Purchaser in accordance with paragraph 3.4.3 the Purchaser shall procure that Facility Tests are revised or repeated to take into account each of the grounds set out in the notice by the Manufacturer repeating the requirements of Clauses 3.4.2 to 3.4.4 above as appropriate.

3.4.6 If the Manufacturer considers acting reasonably that the NXG Maintenance Facility or the NXG Stabling (as the case may be) or the relevant part of them has successfully passed any of the Facility Tests it shall provide the Purchaser and LUL with a completed Certificate of Approval in the form set out in Annex 7.

3.4.7 If the Manufacturer does not serve a notice pursuant to Clause 3.4.5 within the specified period, then the Purchaser and LUL shall be entitled to treat the Manufacturer as having accepted that the NXG Maintenance Facility or the NXG Stabling (as the case may be) or the relevant part of them has successfully completed each of the Facility Tests.

## **4. FIT OUT**

### **4.1 Fit Out Specification, Manufacturer Fit Out Works and Method Statement**

4.1.1 The Manufacturer shall as soon as possible and in any event no later than 56 Working Days following the completion of the NXG Facility Specification submit to the Purchaser for Assurance Acceptance:

- (A) final particulars of the specification for the fit out of the NXG Facility ("**Fit Out Specification**"), including details of all Fixed Assets and all Moveable Assets; and
- (B) its proposals (having regard to the matters set out in Annex 8) for those parts of the fit out of the NXG Facility to be undertaken by the Manufacturer ("**Manufacturer Fit Out Works**") together with draft method statements and management proposals ("**Method Statement**").

4.1.2 The Method Statement shall contain the following information:

- (A) proposed details of contact names for the consultants and Subcontractors proposed for the design and carrying out of the Manufacturer Fit Out Works;
- (B) proposals for the regular liaison co-ordination and co-operation between LUL, the Purchaser, the Main Works Contractor and the Manufacturer in relation to the implementation of the Manufacturer Fit Out Works; and
- (C) proposed details of the order and estimated timing proposed for the carrying out of each part of the Manufacturer Fit Out Works including proposals for deliveries to the site of the NXG Facility of materials and equipment for incorporation or use in the Manufacturer Fit Out Works.

4.1.3 Notwithstanding Assurance Acceptance of the Method Statement and/or the Manufacturer Fit Out Work proposals if it transpires that the Manufacturer Fit Out Works and/or the detailed provisions of the Method Statement is having or is likely to have a materially adverse effect on the completion of any part of the Main Works, the Purchaser may require such amendments or variation to the proposals for the Manufacturer Fit Out Works and/or the Method Statement as are reasonably necessary to mitigate such effect.

4.1.4 The Manufacturer and the Maintainer shall be entitled to convene such meetings between the Manufacturer and LUL as it/they consider necessary or desirable to ensure that the design, construction and fit out of the Manufacturer Fit Out Works occurs in a safe, efficient and coordinated manner. The Purchaser shall attend and participate in such meetings and if requested, the Purchaser shall procure that representatives of the Main Works Contractor attend.

## 4.2 Access to the Maintenance Facility

4.2.1 Subject to the Main Works Contractor's activities in and about the fit out of the NXG Facility and to the Manufacturer remaining at all times under the control of Main Works Contractor, the Manufacturer shall be permitted access to each part of the NXG Facility during construction and also following the date that the Main Works Contractor has achieved Completion, provided that the grant of such access is subject to the Manufacturer complying with, and procuring that each of its representatives (including any Subcontractor) complies with any requirement, instruction and/or condition the Purchaser and/or LUL considers necessary to address any requirement of any insurer any risk to the safety of persons and/or property and/or to comply with any Applicable Laws, any Relevant Consents and/or any applicable NXG Facility Standards.

### 4.3 Carrying out of Fit Out Works

4.3.1 Unless otherwise agreed with the Purchaser, the Manufacturer shall undertake the Manufacturer Fit Out Works in accordance with the Method Statement and carry out and complete such Manufacturer Fit Out Works:

- (A) regularly and diligently and without avoidable delay and in any event before the date set from time to time under the Main Works Contract for the Main Works Contractor to complete the Maintenance Facility;
- (B) in a good and workmanlike manner using sound materials of good quality;
- (C) by reputable contractors;
- (D) in accordance with good design practice; and
- (E) in accordance with the Fit Out Specification and all Relevant Consents where they have been expressly made known to the Manufacturer by LUL or the Purchaser, Applicable Laws, and/or applicable NXG Facility Standards relating to the Manufacturer Fit Out Works.

### 4.4 Co-ordination with the Main Works

4.4.1 The Manufacturer acknowledges that it shall carry out the Manufacturer Fit Out Works in the same areas and at the same times as other fit out works to be carried out by the Main Works Contractor ("**Main Works Contractor Fit Out Works**"). The Manufacturer agrees:

- (A) to liaise as necessary with the Main Works Contractor to ensure that all information regarding any item of the Manufacturer Fit Out Works that may affect any item of the Main Works Contractor Fit Out Works is provided to the Main Works Contractor in writing in good time before that item of the Manufacturer Fit Out Works is to be carried out;
- (B) to arrange its timetable of works and method of working to ensure that it does not hinder or prevent any item of the Main Works Contractor Fit Out Works as far as reasonably practical; and
- (C) to jointly ensure with the Main Works Contractor that the Manufacturer Fit Out Works and the Main Works Contractor Fit Out Works are compatible, integrated and co-ordinated with the Main Works Contractor's interfaces.

4.4.2 The Manufacturer shall during the carrying out of the Manufacturer Fit Out Works:

- (A) take such precautions at all times and at its own cost as the Purchaser and/or LUL may reasonably require for the protection of the NXG Facility and the Main Works from the effect of the Manufacturer Fit Out Works;
- (B) use only the entrances routes and exits as shall be designated from time to time by or on behalf of the Main Works Contractor;
- (C) not cause any delay to or interference with the Main Works Contractor's works nor give any instruction to the contractors engaged on them and shall make good all or any damage to the Main Works and its property caused by the carrying out of the Manufacturer Fit Out Works; and
- (D) provide and maintain temporary hoardings during the execution of the Manufacturer Fit Out Works in order to enclose the area of the NXG Maintenance Facility where the Manufacturer Fit Out Works is taking place in a manner and comprising materials and the type of facing as reasonably agreed with the Purchaser .

4.4.3 LUL and the Purchaser shall use reasonable endeavours to procure that the Main Works Contractor does not unreasonably hinder or prevent the Manufacturer from carrying out and completing the Manufacturer Fit Out Works and shall afford full co-operation to the Manufacturer and its Subcontractors in carrying out its works in accordance with this Clause.

#### 4.5 **Fixtures**

4.5.1 The Manufacturer acknowledges and agrees that to the extent that any plant, equipment and/or other assets installed as part of the Manufacturer Fit Out Works ("**Fixed Assets**") are fixtures, legal and beneficial title to such Fixed Assets shall vest in LUL (or such other person who holds the freehold interest in the land on which the NXG Facility is situated).

#### 4.6 **Moveable Assets**

4.6.1 Subject to Clause 4.6.2 the Manufacturer acknowledges and agrees that the legal and beneficial title to any plant, equipment installed and/or acquired as part of the Manufacturer Fit Out Works, save for the Fixed Assets ("**Moveable Assets**"), shall vest in the Purchaser on Delivery to the NXG Facility with full title guarantee and free from any Security and the Manufacturer shall do all things necessary or desirable to ensure that title to such Moveable Assets vests in the Purchaser. The Parties agree that such delivery of the Moveable Assets to the NXG Facility shall be evidenced by the Manufacturer issuing a Delivery Note to the Purchaser which the Purchaser shall countersign to acknowledge delivery of such Moveable Assets.

4.6.2 The Parties agree that Clause 4.6.1 shall not apply to any assets or other property unless specifically agreed by the Purchaser and the Manufacturer in writing to constitute Moveable Assets or Fixed Assets.

#### 4.7 **Storage of Equipment**

4.7.1 Where as part of the Manufacturer Fit Out Works of the NXG Facility the Manufacturer wishes to store any plant, equipment and/or other materials at or near the NXG Facility the Manufacturer shall obtain the Purchaser's prior written approval to the nature and quantity of the plant, equipment and/or other materials to be stored.

4.7.2 Not used;

4.7.3 The Manufacturer shall take such reasonable security measures as the Purchaser or LUL considers necessary to prevent the stored plant, equipment and materials being used to vandalise any part of the East London Line.

#### 4.8 **Fit Out Specification**

4.8.1 The Manufacturer undertakes to the Purchaser and to LUL that the Fit Out Specification will be designed so that it:

- (A) does not contravene any Applicable Laws, the terms of any applicable NXG Facility Standards;
- (B) is sufficient, adequate and/or complete in all respects such that the Maintainer will be able to perform all of the Services in respect of all of the Units in a safe, economical and efficient manner, and in accordance with the Maintenance Plan (as defined in the Train Services Agreement);
- (C) is consistent with all of, and does not contravene any of the NXG Facility Constraints;
- (D) does not contain any materials which are generally known in the construction industry to be deleterious or which the Main Works Contractor would not be permitted to incorporate into the Main Works Contractor's works;
- (E) does not pose any material risk and/or hazard to any person and/or any property;
- (F) complies with (or will allow the Purchaser and/or LUL to comply with) all Regulatory Documents providing these have been made known to the Manufacturer specifically by the Purchaser as part of the Verification Exercise; and

- (G) will not cause the Purchaser and/or LUL to be in breach of any of its existing obligations (whether regulatory, statutory or contractual) where these have been made specifically known to the Manufacturer by the Purchaser as part of the Verification Exercise.

#### 4.9 **Manufacturer Fit Out Works**

4.9.1 The Manufacturer shall at the time that the Fit Out Specification is finalised represent and warrant to the Purchaser and to LUL that in respect of the Manufacturer Fit Out Works:

- (A) it has examined the documents forming this Agreement and is not aware of any ambiguity or discrepancy within or between any of the documents forming part of this Agreement which might adversely affect the carrying out of the Manufacturer Fit Out Works in accordance with this Agreement;
- (B) it has sufficient information about the Purchaser, the Maintainer, LUL and the Manufacturer Fit Out Works and that it has made all appropriate and necessary enquiries to enable it to provide the Manufacturer Fit Out Works in accordance with this Agreement;
- (C) it is aware of the purposes for which the Manufacturer Fit Out Works are required and acknowledges that the Purchaser, LUL and the Maintainer are each reliant upon the Manufacturer's expertise and knowledge in the provision of the Fit Out Specification;
- (D) it has all the resources including financial, technical and human resources as are required to carry out and complete the Manufacturer Fit Out Works in accordance with this Agreement;
- (E) all workmanship, manufacture and fabrication will be in accordance with the Fit Out Specification and all applicable NXG Facility Standards;
- (F) the Manufacturer Fit Out Works will be carried out using only materials and goods which are new and of sound and good quality;
- (G) the plant and materials will on completion be fit for the purposes described in this Agreement and capable of being used, operated and maintained in a safe, economic and efficient manner, free from any unreasonable risk to the health and well-being of persons using it and free from any unreasonable or avoidable risk of pollution, nuisance, interference or hazard;

- (H) the plant and materials will not deteriorate at a greater rate than that reasonably to be expected of high quality, reliable, well-designed plant of a similar nature and manufacture; and
- (I) the plant and materials will at take-over operate safely and efficiently in combination with any plant, equipment or system to which it is to be connected.

4.9.2 Each warranty and obligation in paragraphs 4.8 and 4.9 shall be construed as a separate warranty or obligation (as the case may be) and shall not be limited or restricted by reference to, or reference from, the terms of any other such warranty or obligation in this Agreement.

## **5. NLR SATELLITE MAINTENANCE FACILITY**

### **5.1 Object of Parties in Relation to NLR Satellite Maintenance Facility**

5.1.1 The purpose of this Clause 5 of Schedule 10 is to permit the Purchaser and the Manufacturer to co-operate together if the Purchaser so elects with the aim of:

- (A) developing a design and specification for the proposed NLR Satellite Maintenance Facility at the expense of the Purchaser;
- (B) facilitating the endeavours of the Purchaser to procure the construction and completion of the proposed NLR Satellite Maintenance Facility by and at the expense and risk of the Purchaser;
- (C) performing and/or procuring the fitting-out of the proposed NLR Satellite Maintenance Facility by and (save as otherwise agreed) at the expense of the Purchaser; and
- (D) bringing the proposed NLR Satellite Maintenance Facility into use for the purpose of servicing, cleaning and maintaining the Units and performing the Maintainer's obligations under the Train Services Agreement;

together, "the **NLR Satellite Maintenance Facility Objective**".

### **5.2 Selection of Site**

5.2.1 The Purchaser may elect to take reasonable steps to identify, screen, select and acquire proposed locations for the NLR Satellite Maintenance Facility, and consult with the Manufacturer and to that end if the Purchaser so elects, the

Purchaser and the Manufacturer agree that they shall undertake the following steps:

- (A) the Purchaser and the Manufacturer shall notify the other of any potentially suitable locations of which he is aware at which the NLR Satellite Maintenance Facility could appropriately be constructed and completed so as to meet the NLR Satellite Maintenance Facility Objective;
- (B) the Purchaser may at its own expense commission a reputable surveying practice to conduct a search for any suitable sites at which the NLR Satellite Maintenance Facility could appropriately be constructed and completed so as to meet the NLR Satellite Maintenance Facility Objective and report in writing with full details;
- (C) the Purchaser may make written proposals for each site identifying in each case their favoured site for the NLR Satellite Maintenance Facility Objective together with reasons in support of this choice. The Purchaser may send these site proposals to the Manufacturer who shall provide comments on each of them within 15 Working Days of receipt; and
- (D) the Manufacturer and the Purchaser shall meet and consult together concerning their proposals with a view to reaching agreement on a suitable site for the NLR Satellite Maintenance Facility.

5.2.2 The Purchaser may at any time notify the Manufacturer of the site it prefers for the proposed NLR Satellite Maintenance Facility or may at any time notify the Manufacturer that it no longer wishes to construct the NLR Satellite Maintenance Facility.

### 5.3 **Co-operation to Develop Design, Specification, Programme and Cost Plan**

5.3.1 Where the Purchaser elects to build the NLR Satellite Maintenance Facility, the Manufacturer shall provide Maintenance Information to assist the Purchaser in developing a design, specification and cost plan for the proposed NLR Satellite Maintenance Facility and in particular shall seek to develop and reach agreement on:

- (A) the nature of the facilities to be provided at the NLR Satellite Maintenance Facility;
- (B) the nature of the servicing, cleaning, maintenance and other activities to be carried out at the NLR Satellite Maintenance Facility ("**NLR Satellite Maintenance Facility Output Specification**");

- (C) the specification for the NLR Satellite Maintenance Facility including details of all machinery and services;
- (D) a timetable or programme showing the main phases of activity and key actions for the site acquisition, surveys, demolitions, works of remediation or decontamination, preparatory or enabling work, construction and completion, fitting out and commissioning activities in respect of the NLR Satellite Maintenance Facility, which identifies a clear date for the NLR Satellite Maintenance Facility to be in service; and
- (E) a cost plan identifying all sums to be expended in and about the achieving of the NLR Satellite Maintenance Facility Objective.

5.3.2 The Manufacturer shall use all reasonable endeavours to assist the Purchaser in and about the matters referred to in Clause 5.3.1 and shall provide all reasonable Maintenance Information to the Purchaser in and about the preparation and completion of the any designs and specifications

5.3.3 Following receipt of the Maintenance Information provided by the Manufacturer pursuant to paragraph 5.3.2 the Purchaser shall promptly provide to the Manufacturer a written design brief, specification, programme and cost plan in respect of the NLR Satellite Maintenance Facility ("**NLR Design Brief**").

5.3.4 Within 15 Working Days after provision of the NLR Design Brief the Manufacturer shall (acting reasonably and with regard to the nature of the Services) indicate whether it accepts or rejects the NLR Design Brief as meeting the NLR Satellite Maintenance Facility Objective.

5.3.5 If the Manufacturer and the Purchaser agree that the NLR Satellite Maintenance Facility Objective can be achieved, the Purchaser shall be entitled to procure the further design, construction, completion, and fitting-out of NLR Satellite Maintenance Facility.

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 10 Annexes**

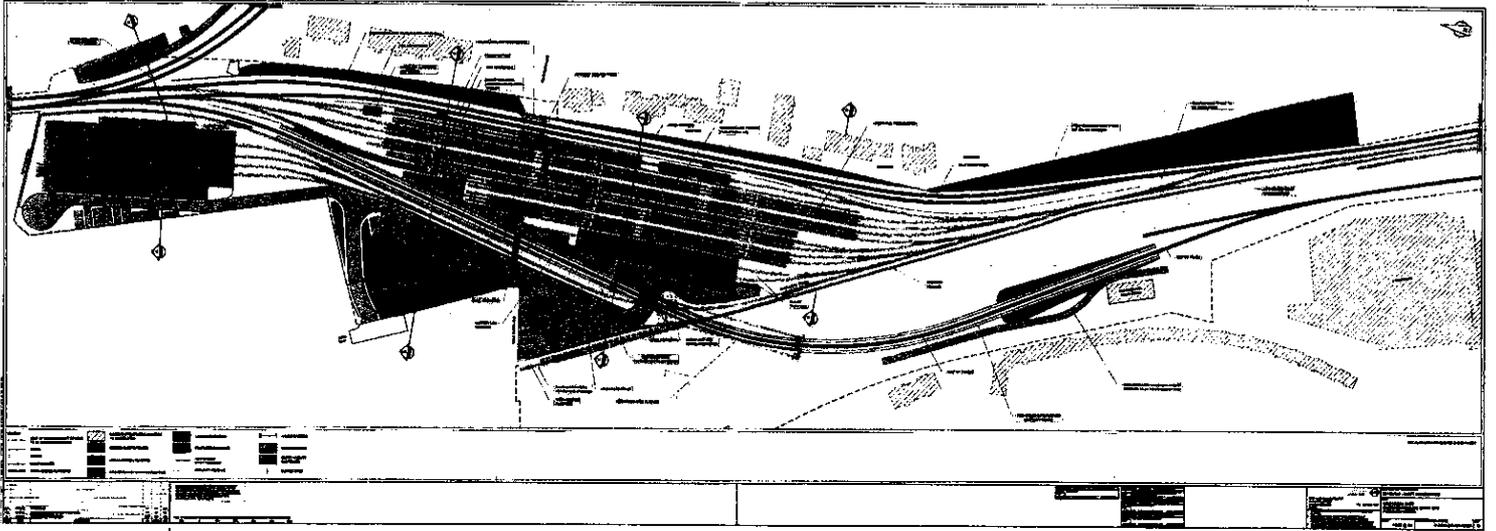
**Annex 1**  
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**Annex 2**  
**NXG Facility Layout Drawing**

This is the layout drawing showing land near New Cross Gate and numbered P – E030 – DP – 520 – 00001 Revision B attached below and this expression shall also refer to any further or revised drawing agreed between the parties.



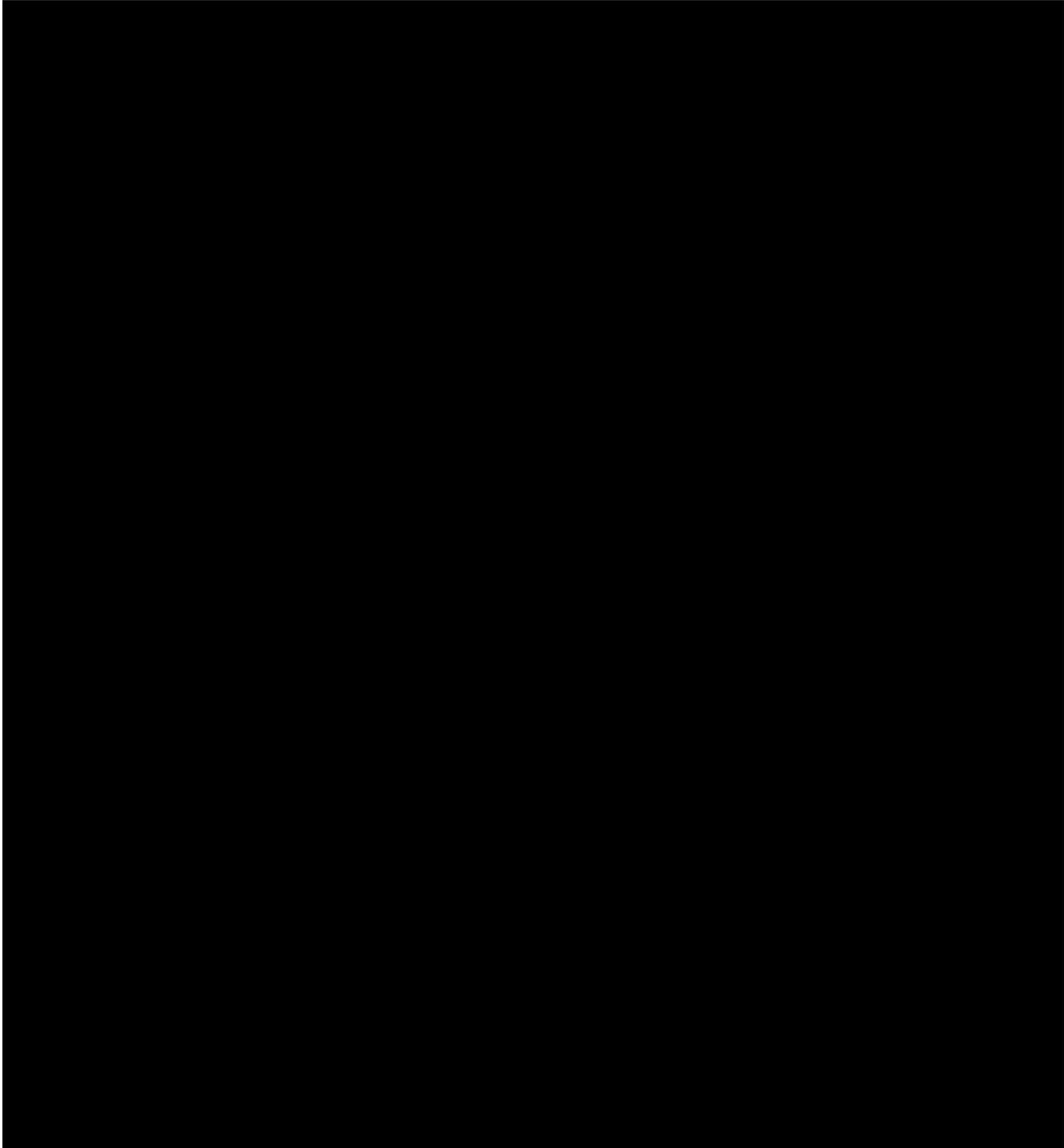
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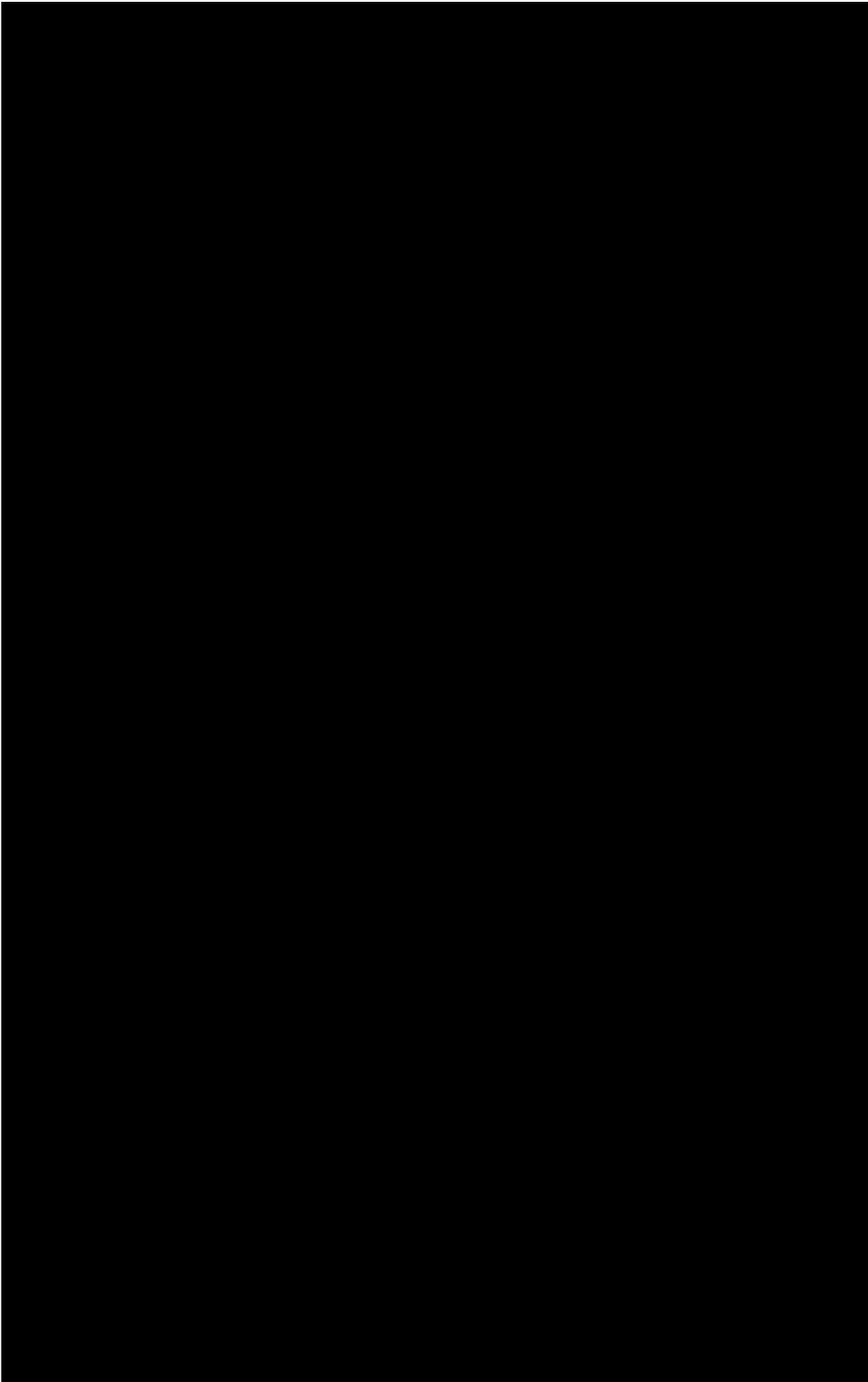


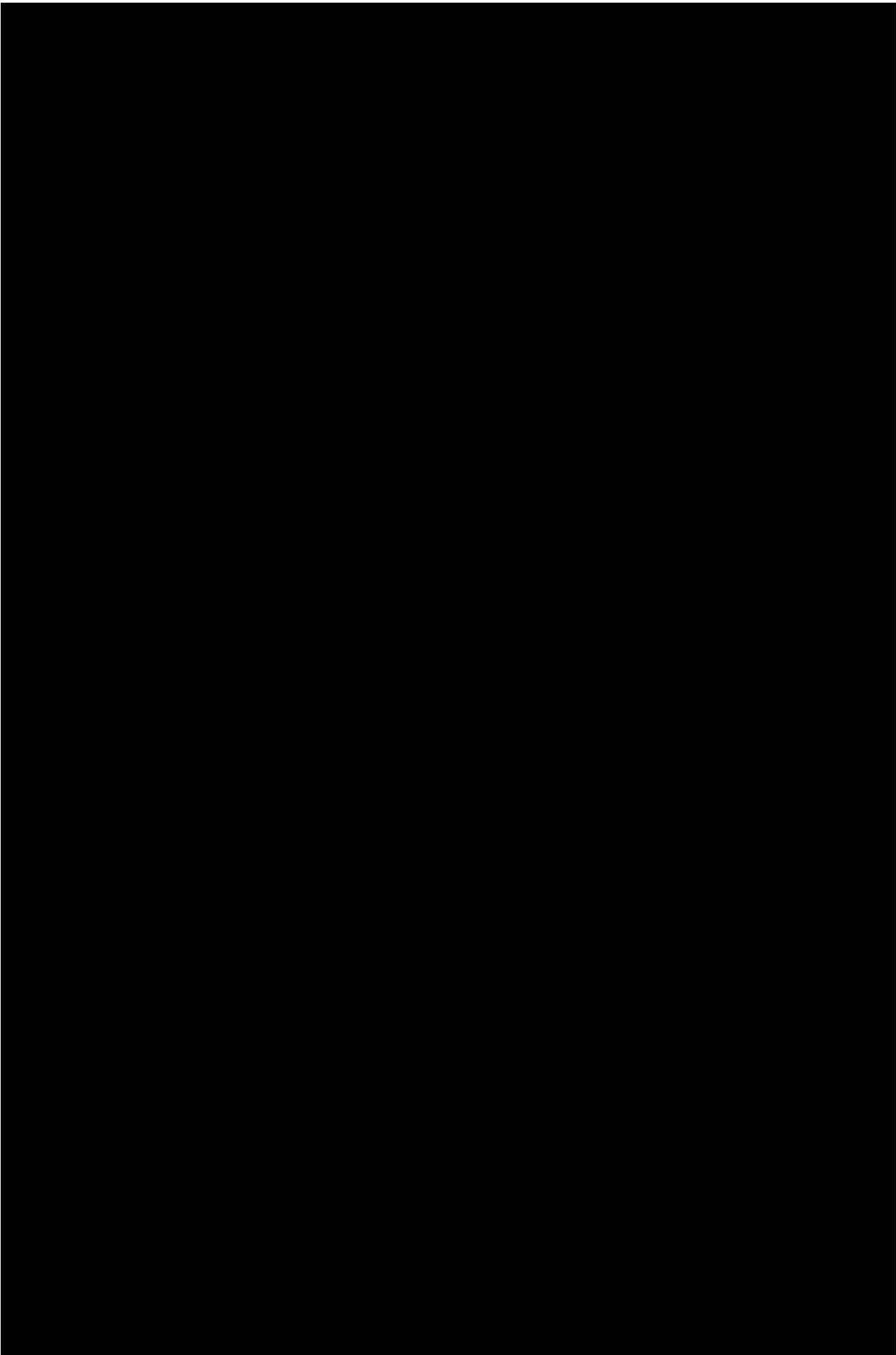
## Annex 3

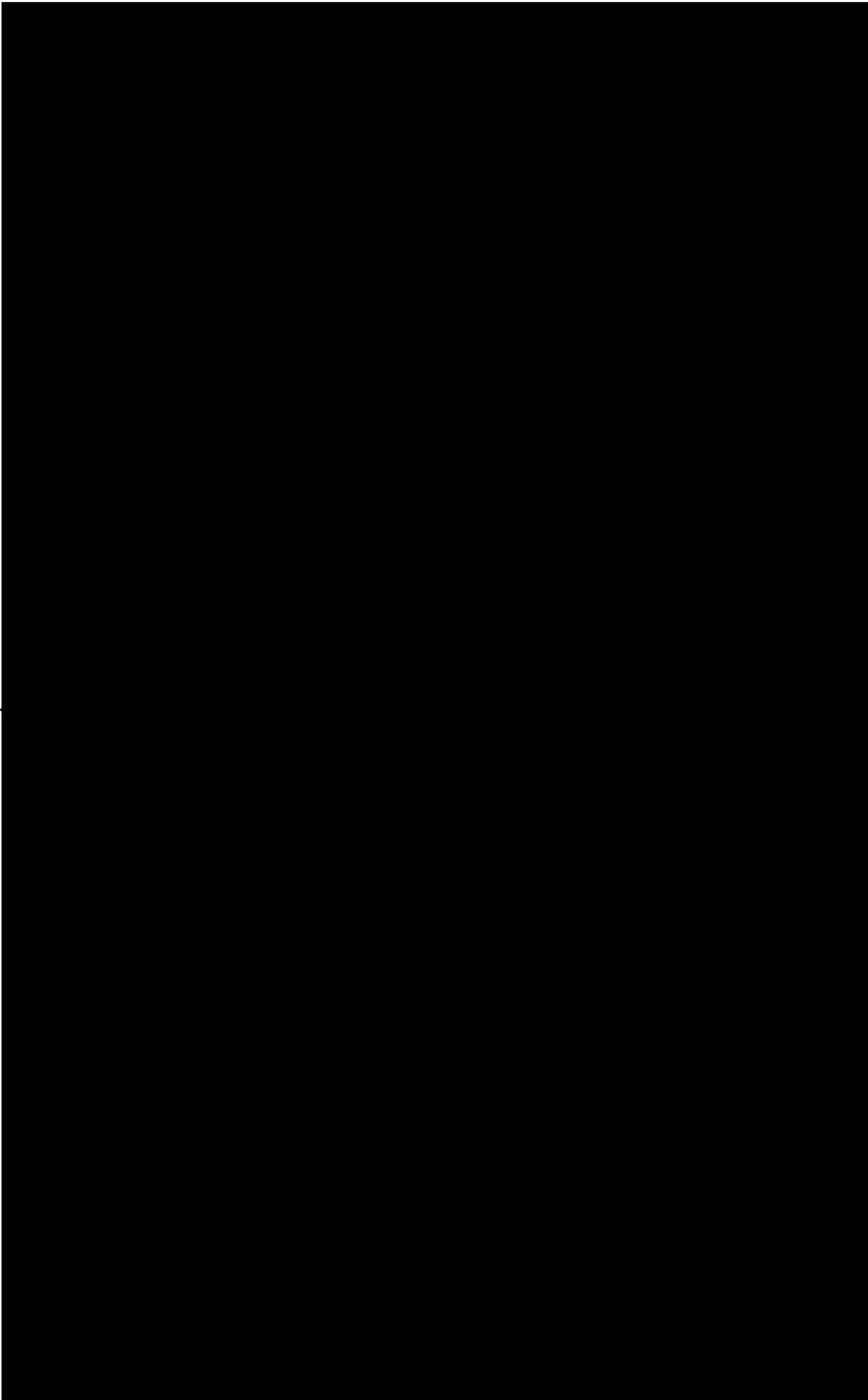
### **NXG Facility Functional Output Specification**

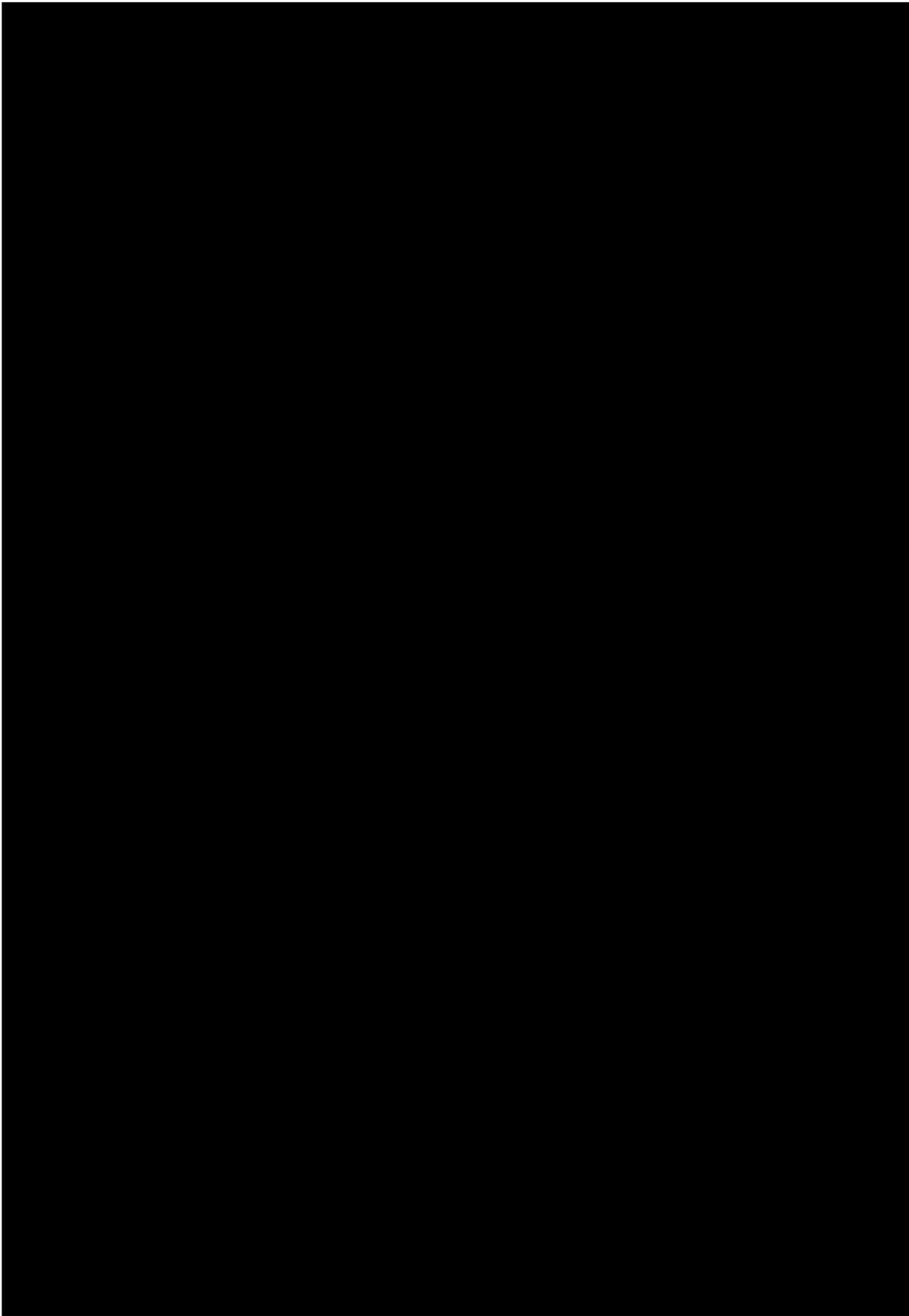
1. The Facility to be constructed by LUL in order for the Maintainer to service and maintain the fleet of East London Line & North London Line trains, as typically shown on plan P-E030-DP-520-00001 in Schedule 10 Annex 2, shall comprise of the following requirements. A definitive list of requirements and specifications for the Facility shall be found in the NXG Facility Specification. Details of other equipment and systems will be contained within the NXG Reference Design and NXG Reference Specification;











Layout drawings will be contained in the NXG Reference Design and NXG Reference Specification to reflect;

- Maintenance facility cross sections. Raised rail format of the pits, access gantries and crane coverage [preferred drawing 664258-BDR-01-112 issue 03].
- Maintenance facility plan. Site plan of maintenance facility and plan at rail level inside the building coverage [preferred drawing 664258-BDR-01-111 issue 03].
- Maintenance facility accommodation layout. Ground and other floors [preferred drawing 664258-BDR-01-113 issue 03 / 664258-BDR-01-119 issue 01 revised in accordance with email of 5 July 2006 ref ELM-COM-109-31-06-0595].
- Train wash facility.
- Identification of potential pinch points.
- Berthing area facilities to include, but not limited to, cross sections and layouts detailing access to units, supply of services / drainage requirements and consideration for removal and temporary storage of waste for collection / waste management. Storage locations for equipment and materials.

## **Annex 4**

### **NXG Facility Constraints**

1. ELLP Templates (various revisions)
2. CAD Manual Part 1 to 3 (ELM-TEC-237-14-05-0004 to 0007 issue 02)
3. CAD Manual Part 4, 5 and 7 (ELM-TEC-237-14-05-0008, 0009 and 0011 issue 01)
4. (TA08) Fire Safety Strategy (ELM-TEC-241-14-05-0021 issue 05)
5. Strategy for Stray Current Management & Implementation Guidelines (TA20) (ELM-TEC-209-14-05-0009 issue 06)
6. System Wide Earthing and Lightning Protection Strategy (TA21) (ELM-TEC-209-14-05-0013 issue 04)
7. EMC Control Plan (ELM-TEC-209-14-05-0028 issue 02)
8. Standards Manual (ELM-TEC-237-14-05-0002 issue 07)
9. Architectural Design Manual (ELM-TEC-206-14-06-0004 issue 03)
10. Project Consents Register (ELM-TEC-216-14-05-0002 issue 08)
11. Hazard Identification Procedure (ELM-TEC-213-18-05-0001 issue 01)
12. Permanent Works Environmental Noise and Vibration Specification (PWEN&VS) (ELM-MW-515-06-0004 issue 09, dated July 2006)

**Annex 5**

**Not Used**

**Annex 6**

**NXG Facility Specification**

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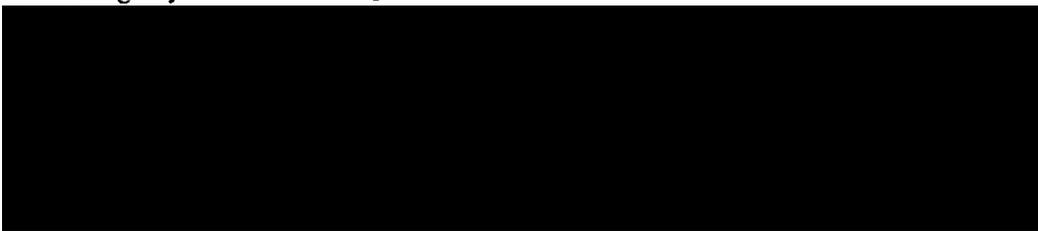
**1. EXECUTIVE SUMMARY**

**NOT USED**

- 2. INTRODUCTION**
  - 2.1 General description of project and purpose of facilities
- 3. GENERAL REQUIREMENTS AND PARAMETERS**
  - 3.1 Existing site
  - 3.2 Existing services
  - 3.3 Existing geotechnical parameters
  - 3.4 Layout and operation of the New Cross Gate Facility
  - 3.5 Road access
  - 3.6 Track layout
  - 3.7 Maintenance Facility
  - 3.8 Combined Heavy Cleaning, Wheel Lathe and amenities Facility
  - 3.9 Carriage Train Wash Facility
  - 3.10 Stabling Facility
  - 3.11 Electrification
  - 3.12 Signalling / “depot protection”
  - 3.13 Site security and safety
  - 3.14 Planning and environmental constraints, permissions, approvals etc.
- 4. EXTERNAL WORKS**
  - 4.1 Earthworks to achieve site levels
  - 4.2 Site drainage
  - 4.3 Accommodation of services, including all utility services
  - 4.4 Site boundaries, fences and acoustic barriers
  - 4.5 Overall requirements for ground for support of facilities (except buildings).
  - 4.6 Requirements for vehicle access platforms
  - 4.7 Requirements for lighting / lighting levels
- 5. TRACK SPECIFICATION**
  - 5.1 Sub-grade and drainage works
  - 5.2 Track structure; ballast, sleepers, rails, fixings etc.
  - 5.3 Track loadings
  - 5.4 Track alignments; vertical and horizontal
  - 5.5 Spacing of tracks and minimum train standing lengths
  - 5.6 Points and crossings

**6.****STABLING FACILITY**

- 6.1 Fresh water provision for the replenishment of services and general cleaning duties.
- 6.2 240vAC and 110vAC electrical supply for the operation of cleaning equipment.
- 6.3 Drainage for excess water and chemical detergents used in cleaning
- 6.4 750vDC powered conductor rail to allow full unrestricted train movements for shunting and “hotel” power consumption requirements.
- 6.5 Depot protection system, linked to the train movements system to allow safe operation of the depot and stabling facility.
- 6.6 Automatic, powered signalling and points system to allow easy and safe movements of trains.
- 6.7 Level crossings and concrete walkways to allow safe movement of staff within and around the NXG Facility.
- 6.8 Full lighting for the exterior of the depot and to allow safe operations for all activities within the stabling facility.
- 6.9 Full length (4 car unit) platform style gantries to allow for safe exterior cleaning and component exchange as required.
- 6.10 All stabling roads to have a level gradient.
- 6.11 All track radii and curvatures to be designed and installed consistent with the capabilities of the associated ELL vehicles that will be required to use this maintenance facility.
- 6.12 Cab entrance gantries to allow maintainers and cleaning staff easy access to a unit.
- 6.13 An automatic, state of the art, carriage washing facility that allows for a high degree of water filtration and recycling (Carriage Train Wash Facility). A Wheel Lathe Facility and Heavy Cleaning Facility with amenities and carriage washing facility water filtration and re-cycling (Combined Heavy Cleaning, Wheel Lathe and amenities Facility).

- 6.14 Provision for the safe and legal disposal of waste and special waste as generated during maintenance and cleaning operations.
- 6.15 Access to and from the maintenance / stabling facility as well as dual access to the mainline as contingency for failure and to protect the service pattern.
- 6.16 
- 6.17 
- 6.18 Arrangements for provision of CSR/GSM and NRN coverage of the whole site including the Maintenance facility and wheel lathe/heavy cleaning.
- 6.19 Provision for a 25kv OHLE test area, with consideration to position in respect to earthing, stray currents and EMC.
- 6.20 Access for unit consumables top-up (including sand, screen wash and de-icing fluid).
- 6.21 Consumables storage and replenishment arrangements for whole site (including any localised storage requirements e.g. sand, screen wash and de-icing fluid).
- 6.22 Provision for portable equipment storage.
- 6.23 Arrangements for the control of environmental issues (e.g. lighting, noise and vibration).
- 6.24 Arrangements for staff facilities.

**7. ELECTRIFICATION**

- 7.1 Power supply and isolation
- 7.2 Arrangement of rails
- 7.3 Protection

**8. SIGNALLING AND “DEPOT PROTECTION”**

- 8.1 Requirements for protection of staff in Maintenance Facility
- 8.2 Requirements for protection of staff in Heavy Cleaning Facility
- 8.3 Requirements for protection of staff in Wheel Lathe Facility
- 8.4 Requirements for protection of staff in Stabling Facility
- 8.5 Routing of trains – control of points
- 8.6 Restriction of access on/off main line
- 8.7 Avoidance of collisions in depot
- 8.8 De-railers and/or train stops

**9. MAINTENANCE FACILITY BUILDING**

- 9.1 External structure requirements – structure loadings to roof and walls
- 9.2 Overall layout parameters including minimum internal dimensions.

- 9.3 Thermal and acoustic insulation, security and day-lighting to structural envelope
- 9.4 Loadings and dimensional tolerances to floors, walls, platforms, tracks, pits etc.
- 9.5 Finishes to all parts of building
- 9.6 Door and window requirements
- 9.7 Reception requirements
- 9.8 Offices, meeting rooms and staff amenities etc. requirements
- 9.9 Stores requirements
- 9.10 Workshop requirements
- 9.11 Maintenance area requirements
- 9.12 Plant room requirements
- 9.13 External requirements
- 9.14 Security system (e.g. including CCTV) for entrance specification

**10. COMBINED HEAVY CLEANING, WHEEL LATHE AND AMENITIES FACILITY BUILDING**

- 10.1 External structure requirements – structure loadings to roof and walls
- 10.2 Overall layout parameters.
- 10.3 Thermal and acoustic insulation, security and day-lighting to structural envelope
- 10.4 Loadings and dimensional tolerances to floors, walls, platforms, tracks, pits etc.
- 10.5 Finishes to all parts of building
- 10.6 Door and window requirements
- 10.7 Reception requirements
- 10.8 Offices, stores and staff amenities etc. requirements
- 10.9 Plant room requirements
- 10.10 External requirements
- 10.11 Security system (e.g. including CCTV) for entrance specification

**11. CARRIAGE TRAIN WASH FACILITY**

- 11.1 External structure requirements
- 11.2 Overall layout parameters.
- 11.3 Thermal and acoustic insulation and security
- 11.4 Finishes to all parts of building
- 11.5 External requirements
- 11.5 Security (e.g. including fencing and CCTV) specification

## **12. FACILITY BUILDING SERVICES**

- 12.1 Power supply and distribution
- 12.2 Minimum lighting levels (internal and external)
- 12.3 Heating and ventilation requirements inside building
- 12.4 Power supply points (inside and outside) for depot operations and for train supplies
- 12.5 Water supply and distribution
- 12.6 Drainage requirements and effluent treatment
- 12.7 Security, fire precautions and telecommunication requirements

## **13. PLANT AND EQUIPMENT DETAILED SPECIFICATIONS MODEL DETAILS FOR TFL PURCHASE**

- 13.1 Wheel Lathe and associated Battery Loco
- 13.2 Train Wash
- 13.3 “Depot Protection”
- 13.4 Turntable
- 13.5 Mobile staging (tbc)
- 13.6 Shore supplies
- 13.7 Overhead cranes
- 13.8 Air supplies and compressor
- 13.9 Synchronised screw jacks

## **14. ACCESS ROADS AND CAR PARKS**

- 14.1 Road layout
- 14.2 Road construction specification
- 14.3 Walkway specification
- 14.4 Emergency vehicle access requirements
- 14.5 NCG Facility Security system (e.g. including fencing, CCTV, gates) specification
- 14.6 Signs and indications

## **15. INTERFACES**

- 15.1 Interfaces with LUL, the Manufacturer, local authorities, and service providers

## **16. TESTING AND COMMISSIONING**

- 16.1 Initial Completion Tests information.

**Annex 7**  
**Certificates of Approval**

*[to be inserted on letterhead of the Manufacturer]*

To: *[the Purchaser]*  
*[insert Address]*  
[LUL]  
*[insert Address]*

For the attention of: [                    ]

[insert date]

**Manufacture and Supply Agreement dated [                    ] and made between London Underground Limited, [                    ] and [                    ] (the "Manufacture and Supply Agreement").**

I, the undersigned, on behalf of the Manufacturer hereby certify to the Purchaser that:

*[insert as applicable]*

[The Facility Design is consistent with the requirements of the NXG Facility Functional Output Specification, the NXG Reference Design and the NXG Reference Specification and all other matters required for the Maintainer to provide the Services].

[The Detailed Design is consistent with the requirements of the NXG Facility Functional Output Specification, the Facility Design and the NXG Facility Specification and all other matters required for the Maintainer to provide the Services].

[The [NXG Maintenance Facility]/[NXG Stabling]/[name relevant part(s) of the NXG Maintenance Facility and/or NXG Stabling] has successfully passed [the following] Facility Tests: *[insert details of Facility Tests passed]* and satisfies the NXG Facility Condition in all respects.

Words and expressions defined in the Manufacturer and Supply Agreement shall have the same meanings when used in this Certificate of Approval and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Certificate of Approval.

Signed on behalf of *[the Manufacturer]*

Name.....

Position..... (Authorised Signatory)

## **Annex 8**

### **Scope of Manufacturer Fit Out Works**

- 1) Office furniture
- 2) Radio equipment
- 3) Scissor lift
- 4) IT server and terminals (not data transmission network)
- 5) Battery Charger
- 6) Tools
- 7) Test and diagnostic equipment.

**Annex 9**

***Not used***

## **Annex 10**

### **NXG Reference Specification**

Based on the site layout defined in Annex 2, and where not otherwise provided in the NXG Functional Output Specification or NXG Reference Design, the NXG Reference Specification shall include the following information;

#### **Operational Principles**

Train movements on site:

1. Estimate number of train movements to use wheel lathe (No of movements a day versus time of the day), differentiate by season
2. Estimate number of train movements to use of OHL testing facility (No of movements a day versus time of the day)
3. Estimate number of train movements to use of maintenance building (No of movements a day versus time of the day)
4. Consumables point re sand and wash

Vehicle movement on site:

1. Extremes of road vehicle types for which access to and movement on the site is required
2. Shift patterns during day
3. Likely vehicle destinations by area (e.g. maintenance building, heavy cleaning/ wheel lathe building, material storage areas in the CSD)
4. Anticipated Emergency Services vehicular access requirements to areas of the site.
5. Mobile crane movements (if any use of such anticipated by the Maintainer- e.g. for re-railing)
6. Level crossings to facilitate road vehicle movement relevant to the Maintainer.
7. Unloading/loading facilities, collection points etc.

Pedestrian movement on site:

1. Normal level of Maintainer personnel on site during any 12 hr period.
2. Pedestrian access to site for Maintainer personnel (e.g. from adjacent road network or local stations)
3. On site walkways.

#### **Site security**

Estimates of;

1. Fencing requirements (location, types and heights)
2. Access arrangements
3. CCTV coverage and records (Control Room)
4. Minimum lighting requirement by area (e.g. MF facility area, OBC / Car parking area, Wheel Lathe Building area, Sand store area, Stabling sidings area, Wash apron area) during the 24 hour operation - Avoid

## **Fire Safety**

1. Anticipated use of flammable material on site
2. location of storage for flammable materials
3. Anticipated Fire hazardous activities (e.g. sparking)
4. Anticipated fire protection systems per building
5. Available information as may reasonably be required for fire safety assessments.

## **Environmental Impact**

### **Noise Mitigation**

1. Where available, a noise generation estimate for the equipment defined in the NXG Functional Output Specification.

### **Dust**

1. Areas of dust generation and an estimate of type and levels of dust generated
2. Fume extraction location and type (battery charging, welding)

### **Vibration**

1. Where available, a generated vibration estimate for the equipment defined in the NXG Functional Output Specification

### **Working environment**

1. Access to consumables (sand, screen wash, cleaning materiel, de-icing liquid, maintenance materiel, etc), storage etc.

### **Water and Waste Water**

1. Estimate of fresh water and grey water requirements at each facility (offices, stabling, cleaning, sheds, etc)
2. Estimate of waste water per building
3. Contaminated water location and estimate
4. Location for water supply points required by the Maintainer (e.g. at the CSD)
5. Drainage requirement heavy cleaning road and wash apron

### **Waste**

1. Special waste disposal requirements including:
  - a. Anticipated contaminated waste, if any, generated at each building
  - b. Waste collection and compacting points

## **Civil Engineering**

1. Abnormal loading requirements for Permanent Way and Roads (note- load constraints on Cold Blown Lane bridge decks)
2. Building access to plant and equipment
3. Working areas around work facilities

4. Overhead gantry crane(s) loading and location (including tonnage)
5. Multi level working and access locations and size (inspection pits, train access gantries, exterior maintenance/cleaning gantries, etc)

### **Structures**

1. Internal and external dimensions of buildings
2. Estimated floor loadings in buildings
3. Building function (reception, offices, canteen, amenities) and size of rooms
4. Heating and ventilation requirements of buildings (see dust handling)
5. Equipment and consumable storage and location
6. Hazardous material storage and location
7. Plant room

### **Power**

1. Estimated power requirements for the equipment defined in the NXG Functional Output Specification
2. Estimation of other general power supply requirements for individual units/buildings (e.g. 110v, 230v, 415v, and dc) and maintenance building 'shore supply' . . .
3. Traction power load (750v dc) and protection requirements
4. OHLE power load and protection requirements
5. Requirements for electrical sectioning of the site (e.g. for isolating) and method of protection.

### **Air Supply**

1. Estimate of pneumatic power supplies required

### **Gas Supply**

1. If any required, the location and any anticipated special protection measures .

### **Track**

1. Confirm basic train dimensions
2. Track Loading
3. Location and type of any track bed type to be specified by the Maintainer (e.g. for calibrated track)
4. Confirmation of track turnout ('points') arrangements , and preferred method of operation.
5. Maximum gradient and areas where level track is required
6. Internal and external dimensions of buildings over track showing building/track clearances
7. Location for charging facilities for the Battery locomotive

### **Signals**

1. Confirmation of train movement control and protection requirements
2. Confirmation of general signal sighting requirements (where not defined or mandated by industry standards).

### **Telecoms**

1. PA network.

2. Radio and telephone coverage
3. Other telecommunication requirements



## **SCHEDULE 11: PRICING, PAYMENT & SECURITY**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 11 – Pricing, Payment and Security**

ELM-COM-109-09-06-0014

Issue: Draft J

August 2006

Confidential

**Client** Transport for London

**Project** East London Line Project

**Document No.** ELM-COM-109-09-06-0014

Issue : Draft J

**Title** Rolling Stock Manufacture and Supply Agreement –  
Schedule 11 – Pricing, Payment and Security

**Issue record :**

Issue	Date	Author	Approved	Description
Draft A	28.04.2006			Draft within MSA

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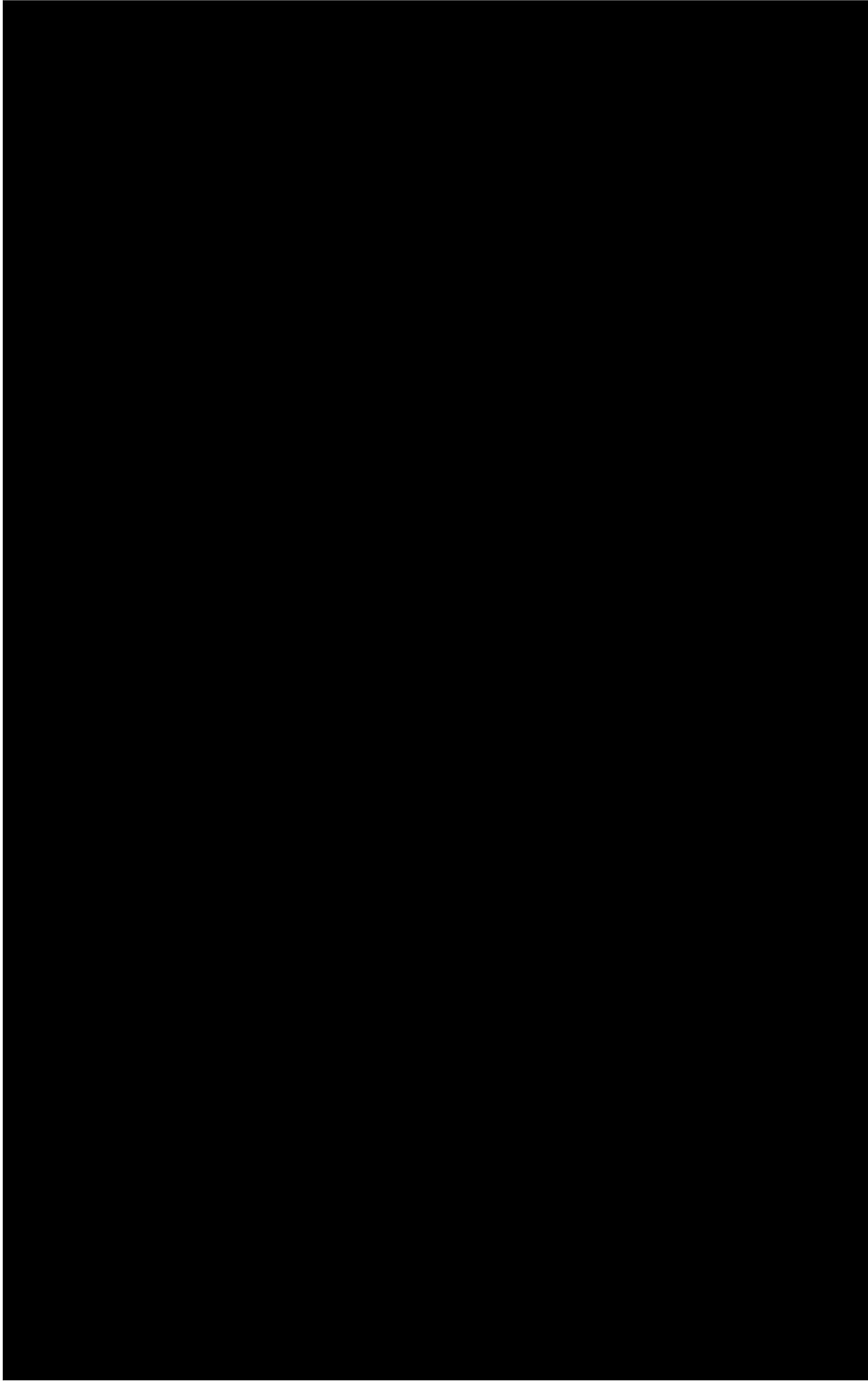
# **SCHEDULE 11**

## **Pricing, Payment and Security**

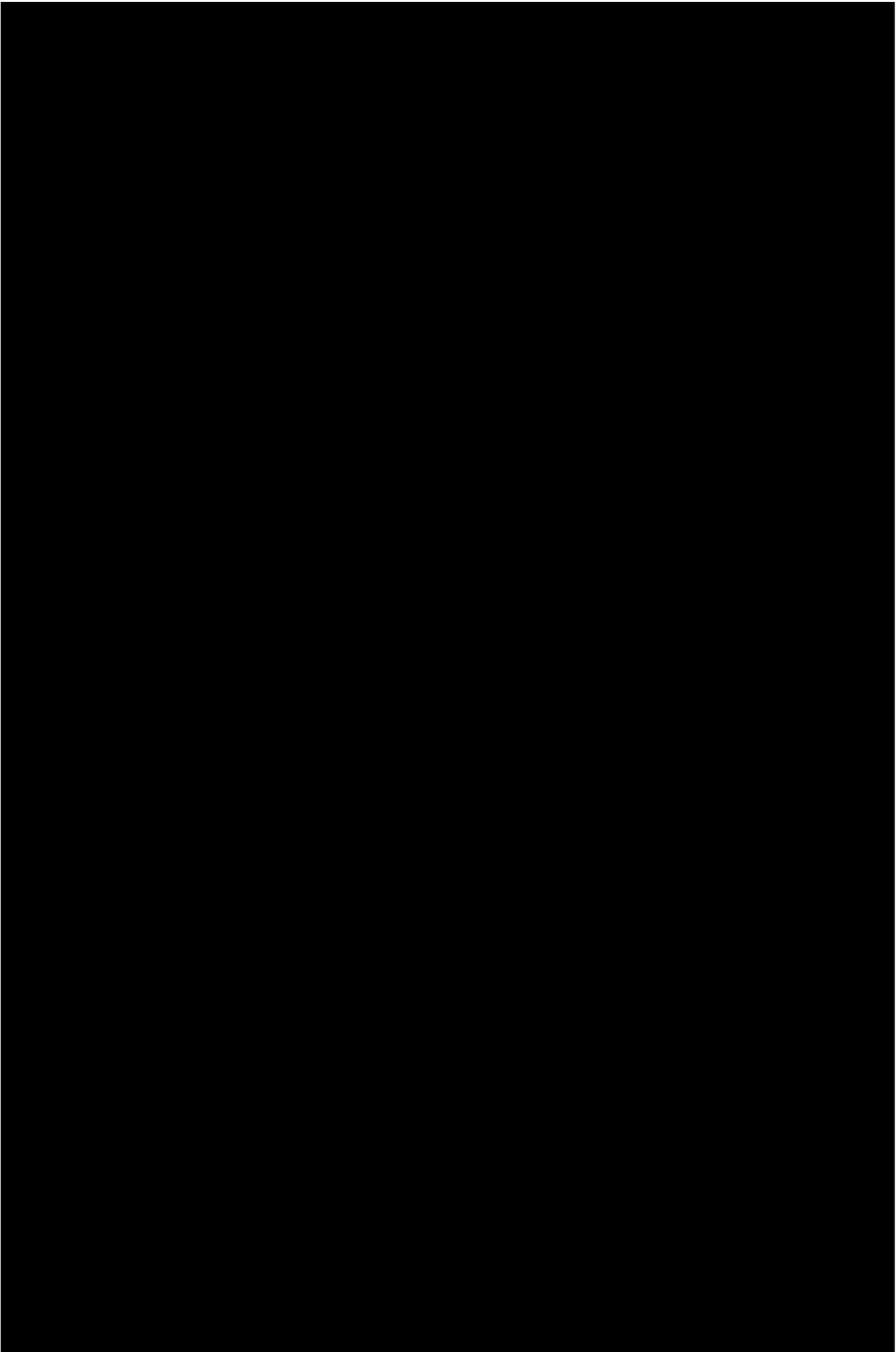
**Strictly Private & Confidential**

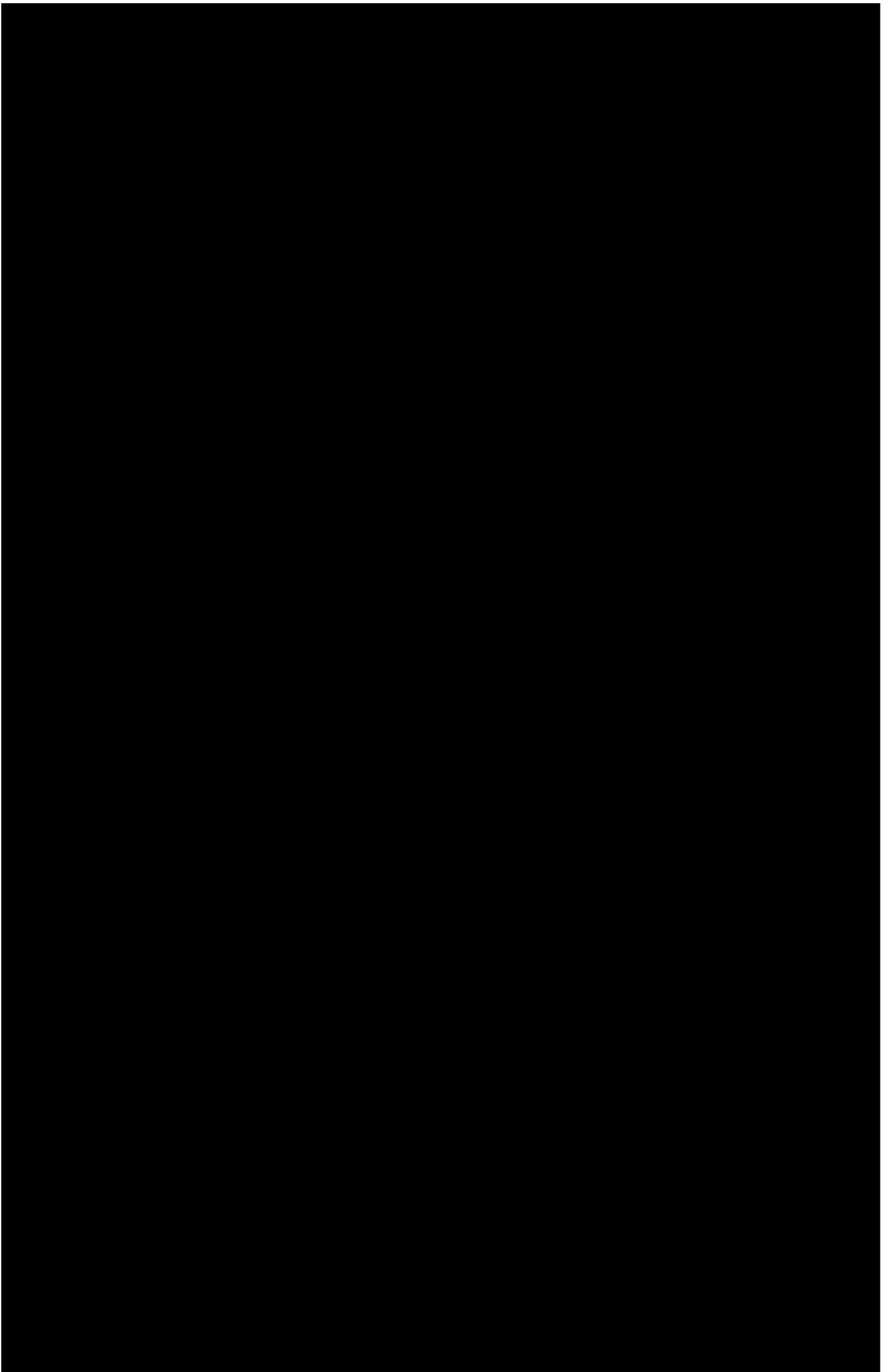
**Subject to Contract**

**Draft: 31 August 2006**



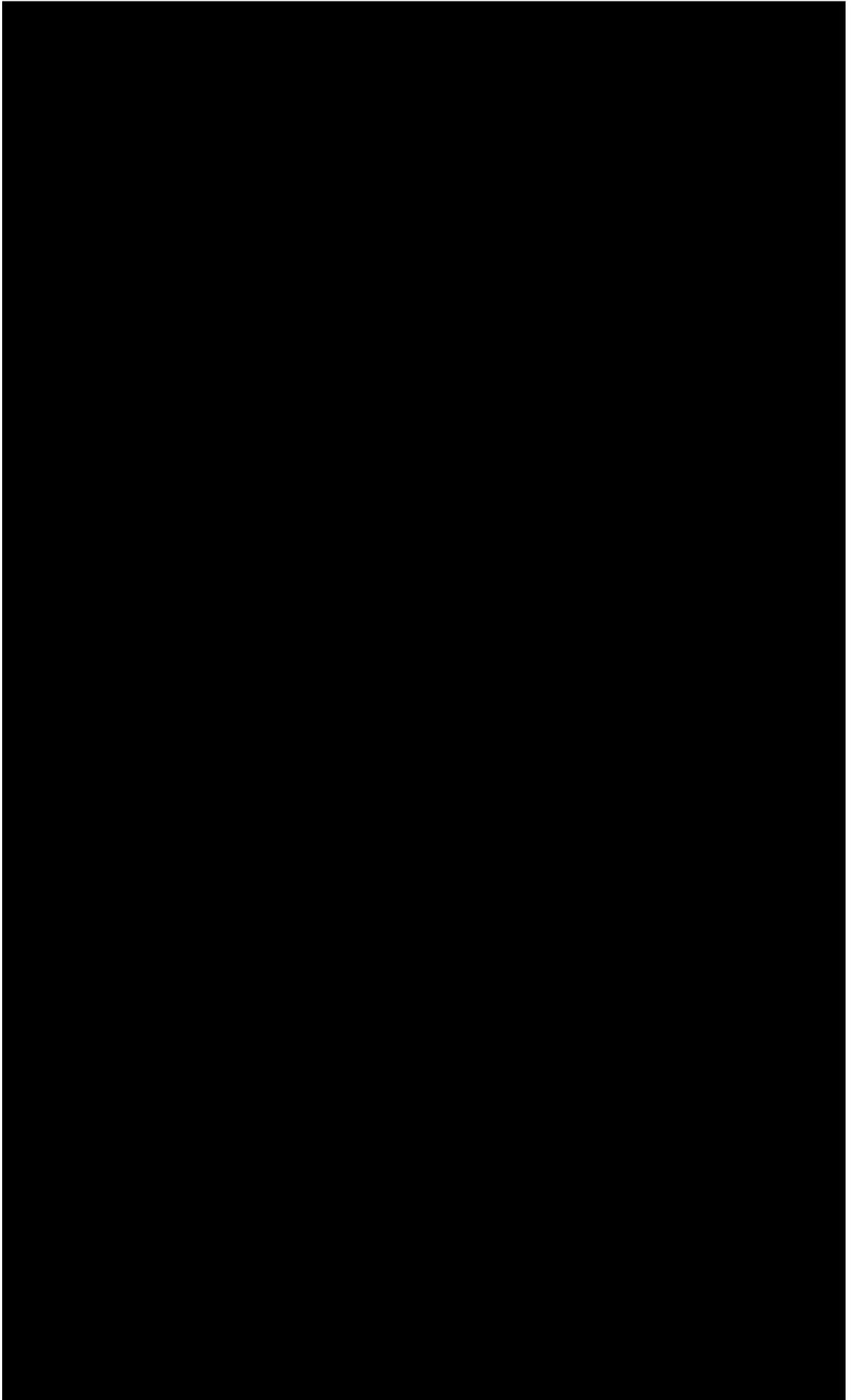
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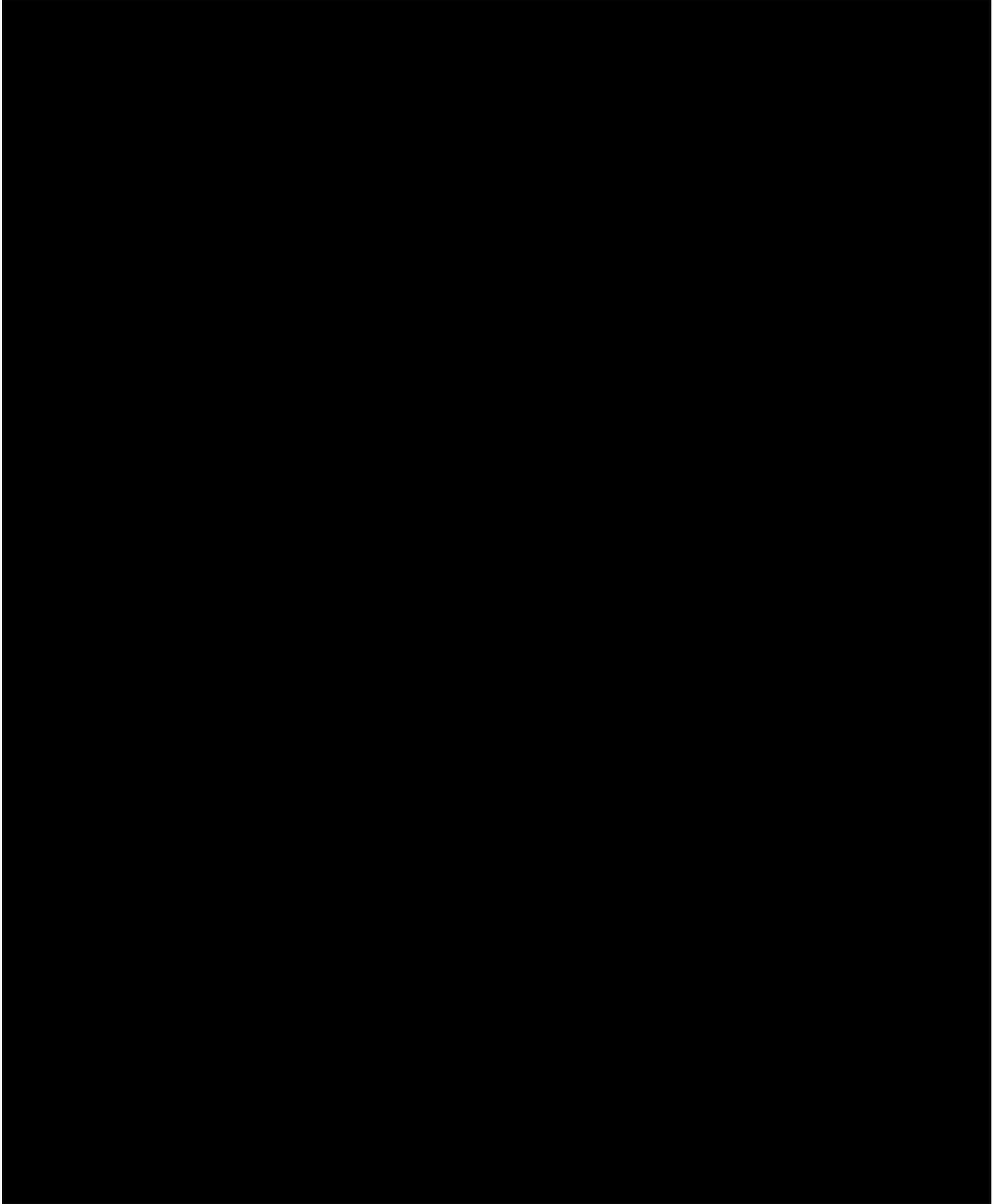




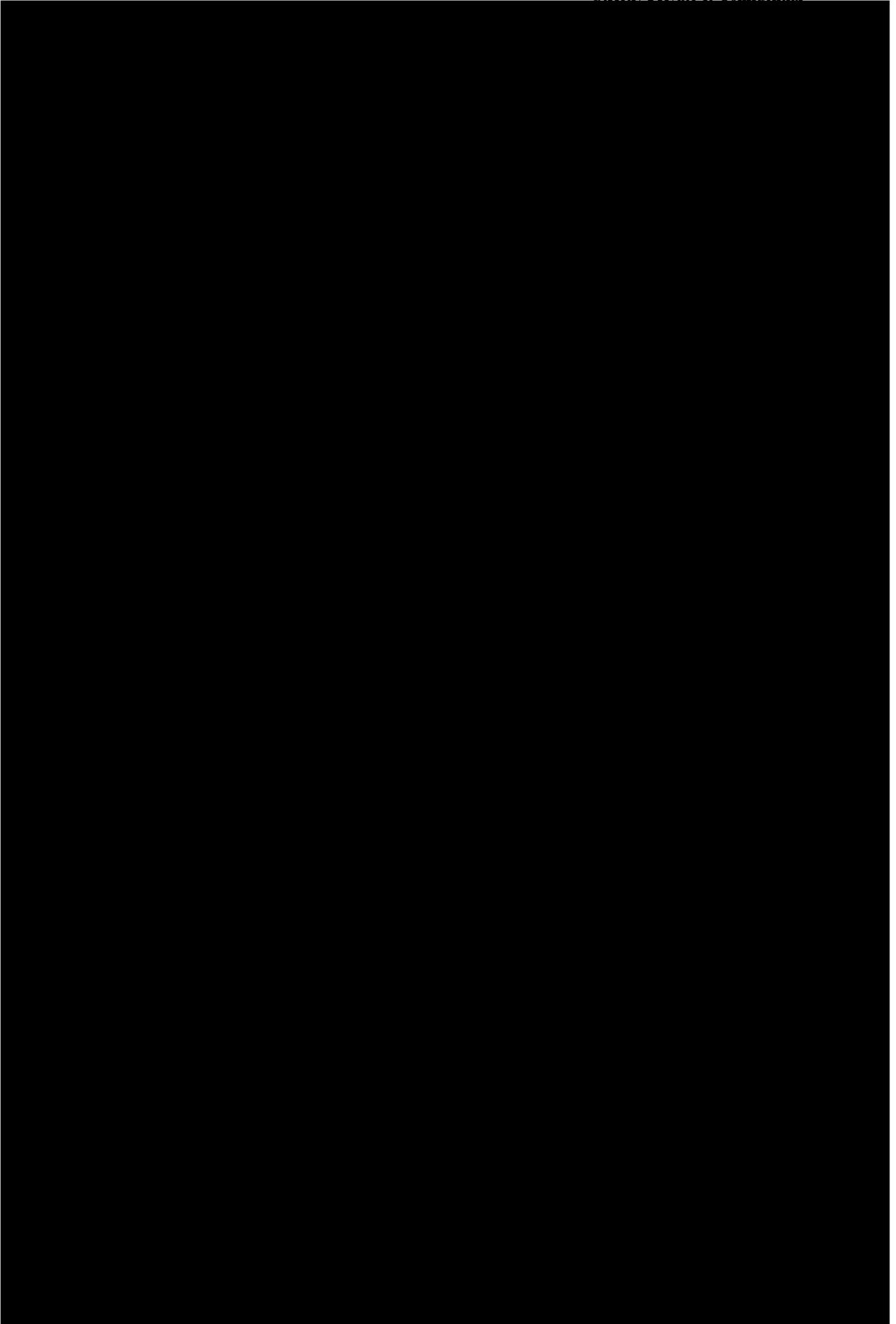
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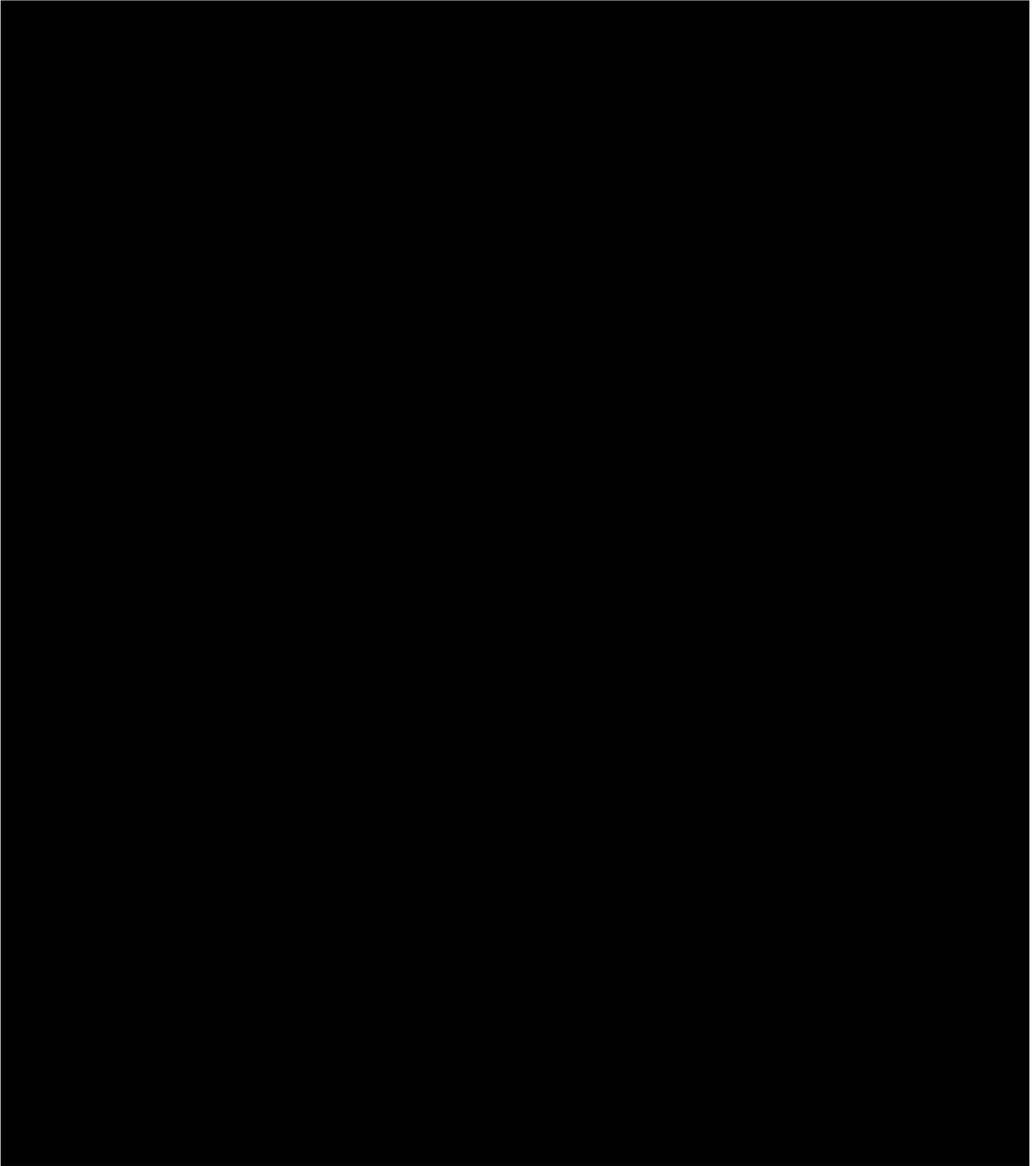
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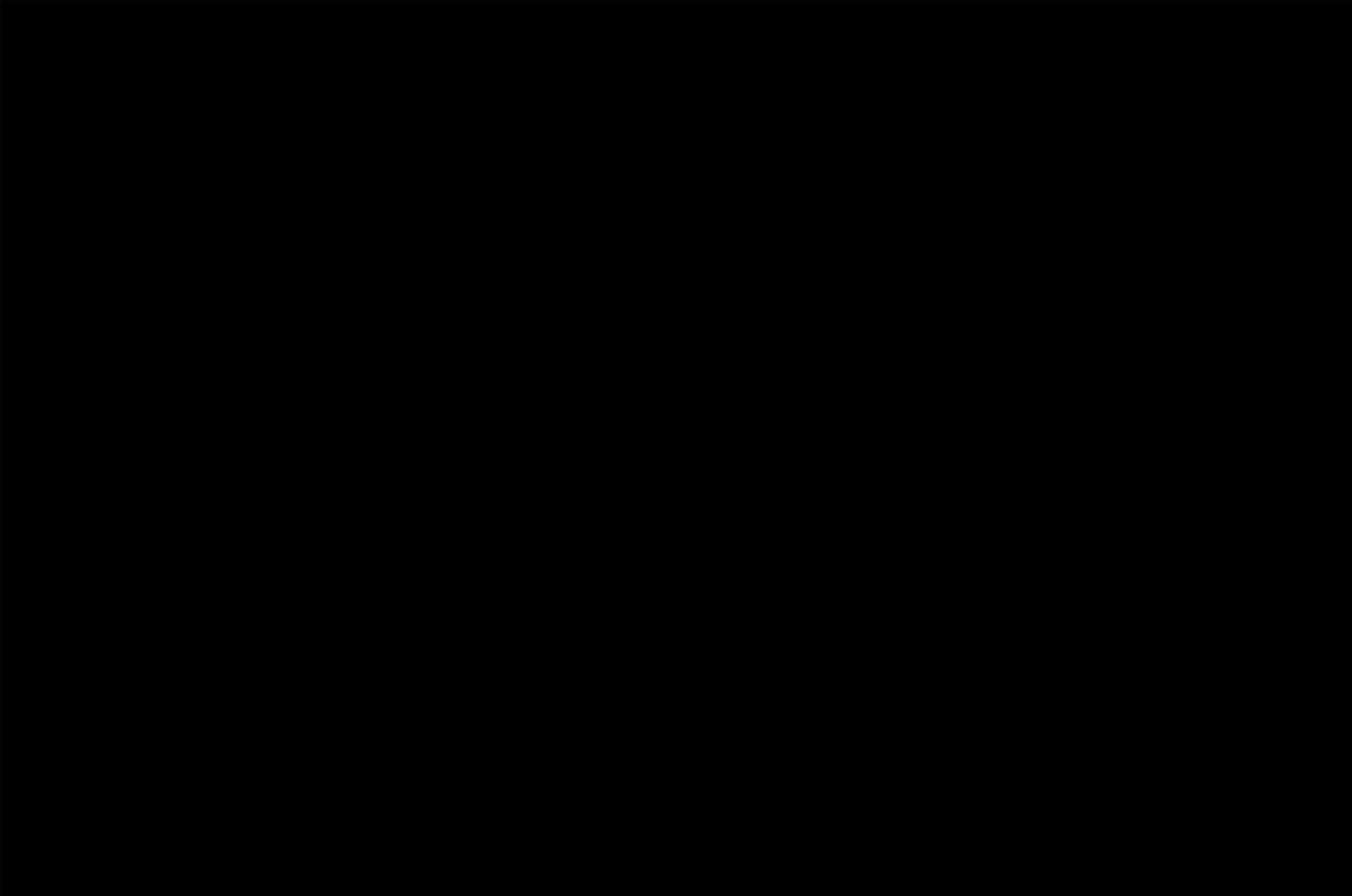


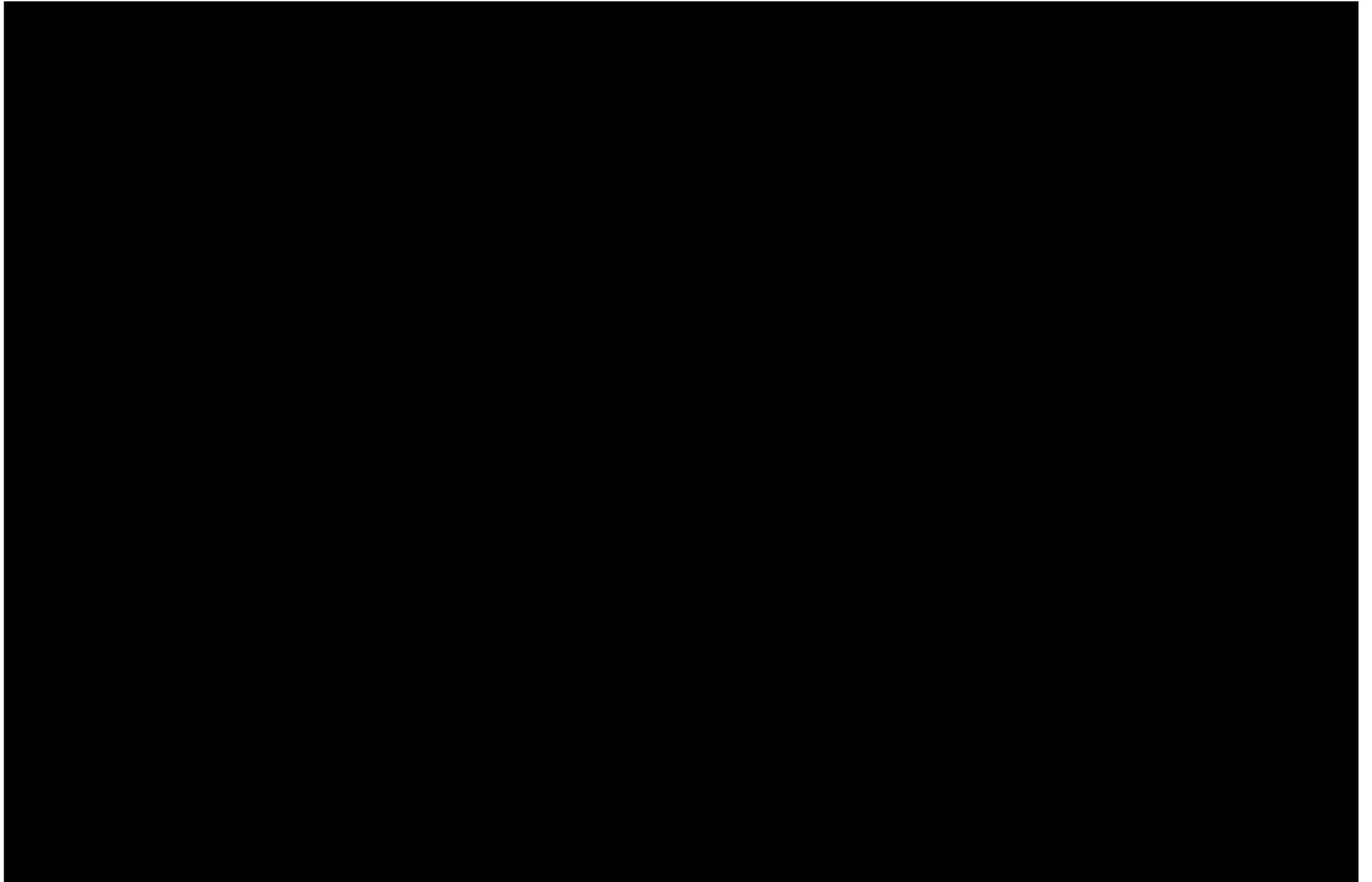
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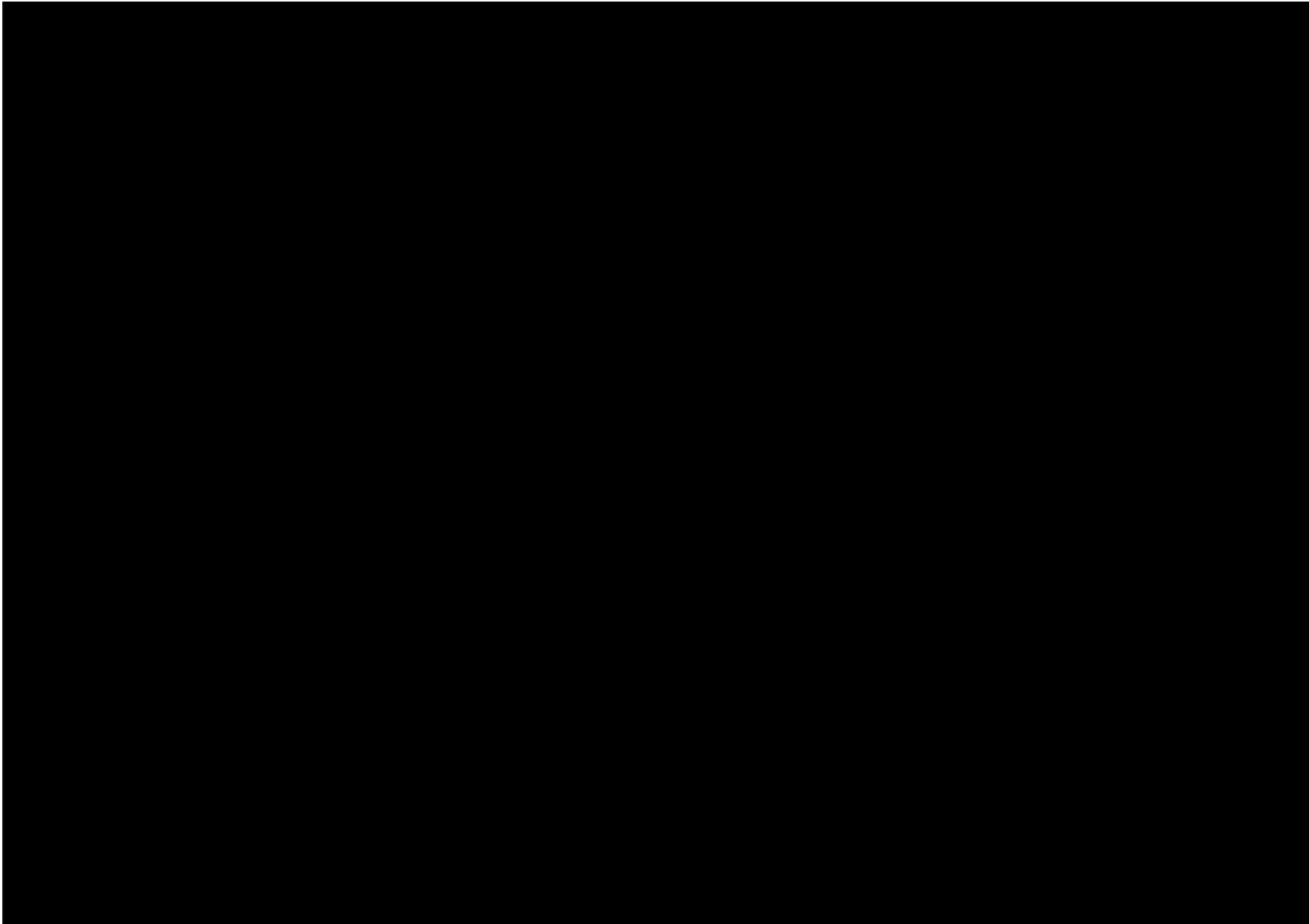


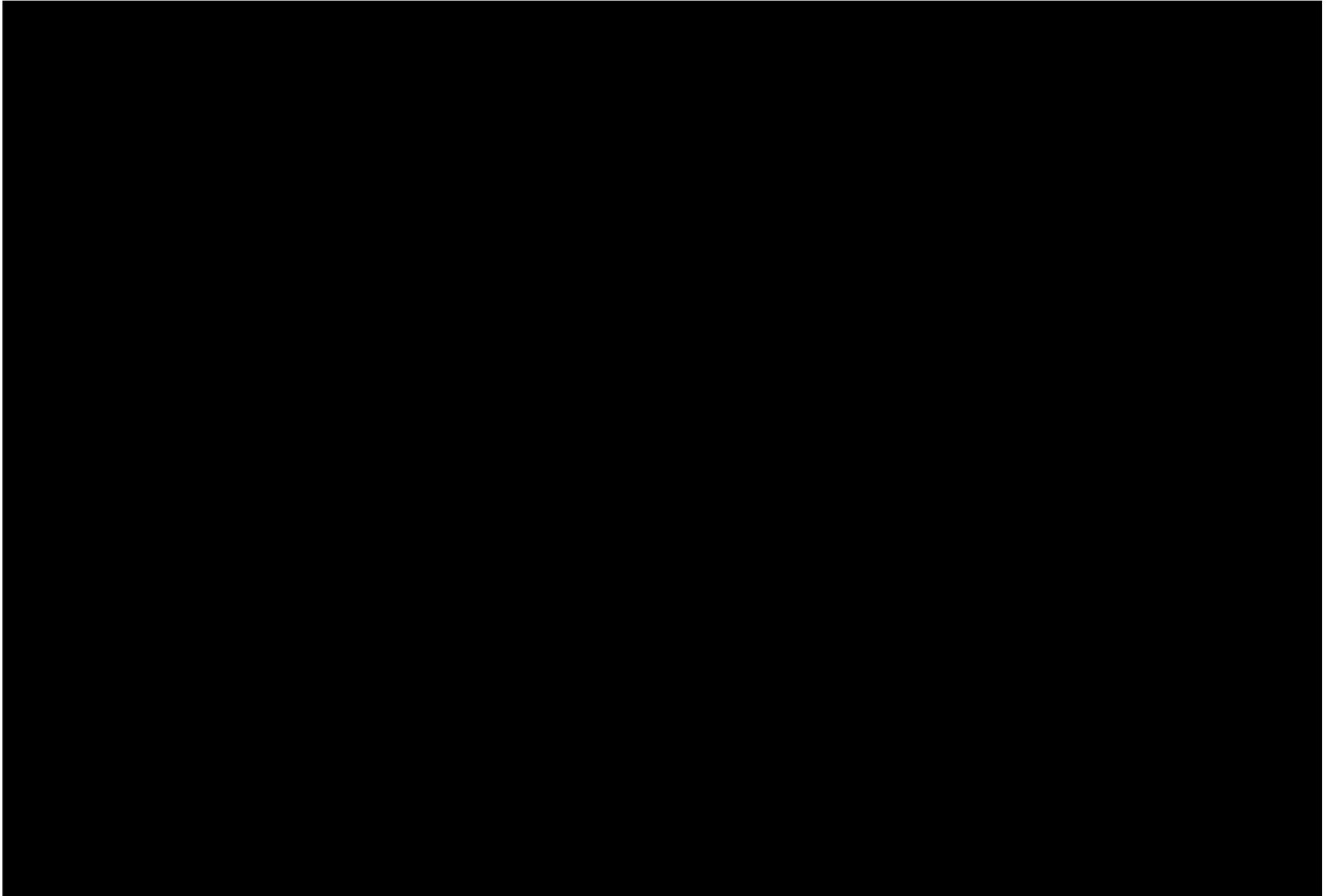


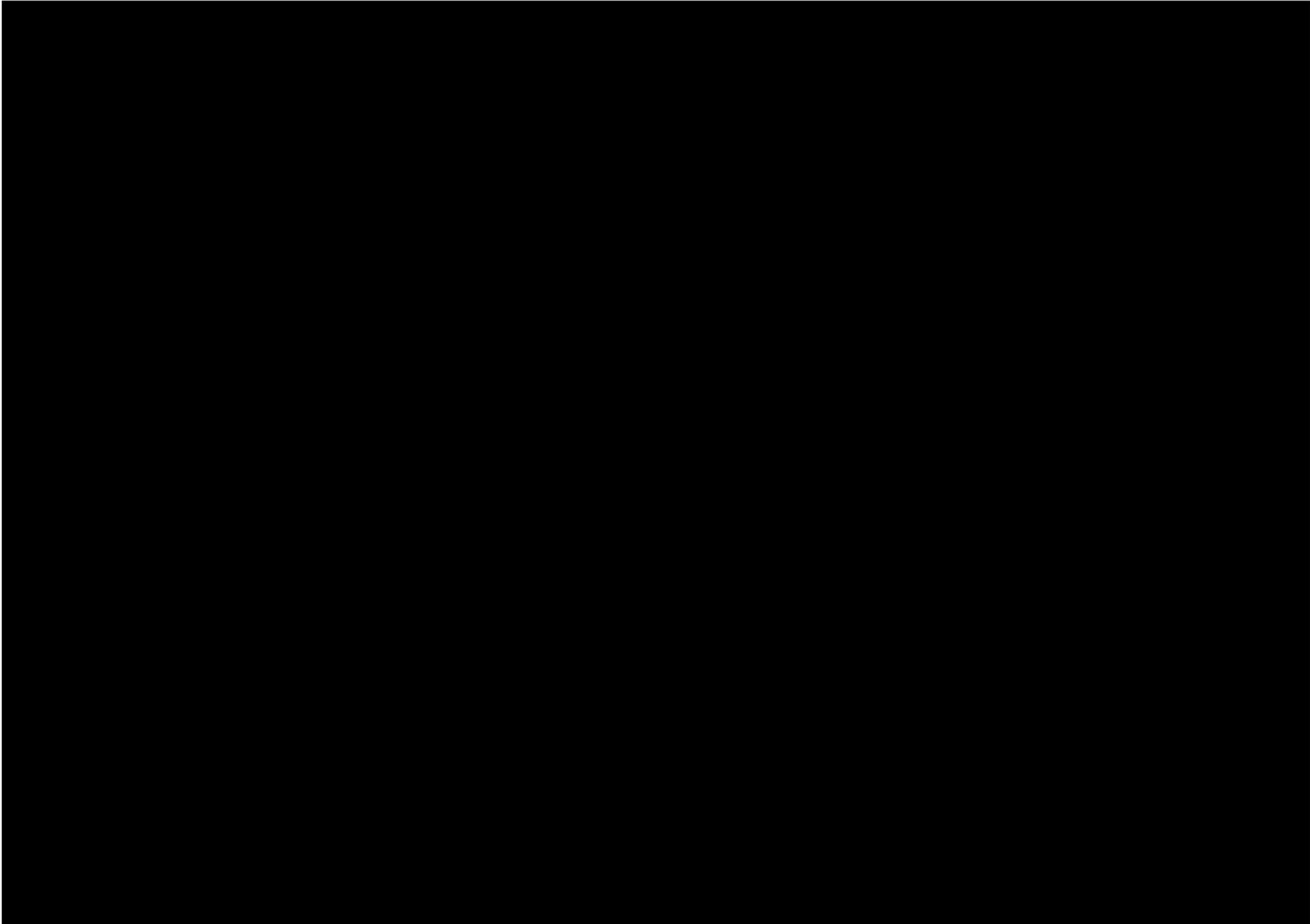
Appendix 1

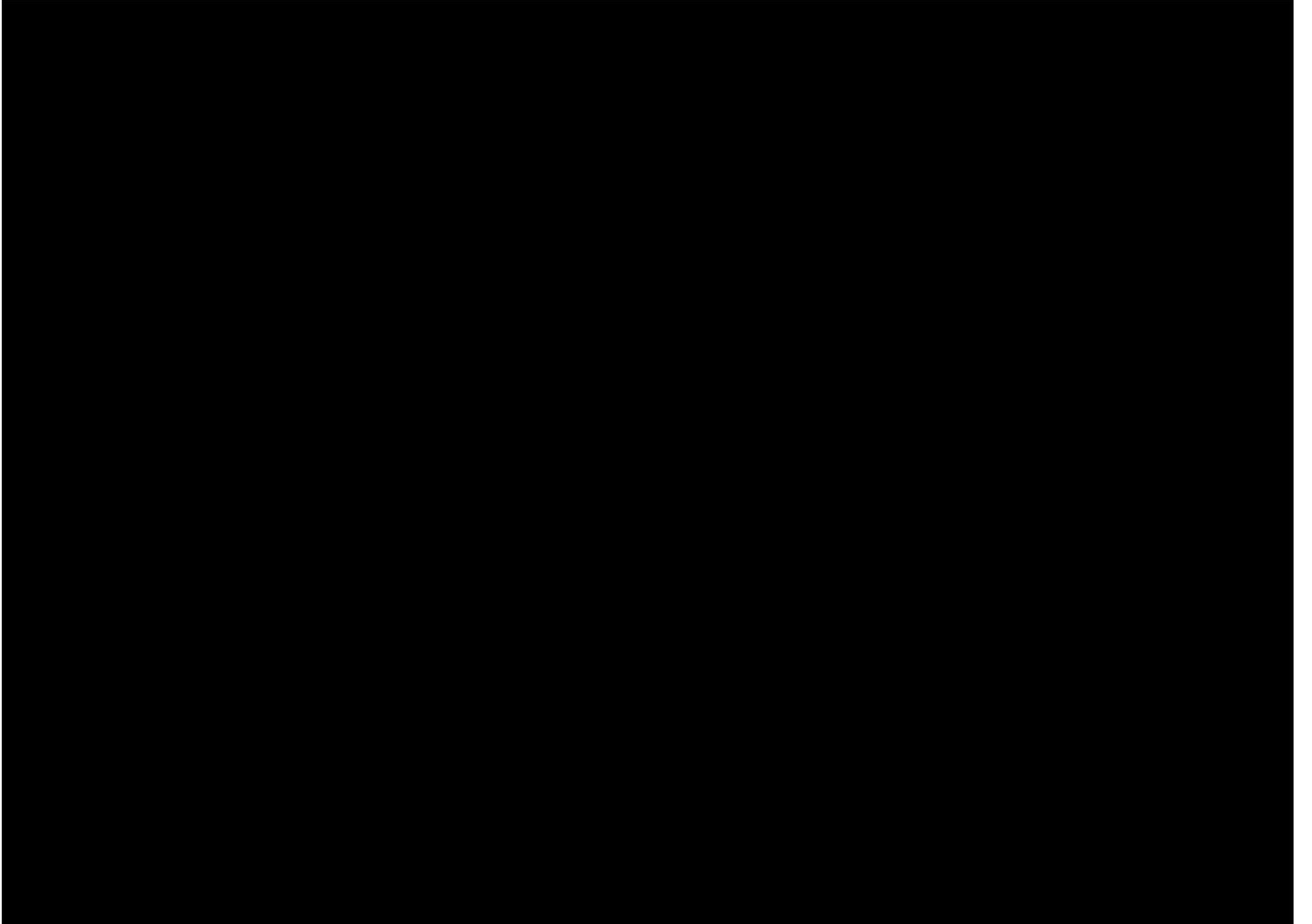


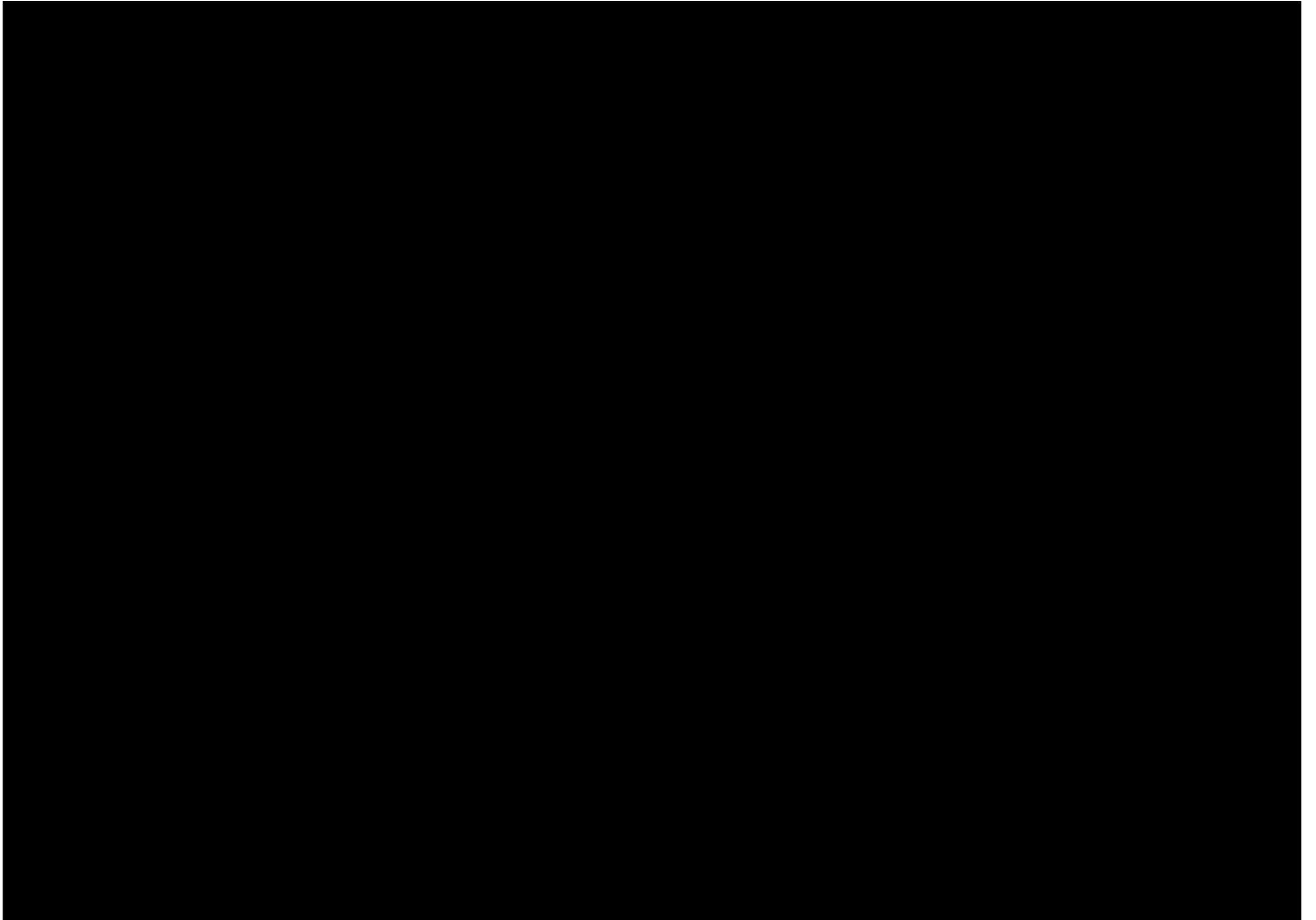


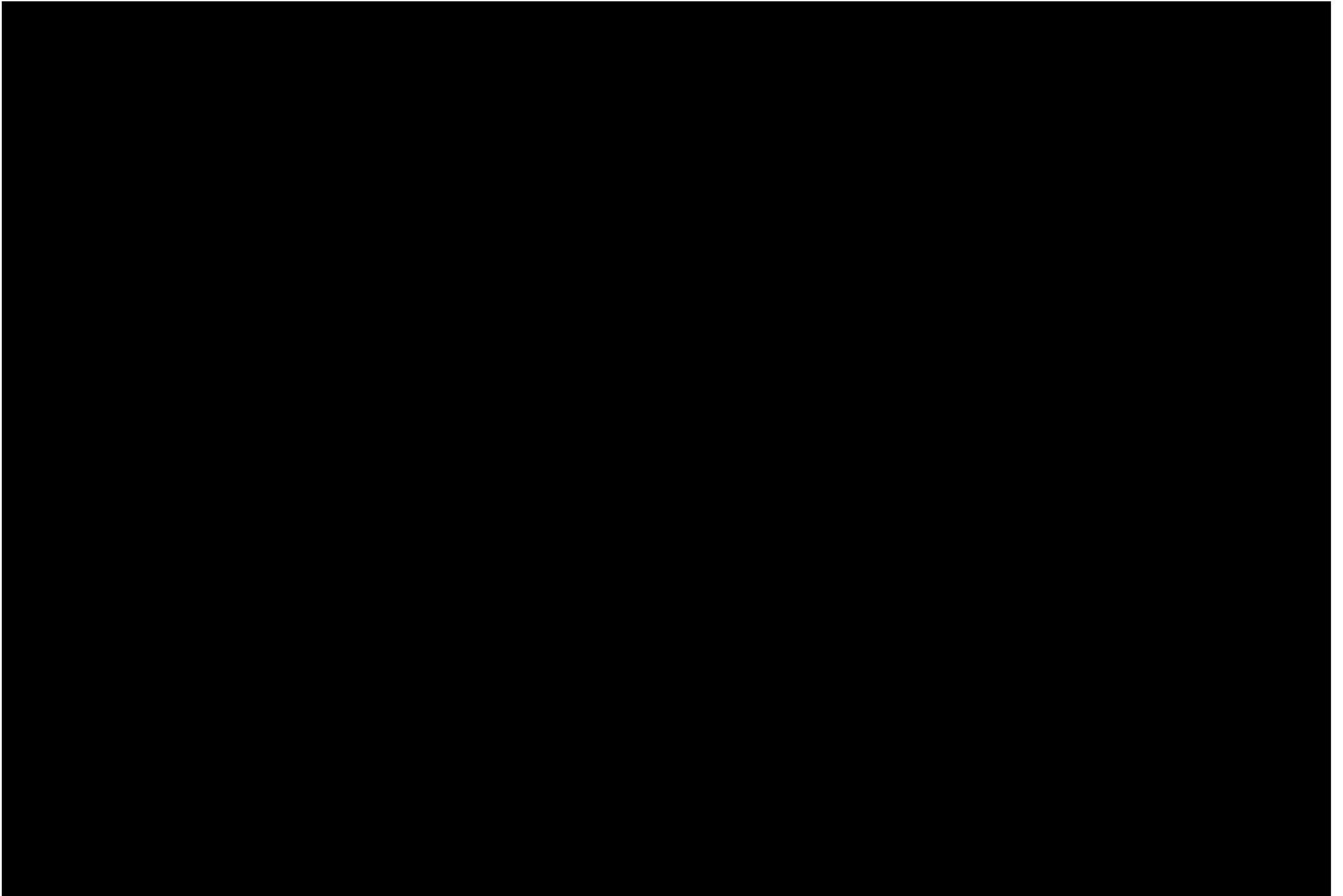












**Appendix 2**  
**Initial Order Price List**

<b>Item</b>	<b>Contract Price</b>
20 ELR Units @ [REDACTED] per ELR Unit	[REDACTED]
24 NLR Units @ [REDACTED] per NLR Unit	[REDACTED]
Initial Spares	[REDACTED]
Initial Special Tools	[REDACTED]
Manuals	[REDACTED]
<b>Total Contract Price (rounded to nearest £)</b>	<b>£182,163,264</b>
of which: Total ELR Contract Price	[REDACTED]
Total NLR Contract Price	[REDACTED]

**Appendix 3  
Milestone Certificate**

*[To be inserted on Purchaser's Letterhead]*

To: [Manufacturer]  
[Address]

Date: [ ]

For the attention of: [ ]

Manufacture and Supply Agreement dated [ ] and made between [ ],  
[ ] and LUL (the "**Manufacture and Supply Agreement**").

Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this certificate and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this certificate.

This certificate constitutes a Milestone Certificate under the Manufacture and Supply Agreement and I, [ ] on behalf of the Purchaser hereby confirm to the Manufacturer that as at the date of this Milestone Certificate the Manufacturer has achieved Milestone [*insert Milestone number*], as set out in Appendix 1 to Schedule 11 of the Manufacture and Supply Agreement [in full or in part with respect to [ELR/NLR] Unit Number(s) [ ]].

The issue of this Milestone Certificate shall not be taken to mean that the relevant obligations of the Manufacturer have been completed in accordance with the terms of the Manufacture and Supply Agreement or otherwise to the satisfaction of the Purchaser.

Signed on behalf of [ ]

Name.....

Date .....

Position.....

(Authorised Signatory)

**SCHEDULE 12: ROLLING STOCK REQUIREMENTS – CONTRACT MANAGEMENT**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 12 - Contract Management**

## SCHEDULE 12

### Contract Management

# 1 Project Team

## 1.1. Purchaser's Project Team

1.1.1. The Purchaser's project team in respect of this Agreement shall consist of the employees, contractors and/or agents of the Purchaser who are engaged in duties principally concerning the procurement of the Units and other items of Purchased Equipment for the East London Railway and the North London Railway (the "**Purchaser's Project Team**").

1.1.2. The main objectives of the Purchaser's Project Team shall be:

- (A) to monitor that the Manufacturer designs, manufactures, tests, commissions and supplies the Units and other items of Purchased Equipment in accordance with the requirements of this Agreement, including all applicable quality, safety and performance requirements specified by the Purchaser under this Agreement and/or by the relevant Competent Authorities;
- (B) to monitor that the Manufacturer performs all of its obligations under this Agreement in a timely, safe, and orderly manner so as to enable the Maintenance Facility to be designed and constructed by the relevant dates; and
- (C) to manage and co-ordinate the Purchaser's interaction with the Manufacturer.

1.1.3. The principal roles and responsibilities of the Purchaser's Project Team shall be to:

- (A) monitor the performance of the Manufacturer in ensuring that specification, design, manufacture, testing, assembly, commissioning and delivery of the Units and the other items of Purchased Equipment occurs in an orderly and structured manner and that all deliverables are produced for the agreed Contract Price and time framework;
- (B) monitor the compliance of the Manufacturer with its obligations under this Agreement, including compliance with each of the technical requirements specified by the Purchaser and the performance by the Manufacturer of its obligations in respect of the Maintenance Facility;
- (C) ensure that the Purchaser performs its obligations under and in accordance with this Agreement;
- (D) support the Purchaser's management of the interface between infrastructure of the Units and East London Railway and/or the North London Railway; and
- (E) manage the financial aspects of the procurement of the Purchased Equipment, including control of financial commitments and preparation of internal financial reports.

1.1.4. Within 20 Working Days of the date of this Agreement the Purchaser shall appoint a project manager to manage and co-ordinate the Purchaser's Project Team in undertaking the activities described paragraph 1.1.3 (the "**Purchaser's Rolling**").

**Stock Manager"**), and shall provide written details of the Purchaser's Rolling Stock Manager to the Manufacturer.

- 1.1.5. The Purchaser undertakes to promptly notify the Manufacturer if there is any change to the Purchaser's Rolling Stock Manager and in any event no later than 3 Working Days from the date of such change.
- 1.1.6. The Manufacturer acknowledges that the management and performance of this Agreement by the Purchaser may be supported and/or undertaken by various stakeholders and/or a number of employees, agents and contractors of the TfL Group.

## **1.2. Manufacturer's Project Team**

- 1.2.1. The Manufacturer undertakes to promptly notify the Purchaser if there is any change to the Manufacturer's Project Manager and in any event no later than 3 Working Days from the date of such change.
- 1.2.2. The Manufacturer shall ensure that the Manufacturer's Project Team is adequately resourced throughout the life of the project.

## **2 Project Planning, Monitoring and Control**

### **2.1. Project Programme**

- 2.1.1. The Manufacturer represents and warrants to the Purchaser that the Project Programme complies with the requirements described in paragraphs 2.1.2 and 2.1.3.
- 2.1.2. The Project Programme shall be in Microsoft Project format and shall clearly identify the start and finish dates, remaining float and the critical path for the design, manufacture, testing, commissioning and supply of the Units and the other items of Purchased Equipment up to the later of (i) Final Acceptance of the last Unit; and (ii) Acceptance of the last item of Purchased Equipment (other than a Unit).
- 2.1.3. Without prejudice to the requirements of Schedule 3 and paragraph 2.1.2, the Project Programme shall set out, as a minimum, start and finish dates and dependencies for each of the following:
  - (A) in respect of the Units (and where applicable, identifying any deviations between the ELR Units, the NLR Units and ELR Units and/or NLR Units not forming part of the Initial Order):
    - (1) the development and design for each Subsystem and each Vehicle Design Area;
    - (2) the design review process (including Design Freeze Dates) for each Subsystem and each Vehicle Design Area;

- (3) the procurement of each system, Major Components, Parts, for each Subsystem and each Vehicle Design Area;
  - (4) the manufacture of each Unit, including each stage of production for each vehicle forming part of that Unit;
  - (5) type testing, including static type testing, testing on test-track, testing on the ELR Network and/or the North London Railway and in each case detailed by test;
  - (6) routine testing of the Units;
  - (7) all safety approvals as required by this Agreement, including each stage of the process in gaining a Certificate of Technical Acceptance from Network Rail (or equivalents) and a Certificate of Authority to Operate (or equivalent);
  - (8) the provision of mock-ups, and the dates for each of the processes associated with the development of each mock-up including inspections and approvals;
  - (9) inspections of each Unit (detailed by each inspection and Unit);
  - (10) the certification by the Manufacturer and external body certification (detailed by item);
  - (11) the delivery and commissioning of each Unit; and
  - (12) achievement of each assurance/acceptance stage for each Unit;
- (B) in respect of the Manuals, each stage of the development, review and production of the Manuals;
  - (C) in respect of each Cab Simulator Unit, each stage in the development, design, manufacture, testing, delivery, commissioning of the Cab Simulator Unit;
  - (D) in respect of the Maintenance Facility the Manufacturer's obligations set out in Schedule 10;
  - (E) the provision of the Initial Spares and the Initial Special Tools;
  - (F) the provision of the Training Services in accordance with Schedule 6;
  - (G) the date when each Milestone is proposed to be achieved by the Manufacturer; and
  - (H) the information, approvals, and/or other inputs required by the Manufacturer from the Purchaser, Competent Authorities and/or other third parties.

2.1.4. The Project Programme shall be constructed so as to mitigate any project risks identified. The Manufacturer shall ensure that any assumptions within the Project Programme are explicitly stated in the Project Programme.

## **2.2. Progress against Project Programme**

2.2.1. Every four weeks from the Commencement Date the Manufacturer shall provide to the Purchaser an updated Project Programme in hard copy and electronic format

(the "**Updated Project Programme**") showing progress by the Manufacturer against the Project Programme. The Project Programme shall continue to be updated and supplied to the Purchaser every four weeks until all Units have been Accepted, or until all activities shown on the Project Programme are complete whichever is the later.

- 2.2.2. The Manufacturer shall ensure that each Updated Project Programme continues to clearly identify the start and finish dates, remaining float and the critical path for the design, manufacture, testing, commissioning and supply of the Units and the other items of Purchased Equipment and without prejudice to the foregoing, the matters set out in paragraph 2.1.3.
- 2.2.3. Where an Updated Project Programme shows a potential delay against the Project Programme or any change in the dependencies and/or assumptions associated with the Project Programme, the Manufacturer shall provide the Purchaser with a report (the "**Exception Report**"), which shall include, the following:
- (A) the extent of the potential delay and/or change and the potential impact on the Project Programme;
  - (B) the reason for the potential delay and/or change;
  - (C) the mitigation measures that the Manufacturer has taken or proposes to undertake to reduce the impact of the potential delay and/or change; and
  - (D) the measures taken, and the measures proposed, to prevent recurrence of the event which caused the potential delay and/or change and/or similar such events in the future.
- 2.2.4. The Manufacturer shall include a commentary in the Exception Report for any delayed tasks which are not on the critical path, but which have any potential to become a factor in project timescales.
- 2.2.5. The Manufacturer acknowledges and agrees that an Updated Project Programme or any other provision in this paragraph 2.2 shall not constitute:
- (A) a Proposed Variation or a Required Variation under the Variation Procedure;
  - (B) a Permitted Delay Event and shall not entitle the Manufacturer to an extension of time to the Contractual Acceptance Date for any item of Purchased Equipment or otherwise entitle the Manufacturer to any adjustment to the Project Programme or the Delivery Schedule; or
  - (C) in any way affect the Contract Price for any item of Purchased Equipment, the Total Option Price for any Option, the Schedule of Milestones, or otherwise entitle the Manufacturer to be reimbursed for any costs and expenses incurred or otherwise compensated in any form or manner.

### **2.3. Contract Progress Reports**

- 2.3.1. Every four weeks from the Commencement Date the Manufacturer shall issue a report to the Purchaser on its progress in connection with the design, manufacture,

testing, commissioning and supply of the Units and the other items of Purchased Equipment and in satisfying each of the other requirements specified in this Agreement (the "**Contract Progress Report**"). The Manufacturer shall ensure the Contract Progress Report contains the information described in paragraph 2.3.2.

2.3.2. The Contract Progress Report shall confirm where activities are proceeding as planned, and provide a commentary on any matters of exception. The Manufacturer shall issue the Contract Progress Report no later than 3 Working Days prior to each Project Review Meeting. The Contract Progress Report shall include:

- (A) the current Updated Project Programme;
- (B) the Exception Report (if appropriate);
- (C) a confirmation that the design, manufacture, testing, commissioning and supply of the Units and other items of Purchased Equipment is proceeding in accordance with the Project Programme (other than as disclosed in the Exception Report);
- (D) commentary on any activities where the Manufacturer considers that any problems may arise, including :
  - (1) the reason for the problem;
  - (2) the extent of the problem and the potential impact on the project;
  - (3) the mitigation measures that the Manufacturer has taken or proposes to undertake to reduce the impact; and
  - (4) the measures taken, and the measures proposed, to prevent recurrence of the event which caused the problem and/or similar such events in the future;
- (E) the physical status of each Unit in respect of the design, manufacture, testing, commissioning and supply stages; and
- (F) subject to any obligations of confidentiality to which the Manufacturer is subject, a section highlighting any defects, or design, maintenance or operational issues that have arisen in any analogous rolling stock manufactured (or being manufactured) by the Manufacturer or in any rolling stock that it has a knowledge of, that may occur or otherwise affect the Units.

## **2.4. Project Risk Management**

- 2.4.1. Without prejudice to its obligations under Schedule 3 the Manufacturer shall actively comply with a project risk management process to be developed by the Purchaser. The project risk management process shall be based on best industry practice and shall include an issues register for existing and emerging risks to be noted.
- 2.4.2. The Purchaser shall liaise with the Manufacturer in developing the project risk management process and take into account any reasonable comments of the Manufacturer regarding the same. The Purchaser intends to notify the Manufacturer of the project risk management process within eight weeks of the Commencement Date.
- 2.4.3. The Manufacturer shall comply with the project risk management process until the later of (i) Final Acceptance of the last Unit; and (ii) Acceptance of the last item of Purchased Equipment (other than a Unit).

## **2.5. Project Review Meeting**

- 2.5.1. The Purchaser and Manufacturer shall hold a review meeting (the "**Project Review Meeting**") every four weeks or more frequently upon the request of either Primary Party.
- 2.5.2. The Purchaser shall circulate an agenda prior to each Project Review Meeting, and the Manufacturer shall be entitled to call for the addition of agenda items before or at the commencement of the Project Review Meeting.
- 2.5.3. The Purchaser's Rolling Stock Manager and the Manufacturer's Project Manager shall both attend the Project Review Meeting unless otherwise agreed by the Primary Parties. Other employees, agents and/or contractors of each Primary Party including Subcontractors in respect of the Manufacturer and the Main Works Contractor and other employees, agents and/or contractors of the TfL Group in respect of the Purchaser may attend a Project Review Meeting.
- 2.5.4. The primary purpose of the Project Review Meeting shall be to:
  - (A) monitor the Manufacturer's performance against the requirements of this Agreement and each of the objectives set out in paragraph 1.1.2;
  - (B) monitor the activities at the interface between the Manufacturer and the Purchaser; and
  - (C) provide a focal point for the resolution of any problems or issues.
- 2.5.5. The Project Review Meeting shall achieve the purposes specified in paragraph 2.5.4 by:
  - (A) reviewing the Updated Project Programme and the Contract Progress Report in order to:

- (1) compare activity progress against the Project Programme and discuss any variances;
  - (2) determine whether any further remedial or mitigation actions are needed to correct variances; and
  - (3) ensure that appropriate responsibility for actions is agreed;
- (B) reviewing quality, safety and technical matters to ensure that the Purchased Equipment will comply with this Agreement;
  - (C) examining actual expenditure and commitments;
  - (D) identifying matters which could potentially affect the Manufacturer's performance of its obligations under the Agreement; and
  - (E) identifying any major concerns regardless of source and ensuring that appropriate actions are agreed to facilitate resolution of such concerns. Both Primary Parties shall endeavour to maintain an open and co-operative relationship, in order to promote the success of the overall project.

2.5.6. The Purchaser shall chair the Project Review Meeting and shall produce and circulate the minutes promptly after the completion of each Project Review Meeting.

## **2.6. Project Board Meetings**

2.6.1. Every three months from the Commencement Date the Purchaser and Manufacturer shall hold a meeting (the "**Project Board Meeting**") to review the progress of the project and the Manufacturer's performance of its obligations under this Agreement. The Purchaser shall be entitled to call a Project Board Meeting more frequently if required. The Project Board Meeting shall continue to meet every three months until all Units have been Accepted, subject to either Primary Party being entitled to reconvene the Project Board Meeting at any time thereafter in order to discuss any matters of serious concern at that time in respect of this Agreement.

2.6.2. The Purchaser and the Manufacturer shall each provide a senior representative to attend the Project Board Meeting. The Purchaser shall circulate an agenda prior to each Project Board Meeting.

2.6.3. The relevant representatives of the Manufacturer's Project Team and the Purchaser's Project Team shall attend the Project Board Meeting and shall present the following as appropriate:

- (A) progress on the project to date;
- (B) the Manufacturer's current Updated Project Programme;
- (C) actions in place to mitigate any programme risks identified;
- (D) summary of the Manufacturer's current Contract Progress Report, and any actions in place;
- (E) resource position for the Manufacturer and Purchaser, and actions taken to resolve any issues;

- (F) current position on stakeholder interface with the project; and
- (G) progress towards consents and approvals.

2.6.4. Without prejudice to Clause 36 if and when required, the attendees of the Project Board Meeting will act in the resolution of any matters that have not been resolved by the Manufacturer's Project Team and the Purchaser's Project Team.

## **2.7. Liaison Meetings**

The Manufacturer shall, from time to time, attend additional liaison meetings as required by the Purchaser, as part of a process of reassuring the Purchaser that the obligations of the Manufacturer under this Agreement are being achieved. Such meetings are expected to cover design, manufacture, statutory body approval, testing and commissioning and introduction of Units into service.

## **2.8. Start-up Meeting**

As soon as possible after the Commencement Date the Purchaser shall convene a start-up meeting with the Manufacturer. The meeting will be used to confirm systems for the control, administration, reporting and management of this Agreement and to confirm lines of communication, information flows, change control and procedures.

## **2.9. Subcontractor Meetings**

The Manufacturer shall advise the Purchaser of any meetings between itself, Subcontractors, suppliers and/or any Competent Authority concerning the subject matter of this Agreement. The Purchaser or its nominee reserves the right to attend any or all such meetings, to the extent reasonably necessary to achieve the purposes set out in paragraph 1.1.2 (such right is not, for the avoidance of doubt, to include meetings between the Manufacturer and its Subcontractors and suppliers relating to their commercial relationship).

# **3 Project Definition**

## **3.1. Project Definition Statement**

3.1.1. The Manufacturer represents and warrants to the Purchaser that the Project Definition Statement complies with each of the requirements described in this paragraph 3.

3.1.2. The Project Definition Statement shall include, as a minimum, the following information:

### Management

- (A) a description of how the Manufacturer will fulfil its obligations under this Agreement, including a clear listing of all final and intermediate deliverables;
- (B) the Manufacturer's project management philosophy and principles;

- (C) a description of the policies, strategies, processes and procedures to be utilised by the Manufacturer in the management of all aspects of its performance of this Agreement, including :
  - (1) design;
  - (2) reliability;
  - (3) availability;
  - (4) maintainability;
  - (5) procurement and supply chain management;
  - (6) manufacture;
  - (7) approvals;
  - (8) project risk management;
  - (9) service introduction; and
  - (10) service support;
- (D) a description of all external parties and stakeholders that may influence and affect the Manufacturer's performance of its obligations under the Agreement;
- (E) a description of the responsibilities of these external parties and stakeholders identified in paragraph 3.1.2(D) in relation to this Agreement;
- (F) a description of the processes to be followed by the Manufacturer in relation to the interface between the Manufacturer and each of the external parties and stakeholders identified in paragraph 3.1.2(D);
- (G) a description of the project management approach and methodology adopted by the Manufacturer;
- (H) a description of how the Manufacturer will implement the approach and methodology identified in paragraph 3.1.2(G), including through the supply chain and in respect of any parties external to the Manufacturer;
- (I) a description of how the Manufacturer will ensure that all its employees, agent and contractors (including Subcontractors) are competent and empowered to fulfil their roles;
- (J) a description of any management tools the Manufacturer intends to use to maximise its performance in respect of this Agreement; and
- (K) a description of how the processes identified in the Project Definition Statement and derived from this Agreement shall be implemented where applicable through the supply chain;

*Manufacturer Organisation*

- (A) a description of the structure of the Manufacturer's organisation, showing how the lines of responsibility are arranged to provide accountability, responsibility, control and communications to facilitate successful delivery of the Manufacturer's obligations under the Agreement; and
- (B) a description of how the Manufacturer will establish progress monitoring and reporting processes;

### Manufacturer's Project Team

- (A) details of a project manager who shall have been granted by the Manufacturer all authority and responsibility necessary to ensure that the Manufacturer performs each of its obligations under this Agreement in the required timescales and complies with all of the requirements under this Agreement (the "**Manufacturer's Project Manager**");
- (B) details of a project team who shall be responsible for supporting the Manufacturer's Project Manager in ensuring the Manufacturer performs each of its obligations under this Agreement in the required timescales and complies with all of the requirements under this Agreement (the "**Manufacturer's Project Team**");
- (C) without prejudice to the Manufacturer's obligations under Schedule 3, details of:
  - (1) each of the individual roles within the Manufacturer's Project Team;
  - (2) the responsibilities of each of the roles identified in paragraph C(1) above;
  - (3) a detailed organisation chart of the Manufacturer's organisation that shows the names, titles, accountabilities and responsibilities, and reporting lines of the Manufacturer's Project Team and to the extent not forming part of the Manufacturer's Project Team the teams responsible for design, procurement, production, testing, and commercial, safety, quality and environmental management aspects, including the names of all principal managers and engineers; and
  - (4) the identity of each of the employees of the Manufacturer that the Manufacturer proposes to perform the roles identified in paragraph C(1) above, including details of their qualification and experiences for the role;
- (D) a description of how the Manufacturer's Project Team manages the functional/lines areas of the organisation; and
- (E) curriculum vitae for each of the key employees in the Manufacturer's Project Team;

### Engineering

- (A) a strategy, plan and process for implementing and controlling the following, as a minimum:
  - (1) provision and planning of engineering resources;
  - (2) Unit design activities including design team, design philosophy, whole life asset and cost optimisation;
  - (3) simulation and mock-up processes;
  - (4) interface management between Units and the infrastructure of the East London Railway and the North London Railway (including the technical and process interface with stakeholders in respect of such interface);
  - (5) integration of individual components of the Units;
  - (6) completion of the Units;
  - (7) service support; and

- (8) management of interfaces between the engineering team and other areas such as procurement, production and outside parties;

Manufacturing

- (A) a description of the Manufacturer's approach to the manufacturing of the Units. Including details of production facilities and locations (including test facilities) and details of manufacturing processes, including details of significant sequencing/staging;
- (B) a description of the proposed provision and planning of manufacturing resources, and management of manufacturing resource scheduling including co-ordination with other areas;
- (C) a description of each proposed bought-in Parts, Subcontractors and processes for management of supply chain;
- (D) a description of the processes for production staffing, training, competence, and, to the extent not already provided, details of production team structure and organisation;
- (E) a plan of project manufacturing activities in Gantt format (to be shown within the overall project plan to be supplied);
- (F) a description of the interface of manufacturing with design and other areas, including quality assurance (as described in Schedule 3);
- (G) a description of the proposed production controls; and
- (H) details of any manufacturing aspects that could give rise to a programme risk, with planned mitigations.

## 4 General

### 4.1. Purchaser's Right of Audit

The Purchaser shall comply with Clause 9 of this Agreement.

### 4.2. Communications

The Purchaser and the Manufacturer shall agree a documented communications procedure between the Primary Parties. All communications, including electronic communications, shall including the following:

- (A) Agreement name and identifying number;
- (B) subject;
- (C) unique reference number;
- (D) date; and
- (E) the name of the author (a representative holding delegated powers compatible with the subject matter).

- 4.2.1. All communications of a formal nature from the Purchaser to the Manufacturer shall be sent by the Purchaser's Rolling Stock Manager to the Manufacturer in accordance with Clause 40.
- 4.2.2. All communications of a formal nature from the Manufacturer to the Purchaser shall be sent by the Manufacturer's Project Manager to the Purchaser in accordance with Clause 40.
- 4.2.3. All correspondence between the Manufacturer and other parties appointed or under the control of the Purchaser or any member of the TfL Group shall be made through the Purchaser.
- 4.2.4. Unless otherwise agreed with the Purchaser, each communication shall cover one subject only, and shall bear an individual sequential number in accordance with a system agreed between the Purchaser and the Manufacturer.

### **4.3. Statutory notices**

- 4.3.1. If any statutory notice relating to the subject matter of this Agreement or naming the Purchaser or LUL as a party is served on the Manufacturer or any of its Subcontractors or suppliers, the Manufacturer shall immediately (or in the case of a statutory notice served on a Subcontractor or supplier, immediately such statutory notice comes into the Manufacturer's possession provided that the Manufacturer imposes a requirement in its Subcontracts or supply contracts that the Subcontractors or suppliers forward such statutory notices to the Manufacturer) inform the Purchaser and provide the Purchaser with a copy of such statutory notice.
- 4.3.2. Where the Manufacturer receives any "letters of claim", writs and/or summons naming the Purchaser or LUL as a party or which may affect the Manufacturer's ability to perform this Agreement, it shall provide the same or a copy immediately to the Purchaser.
- 4.3.3. Where the Manufacturer receives any letters, faxes or other communication from any person holding the Purchaser, any member of the TfL Group and/or any of their respective employees, agents or contractors responsible for any incident, the Manufacturer shall consult with the Purchaser and obtain the Purchaser's approval prior to giving any response to such letters, faxes or other communication.

**SCHEDULE 13: VARIATION PROCEDURE**

## **SCHEDULE 13**

### **Variation Procedure**

#### **1. DEFINITIONS**

1.1 In this Agreement, the following expressions shall have the following meanings:

**"Additional Bonding Requirement"** means the bonding required as a consequence of the Proposed Variation, such bonding to be provided in a manner consistent with Schedule 11 and in an amount which is consistent with the nature and scope of the Variation and the bonding provided or to be provided under Schedule 11;

**"Change in Milestone Payments"** means the change in the Milestone Payments or any additional Milestone Payments arising from a Variation;

**"Emergency Variation"** has the meaning given to it in paragraph 11;

**"New Milestones"** means any new or changed Milestones associated with a Variation;

**"Proposed Variation"** means a variation proposed by the Purchaser or the Manufacturer (as applicable);

**"Required Variation"** means a Variation required in order to comply with a Change in Law or a Variation which is required pursuant to the terms of this Agreement;

**"Variation"** means a change to the Manufacturer's obligations under this Agreement.

#### **2. SCOPE**

2.1 The Parties acknowledge and agree that Variations shall be made by Variation Order and in accordance with the procedure set out in this Schedule 13.

#### **3. VARIATIONS PROPOSED BY THE PURCHASER**

##### **3.1 Request**

3.1.1 The Purchaser may at any time during the duration of this Agreement request a Variation for any reason whatsoever and shall do in the case of a Required Variation.

3.1.2 If the Purchaser wishes to request a Variation (or is required to do so), the Purchaser shall send a notice ("**Purchaser Notice of Proposed Variation**") to the Manufacturer. Such notice shall contain (but not be limited to) the following information:

(A) The date of the notice and the variation number (with each Proposed Variation being sequentially numbered);

(B) A statement as to whether the Proposed Variation is a Required Variation together with sufficient information regarding the nature of the Proposed Variation for the Manufacturer to assess this statement and whether any of the grounds on which the Manufacturer may object to a Proposed Variation under paragraph 3.2.2 apply; and

- (C) sufficient information regarding the nature of the Proposed Variation for the Manufacturer to estimate the Change in Milestone Payments, any New Milestones and/or any Additional Bonding Requirements as fully and accurately as is reasonably possible,

and shall be signed by the Purchaser. In requesting Variations pursuant to this paragraph 3 the Purchaser shall use reasonable endeavours to act in such a manner so as to simplify and minimise the administrative time and costs incurred in dealing with any Proposed Variation.

## 3.2 **Objections**

3.2.1 Subject to paragraph 3.2.2 the Manufacturer shall be entitled within ten (10) Working Days following receipt of a Purchaser Notice of Proposed Variation to object to the Proposed Variation (other than an Emergency Variation) by serving on the Purchaser a notice ('**Manufacturer's Notice of Objection**') specifying the grounds on which the Manufacturer objects to such Proposed Variation.

3.2.2 The grounds on which the Manufacturer may object to a Proposed Variation under paragraph 3.1.2 above shall be limited to the following (and any objection based on a ground other than one or more of the following shall be invalid):

- (A) any Relevant Consent required to implement the Variation will not be obtainable;
- (B) the Variation would, if implemented, require the Manufacturer's obligations under this Agreement to be performed in a manner that infringes an Applicable Law or Standard;
- (C) the Variation would, if implemented, require the Manufacturer's obligations under this Agreement to be performed in a manner that is inconsistent with good industry practice;
- (D) the Variation would, if implemented, cause the terms of a Relevant Consent to be breached, or cause a Relevant Consent to be revoked;
- (E) the Variation would, if implemented, materially and adversely affect the health and safety of any person;
- (F) the Variation would, if implemented, materially and adversely change the basic nature of the Manufacturer's obligations under this Agreement such that such obligations thereafter included activities which could not, at the time of signature of this Agreement, have been reasonably contemplated by a competent person equivalent to the Manufacturer as constituting part of such obligations at some time during the duration of this Agreement;
- (G) the Variation would, if implemented, require the Manufacturer to implement the Variation in an unreasonable period of time;
- (H) the Purchaser does not have the legal power or capacity to require the implementation of the Variation;
- (I) the Variation would, if implemented, place the Manufacturer or any member of the Manufacturer's Group in breach of any of its obligations

under any Applicable Law, any Standard, this Agreement, the Train Services Agreement or any other legally binding agreement to which the Manufacturer is party and which has been entered into on arm's length terms and in the ordinary course of business,

save that the Manufacturer shall not be entitled to object to a Proposed Variation on the grounds mentioned in paragraphs (C), (F) or (G) where such Proposed Variation is a Required Variation.

3.2.3 If the Purchaser disagrees with any objection raised by the Manufacturer it shall meet with the Manufacturer with a view to agreeing whether any such objection is based on the grounds mentioned in paragraph 3.2.2 and if within five (5) Working Days following receipt of the Manufacturer's Notice of Objection the Parties have not agreed on the validity of any such objection the Purchaser may refer the matter for resolution in accordance with Clause 36.

3.2.4 If the Purchaser agrees with any objection raised by the Manufacturer, or any objection is held in accordance with Clause 36 to be valid, the Proposed Variation shall proceed no further and the Purchaser Notice of Proposed Variation shall be deemed to be withdrawn.

3.2.5 If the Purchaser Notice of Proposed Variation is not withdrawn or deemed to have been withdrawn and either:

(A) within ten (10) Working Days following the Manufacturer receiving a Purchaser Notice of Proposed Variation the Manufacturer has not served a Manufacturer Notice of Objection; or

(B) it is agreed between the Parties or determined in accordance with Clause 36 that each of the objections raised by the Manufacturer in a Manufacturer Notice of Objection is not valid,

then within ten (10) Working Days (or other such period as the Parties shall agree (acting reasonably)) following either paragraph (A) or (B) being satisfied, the Manufacturer shall issue to the Purchaser a Variation Report in accordance with paragraph 5.

3.2.6 To the extent required by the Purchaser, the Manufacturer shall produce, to the extent it is reasonably able to do so, any information or any other supporting documentation in relation to any consequences of a Proposed Variation specified in a Variation Report.

#### **4. VARIATIONS PROPOSED BY THE MANUFACTURER**

##### **4.1 Request**

4.1.1 The Manufacturer may at any time during the duration of this Agreement request a Variation for one of the following reasons:

(A) to reduce the Purchaser's overall costs and/or improve the effectiveness and/or efficiency with which the Manufacturer can perform its obligations under this Agreement;

(B) where the requested Variation is a Required Variation; or

(C) for any reason not specified in paragraph 4.1.1(A) or (B).

4.1.2 If the Manufacturer wishes to request a Variation, the Manufacturer shall send a notice ("**Manufacturer Notice of Proposed Variation**") to the Purchaser. Such notice shall contain (but not be limited to) the following information:

- (A) the date of the notice and the variation number (with each Proposed Variation being sequentially numbered);
- (B) the reasons why the Manufacturer Notice of Proposed Variation has been issued;
- (C) an indication as to whether the Variation, if implemented would give rise to a Change in Milestone Payment, any New Milestones or to any Additional Bonding Requirement;
- (D) an indication of any implications of the Variation, in particular on the performance by the Manufacturer of its obligations under this Agreement;
- (E) a statement of whether the Proposed Variation is a Required Variation together with sufficient information regarding the nature of the Proposed Variation for the Purchaser to assess this statement and whether any of the grounds on which the Purchaser may object to a Proposed Variation under paragraph 4.2.3 apply;
- (F) such information as would be required to be provided in a Variation Report pursuant to paragraph 5 as is at that time available to the Manufacturer,

and shall be signed by the Manufacturer. In requesting Variations pursuant to this paragraph 4 the Manufacturer shall use reasonable endeavours to act in such a manner so as to simplify and minimise the administrative time and costs incurred in dealing with any Proposed Variation.

## 4.2 **Rejection of Variations and Objections**

4.2.1 Where a Variation proposed by the Manufacturer is not a Required Variation, the Purchaser may reject it on any grounds acting in its absolute discretion by serving a notice of rejection on the Manufacturer (a "**Purchaser's Notice of Rejection**") within ten (10) Working Days following receipt of a Manufacturer Notice of Proposed Variation and thereafter the Proposed Variation shall proceed no further and the Manufacturer Notice of Proposed Variation shall be deemed withdrawn.

4.2.2 Where the Proposed Variation is a Required Variation the Purchaser shall be entitled within ten (10) Working Days following receipt of a Manufacturer Notice of Proposed Variation to object to the proposed Variation by serving on the Manufacturer a Notice of Objection (the "**Purchaser's Notice of Objection**") specifying the grounds upon which the Purchaser objects to such Proposed Variation.

4.2.3 The grounds on which the Purchaser may object to a Proposed Variation in respect of a Required Variation shall be limited to the following (and any objection based on a ground other than one or more of the following shall be invalid):

- (A) any Relevant Consent required to implement the Variation will not be obtainable;
- (B) the Variation would, if implemented, require the Manufacturer to perform its obligations under this Agreement in a manner that would infringe an Applicable Law or Standard;
- (C) the Variation would, if implemented, cause the terms of a Relevant Consent to be breached, or cause a Relevant Consent to be revoked;
- (D) the Variation would, if implemented, materially and adversely affect the health and safety of any person;
- (E) the Manufacturer does not have the legal power or capacity to require the implementation of the Variation; and
- (F) the Variation would, if implemented, place the Purchaser or any member of the Purchaser's group in breach of any of its obligations under any Applicable Law, any Standard, this Agreement, the Train Services Agreement or any other legally binding agreement to which the Purchaser is party and which has been entered into on arm's length terms and in the ordinary course of business.

4.2.4 If the Manufacturer disagrees with any objection raised by the Purchaser in relation to a Required Variation it shall meet with the Purchaser with a view to agreeing whether any such objection is based on the grounds mentioned in paragraph 4.2.3 above, and if within five (5) Working Days following receipt of the Purchaser's Notice of Objection the Parties have not agreed on the validity of any such objection the Manufacturer and/or the Purchaser may refer the matter for resolution in accordance with Clause 36.

4.2.5 If the Manufacturer agrees with any objection raised by the Purchaser, or any objection is held in accordance with Clause 36 to be valid, the Proposed Variation shall proceed no further and the Manufacturer Notice of Proposed Variation shall be deemed to be withdrawn.

4.2.6 If the Manufacturer Notice of Proposed Variation is not withdrawn or deemed to have been withdrawn and either:

- (A) within ten (10) Working Days following the Purchaser receiving a Manufacturer Notice of Proposed Variation, the Purchaser has not served a Purchaser Notice of Objection or a Purchaser Notice of Rejection; or
- (B) it is agreed between the Parties or determined in accordance with Clause 36 that each of the objections raised by the Purchaser in a Purchaser Notice of Objection is not valid,

then within ten (10) Working Days (or such other period as shall be reasonable for the Parties to agree between them) following either paragraph (A) or (B) being satisfied, the Manufacturer shall serve on the Purchaser a report in accordance with paragraph 5 (the "**Variation Report**") to the extent that the information has not already been provided pursuant to paragraph 4.1.2(F) or was incomplete or is no longer accurate.

## **5. VARIATION REPORT**

### **5.1 Form and Content**

5.1.1 Subject to paragraph 6.2.1, the Variation Report shall state the effect (if any) of the Proposed Variation on:

- (A) this Agreement;
- (B) the Manufacturer's obligations under this Agreement;
- (C) subject to and in accordance with paragraph 6 below, the Milestone Payments, any New Milestones and any Additional Bonding Requirements;
- (D) the Maintenance Plan;
- (E) the Rolling Stock Requirements – Technical and the Technical Description;
- (F) the Units;
- (G) the warranties provided by the Manufacturer under Clause 5 of this Agreement; and
- (H) any other consequences of the proposed Variation.

5.1.2 The Variation Report shall in addition contain the following information:

- (A) the Manufacturer's opinion as to whether relief from compliance with any of the Manufacturer Obligations is required as a result of the Proposed Variation;
- (B) any amendment required to this Agreement as a result of the Proposed Variation;
- (C) any effect on the performance of the Manufacturer's obligations under this Agreement consequent on the Proposed Variation;
- (D) an estimate of any adjustment to the Manufacturer's costs in performing its obligations under this Agreement together with an estimate of the Change in Milestone Payments, any New Milestones and/or any Additional Bonding Requirements prepared in accordance with paragraph 6 below;
- (E) any loss of revenue that will result from the Variation;
- (F) any Relevant Consents that may need to be acquired as a result of the Proposed Variation;
- (G) a clear statement of the steps the Manufacturer proposes to take in order to implement the Proposed Variation; and

- (H) any dates which the Purchaser should take into account in its decision-making including dates by which a decision on any issues relating to the Proposed Variation is critical.

## **6. COST OF IMPLEMENTING VARIATIONS**

### **6.1 Change in Milestone Payments**

6.1.1 The Manufacturer shall set out in the Variation Report the Change in Milestone Payments, any New Milestones and/or Additional Bonding Requirement resulting from a Proposed Variation in a way that clearly identifies each of the different items of cost comprised within the price of the Proposed Variation.

6.1.2 The Change in Milestone Payments and/or Additional Bonding Requirement shall be provided in a comprehensive and accurate manner.

### **6.2 Principles of Pricing**

6.2.1 The Manufacturer shall at all times, act reasonably in assessing the Change in Milestone Payments, any New Milestones and any Additional Bonding Requirement arising from a Variation and shall price each proposed Variation with total transparency and:

- (A) to the extent not relating to a Required Variation, using prices which are demonstrably fair and reasonable having regard to prevailing market rates for the requisite labour and materials and, subject always to 6.4 below, shall only be entitled to seek to claim for the actual costs estimated to be incurred plus an agreed profit margin of ■%;
- (B) to the extent relating to a Required Variation, subject always to 6.4 below at the estimated cost (labour and materials) of carrying out that Required Variation together with an agreed profit margin of ■%;
- (C) in a way which makes clear the method of calculation of the costs, and any assumptions on which the calculations are based;
- (D) in a way which makes clear any necessary changes to working practices which have generated increased costs;
- (E) in a way which takes into account resulting changes in the Manufacturer's workforce including costs and provisions associated with the Transfer Regulations;
- (F) in a way which takes into account the changes in the Rolling Stock Requirements – Technical, the Technical Description and any other Variations to this Agreement;
- (G) in a way which takes into account any changes in risk transfer;
- (H) in a way which highlights the Change in Milestone Payments, any New Milestones and any Additional Bonding Requirements;

- (I) in a way which makes clear any redundancy payments which the Purchaser may be required to meet as a result of the implementation of the Variation; and
  - (J) on the basis that the Change in Milestone Payments and any New Milestones will be determined, to the extent reasonable and practicable, in a manner consistent with Schedule 11.
- 6.2.2 In the event that the implementation of a Variation leads to a reduction in the Manufacturer's estimated costs in performing its obligations under this Agreement, the Manufacturer shall reflect this estimated reduction in the Change in Milestone Payments arising from the Variation and in all other respects shall calculate the Change in Milestone Payments in accordance with this paragraph 6.
- 6.2.3 At the time of providing financial information pursuant to this paragraph 6.2 the Manufacturer shall also provide:
- (A) such relevant data and supporting information as is necessary to allow the Purchaser to review and/or verify the amount of the estimates and/or other information provided;
  - (B) analyses demonstrating the method by which the Manufacturer has built up the Change in Milestone Payments, any New Milestones and/or Additional Bonding Requirement; and
  - (C) any other information which the Purchaser may from time to time reasonably request to enable it to review and verify any estimates and other information which the Manufacturer is required to provide pursuant to this Schedule 13 (Variation Procedure).
- 6.3 Where any costs which the Manufacturer has estimated will arise as a result of the implementation of a Variation have subsequently been avoided by the Manufacturer, the Manufacturer shall inform the Purchaser in writing of such avoidance within five (5) Working Days of such avoidance, and any liability of the Purchaser to meet such costs which may have arisen under the terms of a Variation Order or as a result of any other provision of this Schedule 13 (Variation Procedure) shall be cancelled.
- 6.4 The Manufacturer shall use reasonable endeavours to mitigate any increase in the Milestone Payments and/or Additional Bonding Requirement, including where applicable obtaining the best possible value for money when entering into any Subcontract in order to implement a Variation, and with the minimum impact on the Manufacturer's obligations under this Agreement.

## **7. VARIATION ORDERS**

### **7.1 Issue of Variation Orders or Withdrawal of Proposed Variations**

- 7.1.1 The Purchaser shall within twenty (20) Working Days (or such longer period as may be reasonable having regard to the complexity of the proposed Variation) following receipt of the last Variation Report requested by it:

- (A) if satisfied with the Variation Report, order the Variation by confirming to the Manufacturer in writing the content of the Variation Report ("**Variation Order**");
- (B) refer any disputes regarding the accuracy or completeness or consequences or effect of the matters set out in the Variation Report for resolution in accordance with Clause 36 and may, when such resolution has been achieved, issue a Variation Order which reflects that resolution; or
- (C) inform the Manufacturer in writing that the Purchaser does not wish the proposed Variation to be carried out and that the Proposed Variation has been withdrawn provided that this paragraph (C) shall not apply in the case of a Variation Report regarding a Required Variation.

7.1.2 A Variation Order issued in accordance with paragraphs 7.1.1(A) or 7.1.1(B) above shall include (but not be limited to) the following information:

- (A) the date on which implementation of the Variation shall begin;
- (B) the date on which implementation of the Variation shall be completed;
- (C) an acknowledgement of the adjustment to the Milestone Payments, which shall be calculated in accordance with paragraph 6, and any New Milestones;
- (D) the agreed Additional Bonding Requirement to be provided by the Purchaser in accordance with the programme agreed or determined pursuant to paragraph 7.1.1(A) or 7.1.1(B);
- (E) confirmation of whether the Manufacturer will need to obtain any Relevant Consent in order to implement the Variation; and
- (F) acknowledgement that in the case where the implementation of the Variation will require the Manufacturer to obtain any Relevant Consent and such Relevant Consent cannot be obtained, the Purchaser shall withdraw the Variation Order in accordance with paragraph 8 below.

## 7.2 **Confirmation and Implementation of Variation Orders**

7.2.1 Where a Variation Order has been issued under paragraph 7.1.1(A) or 7.1.1(B):

- (A) in the case where no Relevant Consent is required in order to implement the Variation the Variation Order shall be deemed to be confirmed and the Manufacturer shall proceed to implement the Variation in accordance with the terms of the relevant Variation Order as expeditiously and cost-effectively as possible; and
- (B) in the case where a Relevant Consent is required to implement the Variation:
  - (1) the Manufacturer shall proceed to obtain such Relevant Consents and paragraphs 7.2.1(B)(2), 7.2.1(B)(3) and 7.2.2 below shall

apply in any of the circumstances contemplated by this paragraph (B);

- (2) where the Manufacturer is seeking a Relevant Consent in accordance with paragraph 7.2.1(B)(1) the Manufacturer shall not in any other respect begin implementing the Variation Order for which such Relevant Consent is necessary until either:
  - (a) such Relevant Consent is obtained; or
  - (b) the Purchaser expressly requests the Manufacturer to begin implementing the relevant Variation prior to the obtaining of any such Relevant Consent.
- (3) subject to paragraph 7.2.1(B)(5), where each required Relevant Consent has been obtained by the Manufacturer, the Manufacturer shall proceed to implement the Variation in accordance with the terms of the relevant Variation Order as expeditiously and cost-effectively as possible;
- (4) if it is determined by the Purchaser that any Relevant Consent necessary for the implementation of a Variation cannot be obtained then the Purchaser shall withdraw the relevant Variation Order in accordance with paragraph 8 below; and
- (5) where any Relevant Consent necessitates a change to the Variation Order, then the Manufacturer shall produce a further Variation Report (the "**Second Variation Report**") to which the provisions of paragraph 5 shall apply and any resulting Variation Order shall operate to make such amendments as shall be necessary.

7.2.2 The risk of a failure or delay in any application for any Relevant Consent, or in any appeal, review, enquiry, agreement or revocation in relation to the same, shall be borne by the Purchaser in respect of all Variations.

### 7.3 **Date of Confirmation of Variation Orders**

7.3.1 Where no Relevant Consent is required in order to implement a Variation, the Variation Order shall be deemed to be confirmed upon the date specified in such Variation Order or where no such date is specified in the Variation Order, upon the date of issue of the Variation Order.

7.3.2 Where any Relevant Consent is required to implement any Variation Order, such Variation Order shall be deemed to be confirmed:

- (A) where no Second Variation Report is required in accordance with paragraph 7.2.1(B) upon the date upon which the last such Relevant Consent required has been obtained by the Manufacturer; or
- (B) where a Second Variation Report is required in accordance with paragraph 7.2.1(B) the date upon which the resulting Variation Order is confirmed.

#### **7.4 Effect of Confirmation of Variation Orders**

7.4.1 Upon the relevant Variation Order being deemed to be confirmed:

- (A) The parties shall comply with the Variation Order;
- (B) Schedule 1 (Rolling Stock Requirements - Technical) and Schedule 2 (Technical Description) shall be deemed to have been amended to incorporate the terms of the Variation Order;
- (C) any amendment to this Agreement as referred to in paragraph 5.1.2(B) above shall be deemed to be incorporated into this Agreement;
- (D) it shall be finally agreed that the Manufacturer will incur or benefit from a change in its costs as a result of the relevant Variation; and
- (E) any relief or adjustments required by the Variation Order shall be deemed to have been made.

#### **8. WITHDRAWAL OF VARIATIONS**

8.1 Subject to paragraph 8.2, where the Purchaser or the Manufacturer wishes to withdraw a Variation which it has proposed it may do so at any time prior to the confirmation of a Variation Order relating to such Variation.

8.2 Subject to paragraph 3.2.4 and 4.2.5 neither the Purchaser nor the Manufacturer may withdraw a Variation where such Variation is a Required Variation, save where any Relevant Approval is required in order to implement it and despite the Manufacturer using all reasonable endeavours in accordance with paragraph 7.2.2 is not obtained.

8.3 If the Purchaser withdraws a Variation Order in accordance with paragraph 7.1.2(F) and/or paragraph 7.2.1(B)4 and the Variation was proposed by the Purchaser then the Purchaser shall reimburse to the Manufacturer all the costs of the Manufacturer reasonably incurred in seeking to obtain any Relevant Consent.

#### **9. REQUIRED VARIATIONS**

9.1 The Purchaser and the Manufacturer acknowledge and agree that they shall use their best endeavours to implement each Required Variation within any time limits set out in the relevant Applicable Law or relevant Standard and/or Relevant Consents.

9.2 If a Required Variation is in respect of a Change in Law other than a Qualifying Change in Law the Manufacturer shall not be entitled to any relief or increase to the Milestone Payment, such Required Variation shall be carried out by the Manufacturer at its own cost and such Required Variation shall not affect the performance of (or limit or restrict) the Manufacturer's obligations and shall not prejudice or limit the Purchaser's rights or increase its obligations or risk under this Agreement.

#### **10. RETROSPECTIVE CLAIMS**

10.1 The Purchaser shall be entitled to reject any claims by the Manufacturer arising in connection with a Variation, including claims for an increase to the Milestone Payment or

relief from the Manufacturer's obligations, after a Variation Order has been served in respect of that Variation.

- 10.2 Subject to paragraph 10.3, the Purchaser shall not accept, and the Manufacturer shall not be entitled to, any retrospective claims including claims for an increase in the Milestone Payments or relief from the Manufacturer obligations under this Agreement, arising from work which is being or has already been carried out by the Manufacturer and which was not the subject of a Variation Order prior to such work being commenced.
- 10.3 The Manufacturer may bring a claim as is referred to in paragraph 10.2 where the claim relates to a Required Variation arising from a Qualifying Change in Law but only to the extent that the work carried out was the minimum required to be carried out in order to comply with such Qualifying Change in Law.

## **11. EMERGENCY VARIATION PROCEDURE**

- 11.1 If the Purchaser considers, acting reasonably, that there is a need to implement a Variation as a matter of urgency to address a Safety Critical issue (an "**Emergency Variation**"), the Purchaser may require the Manufacturer to implement the proposed Variation immediately upon receipt of the Purchaser Notice of Proposed Variation by the Manufacturer. In such circumstances the Purchaser shall endorse the Purchaser Notice of Proposed Variation with the wording "**EMERGENCY VARIATION – TO BE IMPLEMENTED IMMEDIATELY**". The Manufacturer shall acknowledge receipt in writing of such notice within two (2) Working Days. If the Manufacturer believes that it is illegal to implement the proposed Variation immediately, it shall inform the Purchaser within two (2) Working Days of receipt of the Purchaser Notice of Proposed Variation otherwise it shall commence implementation of such proposed Variation immediately and the parties shall agree an Variation Report in respect of such Emergency Variation in accordance with the procedure set out in paragraphs 5, 6 and 7.

## **12. COSTS OF PREPARING VARIATIONS**

- 12.1 The Purchaser and the Manufacturer shall be liable for the costs and expenses suffered or incurred by it in evaluating and preparing a proposed Variation. The Purchaser and the Manufacturer agree to act reasonably and not to require any other party to undertake unnecessary work in relation to the proposed Variation.

## **13. DELAYS**

Where the Manufacturer and/or the Purchaser cannot, acting reasonably, resolve or finalise any aspect of a Variation within the time limit specified in this Schedule 13, such aspect of the Variation shall be developed to the extent possible within such time limits and shall be resolved or finalised as soon as practicable thereafter. The Manufacturer and the Purchaser shall act reasonably in agreeing changes to the Variation Order which are consequential upon such issues being so resolved or finalised.

## **14. ROUTE ACCEPTANCE**

In this Schedule 13, the expression "Relevant Consent" shall include Route Acceptance to the extent that the obtaining of such Route Acceptance is the responsibility of the Manufacturer.

**15. CONTRACT PRICE**

Where any Change in Milestone Payments is agreed or determined in accordance with this Schedule 13 the Contract Price and the Total Contract Price and/or the Total Option Price shall each be amended accordingly.

**SCHEDULE 14: EQUALITY AND INCLUSION REQUIREMENTS**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 14 – Equality and Inclusion Requirements**

# **SCHEDULE 14**

## **Equality and Inclusion Requirements**

## **1. EQUALITY AND INCLUSION REQUIREMENTS**

### **1.1 General Obligation**

Without limiting the generality of any other provision of this Agreement, the Manufacturer:

1.1.1 shall not unlawfully discriminate, and

1.1.2 shall procure that its personnel do not unlawfully discriminate,

within the meaning and scope of the Sex Discrimination Act 1975, the Race Relations Act 1976, the Disability Discrimination Act 1995, the Employment Equality (Sexual Orientation) Regulations 2003, the Employment Equality (Religion or Belief) Regulations 2003 and any other relevant Applicable Laws in force from time to time relating to discrimination in employment.

### **1.2 Duty under Race Relations Act**

The Manufacturer acknowledges that the Purchaser is under a duty under section 71 of the Race Relations Act 1976 to have due regard to the need to eliminate unlawful racial discrimination and to promote equality of opportunity and good relations between persons of different racial groups. In performing this Agreement, the Manufacturer shall assist and co-operate with the Purchaser where possible in satisfying this duty.

### **1.3 Direction under Greater London Authority Act**

The Manufacturer acknowledges that the Purchaser is under a duty by virtue of a direction by the Mayor of London under section 155 of the Greater London Authority Act 1999 (in respect of the Greater London Authority's duty under section 404(2) of the Greater London Authority Act 1999) to have due regard to the need to:

1.3.1 promote equality of opportunity for all persons irrespective of their race, gender, disability, age, sexual orientation or religion;

1.3.2 eliminate unlawful discrimination; and

1.3.3 promote good relations between persons of different racial groups, religious beliefs and sexual orientation,

and in performing this Agreement, the Manufacturer shall assist and co-operate with the Purchaser where possible to enable the Purchaser to satisfy this duty.

### **1.4 Harassment Policy**

The Manufacturer acknowledges that the Purchaser's workplace harassment policy as updated from time to time requires the Purchaser's employees to comply fully with the Purchaser's workplace harassment policy to eradicate harassment in the workplace. Subject to the

Purchaser providing an updated copy of its workplace harassment policy from time to time such that the Manufacturer has always been provided with a fully up to date copy of such policy, the Manufacturer shall, in relation to its employees agents and/or subcontractors who are engaged in the performance of this Agreement and who are under the control or supervision of the Purchaser or its nominees and/or located at any premises that are owned or controlled by the Purchaser or any other member of the TfL Group (whether temporarily or permanently):

- 1.4.1 ensure that such employees agents and/or subcontractors are fully conversant with the requirements of the Purchaser's workplace harassment policy;
- 1.4.2 fully investigate allegations of workplace harassment in accordance with the Purchaser's workplace harassment policy; and
- 1.4.3 ensure that appropriate, effective action is taken where harassment is found to have occurred.

## **1.5 Health and Safety Policy**

Without prejudice to Clause 19 the Manufacturer acknowledges that the Purchaser's health and safety policy as updated from time to time requires the Purchaser's employees to comply fully with the Purchaser's health and safety policy. Subject to the Purchaser providing an updated copy of its health and safety policy from time to time such that the Manufacturer has always been provided with a fully up to date copy of such policy, the Manufacturer shall, in relation to its employees agents and/or subcontractors who are engaged in the performance of this Agreement and who are under the control or supervision of the Purchaser or its nominees and/or located at any premises that are owned or controlled by the Purchaser or any other member of the TfL Group (whether temporarily or permanently):

- 1.5.1 ensure that such employees agents and/or subcontractors are fully conversant with the requirements of the Purchaser's health and safety policy;
- 1.5.2 fully investigate any breaches of the Purchaser's health and safety policy arising in the workplace in accordance with the Purchaser's health and safety policy; and
- 1.5.3 ensure that appropriate, effective action is taken where a breach of the Purchaser's health and safety policy occurs.

## **1.6 Drug and Alcohol Policy**

The Manufacturer acknowledges that the Purchaser's drugs and alcohol policy as updated from time to time requires the Purchaser's employees to comply fully with the Purchaser's drugs and alcohol policy. Subject to the Purchaser providing an updated copy of its drug and alcohol policy from time to time such that the Manufacturer has always been

provided with a fully up to date copy of such policy, the Manufacturer shall, in relation to its employees agents and/or subcontractors who are engaged in the performance of this Agreement and who are under the control or supervision of the Purchaser or its nominees and/or located at any premises that are owned or controlled by the Purchaser or any other member of the TfL Group (whether temporarily or permanently):

- 1.6.1 ensure that such employees agents and/or subcontractors are fully conversant with the requirements of the Purchaser's drugs and alcohol policy;
- 1.6.2 fully investigate any breaches of the Purchaser's drugs and alcohol policy arising in the workplace in accordance with the Purchaser's drugs and alcohol policy; and
- 1.6.3 ensure that appropriate, effective action is taken where a breach of the Purchaser's drugs and alcohol policy occurs.

## 1.7 **Equality Policy**

For the duration of this Agreement, the Manufacturer shall comply with the Agreed Equality Policy. For the purposes of this Agreement the expression "**Agreed Equality Policy**" means the equality and diversity policy set out in Appendix A to this Schedule 14.

## 1.8 **Diversity Training**

For the duration of this Agreement the Manufacturer shall comply with the Agreed Diversity Training Plan in relation to all of its employees engaged in the performance of the Agreement. For the purposes of this Agreement the expression "**Agreed Diversity Training Plan**" means the diversity training plan set out in Appendix B to this Schedule 14.

## 1.9 **Supplier Diversity**

For the duration of this Agreement the Manufacturer shall at all times comply with the Agreed Supplier Diversity Plan. For the purposes of this Agreement the expression "**Agreed Supplier Diversity Plan**" means the supplier diversity plan set out in Appendix C to this Schedule 14.

## 1.10 **Monitoring and Reporting**

Subject to paragraph 1.11, the Manufacturer shall use reasonable endeavours to provide the Purchaser on the date of this Agreement and subsequently every 6 months from the date of this Agreement (or at such lesser or greater intervals as agreed between the Purchaser and the Manufacturer), with the following information:

- 1.10.1 the proportion of its employees engaged in the performance of the Agreement and, to the extent reasonably possible, the employees of its direct or indirect Subcontractors engaged pursuant to the terms of the relevant Subcontracts in the performance of the Agreement who are:

- (A) female;
- (B) of non 'White British' origin or who classify themselves as being non 'White British', (and/or if the manufacturer's obligations under this Agreement are performed in a country other than England equivalent ethnic minority groups agreed by the Purchaser in the country where such obligations are being performed); or
- (C) disabled,

1.10.2 the proportion of its direct or indirect subcontractors that are SMEs and/or BMEs or other Diverse Suppliers as defined in Appendix 1.

### 1.11 Data Protection Act

The Manufacturer shall ensure at all times that it complies with the requirements of the Data Protection Act 1998 (as may be amended) and any other applicable data protection legislation in England or any equivalent legislation and/or regulations applicable in the Manufacturer's own jurisdiction in the collection and reporting of the information to the Purchaser pursuant to paragraph 1.10.

### 1.12 Diversity Infractions

1.12.1 If the Manufacturer commits a Diversity Infraction, the Purchaser shall be entitled (but not obliged) to serve written notice upon the Manufacturer identifying in reasonable detail the nature of the Diversity Infraction, and the Manufacturer shall cease committing and remedy, at its own cost, the Diversity Infraction, within 30 days of receipt of such notice (or such longer period as may be specified in the notice). For the purposes of this paragraph 1.12 "**Diversity Infraction**" means any breach by the Manufacturer of its obligations specified in paragraphs 1.1 to 1.11 of this Schedule.

1.12.2 Where, following receipt of a notice given pursuant to paragraph 1.12.1, the Manufacturer fails to remedy a Diversity Infraction, the Manufacturer will be in breach of this Agreement and the Purchaser shall be entitled (but not obliged) to terminate the engagement of the Manufacturer under the Agreement in accordance with Clause 30.1.7.

### 1.13 Equality and Diversity Audit

1.13.1 The Purchaser may from time to time upon giving reasonable notice and during normal working hours undertake any audit or check of any and all information regarding the Manufacturer's compliance with paragraphs 1.1 to 1.11. The Purchaser's rights pursuant to this paragraph shall include any and all documents and records of the Manufacturer and shall include the Minimum Records. The Manufacturer shall maintain and

retain the Minimum Records for a minimum of six years with respect to all matters in respect of the performance of paragraph 1.1 to 1.11.

- 1.13.2 The Purchaser shall use reasonable endeavours to co-ordinate its audits and to manage the number, scope, timing and method of undertaking audits so as to ensure that the Manufacturer is not, without due cause, disrupted or delayed in the performance of its obligations under the Agreement.
- 1.13.3 The Manufacturer shall promptly provide all reasonable co-operation in relation to any audit or check including, to the extent reasonably possible in each particular circumstance:
  - (A) granting or procuring the grant of access to any premises used in the Manufacturer's performance of the Agreement whether the Manufacturer's own premises or otherwise;
  - (B) granting or procuring the grant of access to data operated by any equipment (including all computer hardware and software and databases) used (whether exclusively or non-exclusively) in the performance of the Manufacturer's obligations specified in paragraphs 1.1 to 1.11, wherever situated and whether the Manufacturer's own equipment or otherwise; and
  - (C) complying with the Purchaser's reasonable requests for access to senior personnel engaged in the Manufacturer's performance of the Agreement.
- 1.13.4 For the purposes of this paragraph 1.13 the expression "**Minimum Records**" means all information relating to the Manufacturer's performance of paragraphs 1.1 to 1.11.

## Appendix 1

In this Schedule;

**"SMEs" or "Small Medium Enterprise"** means either;

- (a) a business which meets at least two of the following criteria;
  - (i) the annual turnover of the business is £5.6 million or less;
  - (ii) the balance sheet total is £2.8 million pounds or less;
  - (iii) the business has 50 employees or fewer; or
  
- (b) a business which meets at least two of the following criteria;
  - (i) the annual turnover of the business is £22.8 million or less;
  - (ii) the balance sheet total is £11.4 million or less;
  - (iii) the business has 250 employees or fewer.

and in the case of paragraphs (a)(i) and (a)(ii) and (b)(i) and (b)(ii) the applicable criteria shall apply to group accounts, provided that the turnover for the group does not exceed the figure stated in paragraph (a)(i) in respect of paragraphs (a) (i) and (a)(ii) and (b)(i) in respect of paragraphs (b)(i) and (b)(ii).

**"BMEs" or "Black and Minority Ethnic Business"** means a business which is 51% or more owned by people who, in the case where the Manufacturer's obligations under this Agreement are performed in England, classify themselves as being members of an ethnic group other than 'White British' or, in the case where the Manufacturer's obligations under this Agreement are performed in a jurisdiction other than in England, an equivalent ethnic minority group agreed by the Purchaser.

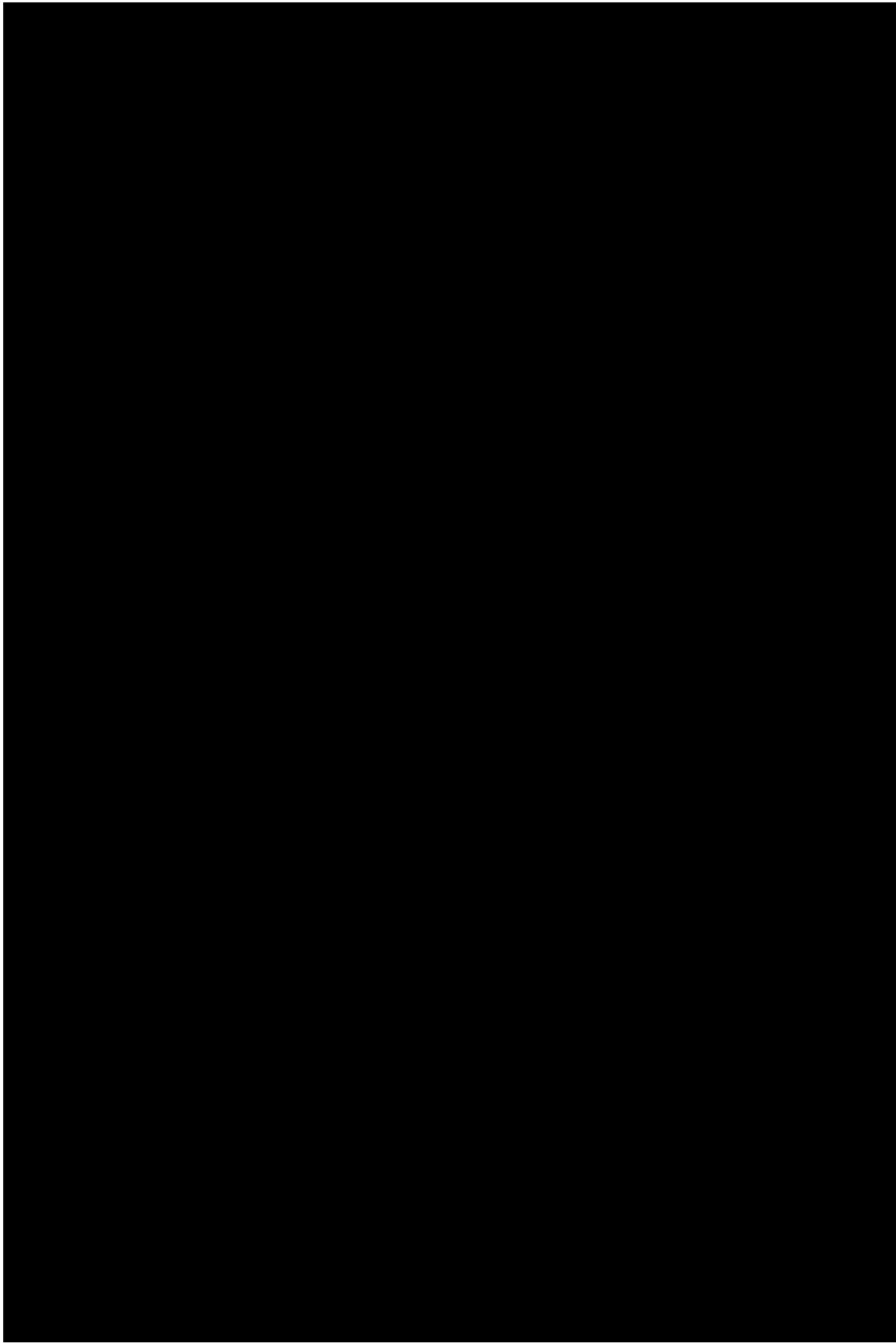
**"Diverse Supplier"** means a business which is;

- (a) an SME or a BME;
- (b) is 51% or more owned by members of one or more of the following groups:
  - (i) women
  - (ii) people with physical and sensory impairments, learning difficulties and mental health requirements;
  - (iii) lesbian, gay, bisexual and transgender people;
  - (iv) people aged sixty (60) or older or people aged twenty-four (24) or younger; and/or

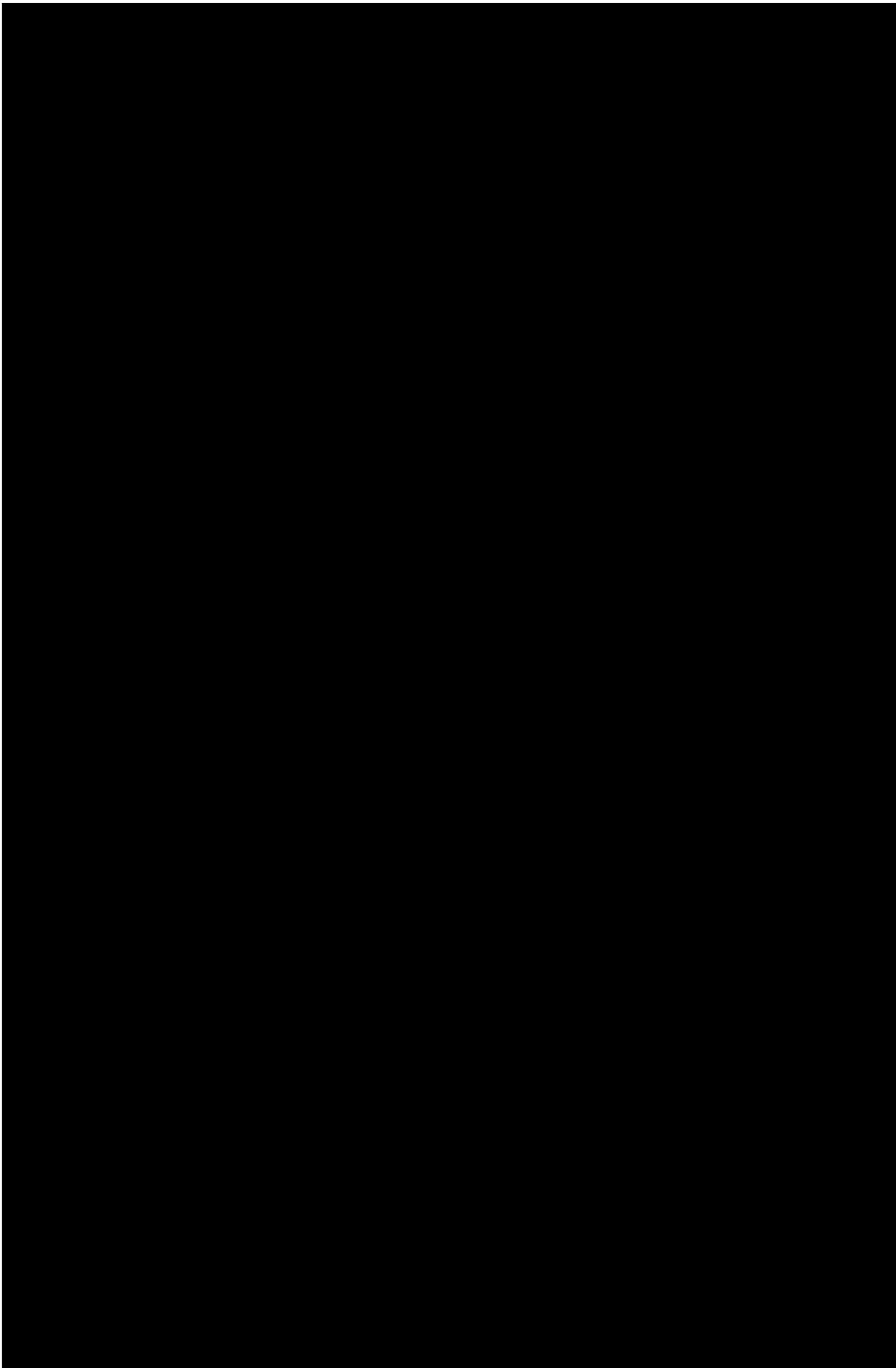
- (v) members of a group for which protection is provided by anti-discriminatory legislation and which is not already mentioned in paragraphs (i) to (iv); and/or
- (c) has a workforce composed of 51% or more of people from one or more ethnic groups other than 'White British' (or an equivalent ethnic minority group agreed by the Purchaser in the jurisdiction in which the Manufacturer's obligations under this Agreement are being performed) and/or any of the groups listed under paragraph (b).

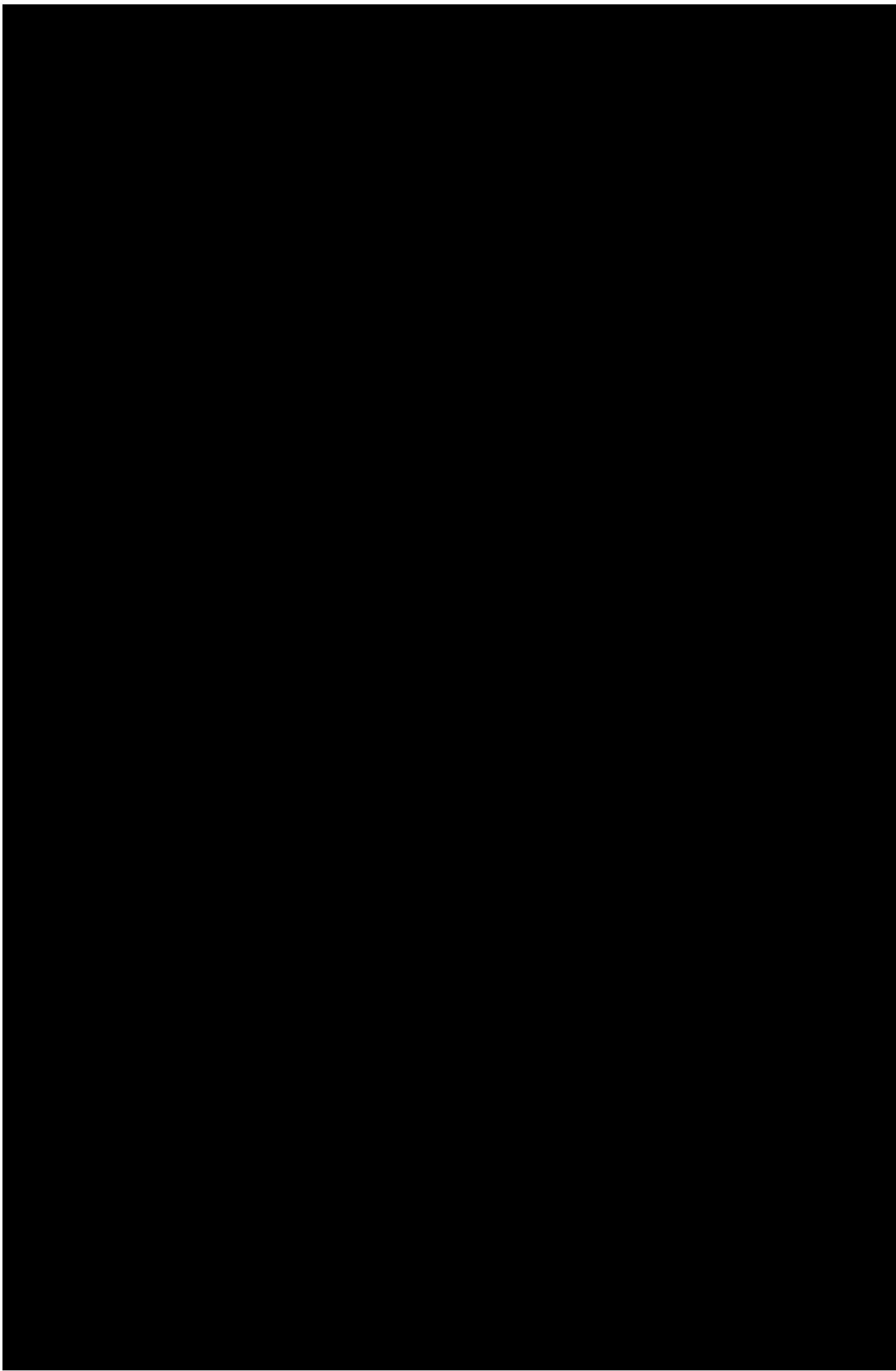
## **Appendix A**

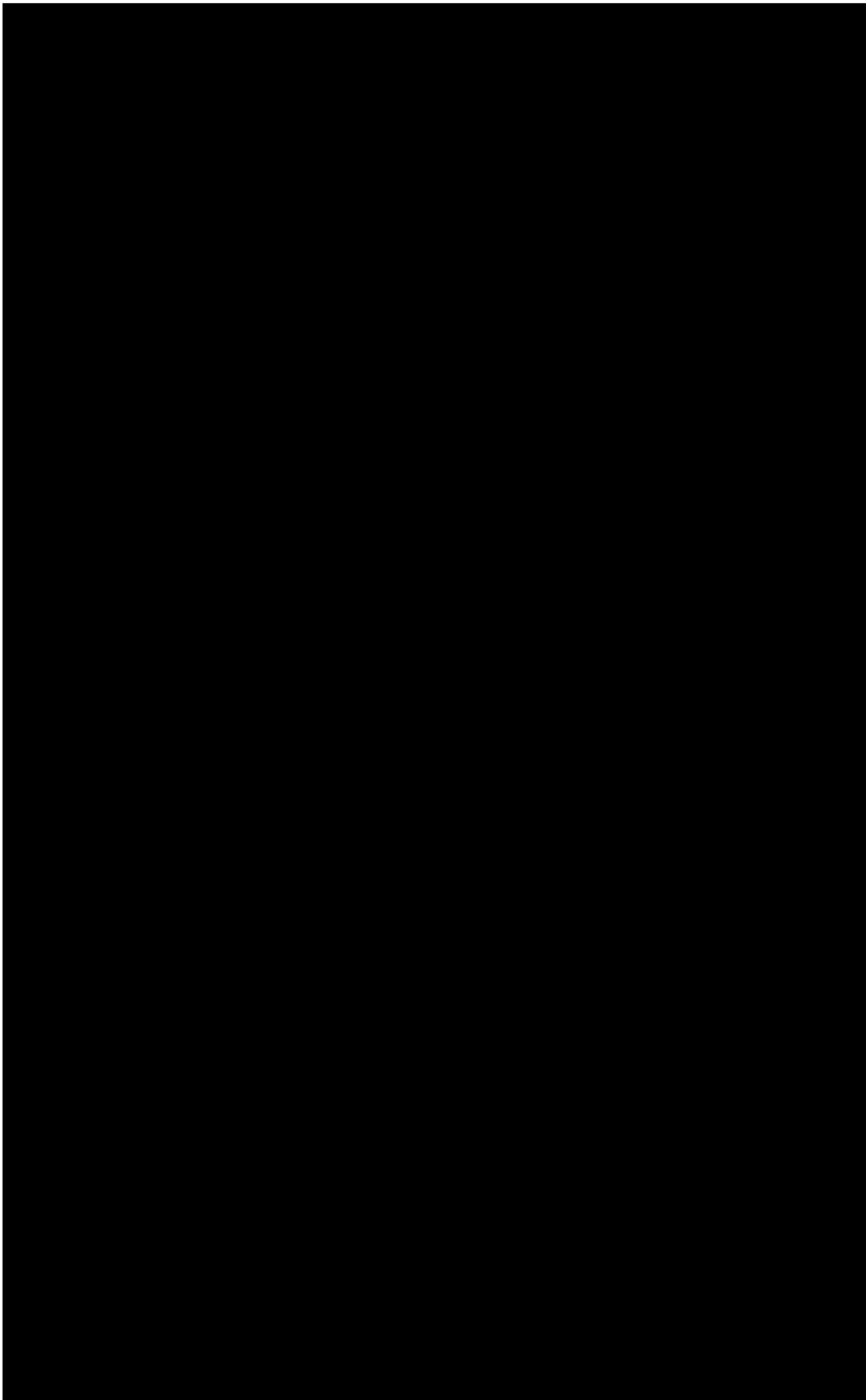
### *Agreed Equality Policy*

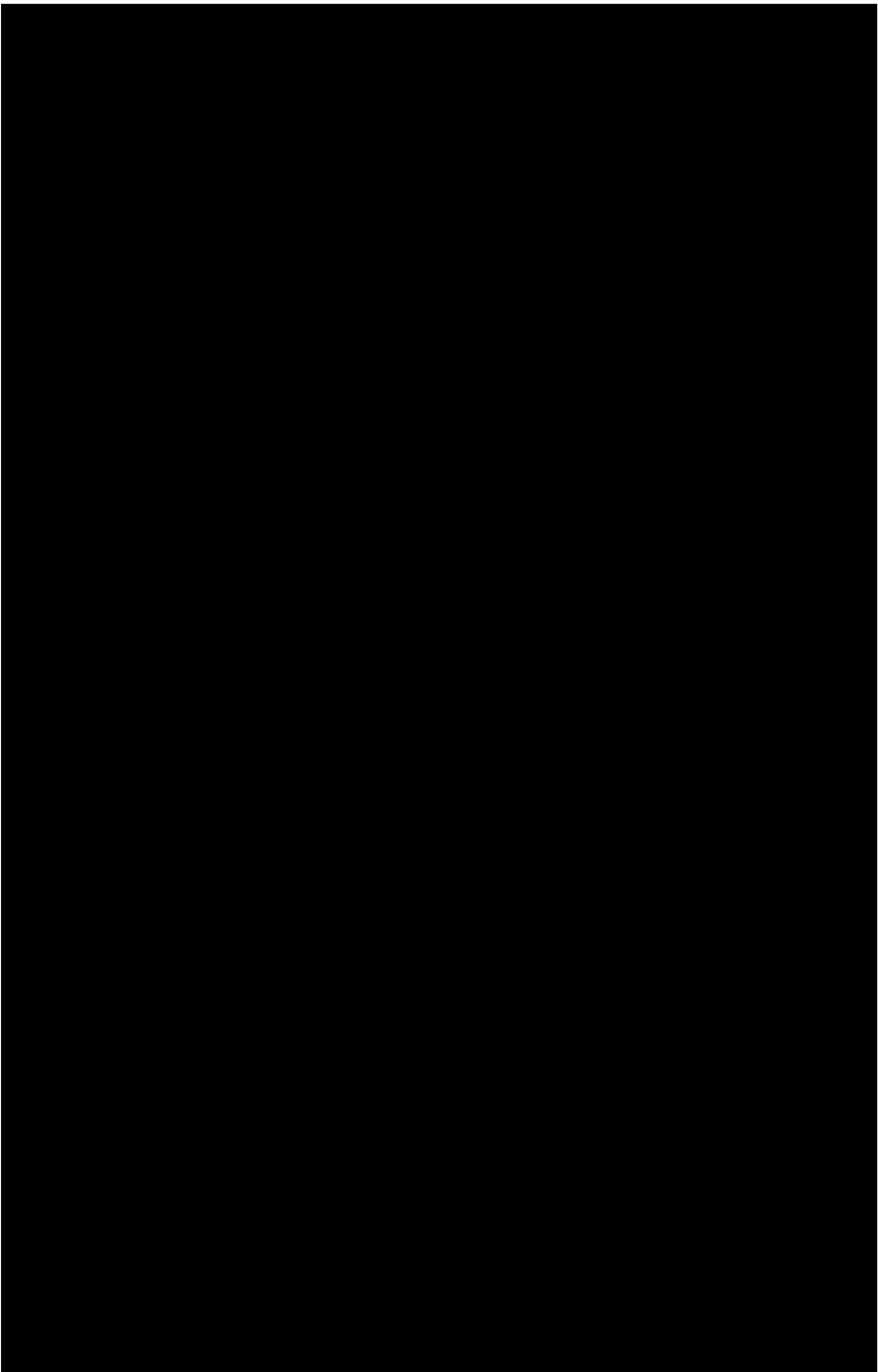


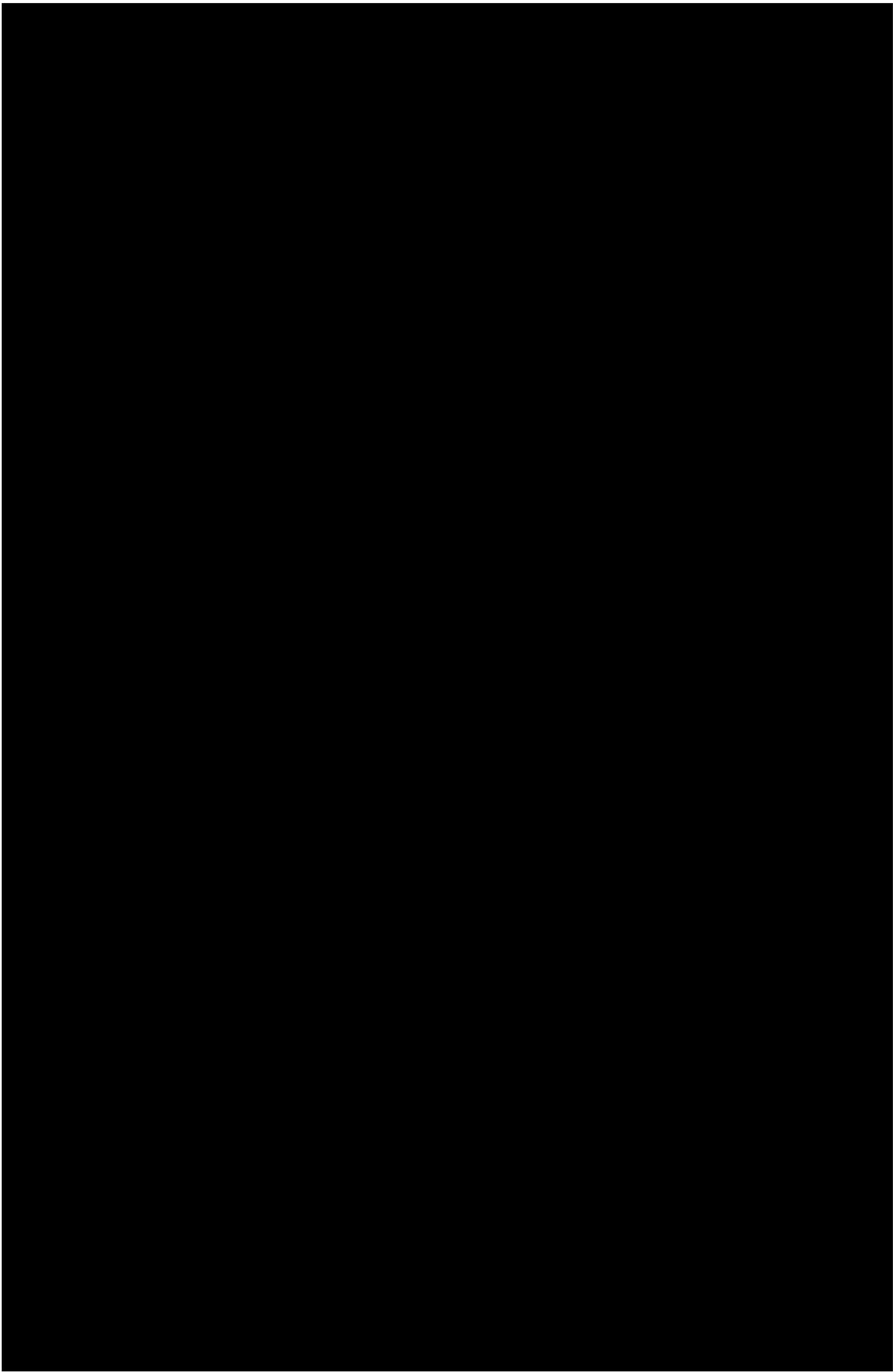


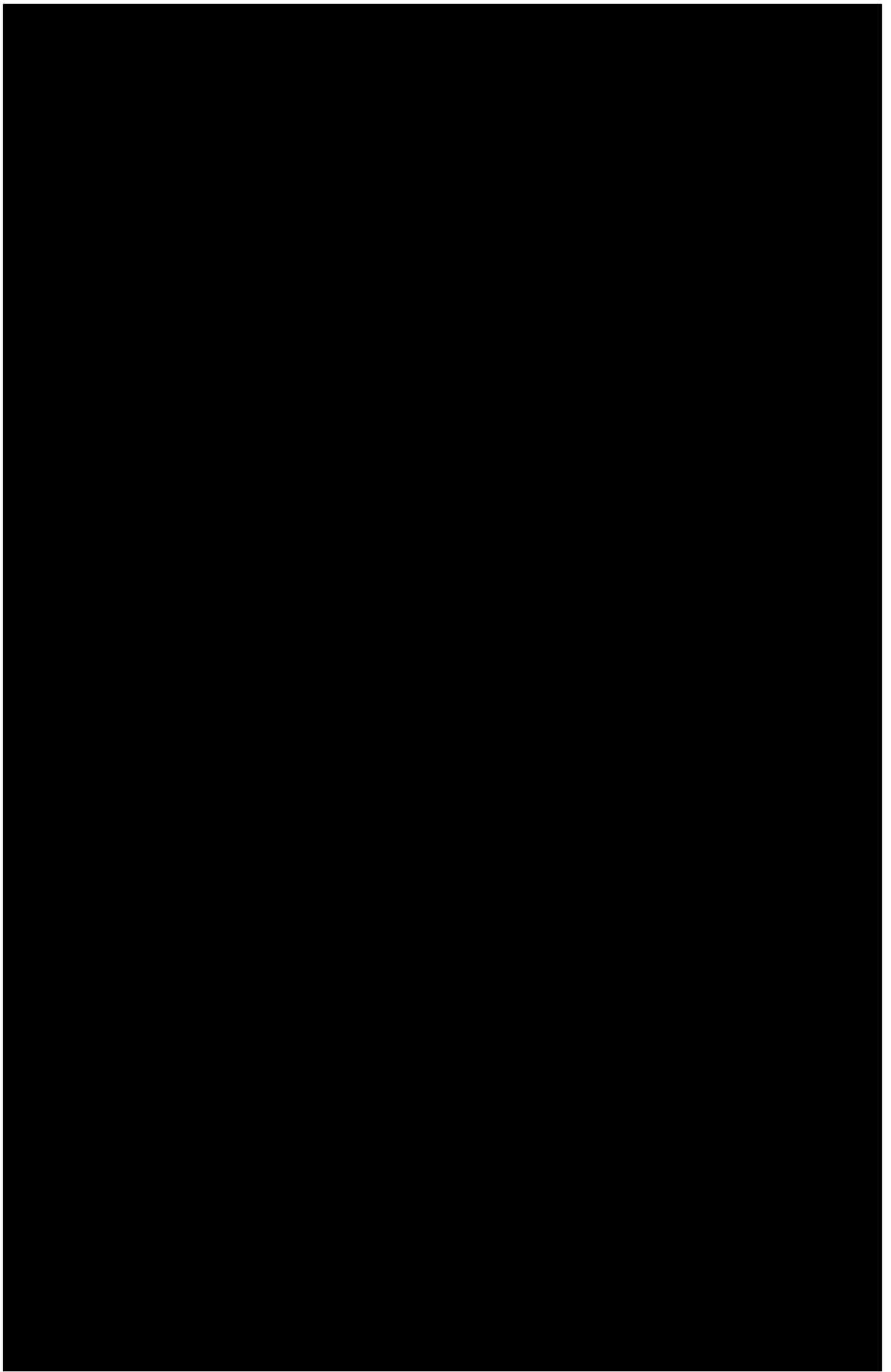


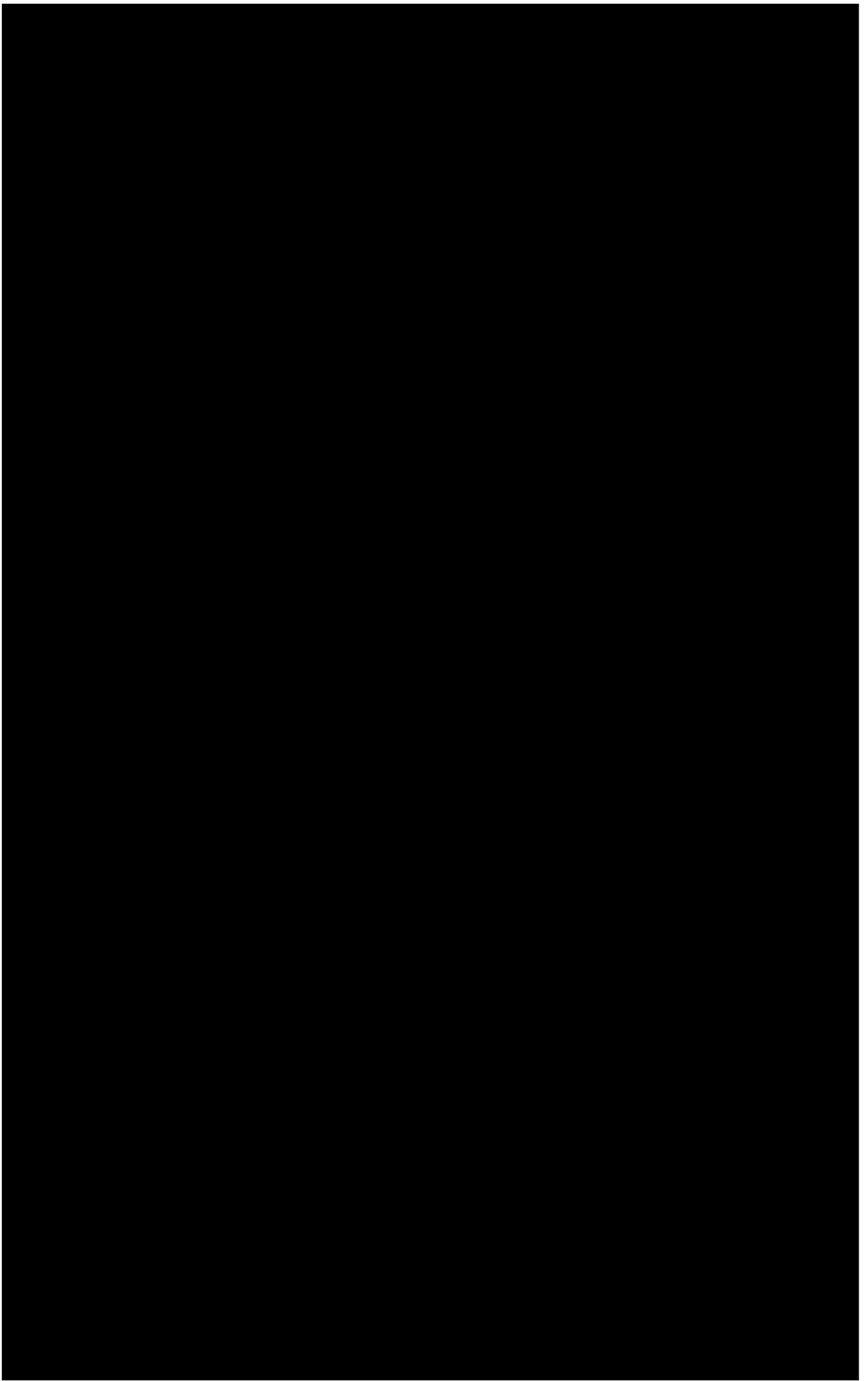


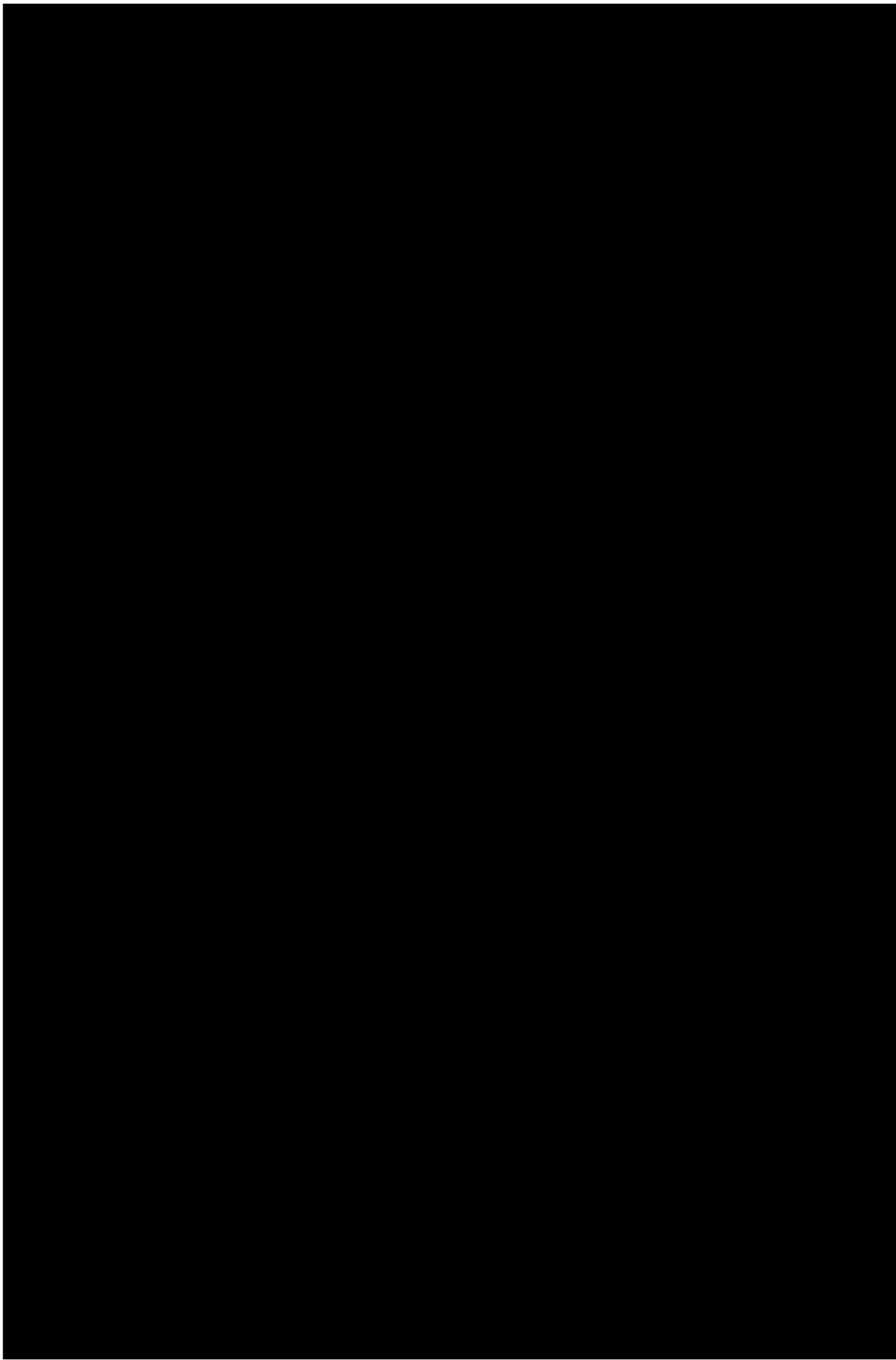


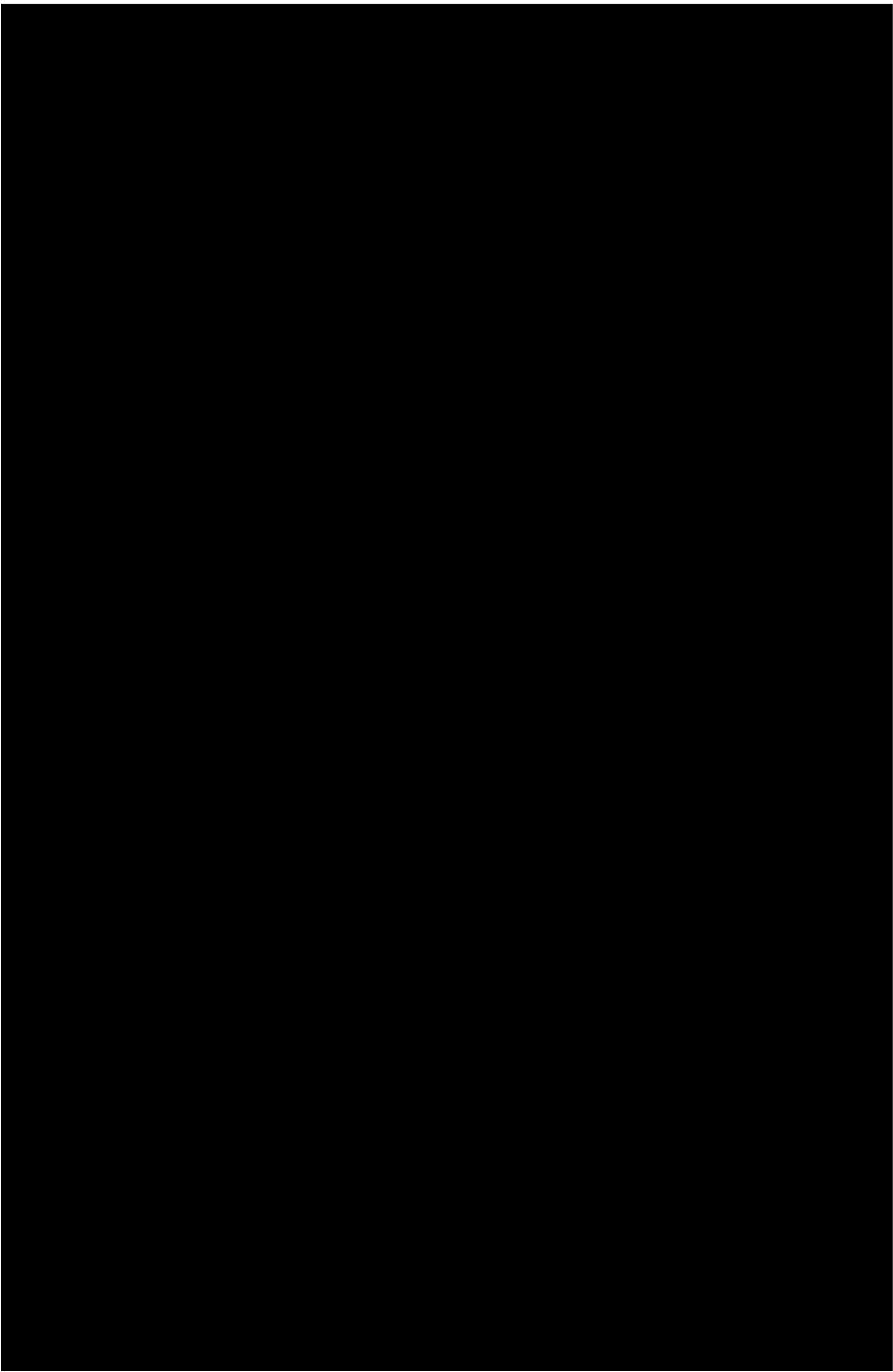


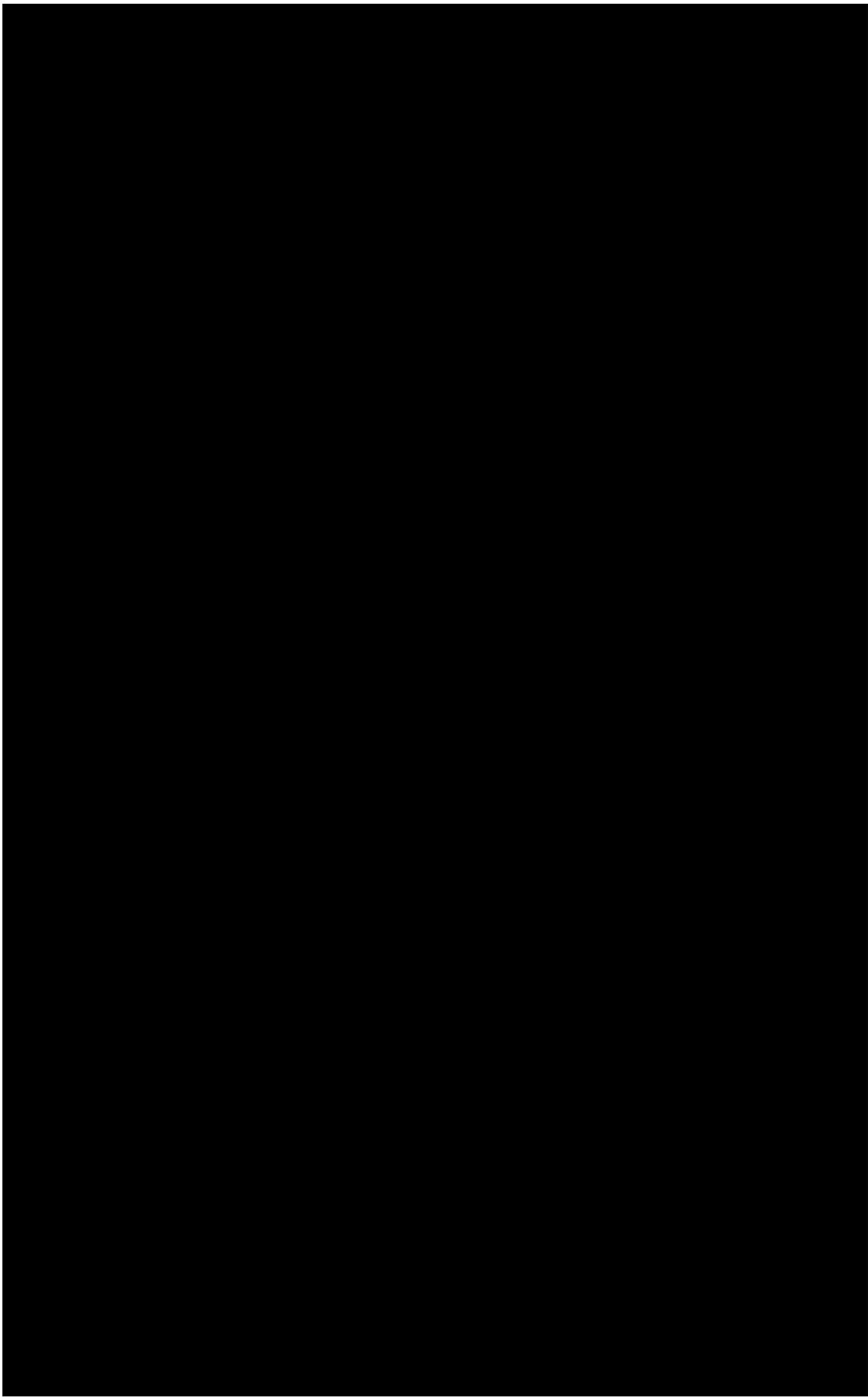






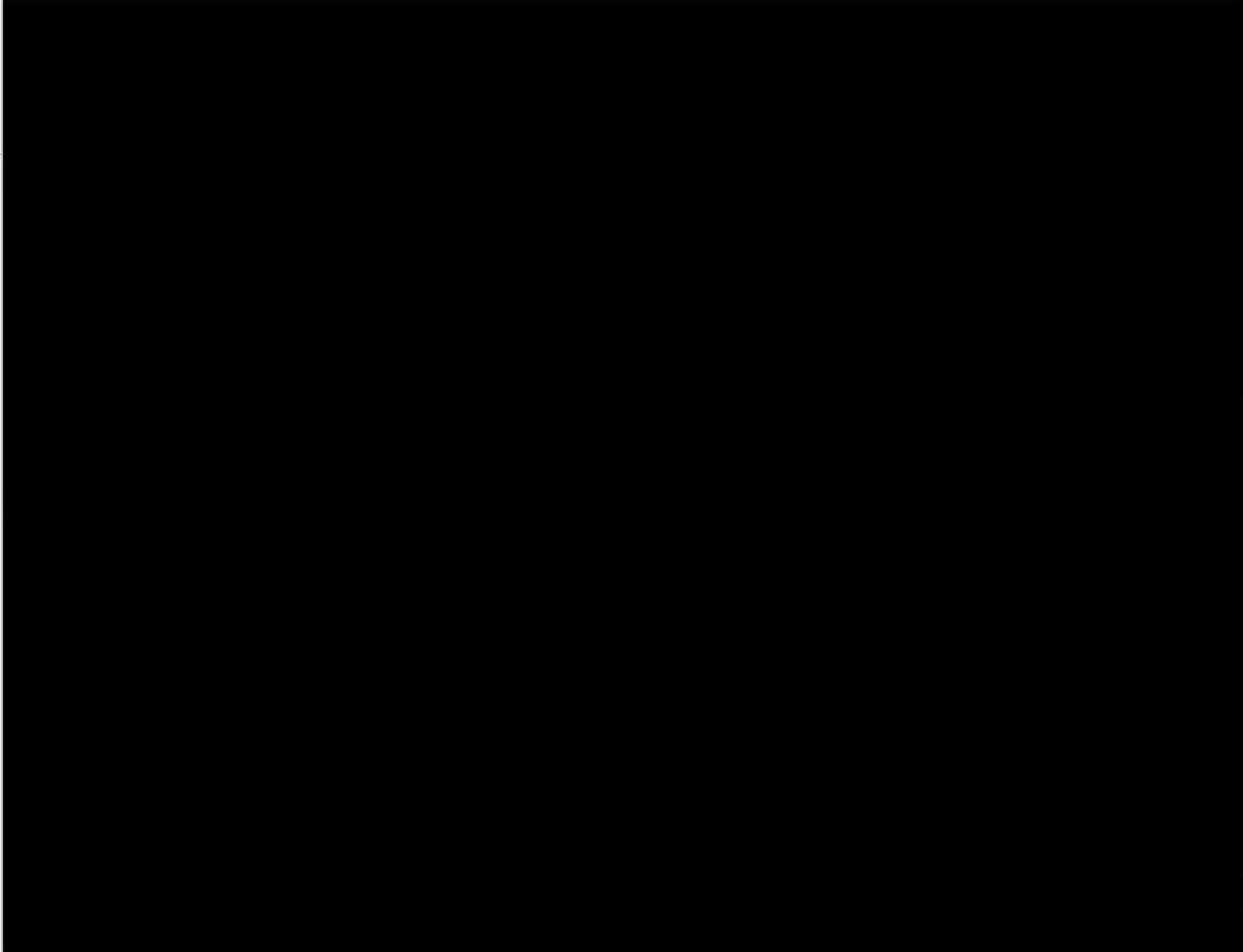








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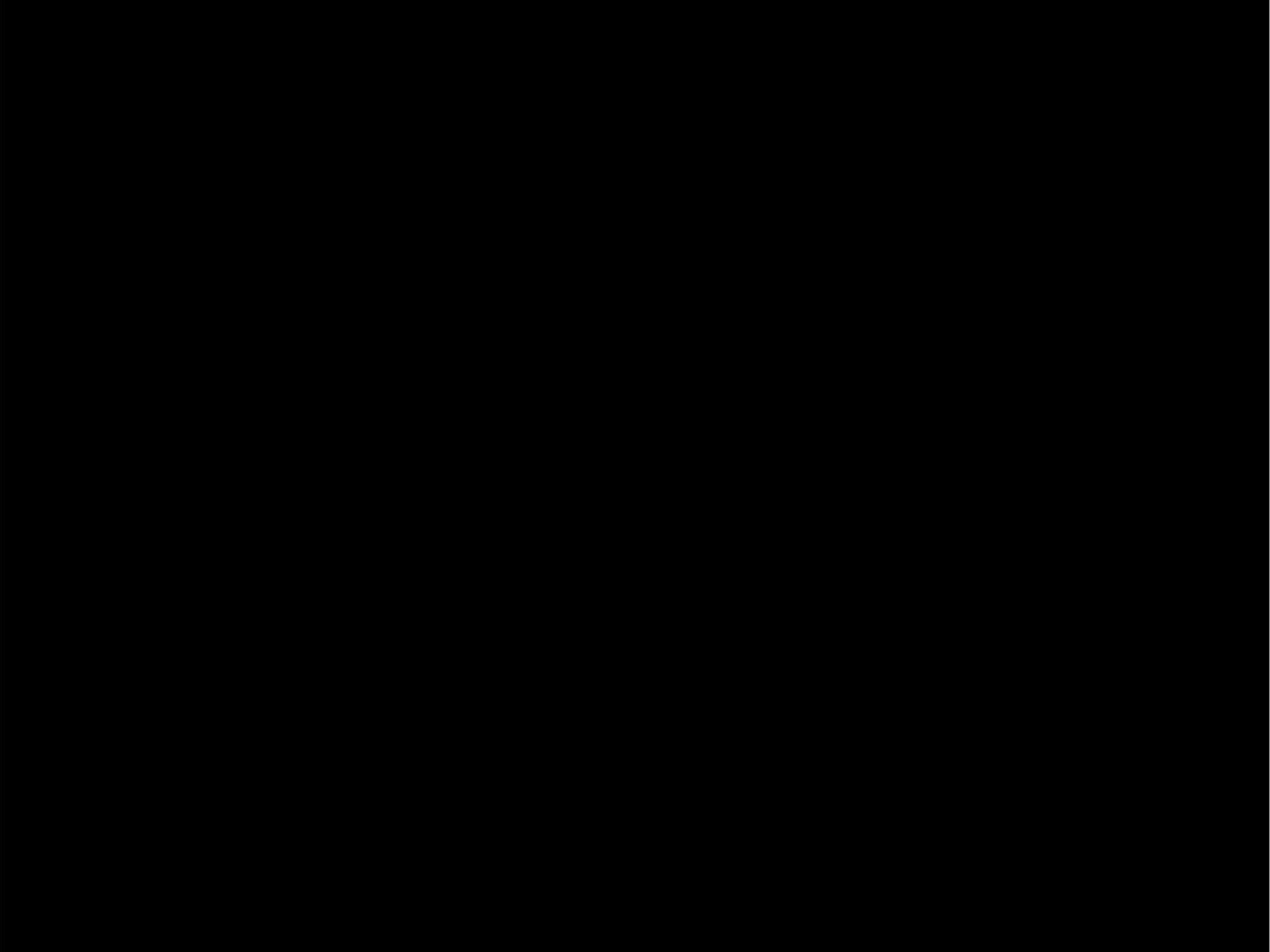


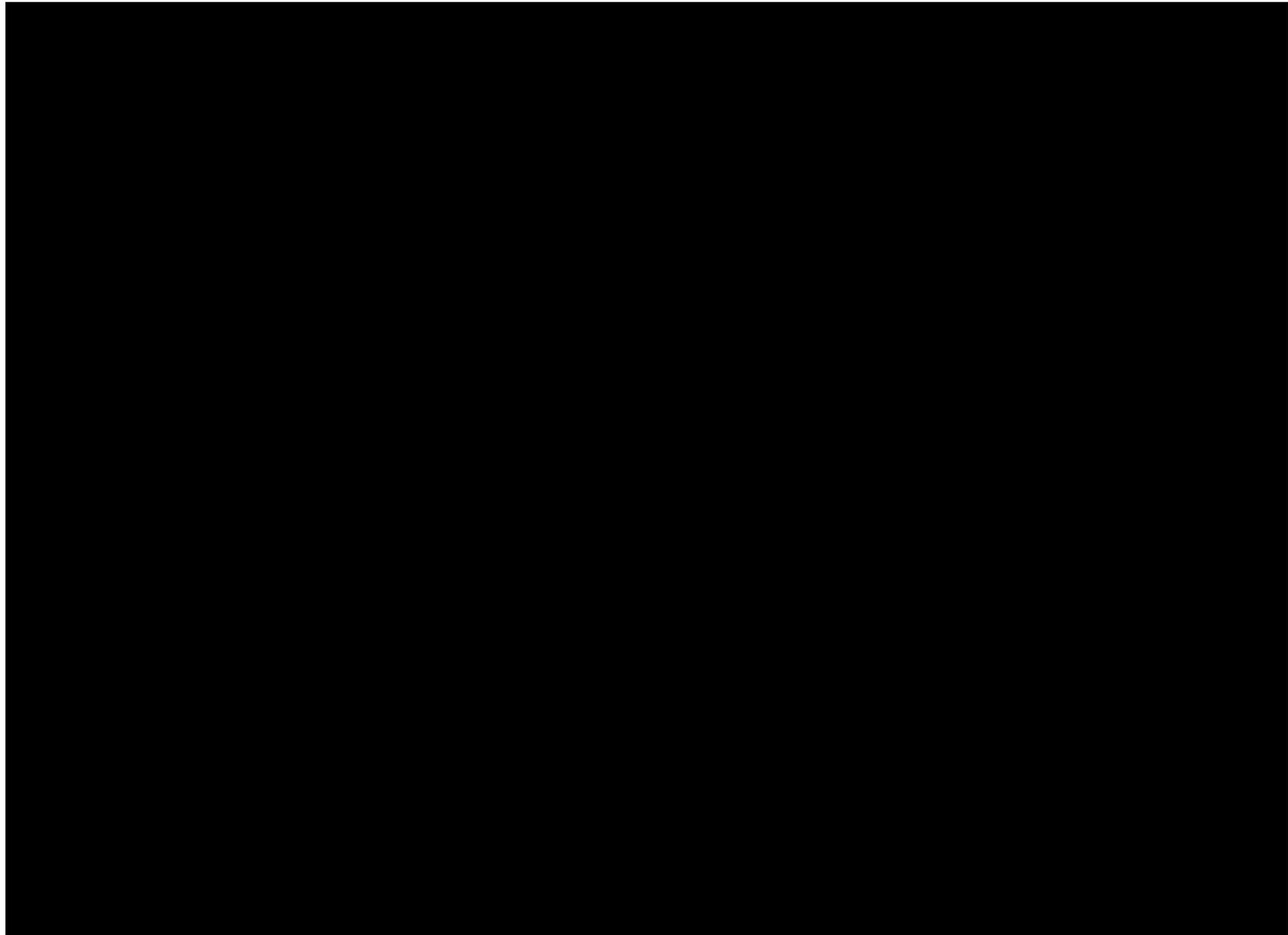
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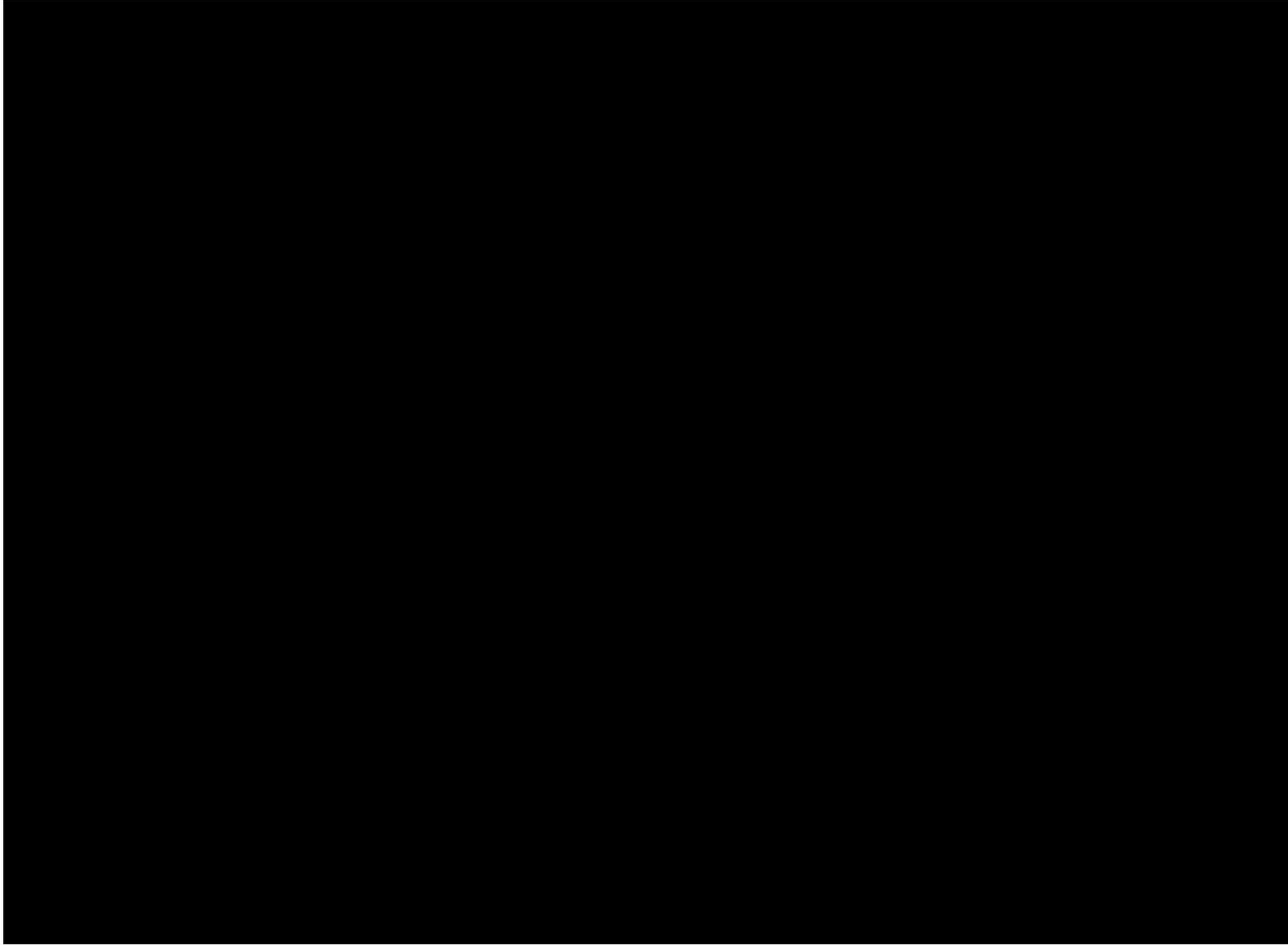
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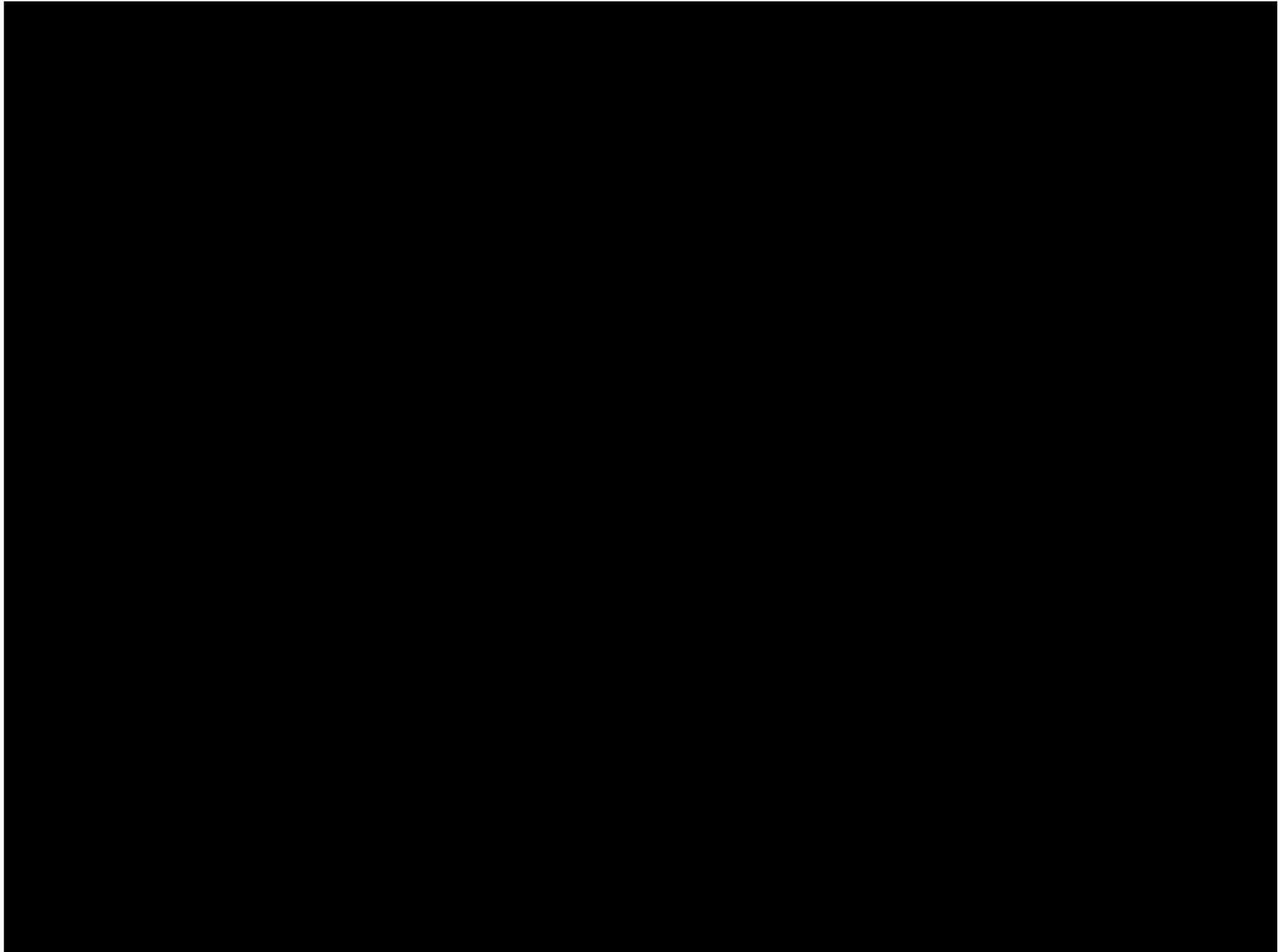




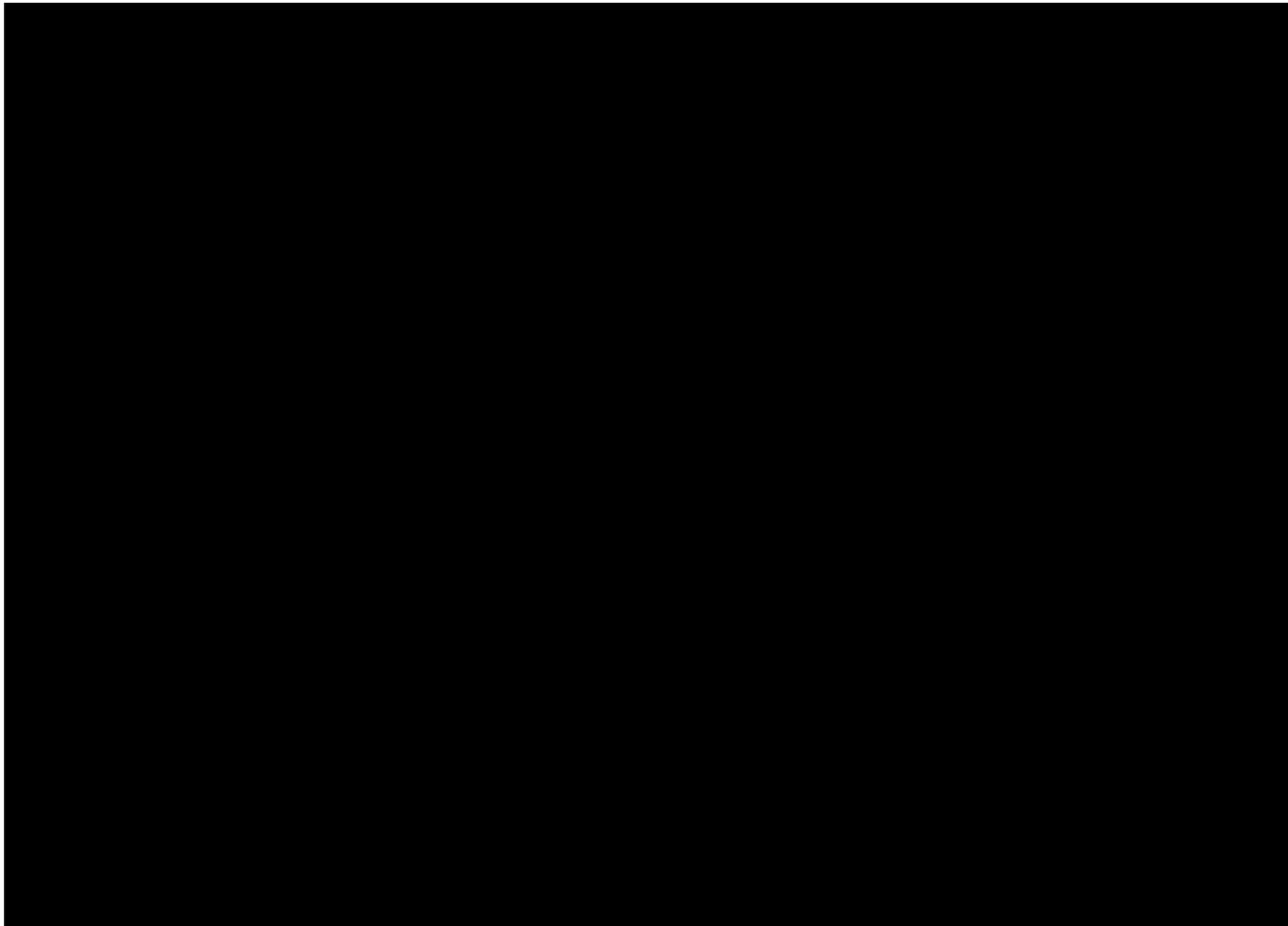


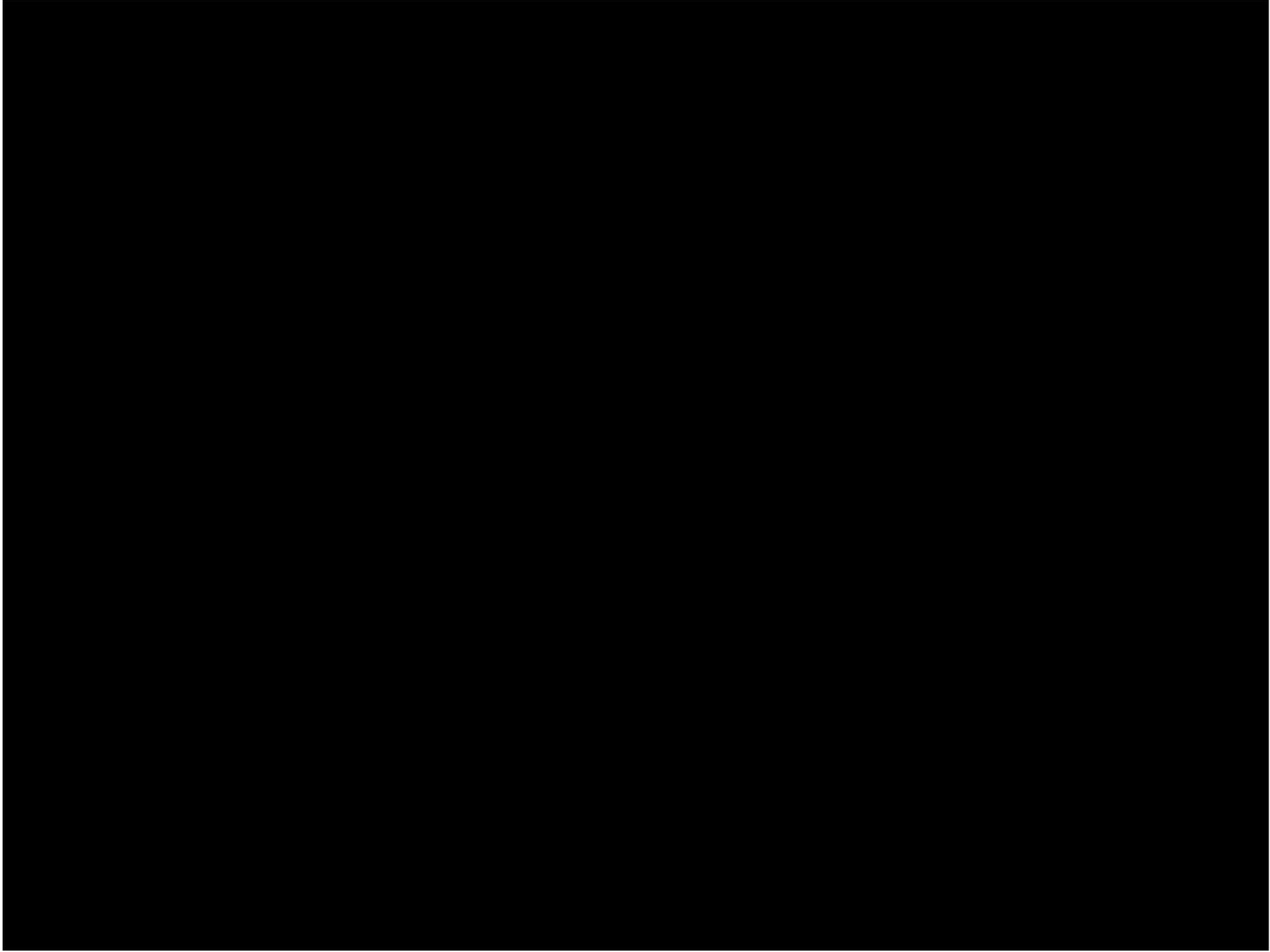


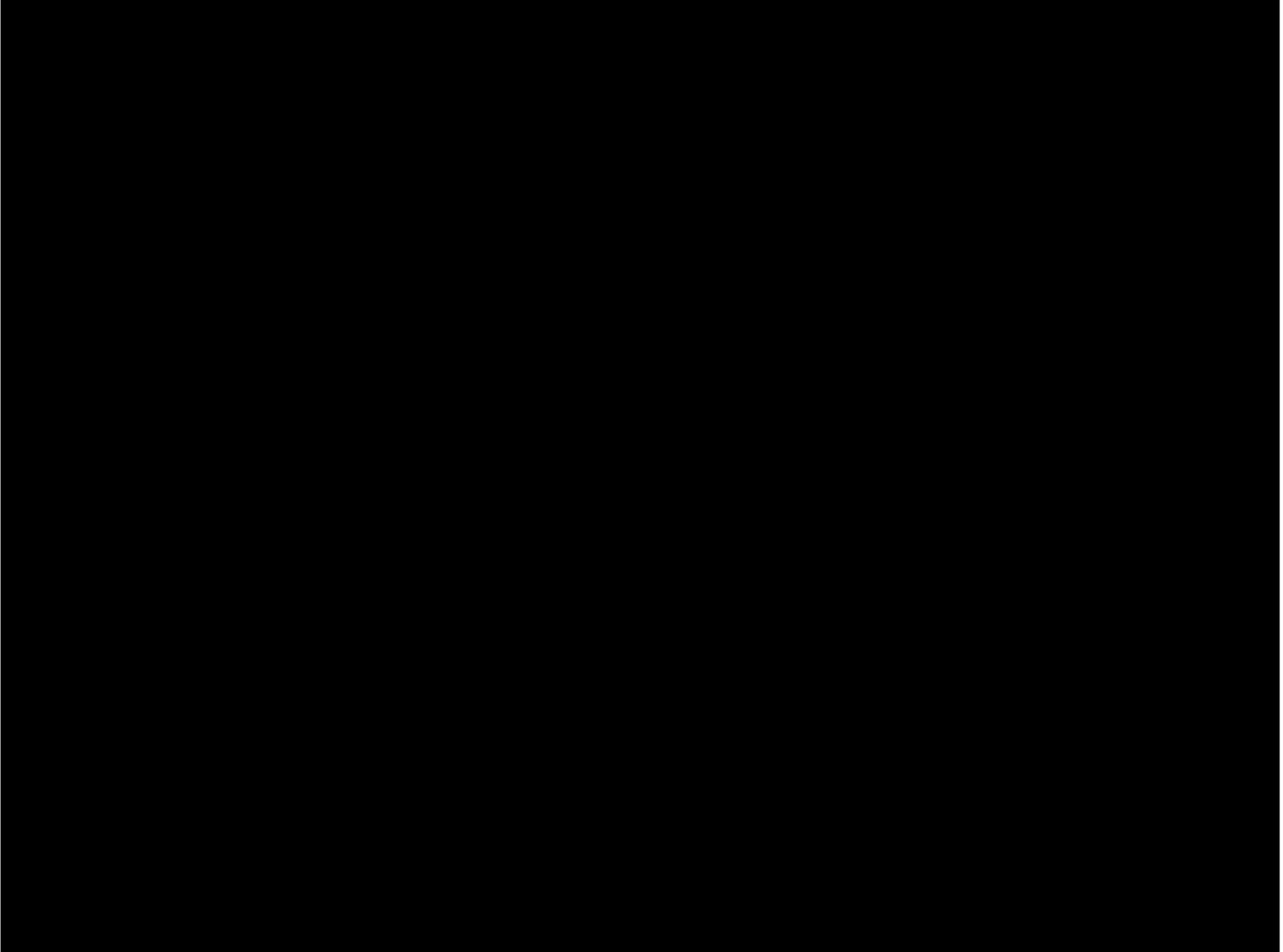




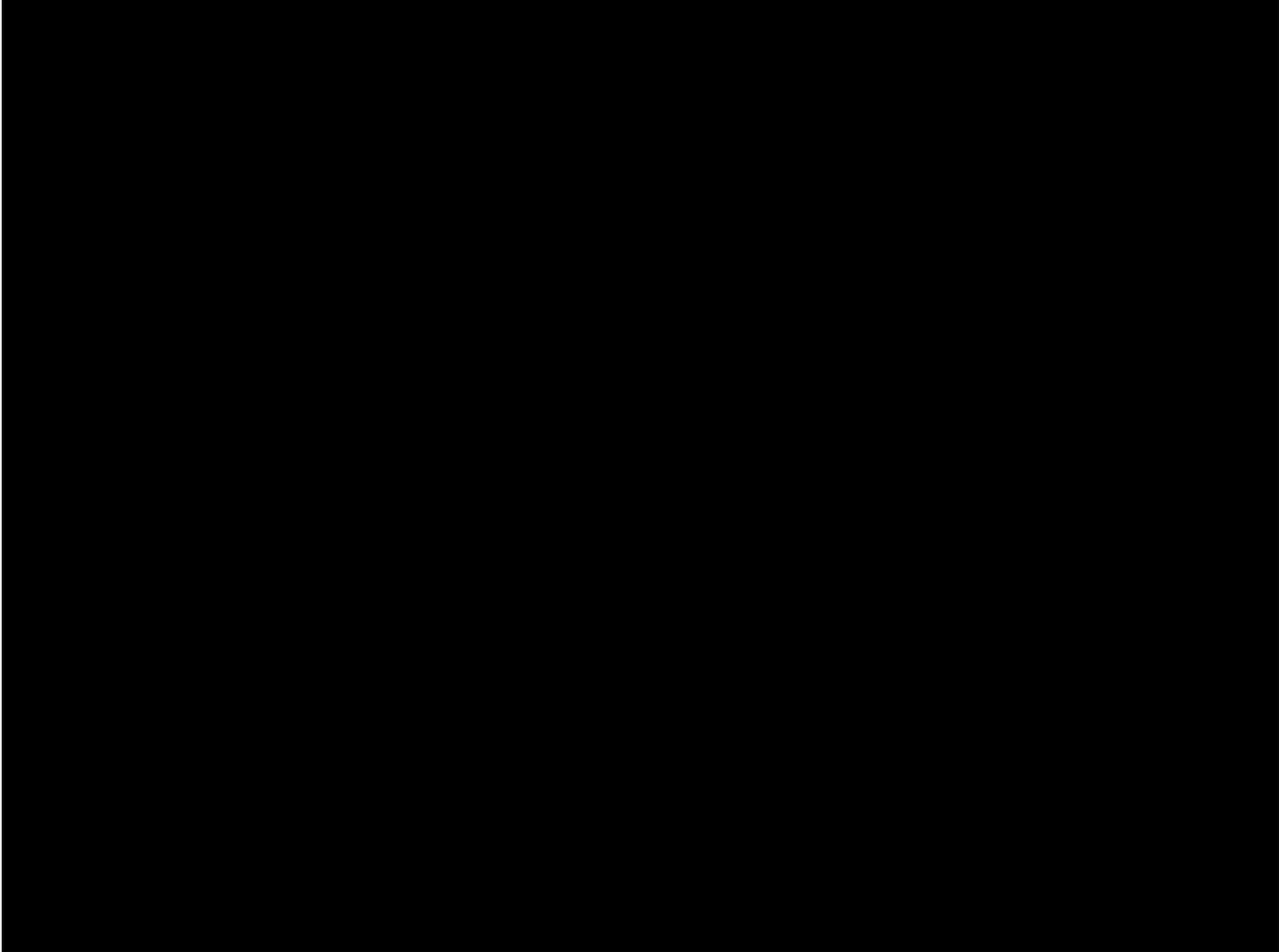


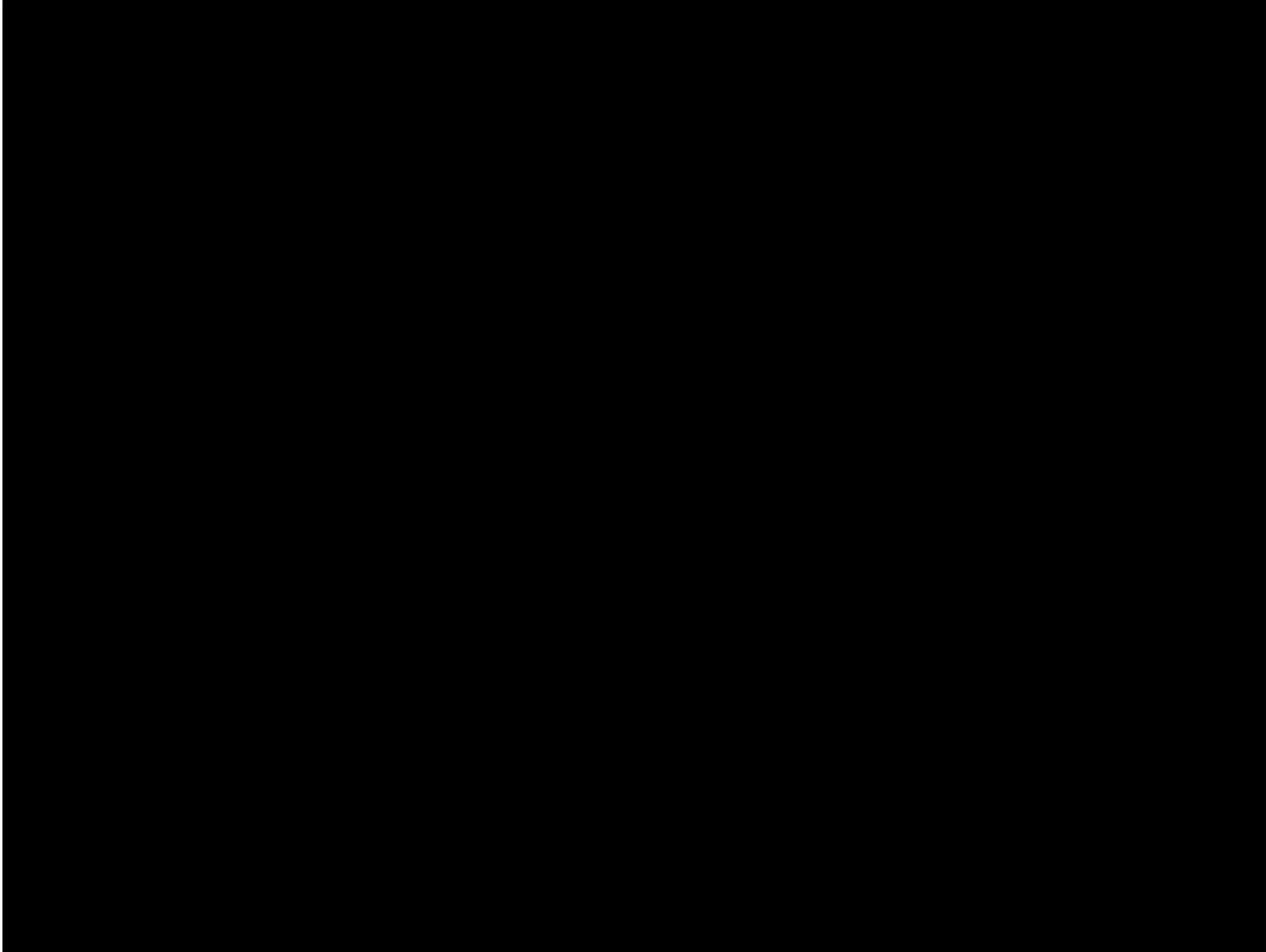


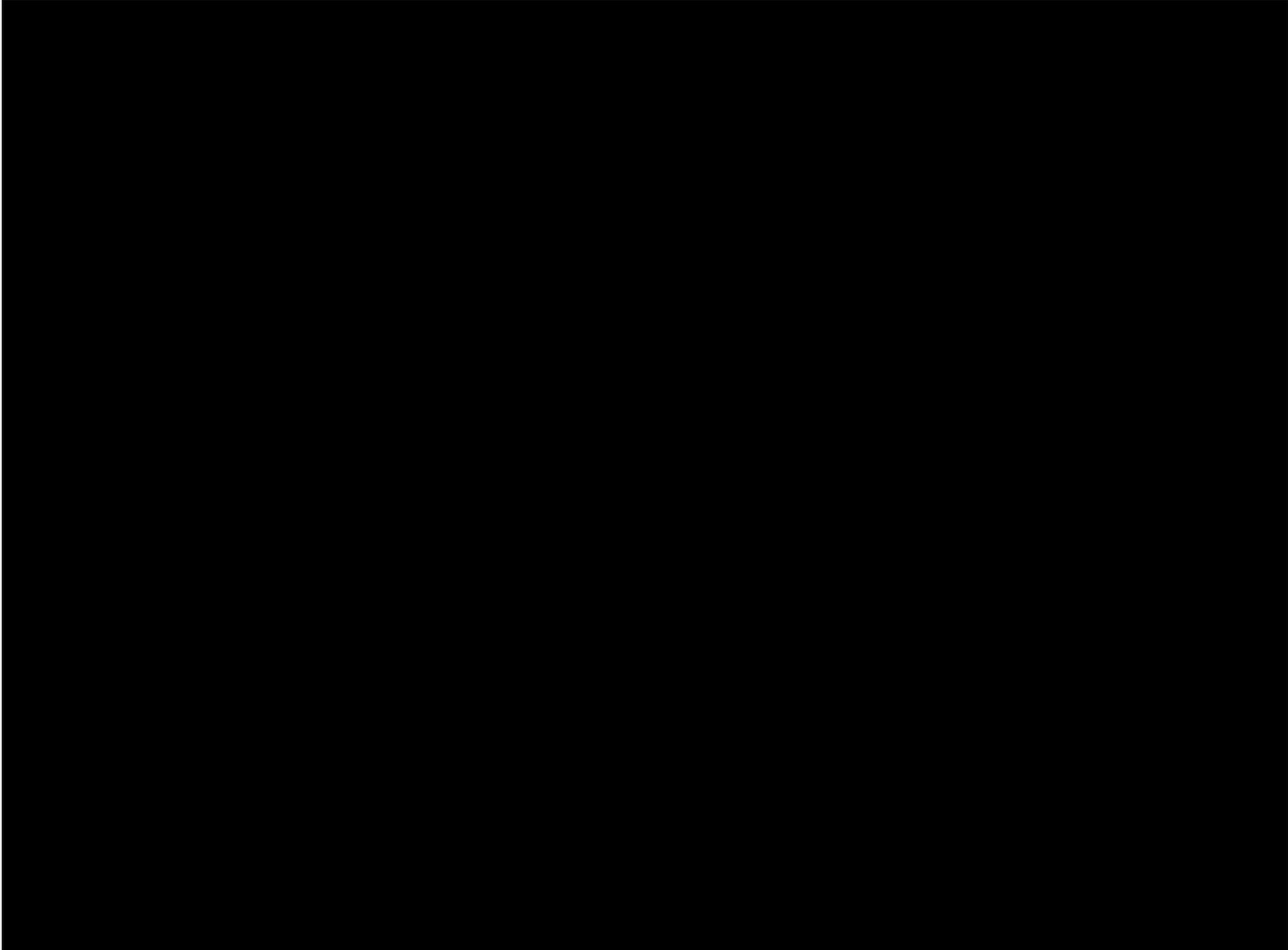


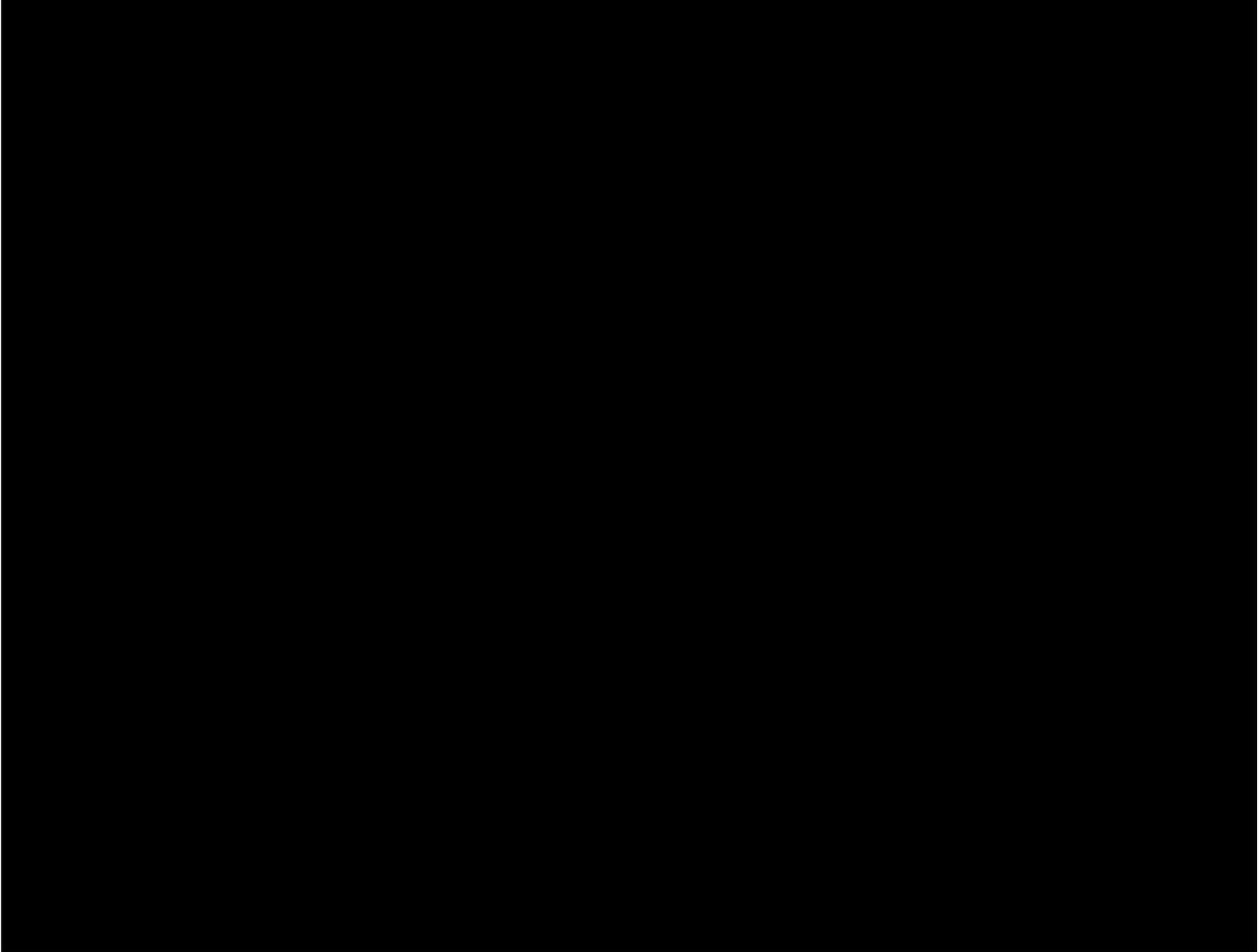


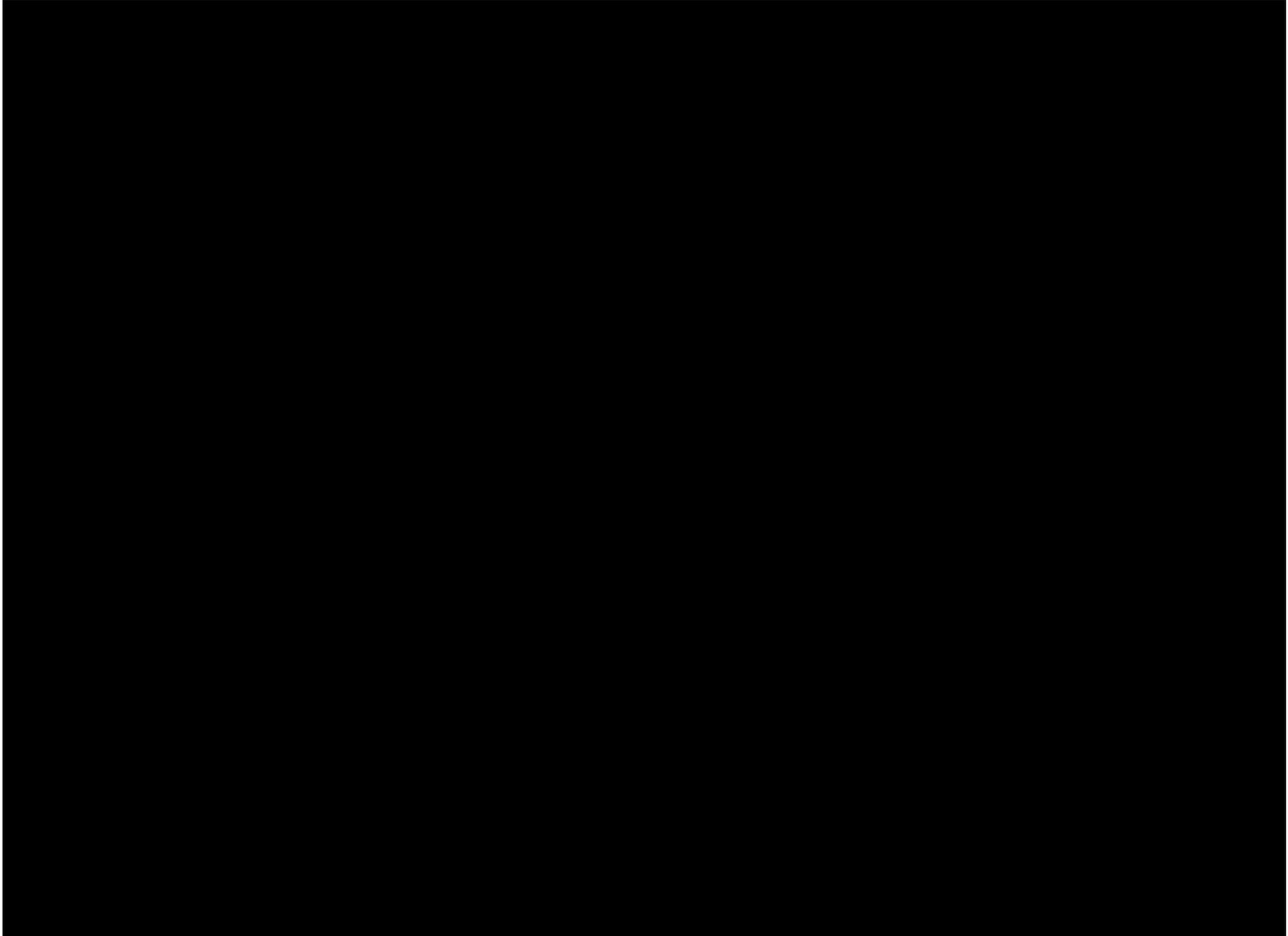


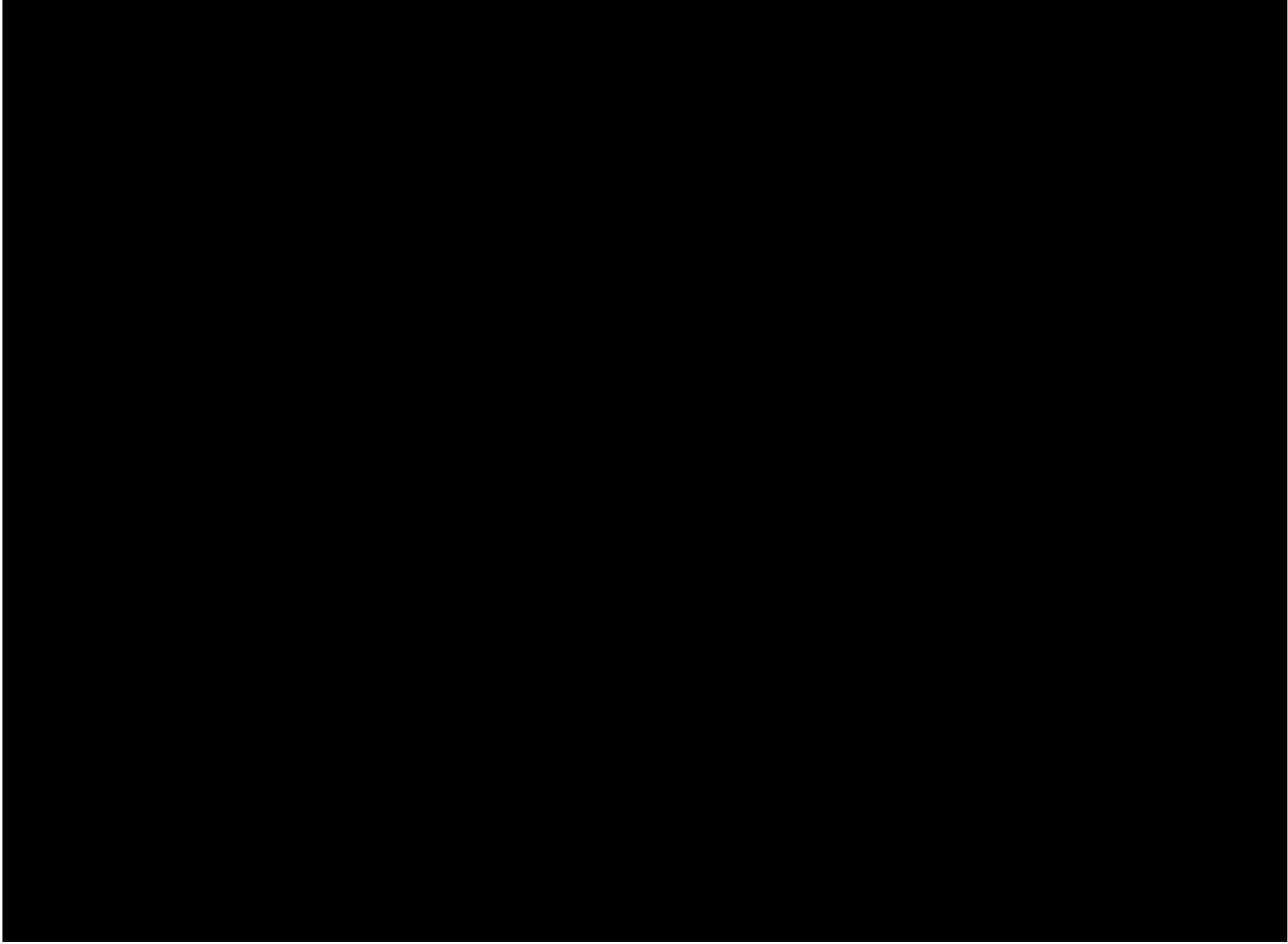


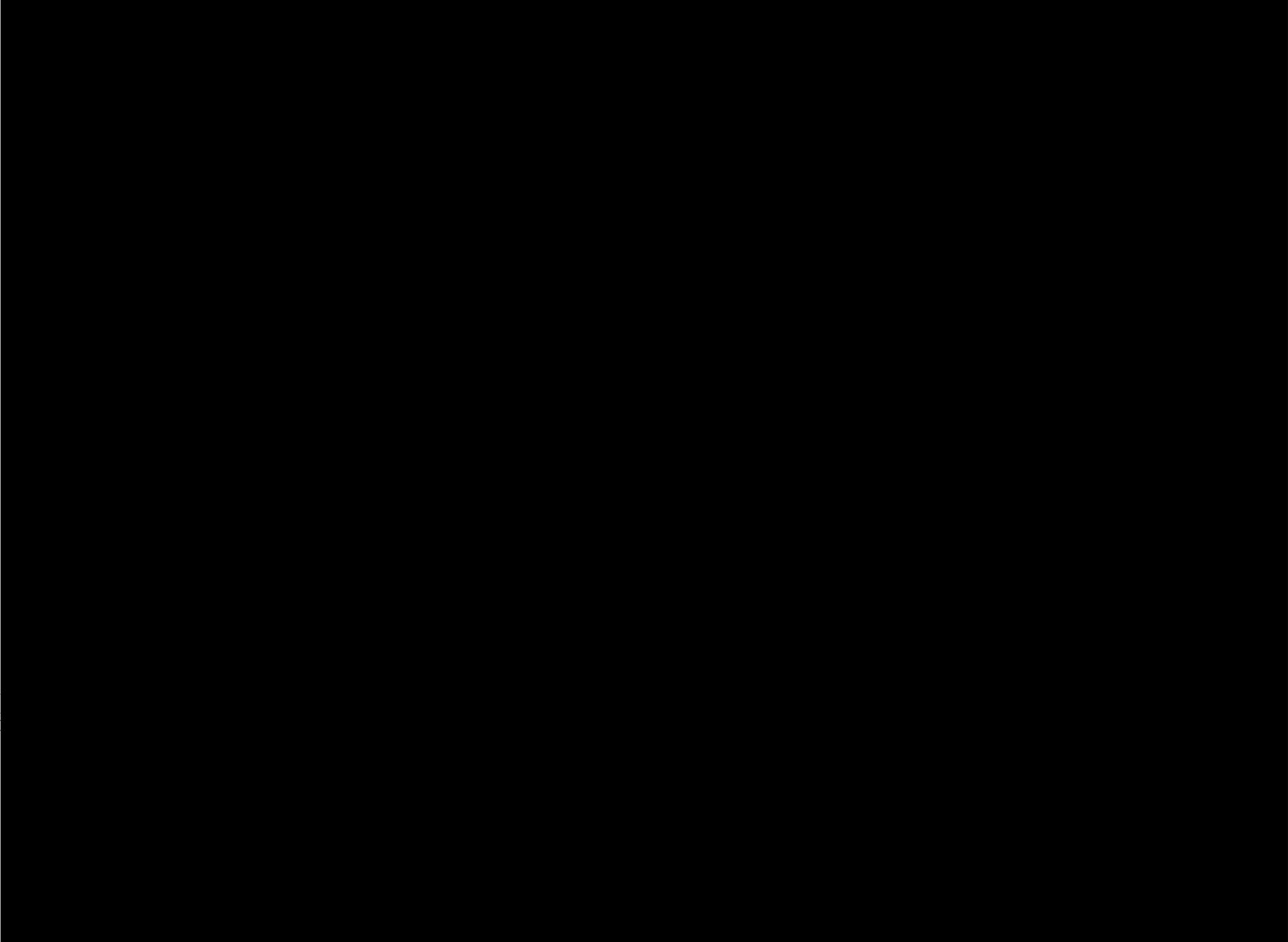


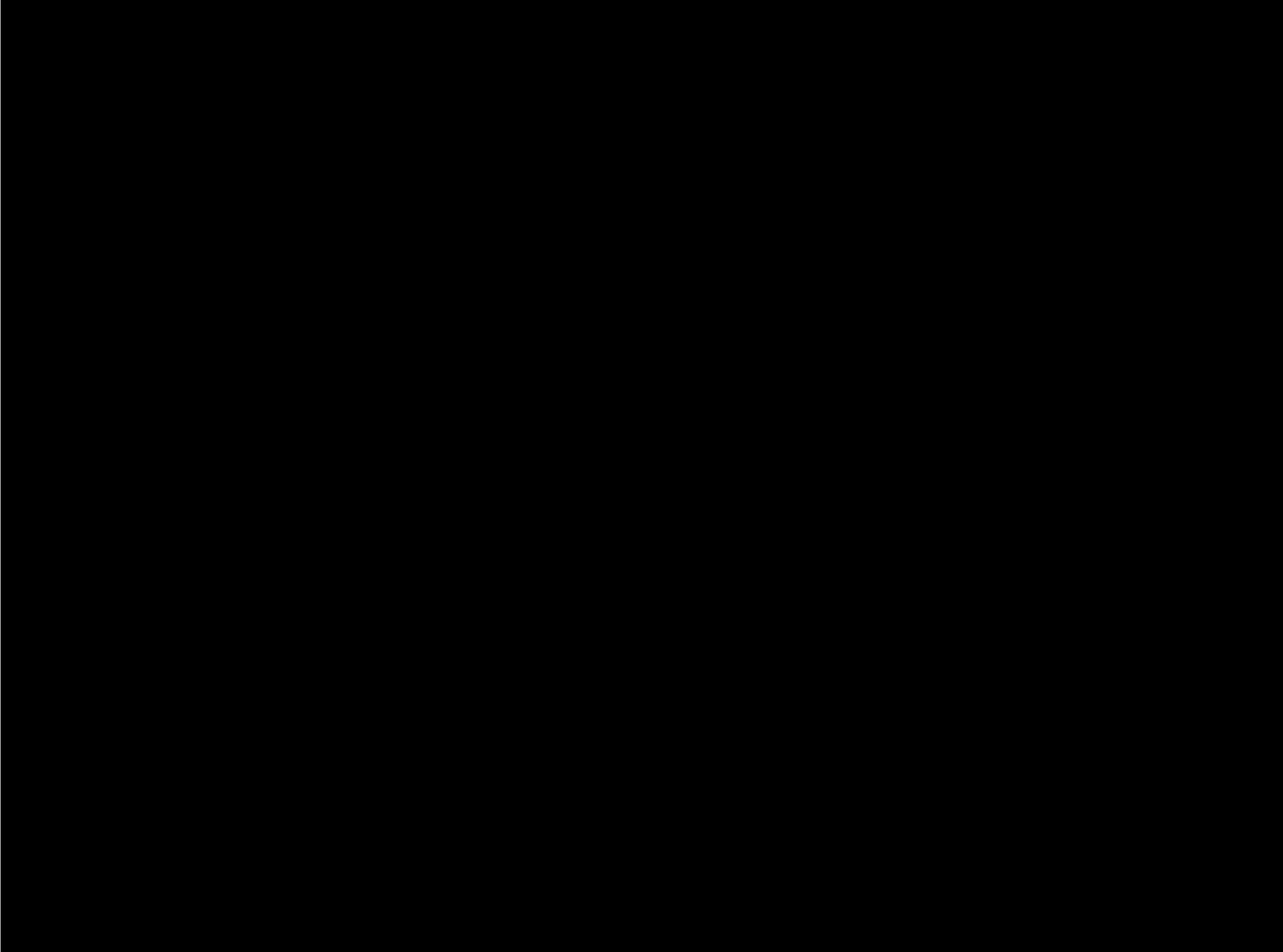


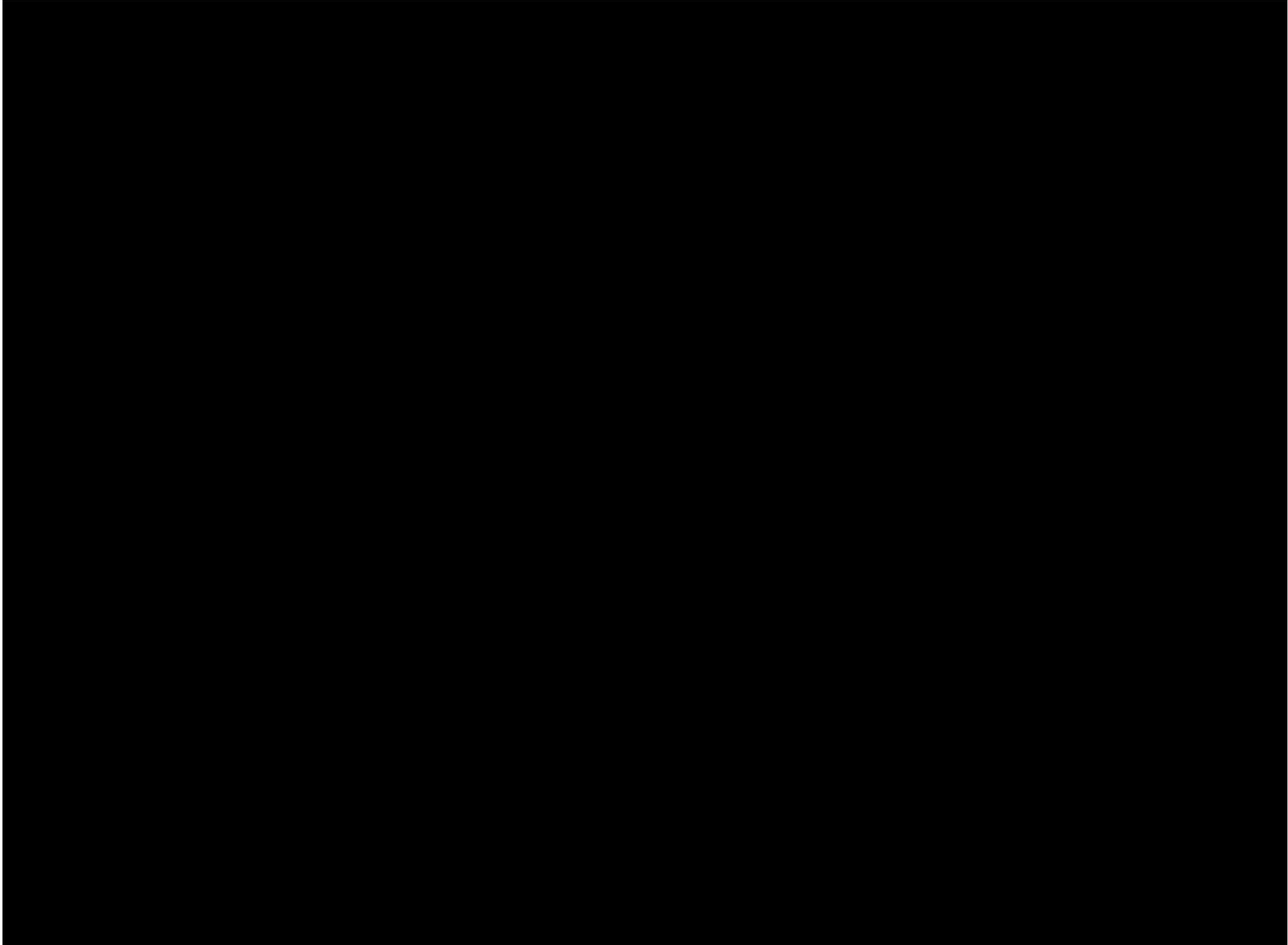




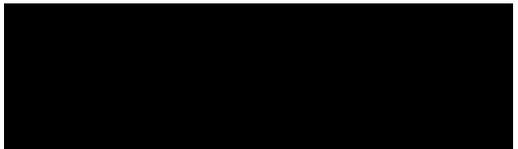
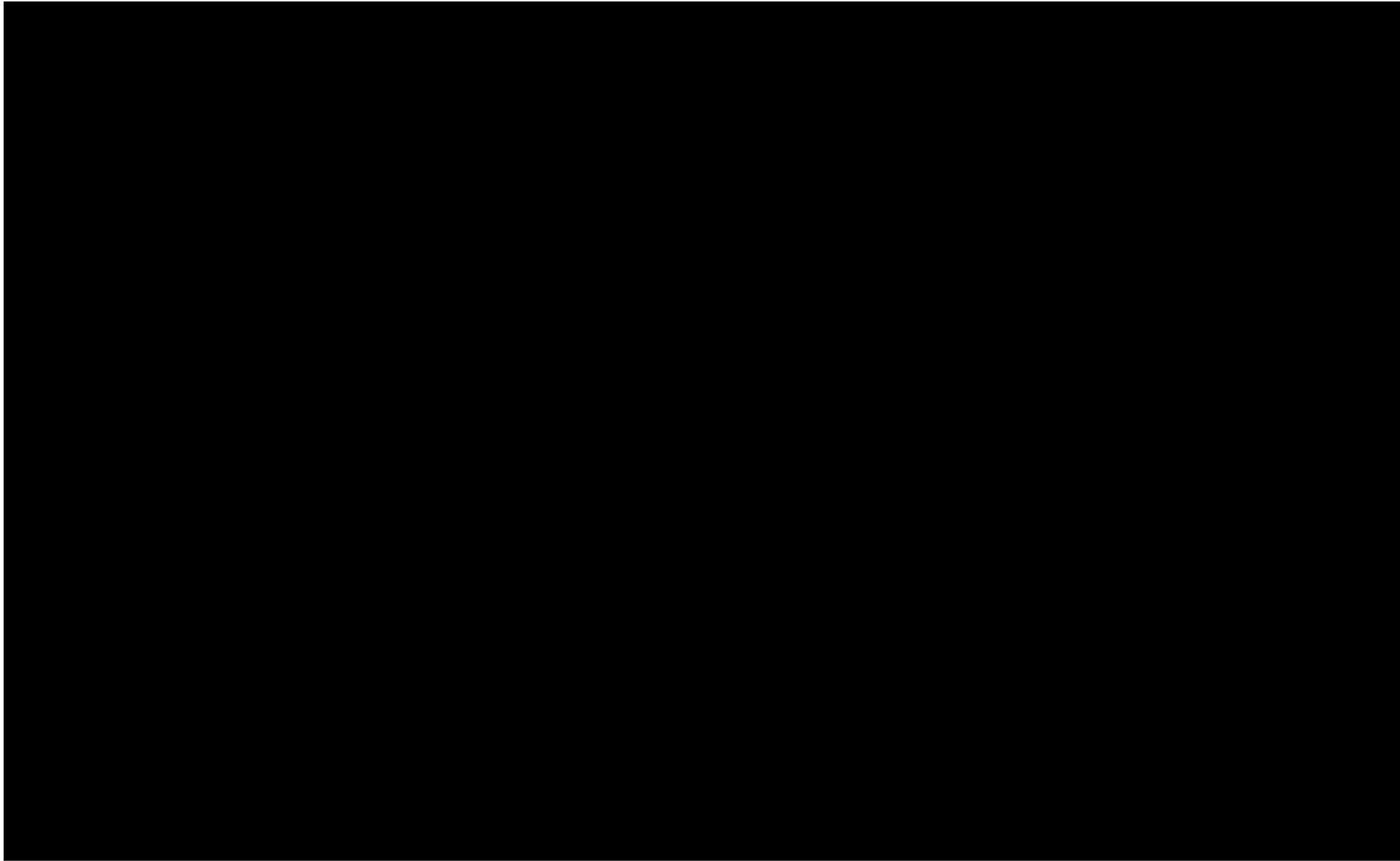


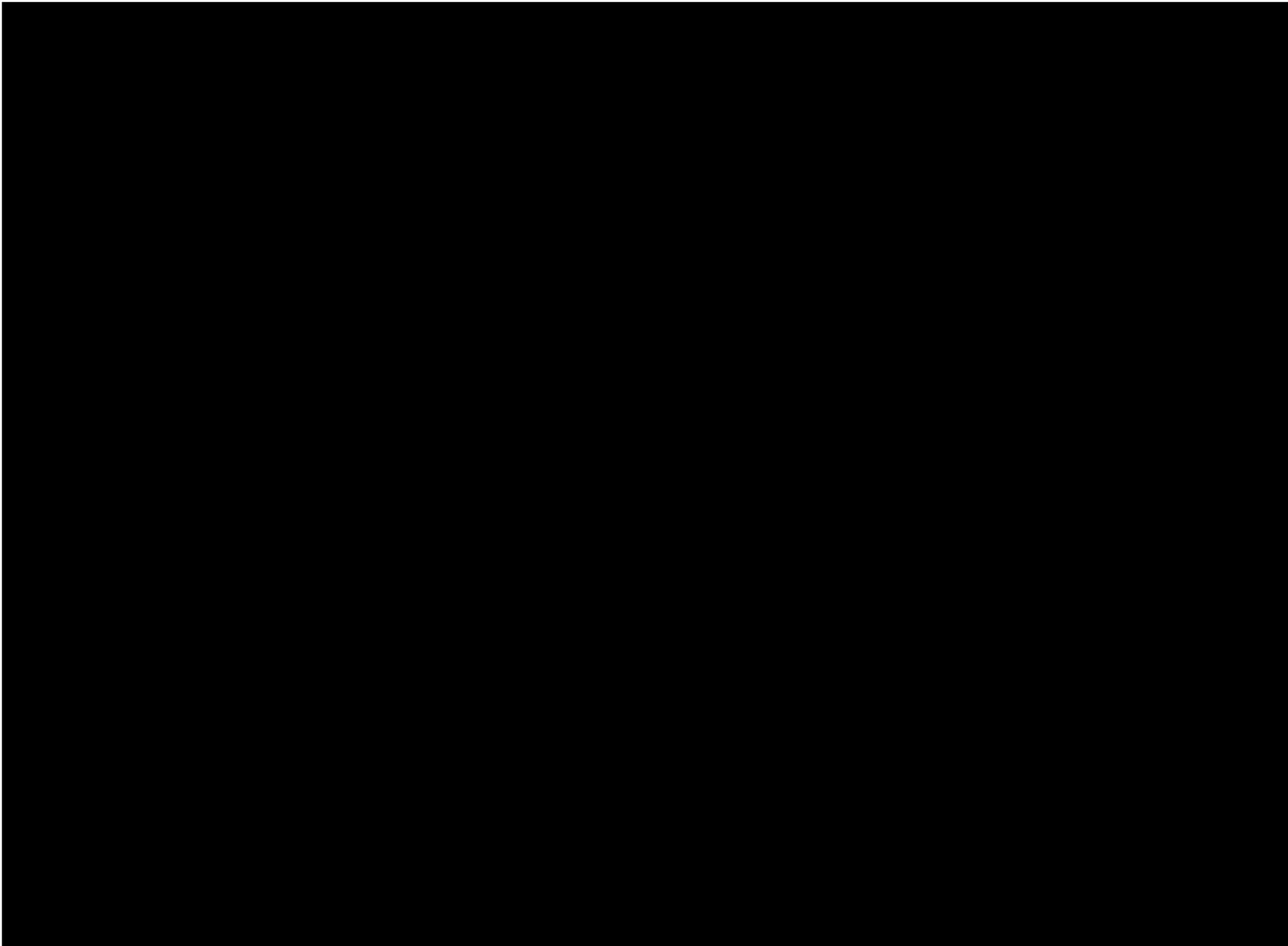


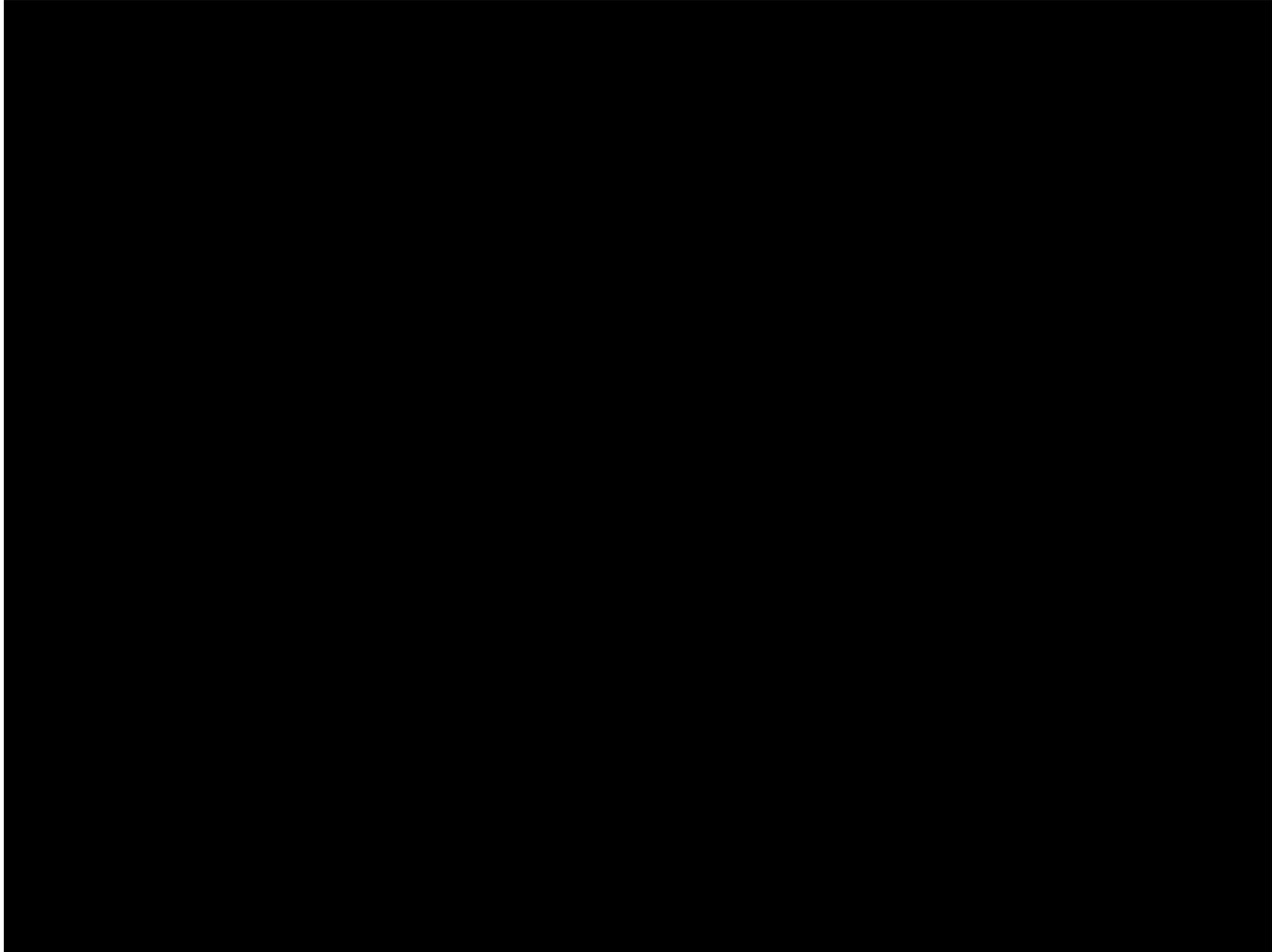




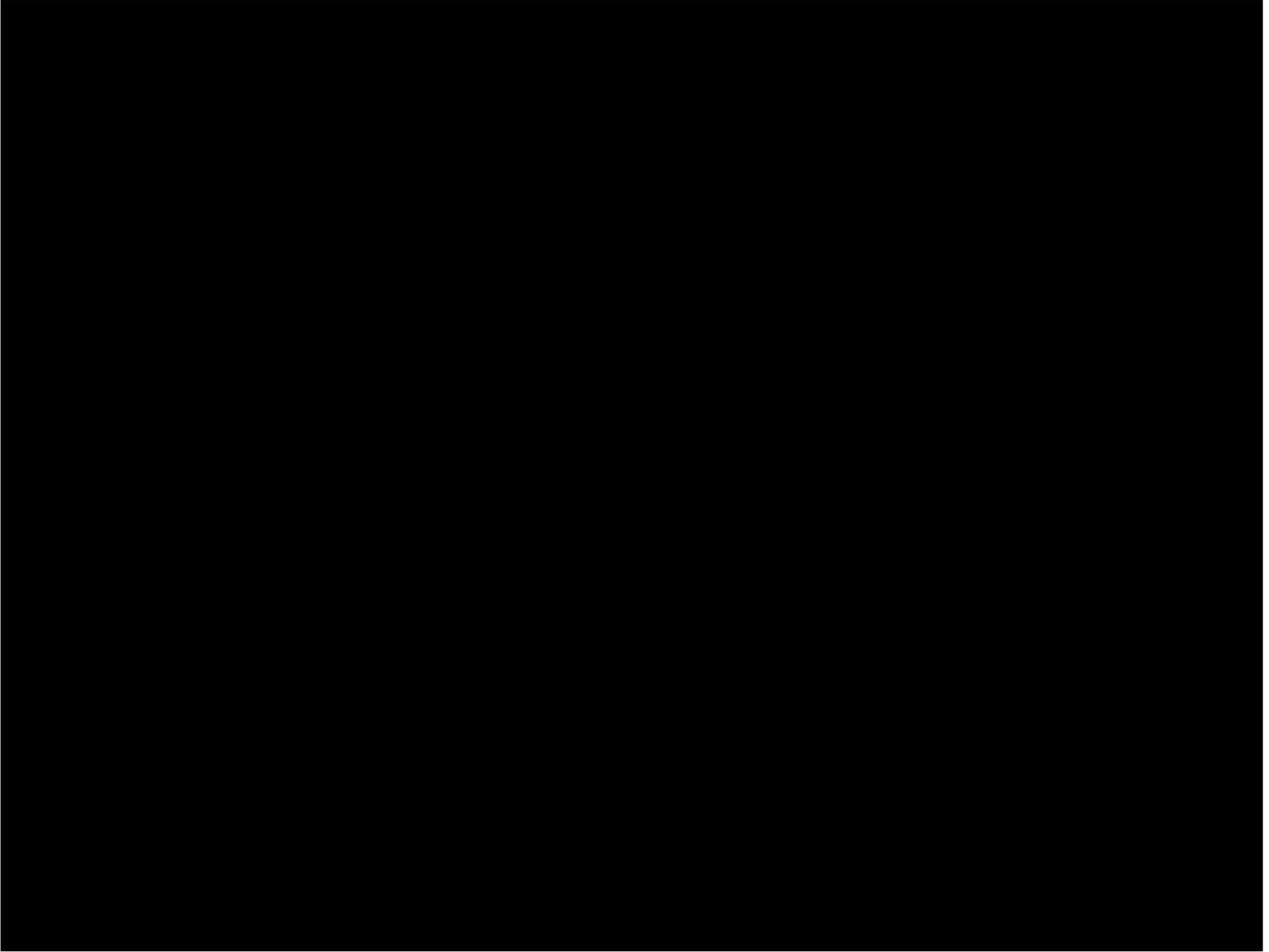




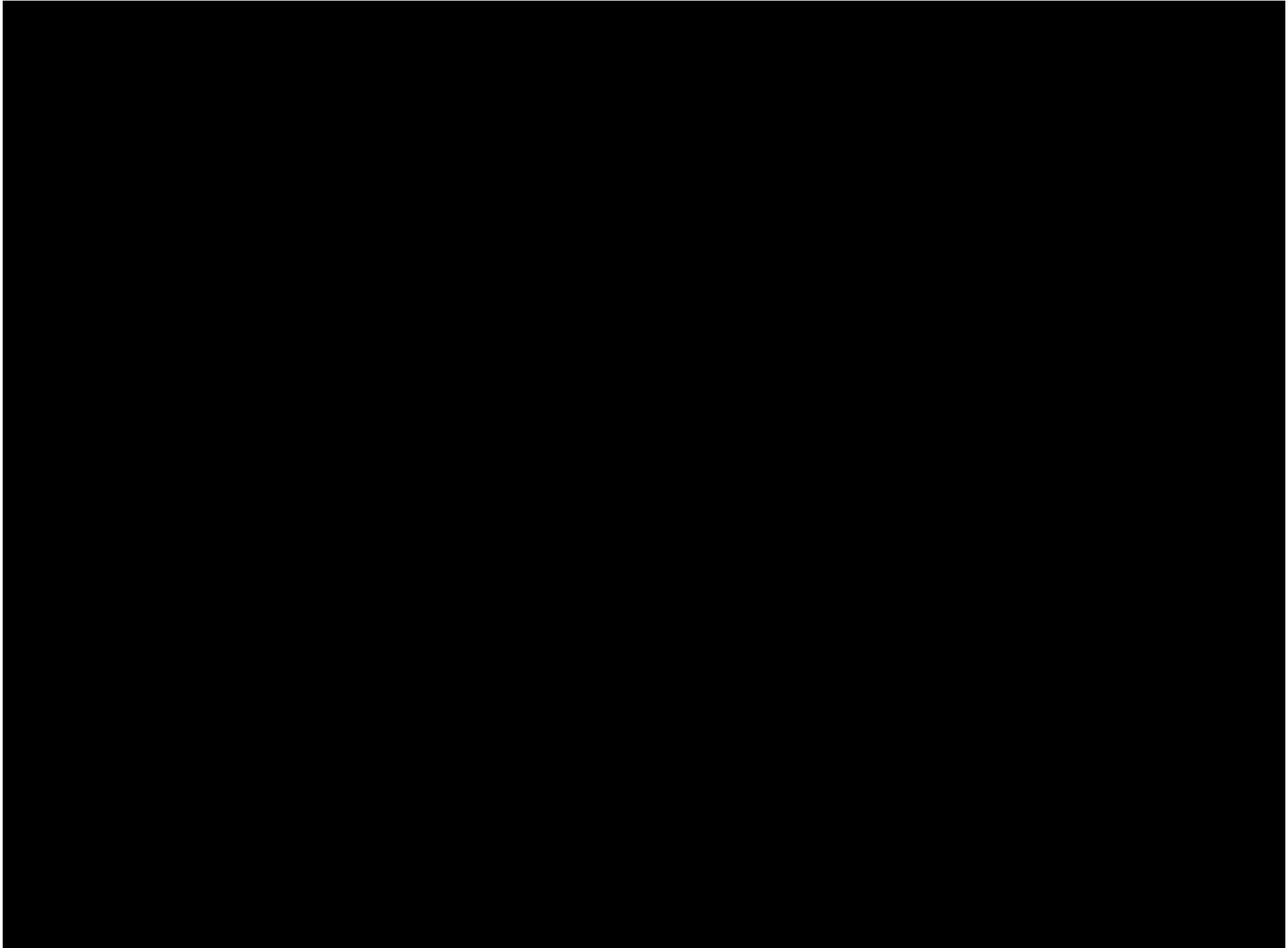


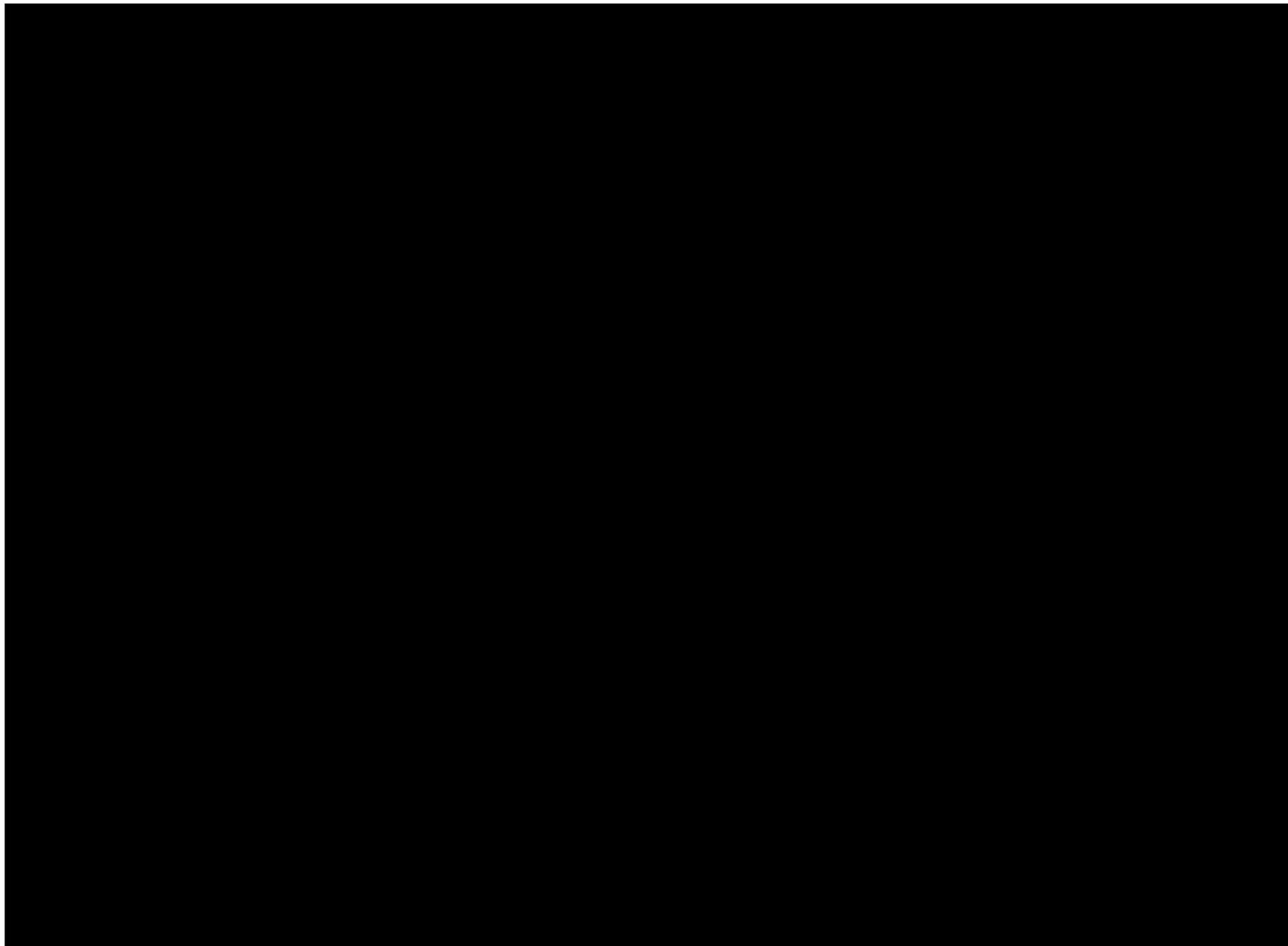


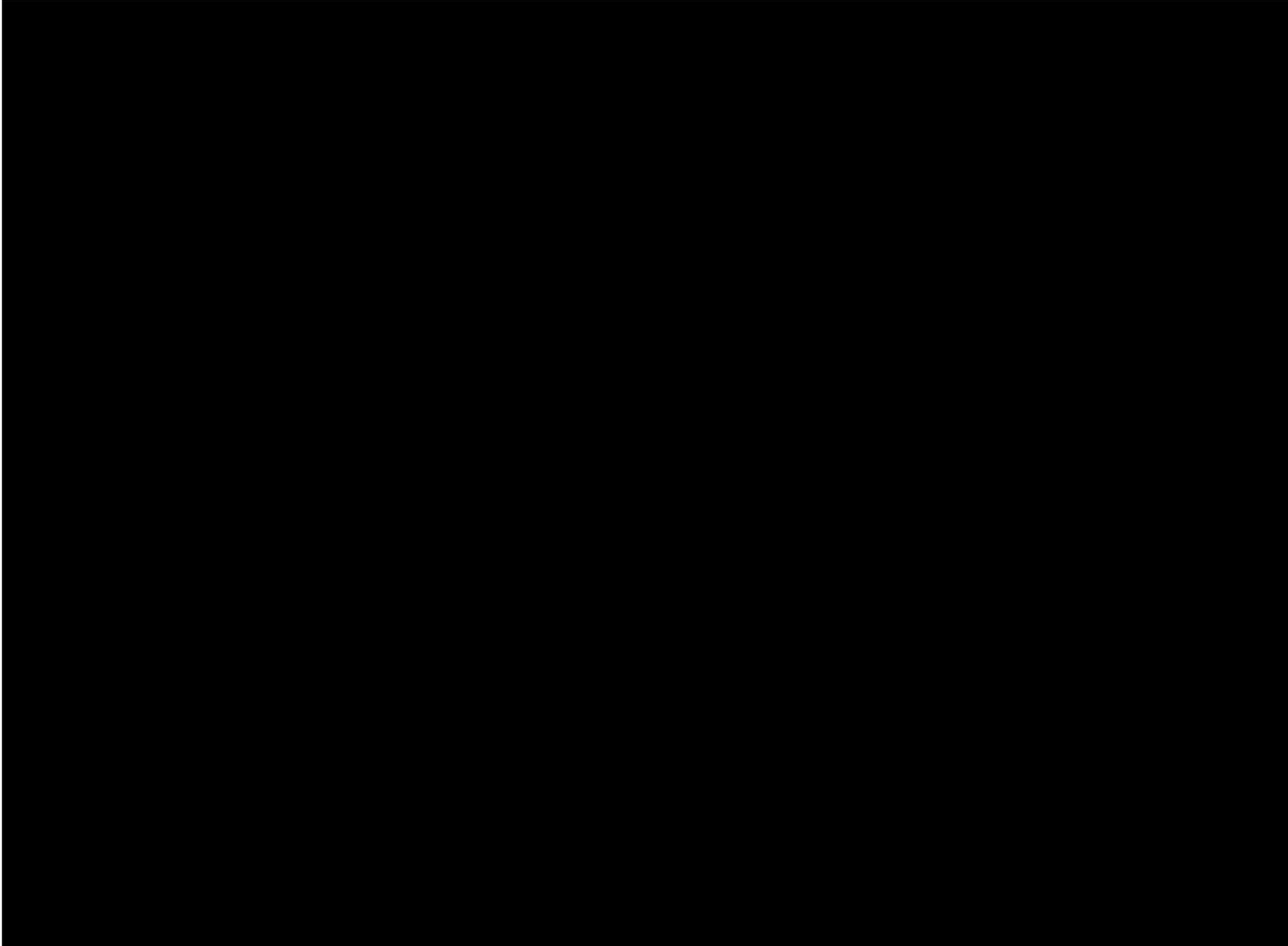


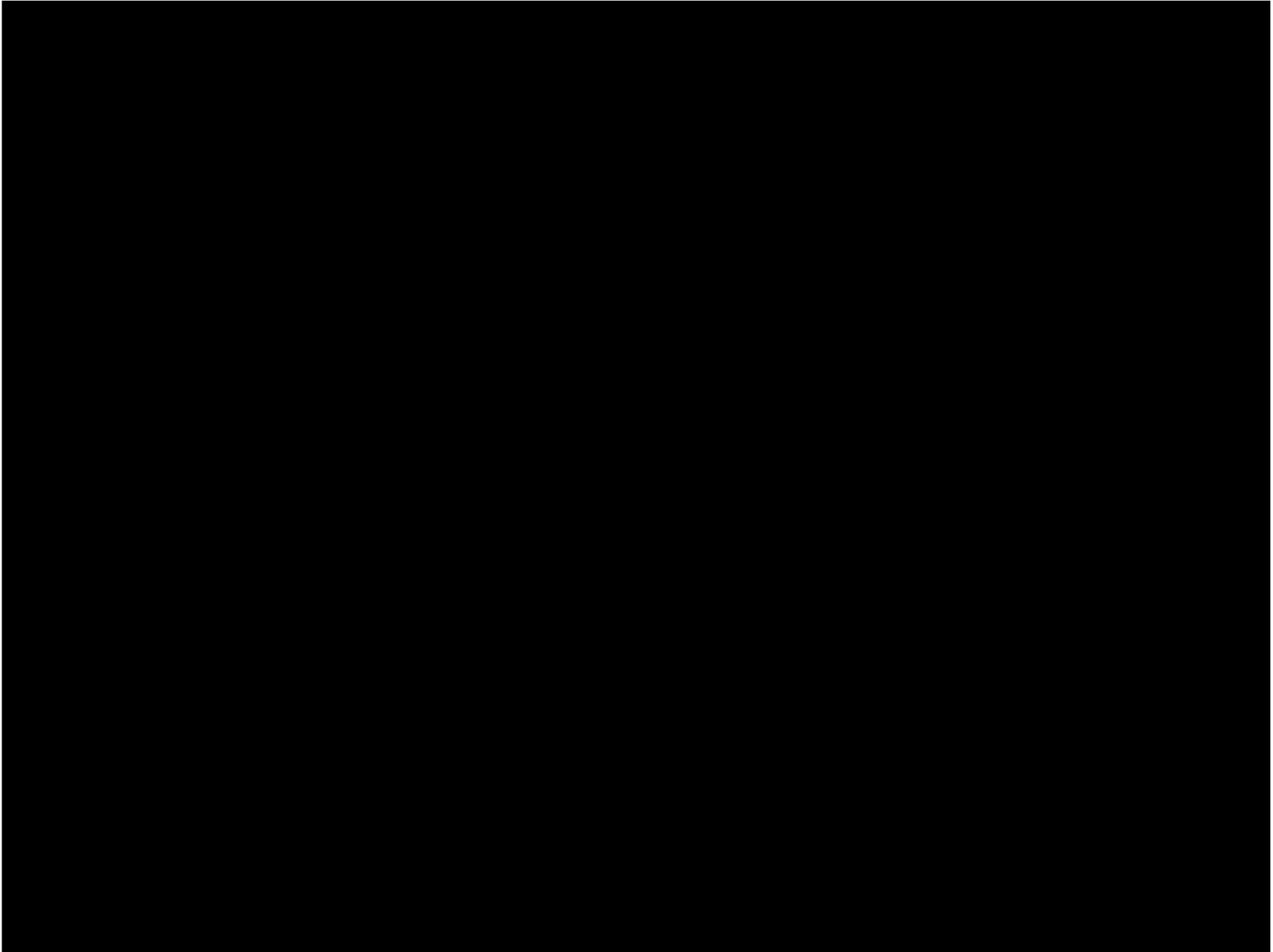
















## **Appendix B**

### *Agreed Diversity Training Plan*

**Schedule 14**  
**Equality and Inclusion Requirements**  
**Appendix B**  
**Agreed Diversity Training Plan**

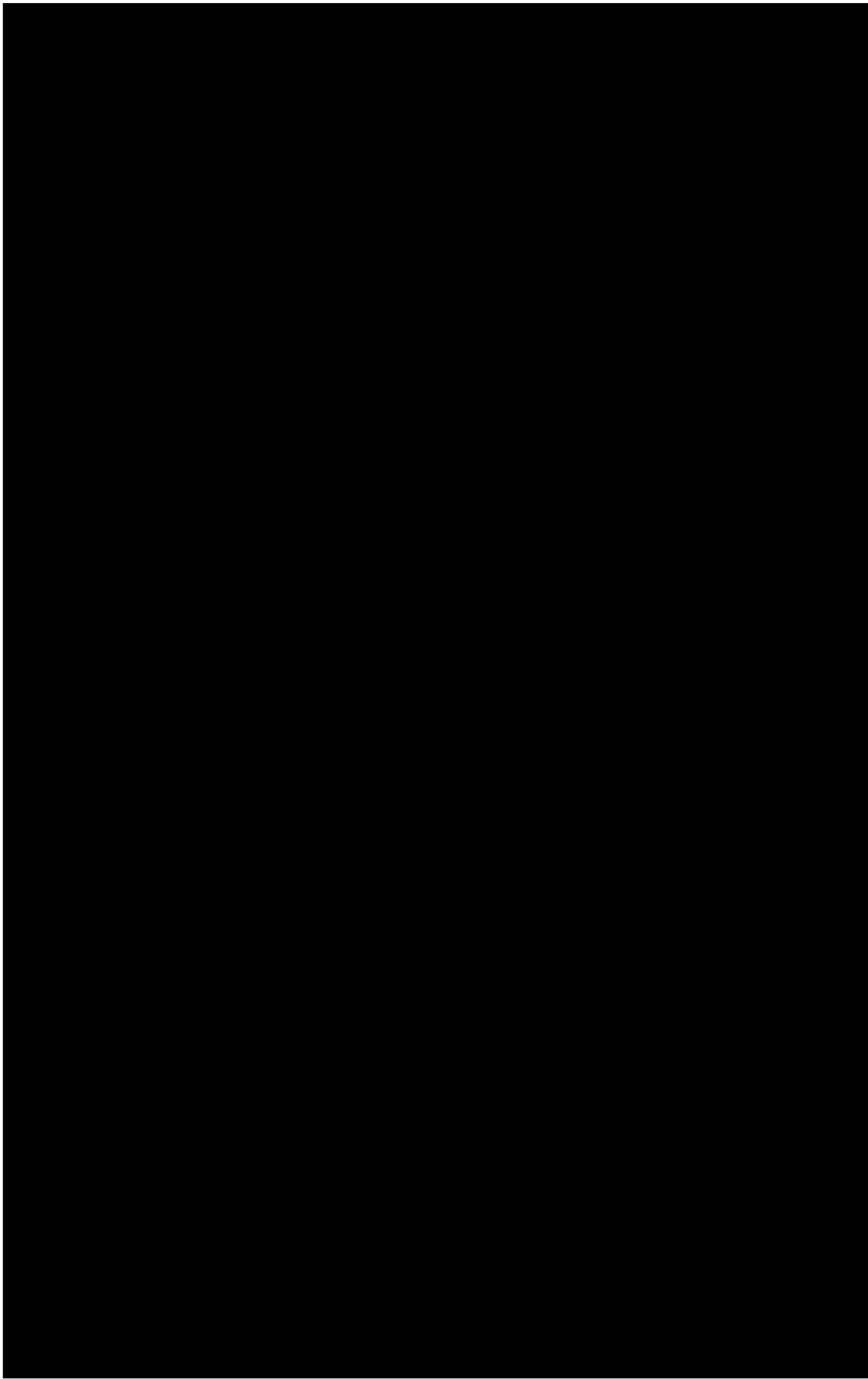


The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and transfers between accounts.

The second part of the document provides a detailed explanation of the double-entry accounting system. It describes how every transaction affects at least two accounts, with the total debits always equaling the total credits. This system helps in identifying errors and ensures that the accounting equation remains balanced at all times.

The third part of the document outlines the steps involved in preparing financial statements. It starts with the trial balance, which is used to verify that the debits and credits are equal. From there, the process moves through the adjustment of accounts, the preparation of the income statement, the balance sheet, and the statement of cash flows. Each step is explained in detail, with examples provided to illustrate the process.

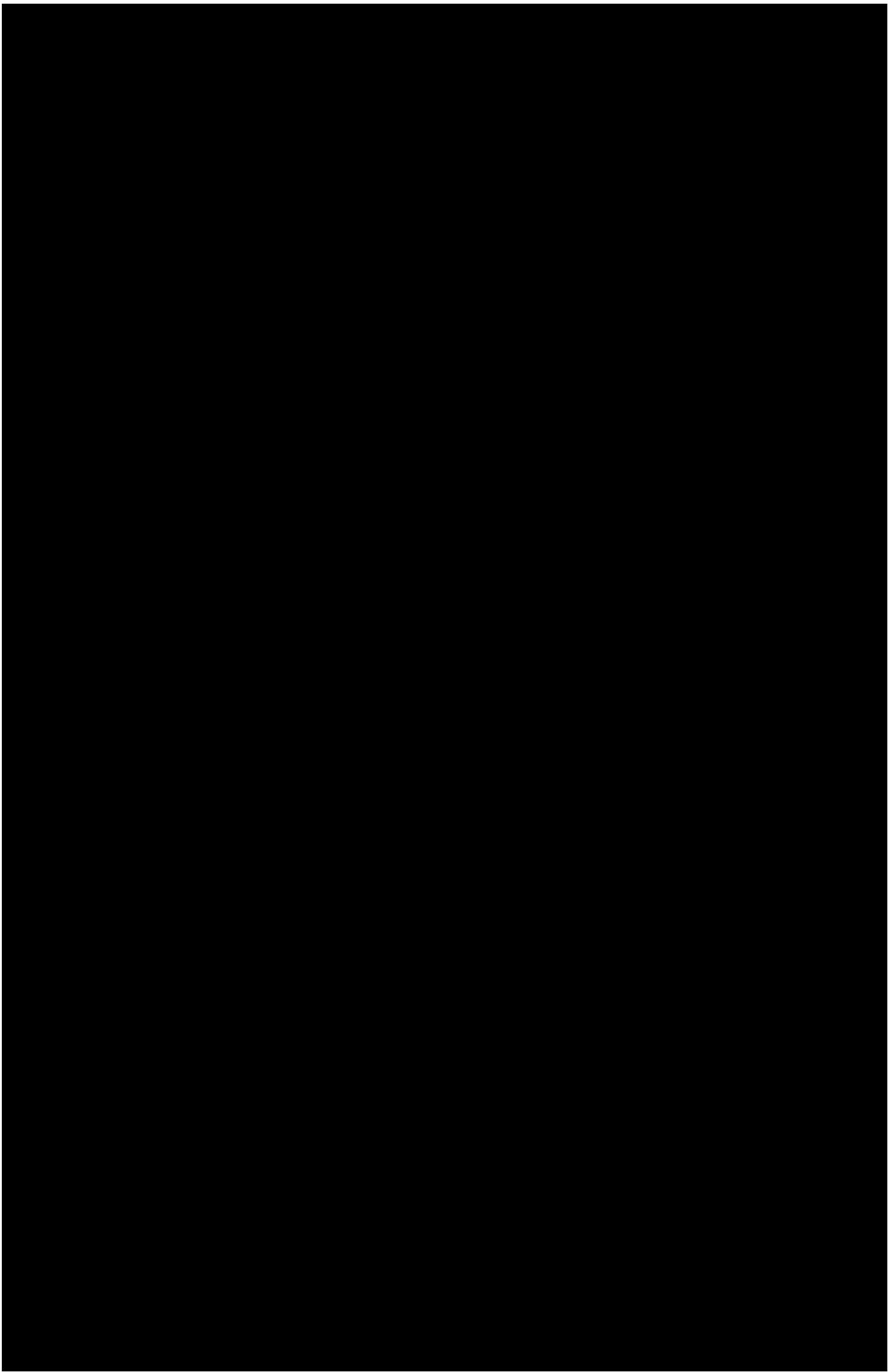
The final part of the document discusses the importance of internal controls and the role of the auditor. It explains how internal controls help in preventing and detecting errors and fraud. It also describes the role of the auditor in providing an independent opinion on the financial statements.

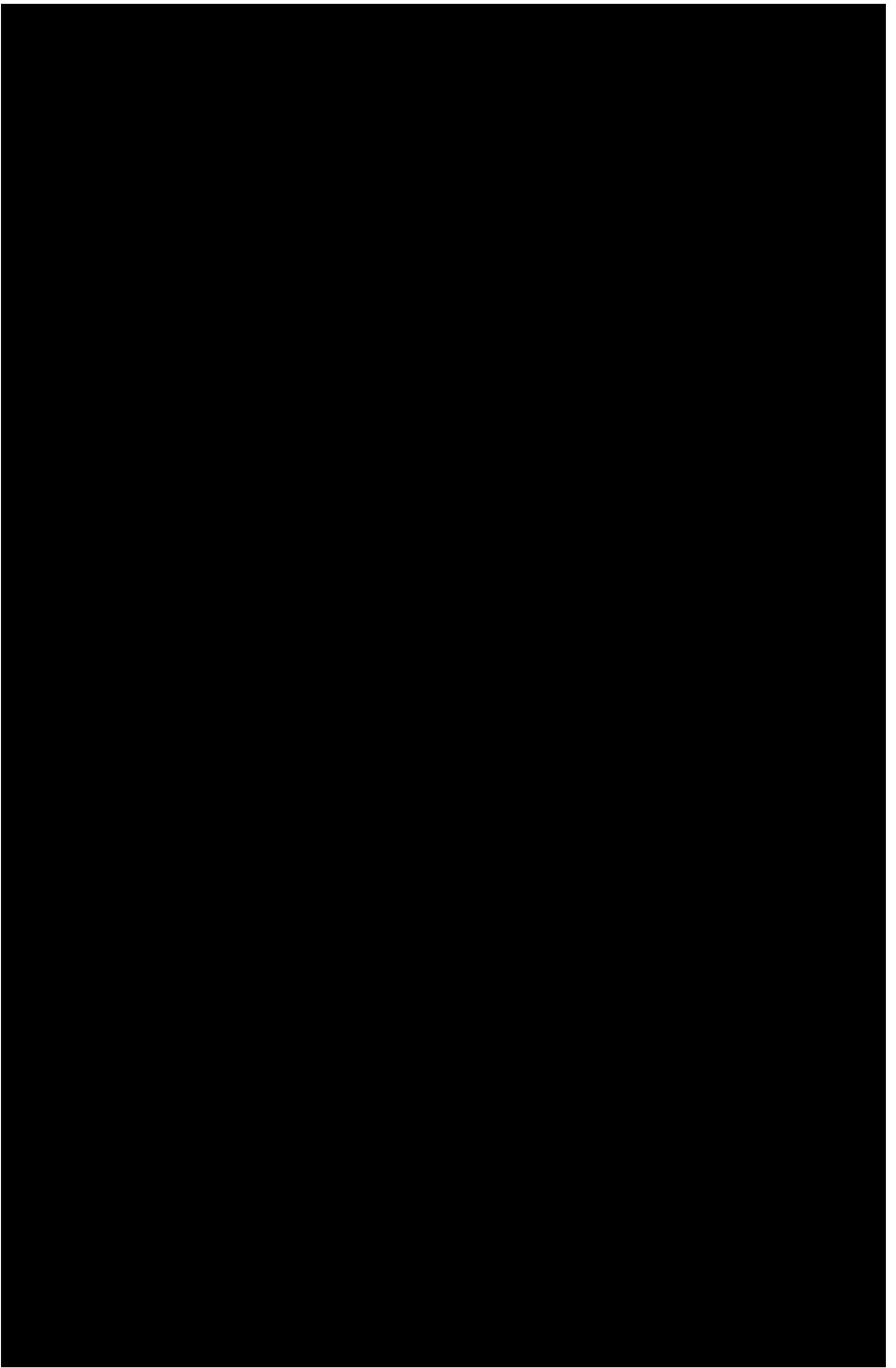


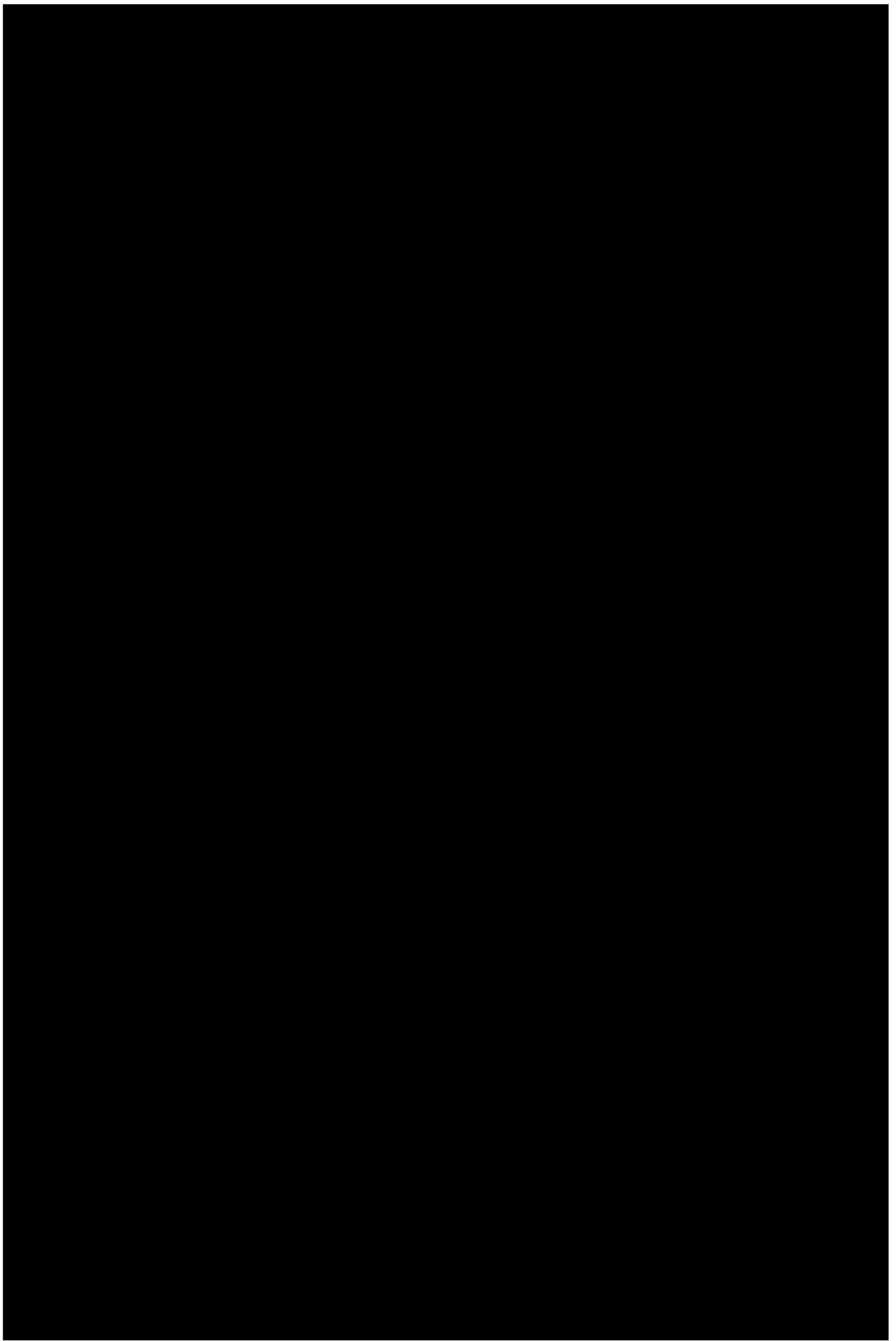
## **Appendix C**

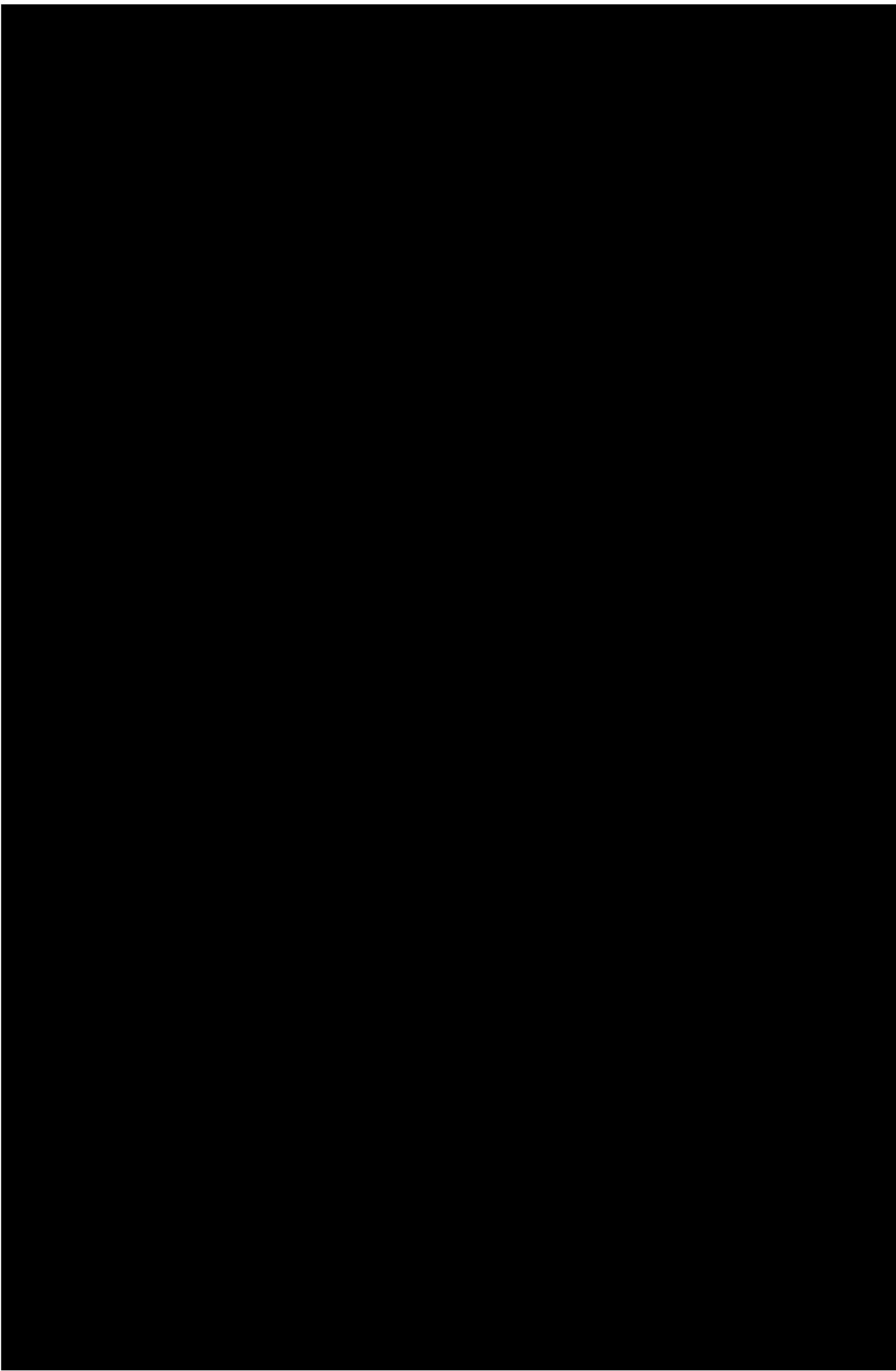
### *Agreed Supplier Diversity Plan*

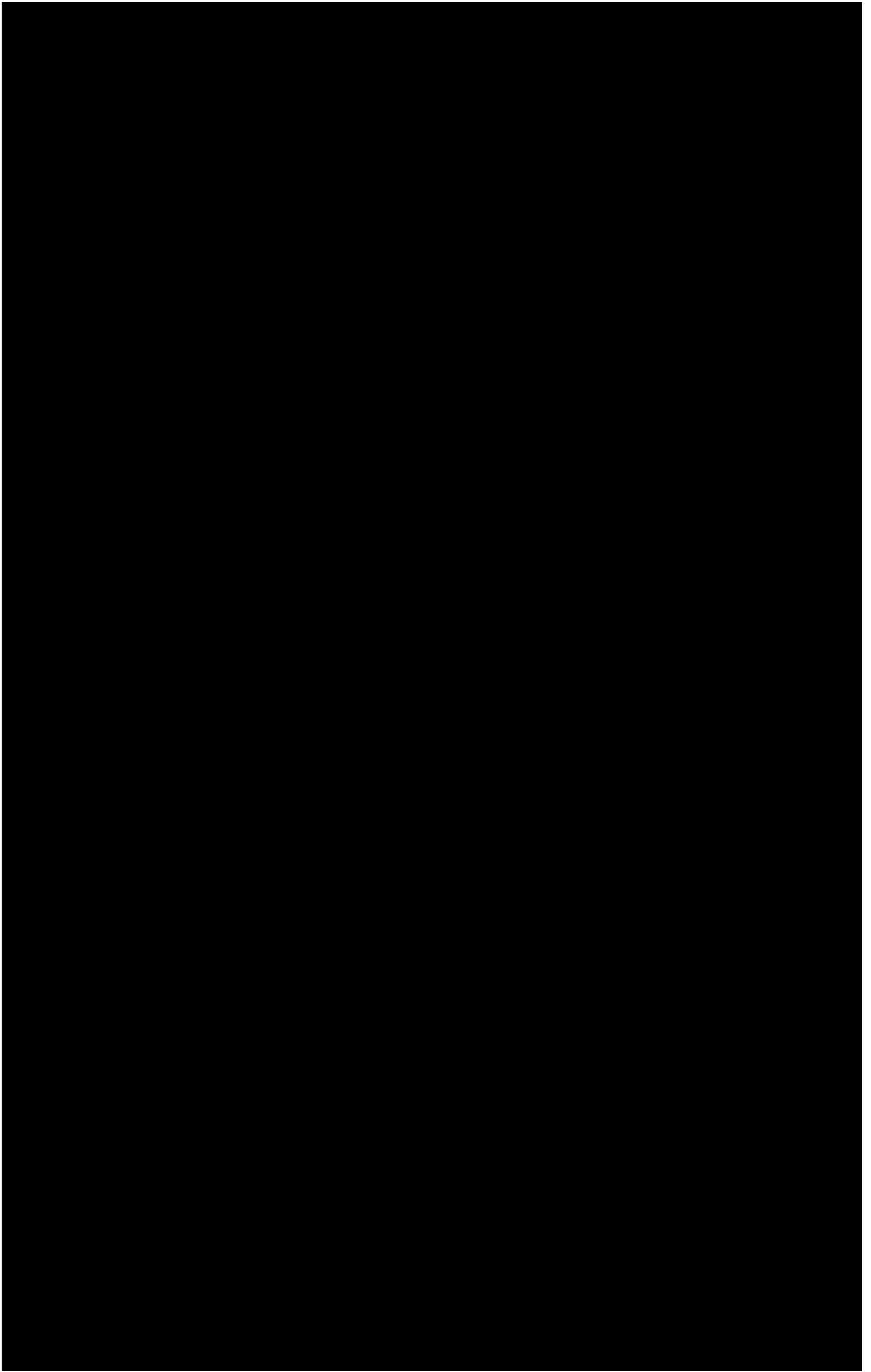
**Schedule 14**  
**Equality and Inclusion Requirements**  
**Appendix C**  
**Agreed Supplier Diversity Training Plan**

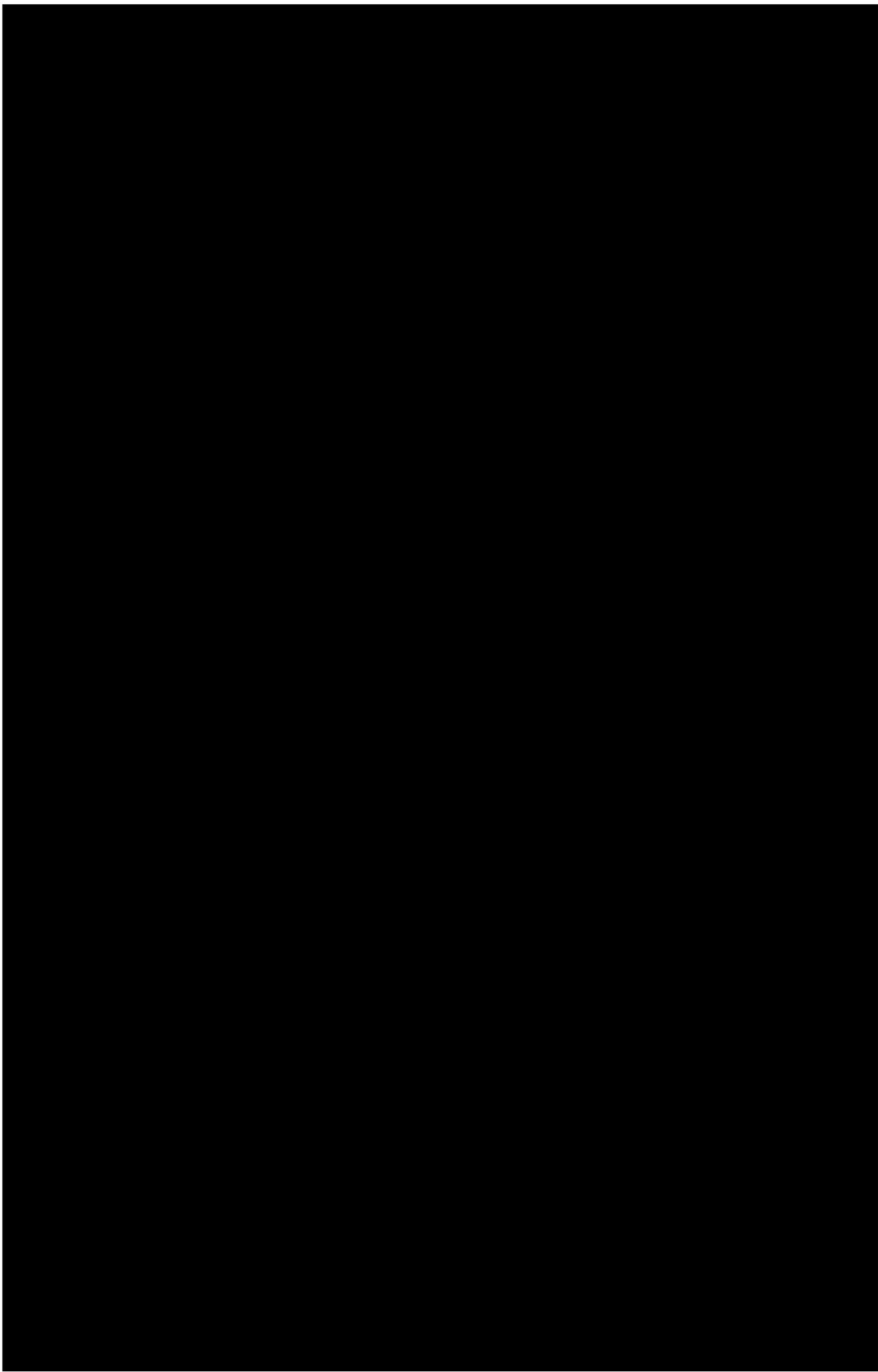




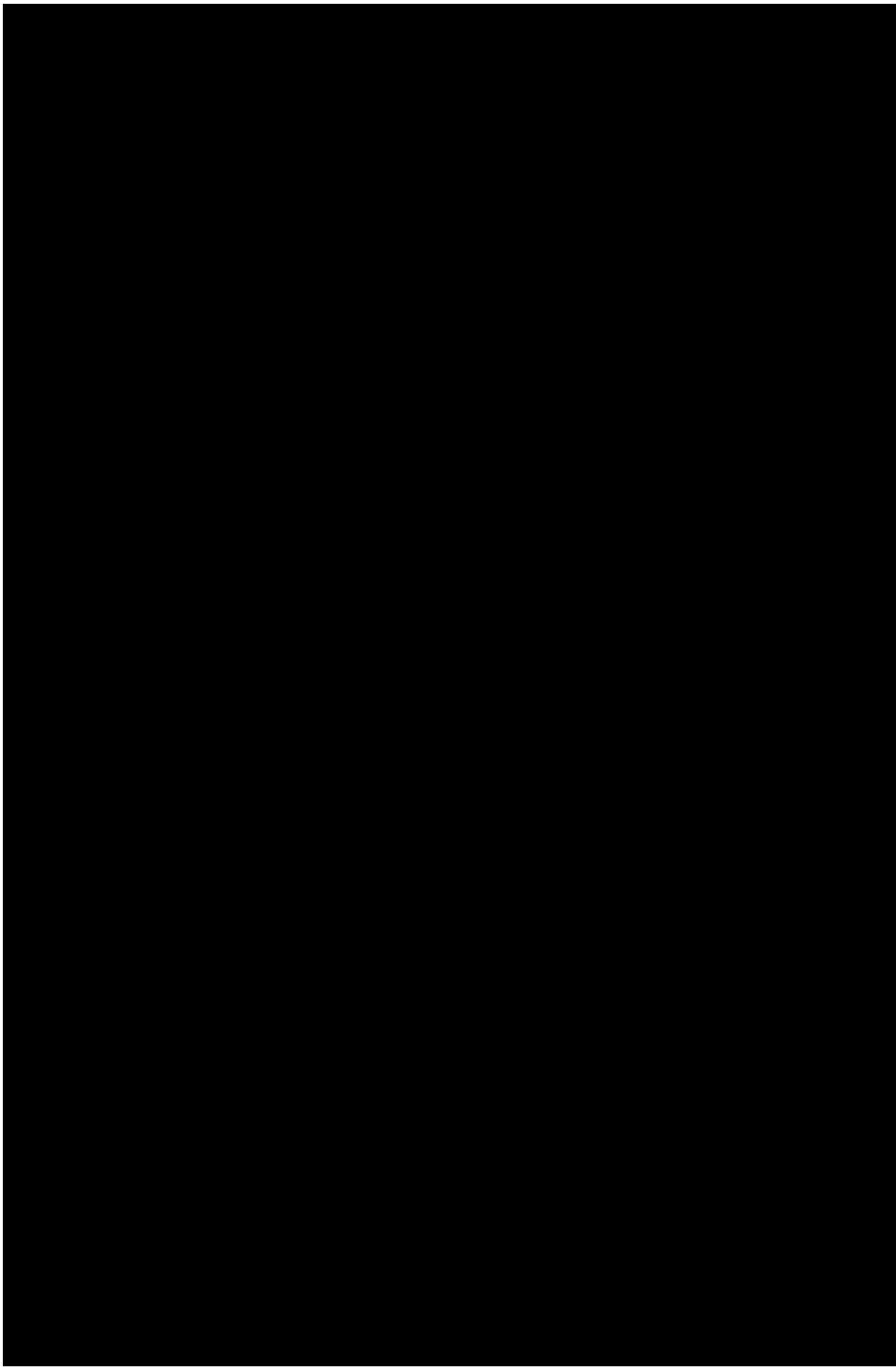


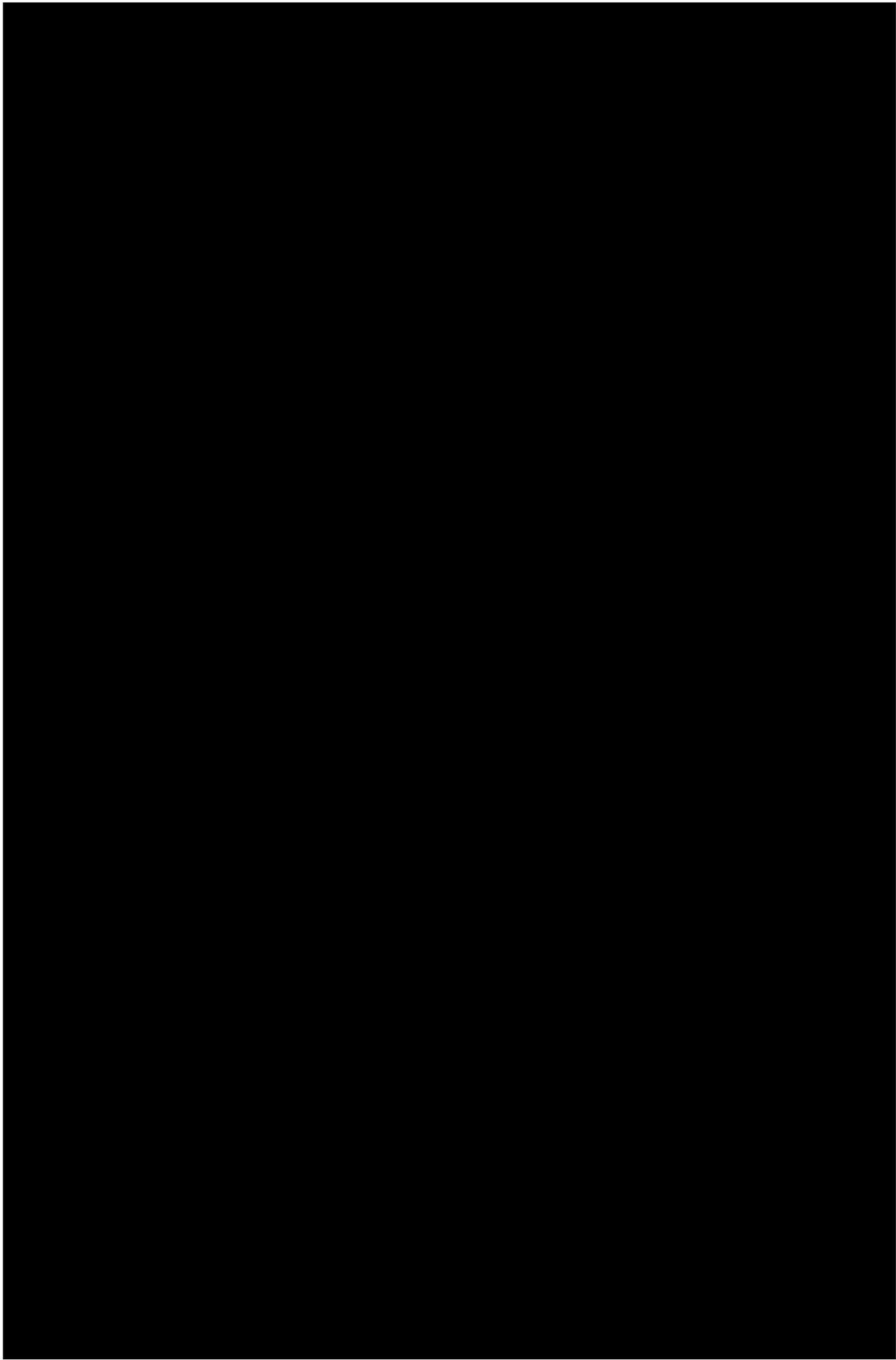


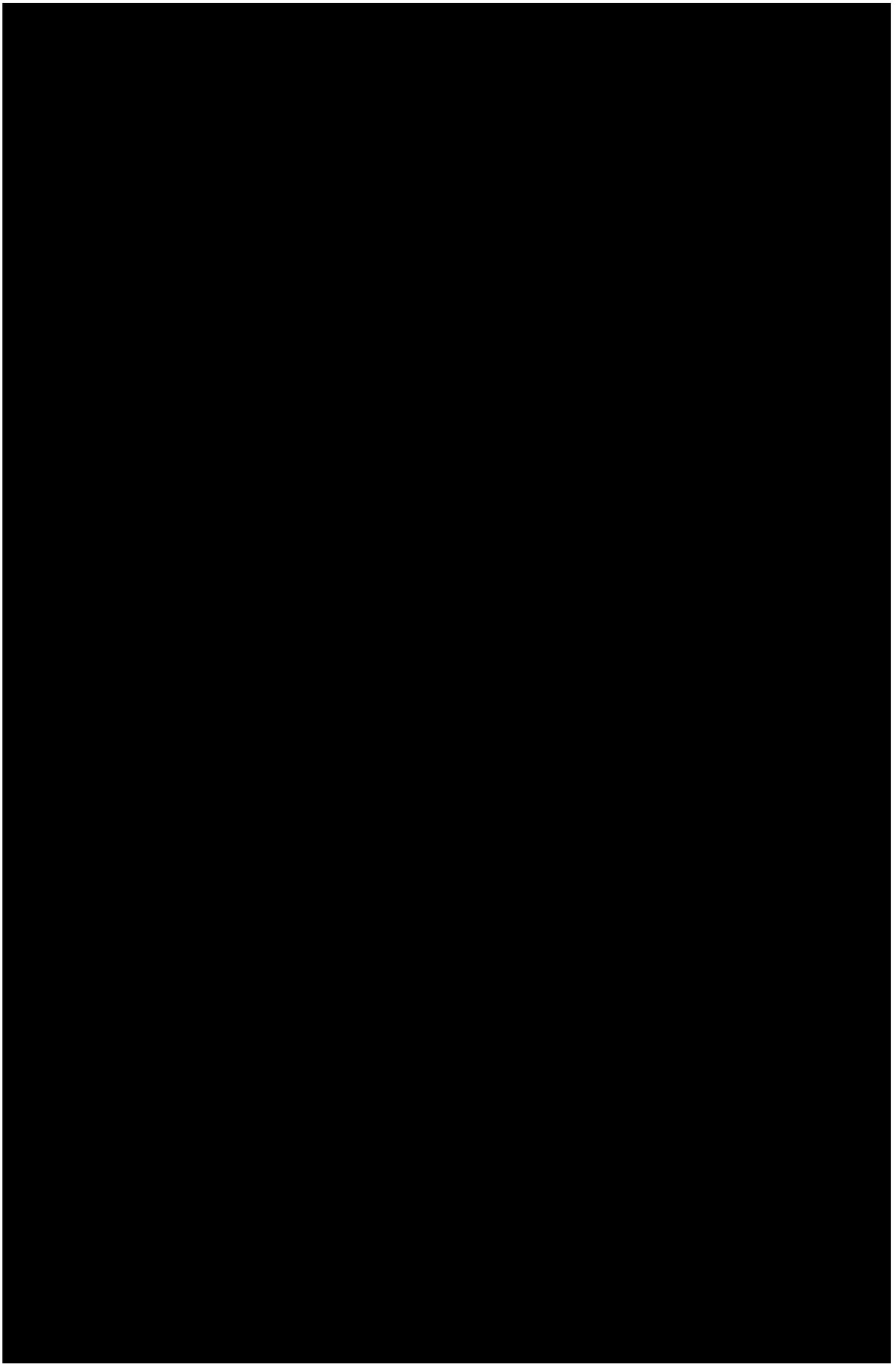


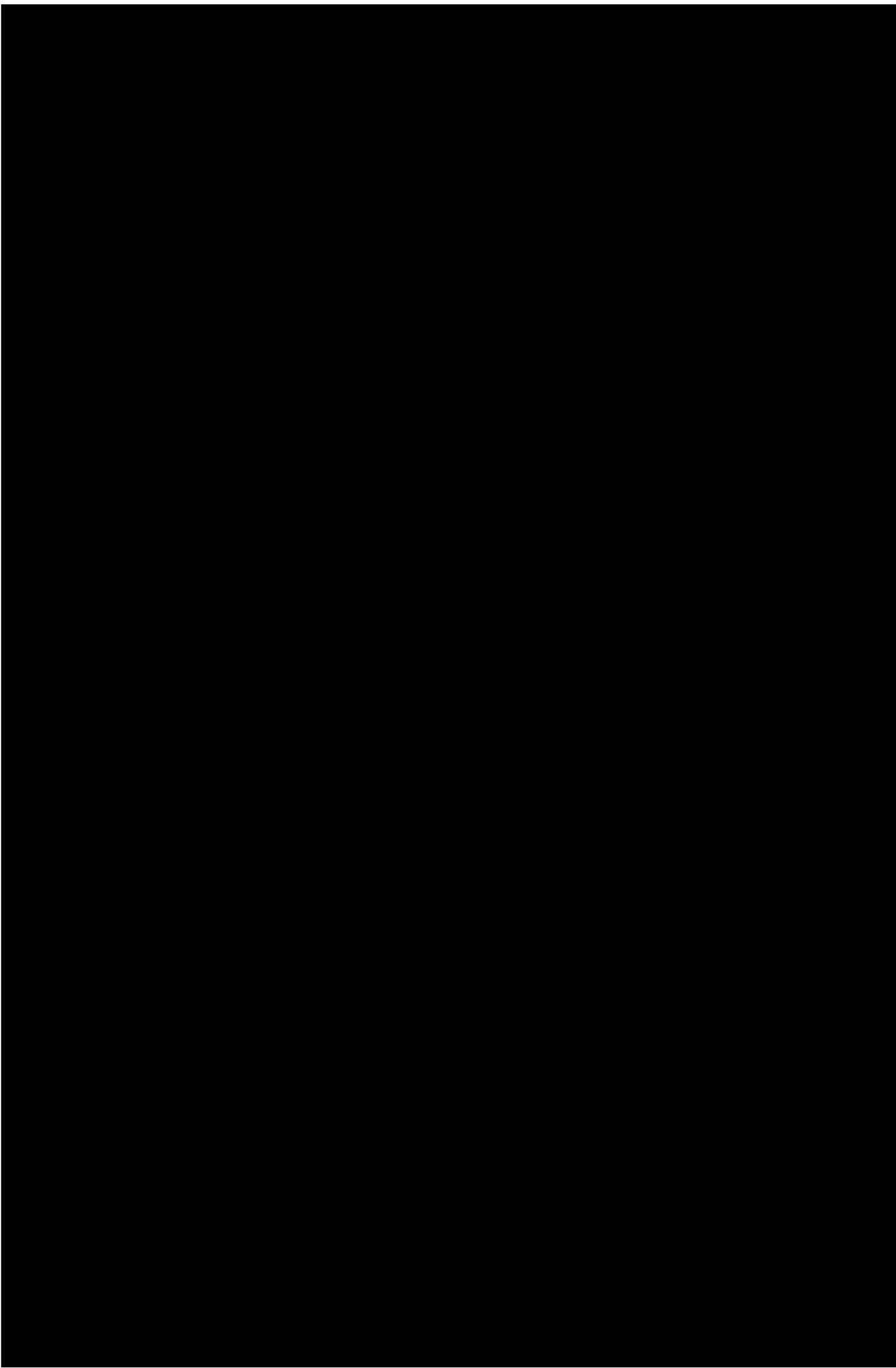


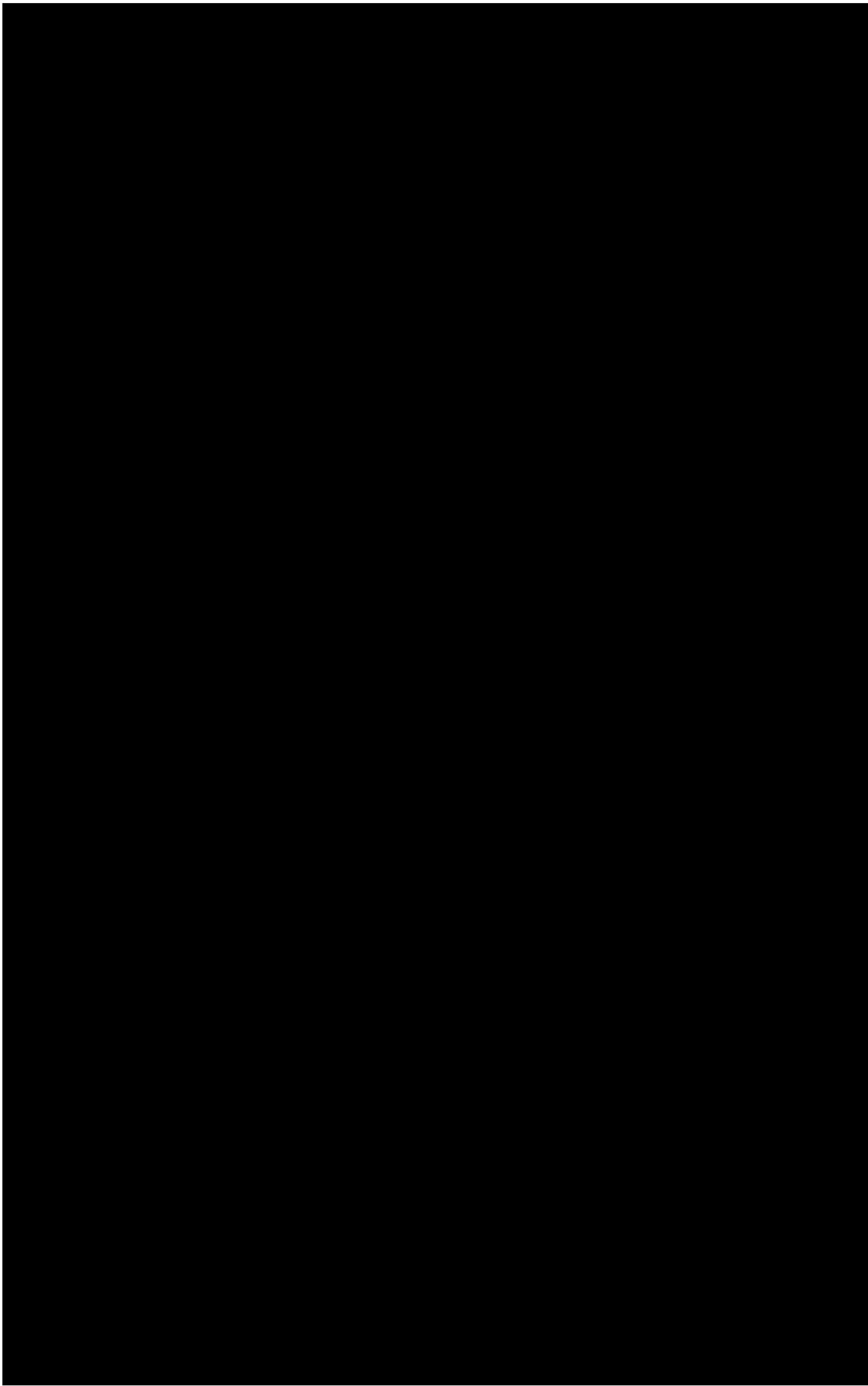


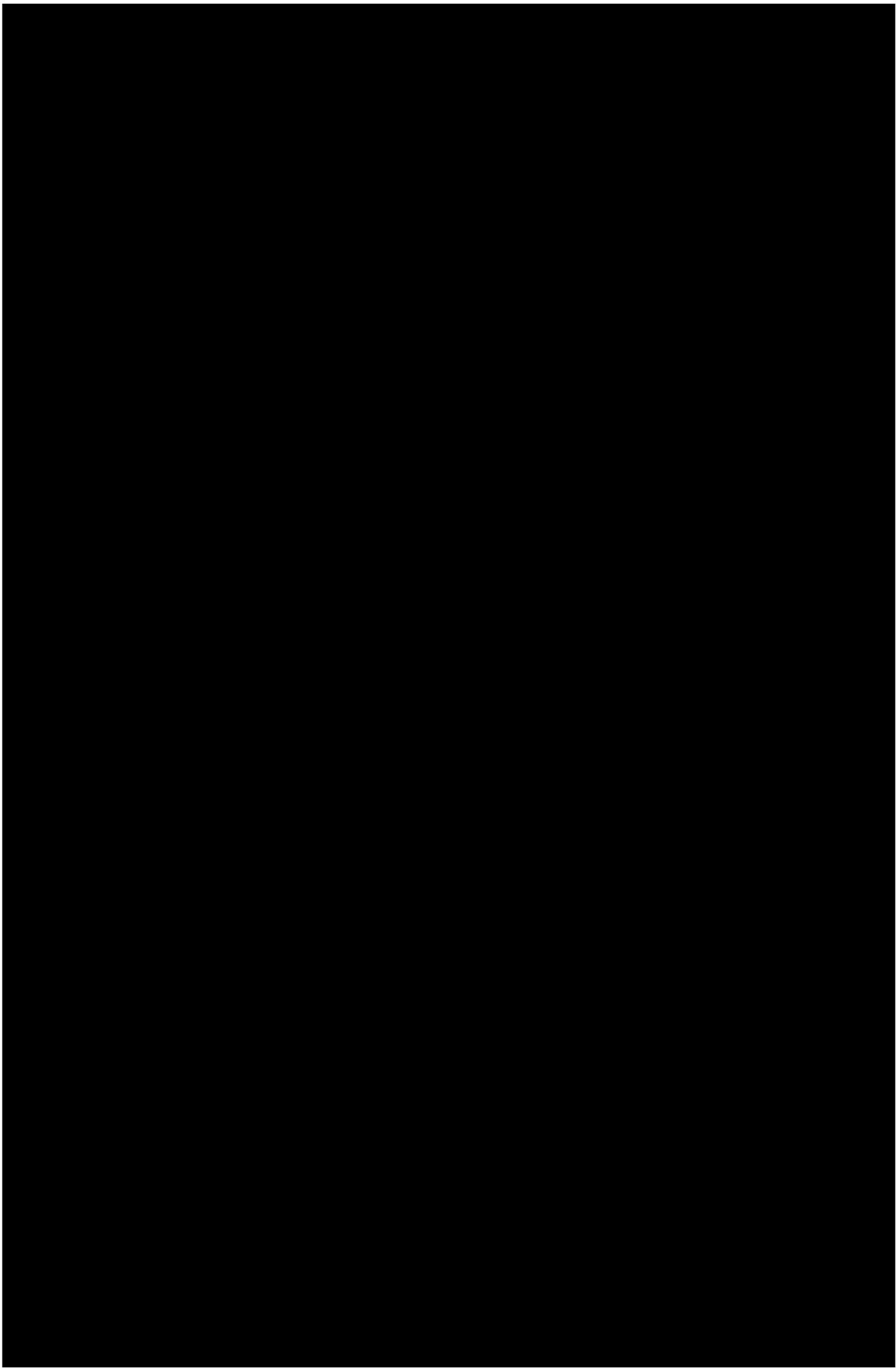


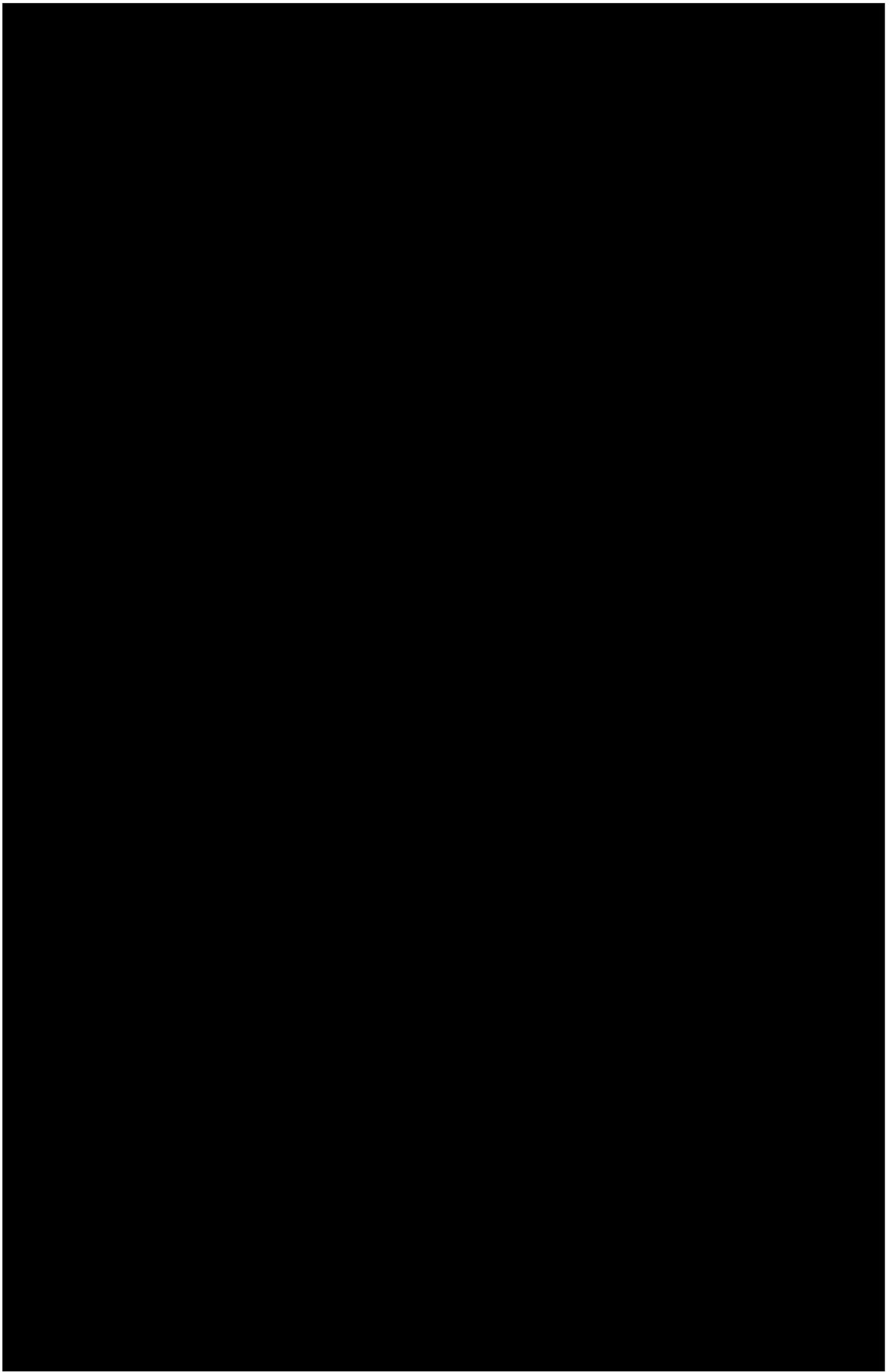


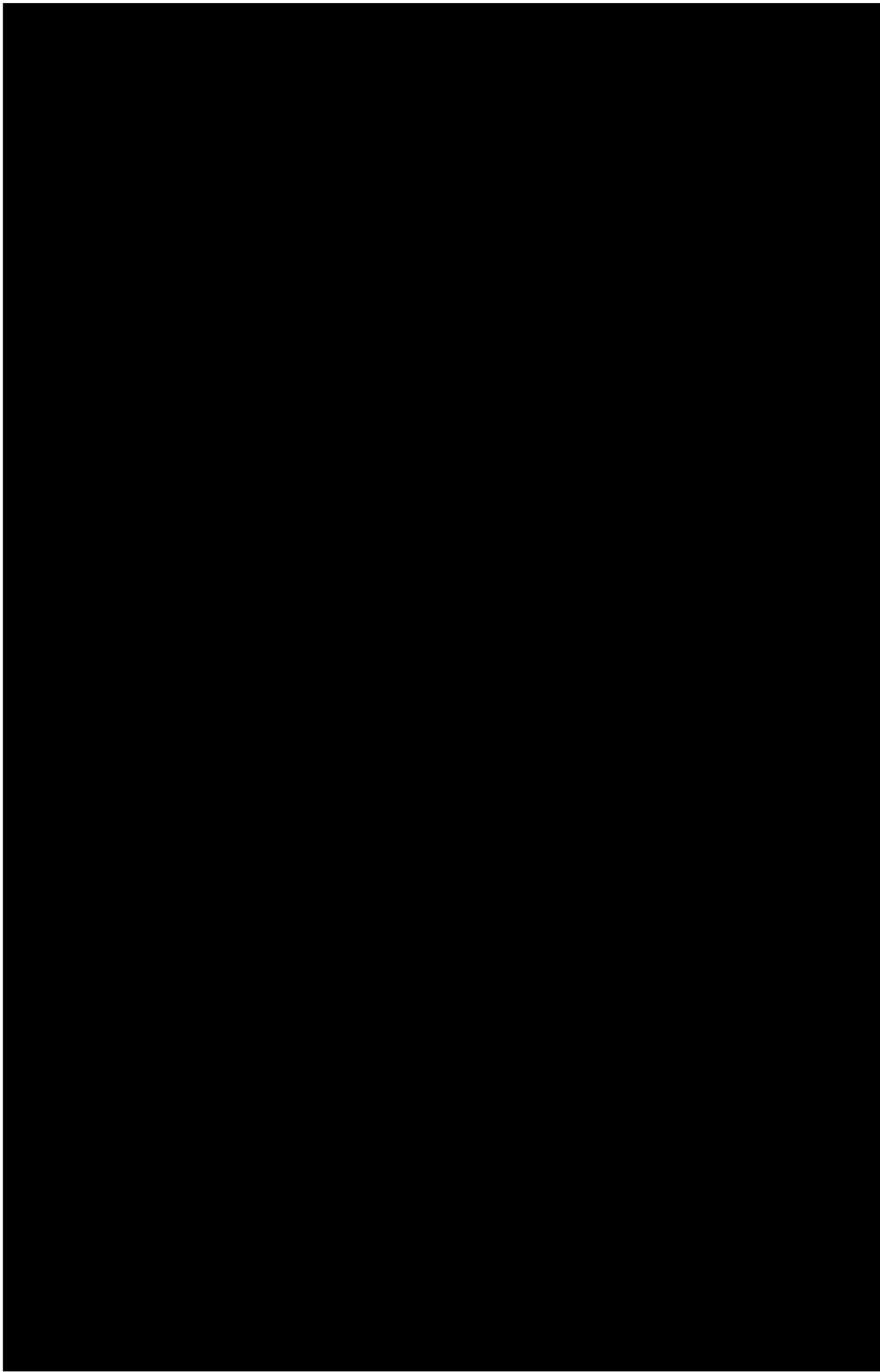












**SCHEDULE 15: INSURANCE**



## **East London Line Project**

# **Rolling Stock Manufacture and Supply Agreement**

## **Schedule 15 – Insurance**

ELM-COM-109-09-06-0018

Issue : Engrossment

August 2006

Confidential

**Client** Transport for London  
**Project** East London Line Project  
**Document No.** ELM-COM-109-09-06-0018 Issue : Draft H  
**Title** Rolling Stock Manufacture and Supply Agreement –  
Schedule 15 - Insurance

**Issue record :**

Issue	Date	Author	Approved	Description
Draft A	28.04.2006			Draft within MSA

*Note:* this document is uncontrolled when printed.

# **SCHEDULE 15**

## **Insurance**

## 1. INSURANCE REQUIREMENTS

1.1 The Manufacturer shall take out and maintain, and shall, in relation to paragraph 1.1.1 only, insure the interests of its Subcontractors in the relevant property to the extent that such property is in the care, custody and control of the Manufacturer, in each case under the following policies or contracts of insurance:

1.1.1 all risks insurance for full replacement cost as new against any loss or damage (however and wherever it arises including in transit and on test) to each ELR Unit, each NLR Unit, any other item of Purchased Equipment (other than a Spare or Special Tool ordered pursuant to Clause 23) (“**Relevant Purchased Equipment**”), each Moveable Asset and each Fixed Asset; and

1.1.2 public and product liability insurance against injury (including, without limitation, disease and death) or damage to persons, natural or otherwise, loss or damage to property and liability at law for damages and costs in each case arising from or caused by the performance by the Manufacturer as the case may be of its obligations under this Agreement, in an amount of [REDACTED] in respect of any one occurrence or series of occurrences consequent on one event or original source, without limitation in the period of insurance or subject to such limitation as expressly approved in writing from time to time by the Office of Rail Regulation (or its successor body), the Manufacturer to provide to the satisfaction of the Purchaser evidence of such approval.

1.2 The Manufacturer shall ensure that:

1.2.1 the insurance referred to in paragraph 1.1.1 is maintained from the Commencement Date until:

- (A) in respect of each Unit, Acceptance of that Unit;
- (B) in respect of each item of Relevant Purchased Equipment other than a Unit, Acceptance of that item of Relevant Purchased Equipment;
- (C) in respect of each Fixed Asset, title in that Fixed Asset has vested in LUL or such other person in accordance with paragraph 4.5.1 of Schedule 10 to this Agreement; and
- (D) in respect of each Moveable Asset, title in that Moveable Asset has transferred to the Purchaser, or the Owner (where it is not the Purchaser), in accordance with paragraph 4.6.1 of Schedule 10 to this Agreement; and

1.2.2 the insurance referred to in paragraph 1.1.2 is maintained from the Commencement Date until 2 years following the latest of:

- (A) Final Acceptance of the last Unit;

- (B) Acceptance of the last item of Relevant Purchased Equipment other than a Unit;
- (C) the vesting of title in the last Fixed Asset in LUL or such other person in accordance with paragraph 4.5.1 of Schedule 10 to this Agreement; and
- (D) transfer of title of the last Moveable Asset to the Purchaser, or the Owner (where it is not the Purchaser), in accordance with paragraph 4.6.1 of Schedule 10 to this Agreement.

1.3 Without prejudice to paragraph 1.1 the Manufacturer shall maintain (and shall procure that each Subcontractor maintains) such insurance as is required by any Applicable Law including insurance to be effected against legal liability for injury to its employees or to other persons under a contract of service or apprenticeship to them.

## **2. ADDITIONAL INSURED**

2.1 The Manufacturer shall ensure that each policy or contract of insurance taken out in accordance with paragraphs 1.1.1 and 1.1.2 names the Purchaser, the Owner (where it is not the Purchaser and if notified to the Manufacturer) LUL (and, in respect of paragraph 1.1.2, names, in addition, the Operator, Transport for London and such subsidiary of Transport for London (if any) that appoints the Operator or operates the Units to provide the passenger services on the East London Railway and/or North London Railway) as an additional insured party.

2.2 The Manufacturer shall ensure that each policy or contract of insurance taken out in accordance with paragraphs 1.1.1 and 1.1.2:

2.2.1 contains a provision that no claim of any of the insured shall be defeated, prejudiced or otherwise affected by any act, omission, neglect, breach or violation of any warranty, declaration or condition on the part of any other insured and shall insure the interests of each insured regardless of any misrepresentation, non-disclosure, want of due diligence, act or omission on the part of any other insured; and

2.2.2 save for limits of liability and/or amount and to the extent required in accordance with this Schedule 15, shall operate in a manner as if there were a separate policy with and covering each insured.

## **3. PAYMENT OF PREMIUM**

The Manufacturer shall promptly pay (or procure the payment of) all premiums due and payable in respect of each policy or contract of insurance taken out in accordance with paragraph 1.

## **4. APPROVAL REQUIREMENTS**

The Manufacturer shall ensure that each policy or contract of insurance required pursuant to paragraph 1 is effected and maintained with insurers of

good standing and repute and, subject to the provisions of paragraph 5.2 below, with a rating of at least Standard & Poor's Corporation [redacted] rating (or an equivalent rating from another rating agency of equal repute) and in such form as the Purchaser has approved. No later than 15 Working Days prior to effecting any such policy or contract of insurance the Manufacturer shall submit to the Purchaser for its approval:

- 4.1 the identity of the proposed insurer(s); and
- 4.2 the principal terms, conditions and warranties of the proposed insurance (including extensions, exclusions and levels of deductibles) or any revision to such insurance.

## **5. UNAVAILABILITY OF INSURANCE AND CHANGE IN CREDIT RATING**

- 5.1 If and to the extent that the Manufacturer is unable to obtain (or procure the obtaining of) any of the insurances specified in paragraph 1 on normal commercial terms, the Manufacturer shall promptly notify the Purchaser and the Parties will consult with each other in order to agree alternative insurance arrangements and/or alternative Security to be provided or procured by the Manufacturer.
- 5.2 The Manufacturer shall promptly notify the Purchaser on becoming aware that any existing insurer providing insurances to the Manufacturer has ceased to have a Standard & Poor's Corporation rating of [redacted] or above (or an equivalent rating from another rating agency of equal repute). Within a reasonable period of time of such notification or of the Purchaser becoming so aware and notifying the Manufacturer, the Manufacturer shall replace that insurer with one having a rating of [redacted] or better, if one is available on normal commercial terms generally accepted in the market (including as to cost). To the extent that such replacement insurer is not available on such commercial terms, the Manufacturer shall be obliged to procure a replacement insurer with the highest credit rating below [redacted] which is higher than the credit rating of the insurer being replaced and which is available on normal commercial terms generally accepted in the market for insurers with that rating (it being understood that, subject to the requirement to procure a replacement insurer having a credit rating higher than that of the insurer to be replaced, this shall not oblige the Manufacturer to select the highest rated insurer below [redacted] if the commercial terms available are not generally accepted in the market) and which is in any event an insurer of good standing and repute.

## **6. ADDITIONAL INSURANCE TERMS**

The Manufacturer shall procure that each policy or contract of insurance effected pursuant to paragraph 1:

- 6.1 which insures the interests of more than one insured, shall contain a waiver of subrogation against the Purchaser, the Owner (where it is not the Purchaser and if notified to the Manufacturer), LUL, the Operator and Transport for London and such subsidiary of Transport for London (if any) that appoints the

Operator or operates the Units to provide the passenger services on the East London Railway and/or North London Railway as applicable; and

- 6.2 shall contain a provision requiring 30 days prior written notice of cancellation or non-renewal to be given to the Purchaser and the Owner (where it is not the Purchaser).

## **7. EVIDENCE**

Promptly following any request from the Purchaser the Manufacturer shall provide the Purchaser with evidence that it has taken out and is maintaining (or has so procured) each of the policies or contracts of insurance in accordance with paragraph 1 together with evidence that the premiums payable in respect of such insurances have been paid and that such insurances are in full force and effect.

## **8. CERTIFICATES OF RENEWAL**

The Manufacturer shall promptly provide the Purchaser, with copies of all notices and certificates of renewal for each of the policies or contracts of insurance taken out in accordance with paragraph 1.

## **9. COMPLIANCE WITH TERMS OF INSURANCE**

- 9.1 The Manufacturer shall (and shall procure that its Subcontractors shall) comply with the terms of all policies or contracts of insurance taken out in accordance with paragraph 1 and shall not act or omit to act in any manner which might render void or voidable any policy or contract of insurance effected in accordance with paragraph 1 or as a result of which an insurer would be entitled to refuse to pay any claim, or to reduce the amount payable in respect of any claim.
- 9.2 Where any contract of insurance is subject to a deductible, the Manufacturer, or the Subcontractor as applicable, shall be responsible for bearing and shall meet the cost of any uninsured liability represented by such deductible.

## **10. LIMITATION ON MANUFACTURER'S OBLIGATIONS**

Neither failure to comply or full compliance by the Manufacturer of its obligations under paragraph 1 or the terms of any policy or contract of insurance shall limit or relieve the Manufacturer of its obligations or liabilities under this Agreement.

## **11. LOSS MITIGATION**

The Manufacturer is responsible for ensuring that, in the event of an incident, all reasonable steps are taken to mitigate further loss. This will include any necessary emergency repairs to property damaged in order to mitigate further damage or for reasons of safety. These repairs must be reasonable in relation to the loss or damage that has been suffered.

## **12. THE PURCHASER'S RIGHT TO INSURE**

If the Manufacturer fails to take out policies and/or maintain any of the insurances in accordance with the requirements of paragraph 1, the Purchaser may take out the relevant policies or contracts of insurance and the costs of such insurance shall be a debt due to the Purchaser from the Manufacturer, payable on demand, together with Default Interest on the amount so paid by the Purchaser from the date so paid until the date the Manufacturer reimburses the Purchaser in full.

## **13. BROKER**

- 13.1 The insurances required under paragraph 1 should be placed through an insurance broker of international repute.
- 13.2 The Manufacturer shall procure the issue of a letter of undertaking to the Purchaser and, in addition, the Owner (where it is not the Purchaser), from its insurance brokers in the form set out in Appendix 1 to this Schedule 15.

## APPENDIX 1

### Form of Brokers Letter of Undertaking

#### 1. To [•]

Dear Sirs,

We confirm in our capacity as insurance brokers to the Manufacturer that the insurances required to be provided pursuant to paragraph 1 of Schedule 15 (the "**Insurances**") of a manufacture and supply agreement dated [ ] between, inter alia, the Manufacturer and the Purchaser (the "**Manufacture and Supply Agreement**") are, as at today's date, in effect on the terms and in respect of the risks as agreed to under contract by the Manufacturer and set out in Schedule 15 of the Manufacture and Supply Agreement and, that any premiums due as at the date of this letter, in respect of the Insurances, have been paid in full.

We also confirm that, as at the date of this letter, the relevant endorsements are in full force and effect in respect of the Insurances. Terms defined in the Manufacture and Supply Agreement shall have the same meaning in this letter.

Pursuant to instructions received from the Manufacturer and in our capacity as brokers for the Manufacturer, we hereby undertake the following:

1. to have endorsed, on each and every policy evidencing the Insurances when the same is issued, endorsements including a loss payable clause in the form set out in Appendix 2 to Schedule 15 to the Manufacture and Supply Agreement ;
2. to hold to the order of the Manufacturer, any policies, cover notes, placing slips, certificates, renewal receipts and confirmation of renewal and payment of premiums issued and hereafter to be issued and any endorsements thereto, in respect of your respective interests in the Insurances. The Purchaser will be provided with the applicable detailed summaries of Insurances;
3. to notify you at least 90 days prior to any change to the terms of, lapse, non-renewal, cancellation and/or suspension of the policies which are material to the terms of the Insurances as they may relate to the contract(s) which are the subject of this Letter of Undertaking;
4. to advise each of you promptly of any default in the payment of any premium for any of the Insurances;
5. to advise each of you promptly of any act or omission or of any event of which we have actual knowledge which would be reasonably likely to invalidate or render unenforceable, in whole or in part, the Insurances;
6. to advise each of you if any insurer cancels or gives notice of cancellation or suspension of the Insurances or any material modification thereto which might adversely affect the interests of the insured or of any lapse which is not

immediately followed by renewal on the same terms with the same insurer of any of the Insurances at least 90 days before such cancellation, suspension, modification or lapse is to be effective as against the insured;

7. promptly upon written request, to make available to you detailed summaries of Insurances evidencing that the Manufacturer has taken out and is maintaining (or has so procured) each of the Insurances, including copies of the original certificates of insurance and confirmations of renewal and payment of premiums;
8. to treat as confidential all information marked as or otherwise stated to be confidential and supplied to us by any person for the purposes of disclosure to the insurers under the Insurances and not to disclose, without the prior written consent of that person, such information to any third party other than the insurers under the Insurances as may be required by law or regulation;
9. to notify each of you at least 30 days prior to ceasing to act as brokers in relation to the Insurances;
10. to pay without any set-off or deduction of any kind for any reason any and all proceeds from the Insurances received by us from the insurers in accordance with the loss payable clause endorsed on the policy as set out in Appendix 2 to Schedule 15 of the Manufacture and Supply Agreement;
11. to disclose to the insurers any fact, change of circumstance or occurrence which we know to be material to the risks insured against under the Insurances promptly after we become aware of such fact; and
12. to notify you promptly on becoming aware that any insurer has ceased to have a Standard & Poor's Corporation rating of [REDACTED] or above (or an equivalent rating from another agency of equal repute).

The above undertakings are given:

- (a) subject to our lien, if any, on the policies referred to above for premiums due under such policies and subject to any insurer's right of cancellation, if any, following default in excess of 30 days in payment of such premium, but we undertake to advise each of you immediately if any such premiums are not paid to us by the date and to give each of you a reasonable opportunity of paying such amounts of premiums outstanding, before notification of non-payment of premiums to the insurers or notification of cancellation on behalf of the insurers; and
- (b) subject to our continuing appointment for the time being as insurance brokers to the Manufacturer.

This letter is given by us on the instructions of the Manufacturer and with the Manufacturer's full knowledge and consent as to its terms as evidenced by the Manufacturer's signature below.

This letter shall be governed by and construed in accordance with the laws of England and Wales.

Yours faithfully,

-----  
For and on behalf of [insurance broker]

-----  
For and on behalf of the Manufacturer

## APPENDIX 2

### Loss Payable Clause

[X] The insurers undertake that, unless and until the insurers receive written notice from the Manufacturer and the Purchaser (as each is defined in the Manufacture and Supply Agreement dated [ ] 2006 between Transport Trading Limited, Bombardier Transportation UK Limited and London Underground Limited (the "**Manufacture and Supply Agreement**") directing otherwise, recoveries shall be paid without any deduction from the agreed claim figure as follows:

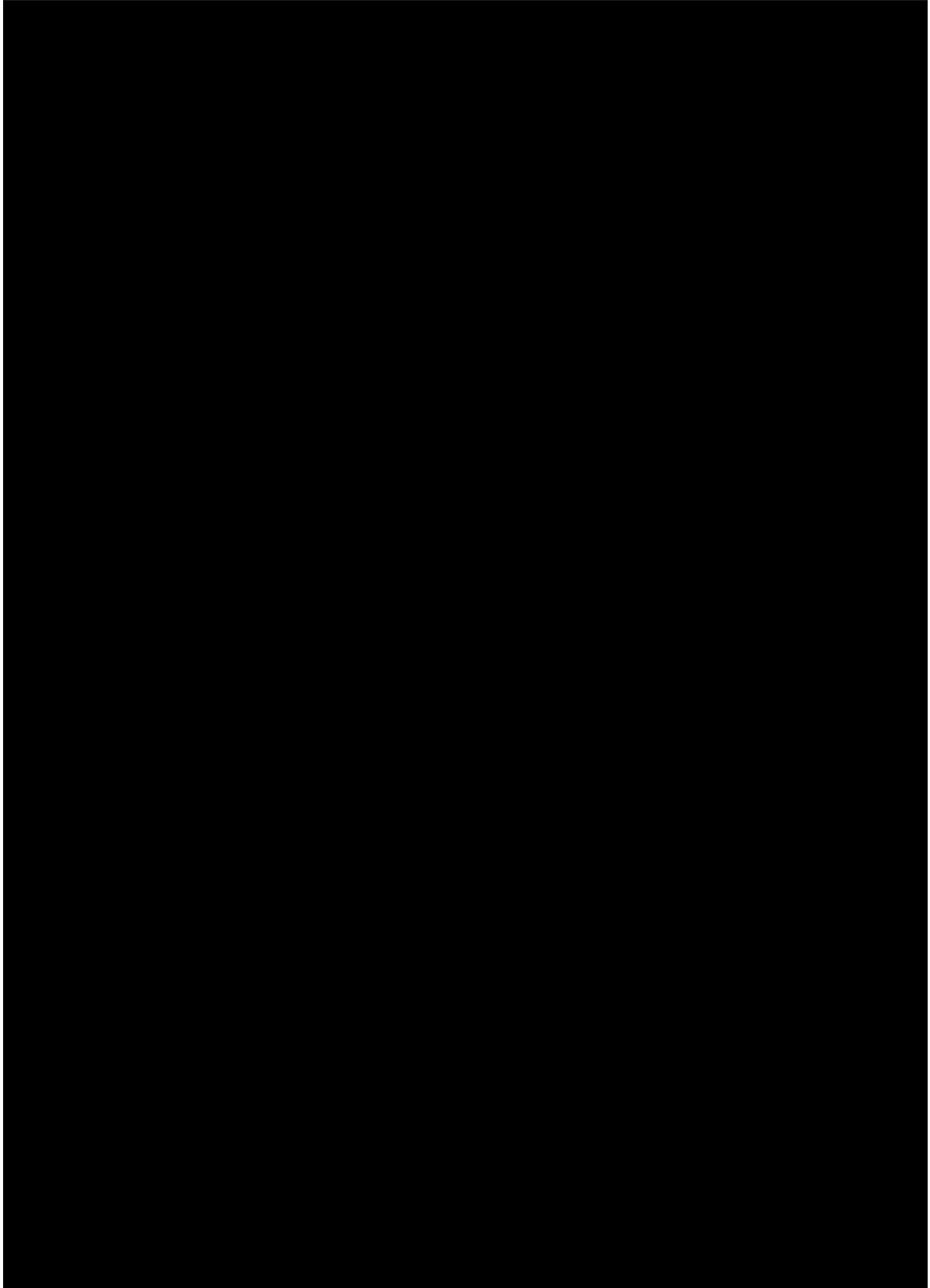
[X.1] all recoveries of insurance proceeds in respect of the "all risks" insurances as set out in paragraph 1.1.1 of Schedule 15 of the Manufacture and Supply Agreement shall be applied in reinstatement of the insured asset in question save where the insured asset is an ELR Unit or NLR Unit which is the subject of an Event of Loss in respect of which the Purchaser has elected to cancel the Manufacture and Supply Agreement in respect of that Unit in which case the insurance proceeds shall be paid to the Purchaser up to the amount of all sums due to be repaid to the Purchaser by the Manufacturer pursuant to Clause 21.1.3(B) of the Manufacture and Supply Agreement; and

[X.2] all recoveries of insurance proceeds in respect of claims by third parties under the public and product liability insurances as set out in paragraph 1.1.2 of Schedule 15 of the Manufacture and Supply Agreement shall be paid to the person to whom the liability covered by such insurances was incurred or, where that liability has been met by an insured party pursuant to an indemnity or express contractual obligation under the Manufacture and Supply Agreement, shall be paid to the indemnifier or the person liable for such obligations.

Defined terms used in this Clause [X] shall have the same meaning as defined in the Manufacture and Supply Agreement.

**SCHEDULE 16: PLANS**

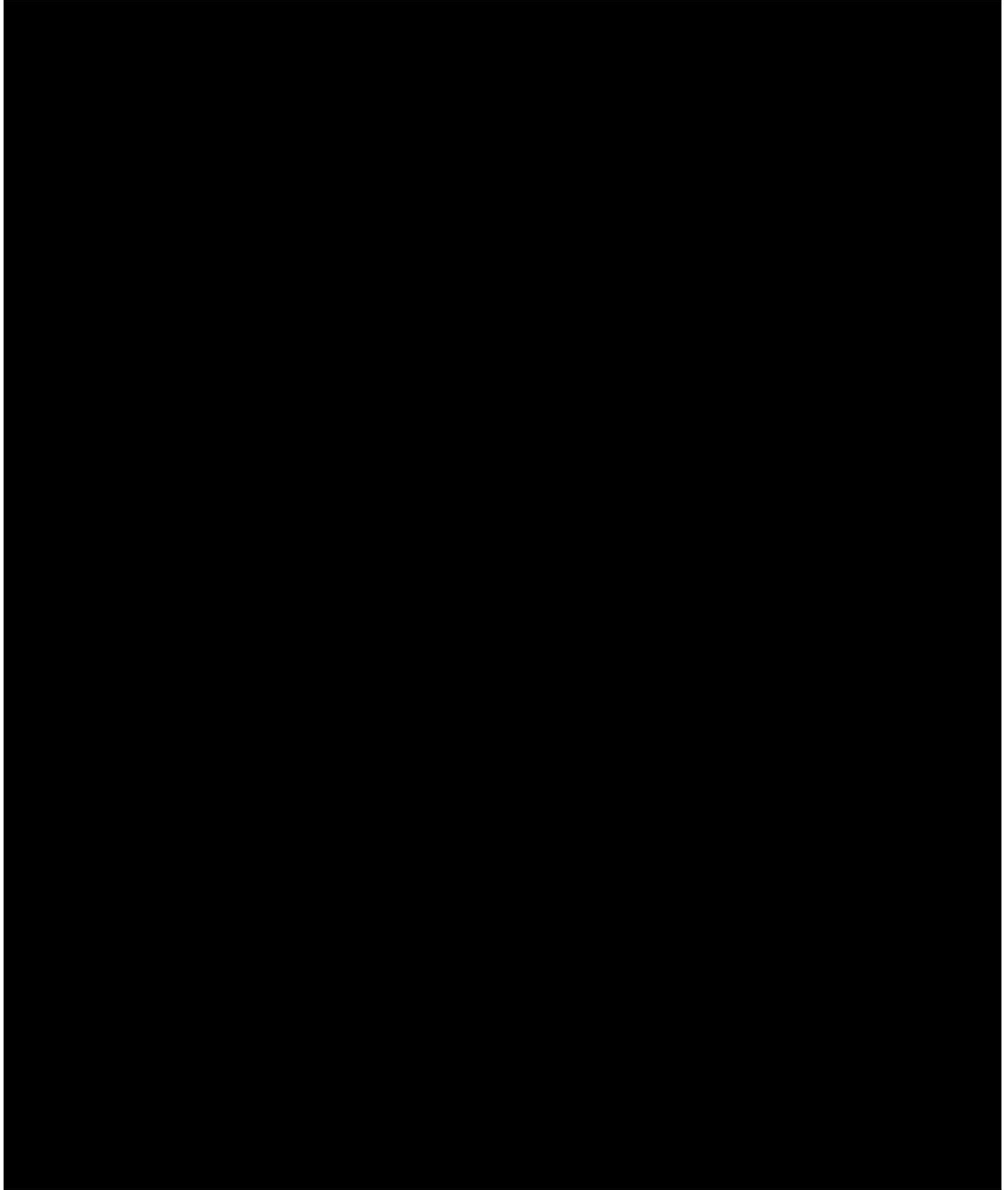
**SCHEDULE 16: PLANS - Part A - Assurance Plan**{ TC "SCHEDULE 16: PLANS" \f  
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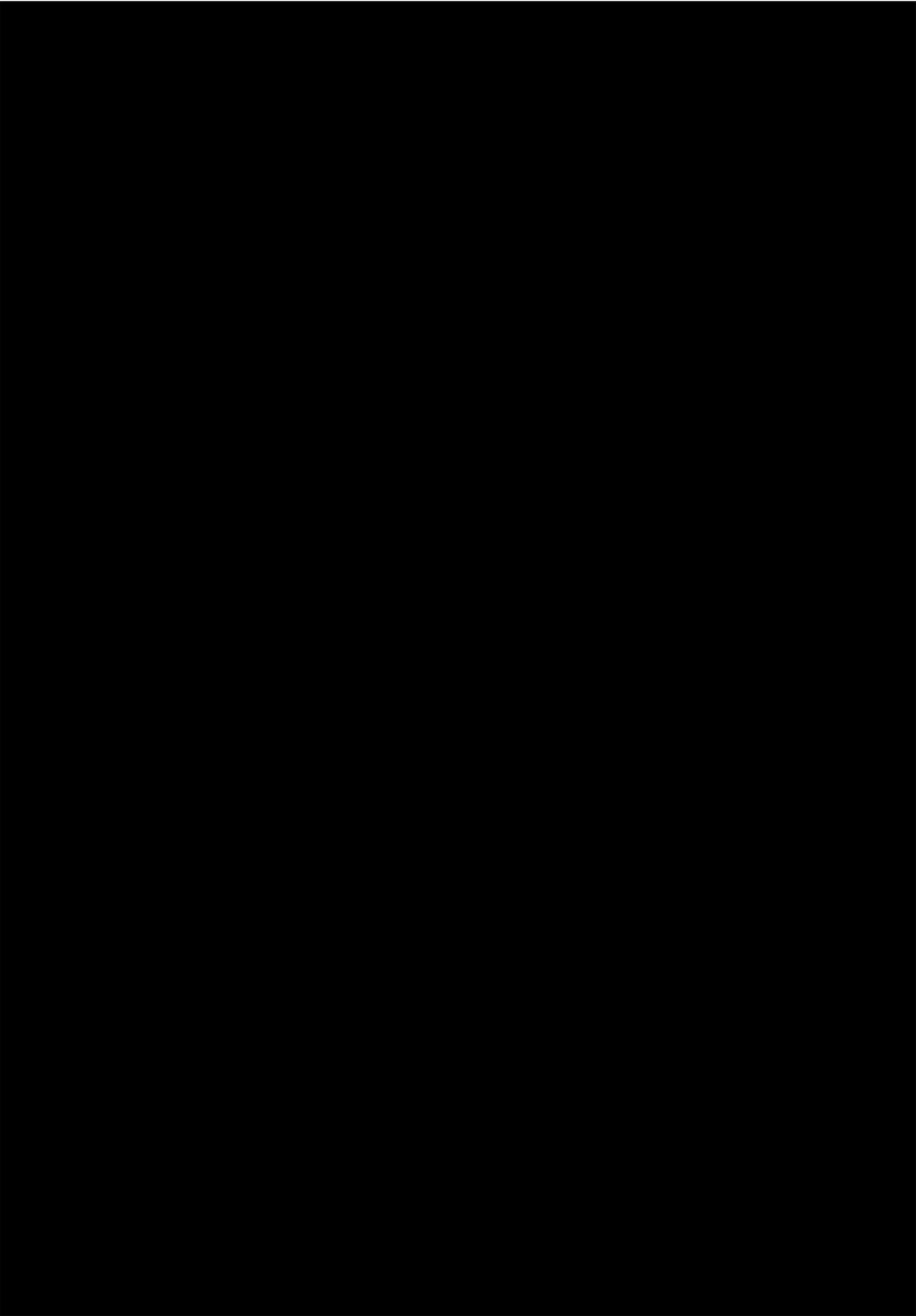


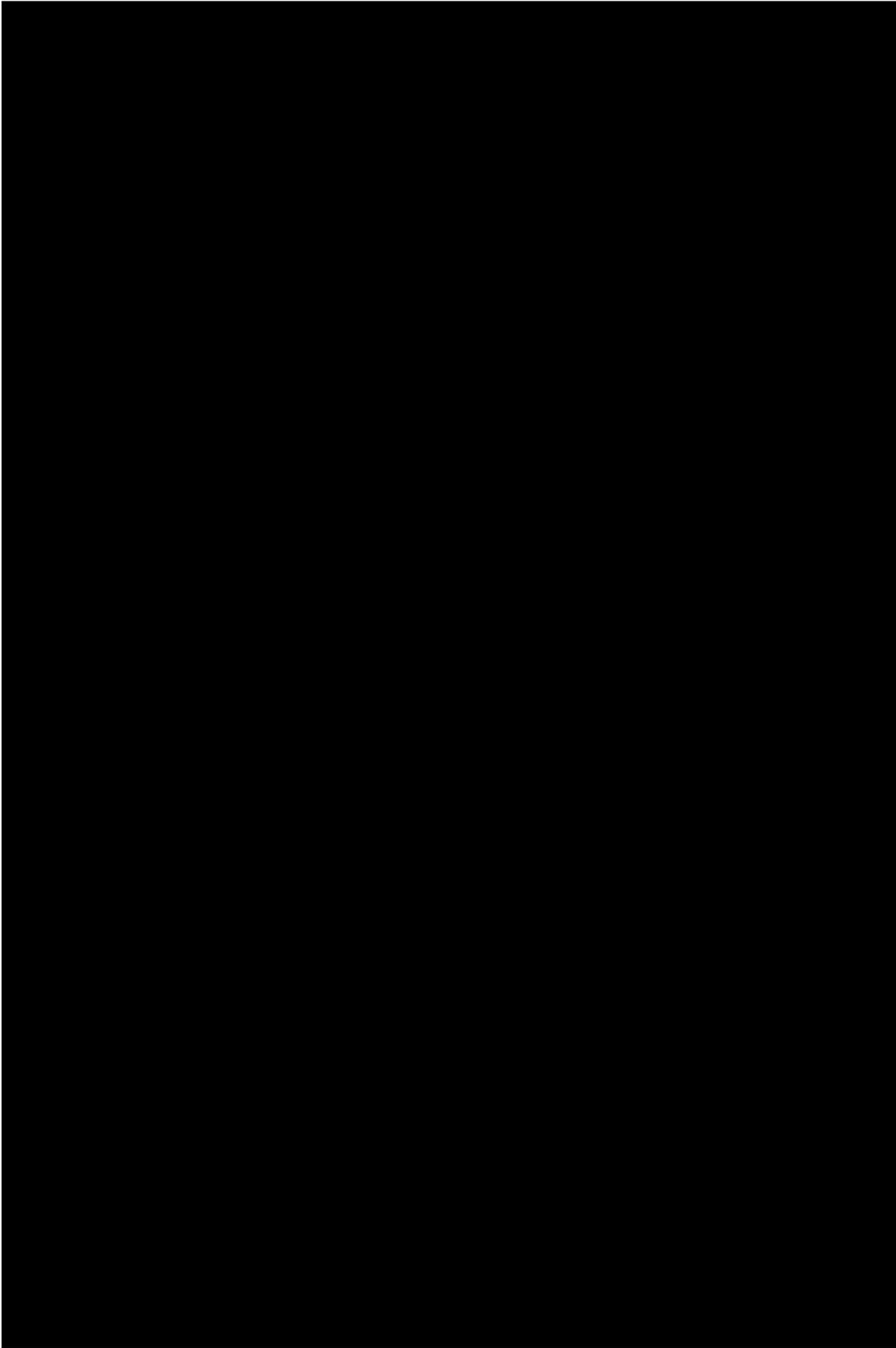


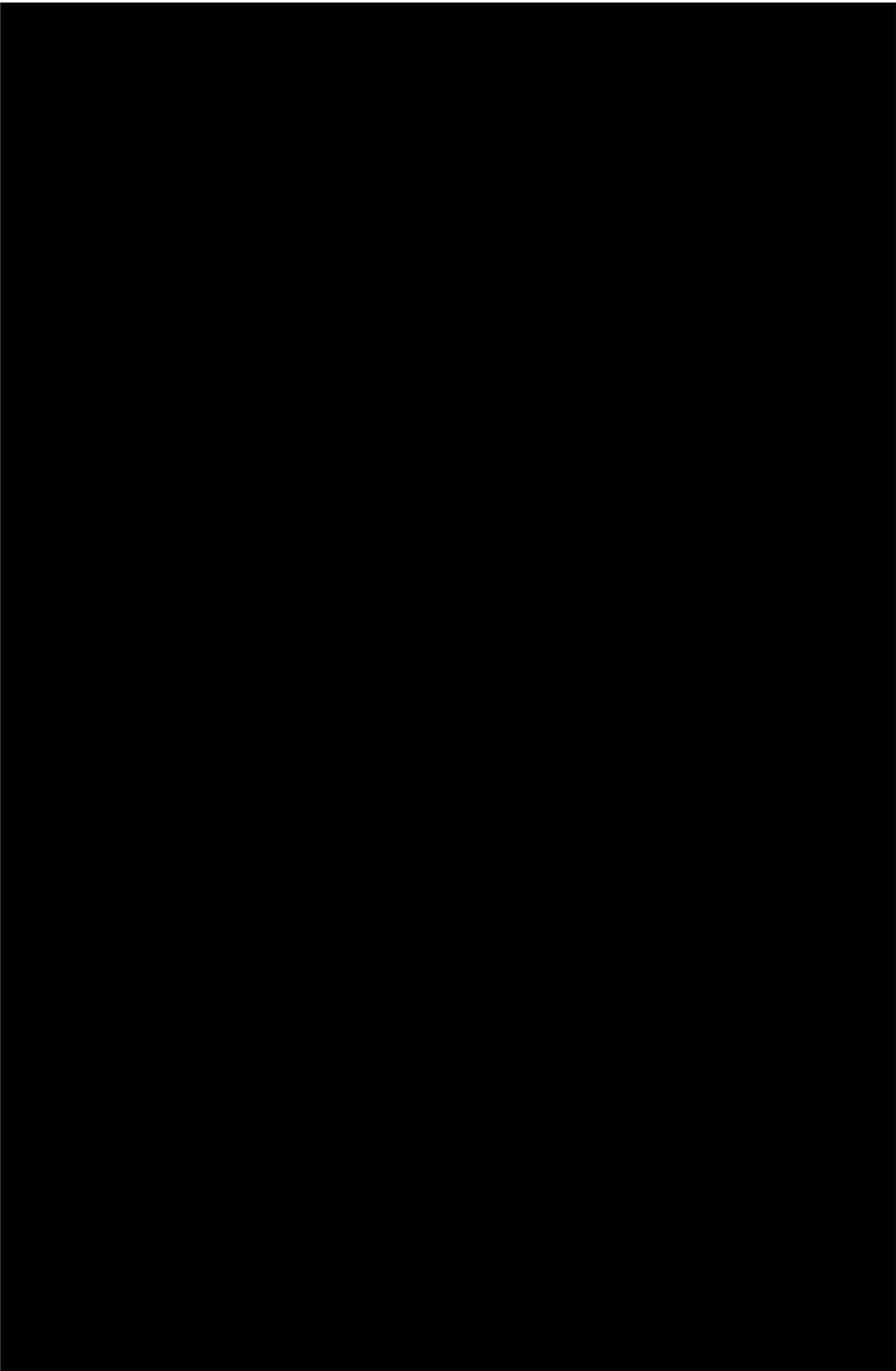
**1. INTRODUCTION**

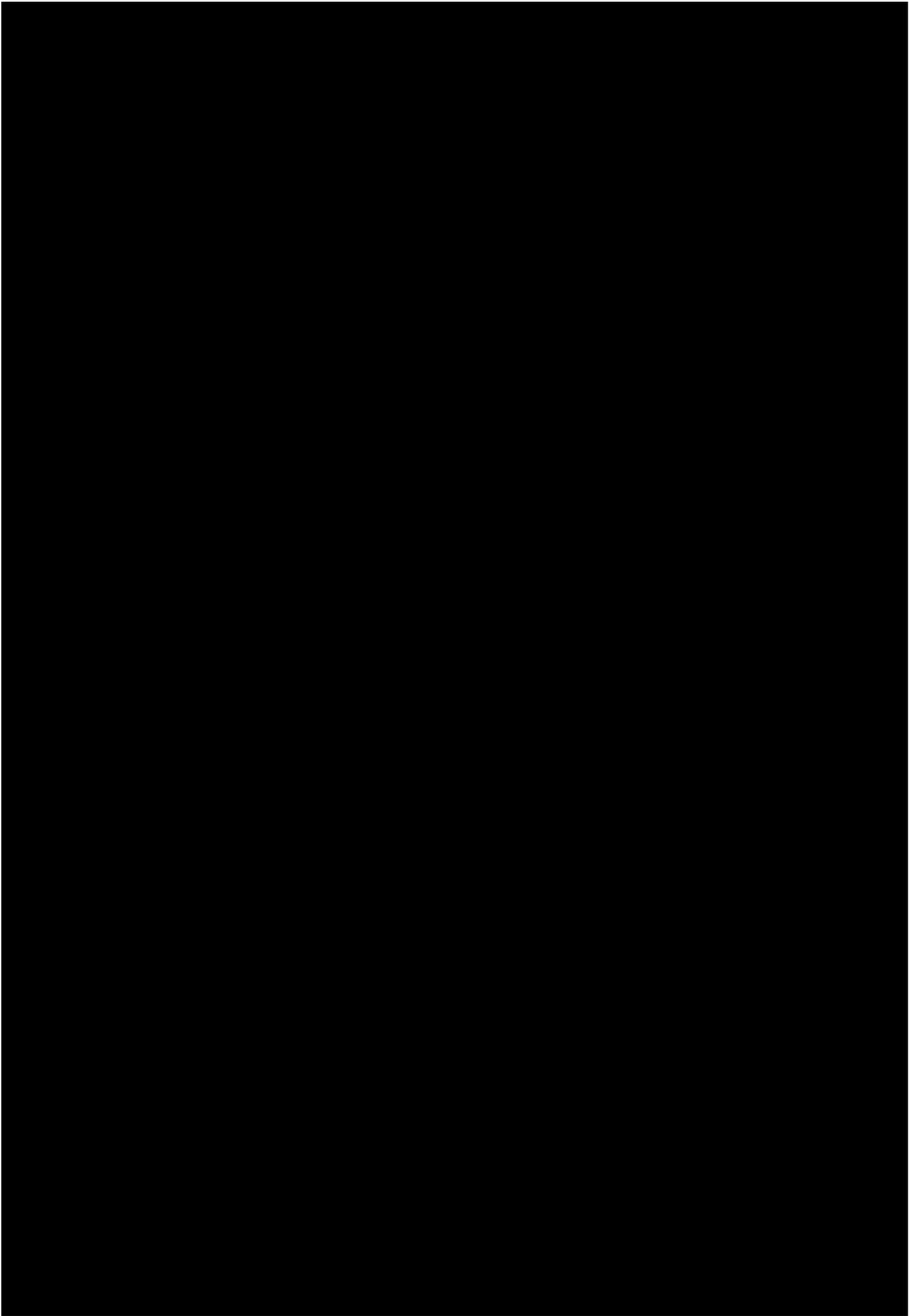
This schedule describes the technical assurance processes the Manufacturer shall follow through the Project.

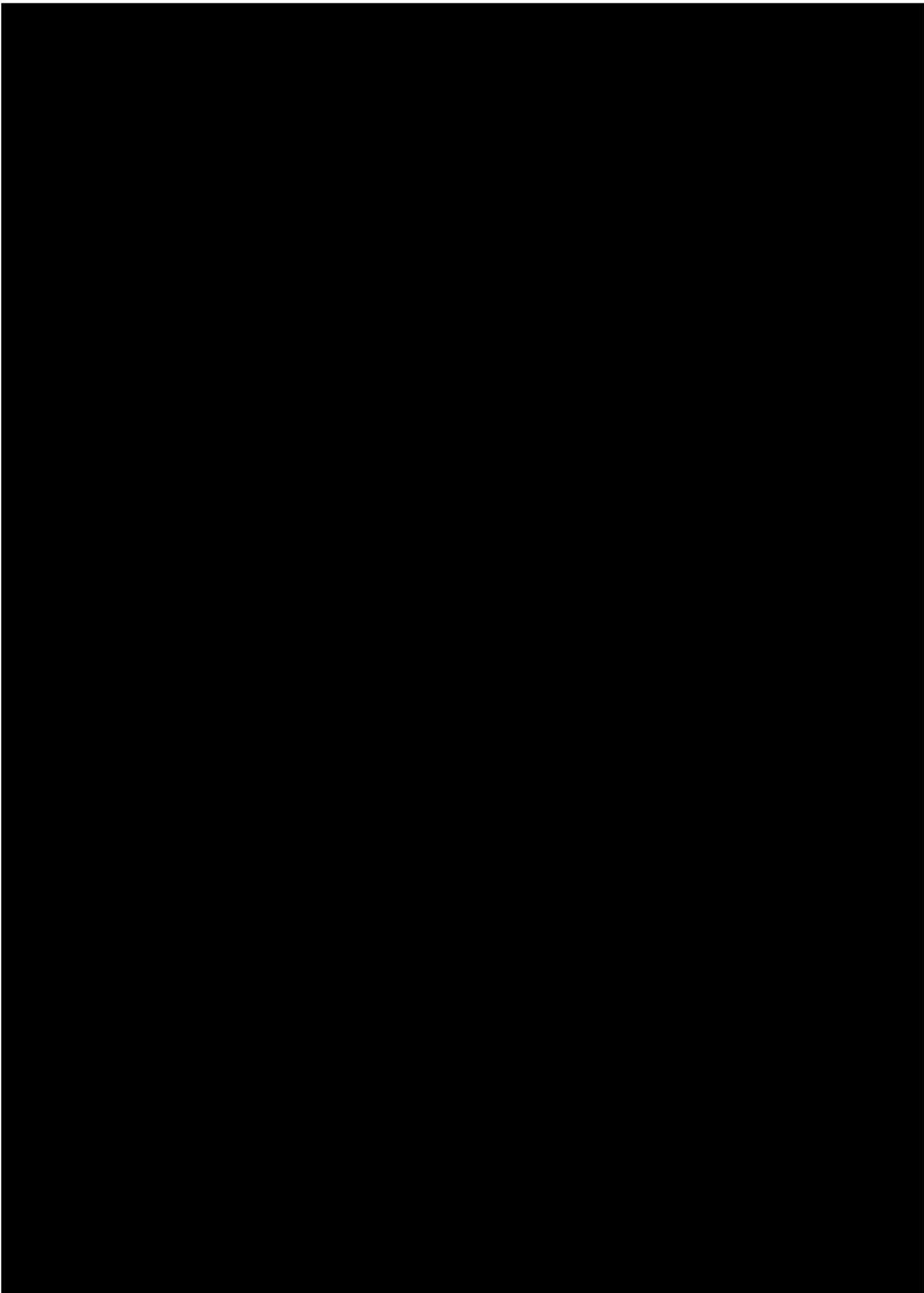










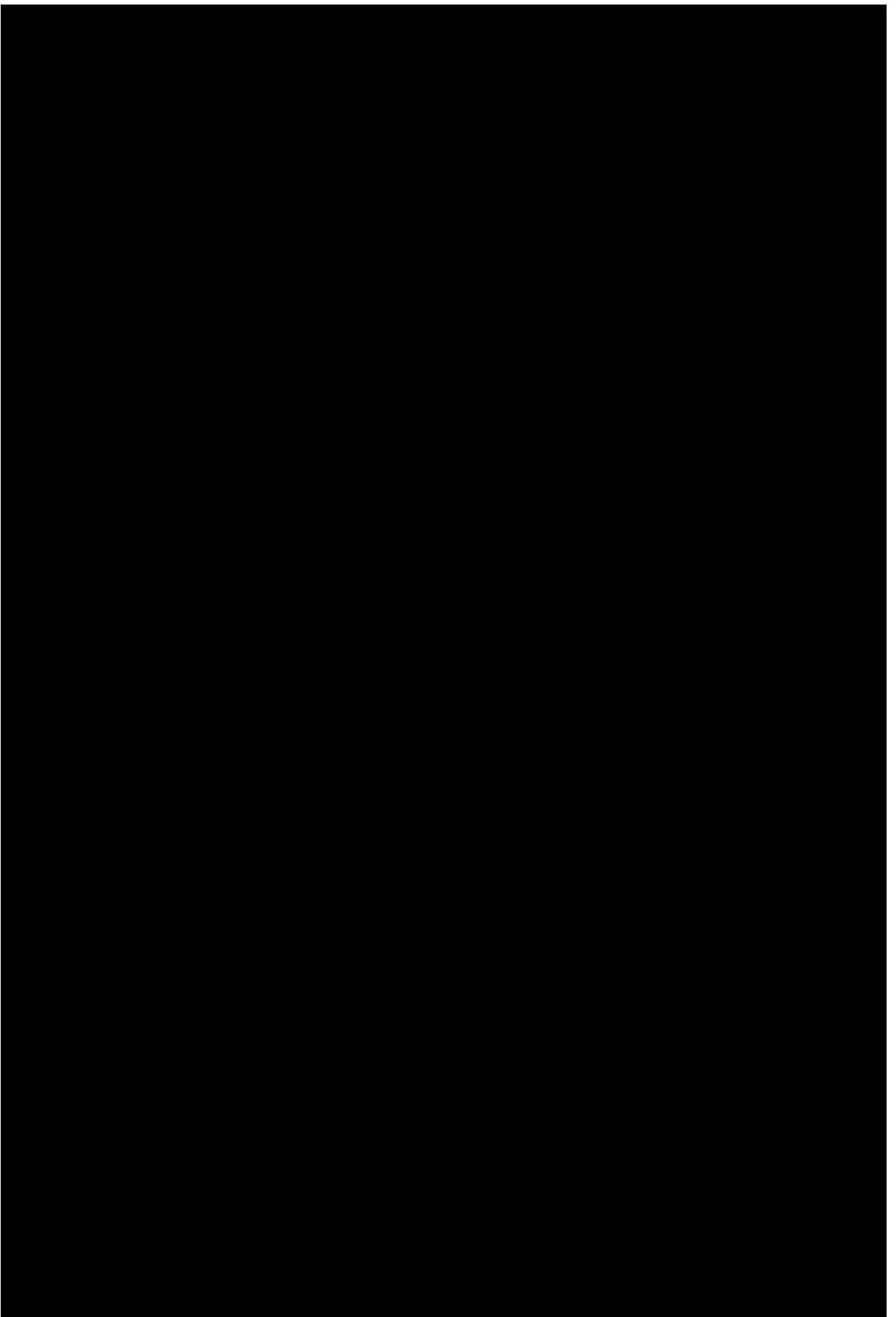




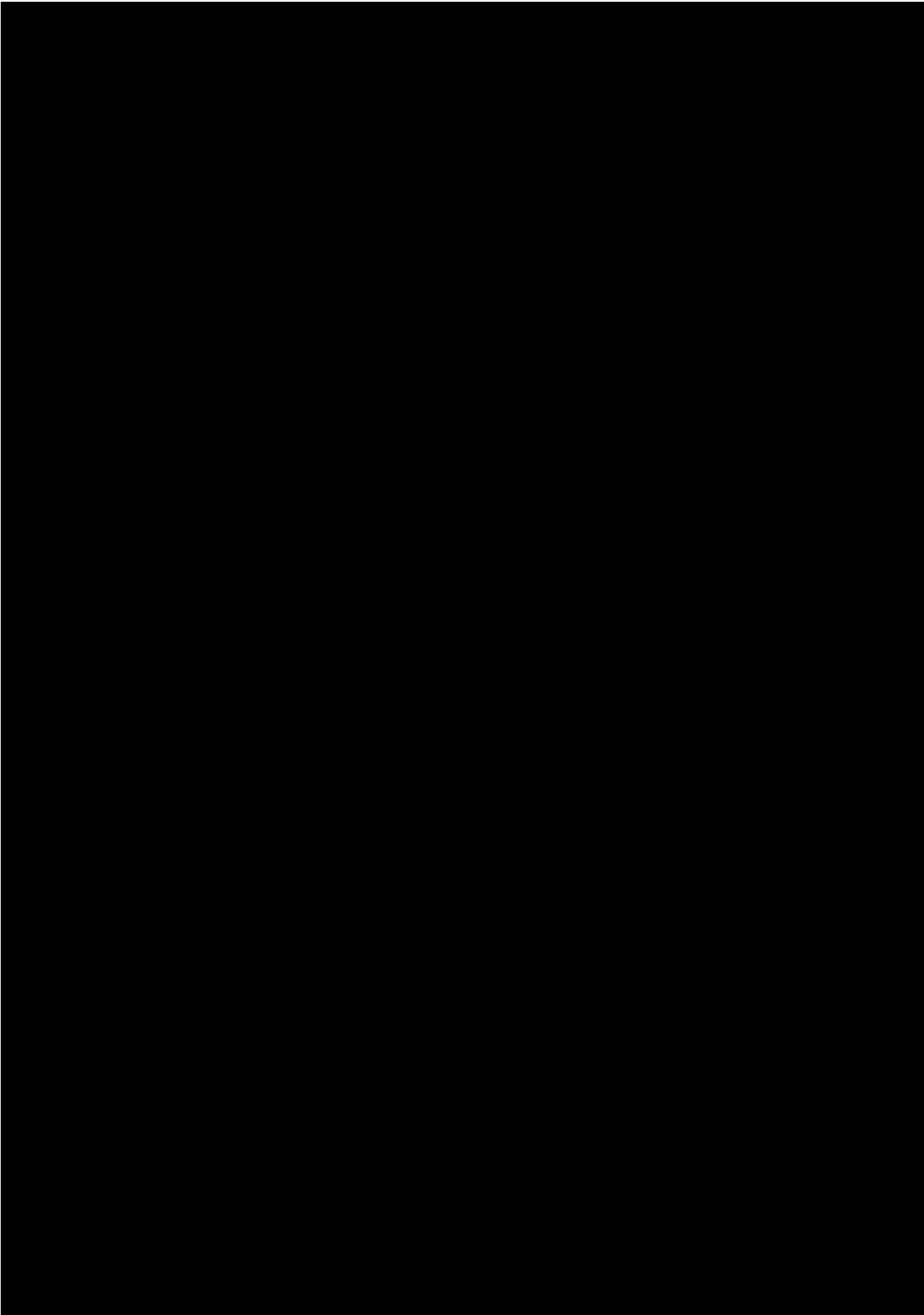


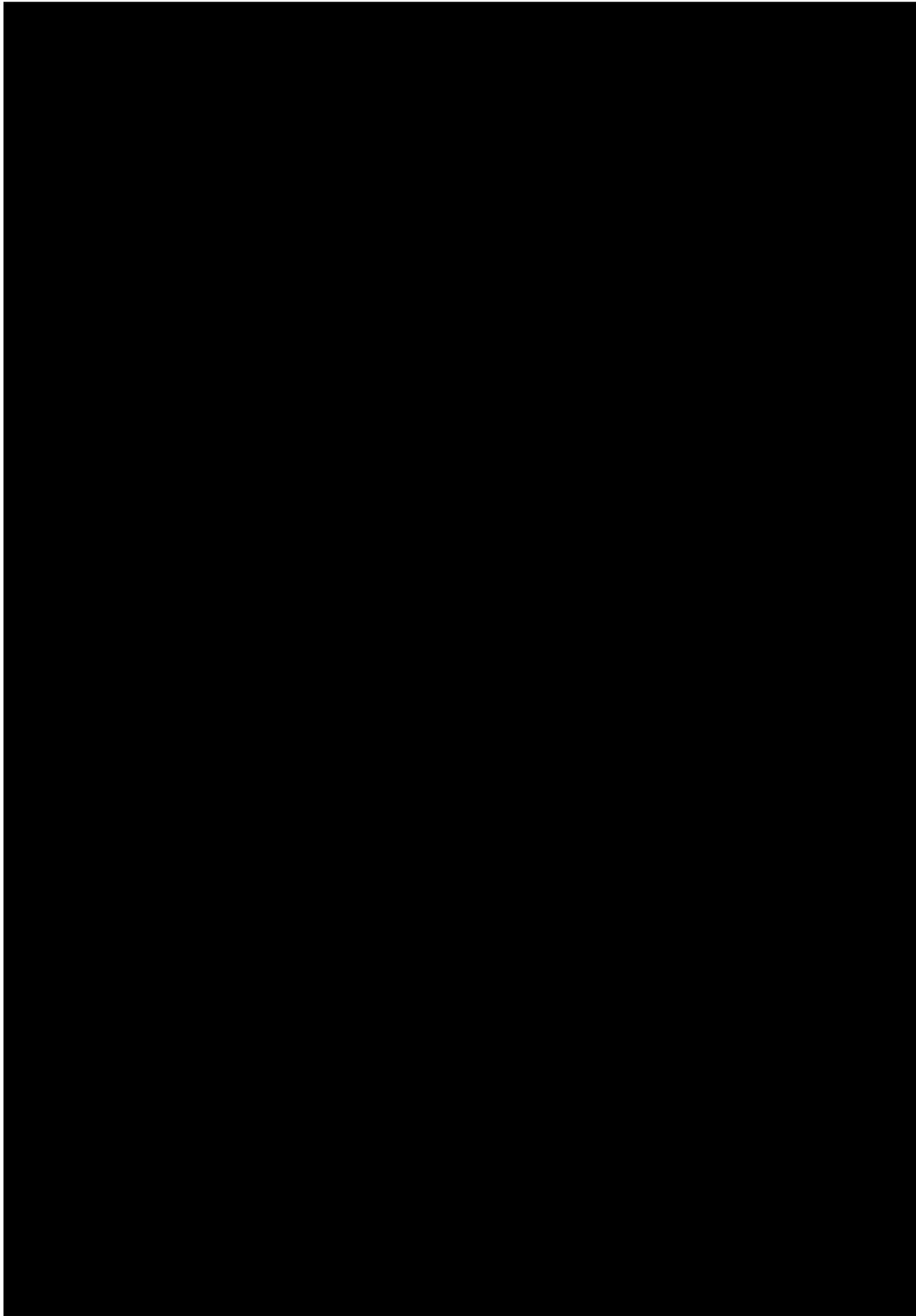


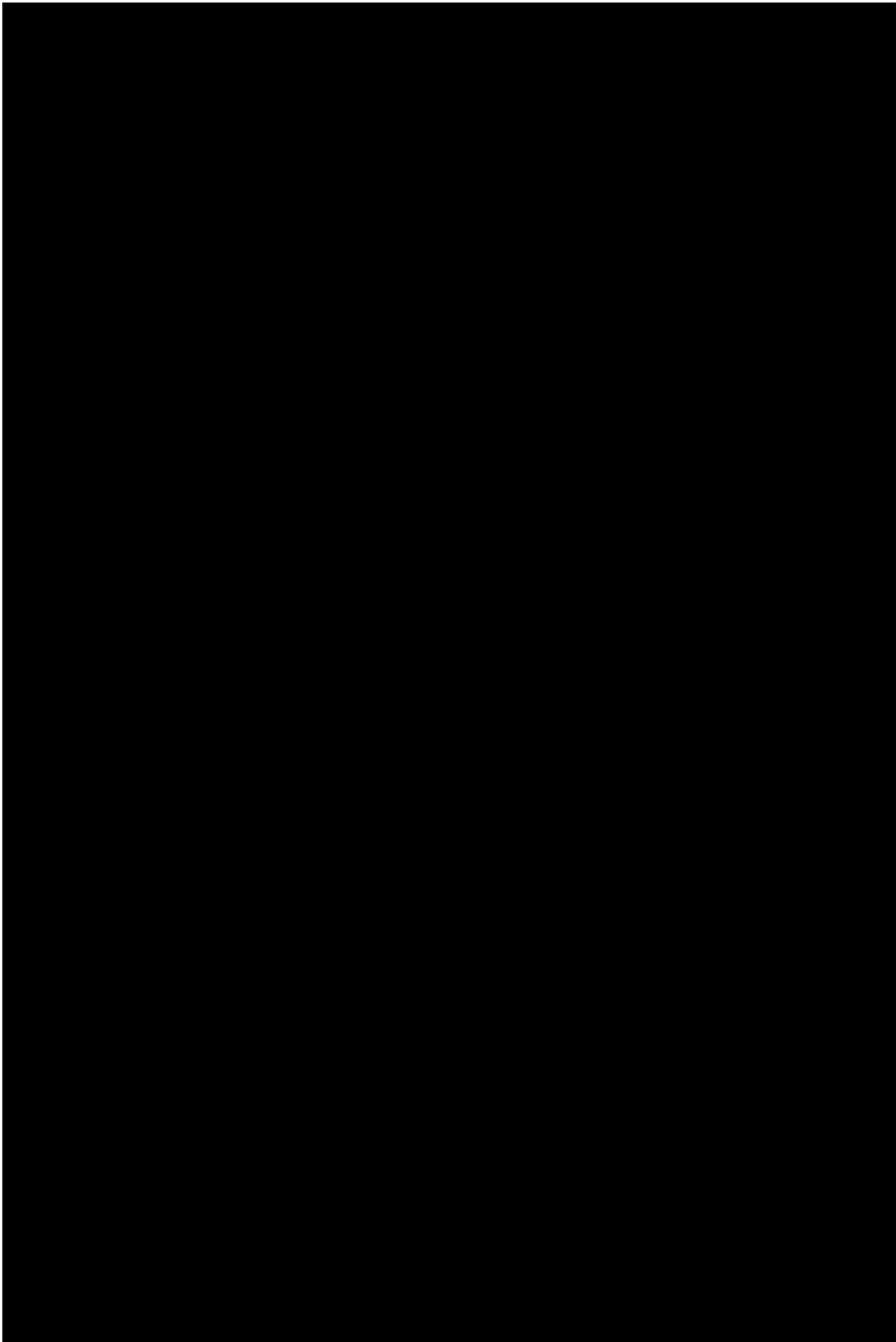


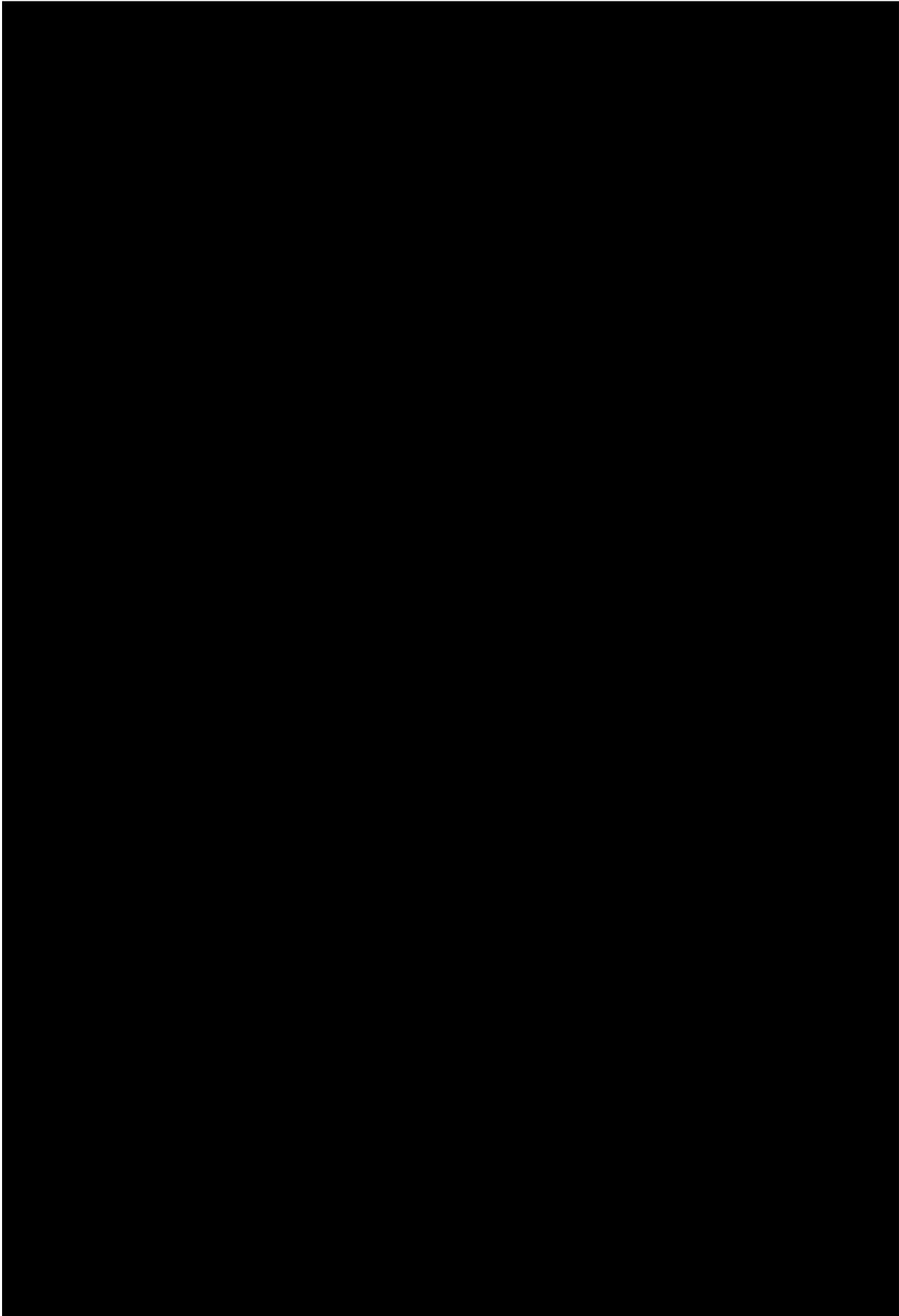


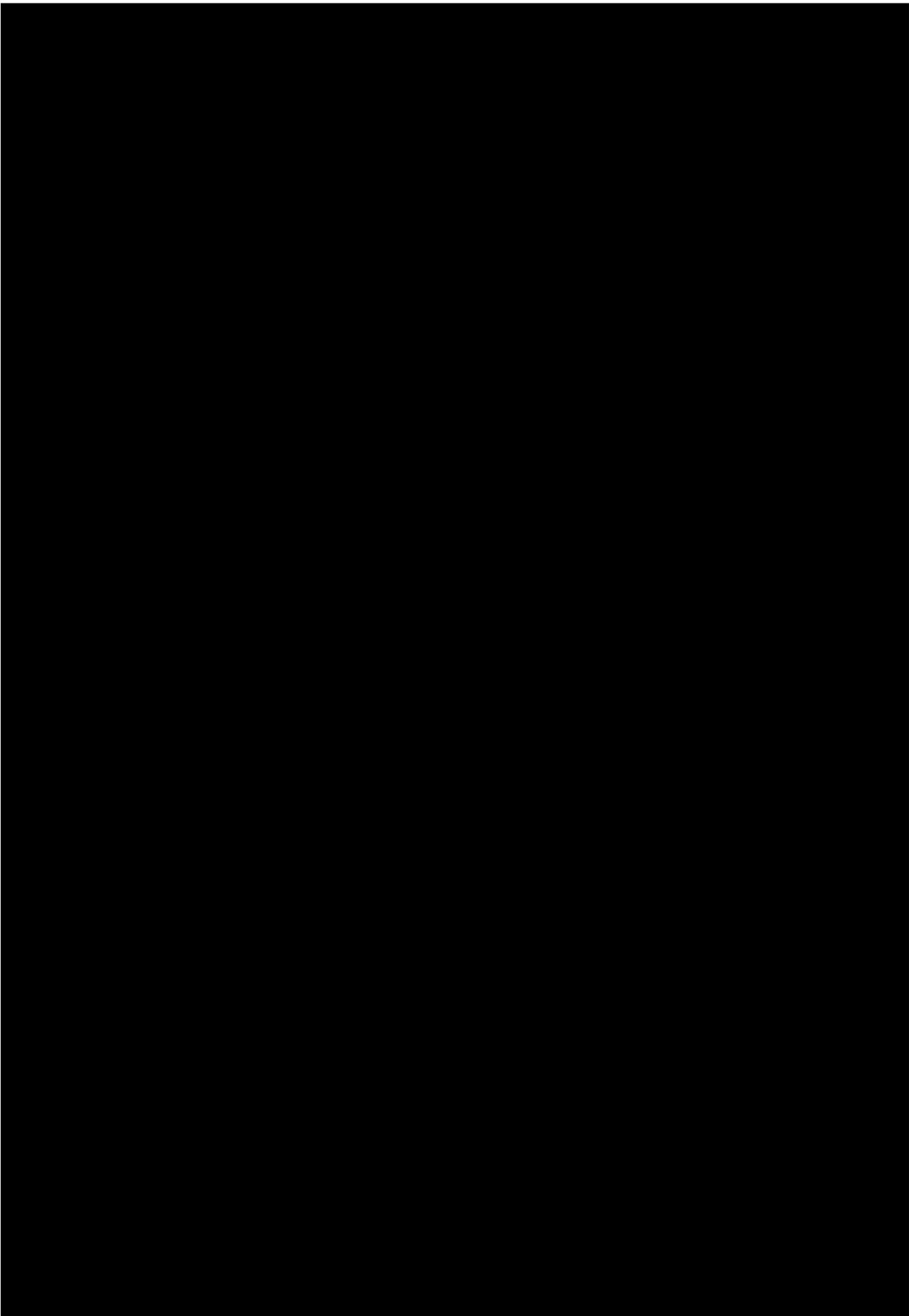


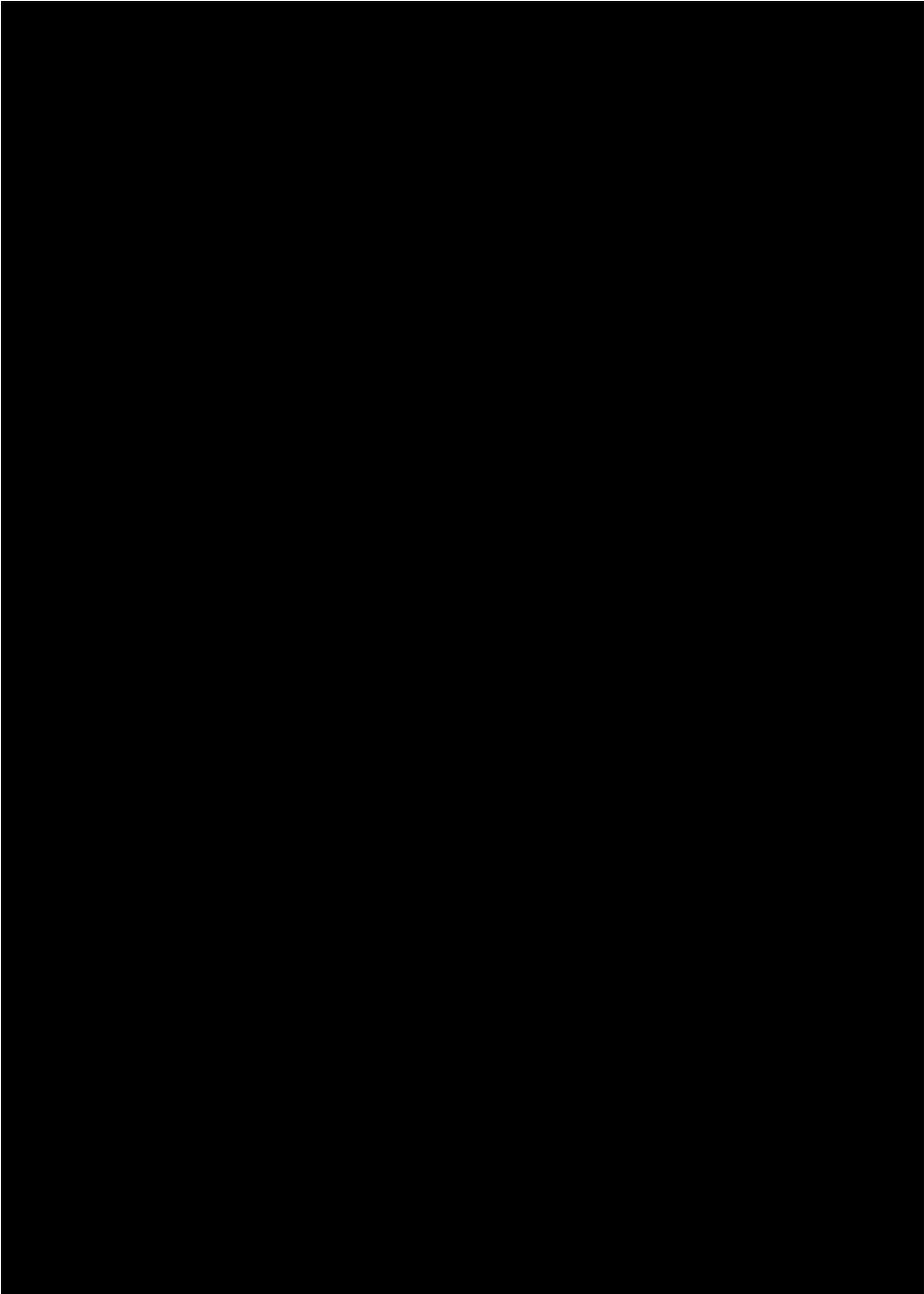


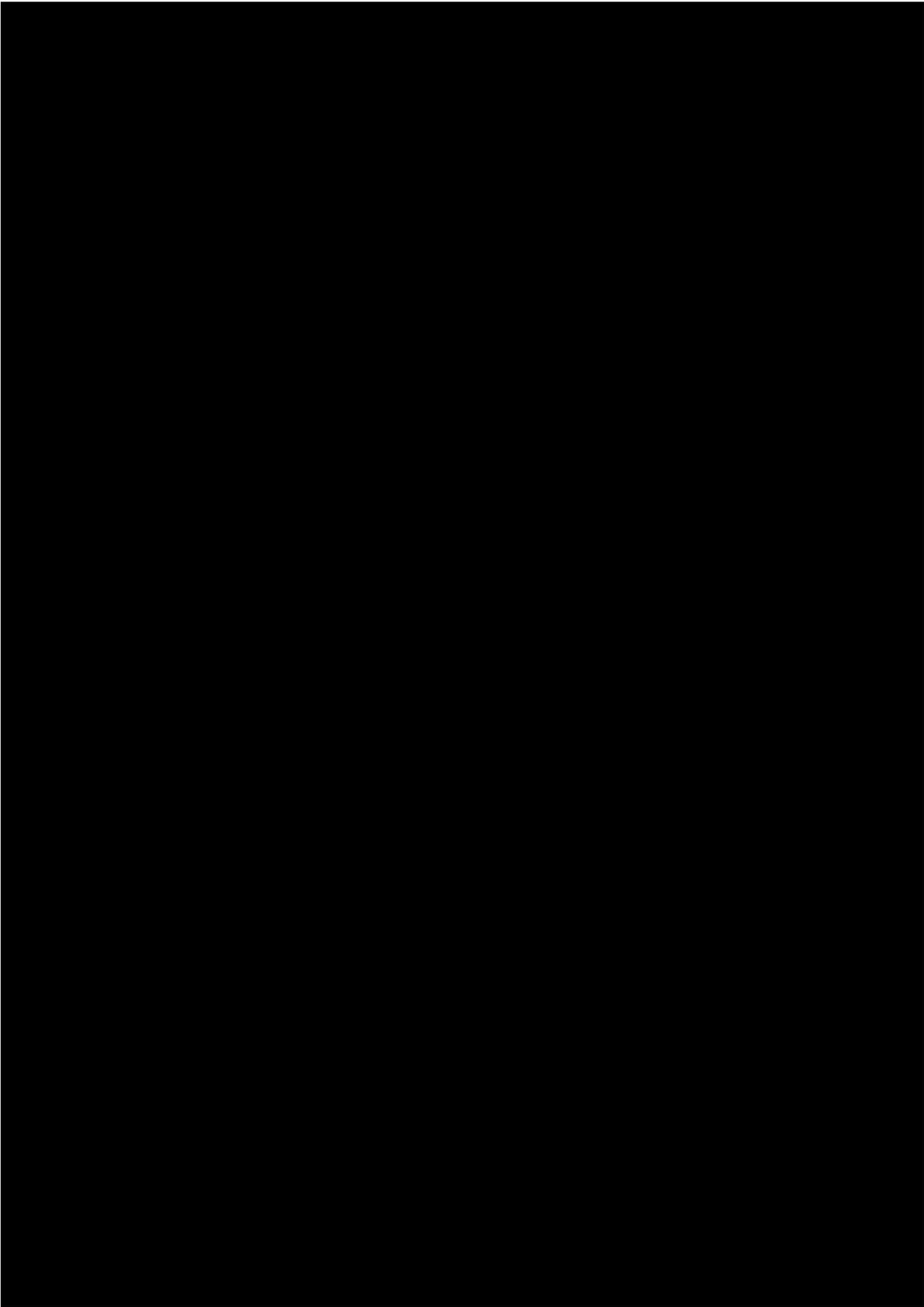








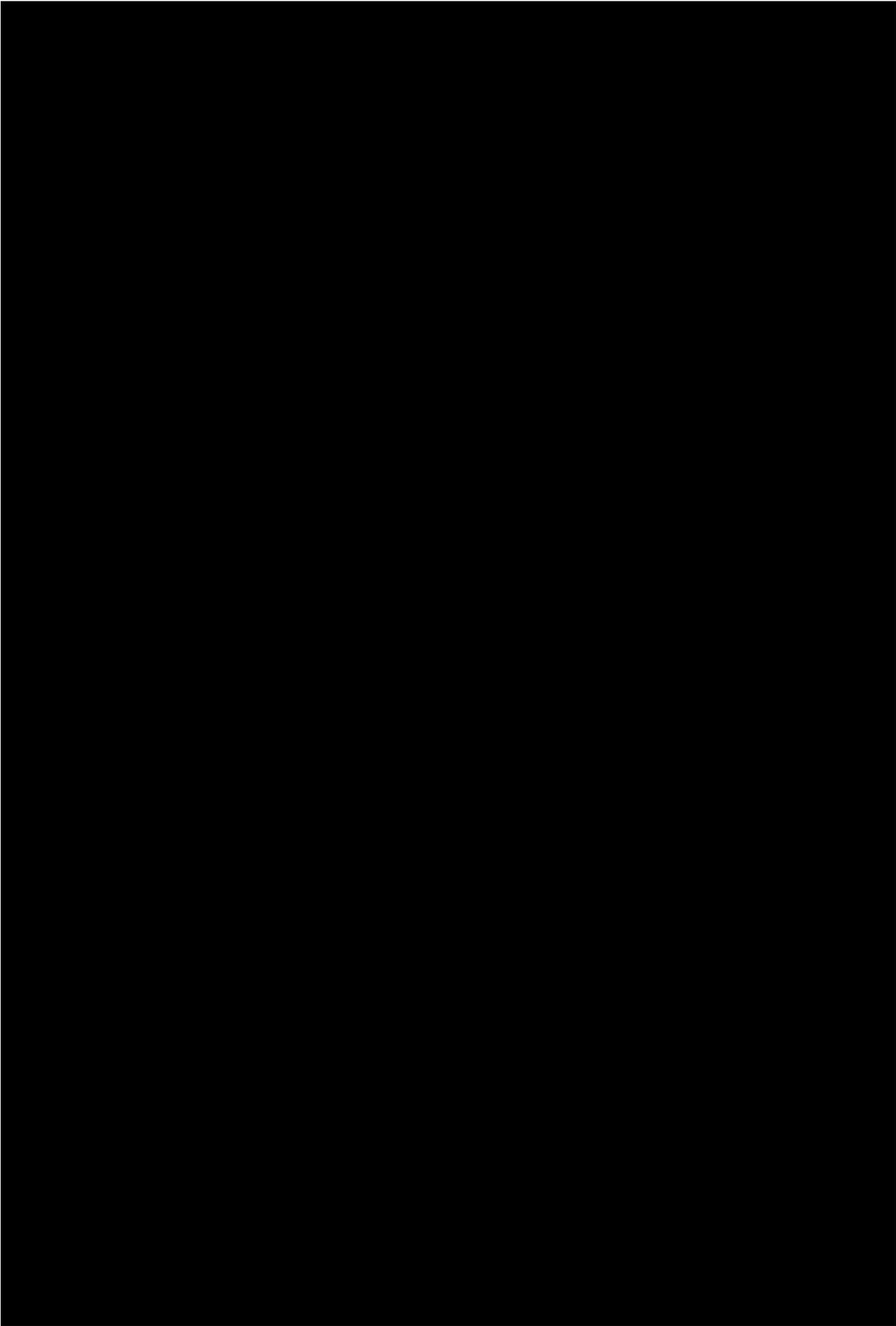


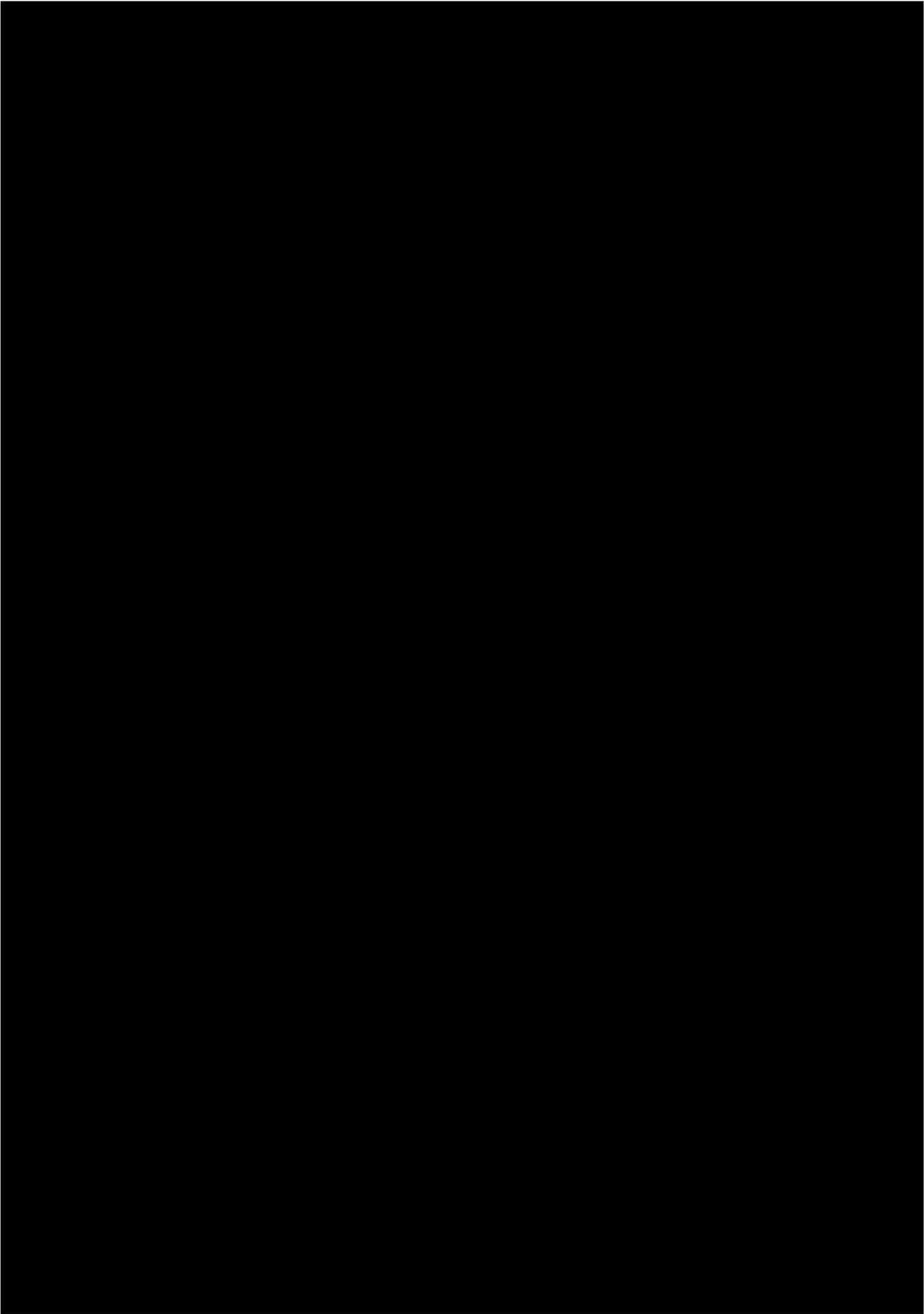


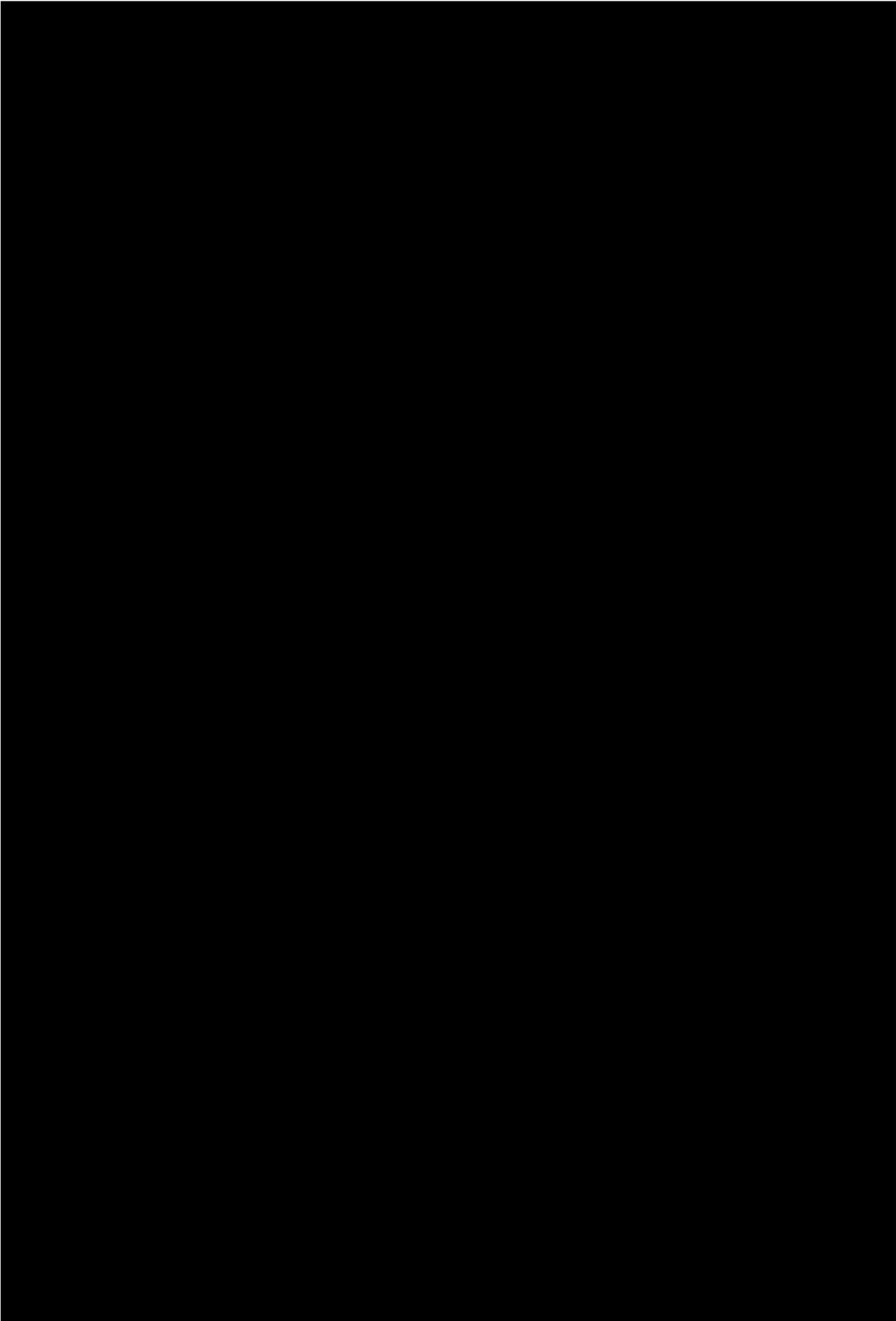


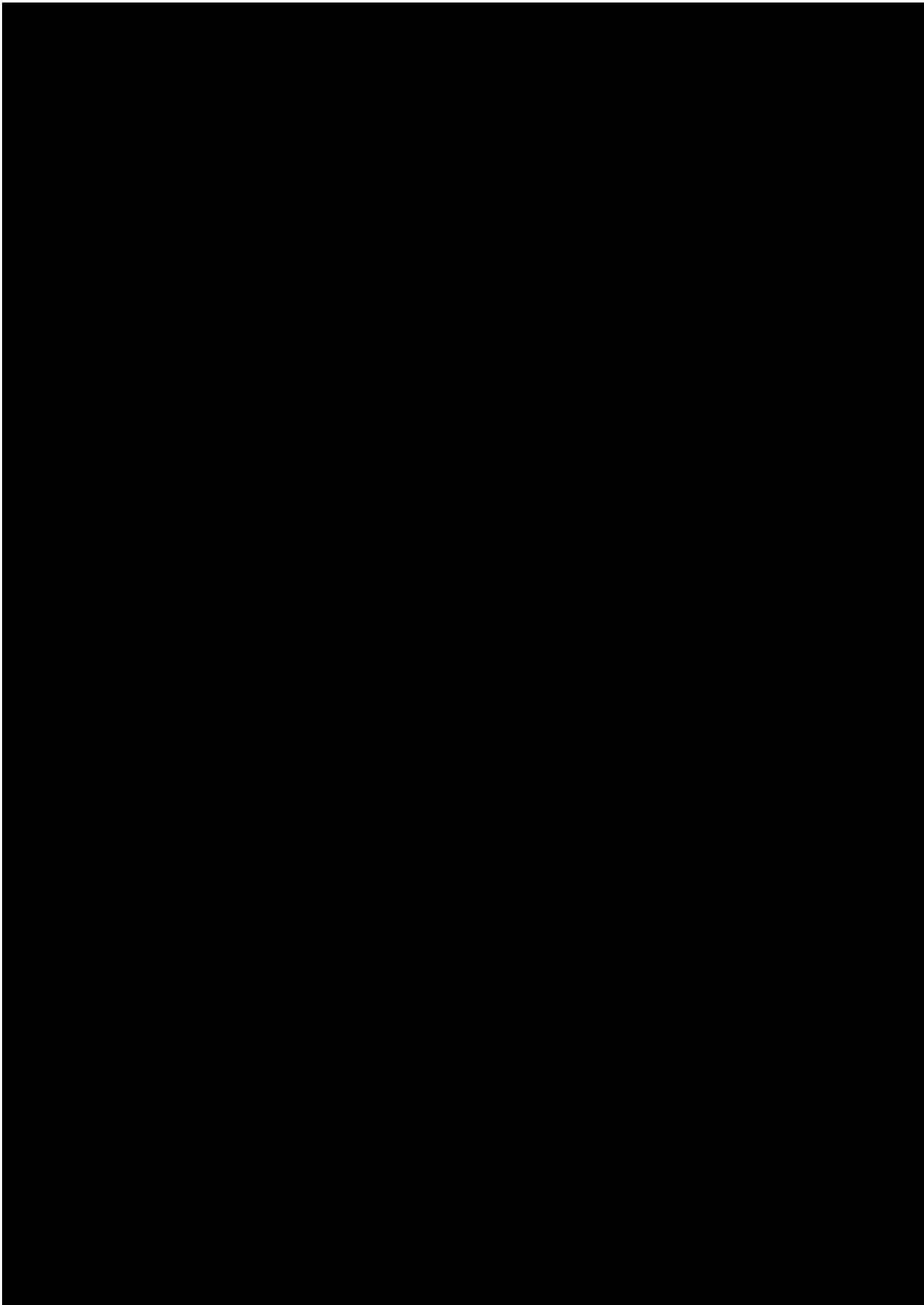


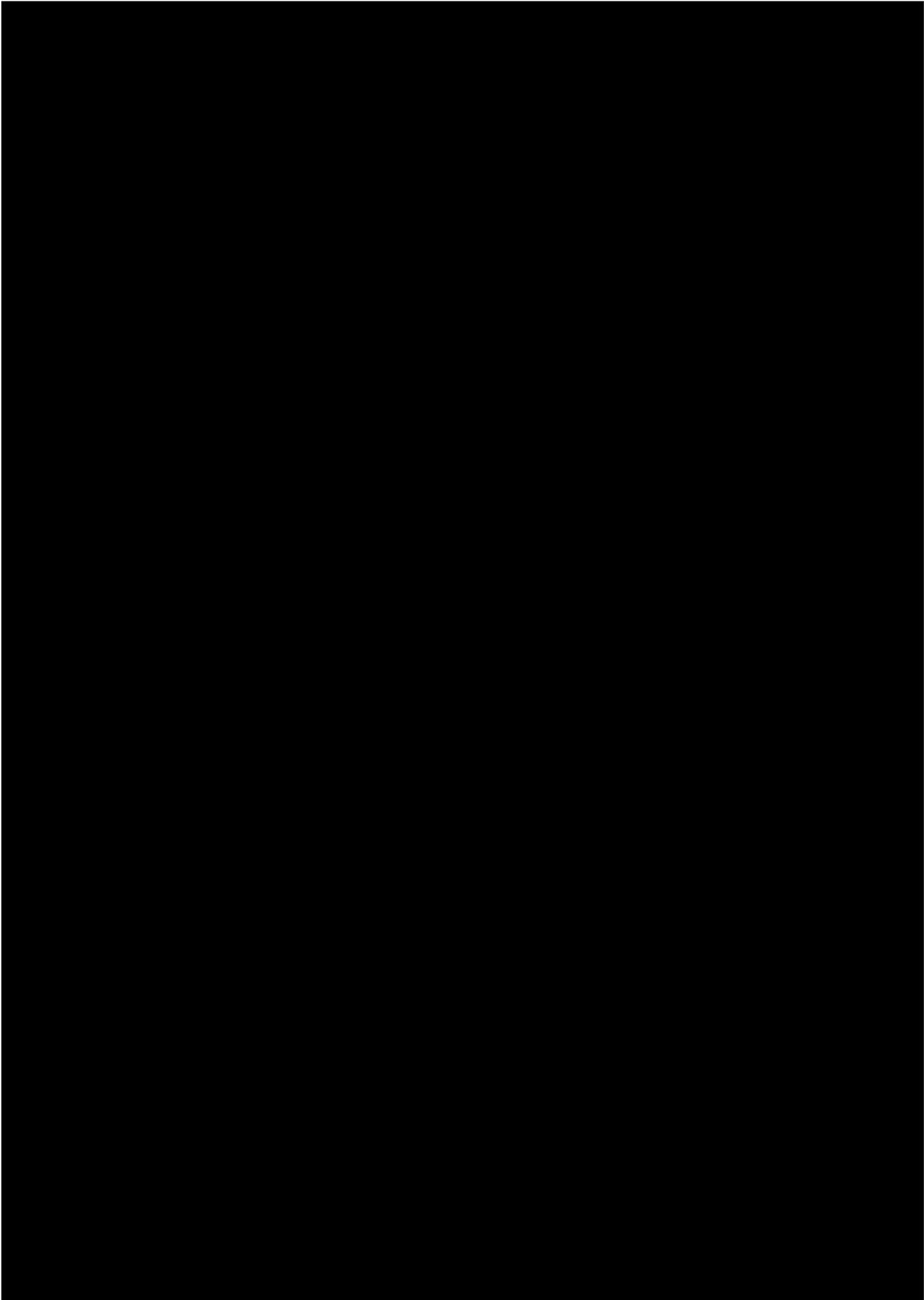




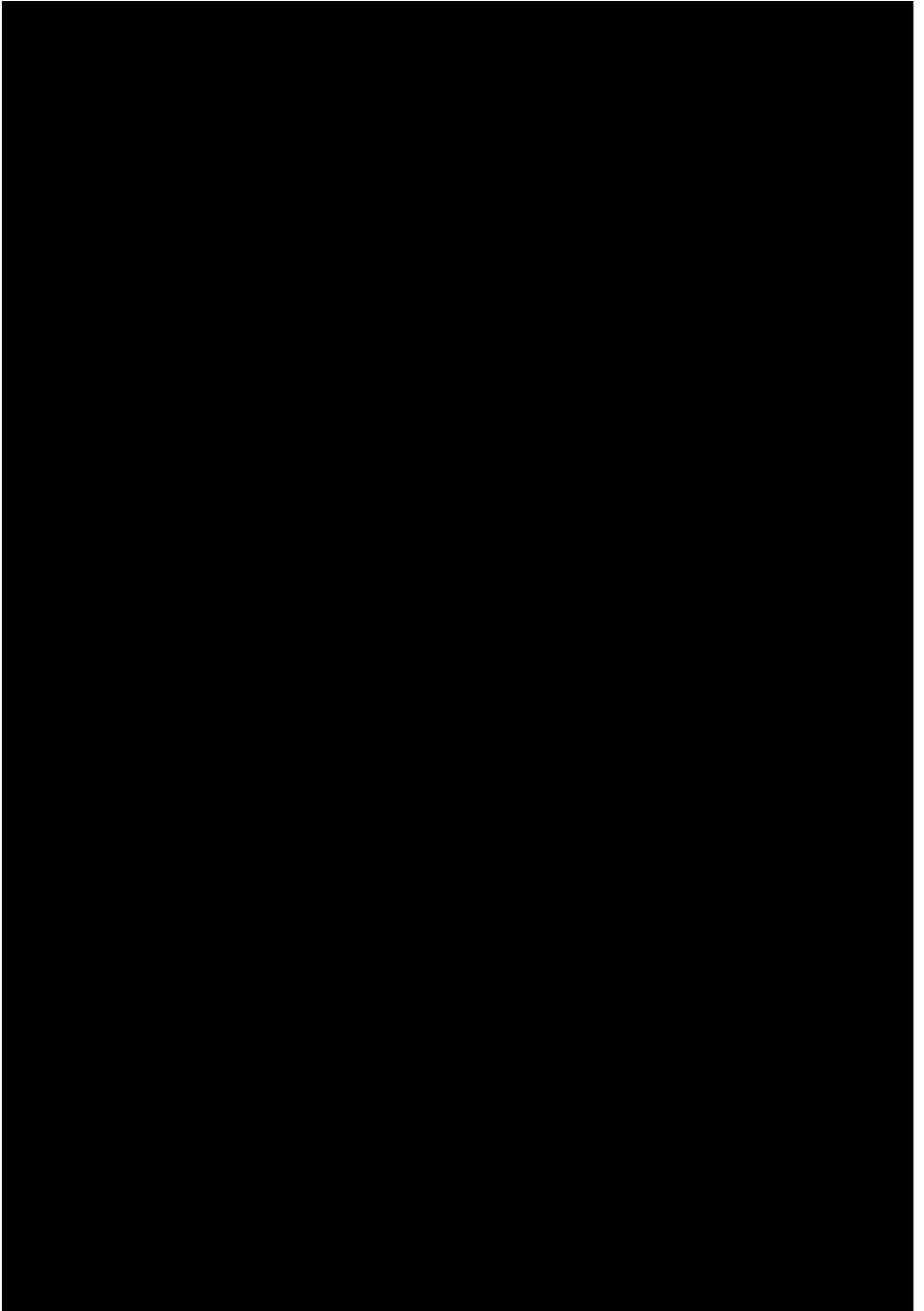




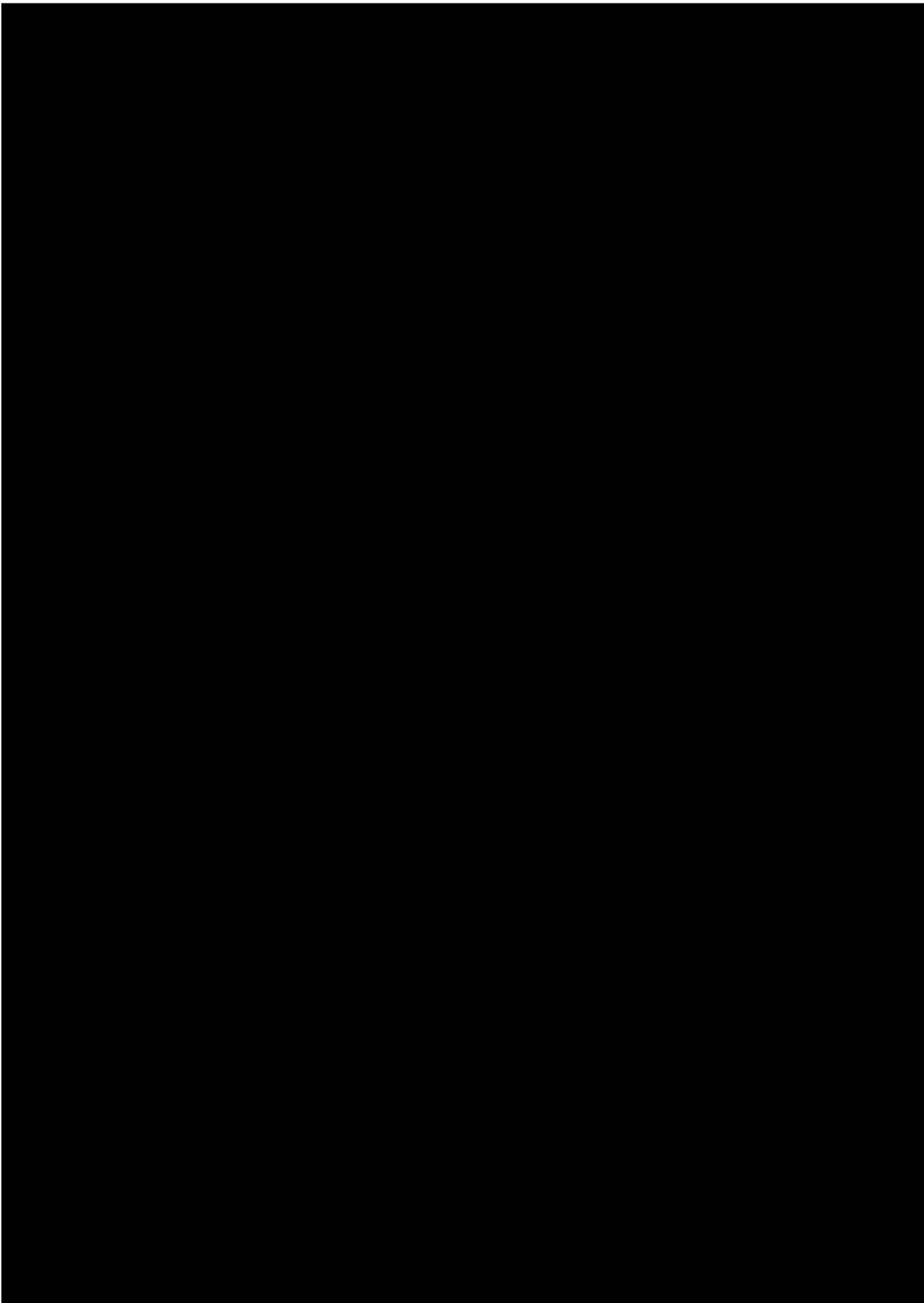














**Schedule 16**  
**Plans**  
**Part D**  
**Template Maintenance Plan**

**Schedule 16 – Plans**  
**Part D - Template Maintenance Plan**

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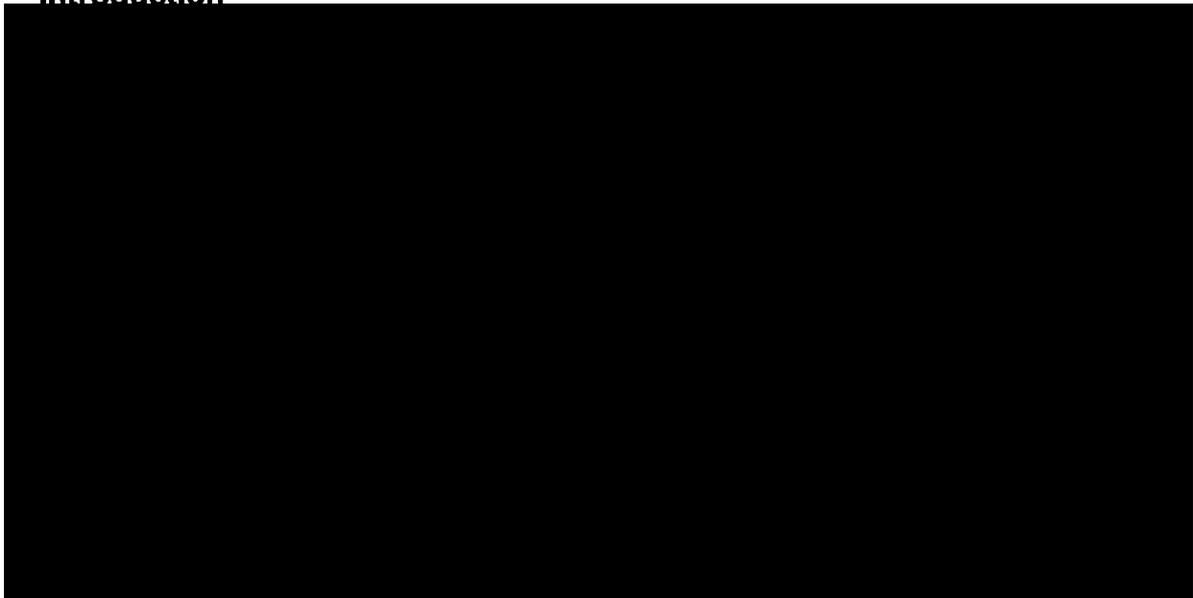
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**Schedule 16 – Plans**  
**Part D - Template Maintenance Plan**

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**1**

**Introduction**



Schedule 16 – Plans  
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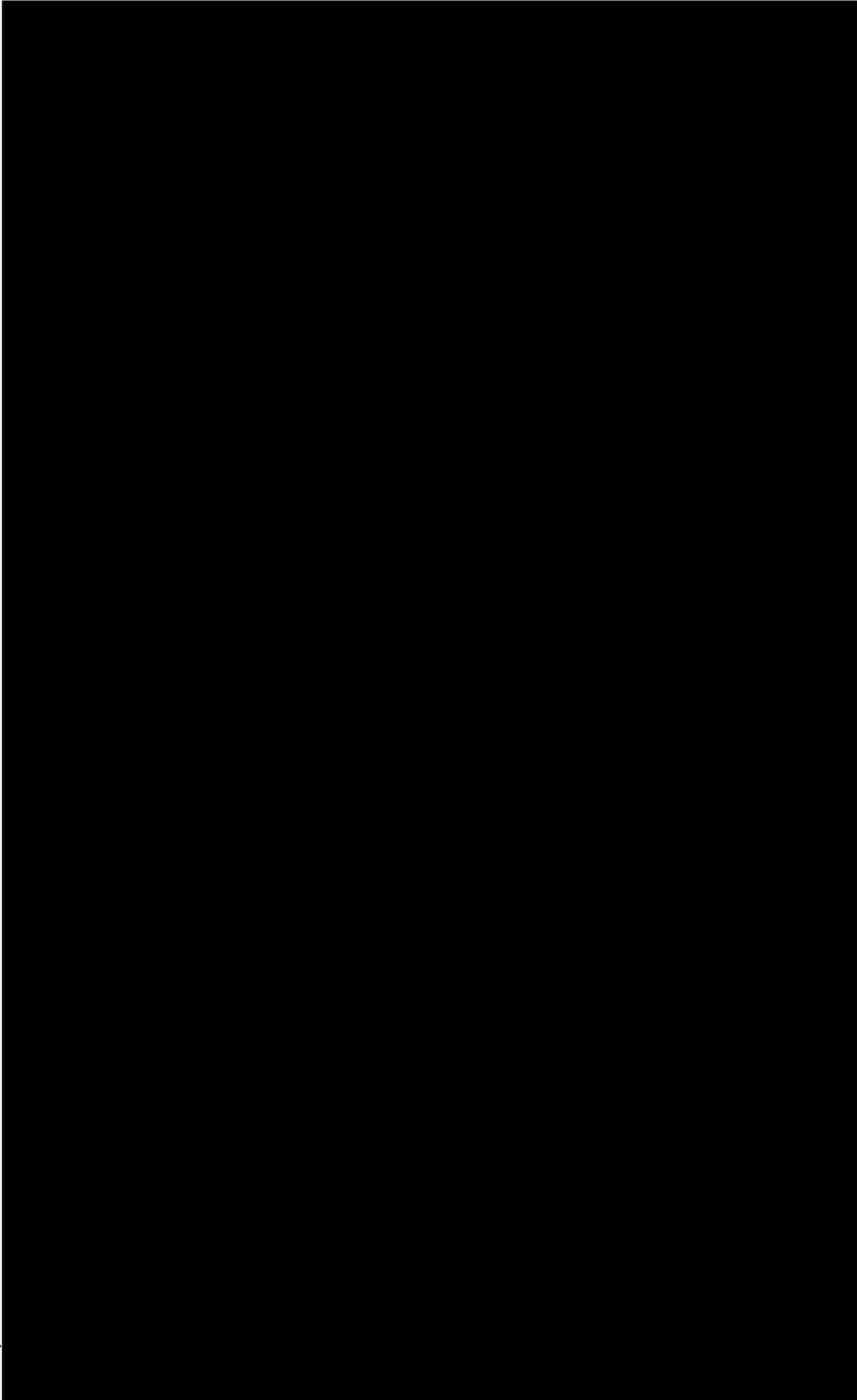
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**Schedule 16 – Plans**  
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**Schedule 16 – Plans**  
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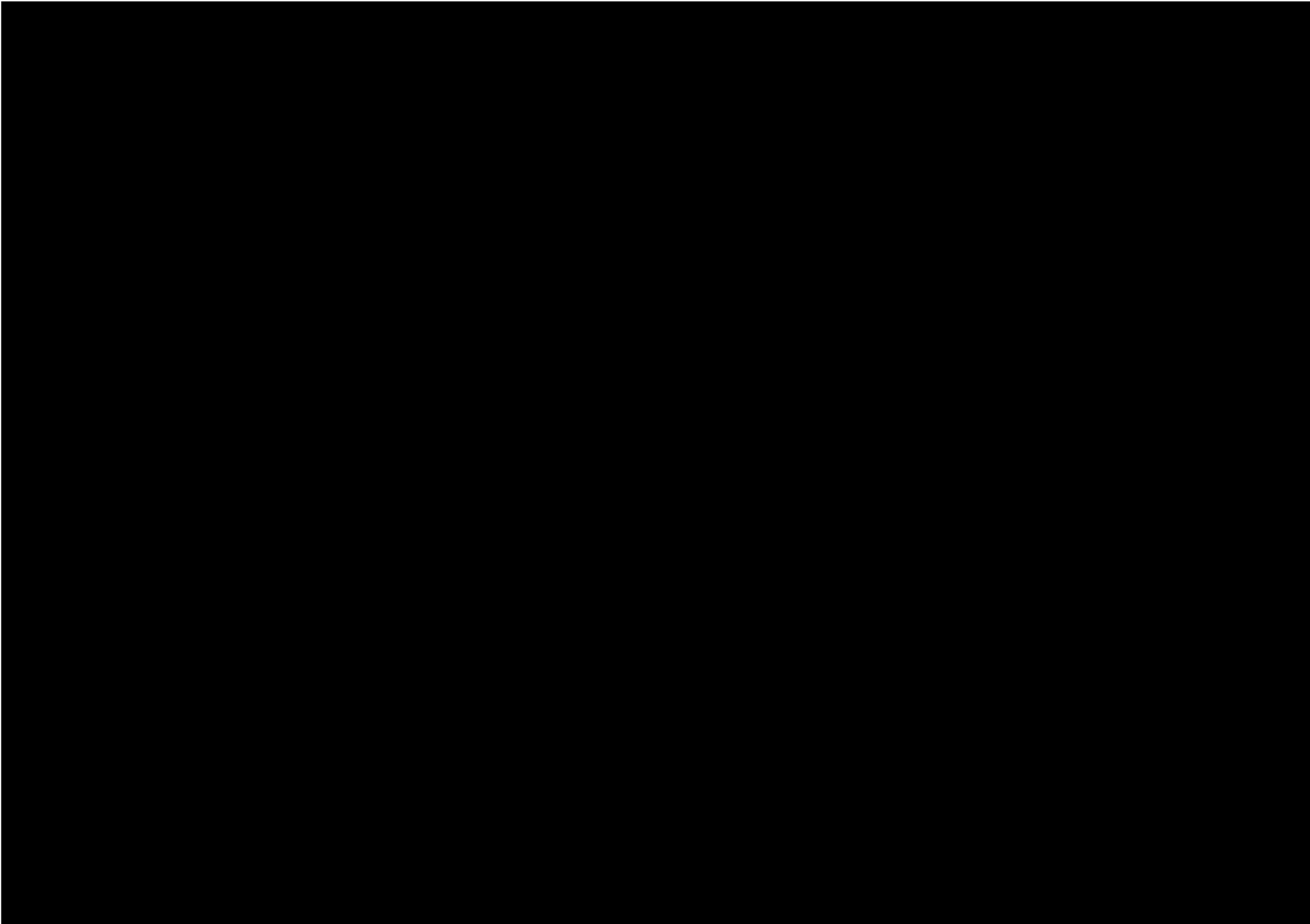
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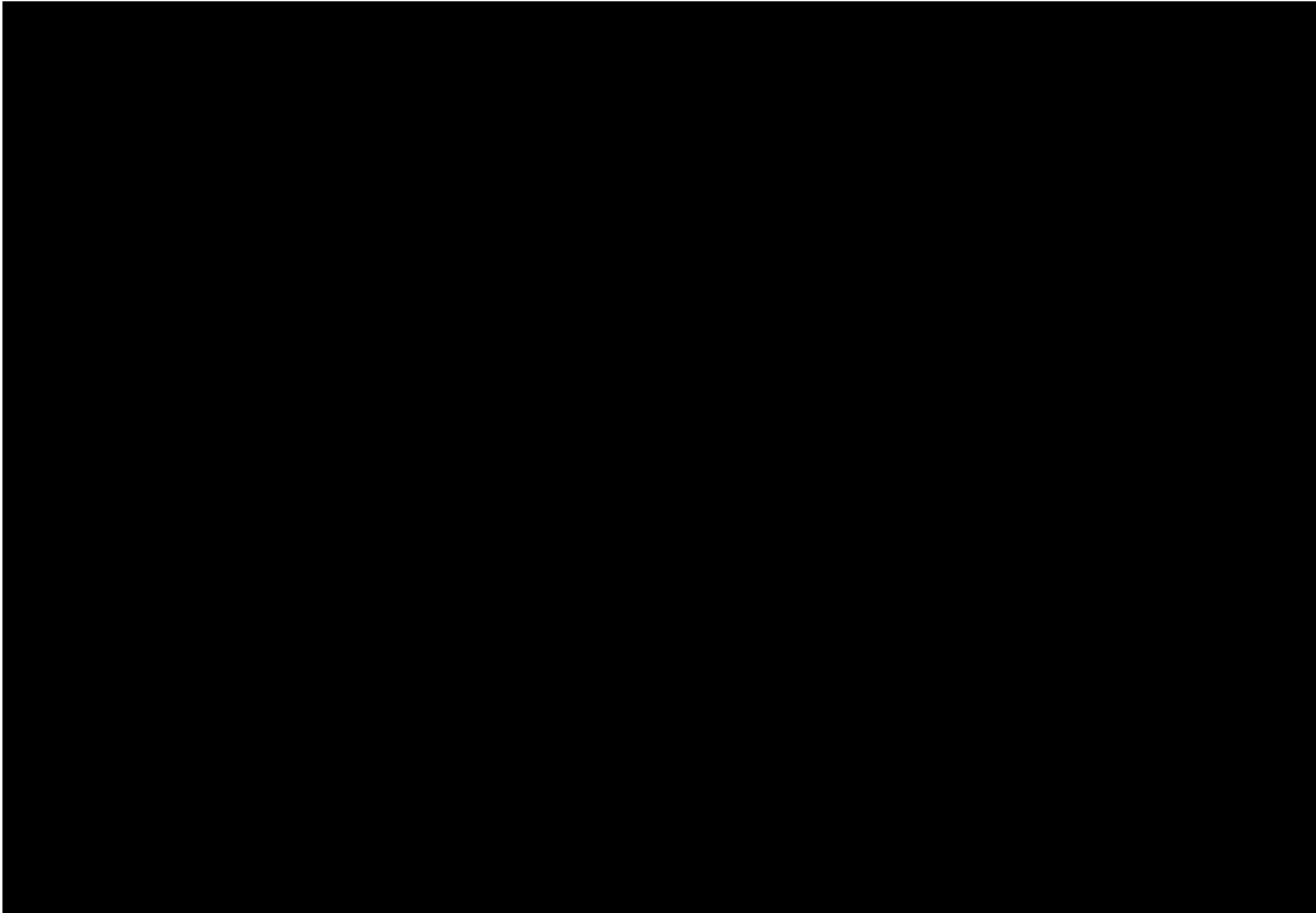


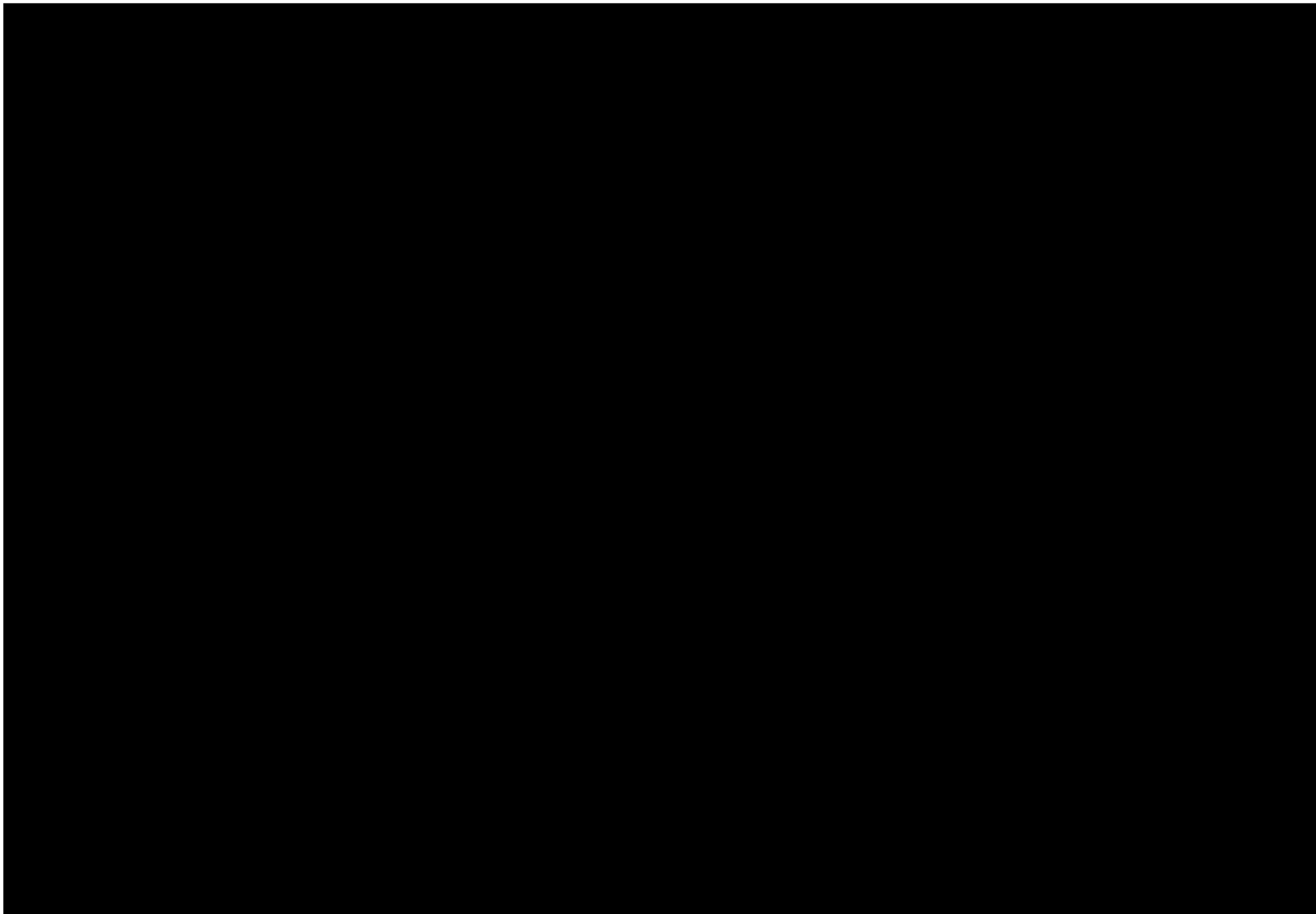
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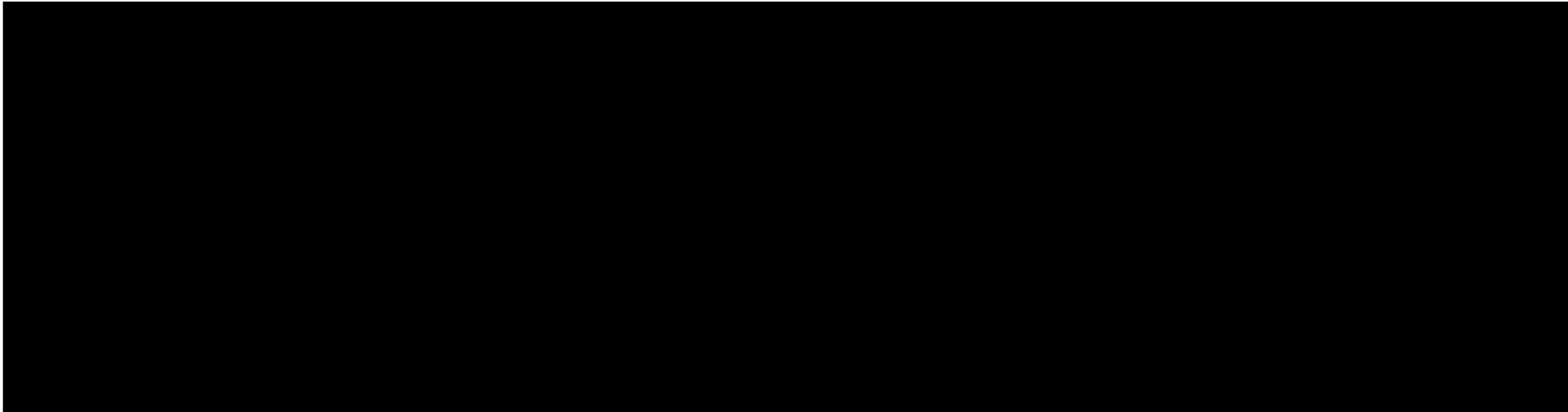
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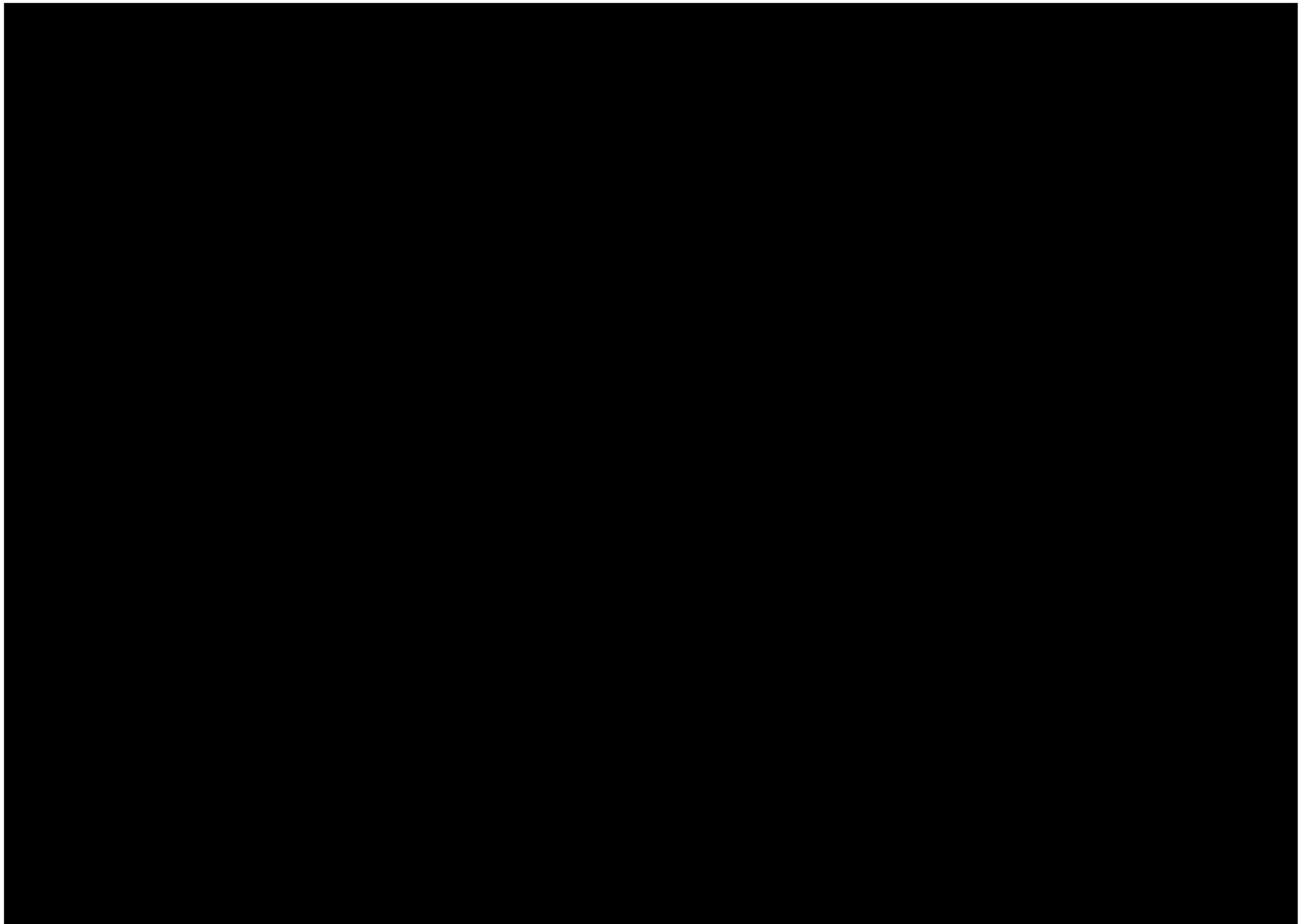
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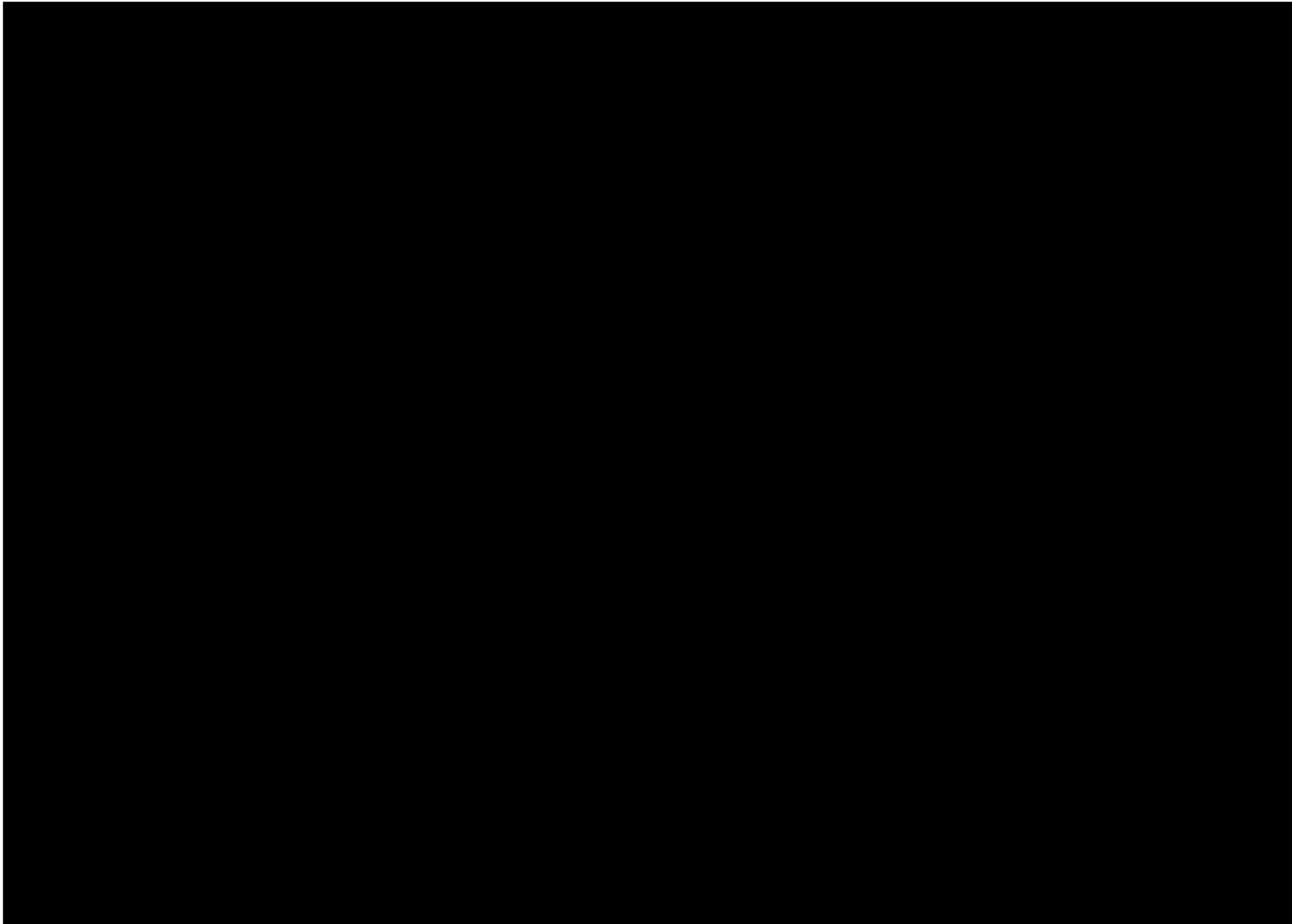


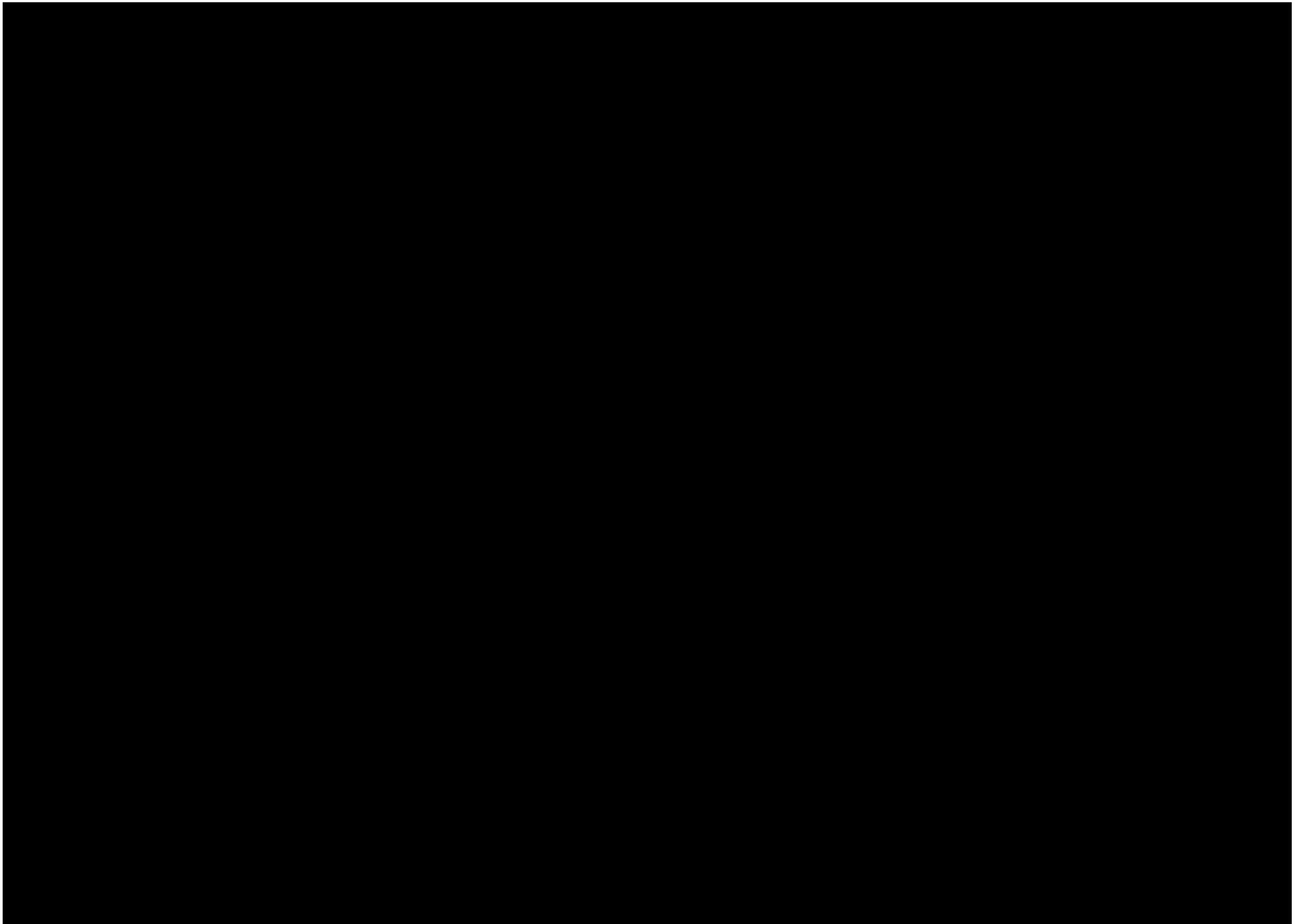


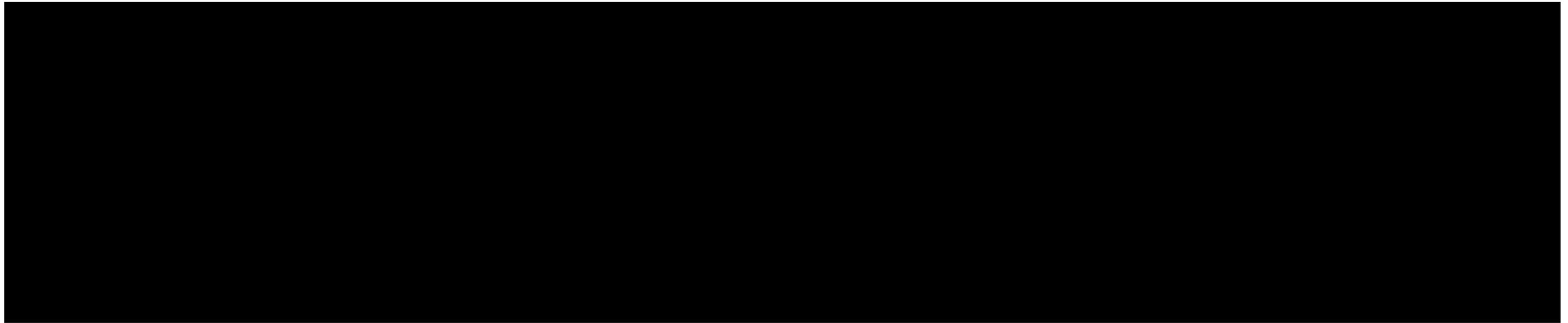


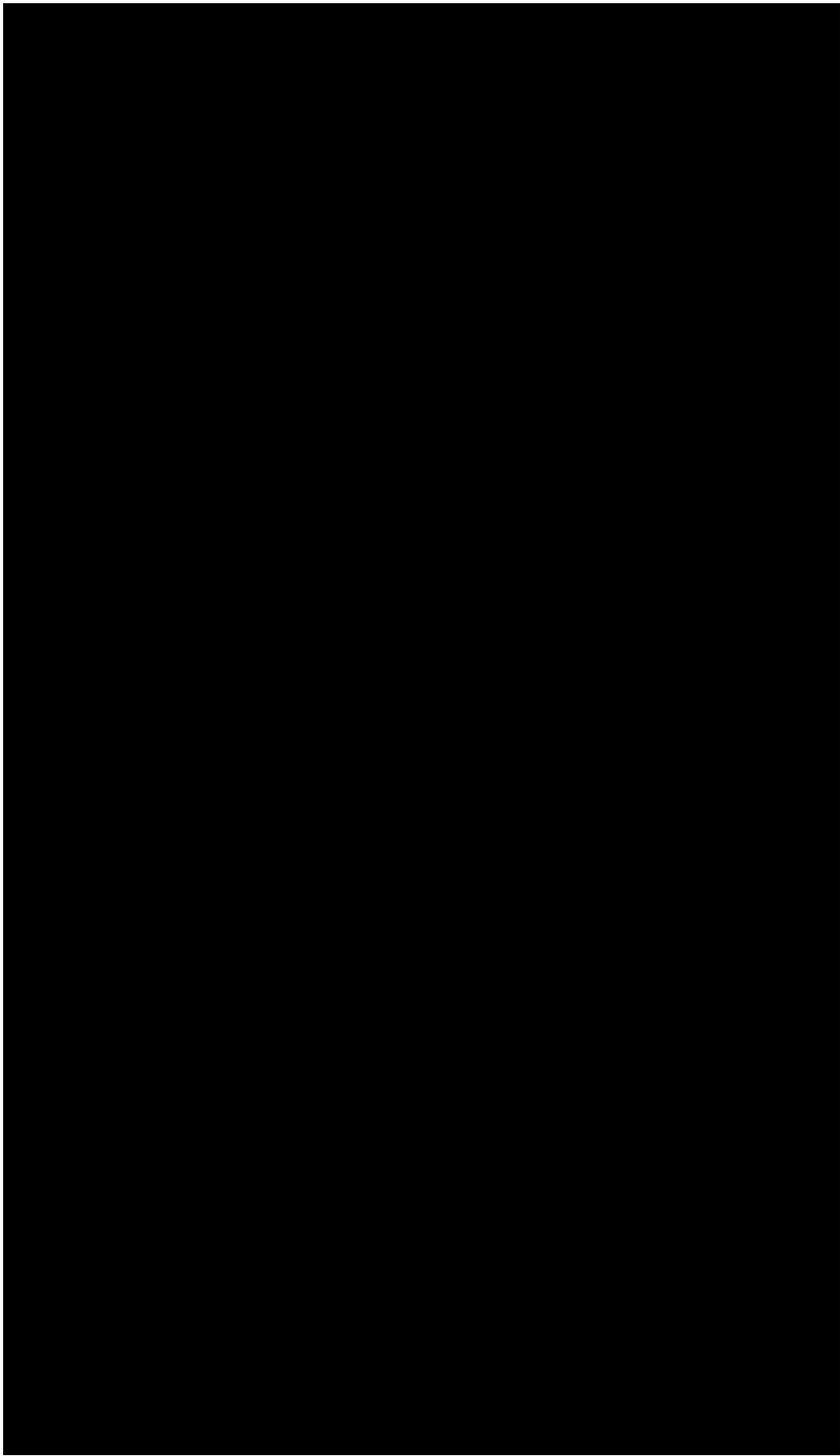


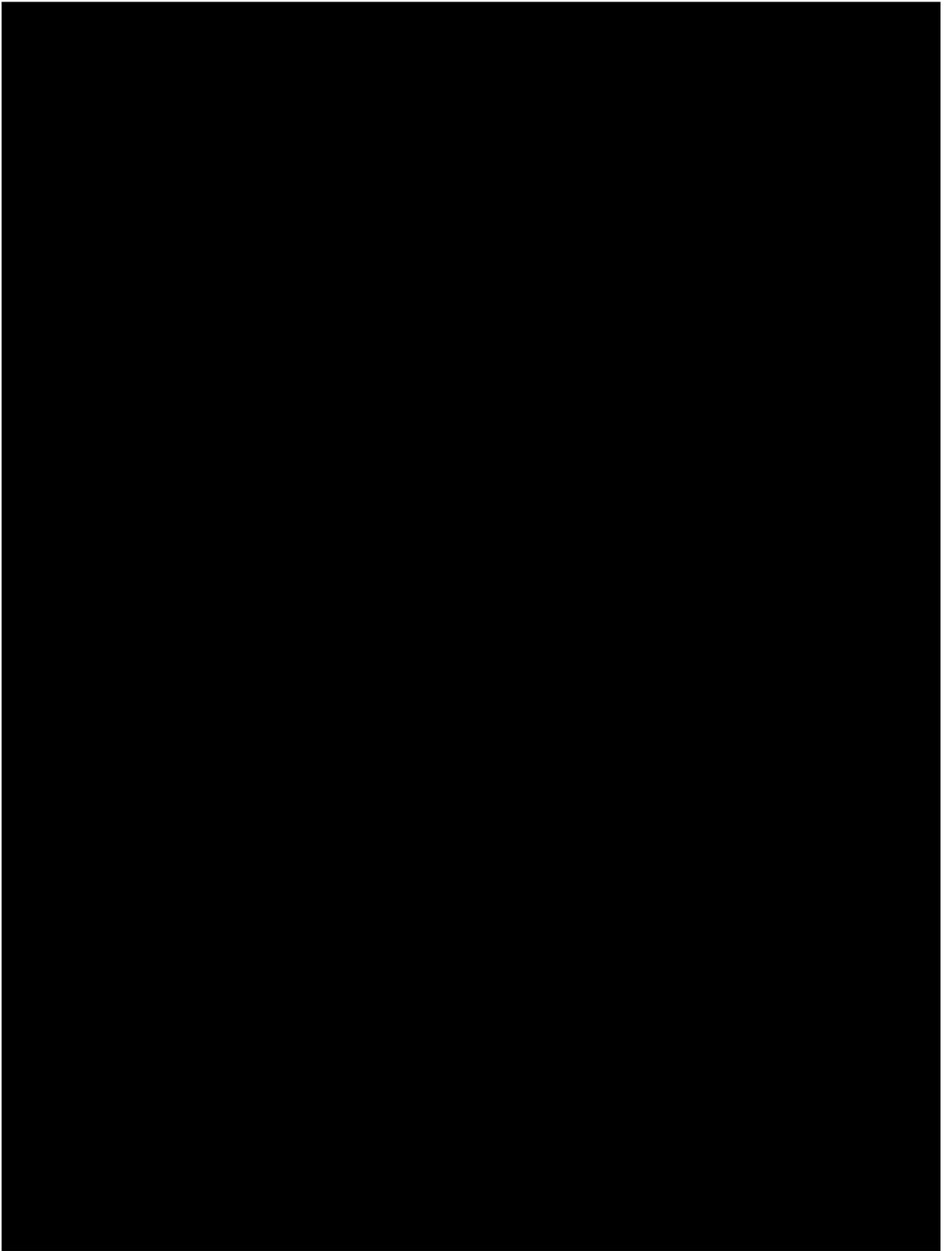


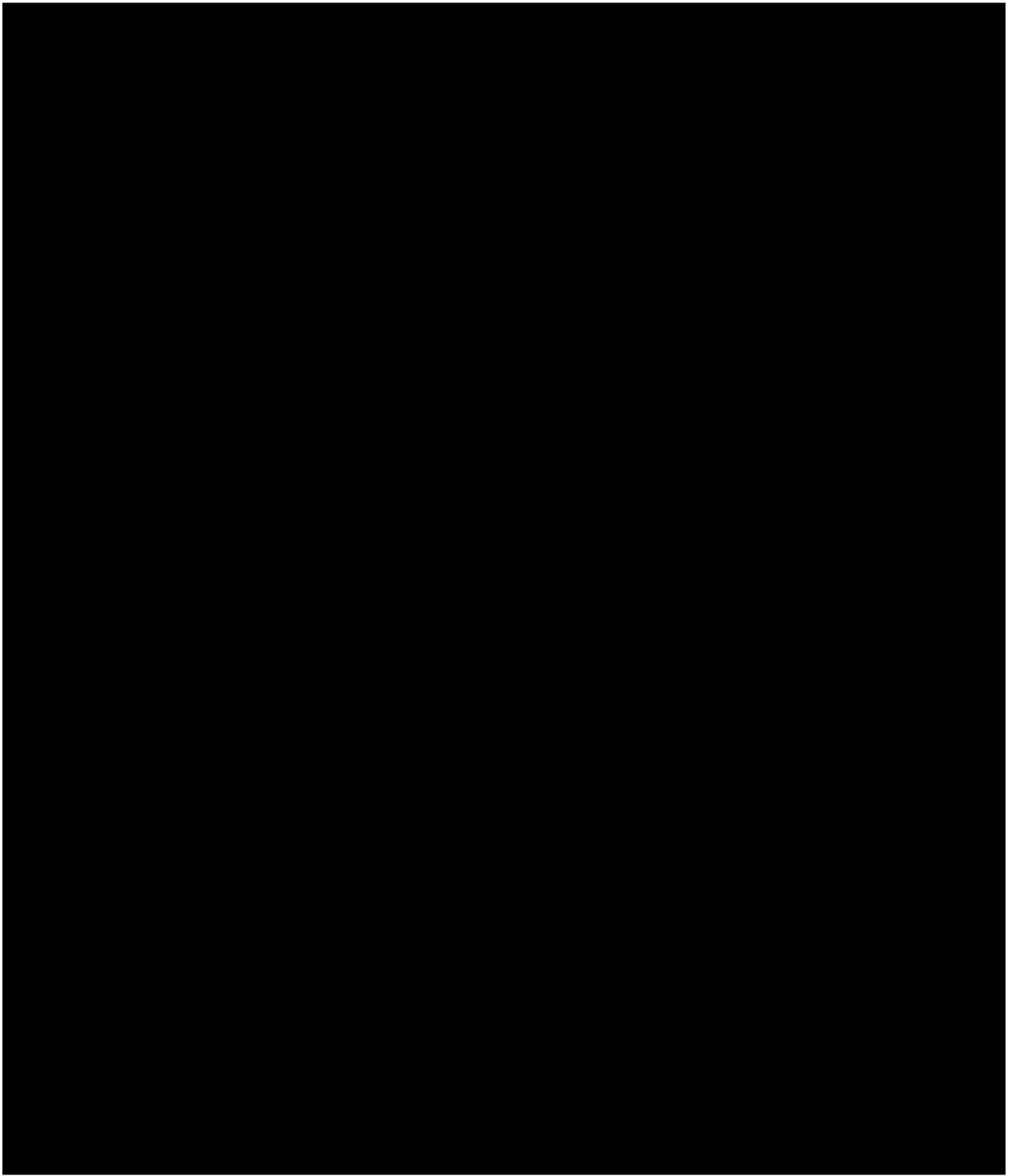


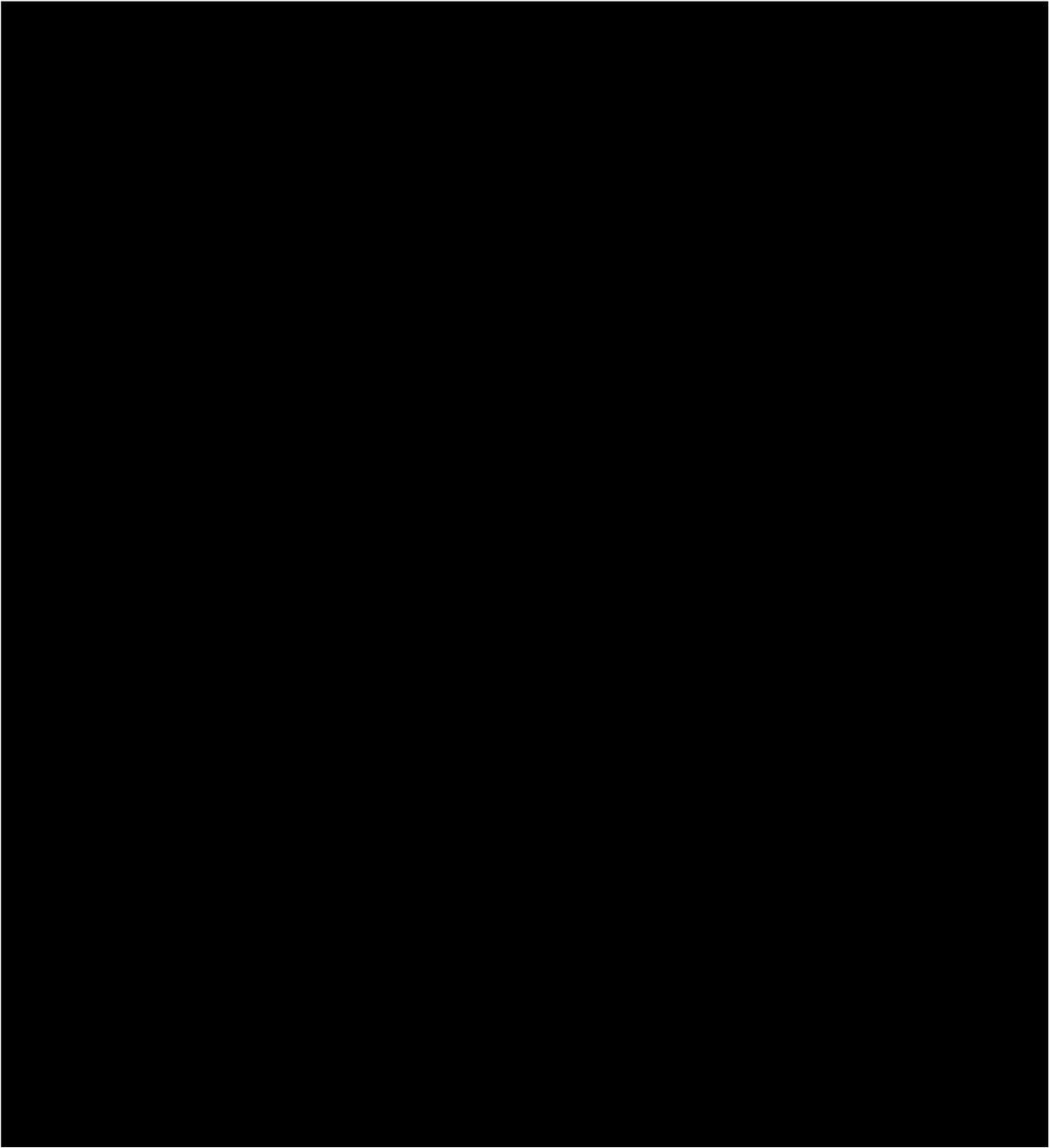


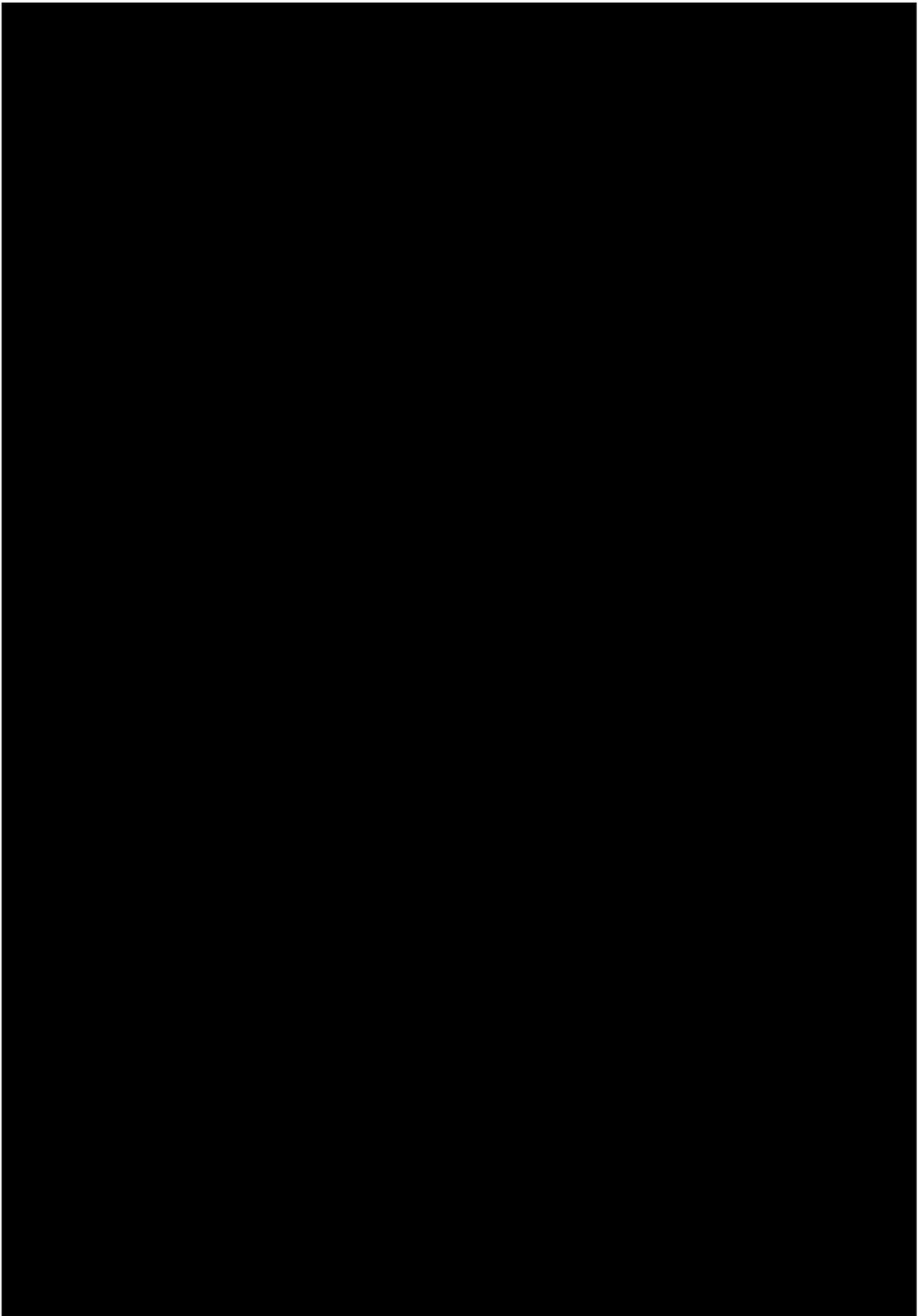


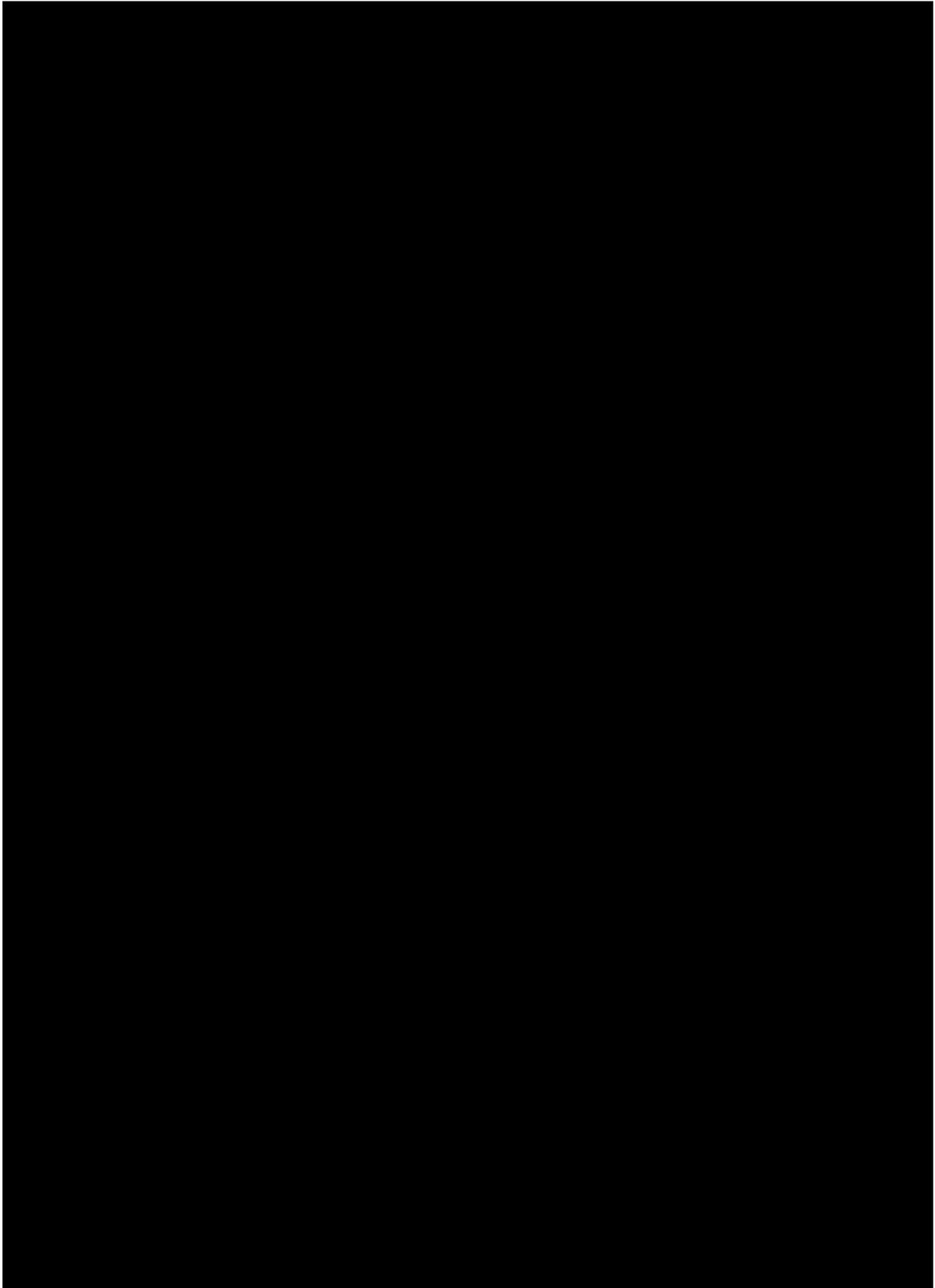


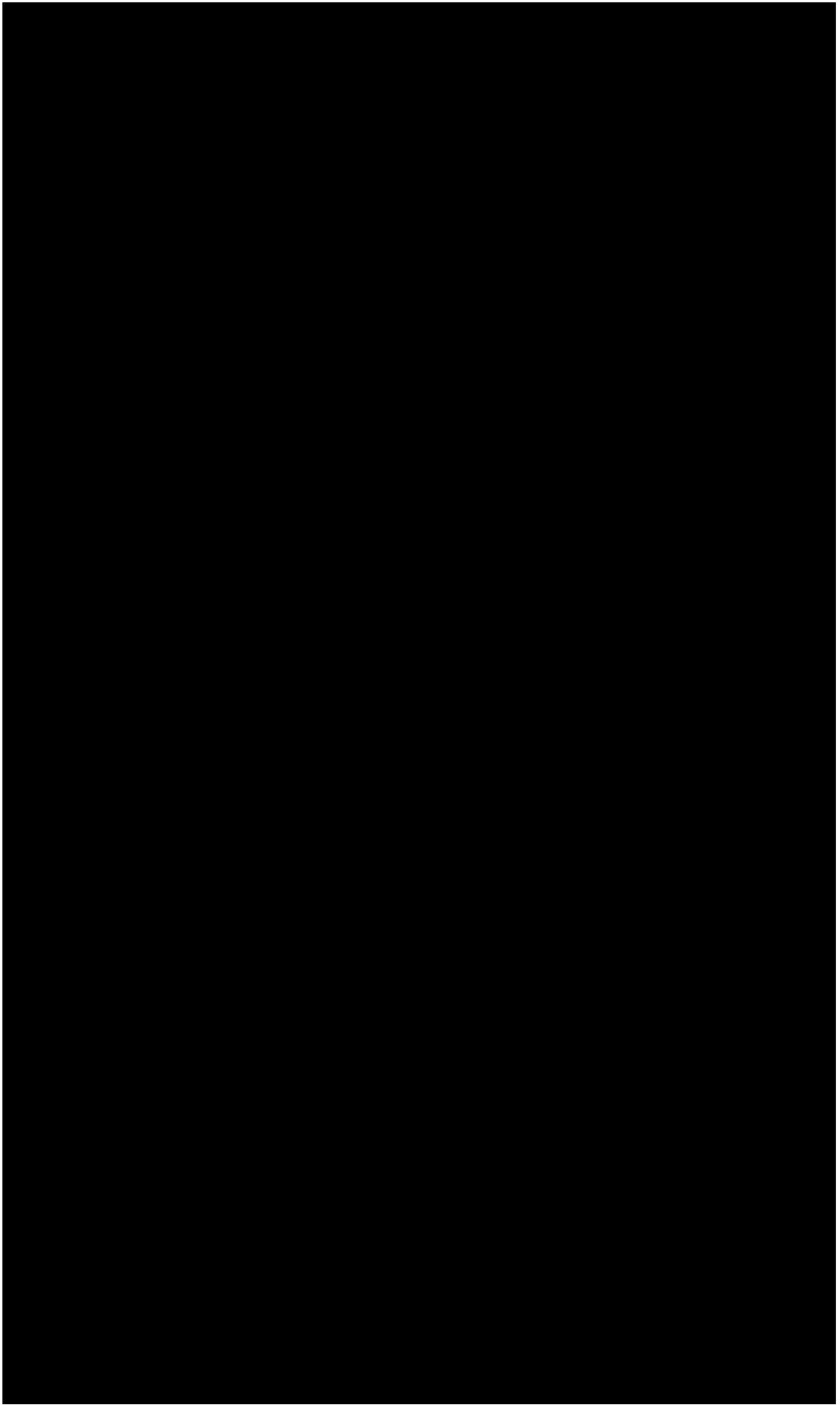


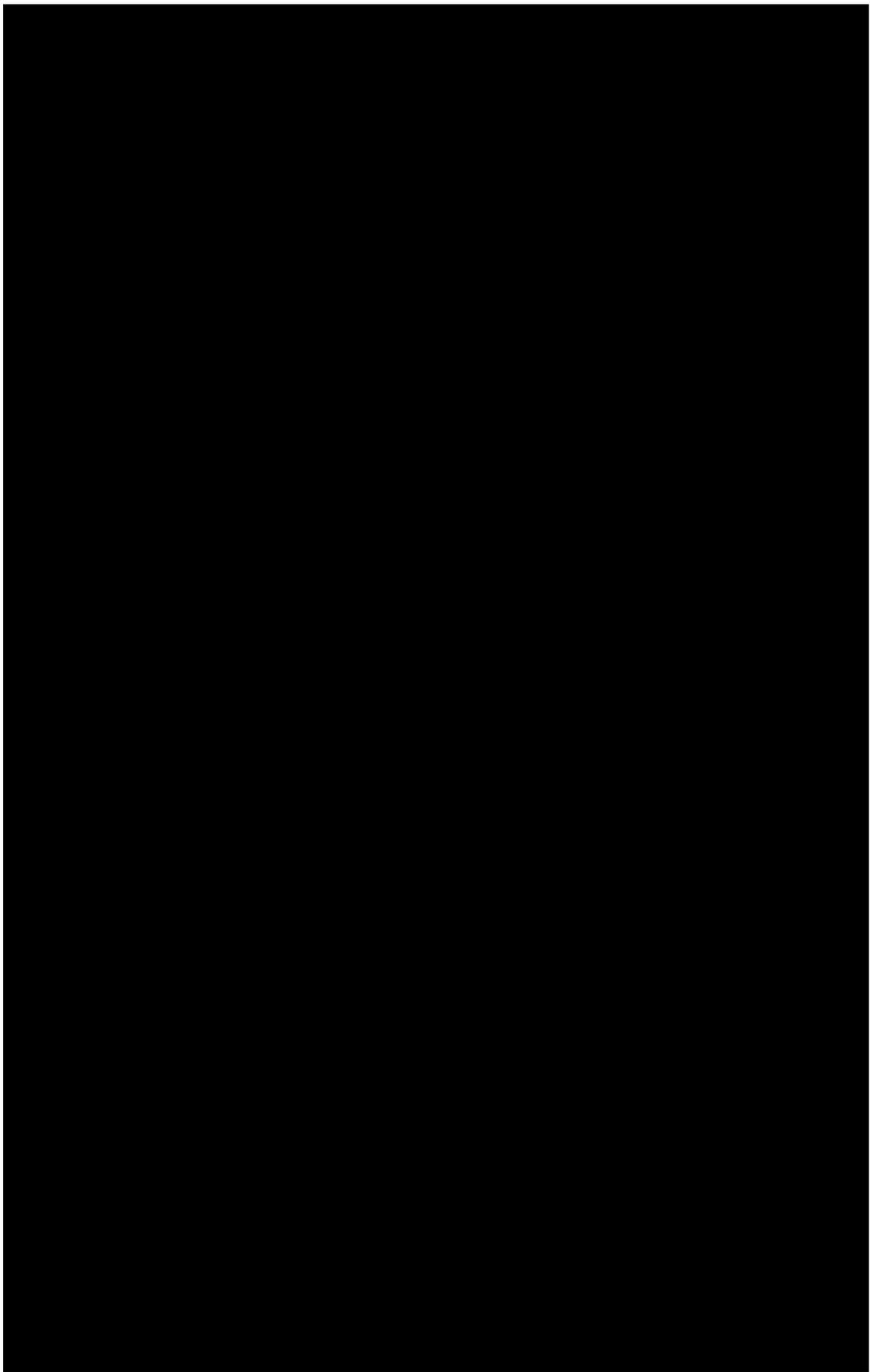


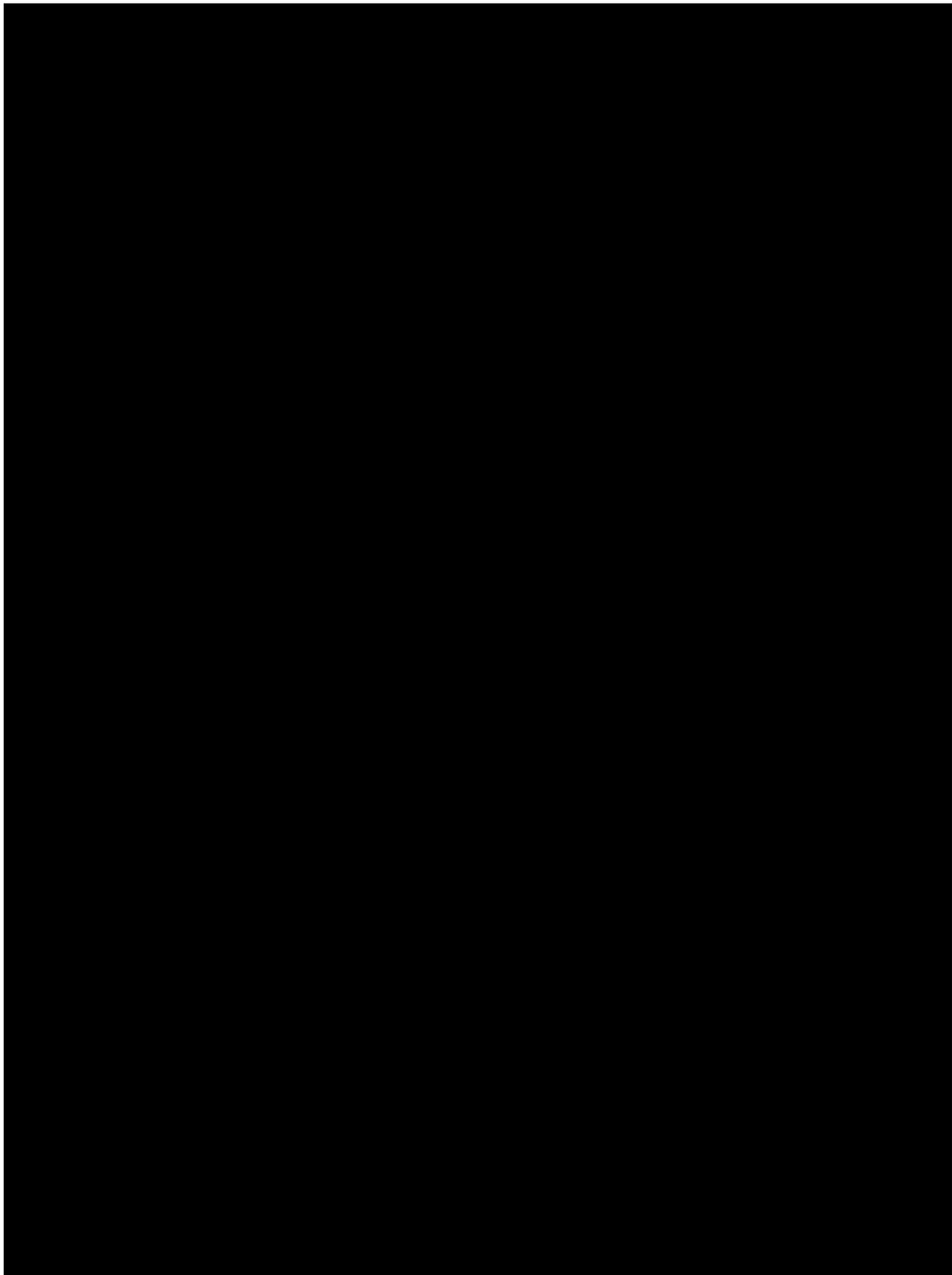


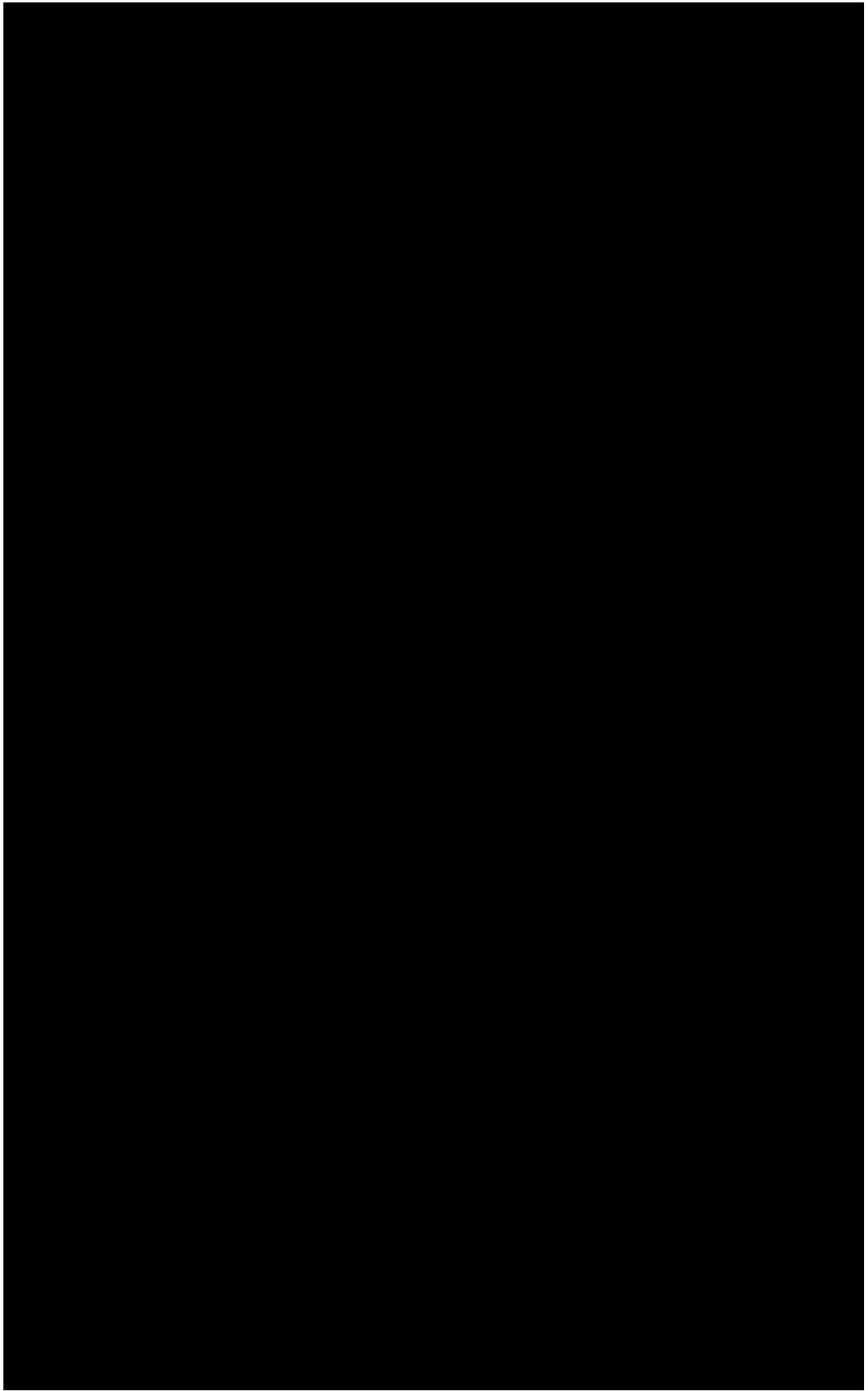


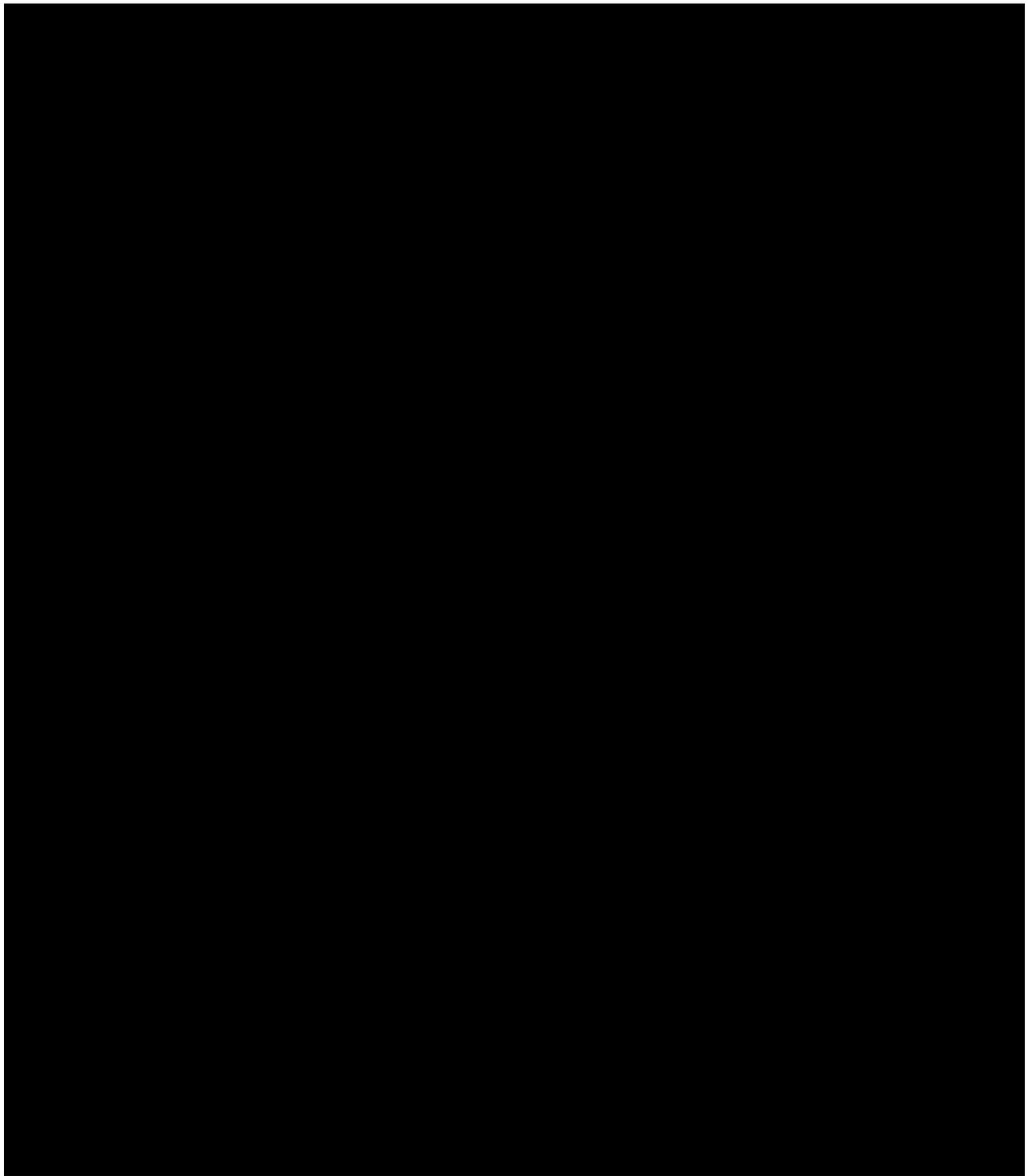


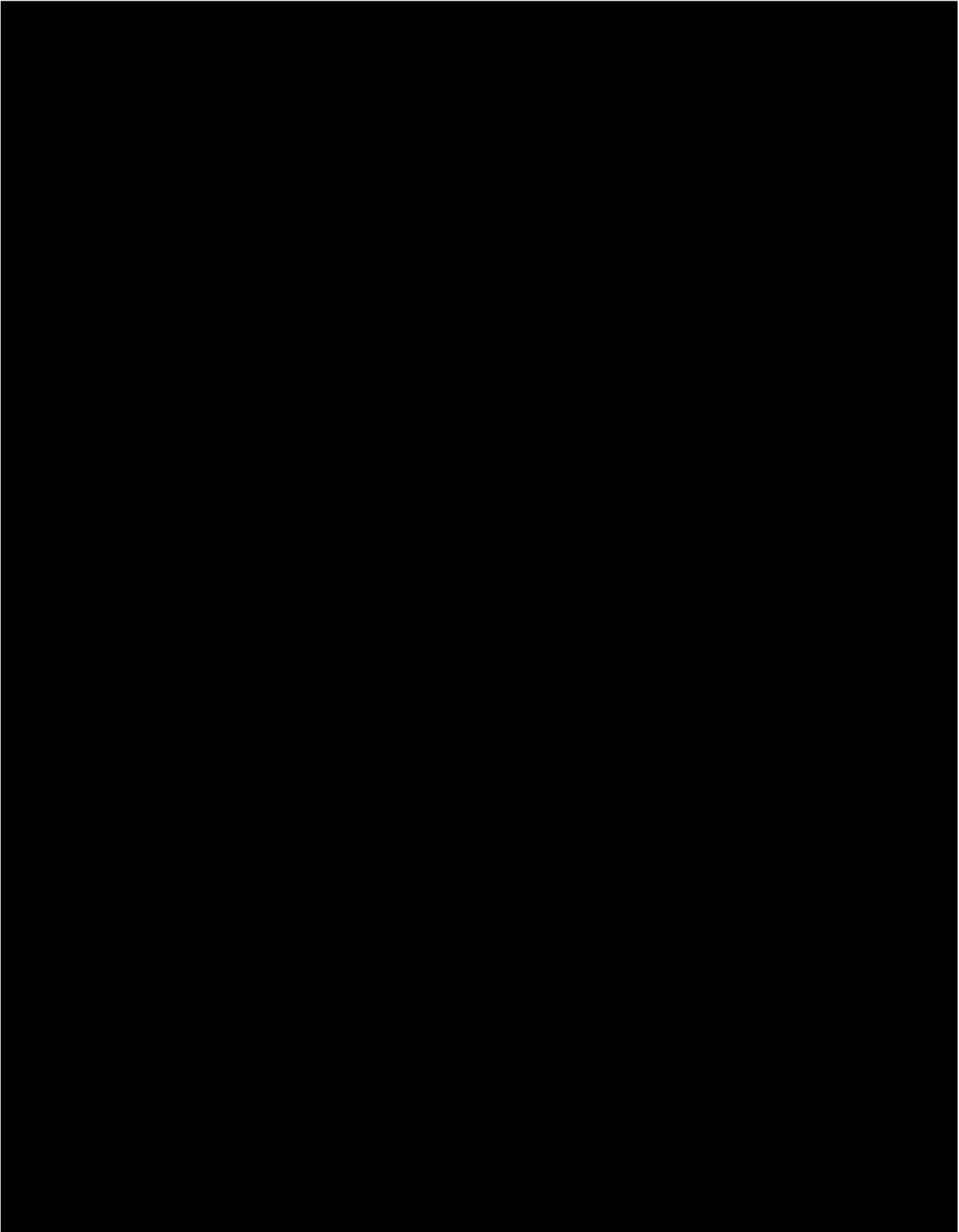


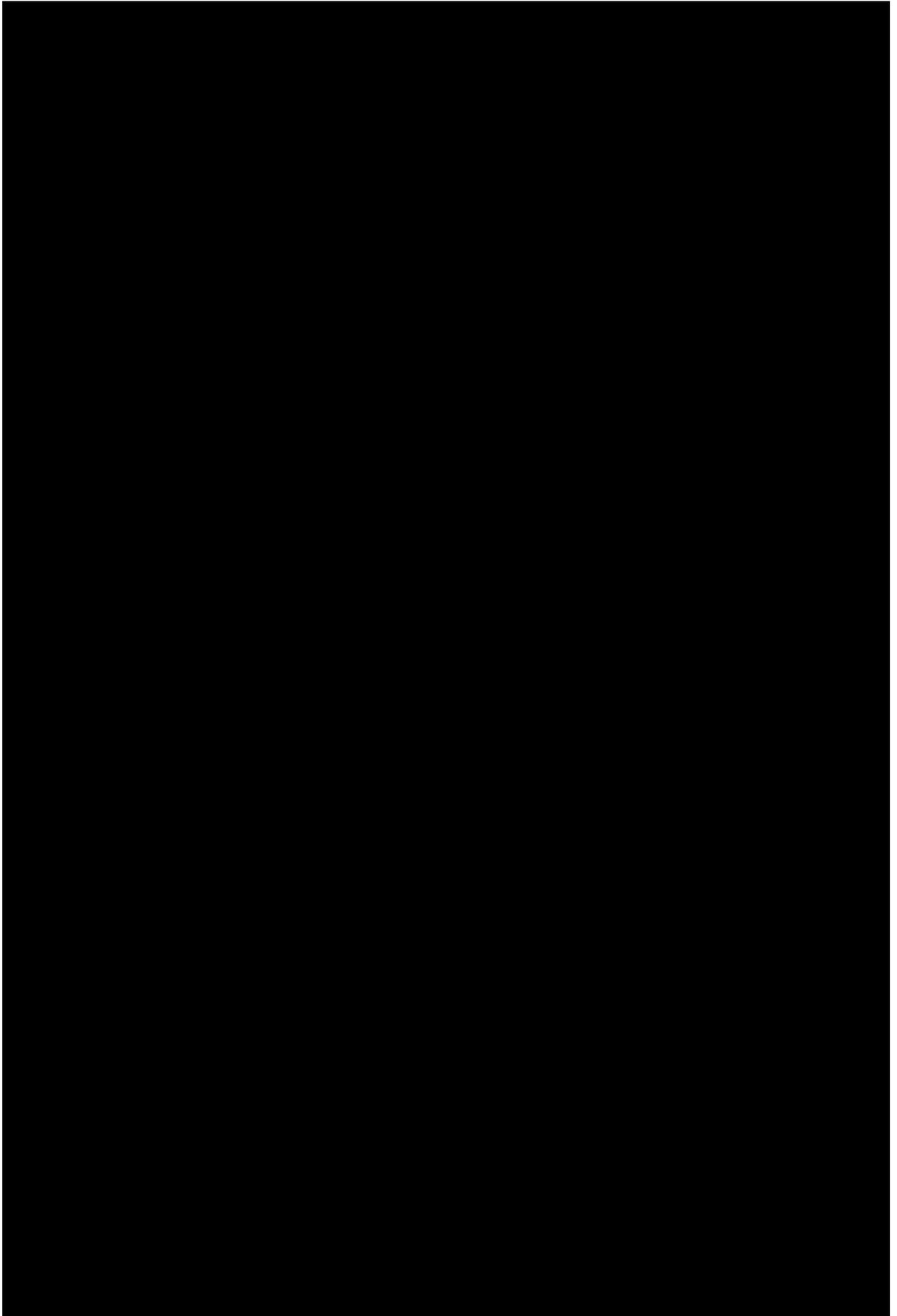


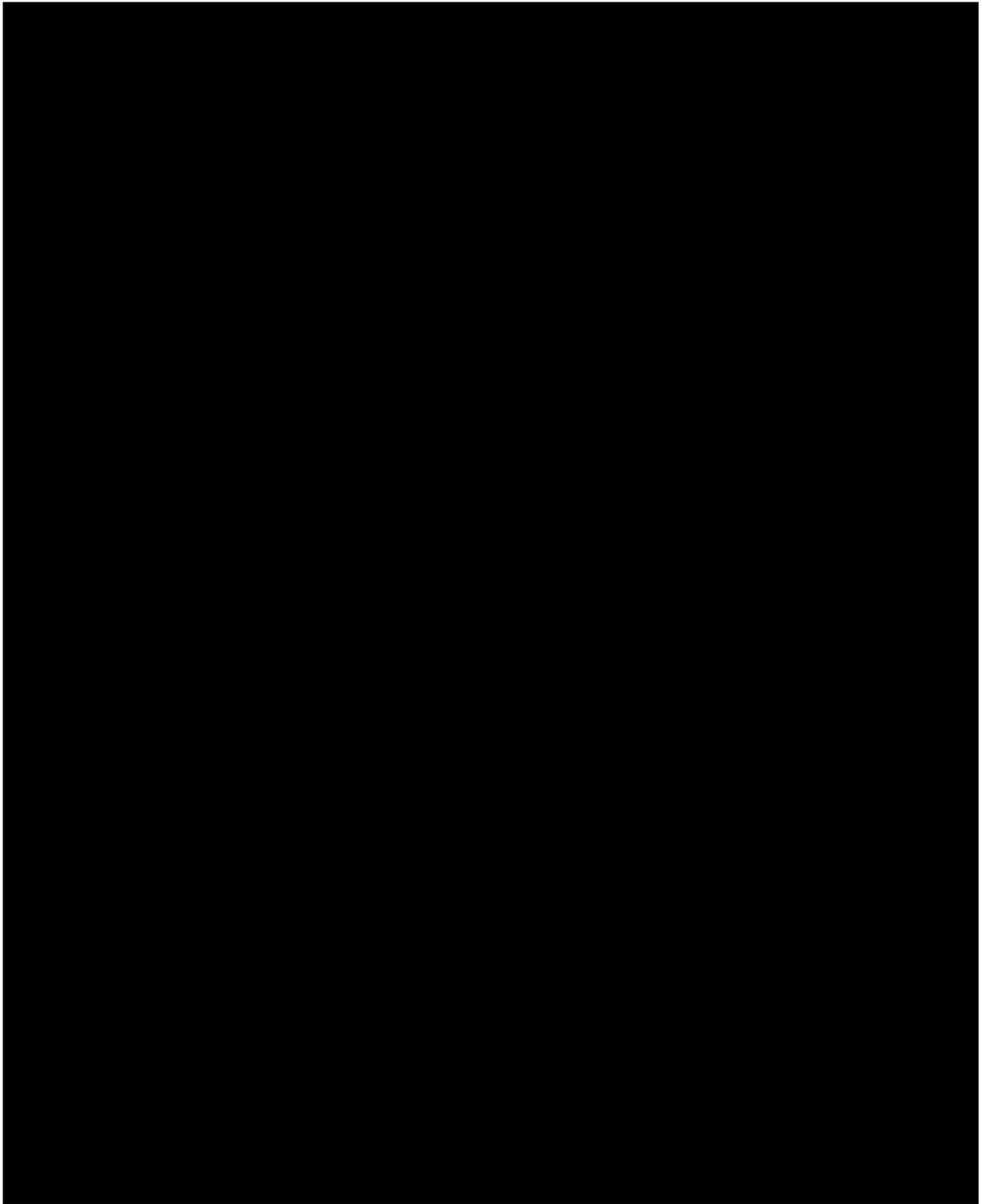


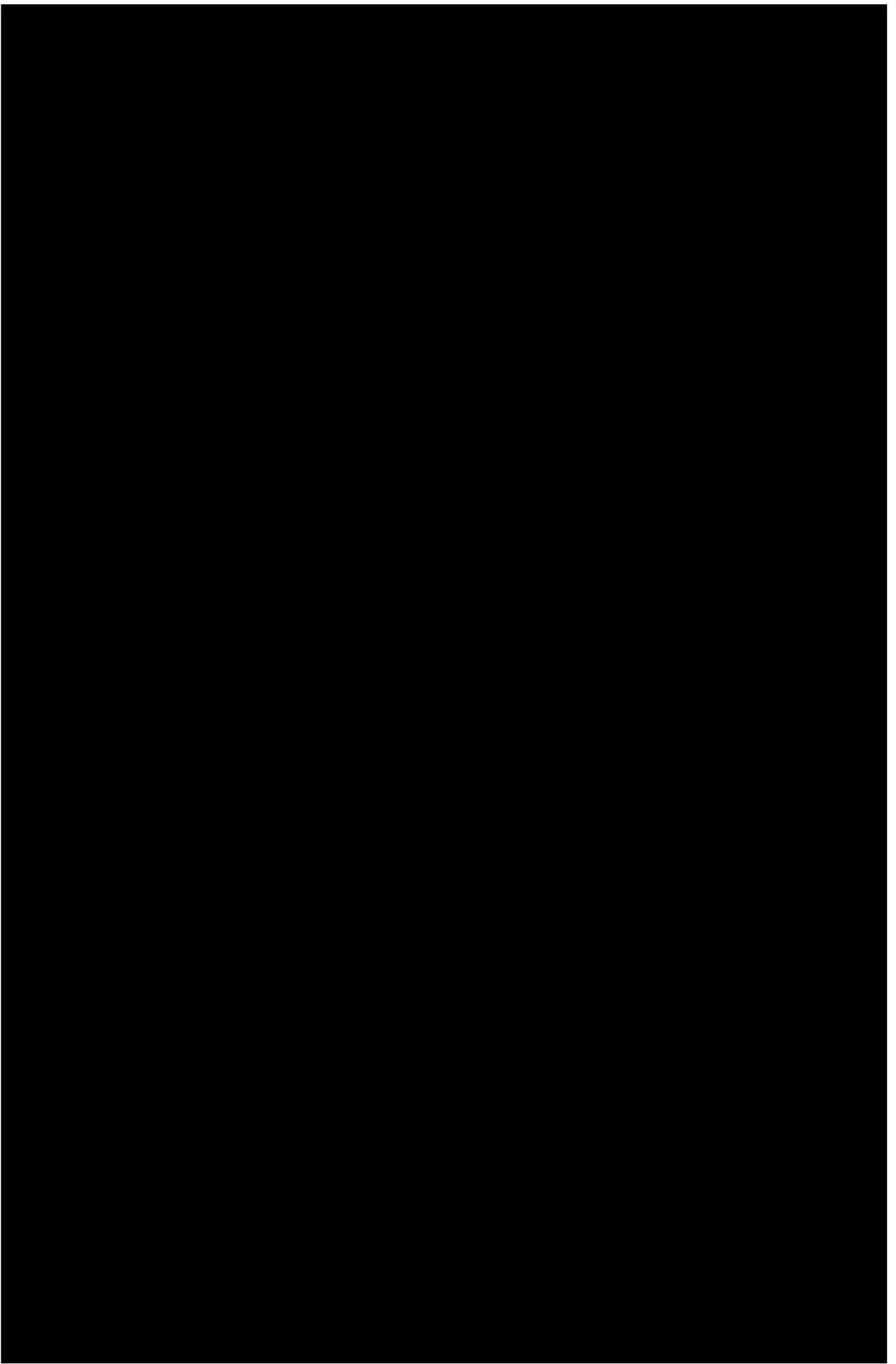


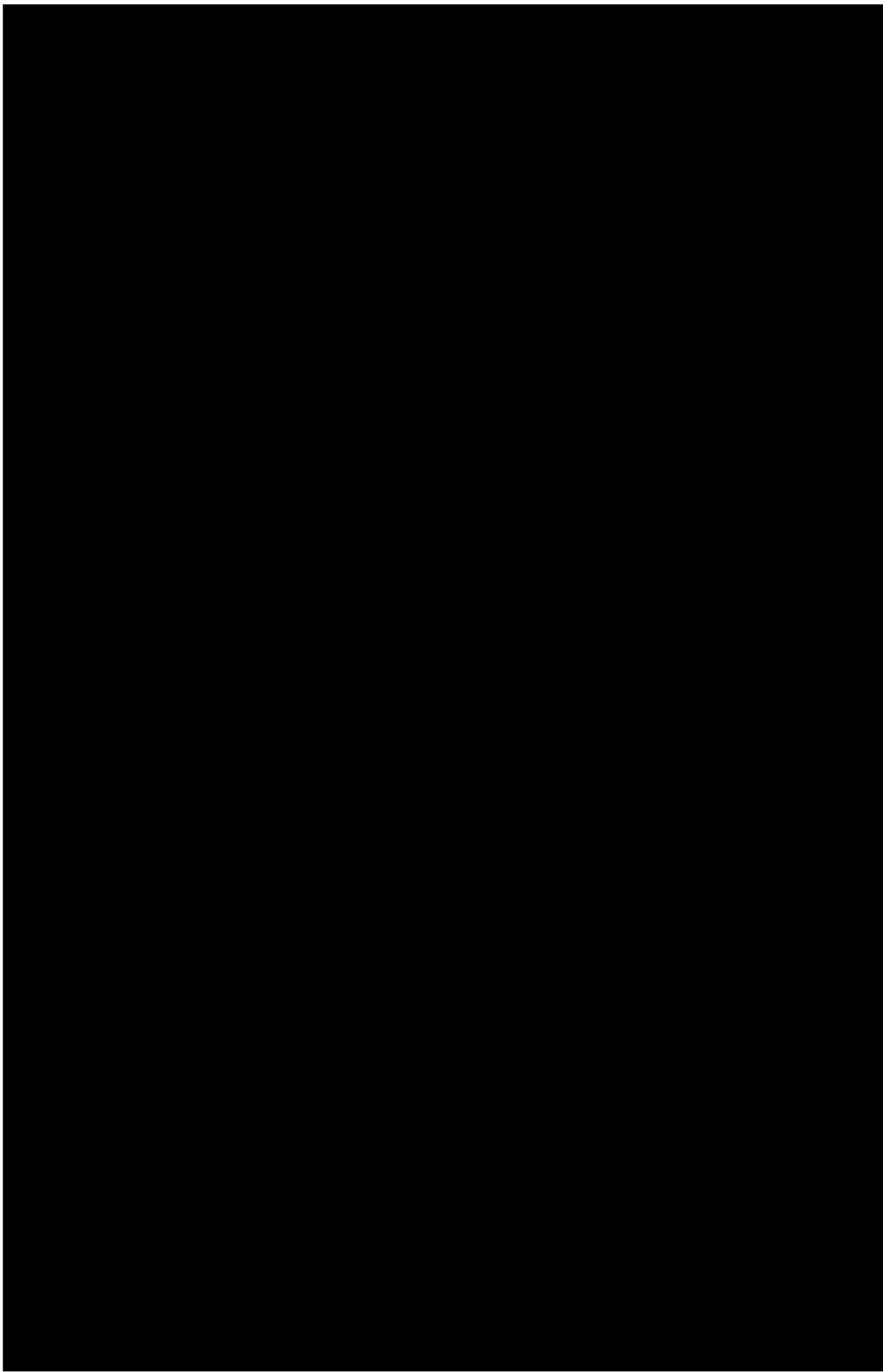


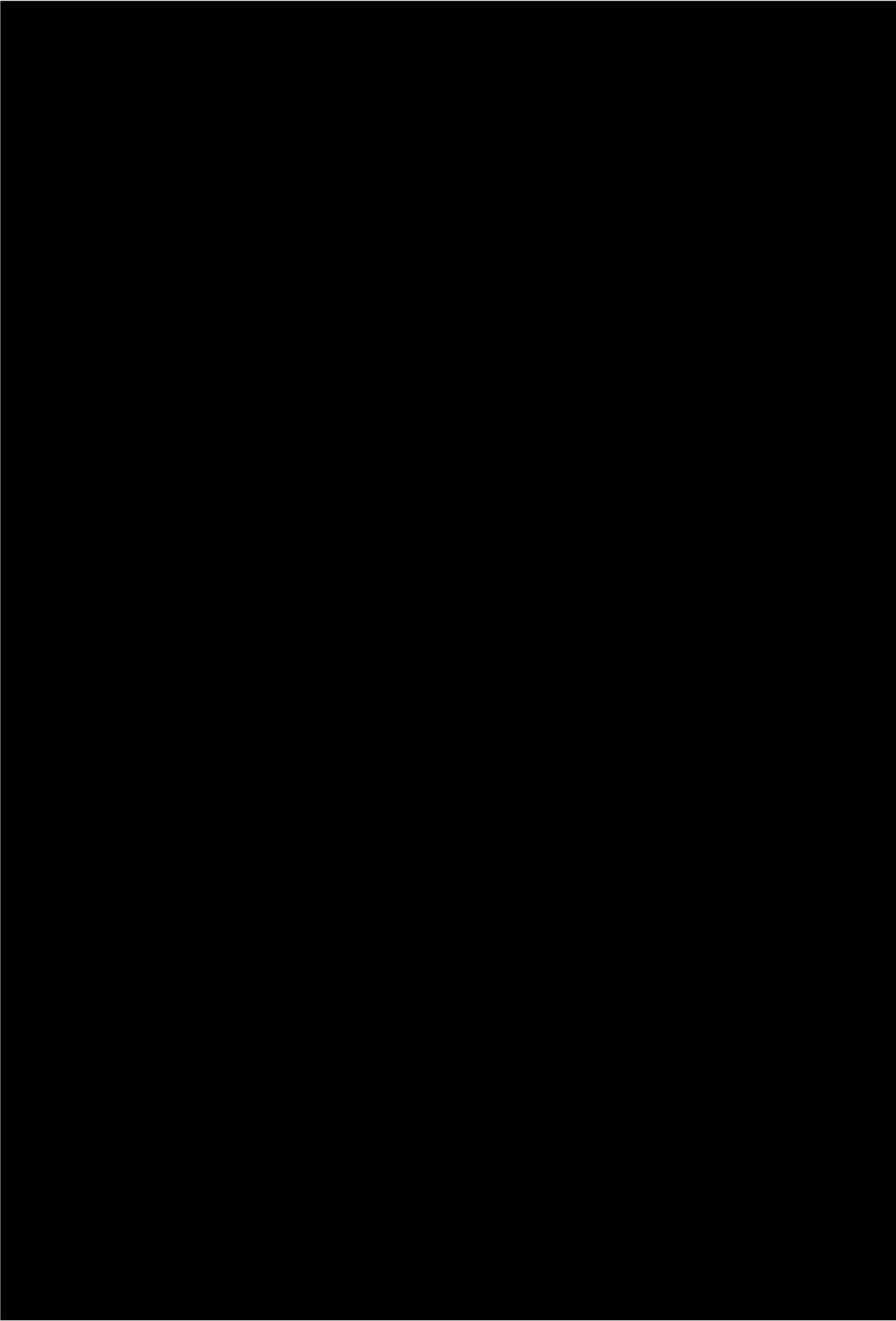




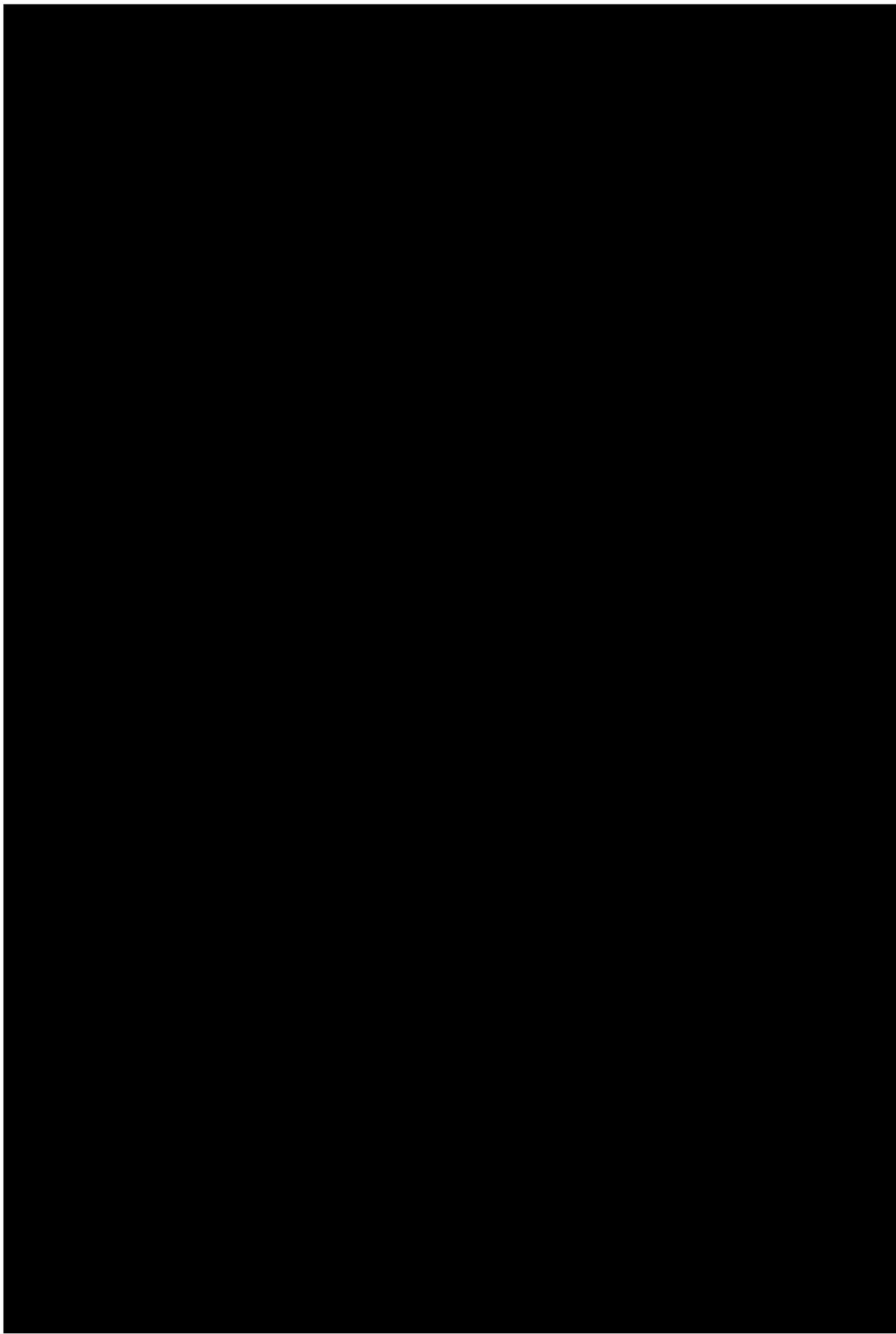


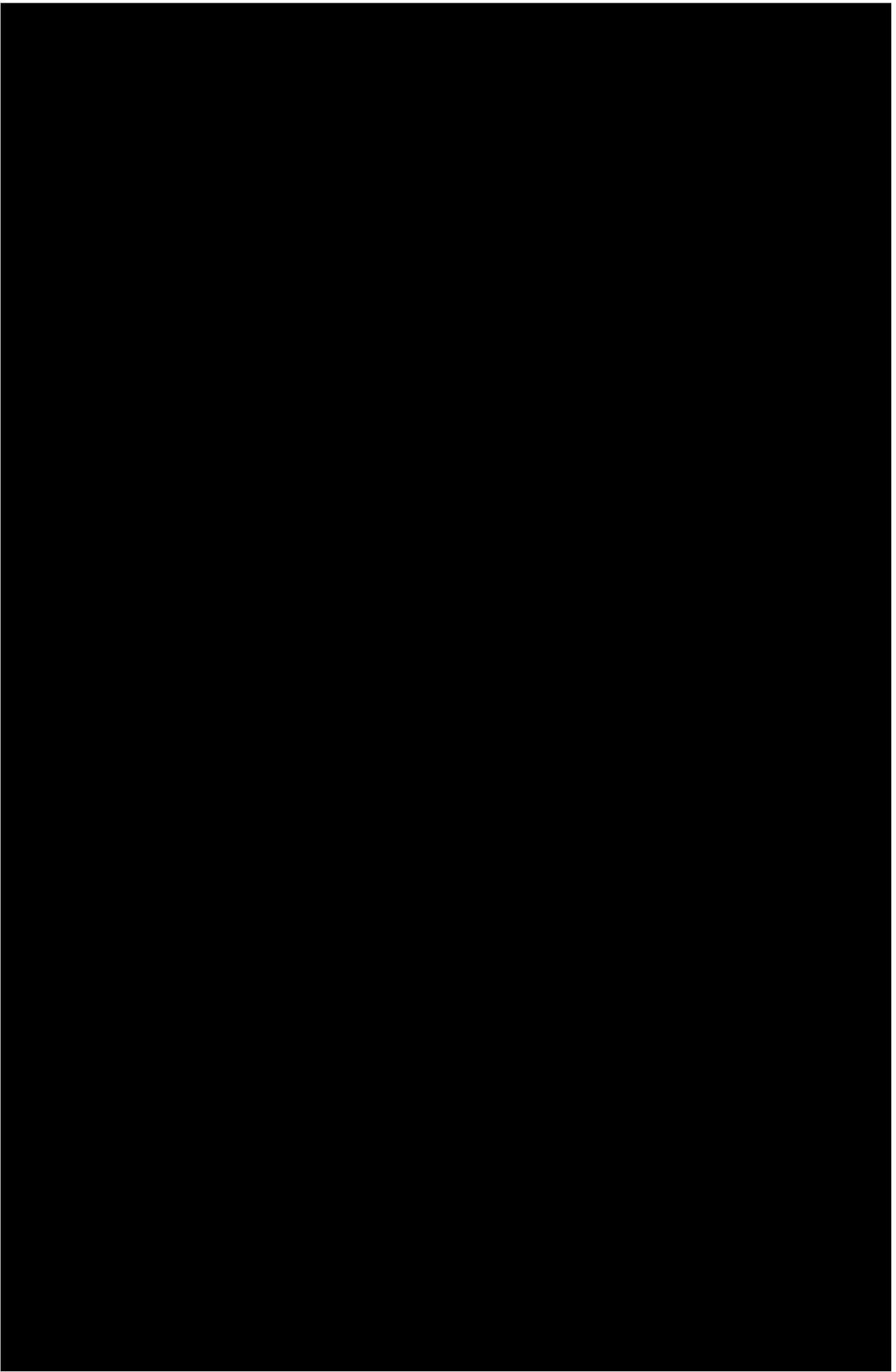


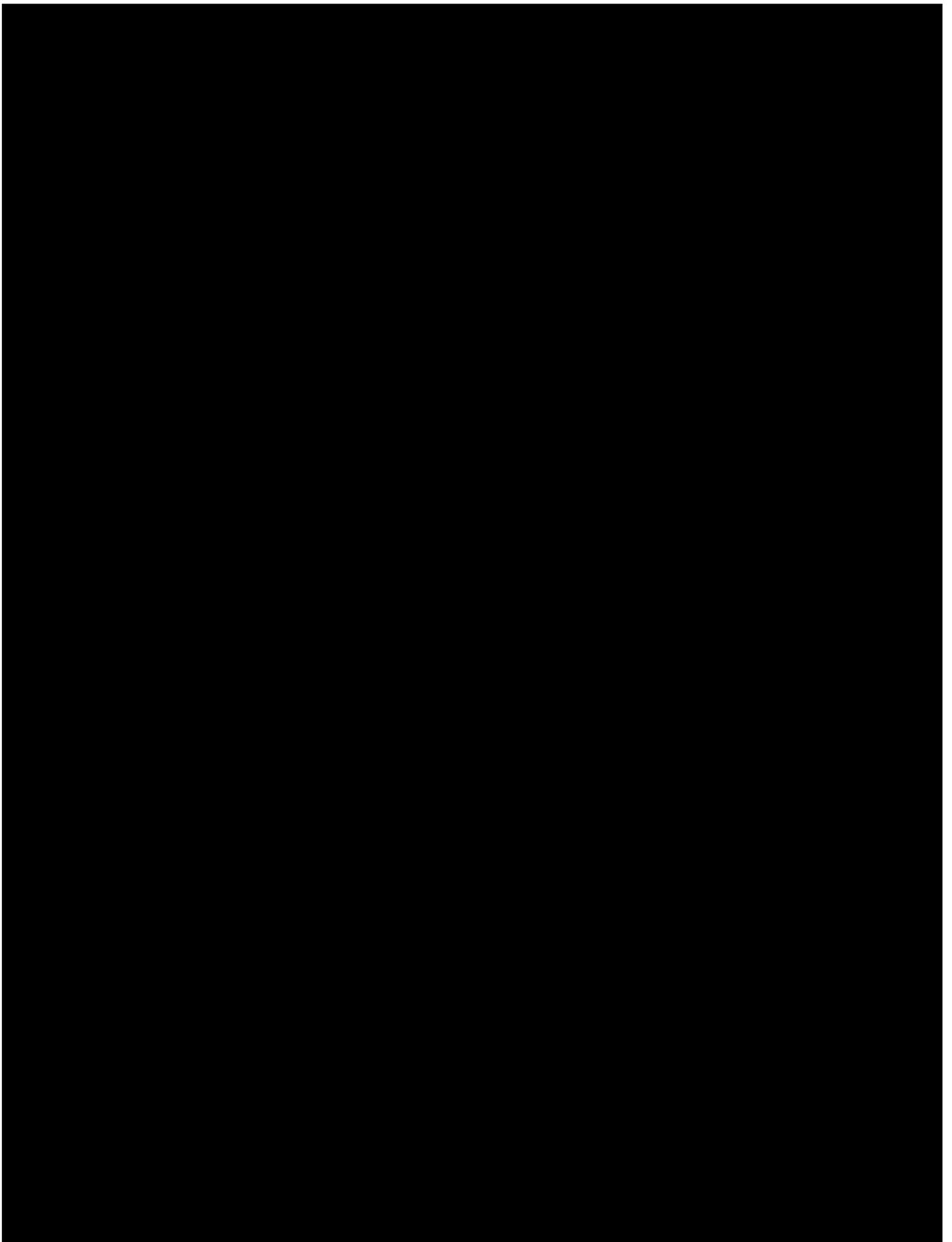


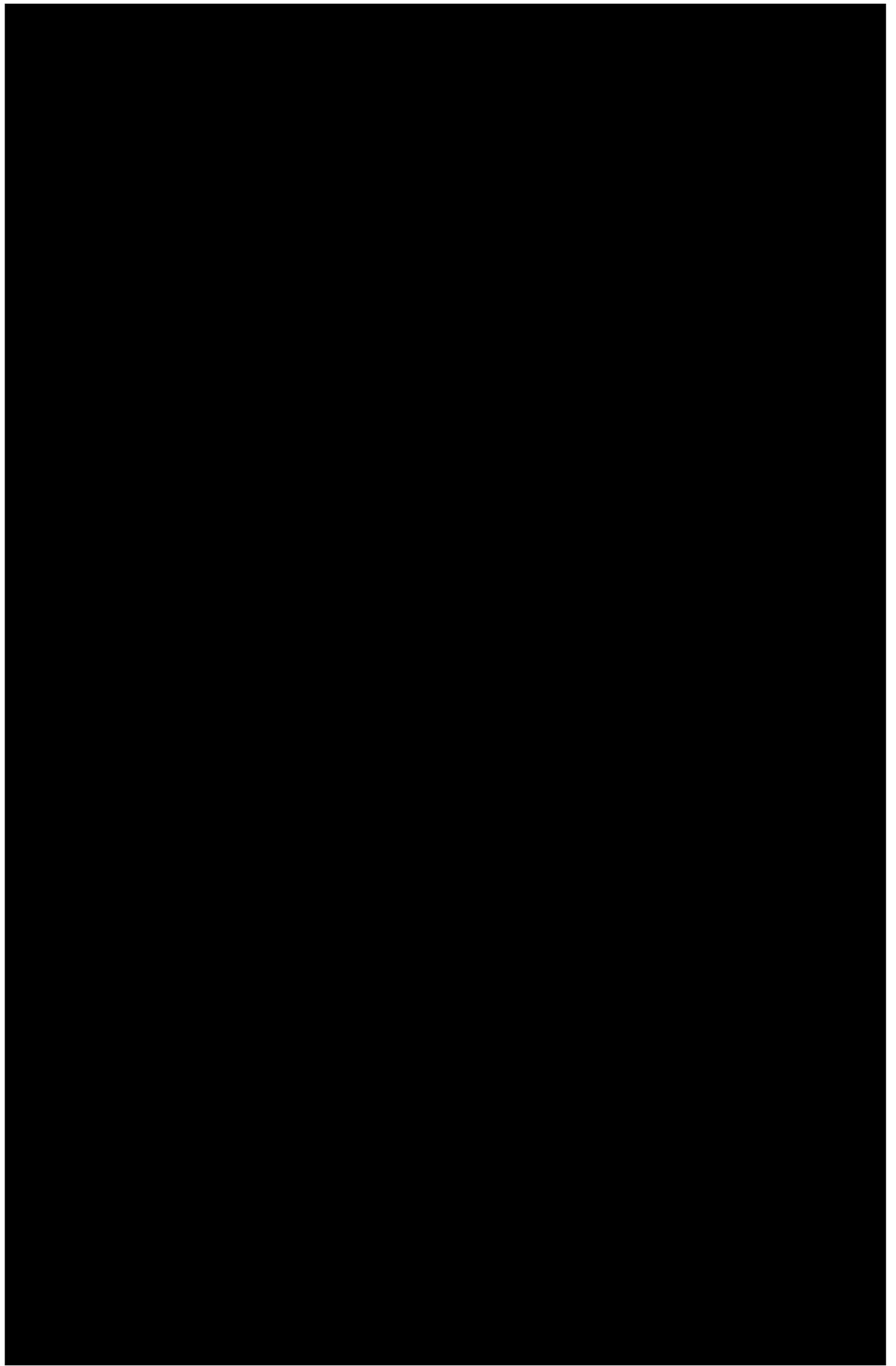


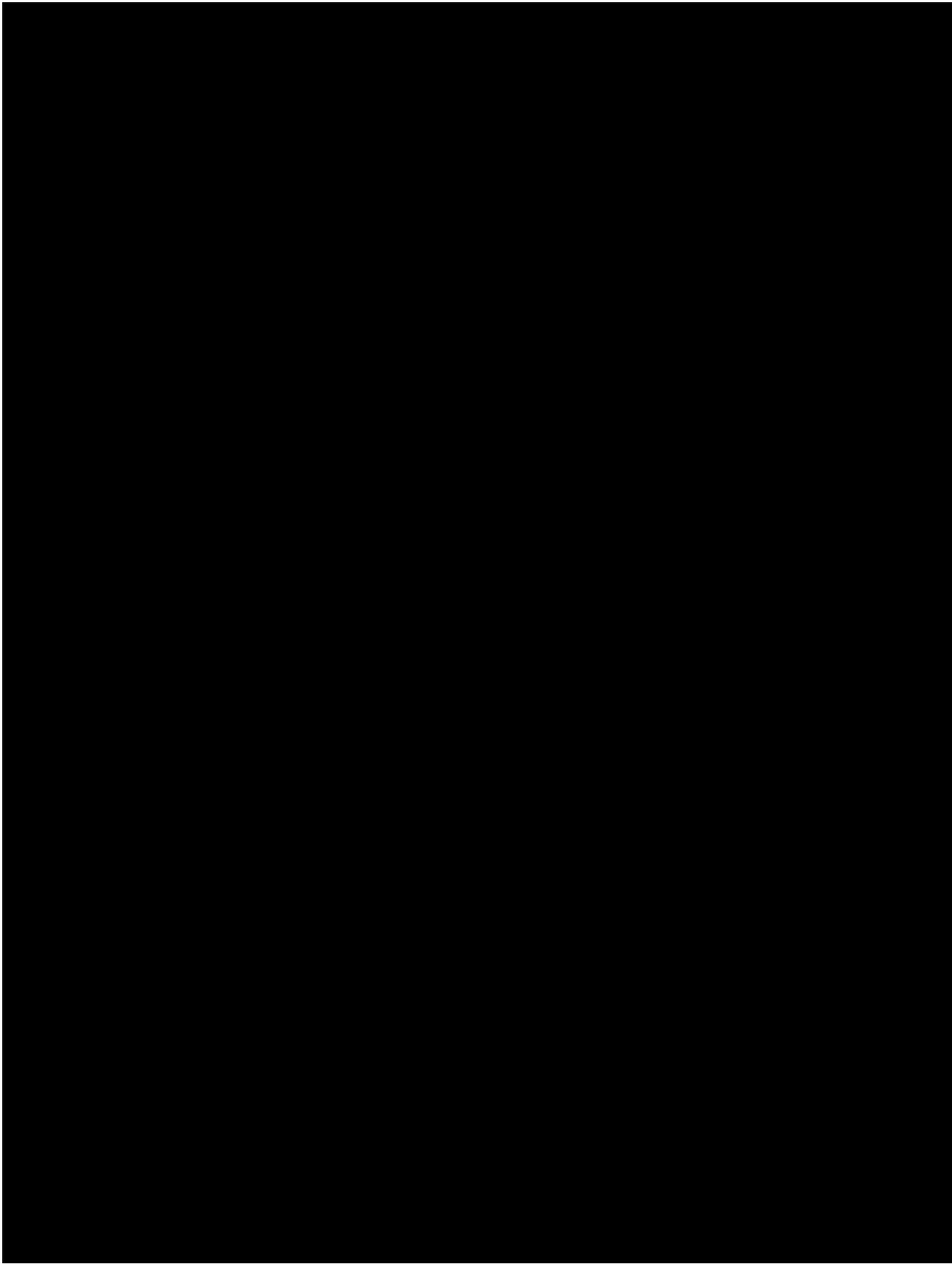
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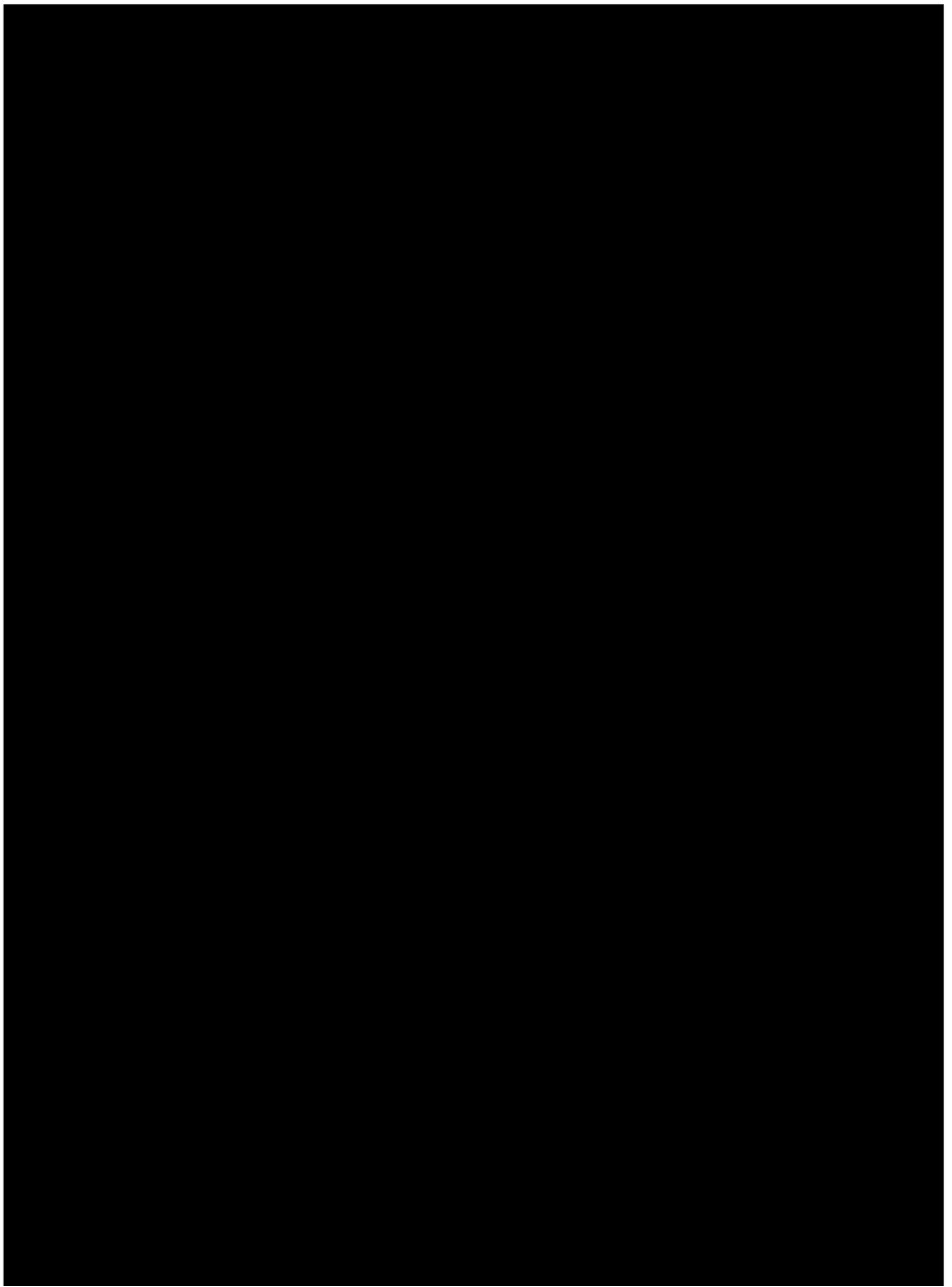




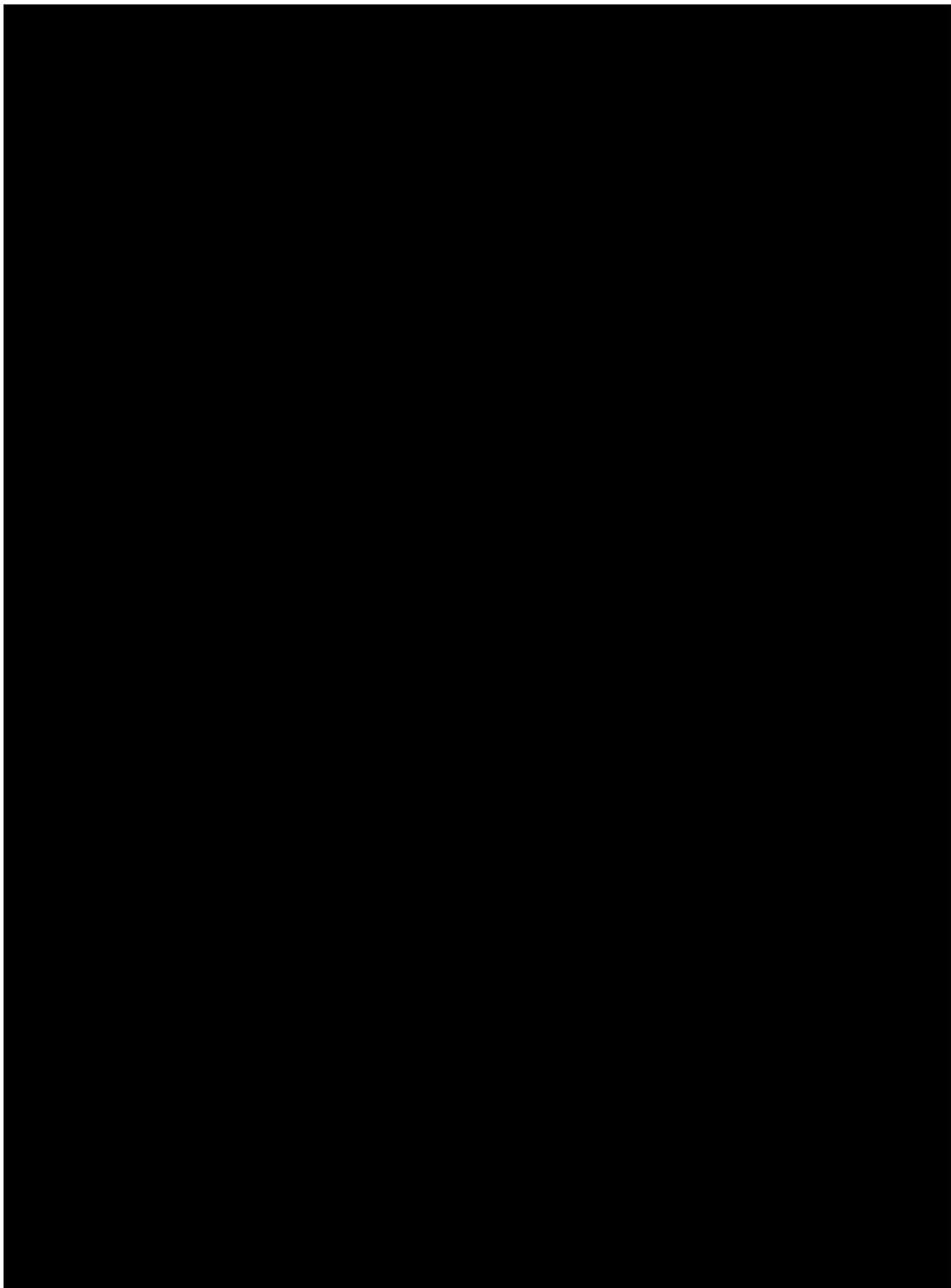


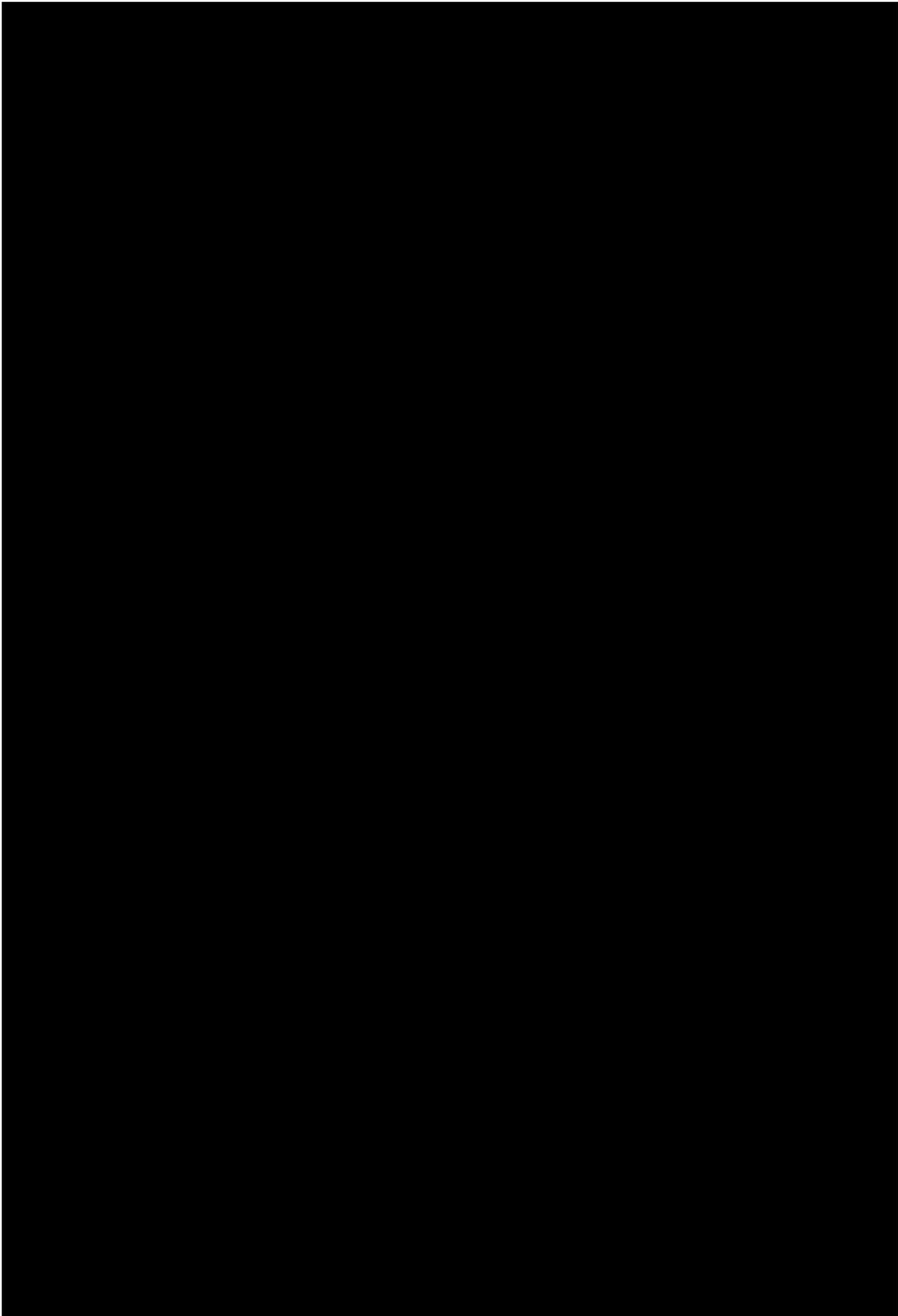


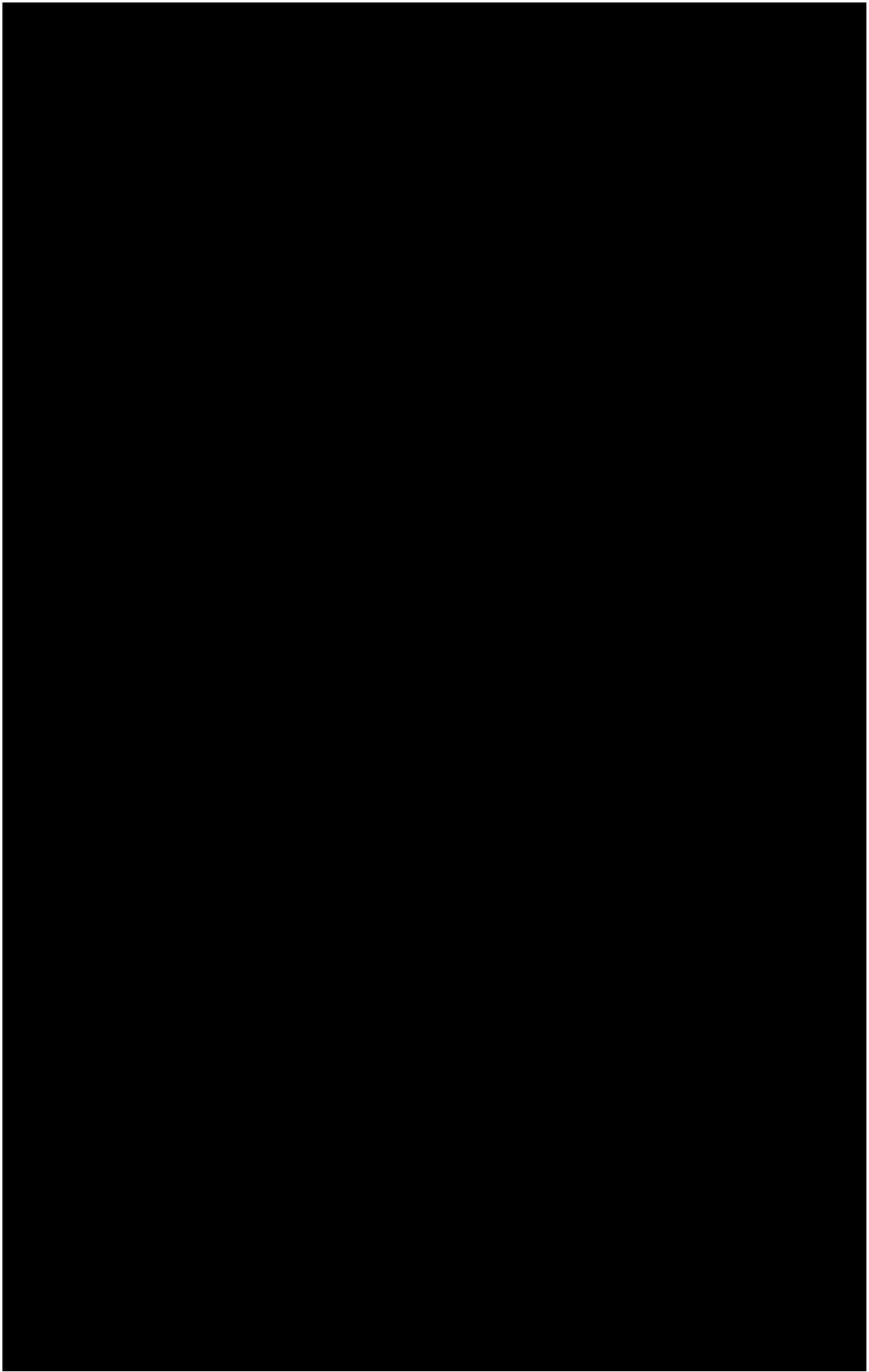


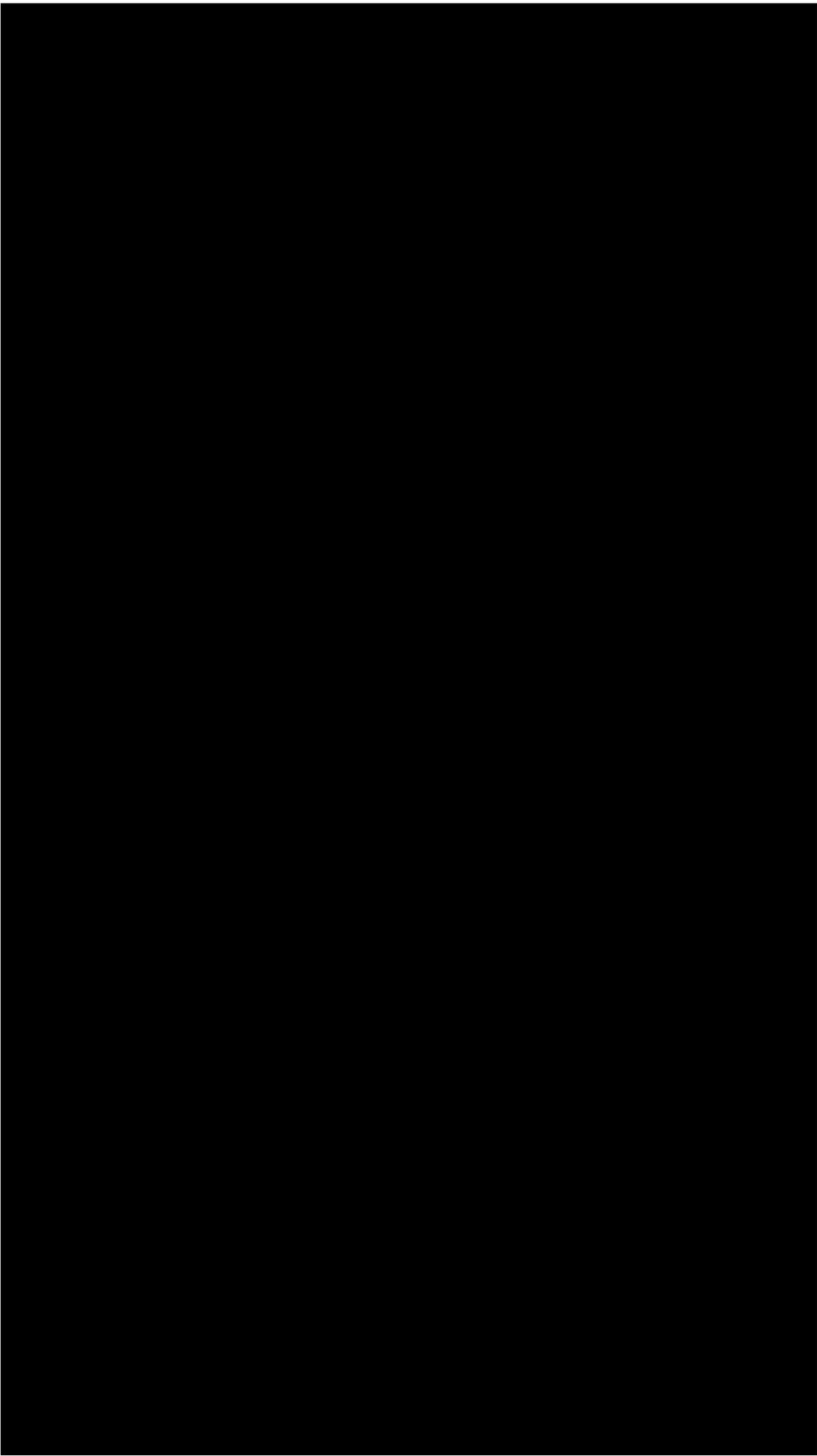


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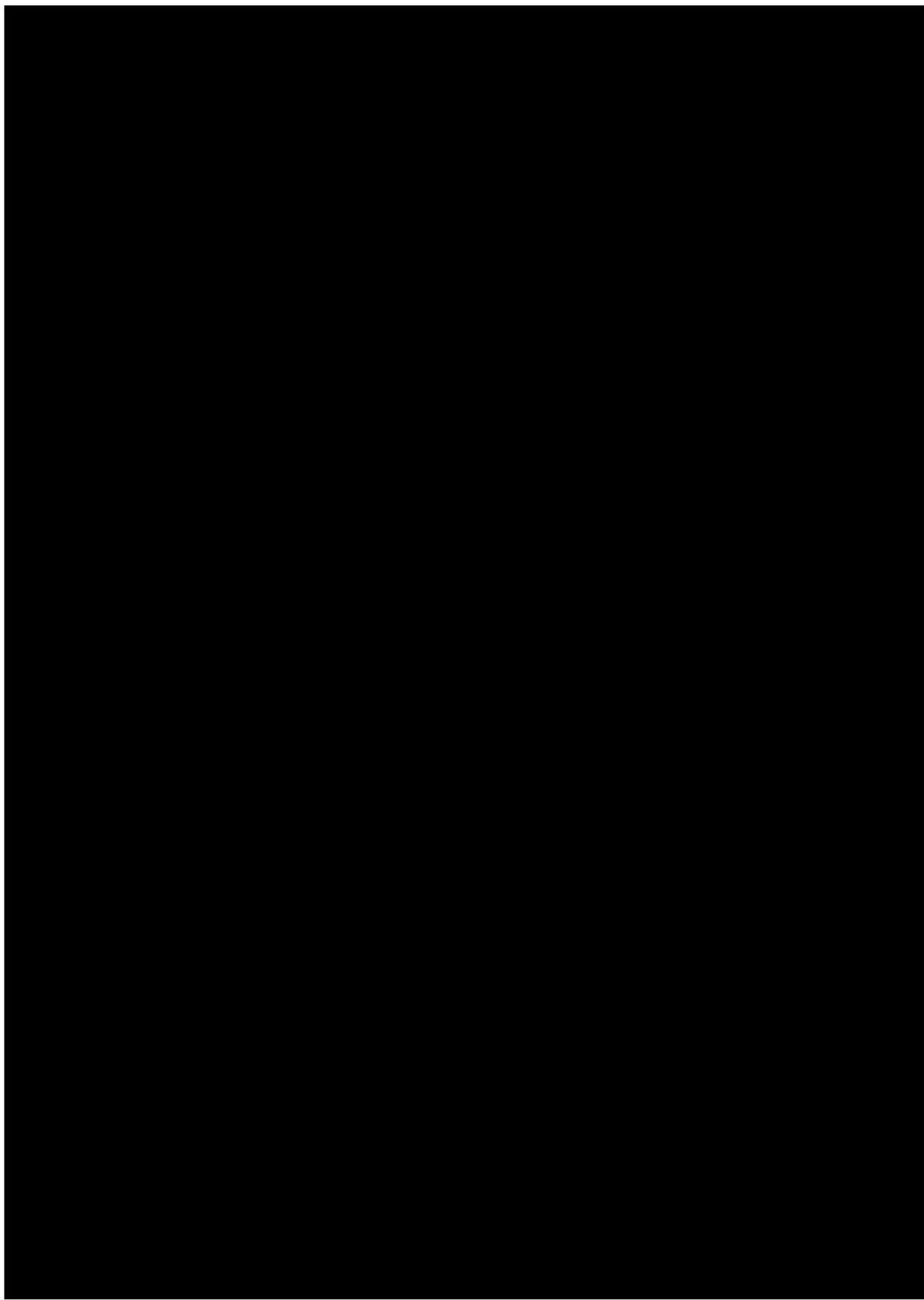


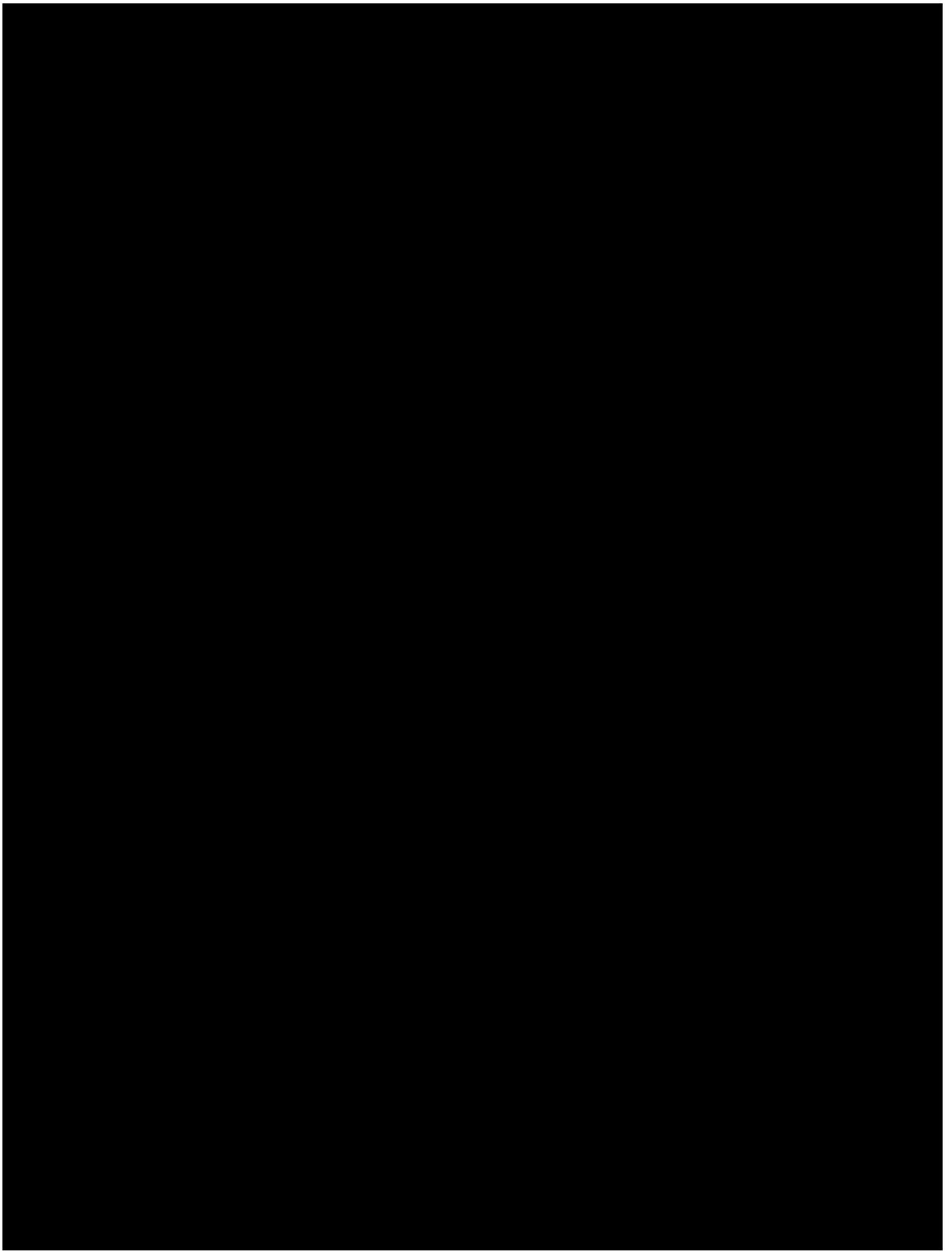


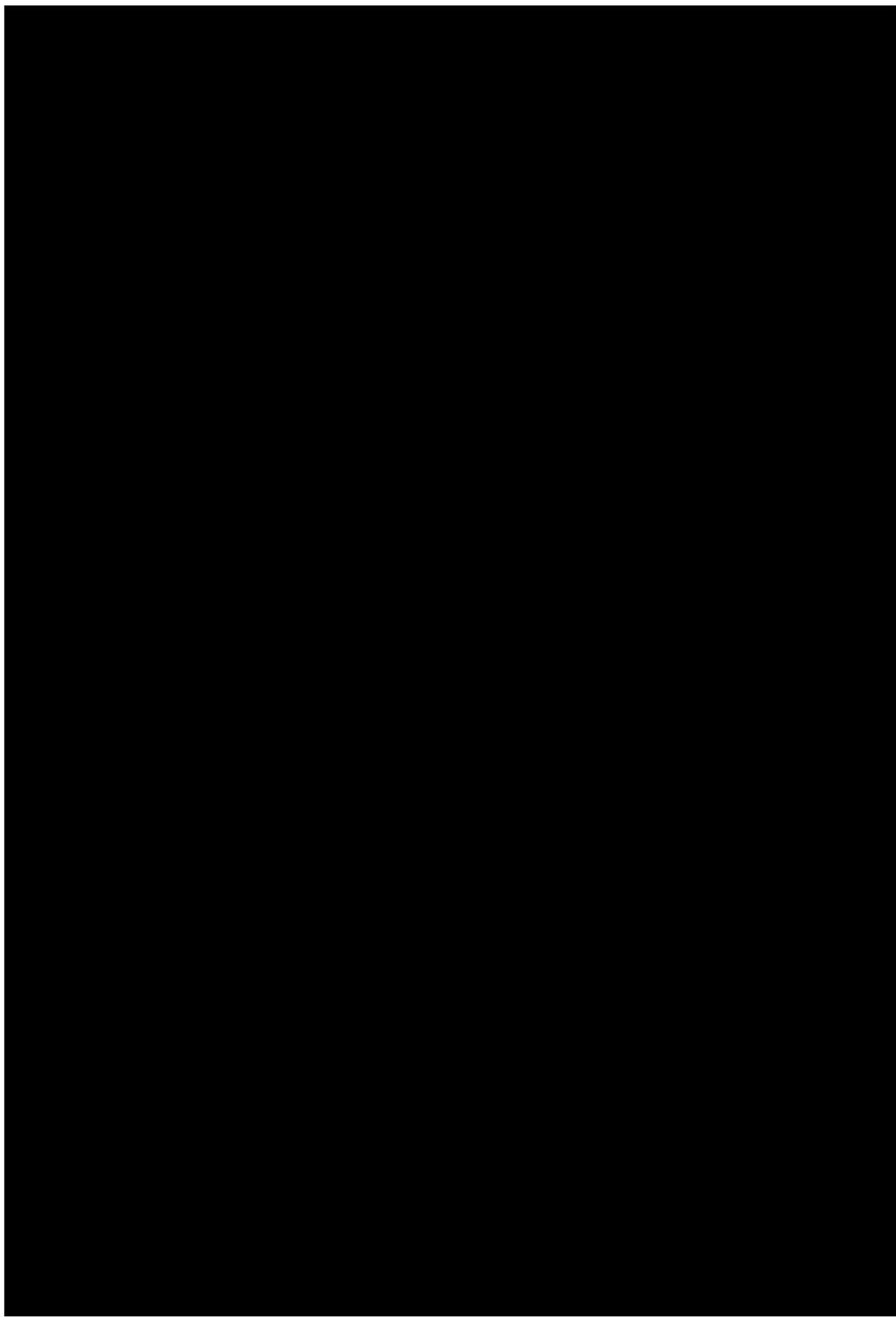


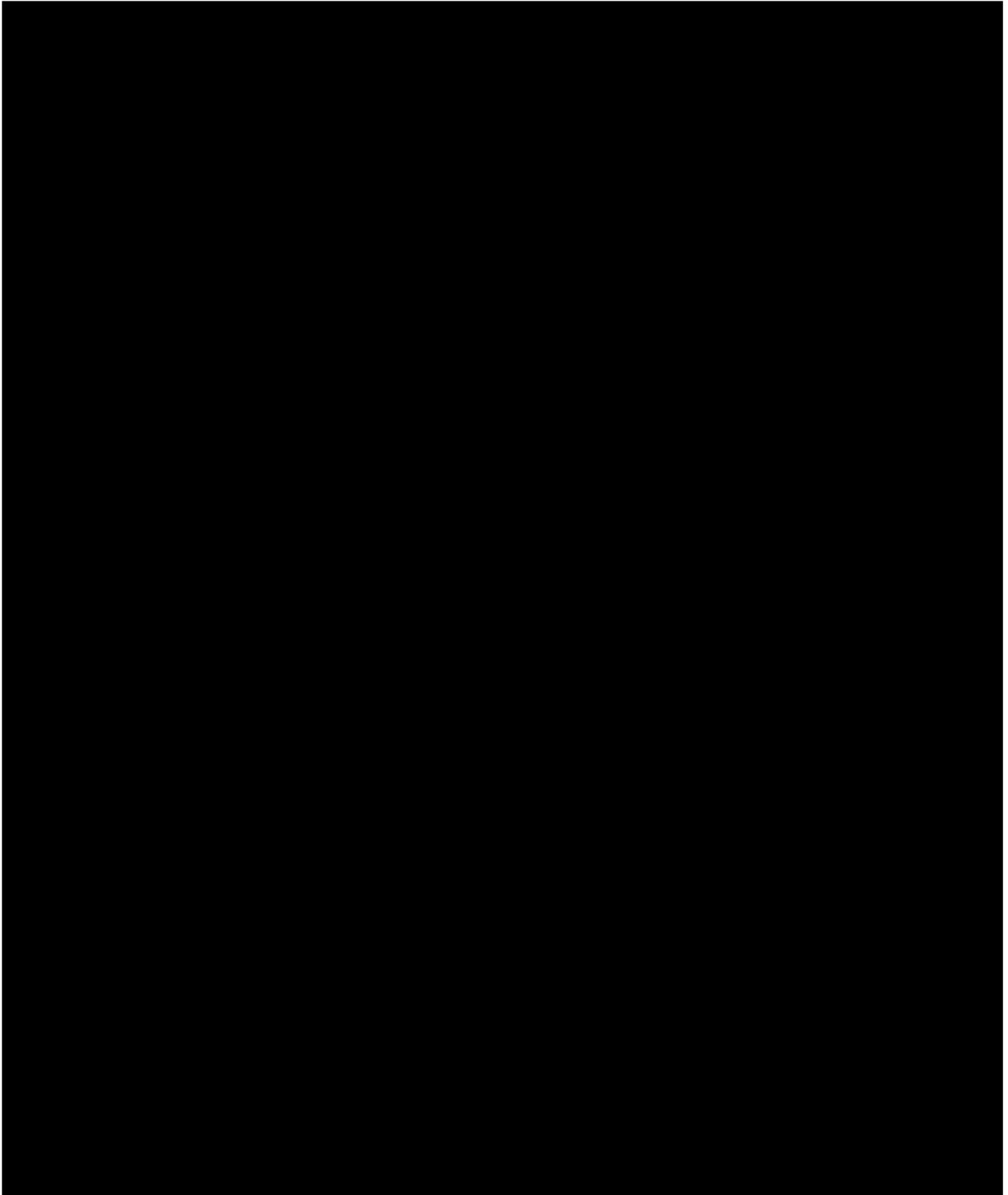




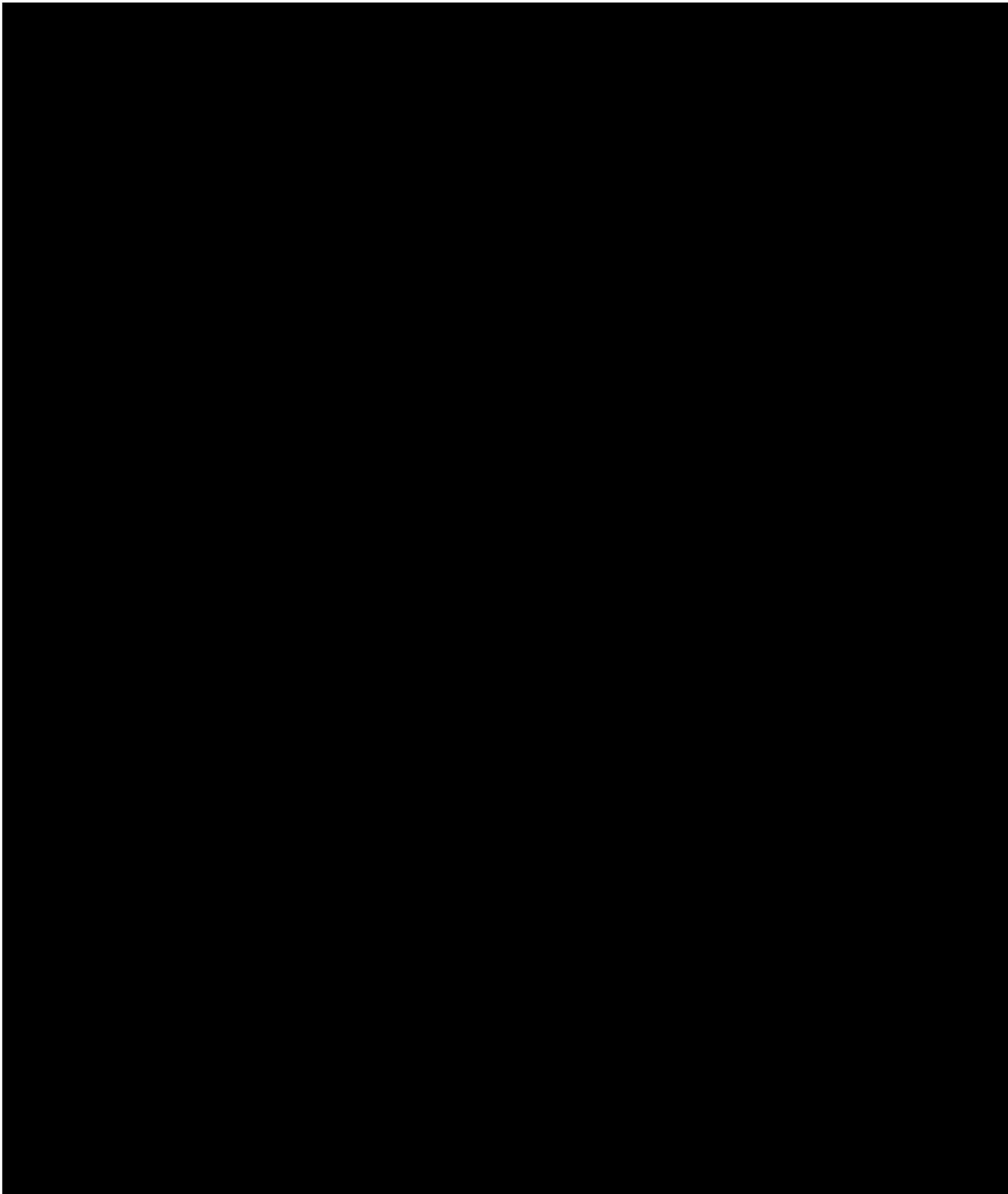


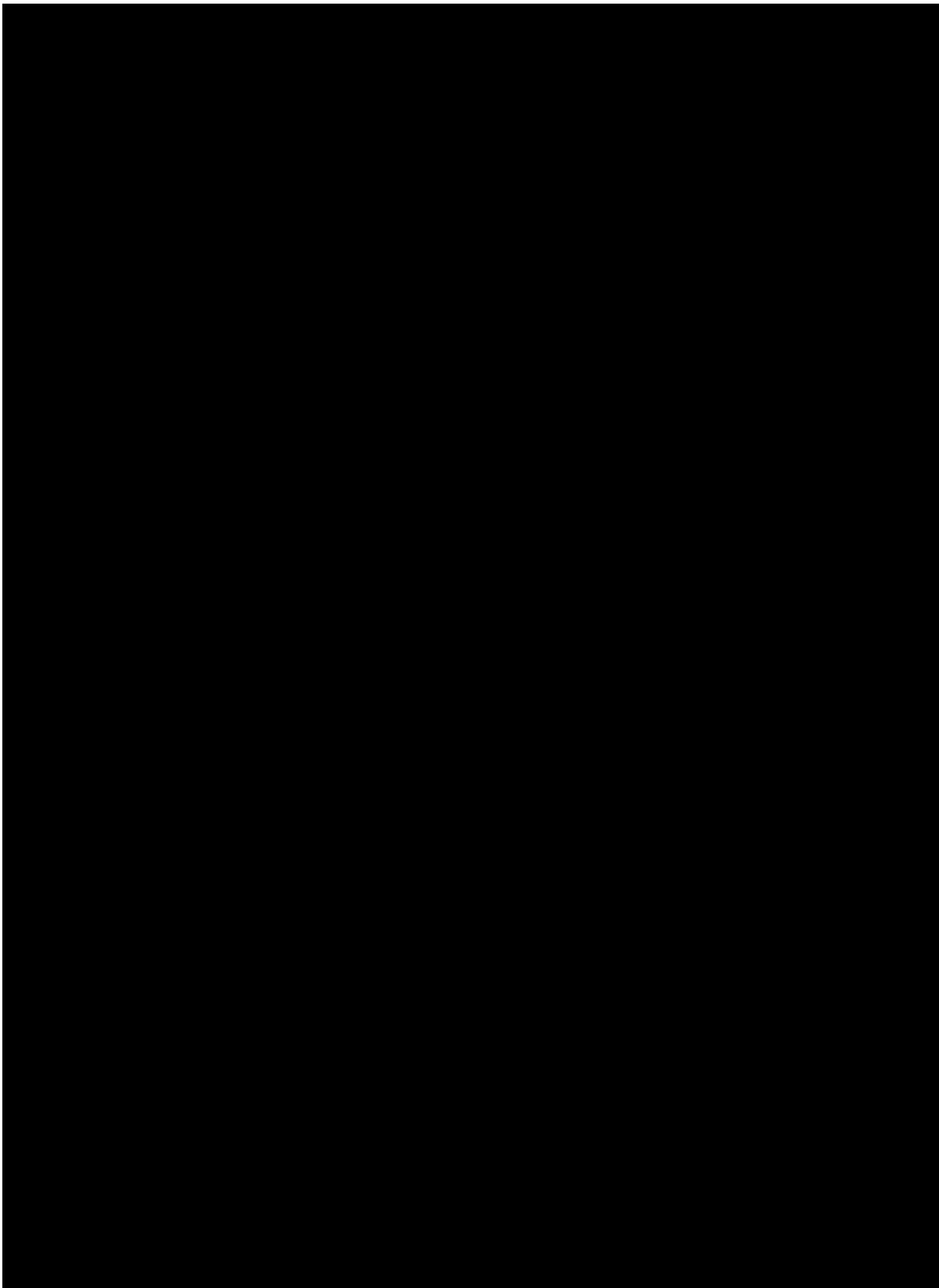


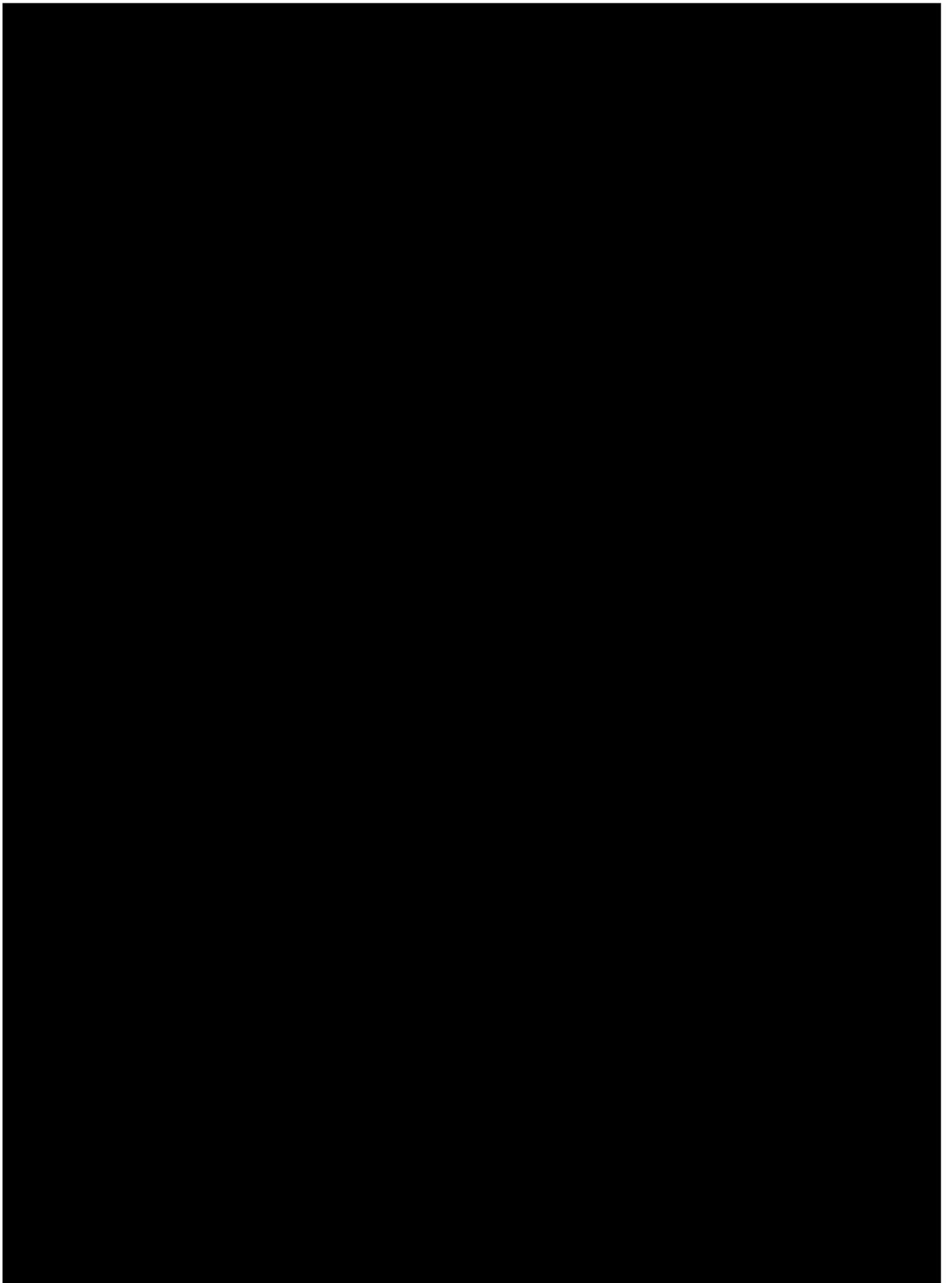




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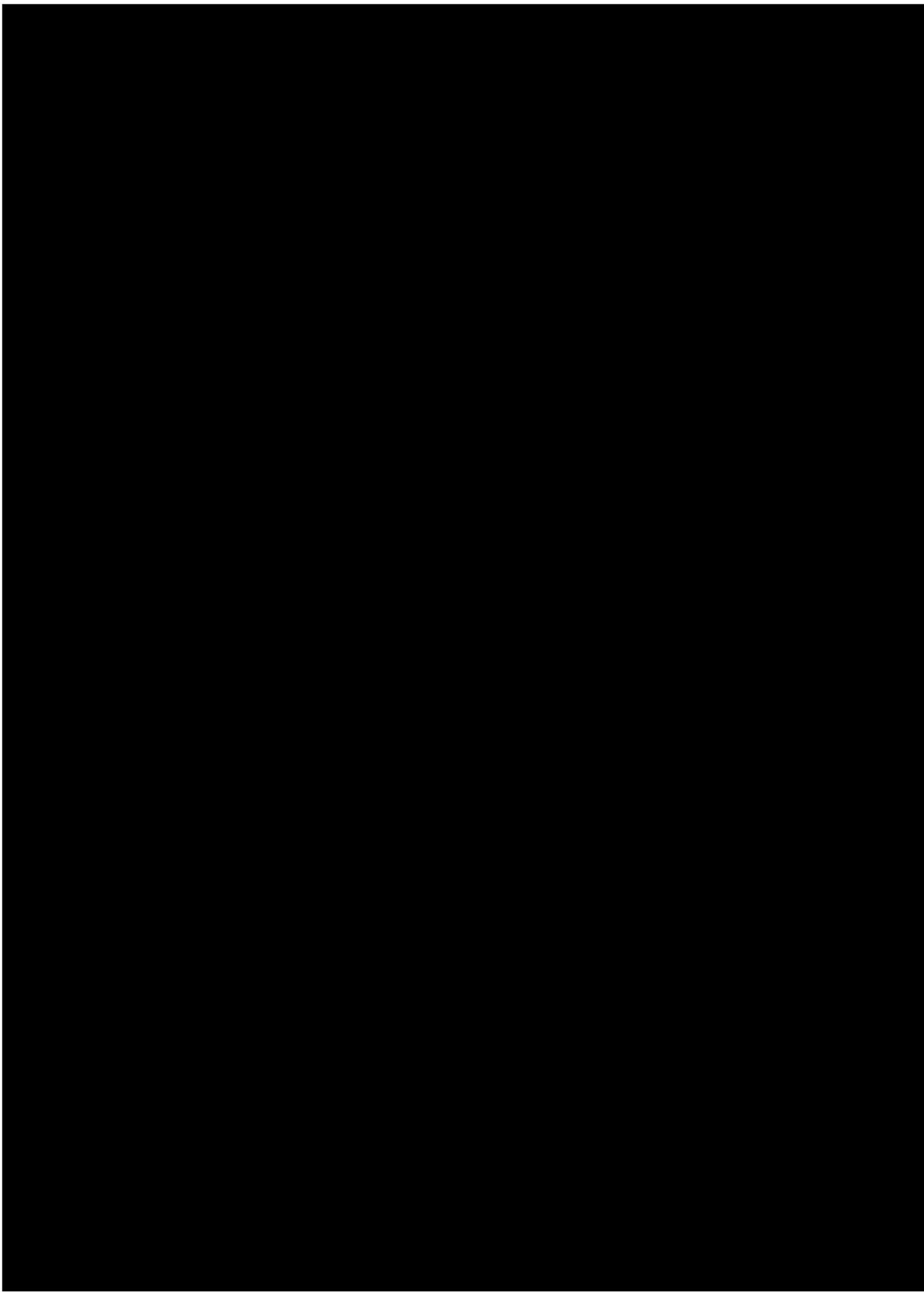
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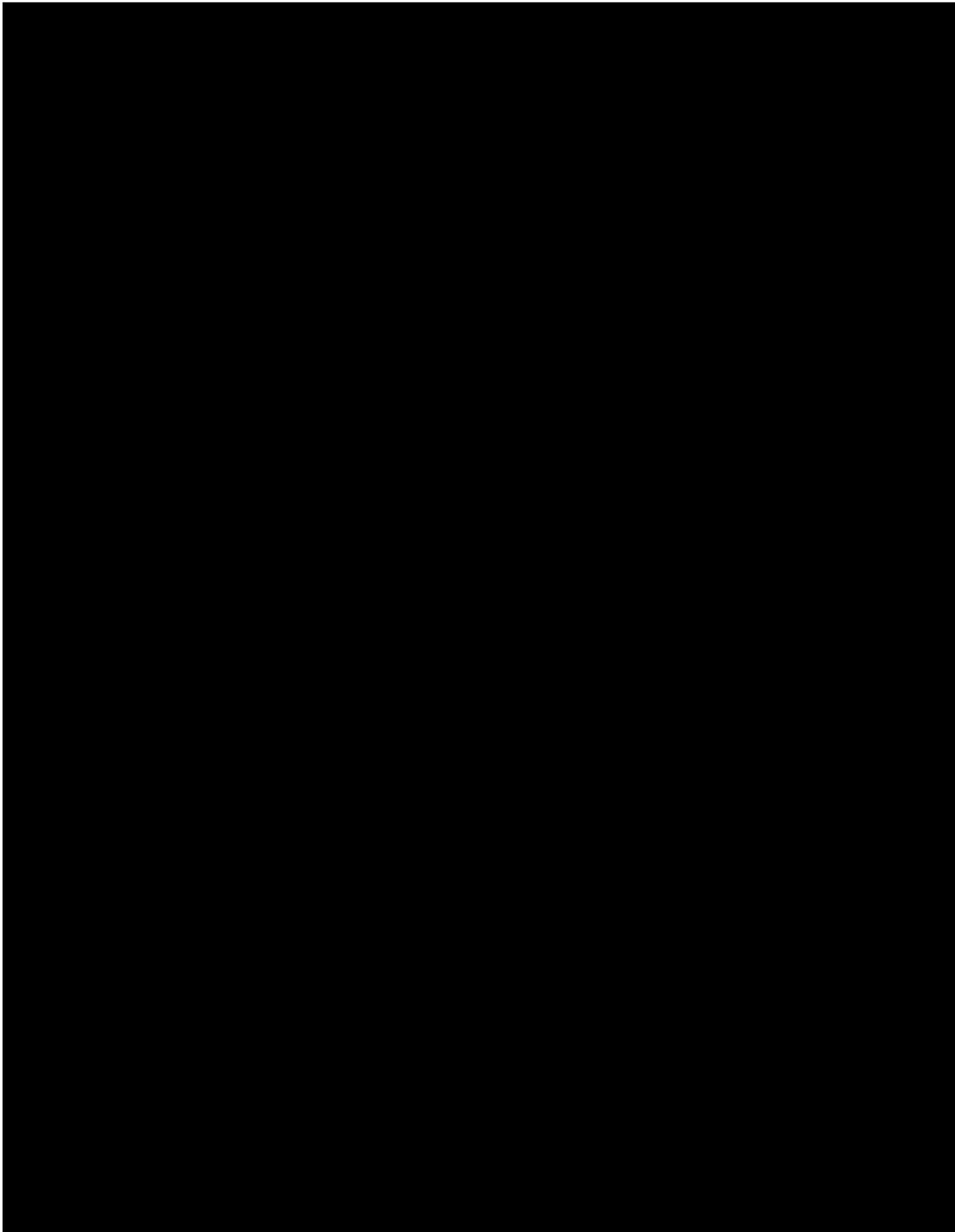
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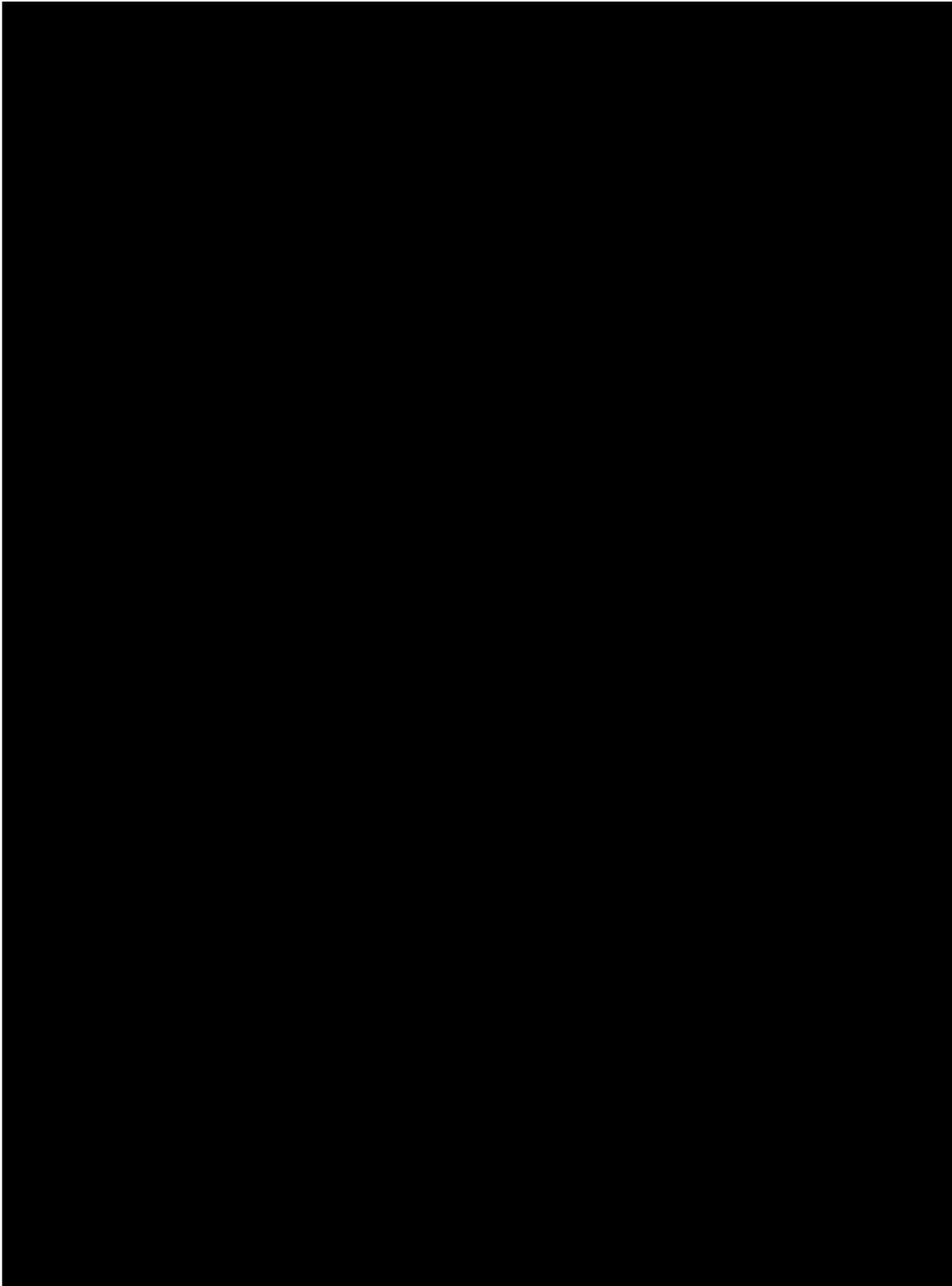
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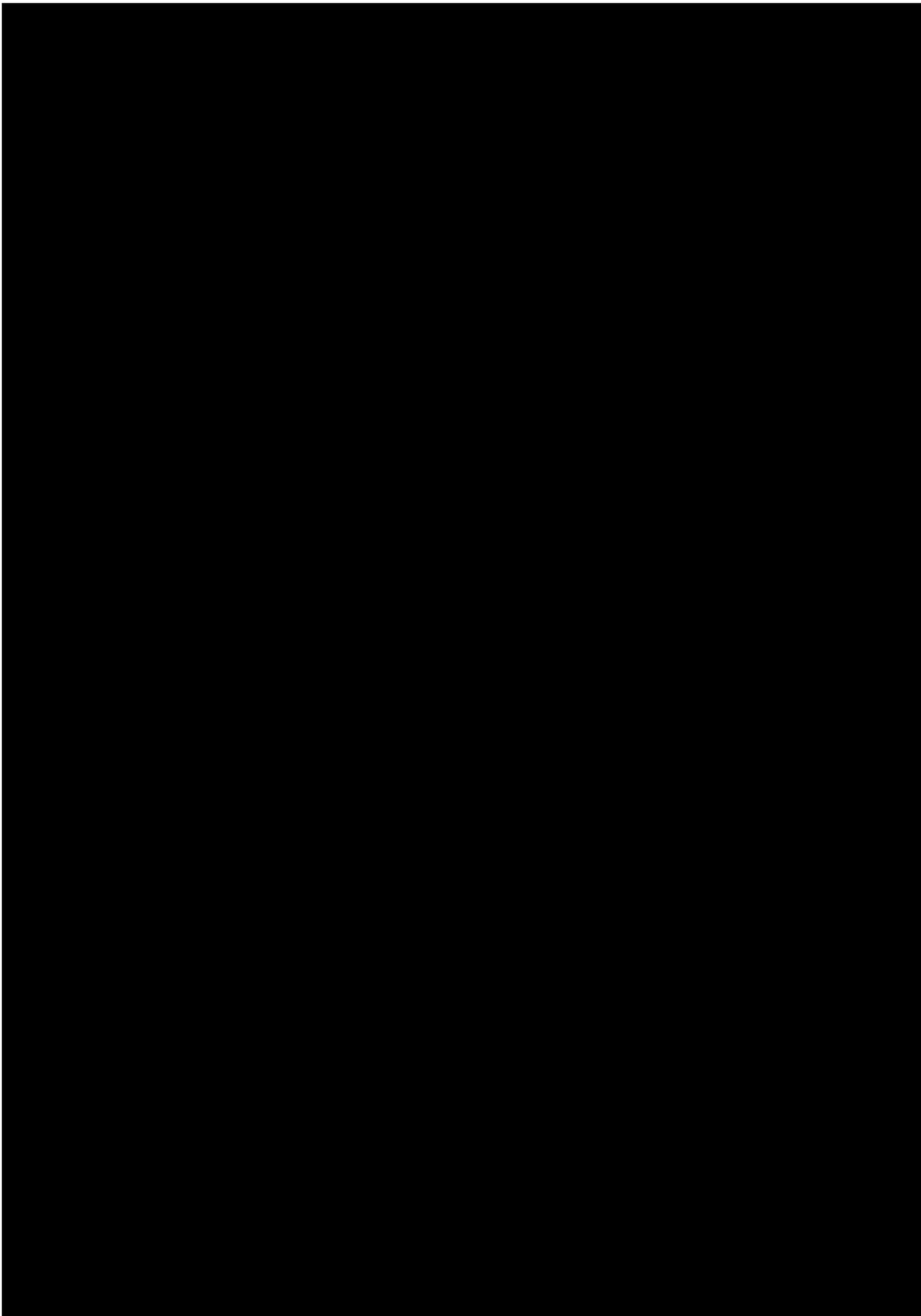
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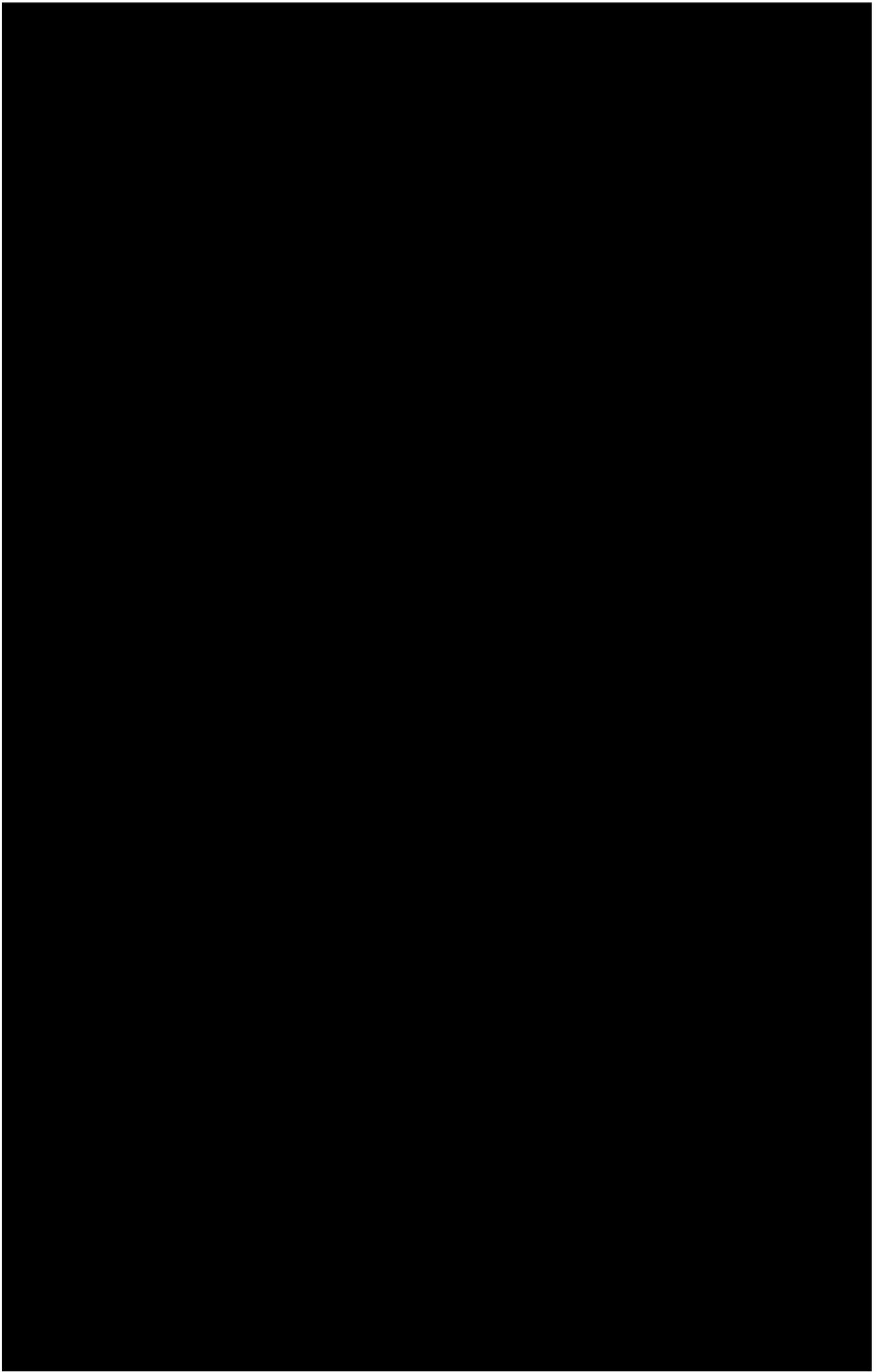
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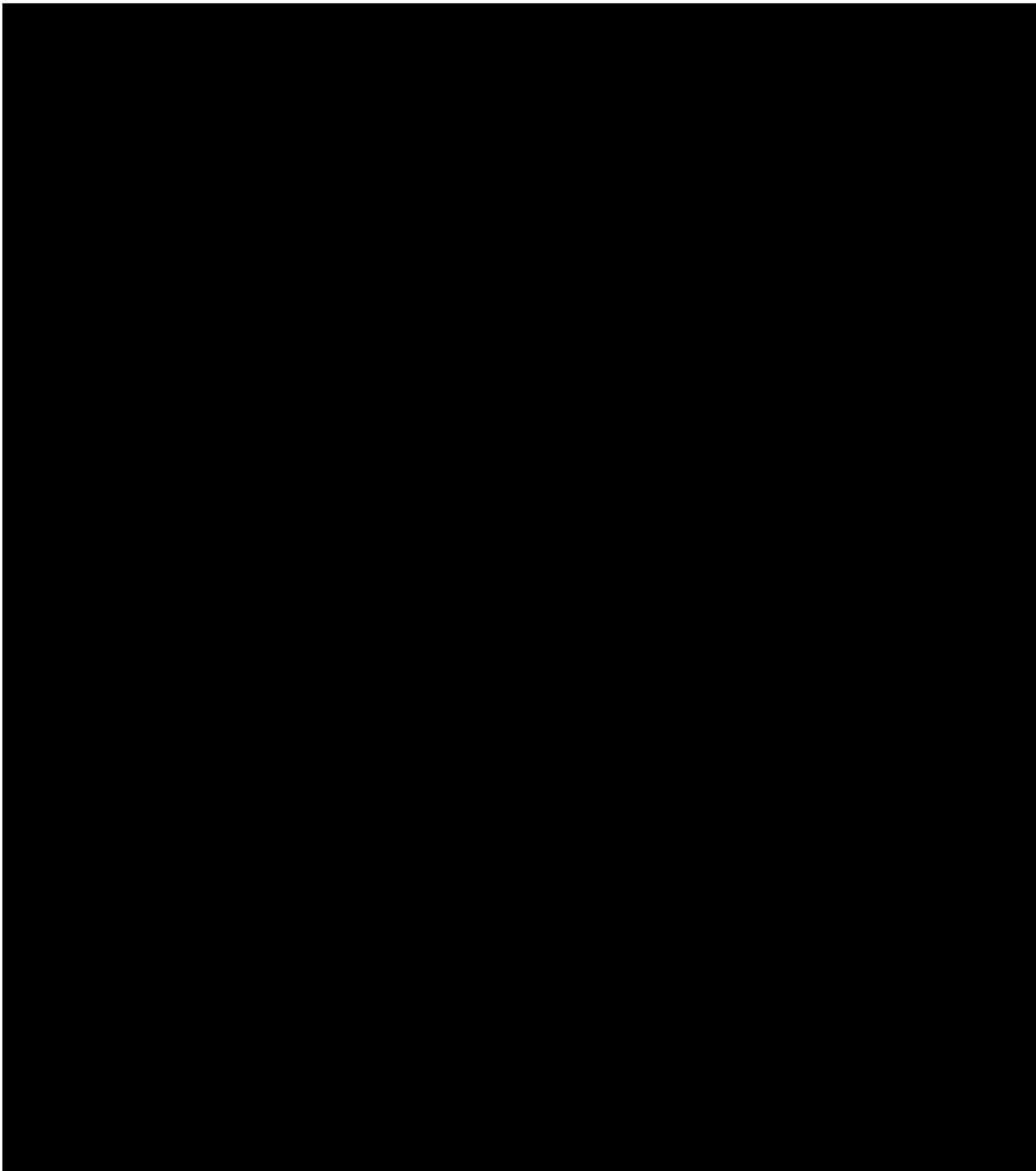


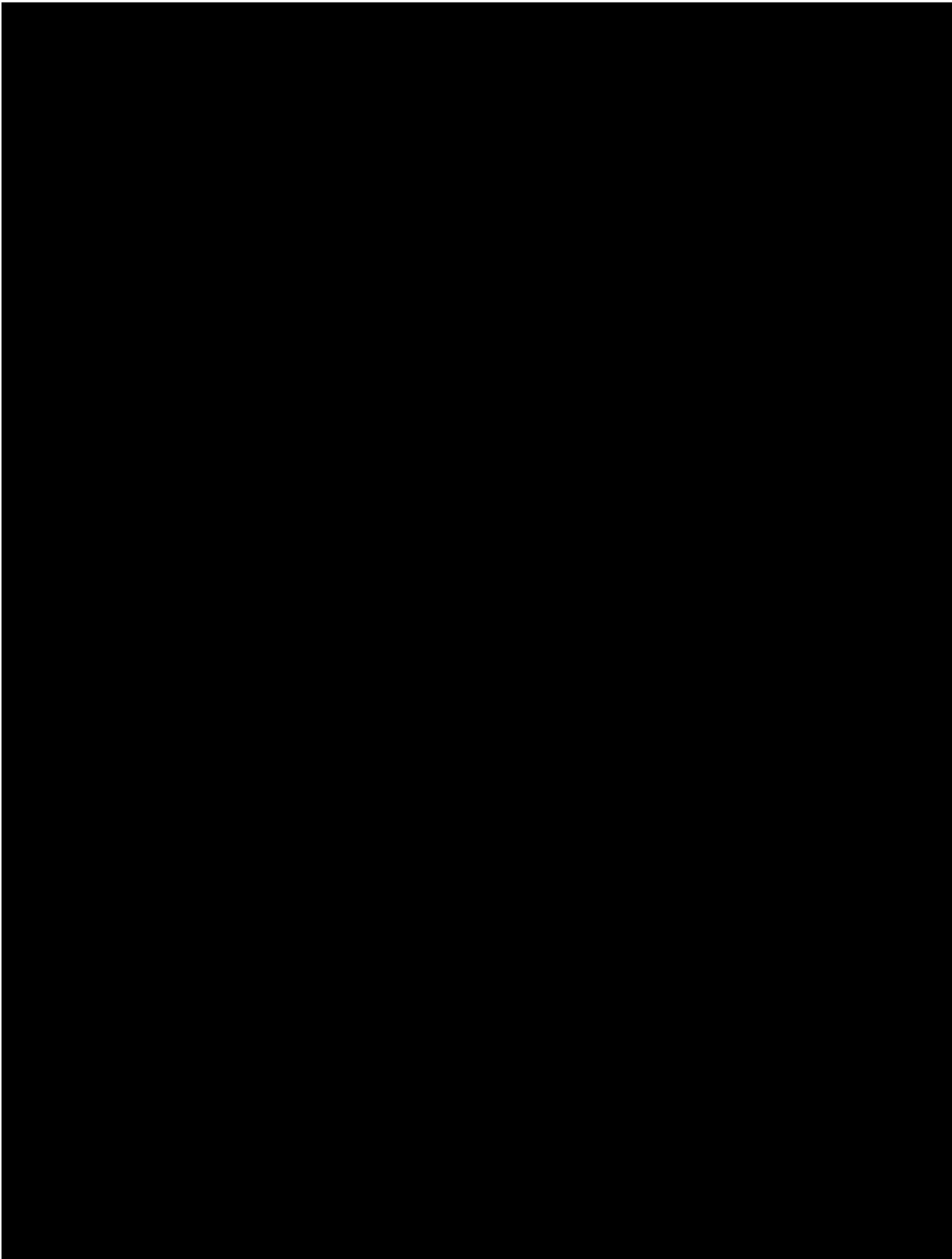


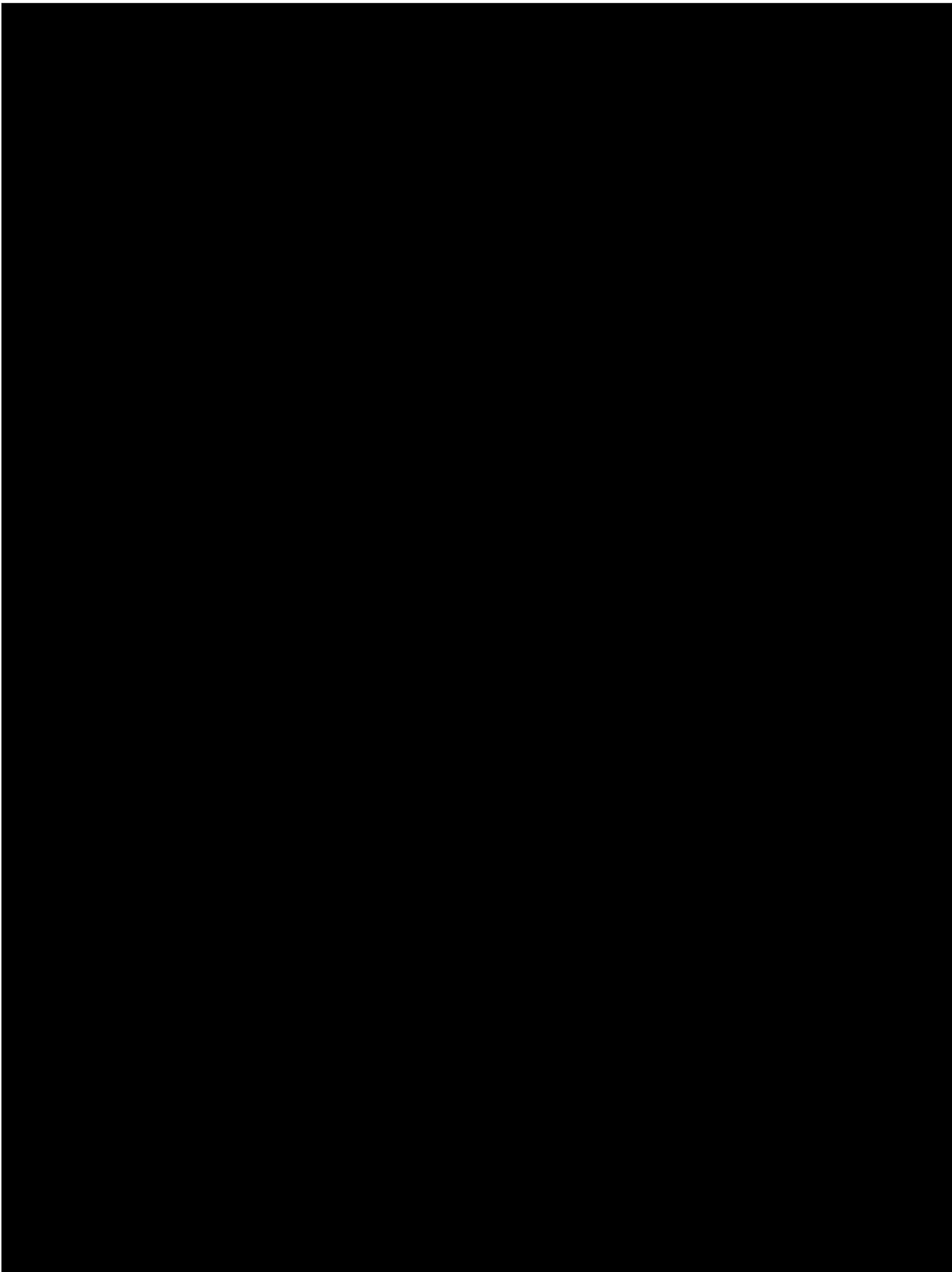


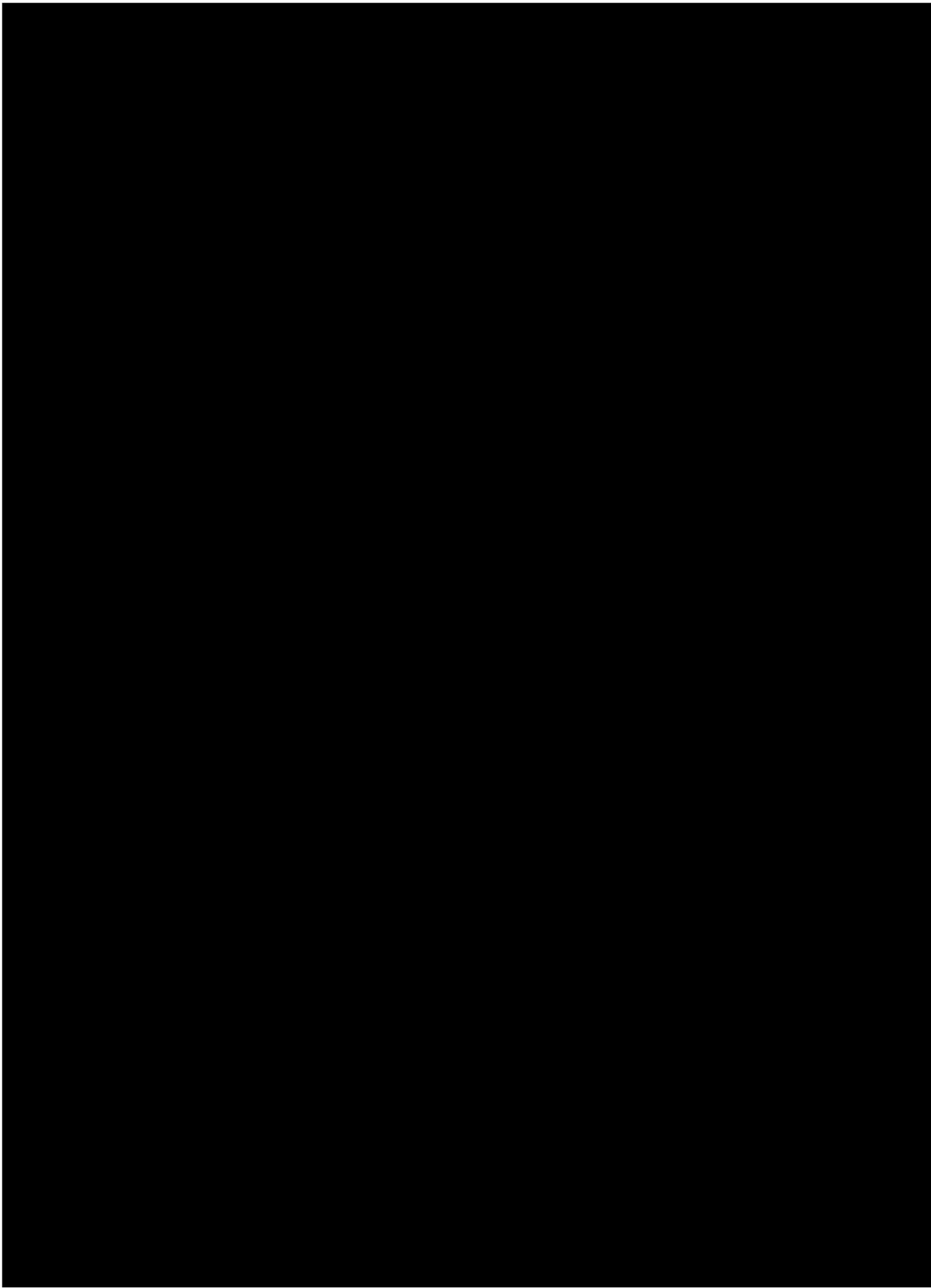






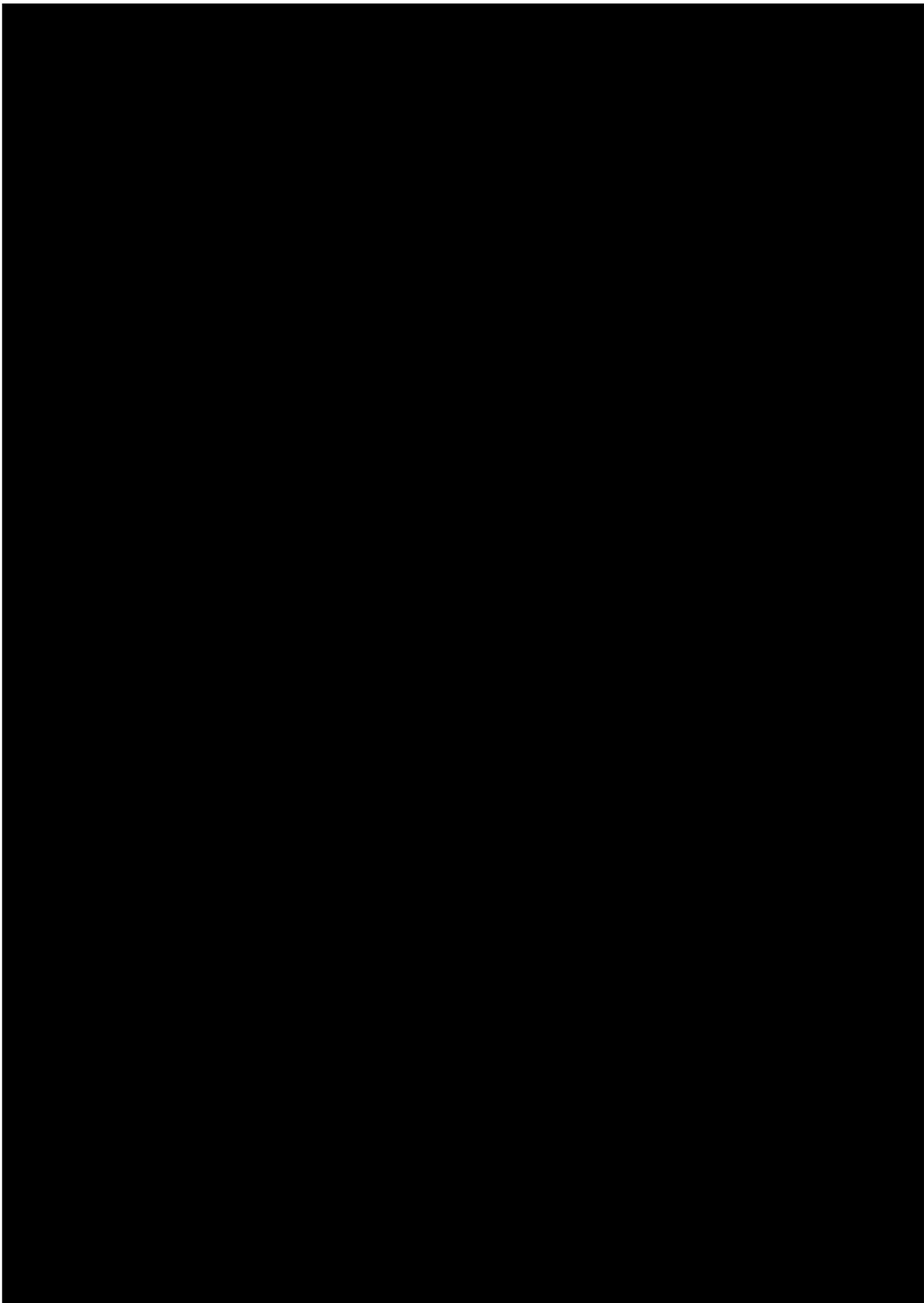


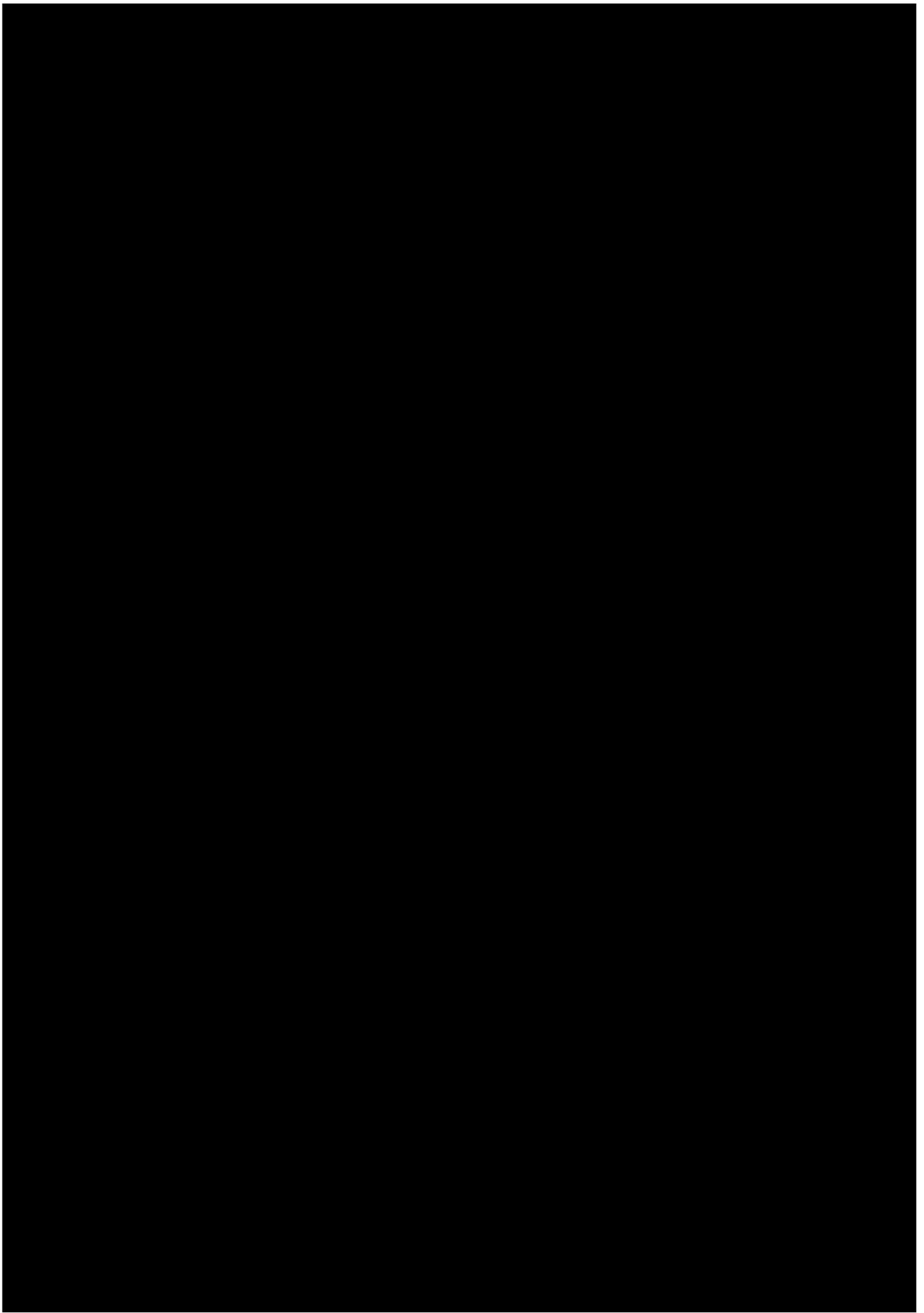




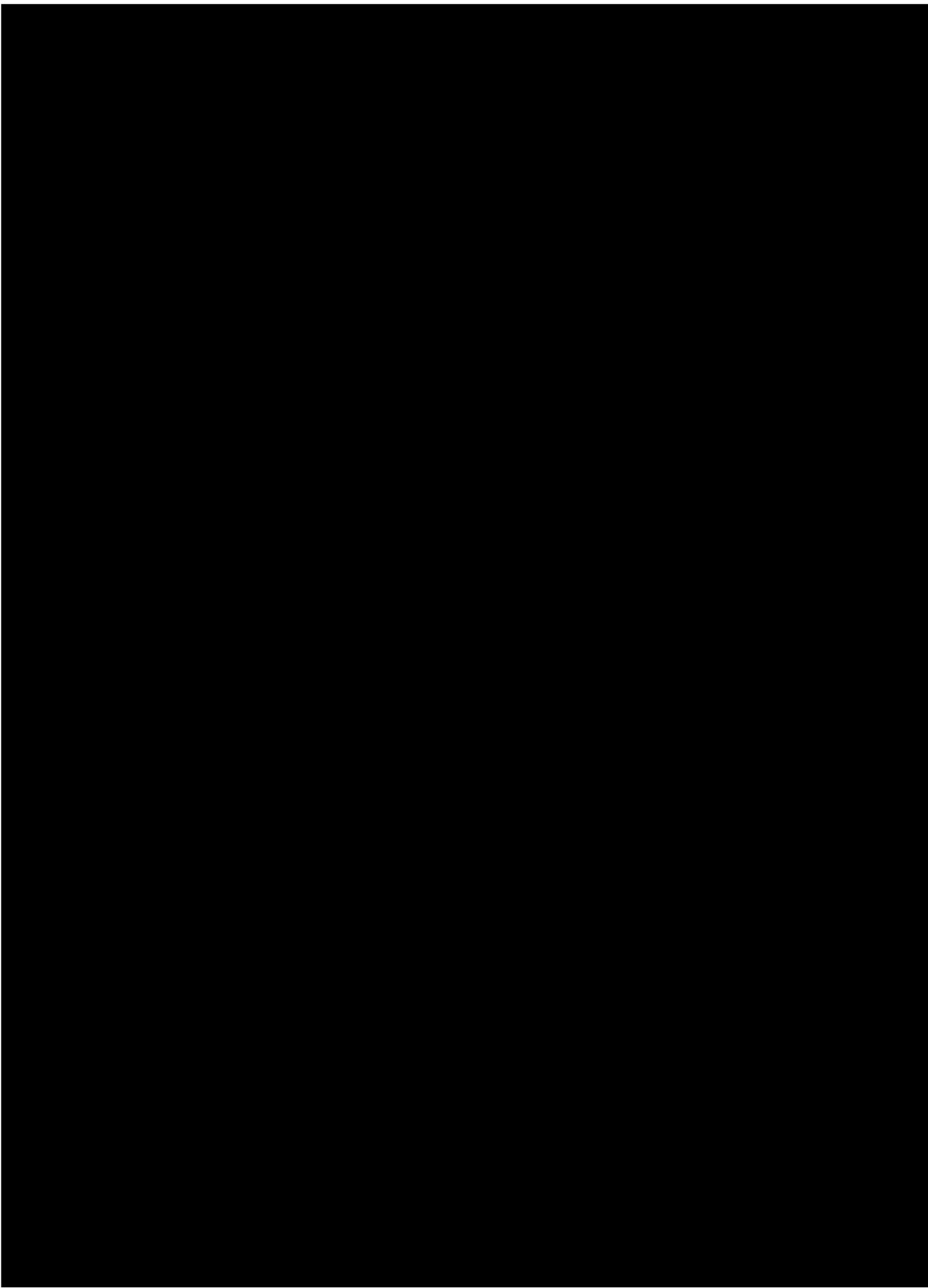
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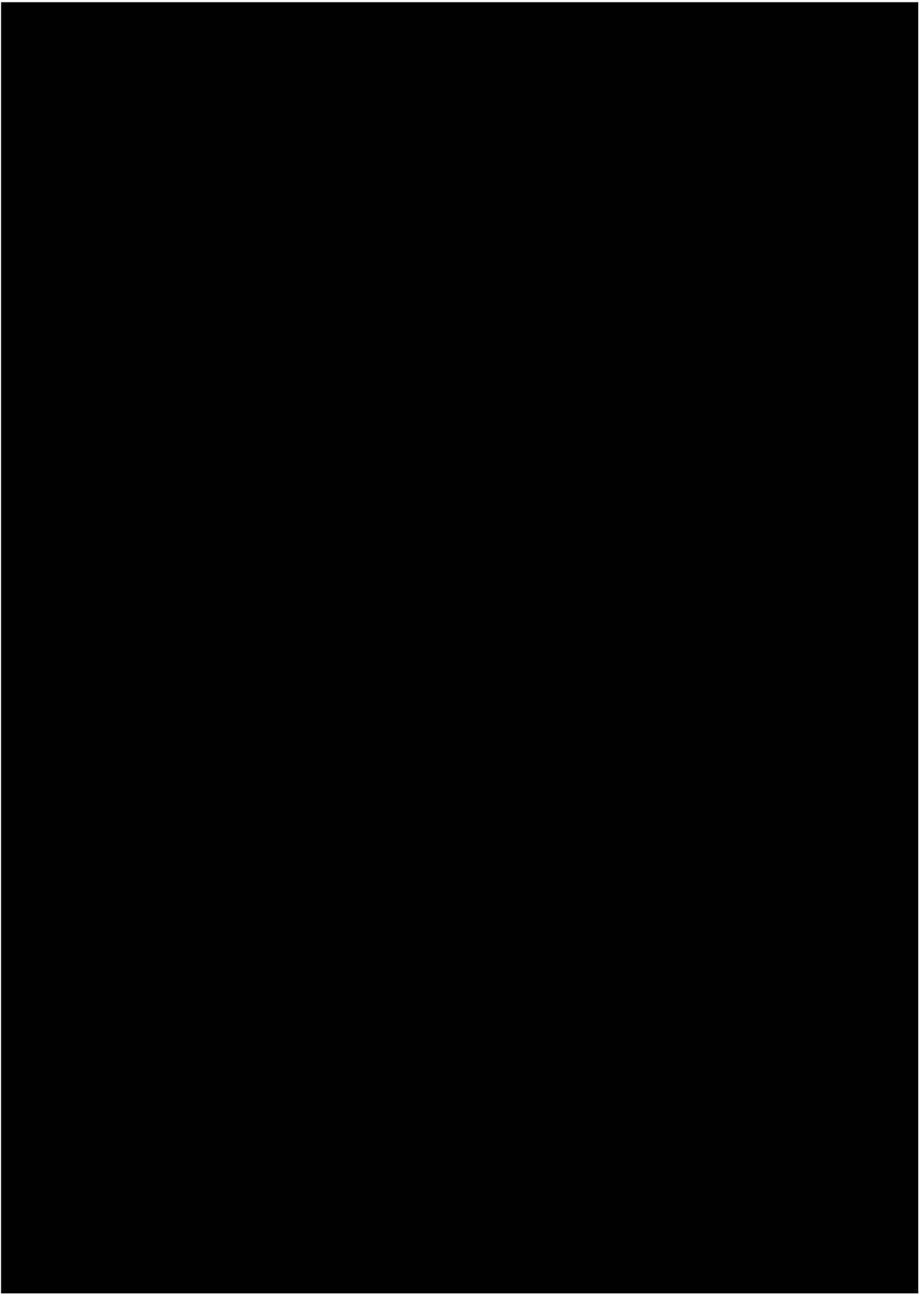
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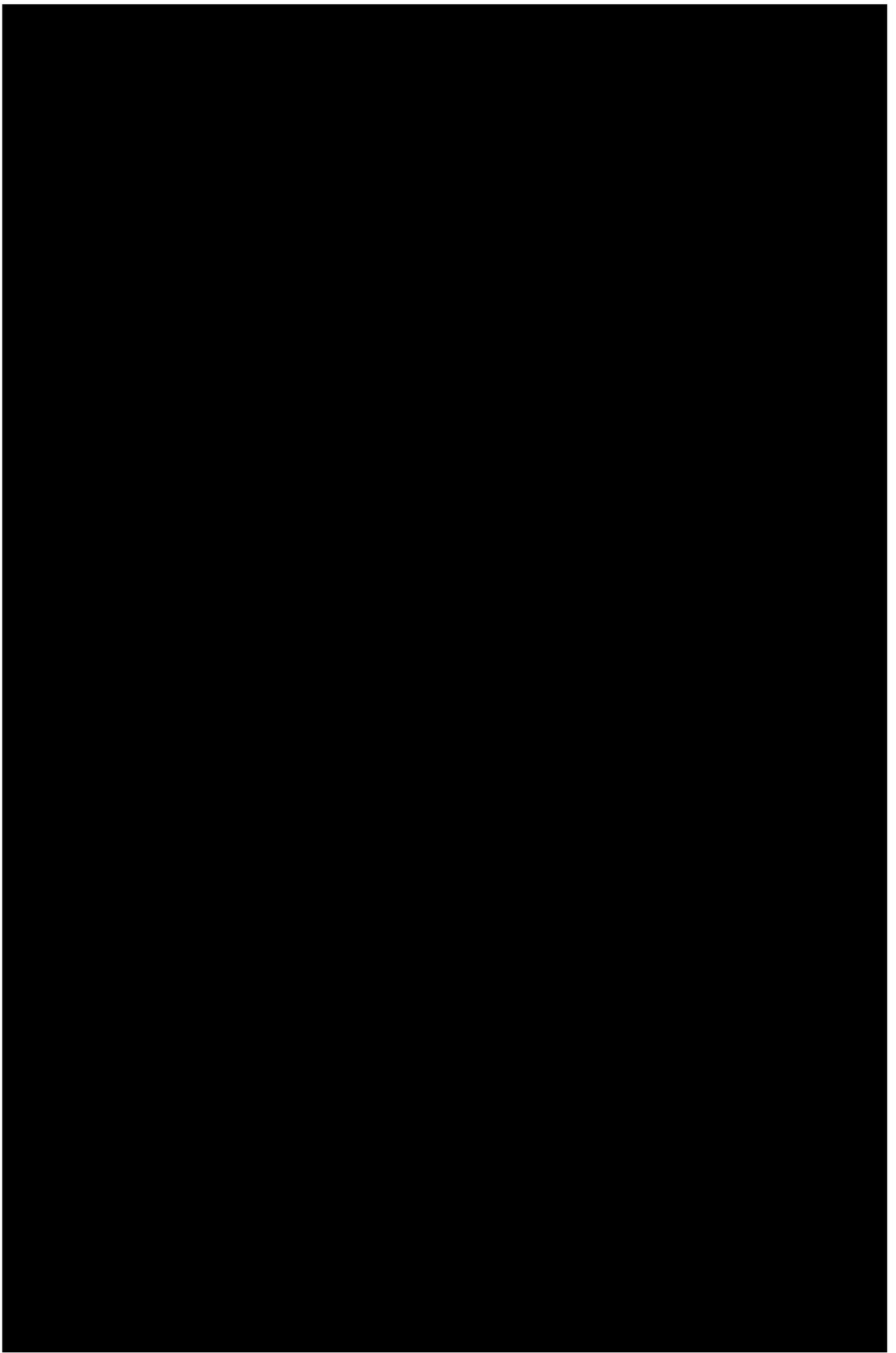


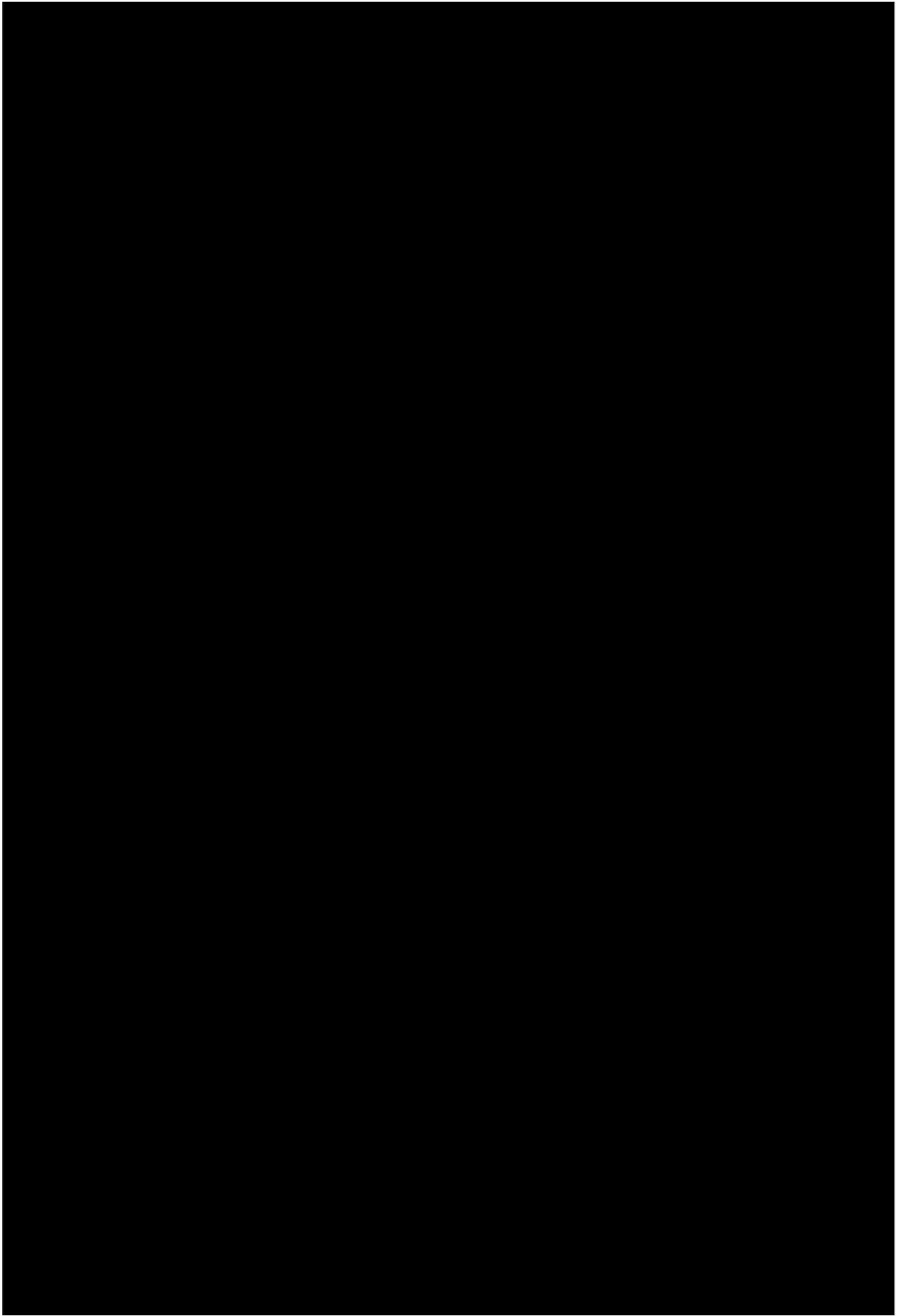


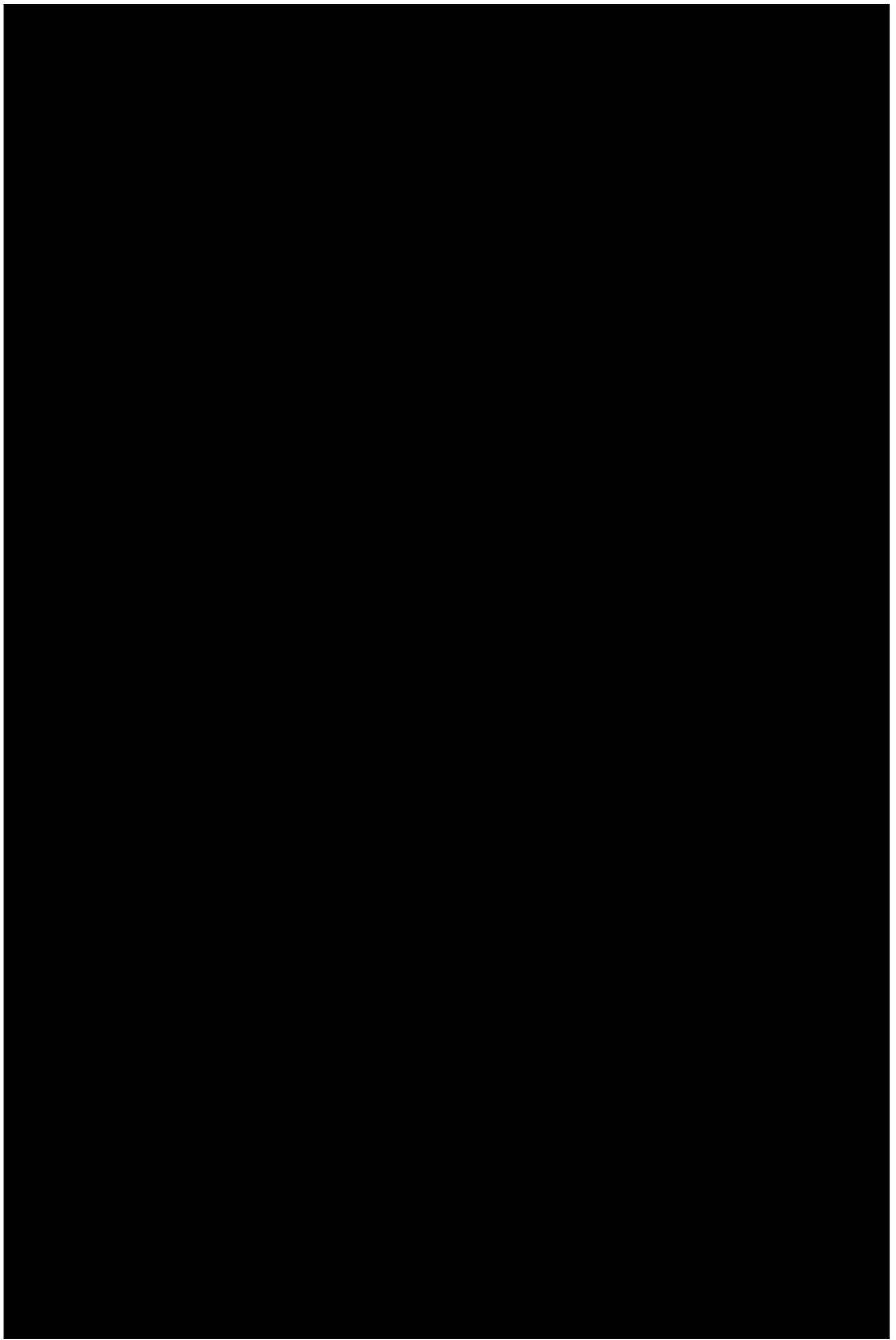


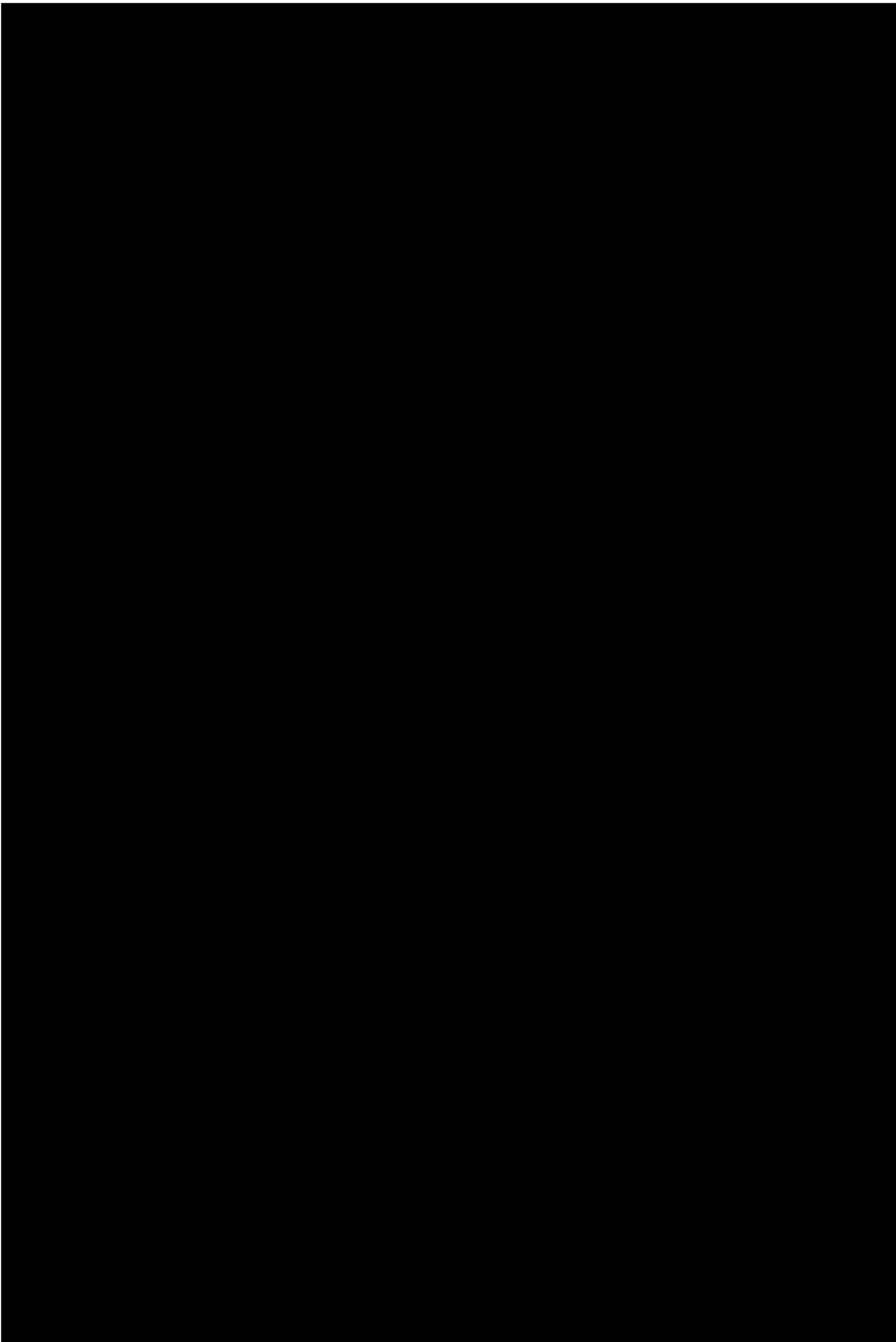


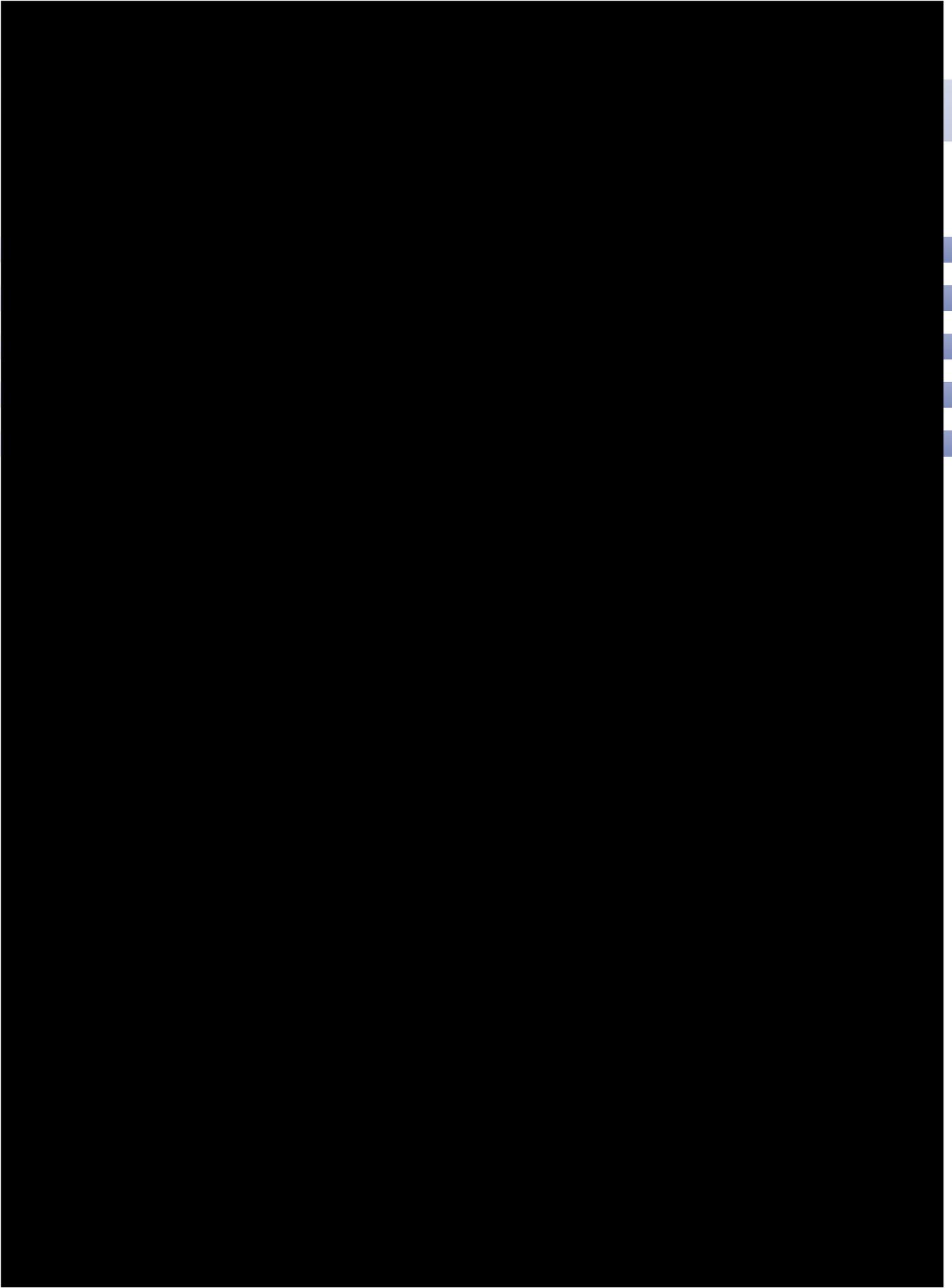


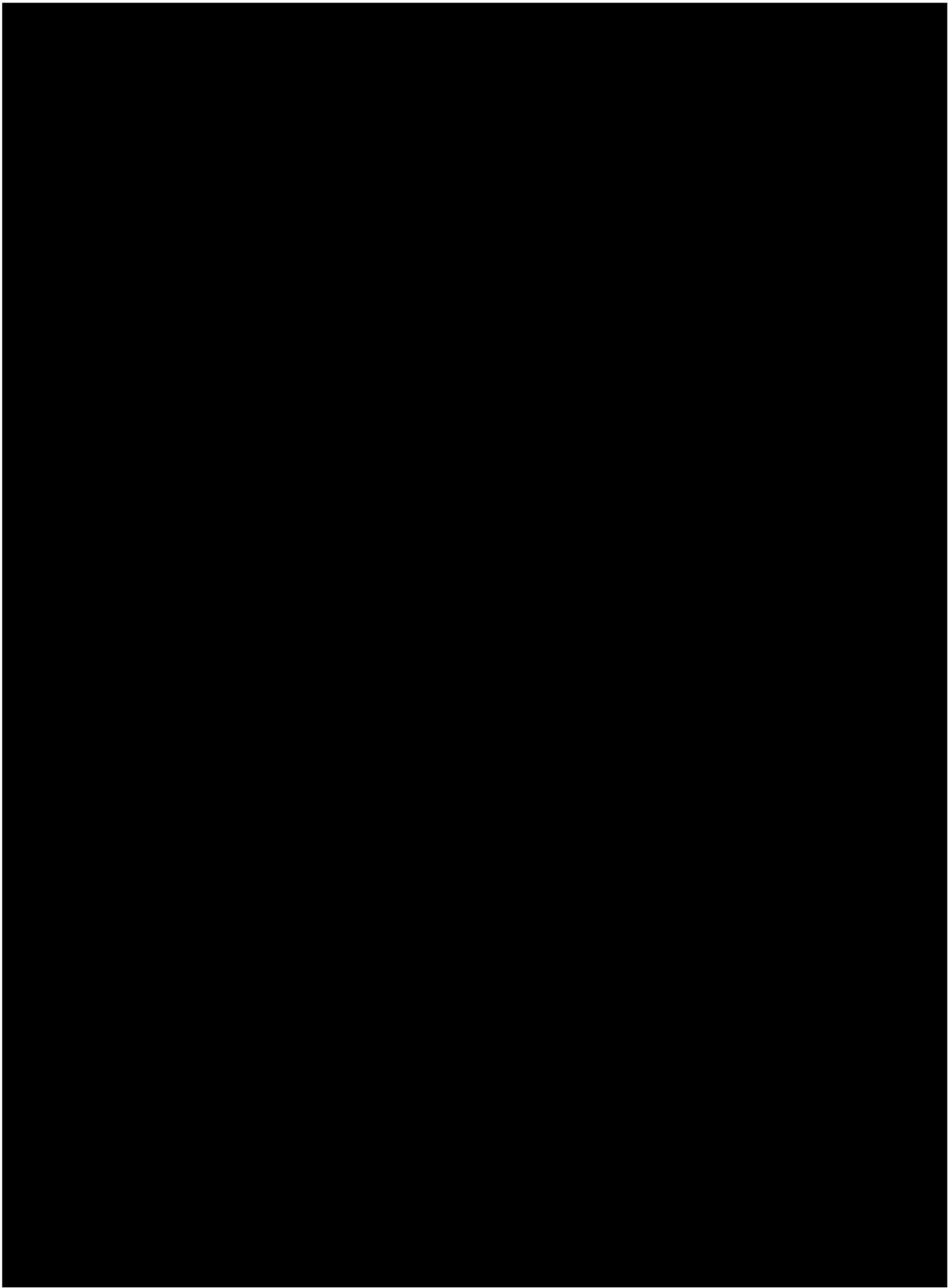




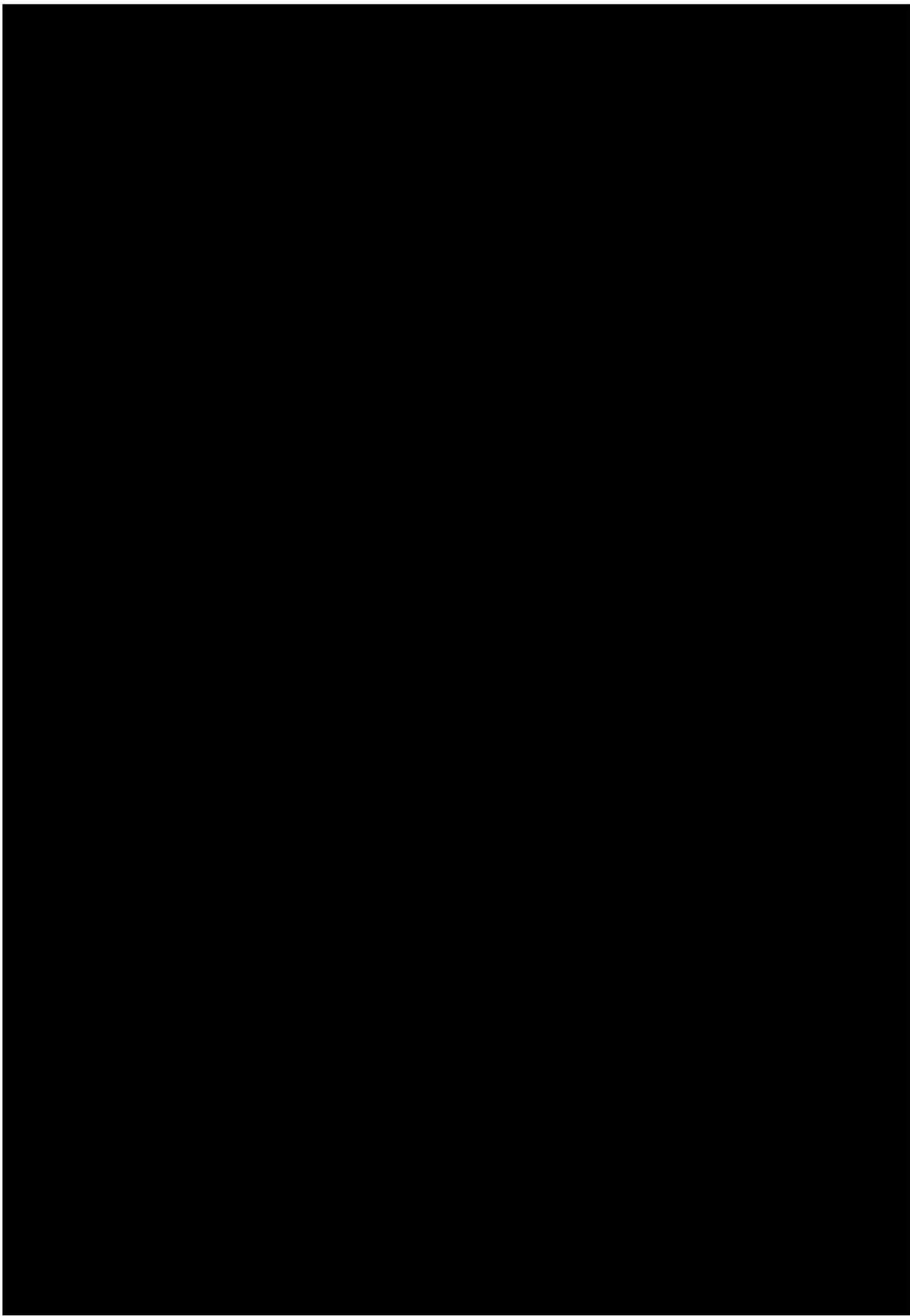


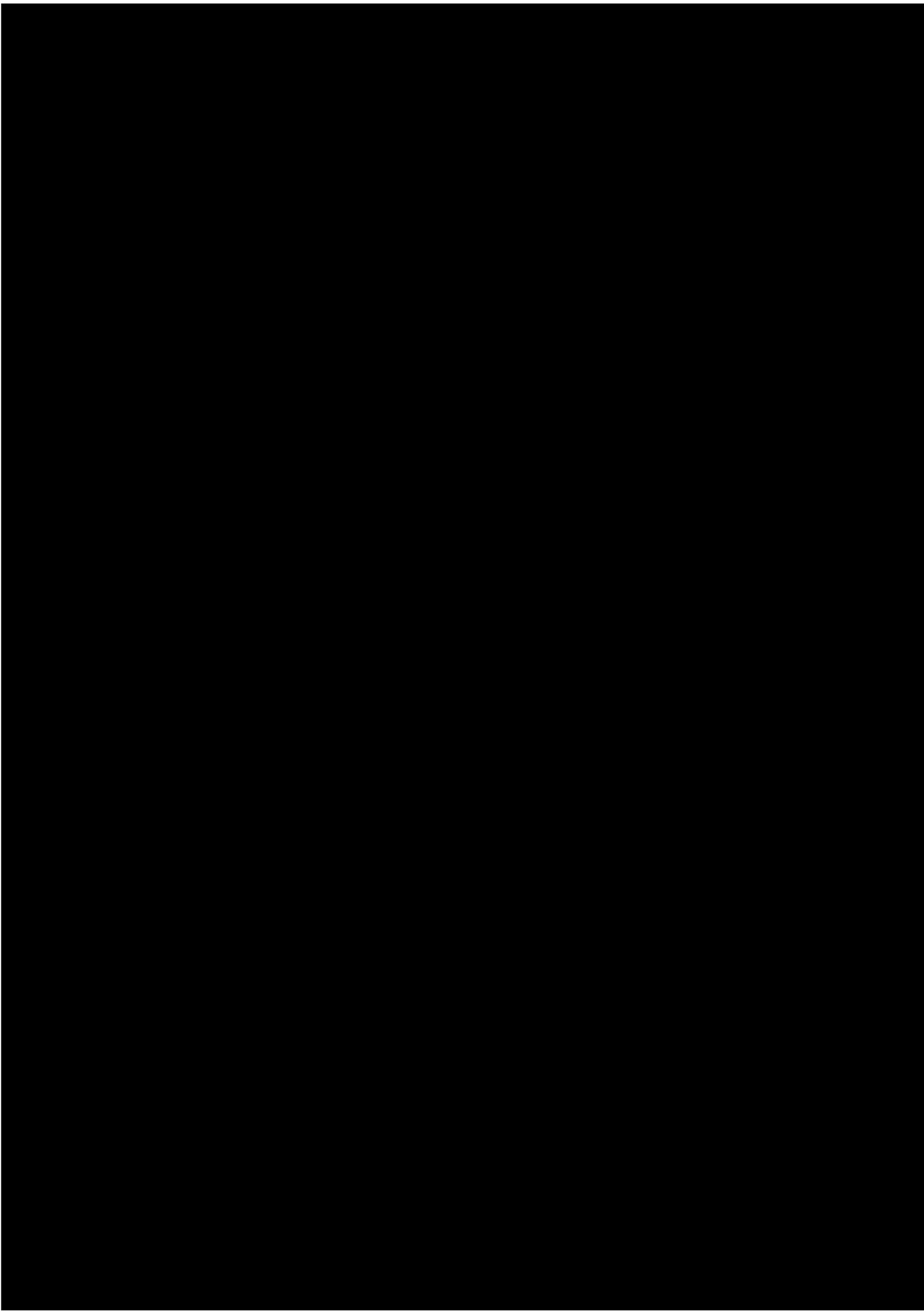


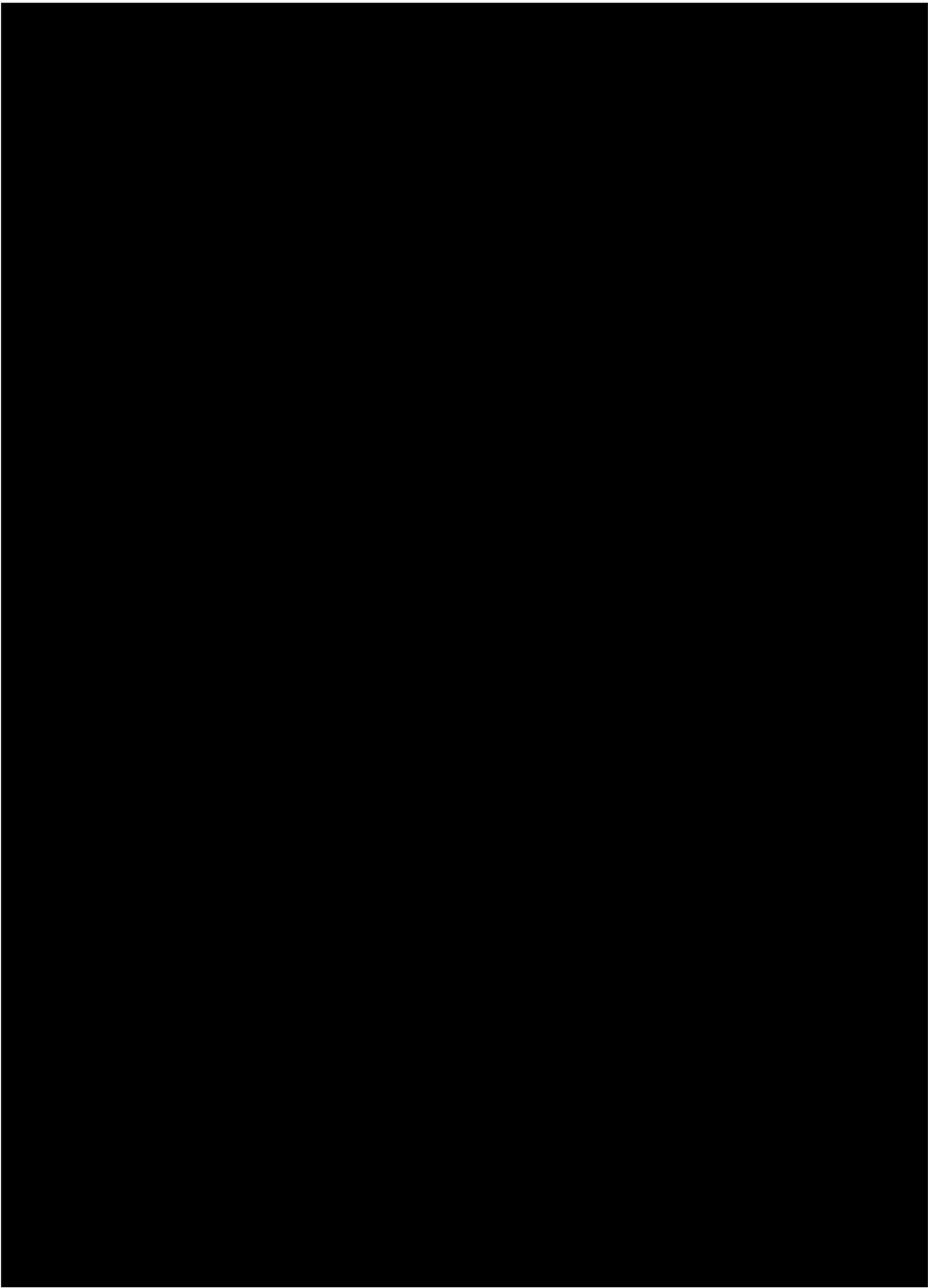


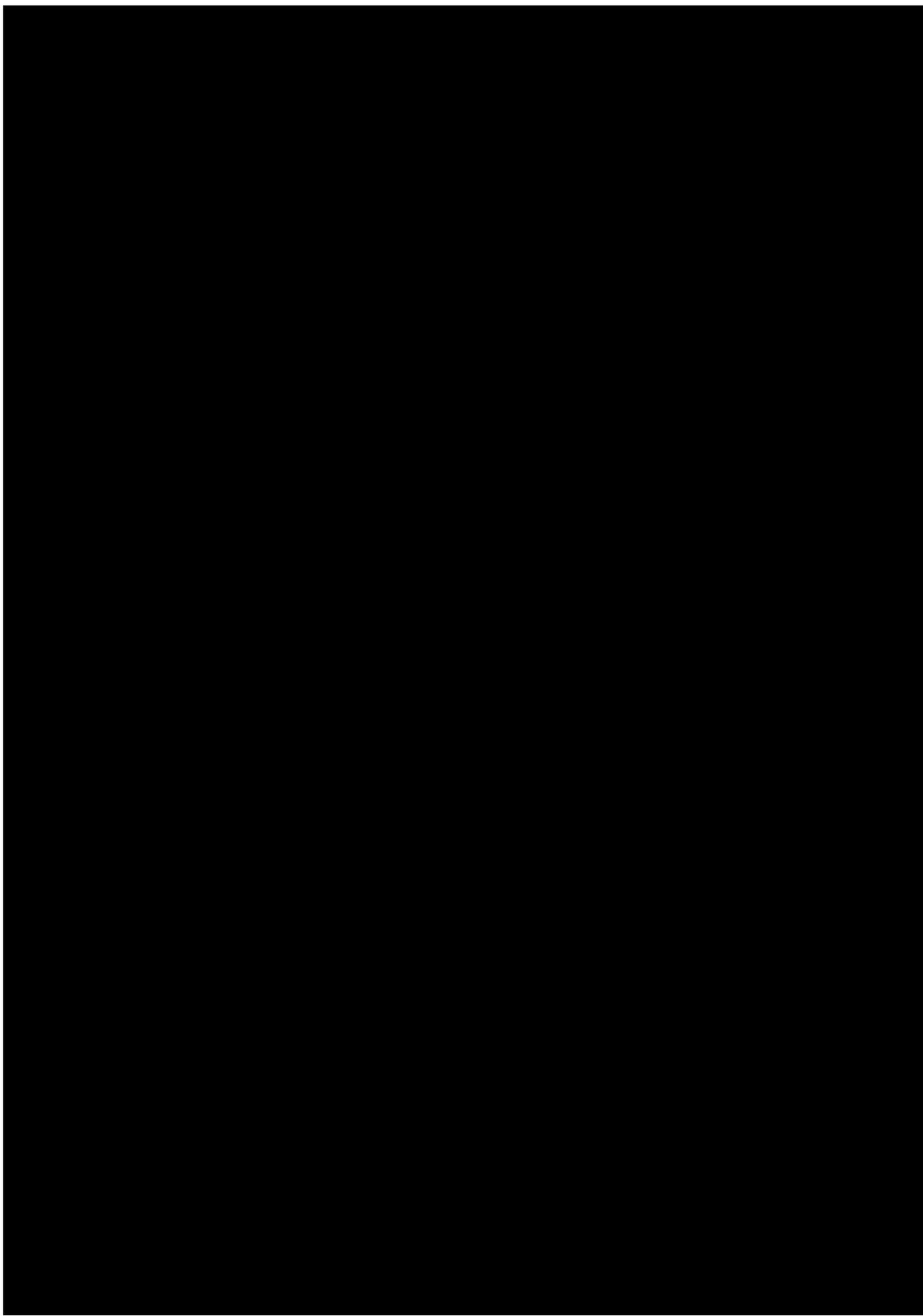


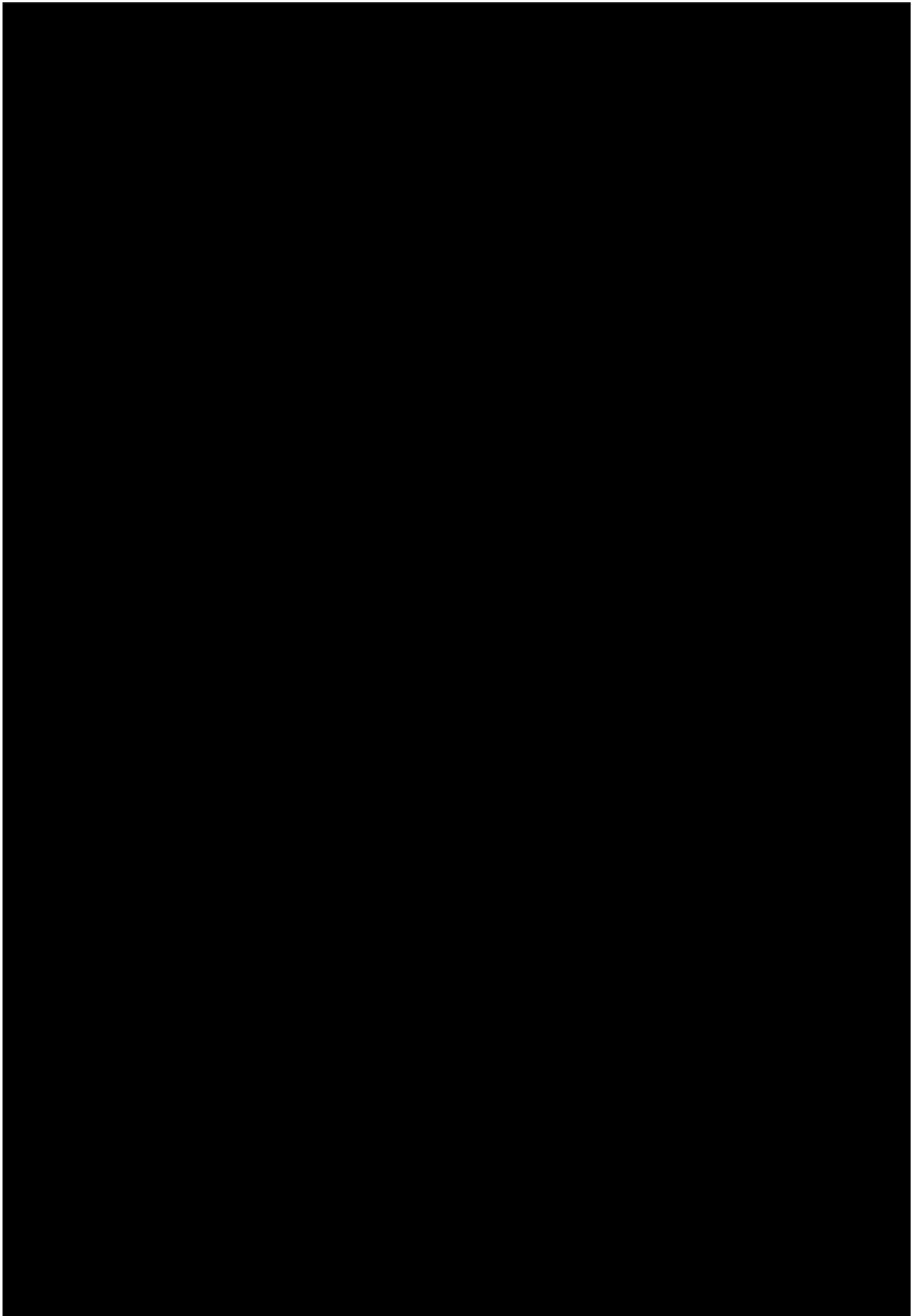


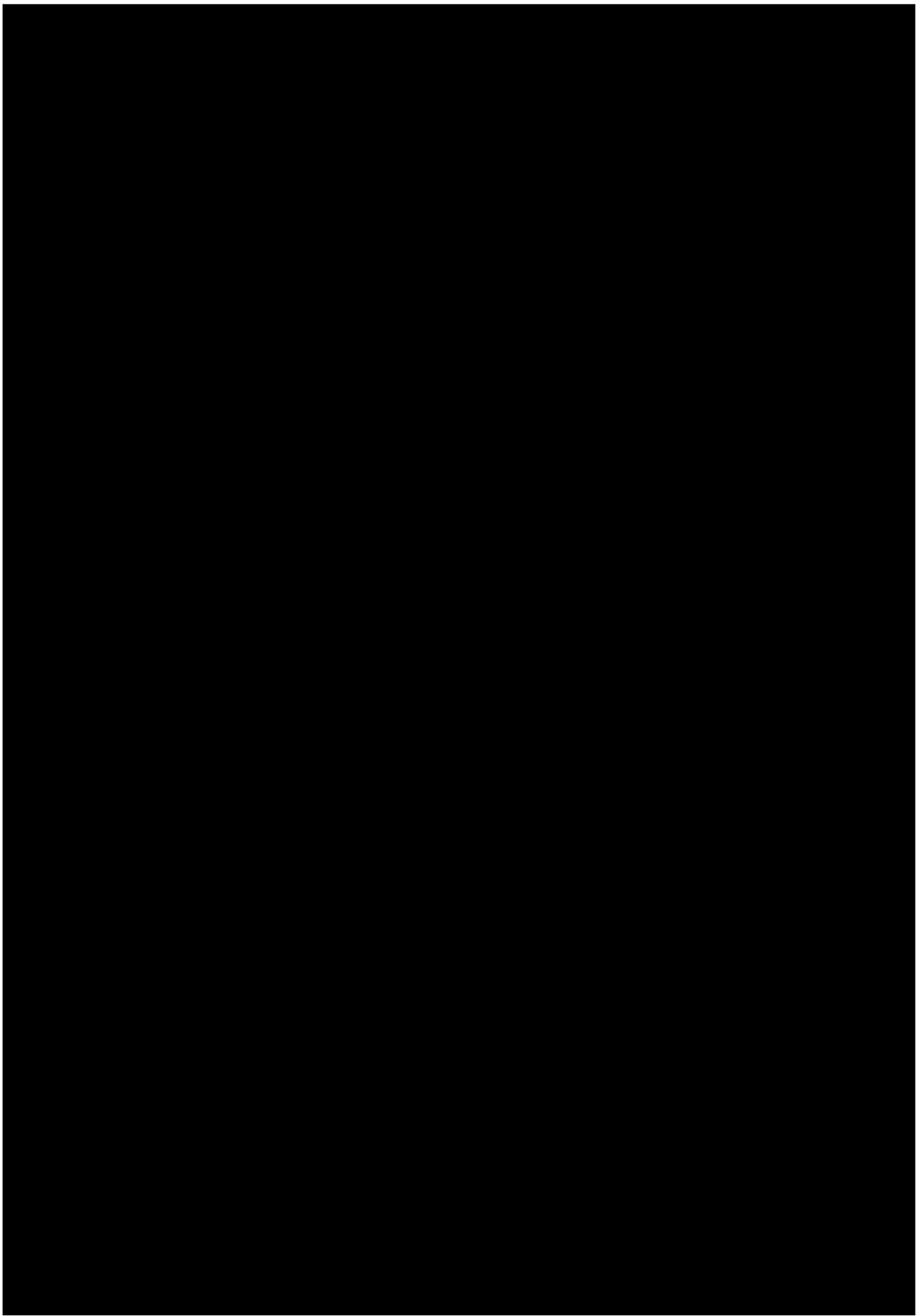


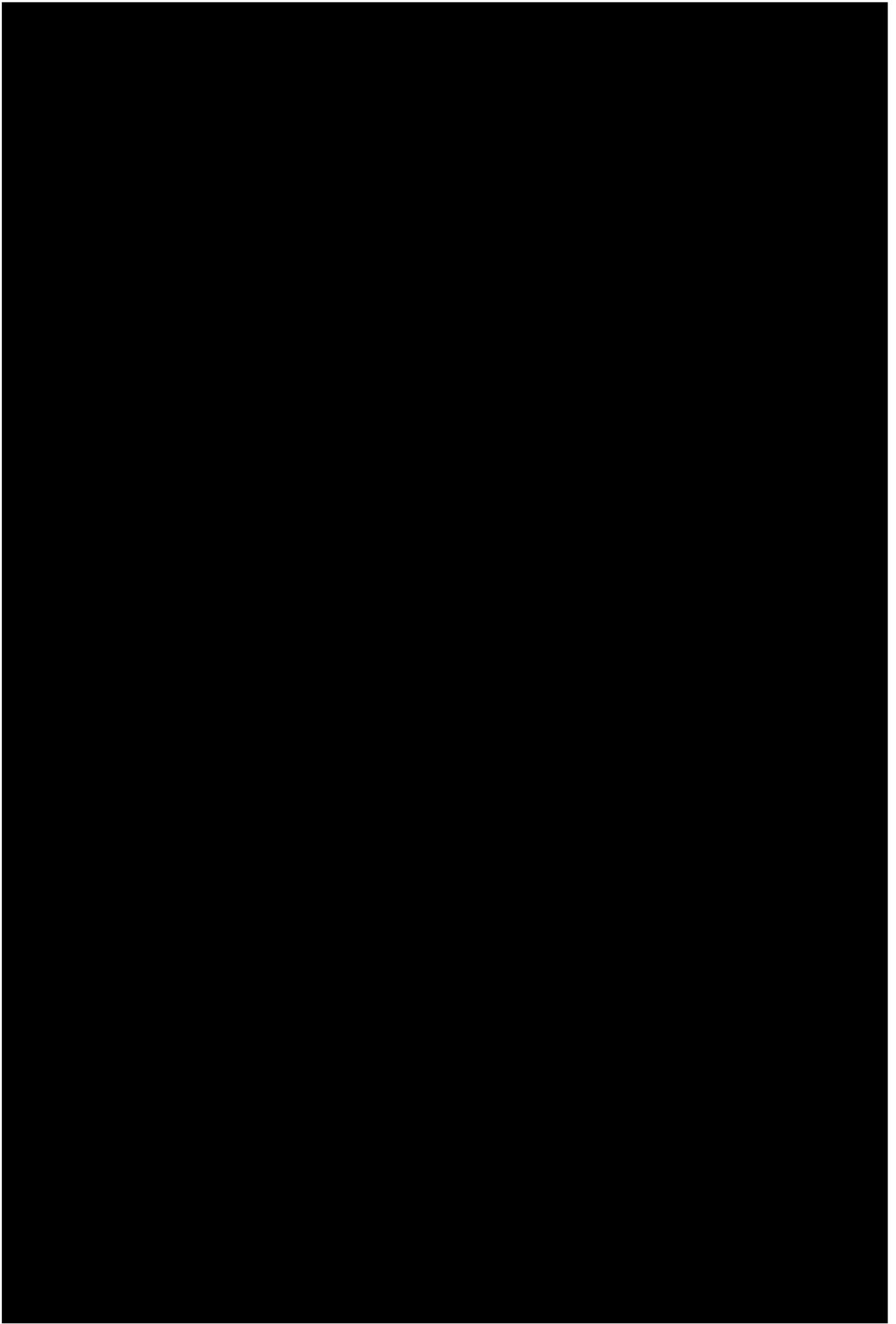


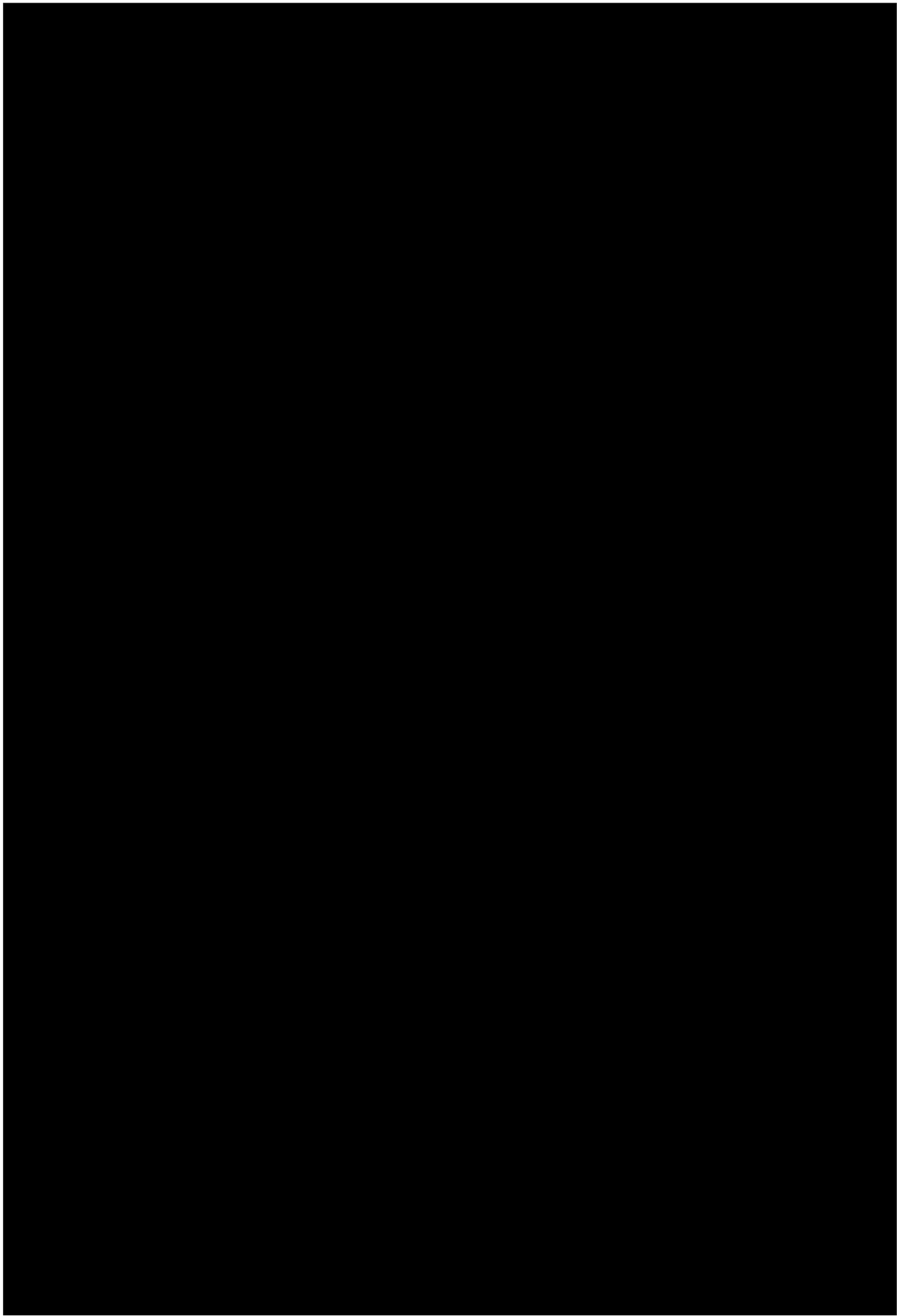


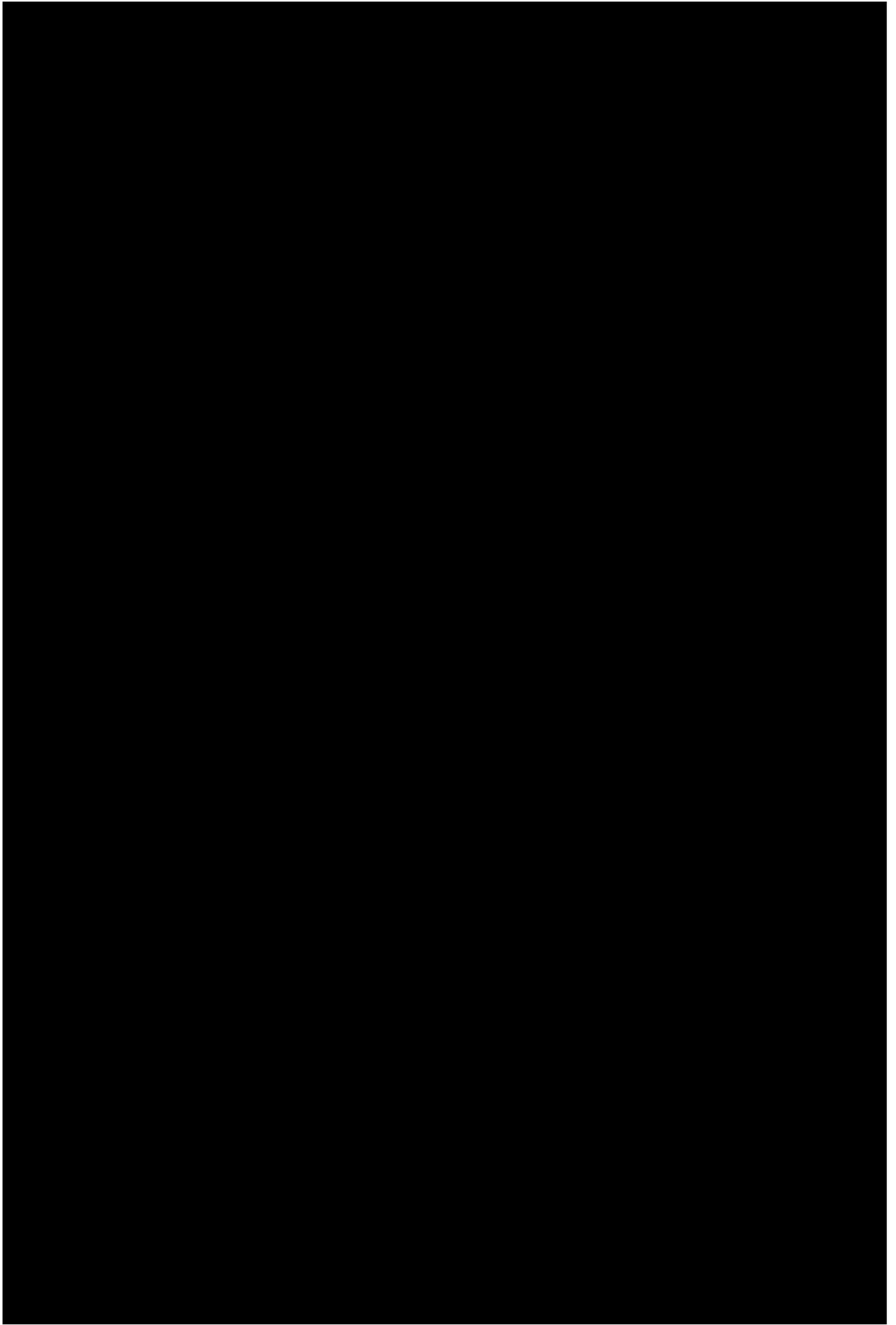


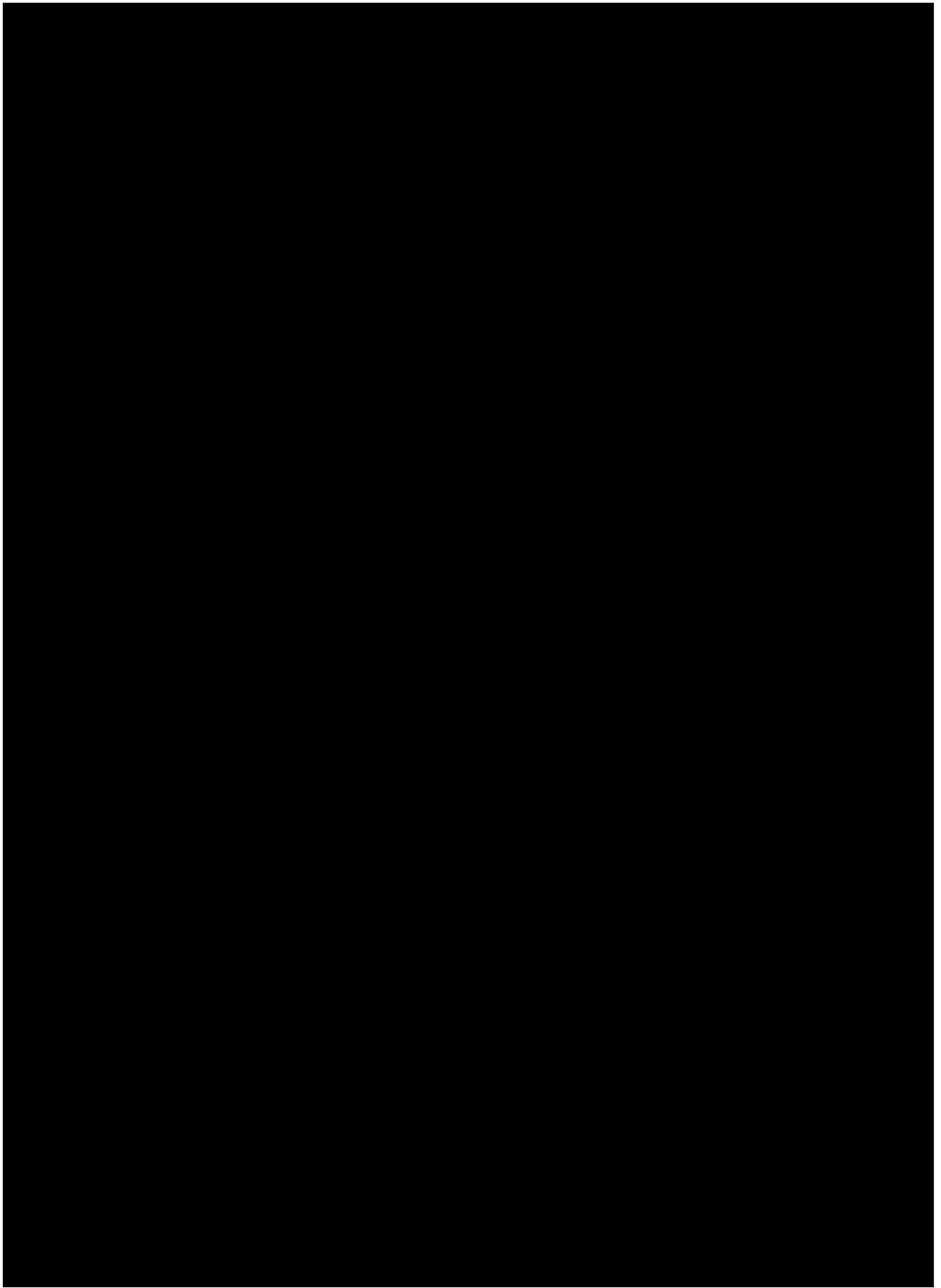












**SCHEDULE 17: DISPUTE RESOLUTION PROCEDURES**

# **SCHEDULE 17**

## **Dispute Resolution Procedure**

## **GENERAL**

1. In this Schedule 17:
  - 1.1 in the case of a Dispute between the Manufacturer and the Purchaser, a reference to "**Party**" shall be deemed to mean the Manufacturer or the Purchaser (as appropriate) and a reference to "**Parties**" shall be deemed to include both the Manufacturer and the Purchaser;
  - 1.2 in the case of a Dispute between the Manufacturer and LUL, a reference to "**Party**" shall be deemed to mean the Manufacturer or LUL (as appropriate) and a reference to "**Parties**" shall be deemed to include both the Manufacturer and LUL; and
  - 1.3 in the case of a Dispute between (a) the Manufacturer and (b) the Purchaser and LUL, a reference to "**Party**" shall be deemed to include either (a) the Manufacturer or (b) the Purchaser and LUL (as appropriate) and a reference to "**Parties**" shall be deemed to include the Manufacturer, the Purchaser and LUL.

## **PART A – ESCALATION PROCEDURE**

### **2. ESCALATION PROCEDURE**

- 2.1 This Part A of Schedule 17 is the Escalation Procedure.
- 2.2 In order to initiate the Escalation Procedure, either Party shall notify the other Party by serving a written notice to that effect (the "**Escalation Notice**").
- 2.3 The Escalation Notice shall:
  - 2.3.1 contain a concise statement of the Dispute in respect of which the Escalation Procedure is being initiated and a statement of the remedy or remedies which are sought;
  - 2.3.2 enclose copies of all correspondence and documentation relevant to the Dispute raised in paragraph 2.3.1; and
  - 2.3.3 state that it is a notice given under this Escalation Procedure.
- 2.4 A managing representative of each Party, in each case of appropriate seniority and experience and with appropriate decision-making authority, shall meet within 5 Working Days after the receipt of the Escalation Notice to discuss the matters set out in the Escalation Notice and attempt to resolve the Dispute described therein. If the managing representatives of the Parties are unable to resolve the

Dispute described in the Escalation Notice within 10 Working Days, either Party may serve an Expert Notice in respect of that Dispute in accordance with the provisions of paragraphs 3.2 and 3.3 below.

## **PART B – EXPERT PROCEDURE**

### **3. REFERRAL TO AN EXPERT**

- 3.1 This Part B of Schedule 17 is the Expert Procedure.
- 3.2 In order to initiate the Expert Procedure, either Party shall notify the other Party by serving a written notice to that effect (the "**Expert Notice**").
- 3.3 The Expert Notice shall:
- 3.3.1 contain a concise statement of the Dispute in respect of which the Expert Procedure is being initiated and a statement of the remedy or remedies which are sought;
  - 3.3.2 enclose copies of all correspondence and documentation relevant to the matter raised in paragraph 3.3.1; and
  - 3.3.3 state that it is a notice given under this Expert Procedure.
- 3.4 The Parties agree that a Dispute in respect of which the Expert Procedure is being initiated shall be referred to the determination of a single natural person as expert ("**Expert**").

### **Qualifications of the Expert**

- 3.5 The Expert shall be of not less than ten years qualification having experience in matters similar to the matters in respect of which the Expert Procedure is being initiated. The Expert shall be a reputable person in good standing.

### **Appointment of Expert**

- 3.6 The Parties shall attempt to appoint the Expert by discussion and agreement. If the Parties do not agree on the identity of such Expert within 10 Working Days of service of the Expert Notice or have not appointed such Expert within 20 Working Days of service of the Expert Notice, then the Expert shall be appointed by or on behalf of the President for the time being of the Law Society of England and Wales on such terms as such person shall direct, provided that those terms are consistent with paragraphs 3.9 and 3.10 of this Schedule 17. Any fees and/or expenses incurred by the President for the time being of

the Law Society of England and Wales in appointing an Expert shall be shared equally between the Parties.

- 3.7 The Dispute in respect of which the Expert Procedure is being initiated shall be deemed to be referred to the Expert upon his appointment.
- 3.8 In the event that the Expert refuses and/or is unable to act further in connection with the Dispute referred to him, or does not provide his determination to the Parties within 42 days of his appointment, the Parties shall co-operate to appoint a replacement Expert in accordance with the provisions of paragraphs 3.6 to 3.8. Such replacement Expert shall commence proceedings afresh without reference to any documents, submissions or information provided to the previous Expert.

### **Procedure for Determination**

- 3.9 Within 5 Working Days of his appointment, the Expert will establish the procedural rules to be applied to the determination which must accord with the following:
  - 3.9.1 Each Party will be entitled to make submissions to the Expert and supply the Expert with relevant data and information.
  - 3.9.2 Communications from a Party to the Expert or from the Expert to a Party shall be copied to the other Party at the same time and by the same method.
  - 3.9.3 The Expert will keep all information and documents provided to him by the Parties confidential save as otherwise required by law.
  - 3.9.4 The Expert will be entitled to make site visits or inspections as he considers is necessary or appropriate and to request samples or tests as he shall think fit.
  - 3.9.5 The Expert shall be entitled to retain the services of other persons to provide legal or expert advice in relation to any matter which he shall think fit.
  - 3.9.6 If a Party sends a document to the Expert but does not provide a copy to the other Party, the Expert shall send such document to the other Party and shall allow it a reasonable opportunity to comment on the same.
  - 3.9.7 The Expert shall not take into consideration any document or statement which has not been made available to the other Party for comment unless the Expert has sent the document to

the other Party pursuant to paragraph 3.9.6 and given it a reasonable opportunity to comment on the same.

- 3.9.8 The Expert shall be entitled to use his own knowledge and experience in arriving at his determination.
- 3.9.9 Any failure by a Party to participate in the proceedings and/or to respond to any request or direction by the Expert shall not invalidate the Expert's determination.
- 3.9.10 The Expert must give his determination in writing with reasons within 42 days of his appointment.
- 3.9.11 The Expert shall be entitled by notice in writing to the Parties:
  - (A) to correct any matter in his determination if the Parties agree; and/or
  - (B) to correct any minor slip or manifest error in his determination within 3 Working Days of communicating his determination to the Parties.
- 3.10 The Expert shall determine the matters referred to him acting impartially and in good faith. The Expert shall have the power to open up, review and revise any certificate, decision, direction, instruction, notice, requirement or valuation made under the Agreement, except where the Agreement expressly prohibits this.
- 3.11 The Expert's determination shall determine the Dispute referred to him and shall be binding on the Parties (save in the case of fraud) unless or until the Parties agree otherwise or the Dispute is finally determined by the High Court of England & Wales as provided by paragraph 4. The Parties shall act to give immediate effect to the Expert's determination.
- 3.12 The Expert shall not be liable for anything done or omitted in the discharge or purported discharge of his functions as Expert unless the act or omission is in bad faith, and any employee or agent of the Expert (including any expert or legal advisor) shall be similarly protected from liability.
- 3.13 The Parties agree that unless a court of competent jurisdiction so orders, the Expert may not be called as a witness in any subsequent proceedings concerning the matters referred to him.

- 3.14 The Expert shall not be entitled to act as an adviser to a Party in any subsequent proceedings arising out of or in connection with this Agreement without the other Party's prior written consent.
- 3.15 The Expert is not an arbitrator within the provisions of the Arbitration Act 1996 and the law relating to the arbitration shall not apply to the Expert, the determination or the procedure by which the Expert reaches the determination.
- 3.16 The fees and expenses of the Expert (including the fees and expenses arising from any legal or expert advice taken by the Expert) will be shared equally between the Parties unless the Expert determines otherwise in his determination. If one Party shall have paid all of the Expert's fees and expenses then that Party shall be entitled to recover from the other Party the proportion of the Expert's fees and expenses that such other Party would otherwise have had to pay under this paragraph 3.16 as a debt.
- 3.17 The Parties shall each bear their own legal, advisory and other costs of any reference to the Expert.
- 3.19 Either Party may apply to any appropriate court for enforcement of an Expert's determination.

## **PART C – LITIGATION IN THE HIGH COURT OF ENGLAND & WALES**

### **4. REFERRAL TO THE HIGH COURT OF ENGLAND & WALES**

#### **4.1 If:**

4.1.1 at any time the Parties agree to proceed to litigation of any Dispute or;

4.1.2 49 calendar days have elapsed after the appointment of an Expert in respect of any Dispute Notwithstanding any determination of the Expert pursuant to paragraph 3;

then either Party may issue and prosecute proceedings in relation to any such Dispute in the High Court of England & Wales (the "**Court**") which shall have exclusive jurisdiction finally to determine the Dispute (provided that nothing in this Schedule 17 shall prevent either Party from enforcing a judgment of the Court in any other jurisdiction).

### **5. SAVING FOR INJUNCTIVE RELIEF**

5.1 Nothing in this Schedule 17 shall remove or diminish or in any way affect any right of a Party to seek injunctive or interim relief from any court of competent jurisdiction in relation to any matter.

**6. POWERS OF THE HIGH COURT OF ENGLAND & WALES**

6.1 The High Court of England & Wales shall have the power to open up, review and revise any certificate, decision, direction, instruction, notice, requirement or valuation made under the Agreement, including any determination of the Expert.

## SCHEDULE 17A

### Fast Track Dispute Resolution Procedure

#### 1. GENERAL

##### 1.1 In this Schedule 17A:

- 1.1.1 in the case of a Dispute between the Manufacturer and the Purchaser, a reference to "**Party**" shall be deemed to mean the Manufacturer or the Purchaser (as appropriate) and a reference to "**Parties**" shall be deemed to include both the Manufacturer and the Purchaser;
- 1.1.2 in the case of a Dispute between the Manufacturer and LUL, a reference to "**Party**" shall be deemed to mean the Manufacturer or LUL (as appropriate) and a reference to "**Parties**" shall be deemed to include both the Manufacturer and LUL; and
- 1.1.3 in the case of a Dispute between (a) the Manufacturer and (b) the Purchaser and LUL, a reference to "**Party**" shall be deemed to include either (a) the Manufacturer or (b) the Purchaser and LUL (as appropriate) and a reference to "**Parties**" shall be deemed to include the Manufacturer, the Purchaser and LUL.

#### **Part A – Fast Track Dispute Escalation Procedure**

#### 2. ESCALATION PROCEDURE

- 2.1 This Part A of Schedule 17A is the Fast Track Dispute Escalation Procedure.
- 2.2 In order to initiate the Fast Track Dispute Escalation Procedure, either Party shall notify the other Party by serving a written notice to that effect (the "**Fast Track Dispute Escalation Notice**").
- 2.3 The Fast Track Dispute Escalation Notice shall:
  - 2.3.1 contain a concise statement of the Dispute in respect of which the Fast Track Dispute Escalation Procedure is being initiated and a statement of the remedy or remedies which are sought;
  - 2.3.2 enclose copies of all correspondence and documentation relevant to the Dispute raised in paragraph 2.3.1; and
  - 2.3.3 state that it is a notice given under this Fast Track Dispute Escalation Procedure.
- 2.4 A management representative of each Party, in each case of appropriate seniority and experience and with appropriate decision-making authority, shall meet within 5 Working Days after the receipt of the Fast Track Dispute Escalation Notice to discuss the matters set out in the Fast Track Dispute Escalation Notice and attempt to resolve the Dispute described

therein. If the management representatives of the Parties are unable to resolve the Dispute described in the Fast Track Dispute Escalation Notice within 10 Working Days, either Party may serve an Fast Track Dispute Expert Notice in respect of that Dispute in accordance with the provisions of paragraphs 3.2 and 3.3 below.

### **Part B – Fast Track Dispute Expert Procedure**

#### **3. REFERRAL TO AN FTD EXPERT**

3.1 This Part B of Schedule 17A is the Fast Track Dispute Expert Procedure.

3.2 In order to initiate the Fast Track Dispute Expert Procedure, either Party shall notify the other Party by serving a written notice to that effect (the "**Fast Track Dispute Expert Notice**").

3.3 The Fast Track Dispute Expert Notice shall:

3.3.1 contain a concise statement of the Dispute in respect of which the Fast Track Dispute Expert Procedure is being initiated and a statement of the remedy or remedies which are sought;

3.3.2 enclose copies of all correspondence and documentation relevant to the matter raised in paragraph 3.3.1; and

3.3.3 state that it is a notice given under this Fast Track Dispute Expert Procedure.

3.4 The Parties agree that a Dispute in respect of which the Fast Track Dispute Expert Procedure is being initiated shall be referred to the determination of a single natural person as expert ("**FTD Expert**").

#### **Qualifications of the FTD Expert**

3.5 The FTD Expert shall be of not less than ten years qualification having experience in matters similar to the matters in respect of which the Fast Track Dispute Expert Procedure is being initiated. The FTD Expert shall be a reputable person in good standing.

#### **Appointment of FTD Expert**

3.6 The Parties shall attempt to appoint the FTD Expert by discussion and agreement. If the Parties do not agree on the identity of such FTD Expert within 10 Working Days of service of the Fast Track Dispute Expert Notice or have not appointed such FTD Expert within 20 Working Days of service of the Fast Track Dispute Expert Notice, then the FTD Expert shall be appointed by or on behalf of the President for the time being of the Law Society of England and Wales on such terms as such person shall direct, provided that those terms are consistent with paragraphs 3.9 and 3.10 of this Schedule 17A. Any fees and/or expenses

incurred by the President for the time being of the Law Society of England and Wales in appointing an FTD Expert shall be shared equally between the Parties.

- 3.7 The Dispute in respect of which the Fast Track Dispute Expert Procedure is being initiated shall be deemed to be referred to the FTD Expert upon his appointment.
- 3.8 In the event that the FTD Expert refuses and/or is unable to act further in connection with the Dispute referred to him, or does not provide his determination to the Parties within 42 days of his appointment, the Parties shall co-operate to appoint a replacement FTD Expert in accordance with the provisions of paragraphs 3.6 to 3.8. Such replacement FTD Expert shall commence proceedings afresh without reference to any documents, submissions or information provided to the previous FTD Expert.

### **Procedure for Determination**

- 3.9 Within 5 Working Days of his appointment, the FTD Expert will establish the procedural rules to be applied to the determination which must accord with the following:
- 3.9.1 Each Party will be entitled to make submissions to the FTD Expert and supply the FTD Expert with relevant data and information.
- 3.9.2 Communications from a Party to the FTD Expert or from the FTD Expert to a Party shall be copied to the other Party at the same time and by the same method.
- 3.9.3 The FTD Expert will keep all information and documents provided to him by the Parties confidential save as otherwise required by law.
- 3.9.4 The FTD Expert will be entitled to make site visits or inspections as he considers is necessary or appropriate and to request samples or tests as he shall think fit.
- 3.9.5 The FTD Expert shall be entitled to retain the services of other persons to provide legal or expert advice in relation to any matter which he shall think fit.
- 3.9.6 If a Party sends a document to the FTD Expert but does not provide a copy to the other Party, the FTD Expert shall send such document to the other Party and shall allow it a reasonable opportunity to comment on the same.
- 3.9.7 The FTD Expert shall not take into consideration any document or statement which has not been made available to the other Party for comment unless the FTD Expert has sent the document to the other Party pursuant to paragraph 3.9.6 and given it a reasonable opportunity to comment on the same.
- 3.9.8 The FTD Expert shall be entitled to use his own knowledge and experience in arriving at his determination.

- 3.9.9 Any failure by a Party to participate in the proceedings and/or to respond to any request or direction by the FTD Expert shall not invalidate the FTD Expert's determination.
- 3.9.10 The FTD Expert must give his determination in writing with reasons within 42 days of his appointment.
- 3.9.11 The FTD Expert shall be entitled by notice in writing to the Parties:
- (A) to correct any matter in his determination if the Parties agree; and/or
  - (B) to correct any minor slip or manifest error in his determination within 3 Working Days of communicating his determination to the Parties.
- 3.10 The FTD Expert shall determine the matters referred to him acting impartially and in good faith. The FTD Expert shall have the power to open up, review and revise any certificate, decision, direction, instruction, notice, requirement or valuation made under the Agreement, except where the Agreement expressly prohibits this.
- 3.11 The FTD Expert's determination shall determine the Dispute referred to him, and shall be final and binding on the Parties (save in the case of fraud) unless or until the Parties agree otherwise. The Parties shall act to give immediate effect to the FTD Expert's determination.
- 3.12 The FTD Expert shall not be liable for anything done or omitted in the discharge or purported discharge of his functions as FTD Expert unless the act or omission is in bad faith, and any employee or agent of the FTD Expert (including any expert or legal advisor) shall be similarly protected from liability.
- 3.13 The FTD Expert shall not be entitled to act as an adviser to either Party in any subsequent proceedings arising out of or in connection with this Agreement without the other Party's prior written consent.
- 3.14 The FTD Expert is not an arbitrator within the provisions of the Arbitration Act 1996 and the law relating to the arbitration shall not apply to the FTD Expert, the determination or the procedure by which the FTD Expert reaches the determination.
- 3.15 The fees and expenses of the FTD Expert (including the fees and expenses arising from any legal or expert advice taken by the FTD Expert) will be shared equally between the Parties unless the FTD Expert determines otherwise in his determination. If one Party shall have paid all of the FTD Expert's fees and expenses then that Party shall be entitled to recover from the other Party the proportion of the FTD Expert's fees and expenses that such other Party would otherwise have had to pay under this paragraph 3.15 as a debt.
- 3.16 The Parties shall each bear their own legal, advisory and other costs of any reference to the FTD Expert.

2.18 Either Party may apply to any appropriate court for enforcement of an FTD Expert's determination.

**4. SAVING FOR INJUNCTIVE RELIEF**

4.1 Nothing in this Schedule 17A shall remove or diminish or in any way affect any right of a Party to seek injunctive or interim relief from any court of competent jurisdiction in relation to any matter.

**SCHEDULE 18: AGREED FORM DOCUMENTS**

**PART A**

**FORM OF CERTIFICATE OF COMPLIANCE**

*[To be issued to Transport Trading Limited on Bombardier Transportation UK Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [                    ] and made between Transport Trading Limited, Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Certificate of Compliance and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Certificate of Compliance.
2. This certificate constitutes a Certificate of Compliance under the Manufacture and Supply Agreement.
3. I, as a director of Bombardier Transportation UK Limited hereby declare, confirm and warrant that:
  - 3.1 no Manufacturer Event of Default has occurred or is continuing; and
  - 3.2 there have been and are no current or likely circumstances, occurrence(s) or event(s) which may give rise to a Manufacturer Event of Default.

Signed for and on behalf of Bombardier Transportation UK Limited

Signature.....

Name.....

Position.....

Date .....

**PART B**  
**FORM OF CERTIFICATE OF COMMENCEMENT**

*[To be issued to Bombardier Transportation UK Limited on Transport Trading Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited, Bombardier Transportation Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Certificate of Commencement and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Certificate of Commencement.
2. This certificate constitutes a Certificate of Commencement under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited hereby:
  - 3.1 acknowledge and agree that the conditions precedent set out in Clause 2.1 of the Manufacture and Supply Agreement have been satisfied (or agree to their waiver or deferral, as applicable); and
  - 3.2 notify you, Bombardier Transportation Limited that the Commencement Date shall be *[insert date]*.

Signed for and on behalf of Transport Trading Limited

Signature.....

Name.....

Position.....

Date .....



# Single Licensee Software Escrow Agreement

Date

Owner

BOMBARDIER TRANSPORTATION UK LIMITED

Agreement Number

[Agreement#]

Notice: The parties to this Agreement are obliged to inform NCC Escrow of any changes to the Package or in their circumstances (including change of name, registered office, contact details or change of owner of the intellectual property in the Package).

**Escrow Agreement Dated:**

**Between:**

- (1) BOMBARDIER TRANSPORTATION UK LIMITED whose registered office is at Litchurch Lane, Derby, DE24 8AD (CRN: 02235994) ("**Owner**");
- (2) TRANSPORT TRADING LIMITED whose registered office is at Windsor House, 42-50 Victoria Street, London SW1H 0TL (CRN: 03914810) ("**Licensee**"); and
- (3) NCC ESCROW INTERNATIONAL LIMITED a company registered in England whose registered office is at Manchester Technology Centre, Oxford Road, Manchester M1 7EF, ENGLAND (CRN: 3081952) ("**NCC Escrow**").

**Background:**

- (A) The Licensee has been granted a licence to use the Package which comprises computer programs.
- (B) Certain technical information and/or documentation relating to the software package is the confidential information and intellectual property of the Owner or a third party.
- (C) The Owner acknowledges that in certain circumstances, such information and/or documentation would be required by the Licensee in order for it to continue to exercise its rights under the Licence Agreement.
- (D) The parties therefore agree that such information and/or documentation should be placed with a trusted third party, NCC Escrow, so that such information and/or documentation can be released to the Licensee should certain circumstances arise.

**Agreement:**

In consideration of the mutual undertakings and obligations contained in this Agreement, the parties agree that:

**1 Definitions and Interpretation**

1.1 In this Agreement the following terms shall have the following meanings:

**"Agreement"** means the terms and conditions of this escrow agreement set out below, including the schedules hereto.

**"Confidential Information"** means all technical and/or commercial information not in the public domain and which is designated in writing as confidential by any party together with all other information of any party which may reasonably be regarded as confidential information.

**"Full Verification"** means the tests and processes forming NCC Escrow's Full Verification service and/or such other tests and processes as may be agreed between the parties for the verification of the Material.

**"Independent Expert"** means a suitably qualified and independent solicitor or barrister.

**"Integrity Testing"** means those tests and processes forming NCC Escrow's Integrity Testing service, in so far as they can be applied to the Material.

**"Intellectual Property Rights"** mean any copyright, patents, design patents, registered designs, design rights, utility models, trademarks, service marks, trade secrets, know how, database rights, moral rights, confidential information, trade or business names, domain names, and any other rights of a similar nature including industrial and proprietary rights and other similar protected rights in any country or jurisdiction together with all registrations, applications to register and rights to apply for registration of any of the aforementioned rights and any licences of or in respect of such rights.

**"Licence Agreement"** means the agreement under which the Licensee was granted a licence to use the Package.

**"Material"** means the Source Code of the Package and such other material and documentation (including updates and upgrades thereto and new versions thereof) as are necessary to be delivered or deposited to comply with clause 2 of this Agreement.

**"Order Form"** means the order form setting out the details of the order placed with NCC Escrow for setting up this Agreement.

**"Package"** means the software package together with any updates and upgrades thereto and new versions thereof licensed to the Licensee under the Licence Agreement details of which are set out in schedule 1.

**"Release Purposes"** means the purposes of understanding, maintaining, modifying and correcting the Package exclusively for and on behalf of the Licensee together with such other purposes (if any) as are permitted under the Licence Agreement.

**"Source Code"** means the computer programming code of the Package in human readable form.

**"Third Party Material"** means Source Code which is not the confidential information and intellectual

property of the Owner or the Licensee.

- 1.2 This Agreement shall be interpreted in accordance with the following:
  - 1.2.1 headings are for ease of reference only and shall not be taken into consideration in the interpretation of this Agreement;
  - 1.2.2 all references to clauses and schedules are references to clauses and schedules of this Agreement; and
  - 1.2.3 all references to a party or parties are references to a party or parties to this Agreement.

## 2 Owner's Duties and Warranties

- 2.1 The Owner shall:
  - 2.1.1 deliver a copy of the Material to NCC Escrow within 30 days of the date of this Agreement;
  - 2.1.2 deliver a further copy of the Material to NCC Escrow each time that there is a change to the Package;
  - 2.1.3 ensure that each copy of the Material deposited with NCC Escrow comprises the Source Code of the latest version of the Package used by the Licensee;
  - 2.1.4 deliver to NCC Escrow a replacement copy of the Material within 30 days after the anniversary of the last delivery of the Material to ensure that the integrity of the Material media is maintained;
  - 2.1.5 deliver a replacement copy of the Material to NCC Escrow within 14 days of a notice given to it by NCC Escrow under the provisions of clause 4.1.3;
  - 2.1.6 deliver with each deposit of the Material the following information:
    - 2.1.6.1 details of the deposit including the full name of the Package (i.e. the original name as set out under schedule 1 together with any new names given to the Package by the Owner), version details, media type, backup command/software used, compression used, archive hardware and operating system details; and
    - 2.1.6.2 password/encryption details required to access the Material;
  - 2.1.7 deliver with each deposit of the Material the following technical information (where applicable):
    - 2.1.7.1 documentation describing the procedures for building, compiling and installing the software, including names and versions of the development tools;
    - 2.1.7.2 software design information (e.g. module names and functionality); and
    - 2.1.7.3 name and contact details of employees with knowledge of how to maintain and support the Material; and
  - 2.1.8 if required by the Licensee, deposit a backup copy of the object code of any third party software package required to access, install, build or compile or otherwise use the Material.
- 2.2 The Owner warrants to both NCC Escrow and the Licensee at the time of each deposit of the Material with NCC Escrow that:
  - 2.2.1 other than any third party object code referred to in clause 2.1.8 or any Third Party Material, it owns the Intellectual Property Rights in the Material;
  - 2.2.2 in respect of any Third Party Material, it has been granted valid and ongoing rights under licence by the third party owner(s) thereof to deal with such Third Party Material in the manner anticipated under this Agreement and that the Owner has the express authority of such third party owner(s) to deposit the Third Party Material under this Agreement as evidenced by a signed letter of authorisation in the form required by NCC Escrow;
  - 2.2.3 in entering into this Agreement and performing its obligations under it, it is not in breach of any of its ongoing express or implied obligations to any third party(s);
  - 2.2.4 the Material deposited under clause 2.1 contains all information in human-readable form (except for any third party object code deposited pursuant to clause 2.1.8) and is on suitable media to enable a reasonably skilled programmer or analyst to understand, maintain, modify and correct the Package; and
  - 2.2.5 in respect of any third party object code that the Owner, at its option, or, at the request of the Licensee, deposits with NCC Escrow in conjunction with the Material pursuant to clause 2.1.8, it has the full right and authority to do so.

## 3 Licensee's Responsibilities and Undertakings

- 3.1 The Licensee shall notify NCC Escrow of any change to the Package that necessitates a replacement deposit of the Material.
- 3.2 In the event that the Material is released under clause 6, the Licensee shall:
  - 3.2.1 keep the Material confidential at all times;
  - 3.2.2 use the Material only for the Release Purposes;
  - 3.2.3 not disclose the Material to any person save such of the Licensee's employees or contractors who need to know the same for the Release Purposes. In the event that Material is disclosed to its employees or contractors, the Licensee shall ensure that they are bound by the same confidentiality obligations as are contained in this clause 3.2;
  - 3.2.4 hold all media containing the Material in a safe and secure environment when not in use; and
  - 3.2.5 forthwith destroy the Material should the Licensee cease to be entitled to use the Package under the terms of the Licence Agreement,provided that nothing herein shall limit or restrict any of the Release Purposes.
- 3.3 In the event that the Material is released under clause 6, it shall be the responsibility of the Licensee to obtain the necessary licences to utilise the object code of any third party material deposited by the Owner pursuant to clause 2.1.8.

#### 4 NCC Escrow's Duties

- 4.1 NCC Escrow shall:
  - 4.1.1 at all times during the term of this Agreement, retain the latest deposit of the Material in a safe and secure environment;
  - 4.1.2 inform the Owner and the Licensee of the receipt of any deposit of the Material by sending to both parties a copy of the Integrity Testing report or Full Verification report (as the case may be) generated from the testing processes carried out under clause 10; and
  - 4.1.3 notify the Owner and the Licensee if it becomes aware at any time during the term of this Agreement that the copy of the Material held by it has been lost, damaged or destroyed so that a replacement may be obtained.
- 4.2 In the event of failure by the Owner to deposit any Material with NCC Escrow, NCC Escrow shall not be responsible for procuring such deposit and may, at its sole discretion, notify the Licensee of the Owner's failure to deposit any Material.
- 4.3 NCC Escrow may appoint agents, contractors or sub-contractors as it deems fit to carry out the Integrity Testing and the Full Verification processes. NCC Escrow shall ensure that any such agents, contractors and sub-contractors are bound by the same confidentiality obligations as are contained in clause 8.
- 4.4 NCC Escrow has the right to make such copies of the Material as may be necessary solely for the purposes of this Agreement.

#### 5 Payment

- 5.1 The parties shall pay NCC Escrow's standard fees and charges as published from time to time or as otherwise agreed, in the proportions set out in schedule 2. NCC Escrow's fees as published are exclusive of value added tax.
- 5.2 NCC Escrow shall be entitled to review and vary its standard fees and charges for its services under this Agreement from time to time but no more than once a year and only upon 45 days written notice to the parties.
- 5.3 All invoices are payable within 30 days from the date of invoice. NCC Escrow reserves the right to charge interest in respect of the late payment of any sum due under this Agreement (both before and after judgement) at the rate of 2% per annum over the prevailing base rate of HSBC Bank Plc accruing on a daily basis from the due date therefor until full payment.

#### 6 Release Events

- 6.1 Subject to: (i) the remaining provisions of this clause 6 and (ii) the receipt by NCC Escrow of its release fee and any other fees and interest (if any) outstanding under this Agreement, NCC Escrow will release the Material to a duly authorised officer of the Licensee if any of the following events ("**Release Event(s)**") occur:
  - 6.1.1 if the Owner is a company:
    - 6.1.1.1 an order is made for the winding up of the Owner, the Owner passes a resolution for winding up (other than for the purposes of a solvent reconstruction or amalgamation) or a liquidator of the Owner is appointed; or

- 6.1.1.2 an order is made for the appointment of an administrator of the Owner or an administrator of the Owner is appointed; or
    - 6.1.1.3 the Owner enters into a compromise or arrangement with creditors; or
    - 6.1.1.4 the Owner has a receiver, administrative receiver or manager appointed over all or any part of its assets or undertaking; or
    - 6.1.1.5 the Owner is dissolved; or
  - 6.1.2 if the Owner is an individual:
    - 6.1.2.1 the Owner enters into a compromise or arrangement with creditors; or
    - 6.1.2.2 the Owner is declared bankrupt; or
    - 6.1.2.3 the Owner dies; or
  - 6.1.3 if the Owner is a partnership:
    - 6.1.3.1 any of the partners in the Owner are declared bankrupt or enter into a compromise or arrangement with creditors; or
    - 6.1.3.2 the Owner is wound up or dissolved; or
    - 6.1.3.3 the Owner enters into a compromise or arrangement with creditors; or
    - 6.1.3.4 a partnership administration order is made in respect of the Owner; or
  - 6.1.4 any similar or analogous proceedings or event to those in clauses 6.1.1 to 6.1.3 above occurs in respect of the Owner within any jurisdiction outside England; or
  - 6.1.5 the Owner ceases to carry on its business or the part of its business which relates to the Package; or
  - 6.1.6 the Owner assigns its rights to the Intellectual Property Rights in the Material to a third party ("Assignee") and the Assignee fails, within 60 days of all parties' knowledge of such assignment, to continue escrow protection for the benefit of the Licensee by failing to enter into either:
    - 6.1.6.1 a novation agreement with the Licensee and NCC Escrow for the assumption of the Owner's rights and obligations under this Agreement by the Assignee; or
    - 6.1.6.2 a new escrow agreement with the Licensee for the Package which offers the Licensee substantially similar protection to that provided by this Agreement without significantly increasing the overall cost to the Licensee,provided that if the Assignee offers to enter into a novation or new escrow agreement within 60 days of all parties' knowledge of the assignment and the Licensee fails to accept the Assignee's offer within 30 days of such offer being notified to the Licensee, there shall be no Release Event under this clause; or
  - 6.1.7 the Owner or, where relevant, its agent, parent, subsidiary or associated company is in material breach of its obligations as to maintenance or modification of the Package under the Licence Agreement or any maintenance agreement entered into in connection with the Package and has failed to remedy such default notified by the Licensee to the Owner within a reasonable period.
- 6.2 The Licensee must notify NCC Escrow of the Release Event specified in clause 6.1 by delivering to NCC Escrow a statutory or notarised declaration ("**Declaration**") made by an officer of the Licensee declaring that such Release Event has occurred, setting out the facts and circumstances of the Release Event, that the Licence Agreement and any maintenance agreement, if relevant, for the Package was still valid and effective up to the occurrence of such Release Event and exhibiting such documentary evidence in support of the Declaration as NCC Escrow shall reasonably require.
- 6.3 Upon receipt of a Declaration from the Licensee claiming that a Release Event has occurred:
- 6.3.1 NCC Escrow shall submit a copy of the Declaration to the Owner by courier or other form of guaranteed delivery; and
  - 6.3.2 unless within 14 days after the date of despatch of the Declaration by NCC Escrow, NCC Escrow receives a counter-notice signed by a duly authorised officer of the Owner stating that in their view no such Release Event has occurred or, if appropriate, that the event or circumstance giving rise to the Release Event has been rectified as shown by documentation in support thereof,
- NCC Escrow will release the Material to the Licensee for its use for the Release Purposes.
- 6.4 Upon receipt of the counter-notice from the Owner under clause 6.3.2, NCC Escrow shall send a copy of the counter-notice and any supporting evidence to the Licensee by courier or other form of guaranteed delivery.

- 6.5 Upon receipt by the Licensee of the counter-notice from NCC Escrow or, in any event, within 90 days of despatch of the counter-notice by NCC Escrow, the Licensee may give notice to NCC Escrow that they wish to invoke the dispute resolution procedure under clause 7.
- 6.6 If, within 90 days of despatch of the counter-notice by NCC Escrow to the Licensee, NCC Escrow has not been informed by the Licensee that they wish the dispute resolution procedure under clause 7 to apply, the Declaration submitted by the Licensee will be deemed to be no longer valid and the Licensee shall be deemed to have waived their right to release of the Material for the particular reason or event specified in the original Declaration.
- 6.7 For the avoidance of doubt, where a Release Event has occurred under clauses 6.1.1 to 6.1.5, a subsequent assignment of the Intellectual Property Rights in the Material shall not prejudice the Licensee's right to release of the Material and its use for the Release Purposes.

## **7 Disputes**

- 7.1 NCC Escrow shall notify the Owner of the Licensee's request for dispute resolution. Unless the Owner or the Licensee objects, NCC Escrow's Chief Executive Officer for the time being will appoint an Independent Expert to resolve the dispute. If the Owner or the Licensee objects to this appointment, they shall endeavour to appoint a mutually acceptable Independent Expert within 7 days of registering their objection. If they fail to appoint an Independent Expert within this 7 day period, NCC Escrow shall request that the President of The Law Society appoints an Independent Expert to resolve the dispute. Any appointment of an Independent Expert under this clause shall be binding upon the parties.
- 7.2 Within 5 working days of the appointment of the Independent Expert, the Owner and the Licensee shall each provide full written submissions to the Independent Expert together with all relevant documentary evidence in their possession in support of their claim.
- 7.3 The Independent Expert shall be requested to give a decision on the matter within 14 days of the date of referral or as soon as practicable thereafter and to send a copy of that decision to the Owner, Licensee and NCC Escrow. The Independent Expert's decision shall be final and binding on all parties and shall not be subject to appeal to a court in legal proceedings except in the case of manifest error.
- 7.4 If the Independent Expert's decision is in favour of the Licensee, NCC Escrow is hereby authorised to release and deliver the Material to the Licensee within 5 working days of the decision being notified by the Independent Expert to the parties.
- 7.5 The parties hereby agree that the costs and expenses of the Independent Expert shall be borne by the party against whom the decision of the Independent Expert is given.

## **8 Confidentiality**

- 8.1 The Material shall remain at all times the confidential and intellectual property of its owner.
- 8.2 In the event that NCC Escrow releases the Material to the Licensee, the Licensee shall be permitted to use the Material only for the Release Purposes.
- 8.3 NCC Escrow agrees to keep all Confidential Information relating to the Material and/or the Package that comes into its possession or to its knowledge under this Agreement in strictest confidence and secrecy. NCC Escrow further agrees not to make use of such information and/or documentation other than for the purposes of this Agreement and, unless the parties should agree otherwise in writing, will not disclose or release it other than in accordance with the terms of this Agreement.

## **9 Intellectual Property Rights**

- 9.1 The release of the Material to the Licensee will not act as an assignment of any Intellectual Property Rights that the Owner or any third party possesses in the Material.
- 9.2 The Intellectual Property Rights in the Integrity Testing report and any Full Verification report shall remain vested in NCC Escrow. The Owner and the Licensee shall each be granted a non-exclusive right and licence to use such report for the purposes of this Agreement and their own internal purposes only.

## **10 Integrity Testing and Full Verification**

- 10.1 NCC Escrow shall bear no obligation or responsibility to any party to this Agreement or person, firm, company or entity whatsoever to determine the existence, relevance, completeness, accuracy, operation, effectiveness, functionality or any other aspect of the Material received by NCC Escrow under this Agreement.
- 10.2 As soon as practicable after the Material has been deposited with NCC Escrow, NCC Escrow shall apply its Integrity Testing processes to the Material.
- 10.3 Any party to this Agreement shall be entitled to require NCC Escrow to carry out a Full Verification. Subject to clause 10.4, NCC Escrow's prevailing fees and charges for the Full Verification

processes and all reasonable expenses incurred by NCC Escrow in carrying out the Full Verification processes shall be payable by the requesting party.

- 10.4 If the Material fails to satisfy NCC Escrow's Full Verification tests as a result of being defective or incomplete in content, NCC Escrow's fees, charges and expenses in relation to the Full Verification tests shall be paid by the Owner.
- 10.5 Should the Material deposited fail to satisfy NCC Escrow's Integrity Testing or Full Verification tests under clauses 10.2 or 10.3, the Owner shall, within 14 days of the receipt of the notice of test failure from NCC Escrow, deposit such new, corrected or revised Material as shall be necessary to ensure its compliance with its warranties and obligations in clause 2. If the Owner fails to make such deposit of the new, corrected or revised Material, NCC Escrow will issue a report to the Licensee detailing the problem with the Material as revealed by the relevant tests.

## 11 NCC Escrow's Liability

- 11.1 Nothing in this clause 11 excludes or limits the liability of NCC Escrow for fraudulent misrepresentation or for death or personal injury caused by NCC Escrow's negligence. Save as aforesaid the following provisions set out the entire financial liability of NCC Escrow (including any liability for the acts or omissions of its employees, agents and sub-contractors) to the other parties:
- 11.1.1 NCC Escrow shall not be liable for any loss or damage caused to either the Owner or the Licensee either jointly or severally except to the extent that such loss or damage is caused by the negligent acts or omissions of or a breach of any contractual duty by NCC Escrow, its employees, agents or sub-contractors and in such event NCC Escrow's total liability in respect of all claims arising under or by virtue of this Agreement or in connection with the performance or contemplated performance of this Agreement, shall not exceed the sum of £1,000,000 (one million UK pounds); and
- 11.1.2 NCC Escrow shall not be liable to the Owner or the Licensee for any indirect or consequential loss or damage whether for loss of profit, loss of business, depletion of goodwill or otherwise whatsoever or howsoever caused which arise out of or in connection with this Agreement even if such loss was reasonably foreseeable or NCC Escrow had been advised of the possibility of incurring the same by the Owner, the Licensee or any third party.
- 11.2 NCC Escrow shall not be liable in any way to the Owner or the Licensee for acting in accordance with the terms of this Agreement and specifically (without limitation) for acting upon any notice, written request, waiver, consent, receipt, statutory declaration or any other document furnished to it pursuant to and in accordance with this Agreement.
- 11.3 NCC Escrow shall not be required to make any investigation into and shall be entitled in good faith without incurring any liability to the Owner or the Licensee to assume (without requesting evidence thereof) the validity, authenticity, veracity and due and authorised execution of any documents, written requests, waivers, consents, receipts, statutory declarations or notices received by it in respect of this Agreement.

## 12 Indemnity

- 12.1 Save for any claim falling within the provisions of clause 11.1.1, the Owner and the Licensee jointly and severally agree at all times to indemnify and hold harmless NCC Escrow in respect of all of its legal and all other costs, fees and expenses incurred directly or indirectly as a result of being brought into or otherwise becoming involved in any form of dispute resolution proceedings or any litigation of any kind between the Owner and the Licensee in relation to this Agreement to the extent that this Agreement does not otherwise provide for reimbursement of such costs.
- 12.2 The Owner shall assume all liability and shall at all times indemnify and hold harmless NCC Escrow and its officers, agents, sub-contractors and employees from and against any and all liability, loss, damages, costs, legal costs, professional and other expenses and any other liabilities of whatever nature, awarded against or agreed to be paid or otherwise suffered, incurred or sustained by NCC Escrow, whether direct, indirect or consequential as a result of or in connection with any claim by any third party(s) for alleged or actual infringement of Intellectual Property Rights arising out of or in connection with all and any acts or omissions of NCC Escrow in respect of the Material as contemplated under this Agreement.

## 13 Term and Termination

- 13.1 This Agreement shall continue until terminated in accordance with this clause 13.
- 13.2 If the Owner or the Licensee, as the case may be, fails to pay an invoice addressed to it for services under this Agreement within 30 days of its issue, NCC Escrow reserves the right to give that party written notice to pay the outstanding invoice within 30 days. If the Licensee has not paid its invoice by the expiry of the 30 day notice period, this Agreement will automatically immediately terminate. If the Owner has not paid its invoice by the expiry of the 30 day notice period, NCC Escrow will give the Licensee a period of 15 days to pay the Owner's invoice. If the Owner's invoice has not been paid by the expiry of the 15 day optional payment period given to the

Licensee, this Agreement will automatically immediately terminate. Any amounts owed by the Owner but paid by the Licensee will be recoverable by the Licensee direct from the Owner as a debt and, if requested, NCC Escrow shall provide appropriate documentation to assist in such recovery.

- 13.3 Upon termination under the provisions of clause 13.2, for 30 days from the date of termination NCC Escrow will make the Material available for collection by the Owner or its agents from the premises of NCC Escrow during office hours. After such 30 day period NCC Escrow will destroy the Material.
- 13.4 Notwithstanding any other provision of this clause 13, NCC Escrow may terminate this Agreement by giving 30 days written notice to the Owner and the Licensee. In that event, the Owner and the Licensee shall appoint a mutually acceptable new custodian on similar terms and conditions to those contained herein. If a new custodian is not appointed within 14 days of delivery of such notice, the Owner or the Licensee shall be entitled to request the President for the time being of the British Computer Society (or successor body) to appoint a suitable new custodian upon such terms and conditions as he/she shall require. Such appointment shall be final and binding on the Owner and the Licensee. If NCC Escrow is notified of the new custodian within the notice period, NCC Escrow will forthwith deliver the Material to the new custodian. If NCC Escrow is not notified of the new custodian within the notice period, NCC Escrow will return the Material to the Owner.
- 13.5 The Licensee may terminate this Agreement at any time by giving written notice to NCC Escrow. Upon such termination, NCC Escrow will return the Material to the Owner.
- 13.6 If NCC Escrow discovers that a Release Event has occurred and the Licensee has failed to exercise its right to claim for release of the Material under clause 6.2, NCC Escrow shall have the right to terminate this Agreement upon 30 days written notice to the Owner and the Licensee. The Licensee shall have the option of applying for release in accordance with clause 6 during this notice period, but if it fails to do so, upon the expiry of this notice period, this Agreement shall automatically terminate and, unless otherwise instructed by the Owner or the Assignee prior to expiry of the notice period, NCC Escrow shall destroy the Material.
- 13.7 If the Intellectual Property Rights in the Material have been assigned to a third party and the proviso in clause 6.1.6 applies such that there has been no Release Event under that clause, NCC Escrow shall be entitled to terminate this Agreement immediately by written notice to the Owner and the Licensee and upon such termination, unless otherwise instructed by the Owner or the Assignee, NCC Escrow shall destroy the Material.
- 13.8 If the Licence Agreement has expired or has been lawfully terminated, then the Licensee shall give notice to NCC Escrow within 14 days thereof to terminate this Agreement, failing which, the Owner shall be entitled to give written notice to NCC Escrow to terminate this Agreement. Upon receipt of such a notice from the Owner, NCC Escrow shall notify the Licensee of the Owner's notice to terminate. Unless within 14 days of NCC Escrow giving such notice to the Licensee, NCC Escrow receives a counter-notice signed by a duly authorised officer of the Licensee disputing the termination of the Licence Agreement, then the Licensee shall be deemed to have consented to such termination and this Agreement shall immediately automatically terminate. Any disputes arising under this clause shall be dealt with in accordance with the dispute resolution procedure in clause 7. Upon termination under this clause, NCC Escrow shall return the Material to the Owner.
- 13.9 Subject to clause 13.8, the Owner may only terminate this Agreement with the written consent of the Licensee.
- 13.10 This Agreement shall automatically immediately terminate upon release of the Material to the Licensee in accordance with clause 6.
- 13.11 If this Agreement is superseded and replaced by a new agreement in respect of the Material, this Agreement shall, upon the coming into force of the new agreement, automatically terminate. The relevant party or parties shall request NCC Escrow to either transfer the Material to the new agreement or ask the owner under the new agreement to deposit new material. If new material is deposited, upon its receipt, NCC Escrow shall, unless otherwise instructed, destroy the Material.
- 13.12 The provisions of clauses 1, 3.2, 3.3, 5, 8, 9, 10.1, 11, 12, 13.12 to 13.14 (inclusive) and 14 shall continue in full force after termination of this Agreement.
- 13.13 On and after termination of this Agreement, the Owner and/or the Licensee (as appropriate) shall remain liable to NCC Escrow for payment in full of any fees and interest which have become due but which have not been paid as at the date of termination.
- 13.14 The termination of this Agreement, however arising, shall be without prejudice to the rights accrued to the parties prior to termination.

#### 14 General

- 14.1 A party shall notify the other parties to this Agreement, within 30 days of its occurrence, of any of the following:
  - 14.1.1 a change of its name, registered office, contact address or other contact details; and

- 14.1.2 any material change in its circumstances that may affect the validity or operation of this Agreement.
- 14.2 Within 14 days of any assignment or transfer by the Owner of any part of its Intellectual Property Rights in the Material, the Owner shall notify:
- 14.2.1 NCC Escrow and the Licensee of such assignment and the identity of the Assignee; and
- 14.2.2 the Assignee of the provisions of clause 6.1.6.
- 14.3 The formation, existence, construction, performance, validity and all other aspects of this Agreement shall be governed by and construed in accordance with the laws of England and the parties submit to the exclusive jurisdiction of the English courts.
- 14.4 This Agreement, together with the Order Form and any relevant NCC Escrow standard terms and conditions represent the whole agreement relating to the escrow arrangements between NCC Escrow and the other parties for the Package and shall supersede all prior agreements, discussions, arrangements, representations, negotiations and undertakings. In the event of any conflict between any of these documents, the terms of this Agreement shall prevail.
- 14.5 Unless the provisions of this Agreement otherwise provide, any notice or other communication required or permitted to be given or made in writing hereunder shall be validly given or made if delivered by hand or courier or if despatched by first class recorded delivery (airmail if overseas) addressed to the address specified for the parties in this Agreement (or such other address as may be notified to the parties from time to time) or if sent by facsimile message to such facsimile number as has been notified to the parties from time to time and shall be deemed to have been received:
- (i) if delivered by hand or courier, at the time of delivery;
  - (ii) if sent by first class recorded delivery (airmail if overseas), 2 business days after posting (6 days if sent by airmail);
  - (iii) if sent by facsimile, at the time of completion of the transmission of the facsimile with facsimile machine confirmation of transmission to the correct facsimile number of all pages of the notice.
- 14.6 The Owner and the Licensee shall not assign, transfer or subcontract this Agreement or any rights or obligations thereunder without the prior written consent of the other parties.
- 14.7 NCC Escrow shall be entitled to transfer or assign this Agreement upon written notice to both the Owner and the Licensee.
- 14.8 This Agreement shall be binding upon and survive for the benefit of the successors in title and permitted assigns of the parties.
- 14.9 If any provision of this Agreement is declared too broad in any respect to permit enforcement to its full extent, the parties agree that such provision shall be enforced to the maximum extent permitted by law and that such provision shall be deemed to be varied accordingly. If any provision of this Agreement is found by any court, tribunal or administrative body of competent jurisdiction to be wholly or partly illegal, invalid, void or unenforceable, it shall, to the extent of such illegality, invalidity or unenforceability, be deemed severable and the remaining part of the provision and the rest of the provisions of this Agreement shall continue in full force and effect.
- 14.10 Save as expressly provided in this Agreement, no amendment or variation of this Agreement shall be effective unless in writing and signed by a duly authorised representative of each of the parties to it.
- 14.11 The parties shall not be liable to each other or be deemed to be in breach of this Agreement by reason of any delay in performing, or failure to perform, any of their obligations under this Agreement if the delay or failure was for a reason beyond that party's reasonable control (including, without limitation, fire, flood, explosion, epidemic, riot, civil commotion, any strike, lockout or other industrial action, act of God, war or warlike hostilities or threat of war, terrorist activities, accidental or malicious damage, or any prohibition or restriction by any governments or other legal authority which affects this Agreement and which is not in force on the date of this Agreement). A party claiming to be unable to perform its obligations under this Agreement (either on time or at all) in any of the circumstances set out above must notify the other parties of the nature and extent of the circumstances in question as soon as practicable. If such circumstances continue for more than six months, any of the other parties shall be entitled to terminate this Agreement by giving one month's notice in writing.

- 14.12 No waiver by any party of any breach of any provisions of this Agreement shall be deemed to be a waiver of any subsequent or other breach and, subject to clause 6.6, no failure to exercise or delay in exercising any right or remedy under this Agreement shall constitute a waiver thereof.
- 14.13 This Agreement is not intended to create any right under the Contracts (Rights of Third Parties) Act 1999 which is enforceable by any person who is not a party to this Agreement and the rights of any third party under the said act are hereby expressly excluded.
- 14.14 This Agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.

Signed for and on behalf of BOMBARDIER TRANSPORTATION UK LIMITED

Name: ..... | .....

Position: ..... | (Authorised Signatory)

Signed for and on behalf of TRANSPORT TRADING LIMITED

Name: ..... | .....

Position: ..... | (Authorised Signatory)

Signed for and on behalf of NCC ESCROW INTERNATIONAL LIMITED

Name: ..... | .....

Position: ..... | (Authorised Signatory)

### Schedule 1

#### The Package

The software package known as [SoftwareName] or any other name(s) as may be given to it by the Owner from time to time.

### Schedule 2

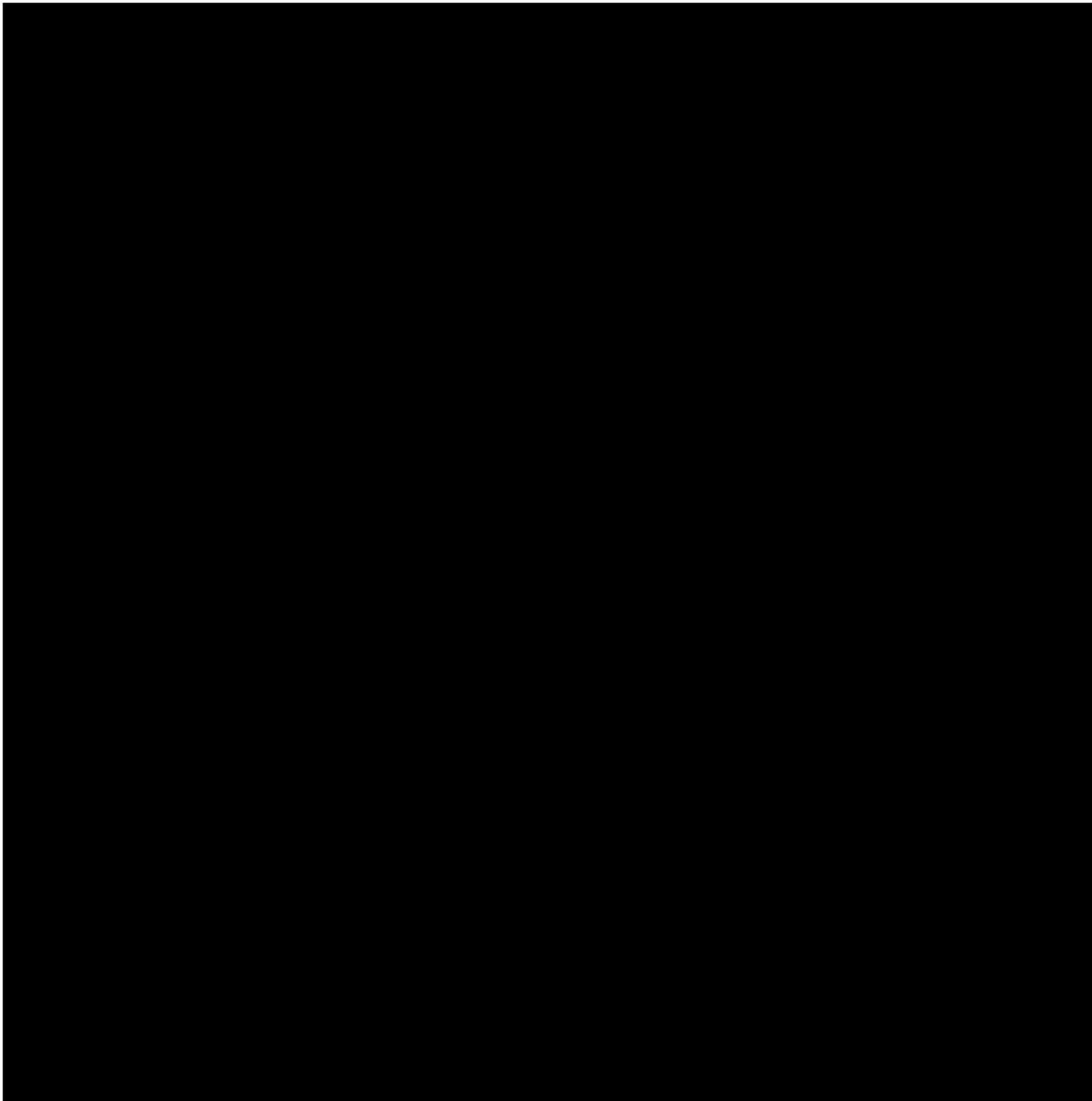
#### NCC Escrow's Fees

	DESCRIPTION	OWNER	LICENSEE
1	Annual Fee (payable on completion of this Agreement and in advance of each anniversary thereafter)	100%	Nil
2	Scheduled Update Fee (2 <sup>nd</sup> and subsequent scheduled deposits in any one year, payable on completion of this Agreement and in advance of each anniversary thereafter)	100%	Nil
3	Unscheduled Update Fee (per unscheduled deposit)	100%	Nil
4	Release Fee (plus NCC Escrow's reasonable expenses)	Nil	100%

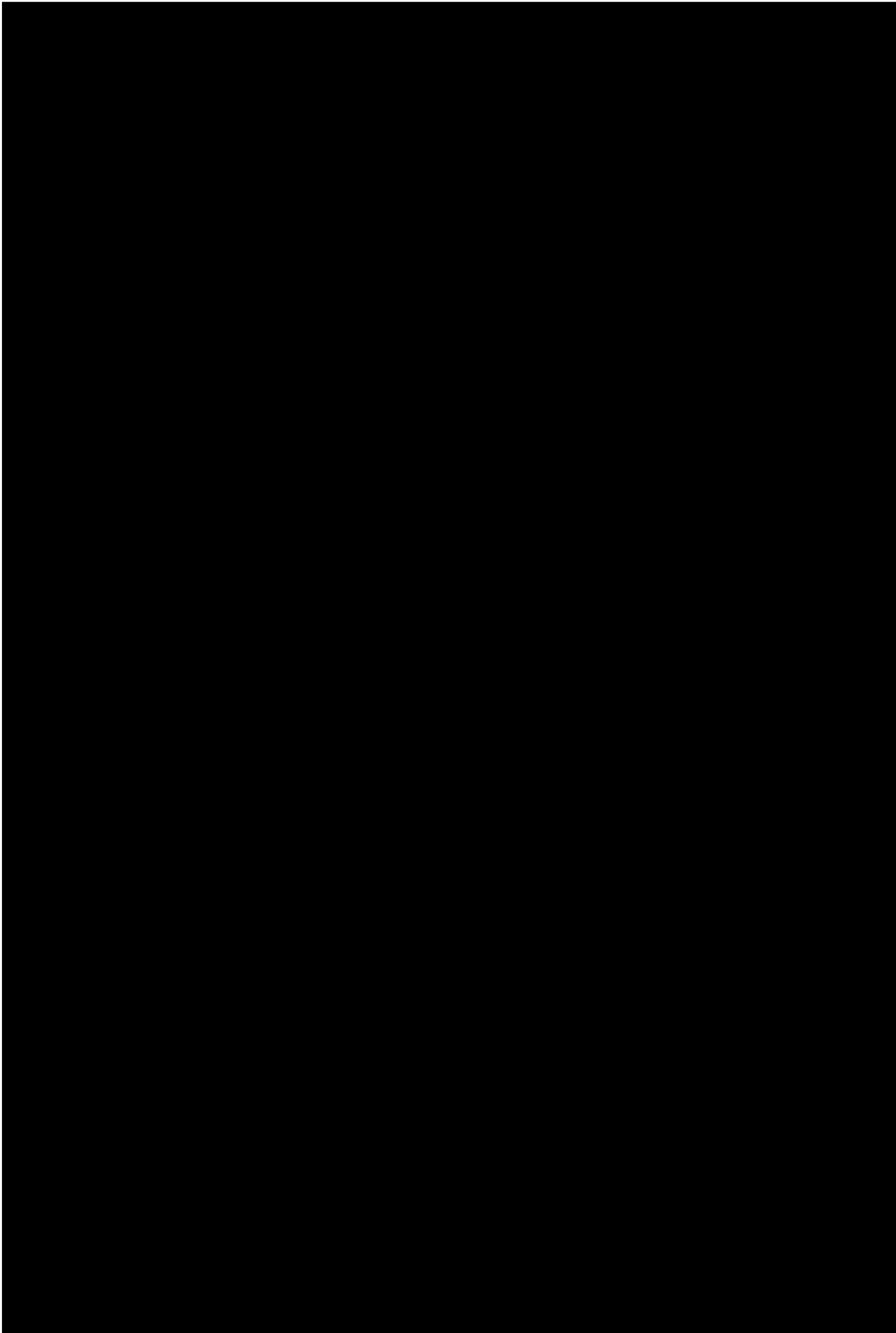
Additional fees will be payable to NCC Escrow by the Licensee (unless otherwise agreed between the parties) for the following where applicable:

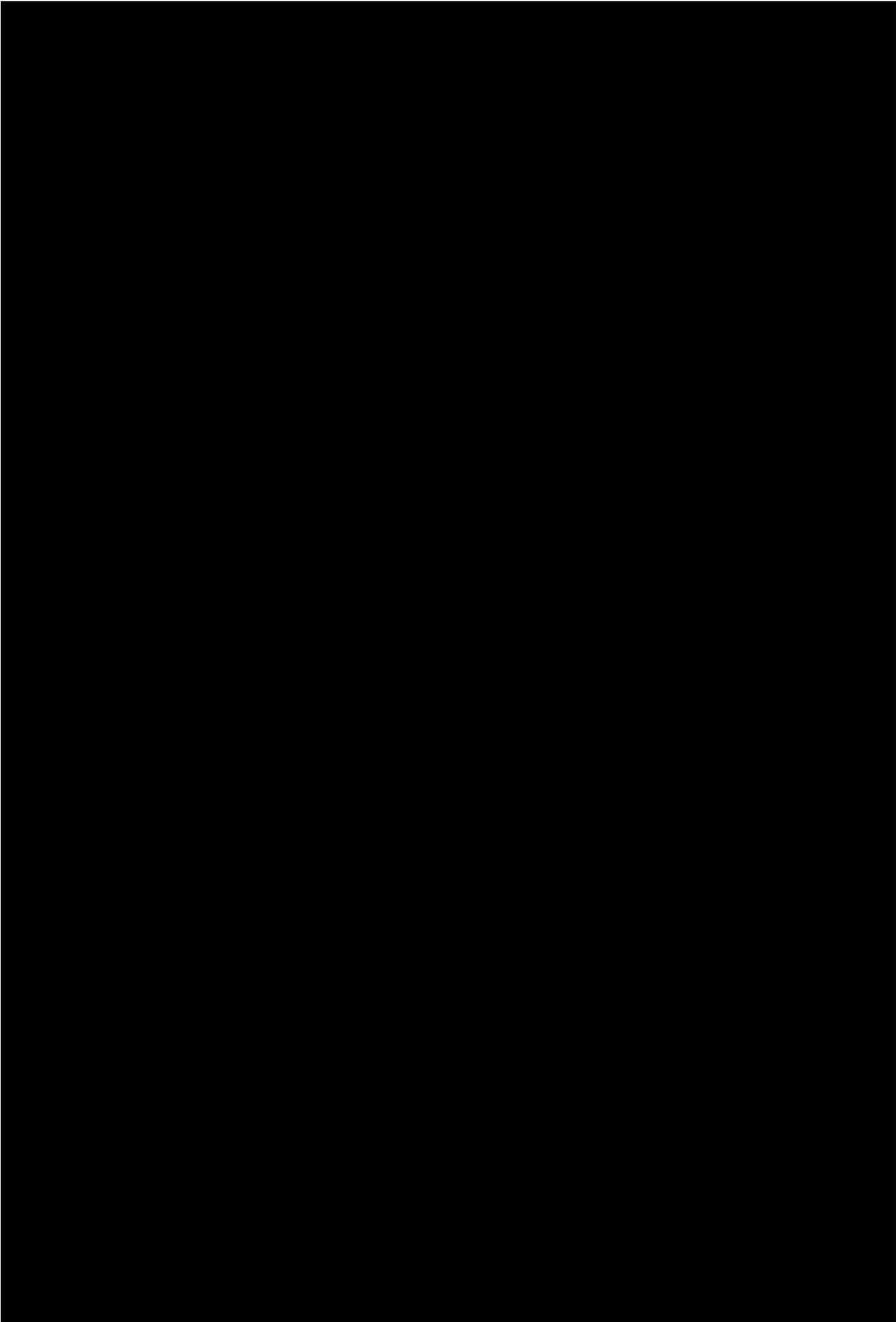
- Storage Fee for deposits in excess of 1 cubic foot;
- Any novation or replacement of this Agreement at the request of the Owner or the Licensee;
- Integrity Testing Fee for deposits consisting of more than 5 media items.

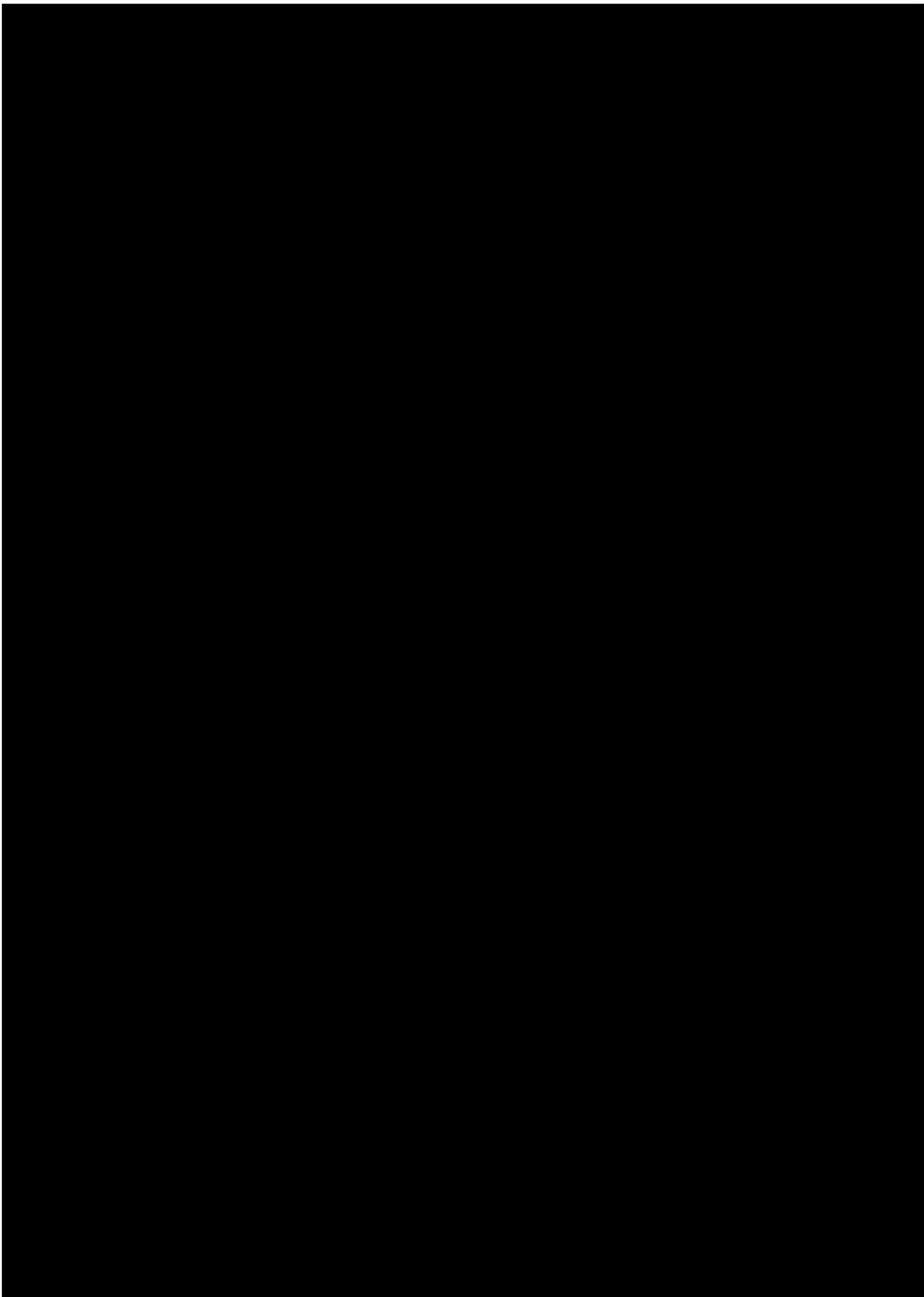


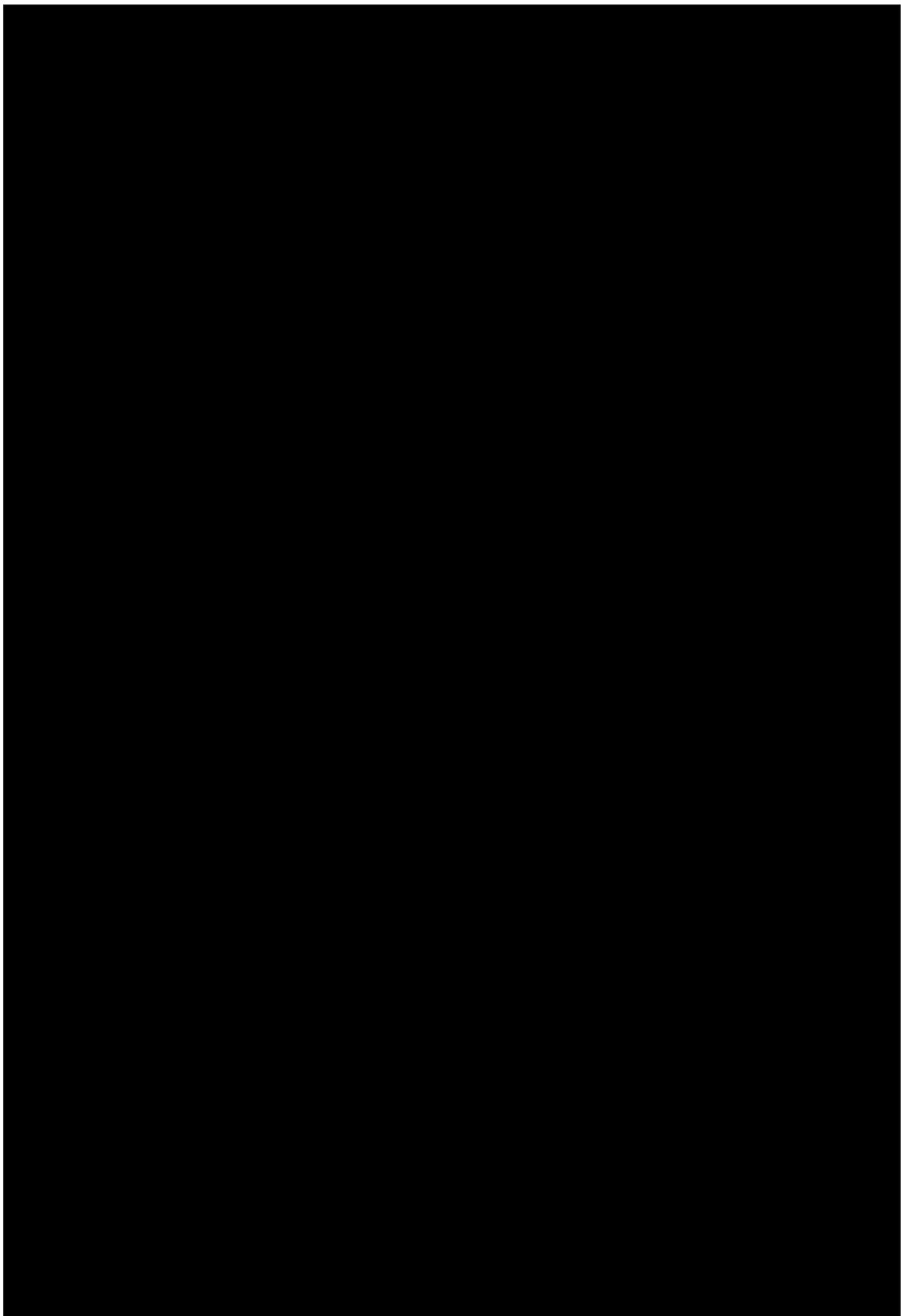


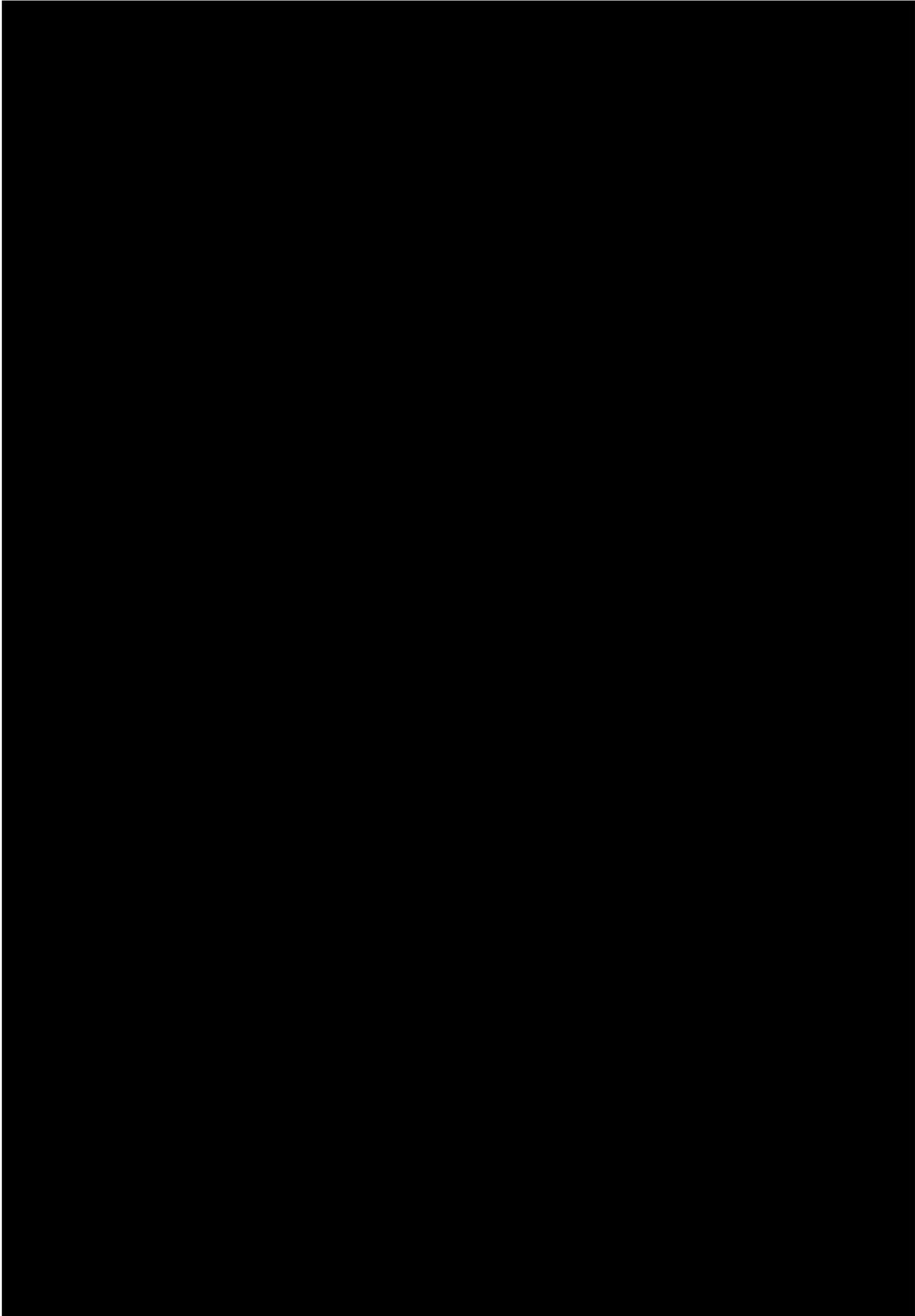


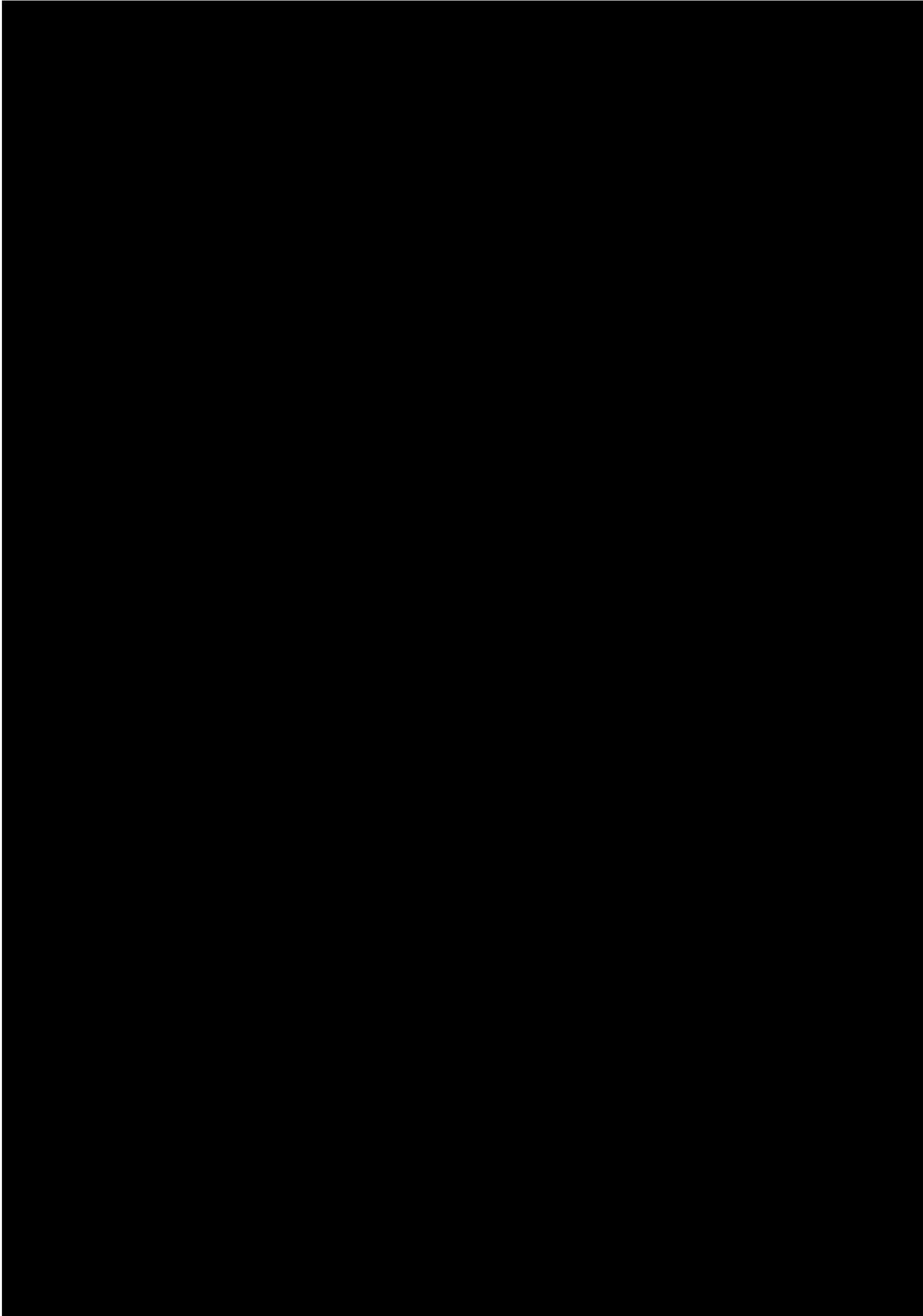


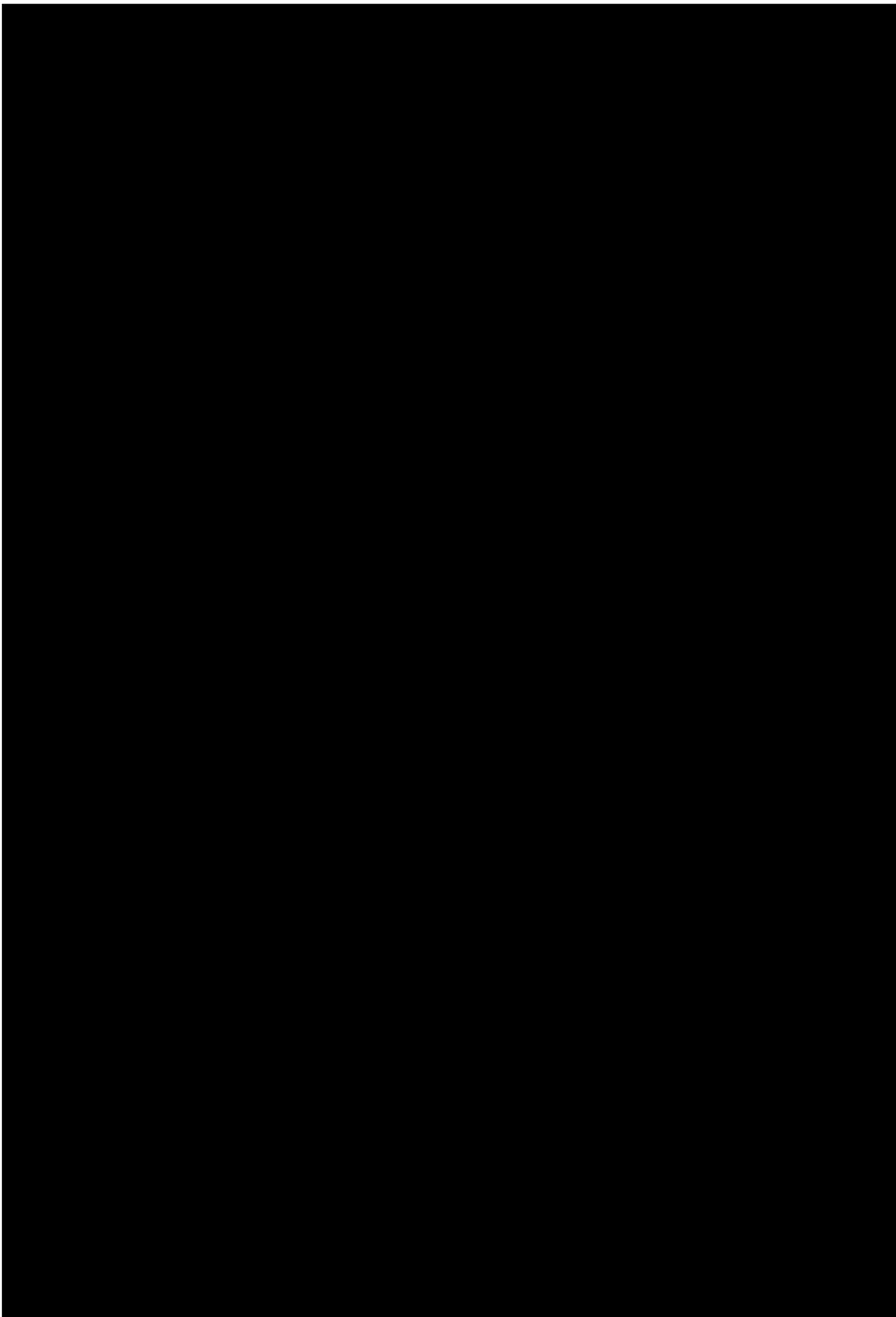








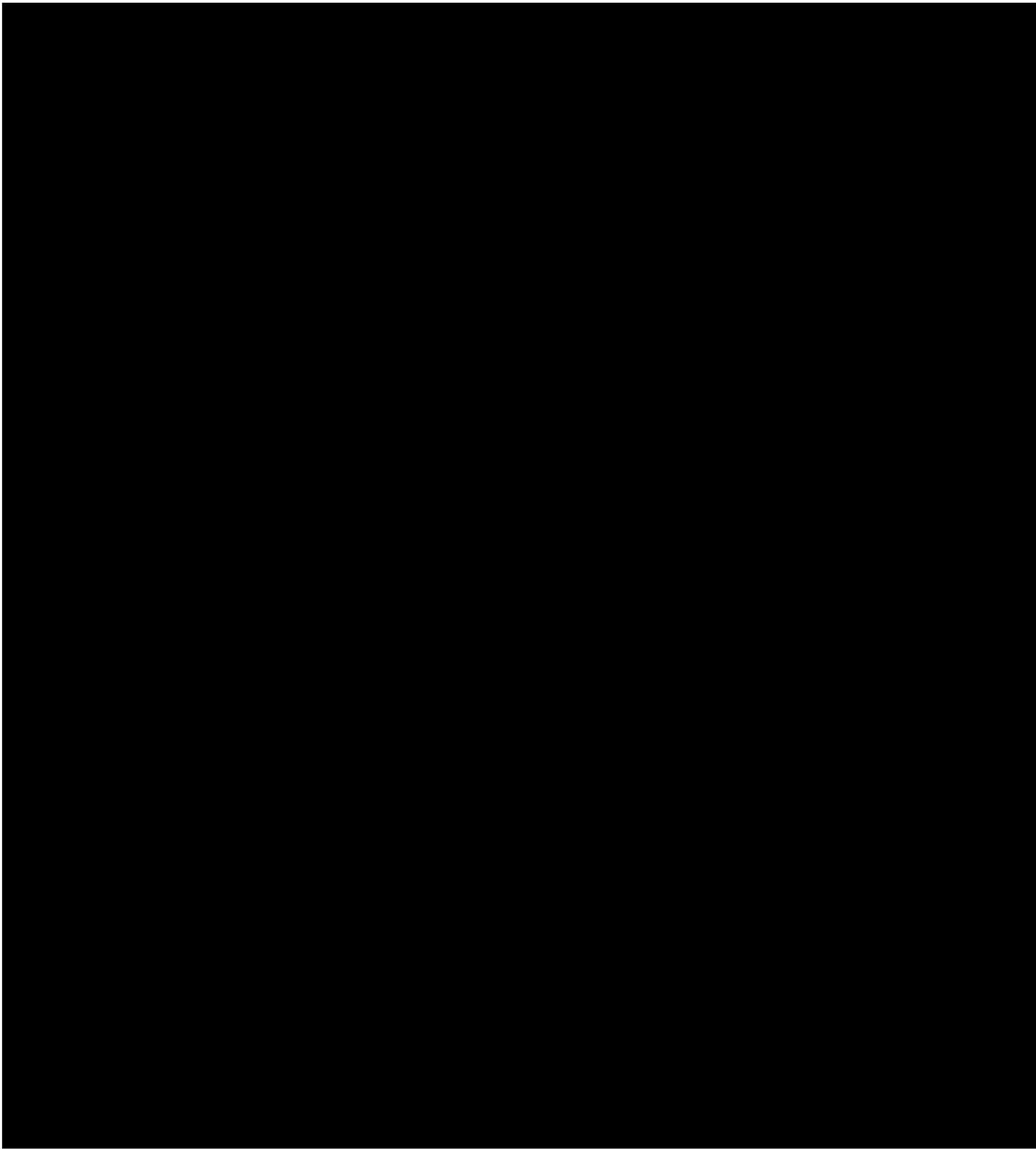














- (e) the Guaranteed Amount will decrease by [REDACTED] in respect of an ELR Unit on each occasion that a certificate in the form set out in Appendix 2C is delivered to us by you;
  - (f) the Guaranteed Amount will decrease by [REDACTED] in respect of each ELR Unit and [REDACTED] in respect of each NLR Unit on each occasion that a certificate in the form set out in Appendix 3A is delivered to us by you;
  - (g) the Guaranteed Amount will decrease by [REDACTED] in respect of each ELR Unit on each occasion that a certificate in the form set out in Appendix 3B is delivered to us by you;
  - (h) the Guaranteed Amount will decrease by [REDACTED] in respect of each ELR Unit on each occasion that a certificate in the form set out in Appendix 3C is delivered to us by you; and
  - (i) the Guaranteed Amount will decrease on each occasion that a certificate in the form set out in Appendix 4 is delivered to us by you by the amount refunded to the Purchaser by the Manufacturer in accordance with paragraph 1.5.5 of Part A of Schedule 11 of the Manufacture and Supply Agreement.
4. This Bonding Guarantee shall be valid for Demands received in accordance with this Bonding Guarantee until the date (the "**Expiry Date**") which is the earlier to occur of:
- (a) the date that you deliver to us a certificate in respect of the last Unit to which the provisions of Part A of Schedule 11 of the Manufacture and Supply Agreement apply which reduces the Guaranteed Amount to zero; and
  - (b) 31 October 2010,
- whereupon you shall return this Bonding Guarantee to the Manufacturer. After the Expiry Date, our undertaking will become automatically null and void if no claim has been received by us on or before that date, whether or not this Bonding Guarantee is returned to us.
5. We shall make payment to you immediately upon service of your Demand:
- (a) without regard to any information or instructions which we may then have received or may thereafter receive from any other source and we shall not be entitled to inquire into or require proof of the facts stated in the Demand which, as between ourselves and you, shall be conclusive; and
  - (b) notwithstanding any dispute between the Manufacturer and you; it being the intention of the parties hereto that the event upon which payment must be made hereunder is the service of your Demand without any rights on our part to raise any objections, irrespective of the validity of the effectiveness of the Manufacture and Supply Agreement and the obligations arising thereunder and irrespective of the underlying facts or their significance under the Manufacture and Supply Agreement.
6. All sums payable under this Bonding Guarantee shall be paid in pounds sterling to such bank account as may be specified in your Demand in immediately available funds, free of any restriction or condition and free and clear of and without any deduction or withholding whether for or on account of tax, by way of set-off, or otherwise, except to the extent

required by law. If we are required by law to make any deduction or withholding, the amount payable by us hereunder shall be increased to such amount as shall ensure that you receive a net amount equal to the amount which would have been received in absence of such deduction or withholding.

7. This Bonding Guarantee shall not be affected by:
  - (i) any change in the constitution of the Manufacturer and/or you and/or ourselves;
  - (ii) any assignment or transfer of the Manufacture and Supply Agreement to any member of the Manufacturer's Group in accordance with Clause 38.2 of the Manufacture and Supply Agreement;
  - (iii) the granting of any time by you to the Manufacturer and/or any forbearance or indulgence on any account shown by you to the Manufacturer; and/or
  - (iv) any change in the terms and conditions of the Manufacture and Supply Agreement; and/or
  - (v) any other circumstances which might operate to release a guarantor at law or in equity.
8. This Bonding Guarantee may be assigned or charged to any party that you are entitled to assign the Manufacture and Supply Agreement in accordance with Clause 39 of the Manufacture and Supply Agreement.
9. This Bonding Guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 (the "**Rules**") save that Article 20 of the Rules shall be varied to enable the Purchaser to claim under this Bonding Guarantee in all circumstances set out in proviso (b) to paragraph (3) above.
10. Words and phrases defined in the Manufacture and Supply Agreement shall have the same meanings in this Bonding Guarantee unless inconsistent with the context.
11. This Bonding Guarantee shall be governed and construed in accordance with the laws of England and Wales and the English Courts shall have exclusive jurisdiction in relation to any claim, dispute or difference concerning this Bonding Guarantee and any matter arising from it.

Executed as a Deed this ● day of ● ●.







**APPENDIX 2C**

**Certificate of Decrease in Guaranteed Amount on Completion of Stage 3 Testing in respect of ELR Units which achieved Deemed Acceptance**

To: [Bonding Guarantor]

Date: [                    ]

**Bonding Guarantee No. [                    ] issued in favour of Transport Trading Limited (the "Bonding Guarantee")**

Dear Sirs,

We refer to the Bonding Guarantee. Terms defined in the Bonding Guarantee have the same meaning in this Certificate.

We notify you that ELR Unit number [                    ] which achieved Deemed Acceptance on [date], subsequently completed each of the tests in the Stage 3 Core ELL Test Plan on [date].

Accordingly, the Guaranteed Amount will be reduced by £[*this is the calculation in paragraph 1.5.3 of Part A of Schedule 11 to the MSA having regard to the number of ELR Units which have achieved Deemed Acceptance subsequently achieving completion of Stage 3 Testing*] to £[                    ] with immediate effect.

Yours faithfully

Authorised Signatory









**PART F**

**FORM OF DELIVERY NOTE**

*[To be issued to Bombardier Transportation UK Limited on Transport Trading Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited, Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Delivery Note and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Delivery Note.
2. This document constitutes a Delivery Note under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited, hereby acknowledge and confirm, in accordance with the Manufacture and Supply Agreement, that:
  - 3.1 we Accepted the [*details of accepted equipment*] (the "**Accepted Equipment**");
  - 3.2 immediately on such Acceptance you, Bombardier Transportation UK Limited, Delivered the Accepted Equipment; and
  - 3.3 immediately on Delivery of the Accepted Equipment, full unencumbered legal and beneficial title in the Accepted Equipment passed to us, as Purchaser.

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**PART G**  
**FORM OF REQUEST FOR APPROVAL**

**Manufacture and Supply Agreement dated [ ] and made between Transport Trading Limited and Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement").**

This form accompanies Bombardier Transportation UK Limited's submission for Assurance Acceptance for the attached documentation:

<b>1. Submission Number</b>	
<b>2. Drawing and/or Document number</b>	
2.1 Revision letter/number	
<b>3. Drawing title and/or Title Document</b>	
<b>4. Date of Submission</b>	
<b>5. Details of Approval Sought</b>	
<b>6. Supplementary Information</b>  <i>This section should be used to provide any supplementary information which may be necessary to enable the Purchaser to decide how to categorize the Request for Approval. Where relevant, this should also include a description of the latest revision to any of the documents or drawings contained in the submission.</i>	

Signed on behalf of Bombardier Transportation UK Limited

Name.....

Position.....

Date .....

**PART H**  
**FORM OF PROVISIONAL ACCEPTANCE CERTIFICATE**

*[To be issued to the Bombardier Transportation UK Limited on Transport Trading Limited's  
headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited, Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Provisional Acceptance Certificate and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Provisional Acceptance Certificate.
2. This certificate constitutes a Provisional Acceptance Certificate under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited, hereby confirm that the [*details of Unit(s) receiving a Provisional Acceptance Certificate*] [comply/complies] with each of the Provisional Acceptance Criteria.

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**PART I**  
**FORM OF FINAL ACCEPTANCE CERTIFICATE**

*[To be issued to Bombardier Transportation UK Limited on Transport Trading Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [                    ] and made between Transport Trading Limited and Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Final Acceptance Certificate and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Final Acceptance Certificate.
2. This certificate constitutes a Final Acceptance Certificate under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited hereby confirm that the [*details of Unit(s) receiving a Final Acceptance Certificate*] [comply/complies] with each of the Final Acceptance Criteria.

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**PART J**

**FORM OF LOSS OF QUALIFYING STATUS NOTICE**

*[To be issued to Bombardier Transportation Limited on Transport Trading Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited, Bombardier Transportation Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Loss of Qualifying Status Notice and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Loss of Qualifying Status Notice.
2. This notice constitutes a Loss of Qualifying Status Notice under the Manufacture and Supply Agreement.
3. We, Transport Trading Limited, hereby advise you that [*name of bank/financial institution*] is no longer a Qualifying Issuer and remind you, Bombardier Transportation UK Limited, of your obligations pursuant to paragraph 2 of Part A of Schedule 11 of the Manufacture and Supply Agreement.

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**PART K**

**FORM OF QUALIFIED PROVISIONAL ACCEPTANCE CERTIFICATE**

*[To be issued to Bombardier Transportation UK Limited on Transport Trading Limited's headed notepaper]*

**Manufacture and Supply Agreement dated [            ] and made between Transport Trading Limited and Bombardier Transportation UK Limited and London Underground Limited (the "Manufacture and Supply Agreement")**

1. Words and expressions defined in the Manufacture and Supply Agreement shall have the same meanings when used in this Provisional Acceptance Certificate and the provisions of the Manufacture and Supply Agreement (including Clause 52 "Governing Law and Jurisdiction") shall, as applicable, apply to this Provisional Acceptance Certificate.
2. This certificate constitutes a Qualified Provisional Acceptance Certificate under the Manufacture and Supply Agreement.
3. We, [*Purchaser*], hereby confirm that the [*details of NLR Unit(s) receiving a Qualified Provisional Acceptance Certificate*] [comply/complies] with each of the Provisional Acceptance Criteria other than those set out in paragraph D.7.1(C) and (D) of Appendix D to Schedule 3 of the Manufacture and Supply Agreement.

Signed for and on behalf of Transport Trading Limited

Signature .....

Name.....

Position.....

Date .....

**SCHEDULE 19: PERMITTED DESIGN CHANGES**

**SCHEDULE 19**

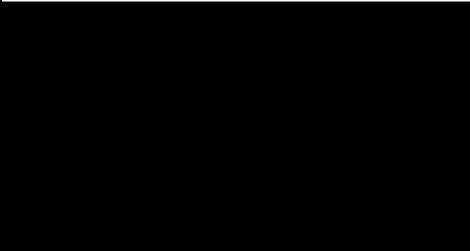
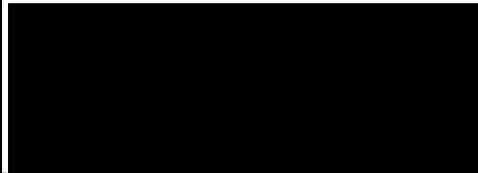
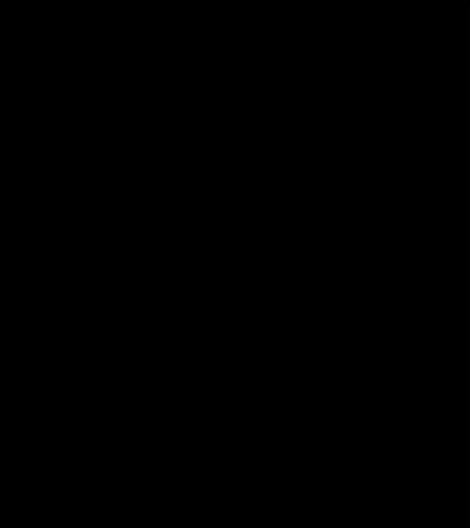
**Permitted Design Changes**

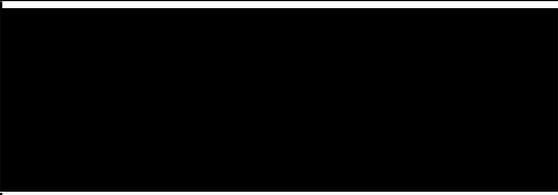
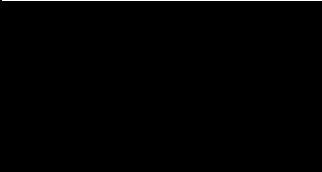
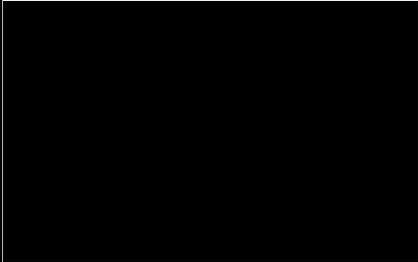
Permitted Design Change	Design Freeze Date
Revert to Electrostar standard shoe gear and busbar	
Create Unit length busbar by addition of a link	
Cab detrainment system - subject to mock-up being available for review	
Horns and depot whistle	
Grab pole – orientation (but not position)	
Head light low intensity control	
Footstep heights	
Drivers seat – colour	
Non drivers side tip up seat - colour/trim	
Interior panelling - colour	
Saloon flooring - colour	
Cab flooring – colour	
Cab back wall – colour	
Vestibule flooring - colour	
Grab pole – colour	
Seat fabric pattern (random)	
PIS audio and visual messages	
Driver diagnostic messages	
Cab interior trim as per paragraph 9.7.9.2 of the Rolling Stock Requirements – Technical and in accordance with mock-up/review process- (a) coat hooks (b) waste bin (c) cup holder (d) clip-boards (e) UK domestic power socket	
Exterior colour scheme	
Notices and decals (non copyright).	
Interior lighting - bulb tone	
CCTV - location of internal cameras	
Class and vehicle numbers	
Cab driver's desk and non-driver's side desk trim	

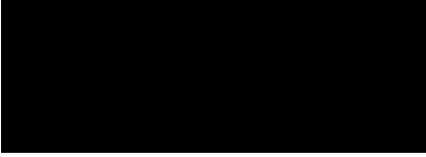
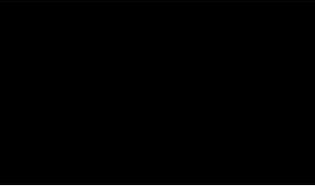
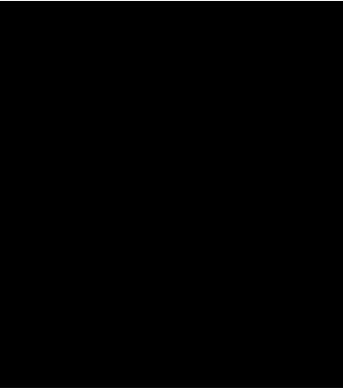
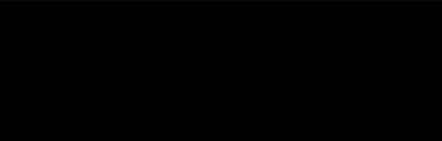
**SCHEDULE 20: APPROVED CONTRACTORS**

Schedule 20

Approved Contractors

System	Approved Contractors
Brake equipment, air supply and air suspension (body mounted only)	
Passenger doors	 OR 
Cab doors	
HVAC (saloon and cab)	

System	Approved Contractors
	
Gangway	  
CCTV	 OR  OR  OR 

System	Approved Contractors
PIS/audio	 OR  OR 
Battery system	OR 

**SCHEDULE 21: ROUTES**

## SCHEDULE 21

### Routes

#### Notes

**CSD** = Carriage Servicing Depot

**ECS** = Empty Coaching Stock

**Table 1: Core ELL Infrastructure**

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Canal Junction.	New Cross.	ELL2			DC		
	Dalston Junction Station	New Cross Gate Down Junction.	ELL1			DC		
	New Cross Gate Up Junction.	Canal Junction.	ELL1			DC		
	Dalston Junction Station	A connection with the North London Line near Canonbury.	To be advised			To be advised		Route not built at August 2006
<i>Sidings, depots, platforms and loops:</i>								
	New Cross Gate CSD		ELL4			DC	(ELR Carriage Servicing Depot) ECS only	

**Table 2 : ELR Network**

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Balham Junction.	Pouparts Junction.	VTB1		Fast	DC		
	Bromley Down Junction.	Norwood Junction.	BJN2			DC		
	Crystal Palace Tunnel Junction.	Sydenham Up Junction.	SCP			DC		
	Factory Junction.	Longhedge Junction.	FLL1			DC		
	Factory Junction.	Battersea Park platform 2	ATL			DC		
	Falcon Junction.	Pouparts Junction.	VTB1		Slow	DC		
	Gloucester Road Junction.	Selhurst Junction.	WCS			DC		
	Lavender Hill Junction.	Ludgate GW Junction.	FLL3			DC		
	Longhedge Junction.	Pouparts Junction.	BSP2			DC		
	Longhedge Junction.	Lavender Hill Junction.	FLL2			DC		
	New Cross Gate 2½ m.p.	Norwood Junction. (West Croydon Junction.)	LBW		Fast/Slow	DC	Access to No.1 Carriage Road	
	Norwood Junction.	Bromley Up Junction.	BJN1			DC		
	Norwood Junction.	Selhurst Junction.	NYD			DC	ECS only	
	Norwood Junction. (West Croydon Junction.)	West Croydon Station	NFE			DC		
	West Croydon Station	West Croydon Reversing Siding	NFE			DC		West Croydon Reversing Siding not yet built at August 2006
	Peckham Rye Junction.	Shepherds Lane Junction.	ATL		Atlantics	DC		
	Shepherds Lane Junction.	Factory Junction.	ATL		Atlantics	DC		

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Sydenham Down Junction.	Crystal Palace Tunnel Junction.	SCP			DC		
	Tulse Hill North Junction.	Old Kent Road Junction.	BTH1			DC		
	West Croydon Station	Norwood Fork Junction	NFE			DC		
	West Croydon Reversing Siding	West Croydon Station	NFE			DC		West Croydon Reversing Siding not yet built at August 2006
<i>Sidings, depots, platforms and loops:</i>								
	No.1 Carriage Road (New Cross Gate)		LBW			DC	ECS only	
	West Croydon platform 1		NFE			DC		

**Table 3 : North London Railway**

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Acton Central	Acton Wells Junction.	BOK5			AC		
	Acton Wells Junction.	Willesden High Level Junction.	BOK4			AC		
	Balham Junction.	Falcon Junction.	VTB1		Slow	DC		
	Bromley Jns.	Balham Junction.	BBJ			DC		
	Camden Junction.	Watford Junction.	CWJ		DC Lines	DC	4 <sup>th</sup> rail Kilburn - Harrow	
	Camden Road East Junction.	Dalston Western Junction.	BOK1		No.1 Lines	AC		
	Camden Road East Junction.	Dalston Western Junction.	BOK1		No.2 Lines	DC		
	Camden Road Junction.	Camden Road East Junction.	BOK1			AC/DC		
	Camden Road Junction.	Change of ELR (5m 23ch)	CRC1			AC/DC		
	Change of ELR (5m 23ch)	Primrose Hill Junction.	CRC2			AC/DC		
	Channelsea North Junction.	High Meads Junction.	CHM			AC	ECS only	
	Channelsea South Junction.	Stratford Central Junction.	CST			AC		
	Clapham Junction.	Richmond station platform 3	RDG1			DC	ECS only	
	Clapham Junction. platform 2	Latchmere No. 2 Junction.	CJL		Fast/Slow	DC		
	Dalston Western Junction.	Victoria Park Junction.	DWW1			AC/DC		
	Euston	Camden Junction.	LEC1		DC lines	AC/DC	Euston platforms 9/10	
	Euston	Watford Junction.	LEC1		Fast/Slow	AC	ECS only	
	Factory Junction.	Herne Hill South Junction.	VIR		Chathams	DC	ECS only	
	Falcon Junction.	North Pole Junction.	WLL			DC		
	Gunnersbury Junction.	South Acton Junction.	SAR1			DC		

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Harlesden Junction.	Sudbury Junction.	WTS		U&D Goods 1/2	AC	ECS only	
	Herne Hill South Junction.	Tulse Hill North Junction.	HHT			DC	ECS only	
	High Meads Junction.	Temple Mills East Junction.	LLS2			AC	ECS only	
	Kensal Green HL Junction.	Willesden Junction Low Level	KGW		New Lines	AC/DC	AC/DC changeover midway	
	Kensal Green HL Junction.	Harlesden Junction.	KGC		City Lines	AC	ECS only	
	Kensal Green Junction.	Camden Road Junction.	BOK2			AC		
	Lea Junction.	High Meads Junction.	LLS1			AC	ECS only	
	Leigham Junction.	Tulse Hill South Junction.	LTH			DC	ECS only	
	Longhedge Junction.	Latchmere No. 1 Junction.	CKL			DC		
	Mitre Bridge Junction.	Willesden High Level Junction.	WMB			AC		
	Mitre Bridge Junction.	West London Junction.	WLL			AC	ECS only	
	North Pole Junction.	Mitre Bridge Junction.	WLL			AC		
	Primrose Hill Junction.	Camden Junction.	CRC2		DC Electric	DC		
	Primrose Hill Junction.	Camden Junction.	CRC2		Slow Line	AC	ECS only	
	Richmond station	Gunnersbury Junction.	SAR2			DC	4 <sup>th</sup> rail	
	Selhurst Junction.	Balham Junction.	VTB1		Fast/Slow	DC		
	South Acton Junction.	Acton Central	BOK5			DC		
	Stratford Central Junction.	Temple Mills East Junction. 5 m.p.	SDC			AC	Access to Lea Interchange CSD. Section from Stratford Central Jn to Stratford platforms 11&12 and	

	From	To	Eng. Ref.	Line	Lines	Electrification	Notes 1	Notes 2
							(new) platforms 13&14 is for passenger service. Remainder to Lea Interchange CSD is ECS only.	
	Stratford Central Junction.	Ilford Depot London End Junction.	LTN1		Main/Electric	AC	ECS only	
	Streatham Common Junction.	Streatham Junction.	SSC			DC	ECS only	
	Streatham Junction.	Tulse Hill North Junction.	BTH1			DC	ECS only	
	Victoria Park Junction.	Channelsea South Junction.	DWW2			AC/DC		
	West London Junction.	Sudbury Junction.	LLG		Relief Lines	AC	ECS only	
	West Norwood Junction.	Tulse Hill South Junction.	WTH			DC	ECS only	
	Willesden High Level Junction.	Kensal Green Junction.	BOK3			AC		
<i>Sidings, depots, platforms and loops:</i>								
	Camden Carriage Sidings		LEC1			AC	ECS only	
	Harrow & Wealdstone Centre Siding		CWJ			DC 4th rail	ECS only	
	Ilford EMU Depot		ICS			AC	ECS only	
	Kensal Green Reversing Siding		BOK2			AC	ECS only	
	Kilburn Up and Down Goods Loop		LEC1			AC	ECS only	
	Lea Interchange CSD		SDC			AC	ECS only	Lea Interchange CSD not yet built at August 2006

	<b>From</b>	<b>To</b>	<b>Eng. Ref.</b>	<b>Line</b>	<b>Lines</b>	<b>Electrification</b>	<b>Notes 1</b>	<b>Notes 2</b>
	Stratford platforms 13 and 14 (new NLL platforms)		SDC			AC		Stratford platforms 13 &14 not yet built at August 2006
	Watford Tip Sidings		LEC1			DC	ECS only	
	Watford Yard		WSA			AC	ECS only	
	Willesden TMD		LEC1			AC/DC	ECS only	
	Willesden TMD Loop		LEC1			AC	ECS only	