REDACTED

Northern Utilities, Inc.
DG 23-087
Petition for Expedited Approval of Empress Capacity Agreements
NH Department of Energy Data Requests - Set 1

Date Request Received: 11/07/23
Request No. DOE 1-07
Date of Response: 11/17/2023
Witness: Francis X. Wells

Request:

Reference: Pre-filed Testimony of Francis X. Wells, Exhibit Unitil-FXW-1, pg. 8

a) Please provide supporting analysis for the statement "Northern assesses the probability that TCPL would cancel the project and trigger termination costs to Northern as quite low," Including but not limited to a numeric range for "quite low."
b) Please identify salient components potentially contributing to the "probability of project cancellation" and possible remedies. Also, please identify responsibilities of transporter and/or shippers for each component.
c) Does the project plan include risk minimization measures? Please provide details.
d) Please confirm that there are six shippers in total and identify them. Is the project cancellation risk (for TCPL and PNGTS) heavily based on other shippers getting regulatory approvals and permits? If so, is this increasing the associated project cancellation risk for Northern?

Confidential Response:

a. Northern's response to DOE 1-08 provides the requested data.

b. The salient components contributing to the probability of project cancellation include the following:

1. Potential loss of downstream PNGTS capacity due to failure of PNGTS to obtain FERC Certificate. If PNGTS were to fail to obtain its FERC Certificate, then neither Northern nor the other shippers would be able to meet the TCPL Tariff requirement that the shipper obtain all necessary downstream capacity and the project would be cancelled. This filing was made on September 26, 2023 under FERC Docket No. CP23-548. PNGTS expects a decision by November 28, 2023.
2. Potential failure of TCPL to obtain all necessary approvals to construct any of the facilities listed in Northern's response to Maine Data Request OPA-001-009. TransCanada's has extensive experience with pipeline project approval processes, which mitigates this risk. Please refer to Northern's response to DOE 1-8. One new risk factor is that TransCanada must seek approval from the Quebec government for the power supply it requires for the added compression contemplated by the project, which was not a requirement during TransCanada's last capacity expansion to East Hereford. [redacted]

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3. Upon receiving these approvals, potential failure of TCPL to construct these facilities. TransCanada has extensive experience with pipeline construction, as its organization has built and placed many projects into service, which mitigates this risk. Please refer to Northern's response to DOE 1-8.

c. Please refer to Northern's response to part b. of this request. TCPL also has a duty to use commercially reasonable efforts to minimize costs. (See Maine Data Request EXM-001-009.)

d. There are three shippers in total. They are Emera Energy Services, Inc. ("Emera"), New England Green Gas LLC ("NEGG"), and Northern. This information was publicly disclosed in PNGTS' FERC approval filing. TCPL does not typically disclose shipper identities until commencement of firm transportation service agreements, but it is known that Emera and NEGG are also the TCPL shippers because PNGTS' tariff requires that shippers obtain upstream capacity[1]. Because the other two shippers are not regulated utilities, like Northern, they are not required to seek regulatory approval or permits and there is no project cancelation risk attributable to their ability to do so.

[1] TCPL's tariff also requires that shippers have corresponding downstream capacity on PNGTS.

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Date Request Received: 11/07/23 **Date of Response:** 11/17/2023
Request No. DOE 1-08 **Witness:** Francis X. Wells

Request:

Did Northern, transporters, or any other party perform a risk analysis (es) regarding the potential cancellation of the Project (inclusive of TCPL and PNGTS or for either TCPL or PNGTS individually? If not, why not? If yes, please provide the details of the analysis.

Response:

Northern is not aware of risk analyses performed by other parties. In response to this data request, Northern has performed the following analysis.

As discussed in the Empress Capacity Resource Assessment, PNGTS capacity requires only approval from the FERC to increase their certificated capacity by 59,100 Dth. The physical facilities PNGTS needs to provide the service requests that were awarded through the PNGTS Open Season are already in service. Therefore, Northern believes that FERC will approve PNGTS' request.

TransCanada provided Northern the following data relative to pipeline expansion projects that it has proposed from 2012 through 2023 across its affiliate pipelines operating in Canada.

	No. of Applications				
Year	NGTL	Foothills	TCPL	TQM	Total
2012	6	1	2	0	9
2013	16	0	0	0	16
2014	19	0	2	2	23
2015	22	1	5	0	28
2016	6	0	5	0	11
2017	30	0	5	1	36
2018	21	0	1	0	22
2019	16	0	6	2	24
2020	5	2	2	0	9
2021	7	1	0	0	8
2022	2	0	1	0	3
Total	150	5	29	5	189
Projects Cancelled By Pipeline	1	0	1	0	2
Percent Projects Cancelled	0.67%	0.00%	3.45%	0.00%	1.06%

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Based on this data, TransCanada and its affiliate pipelines have cancelled only 2 out of 189 projects (1.06%) that have been proposed from 2012 through 2022[1]. No projects have been cancelled by TransCanada or its affiliates since 2014. Therefore, 1.06% is a reasonable estimate of the probability that TransCanada would cancel its Precedent Agreement with Northern due either to its inability to gain approvals or inability to create the new capacity it requires to fulfill Northern's requested service for 13,600 GJ of firm transportation service, which would trigger cancellation costs.

TCPL expects decisions from the CER by the end of Q4 2025 and, at that time, the Estimated Liability Limit ("ELL") would be [redacted] USD. Assuming that Northern is able to obtain approvals from the NH PUC and the ME PUC, the Company believes it is unlikely that TCPL would cancel the project before the CER would issue its decisions on its proposed facilities, so that would be a reasonable lower limit of the cancellation cost risk. The upper limit of the ELL for the 2027 TCPL PA is [redacted] USD in Q4 2027. Assuming for the sake of analysis that the timing of cancellation by TransCanada would be random, the average between the lower and upper limits of the TransCanada cancellation risk of [redacted] would be the expected risk amount.

Using the assumed probability of project cancellation by TransCanada equal to 1.06% and the expected risk amount equal to [redacted], the expected value of the project cancellation by TransCanada would be equal to $219,054.

Relative to the expected benefits provided in the Modelled Cost Analysis (Attachment 9) and the estimated Asset Management Revenue provided in response to Maine Data Request CLF-001-006, the expected value of project cancellation by TransCanada is reasonable.

In addition to the reasonable balance between benefits and risk in the 2027 TCPL PA, Northern's response to EXM-001-009 provides an overview of tools that Northern has to mitigate cancellation cost risk, which include audit rights and TCPL's duty to minimize costs.

[1] Seven of the projects were not placed into service because the customer requesting service withdrew their request for service or there was a delay on the customer's end. TransCanada and/or its affiliates were able to gain their approvals in these cases. There were three projects that have been proposed in 2023 by the NGTL system, but those approvals processes have not been completed. For that reason, these projects were not included in the table.

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Date Request Received: 11/07/23
Request No. DOE 1-08

Date of Response: 11/17/2023
Witness: Francis X. Wells

Estimate of Shared Facilities Costs ($)
for 2027 Eastern System Expansion
(Confidential)
November 14, 2023

The following is an estimate provided for information purposes only and on a without prejudice basis. Shipper is liable for the actual amount payable as calculated pursuant to the terms of the Precedent Agreement.

Northern Utilities, Inc. - 13,600 GJ/d, Empress to East Hereford from Apr. 1, 2024 to Mar. 31, 2054 (Estimated Exposure Profile for Required Facilities)

	2023 (Cumulative)				2024 (Cumulative)				2025 (Cumulative)				2026 (Cumulative)				2027 (Cumulative)			
Estimated Exposure ($)	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
40,549,594	**0**	**0**	21,553	280,190	668,146	1,287,957	2,573,816	4,435,832	6,504,929	8,664,549	11,005,214	13,345,880	15,686,546	18,027,211	21,261,037	24,774,191	28,973,773	33,627,606	38,089,096	40,549,594

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Date Request Received: 11/07/23
Request No. DOE 1-13
Date of Response: 11/20/2023
Witness: Francis X. Wells

Request:

Please provide the following:

a) Please identify all decision points in the schedules when the Company will evaluate whether to proceed with the agreements or not.
b) Please provide details of the decision-making process that the Company will use to evaluate whether to initiate a cancellation event.
c) Please explain what criteria will be used in the decision-making. If the criteria are different at each decision point, please identify the differences.

Response:

Regarding the 2027 TCPL PA, provided as Attachment 6 to the Empress Capacity Resource Assessment, pursuant to Section 13(g), the Company has the right to withdraw its service request under the Precedent Agreement at any time and may incur Cancellation Charges accrued at that time. Withdrawal from the 2027 TCPL PA would trigger a termination of the 2024 Early Start capacity as well. CONFIDENTIAL DG 23-087 DOE 1-13 provides a list of anticipated events related to the PNGTS FT Contract and the 2027 TCPL PA, a description of the relevant decisions that would be made at that time and the estimated liability at the time of that event.

a) The Company cannot foresee all circumstances under which it might seek to terminate the precedent agreements early. [BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

b) The Company has not formalized a decision-making process for assessing termination of its participation in the projects, but anticipates [BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

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Request No. DOE 1-13 **Witness:** Francis X. Wells

c) Specific decision-making criteria have not been developed. Project cancellation or a failure to obtain regulatory approval on the part of one of the pipelines would jeopardize the capacity path and unless a viable replacement project is anticipated, early termination by Northern of the other projects may be possible although the Company would weigh the consequences of such cancellation carefully. Once regulatory approvals for all projects have been obtained, the risk of cancellation would drop significantly, though the cost of an early termination would increase as project construction progresses.

CONFIDENTIAL

Northern Utilities, Inc.
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Petition for Expedited Approval of Empress Capacity Agreements
NH Department of Energy Data Requests - Set 1

Date Request Received: 11/07/23
Request No. DOE 1-24

Date of Response: 11/17/2023
Witness: Francis X. Wells

Request:

Reference: CONFIDENTIAL Attachment 6
Is the TCPL 2027 Precedent Agreement subject to an Estimated Liability Limit? If yes, please identify the amount.

Out of an abundance of caution, recognizing that Attachment 6 is confidential, the DOE asks Northern to indicate whether it considers this question or Northern's response "confidential" in the event this data request were to be marked as an exhibit for hearing.

CONFIDENTIAL Response:

Please refer to DOE 1-10. The Estimated Liability Limit is found on CONFIDENTIAL Attachment 6 to the Empress Capacity Resource Assessment. The total Estimated Liability Limit is [redacted] CAD, which is equal to approximately [redacted] USD based on the average exchange rate equal to 1.304.

Projected Design Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Year	Total Fixed Costs	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
2023-2024									
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



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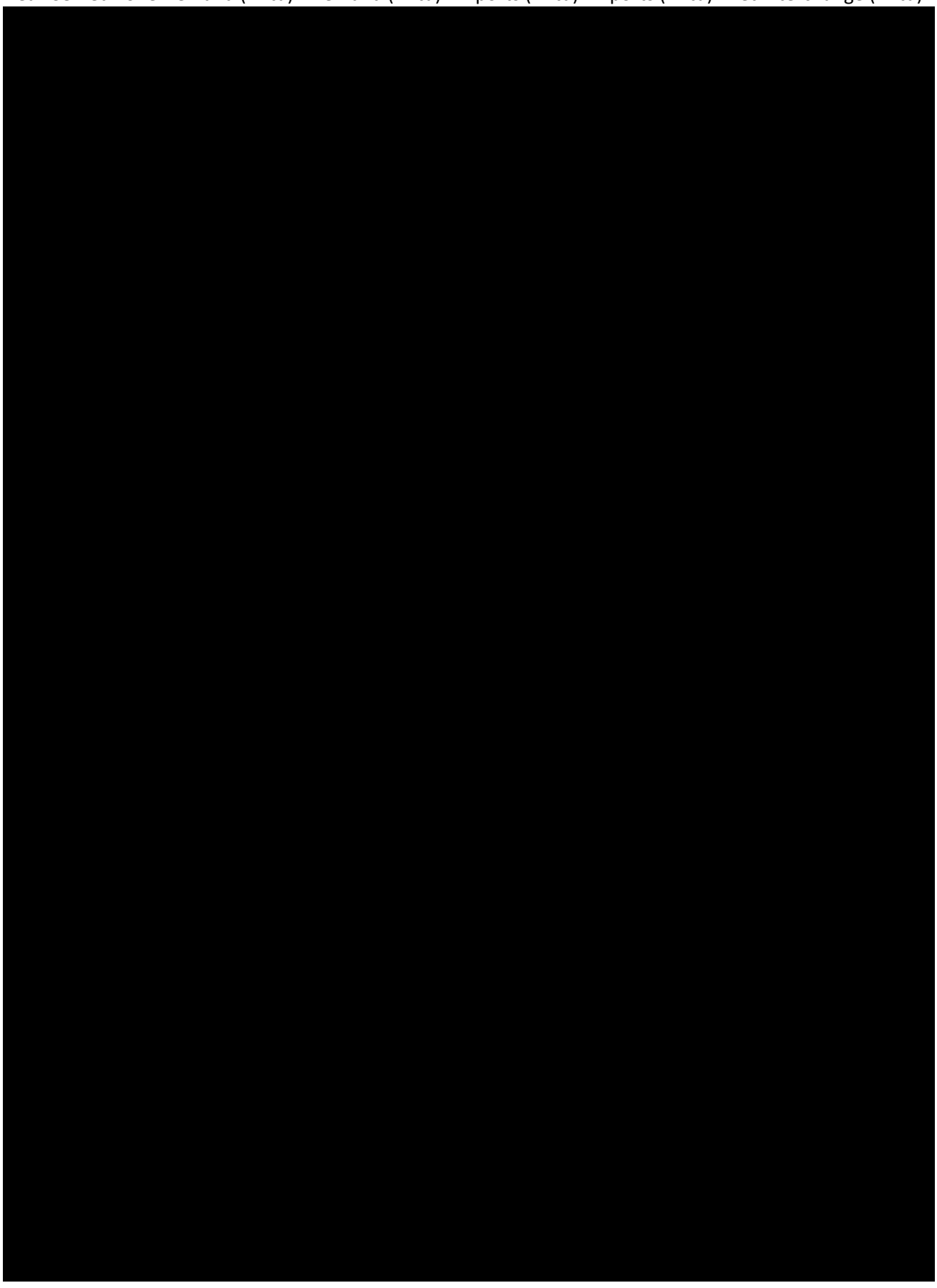
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





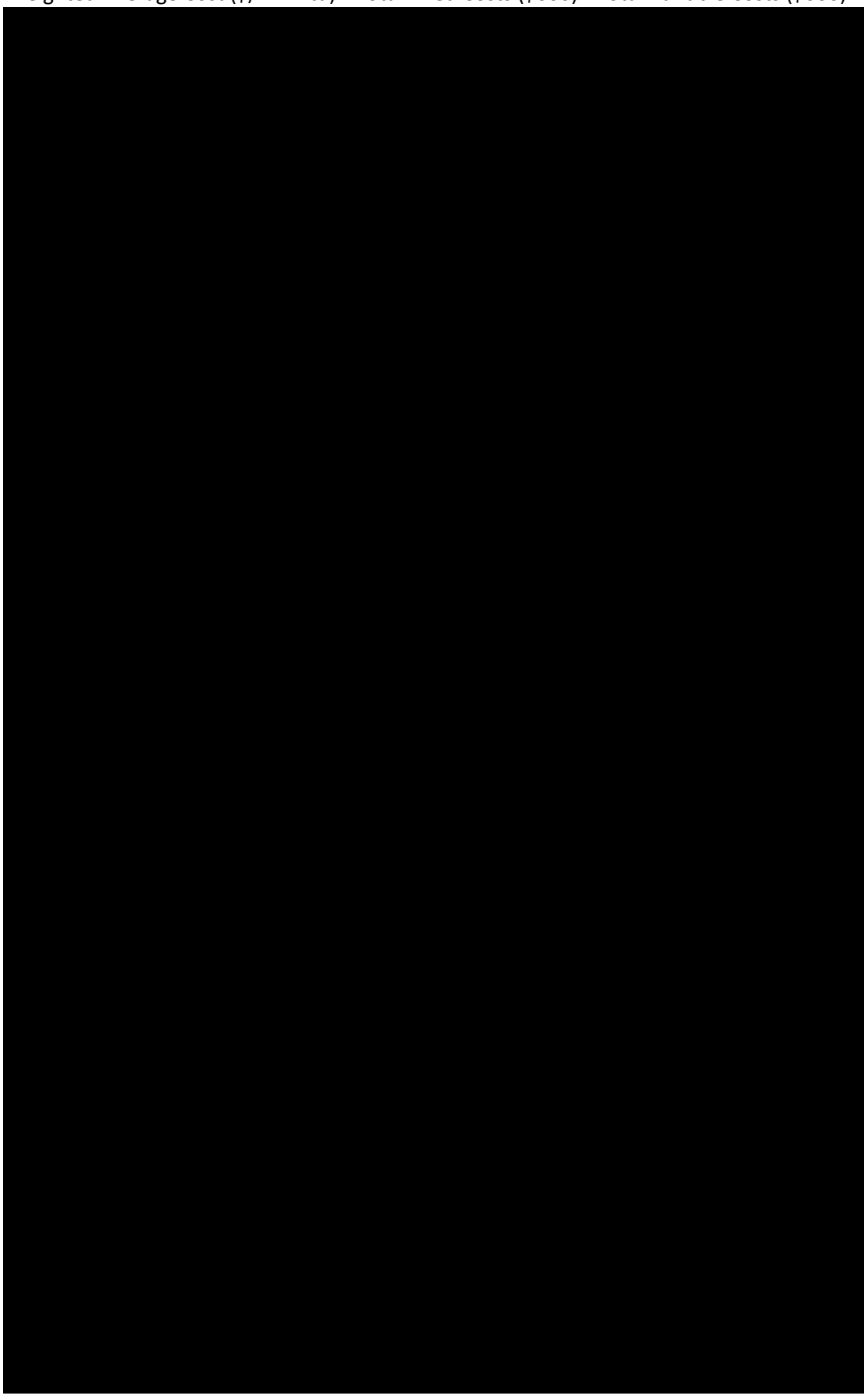
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

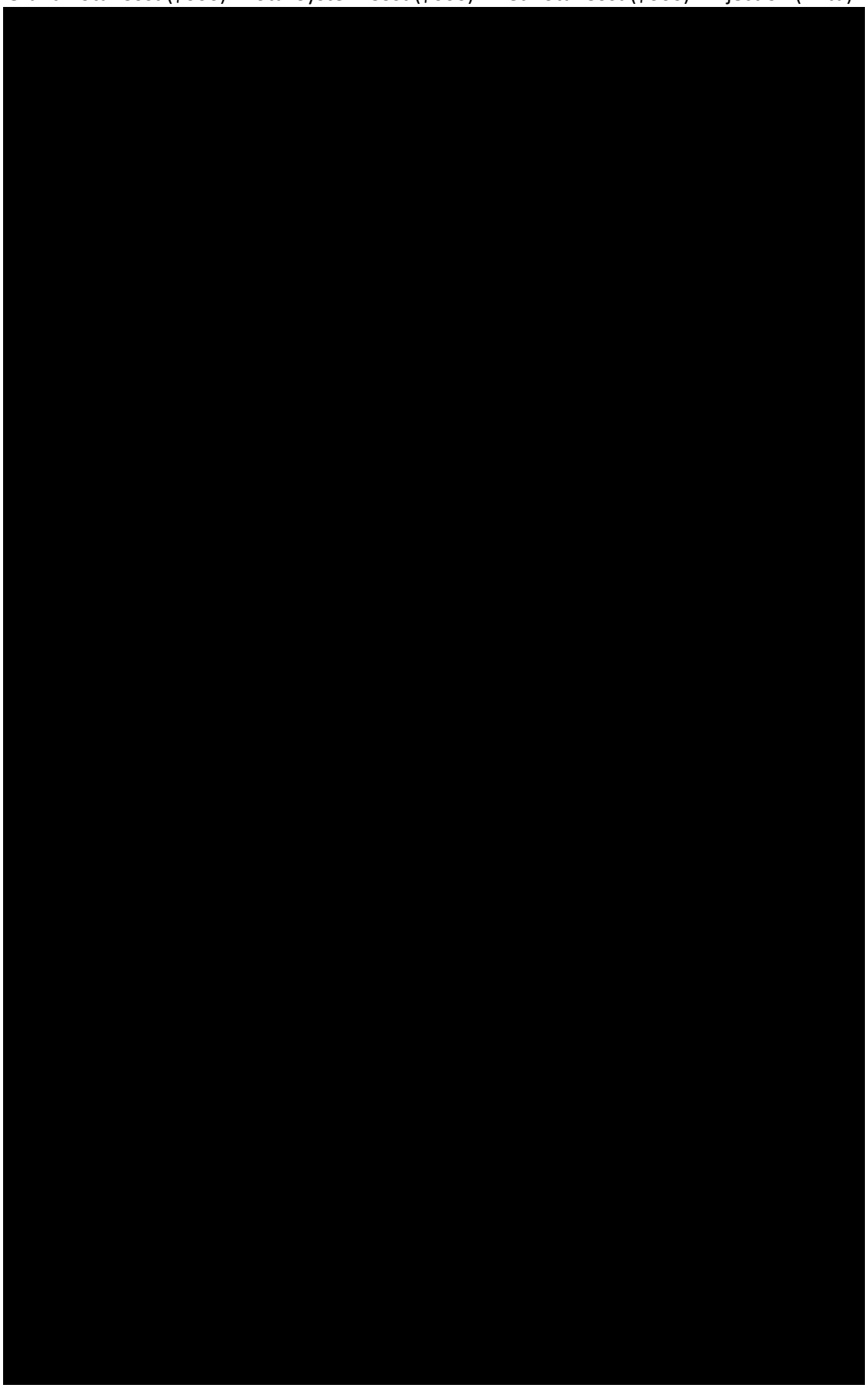


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

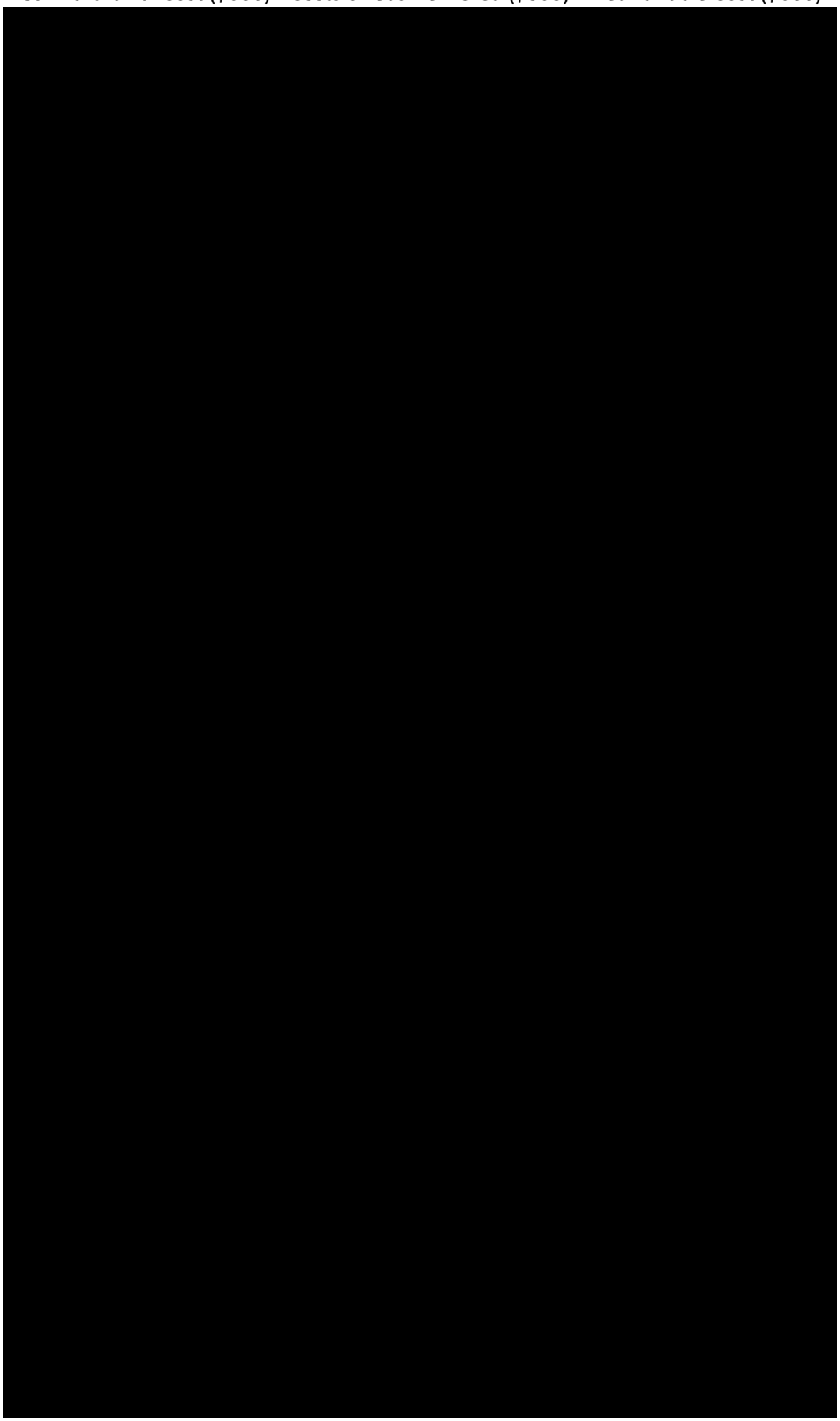




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

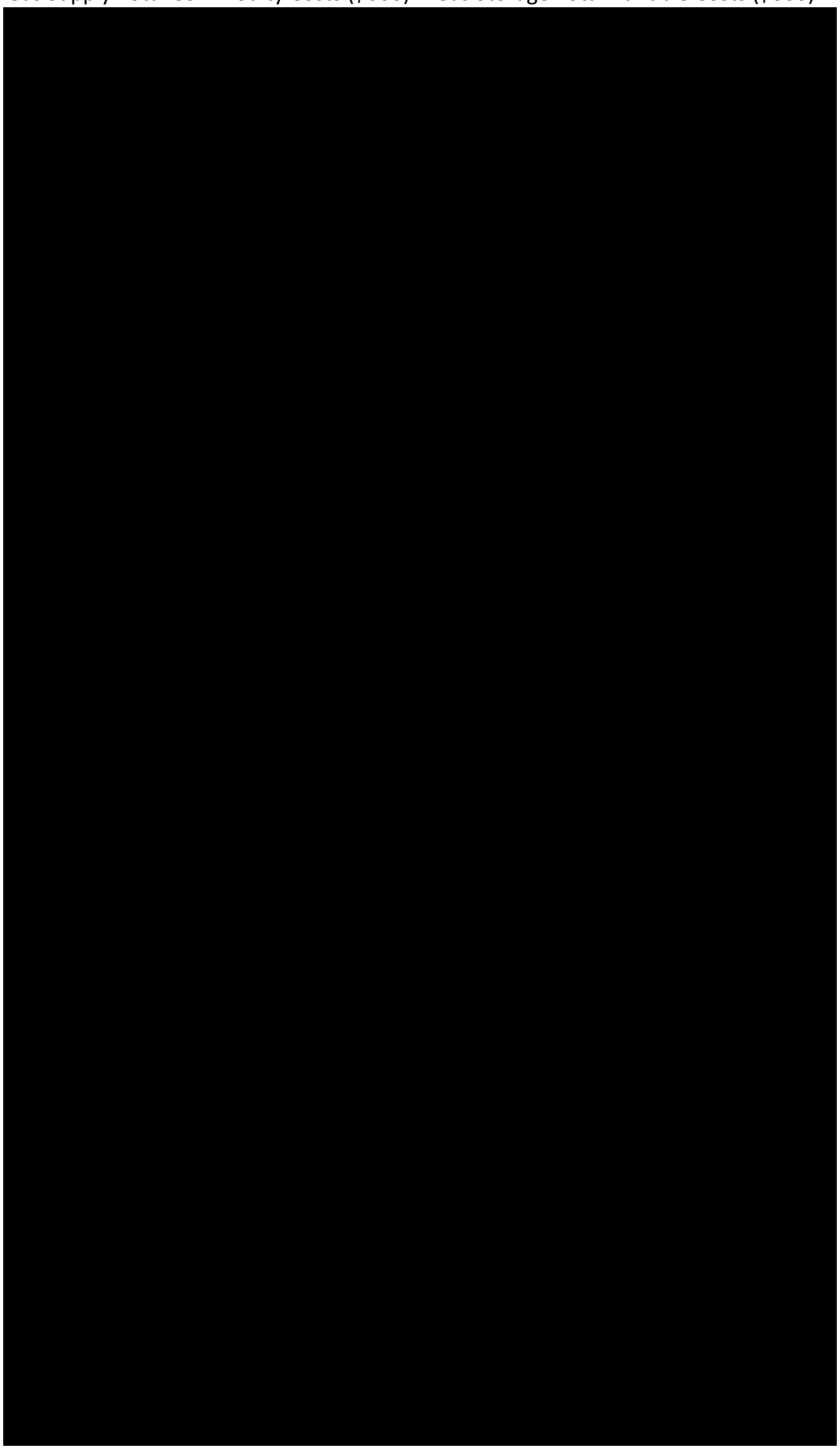




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

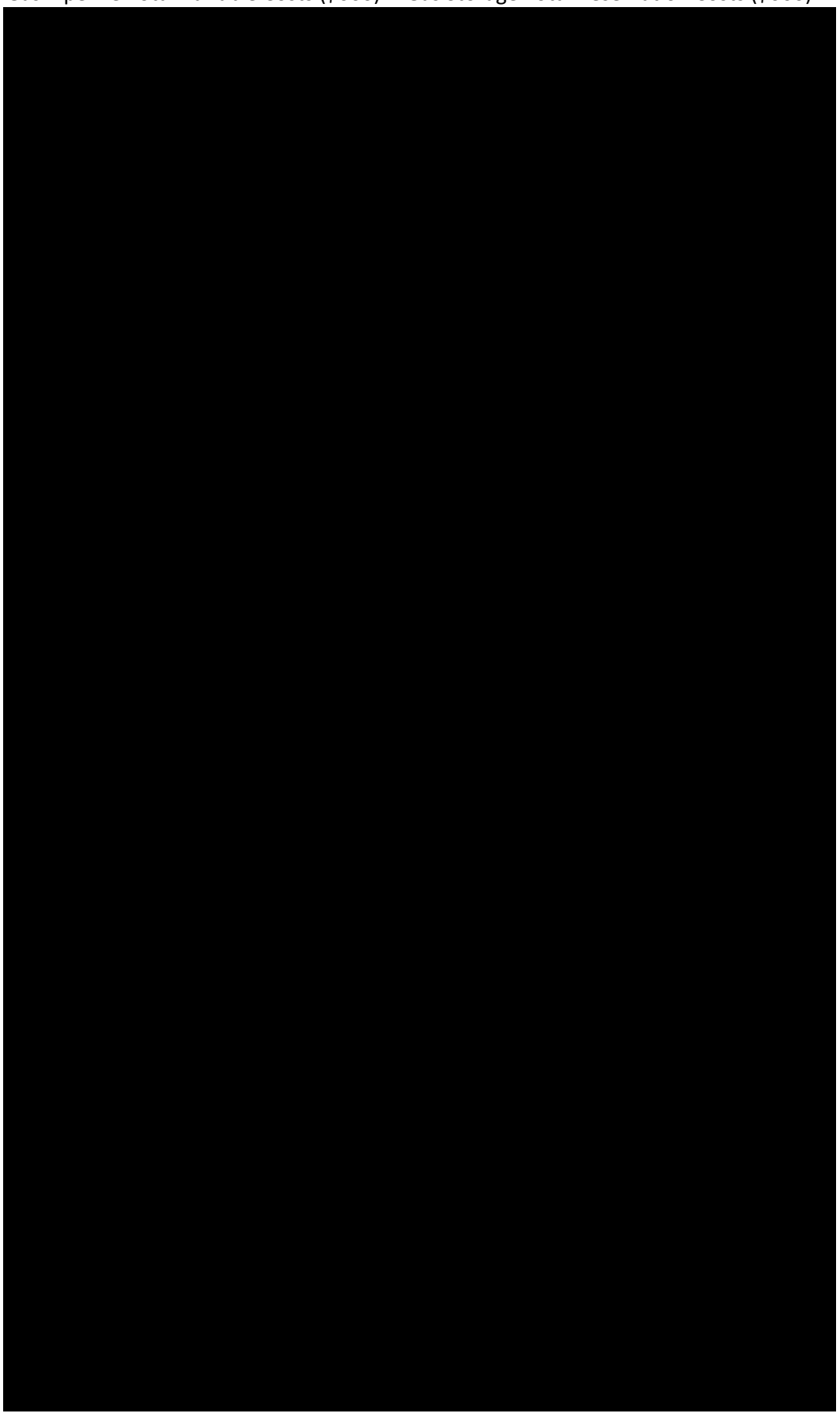


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



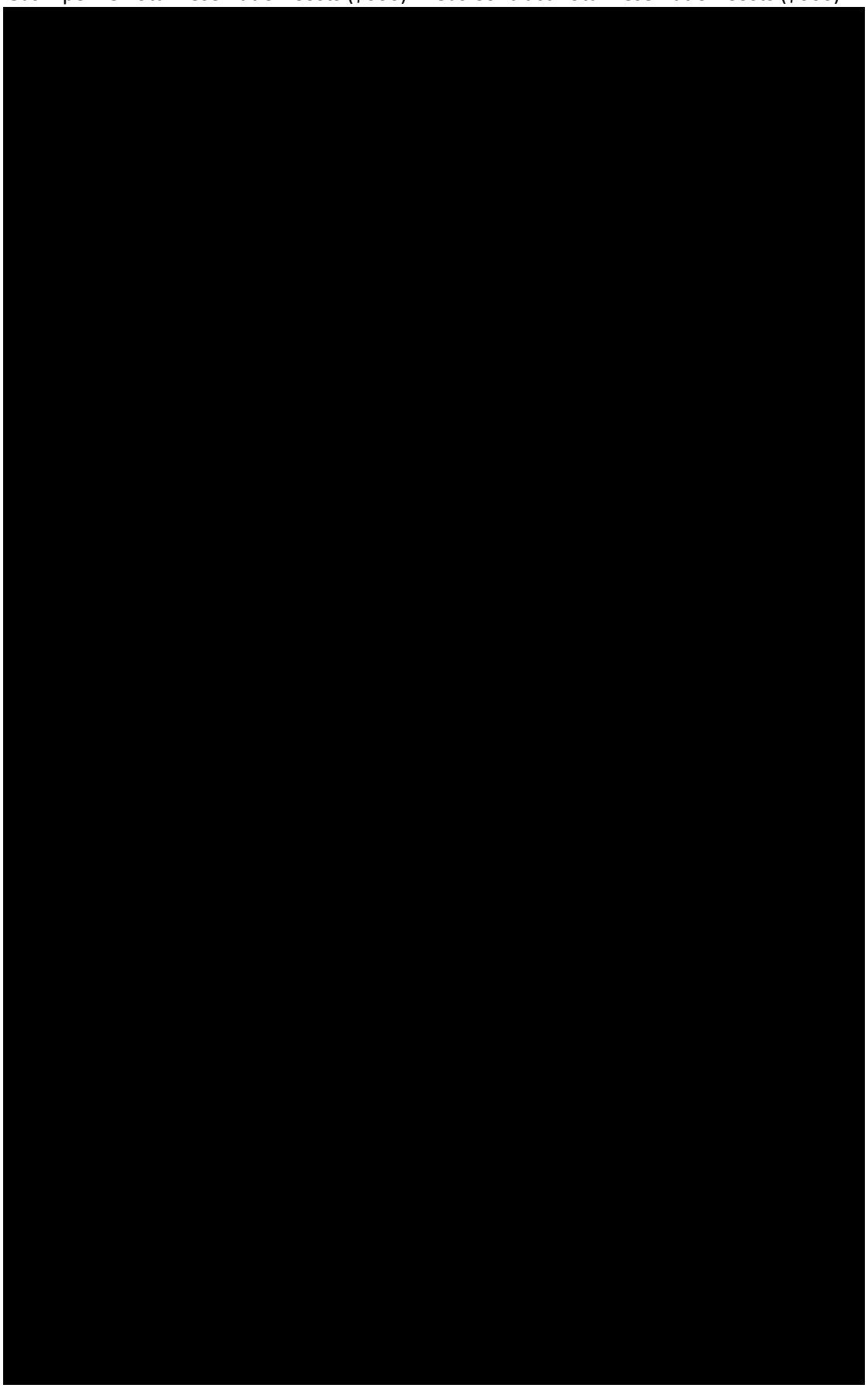


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



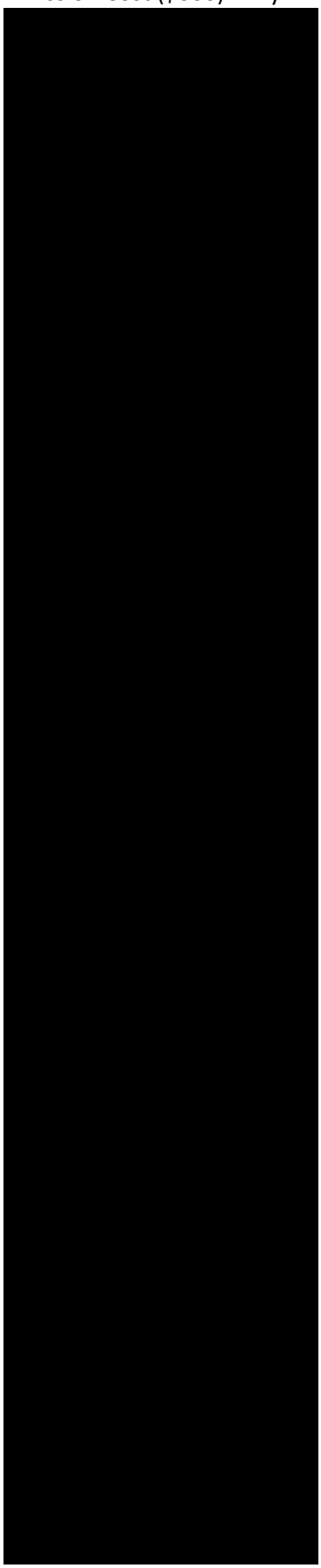


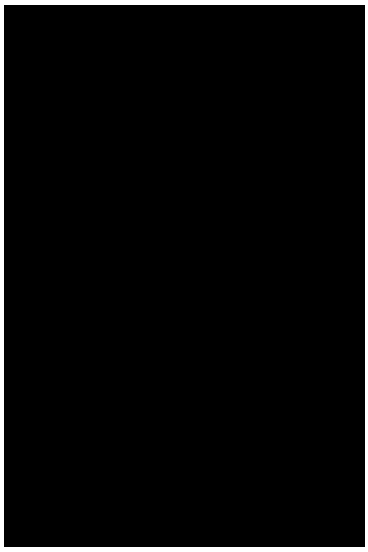
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



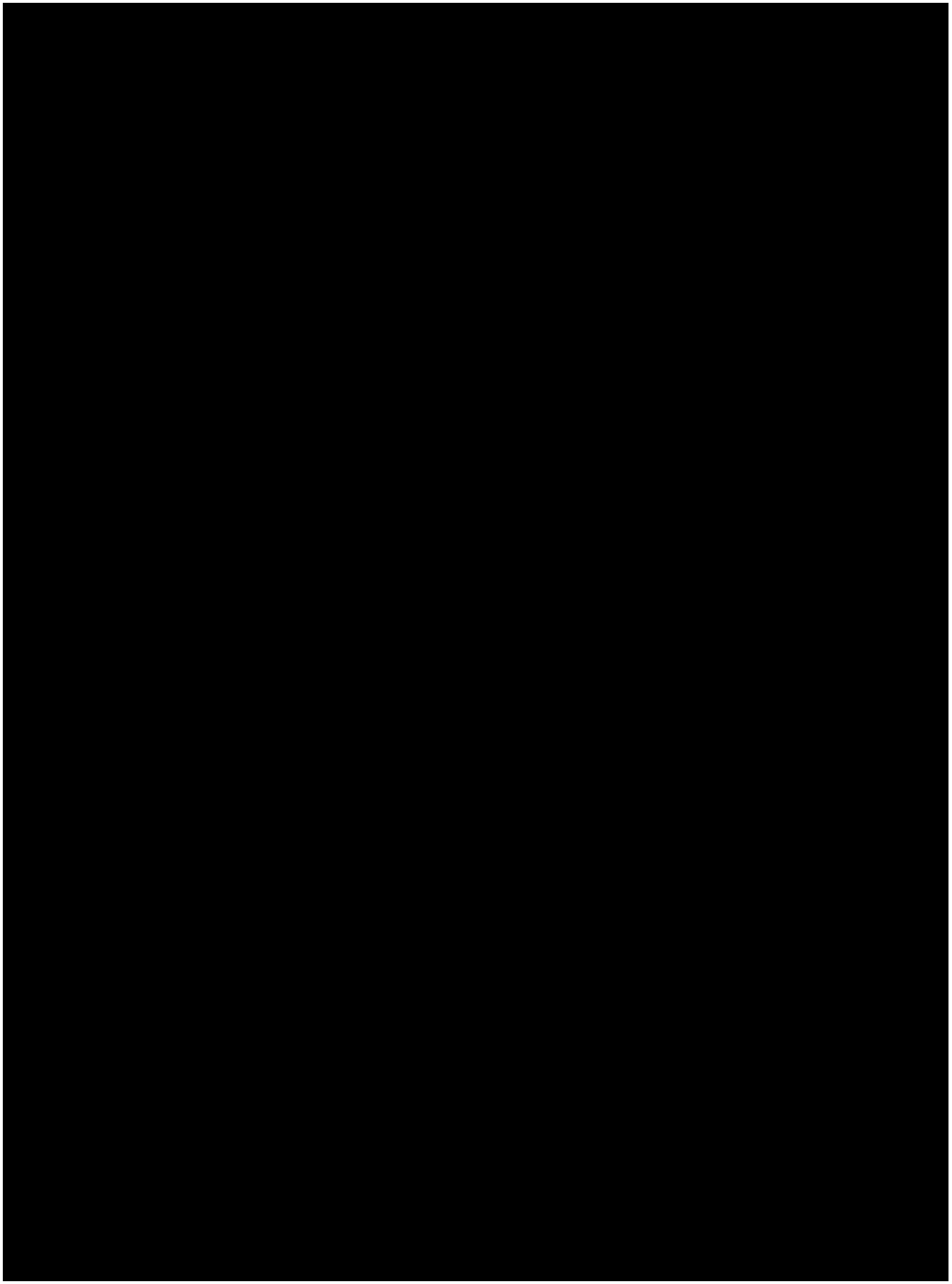


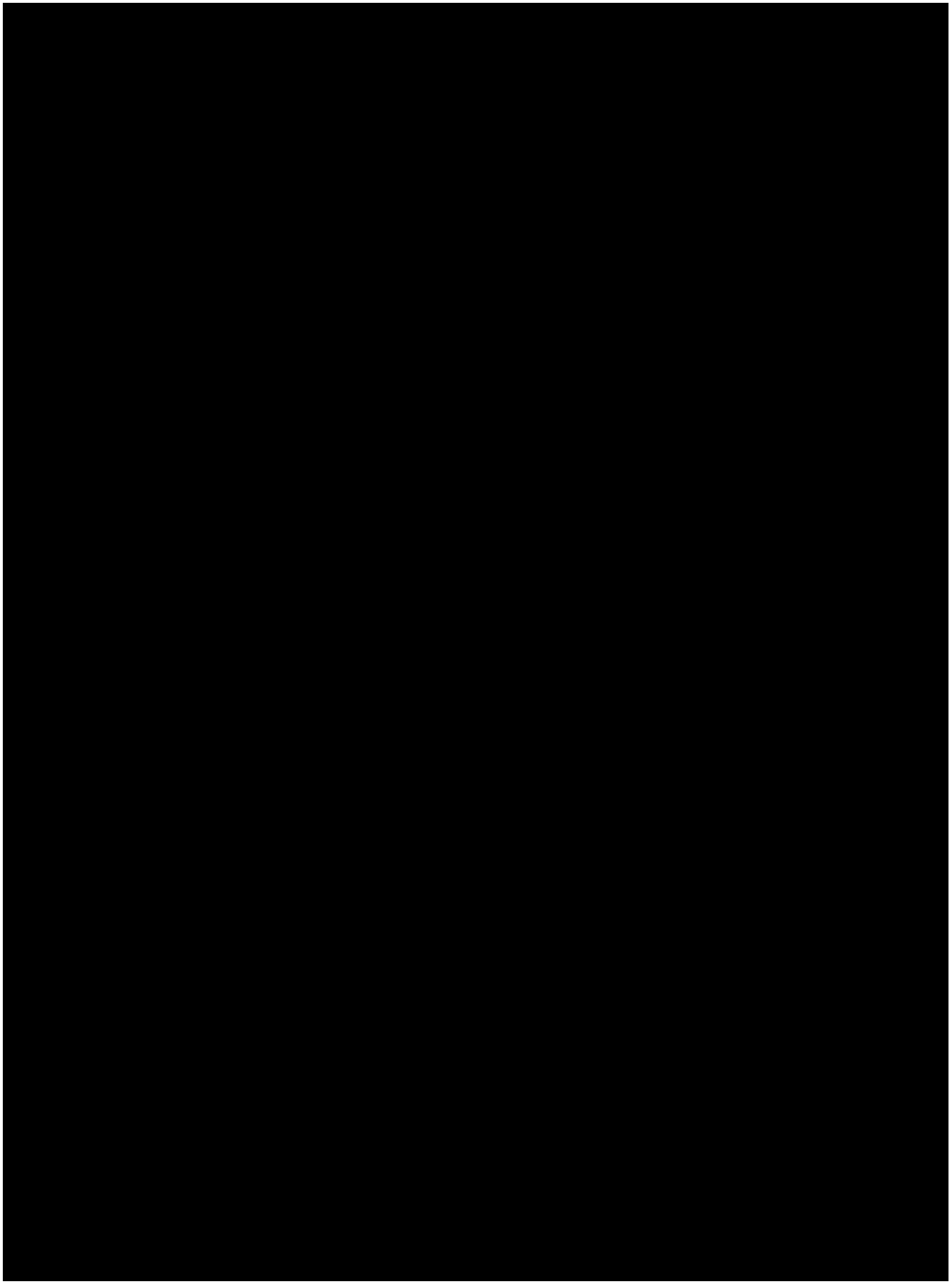
Emission Cost ($000) x y z

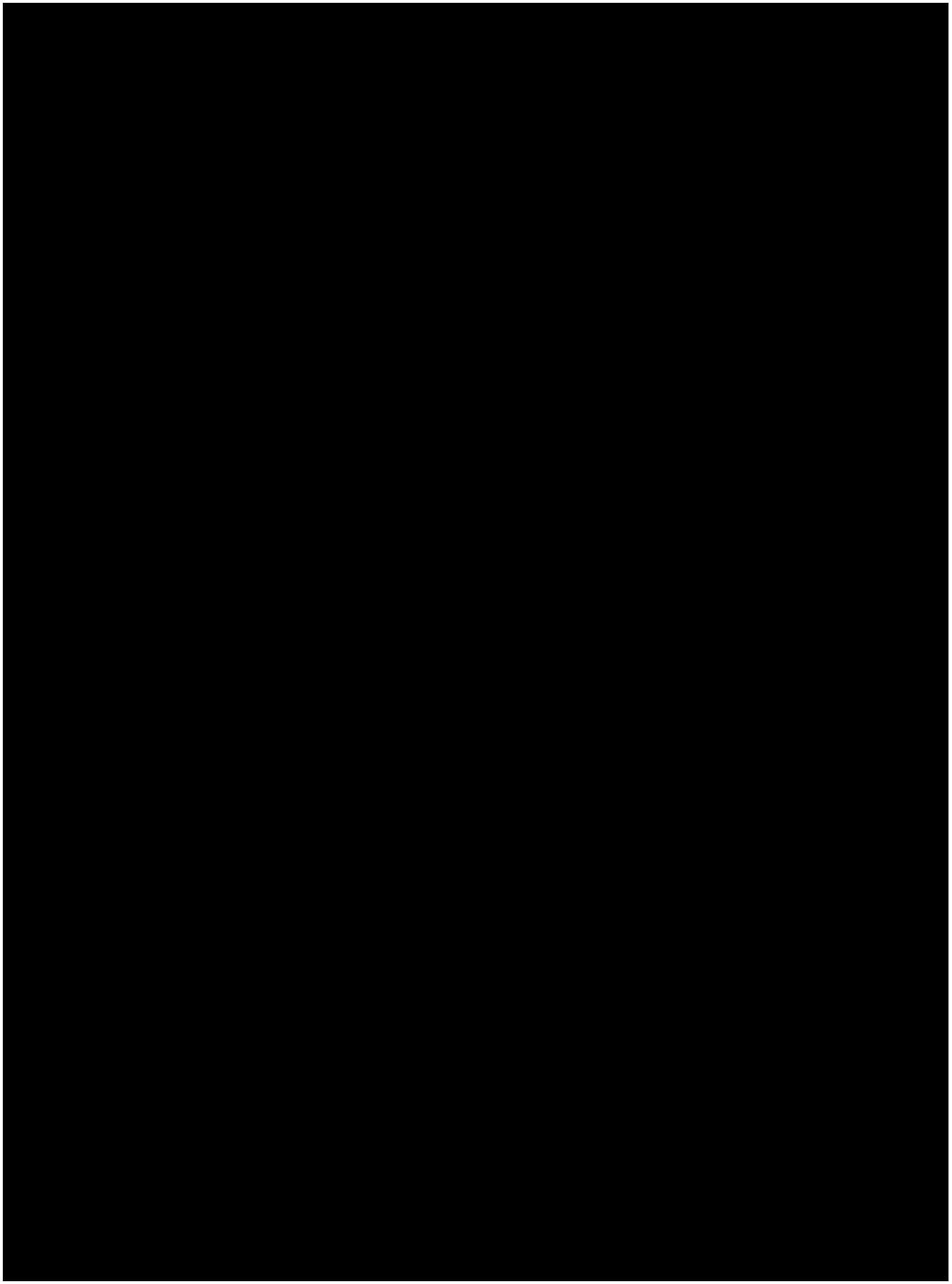


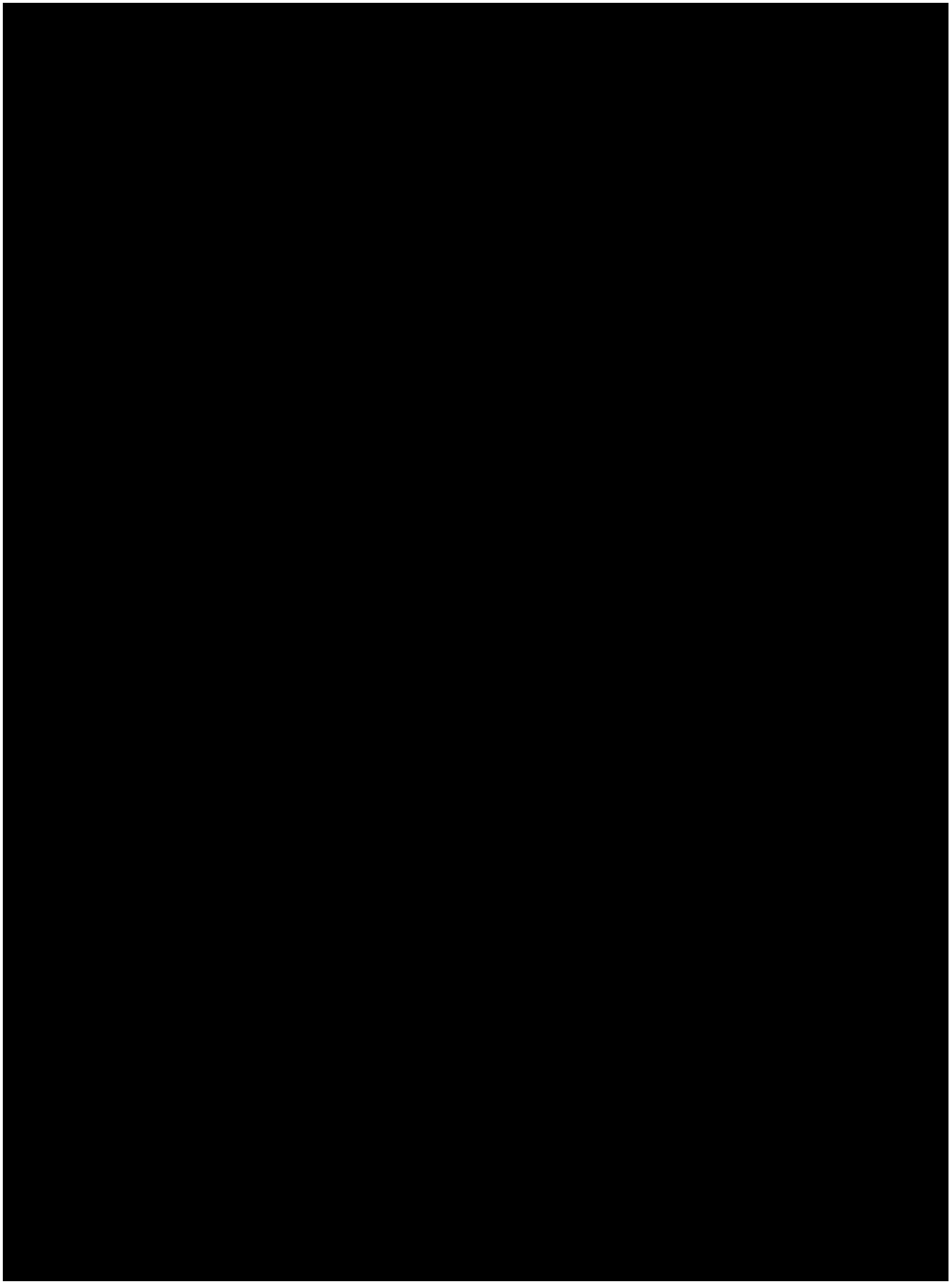


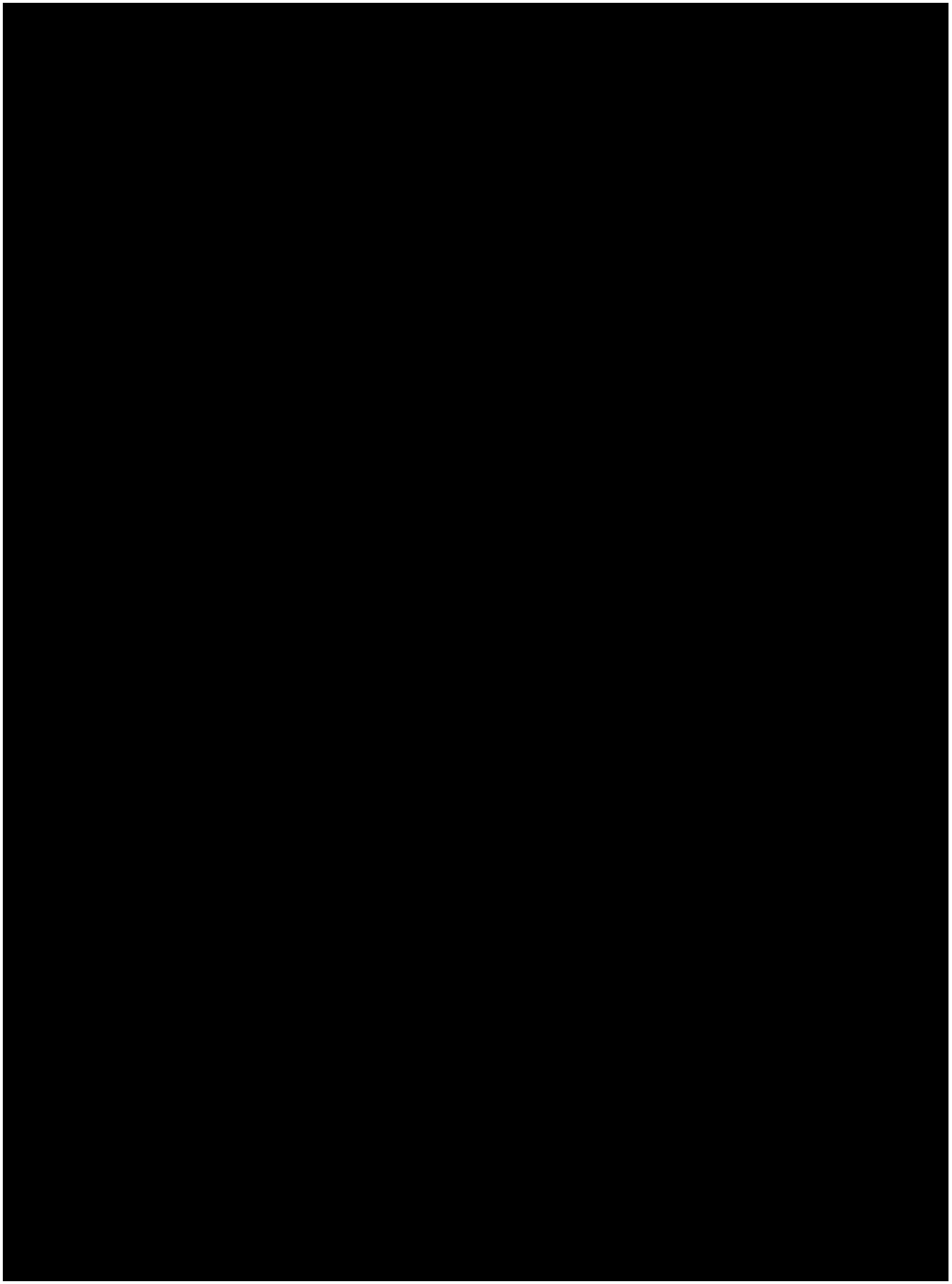
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[redacted]								

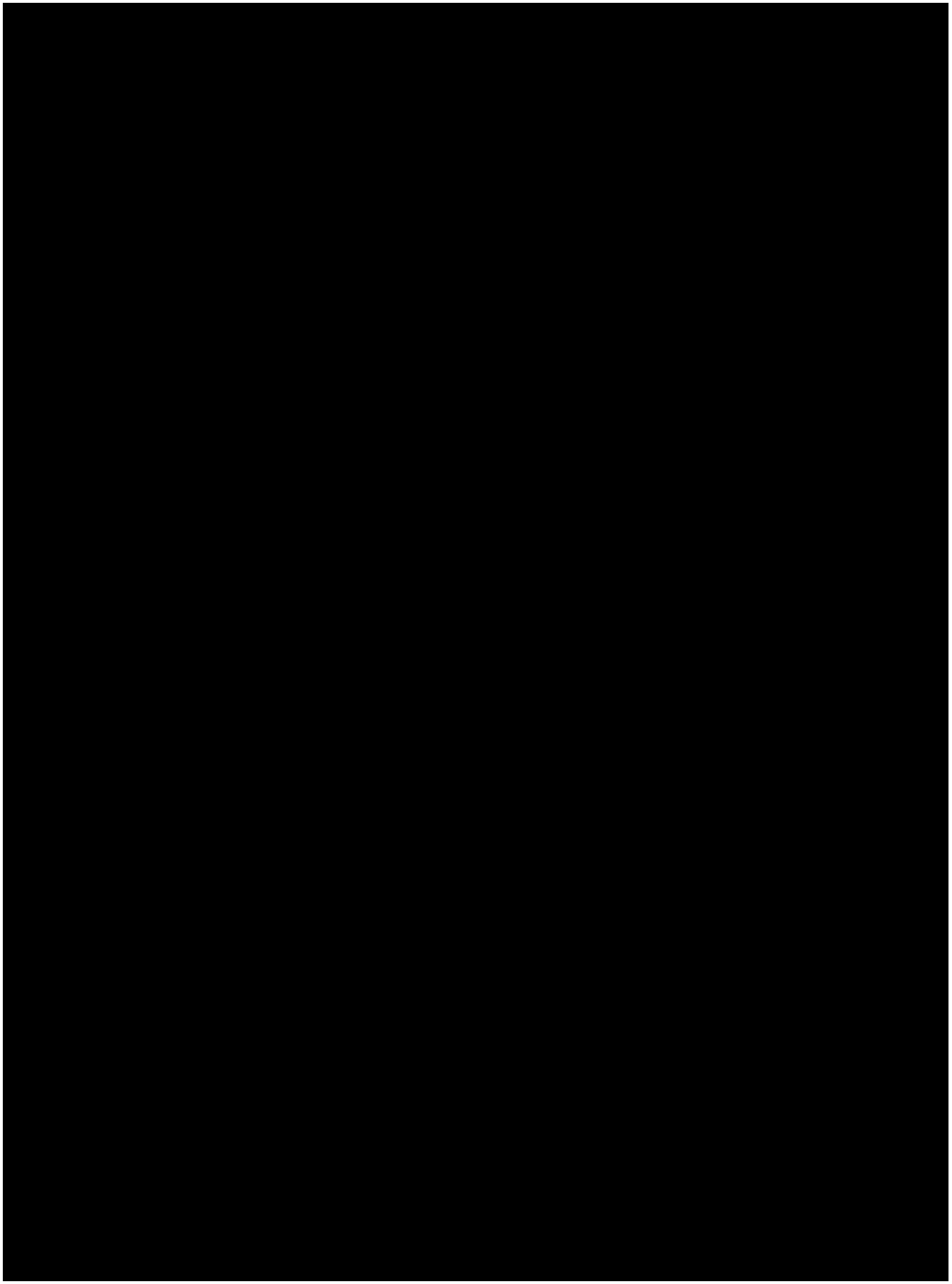


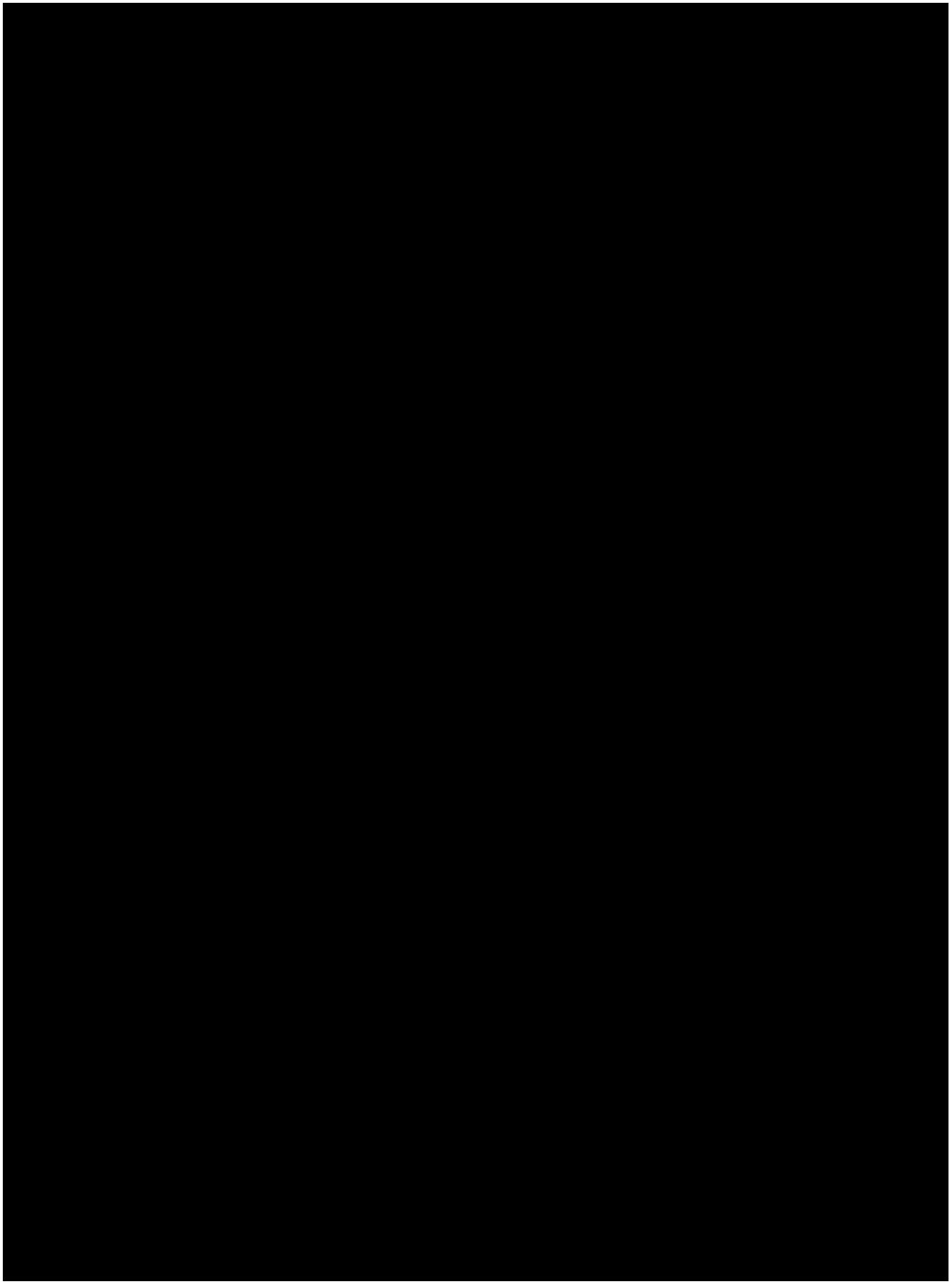


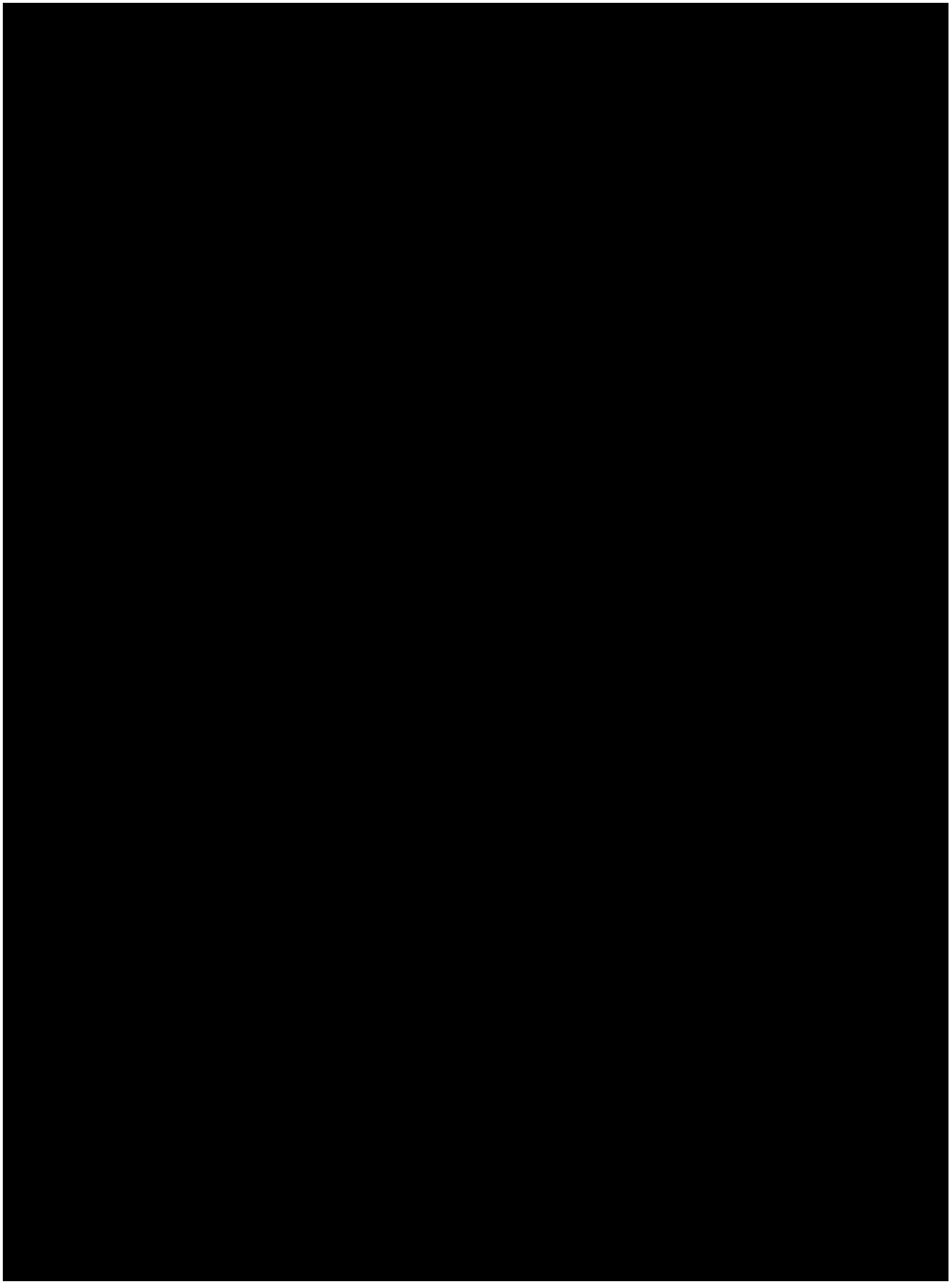


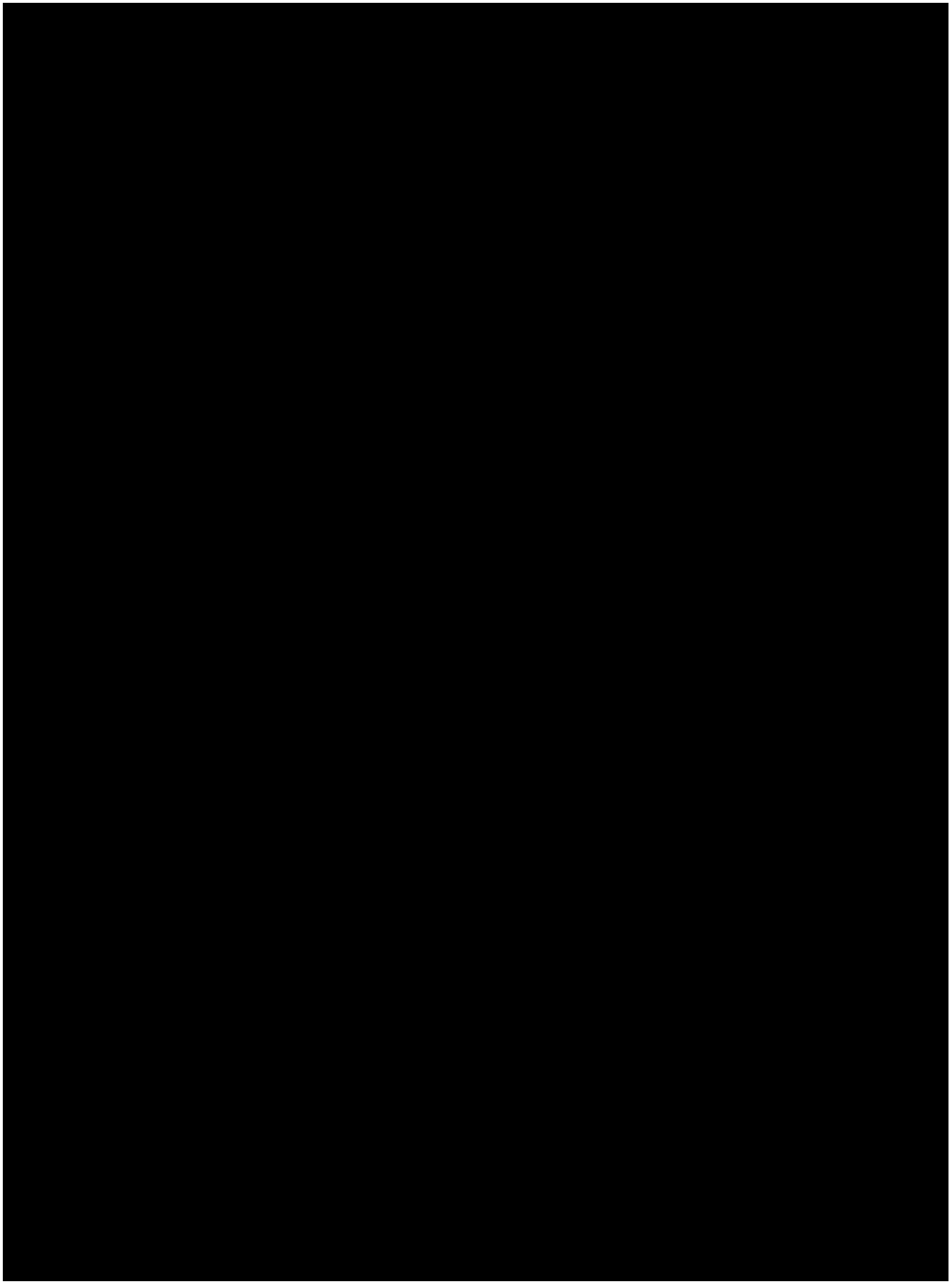


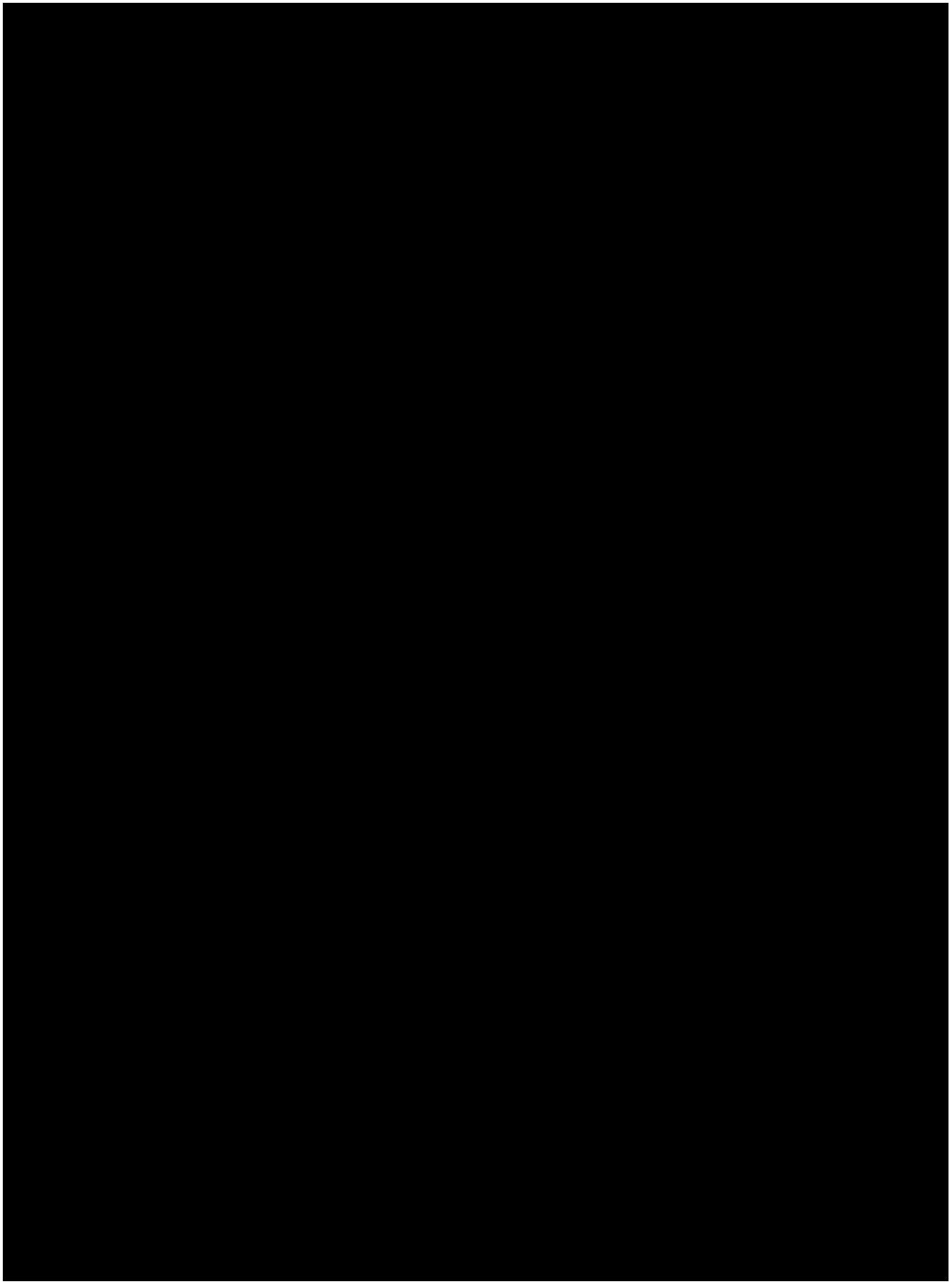


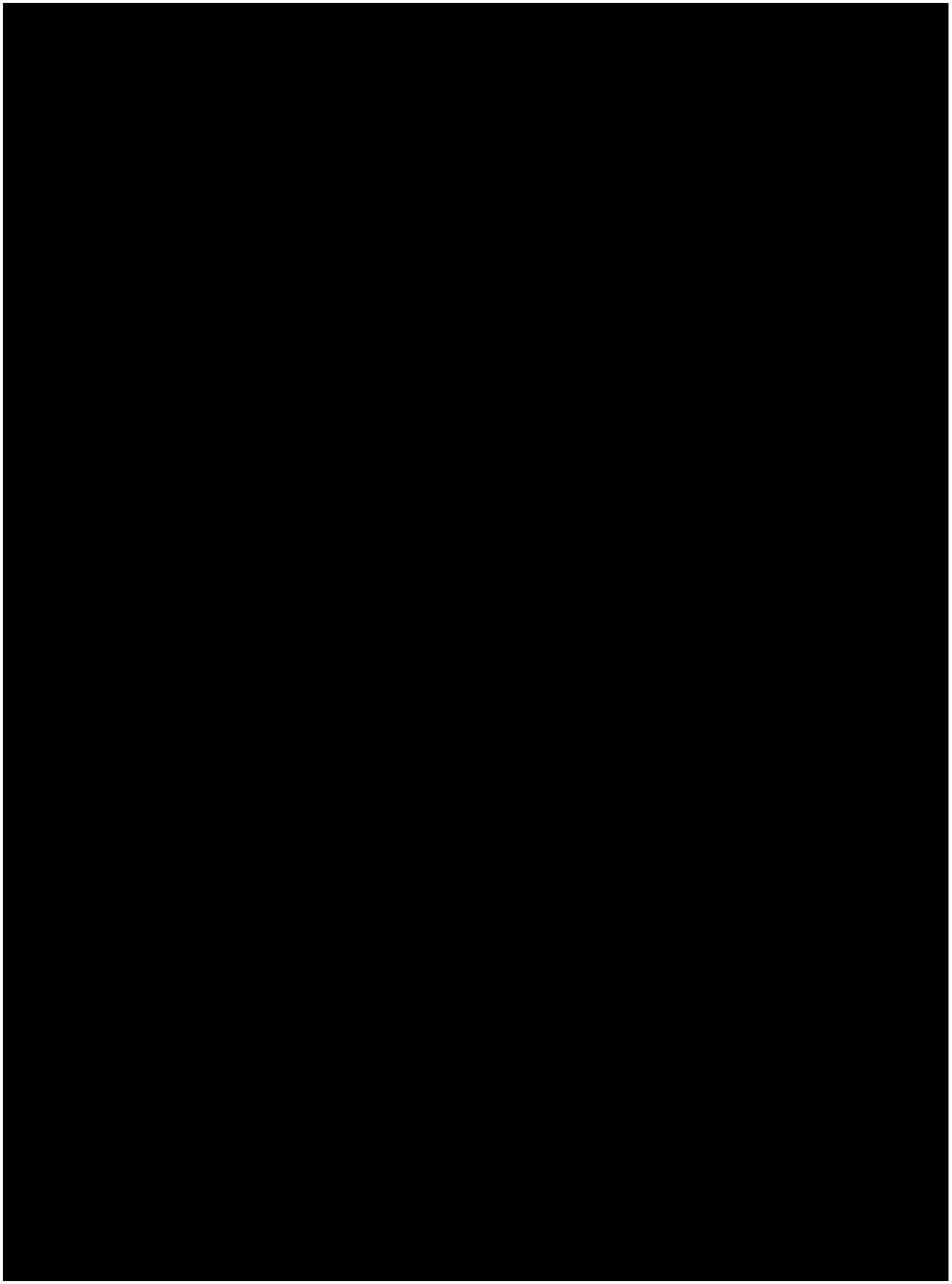


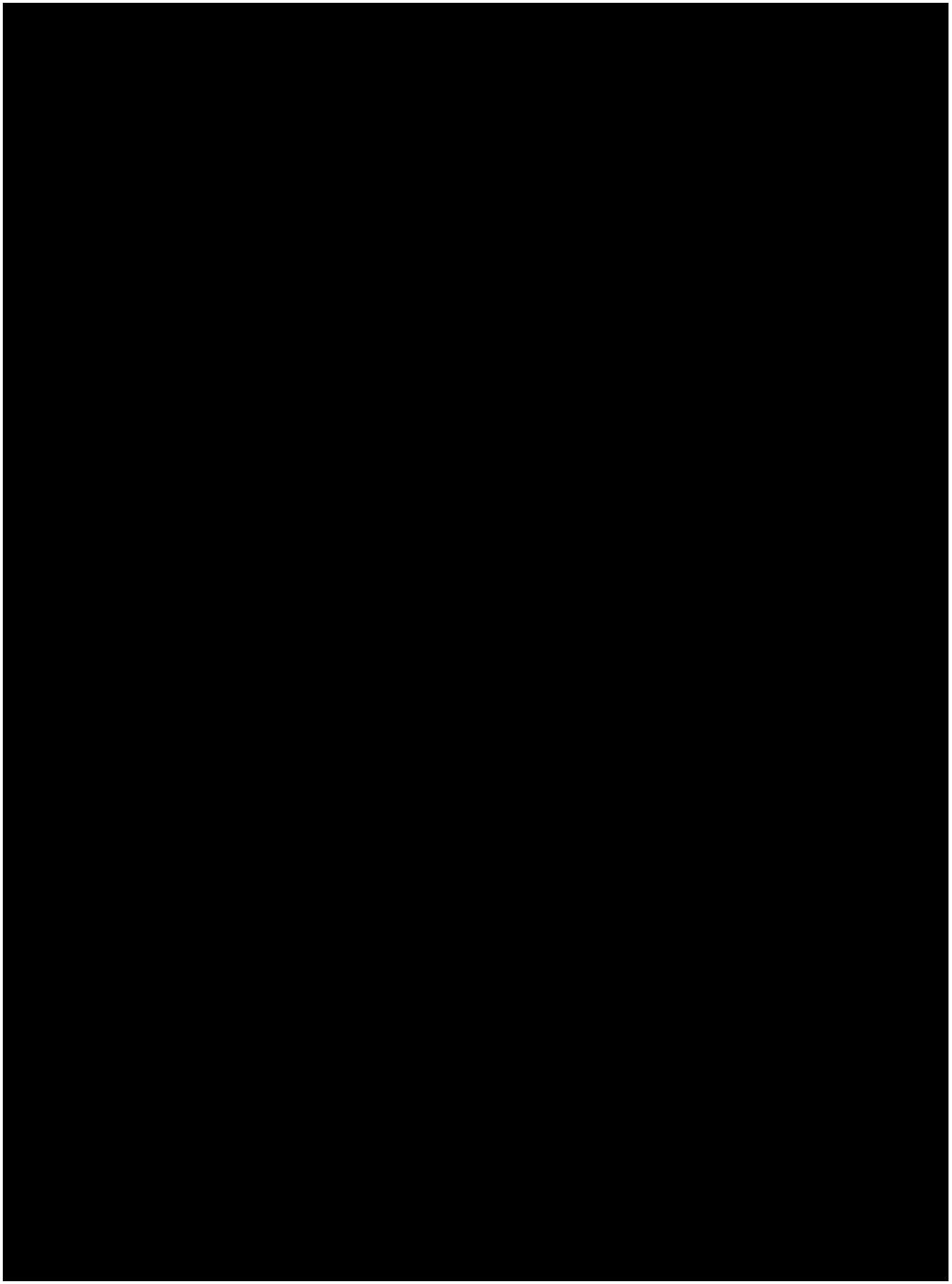


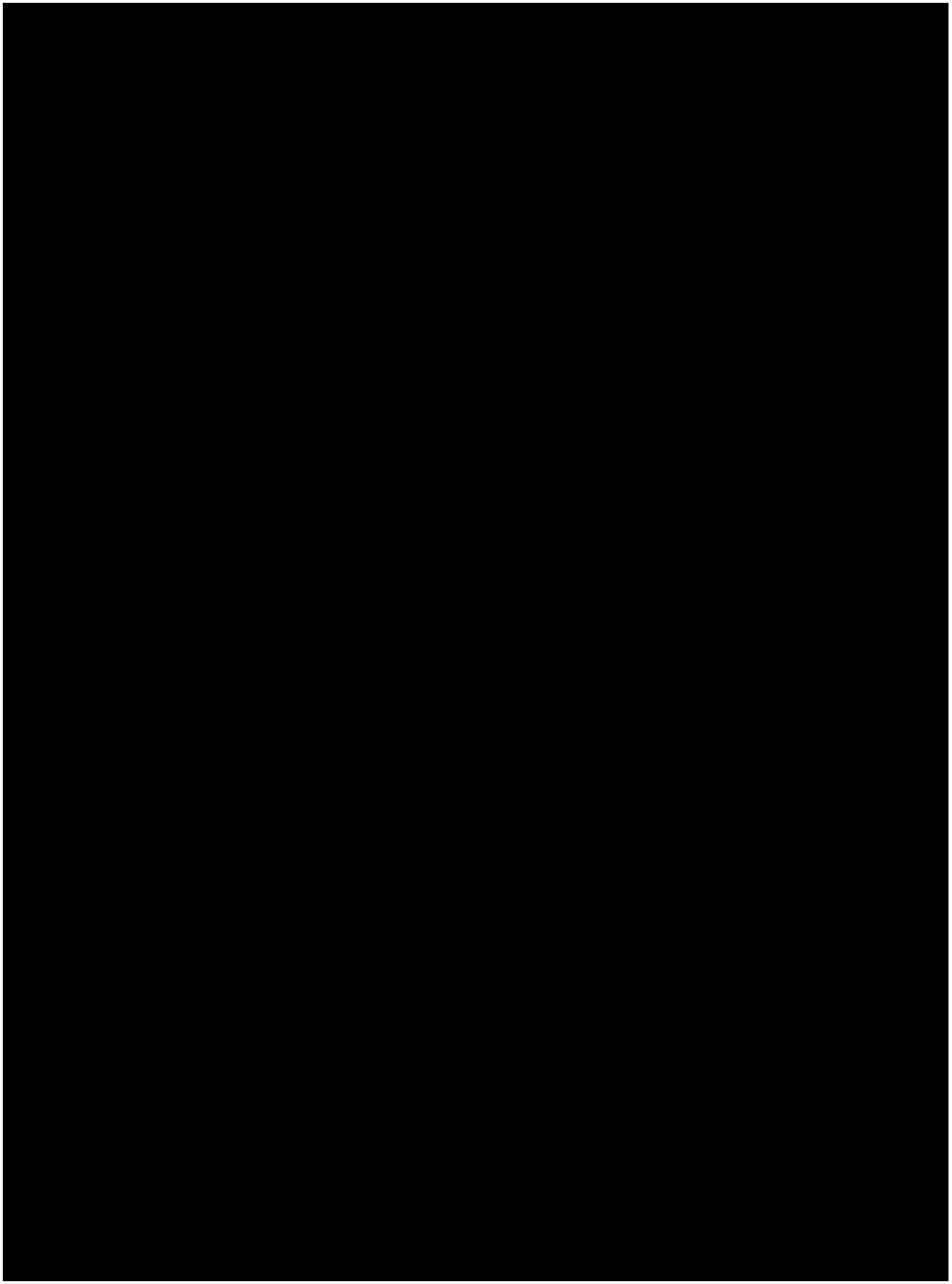


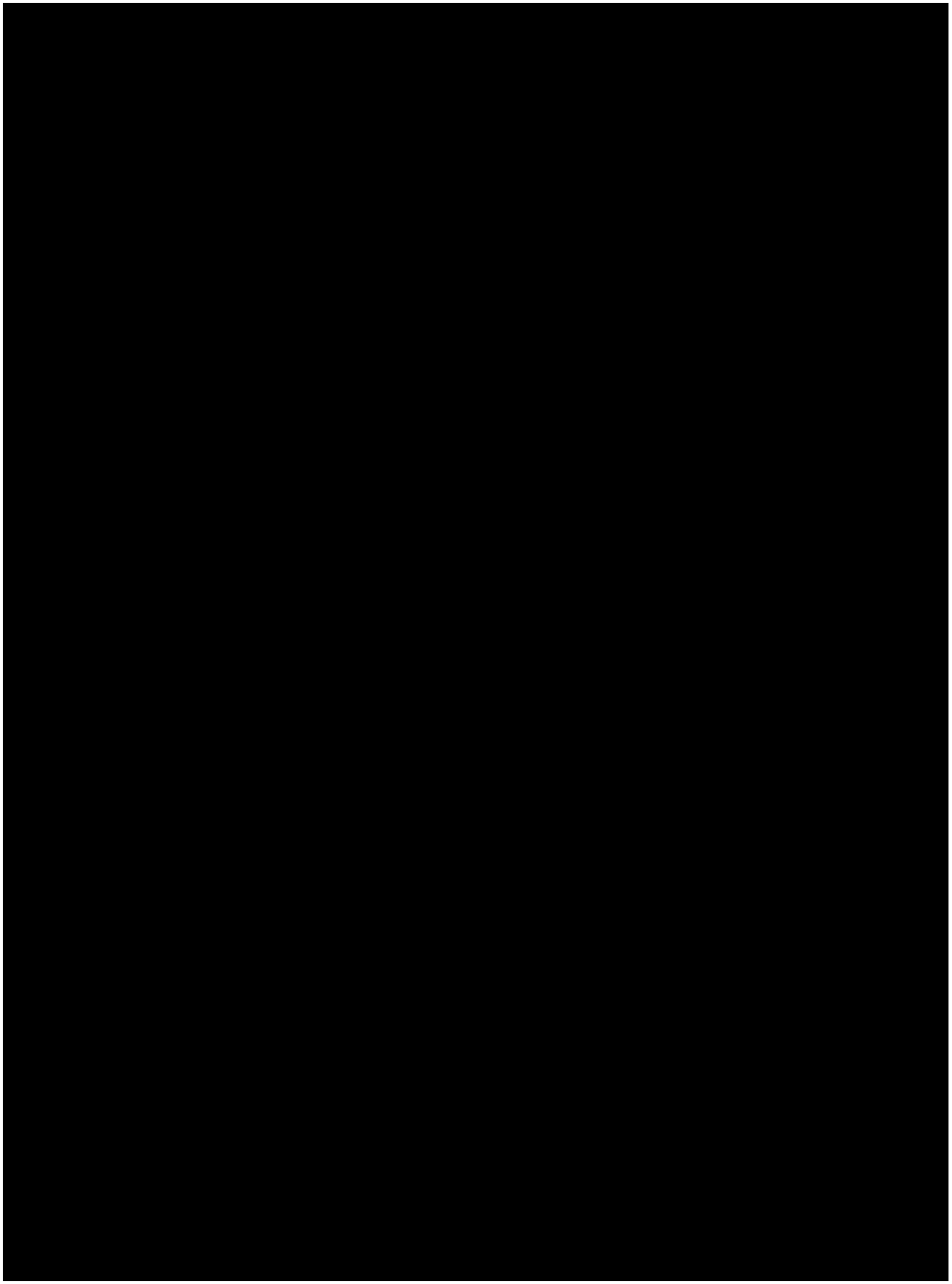


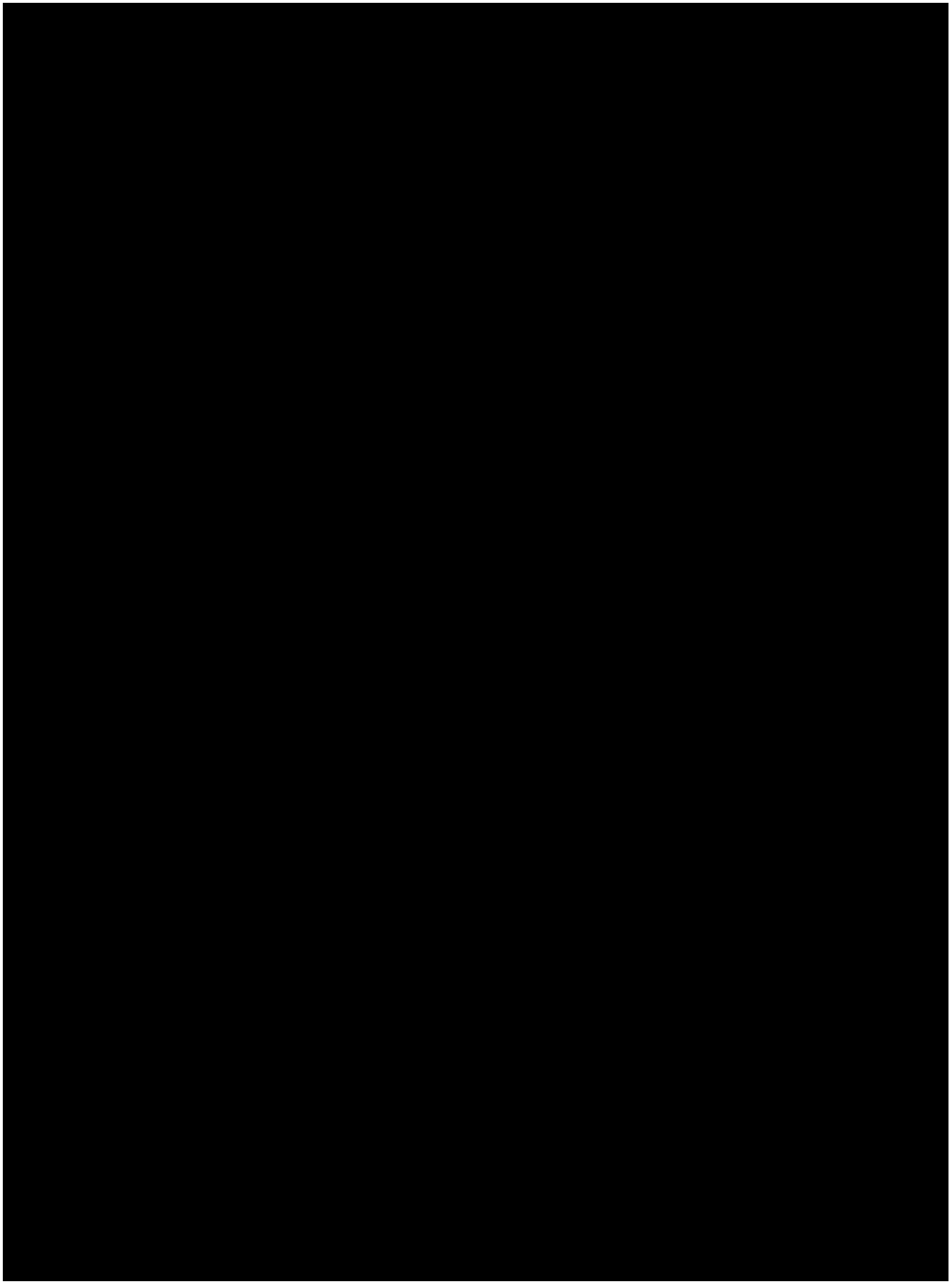


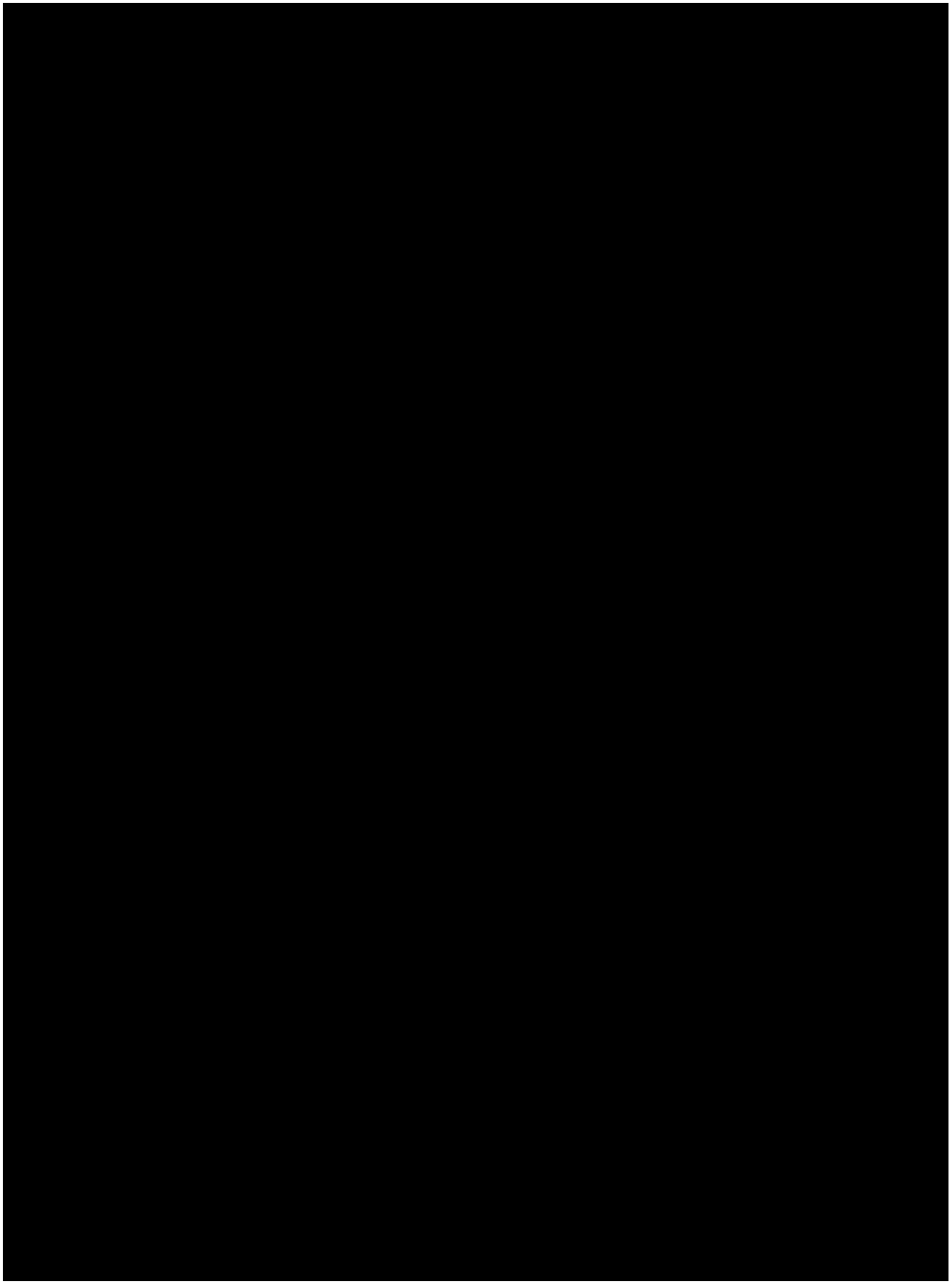


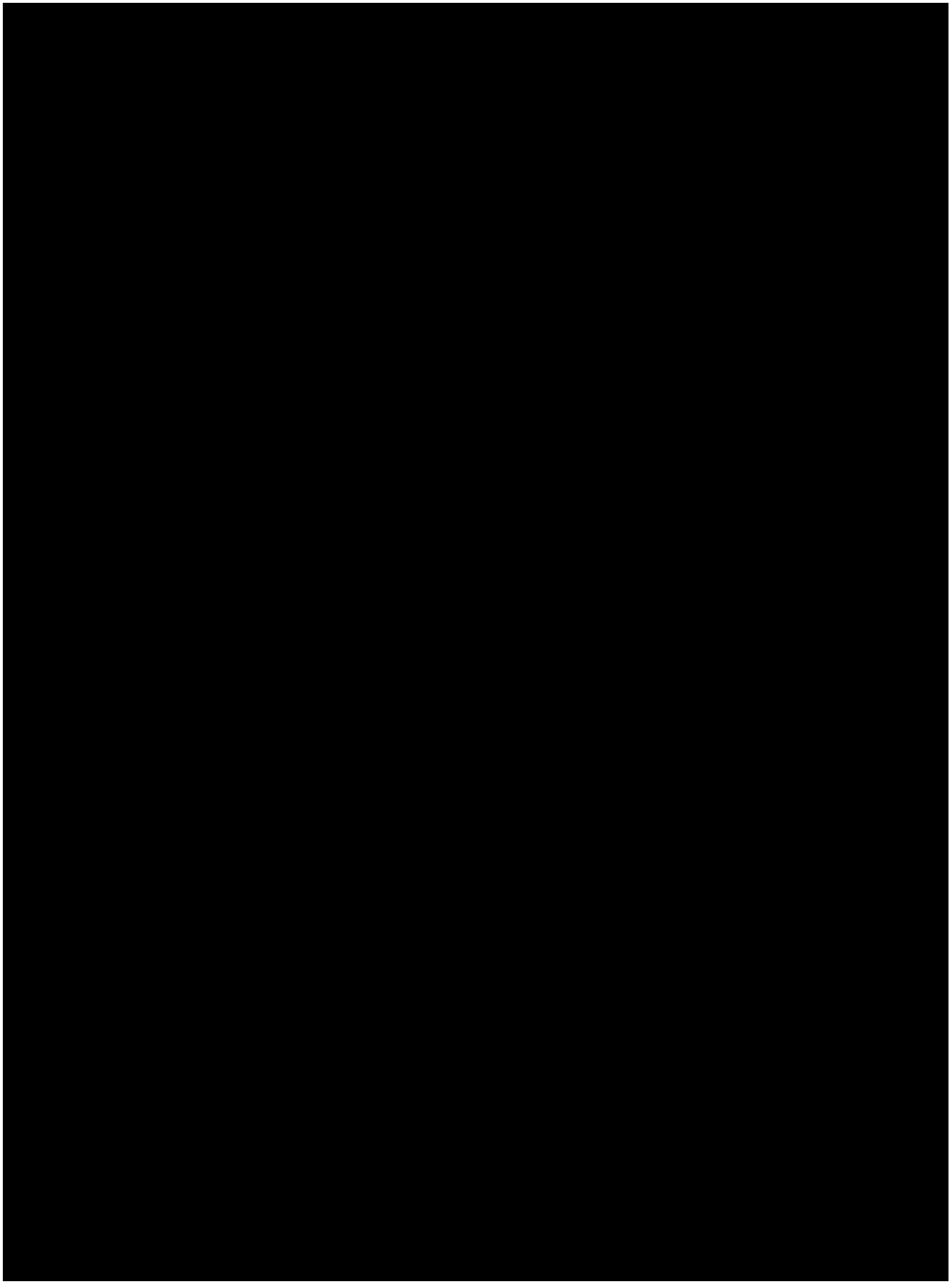


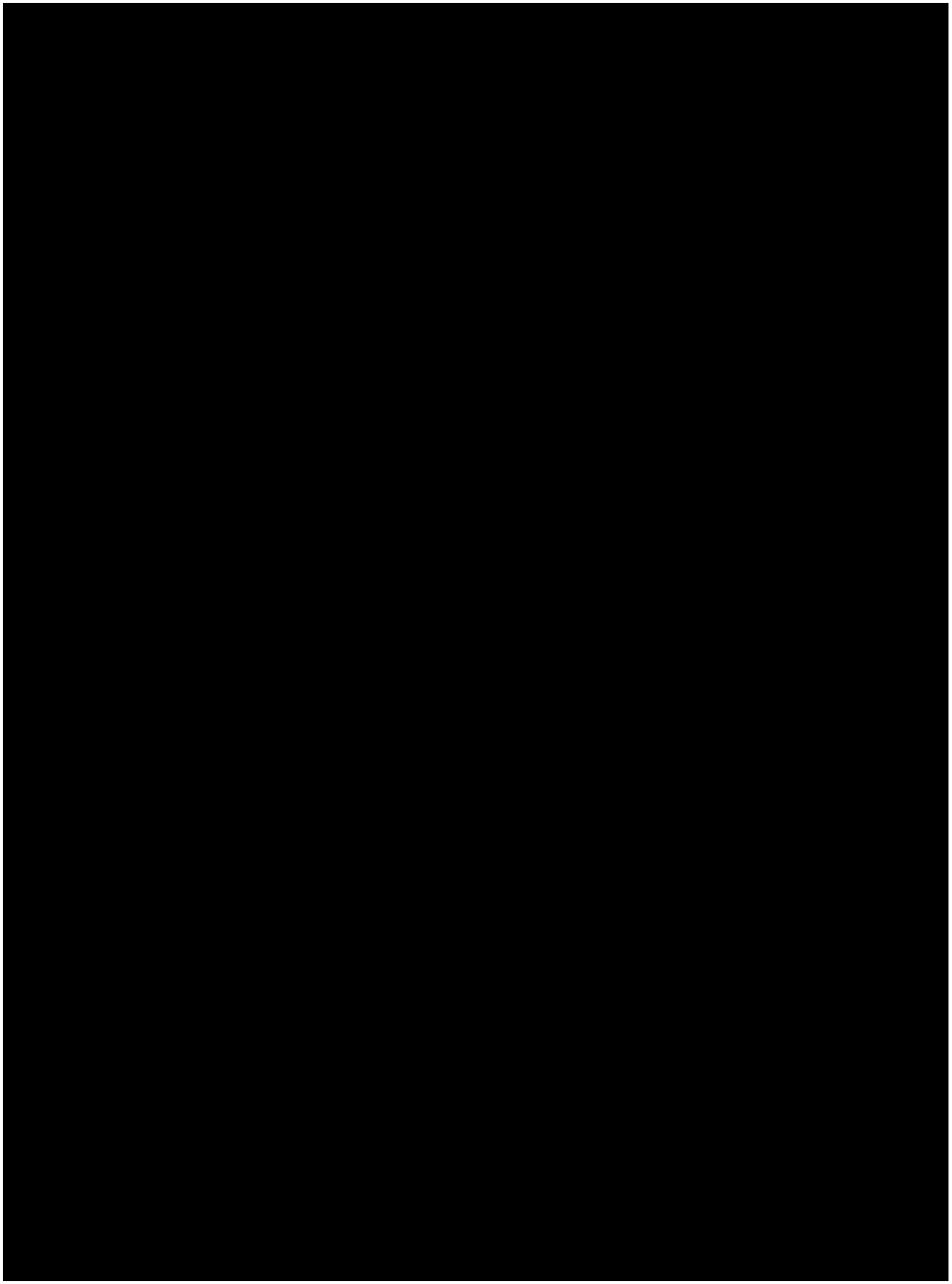




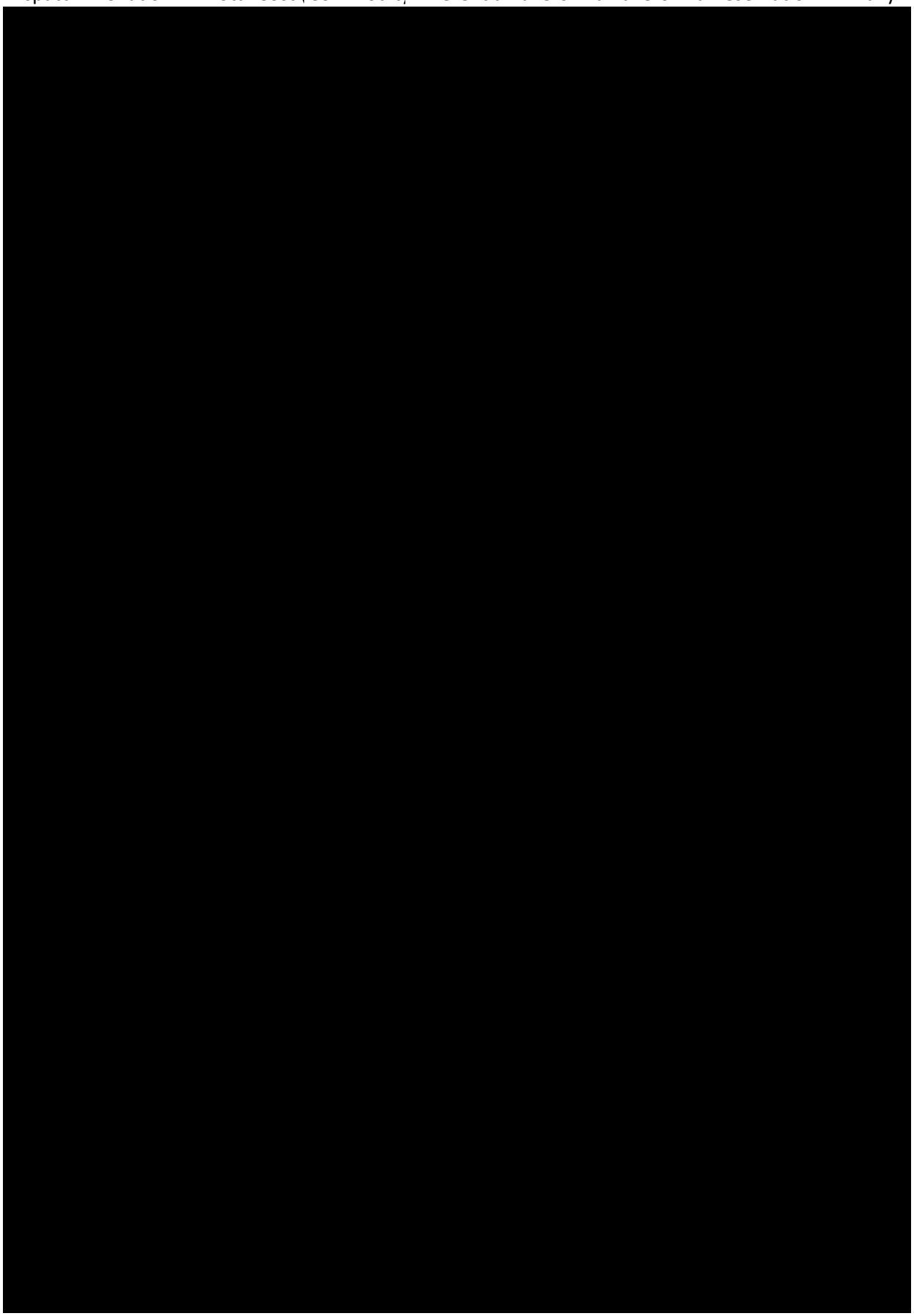


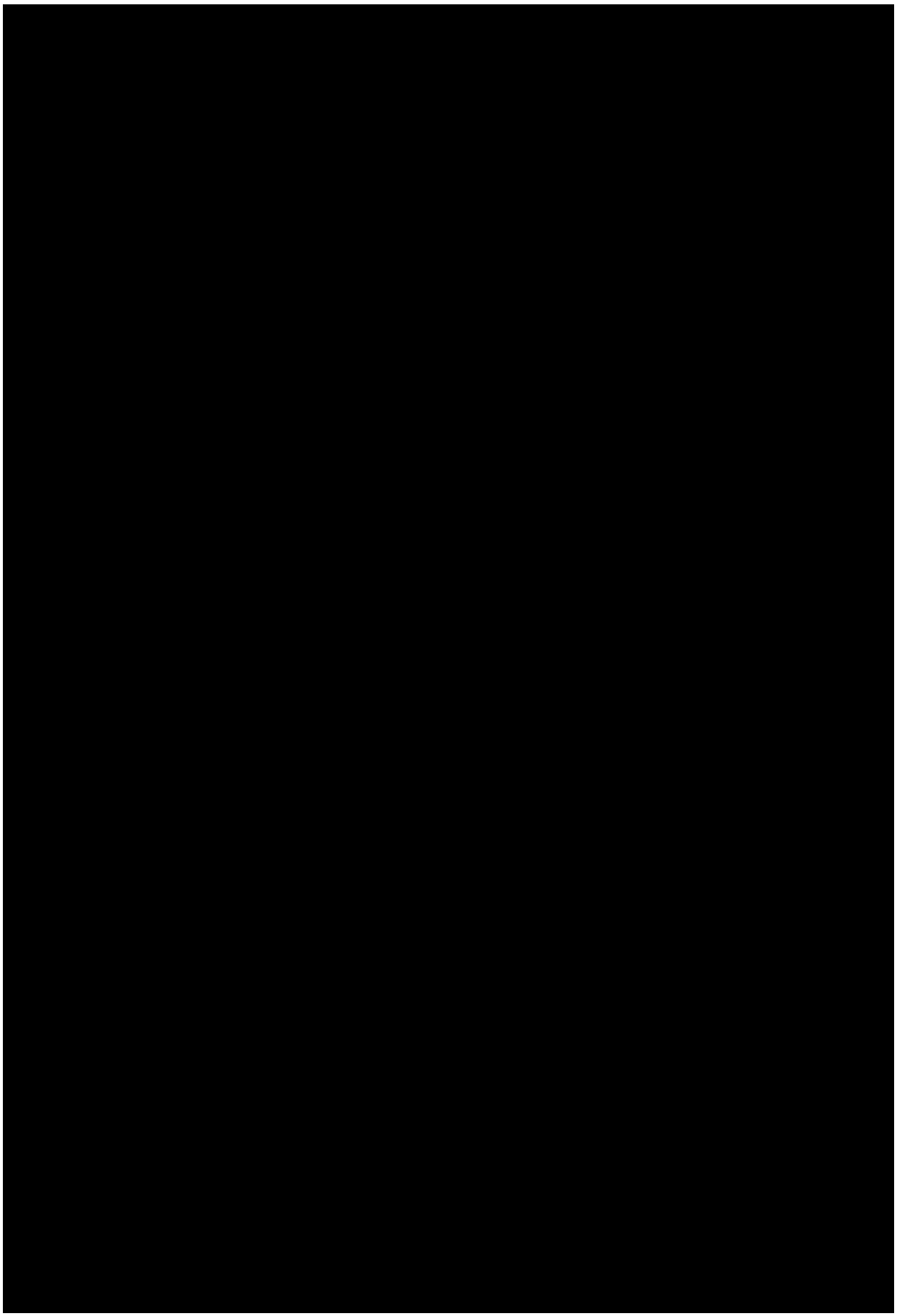


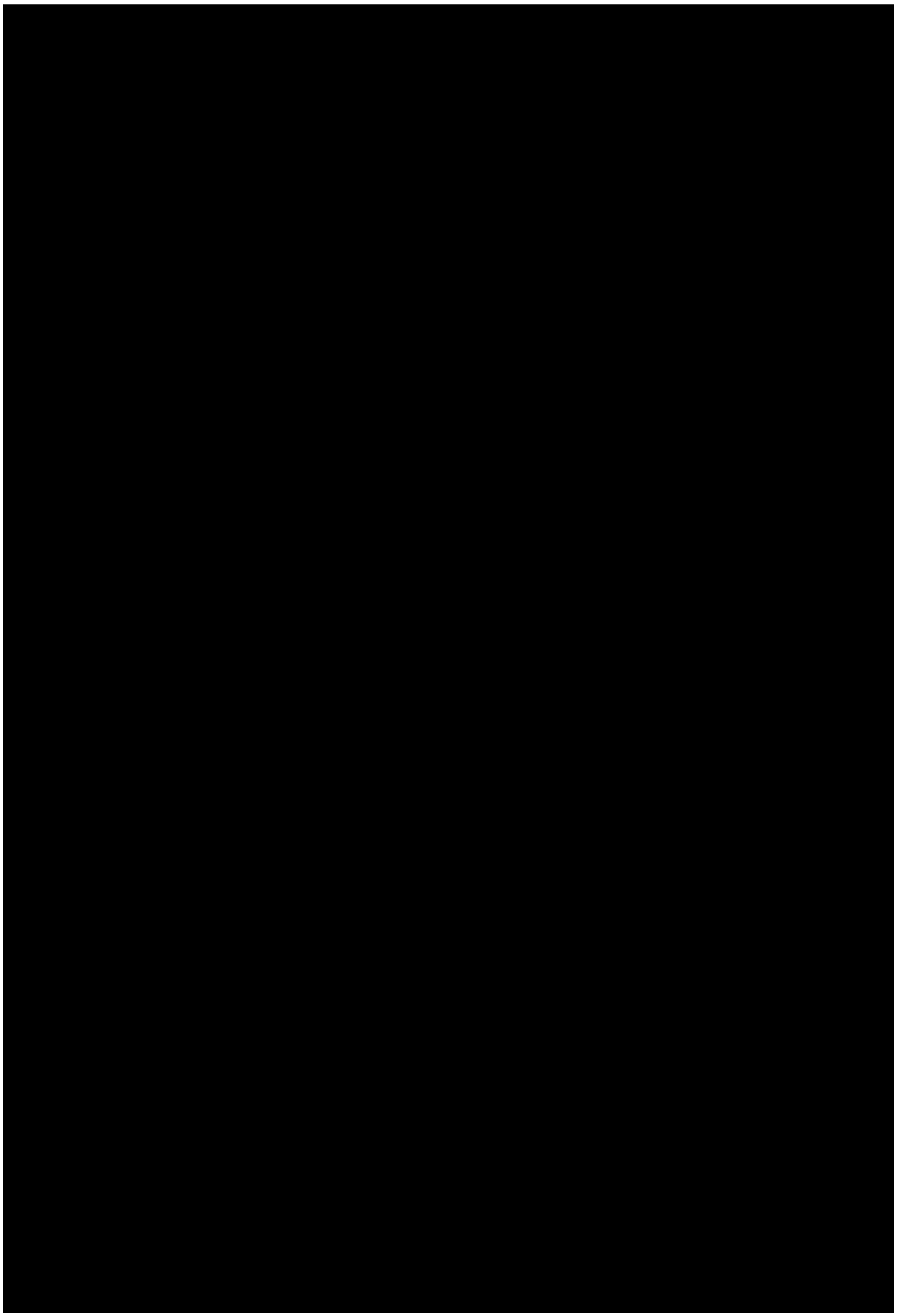


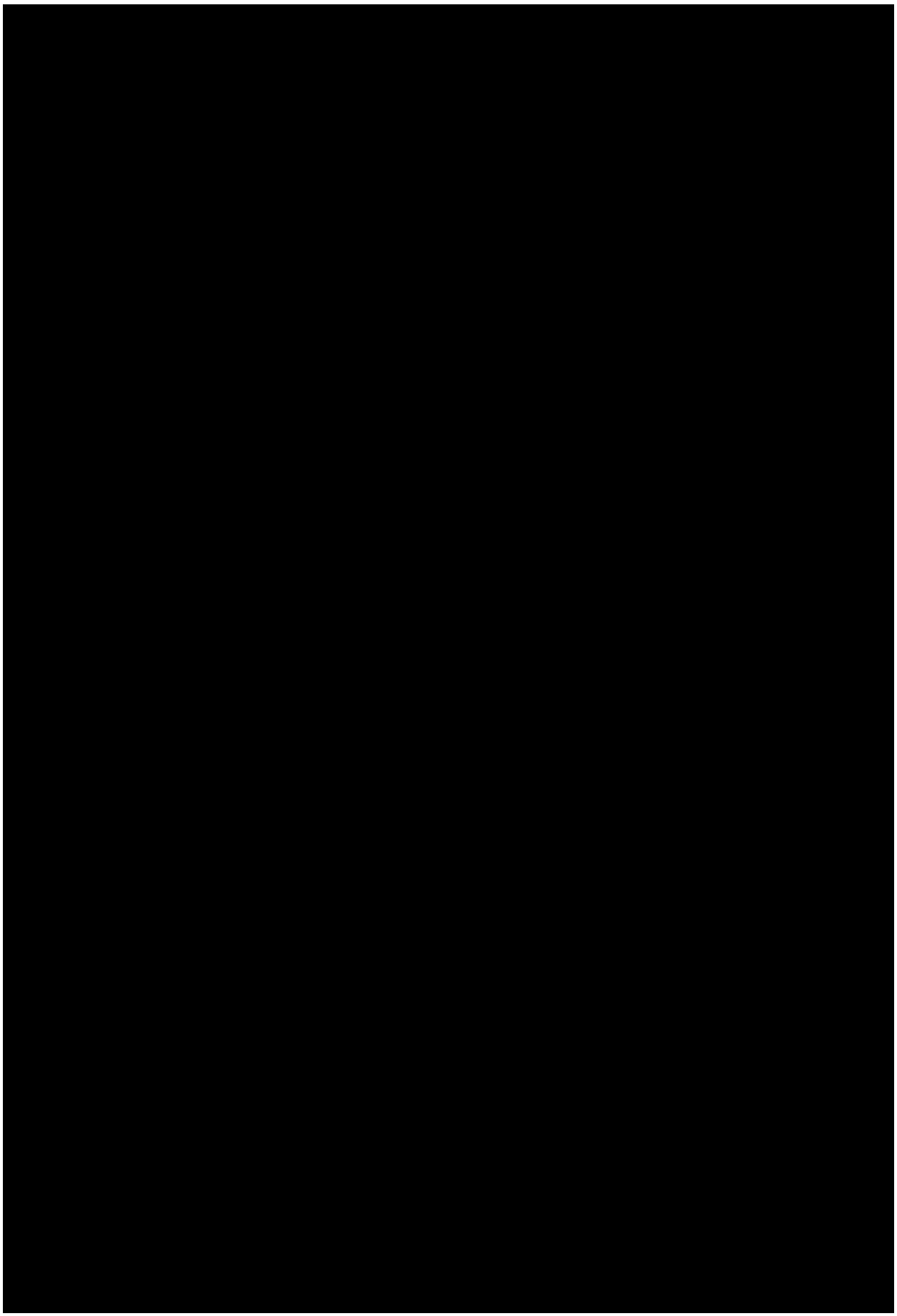


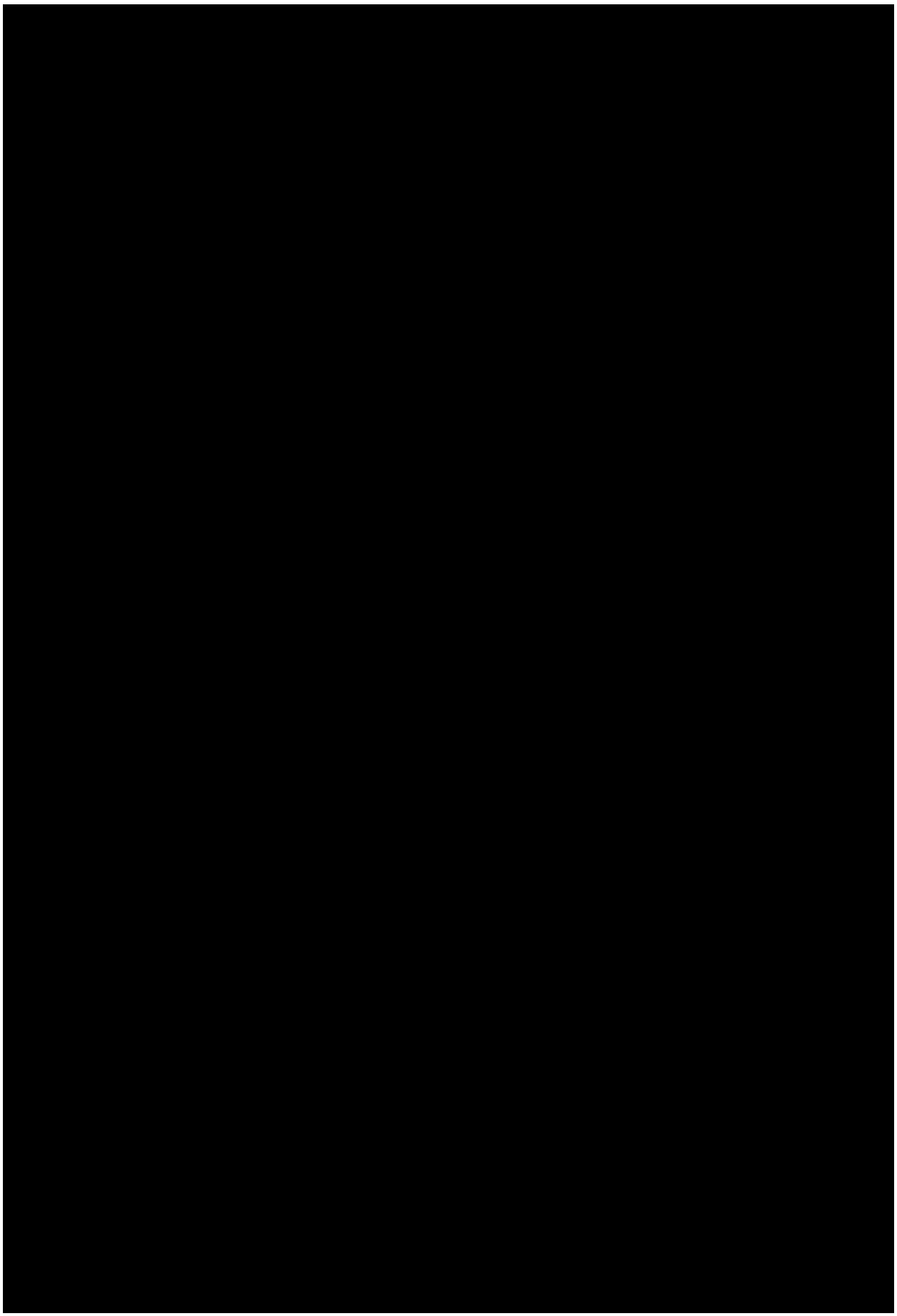


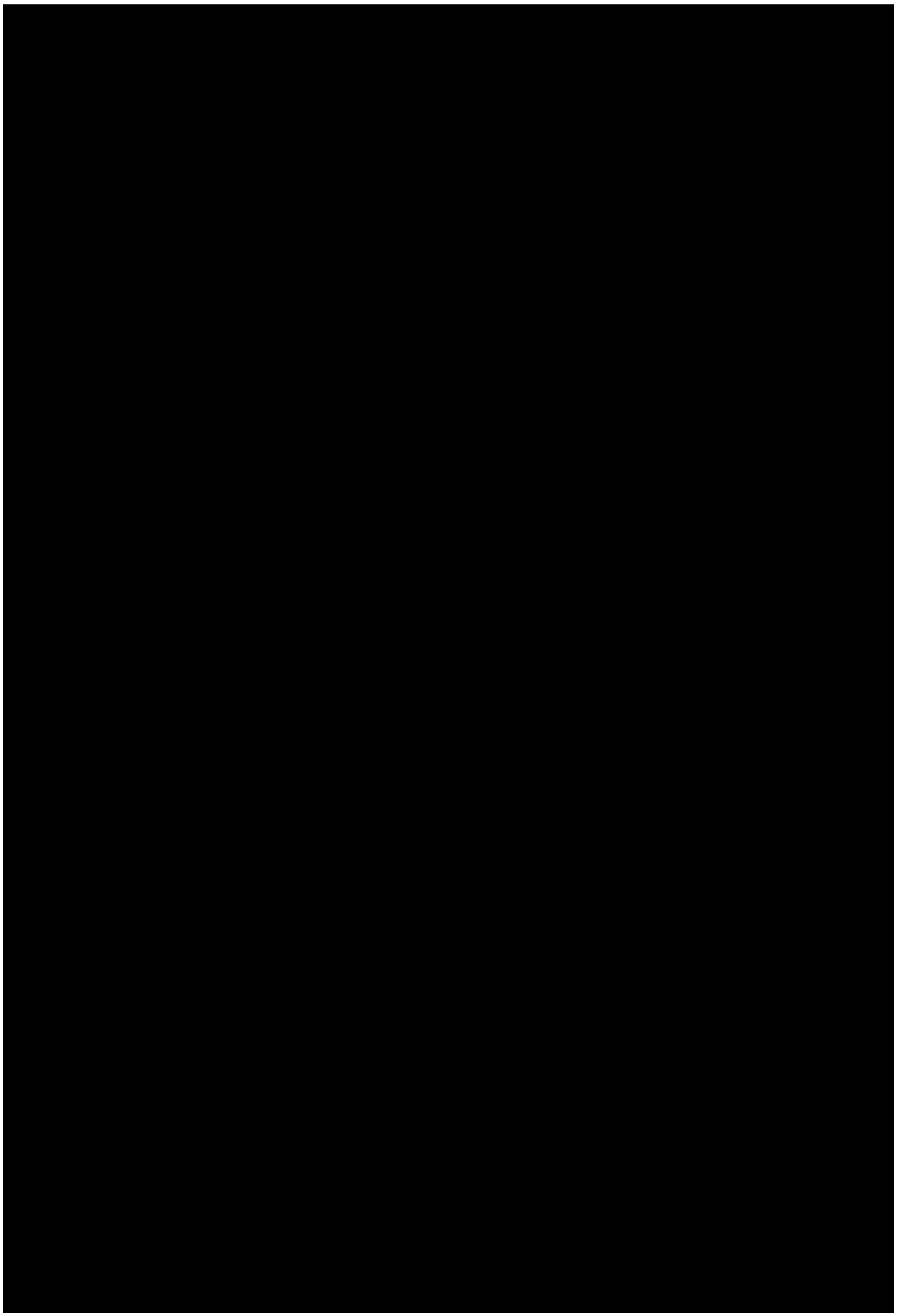

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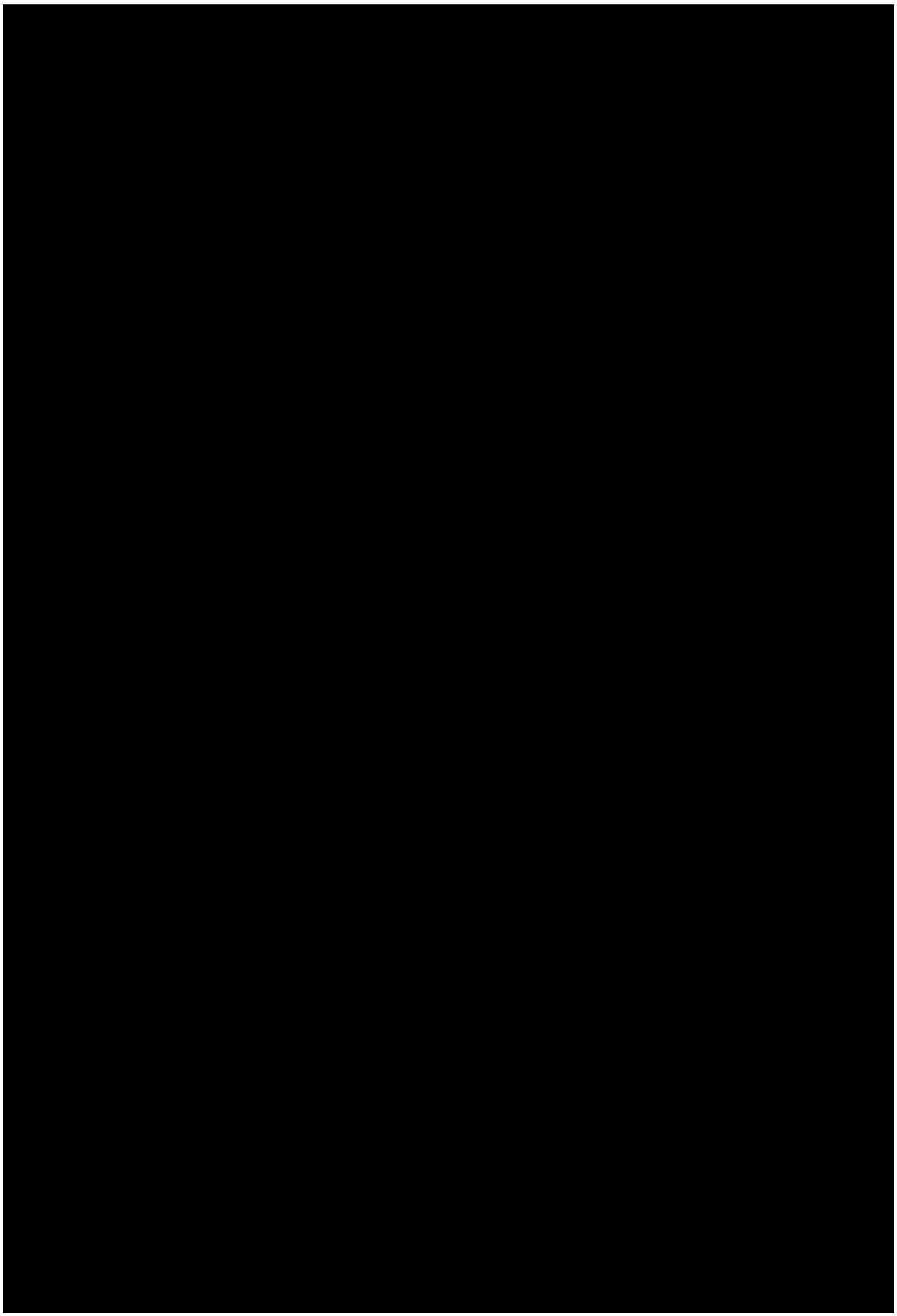


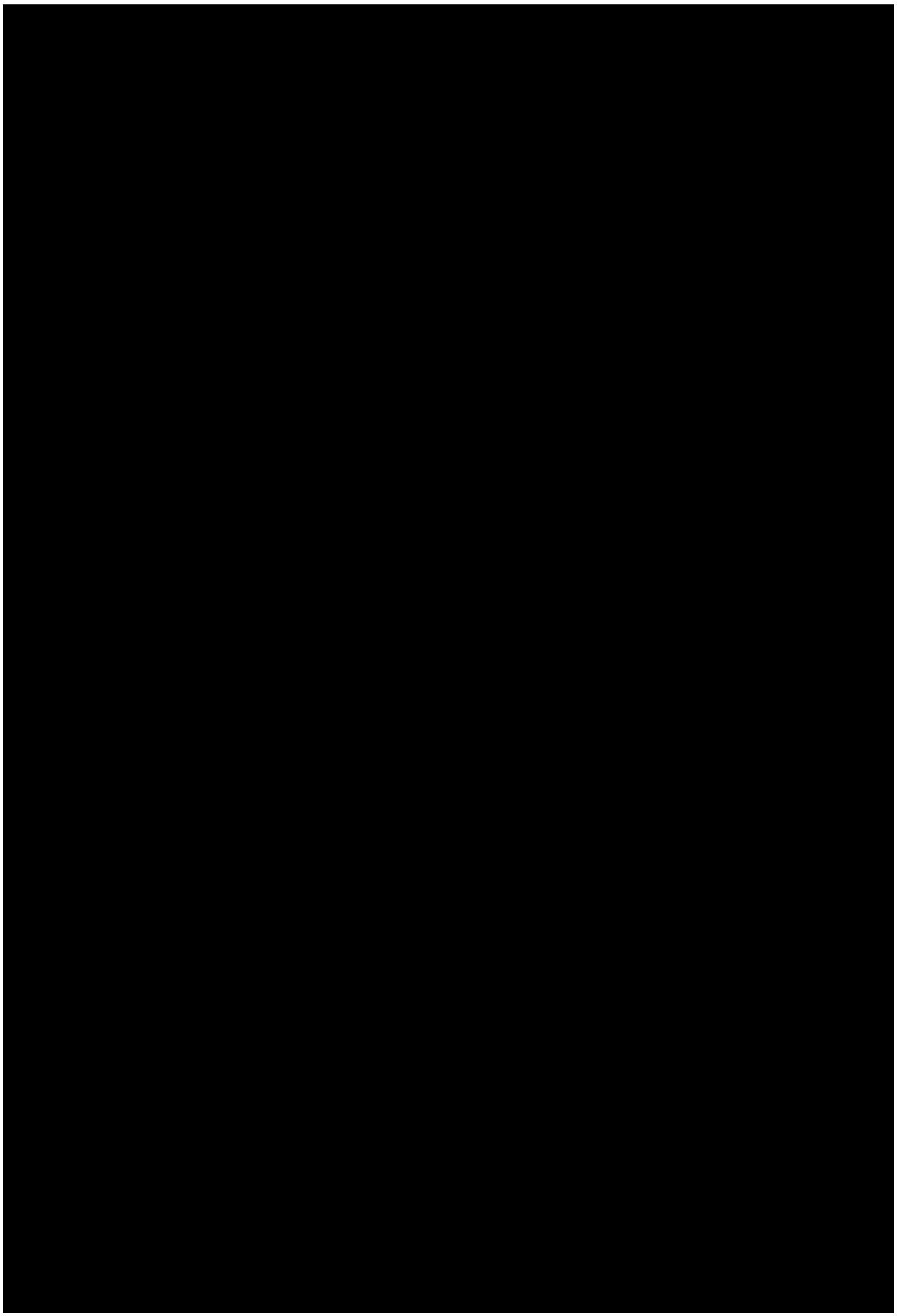


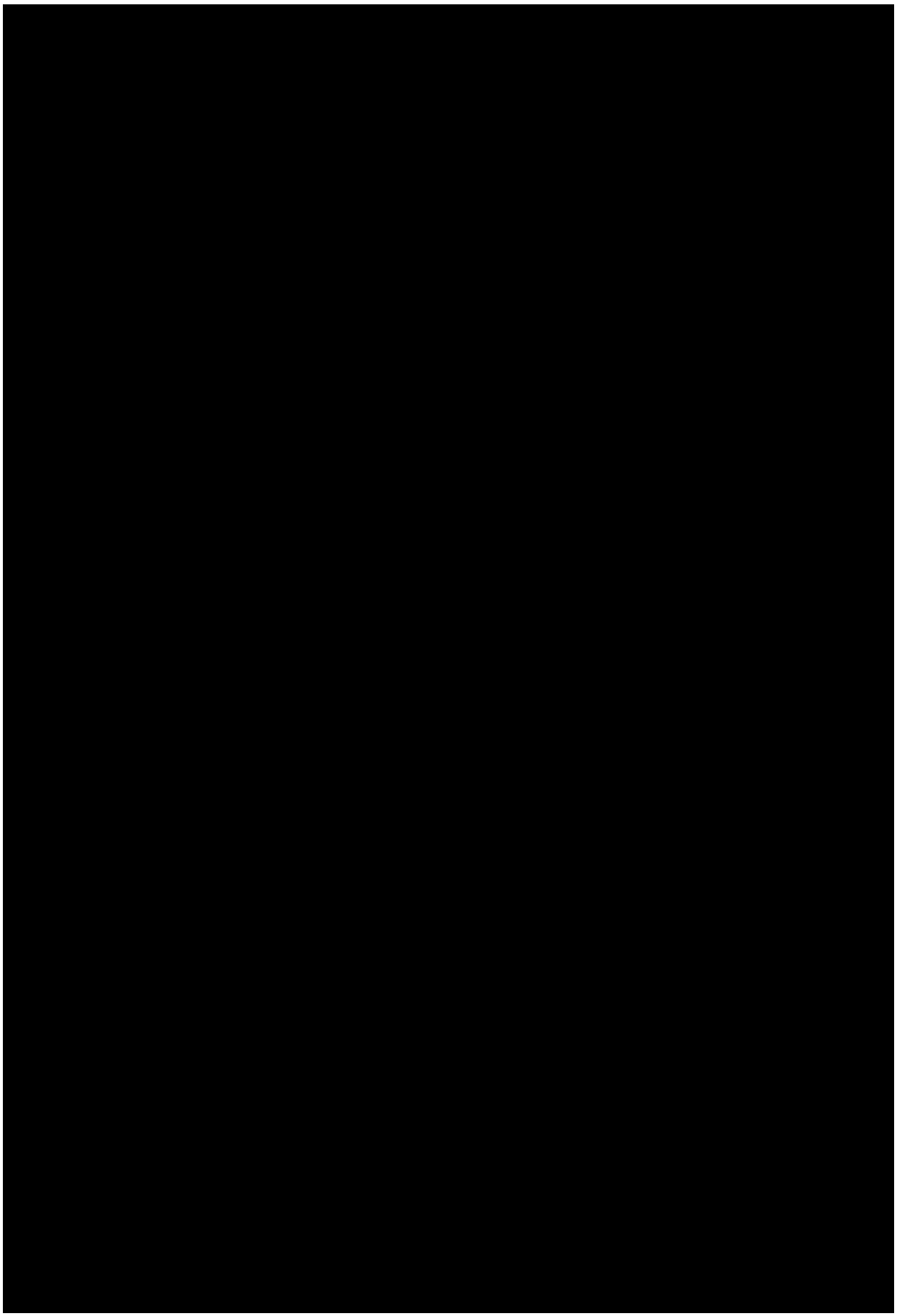


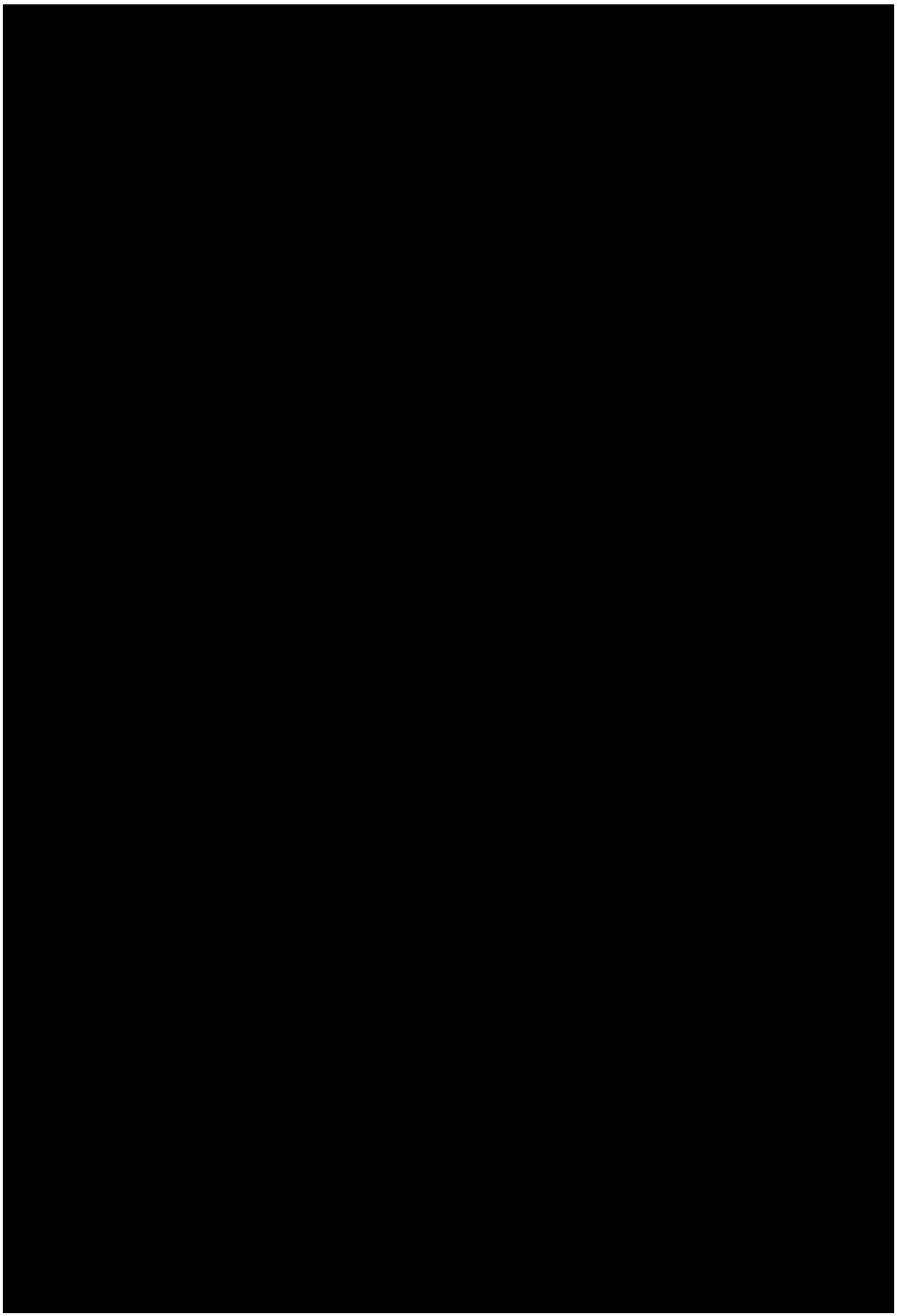


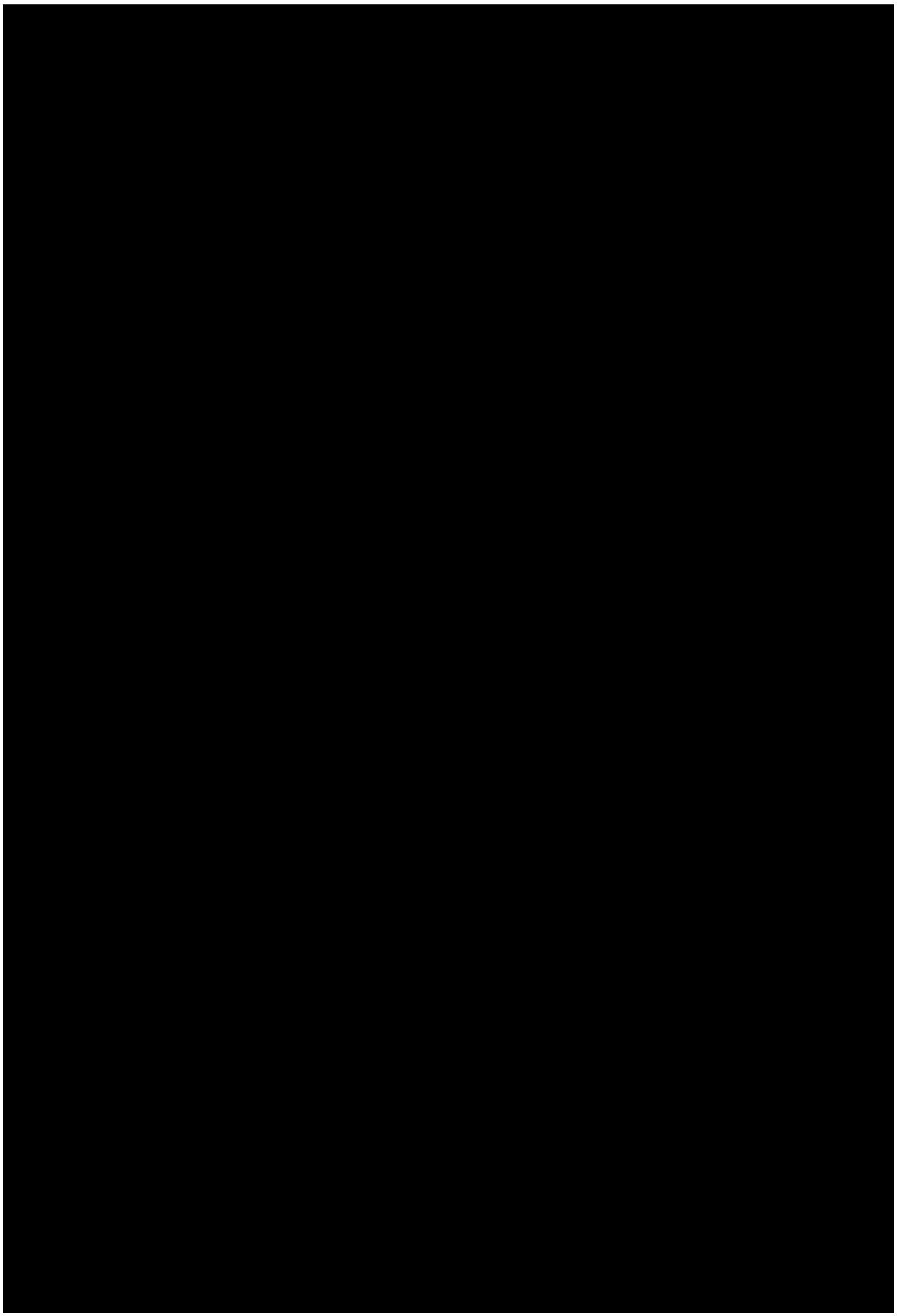


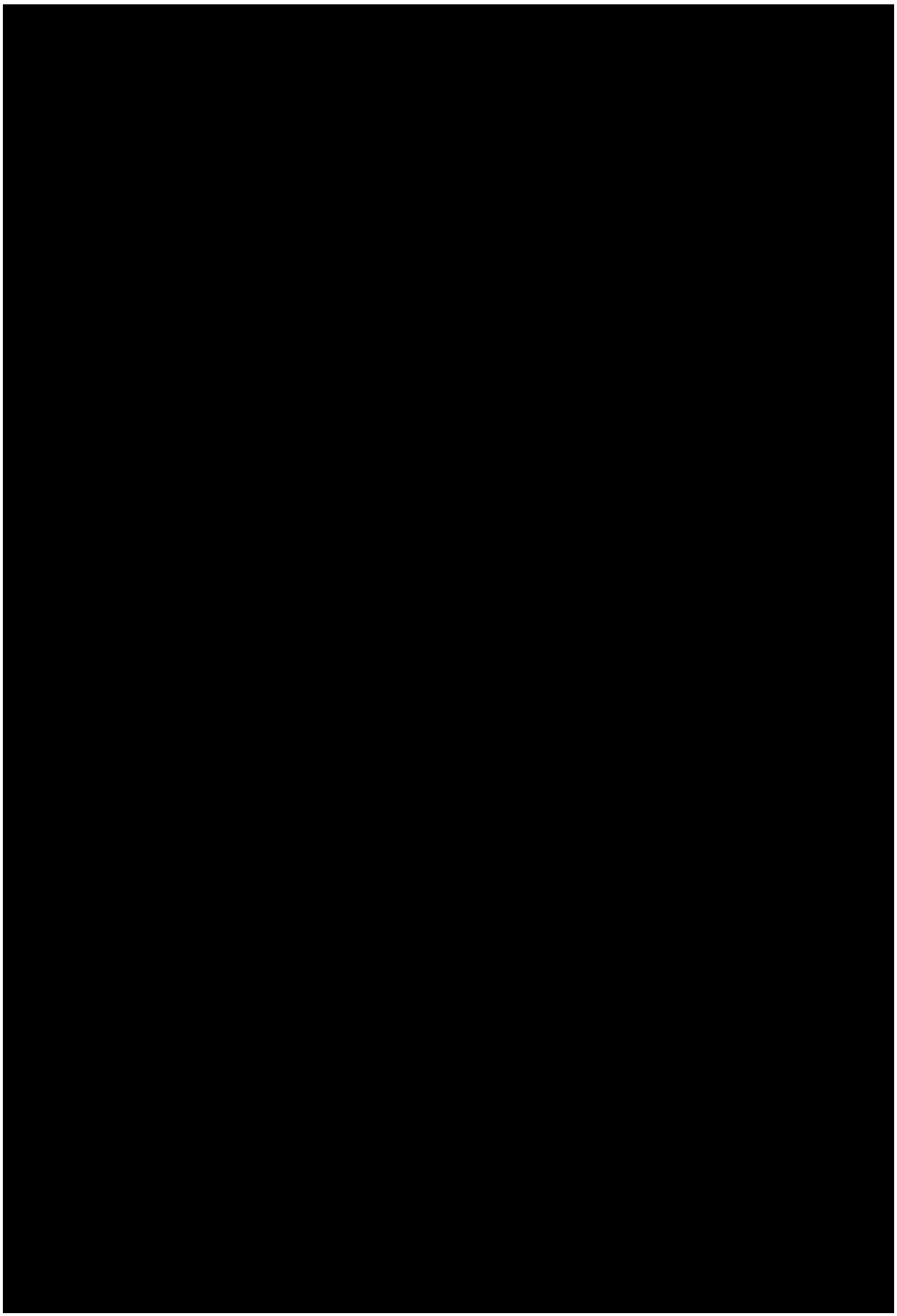


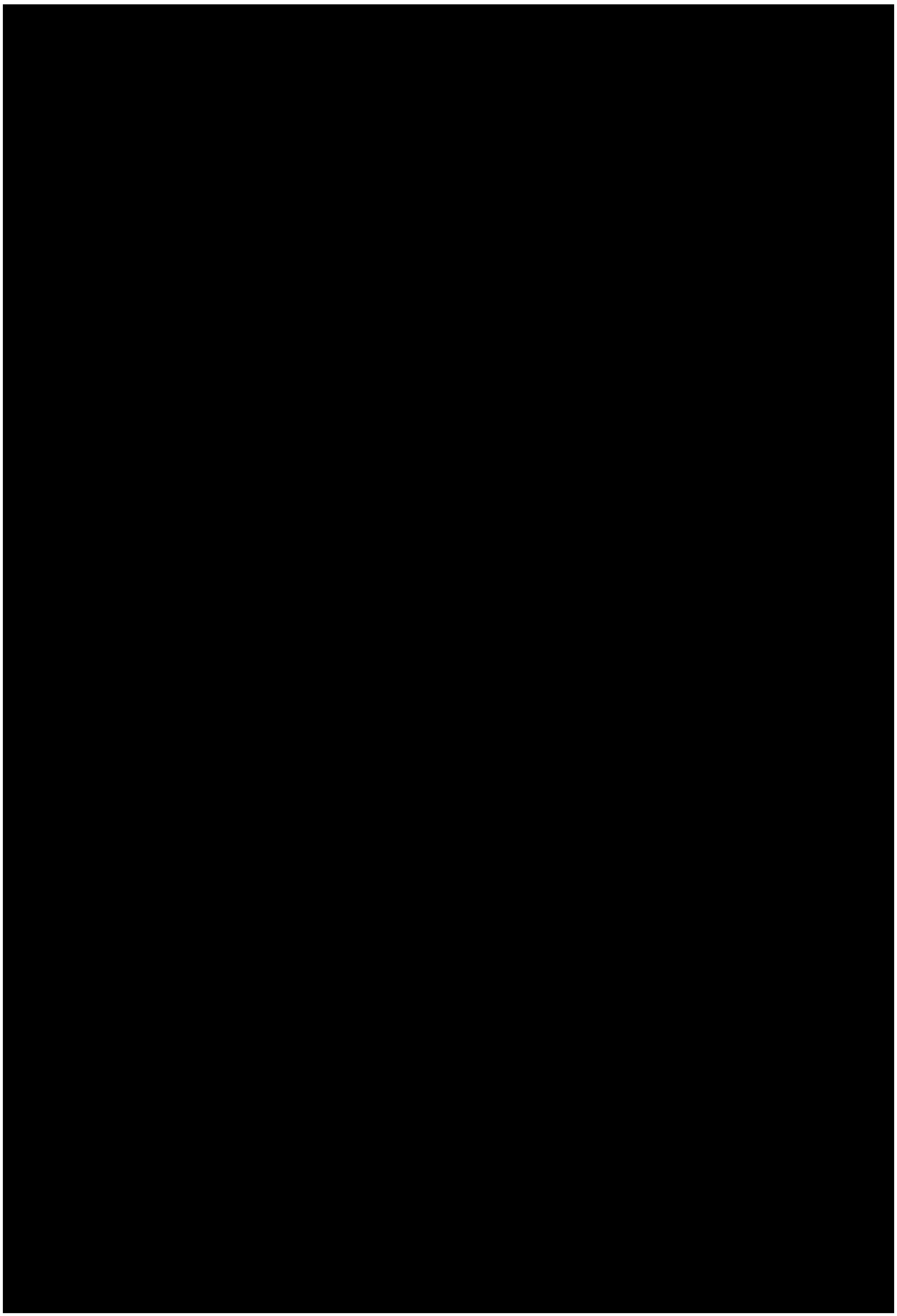


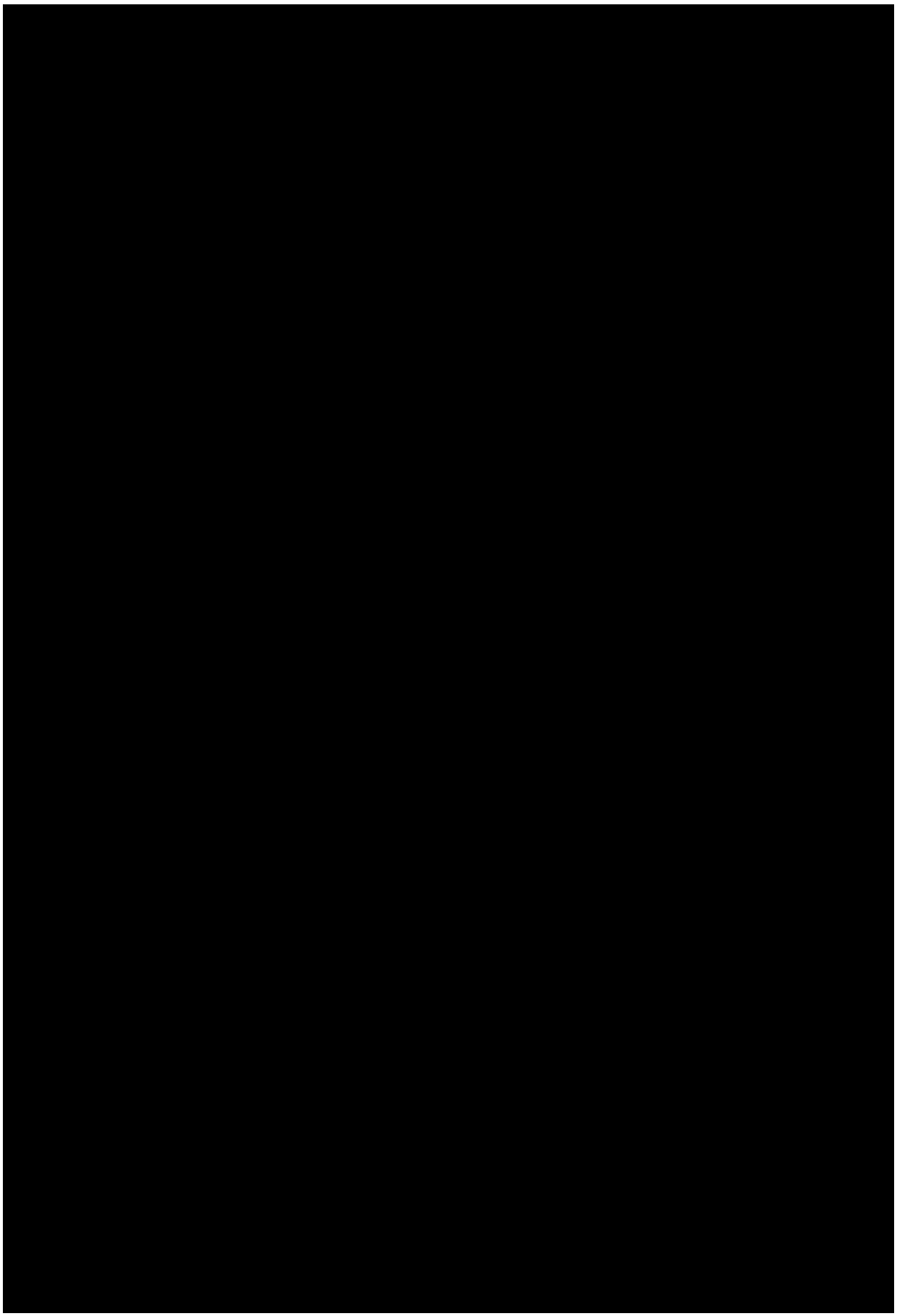


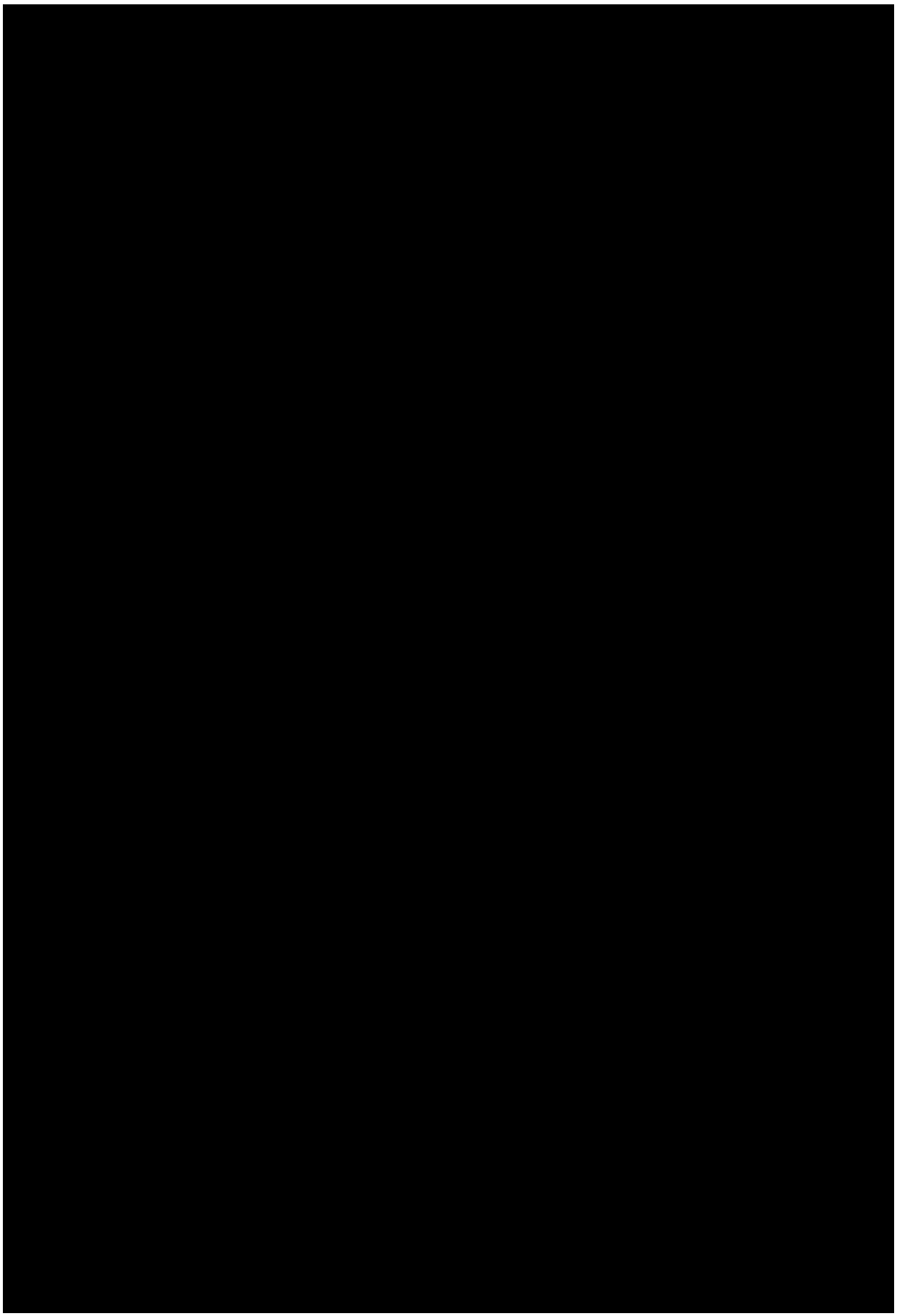


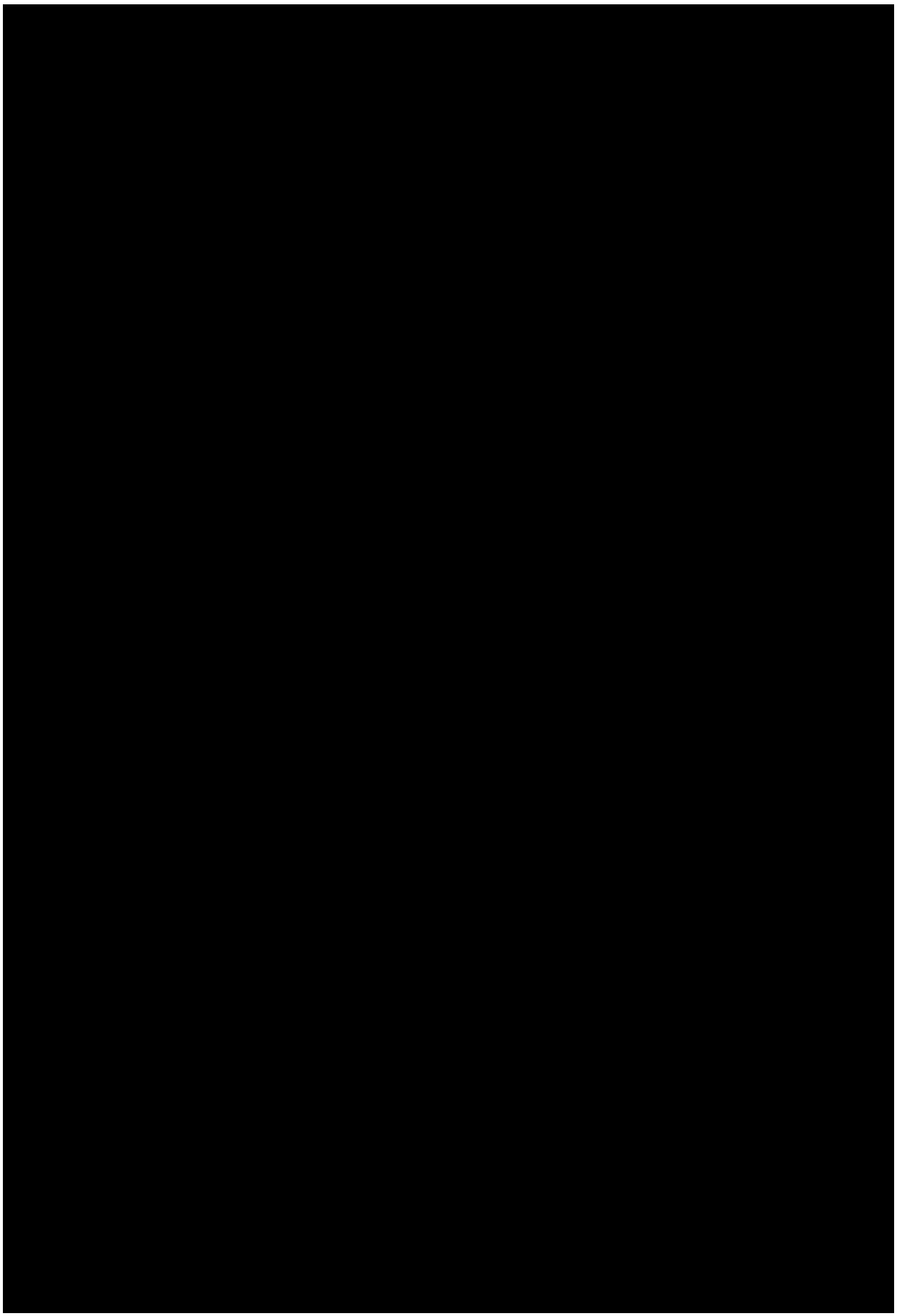


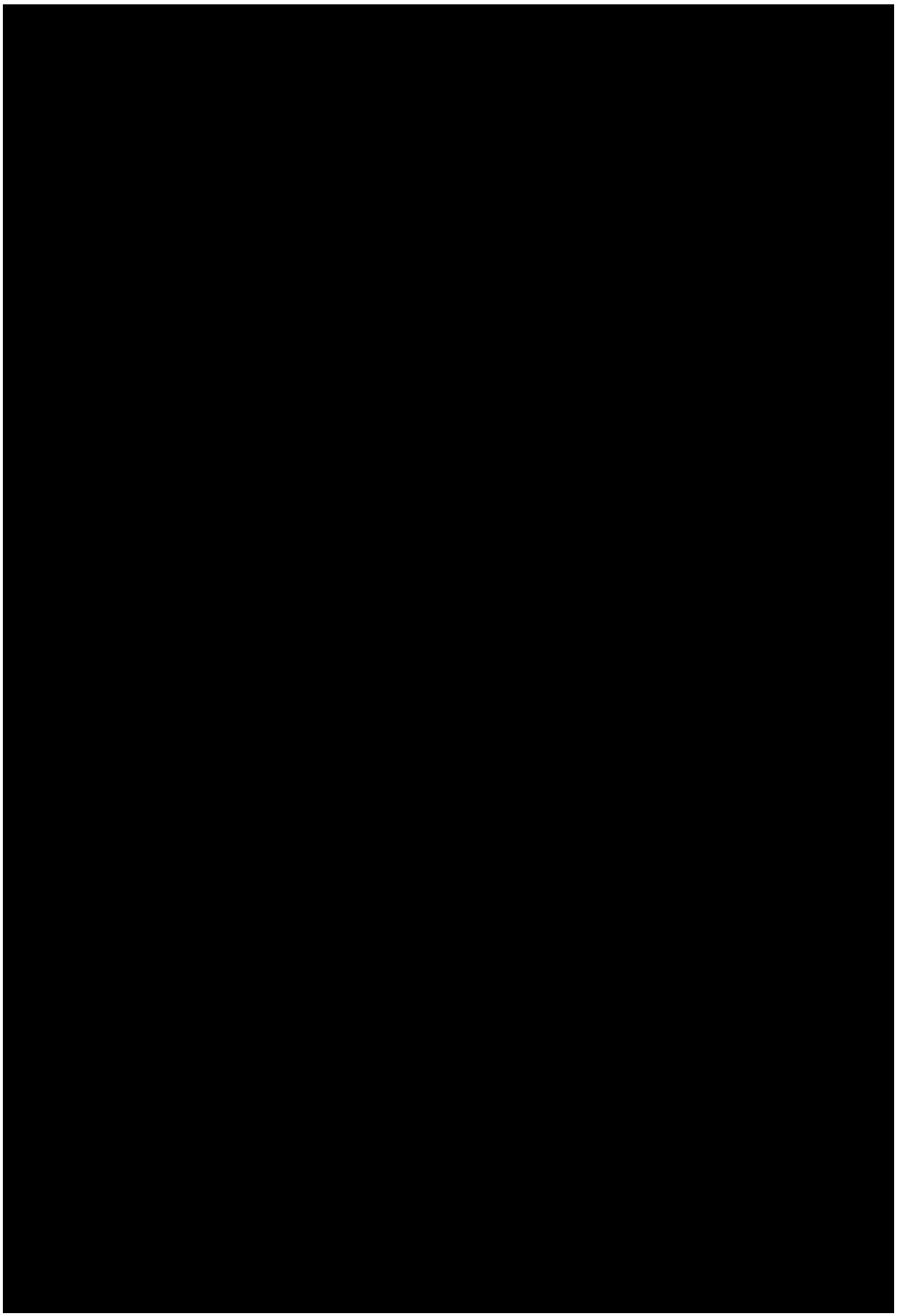


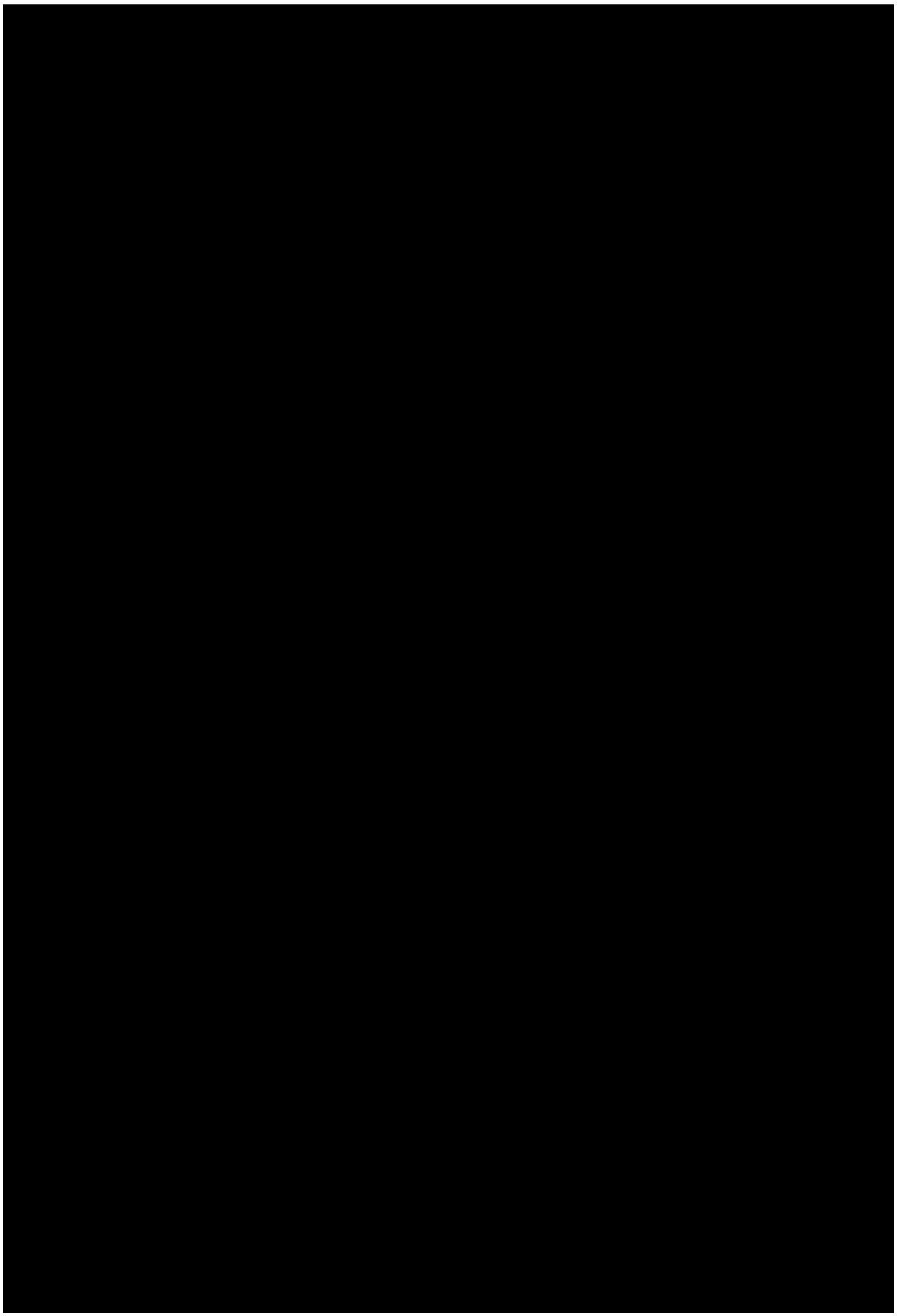


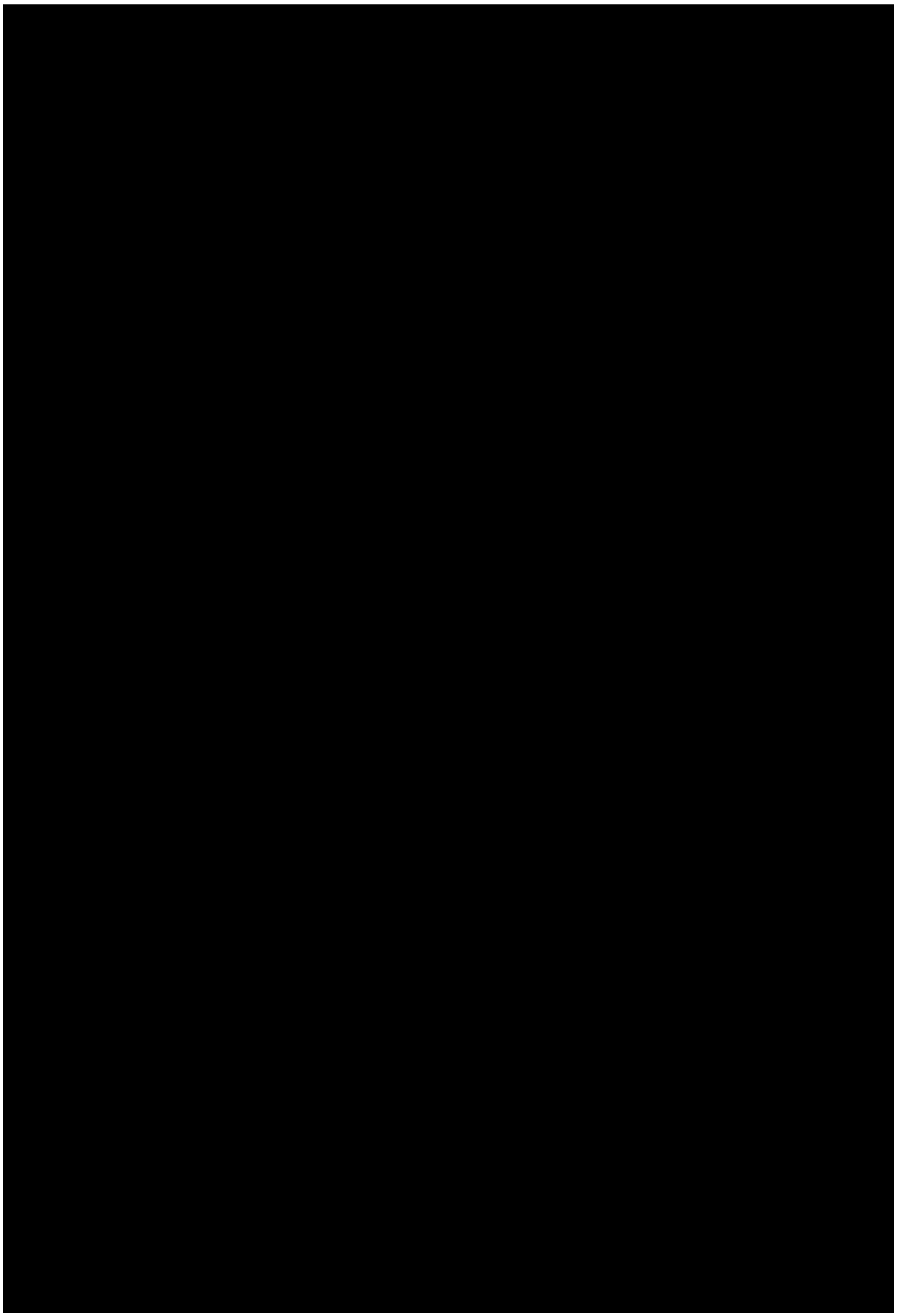






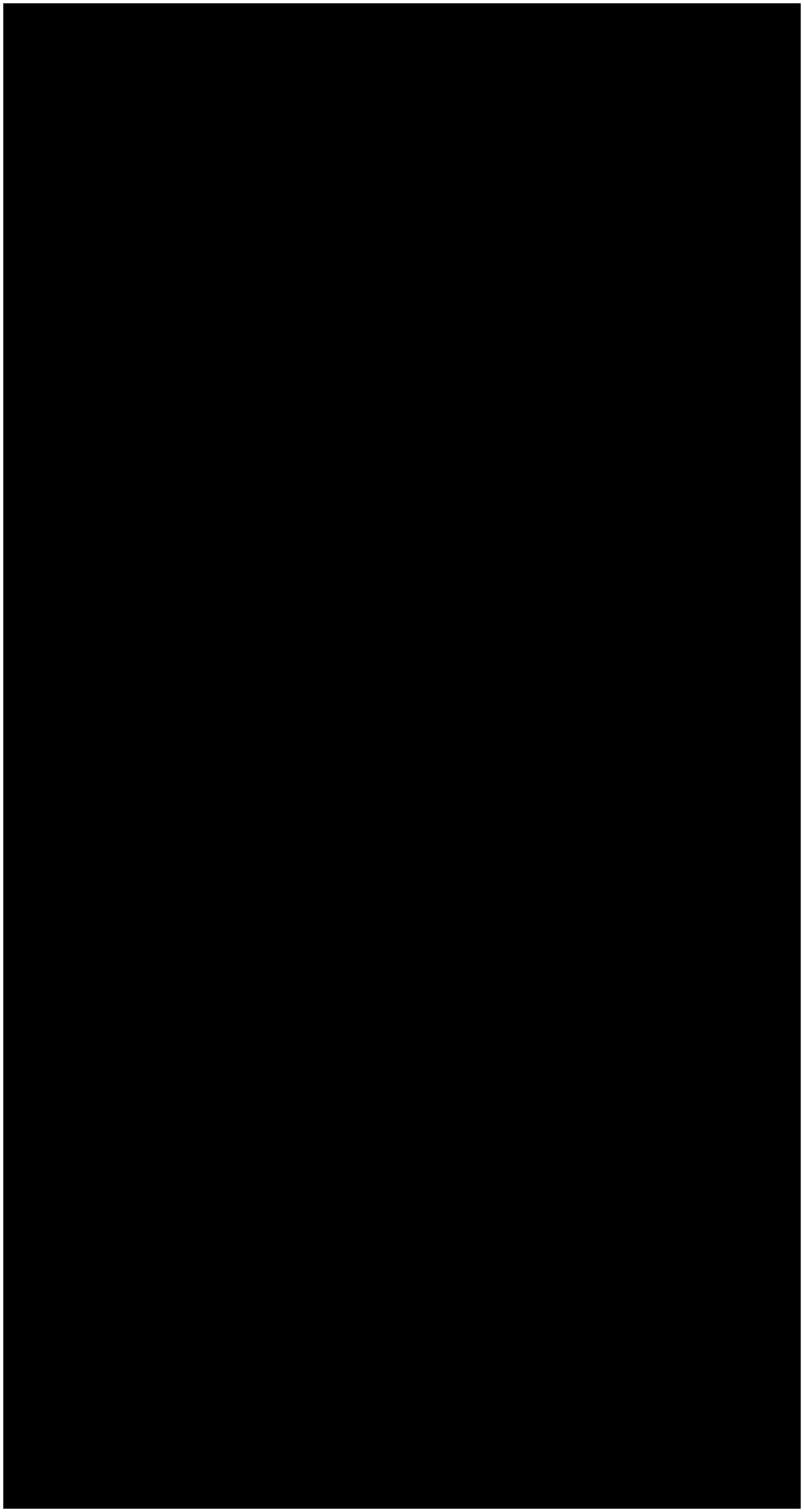


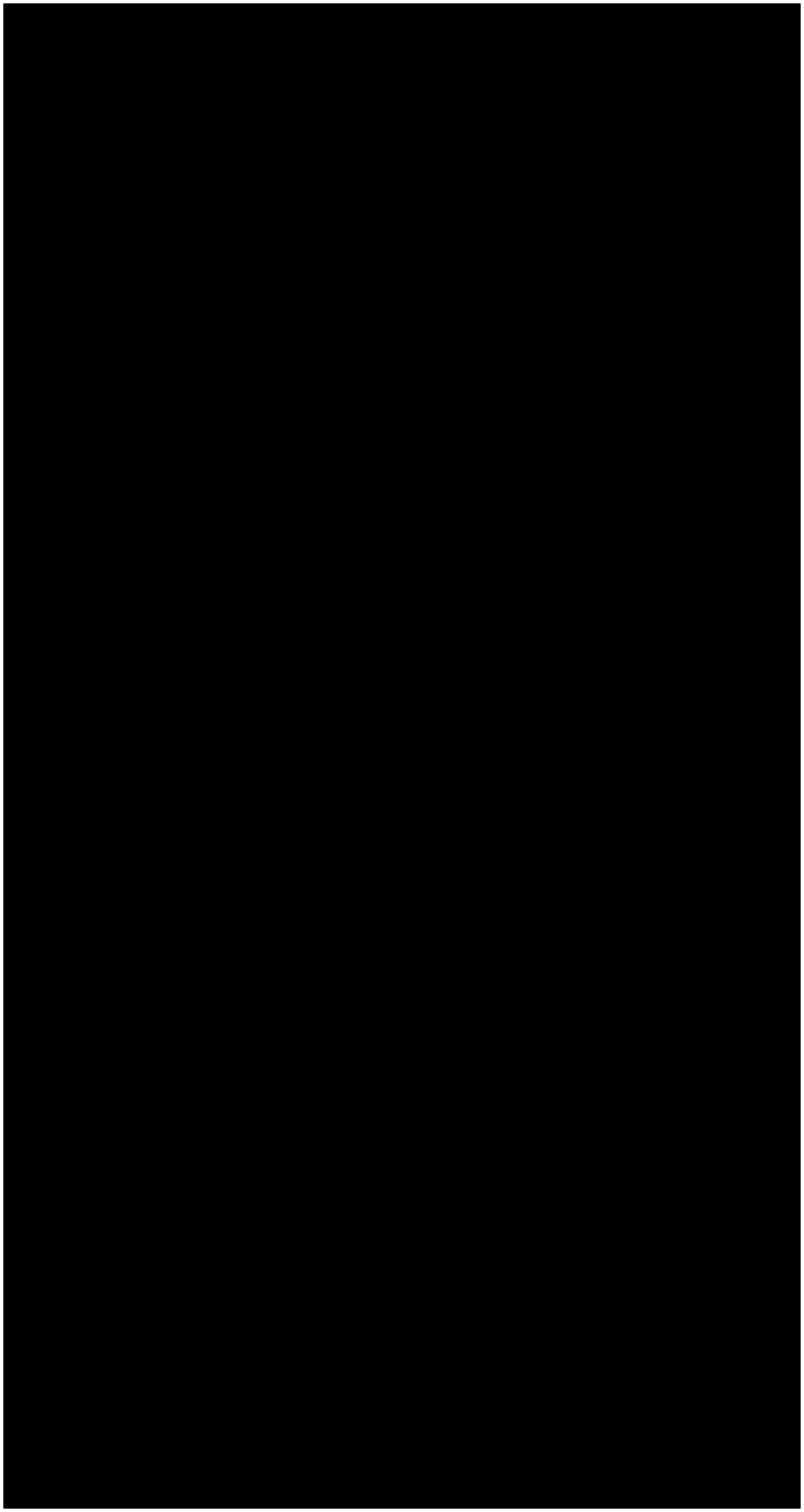


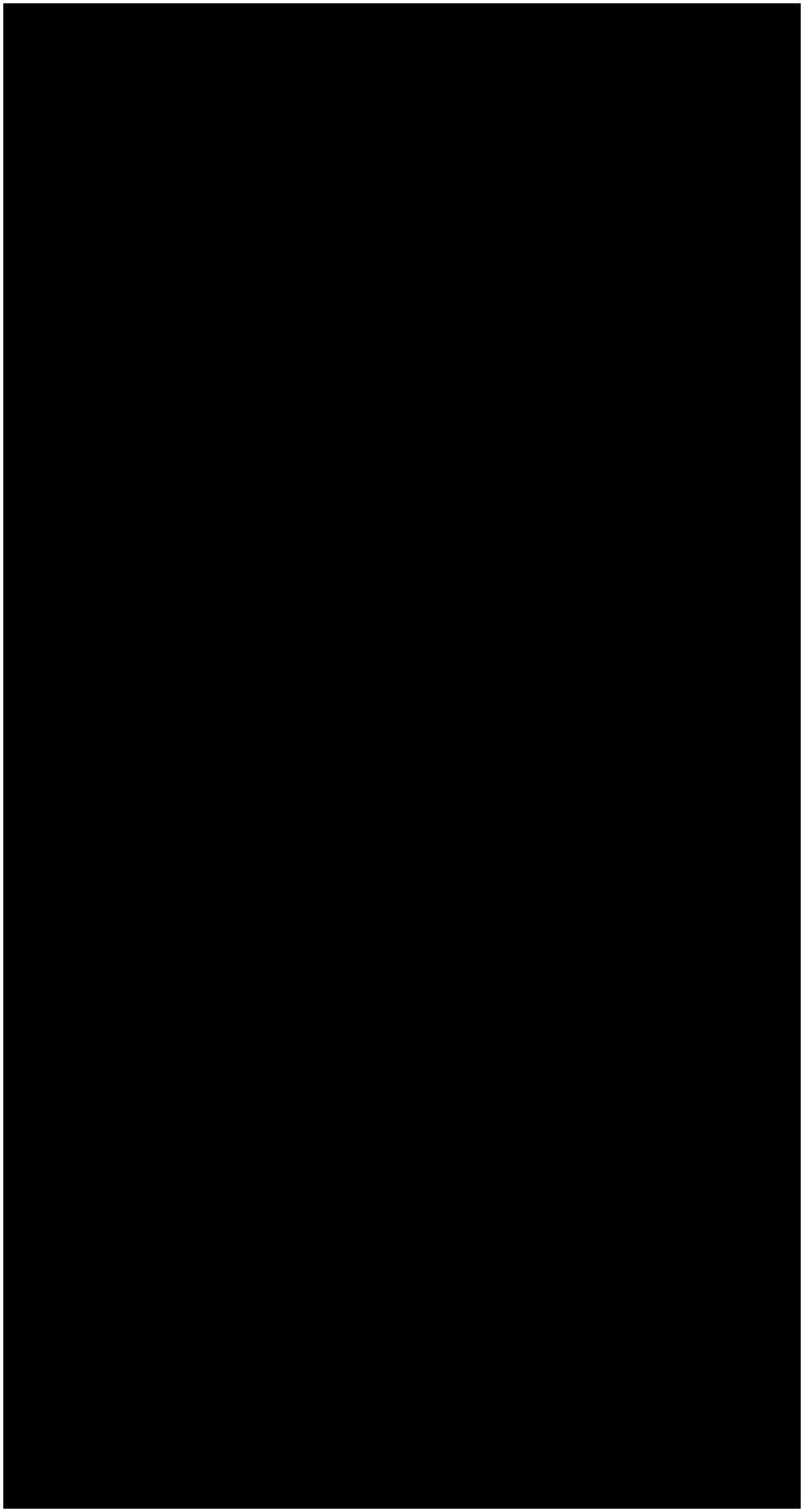


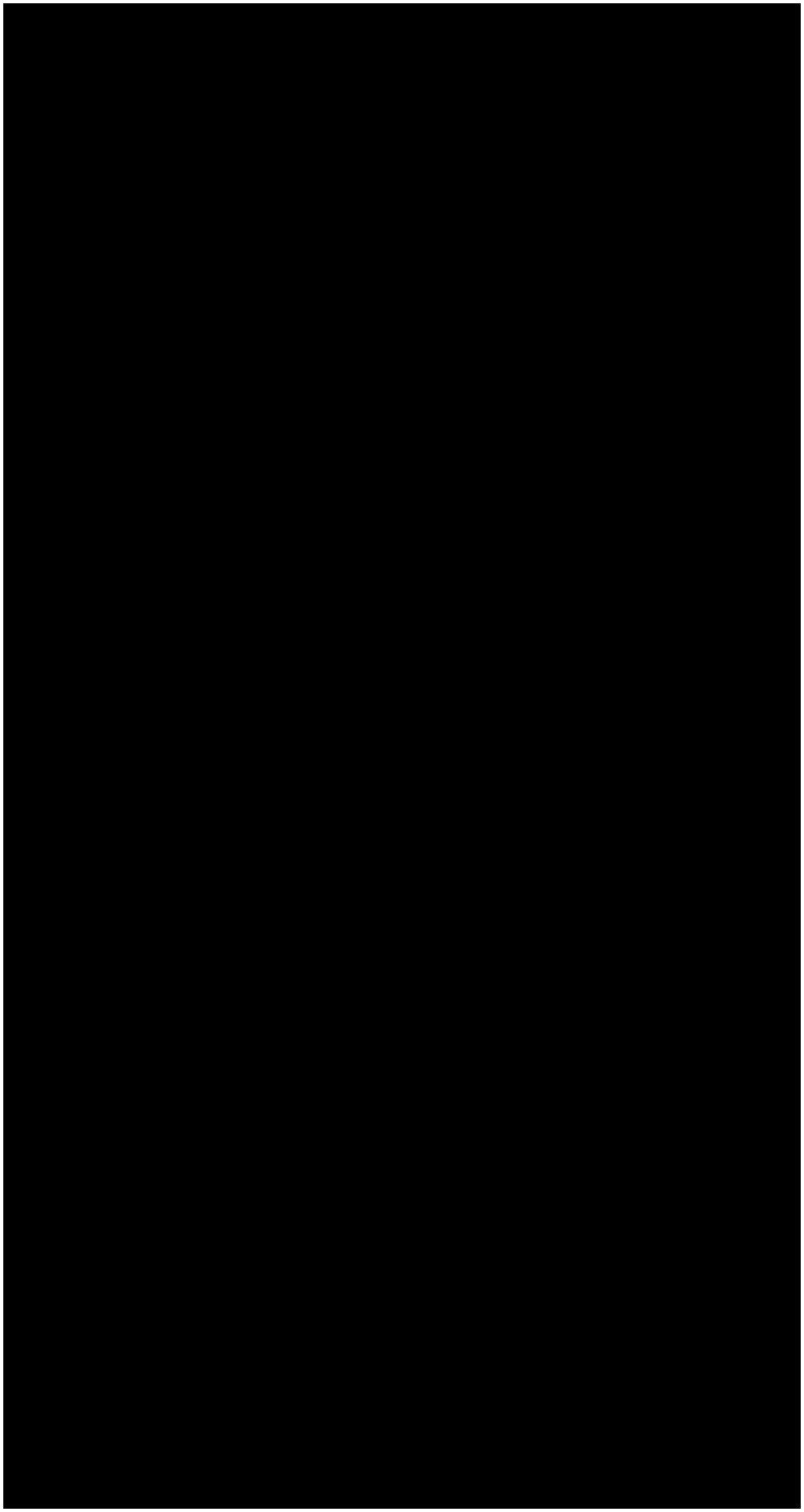


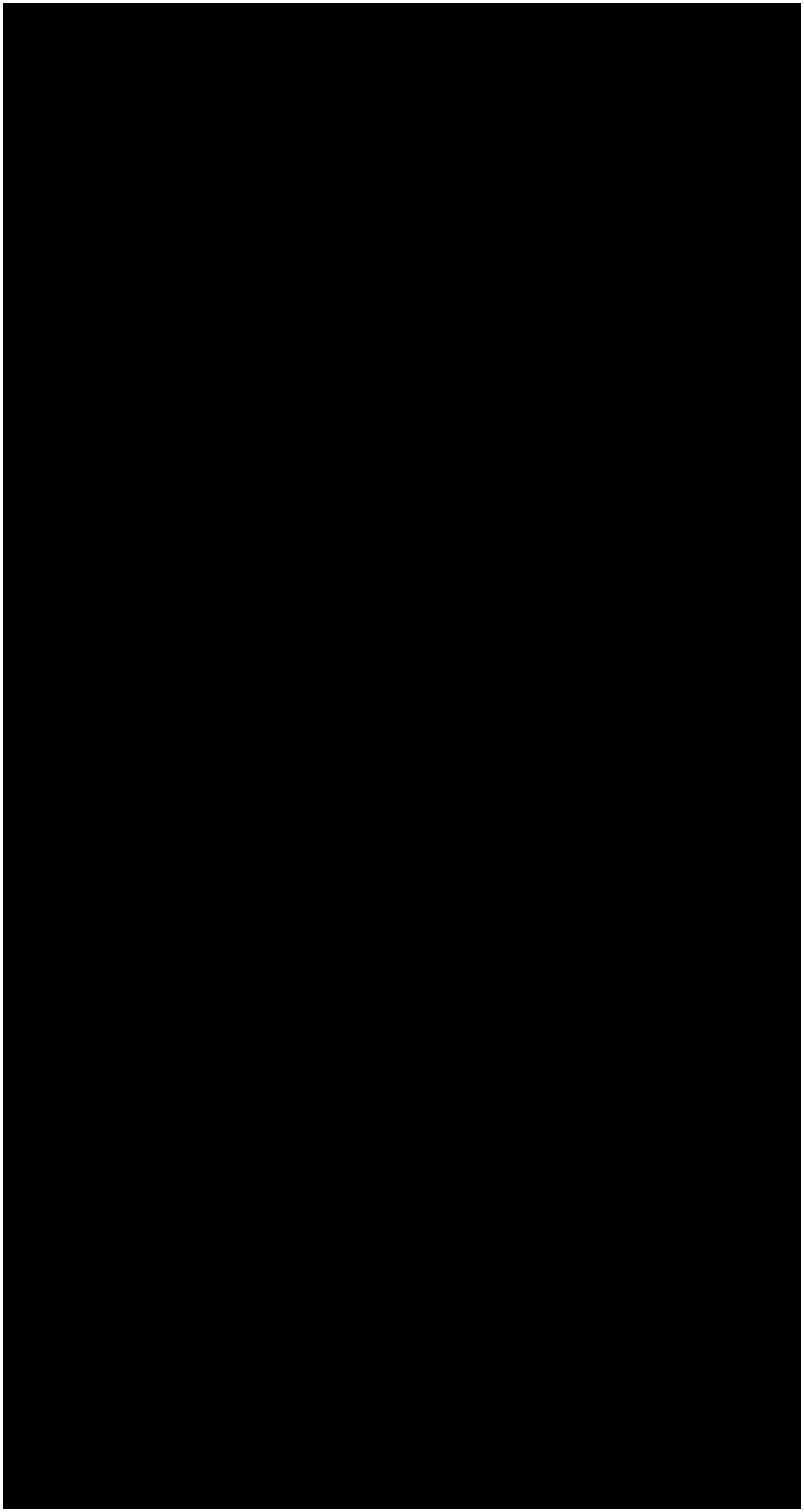
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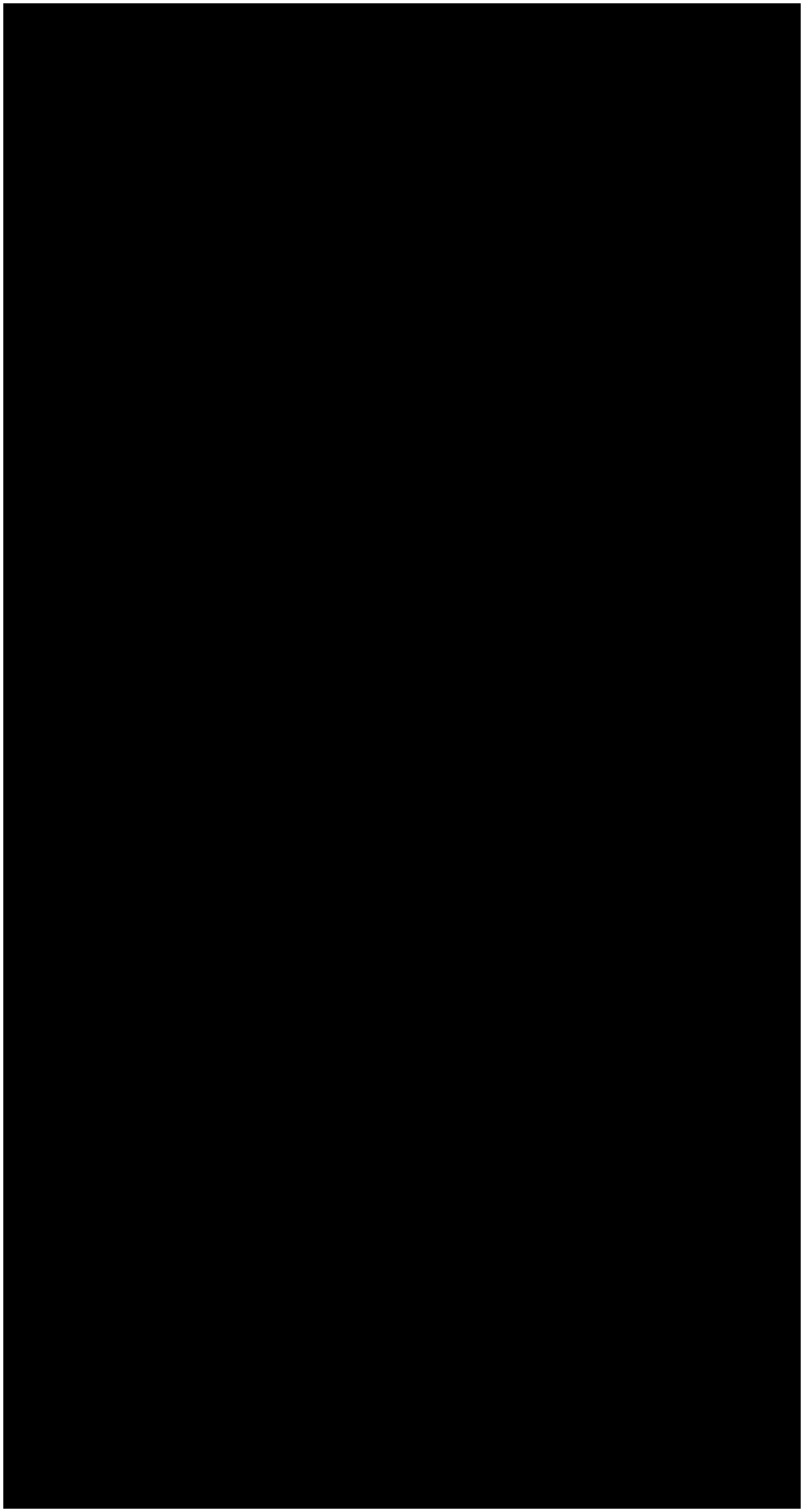


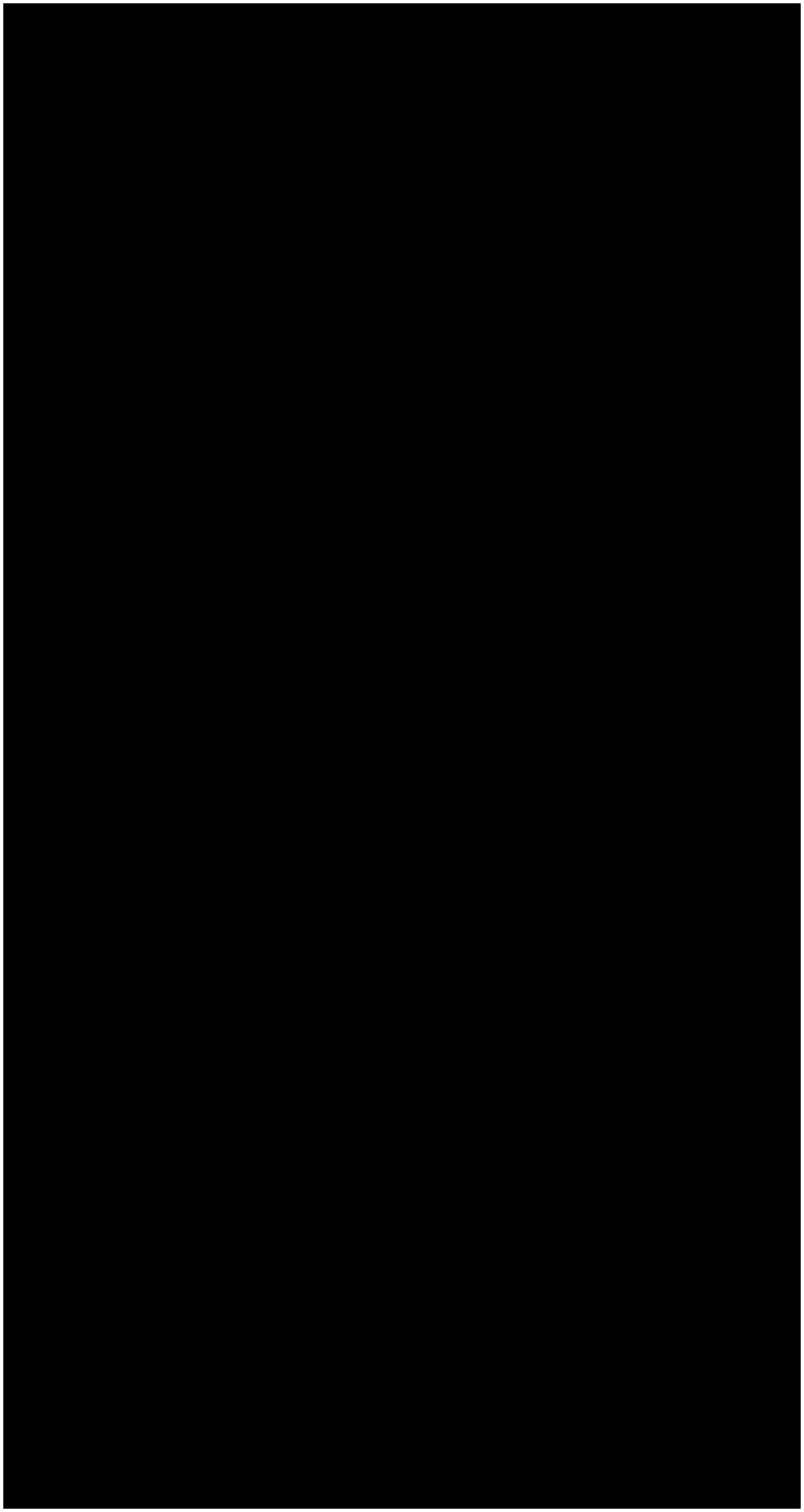


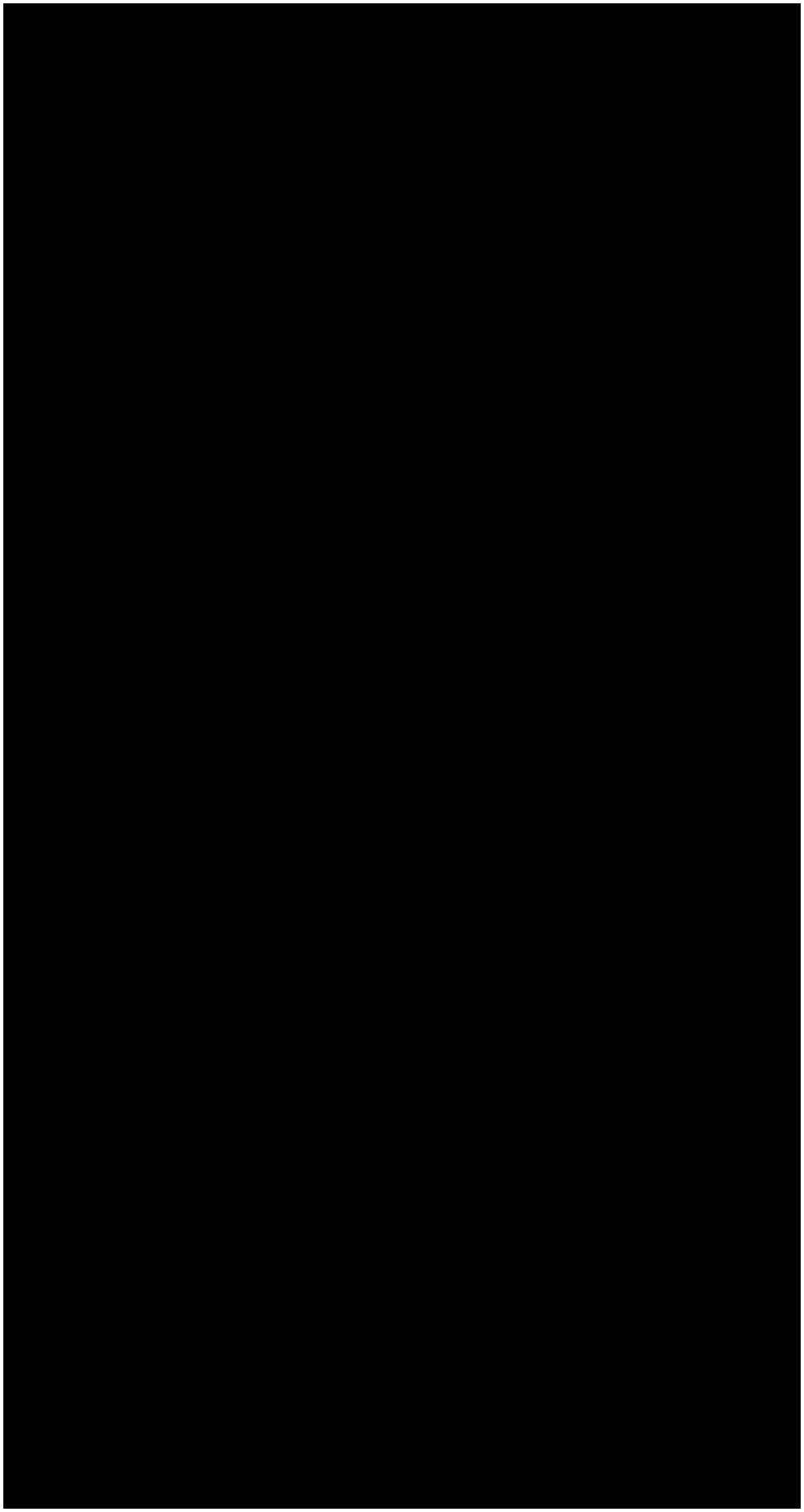


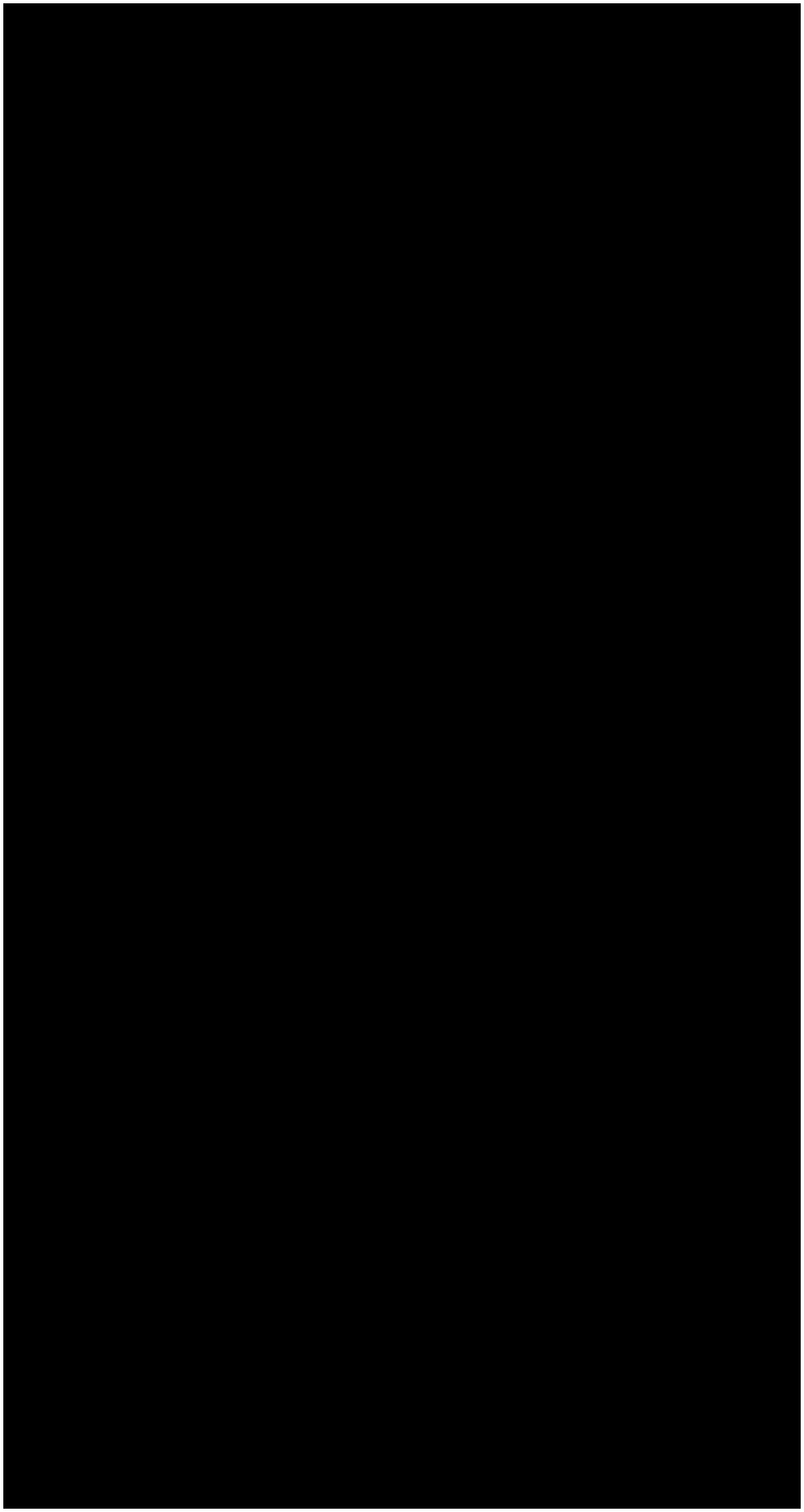


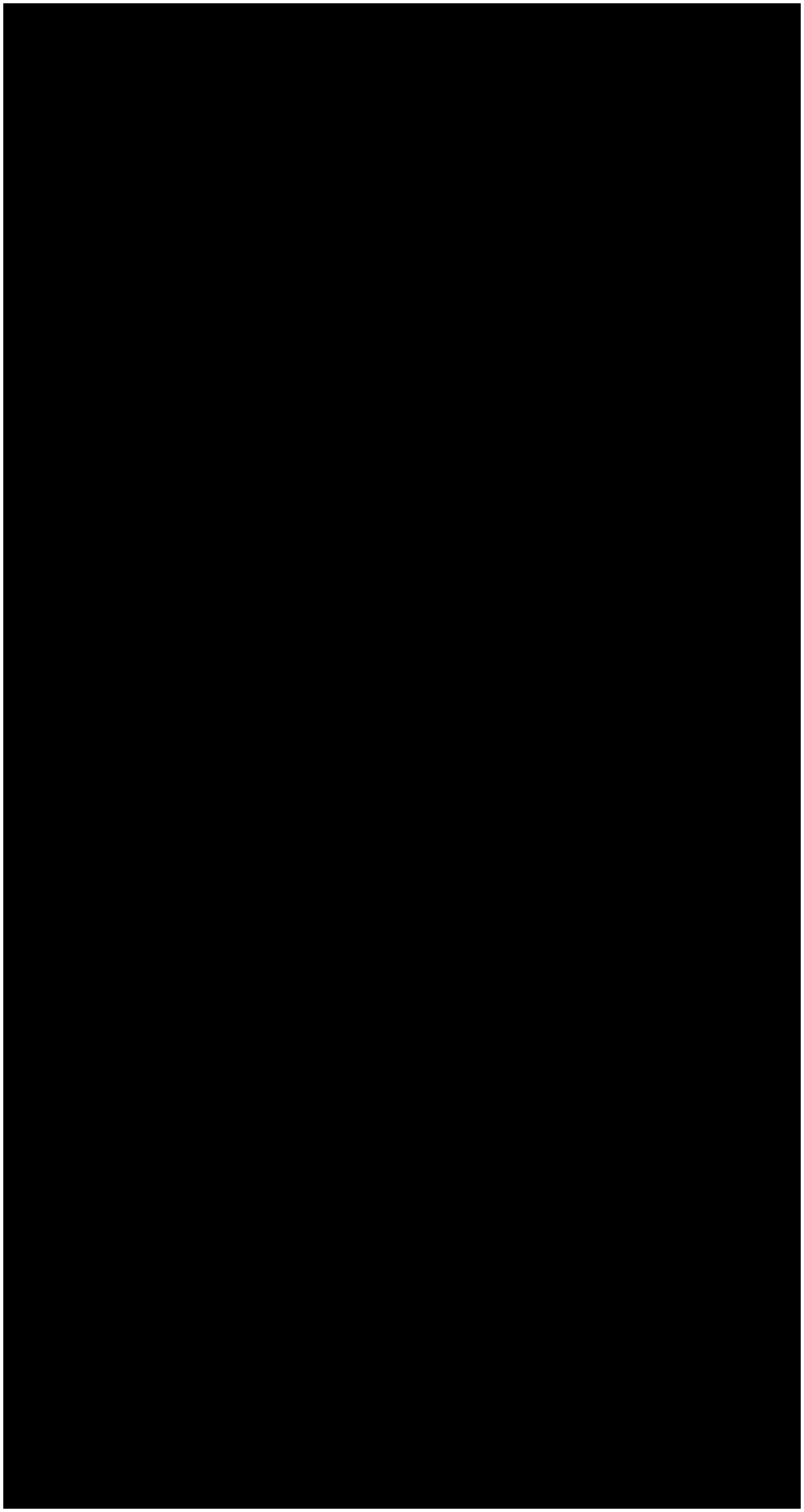


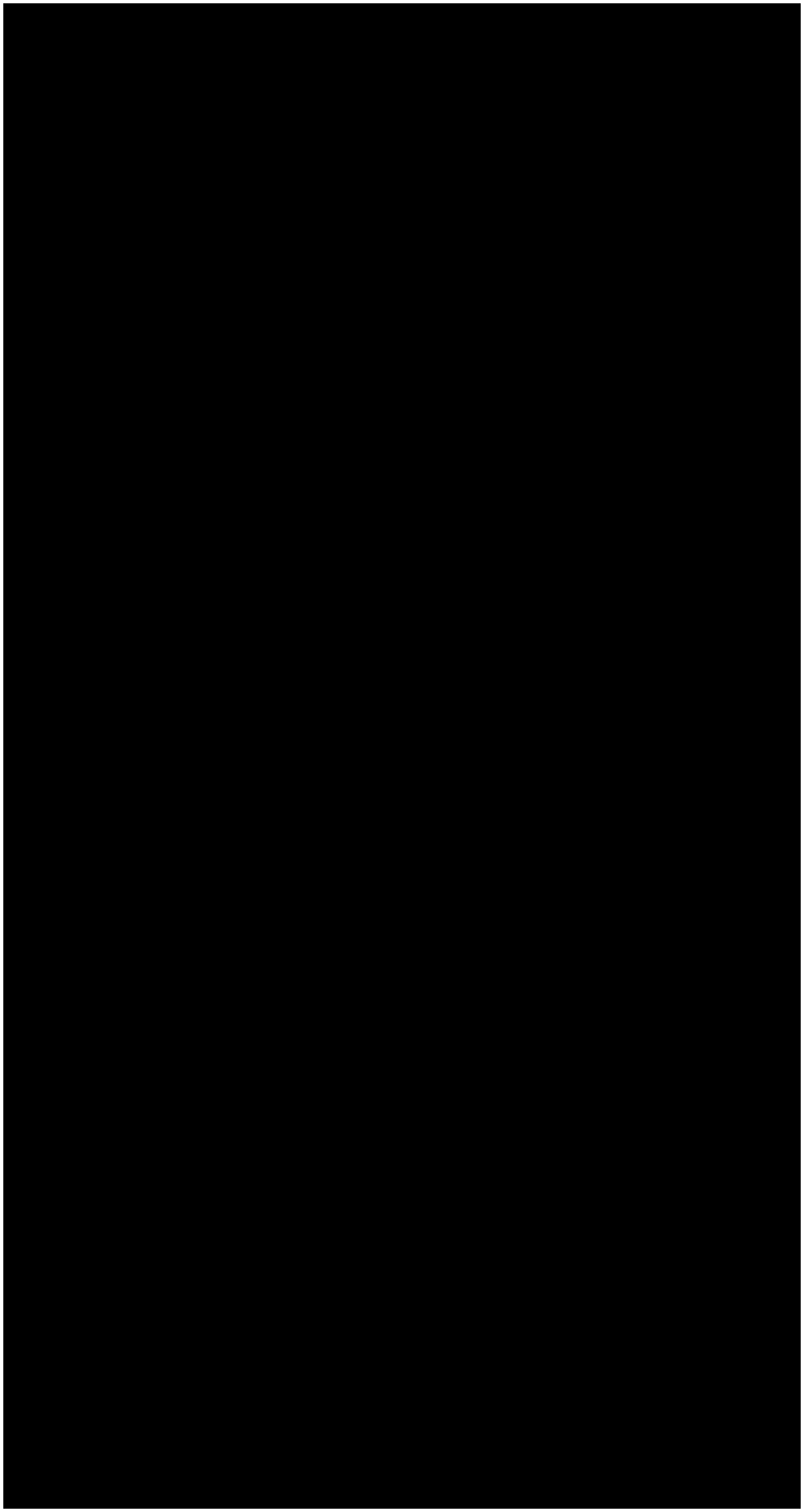


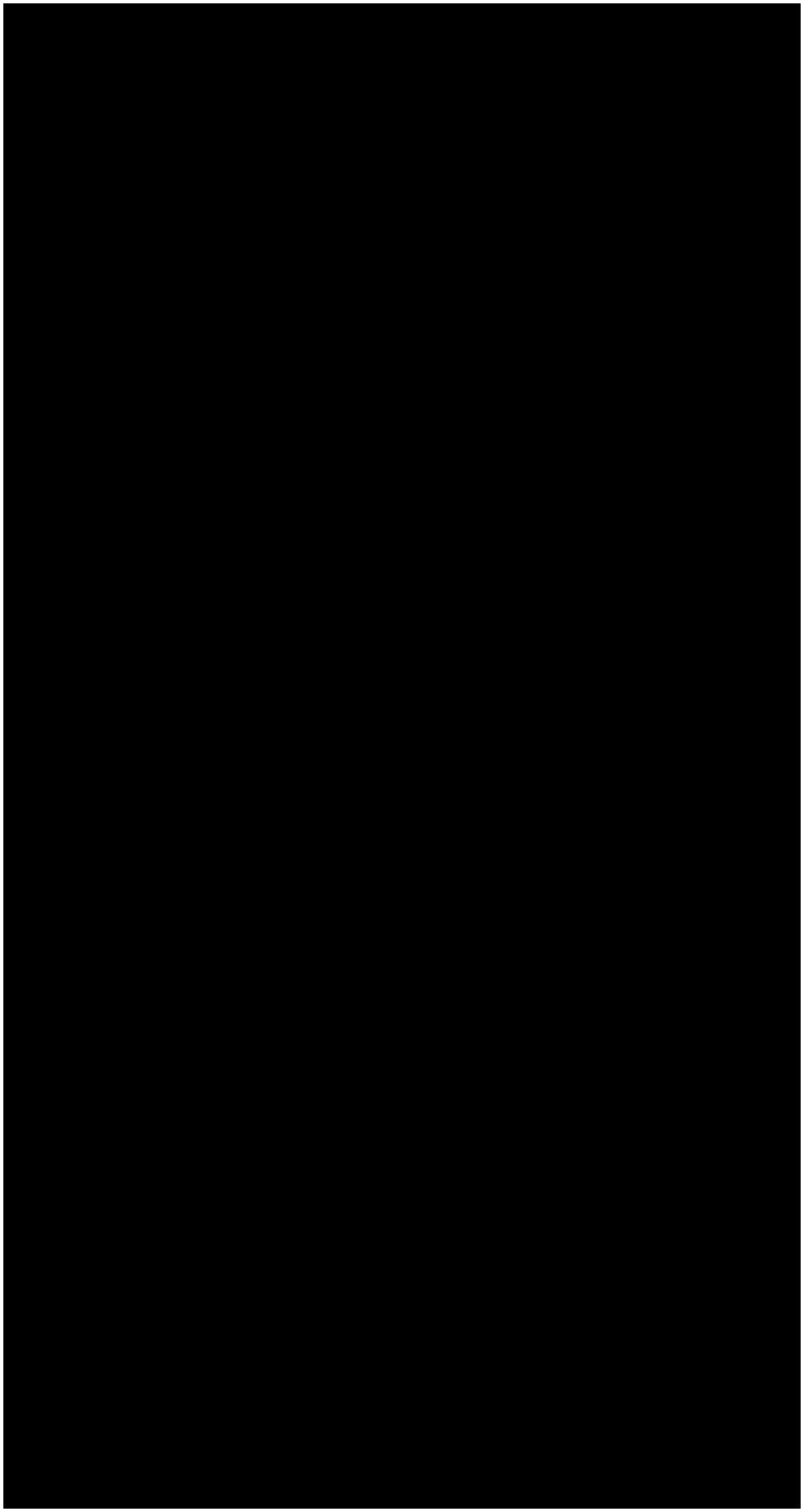


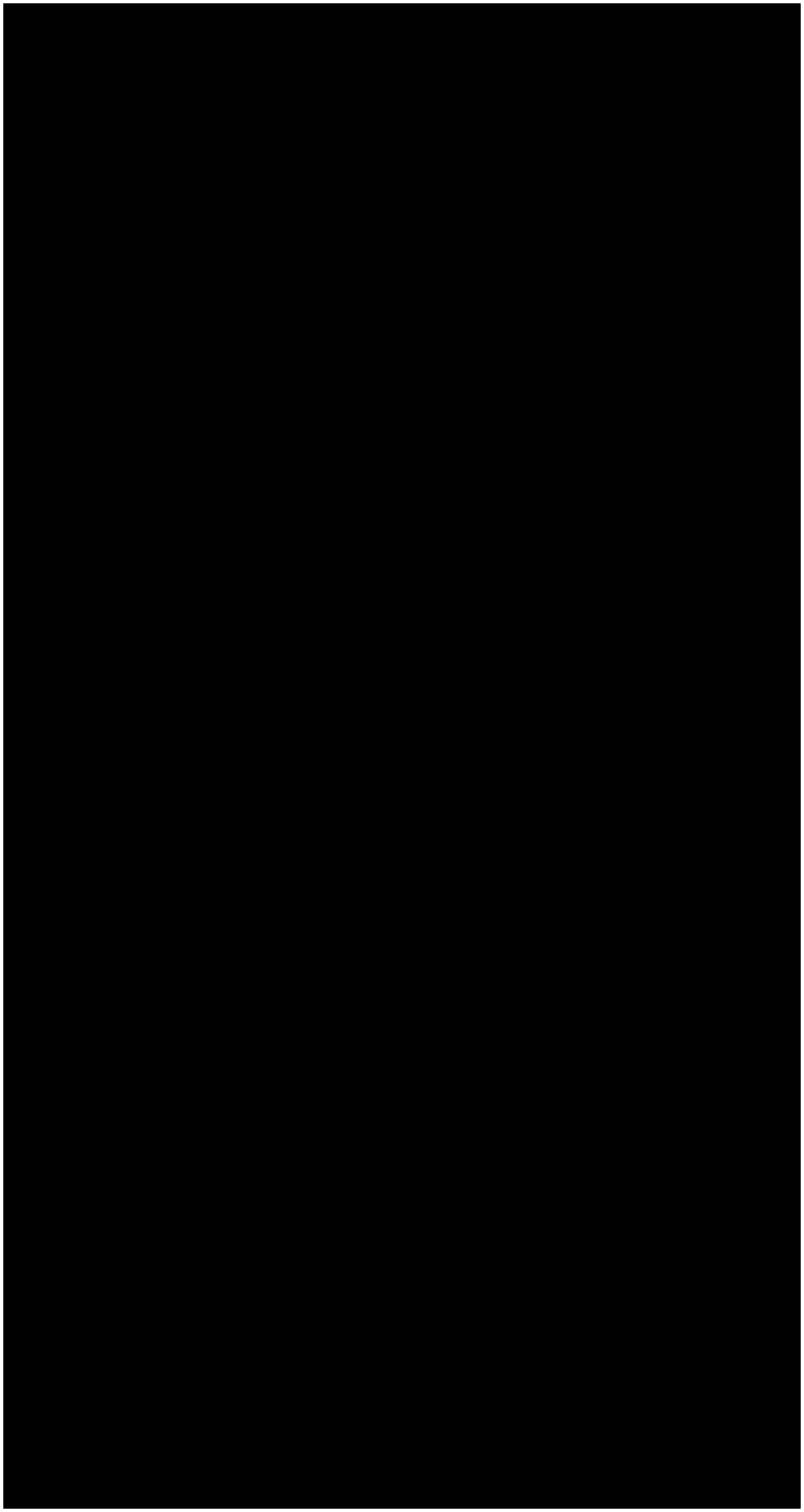


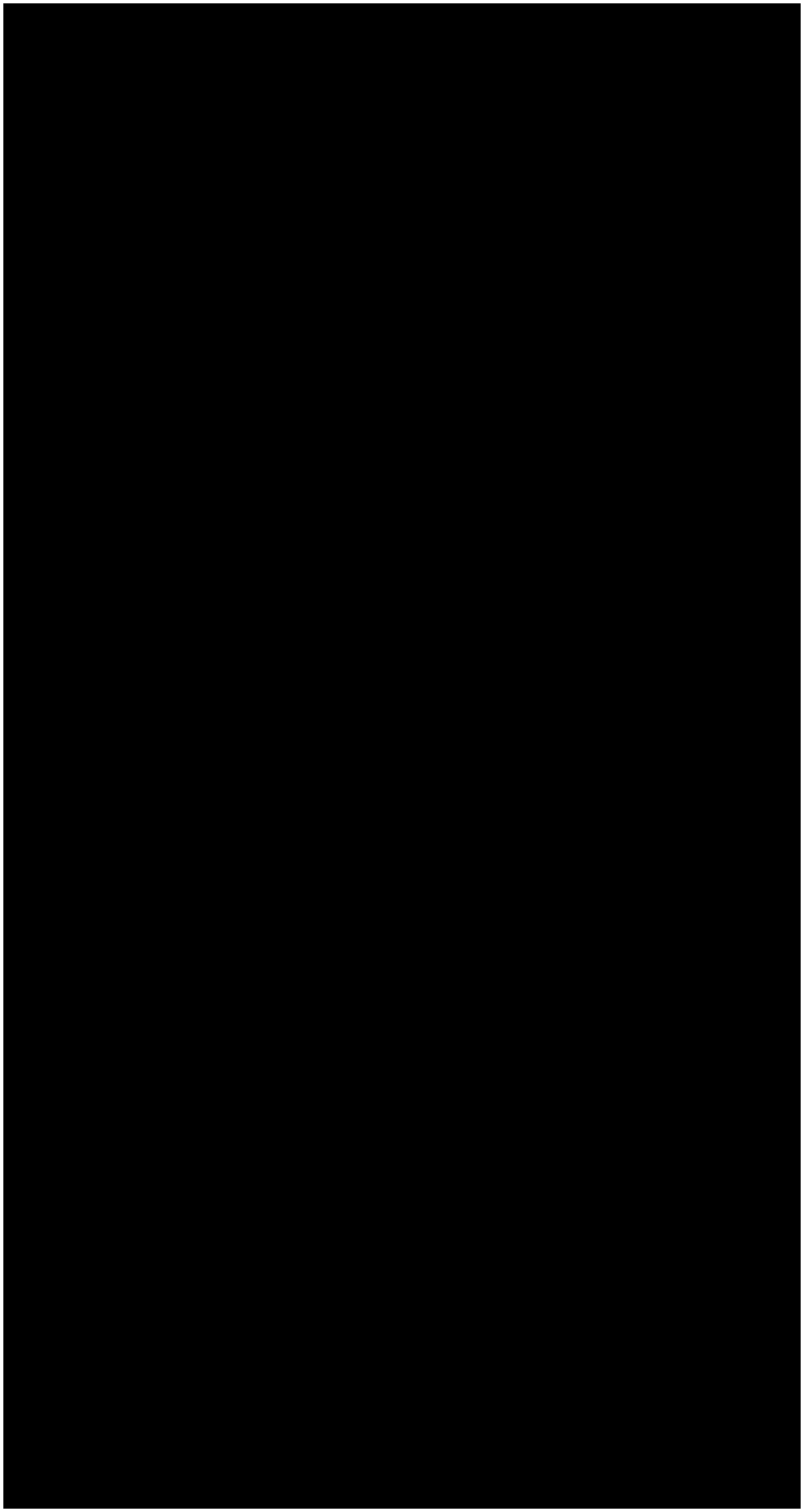


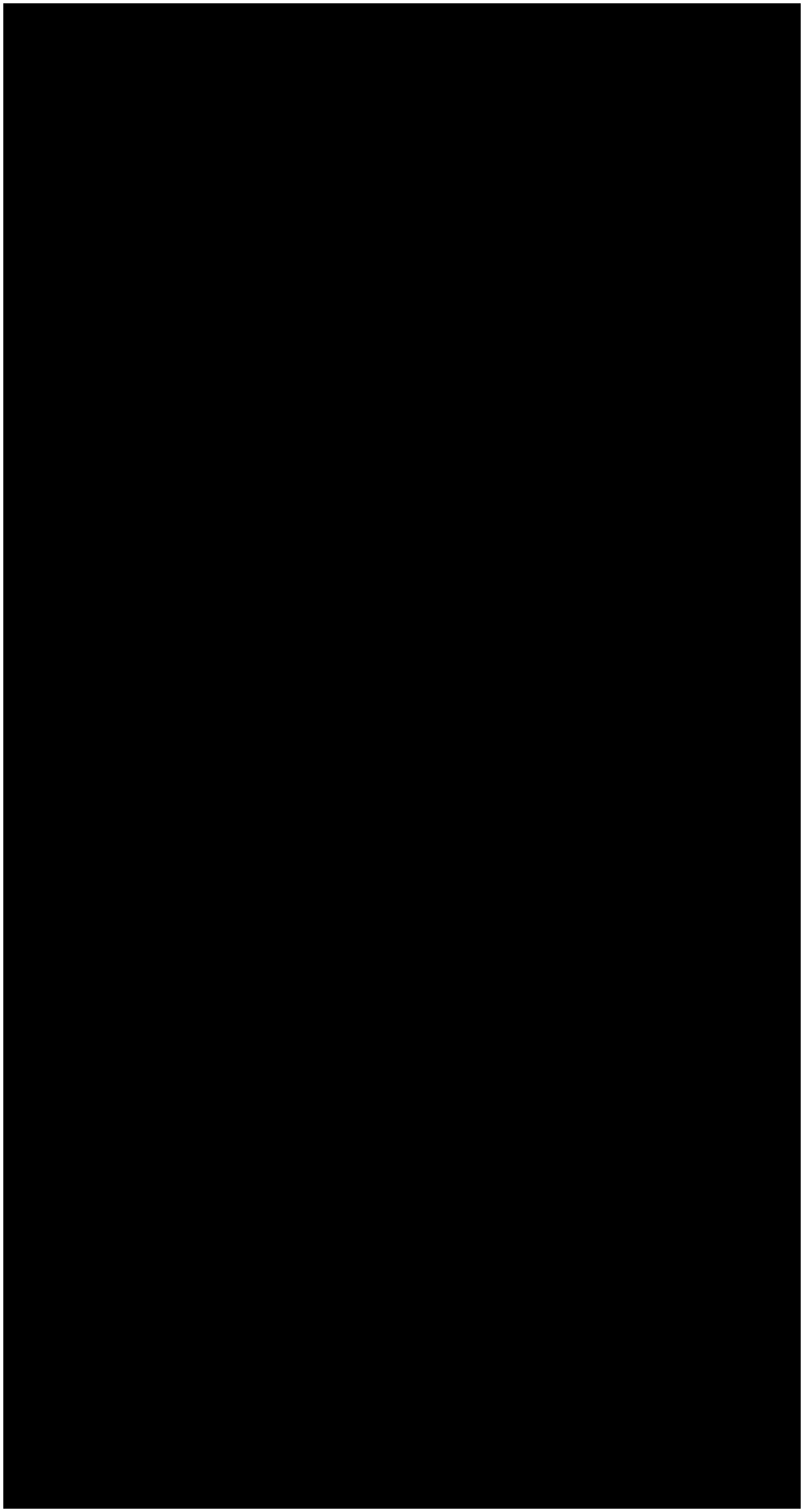


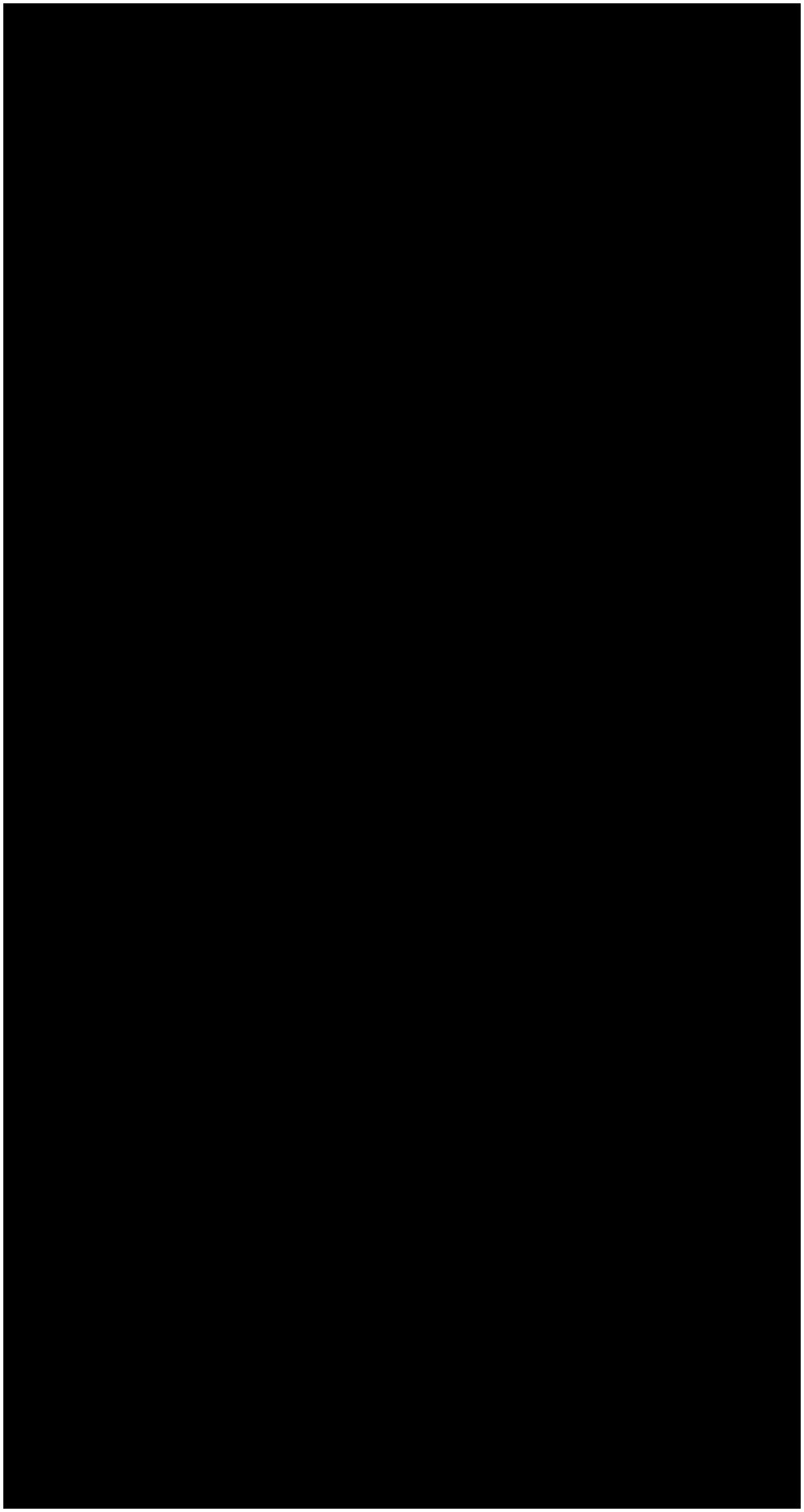


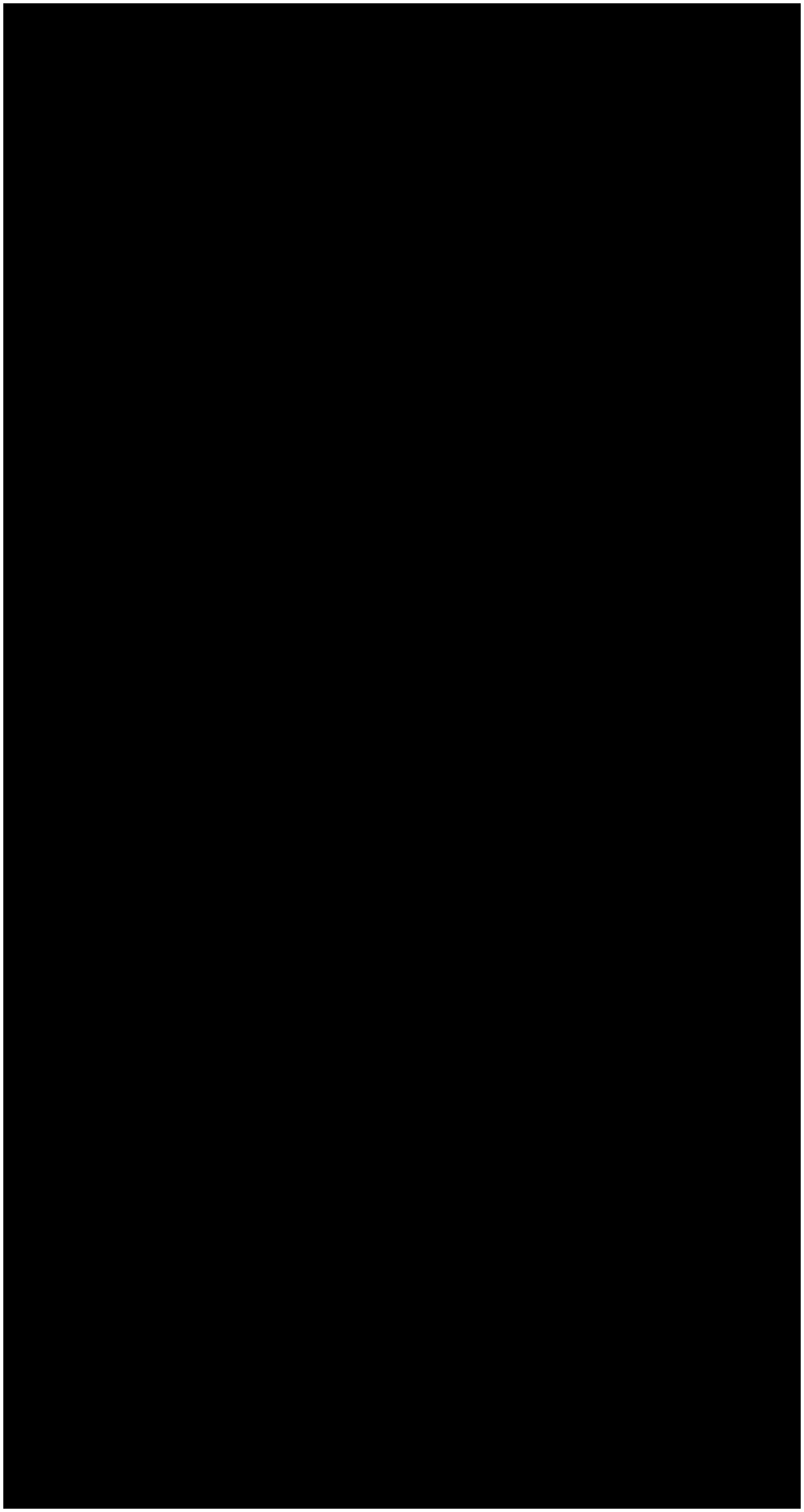


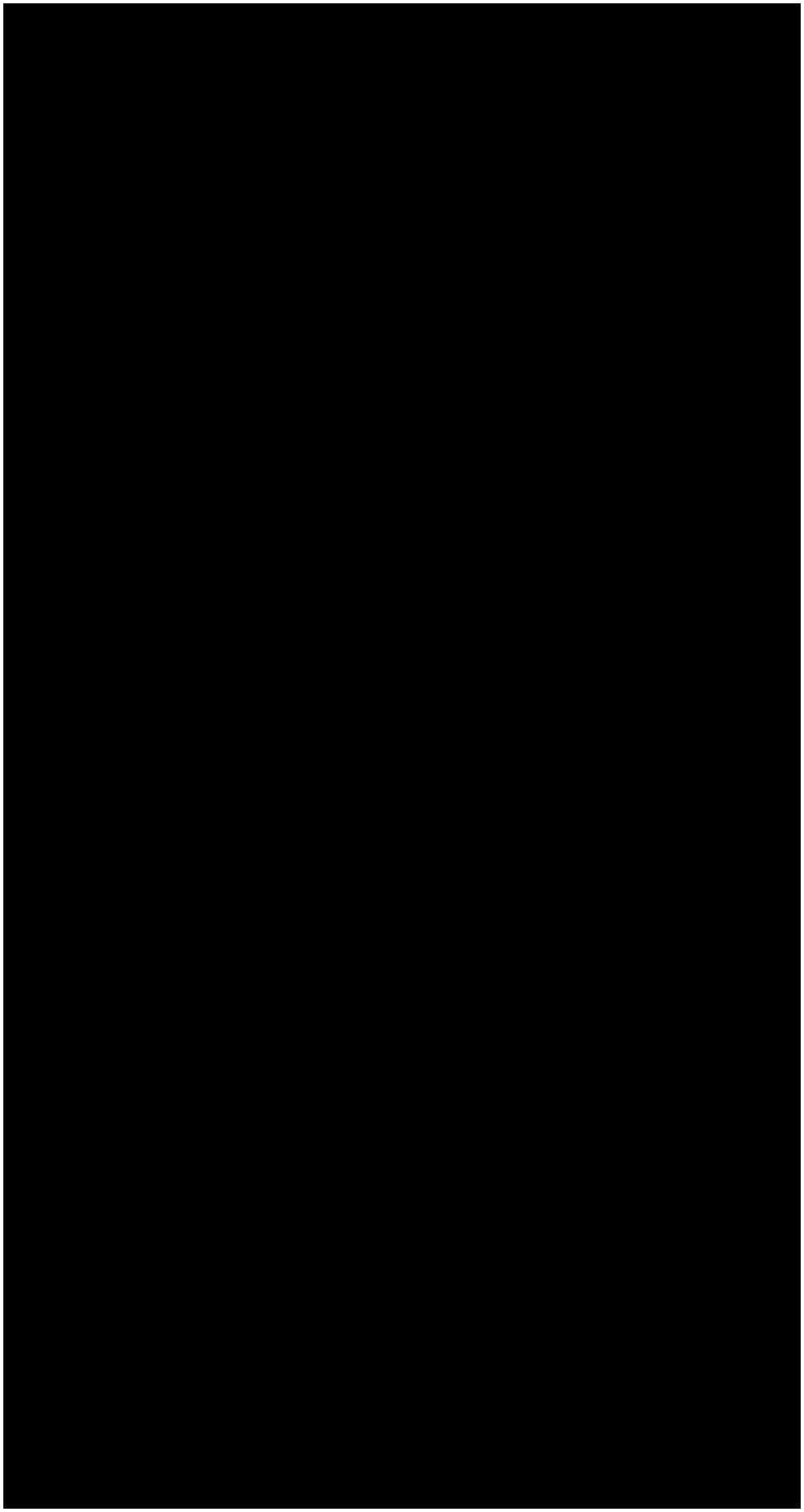














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
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Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
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Oct-28											

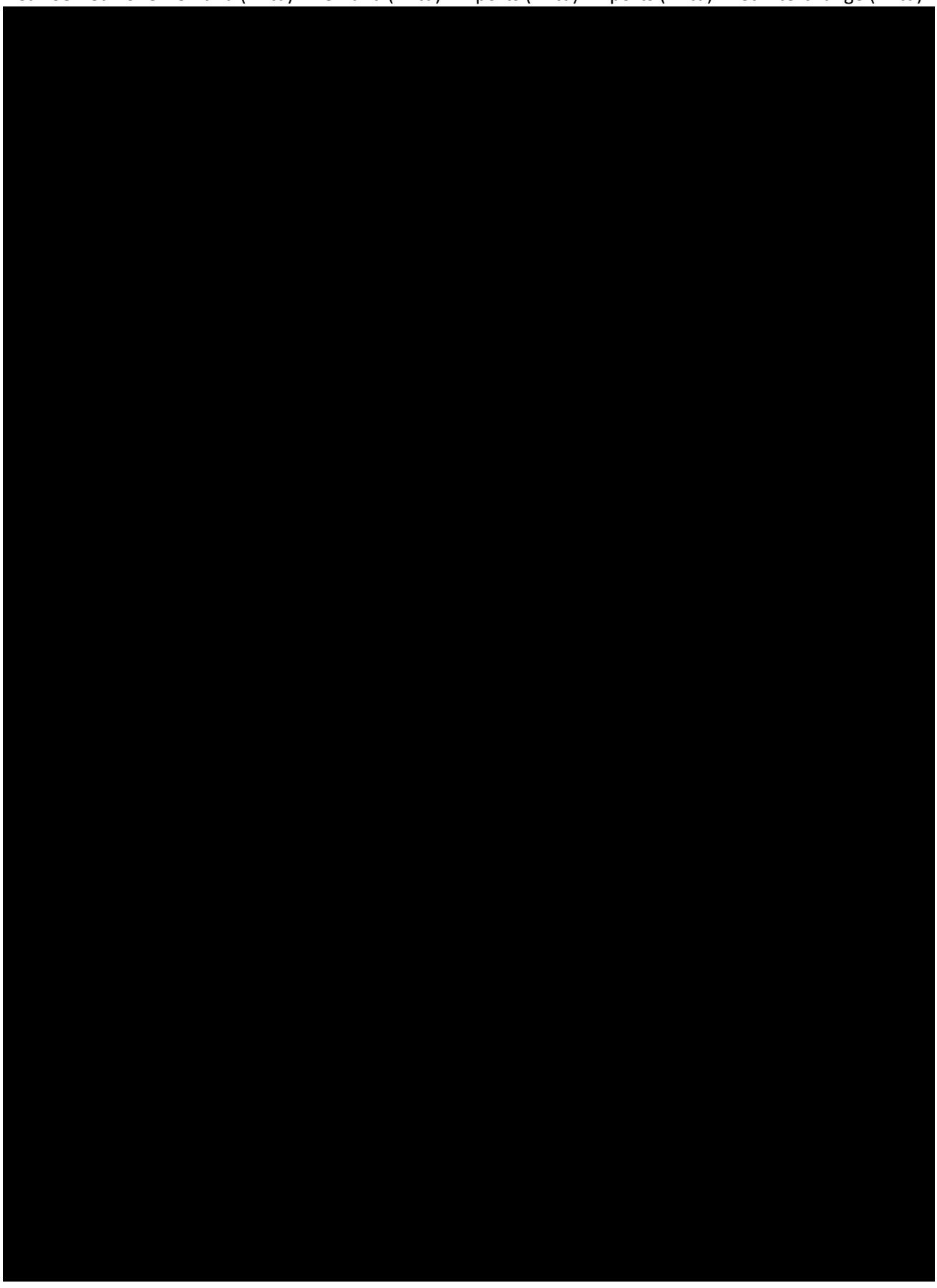
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





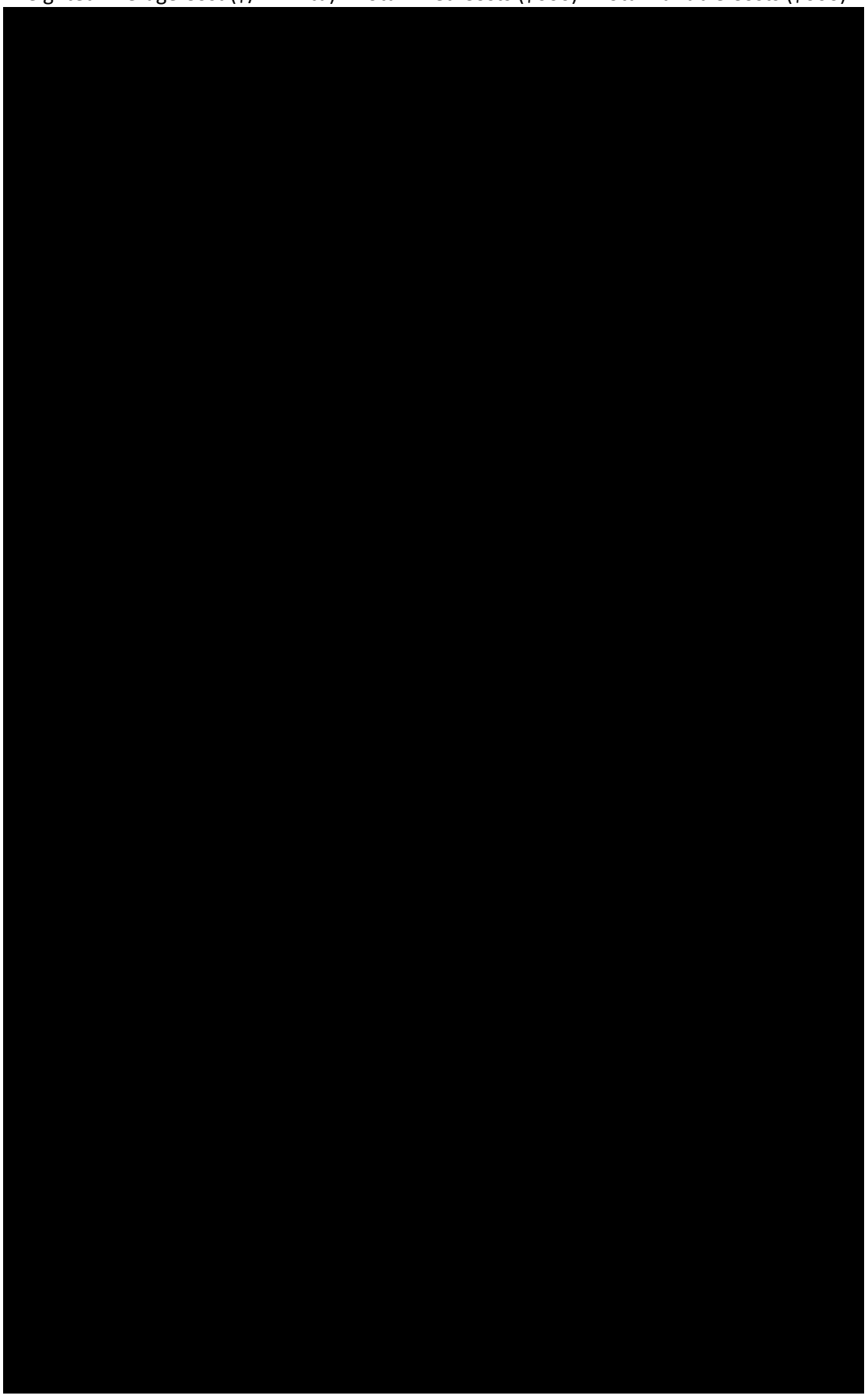
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

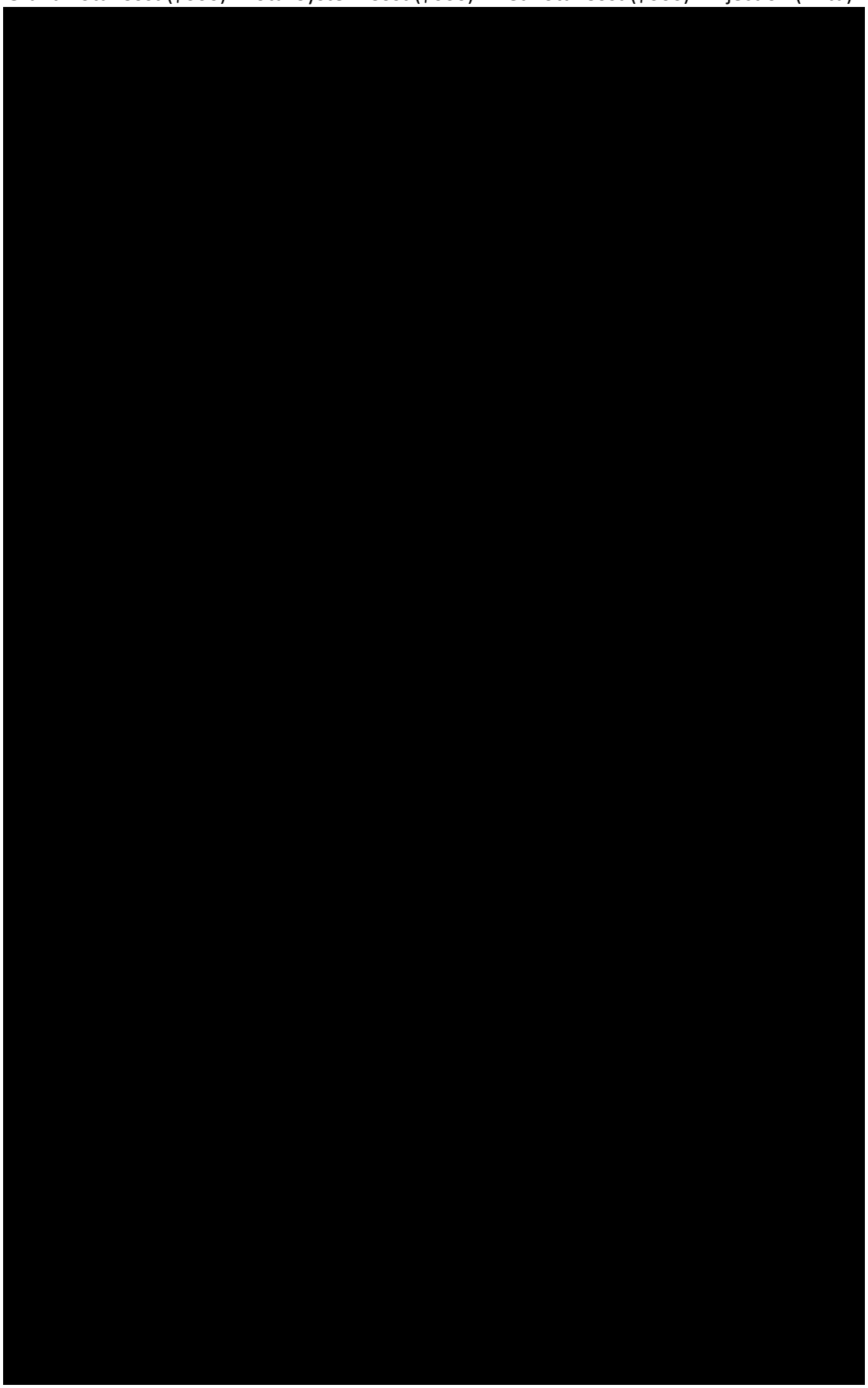


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

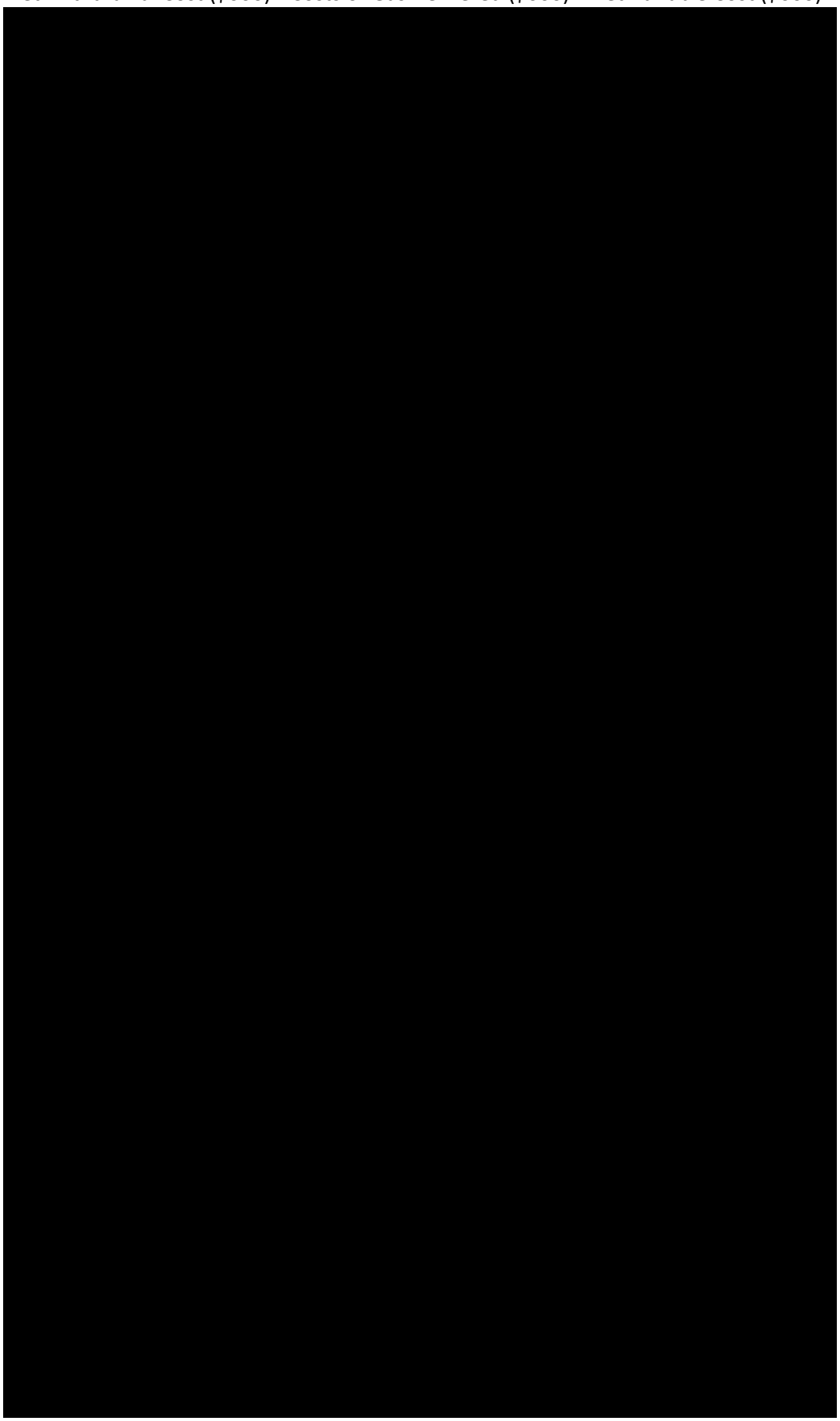




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

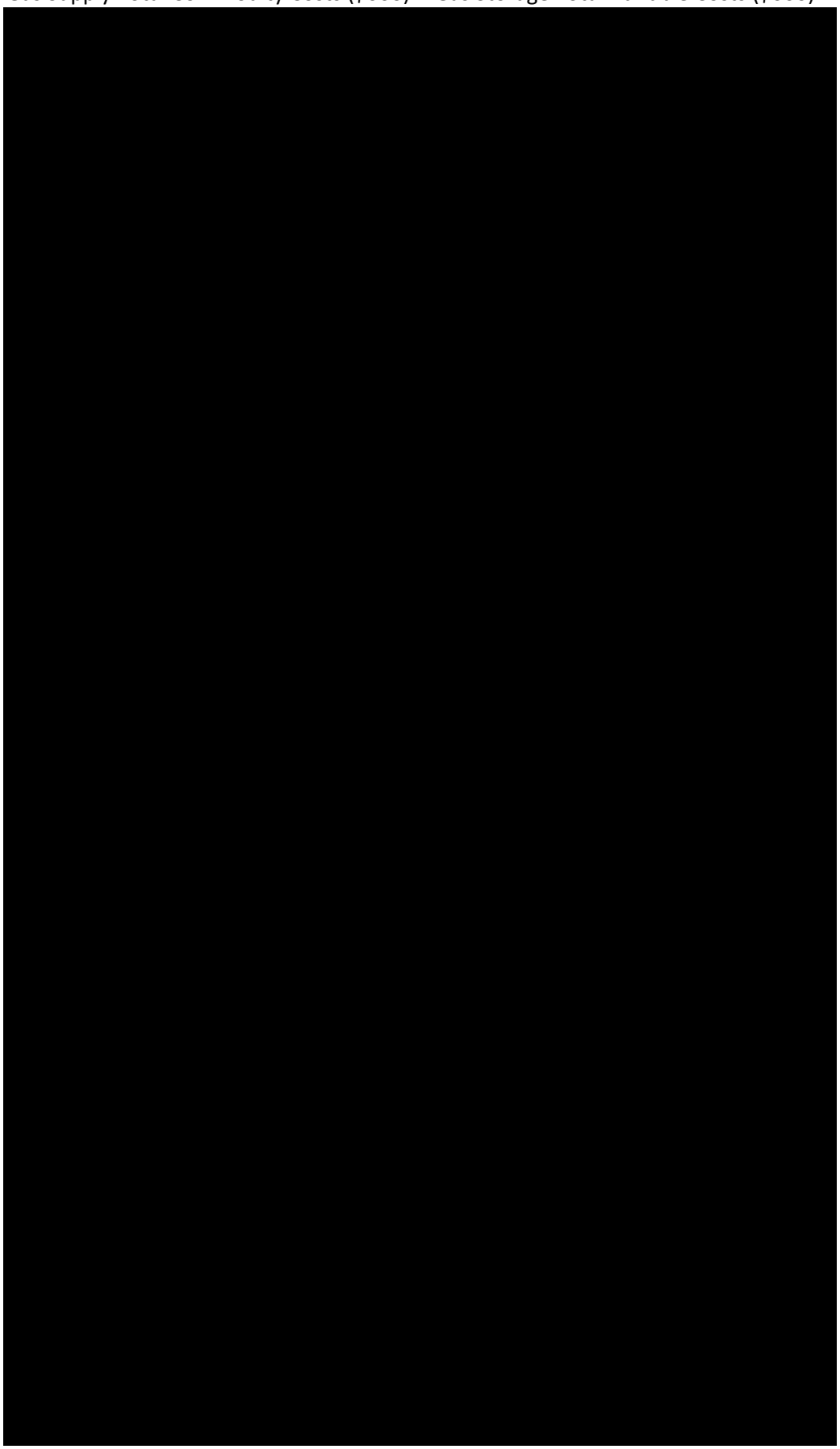




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

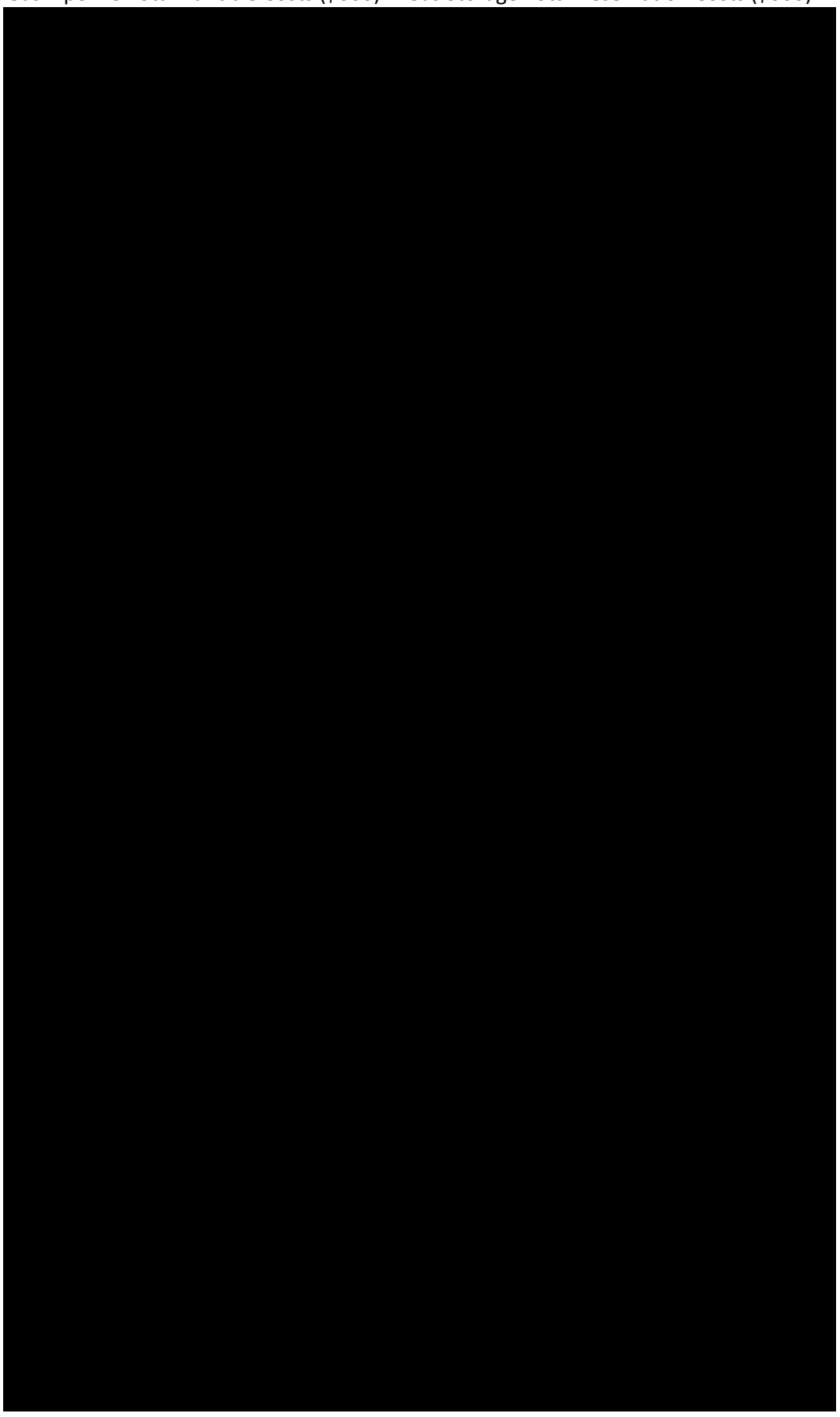


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



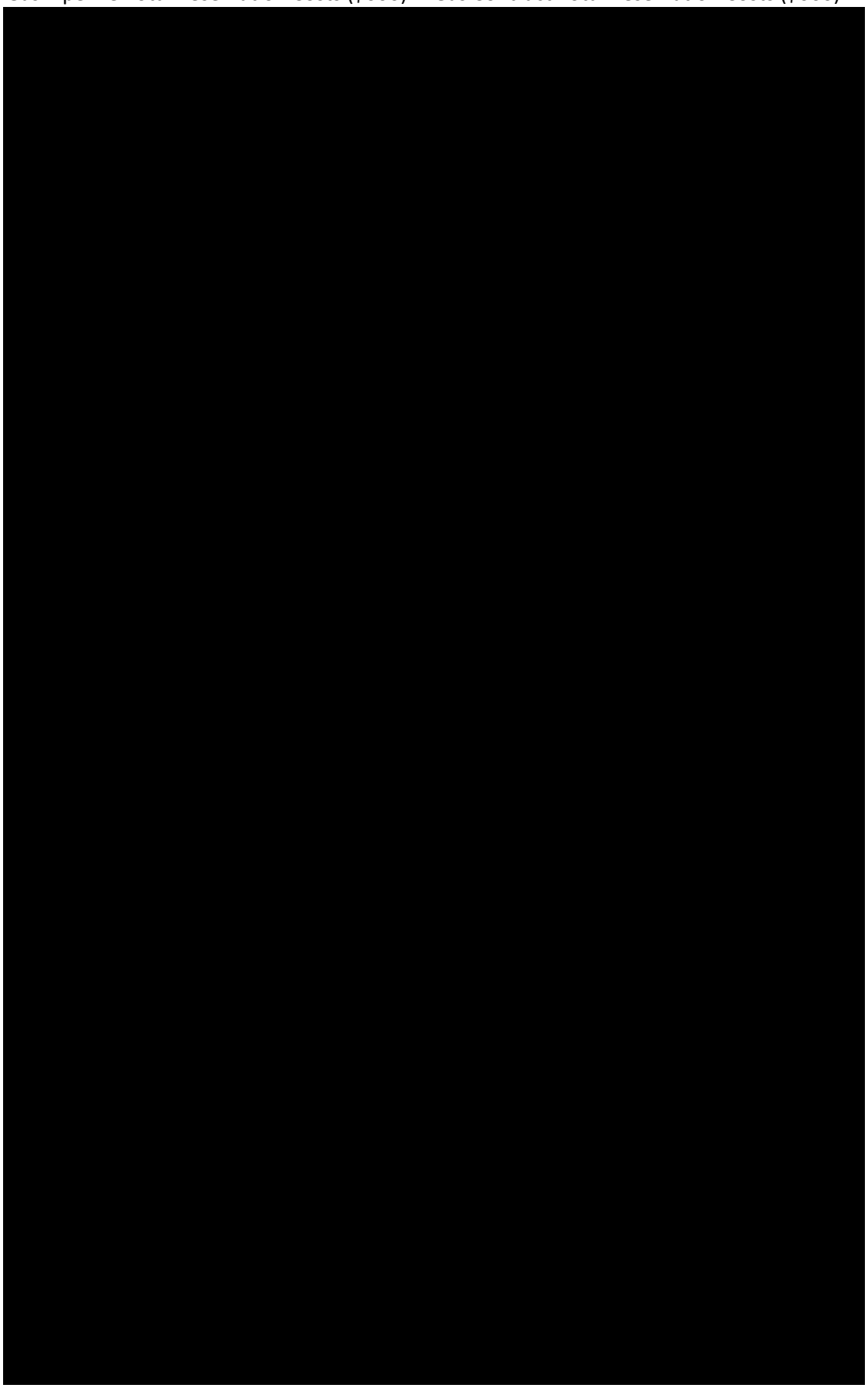


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



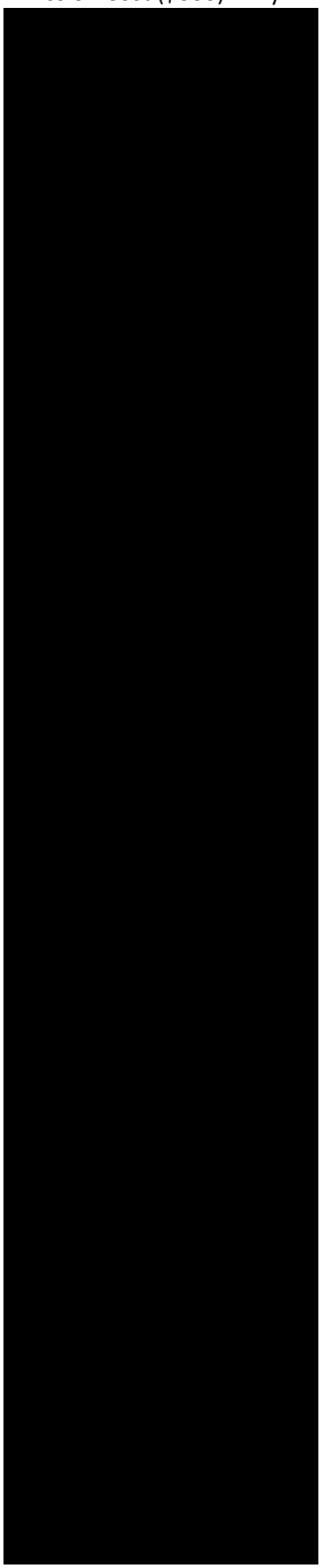


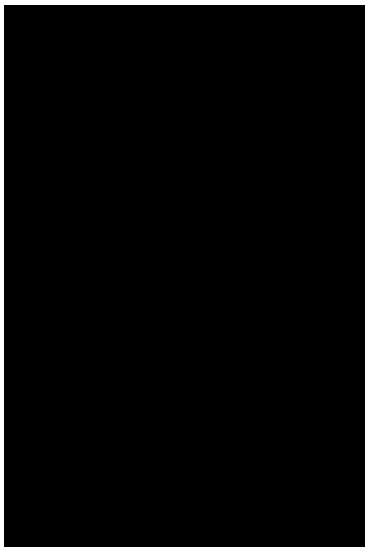
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



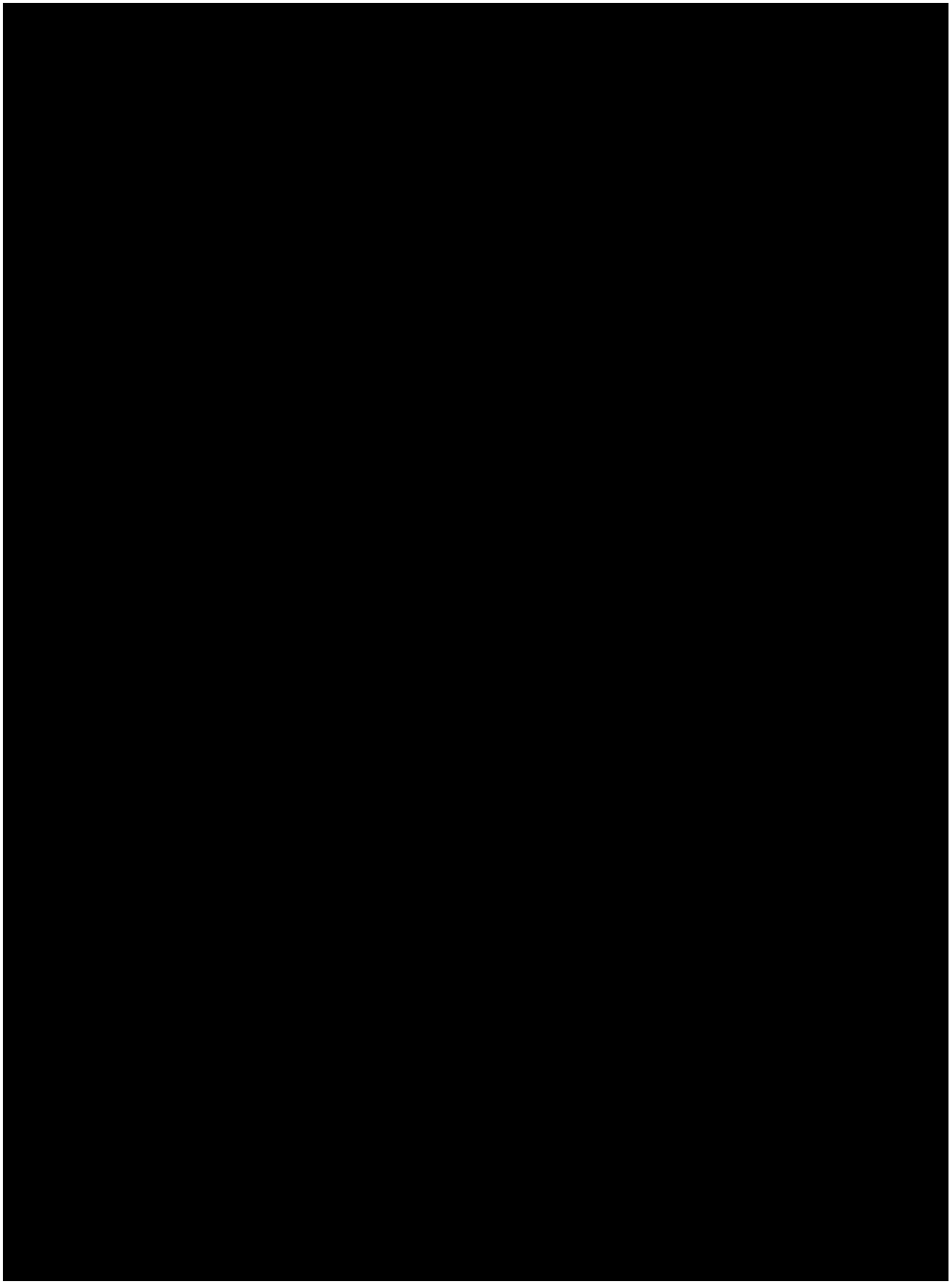


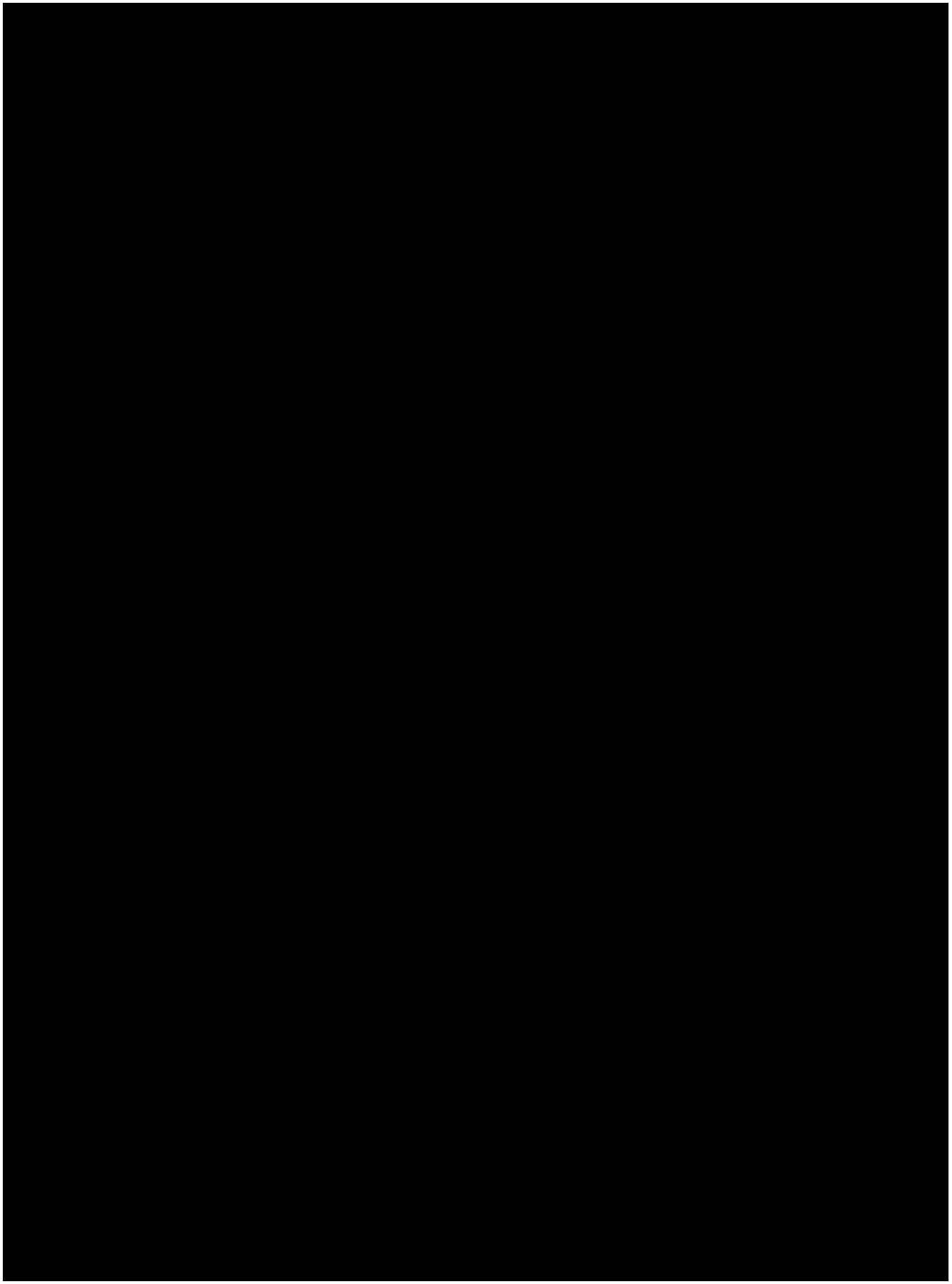
Emission Cost ($000) x y z

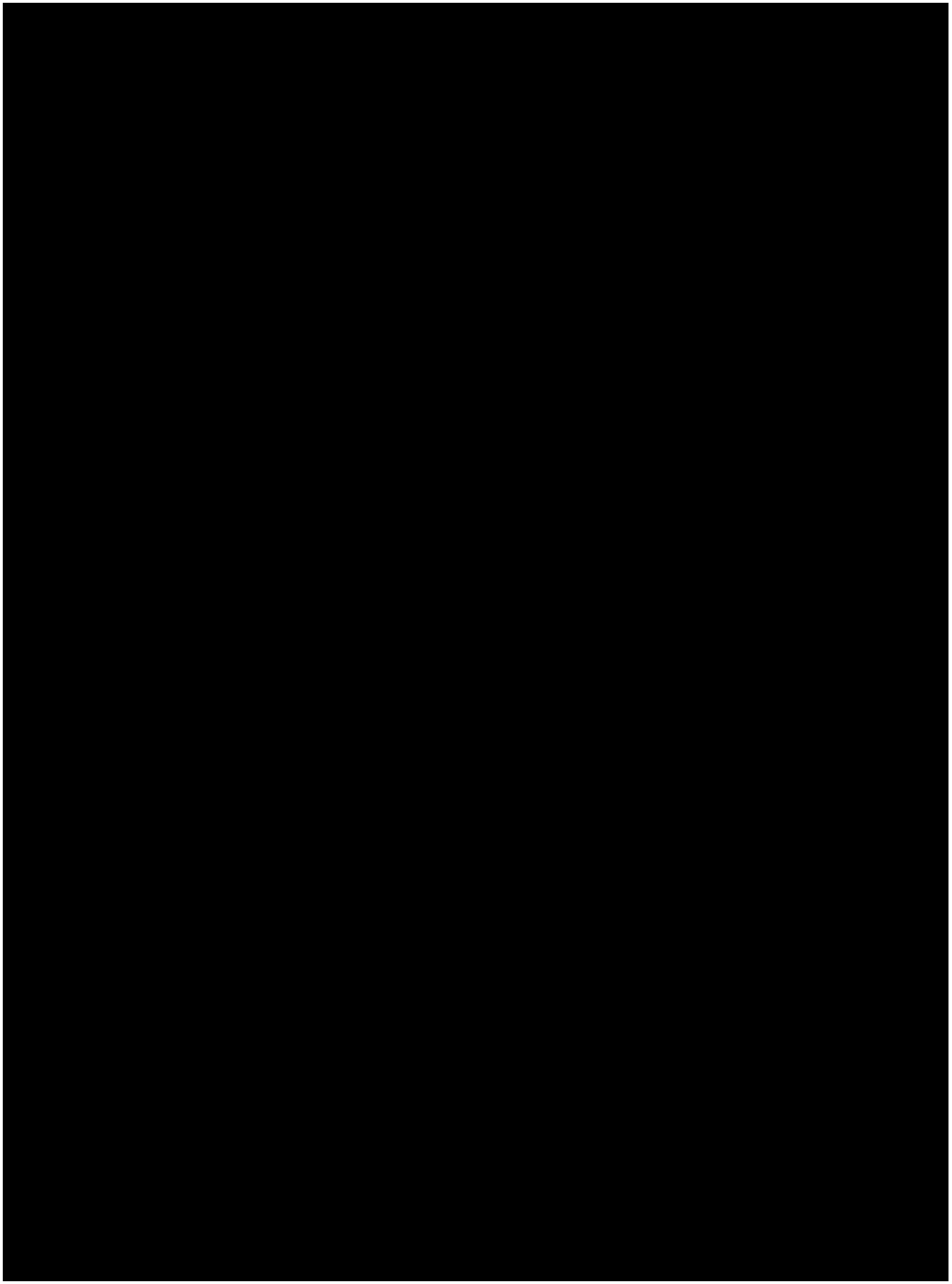


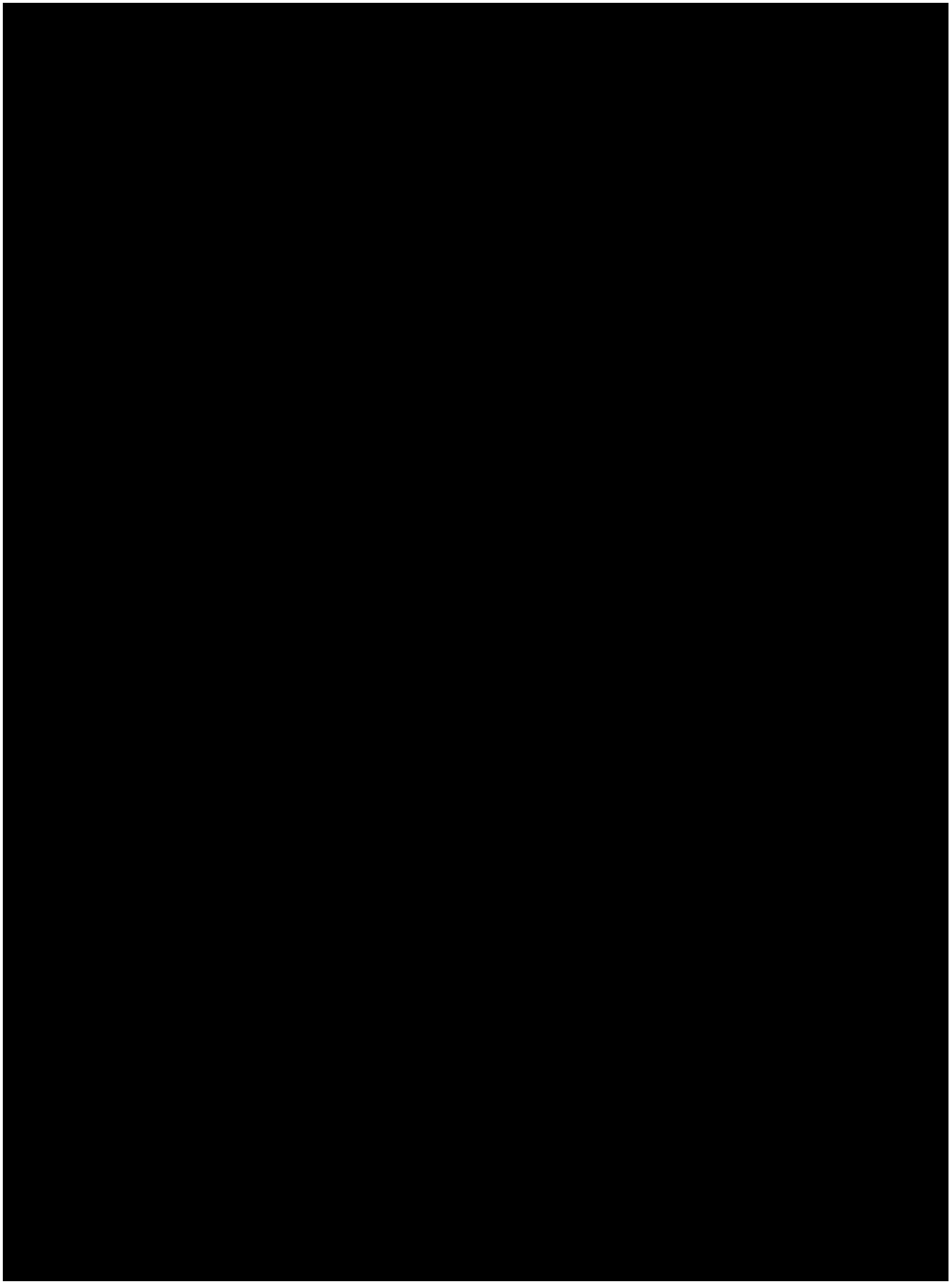


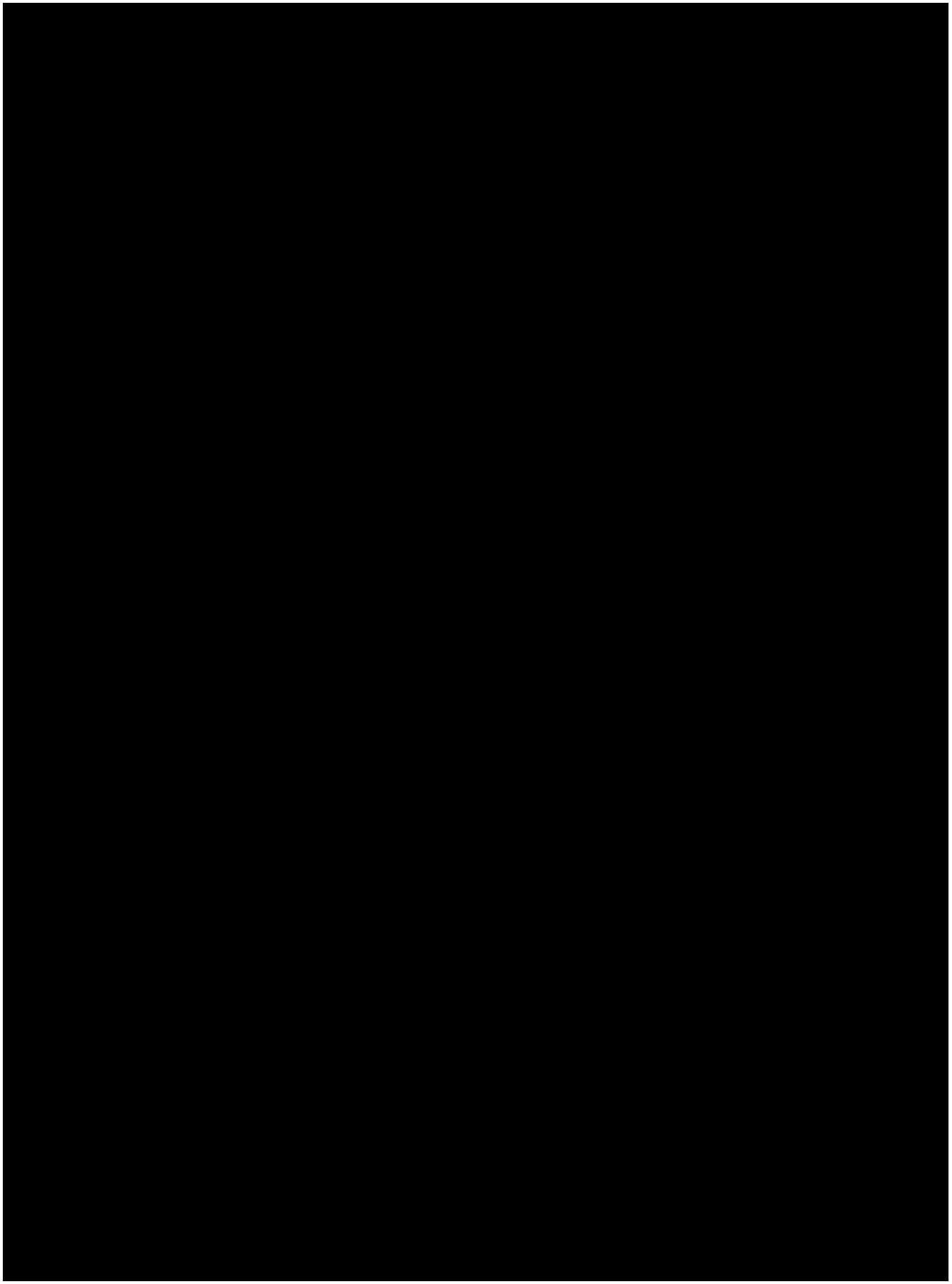
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

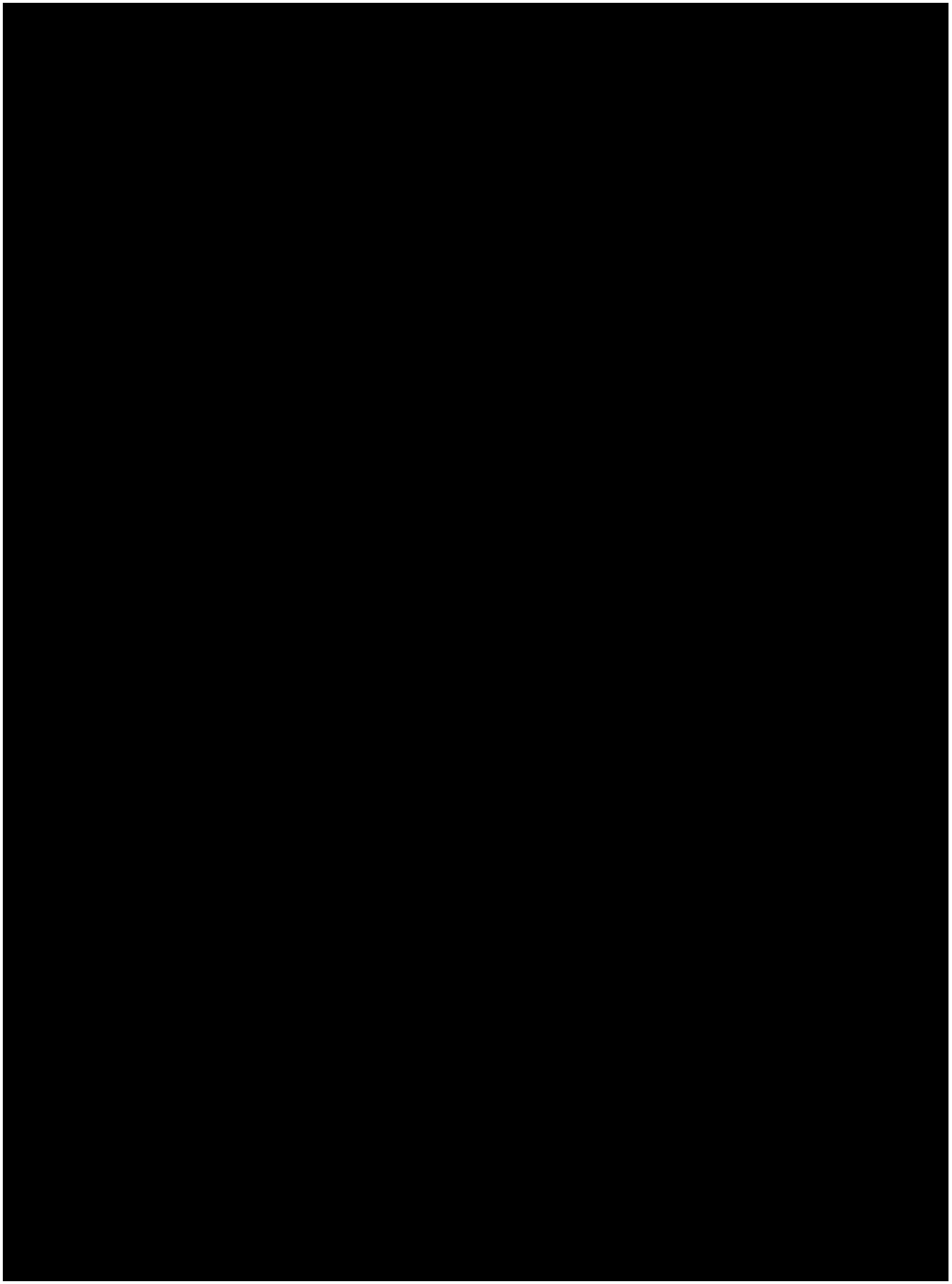


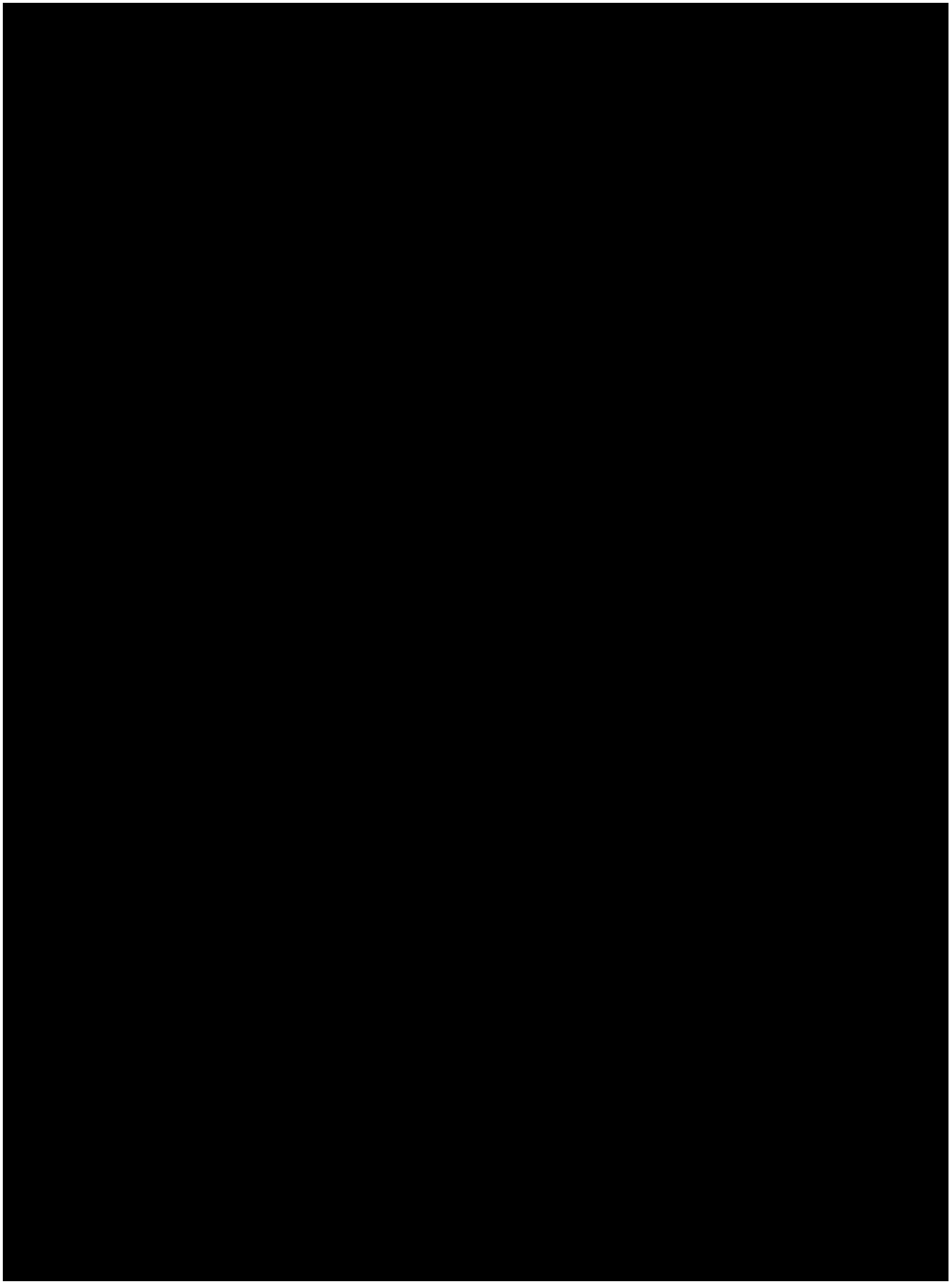


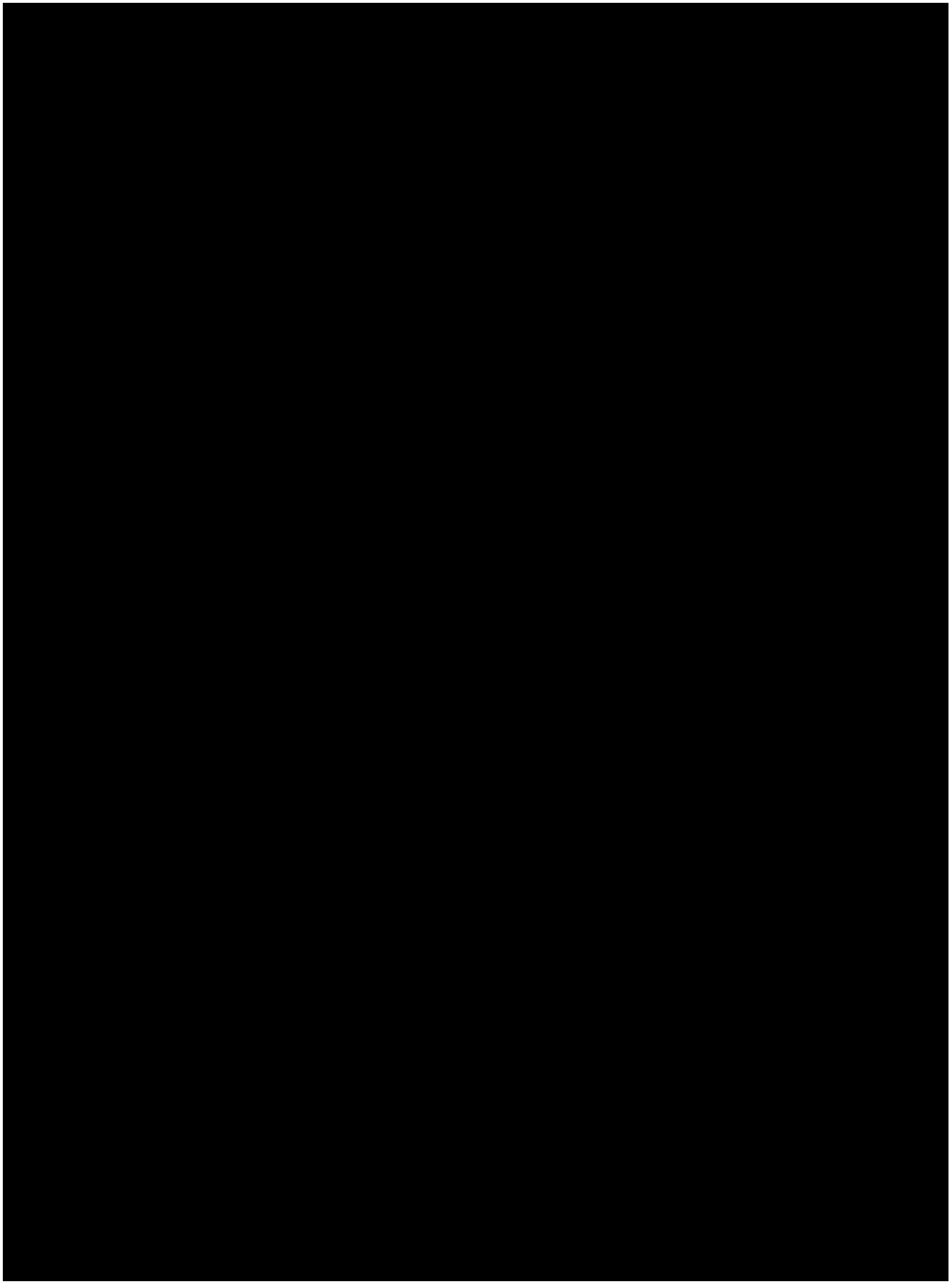


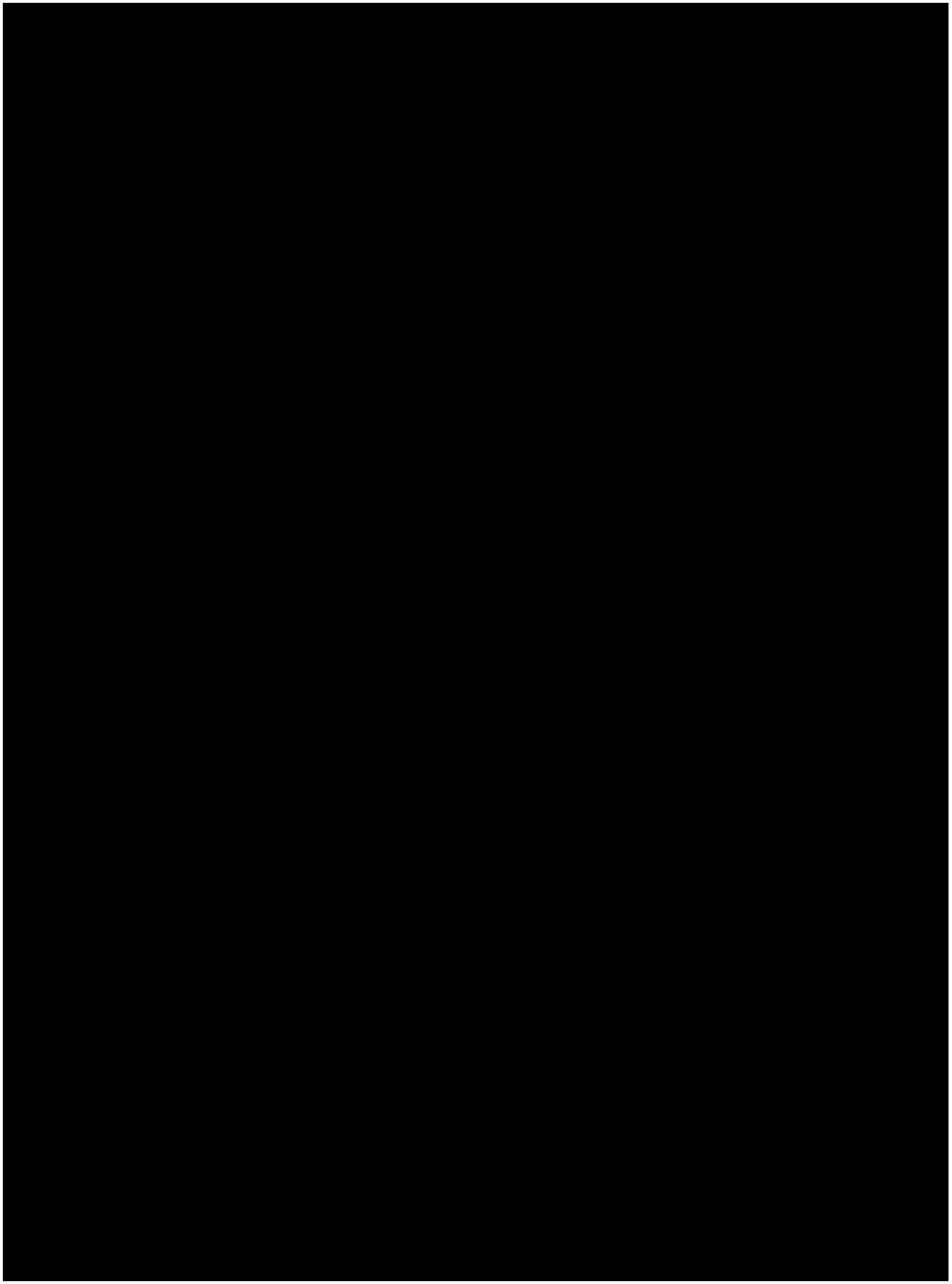


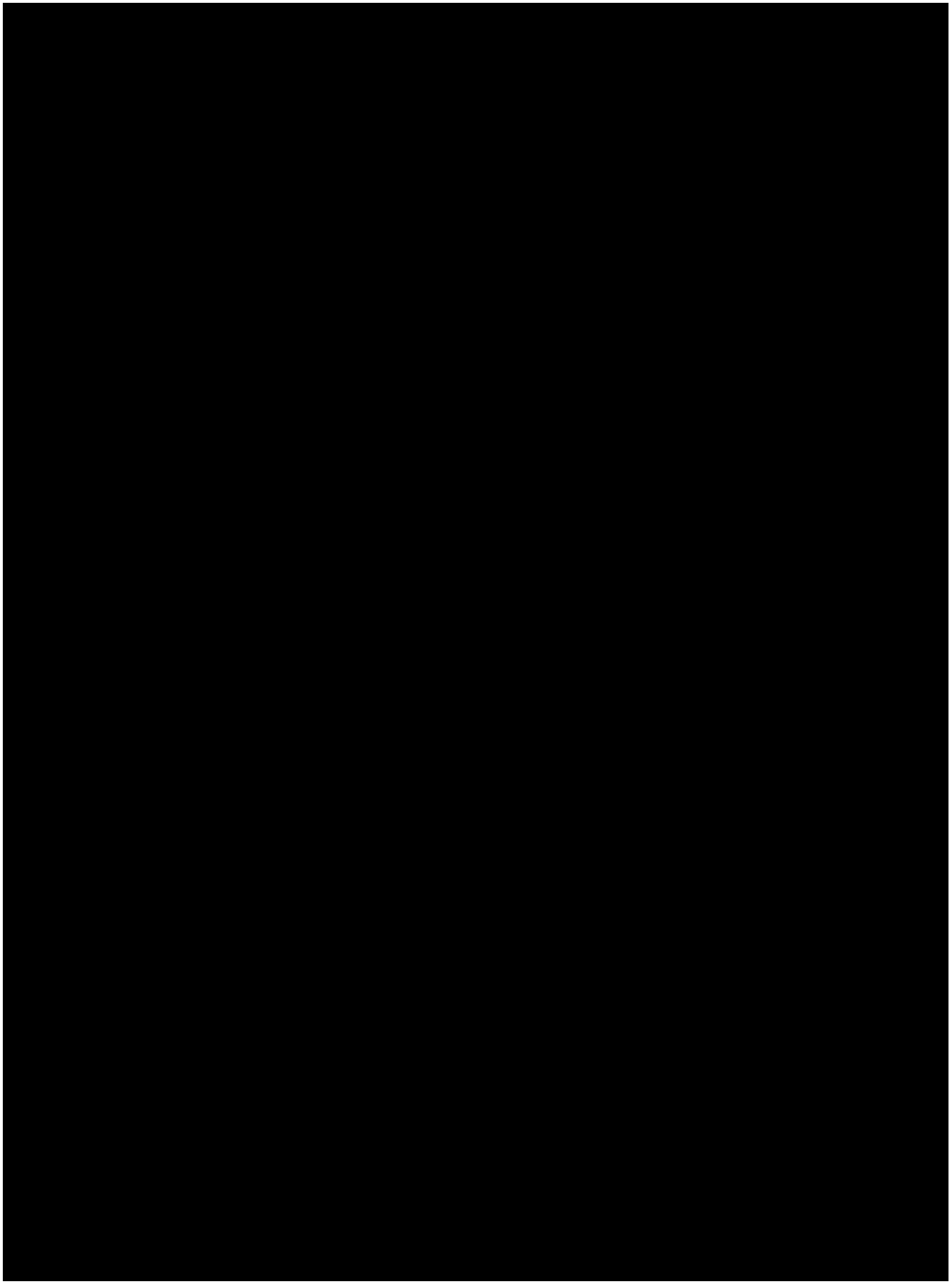


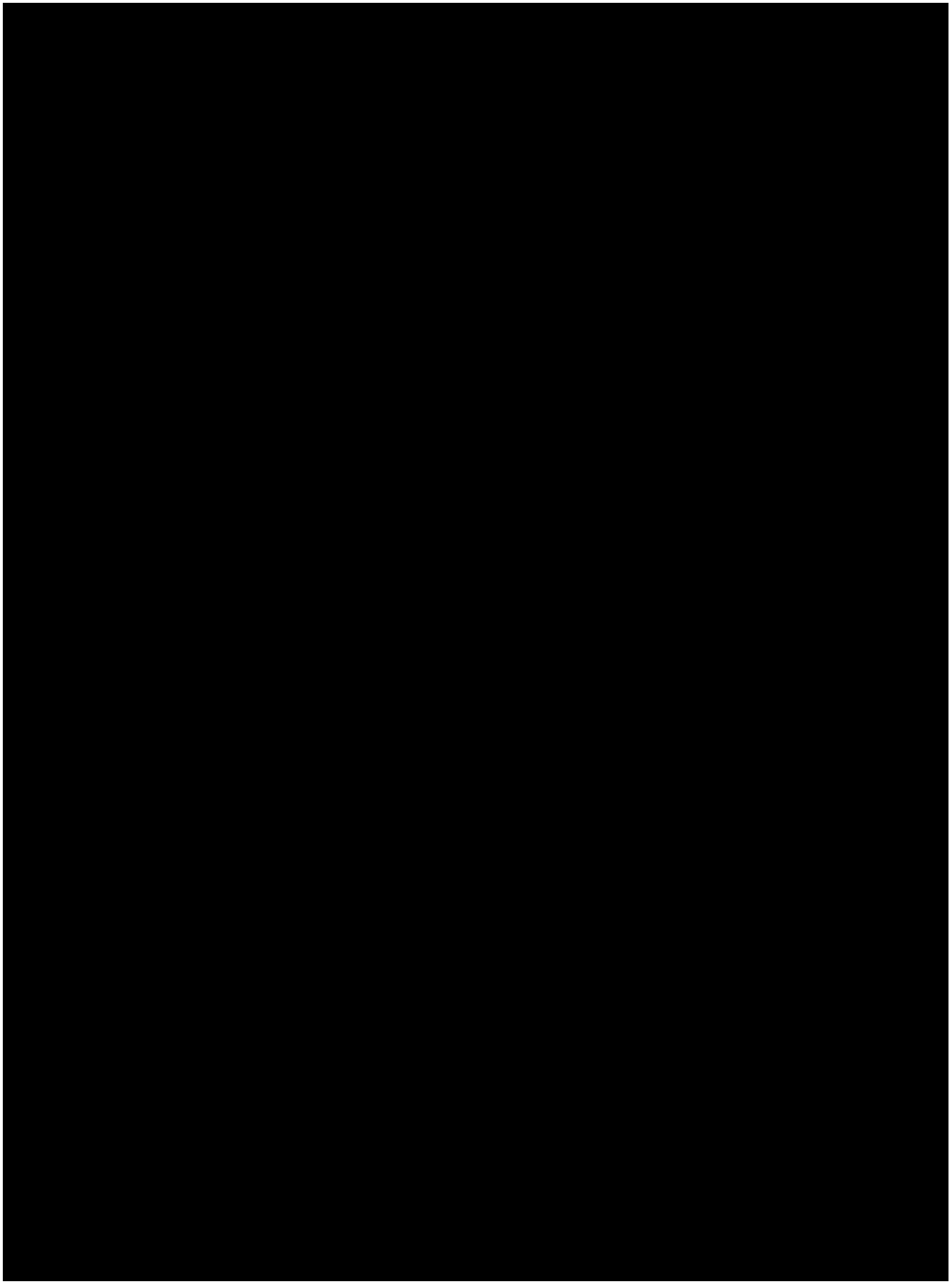


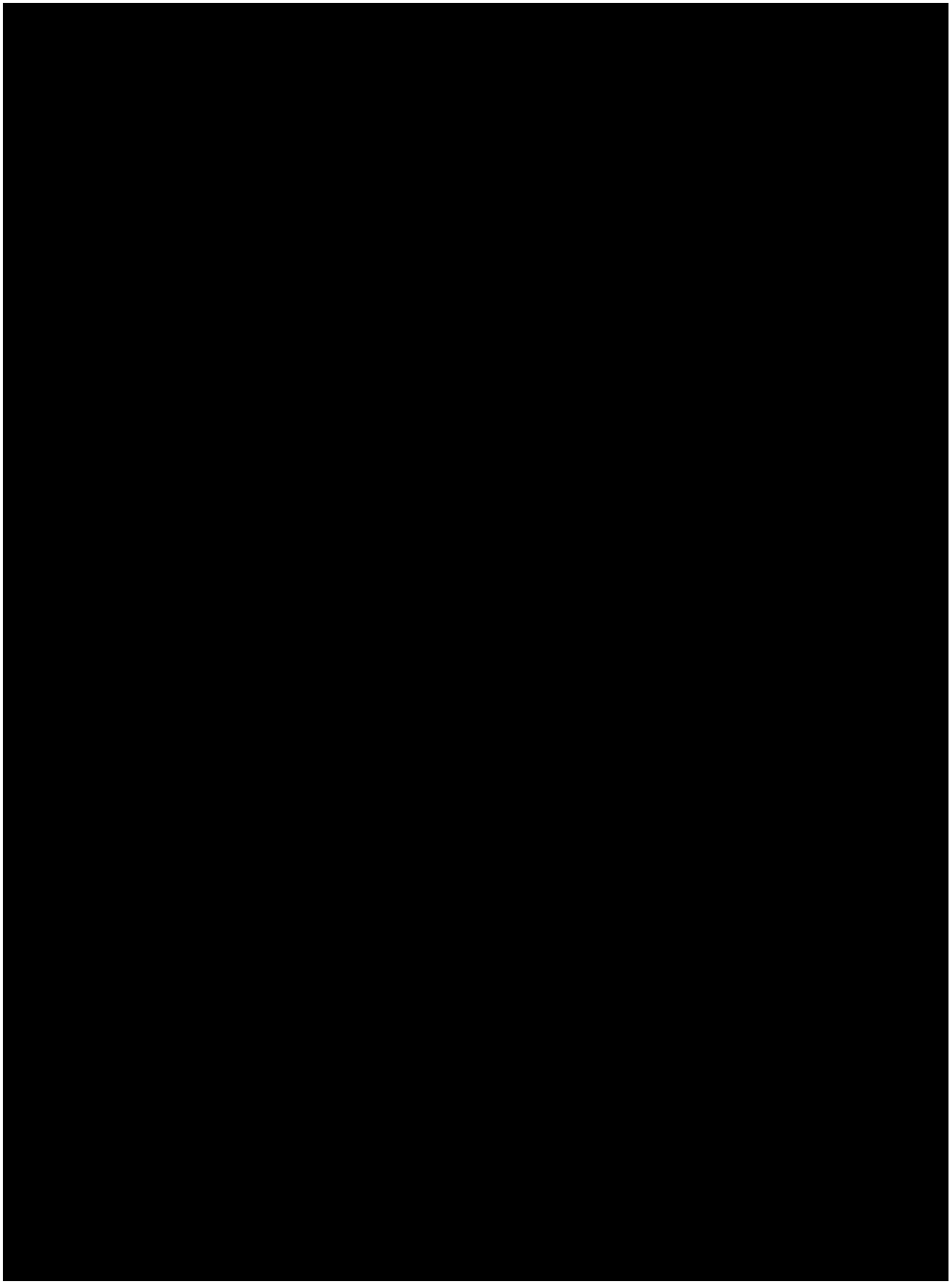


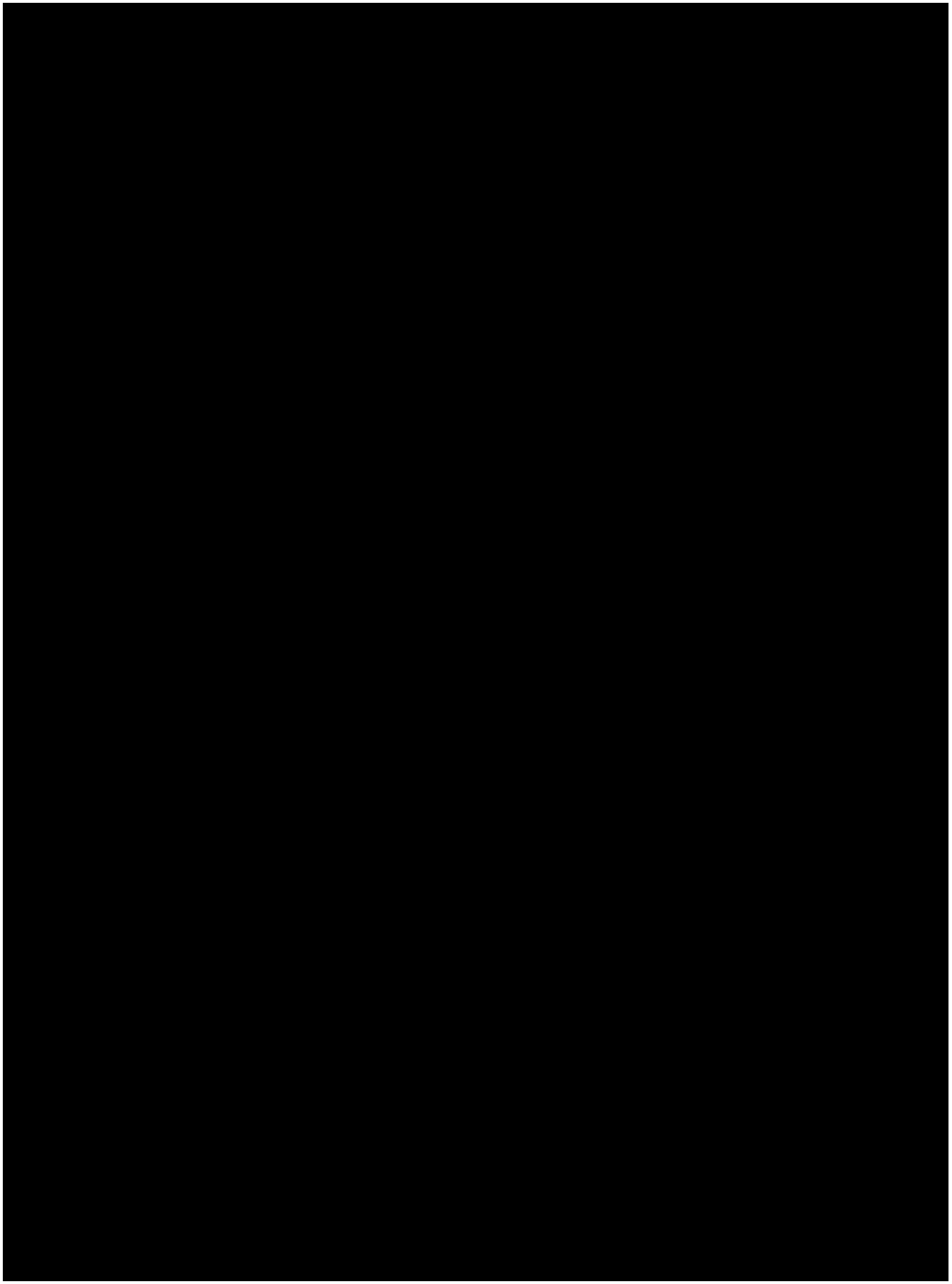


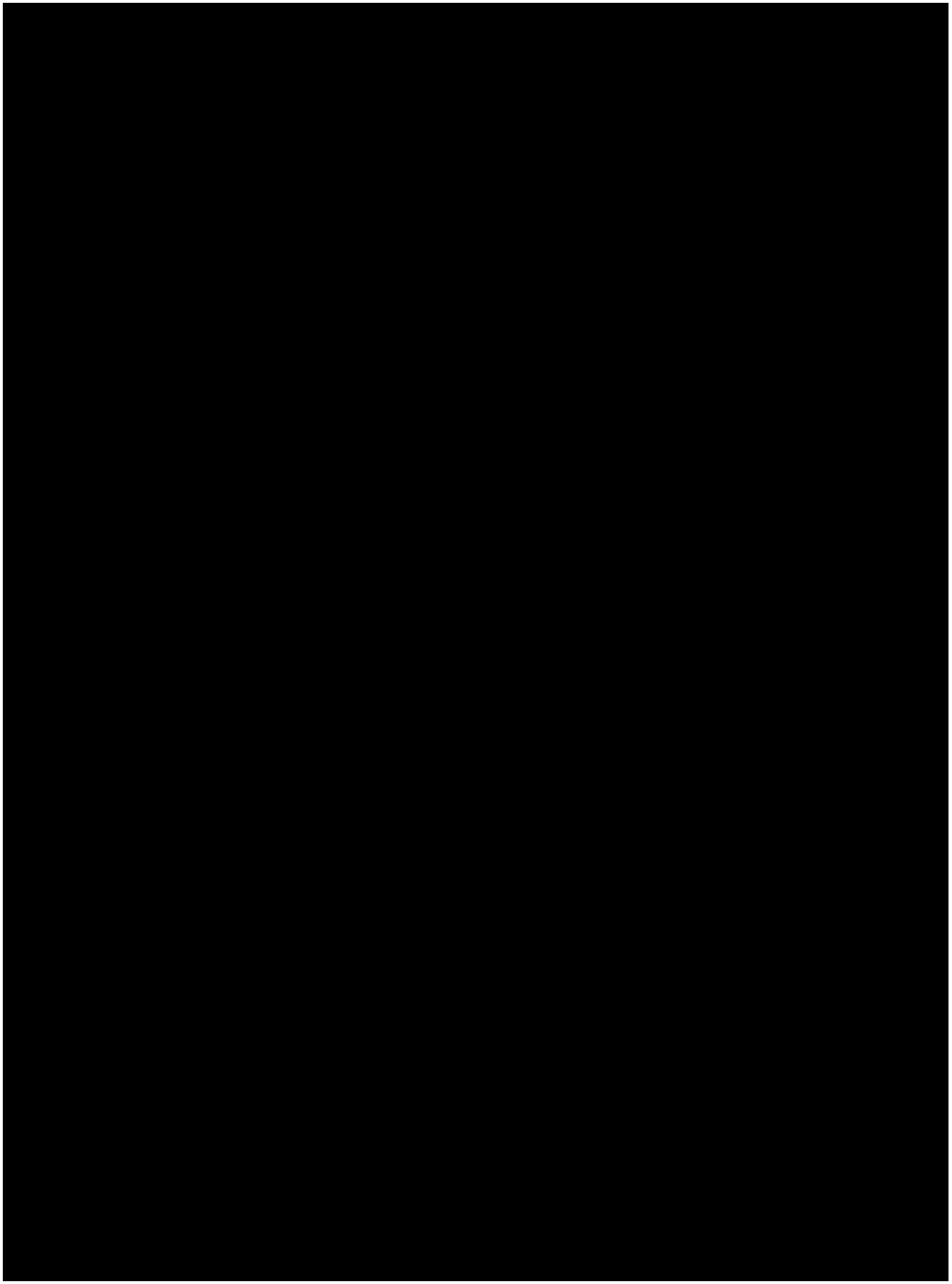


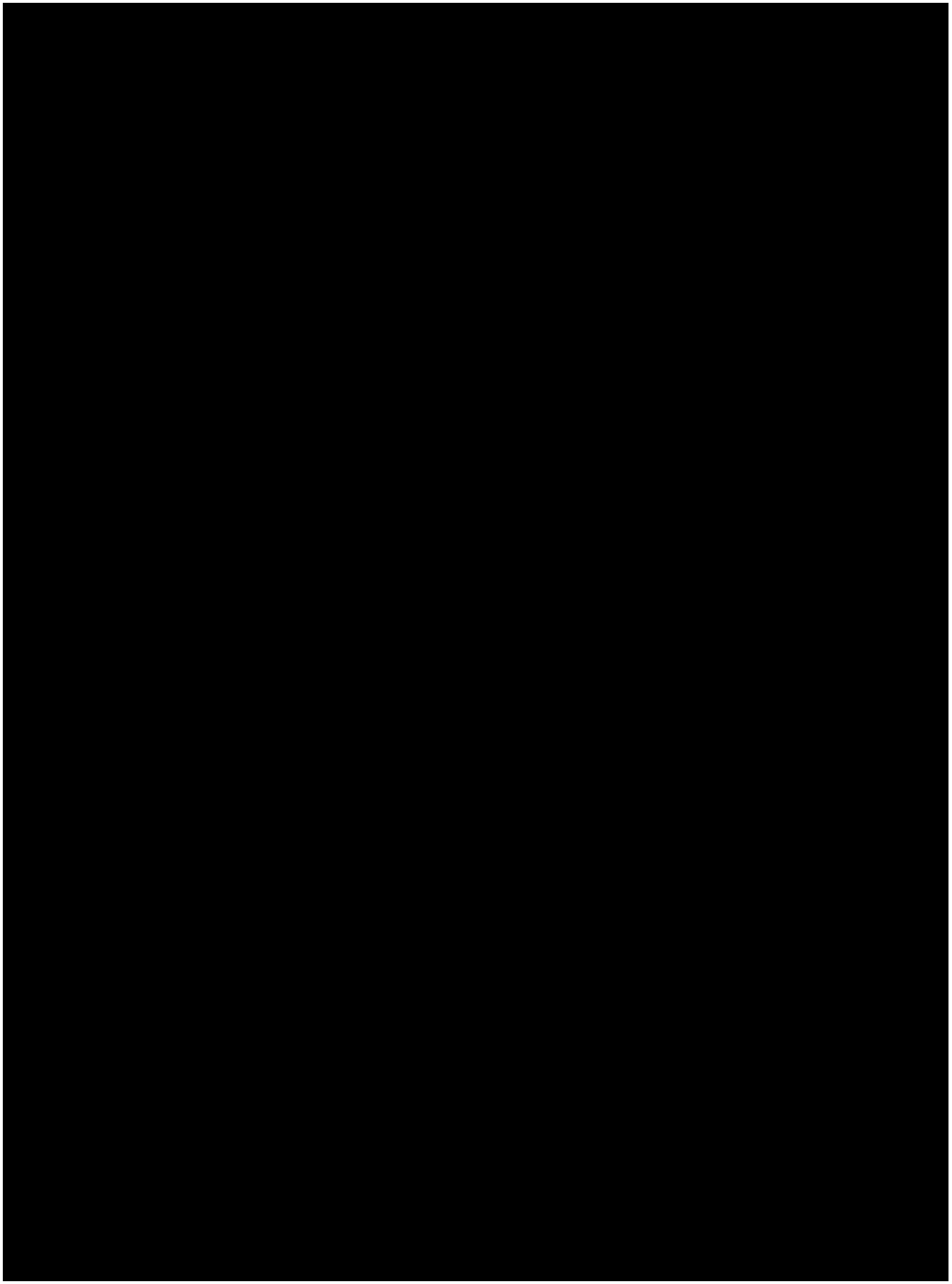


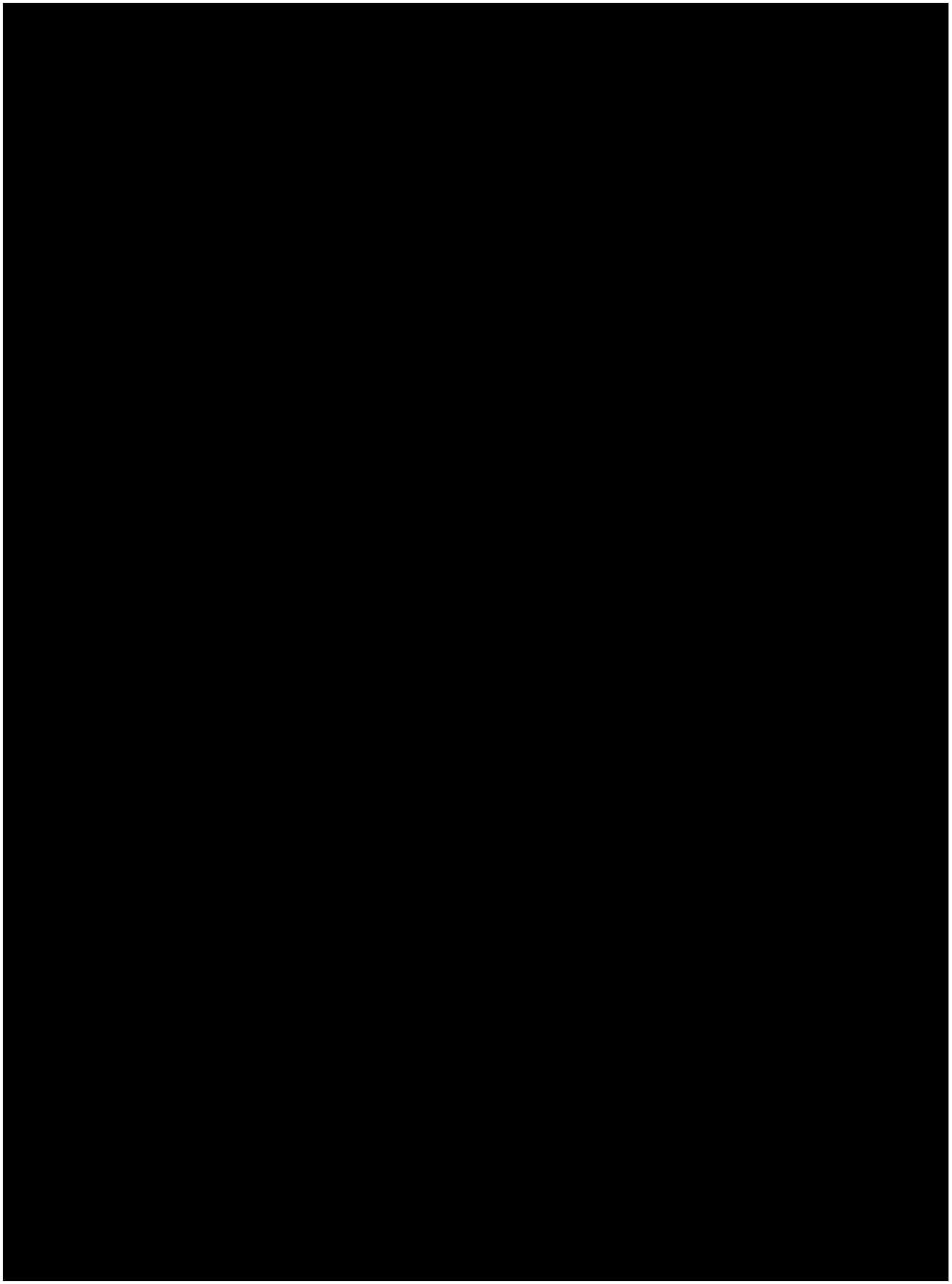


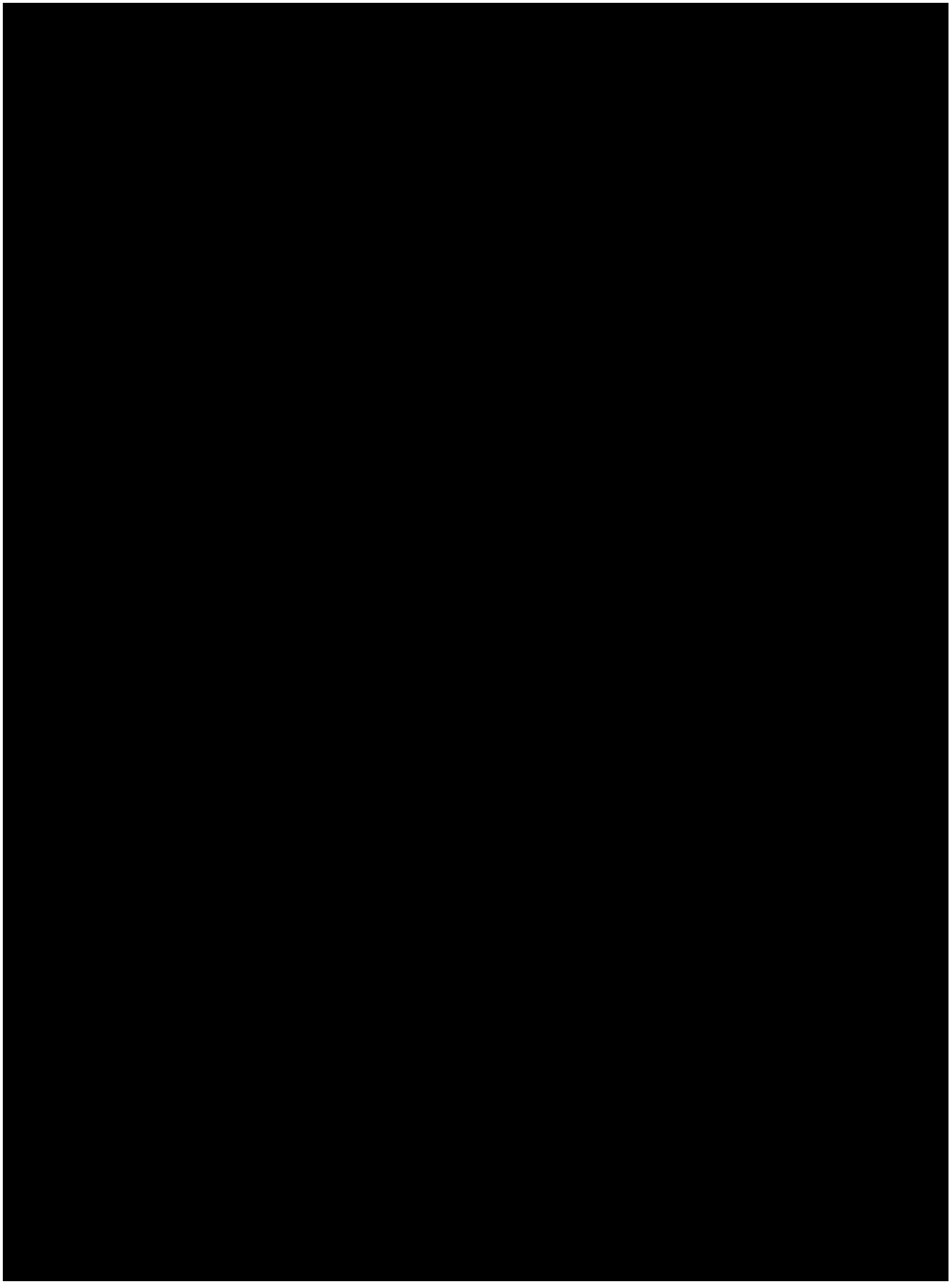


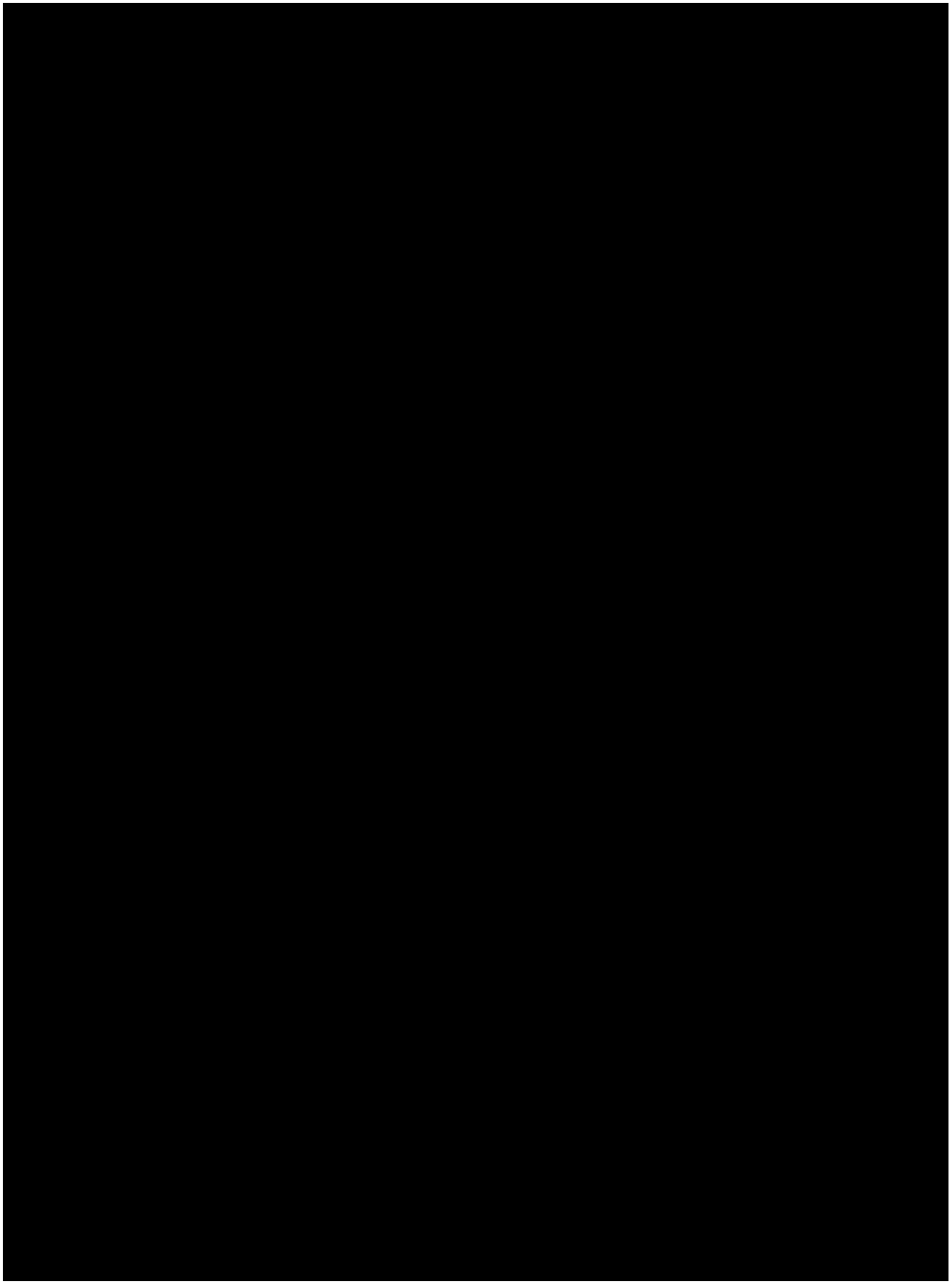




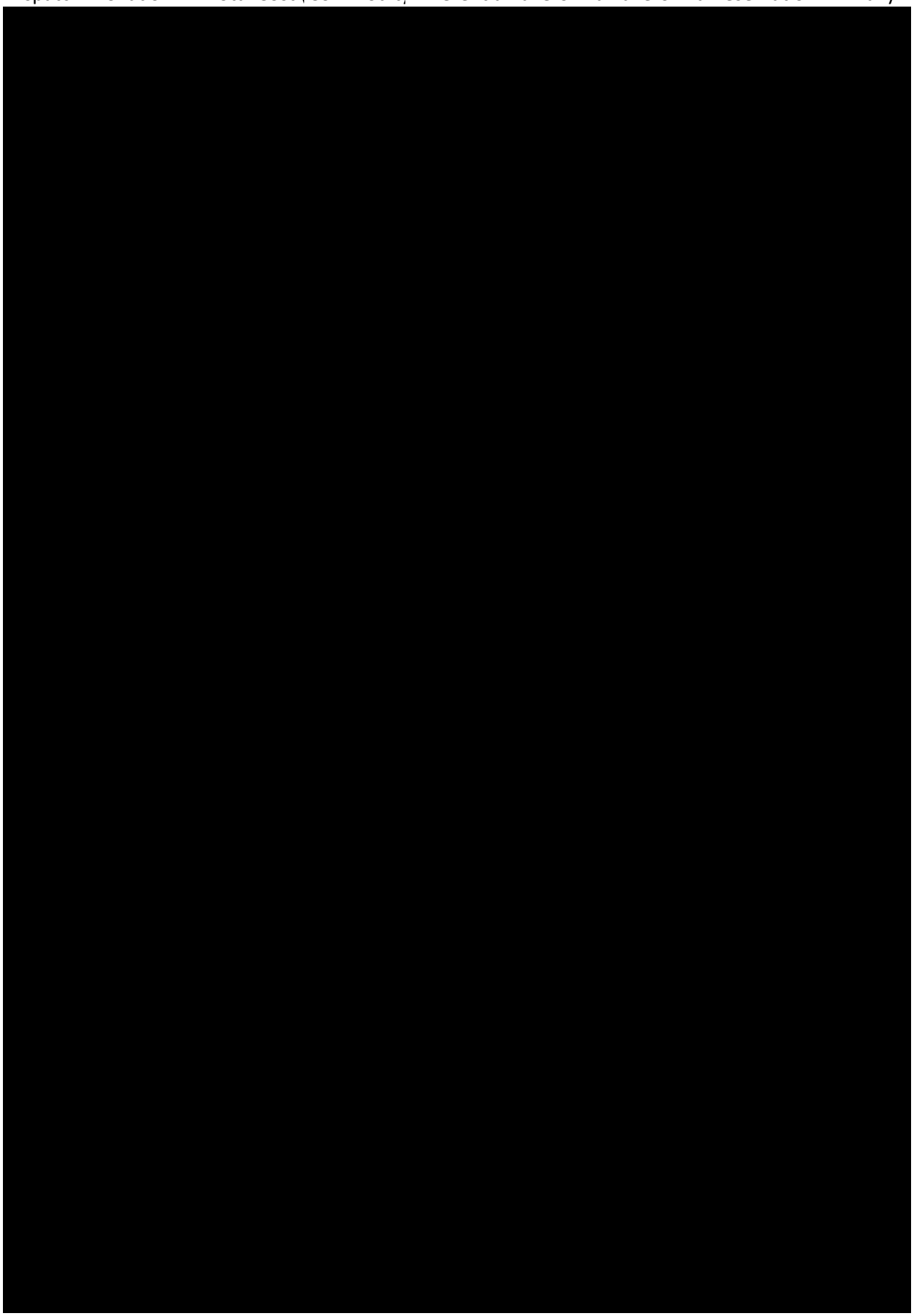


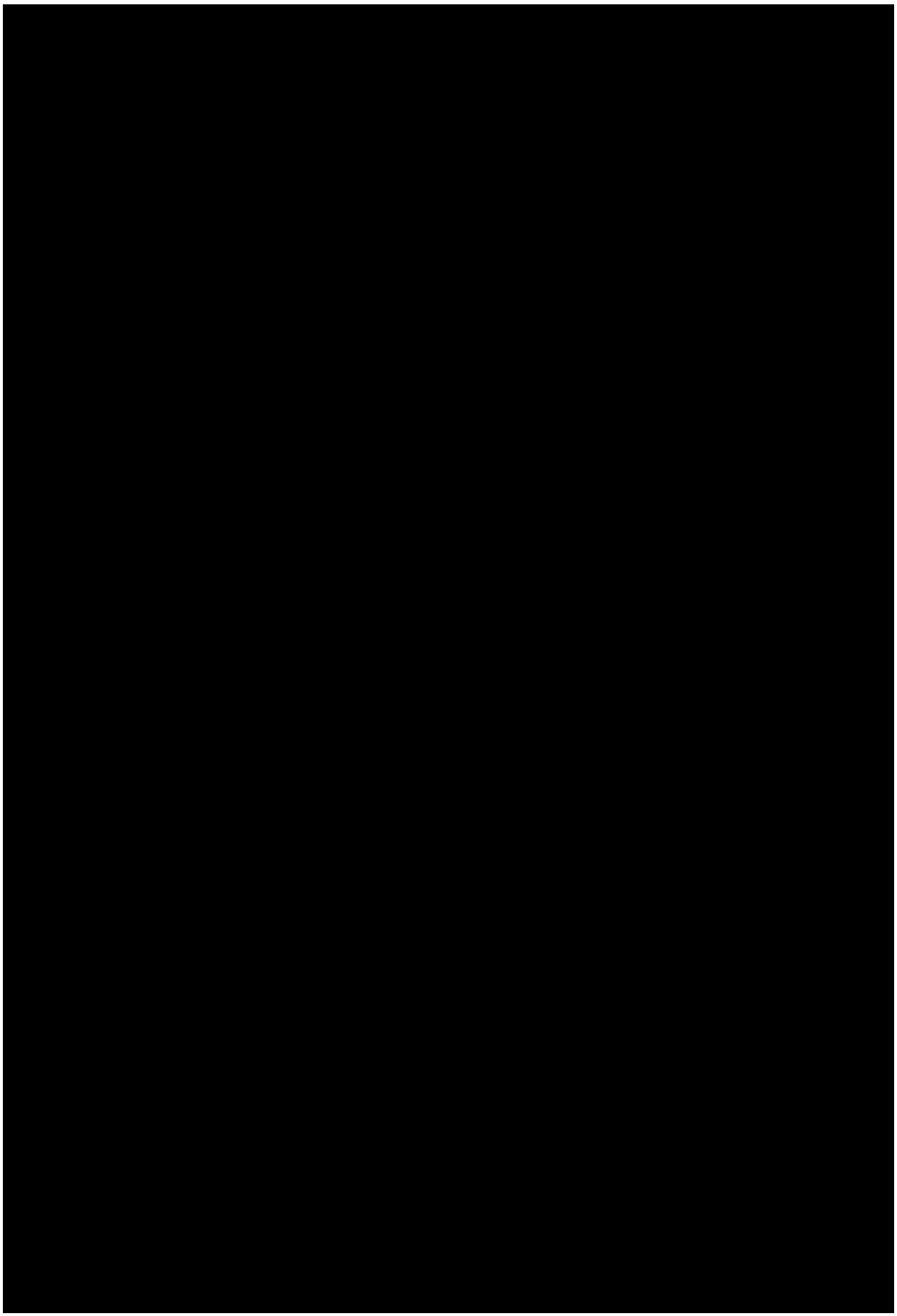


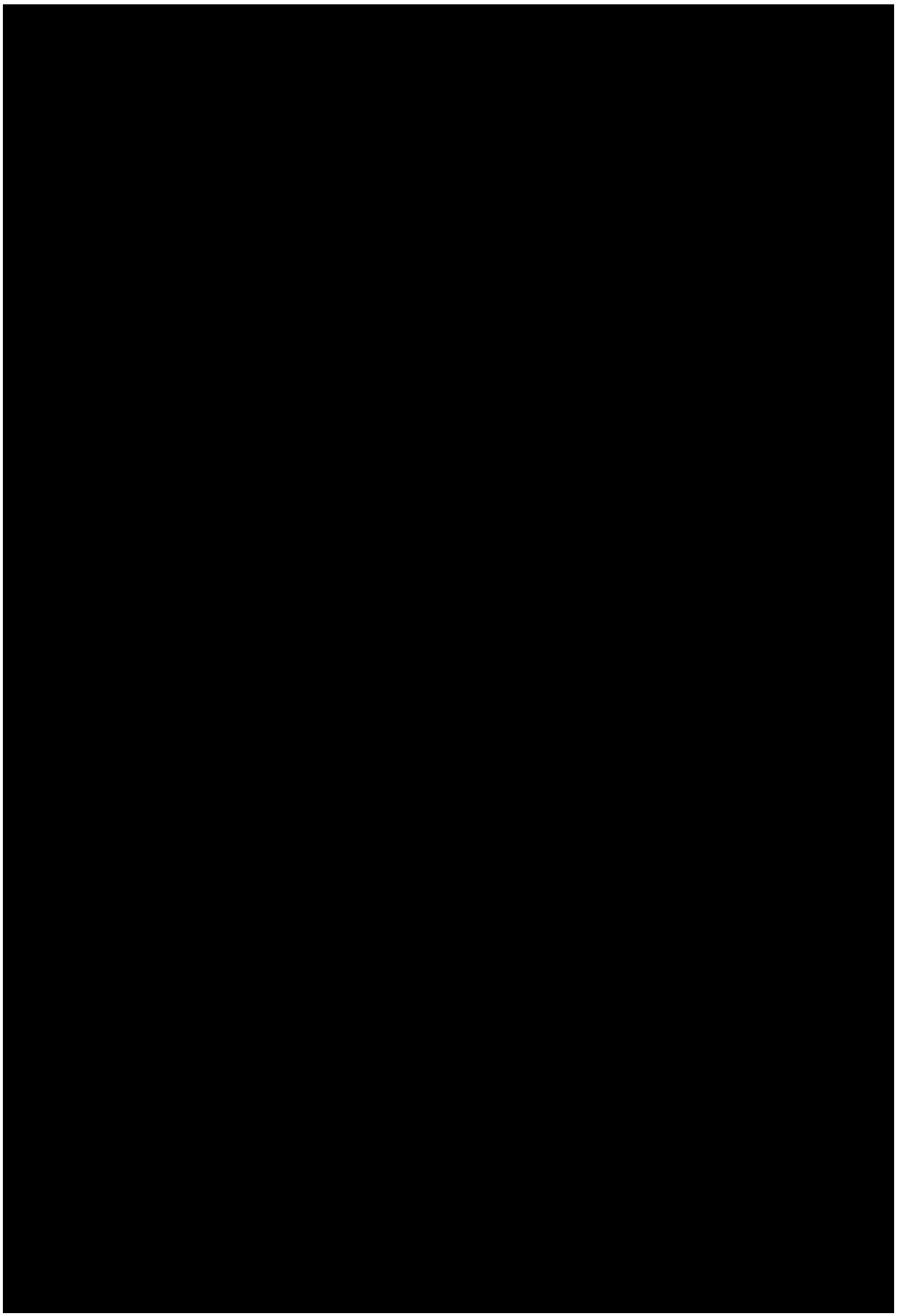


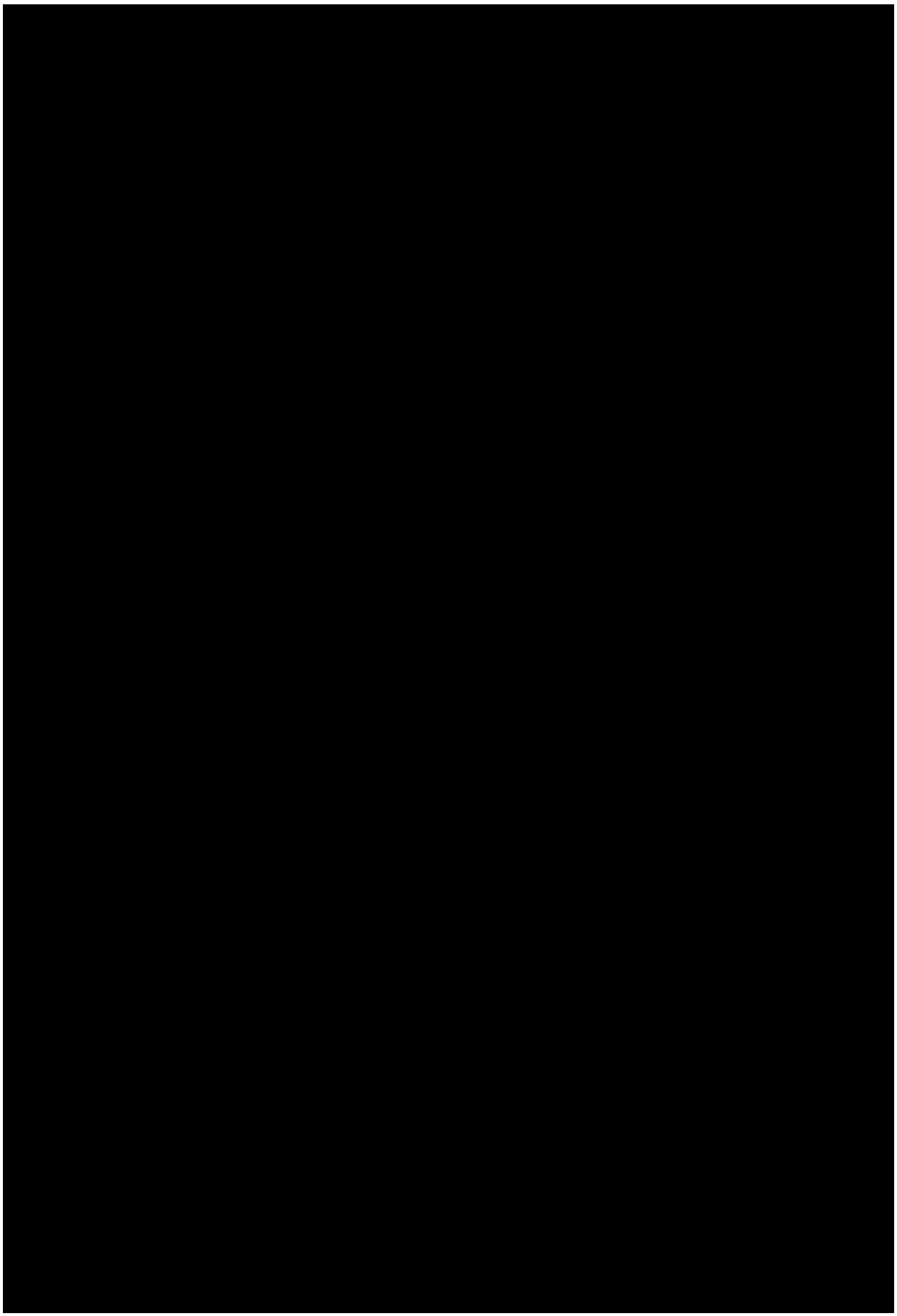


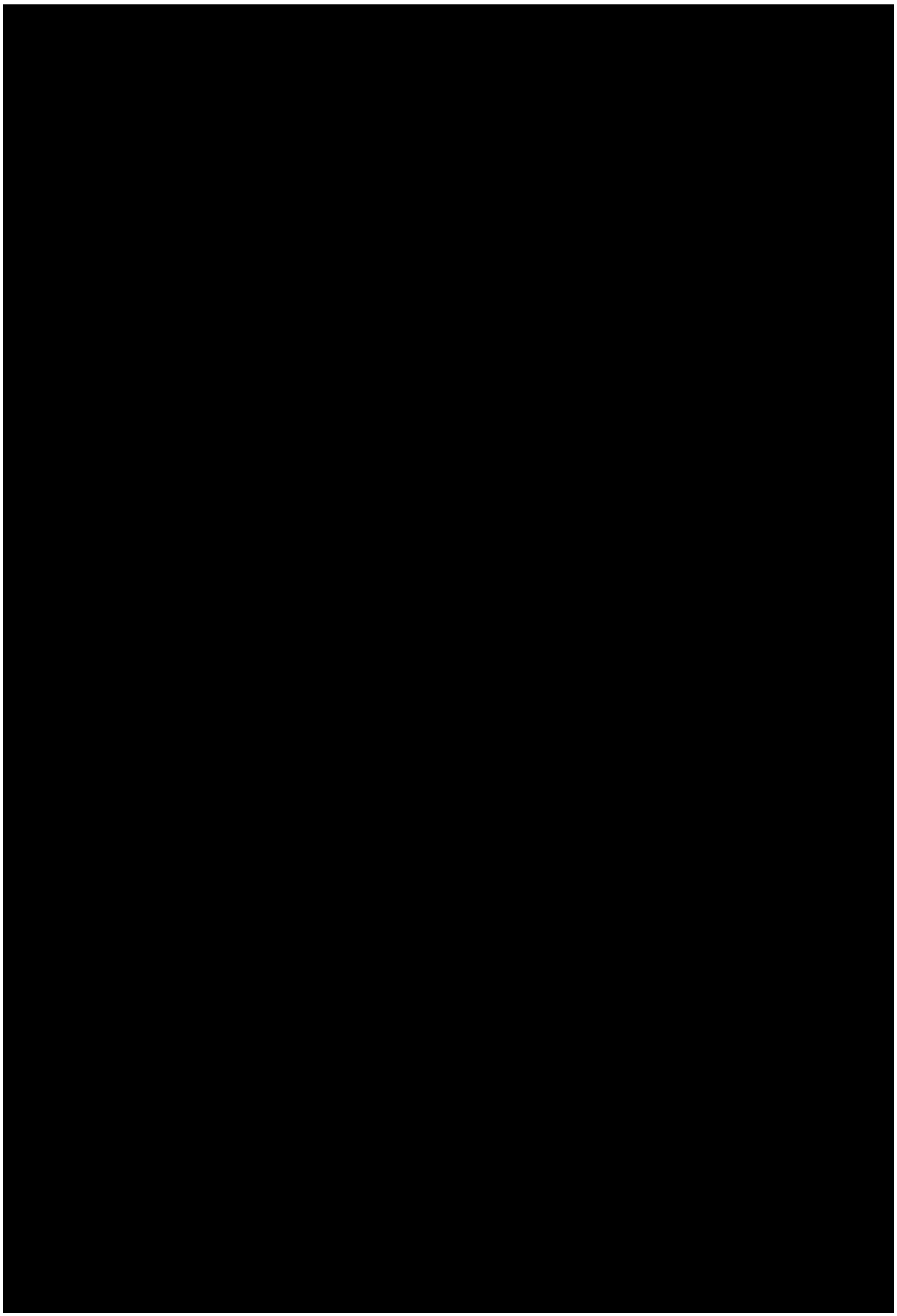


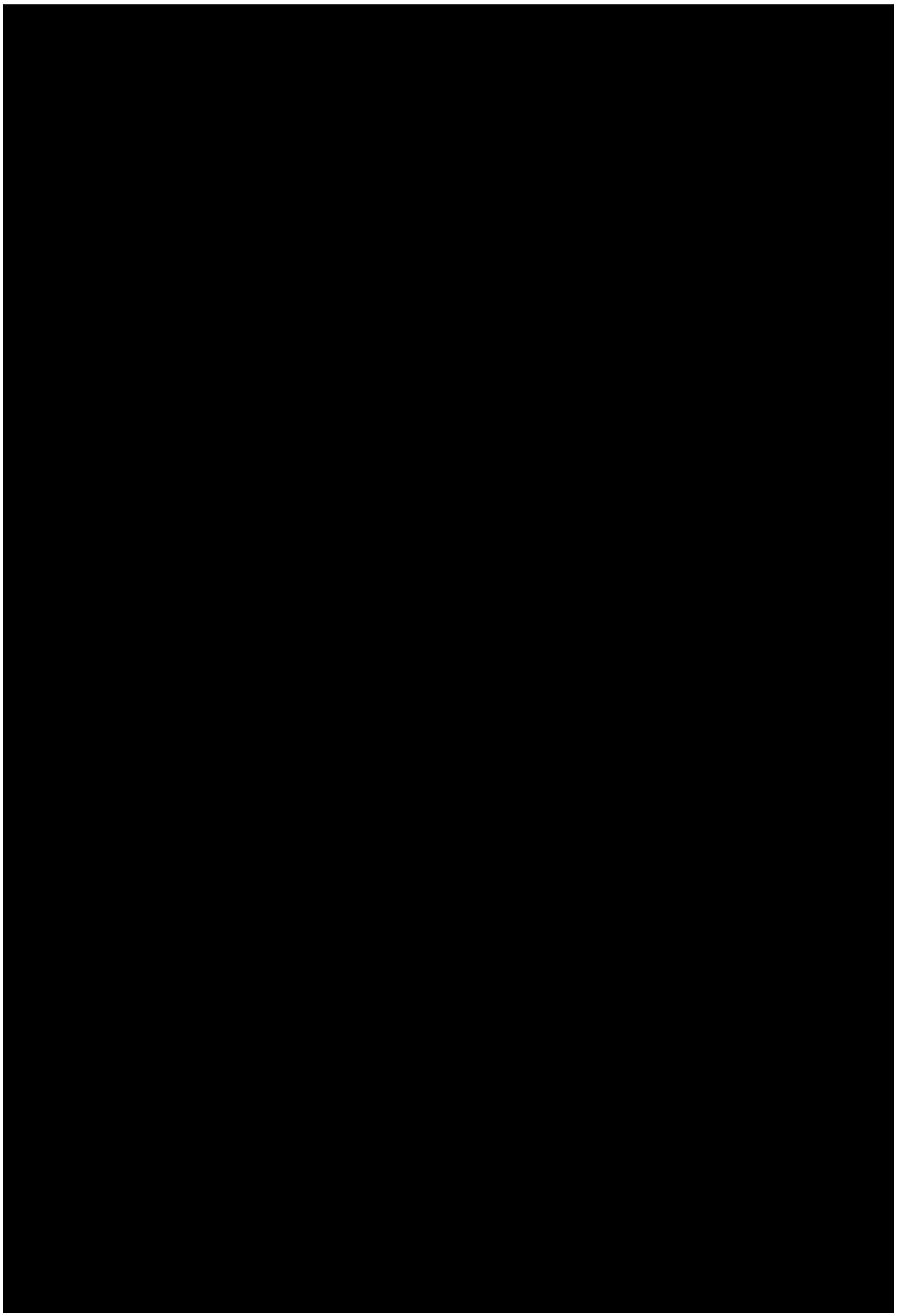

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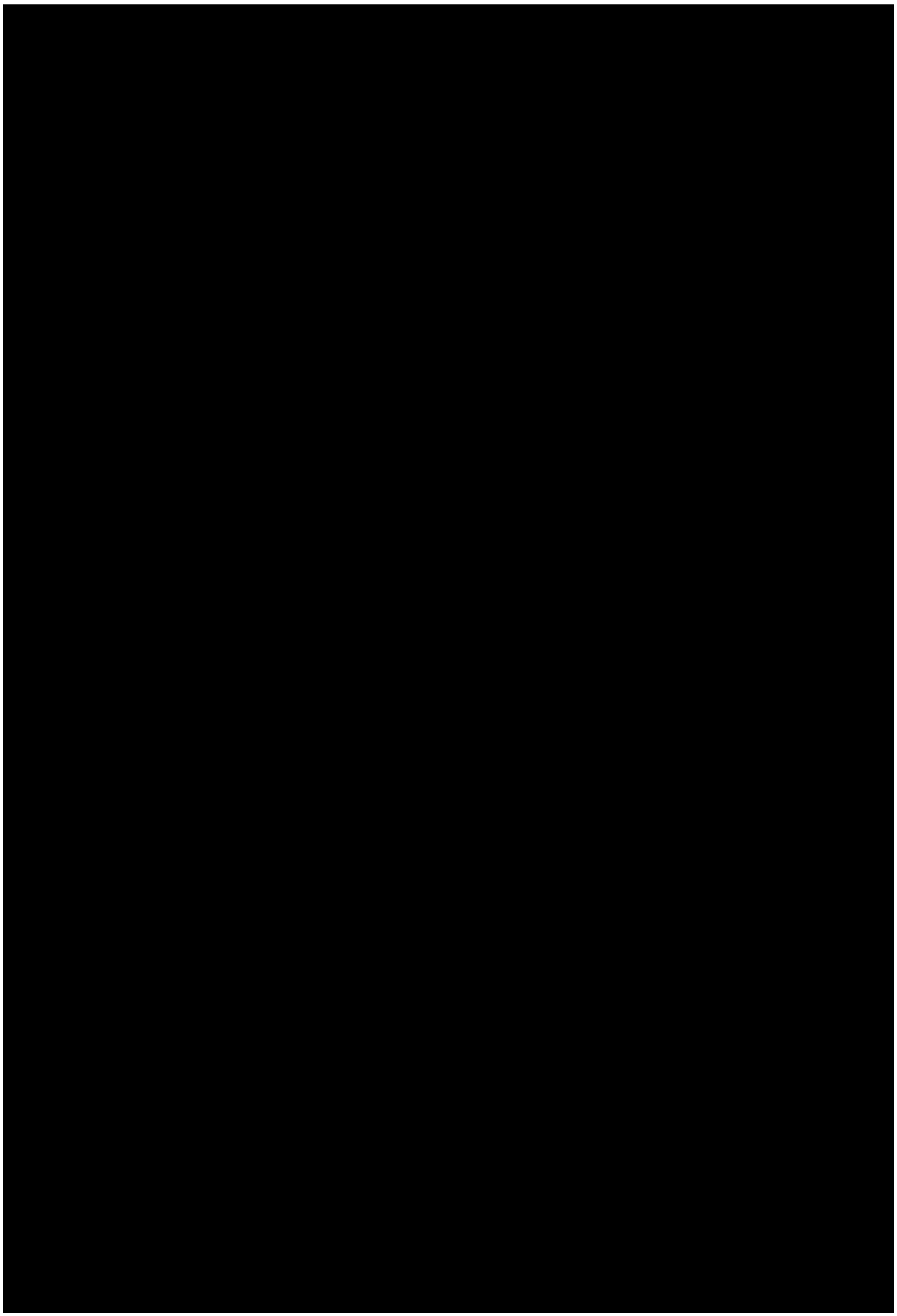


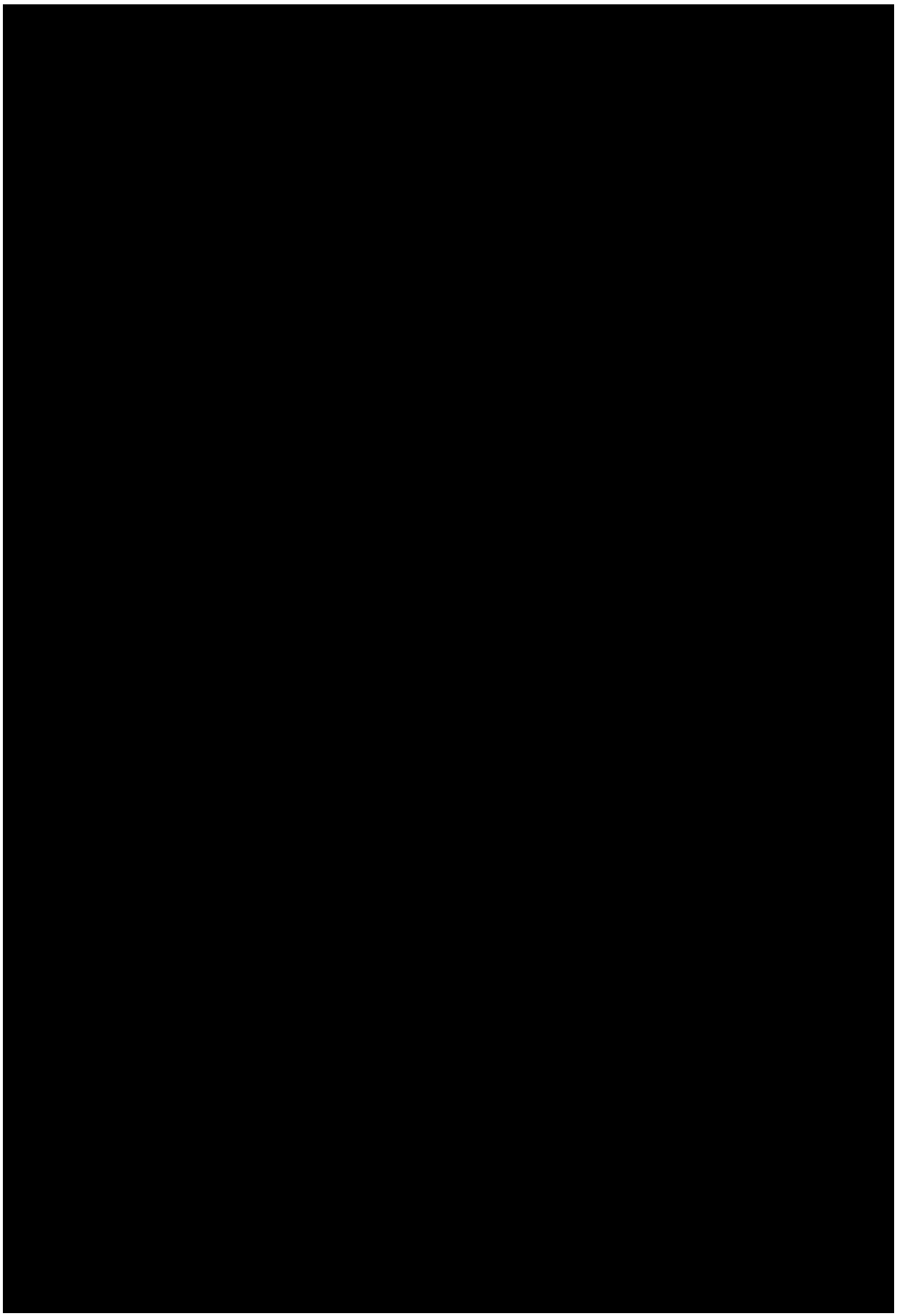


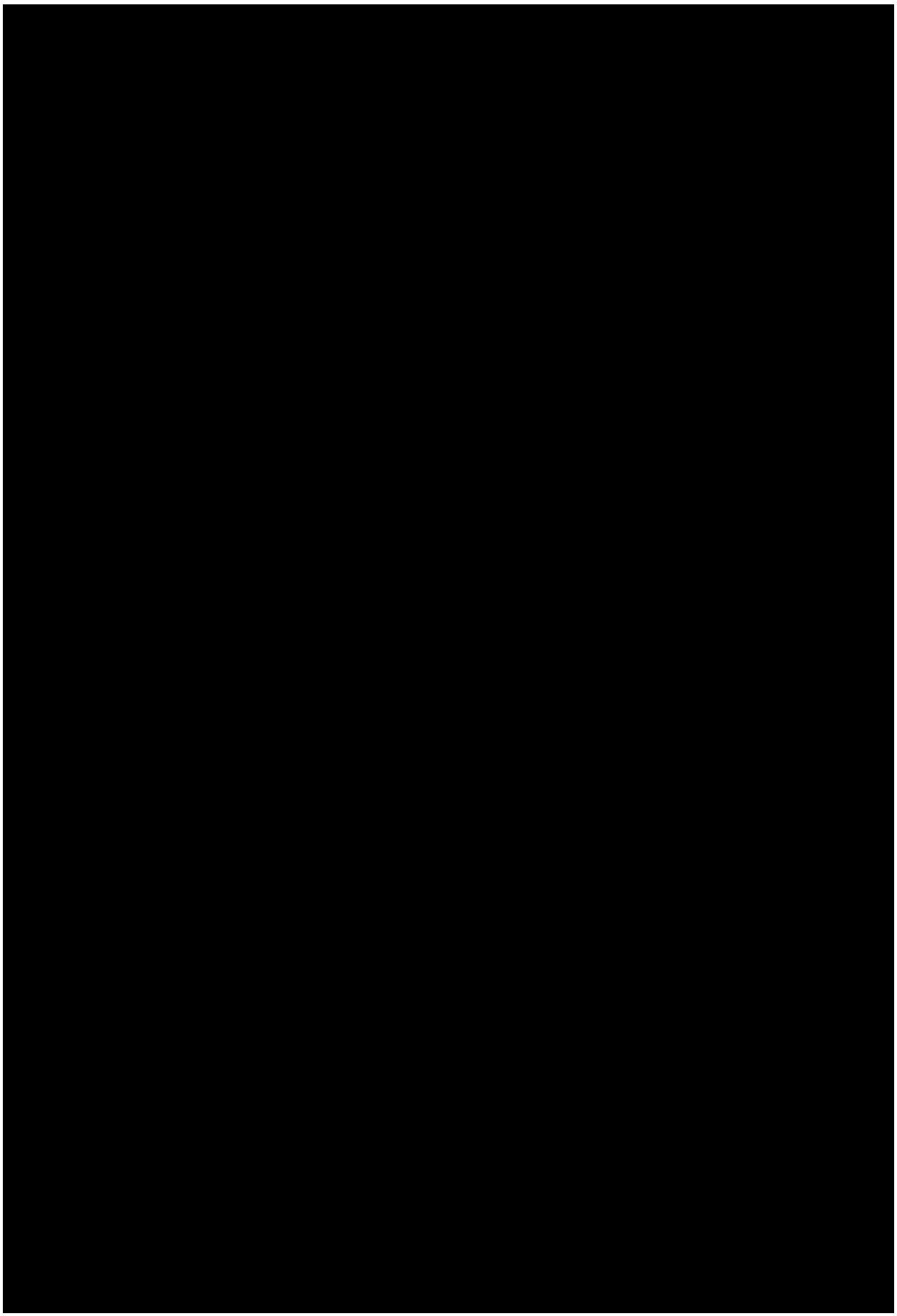


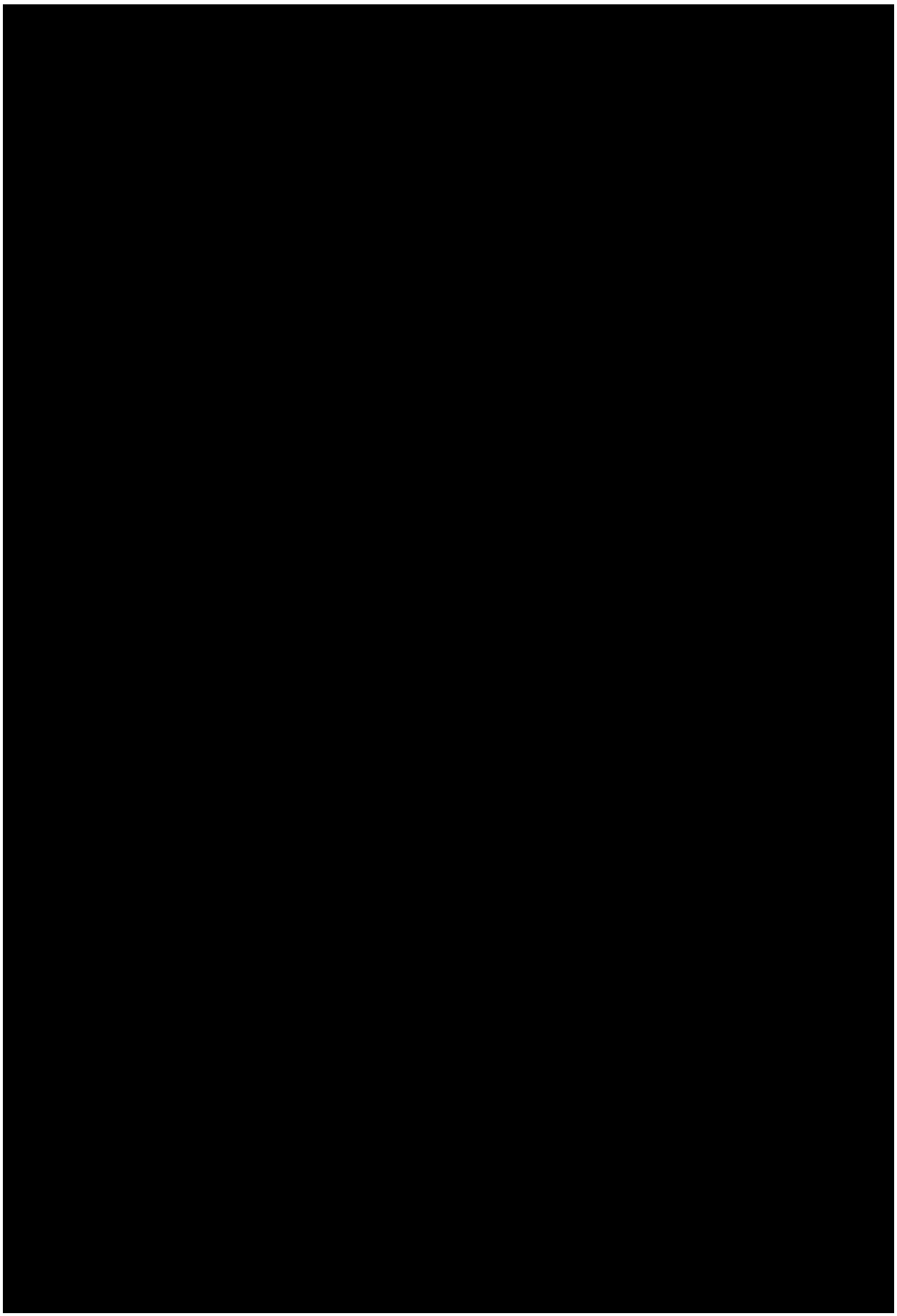


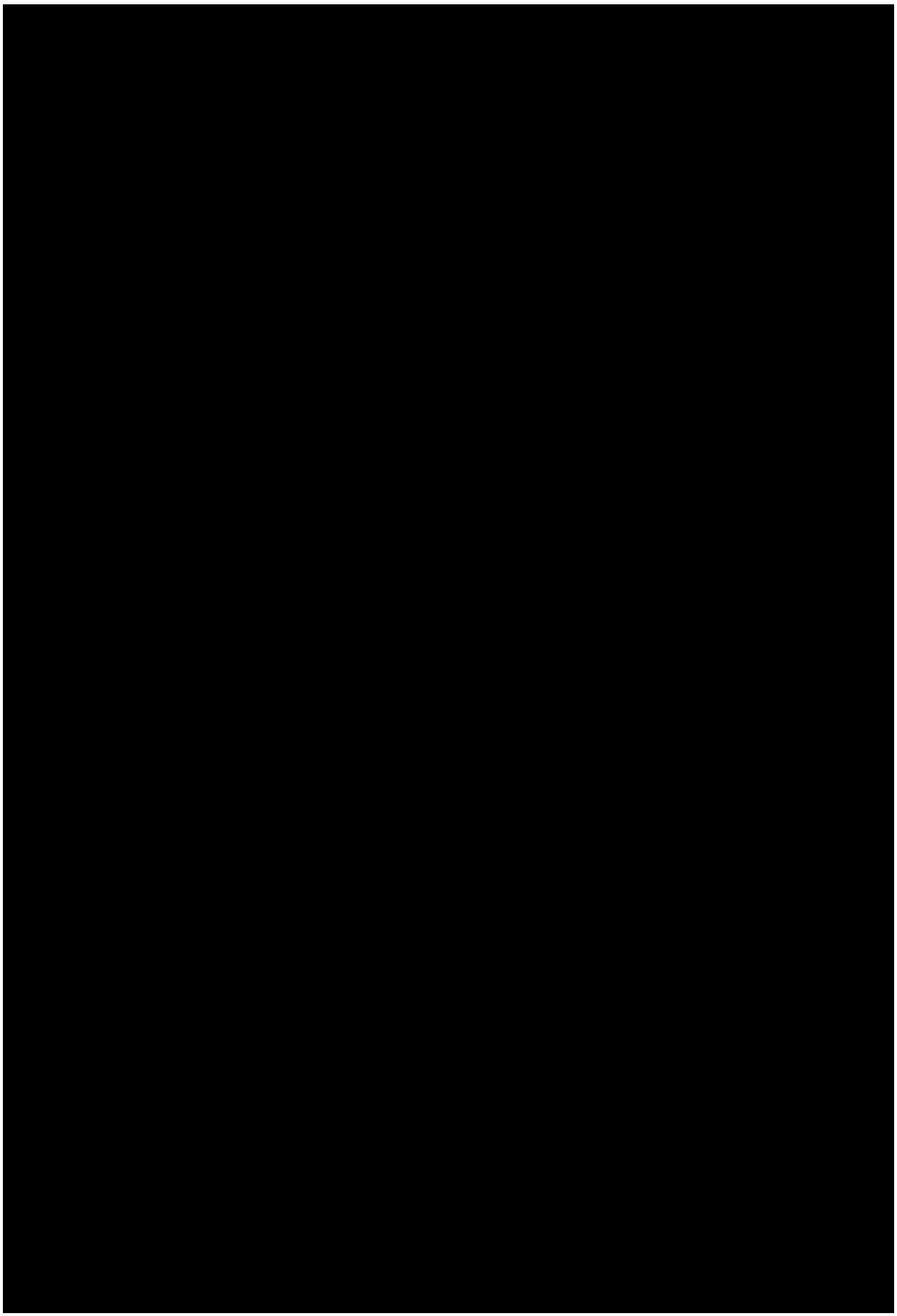


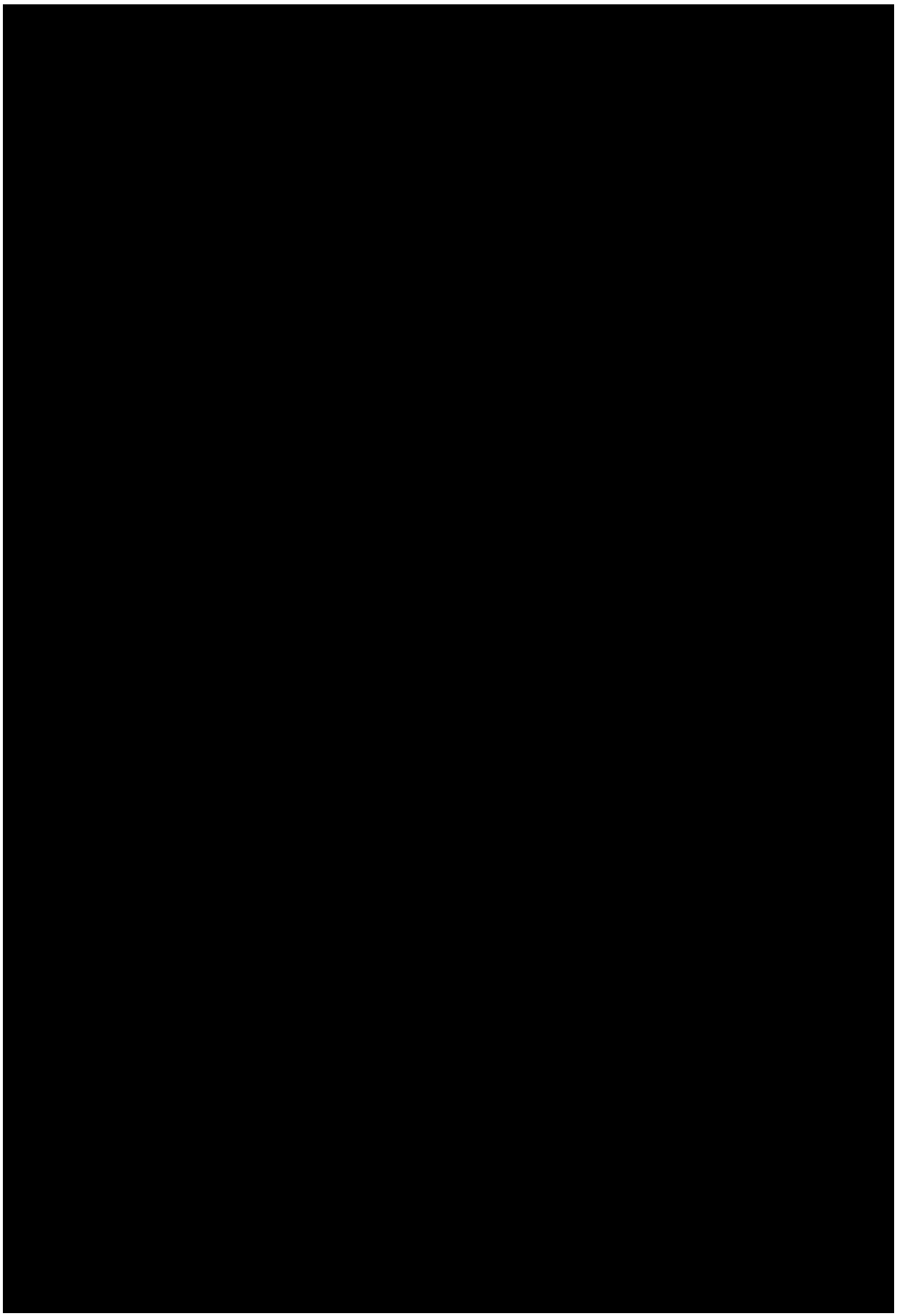


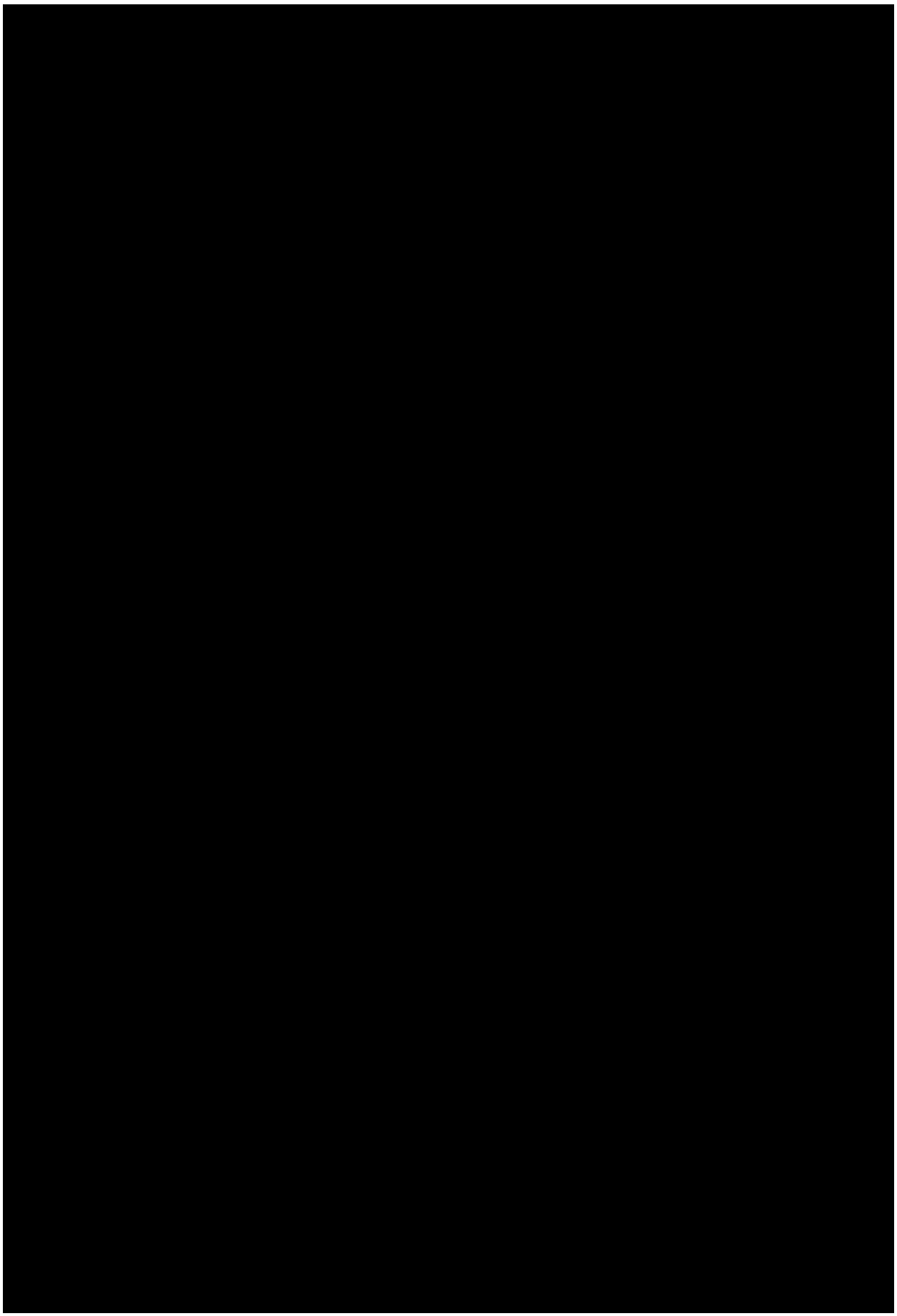


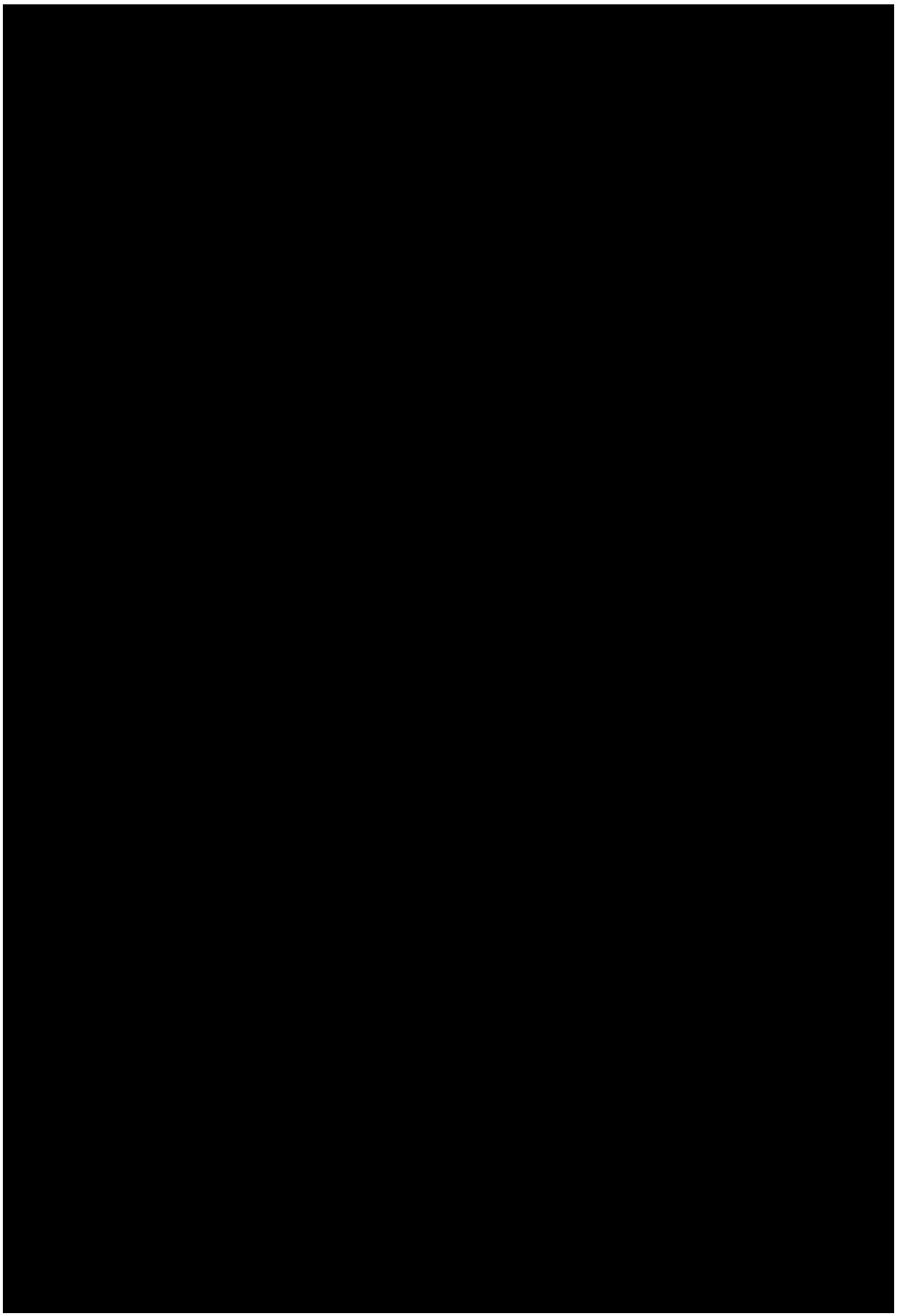


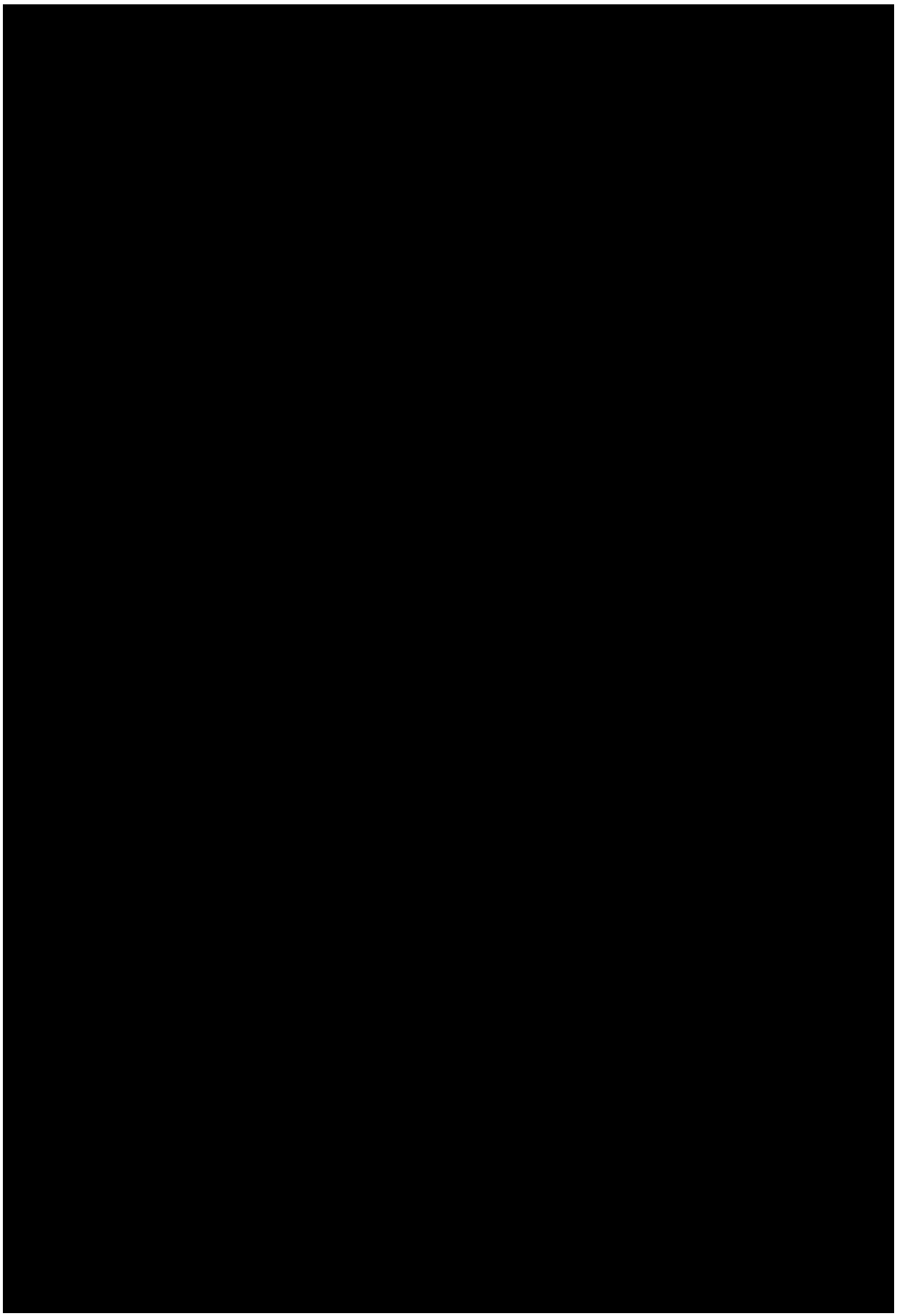


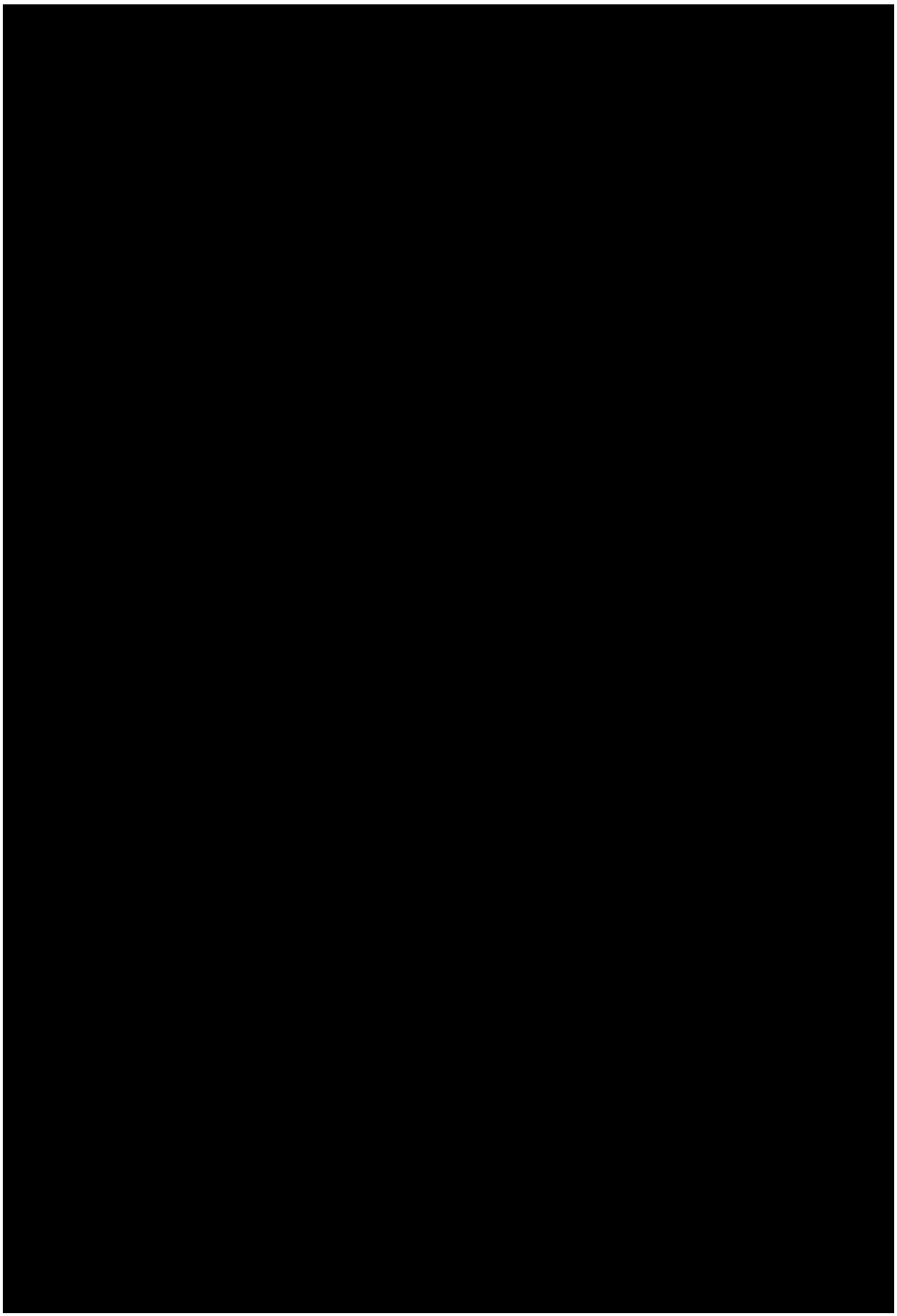


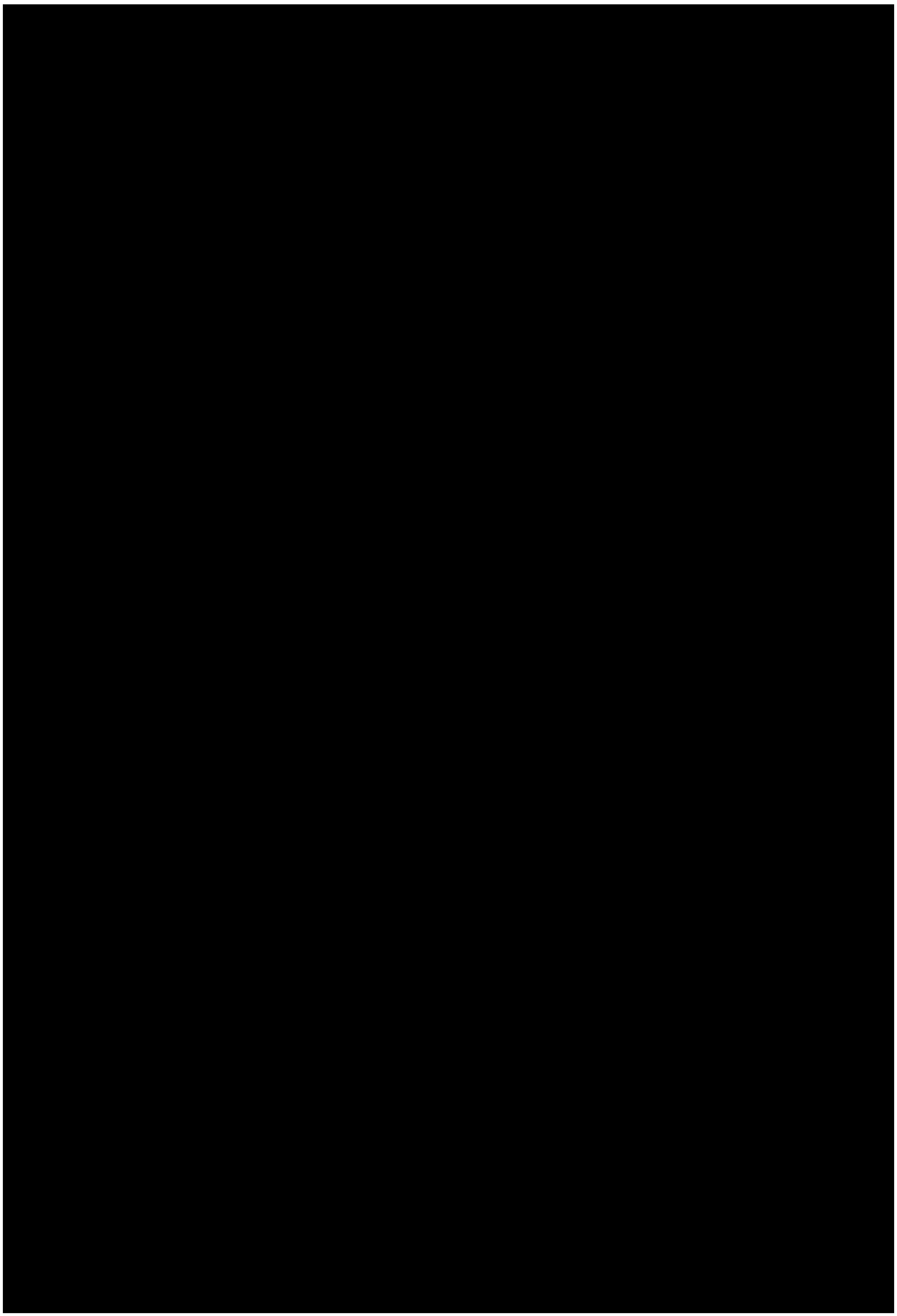


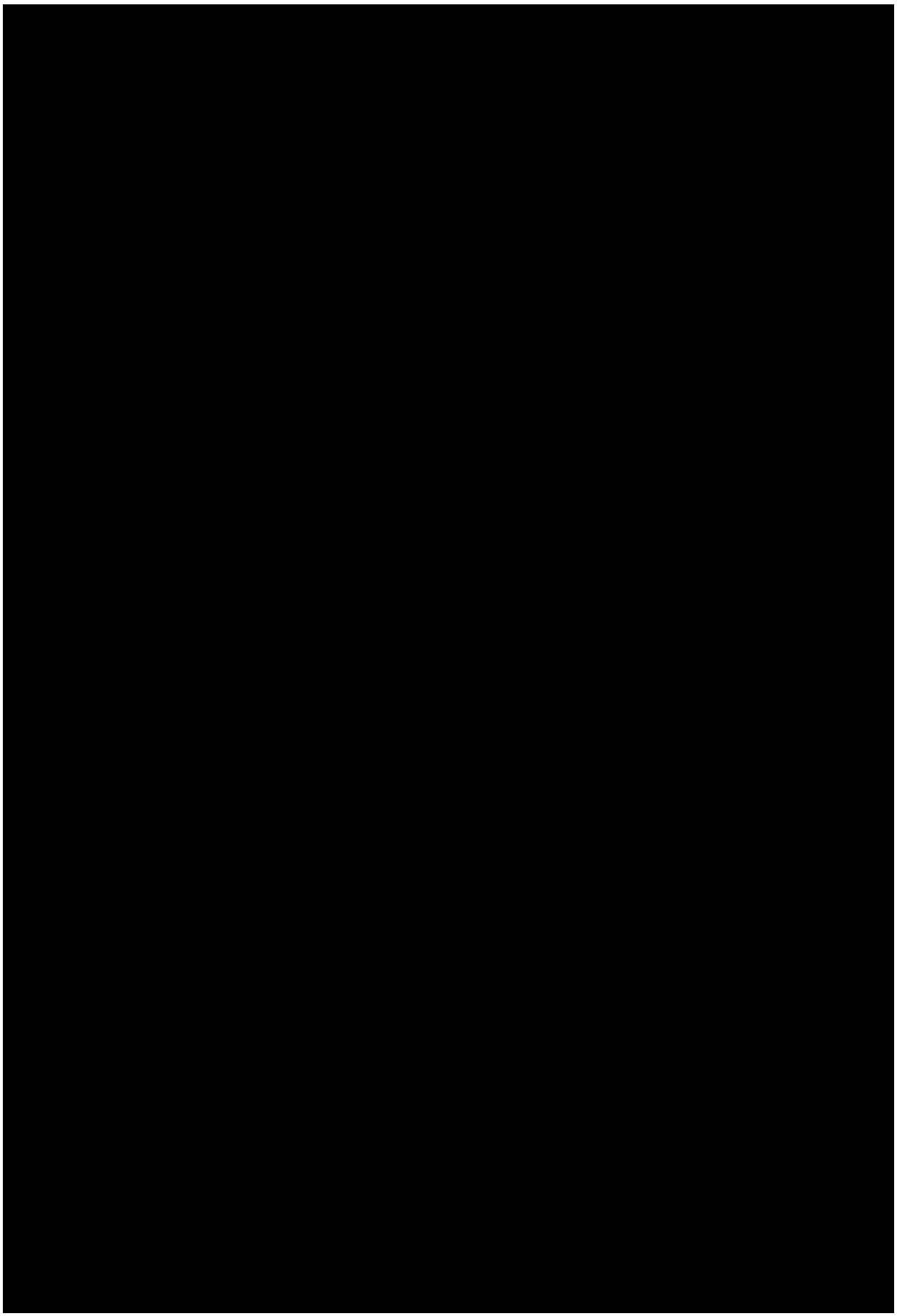


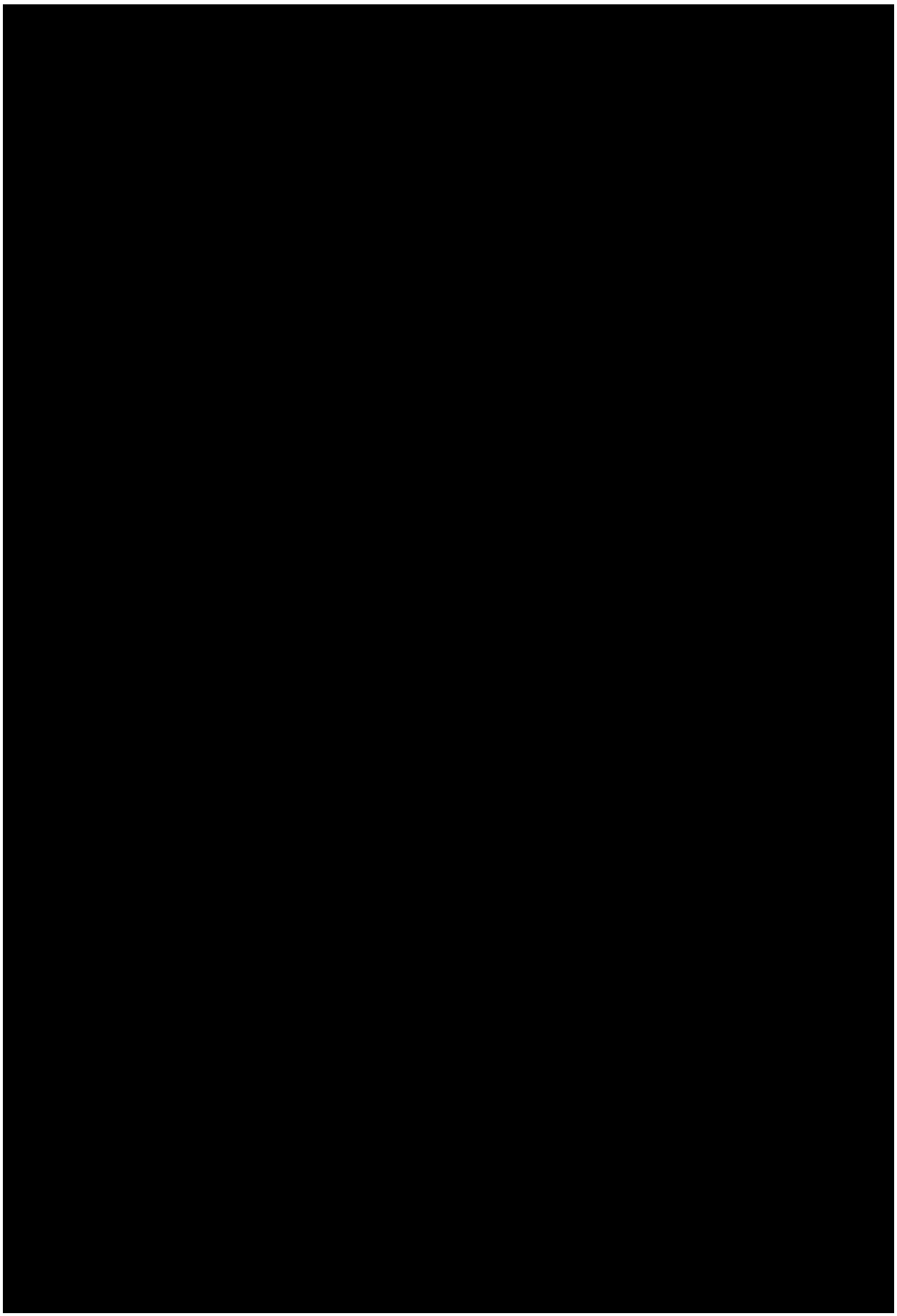






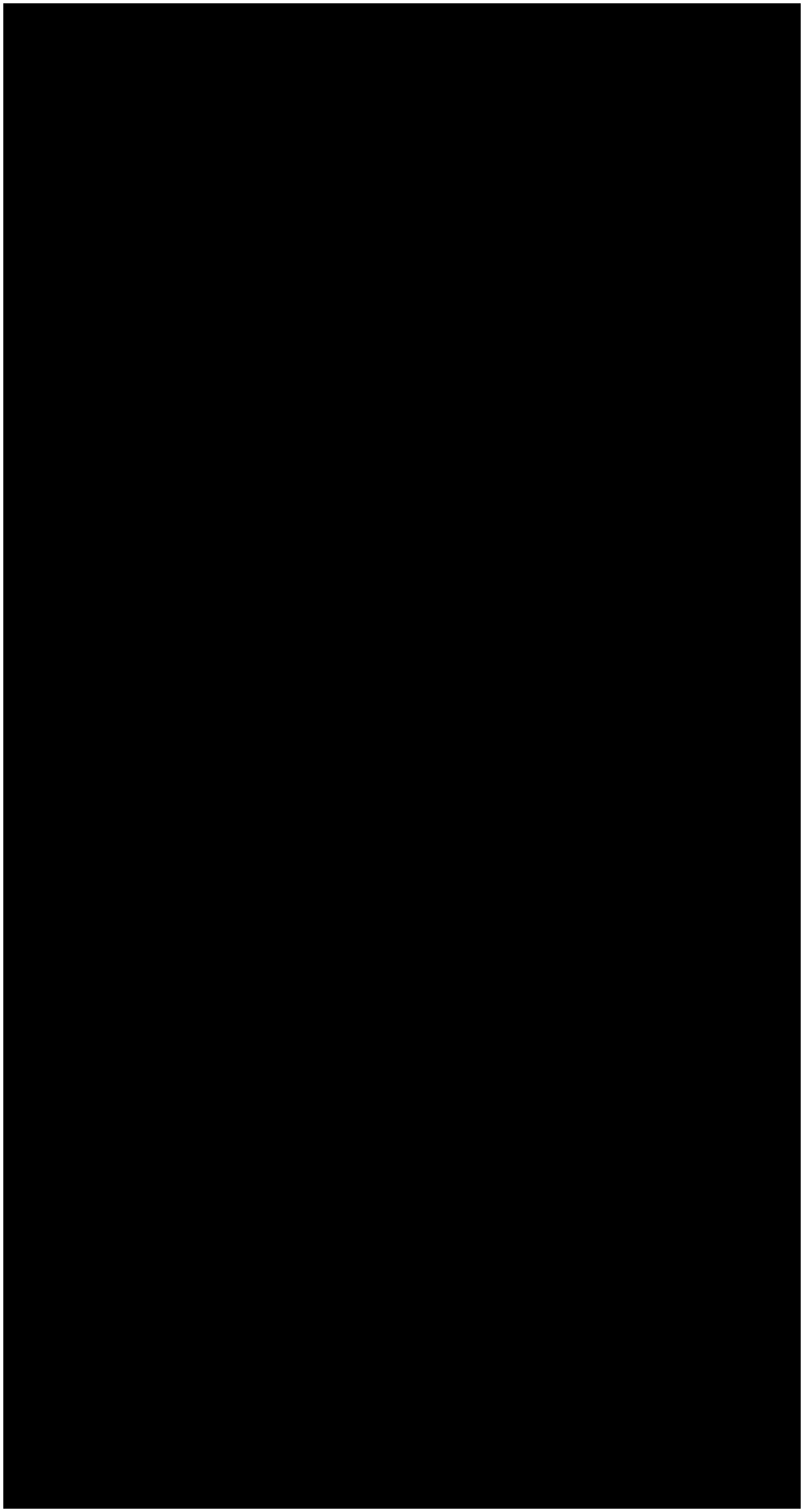


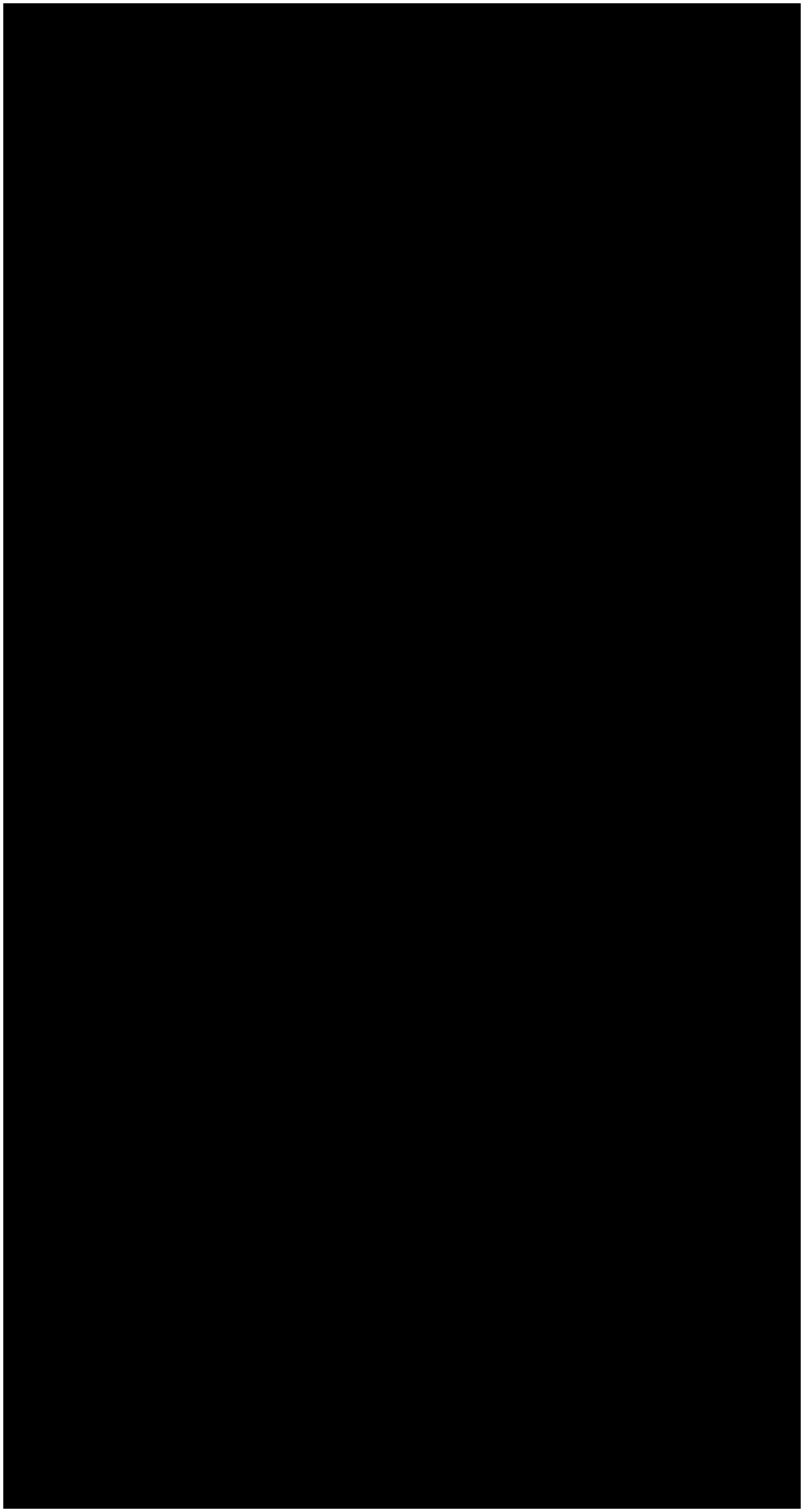


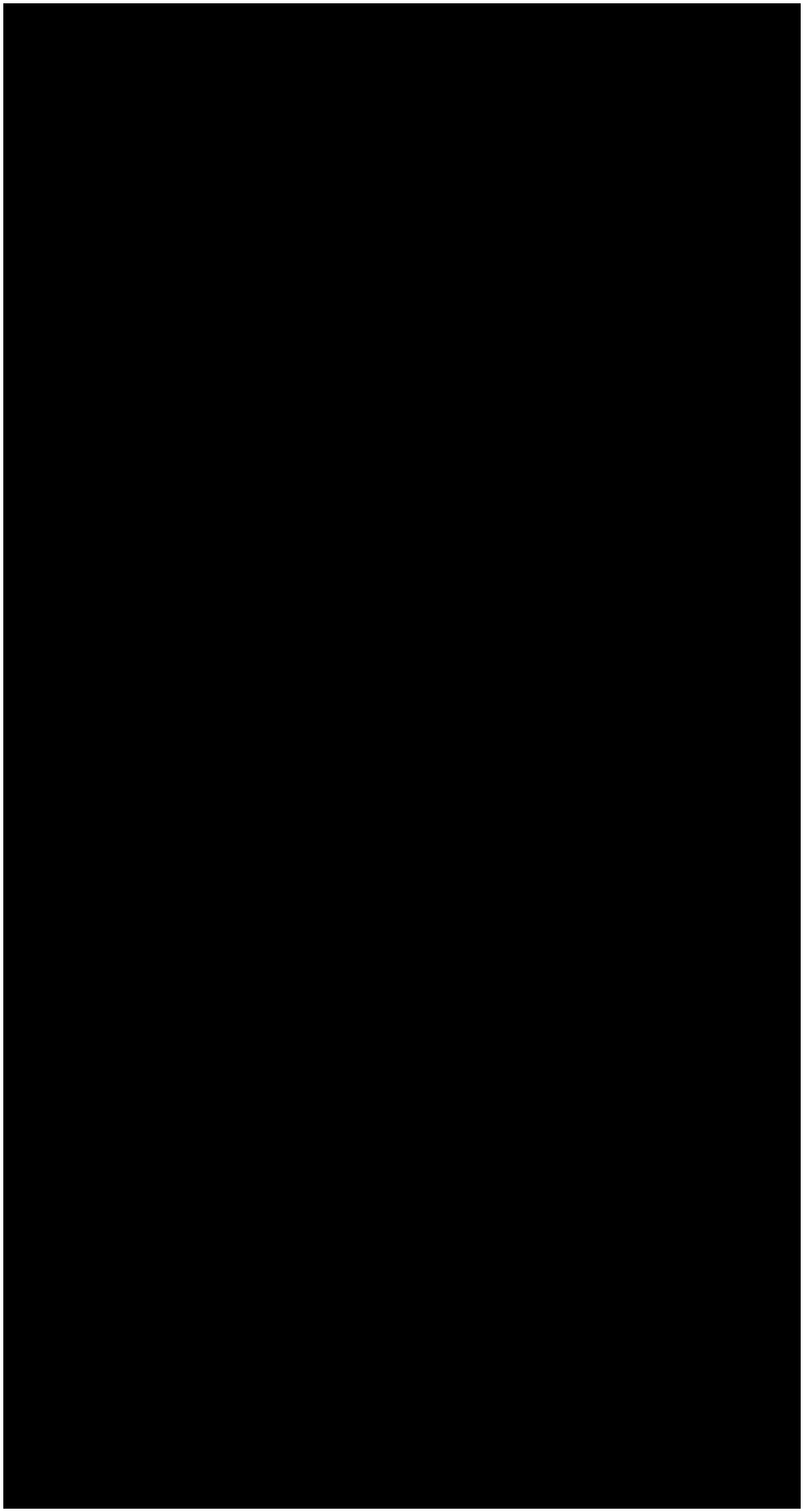


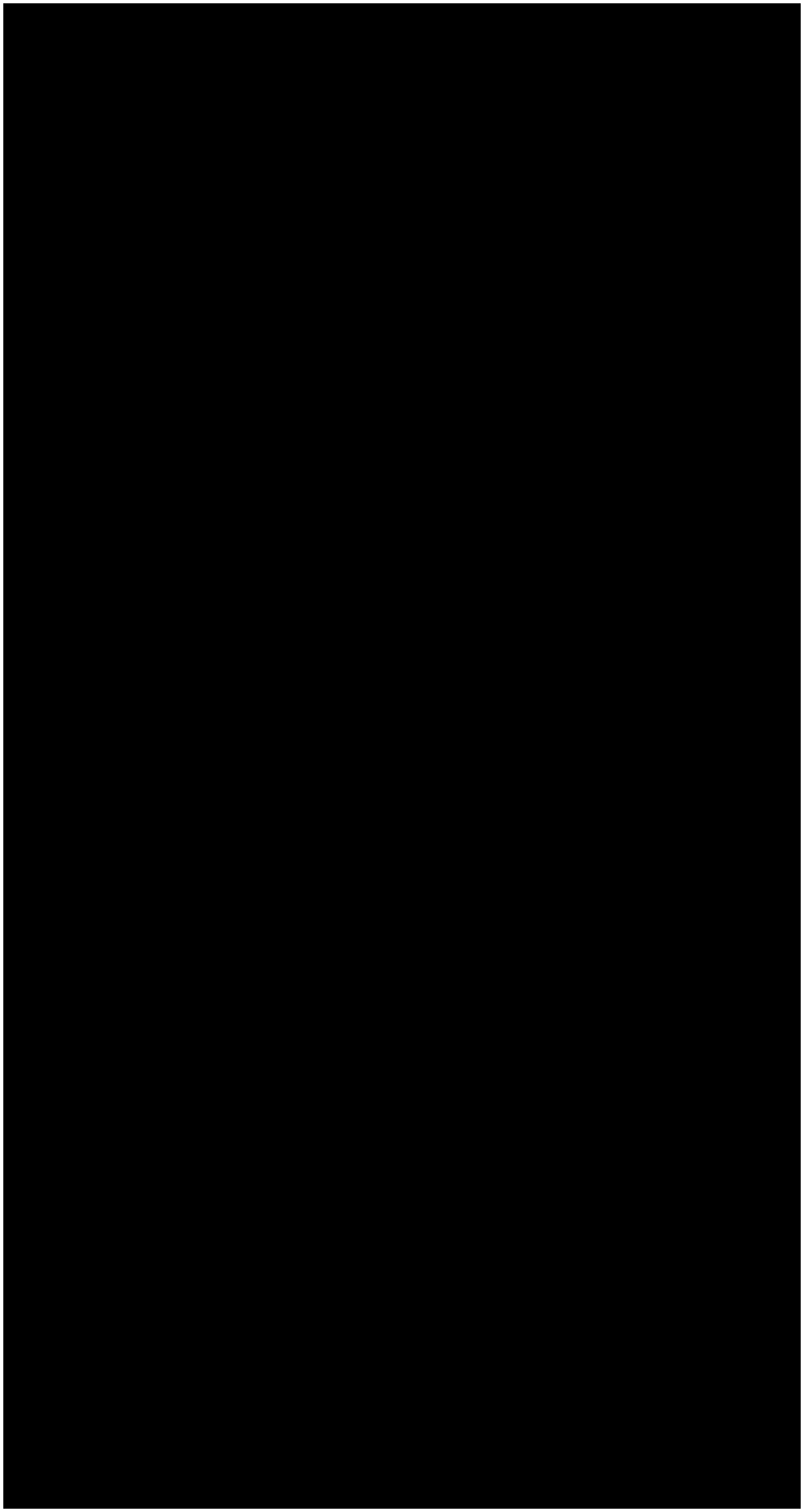


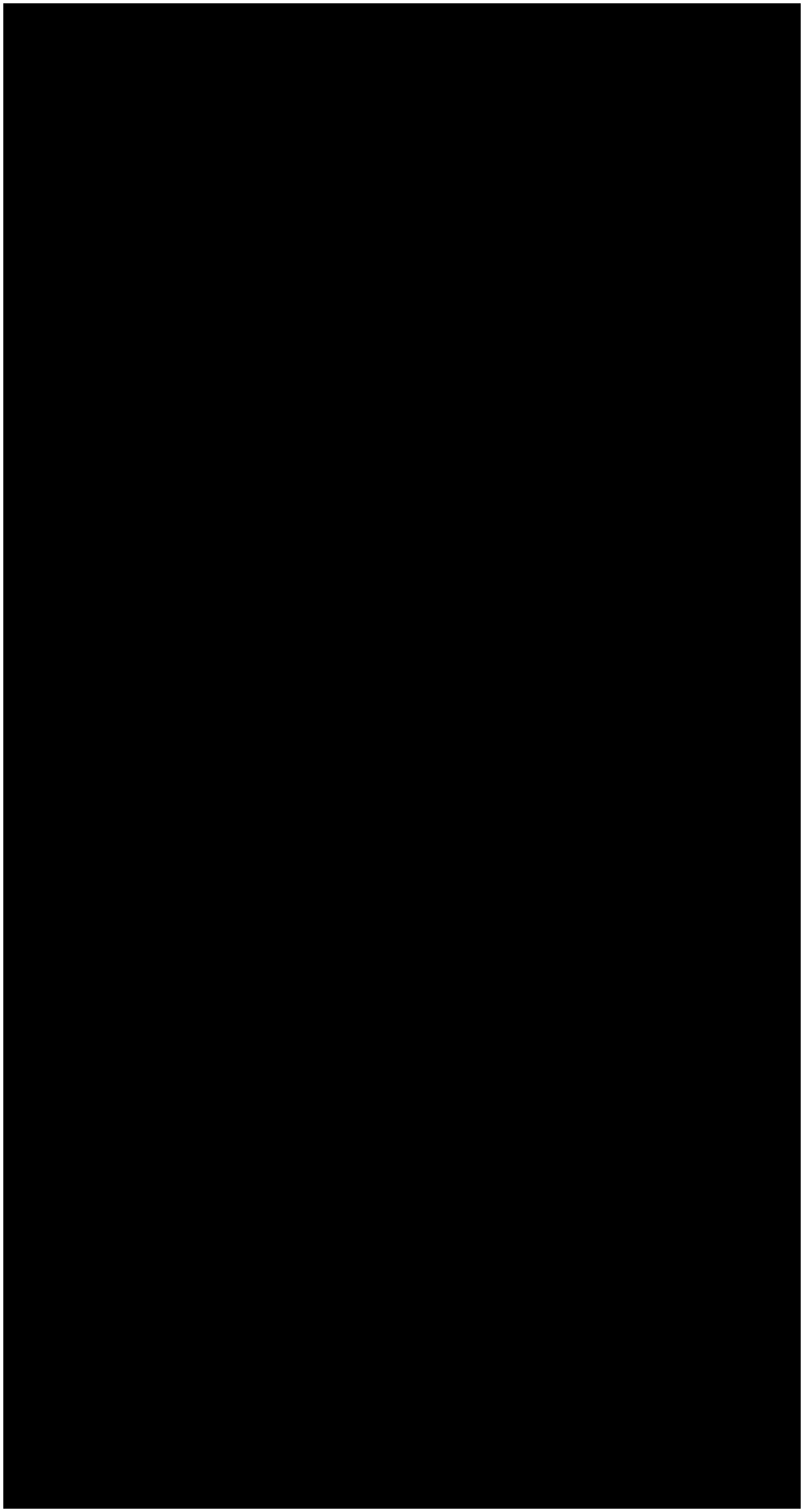
Max Daily T	Quantity D	Build Cost (	Quantity D	x	y	z
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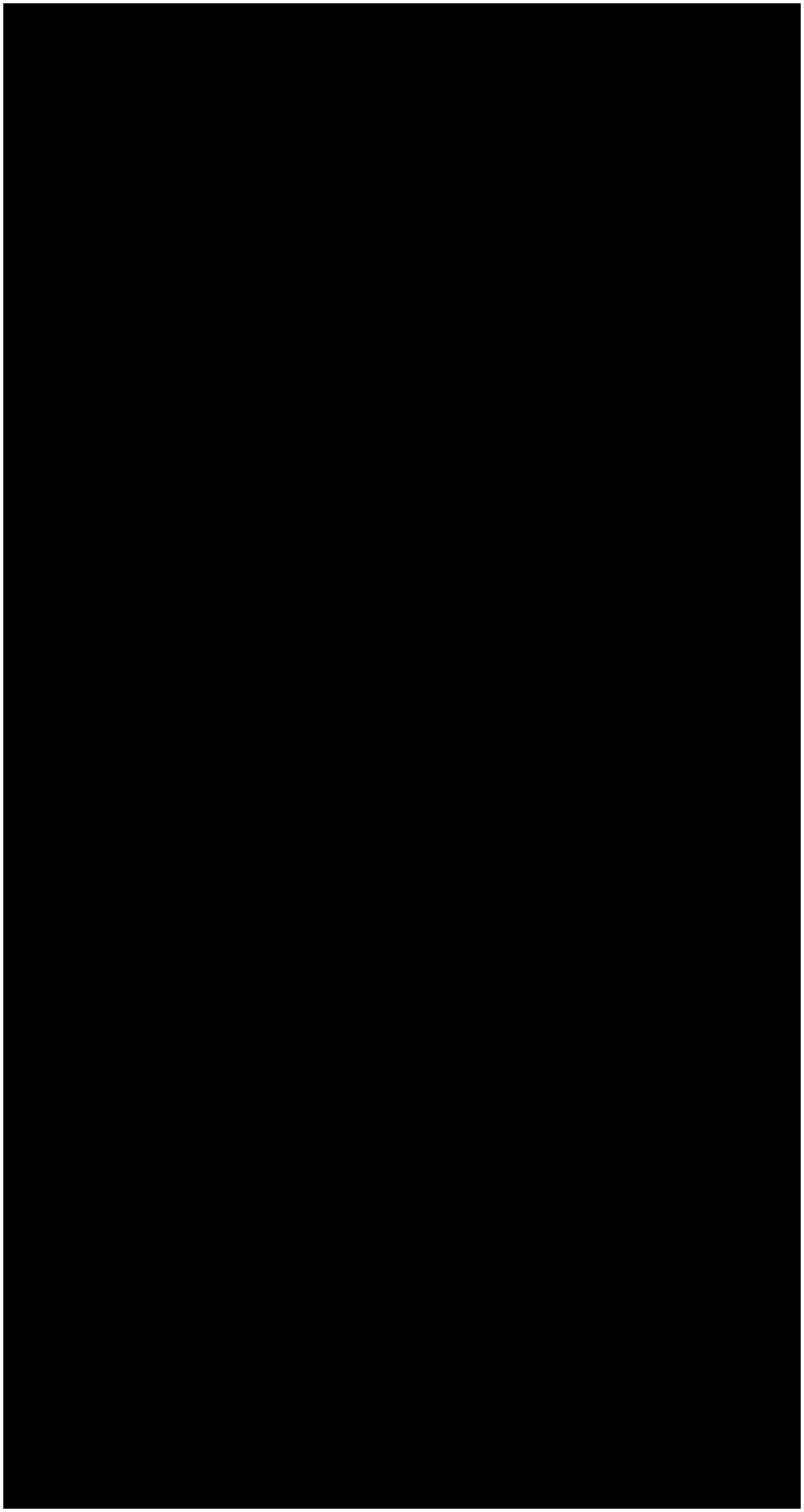


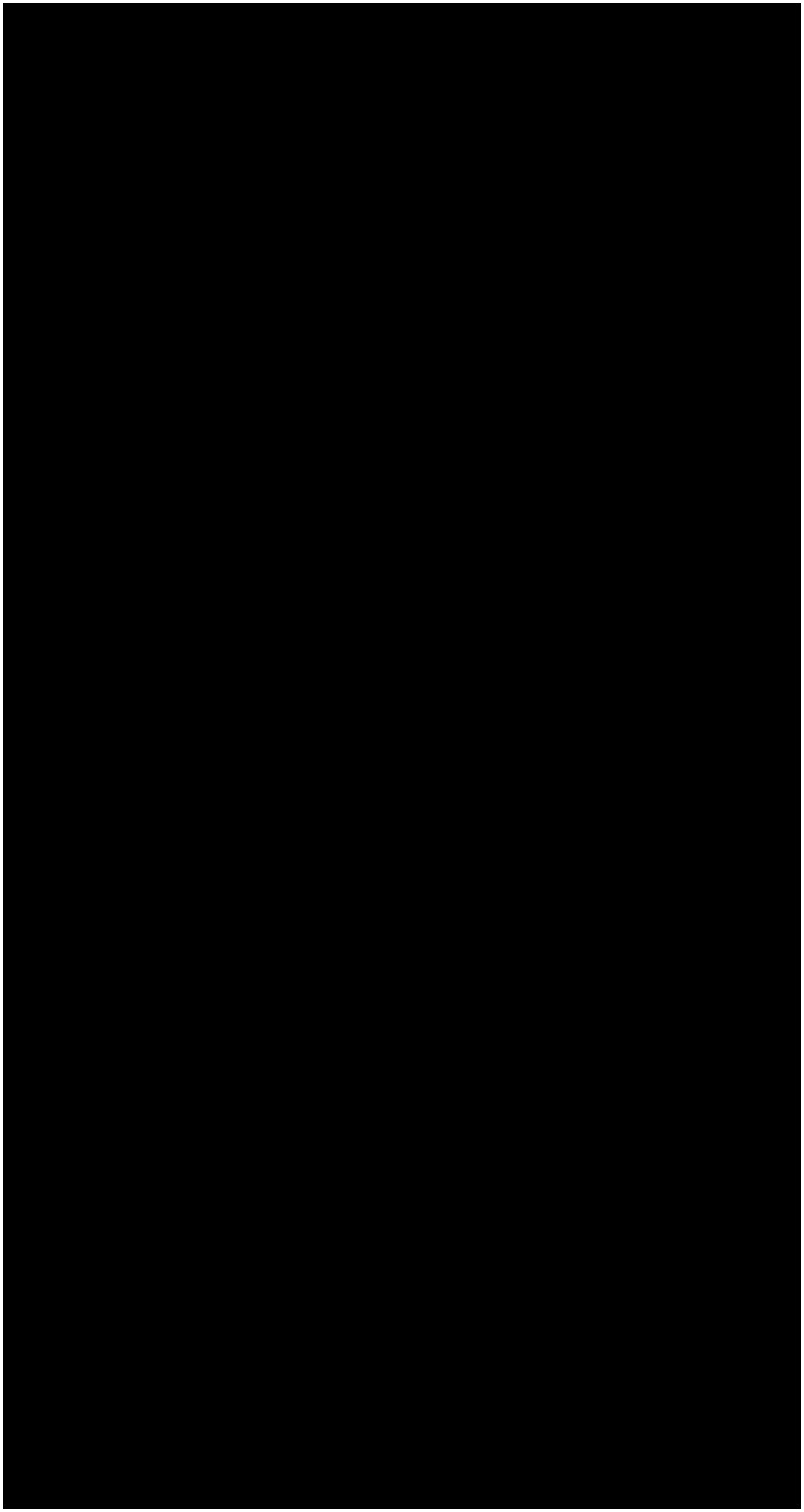


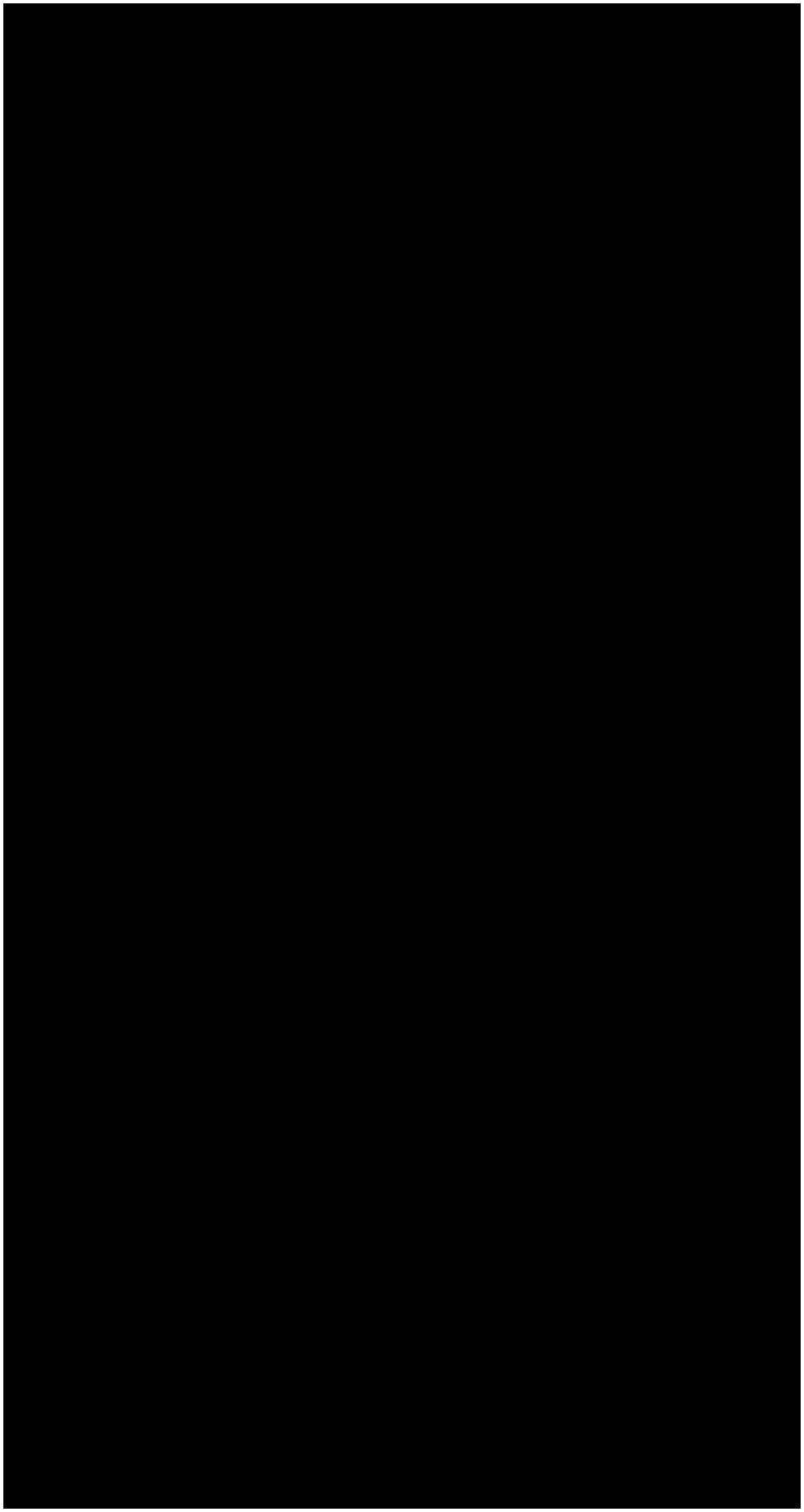


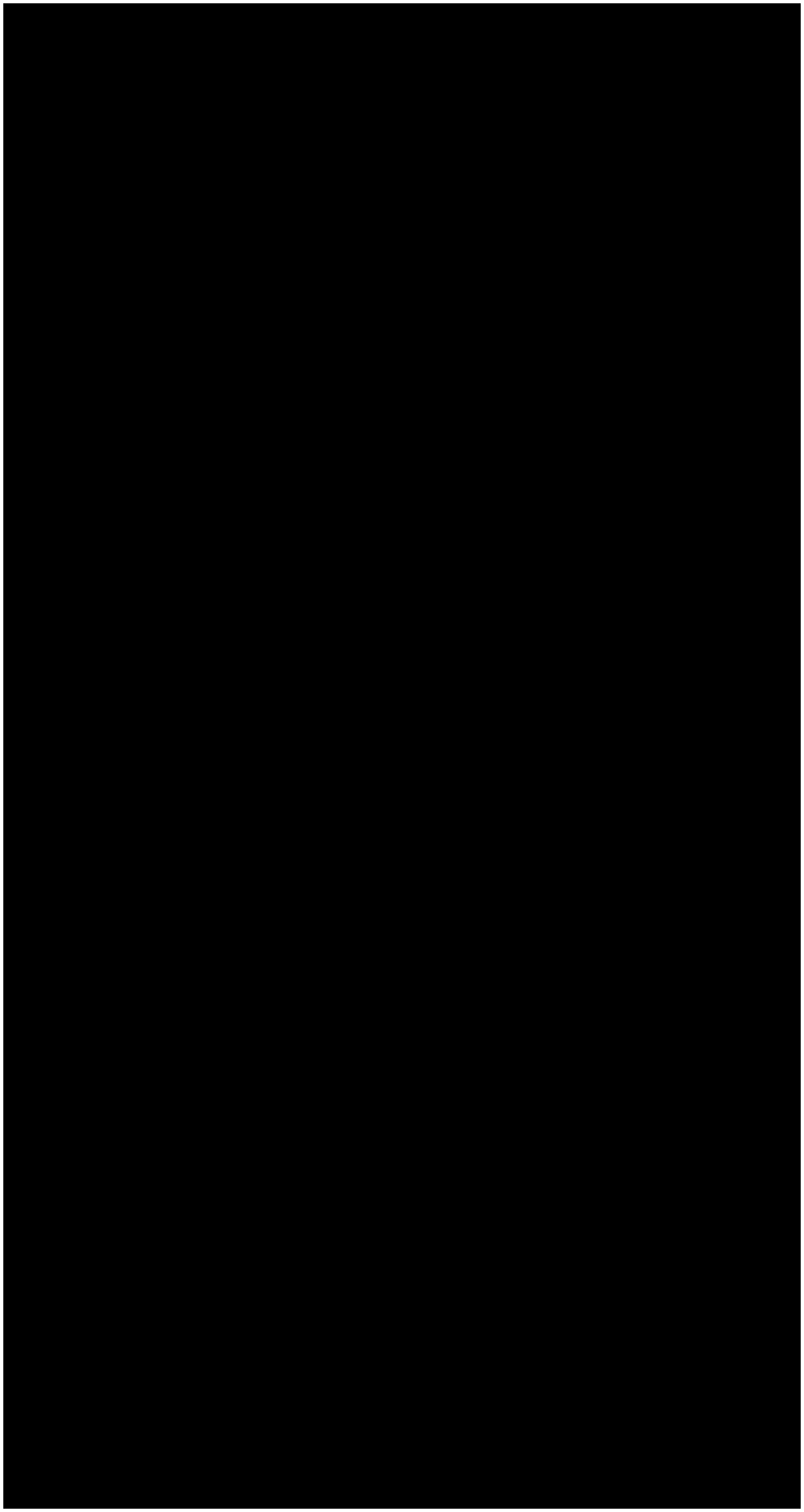


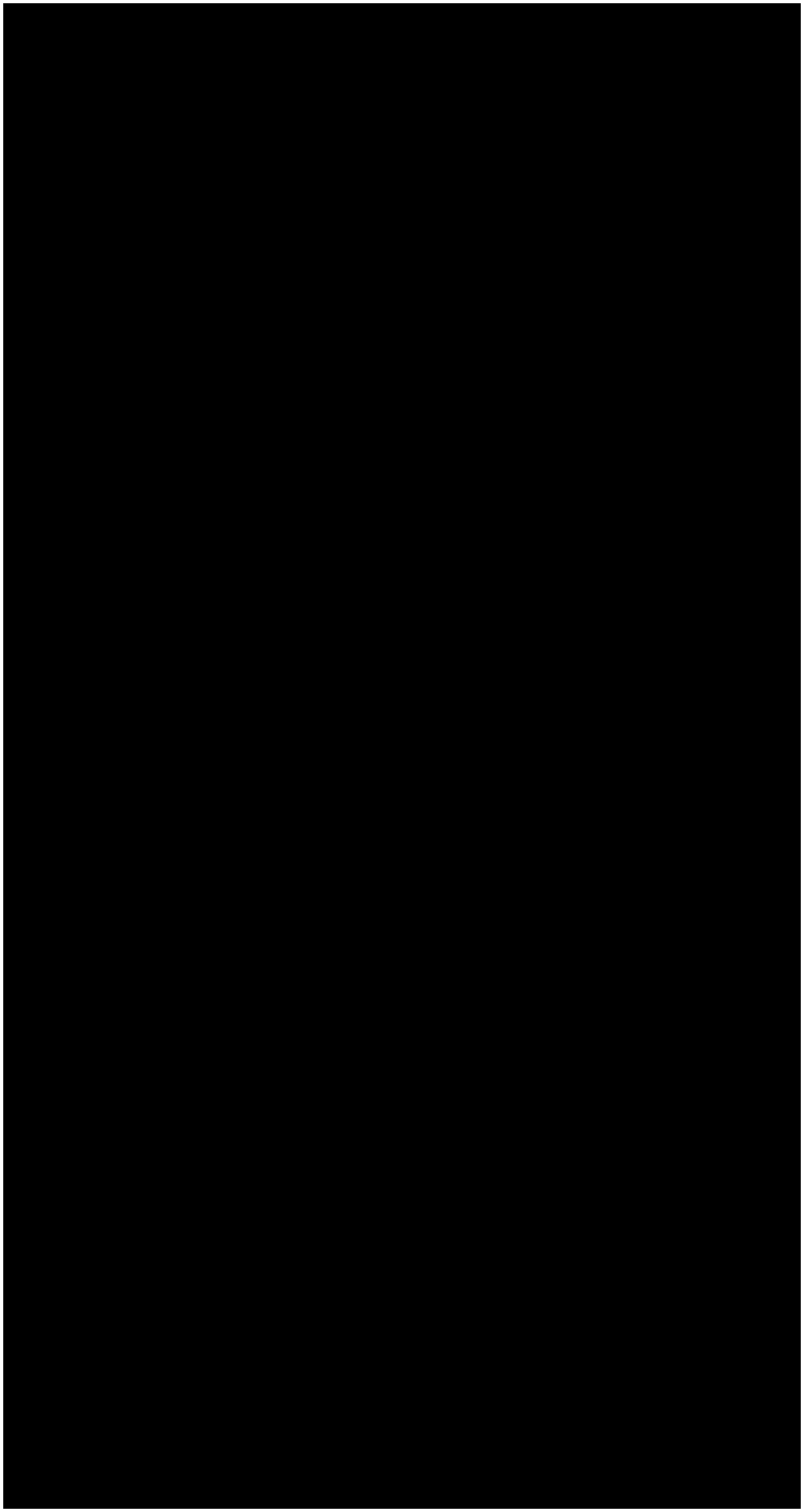


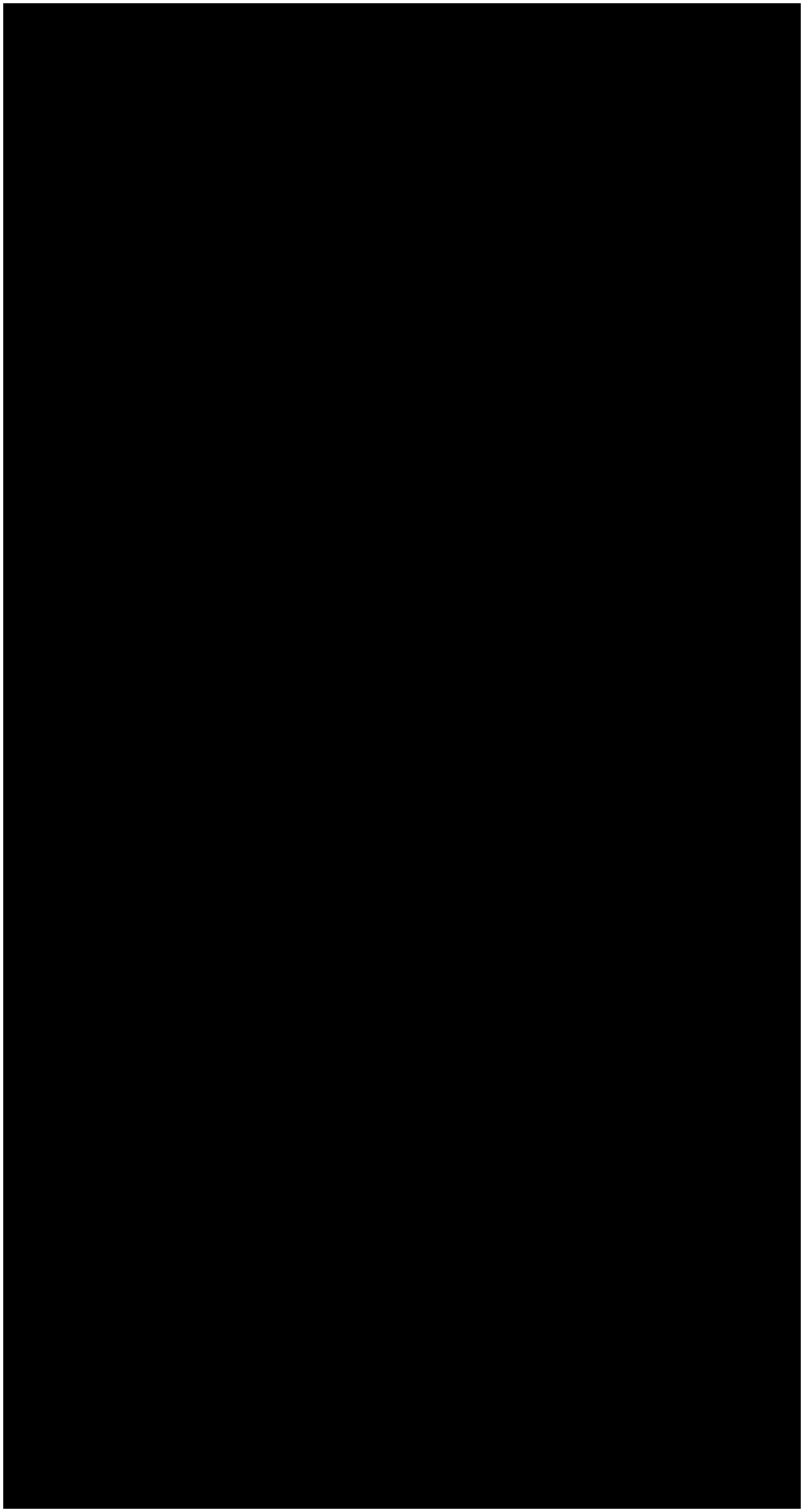


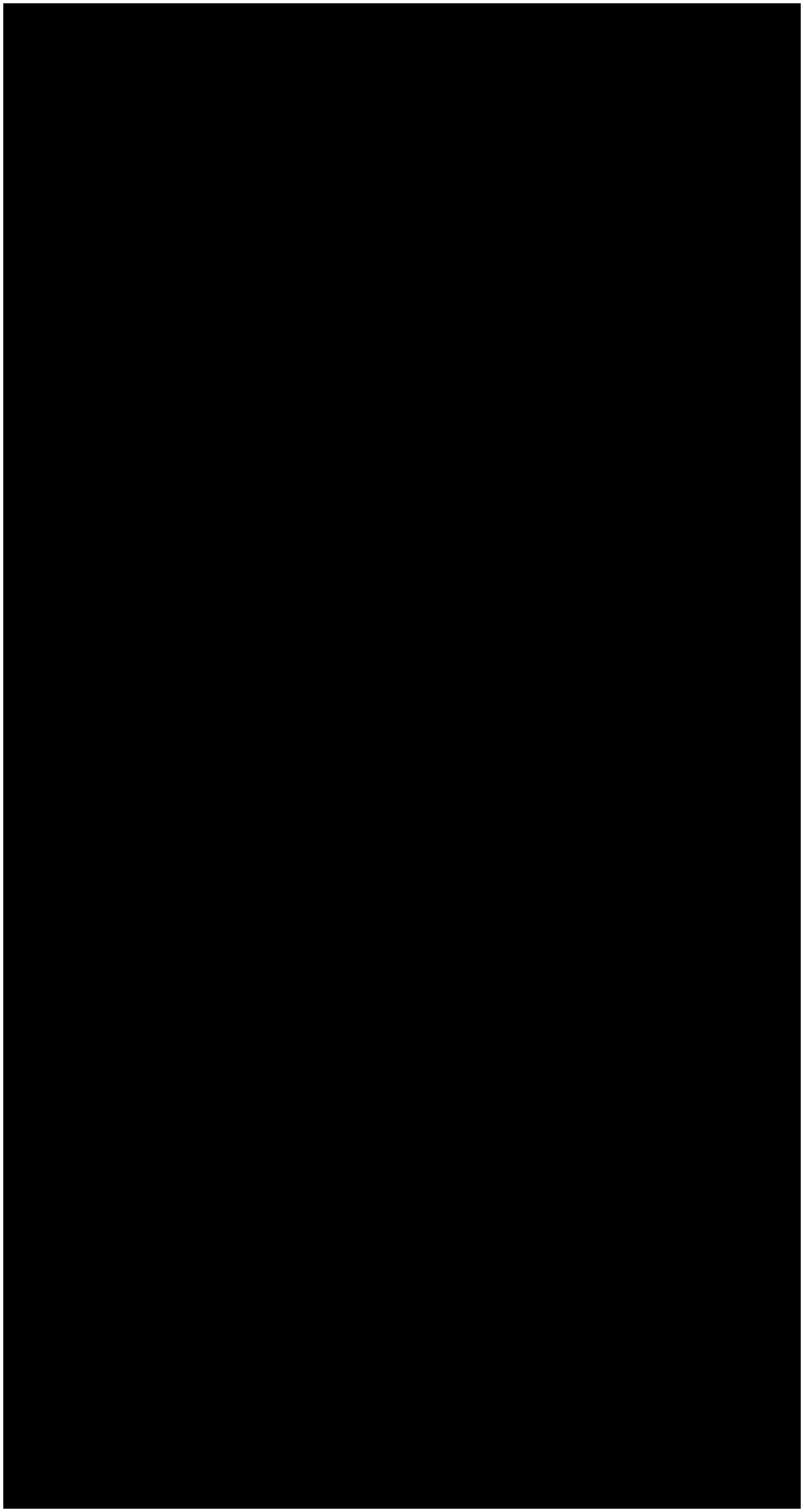


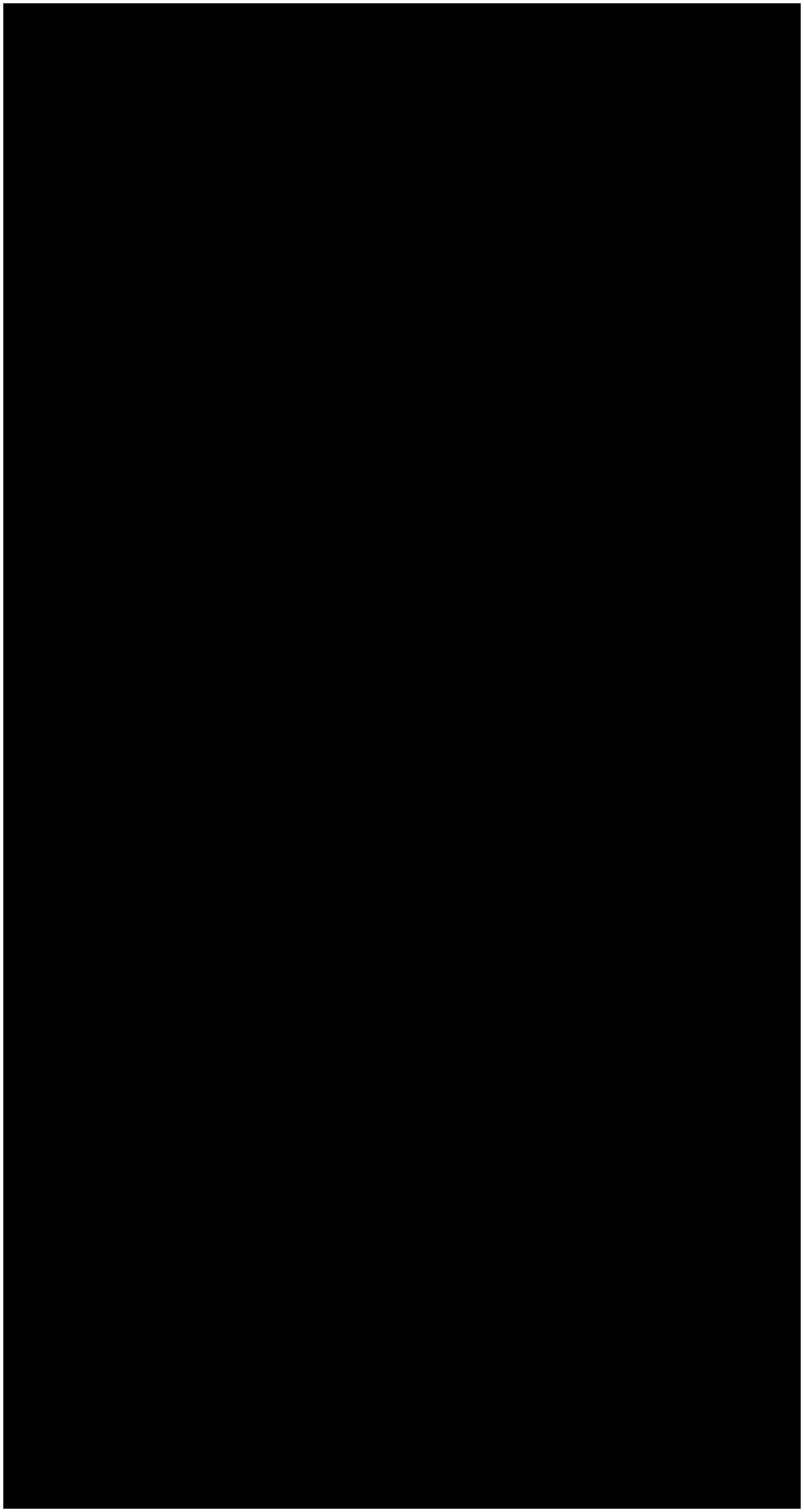


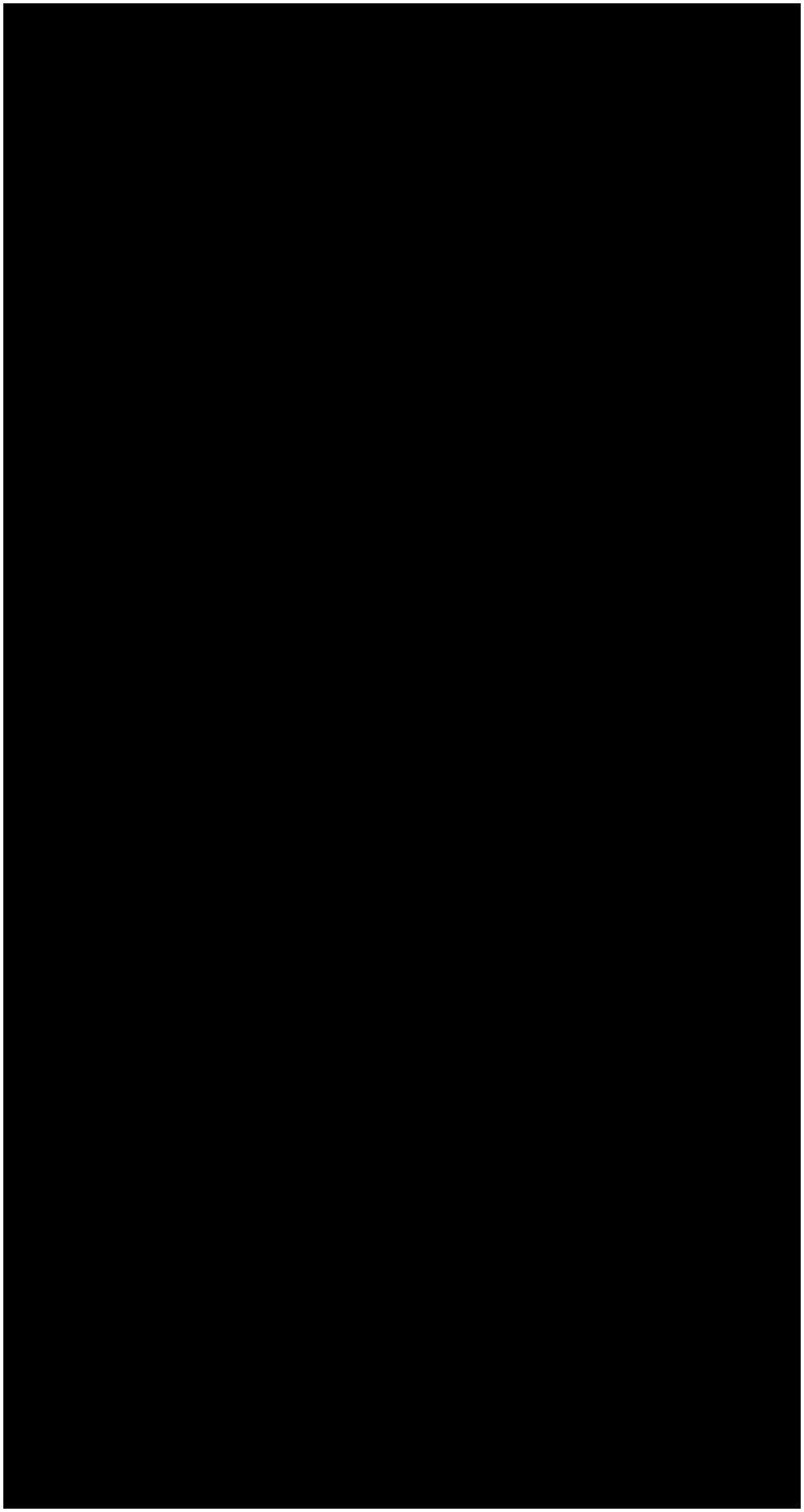


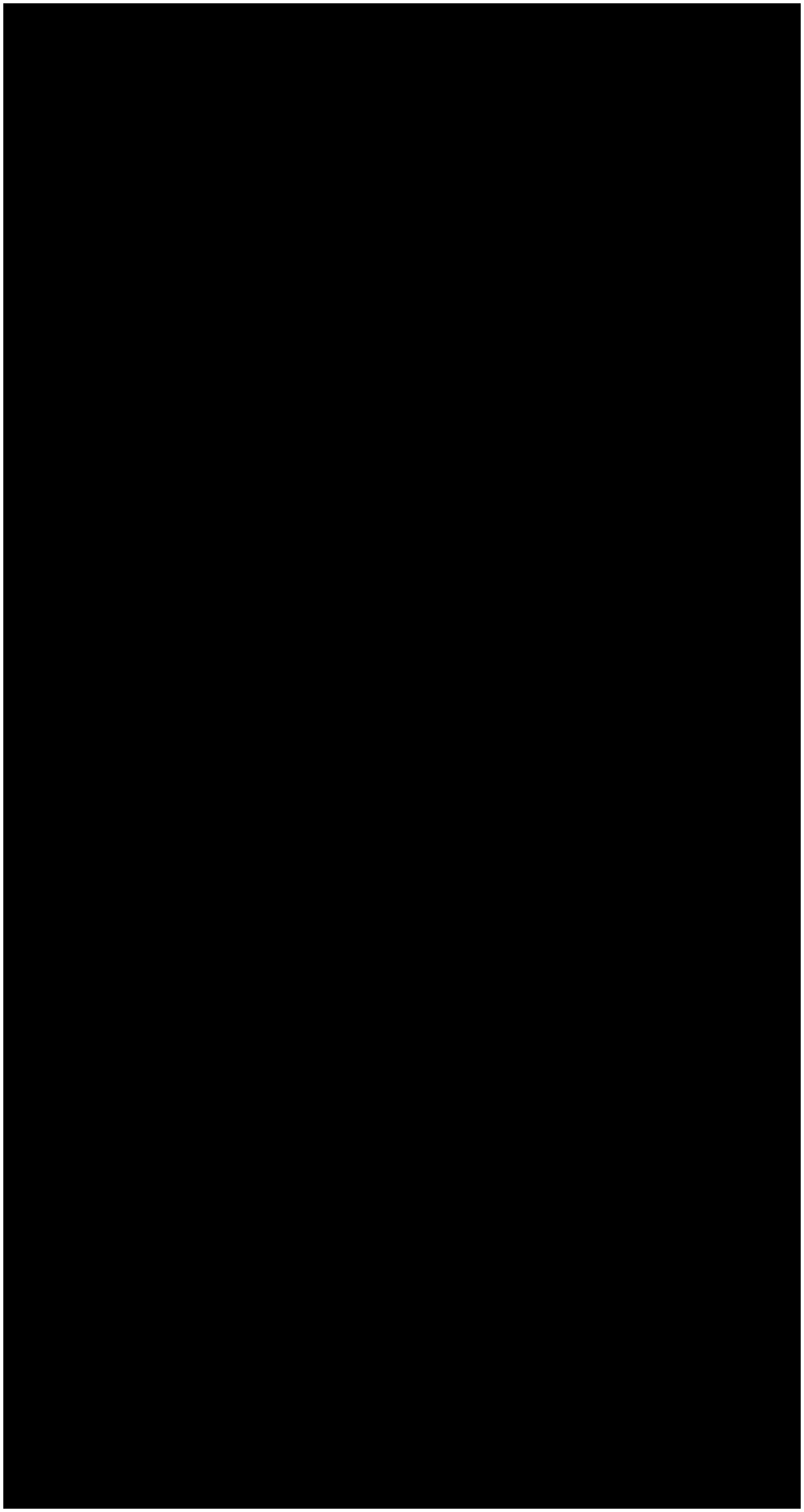


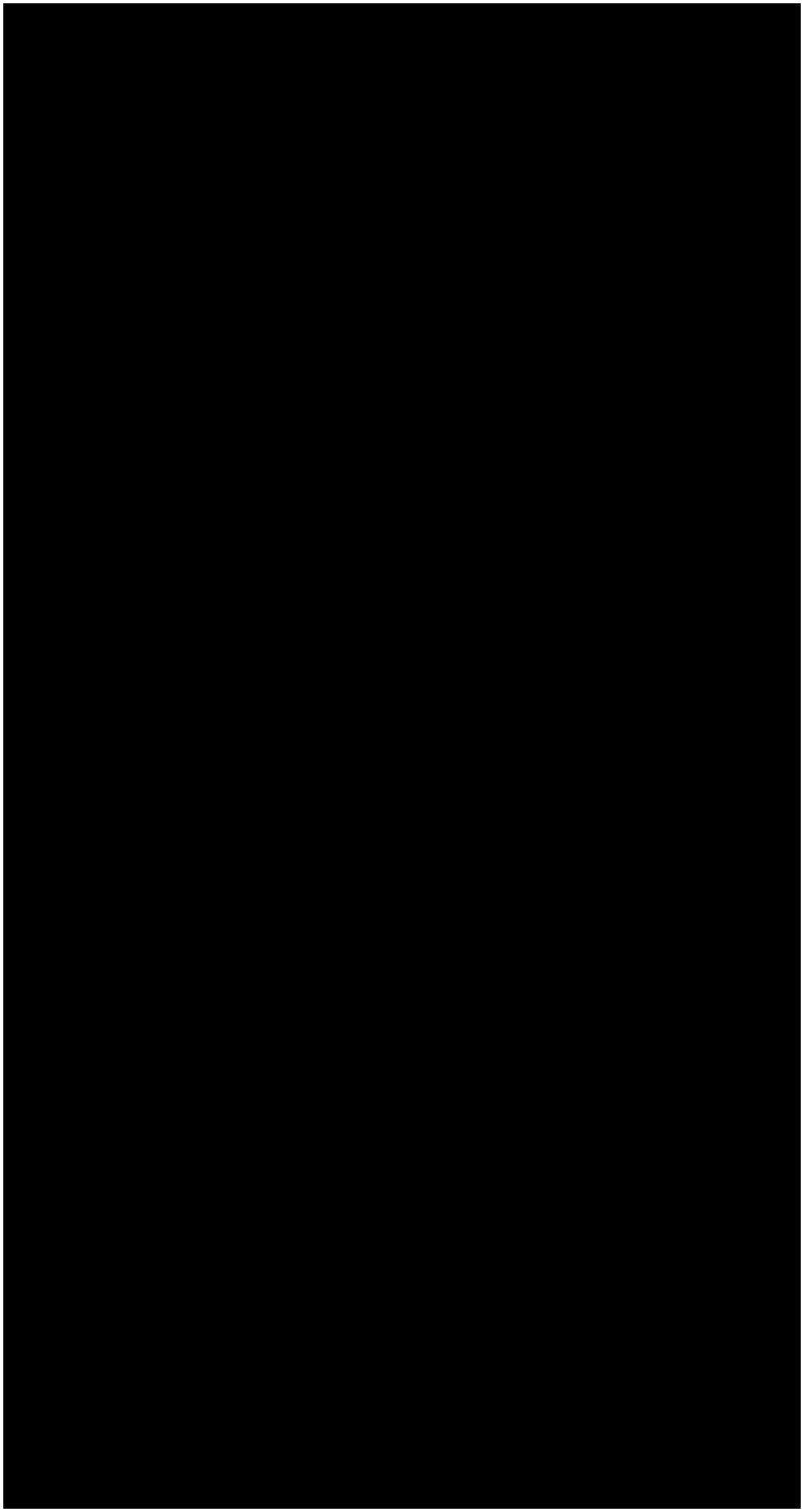


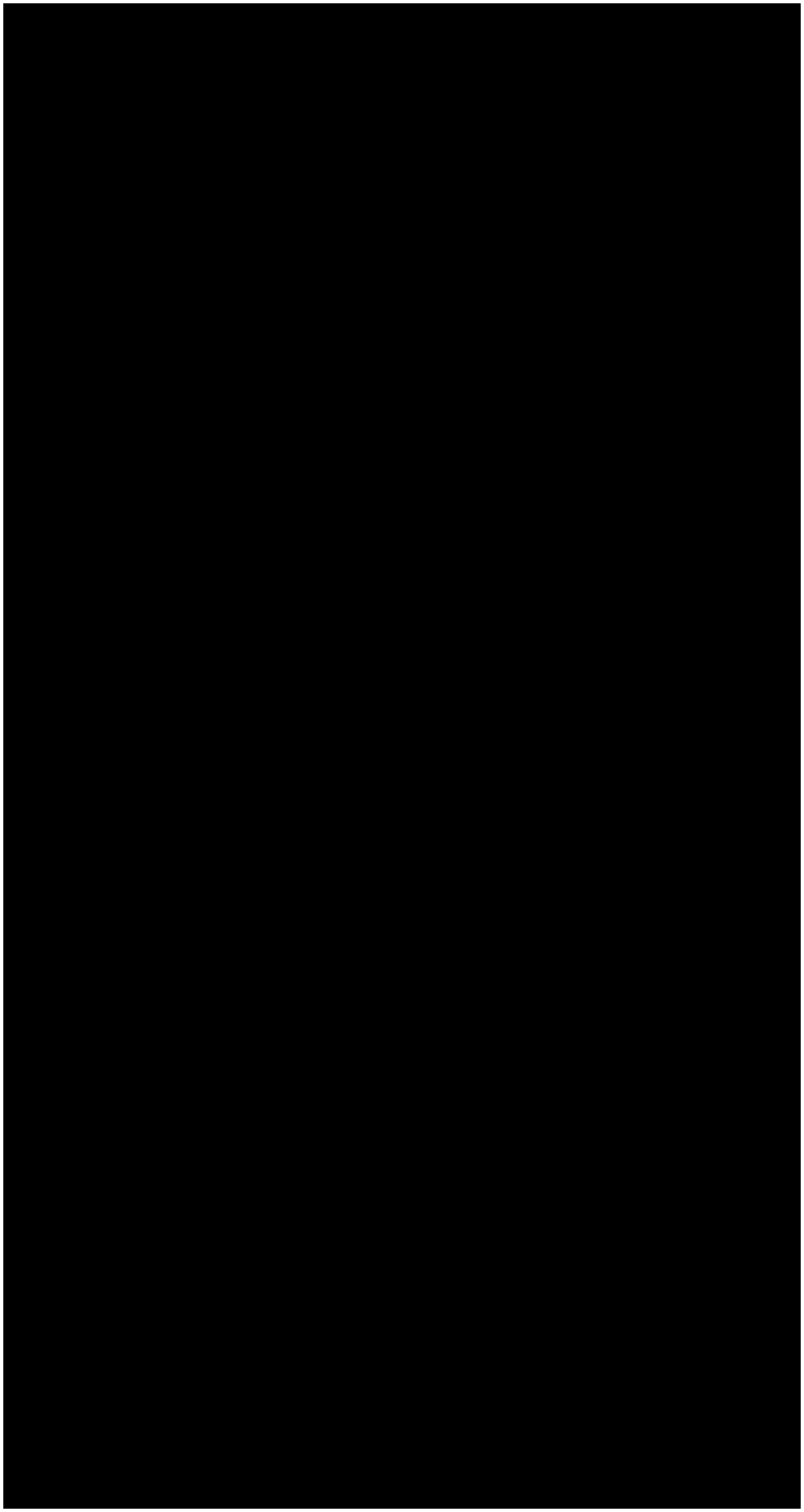


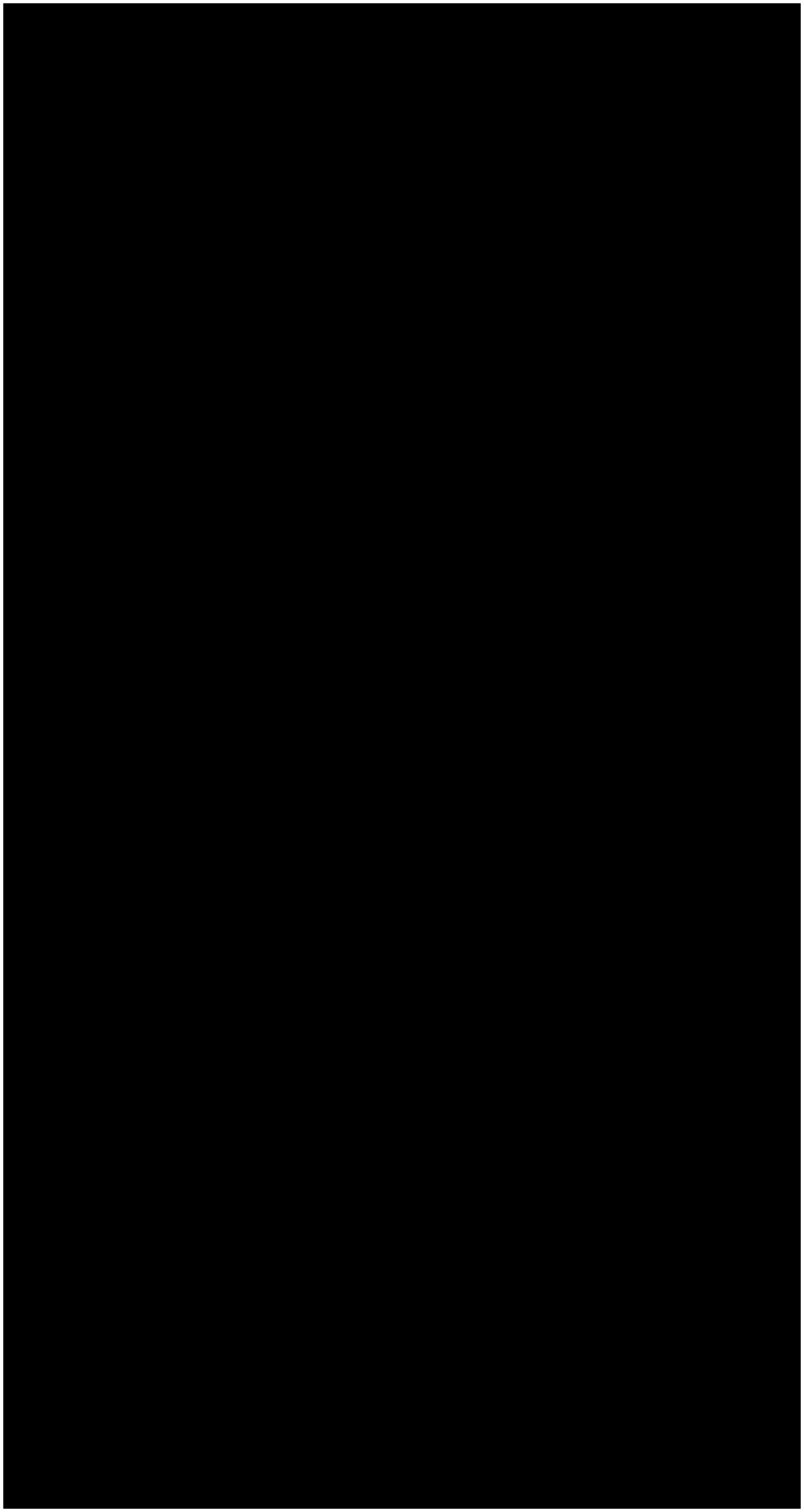














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
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Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
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Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
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Feb-25											
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Aug-25											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Design Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Year	Total Fixed Costs	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
2023-2024									
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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2026-2027						

2026-2027	[redacted]
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2027-2028	
2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



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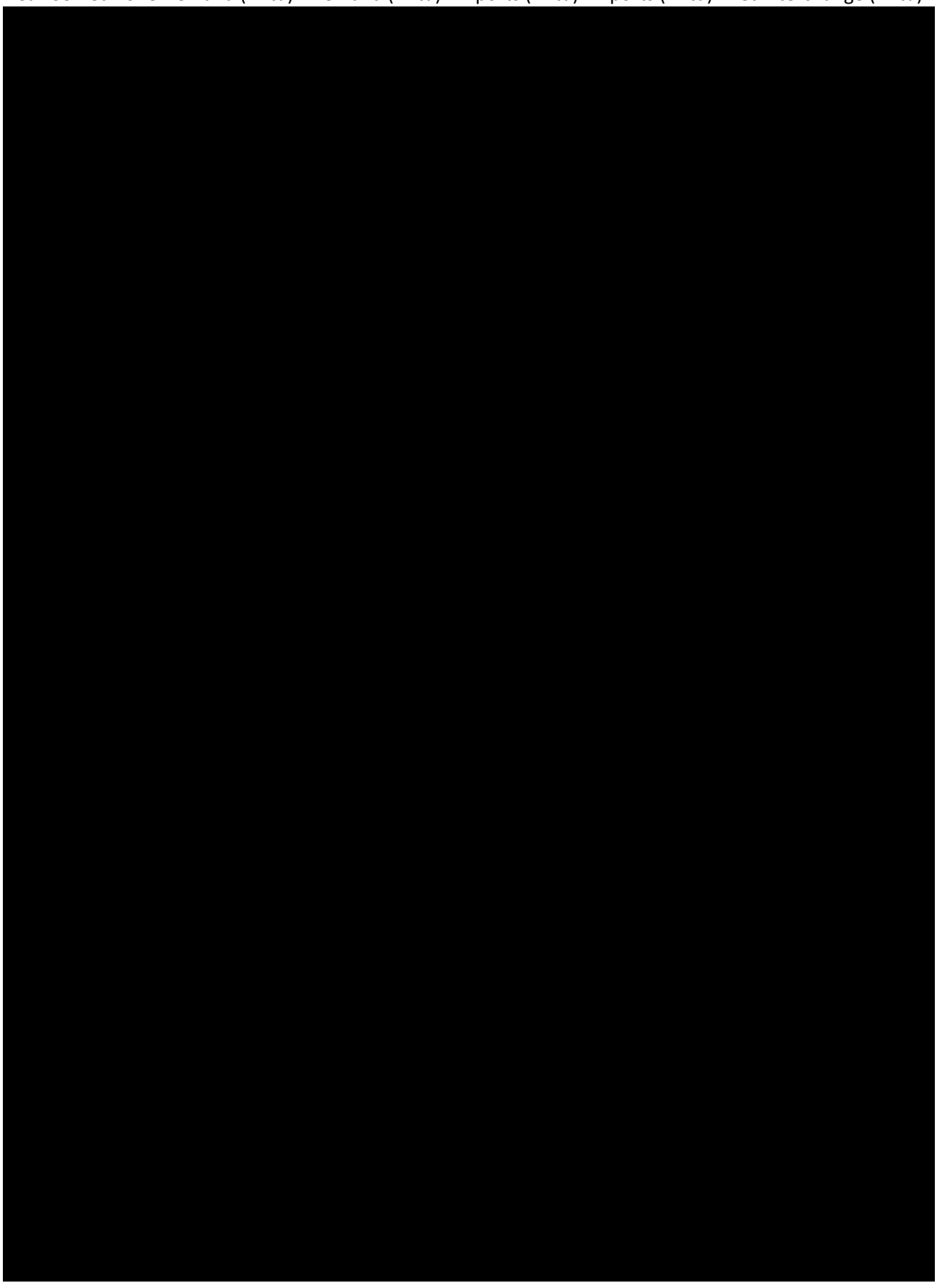
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





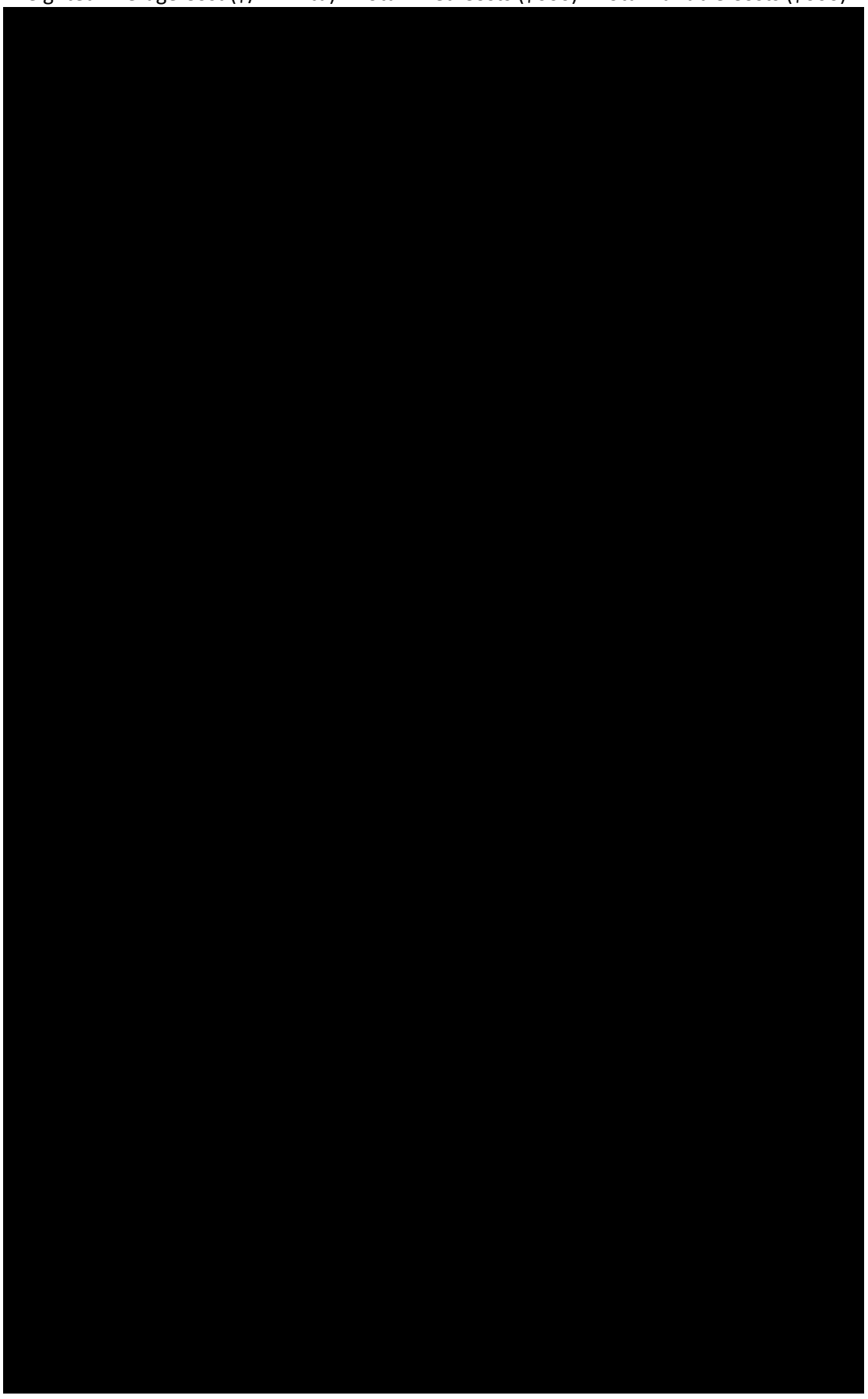
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

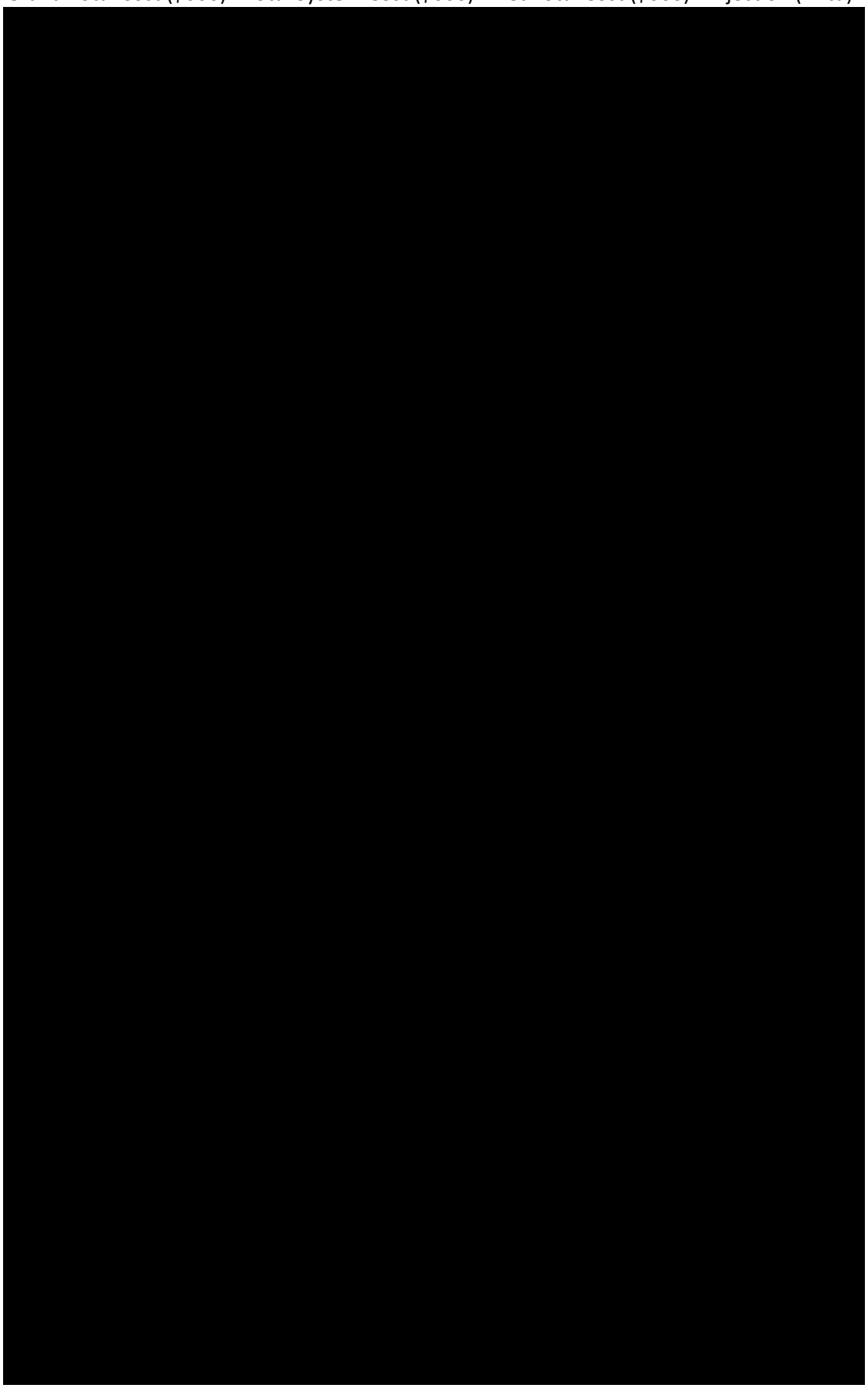


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

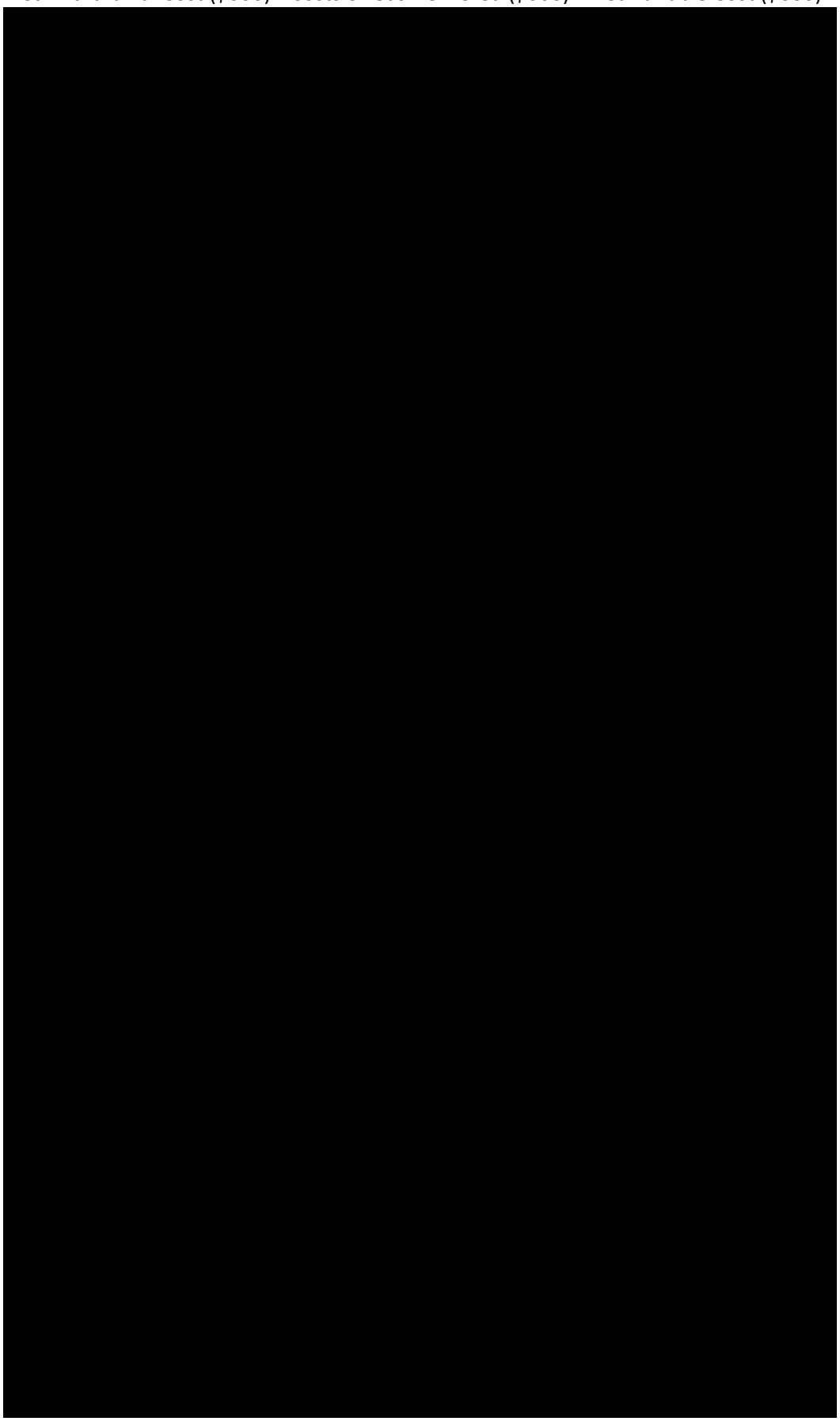




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

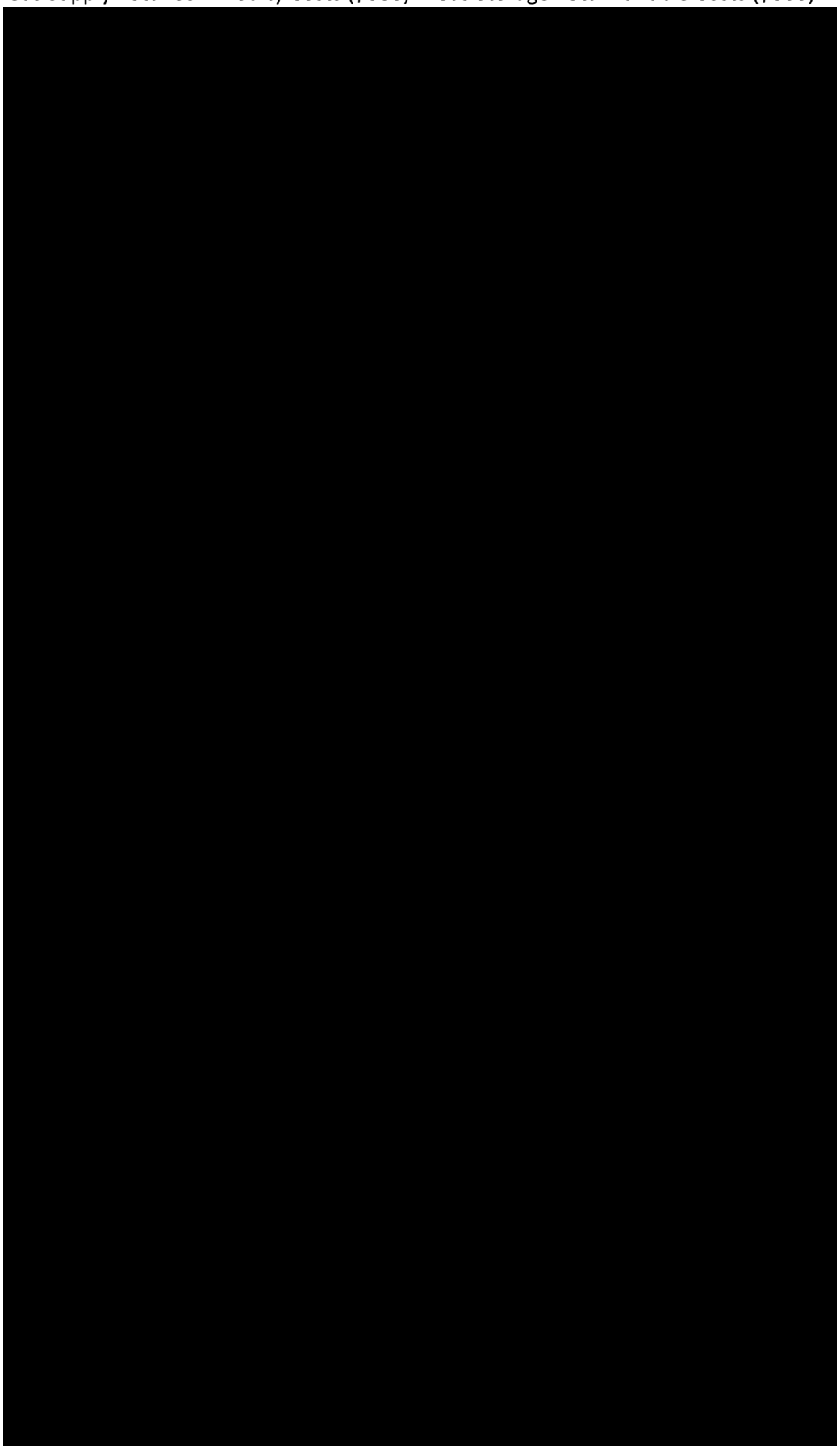




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

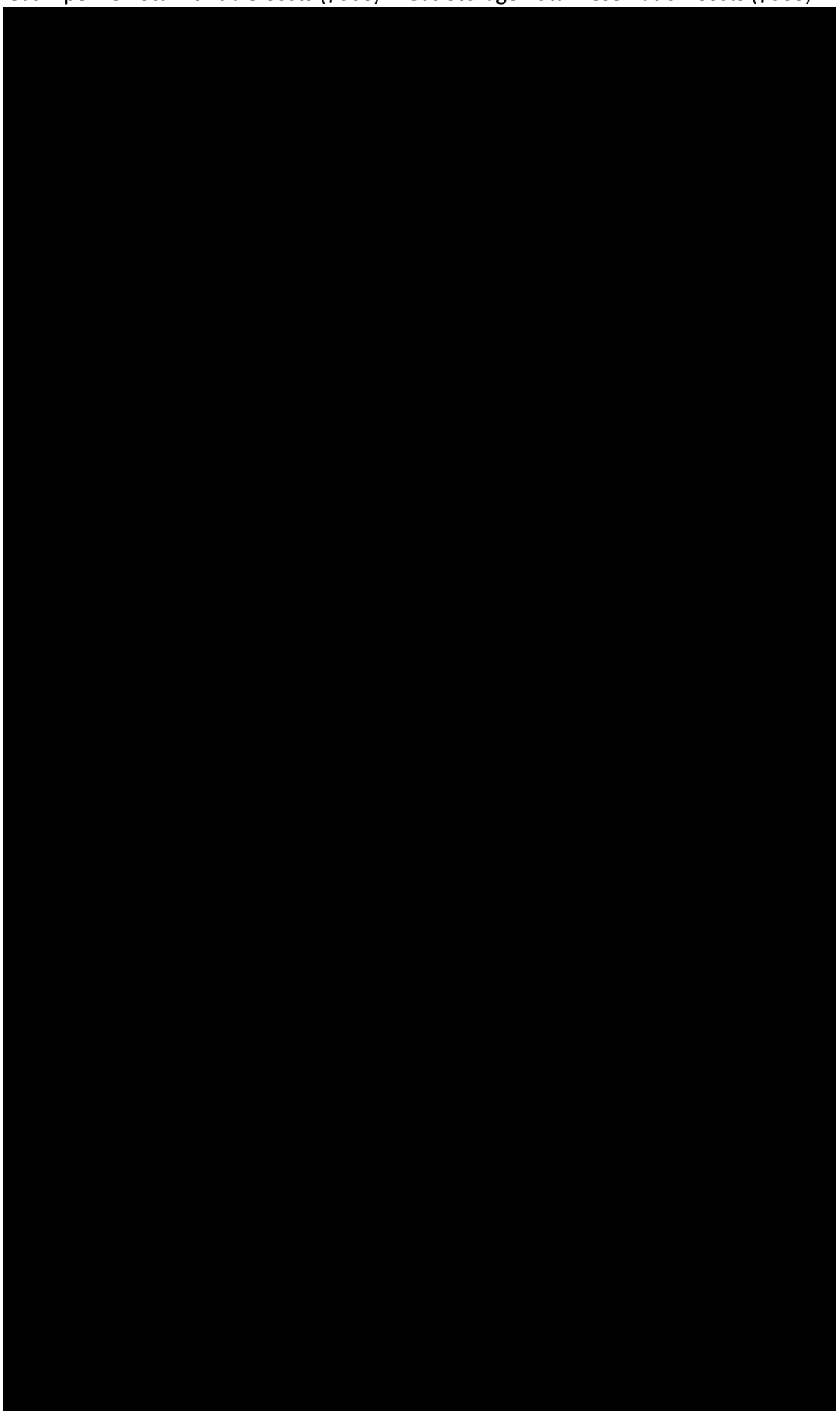


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



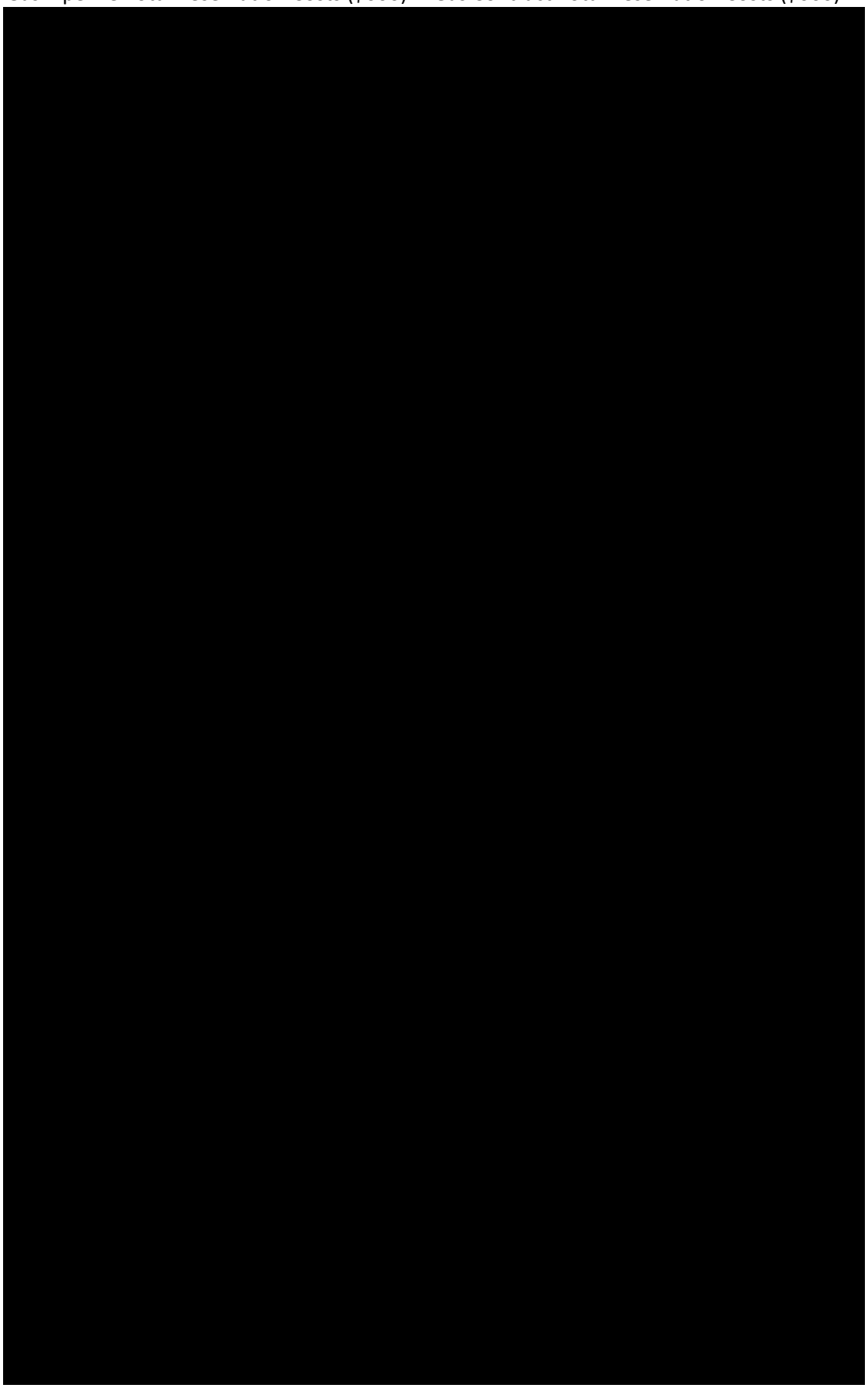


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



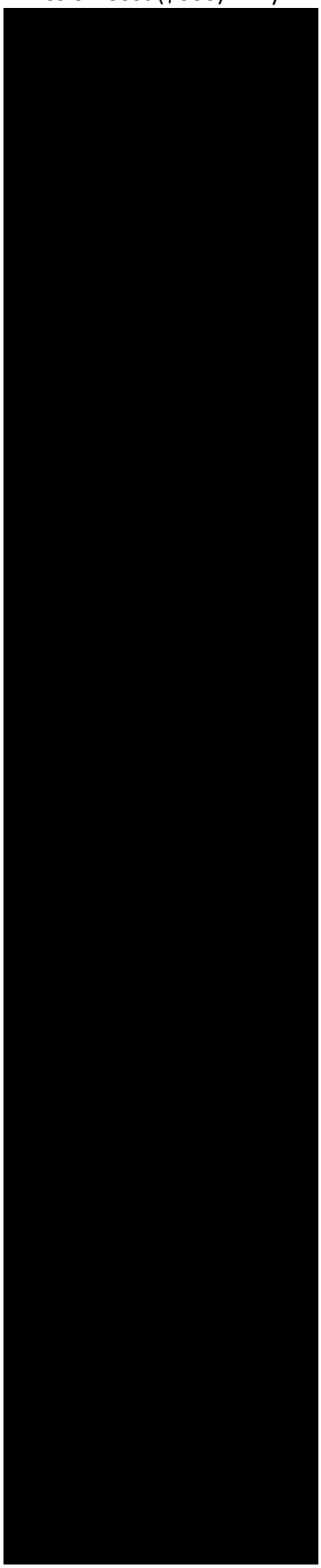


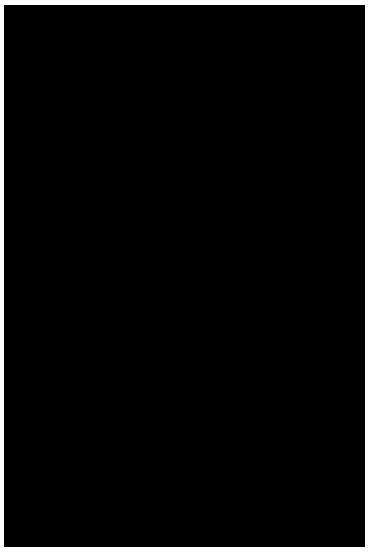
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



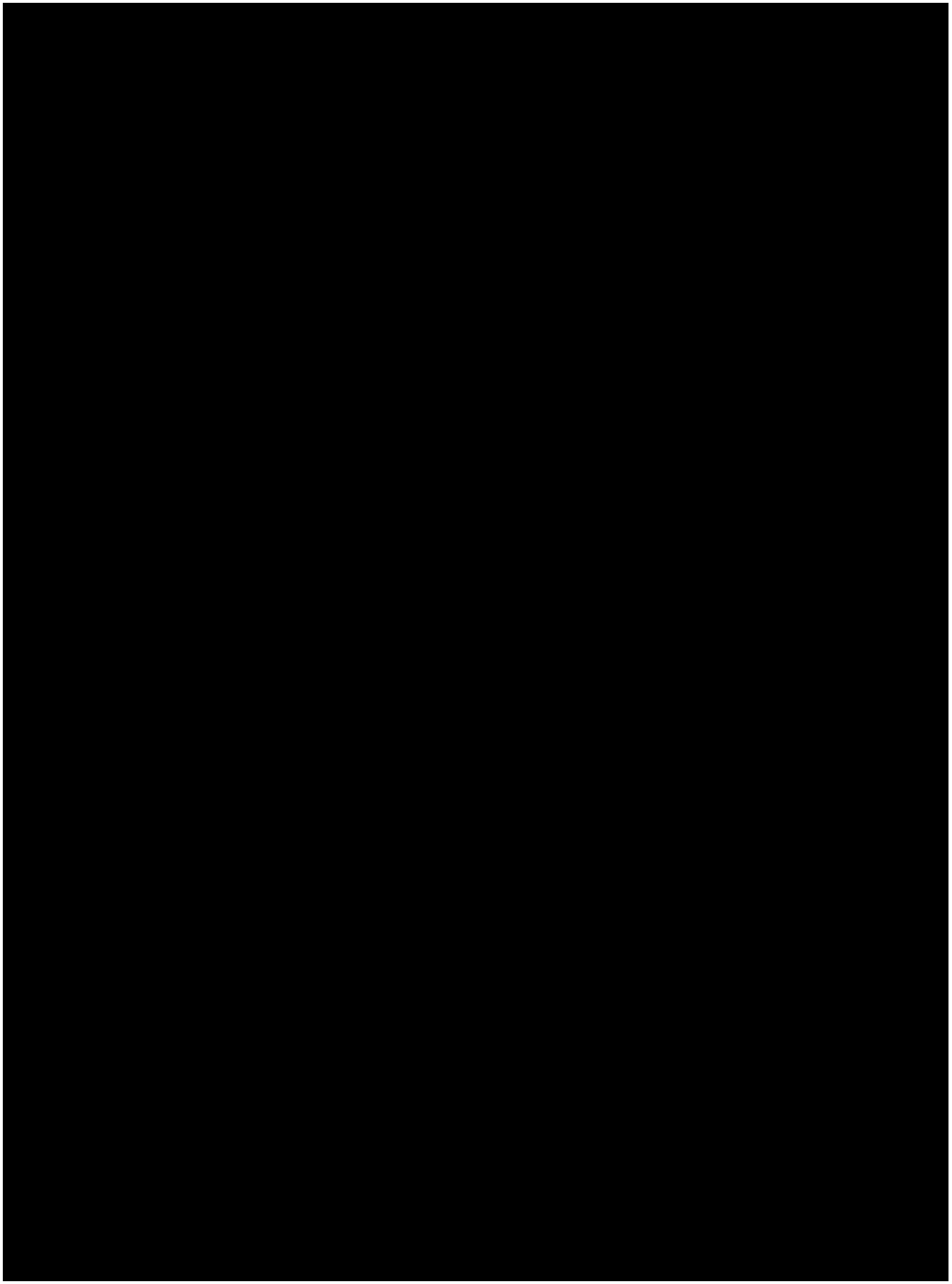


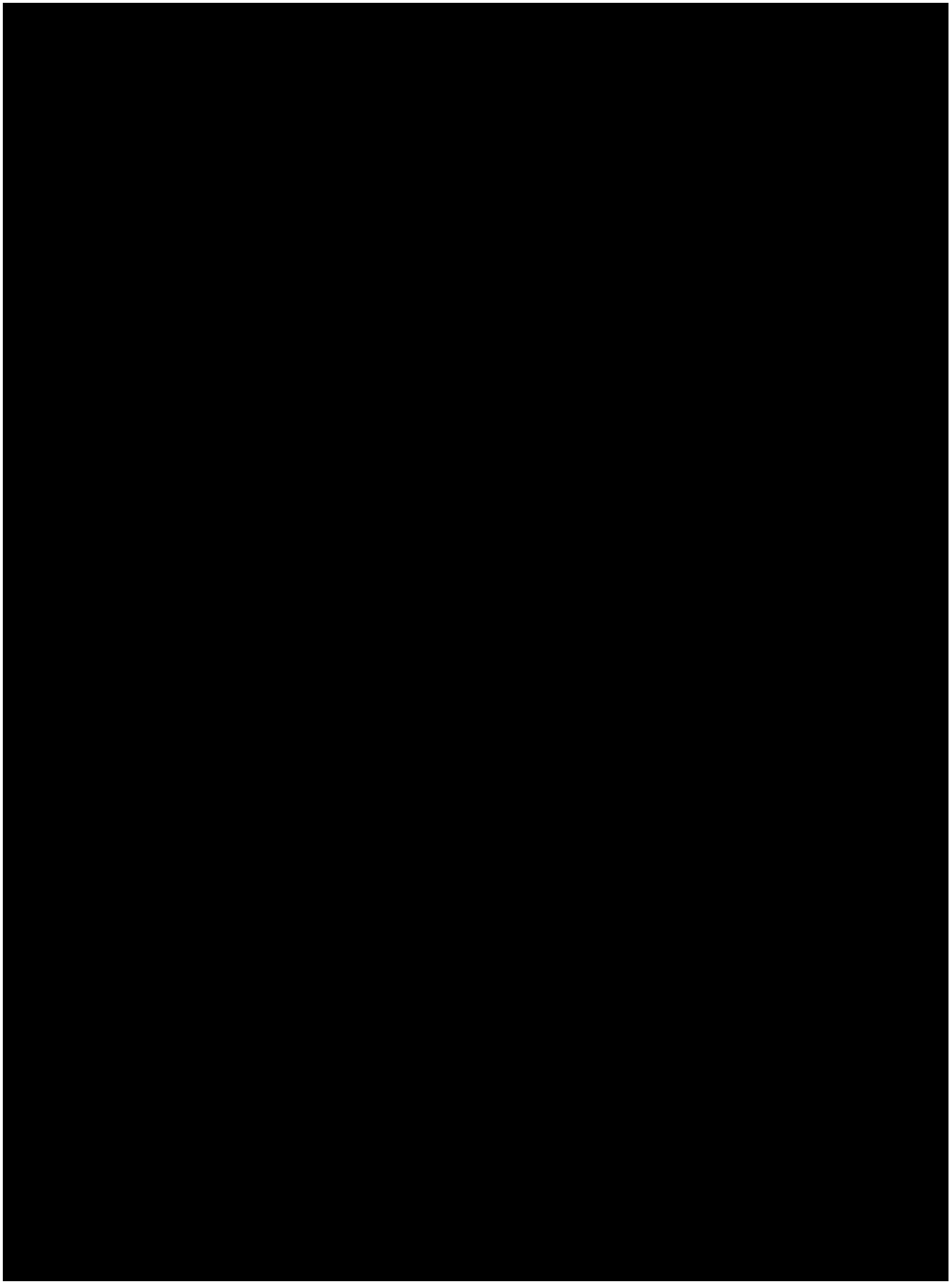
Emission Cost ($000) x y z

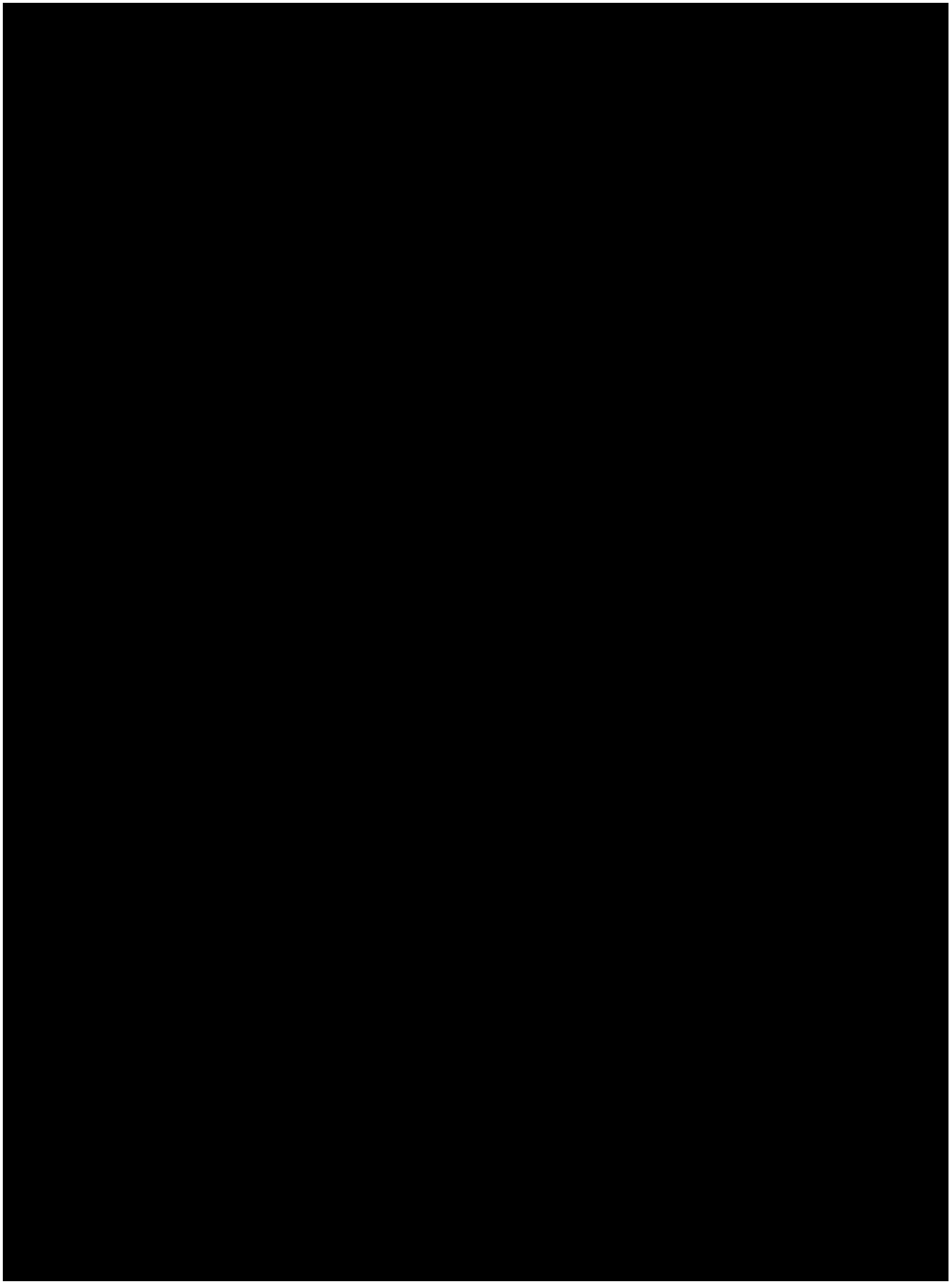


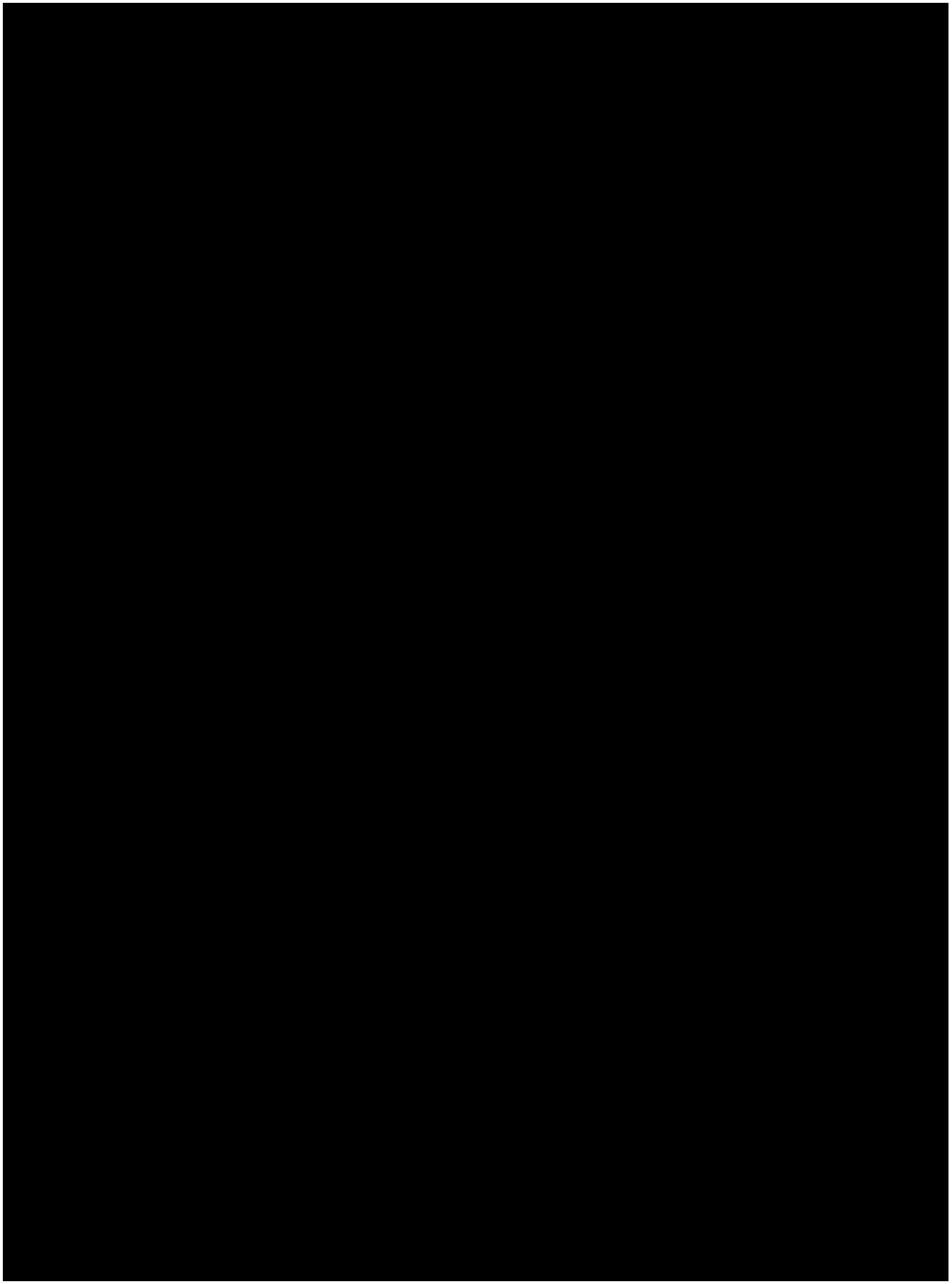


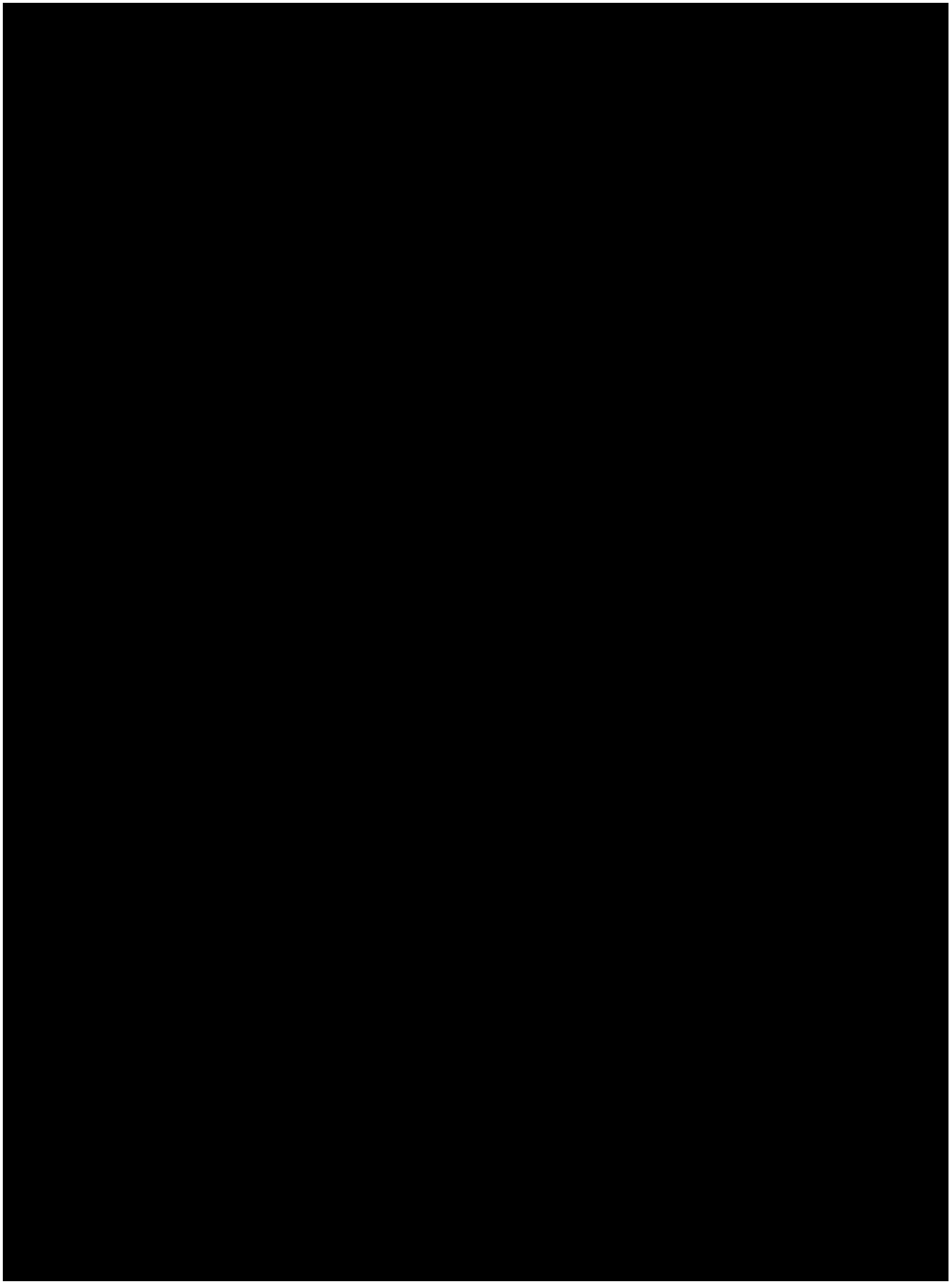
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

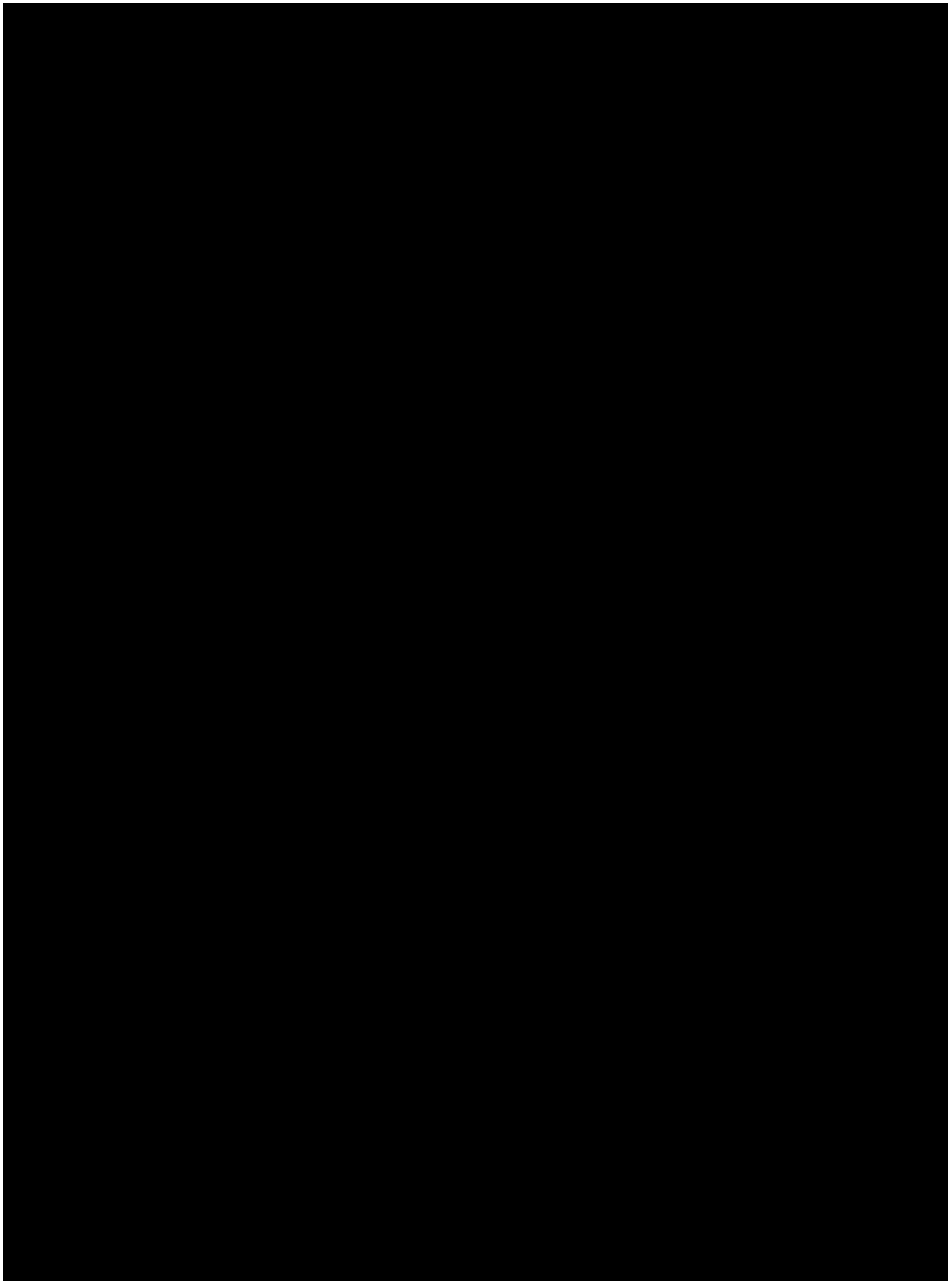


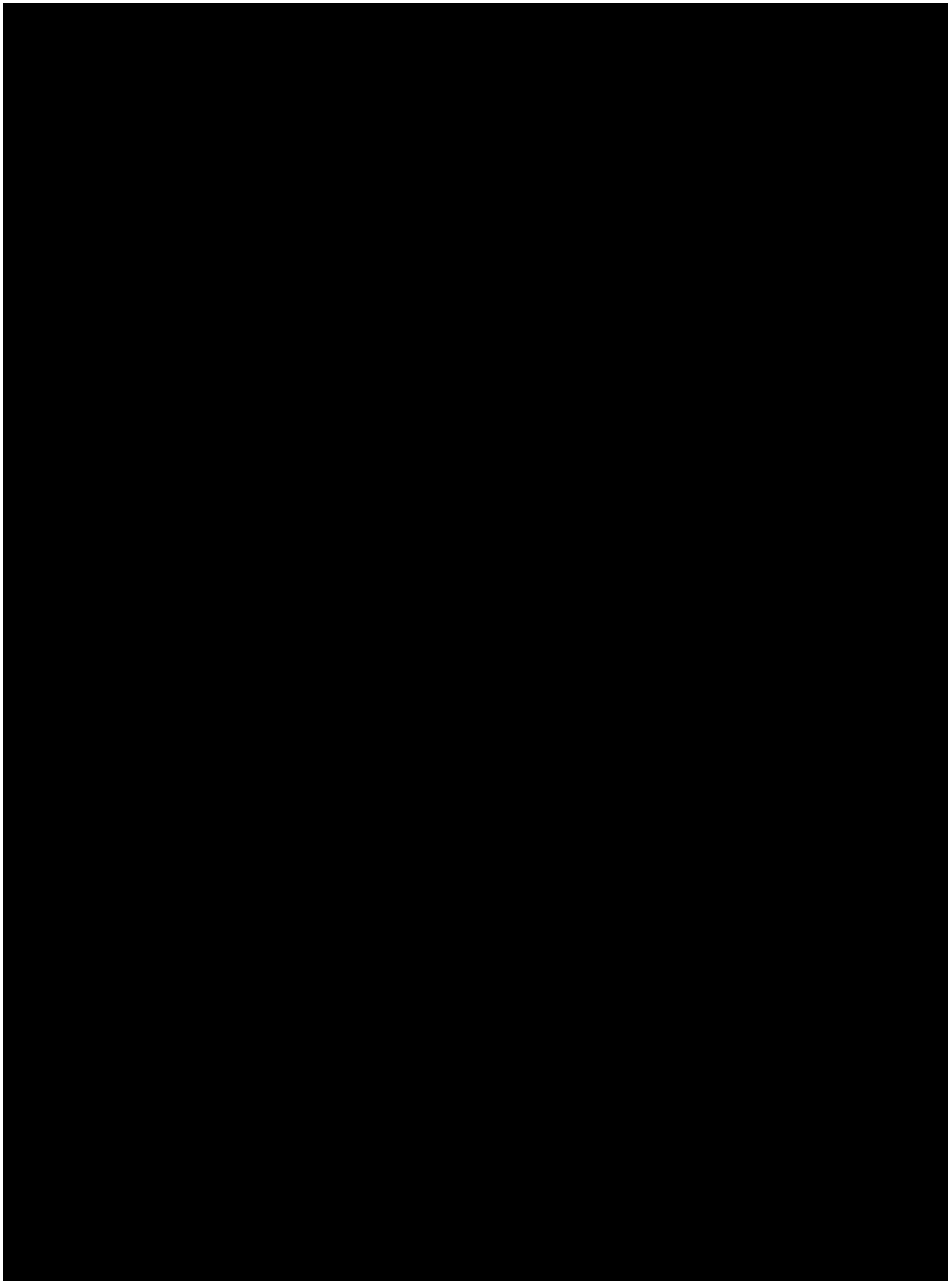


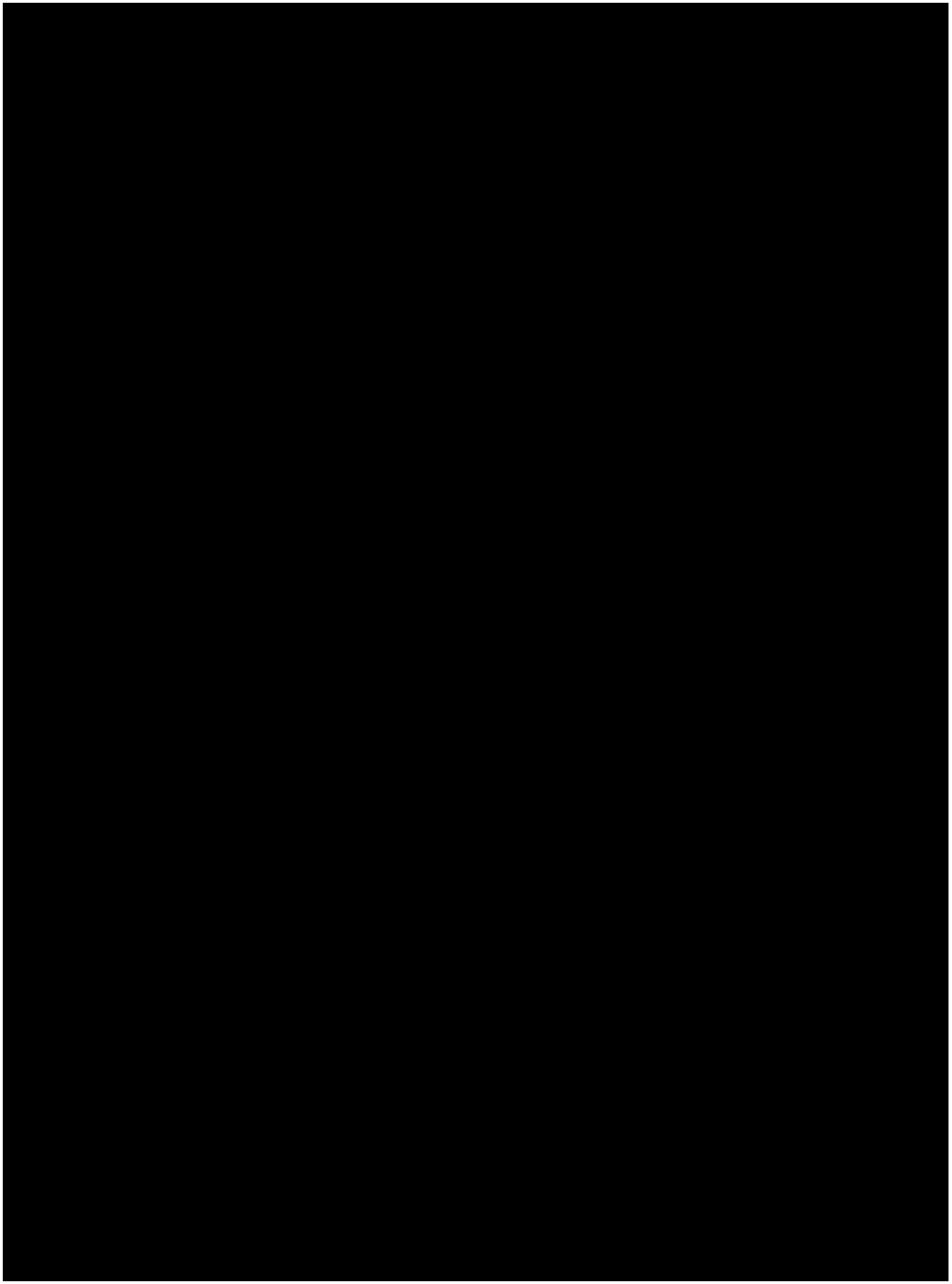


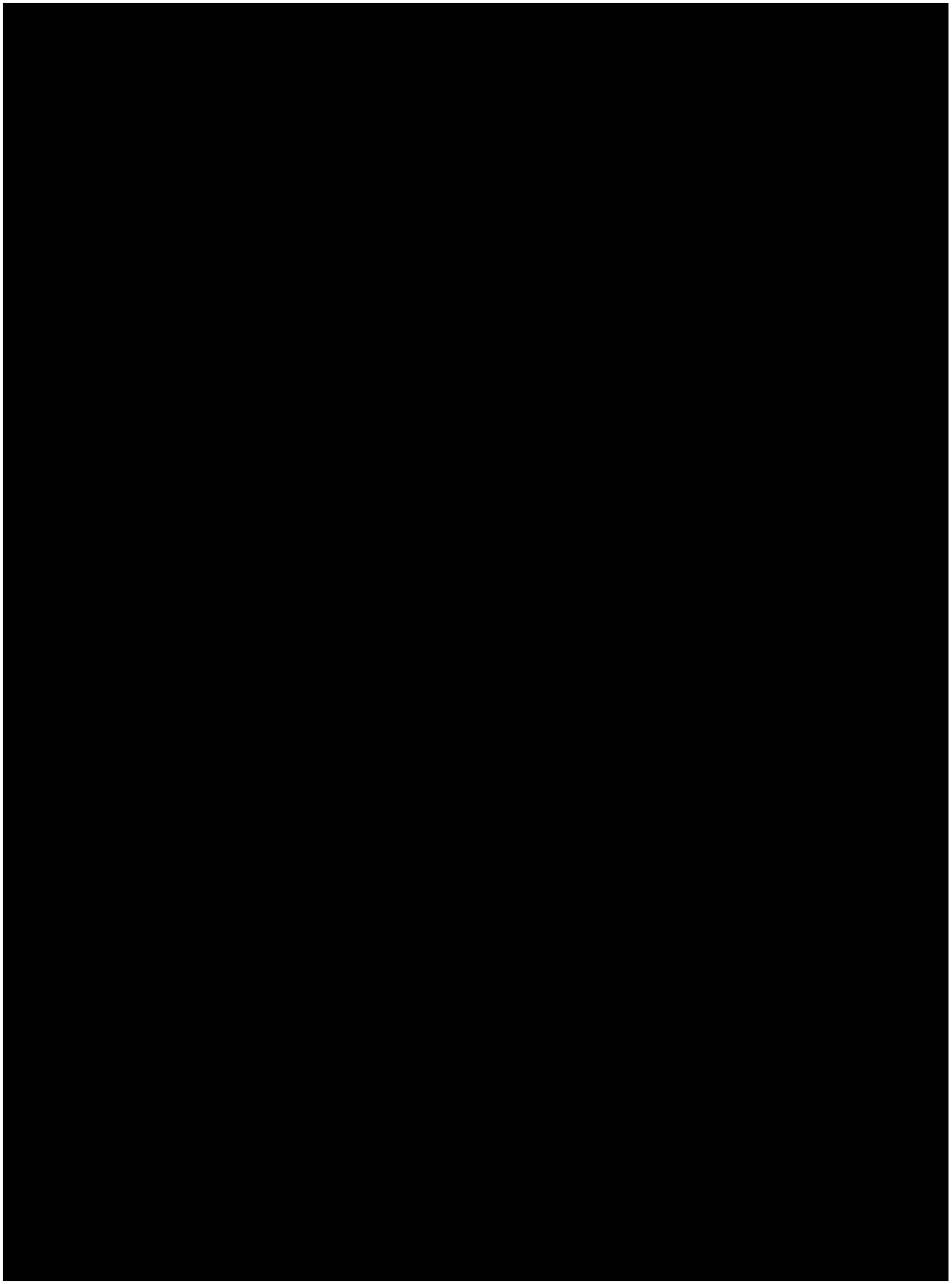


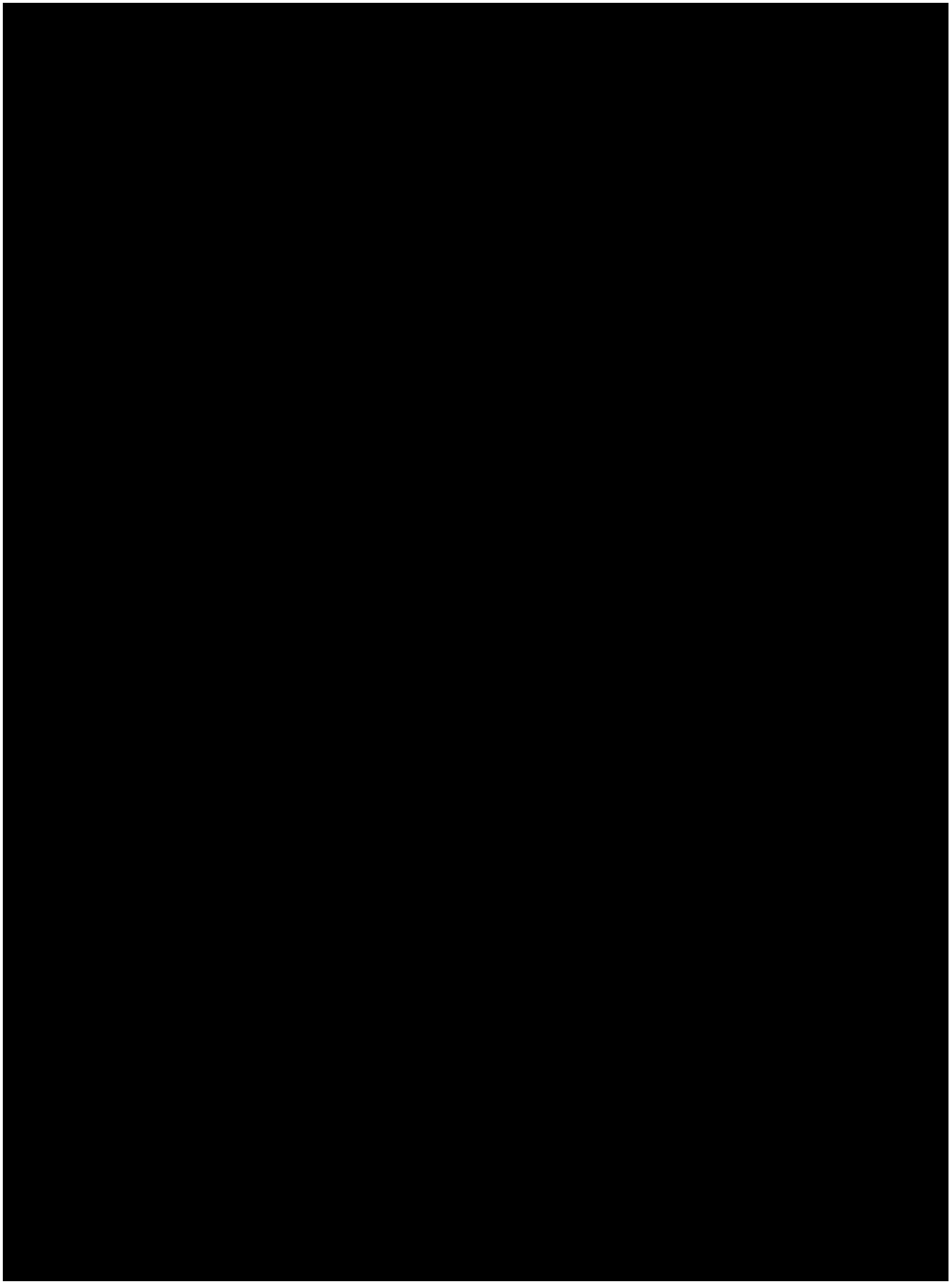


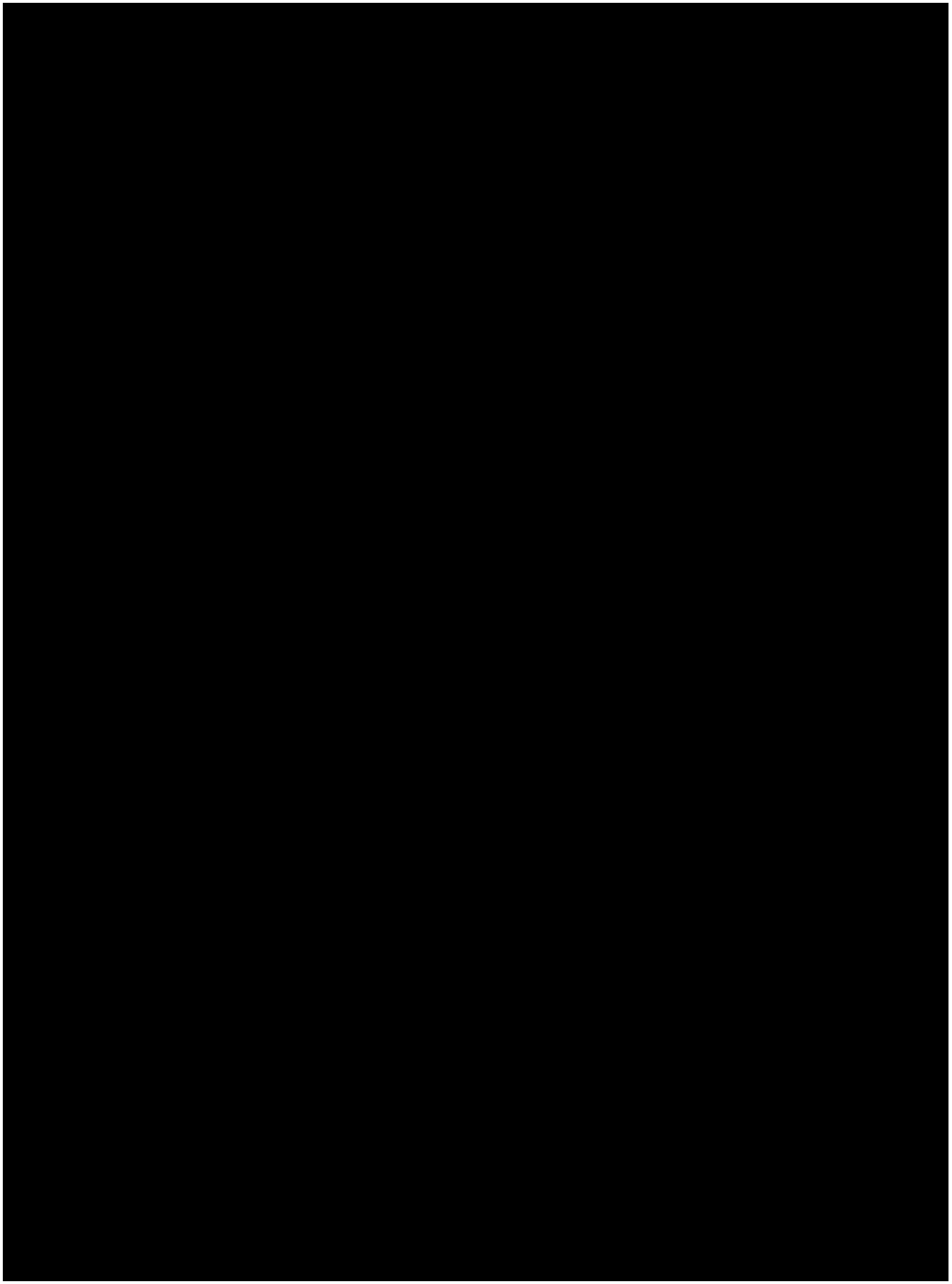


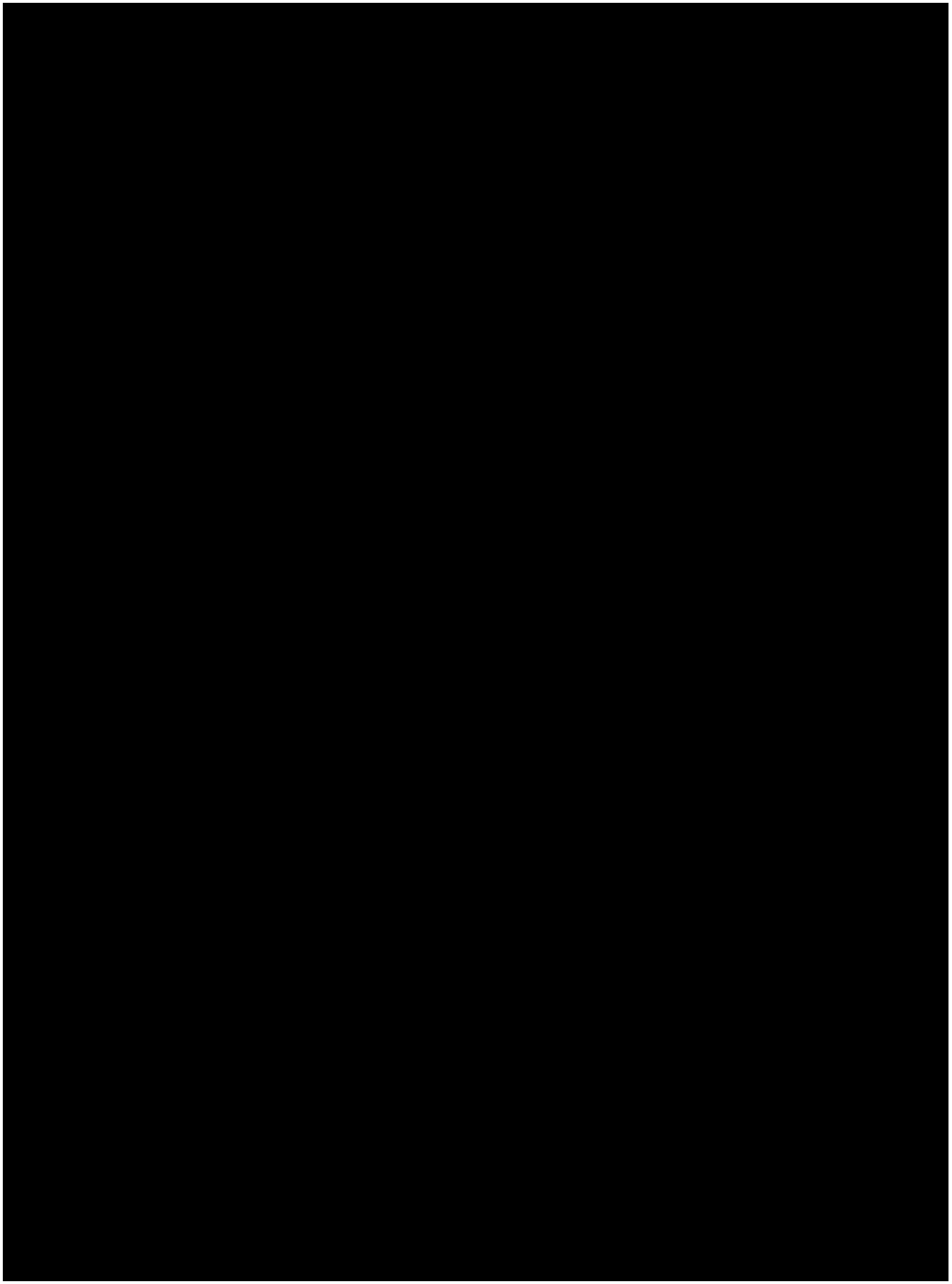


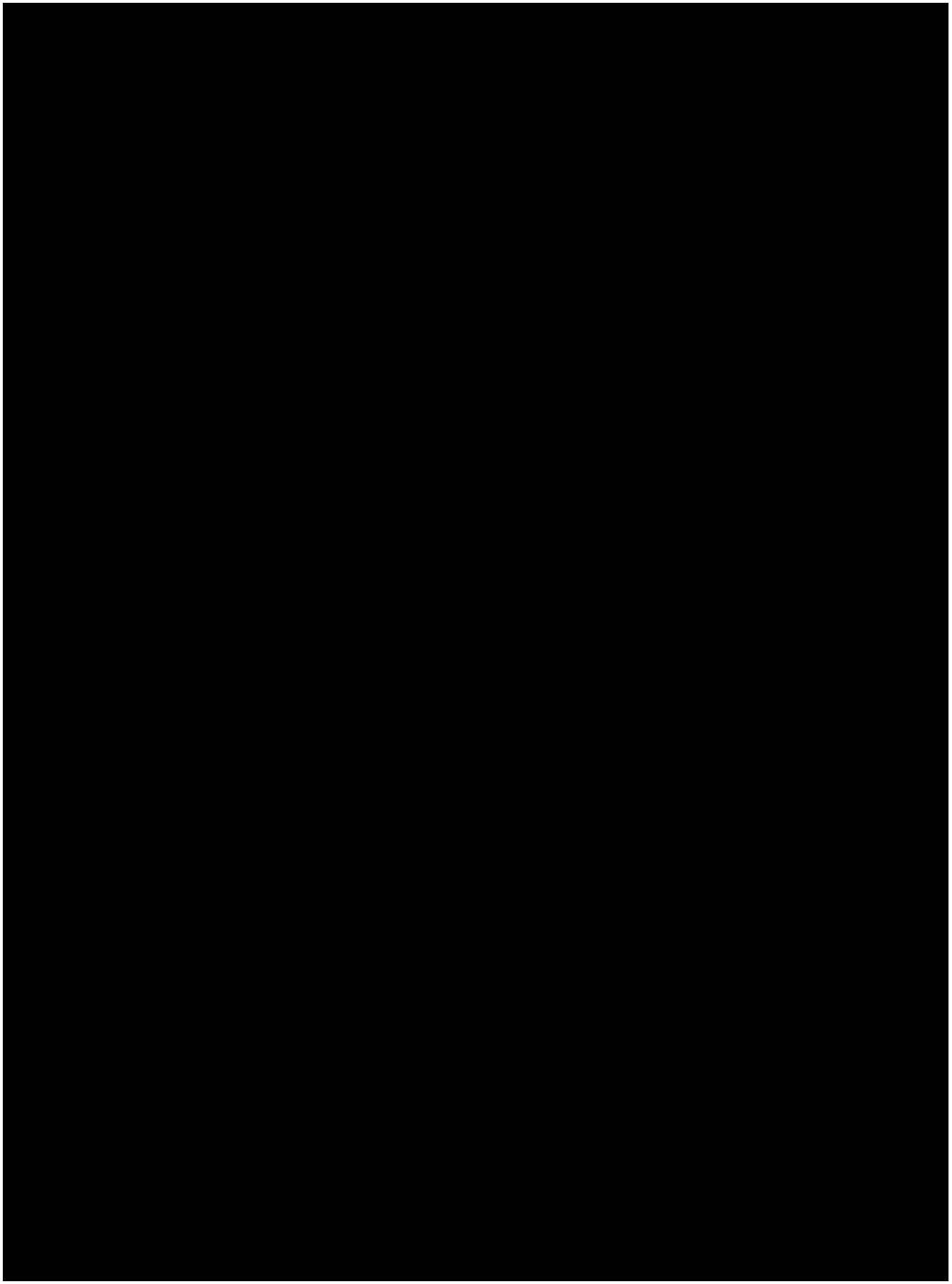


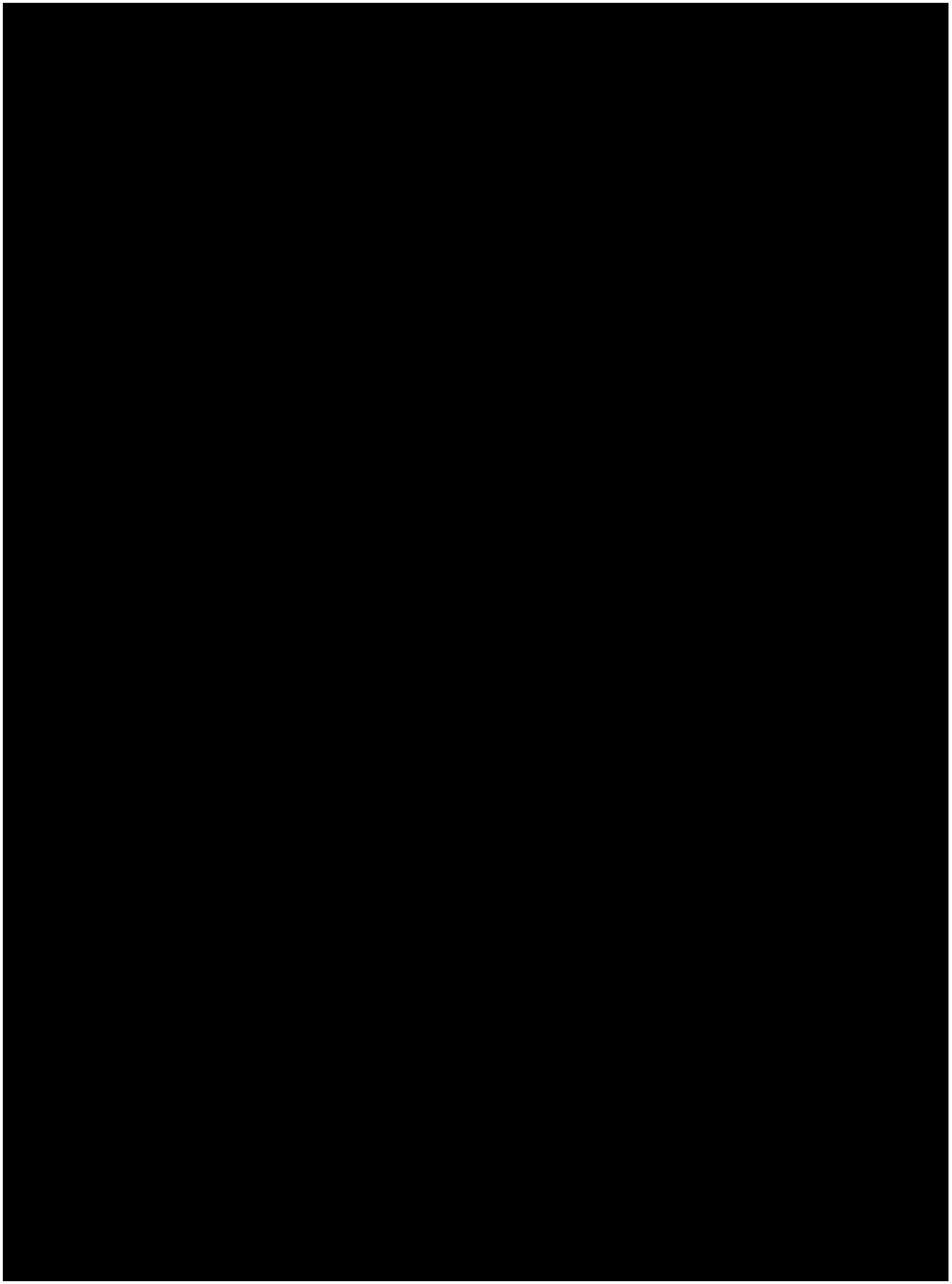


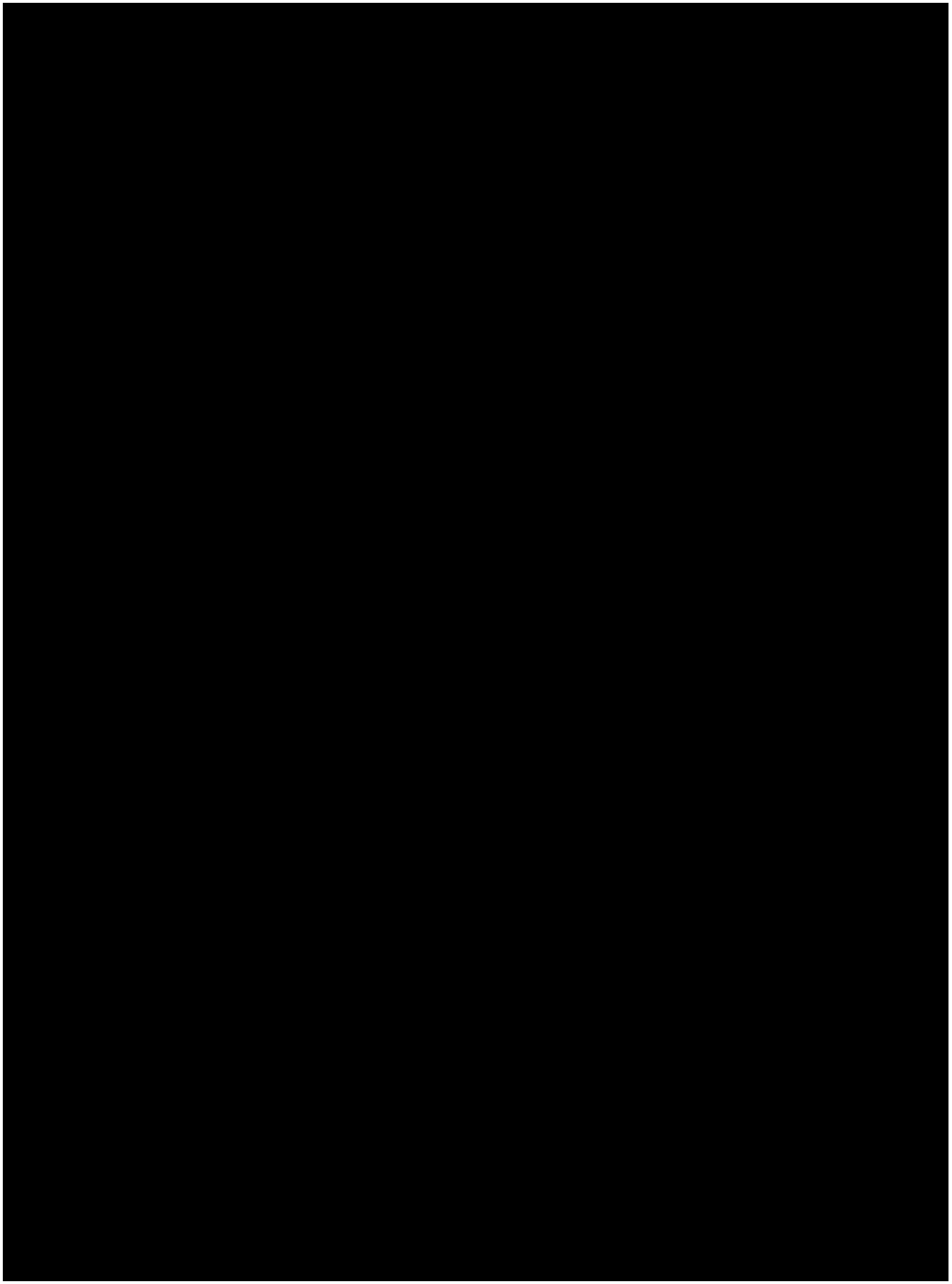


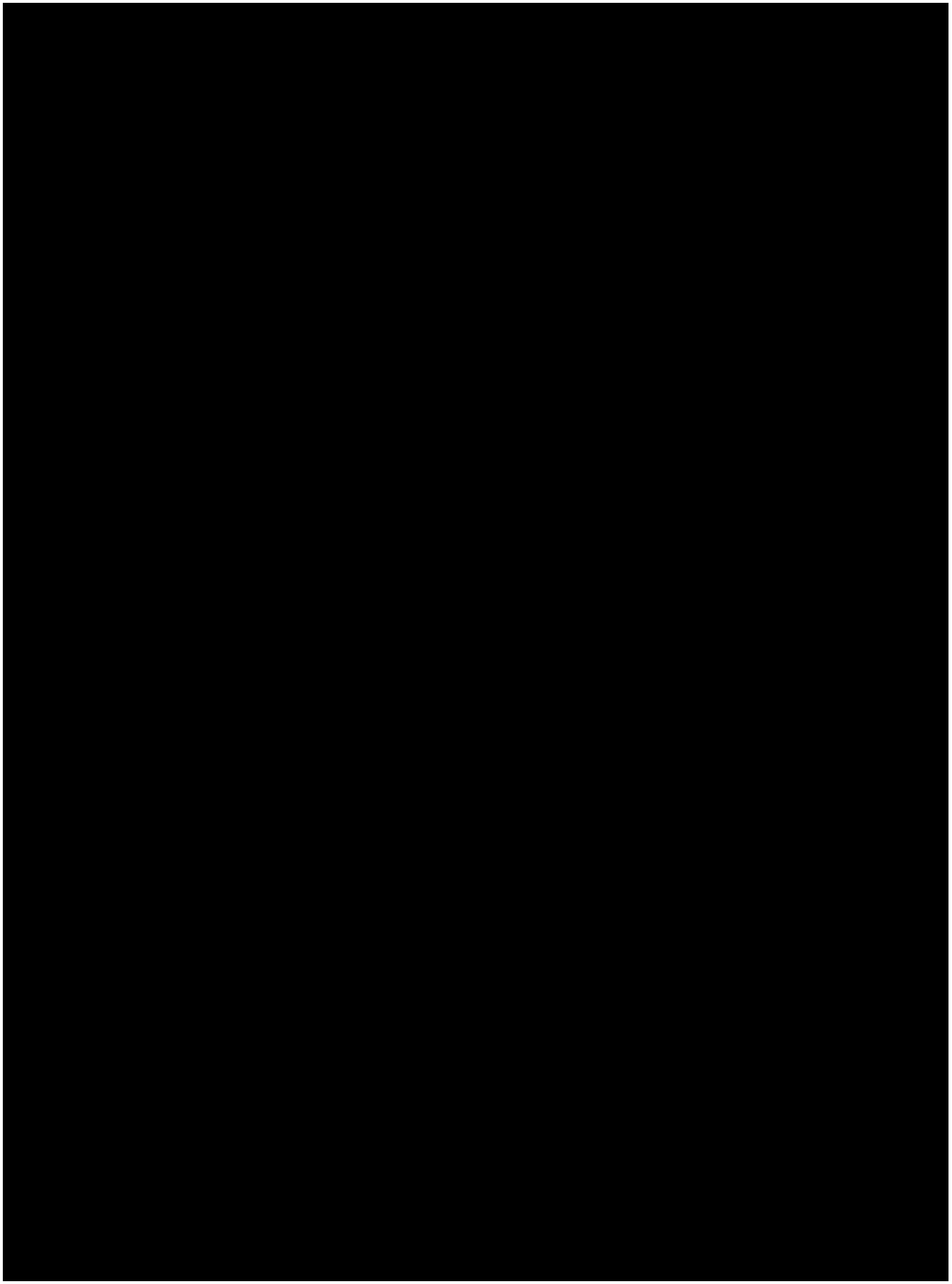


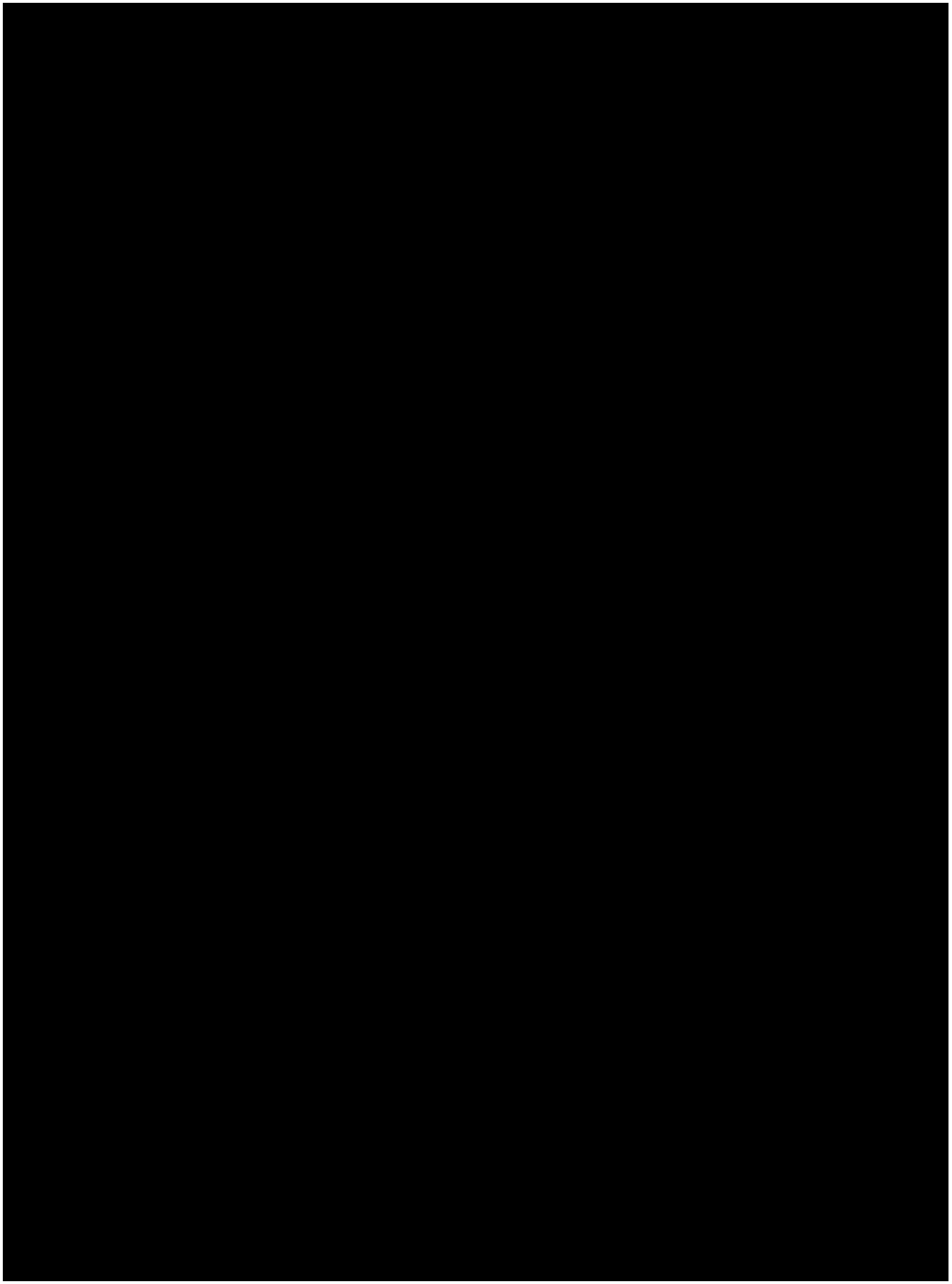


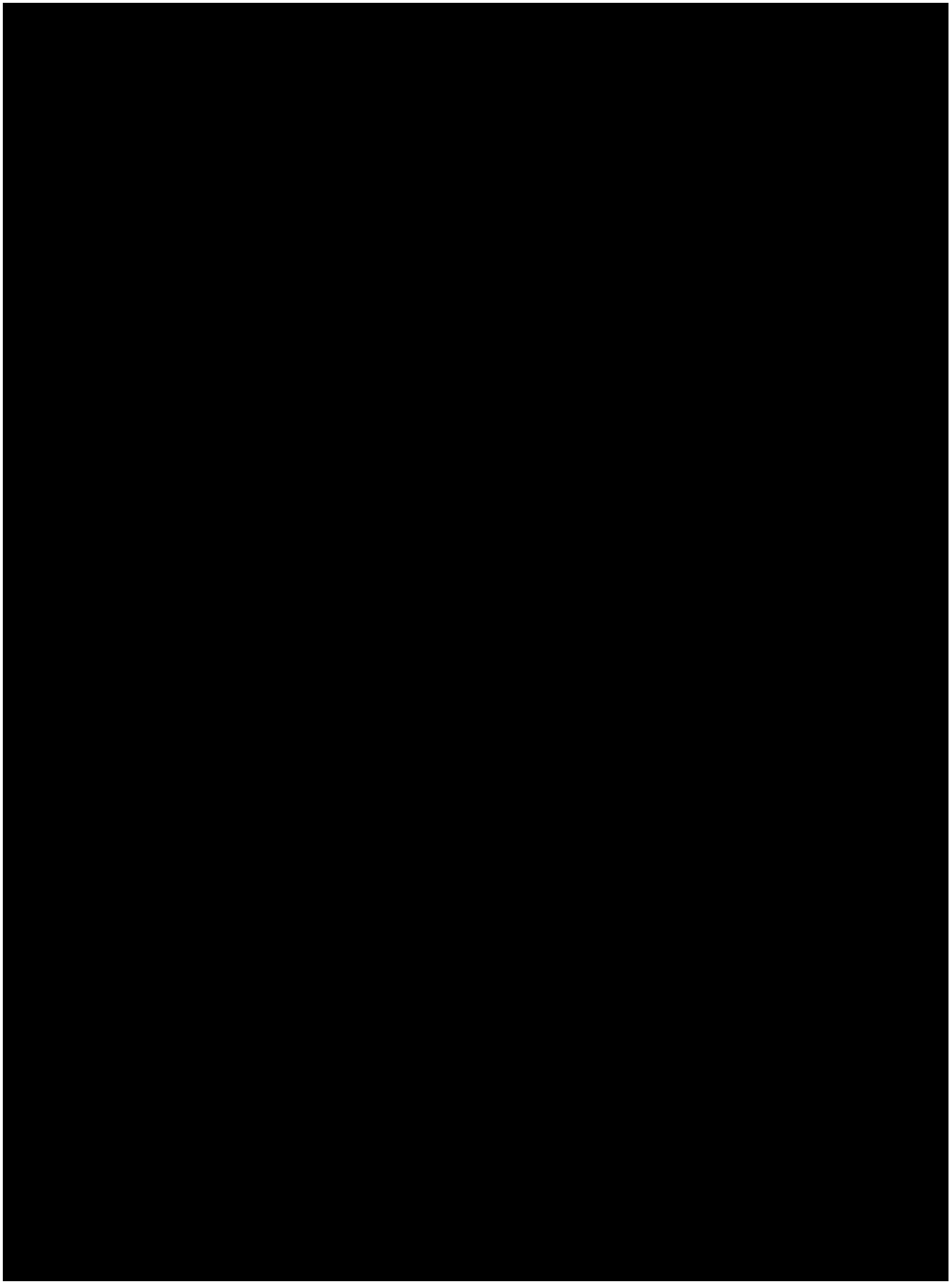




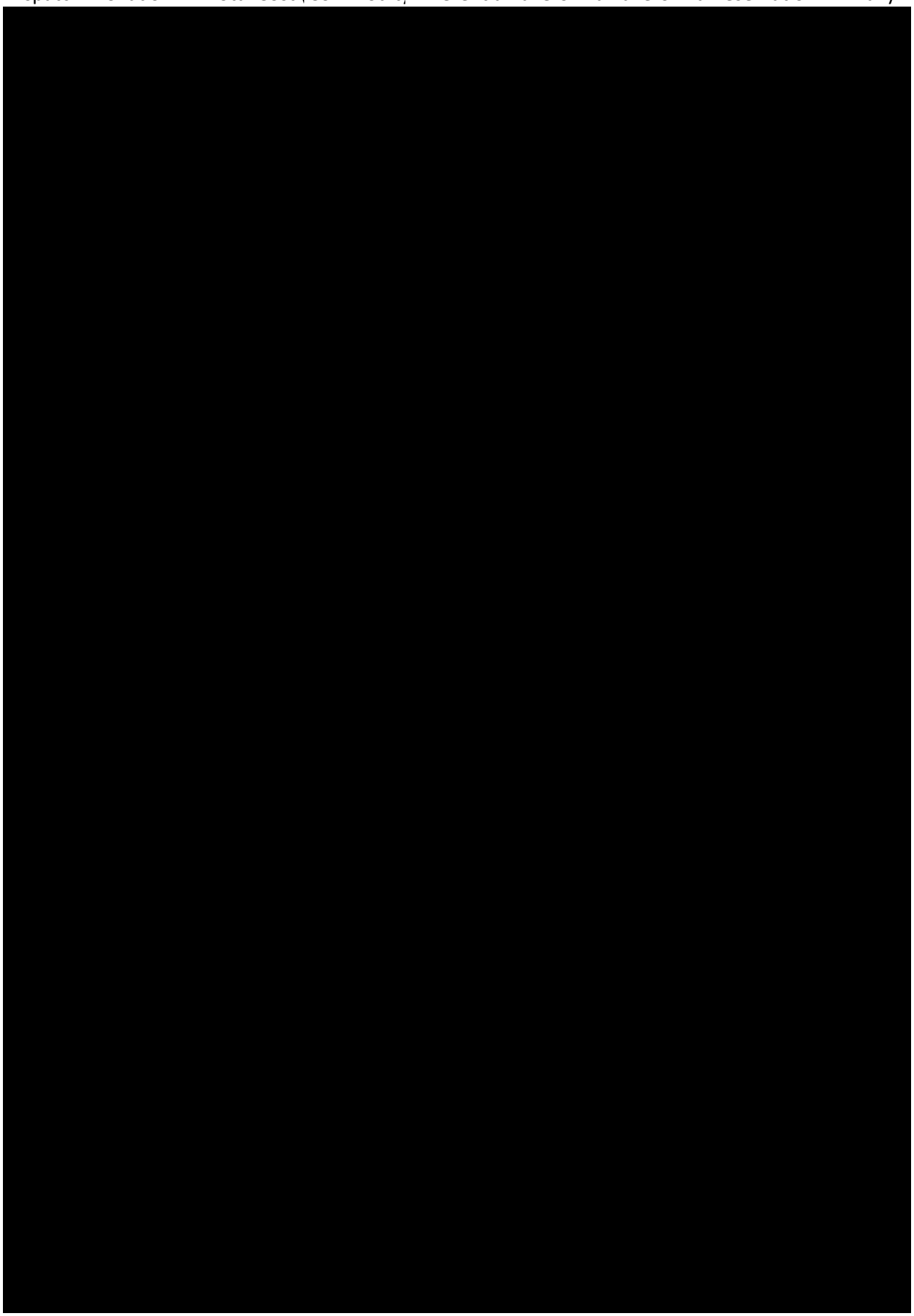


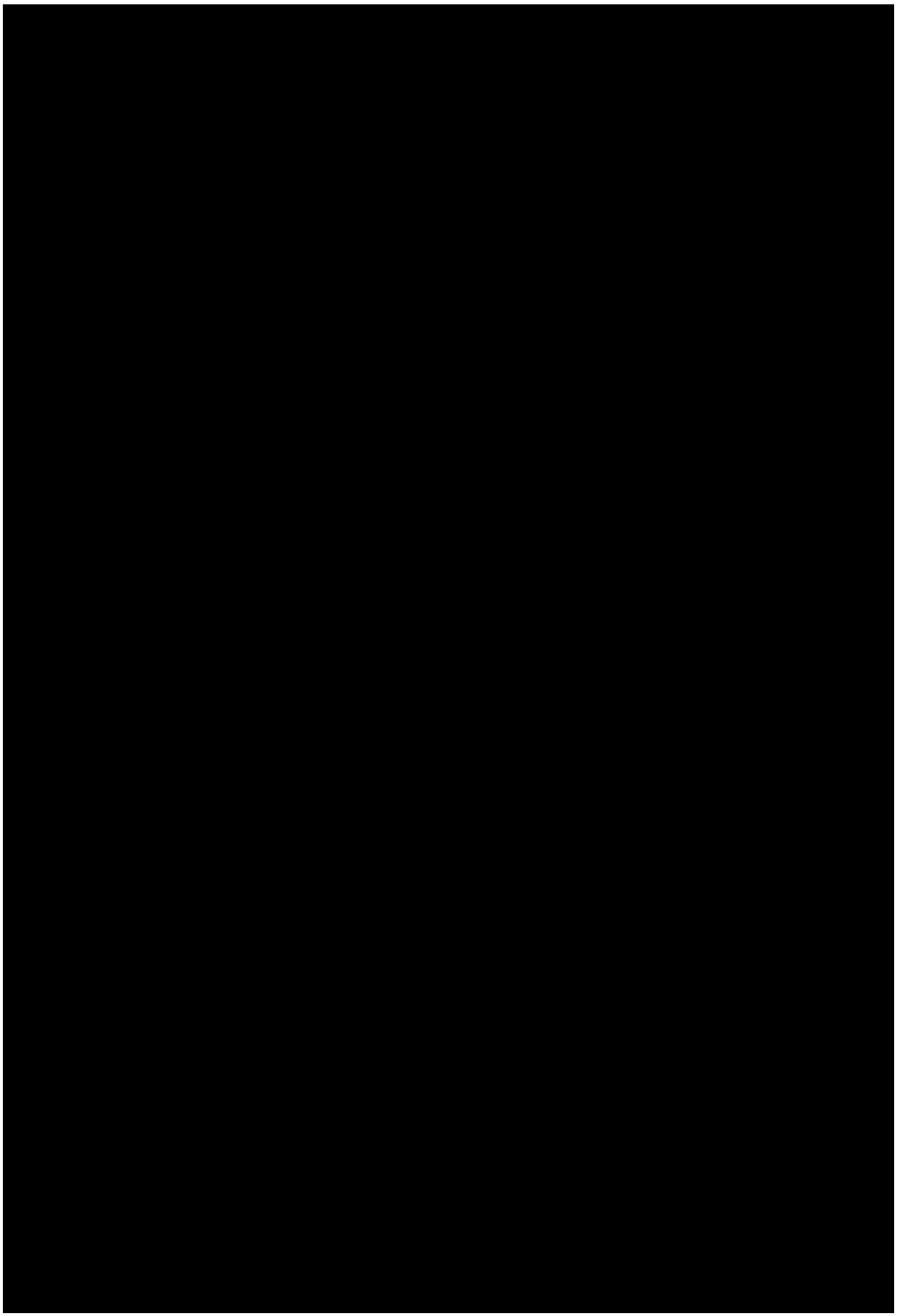


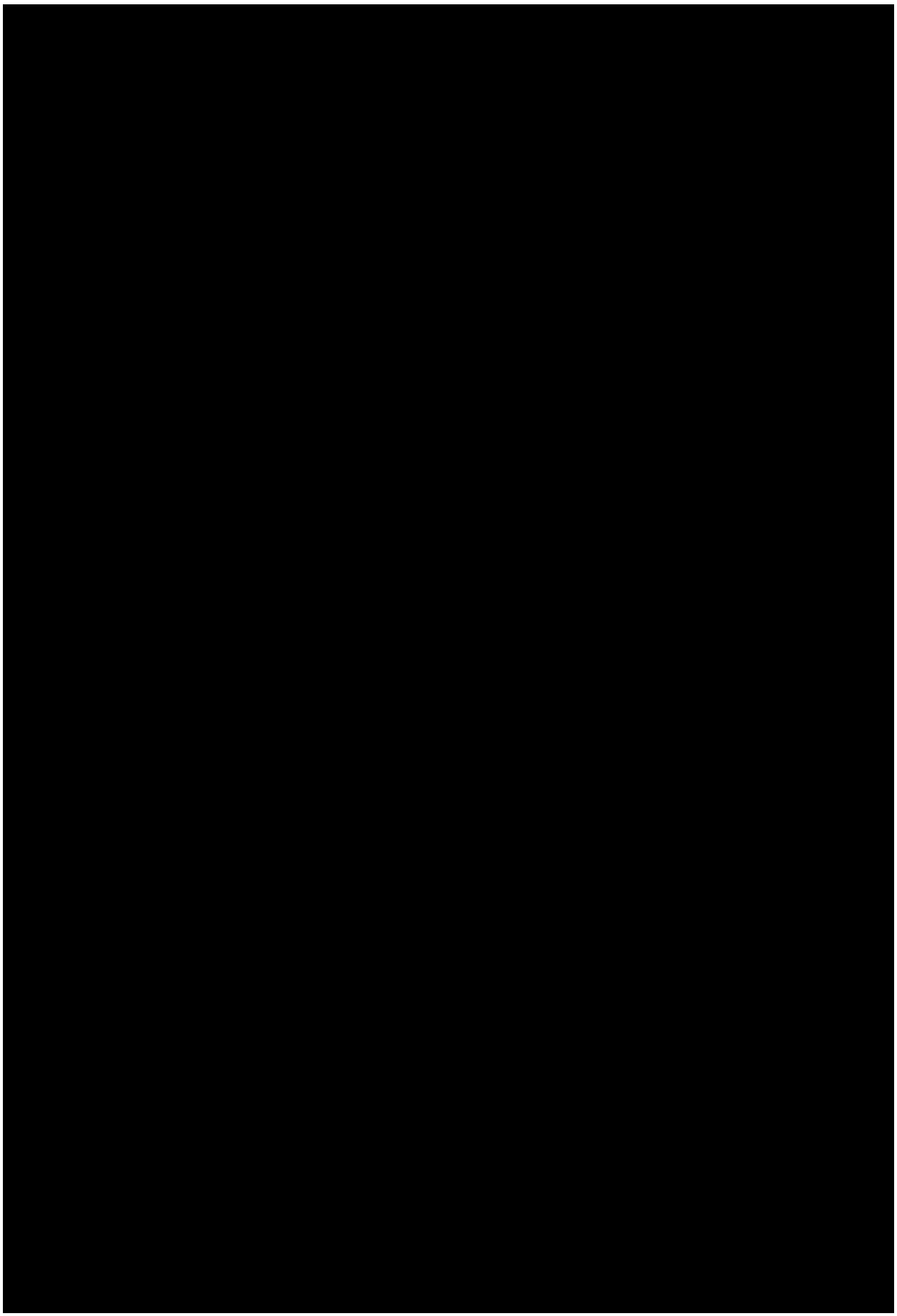


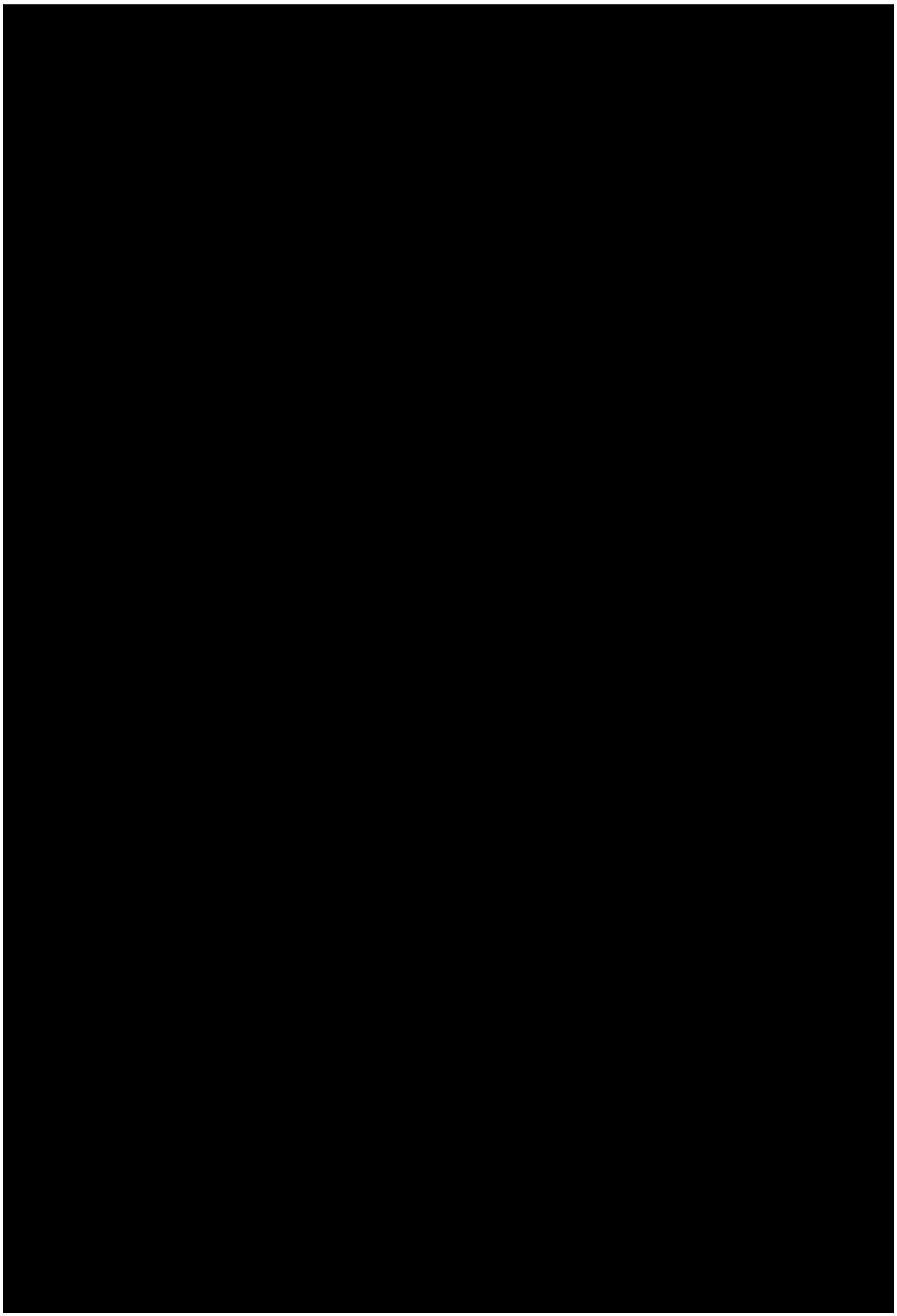


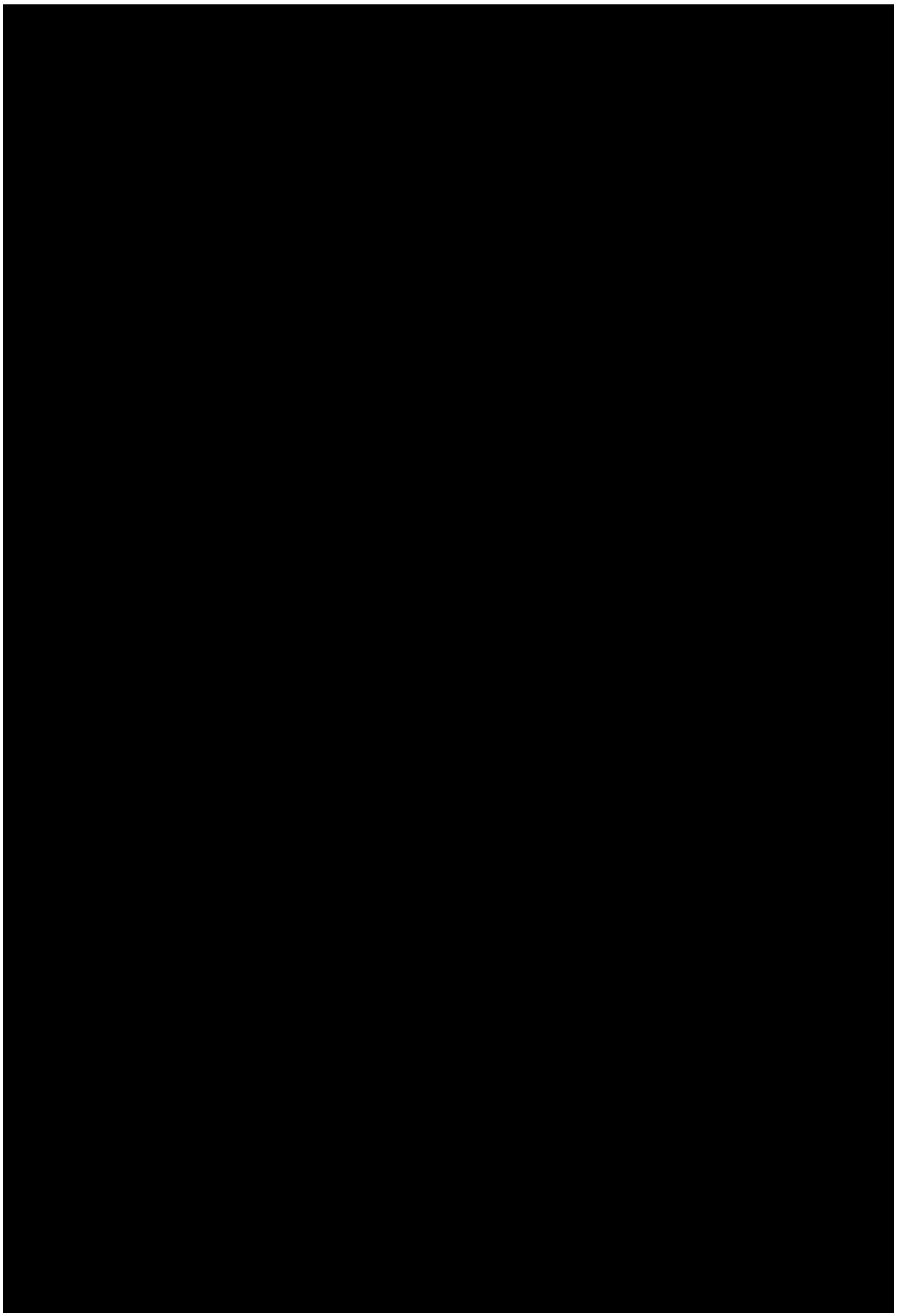


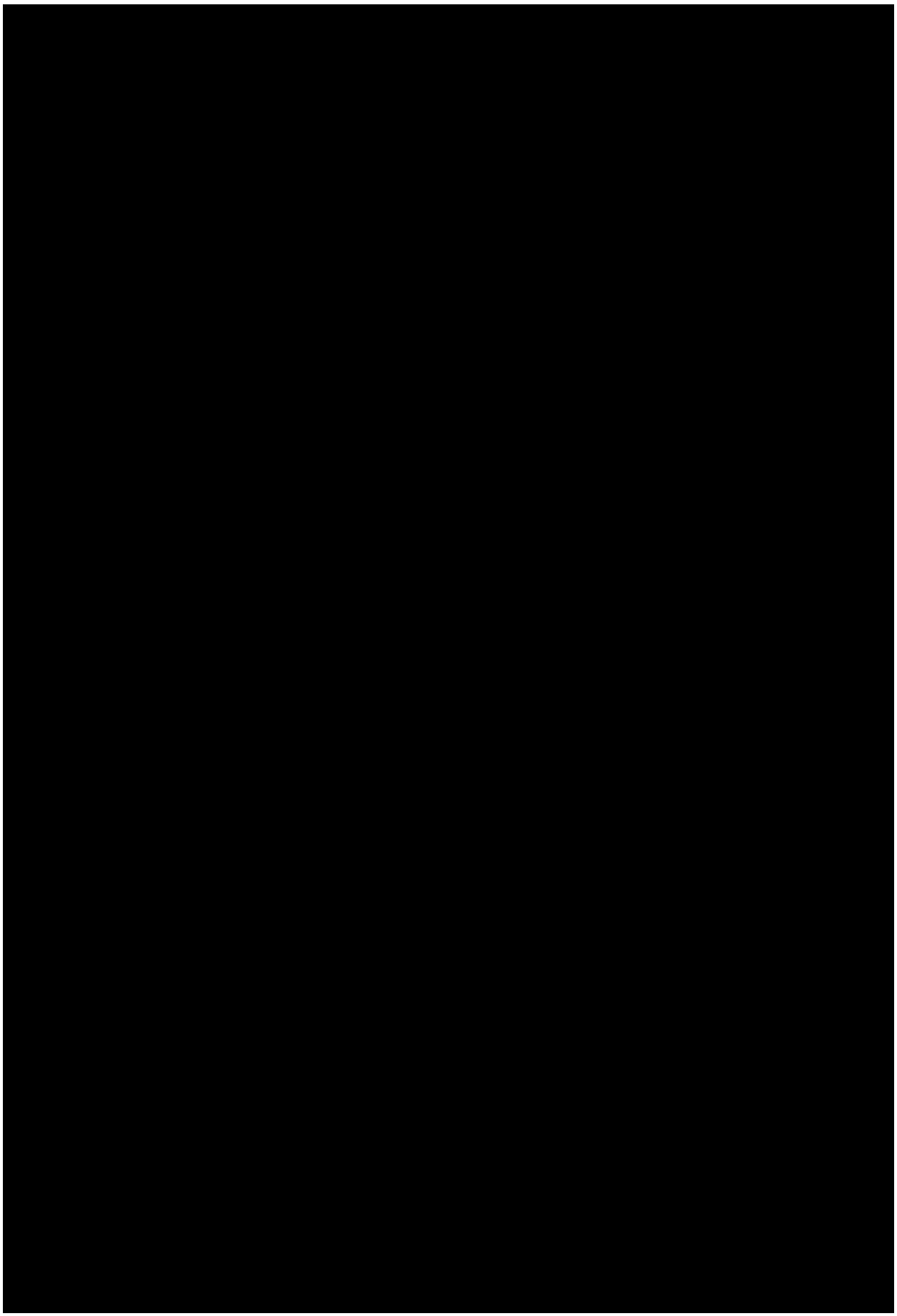

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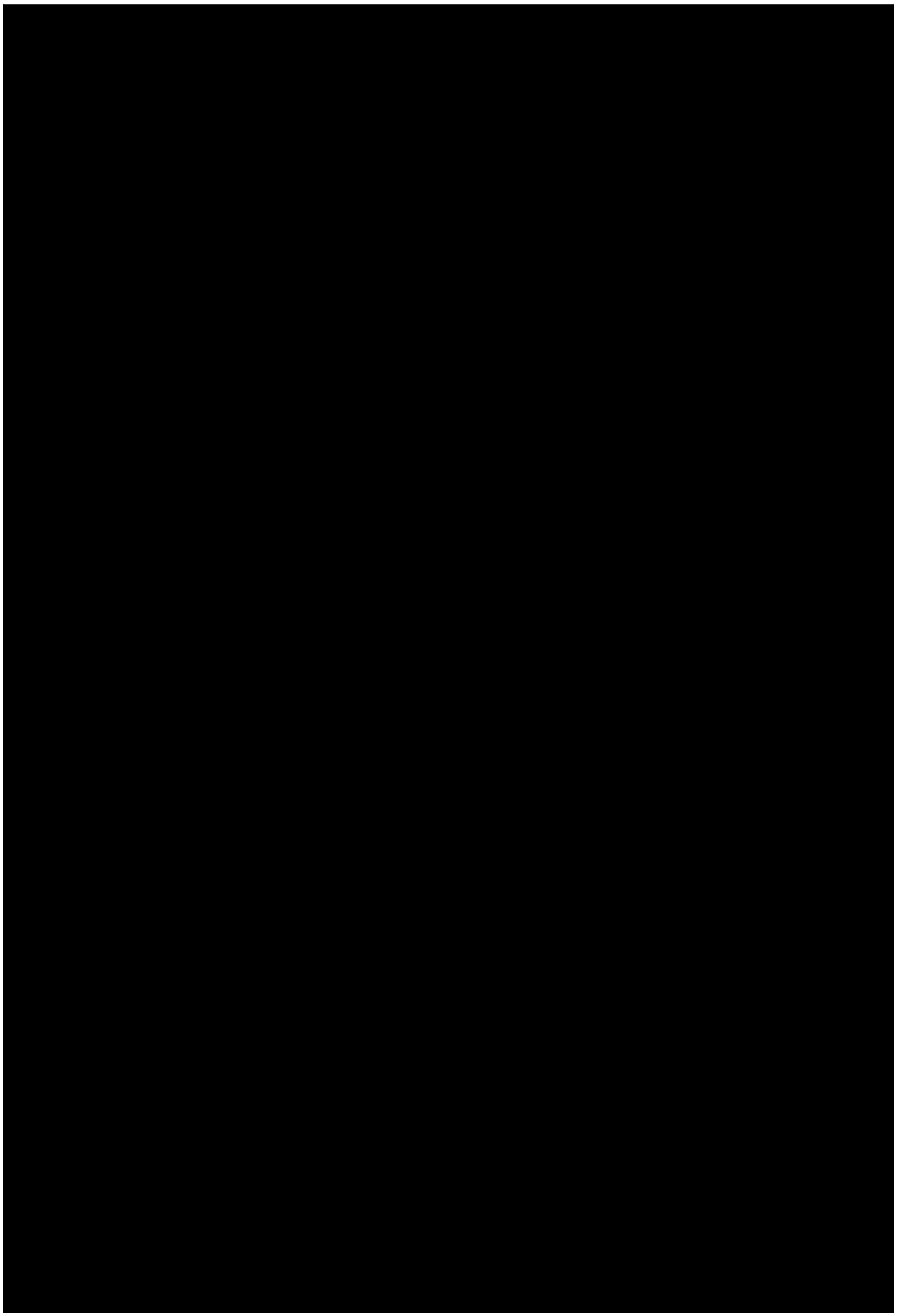


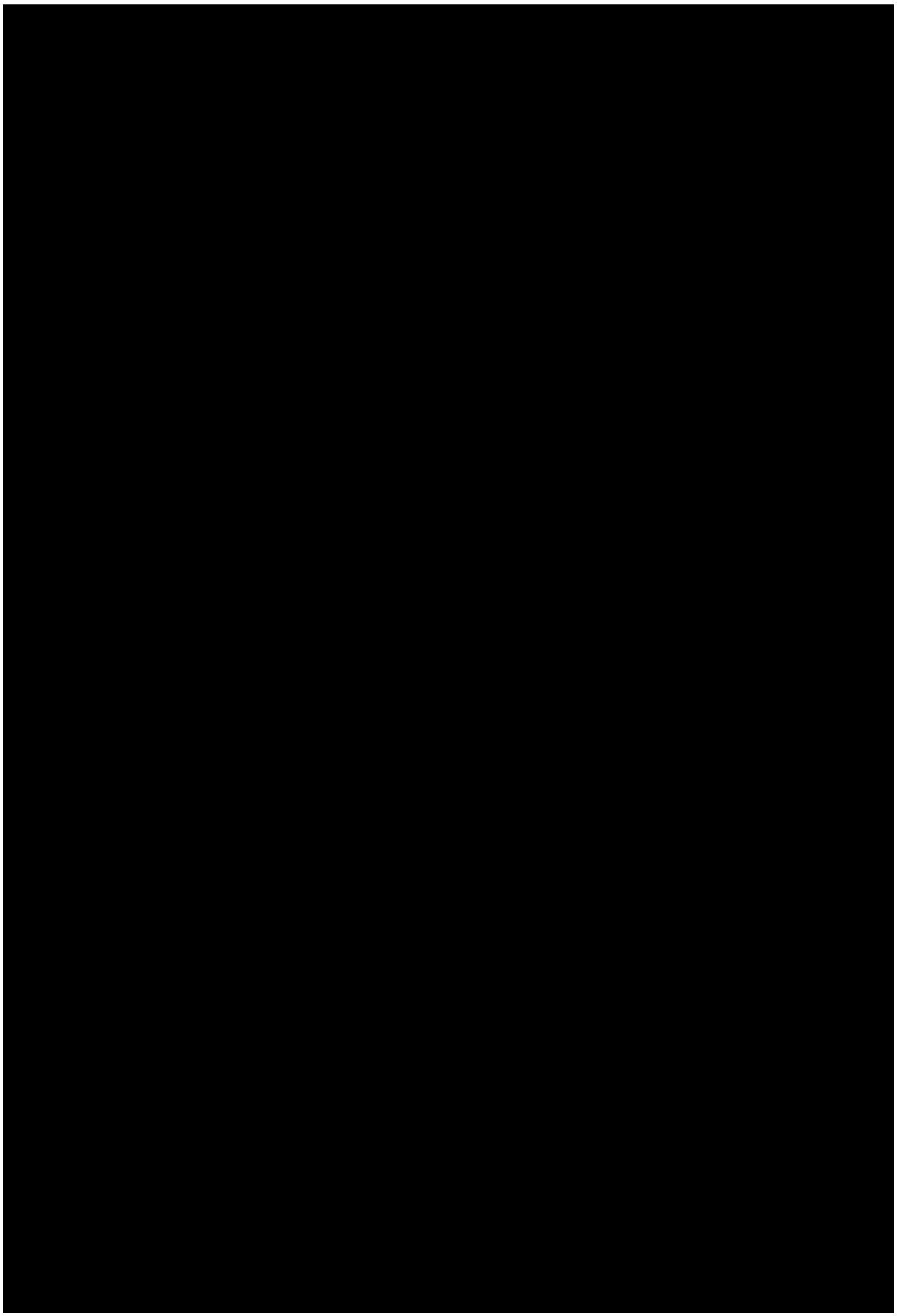


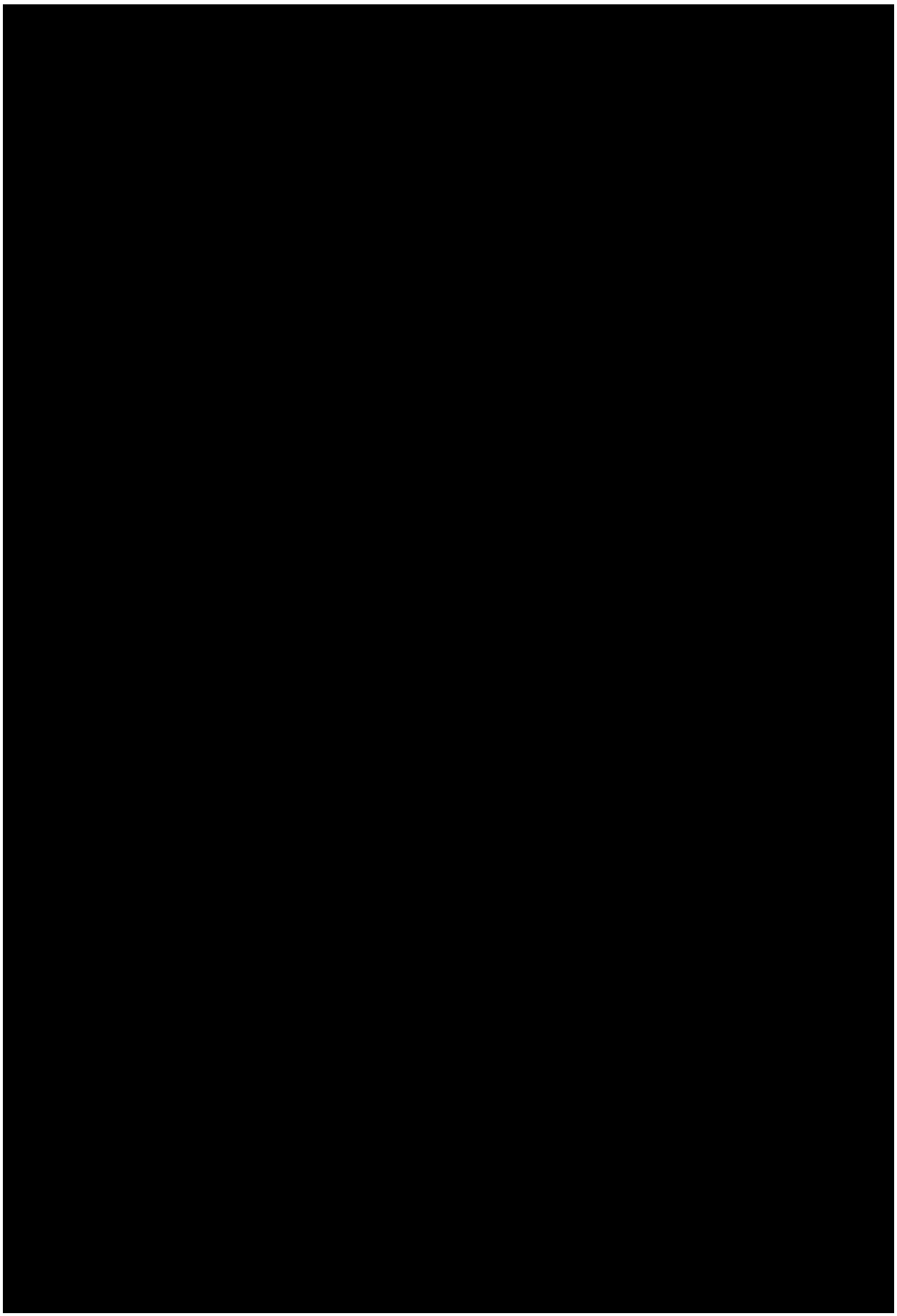


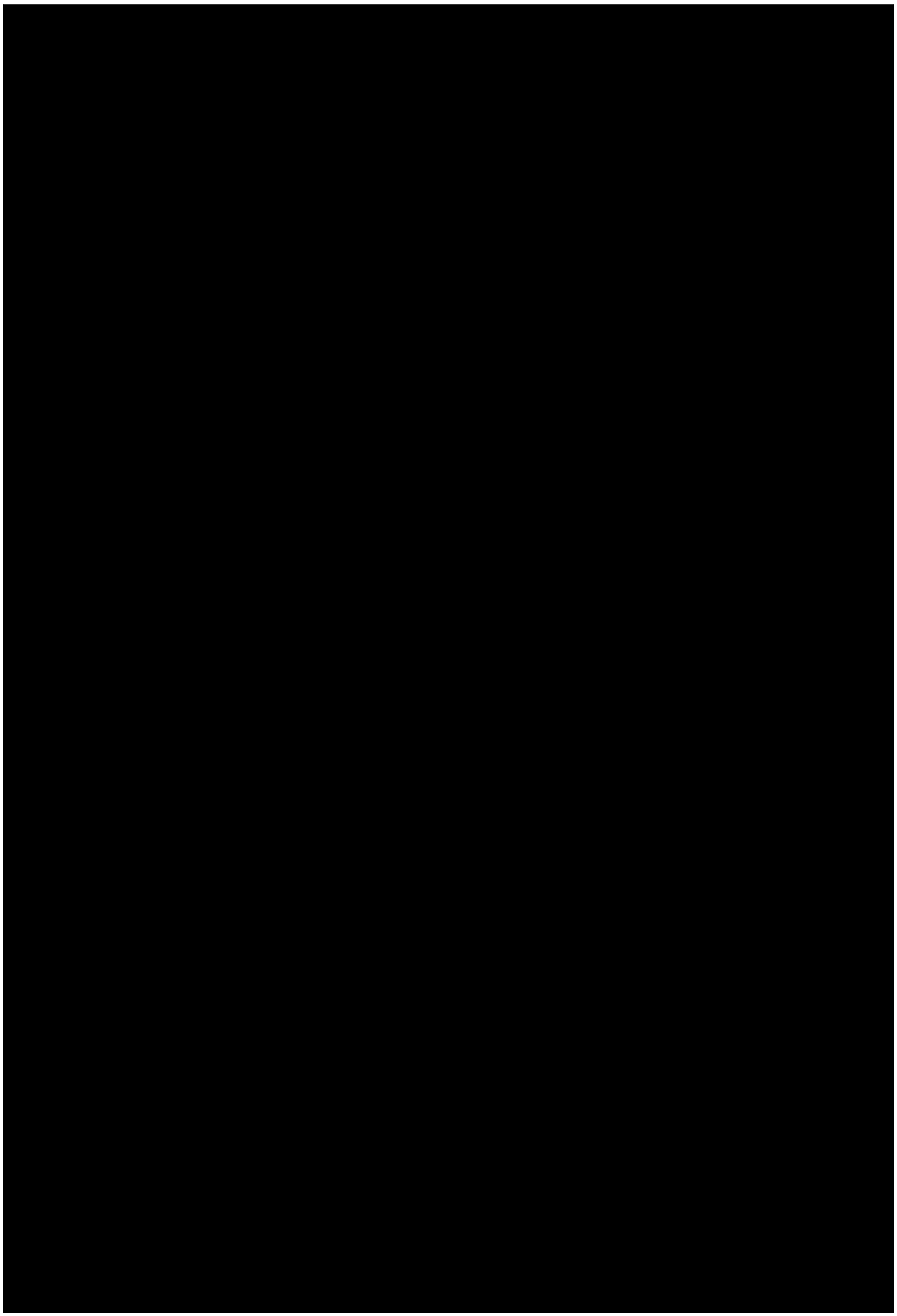


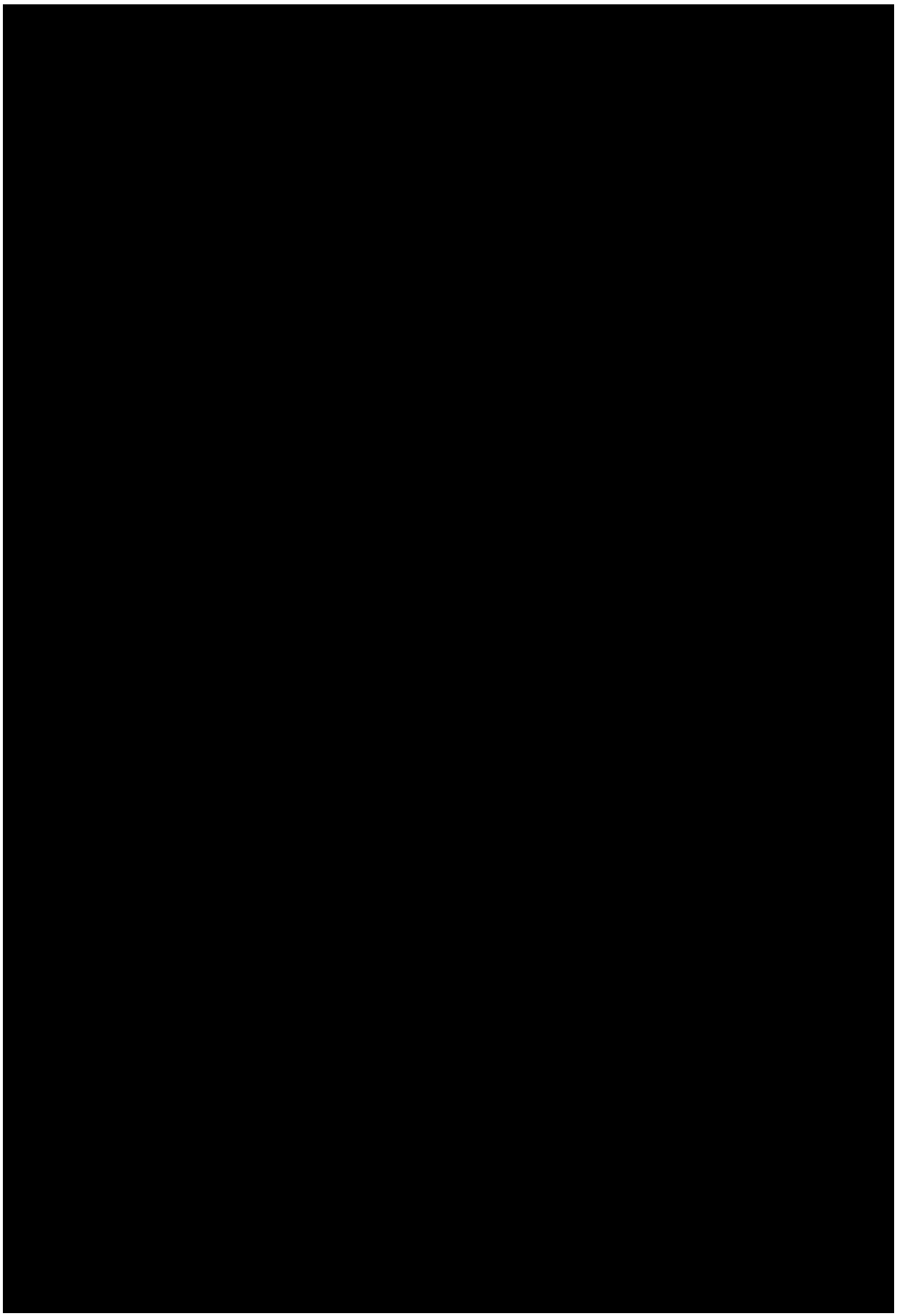


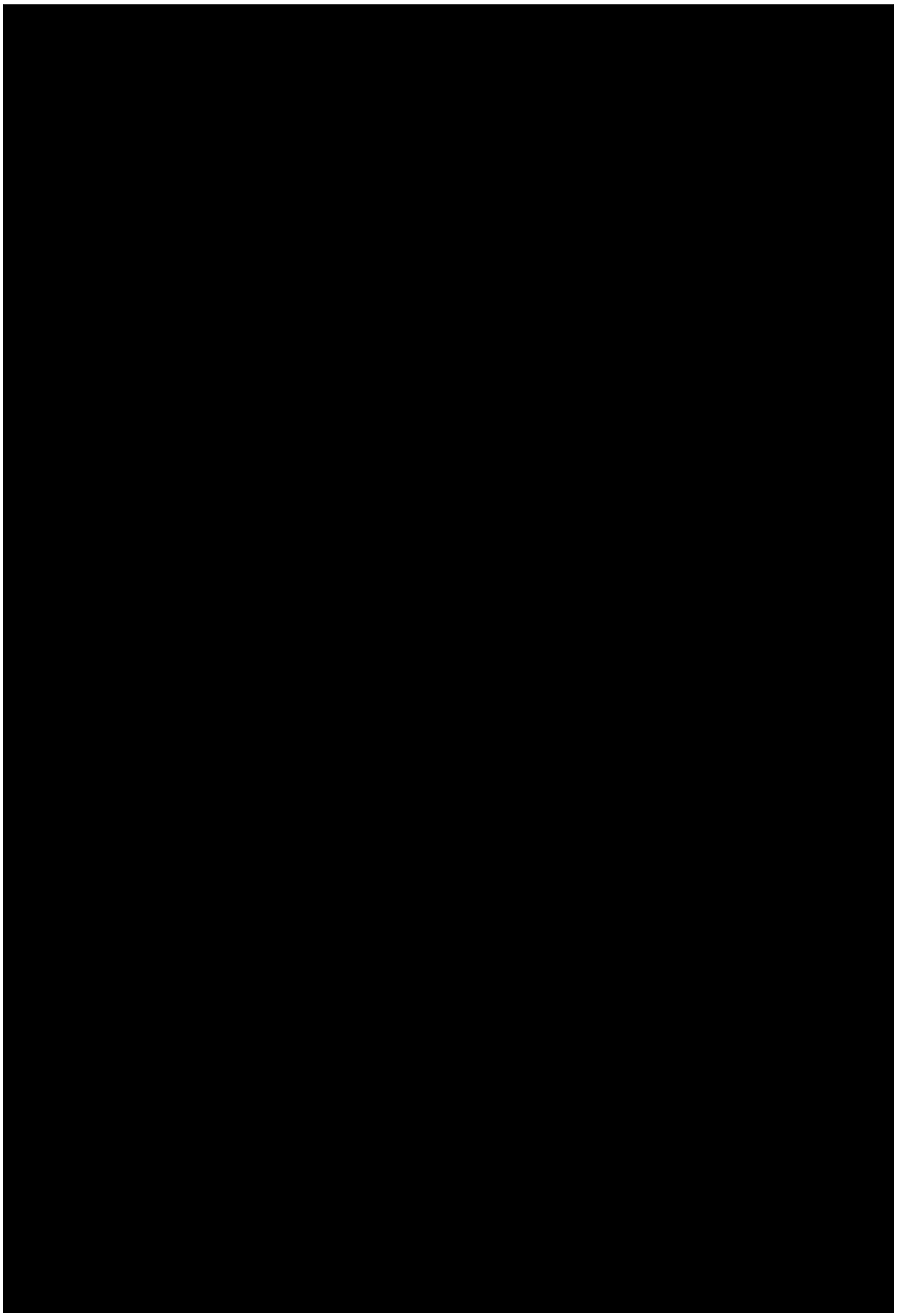


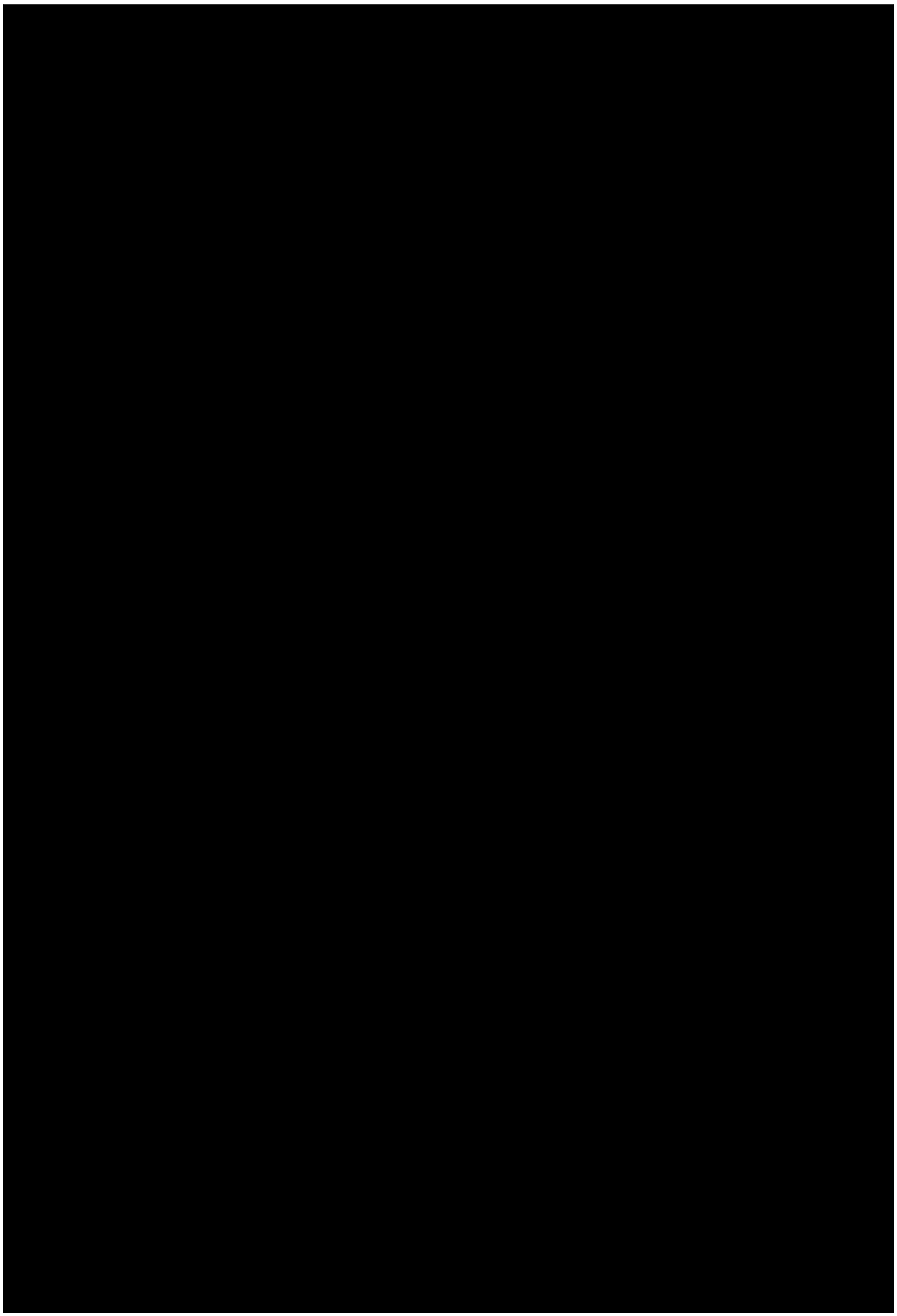


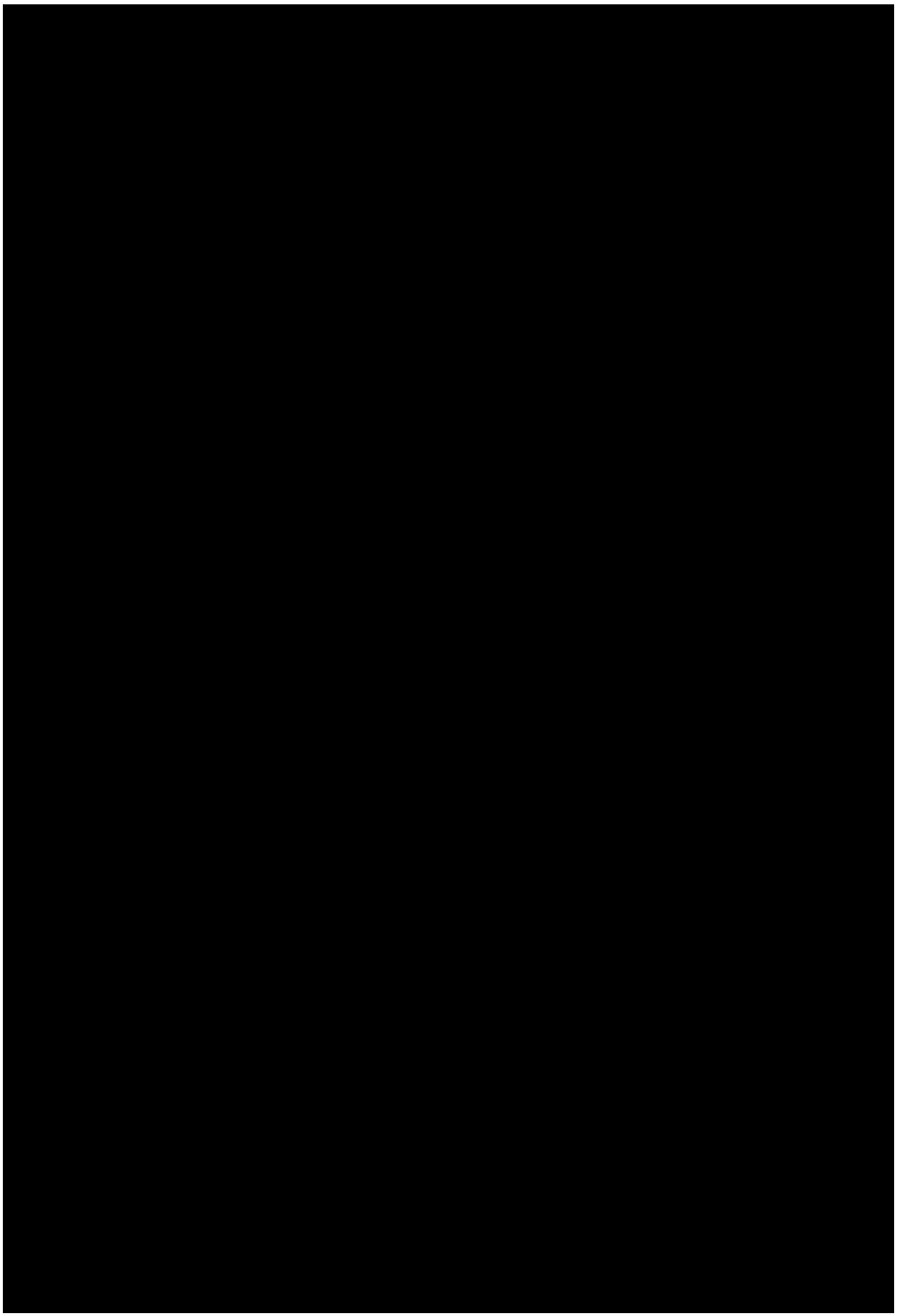


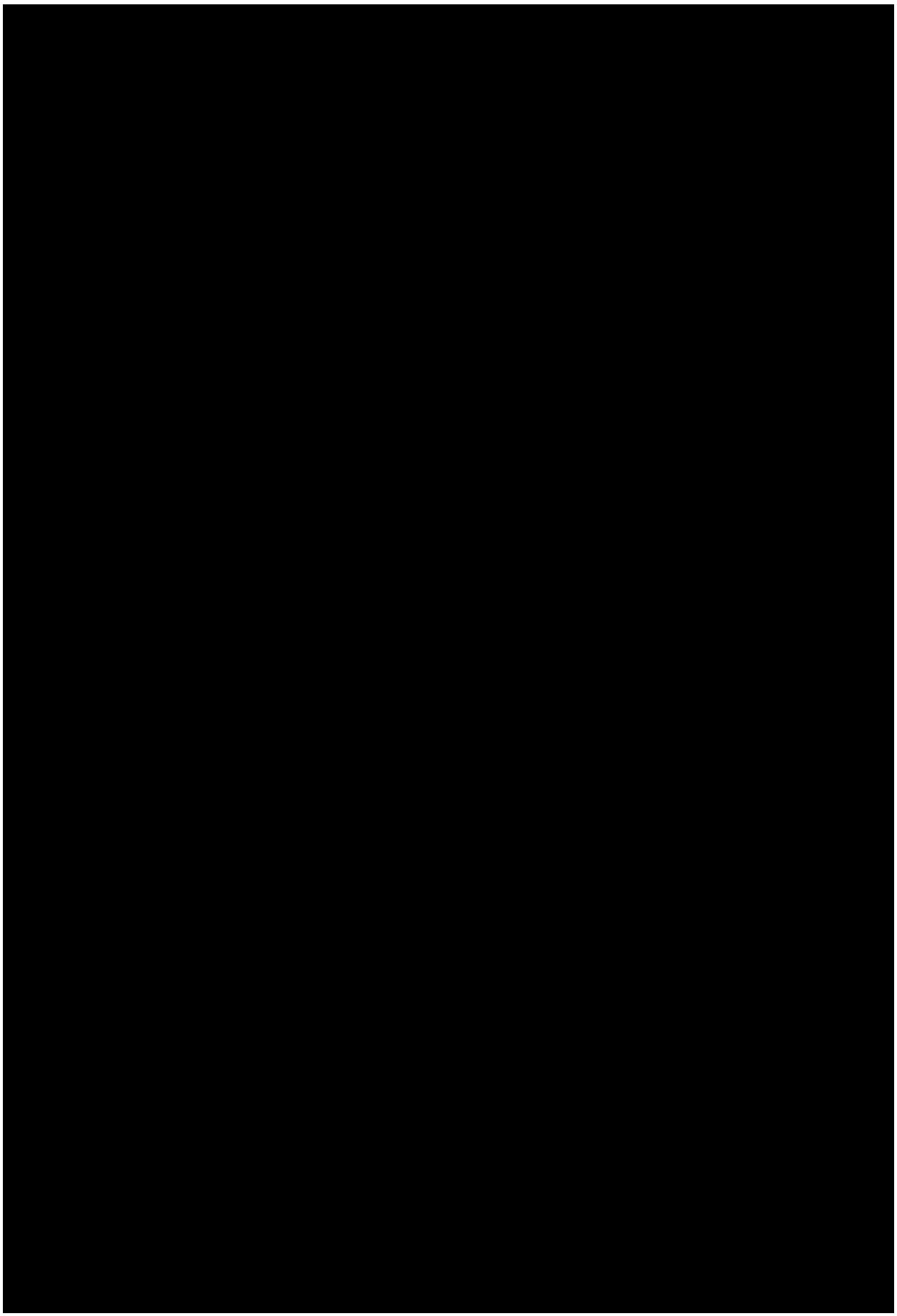


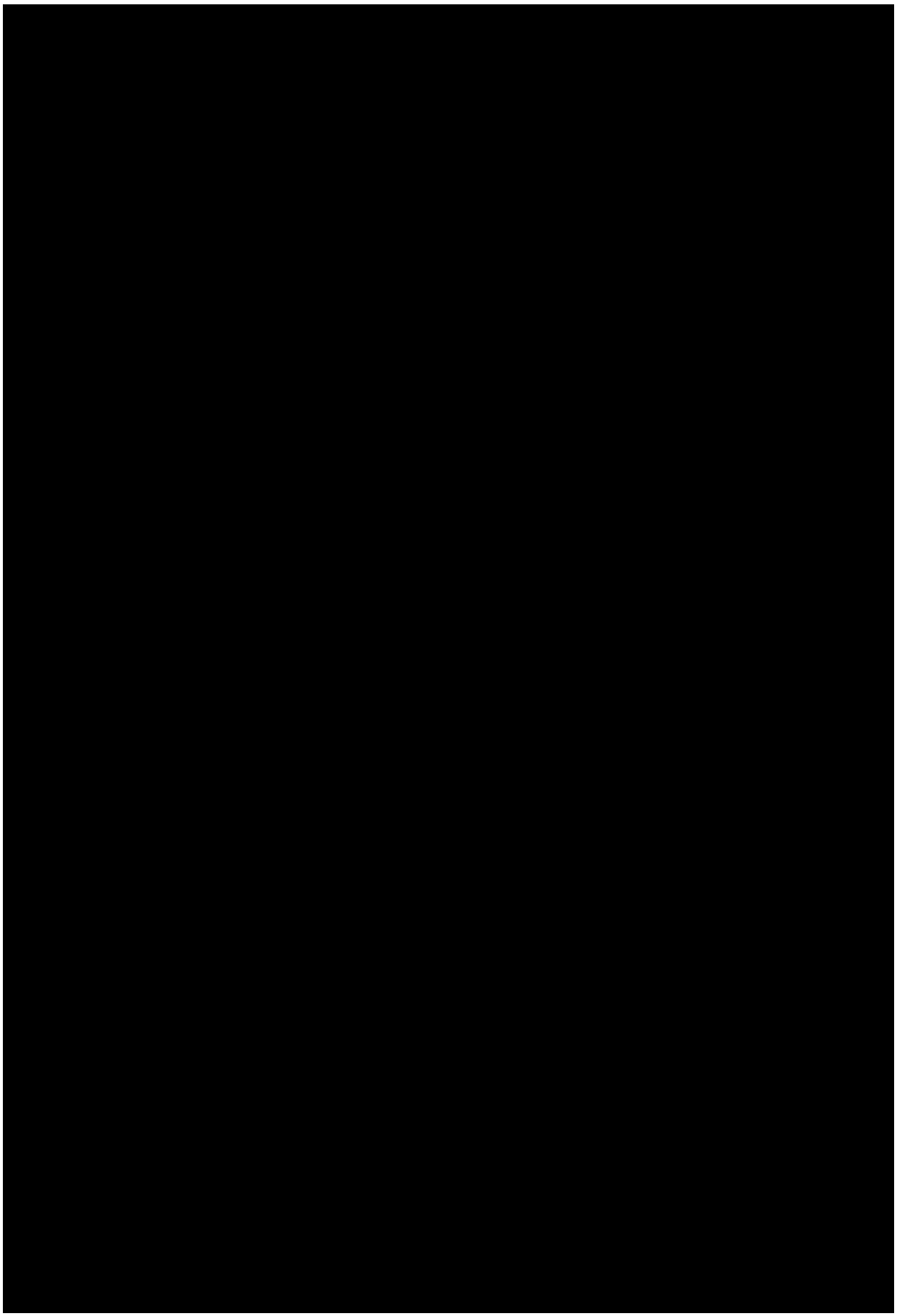


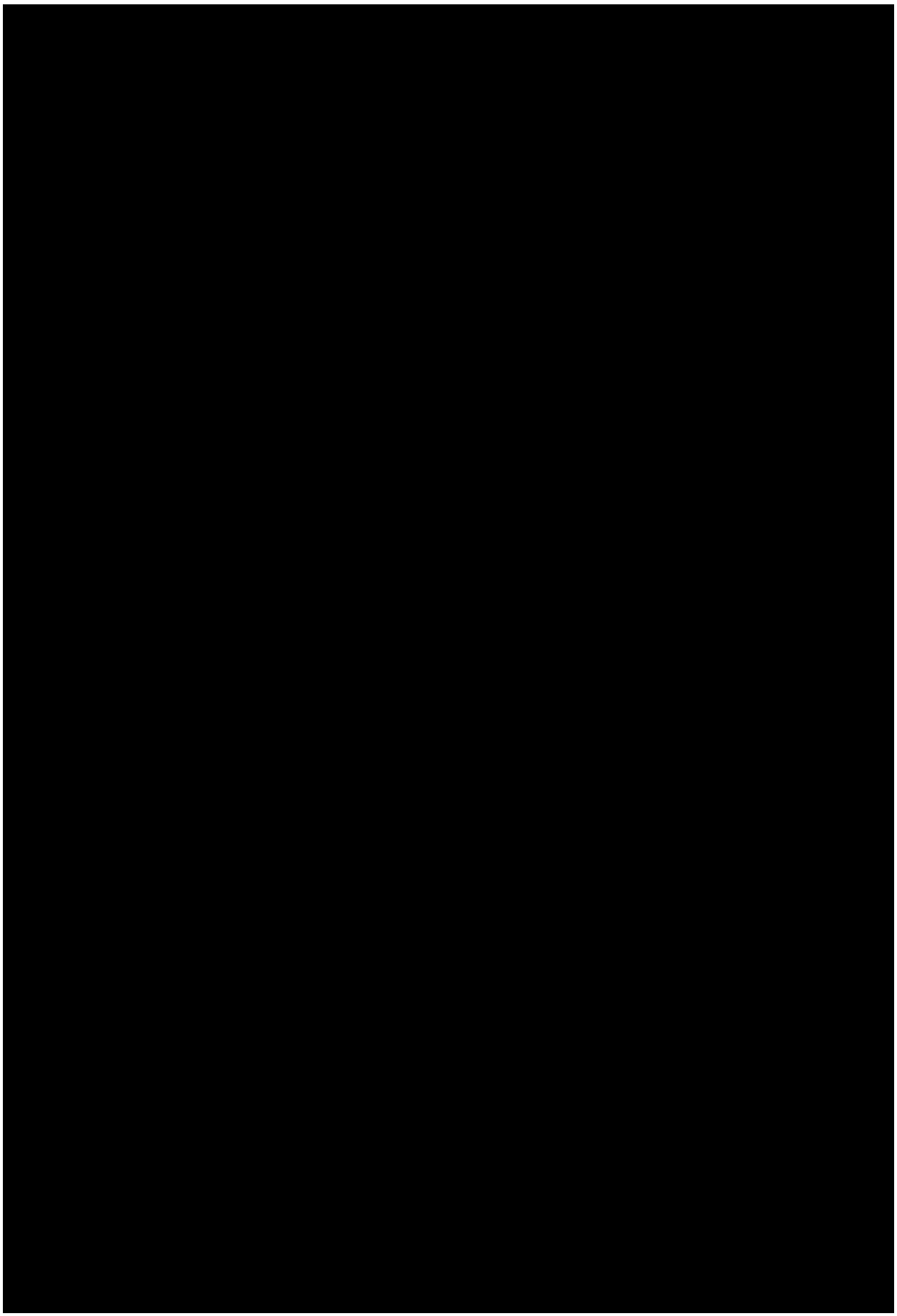


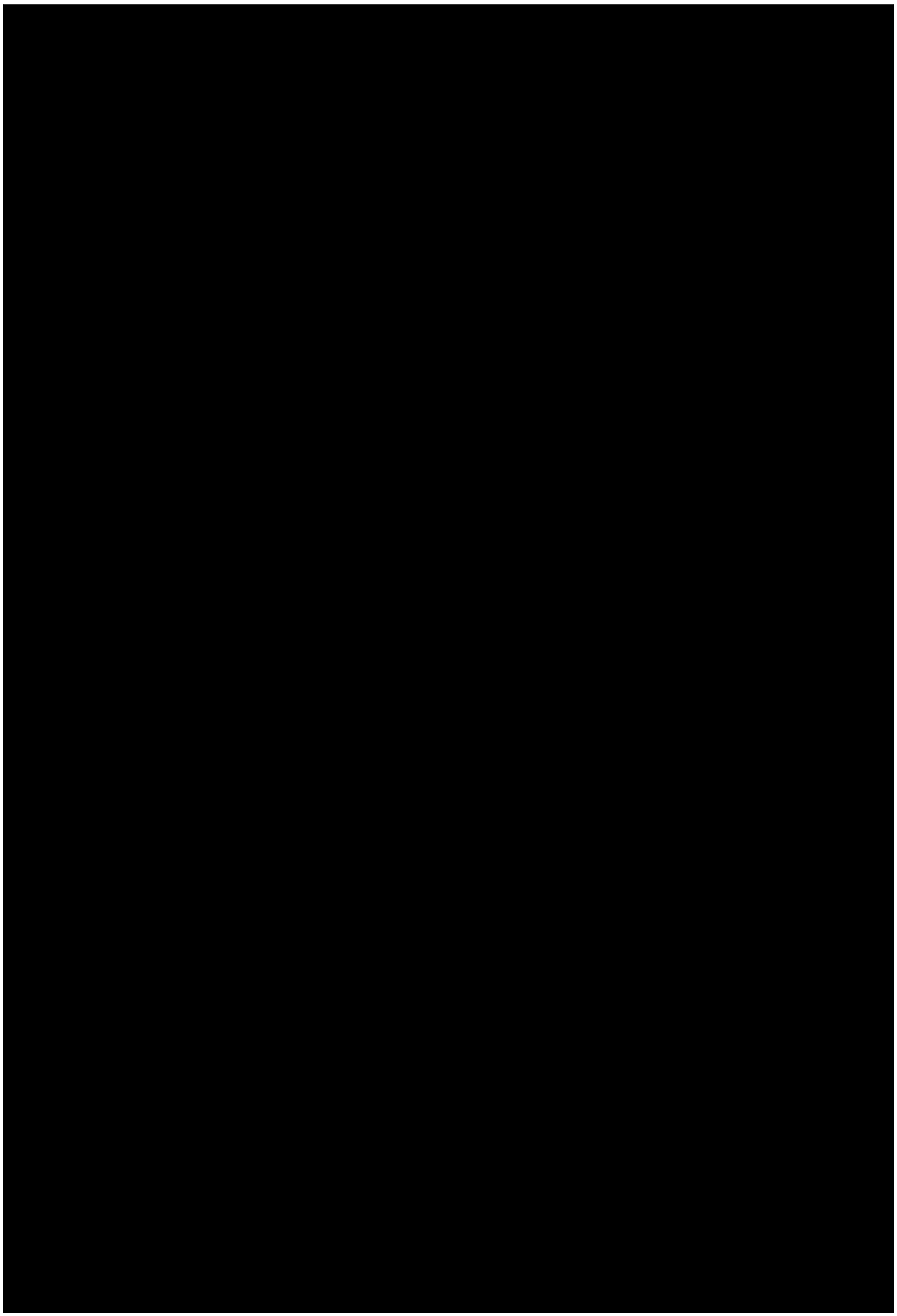


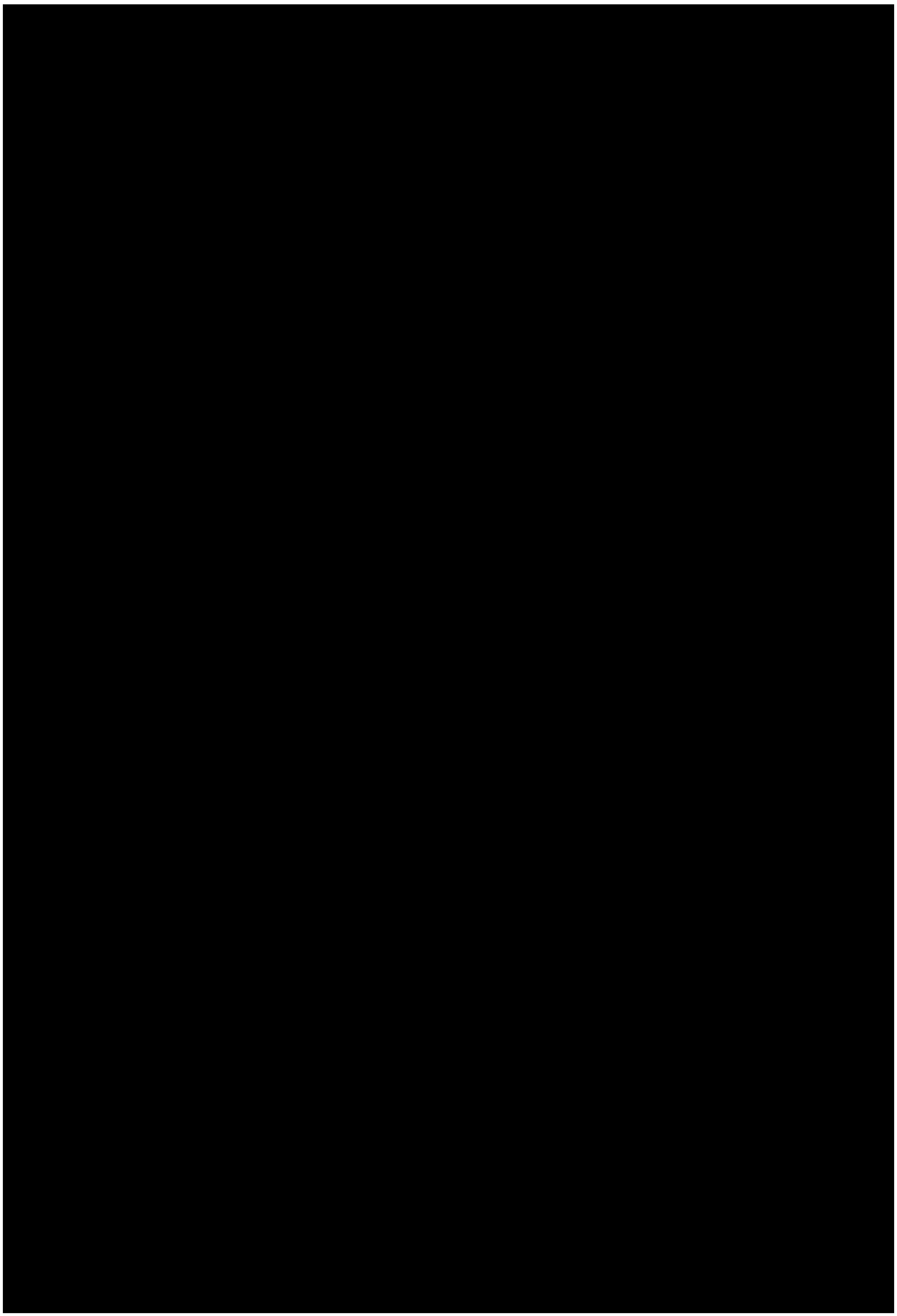






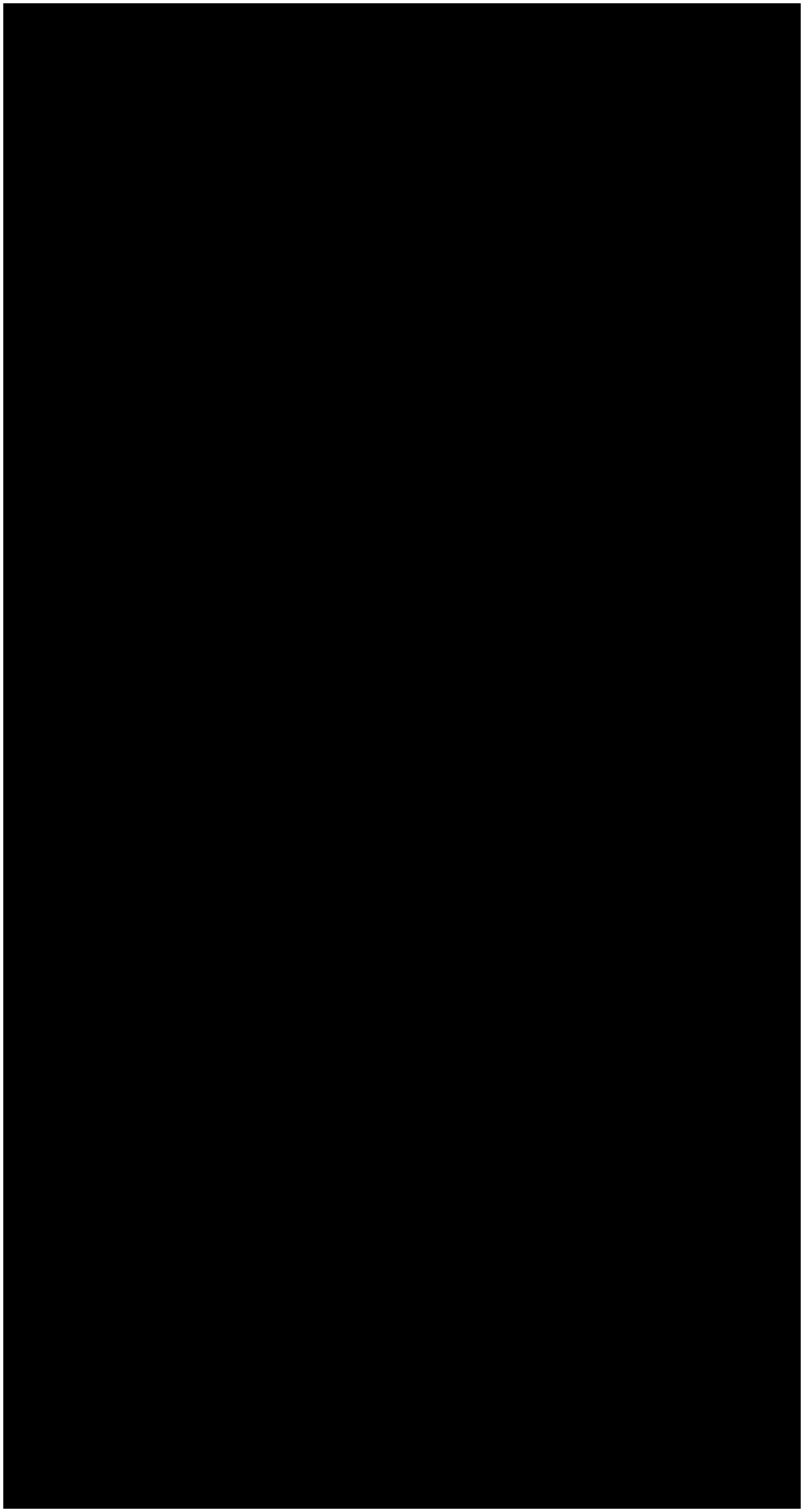


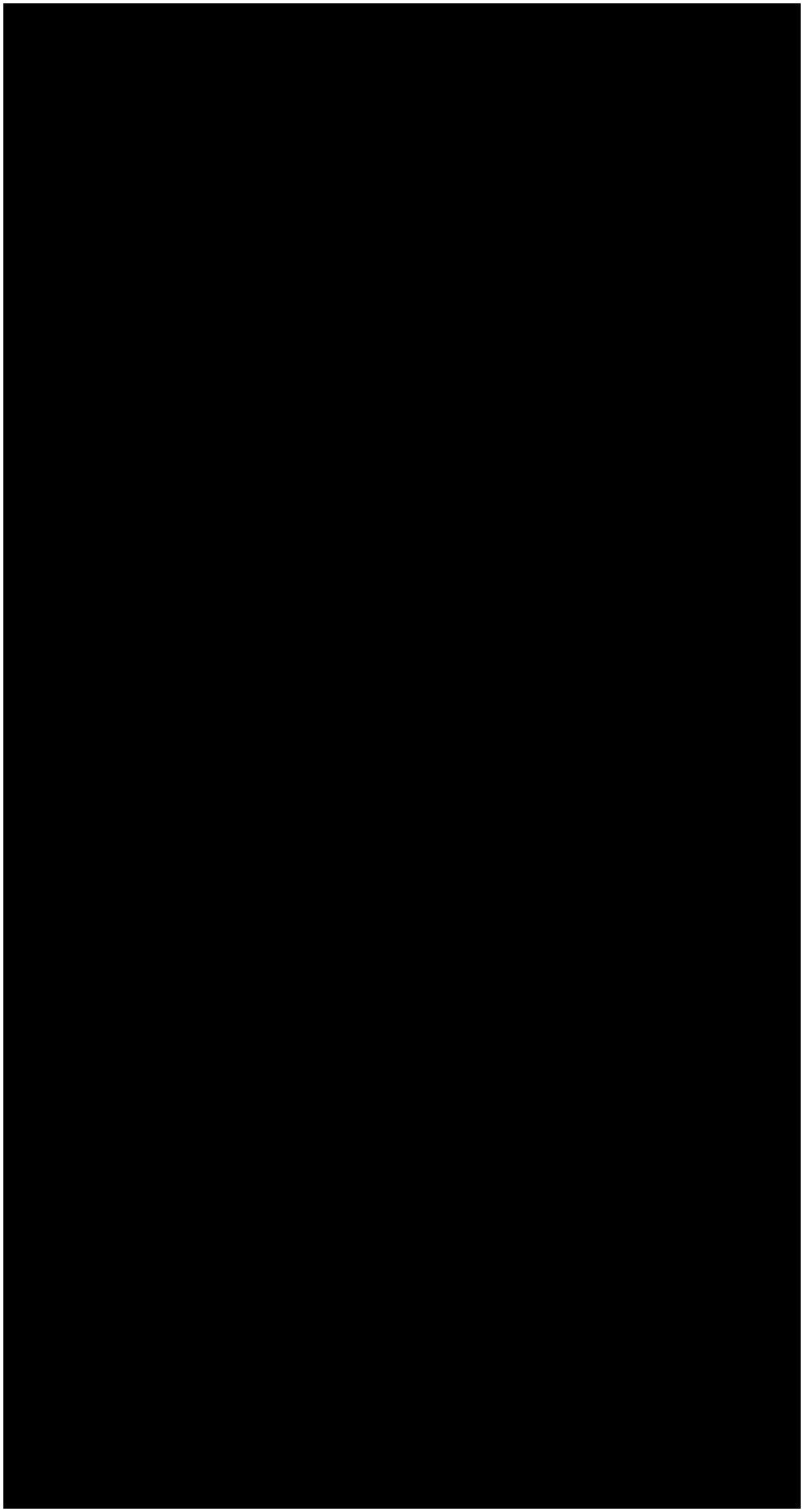


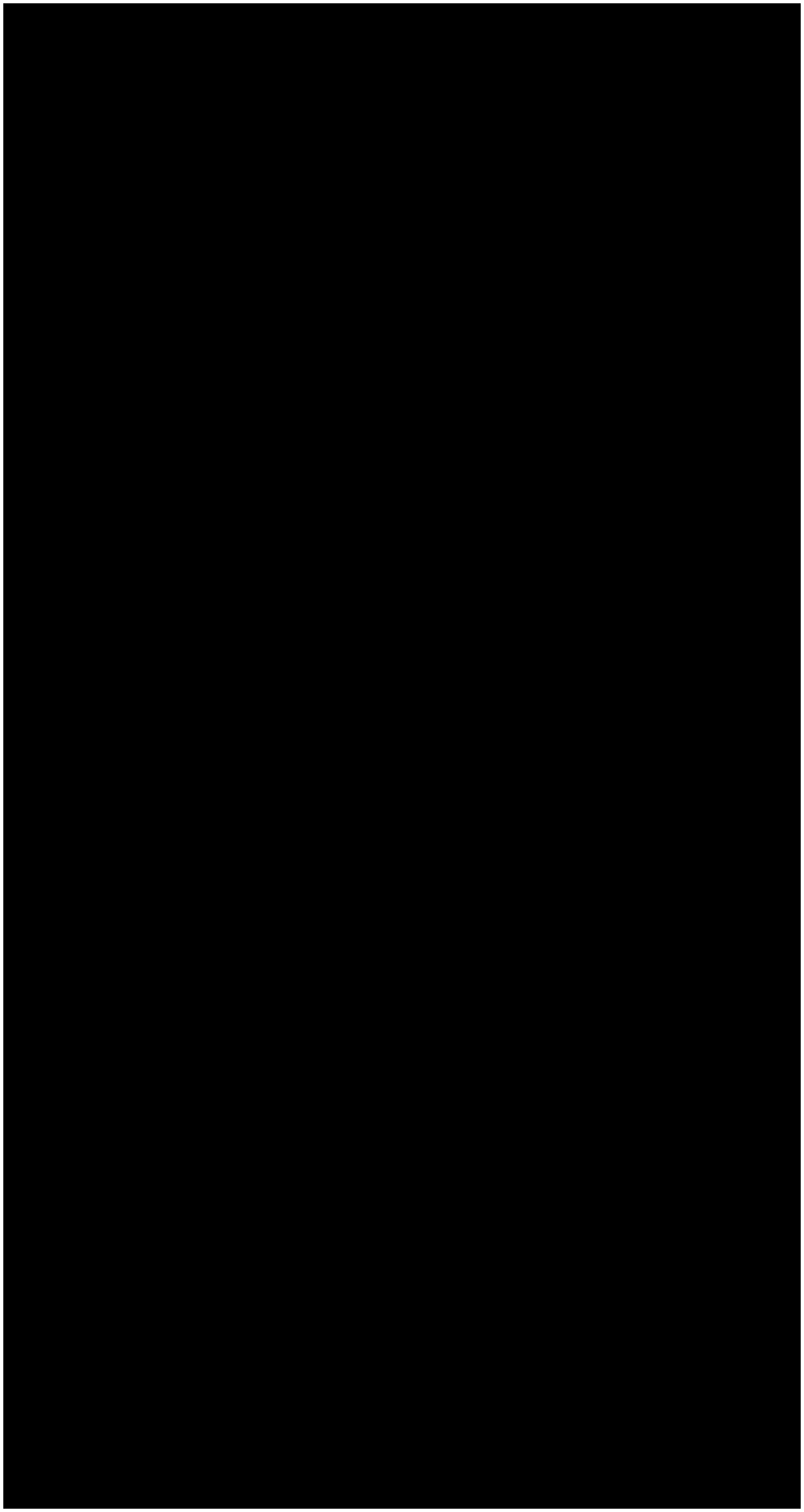


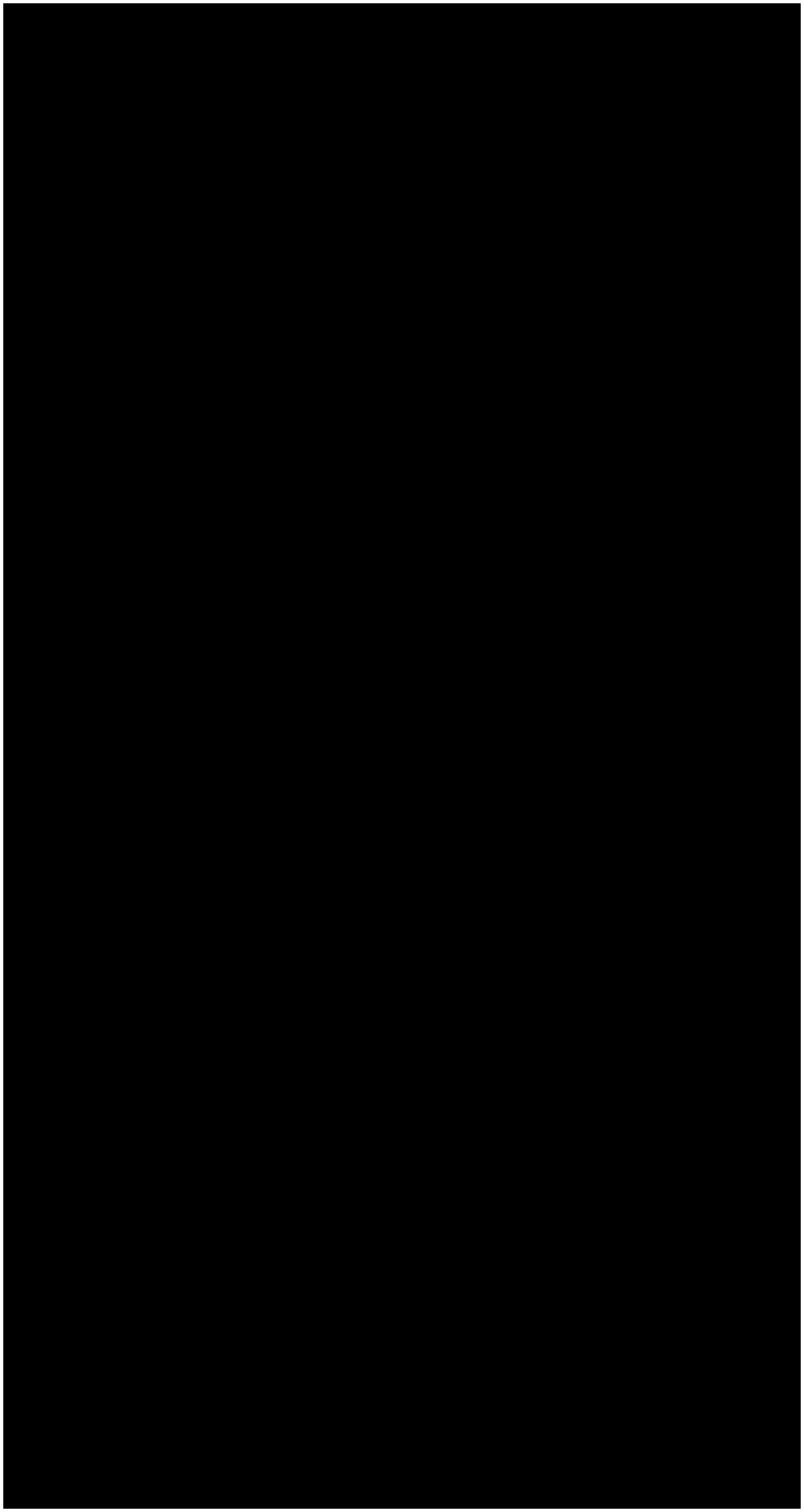


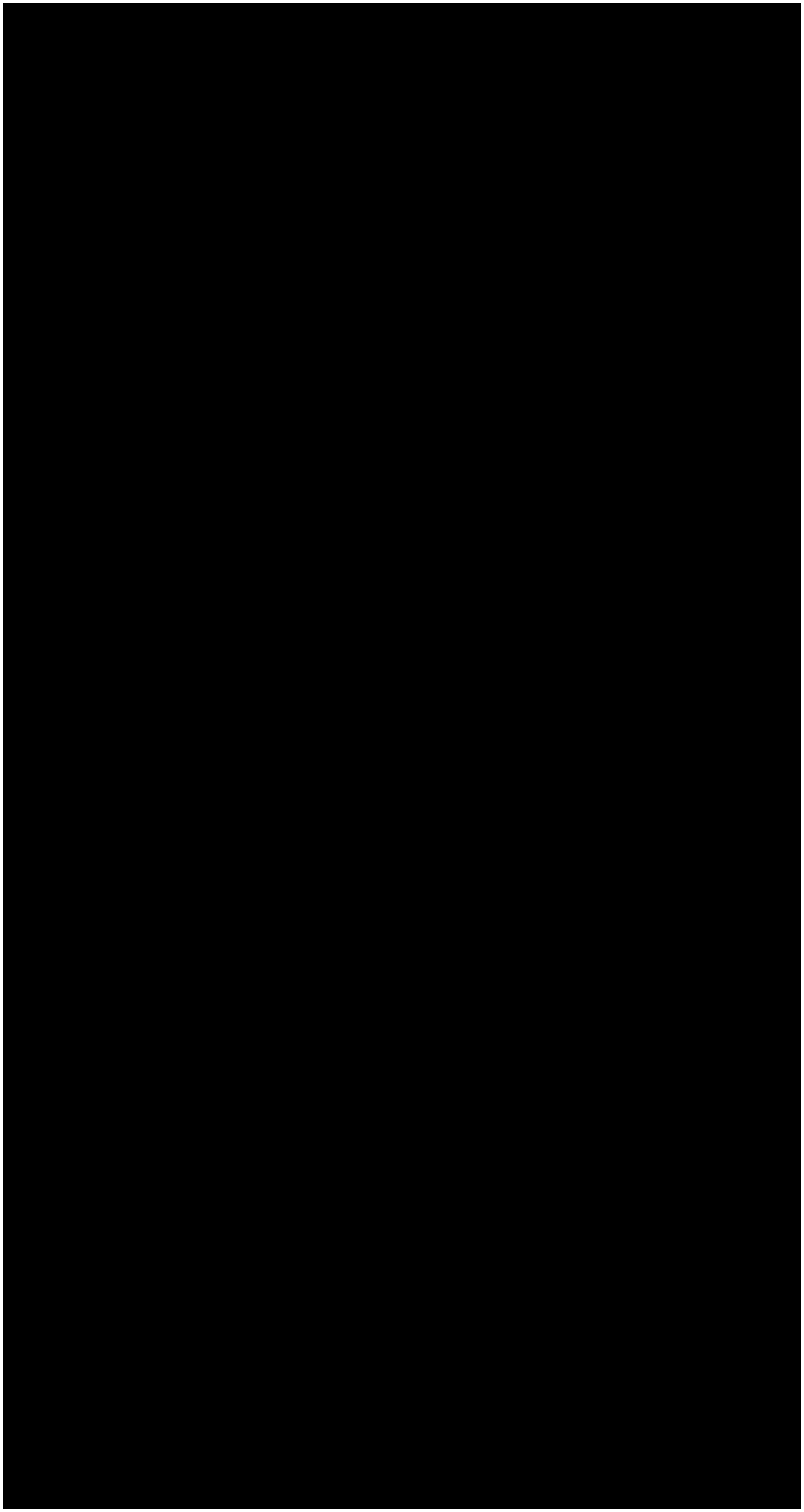
Max Daily T	Quantity D	Build Cost (	Quantity D	x	y	z
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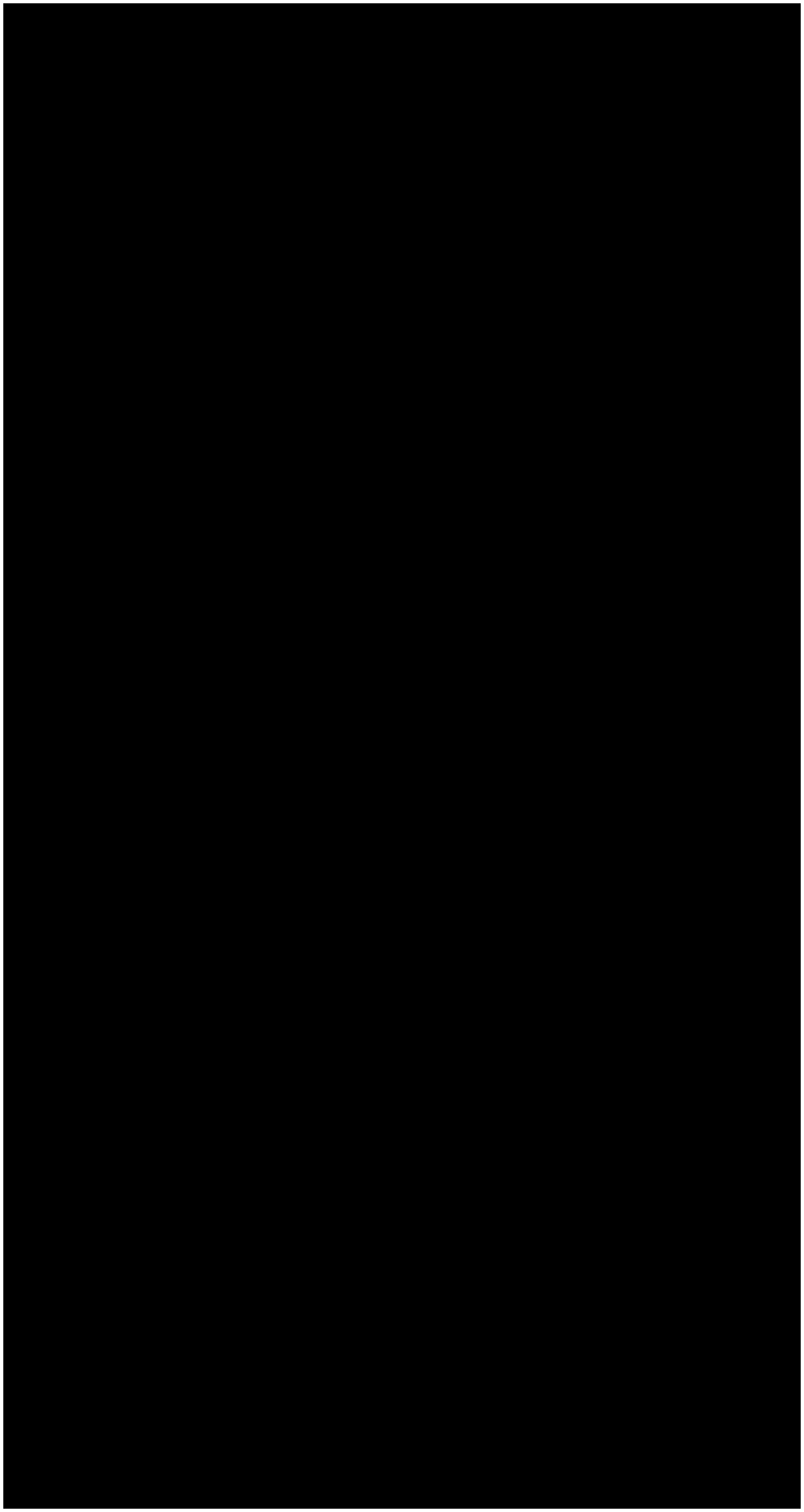


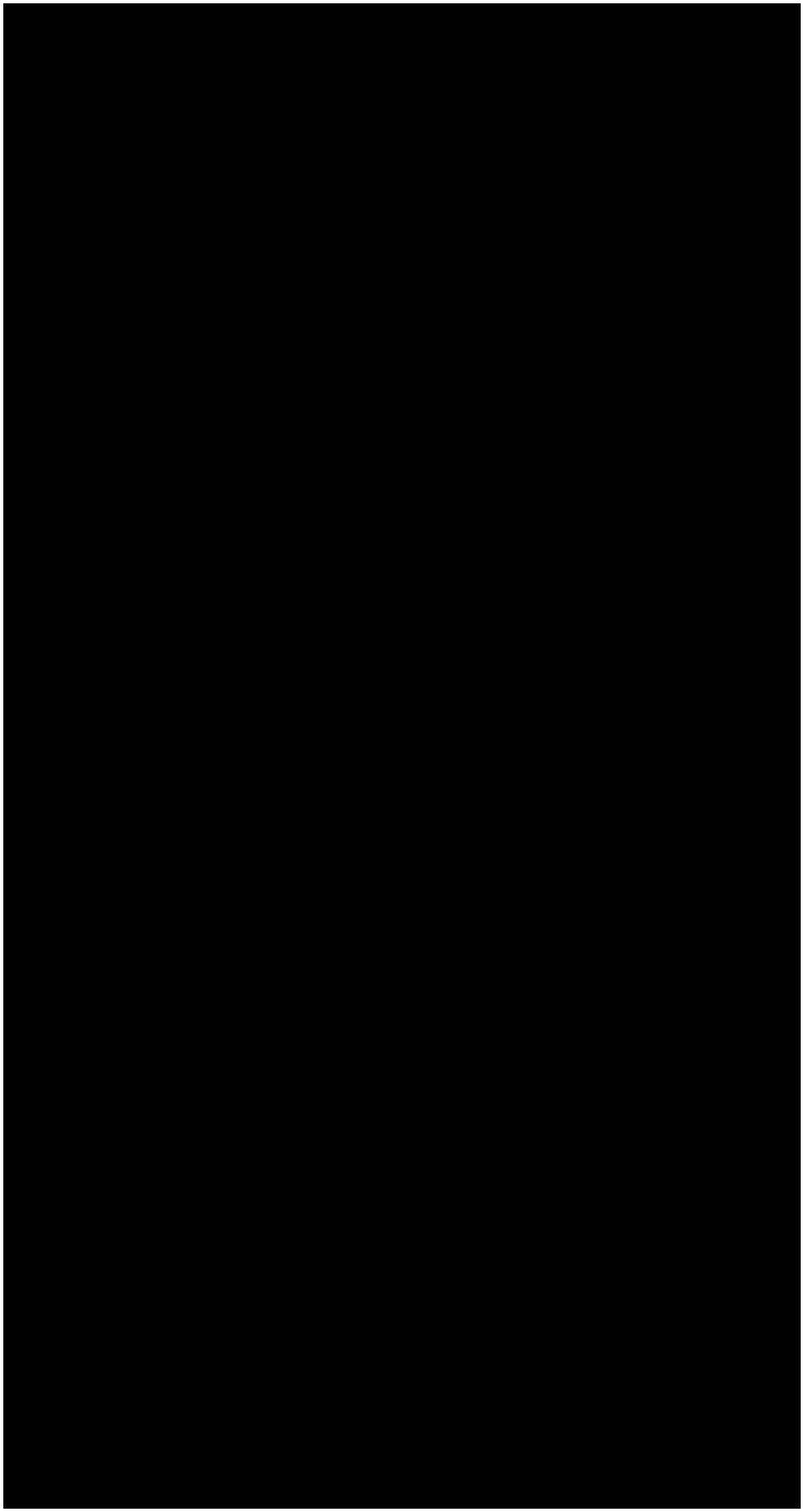


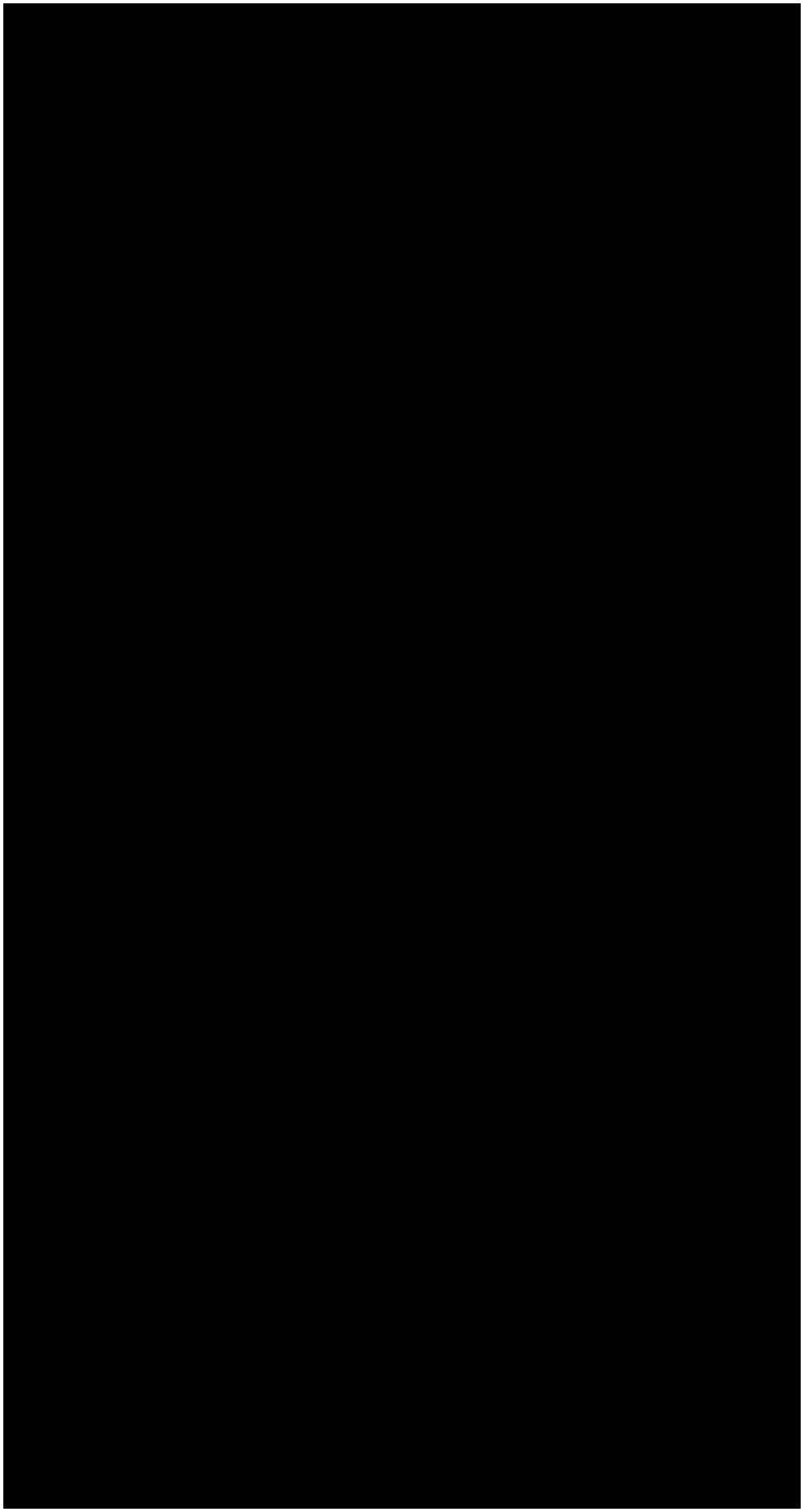


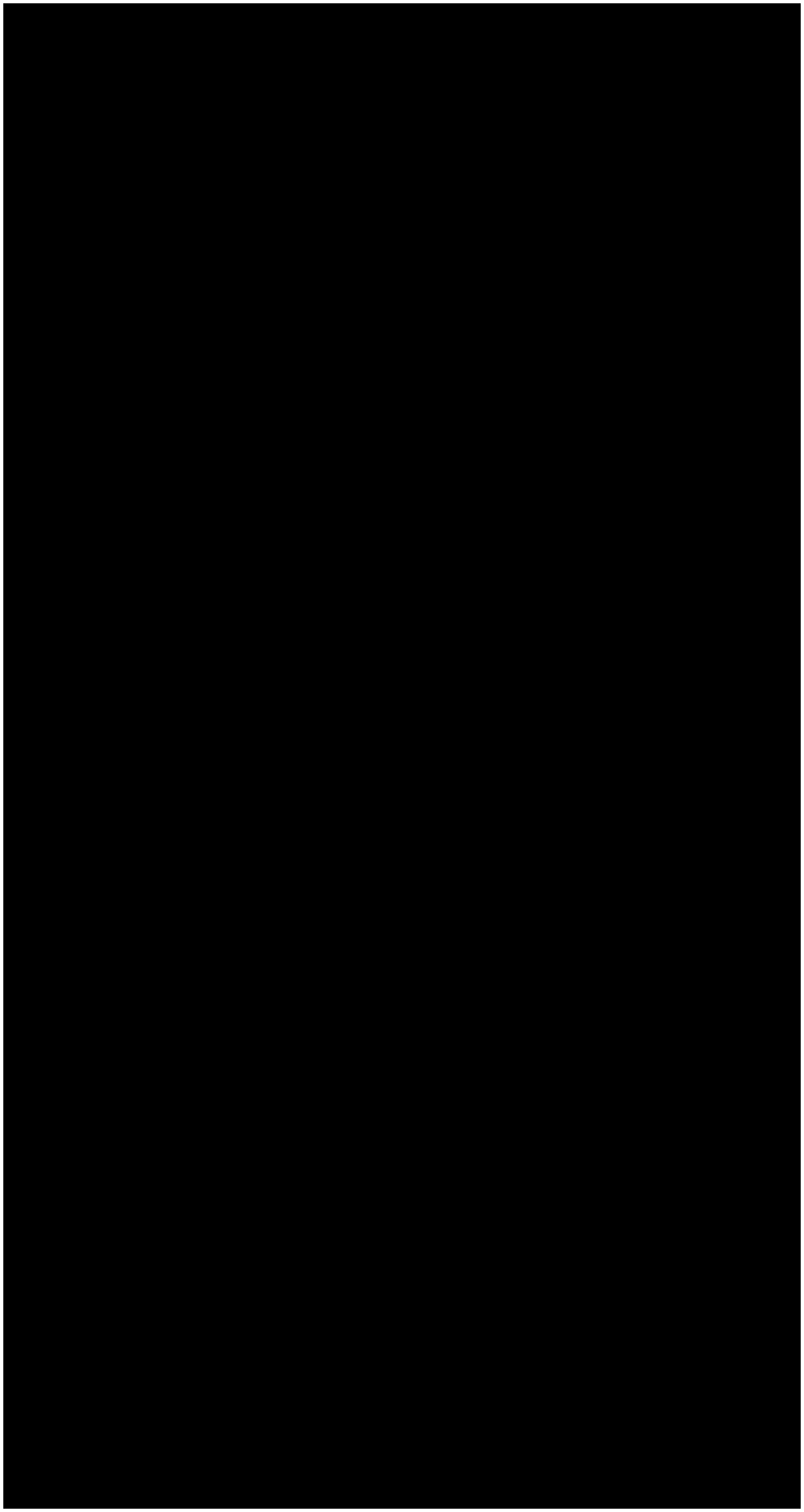


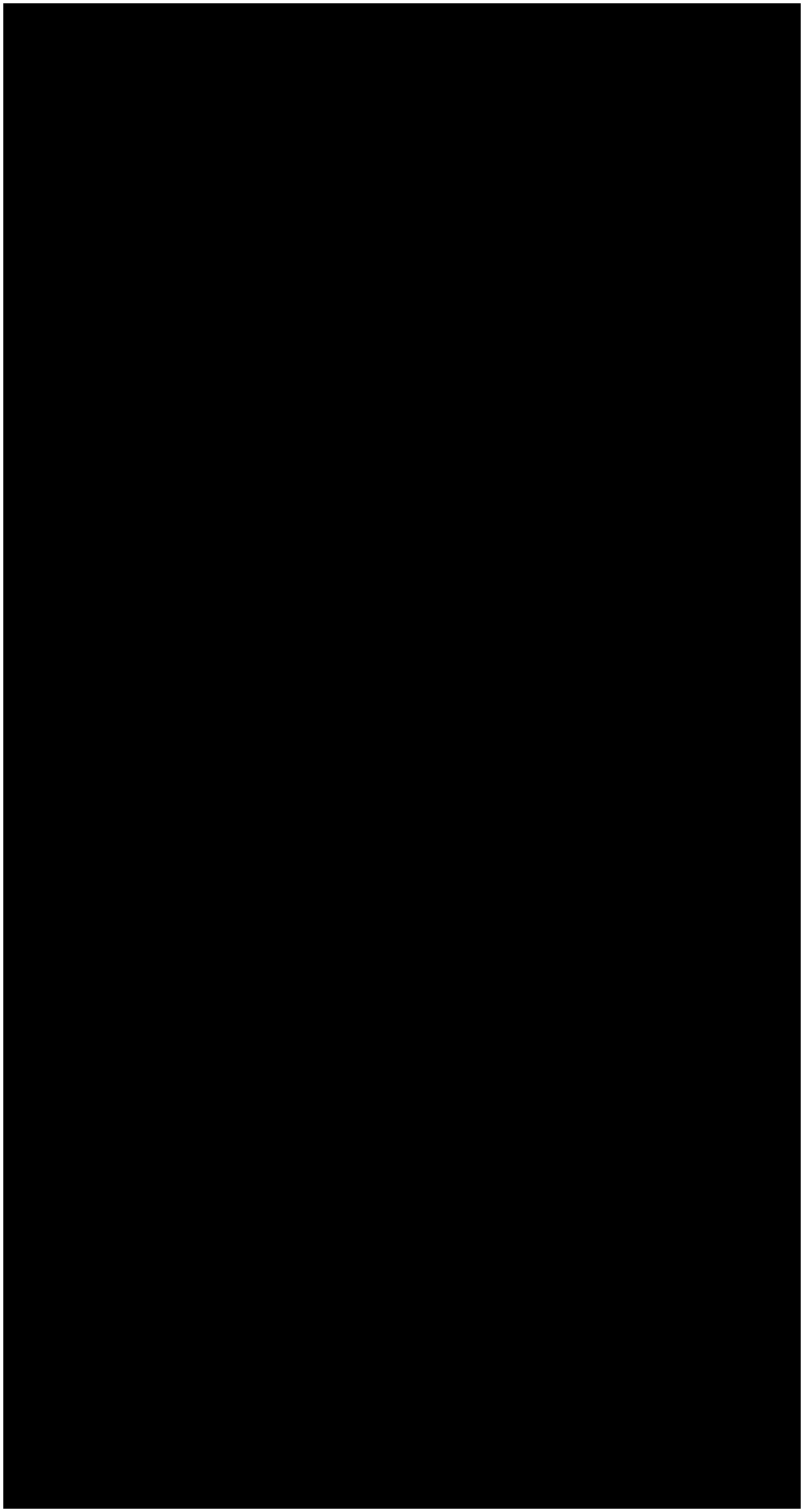


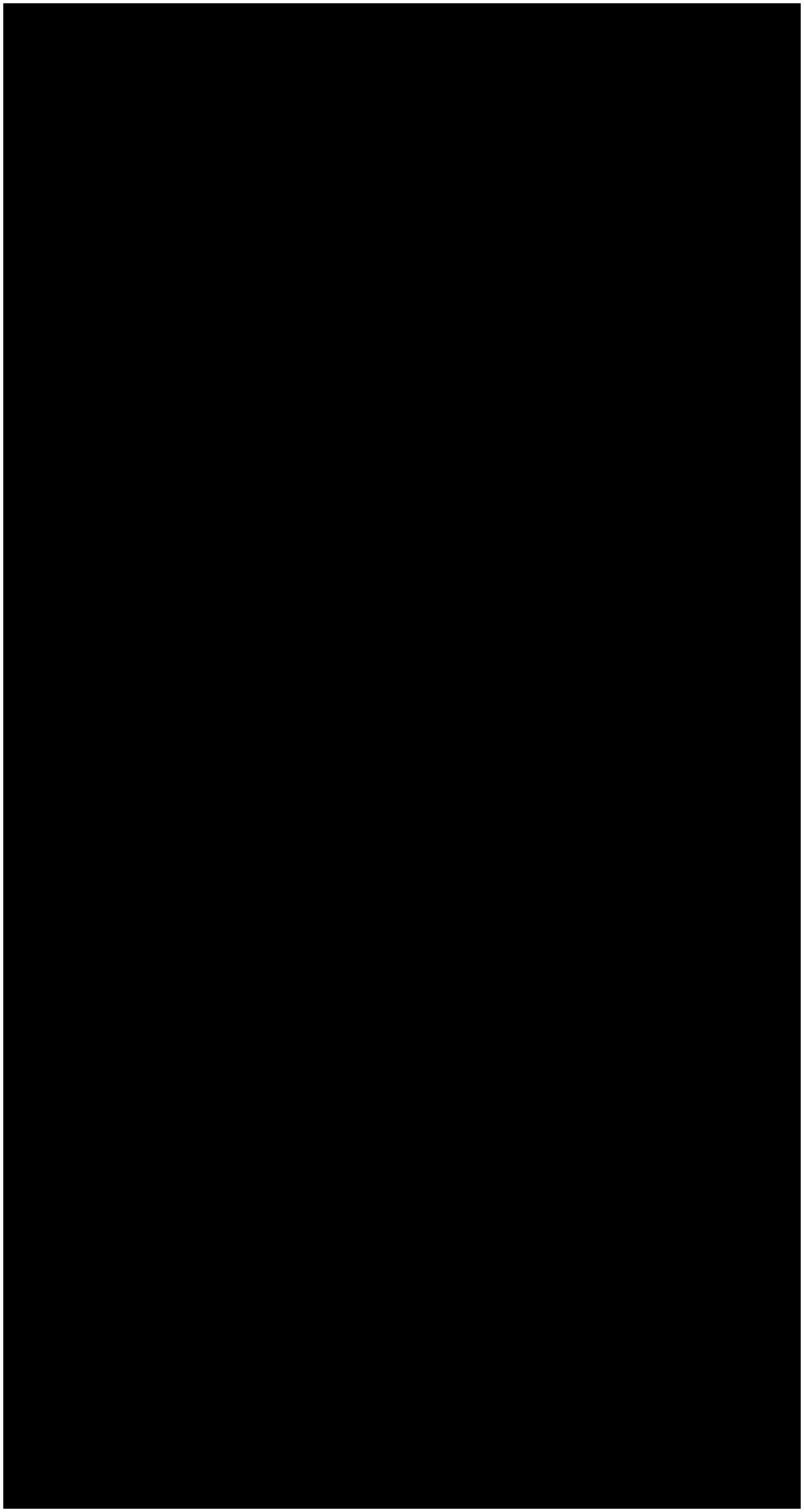


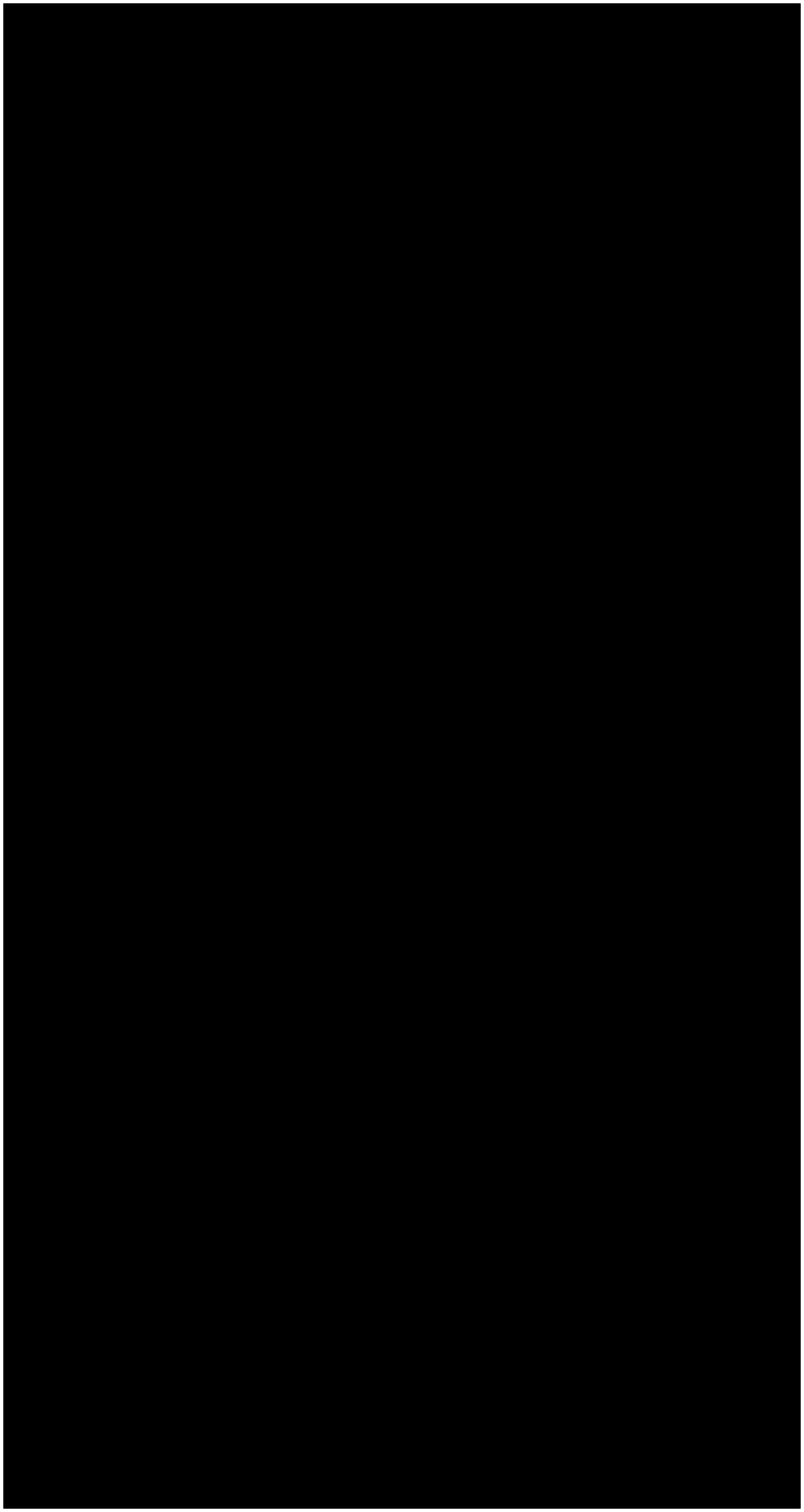


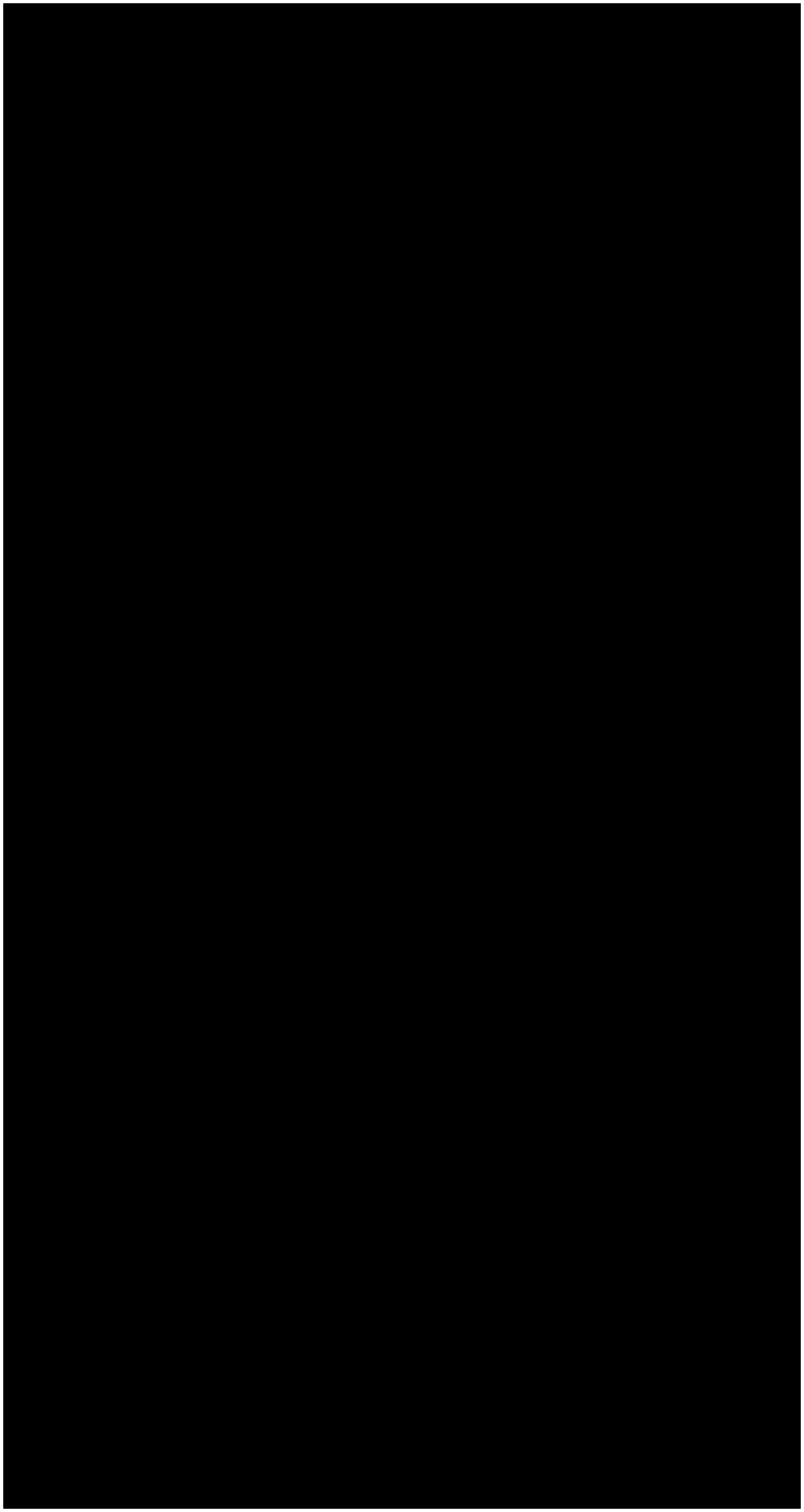


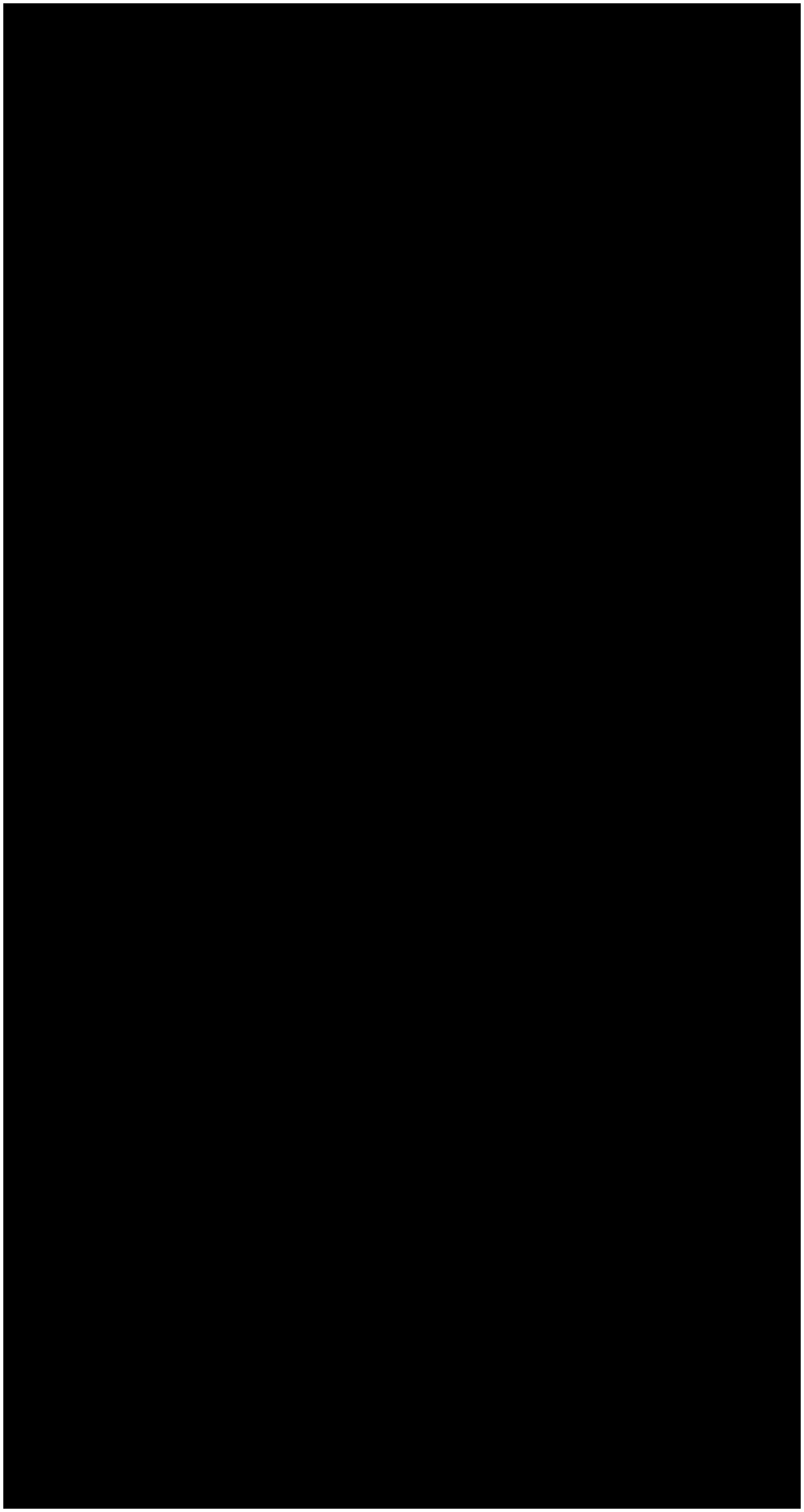


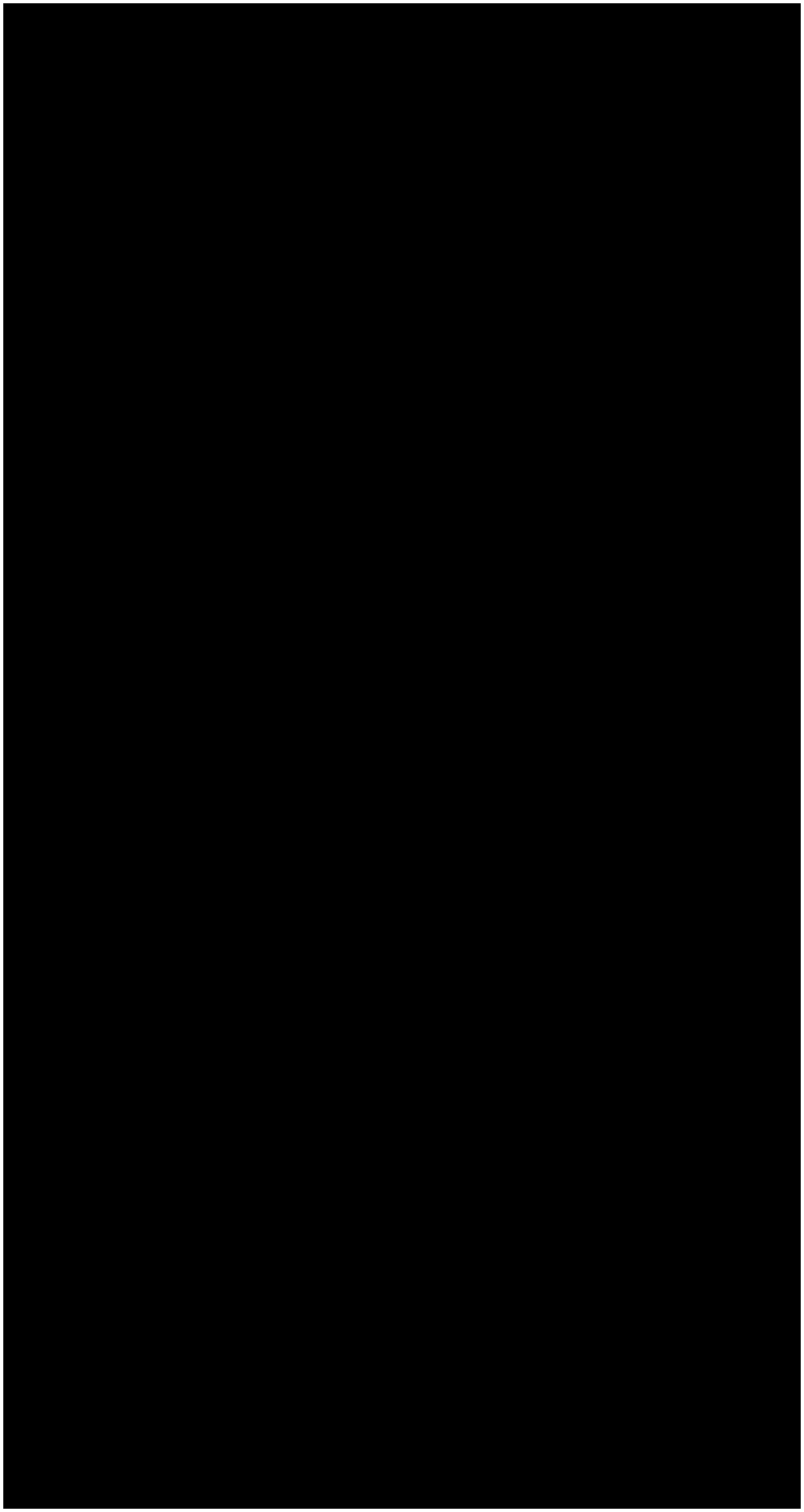


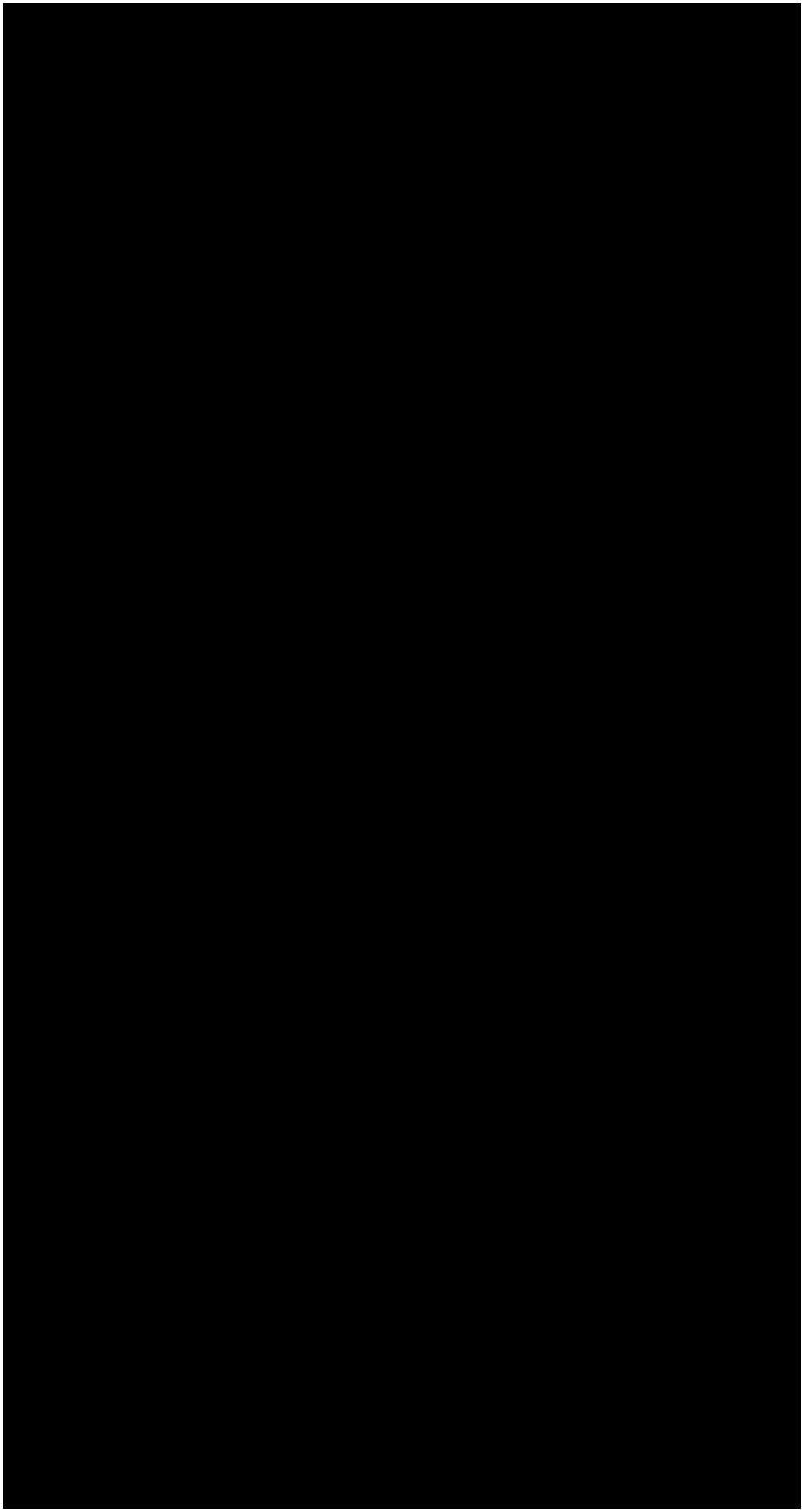


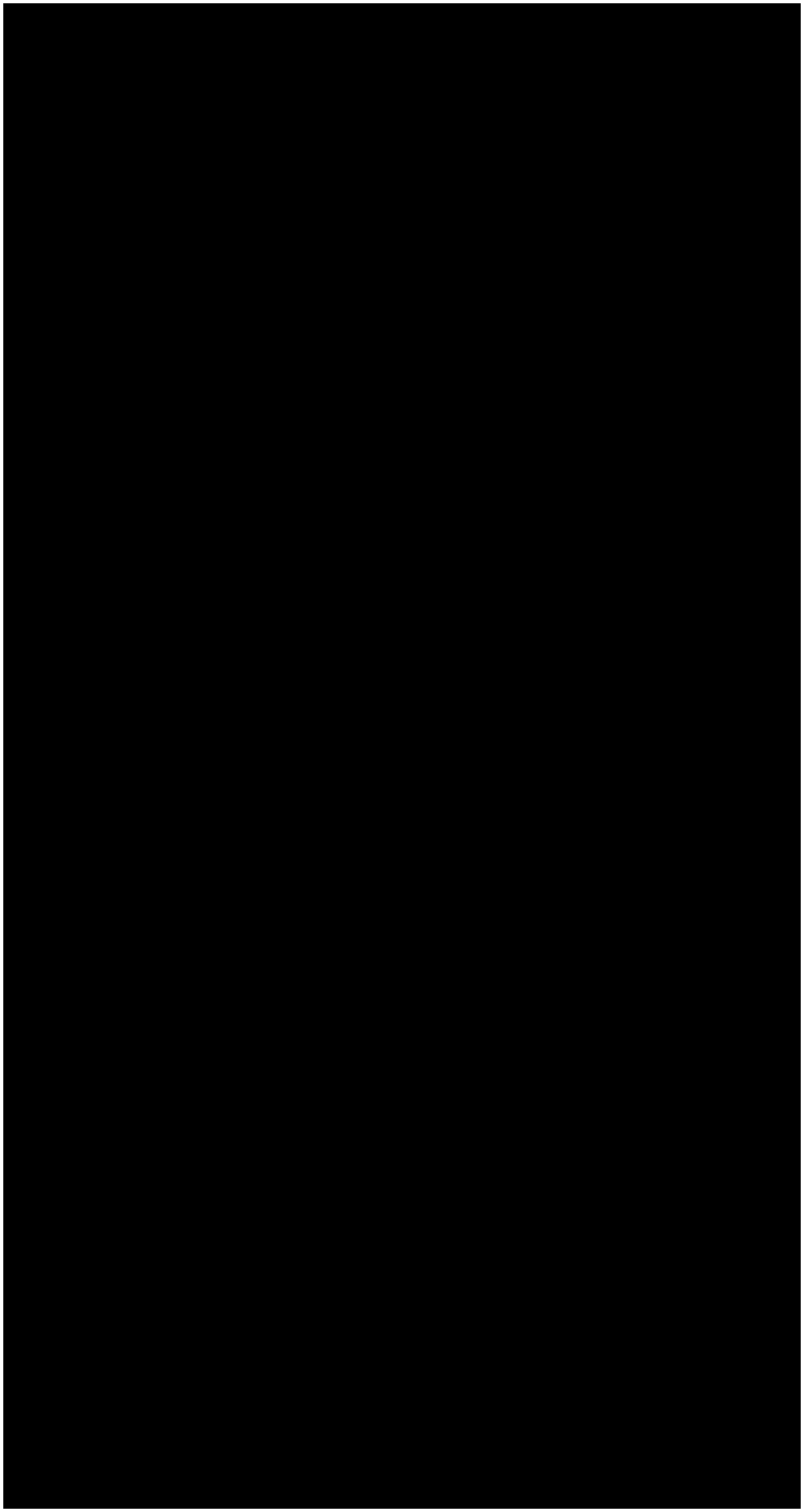


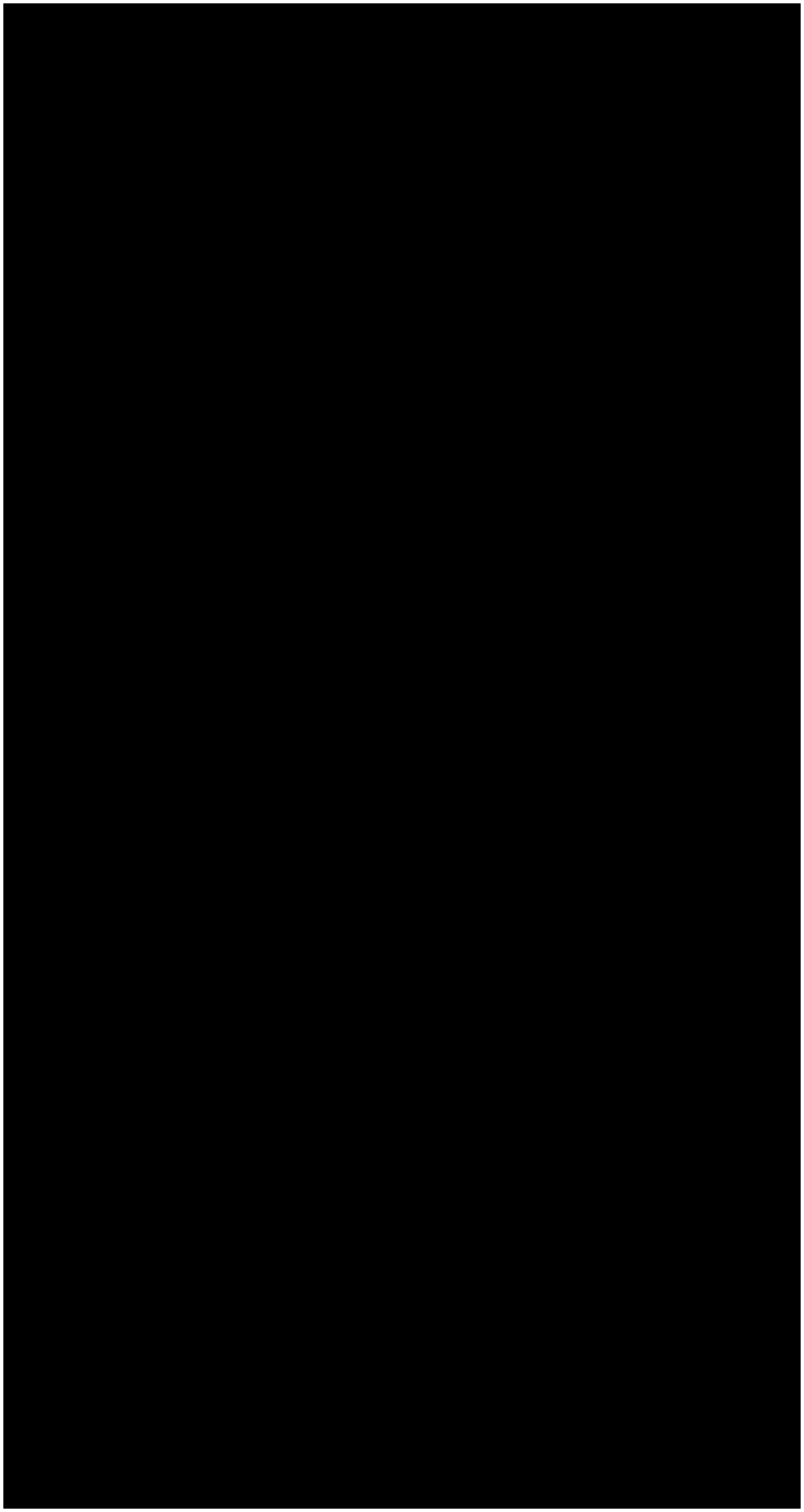














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
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Aug-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
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Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
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Oct-28											

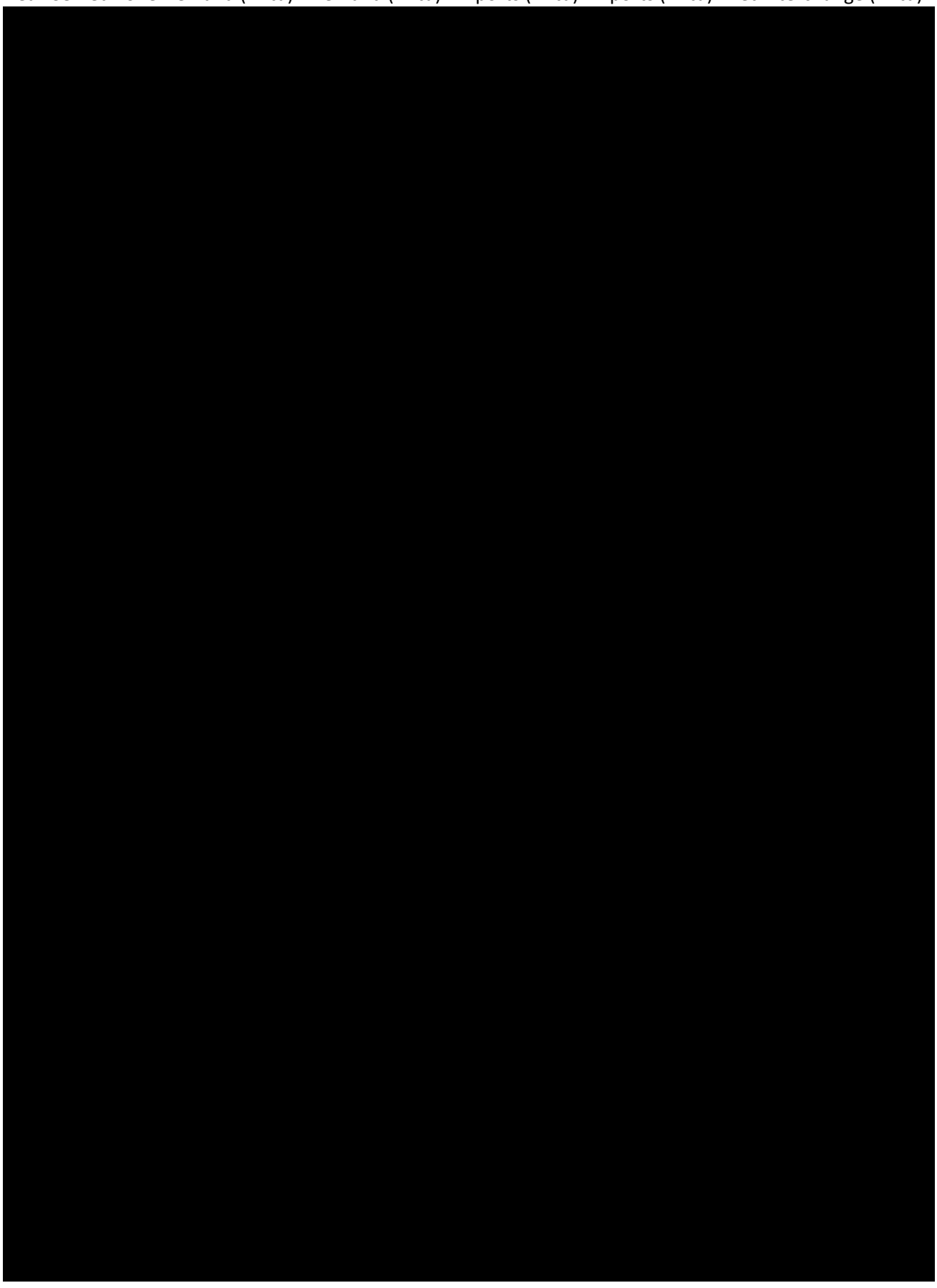
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
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Aug-27											
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Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





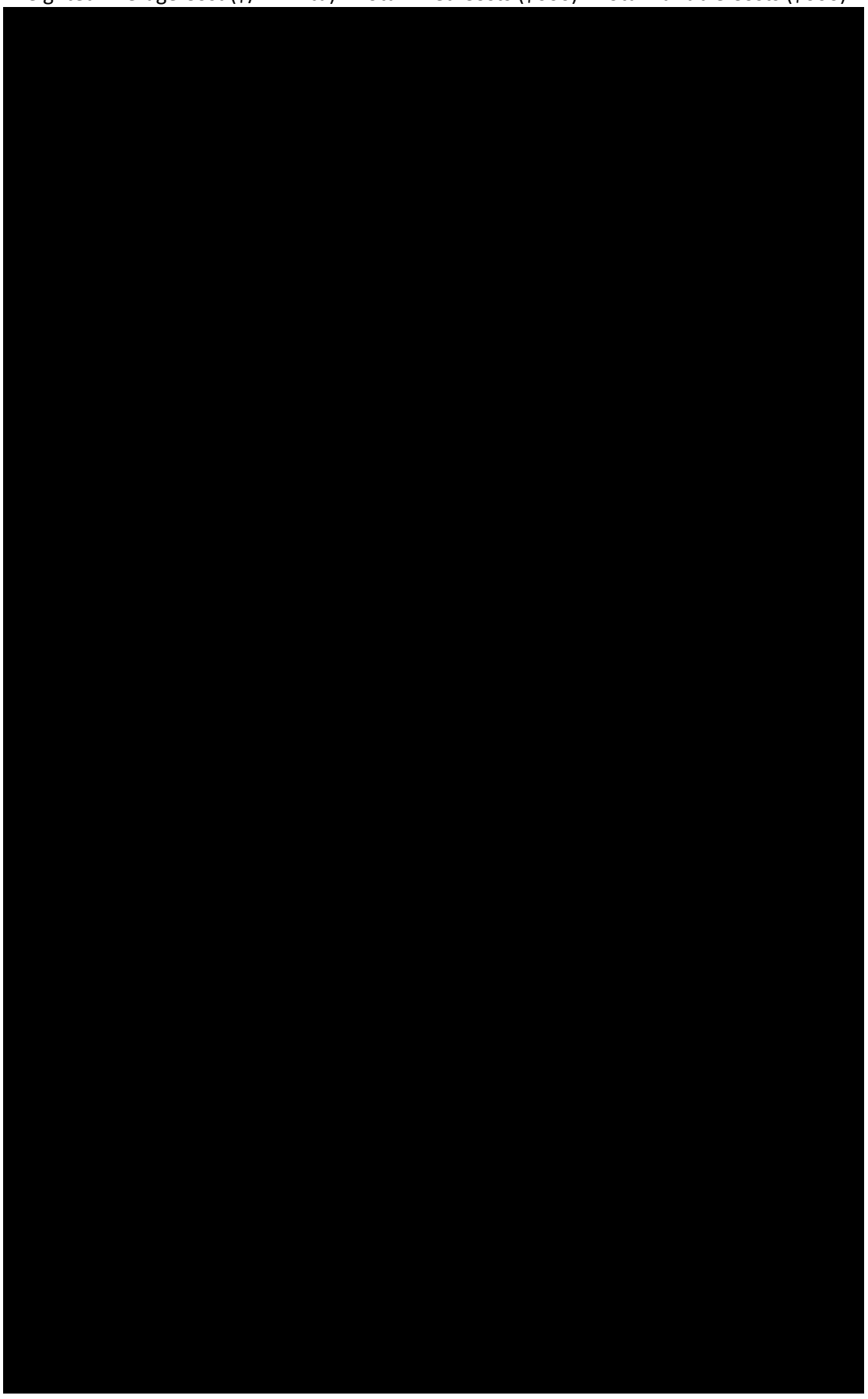
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

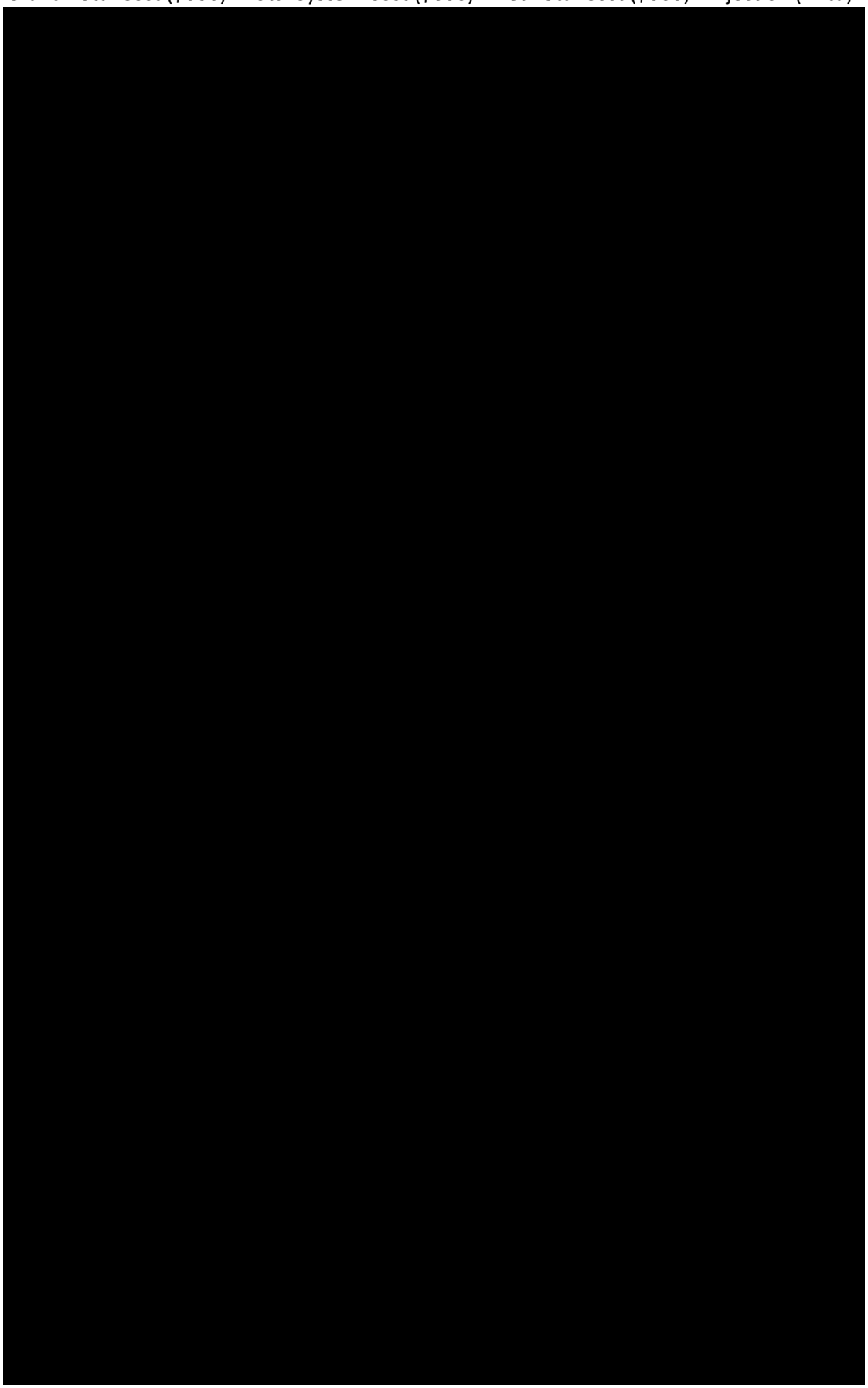


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

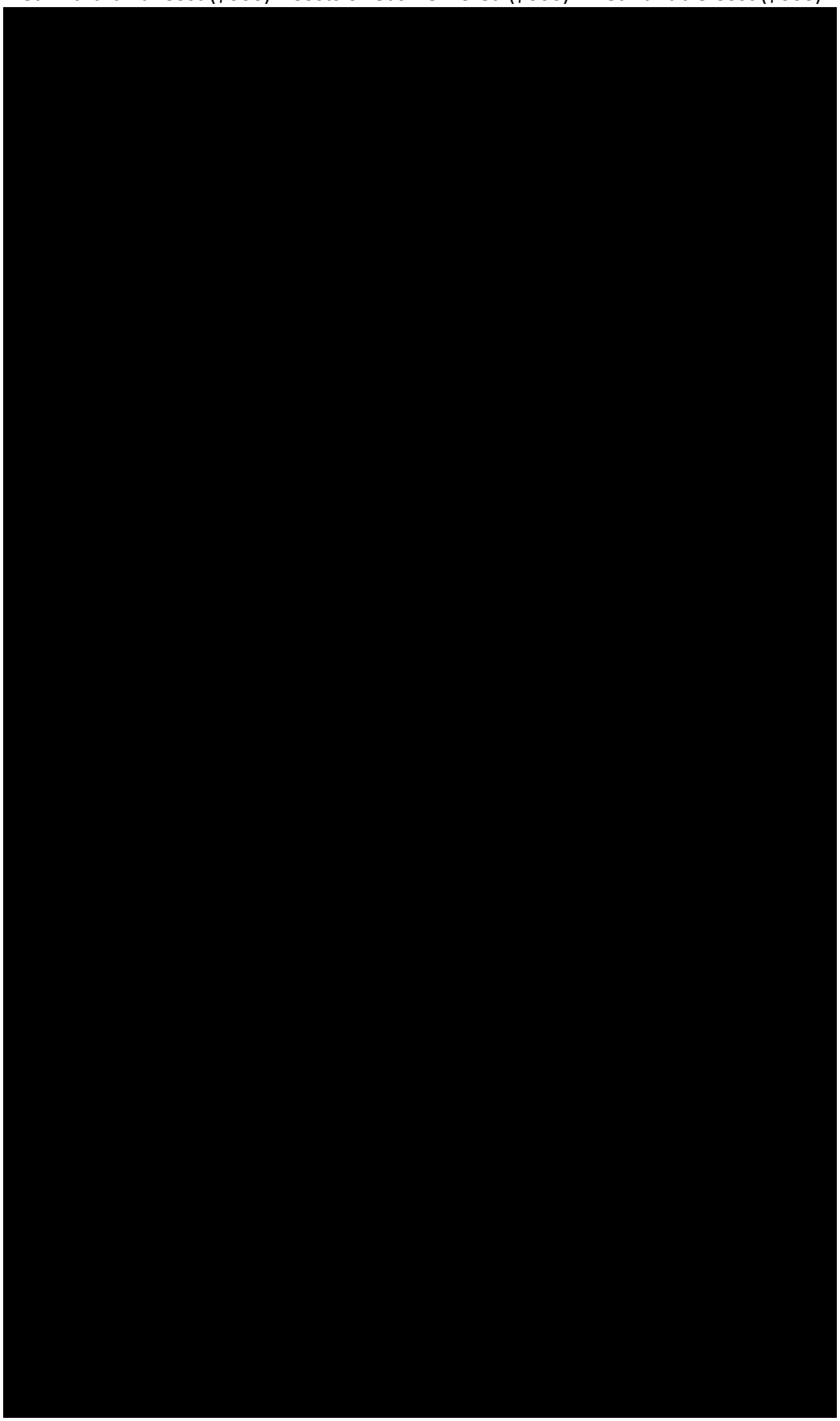




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

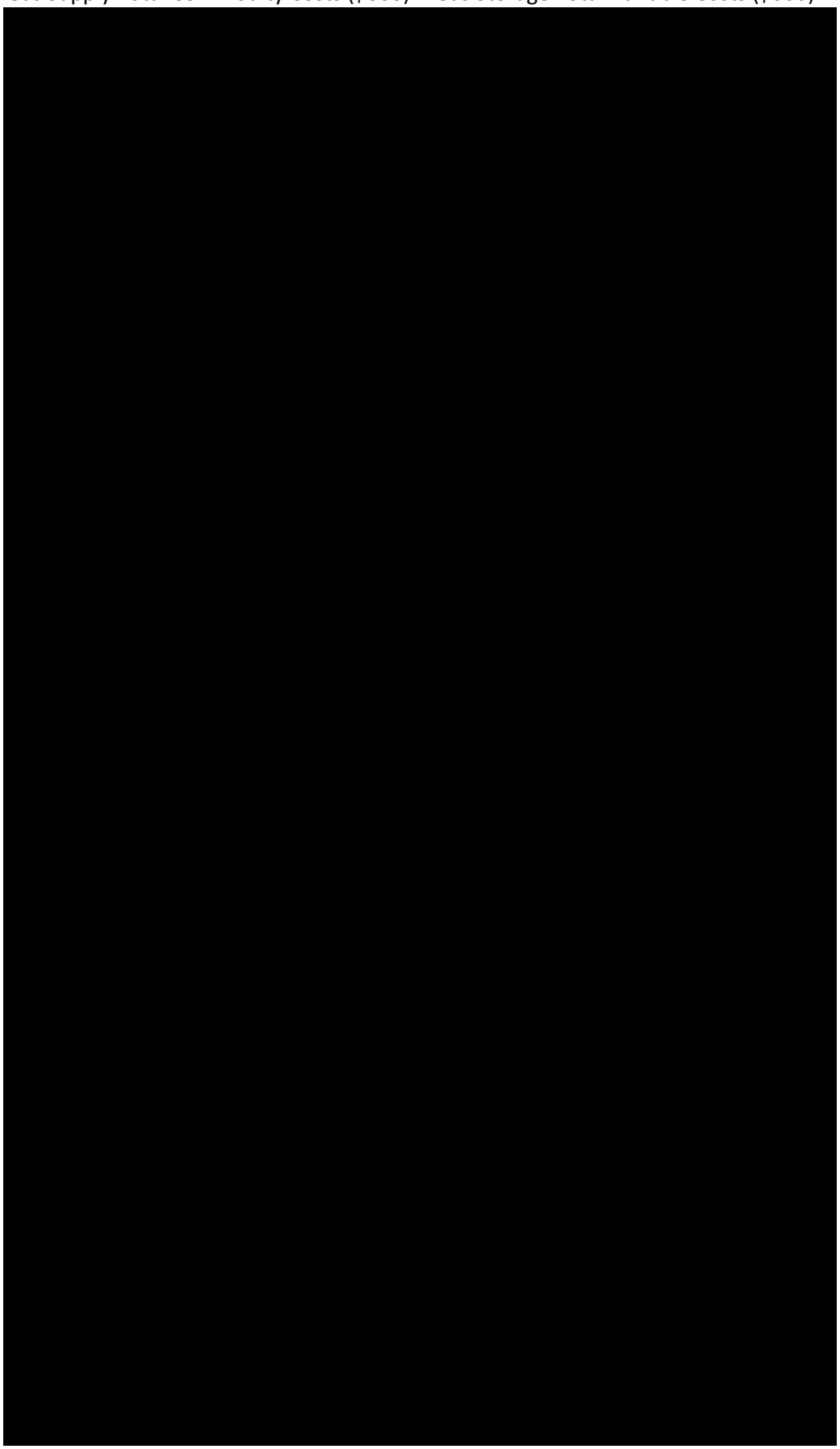




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

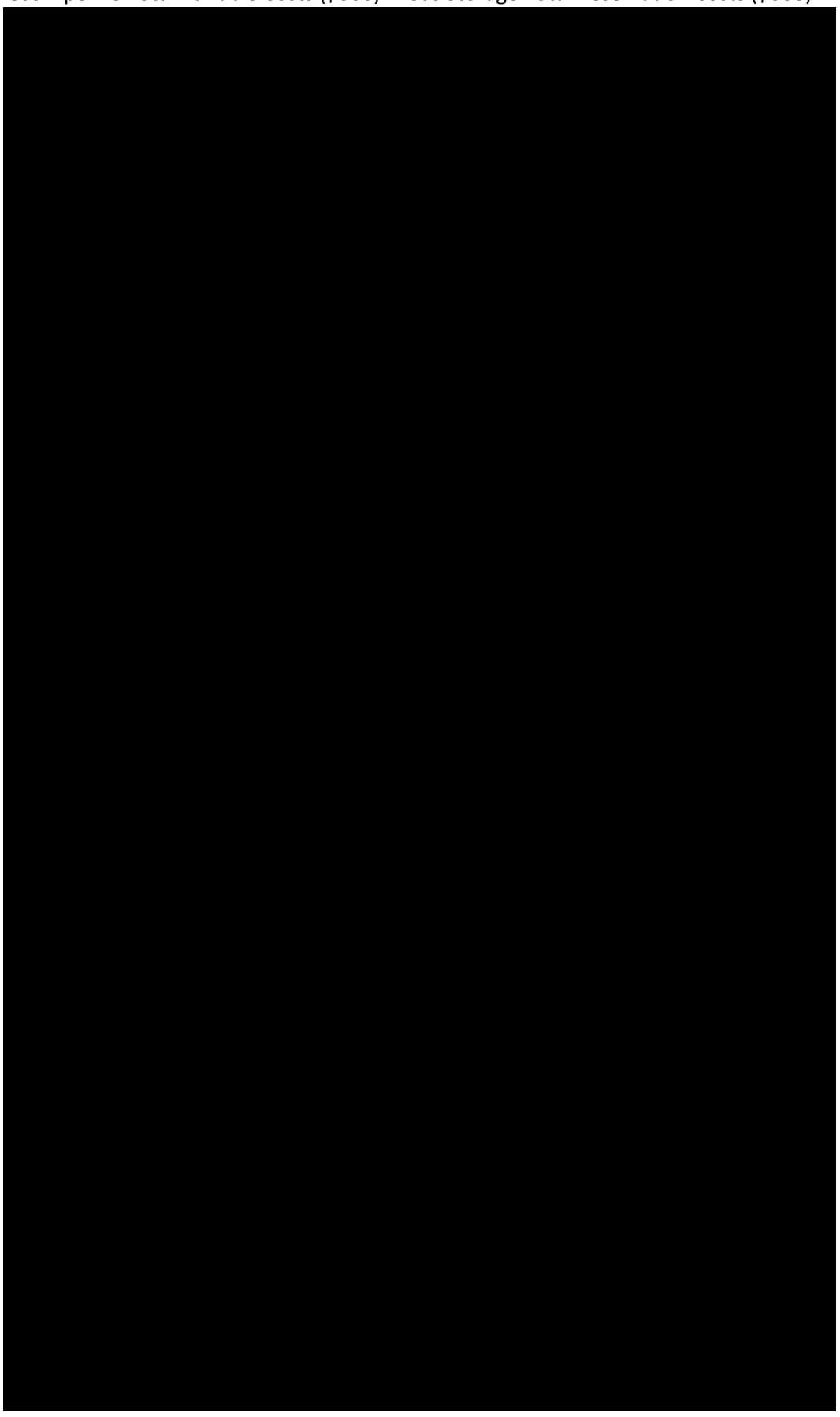


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



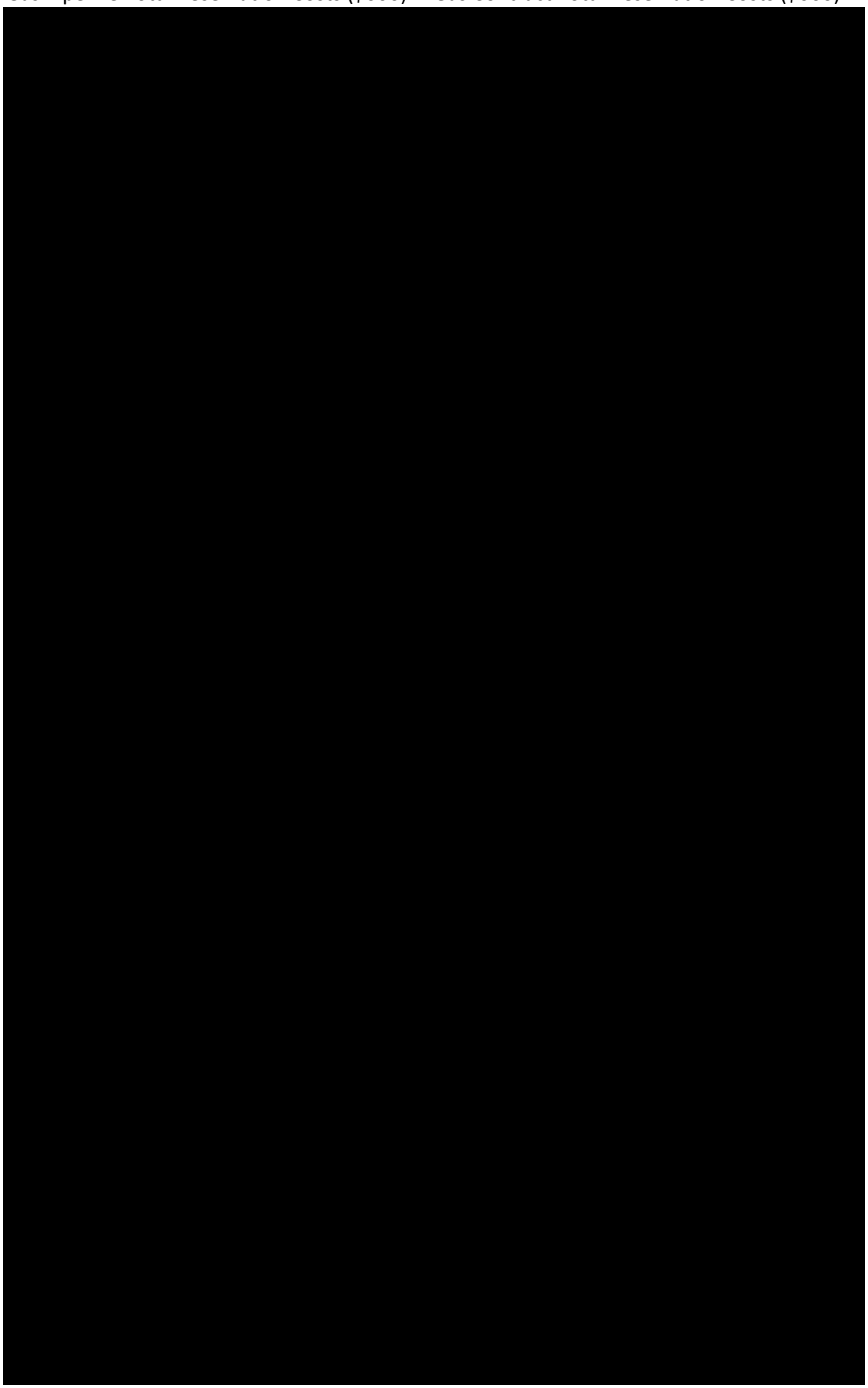


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



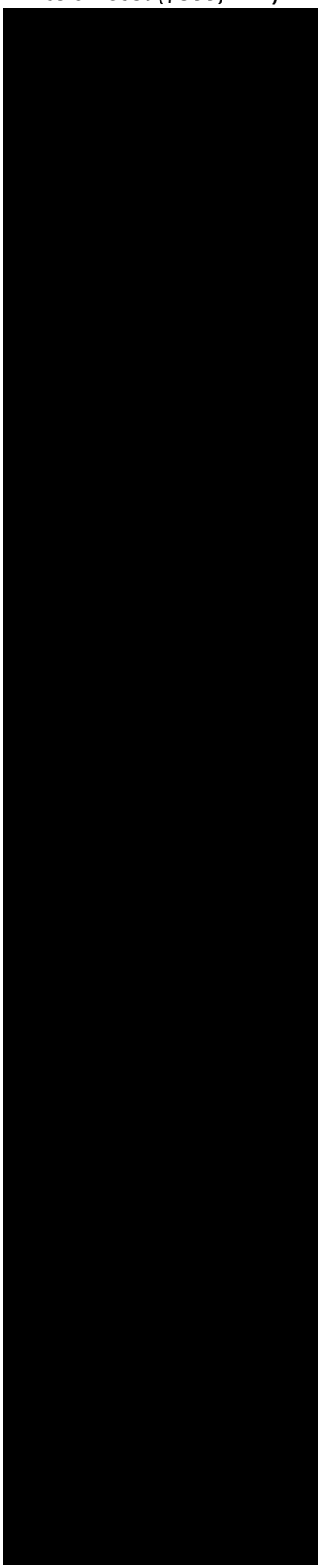


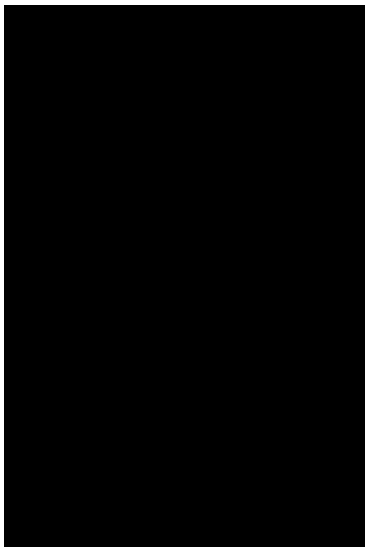
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)





Emission Cost ($000) x y z





Parent Nan	Collection	Child Name	Category	Month	Take Quant	Supply Exce	Cost ($000	Price ($/MI
System	Gas Contra	INCREMEN	[redacted]					
System	Gas Contra	INCREMEN	[redacted]					
System	Gas Contra	INCREMEN	[redacted]					
System	Gas Contra	INCREMEN	[redacted]					
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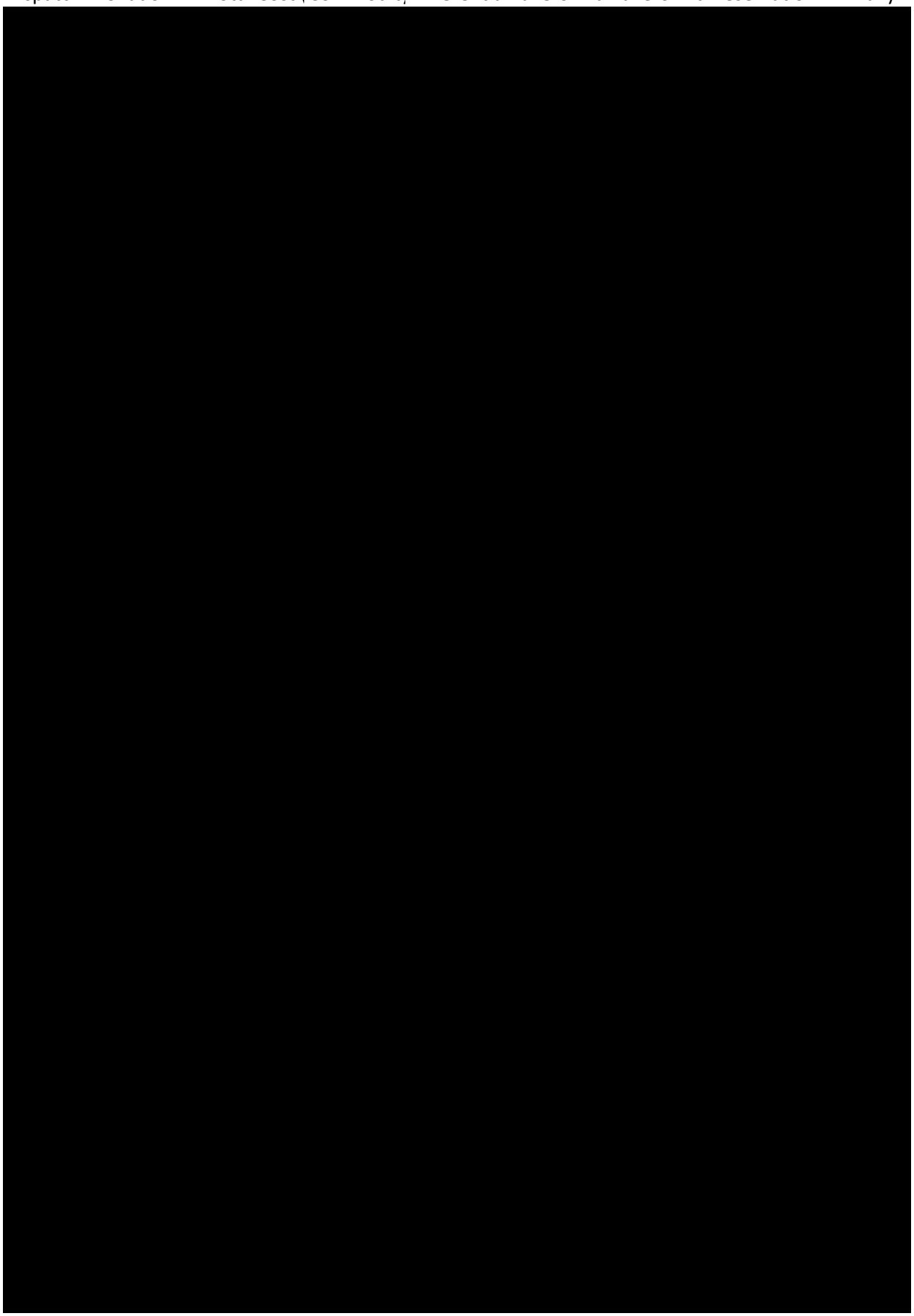
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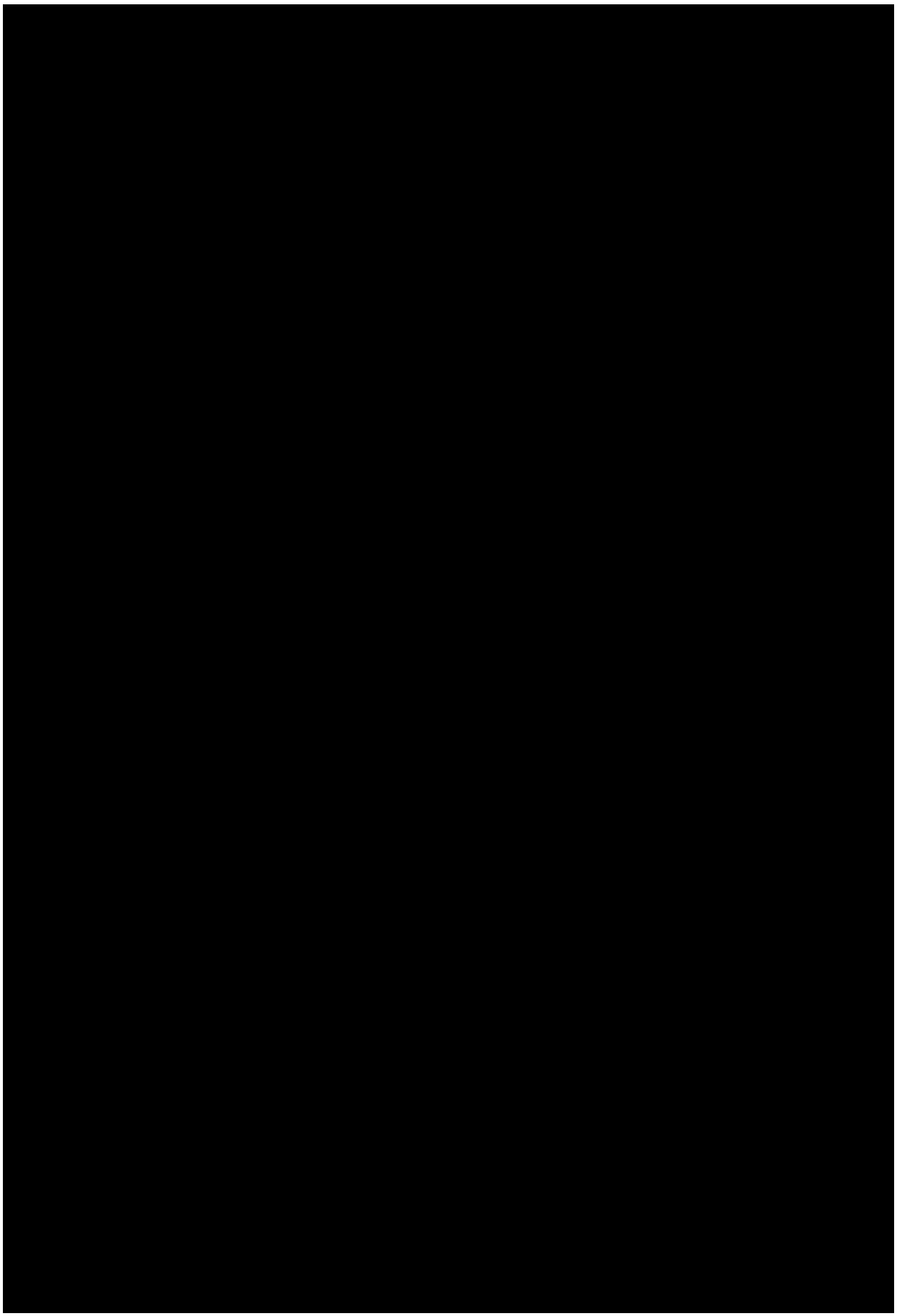
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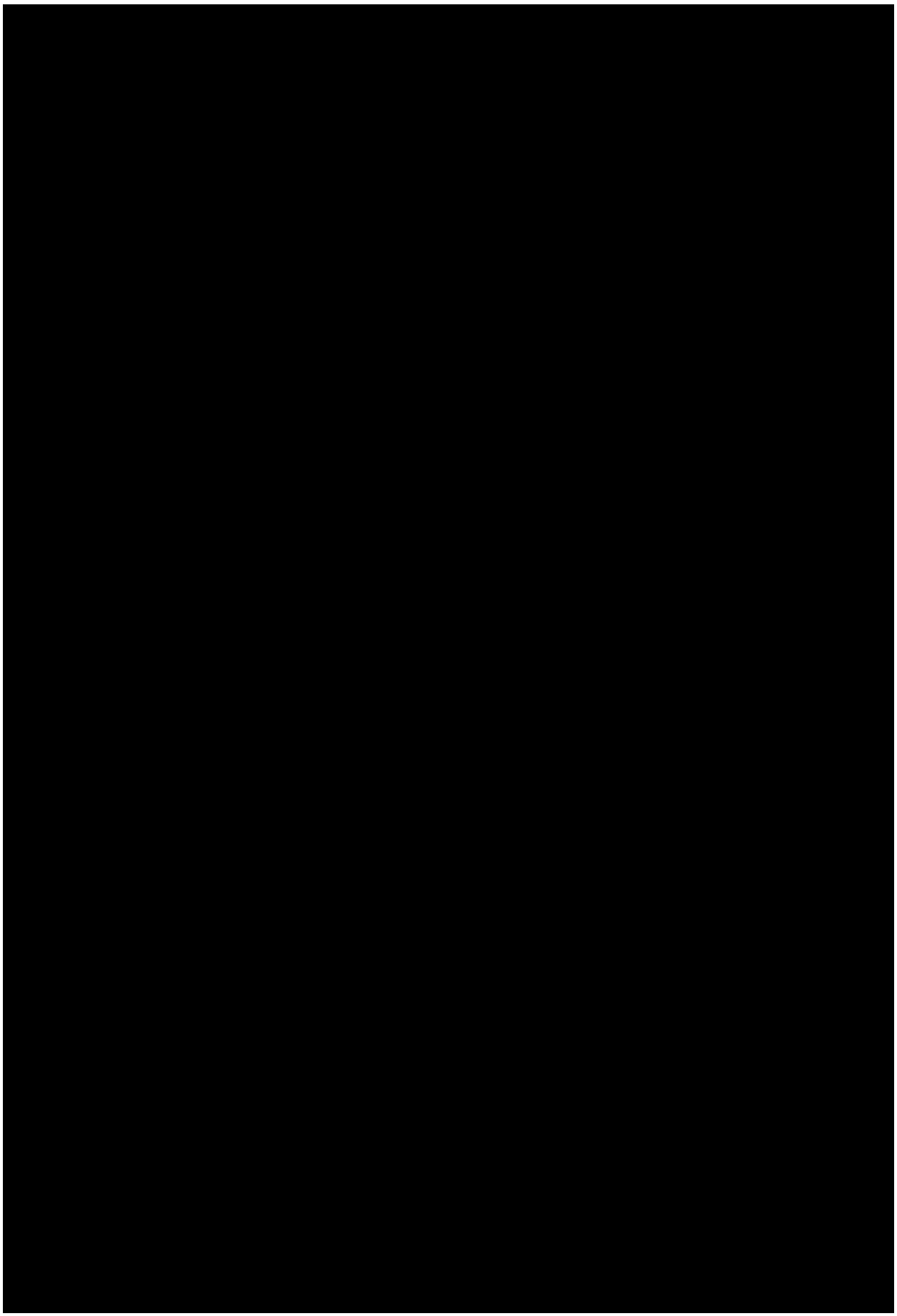
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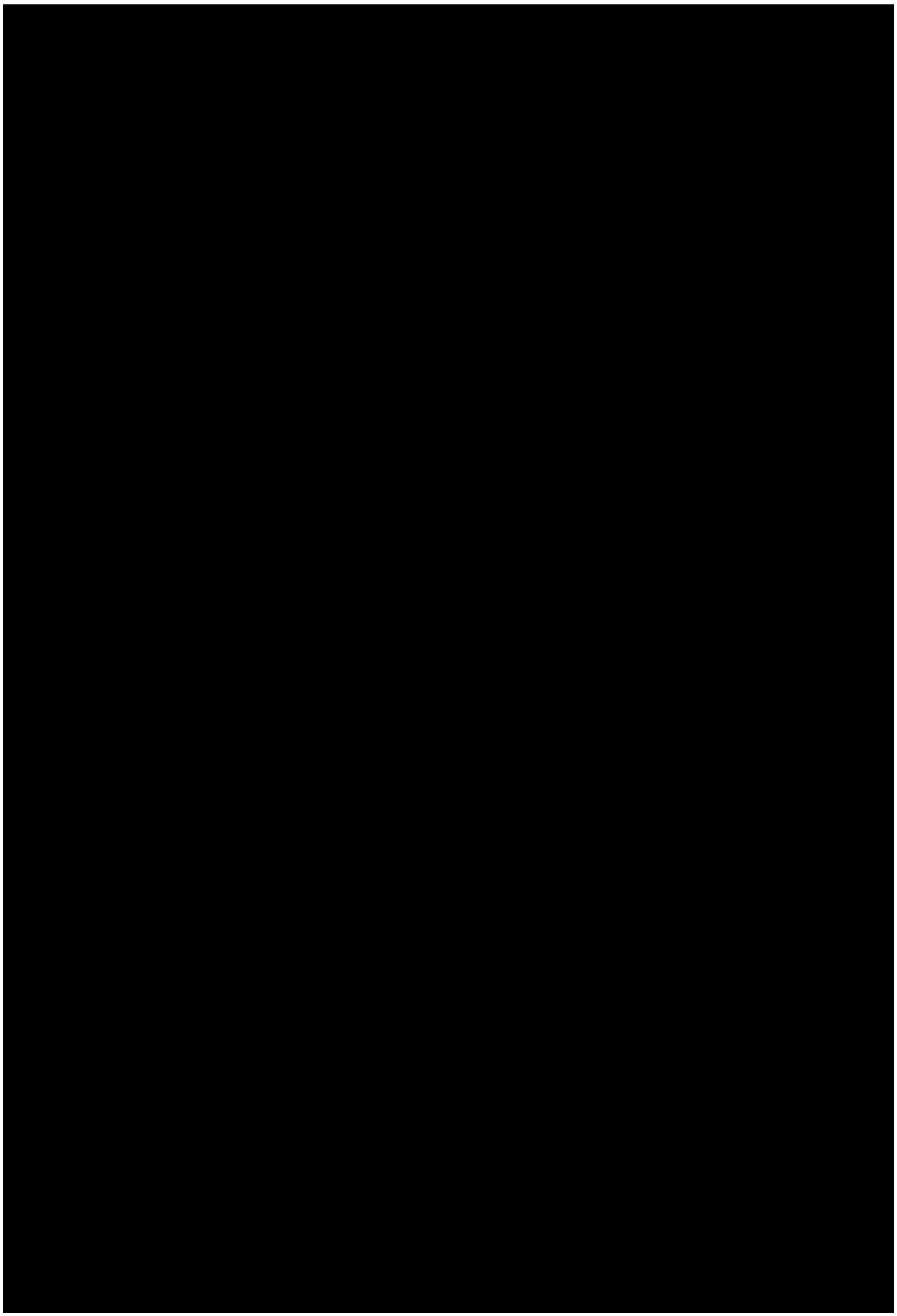
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System	Gas Contra P9 LNG	[redacted]
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System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
System	Gas Contra P9 LNG	[redacted]
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System	Gas Contra P9 LNG	[redacted]
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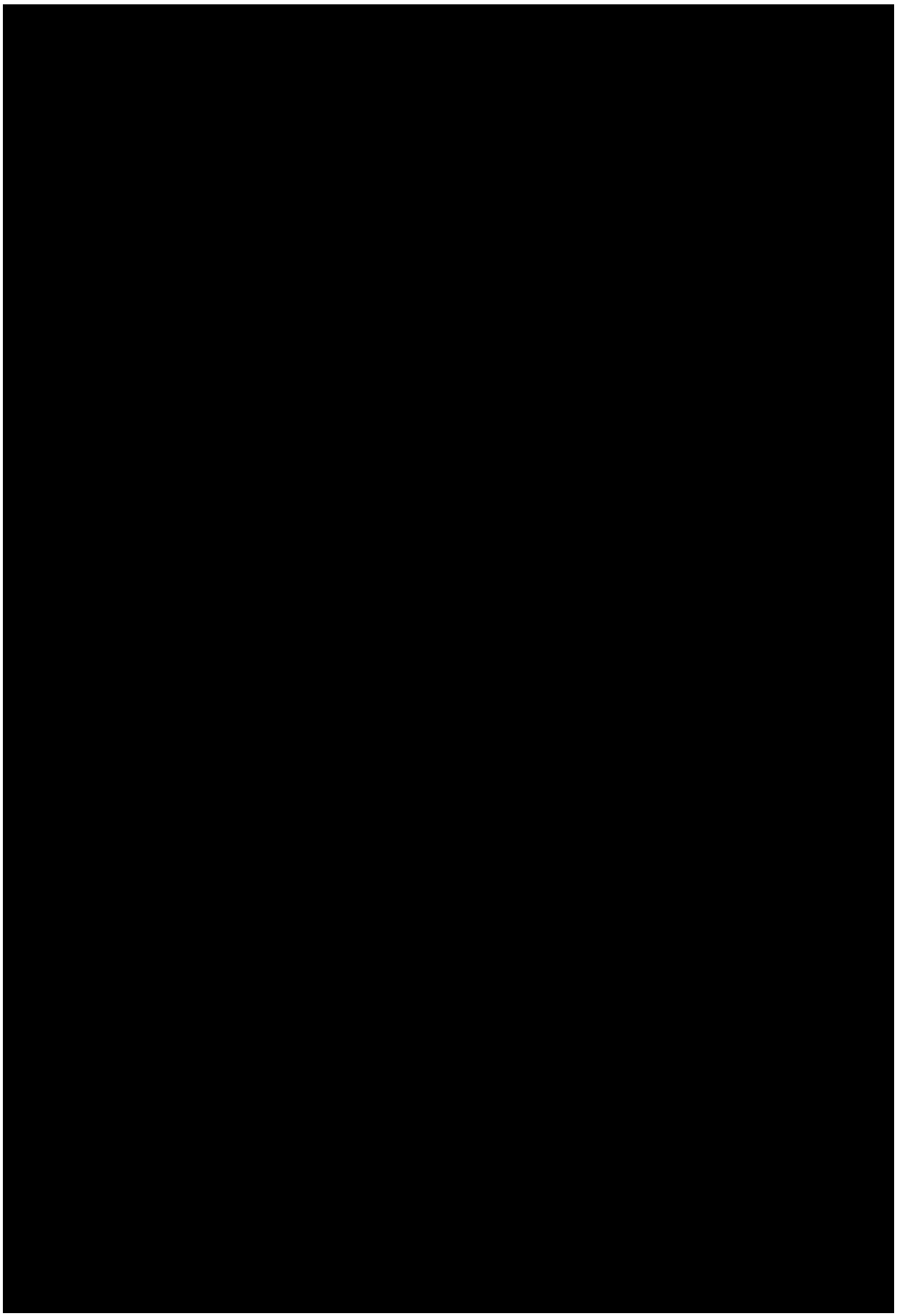
System	Gas Contra P9 LNG	[redacted]
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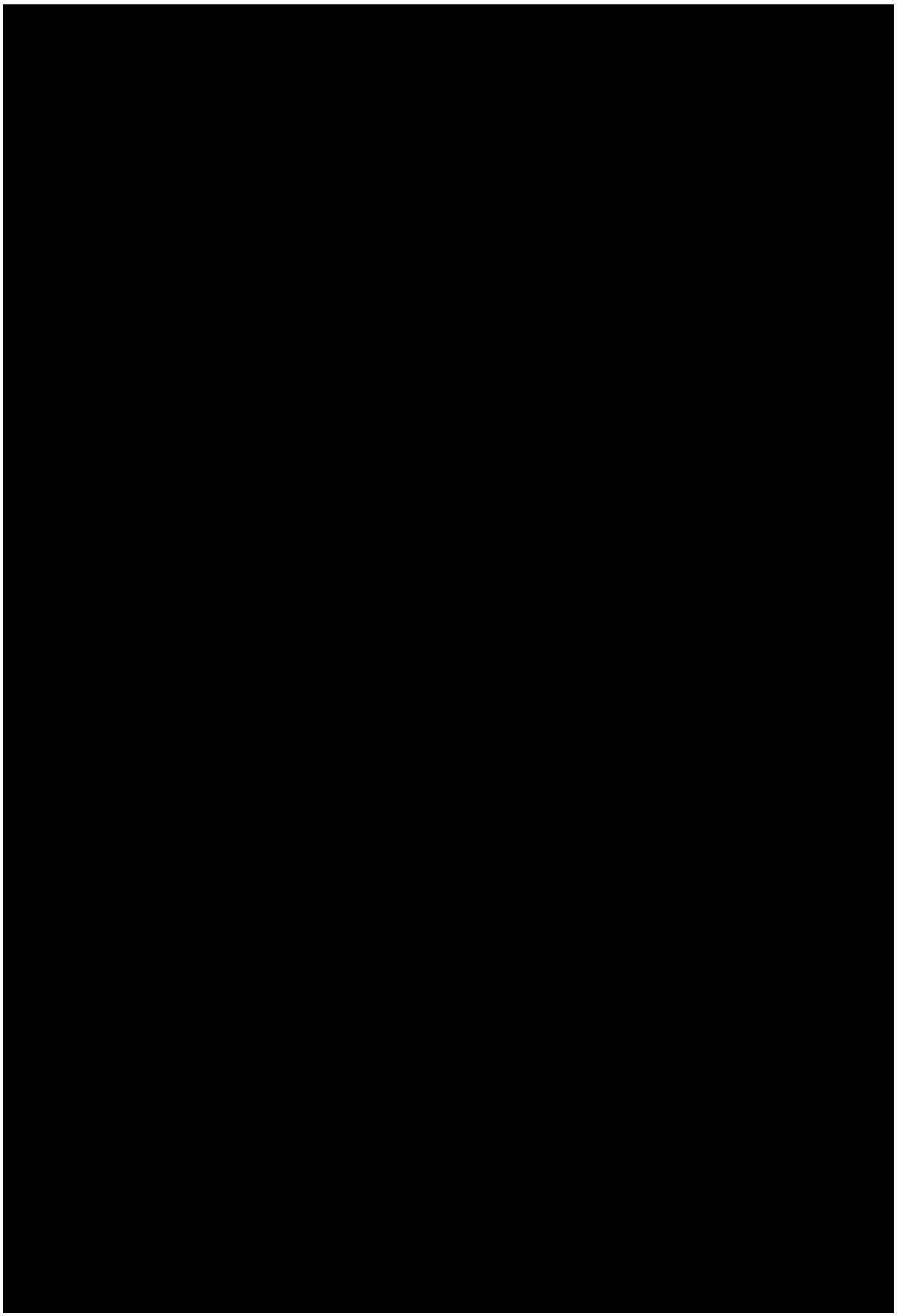

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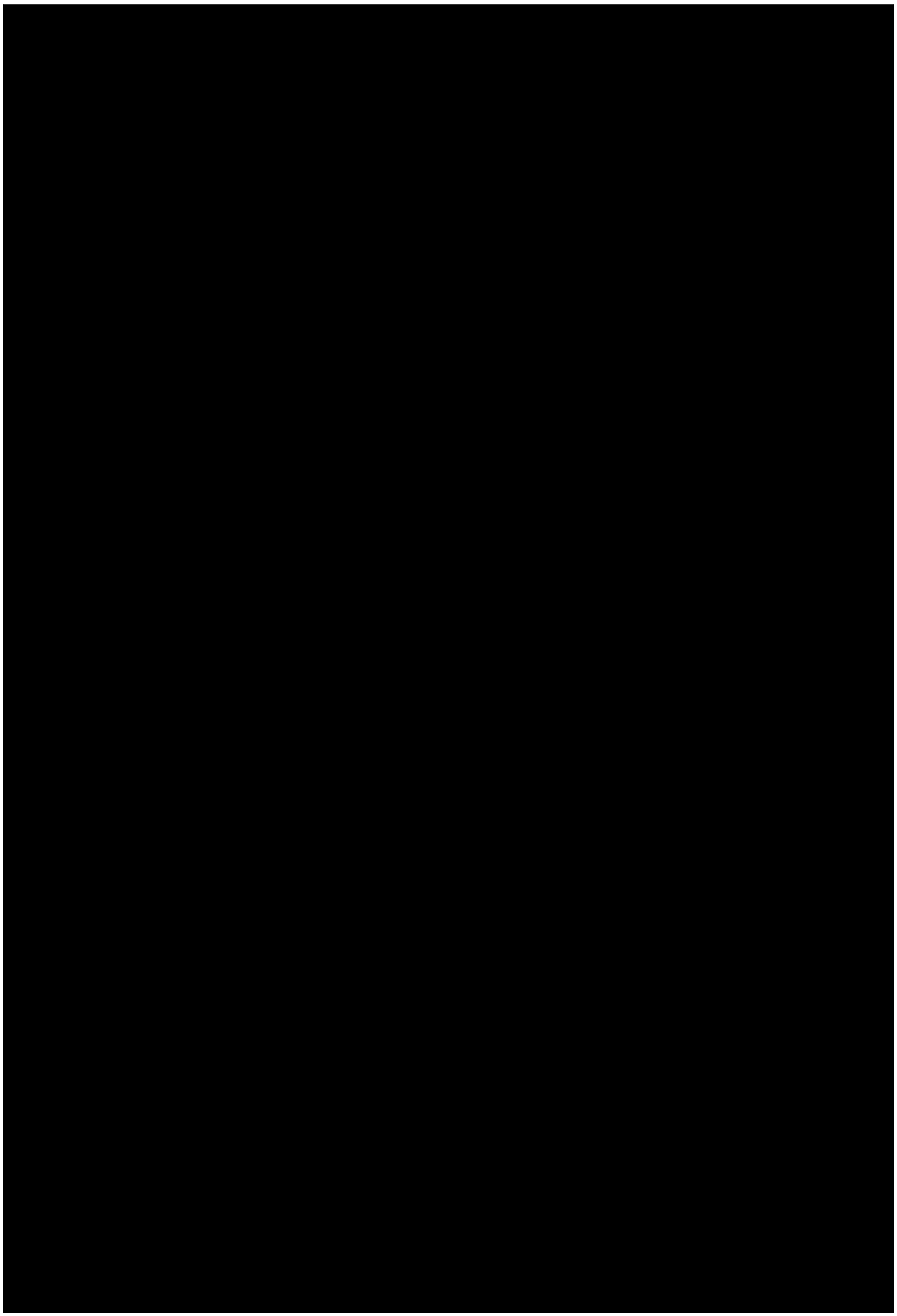


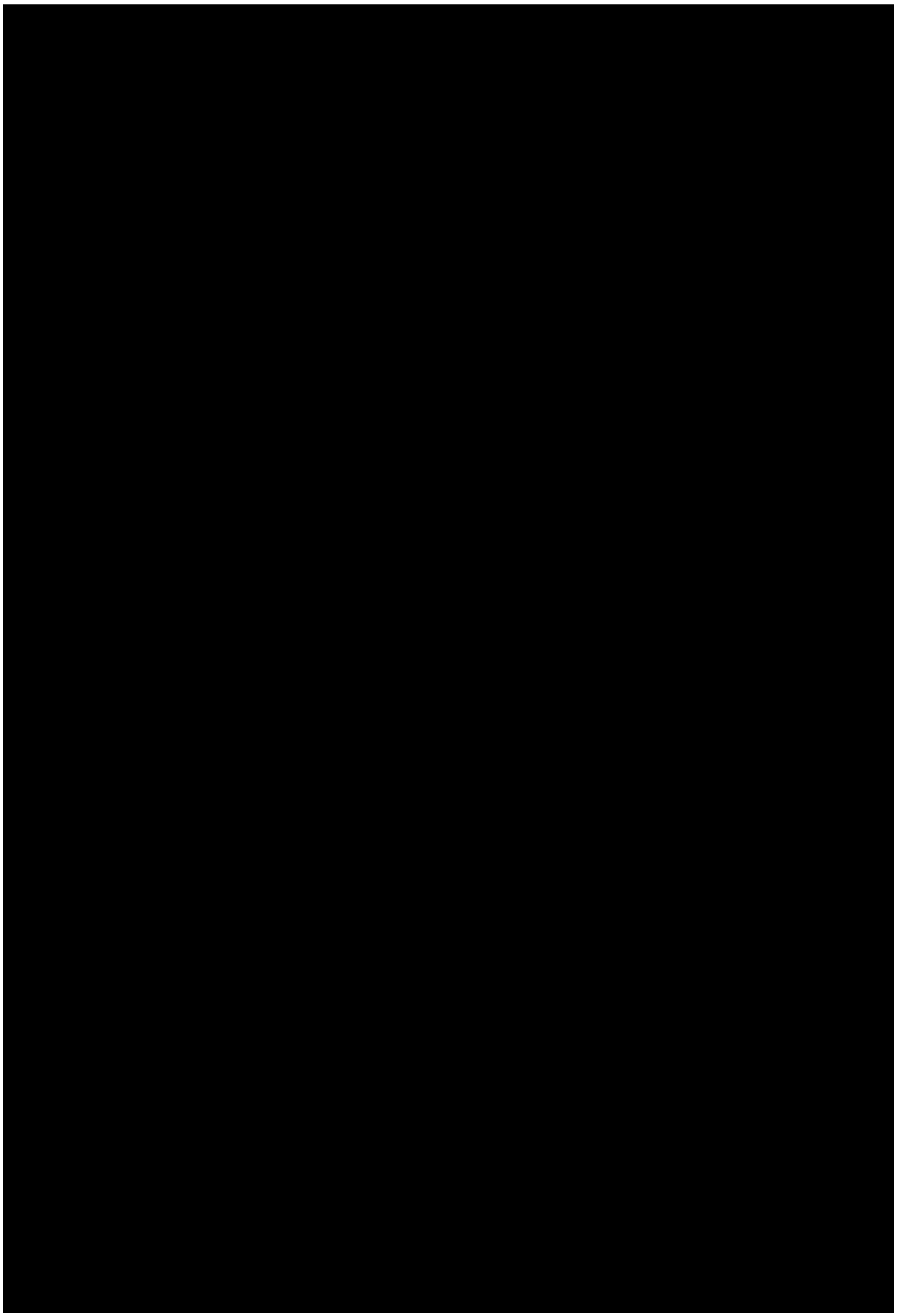


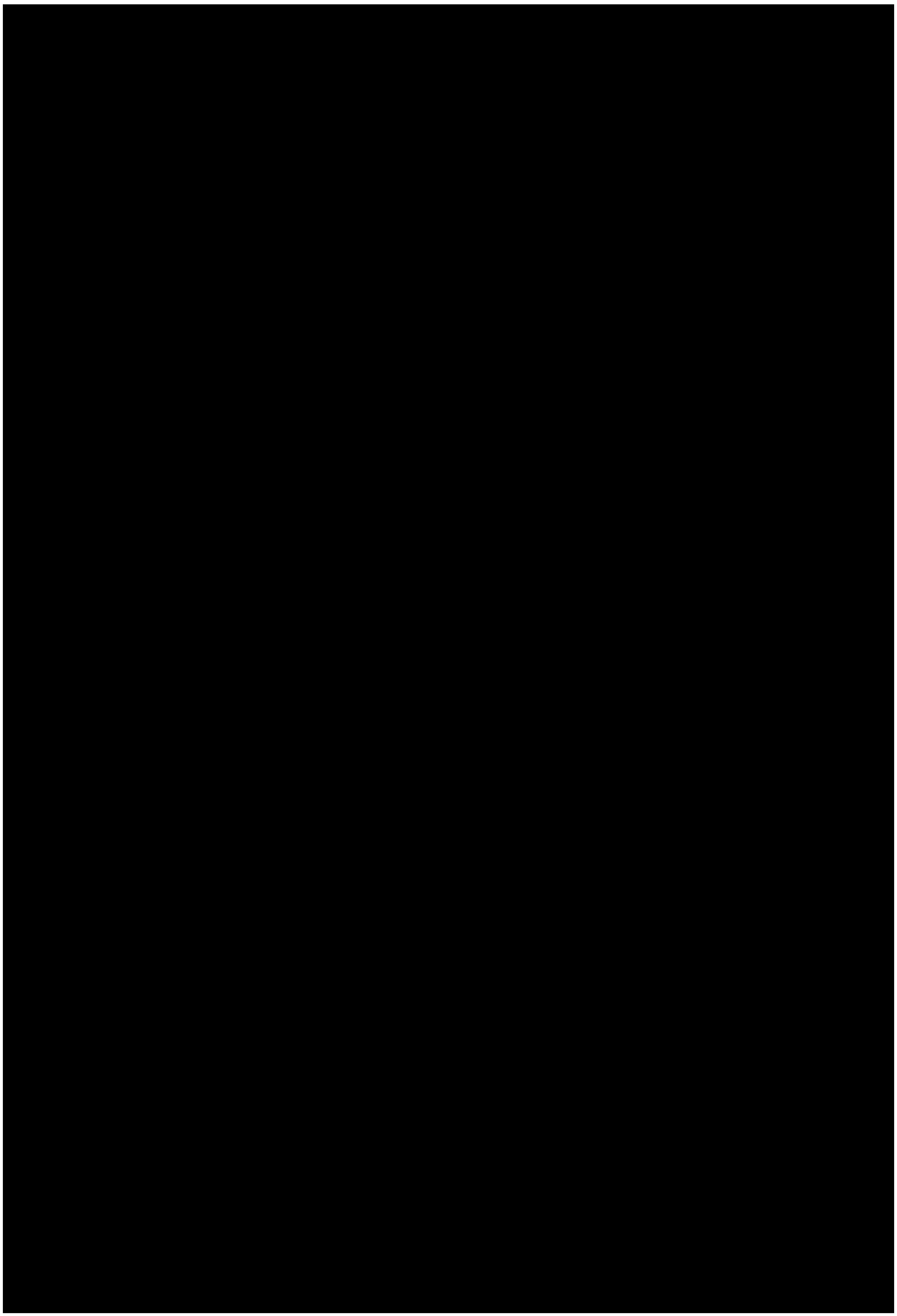


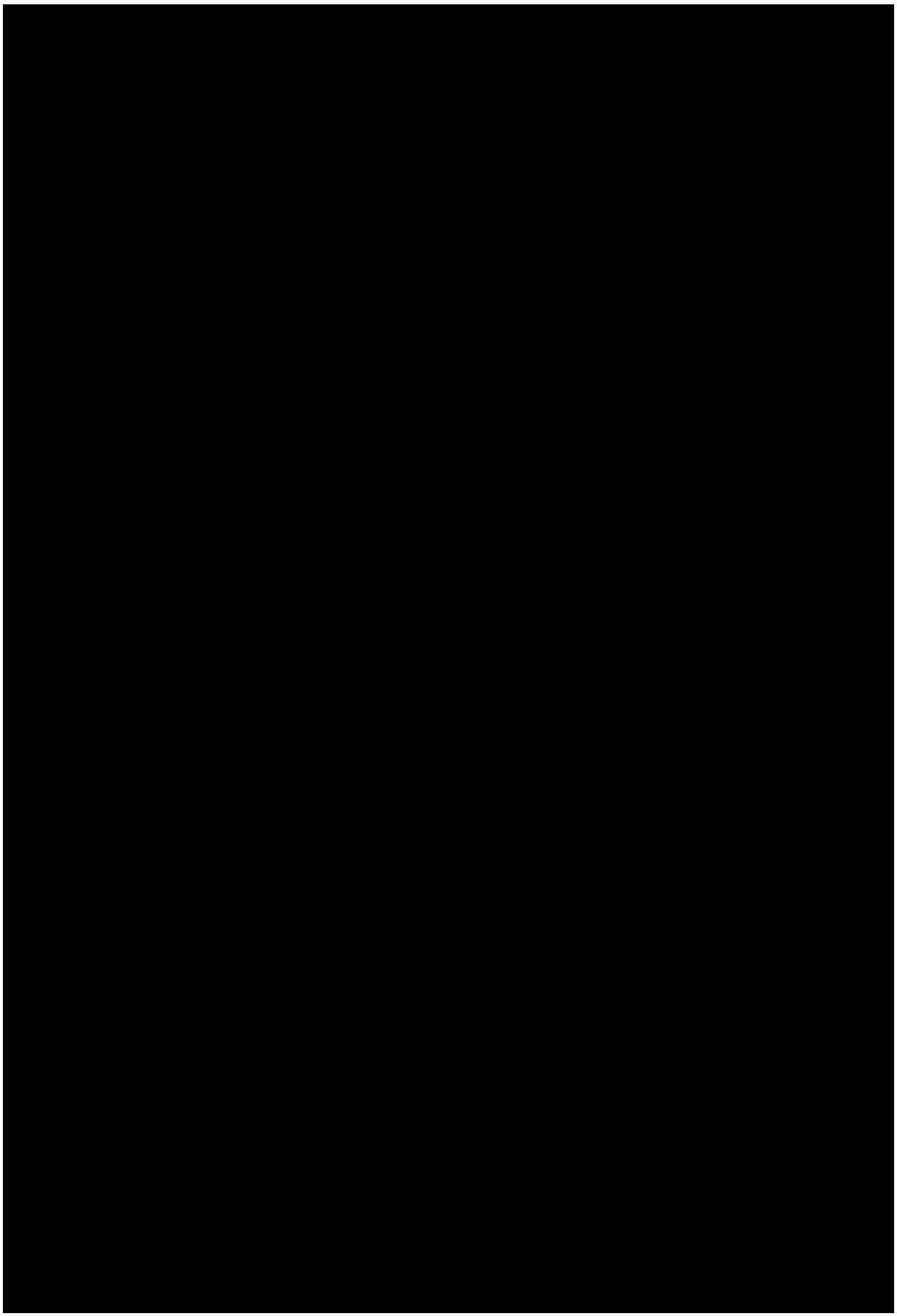


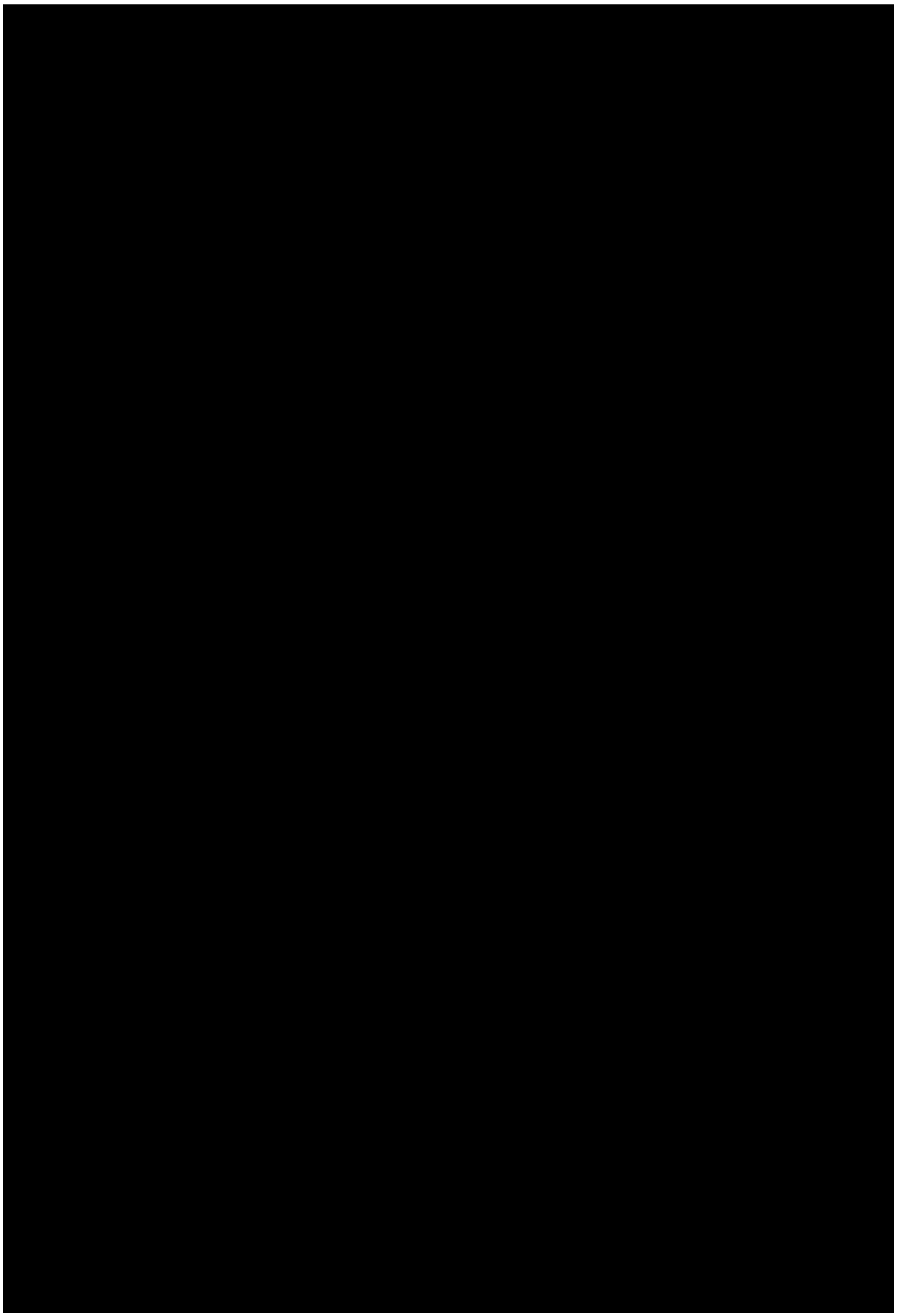


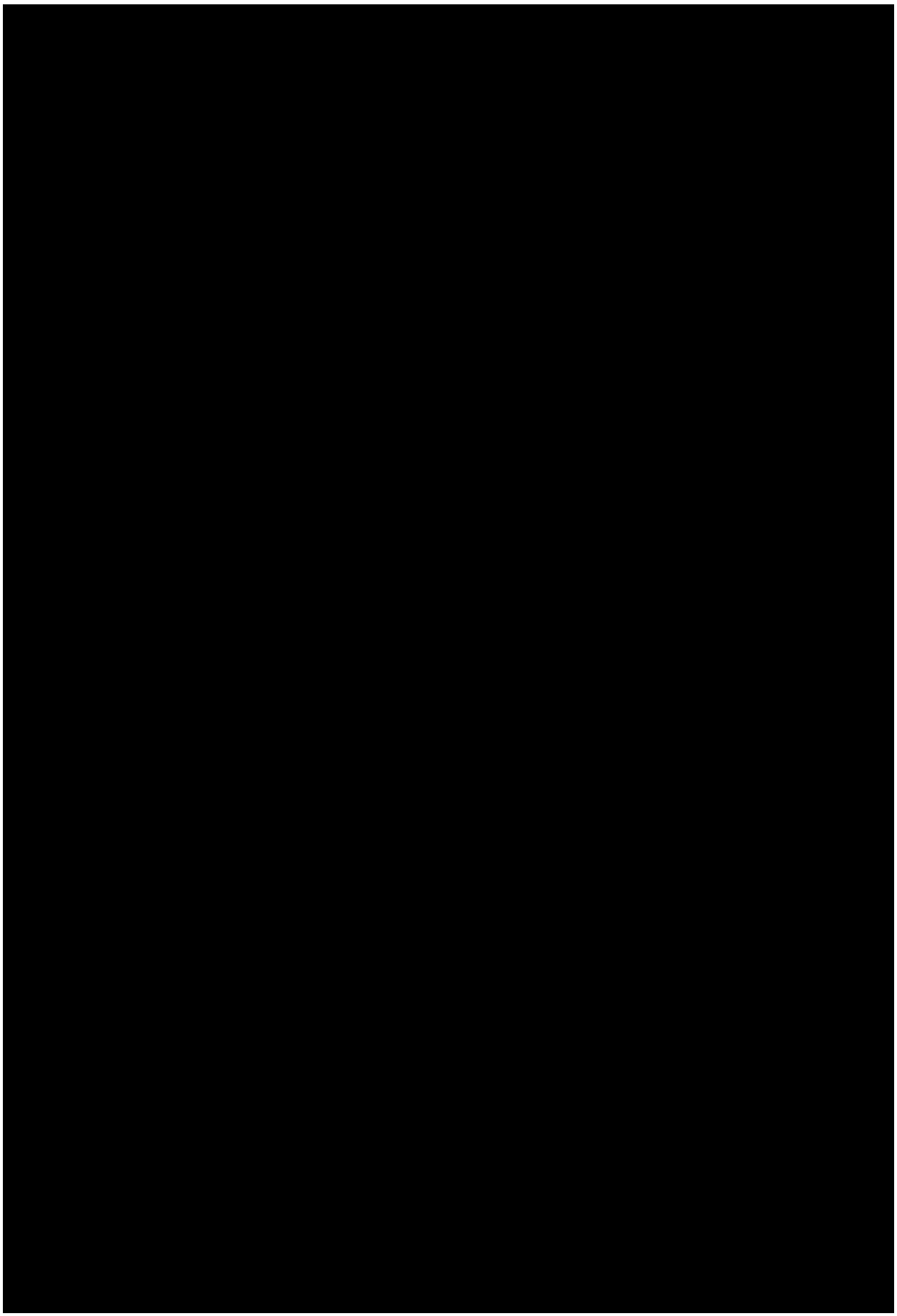


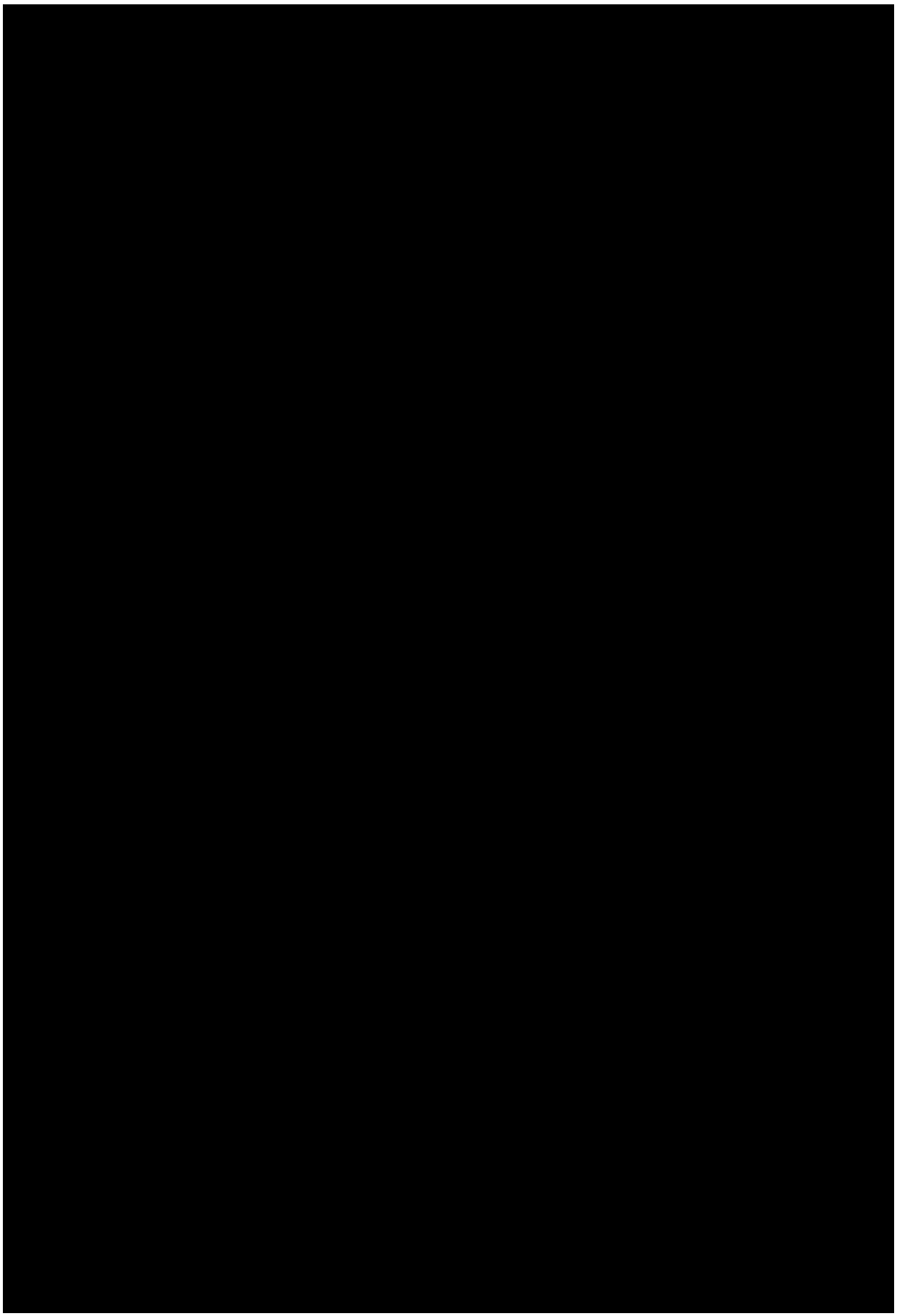


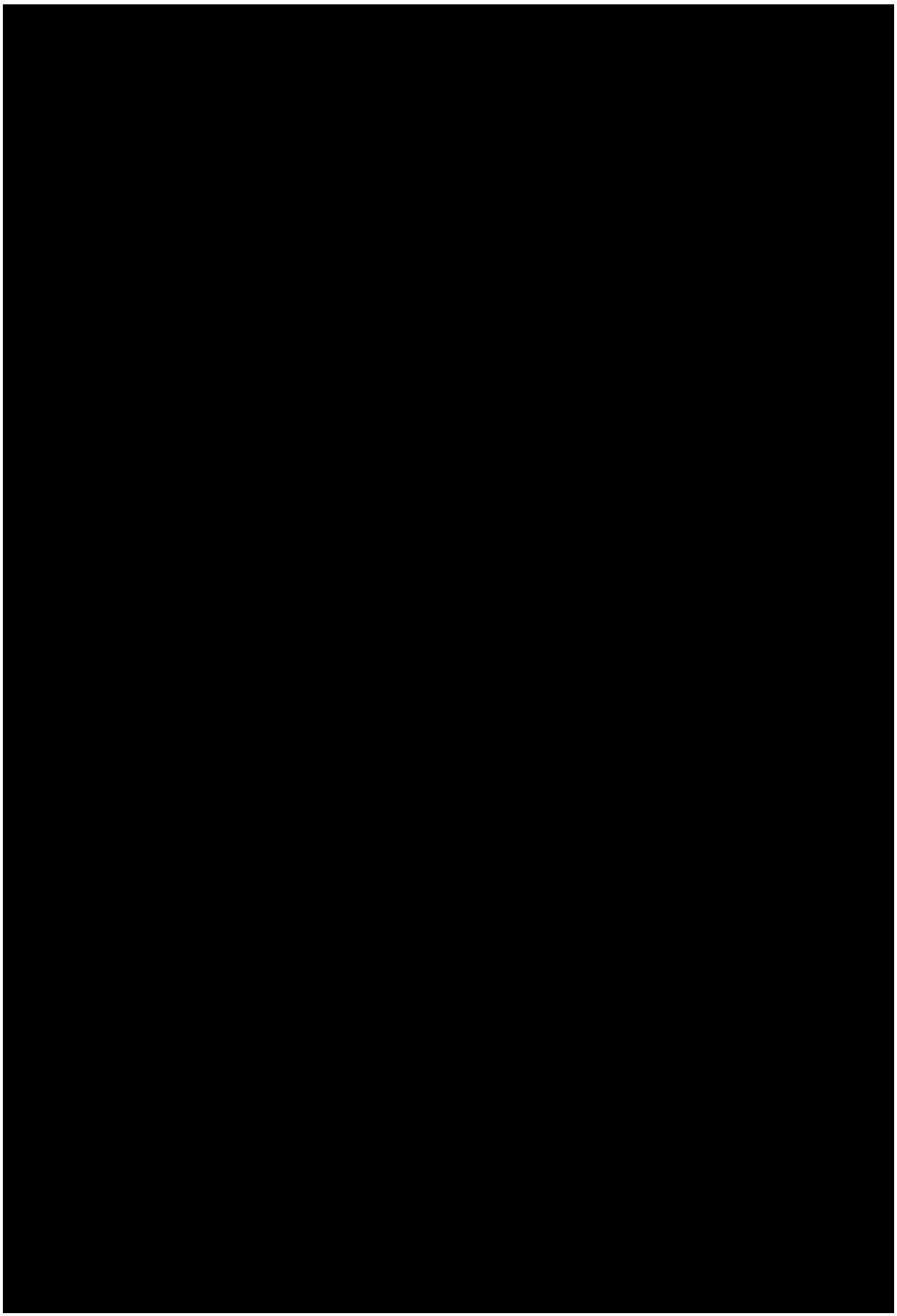


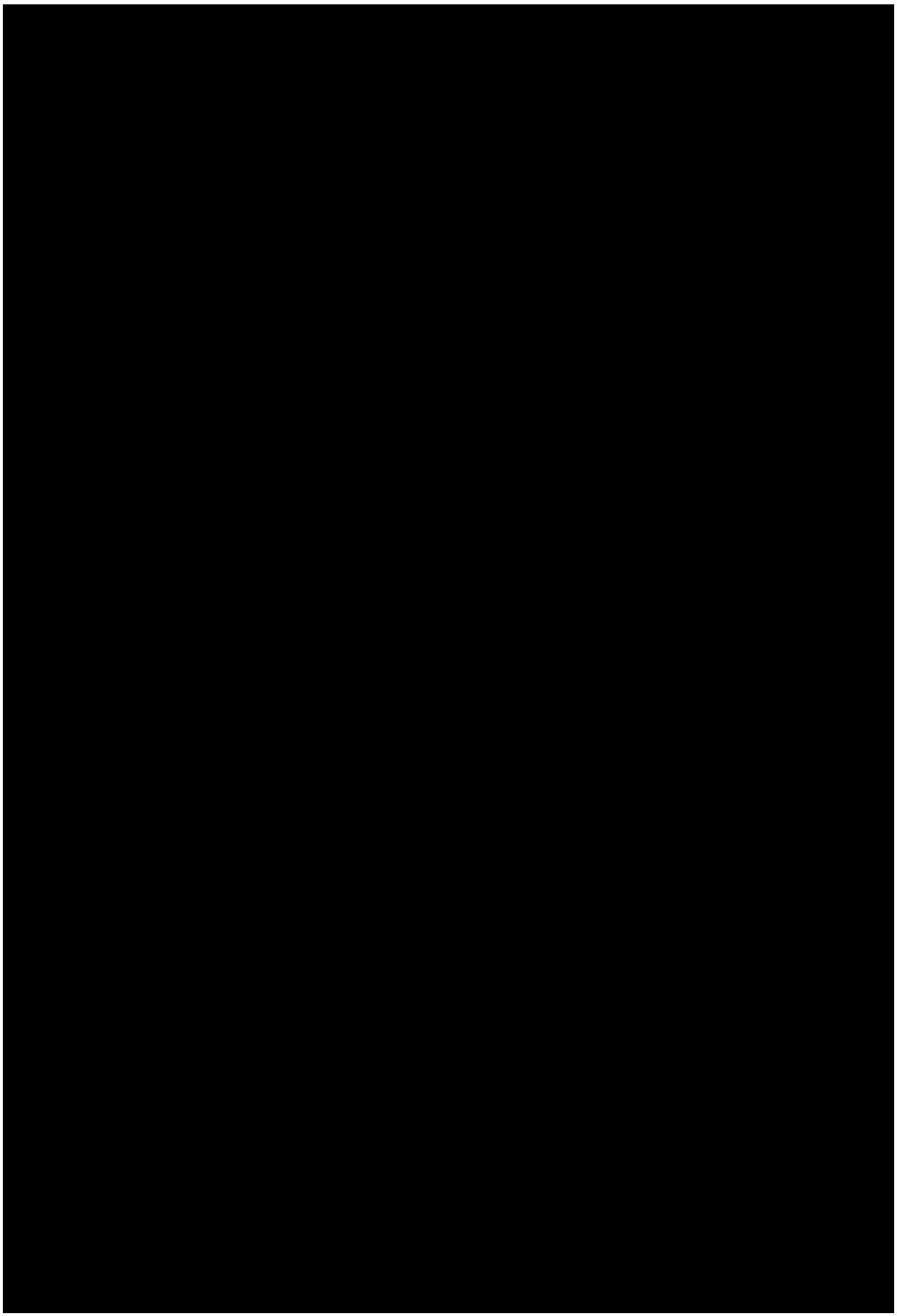


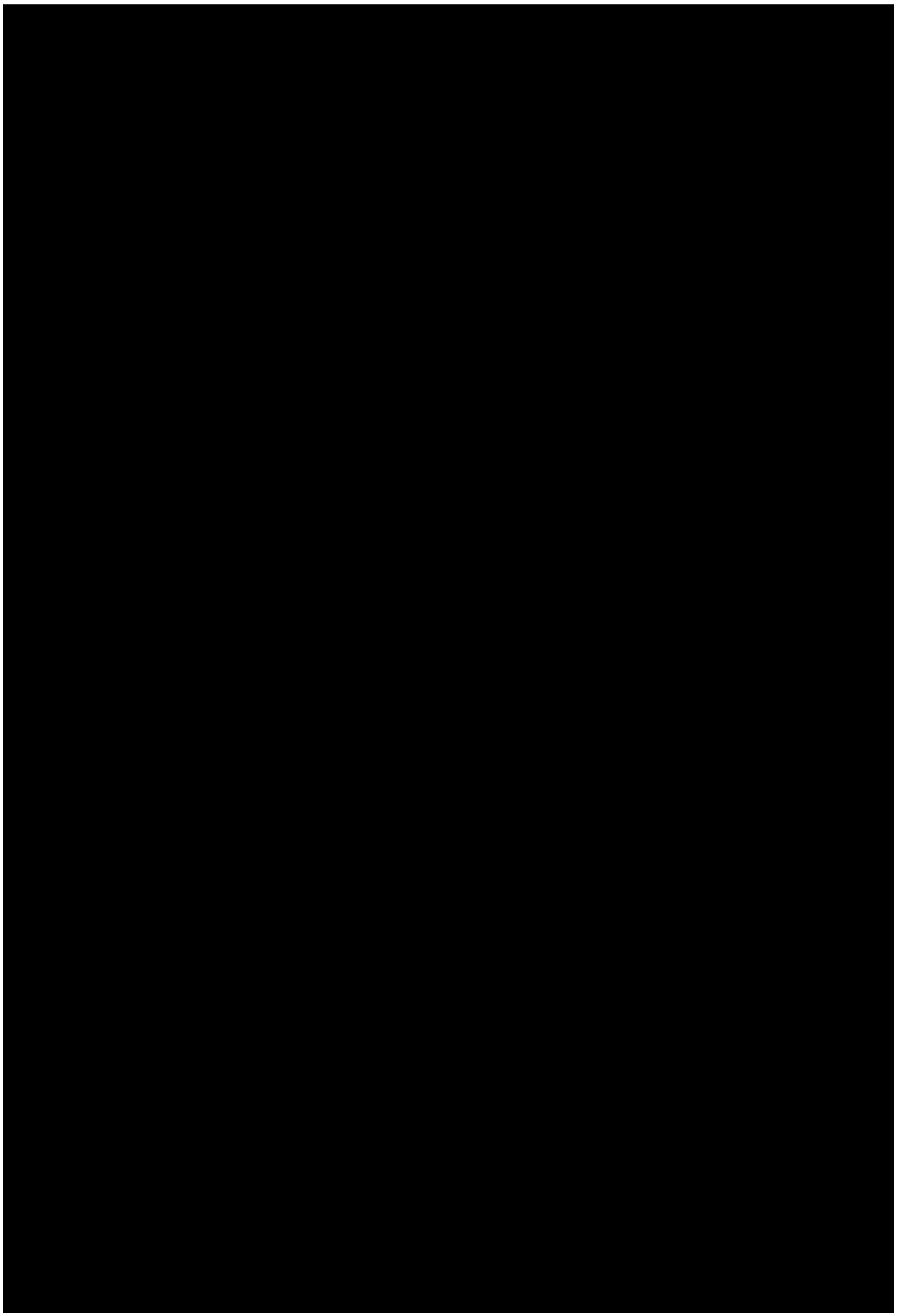


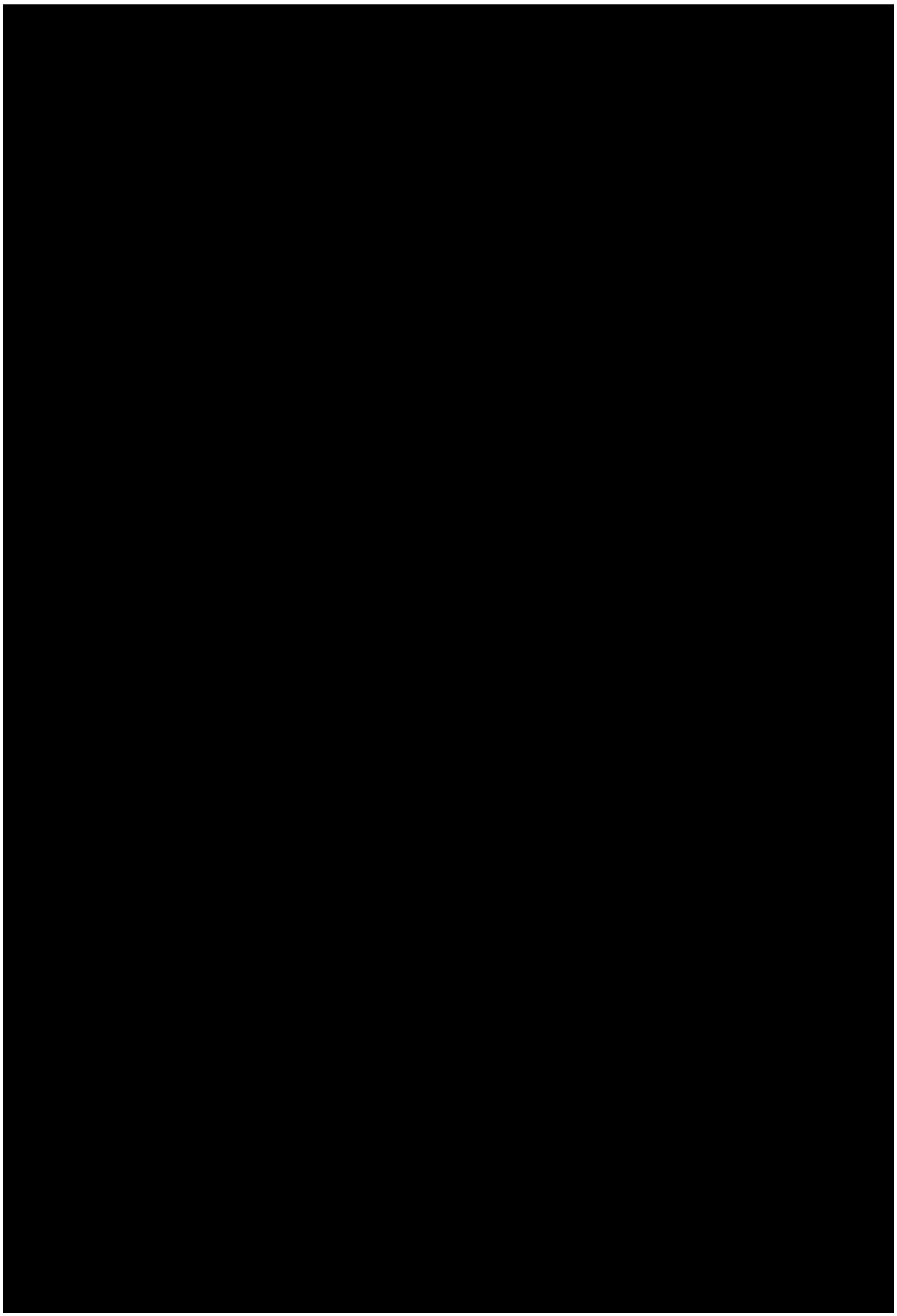


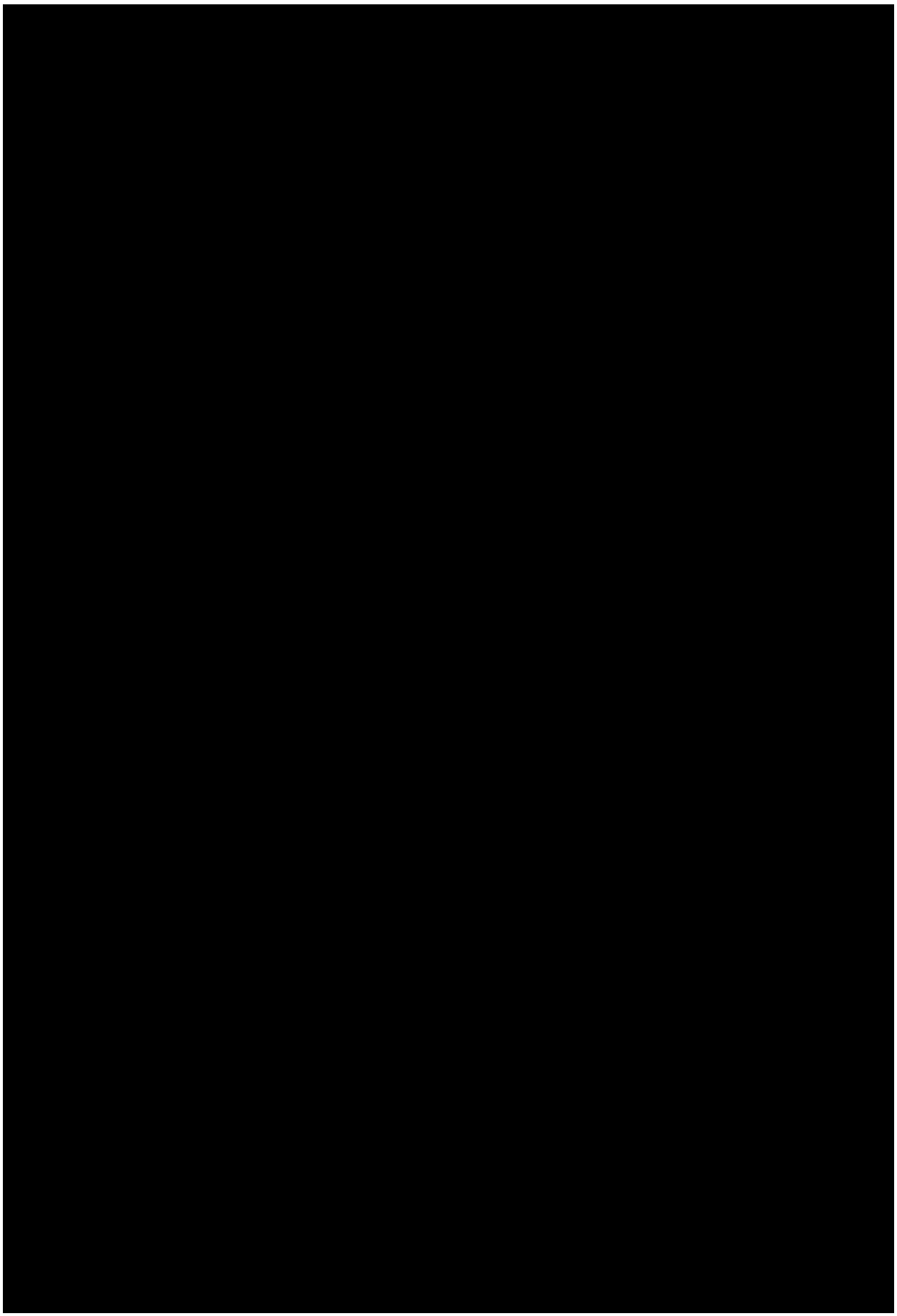


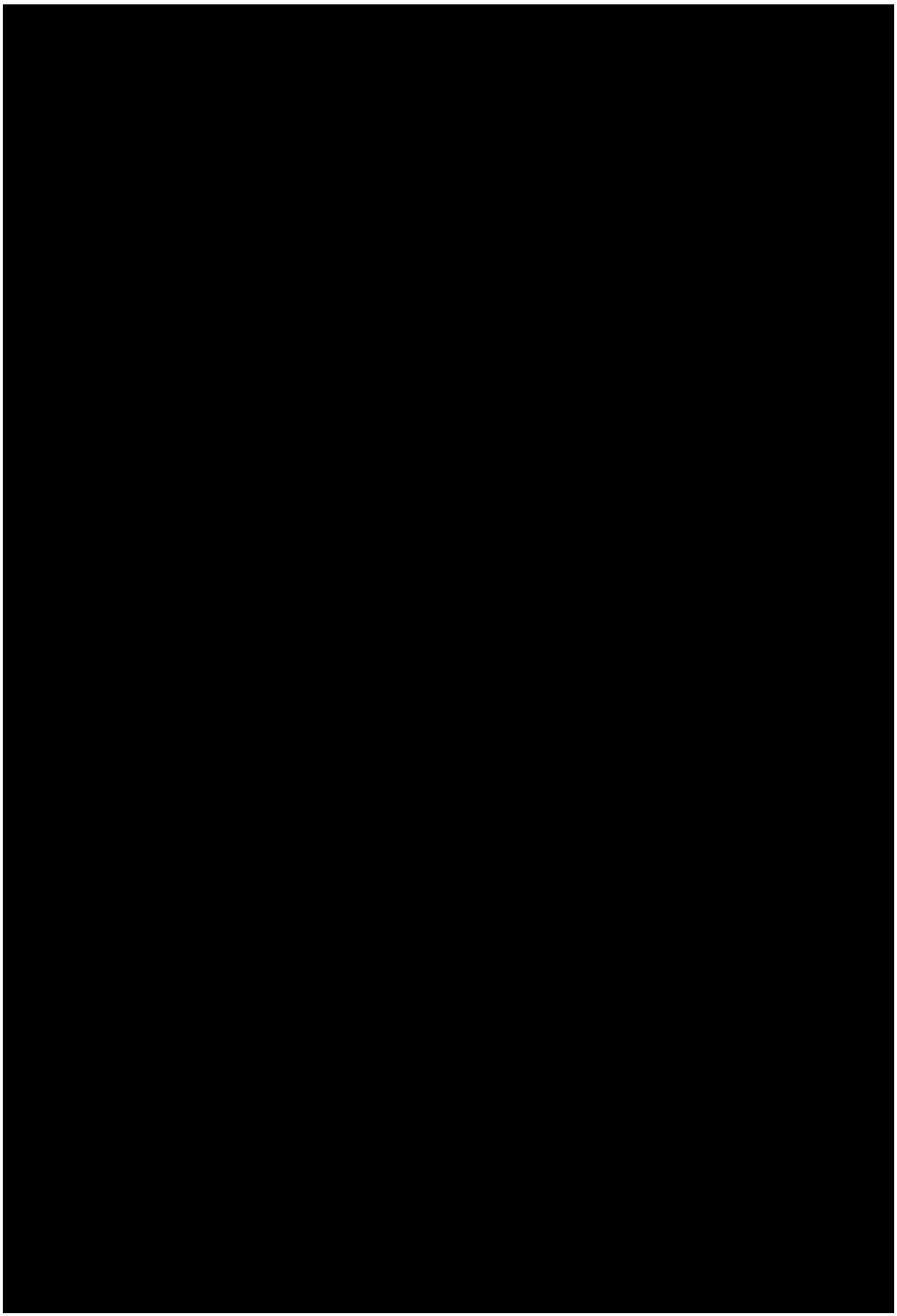






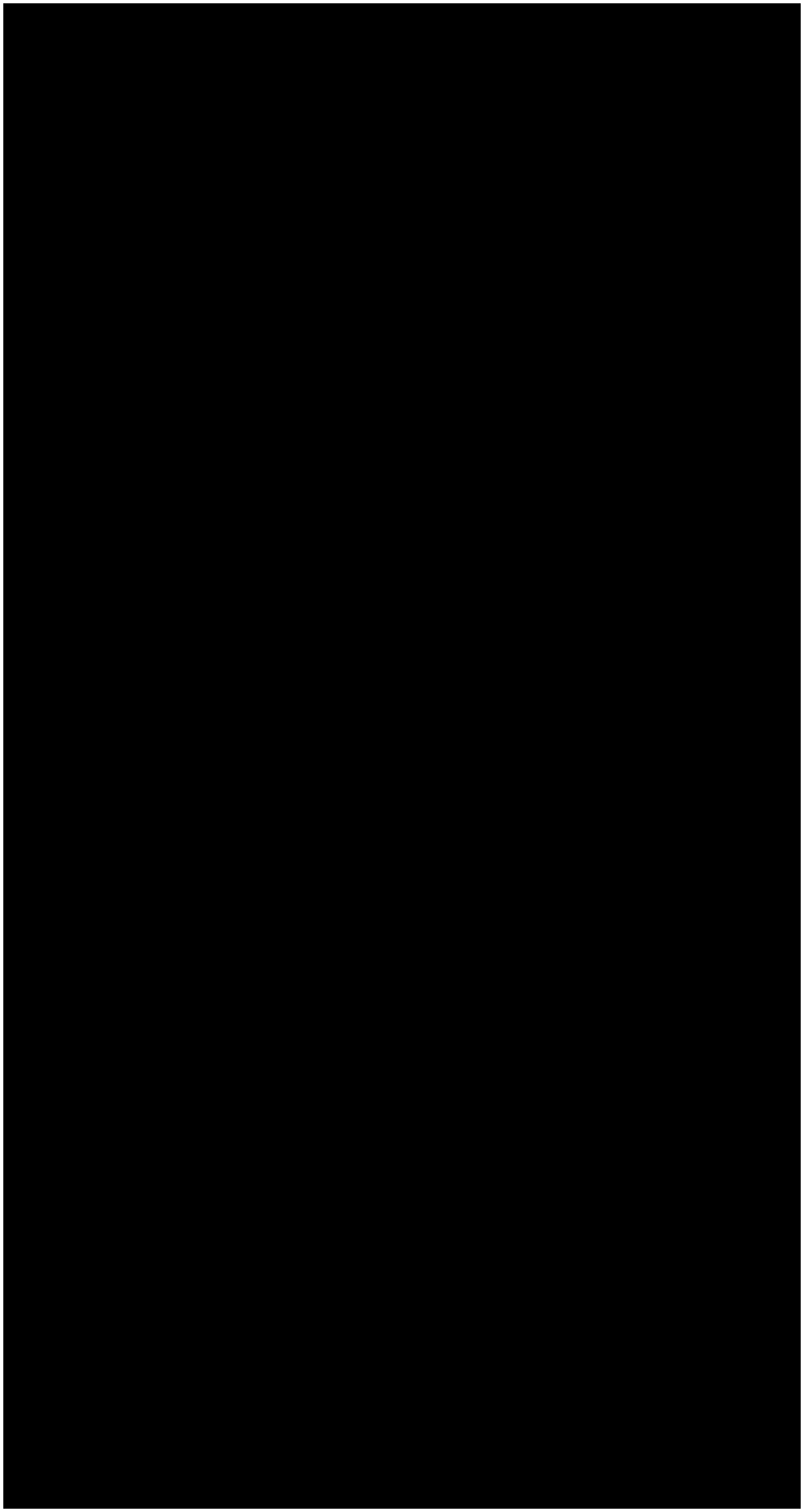


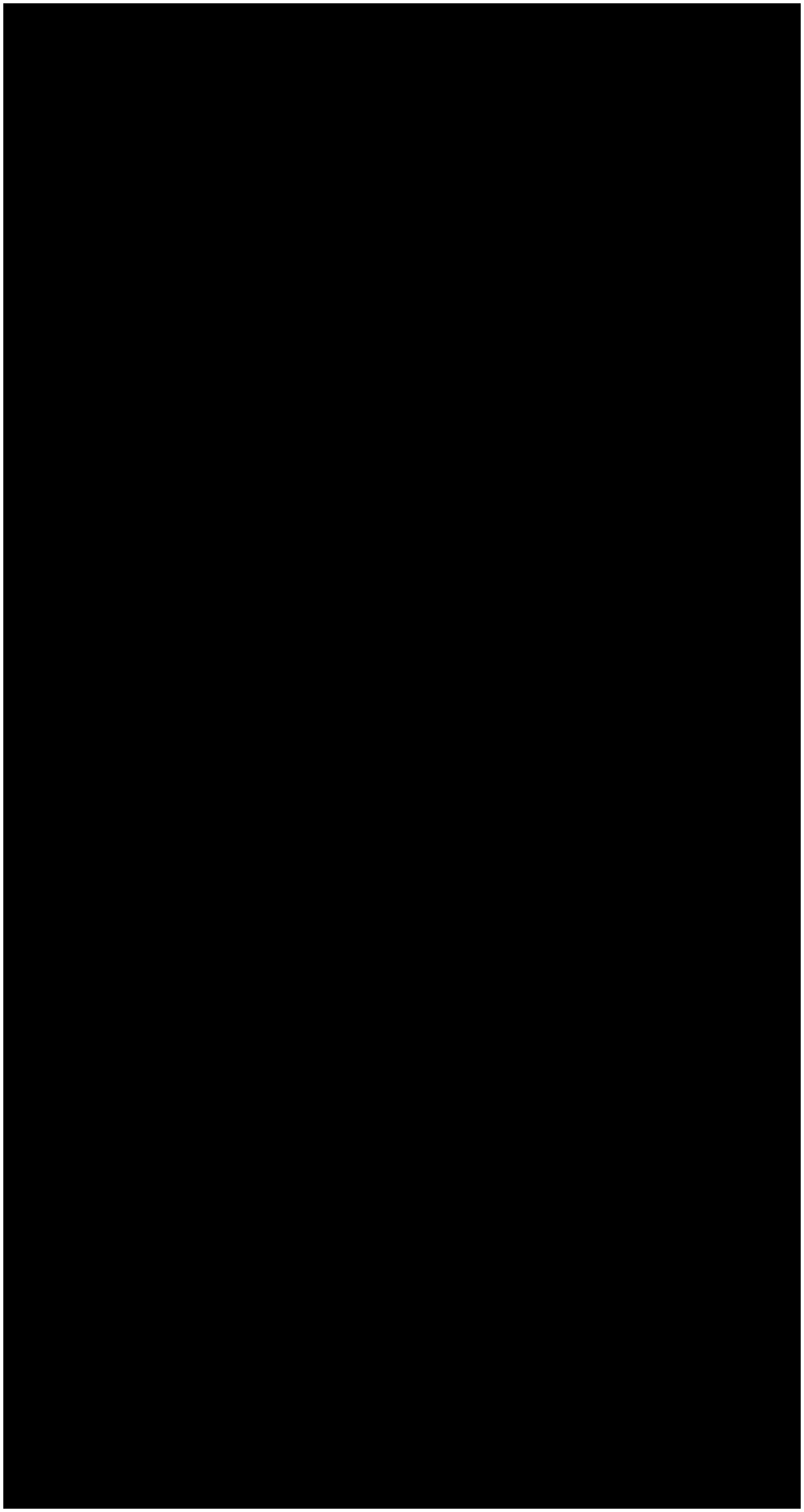


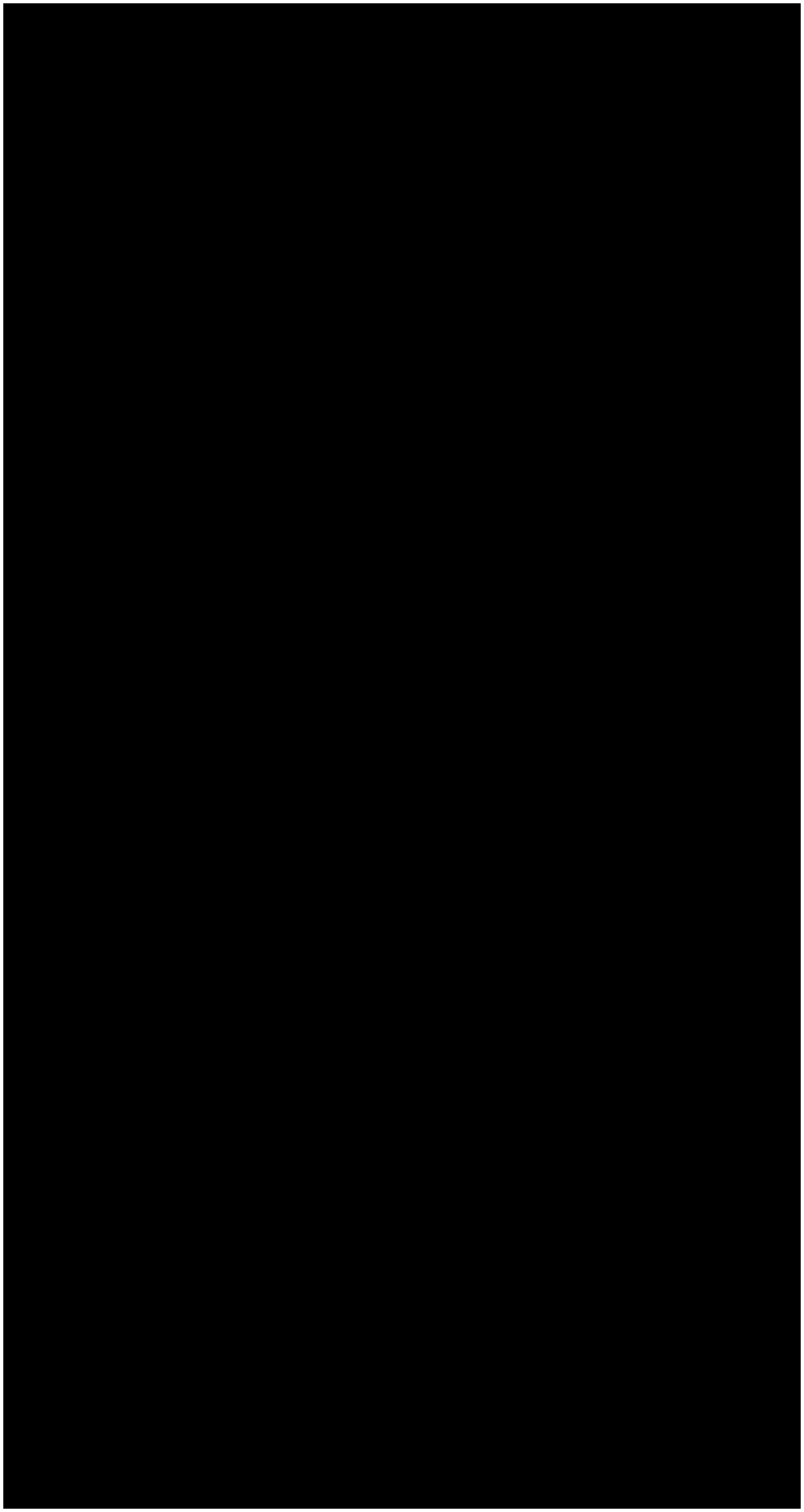


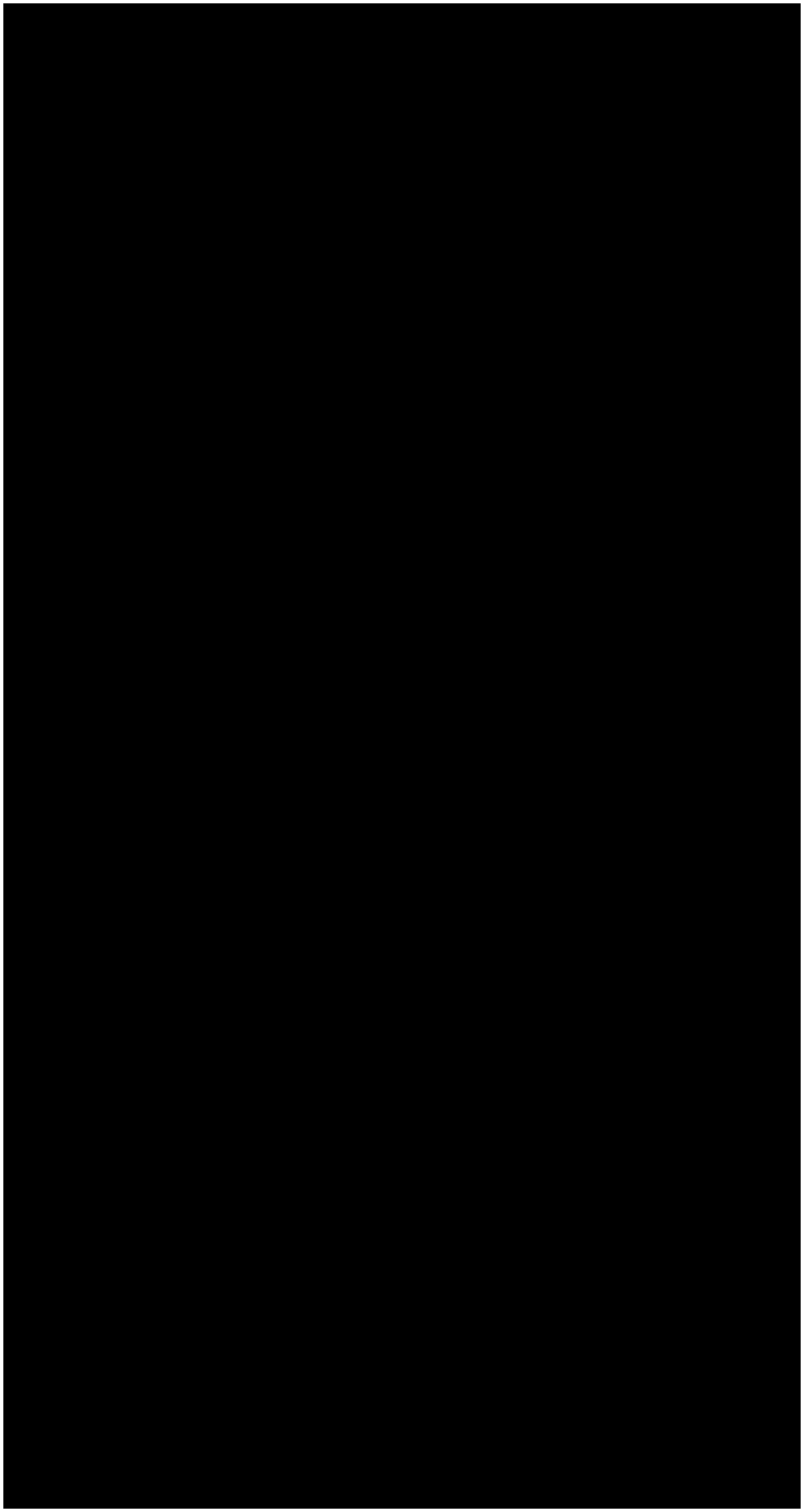


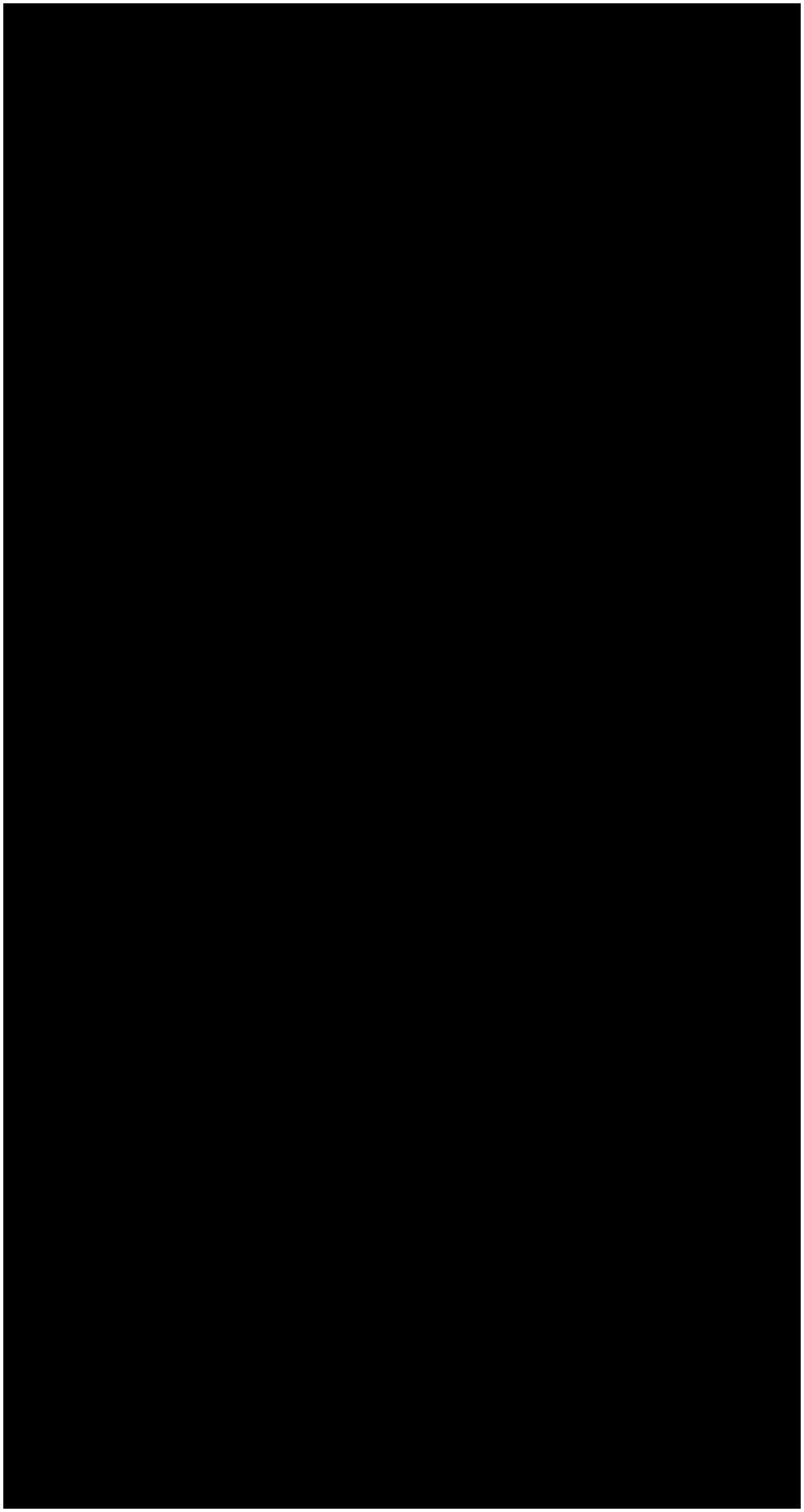
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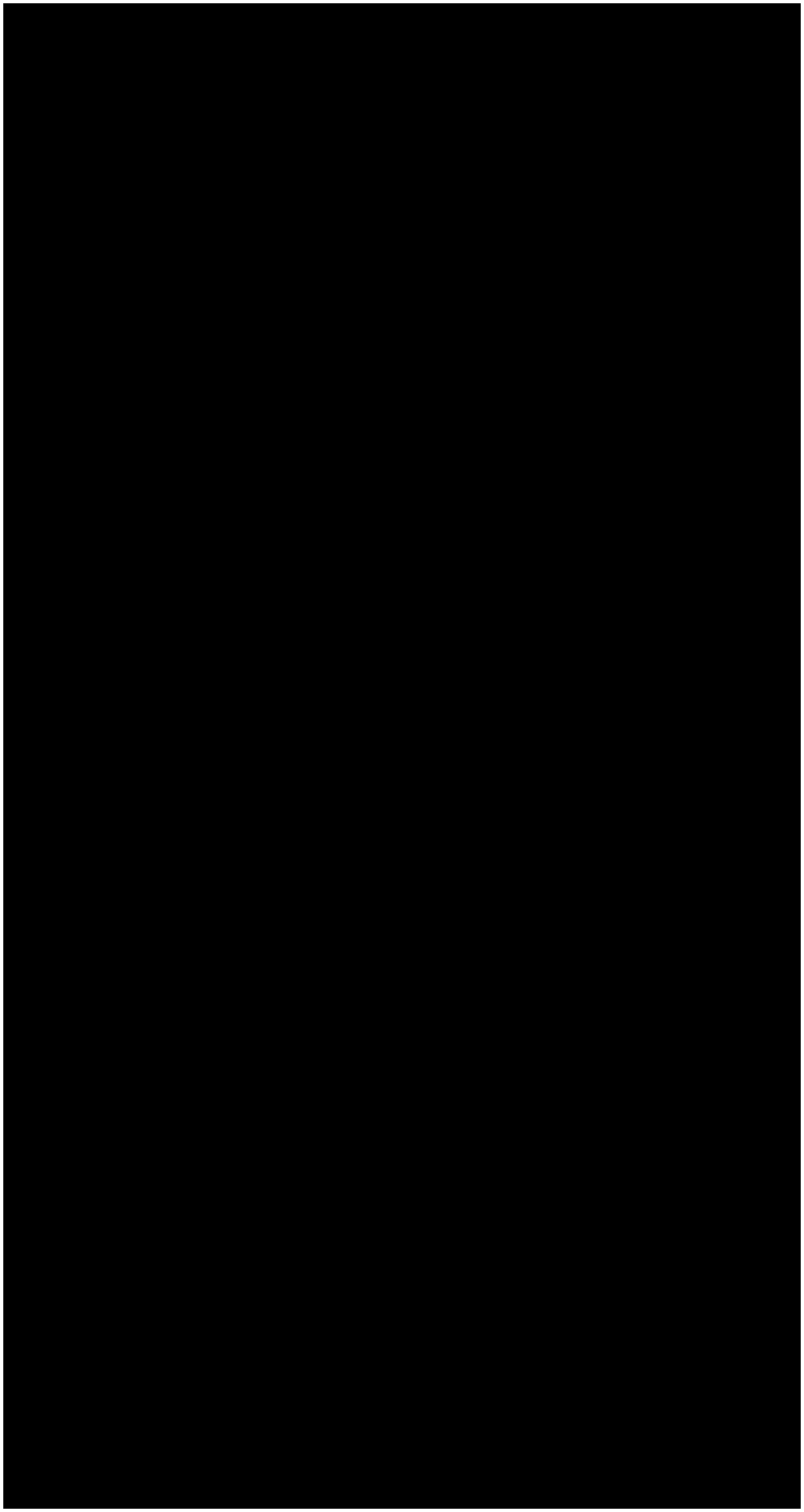


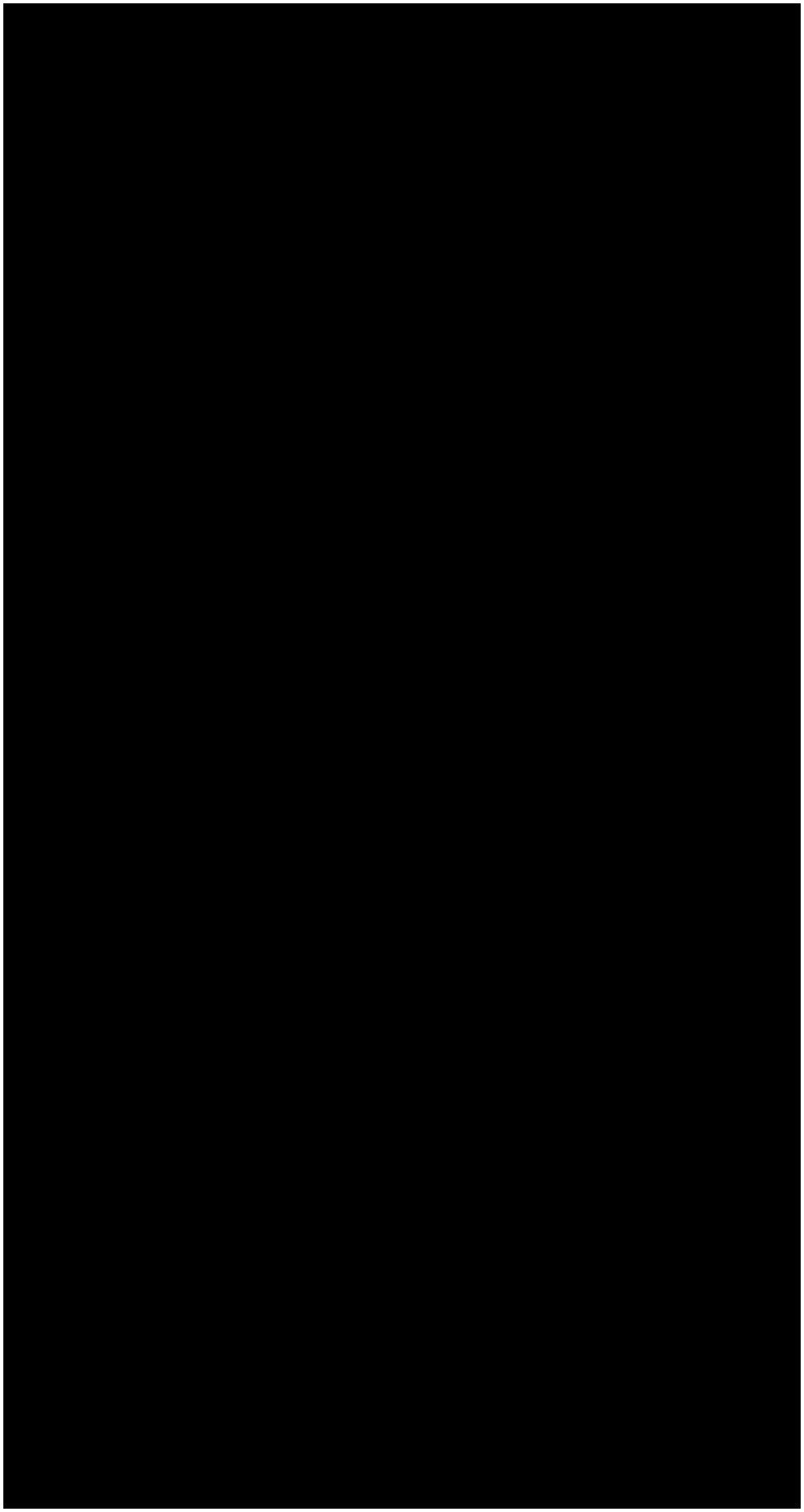


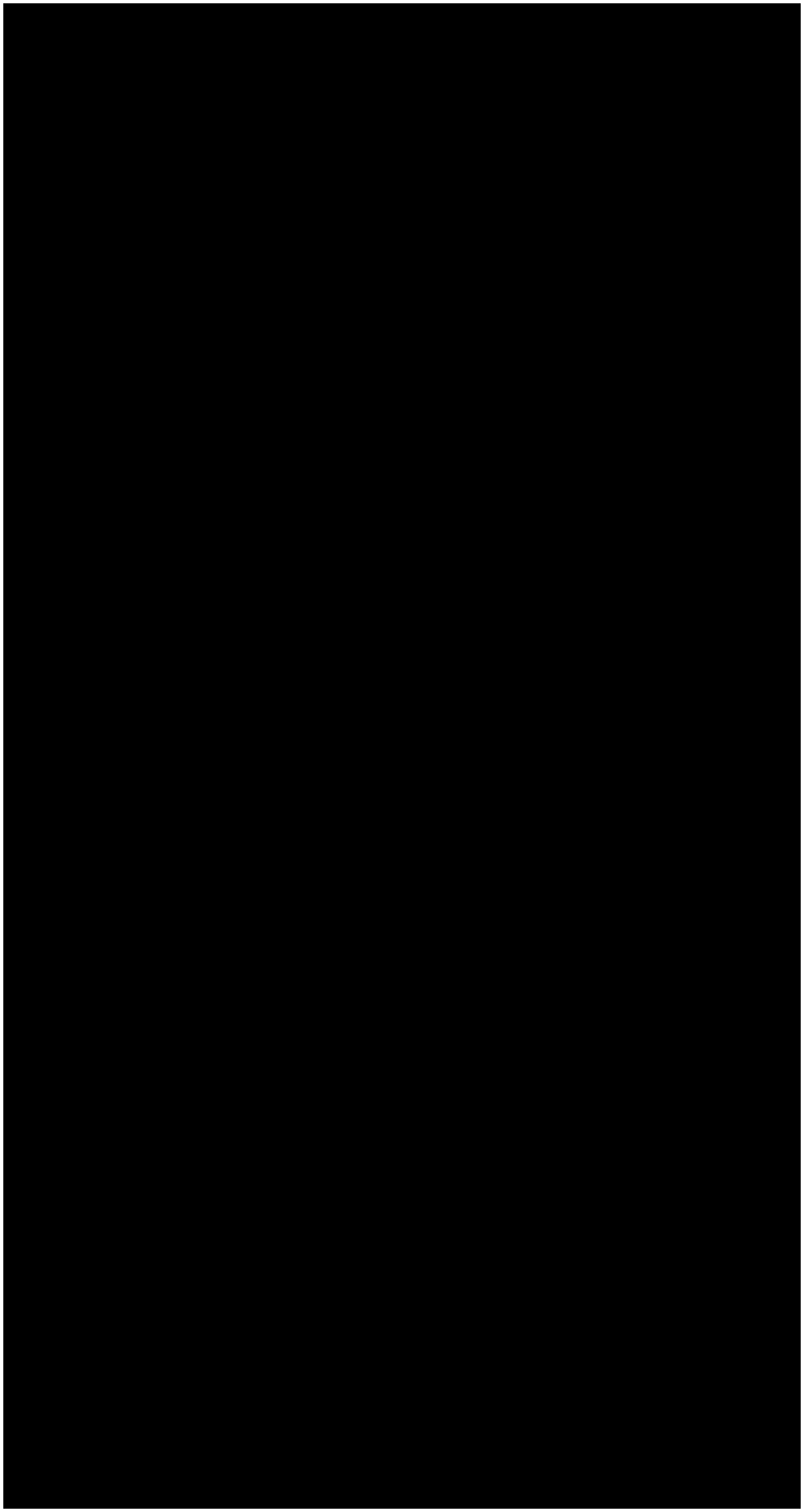


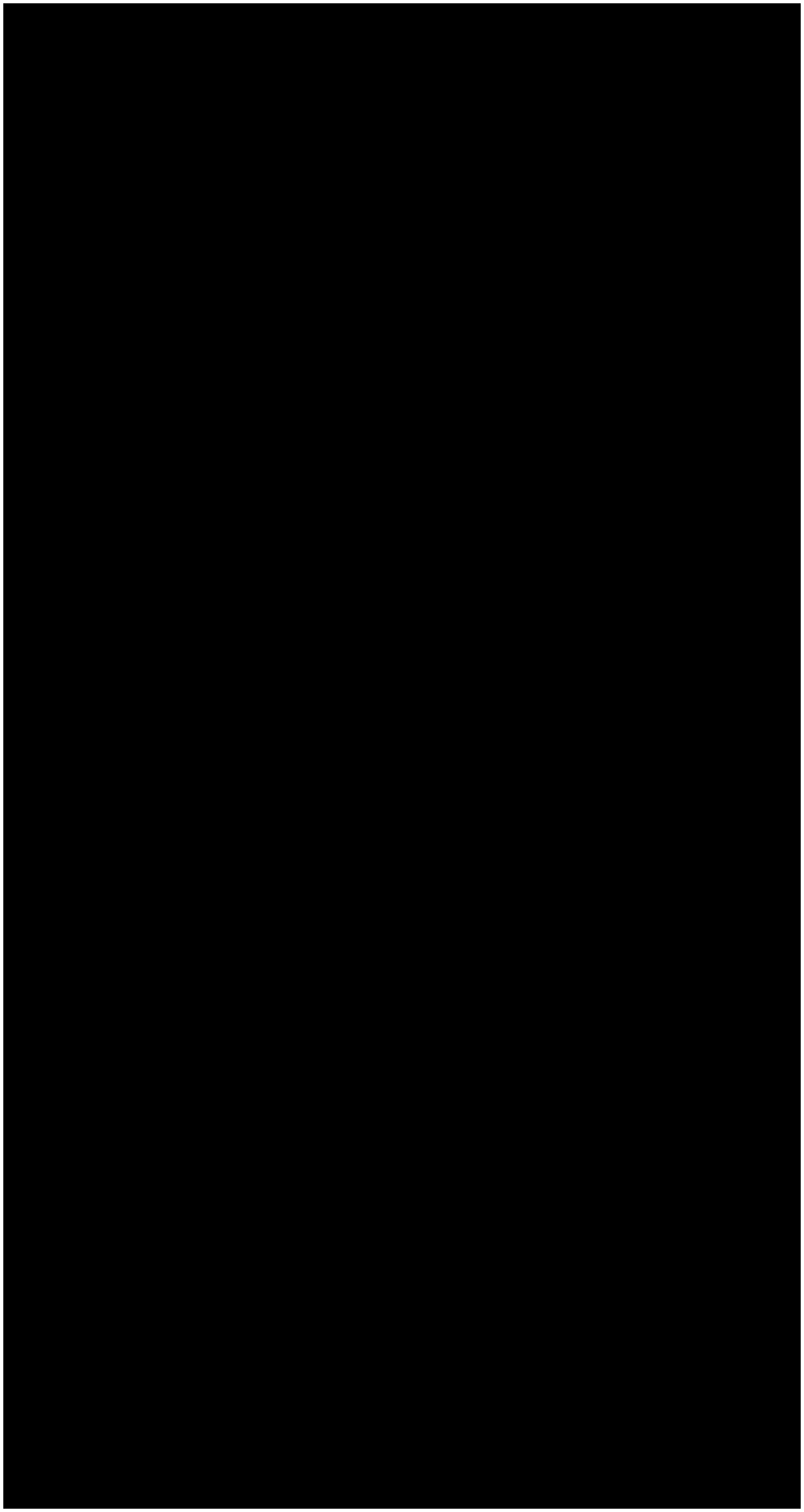


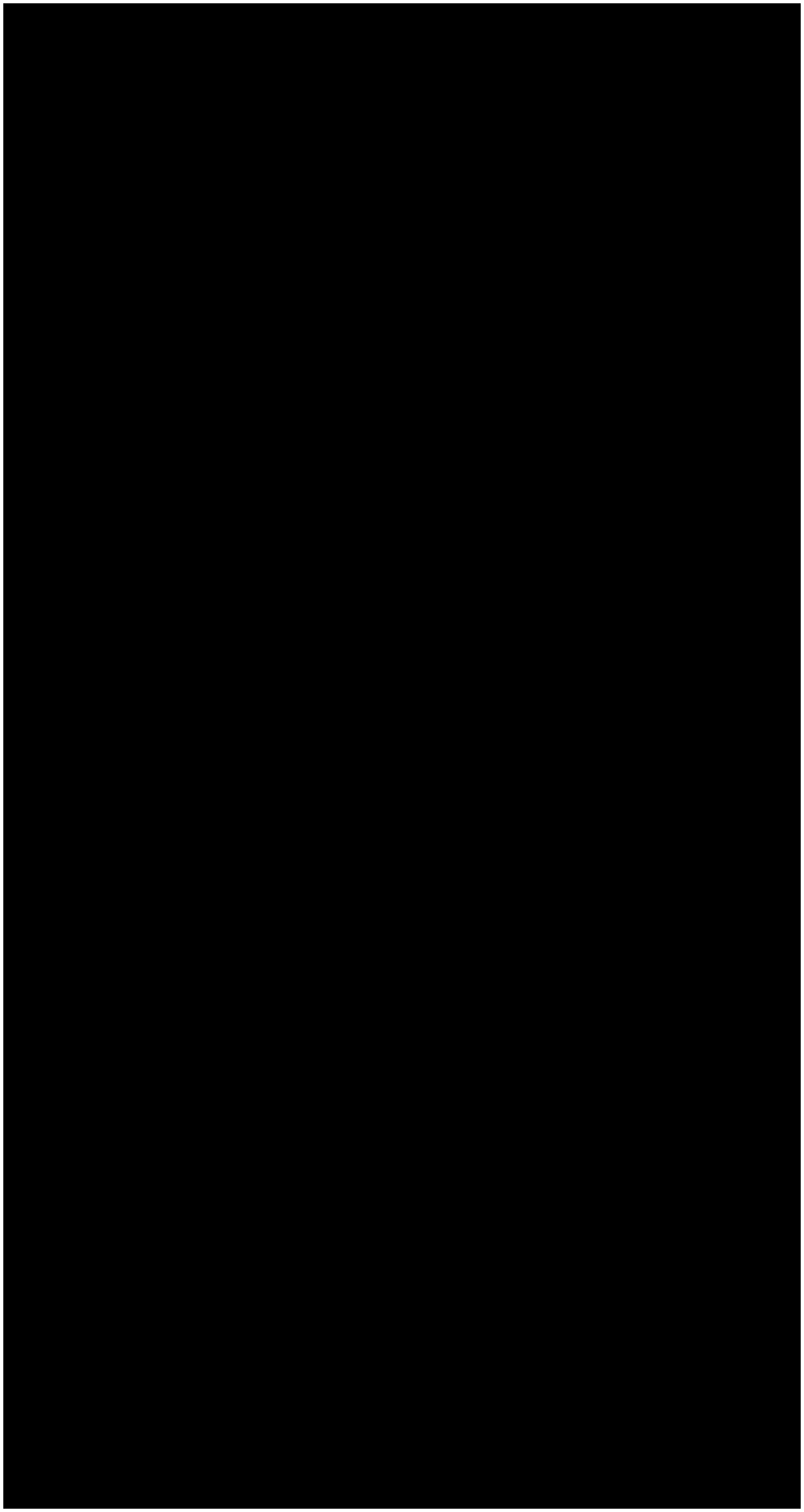


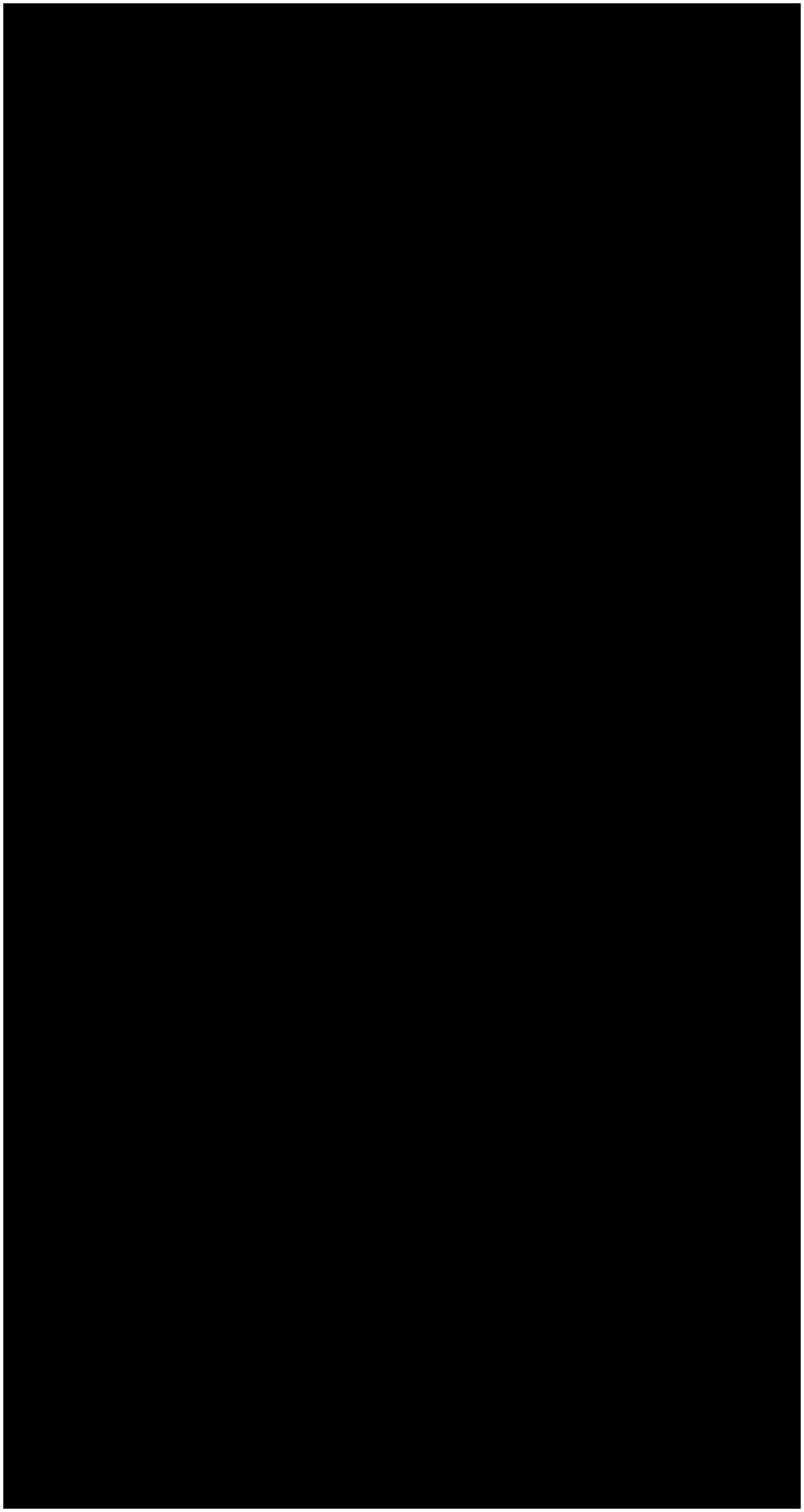


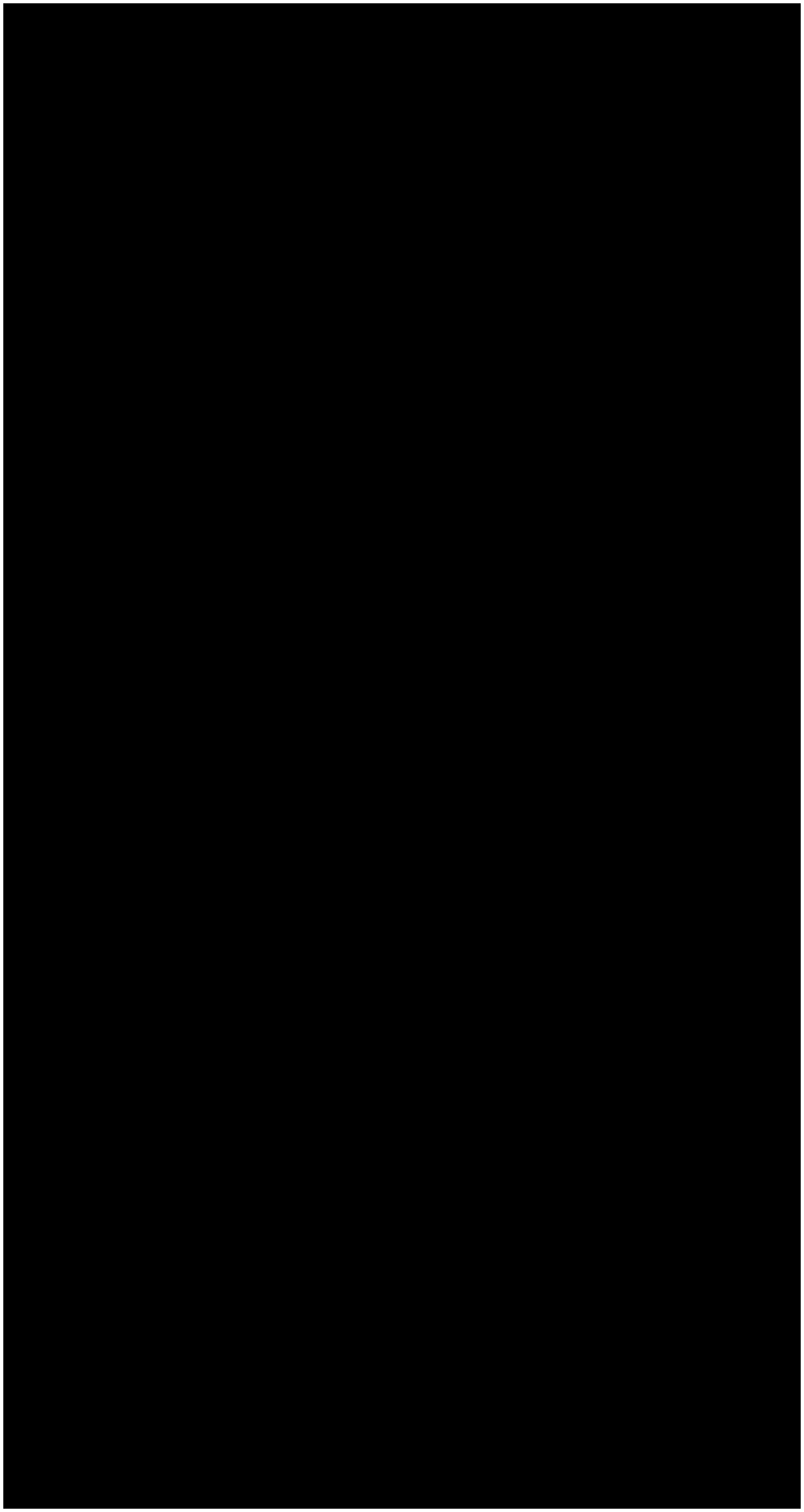


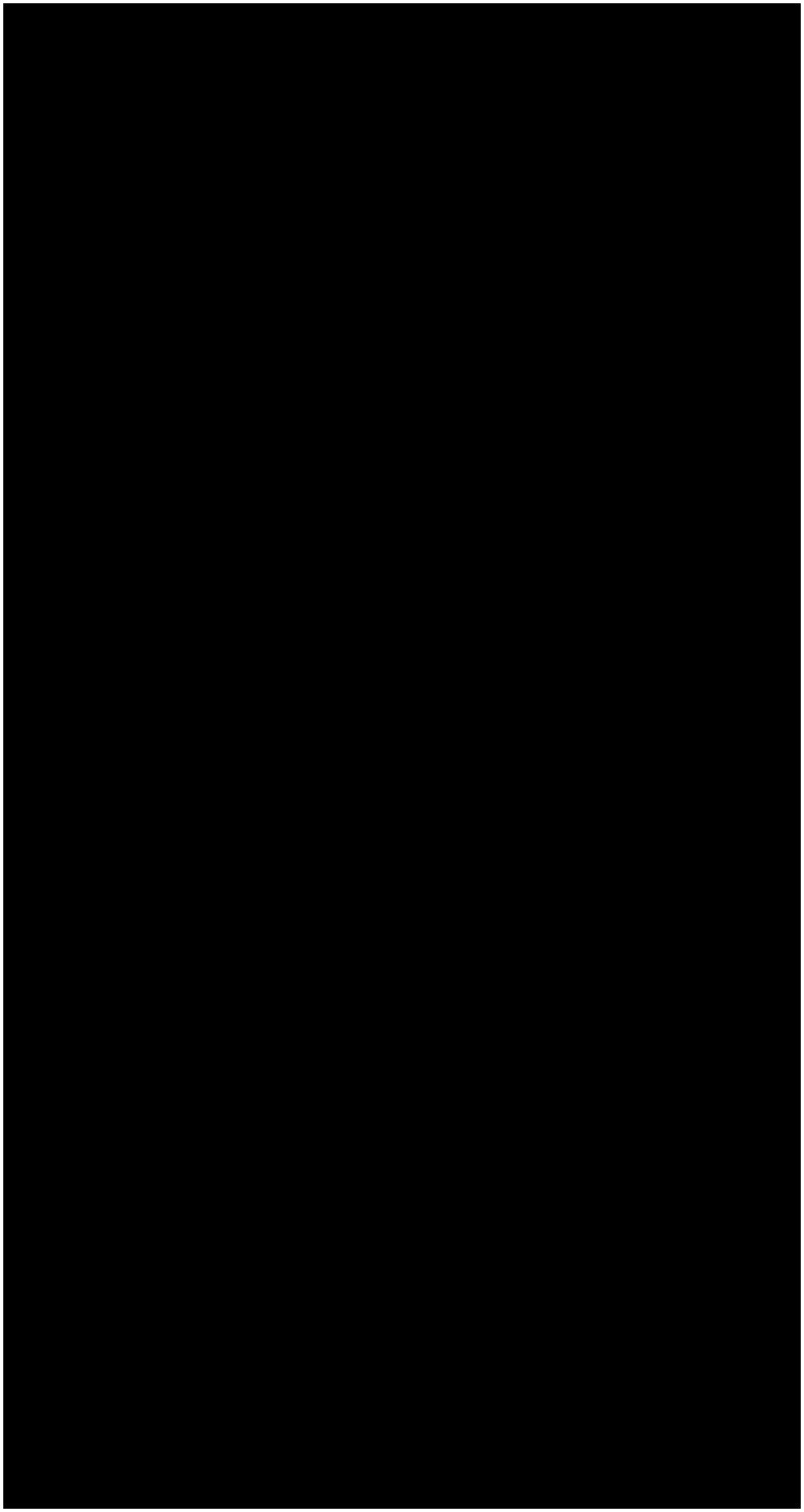


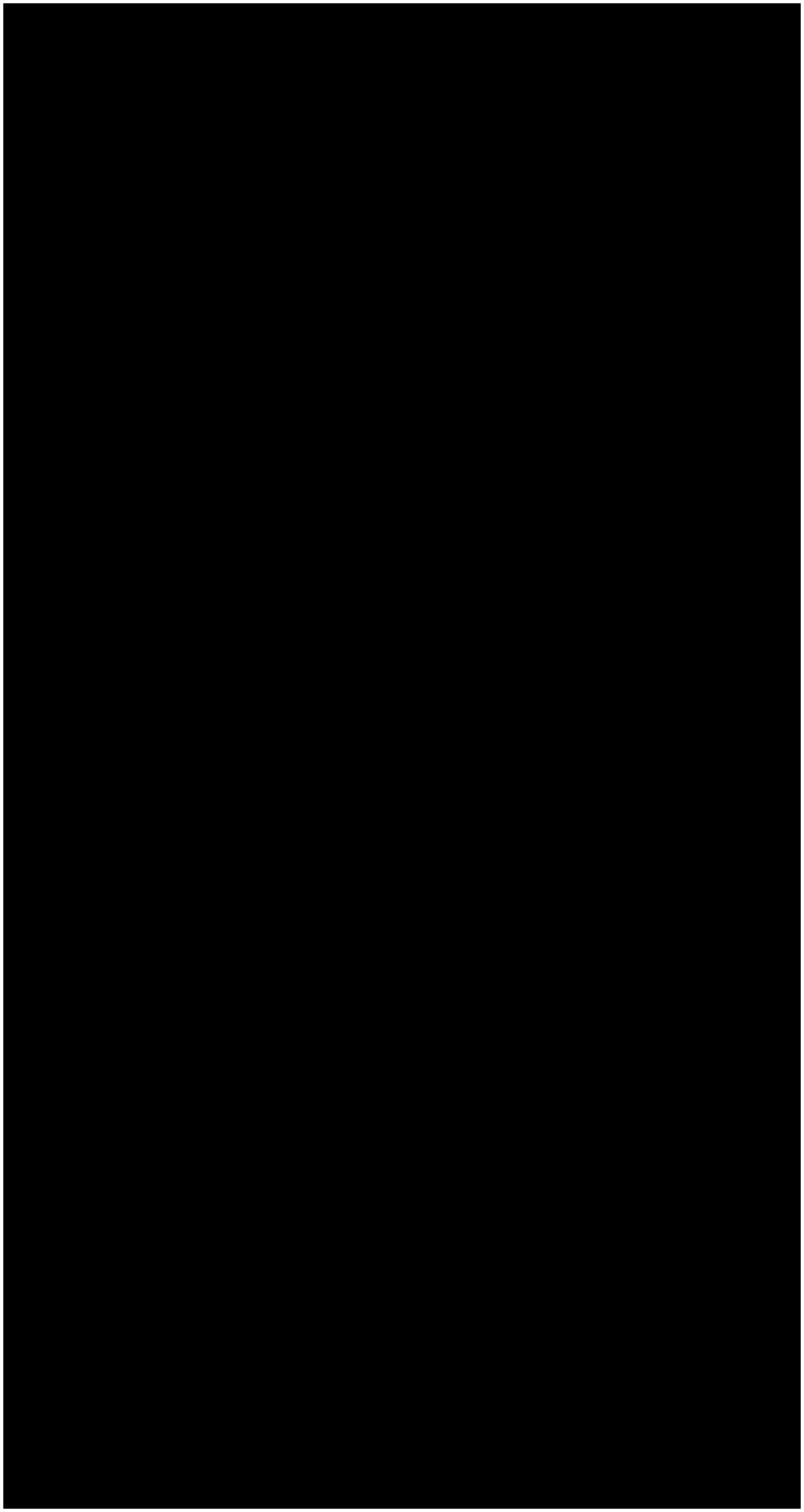


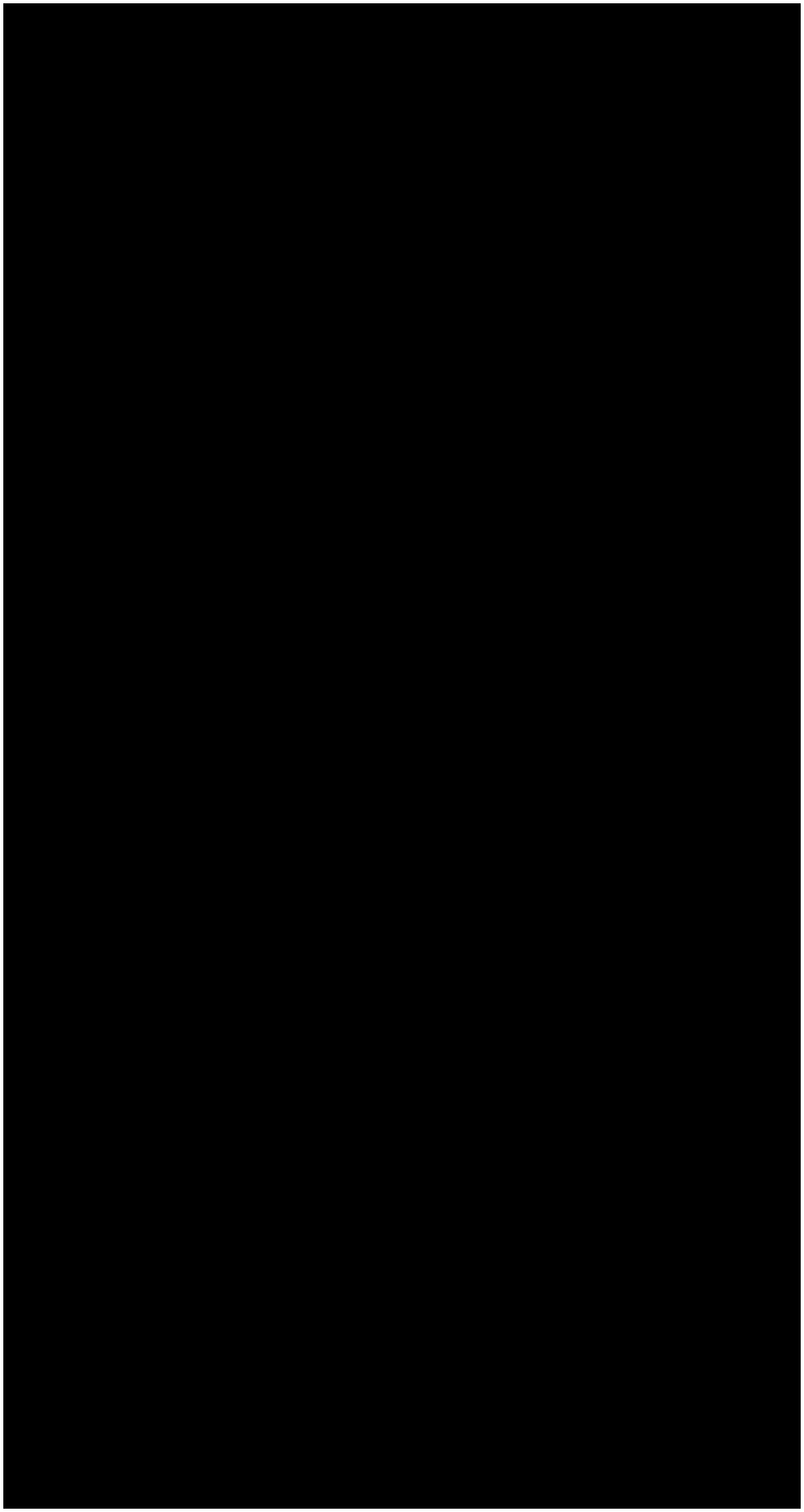


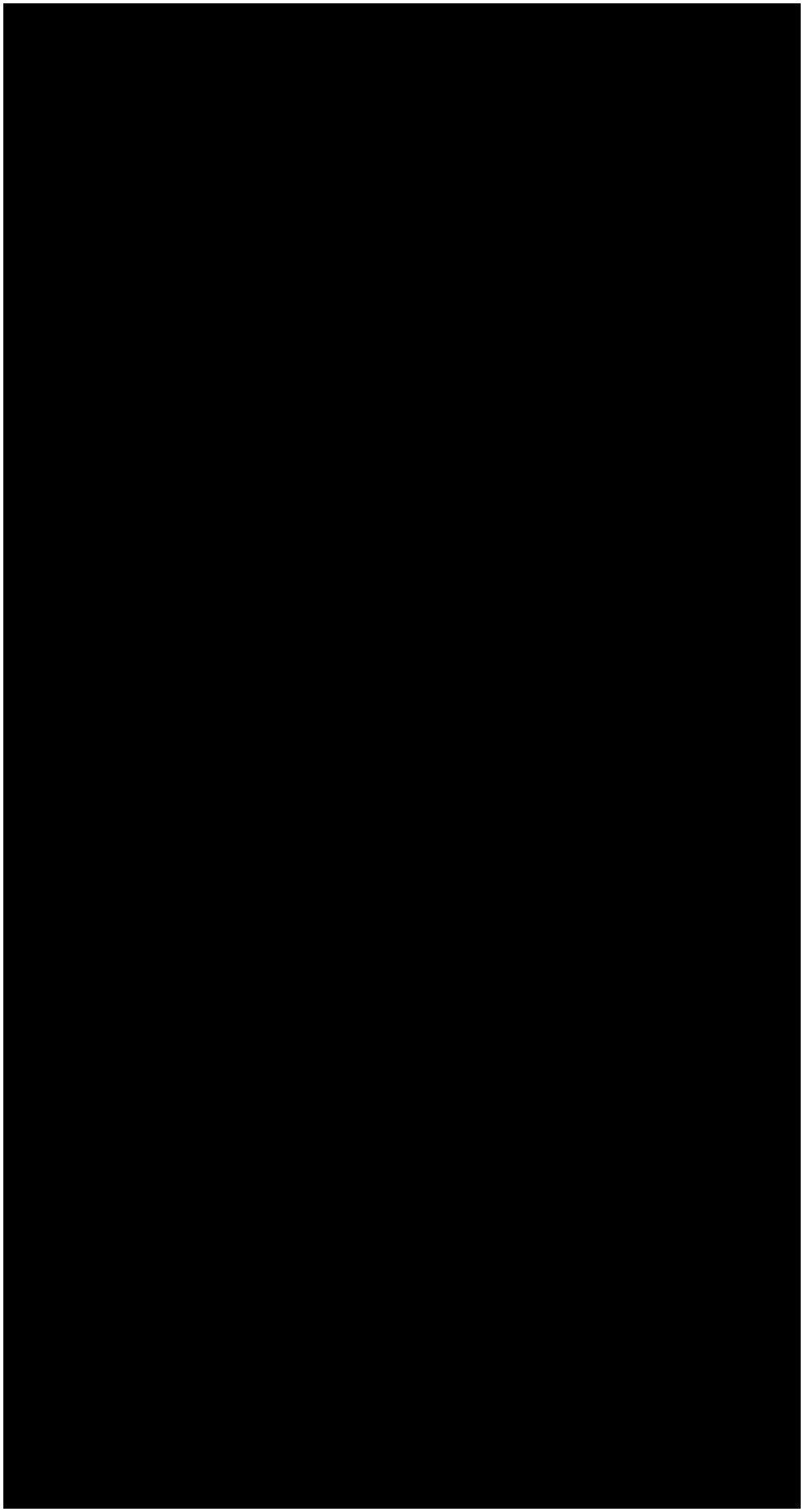


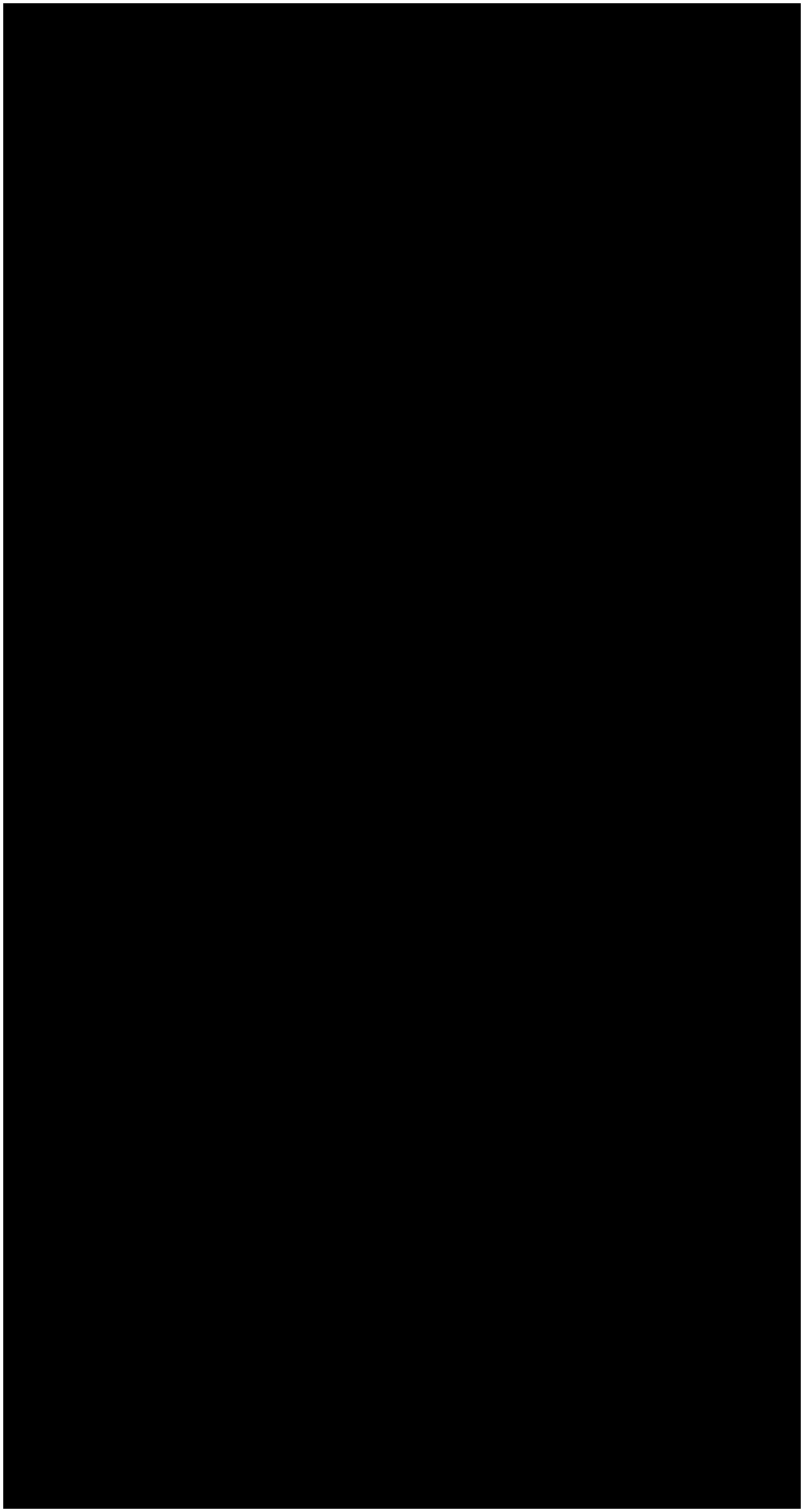


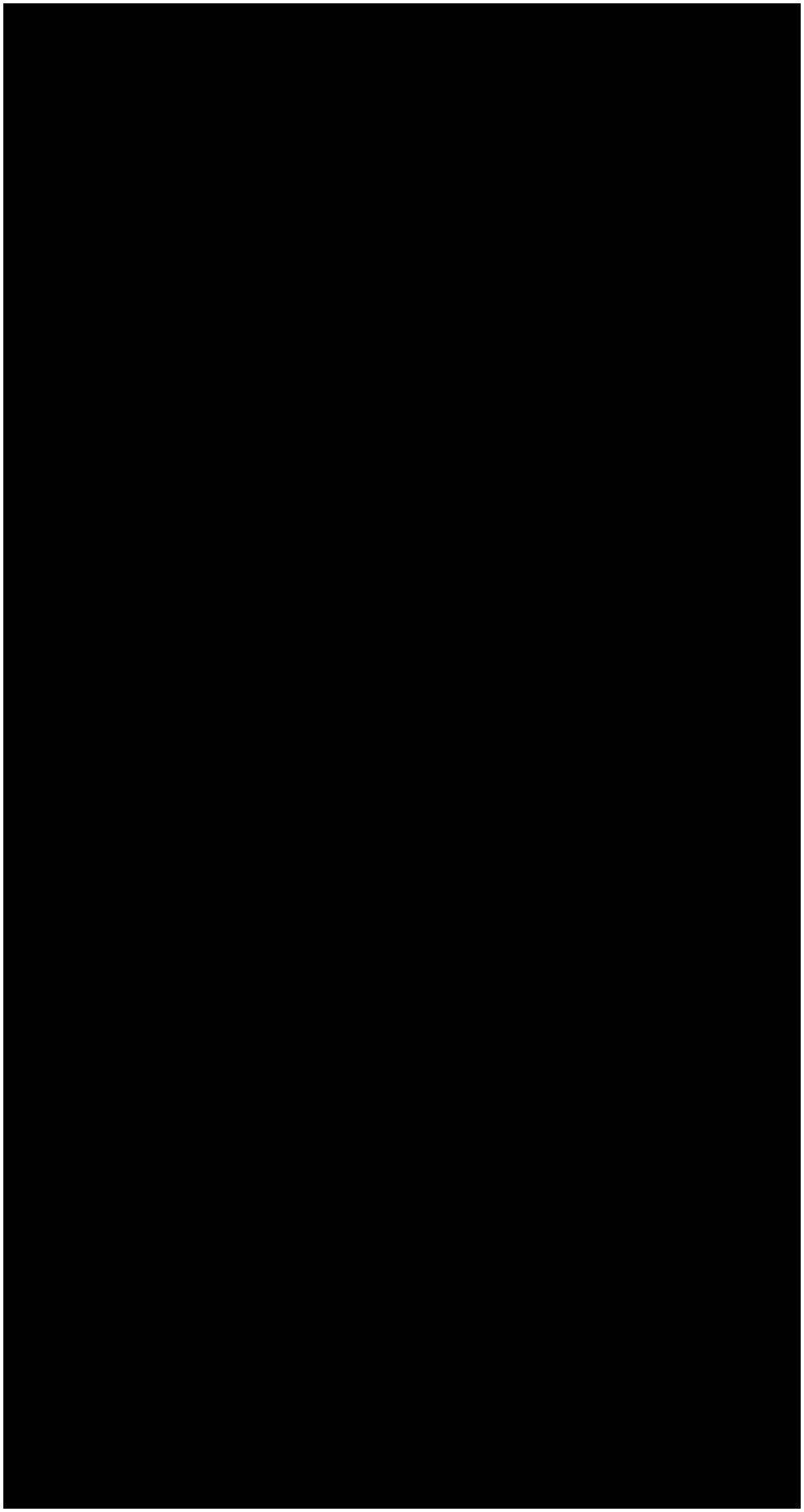














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
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May-27											
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Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
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Dec-27											
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Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Design Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Year	Total Fixed Costs	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
2023-2024									
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
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2026-2027	[redacted]
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2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



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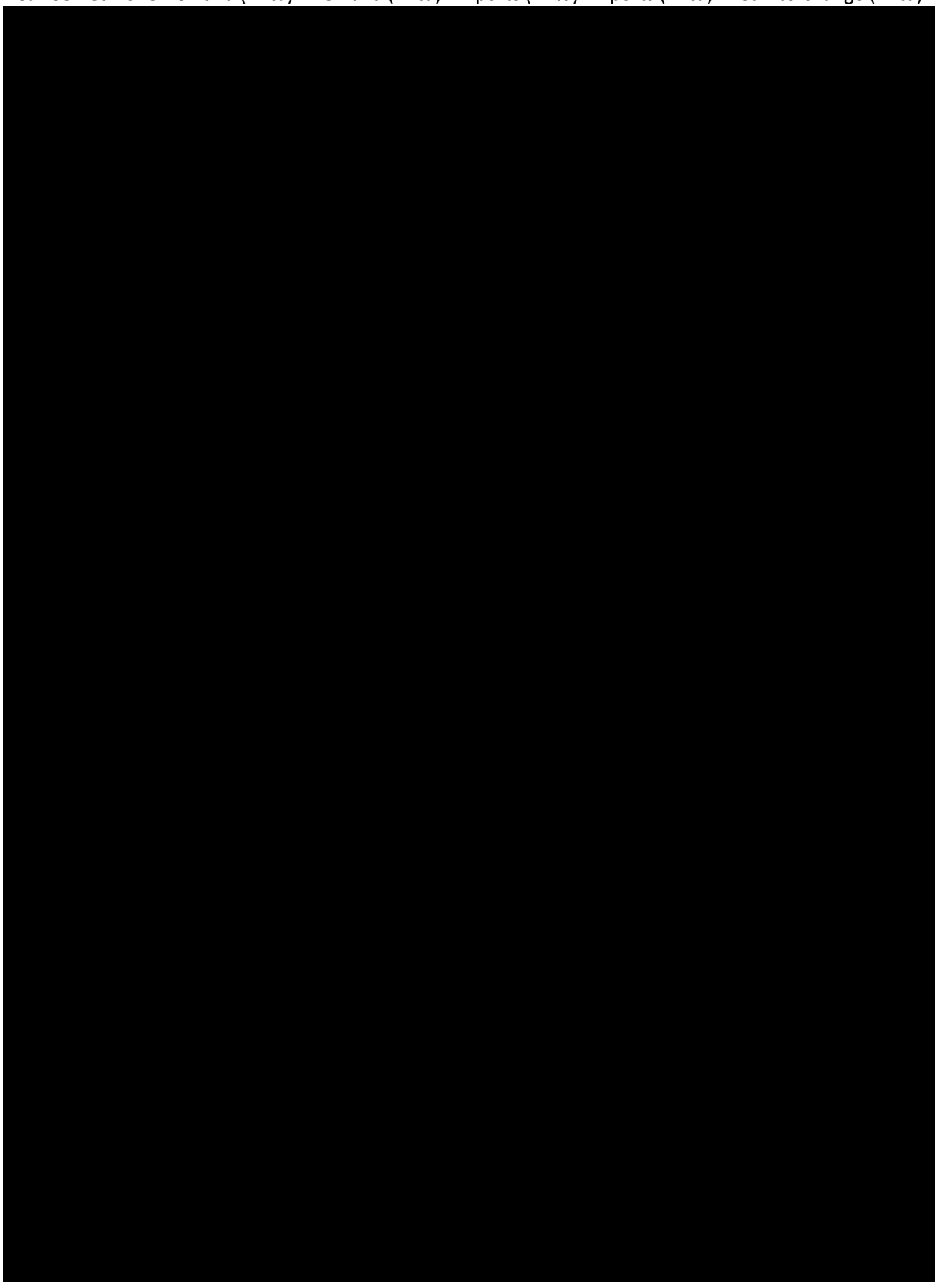
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





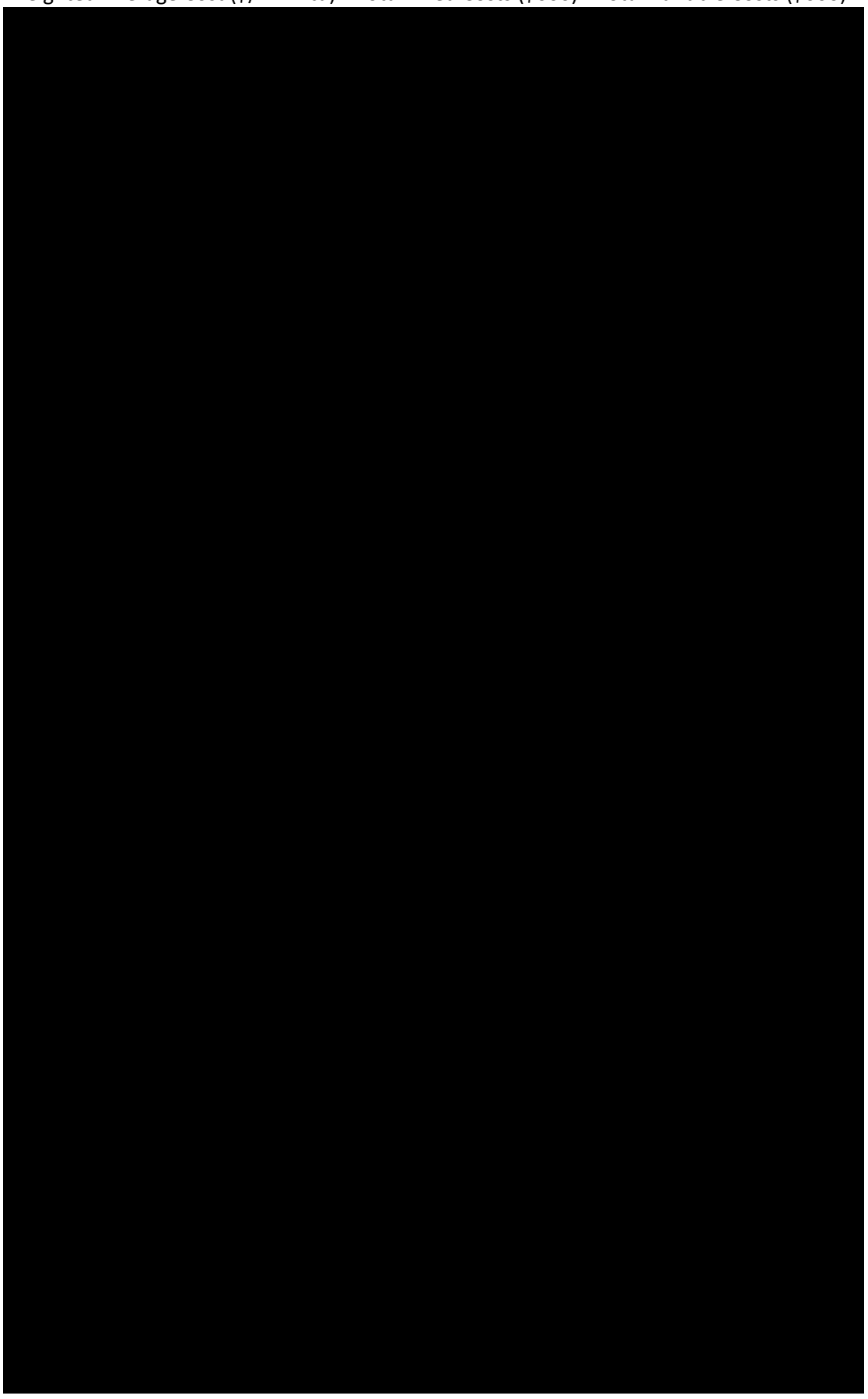
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

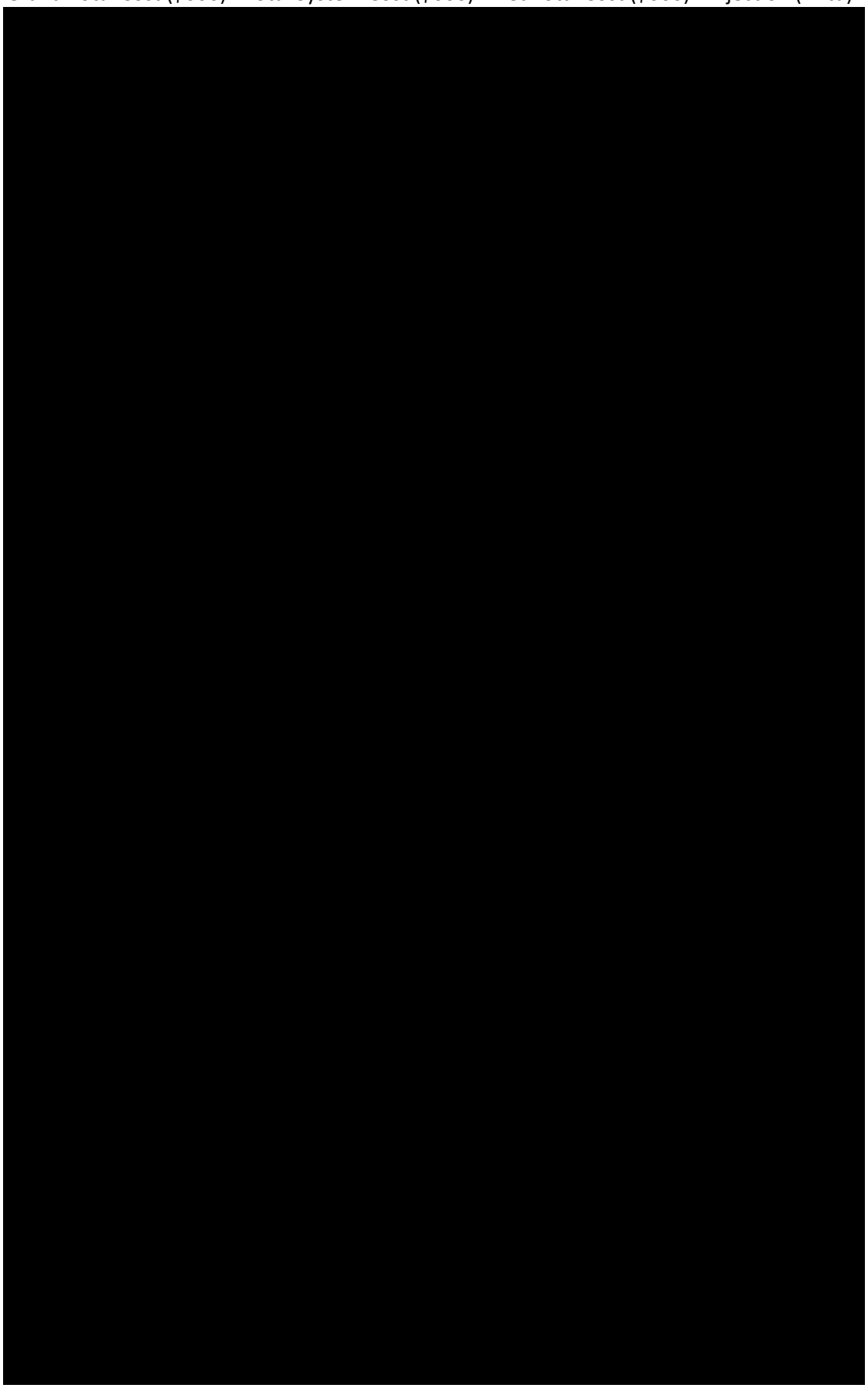


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

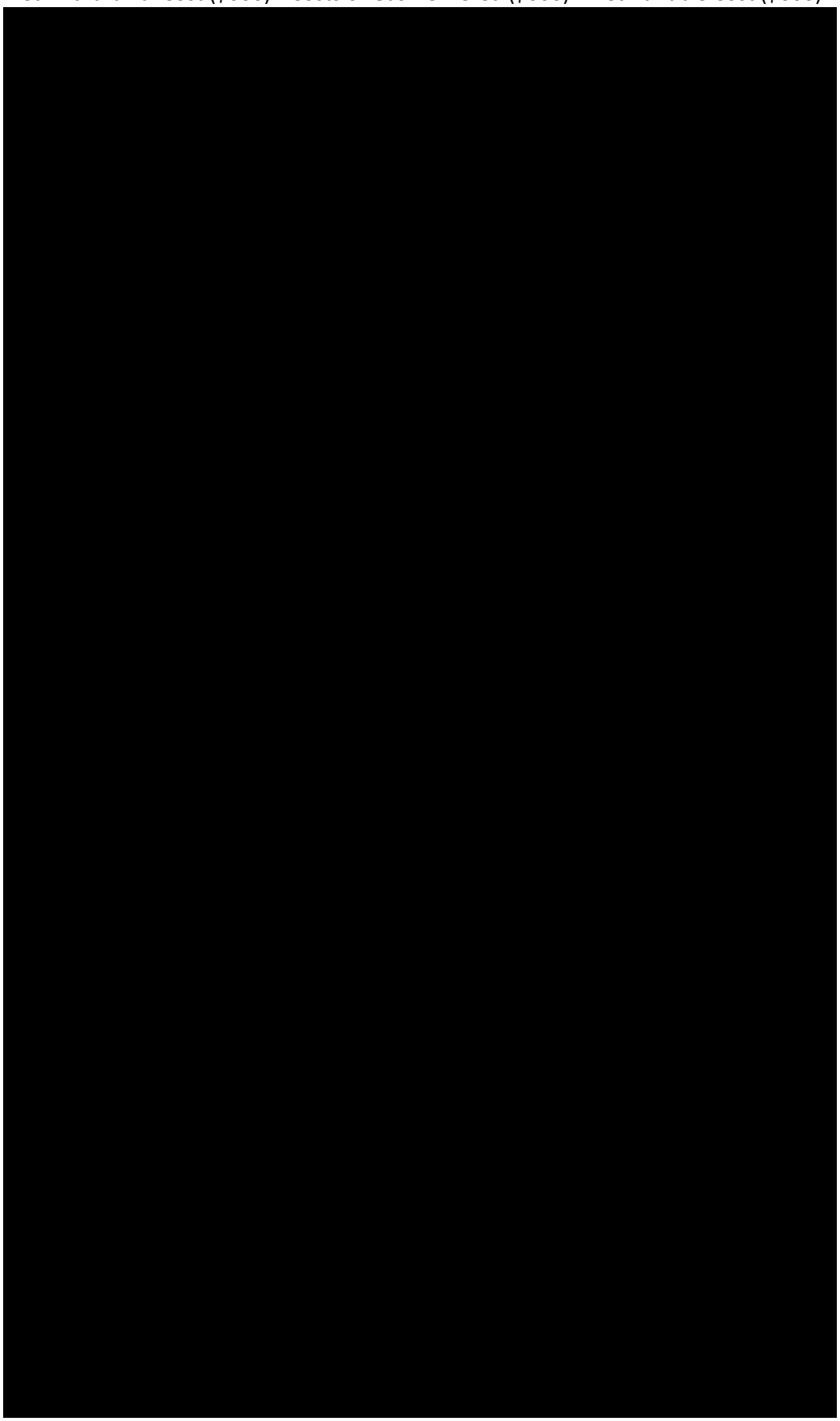




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

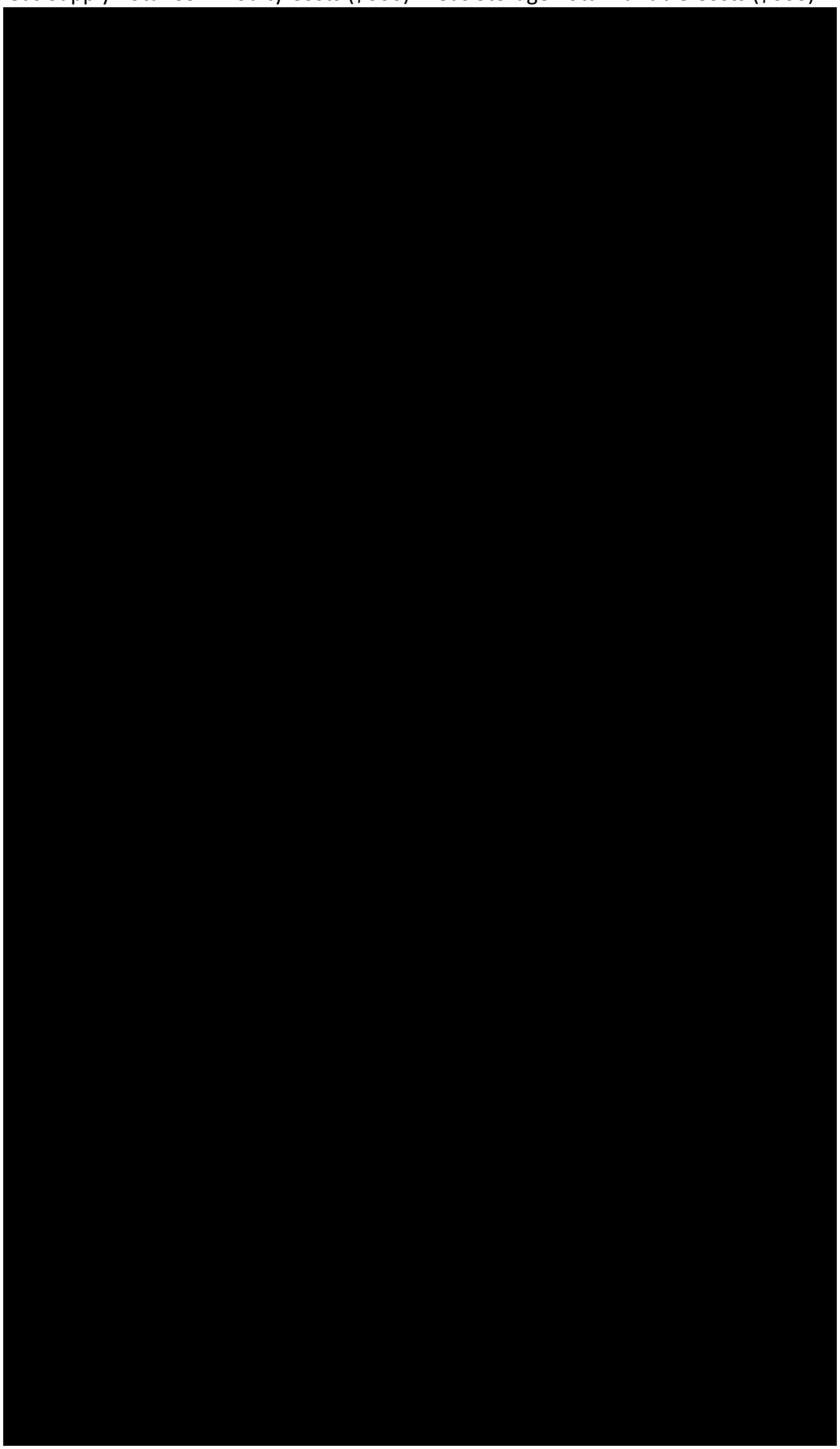




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

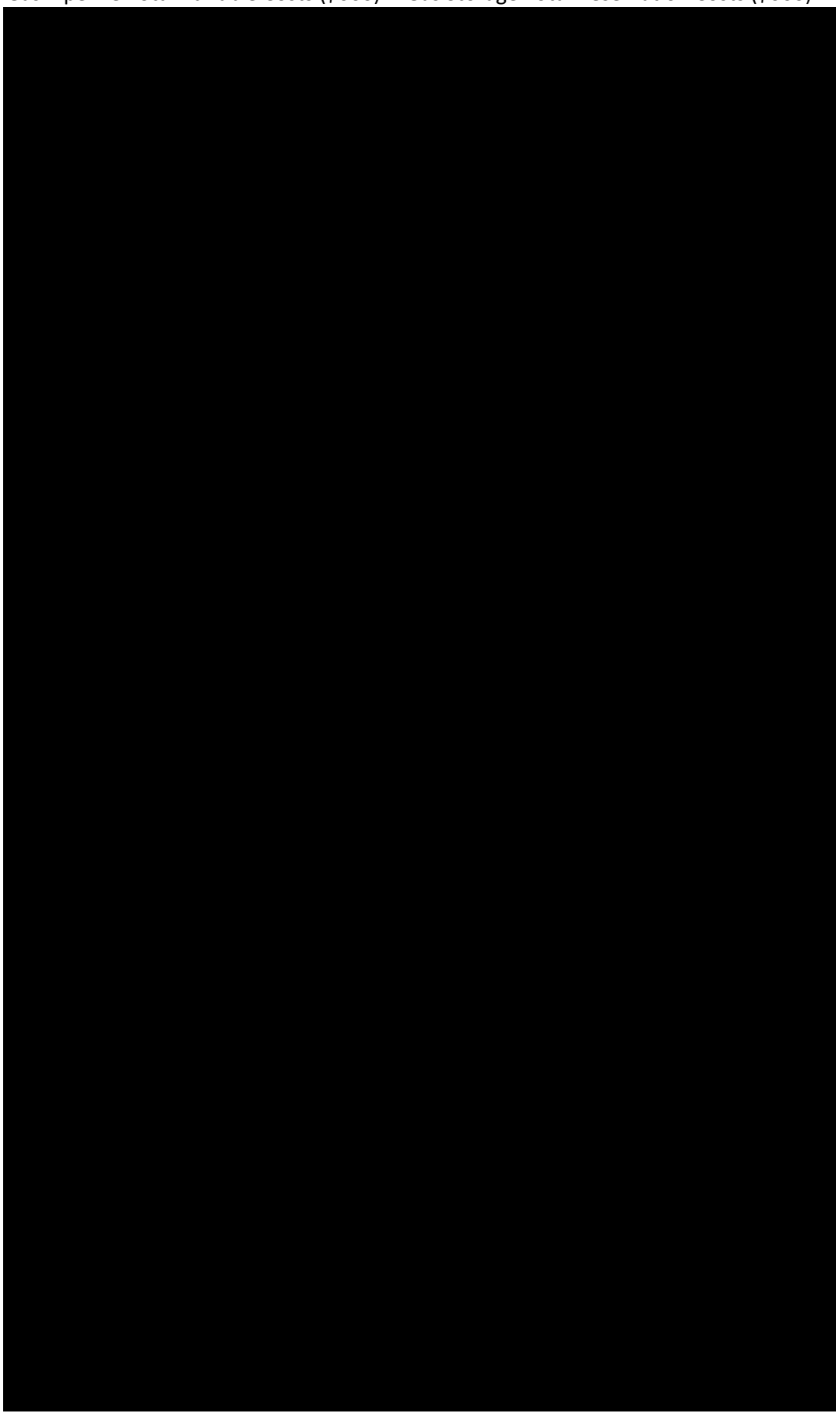


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



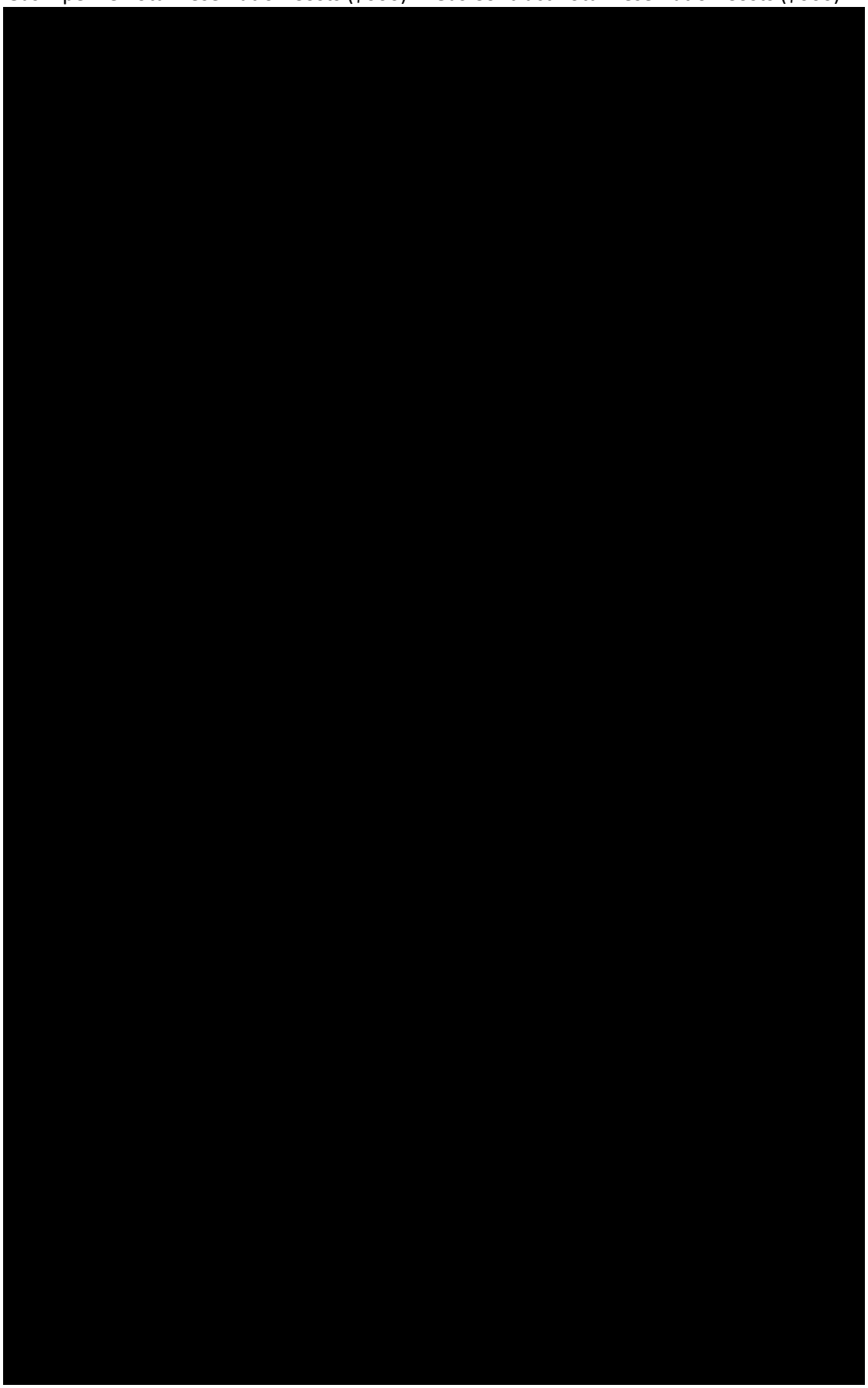


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



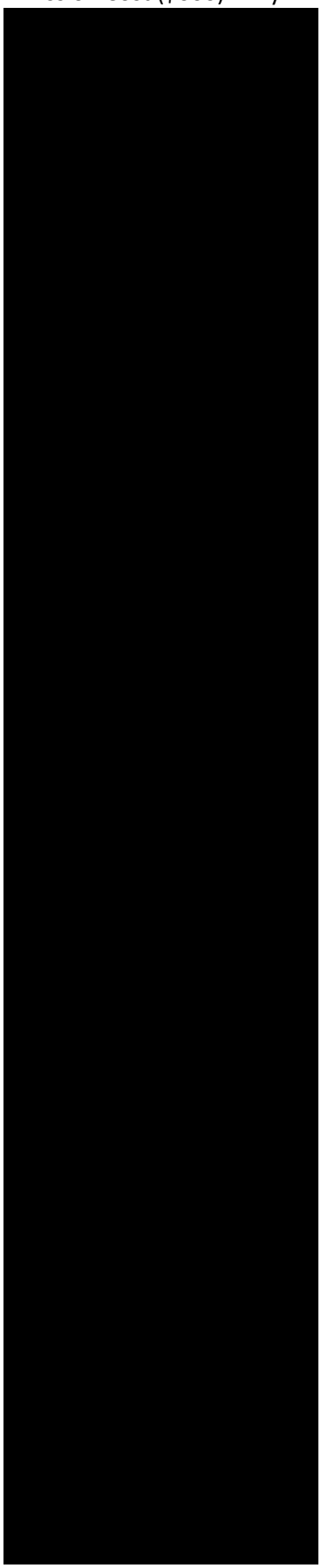


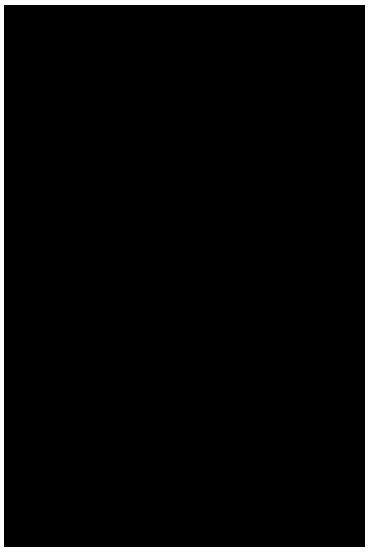
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



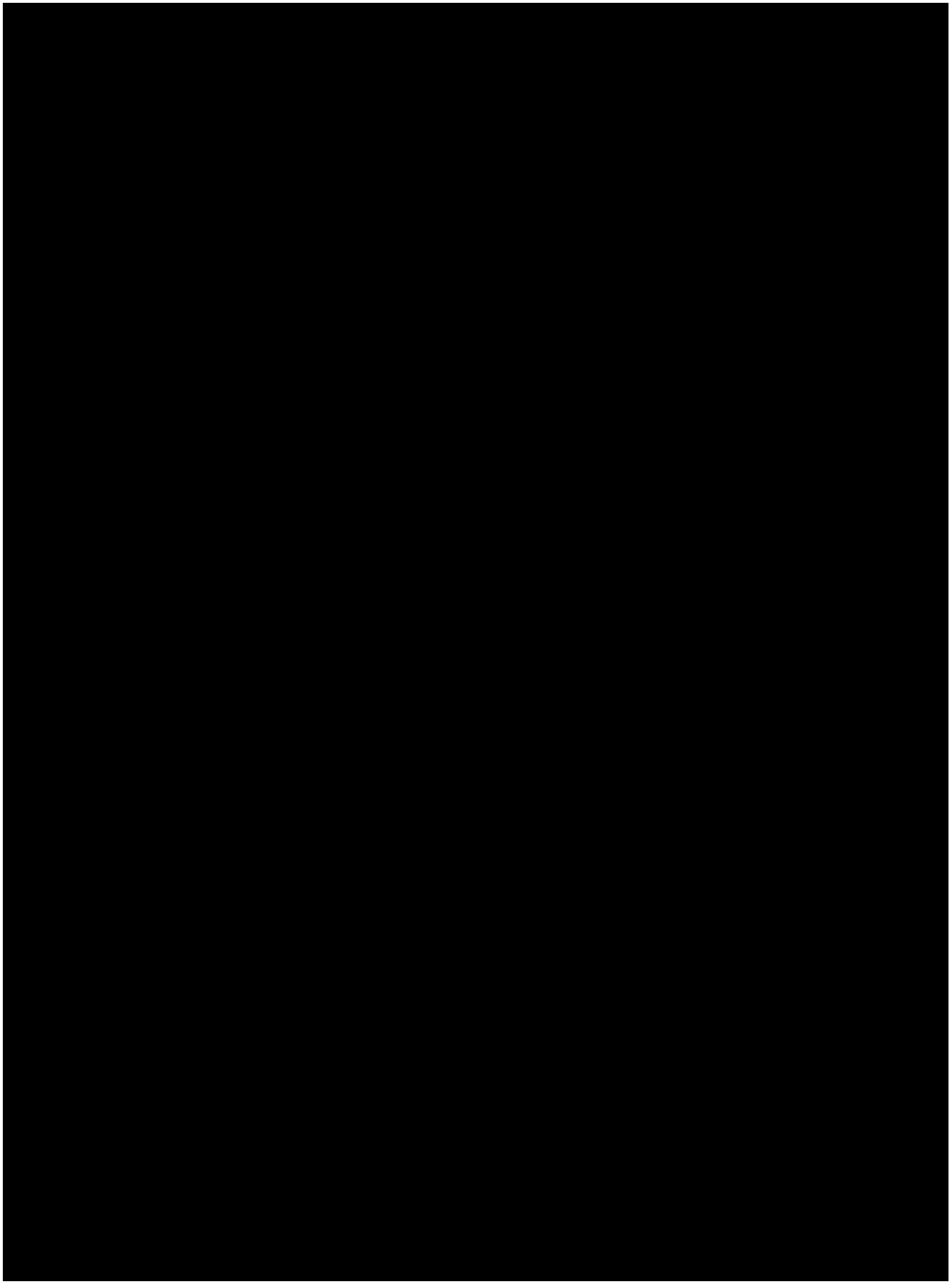


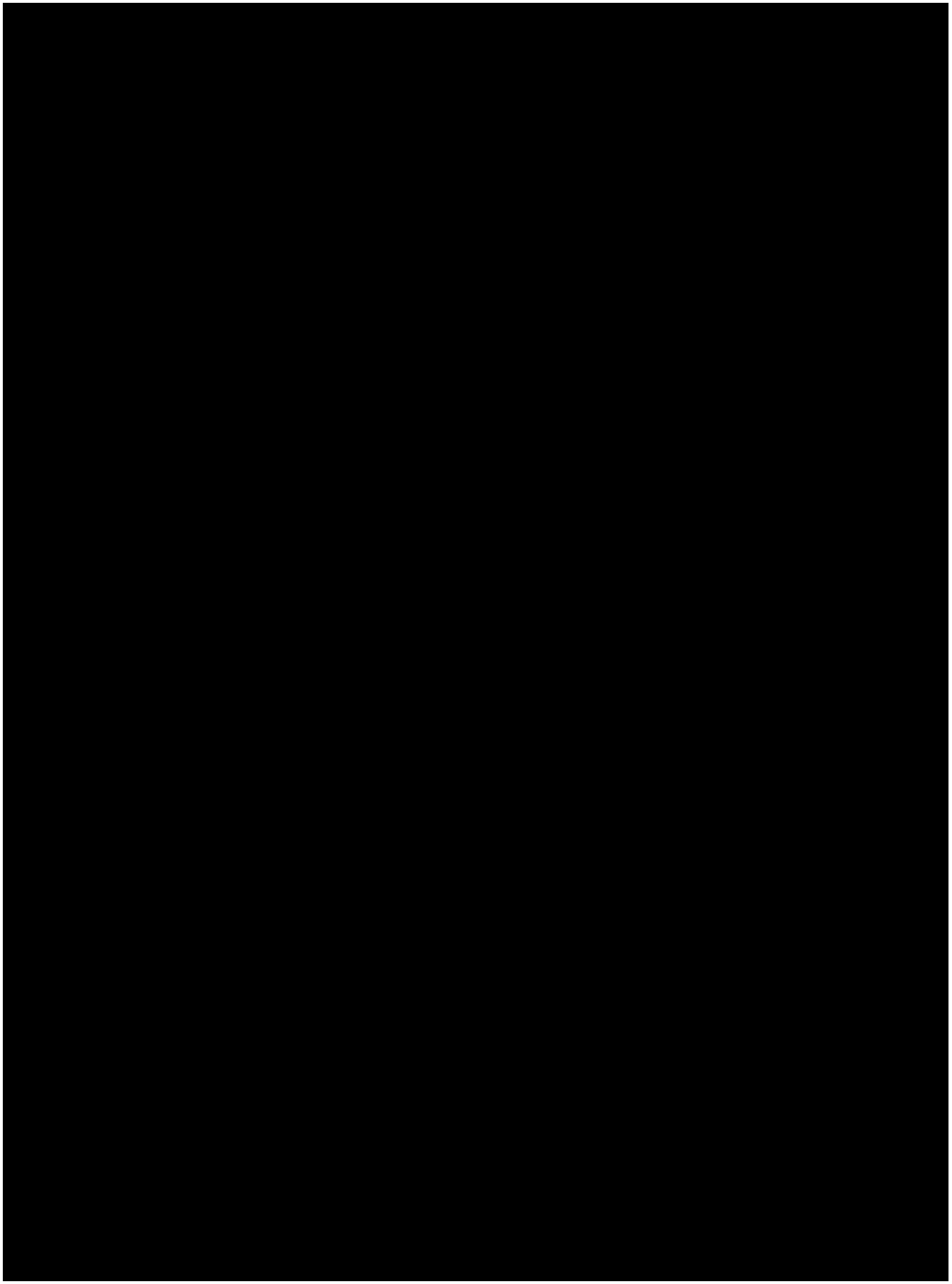
Emission Cost ($000) x y z

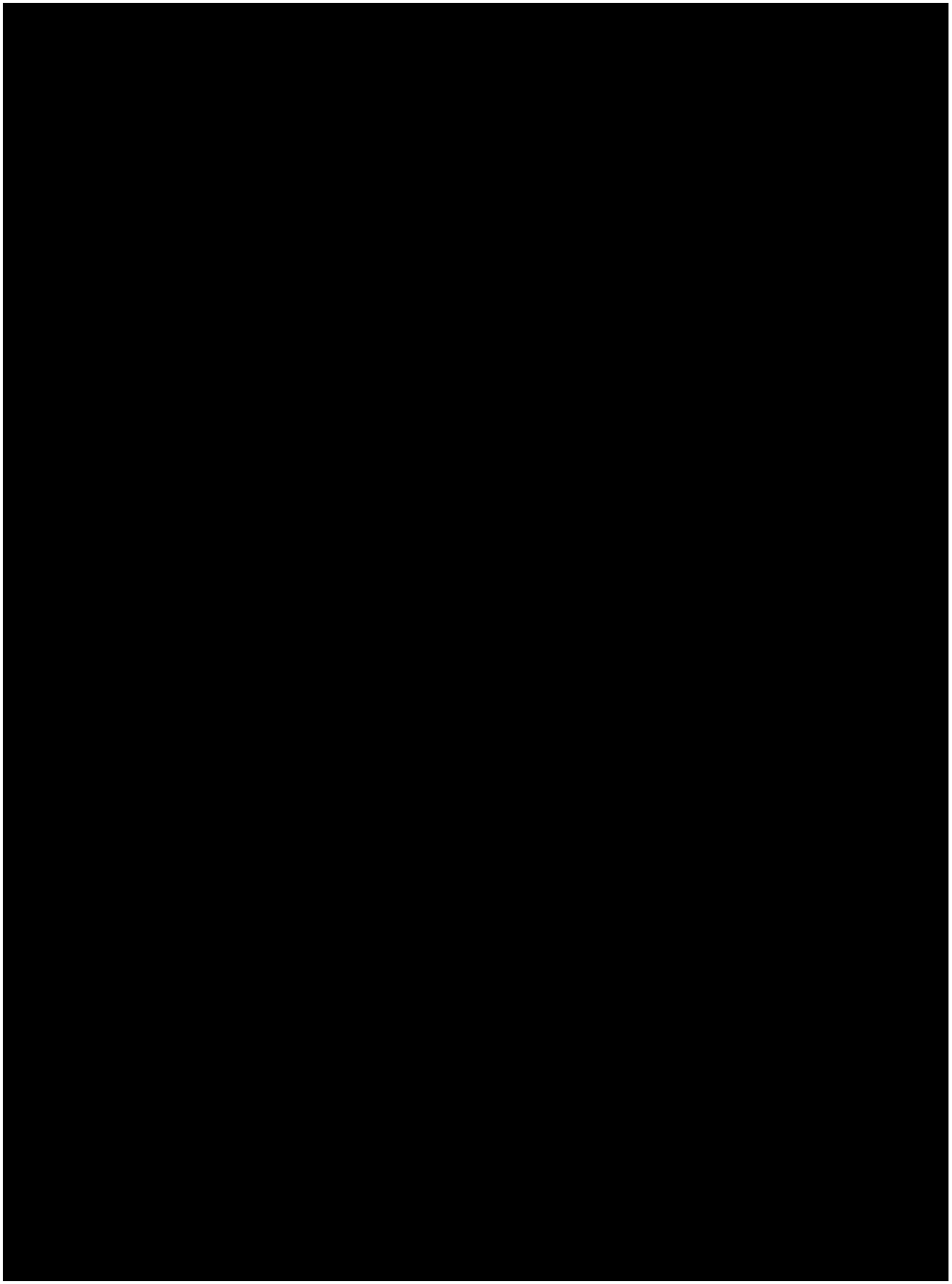


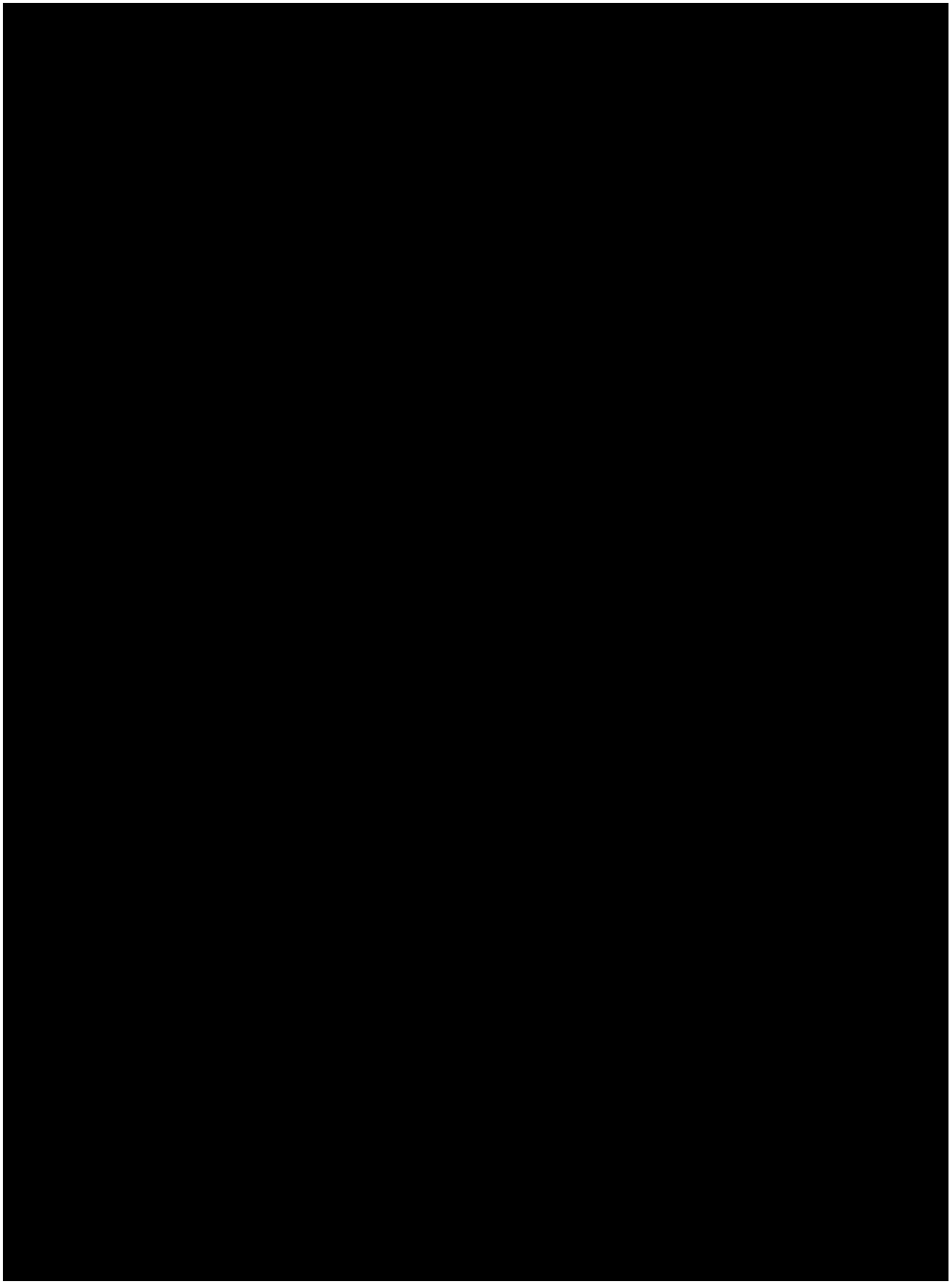


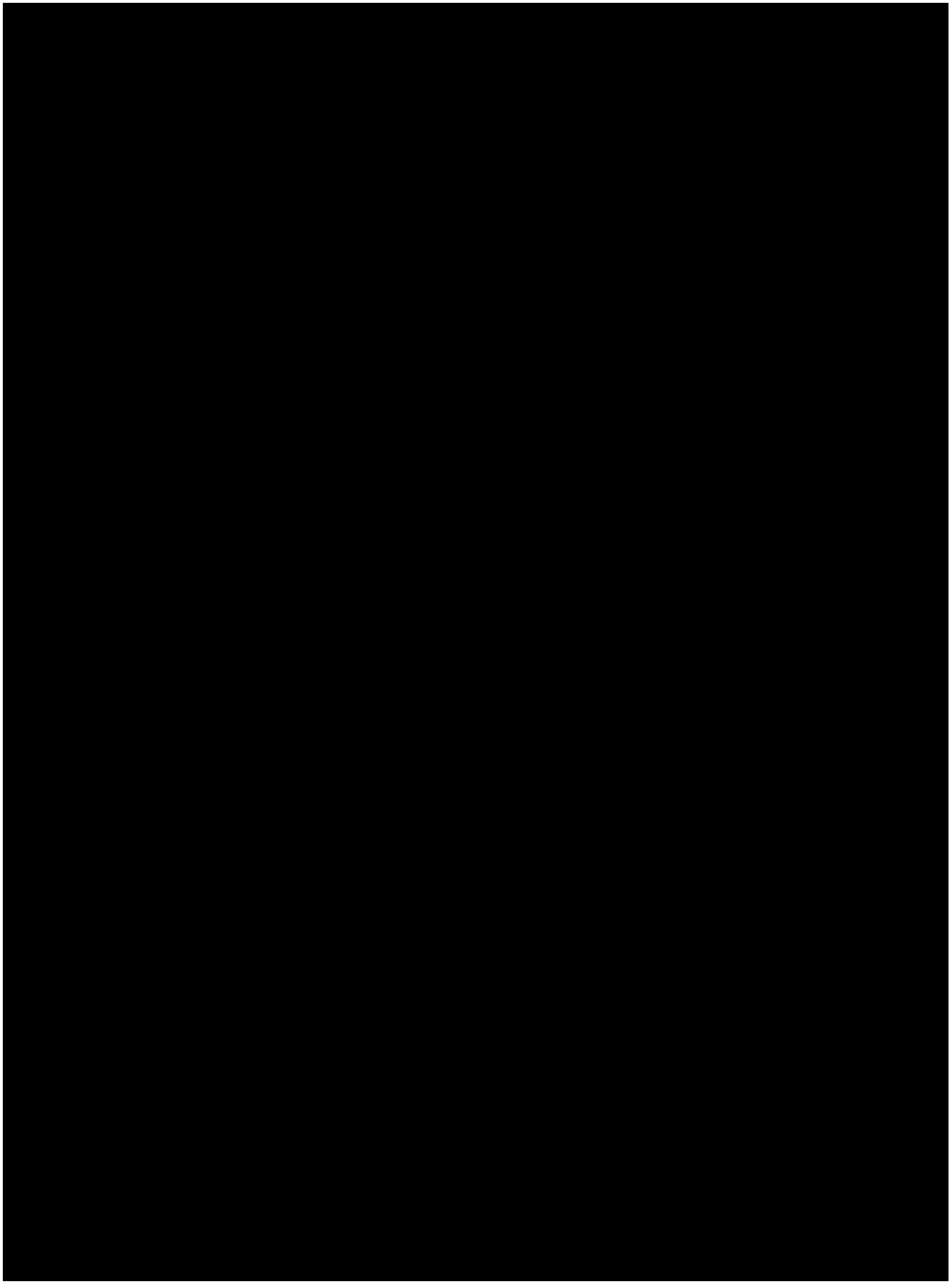
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

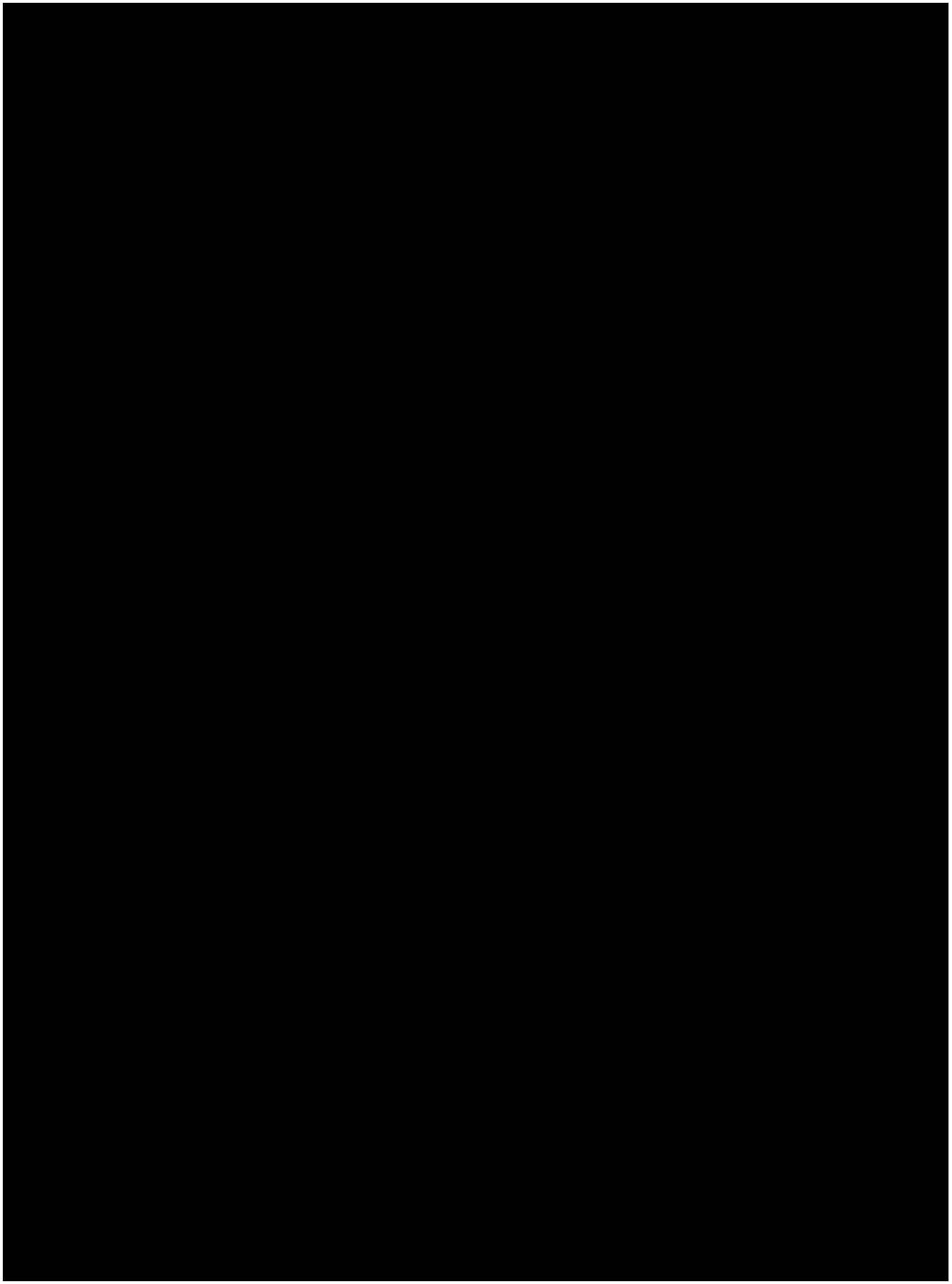


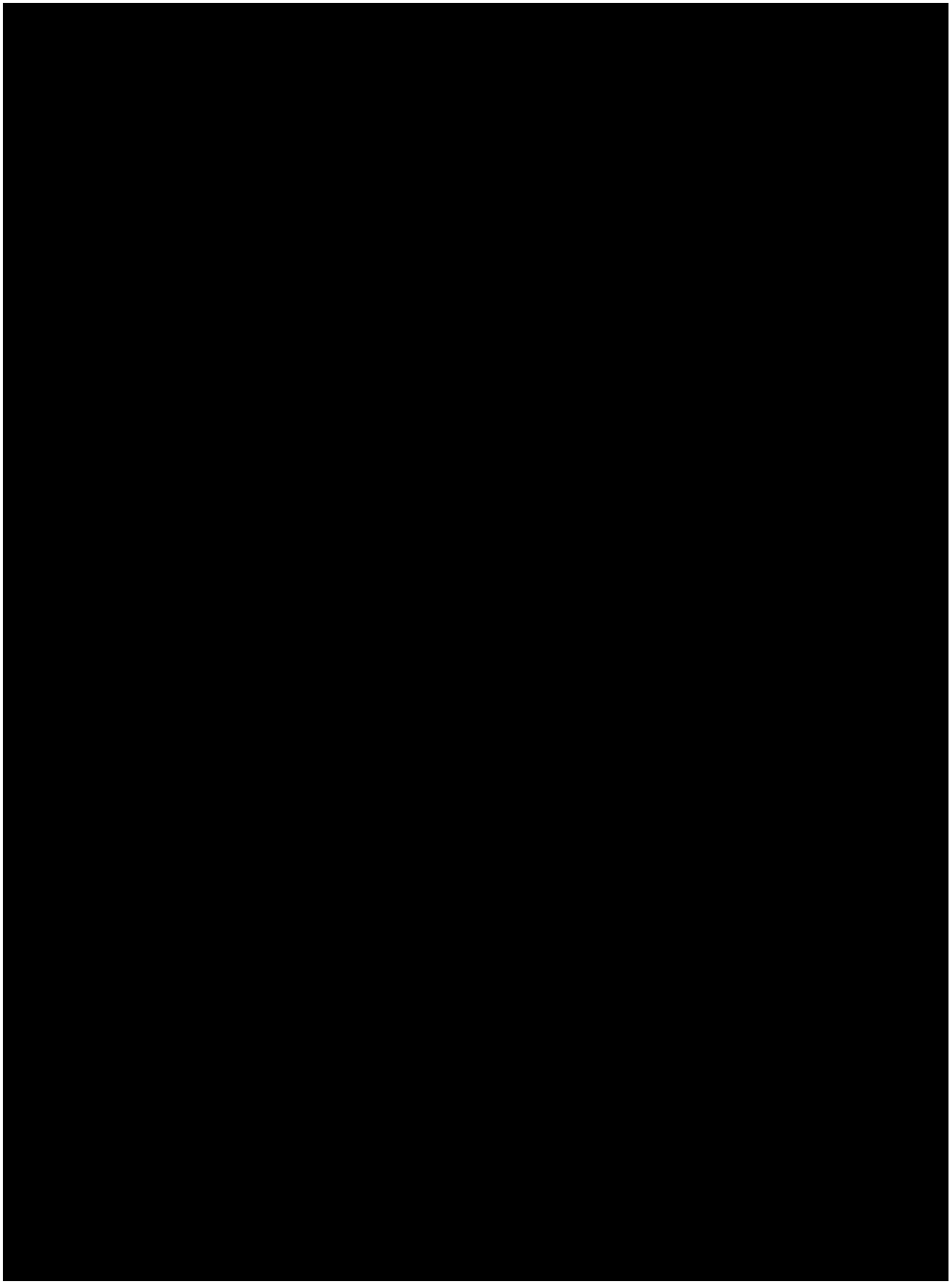


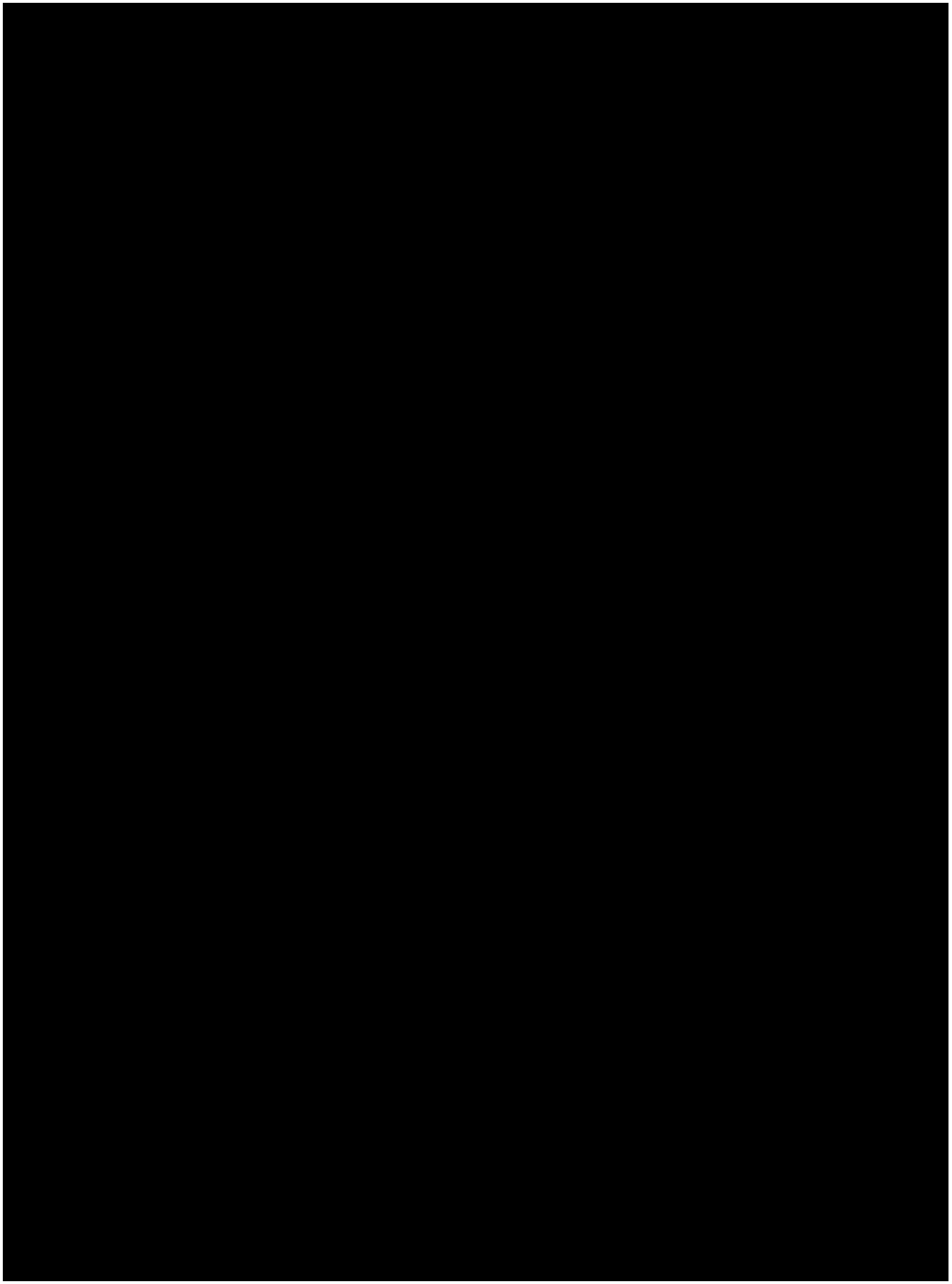


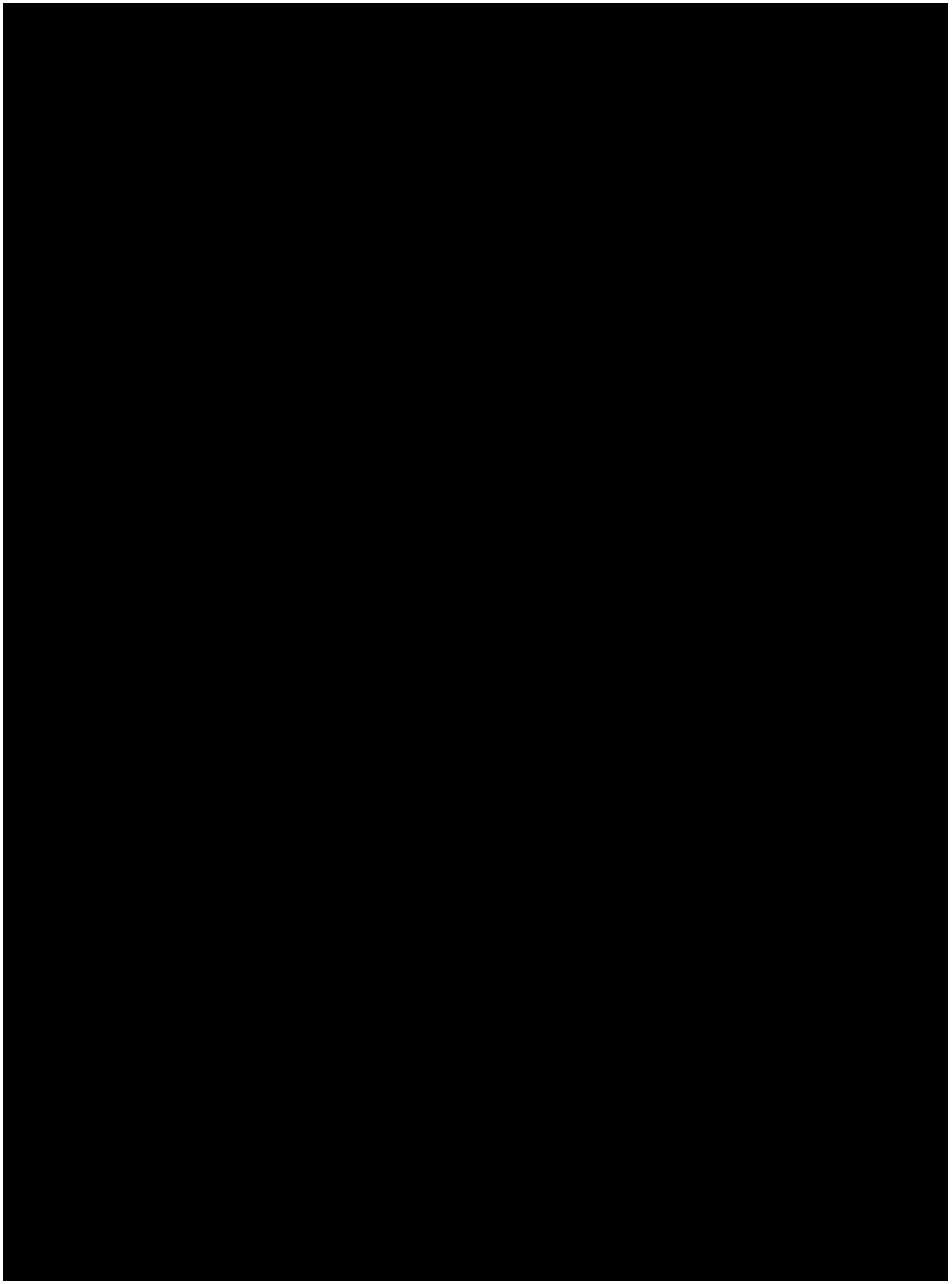


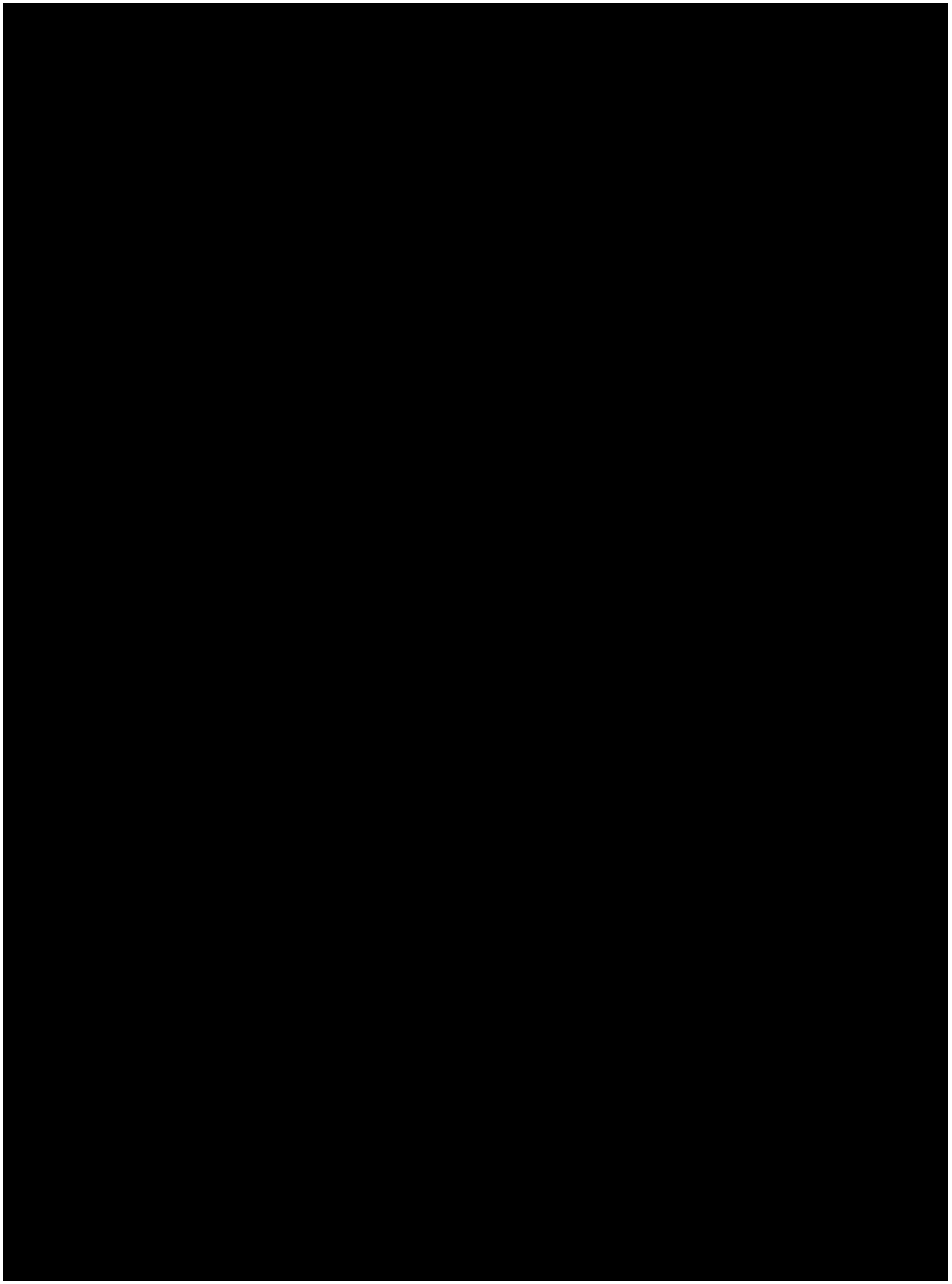


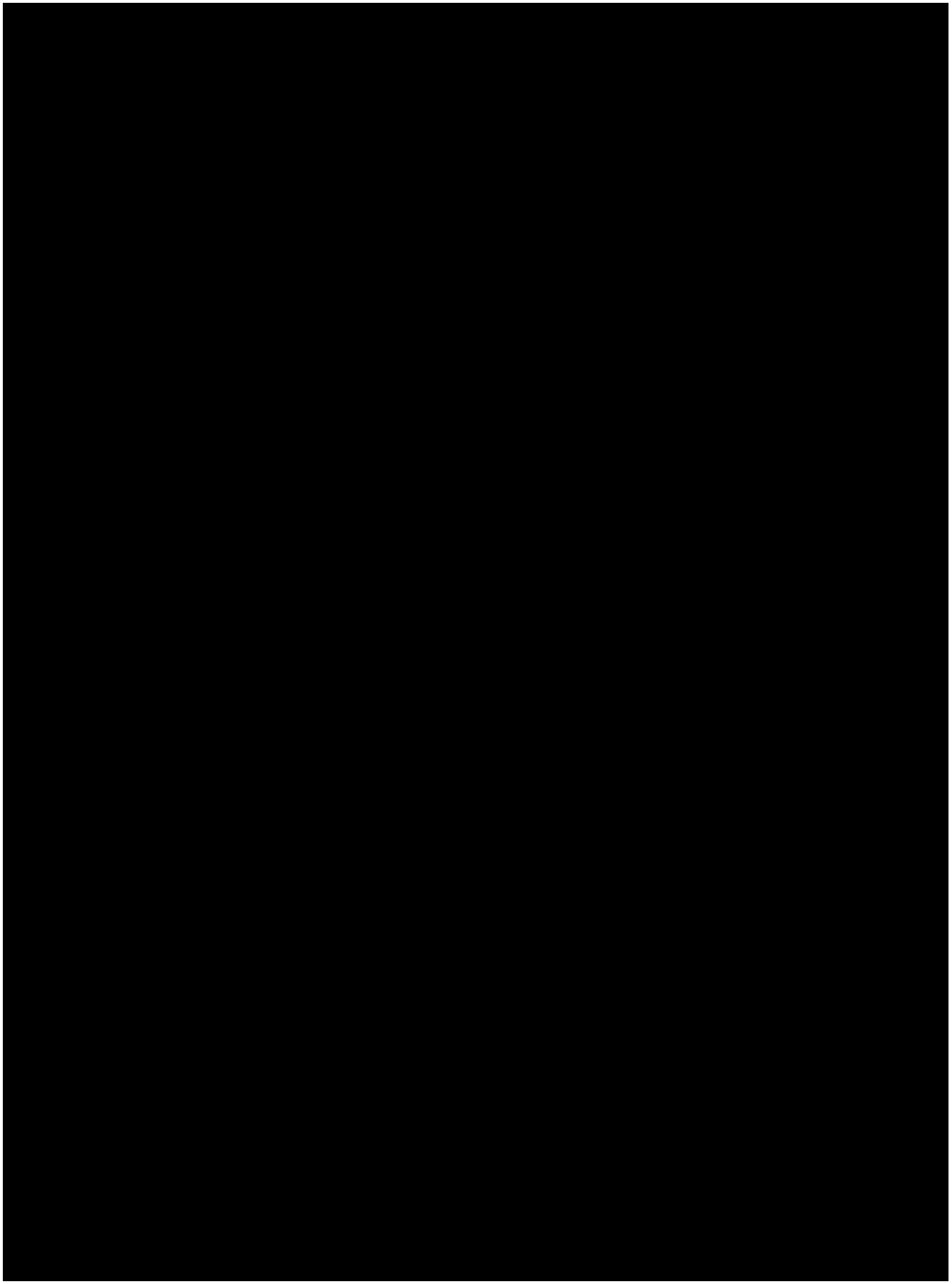


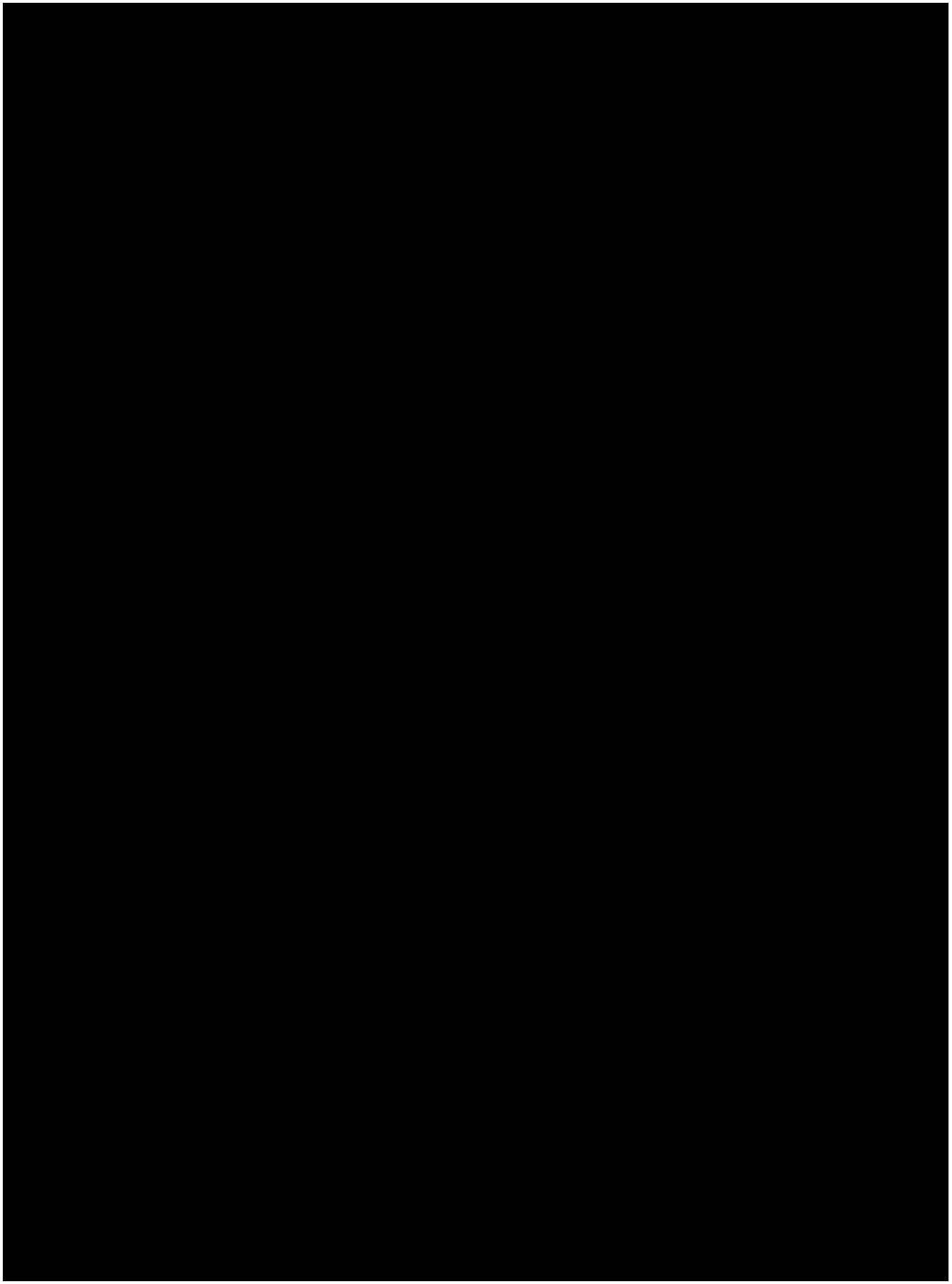


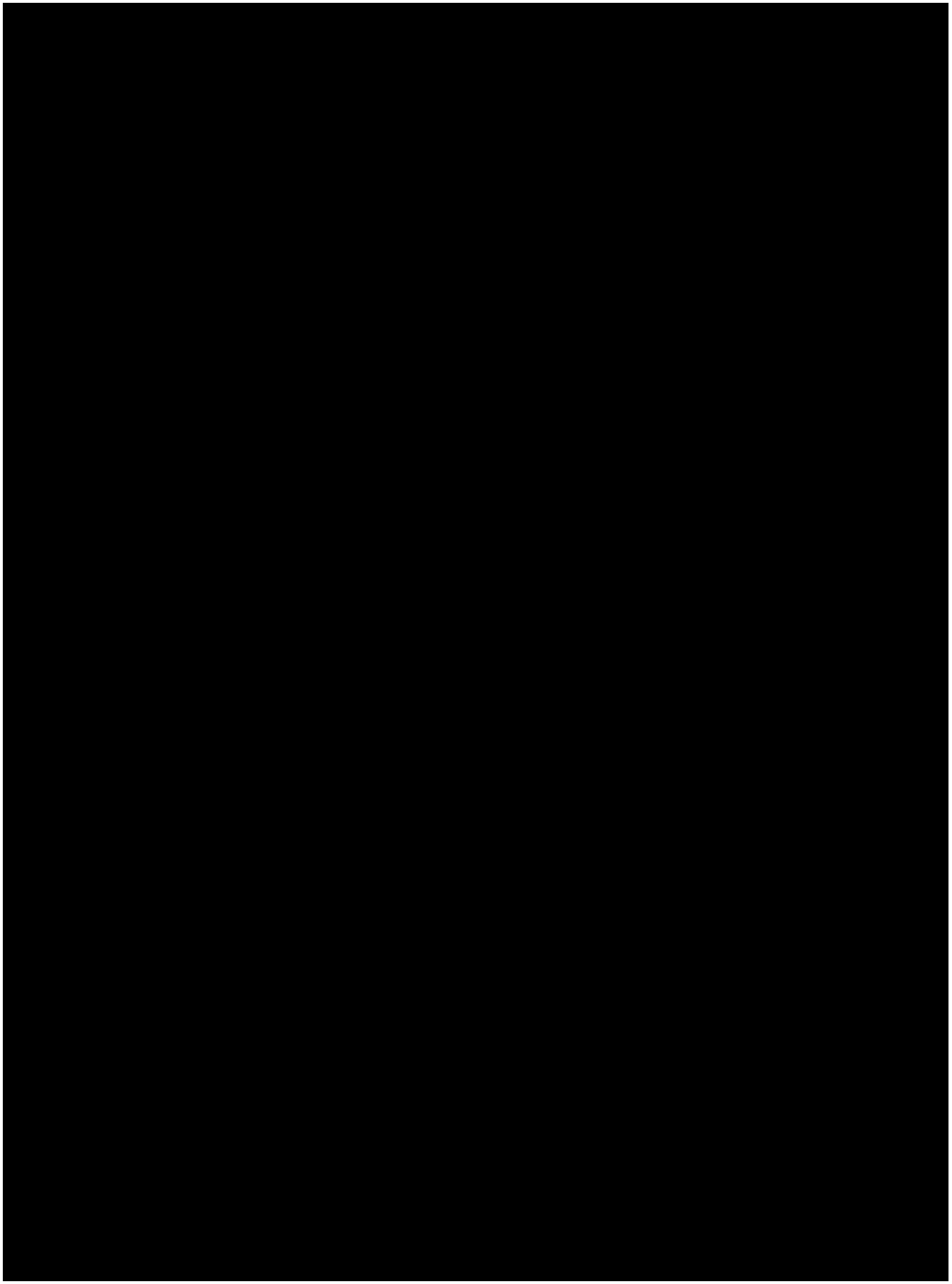


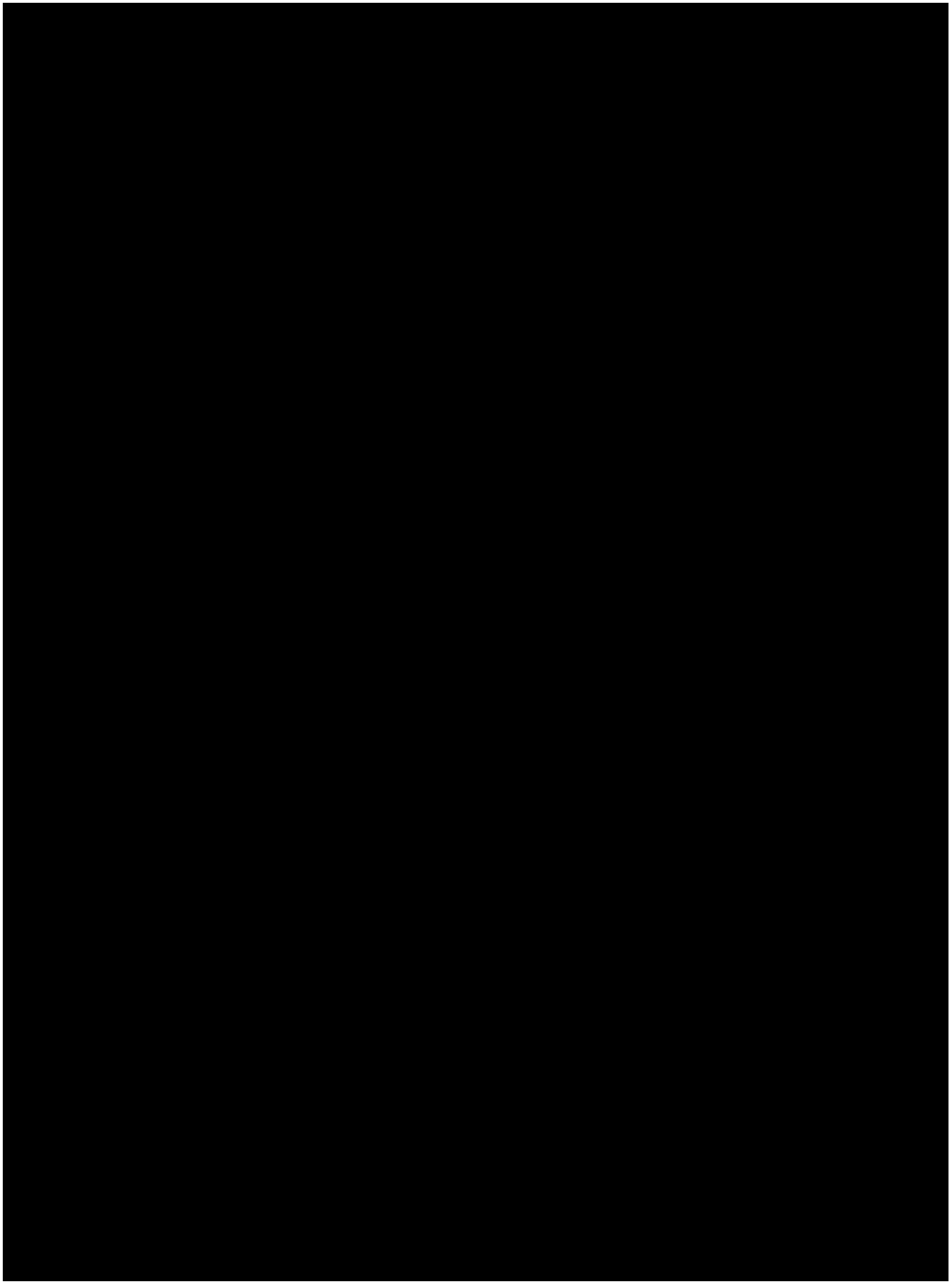


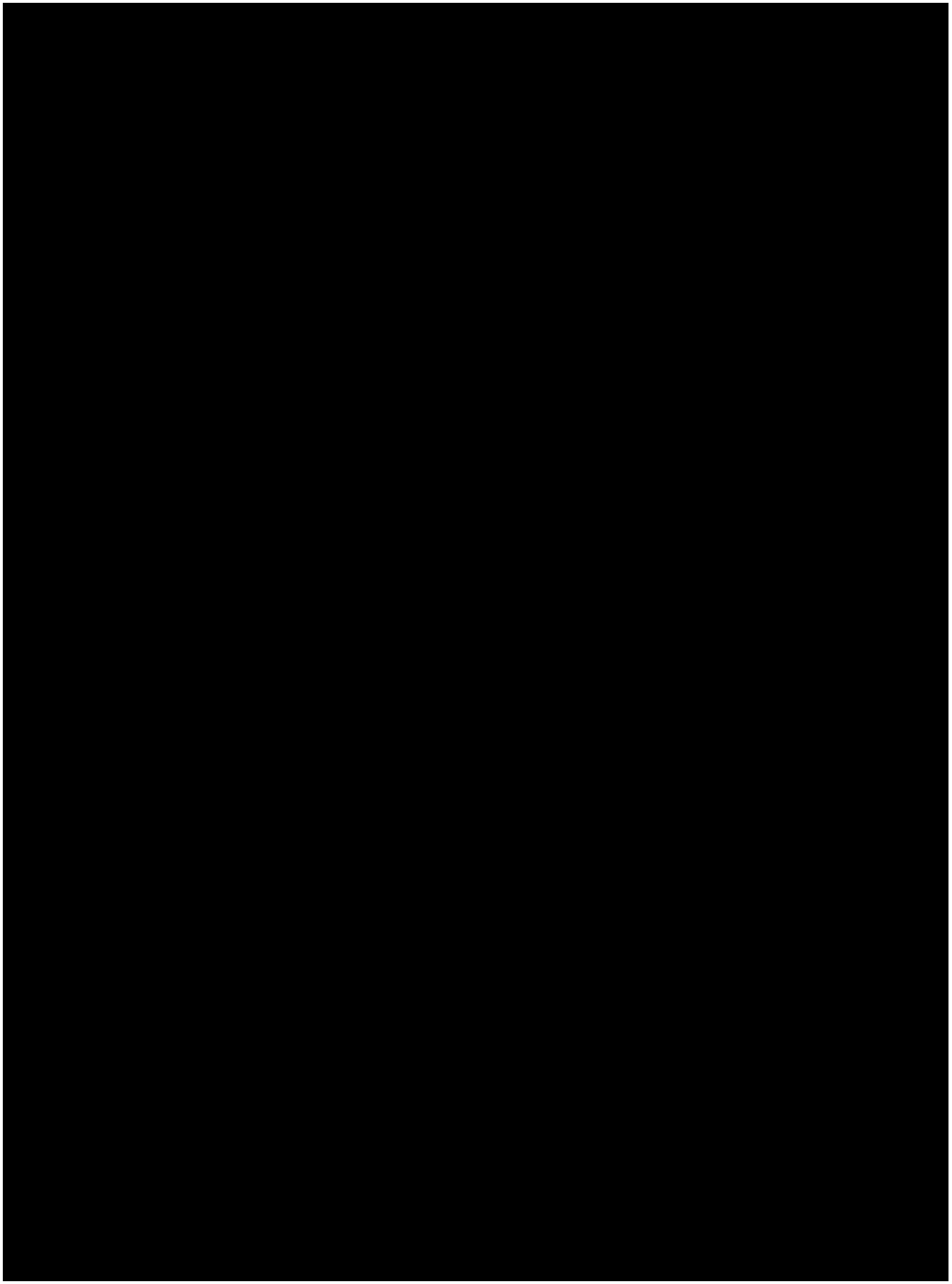


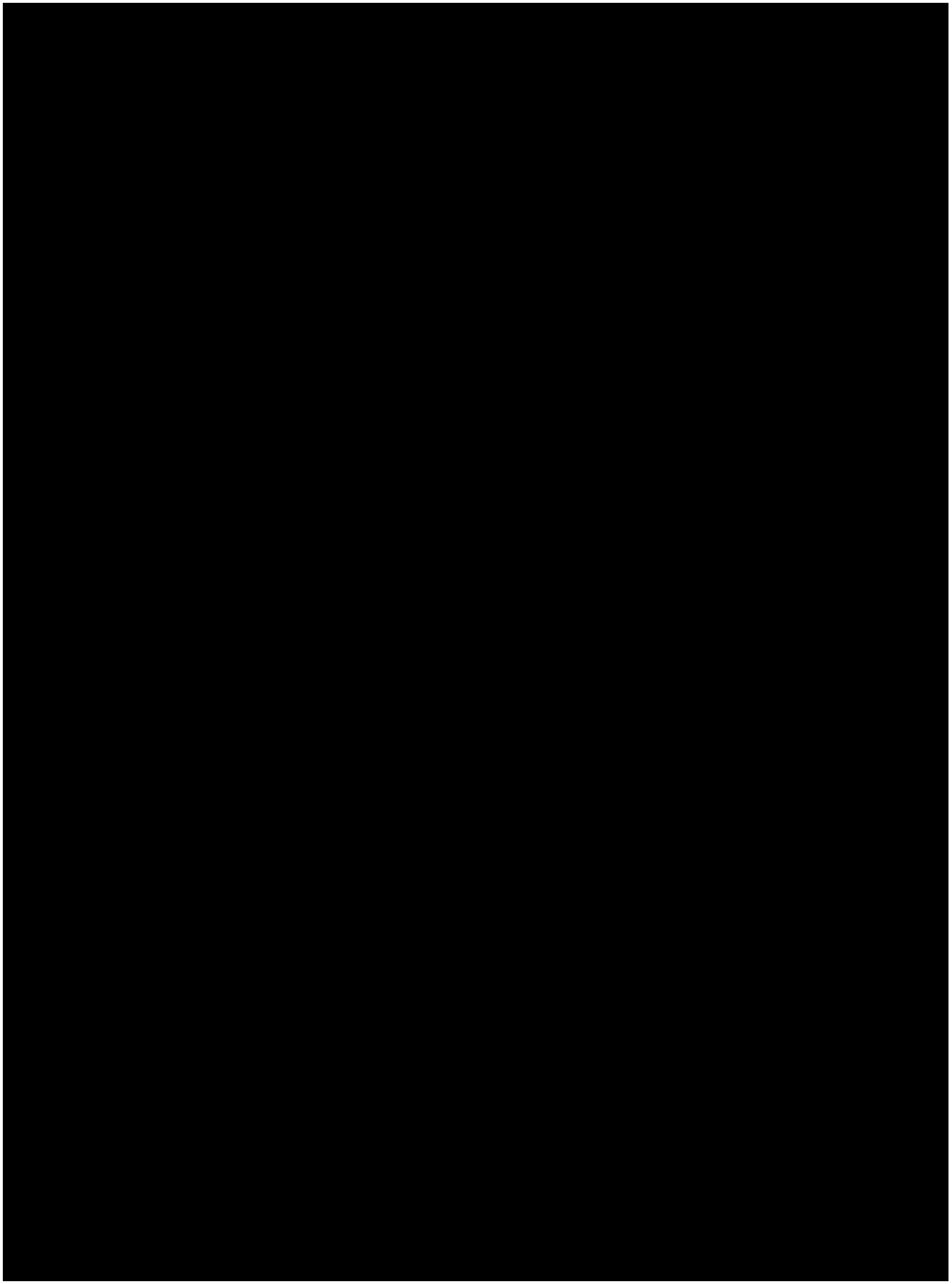


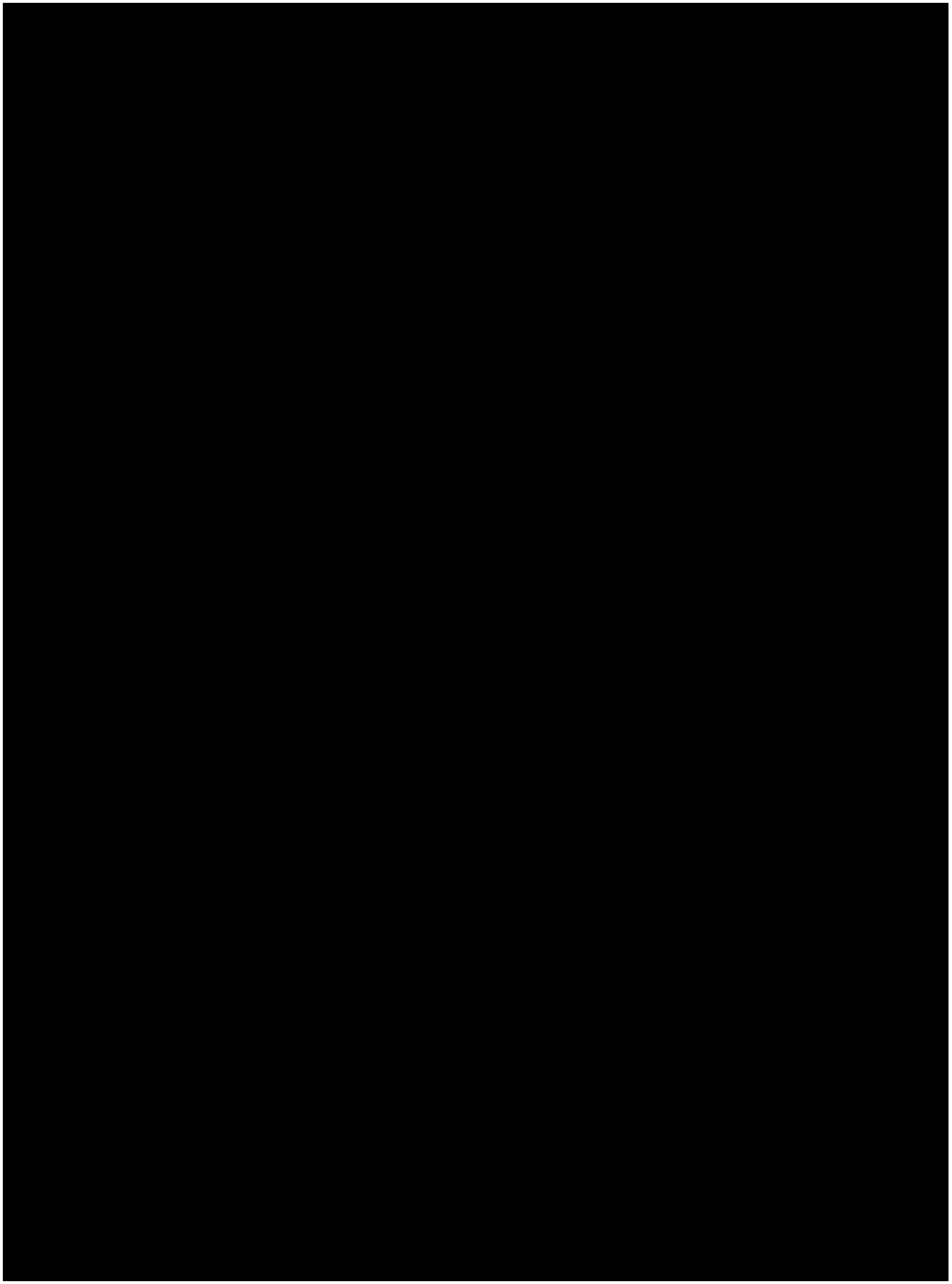


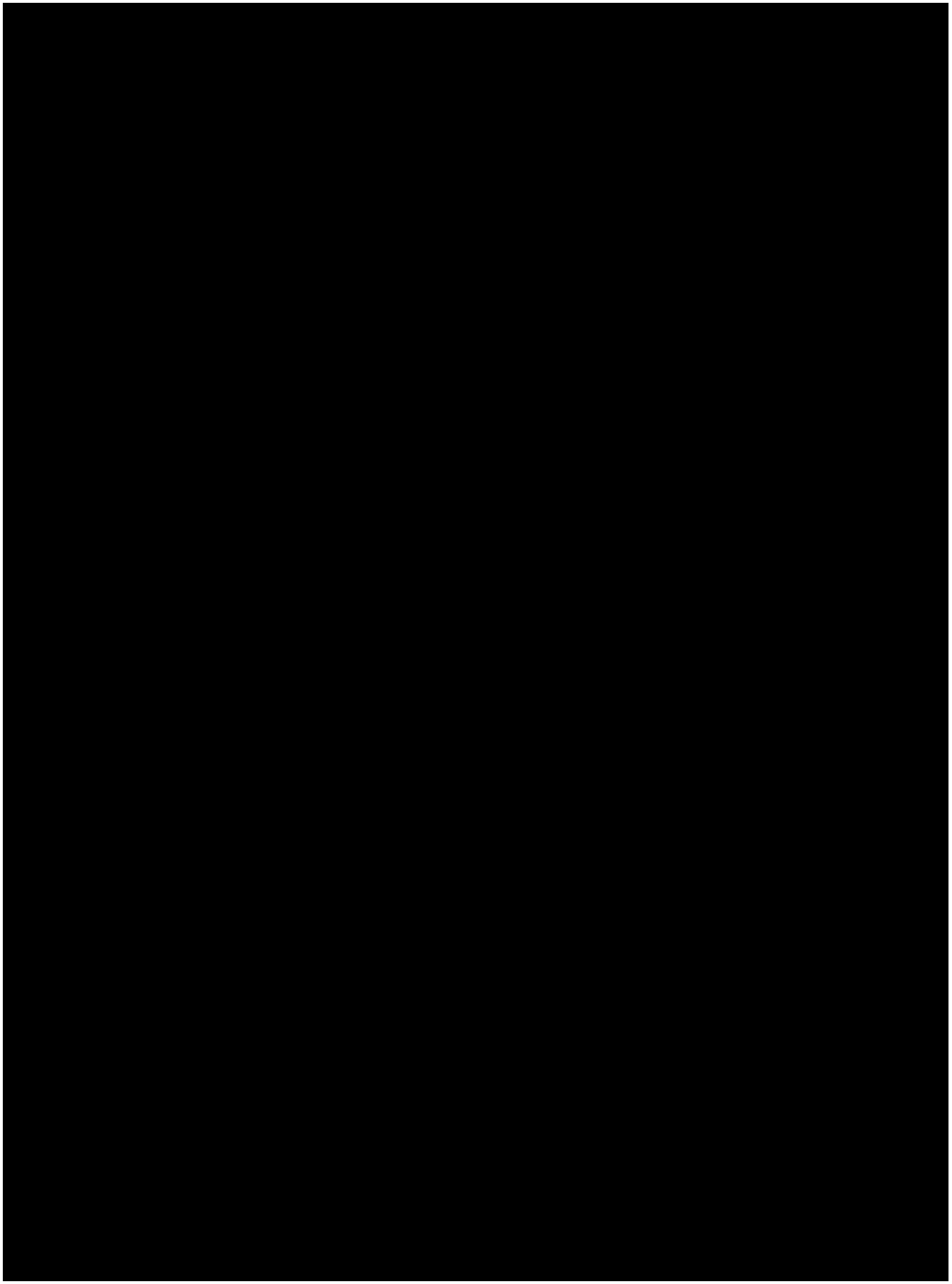




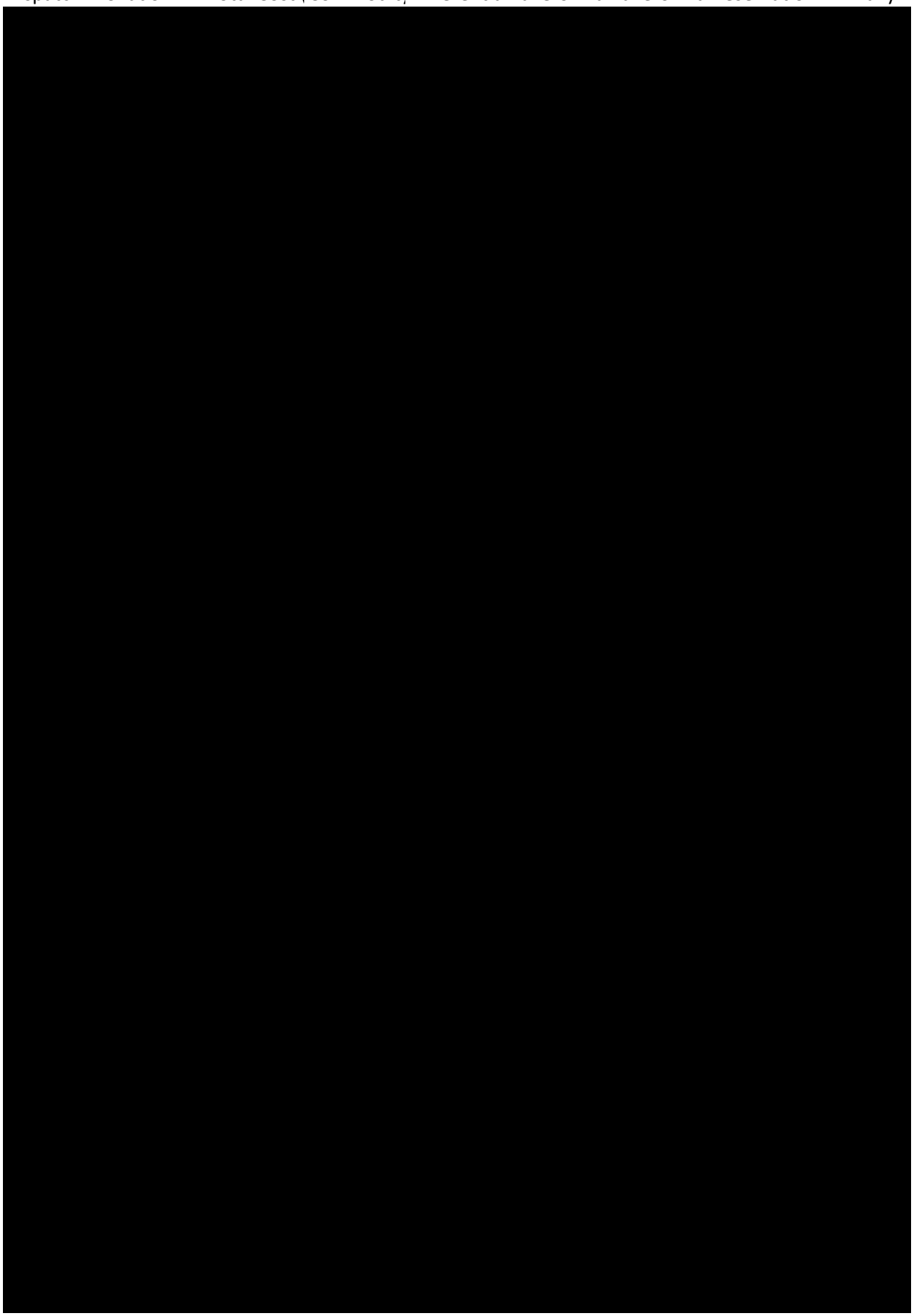


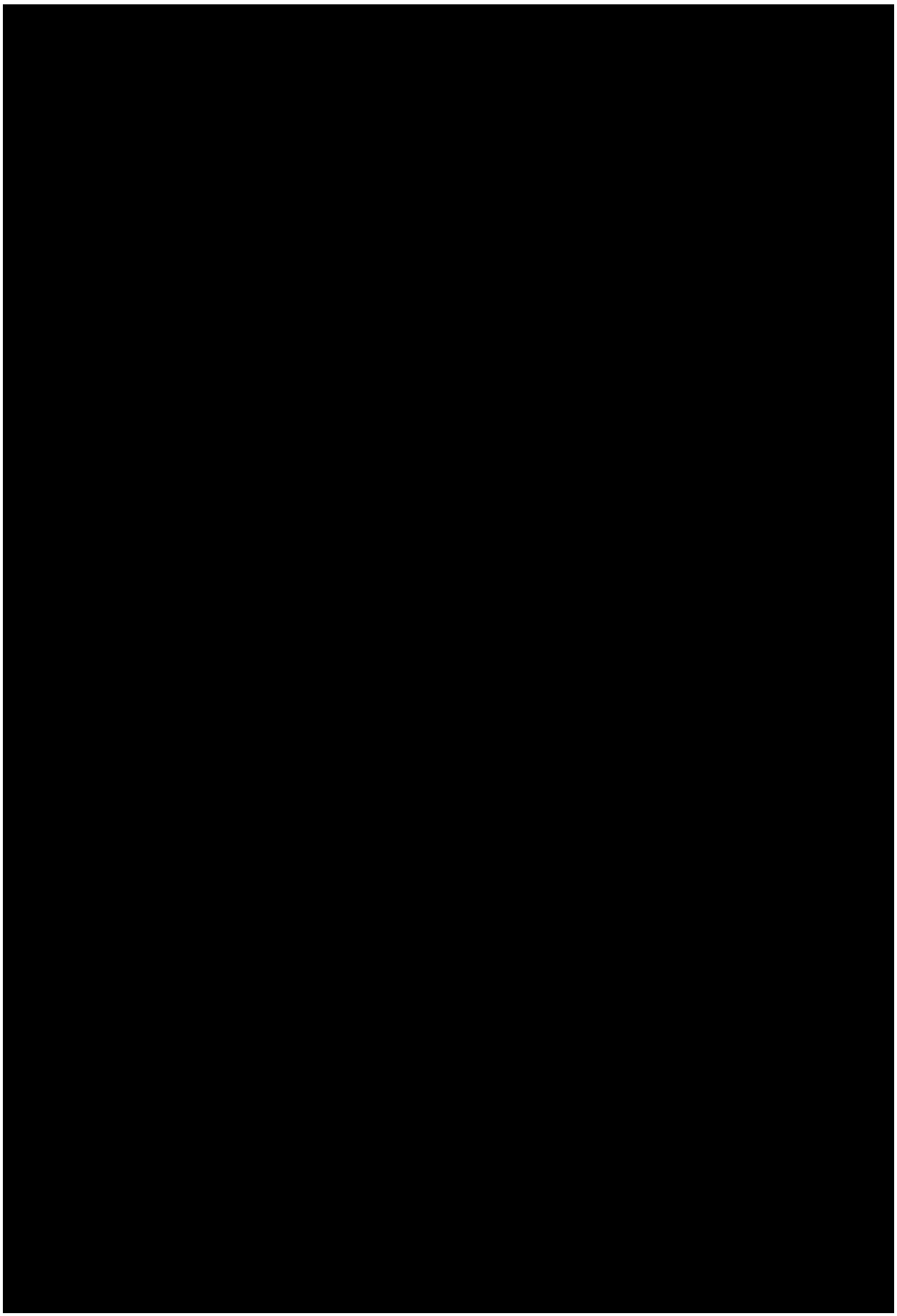


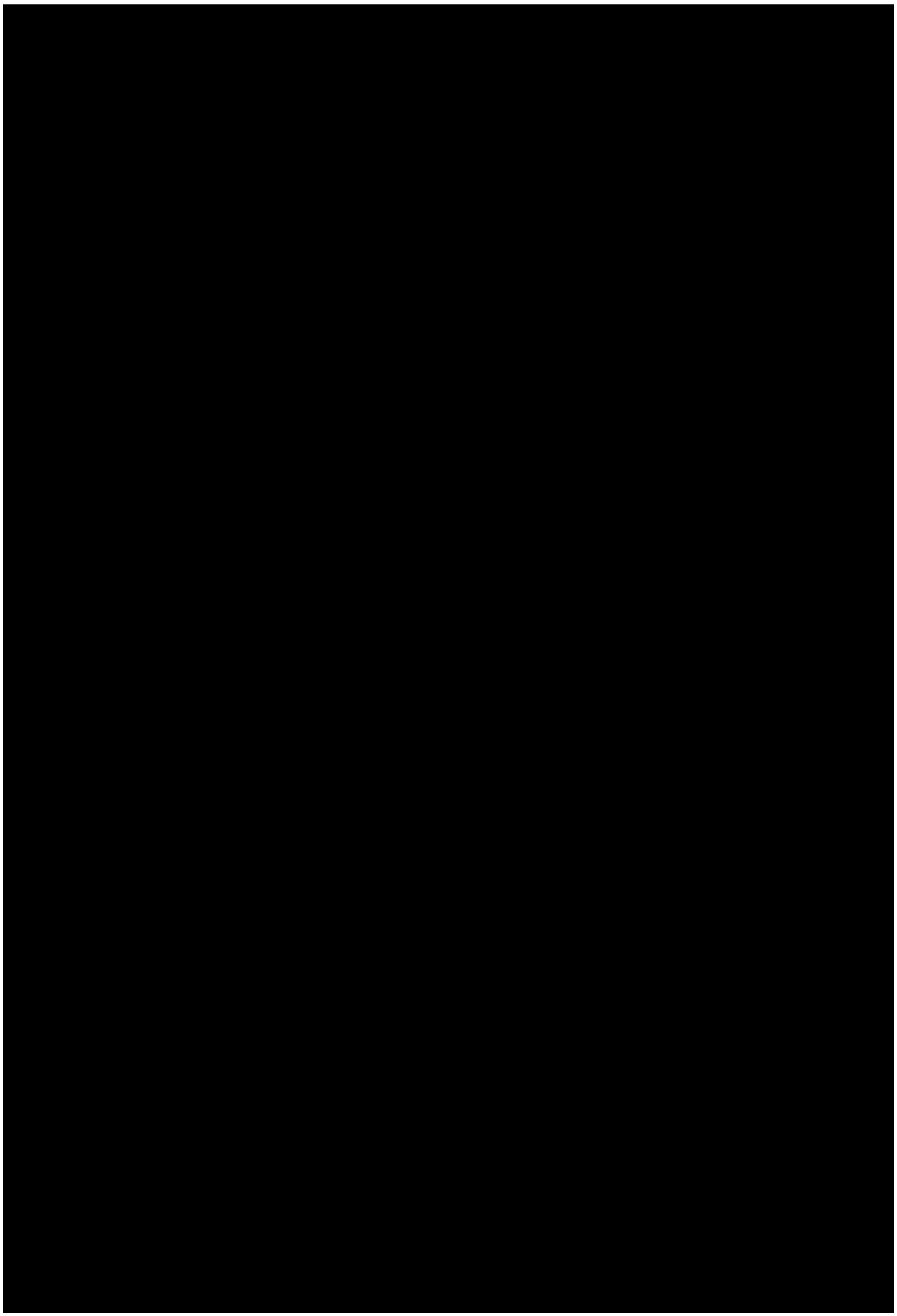


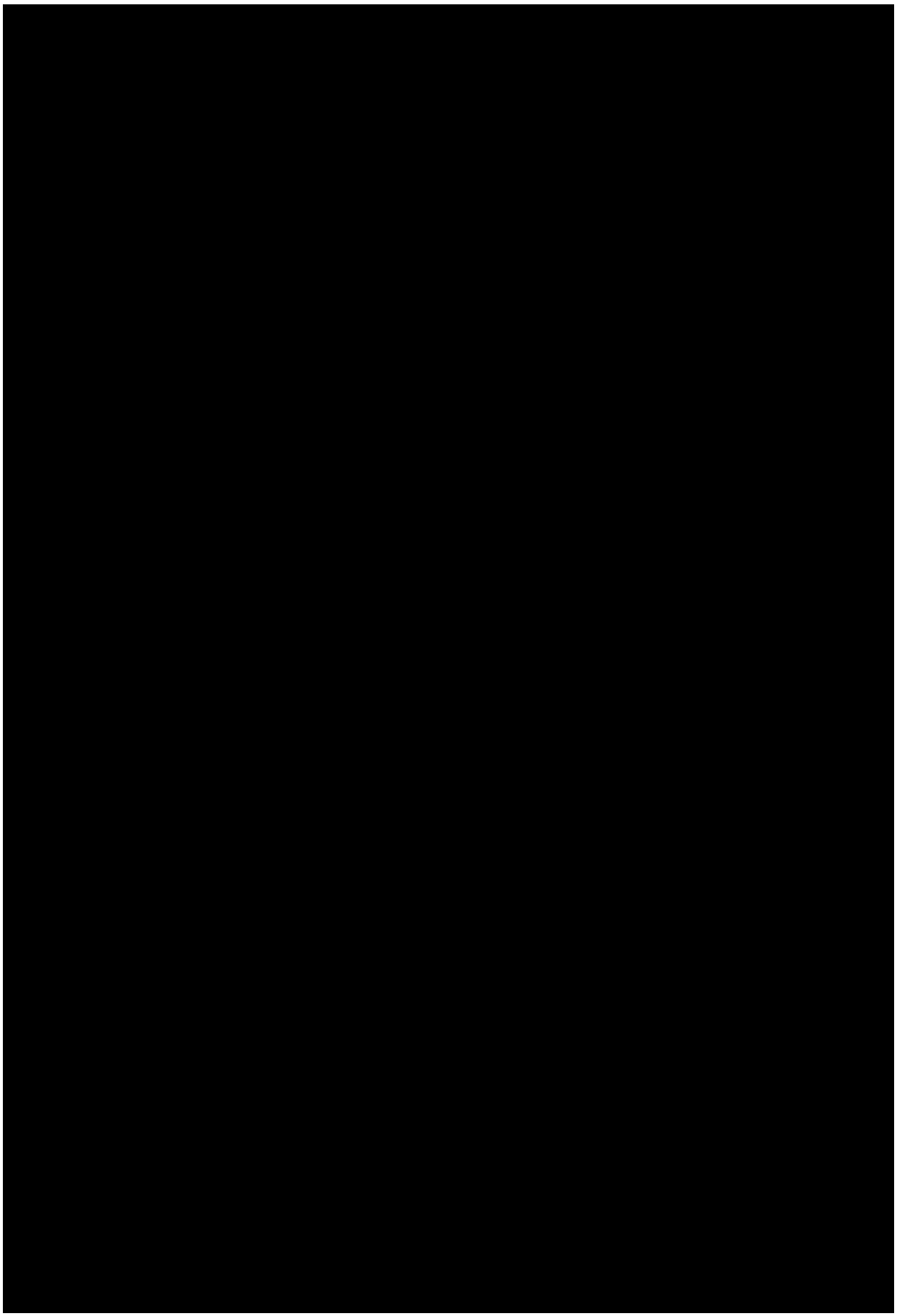


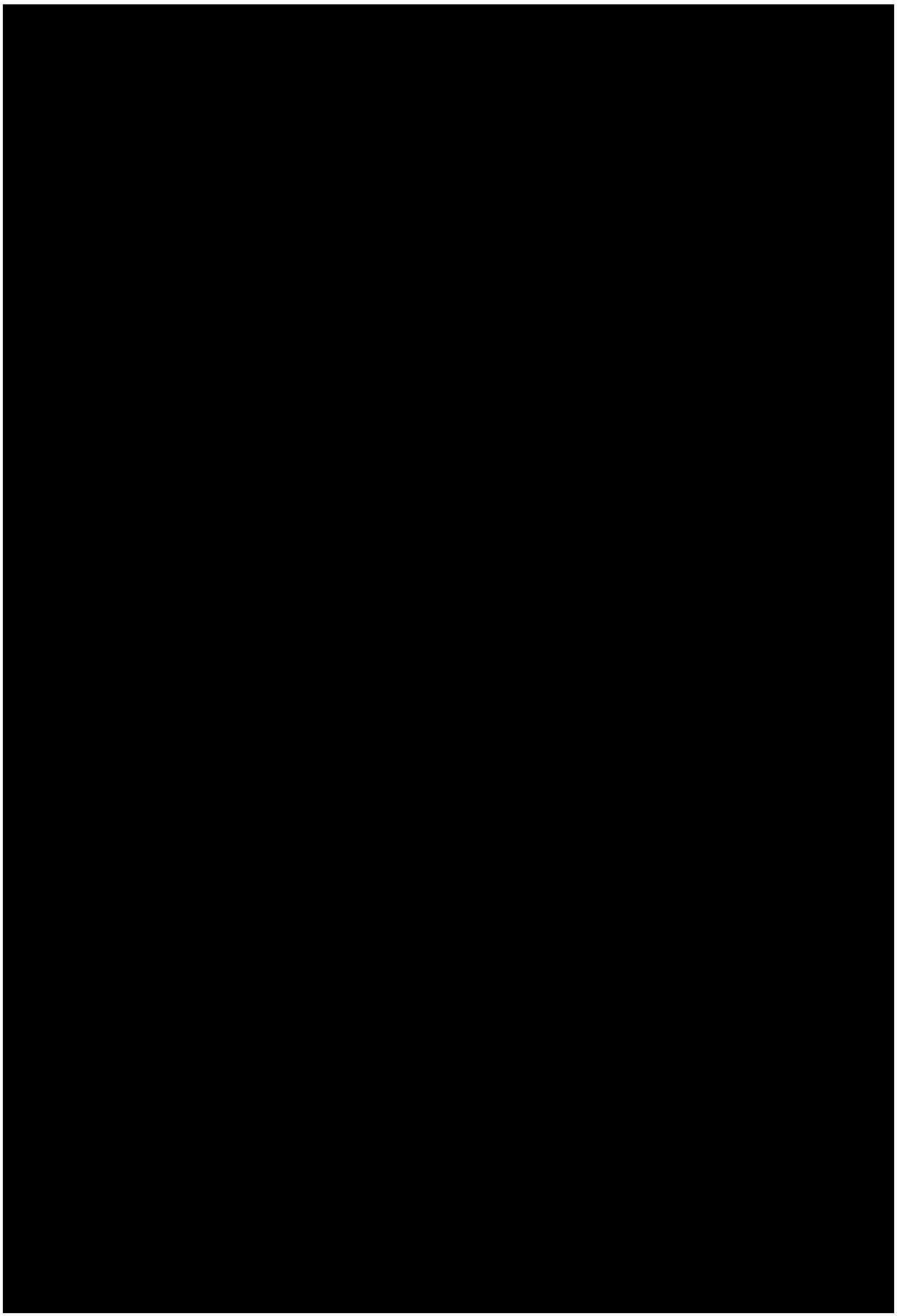


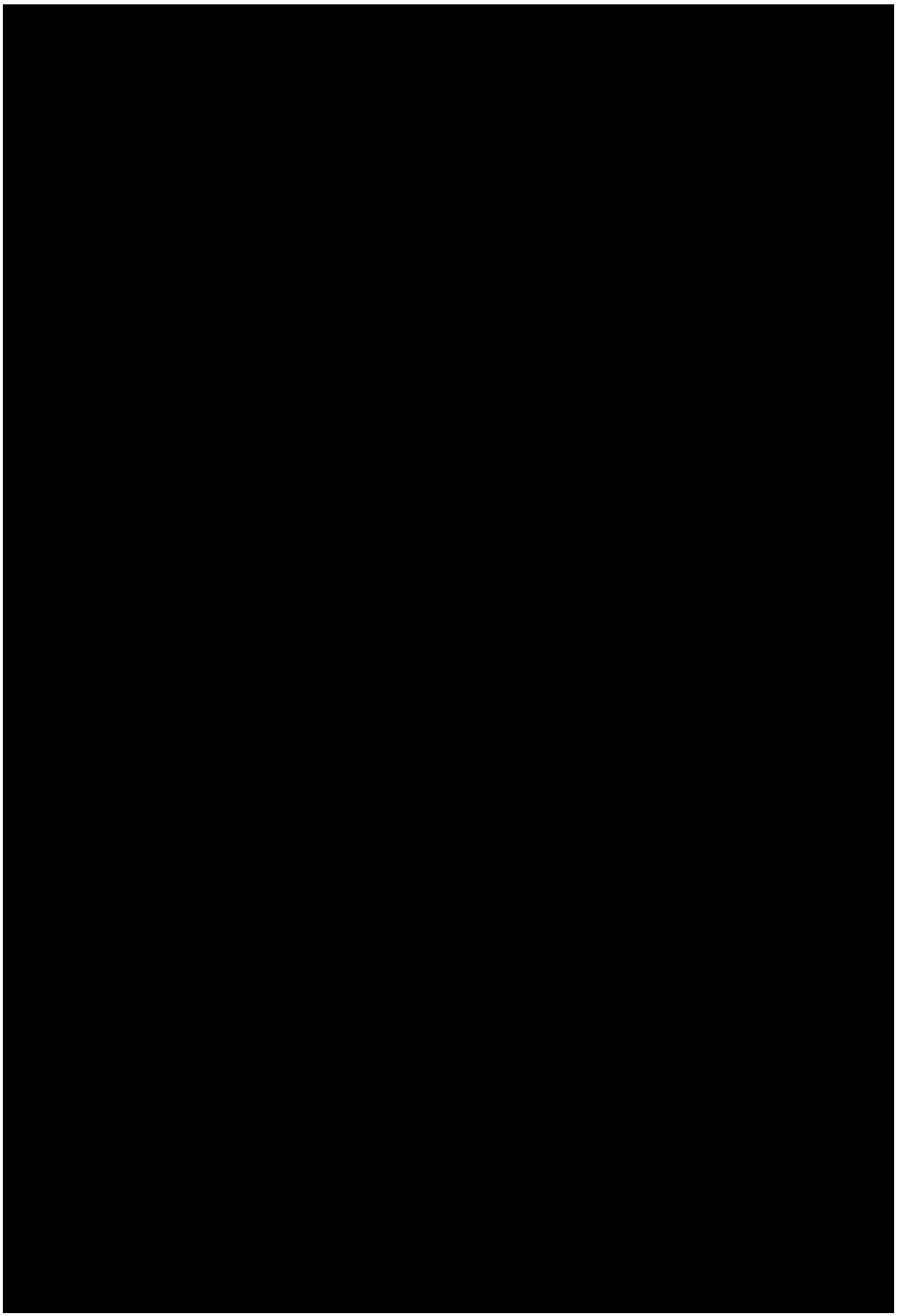

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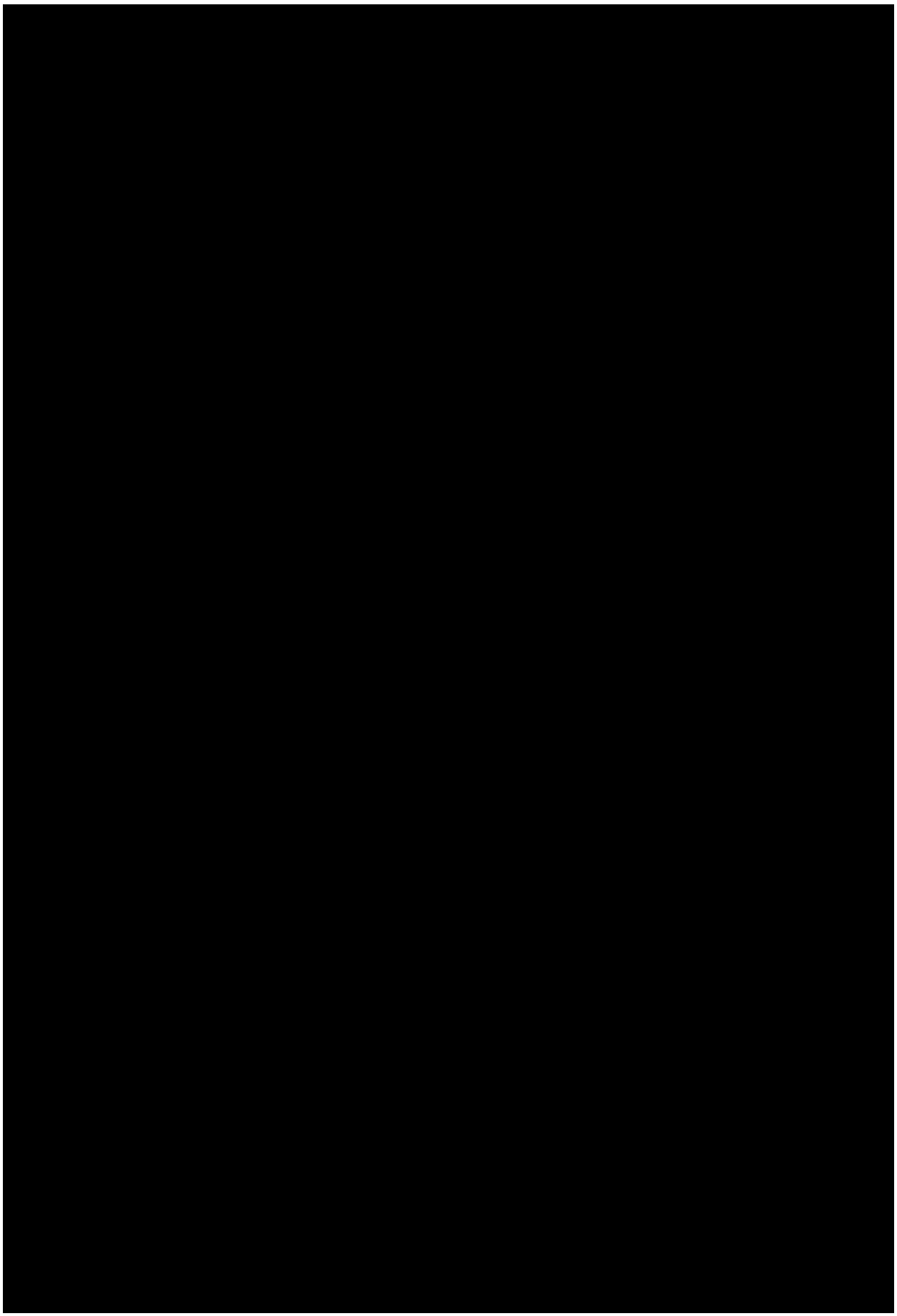


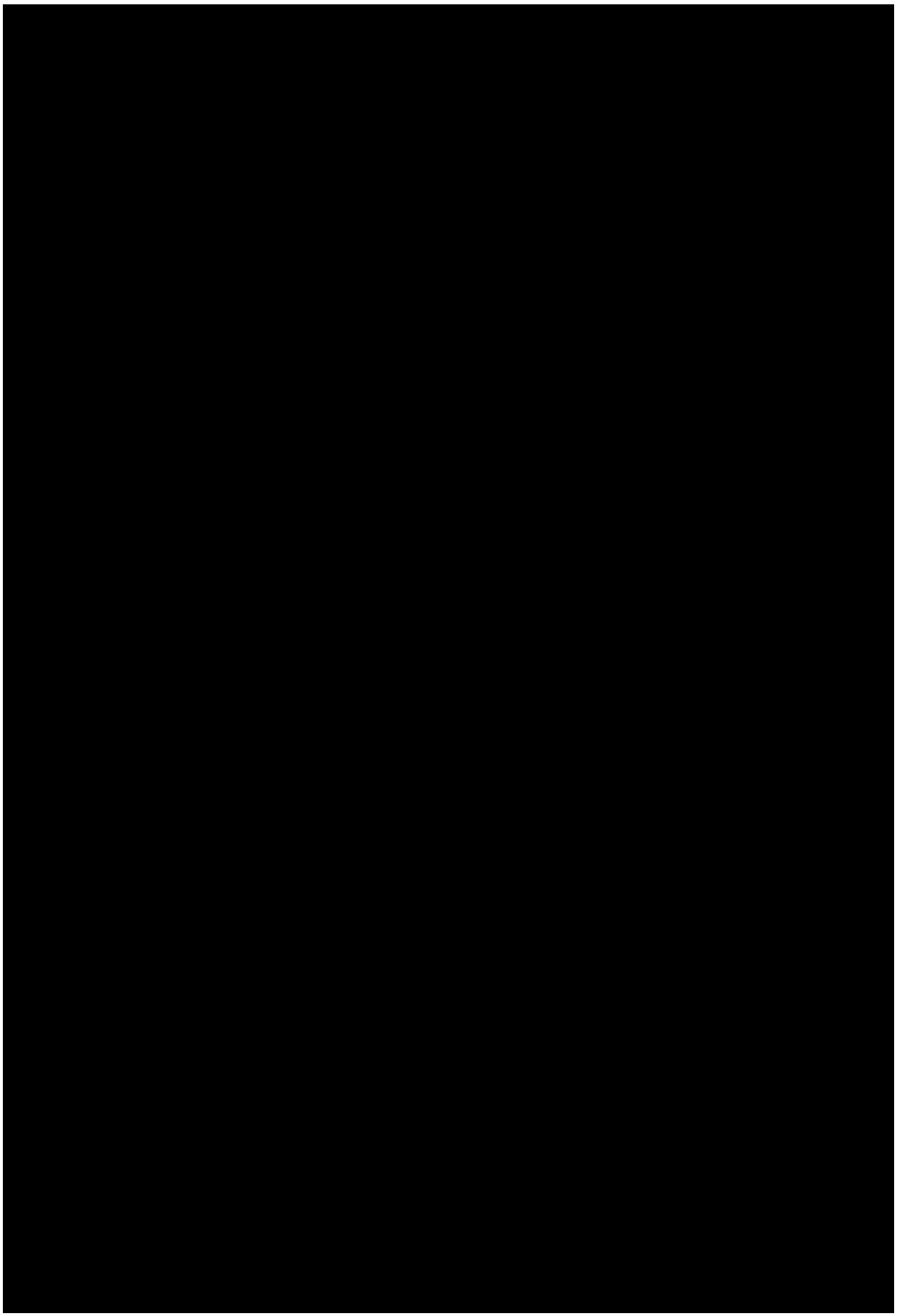


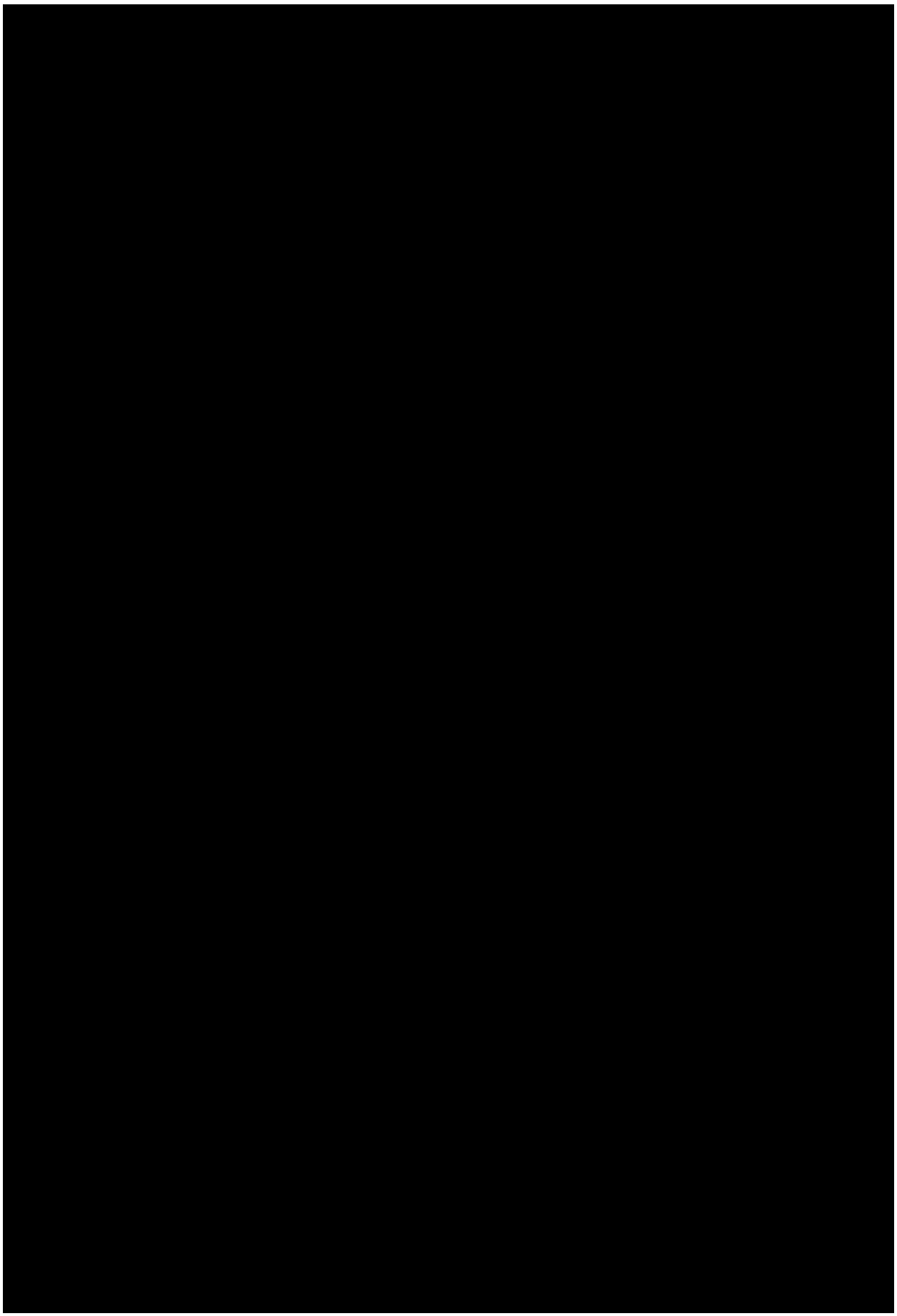


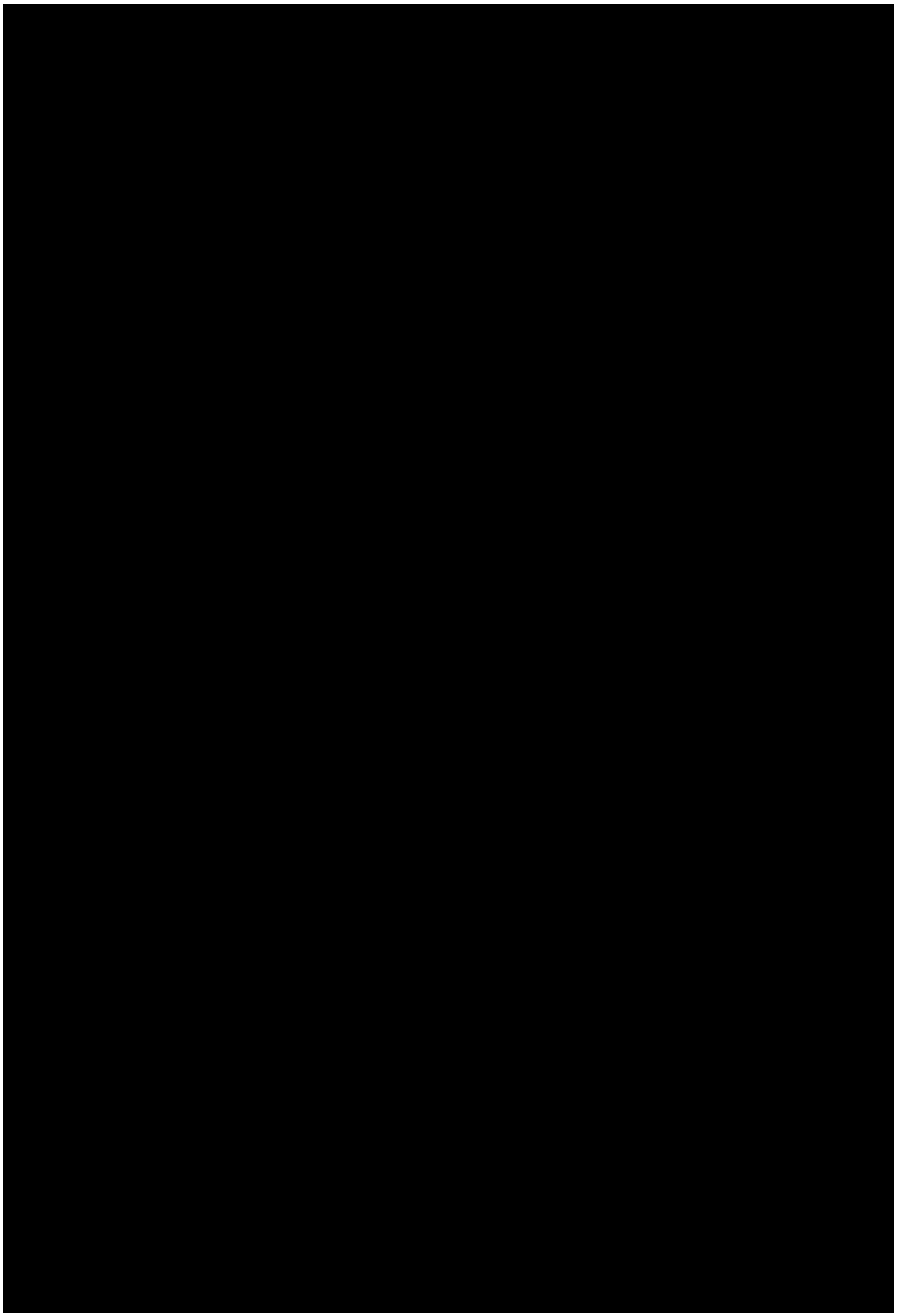


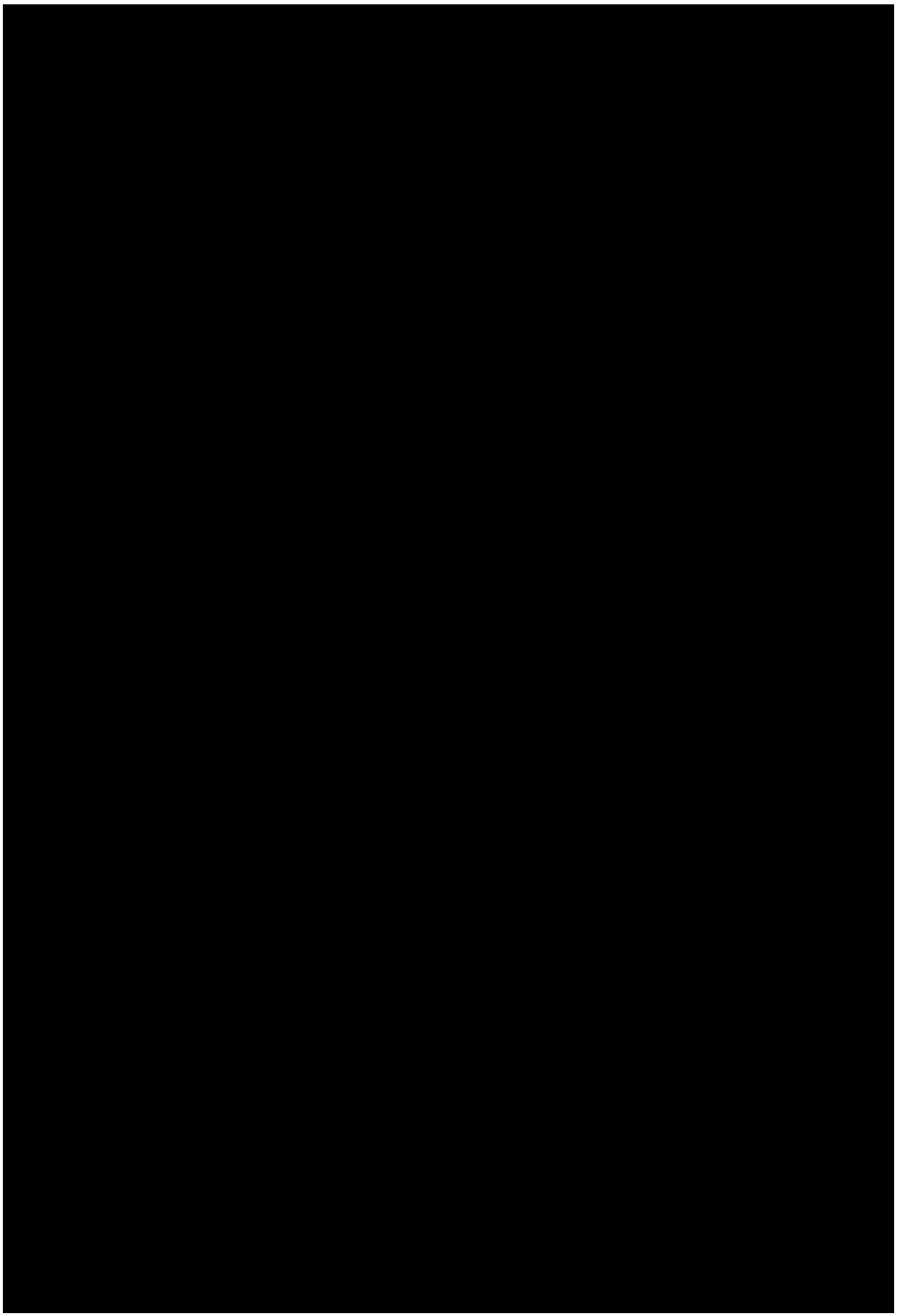


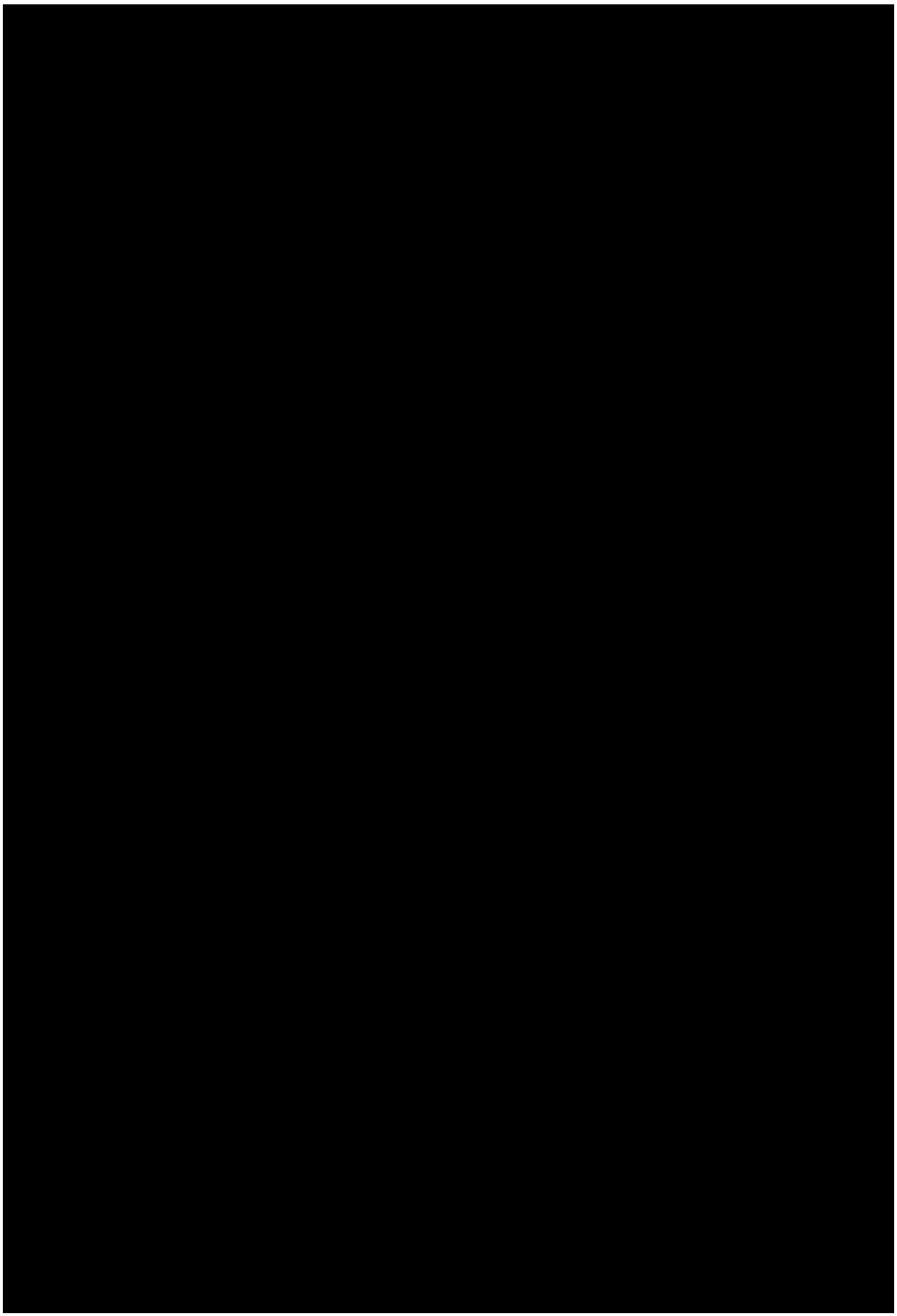


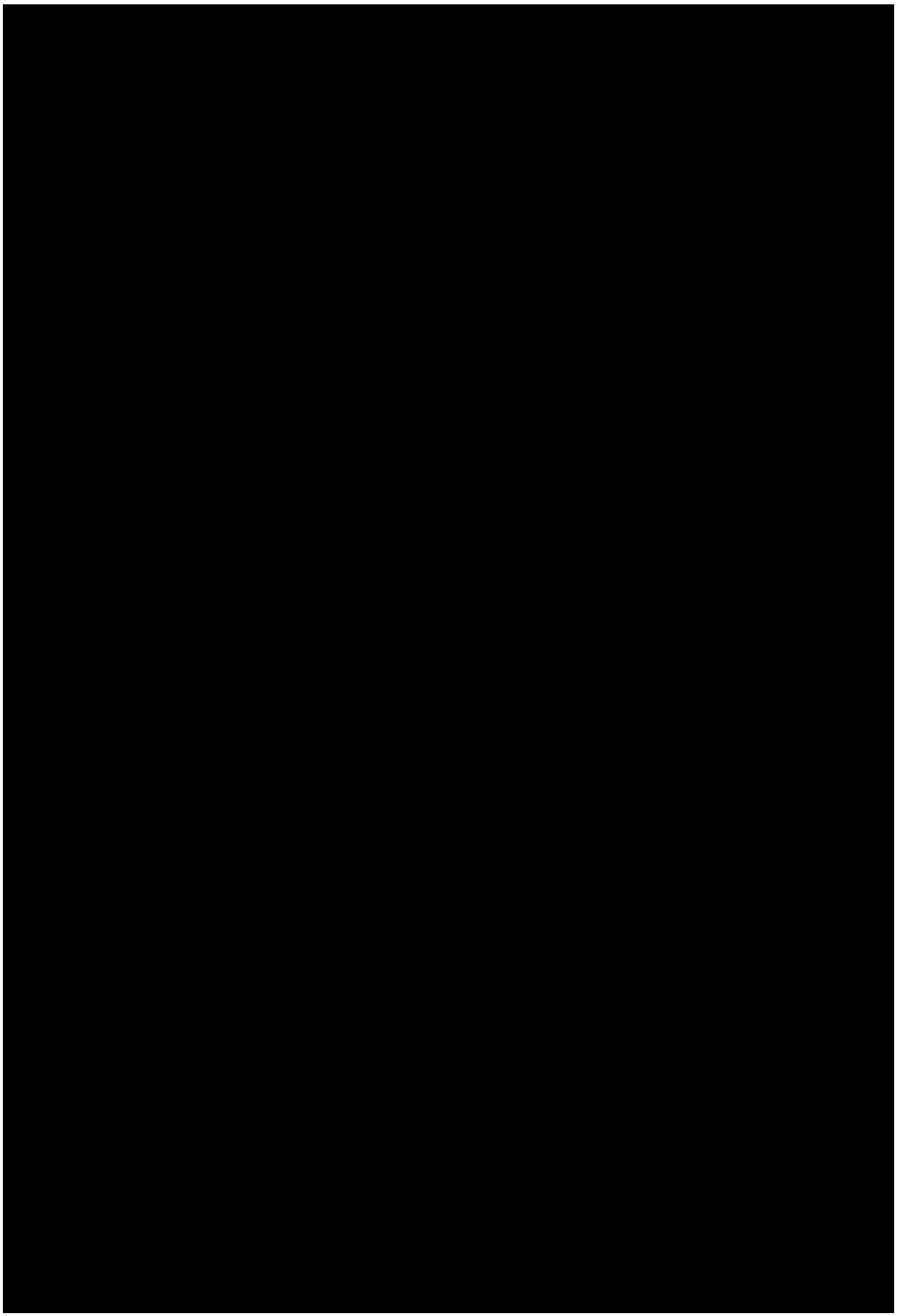


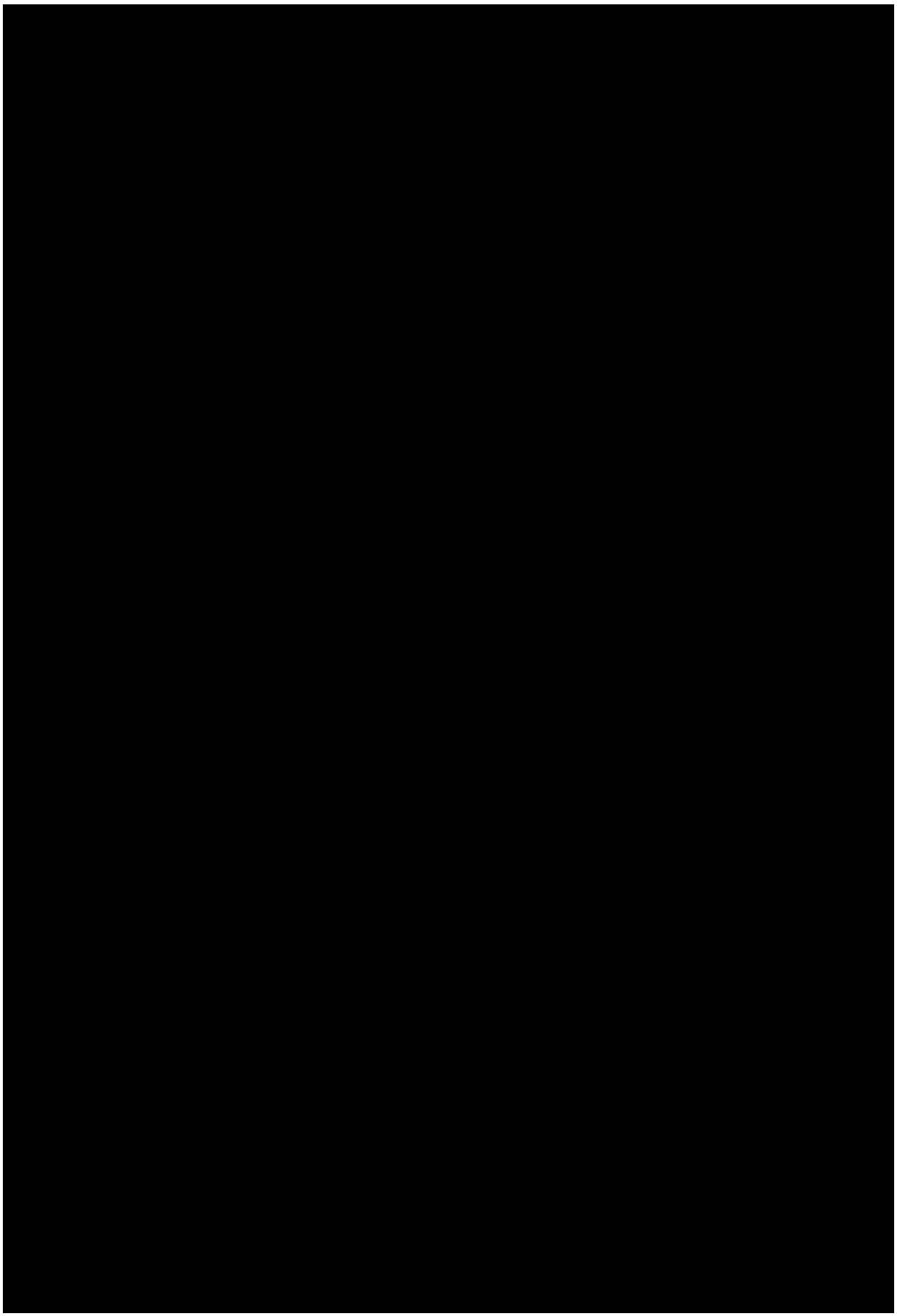


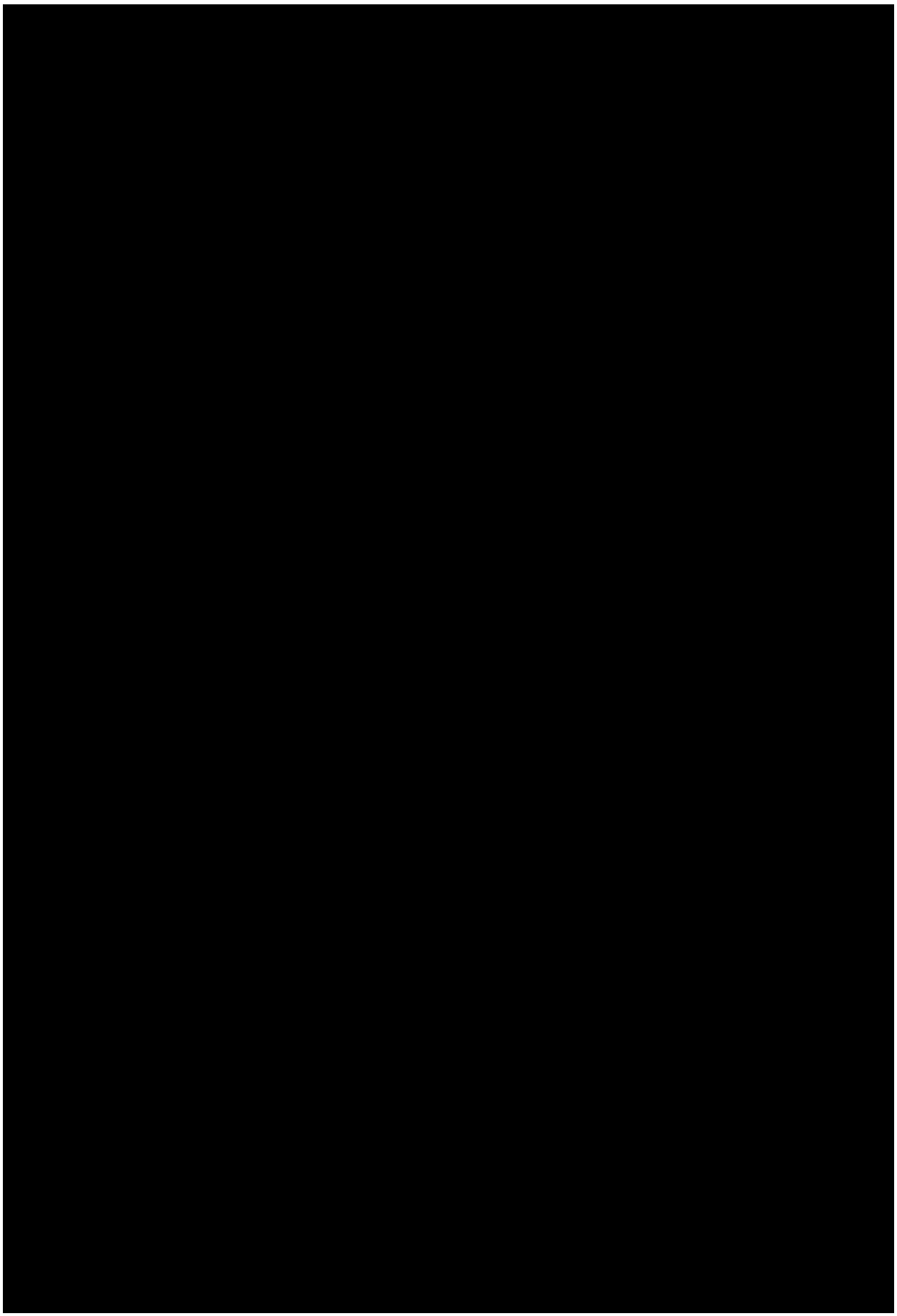


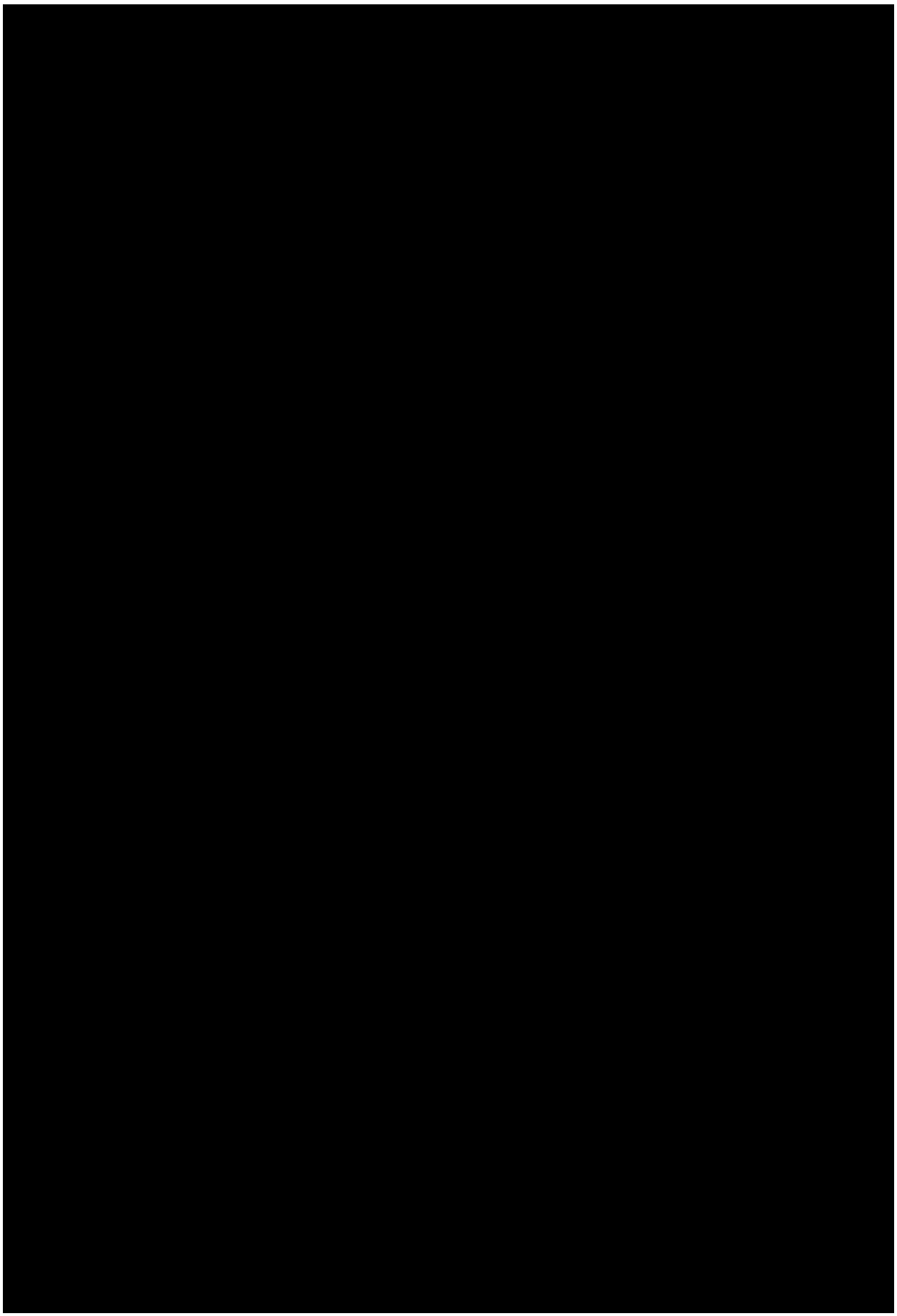


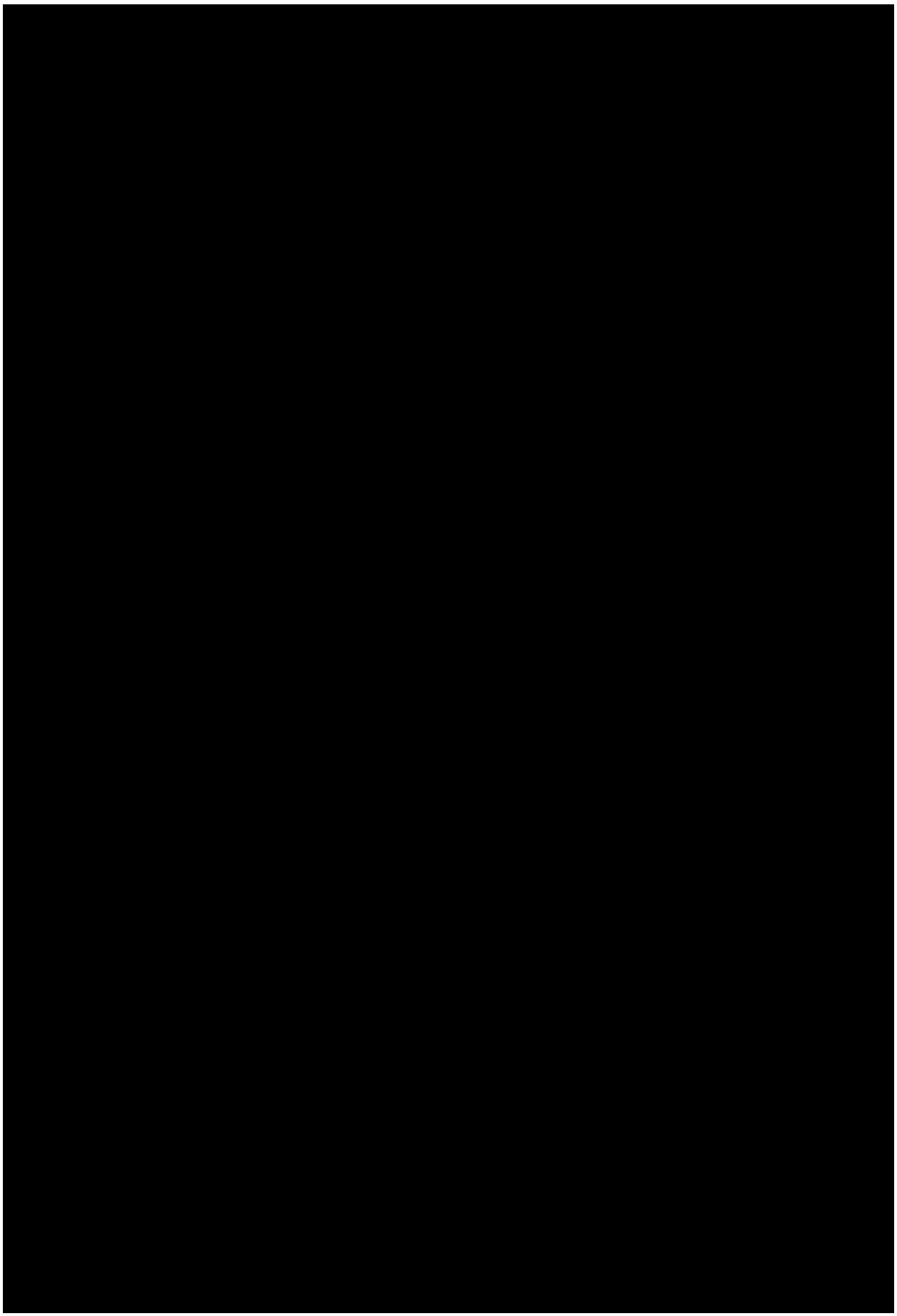


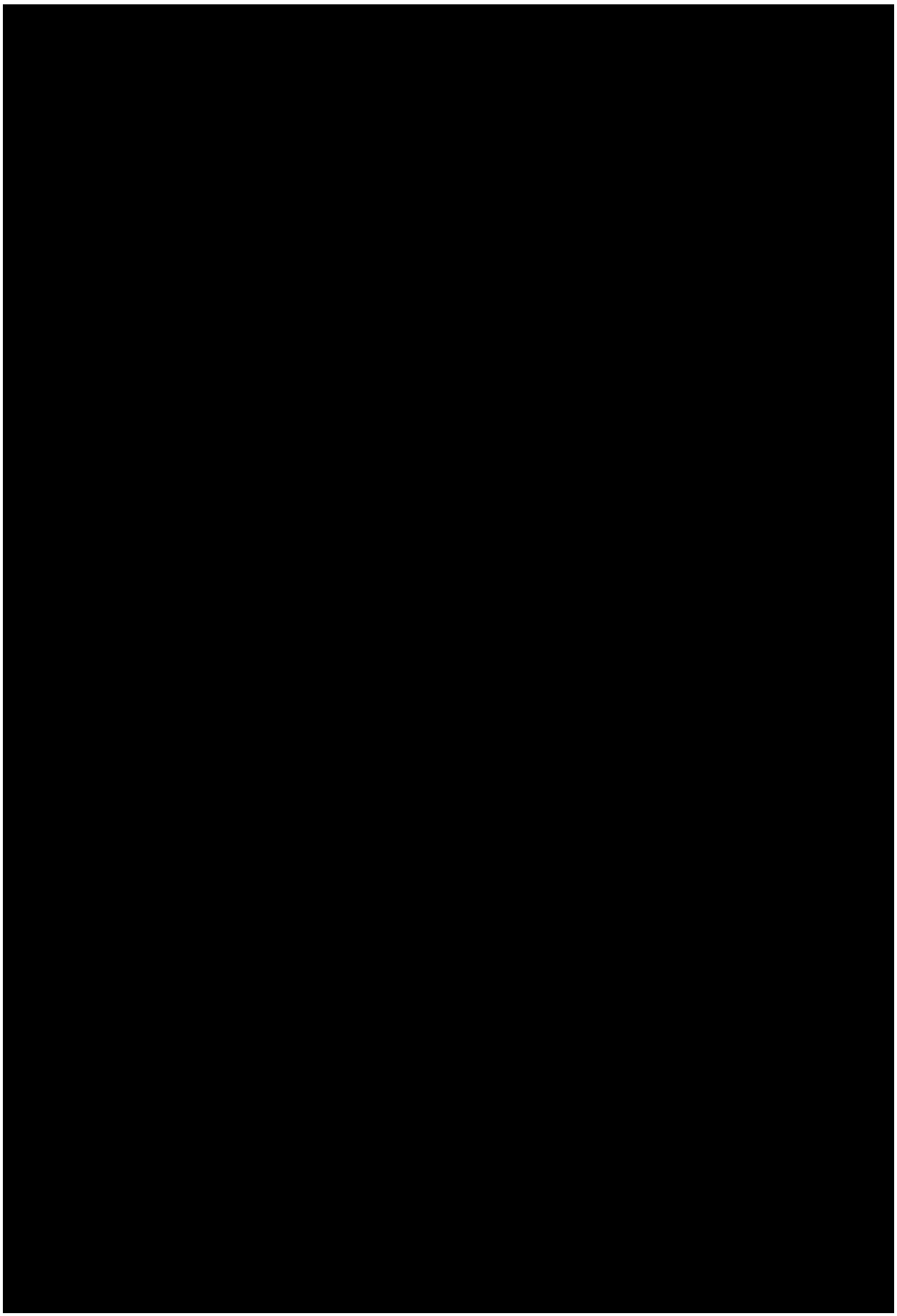


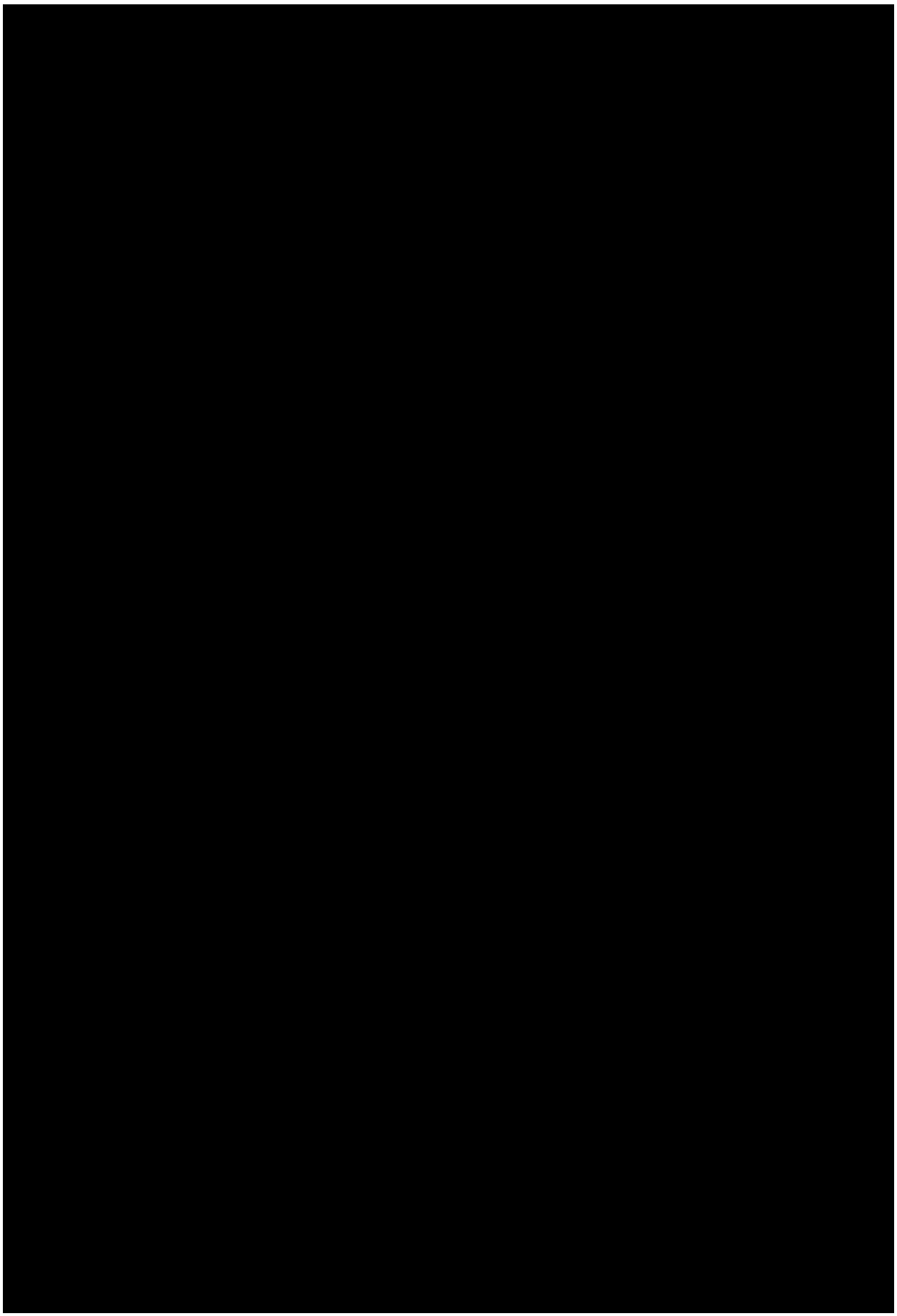






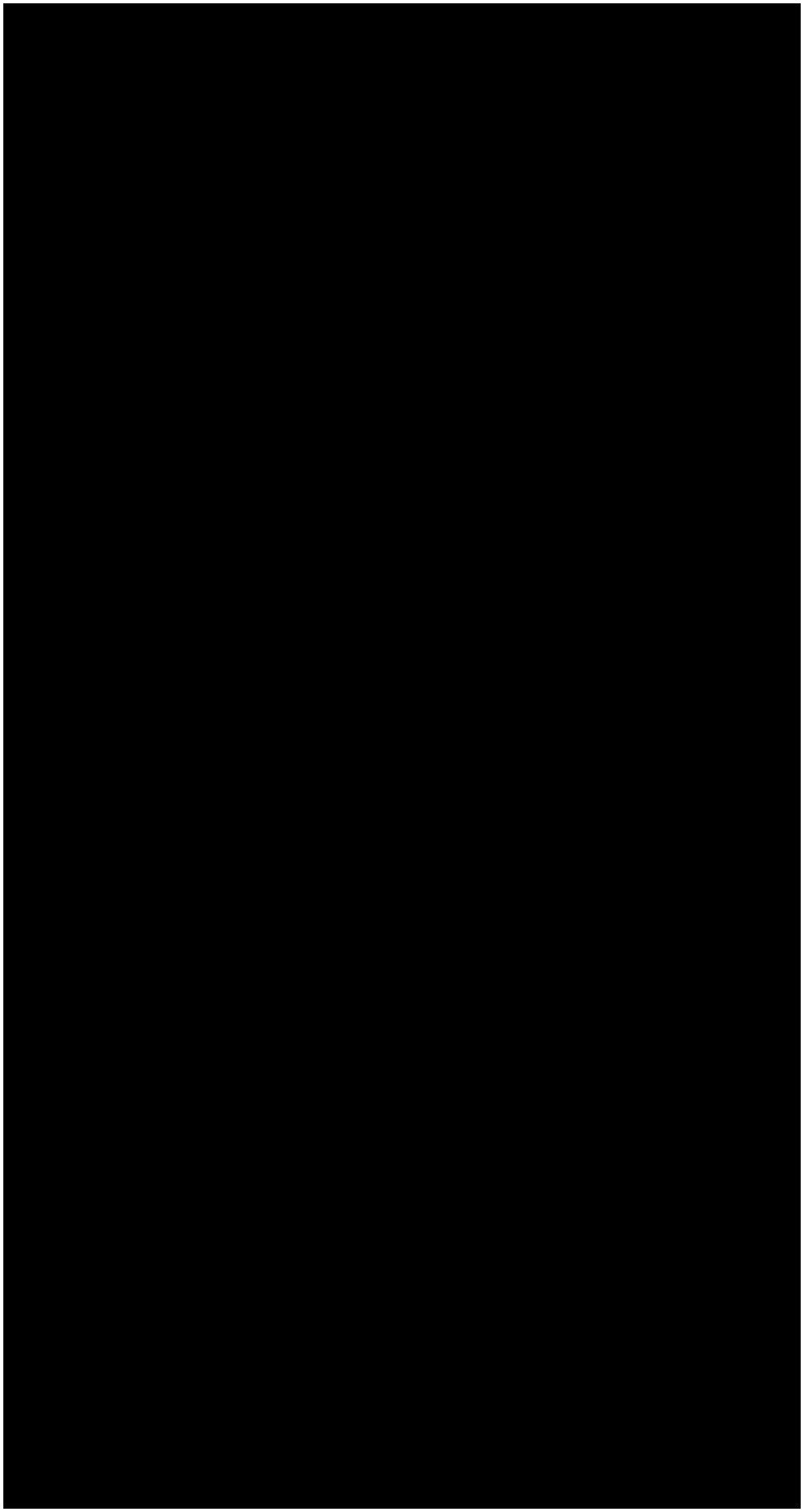


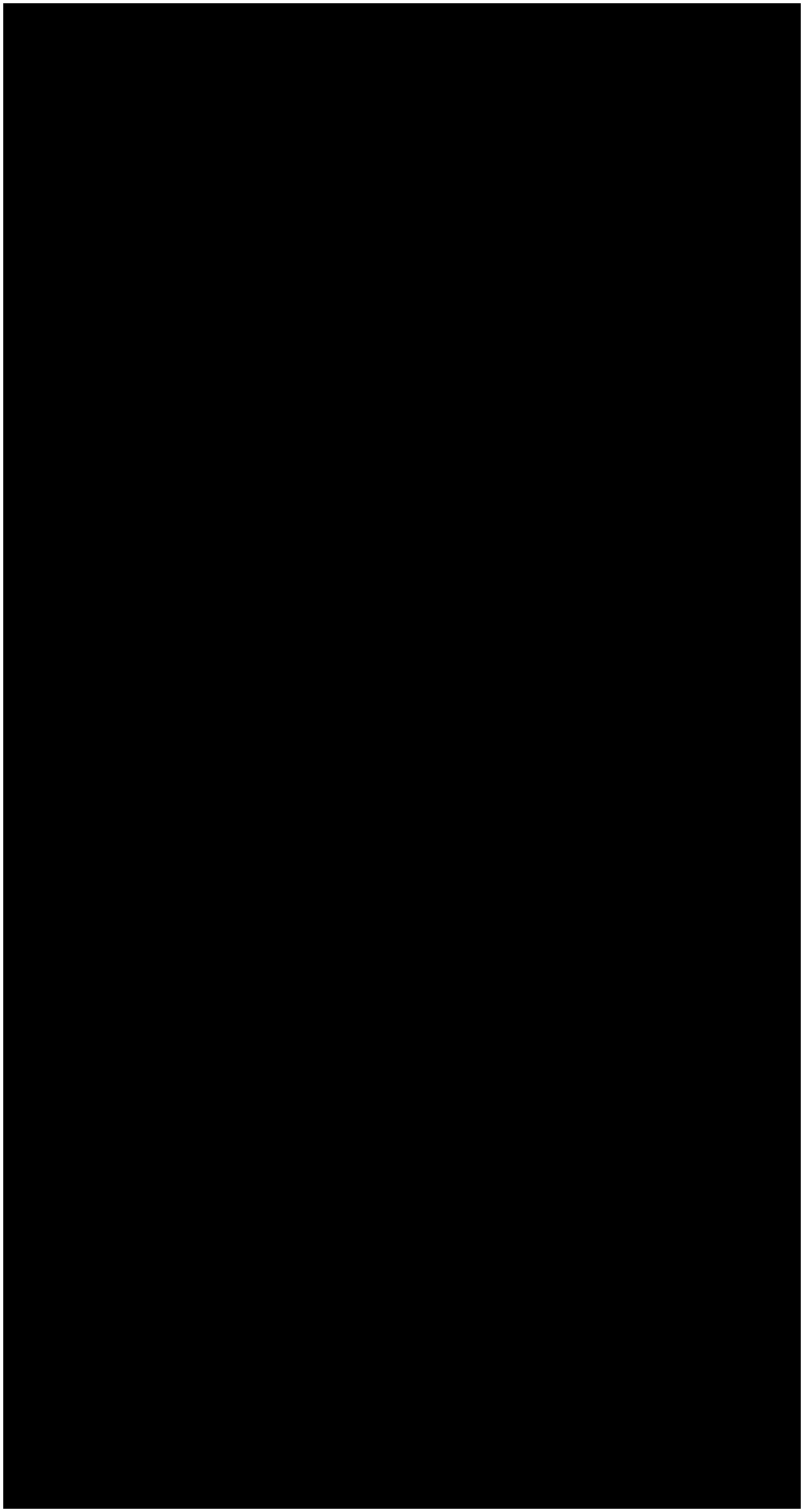


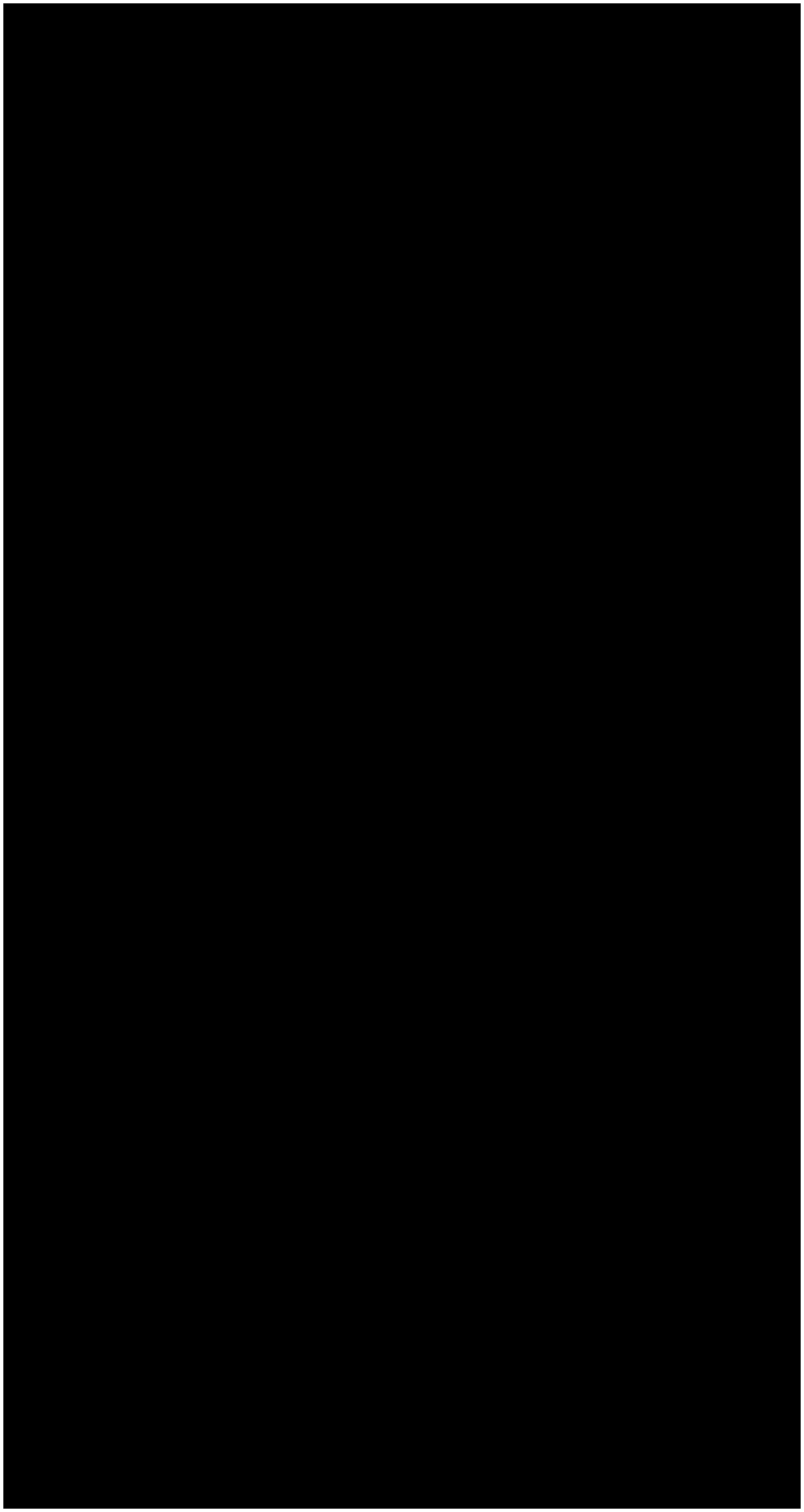


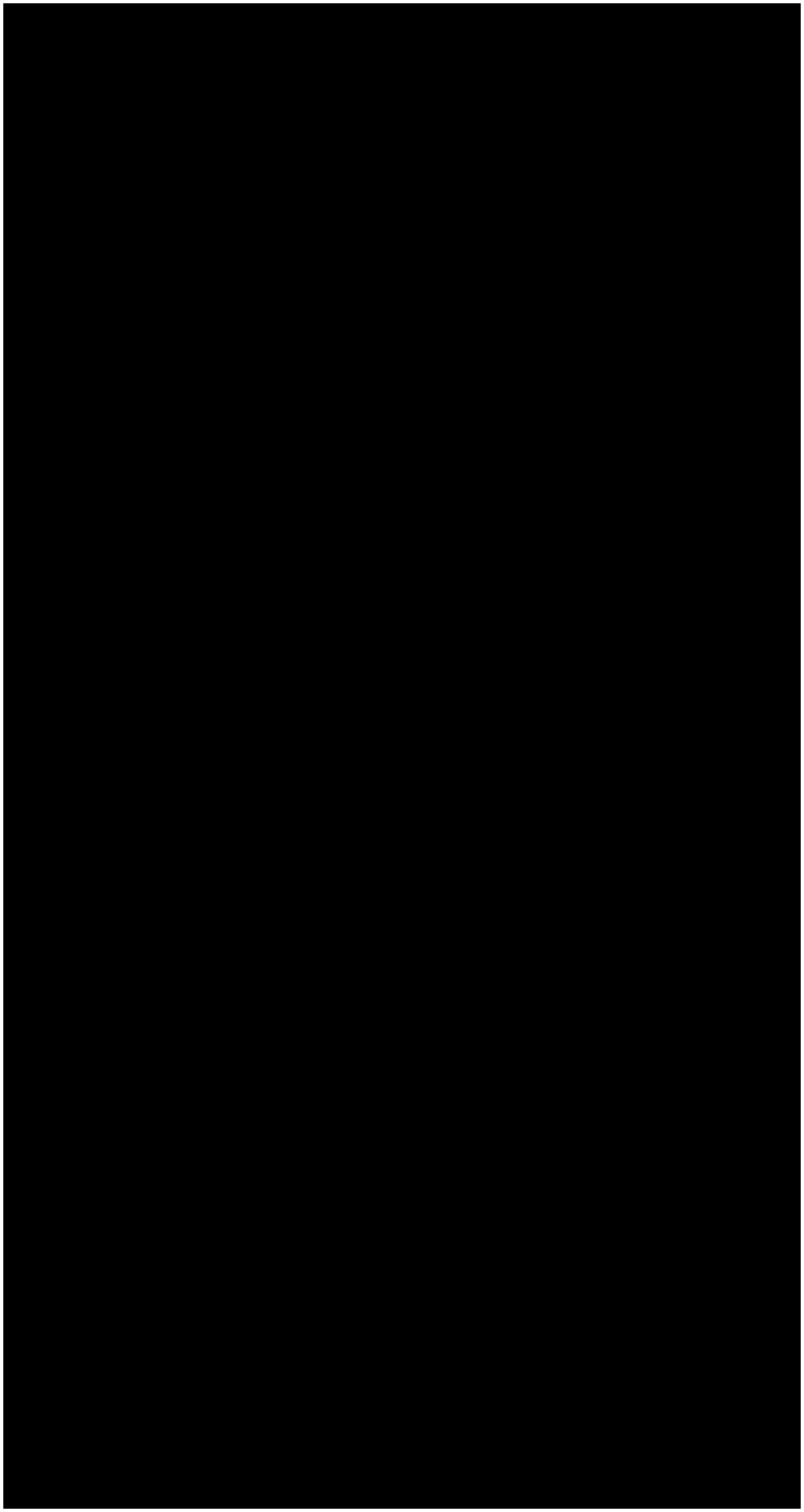


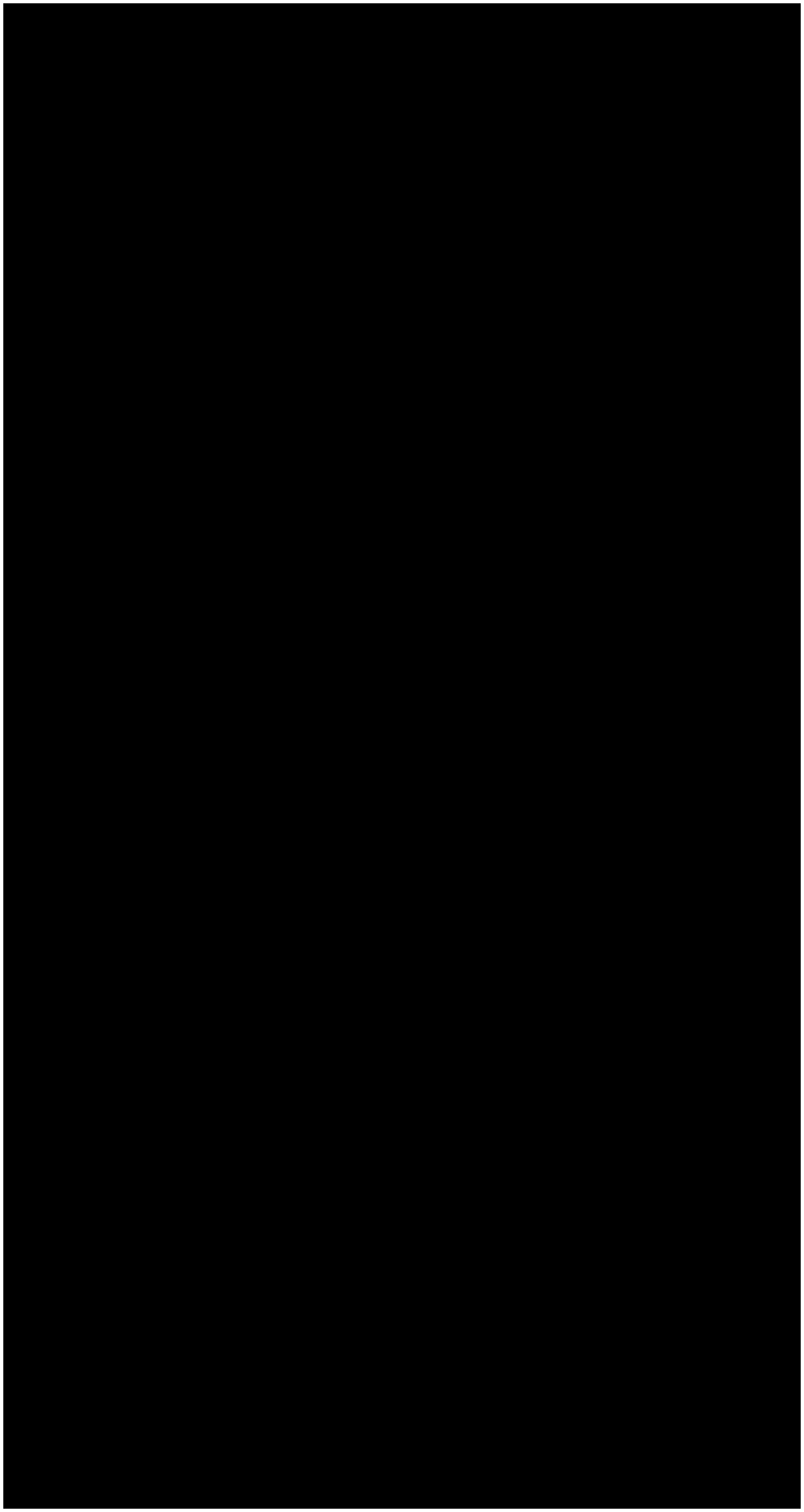
Max Daily T	Quantity D	Build Cost (	Quantity D	x	y	z
[redacted]						

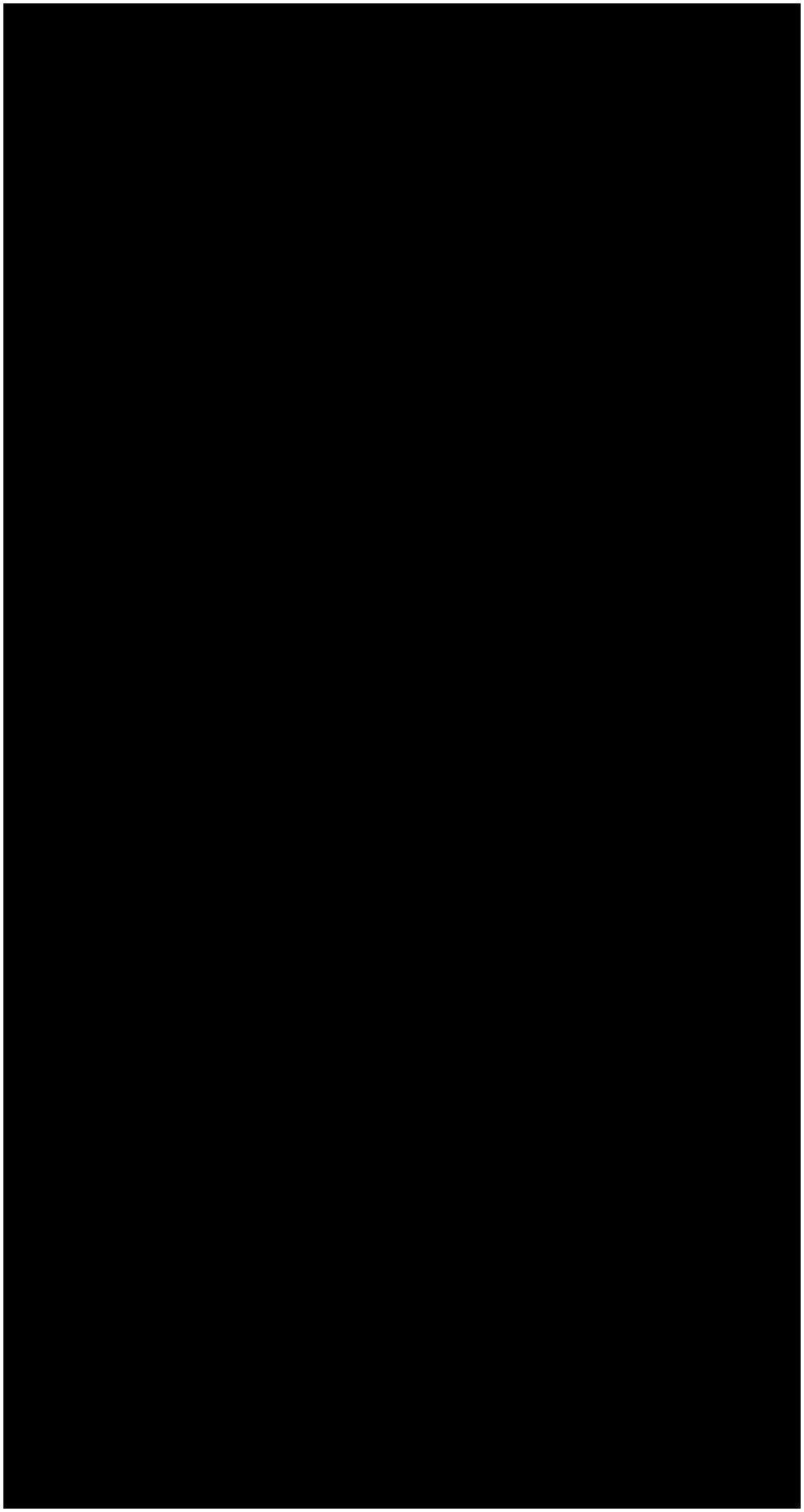


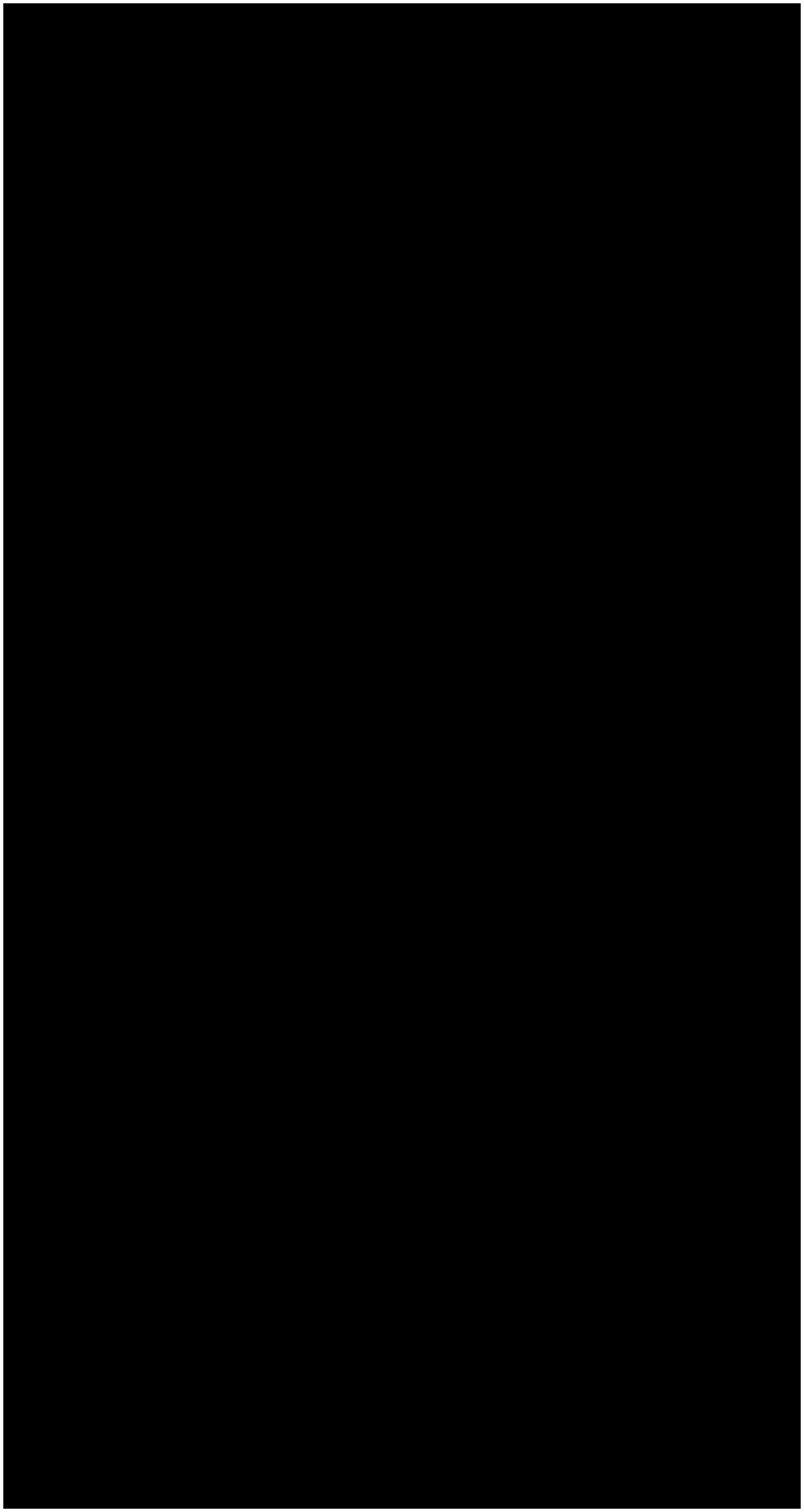


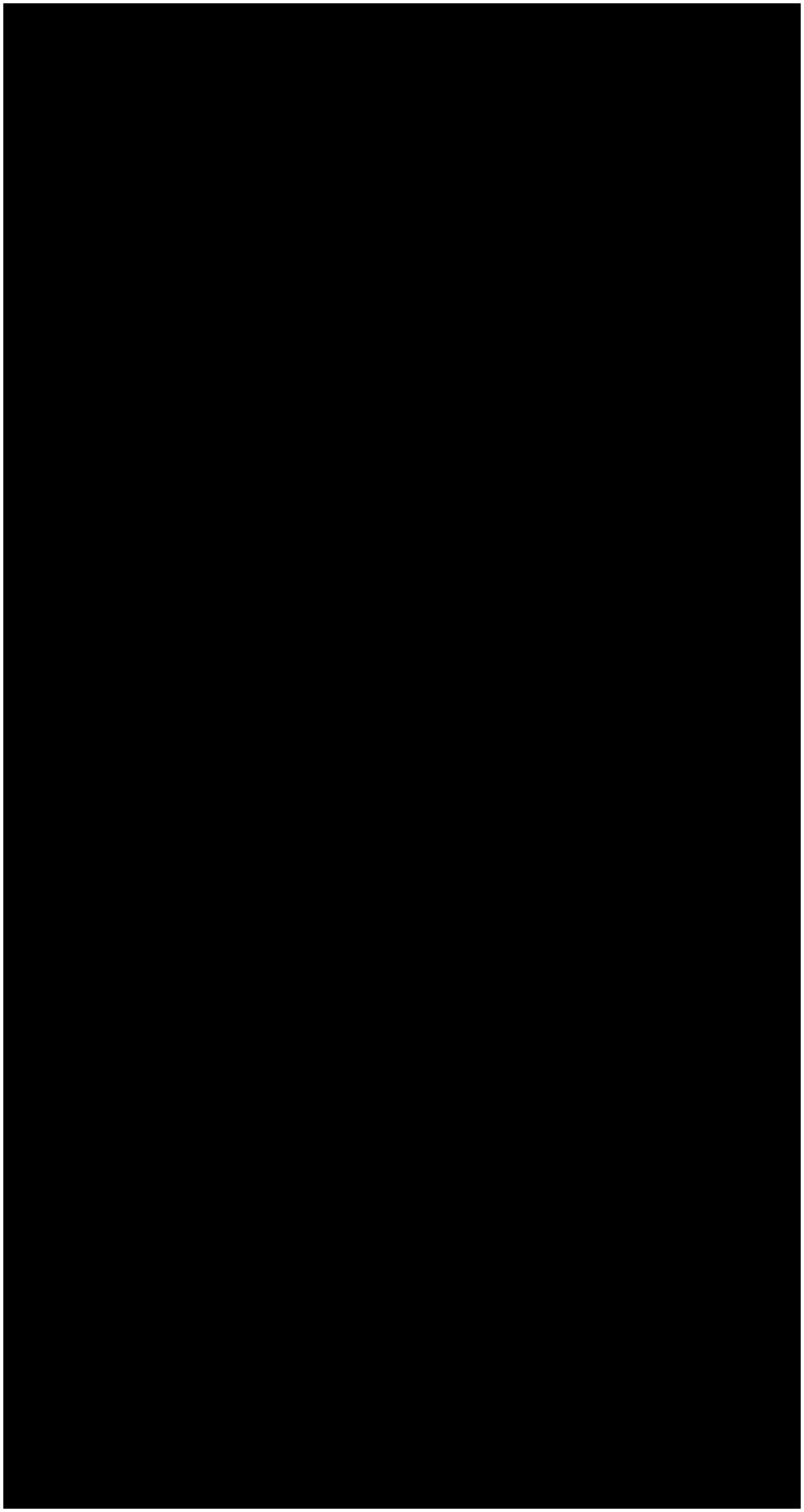


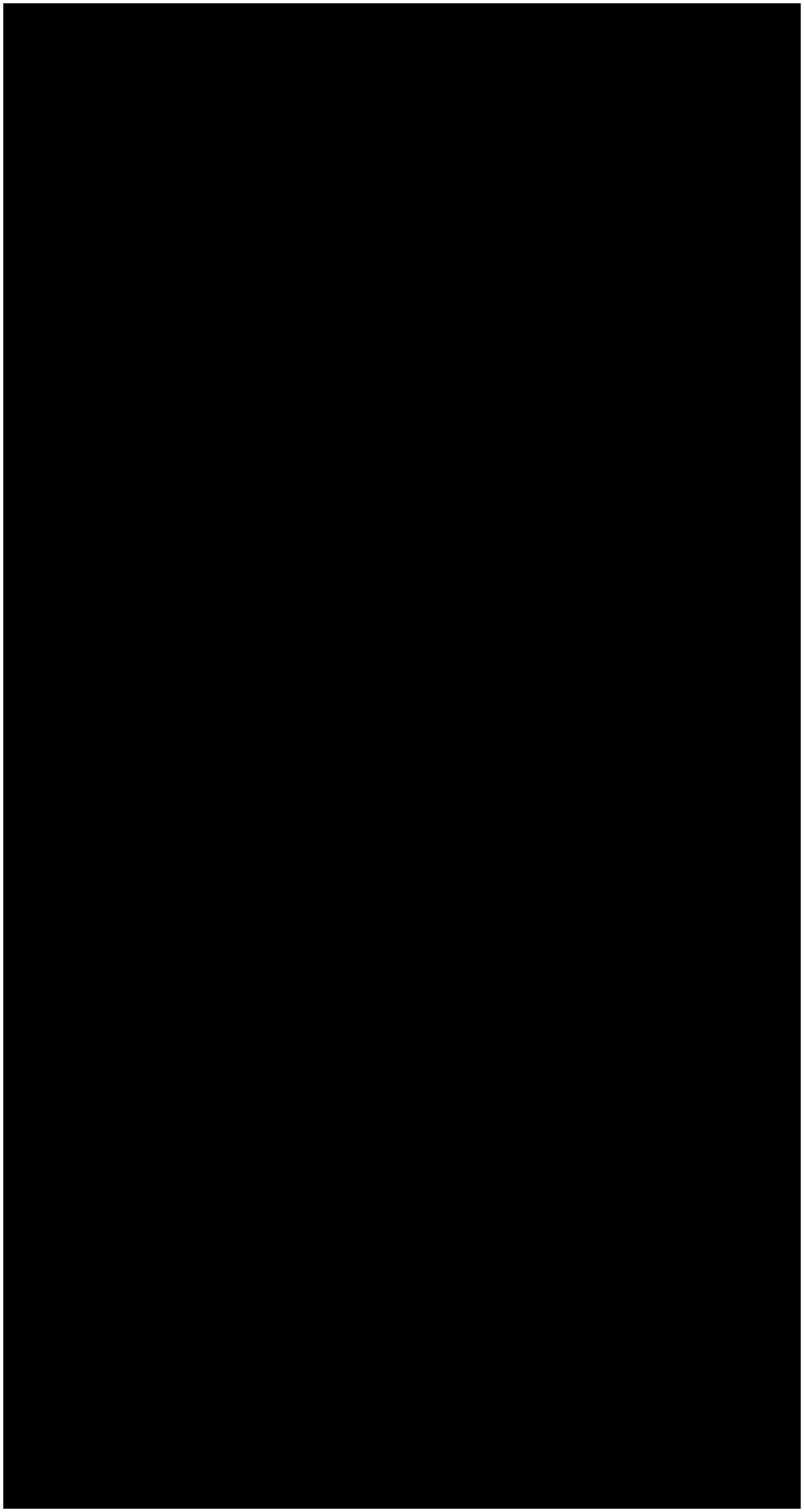


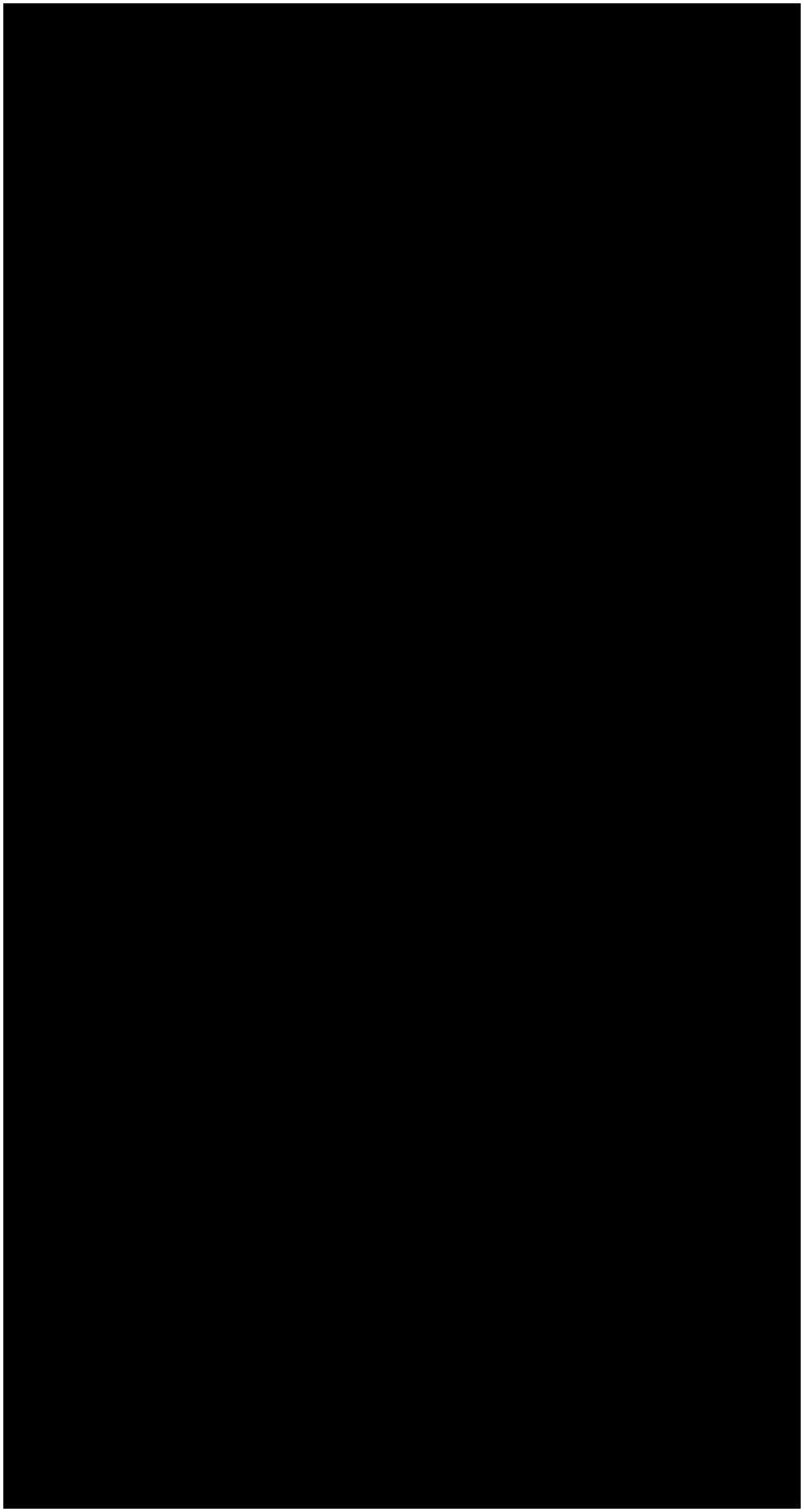


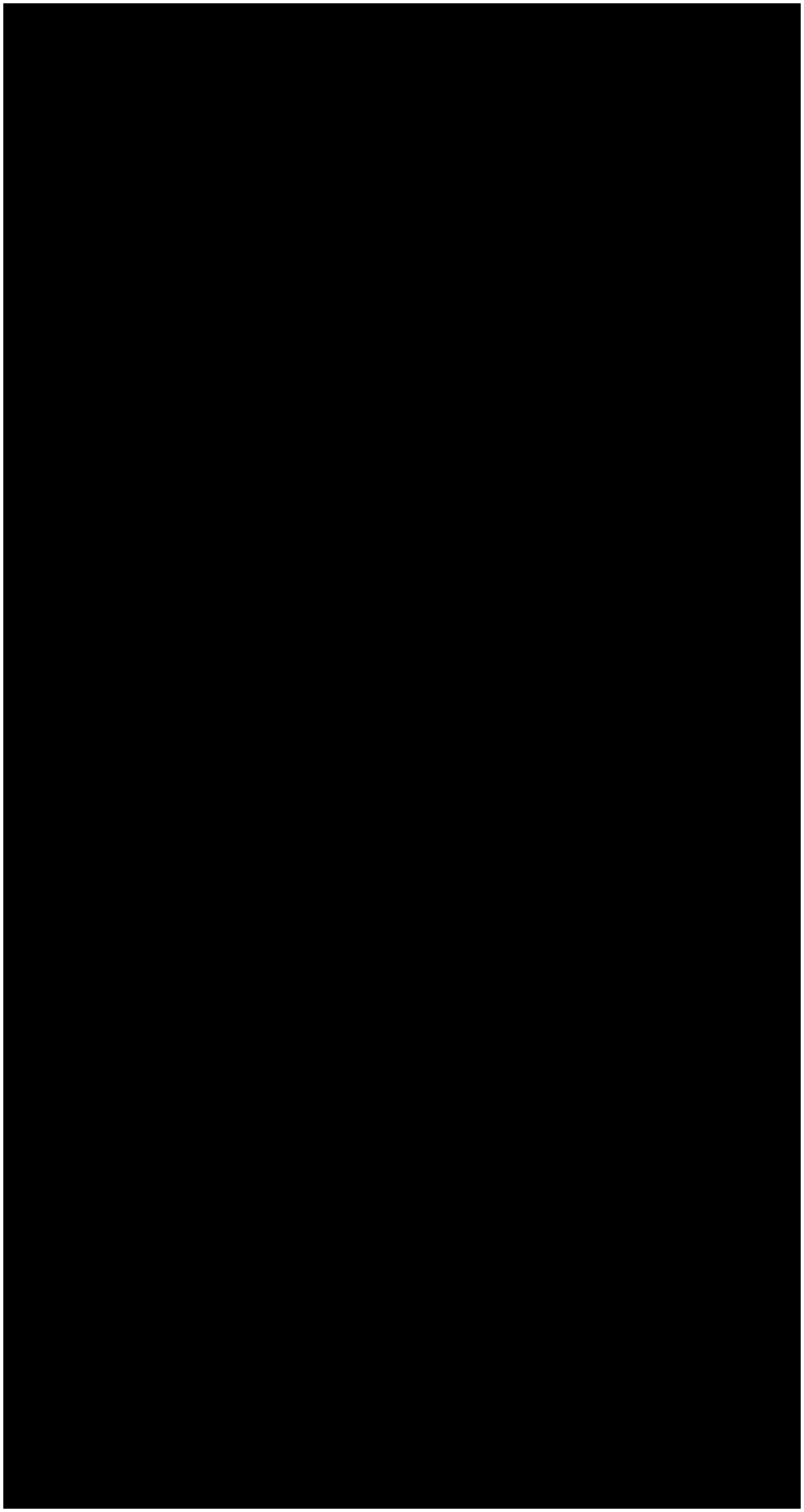


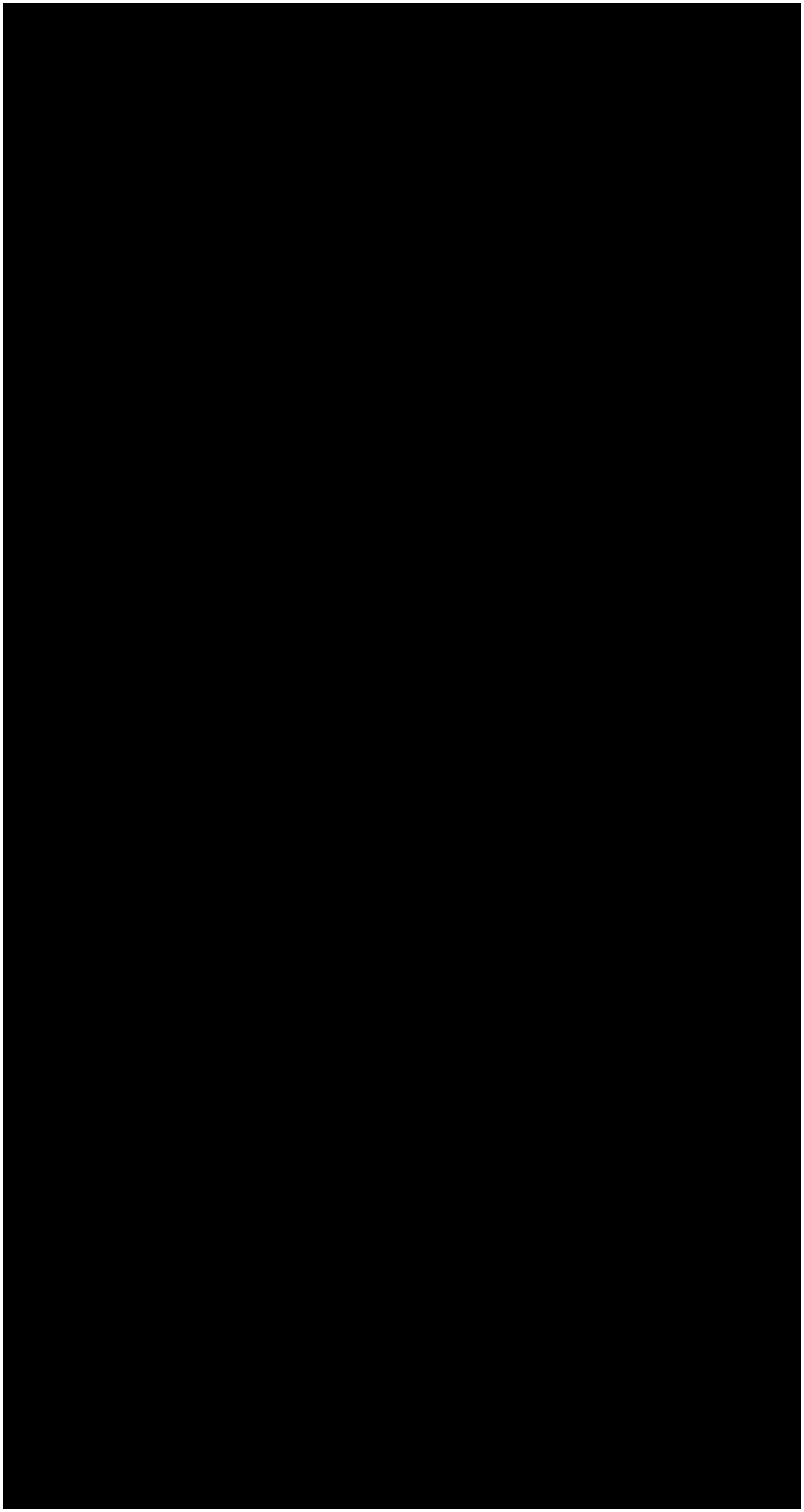


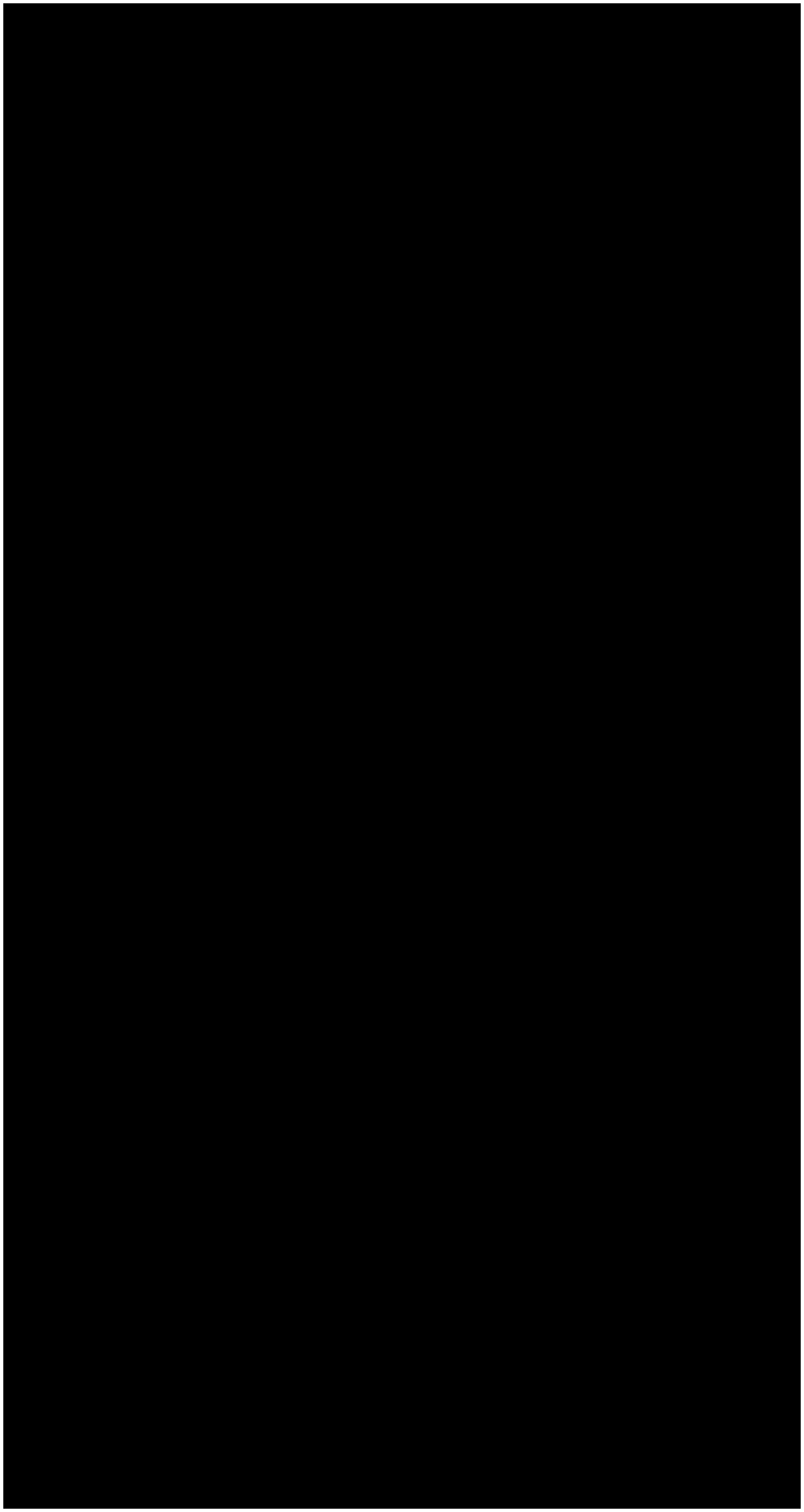


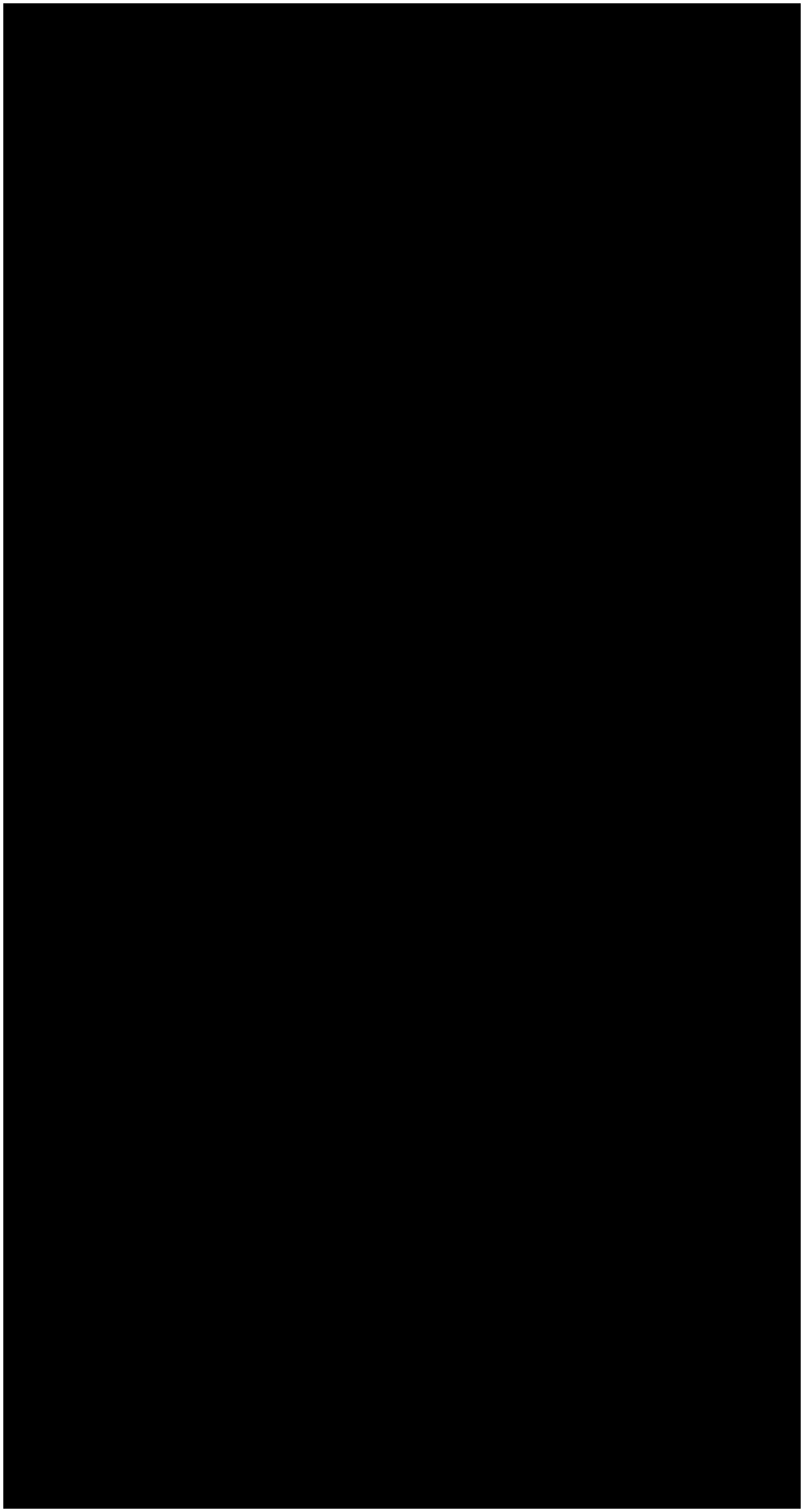


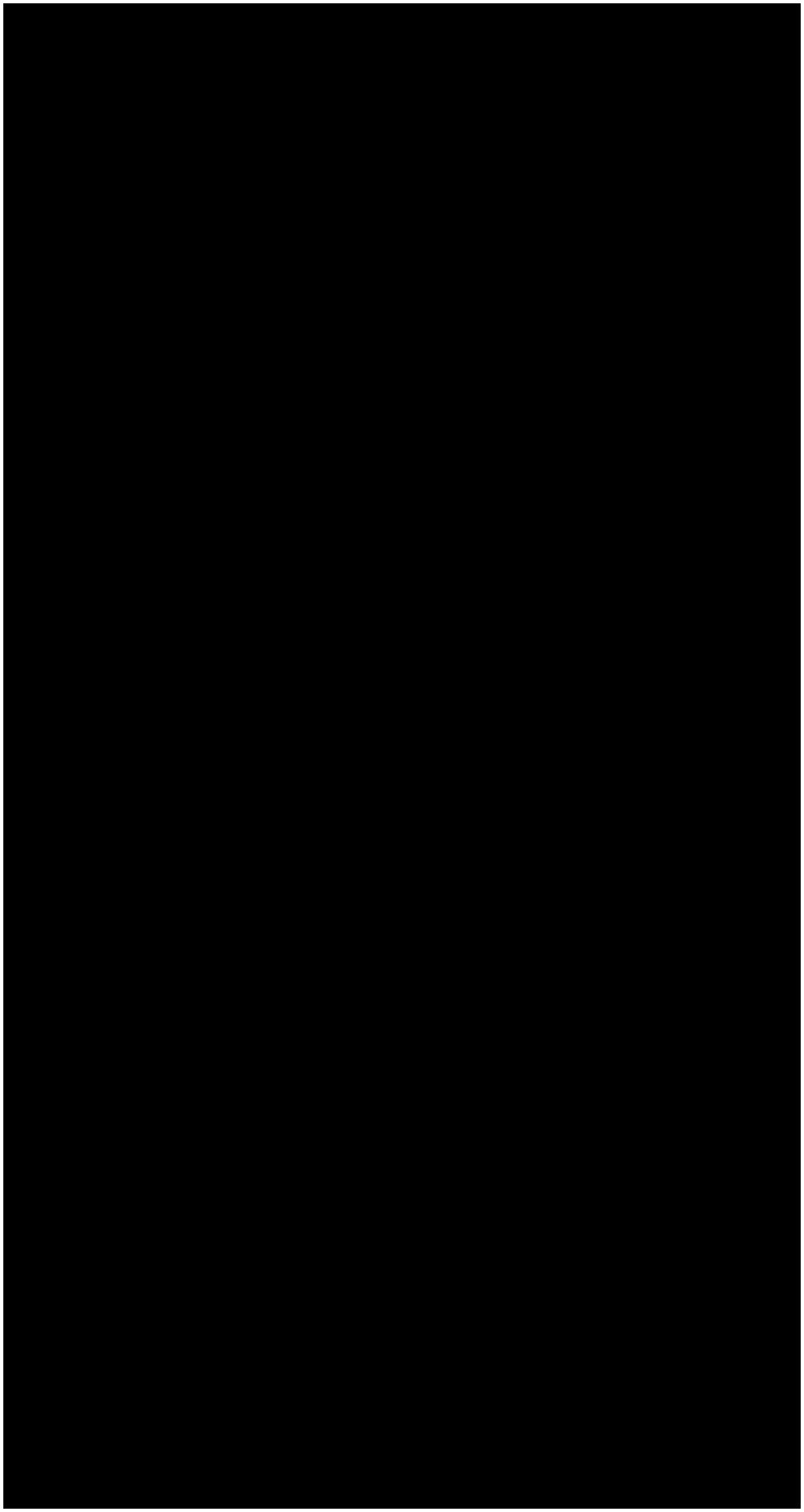


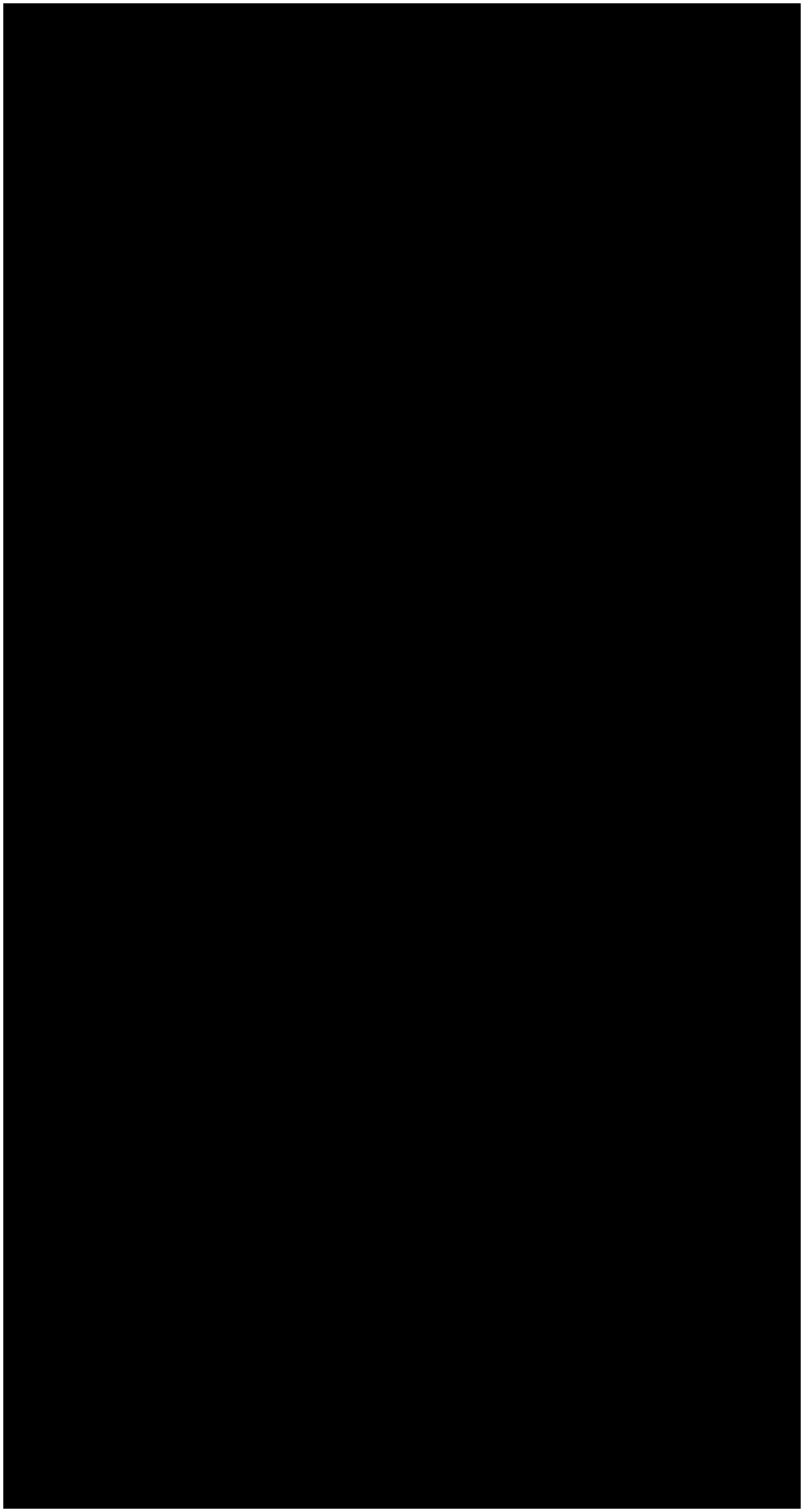


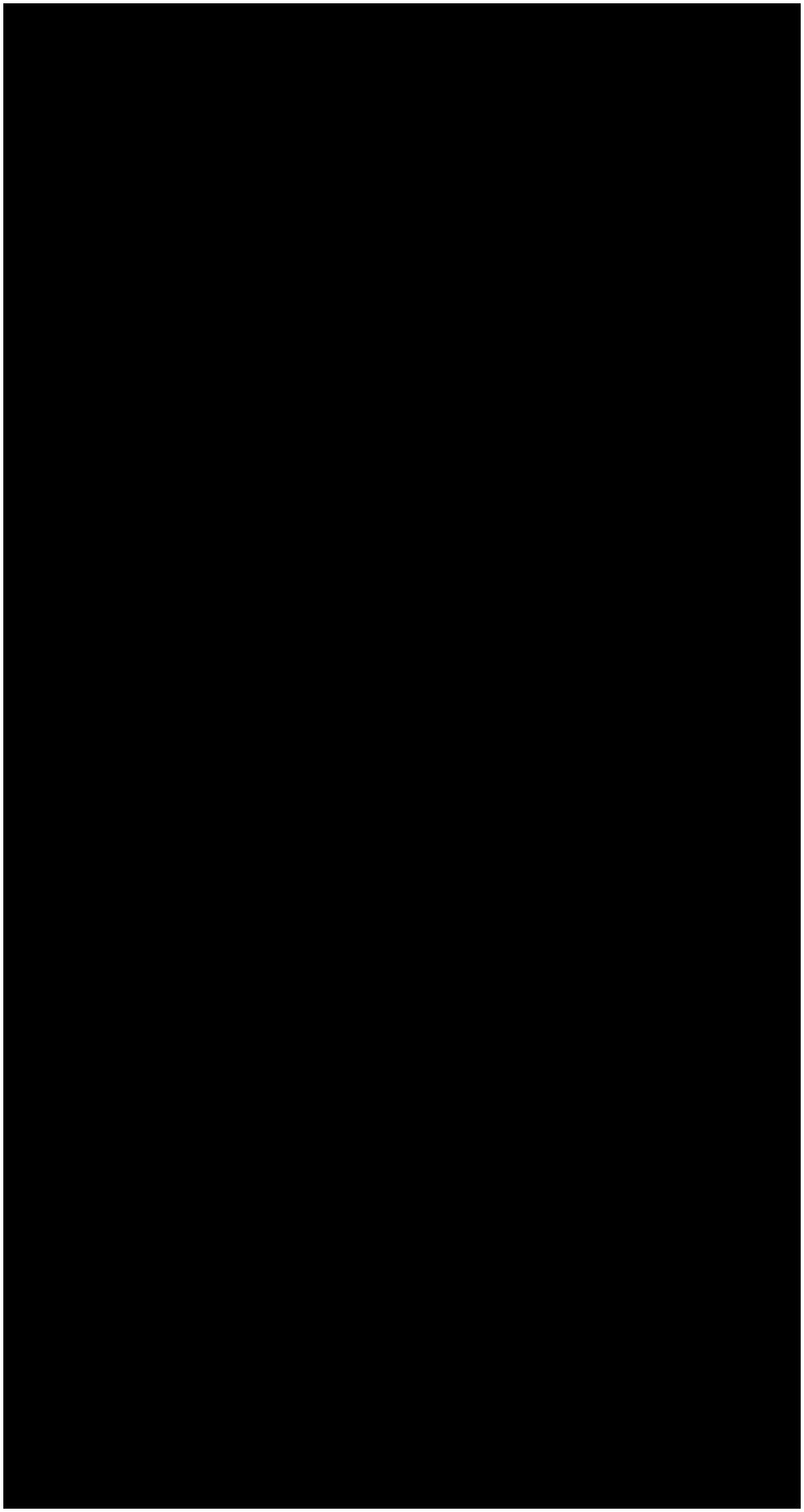


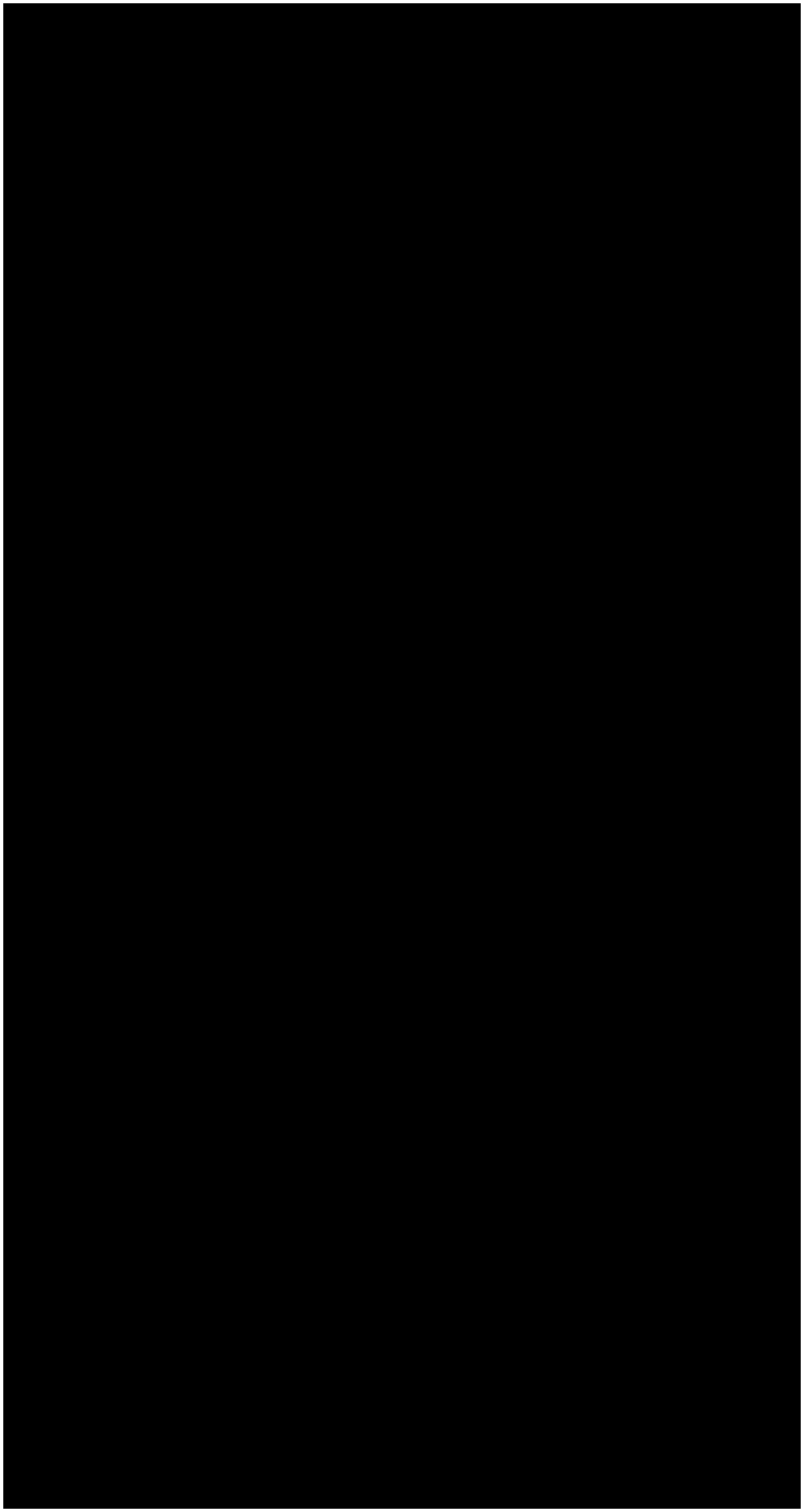














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
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Apr-27											
May-27											
Jun-27											
Jul-27											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
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Aug-25											
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Jan-26											
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Oct-28											

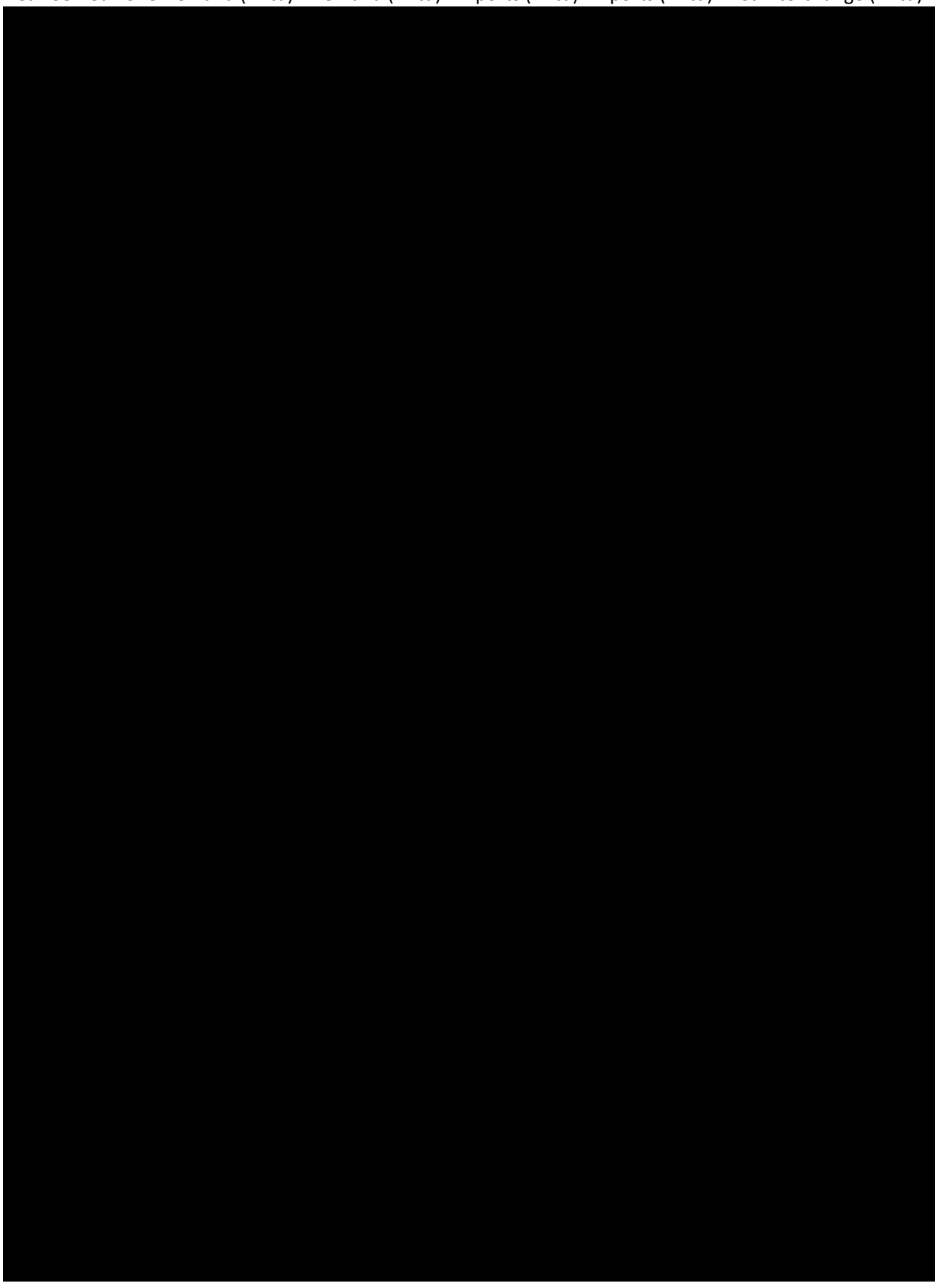
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





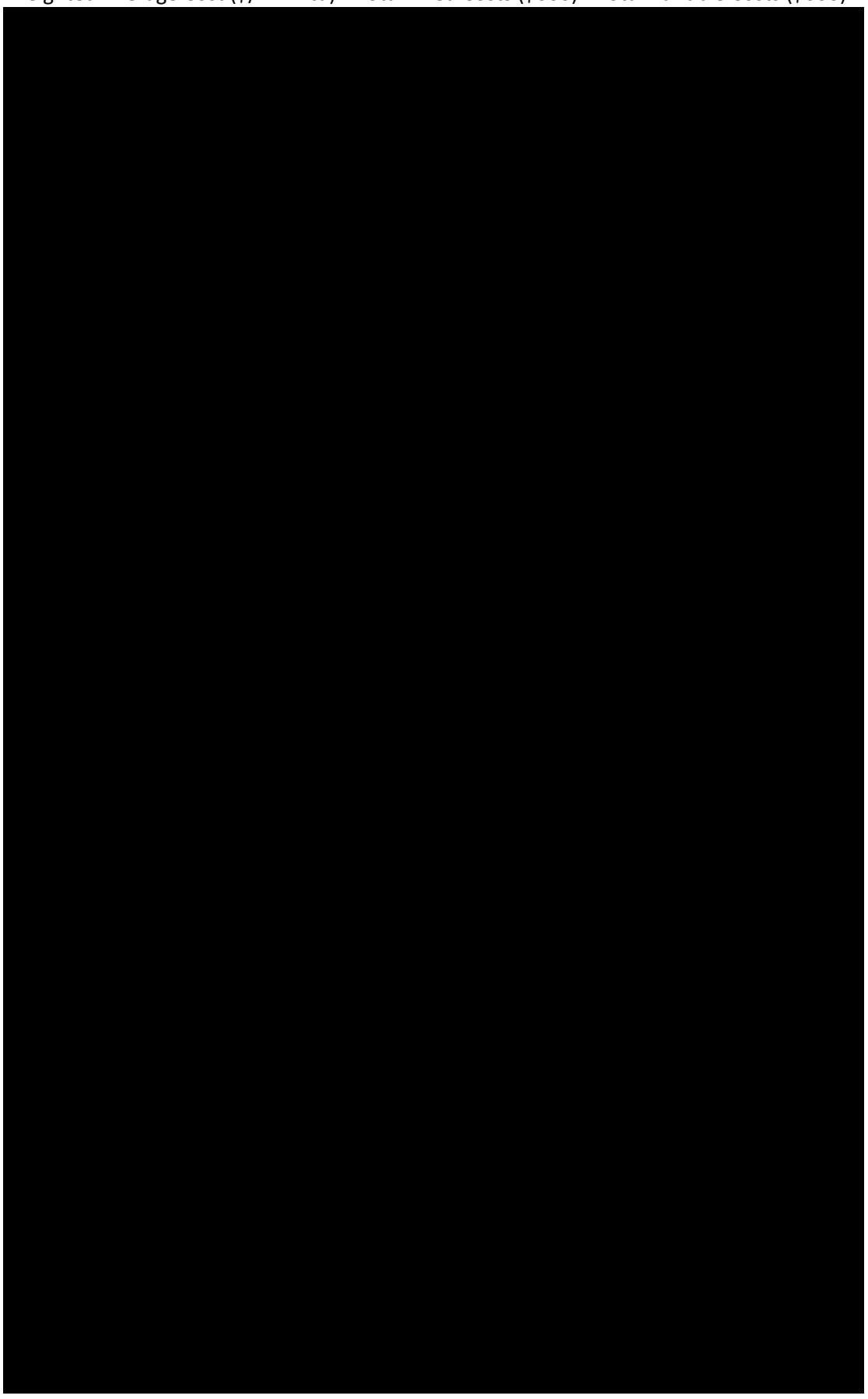
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

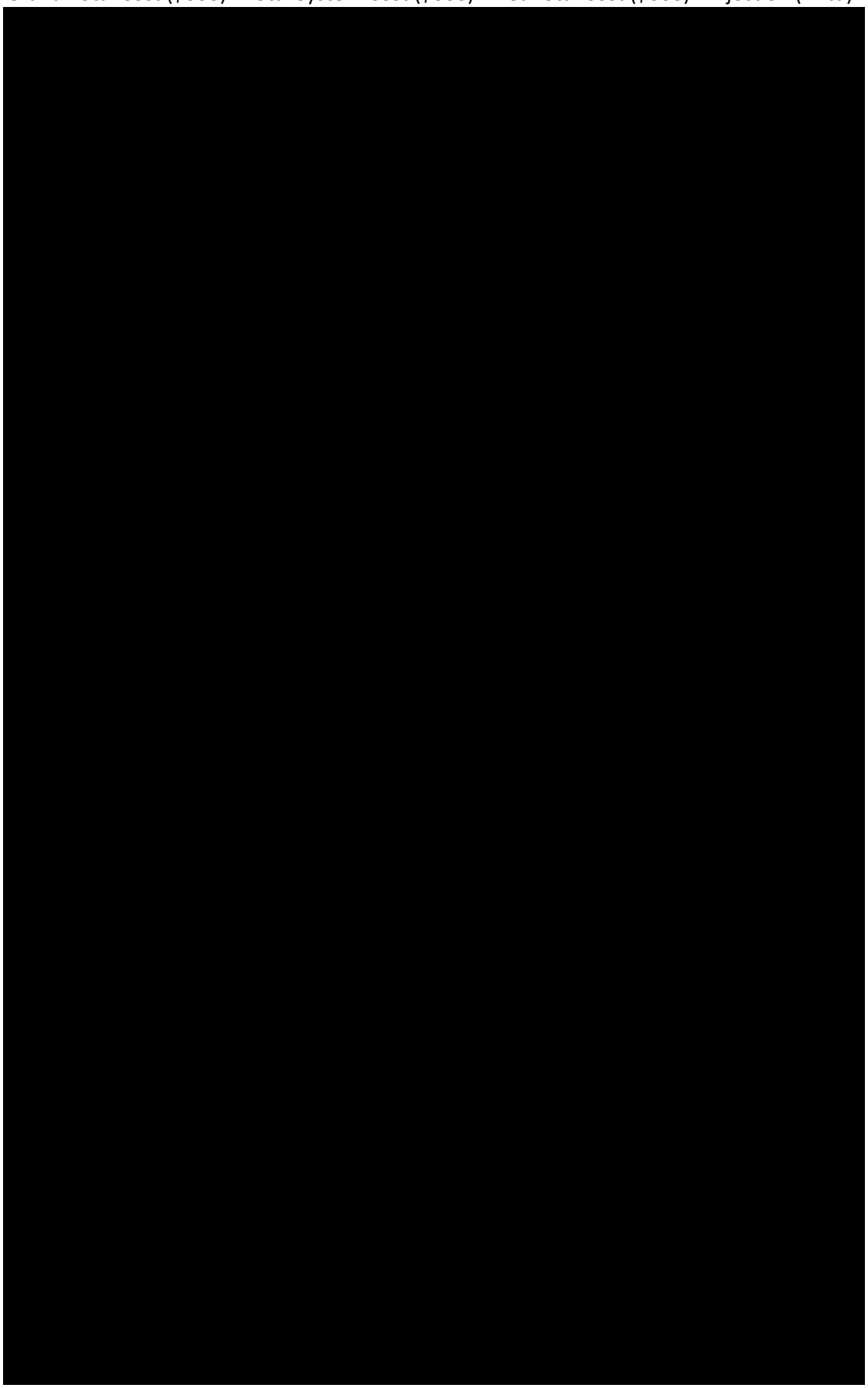


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

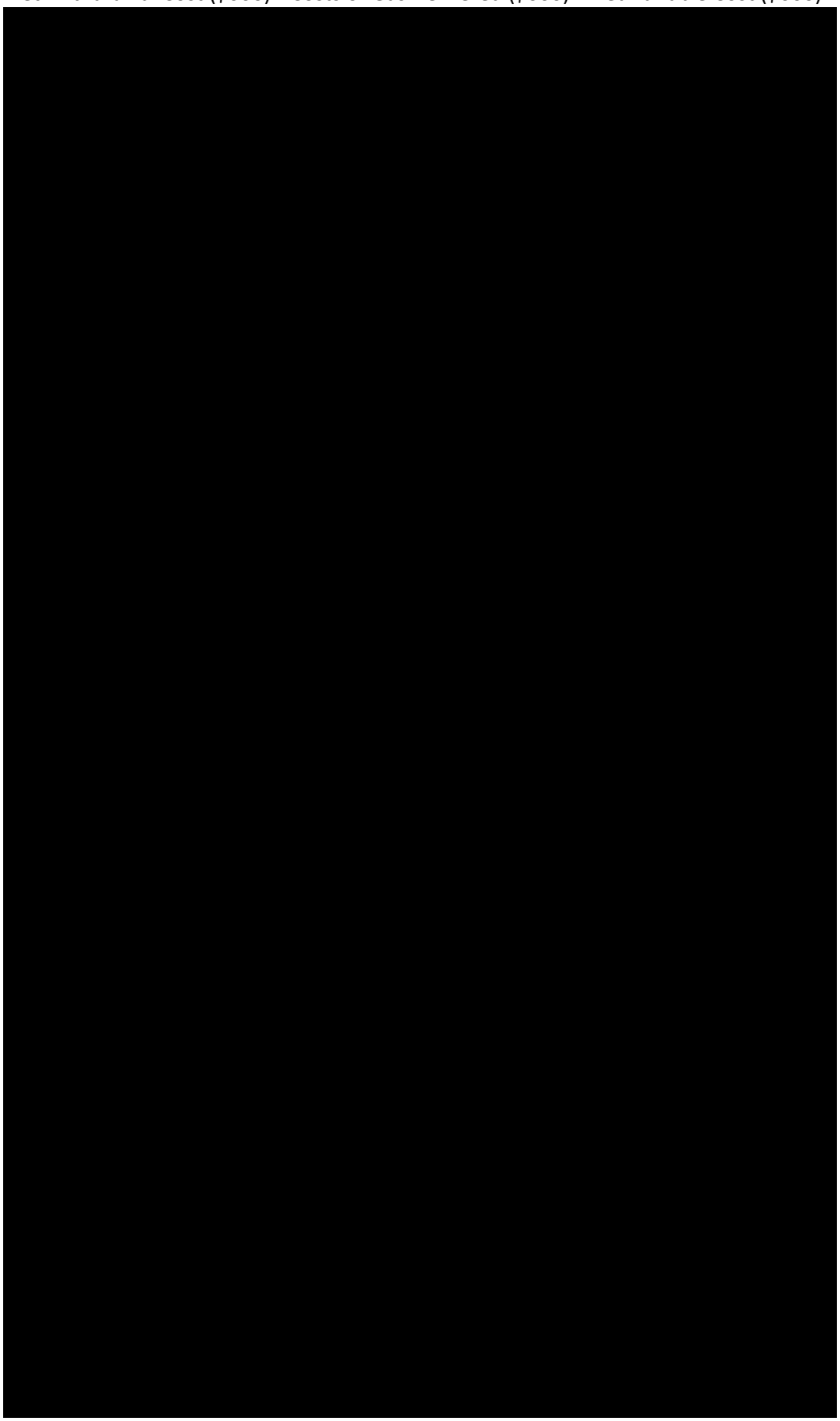




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

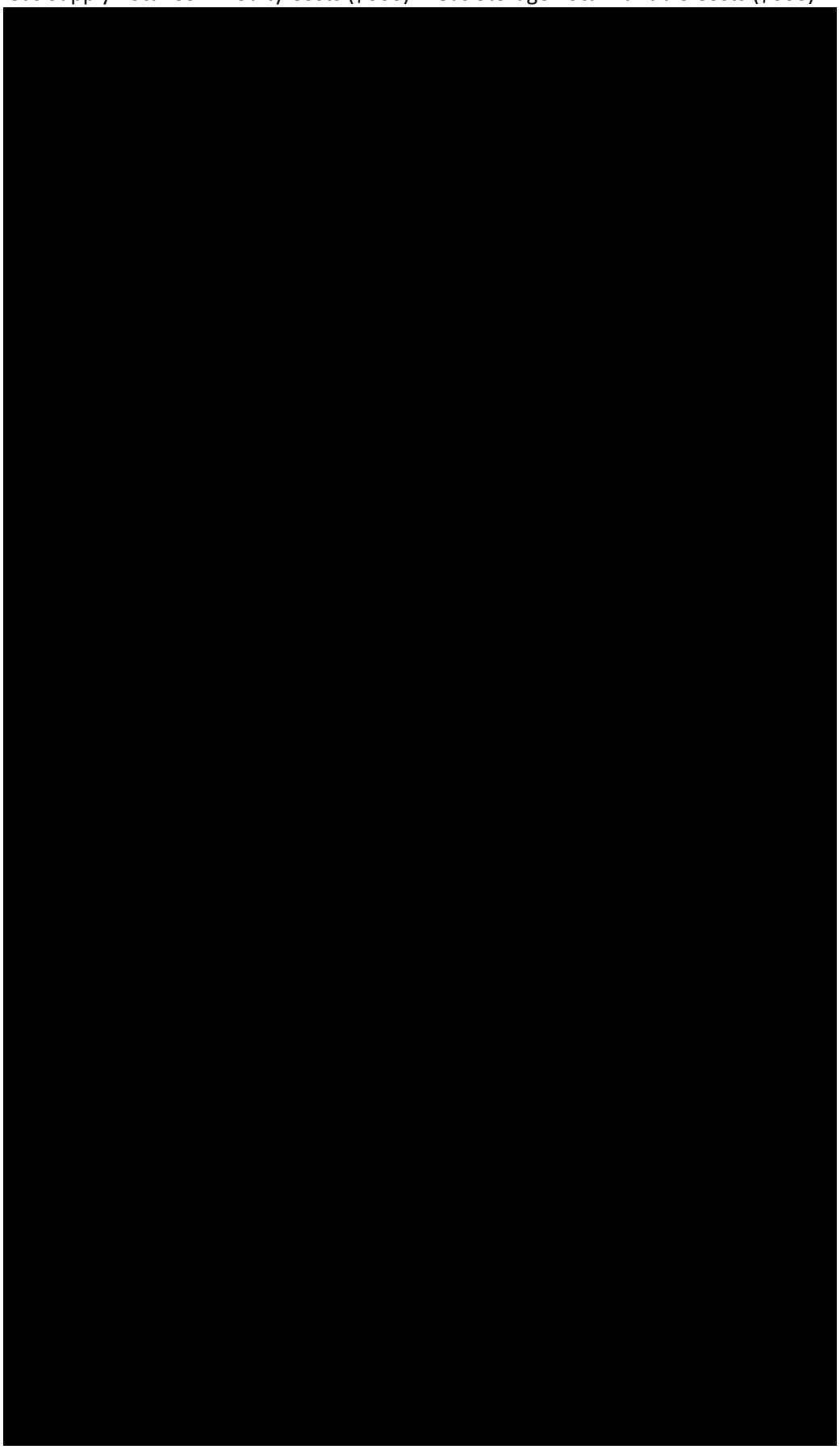




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

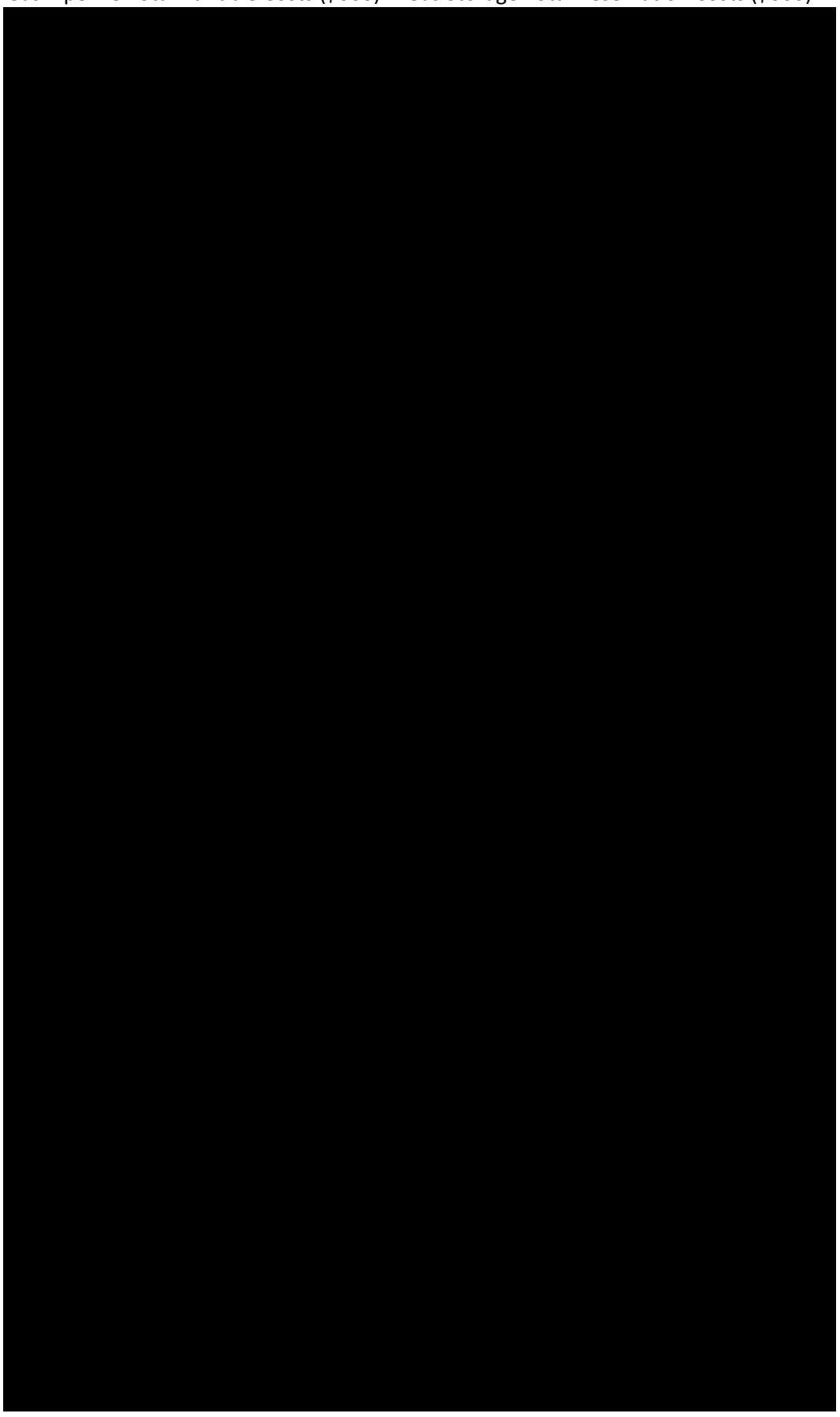


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



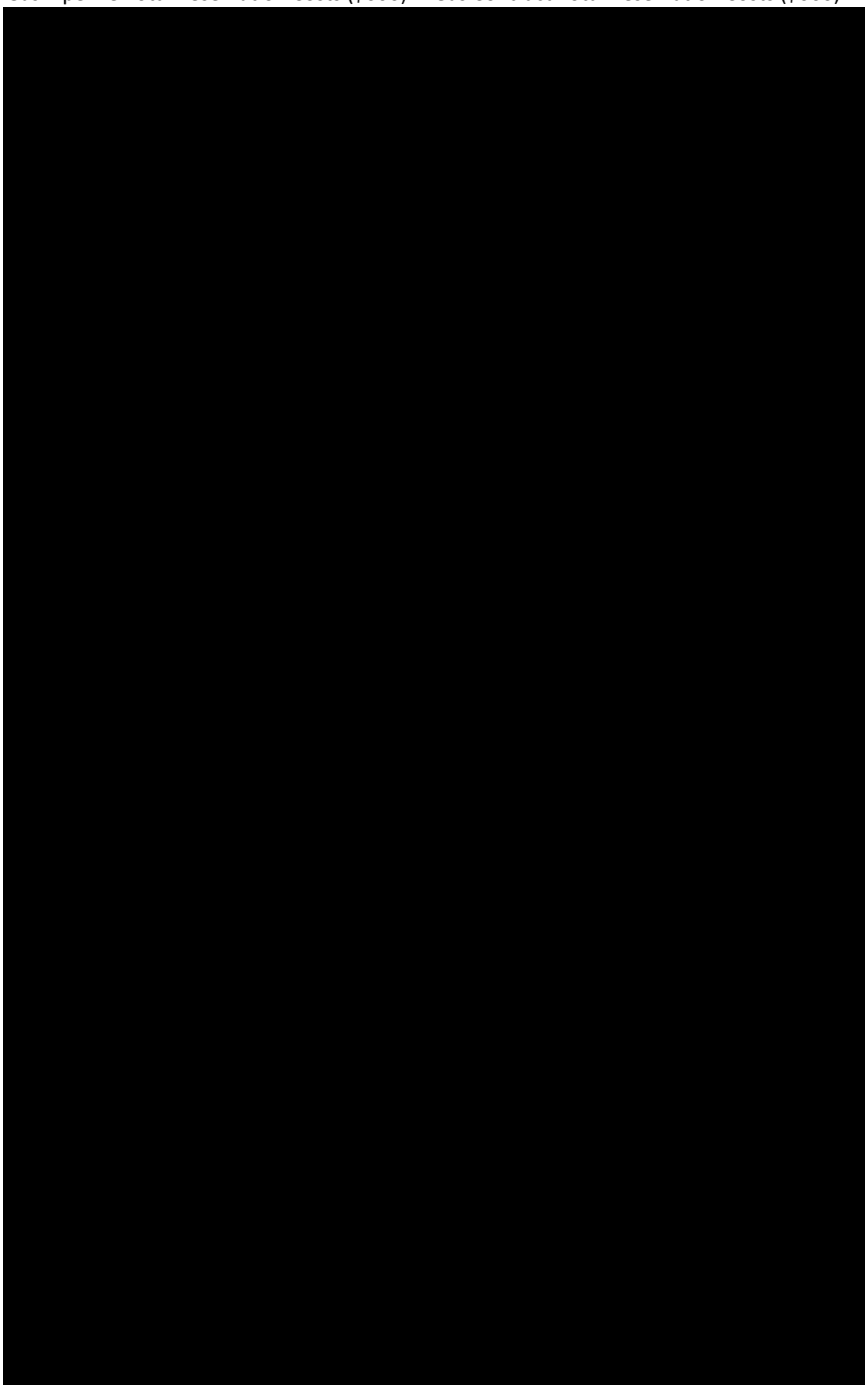


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



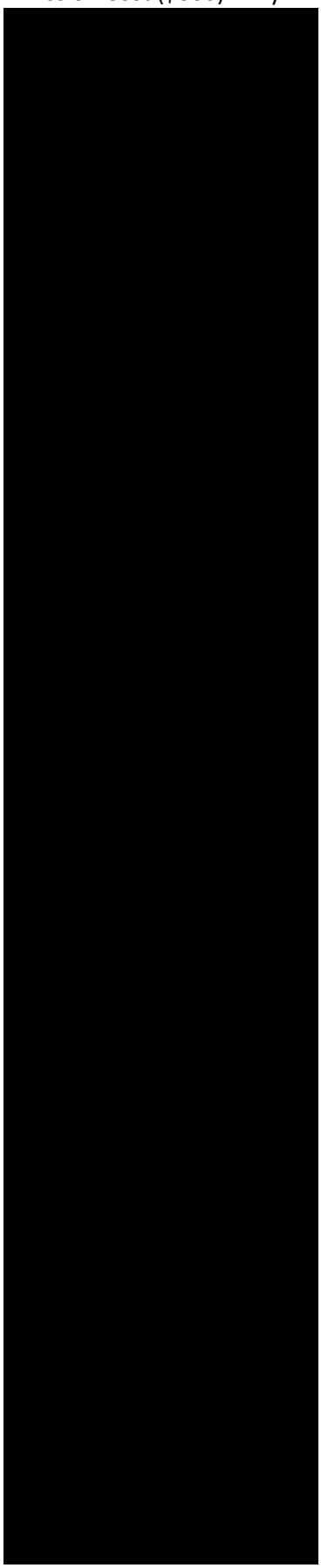


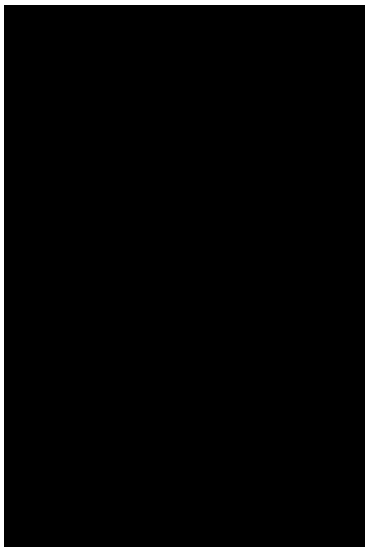
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



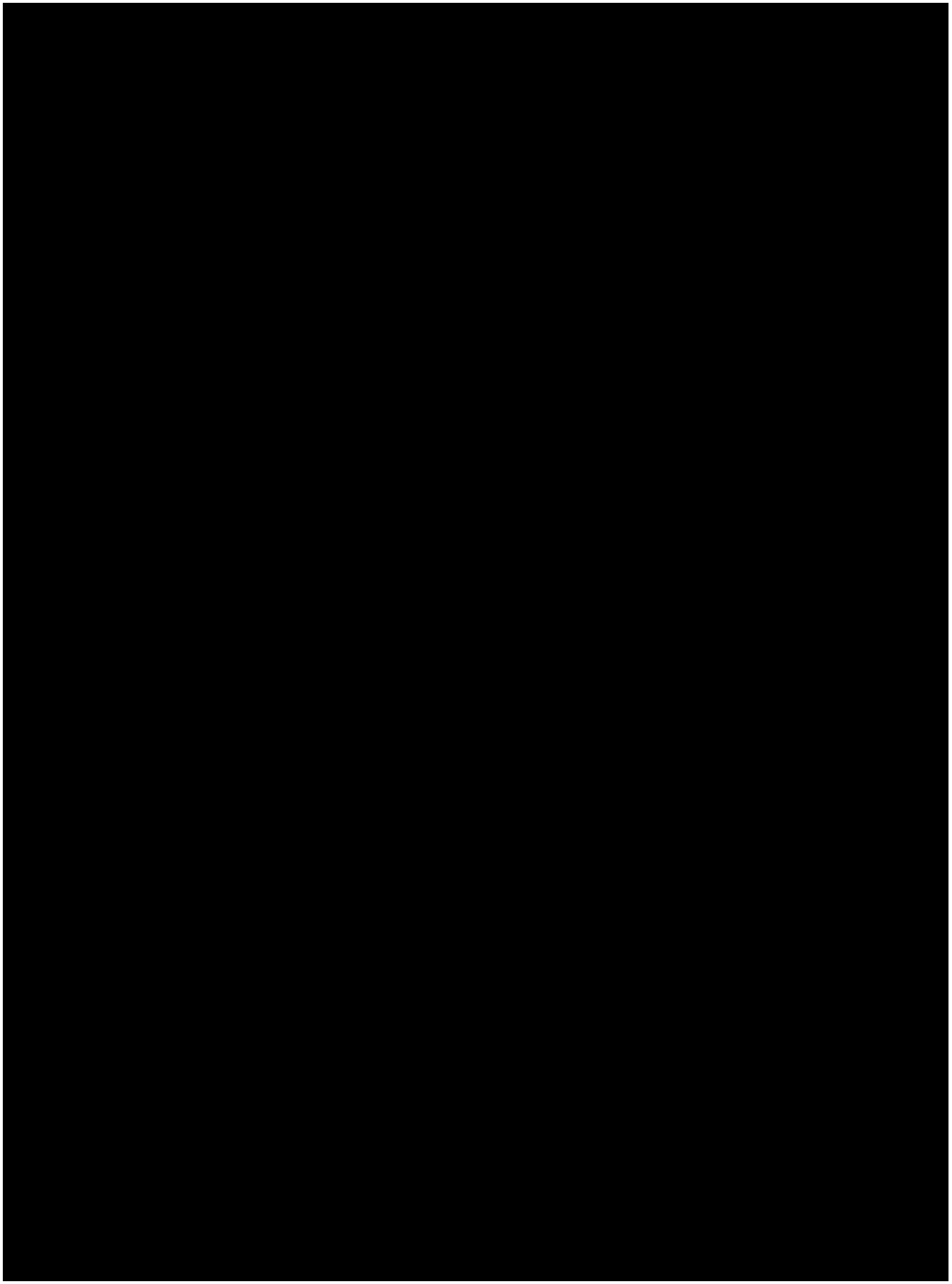


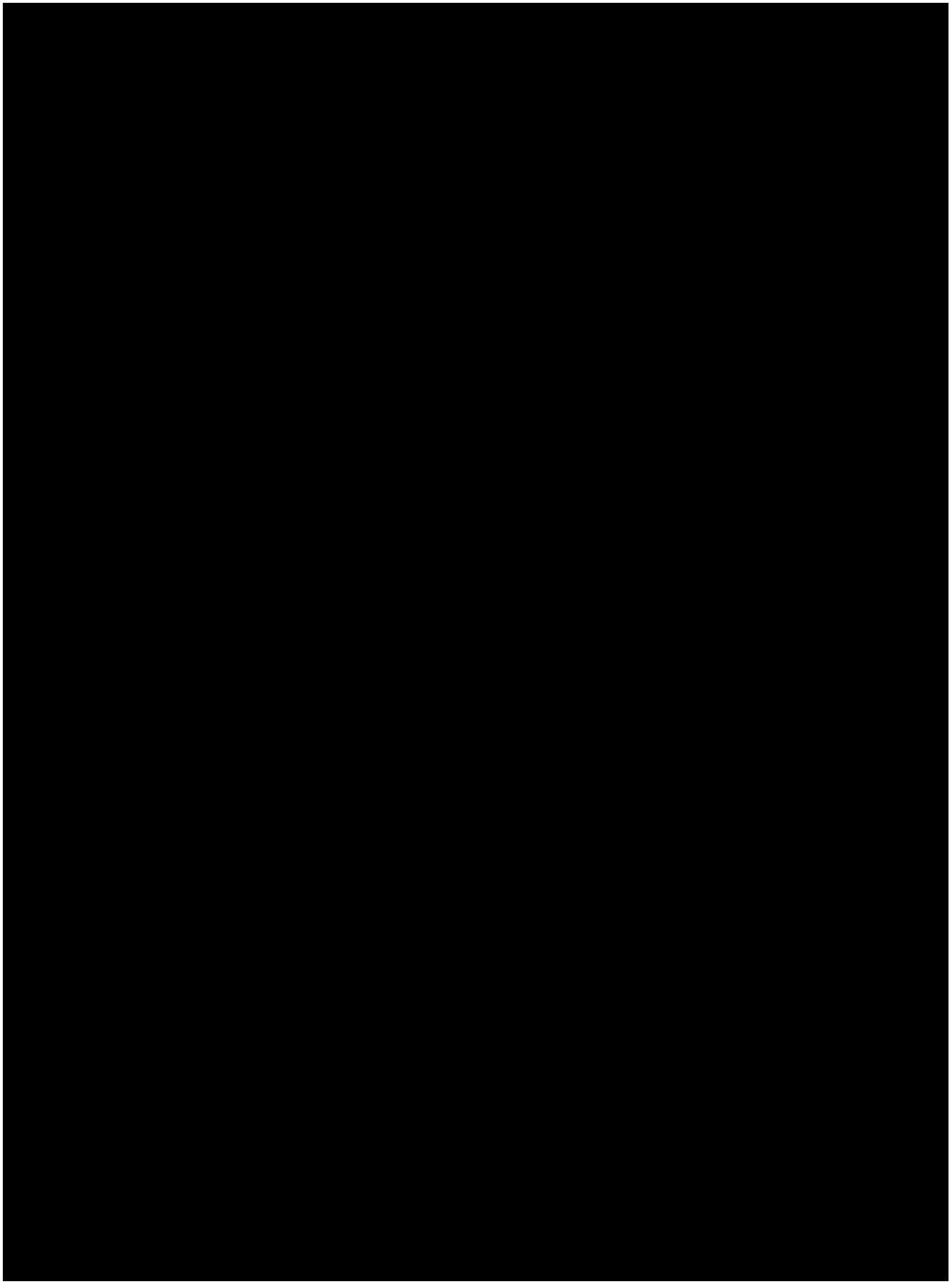
Emission Cost ($000) x y z

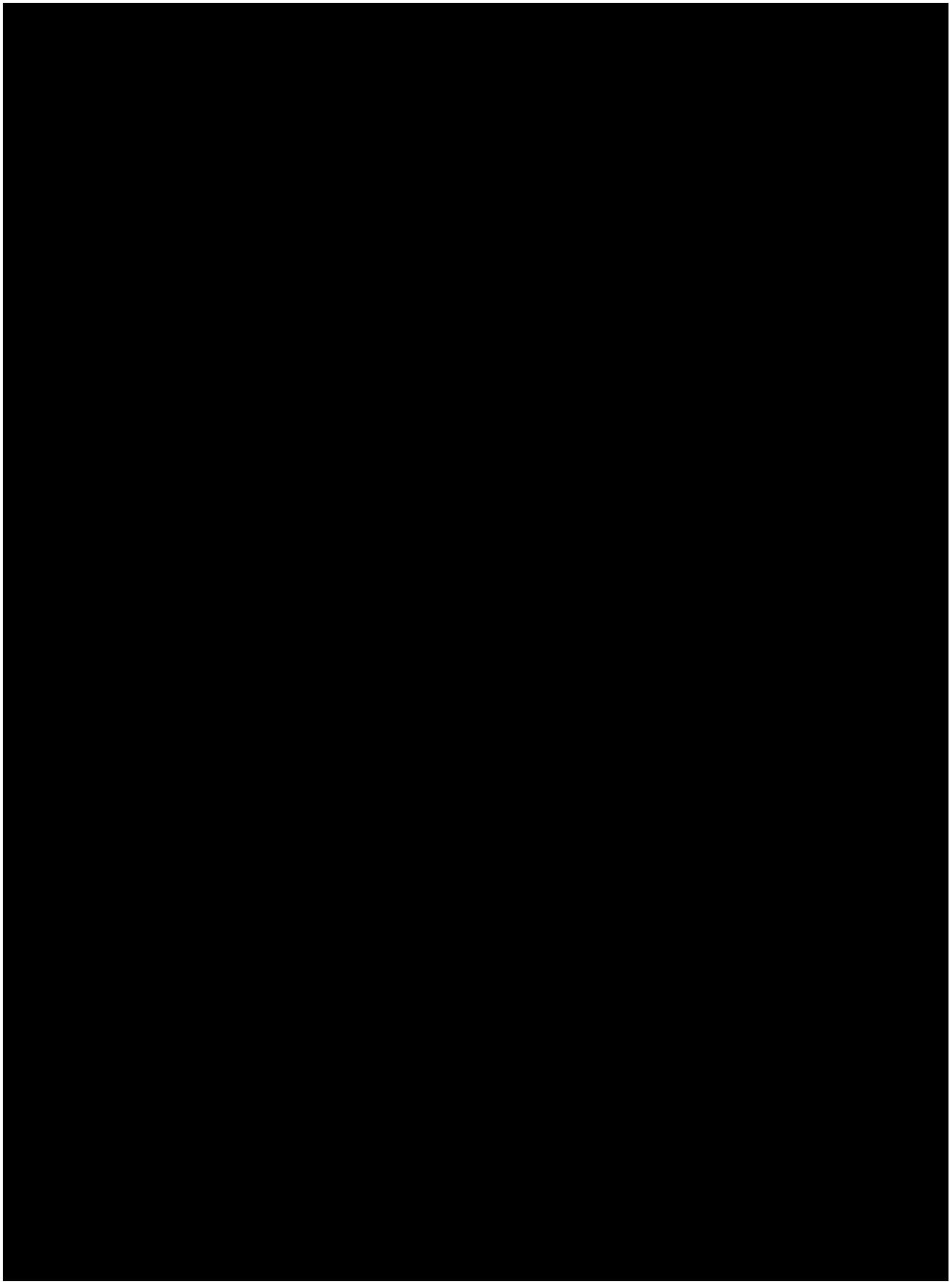


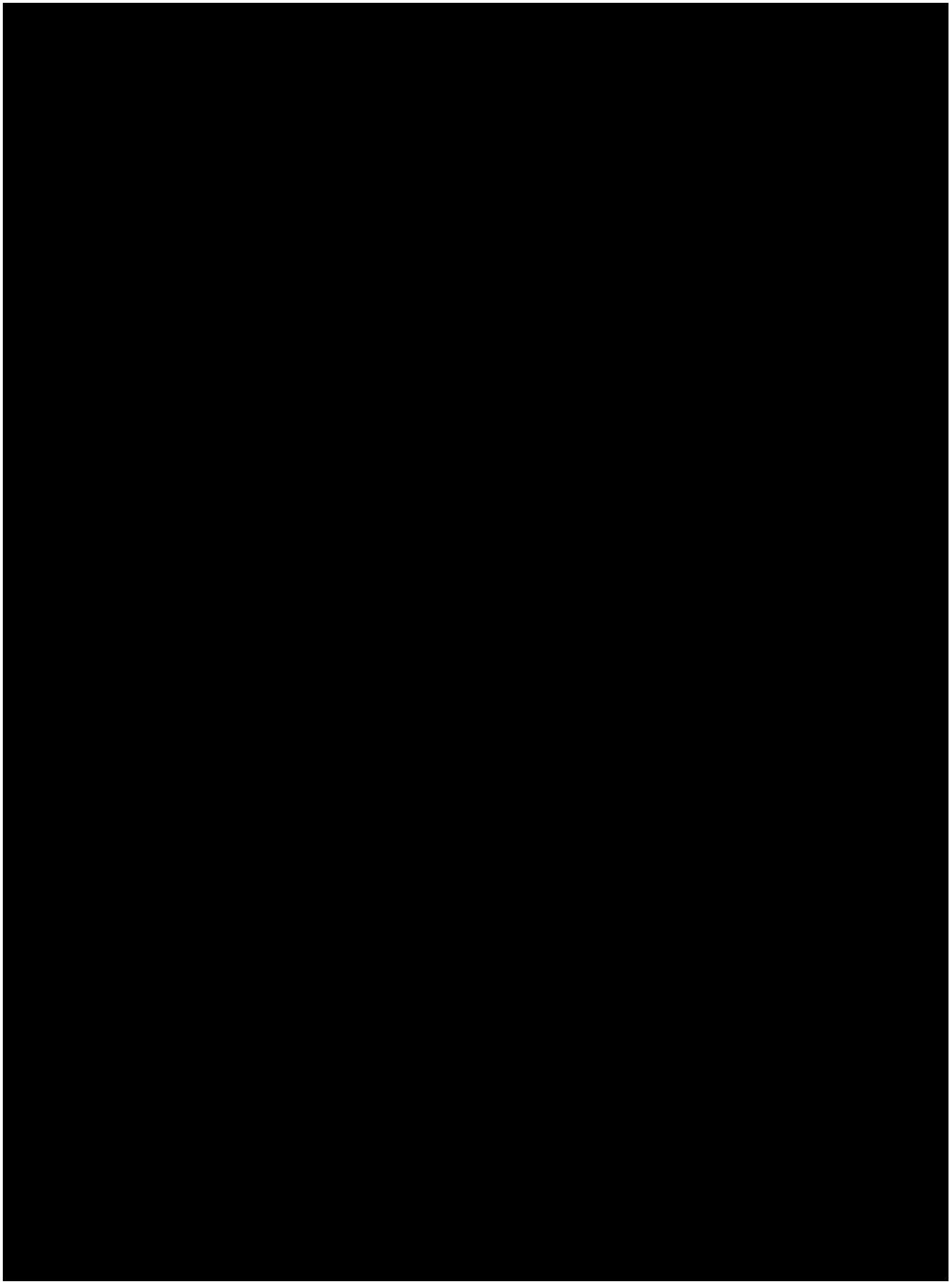


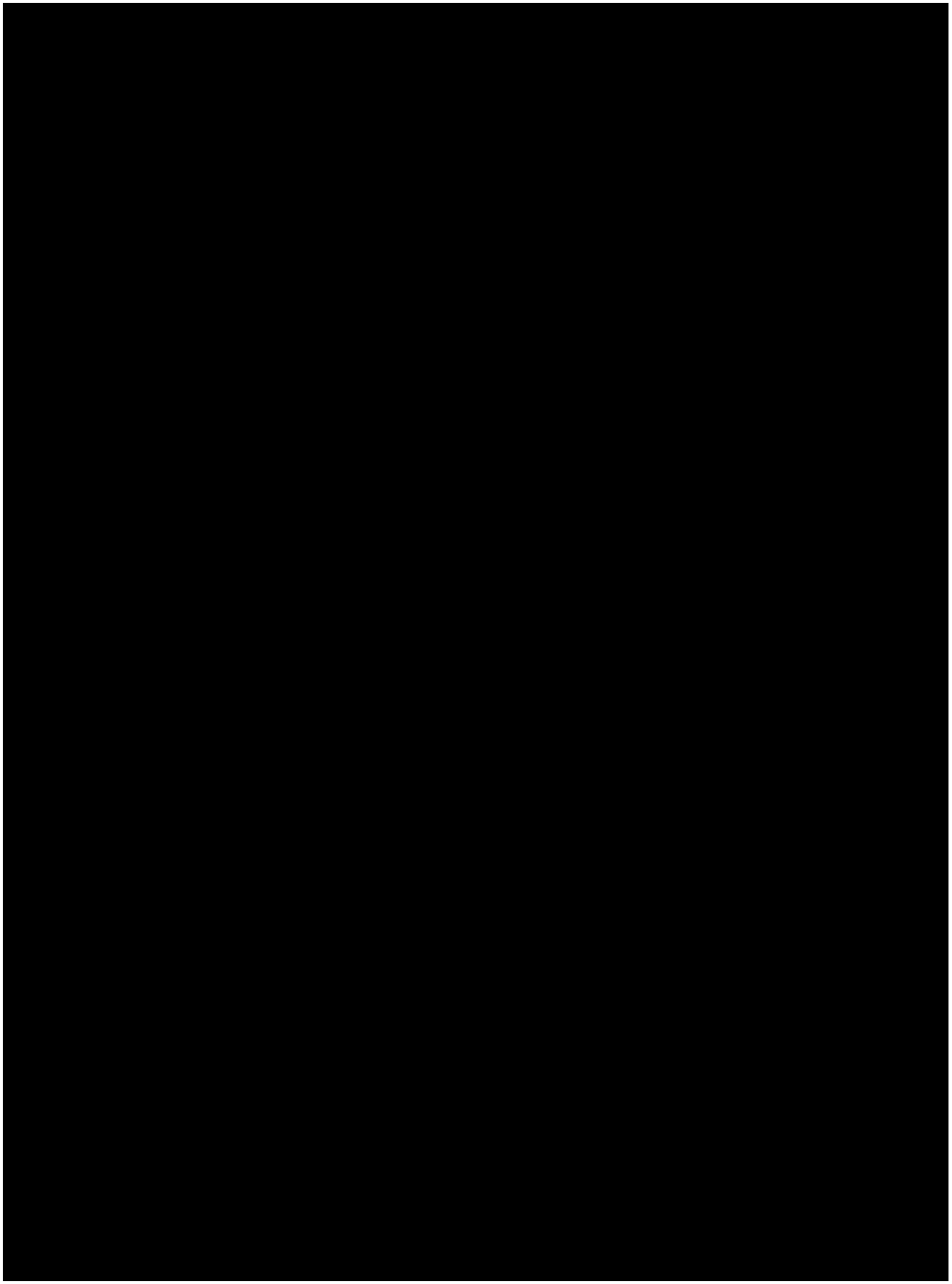
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

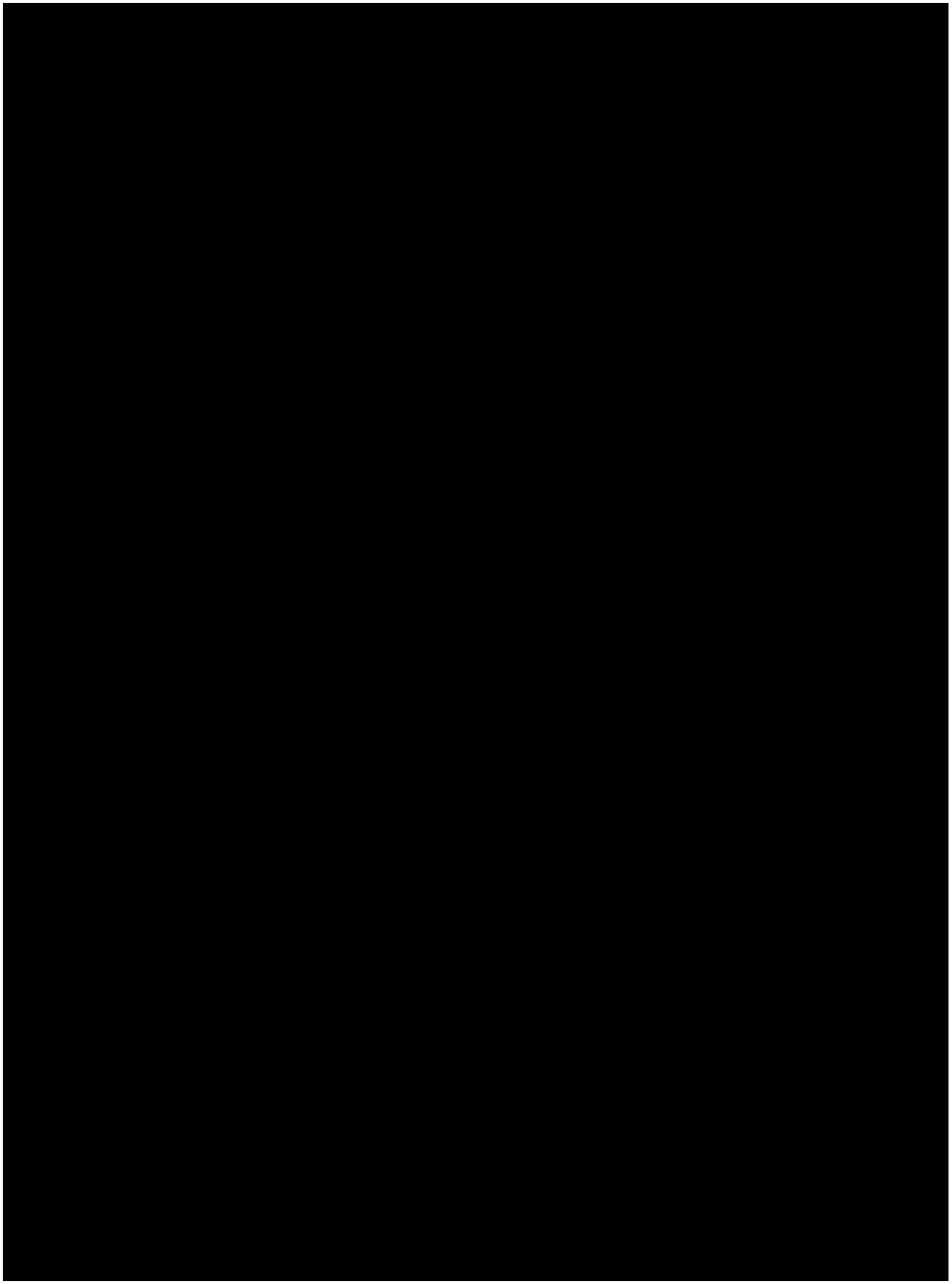


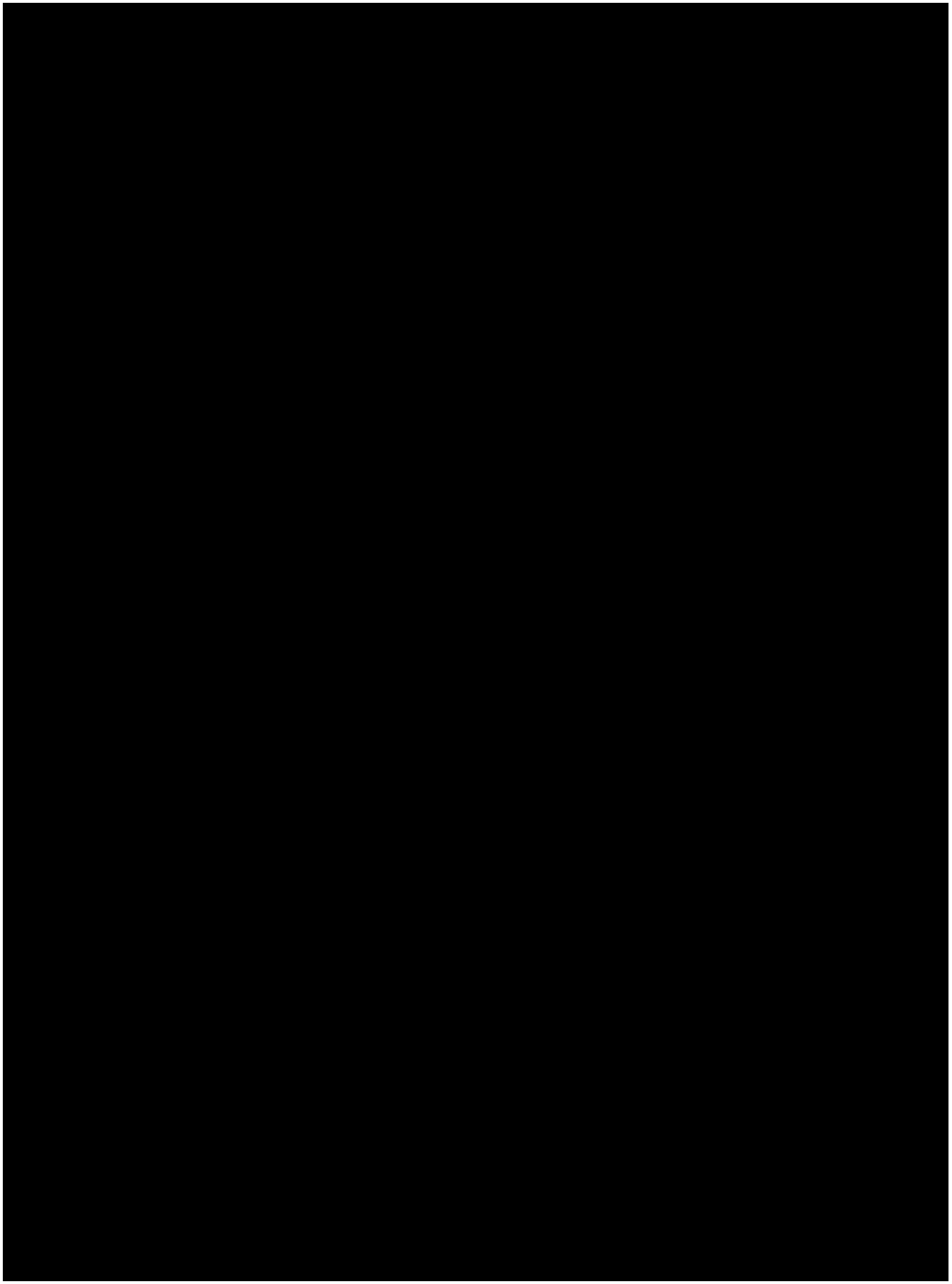


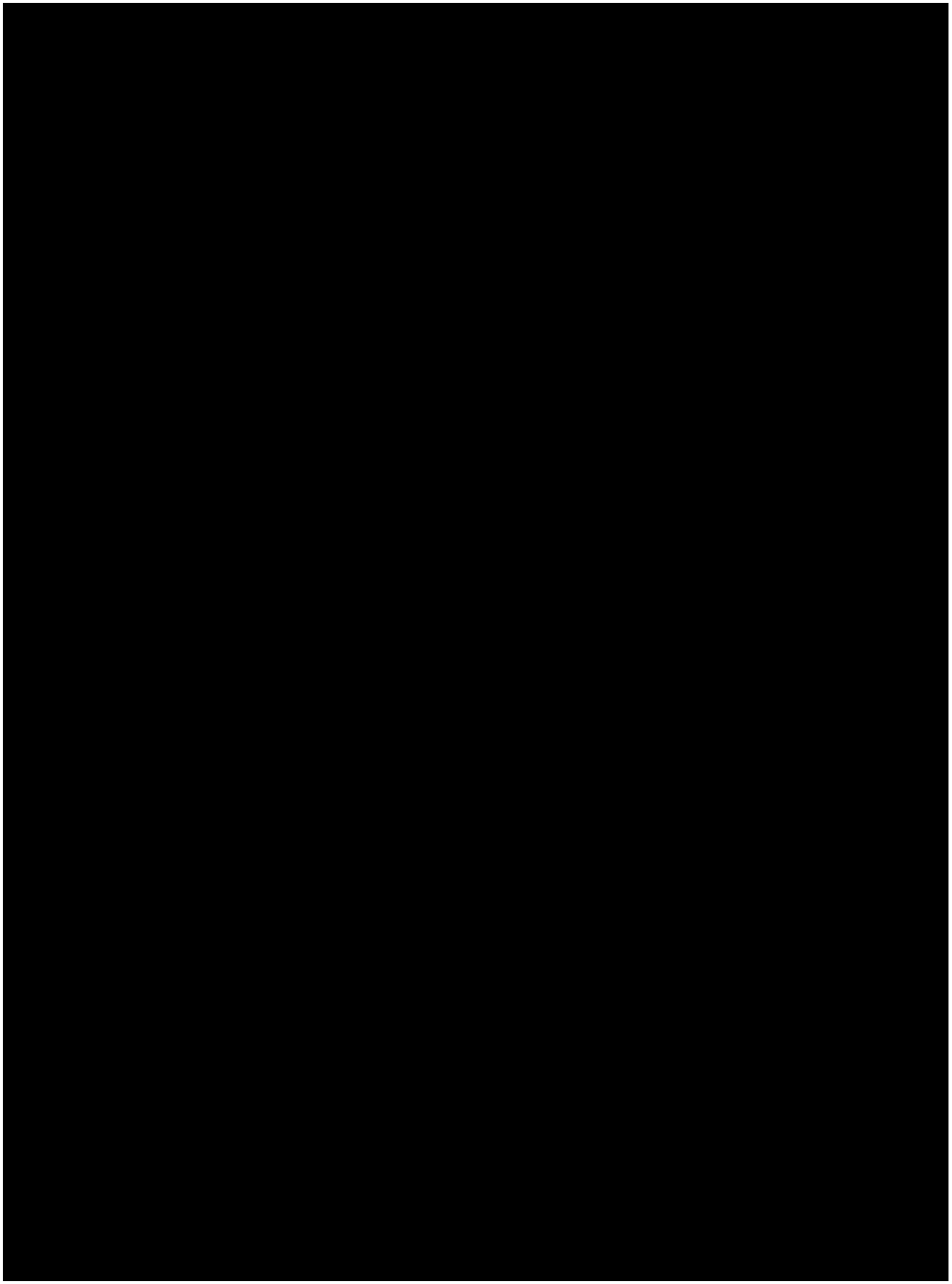


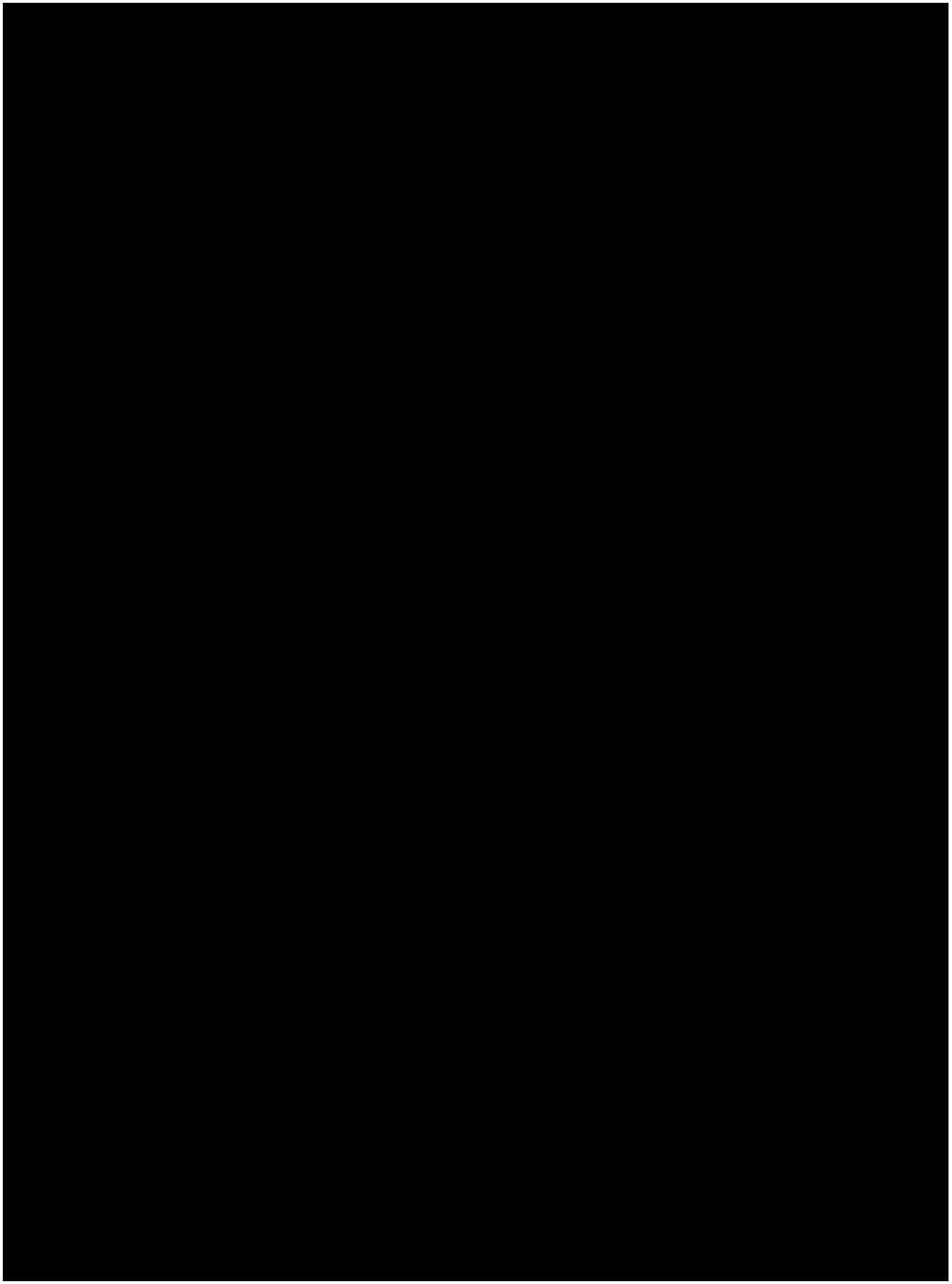


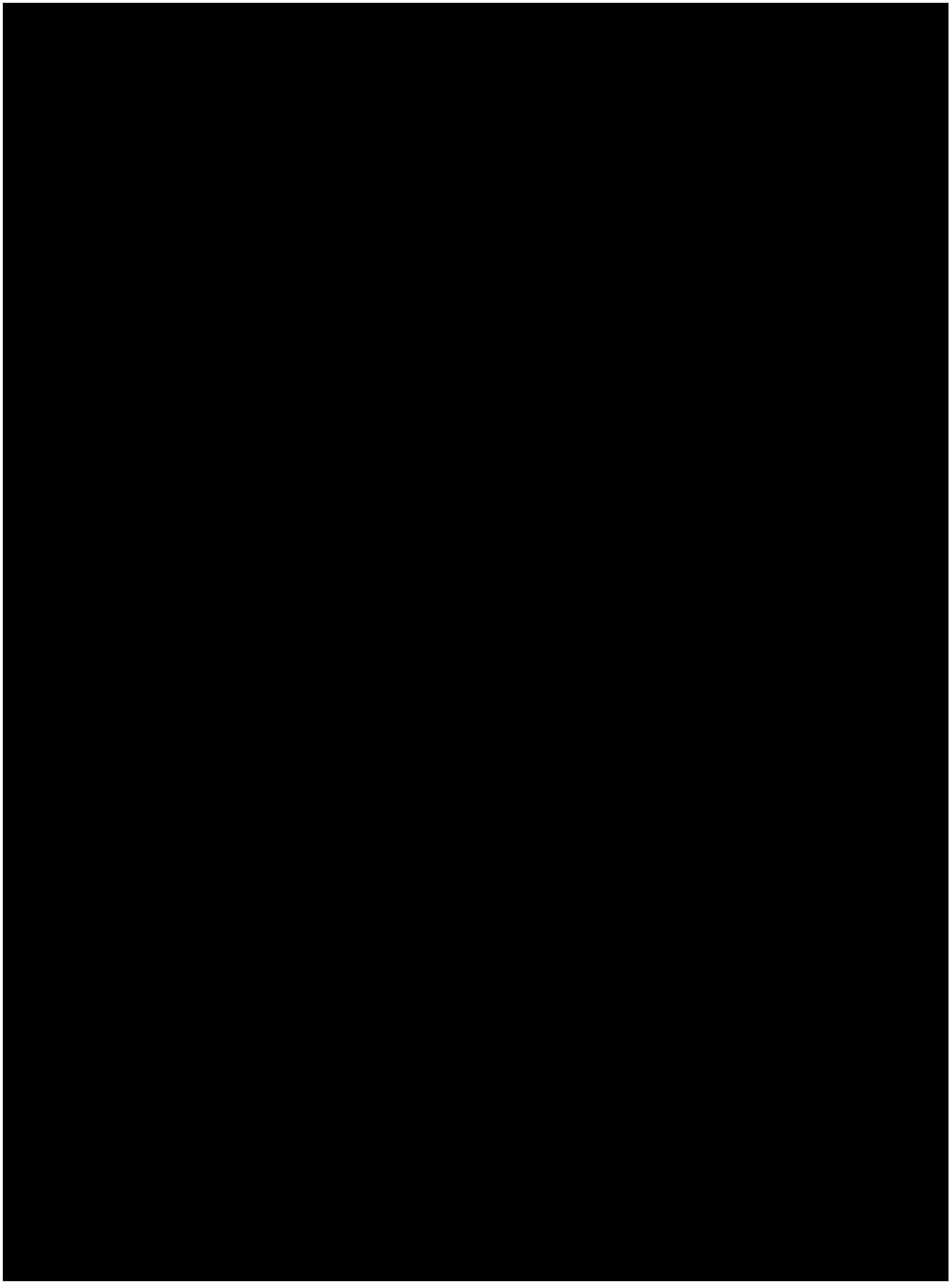


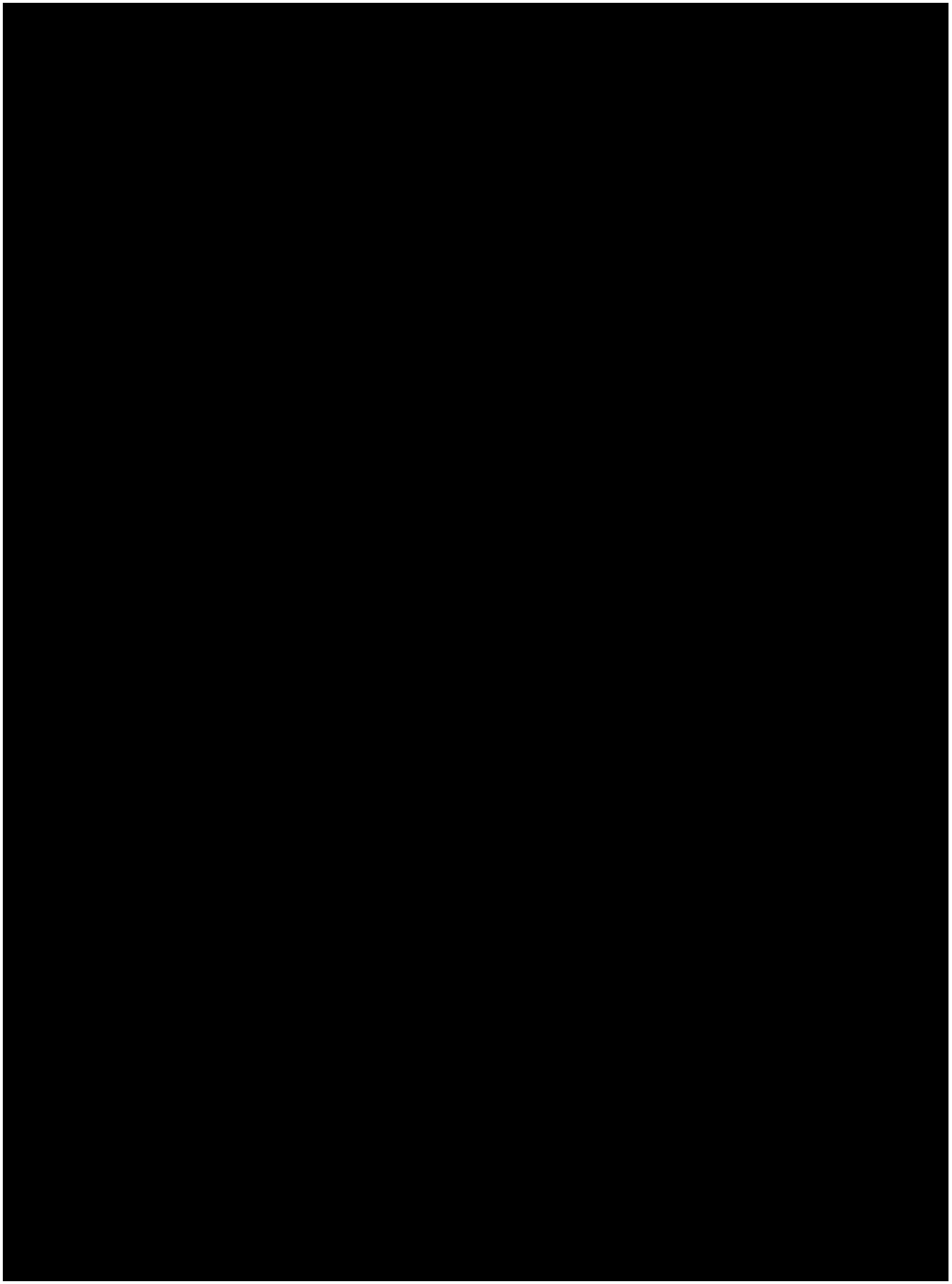


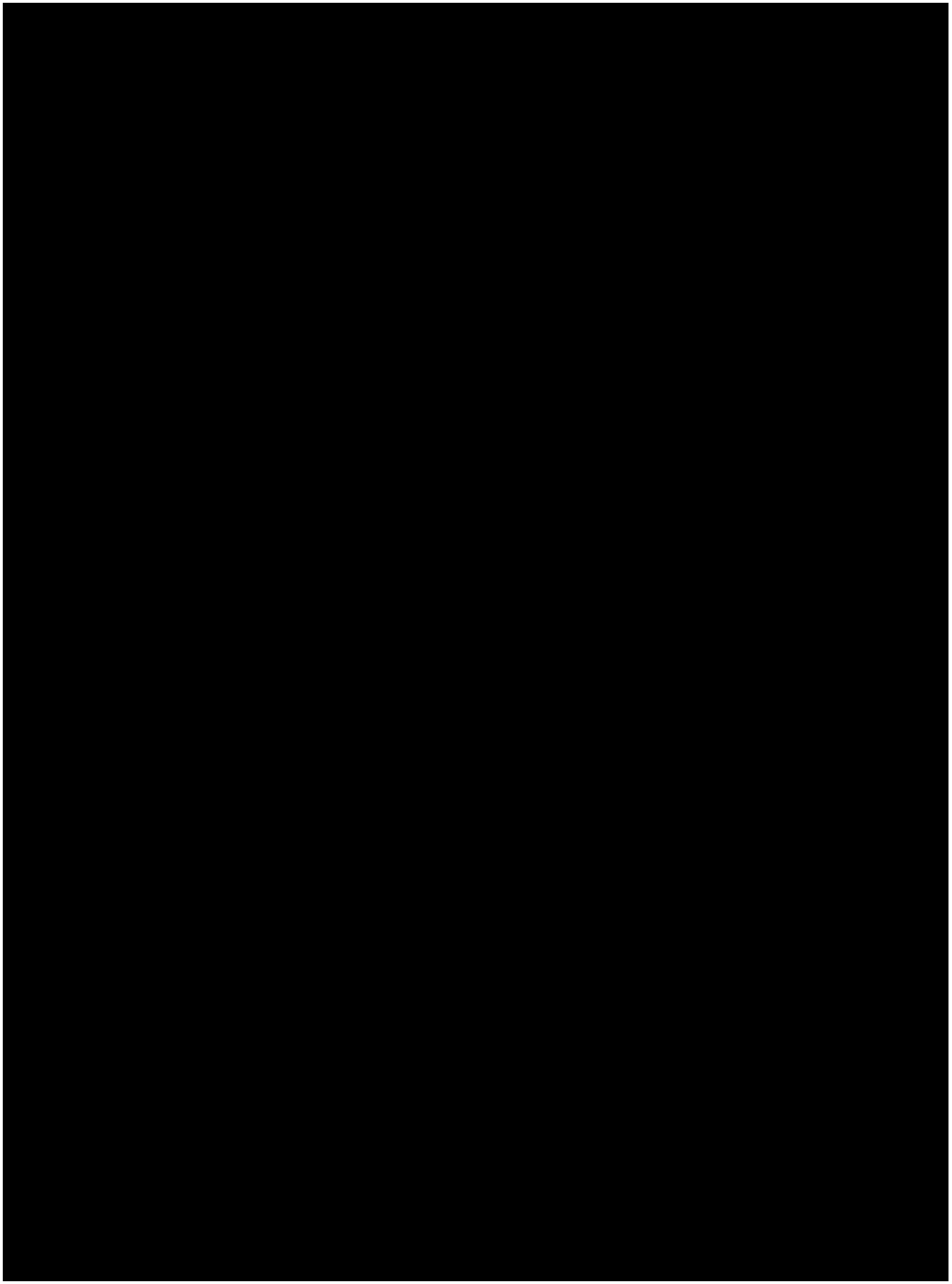


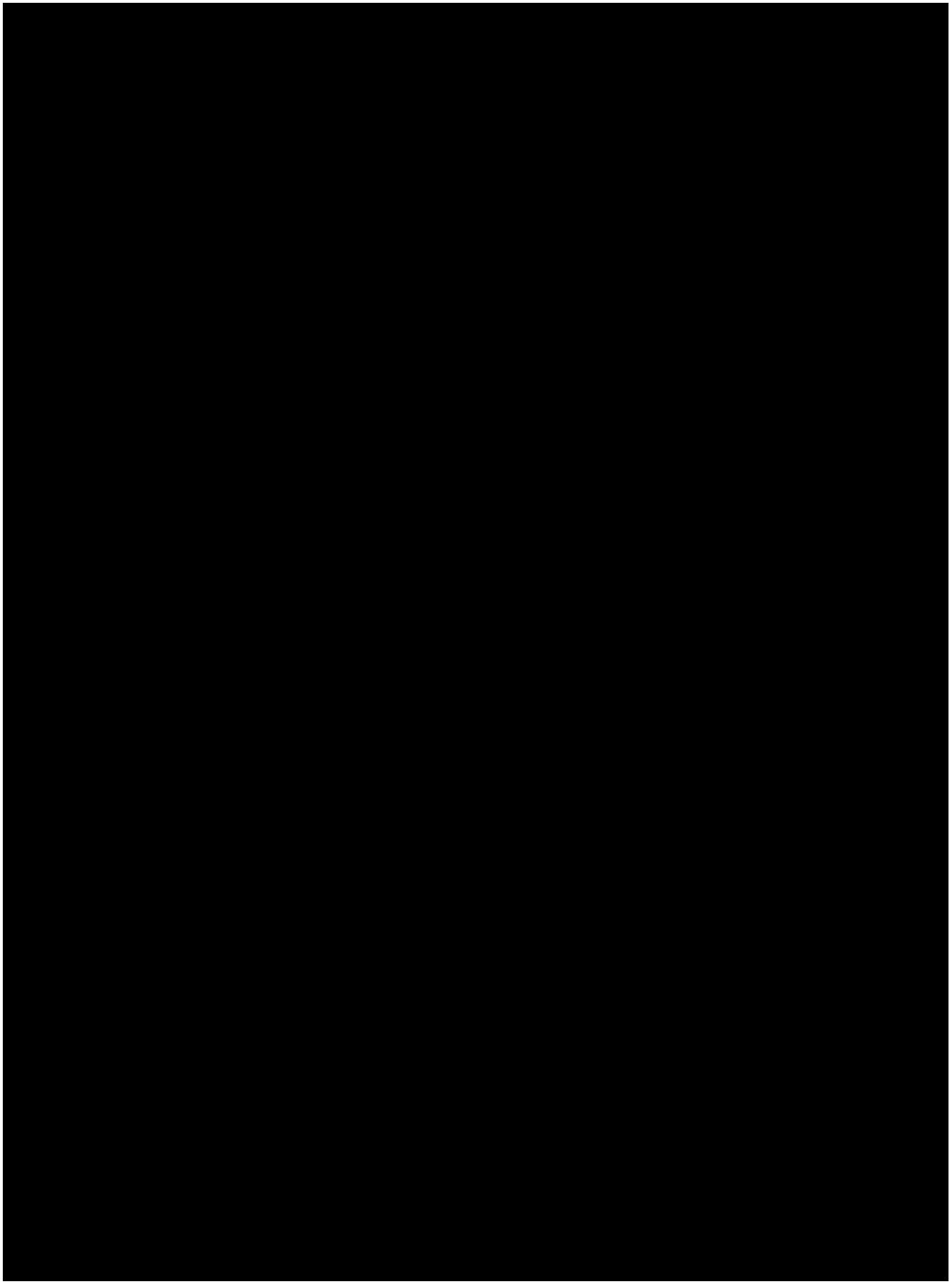


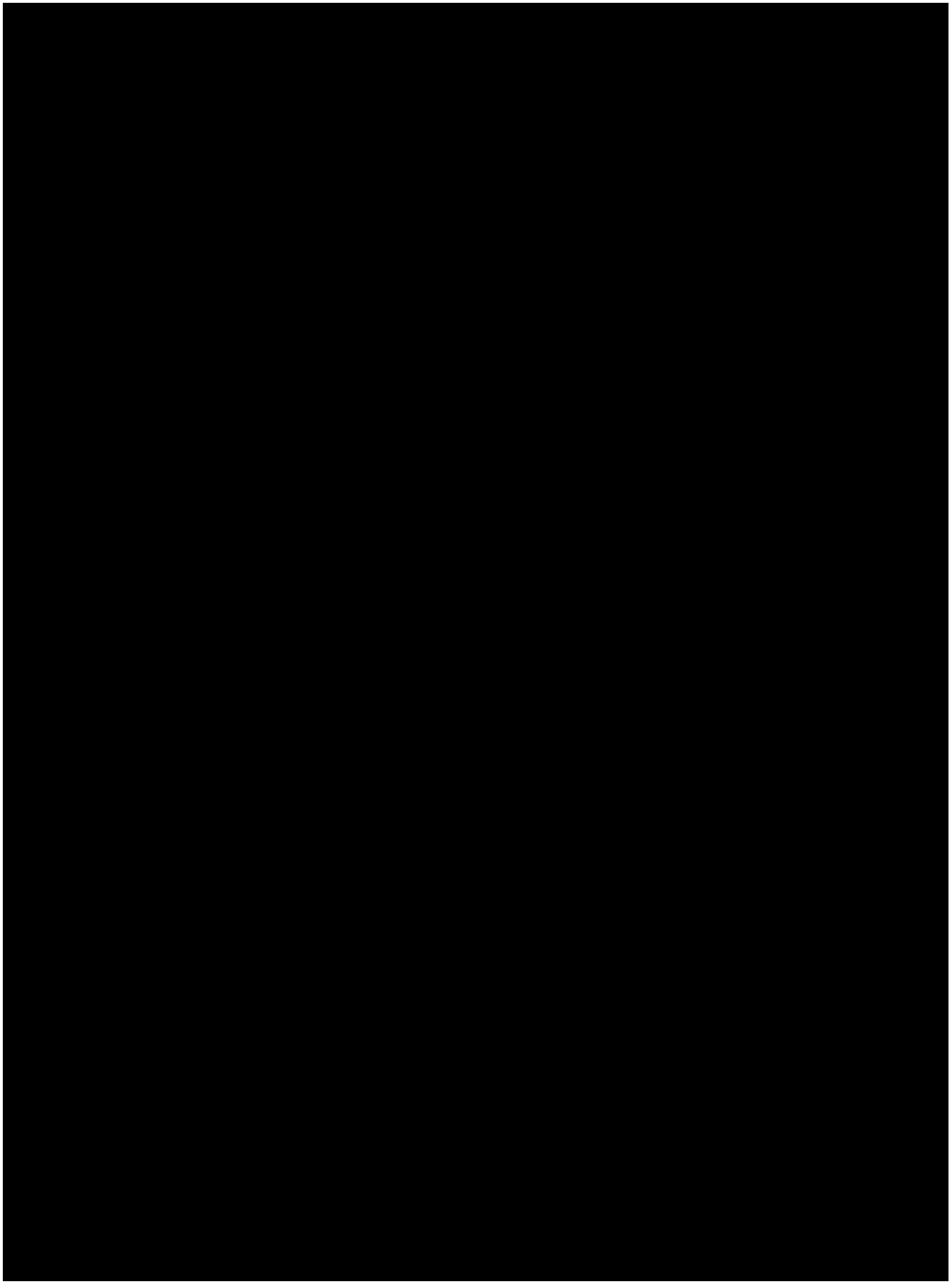


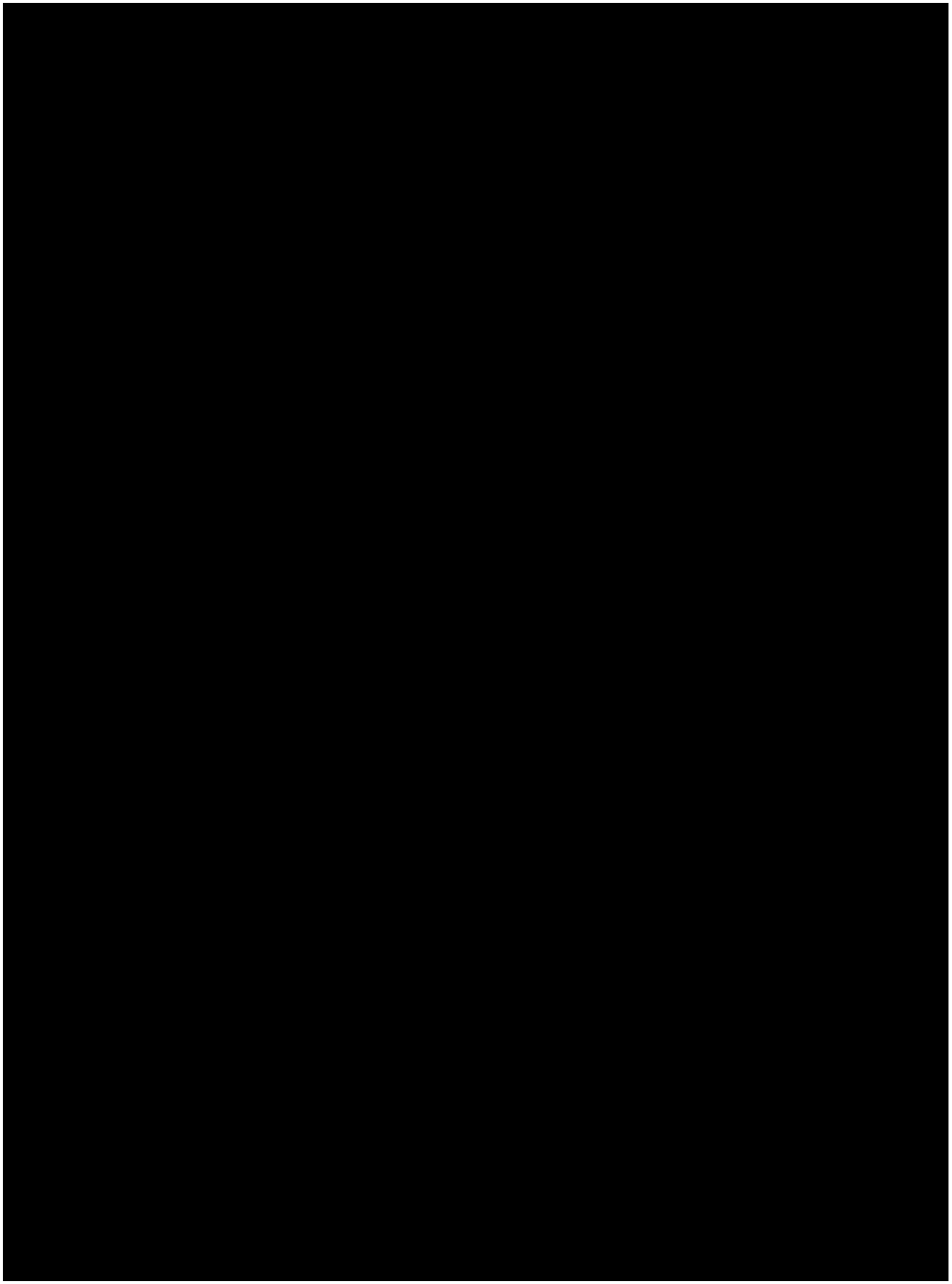


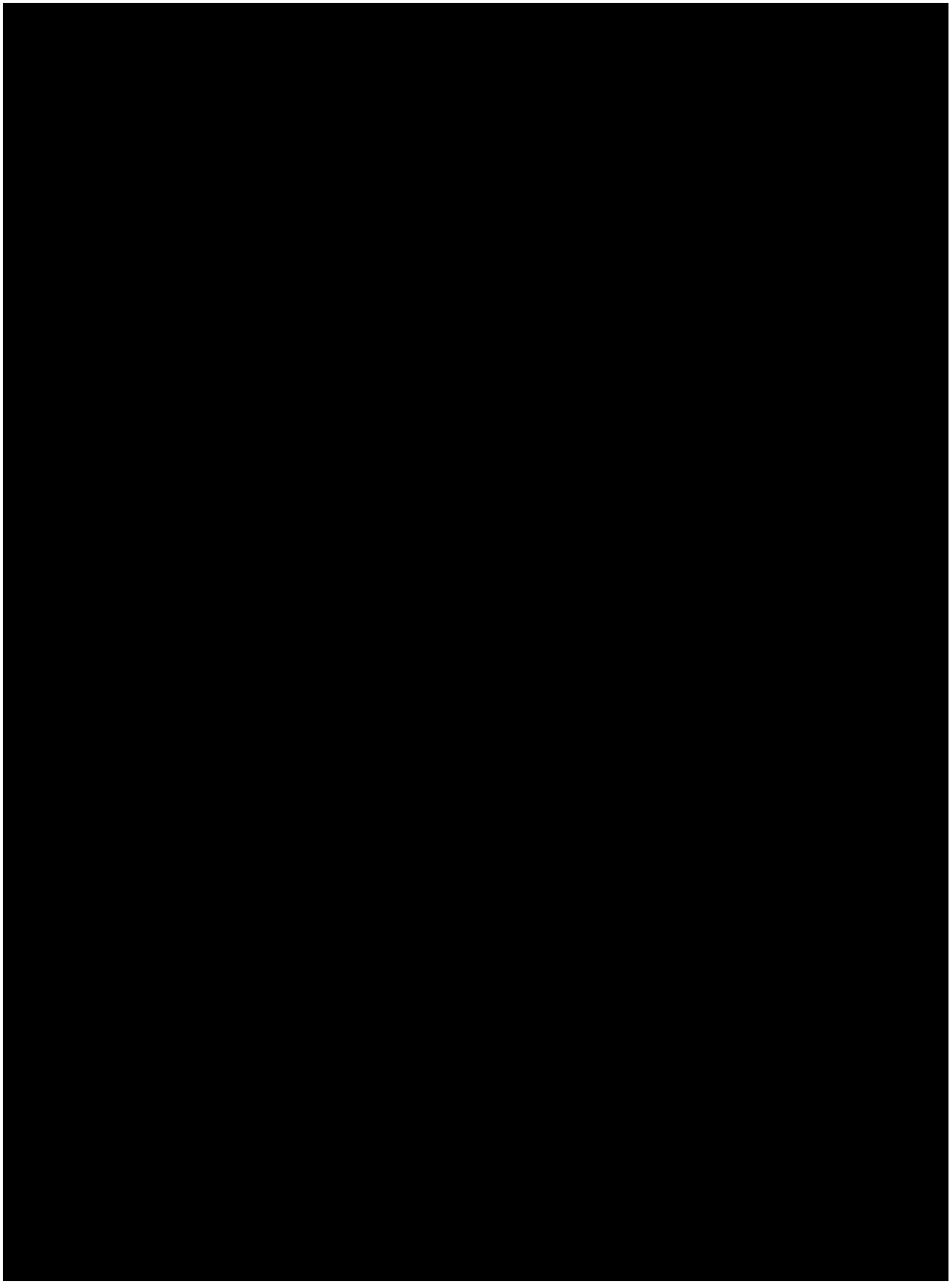


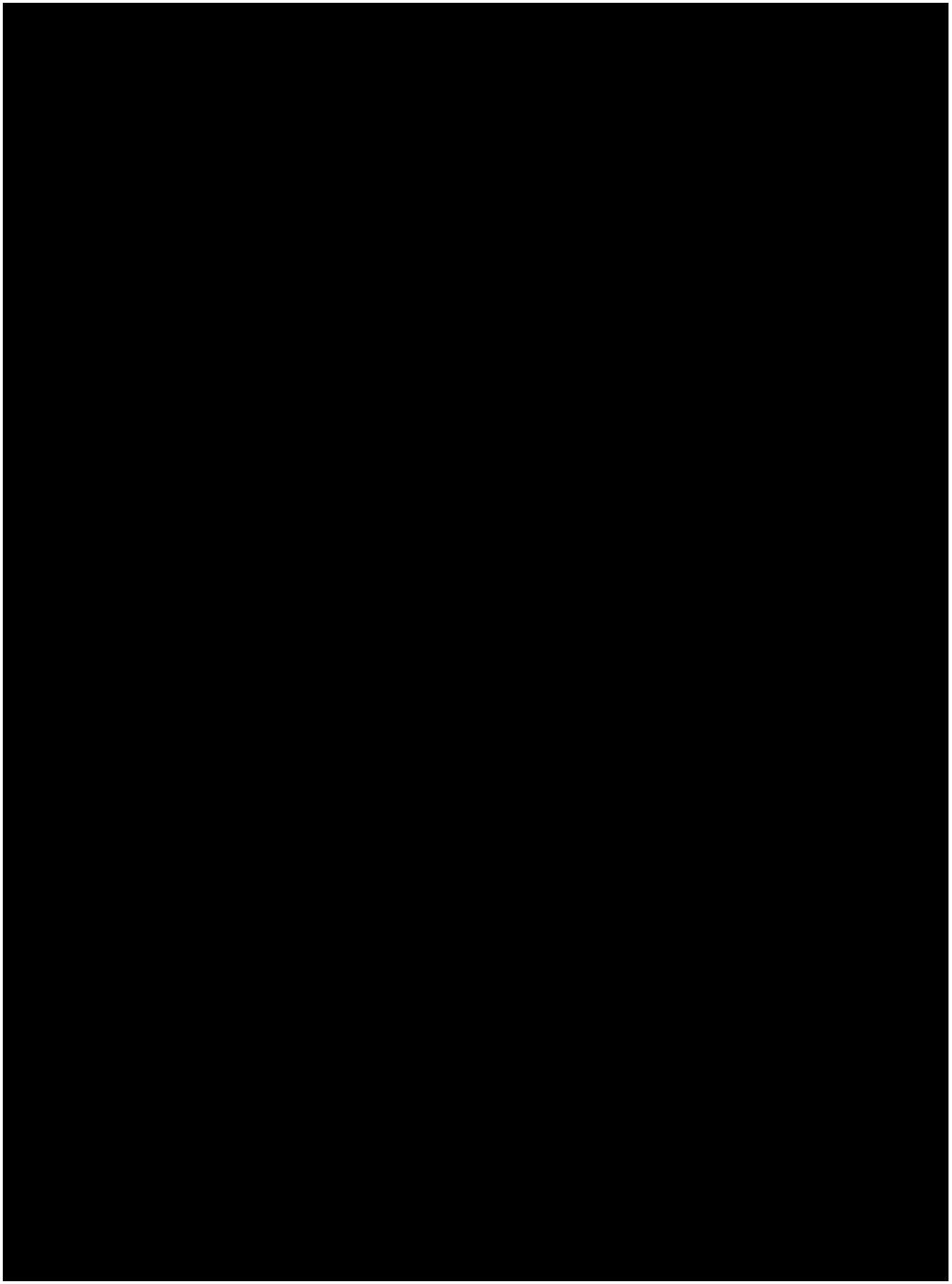


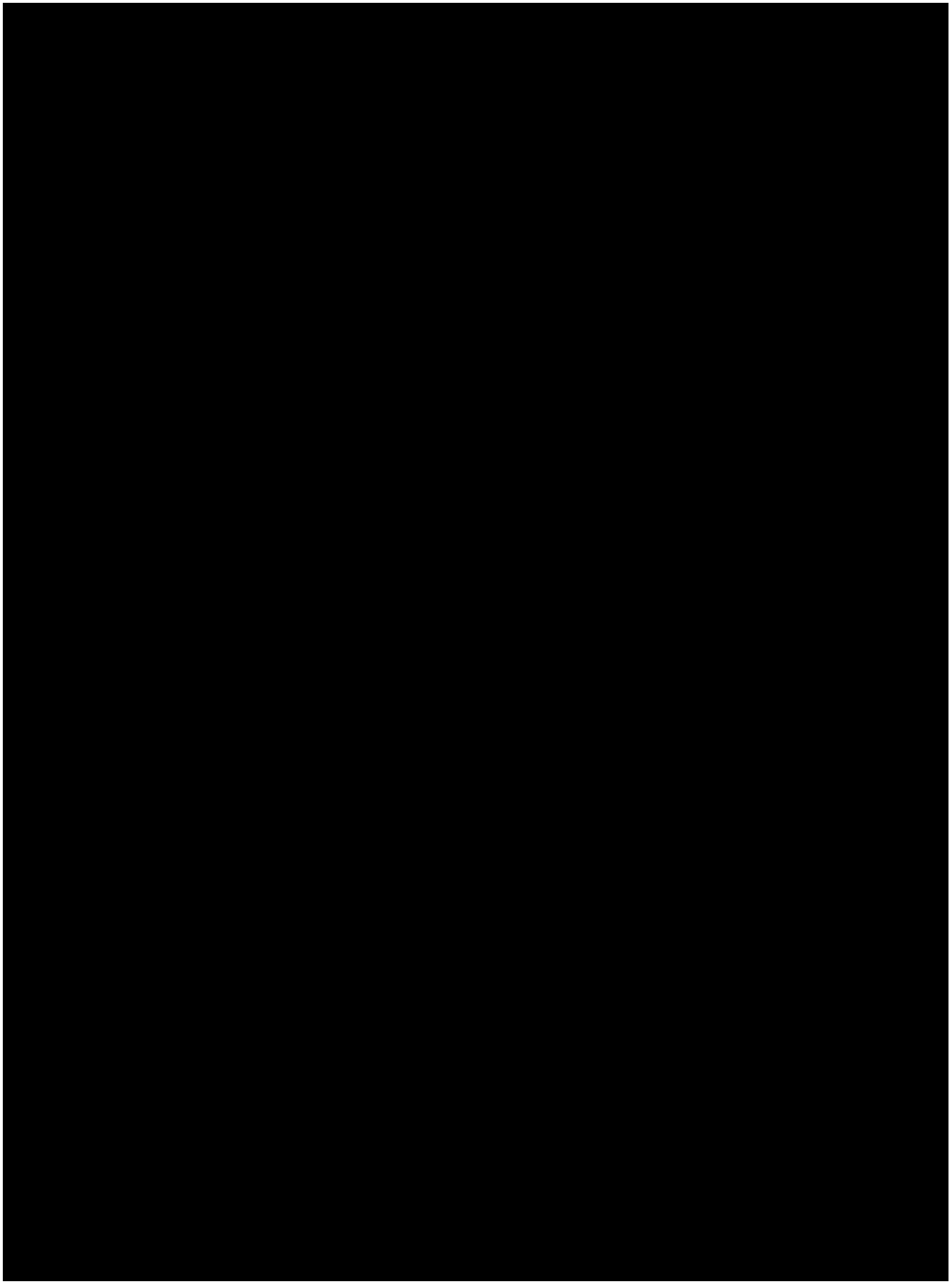




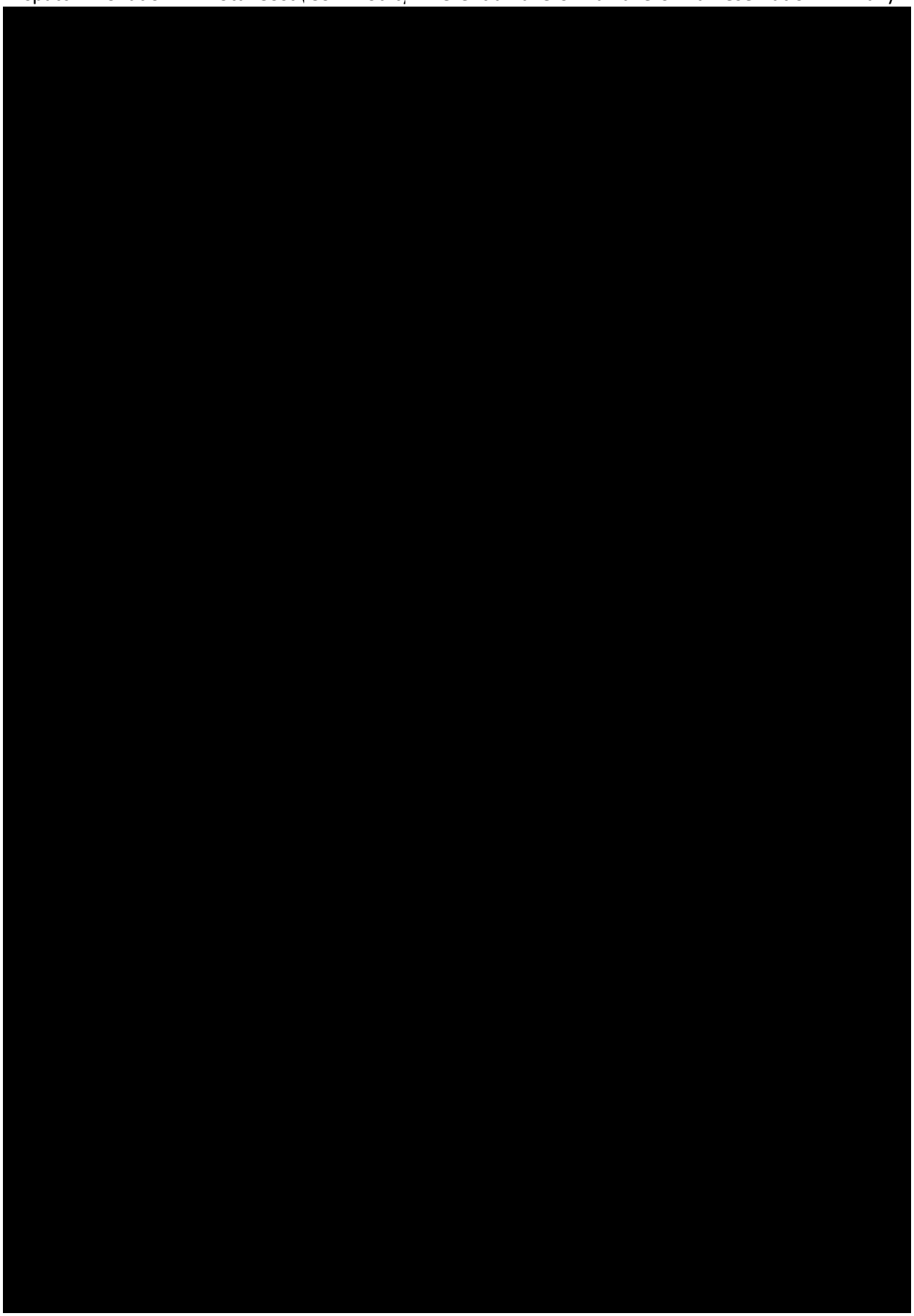


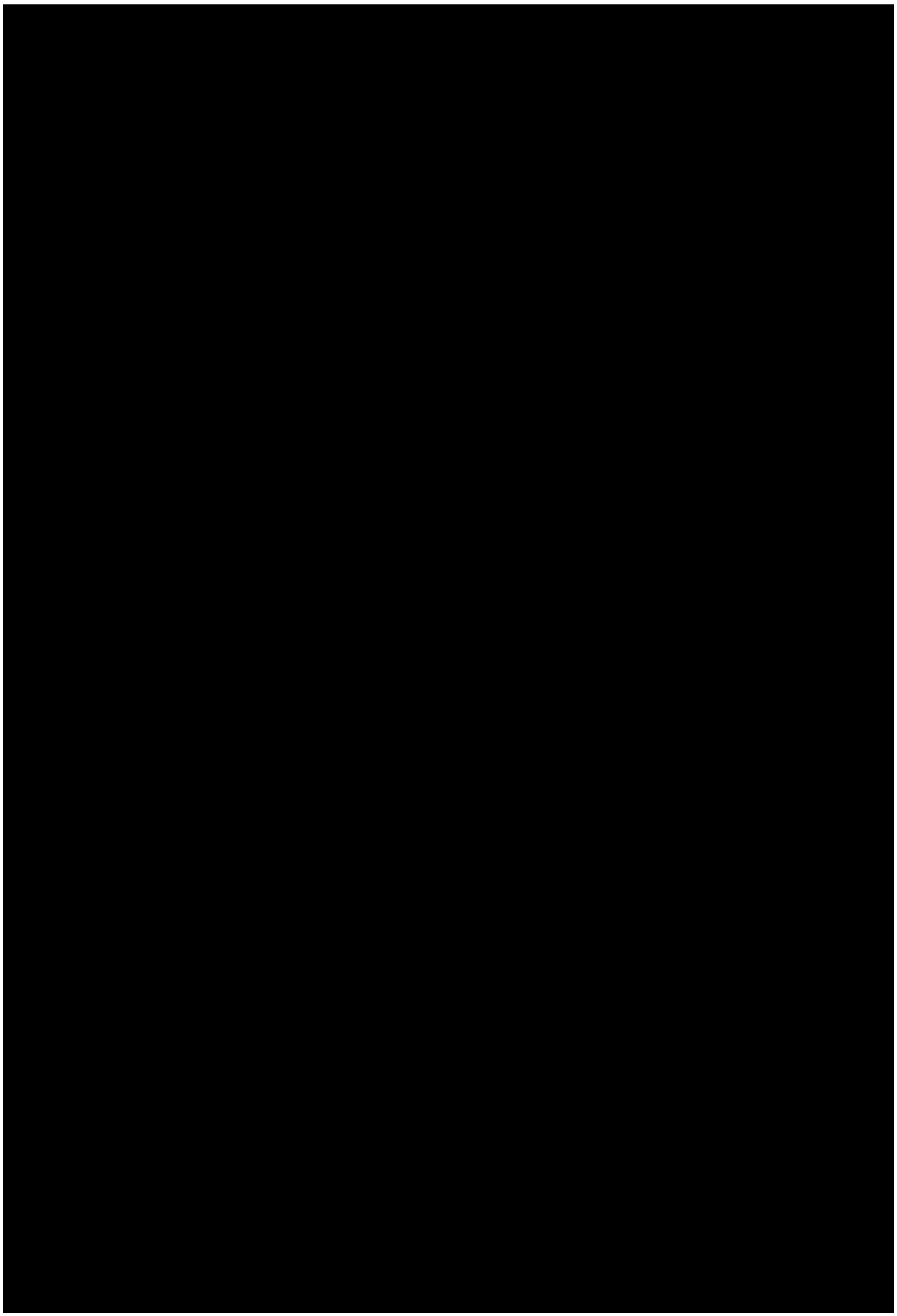


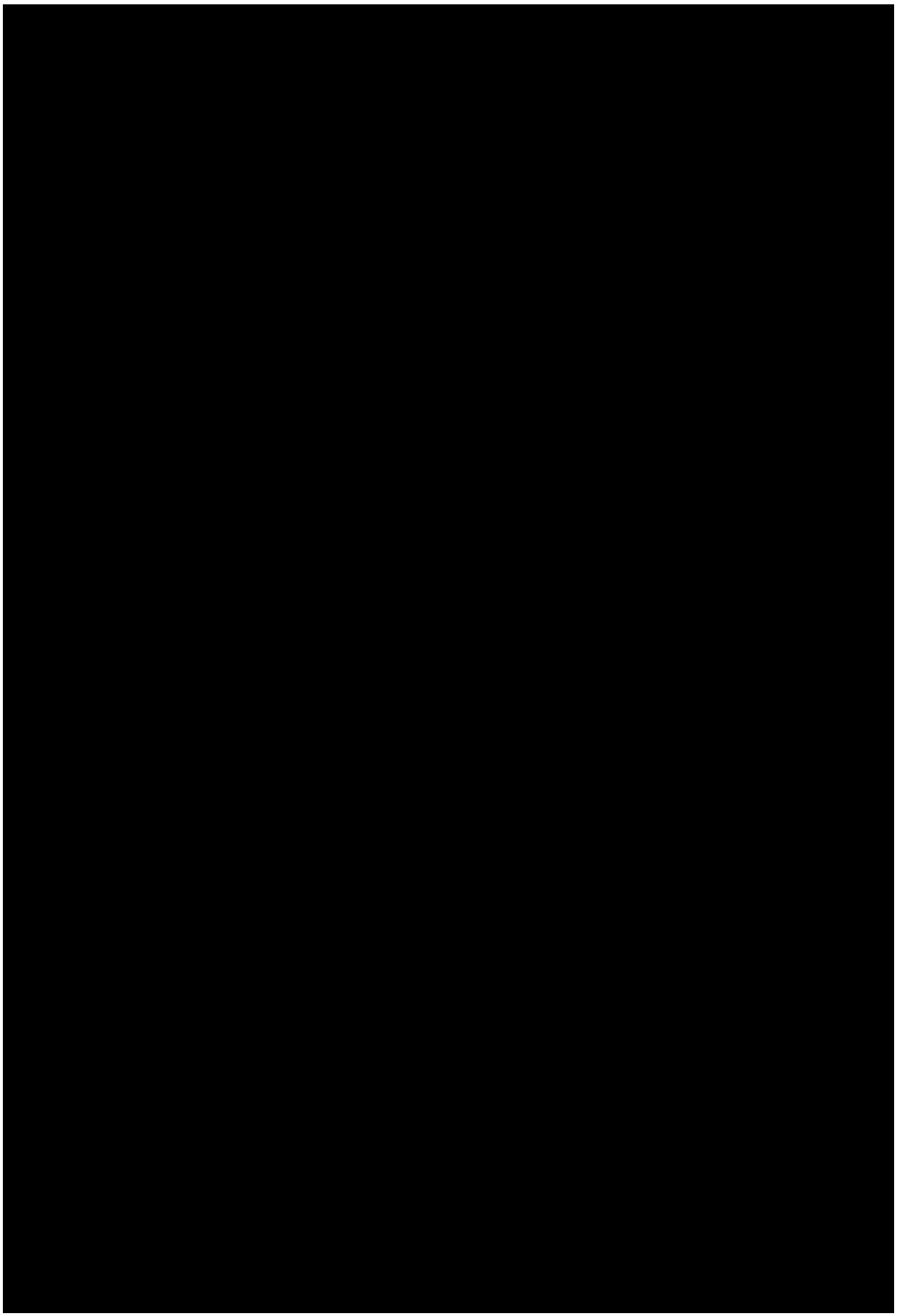


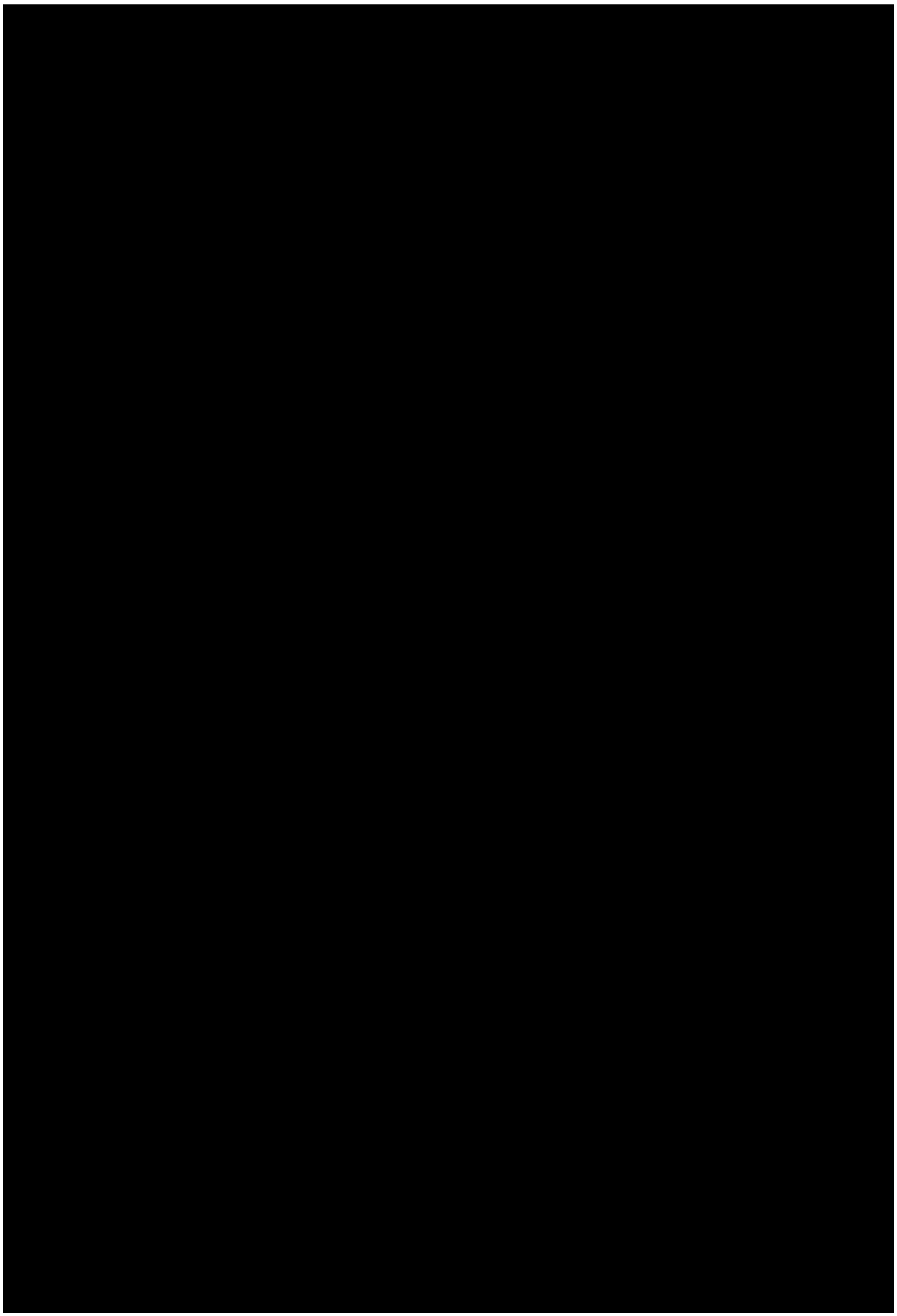


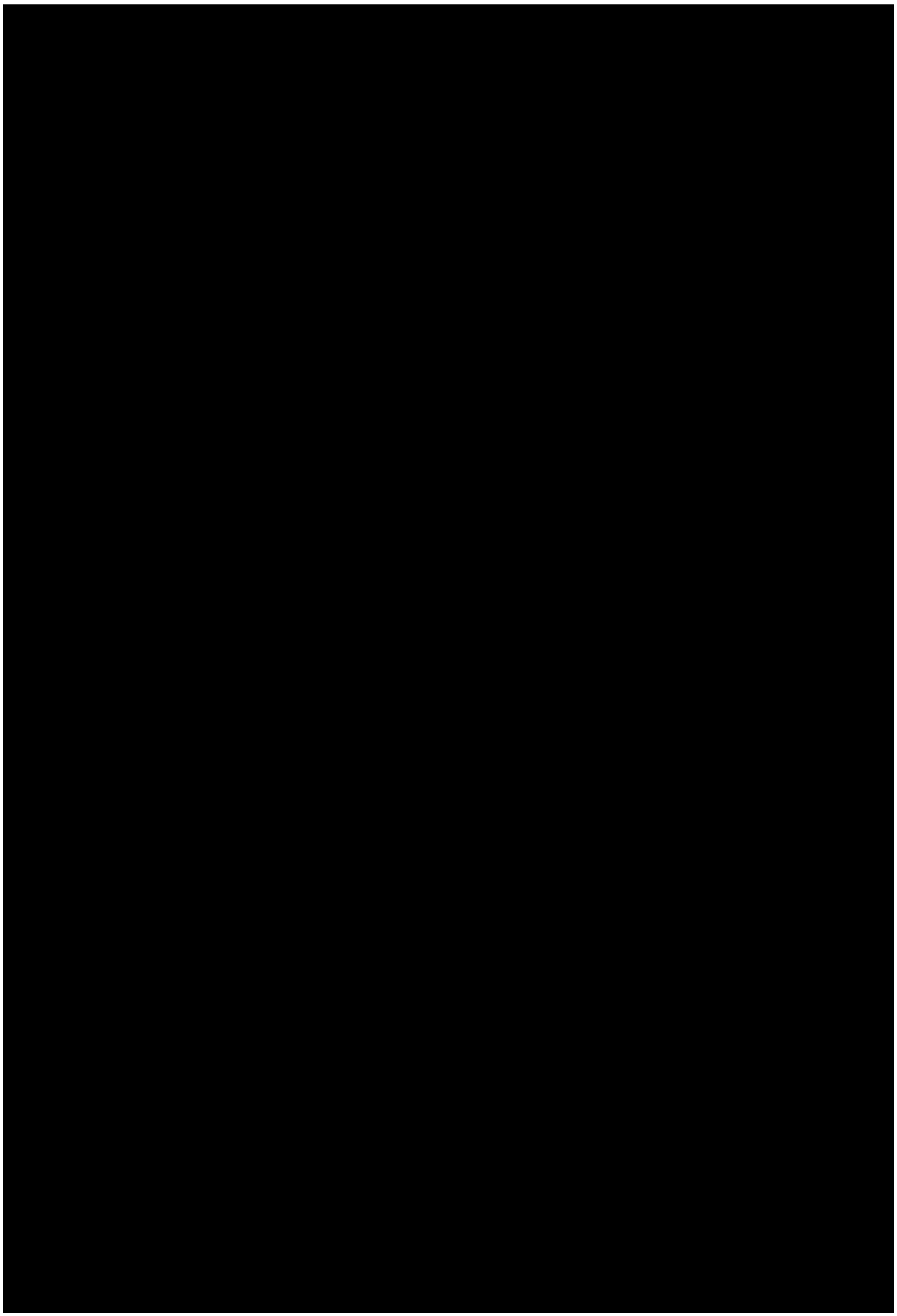


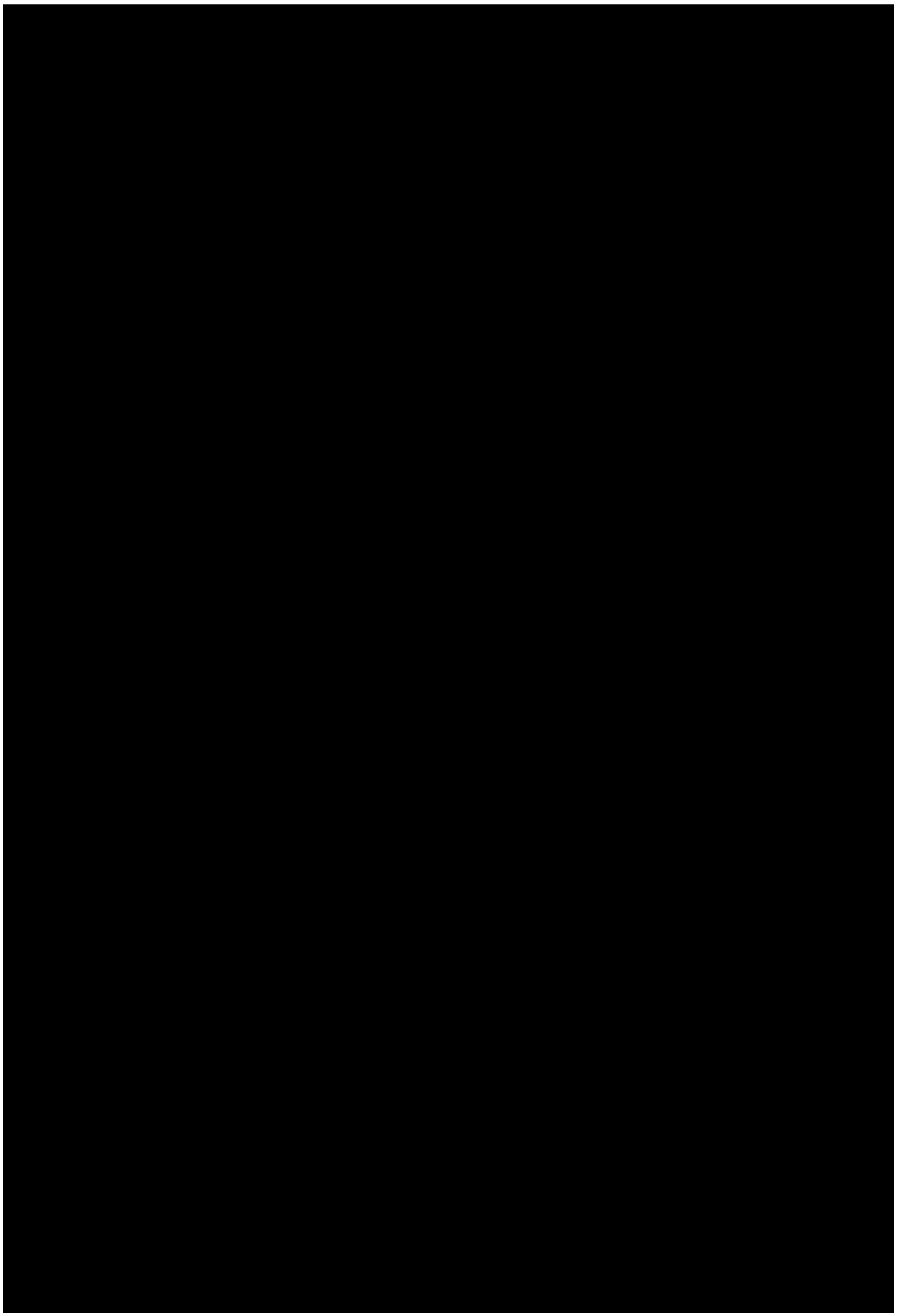

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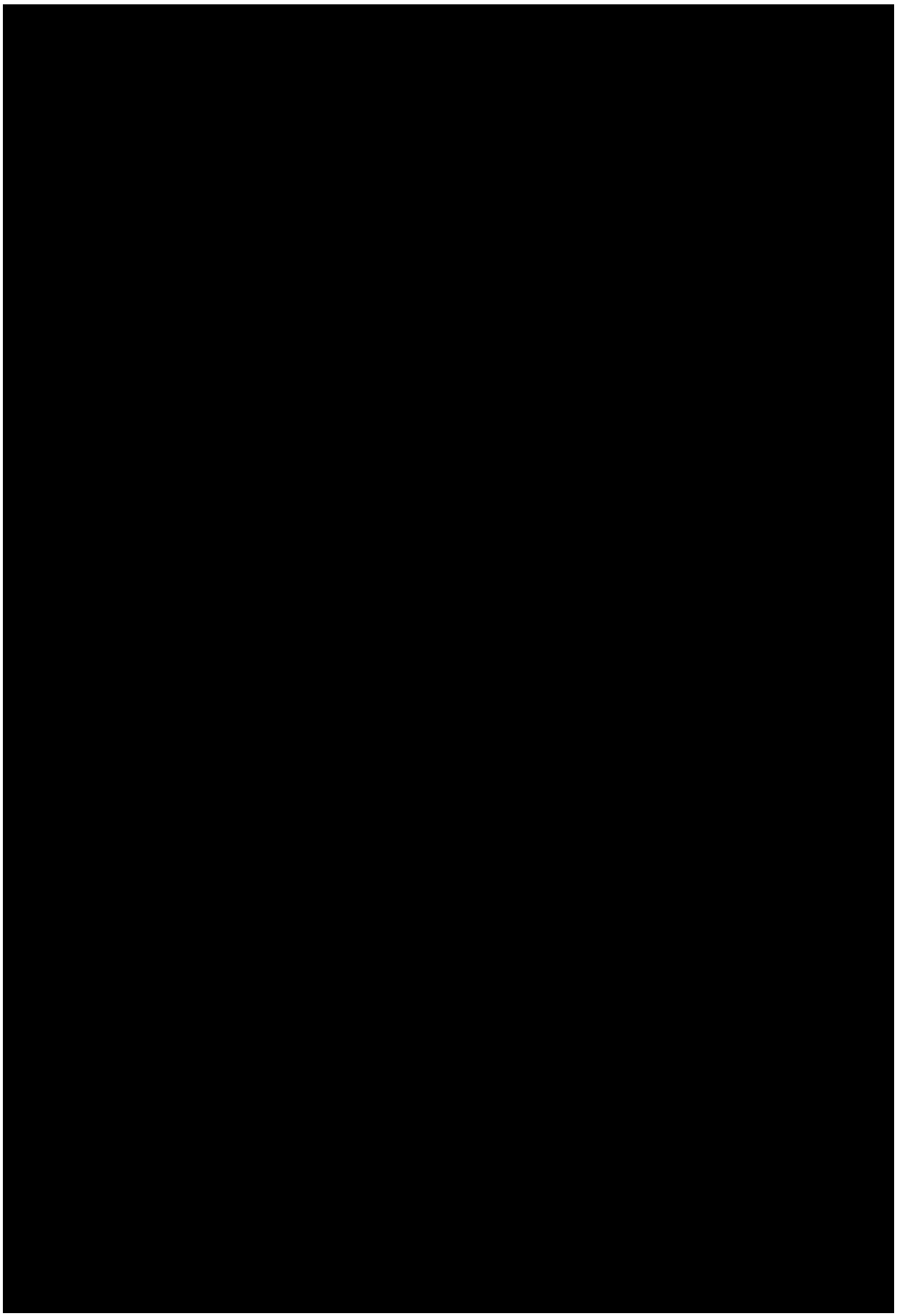


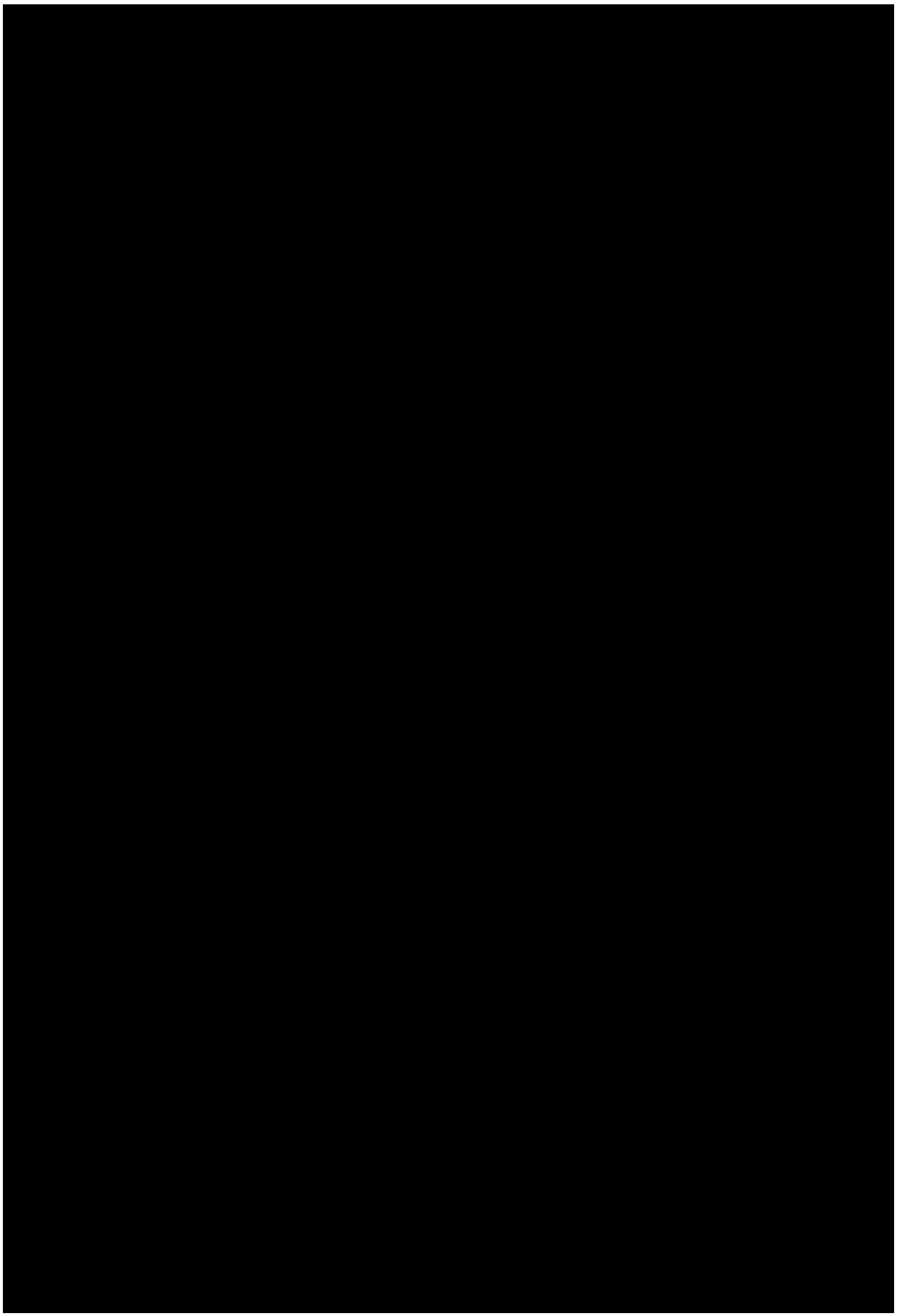


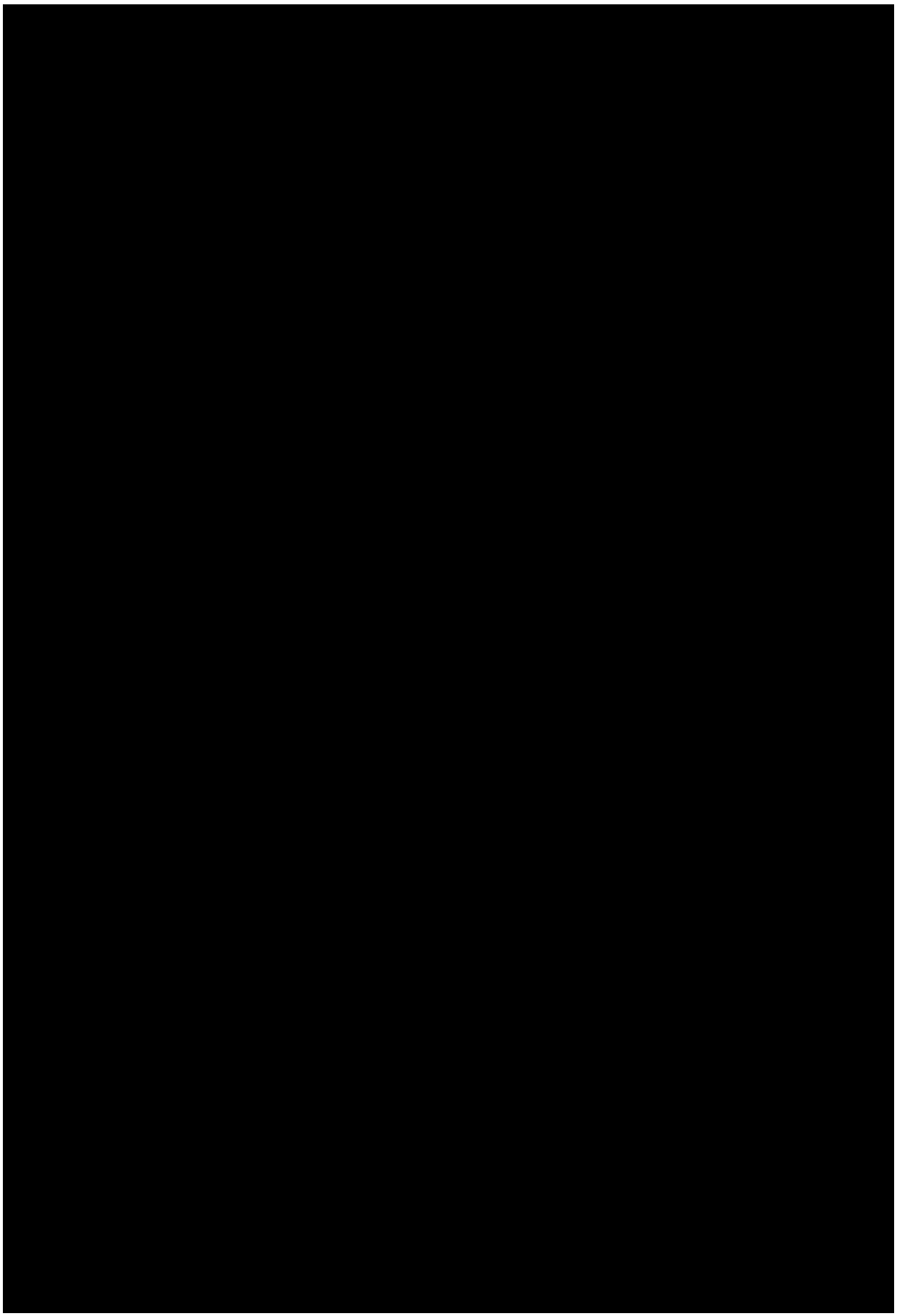


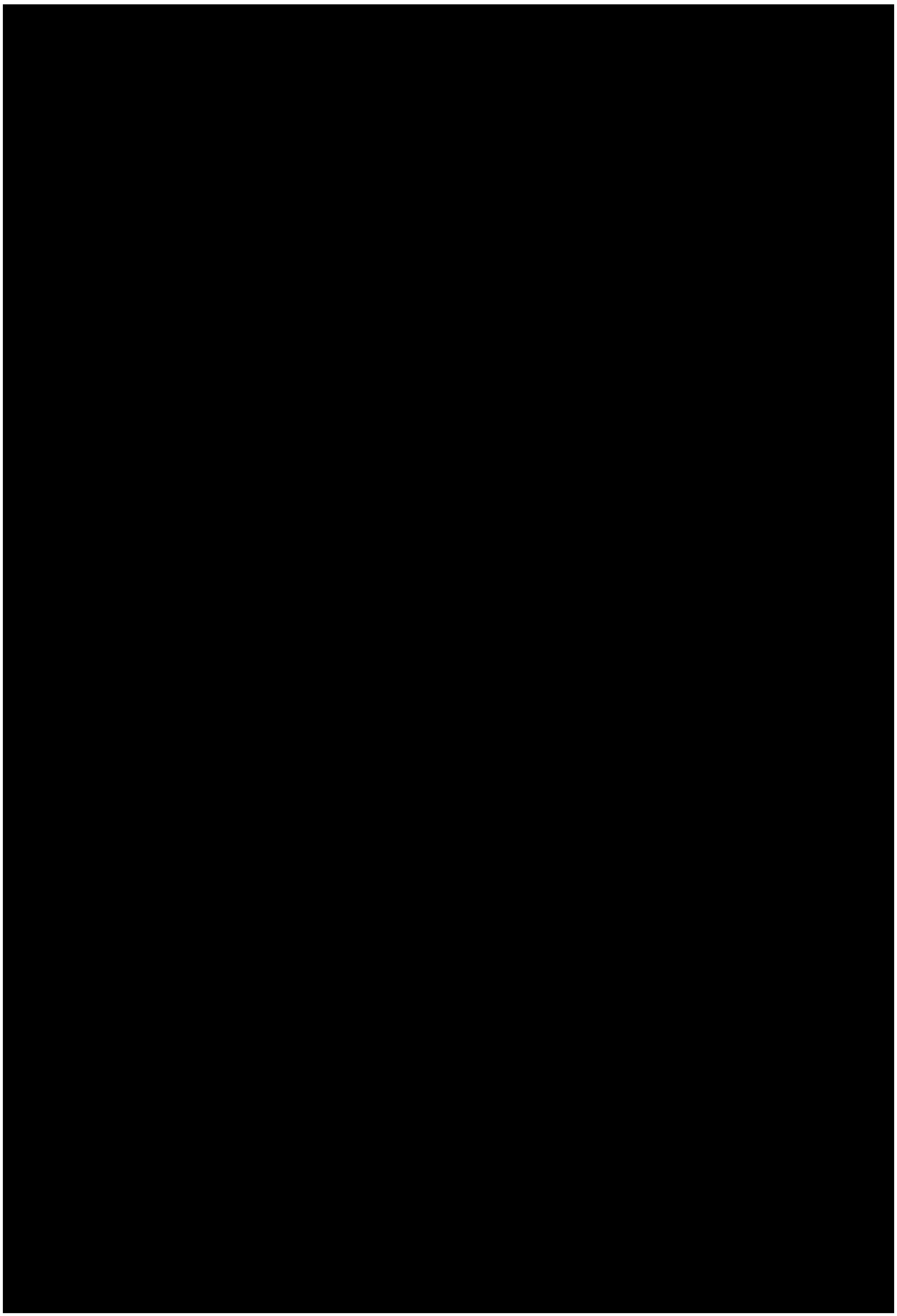


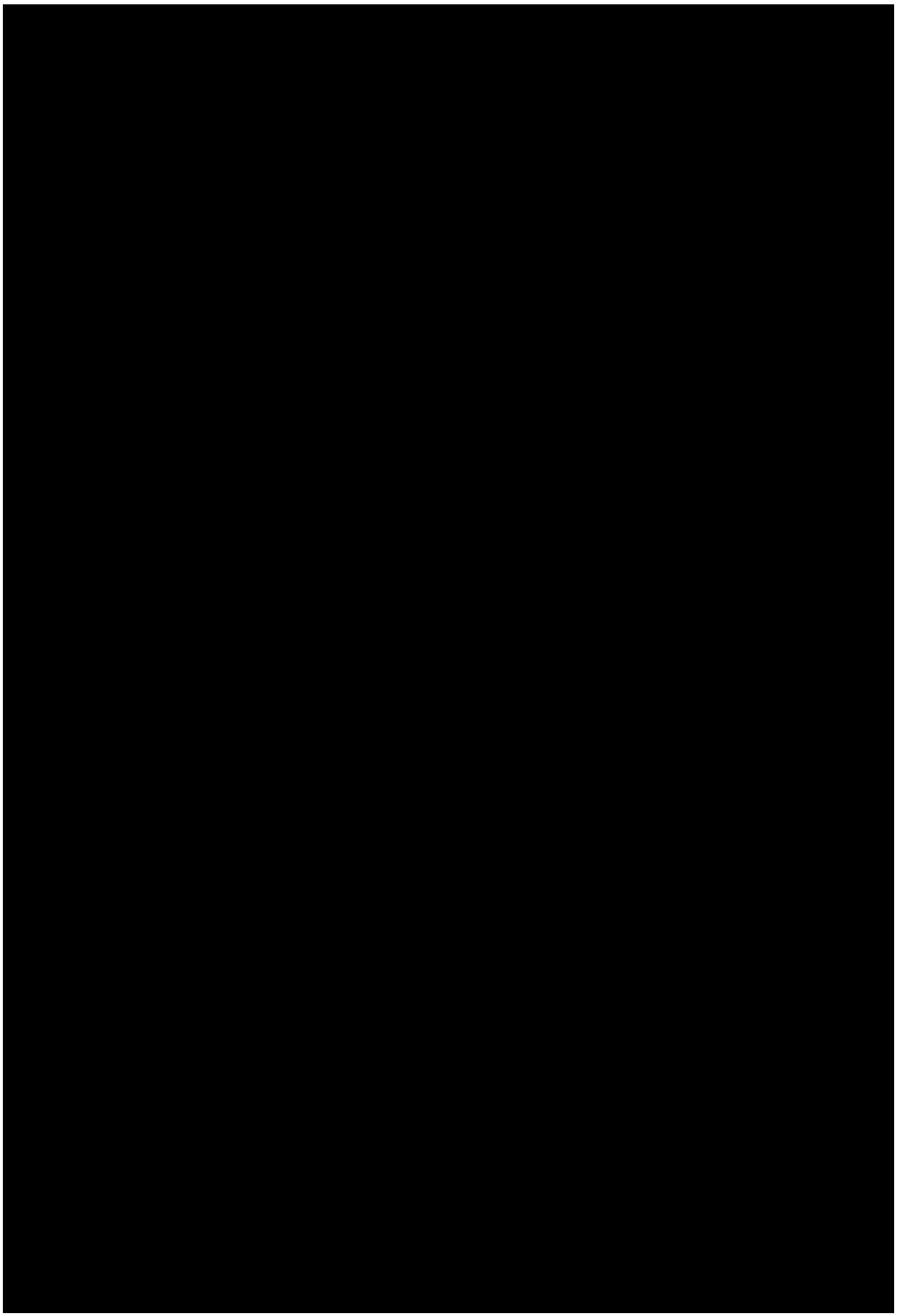


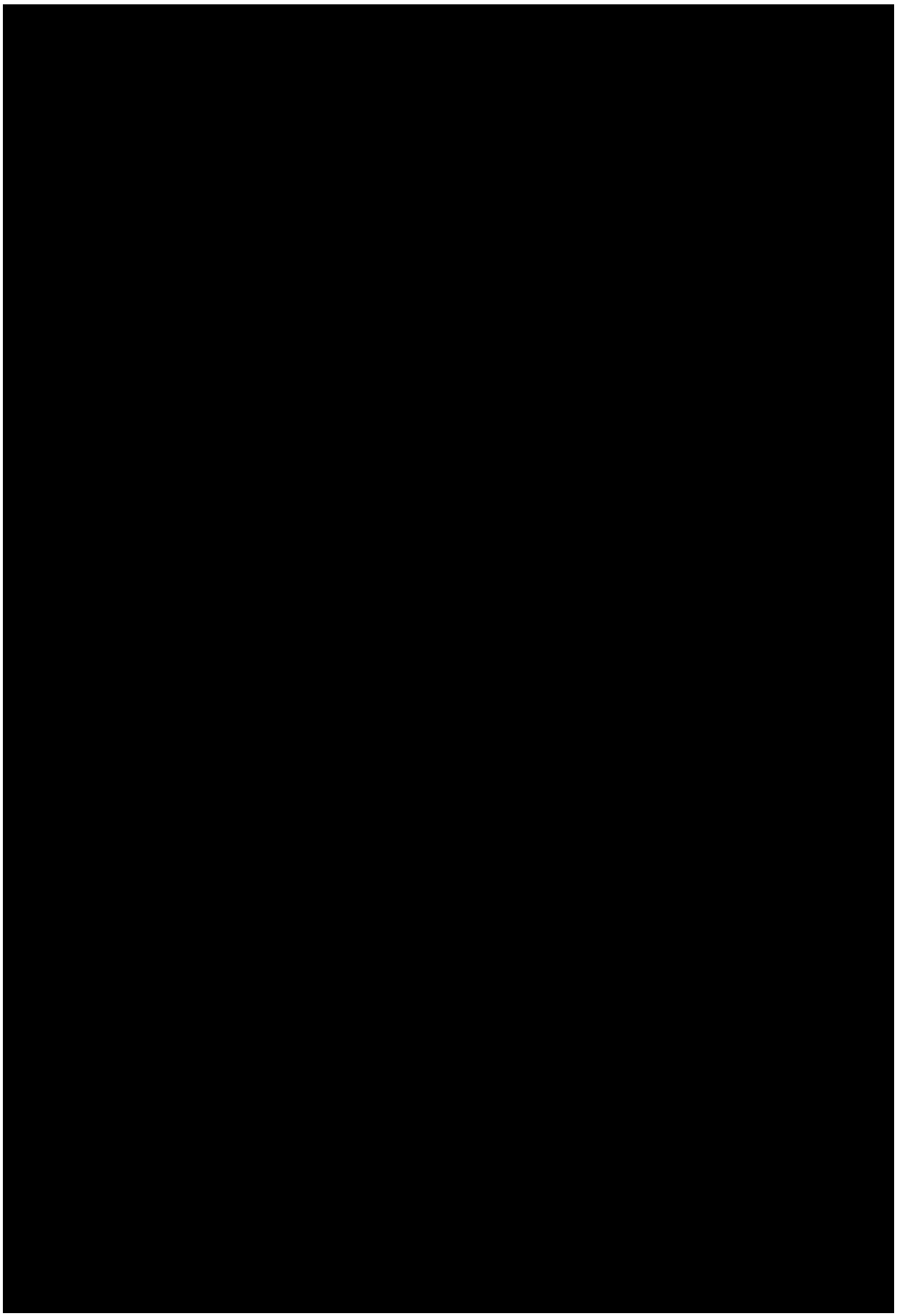


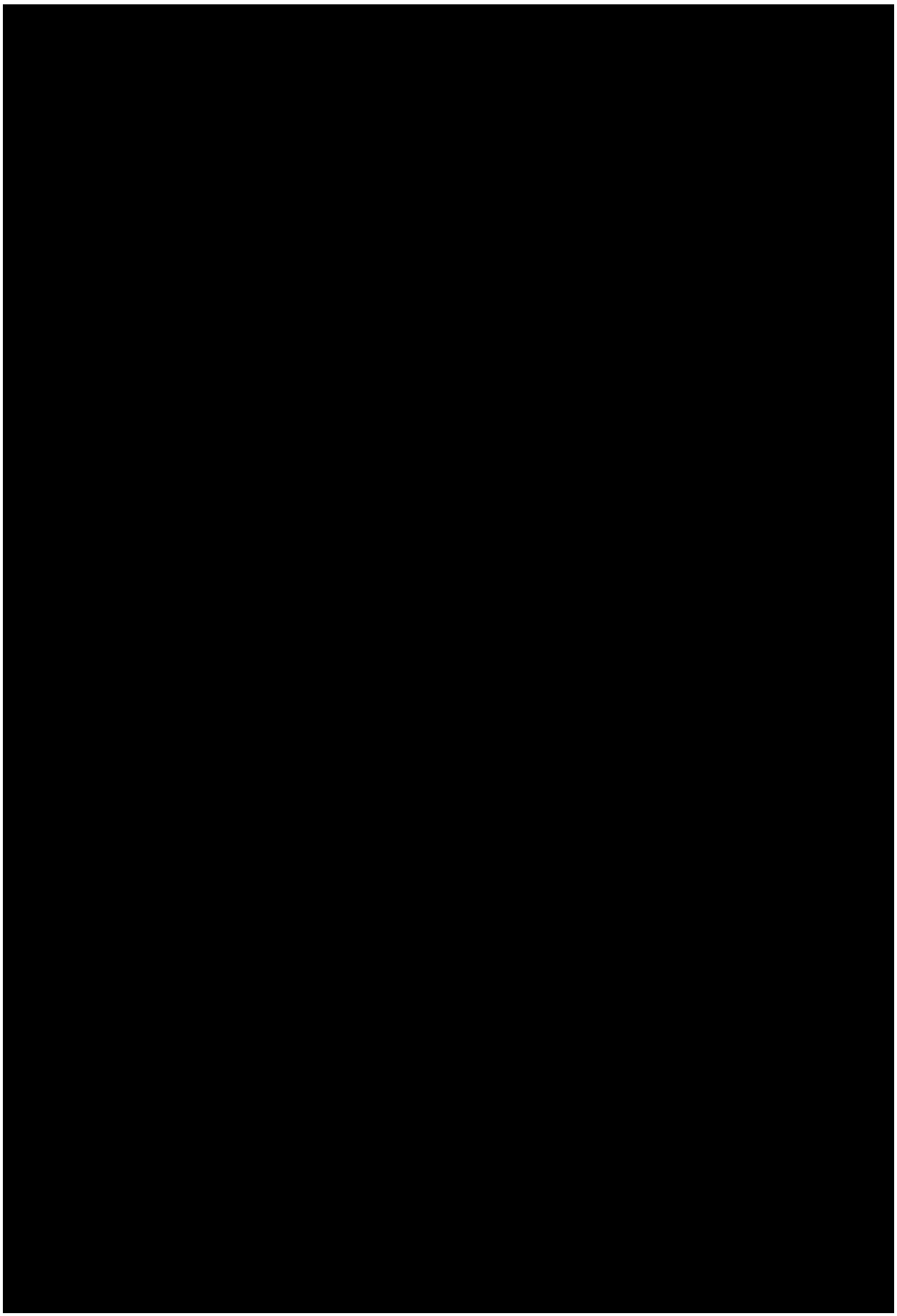


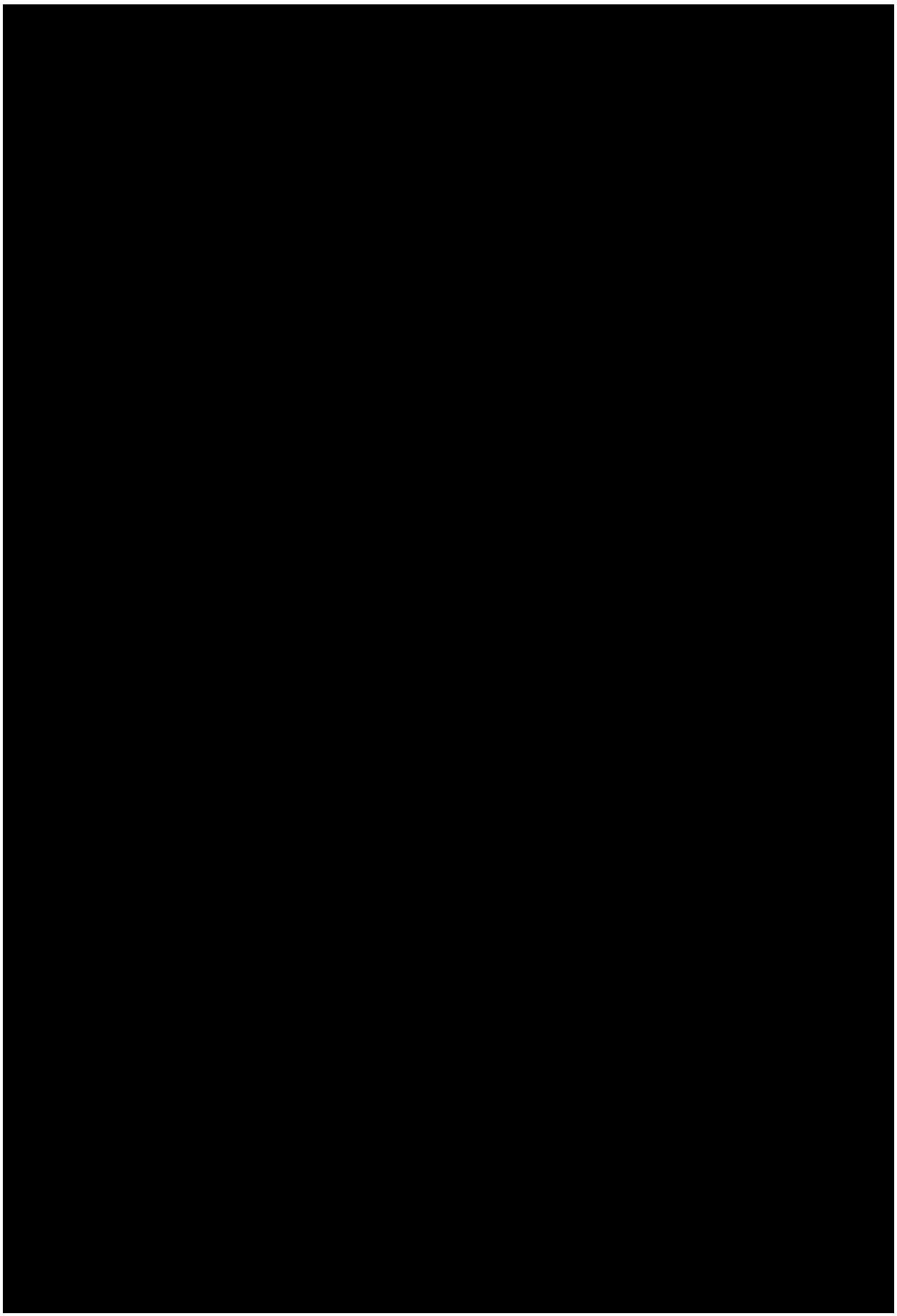


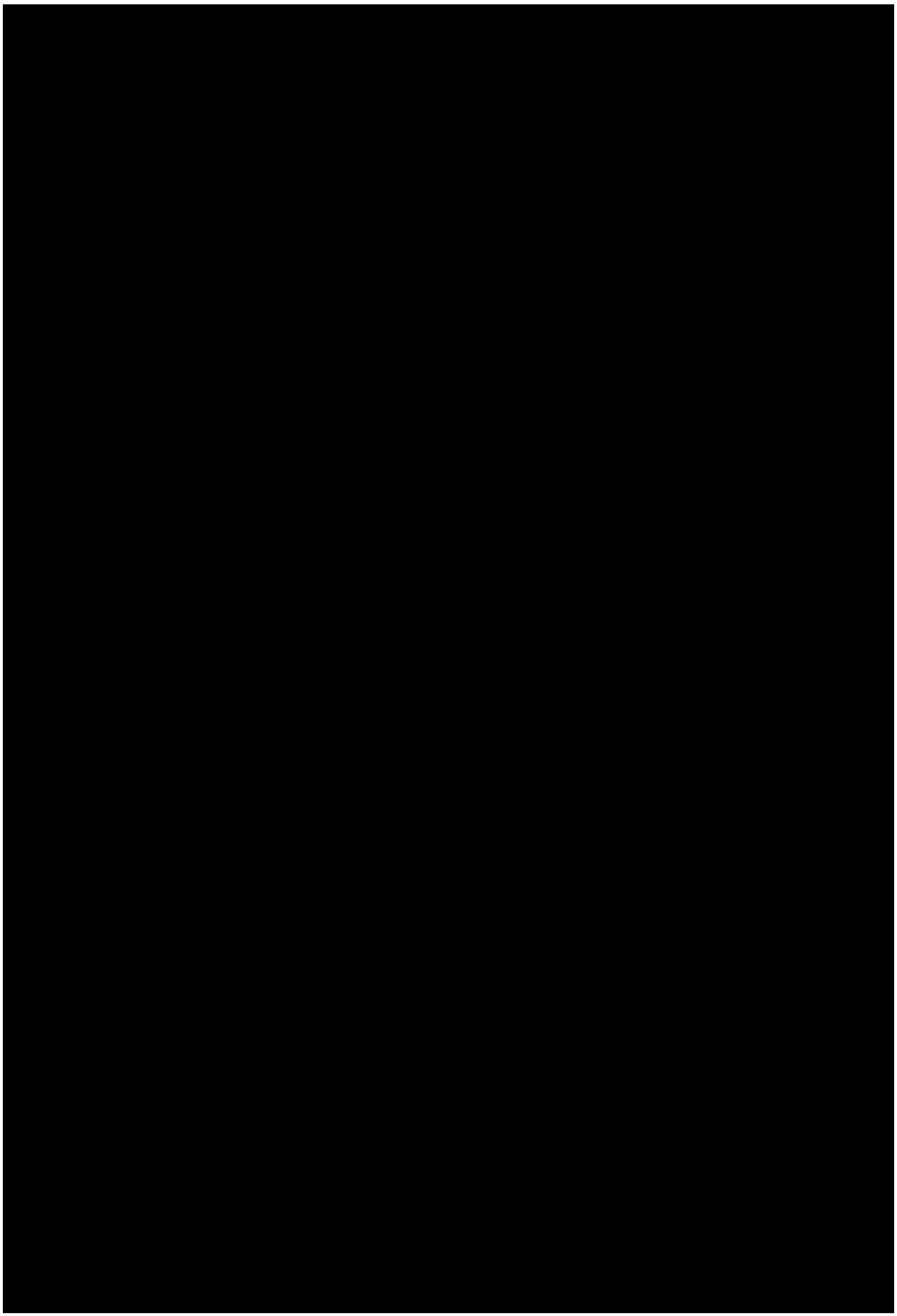


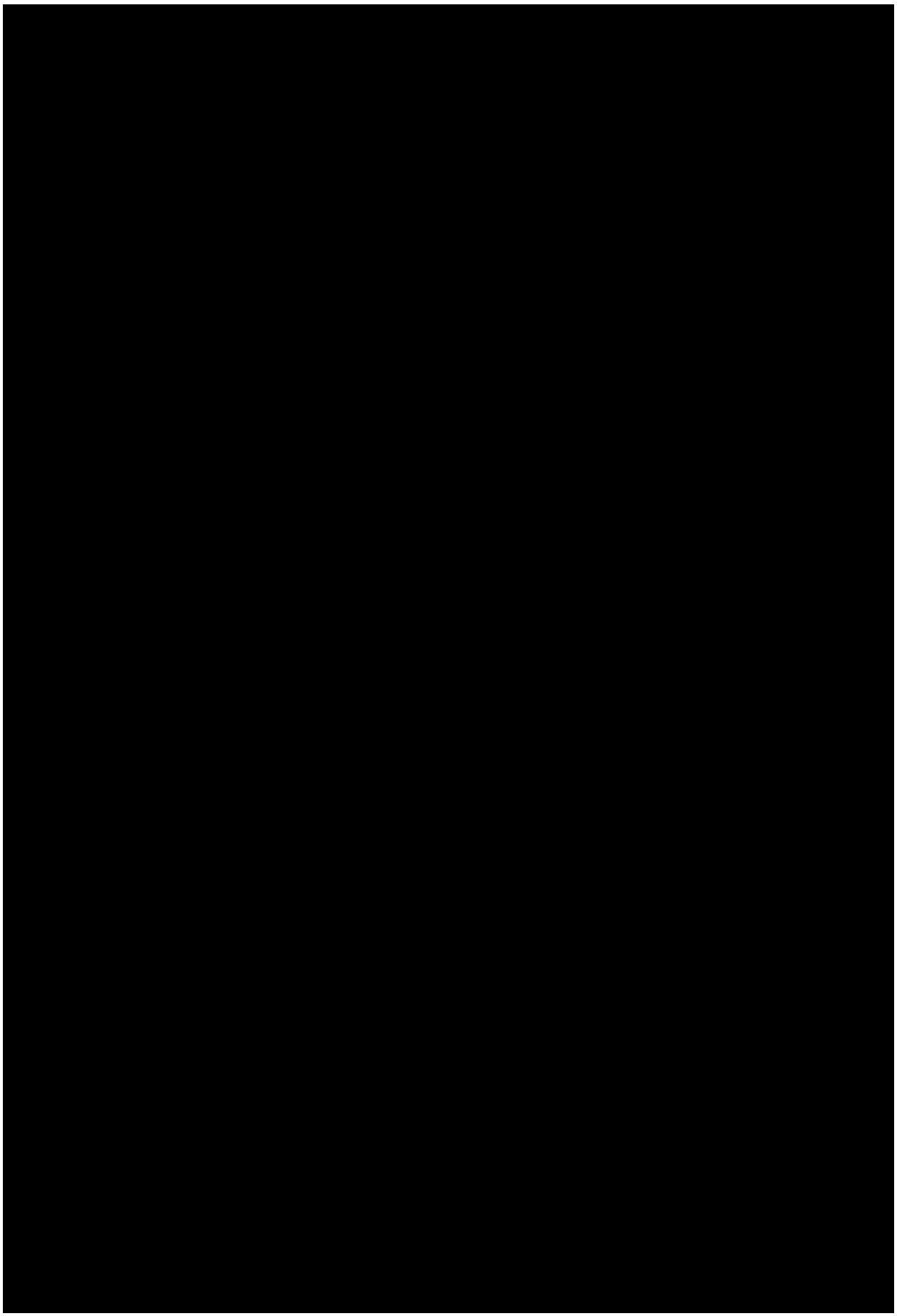


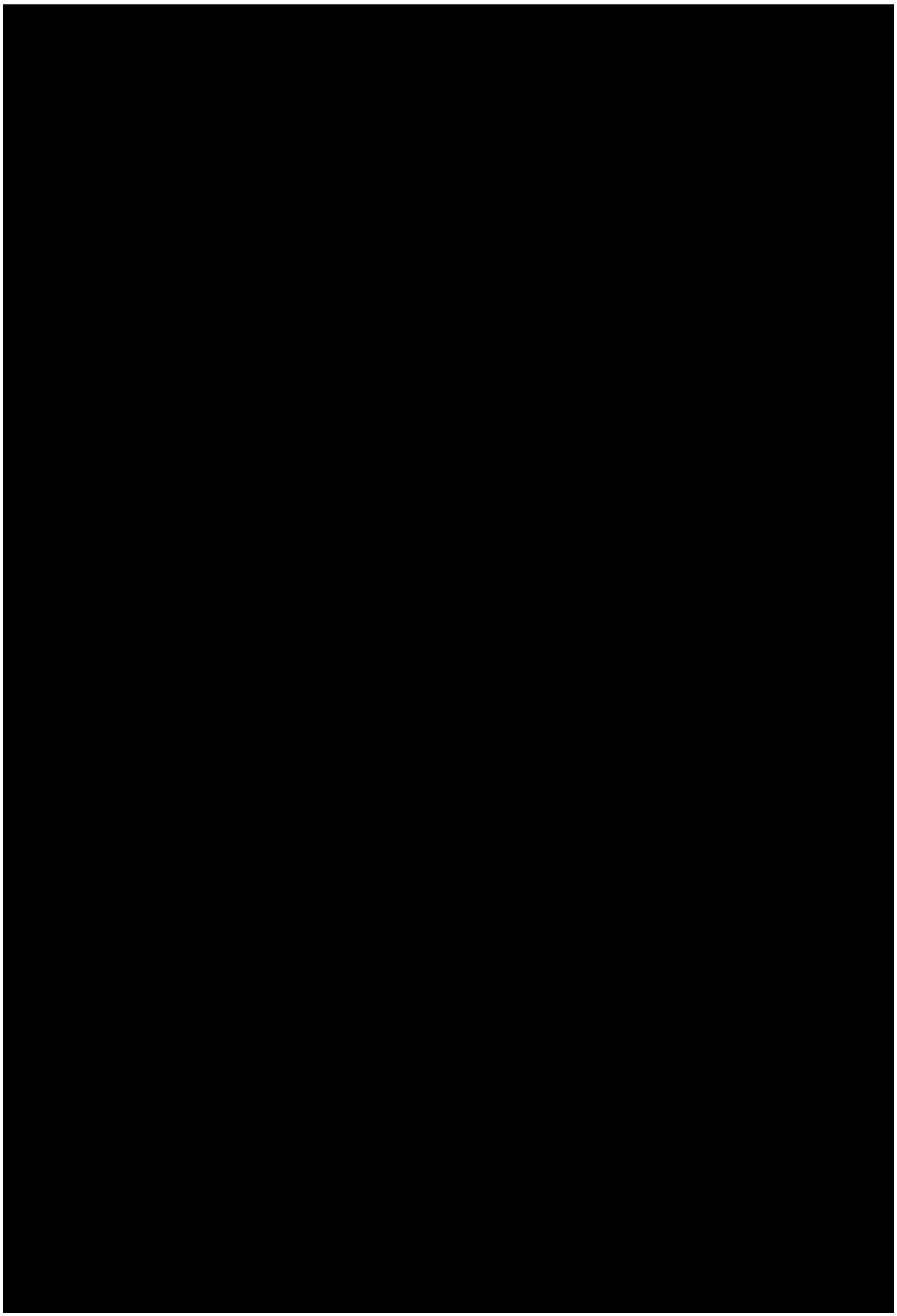


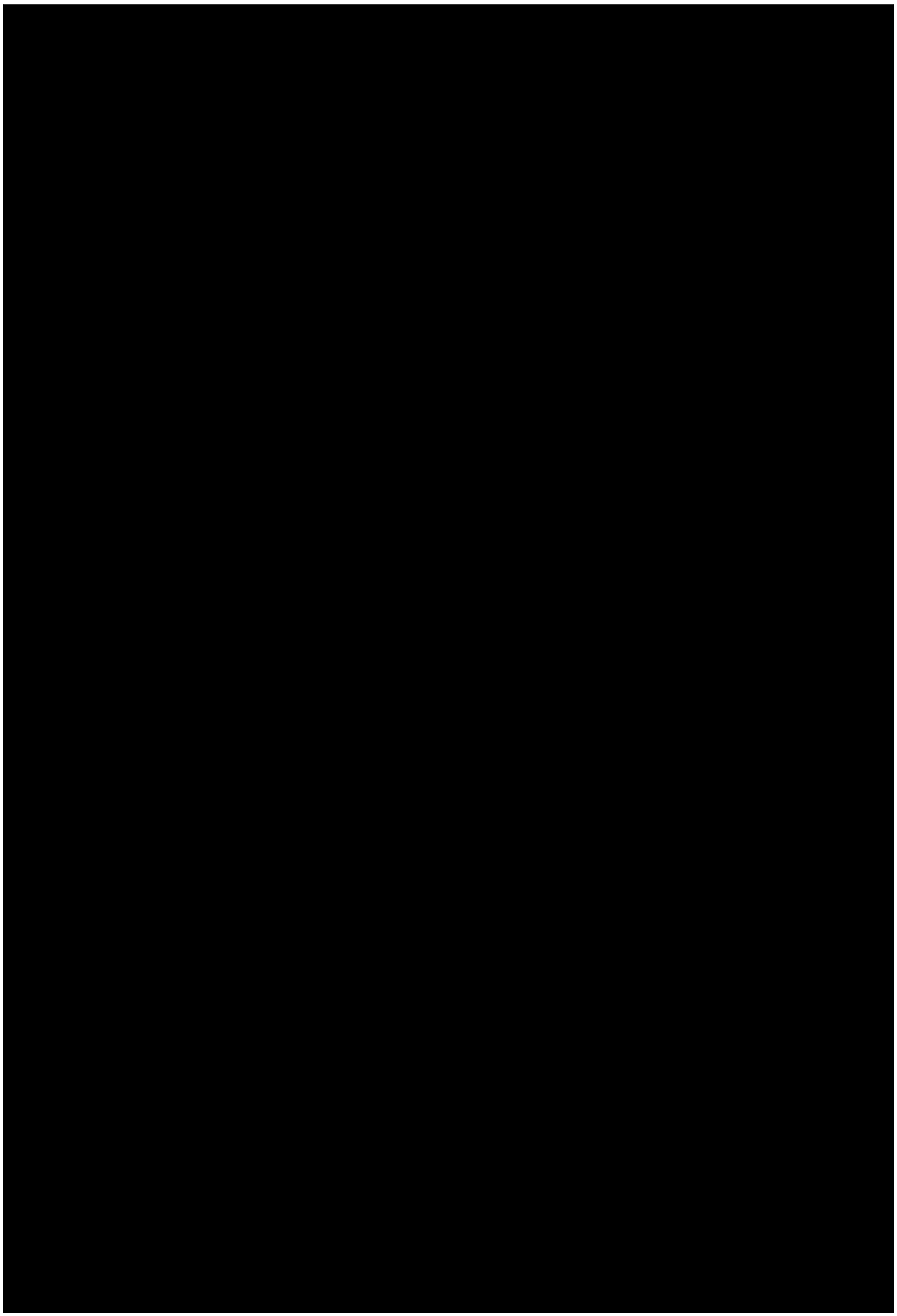


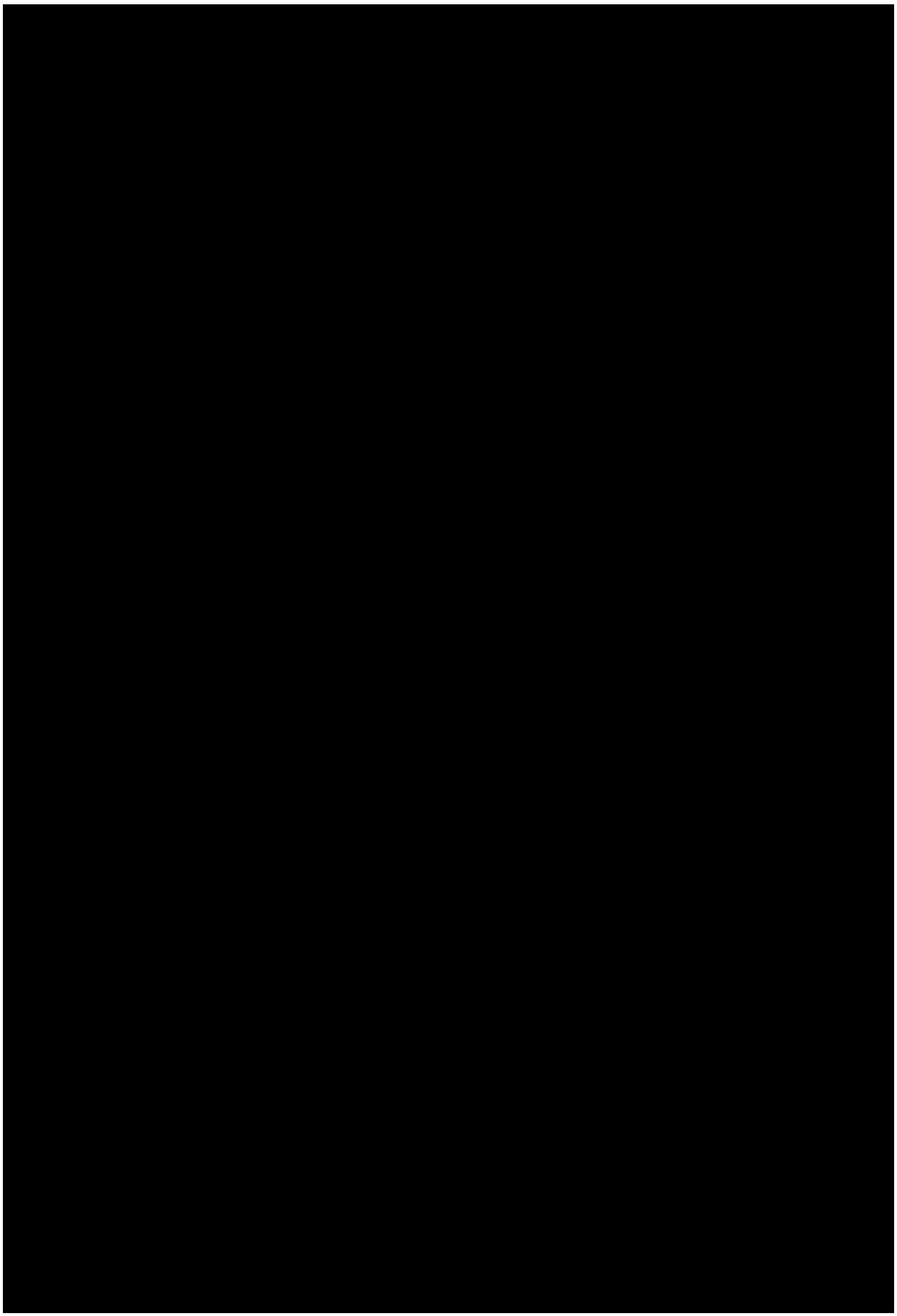






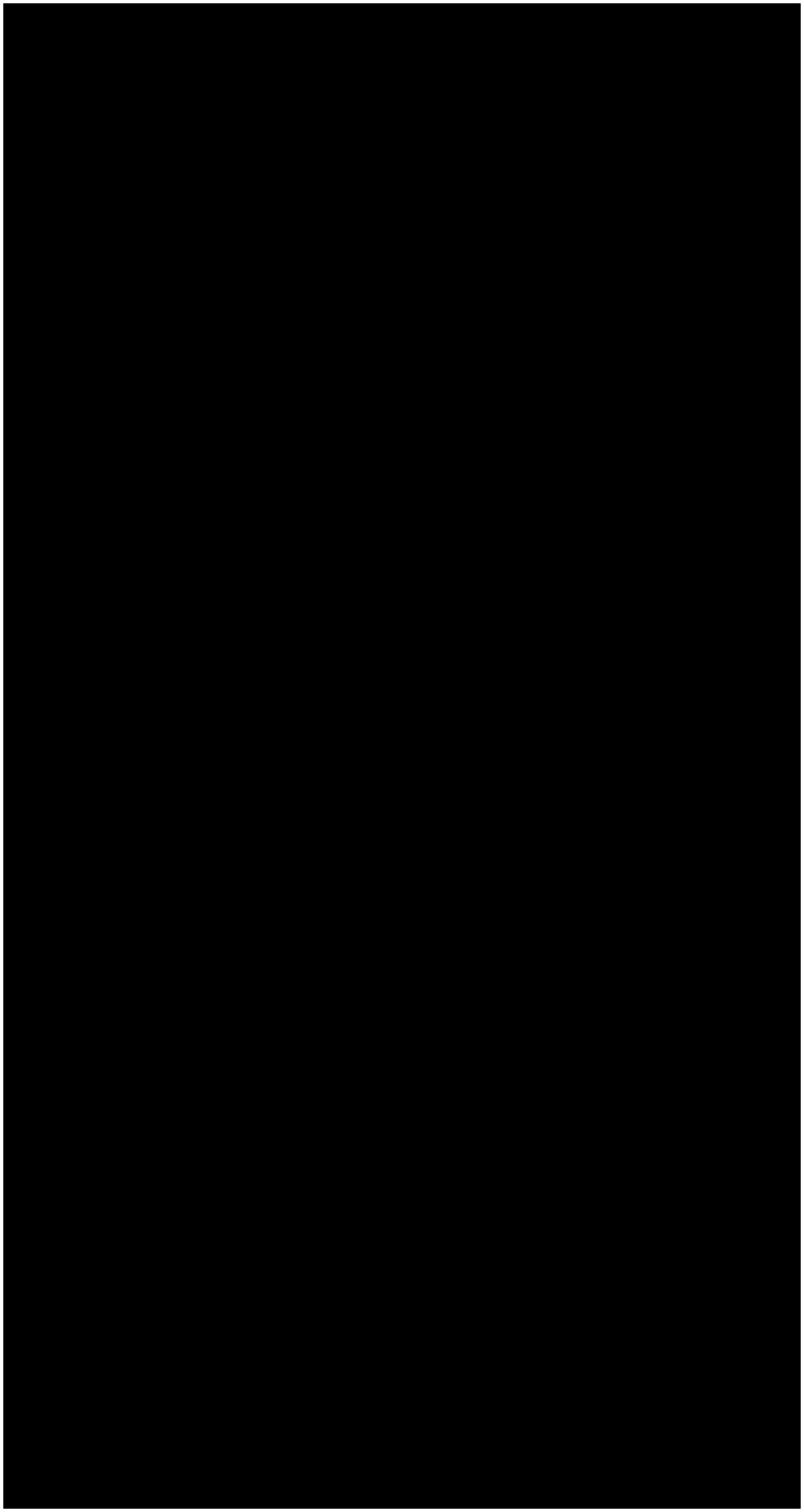


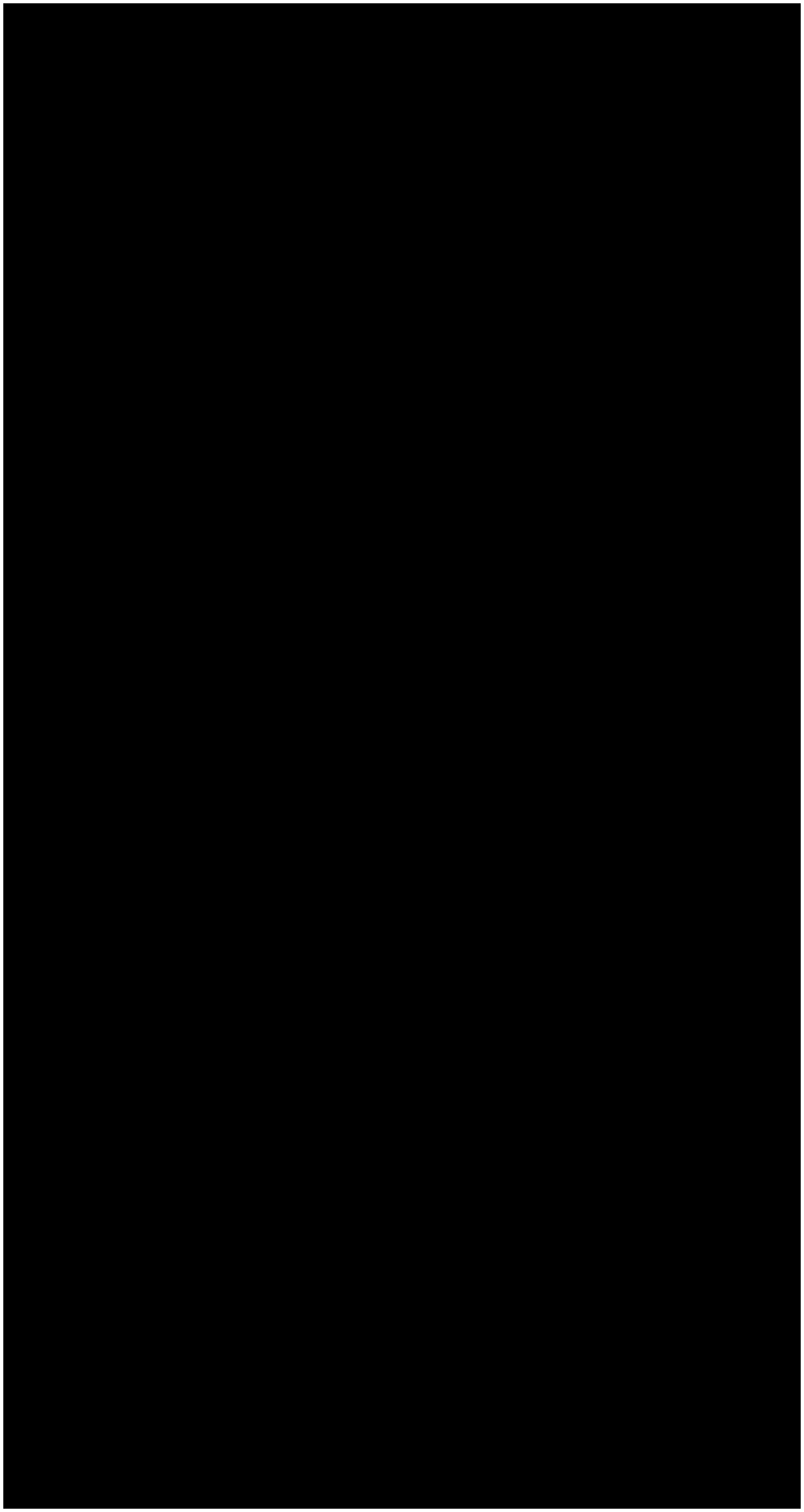


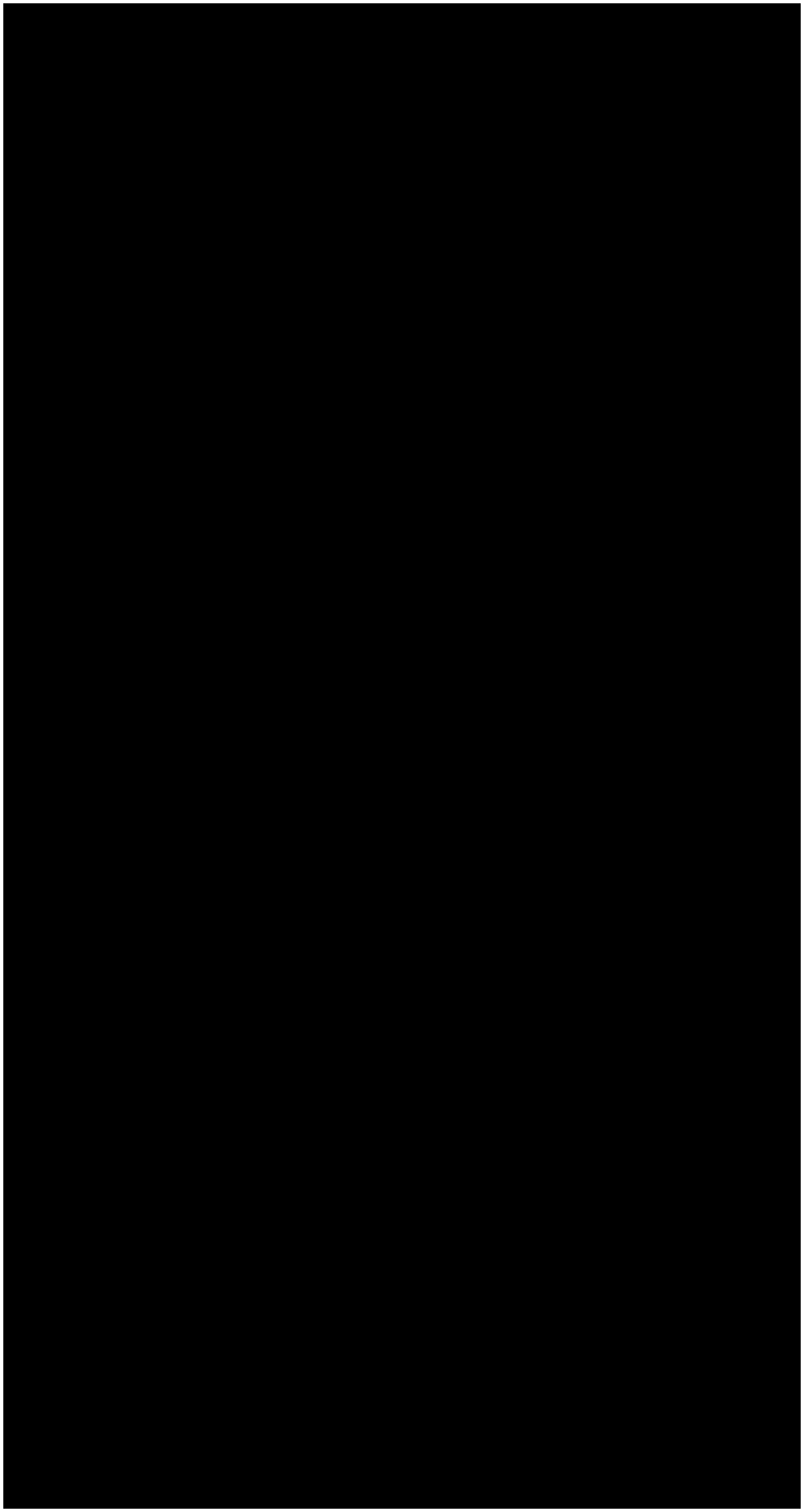


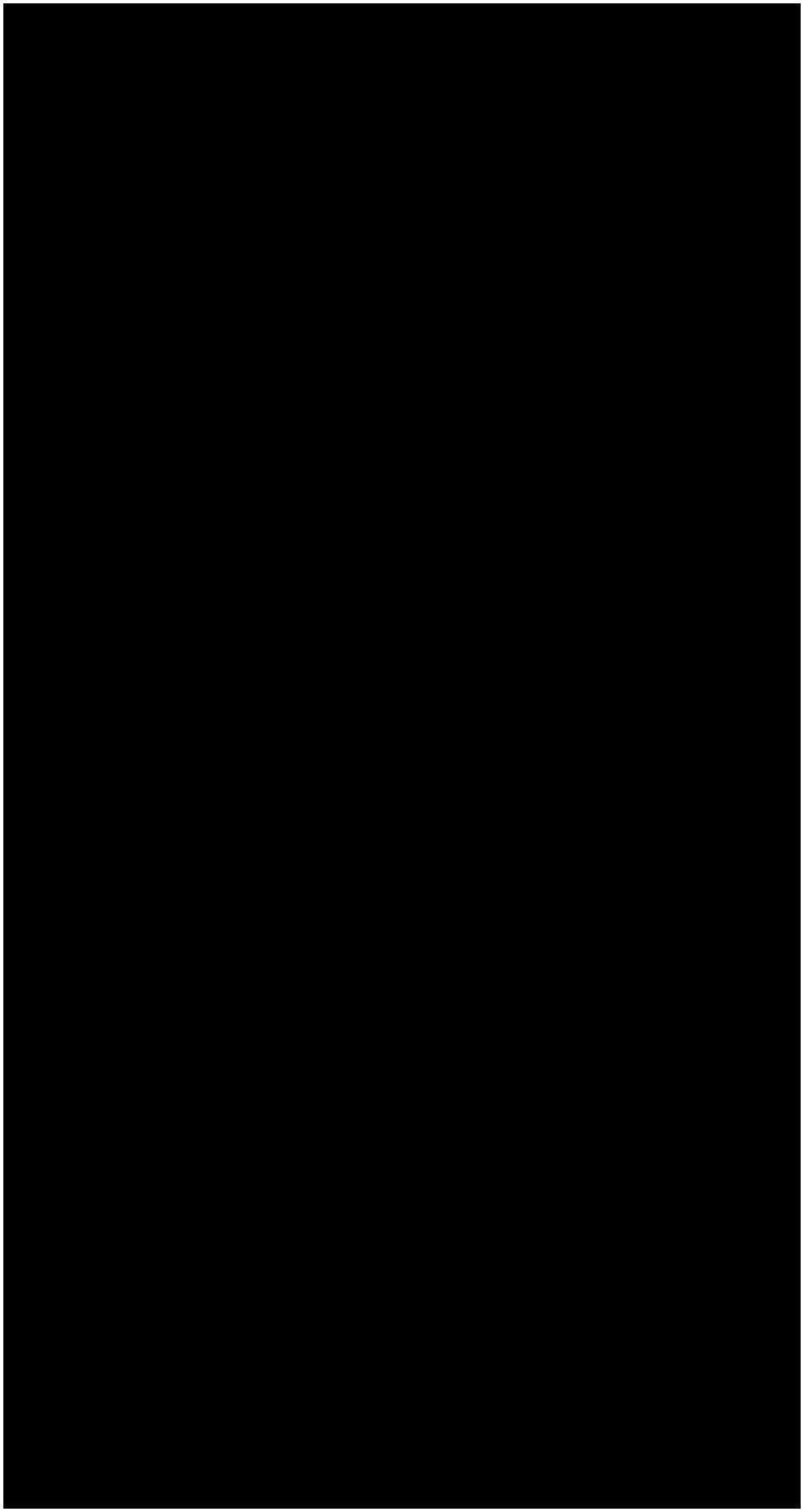


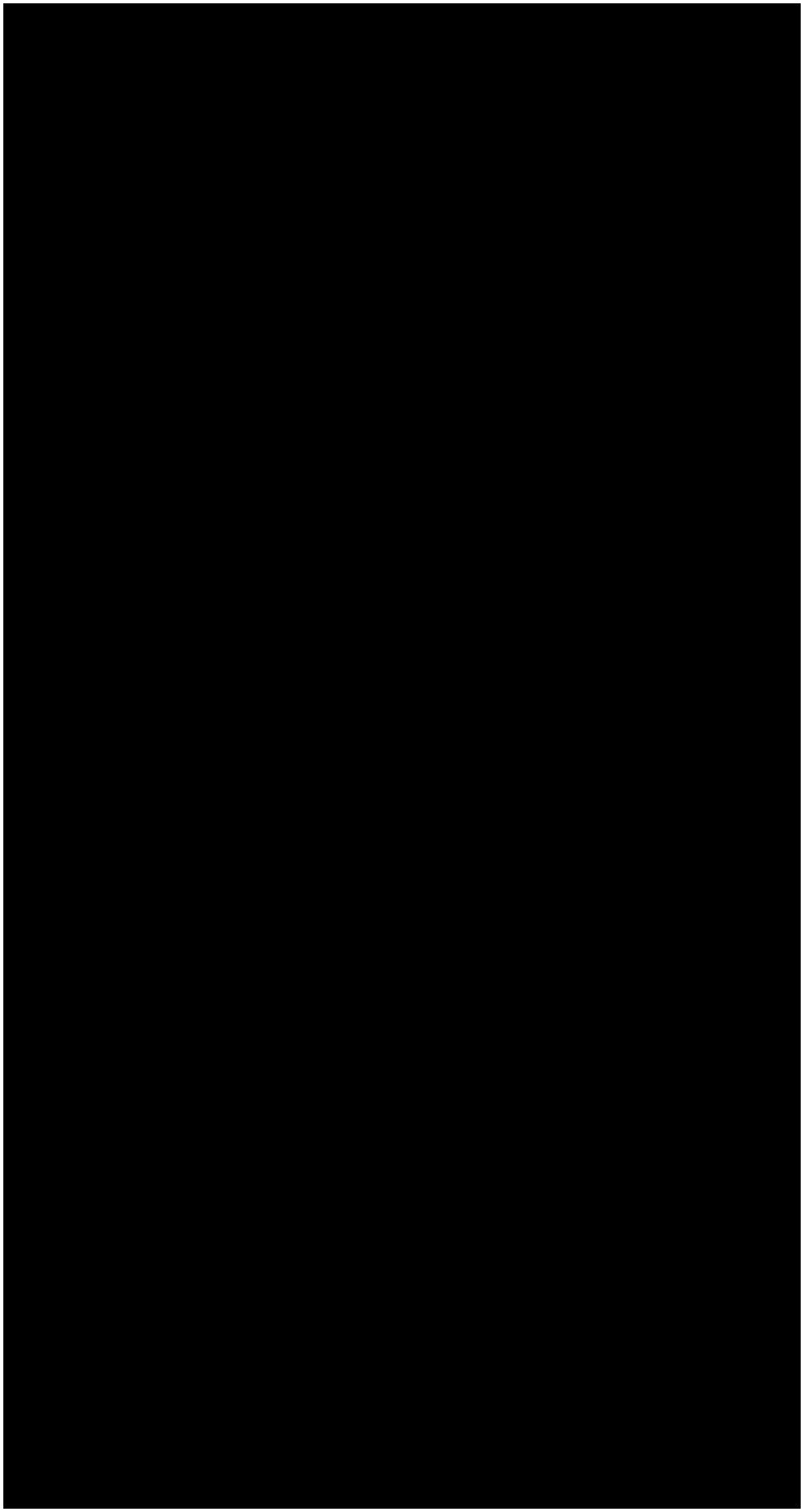
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[redacted]						

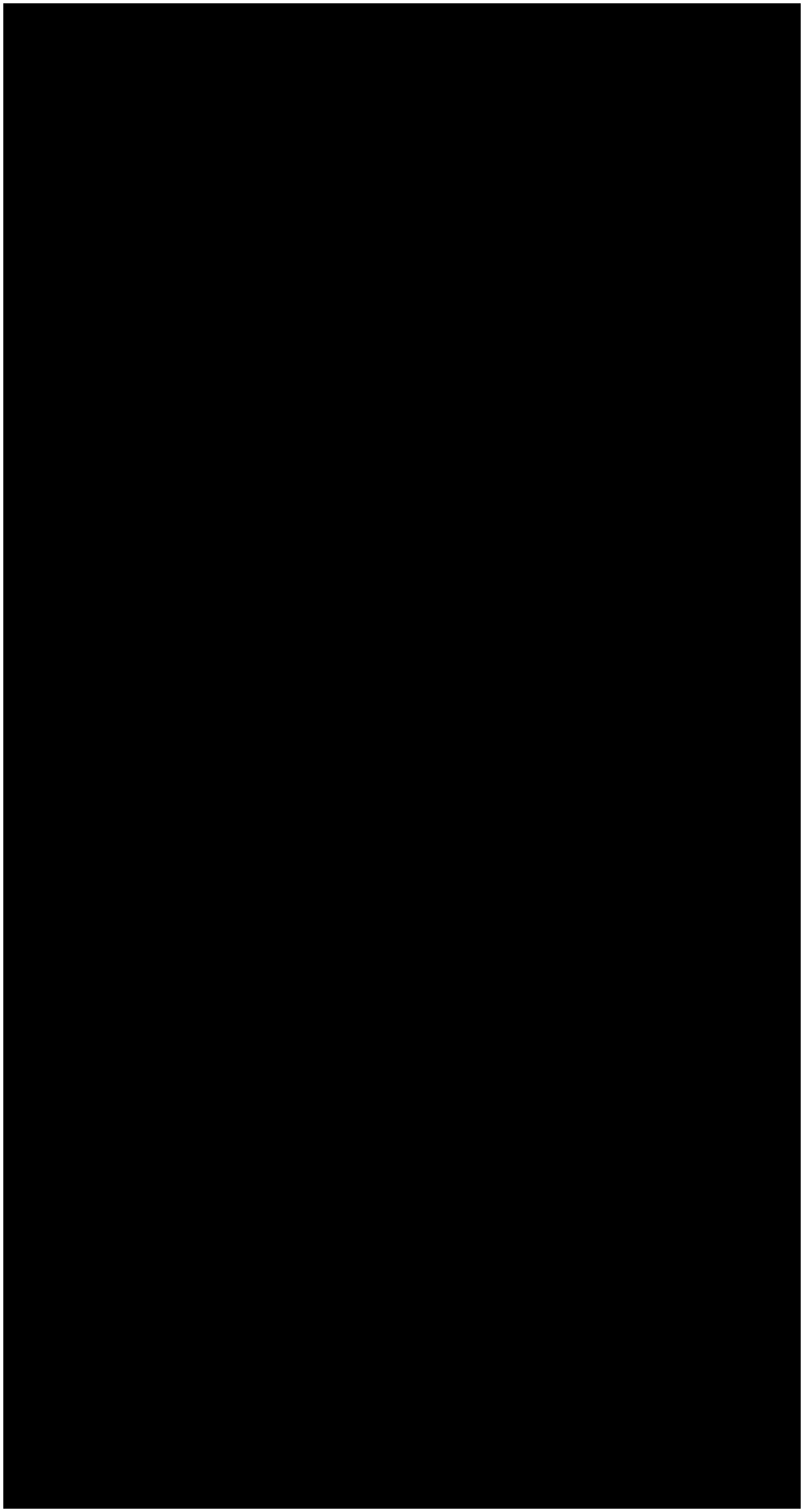


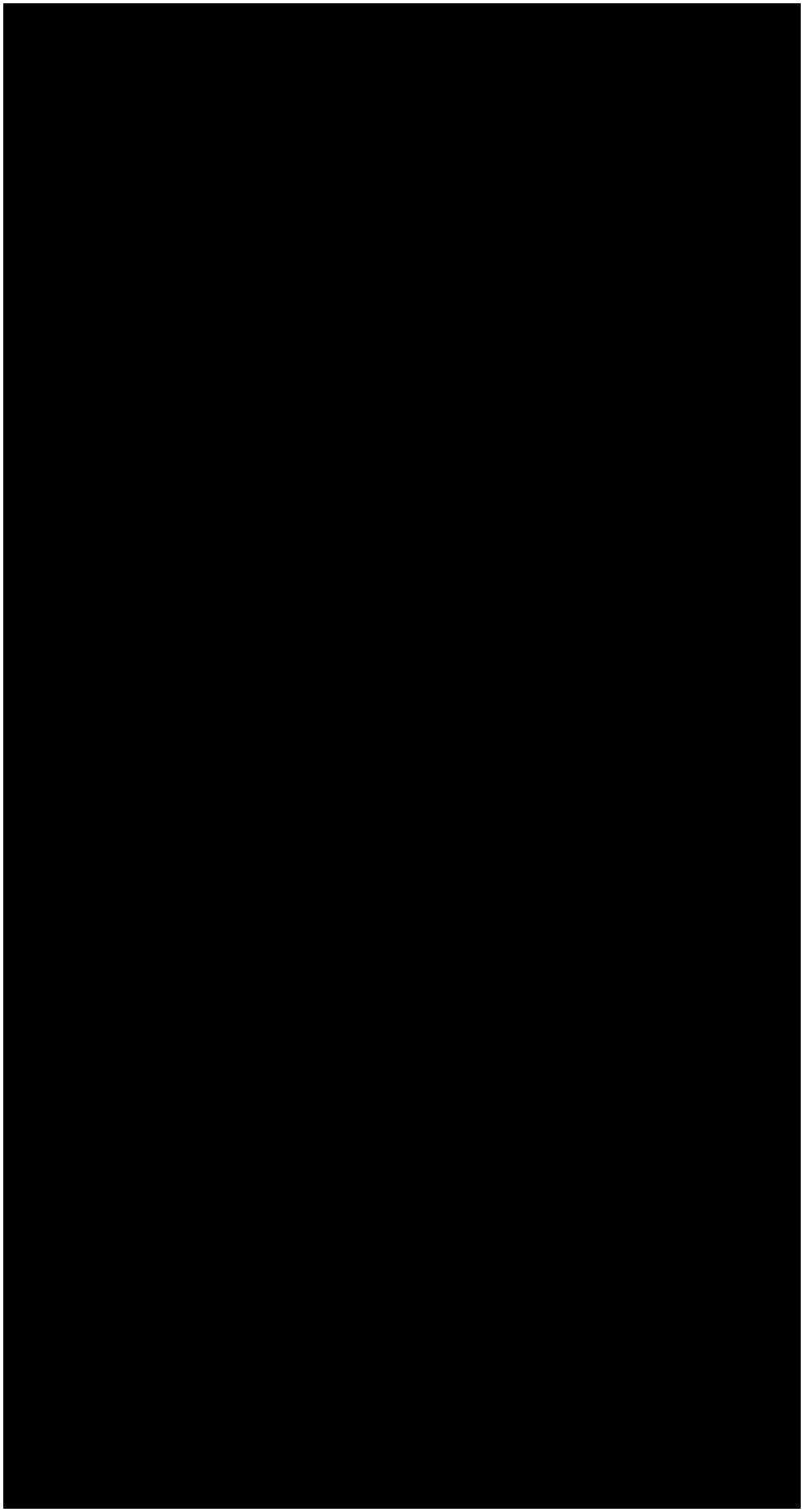


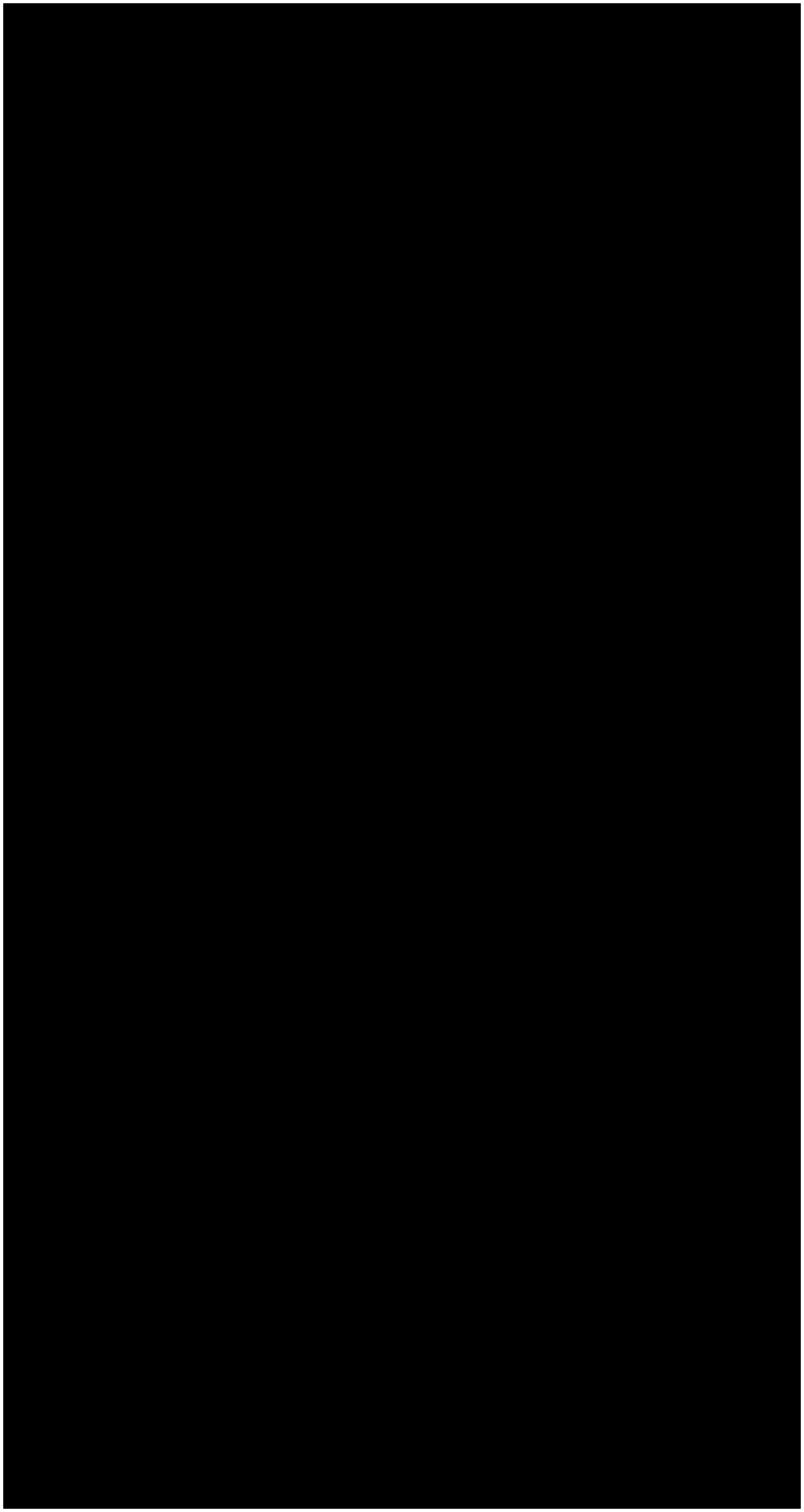


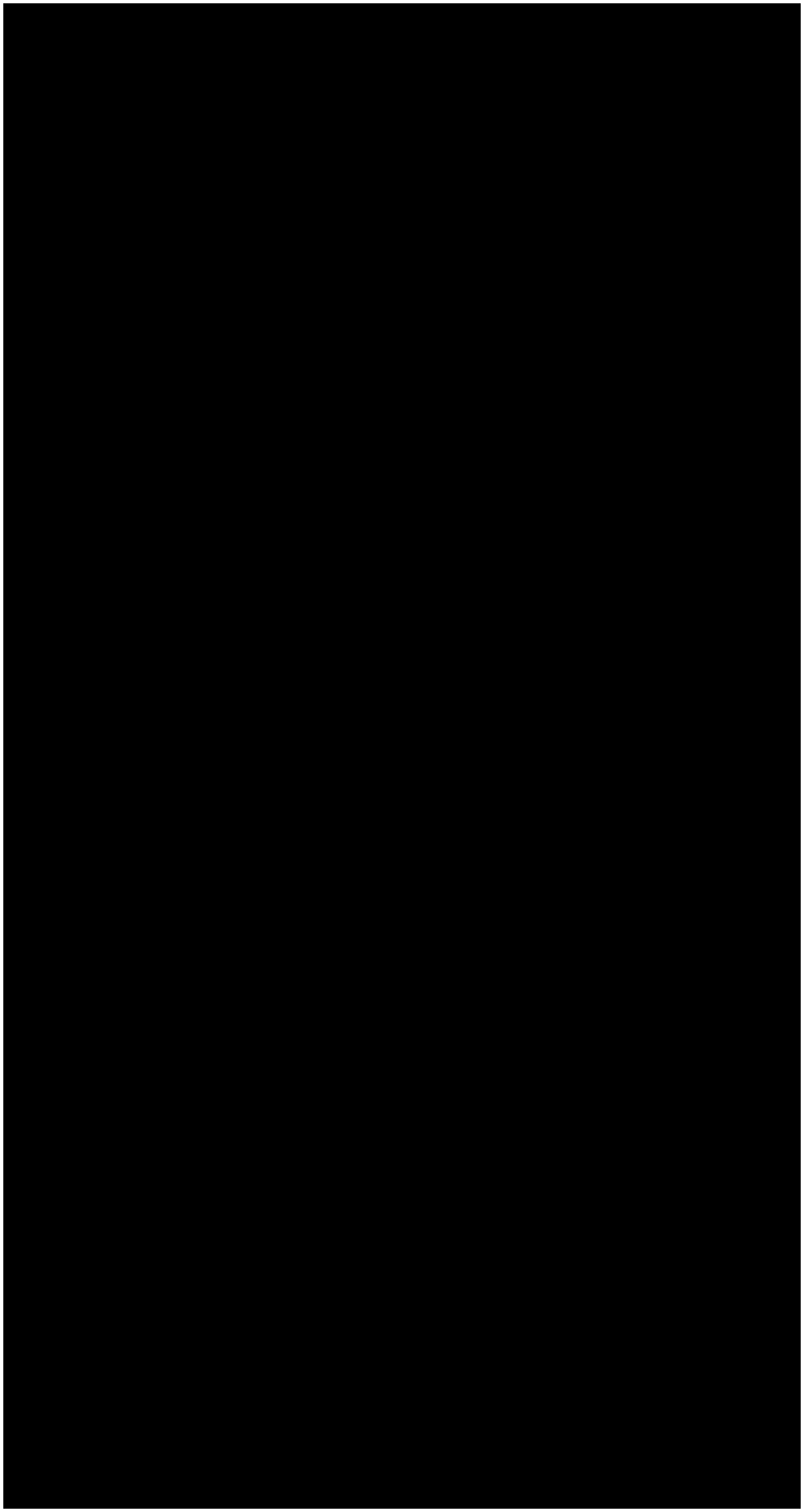


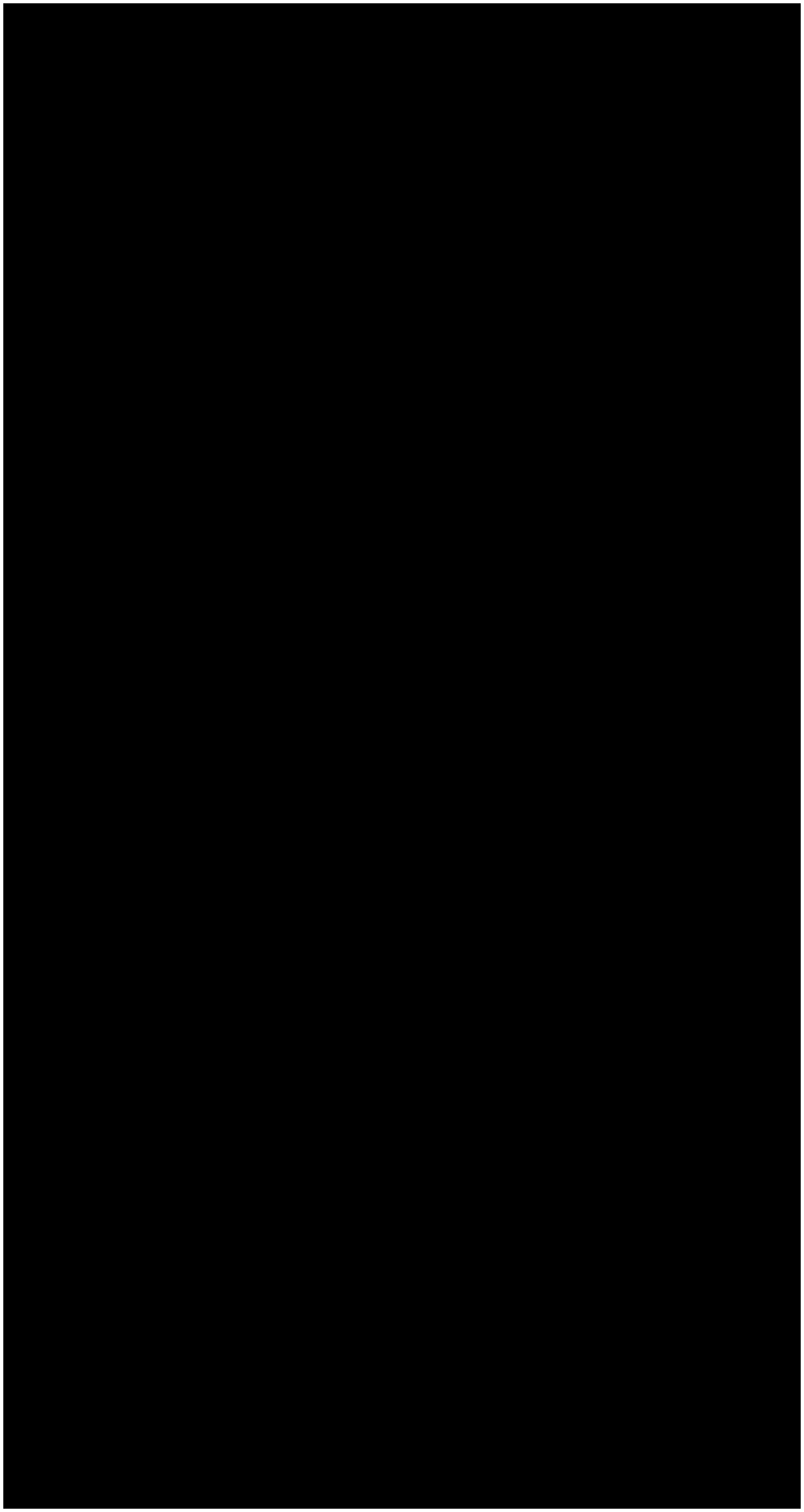


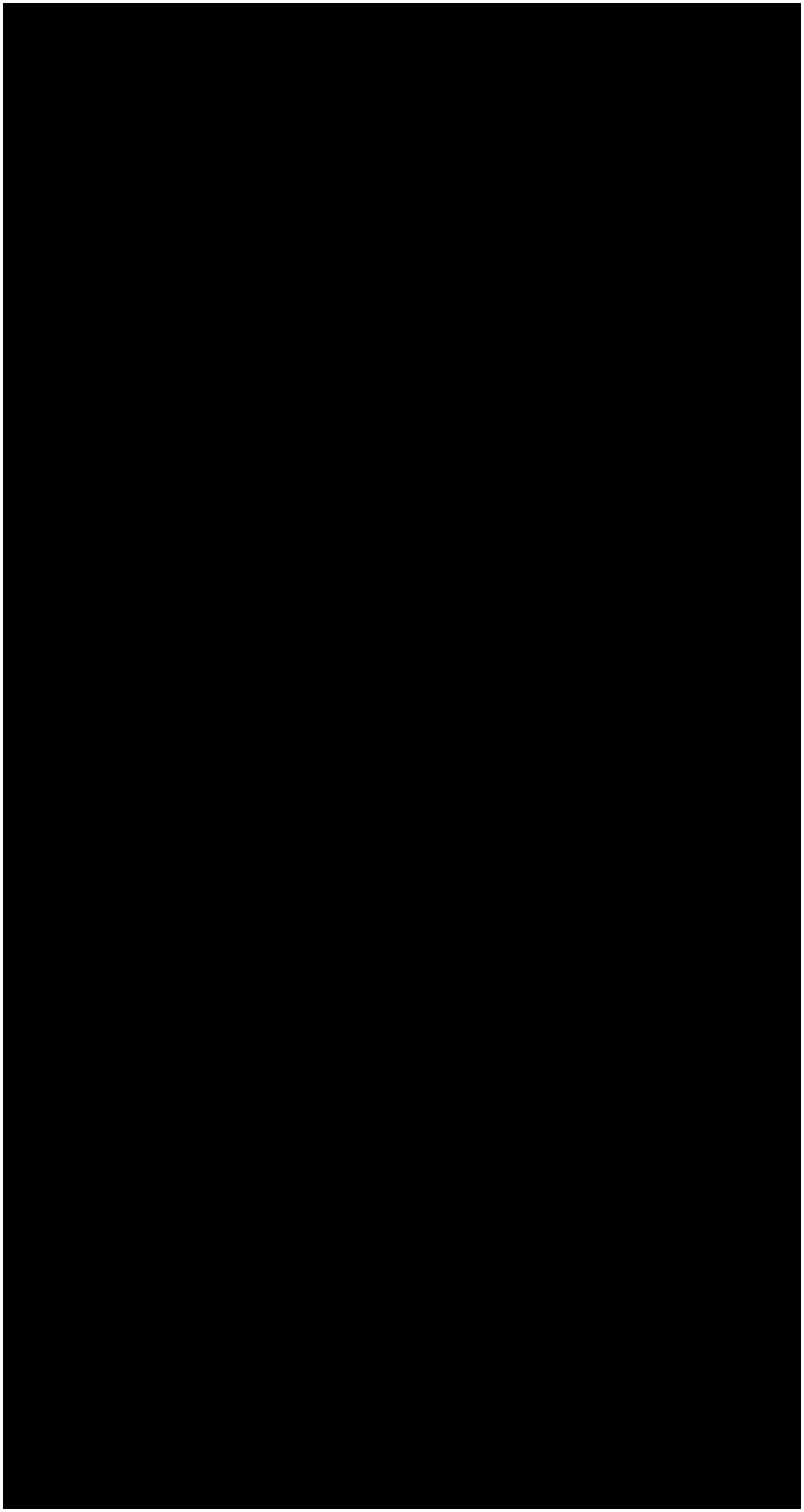


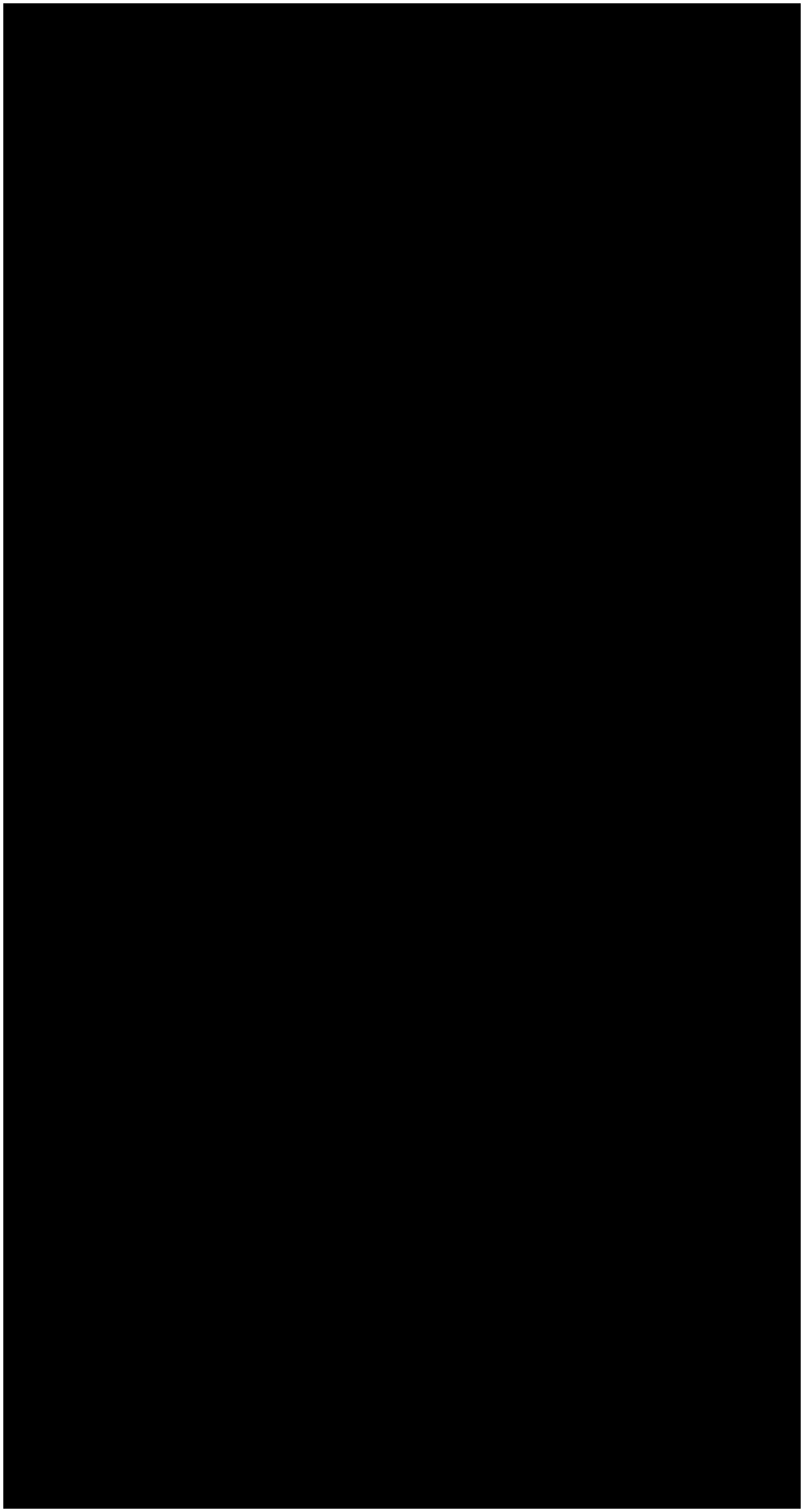


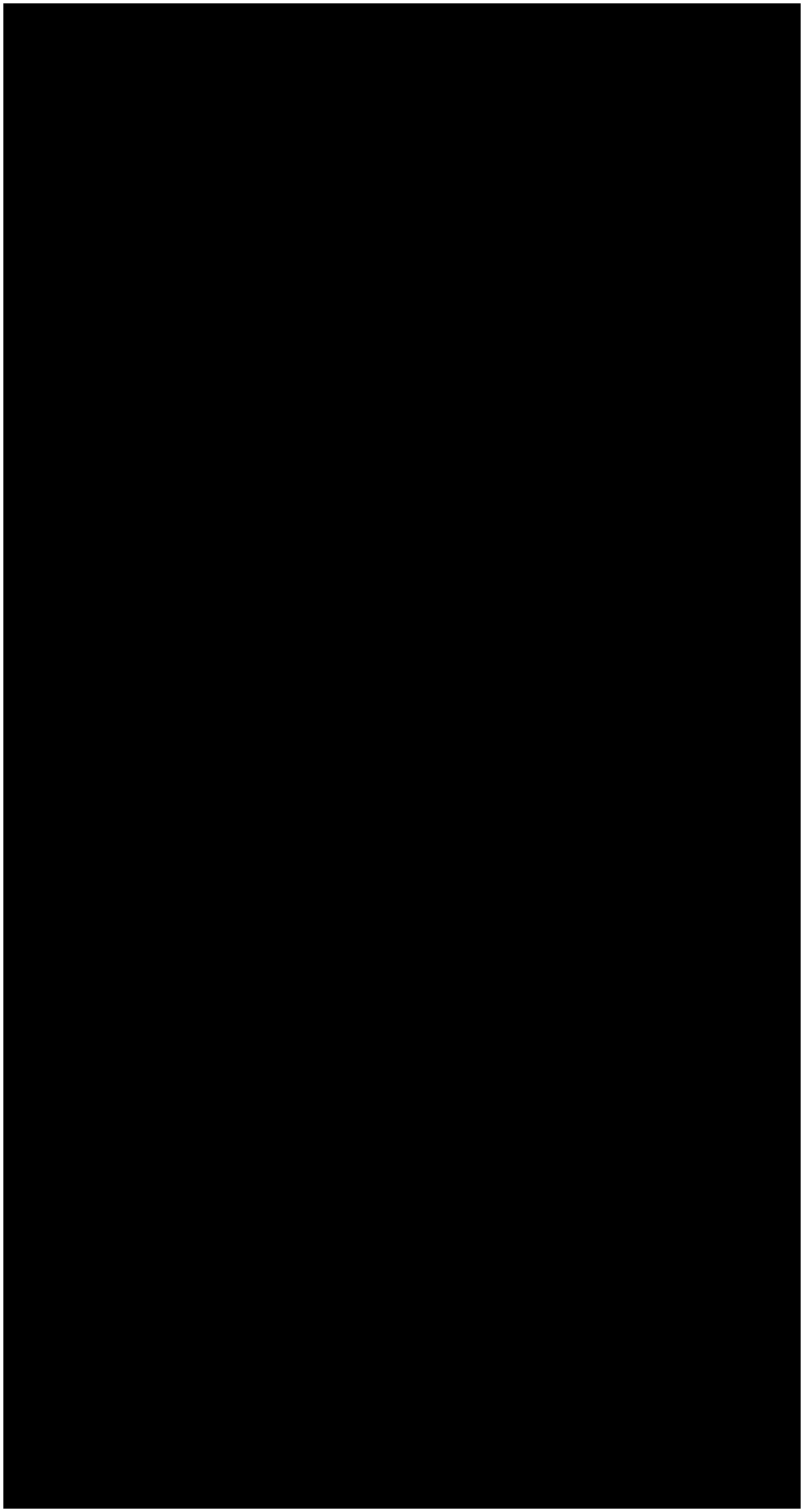


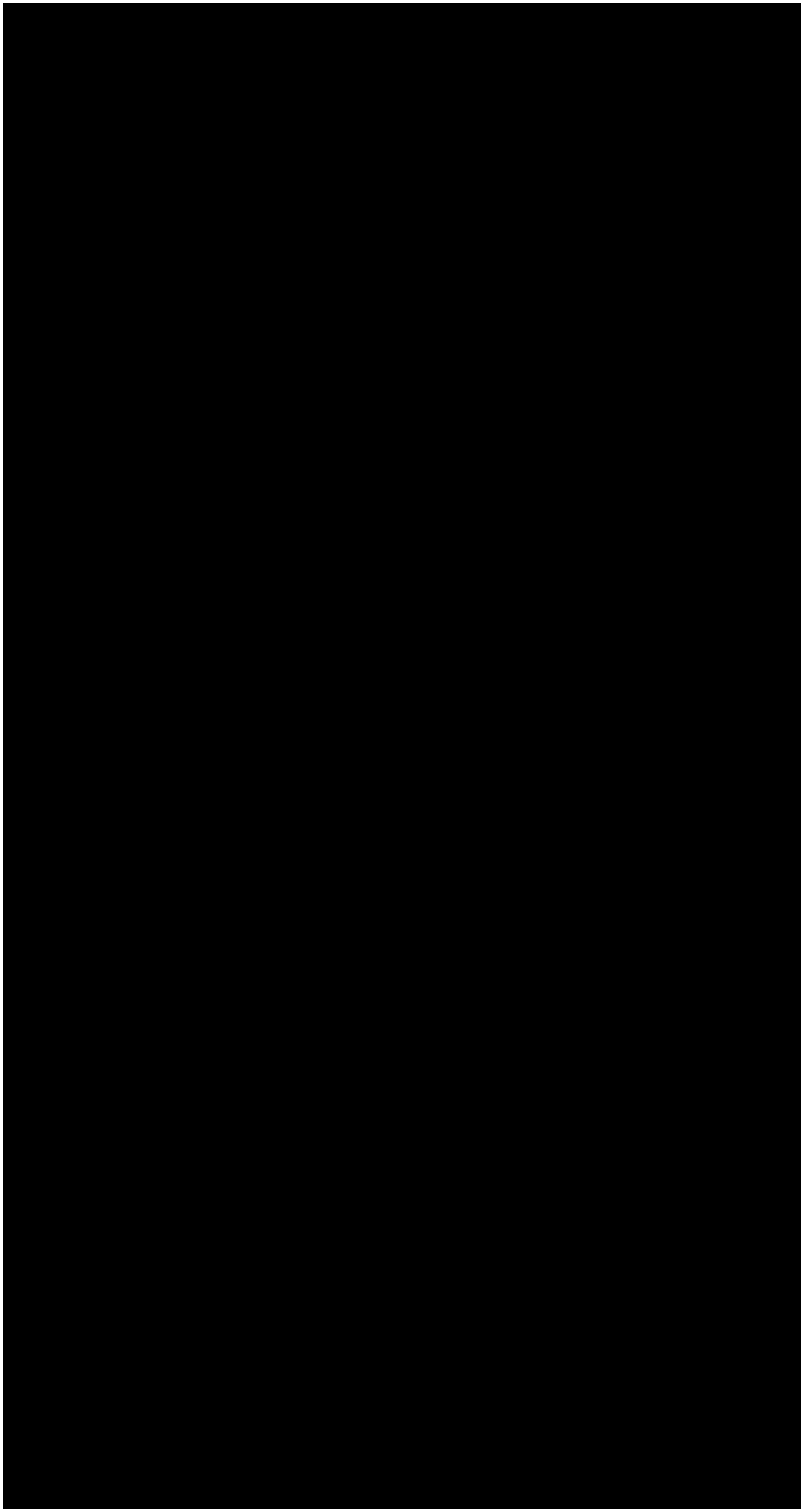


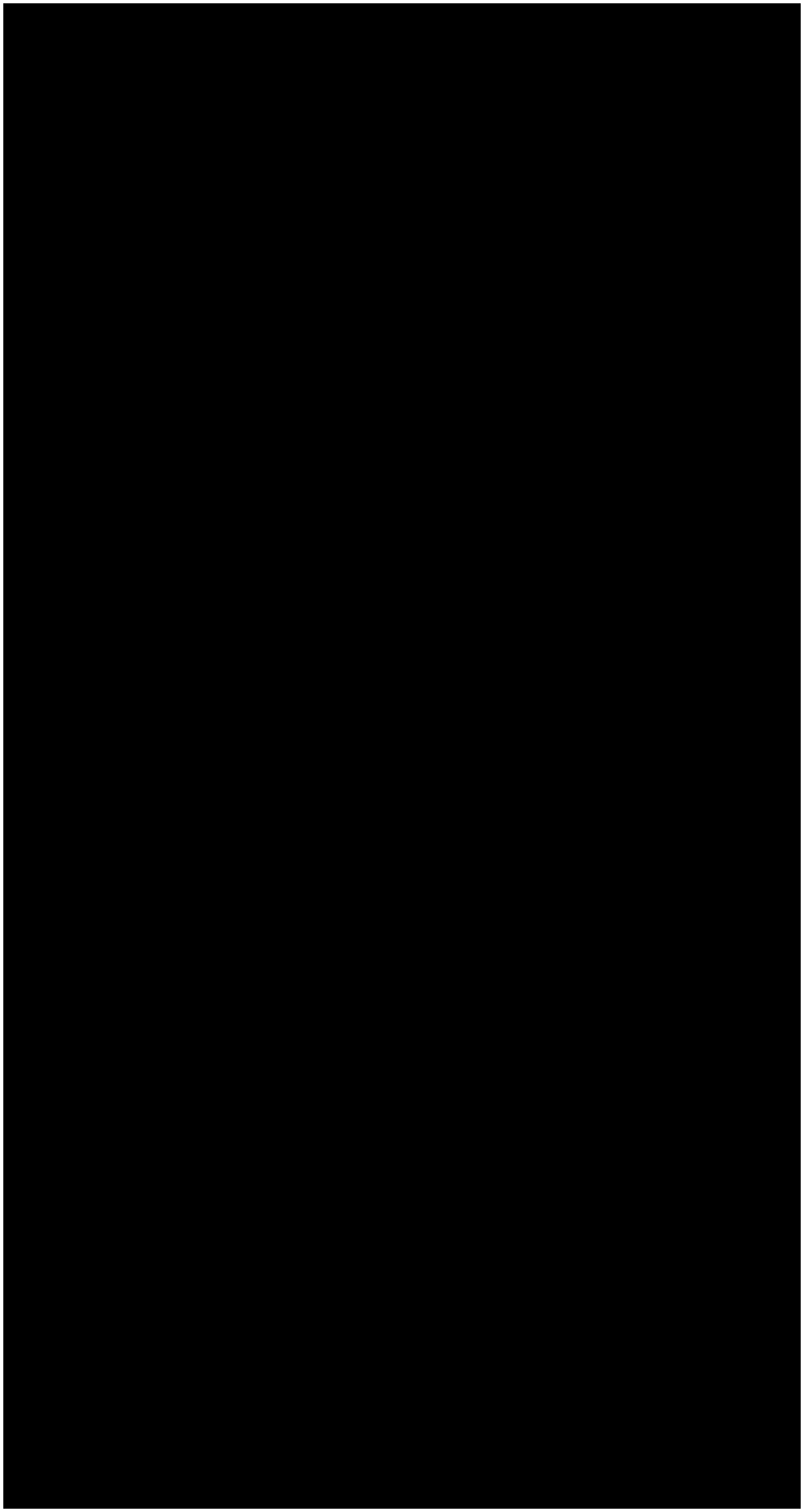


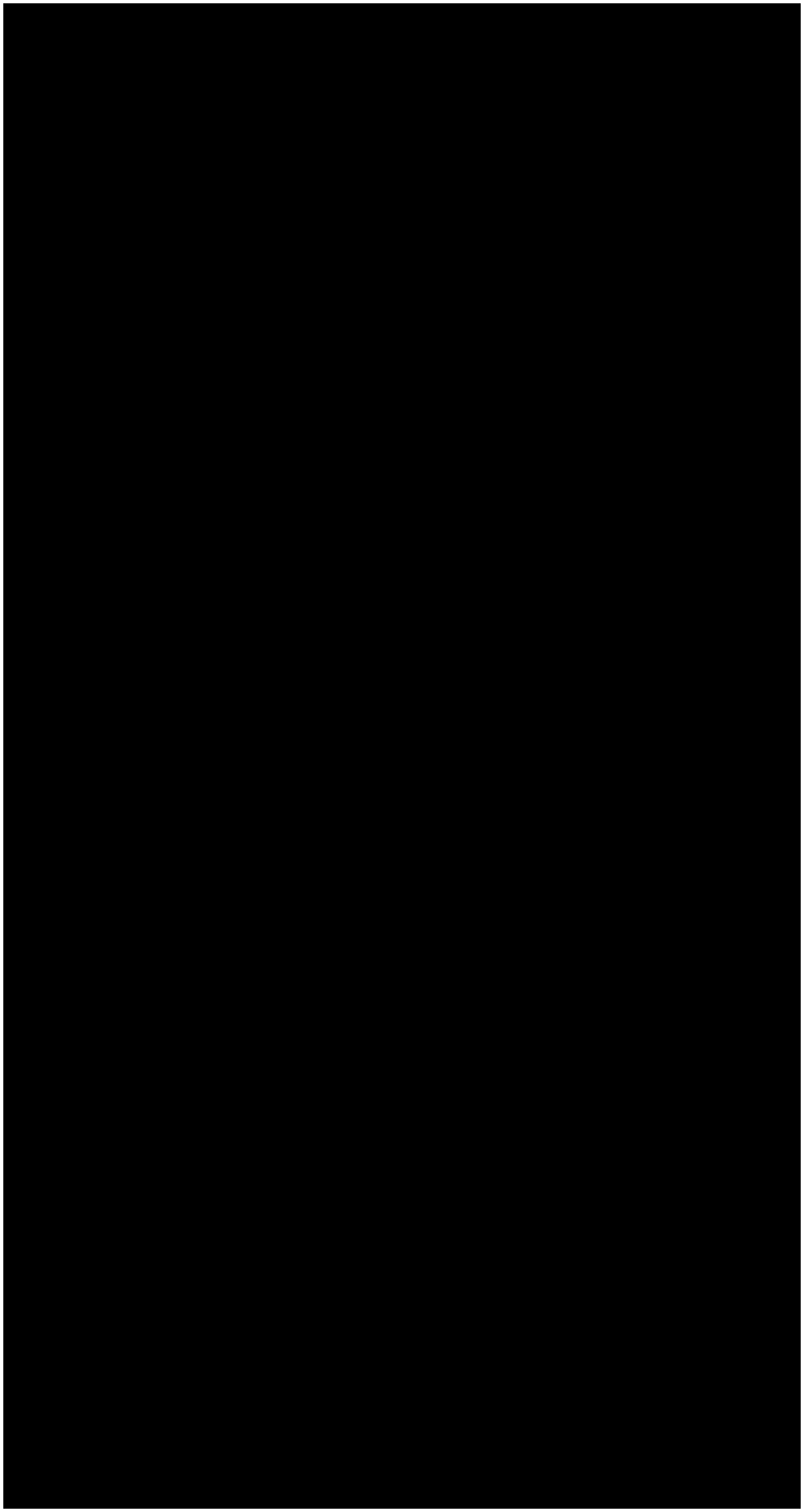


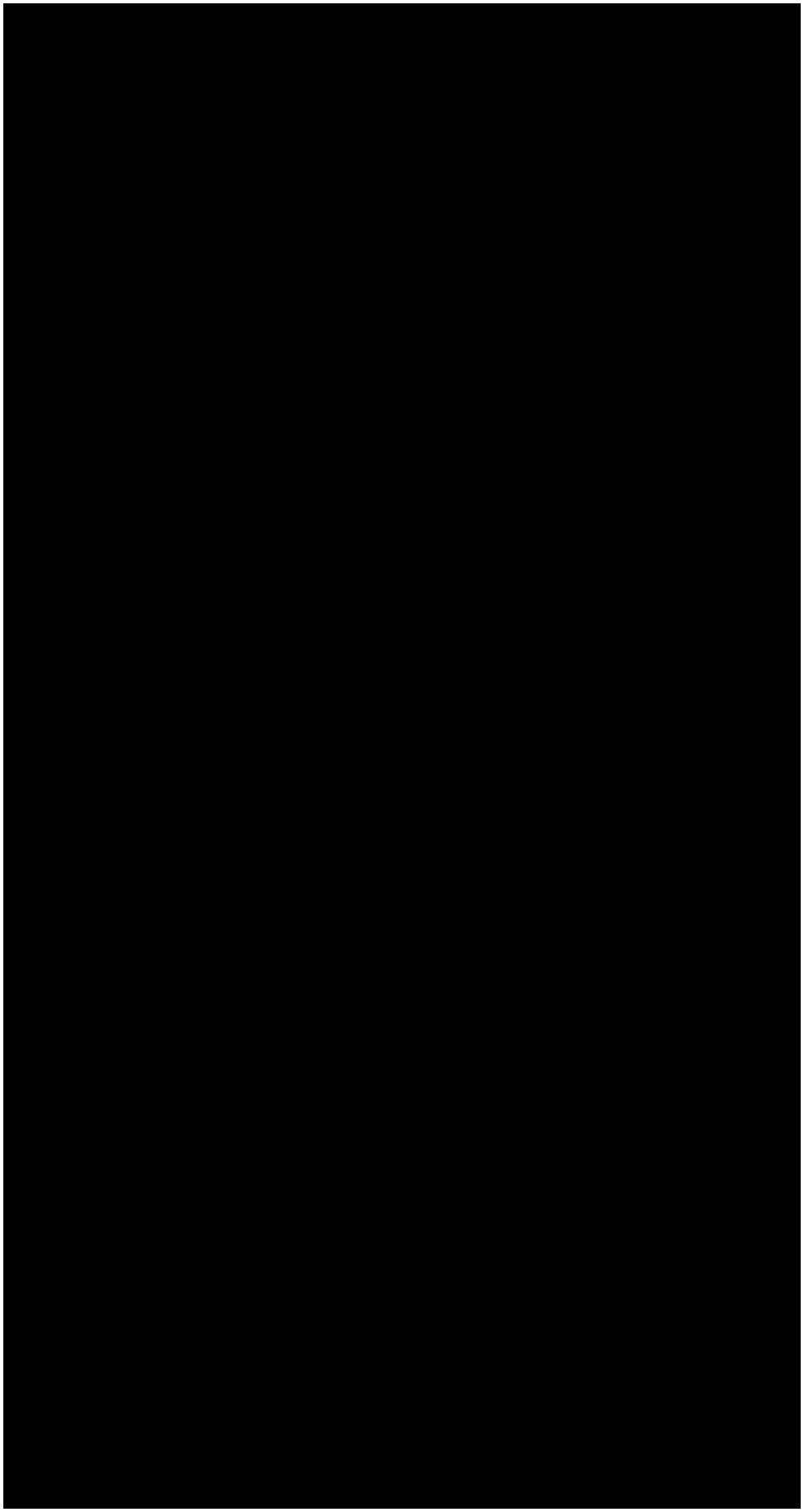


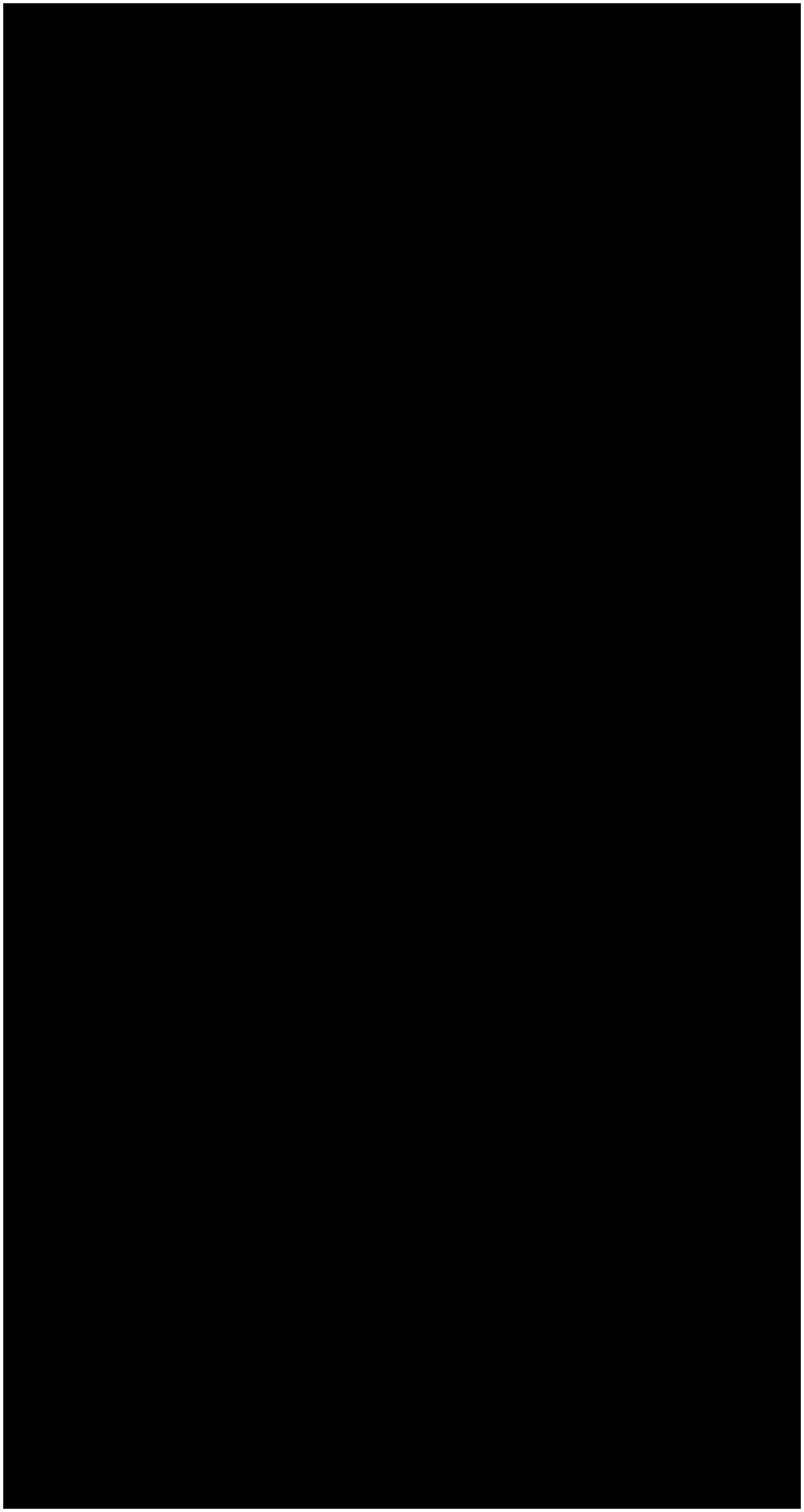














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
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Aug-25											
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Oct-25											
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Apr-27											
May-27											
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Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Design Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Year	Total Fixed Costs	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
2023-2024									
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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2024-2025						
2024-2025						
2024-2025						
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2024-2025						
2025-2026						
2025-2026						
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2025-2026						
2025-2026						
2025-2026						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						

2026-2027	[redacted]
2026-2027	
2026-2027	
2026-2027	
2026-2027	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



PORTFOLIO

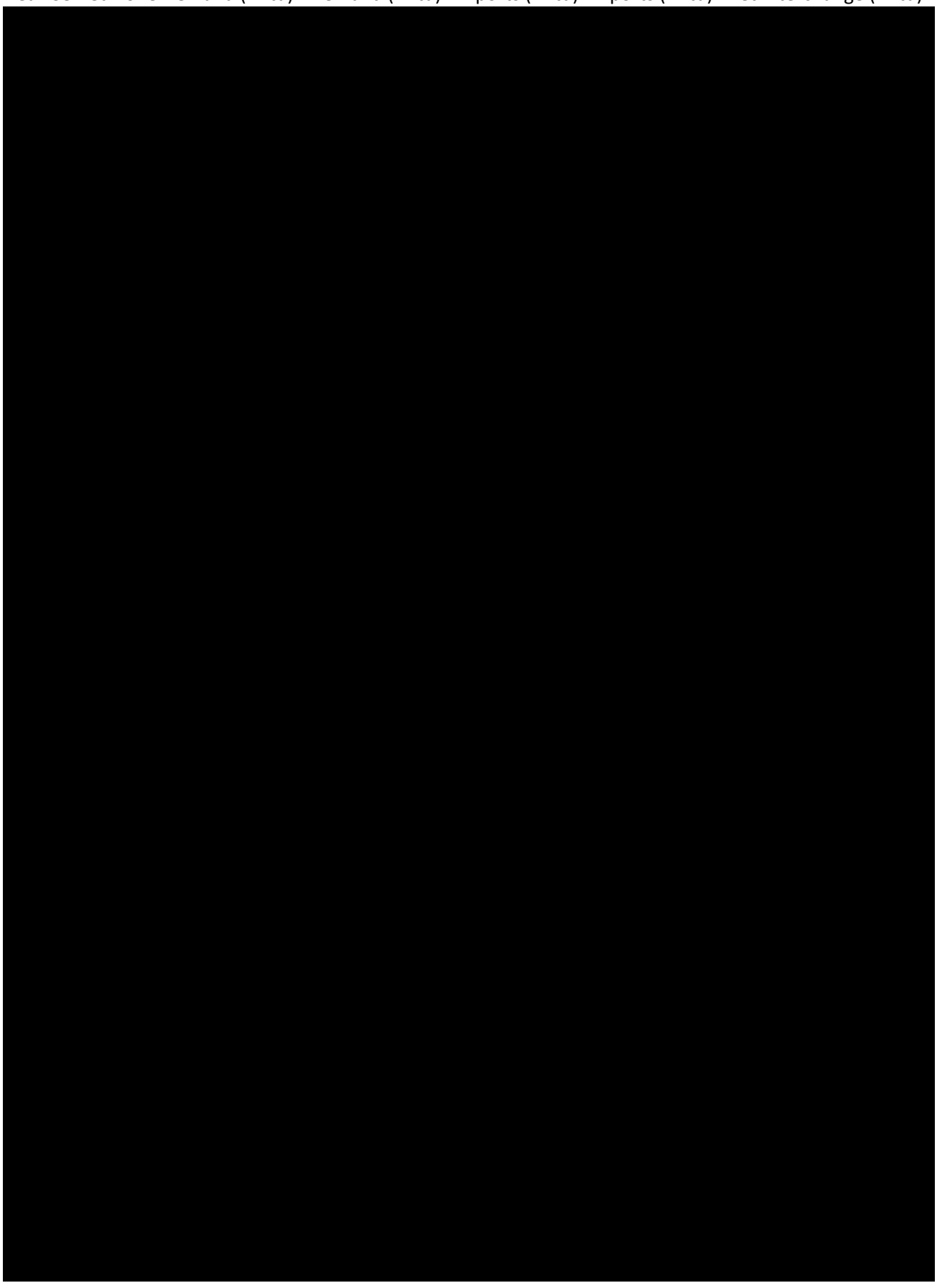
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





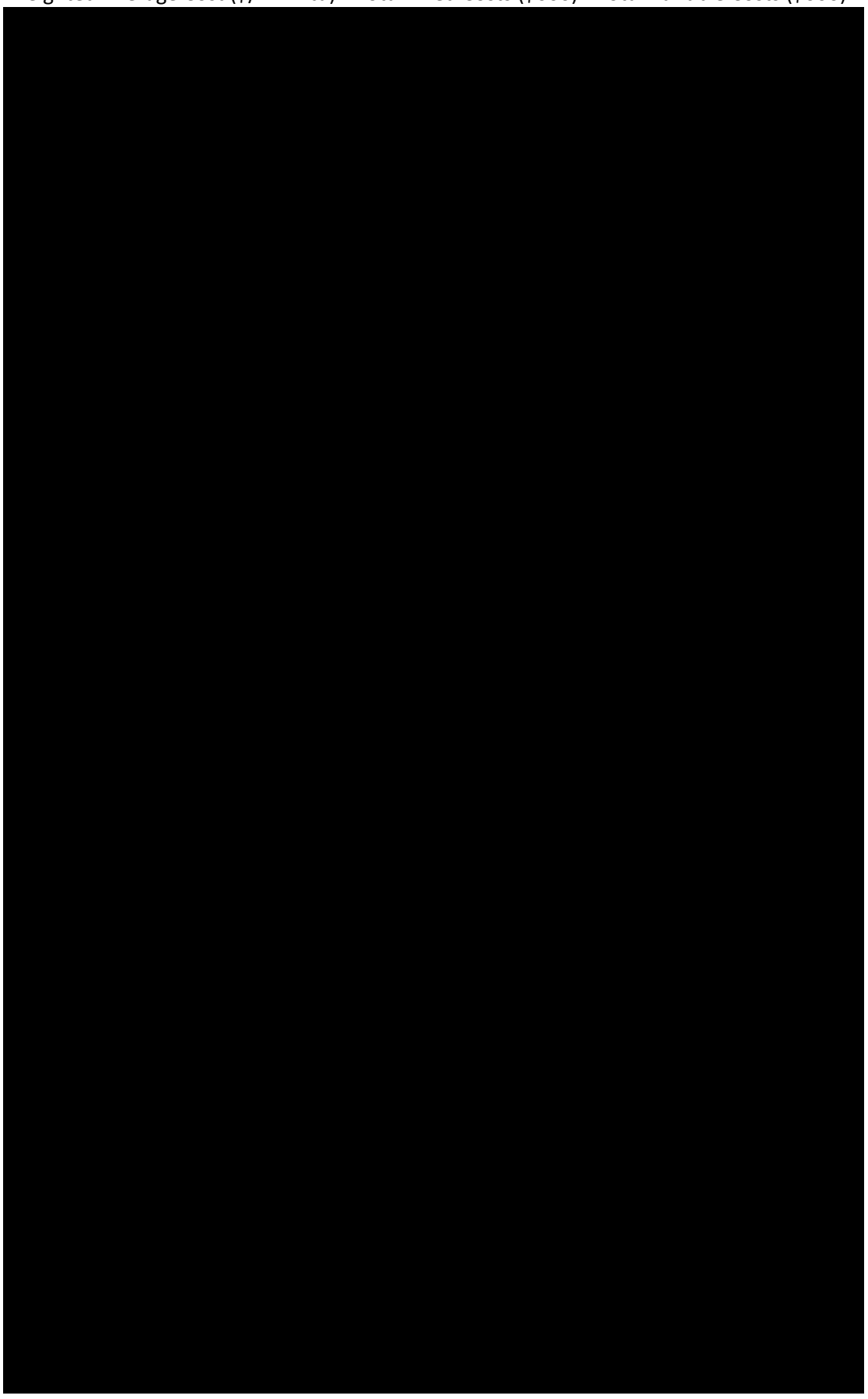
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

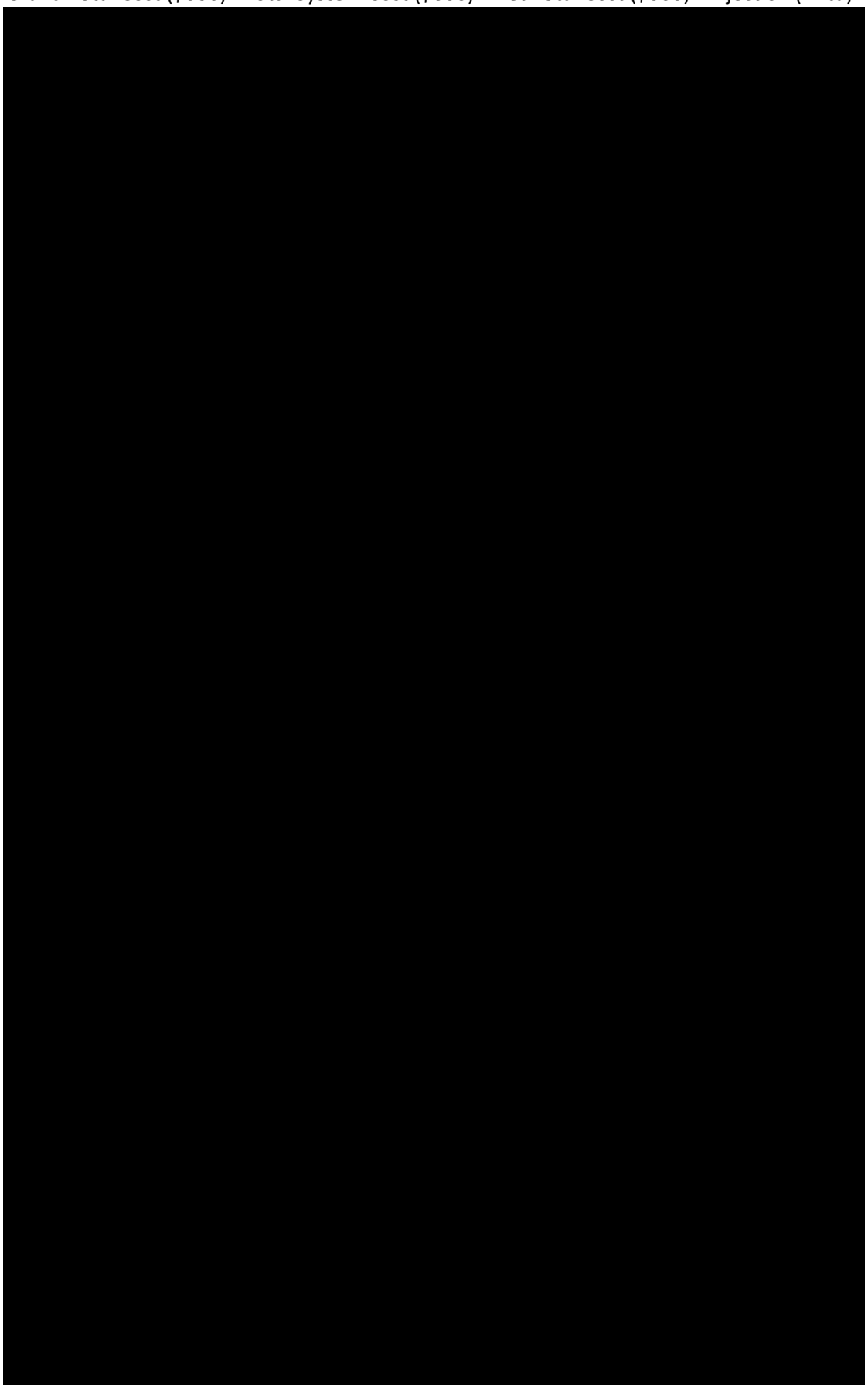


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

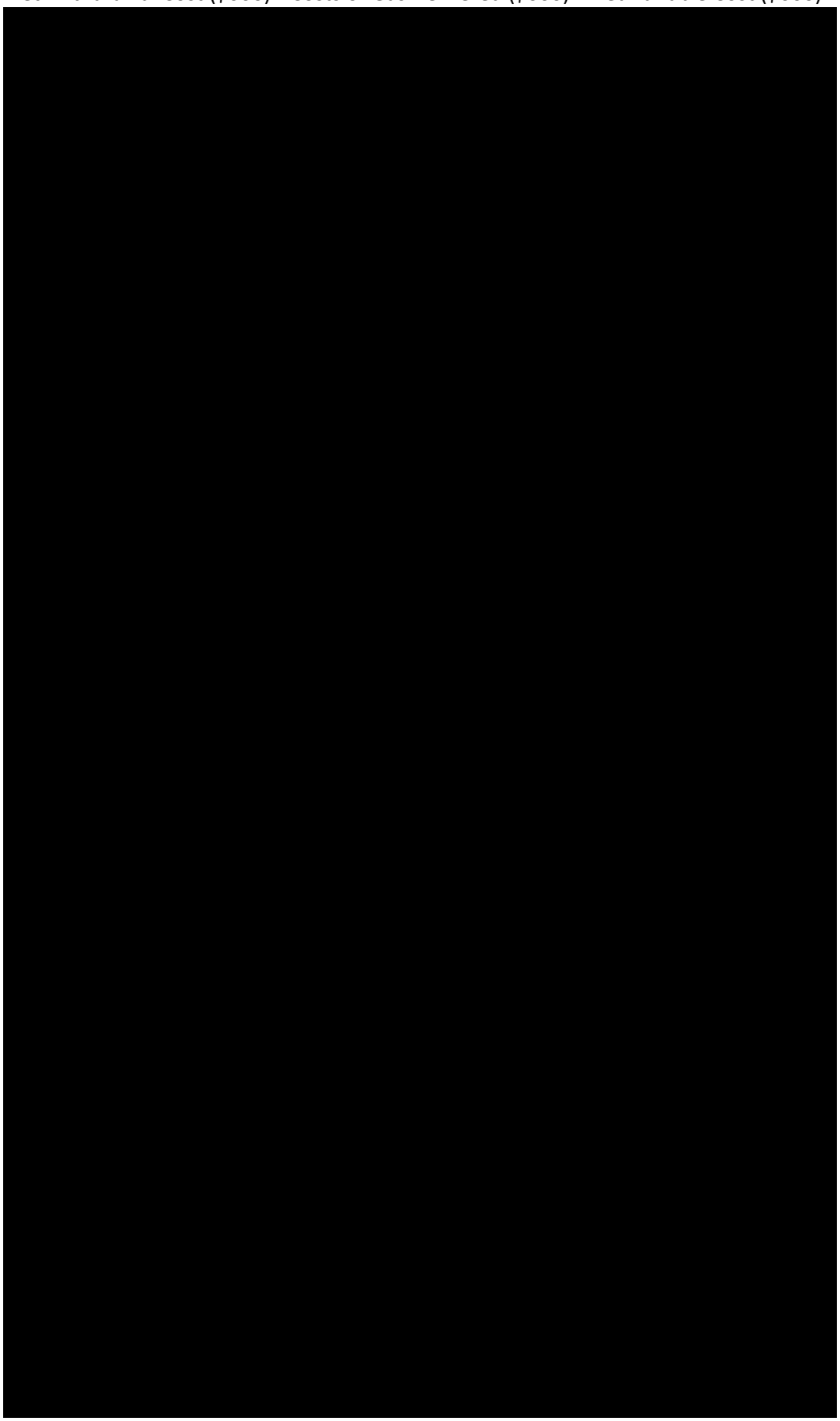




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

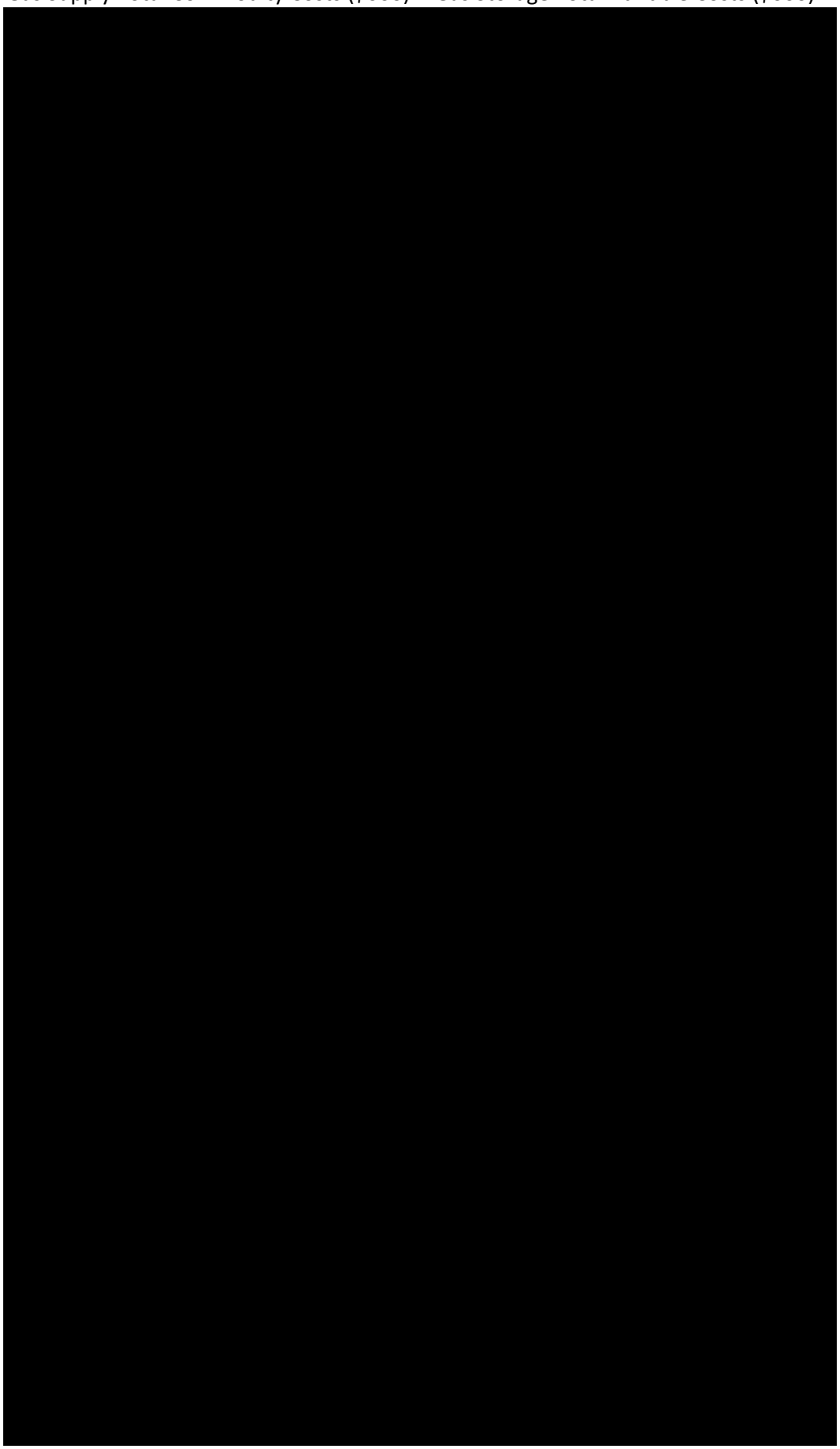




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

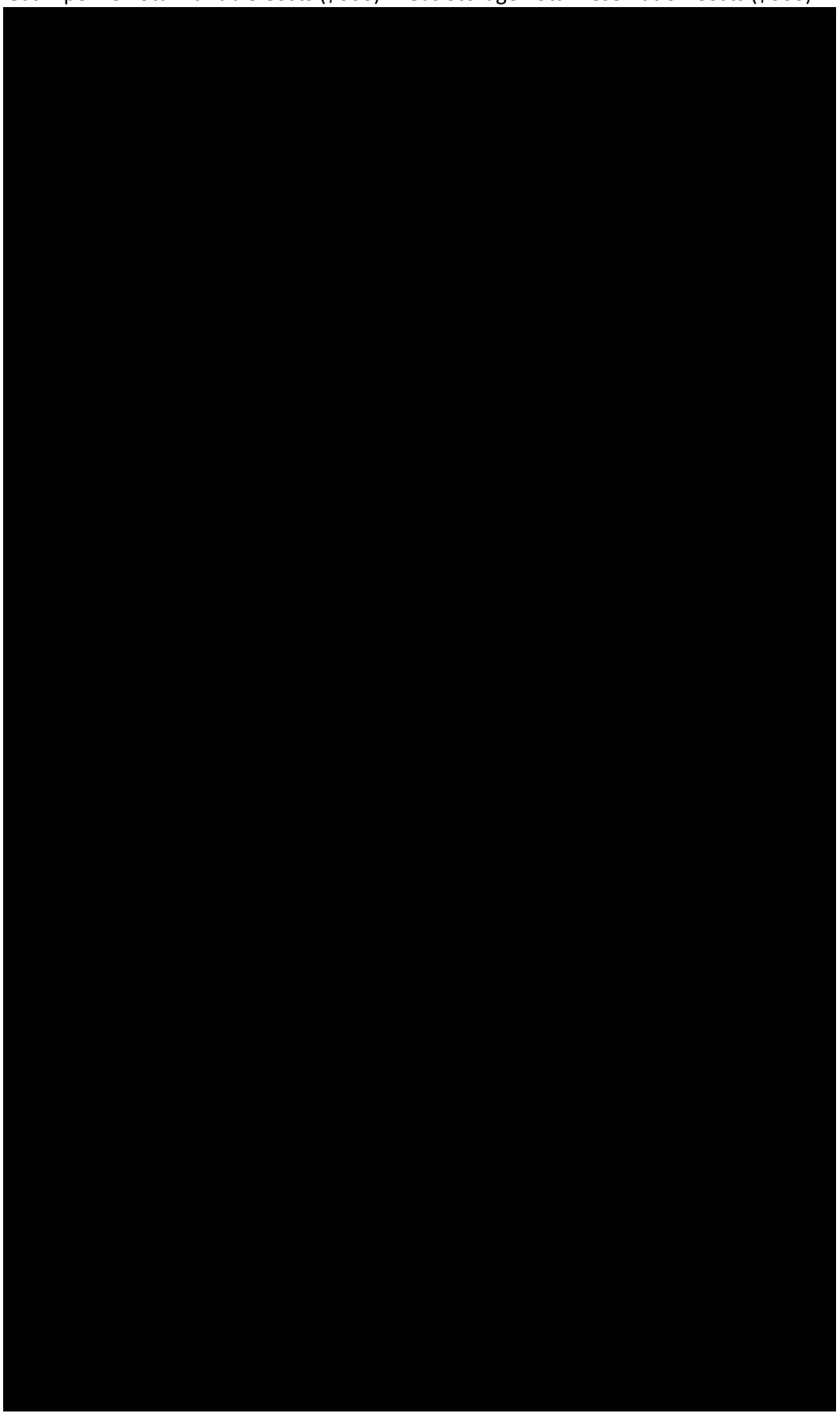


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



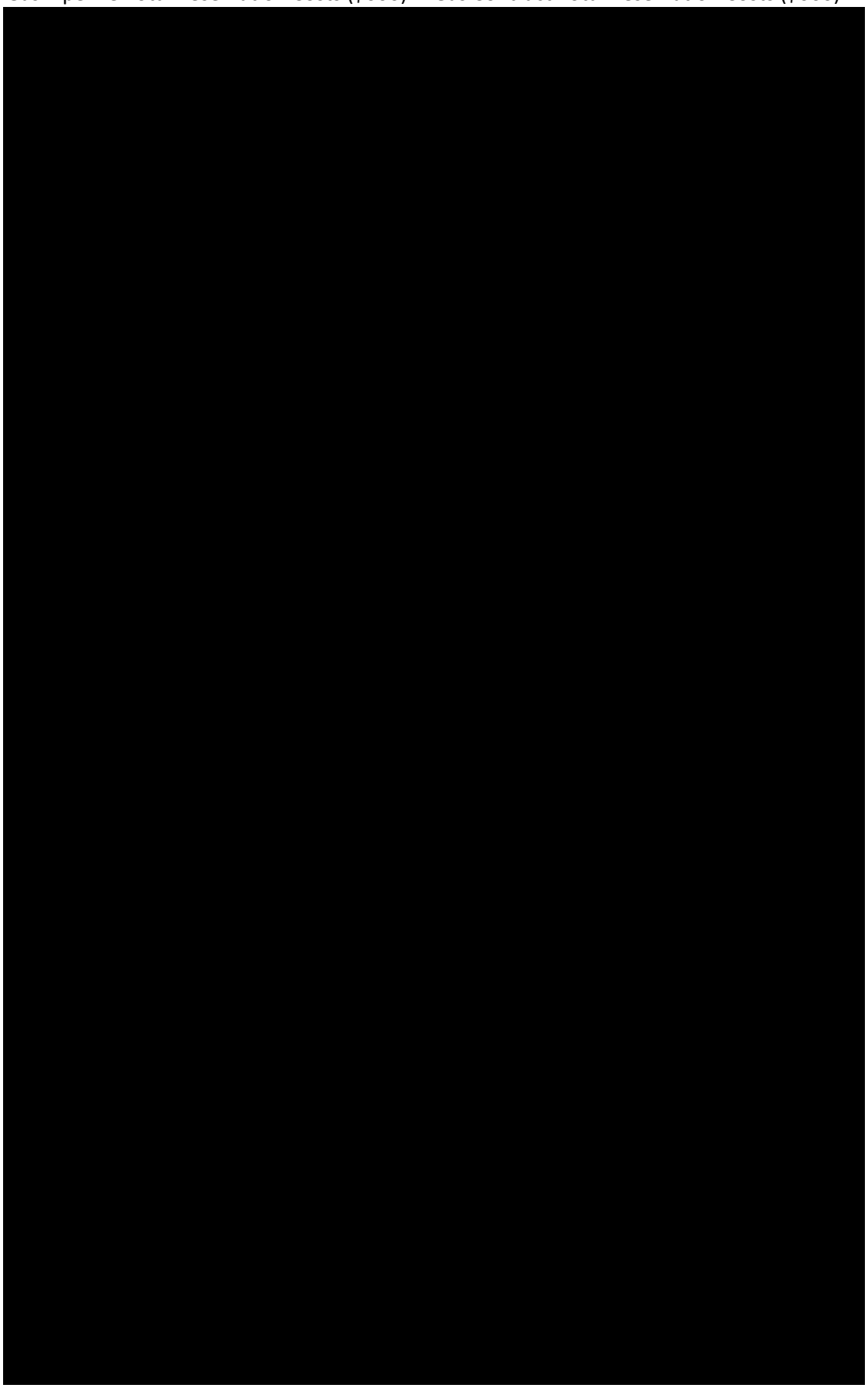


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



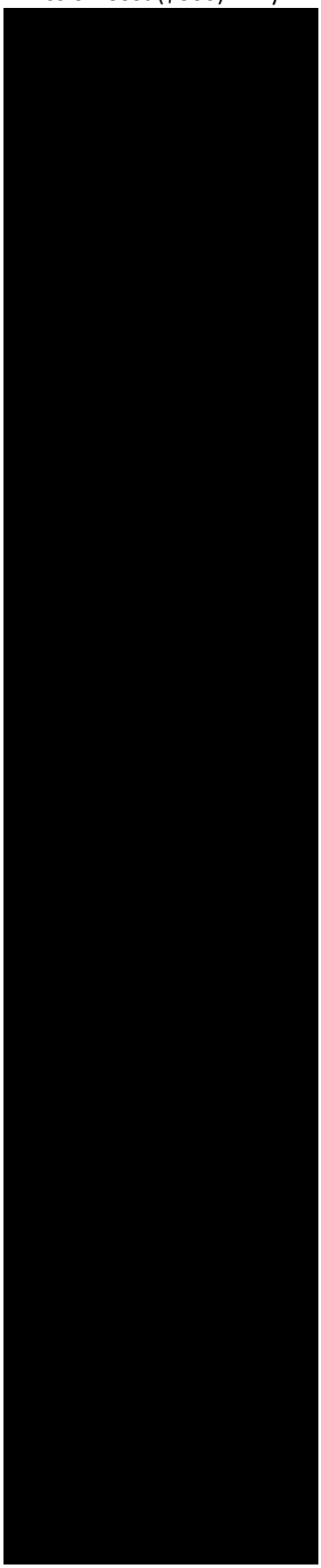


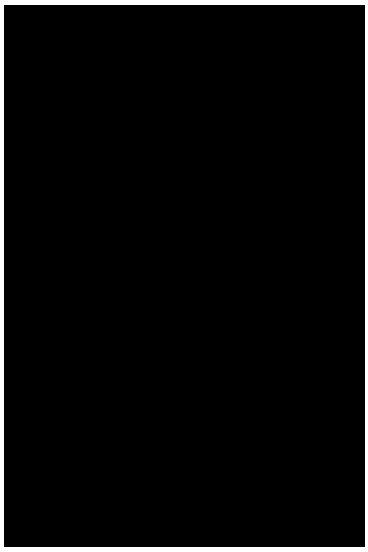
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



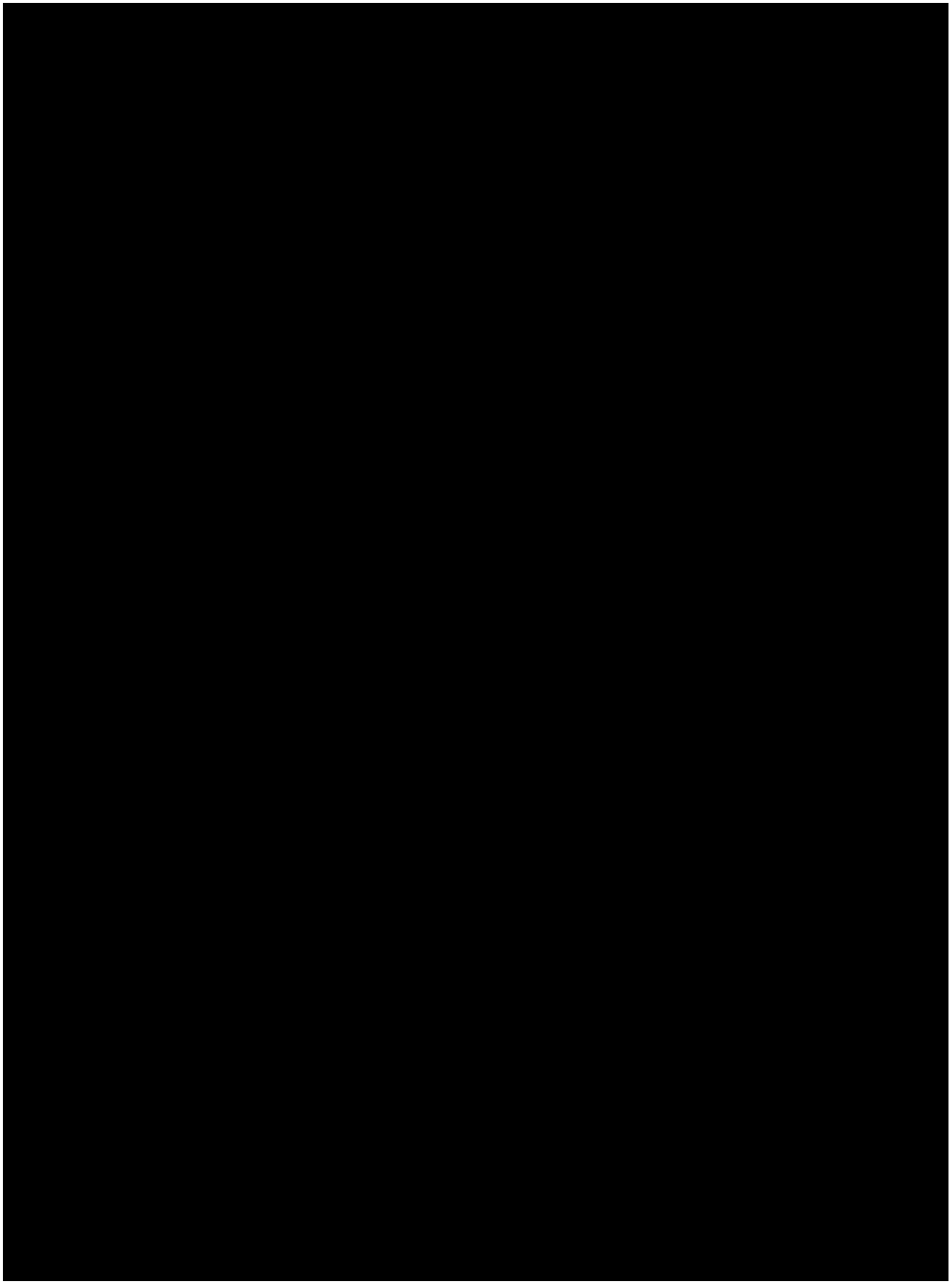


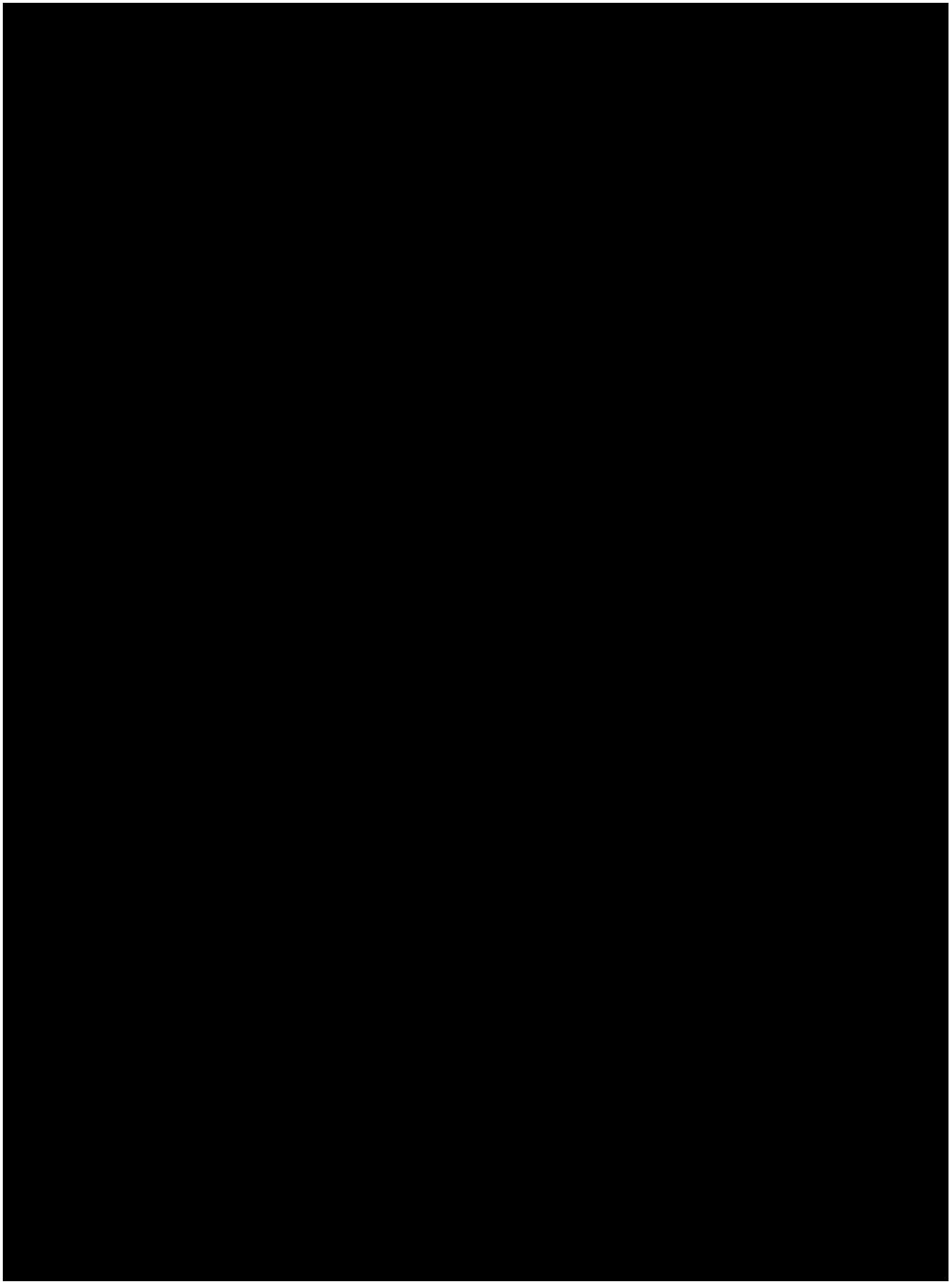
Emission Cost ($000) x y z

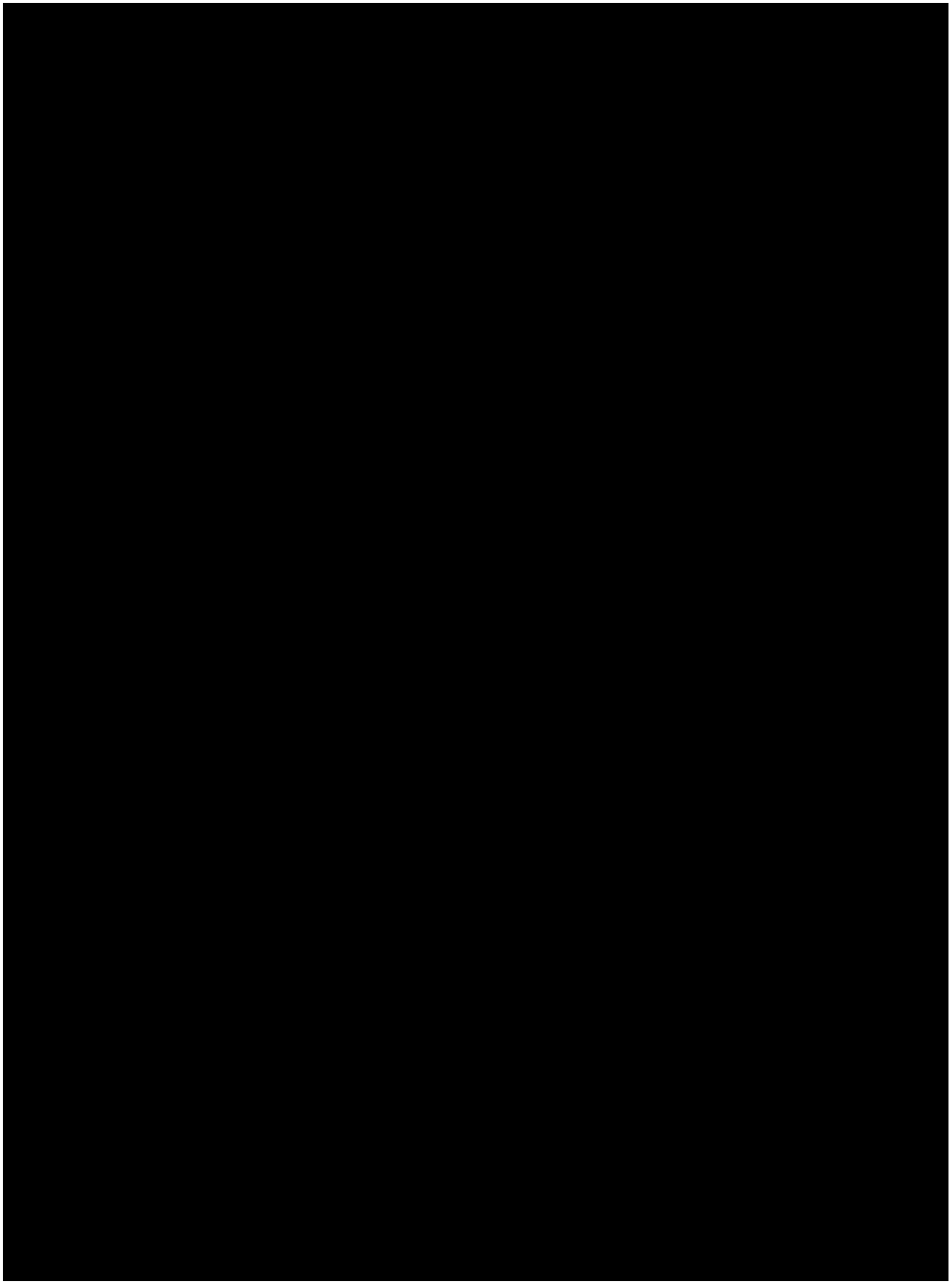


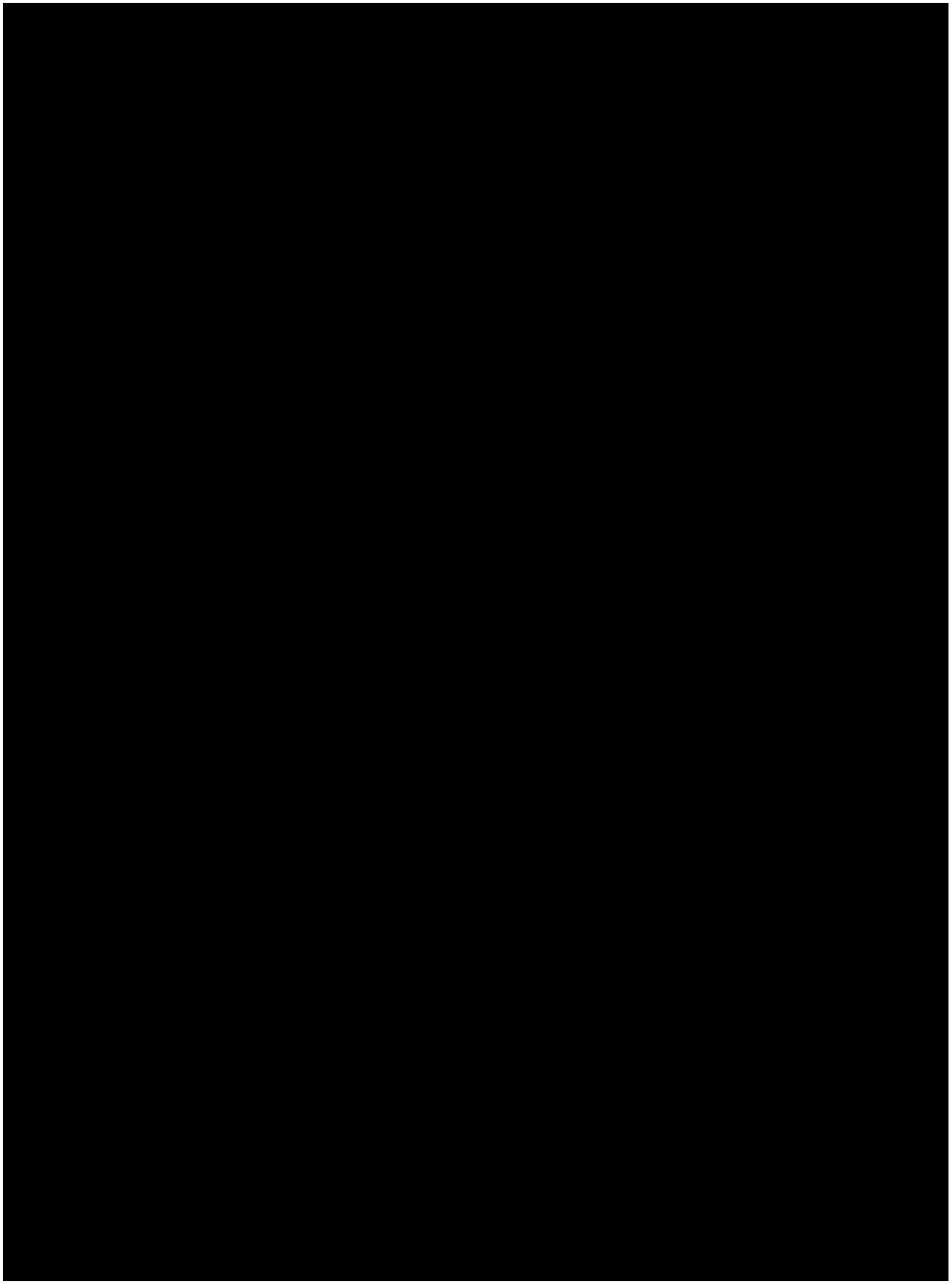


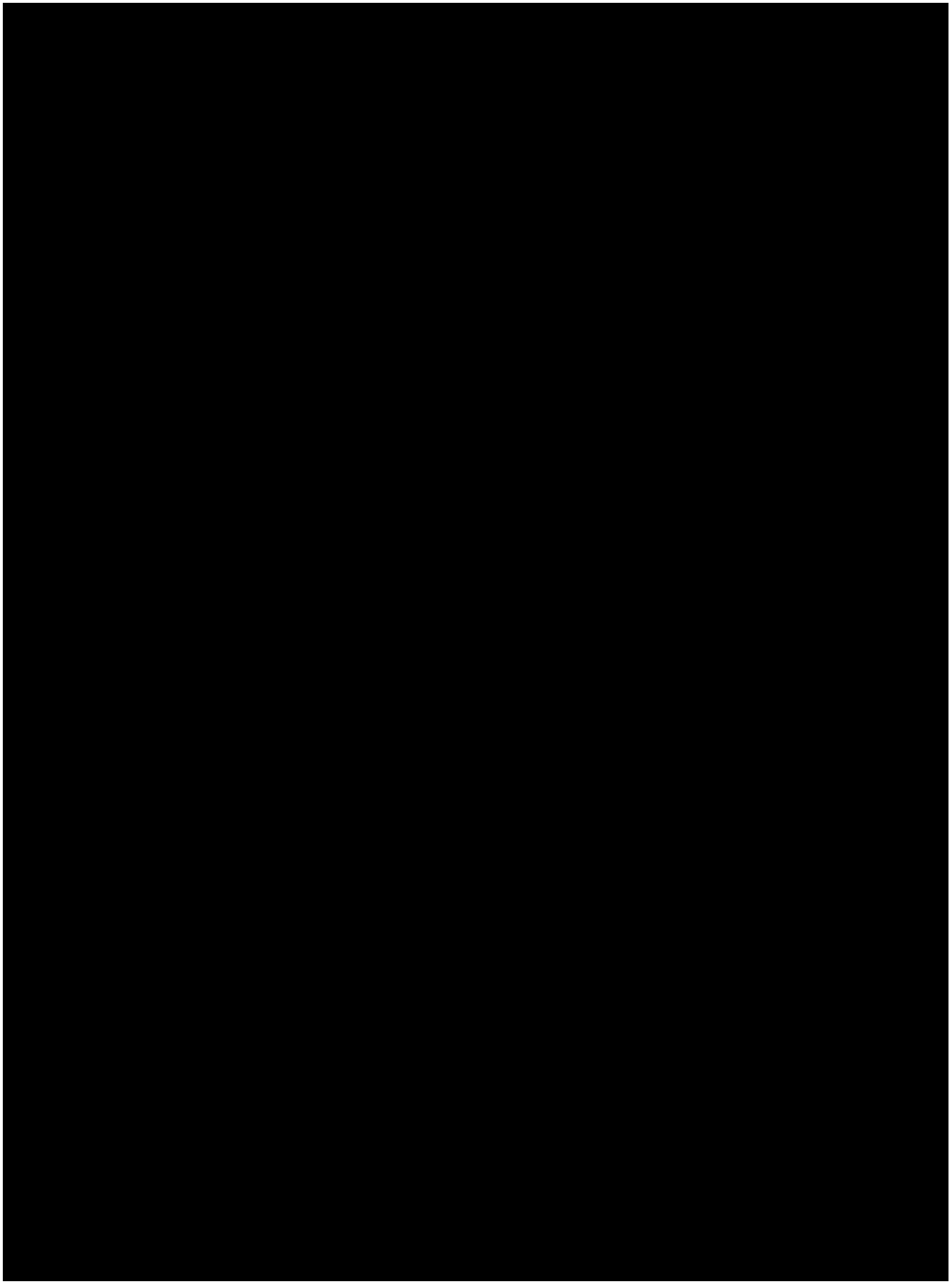
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[redacted]								

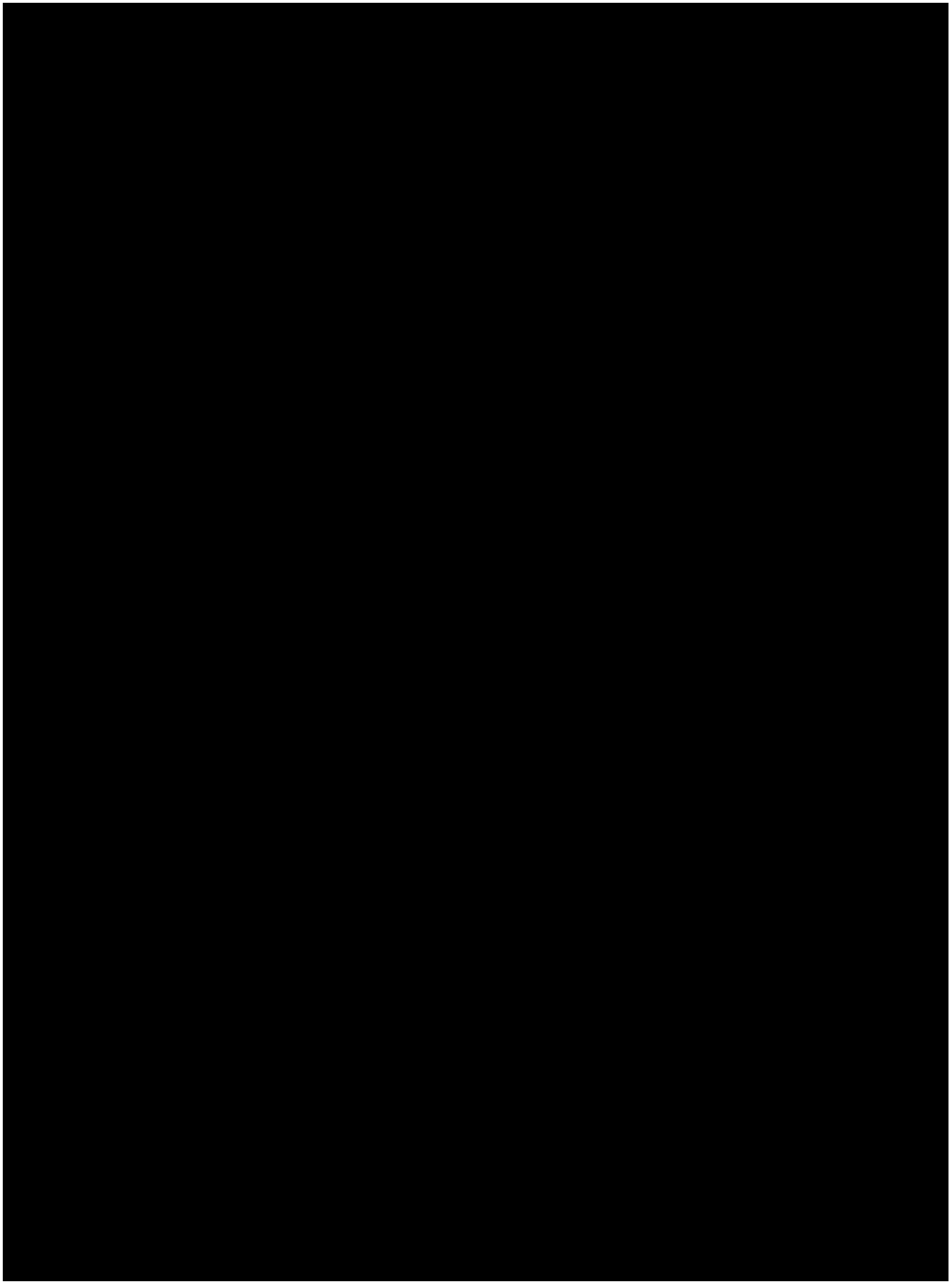


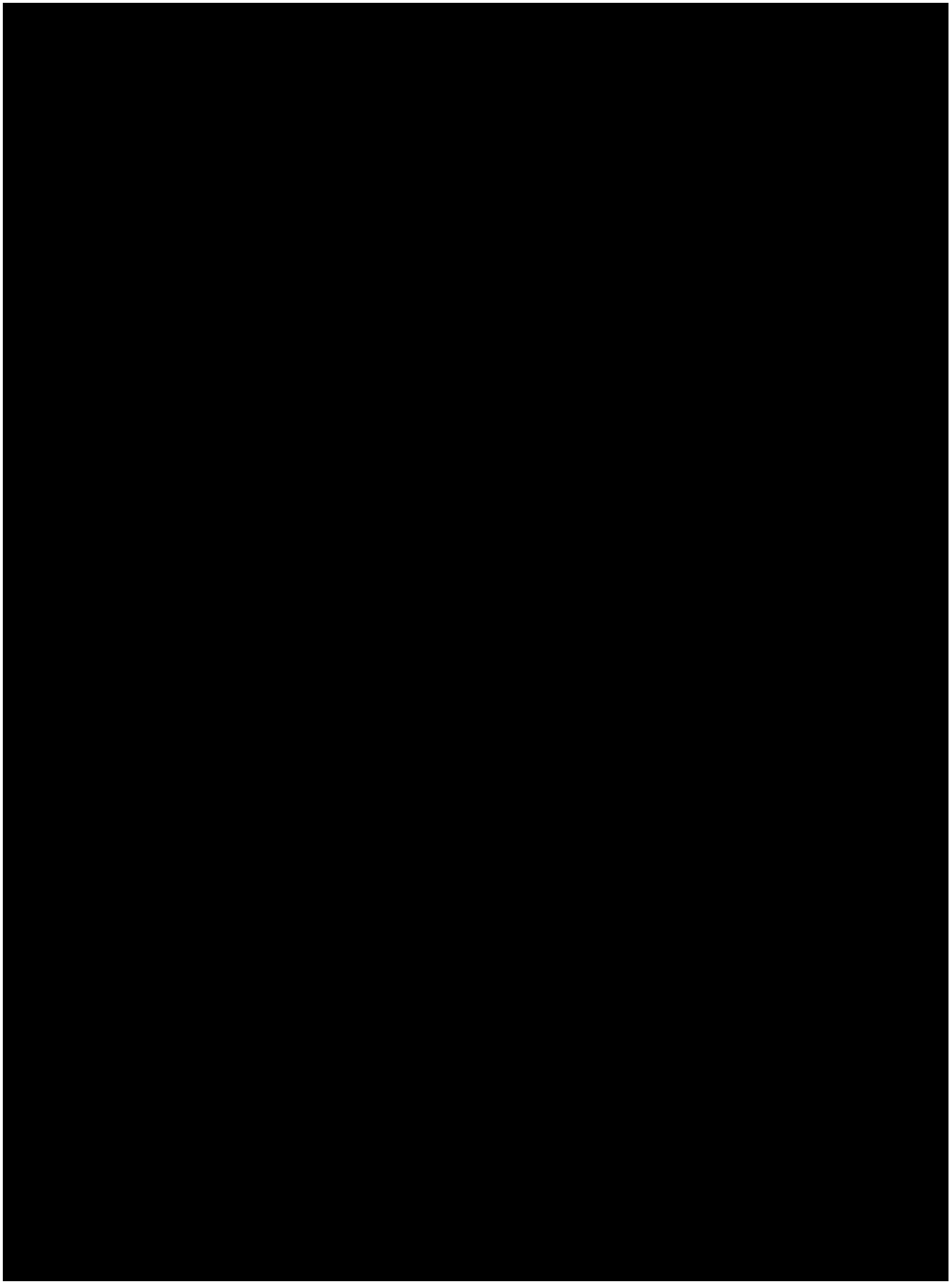


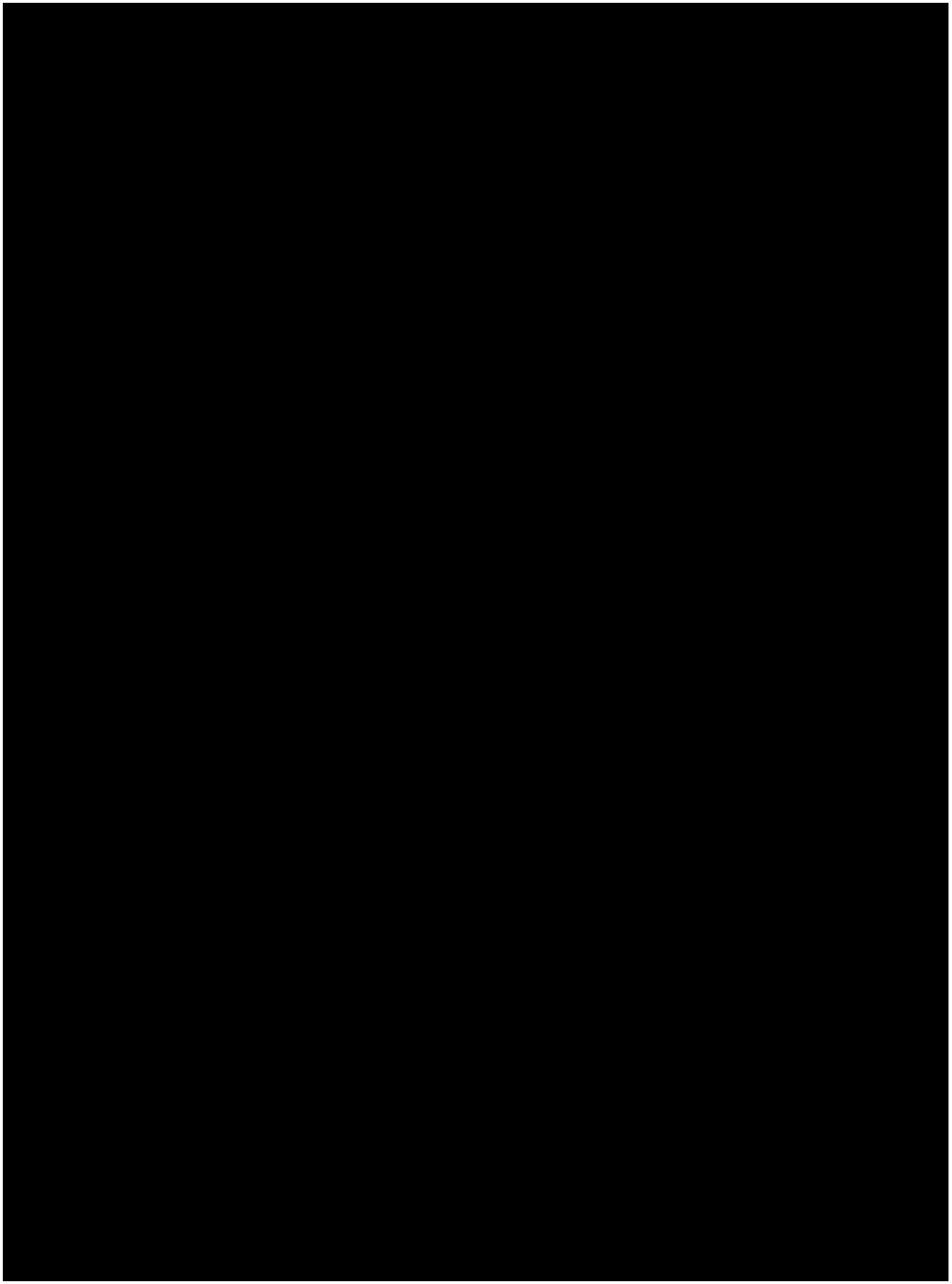


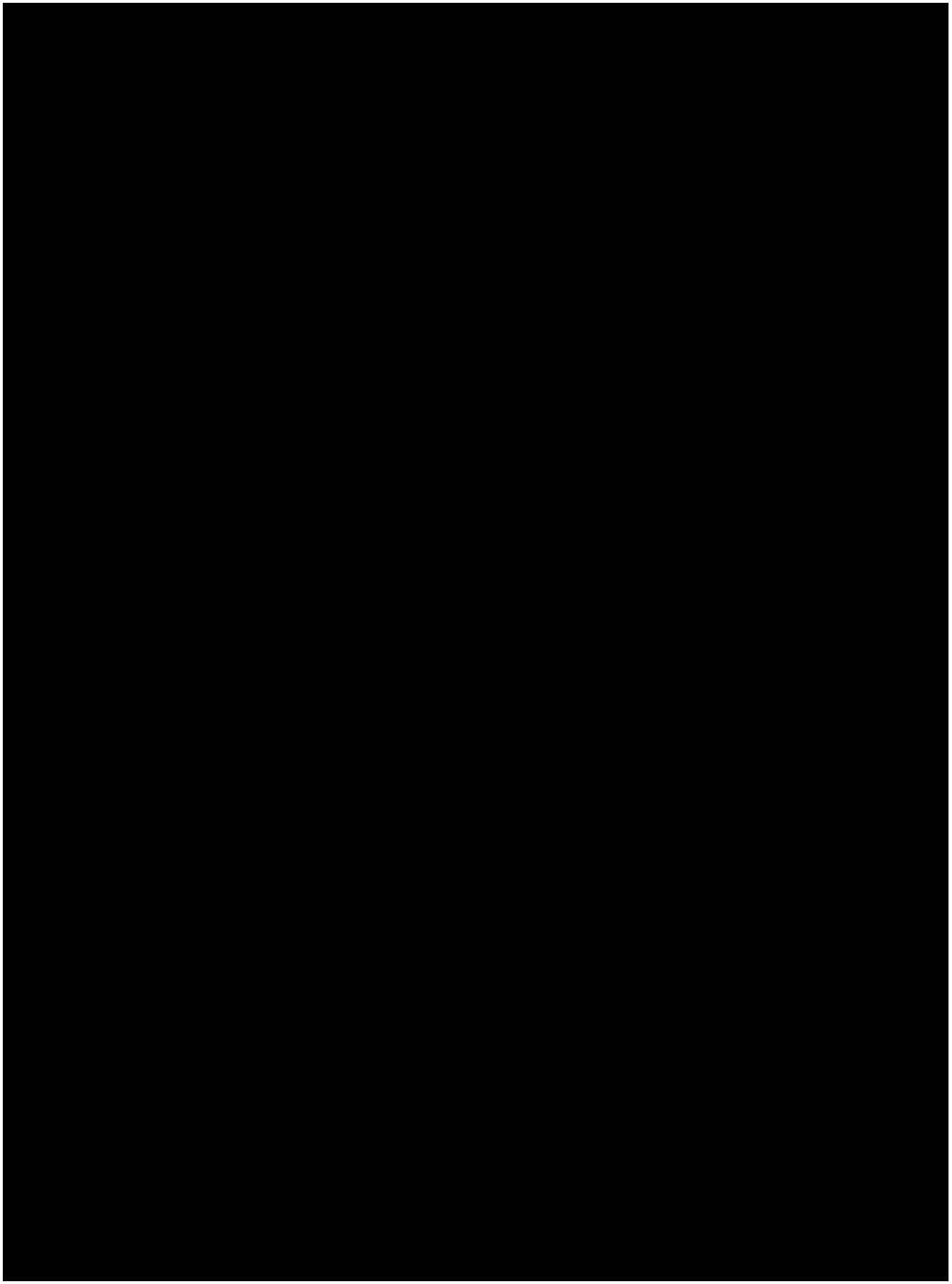


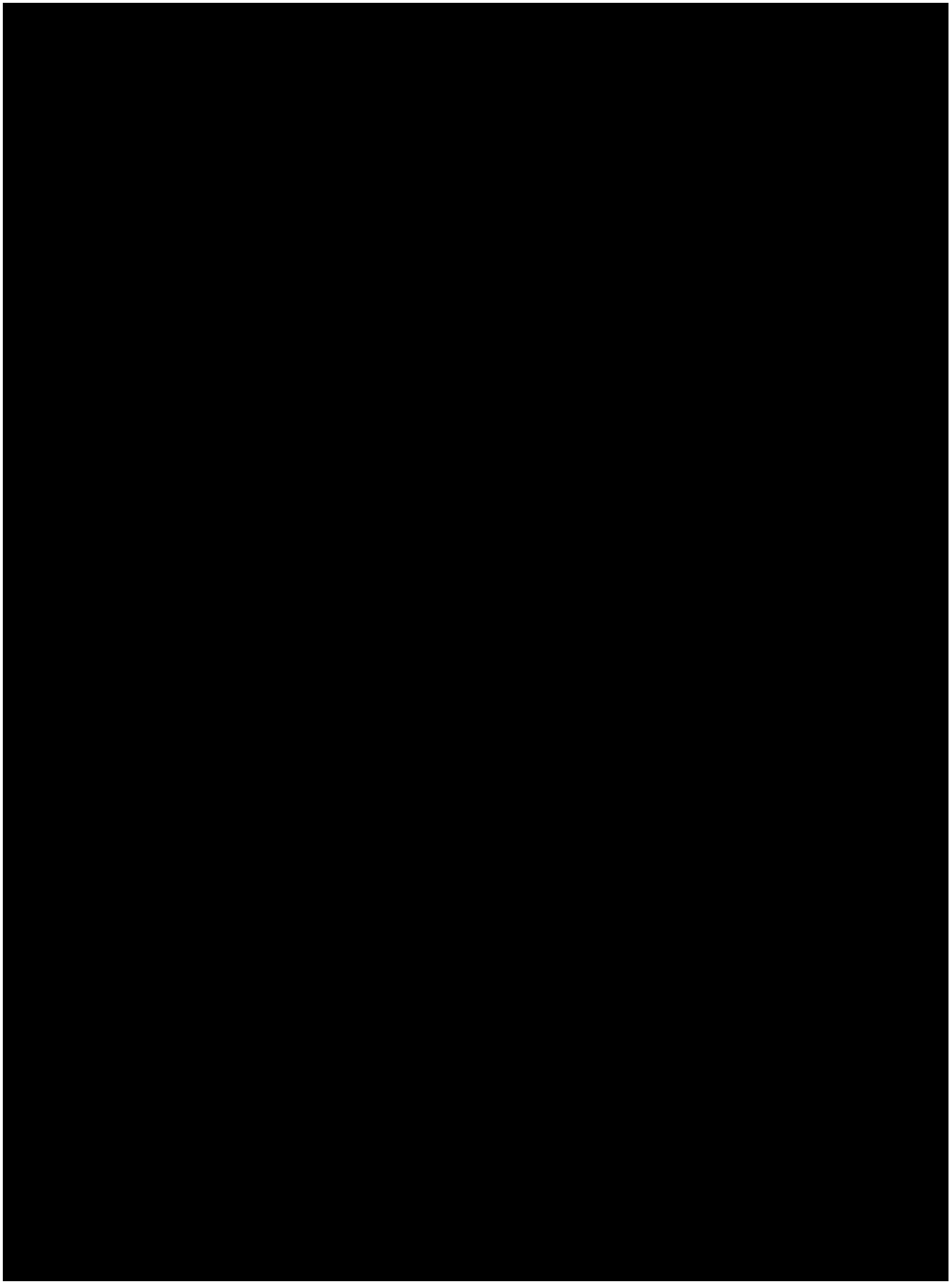


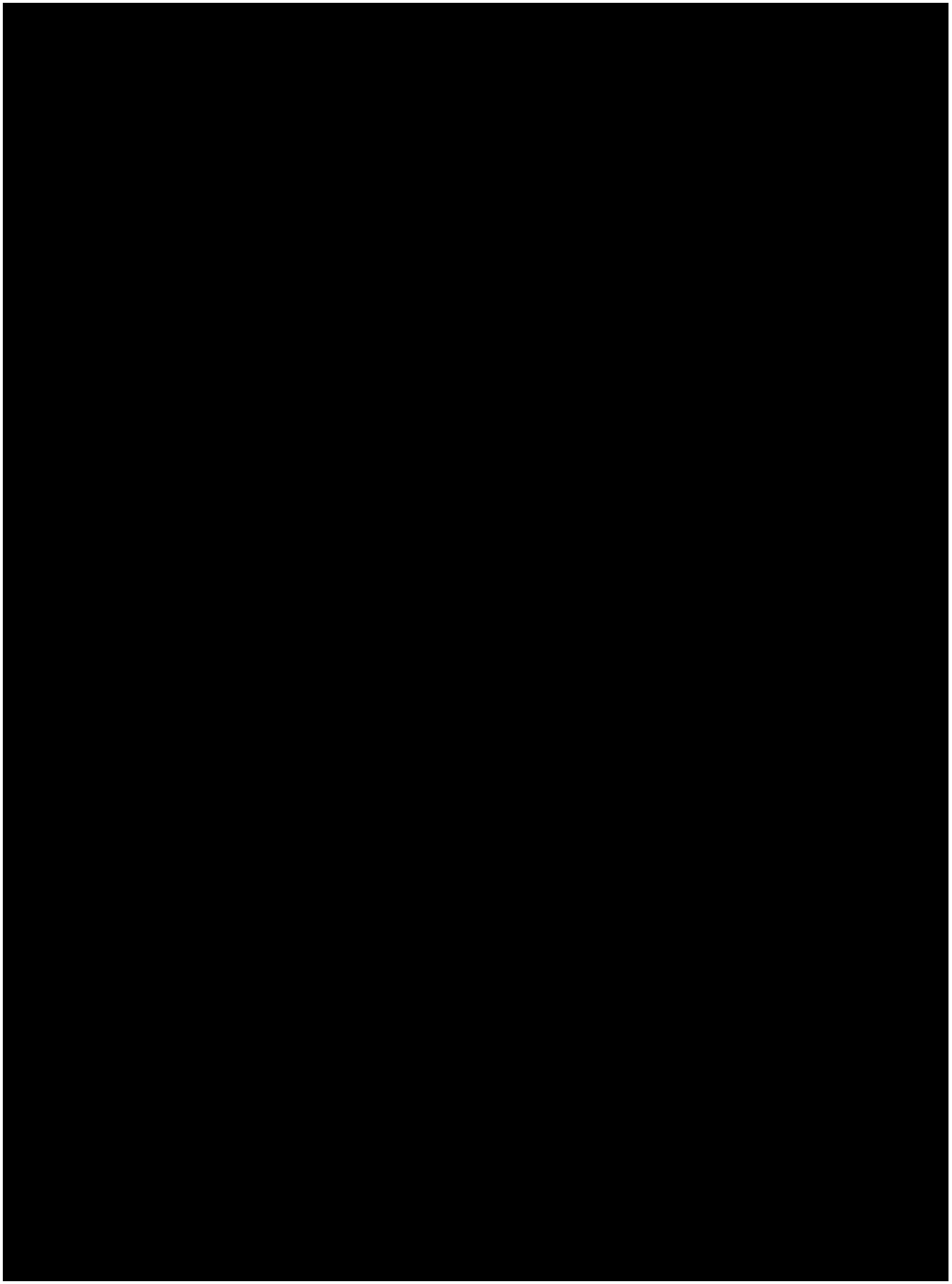


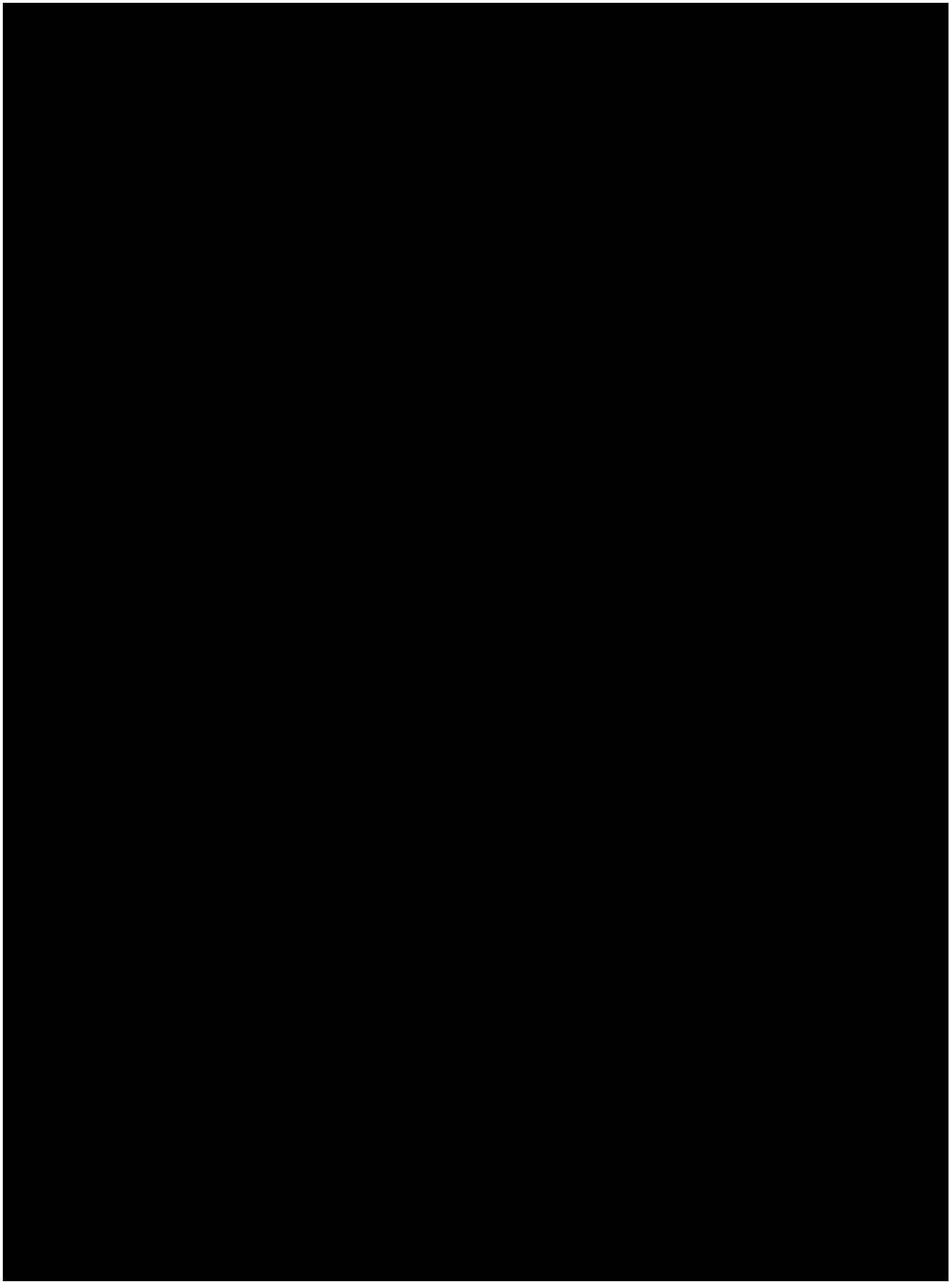


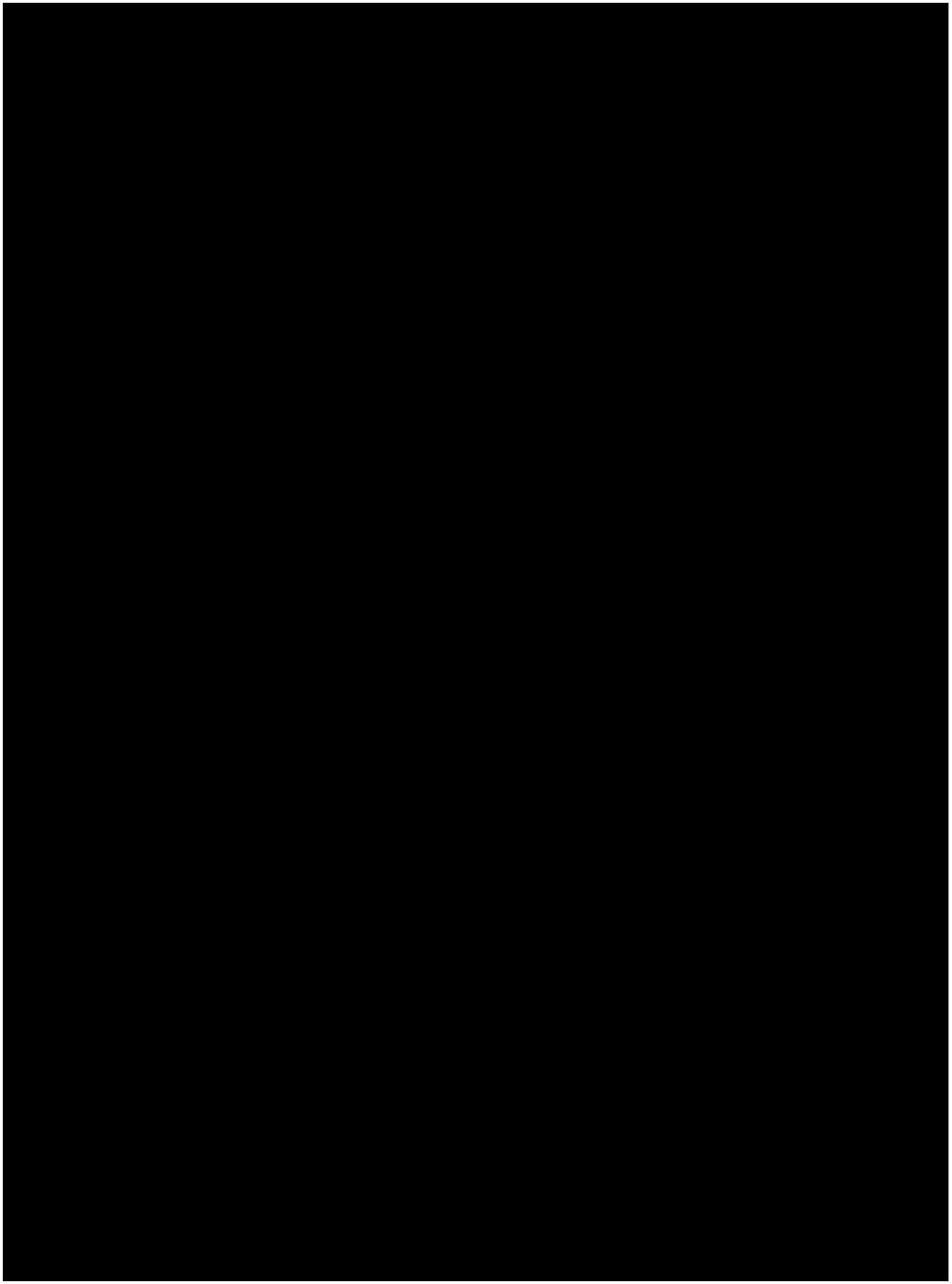


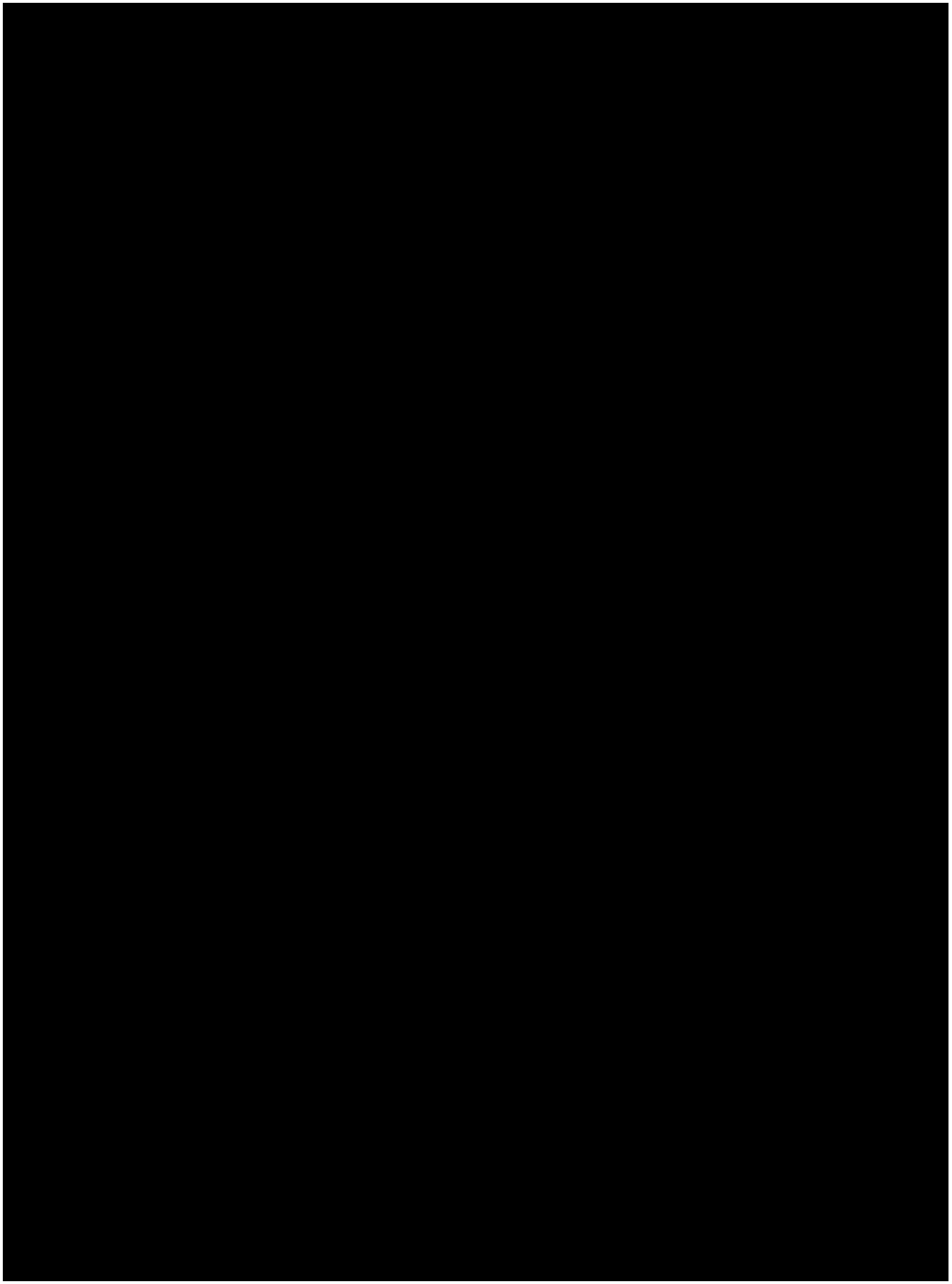


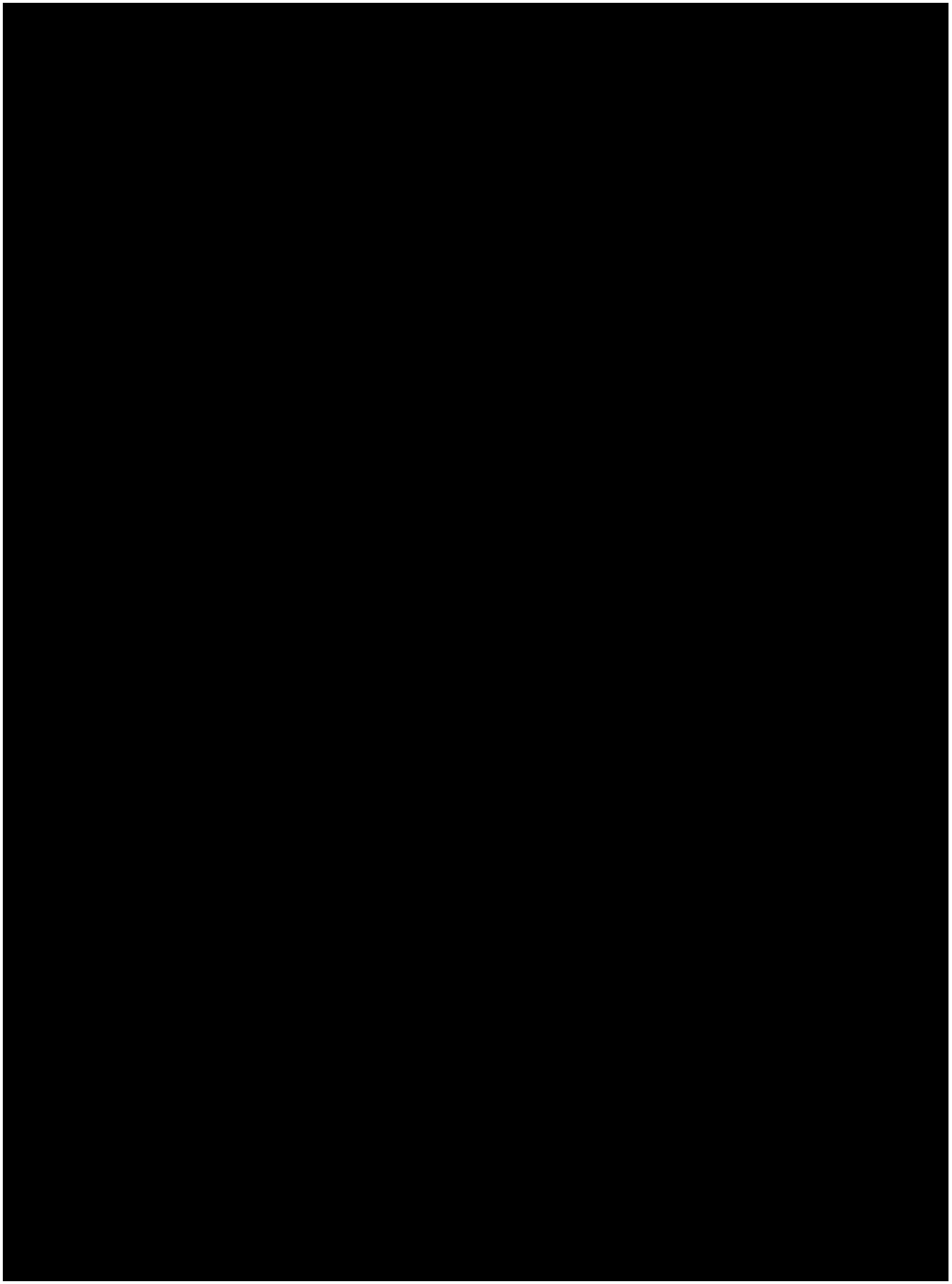


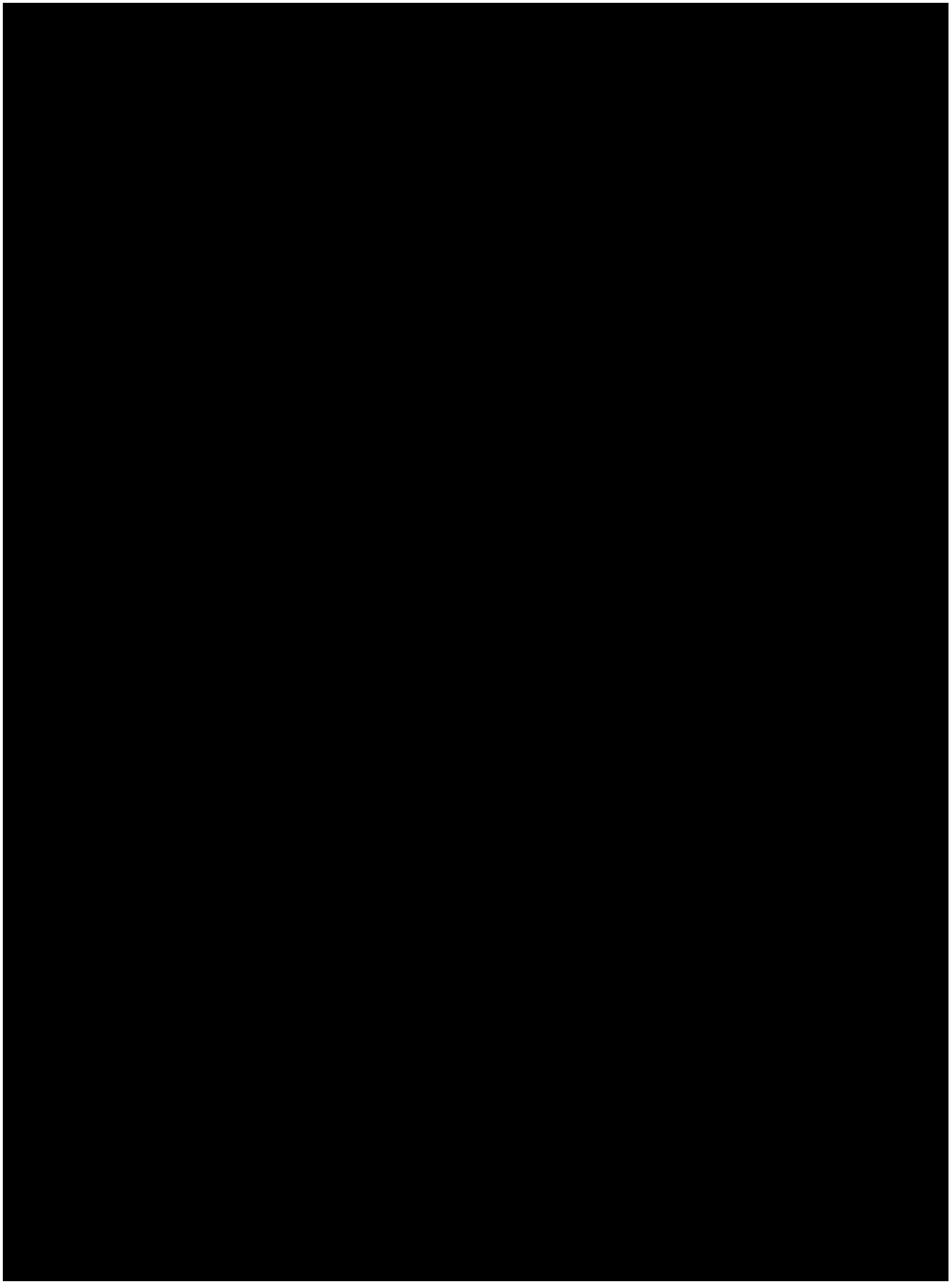


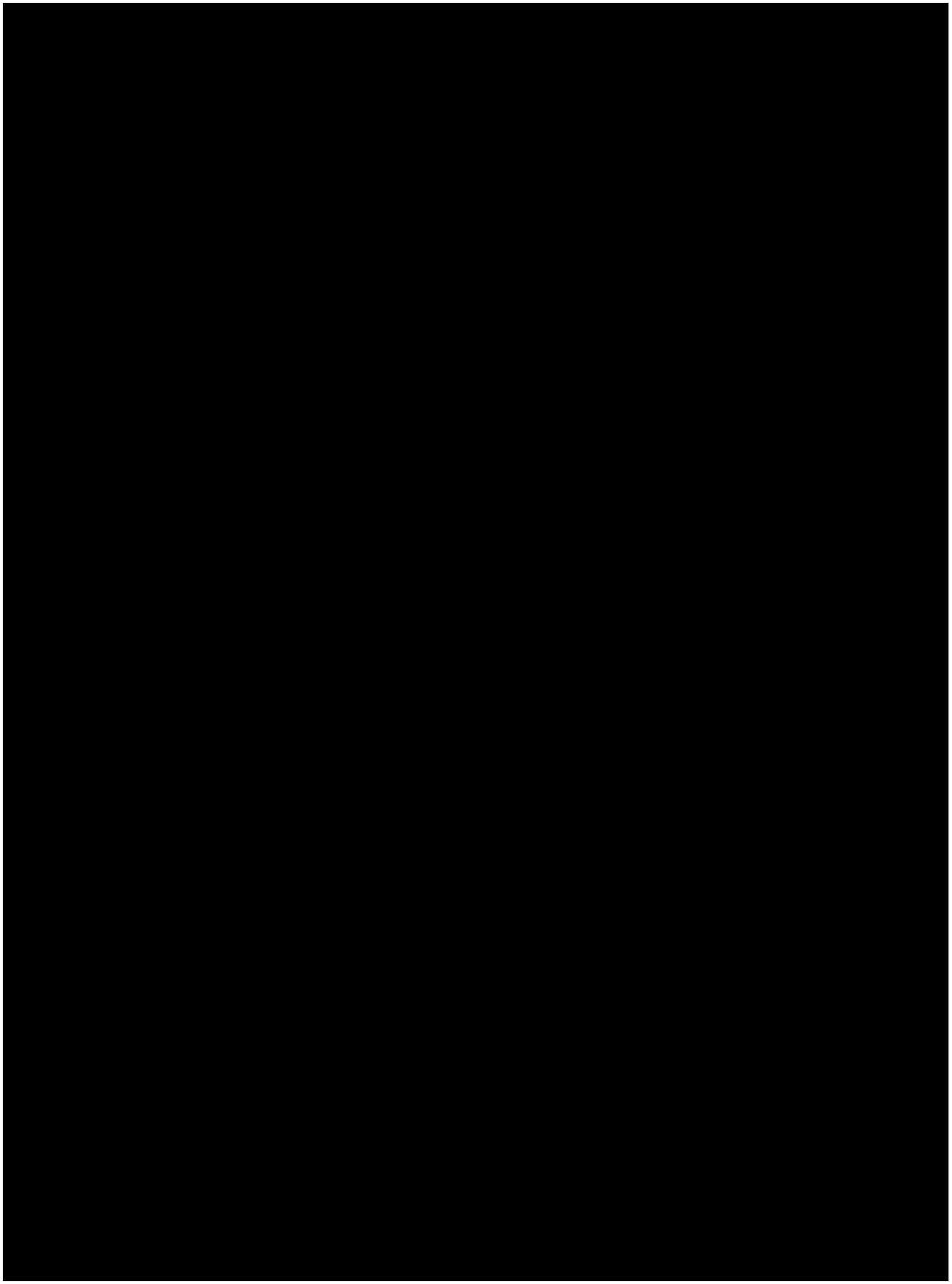


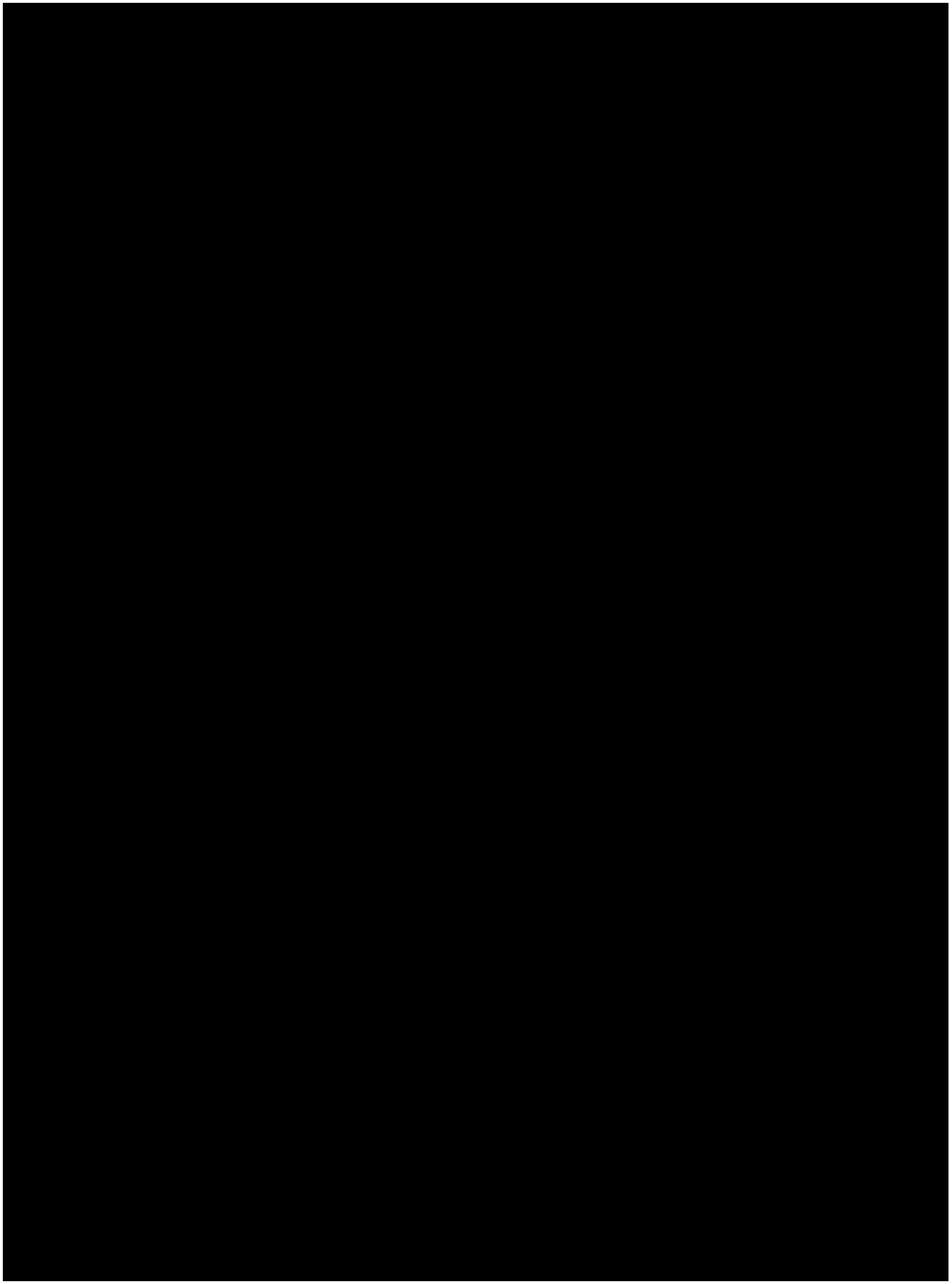




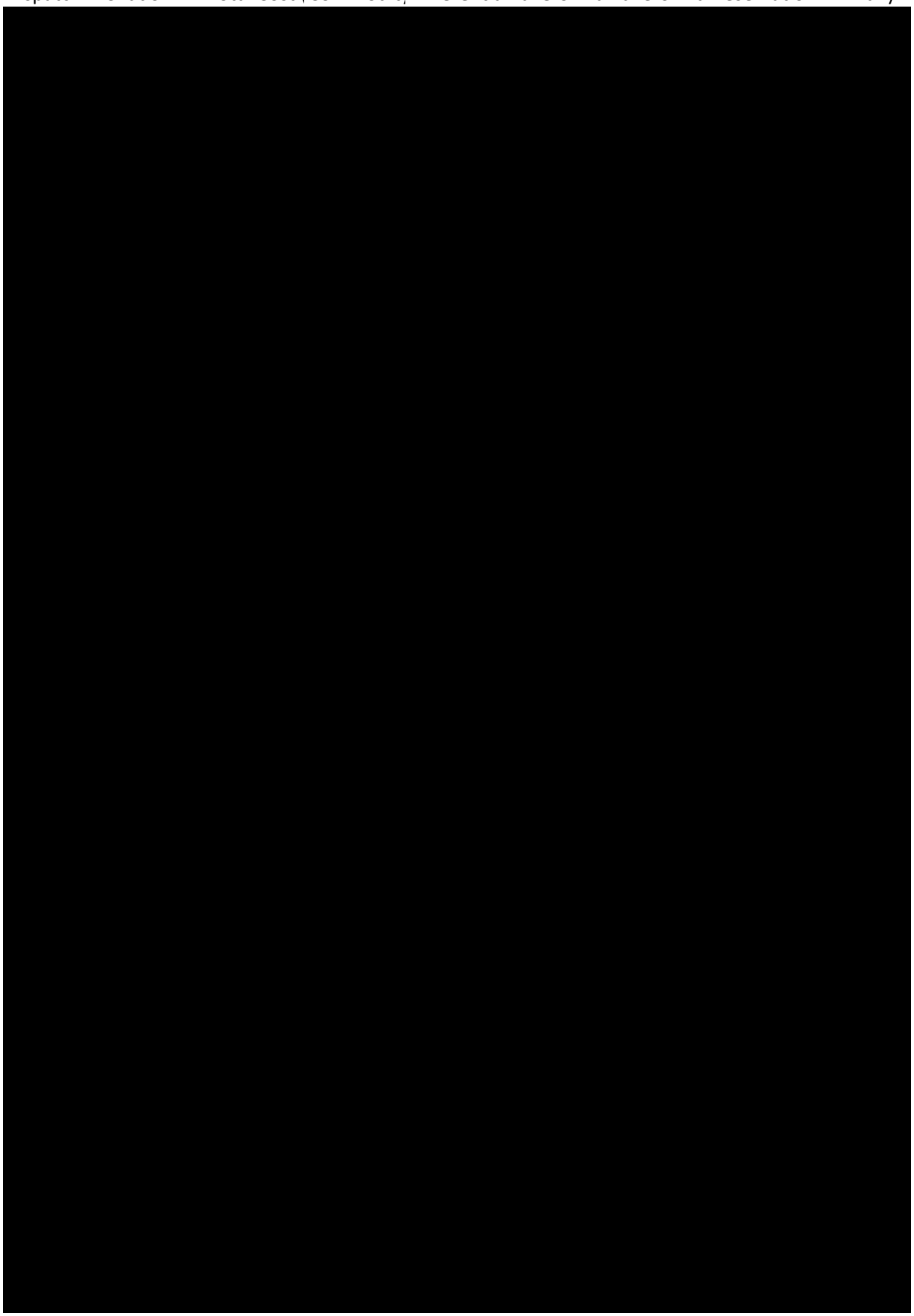


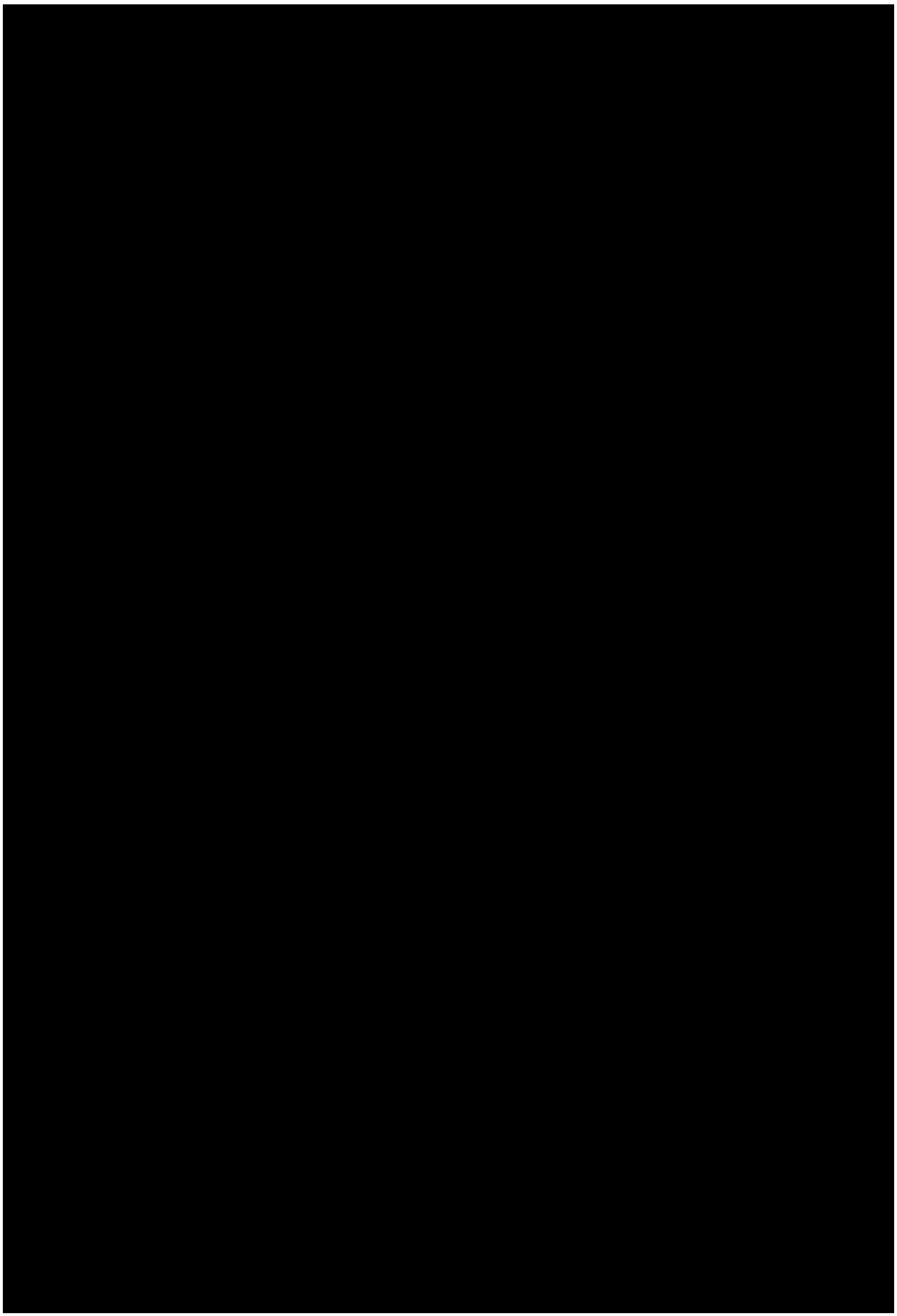


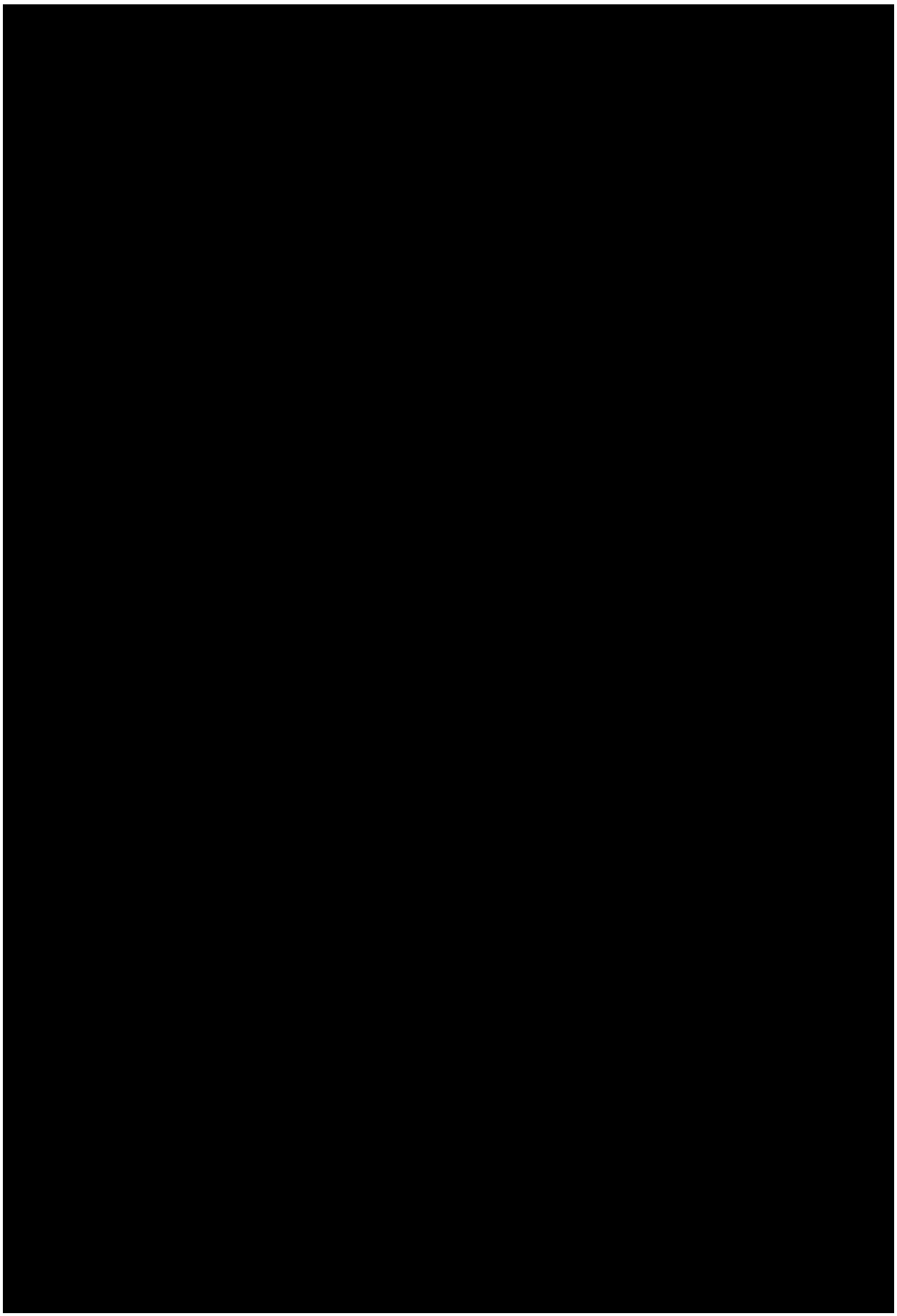


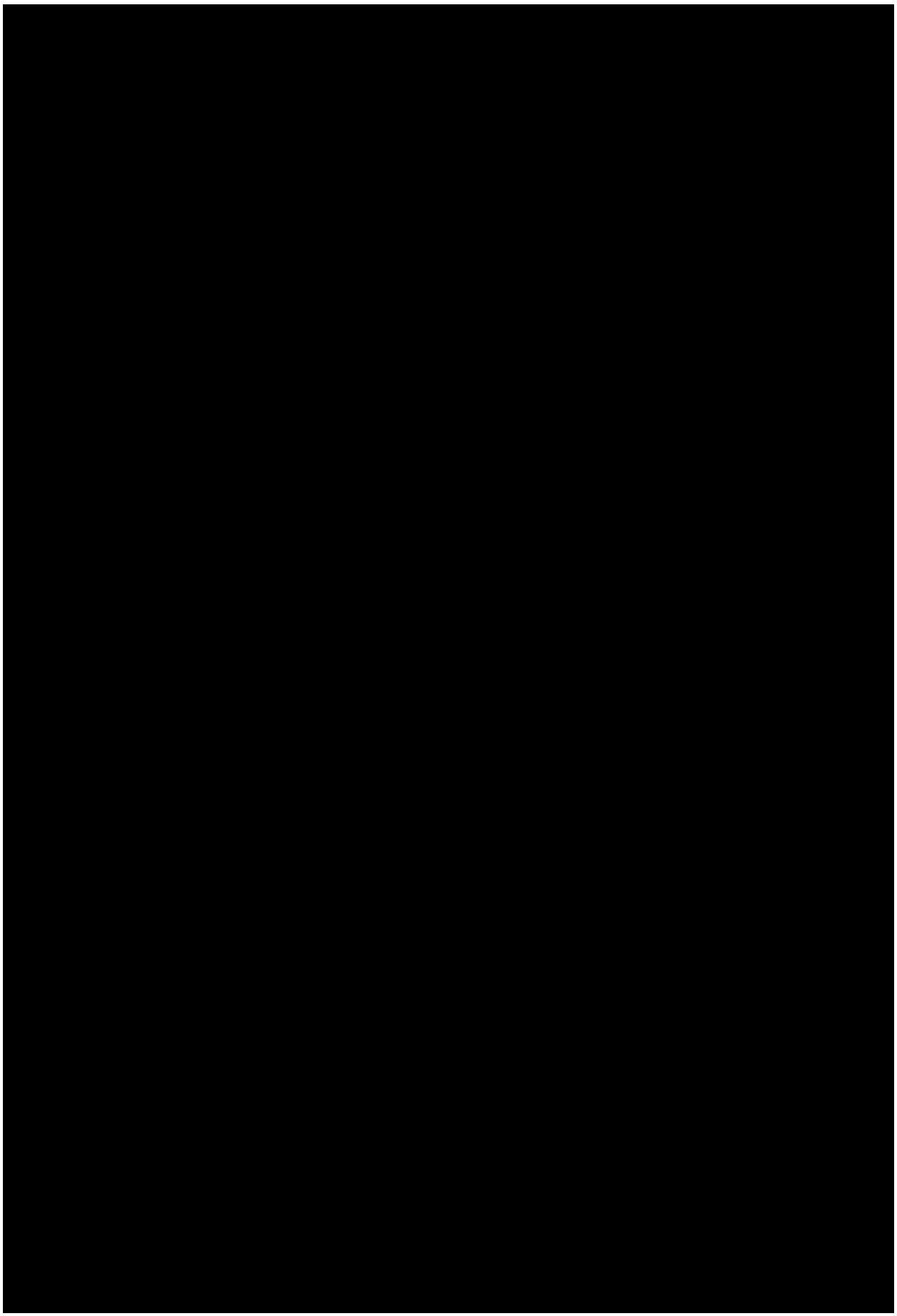


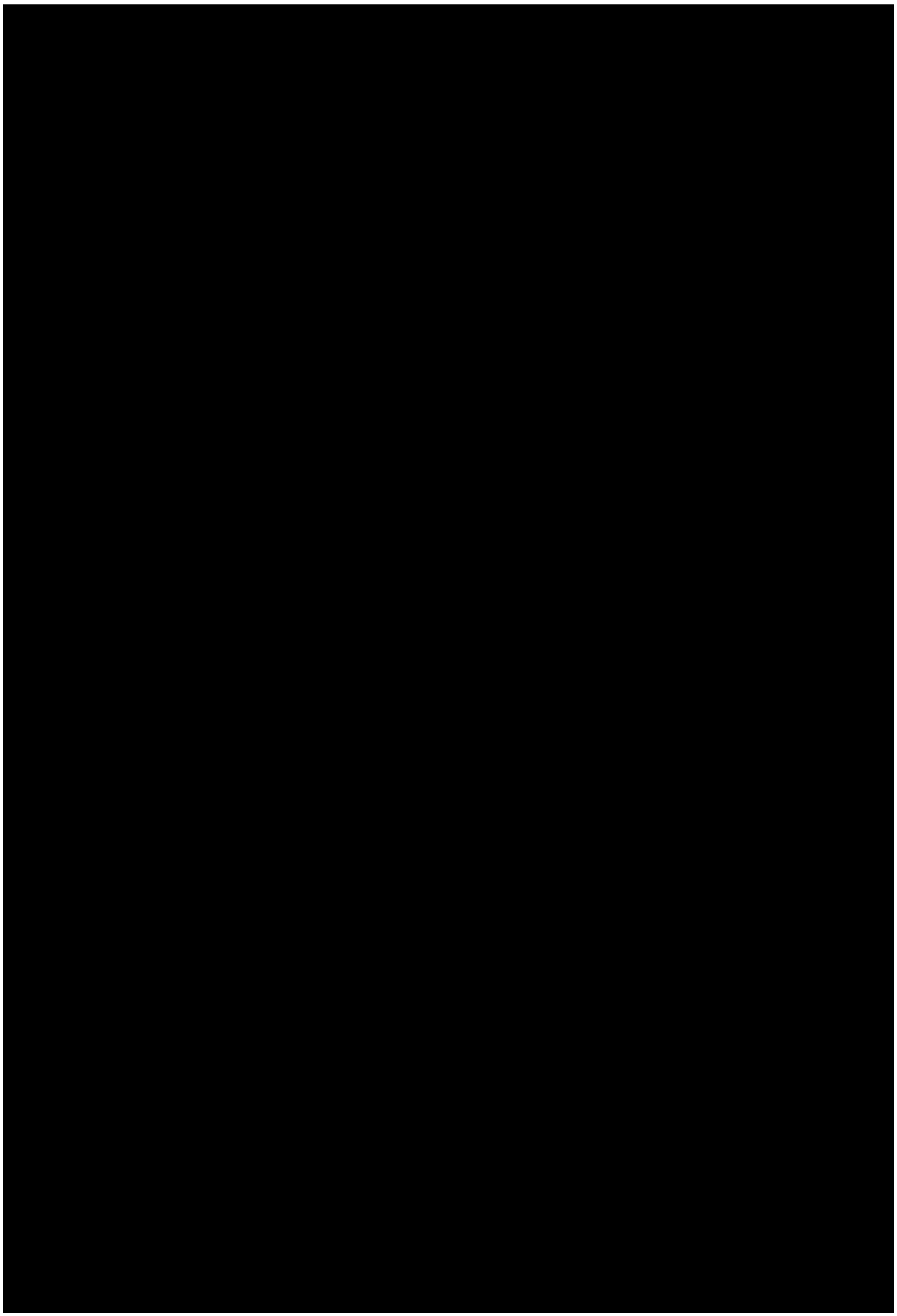


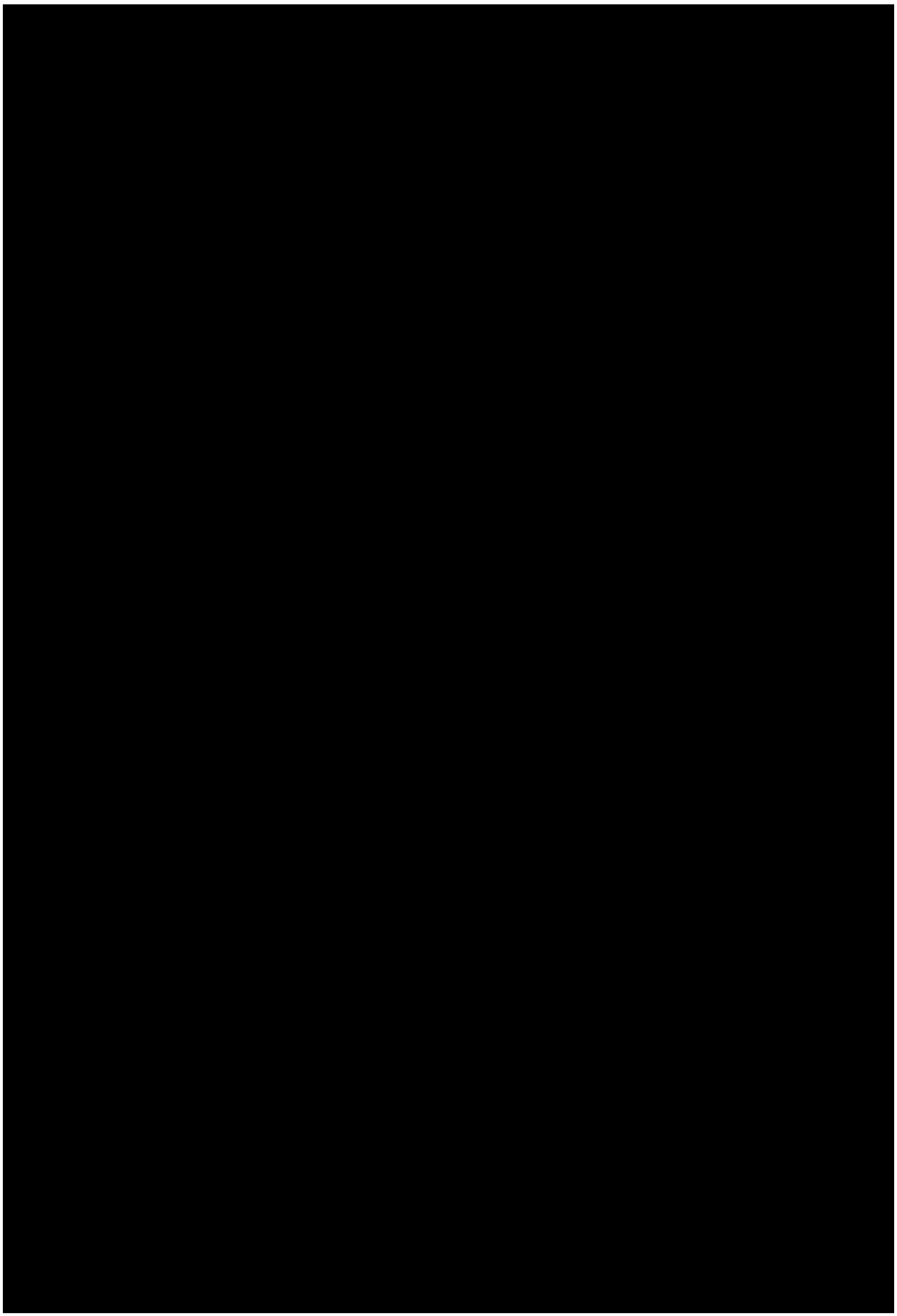

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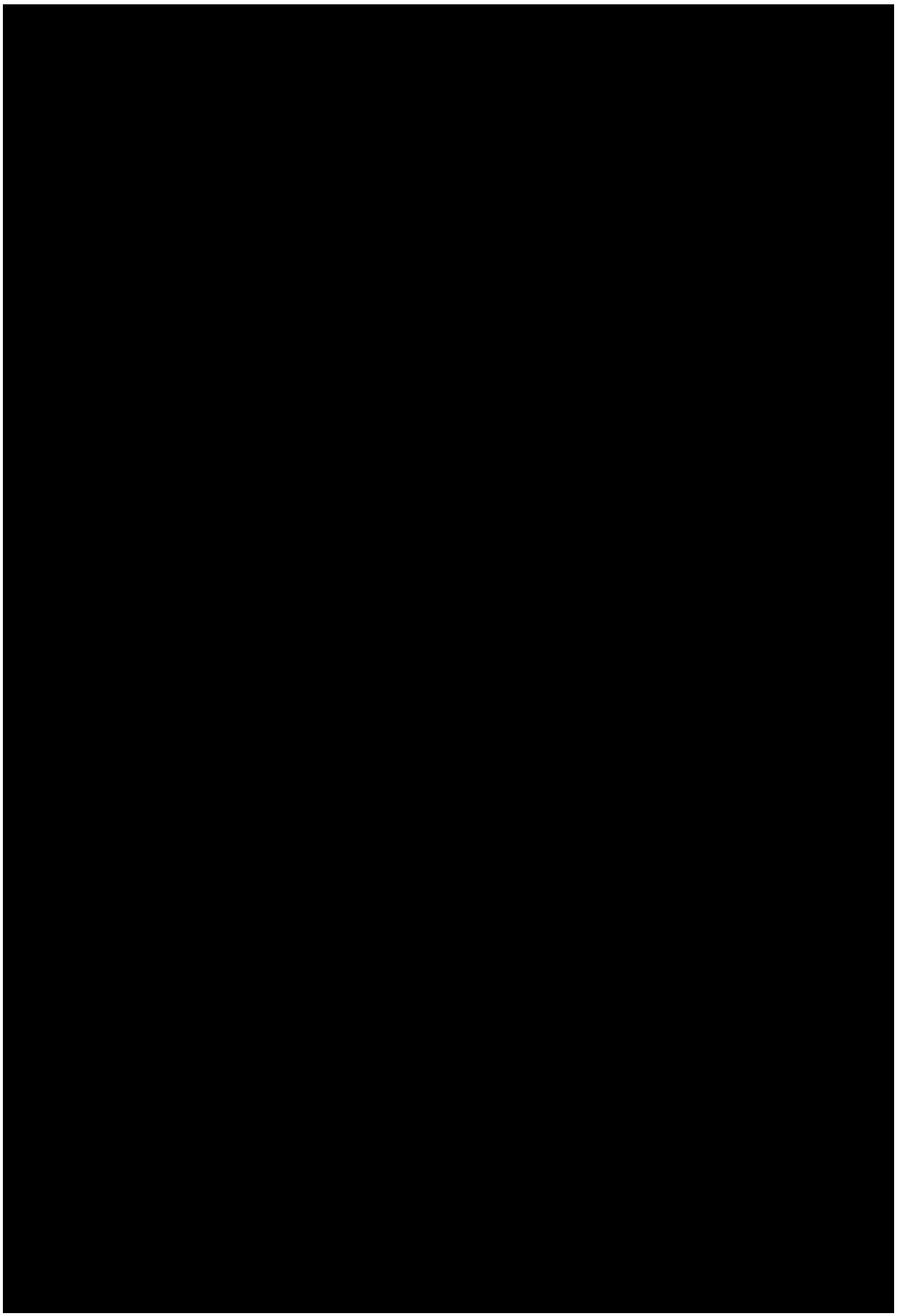


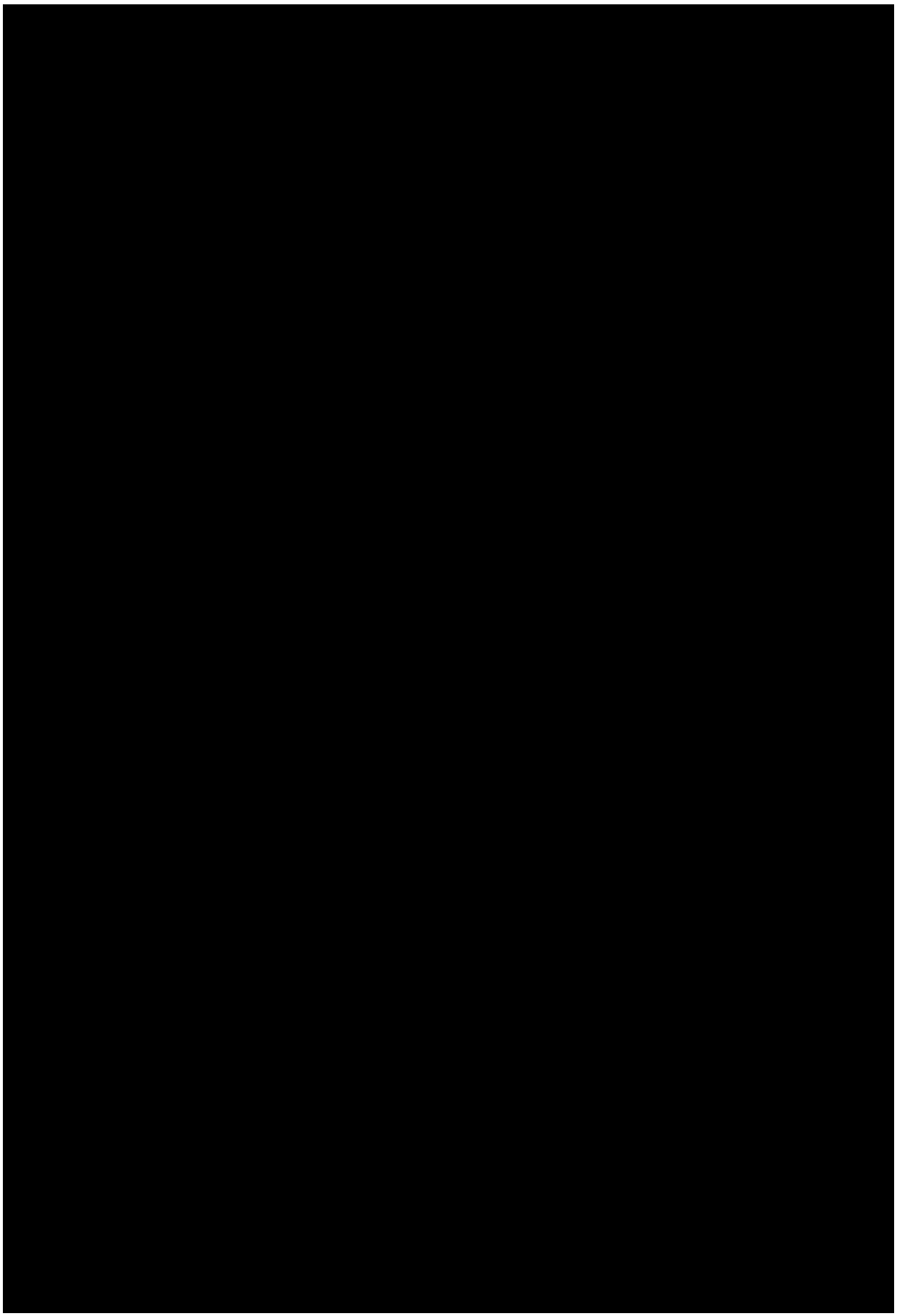


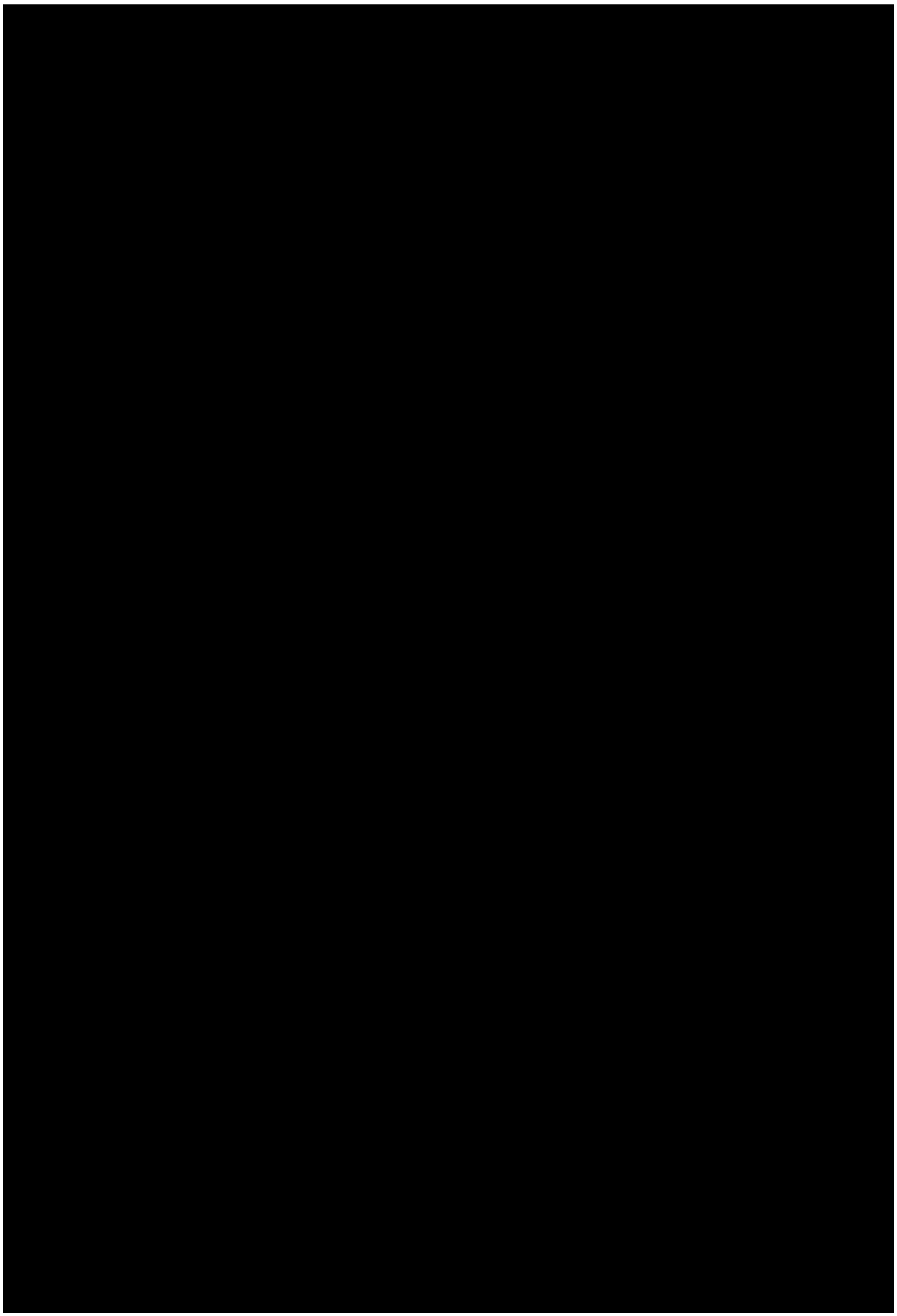


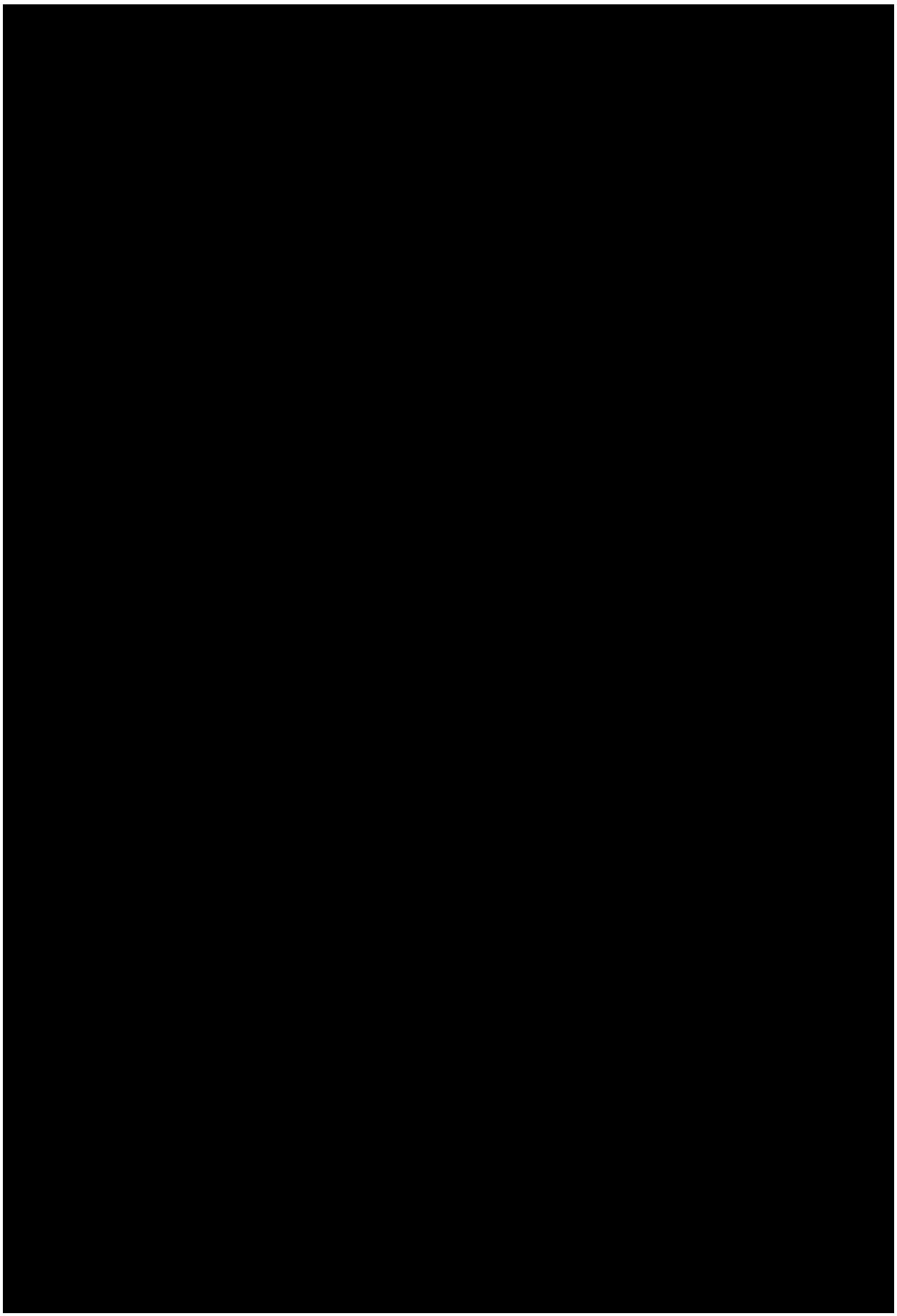


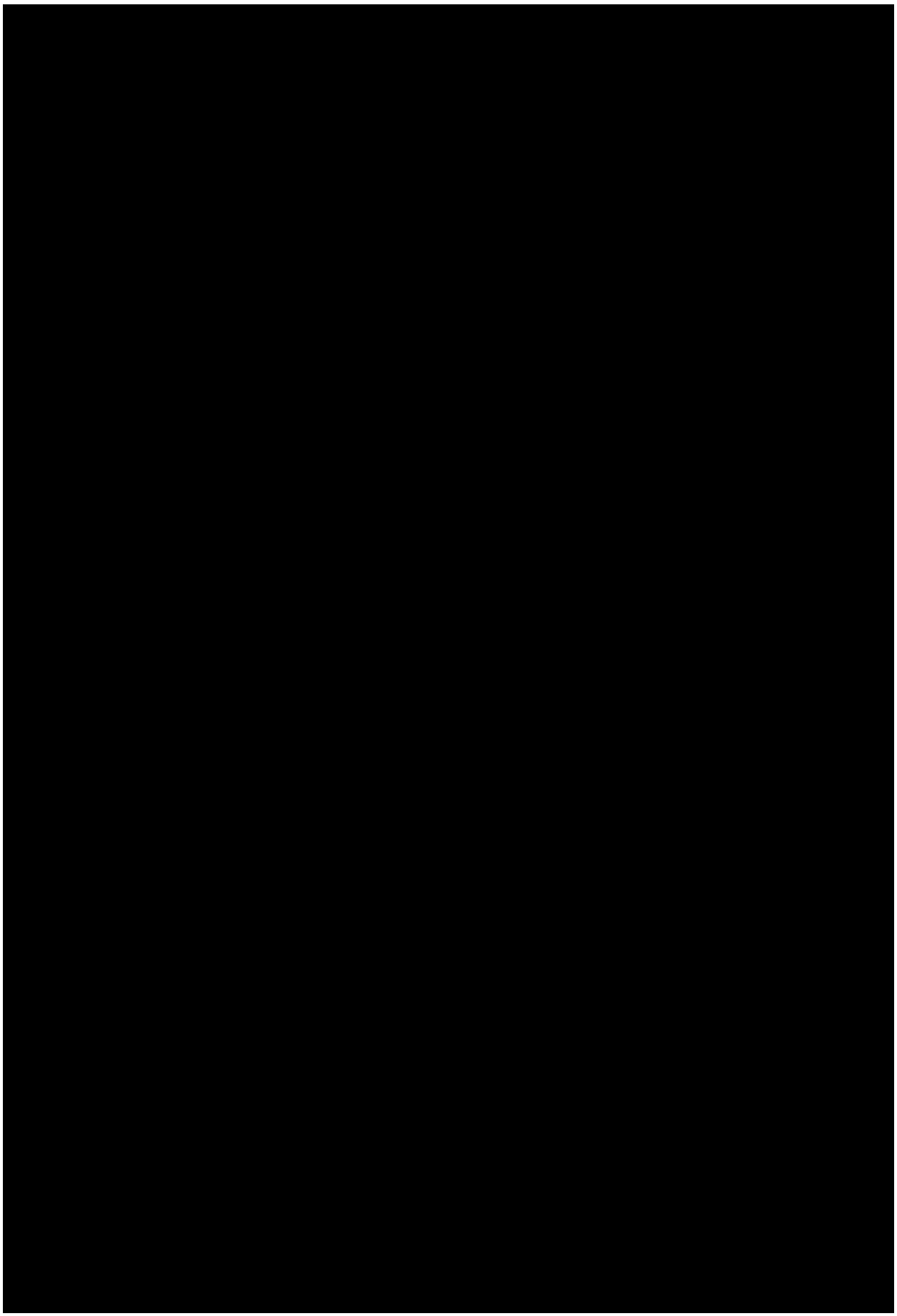


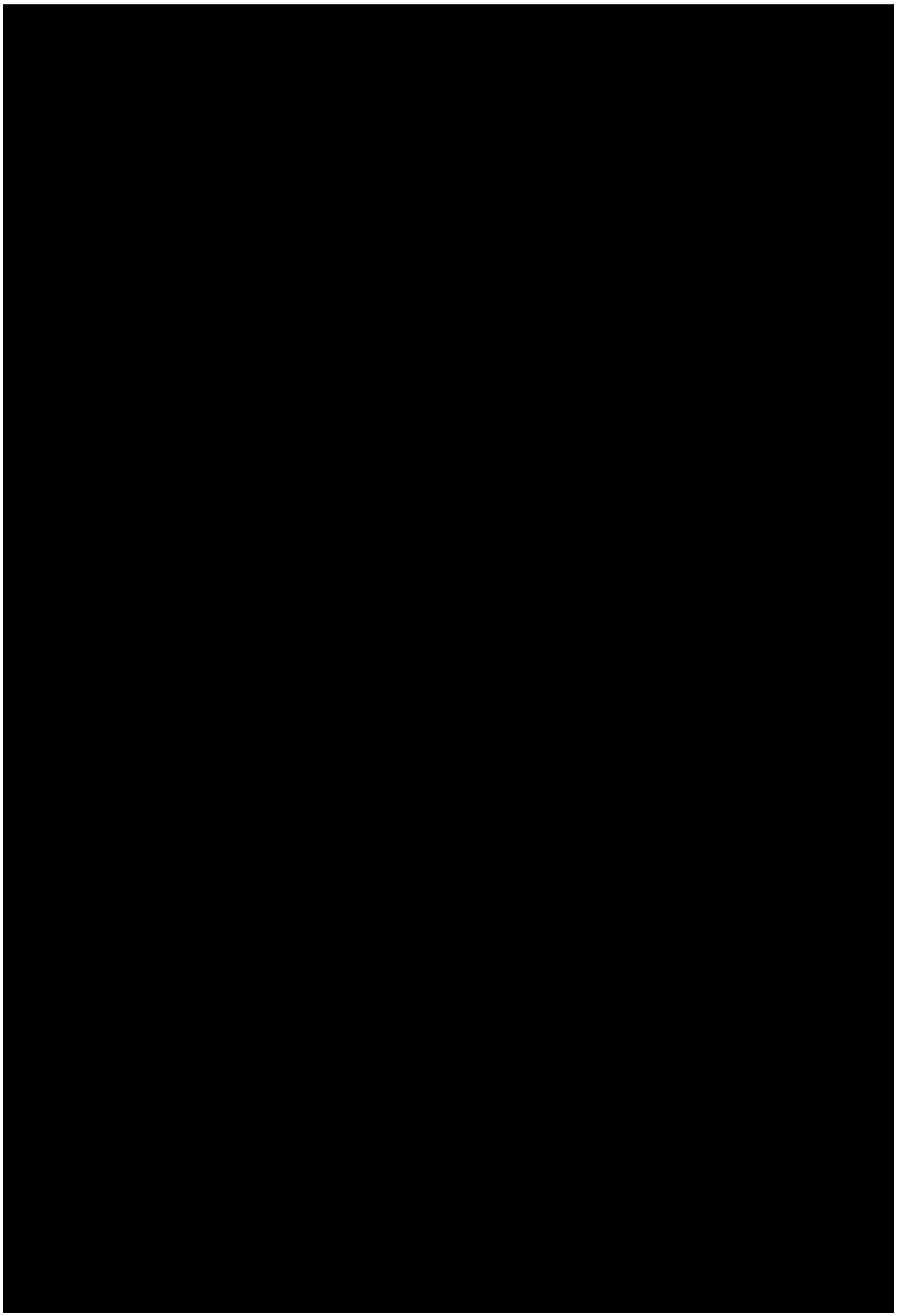


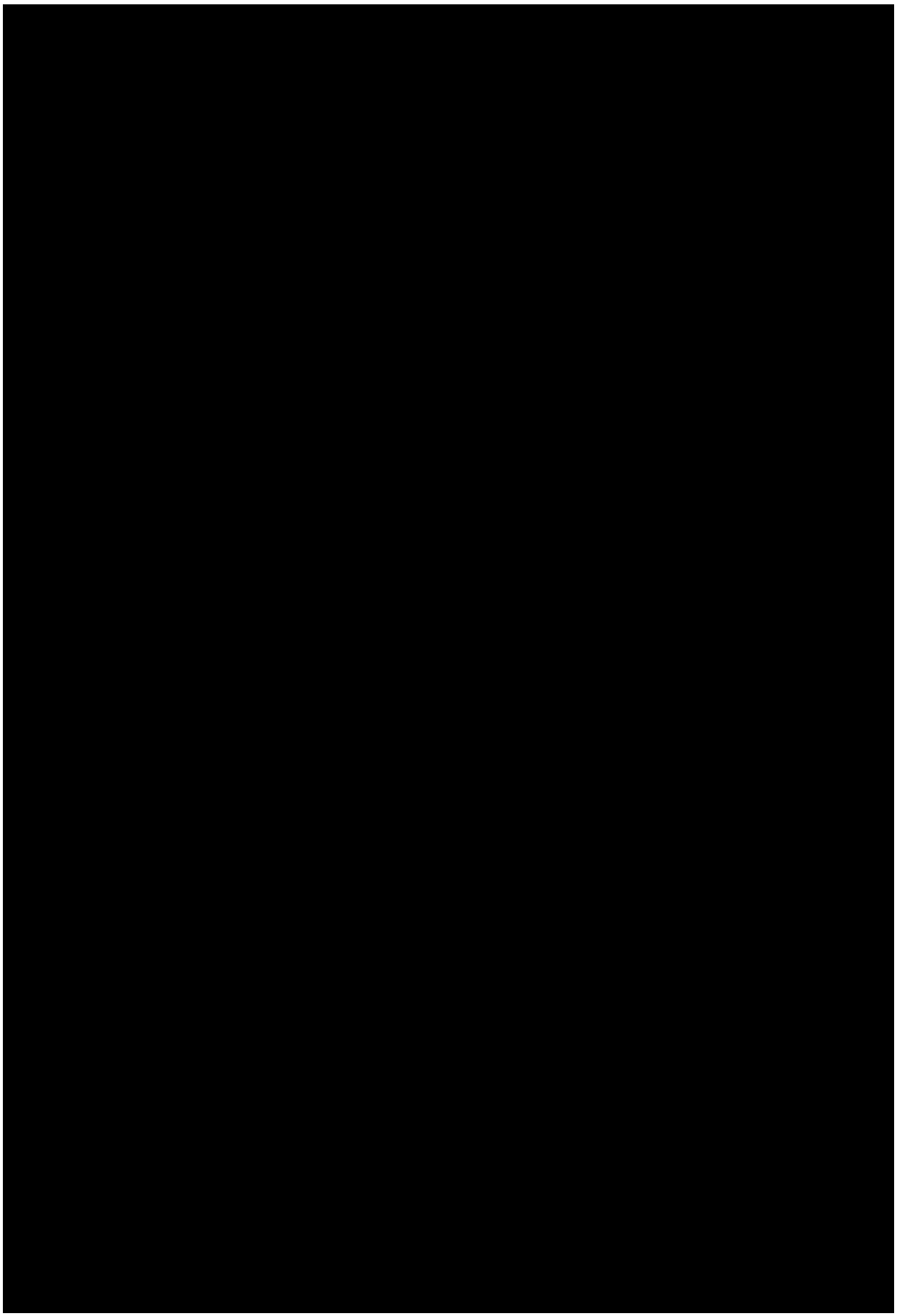


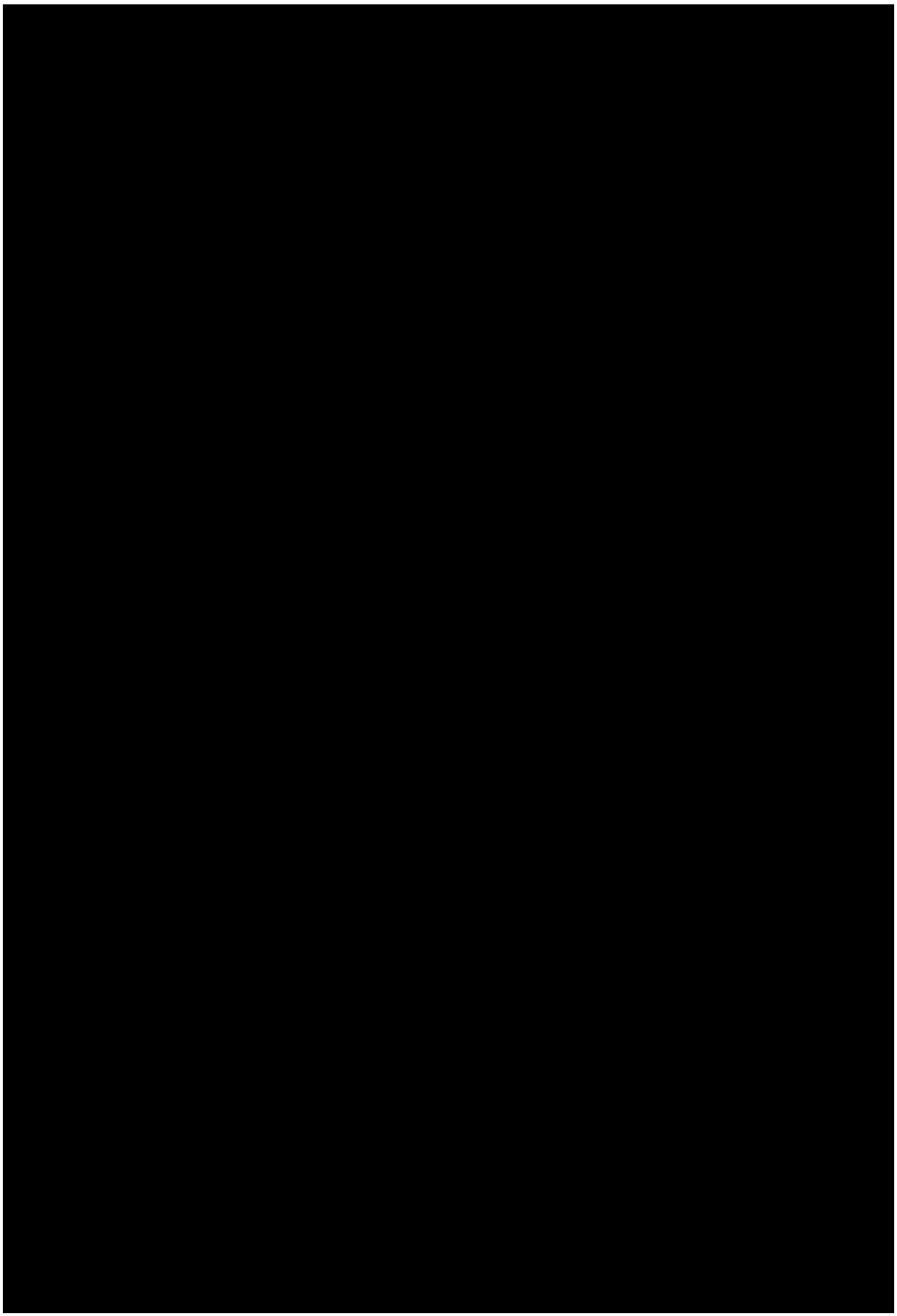


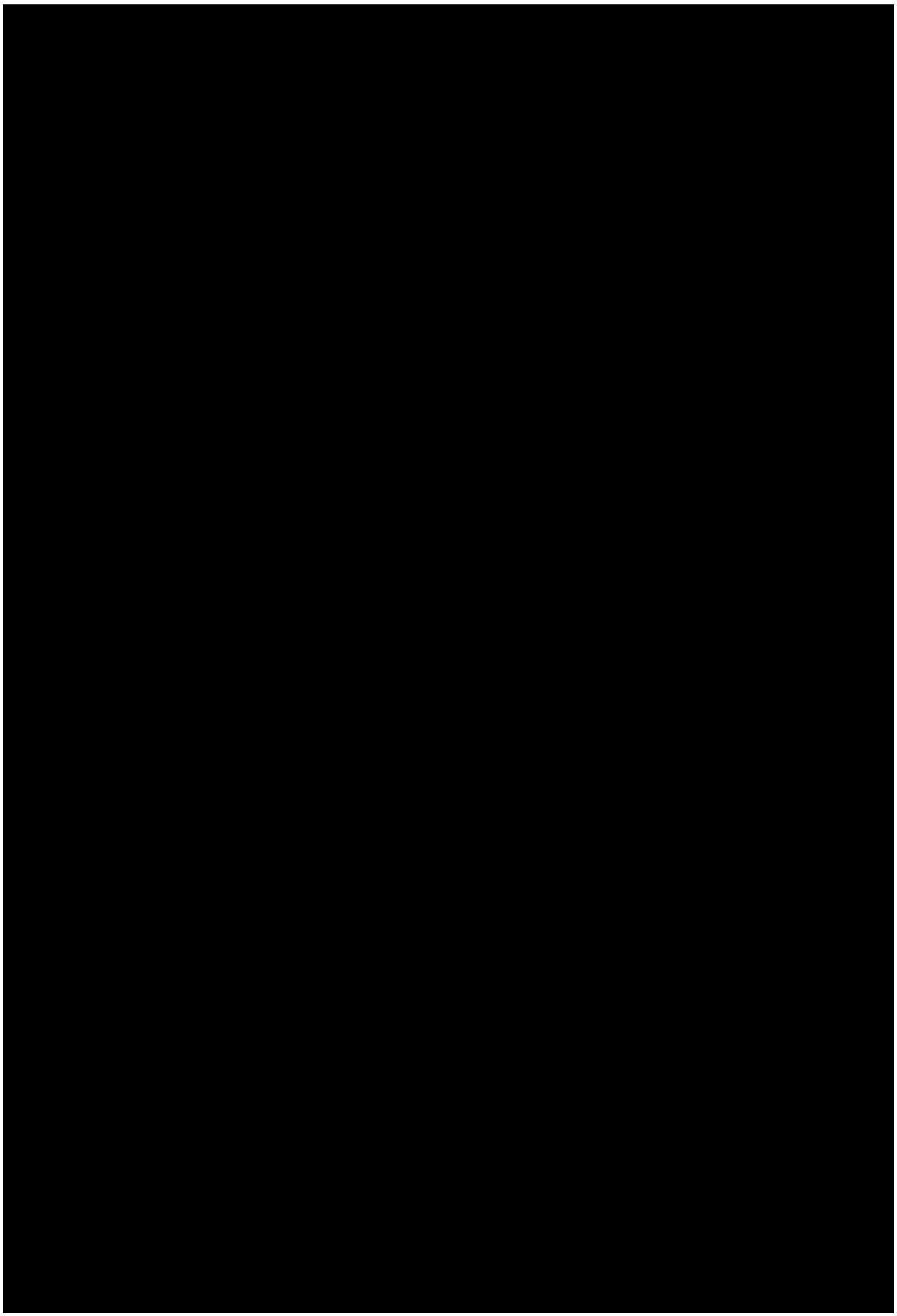


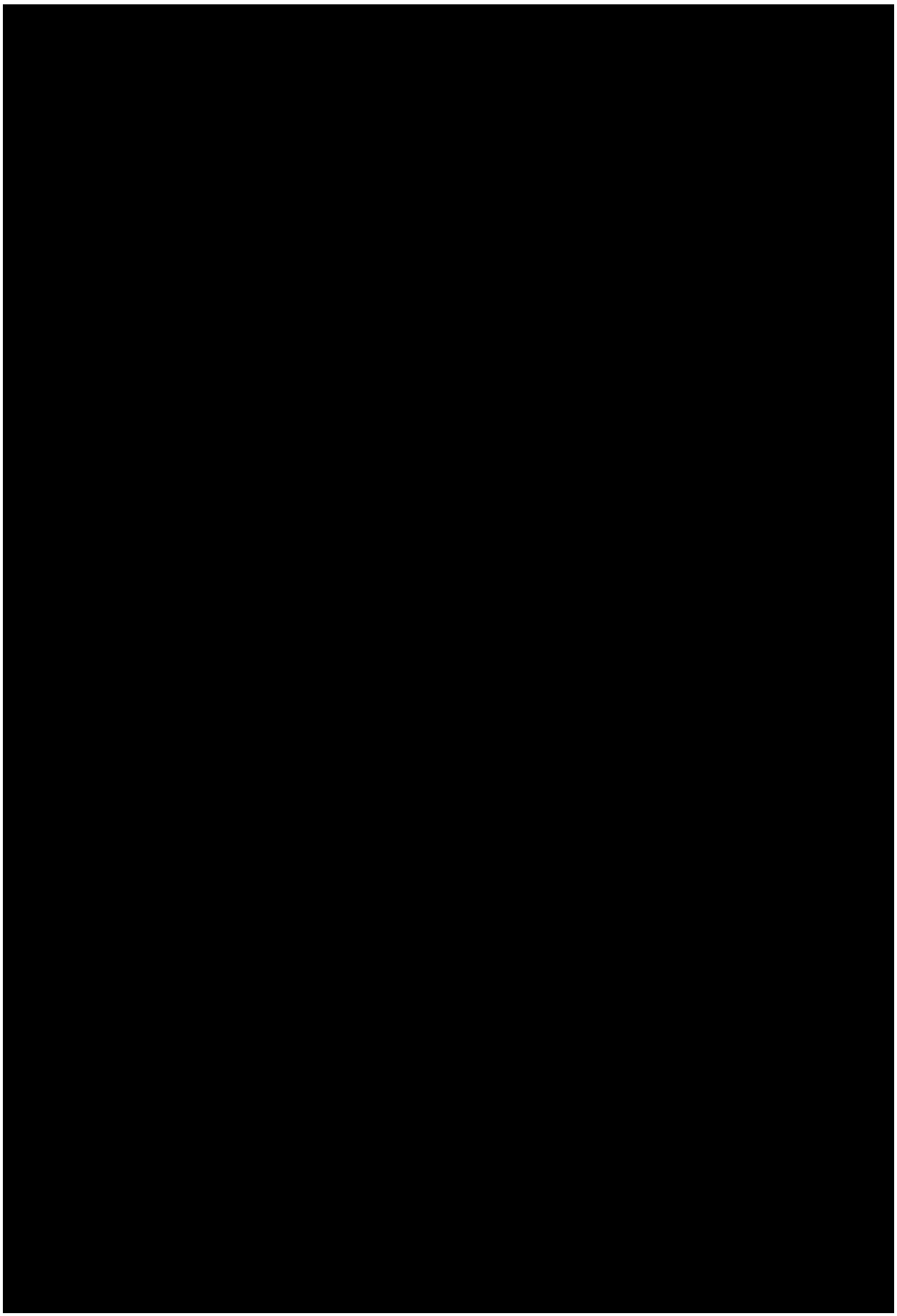


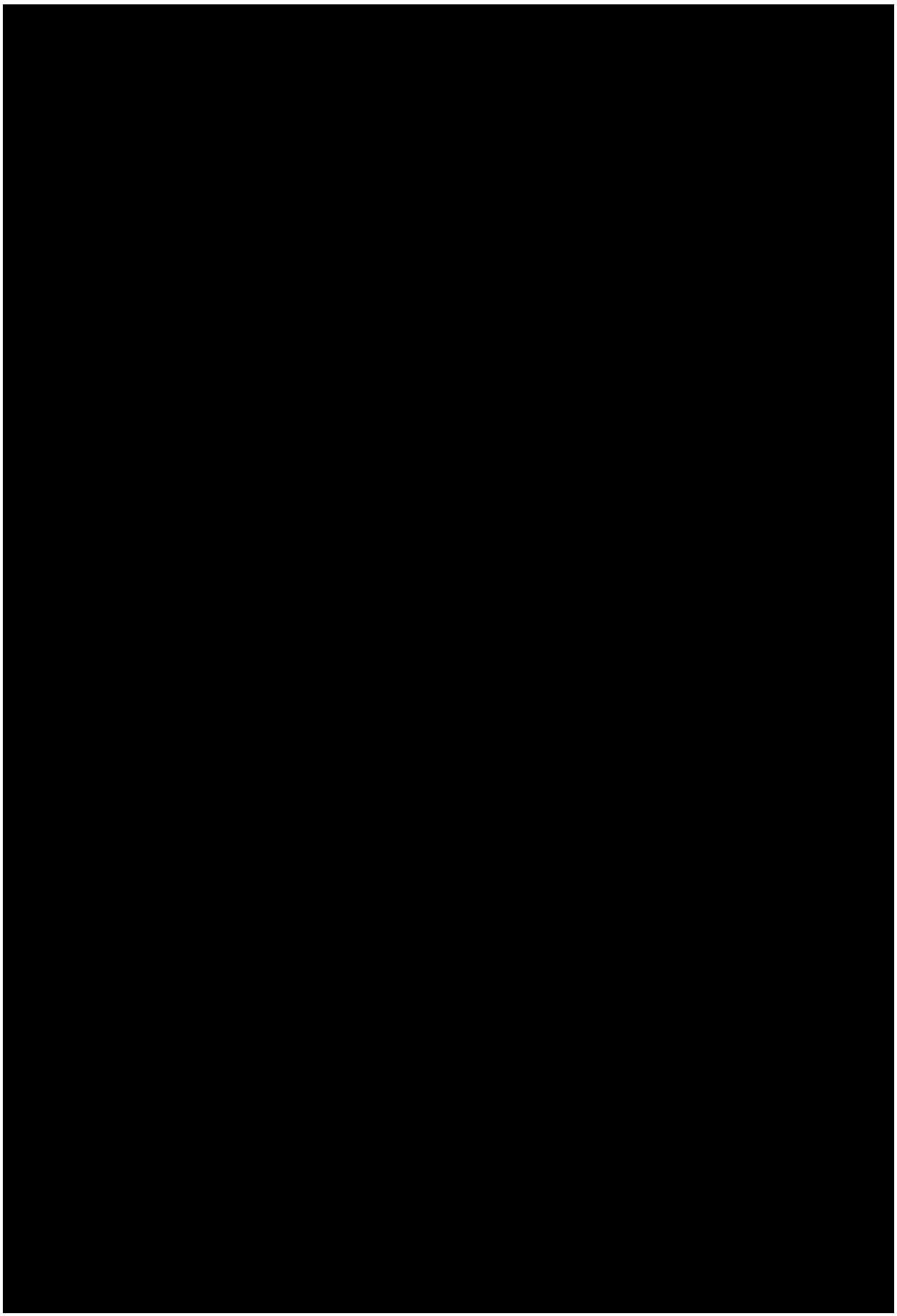


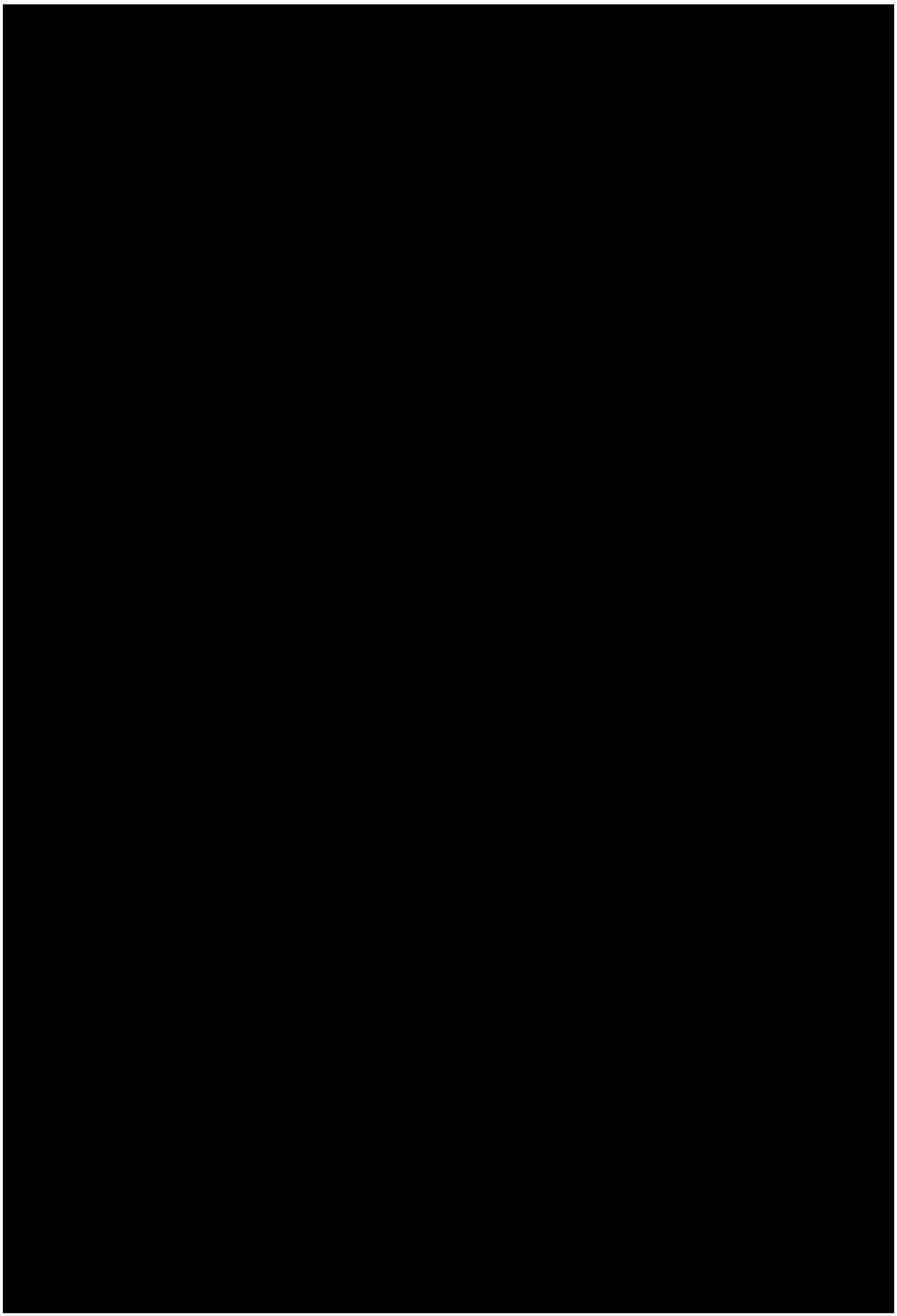


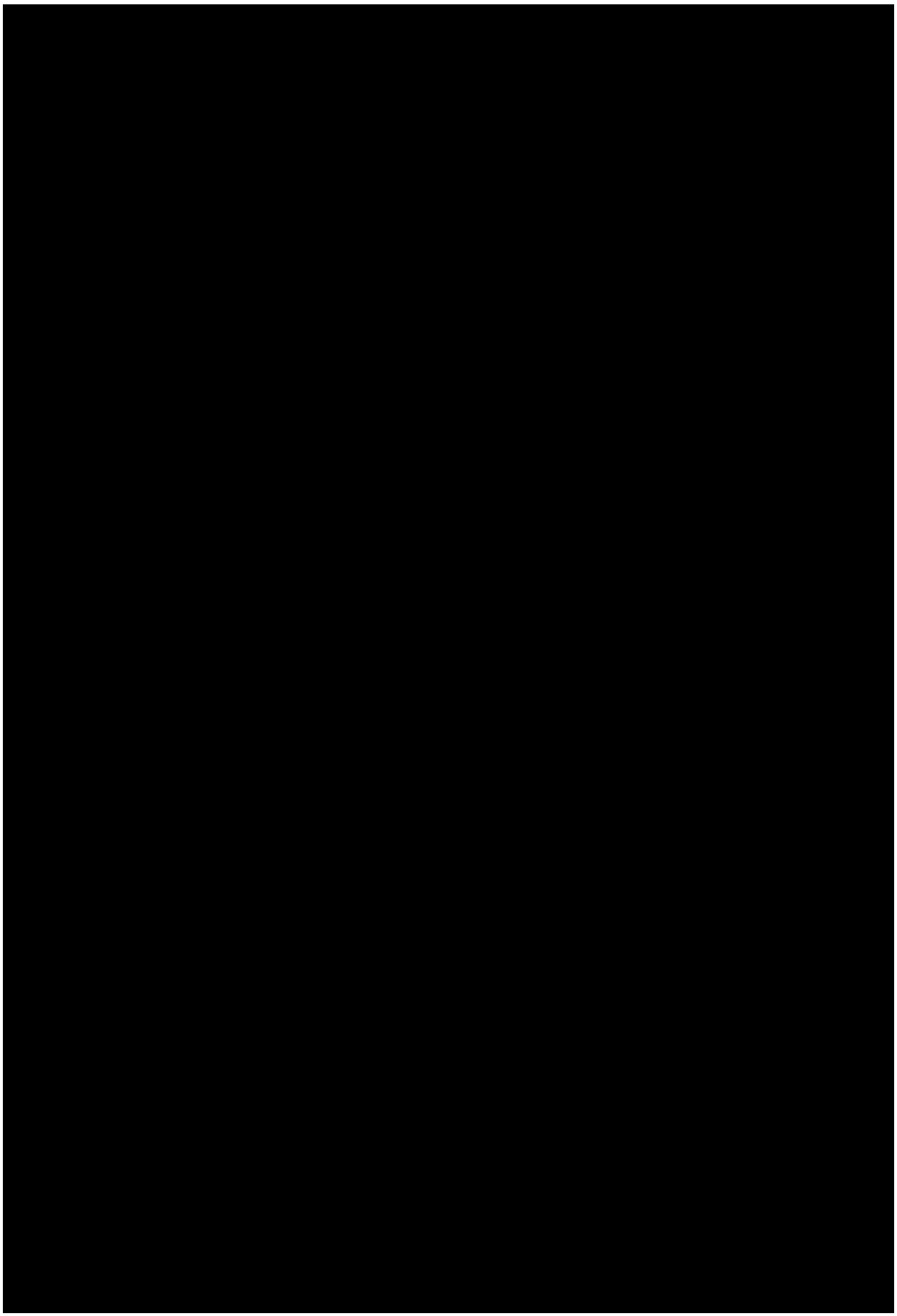






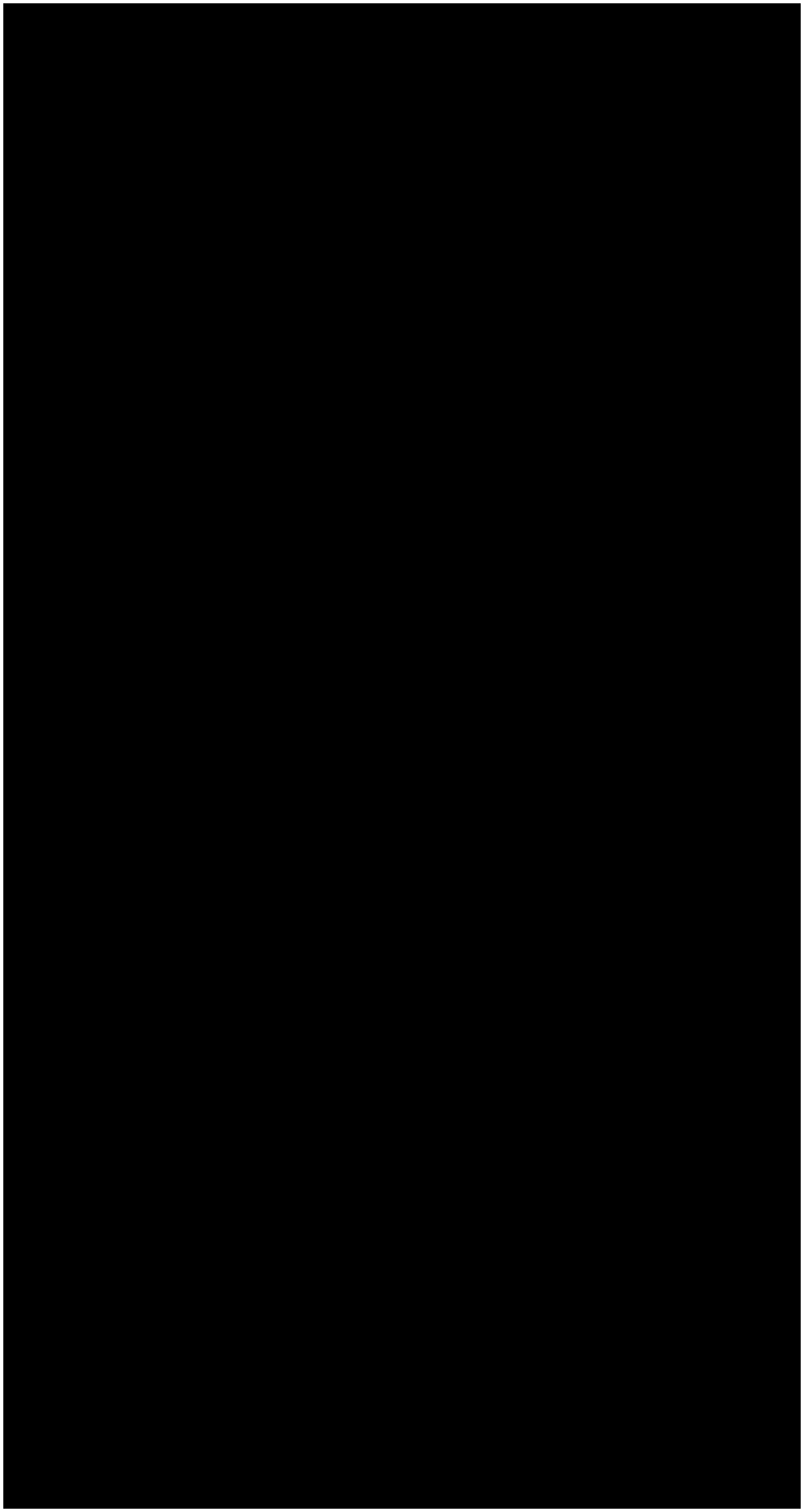


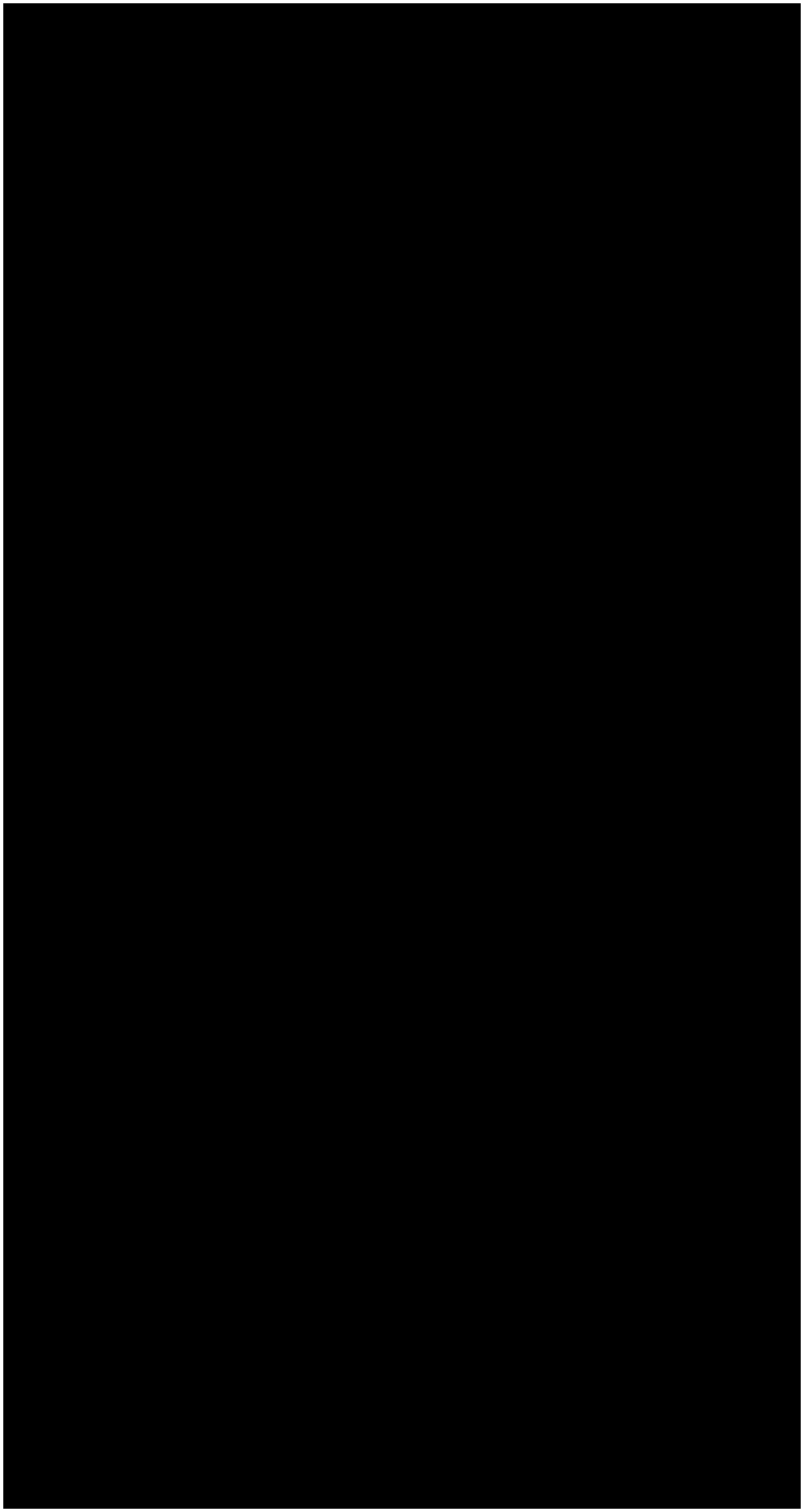


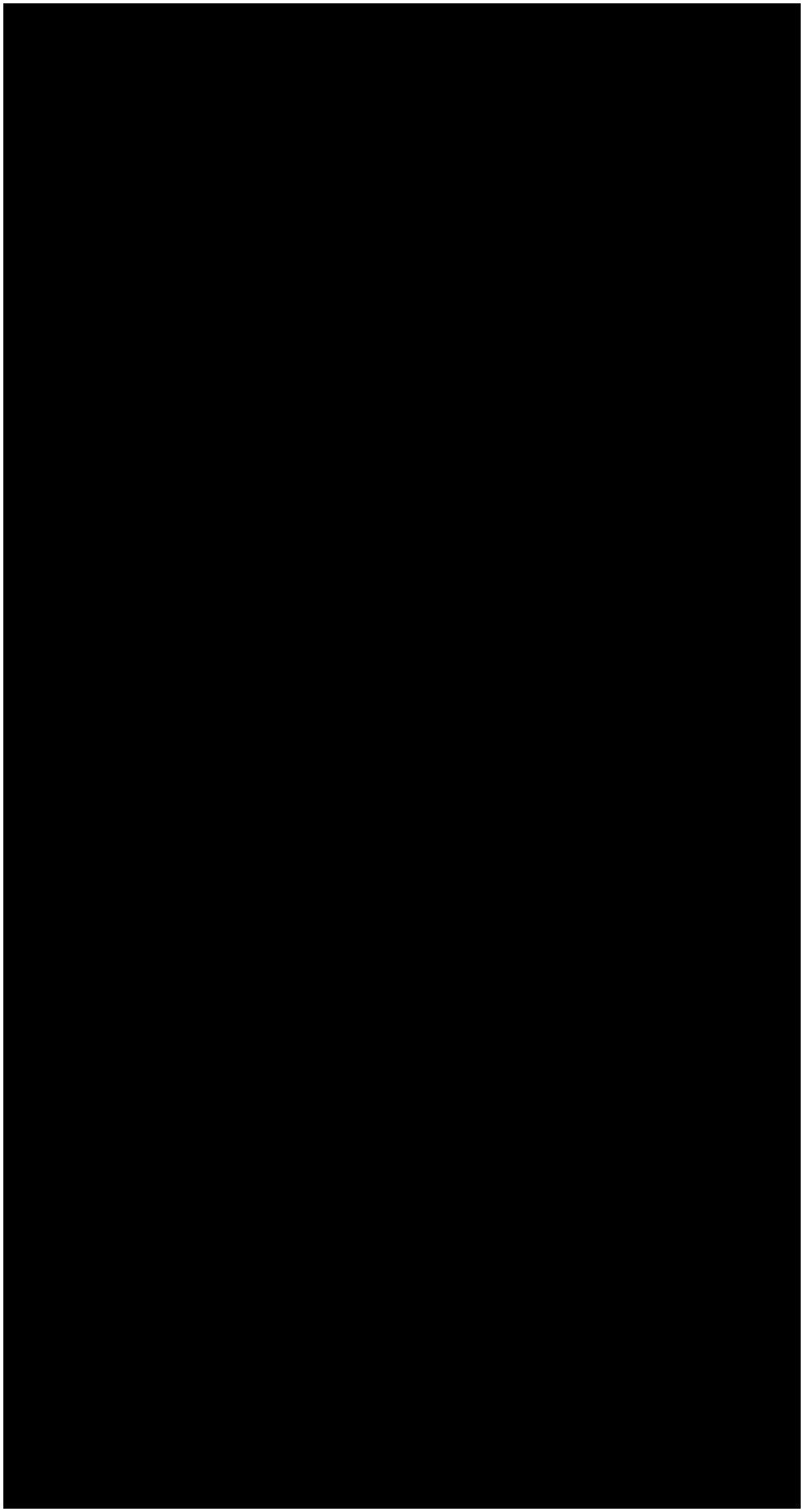


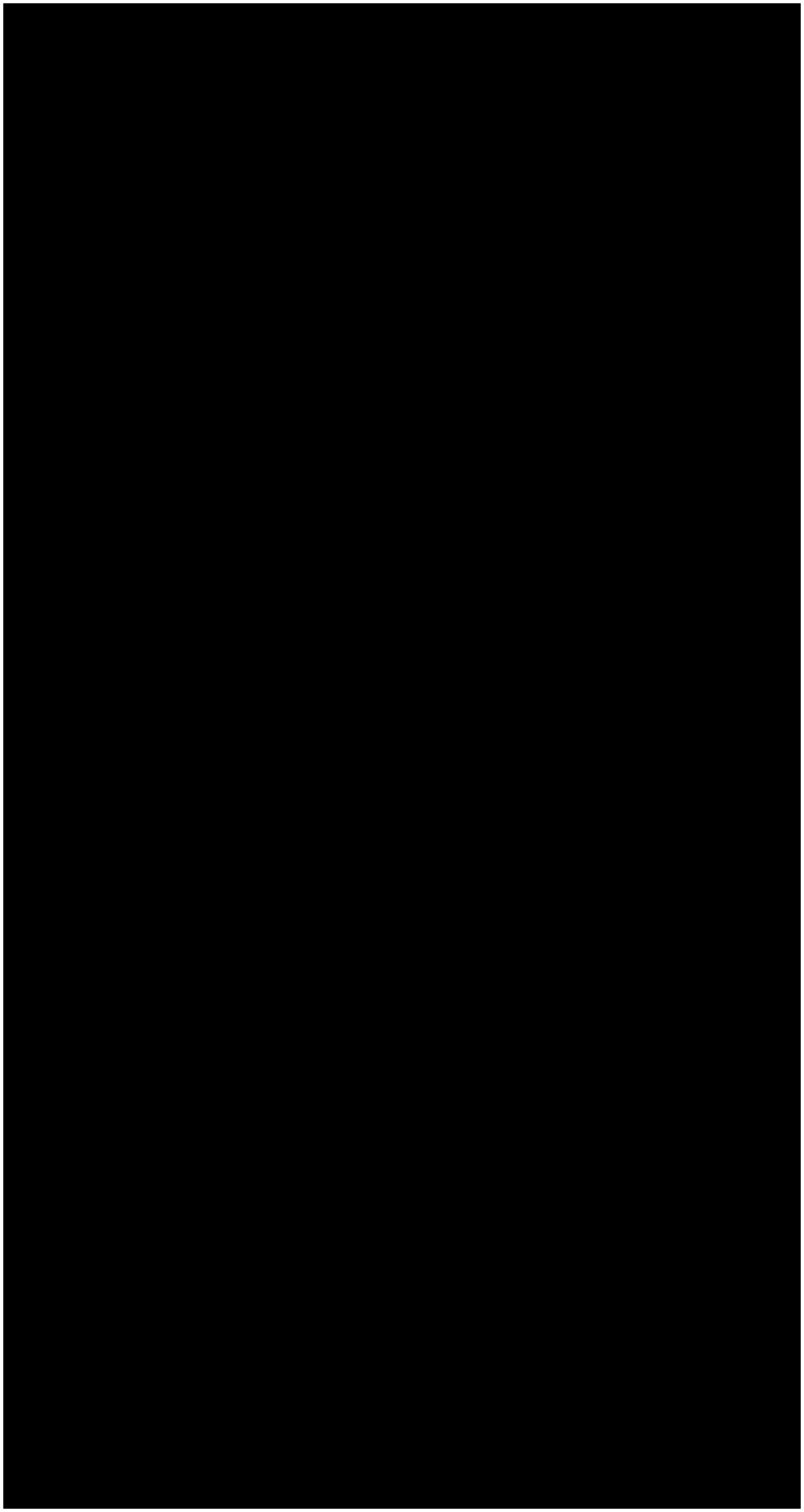


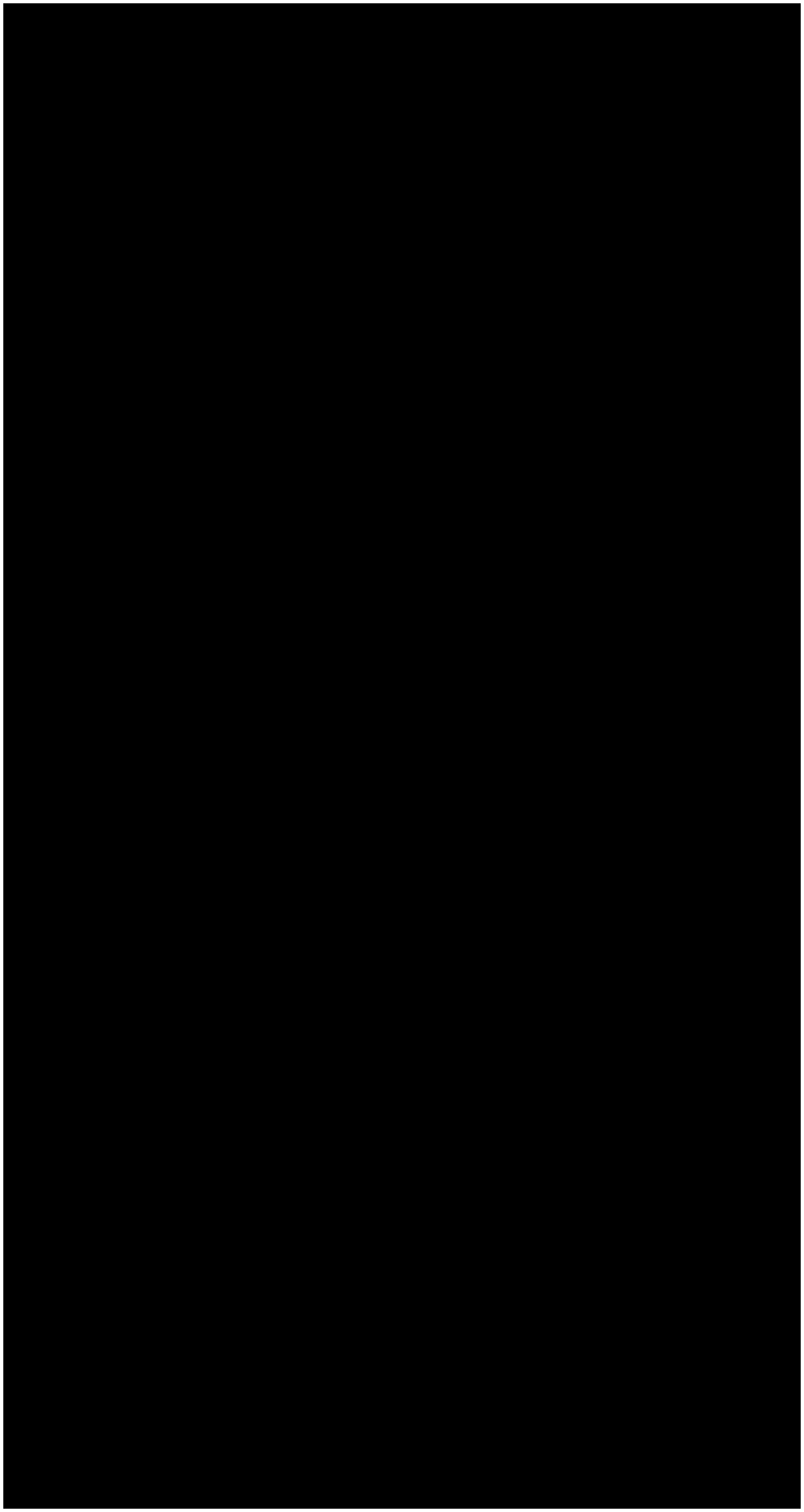
Max Daily T	Quantity D	Build Cost (	Quantity D	x	y	z
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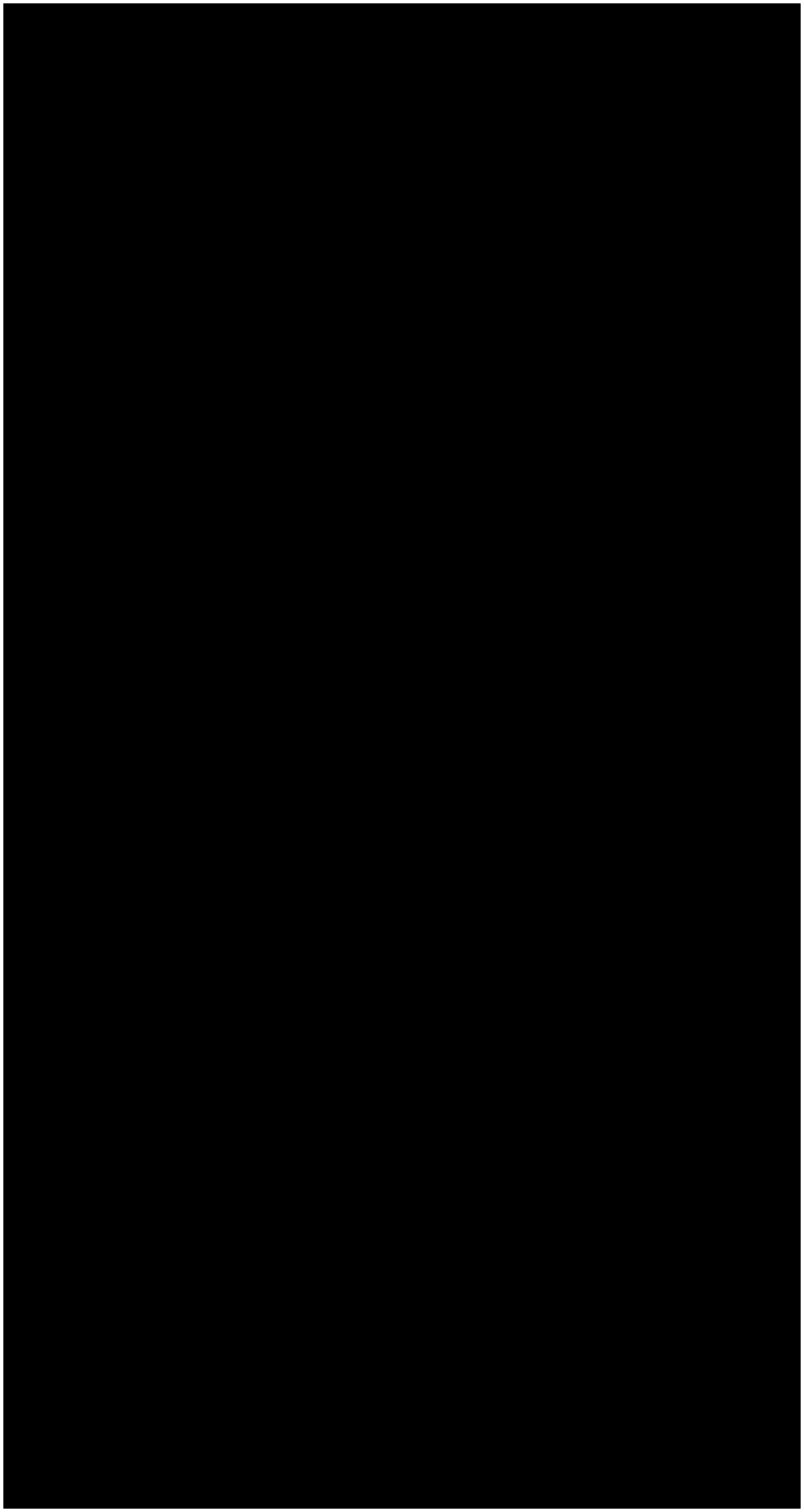


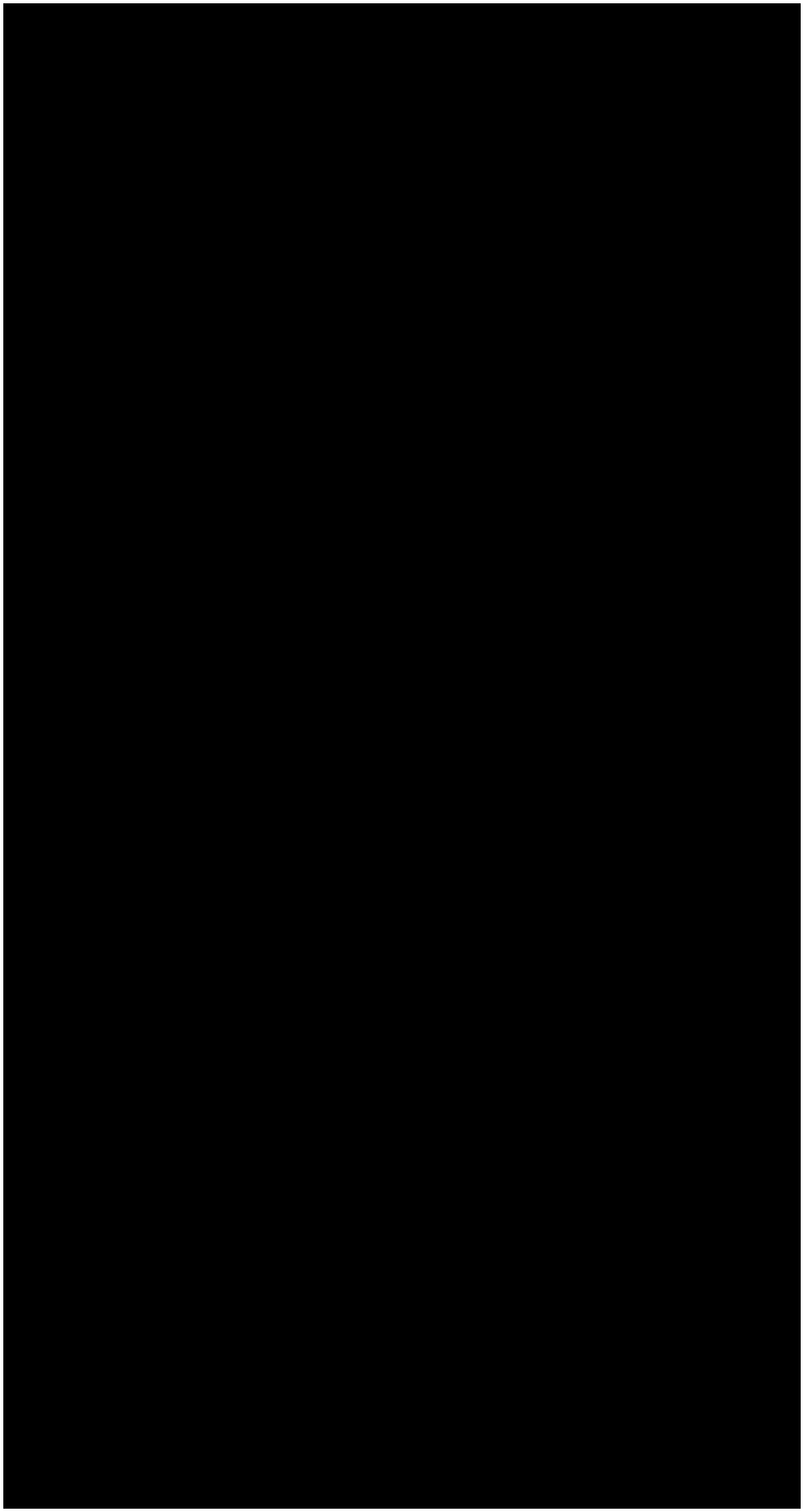


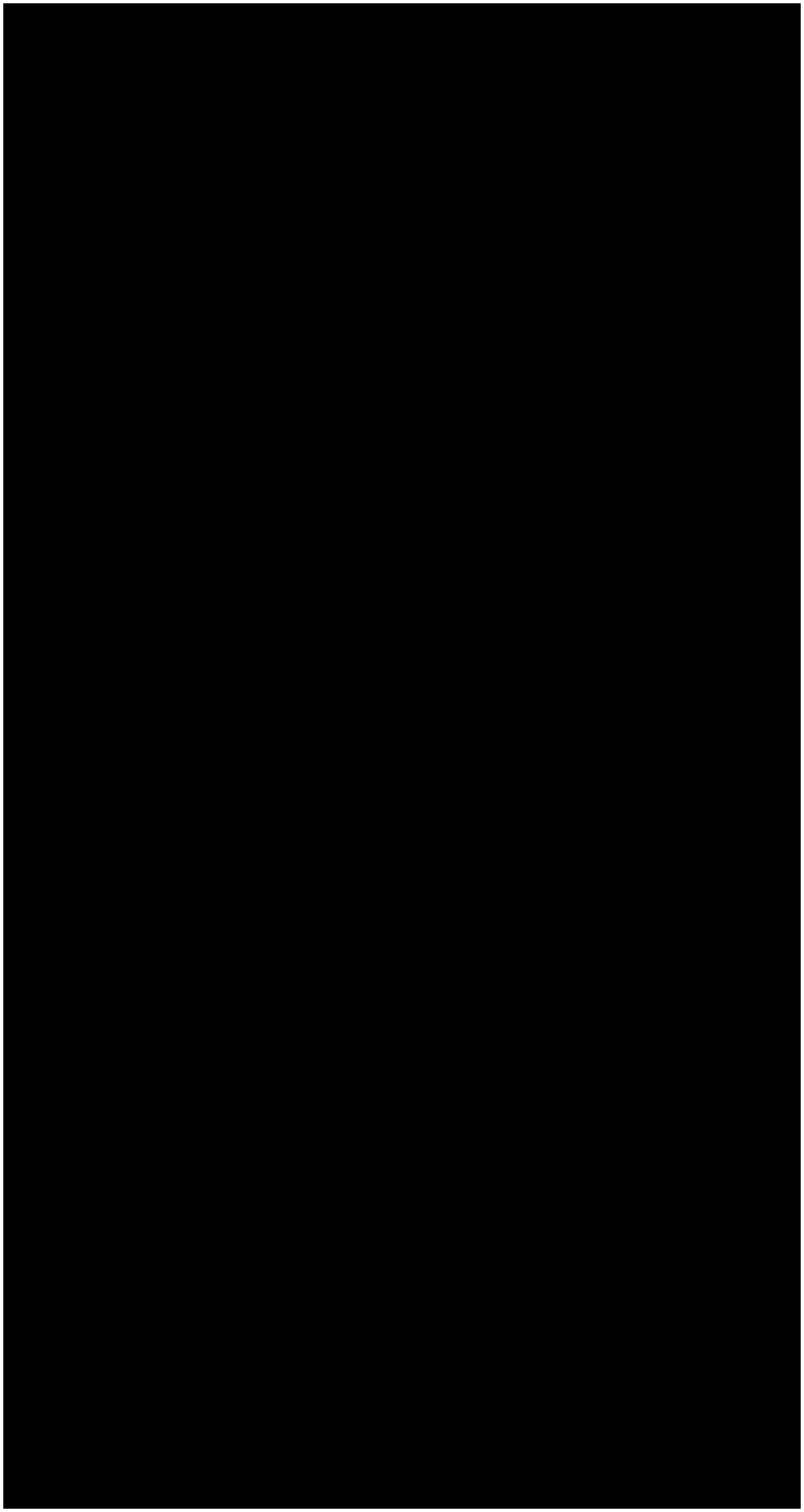


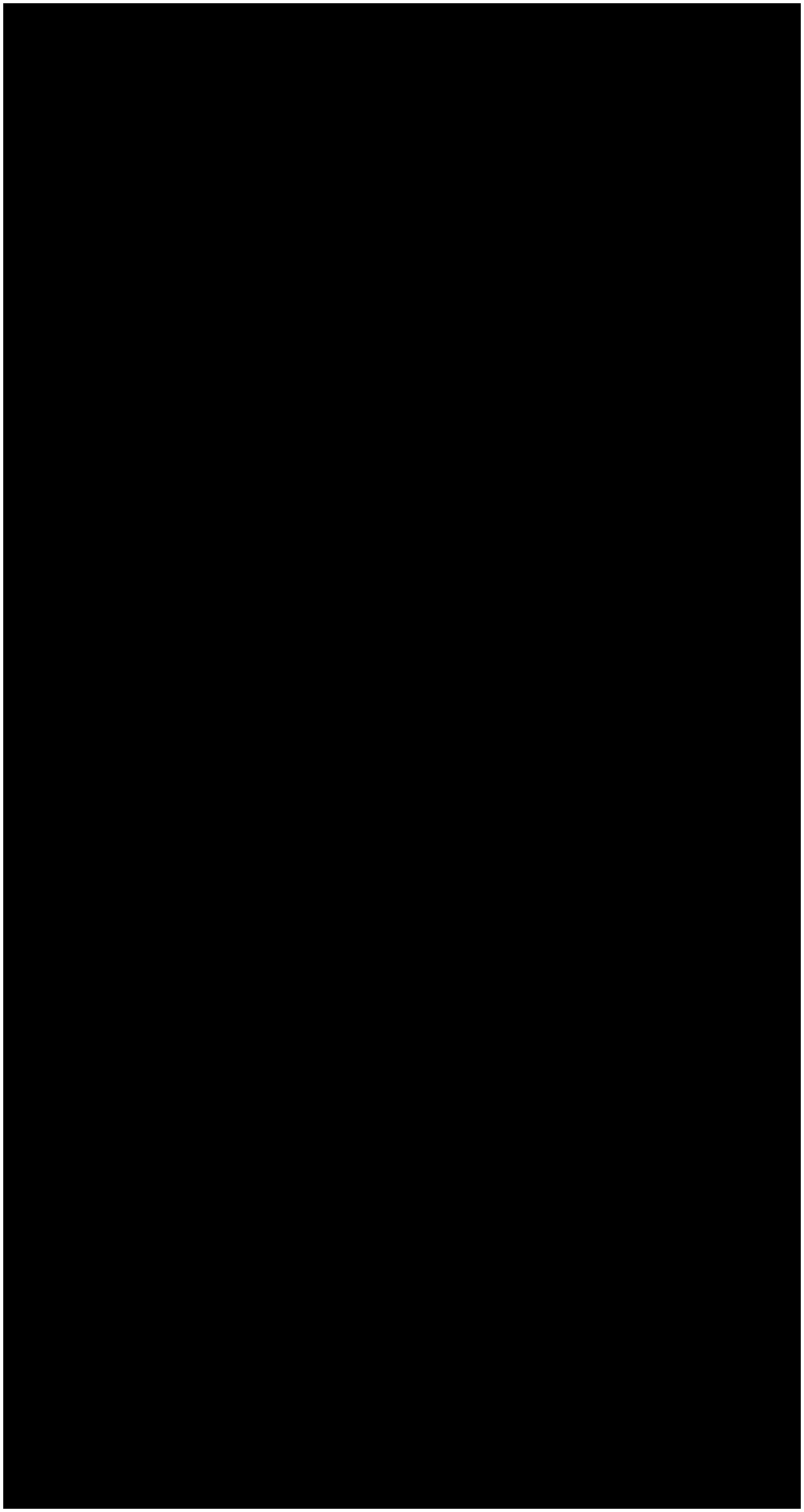


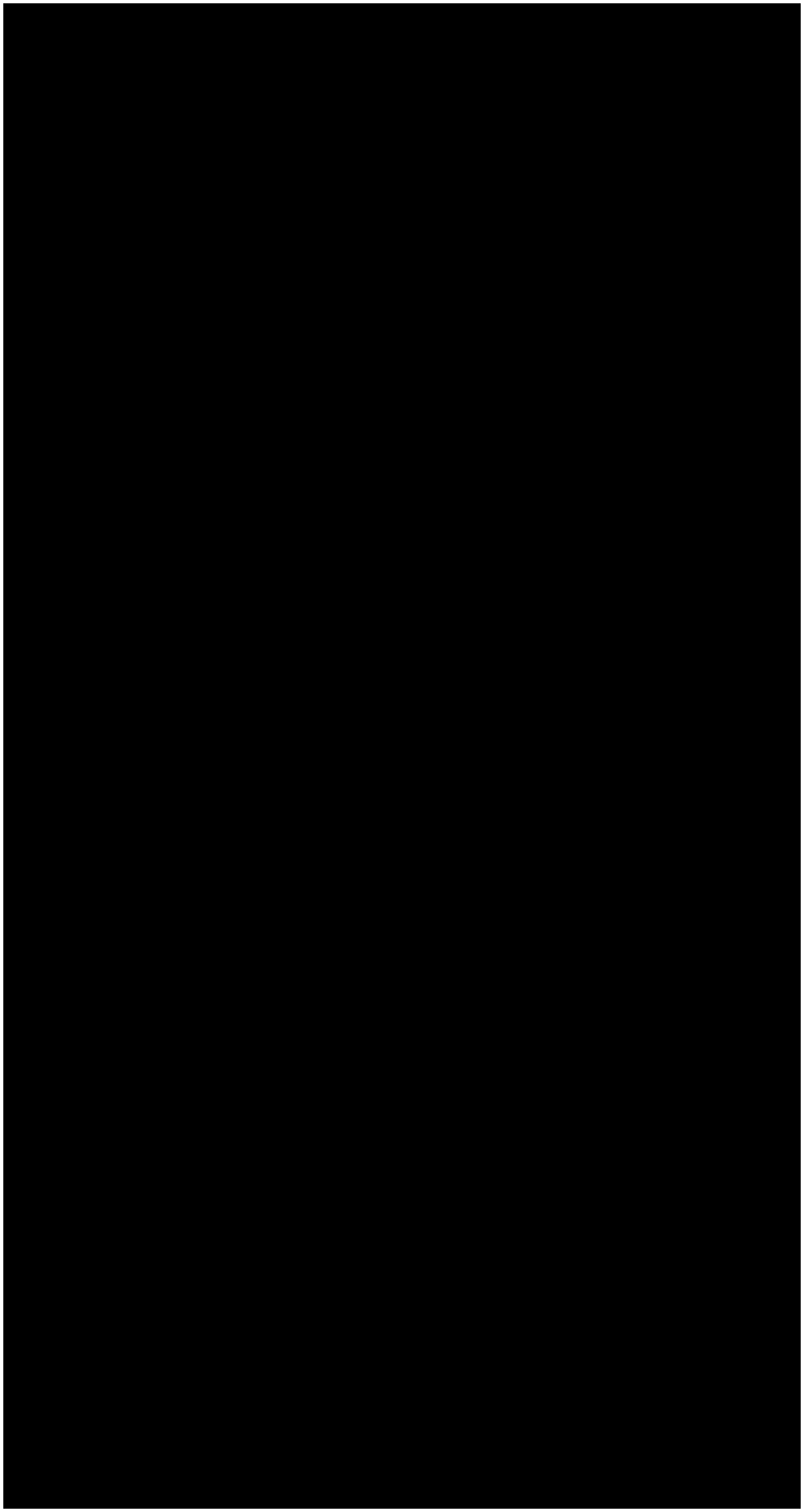


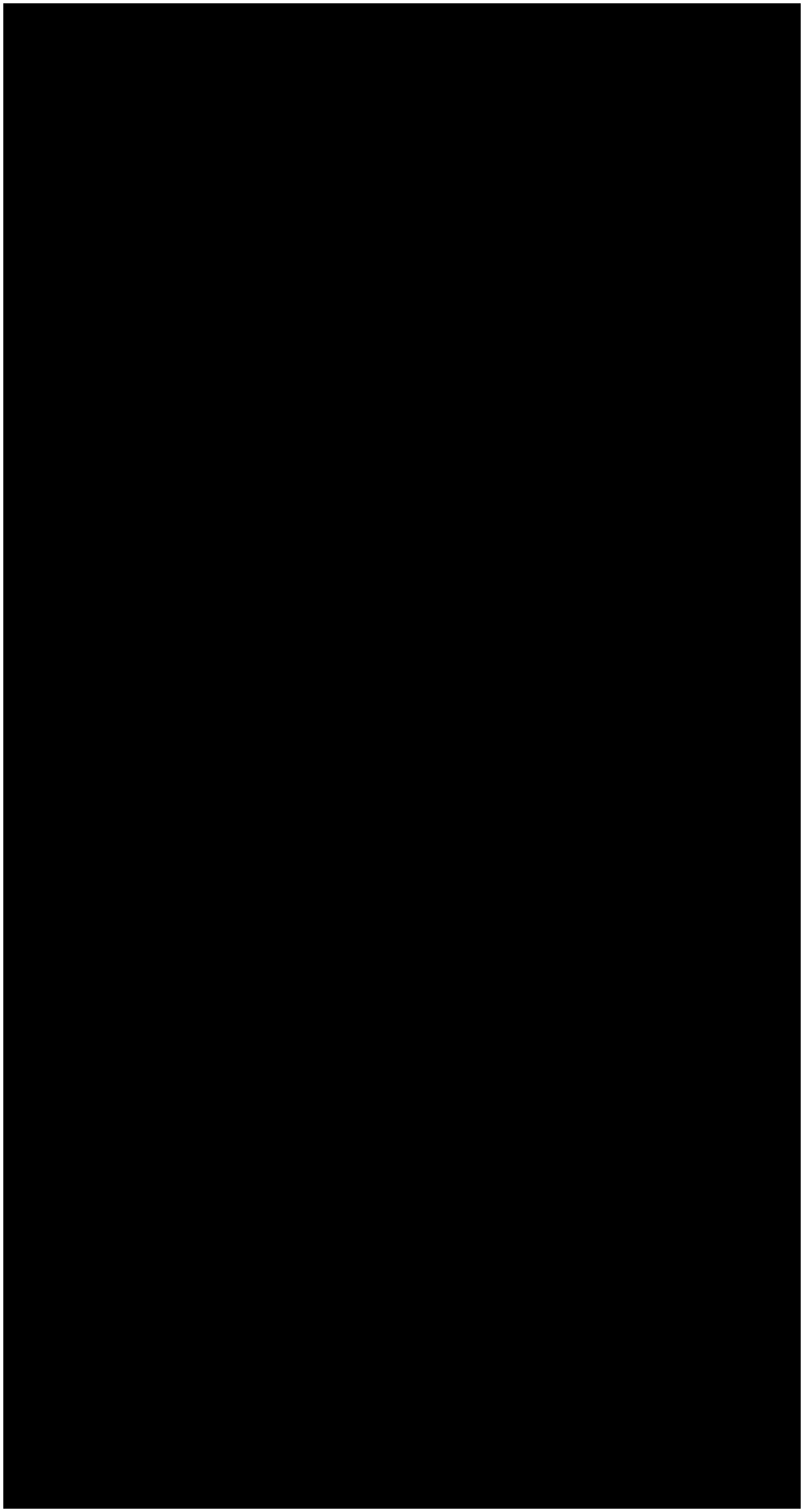


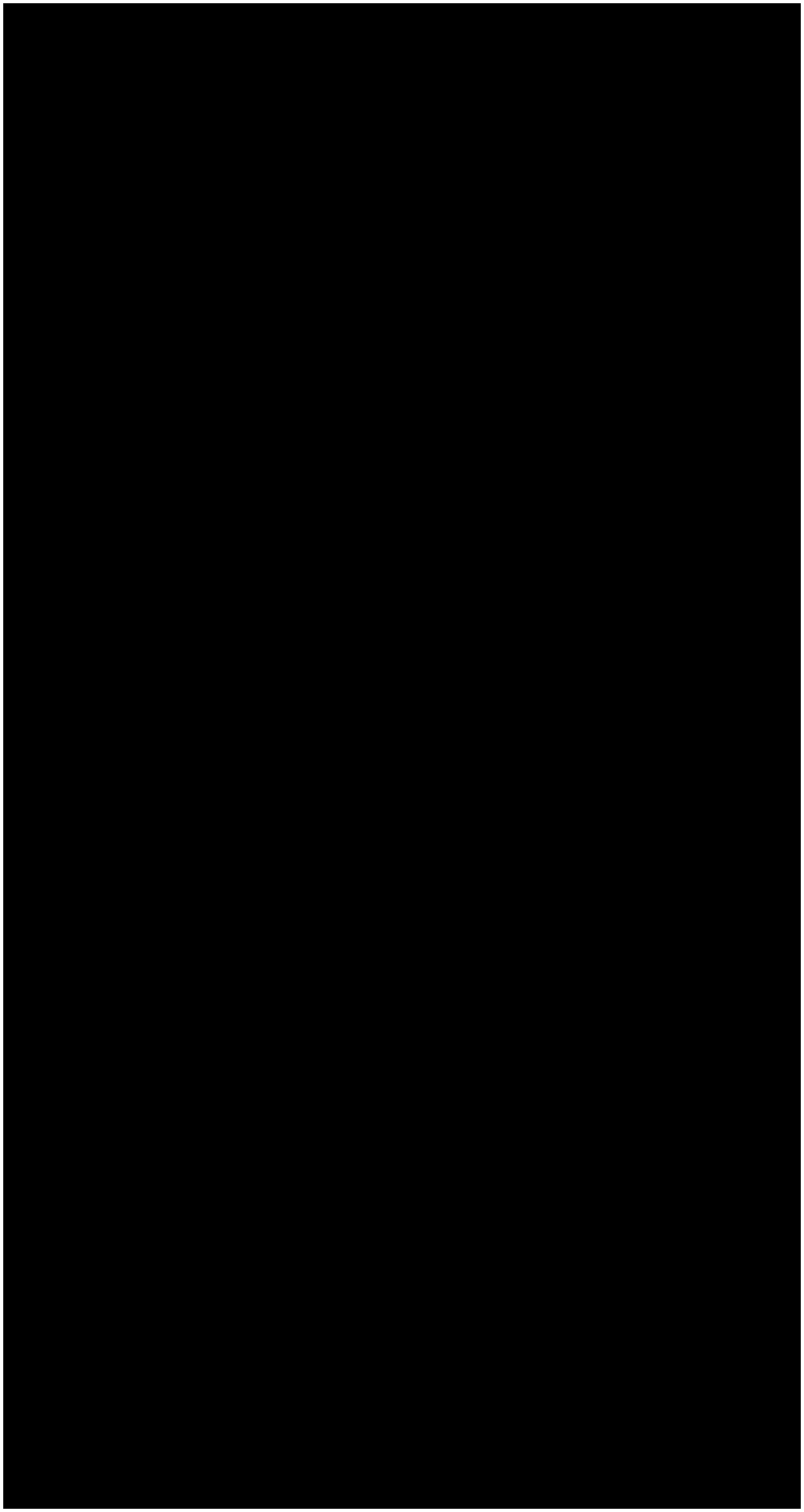


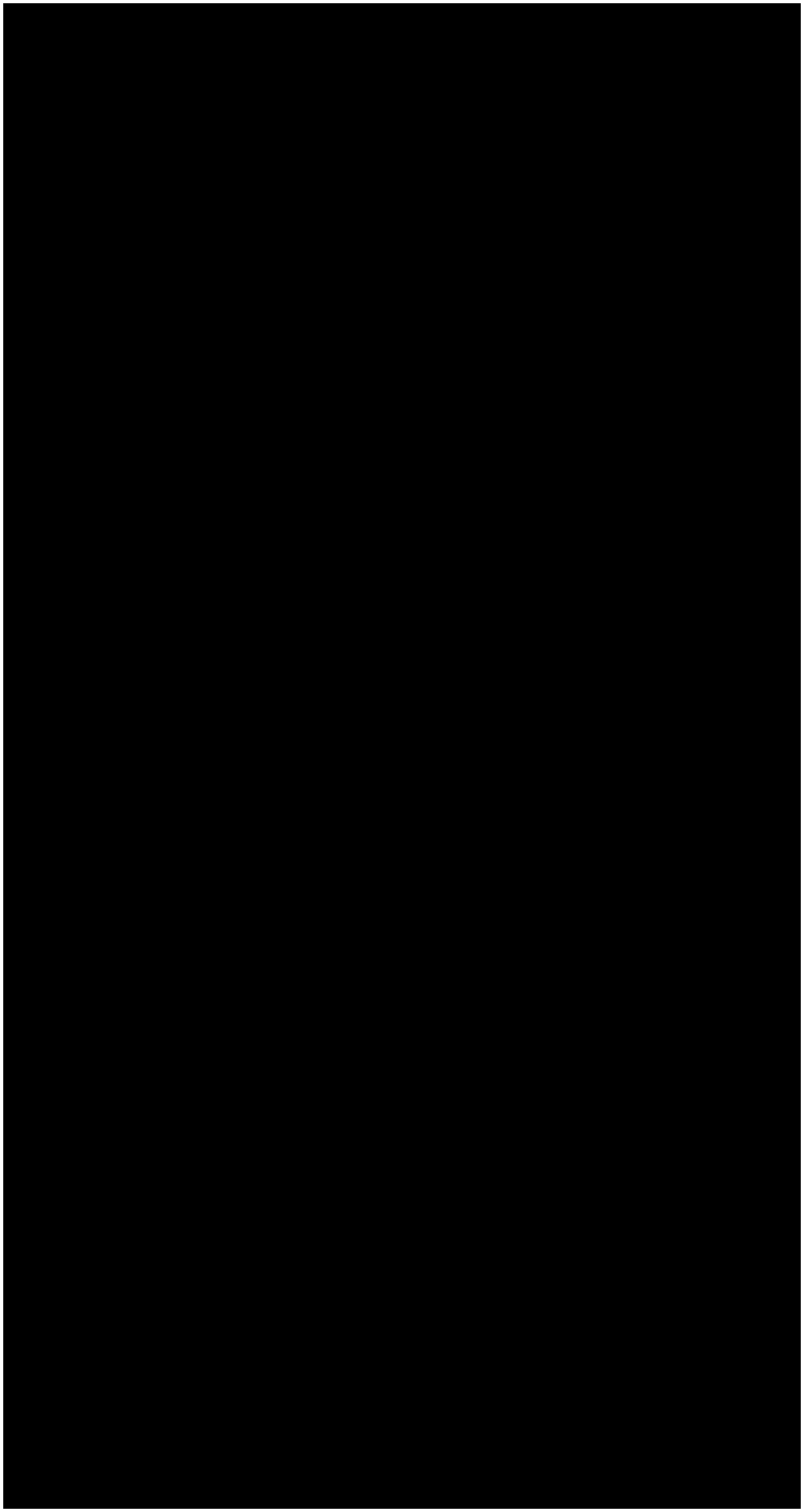


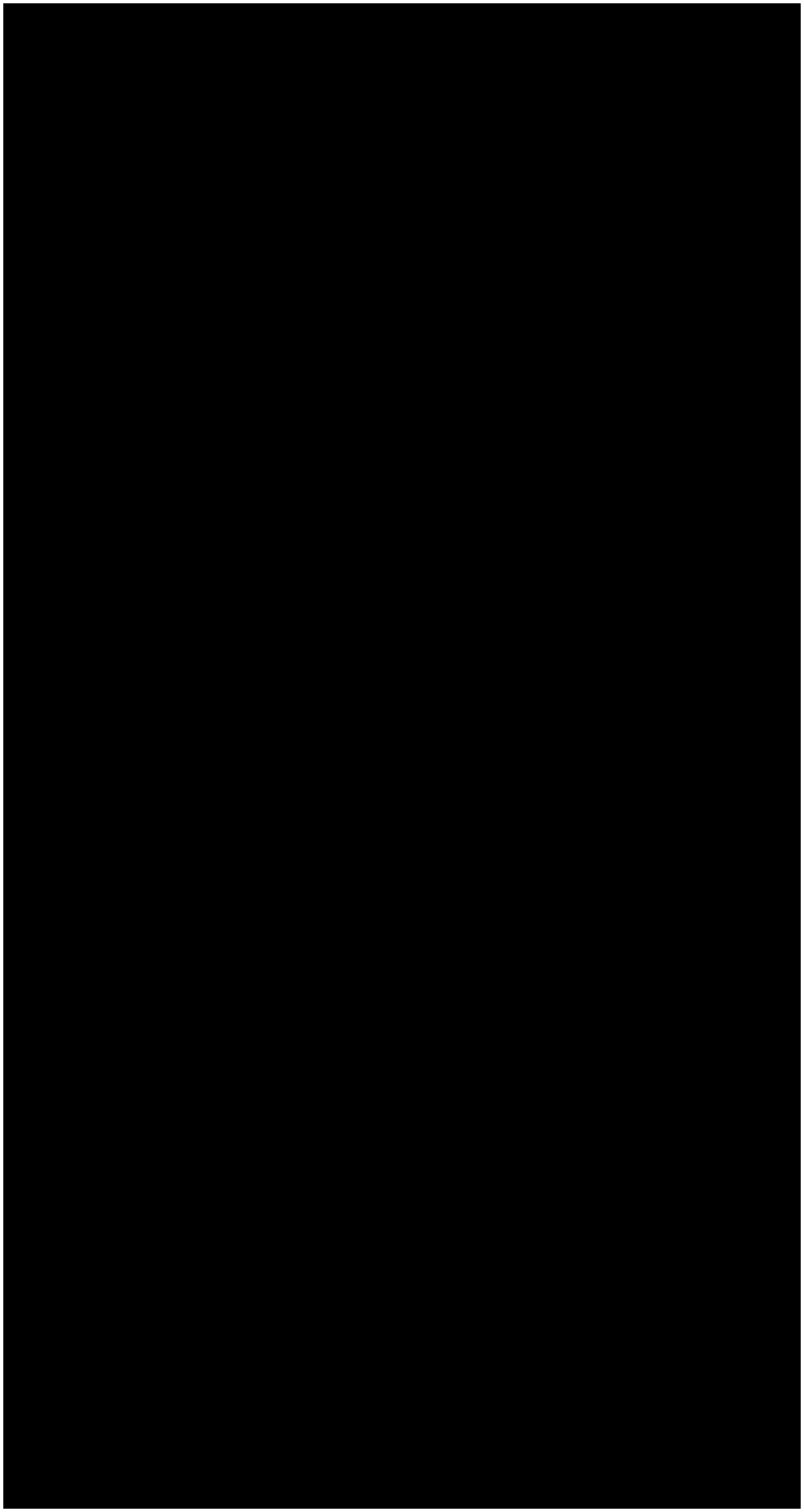


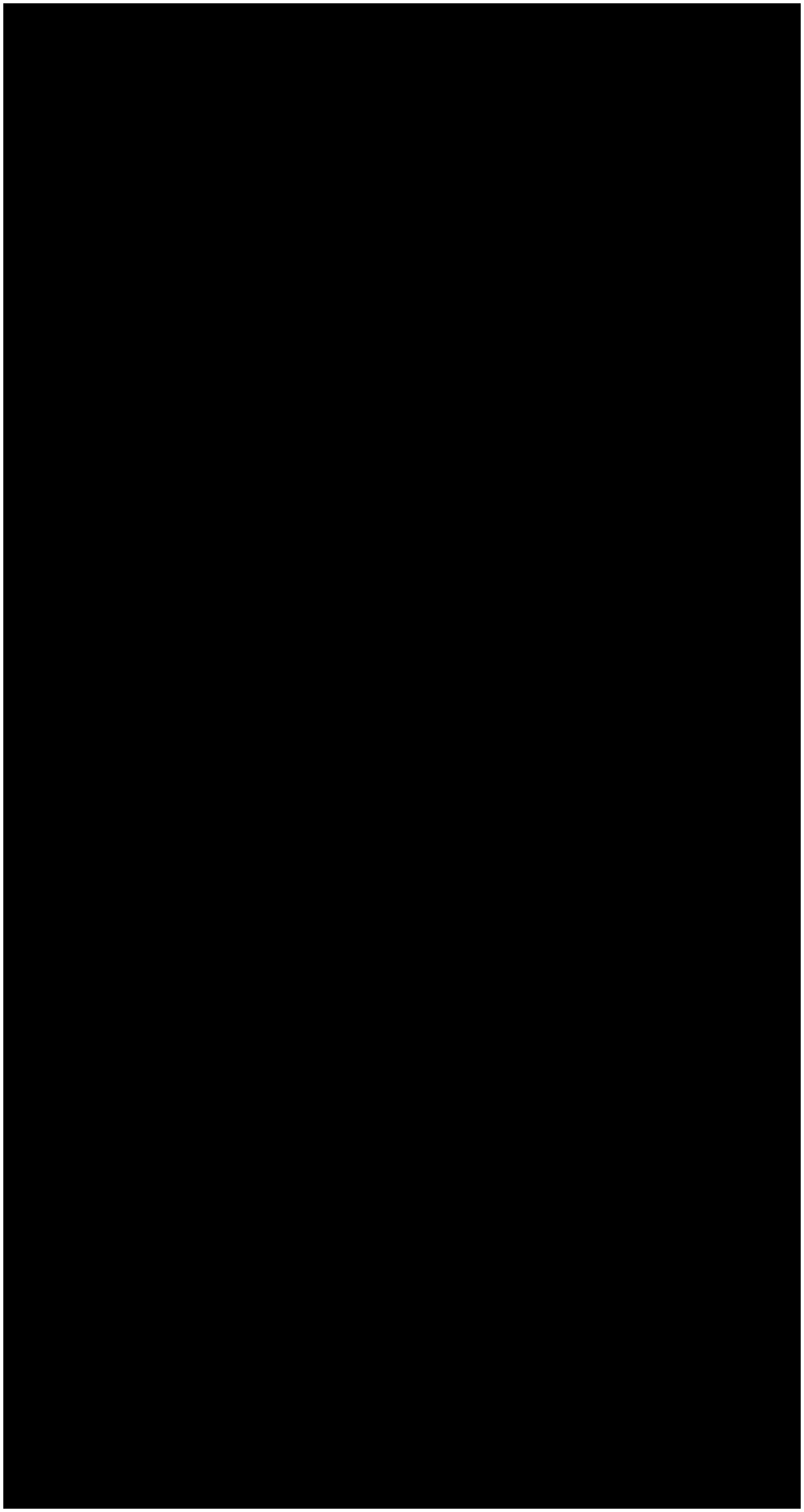


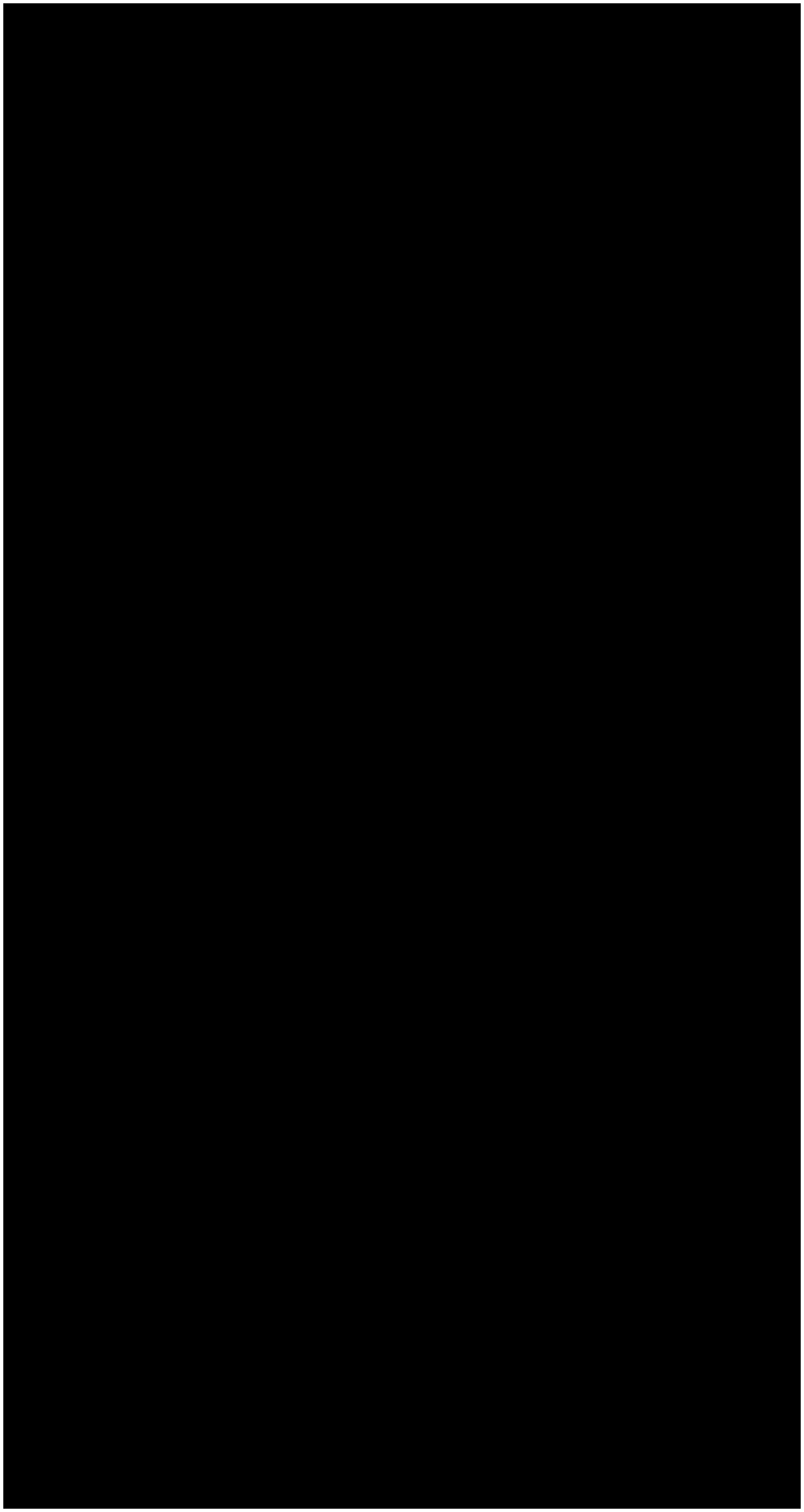


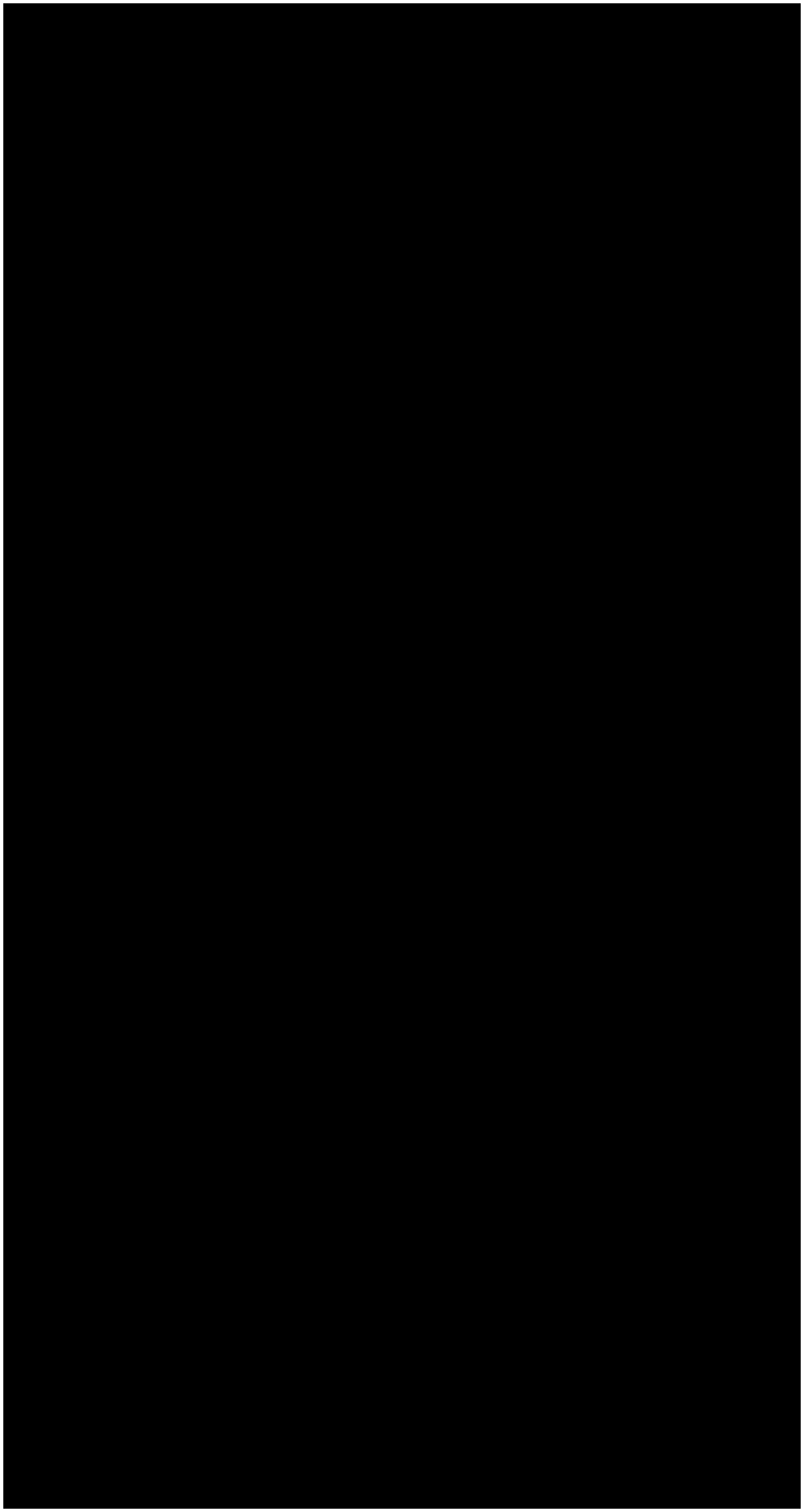


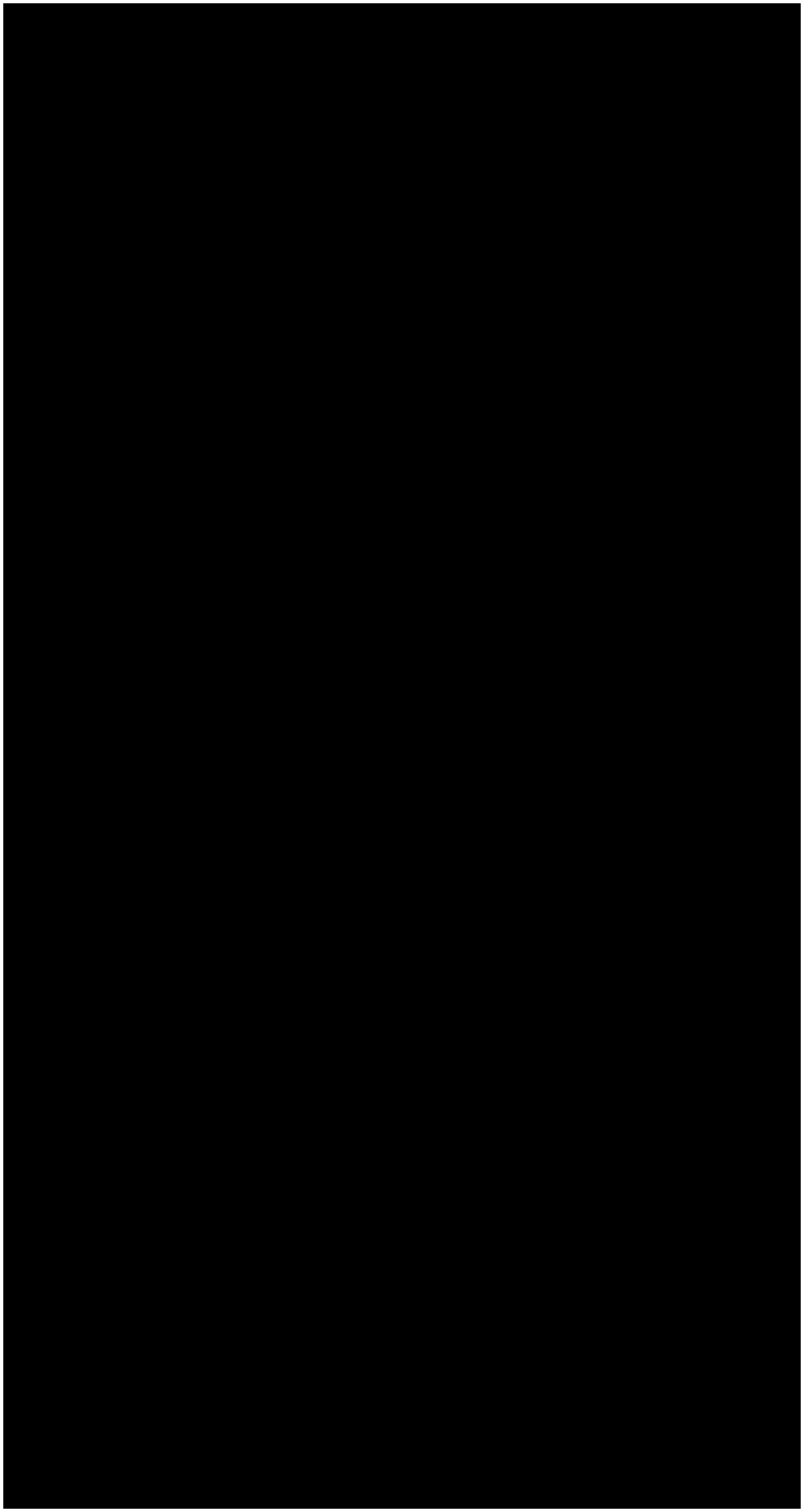














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
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Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
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Aug-28											
Sep-28											
Oct-28											

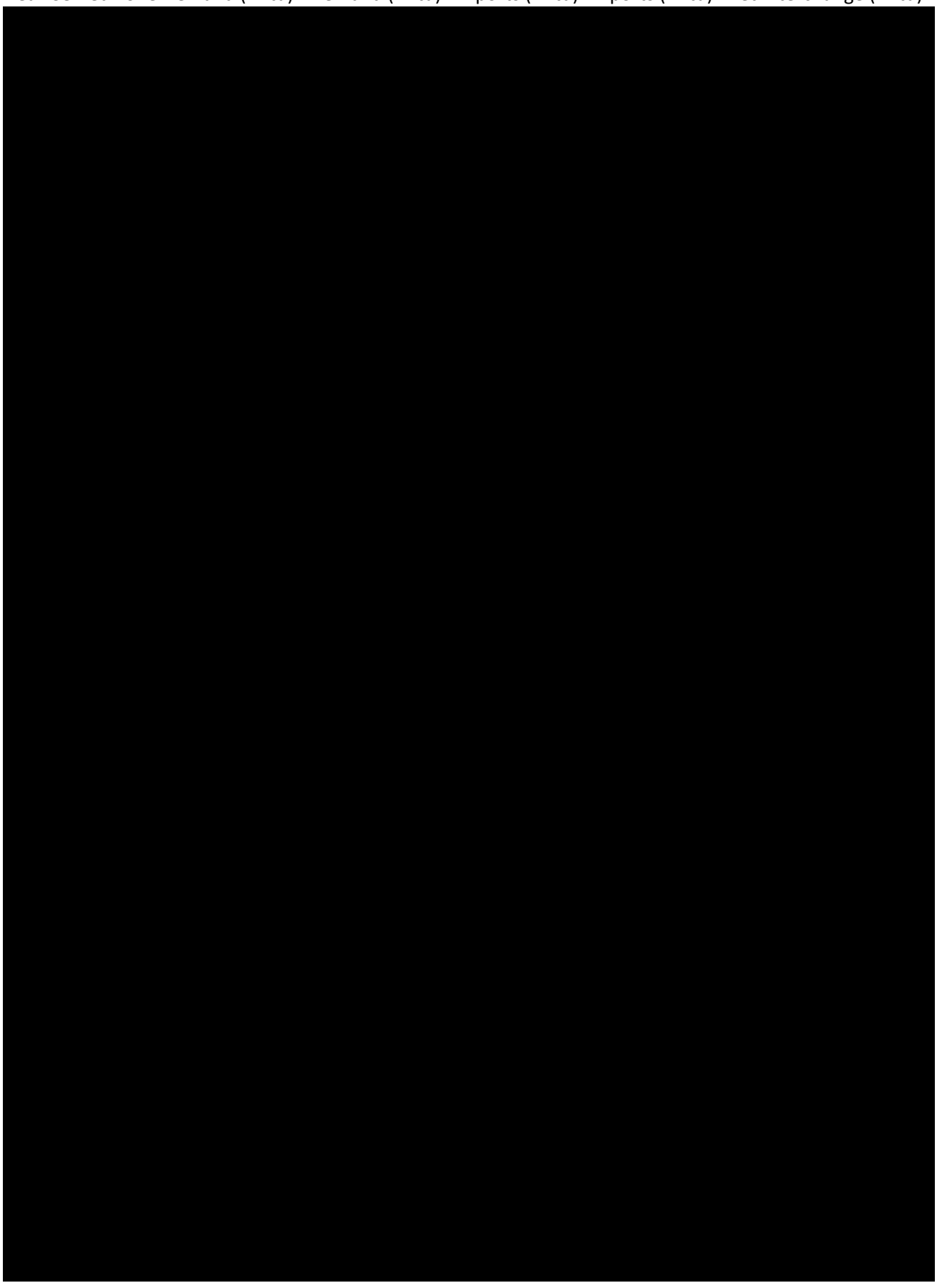
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
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Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





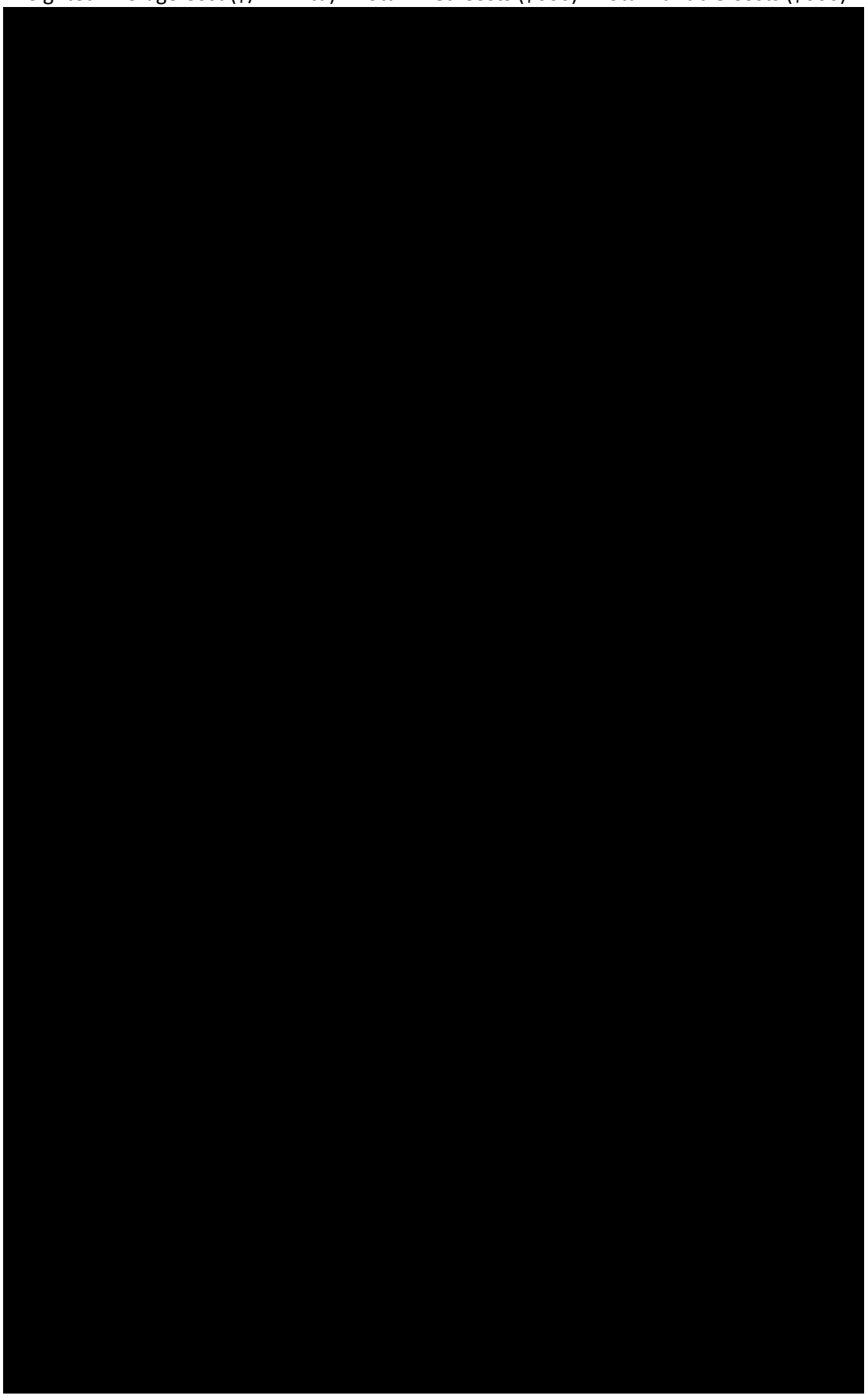
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

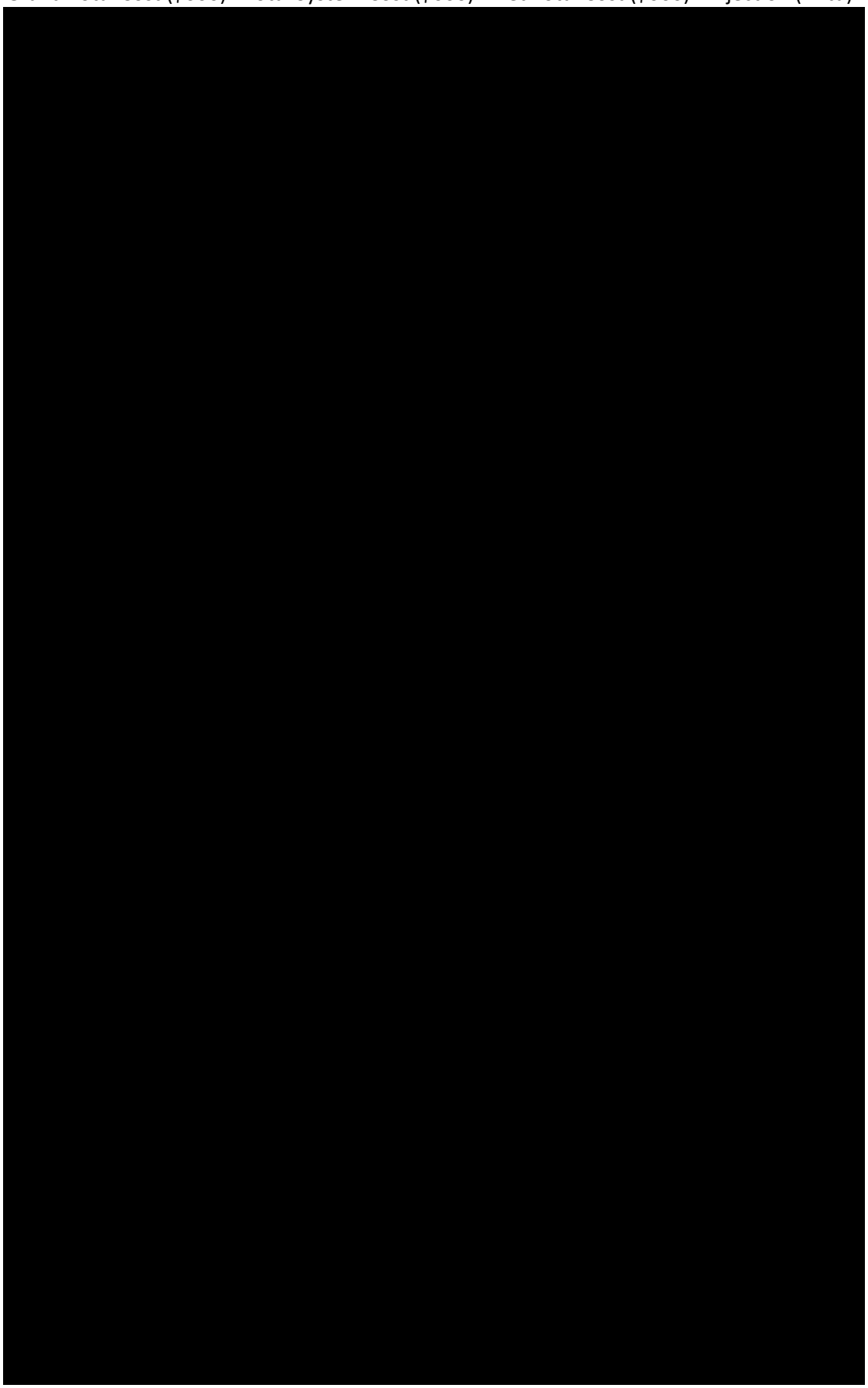


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

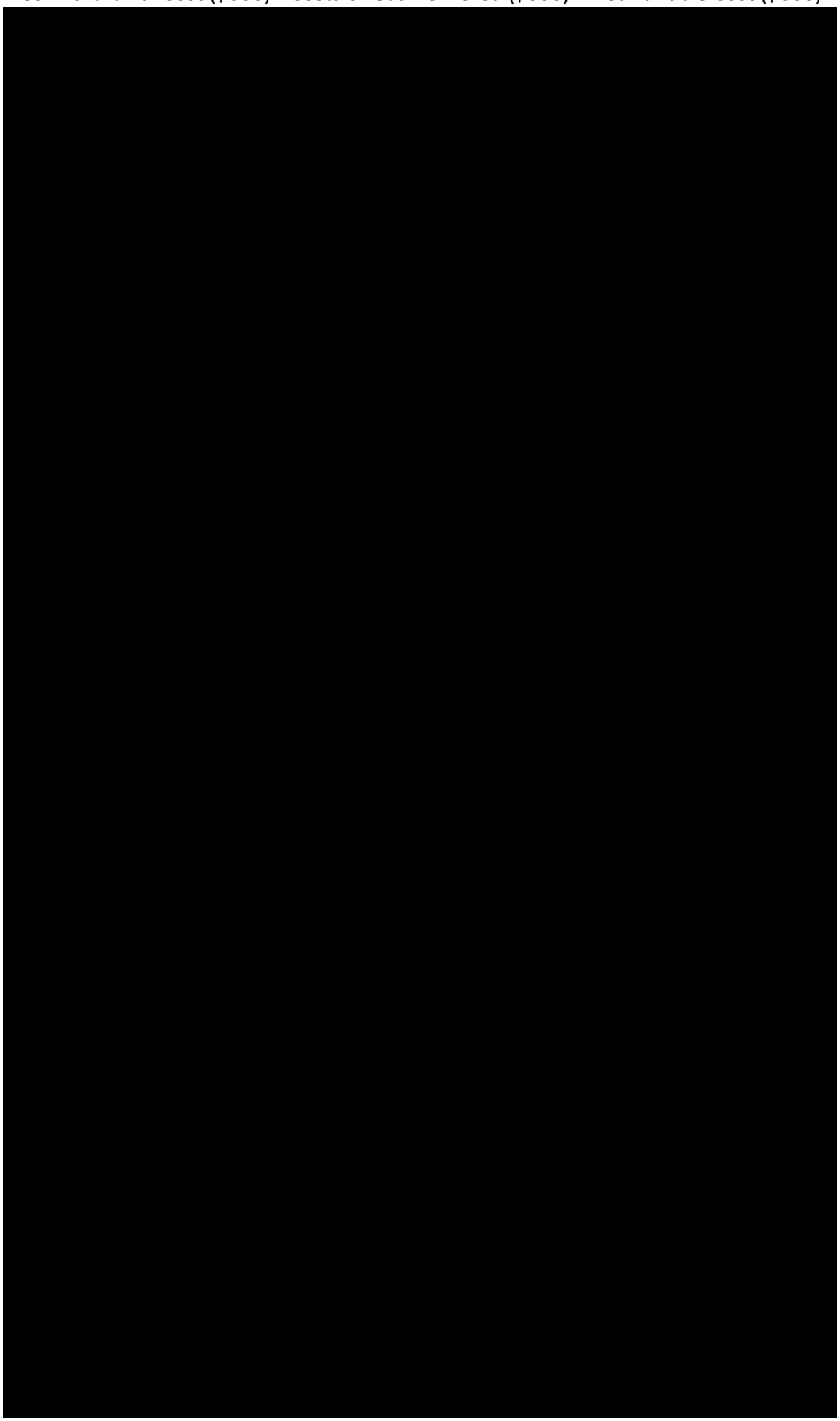




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

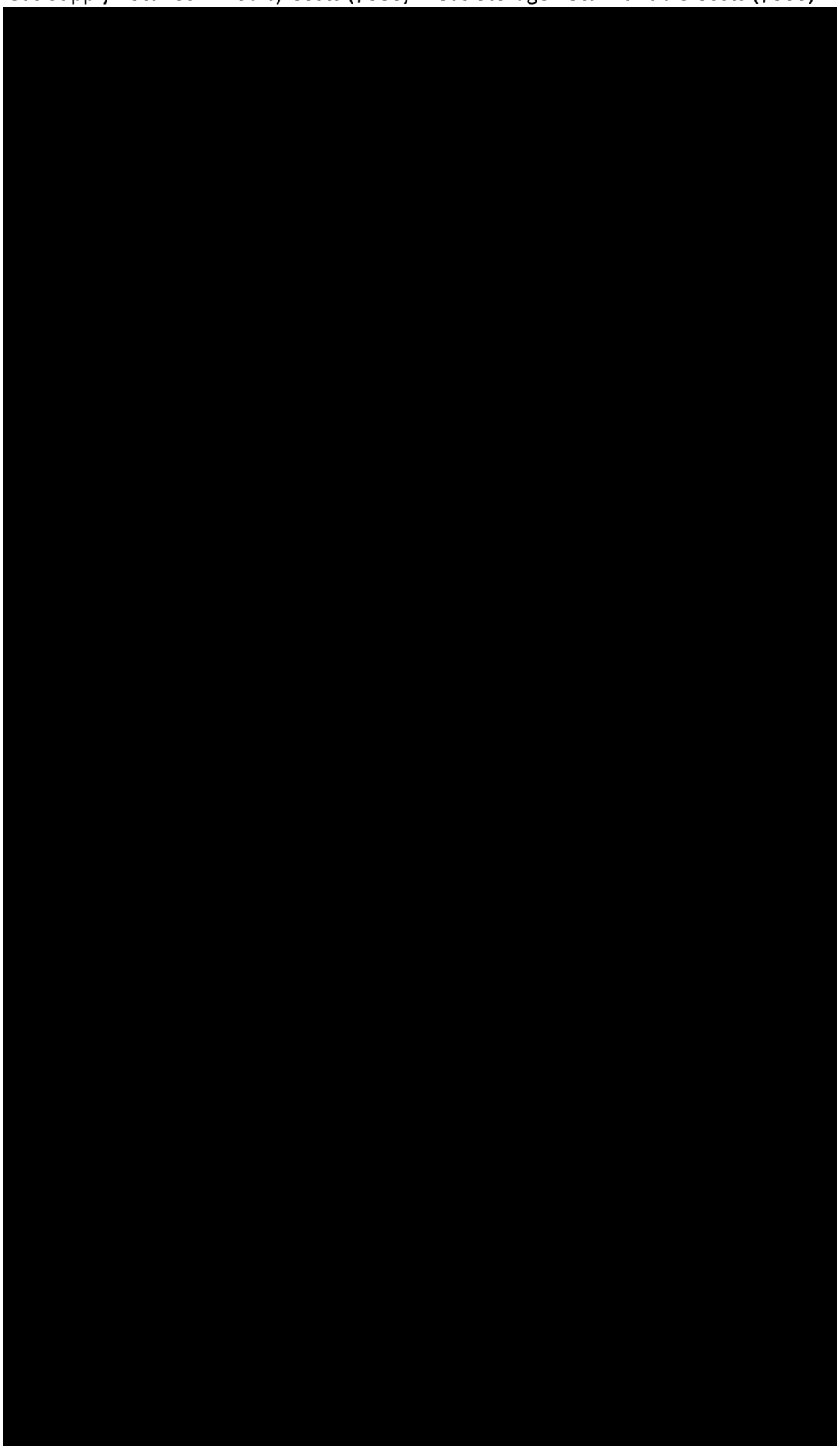




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

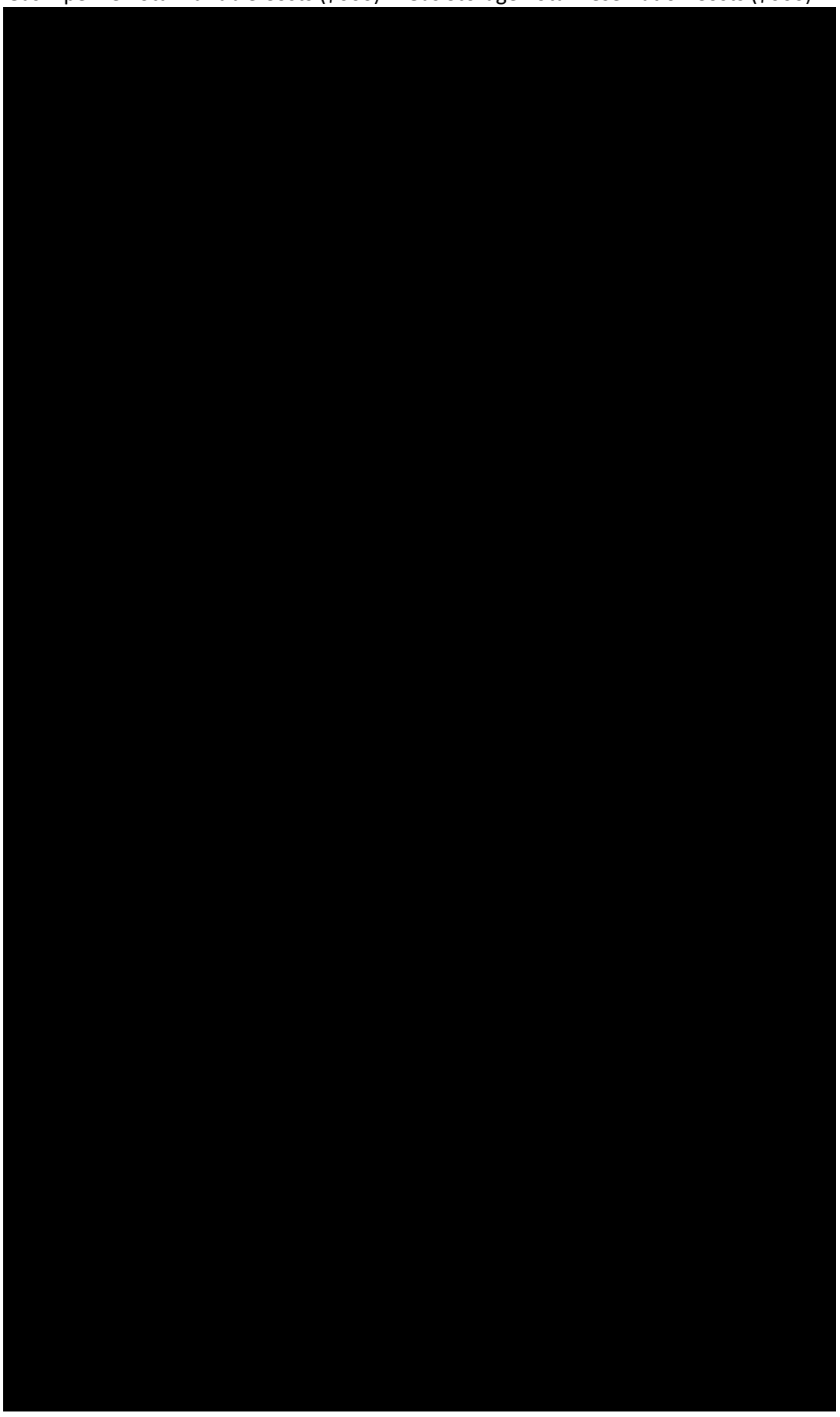


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



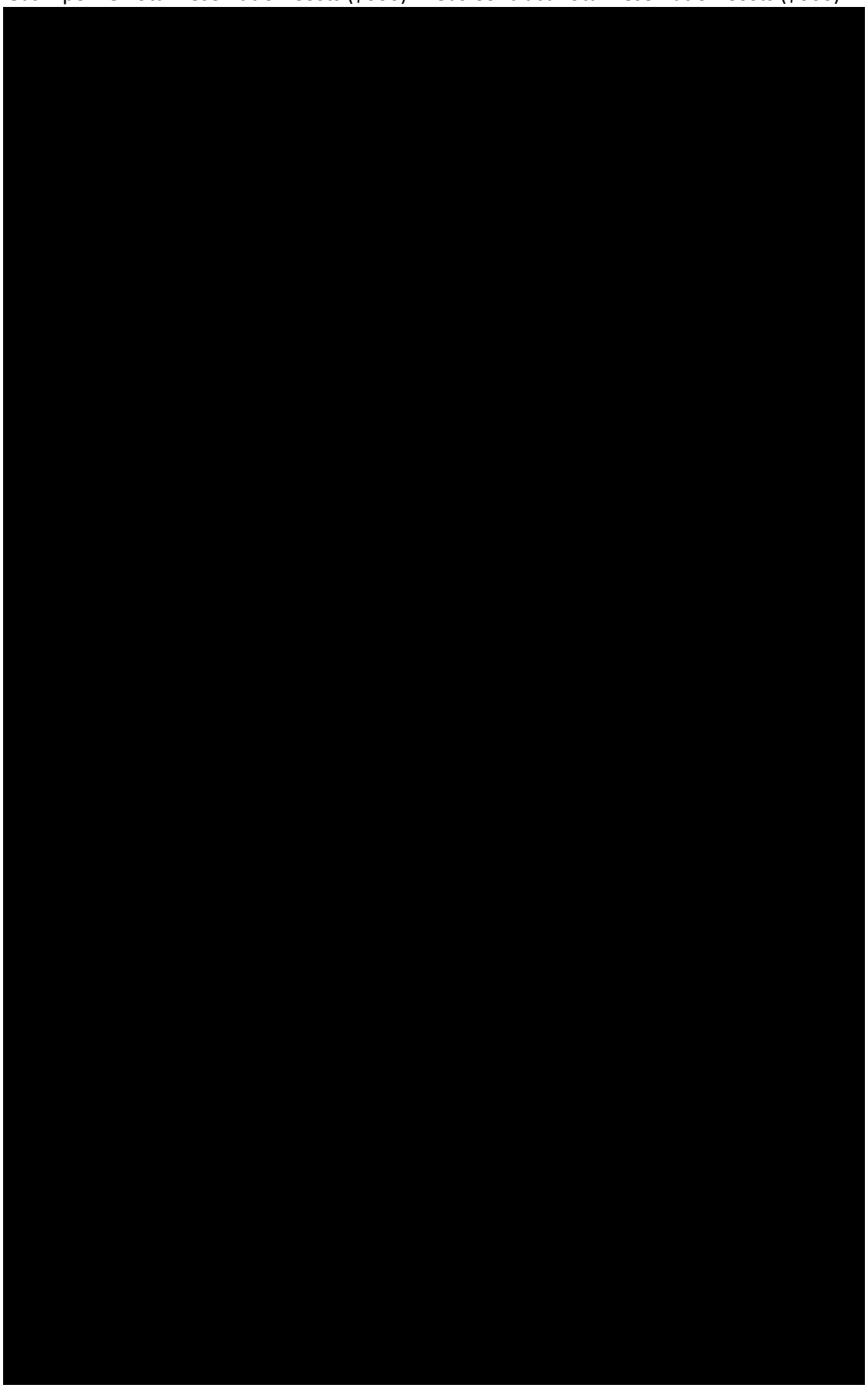


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



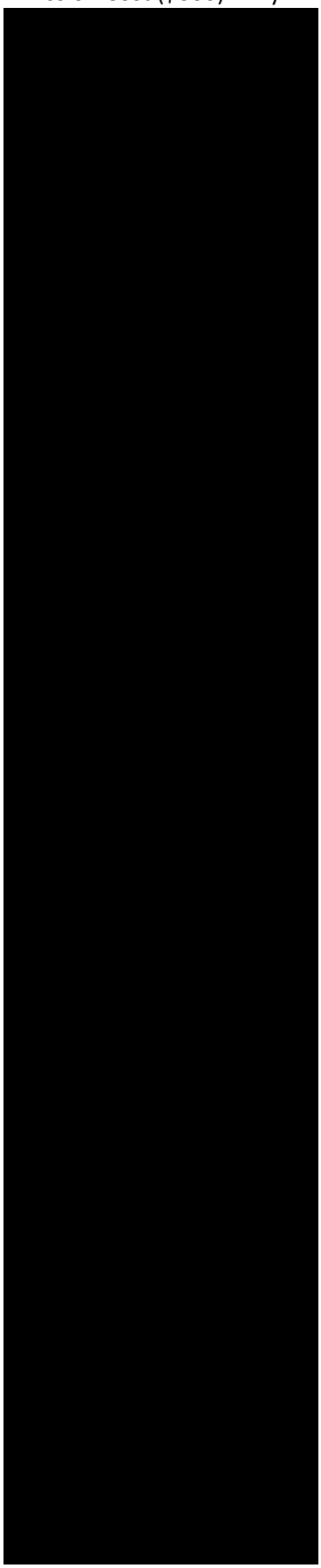


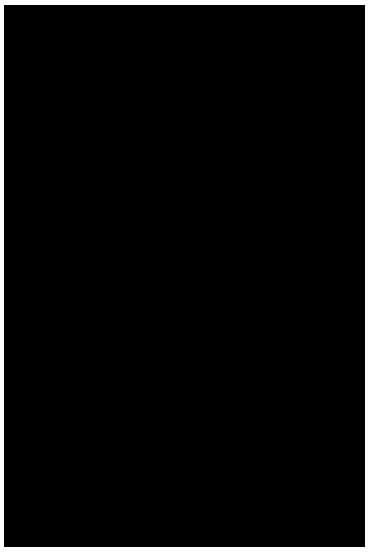
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



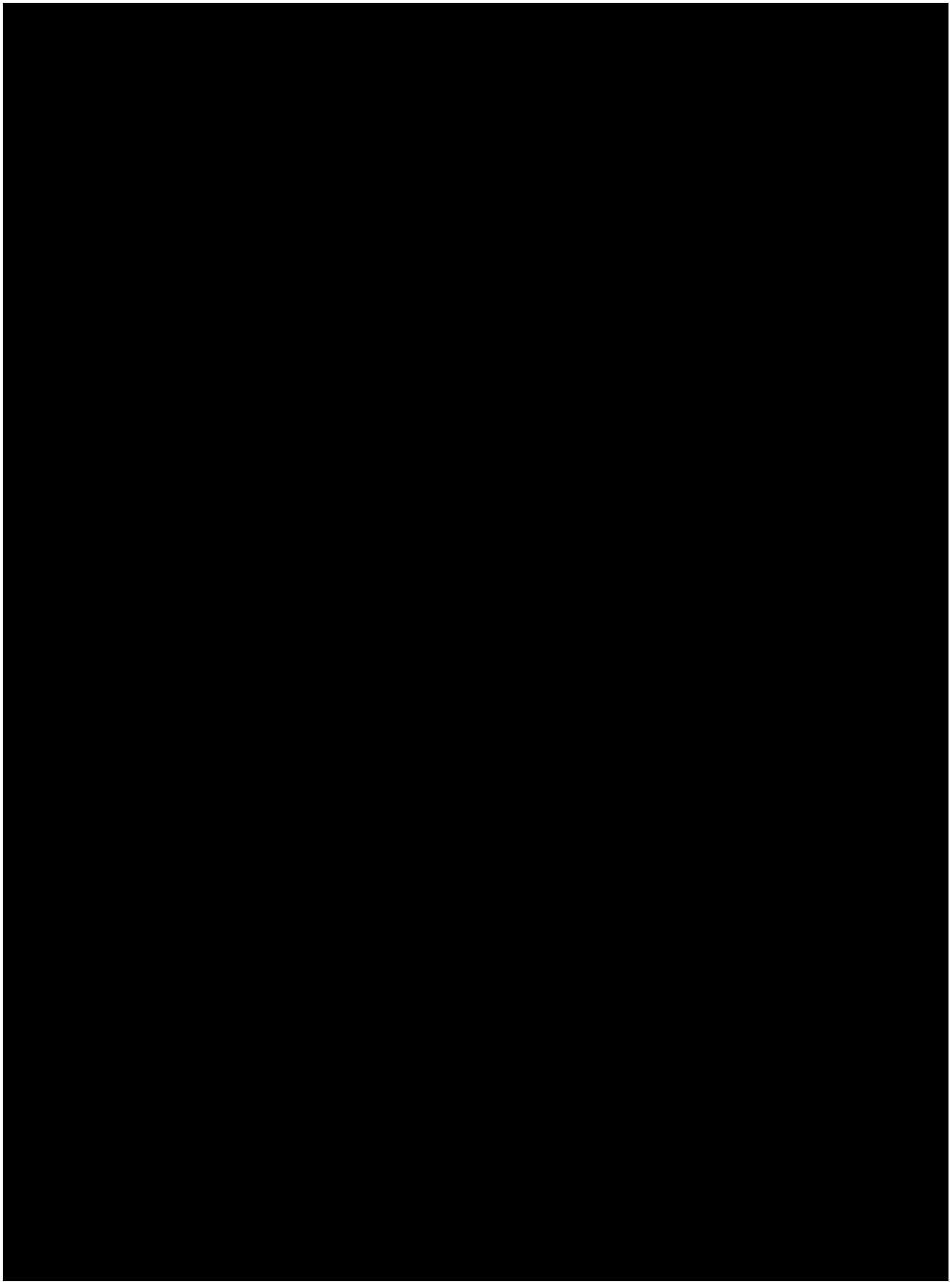


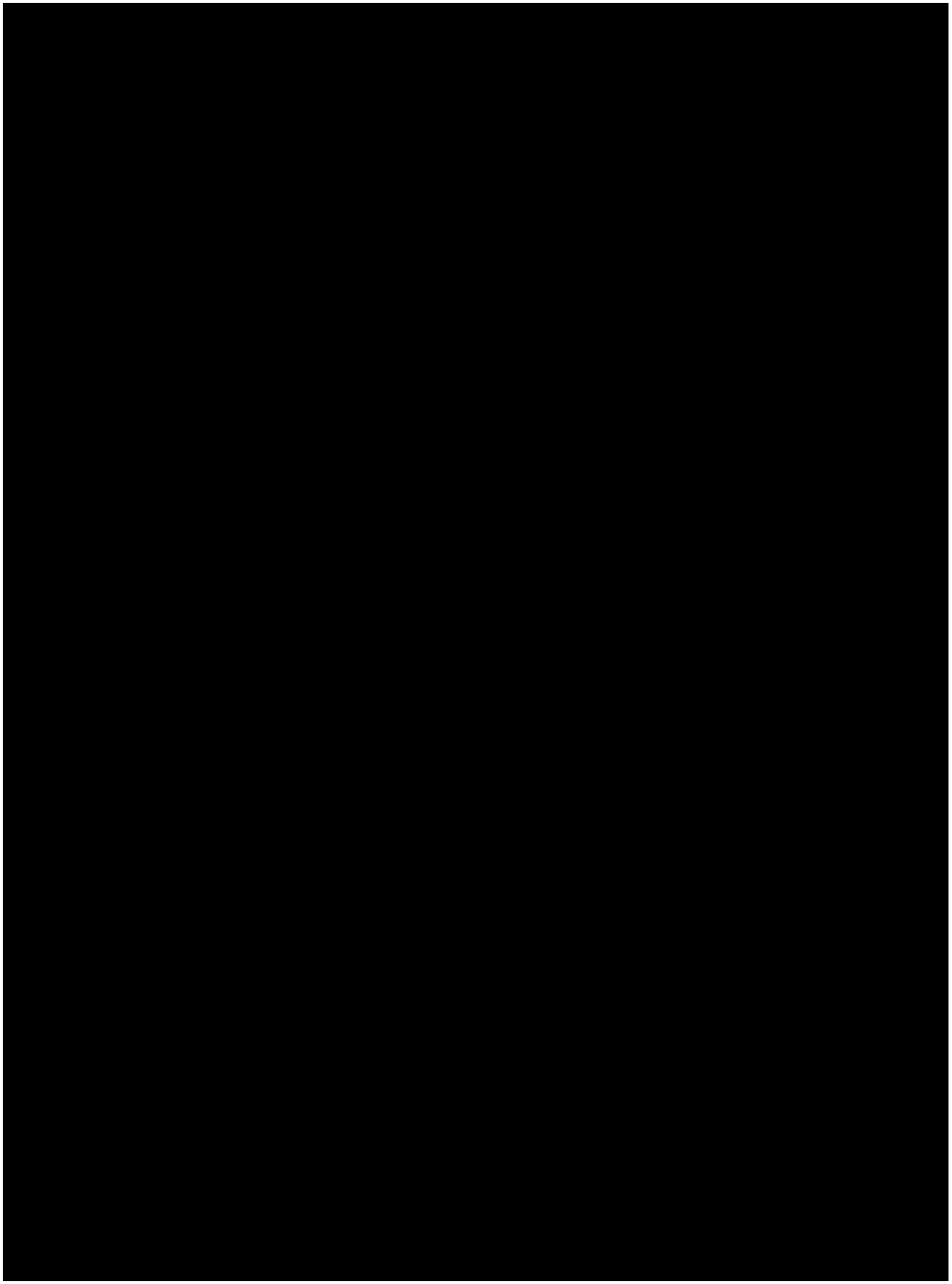
Emission Cost ($000) x y z

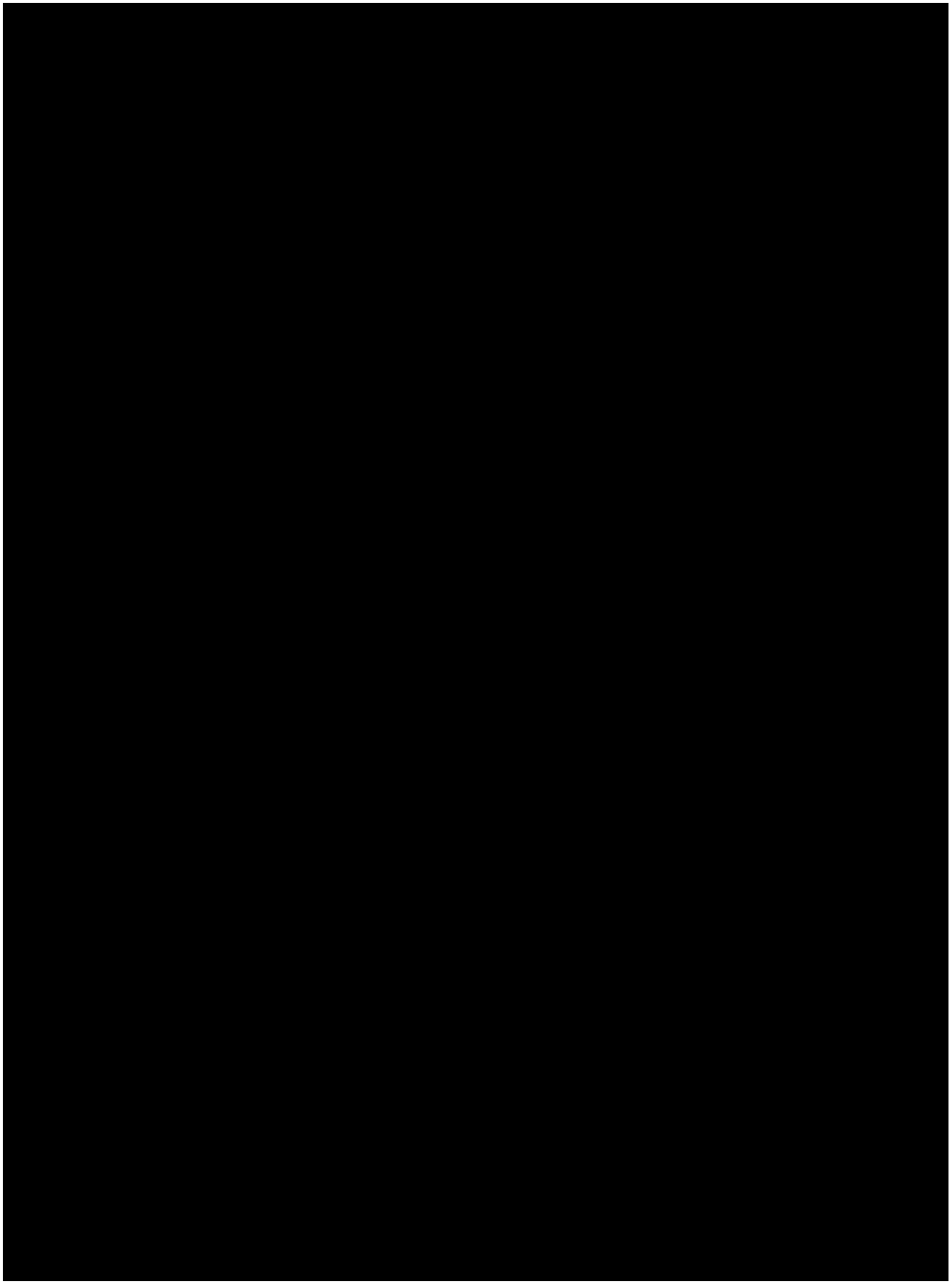


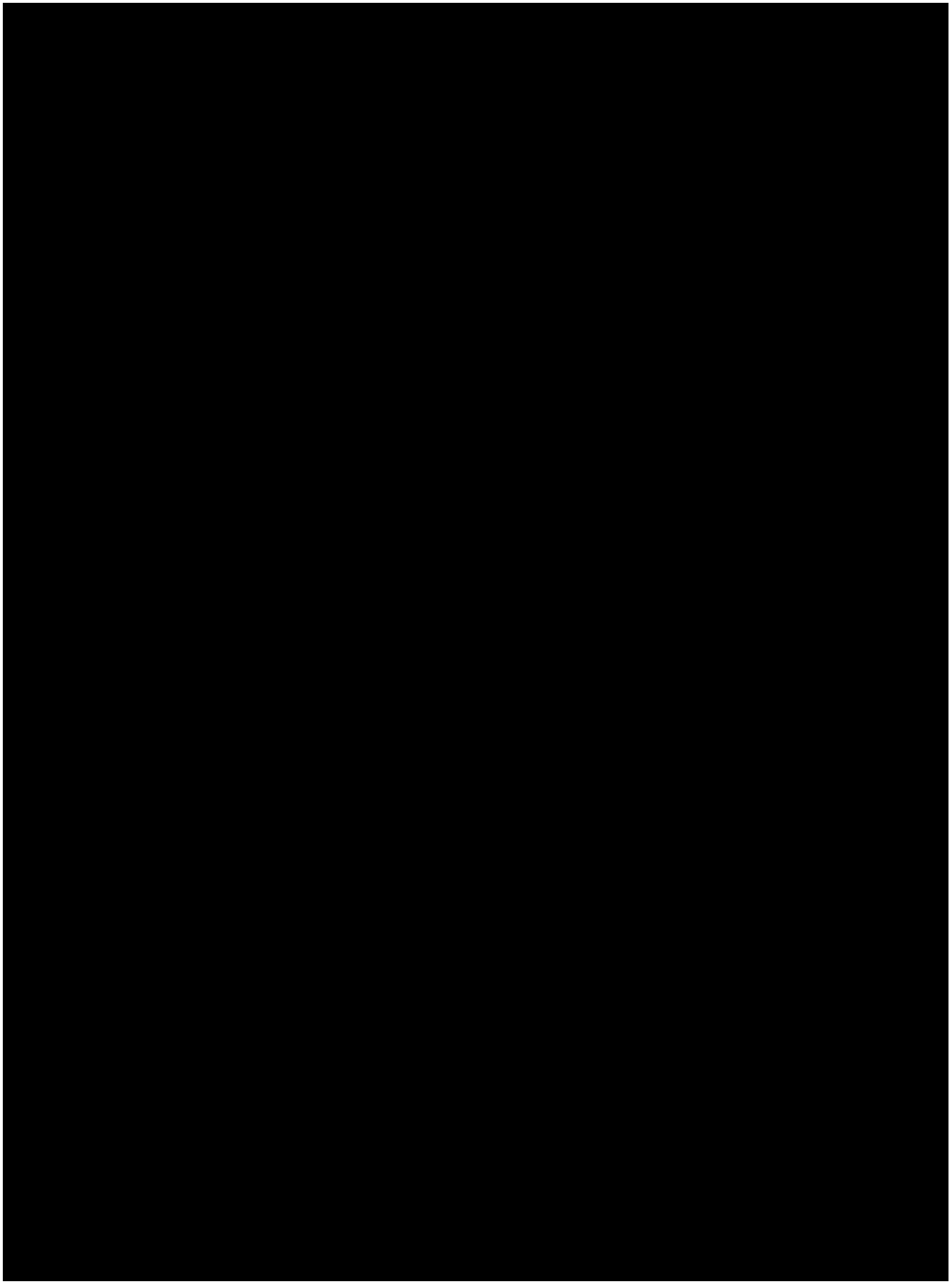


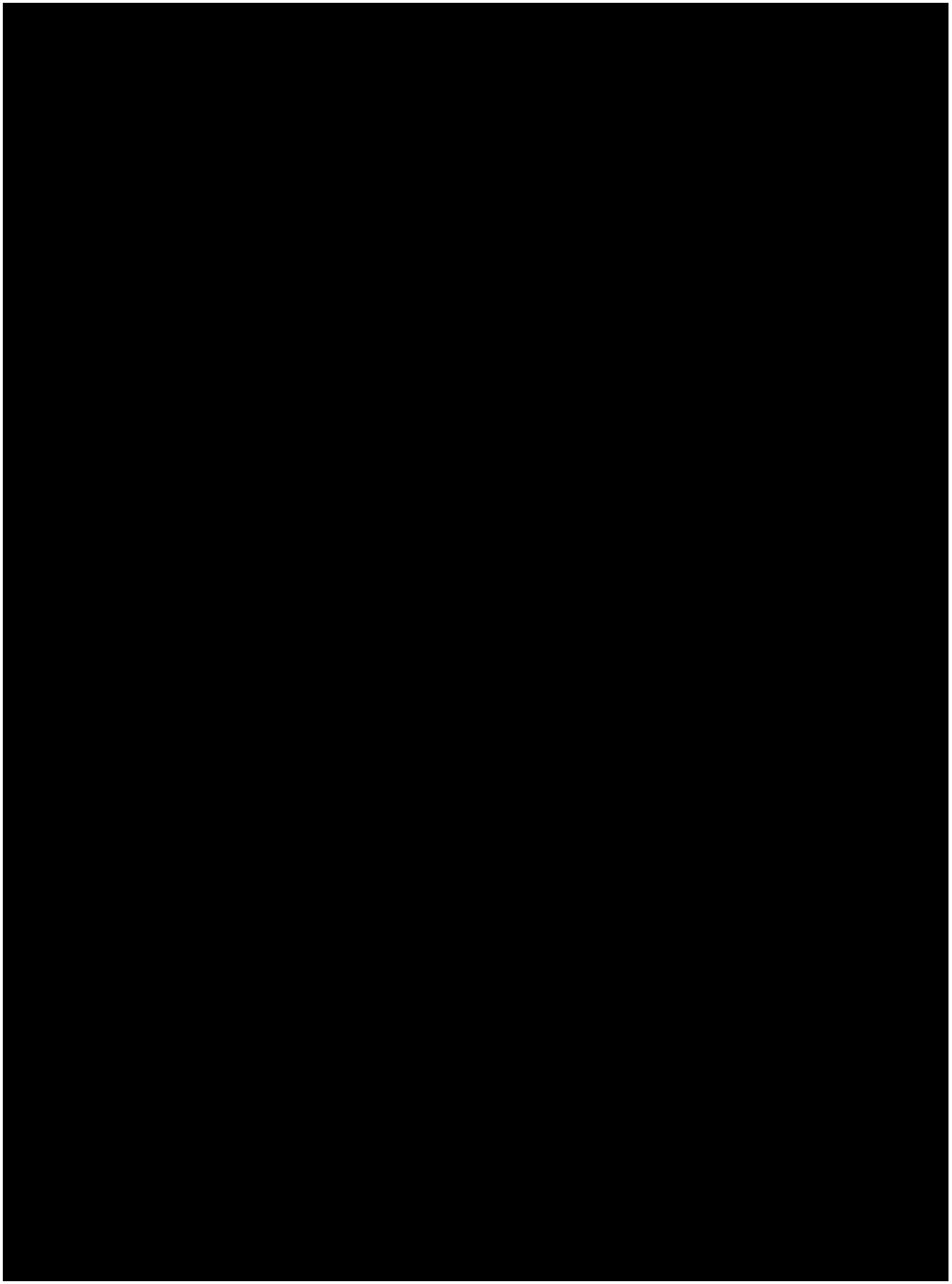
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

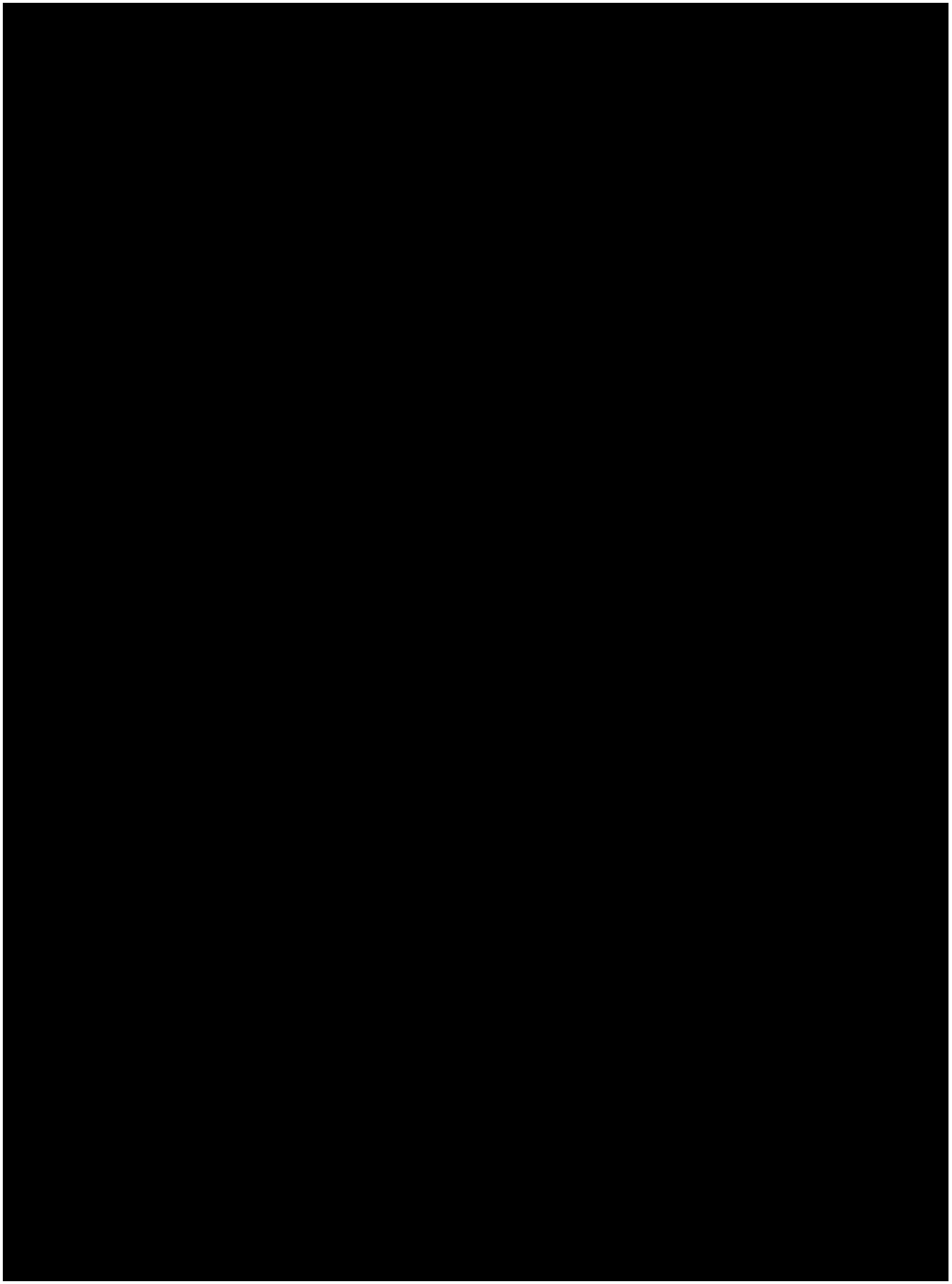


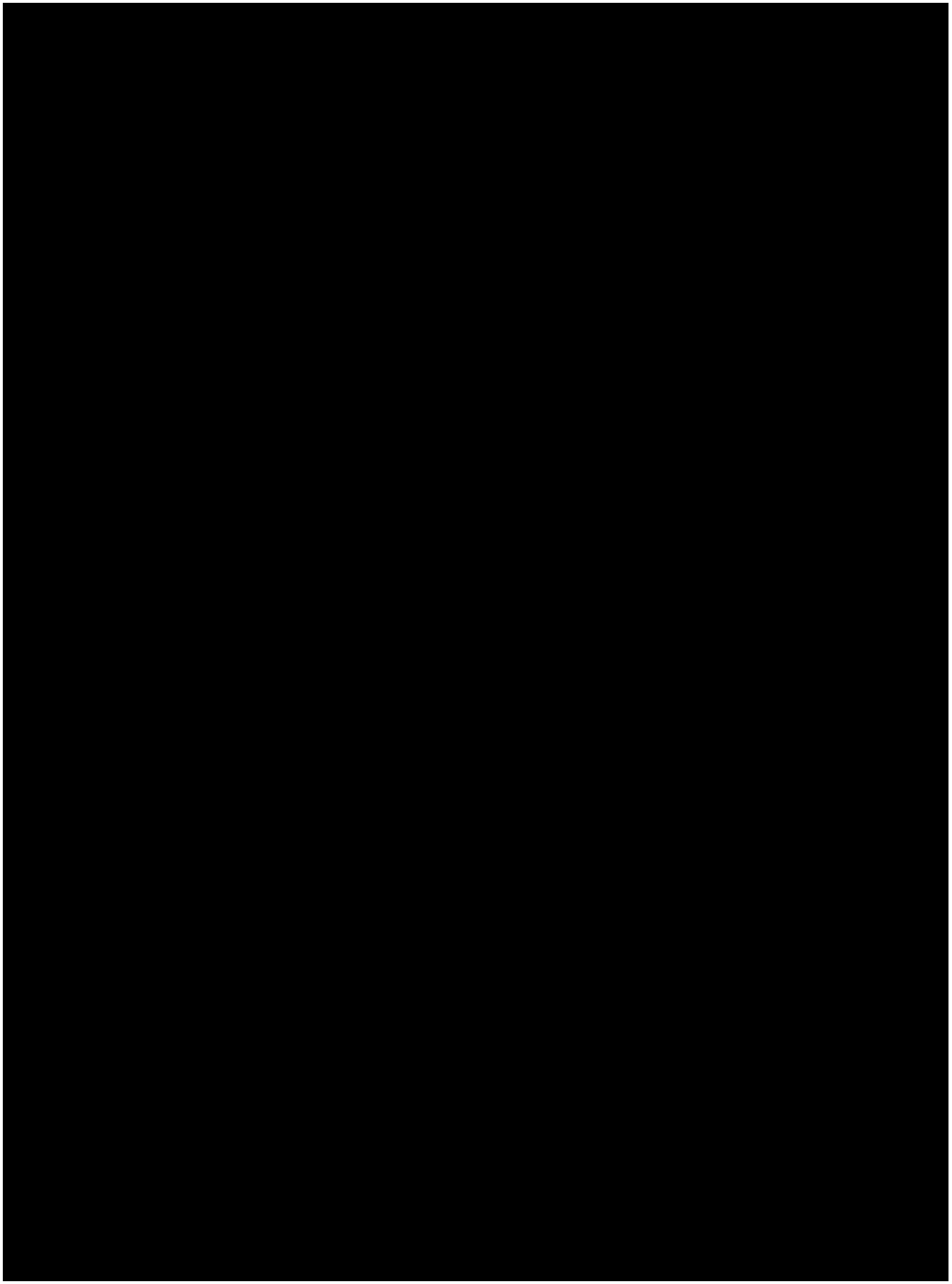


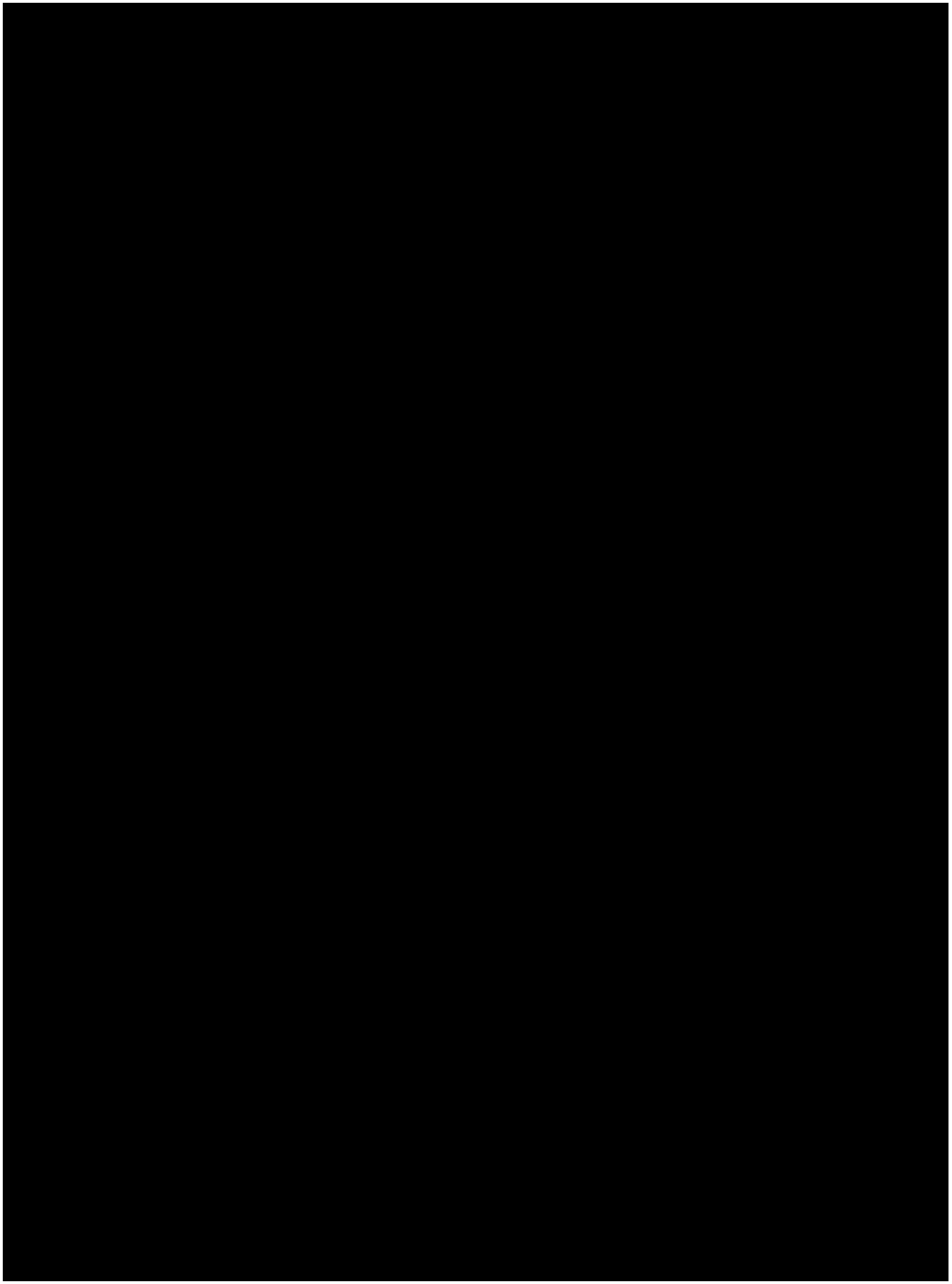


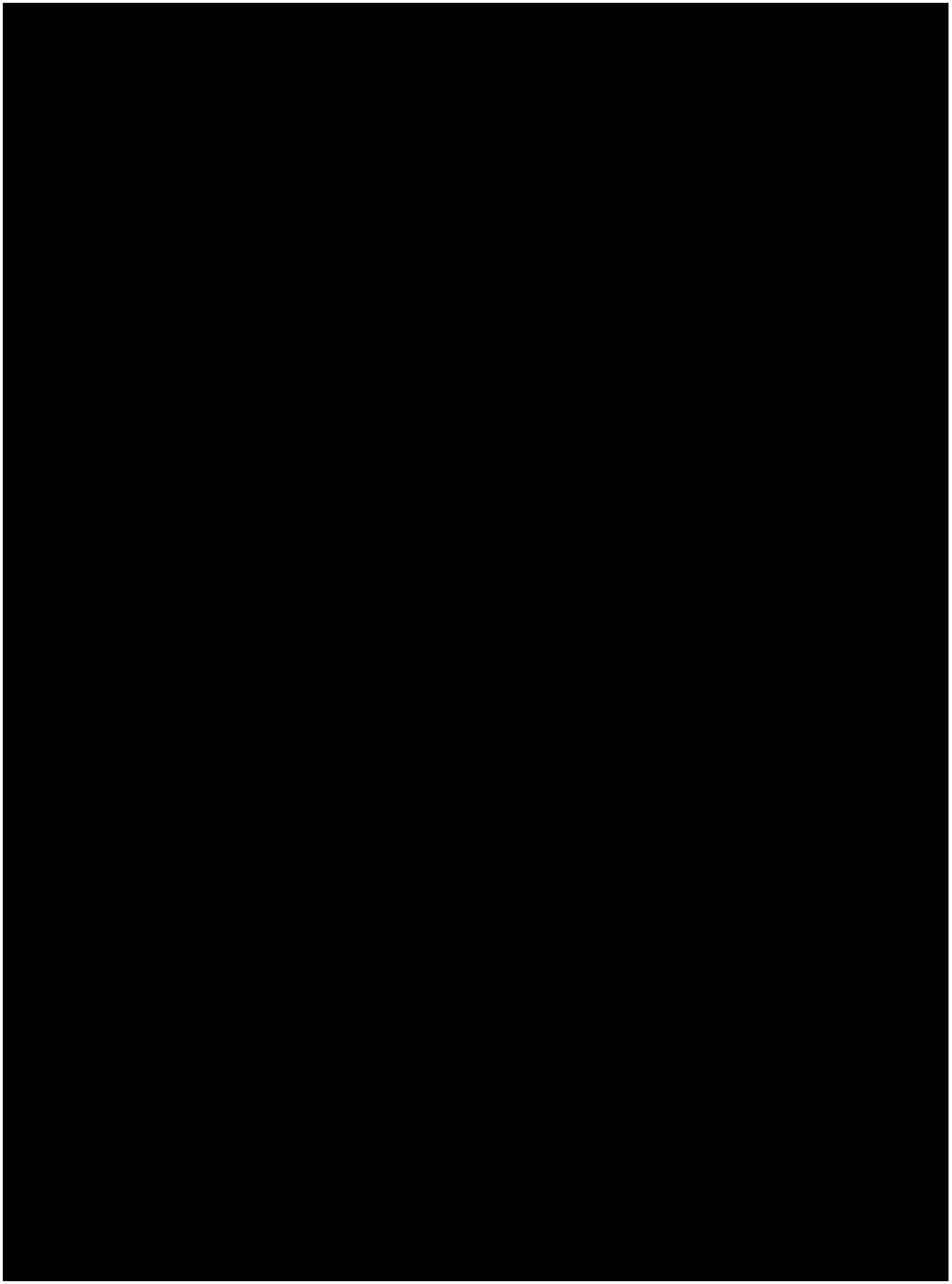


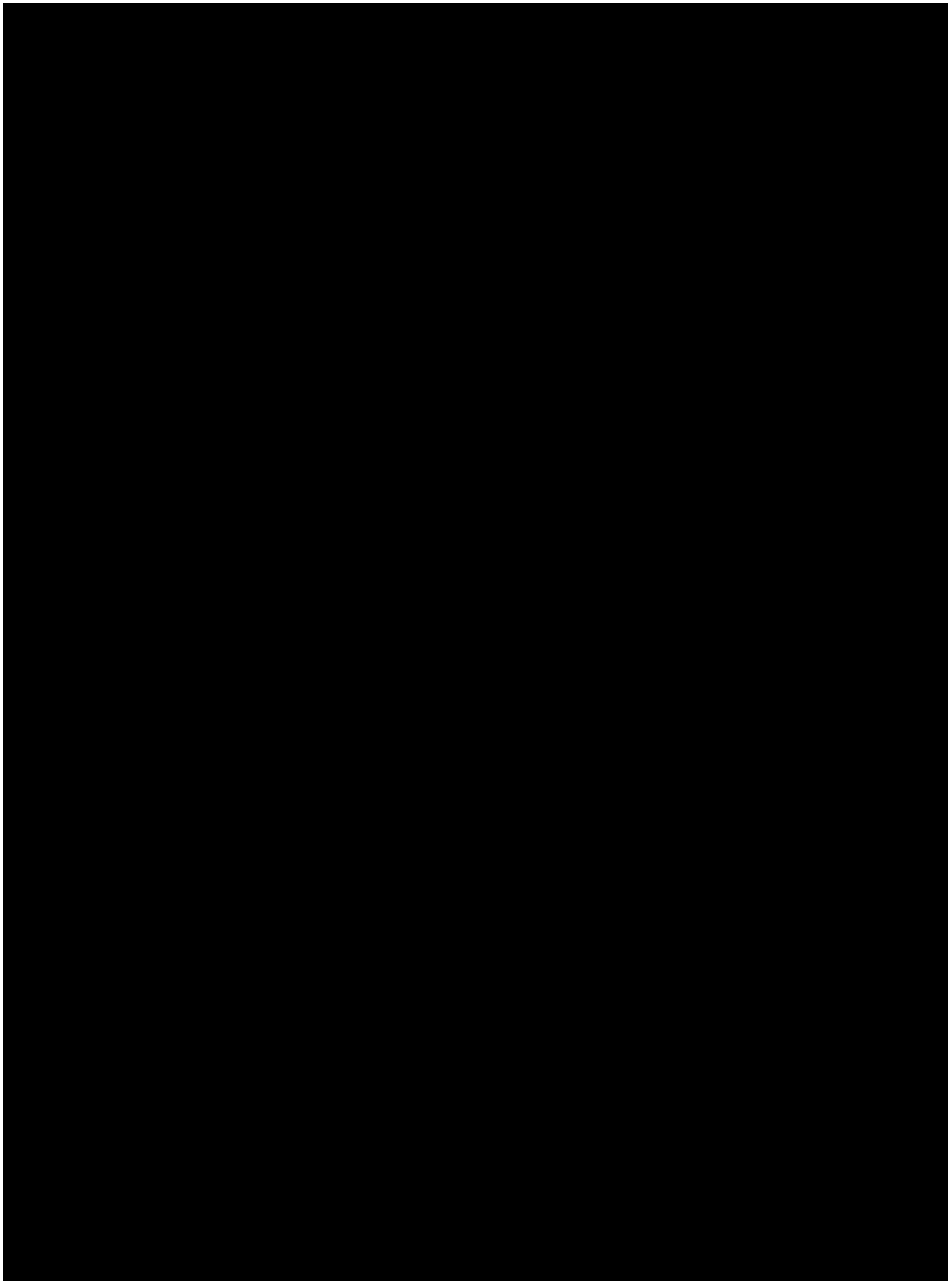


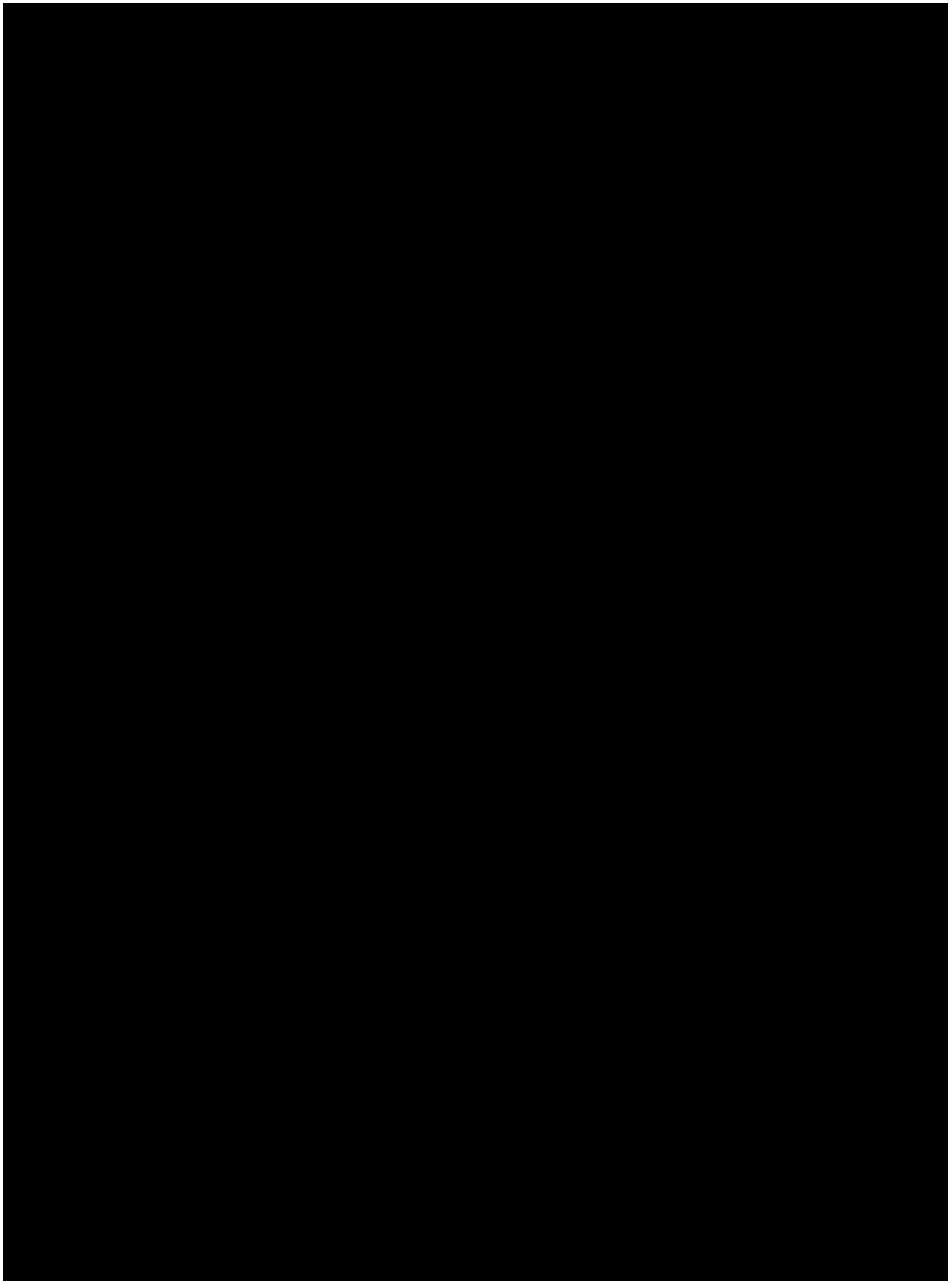


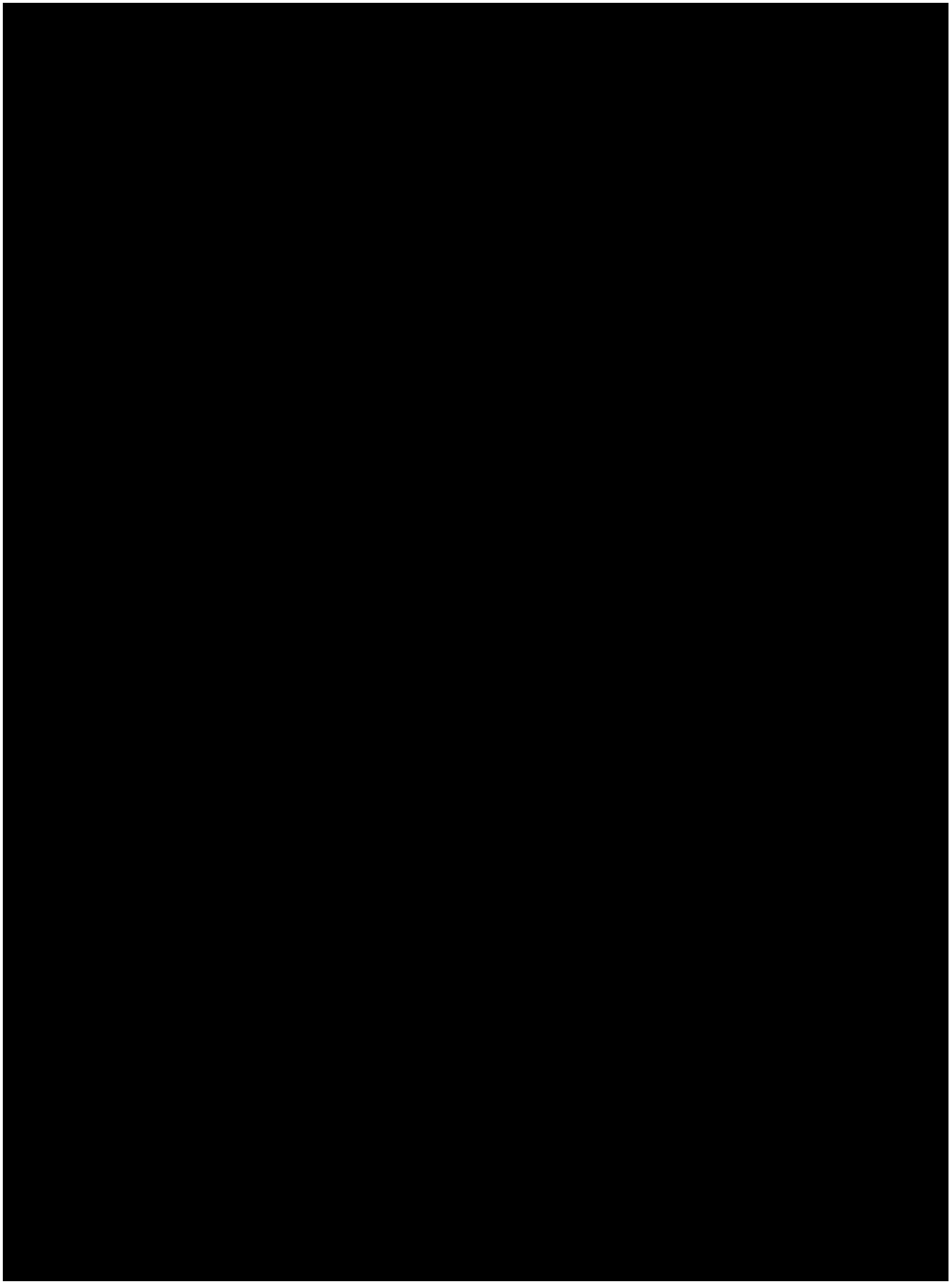


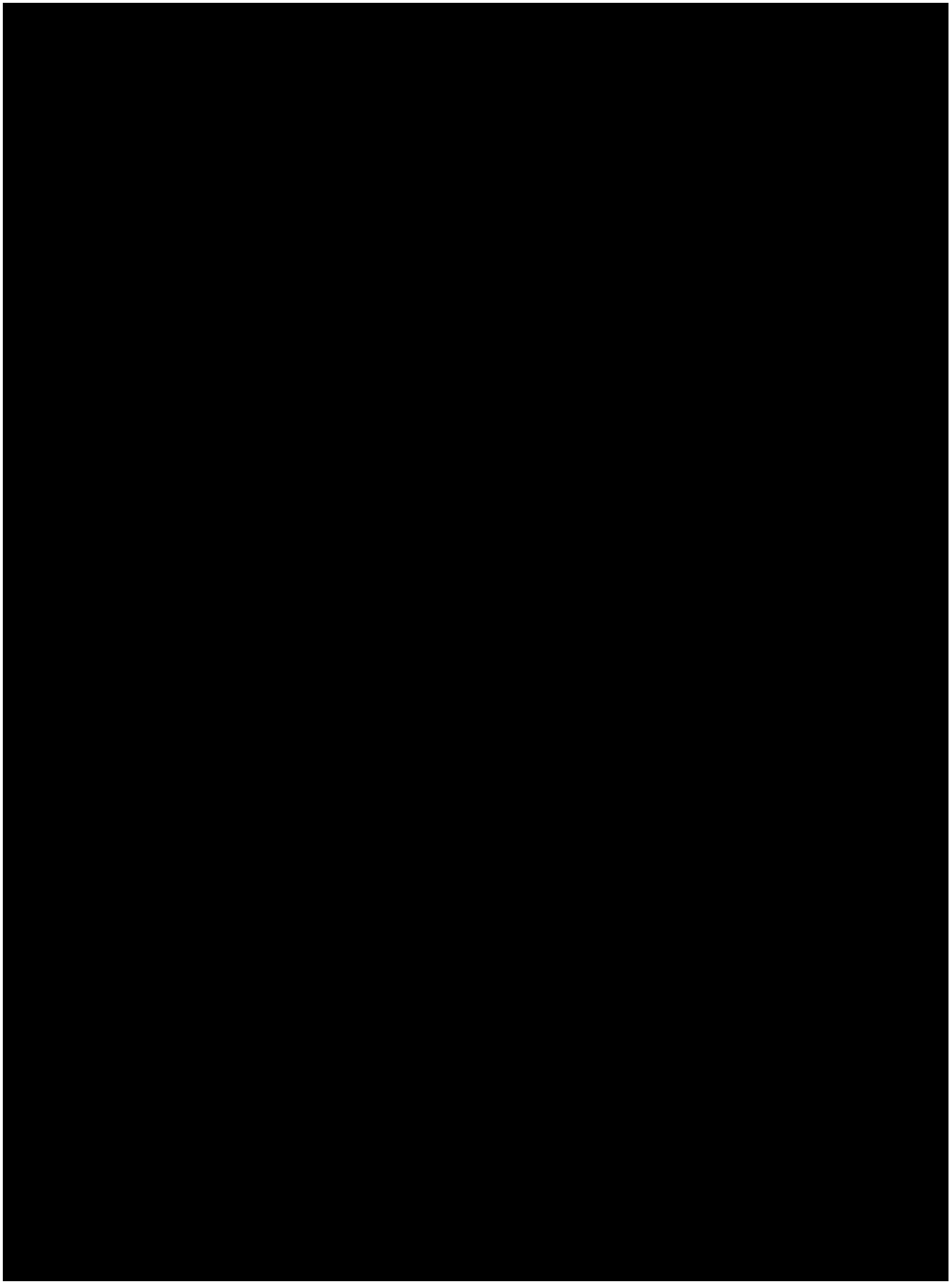


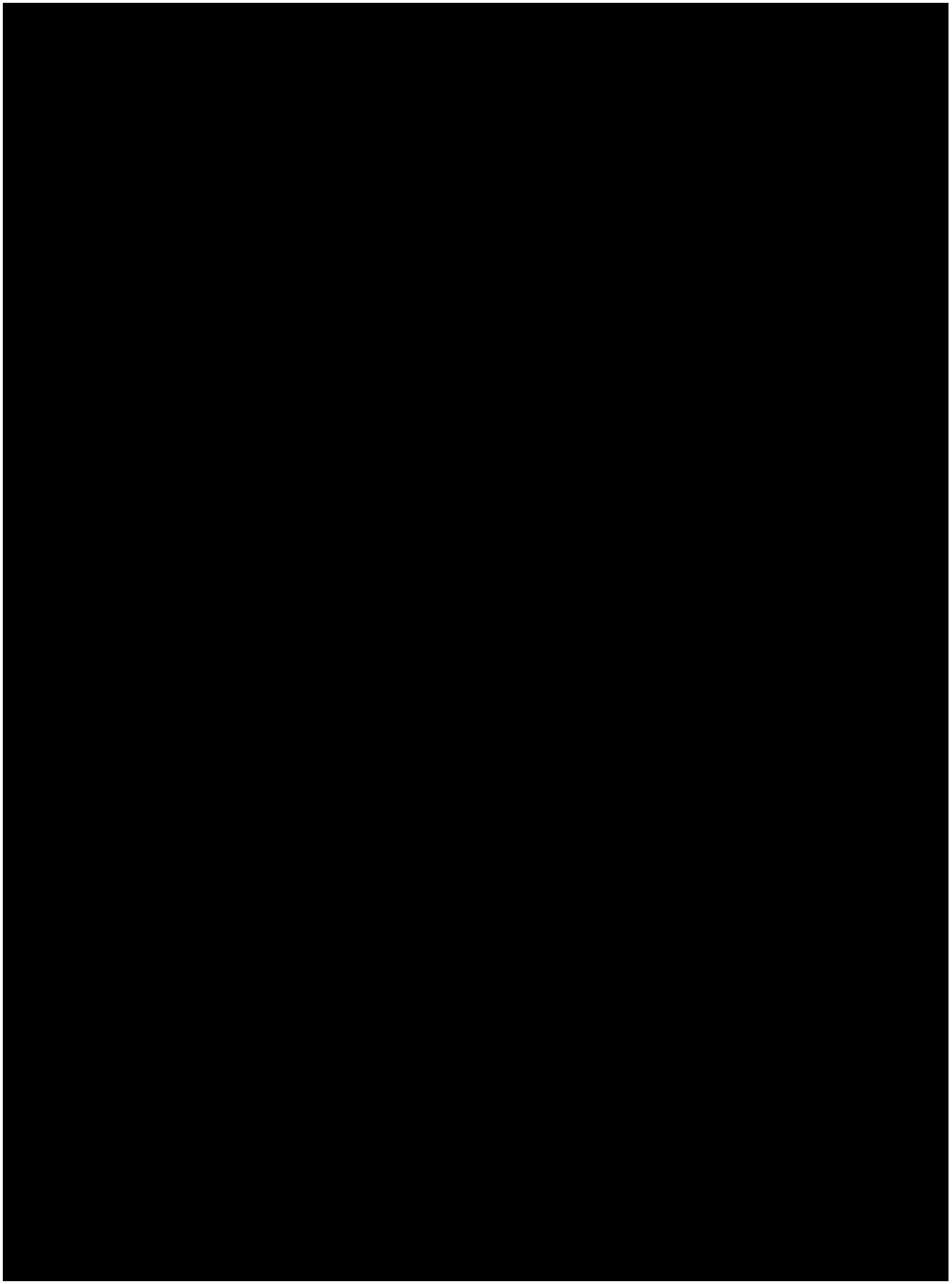


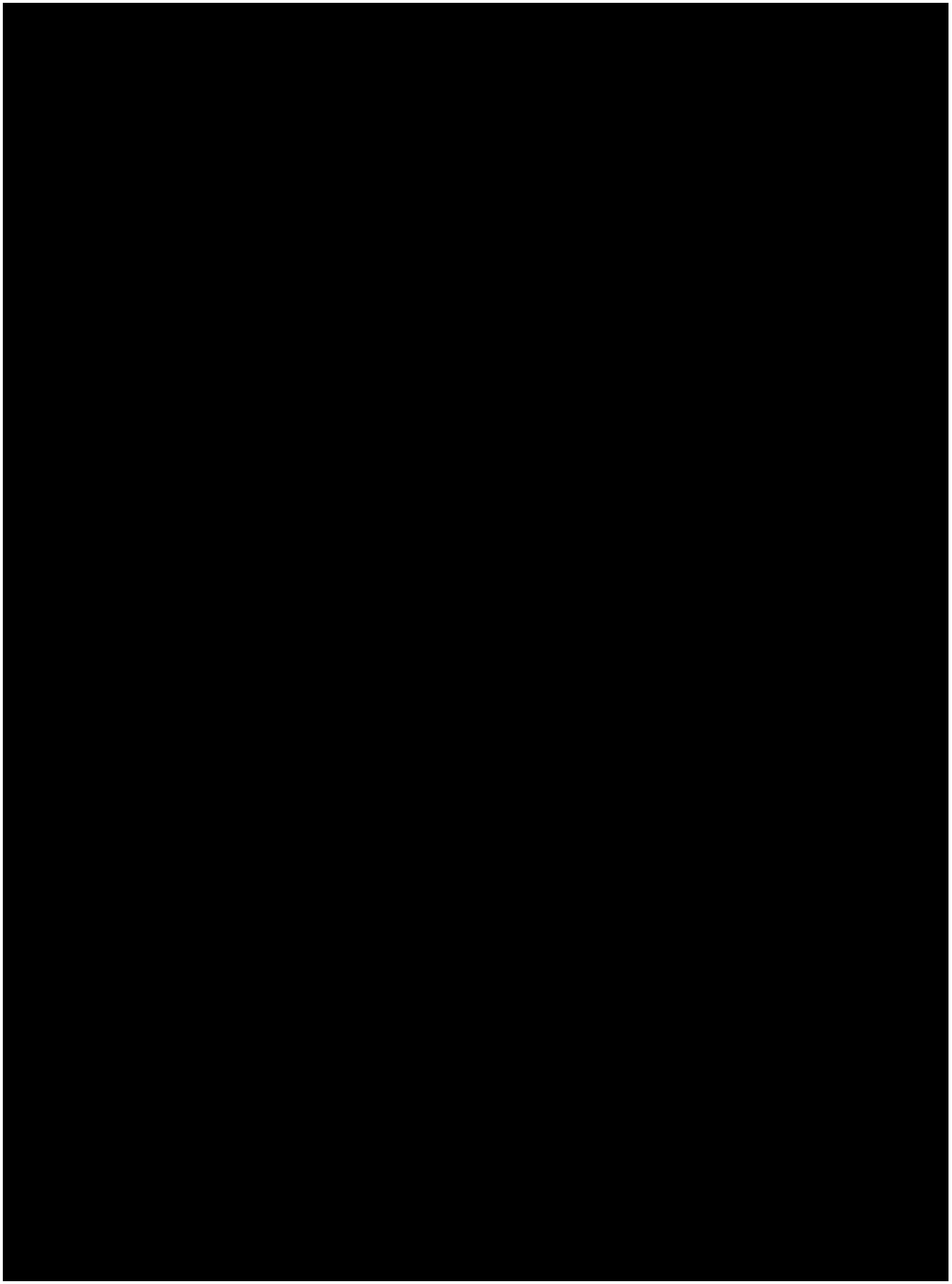


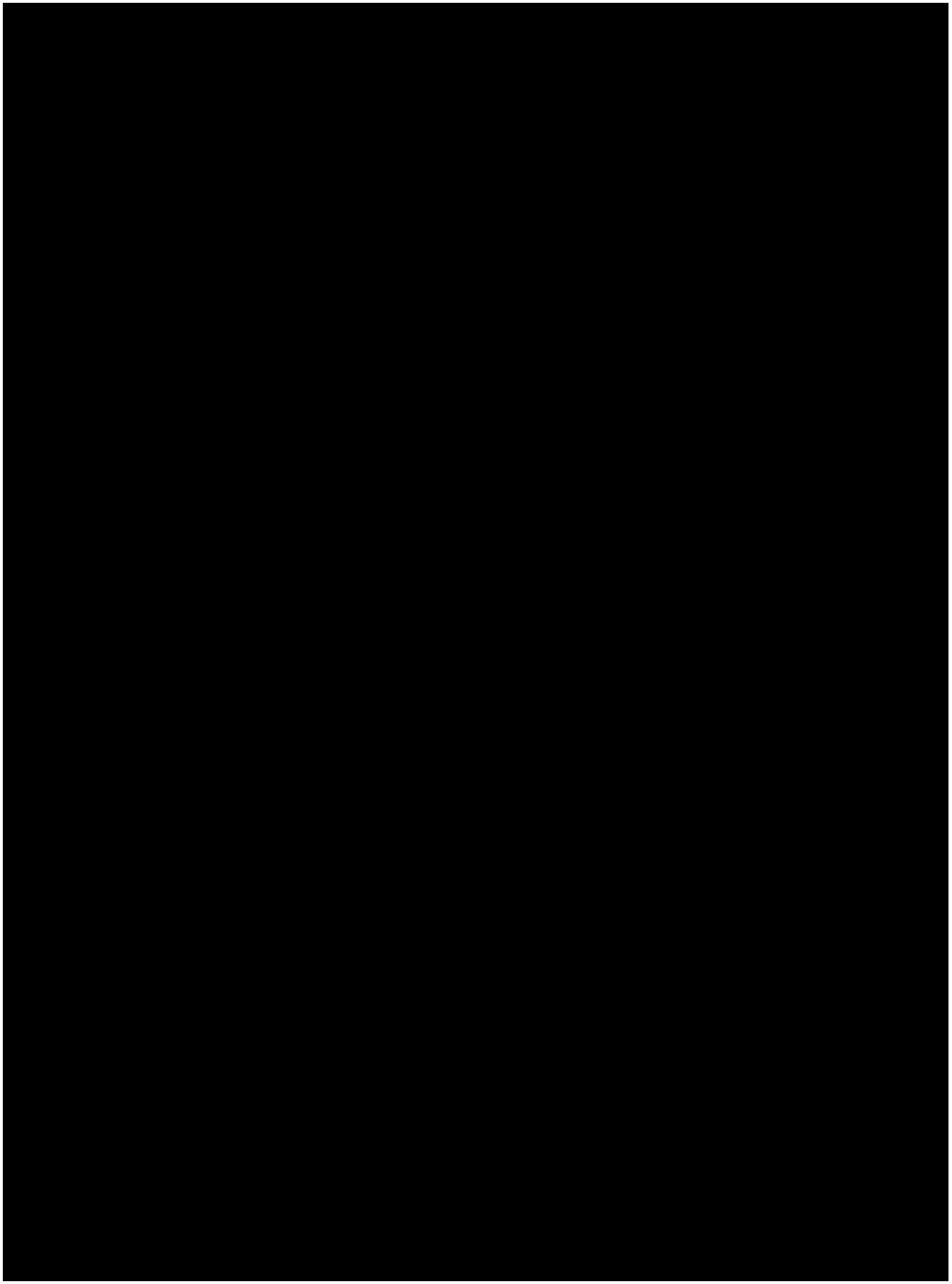


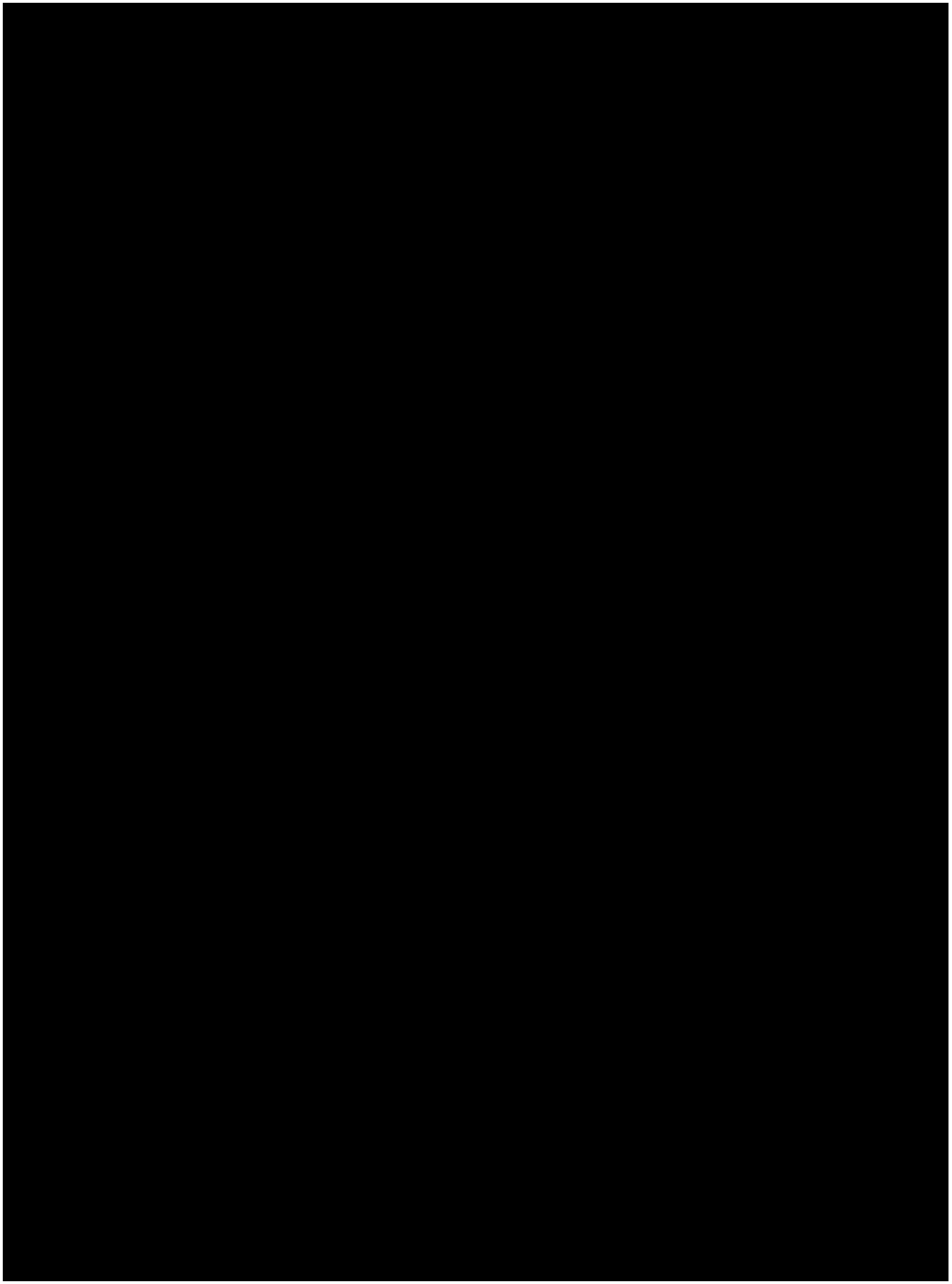


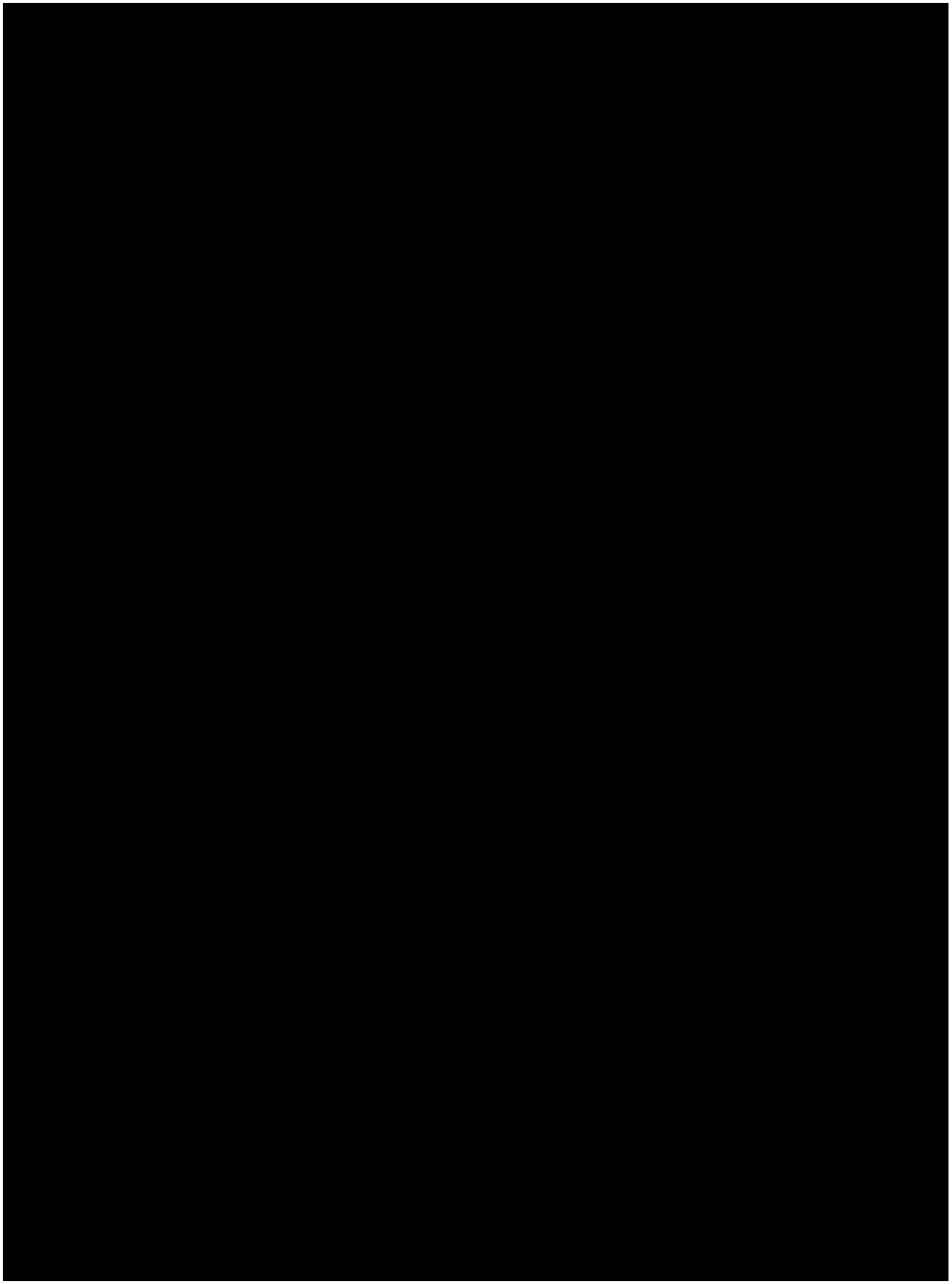




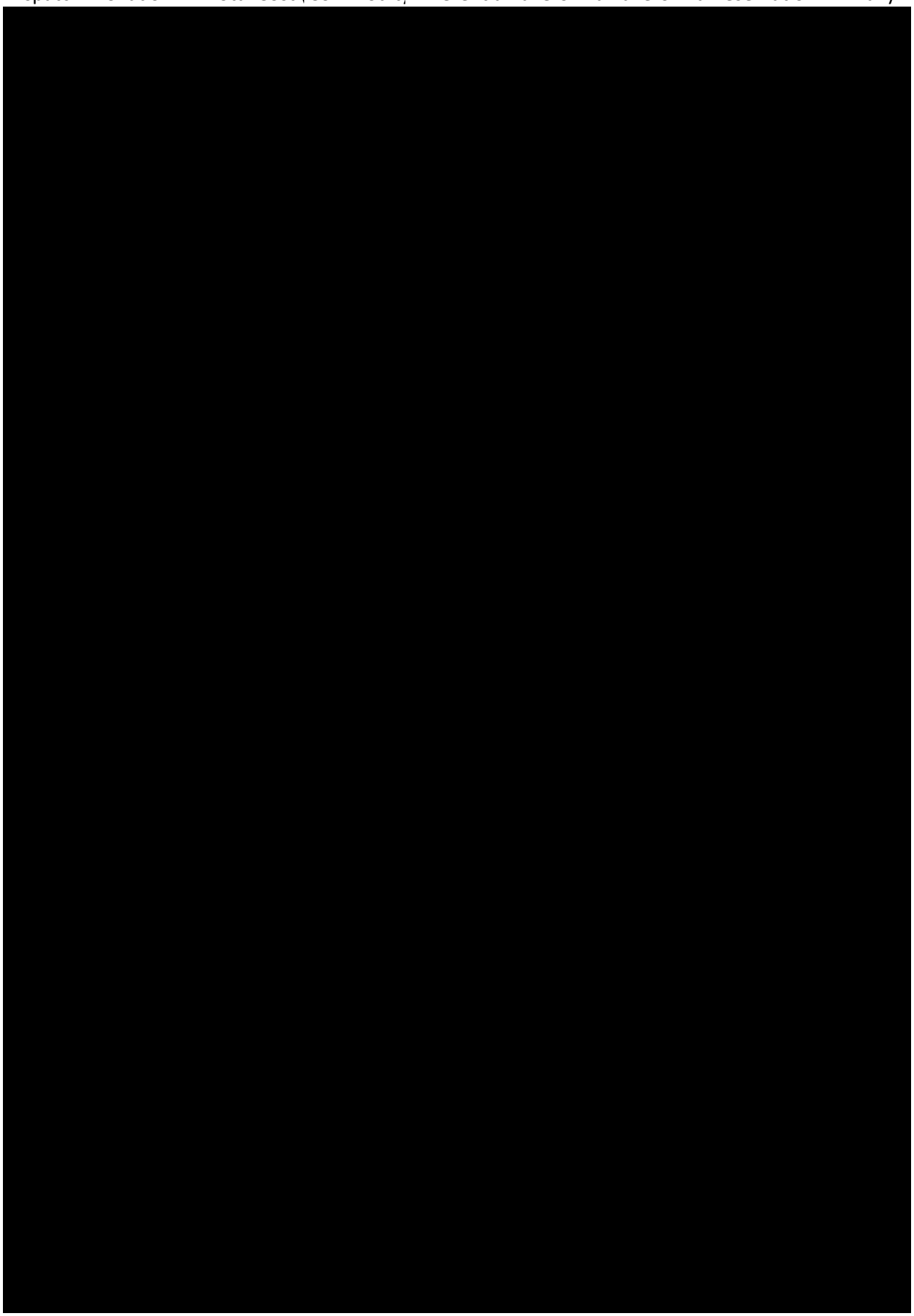


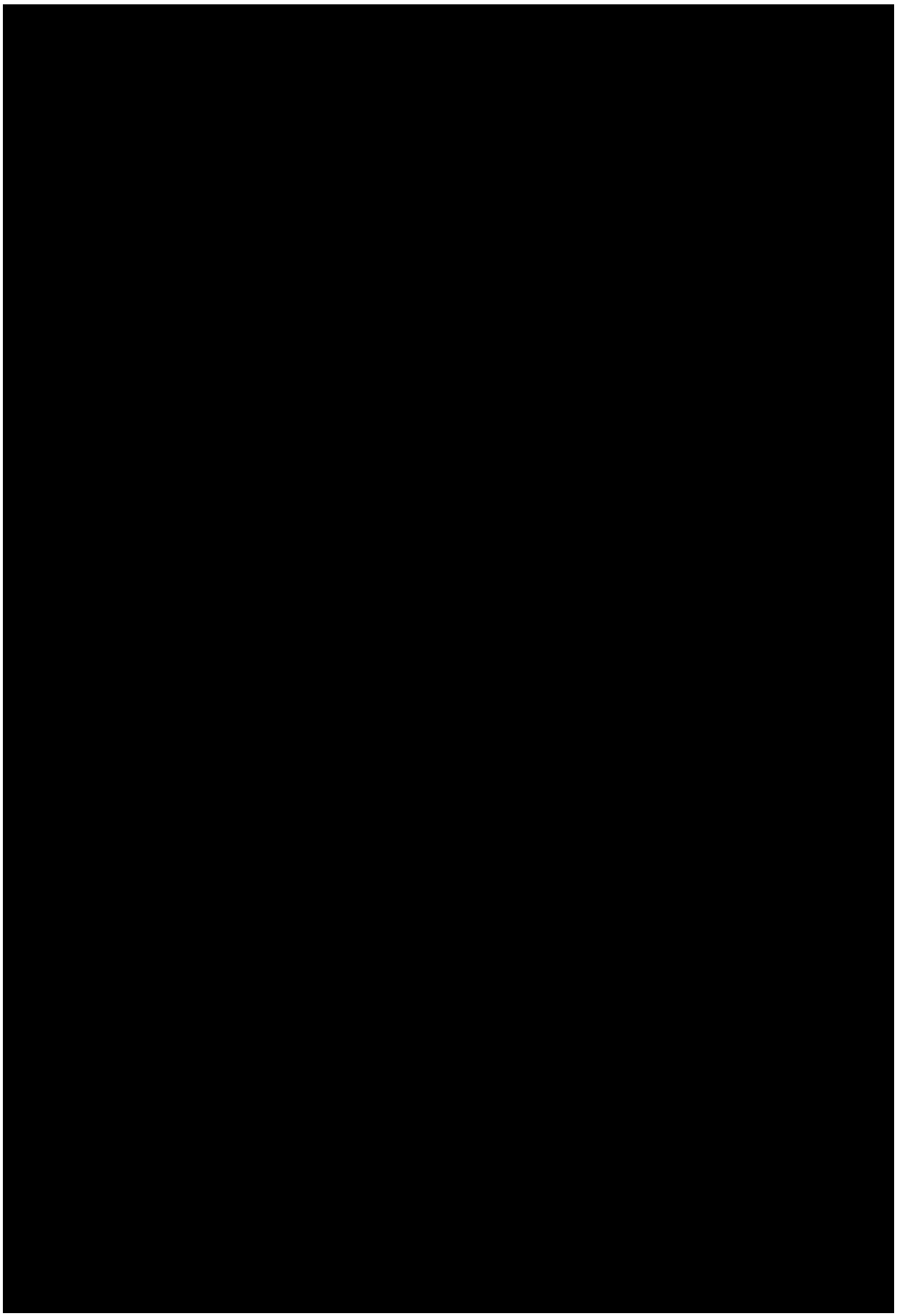


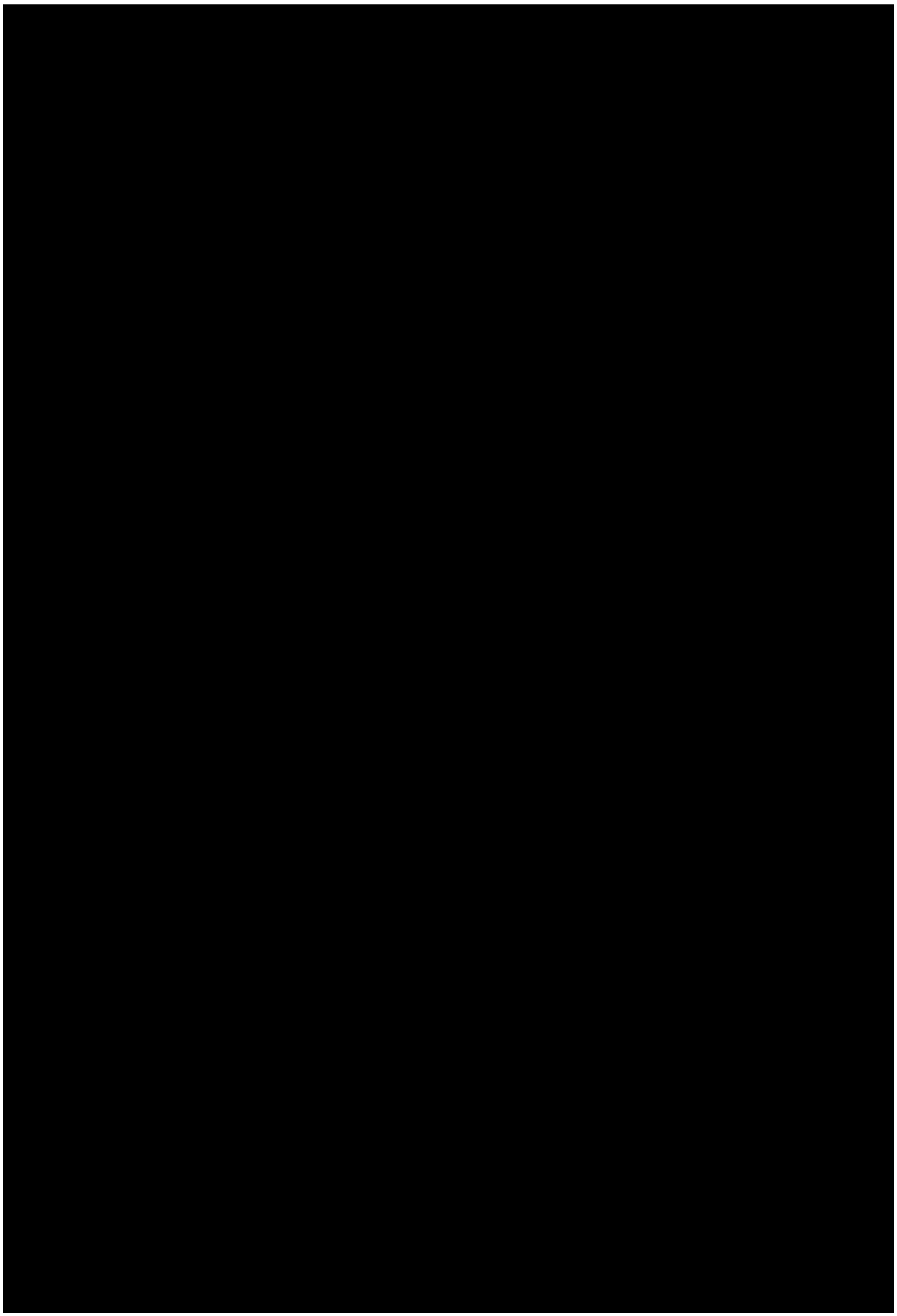


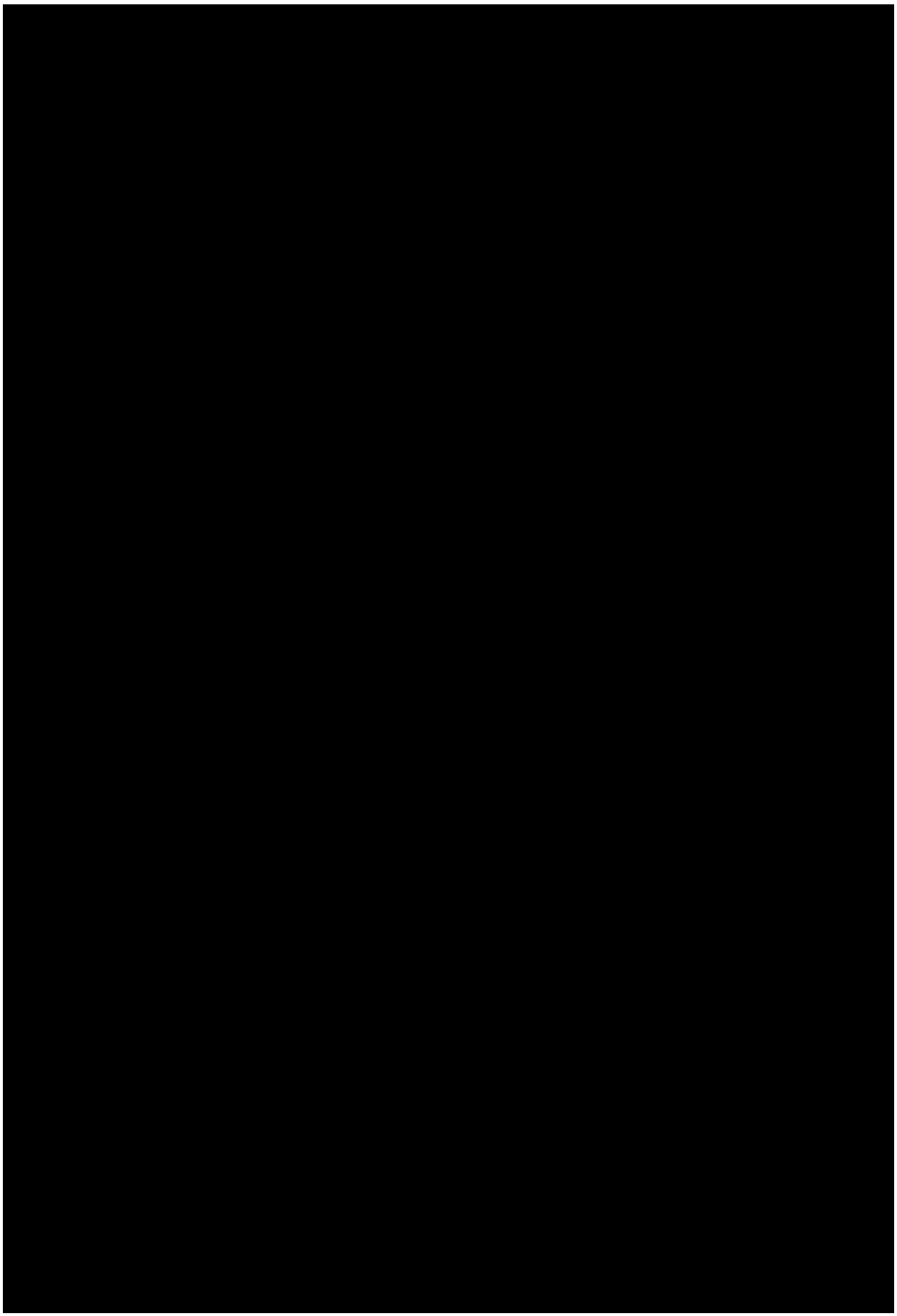


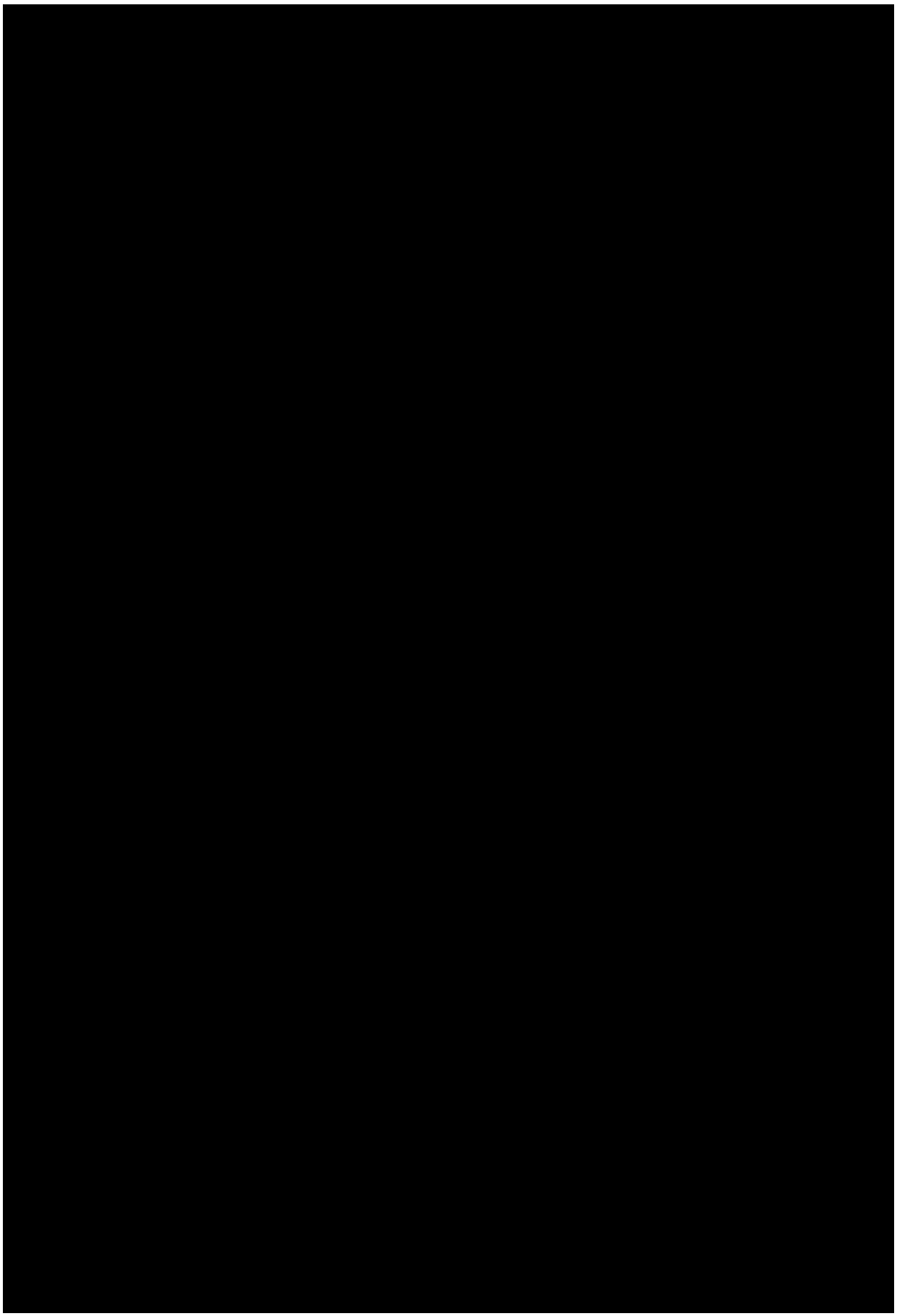


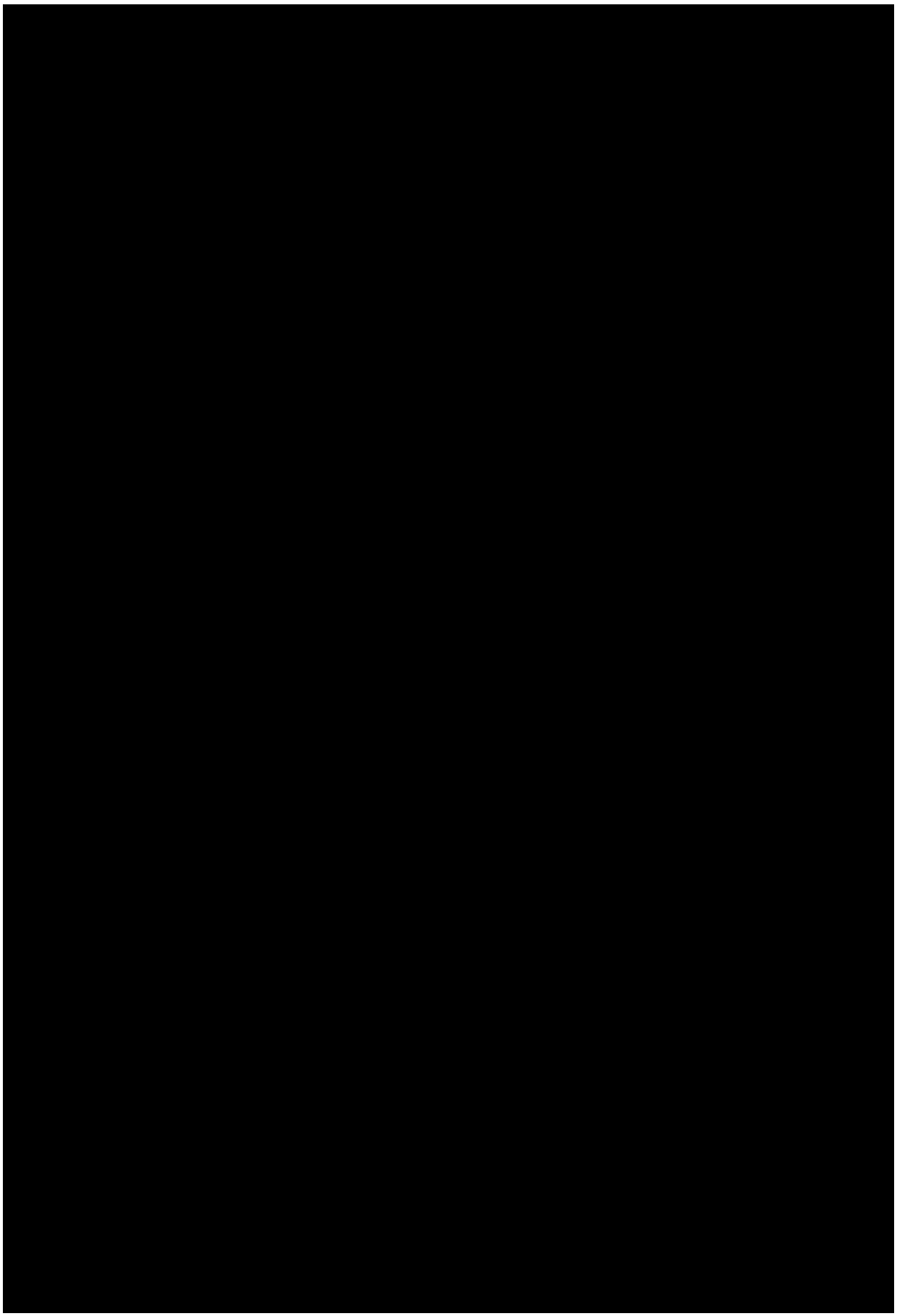

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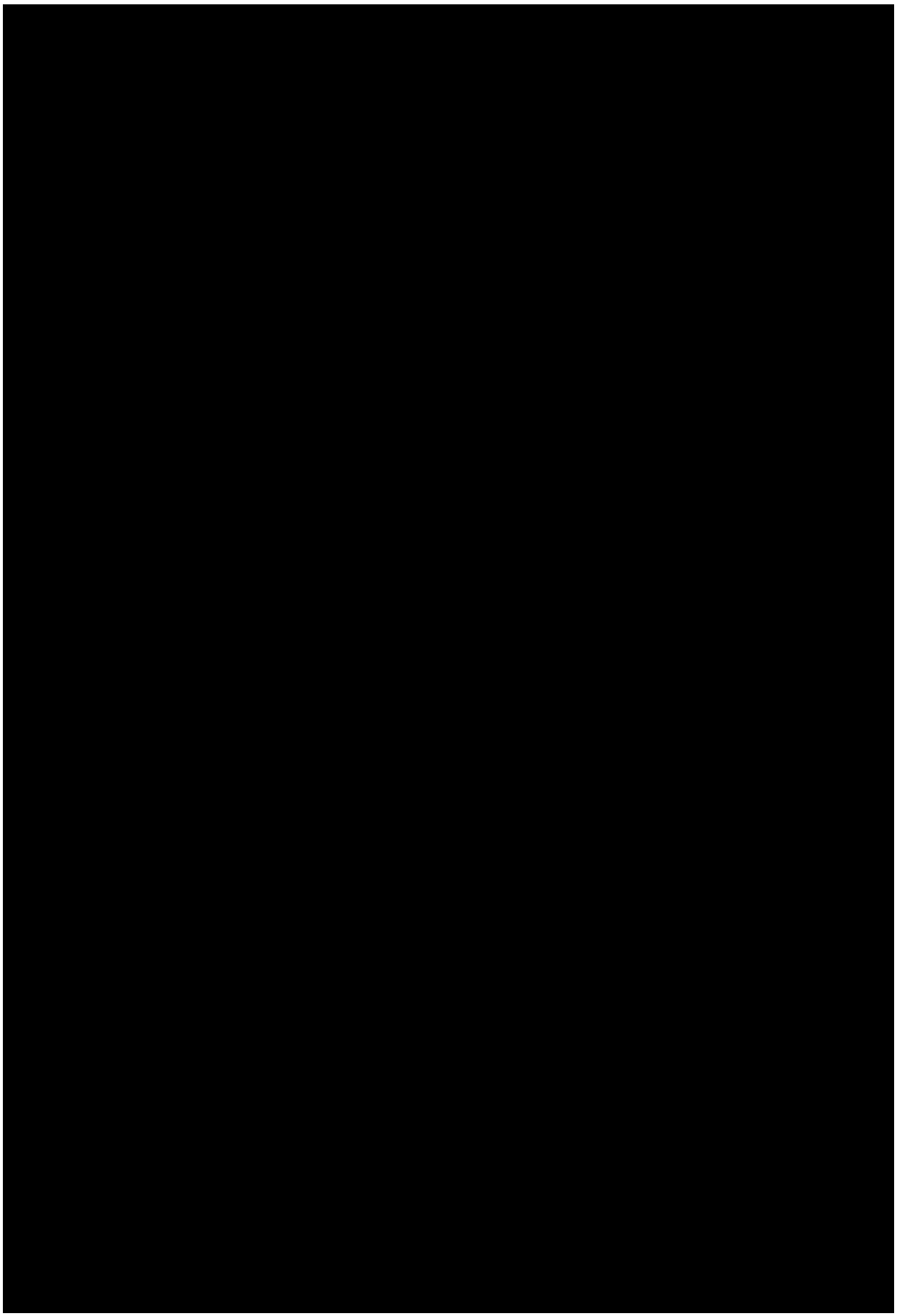


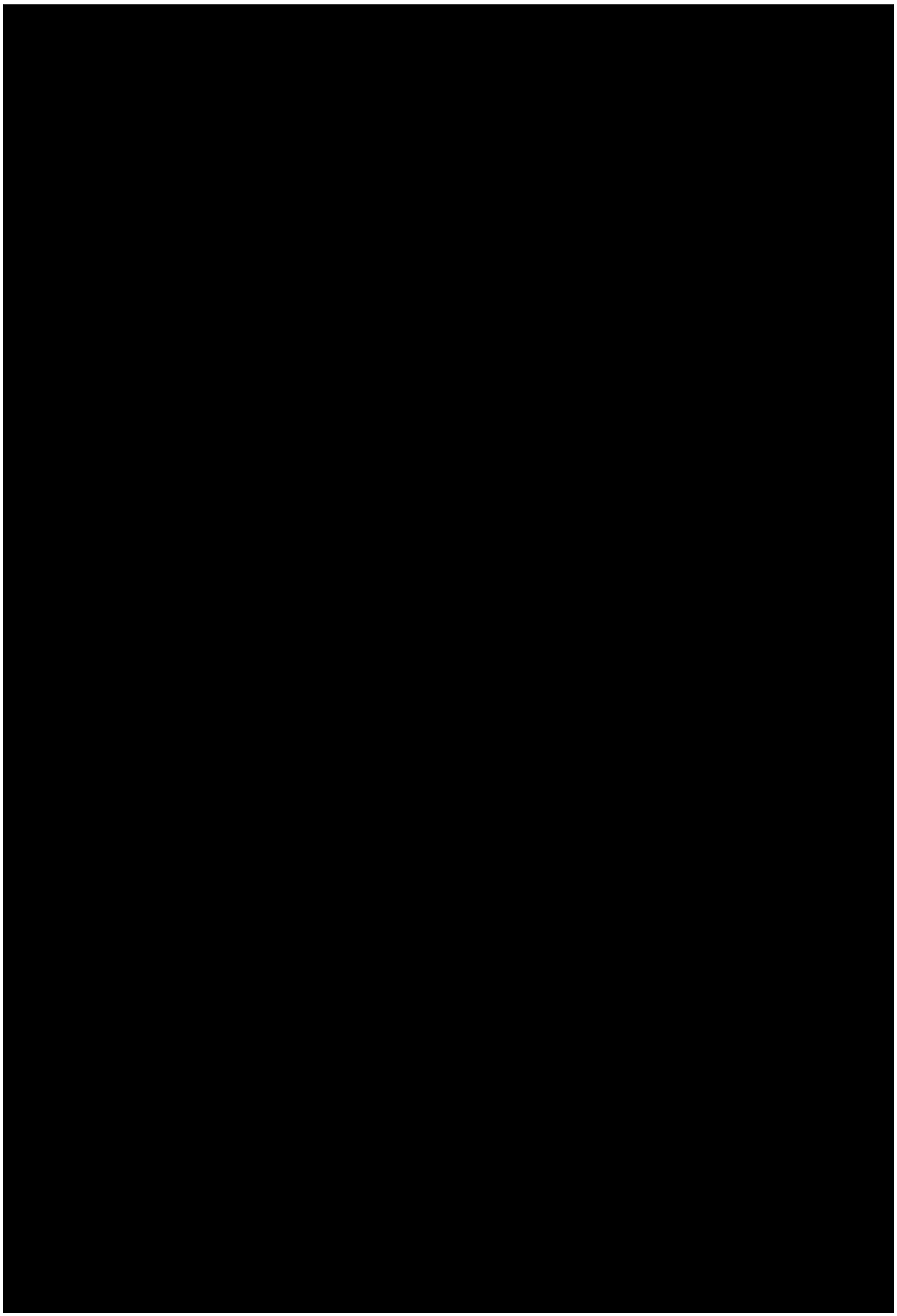


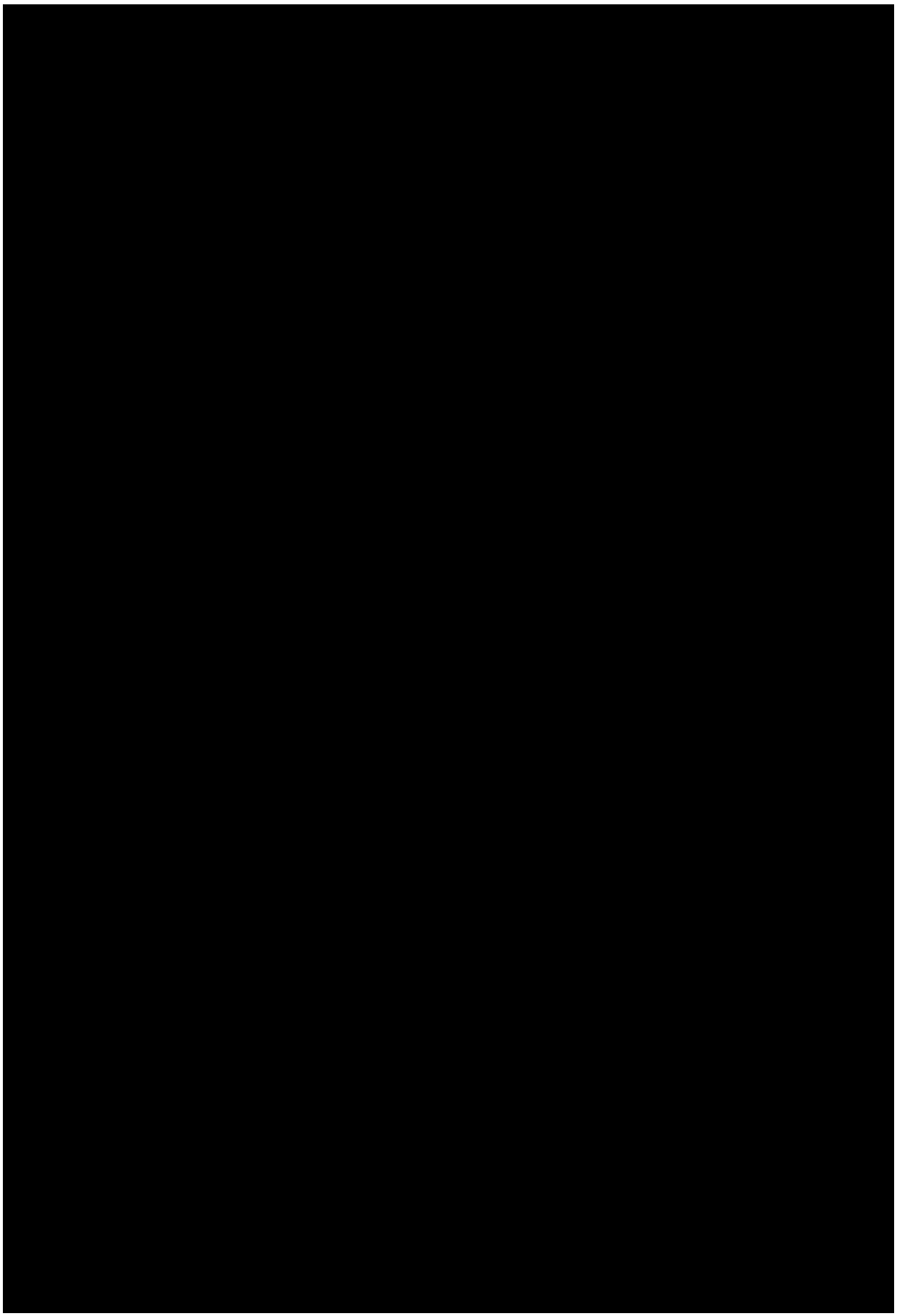


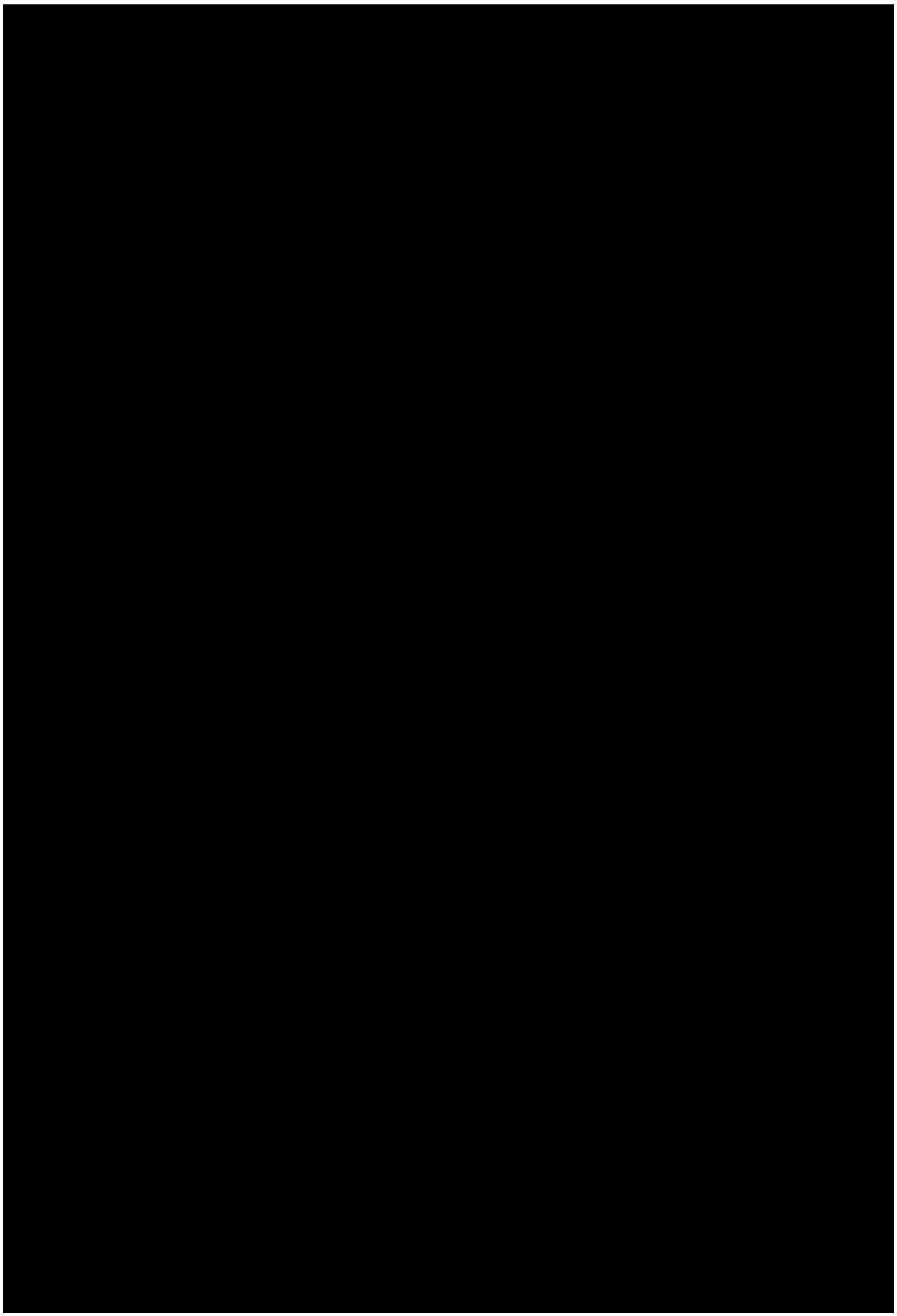


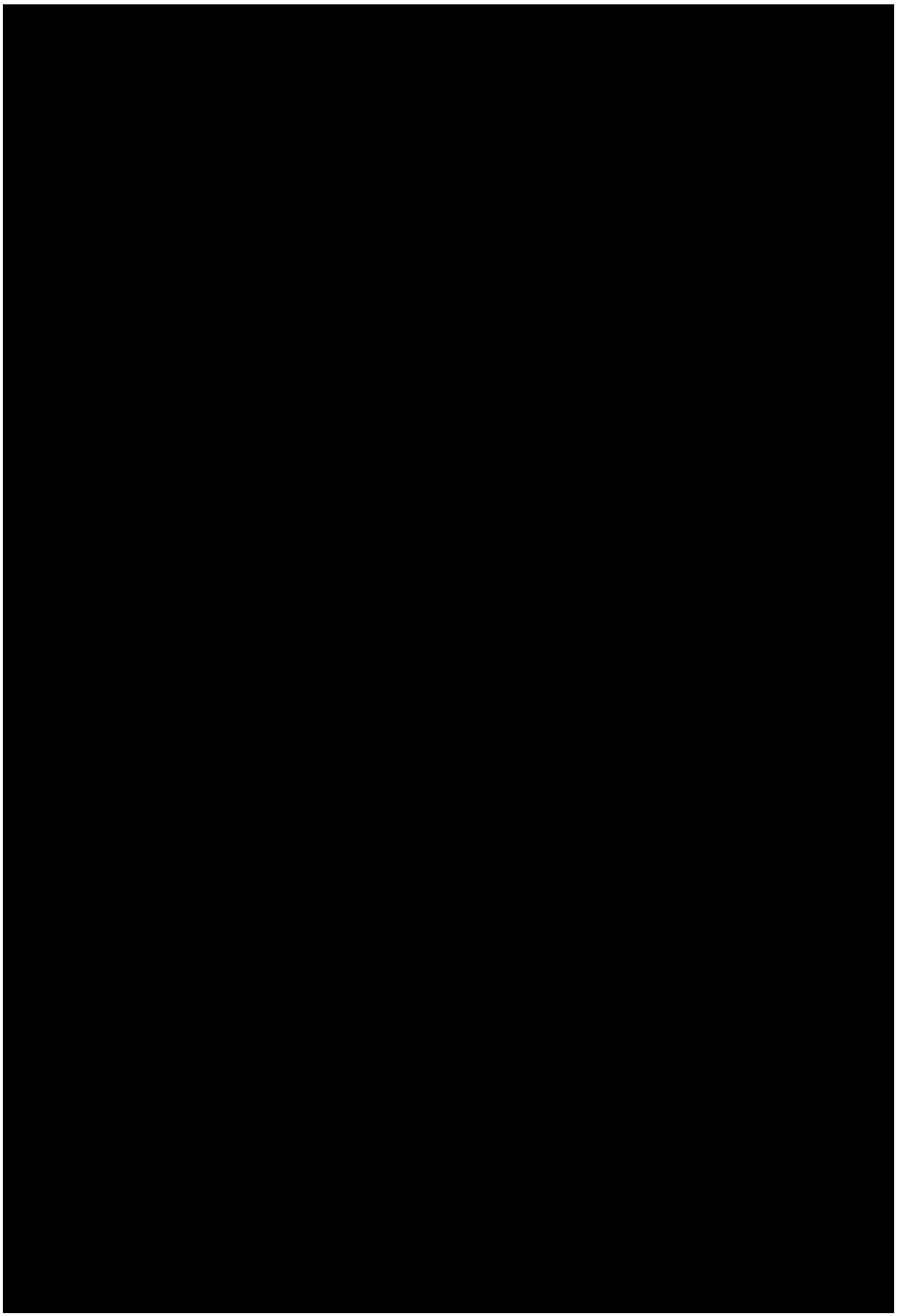


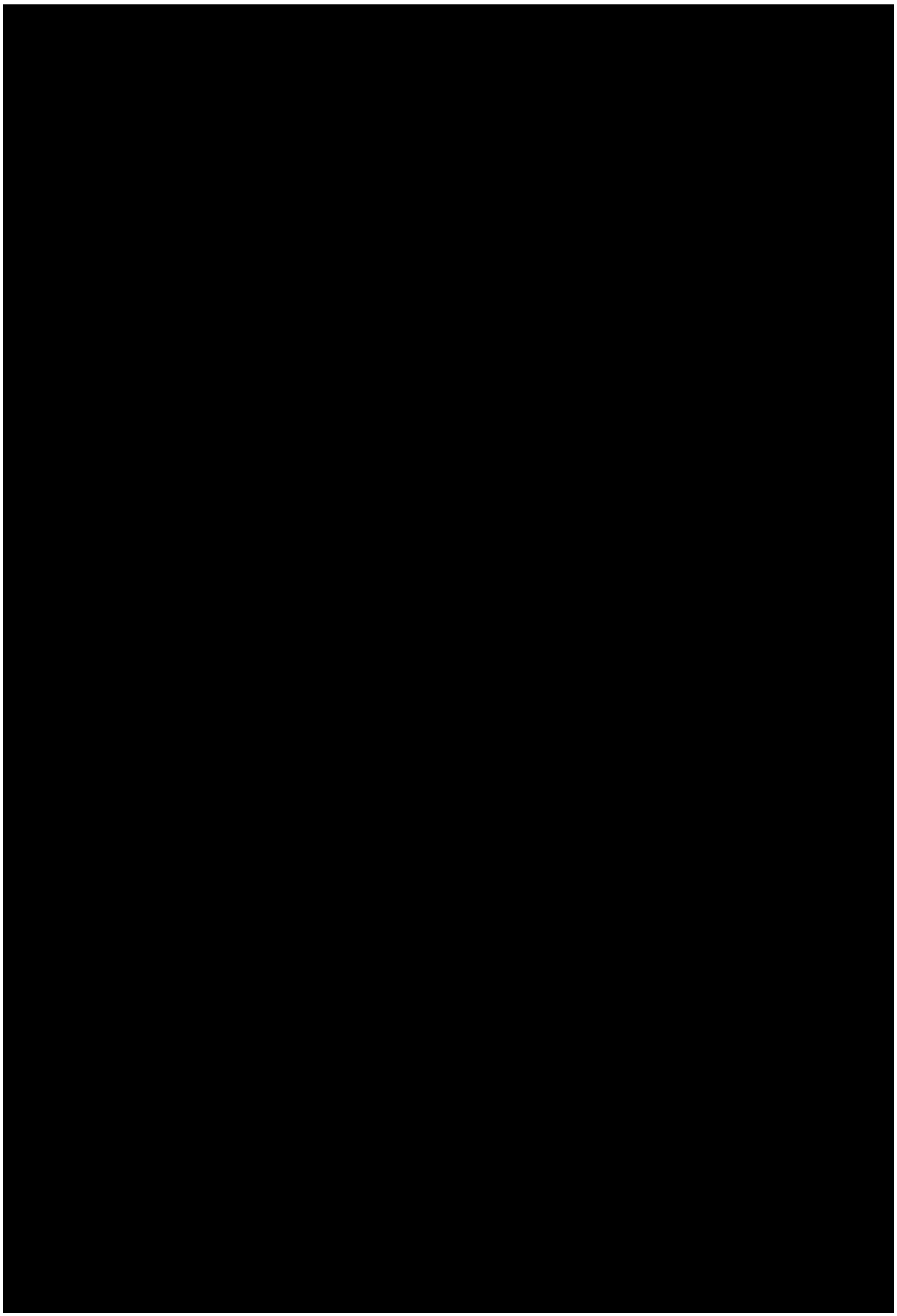


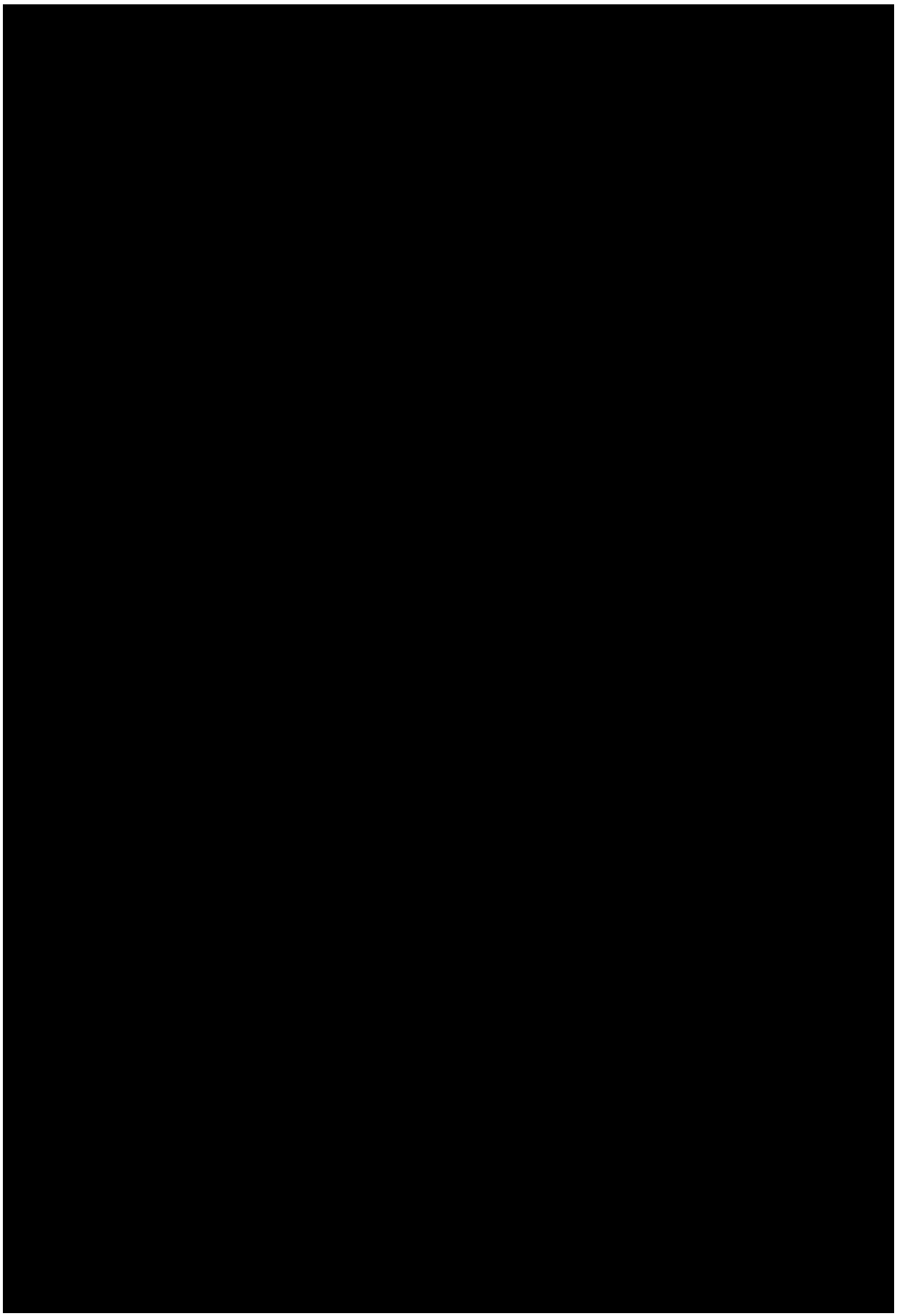


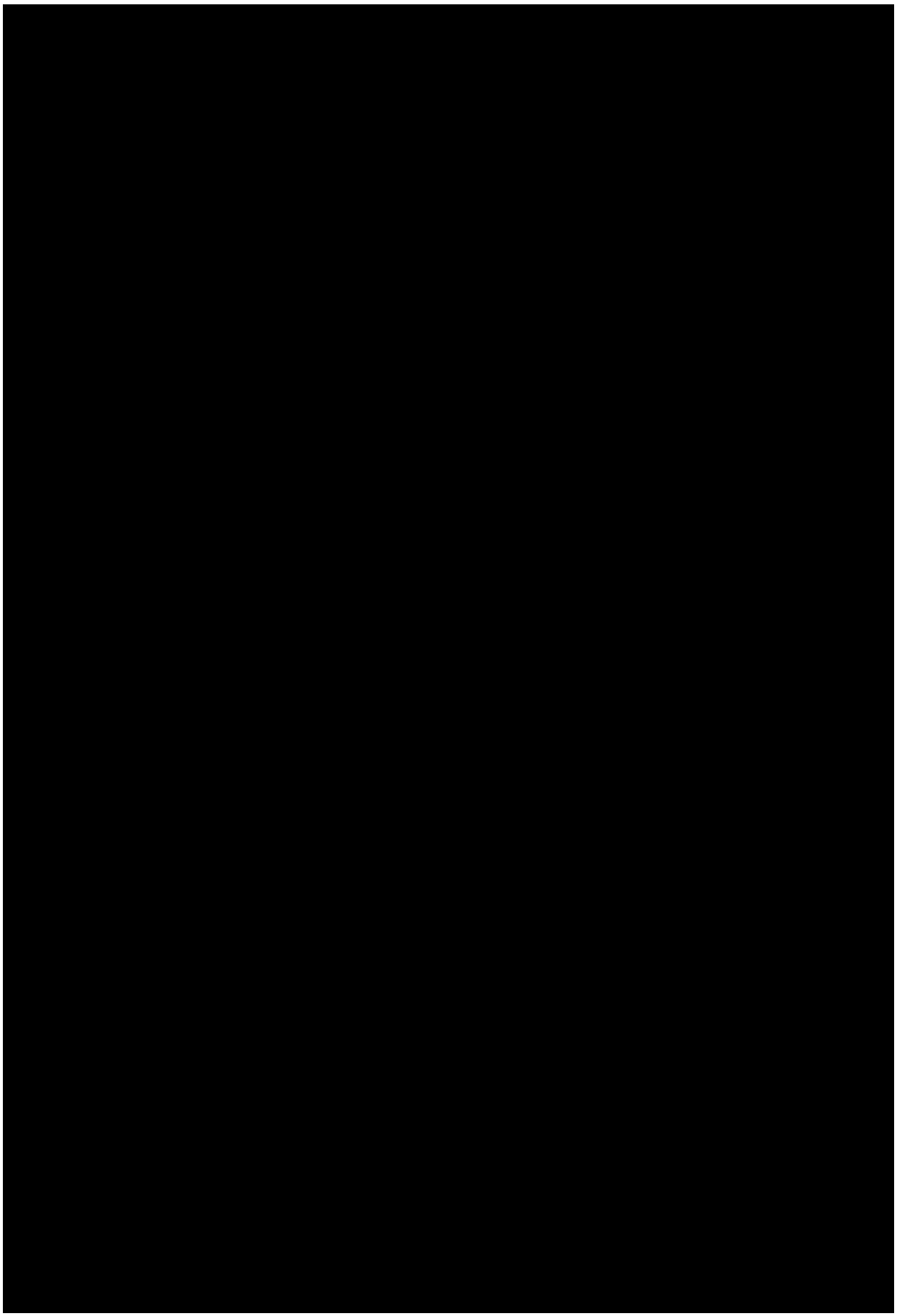


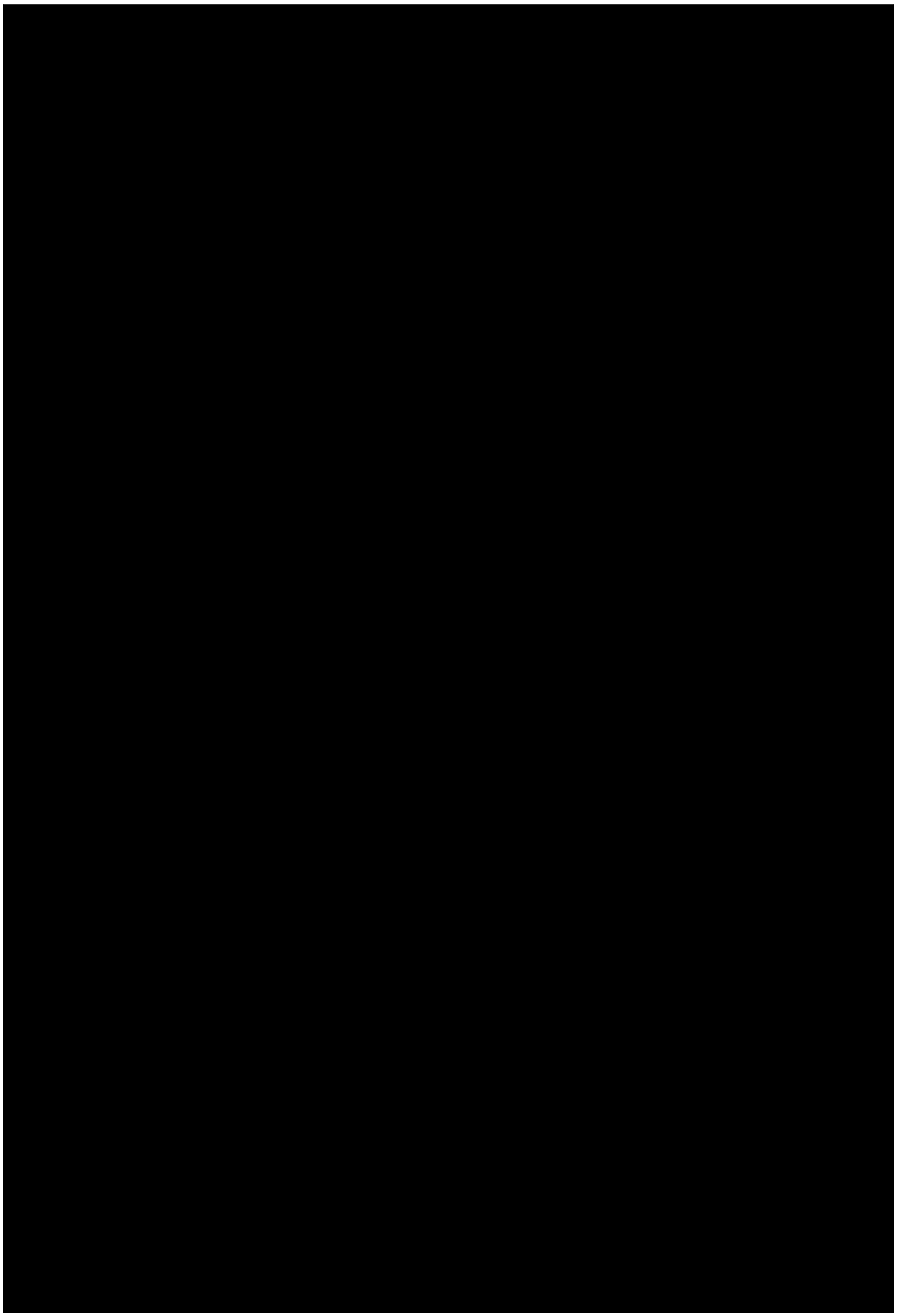


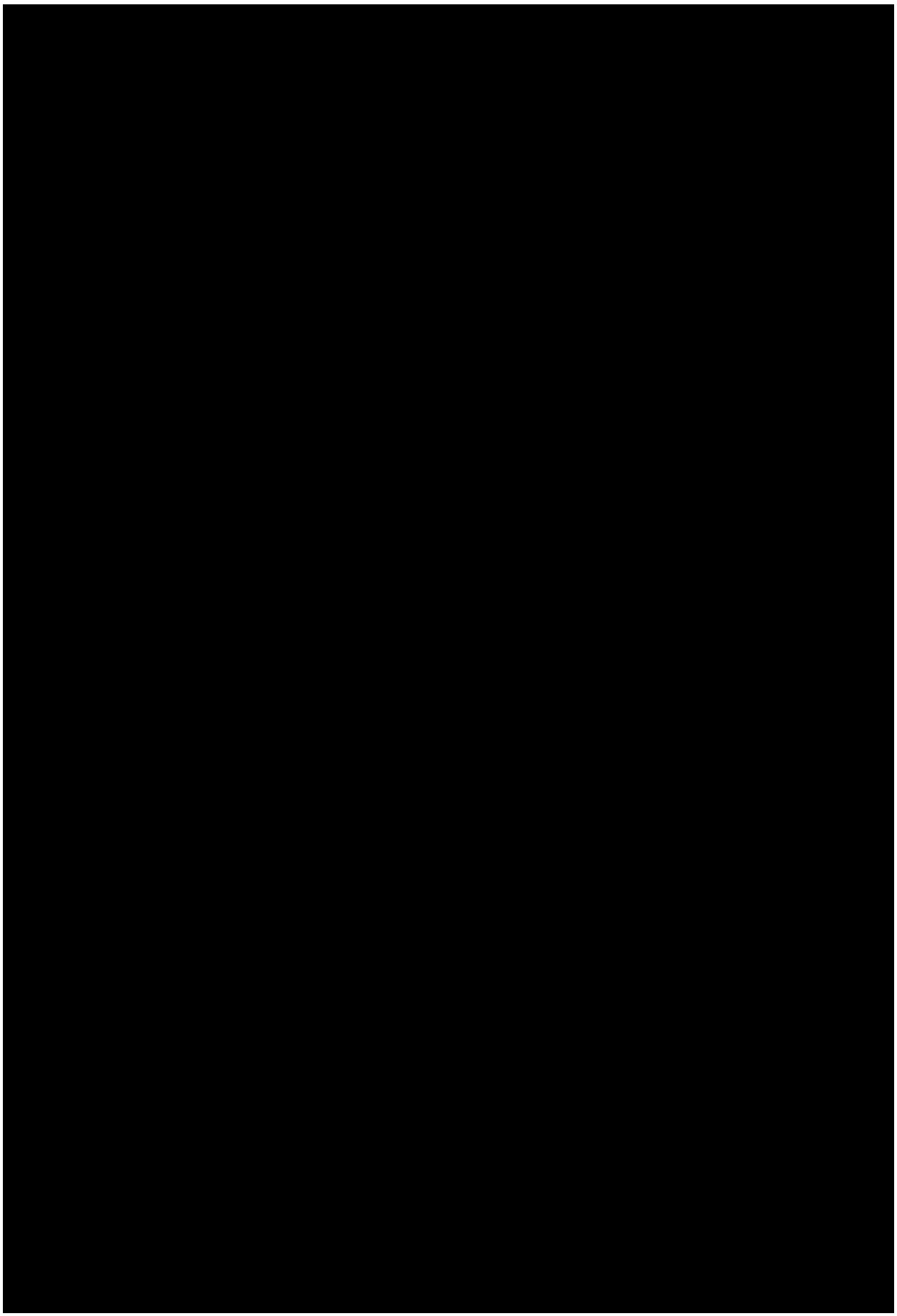


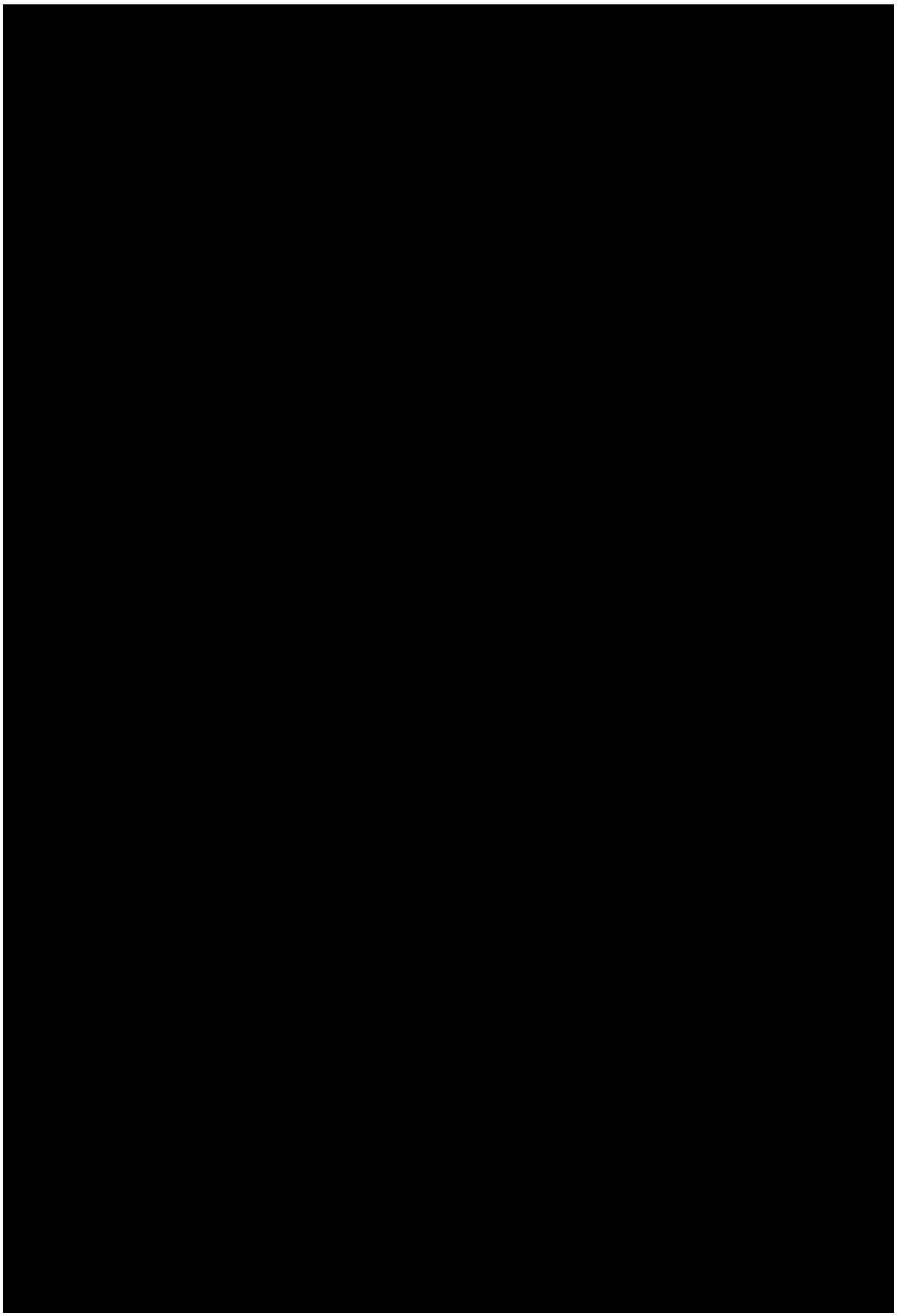


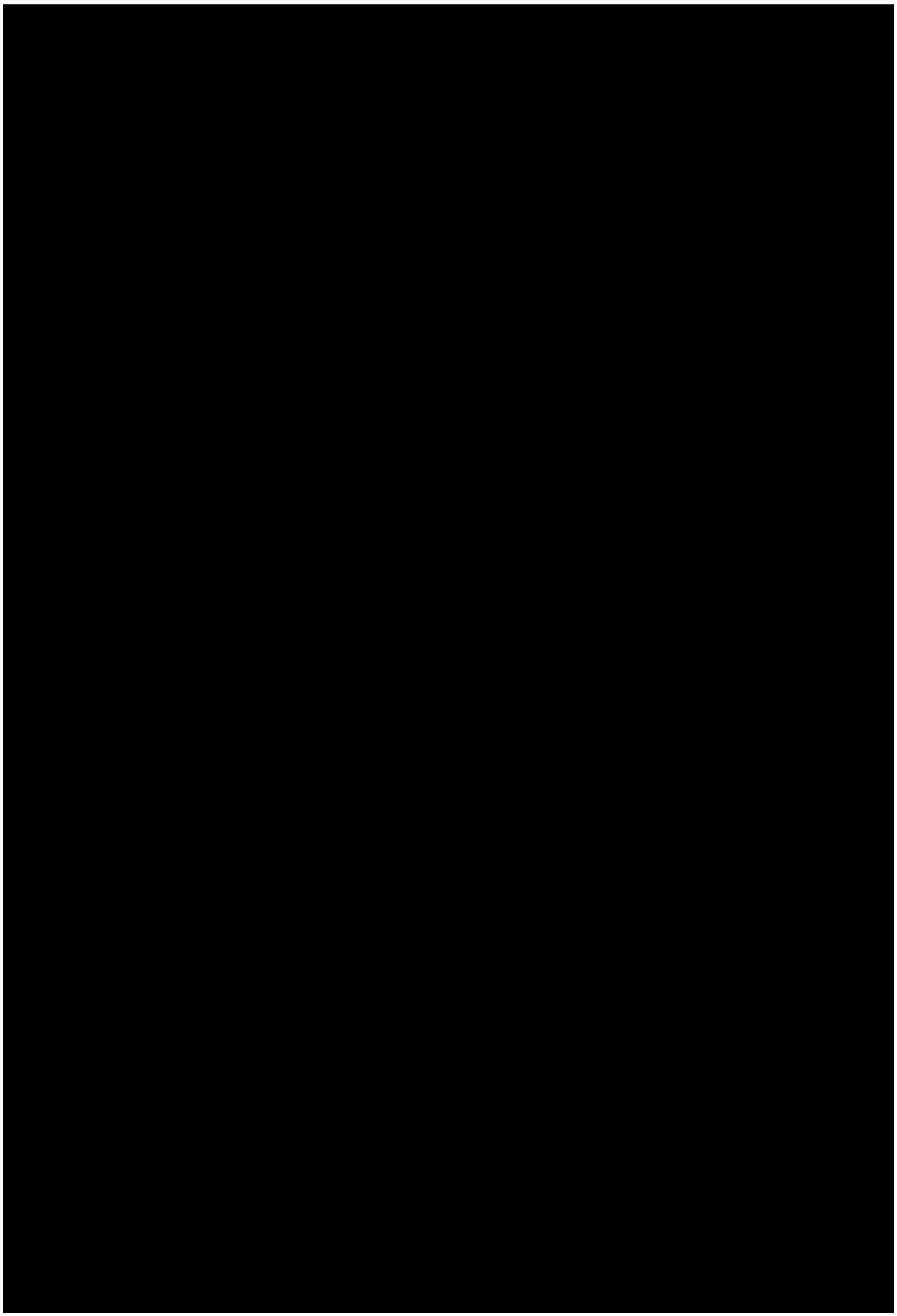


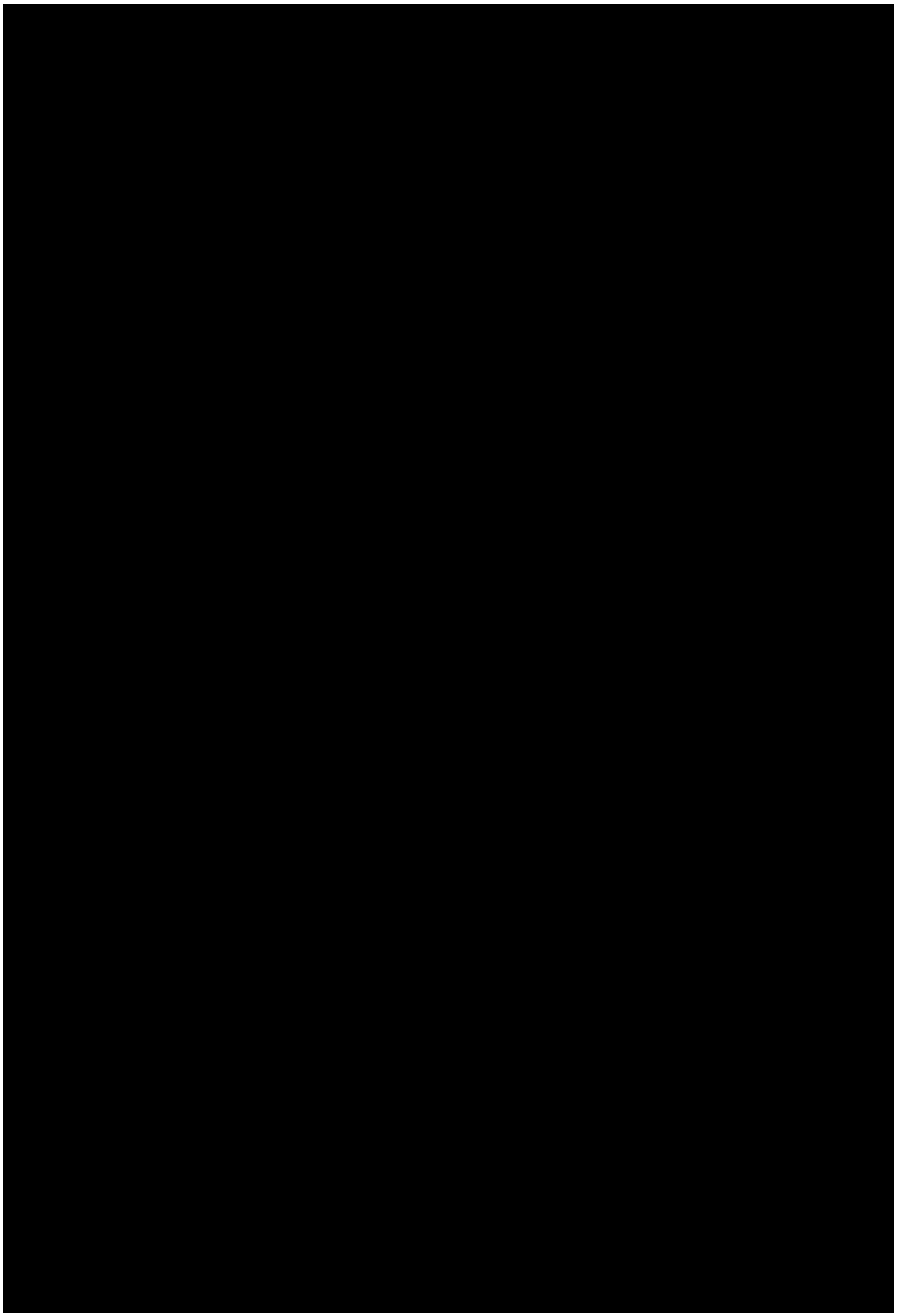






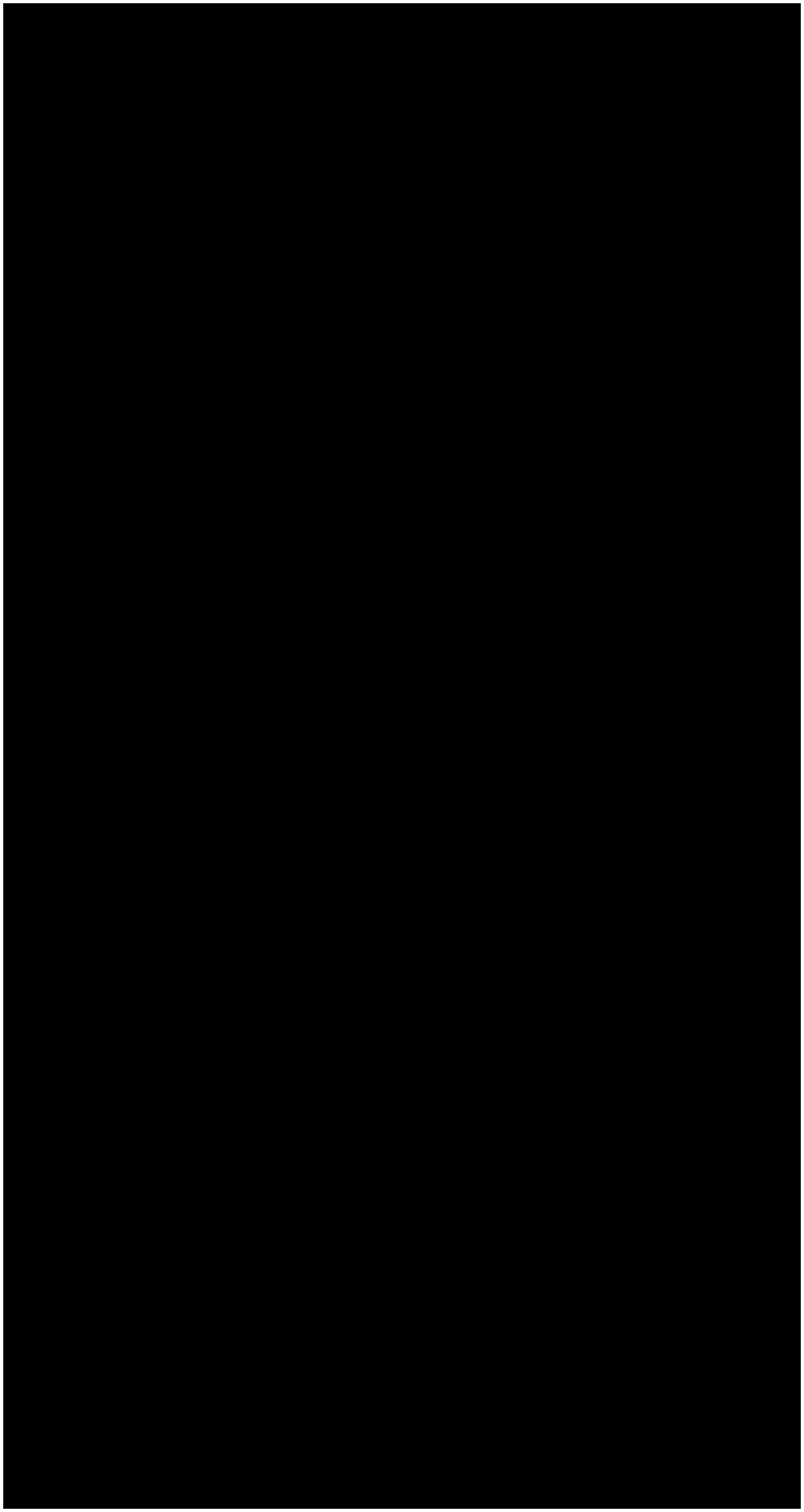


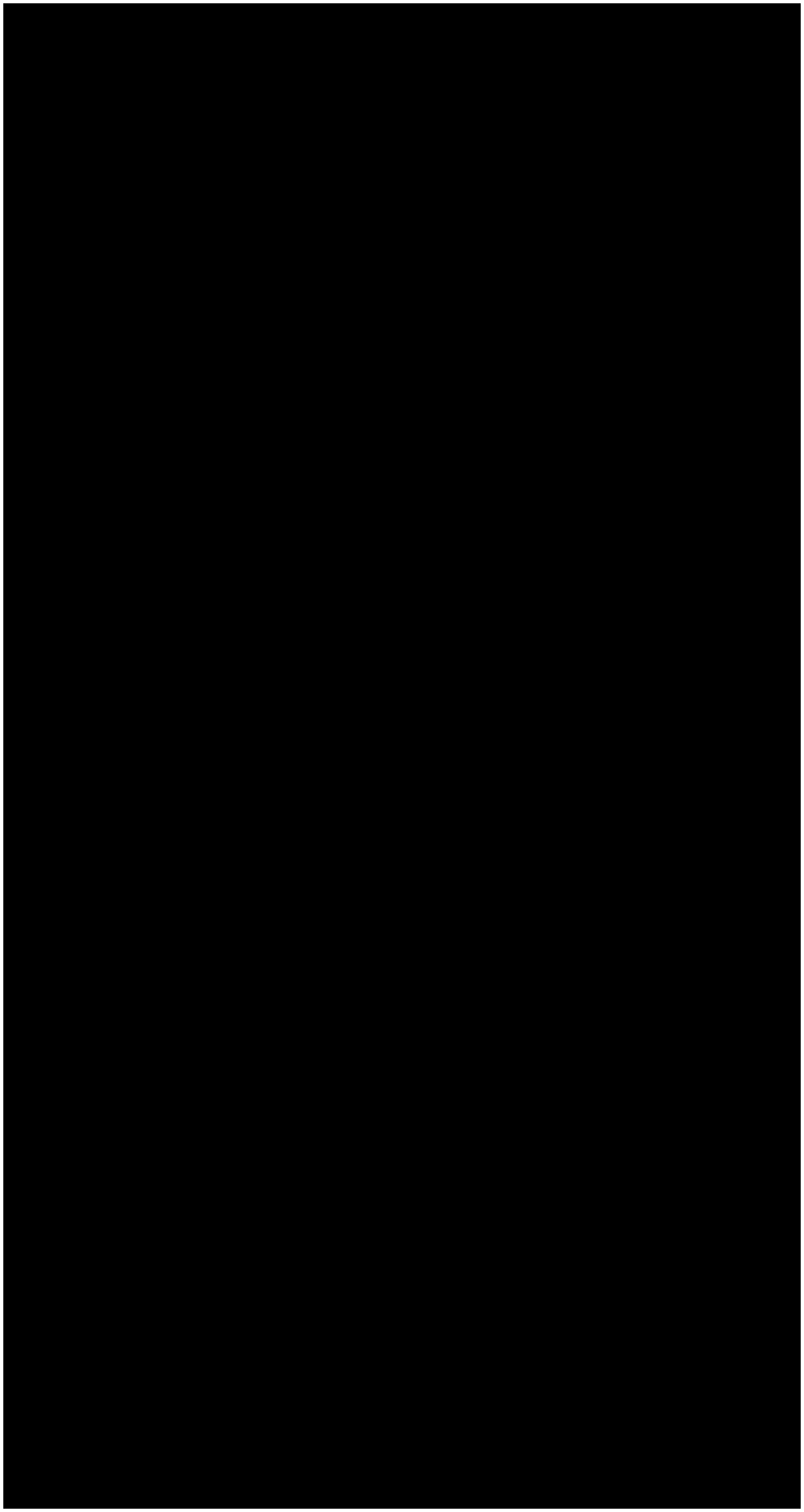


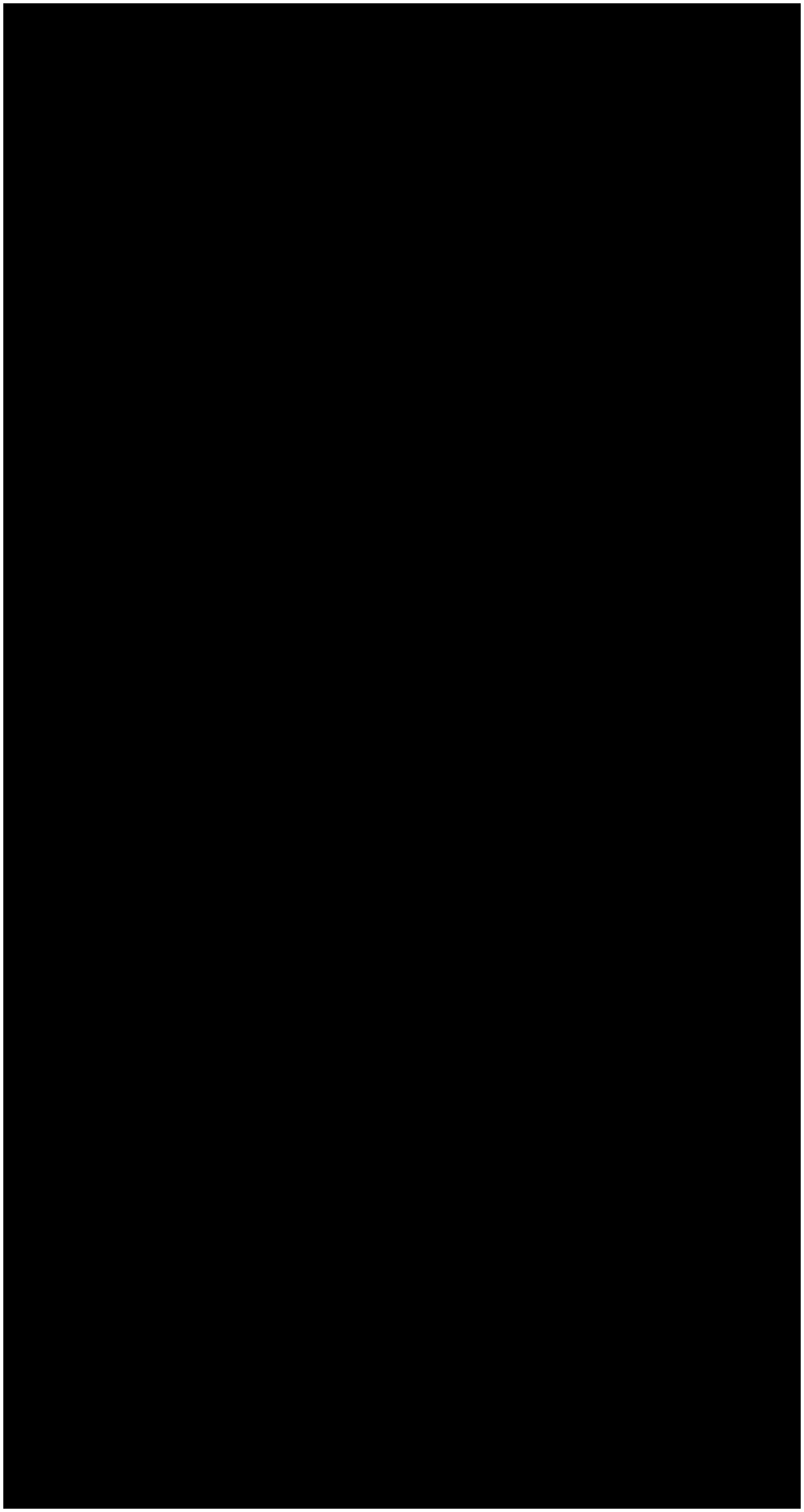


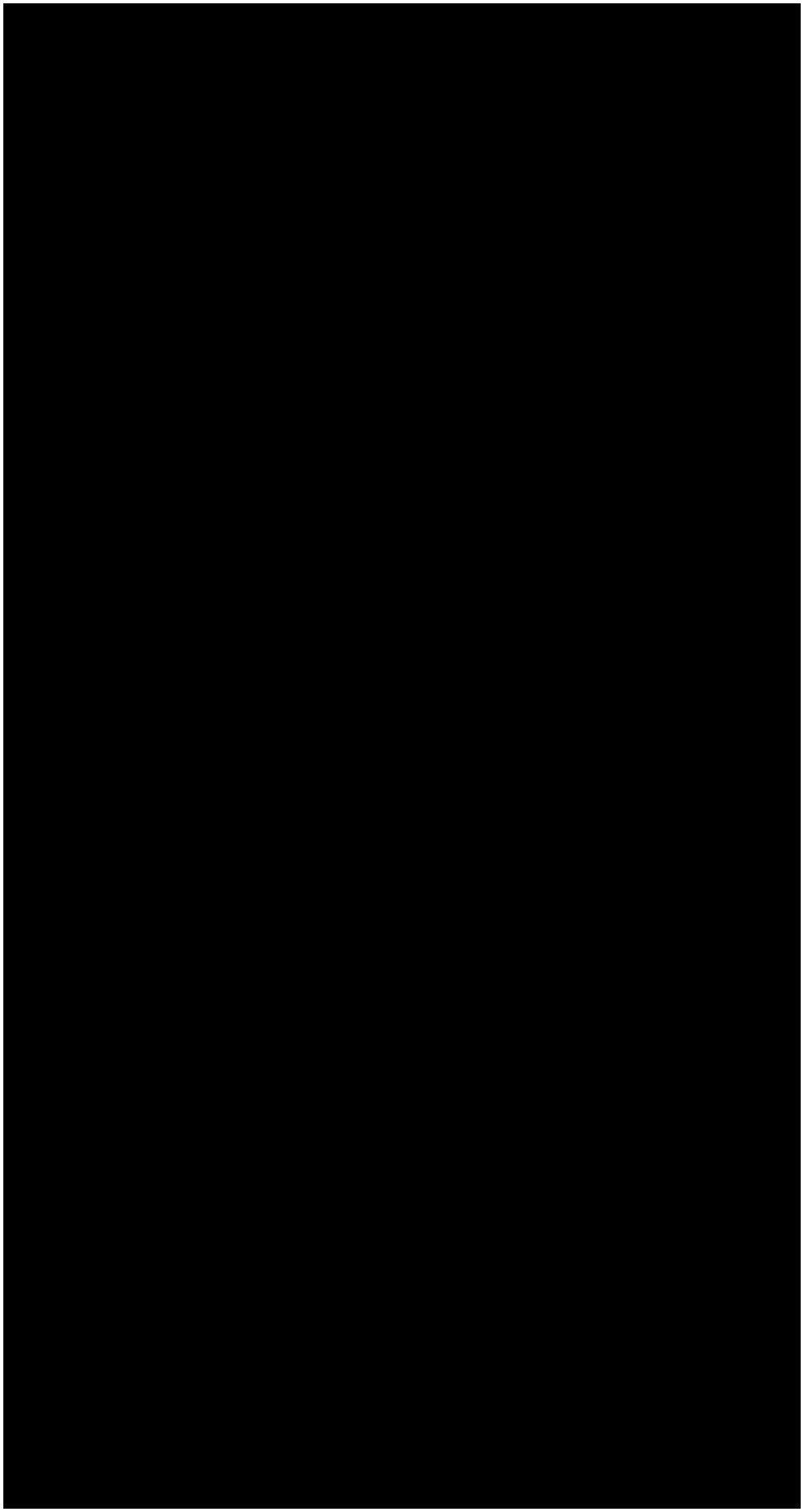


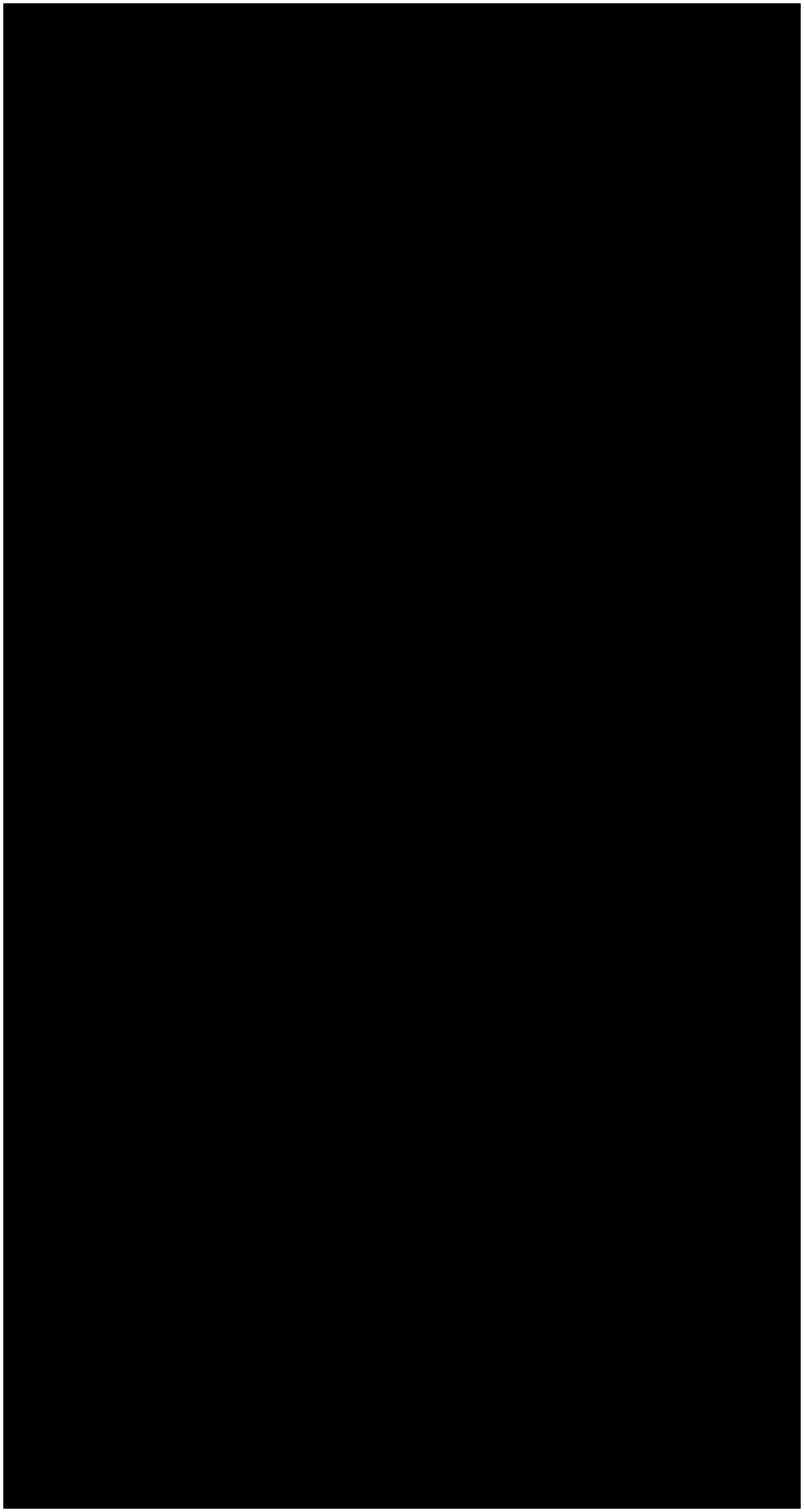
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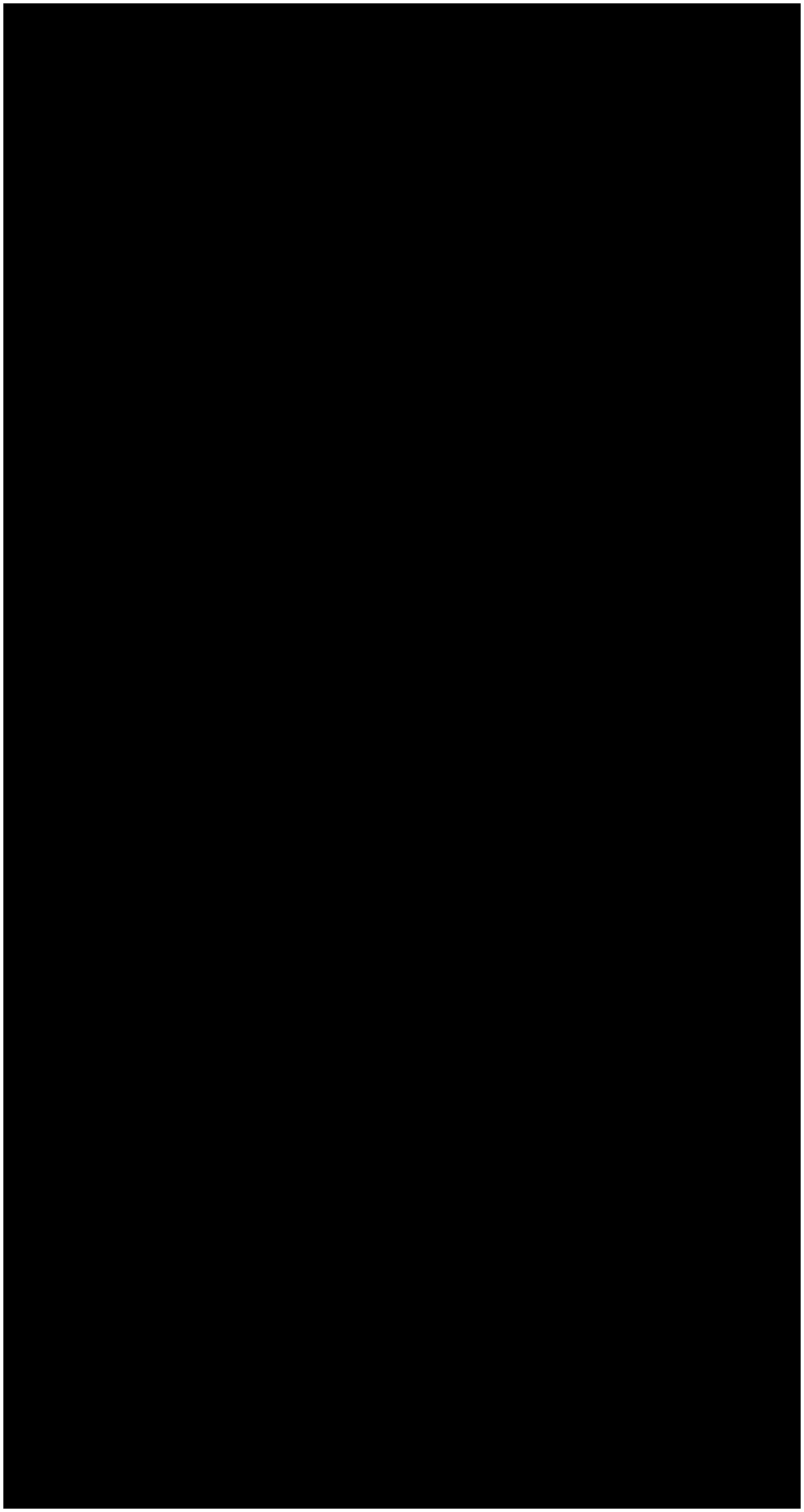


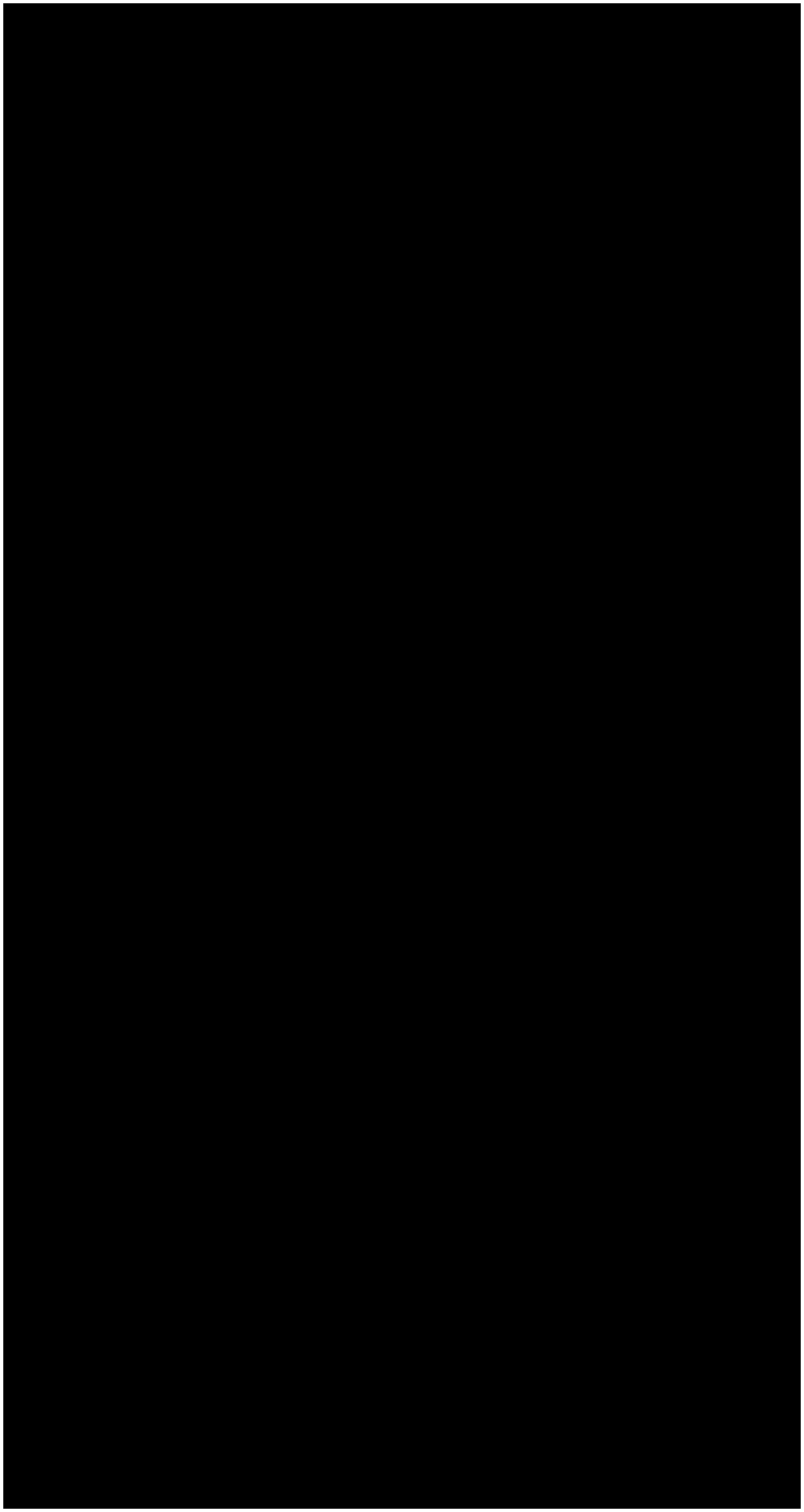


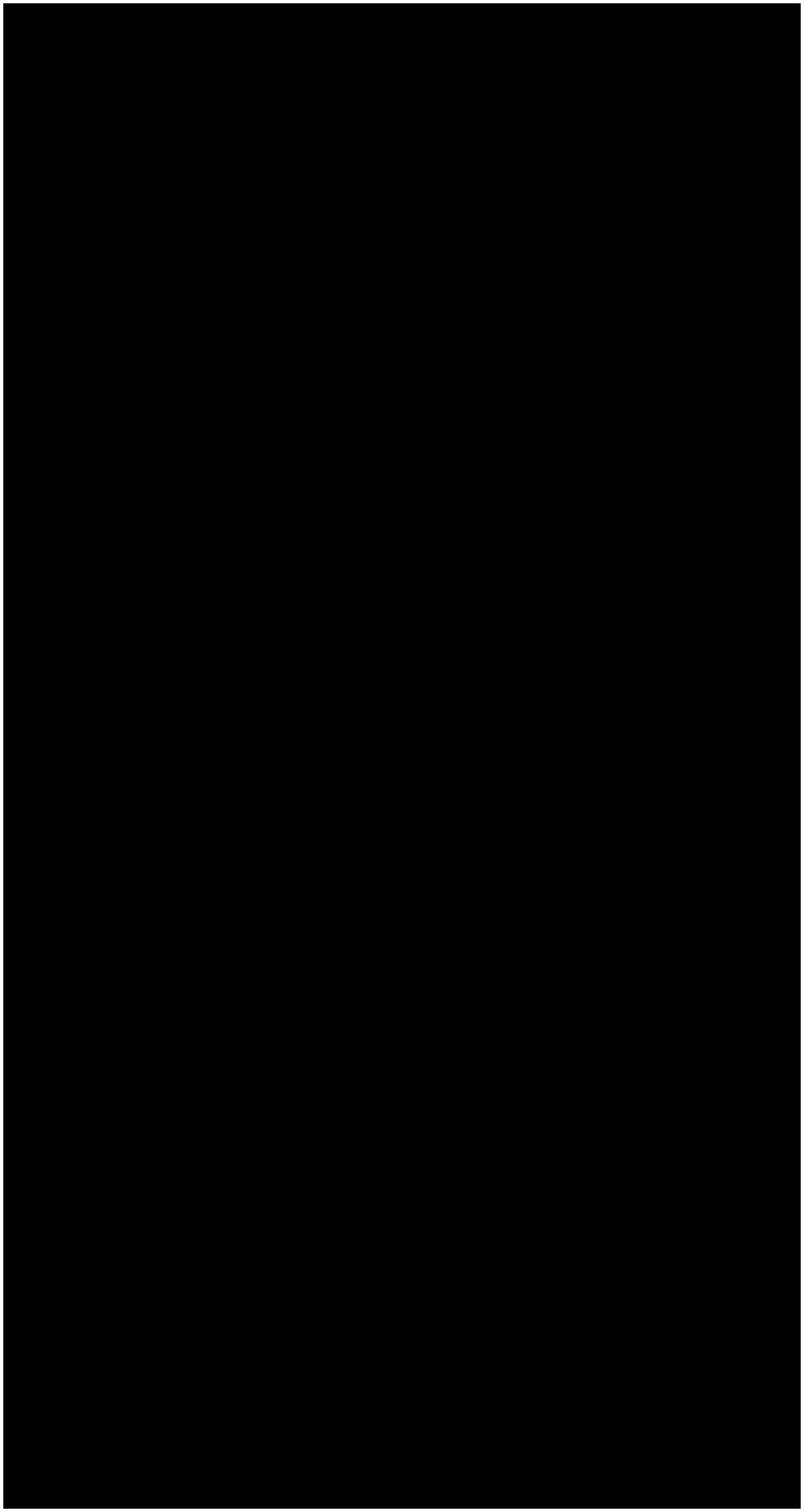


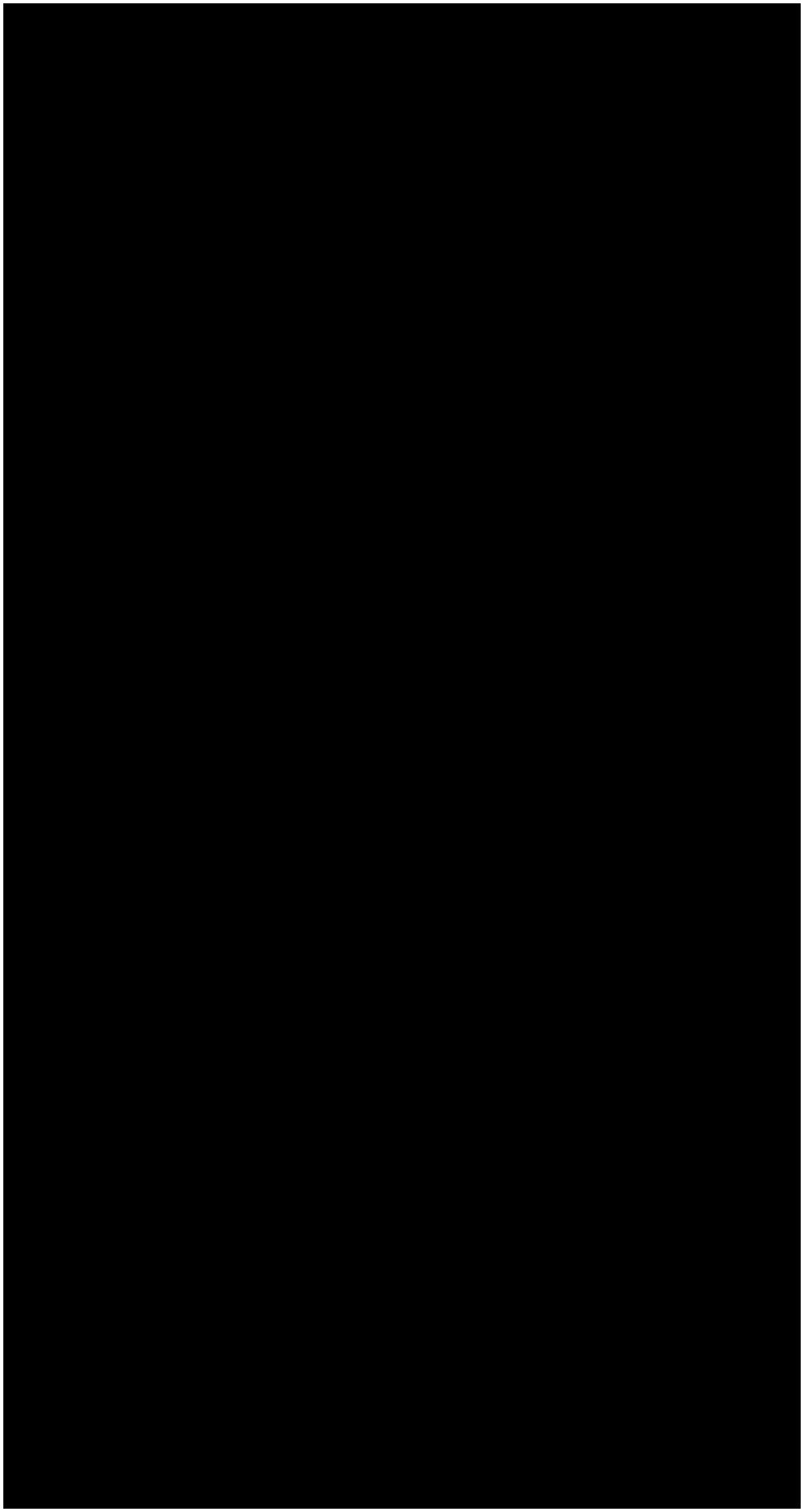


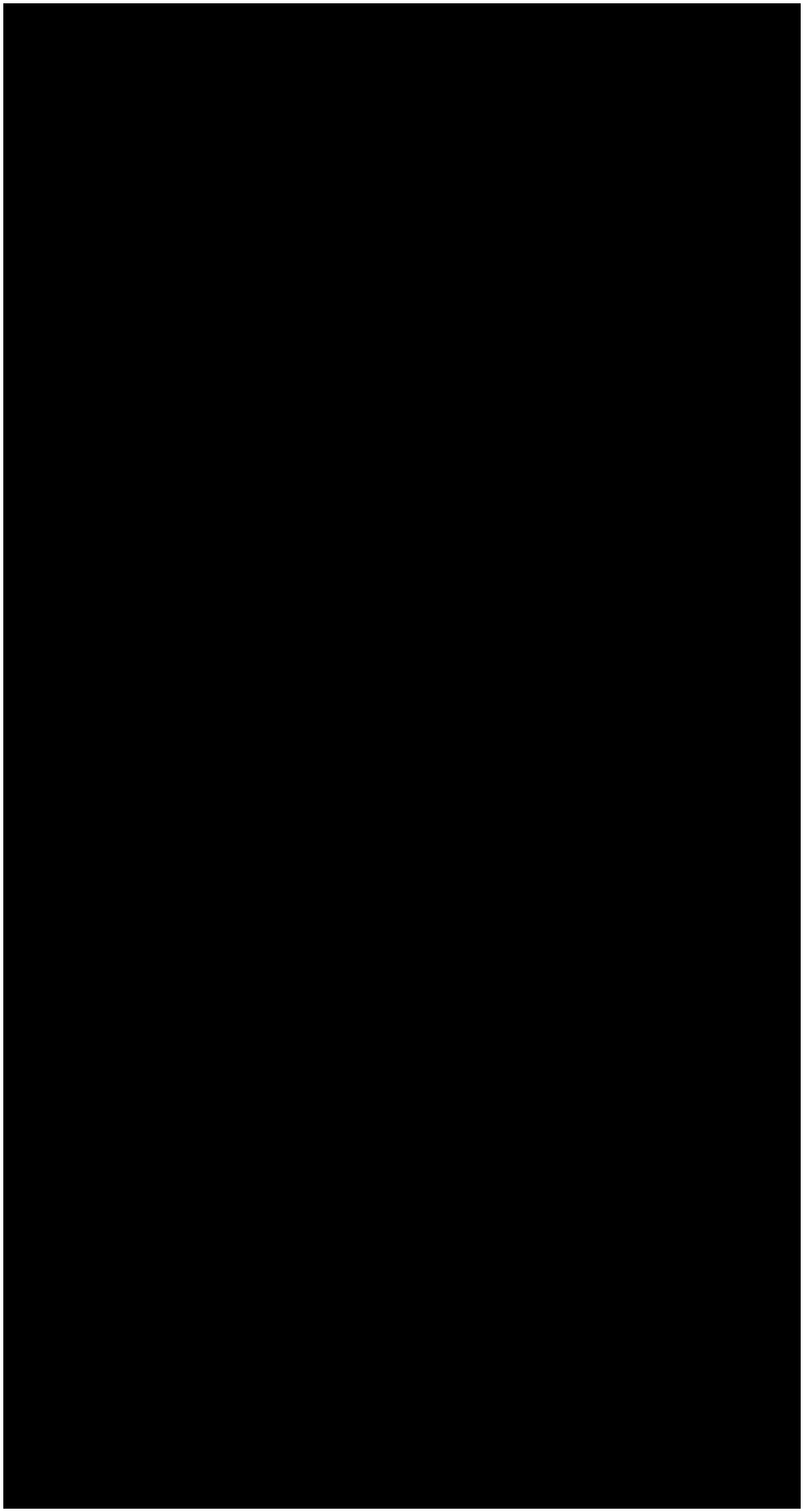


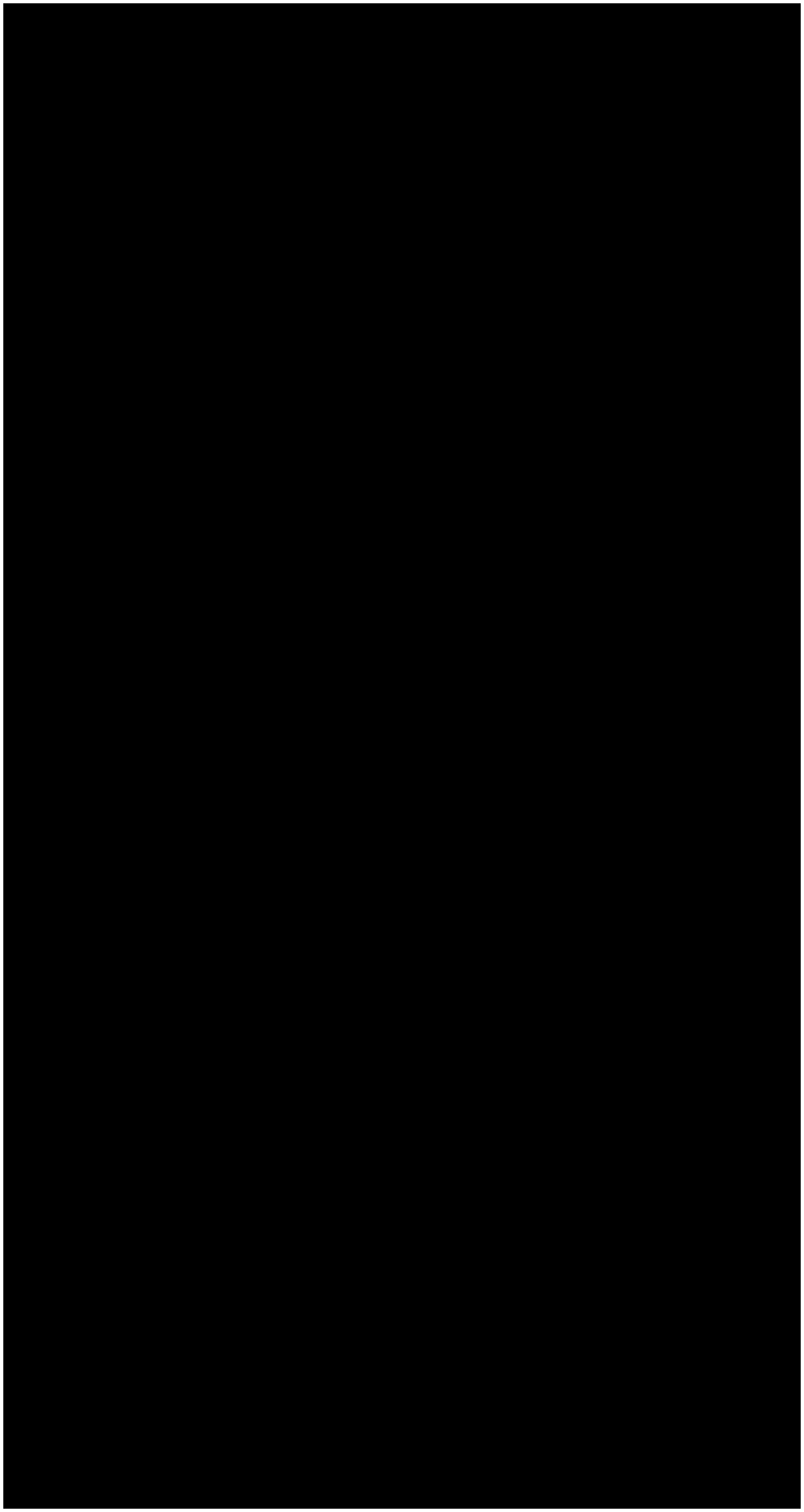


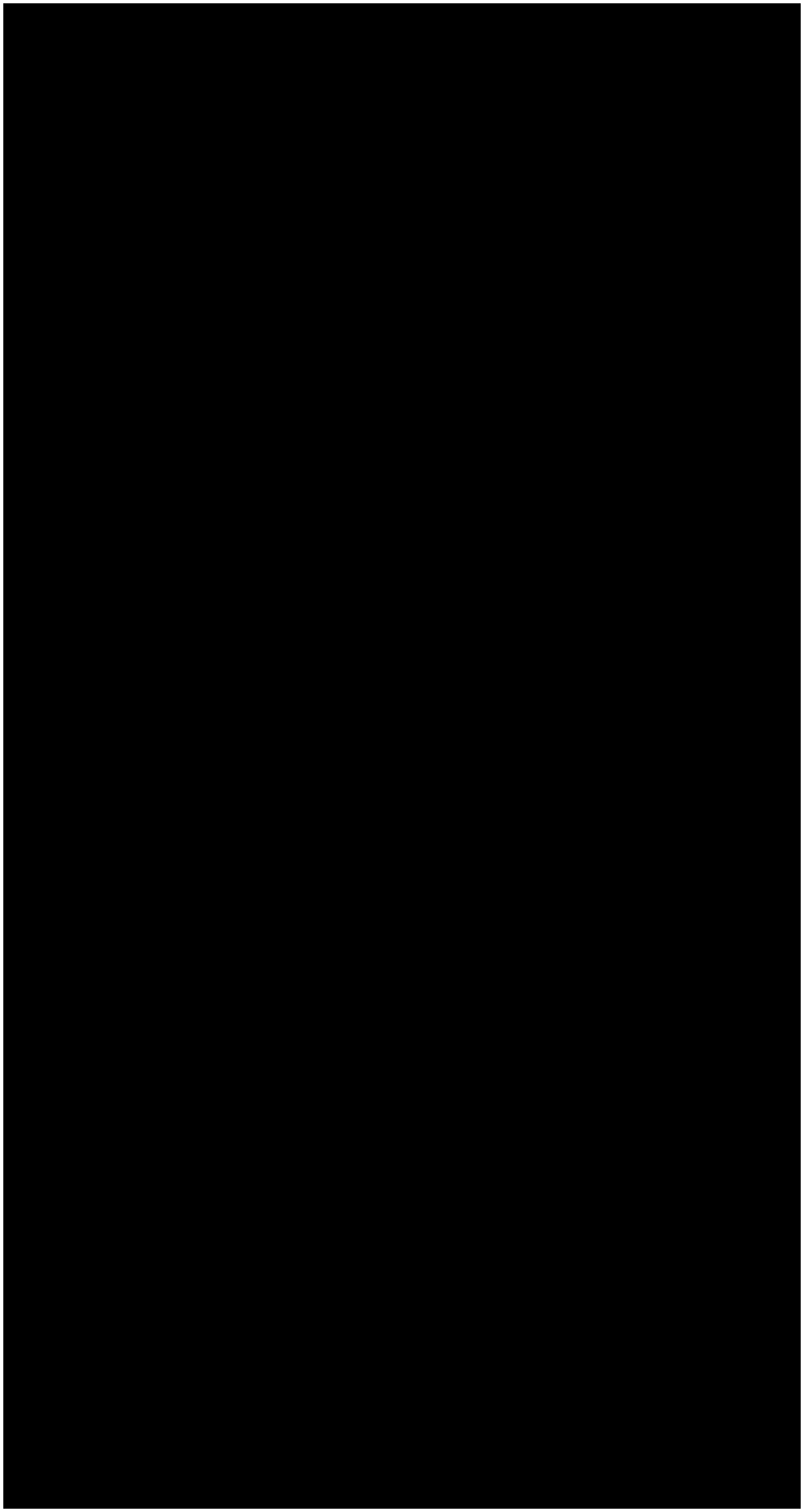


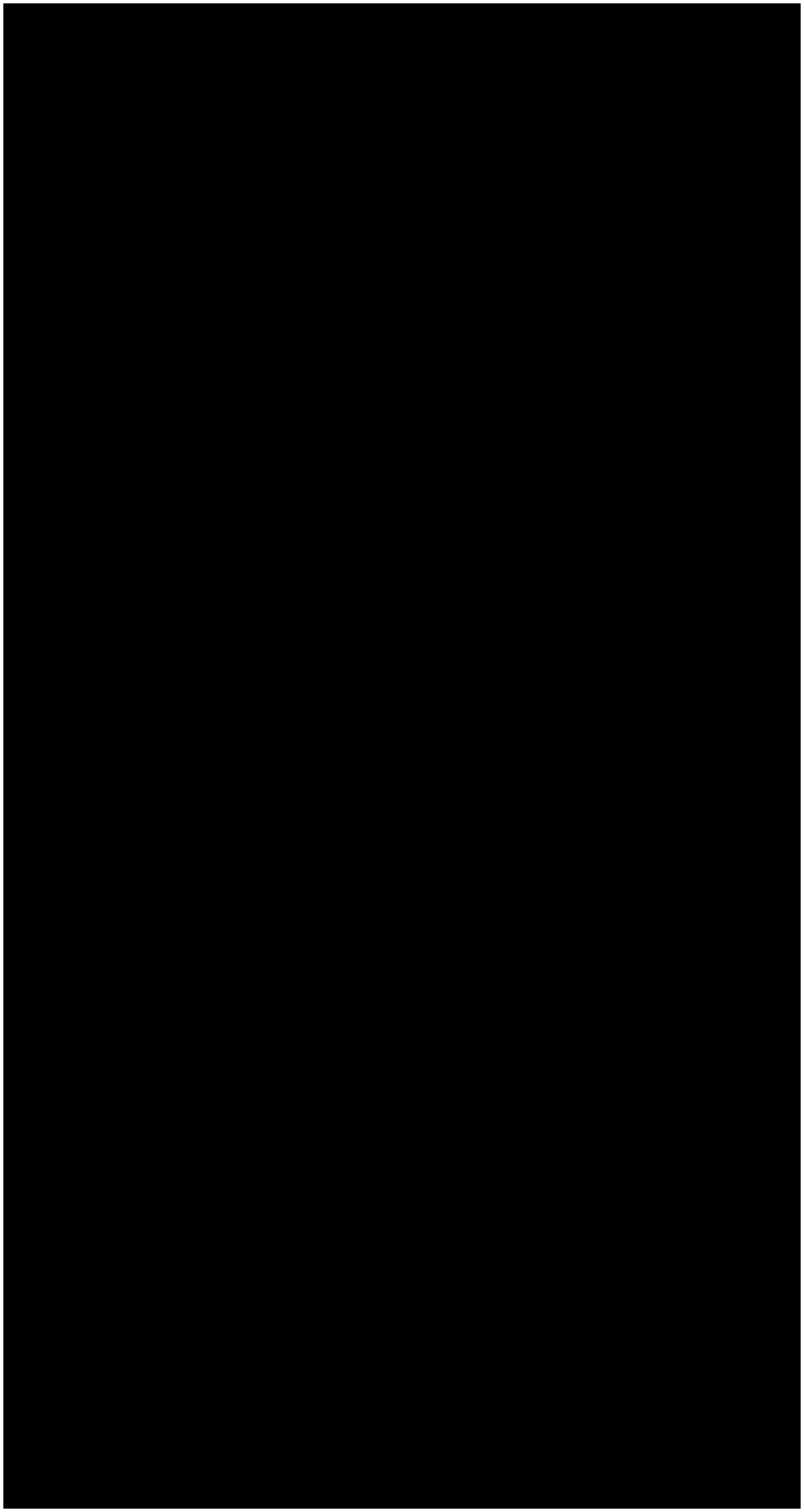


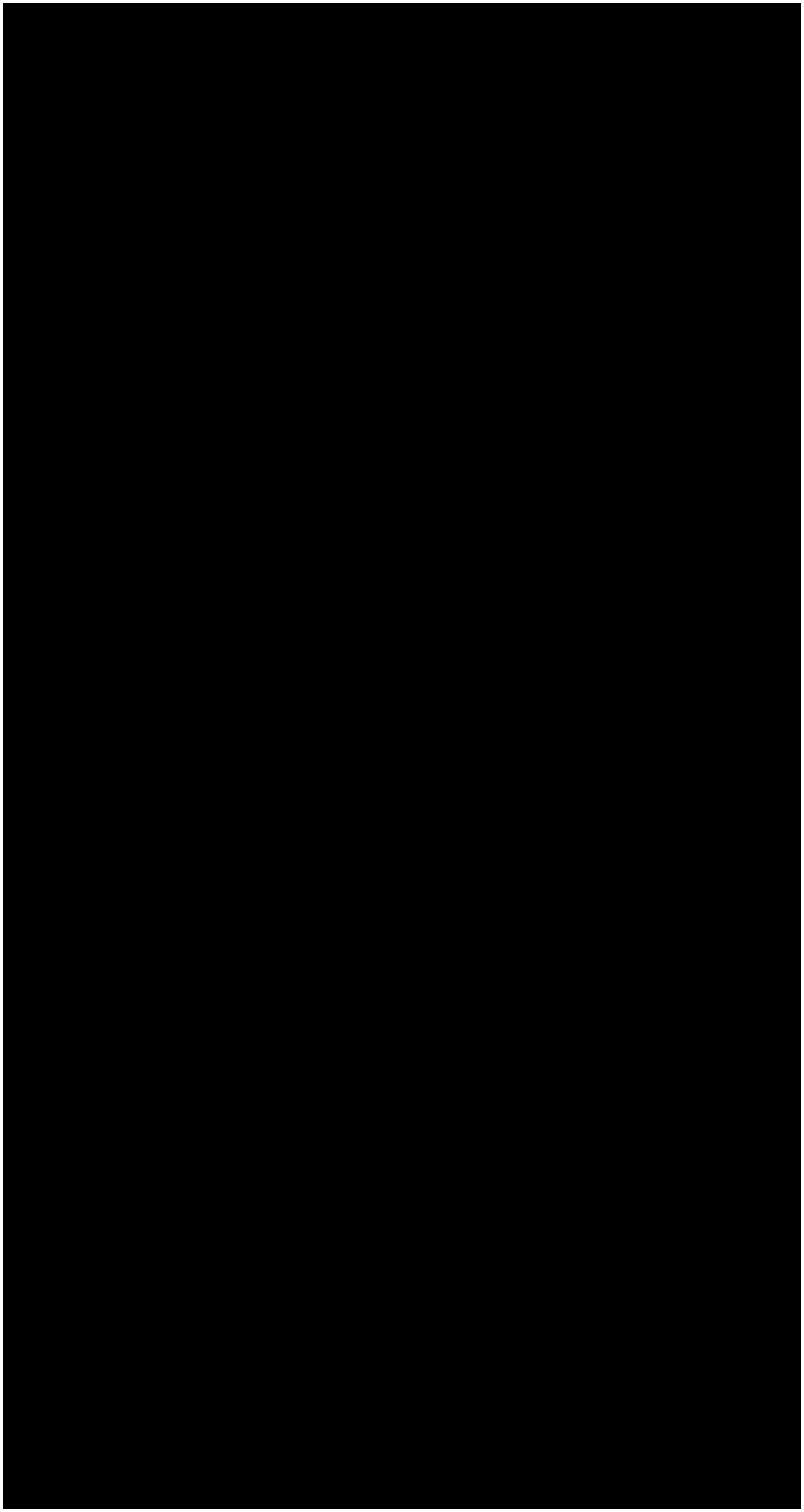


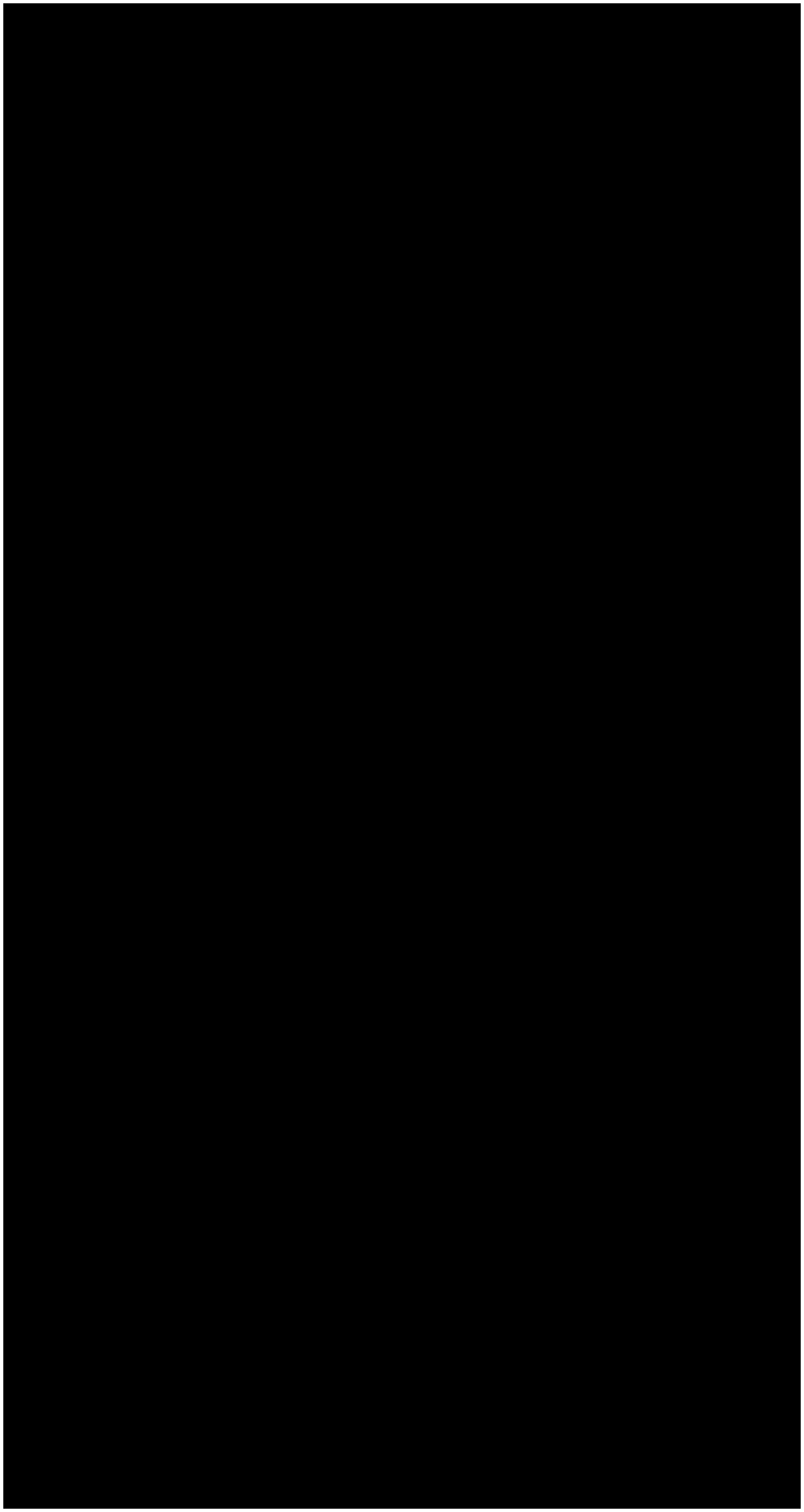


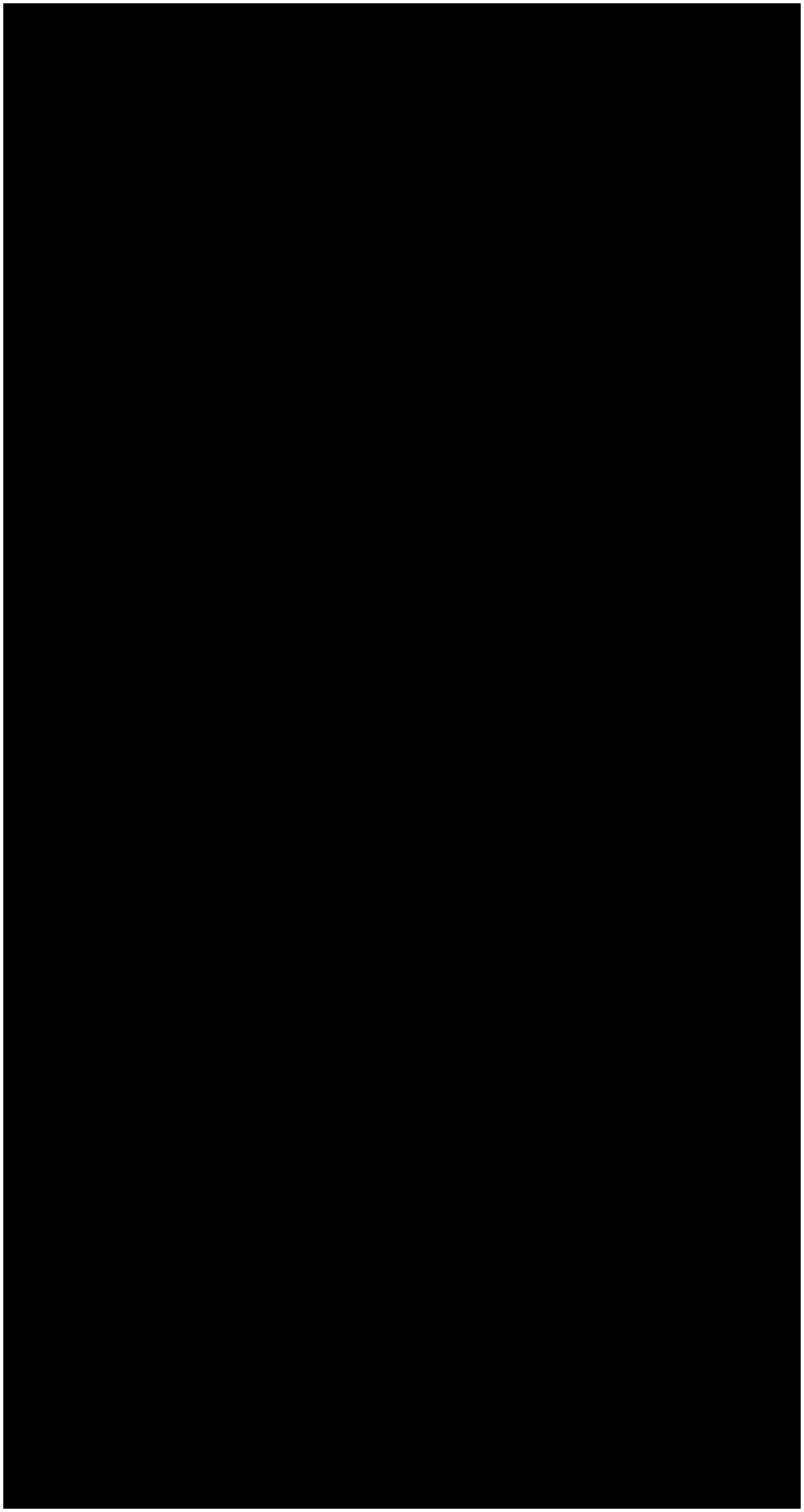


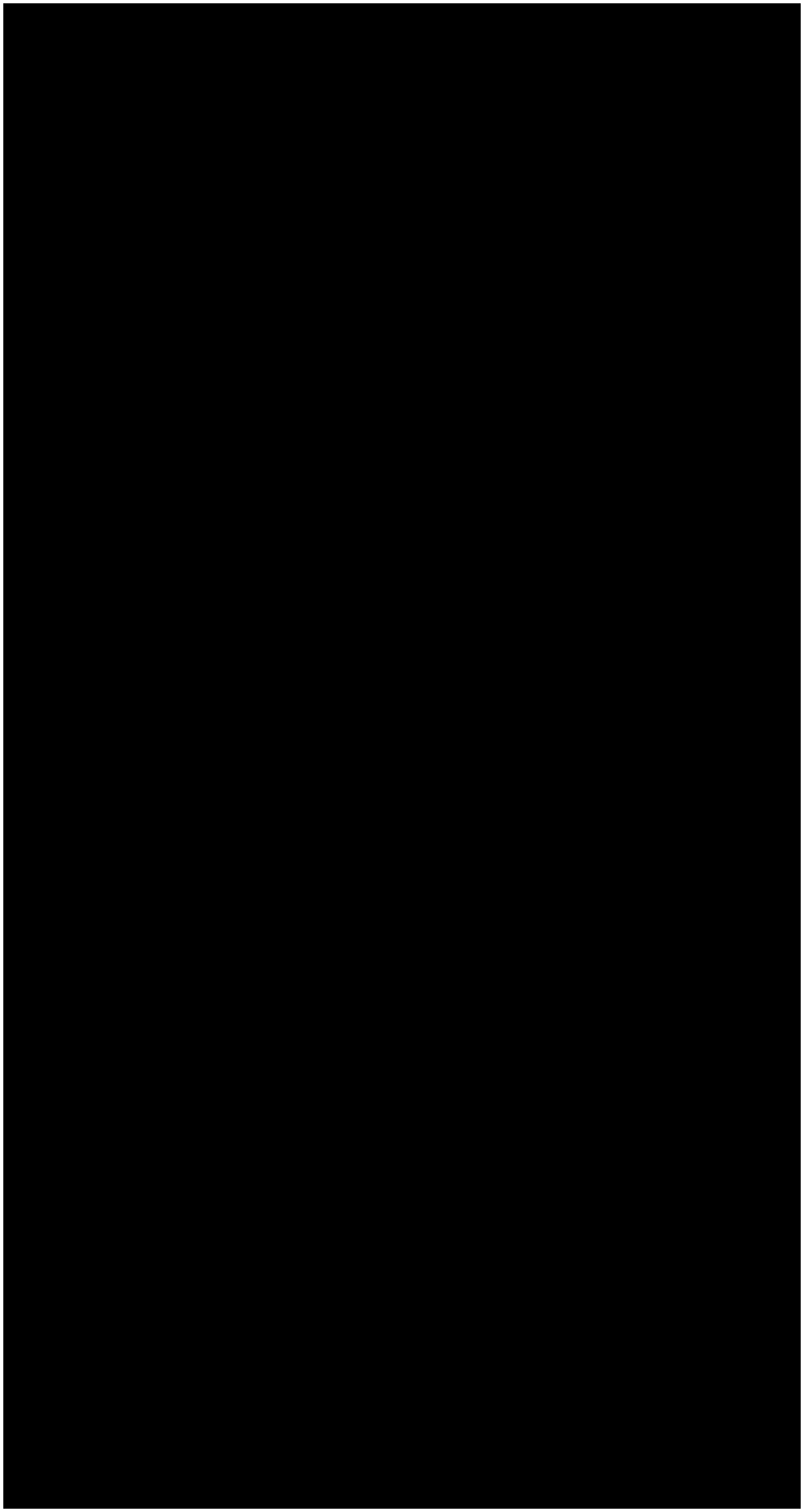


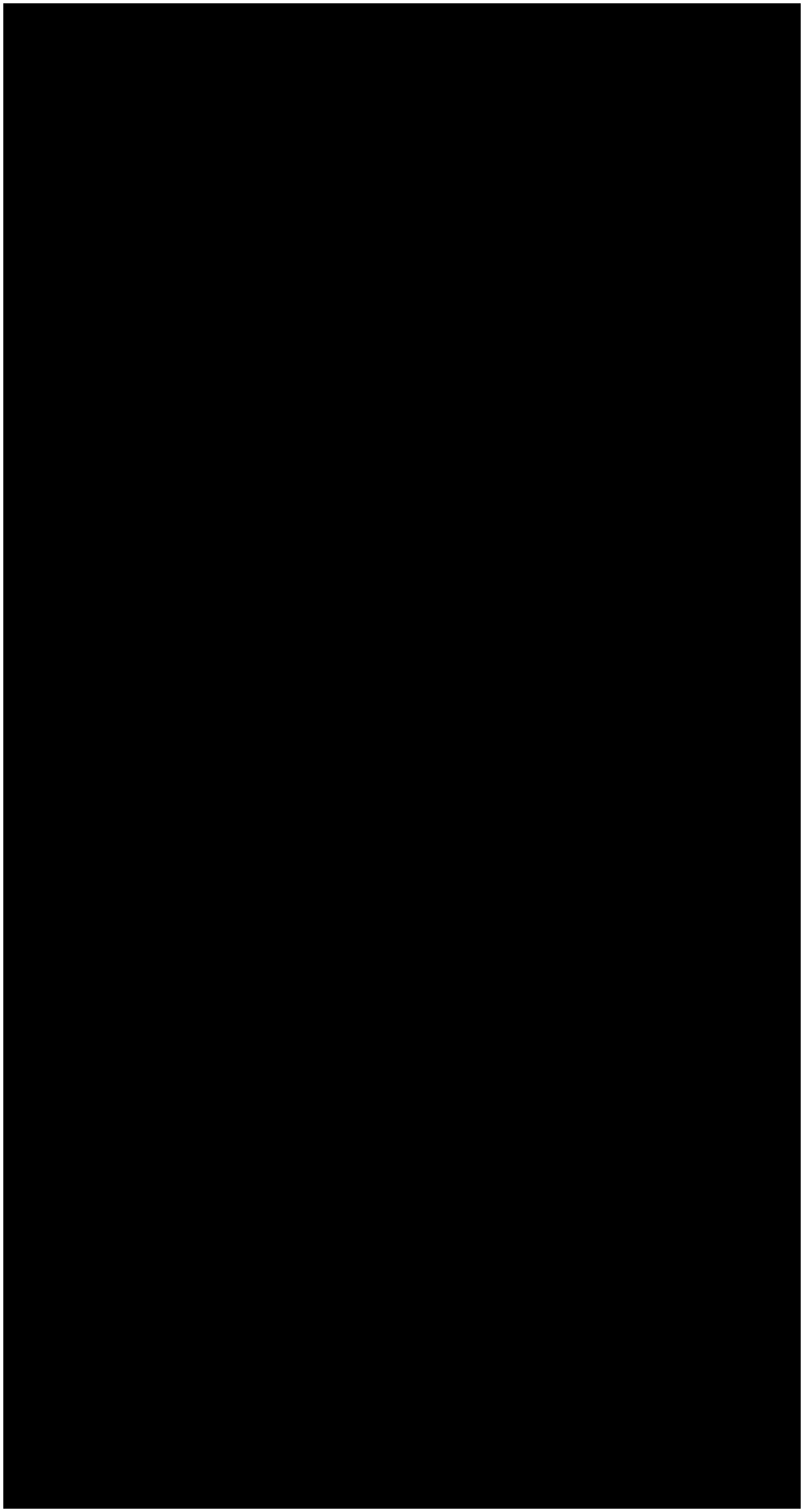














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
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Nov-25											
Dec-25											
Jan-26											
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Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
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Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						

2026-2027	[redacted]
2026-2027	
2026-2027	
2026-2027	
2026-2027	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
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2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



PORTFOLIO

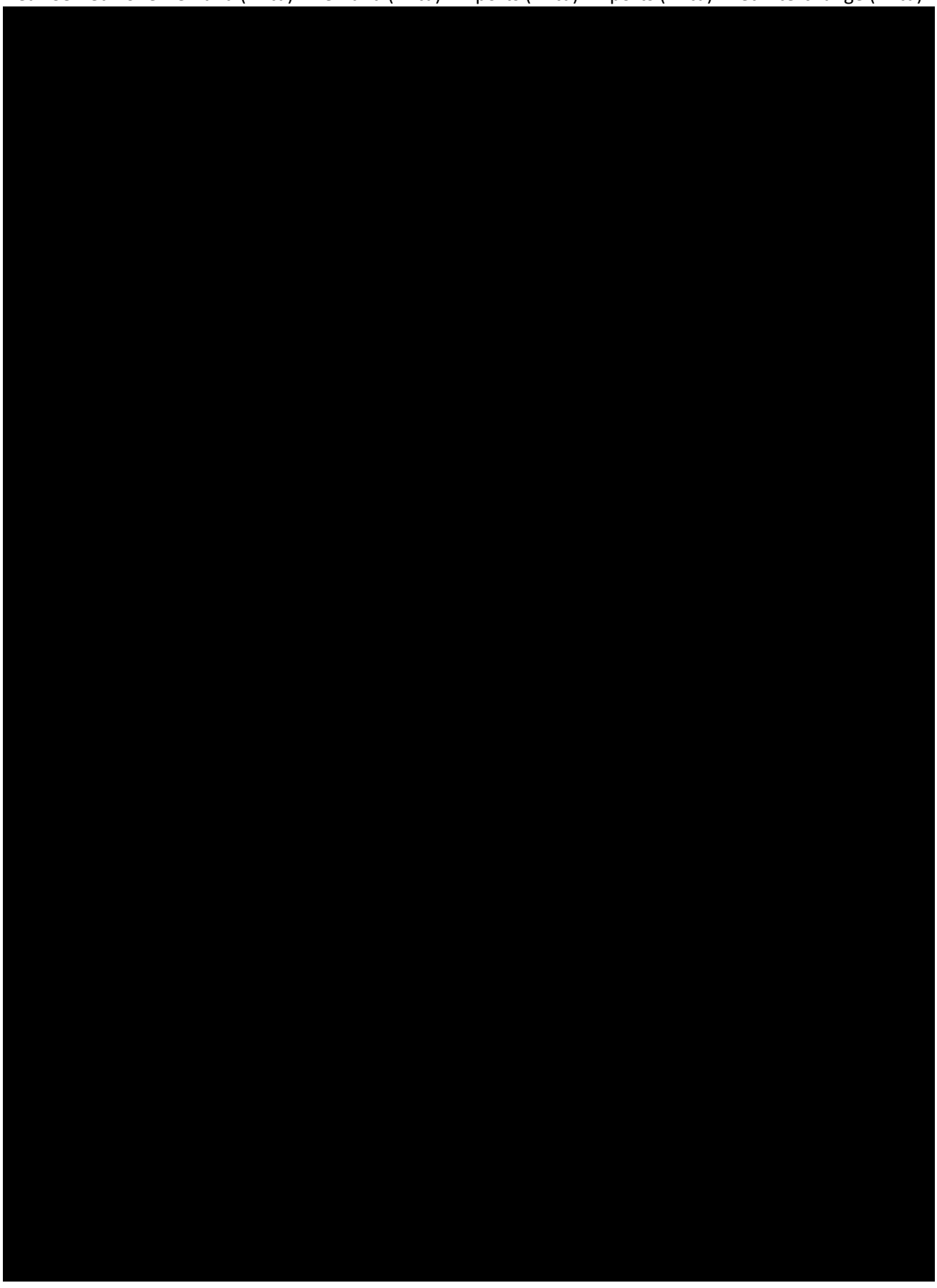
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





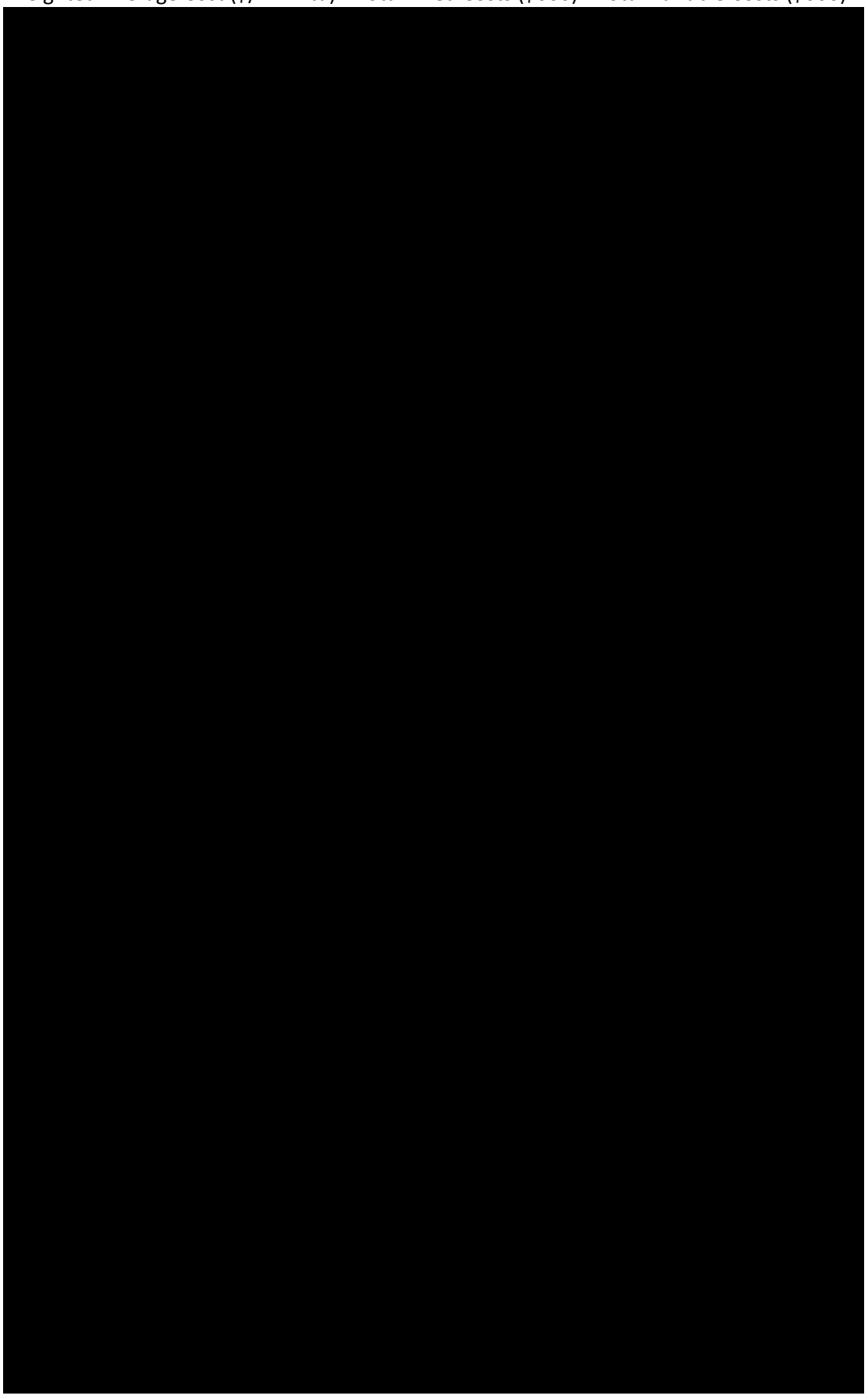
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

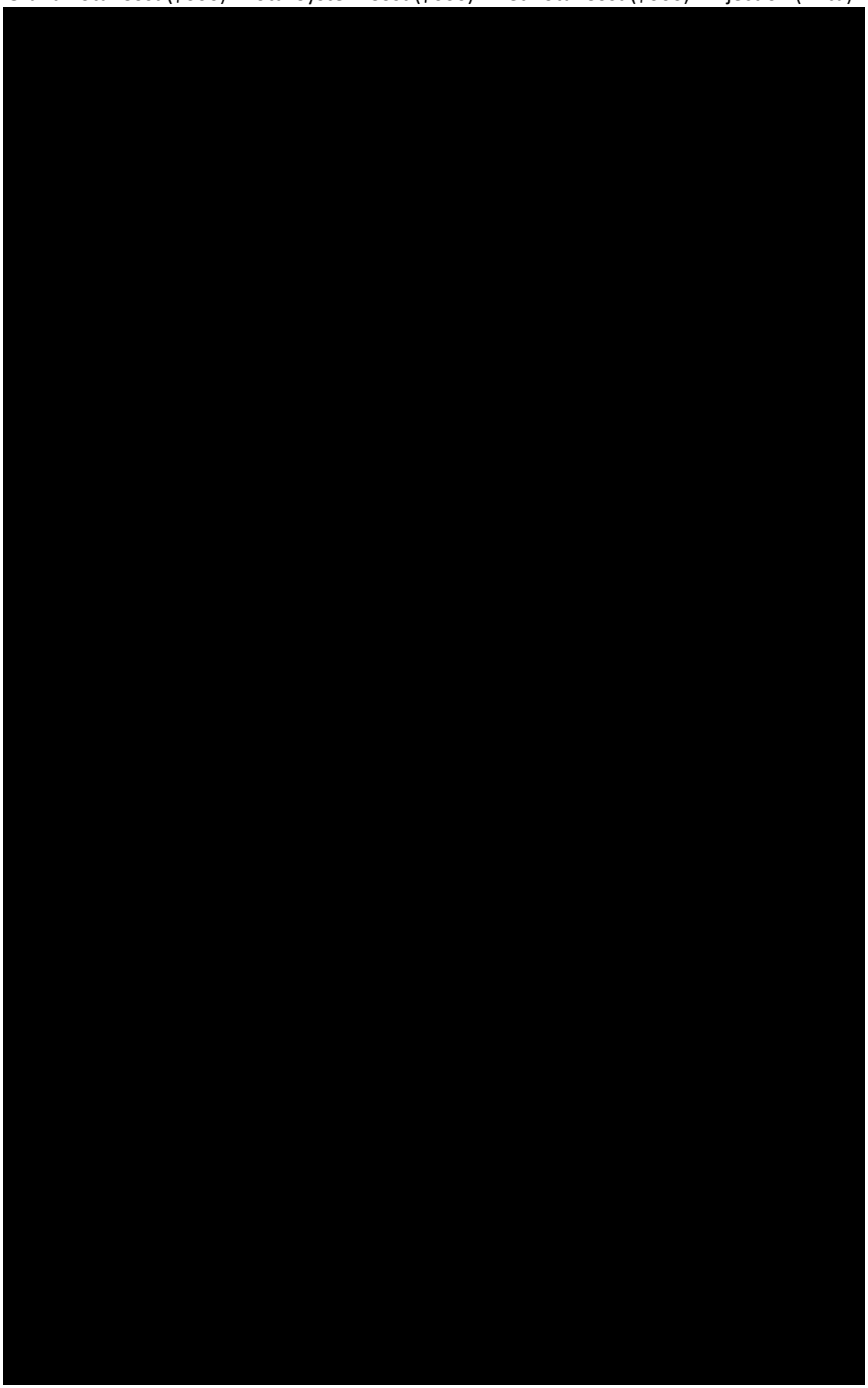


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

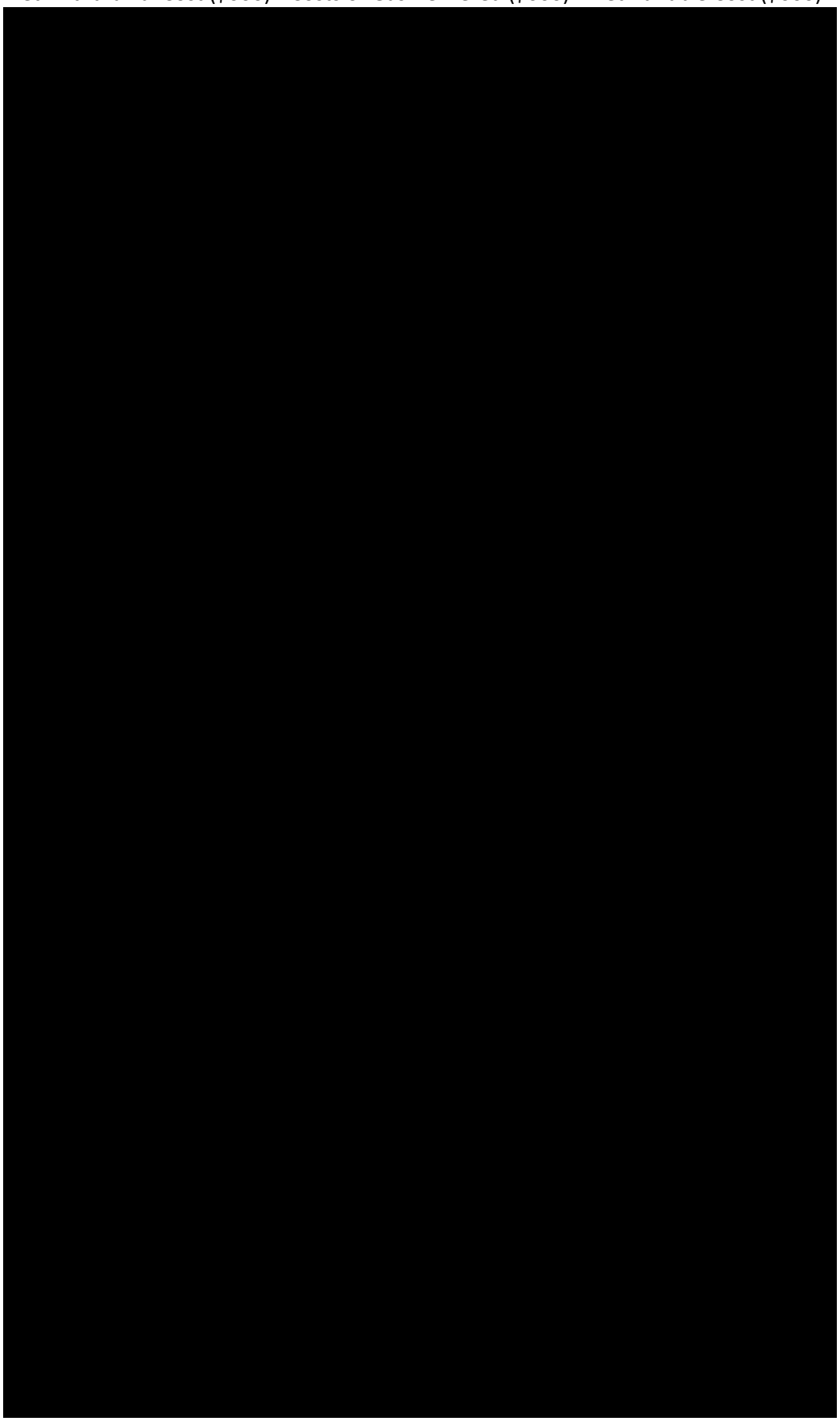




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

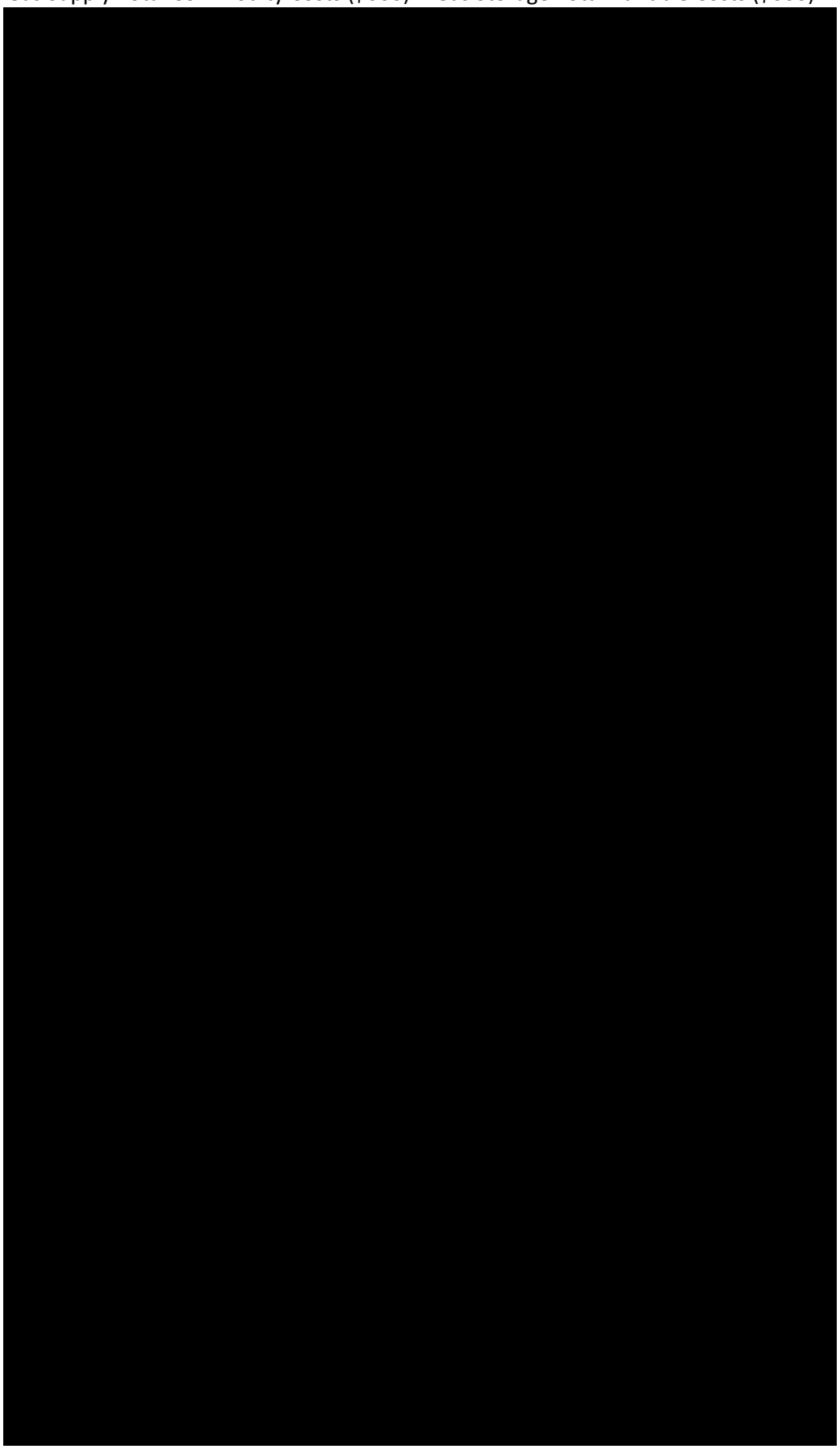




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

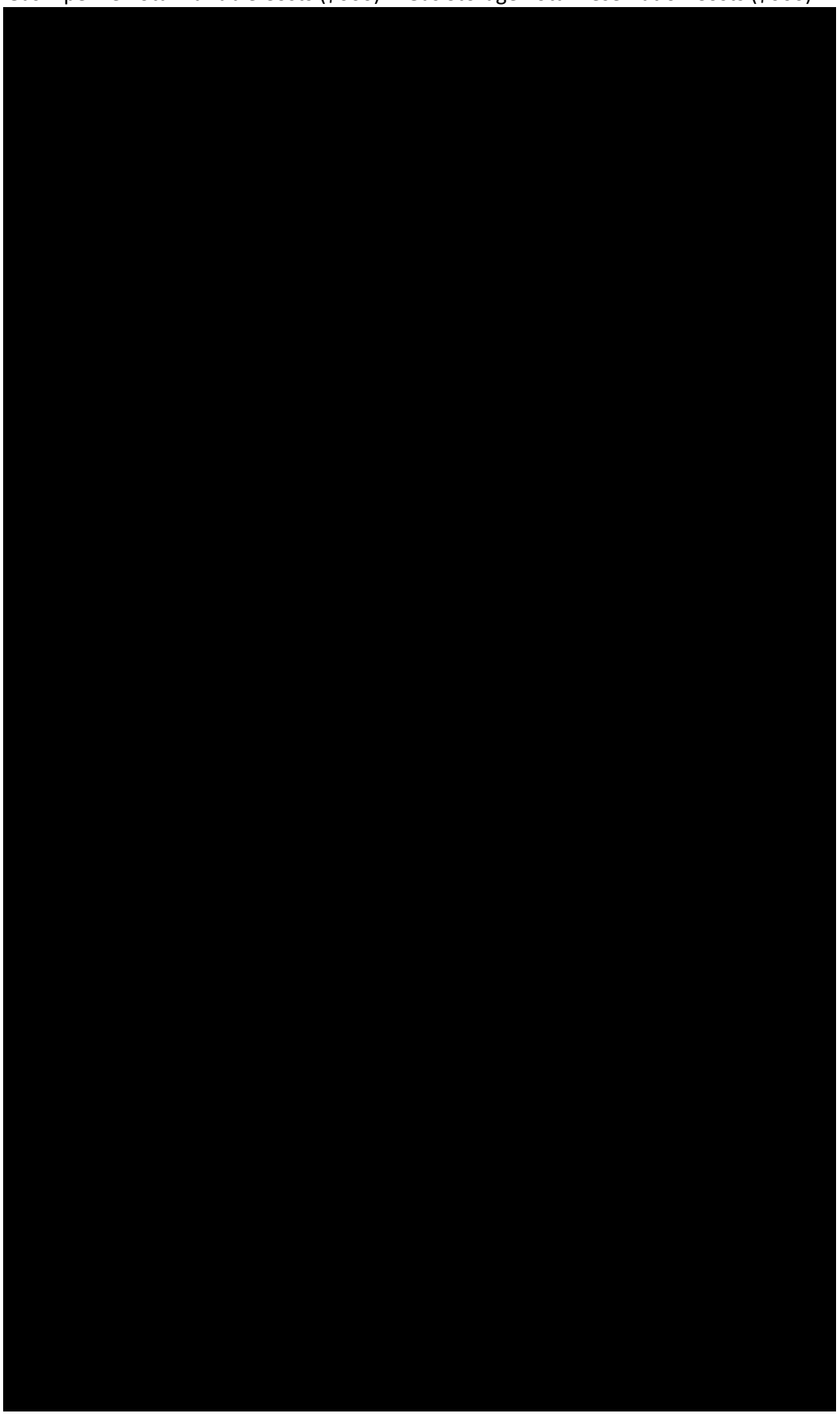


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



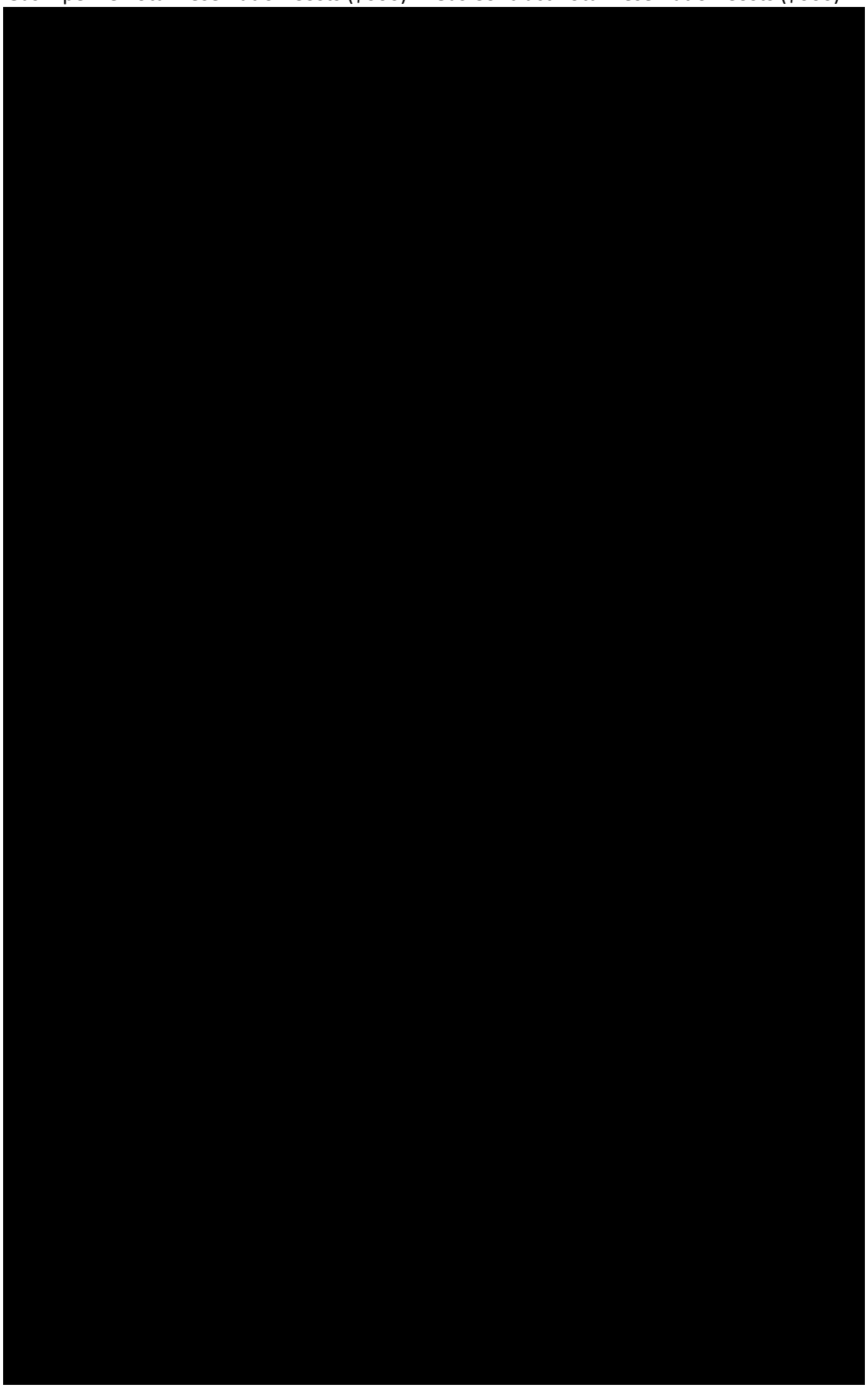


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



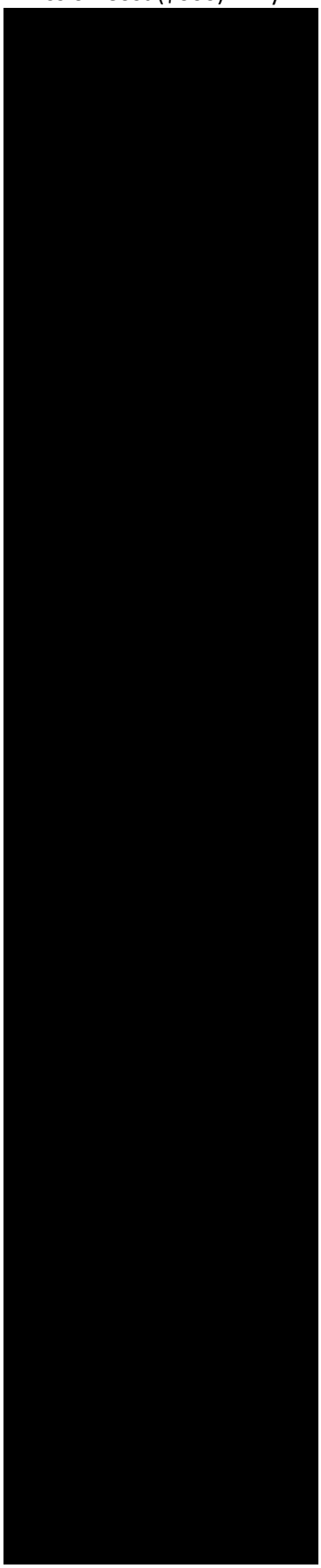


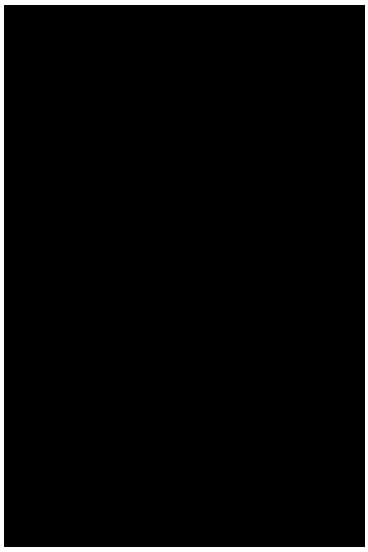
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



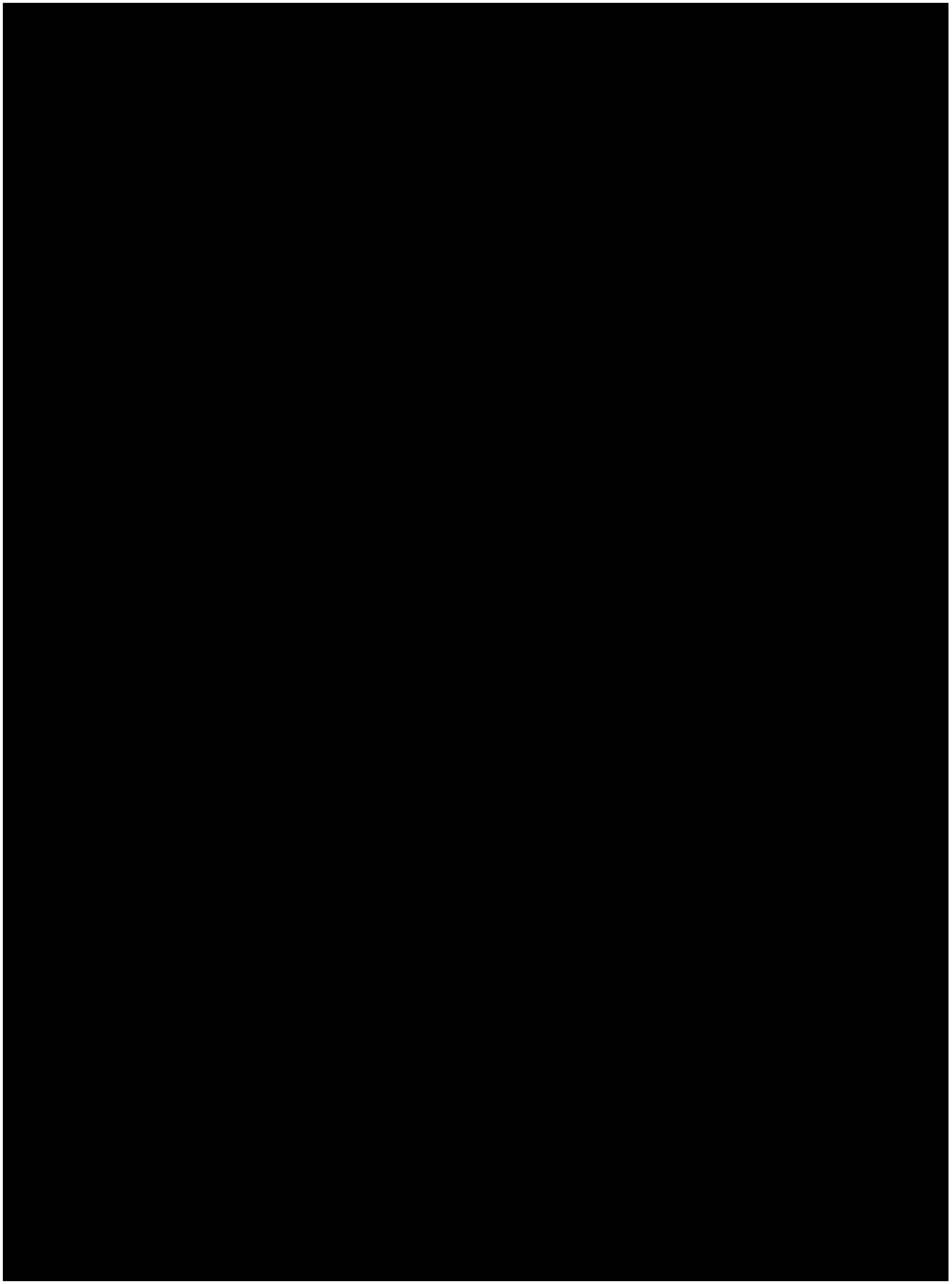


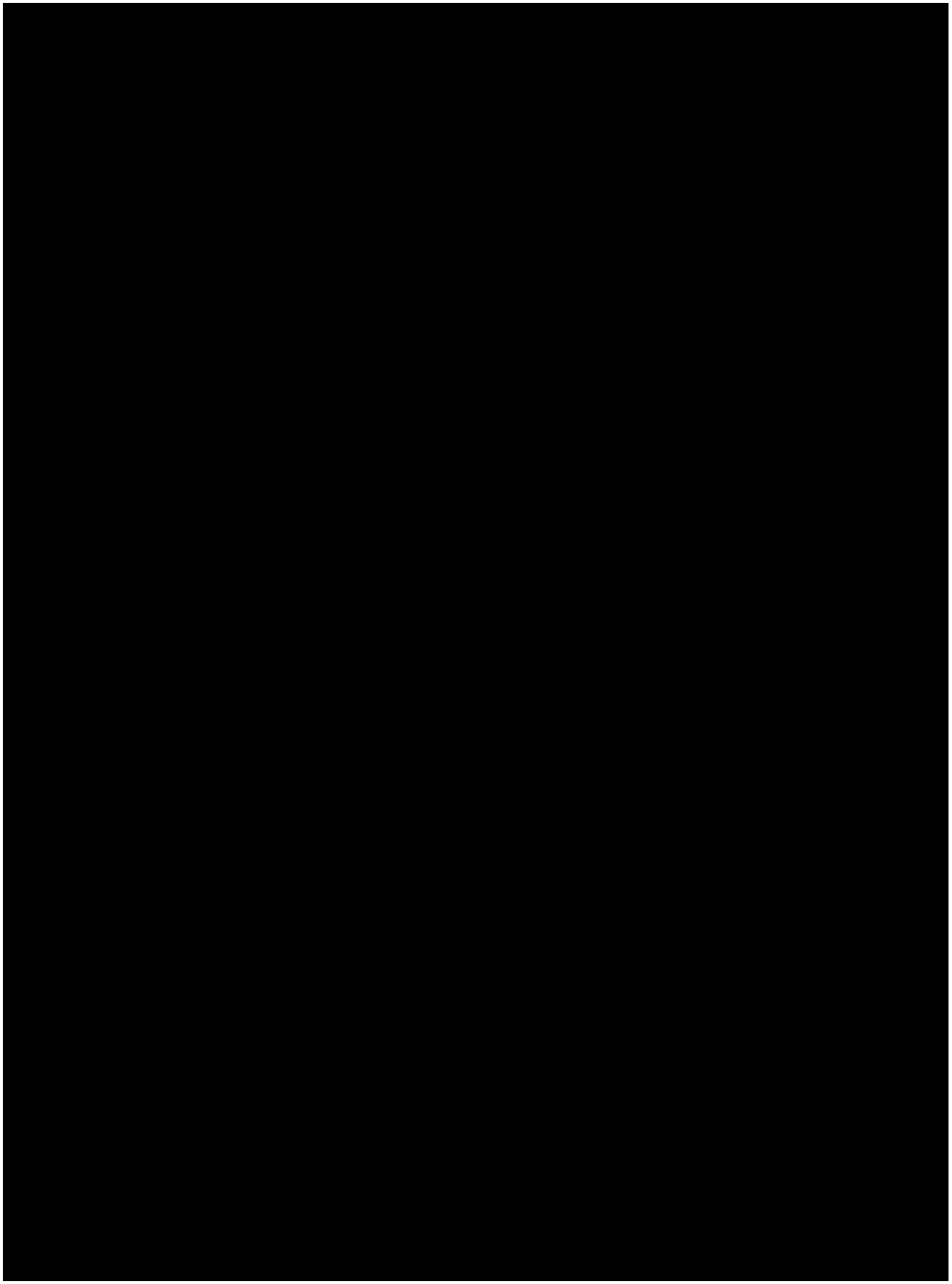
Emission Cost ($000) x y z

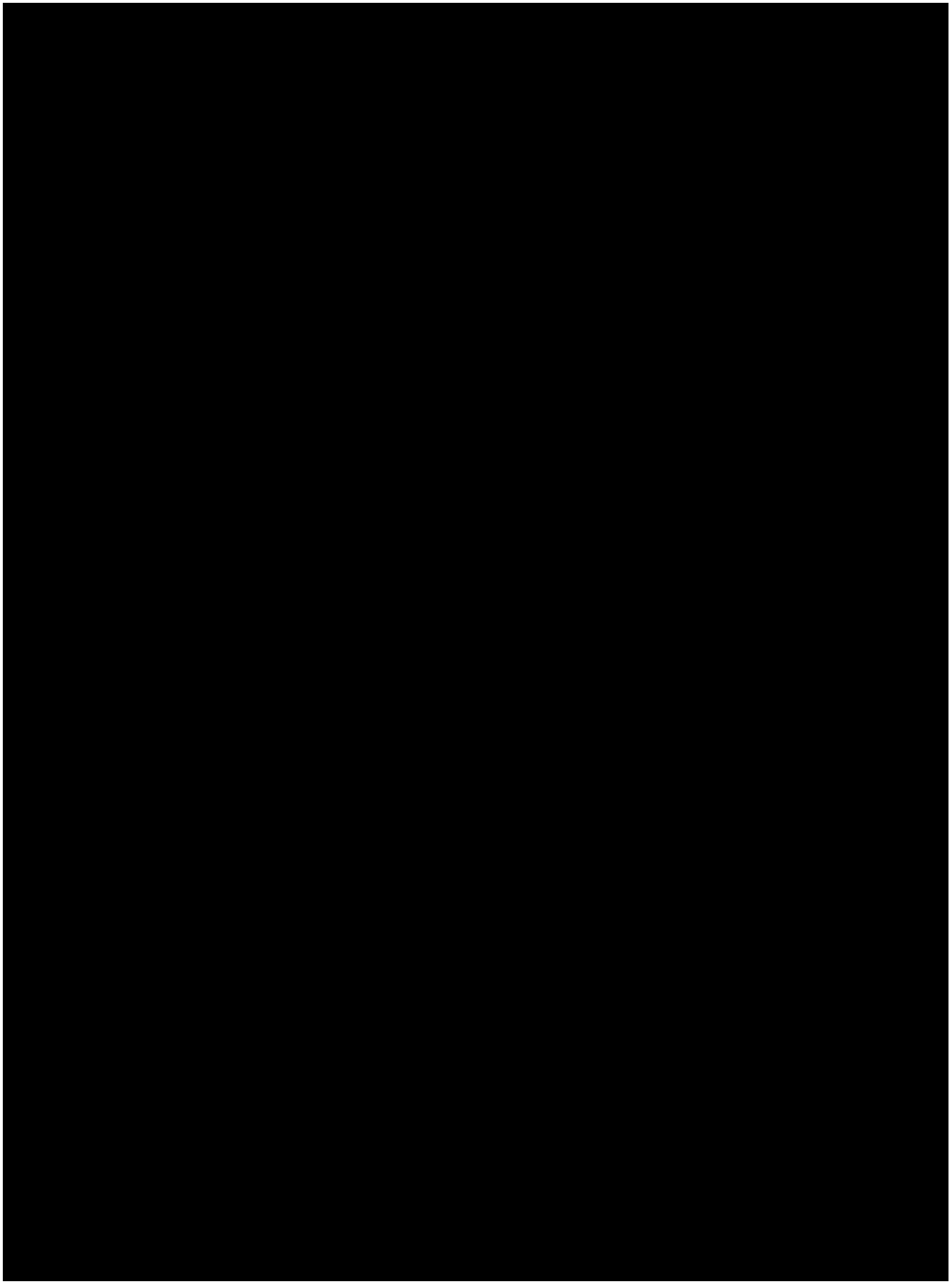


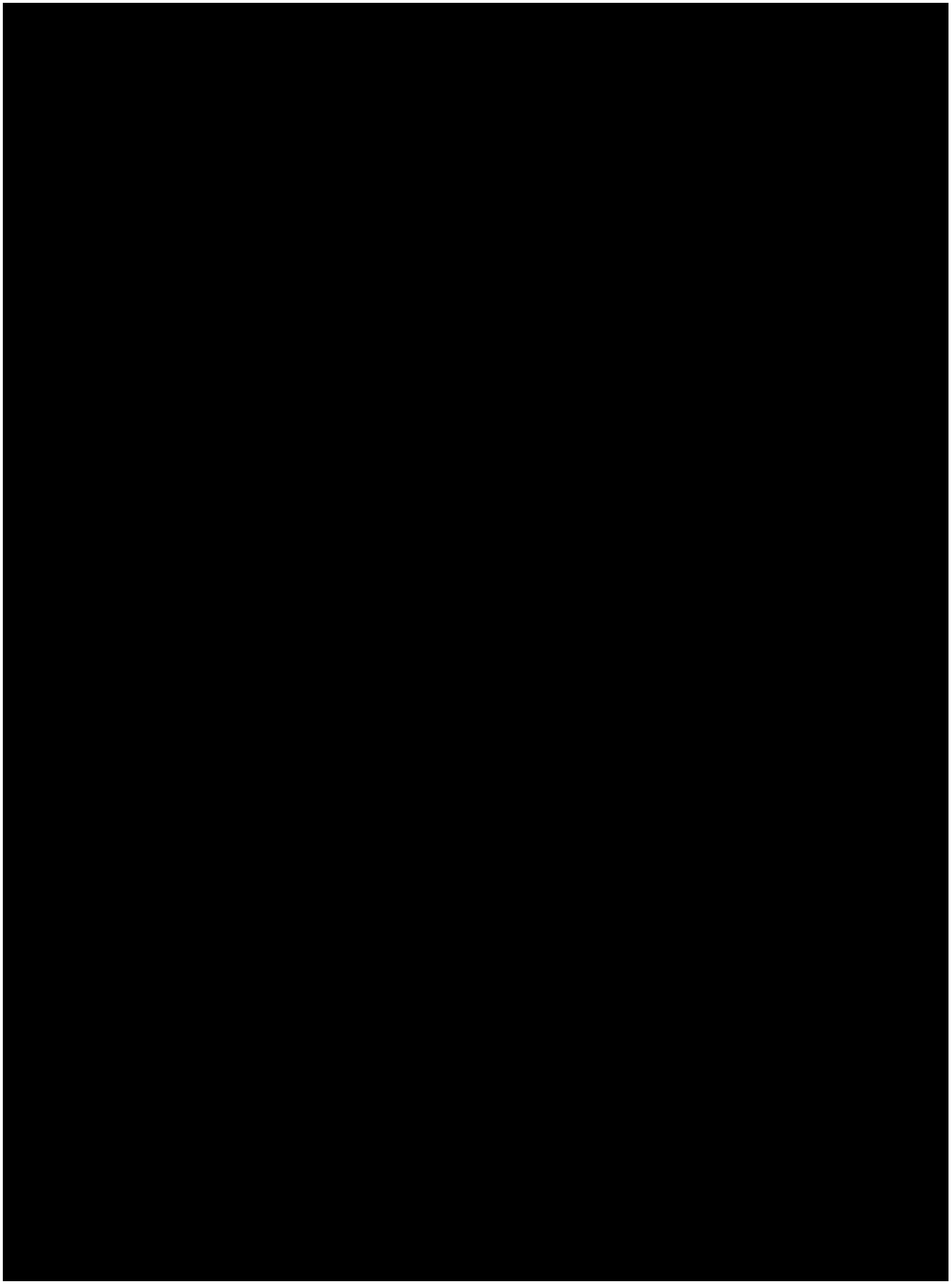


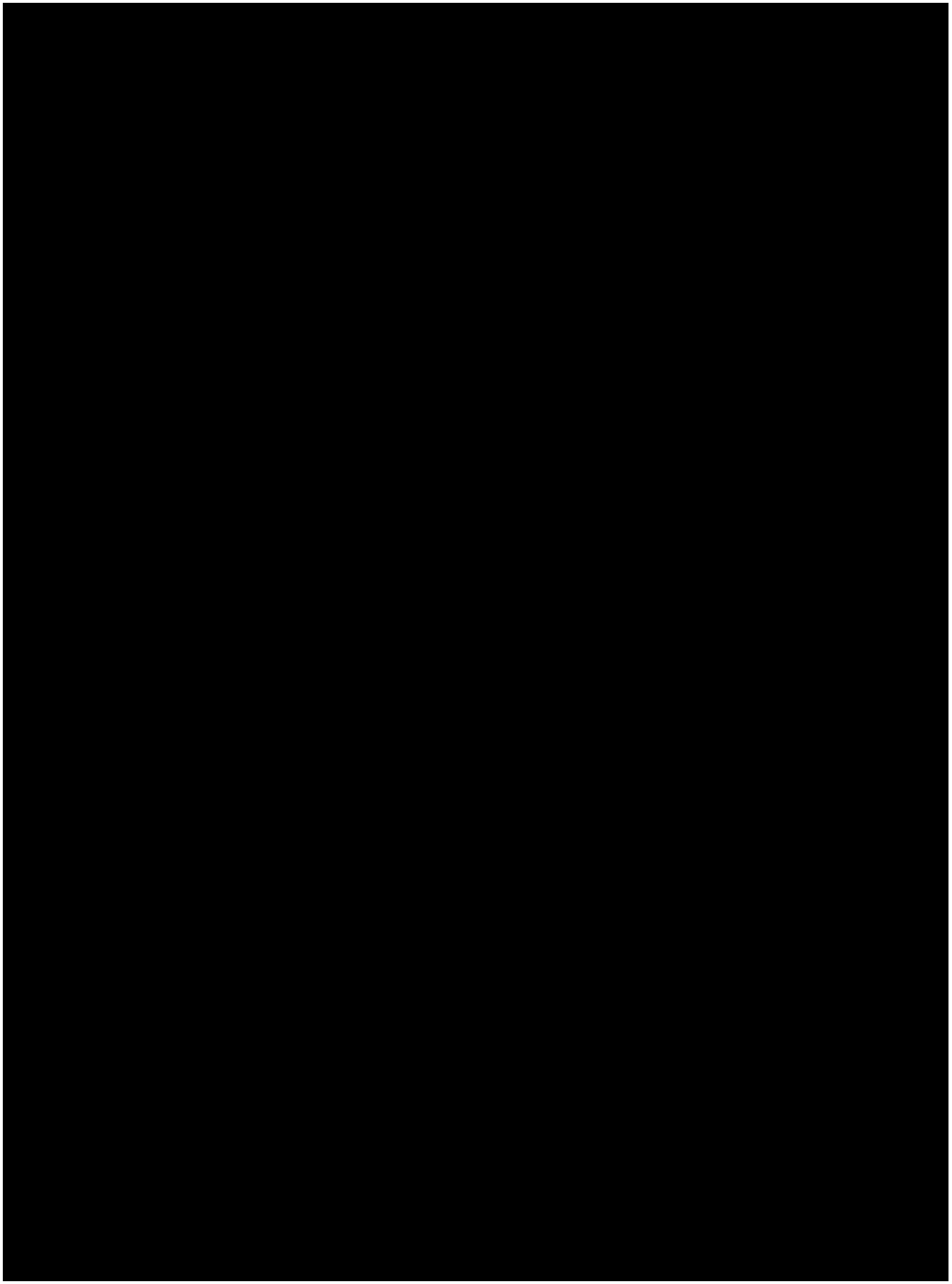
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

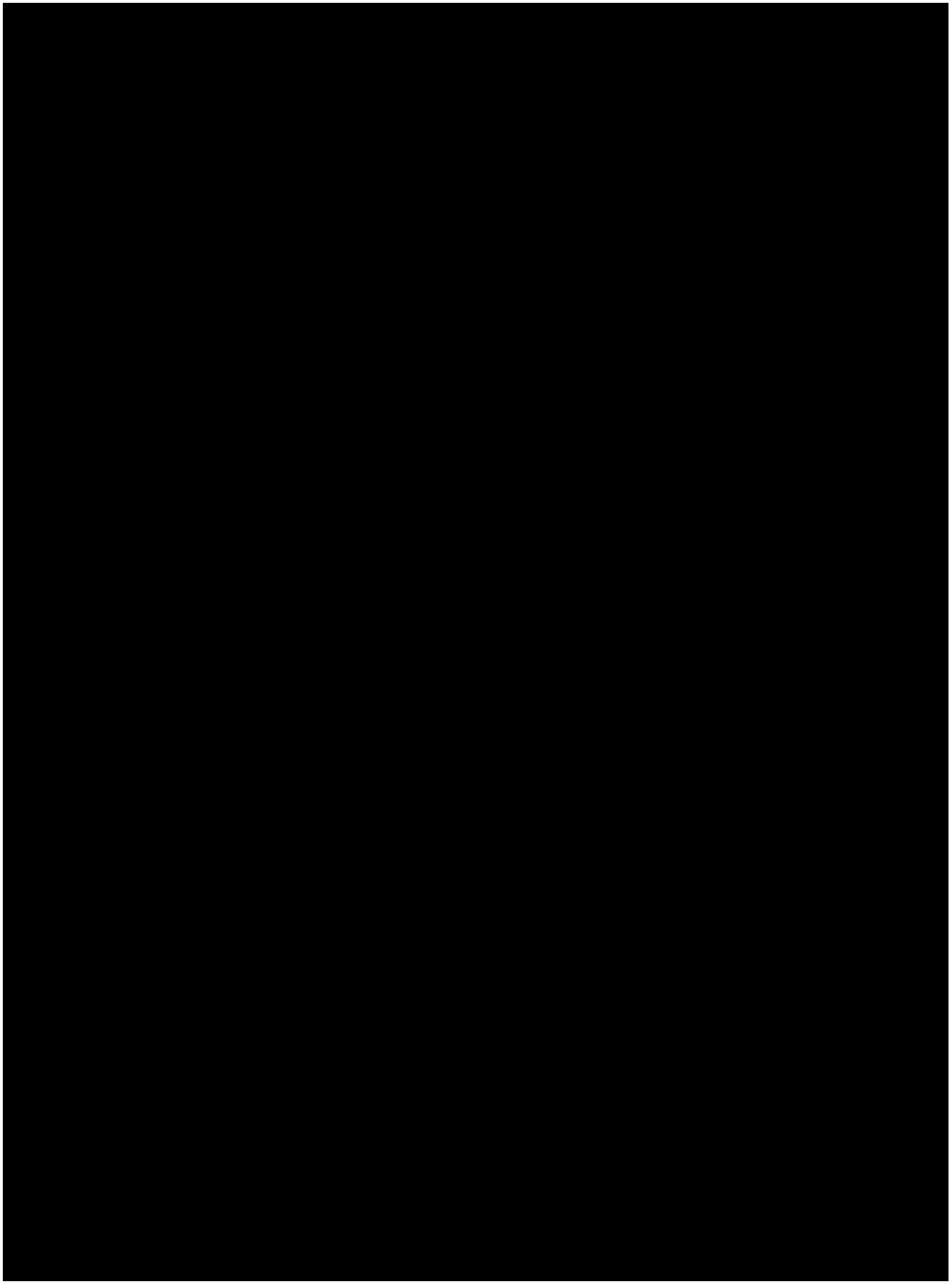


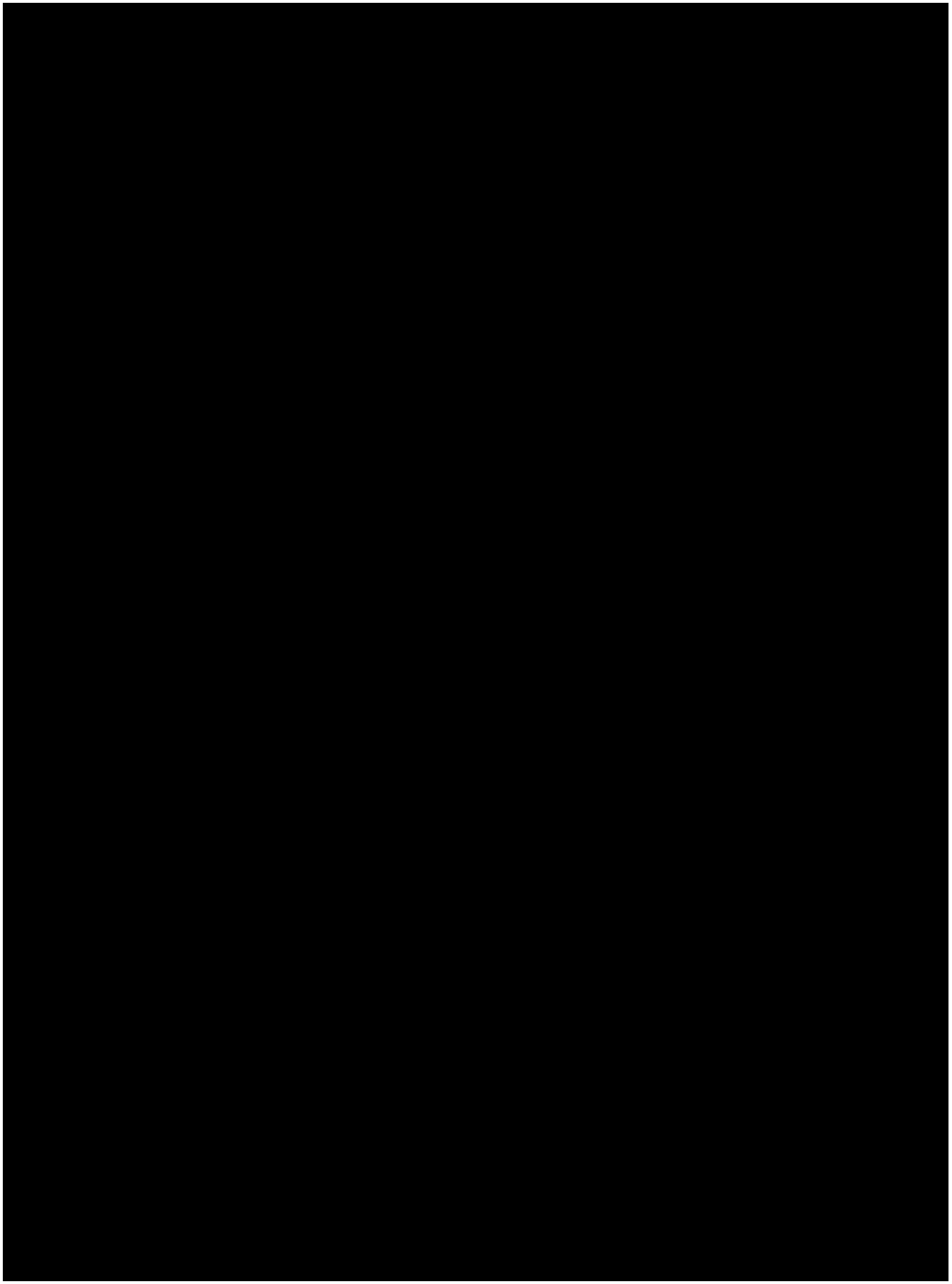


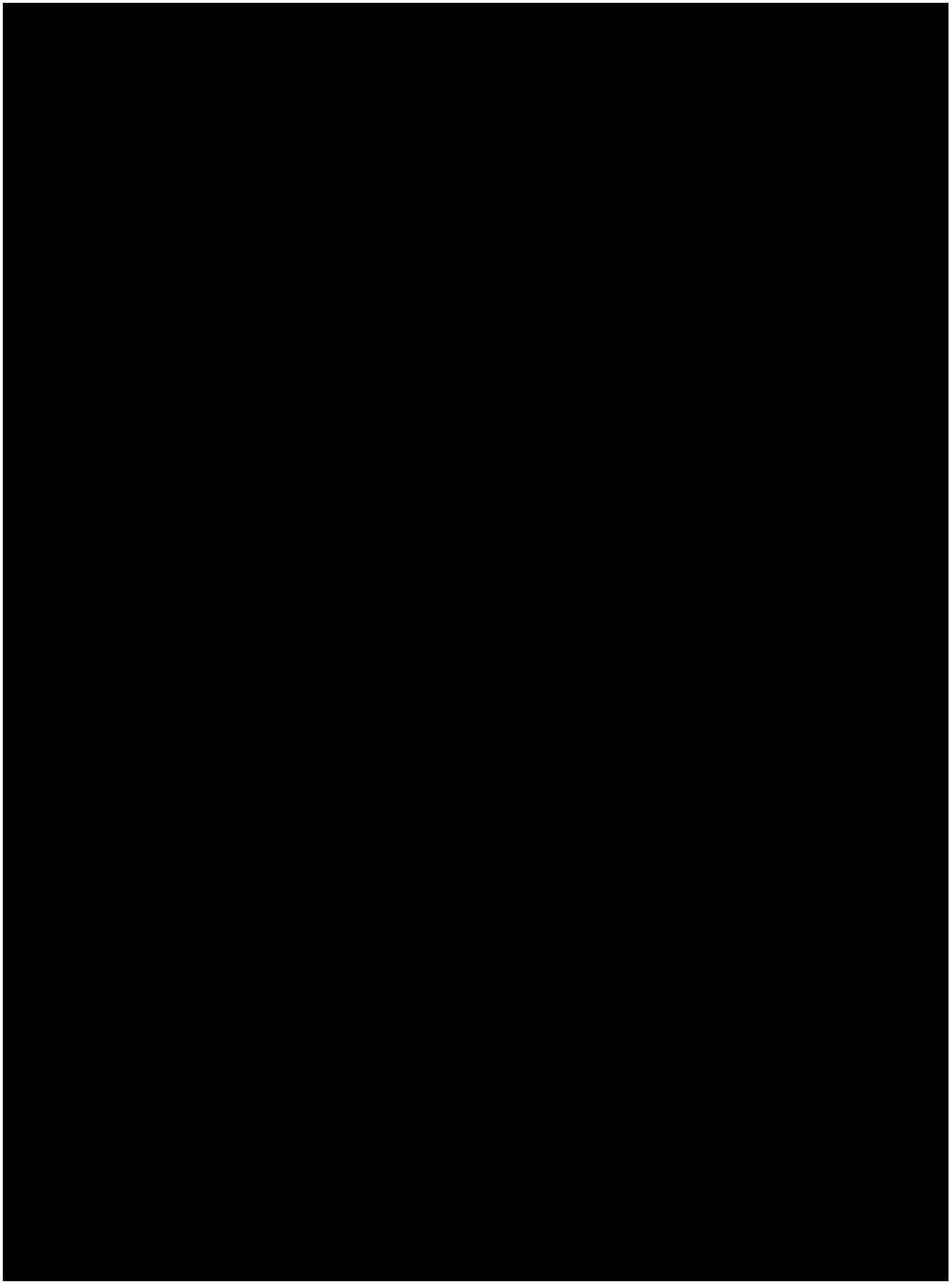


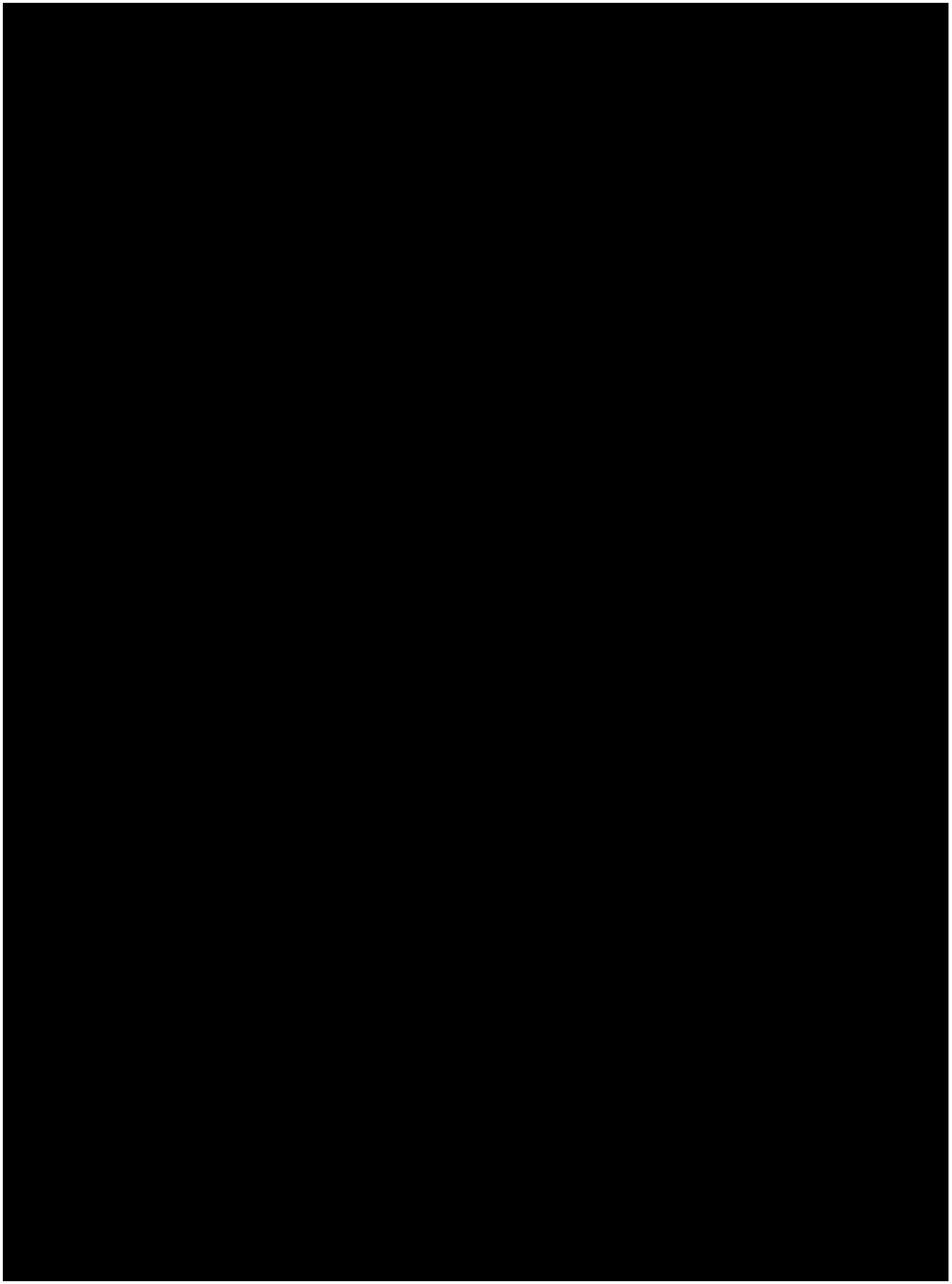


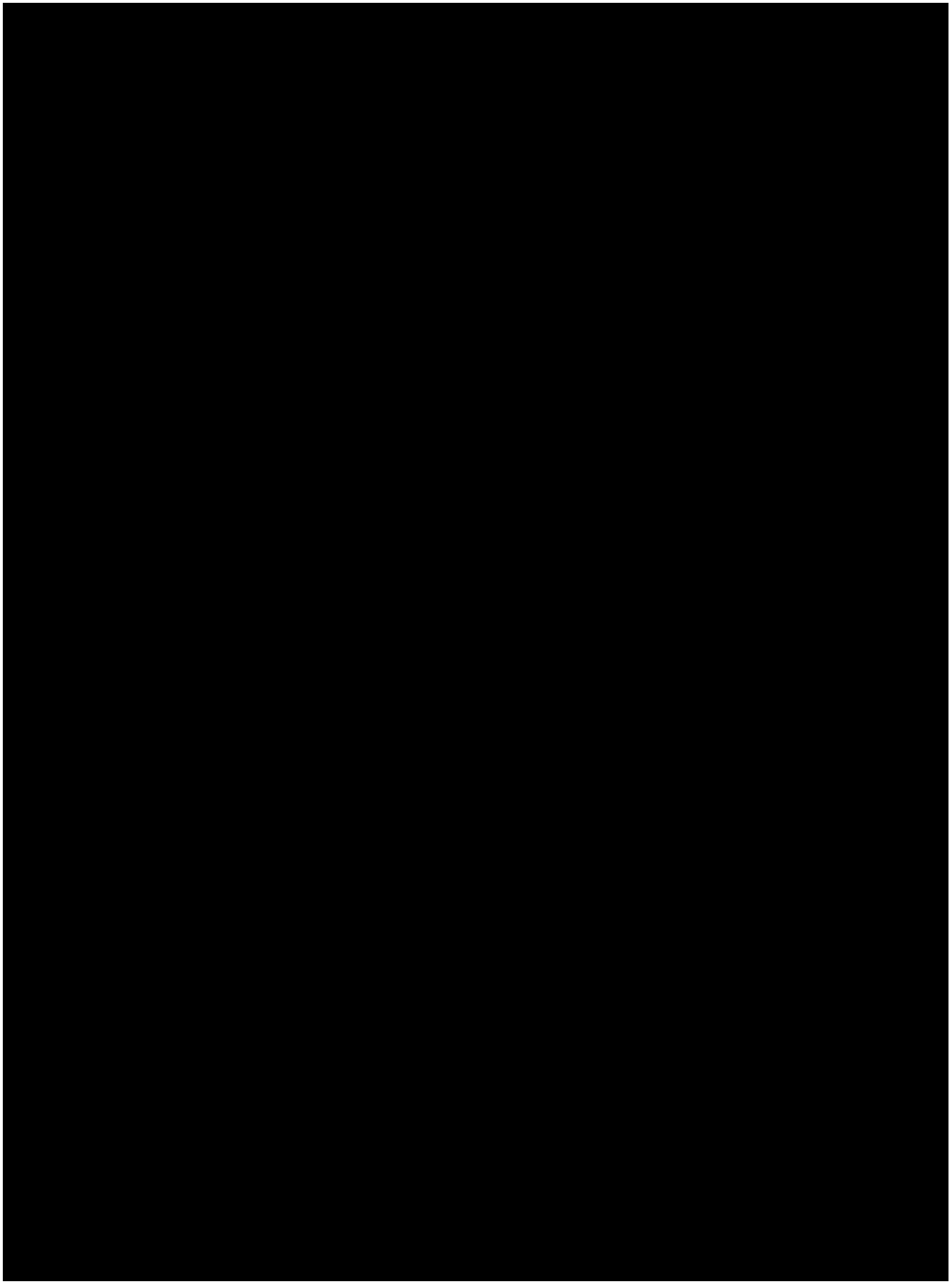


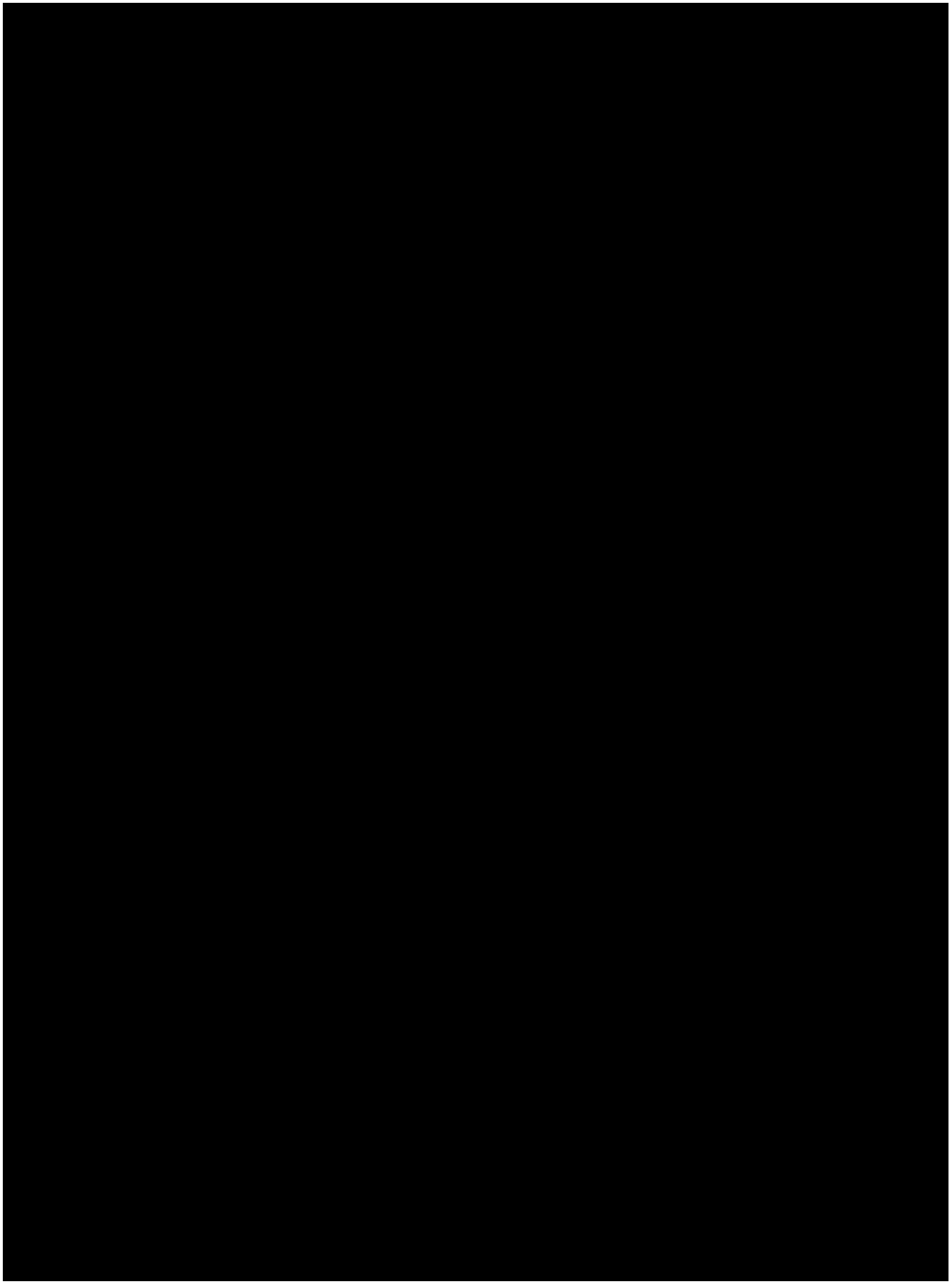


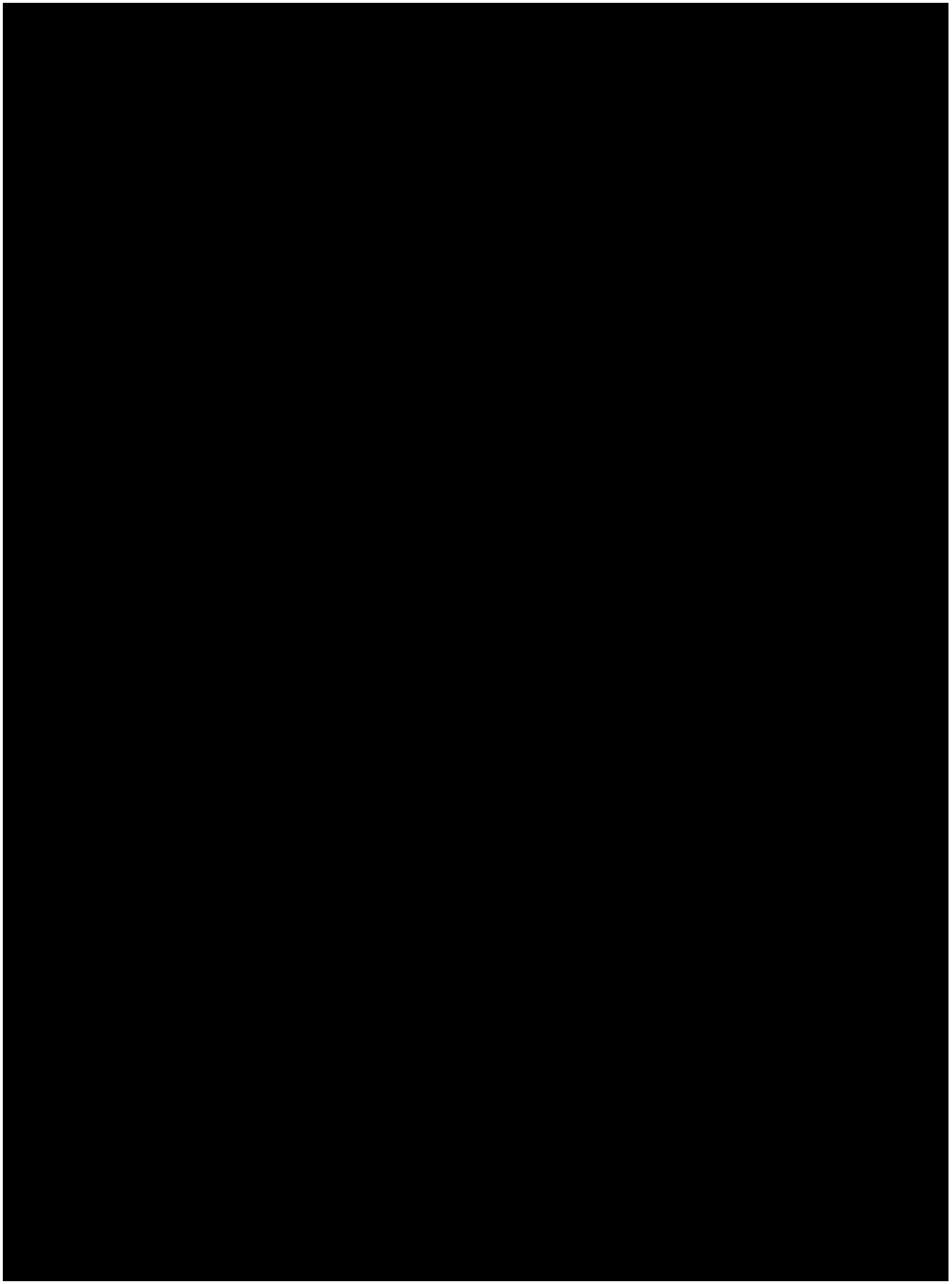


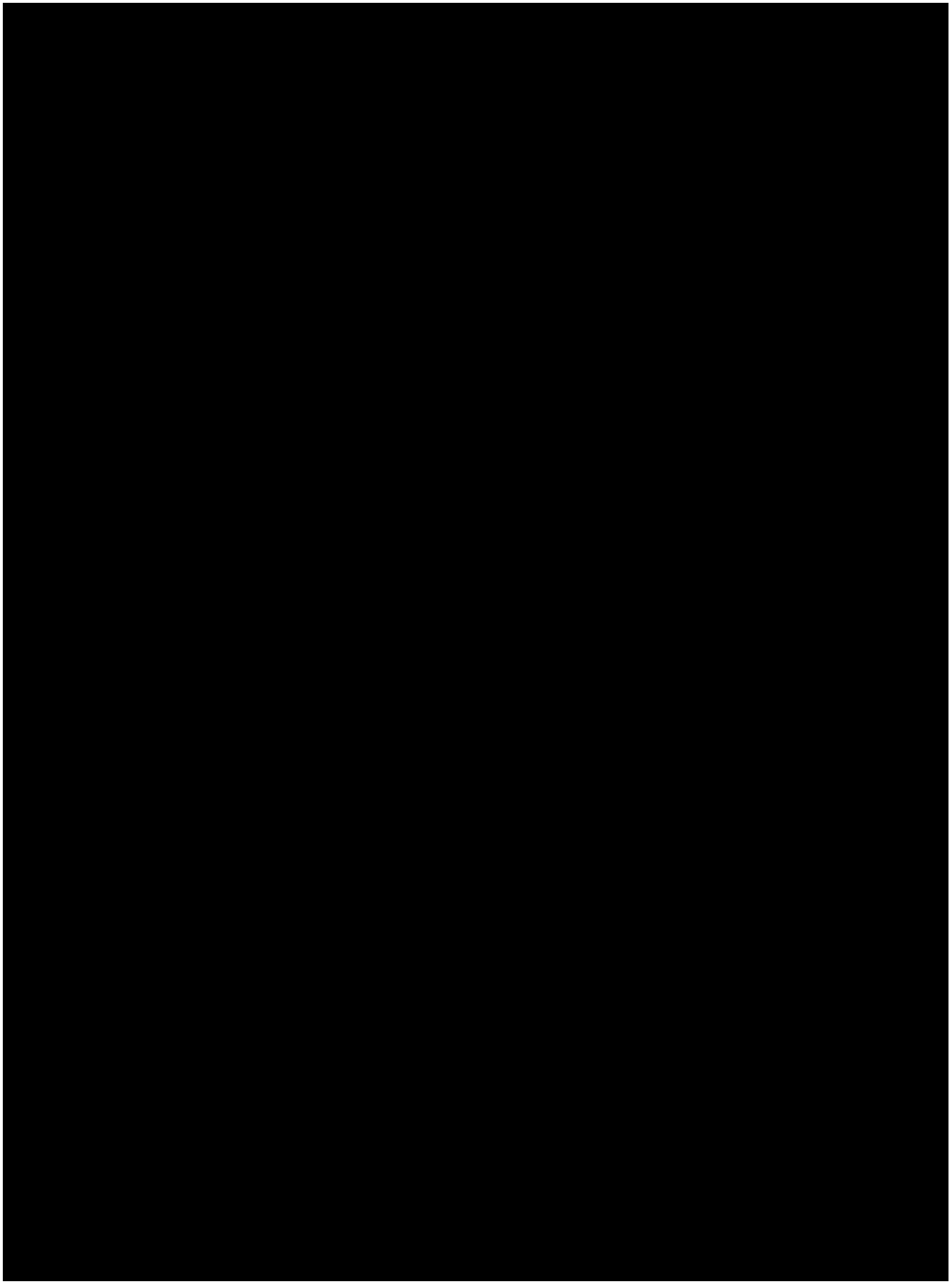


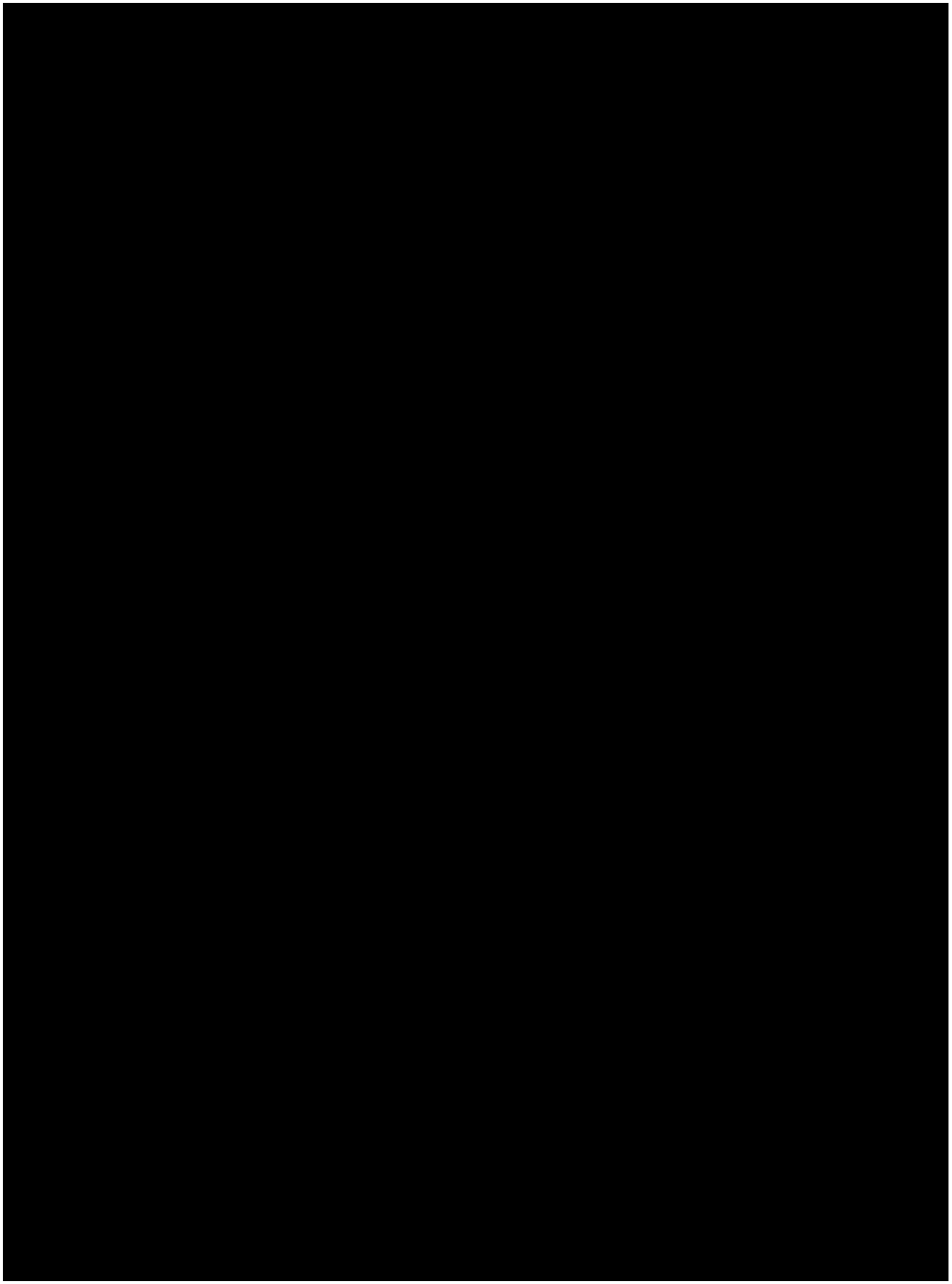


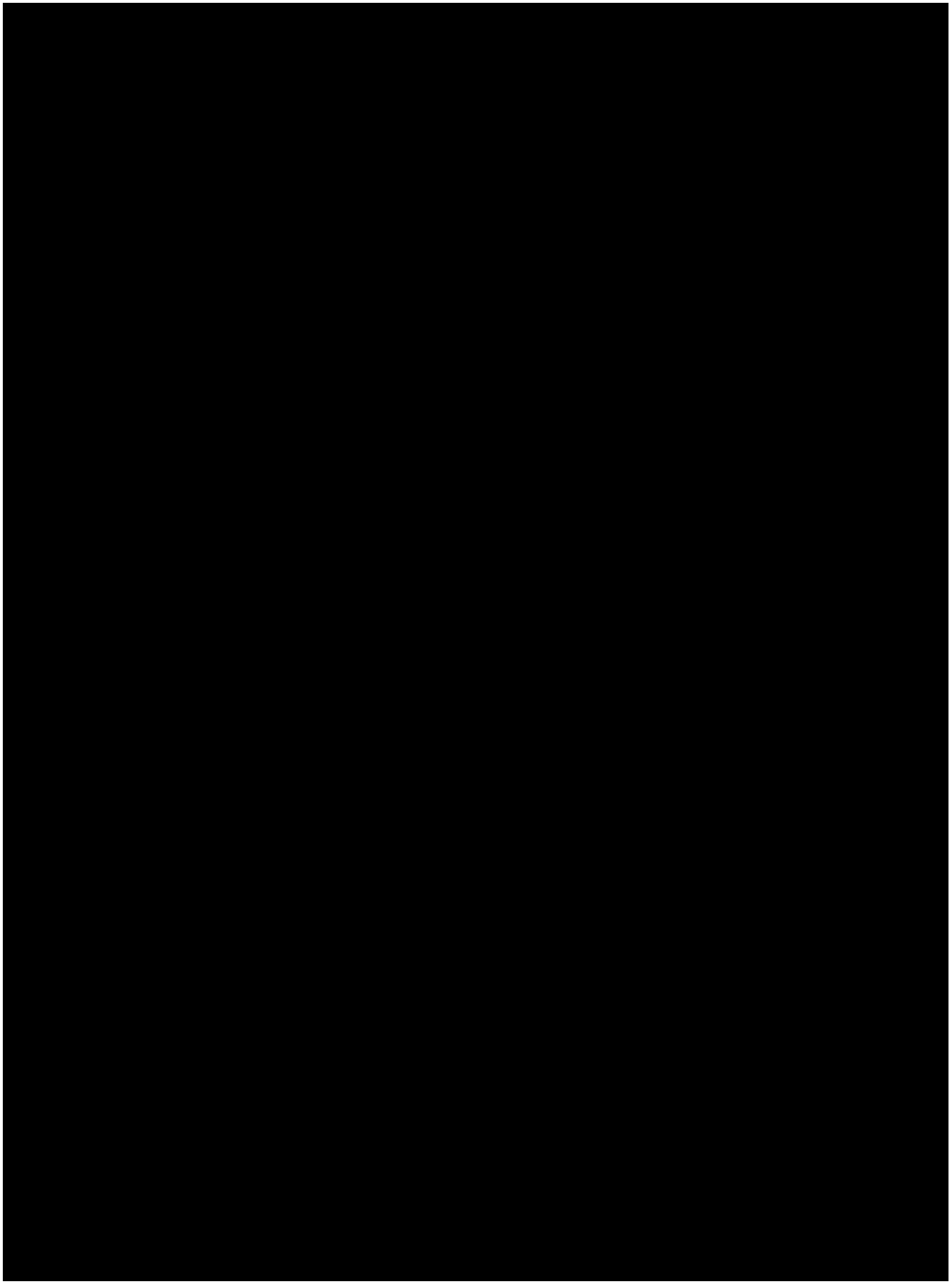


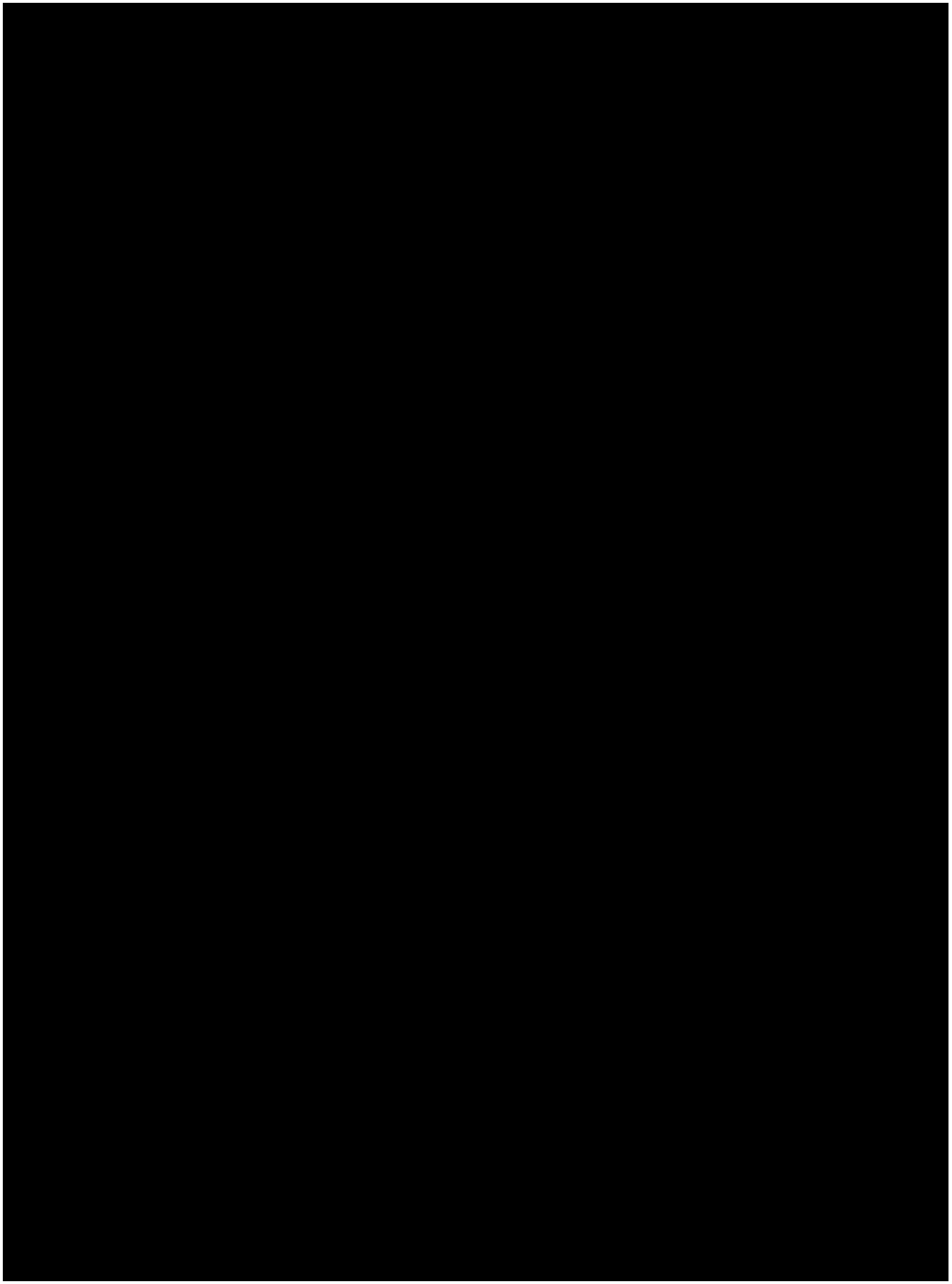


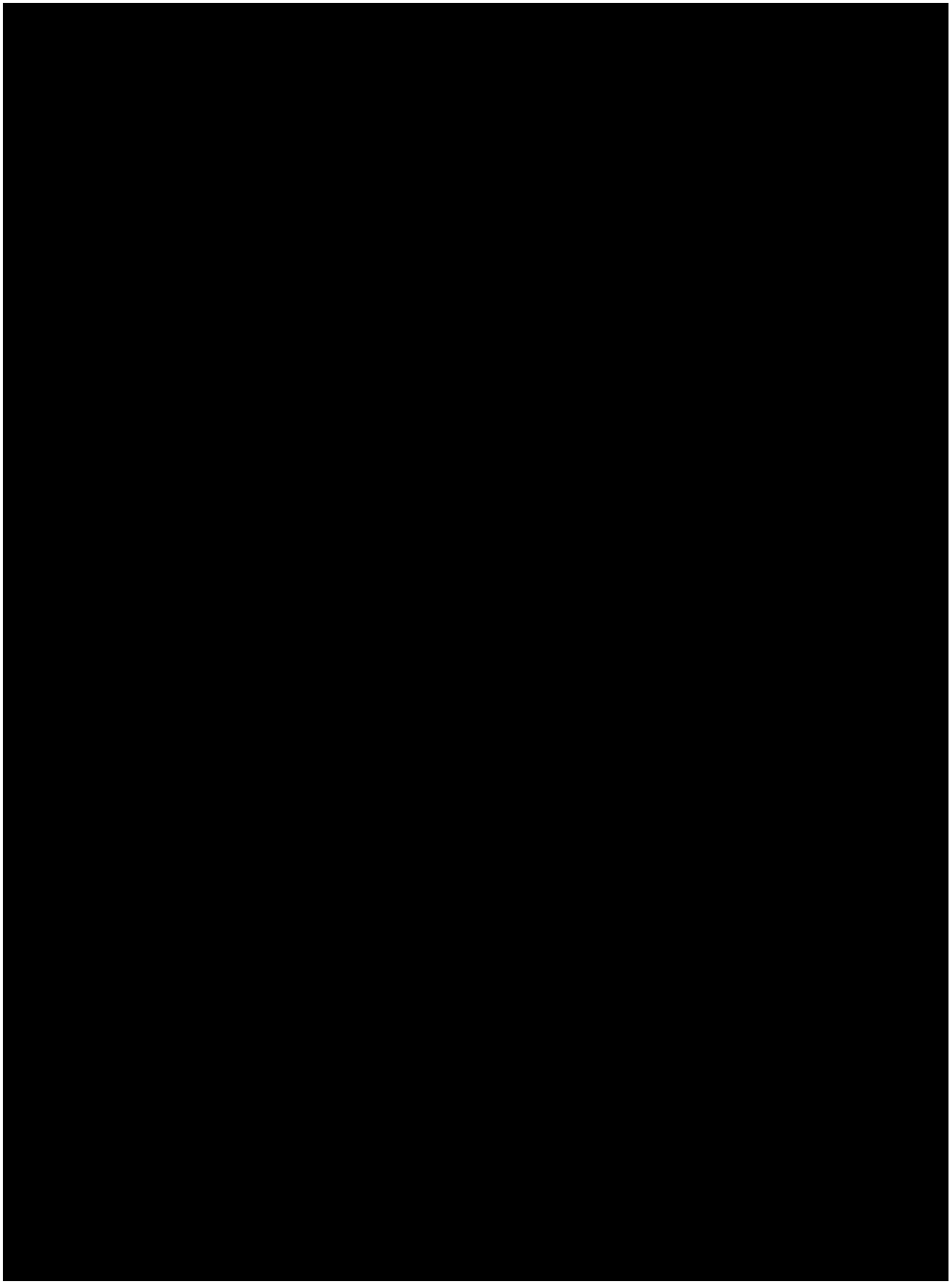


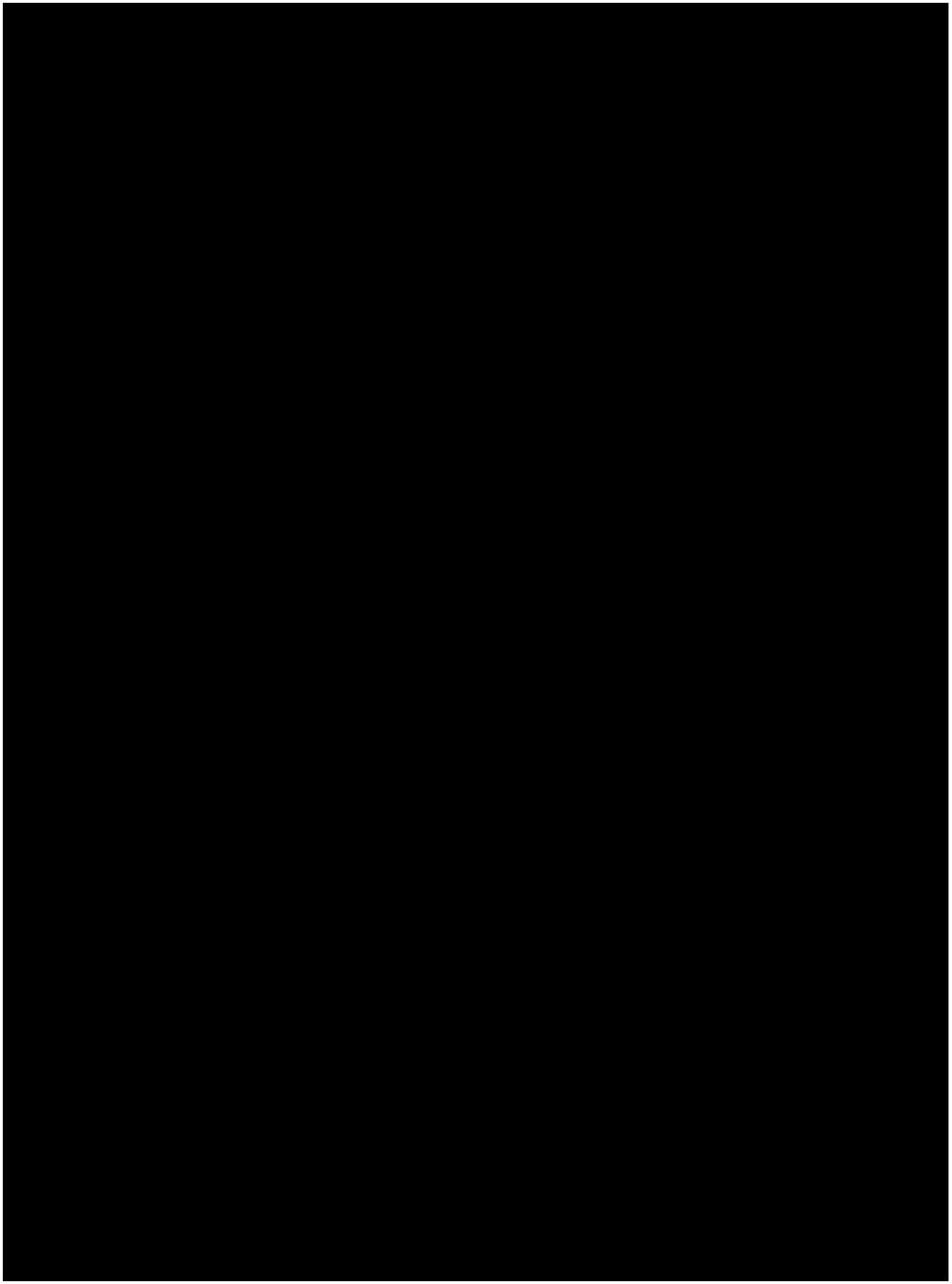




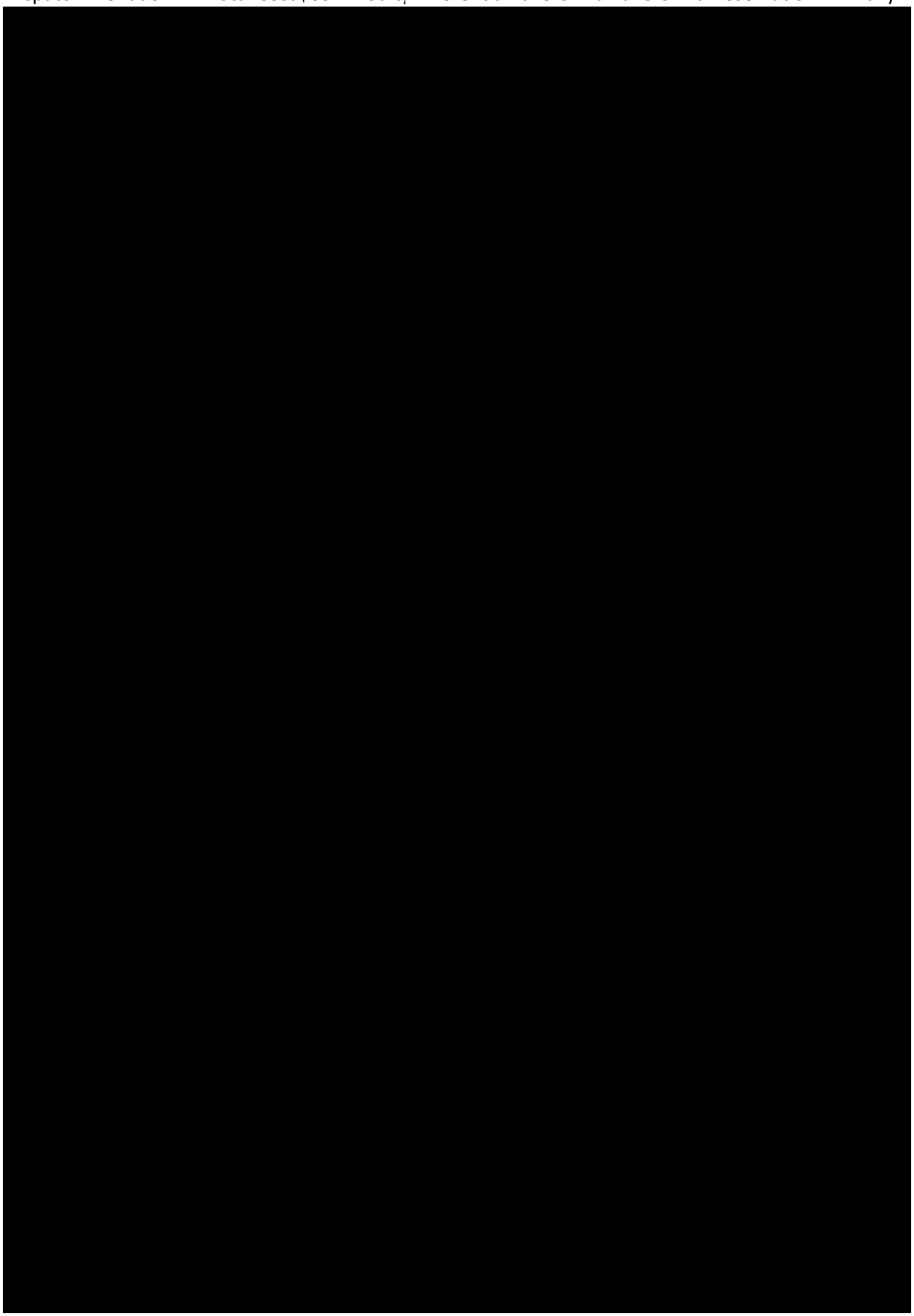


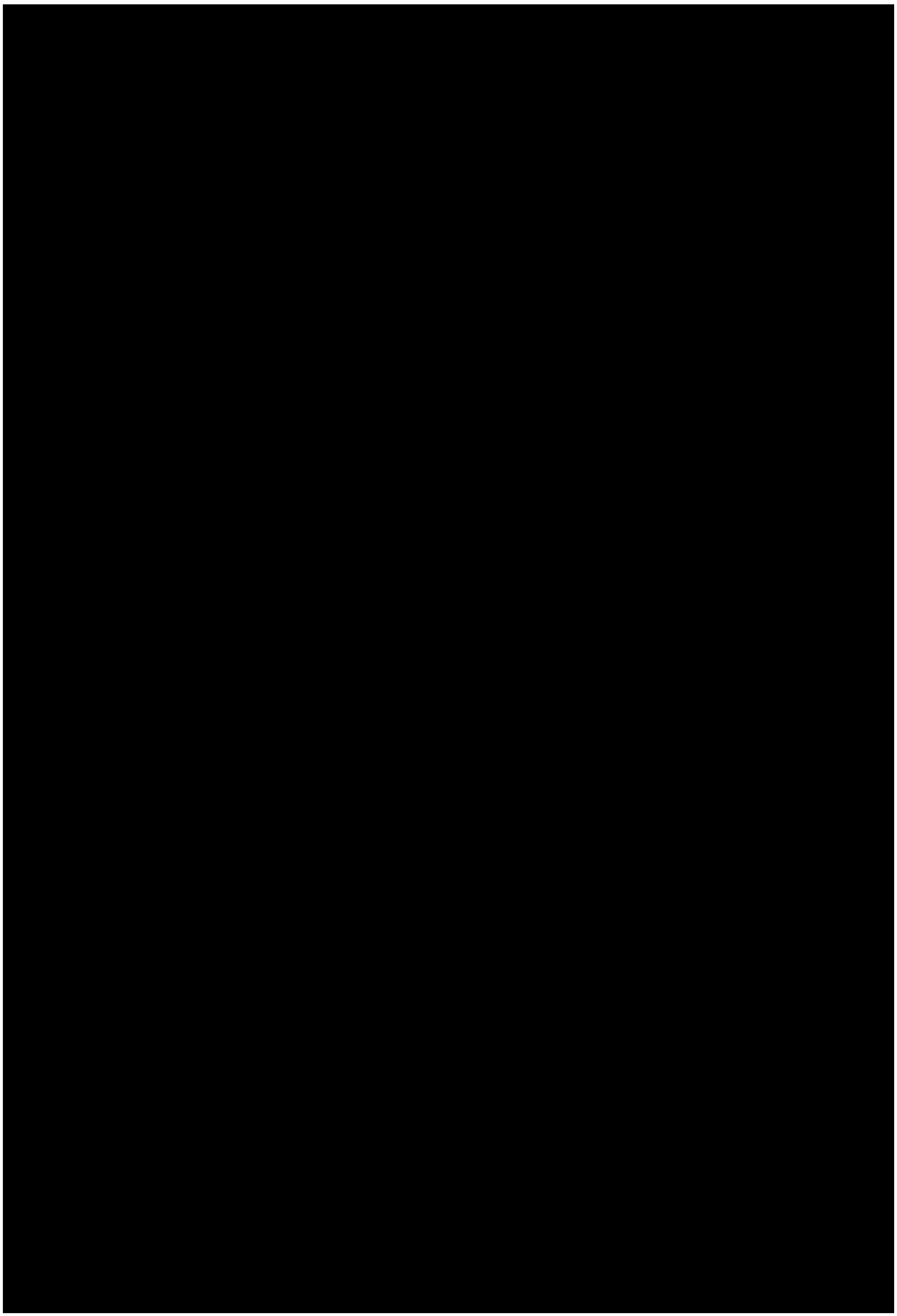


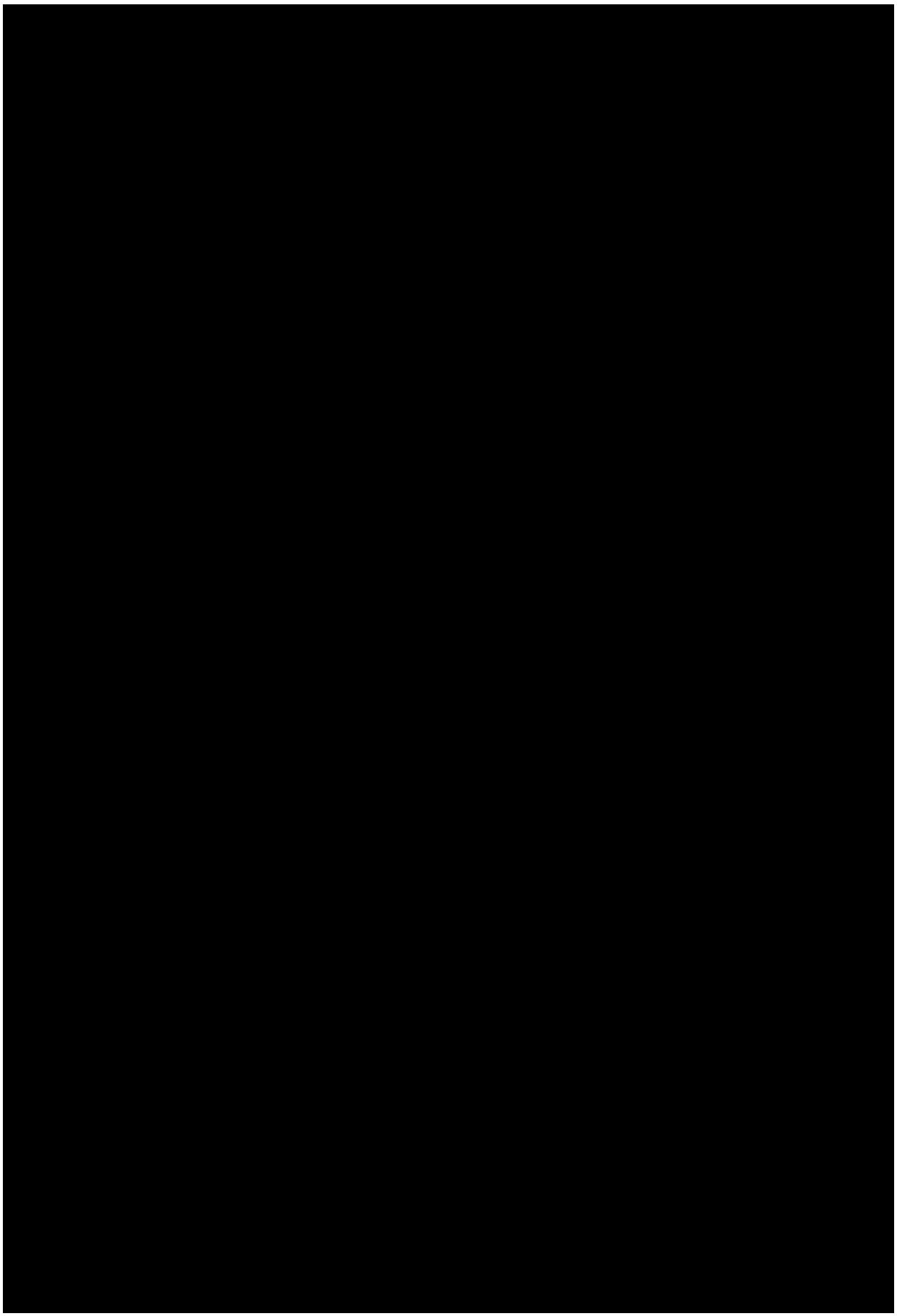


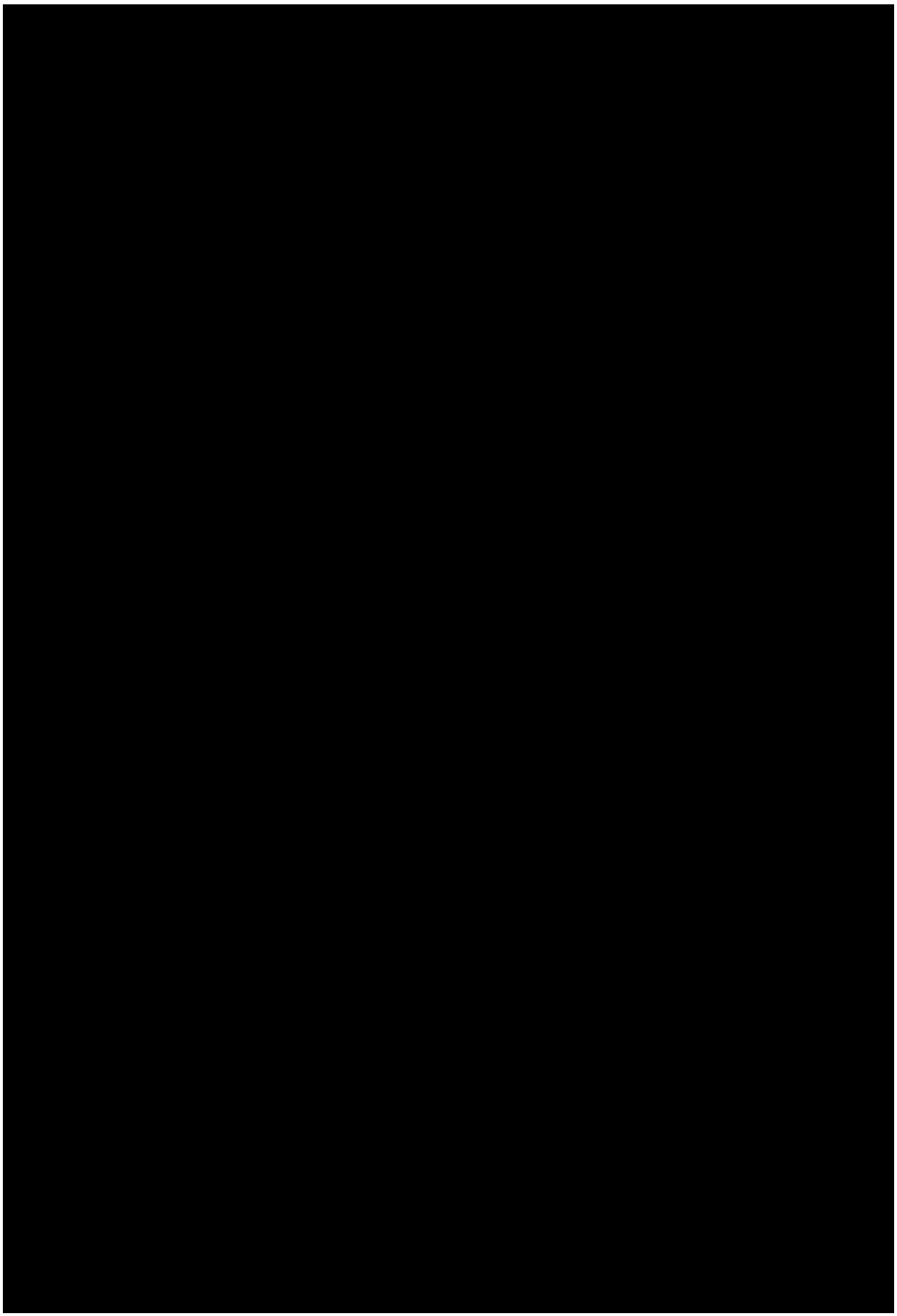


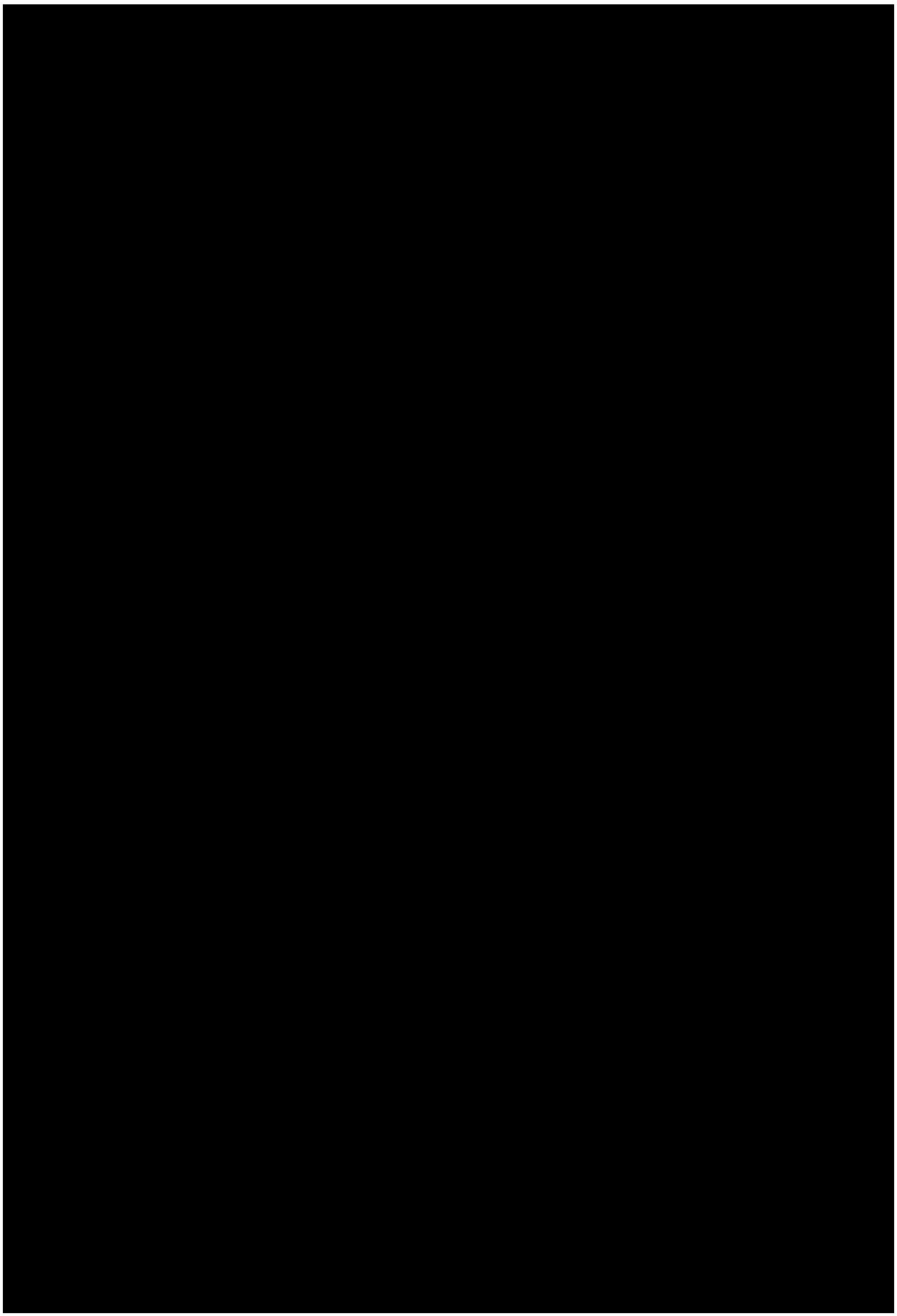


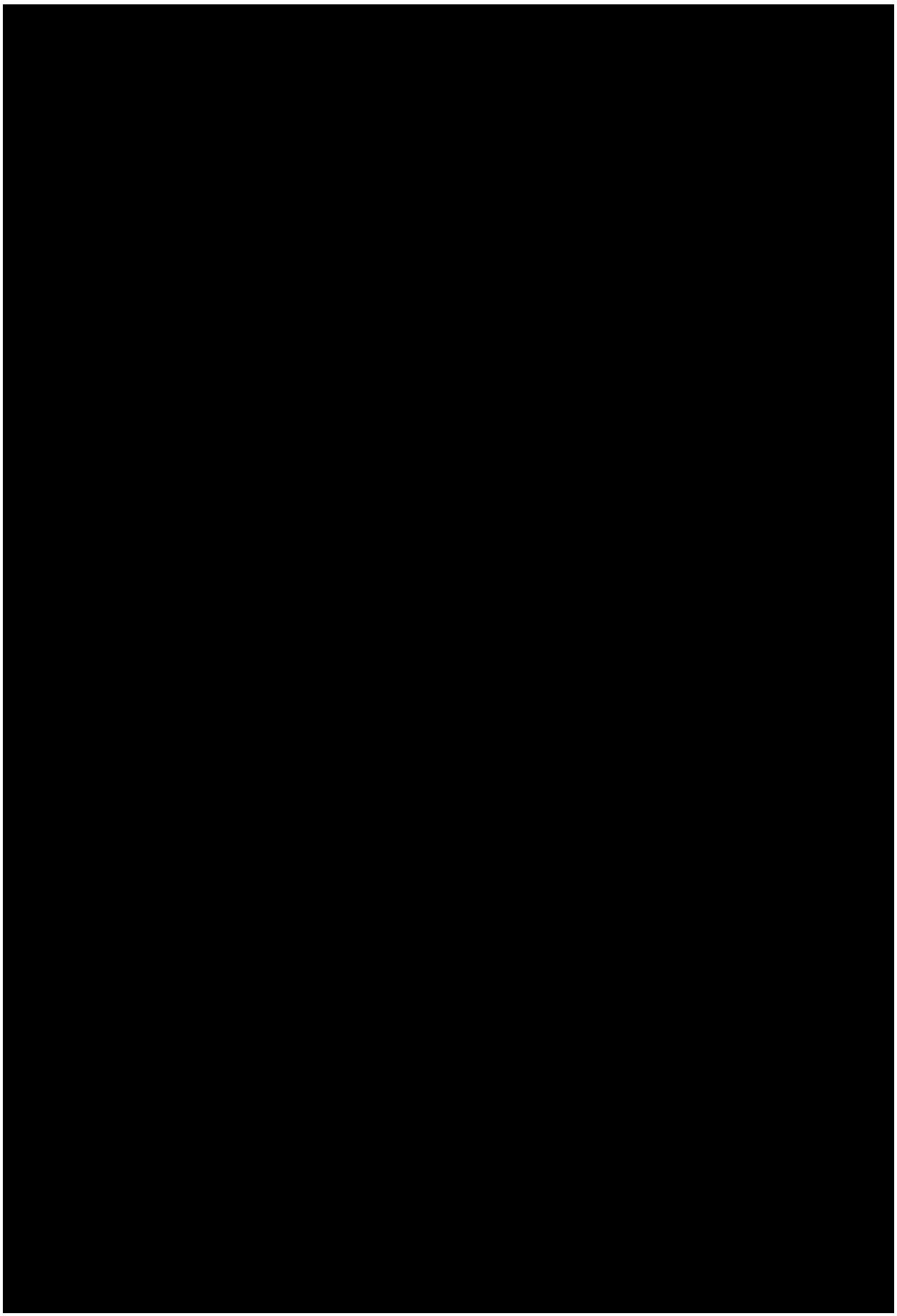

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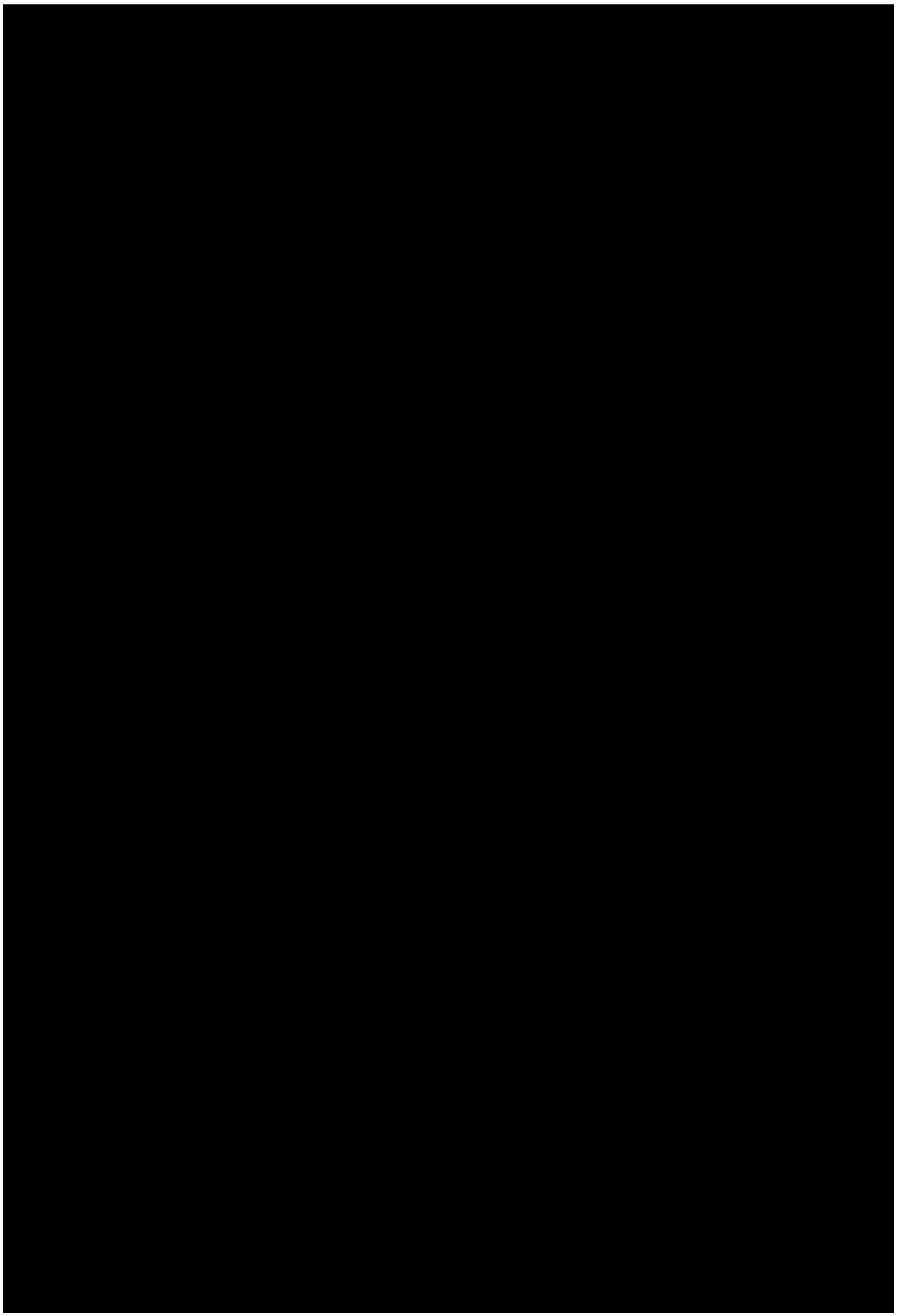


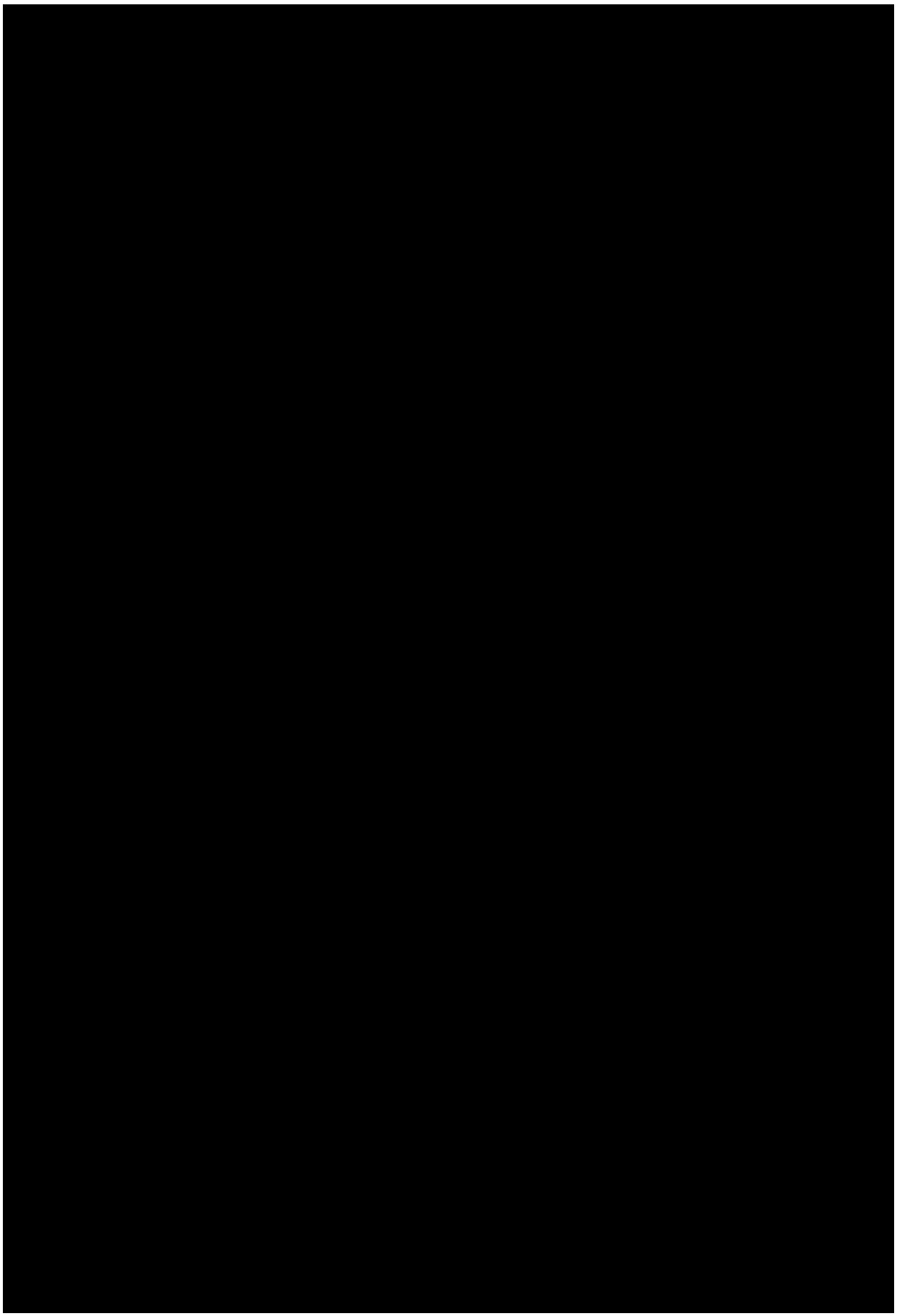


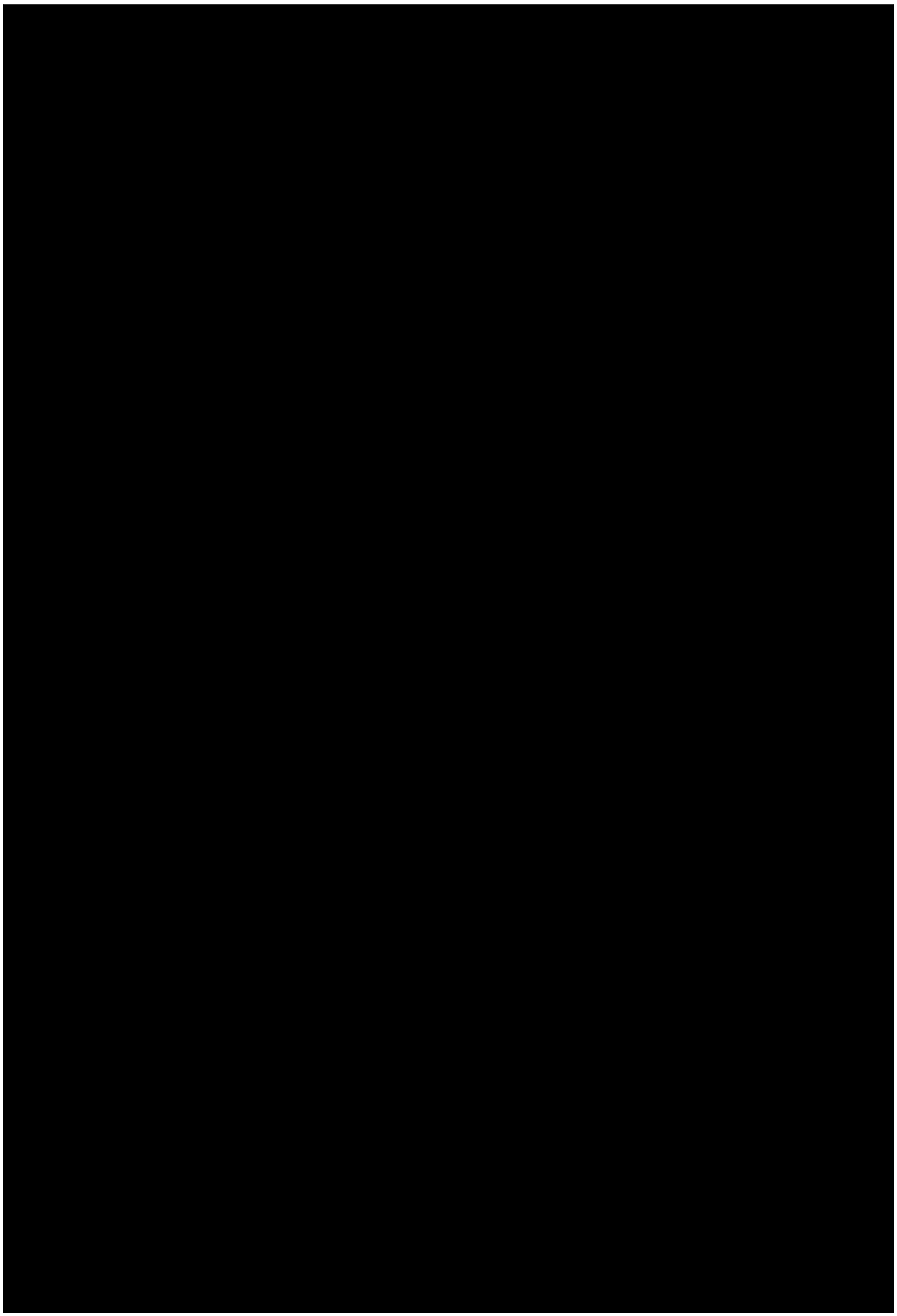


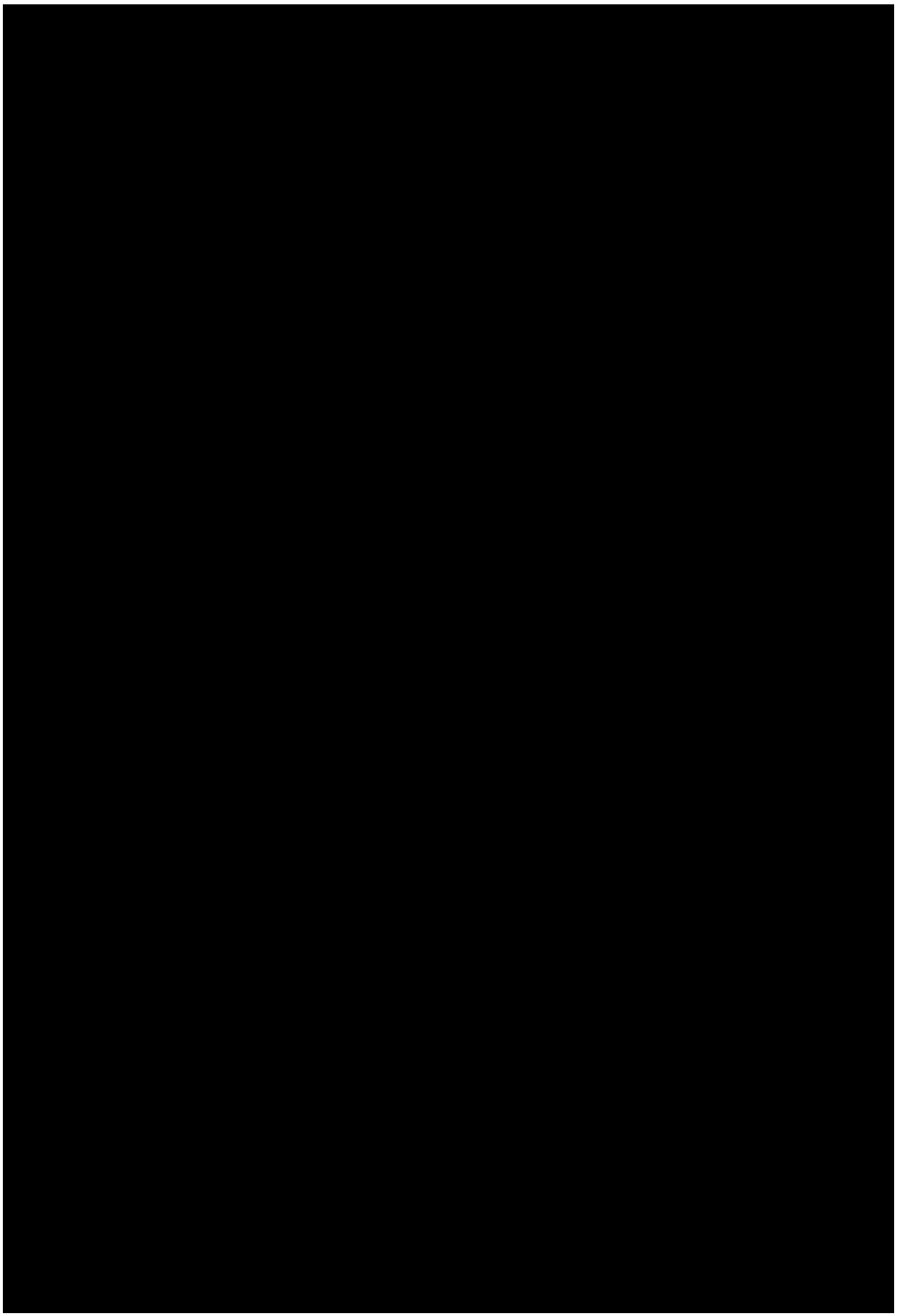


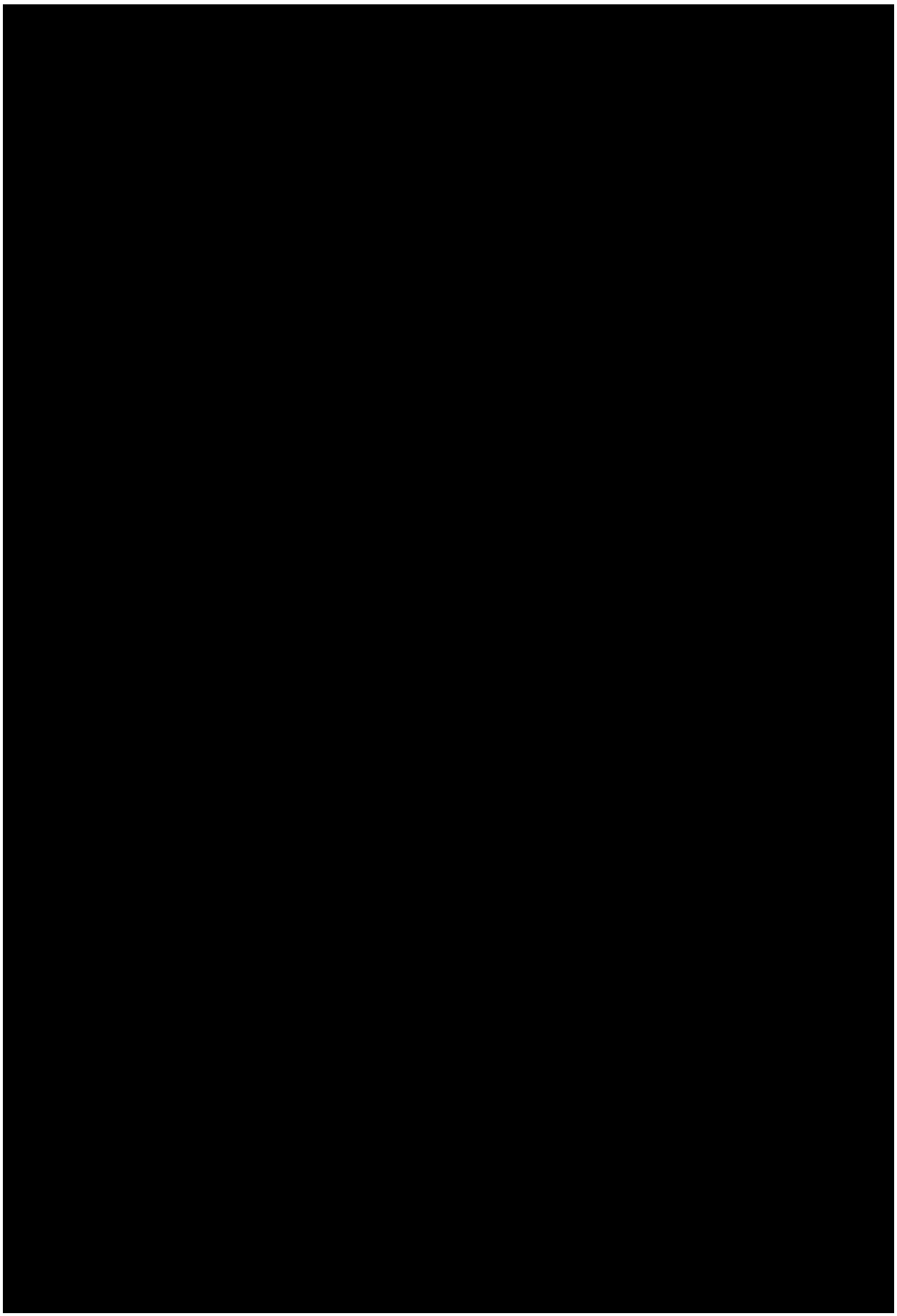


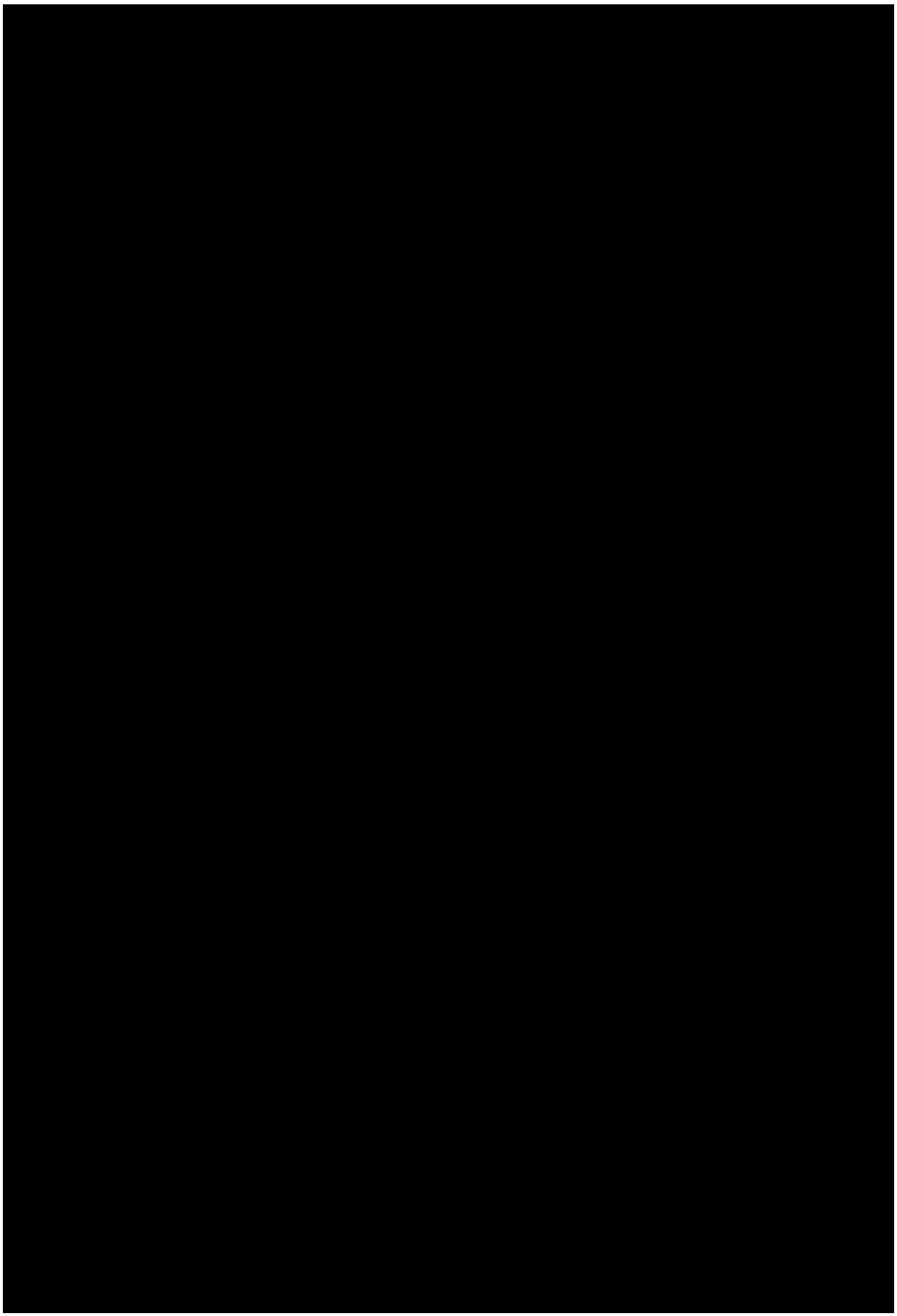


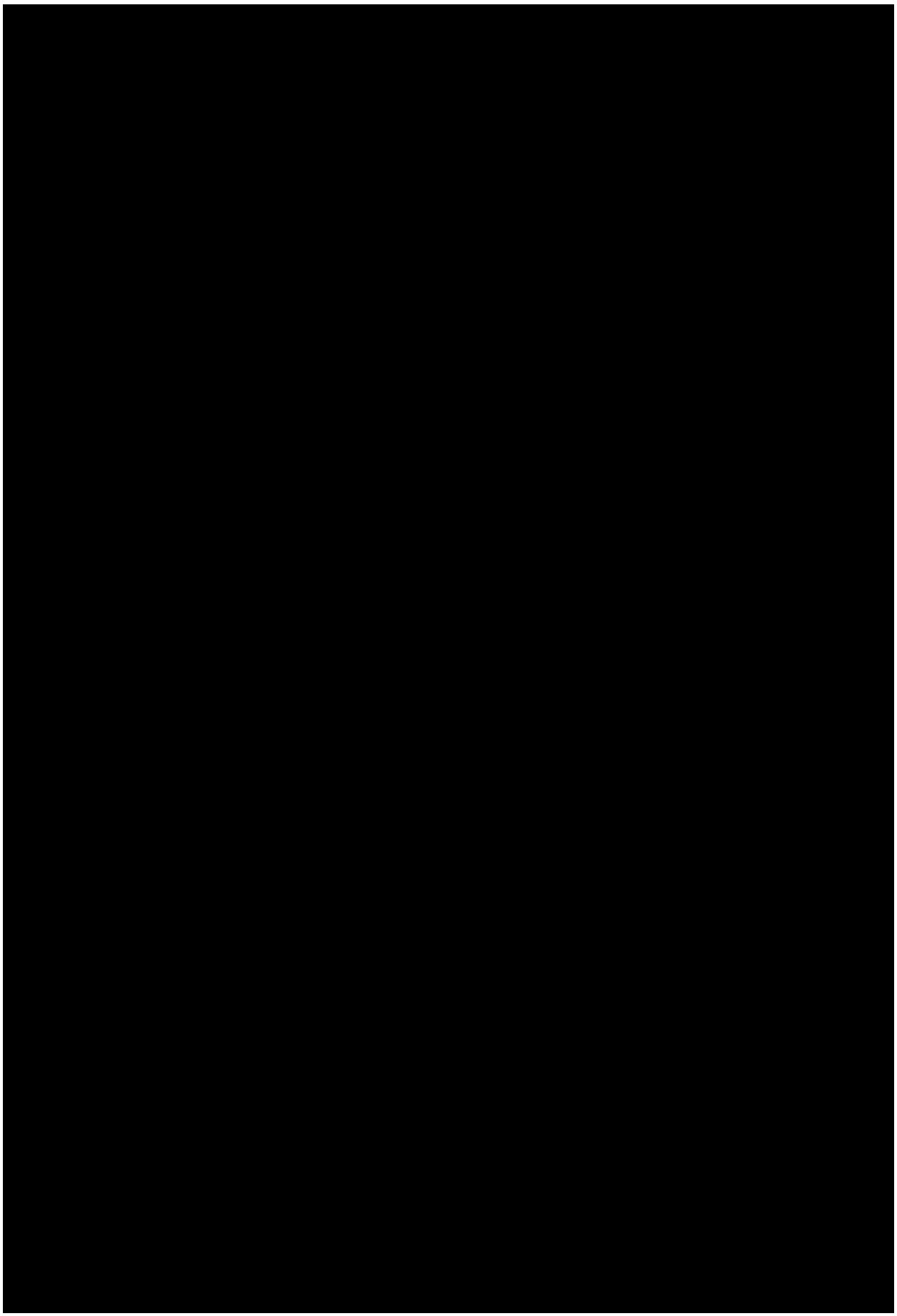


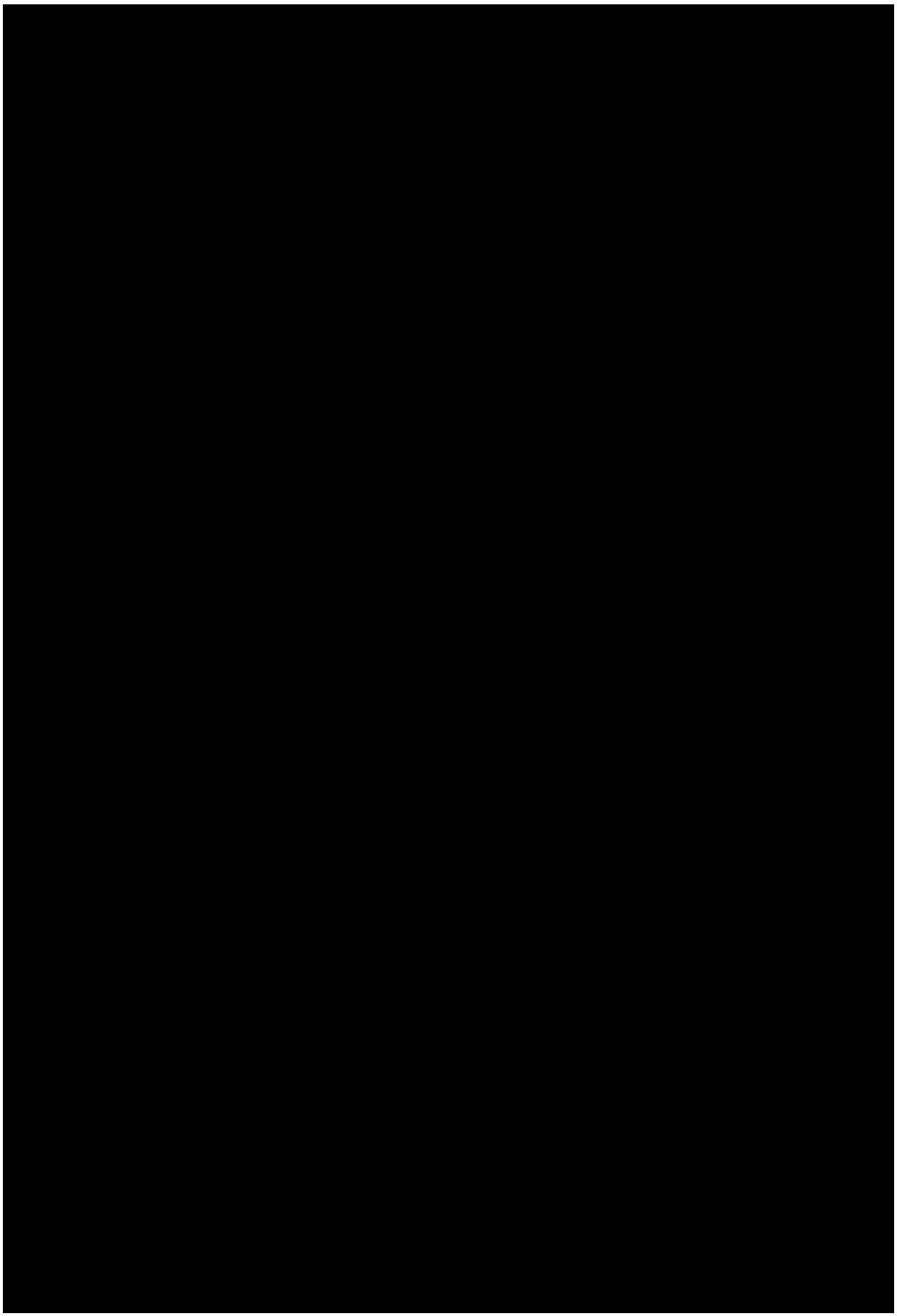


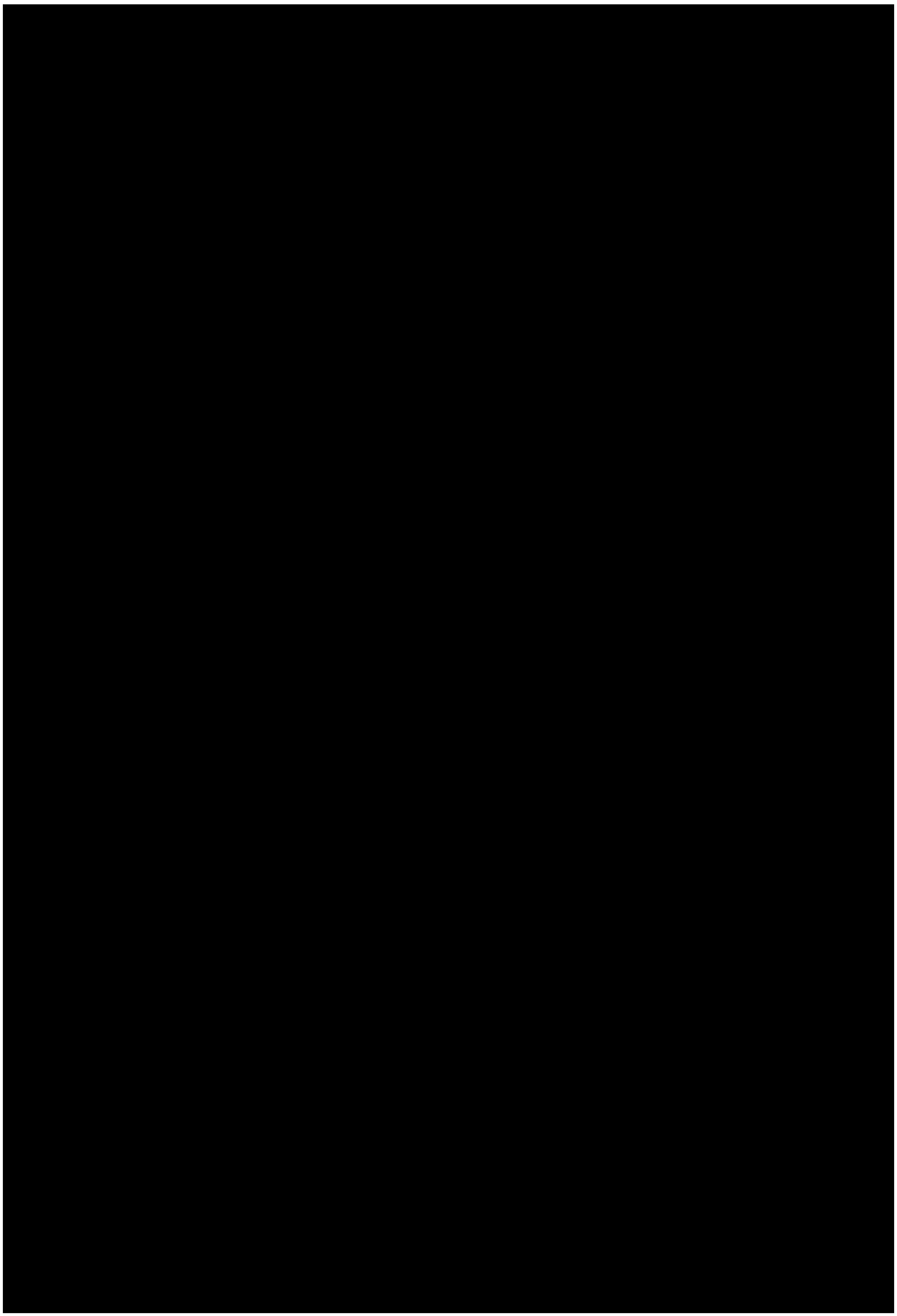


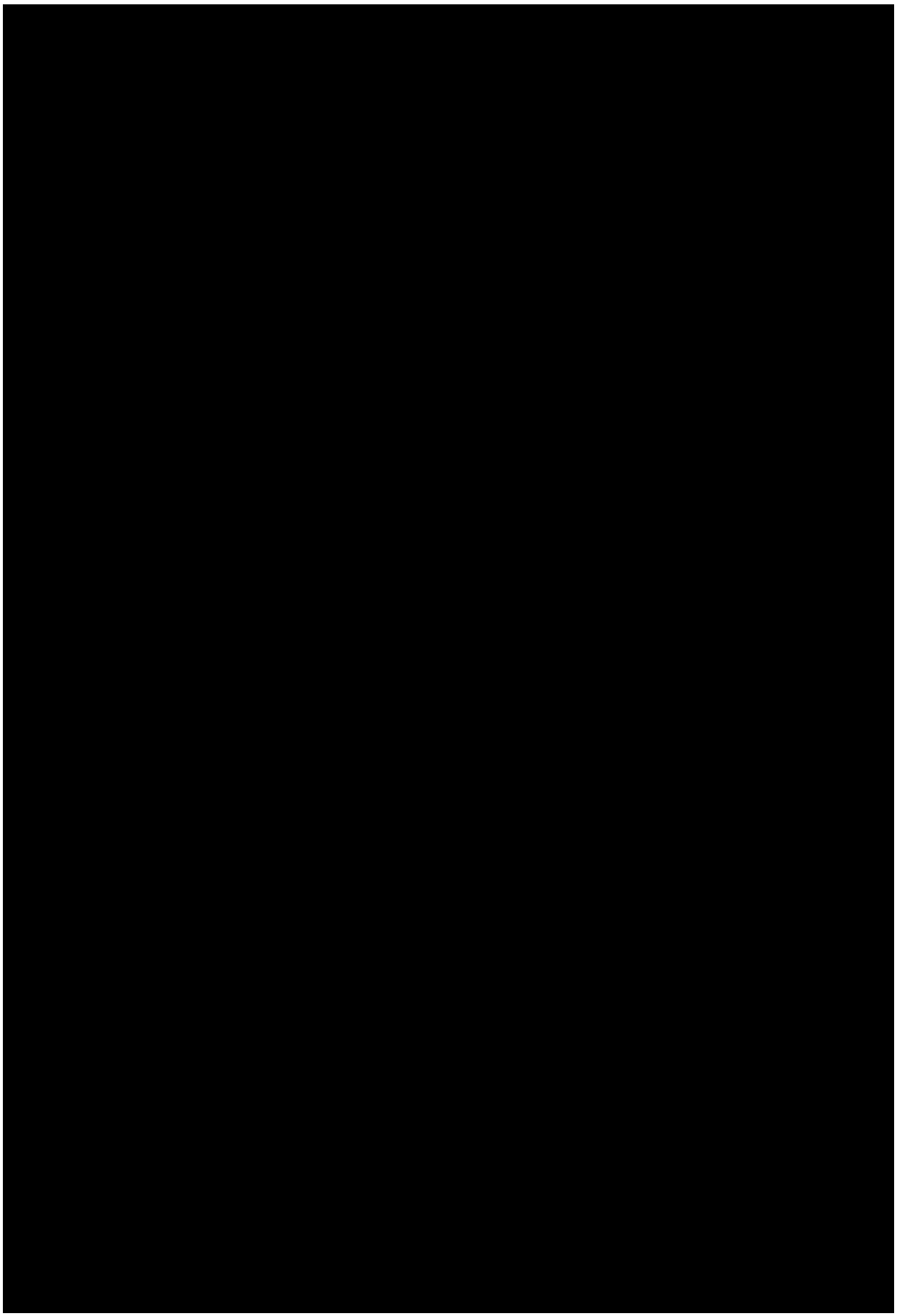


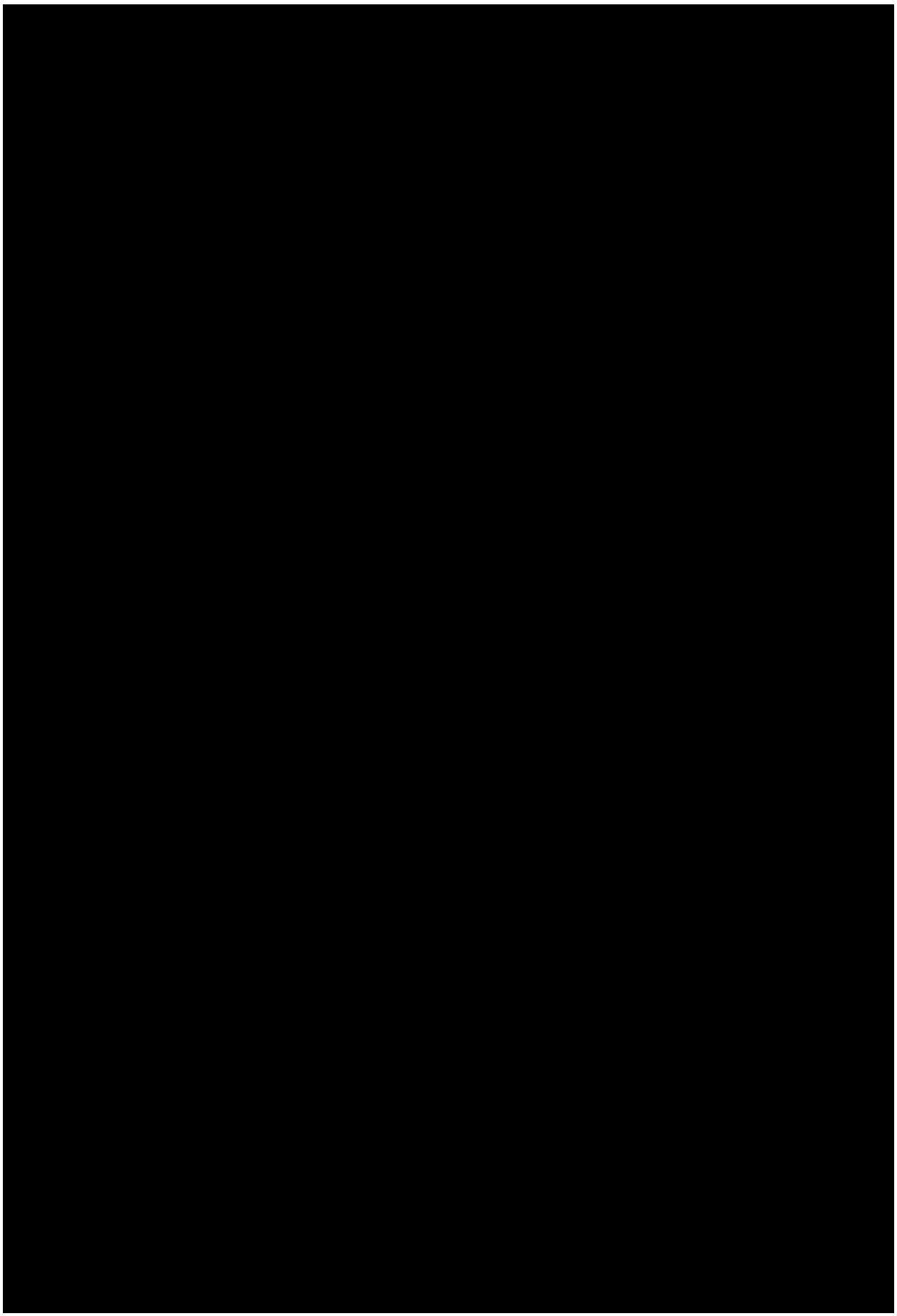


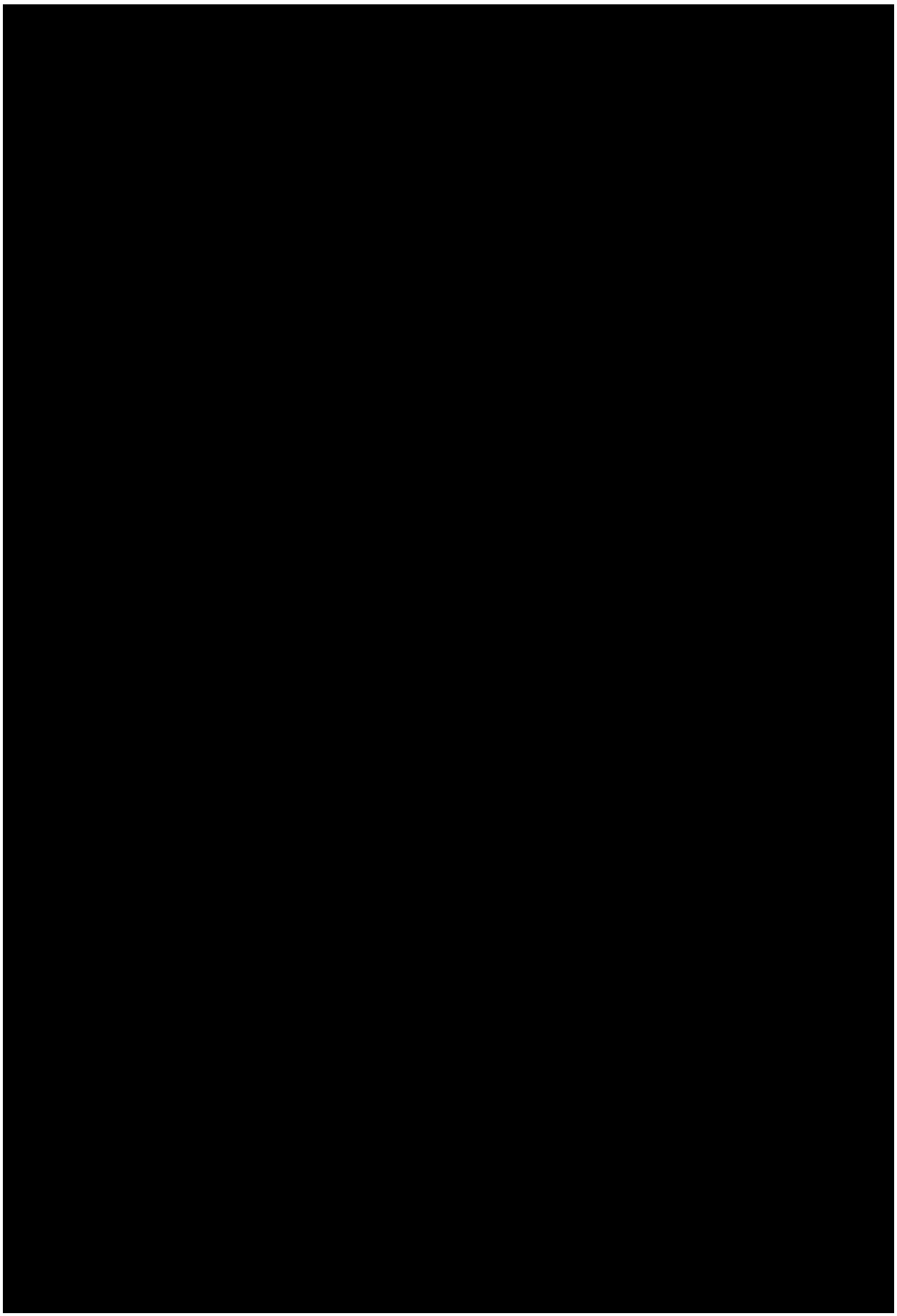


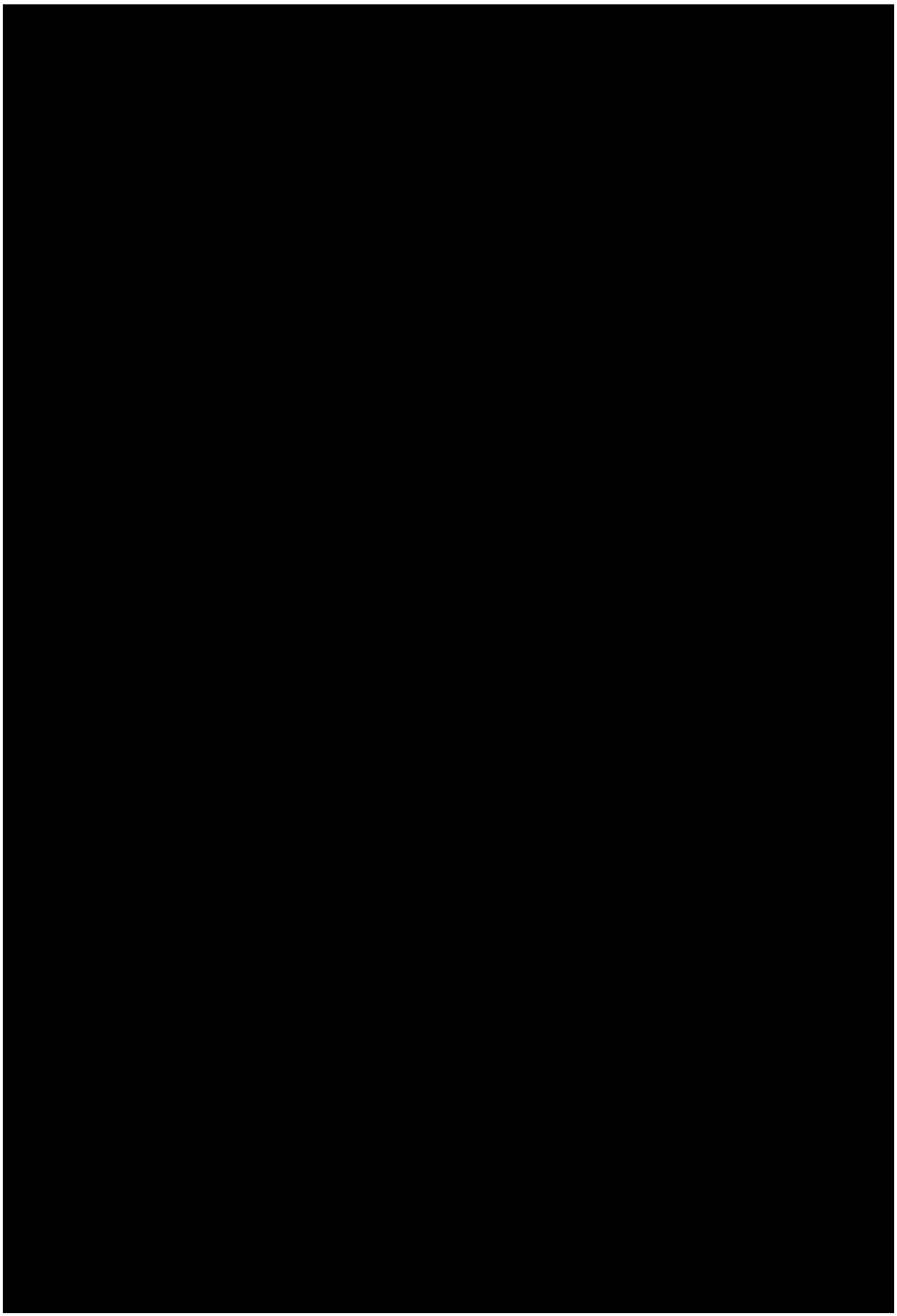






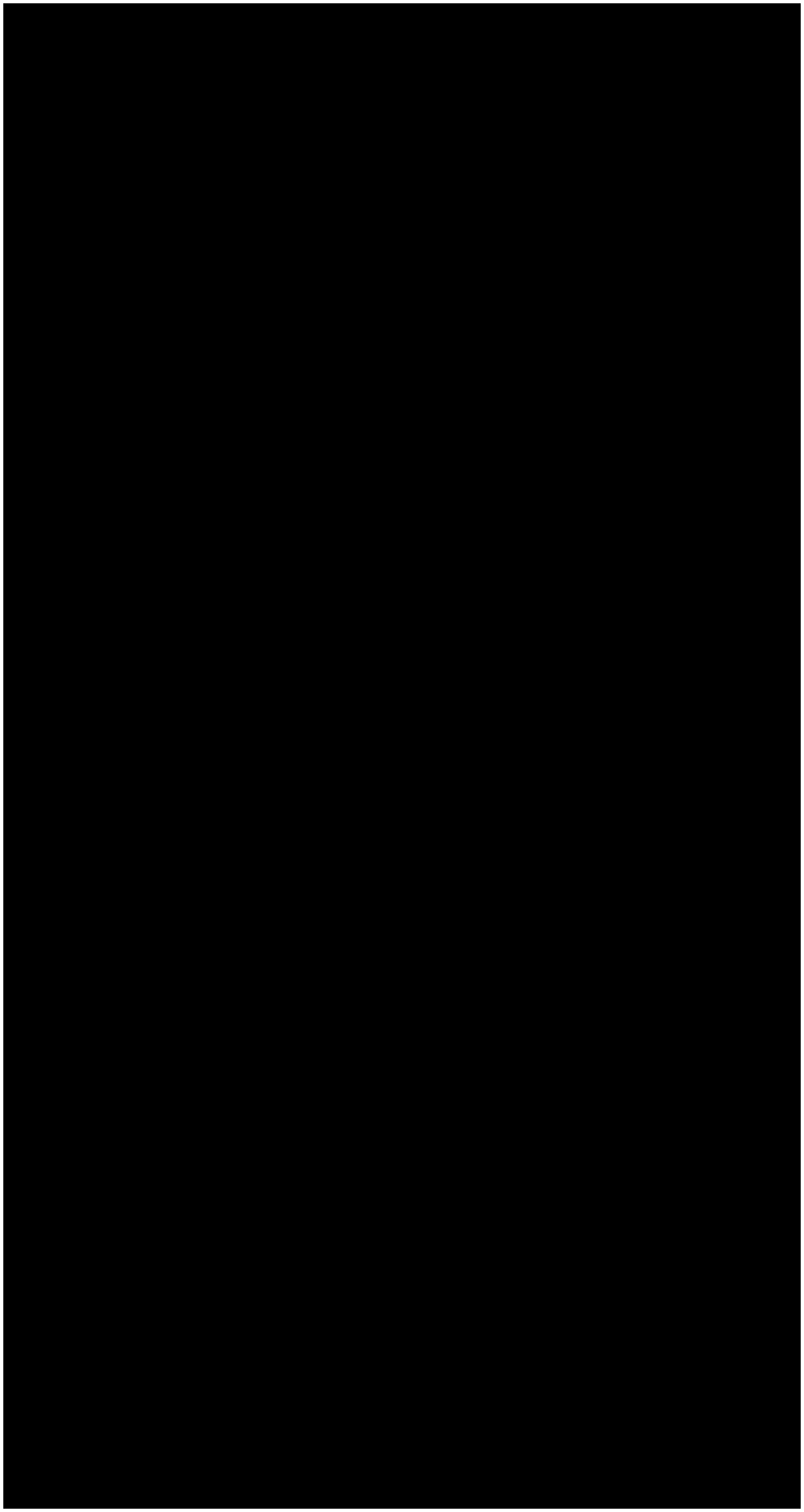


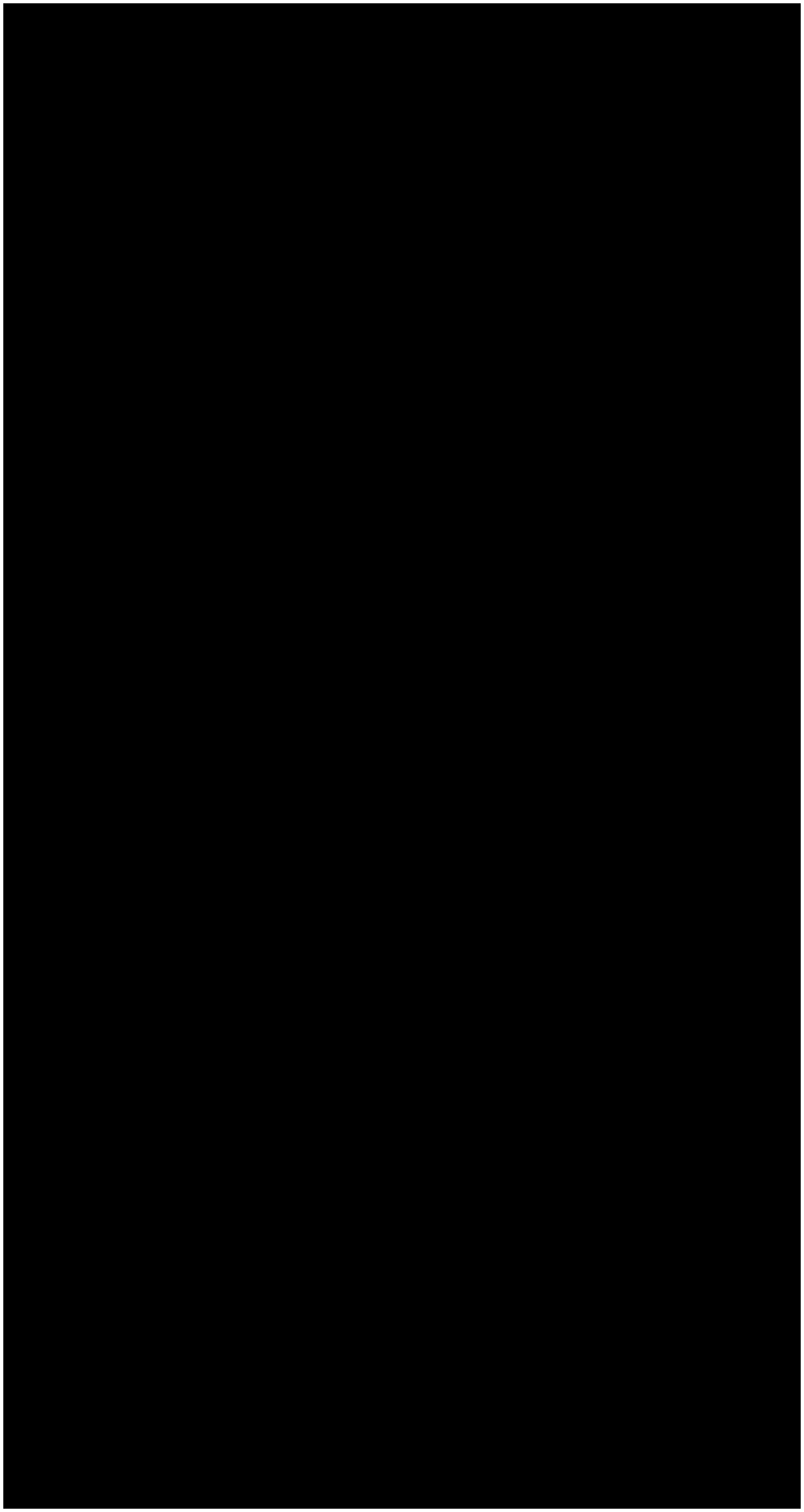


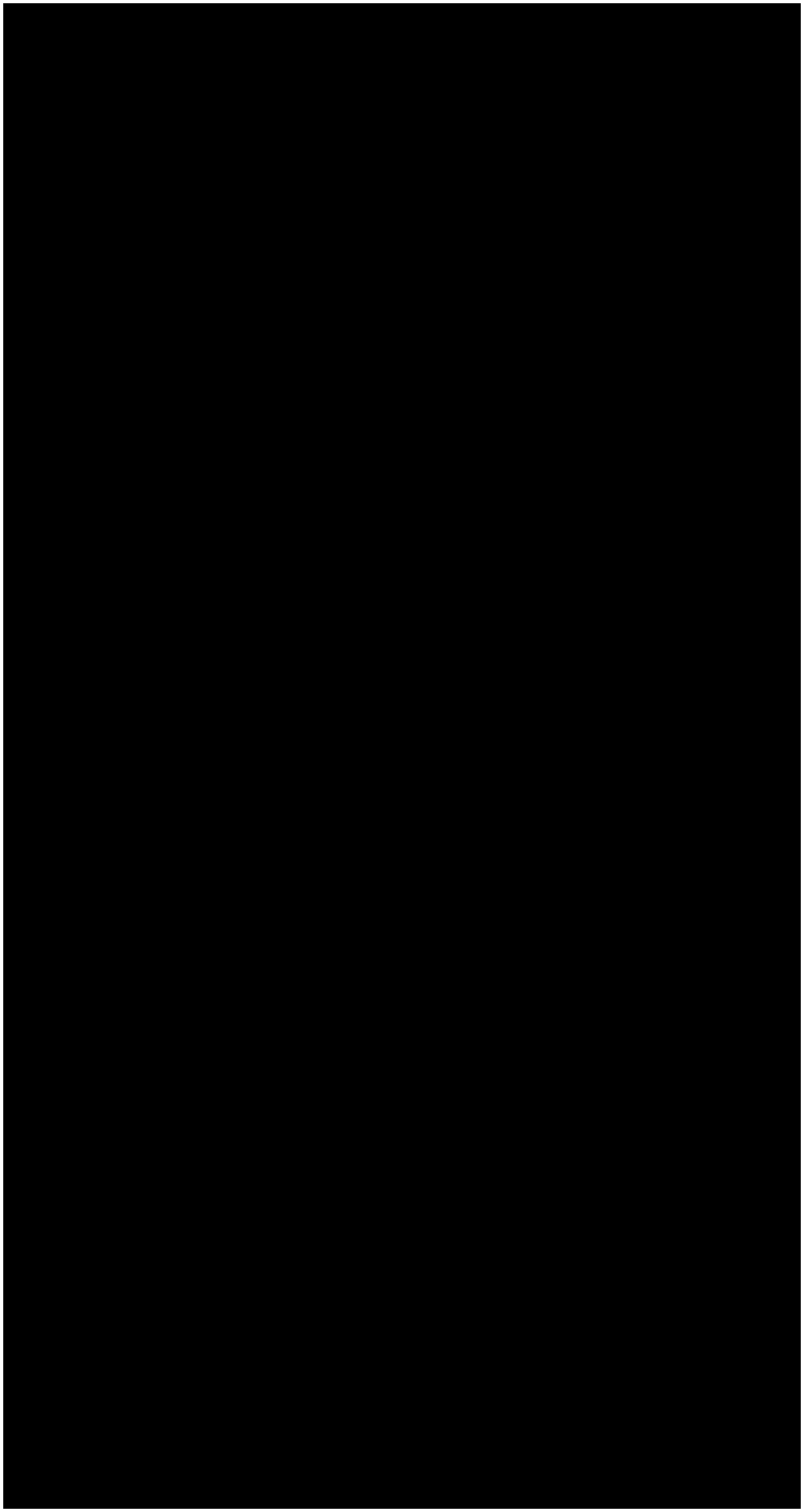


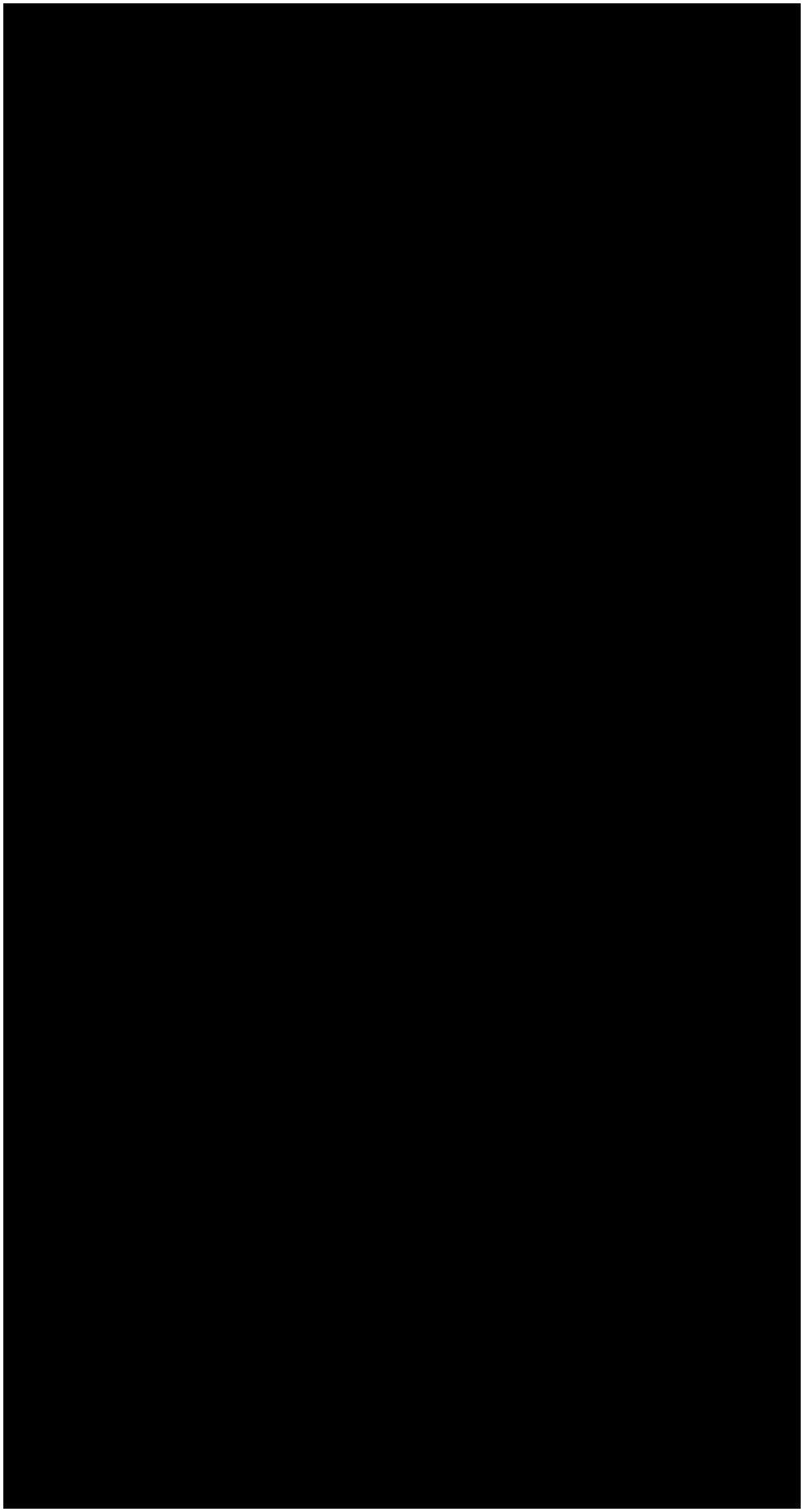


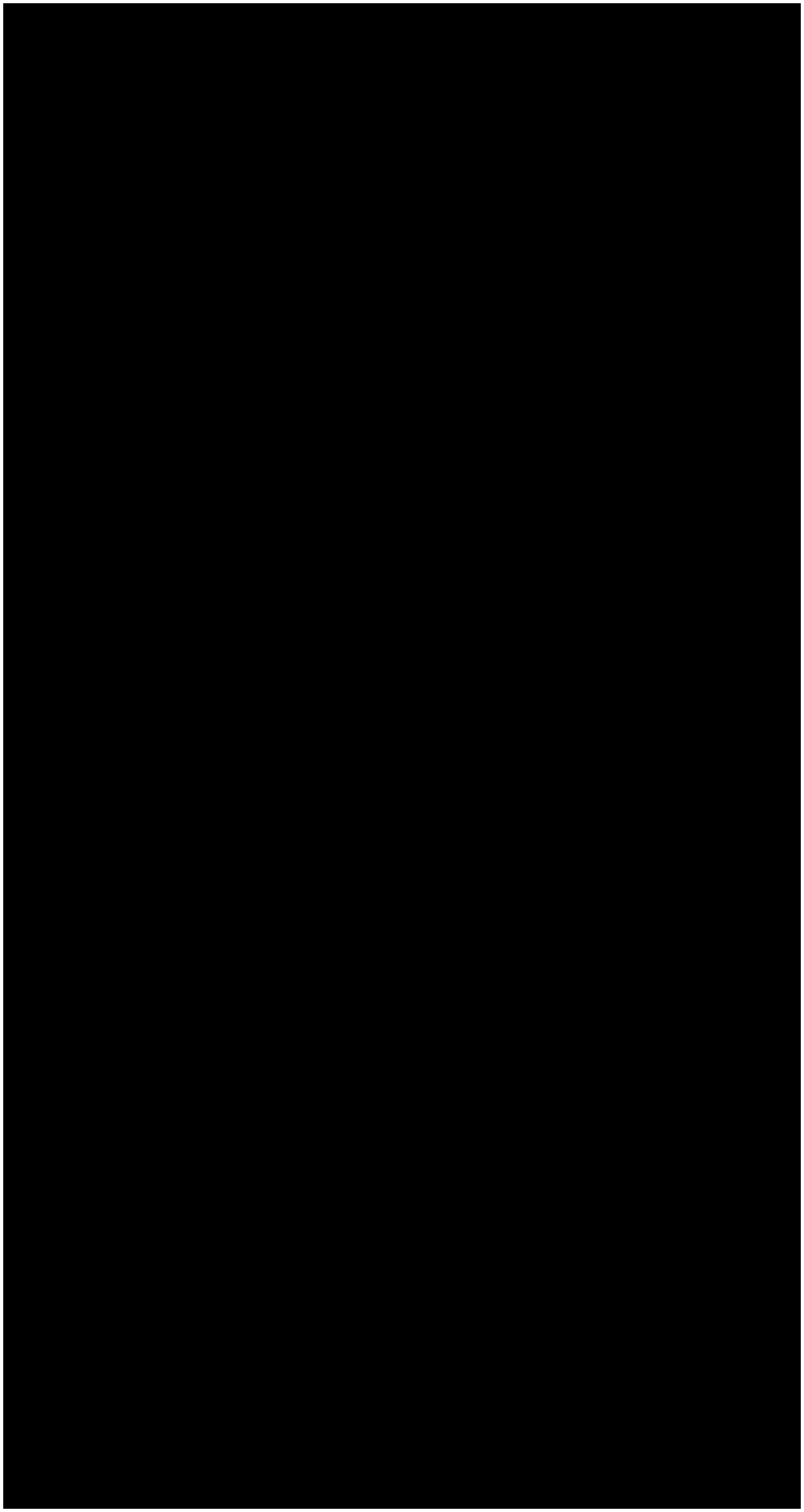
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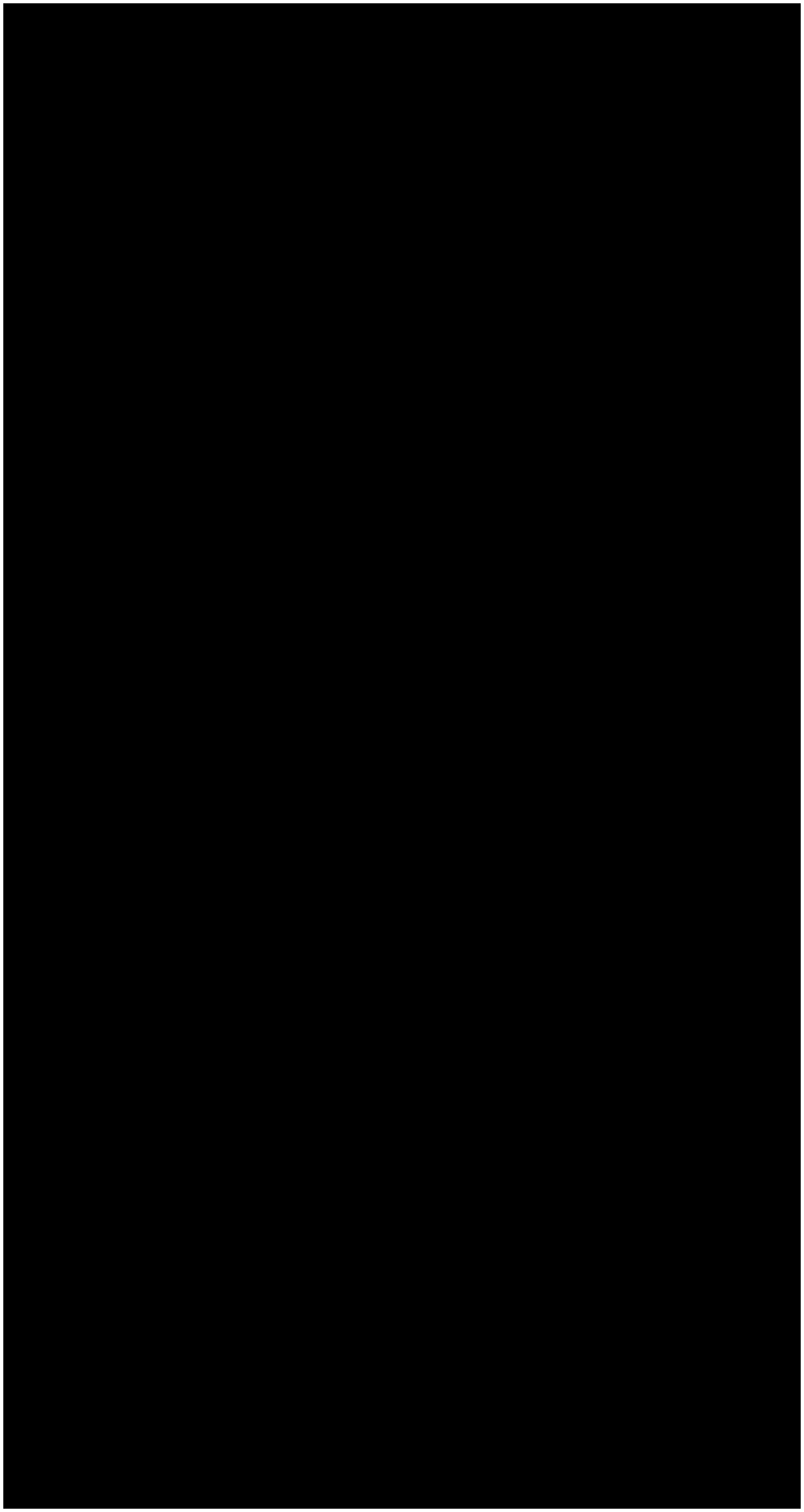


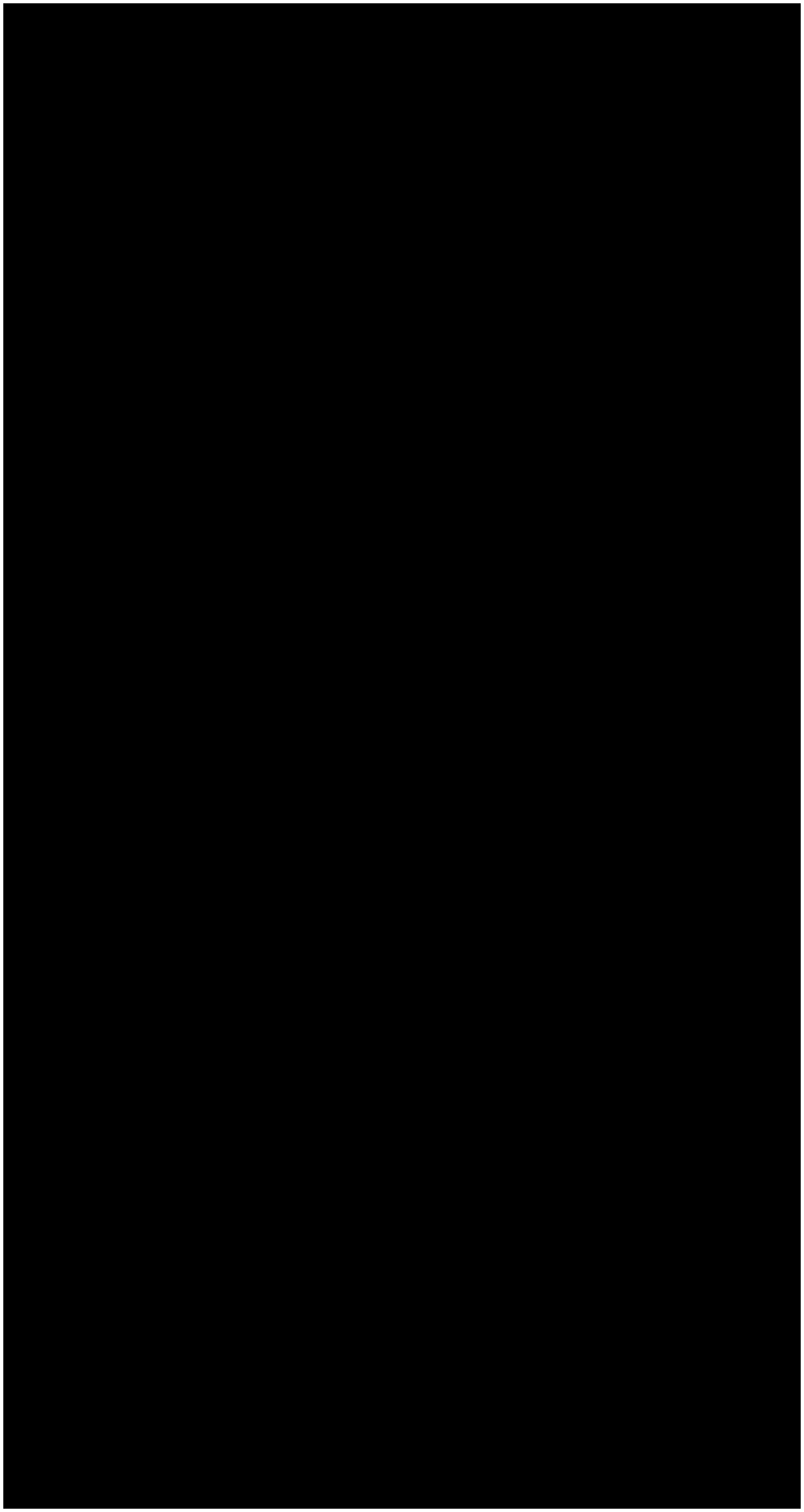


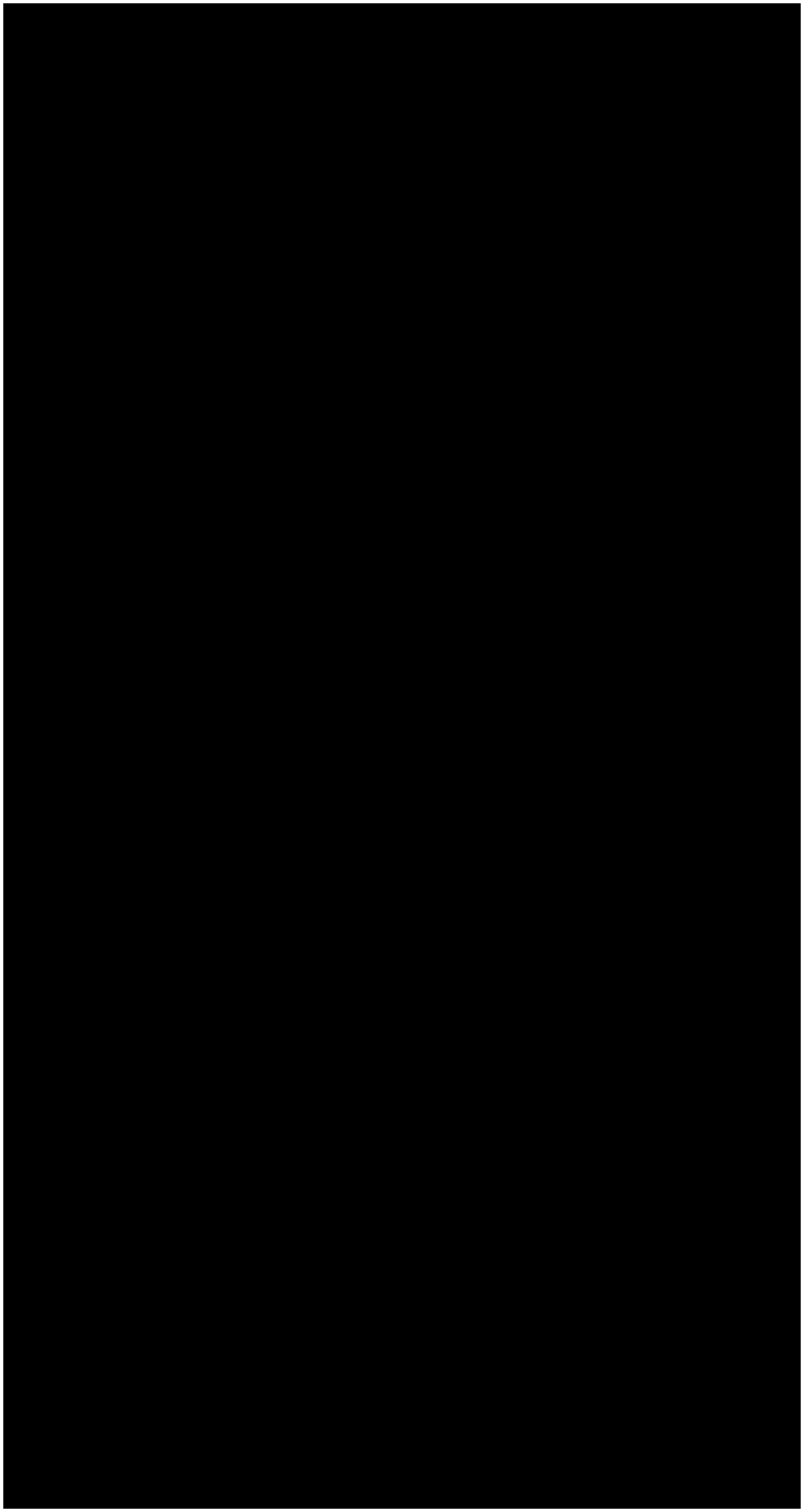


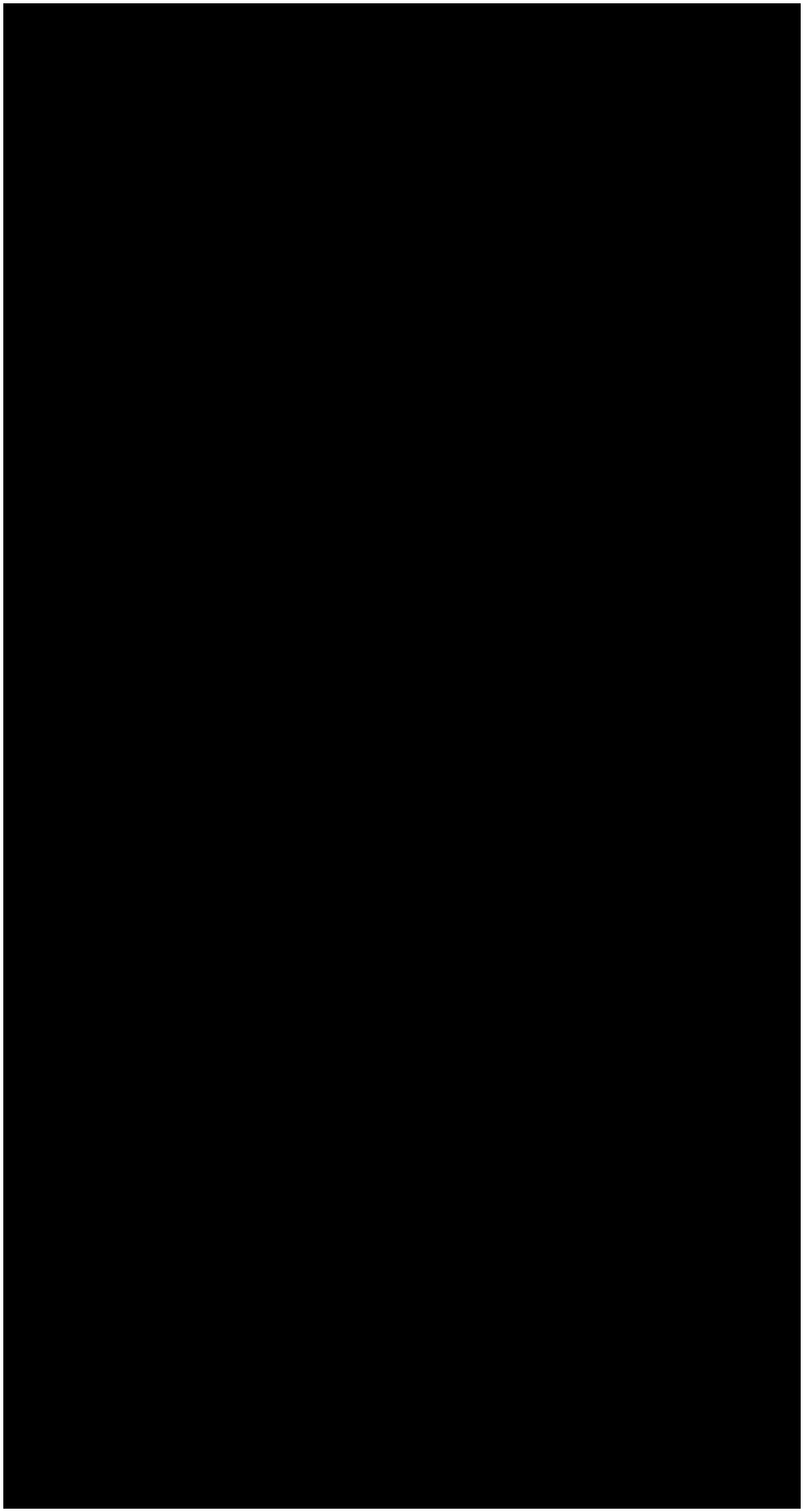


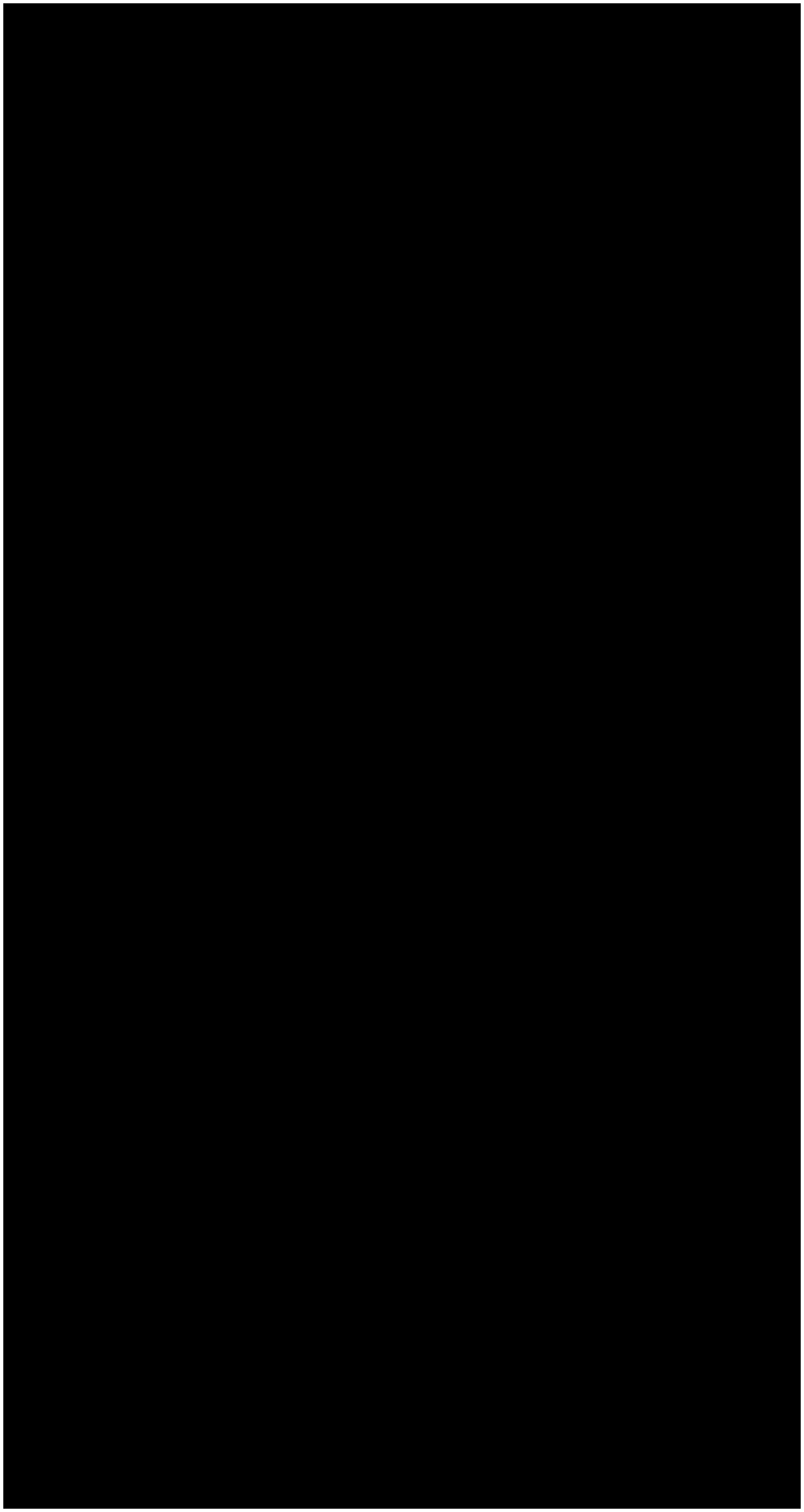


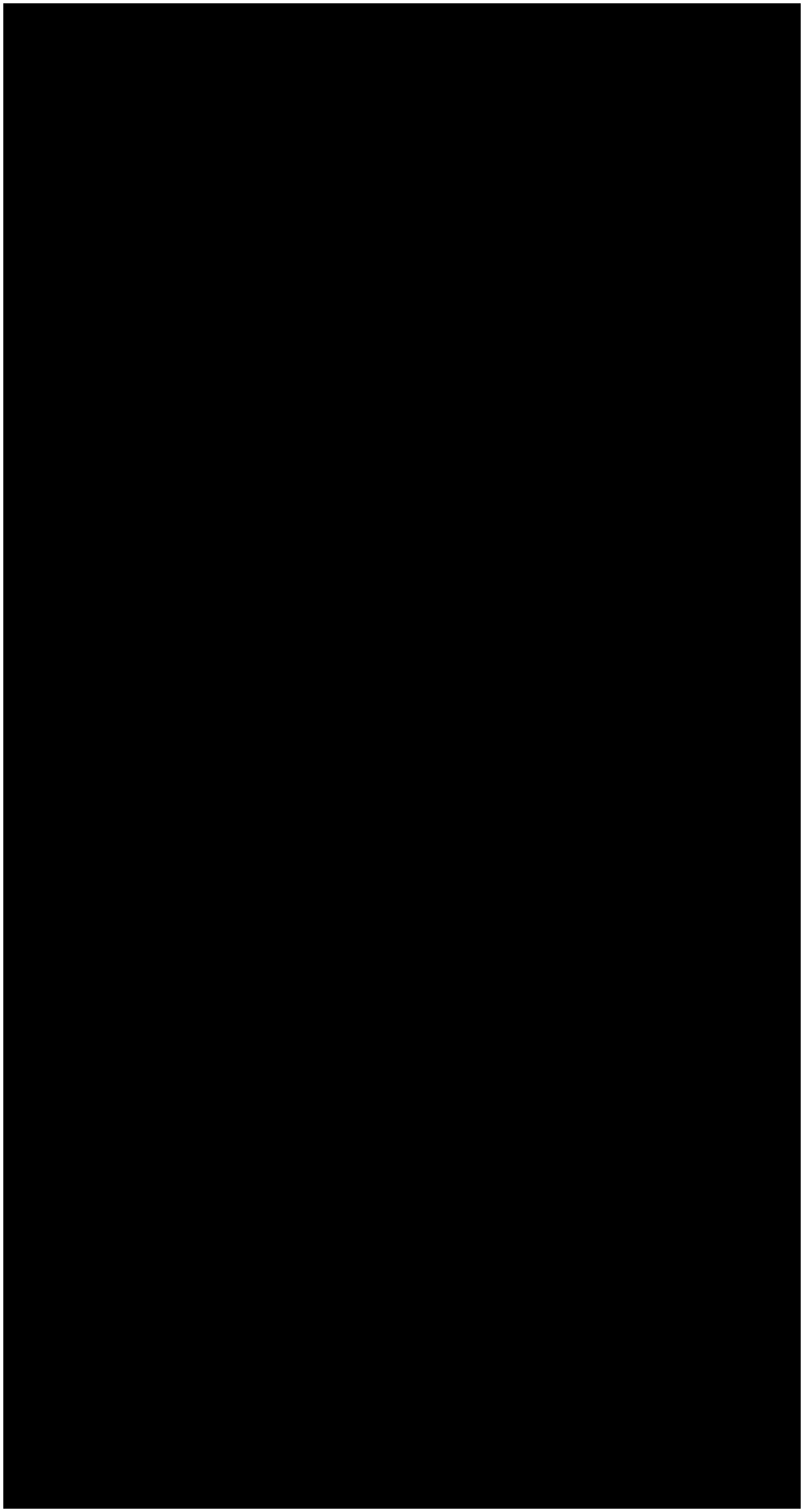


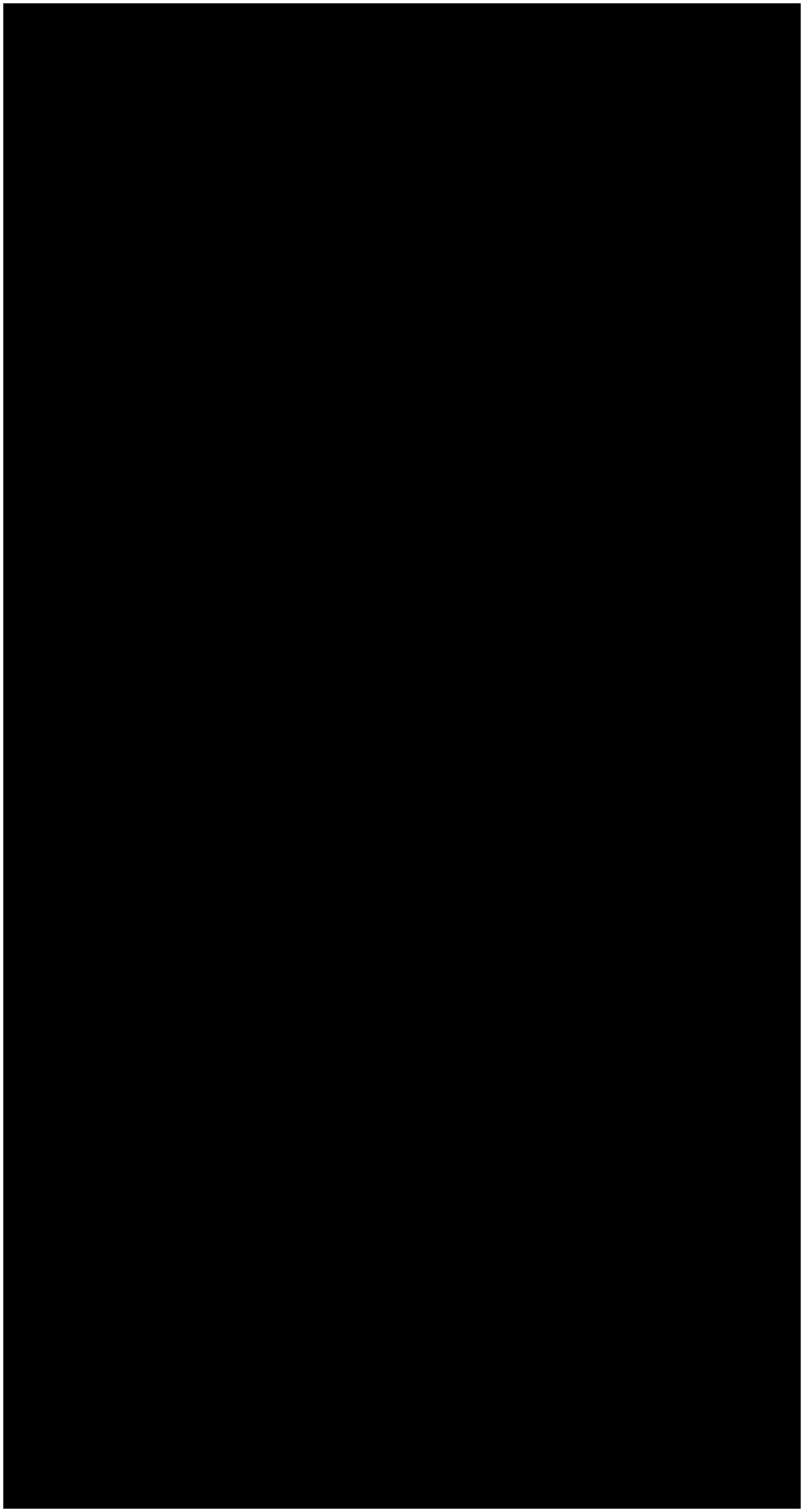


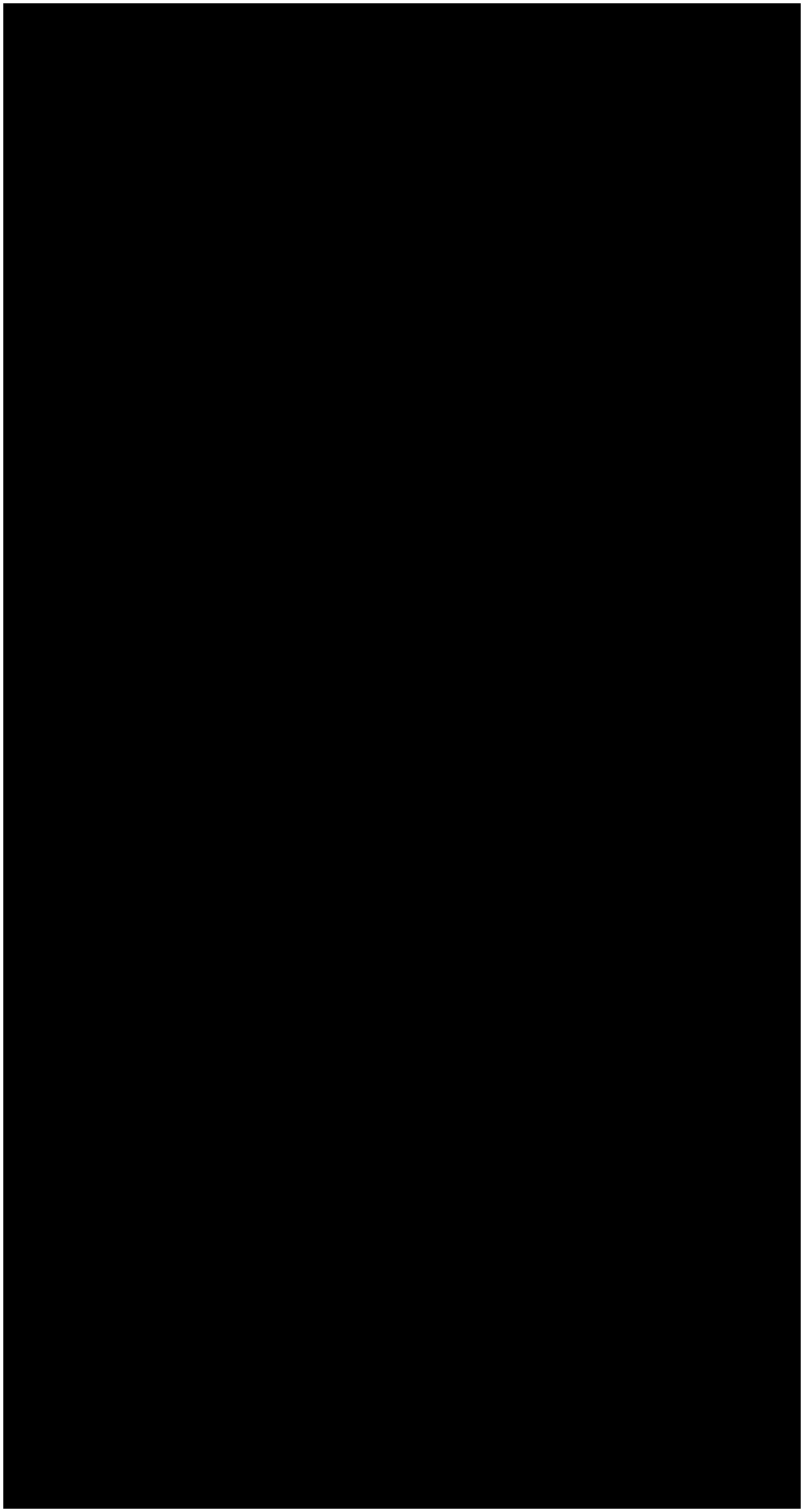


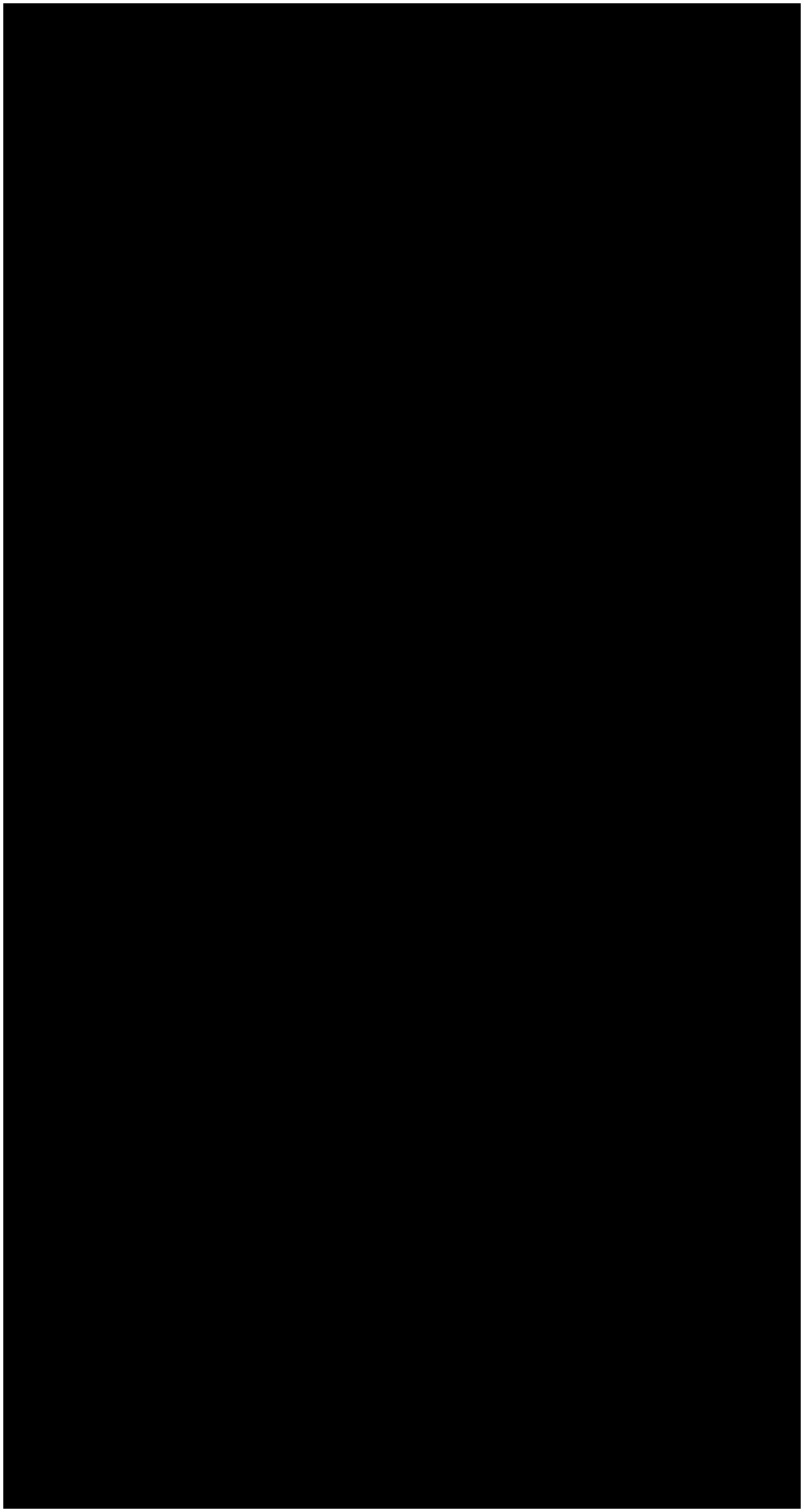


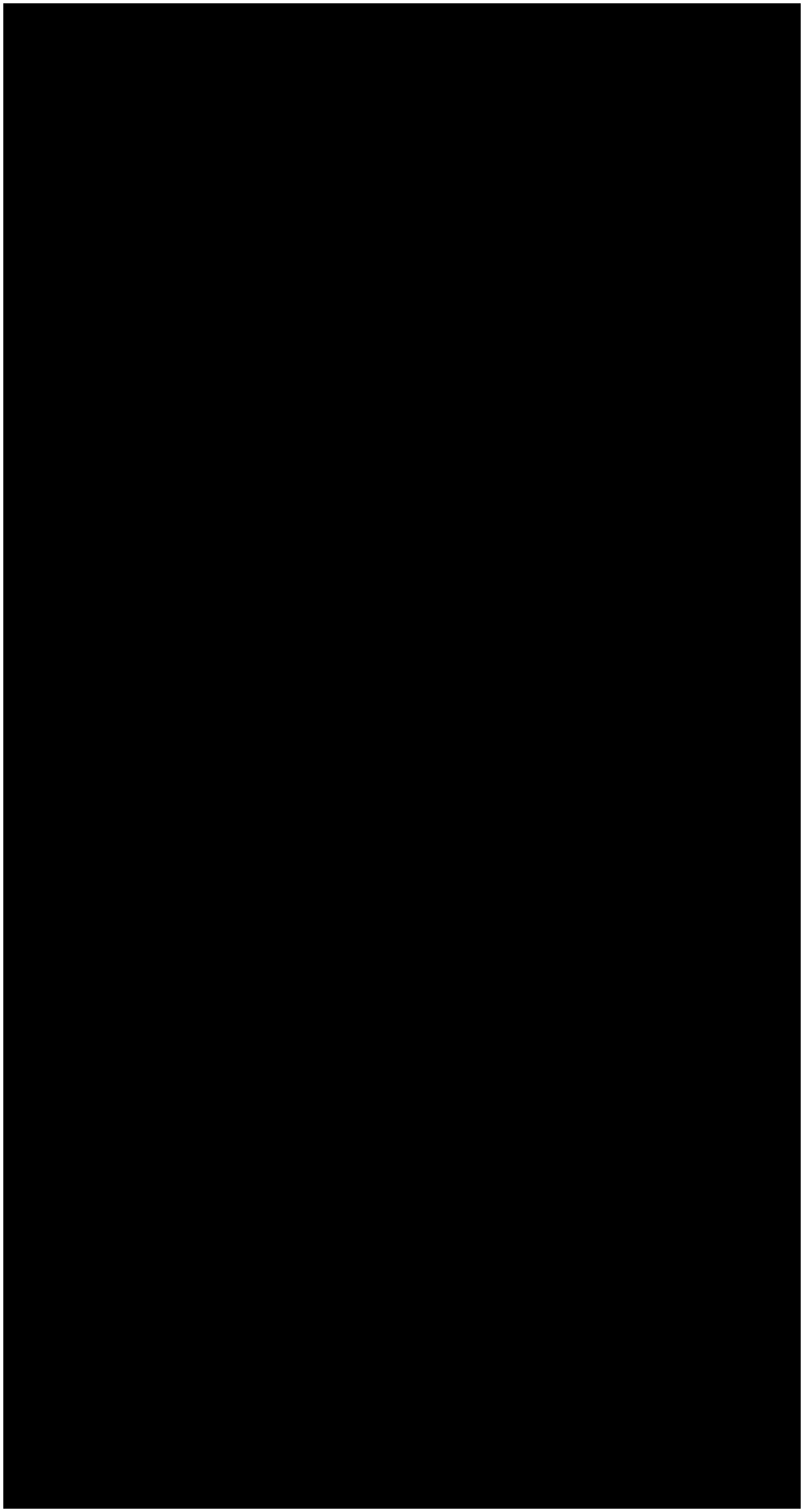


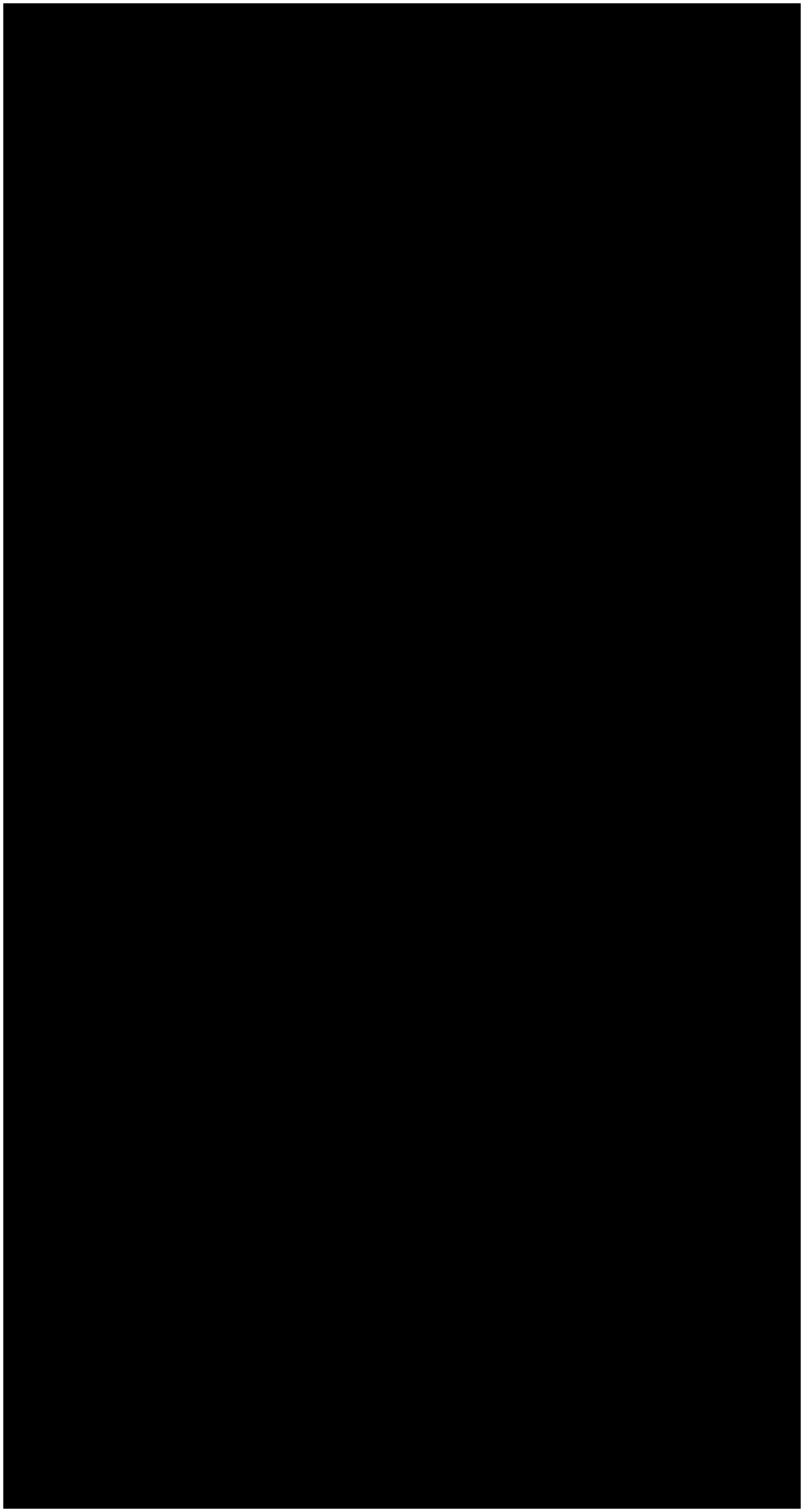


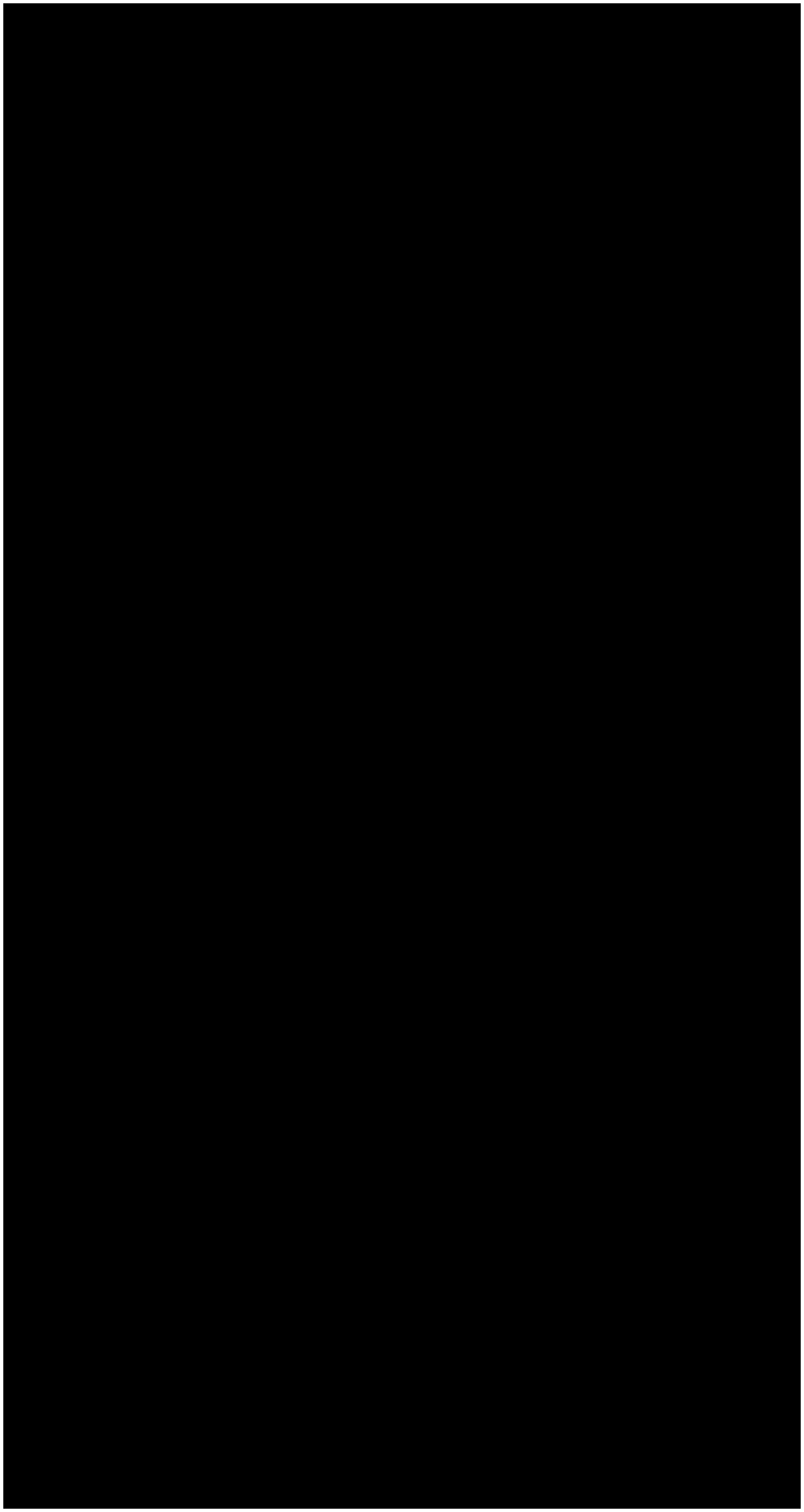


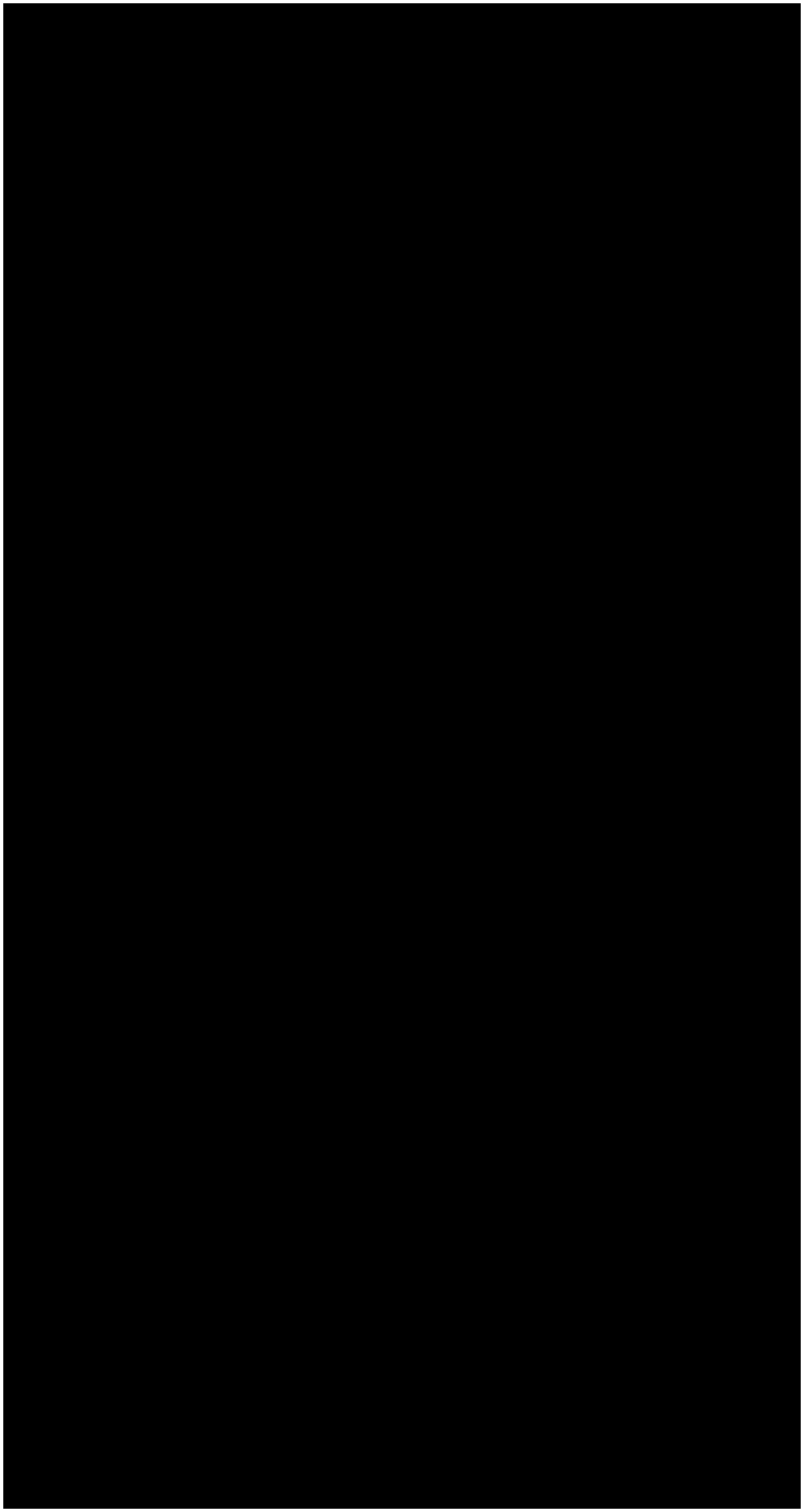














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
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Apr-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
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Apr-26											
May-26											
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Jul-26											
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May-27											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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Oct-28											

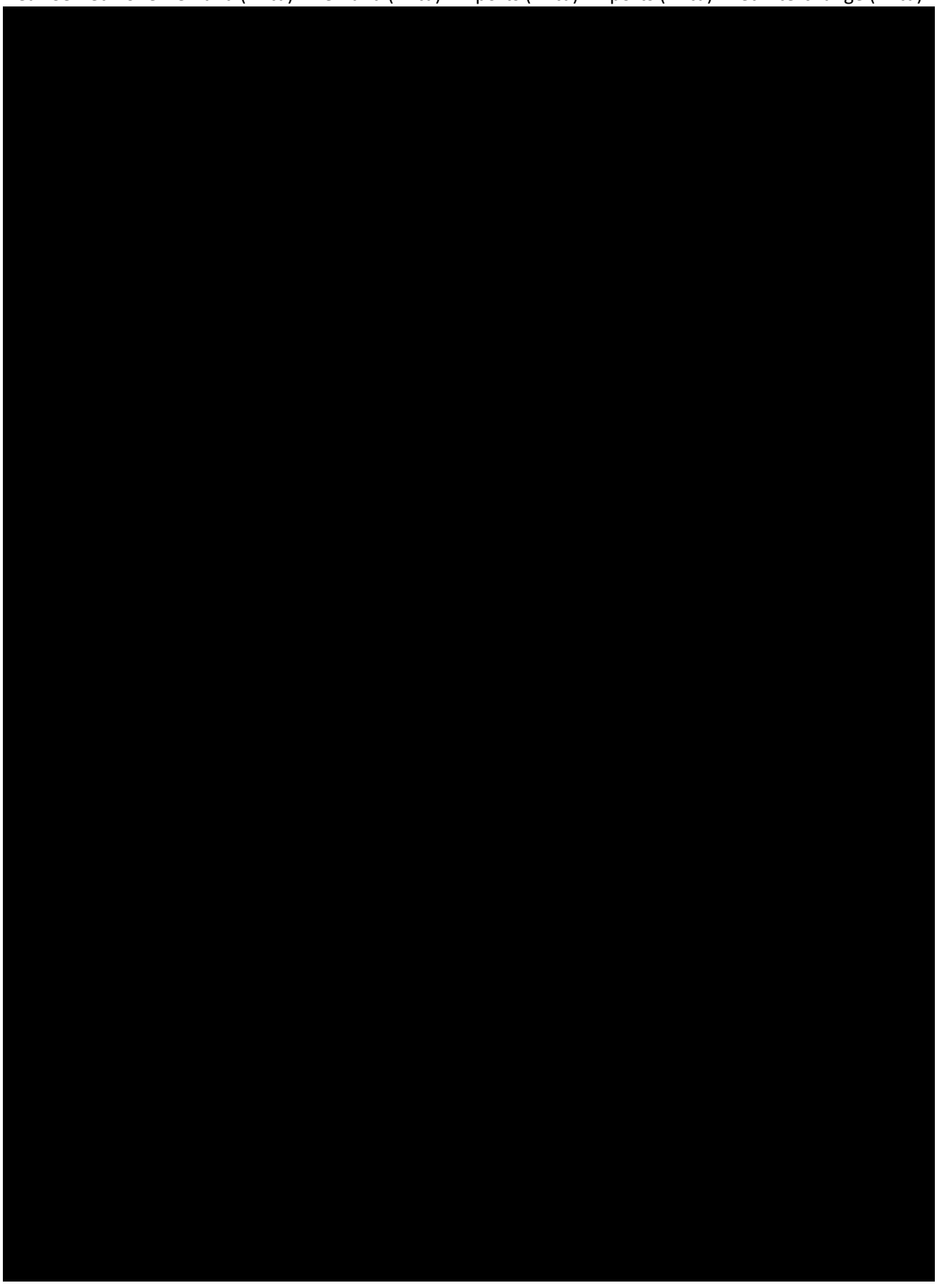
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





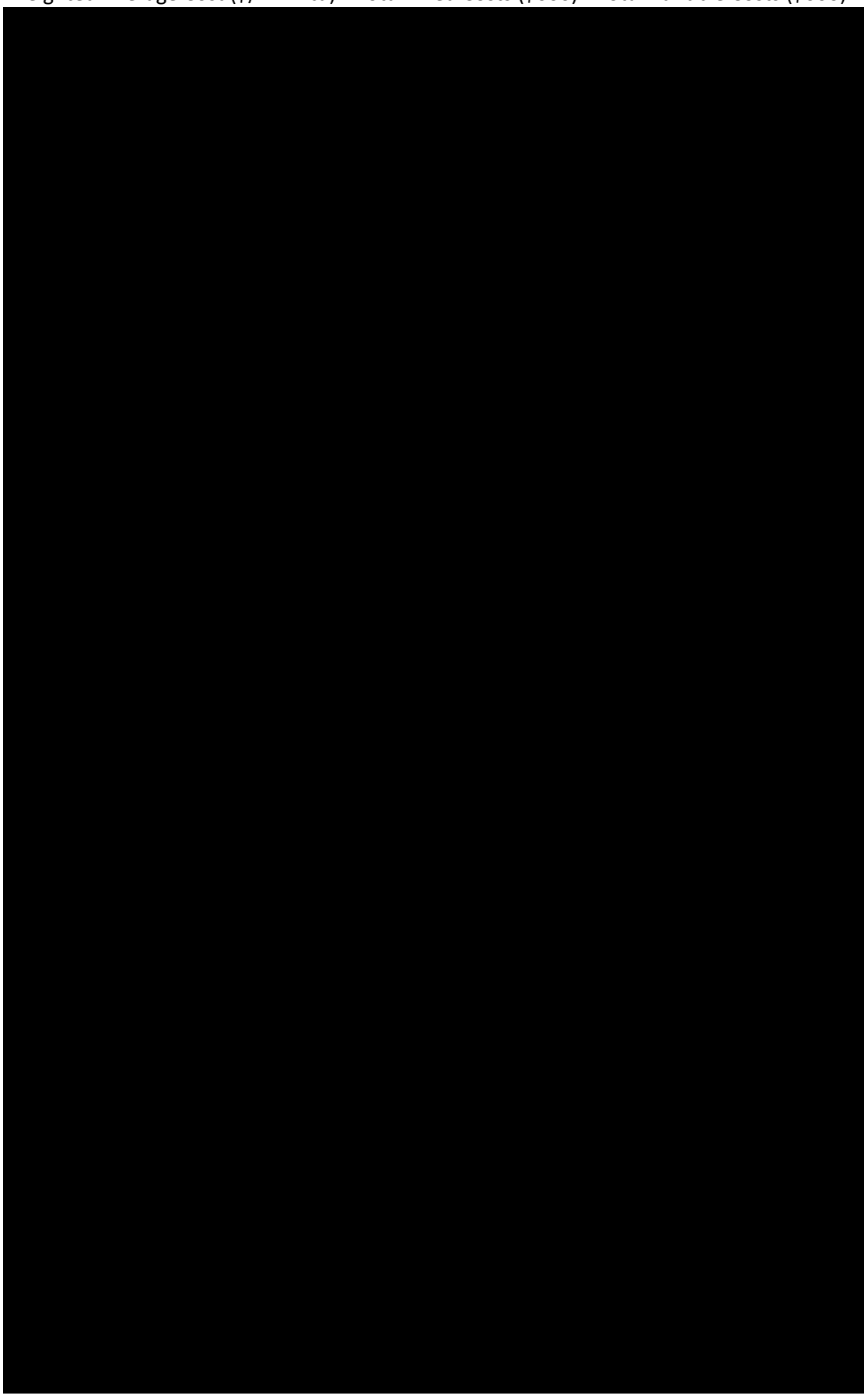
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

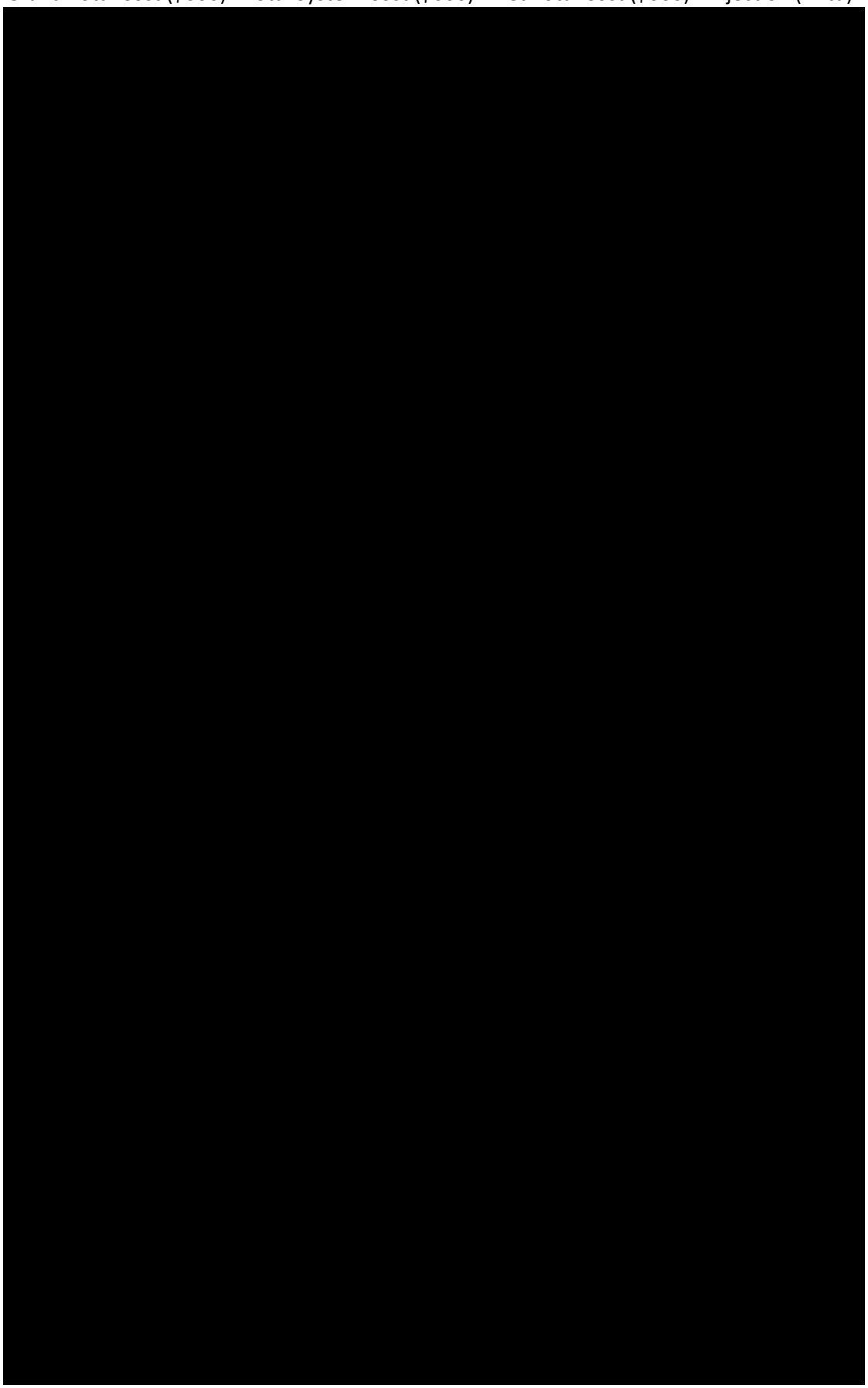


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

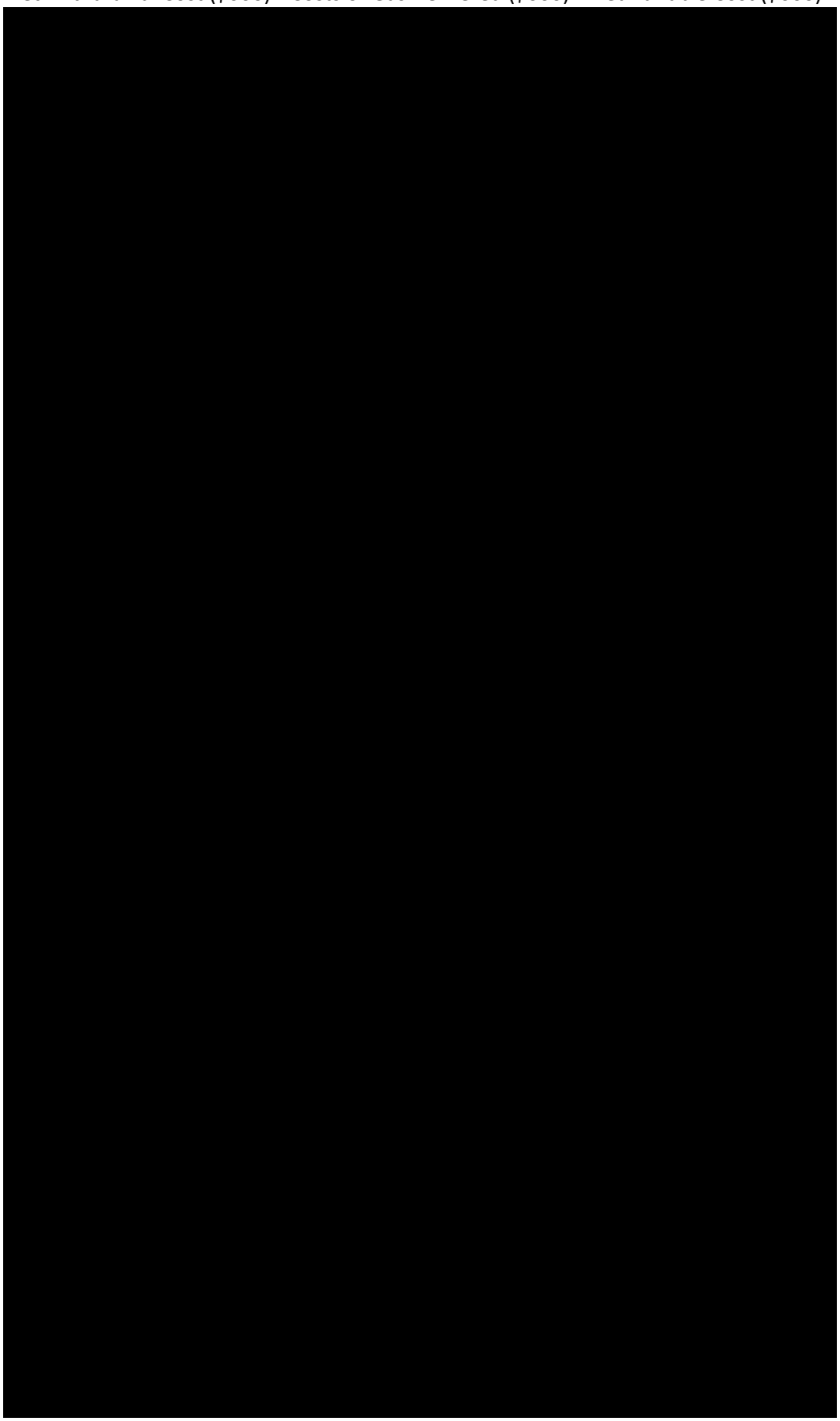




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

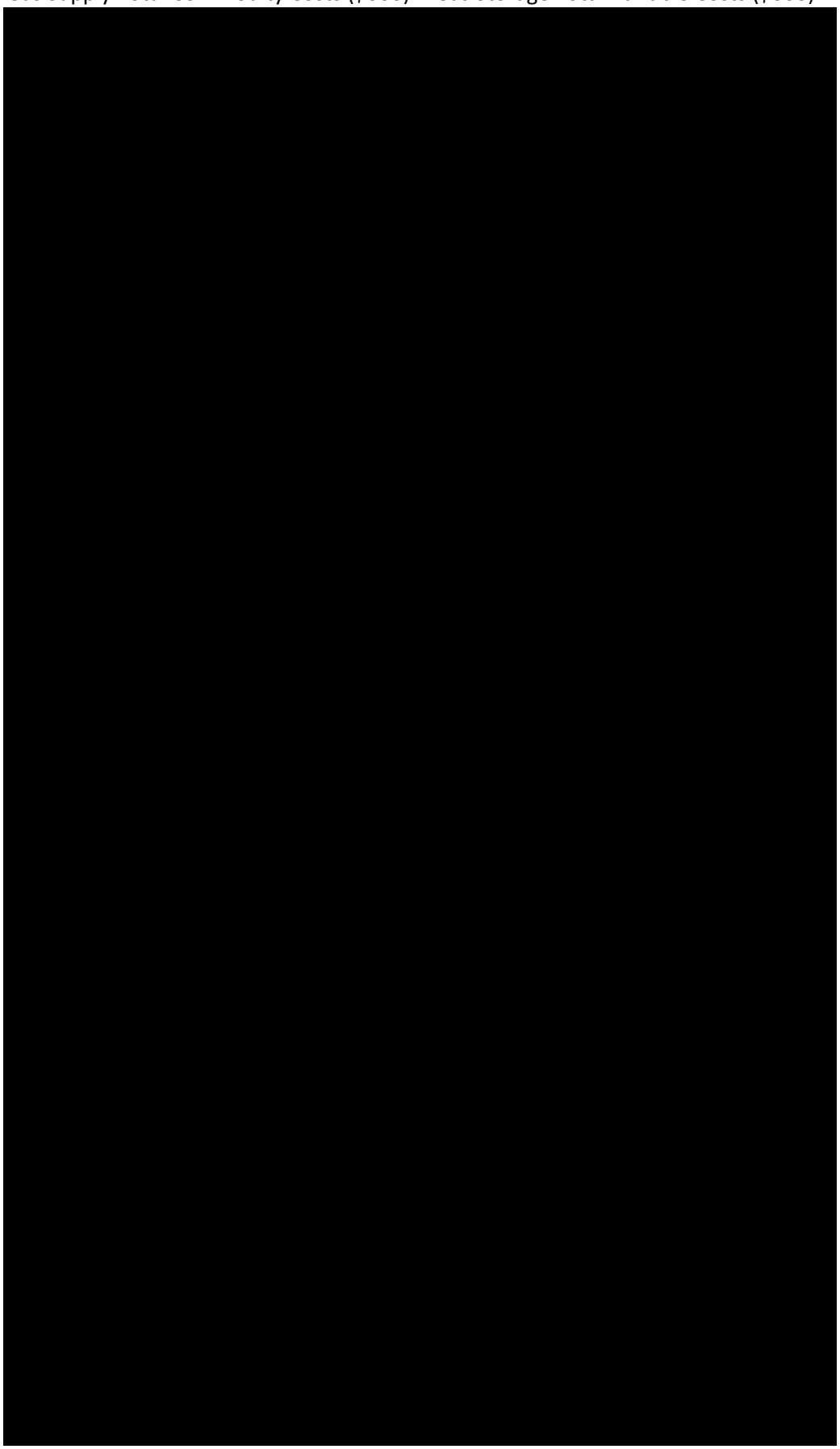




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

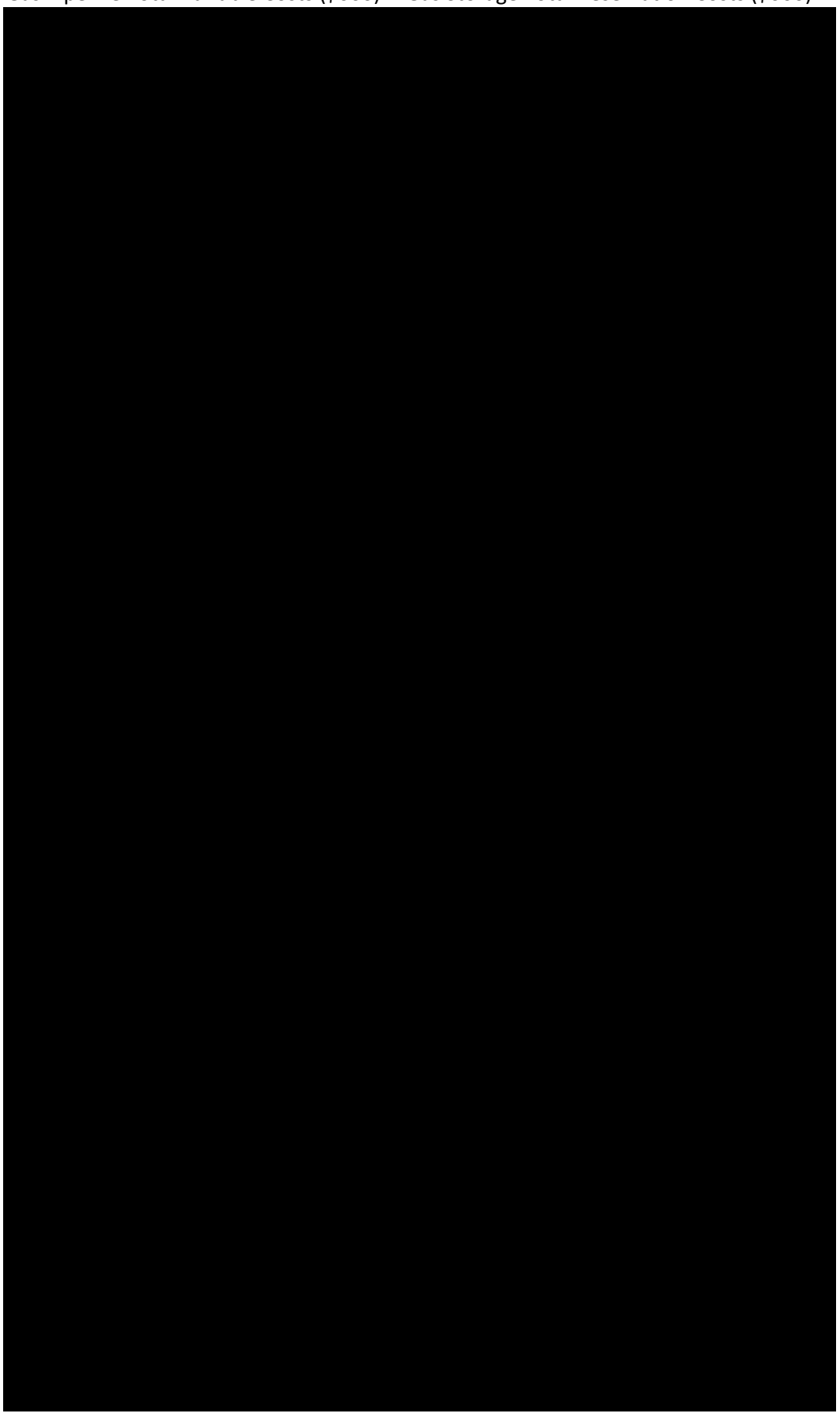


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



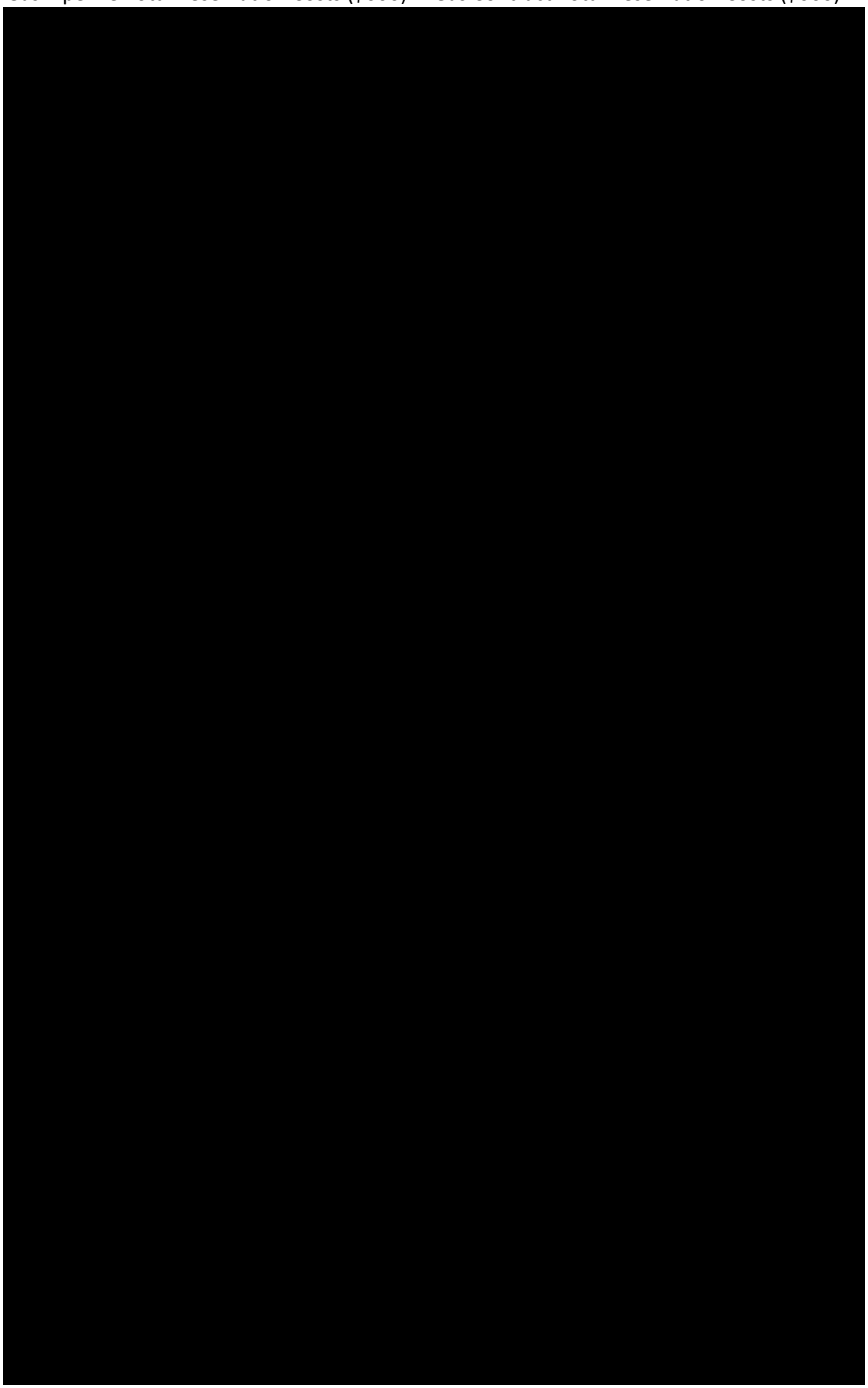


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



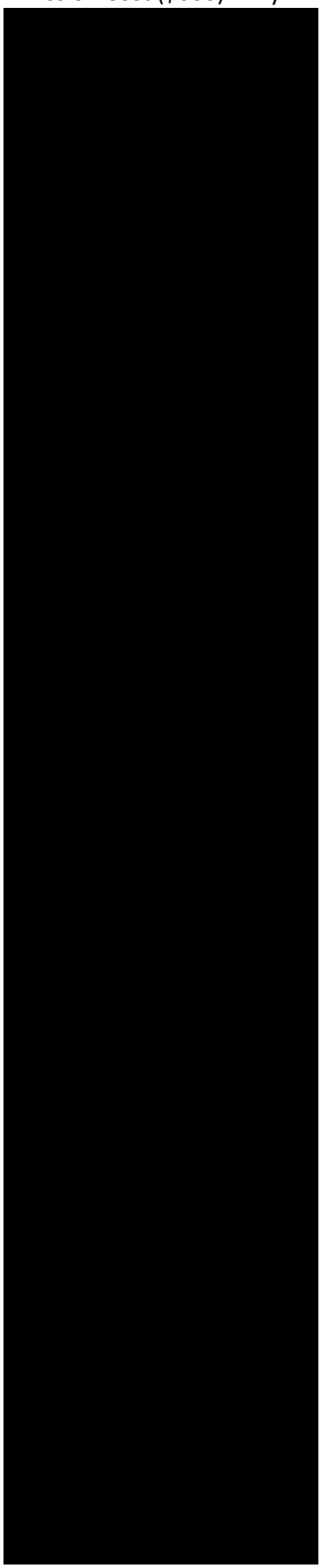


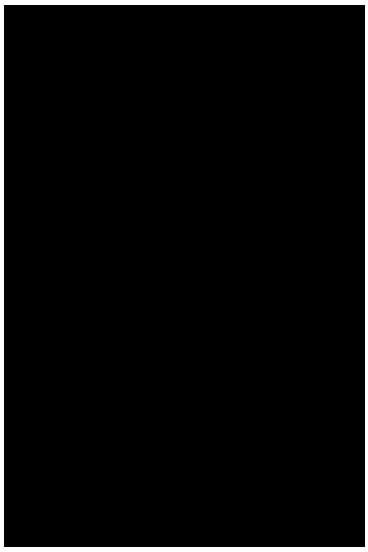
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



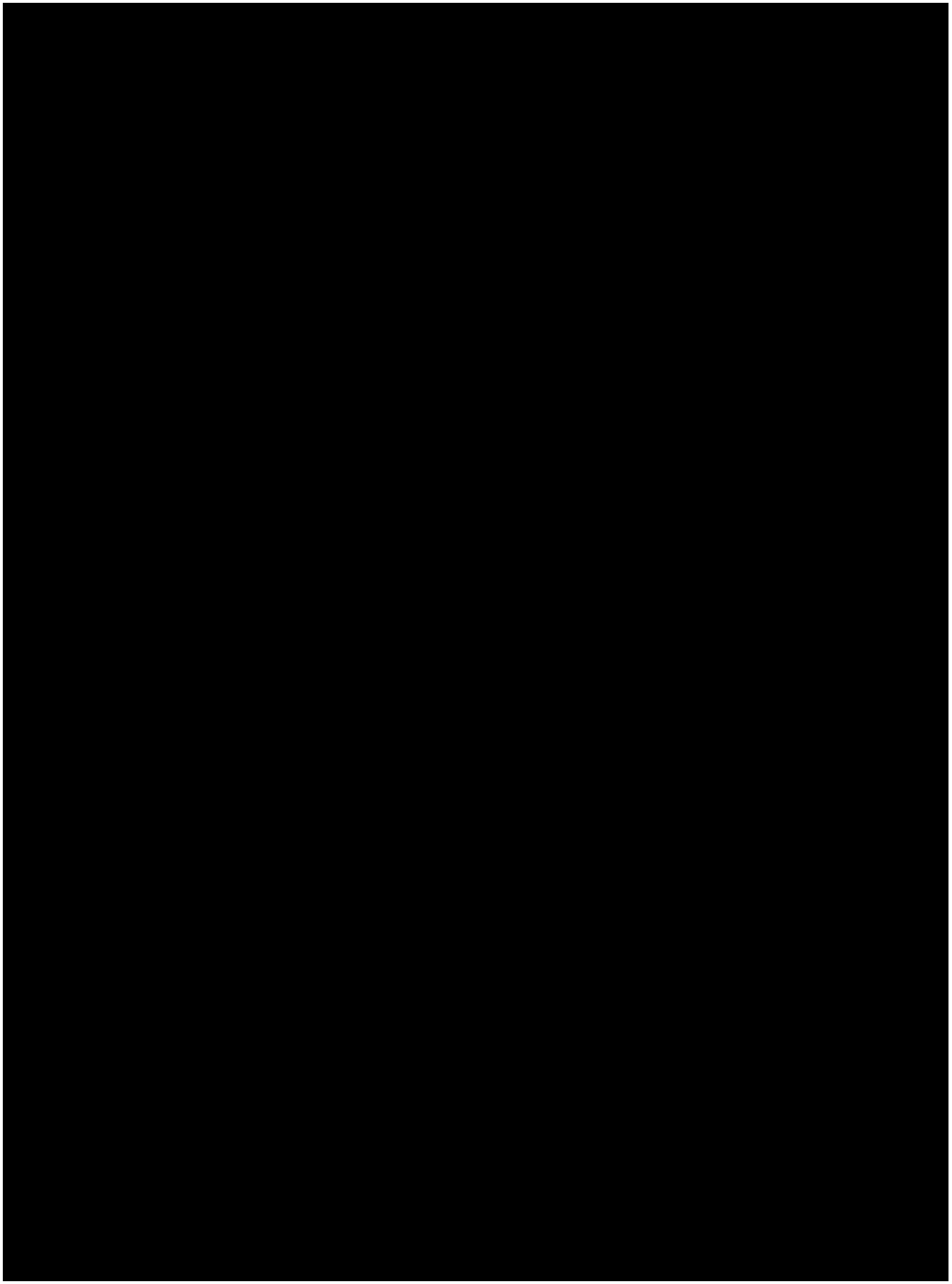


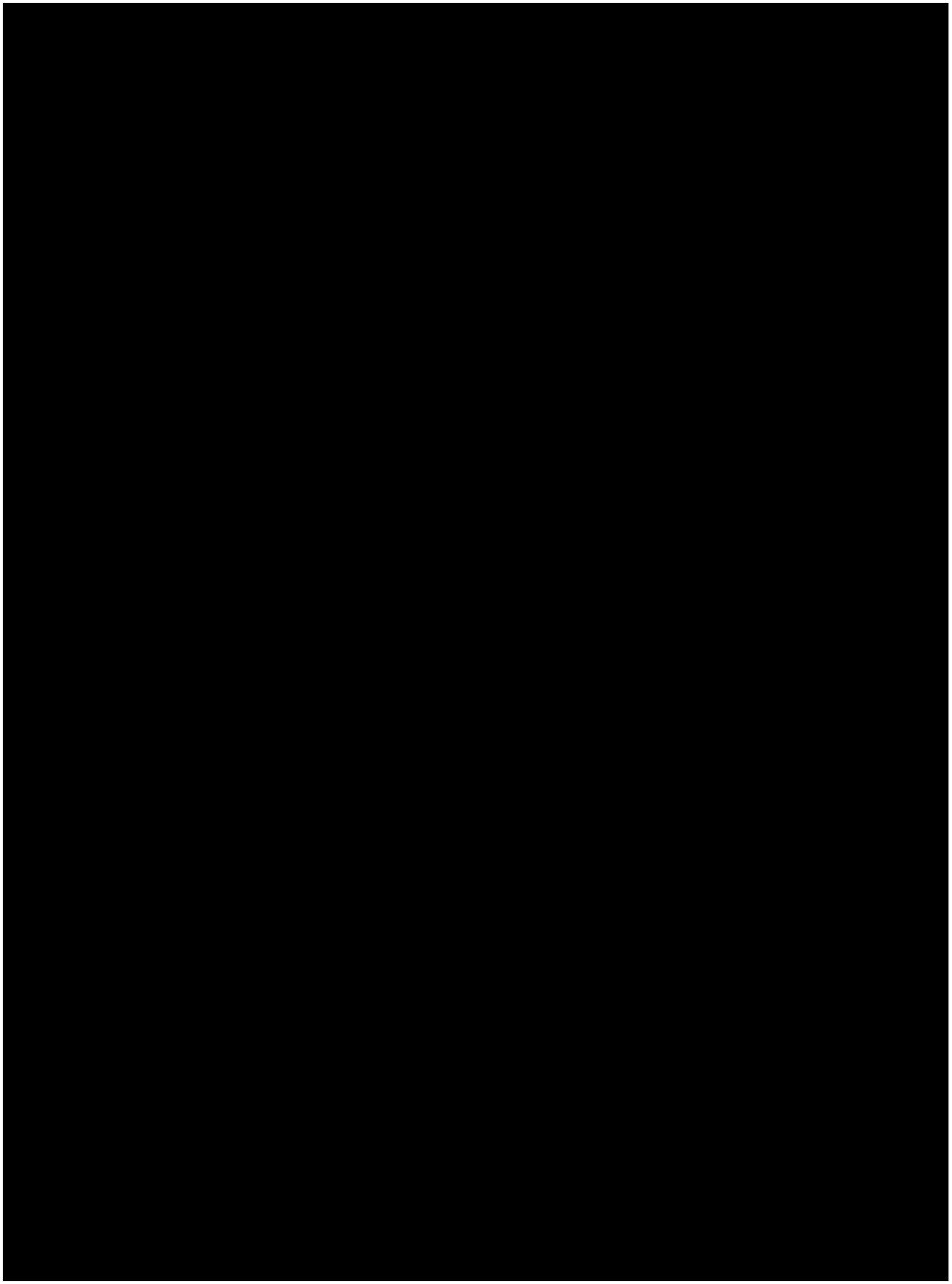
Emission Cost ($000) x y z

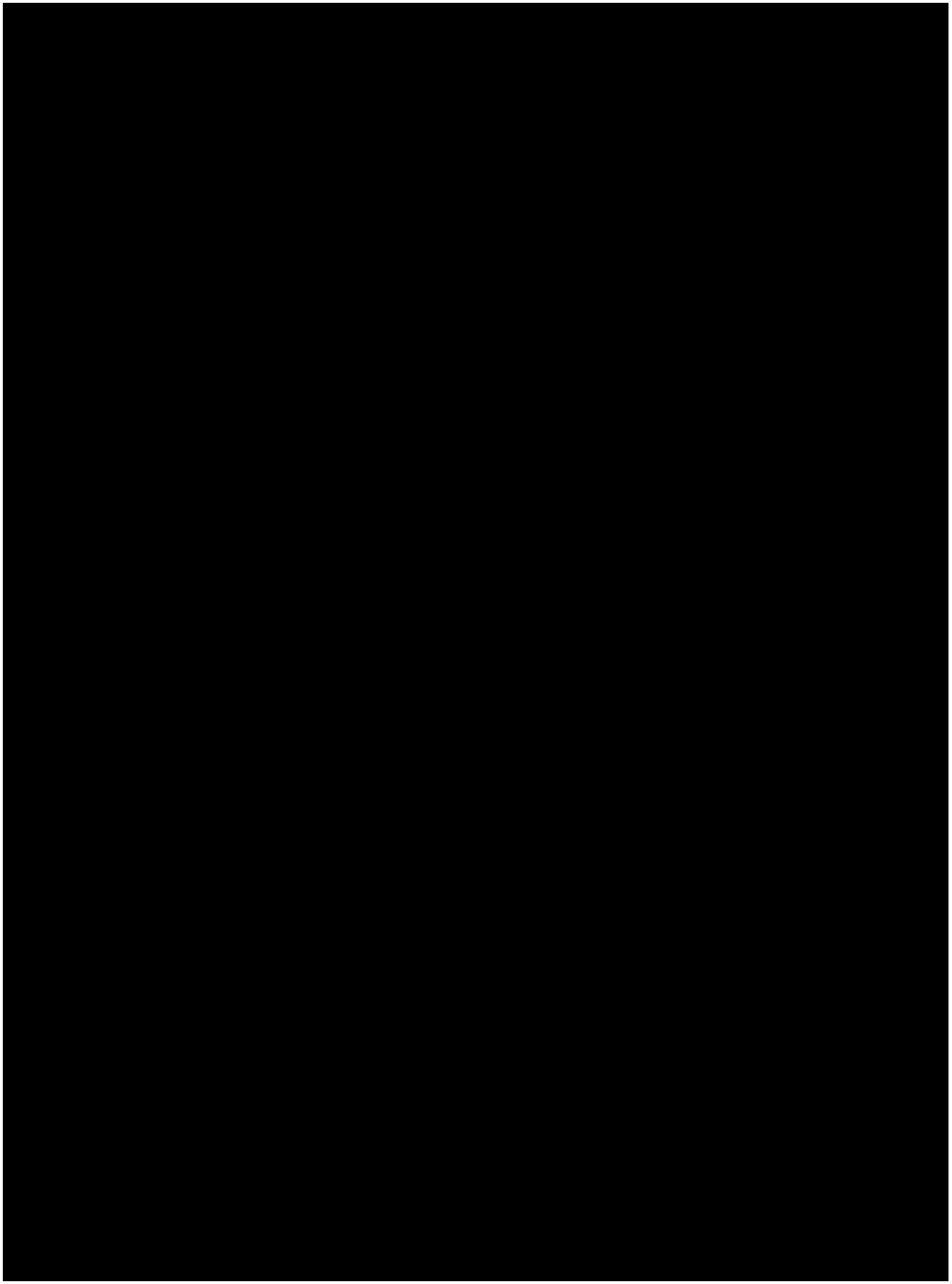


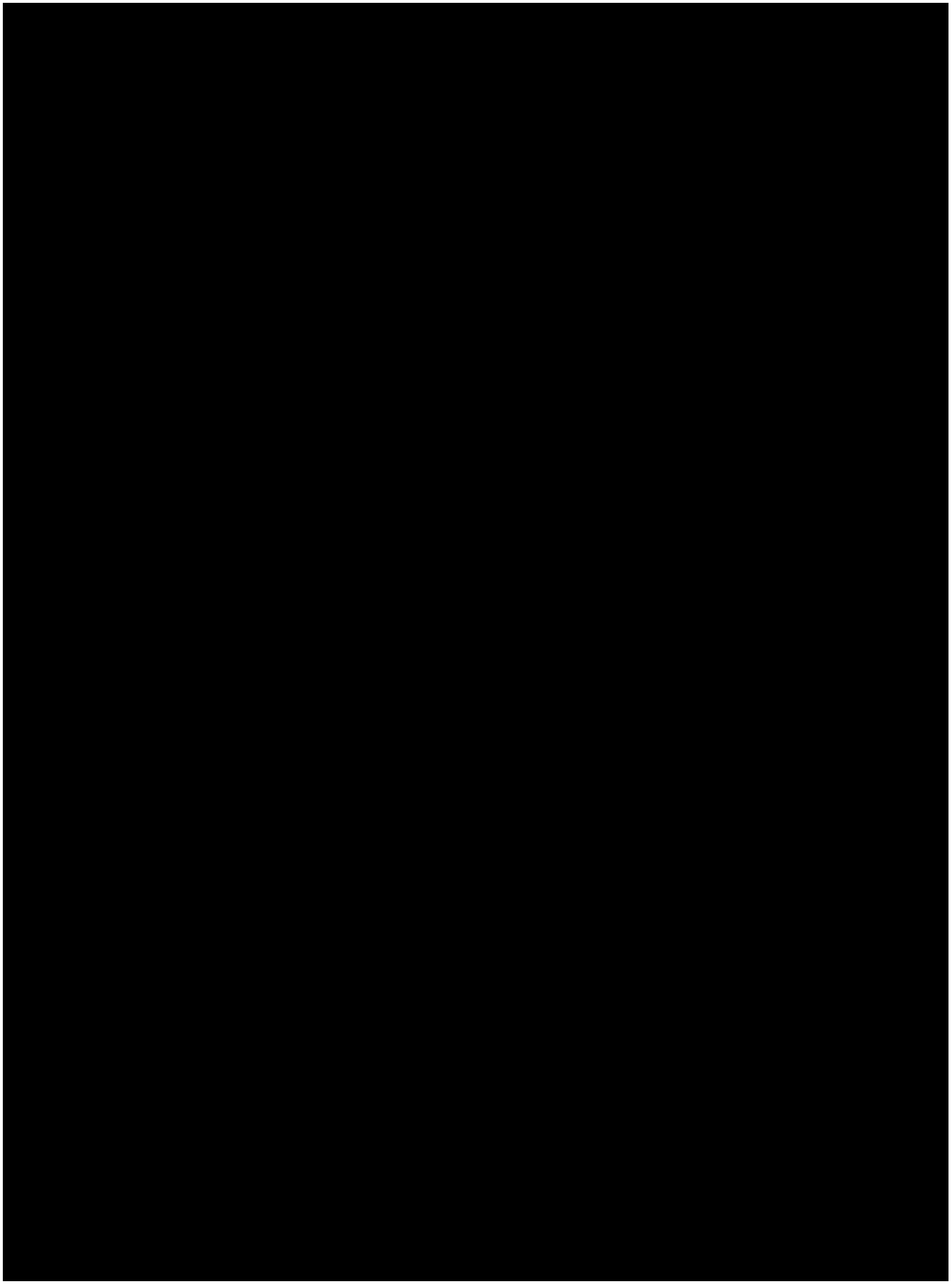


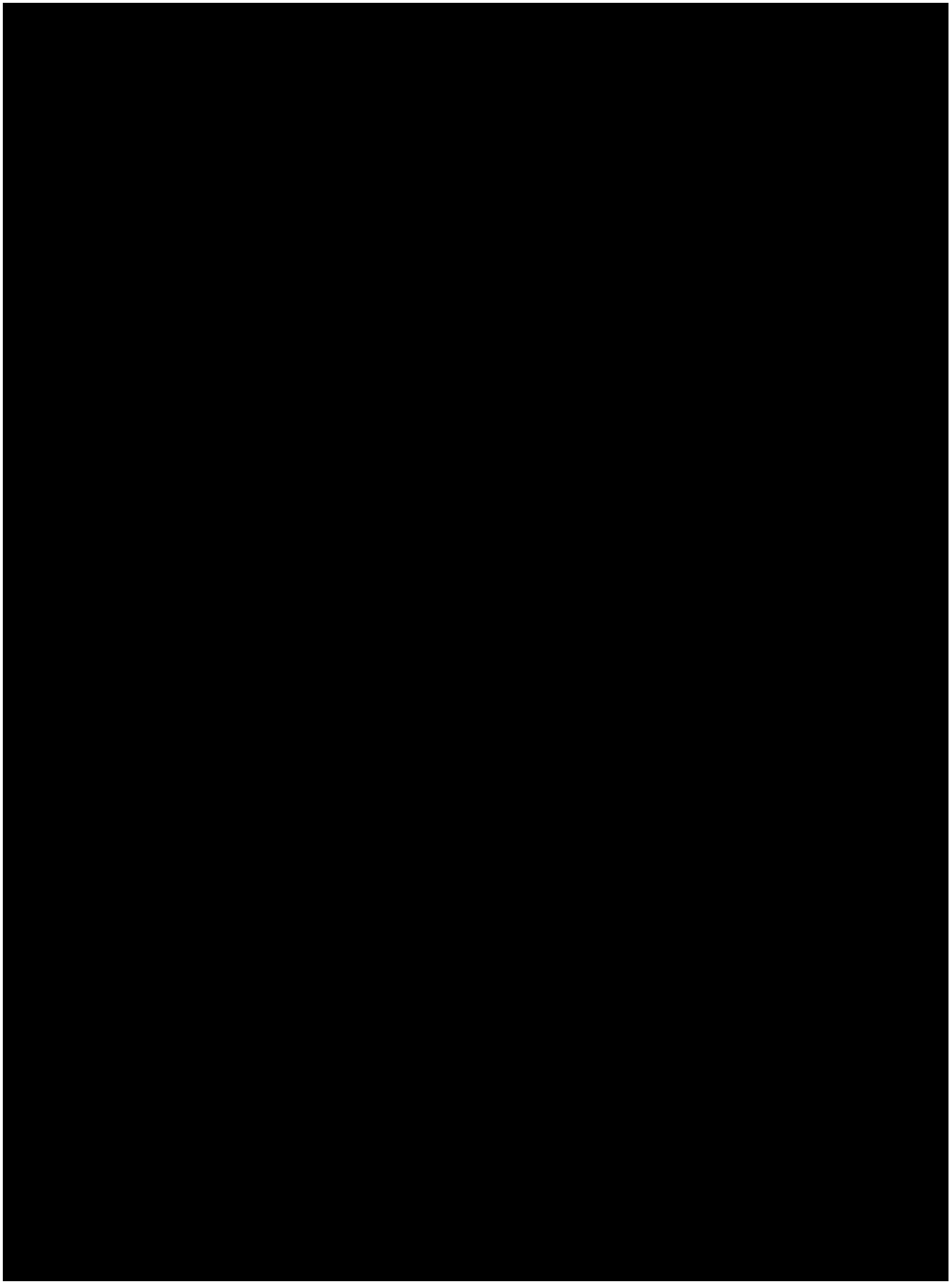
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

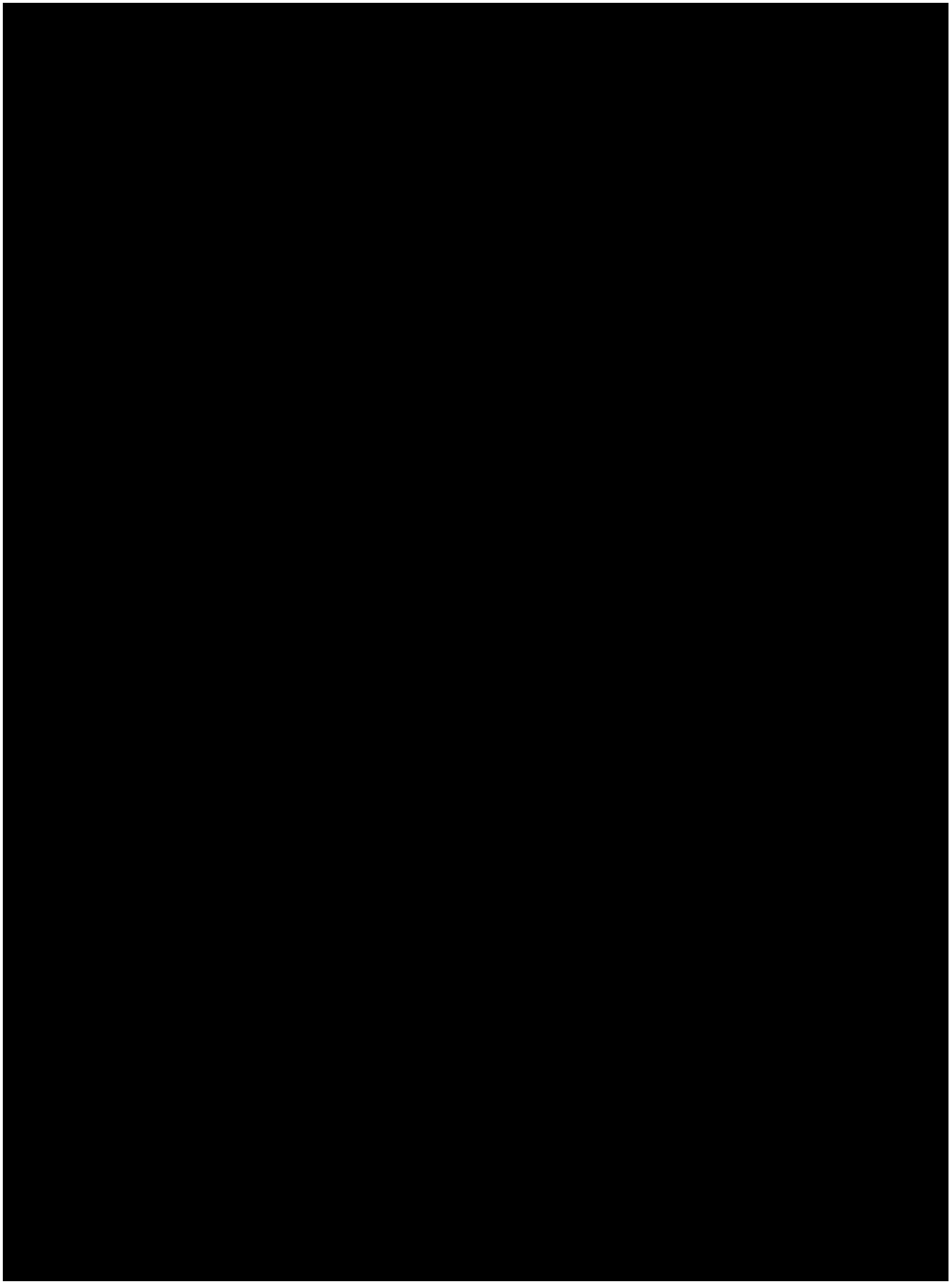


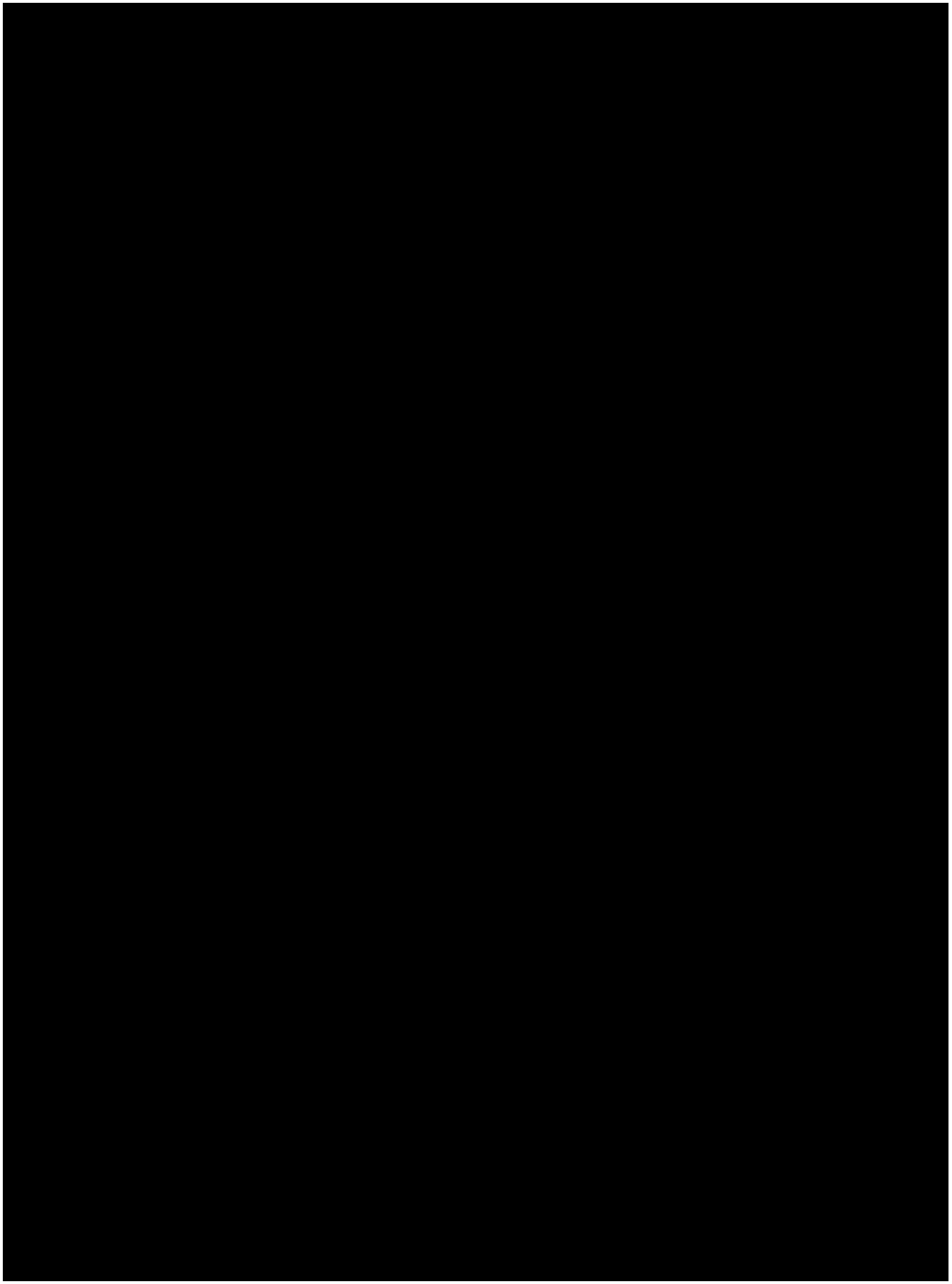


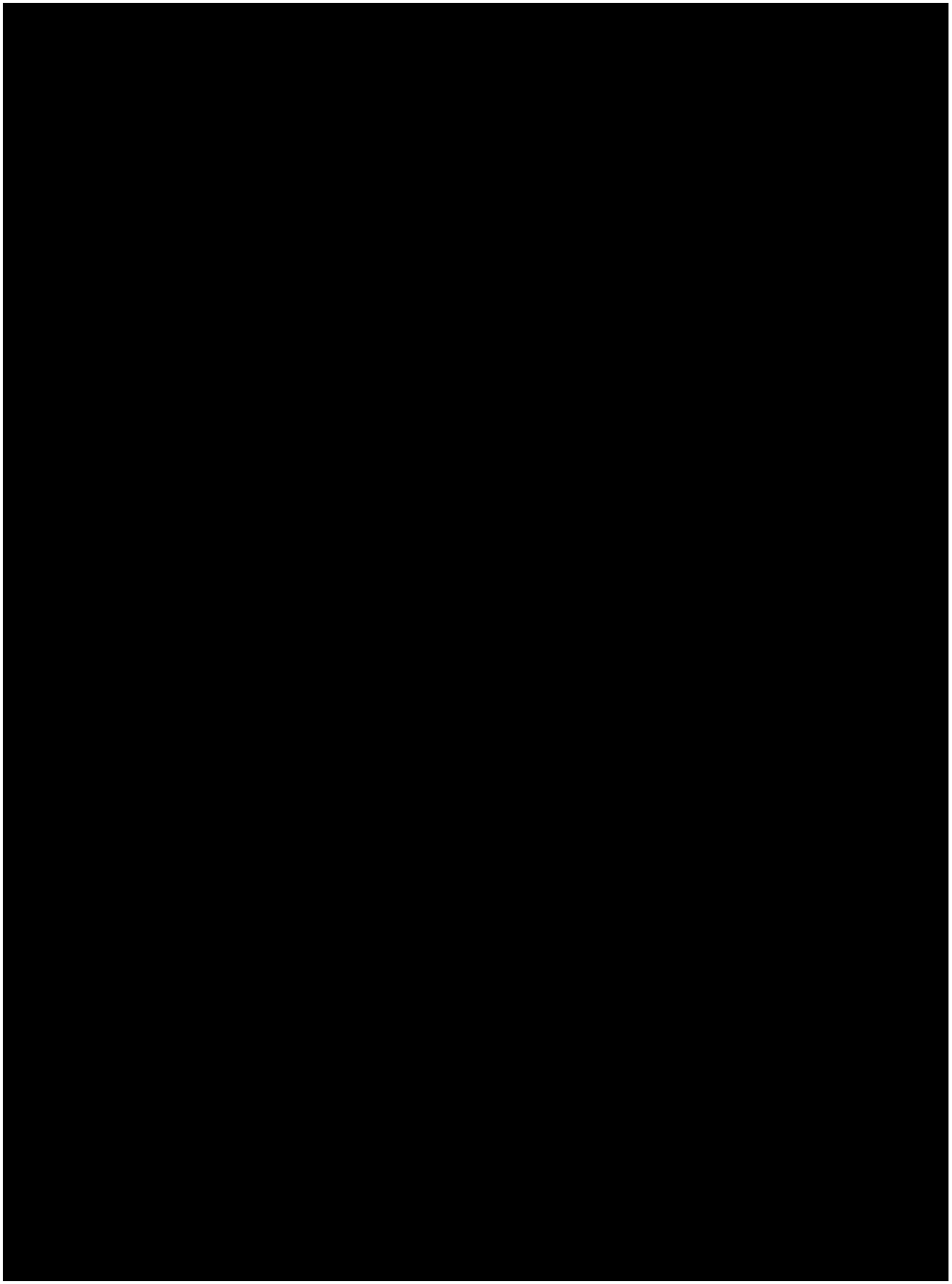


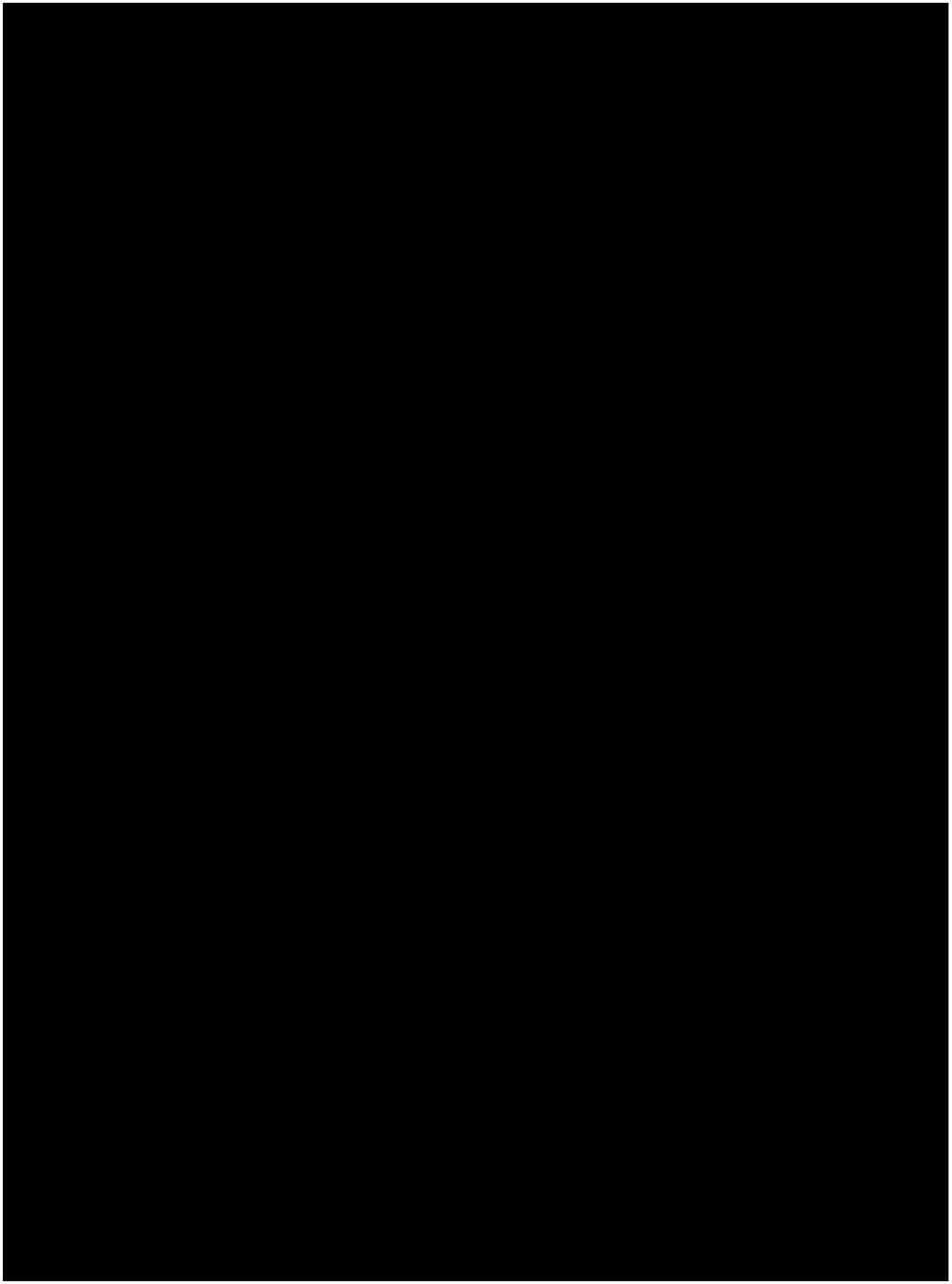


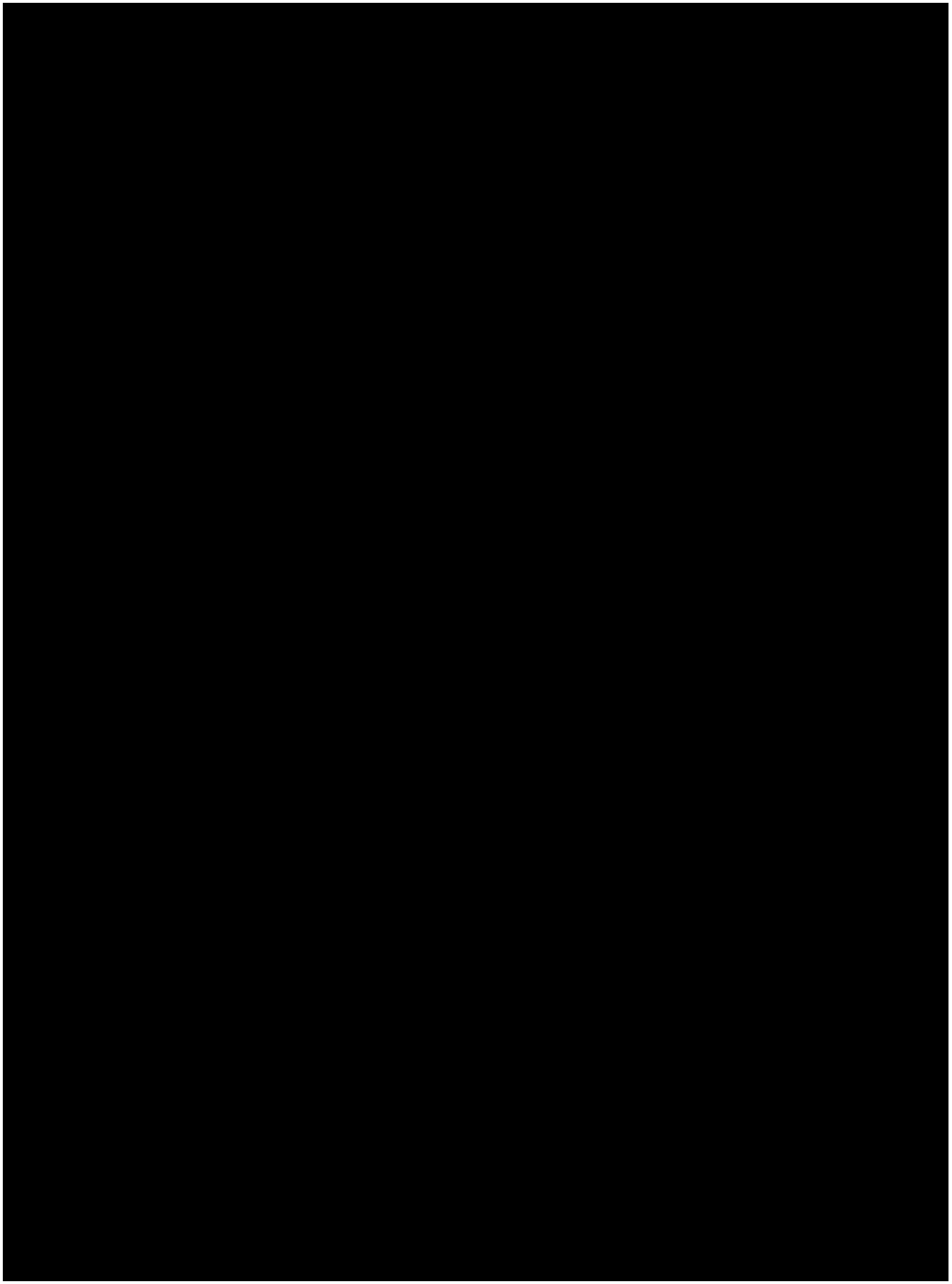


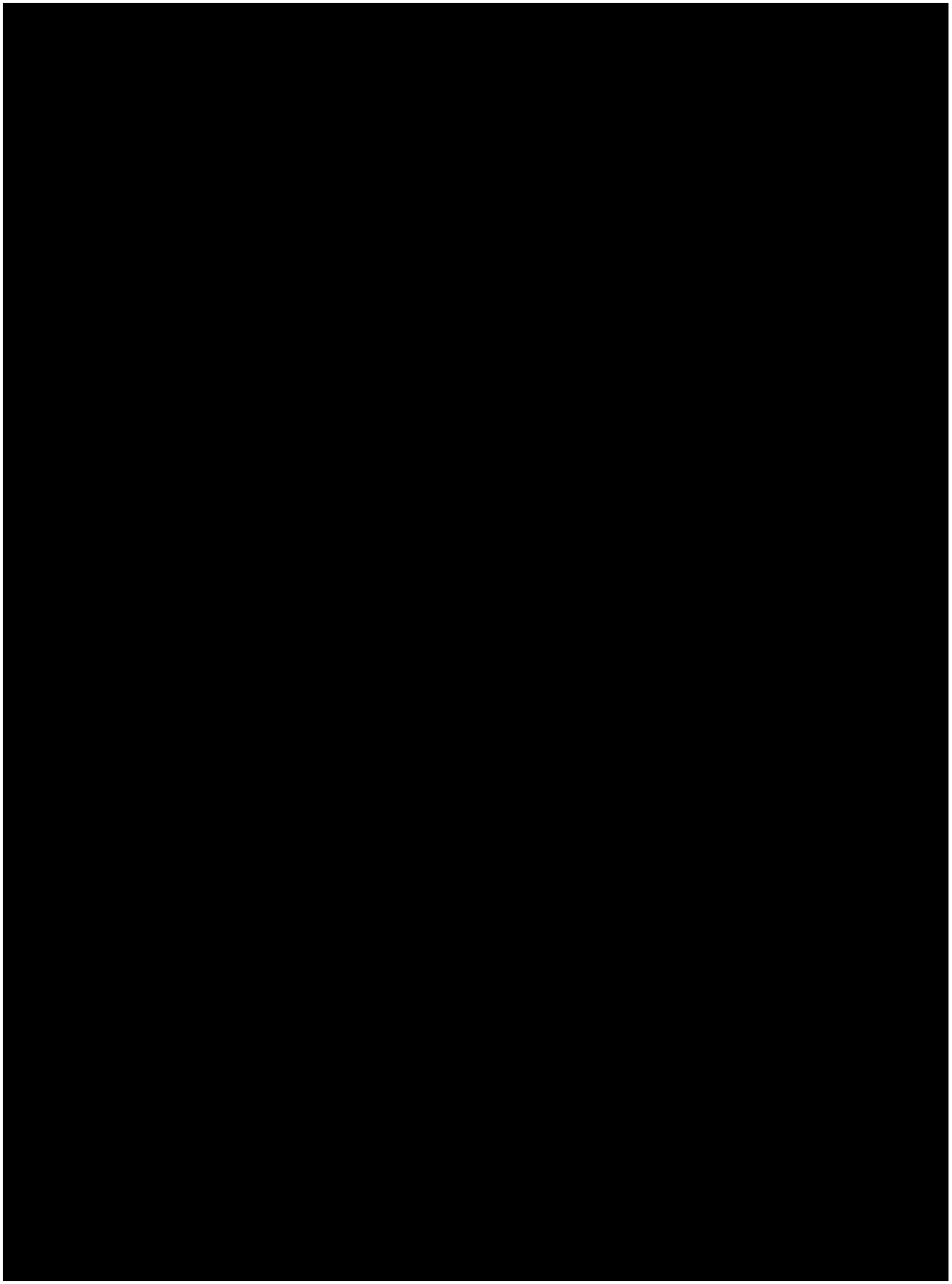


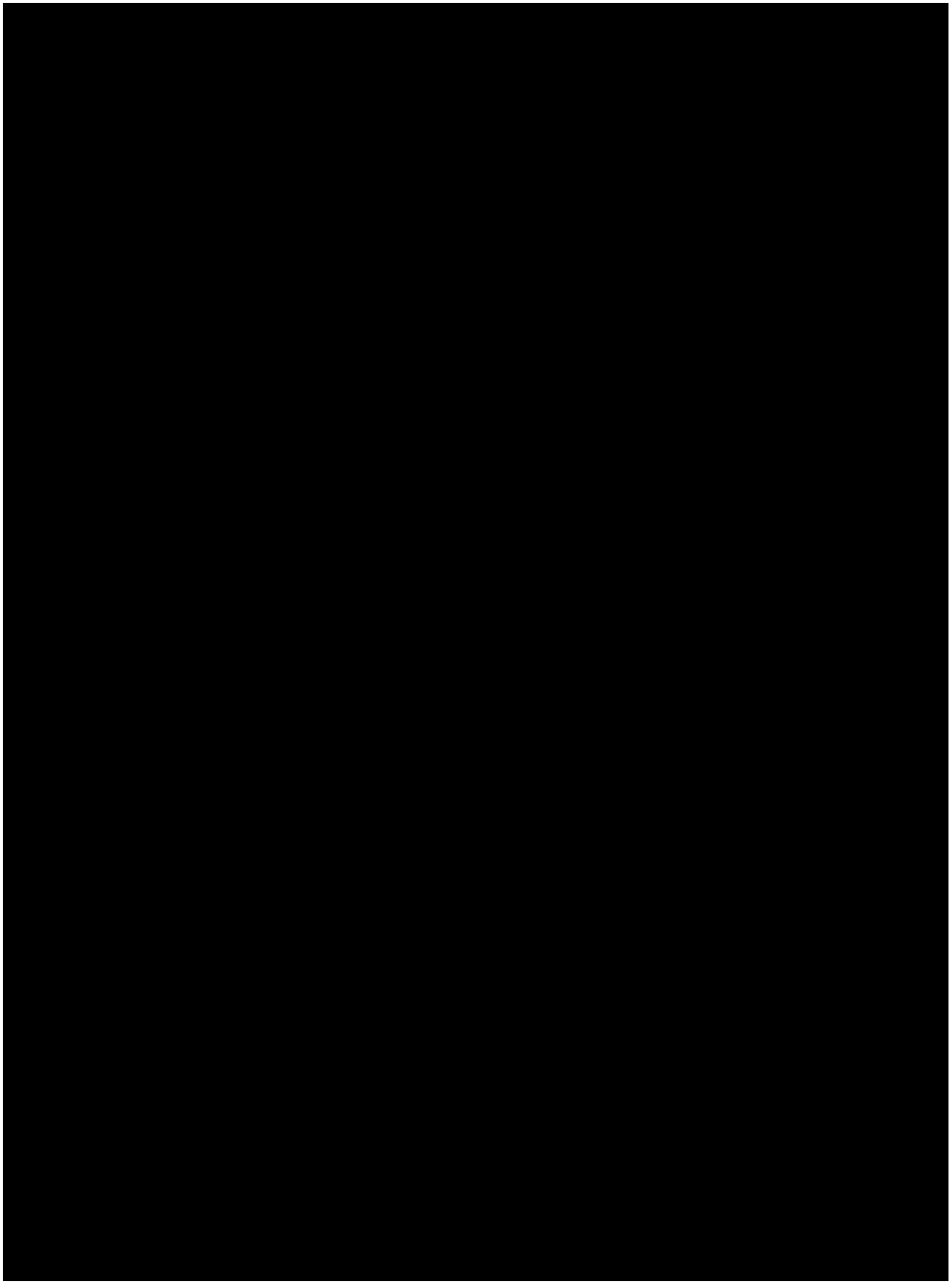


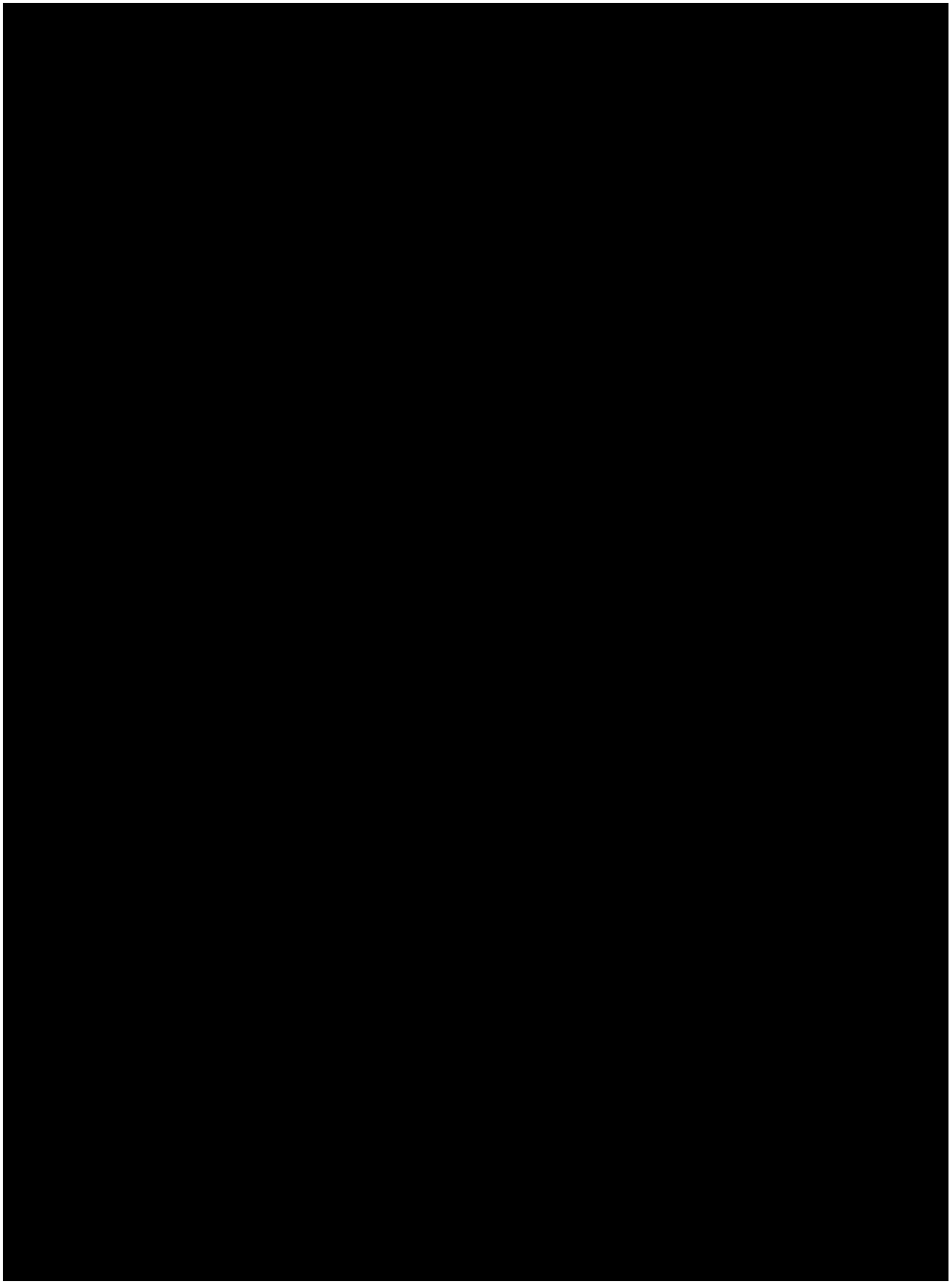


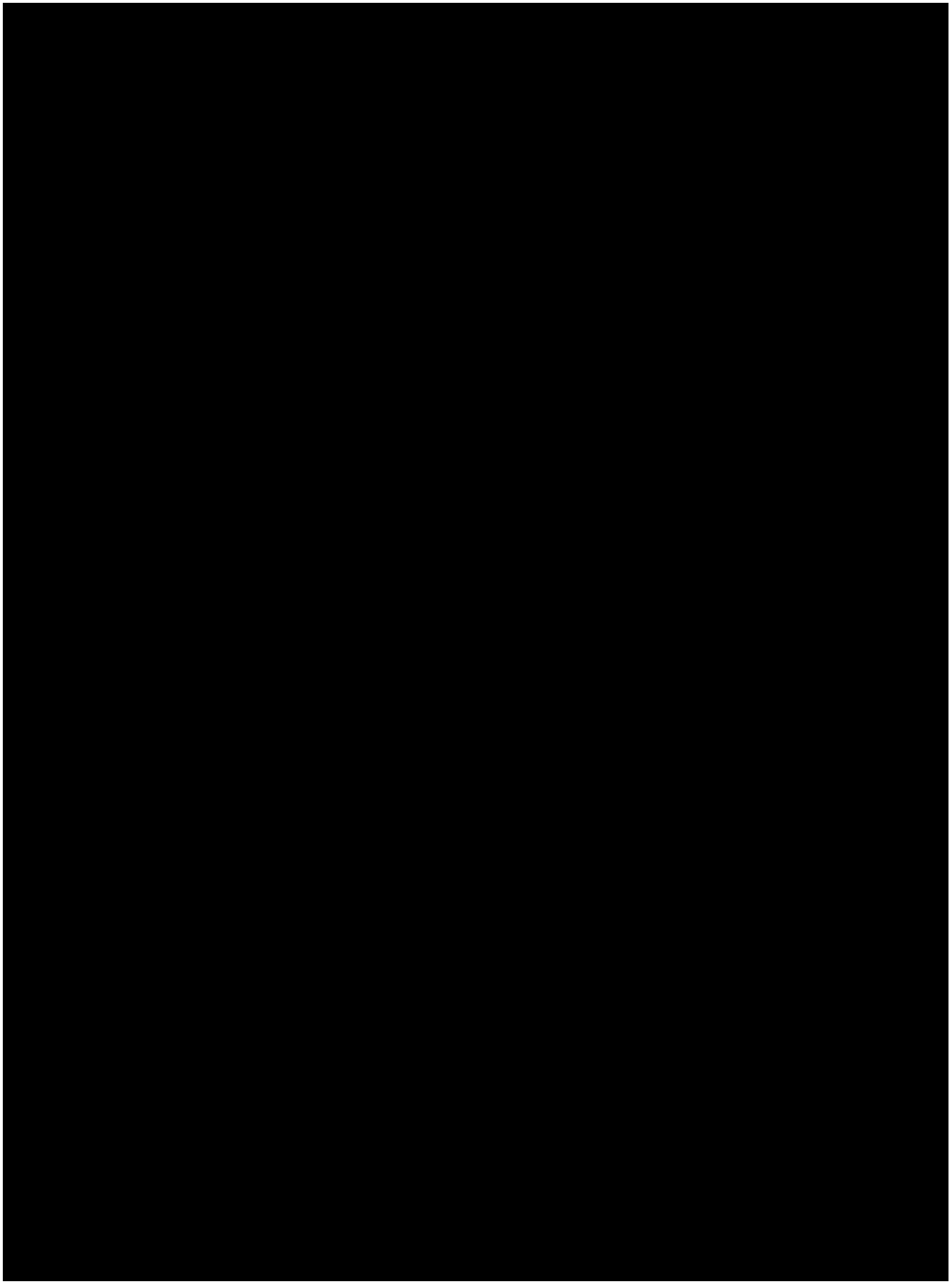


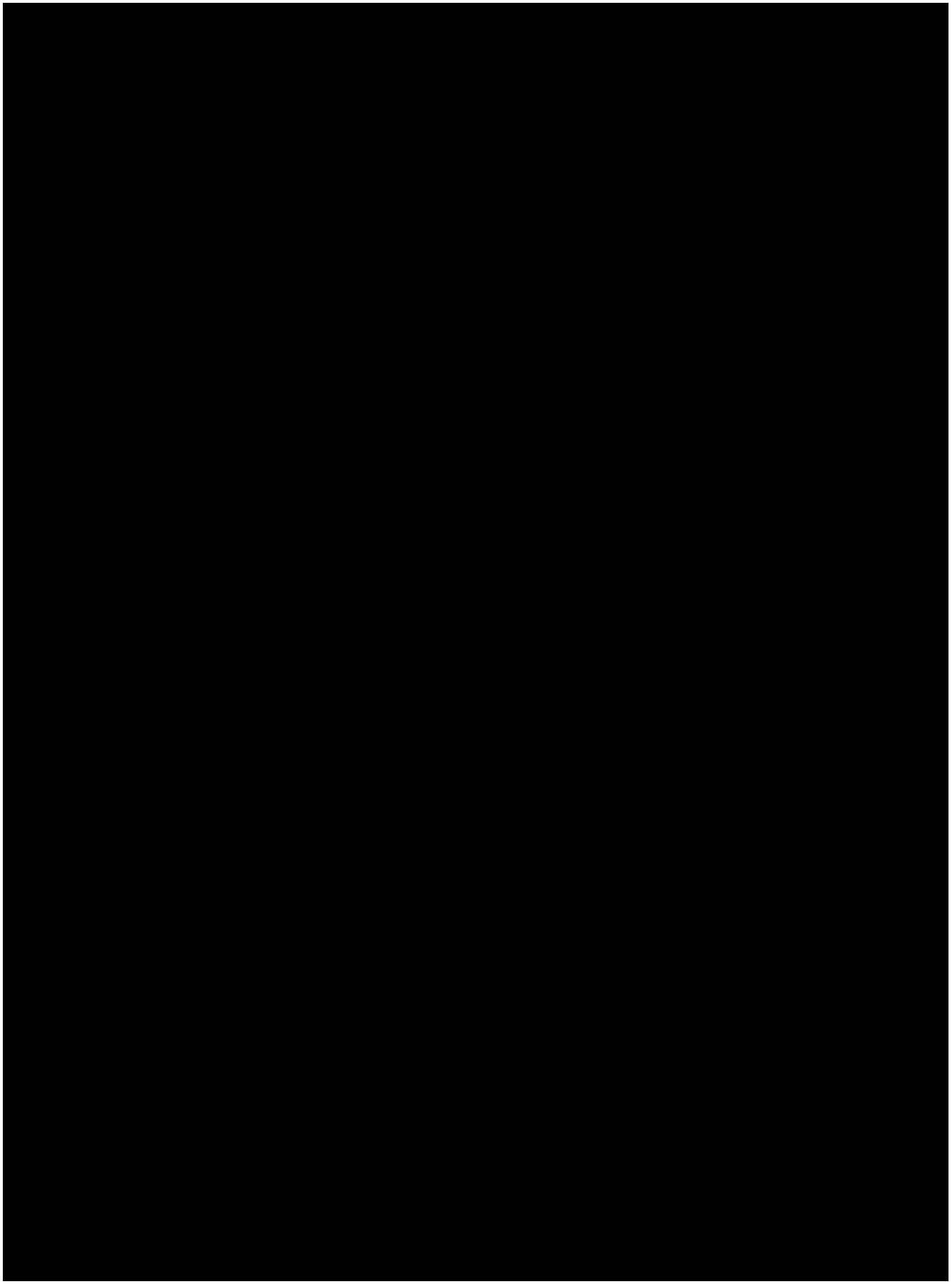


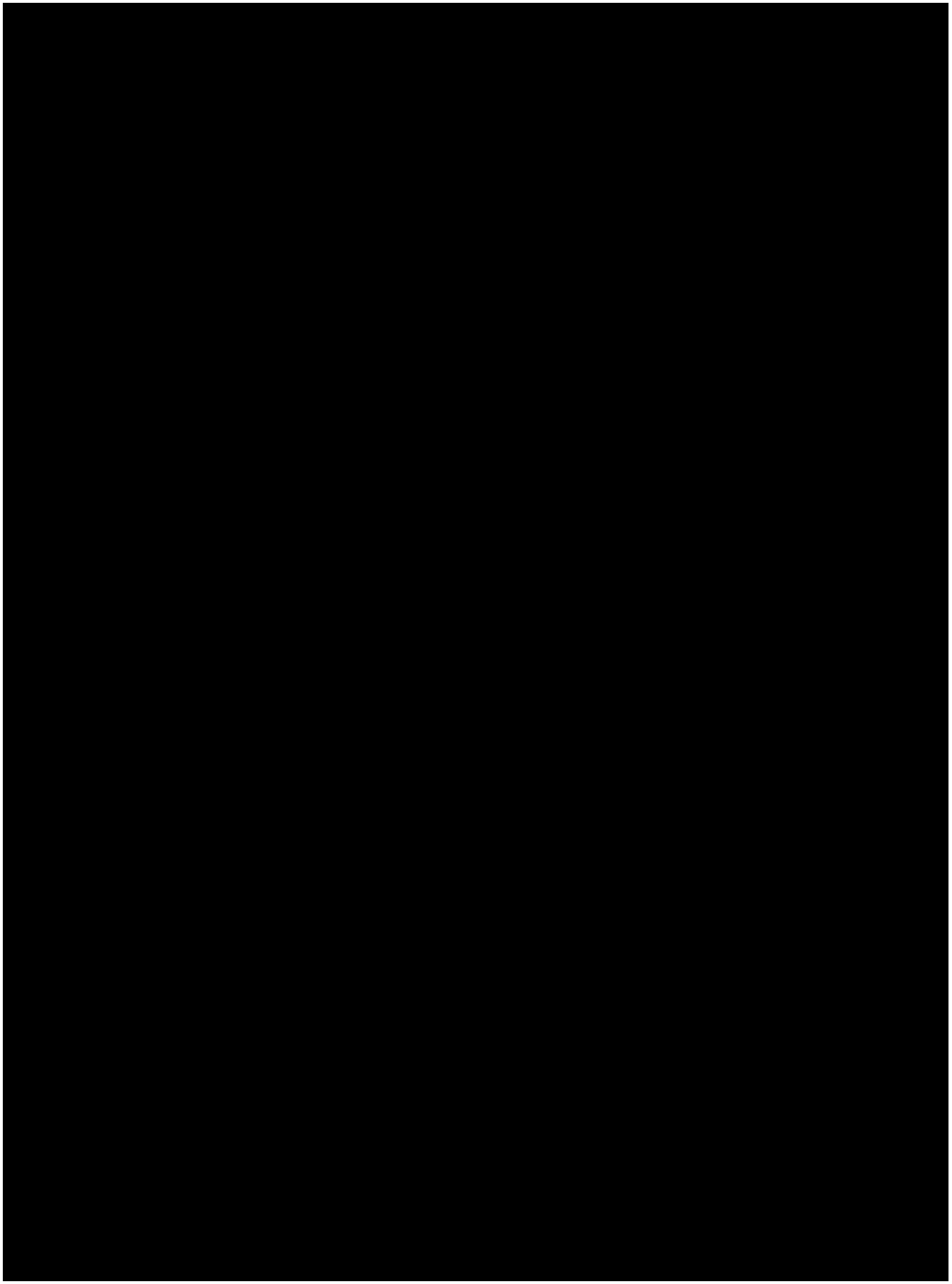


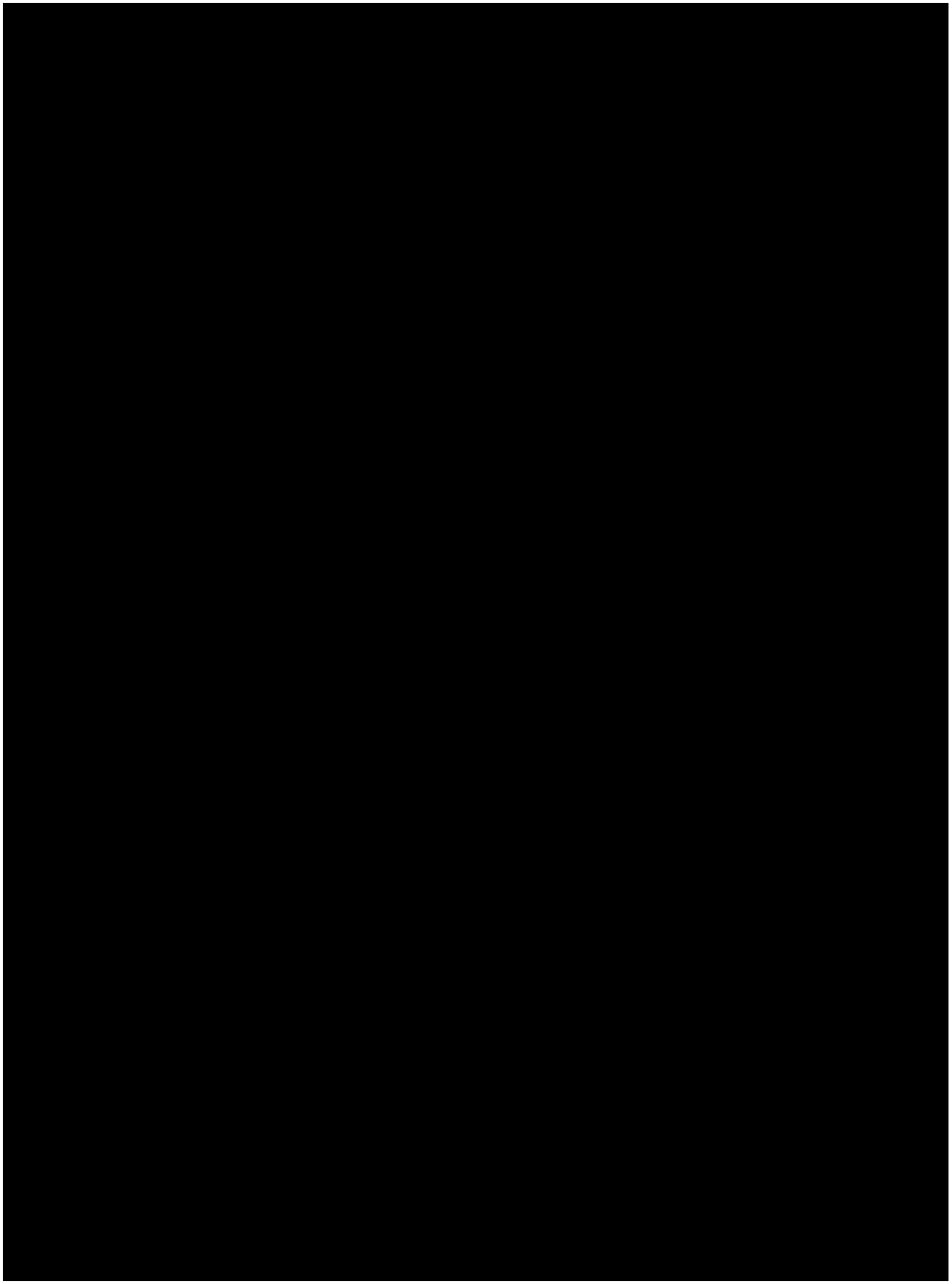


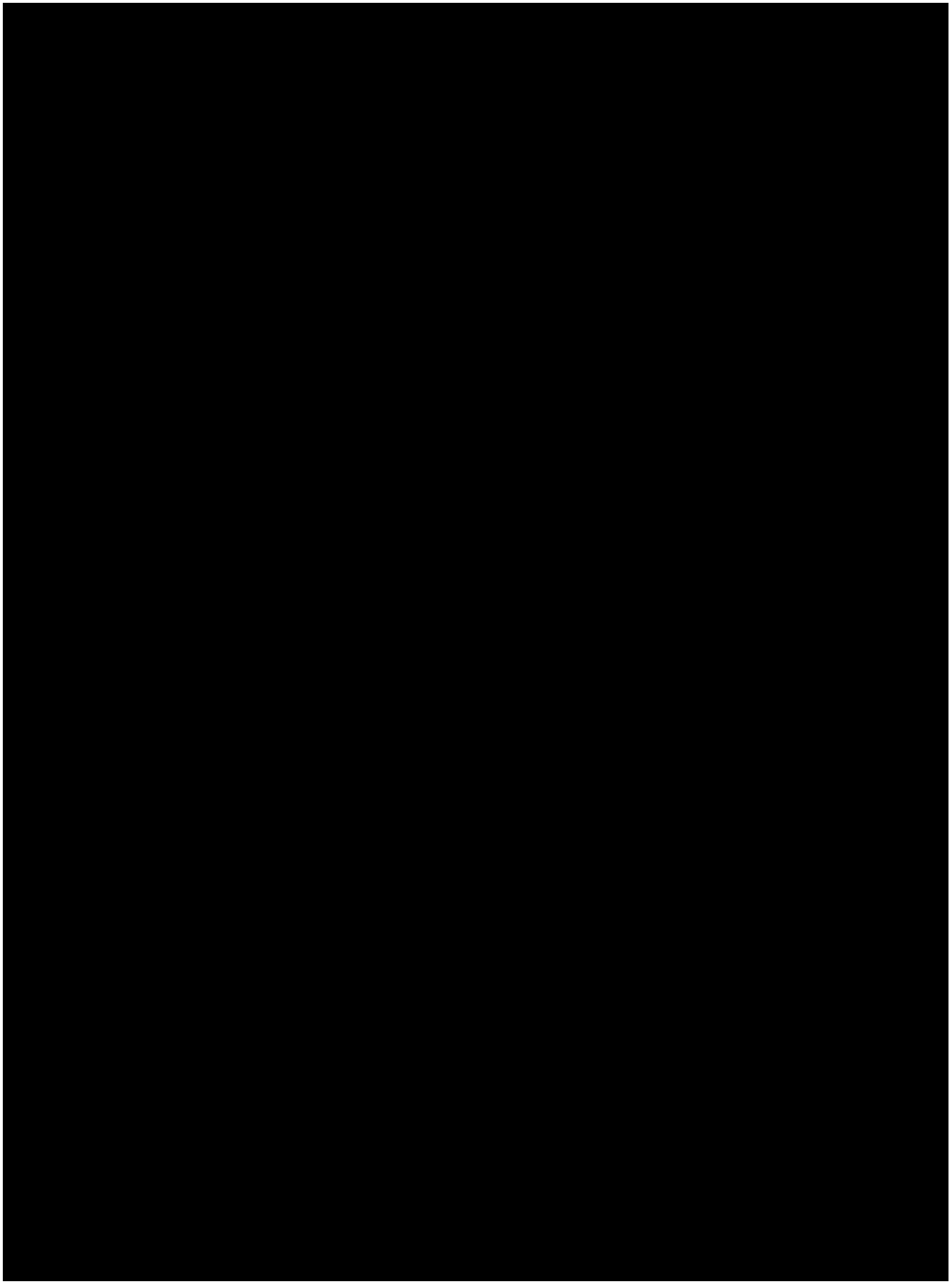




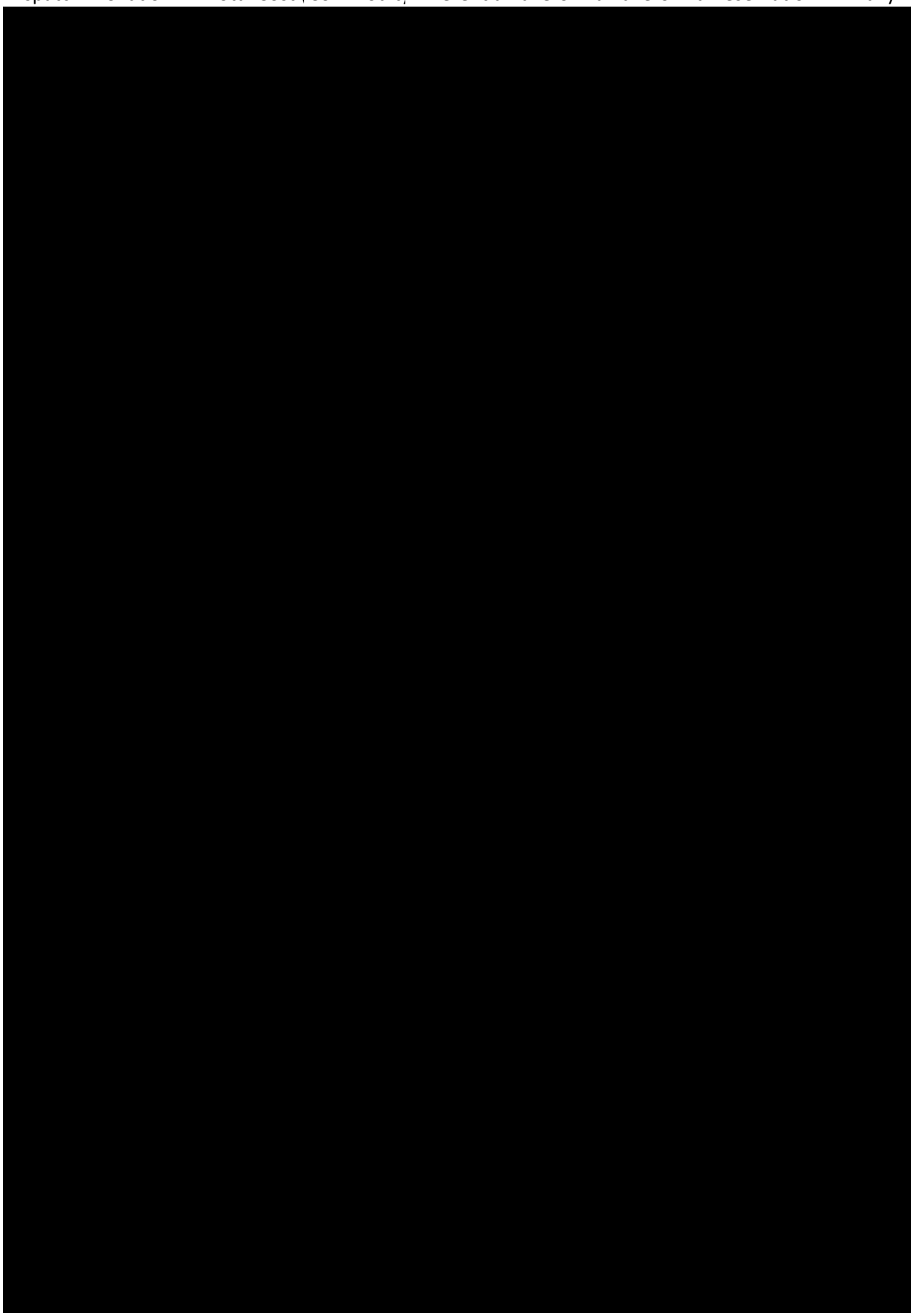


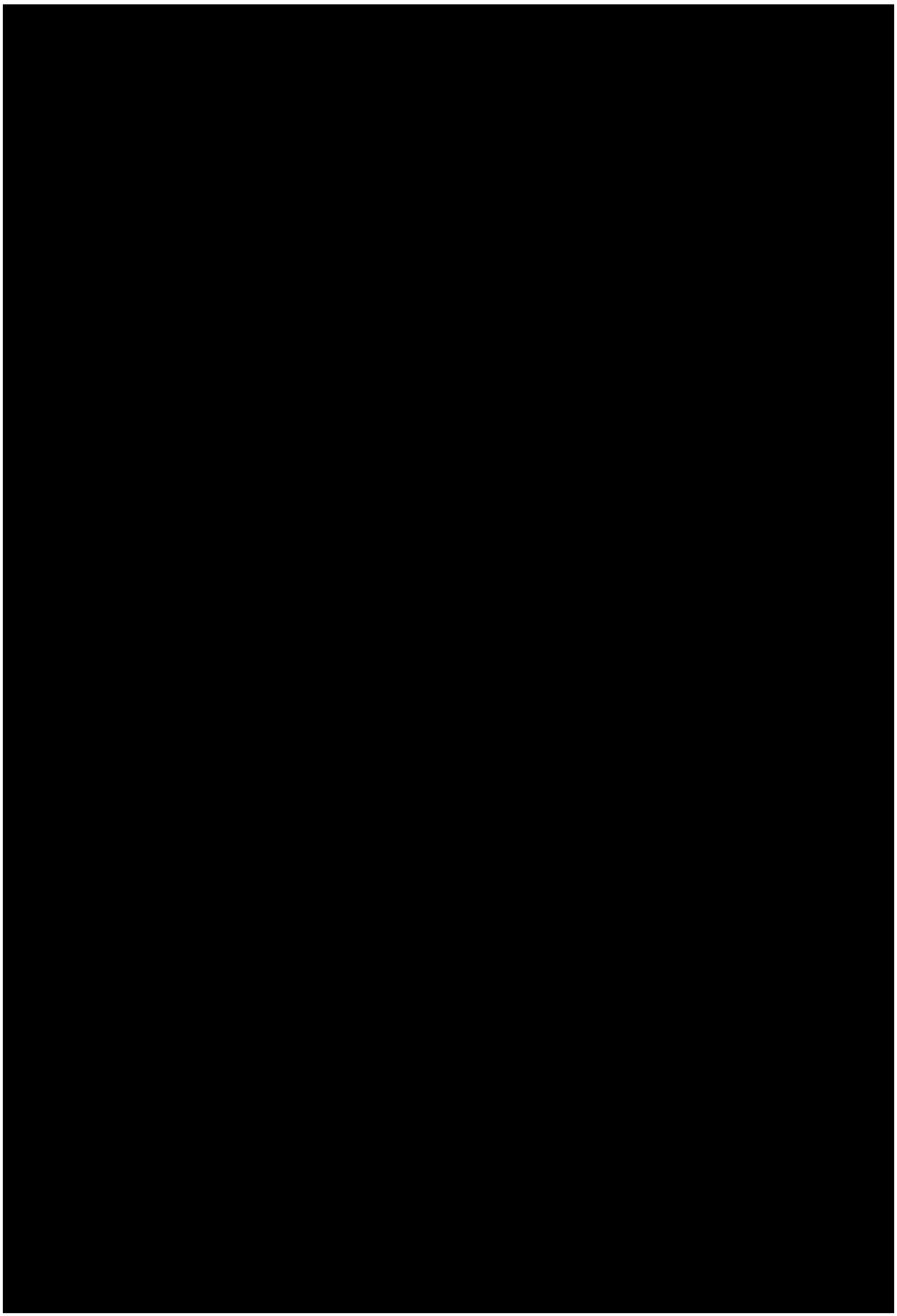


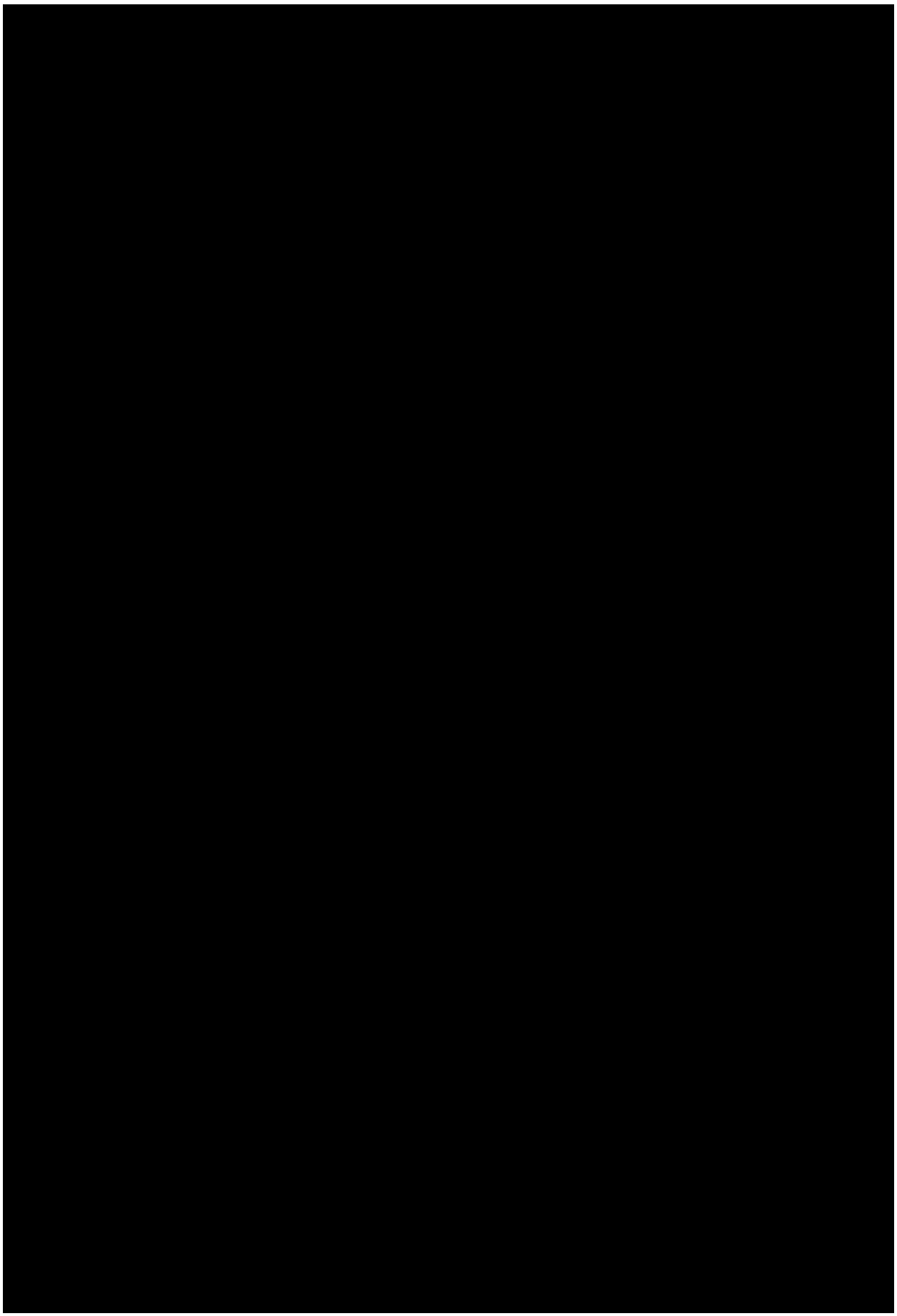


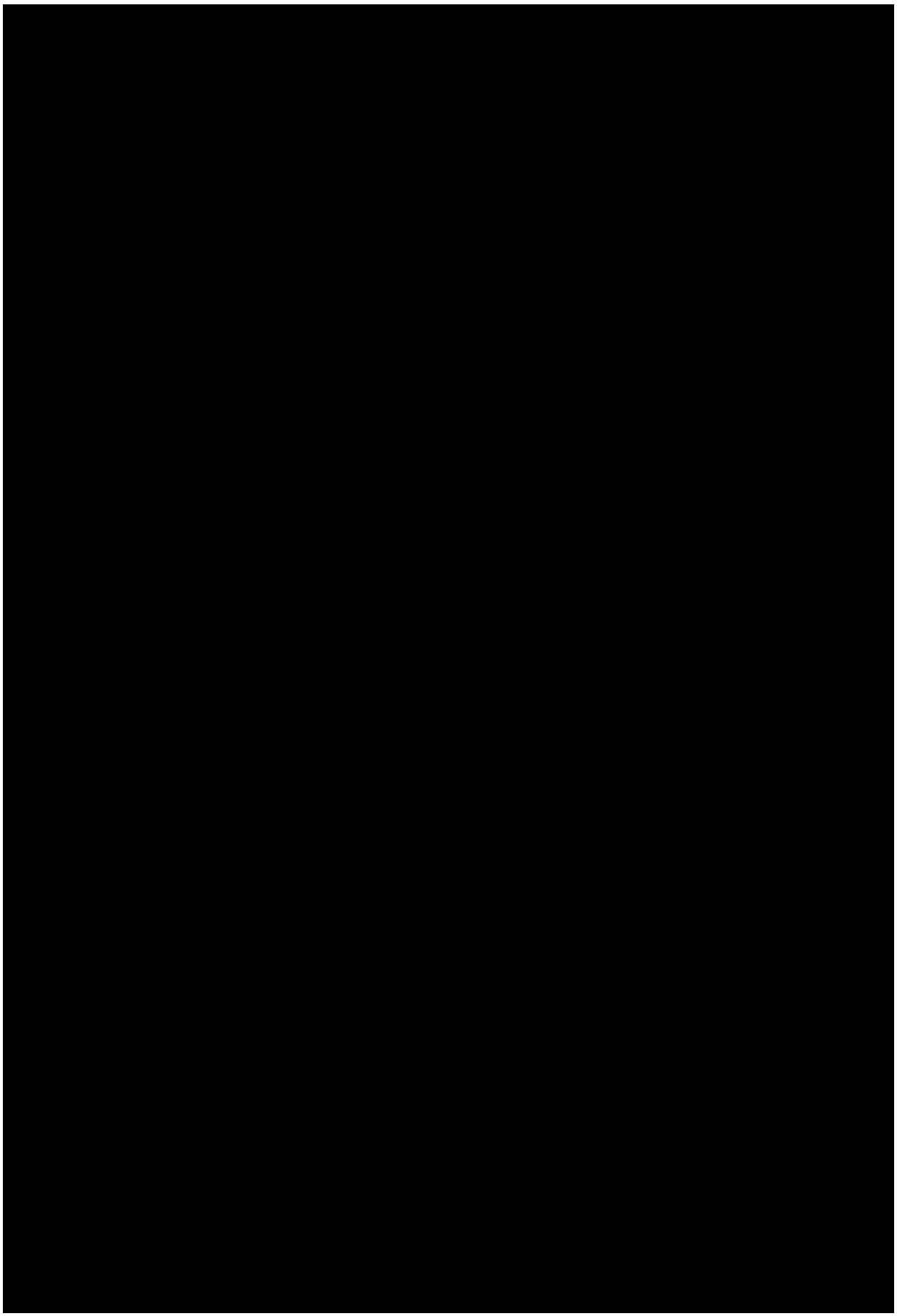


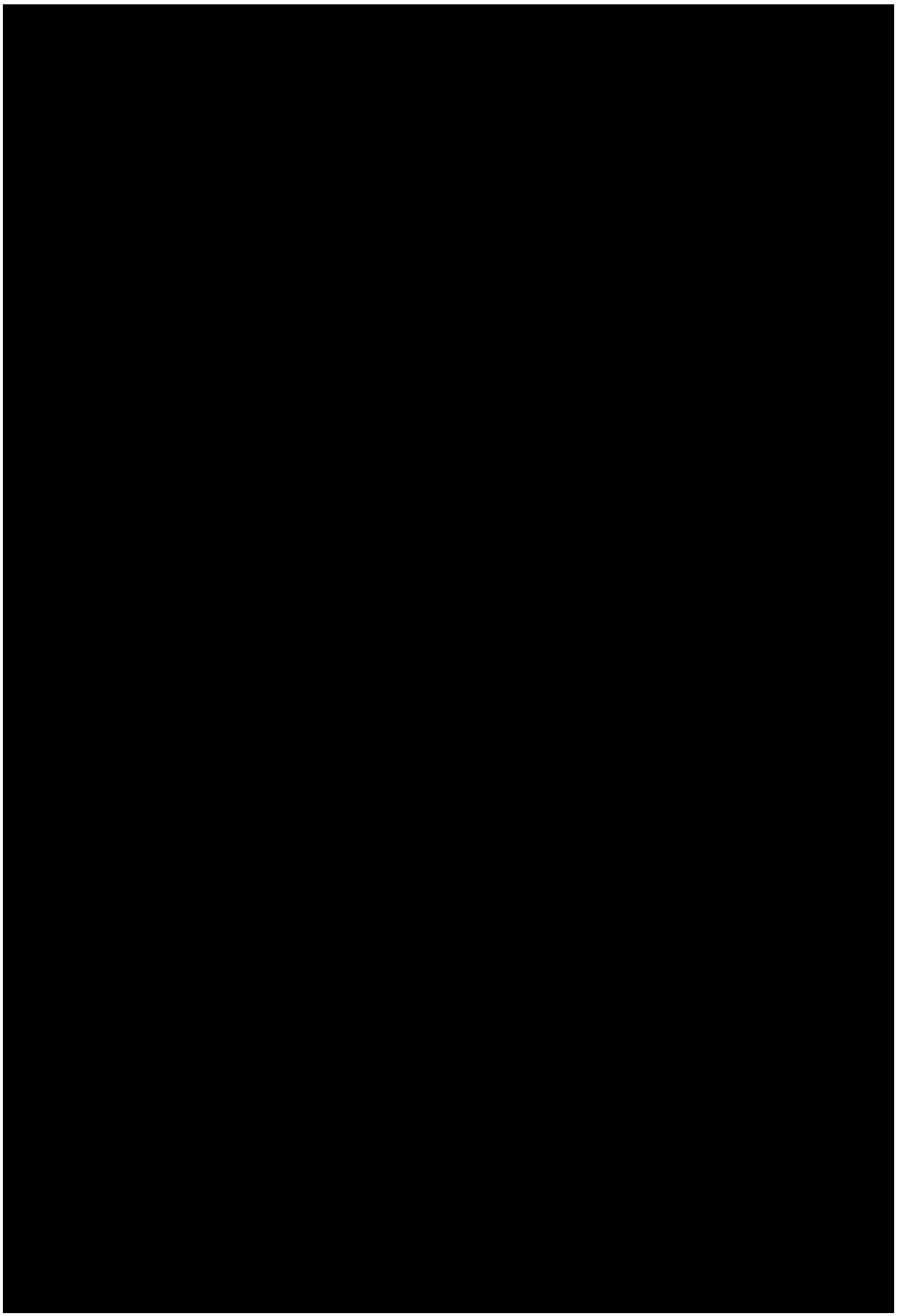


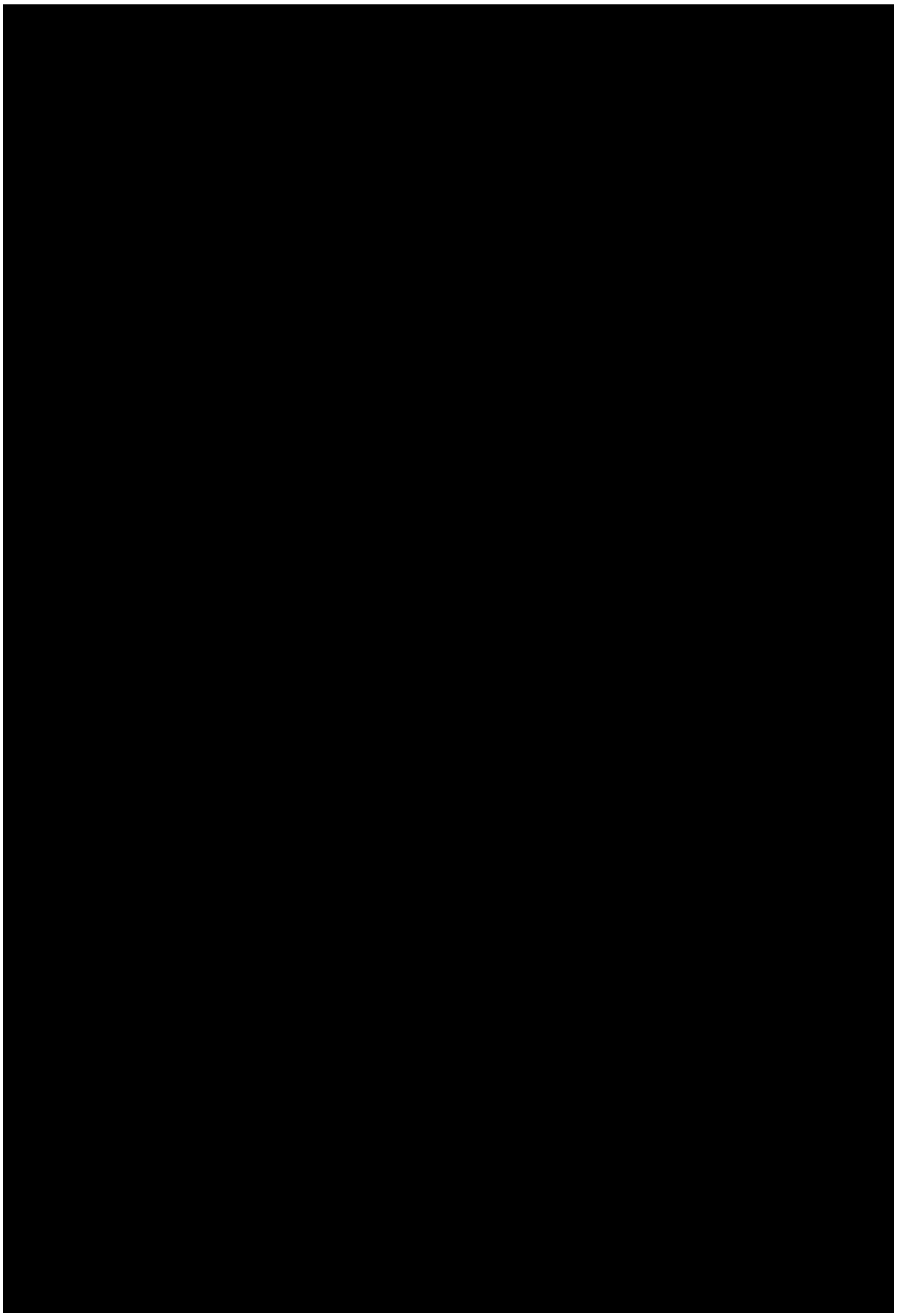

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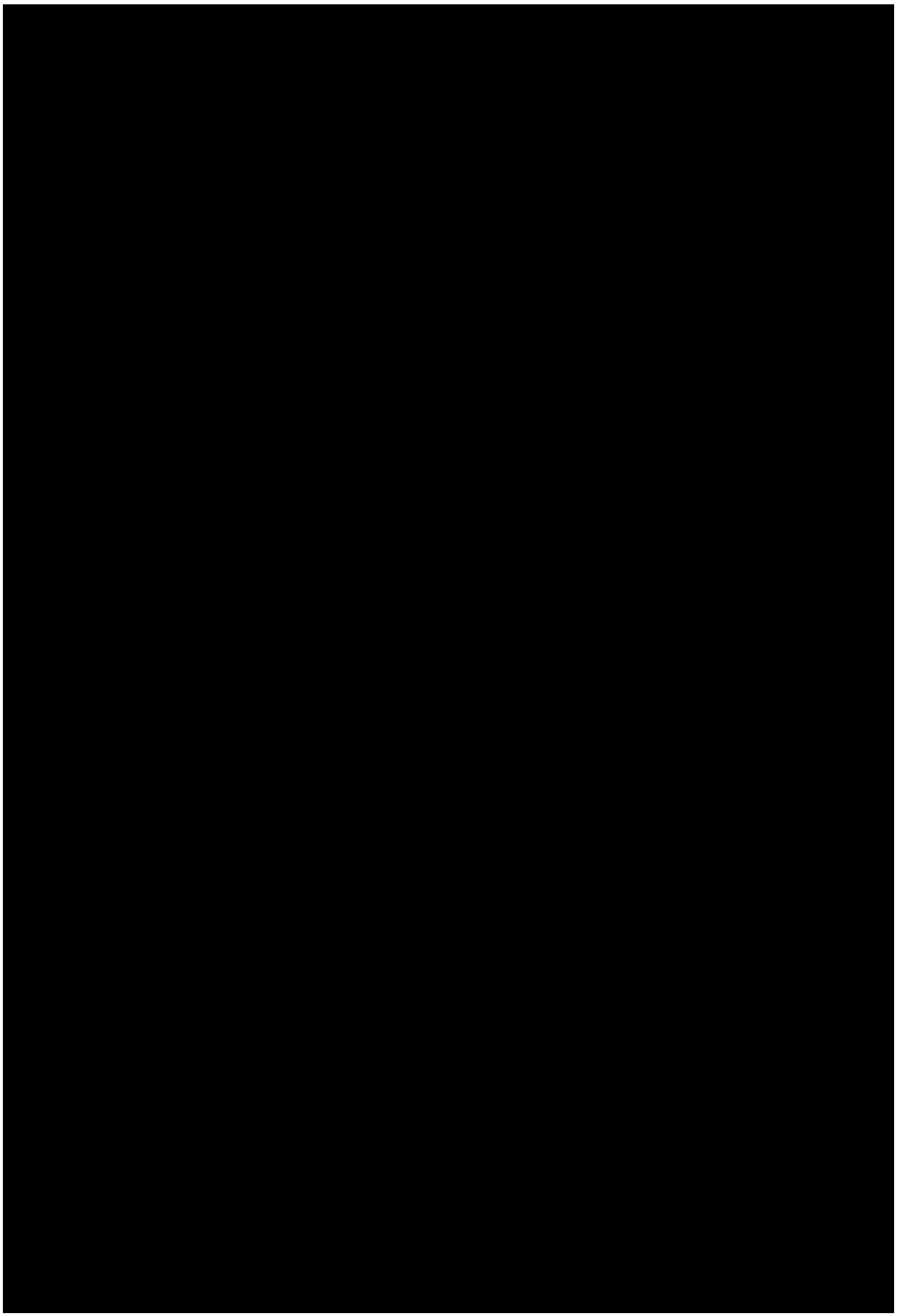


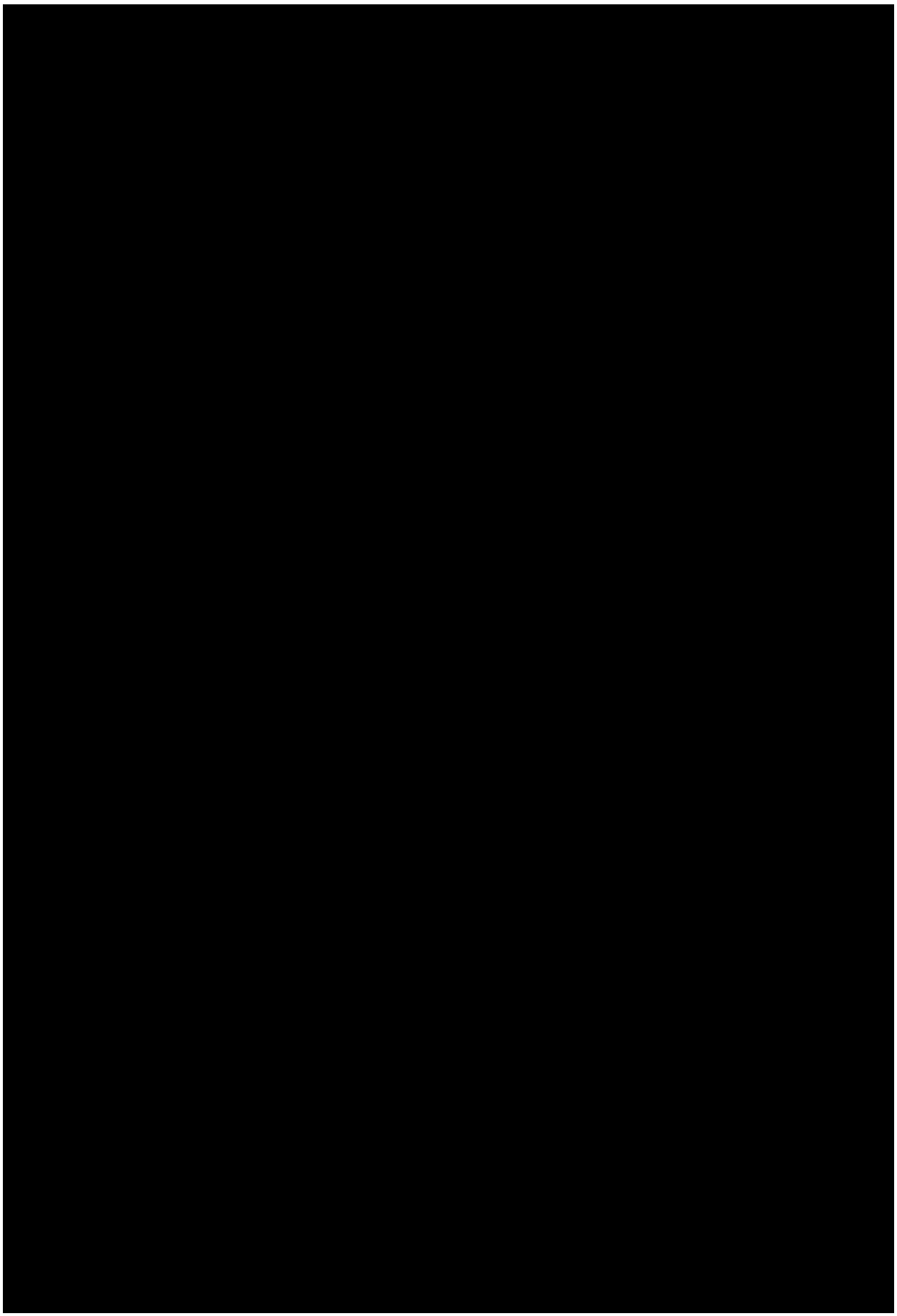


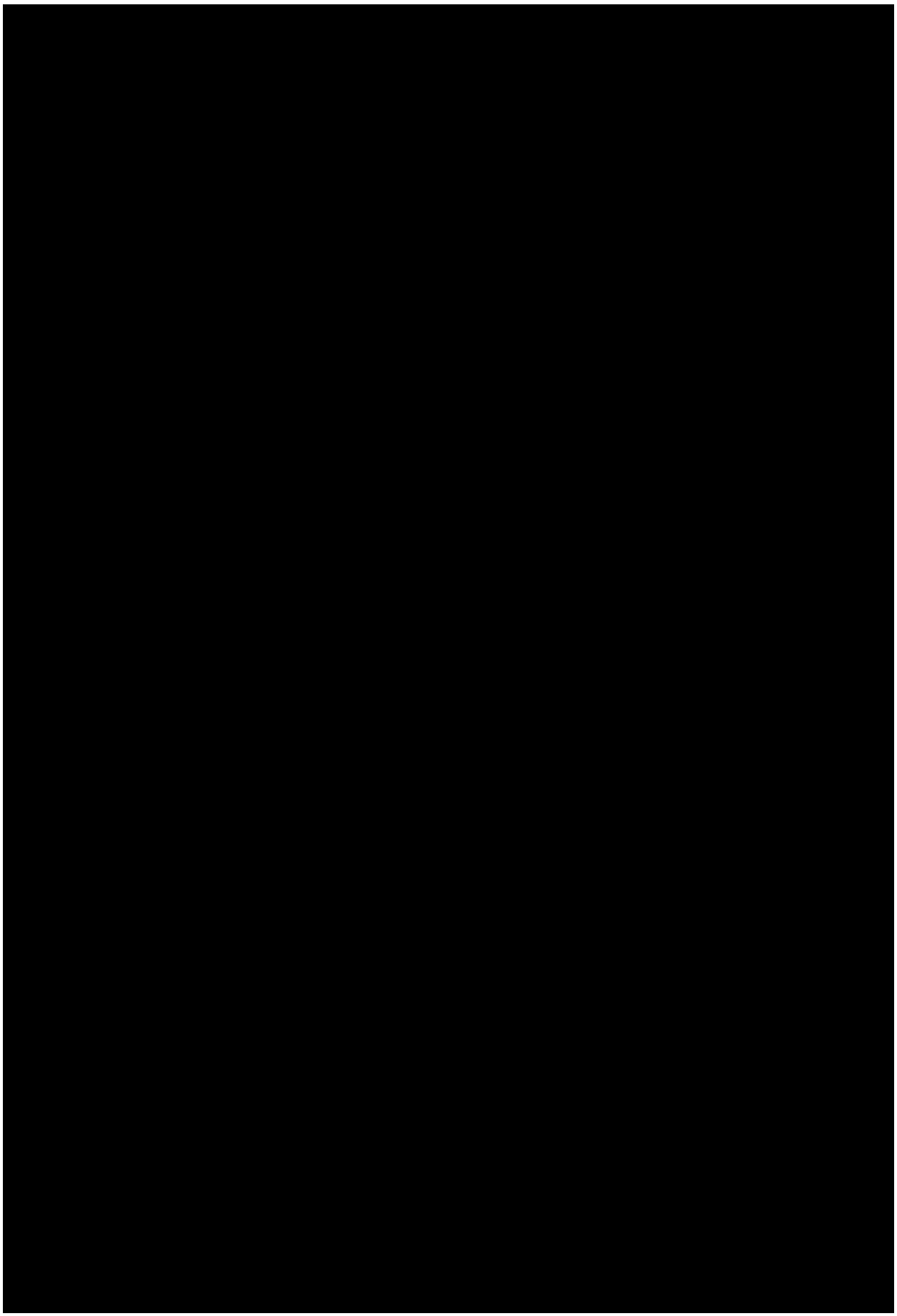


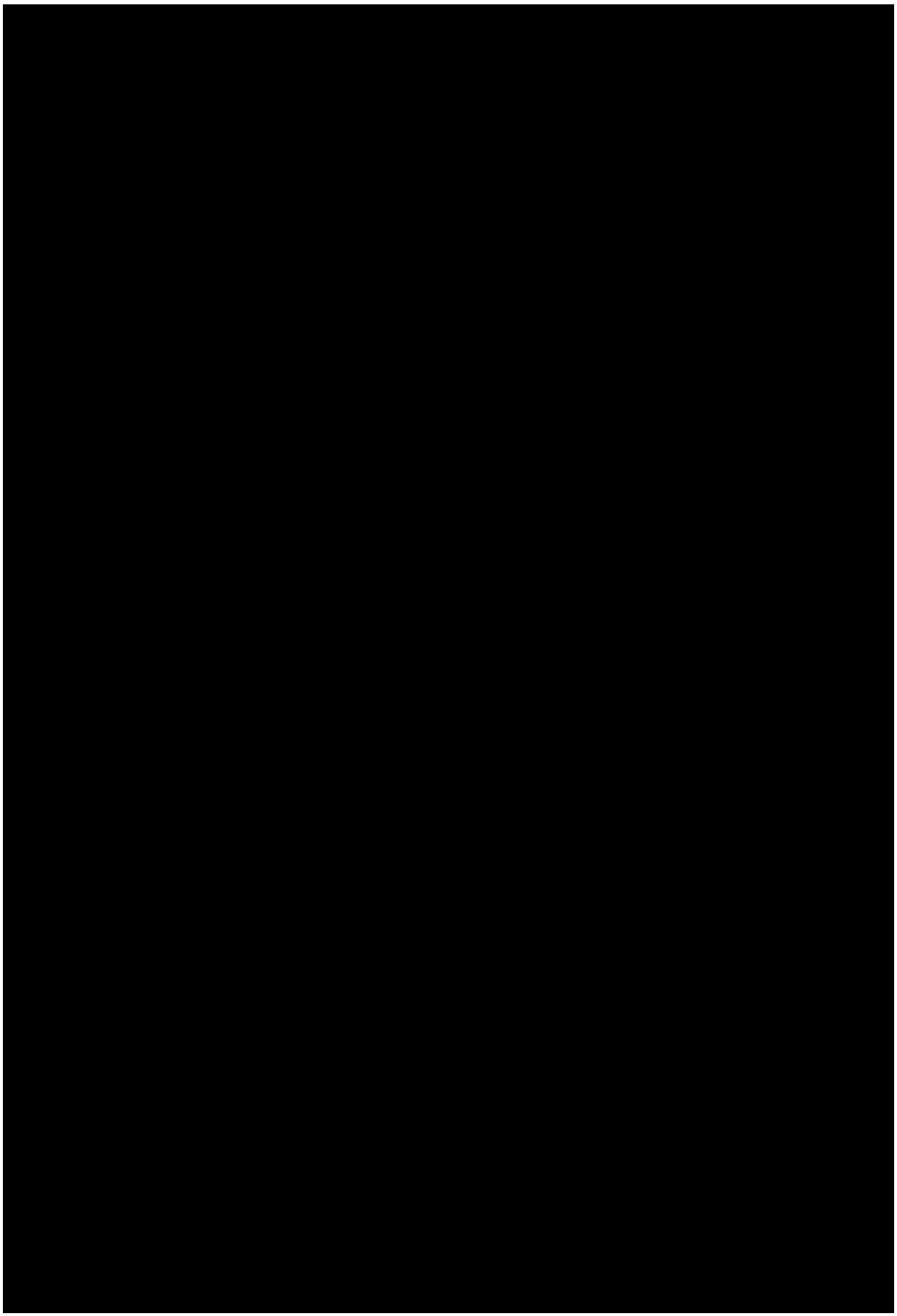


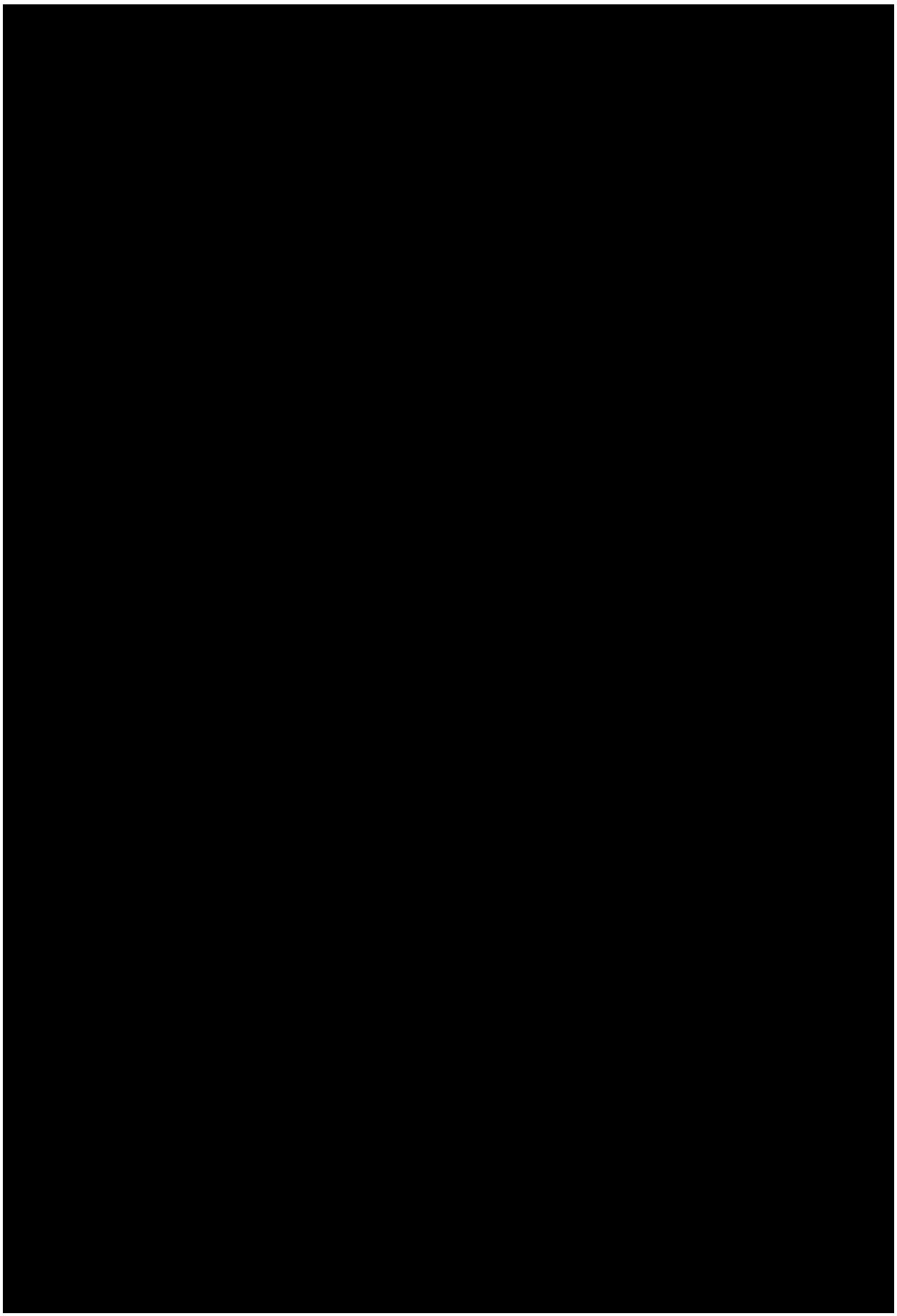


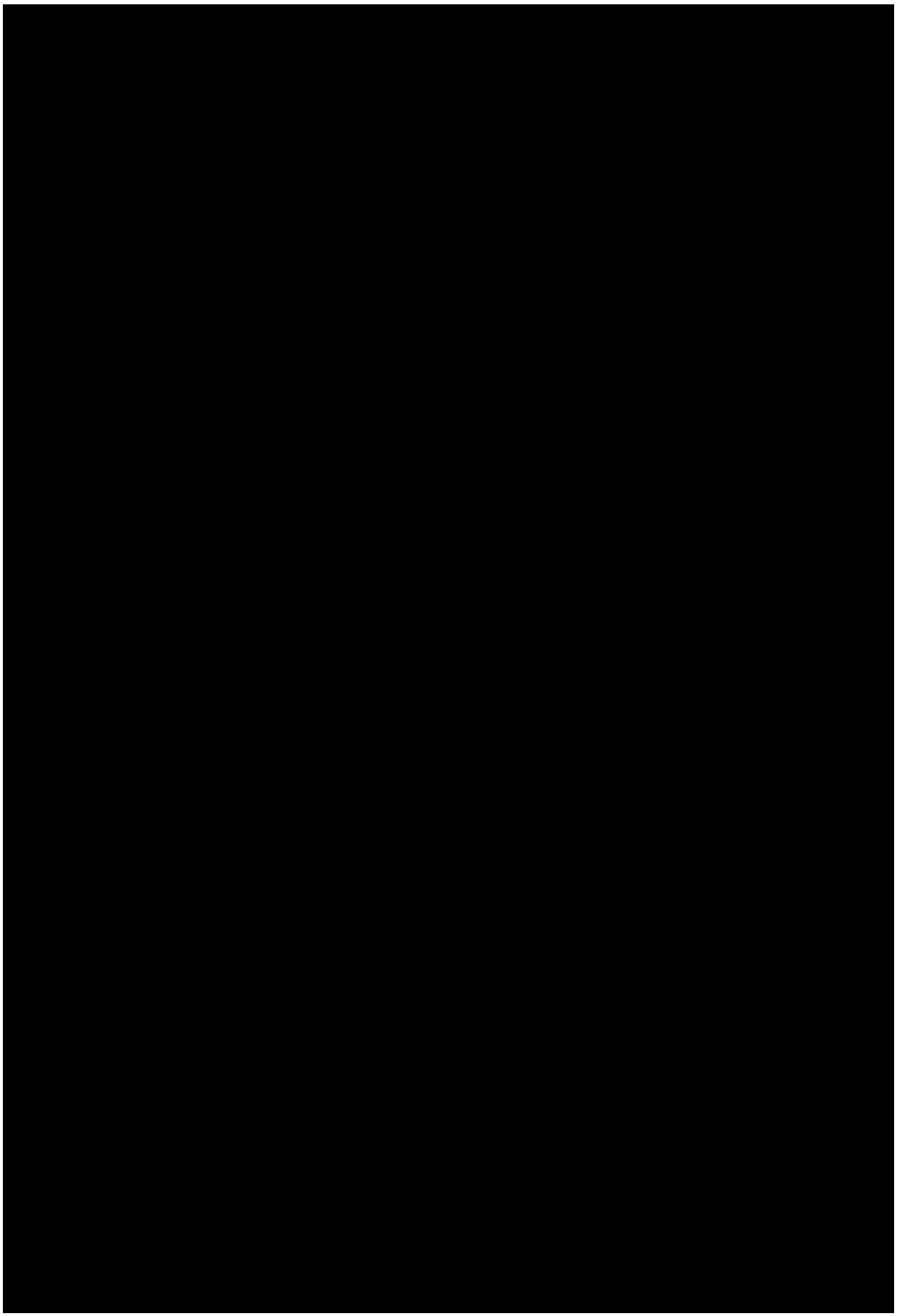


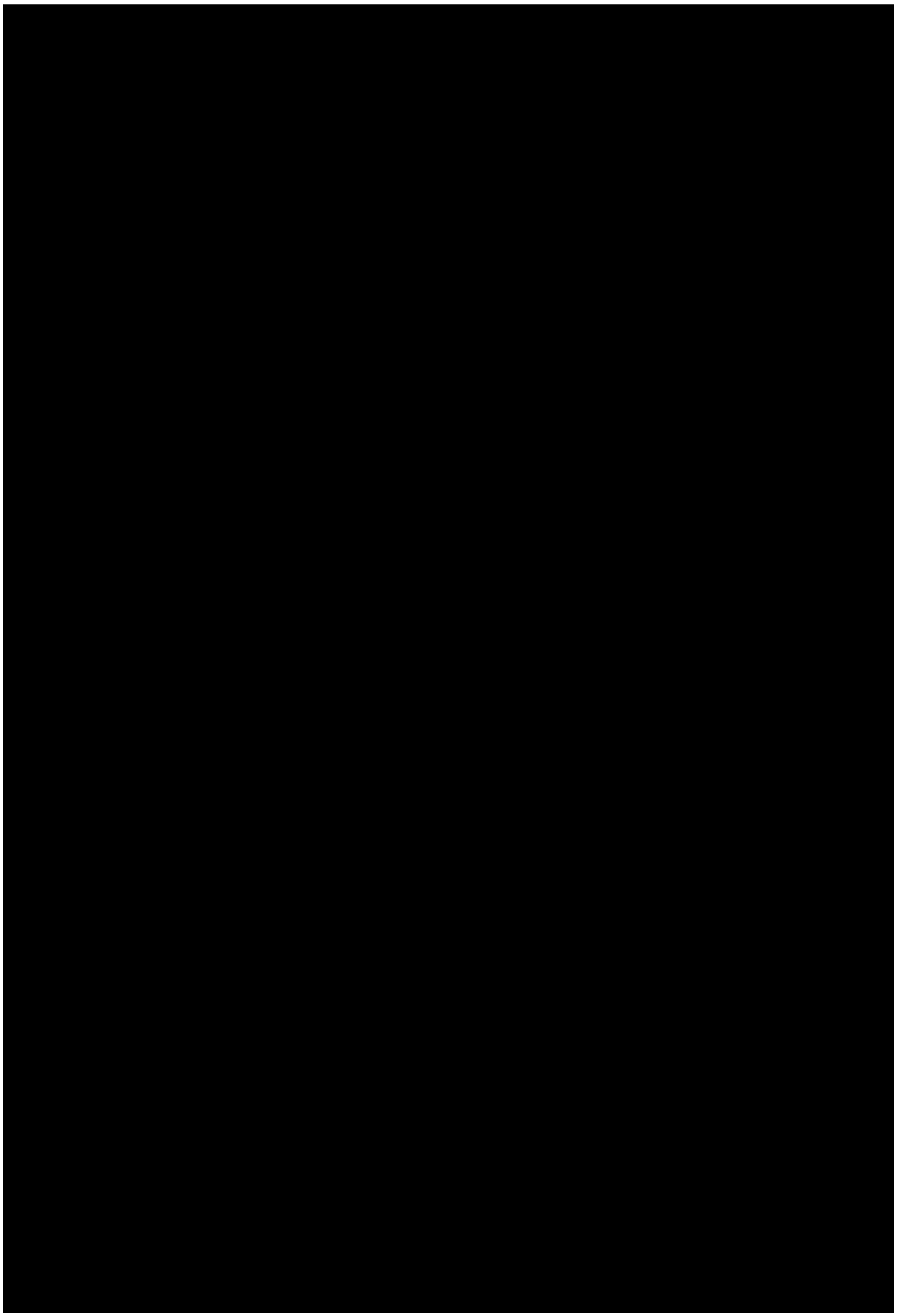


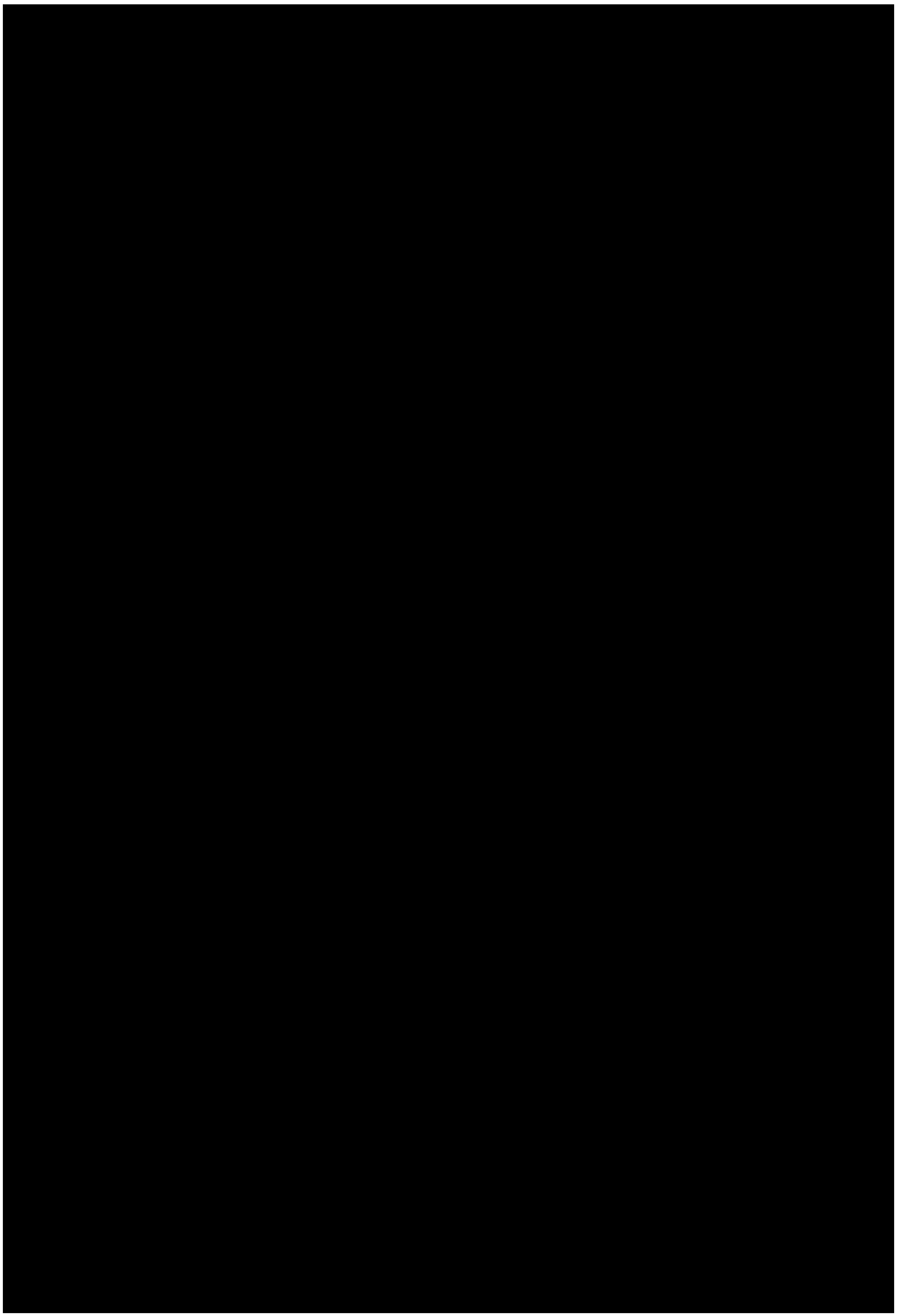


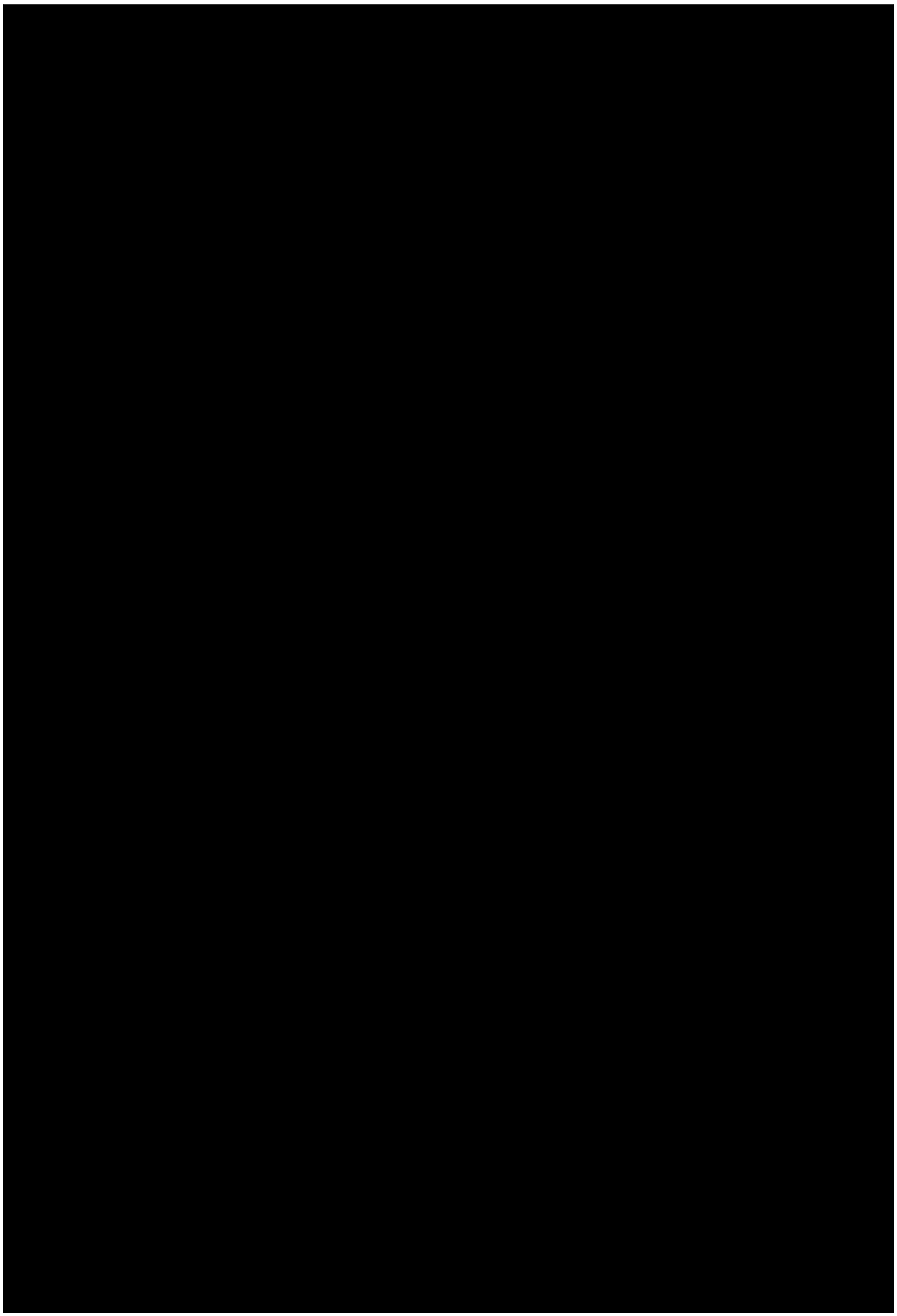


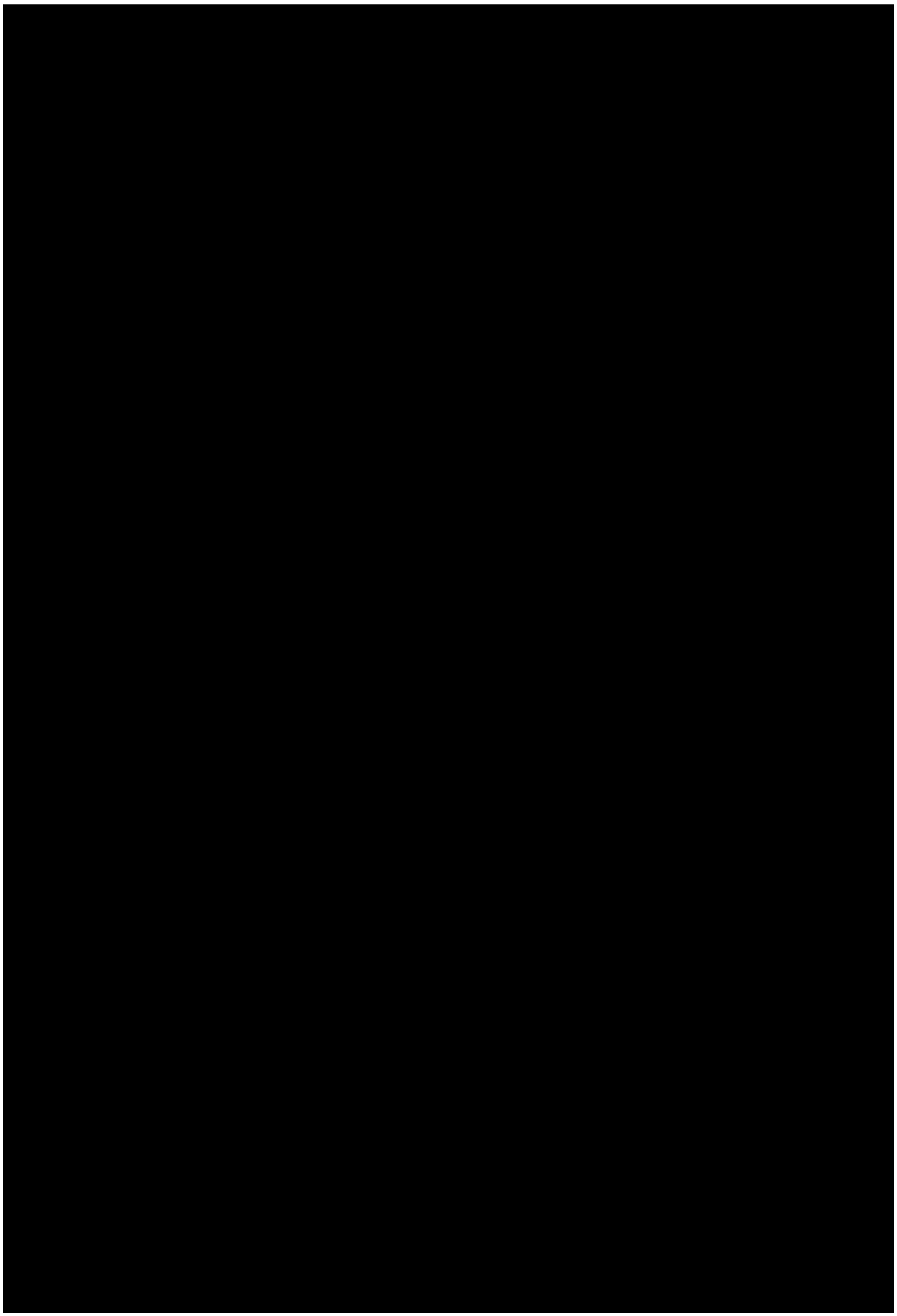


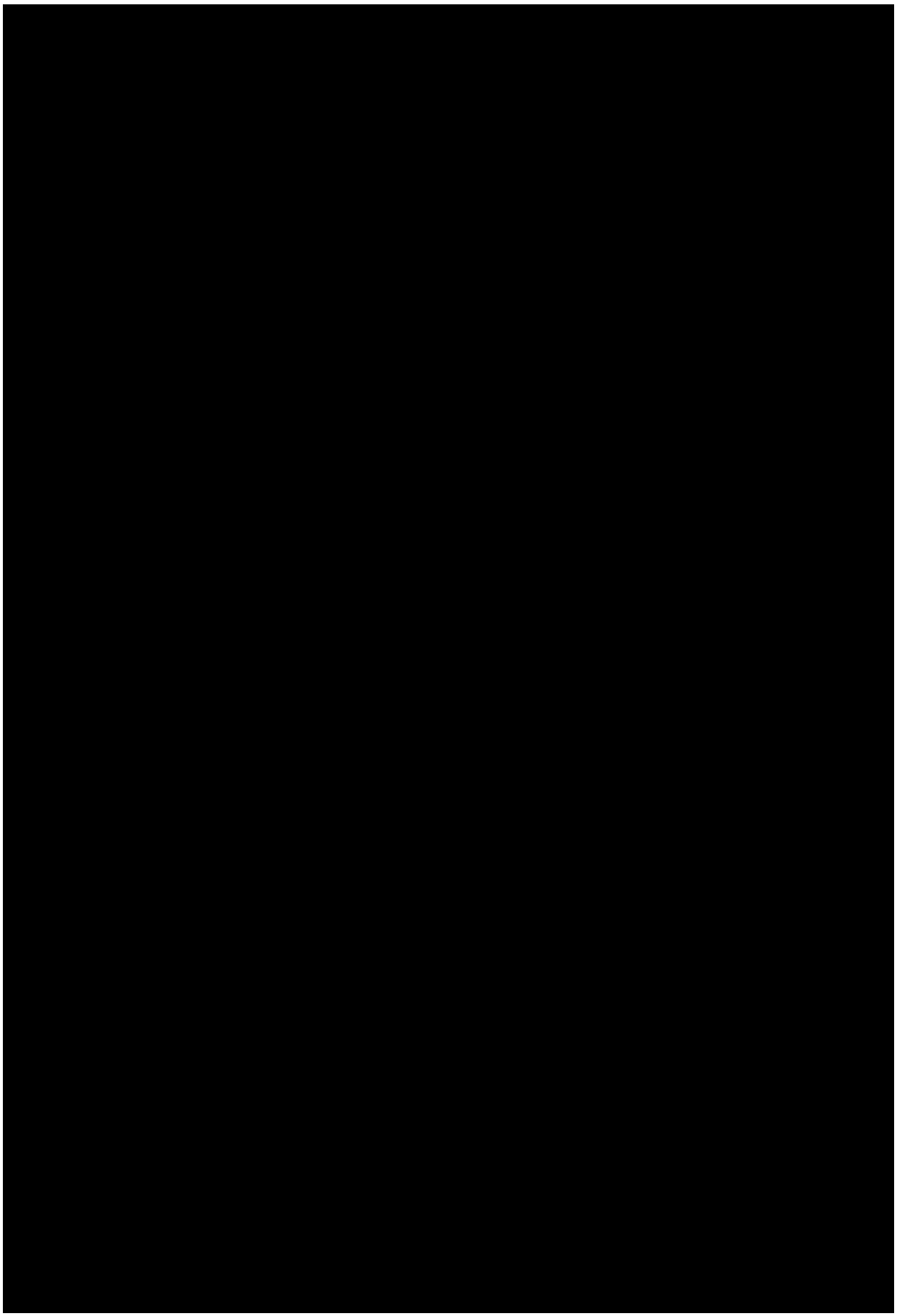


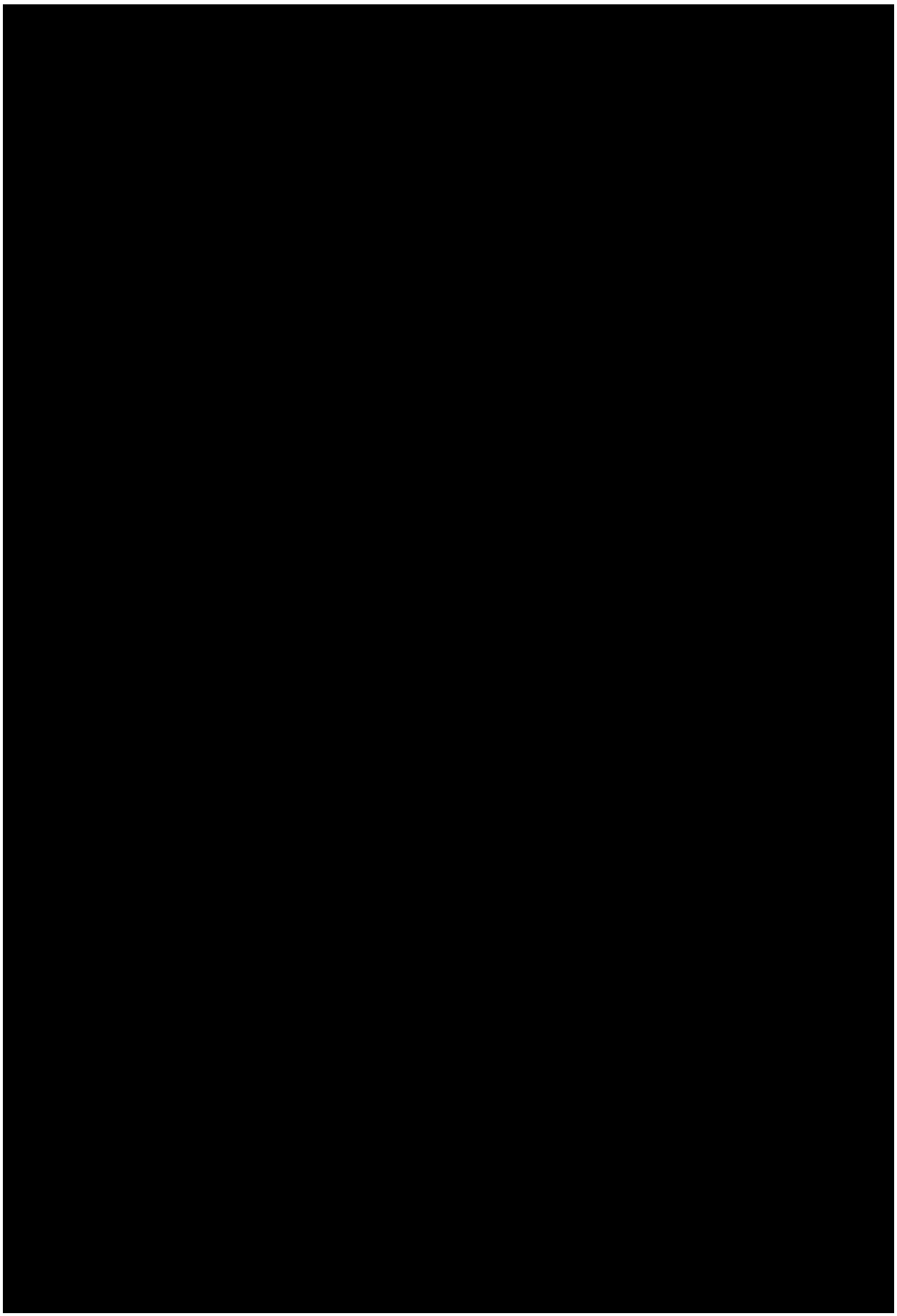


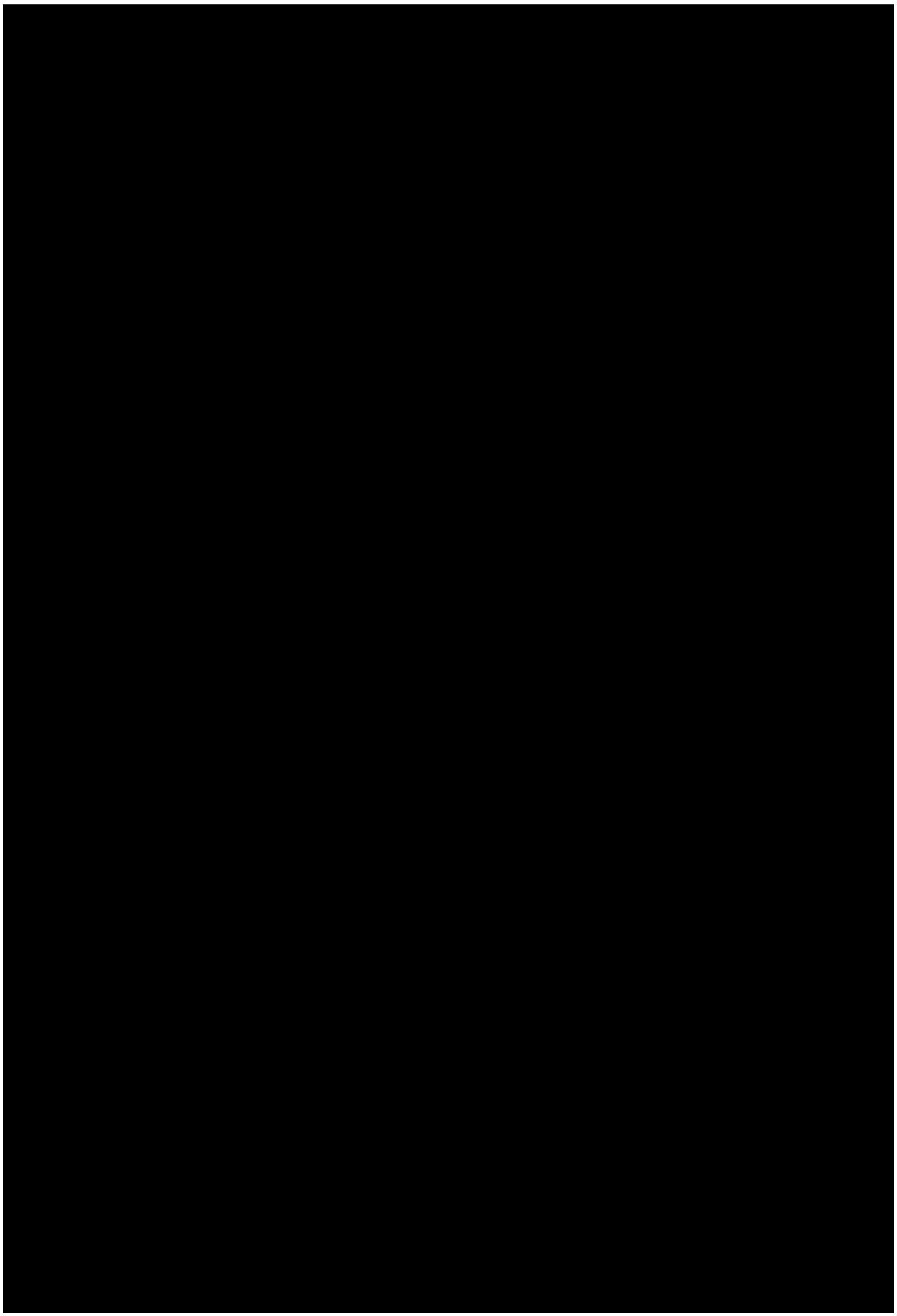






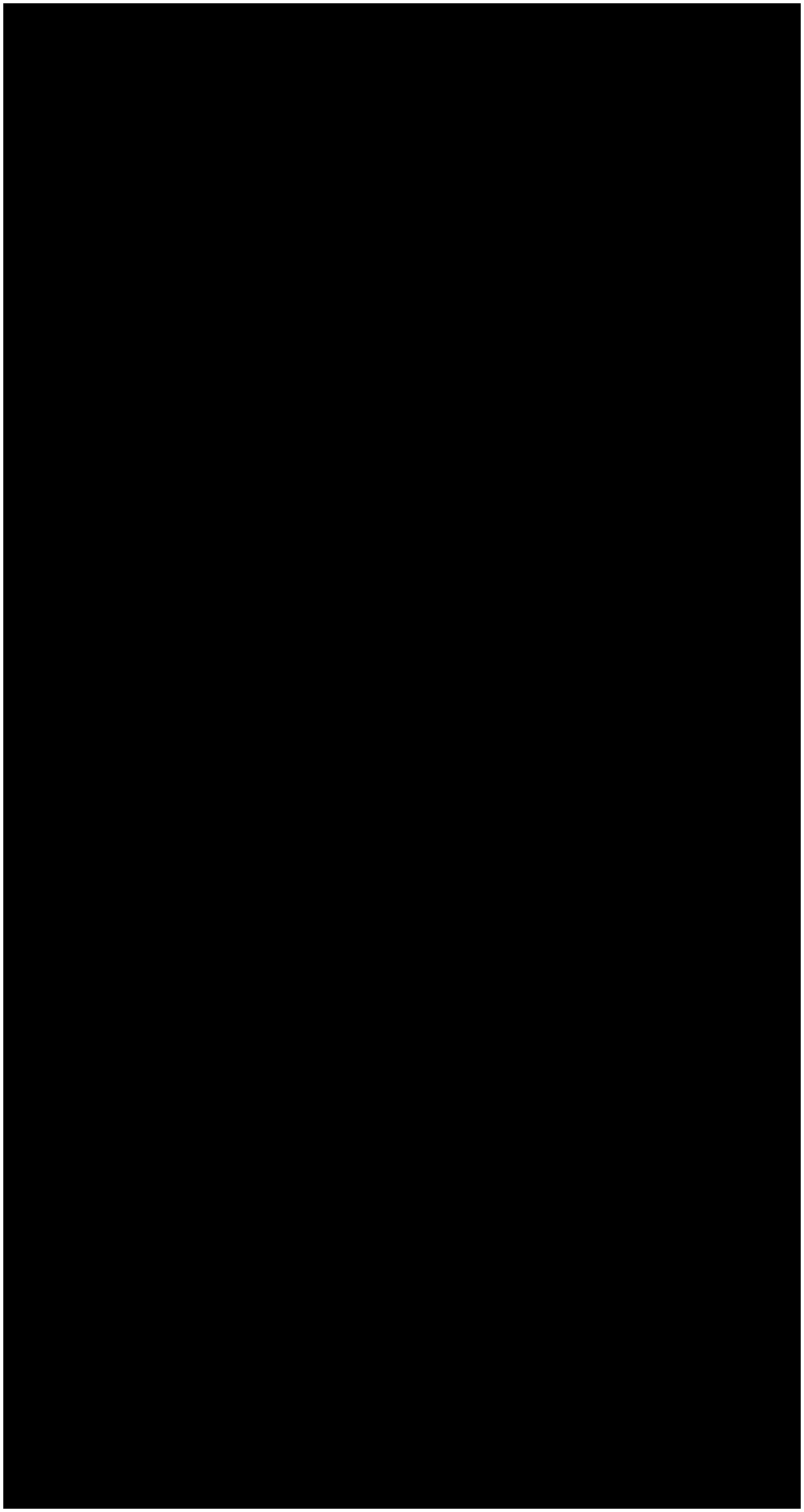


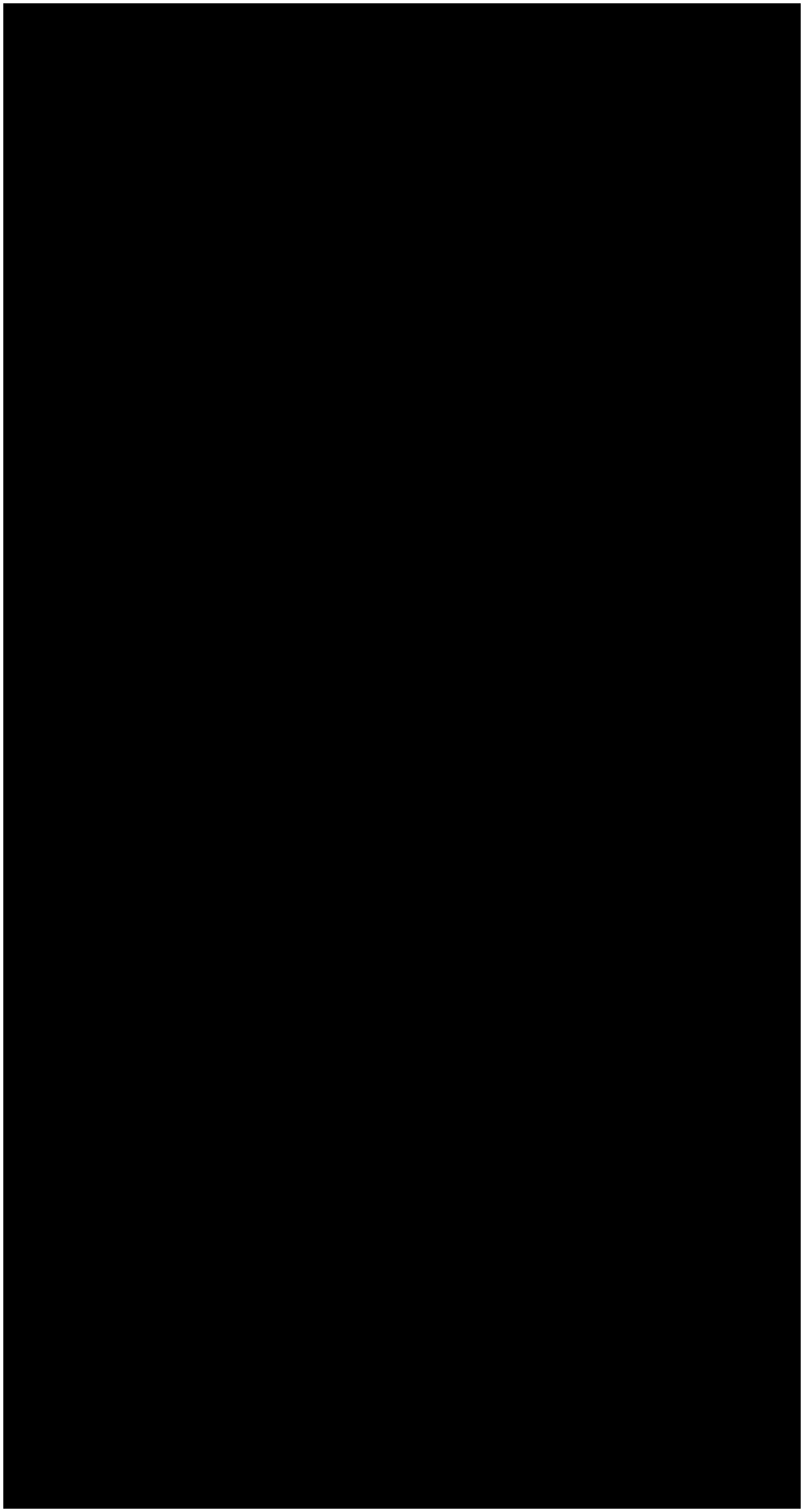


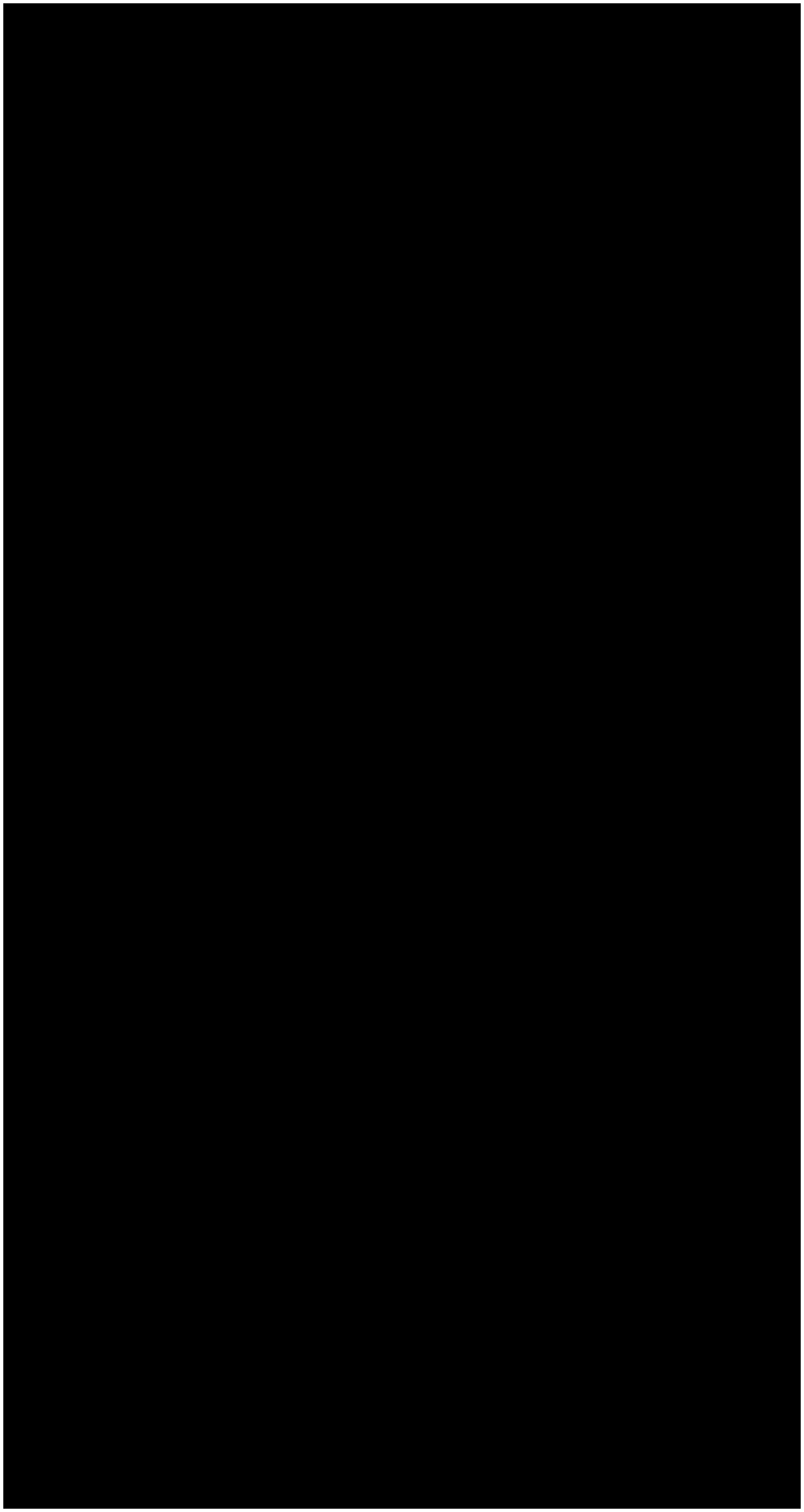


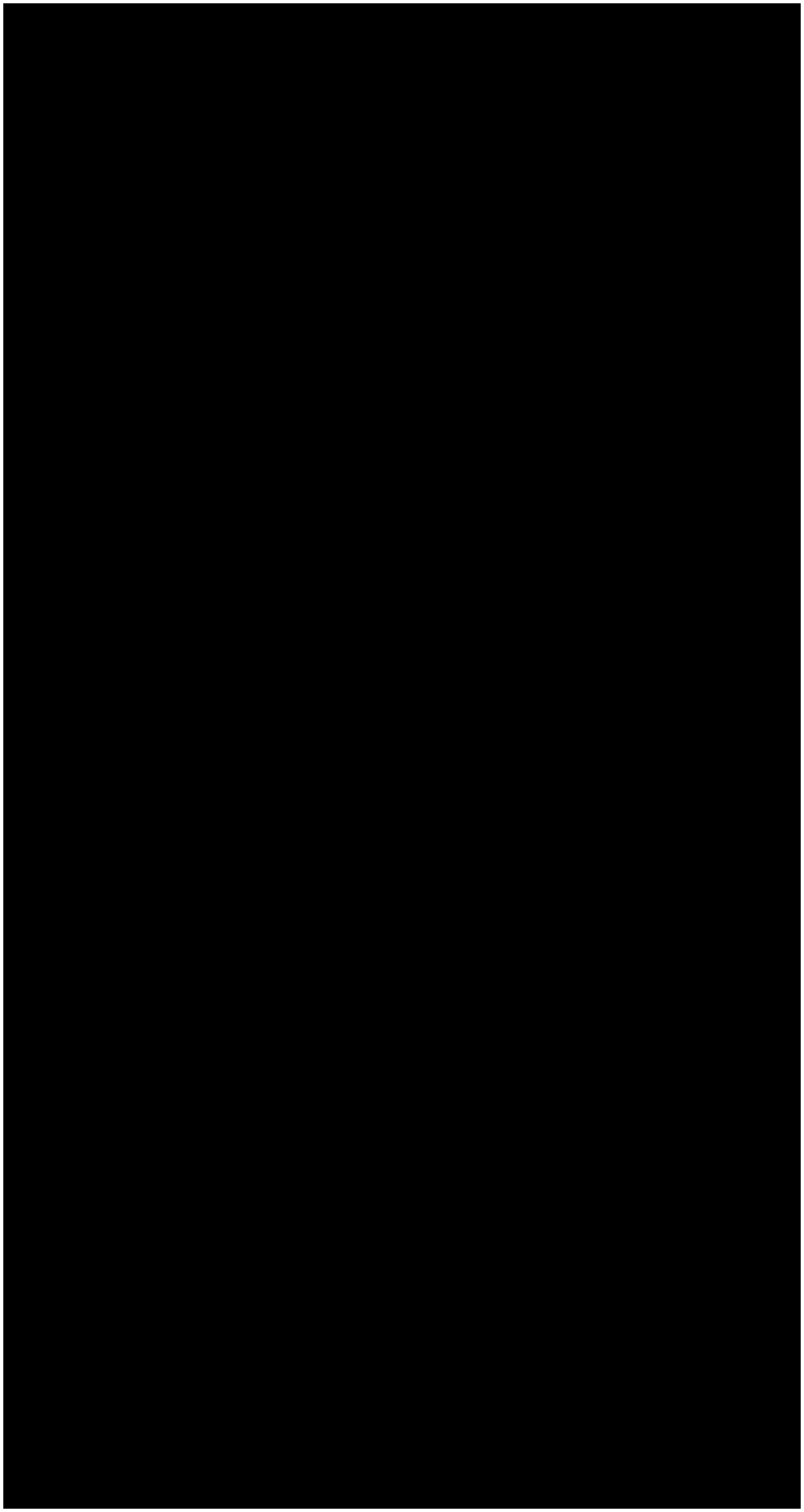


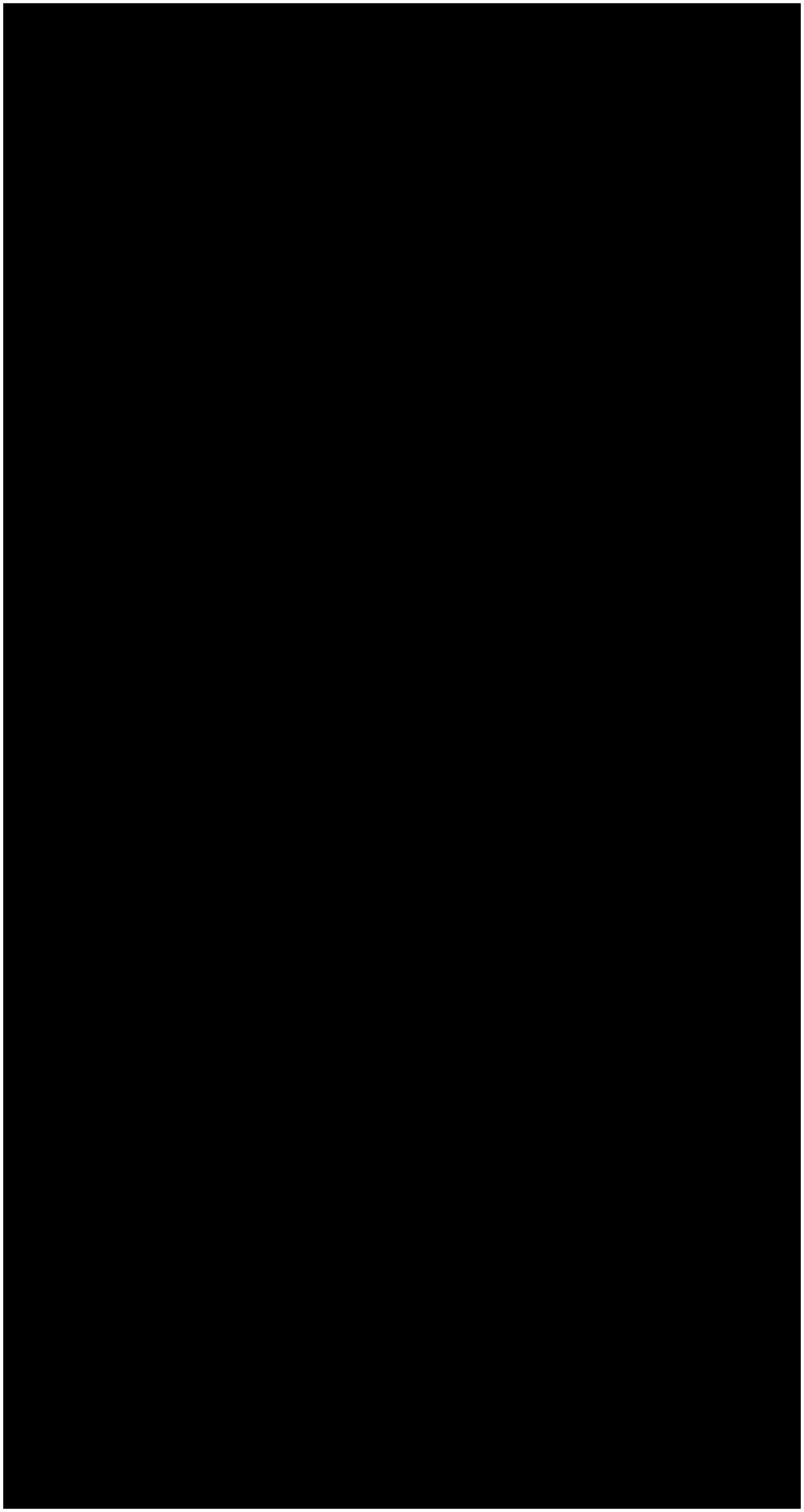
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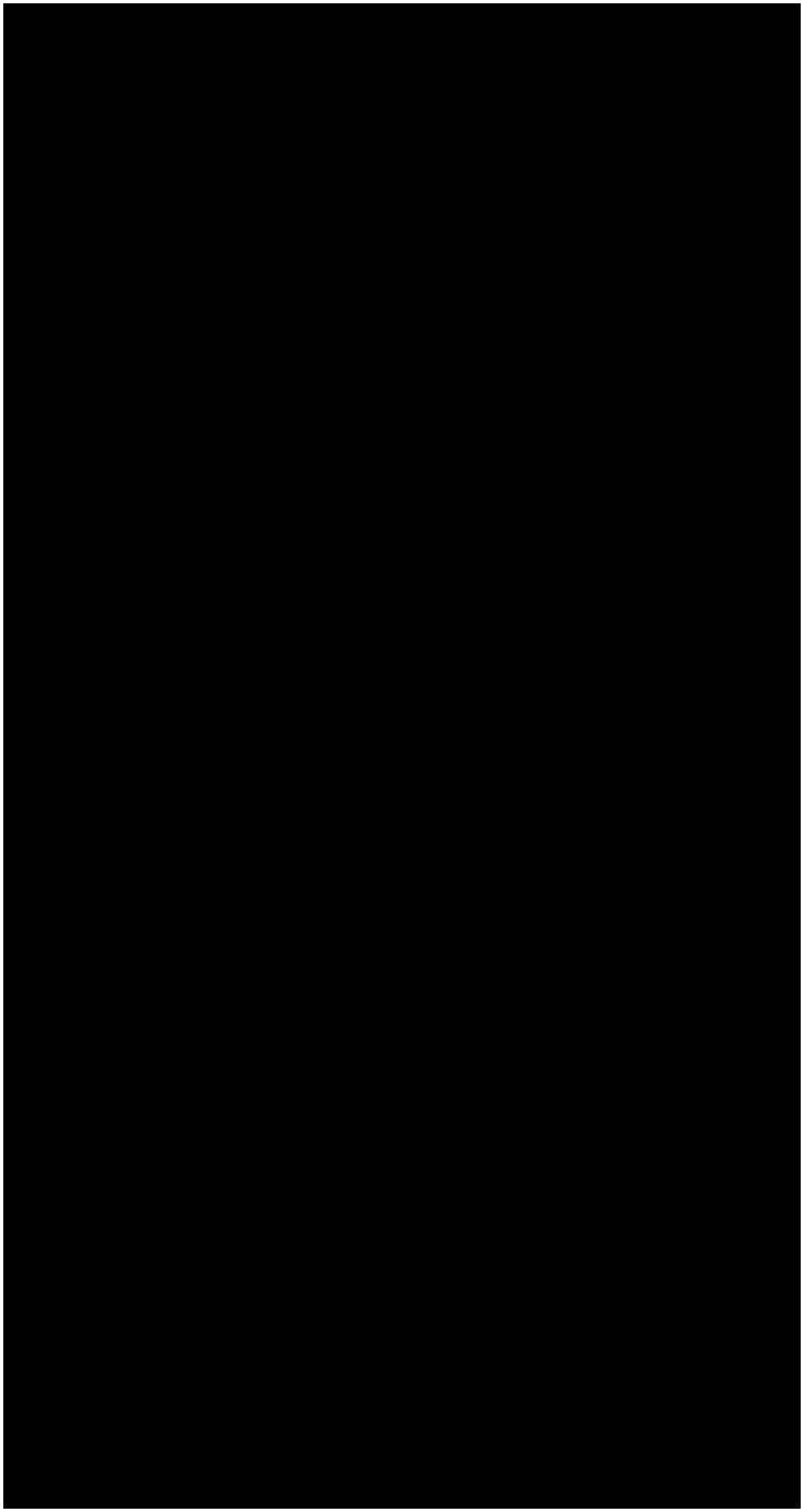


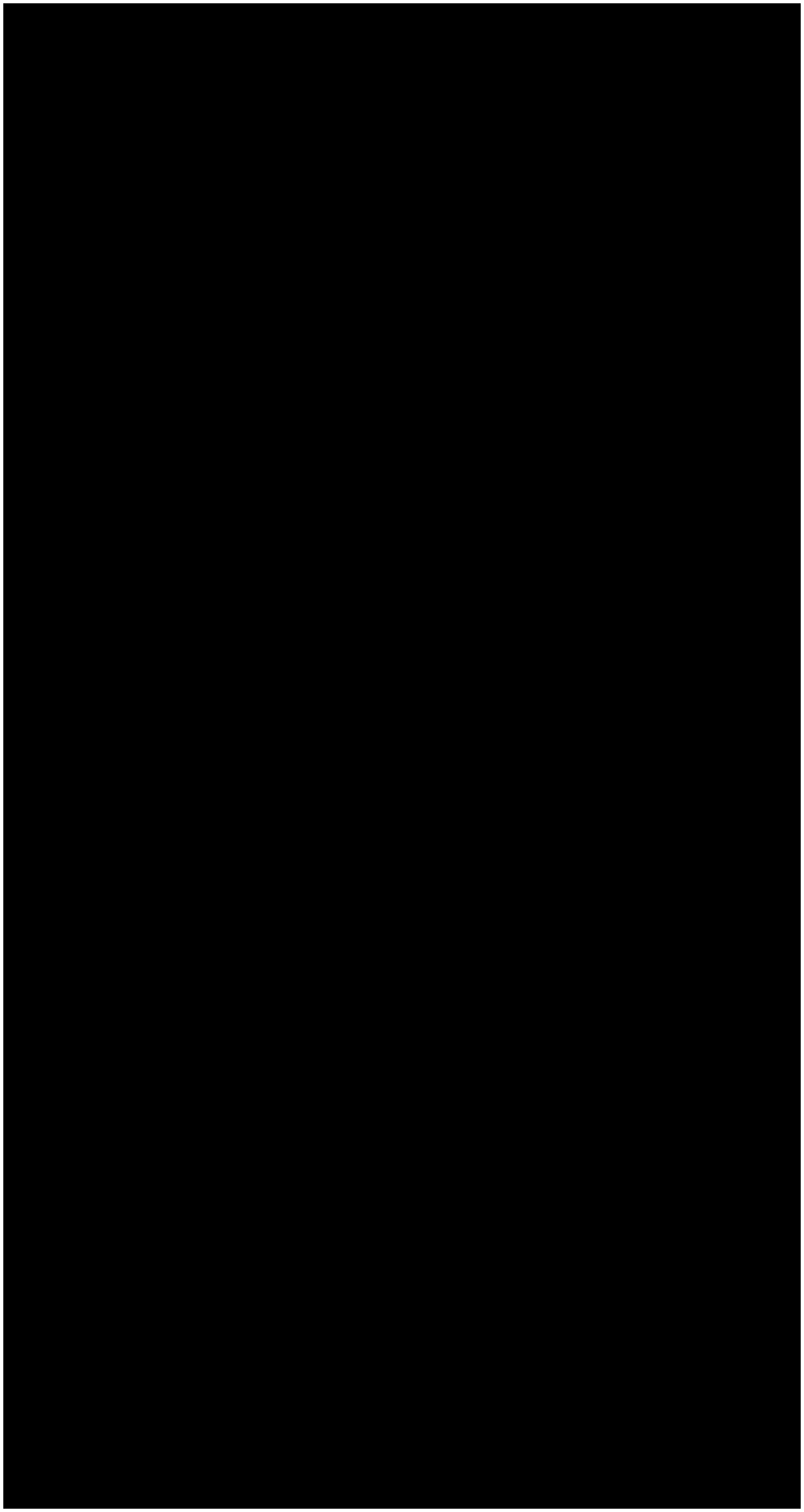


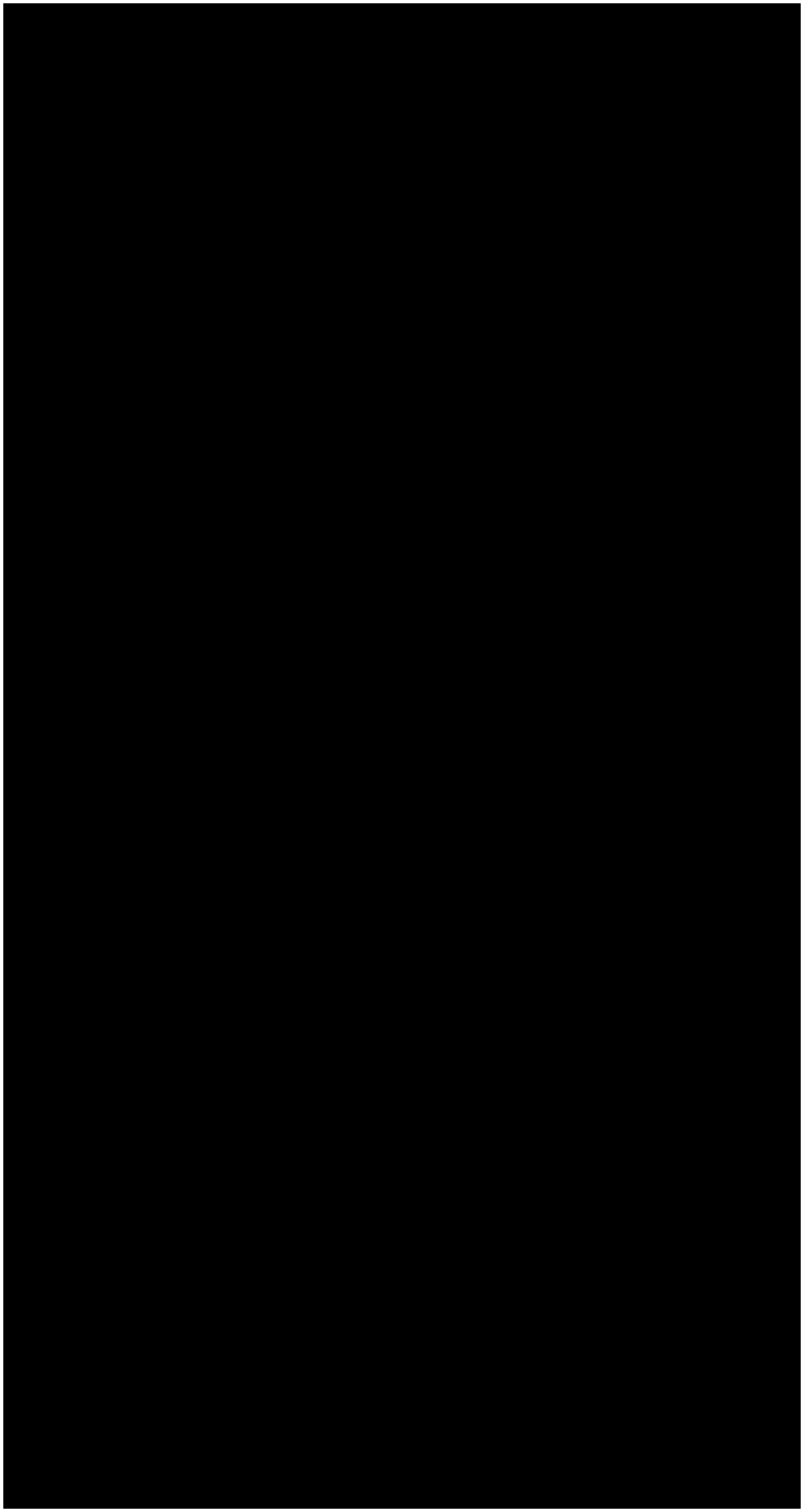


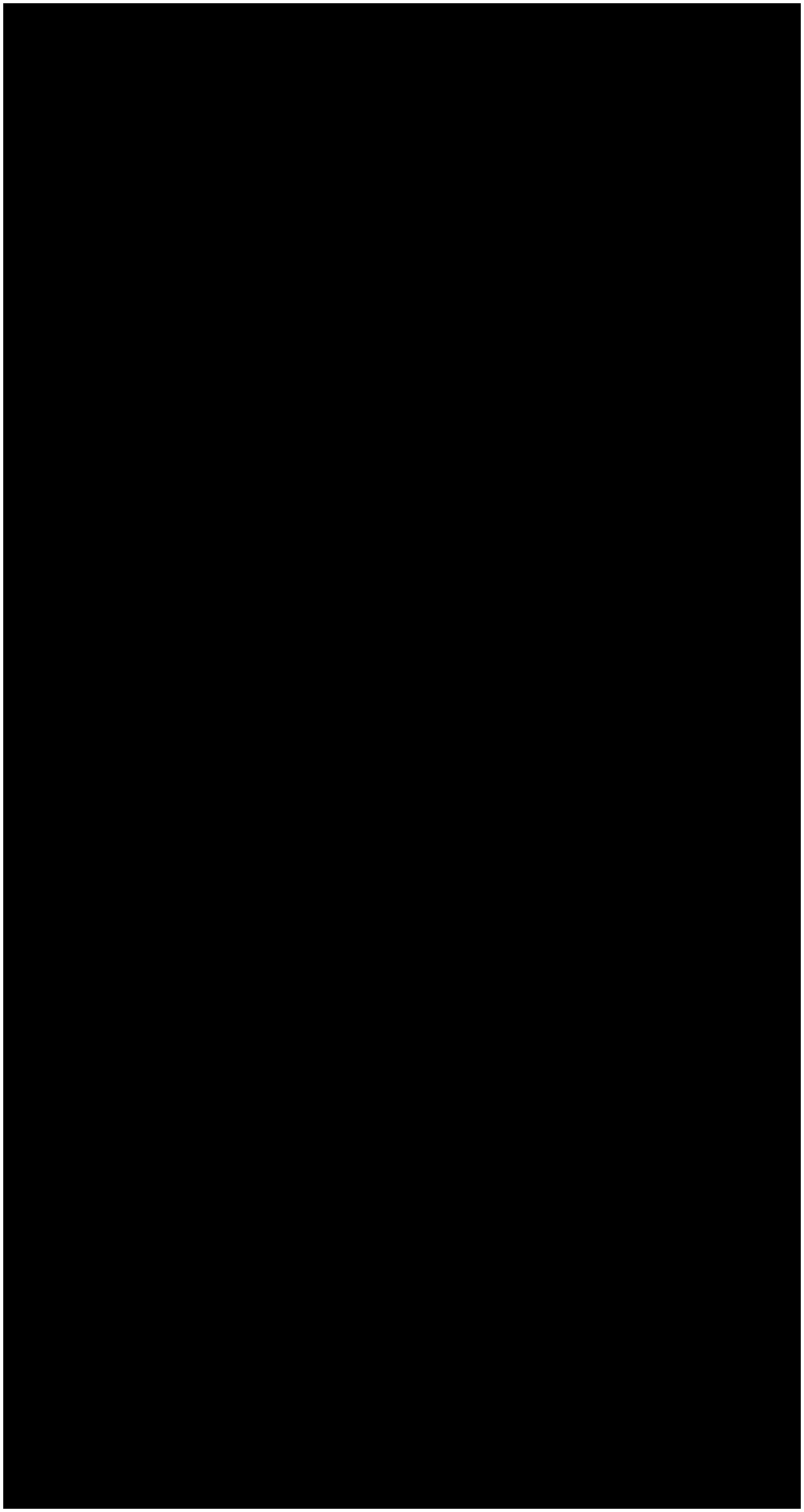


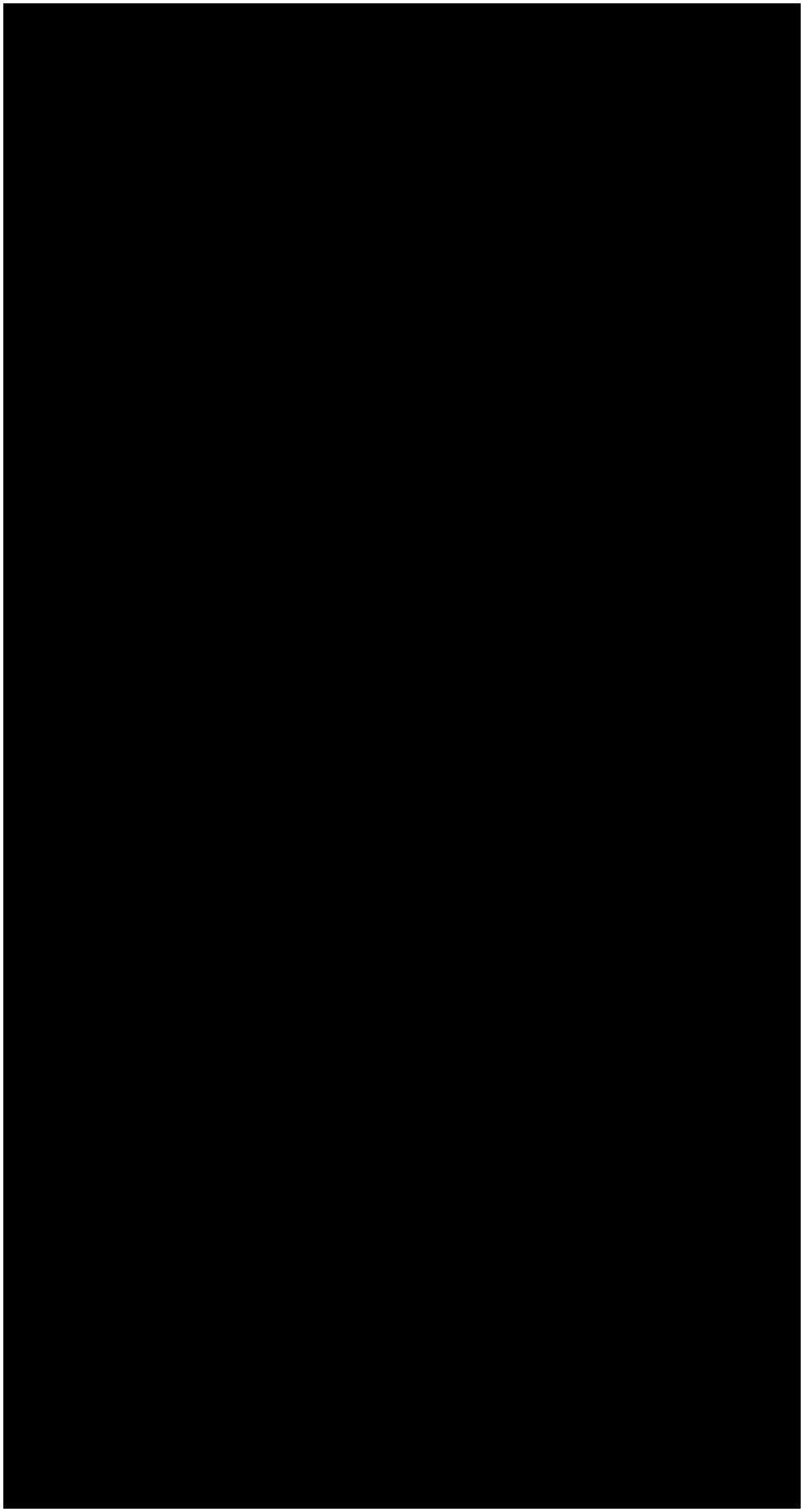


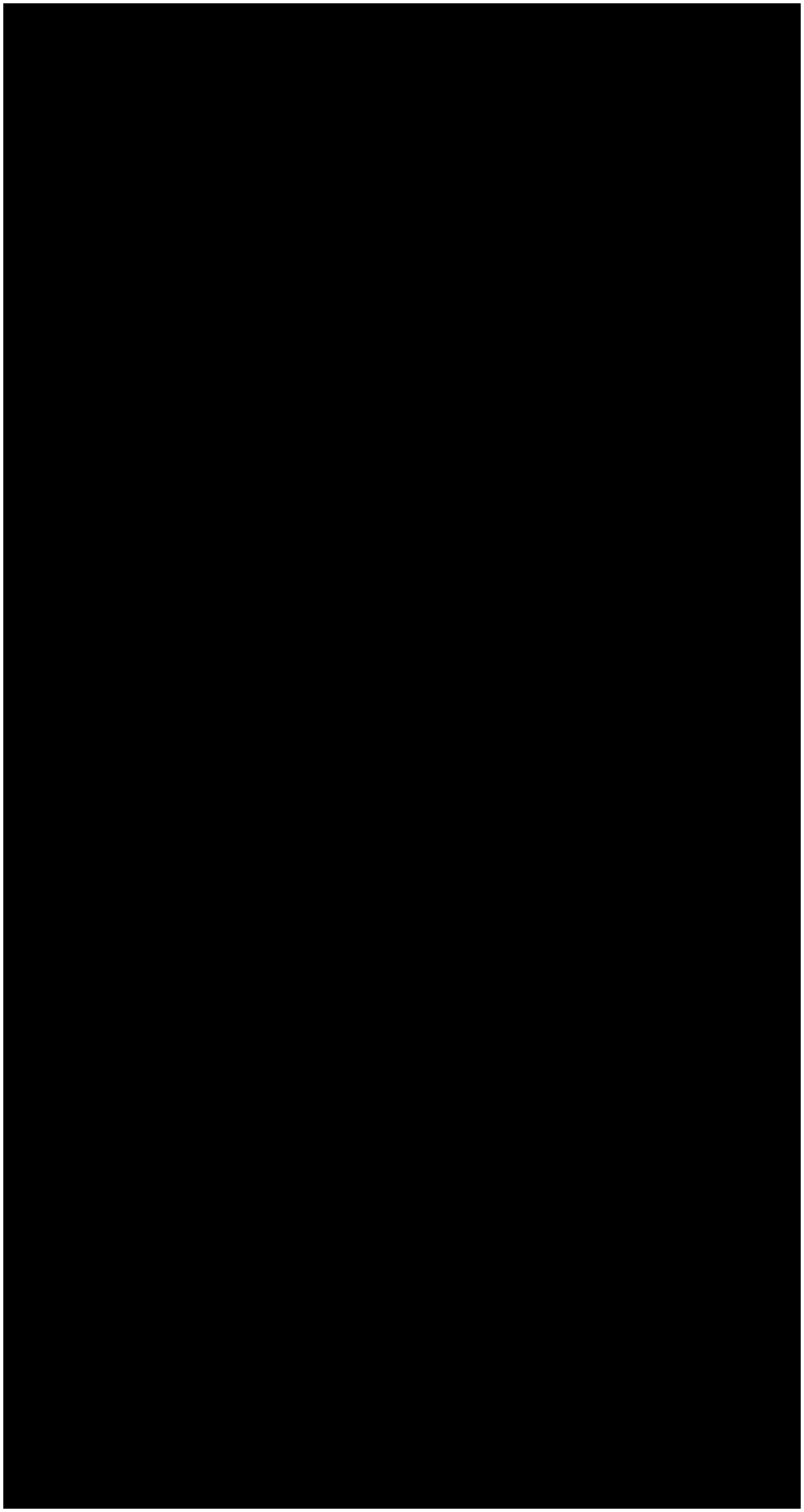


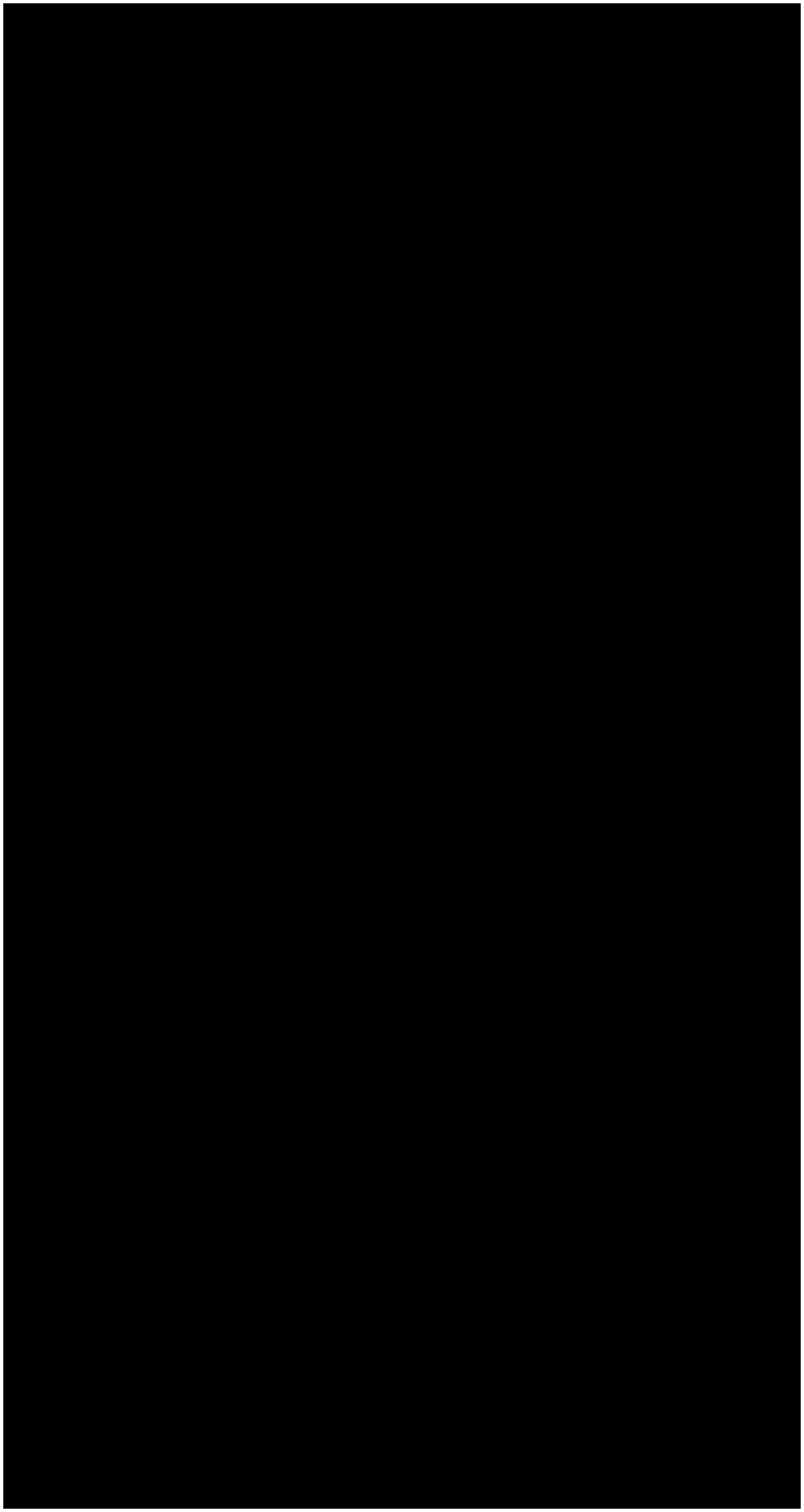


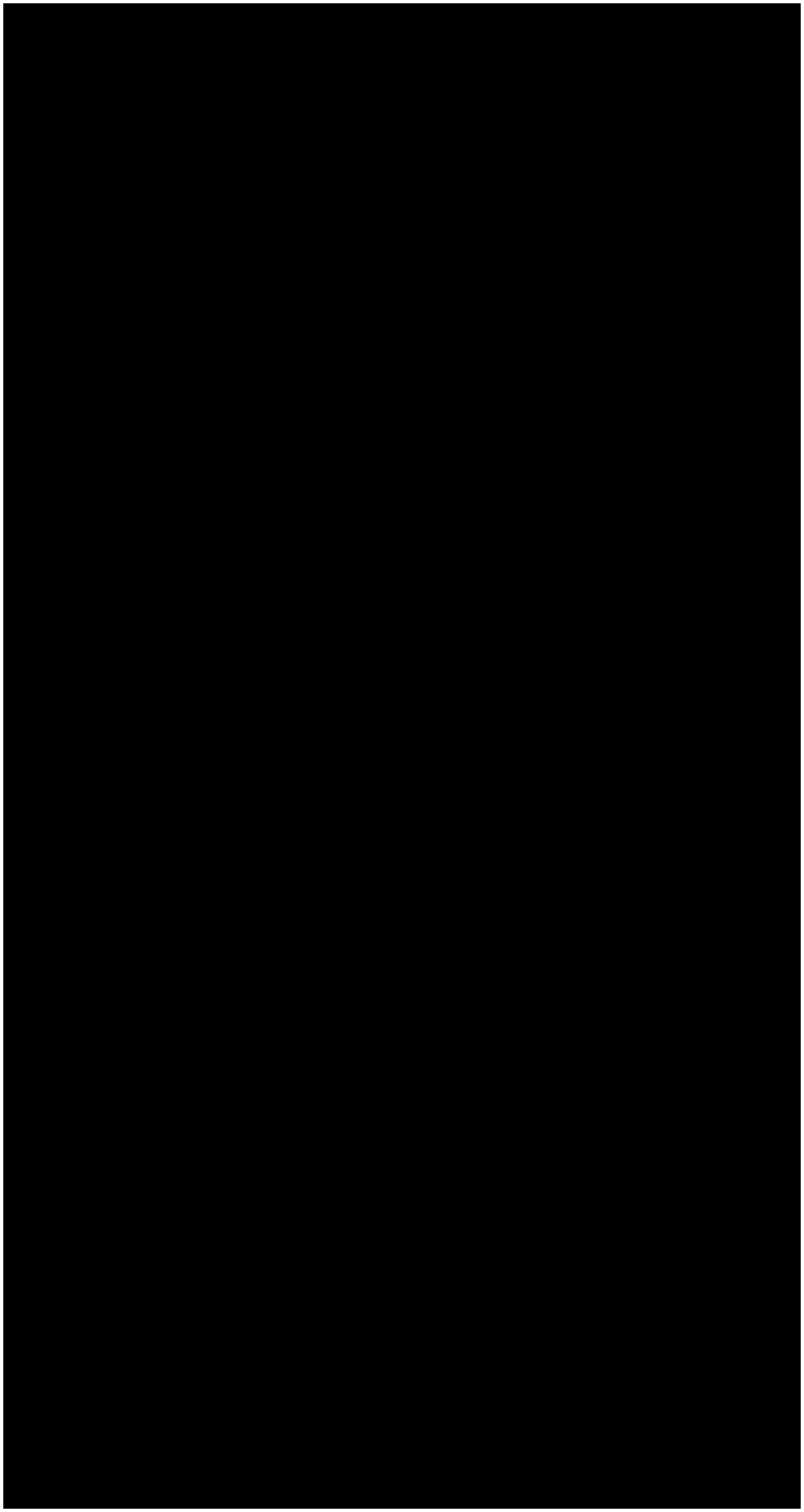


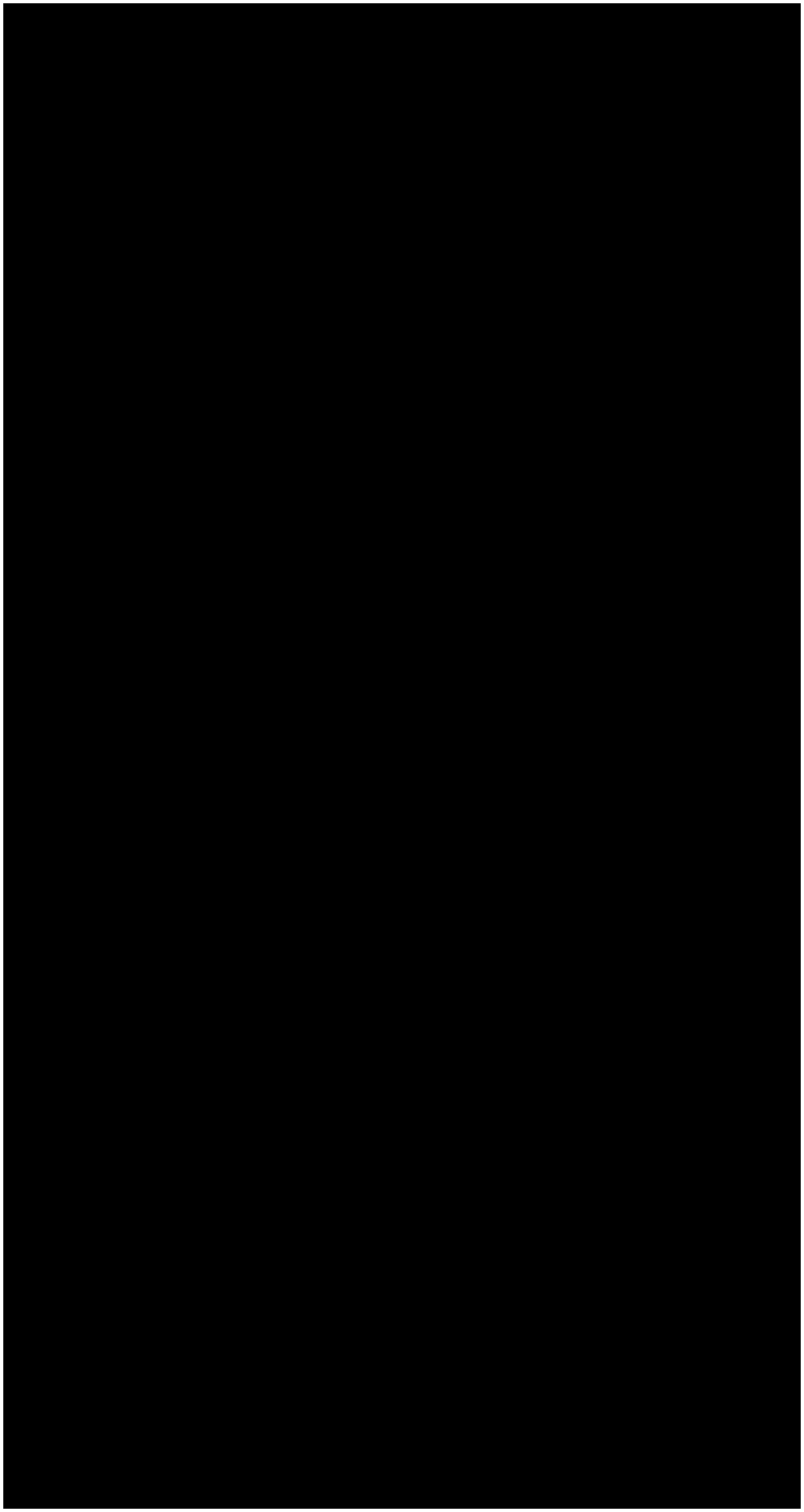


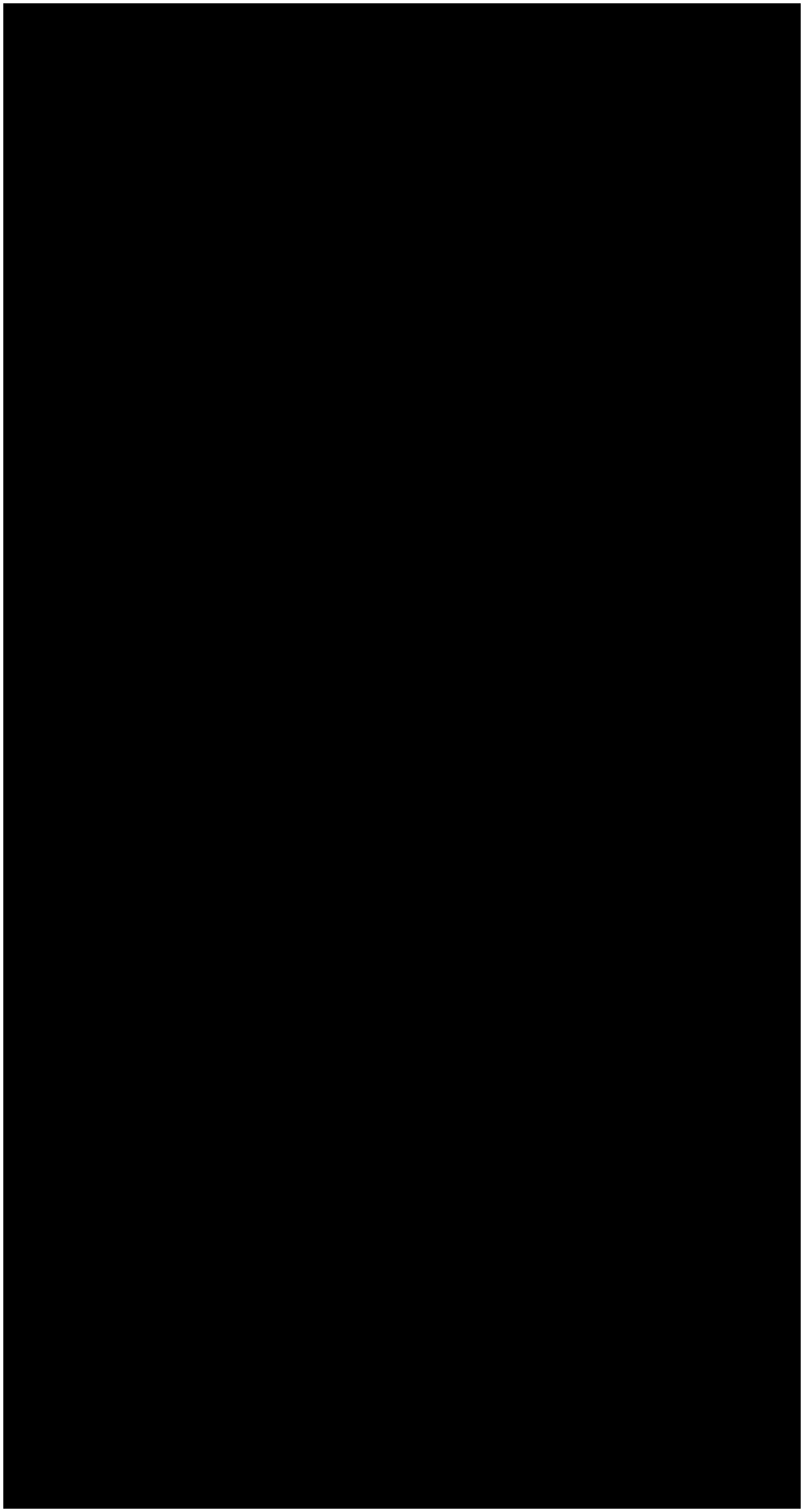


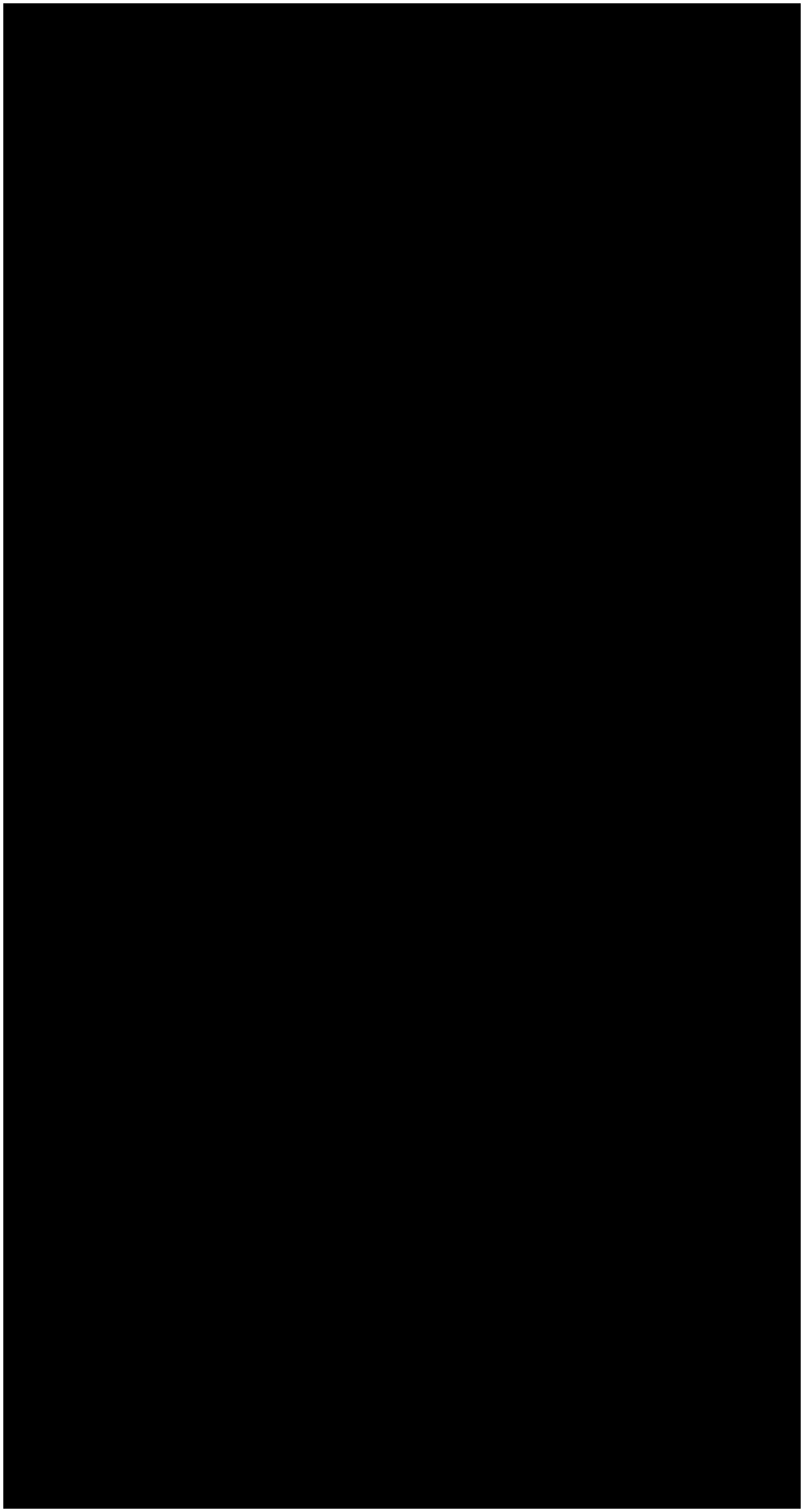


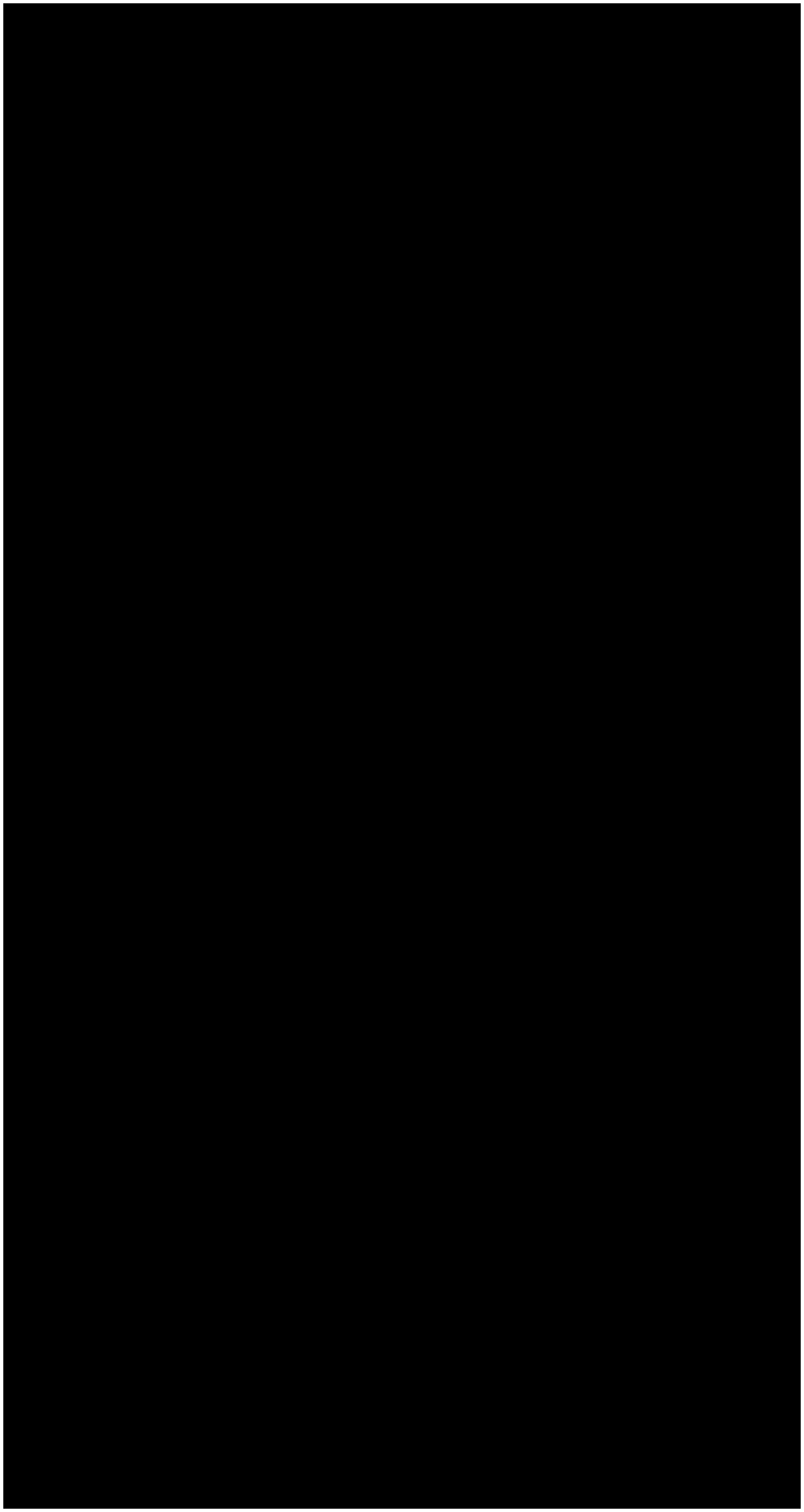


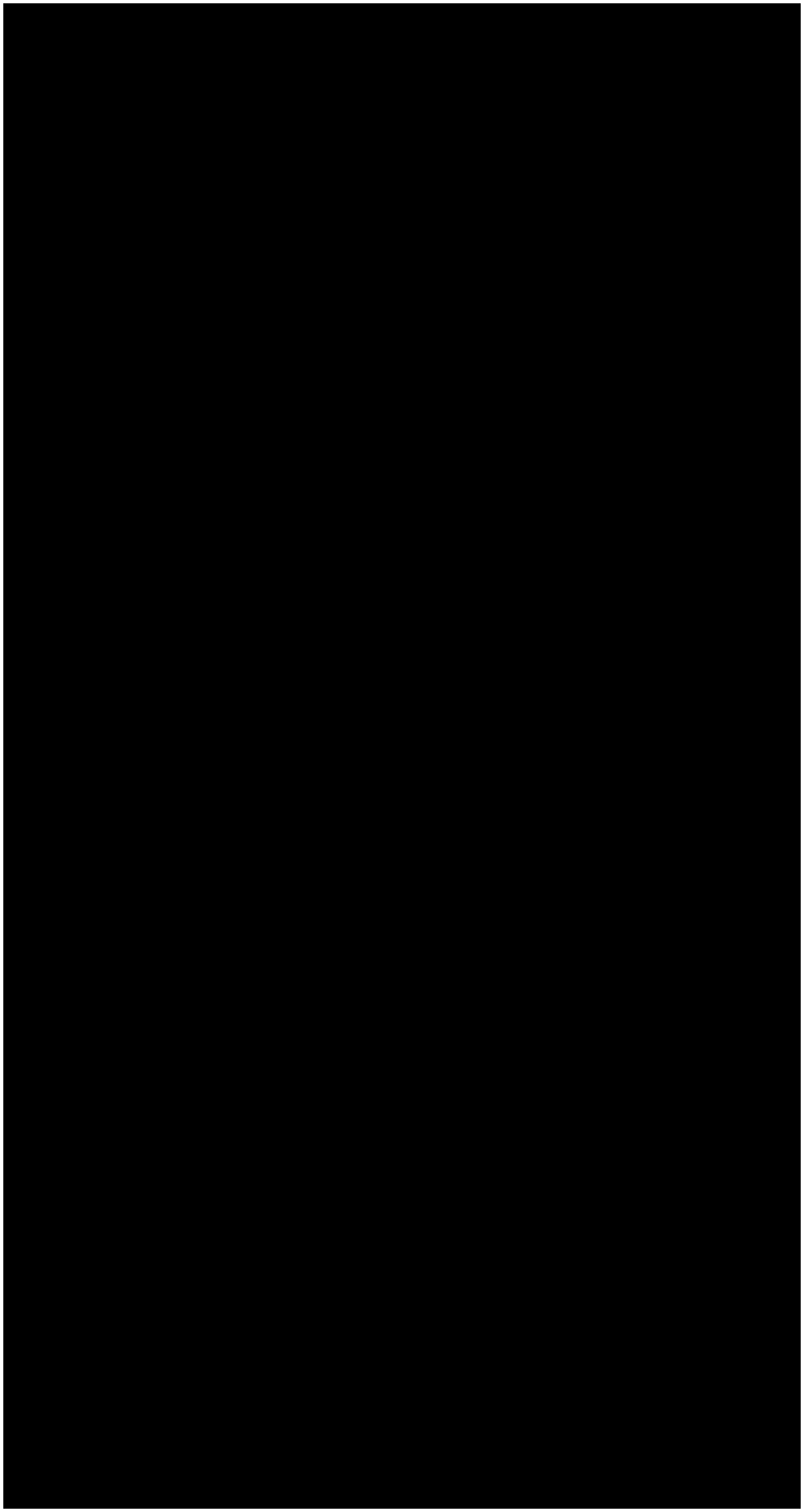














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
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May-25											
Jun-25											
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Jan-26											
Feb-26											
Mar-26											
Apr-26											
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Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
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Jan-25											
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Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
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Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



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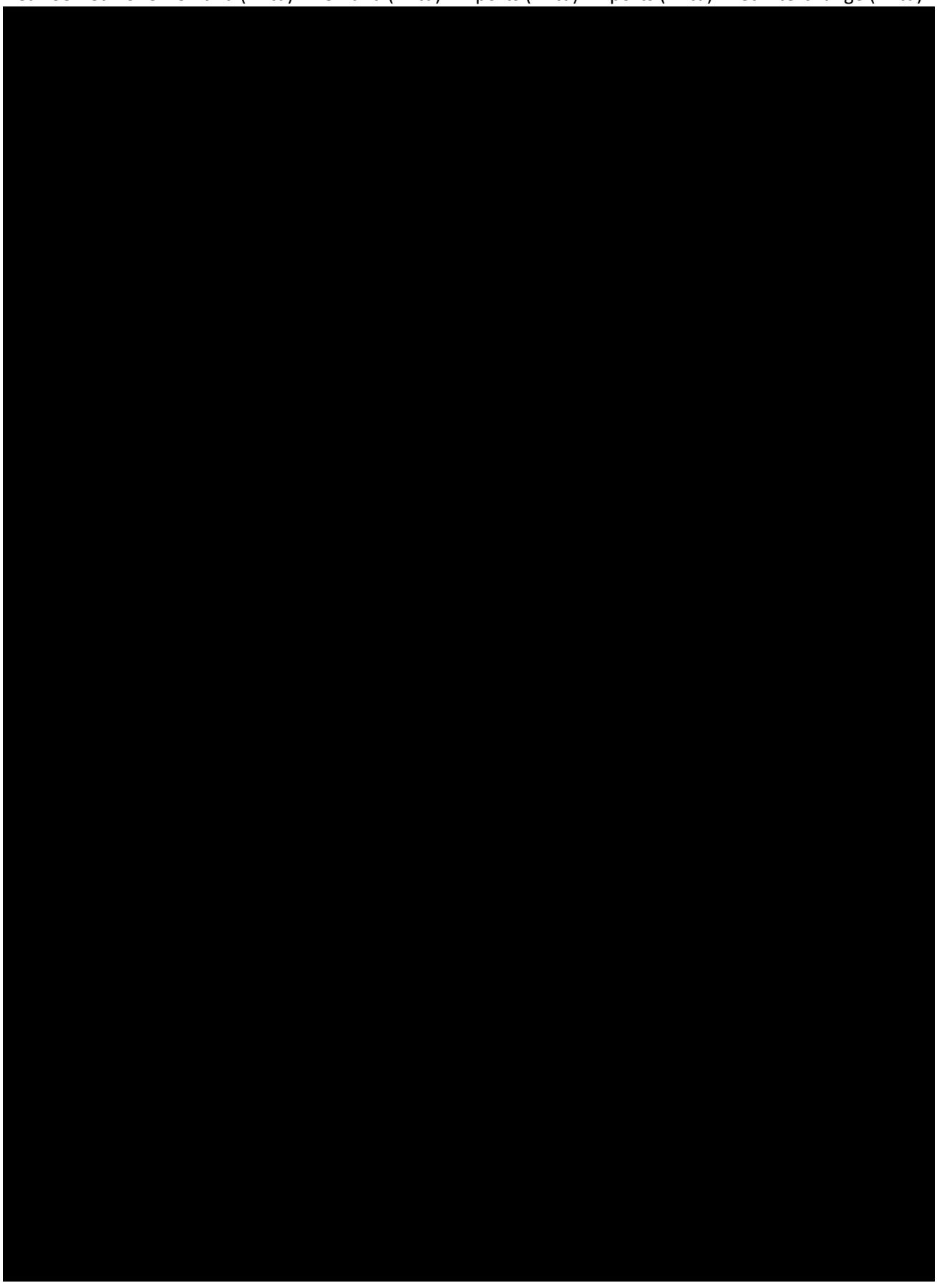
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





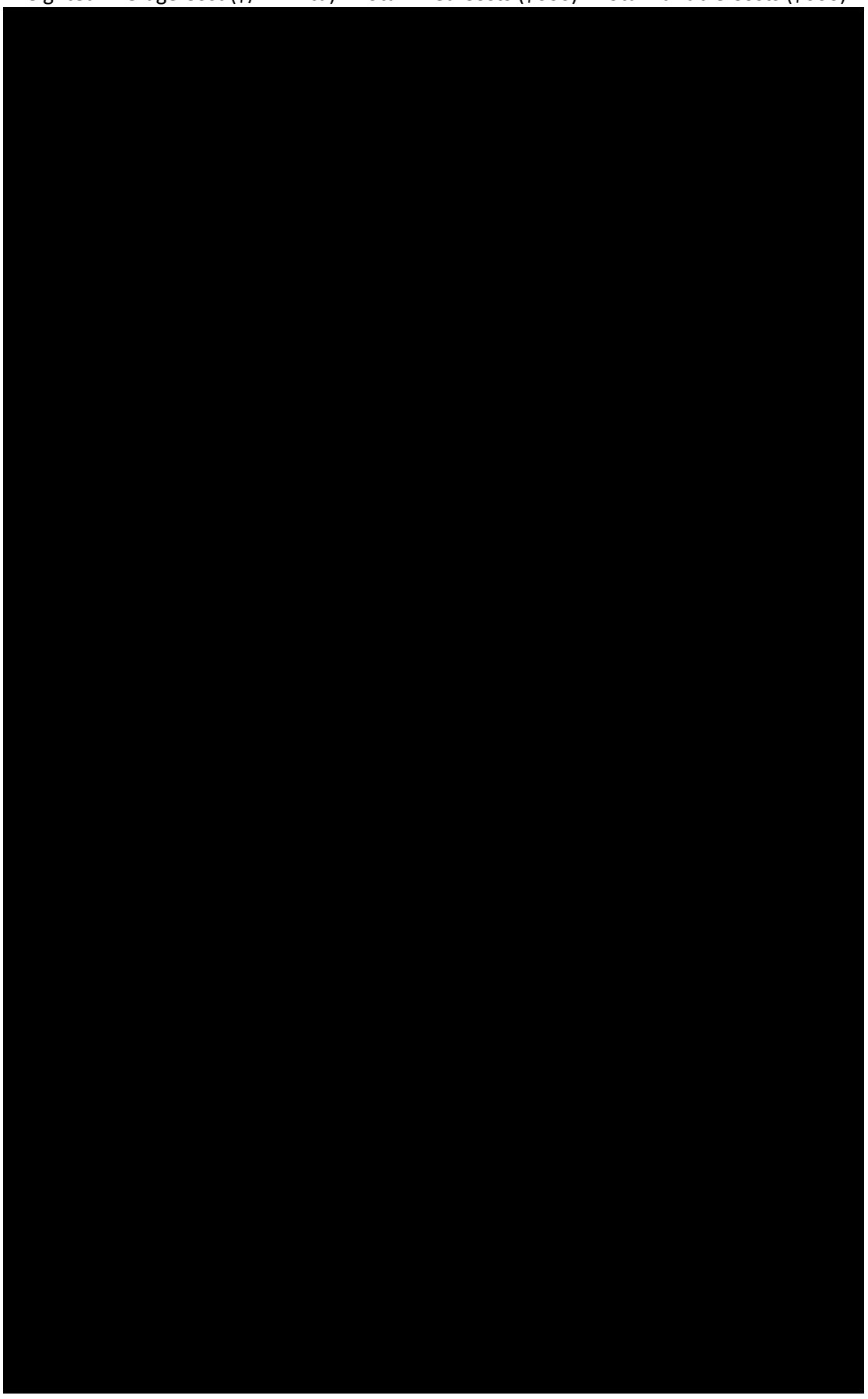
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
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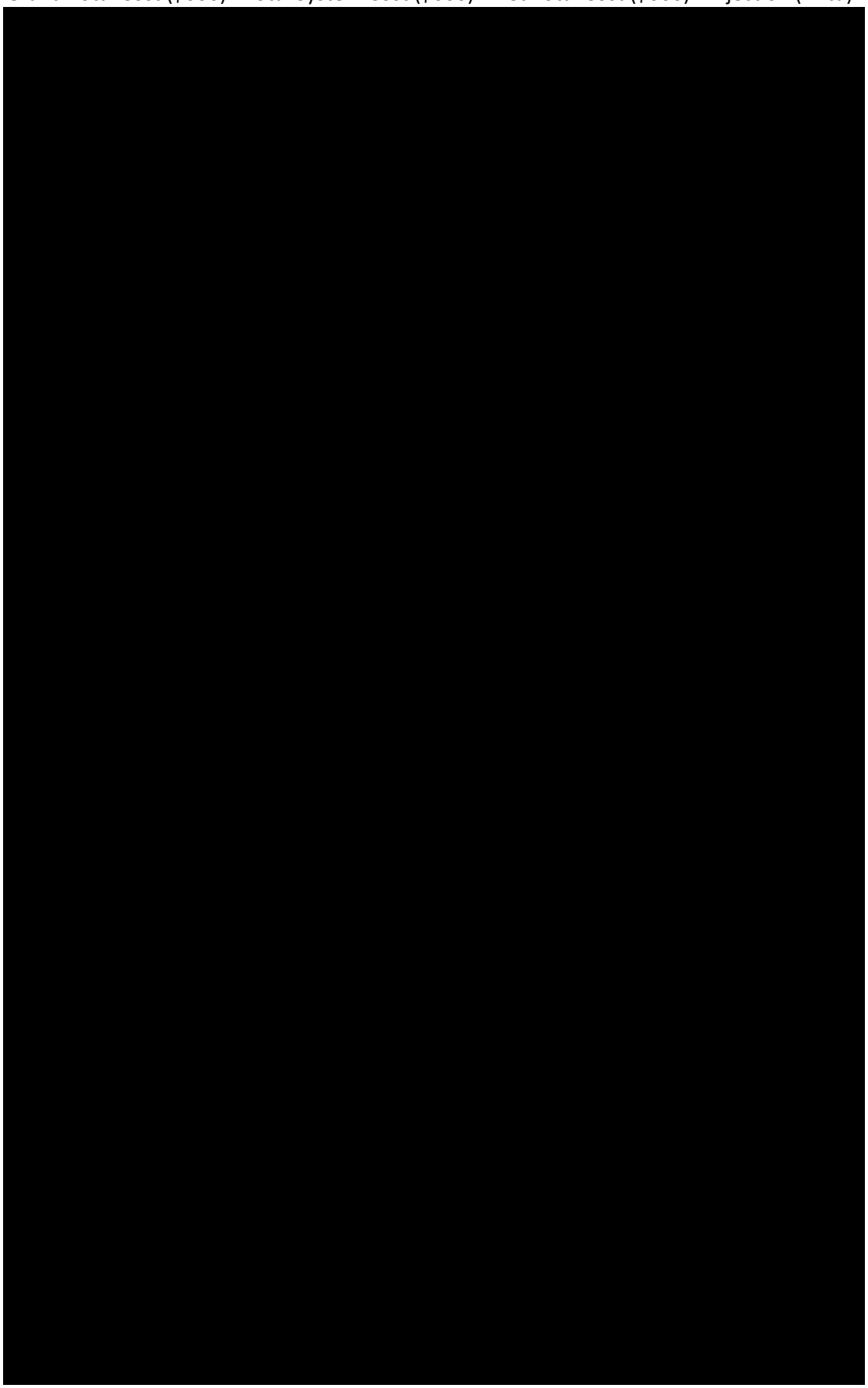


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

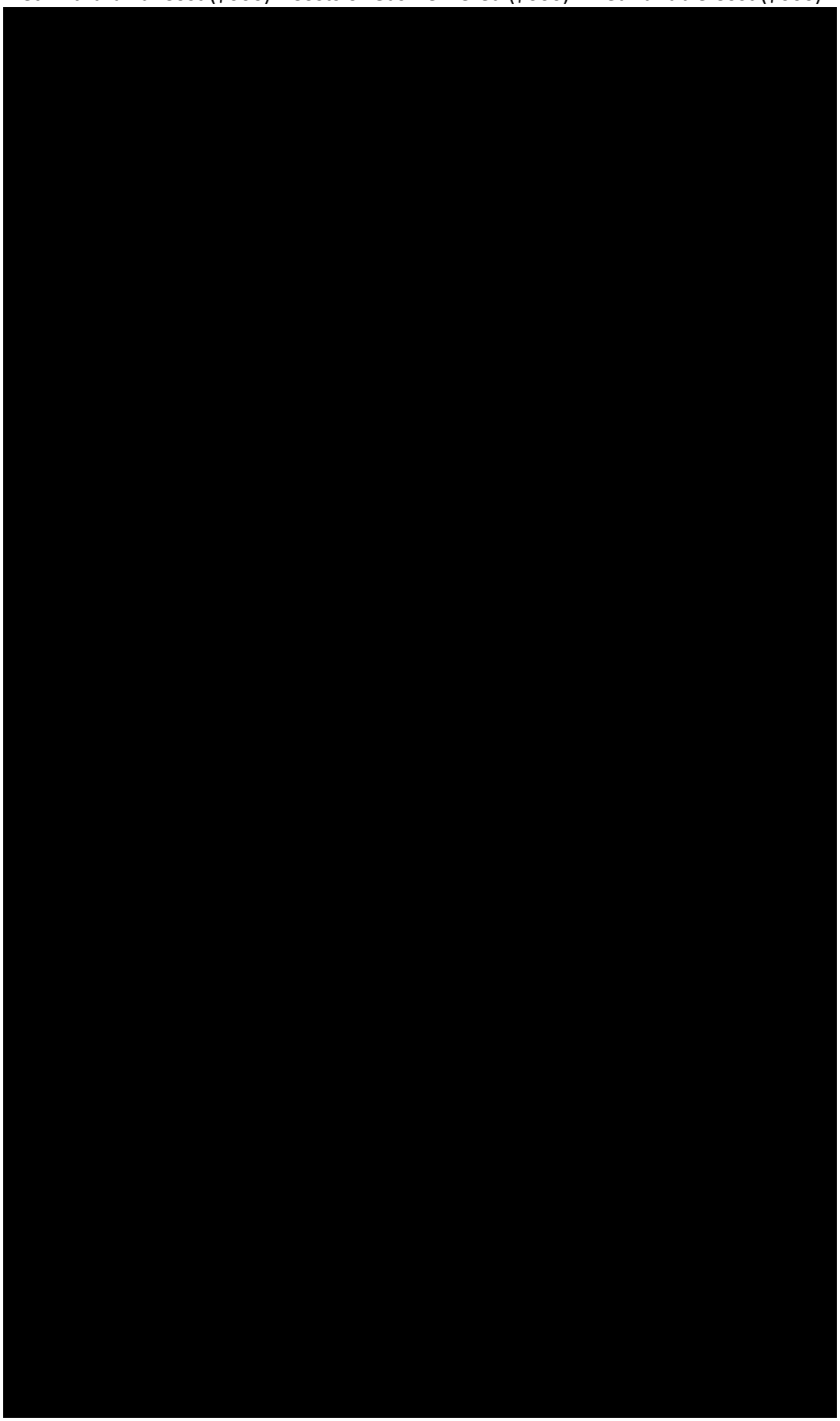




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

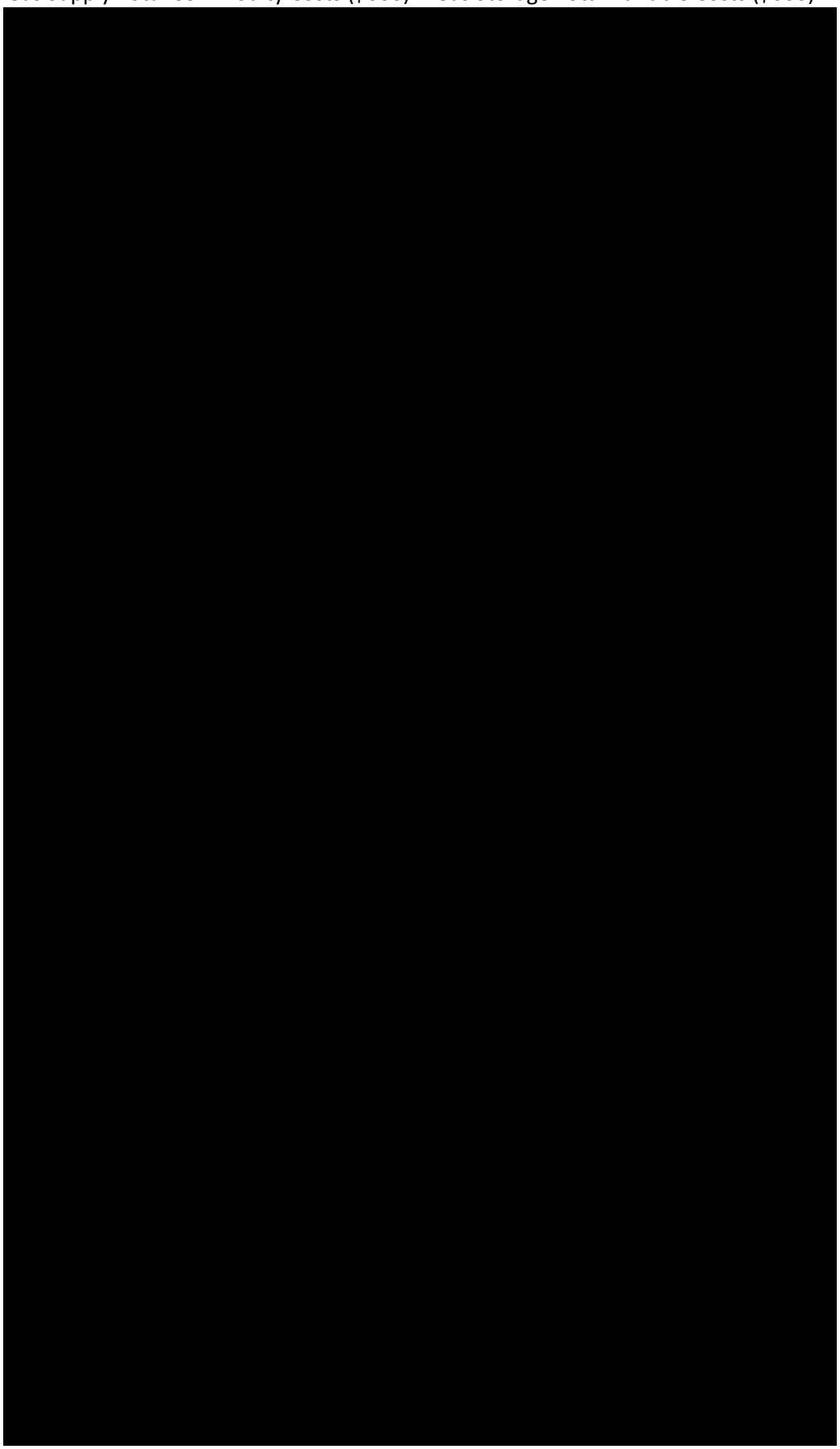




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
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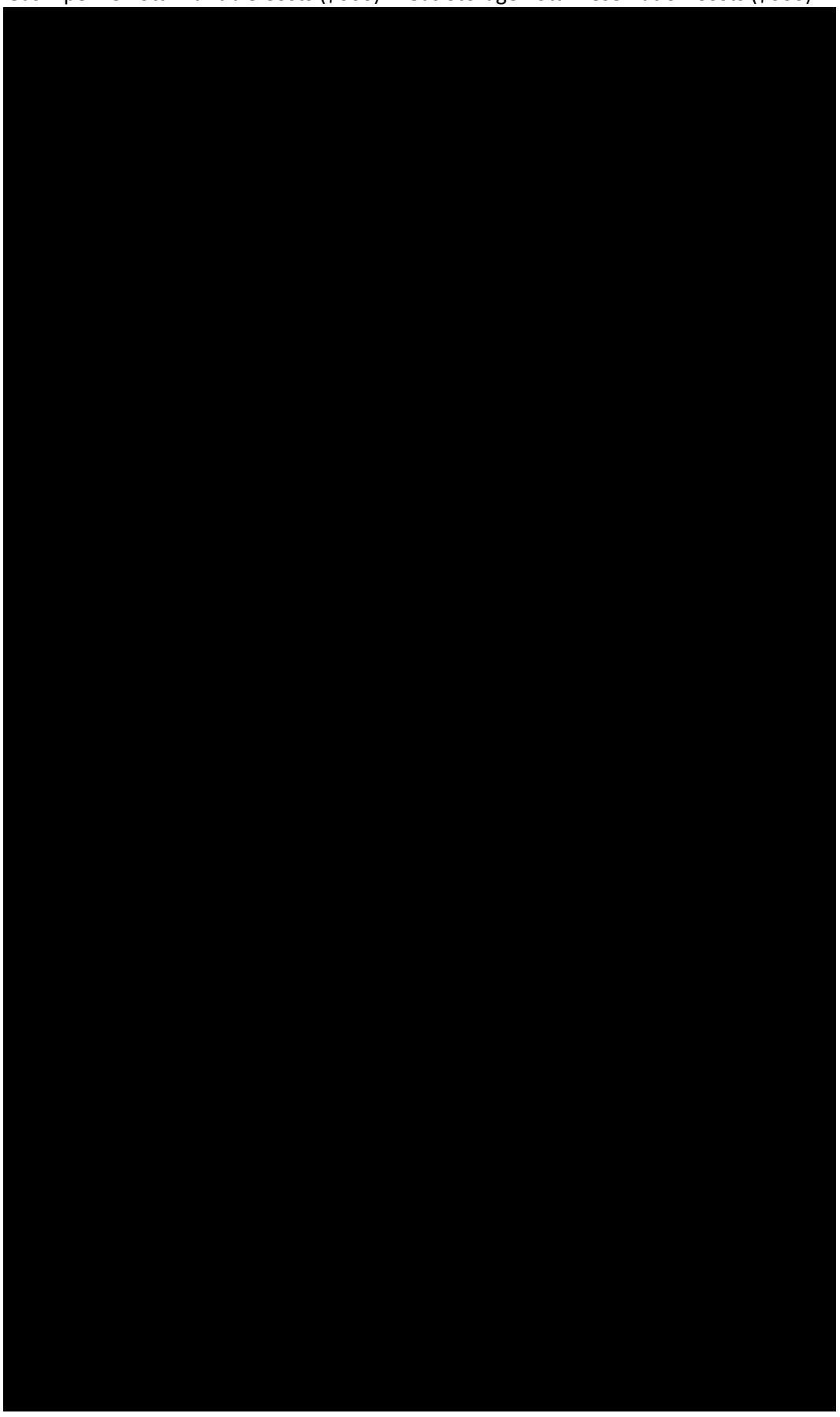


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



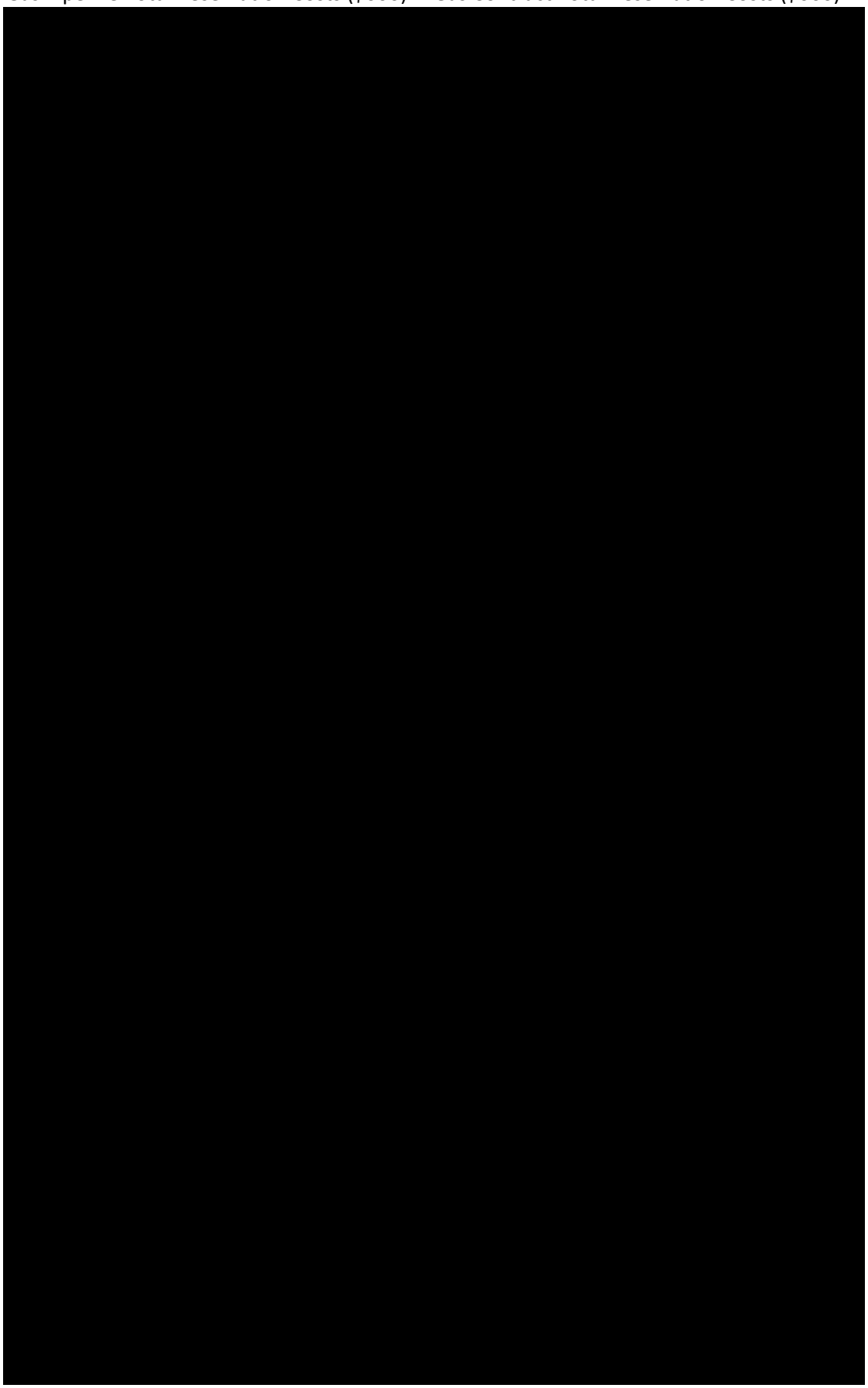


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



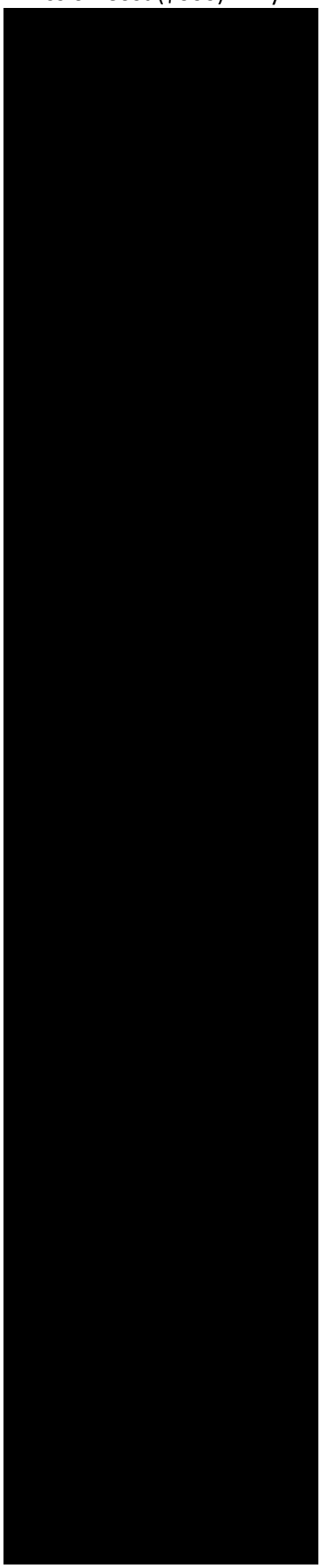


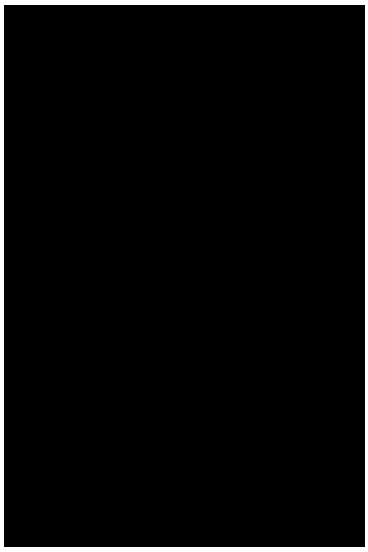
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



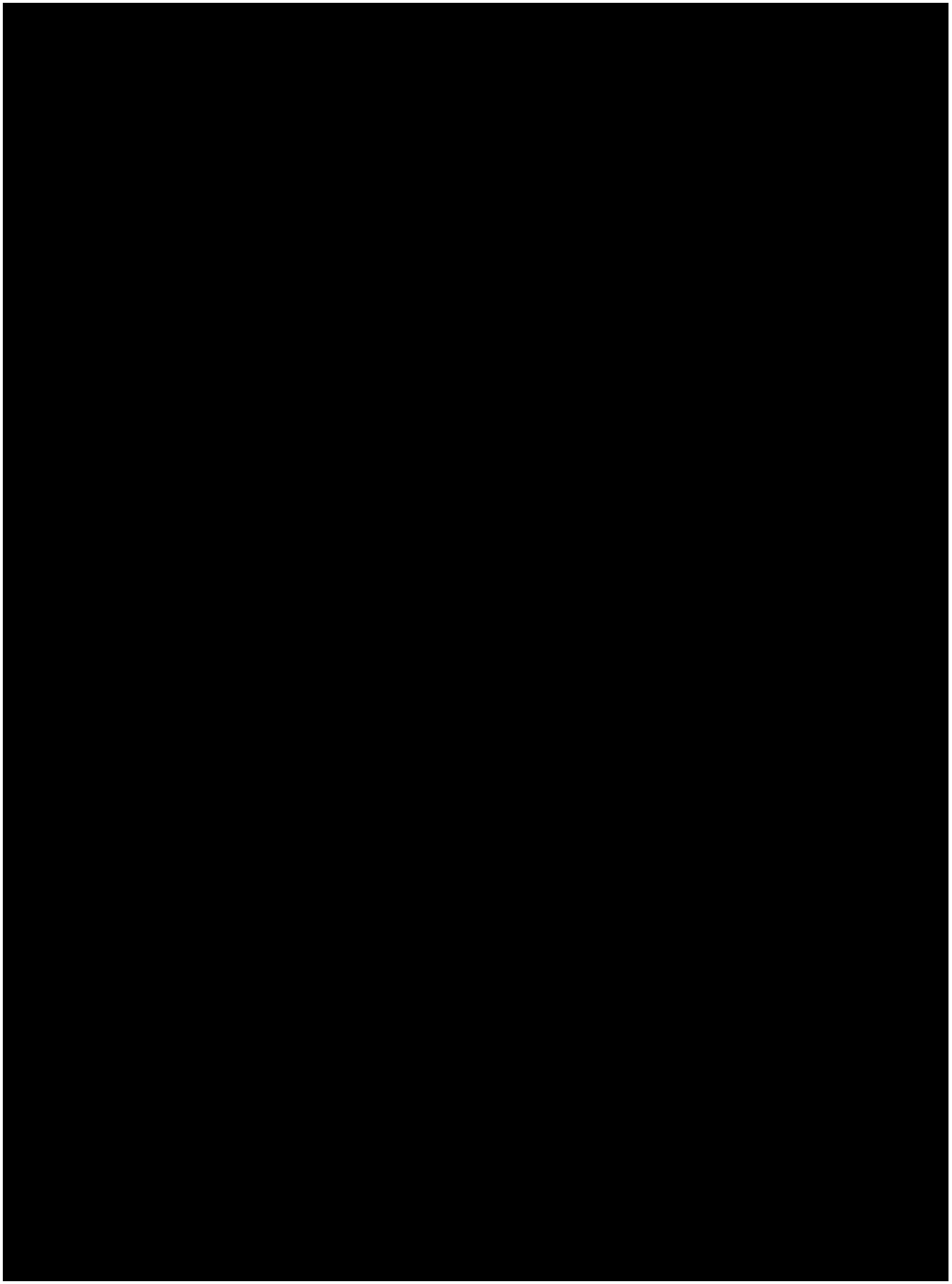


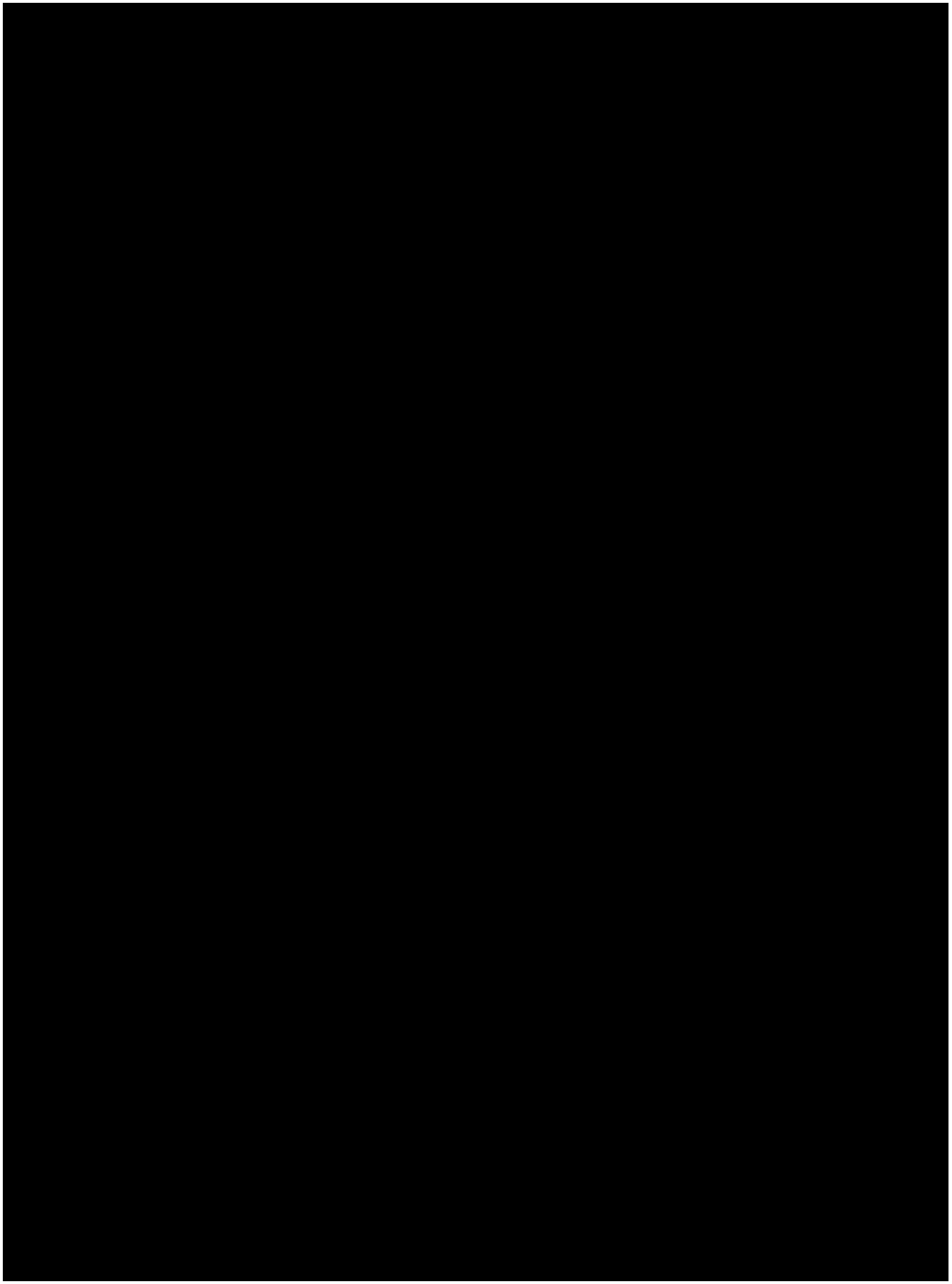
Emission Cost ($000) x y z

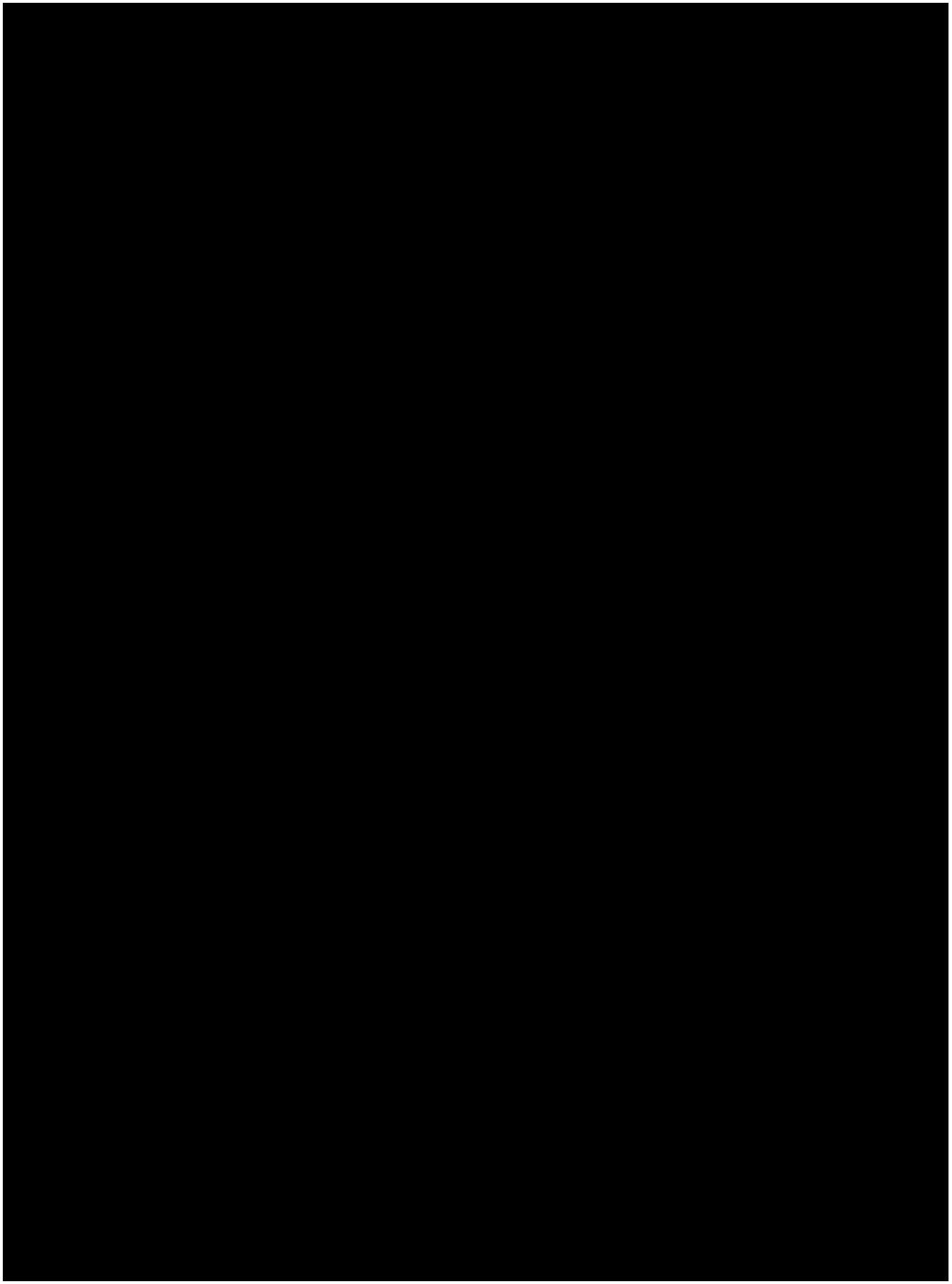


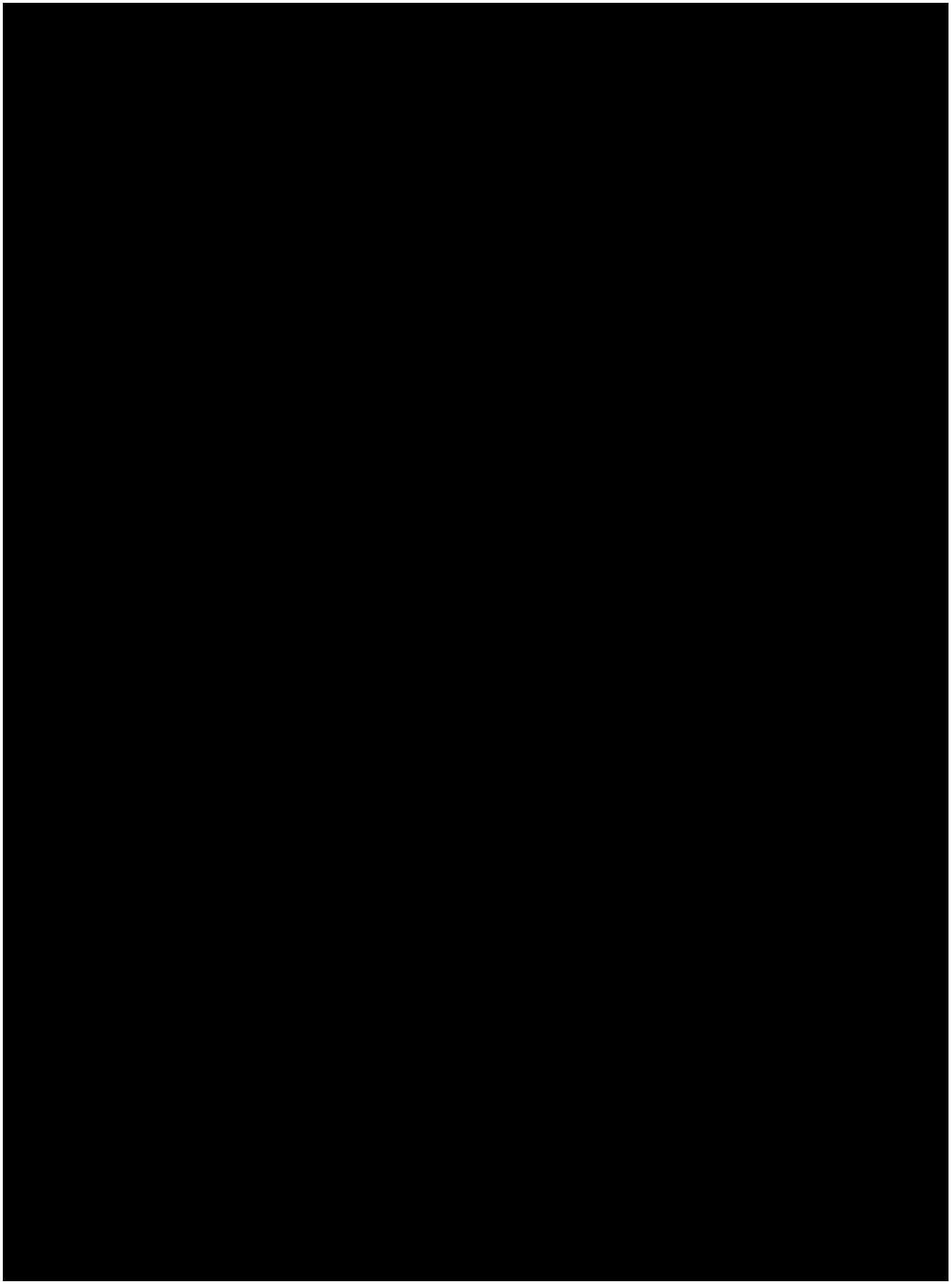


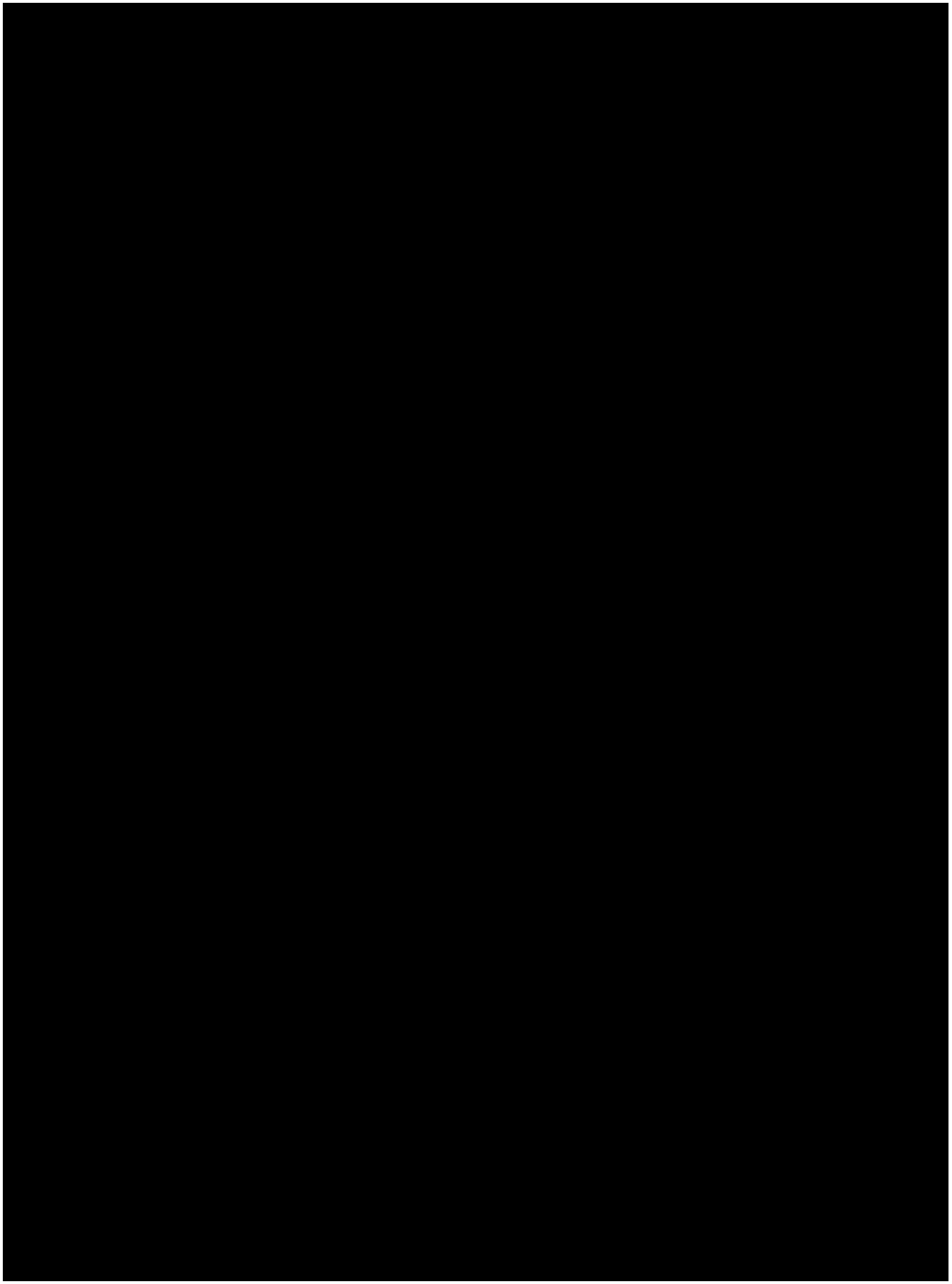
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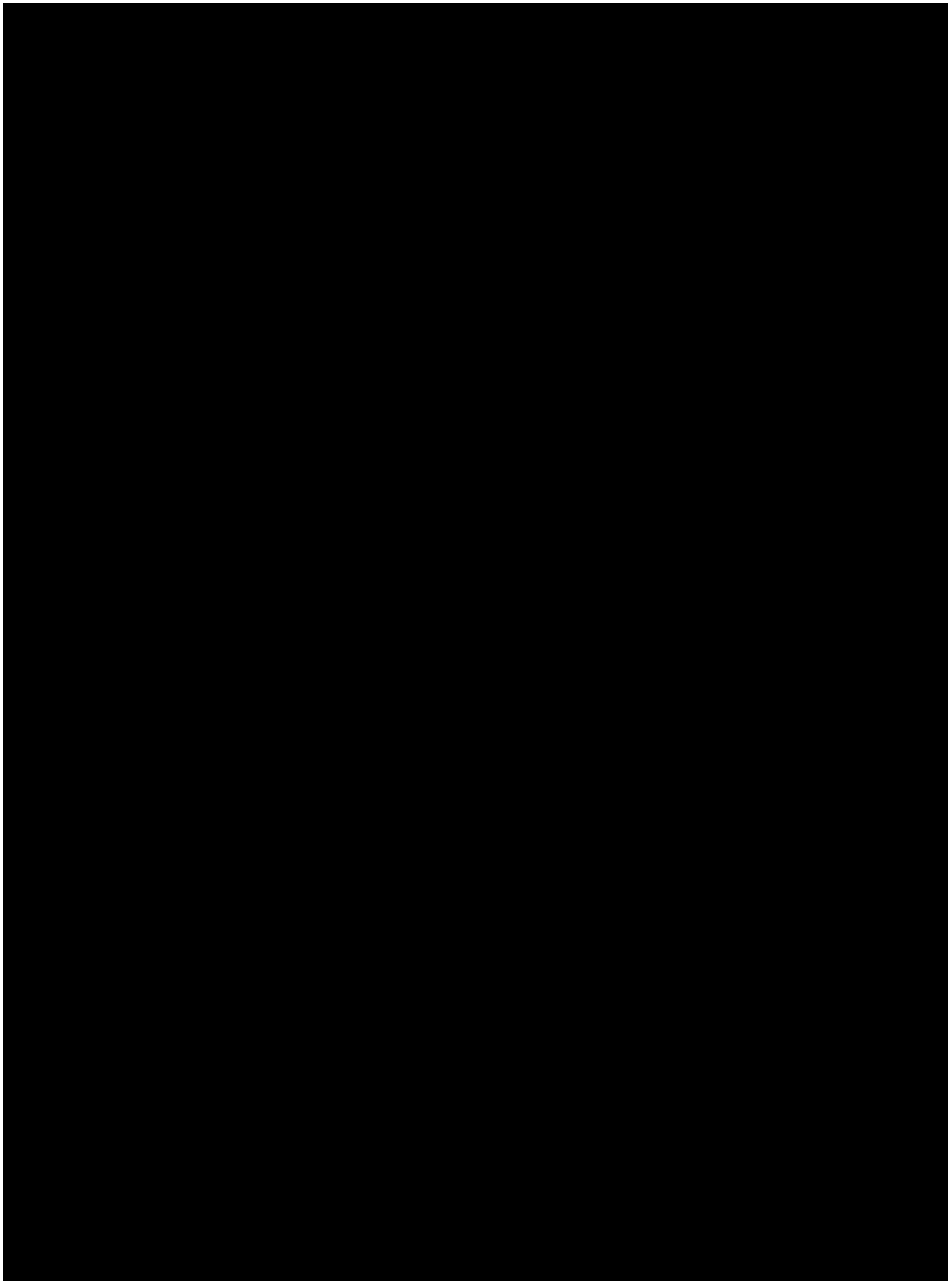


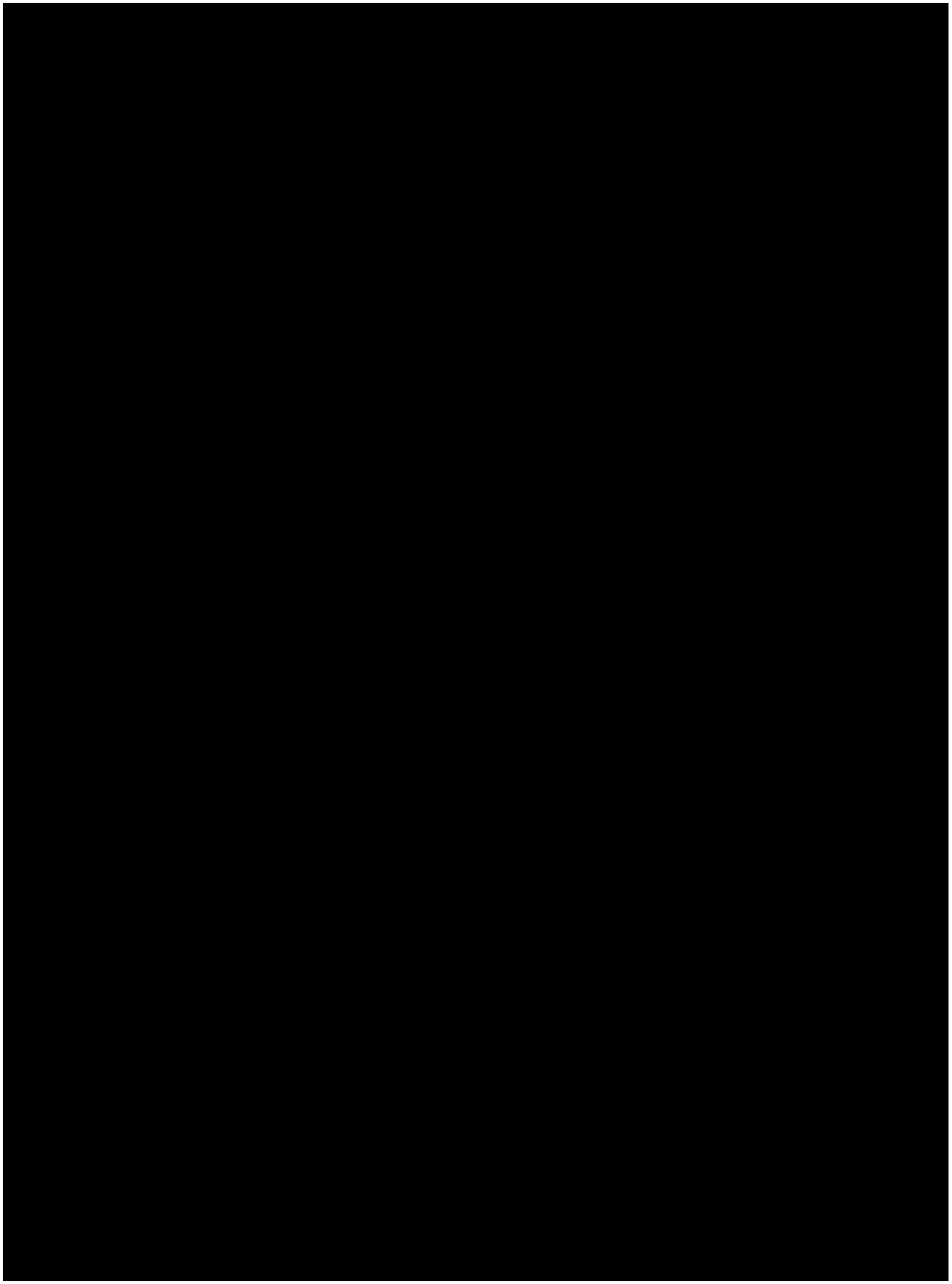


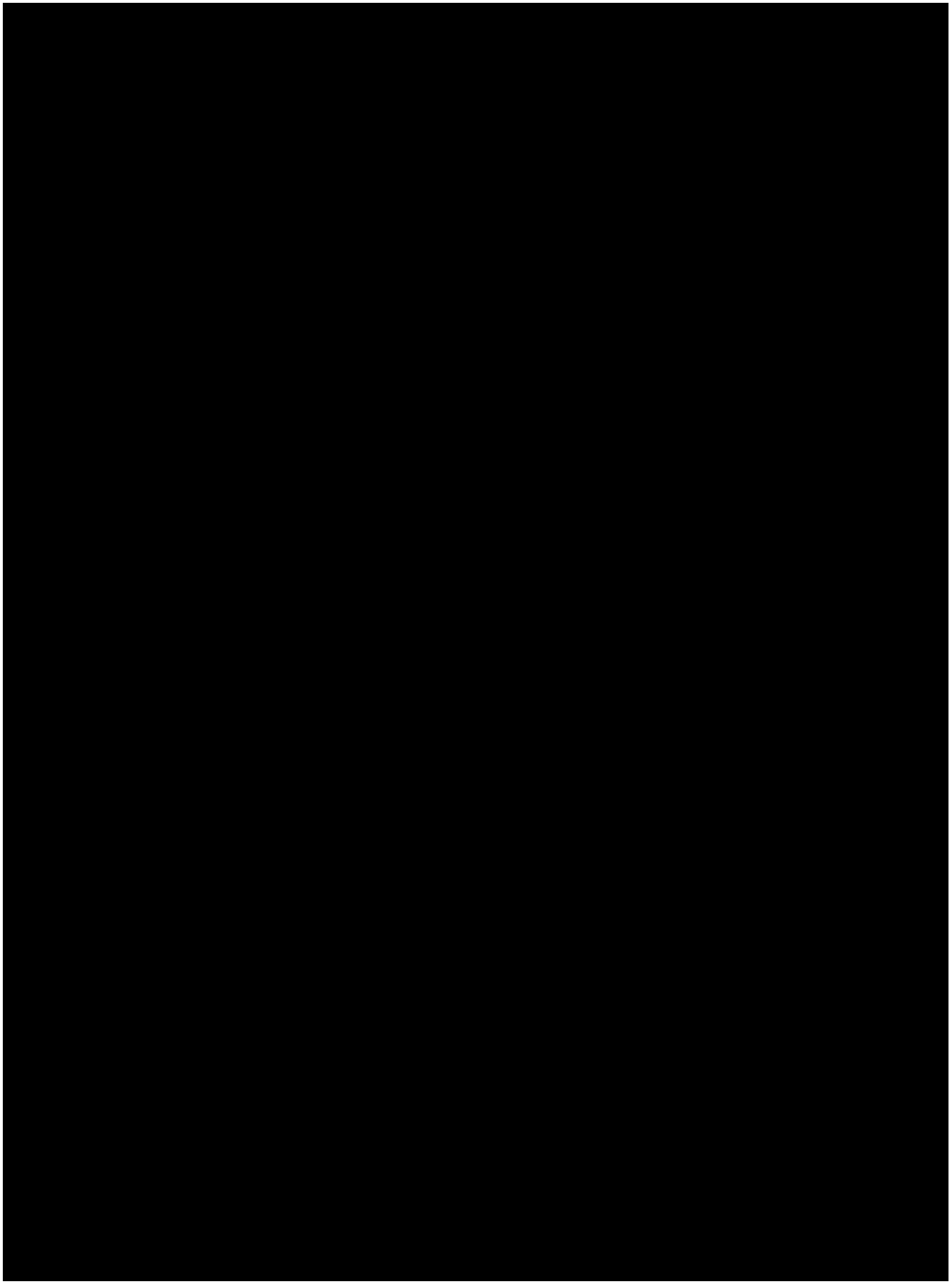


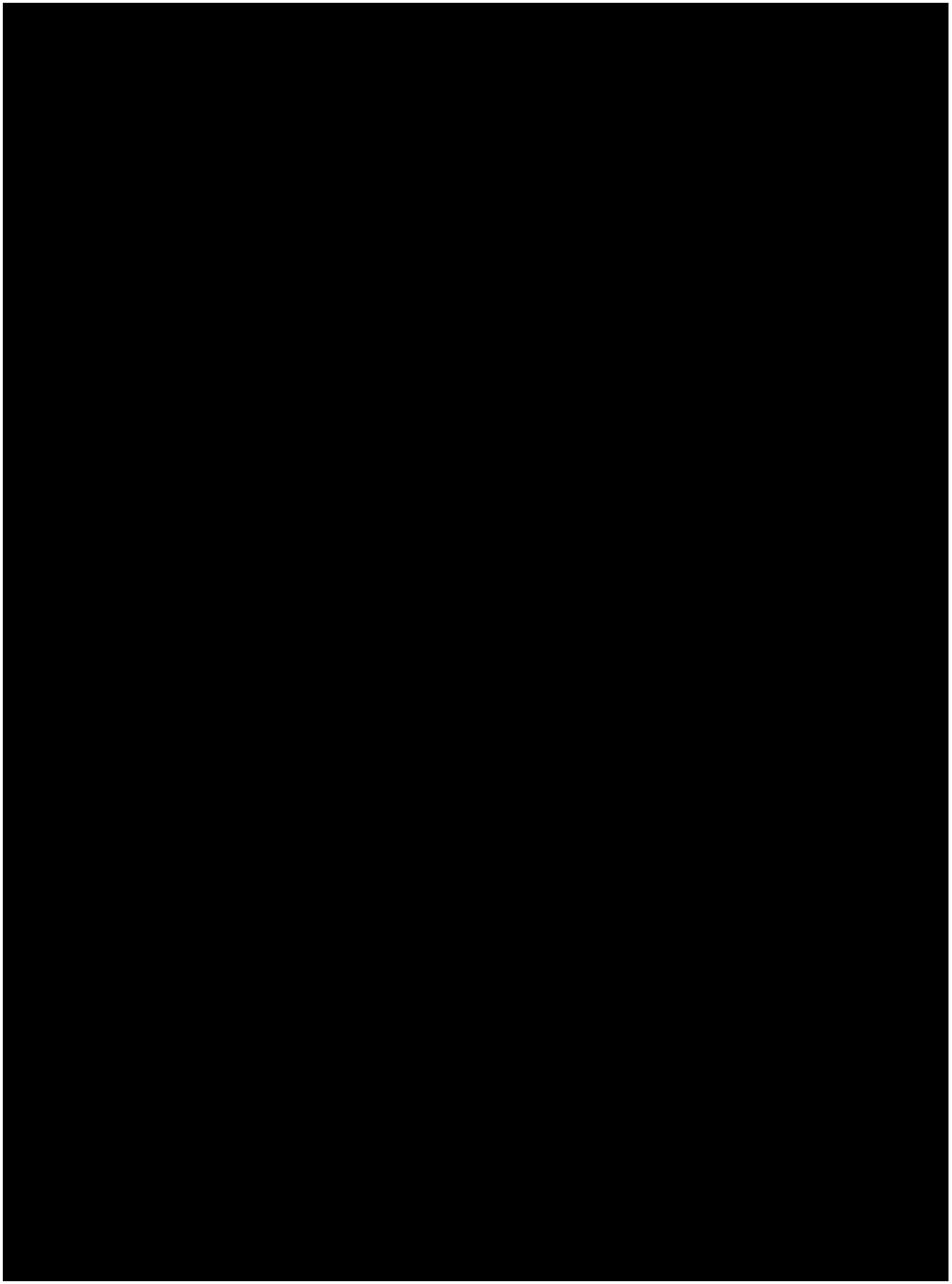


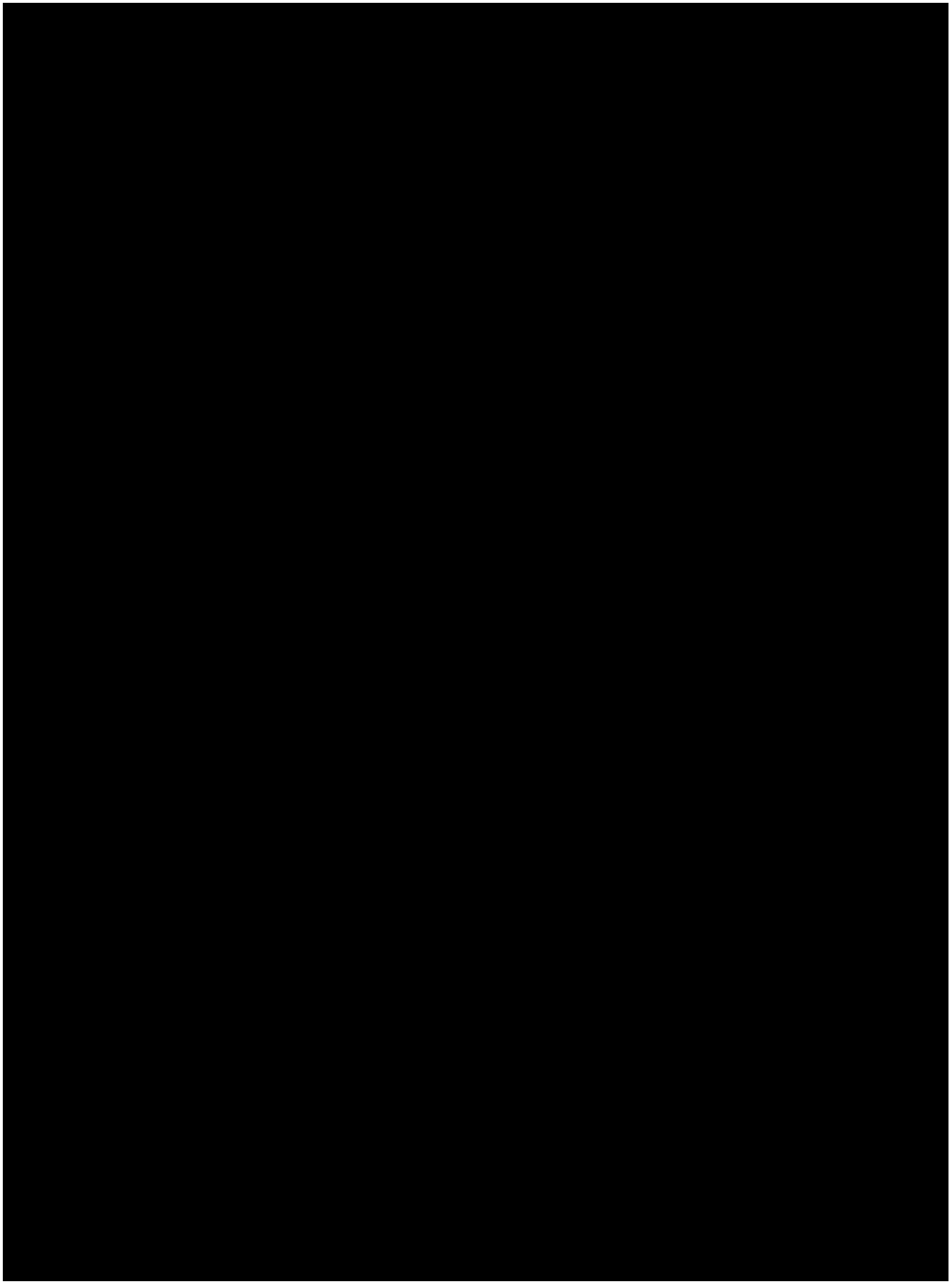


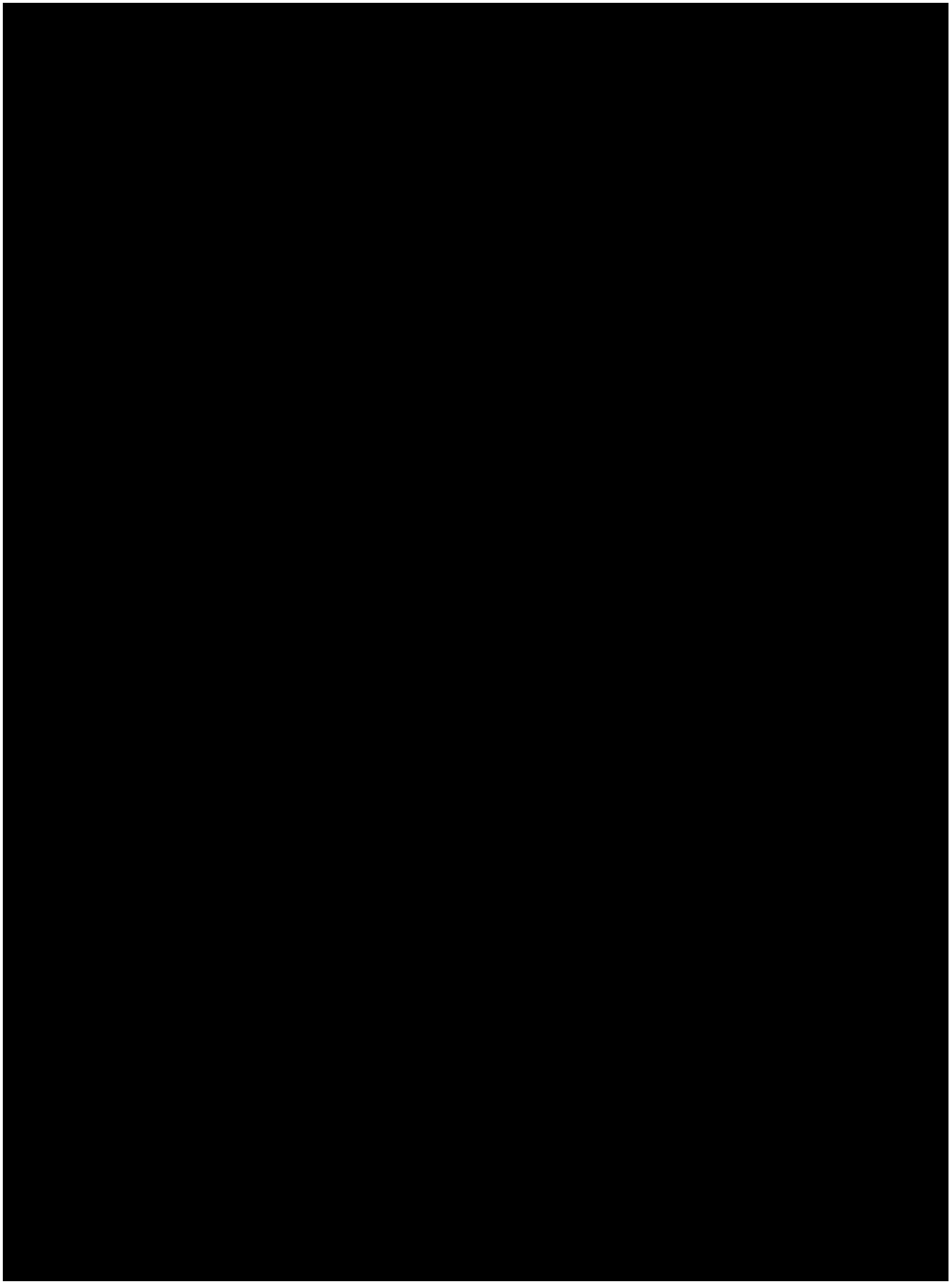


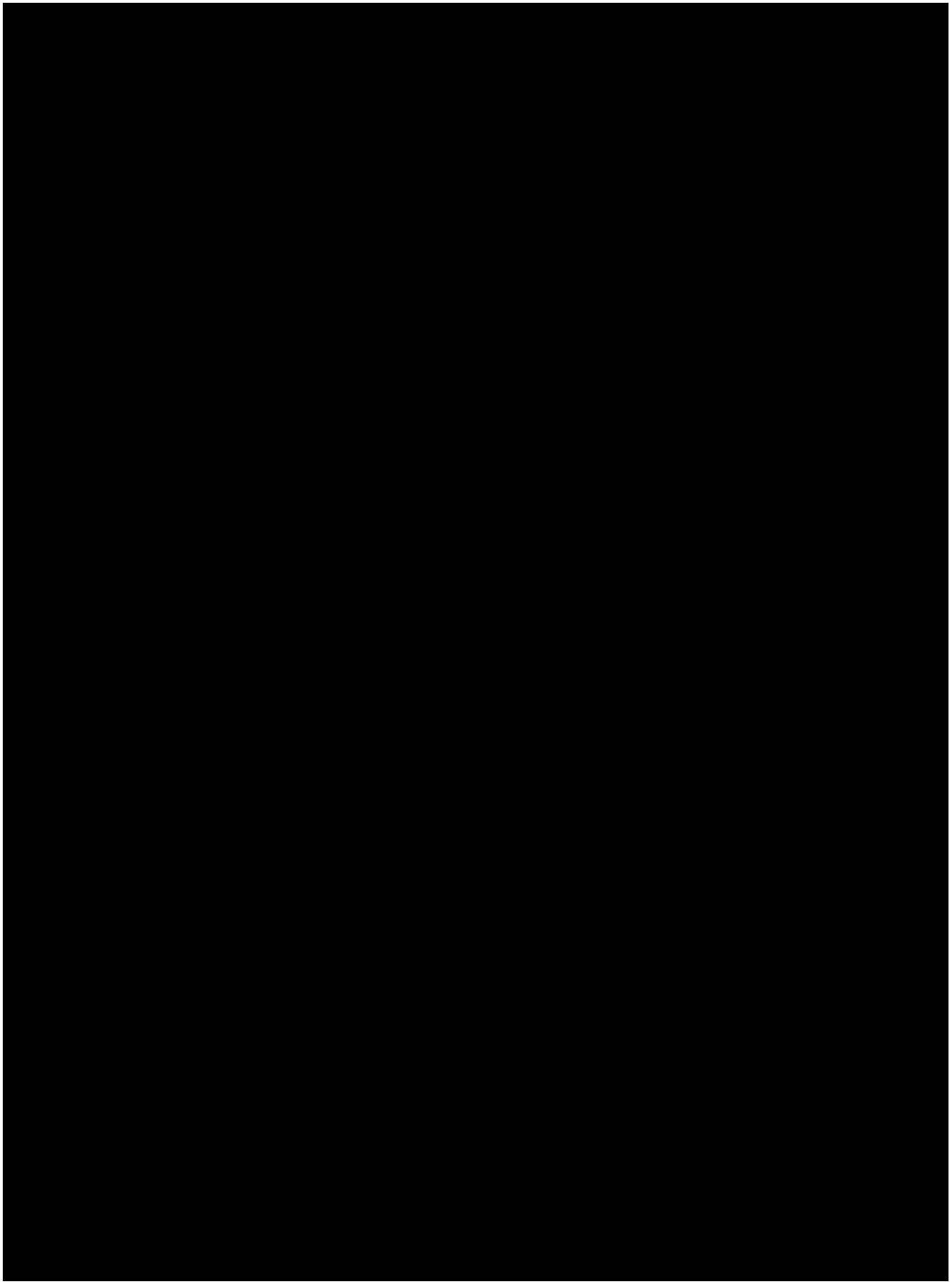


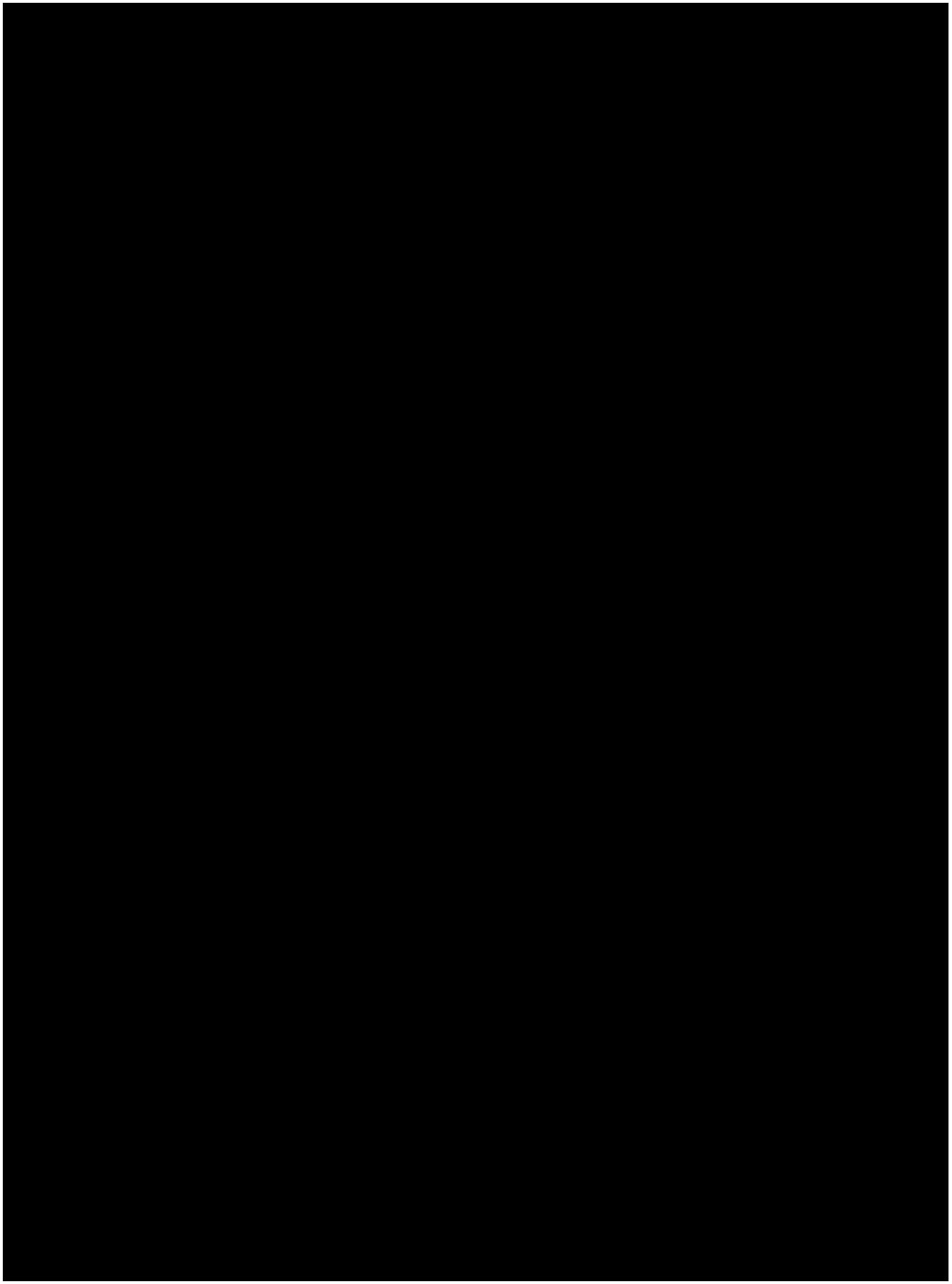


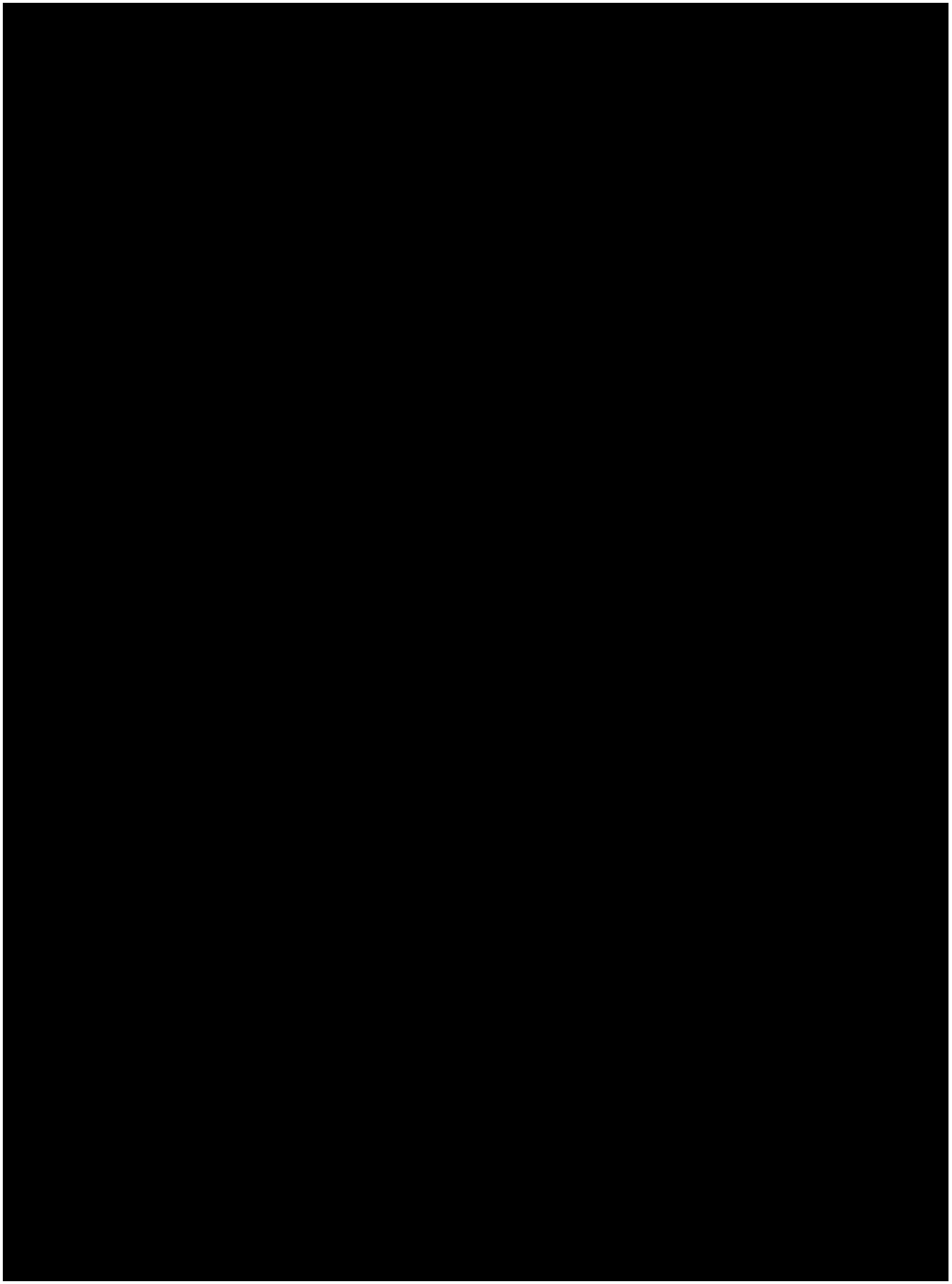


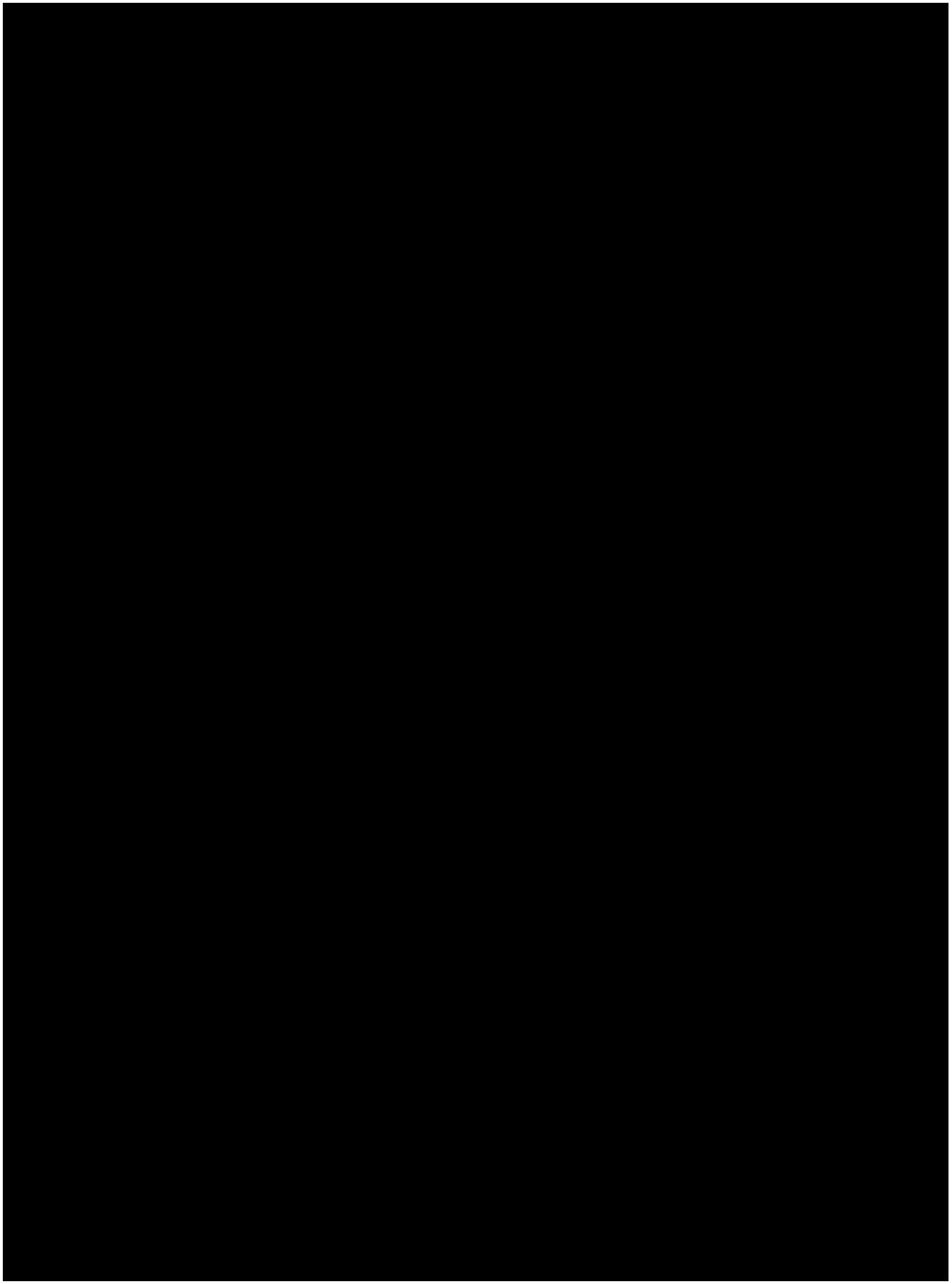


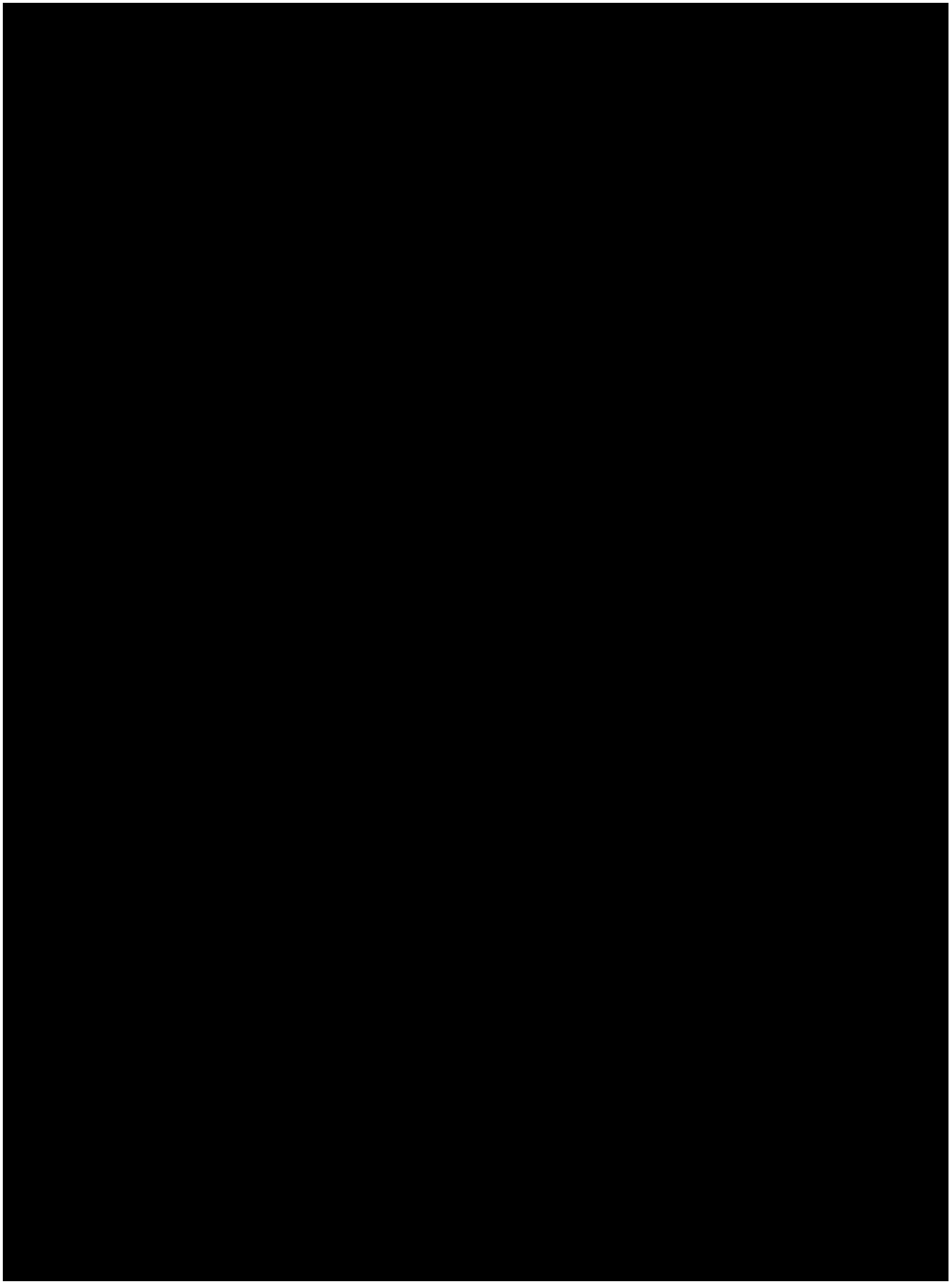


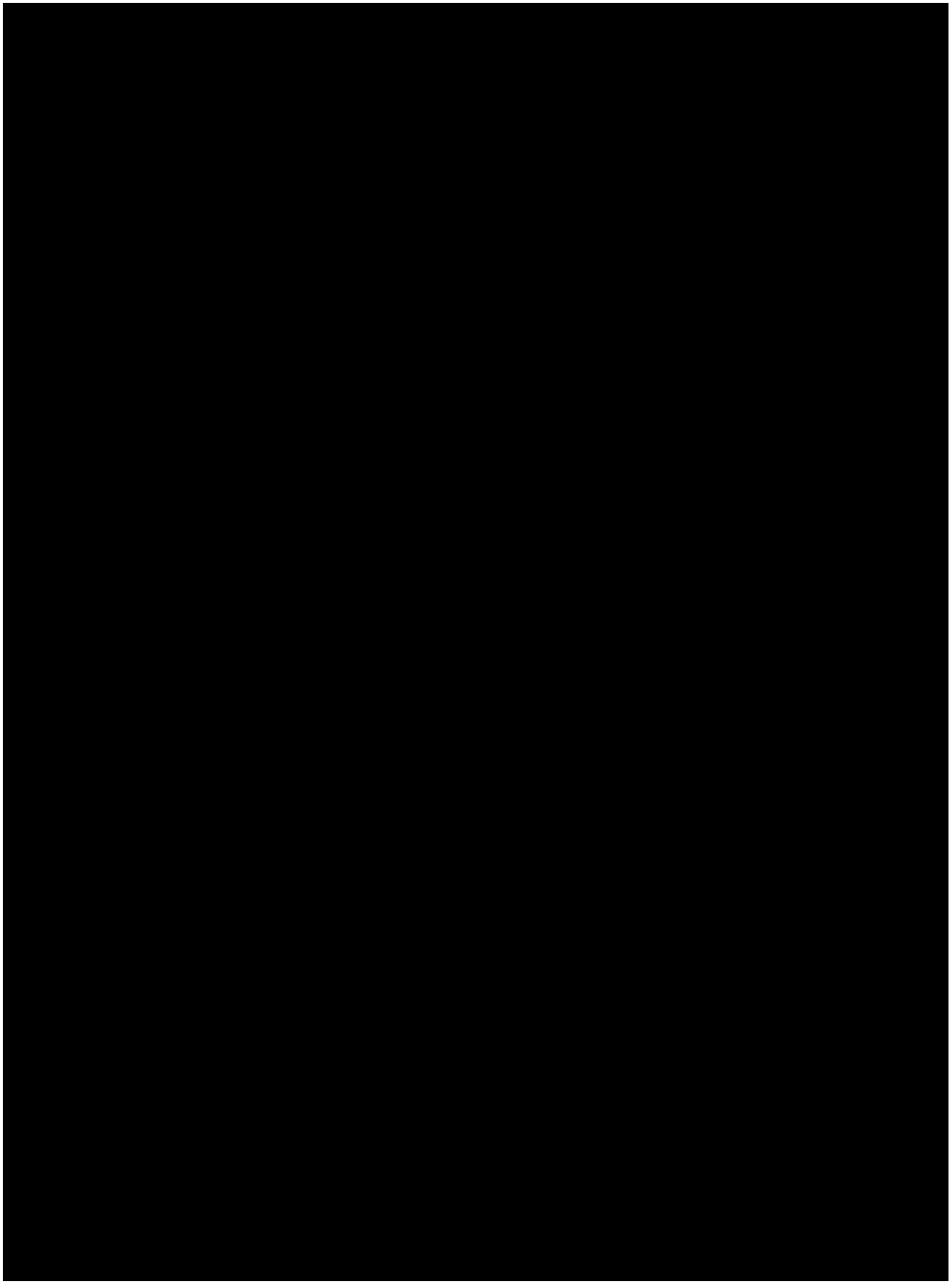


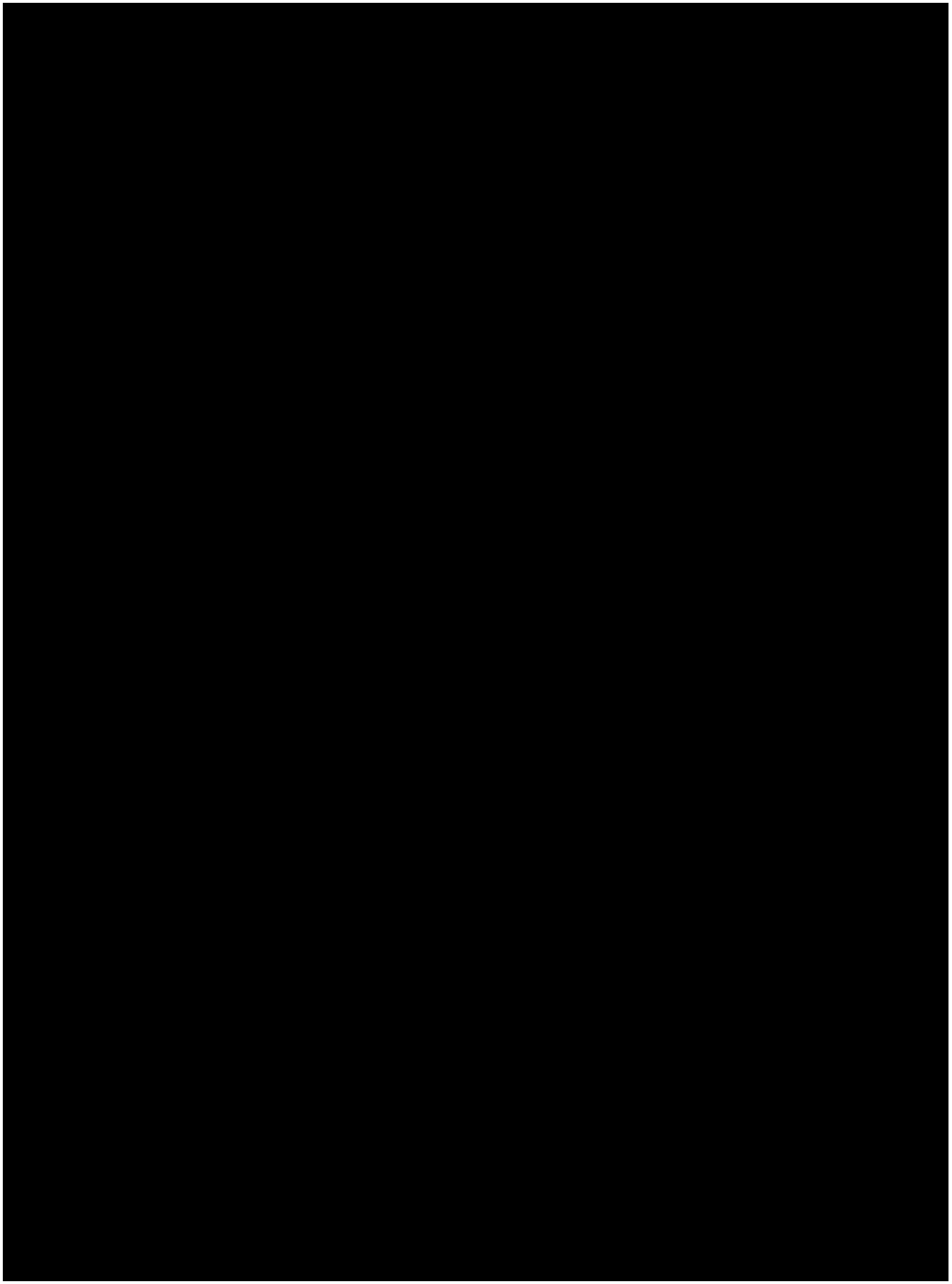




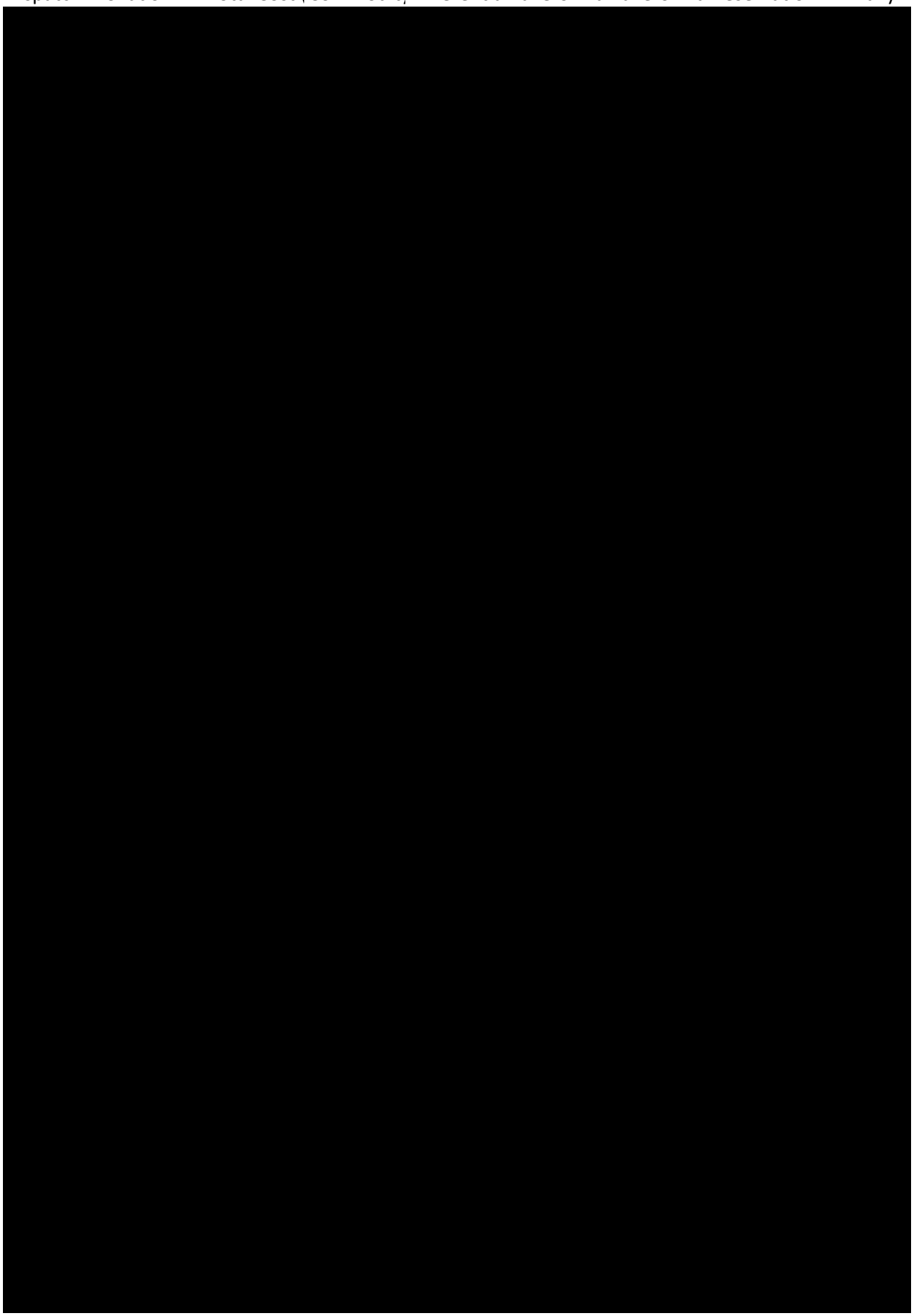


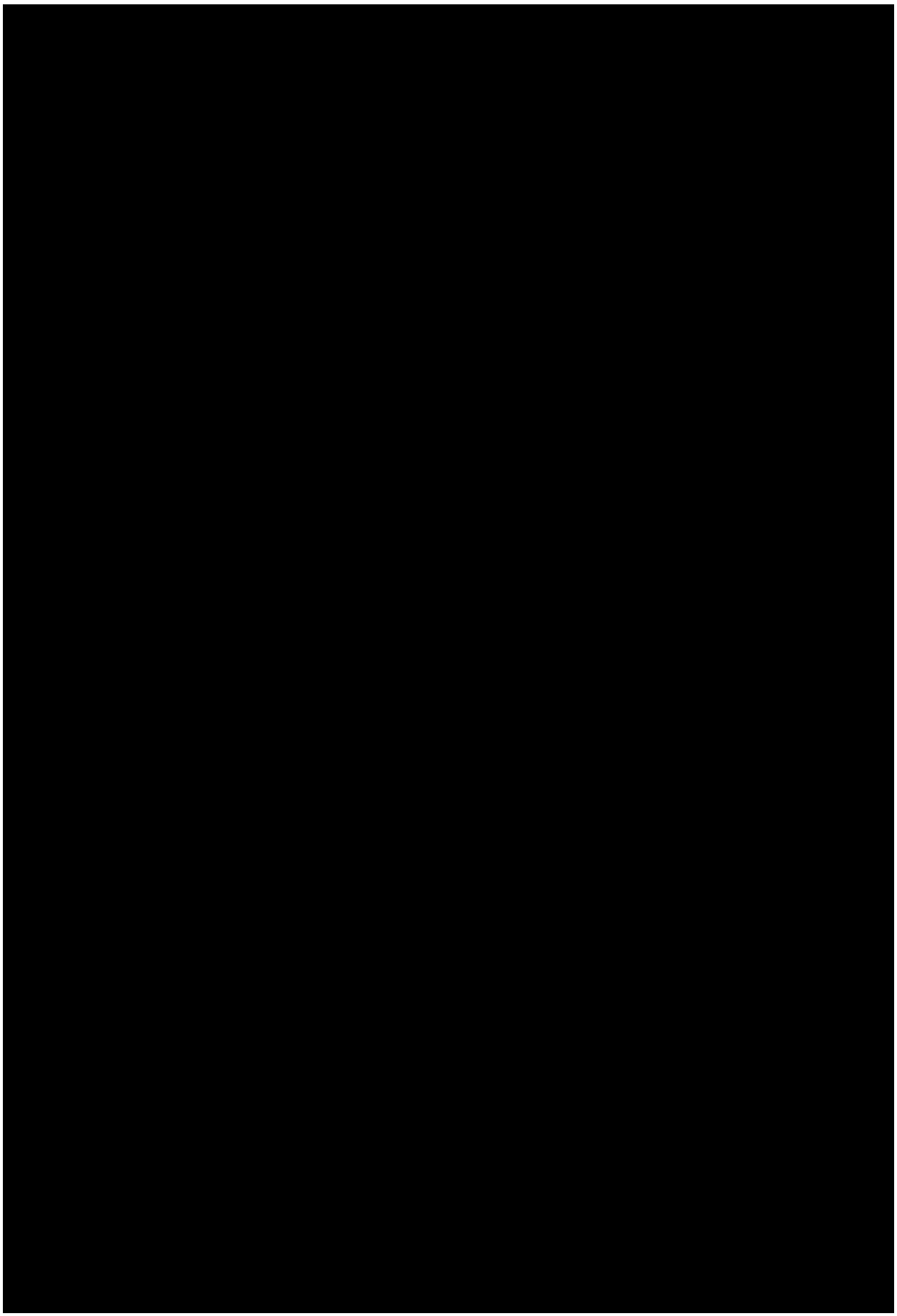


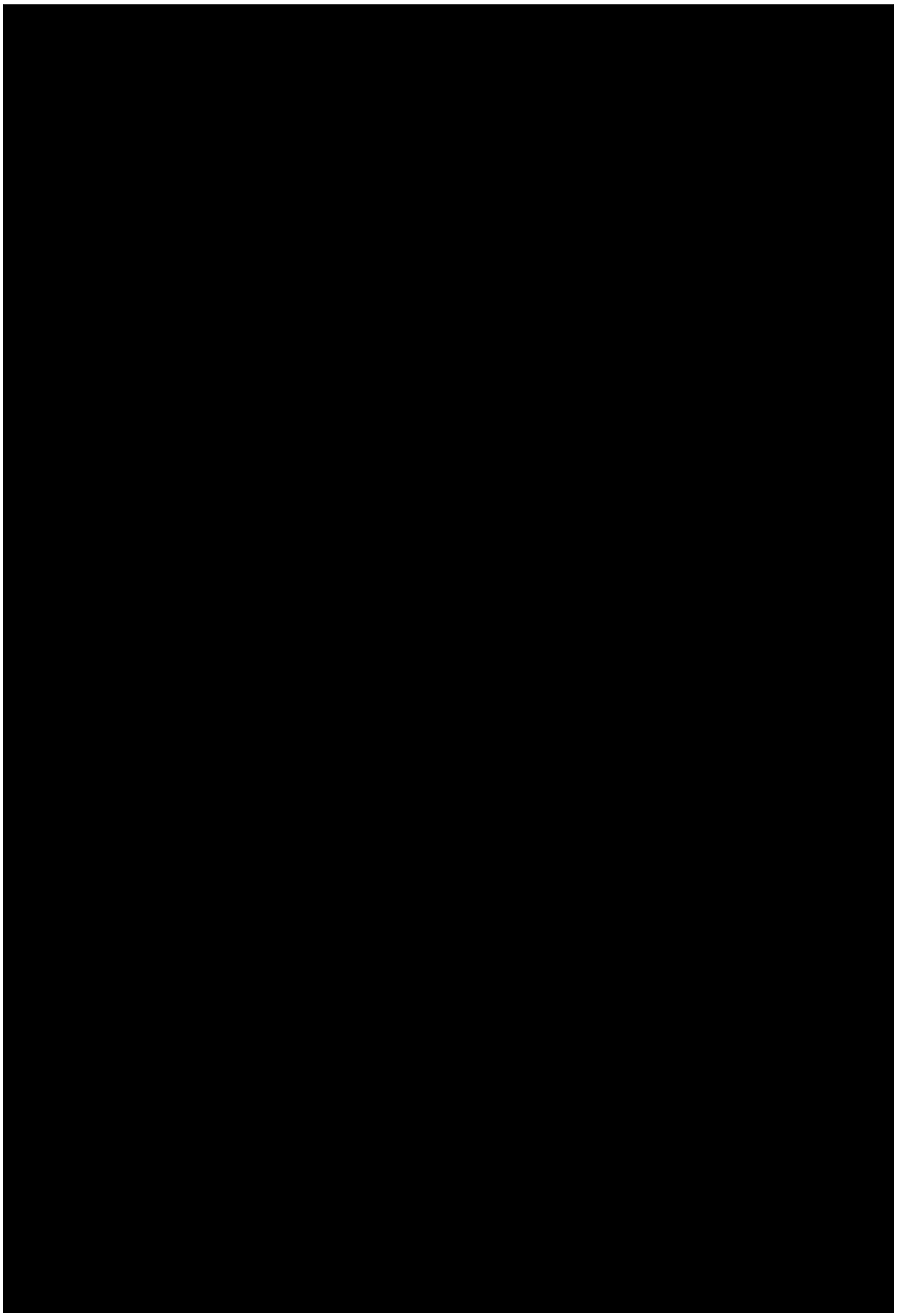


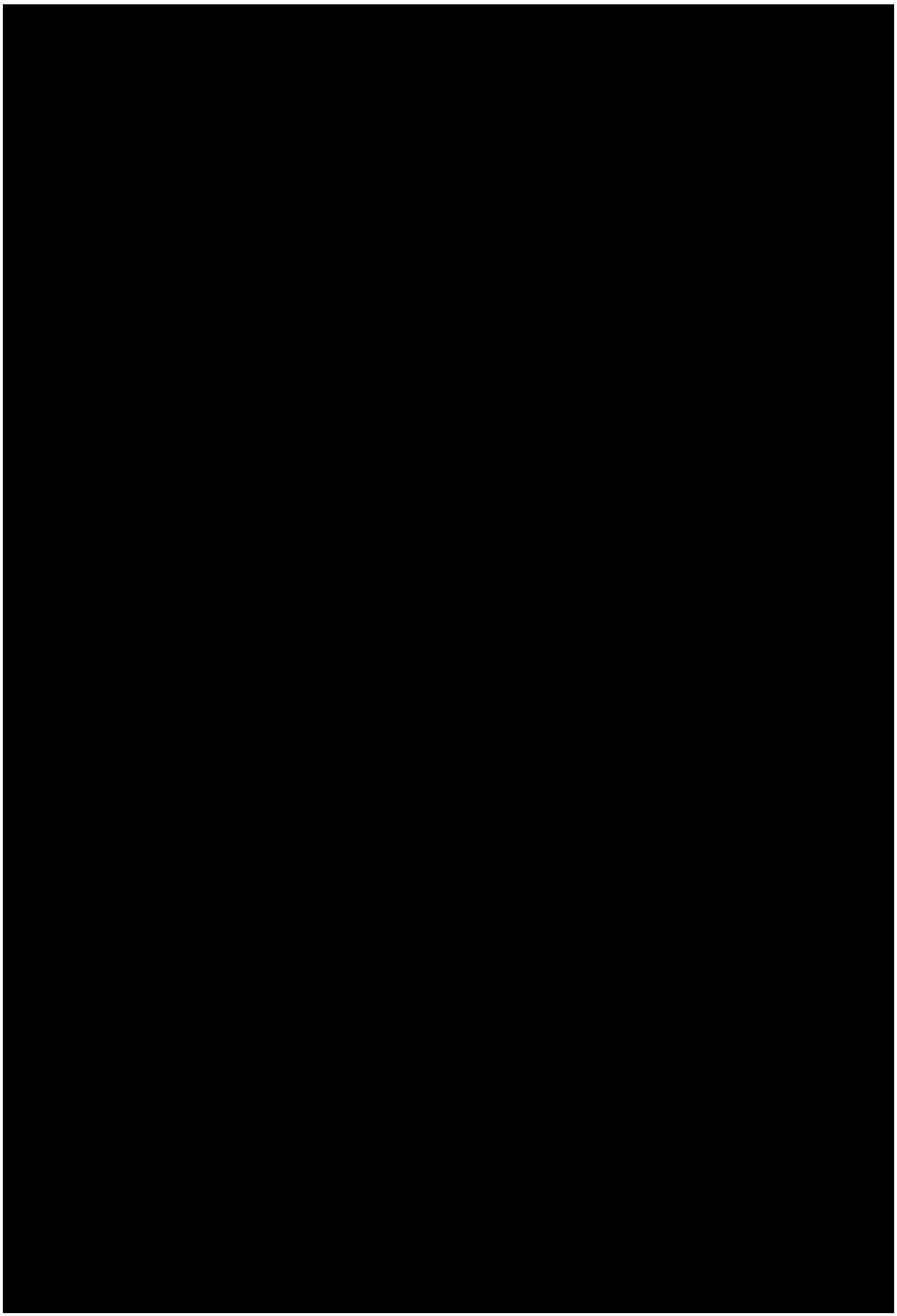


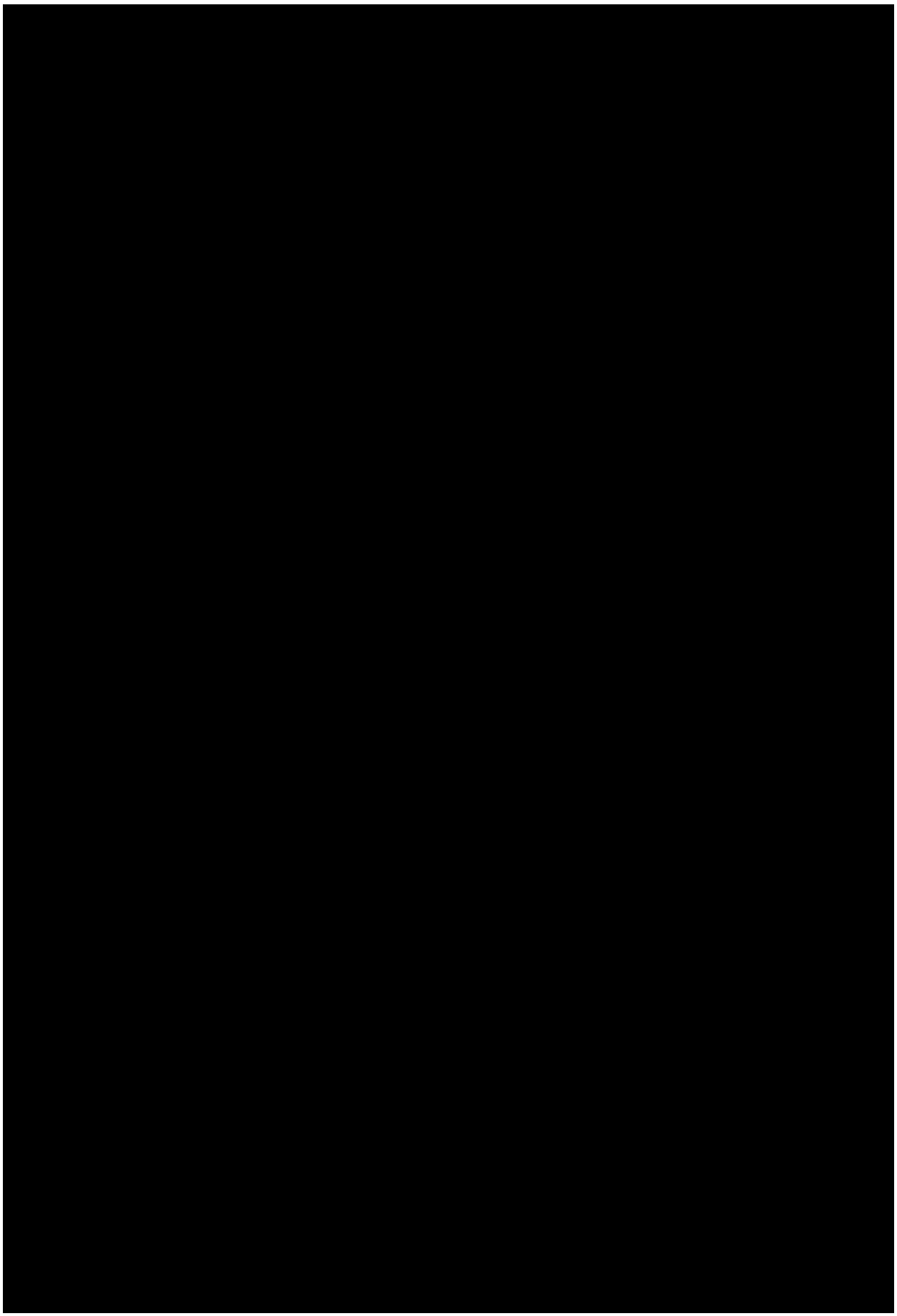


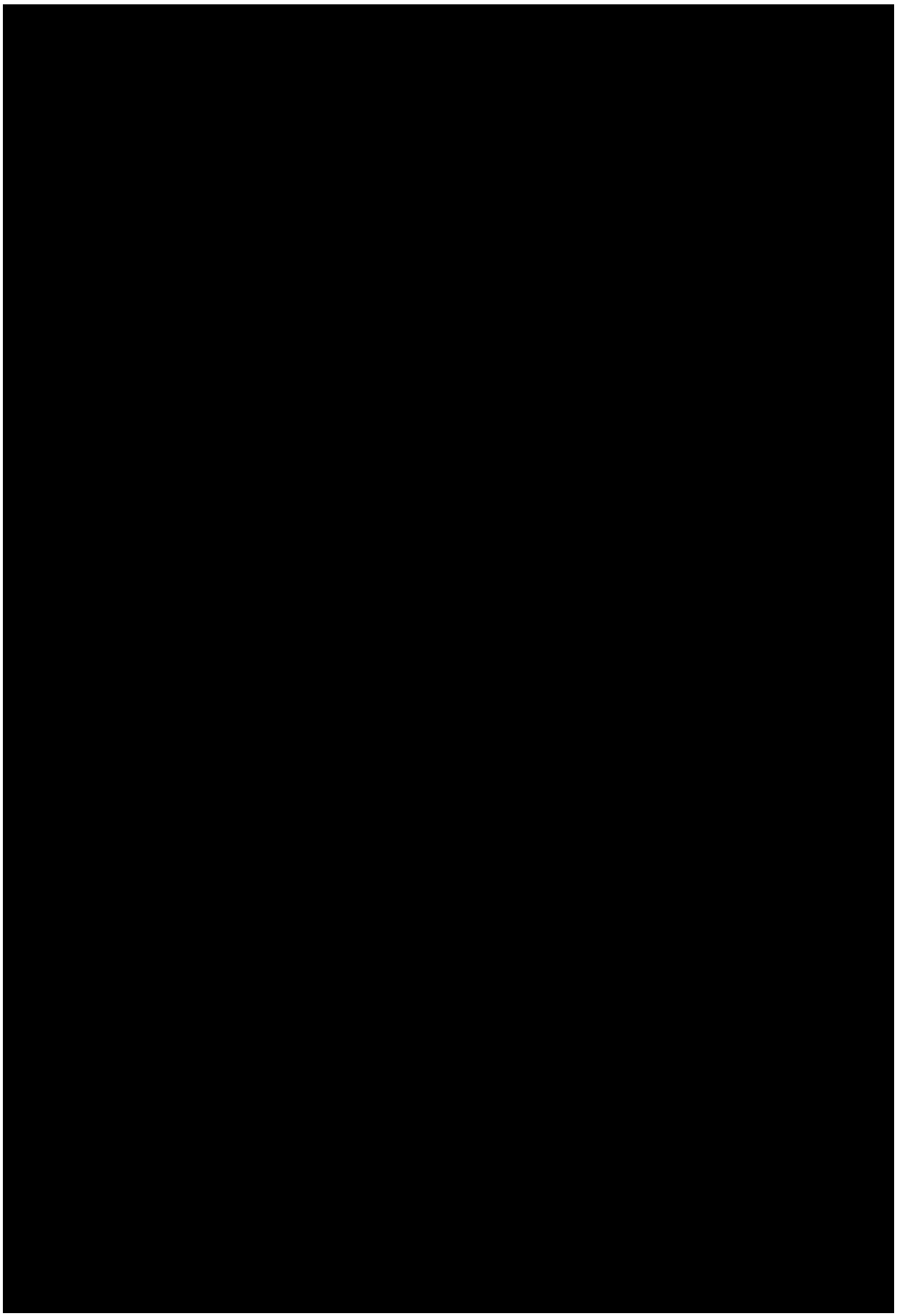

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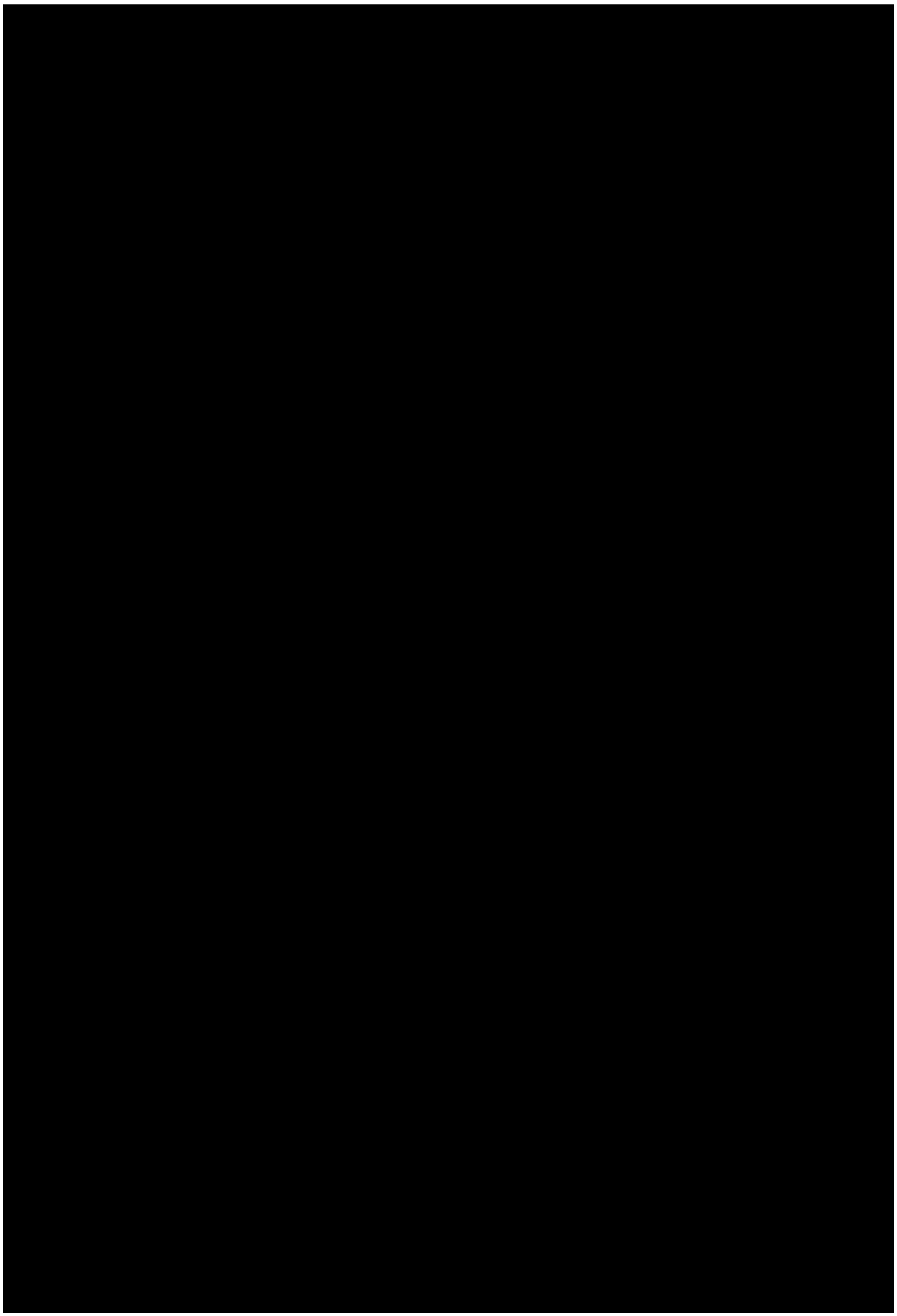


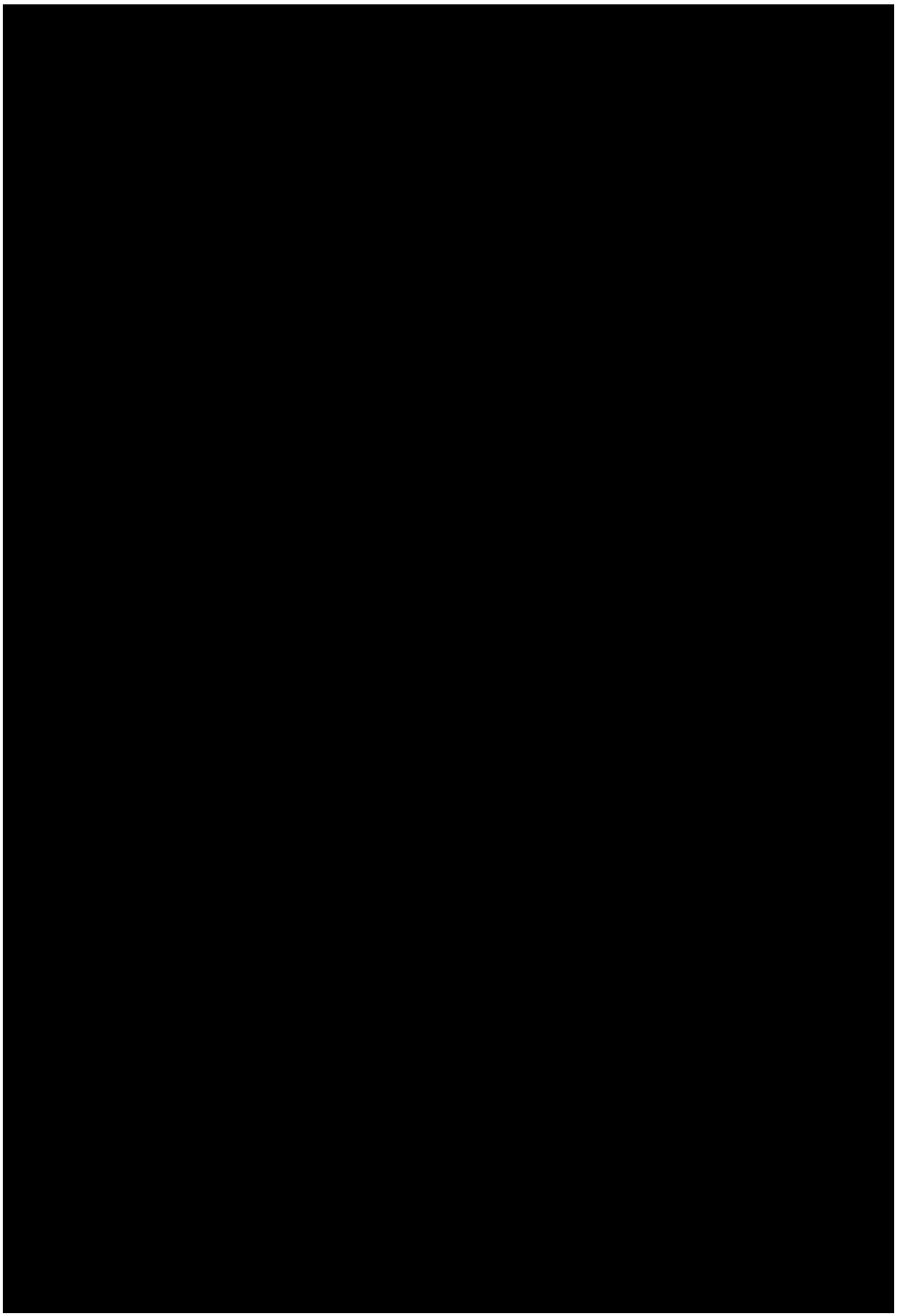


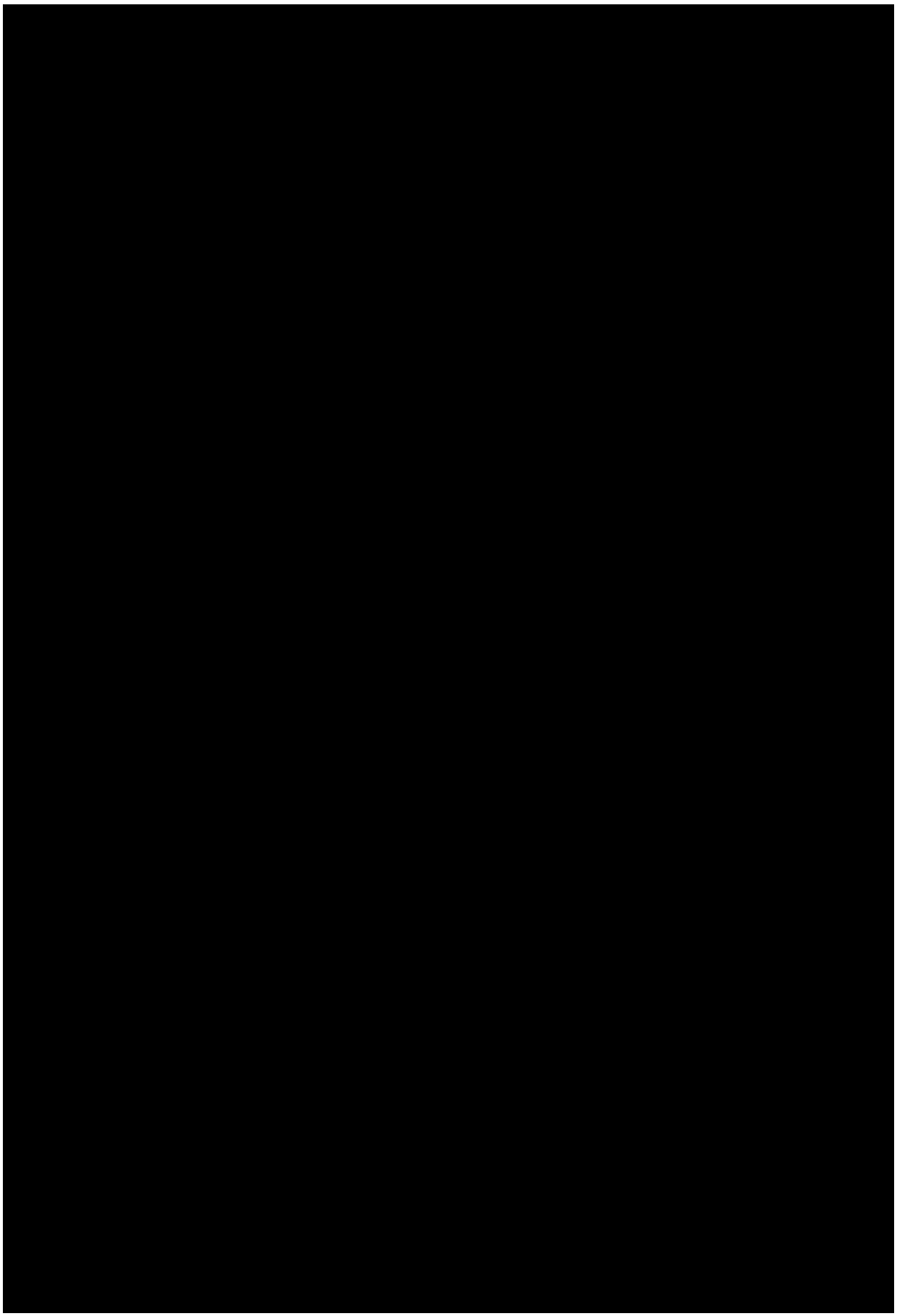


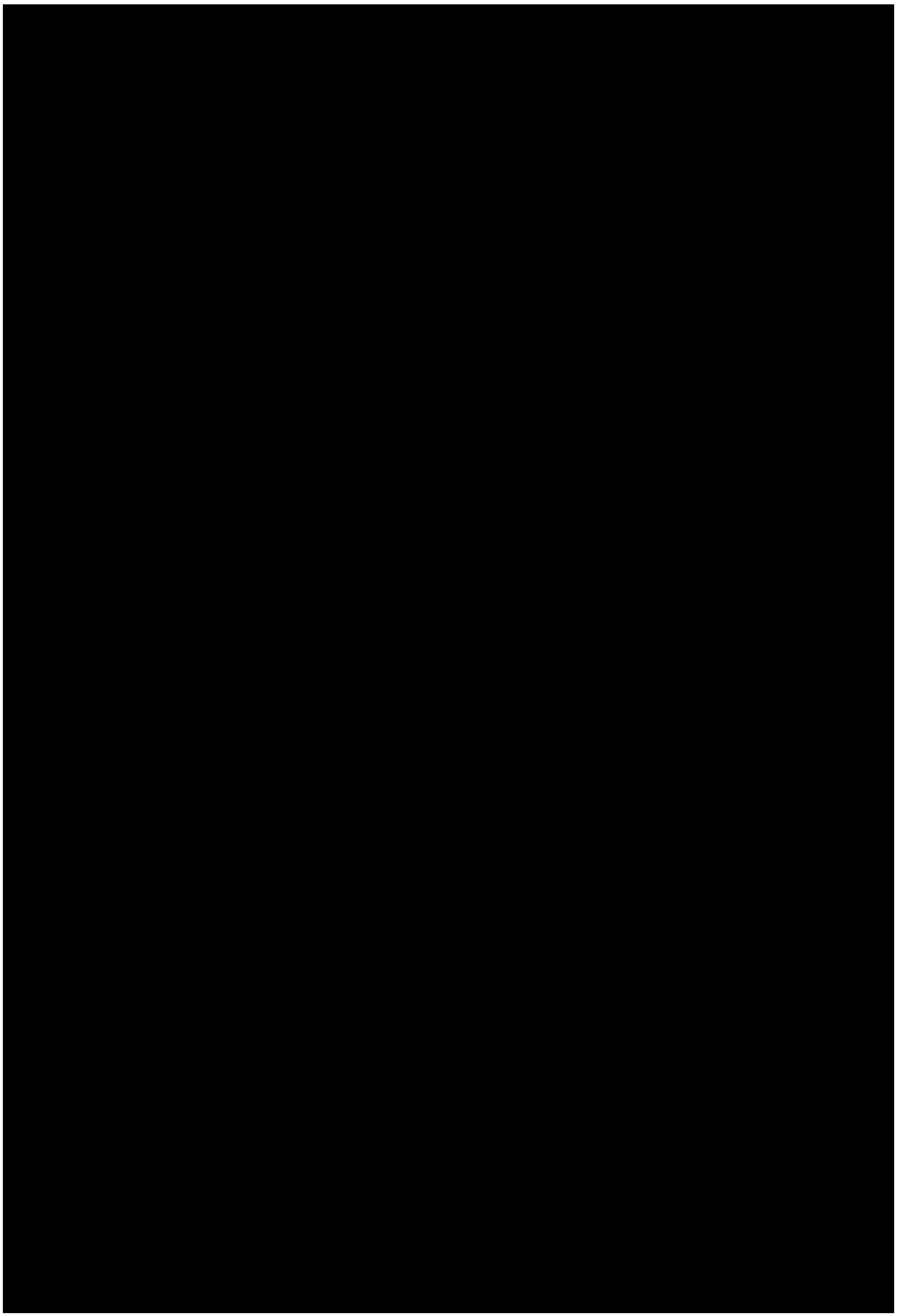


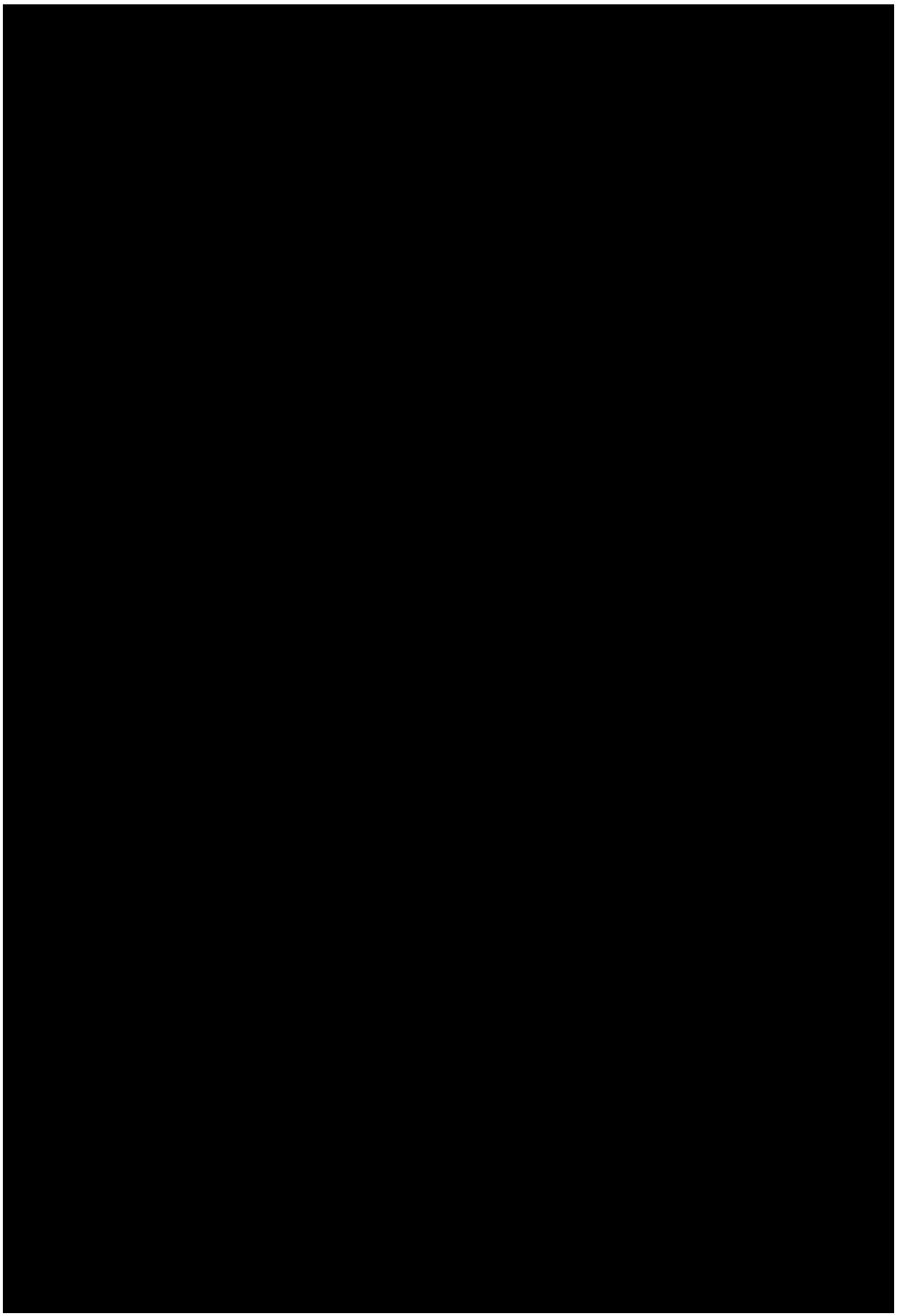


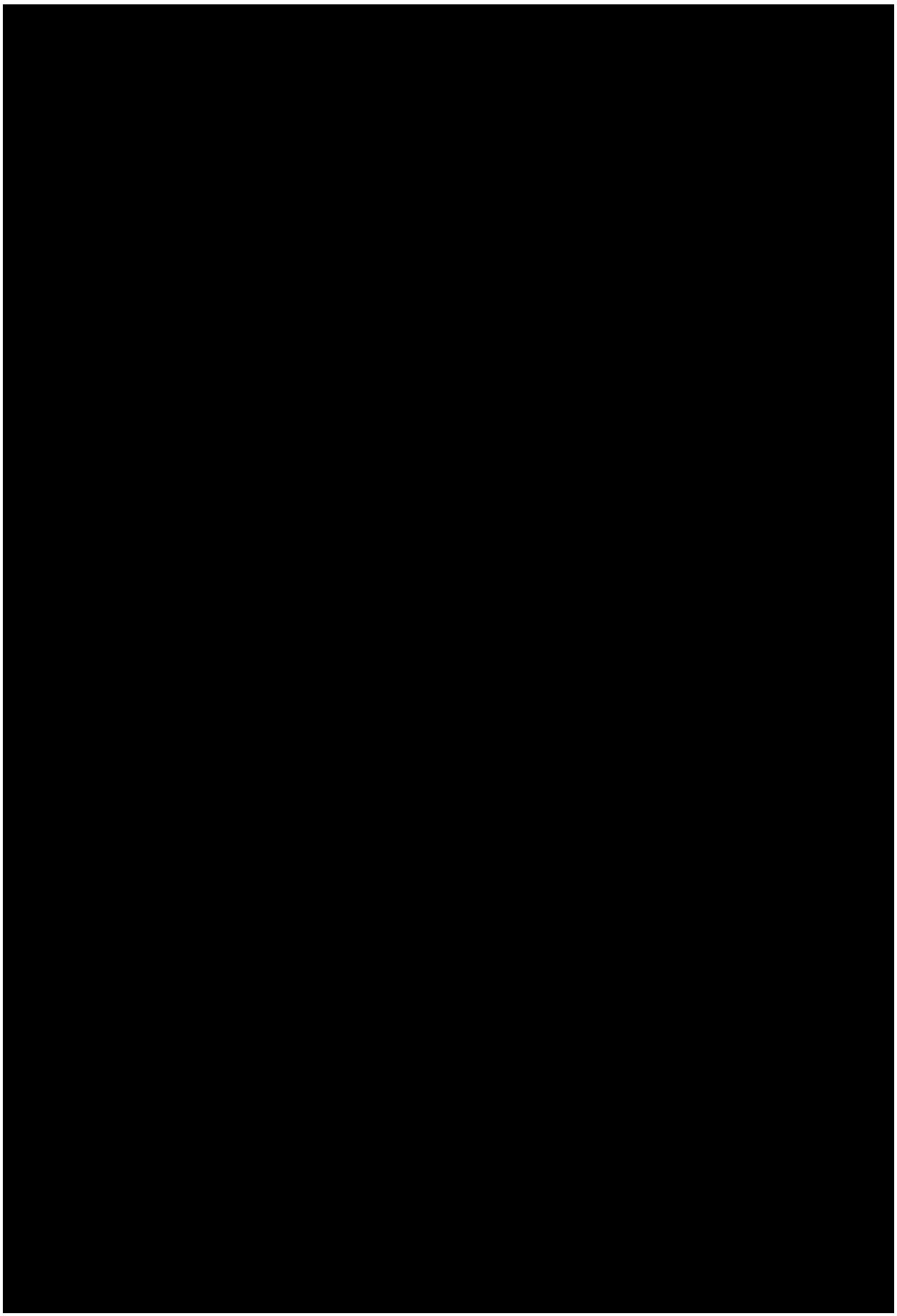


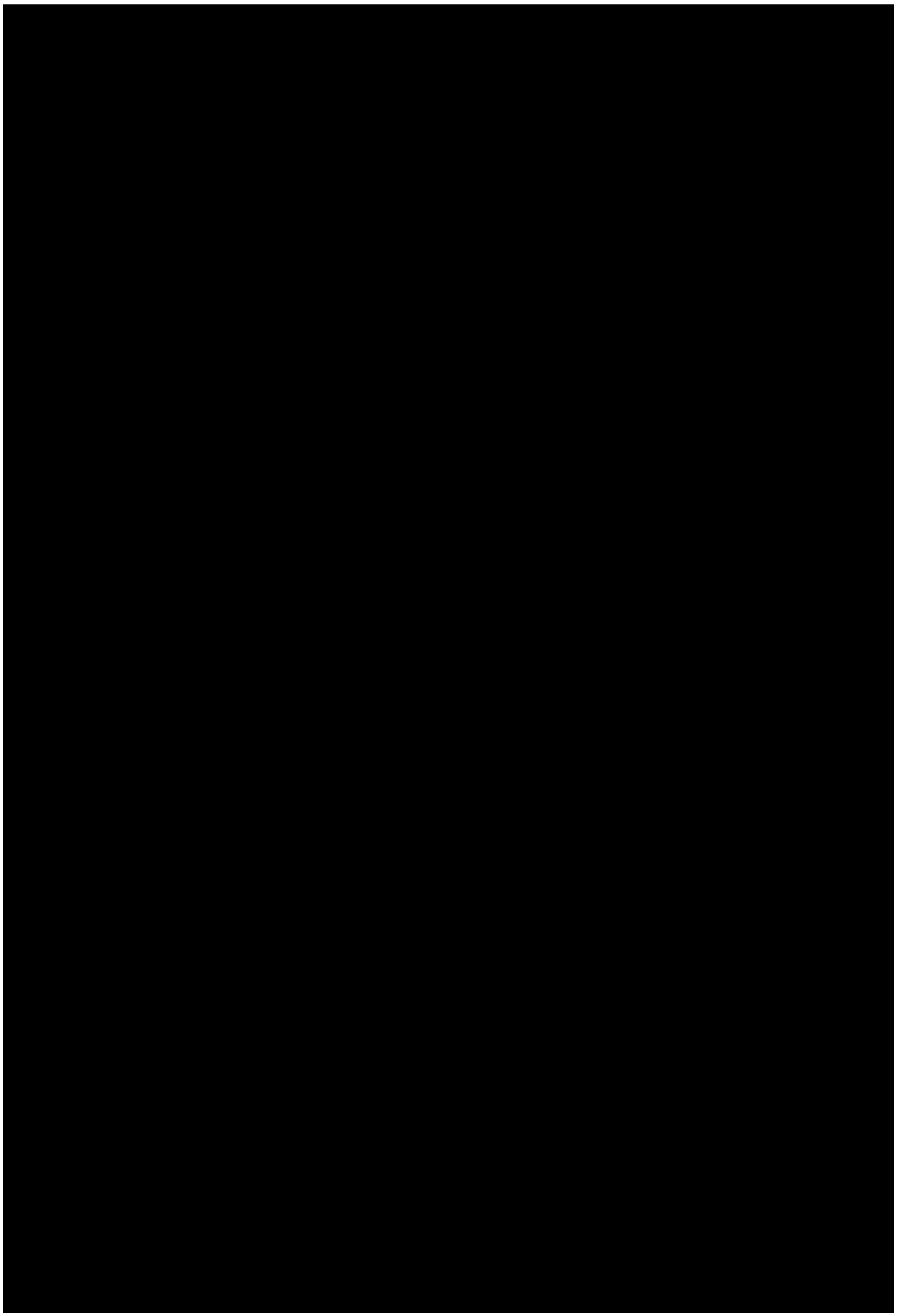


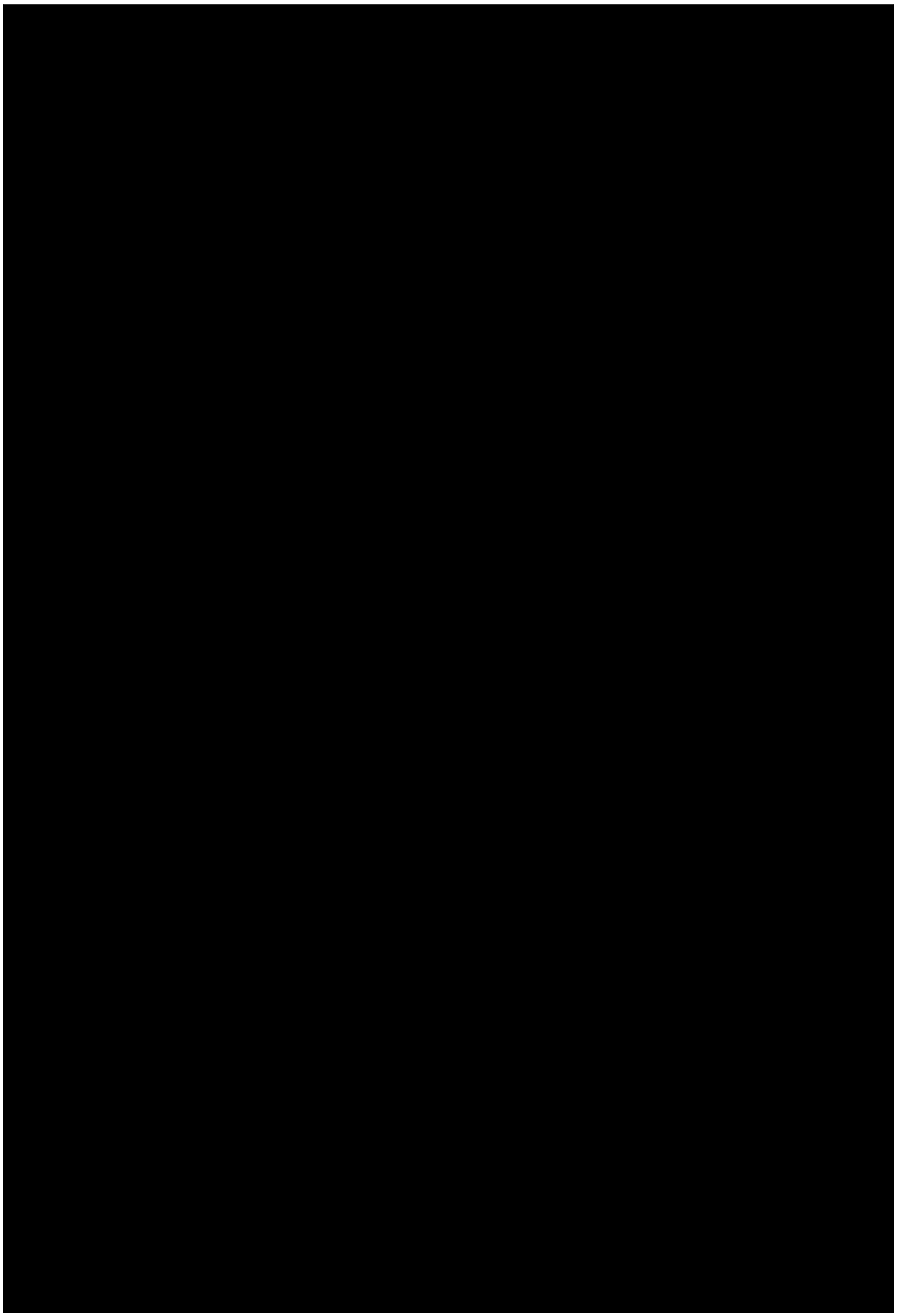


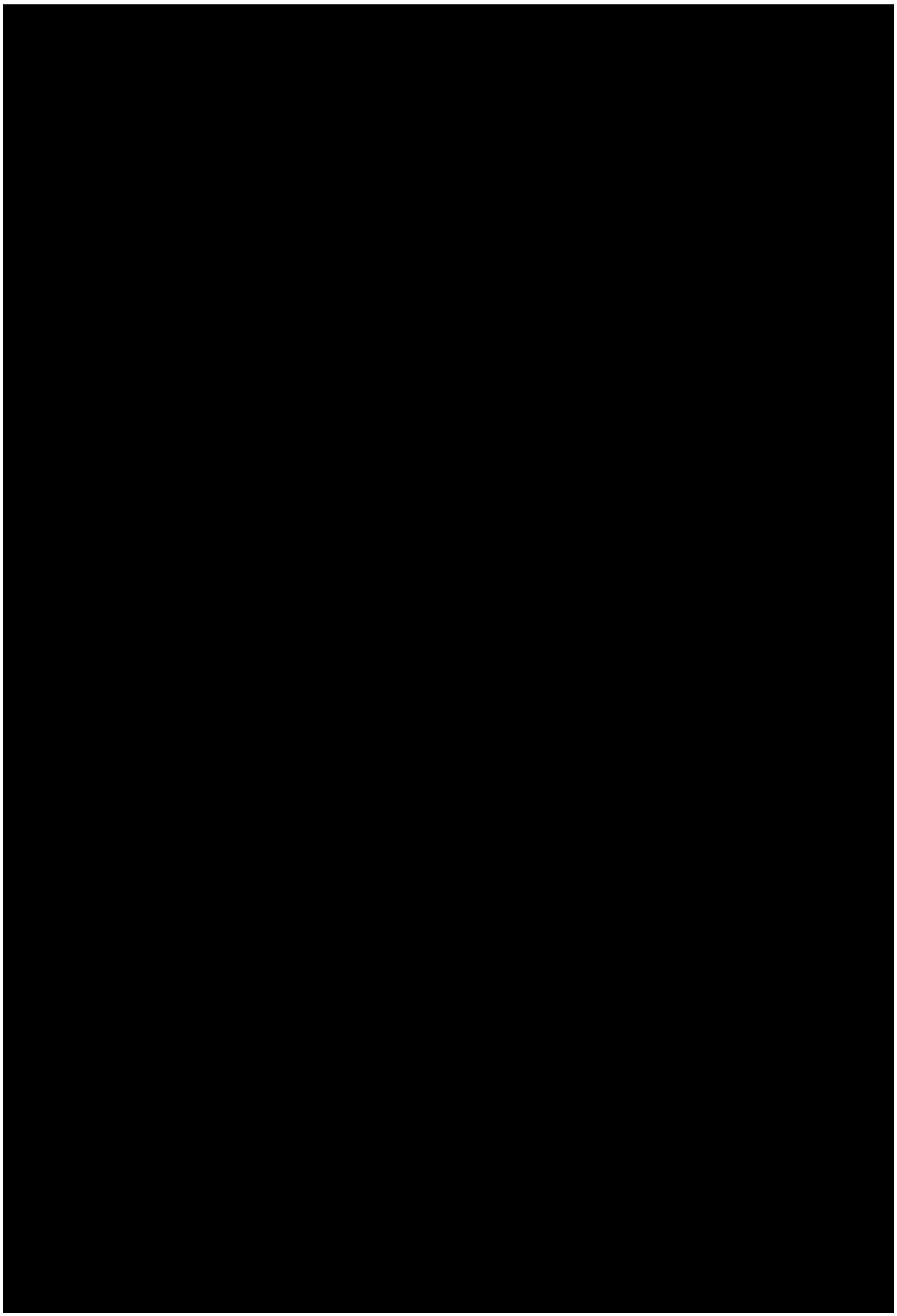


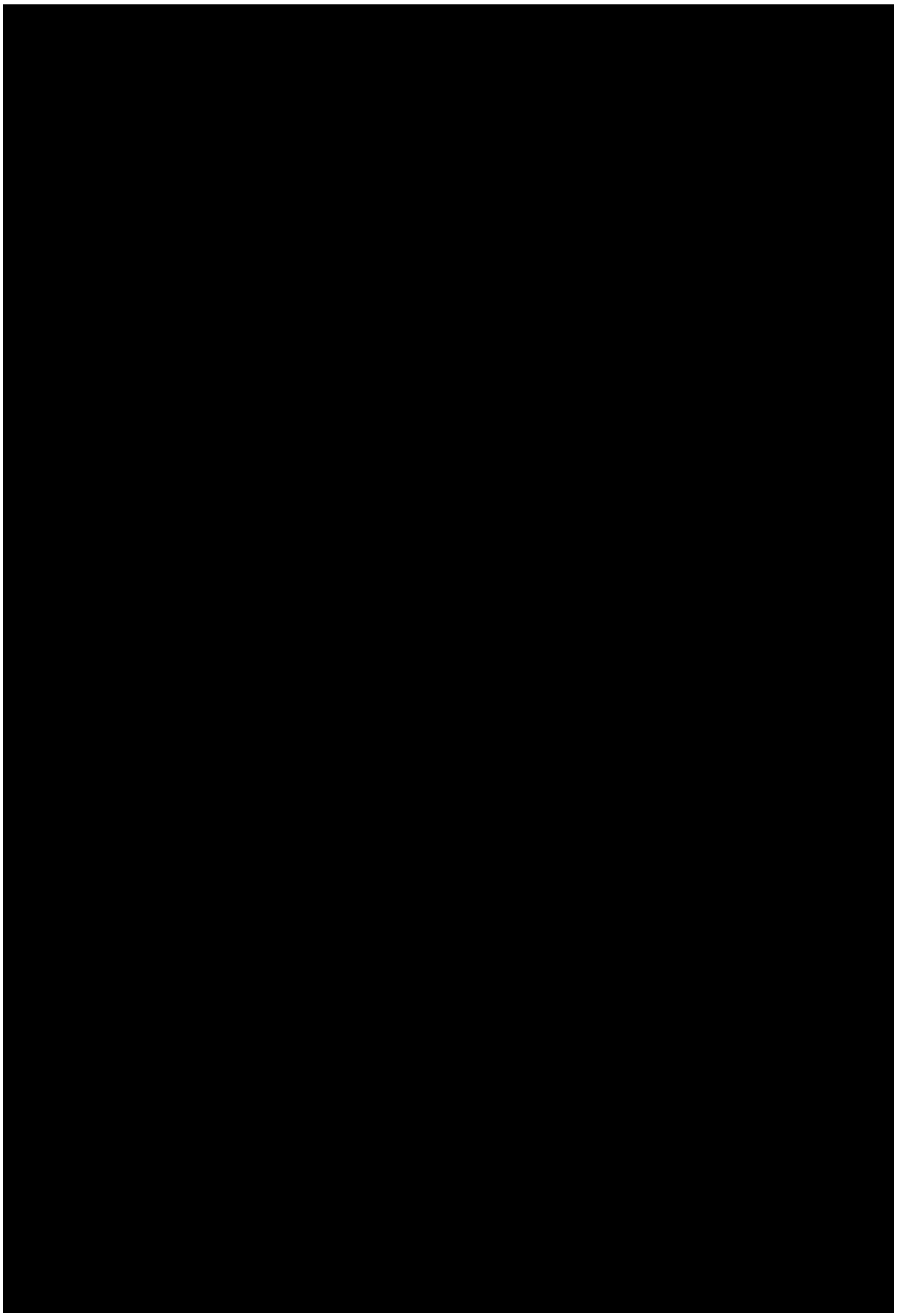


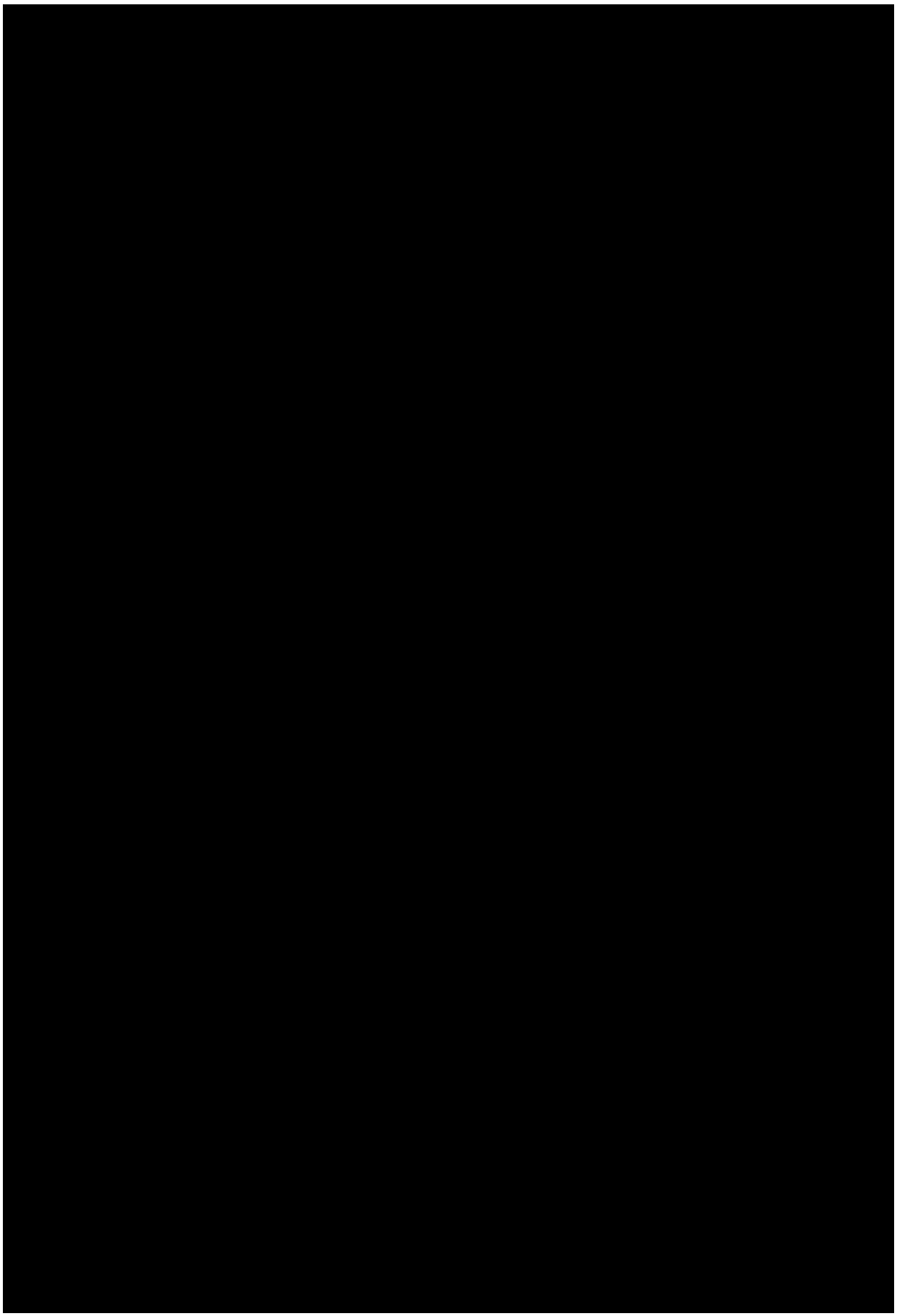


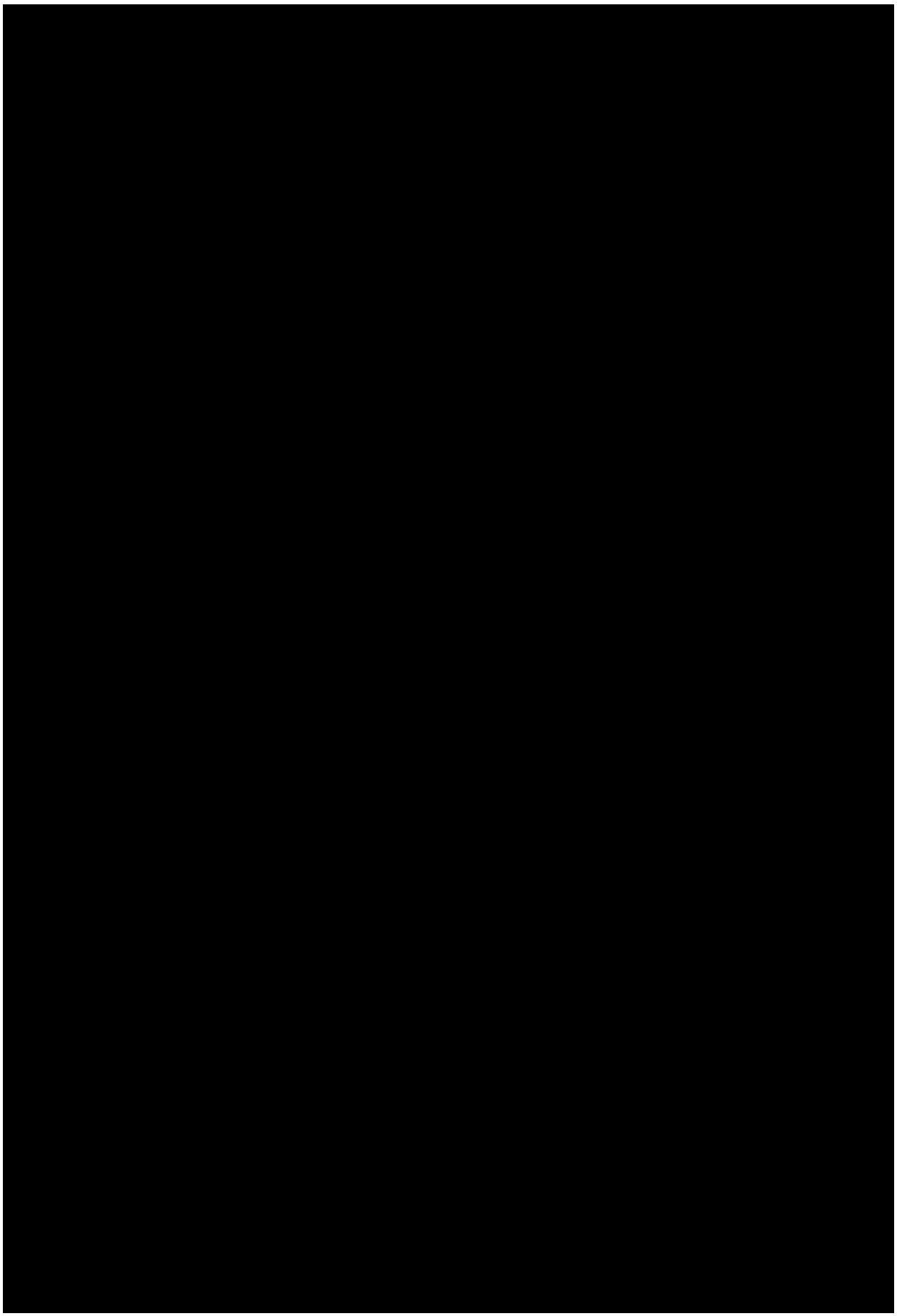


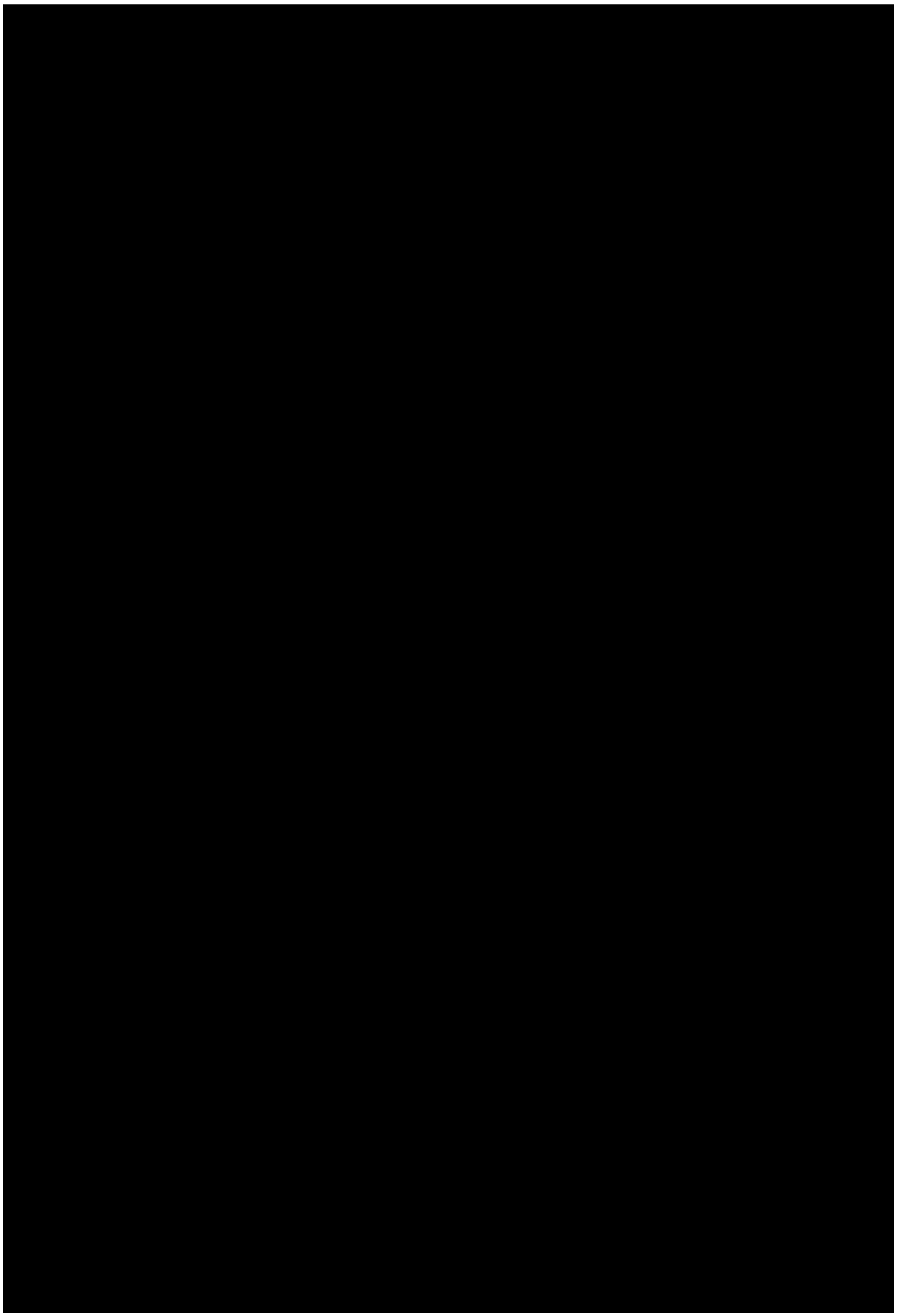






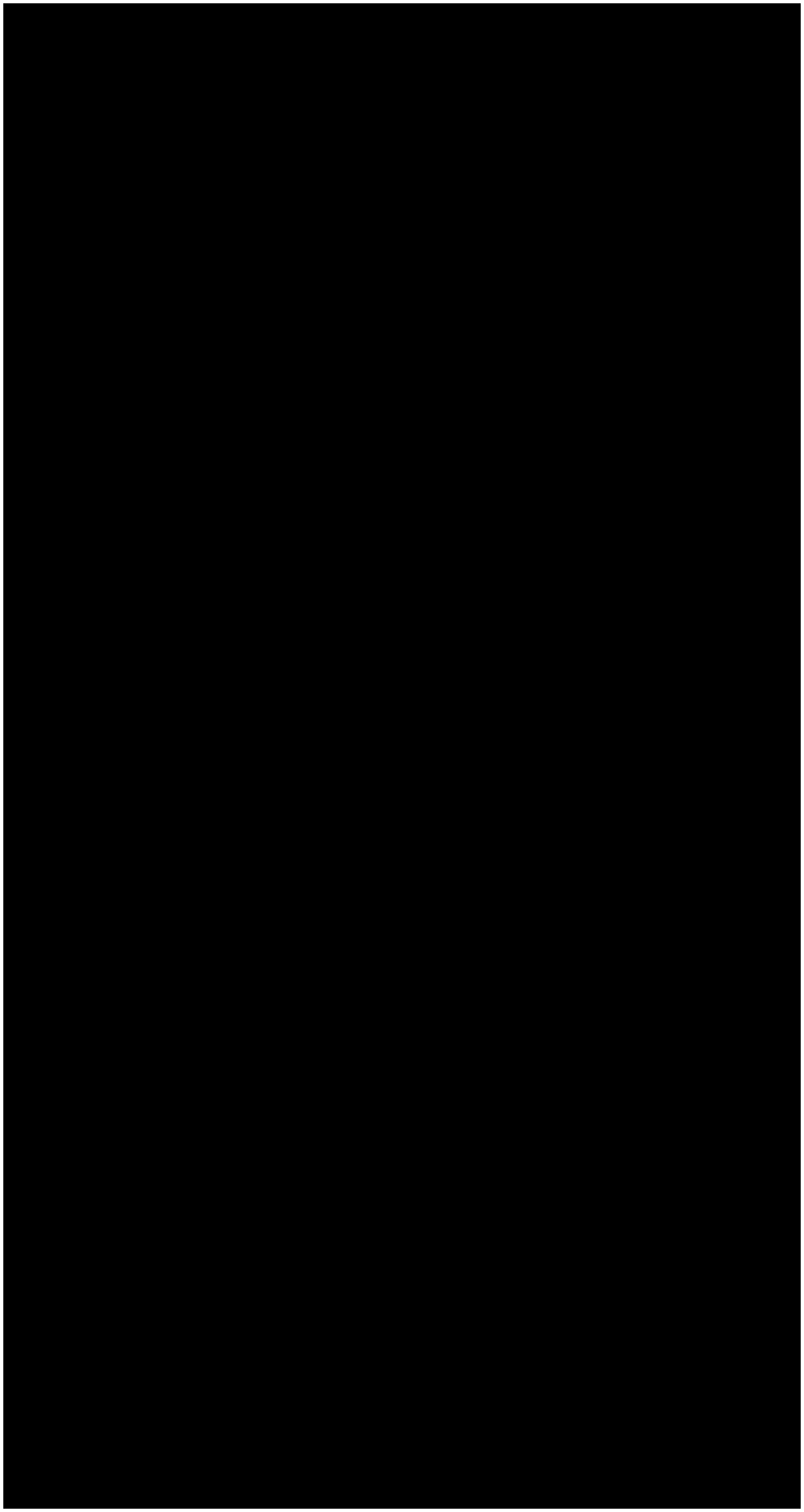


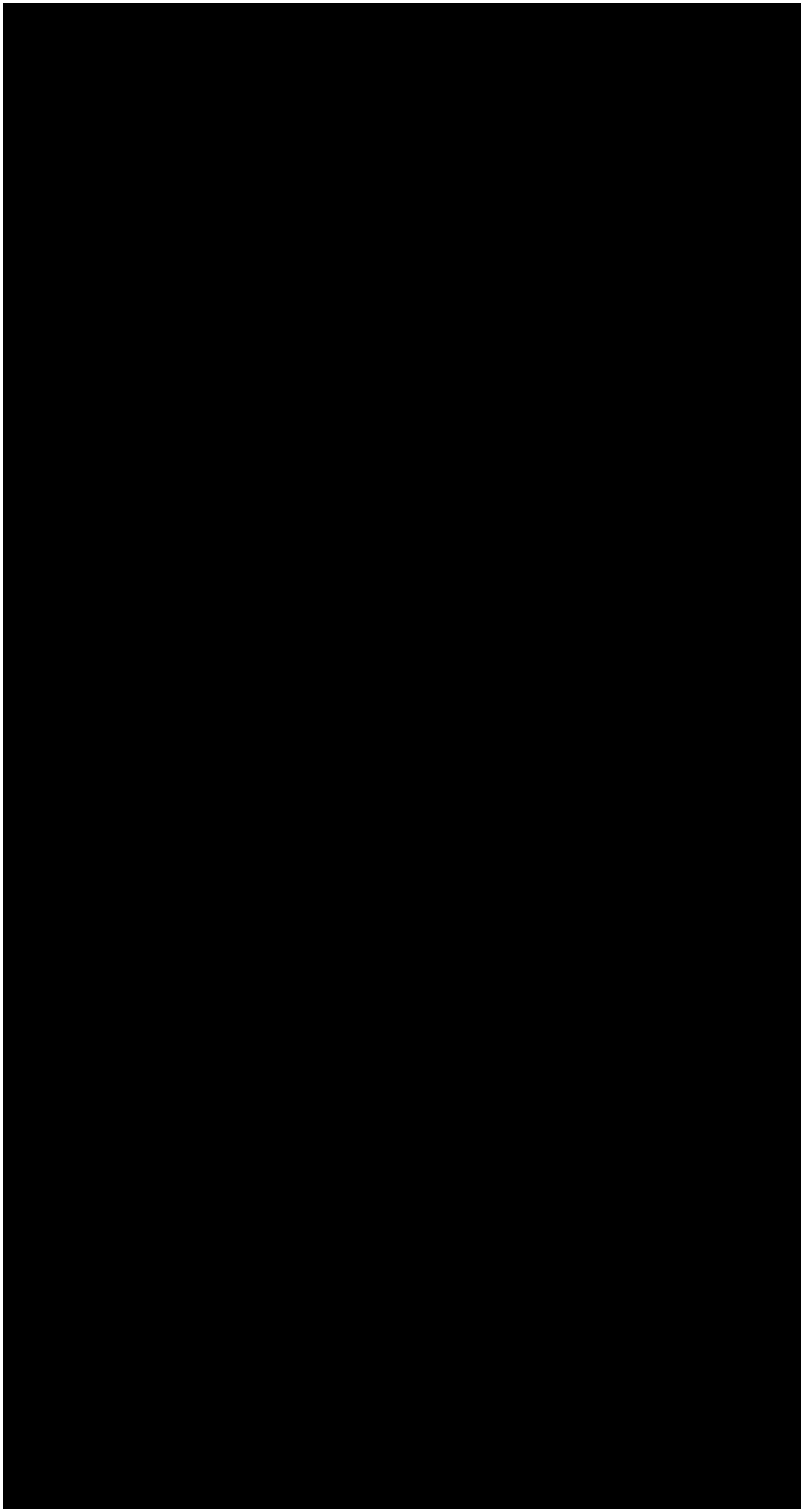


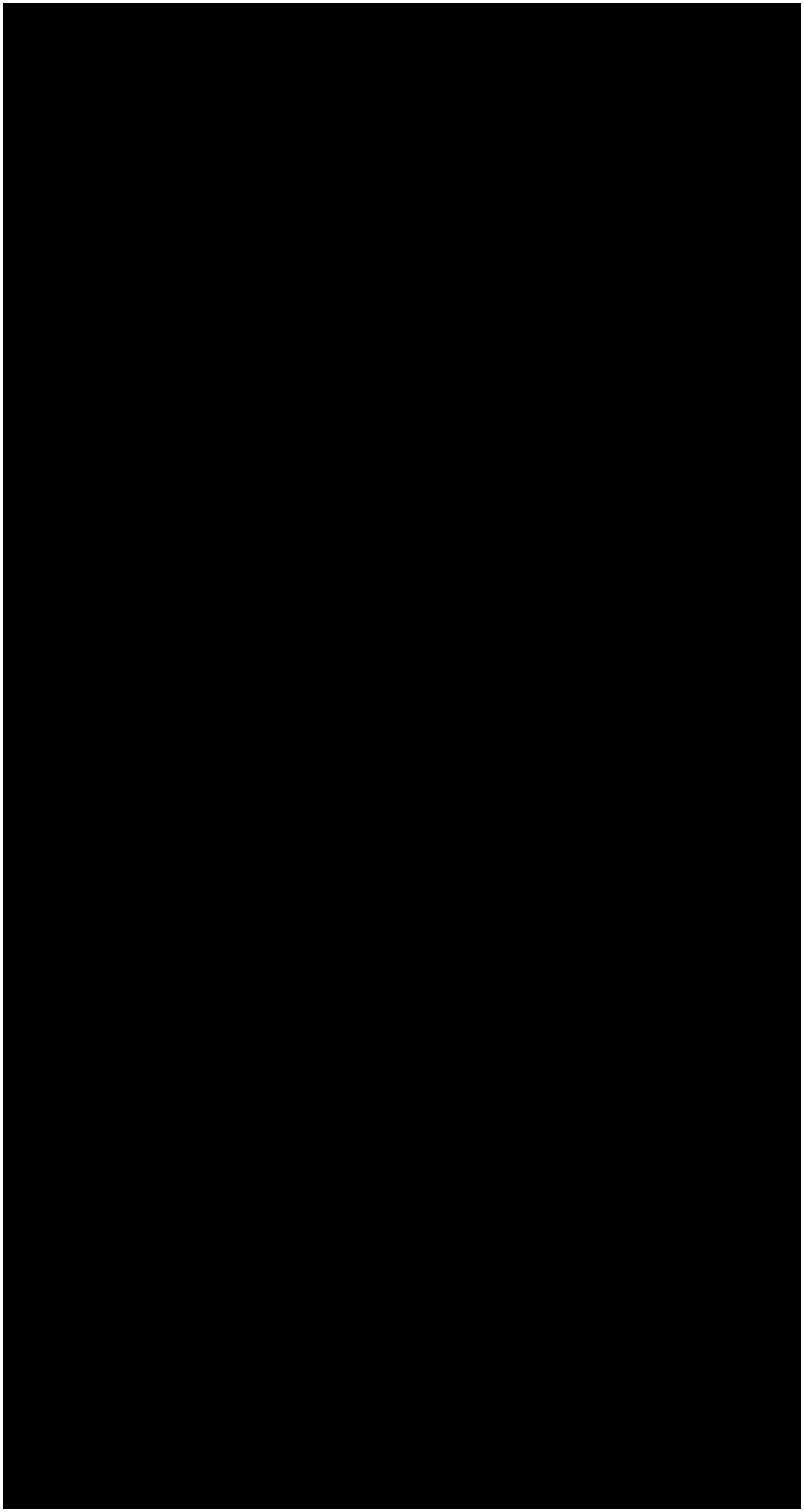


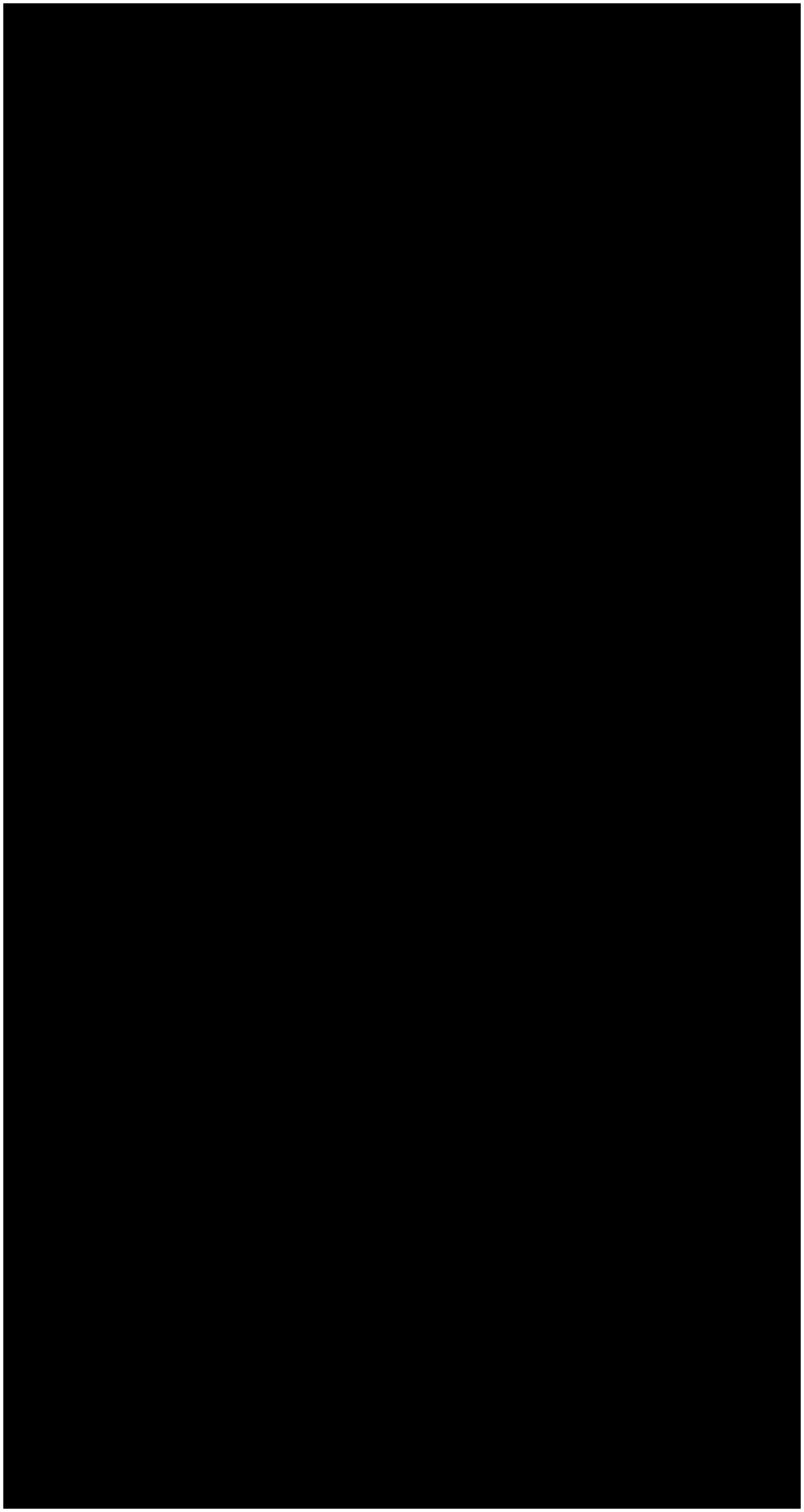


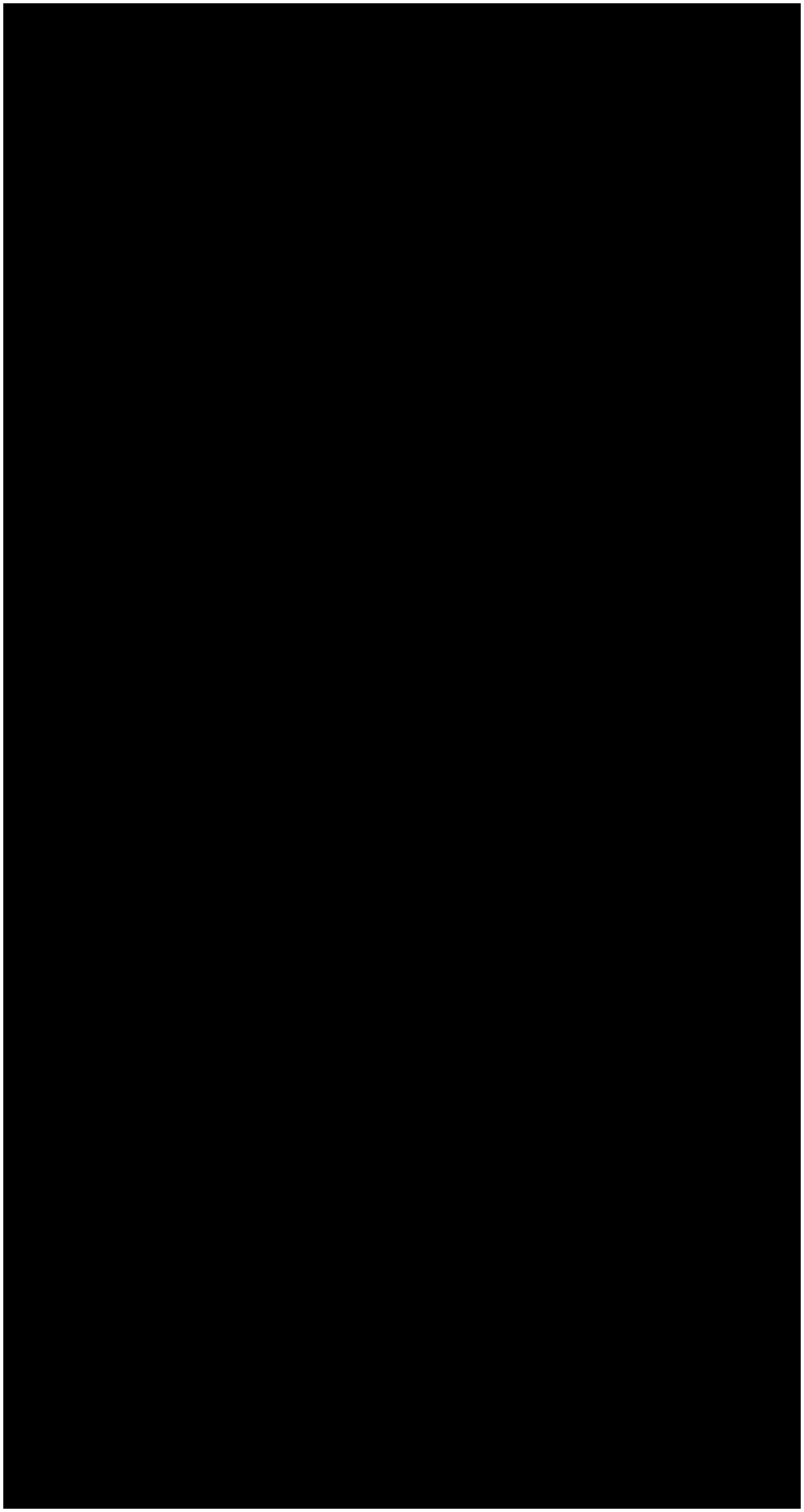
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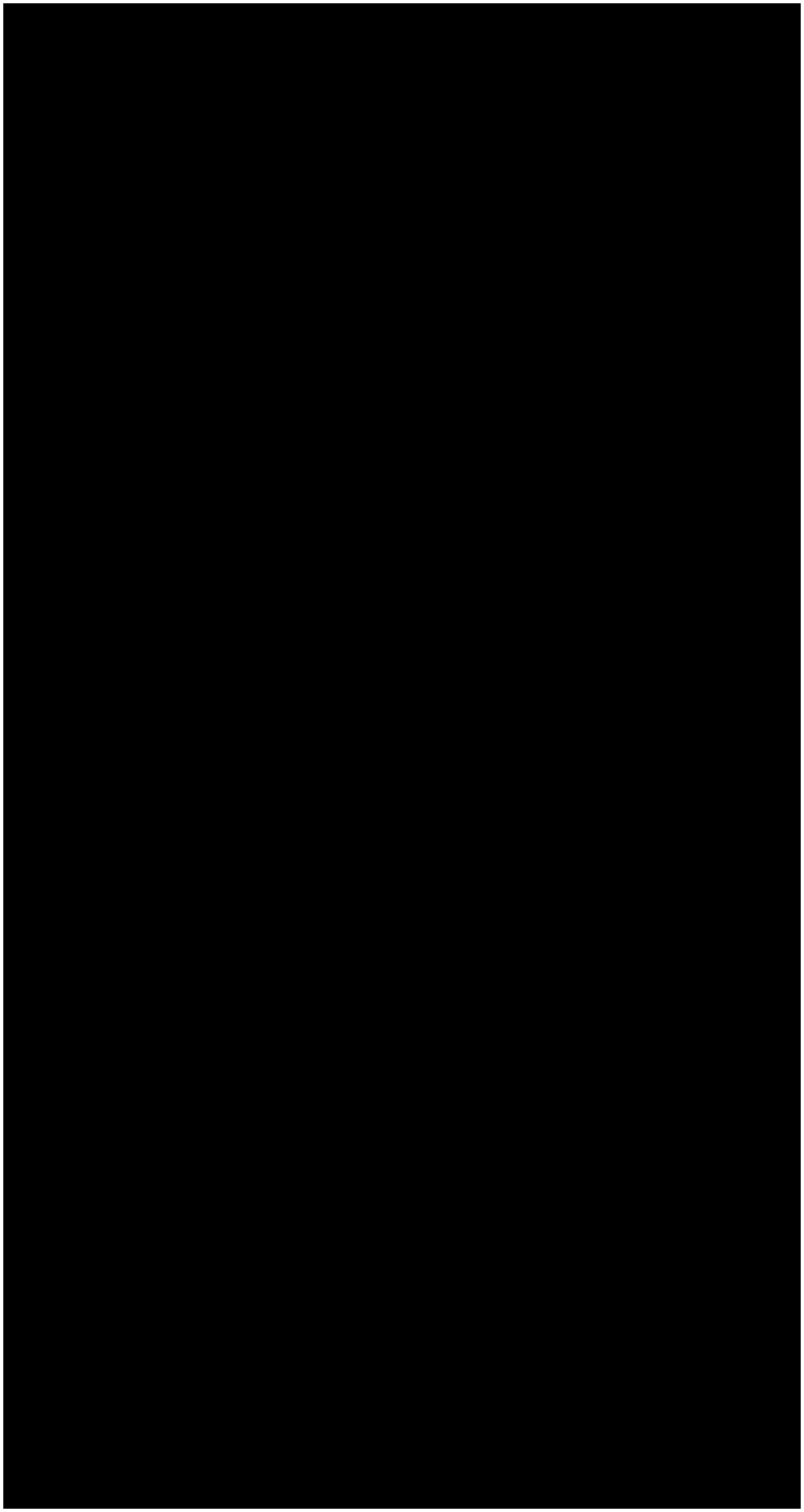


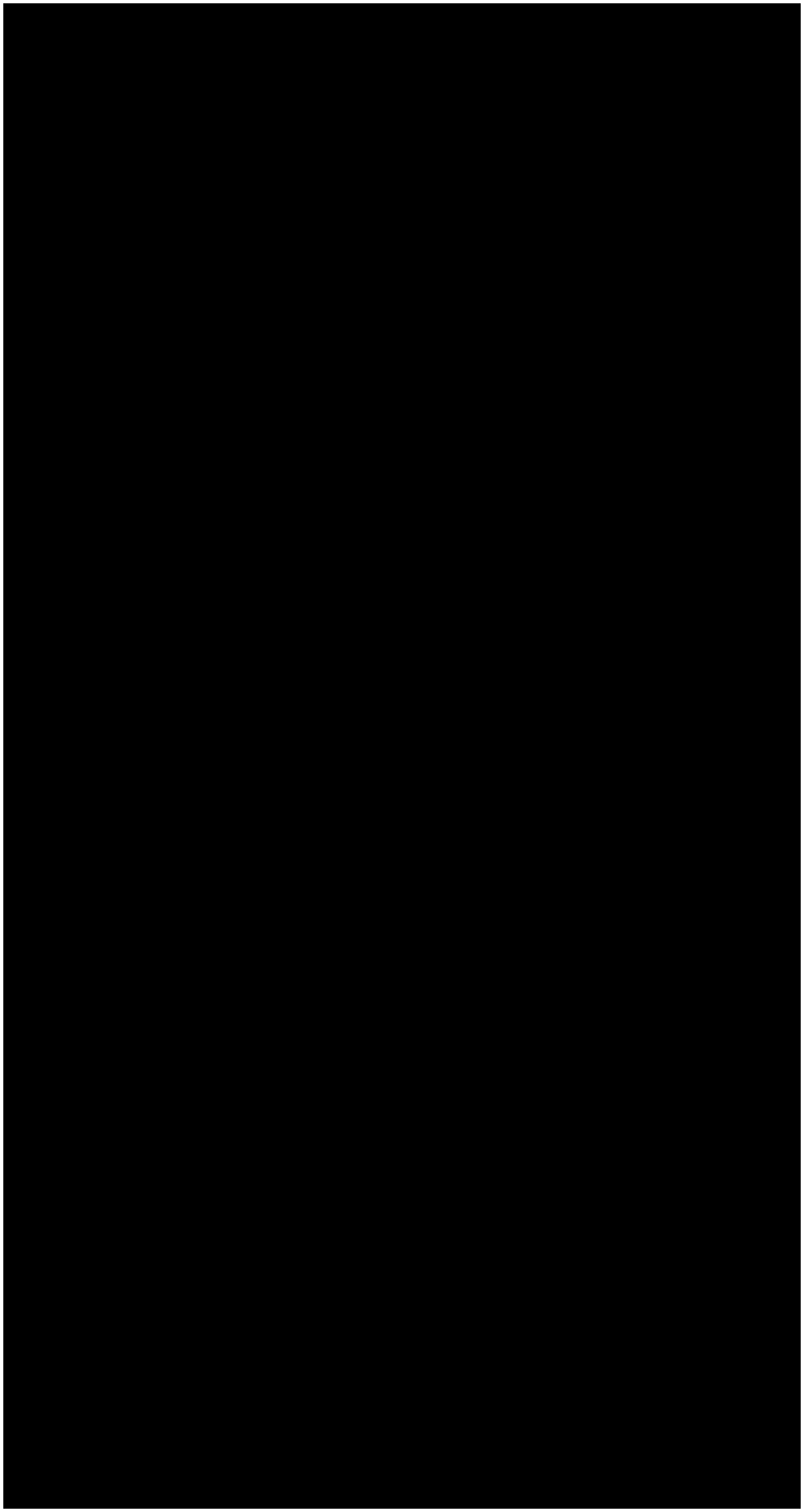


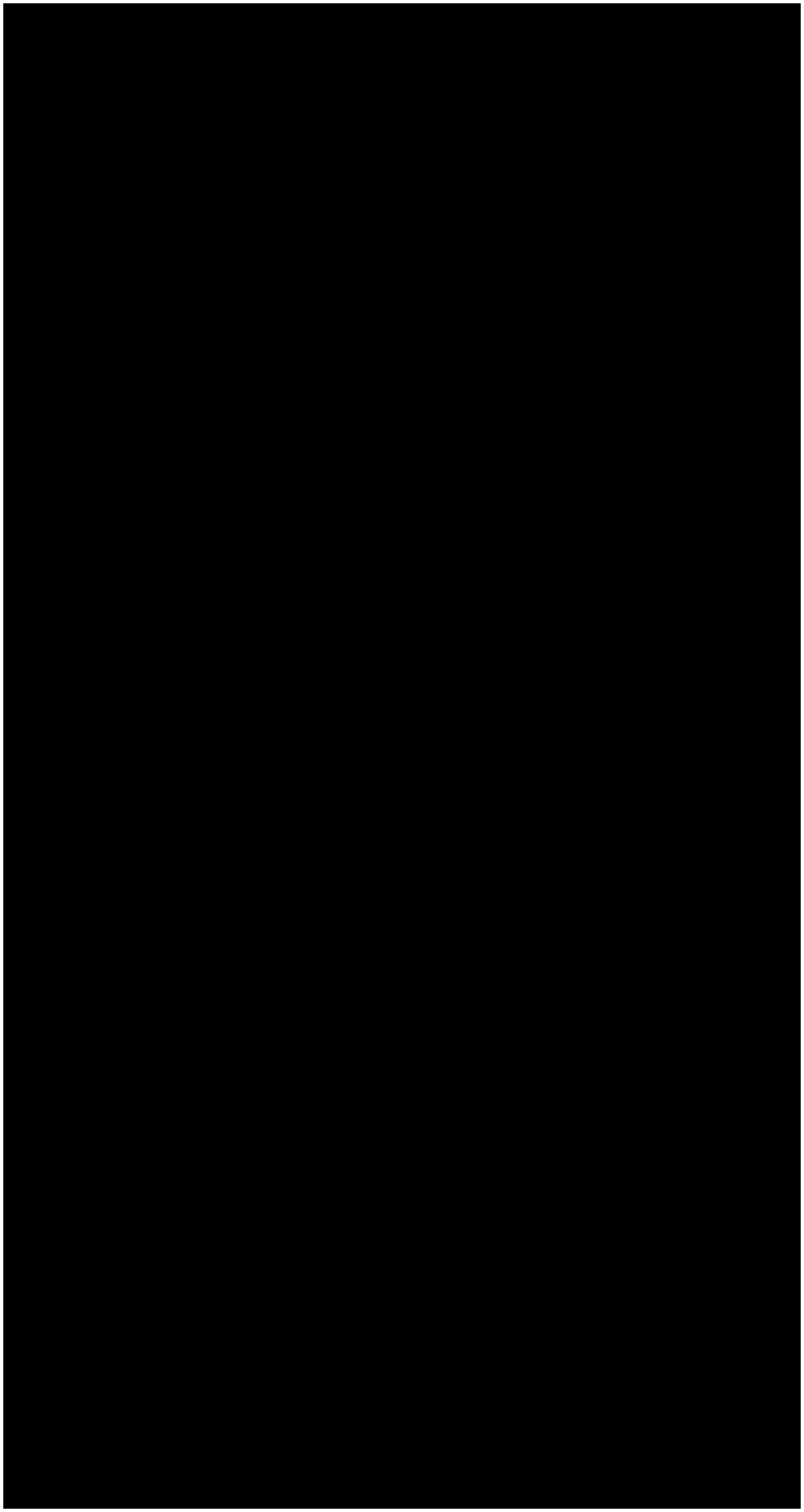


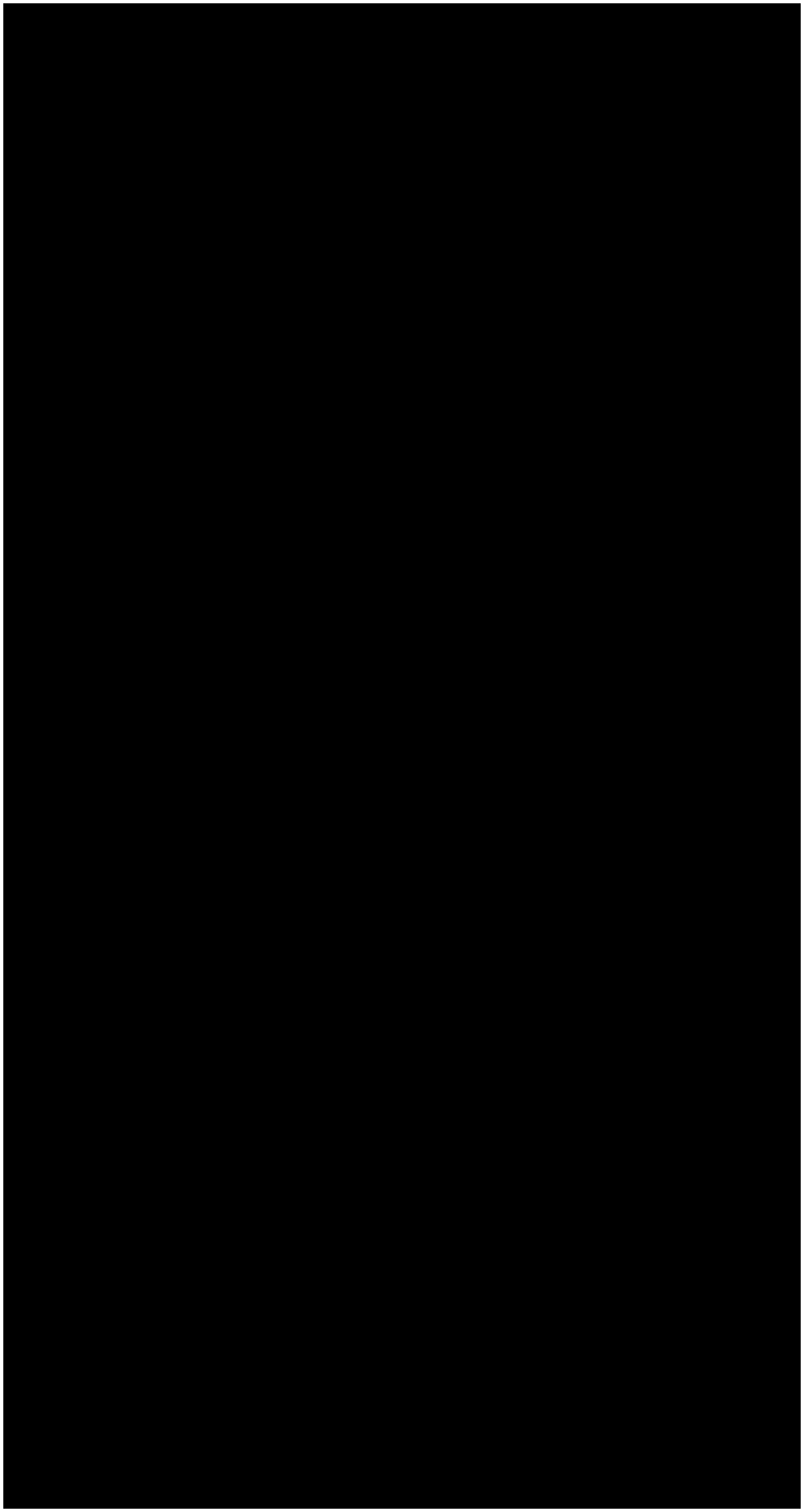


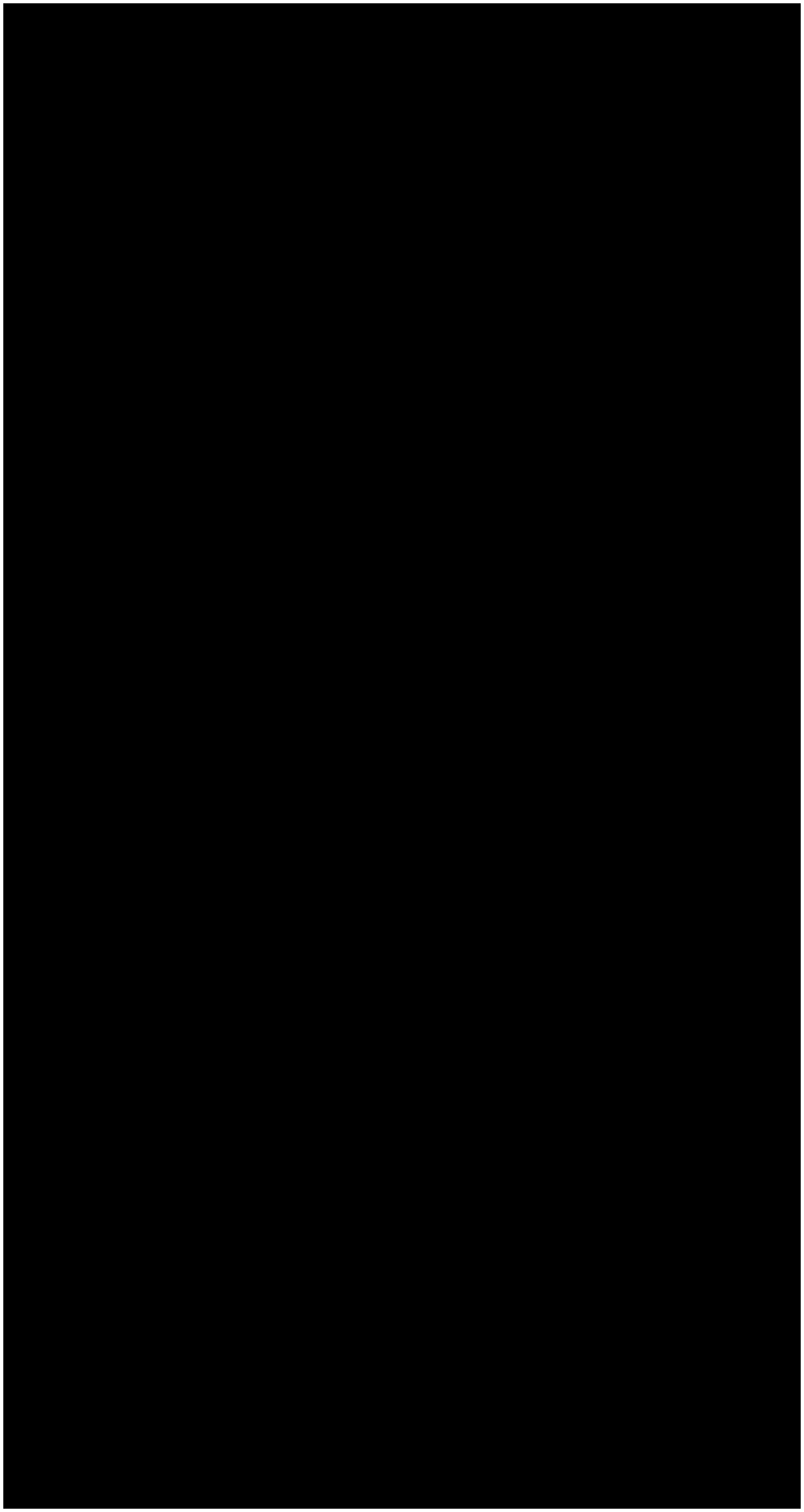


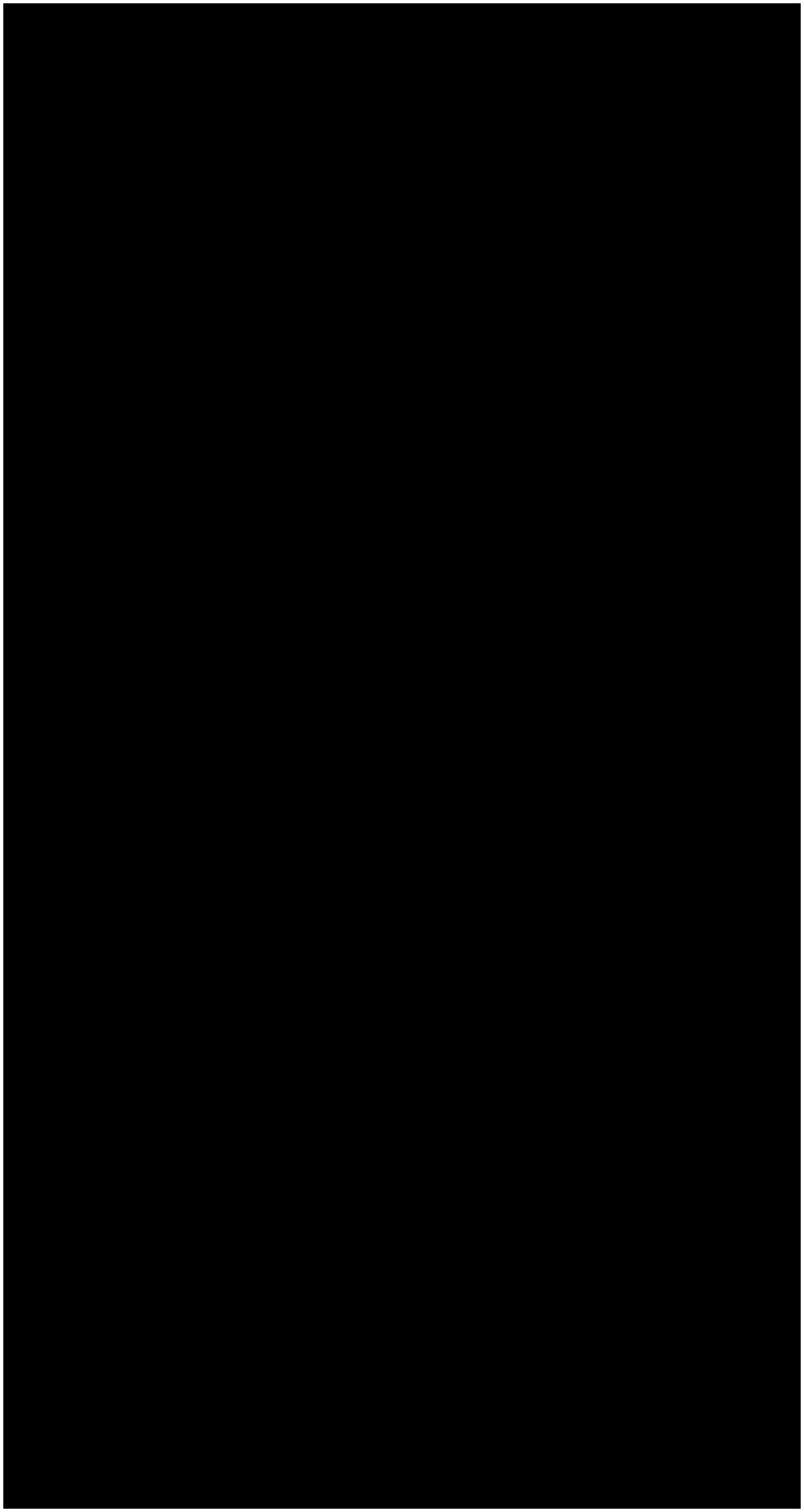


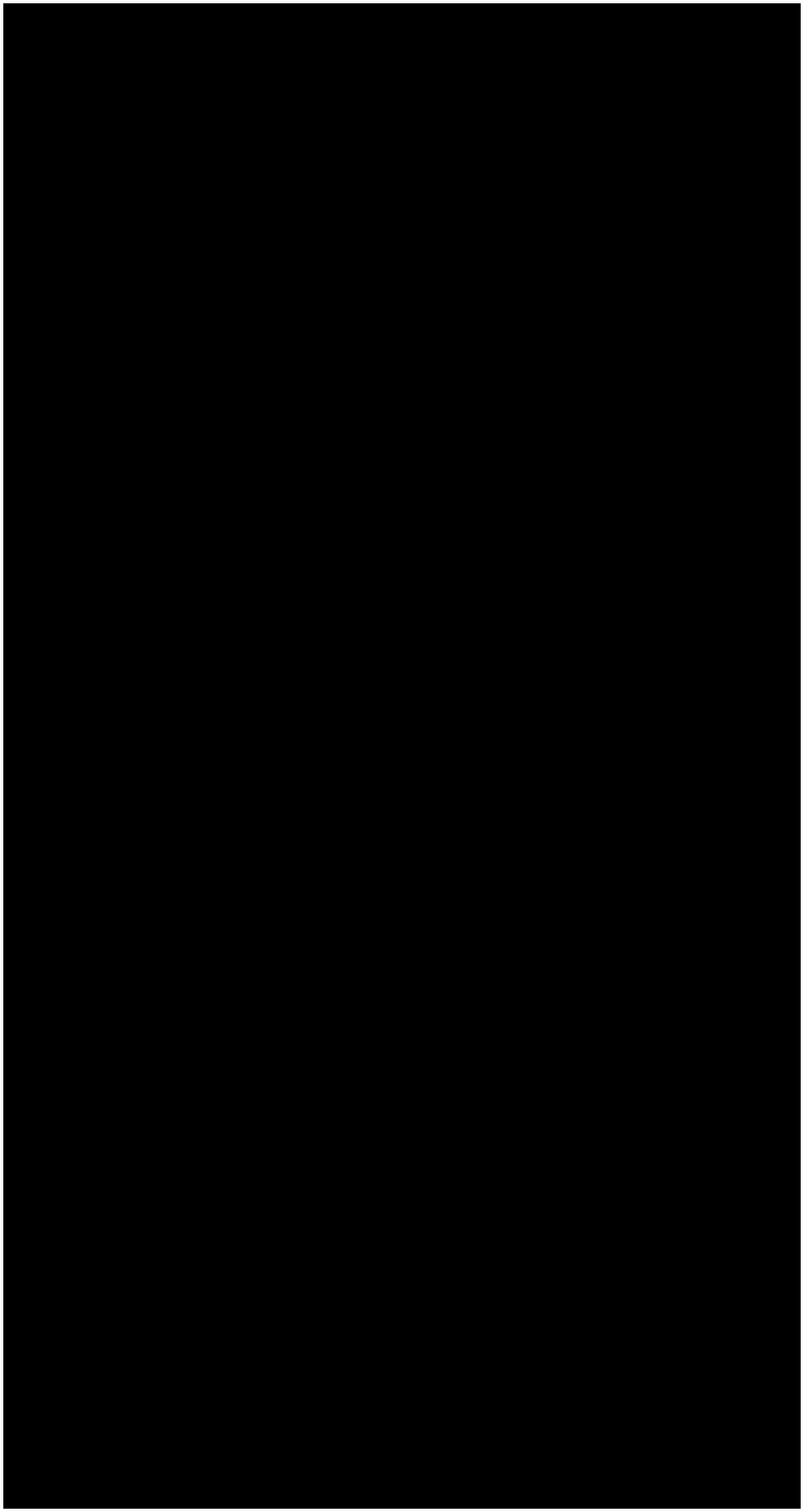


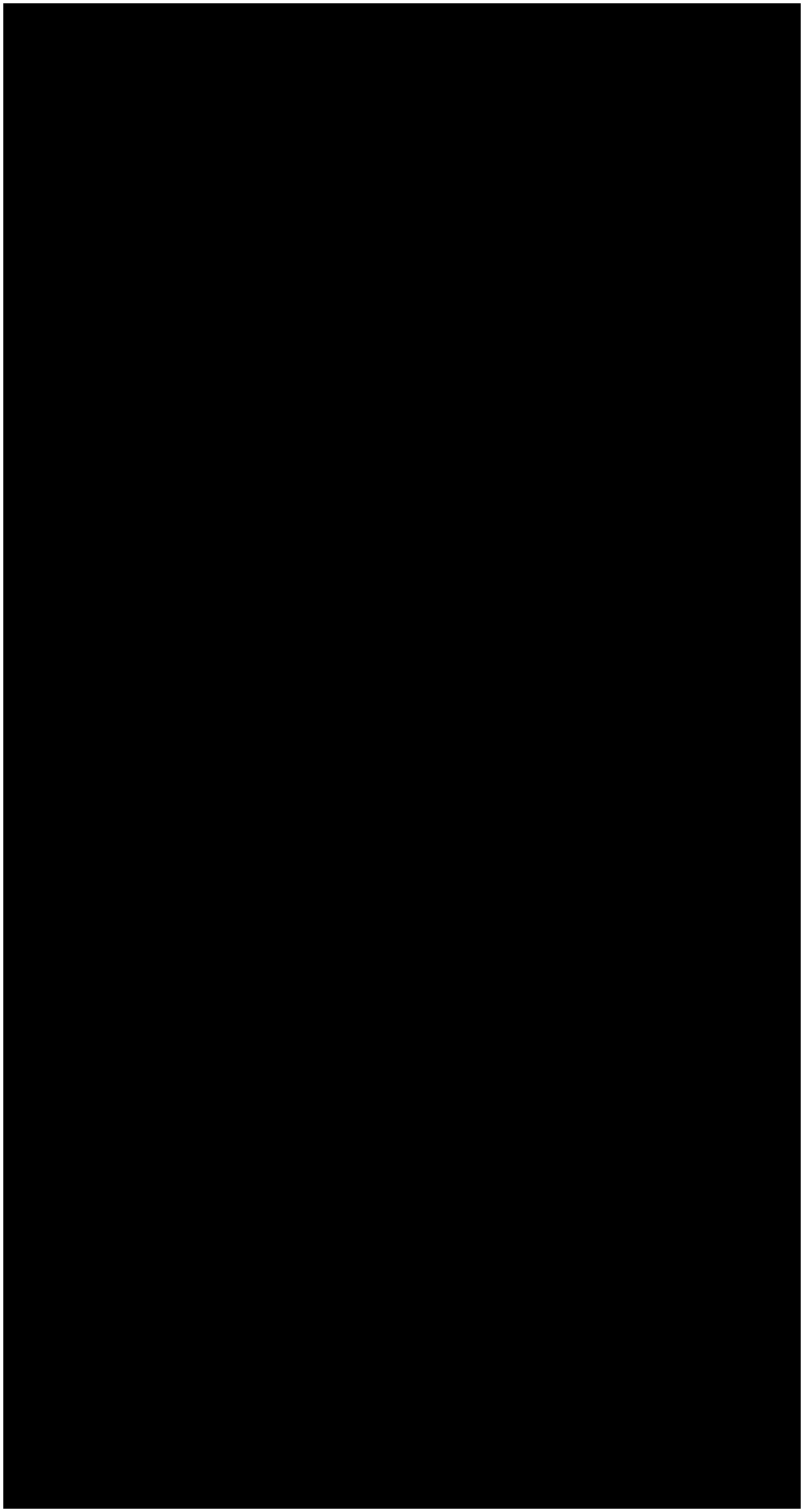


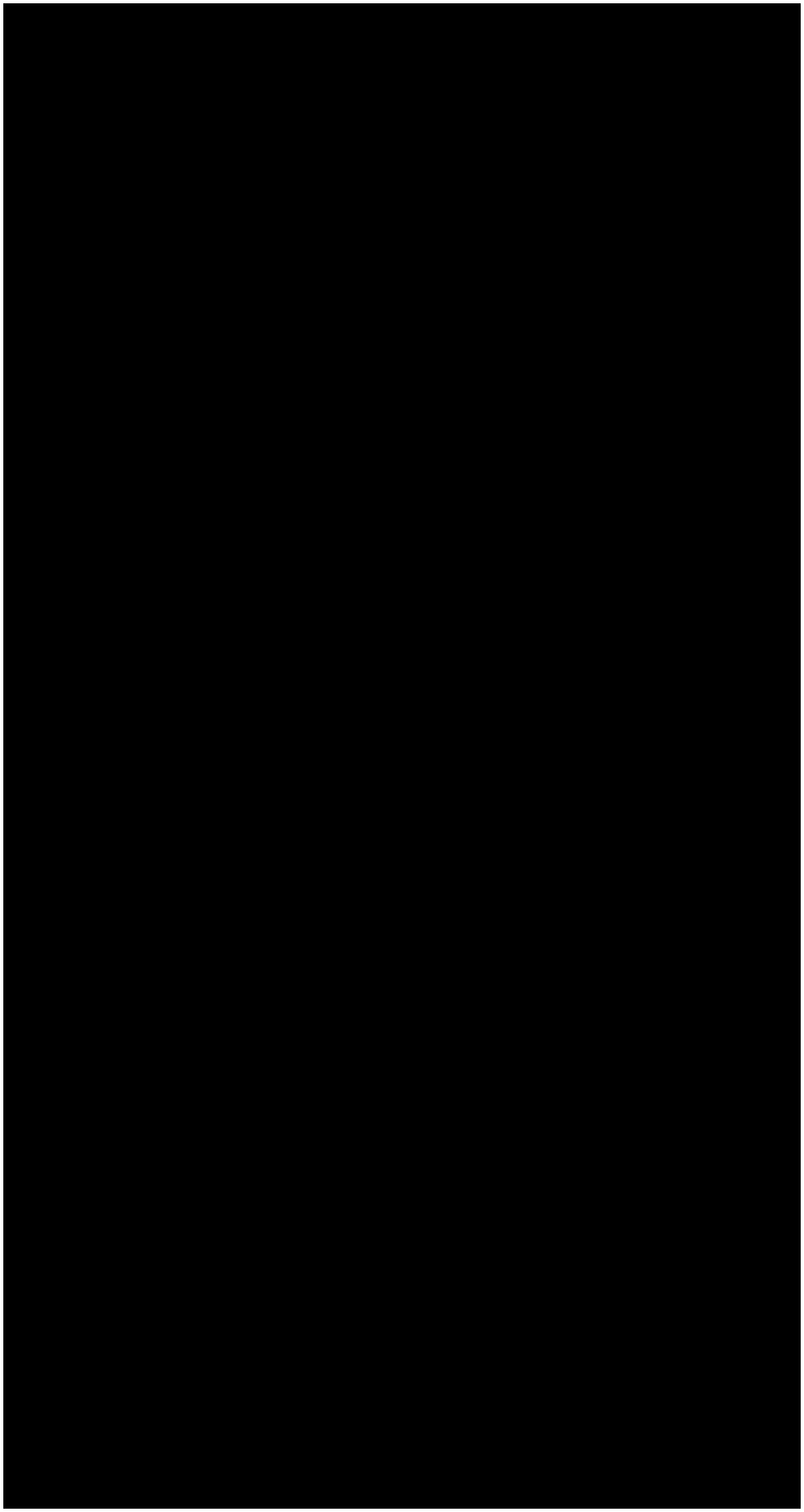


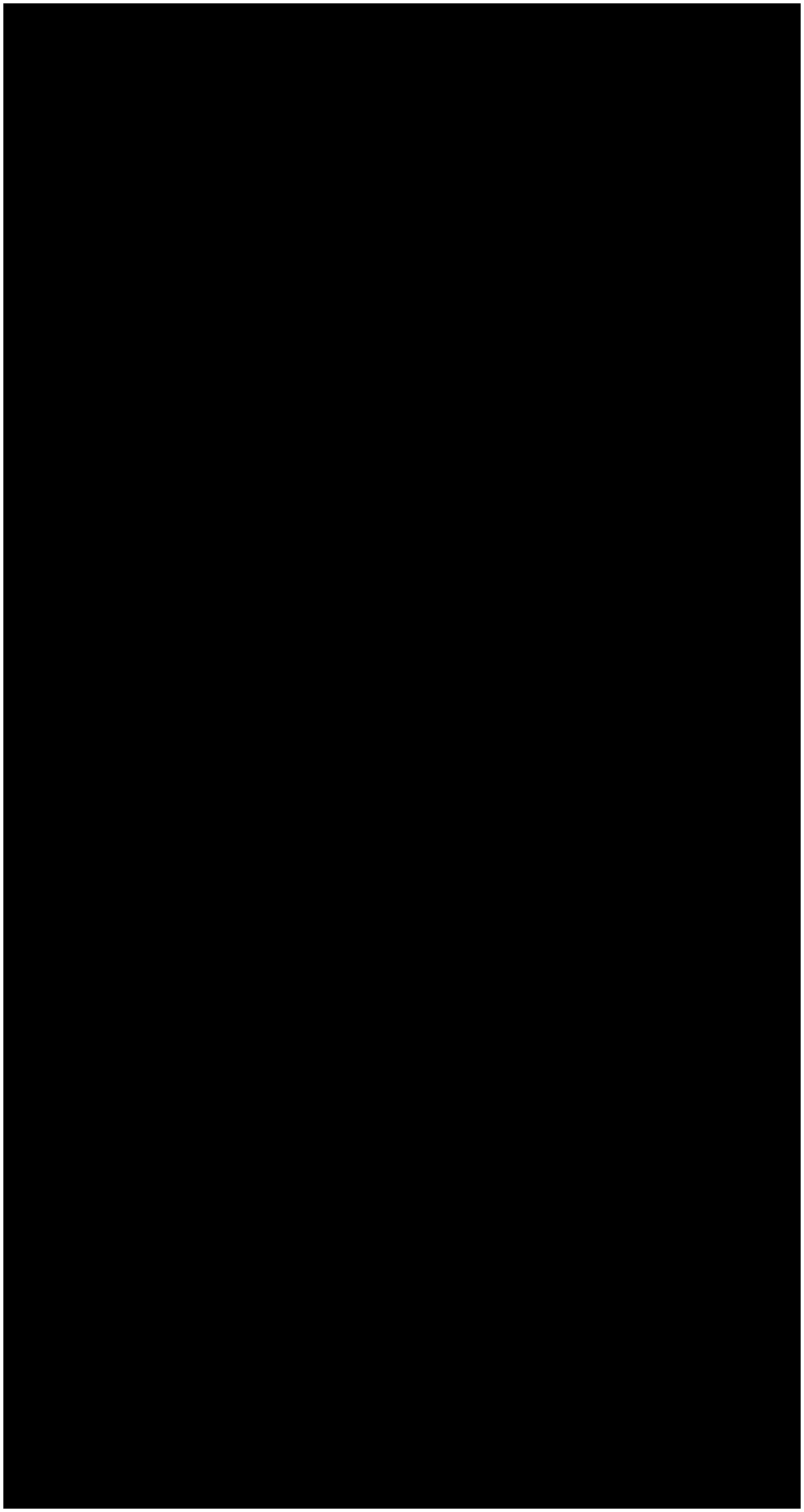


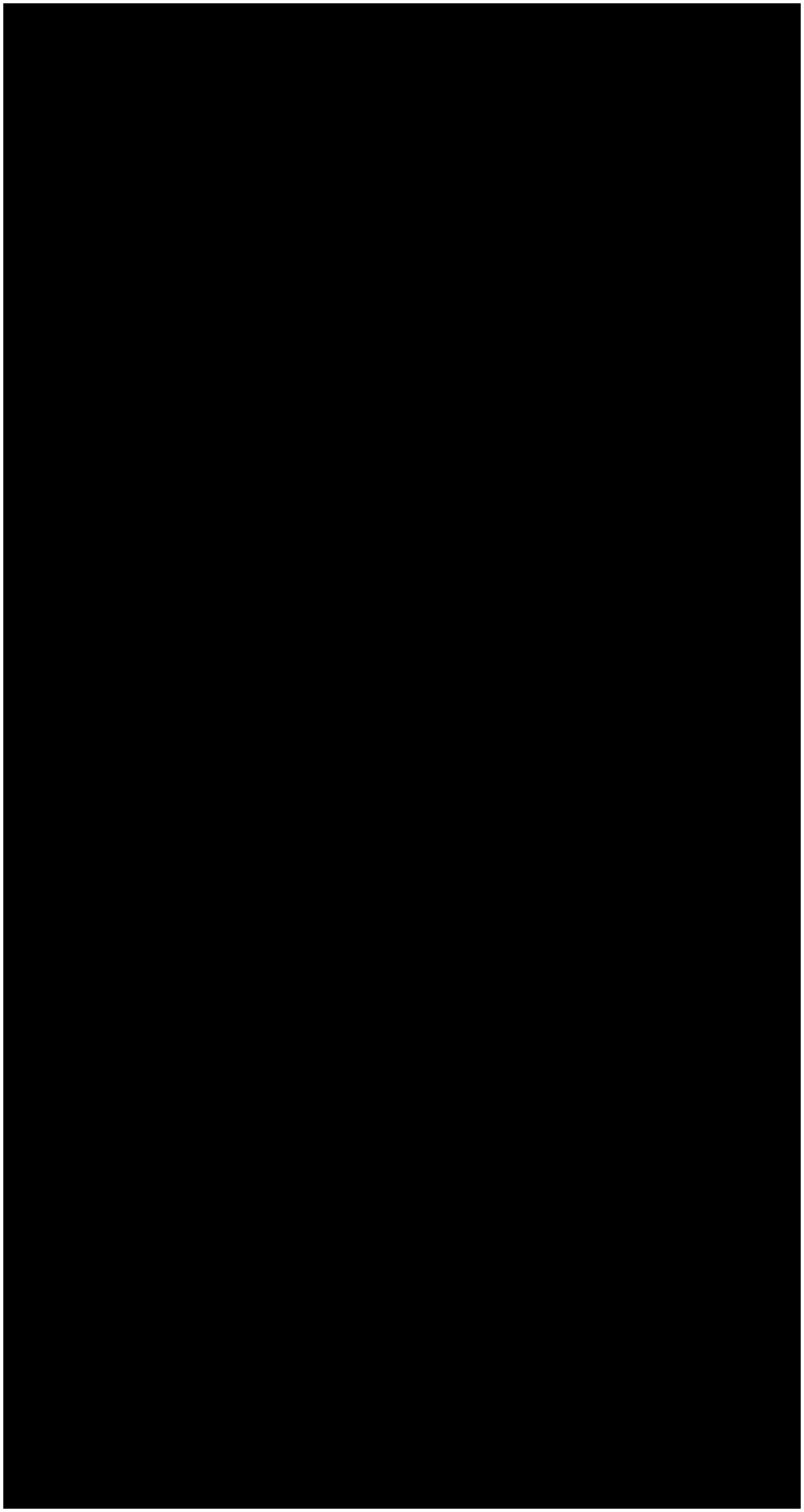


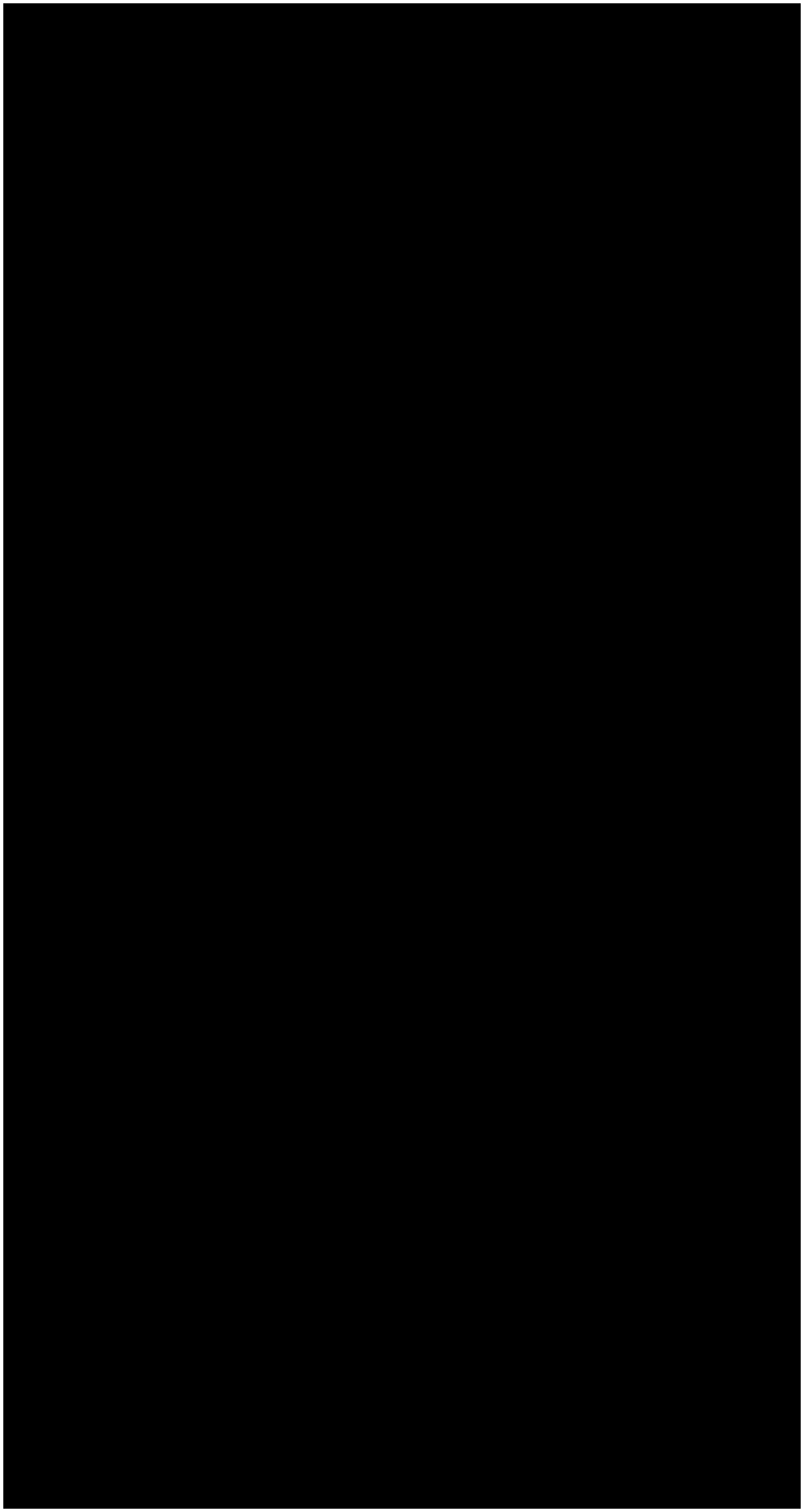


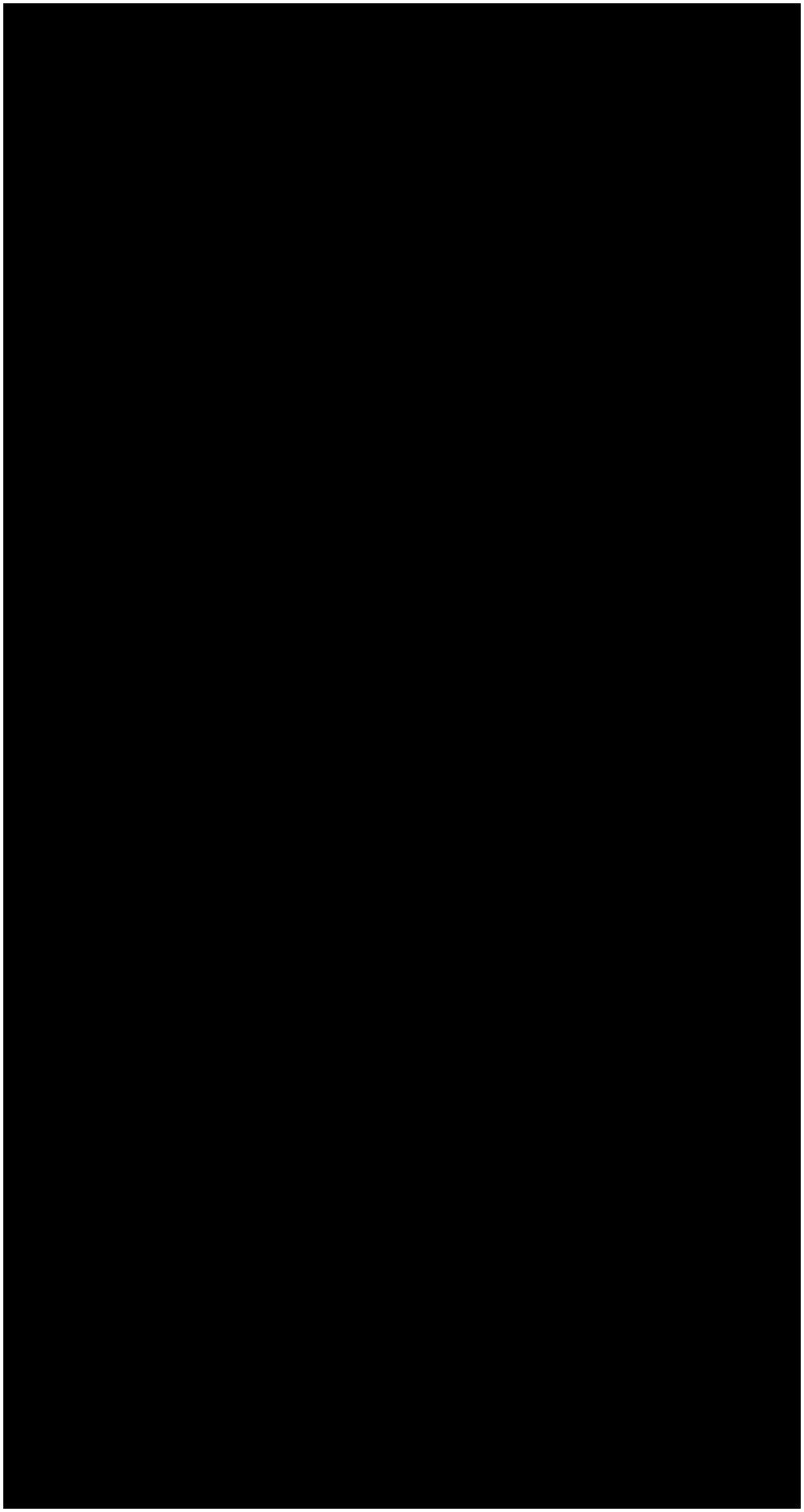














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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Dec-25											
Jan-26											
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May-27											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
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Oct-28											

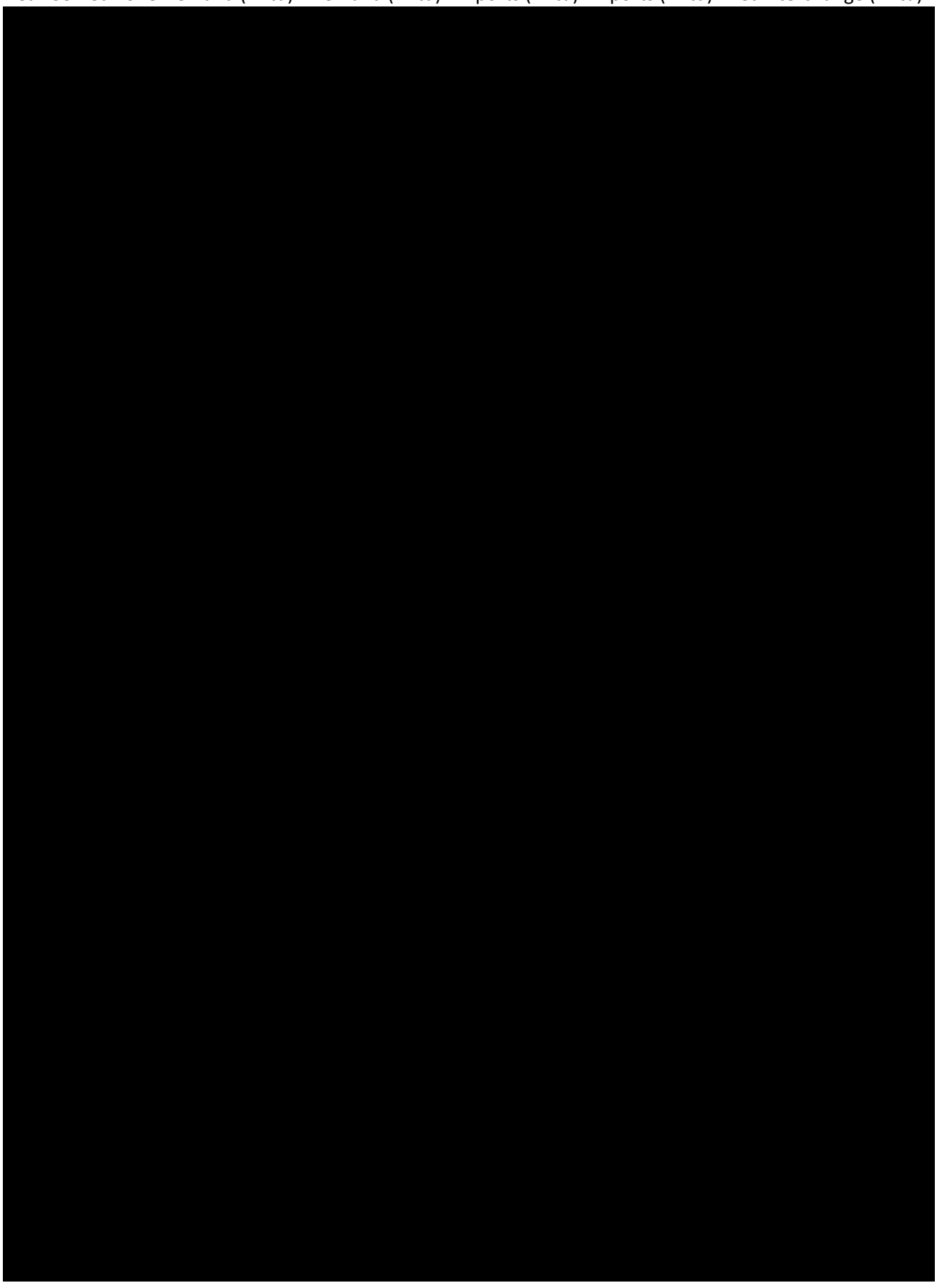
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





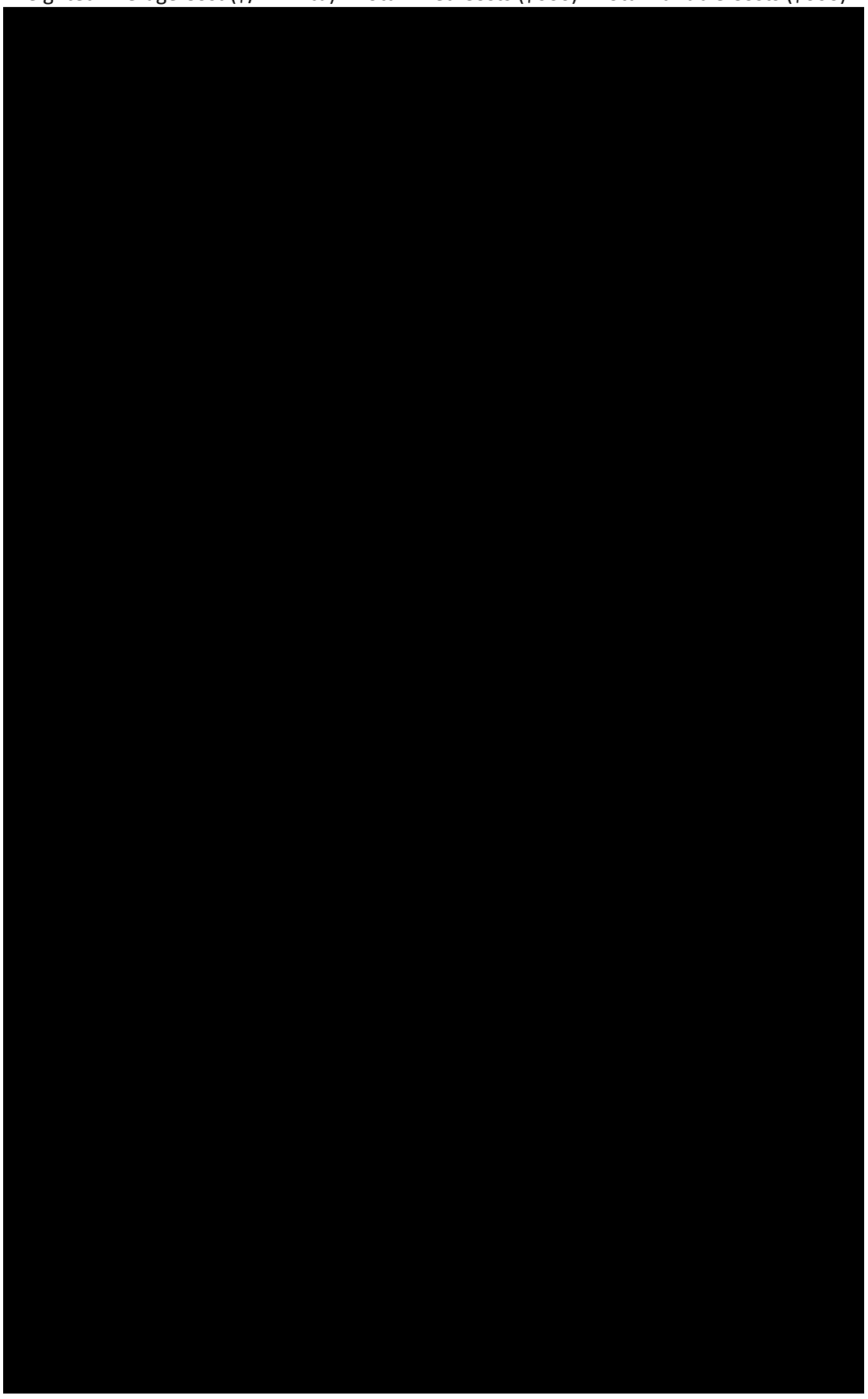
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

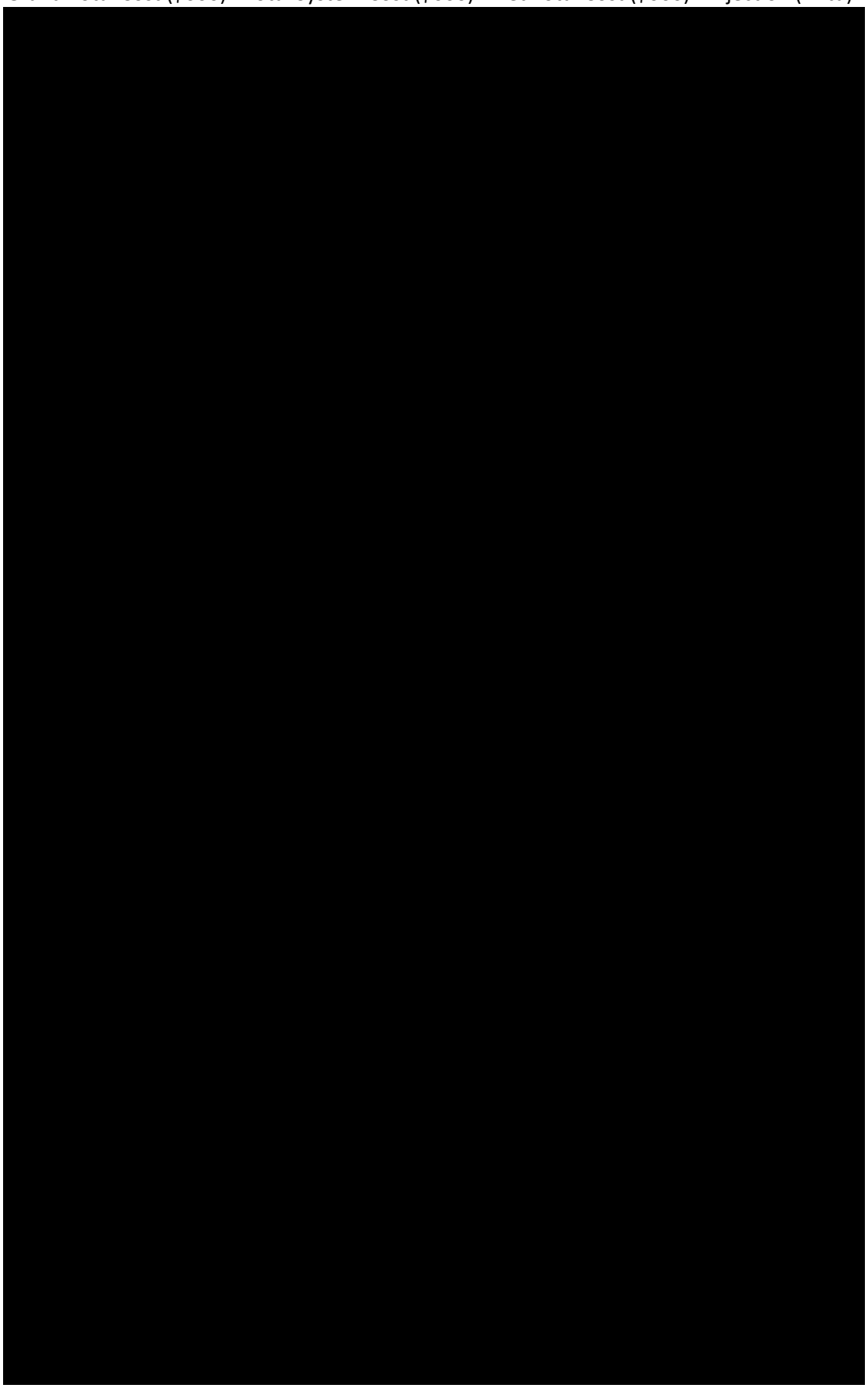


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

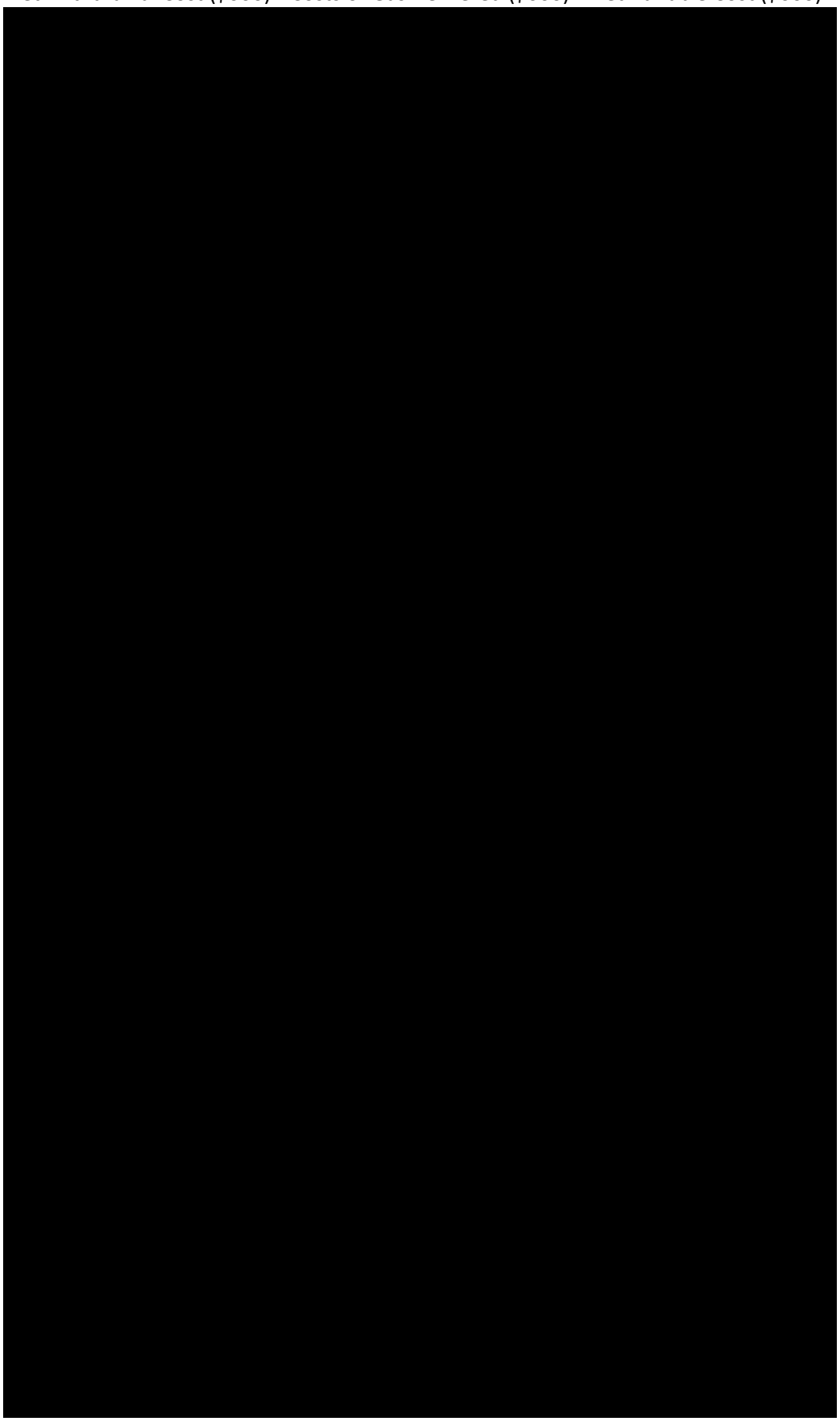




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

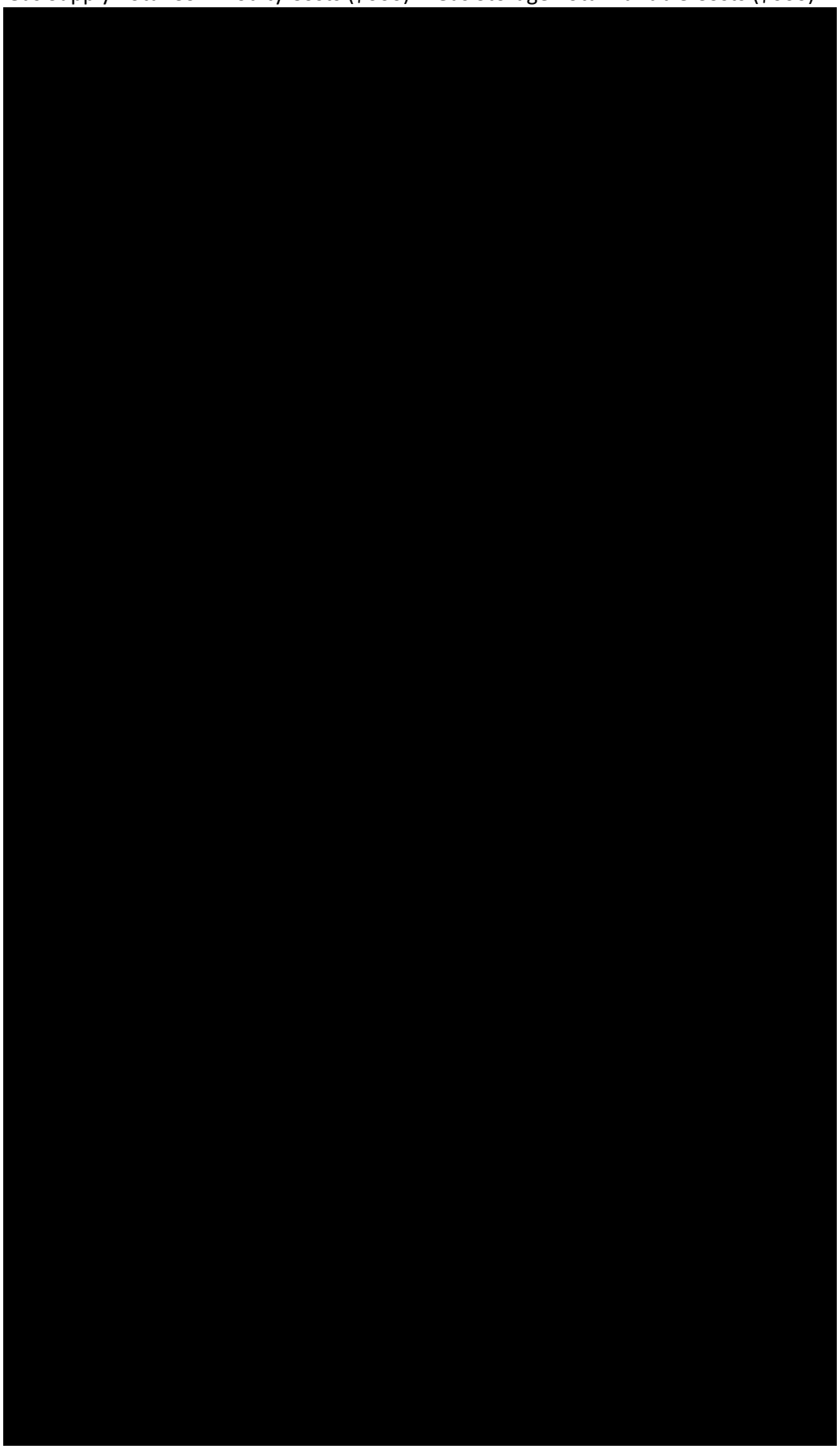




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

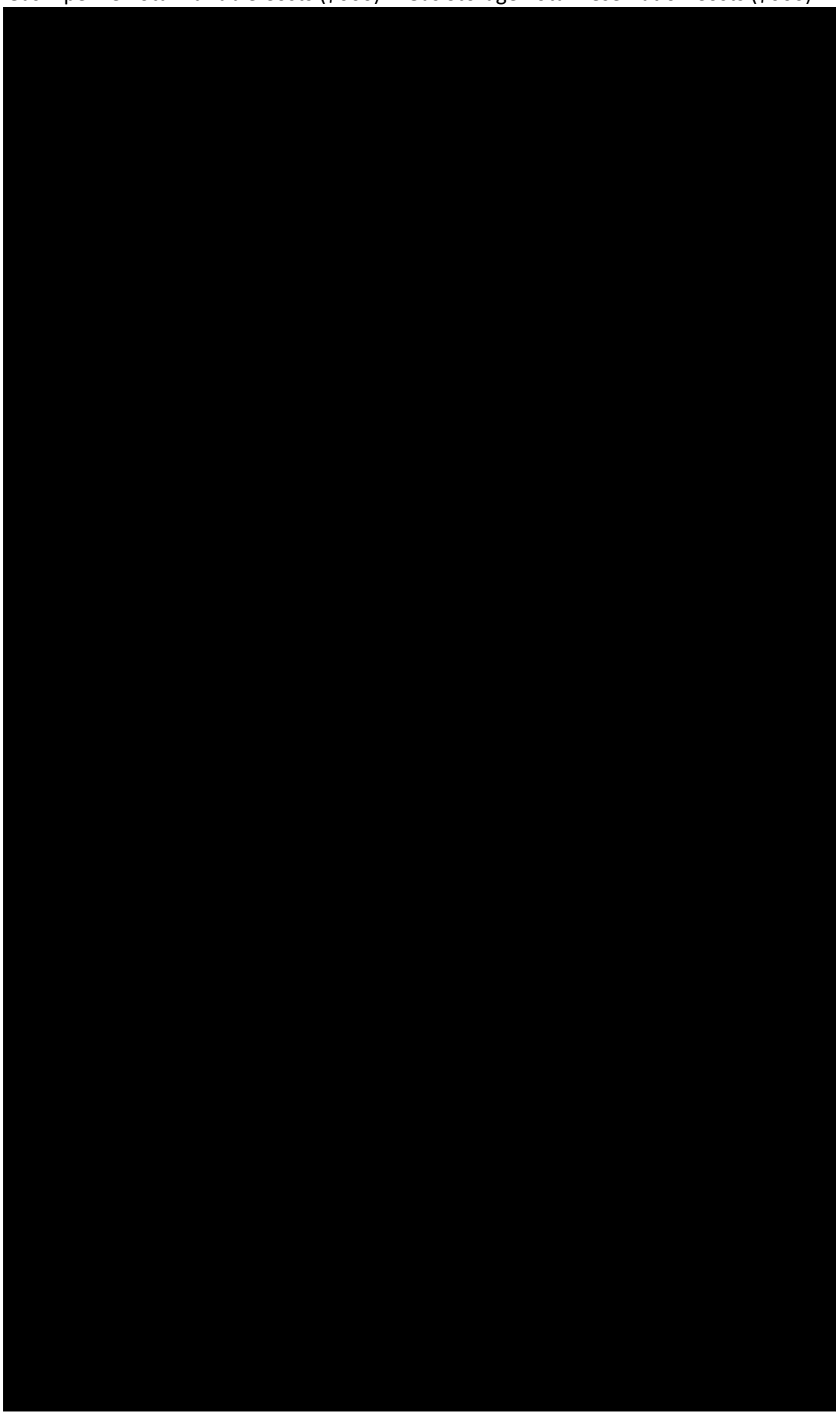


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



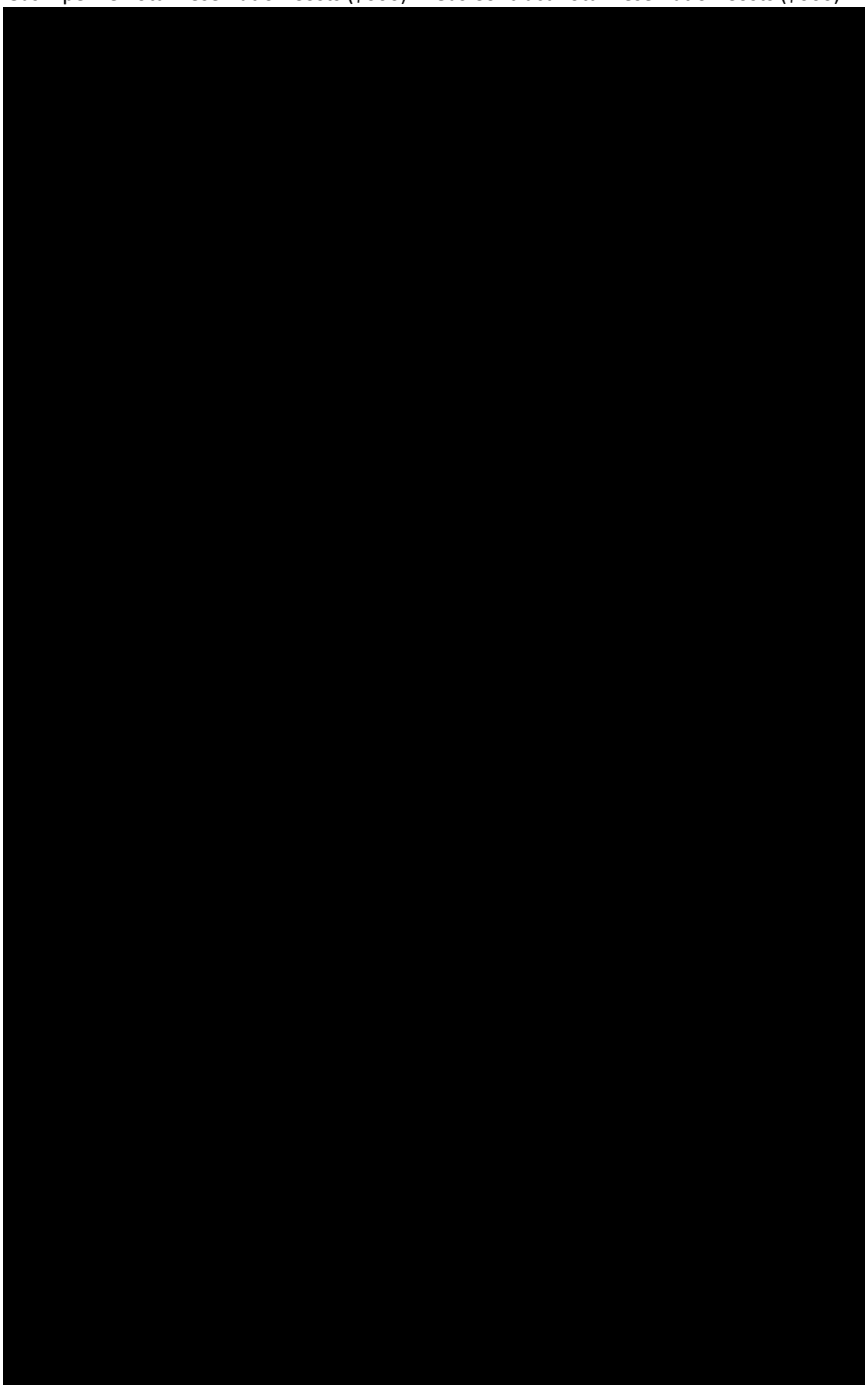


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



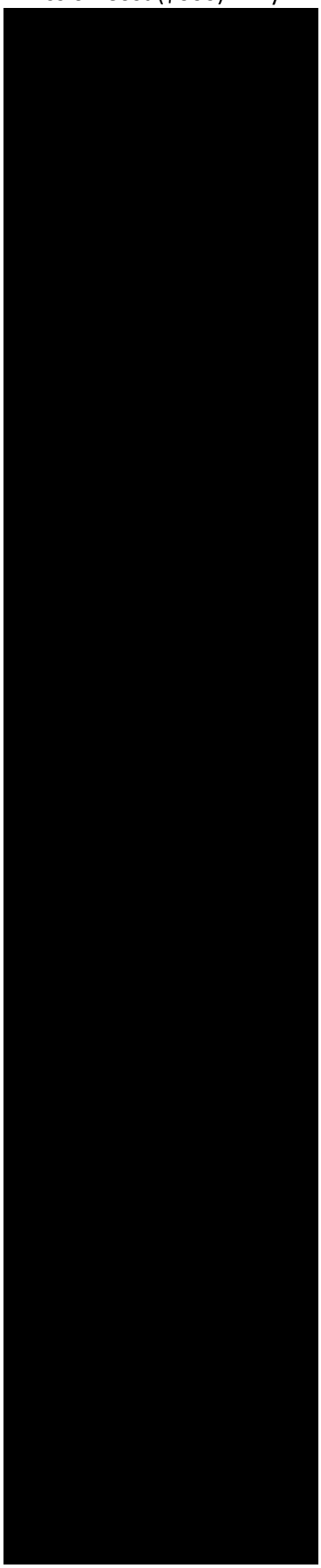


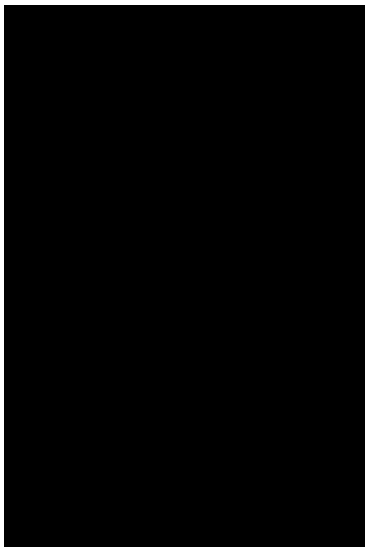
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



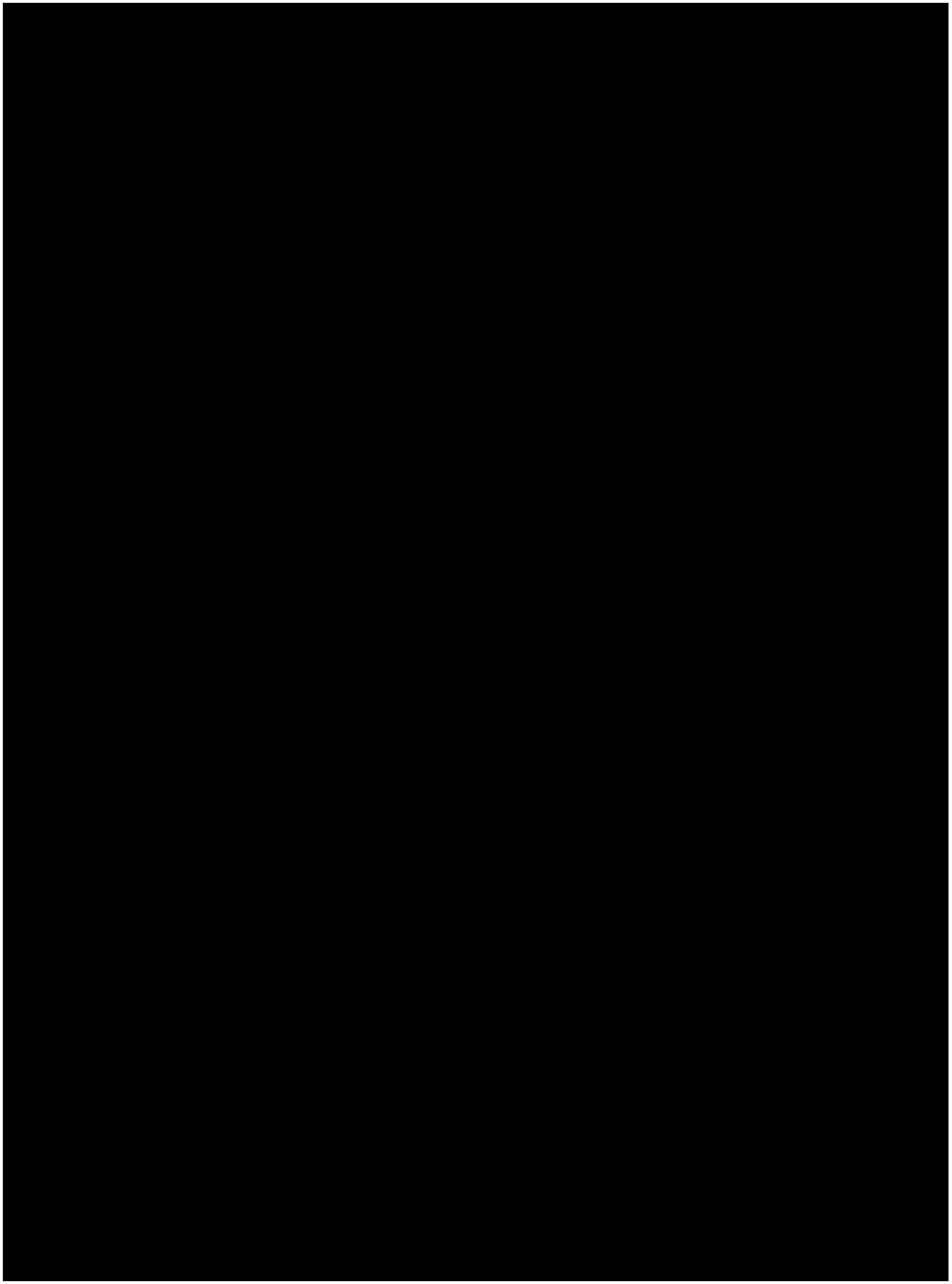


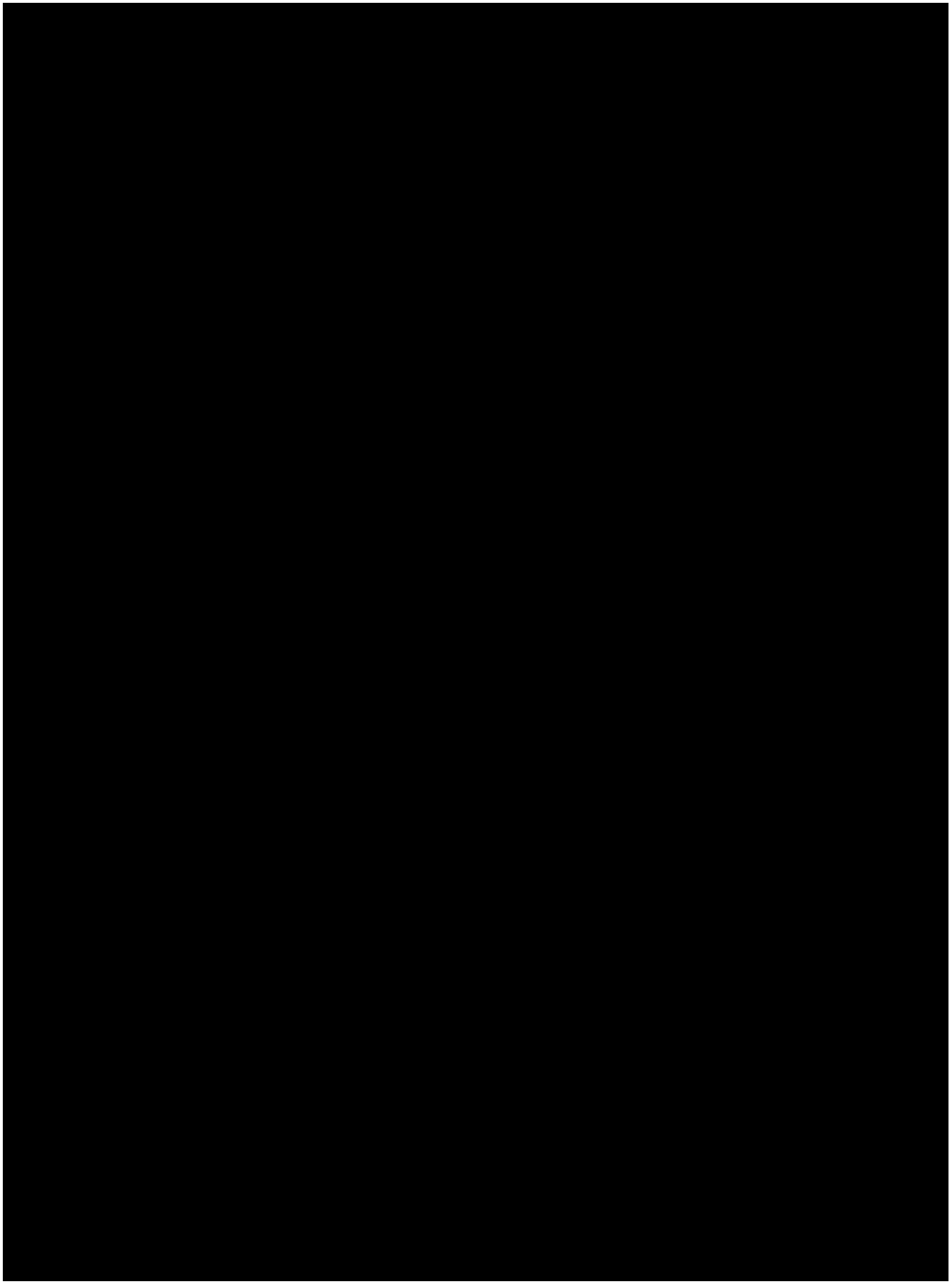
Emission Cost ($000) x y z

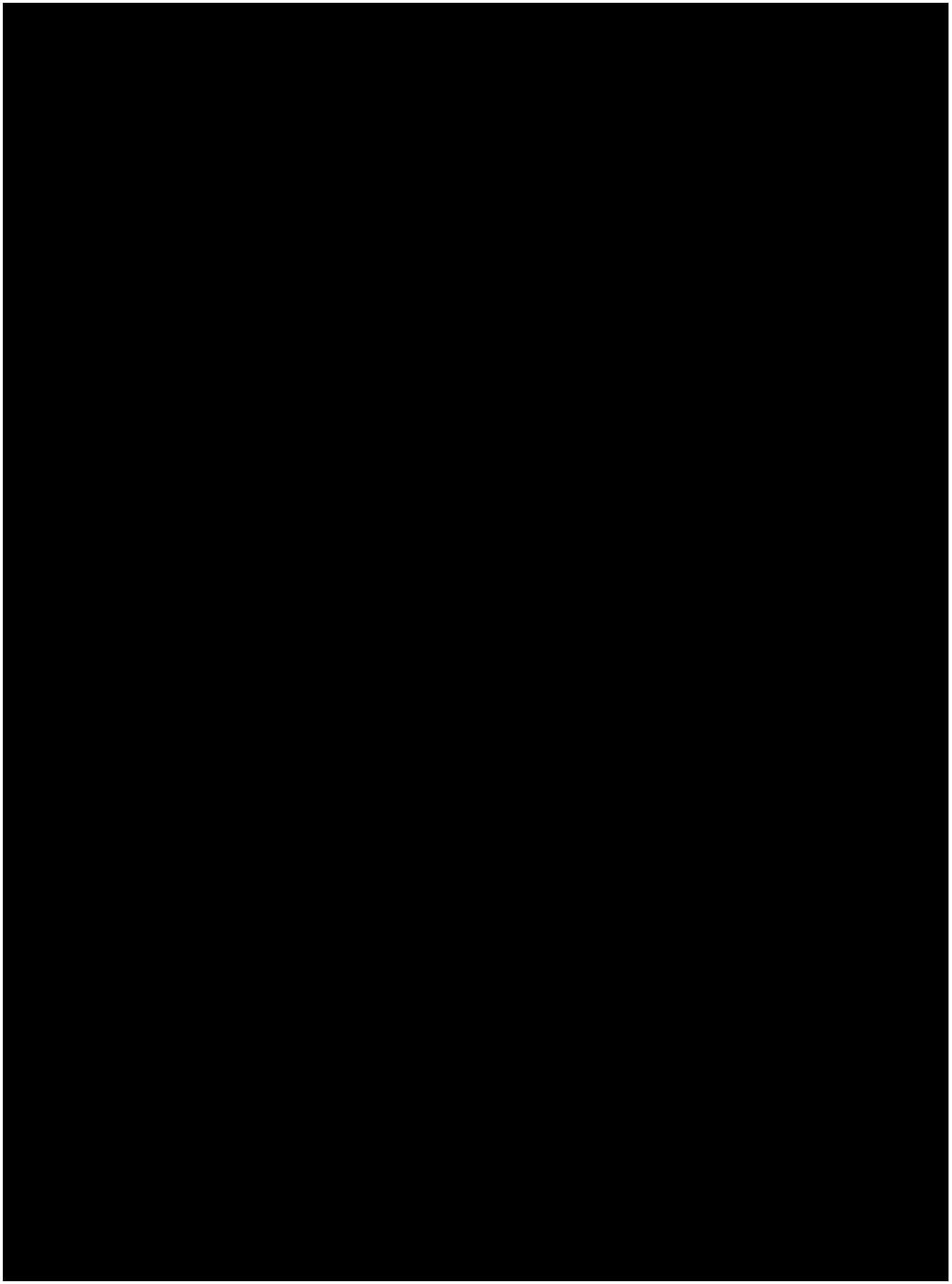


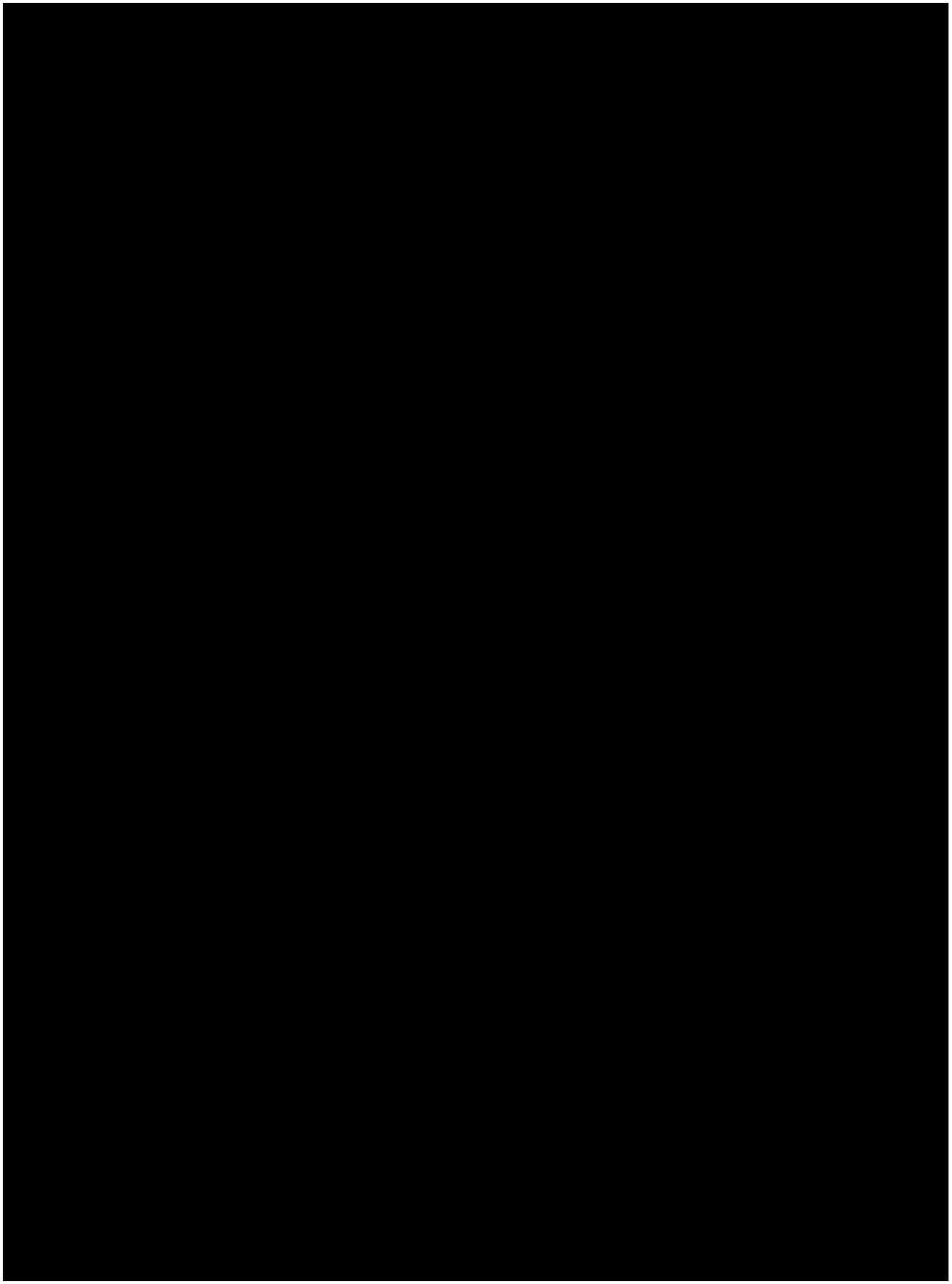


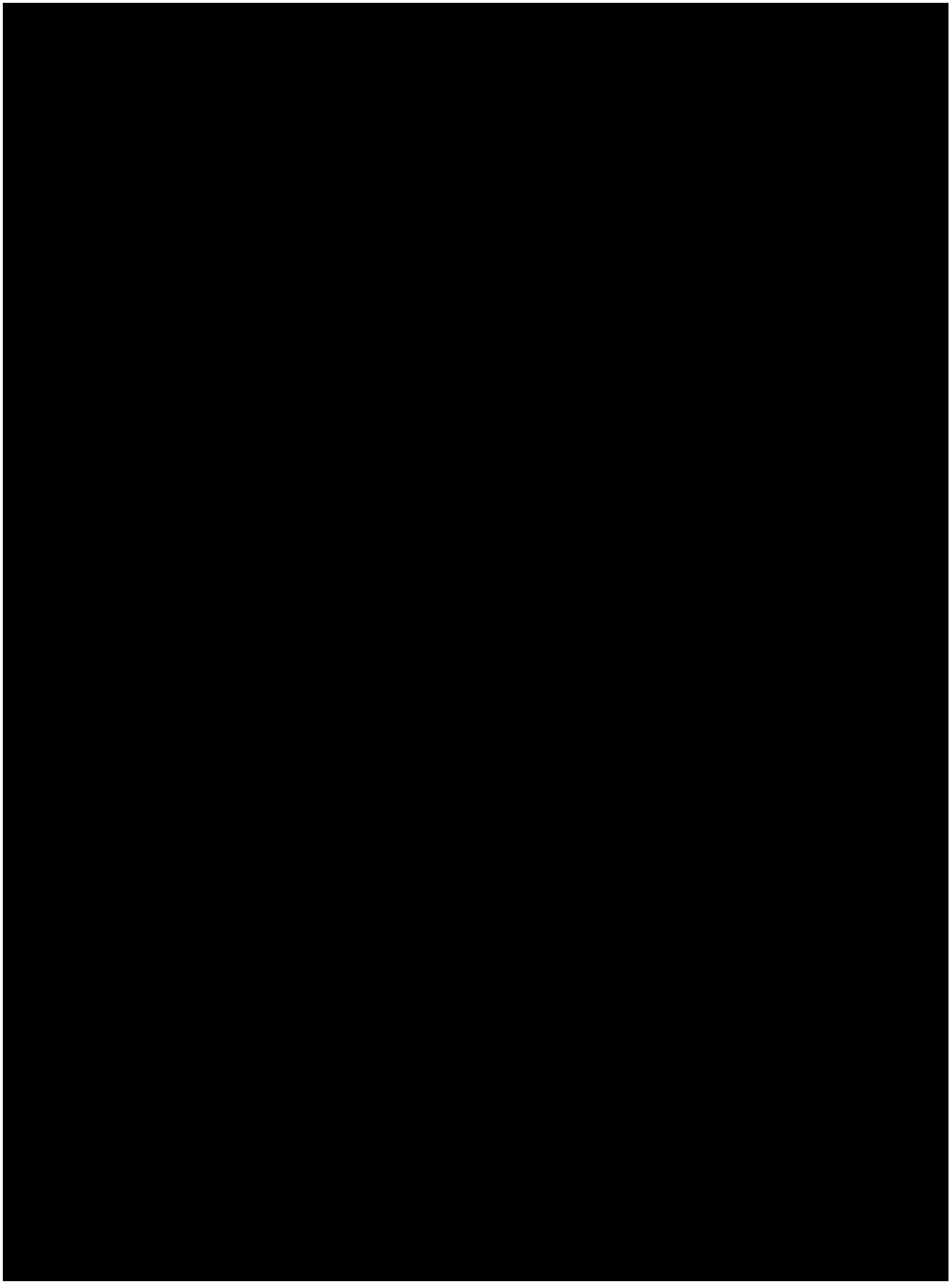
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

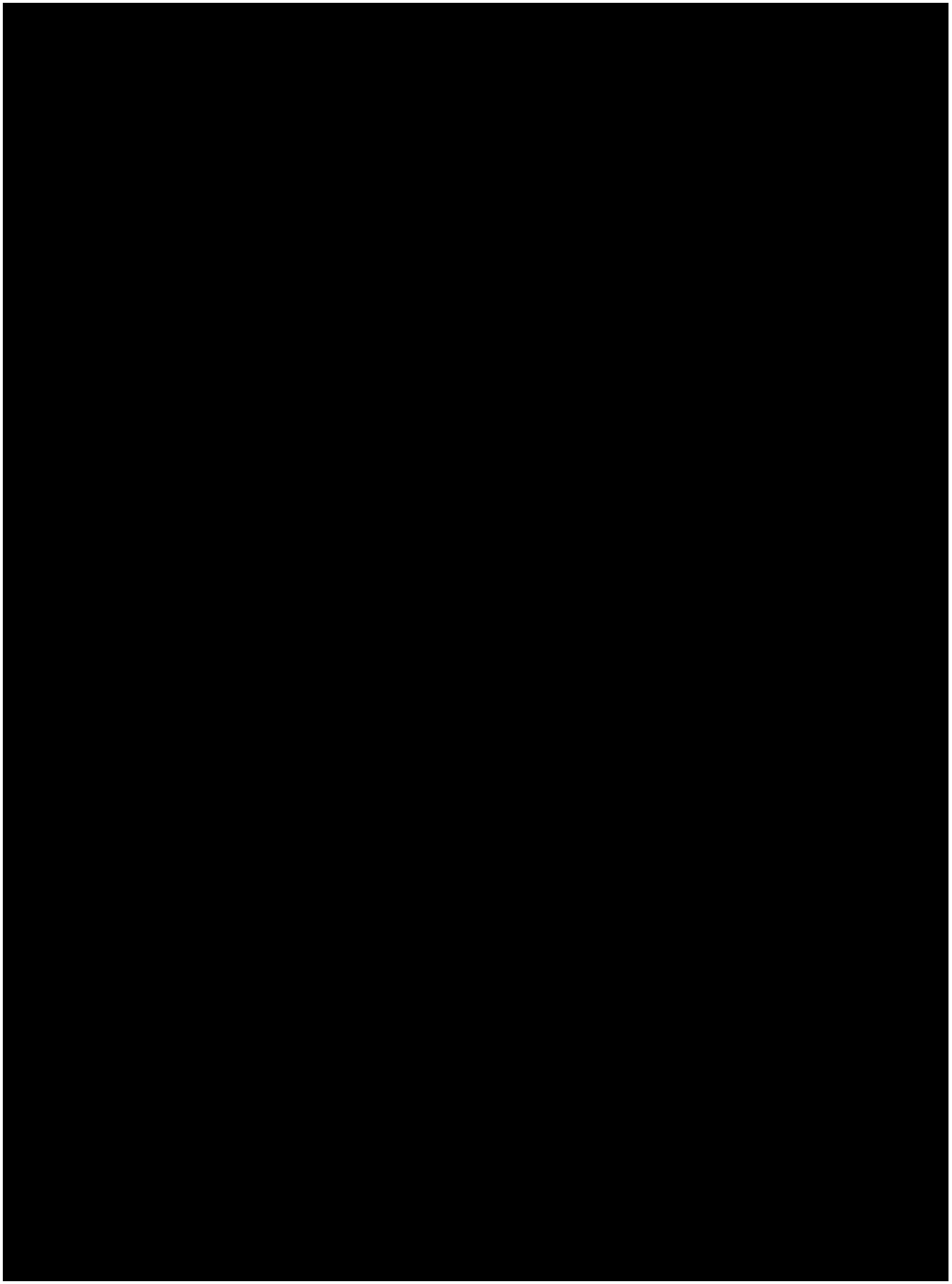


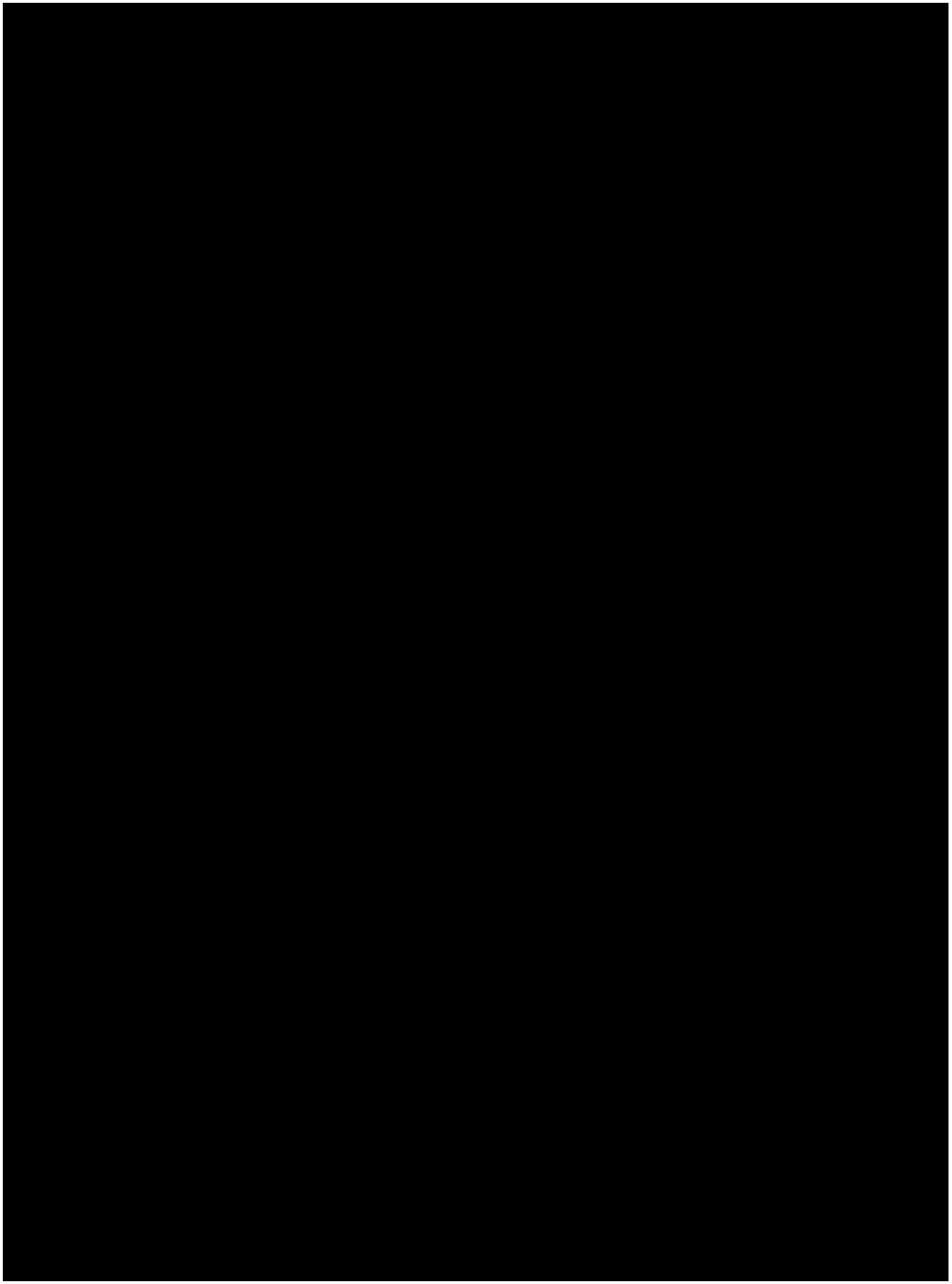


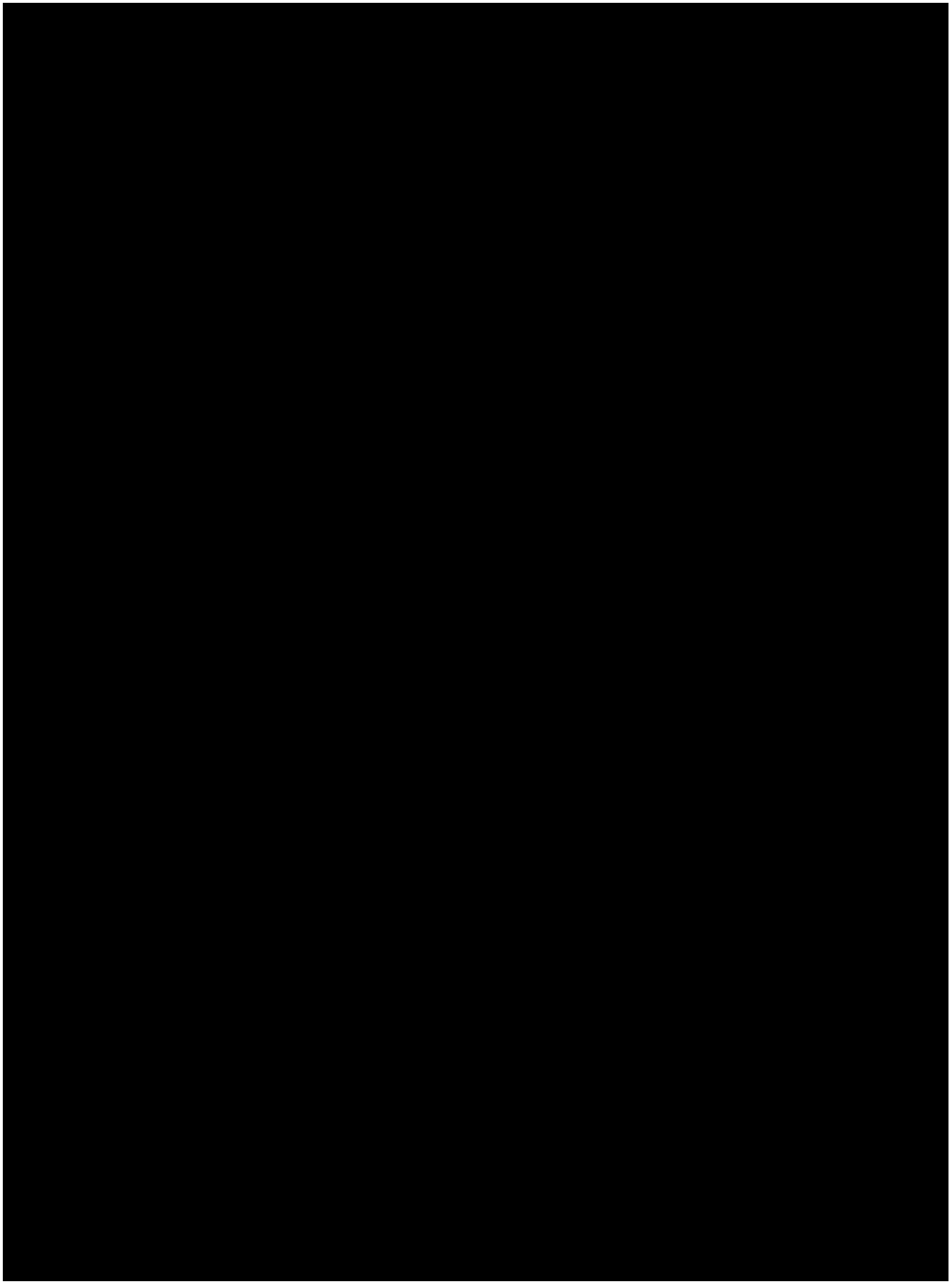


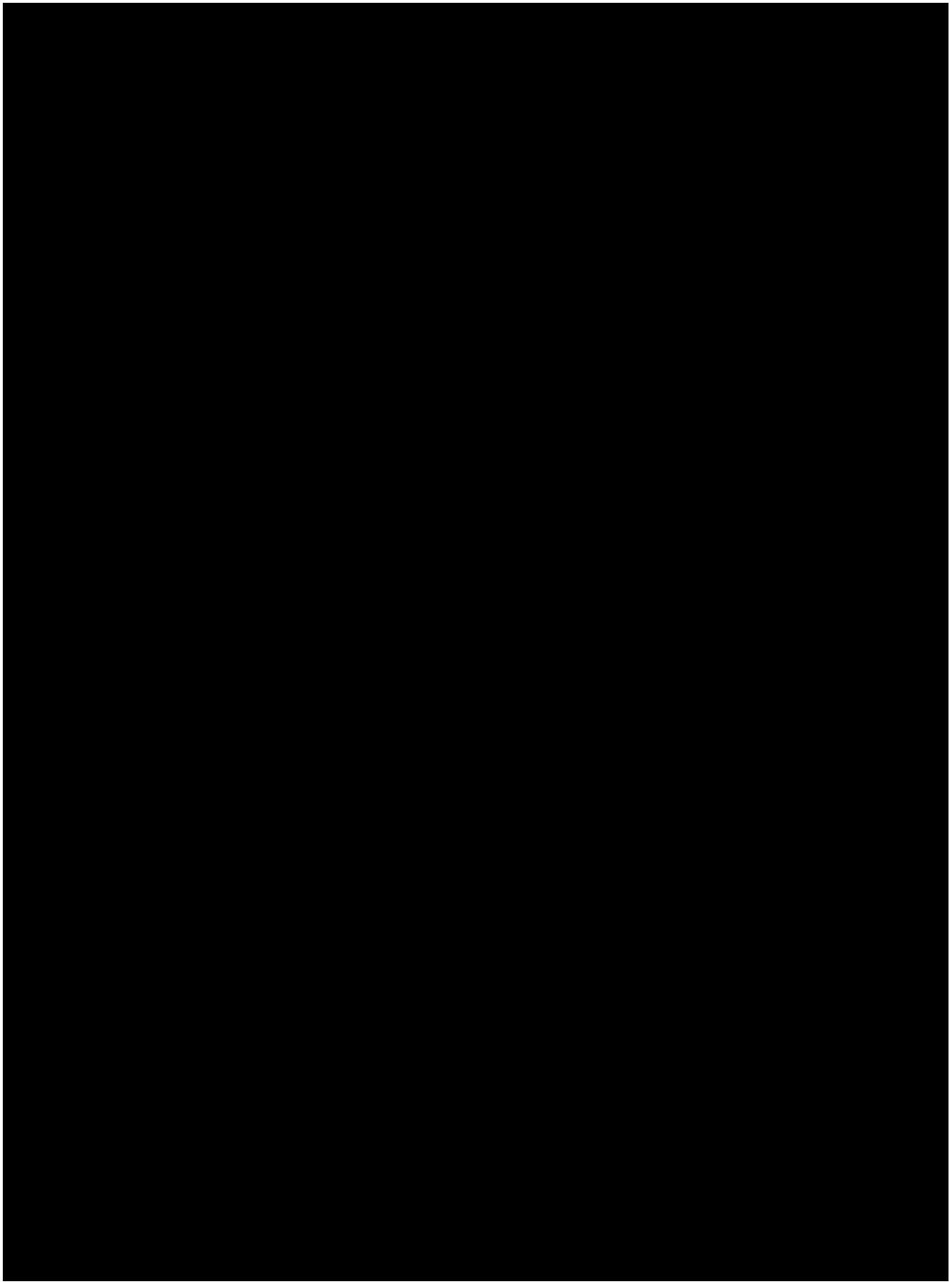


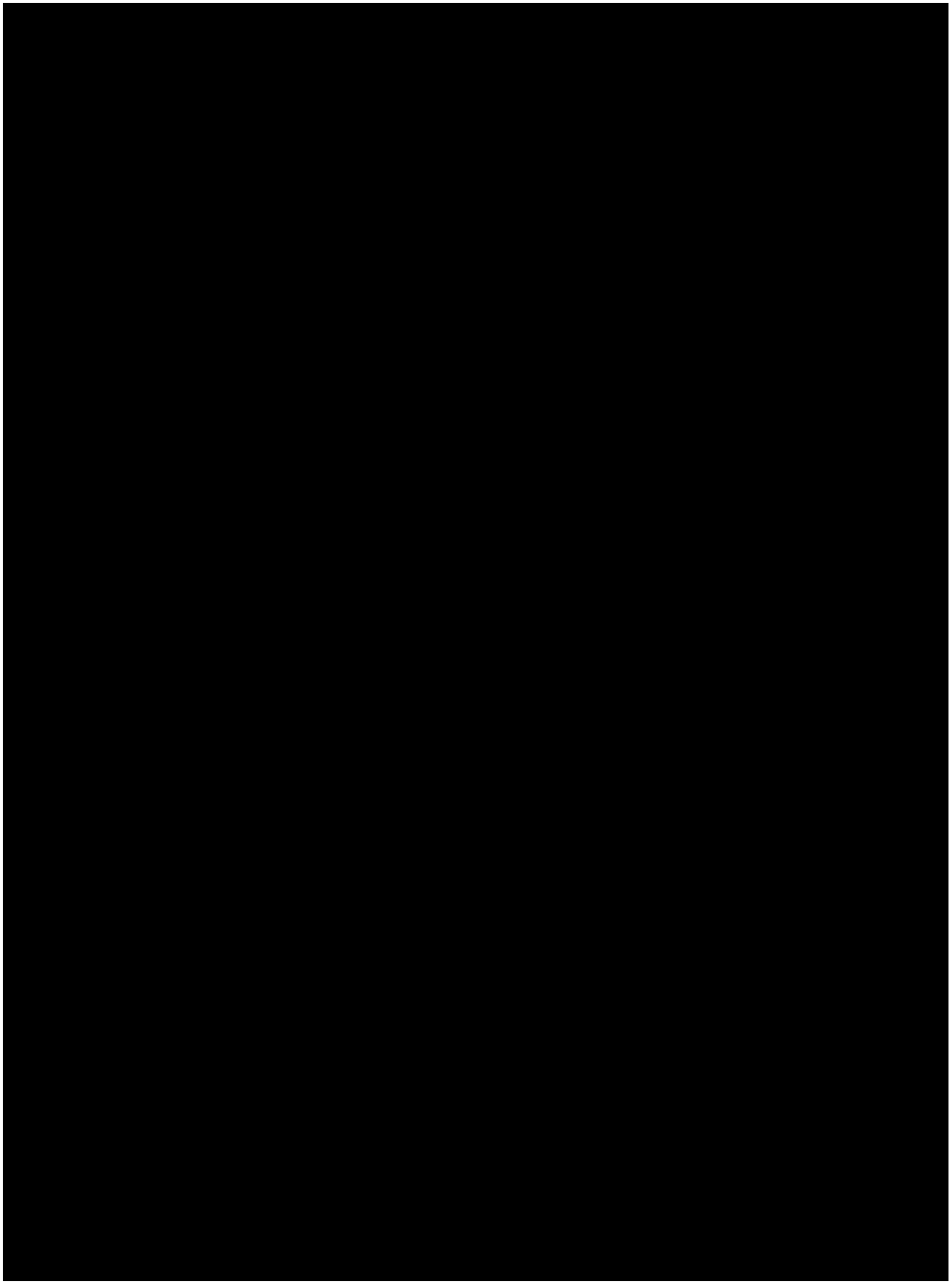


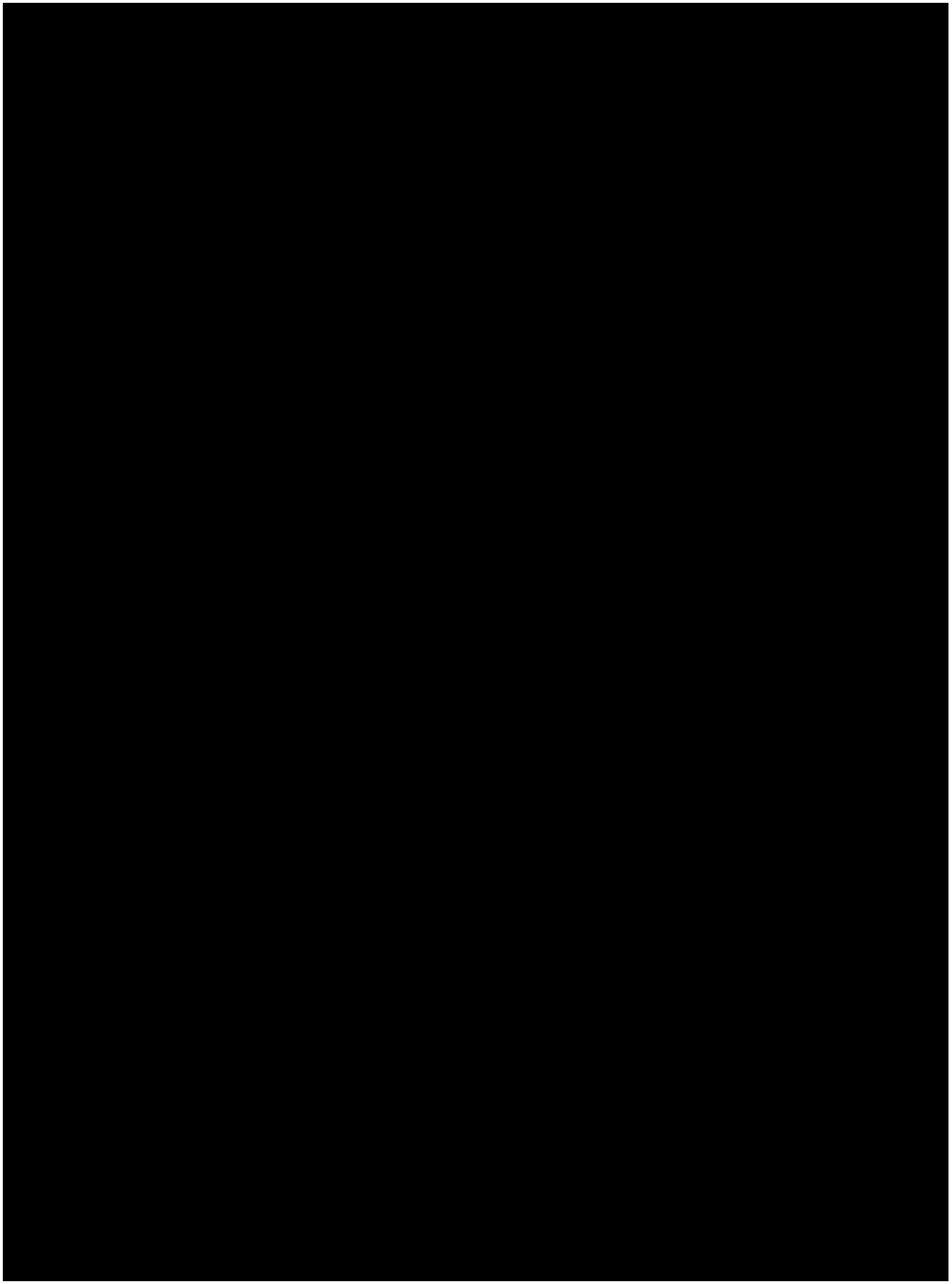


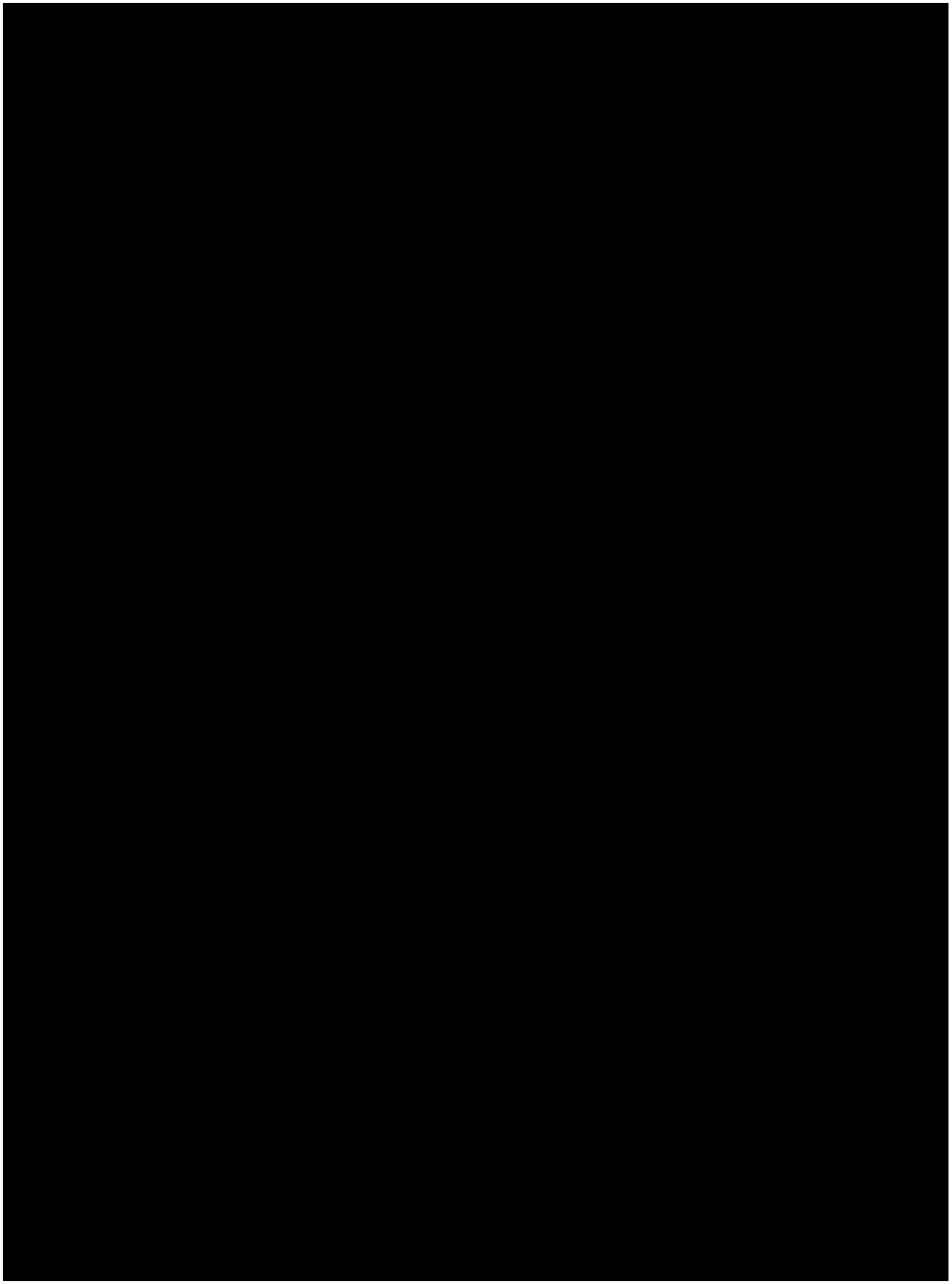


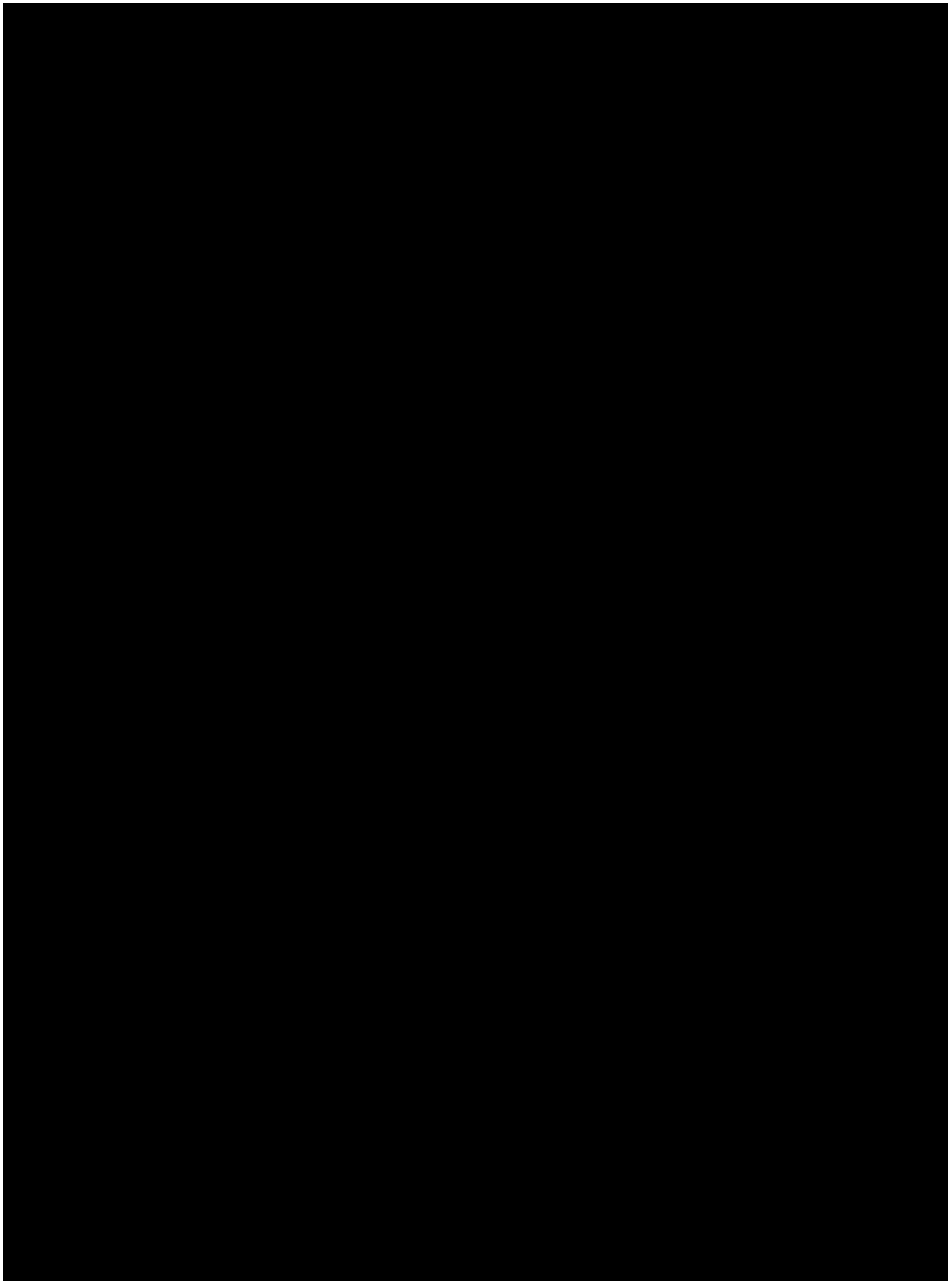


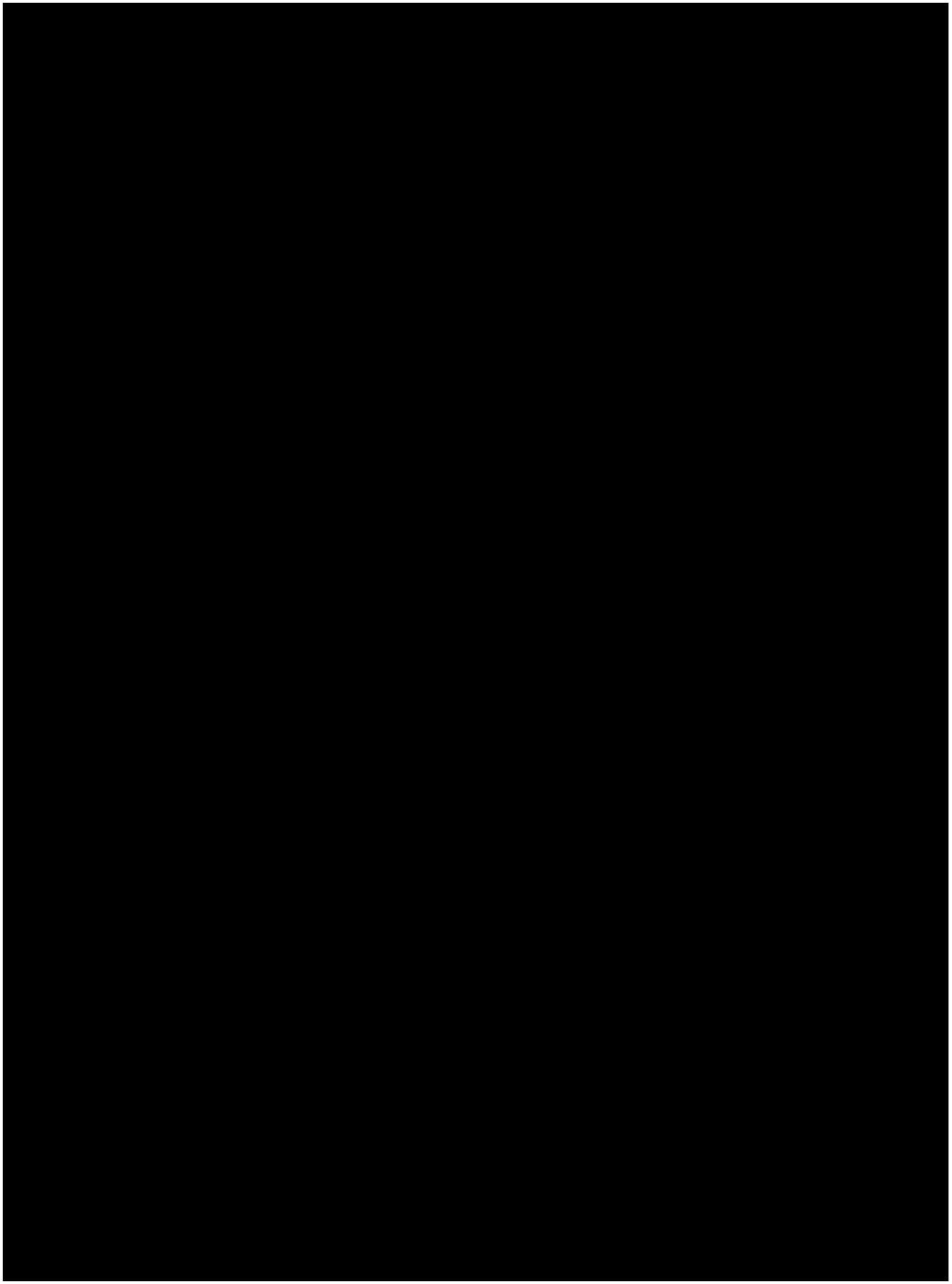


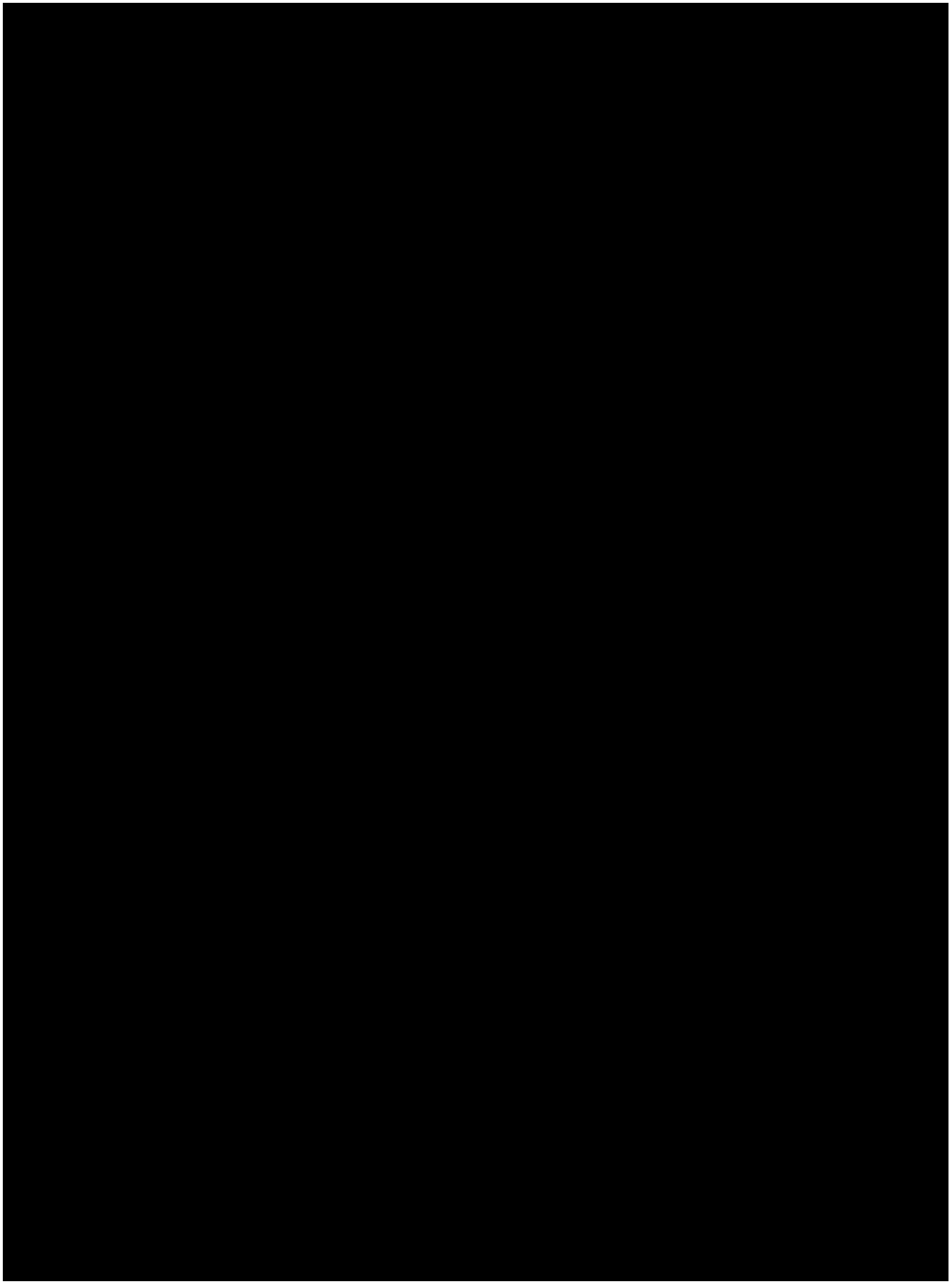


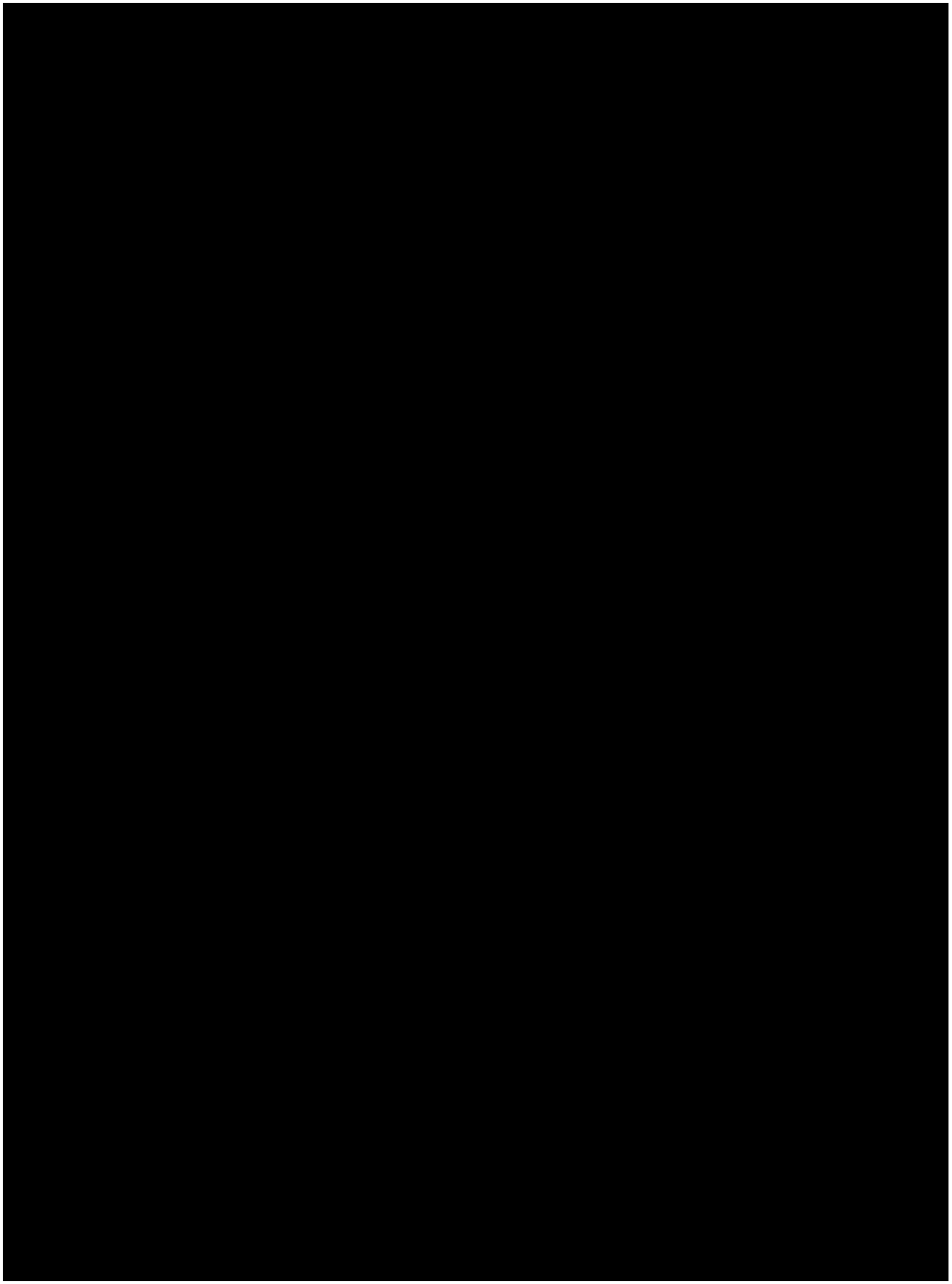


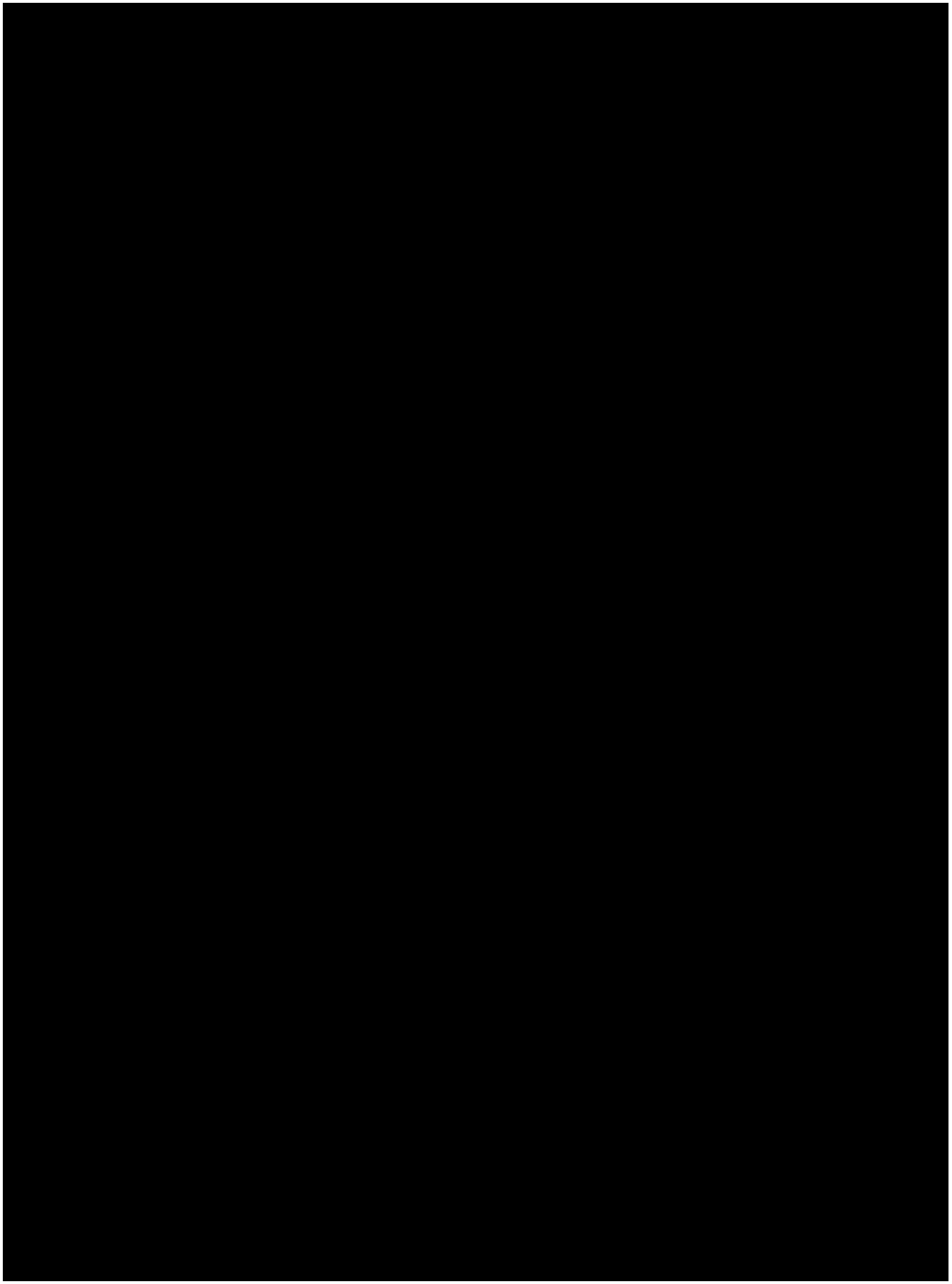


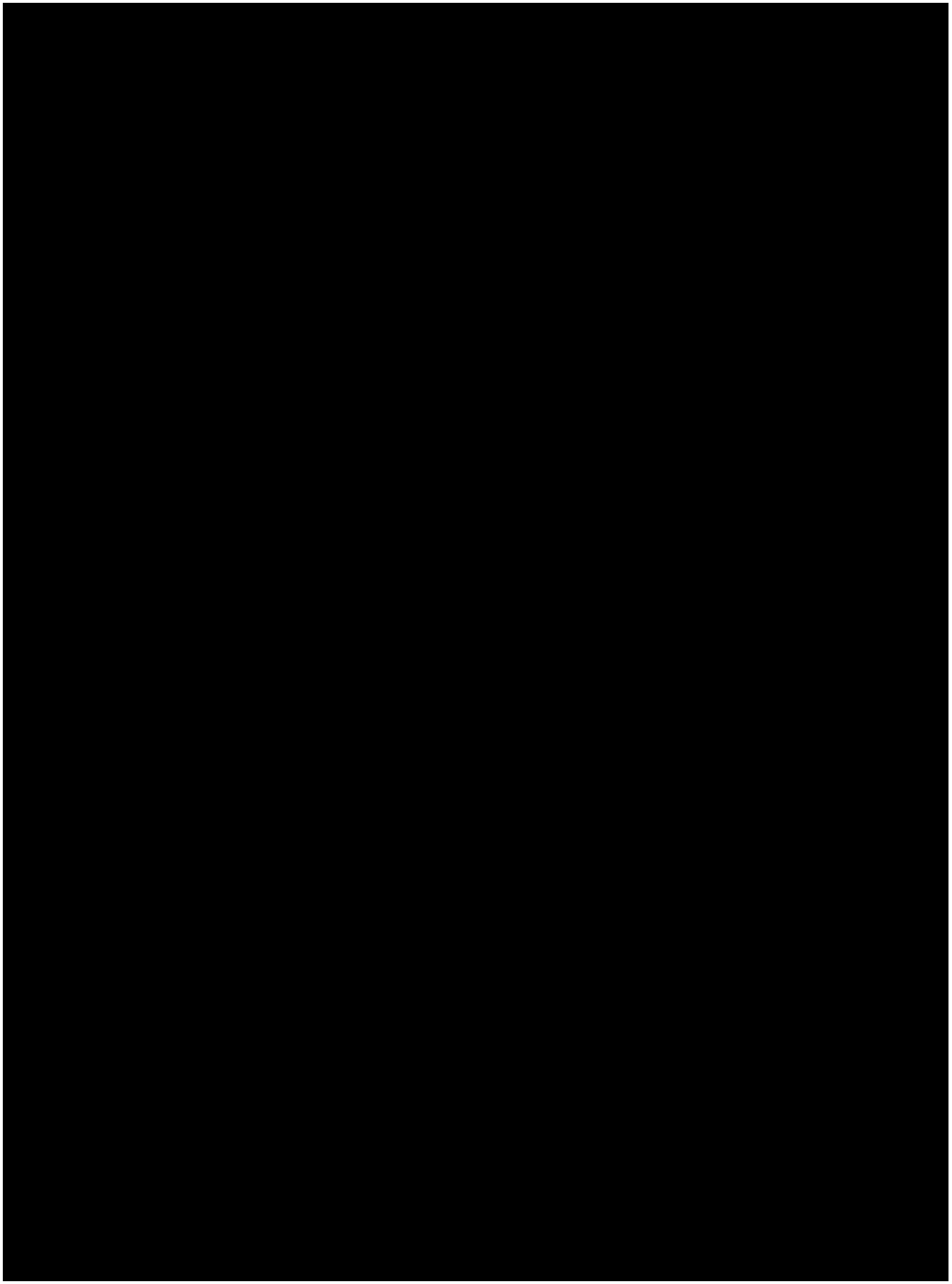




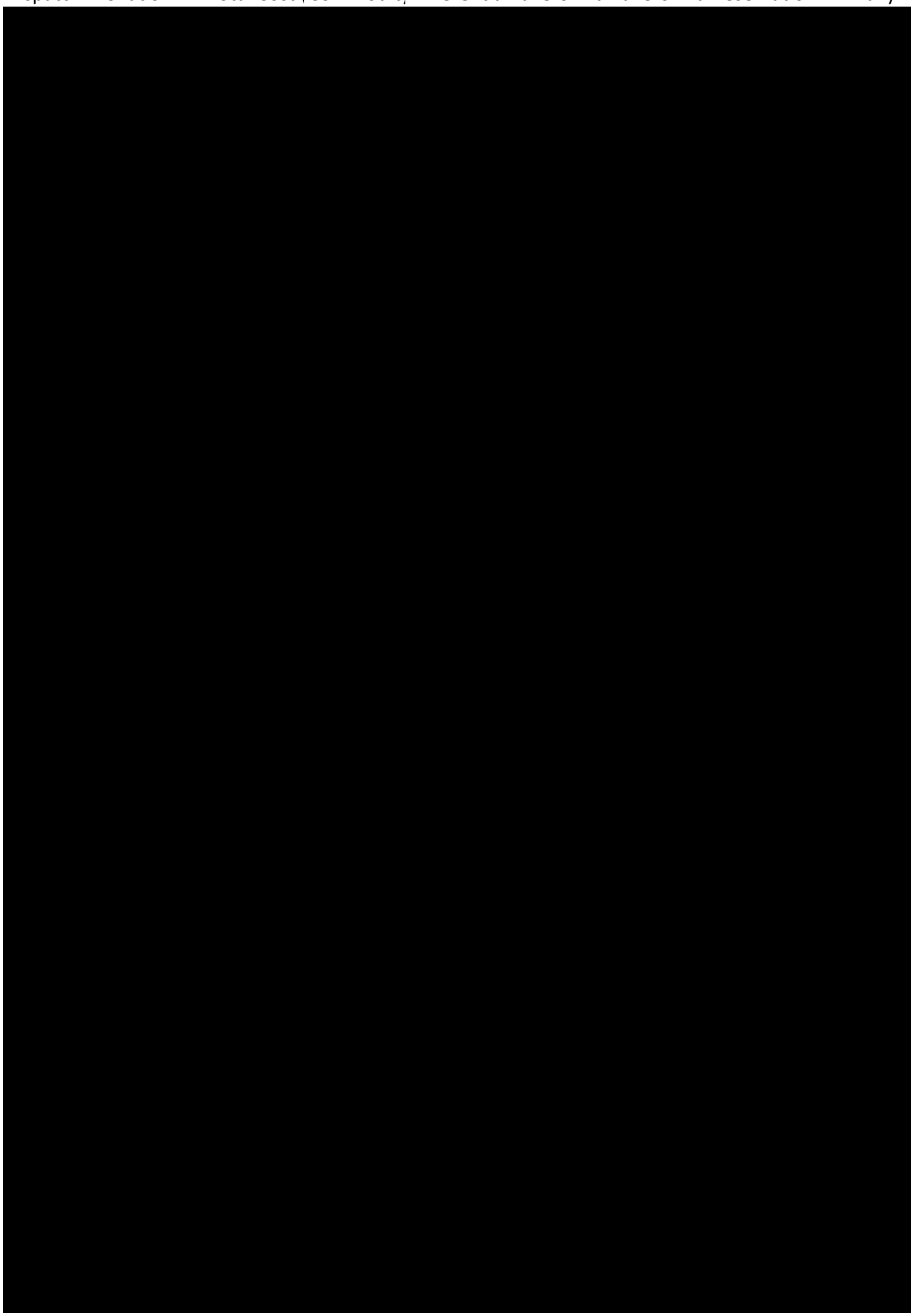


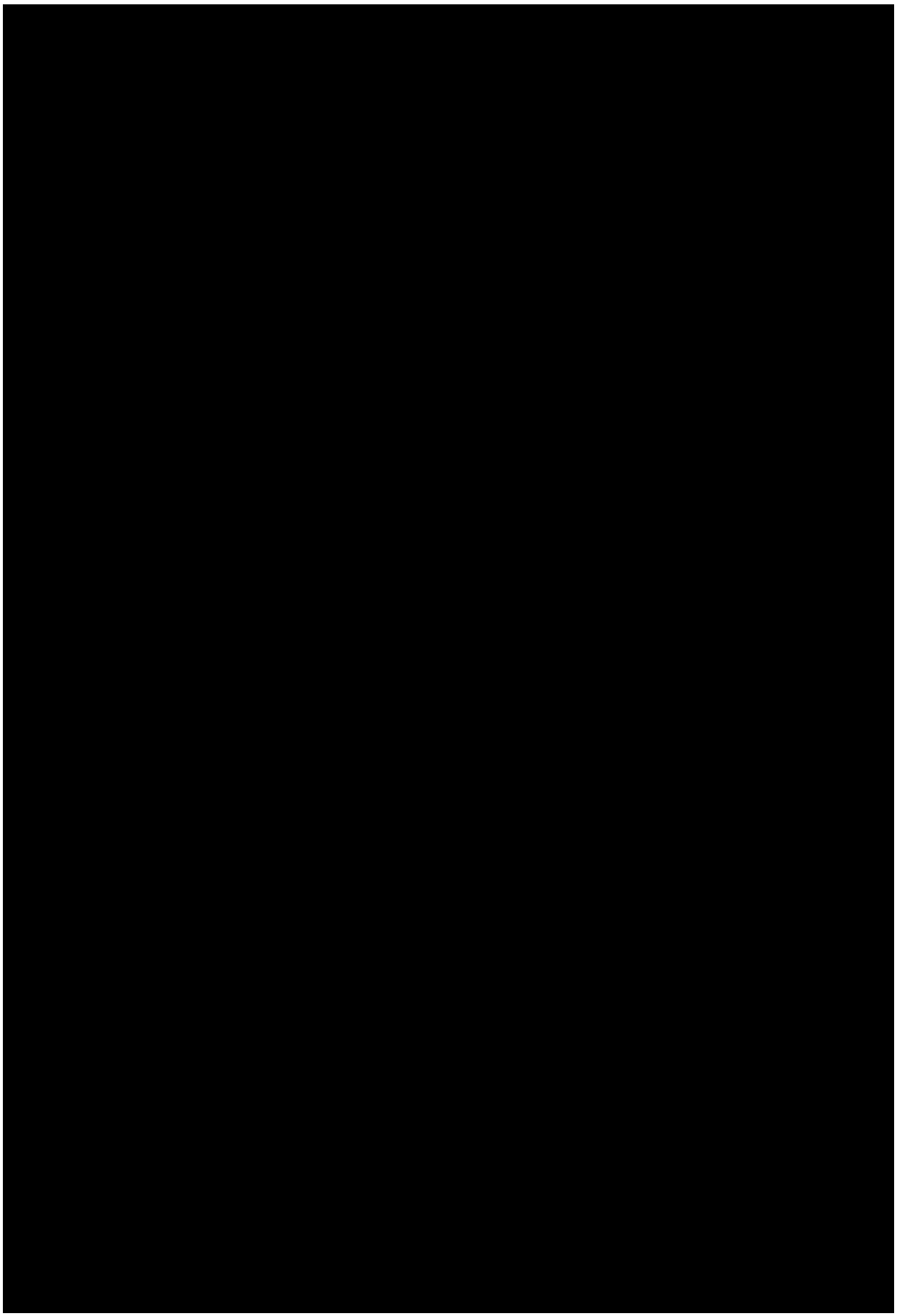


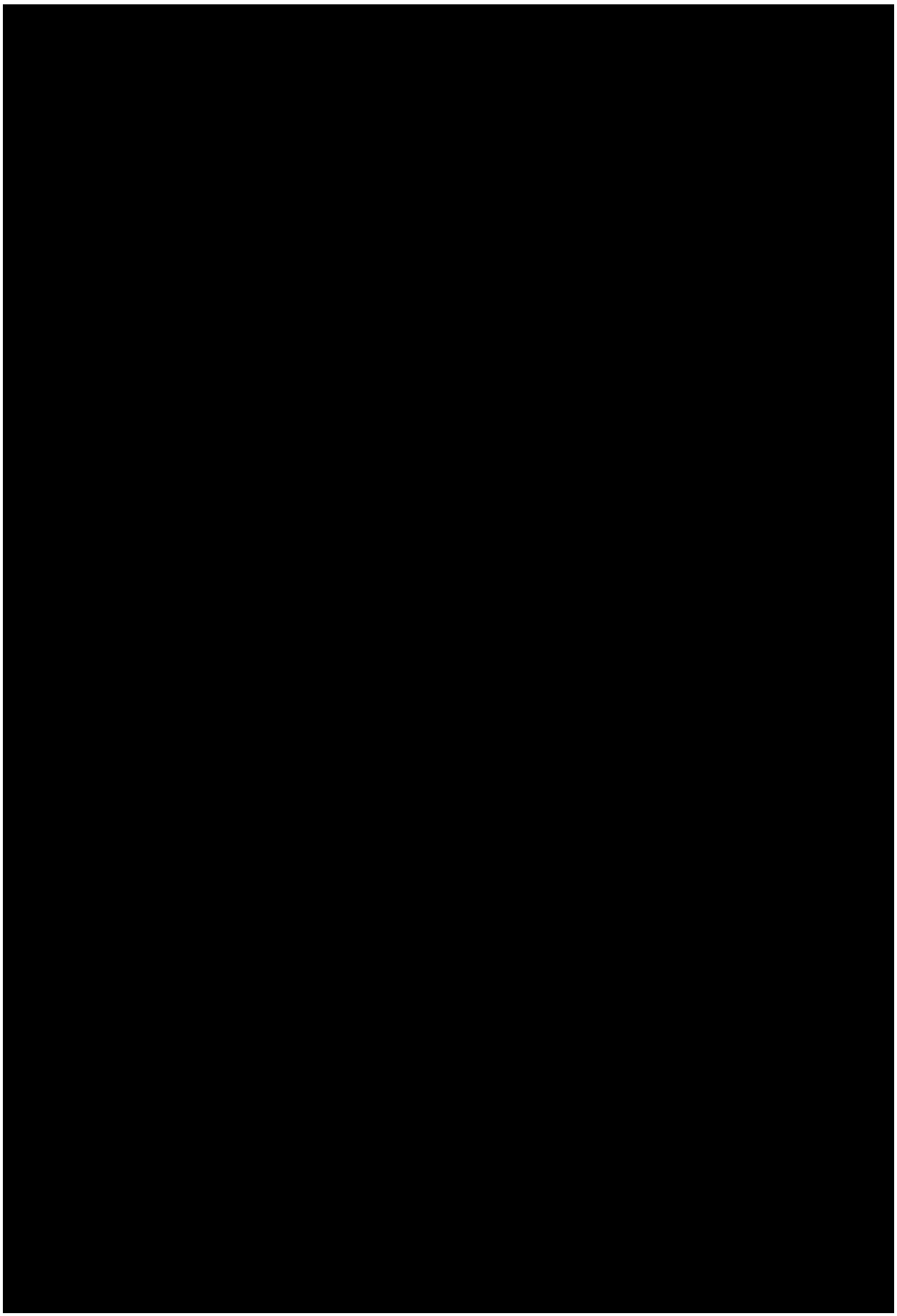


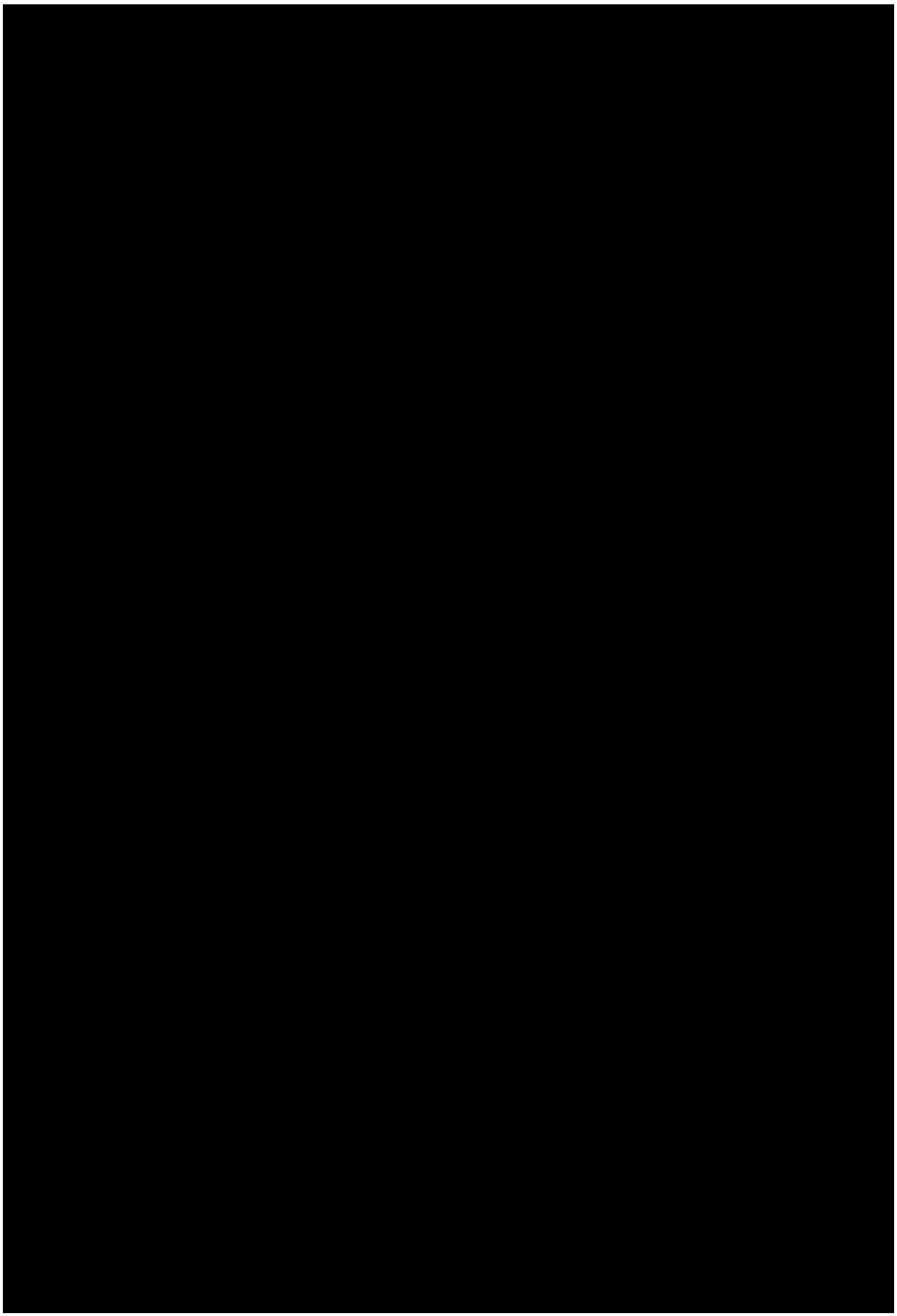


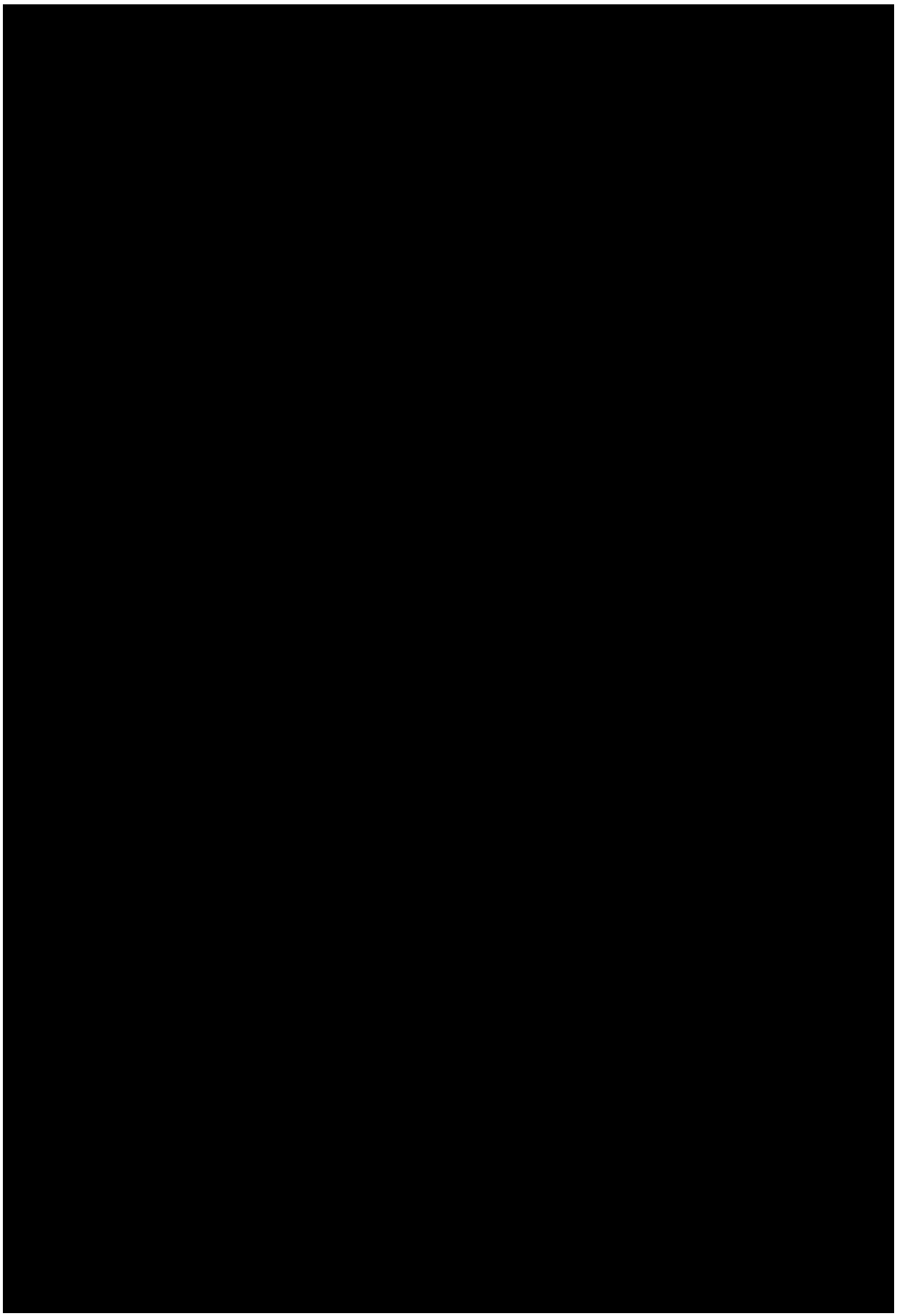


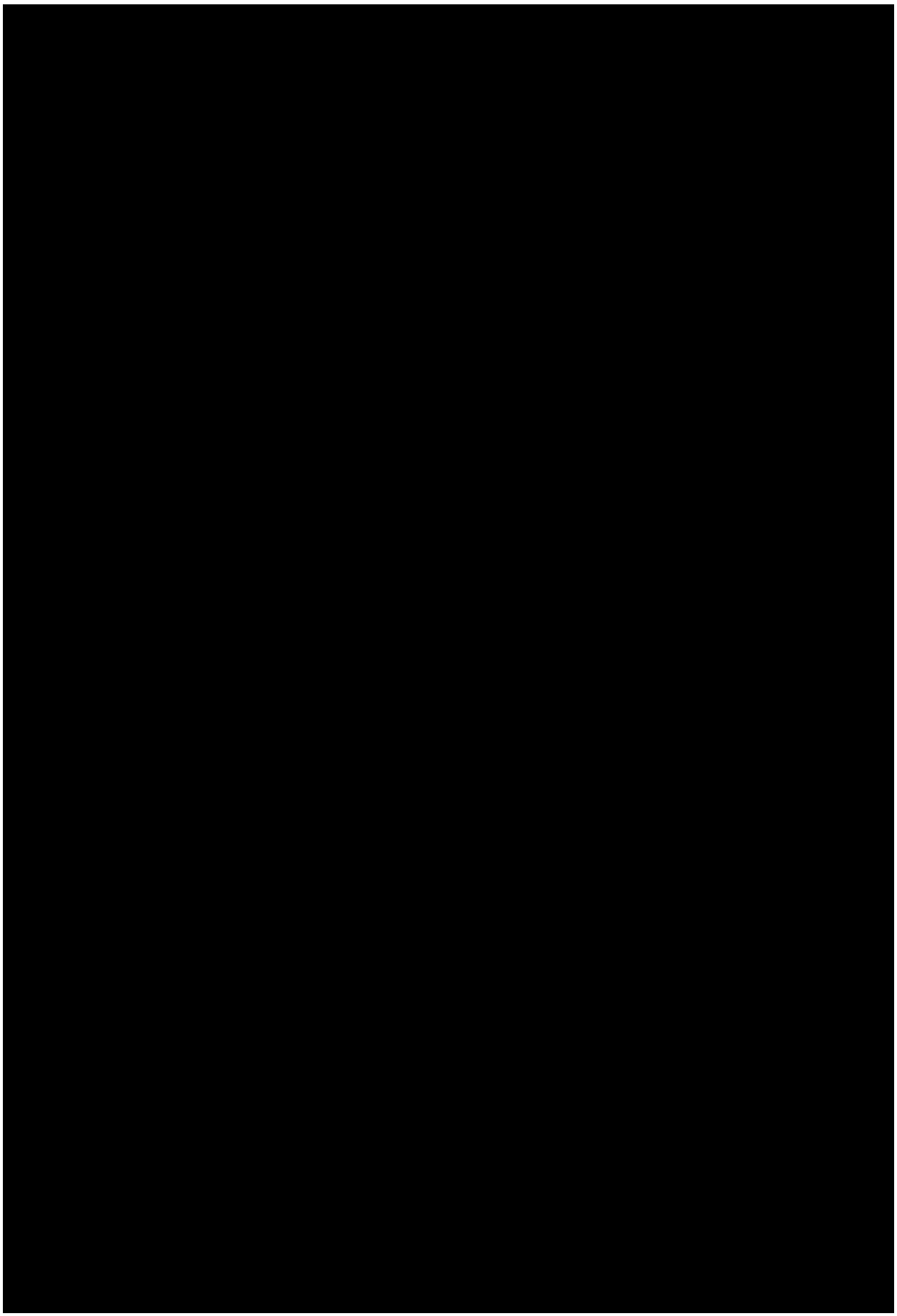

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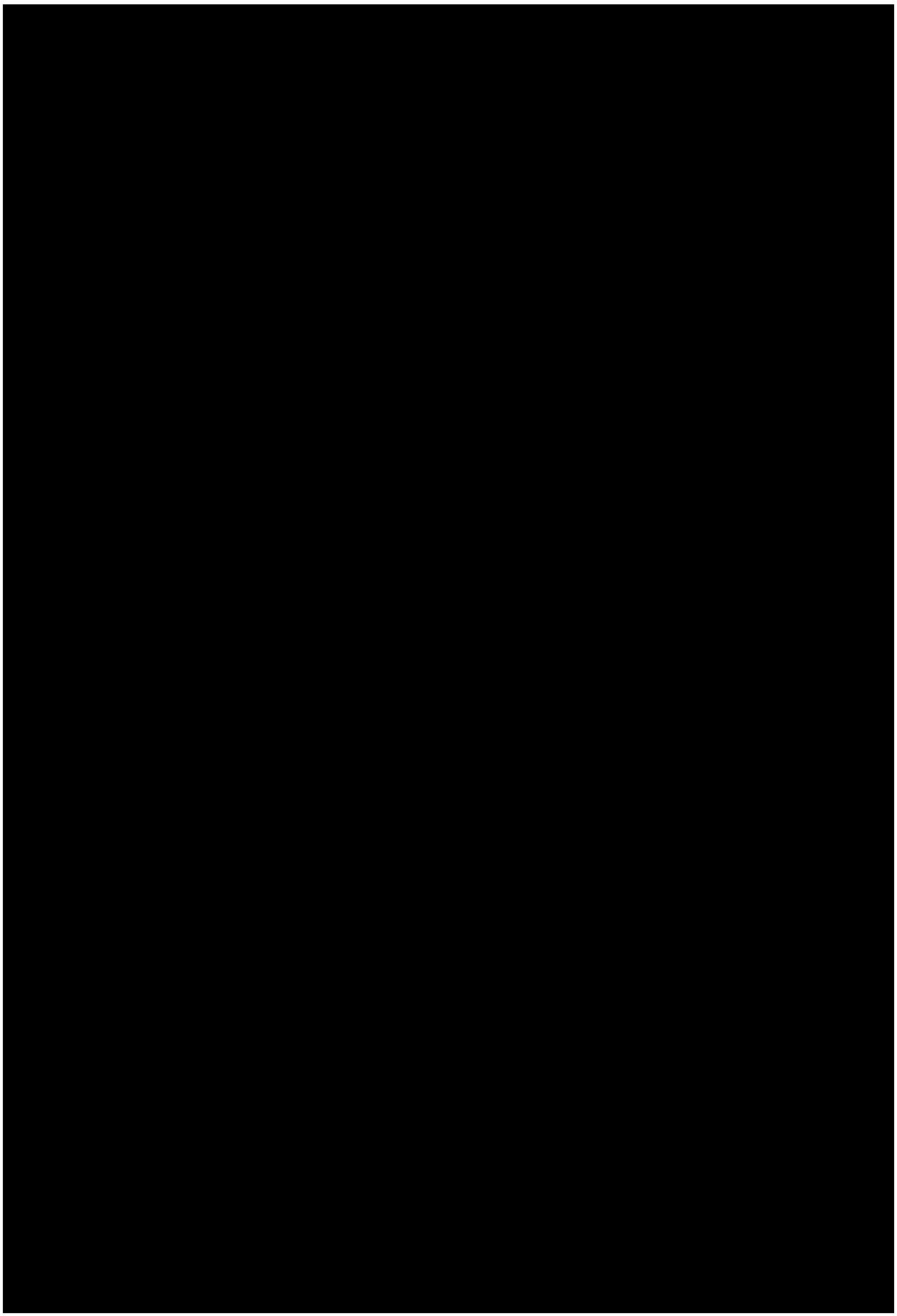


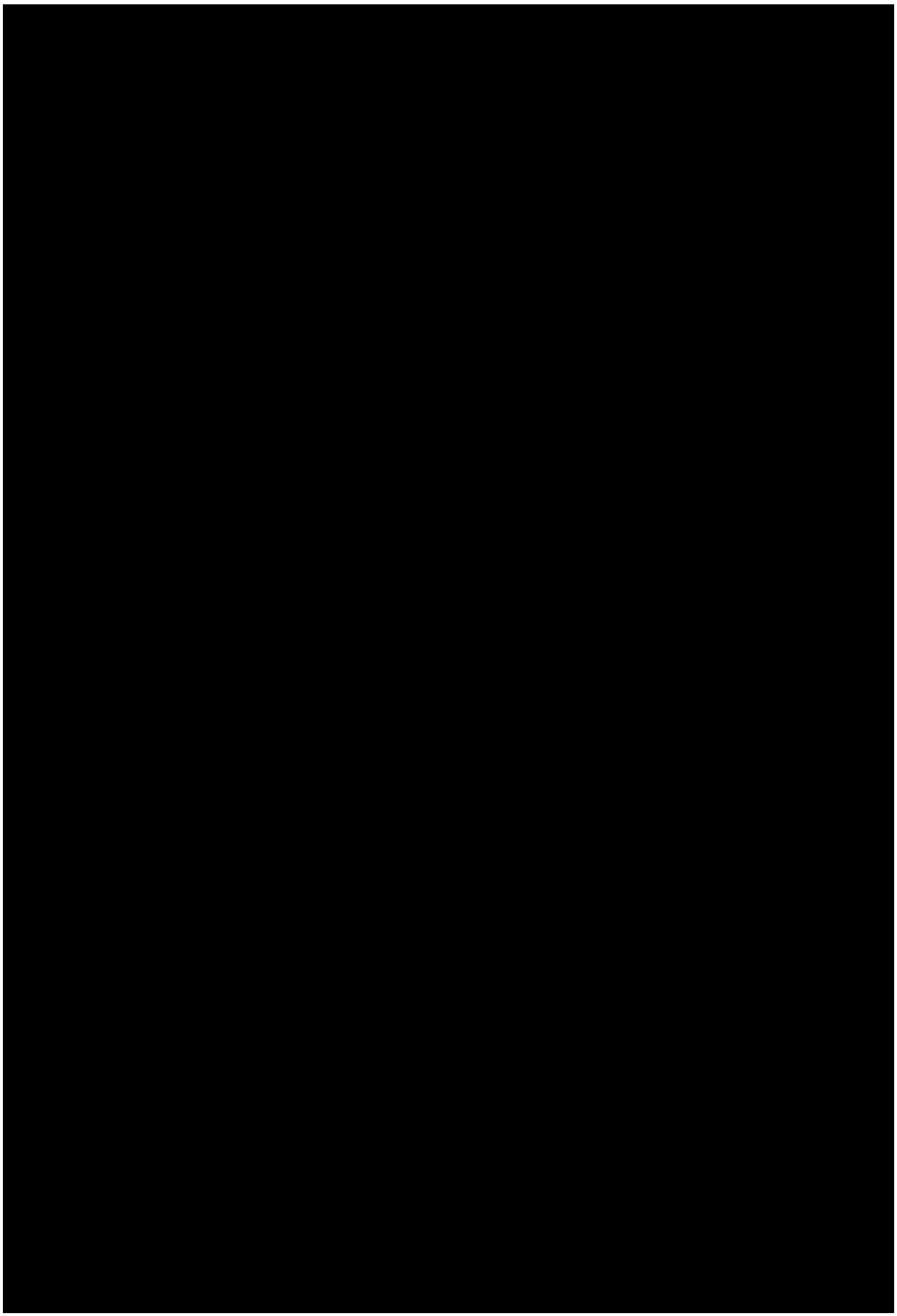


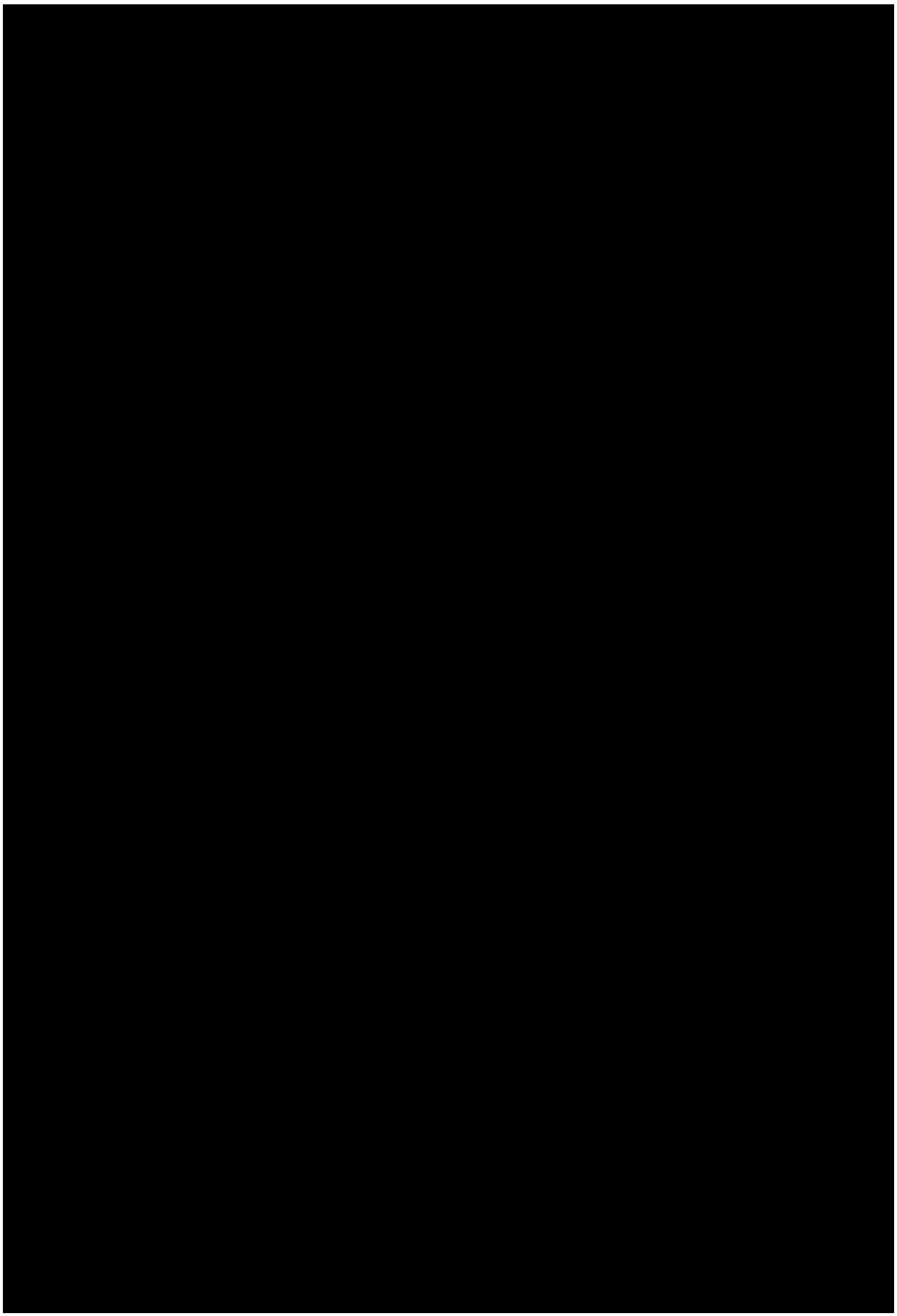


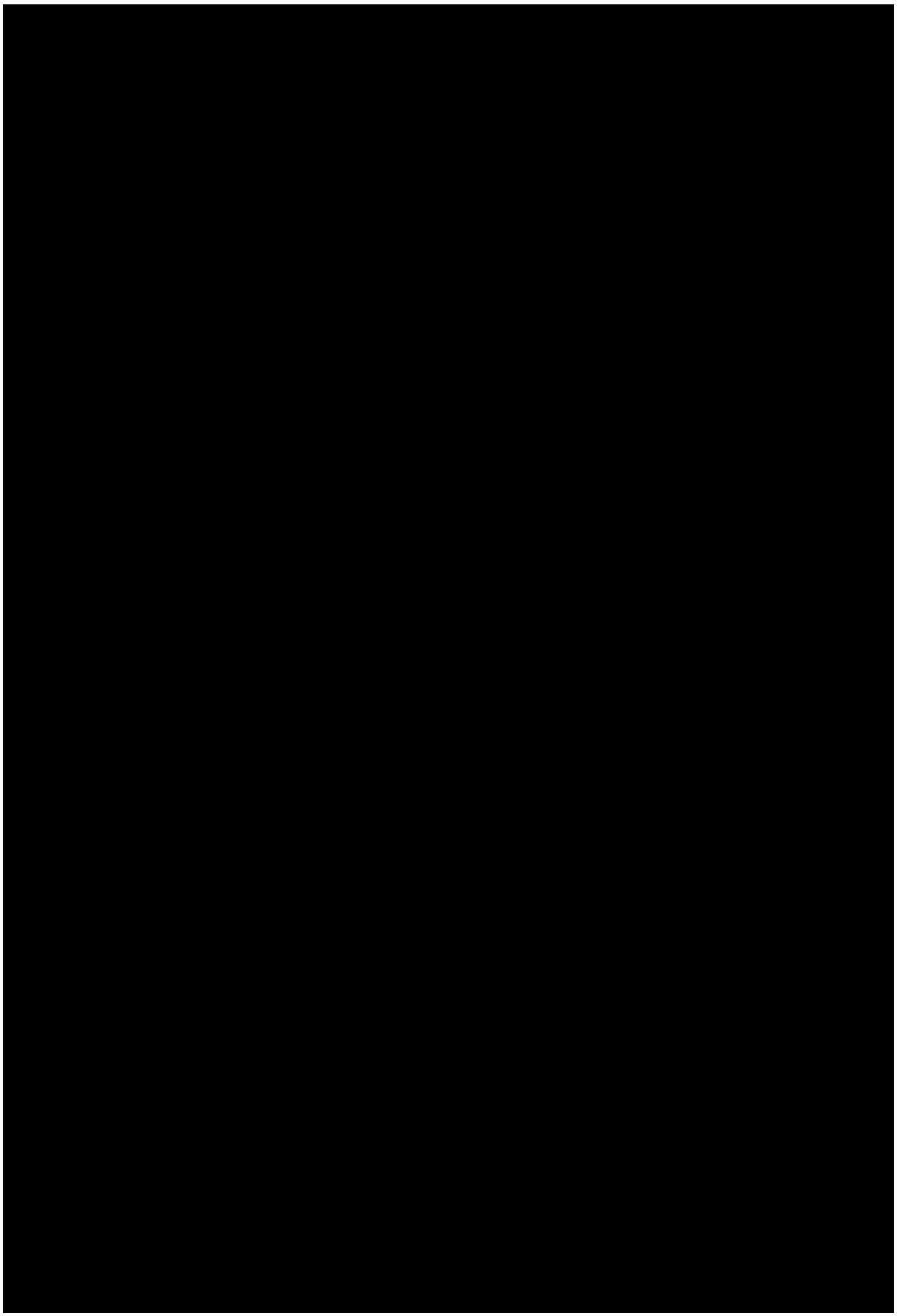


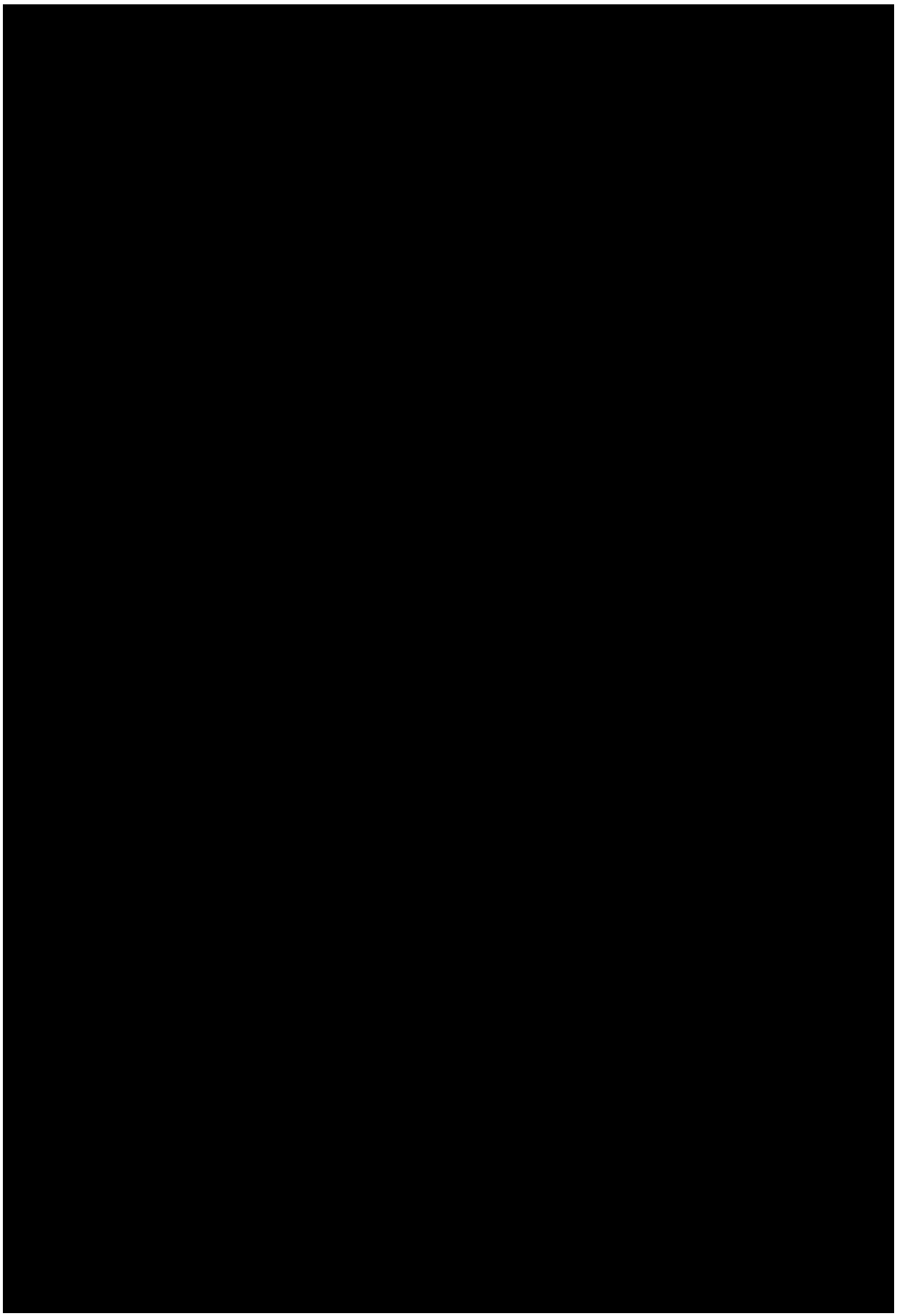


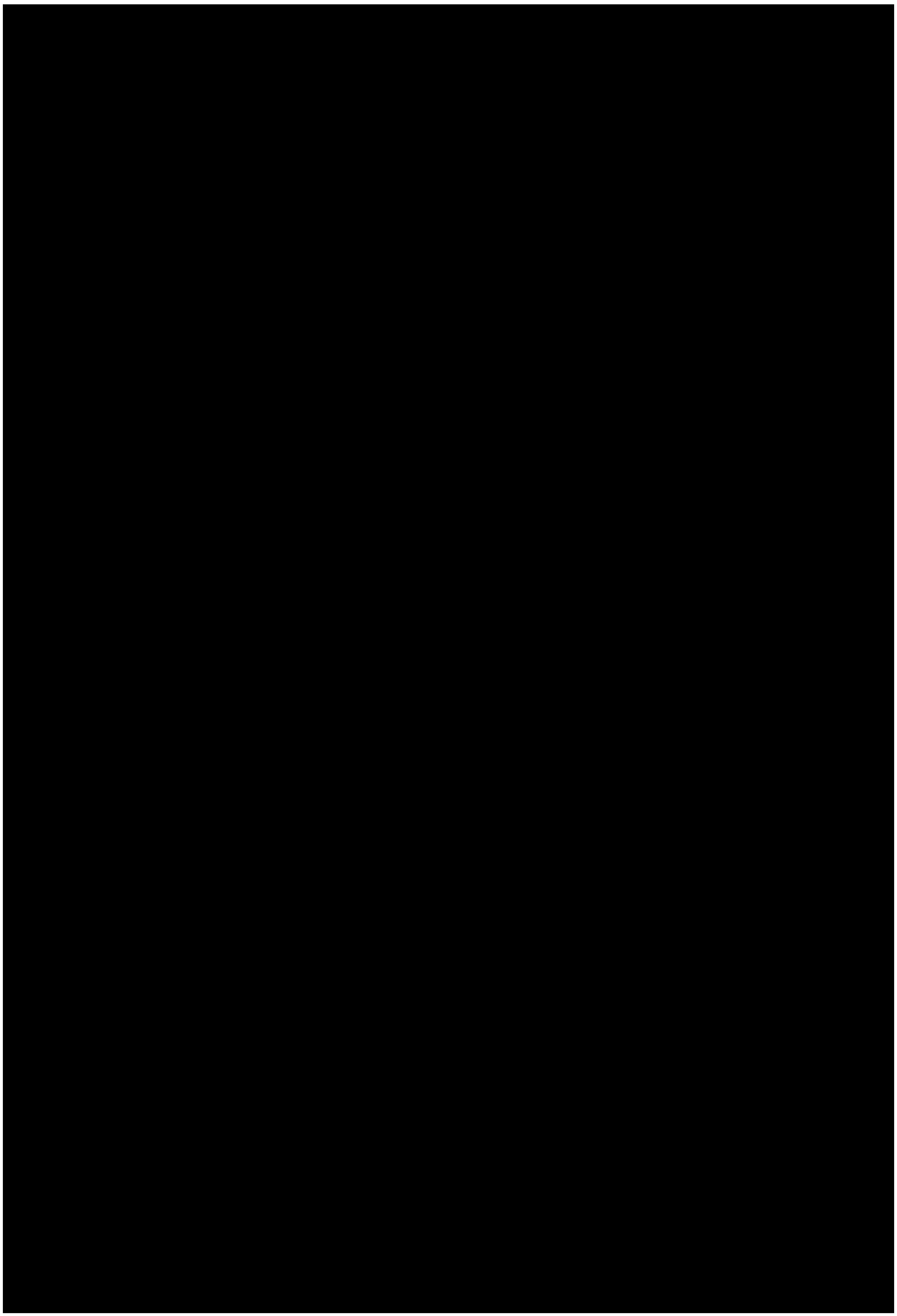


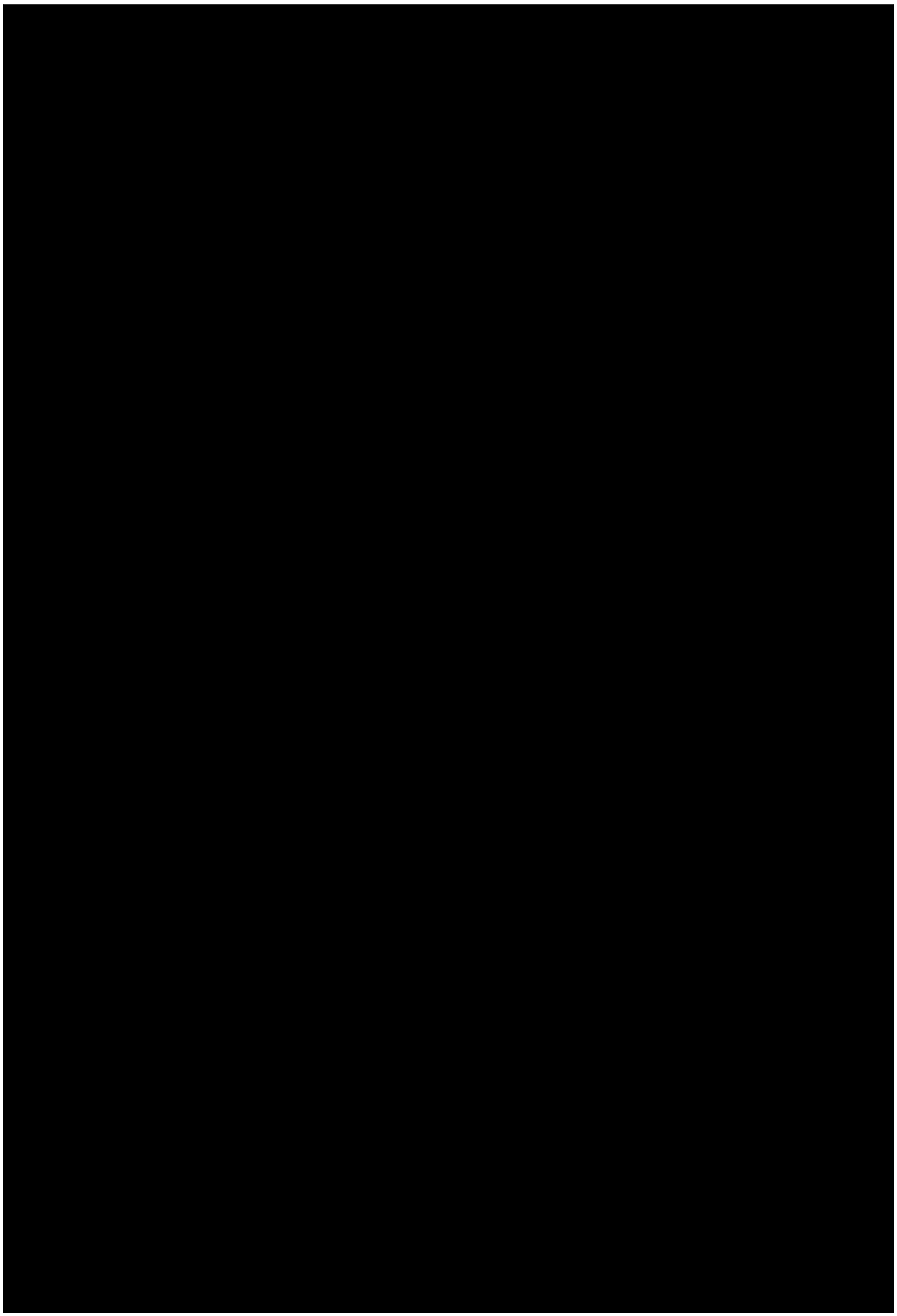


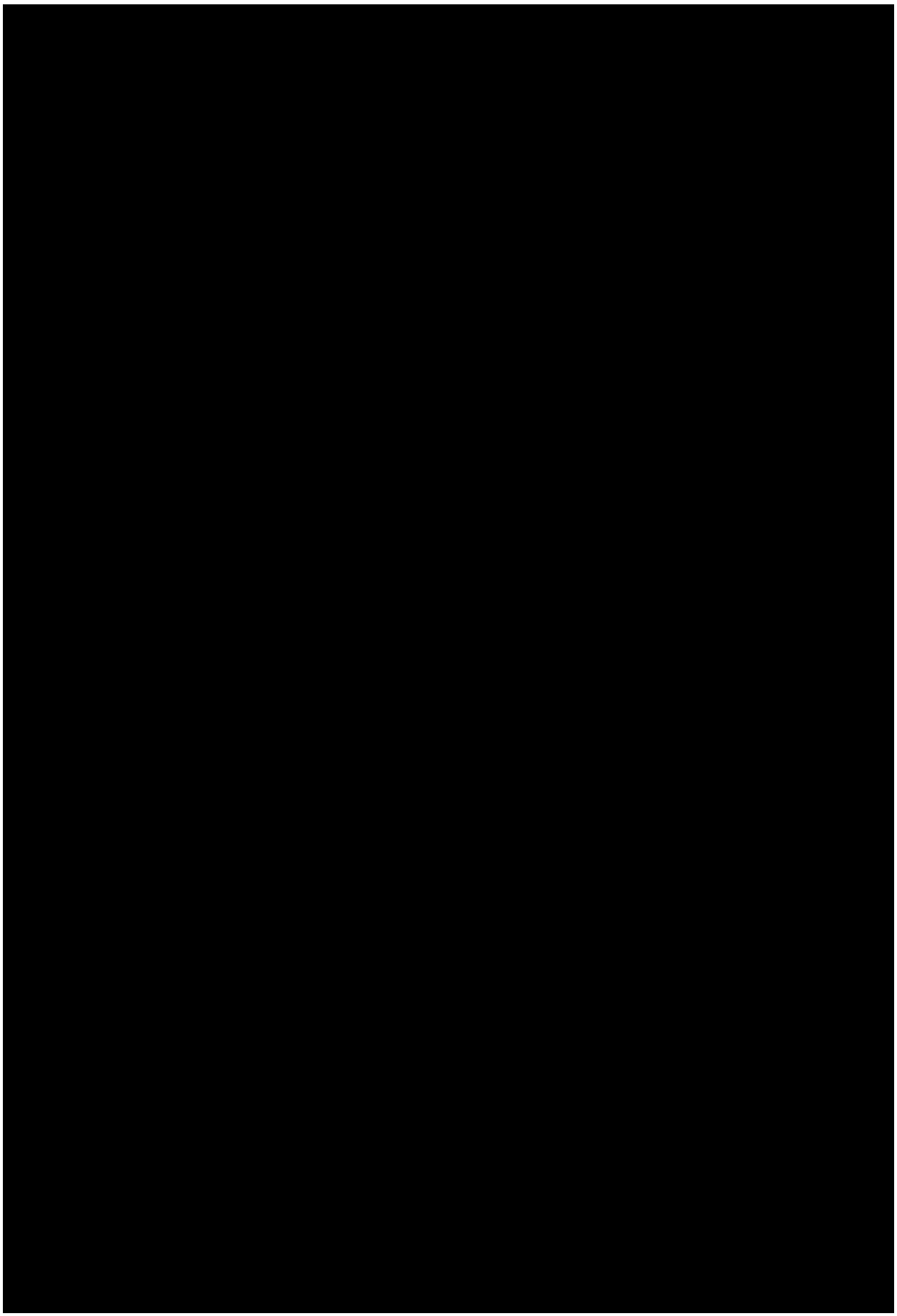


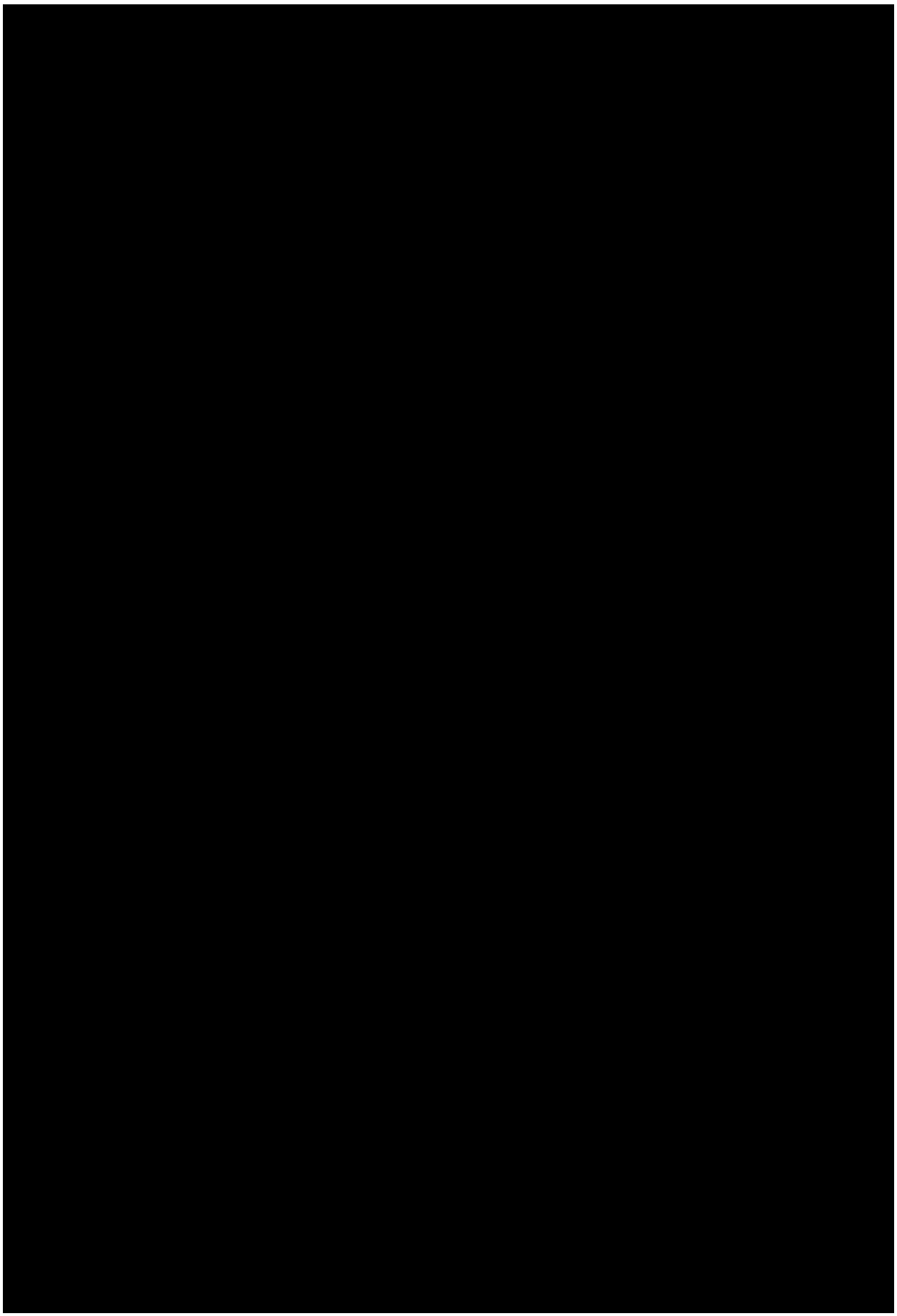


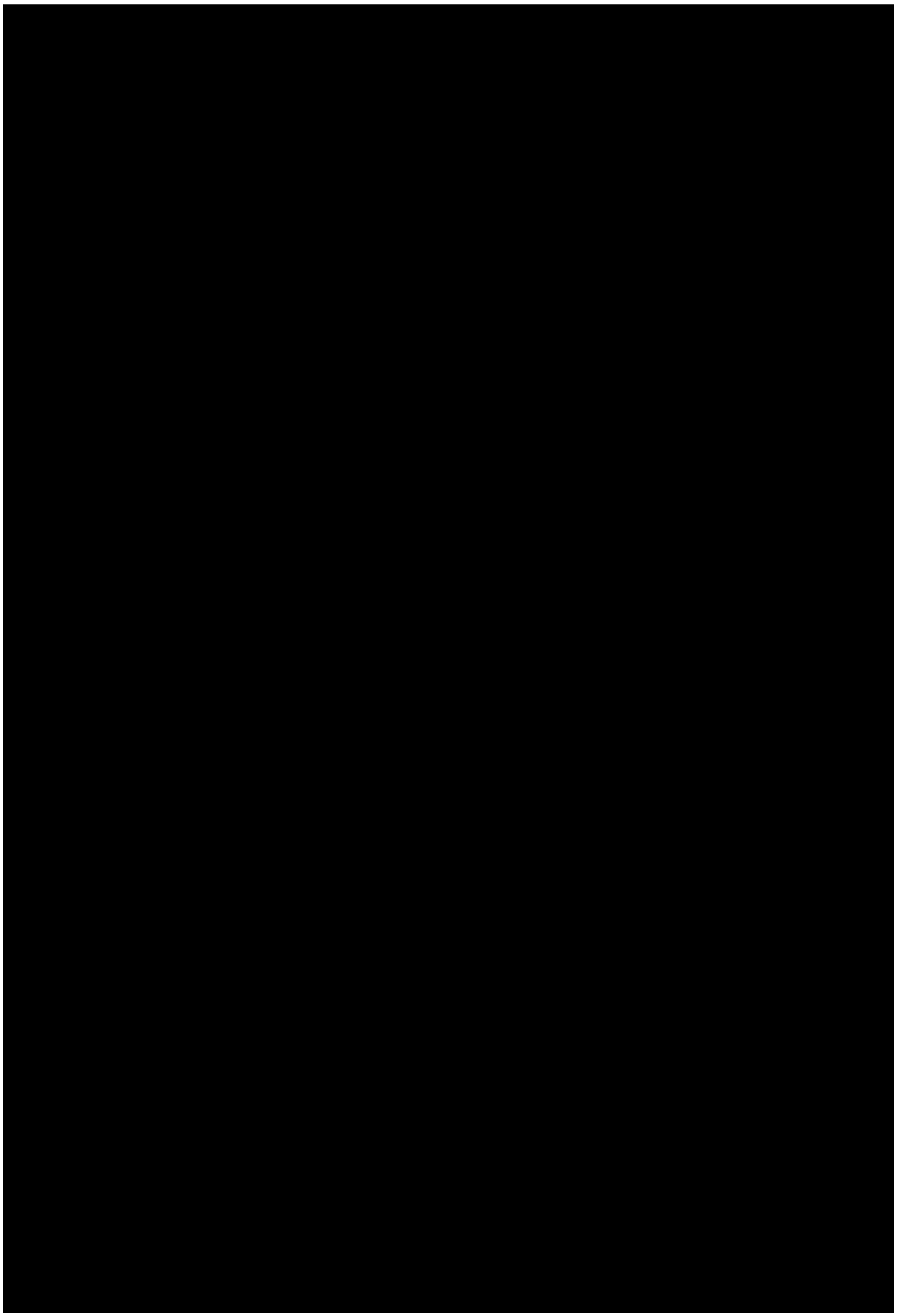


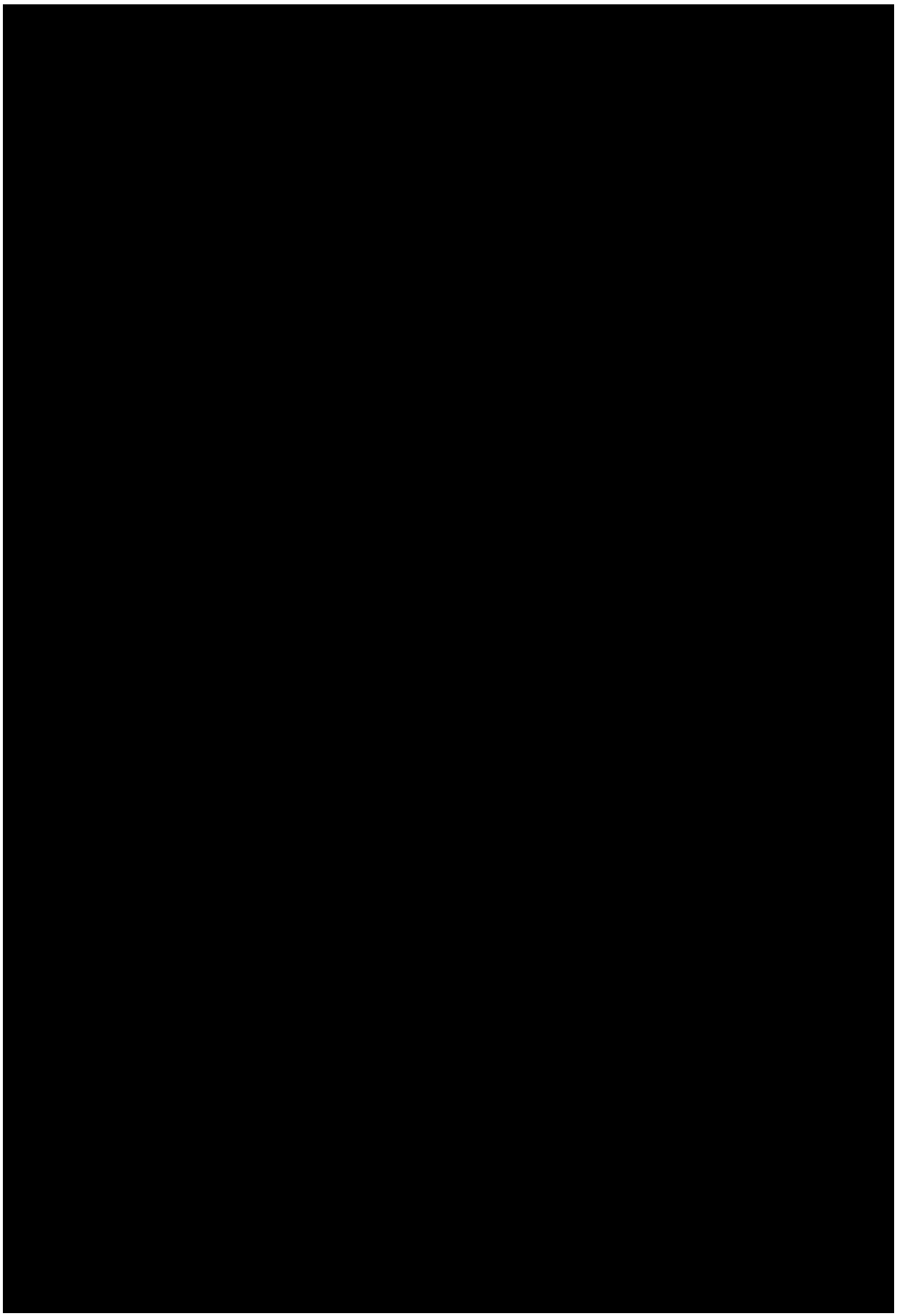


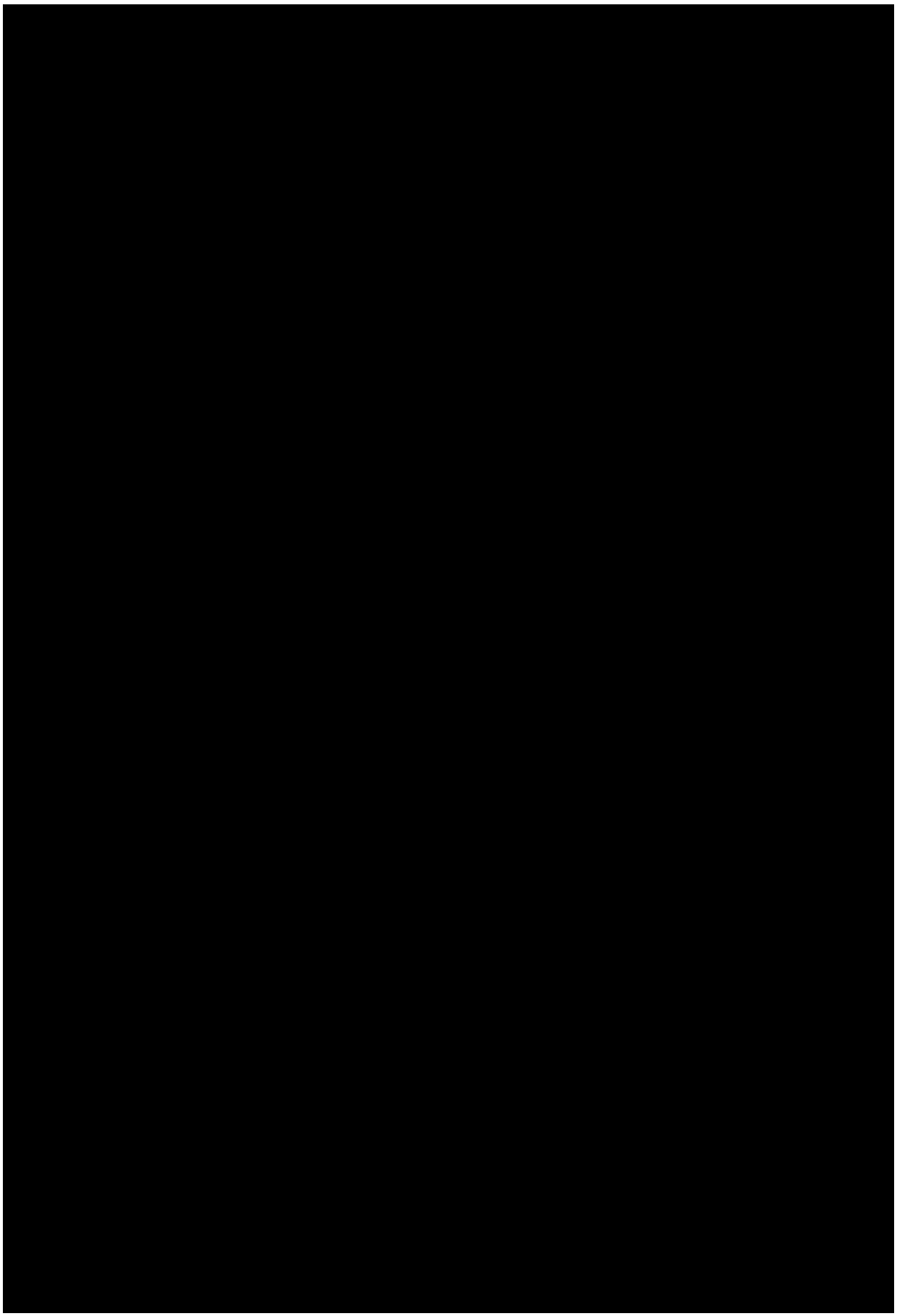


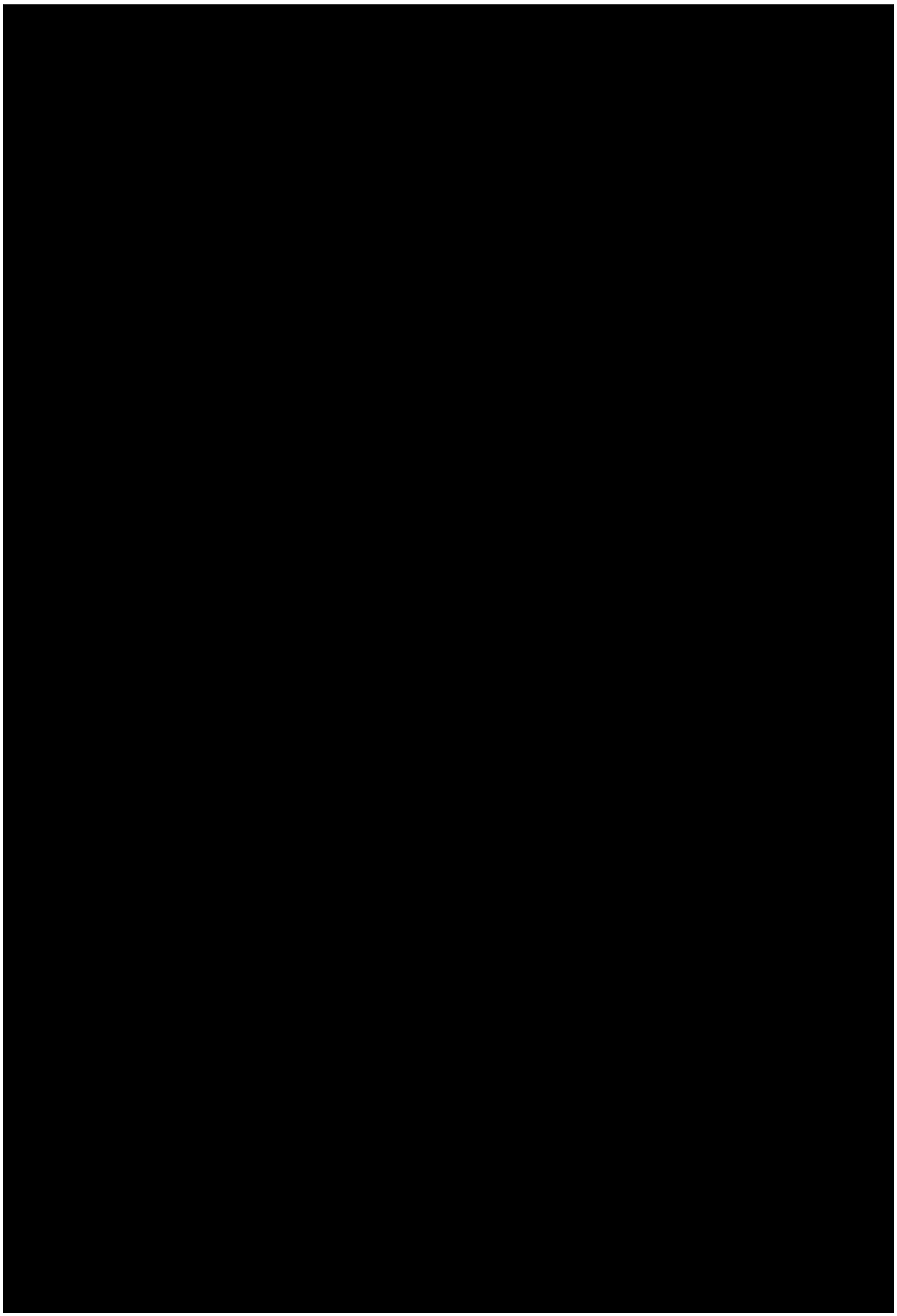






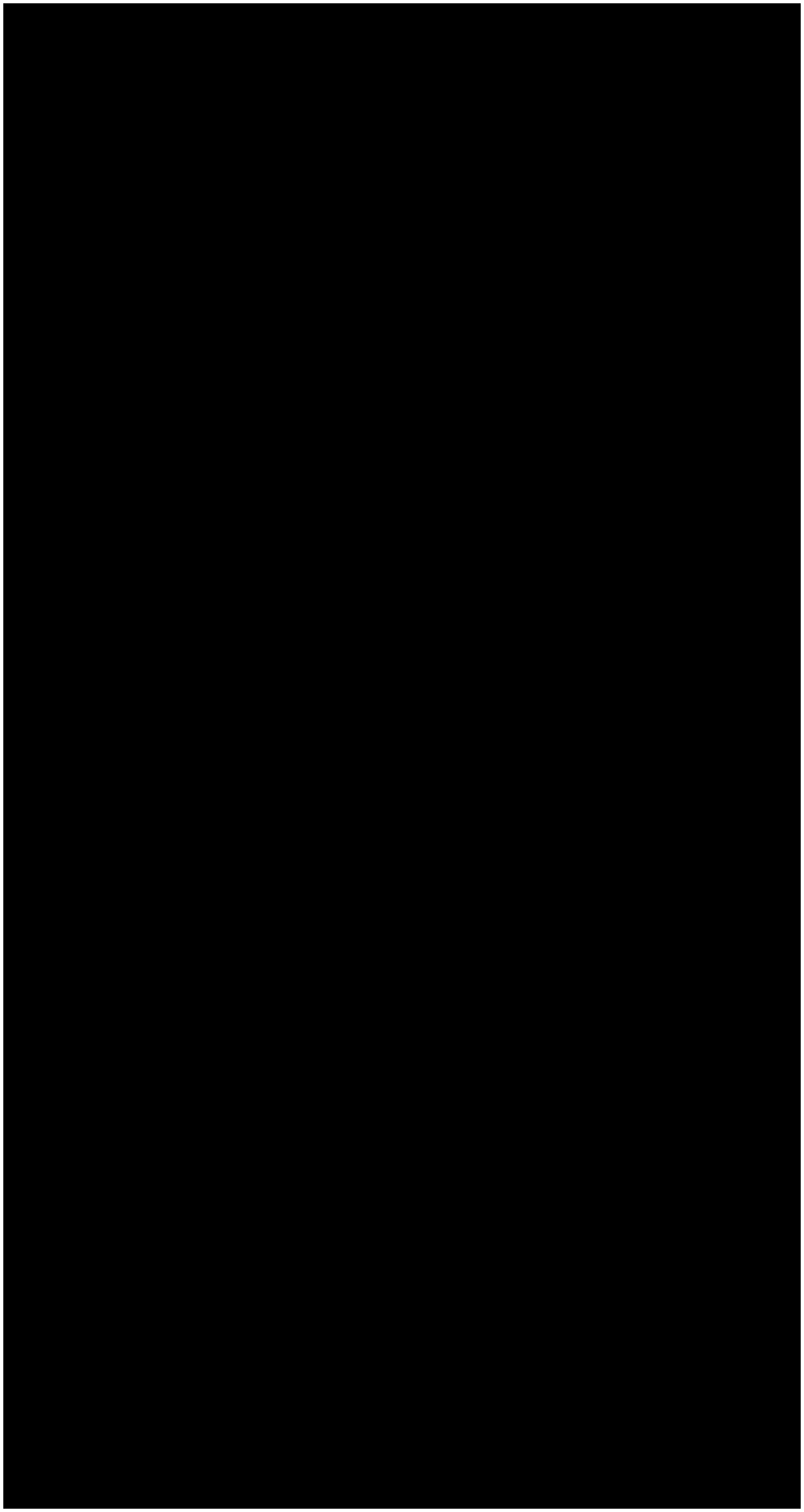


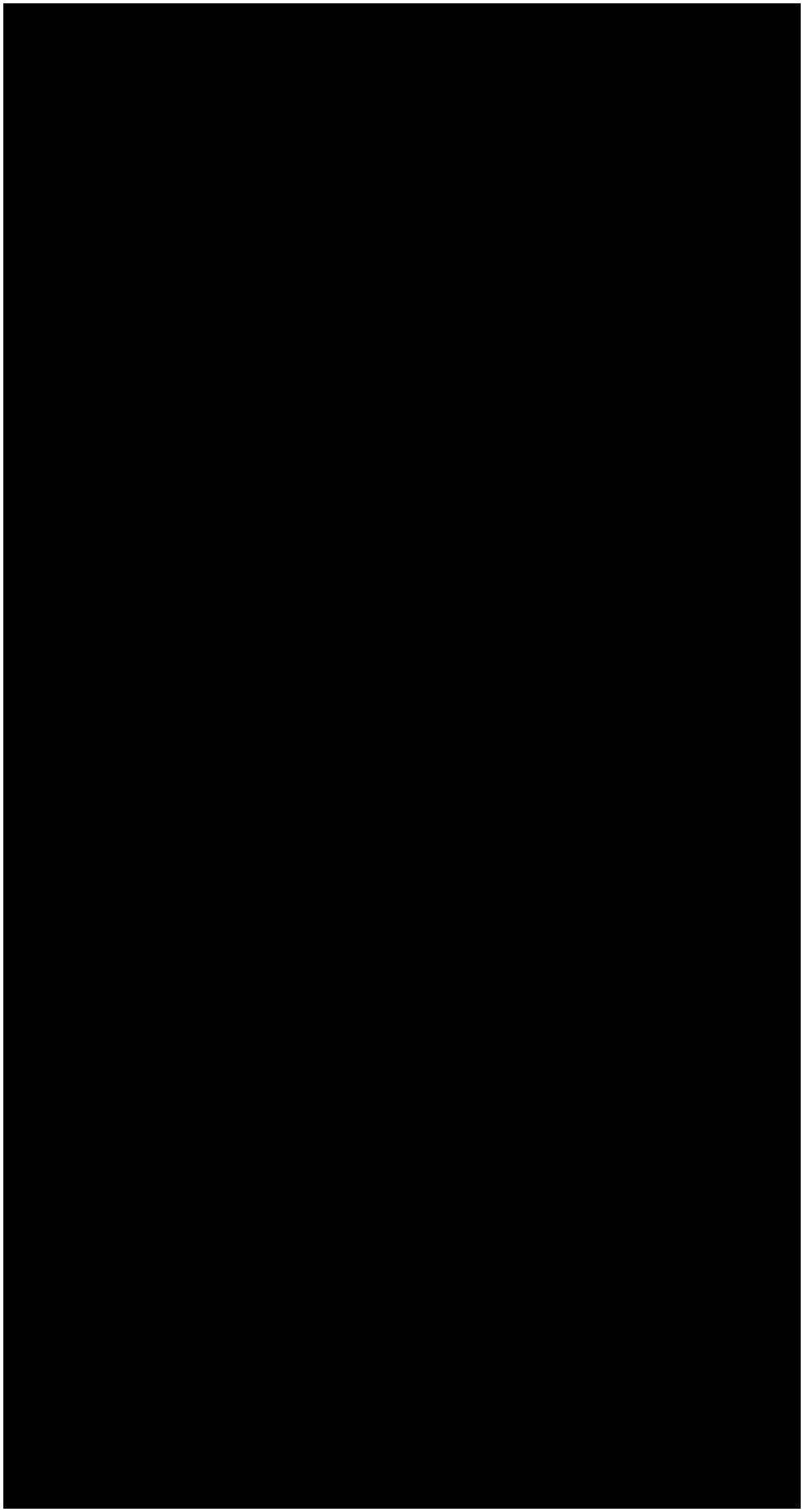


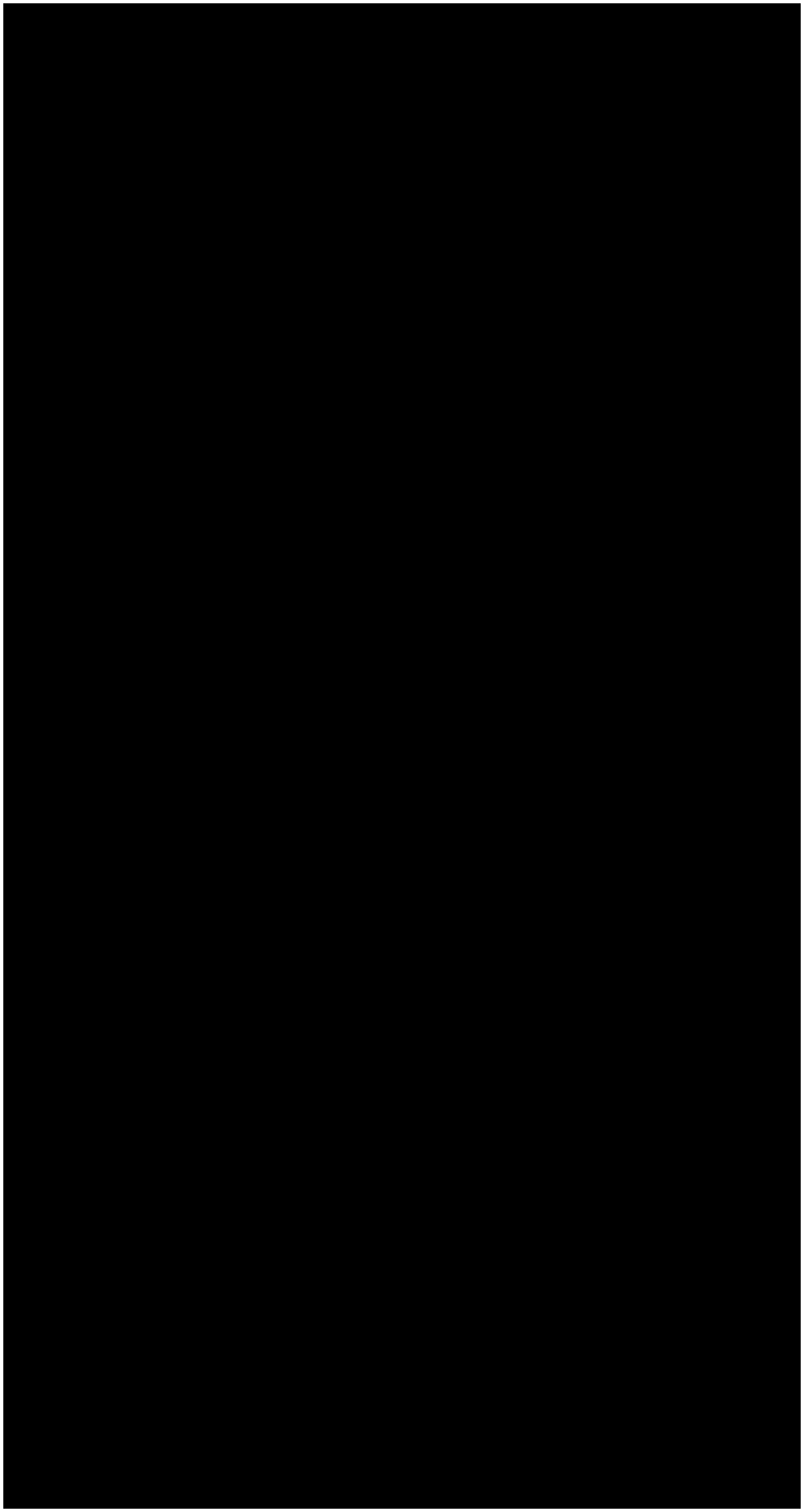


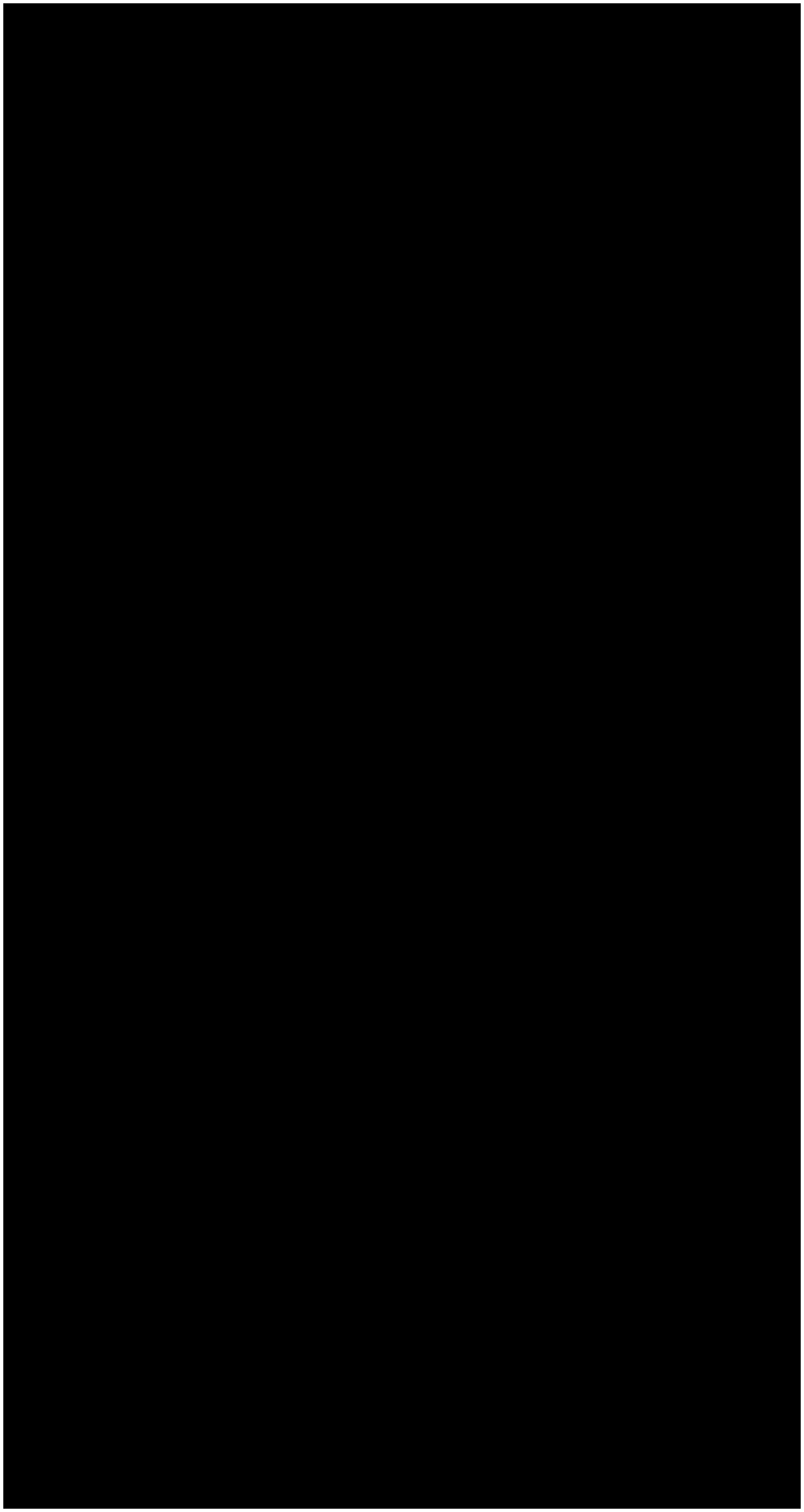


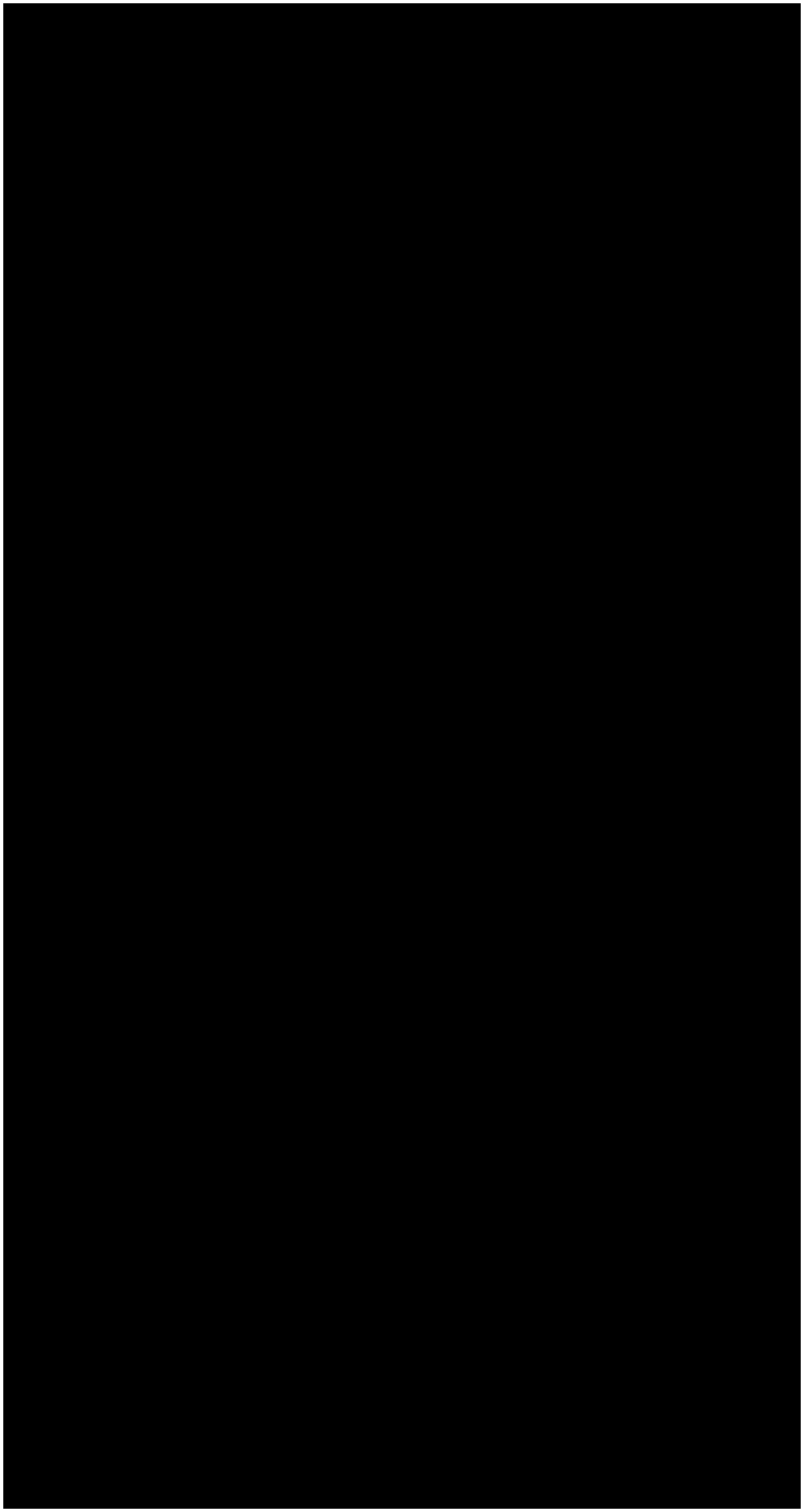
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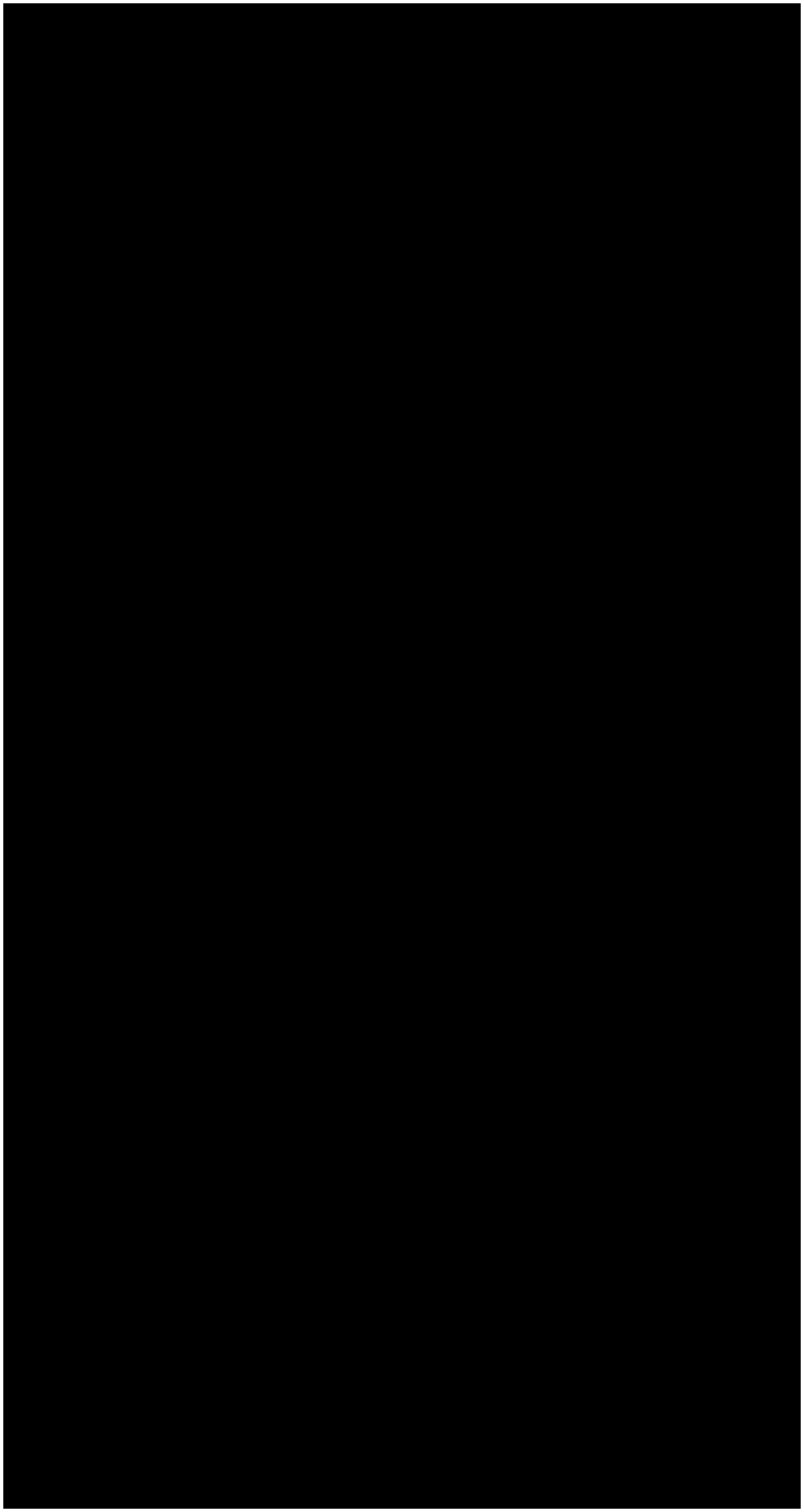


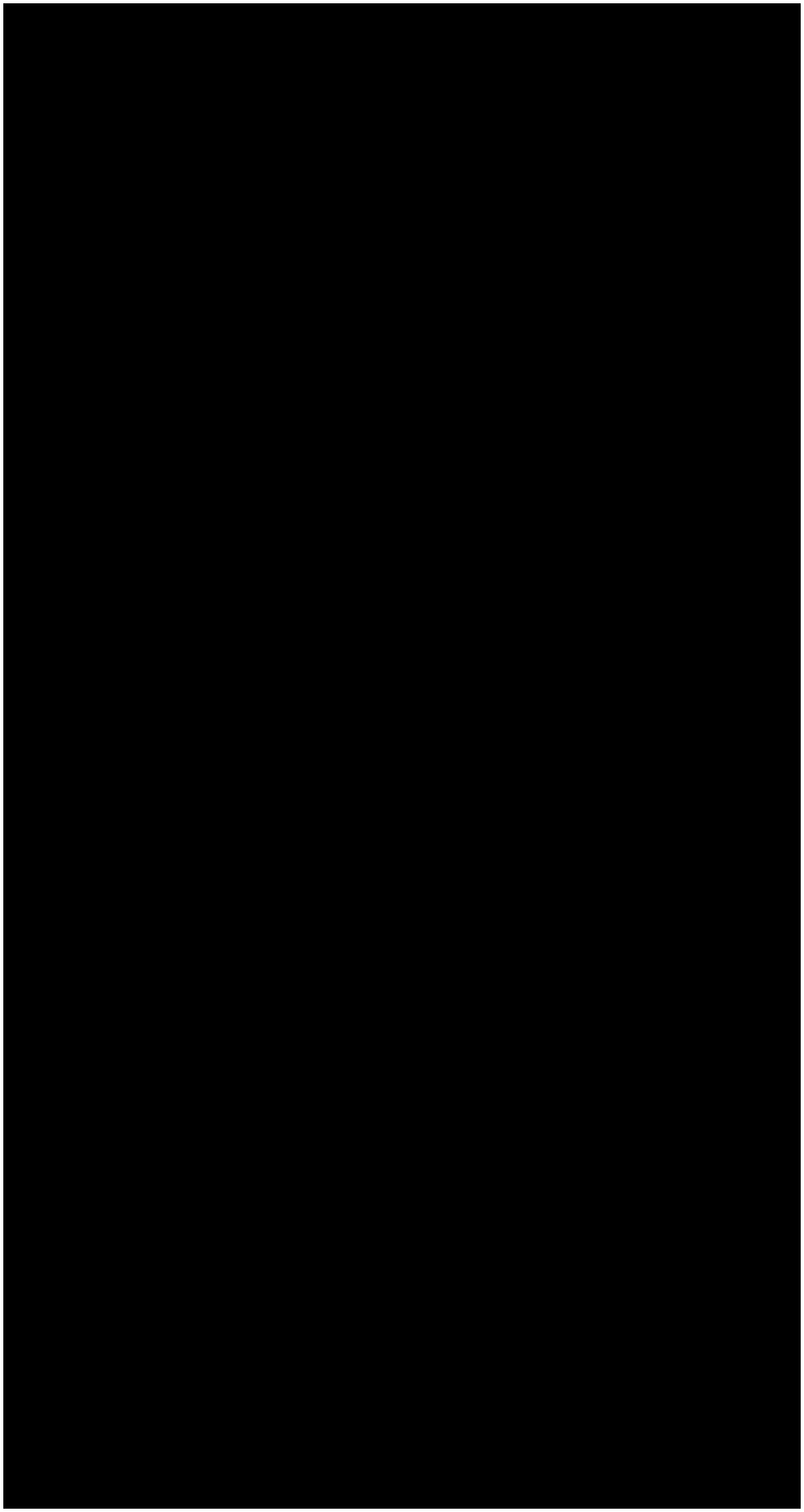


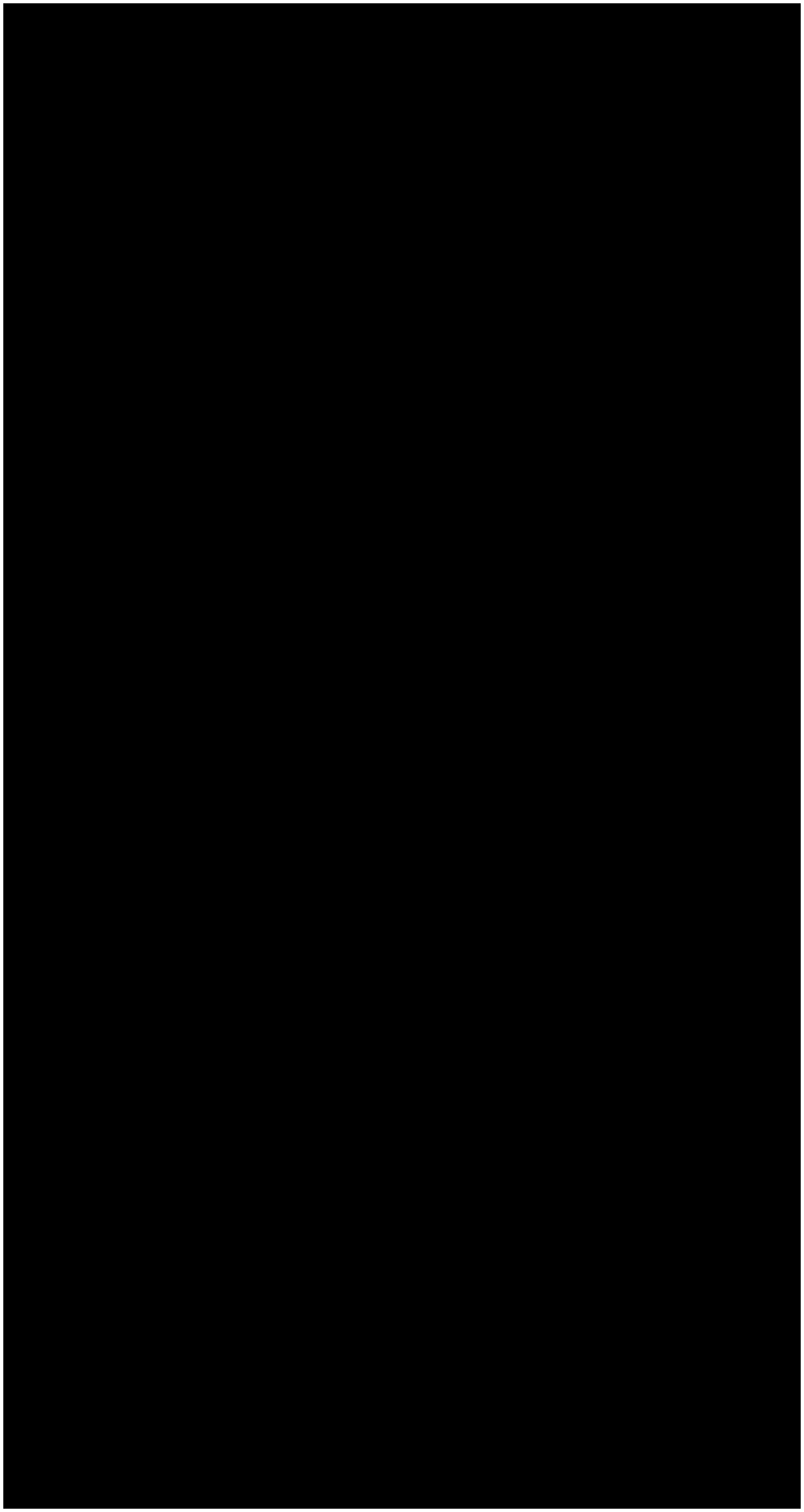


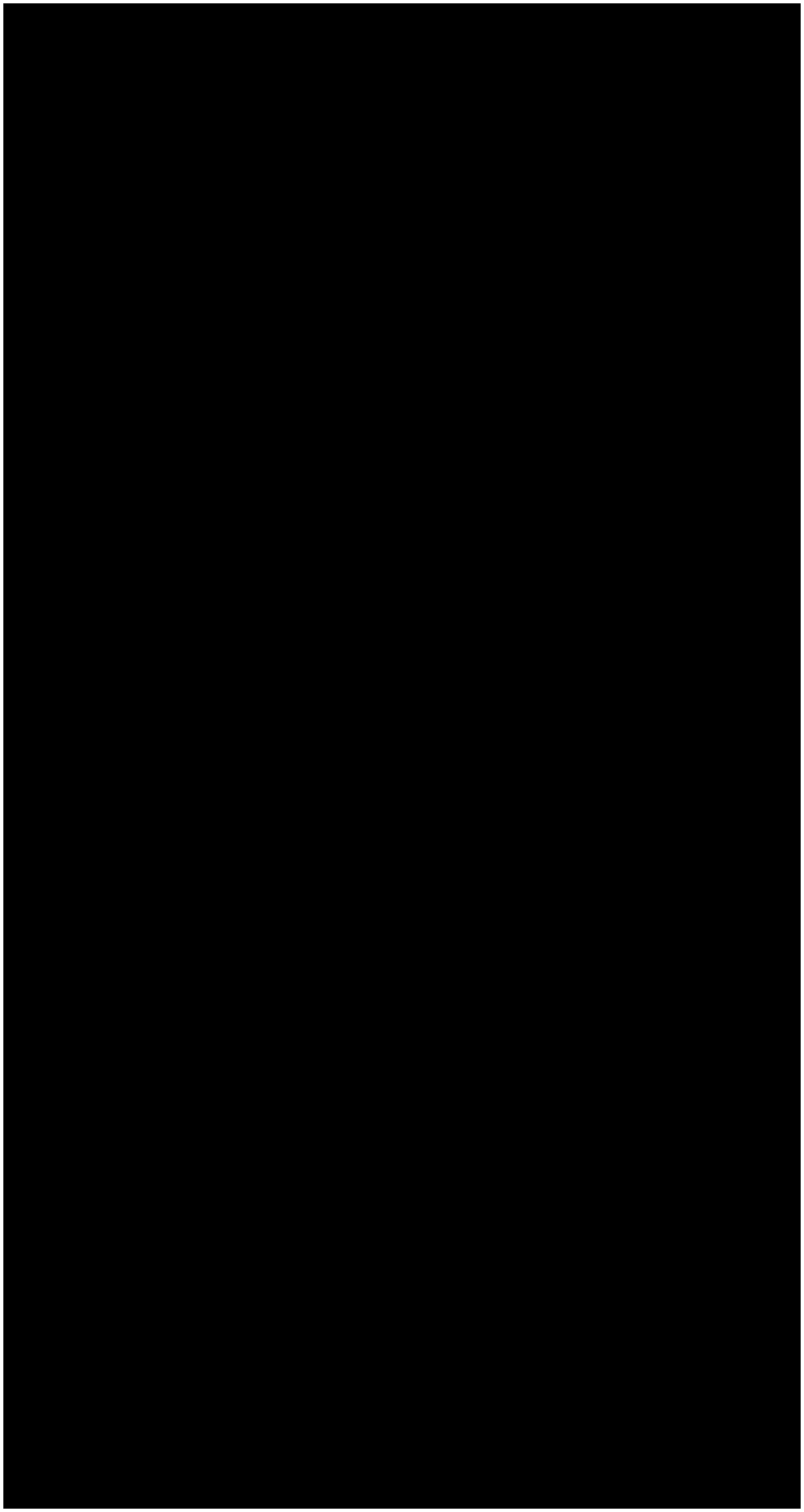


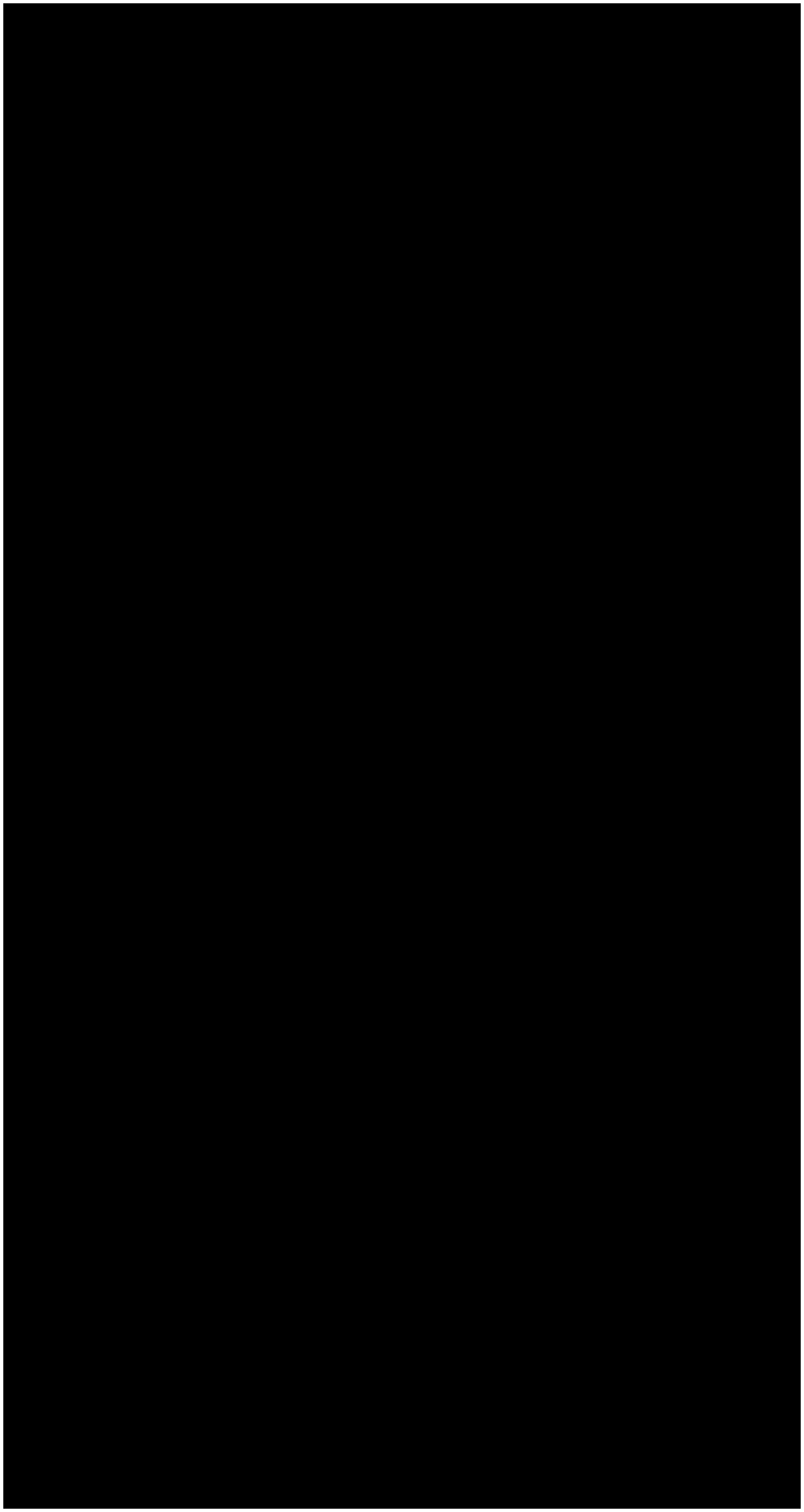


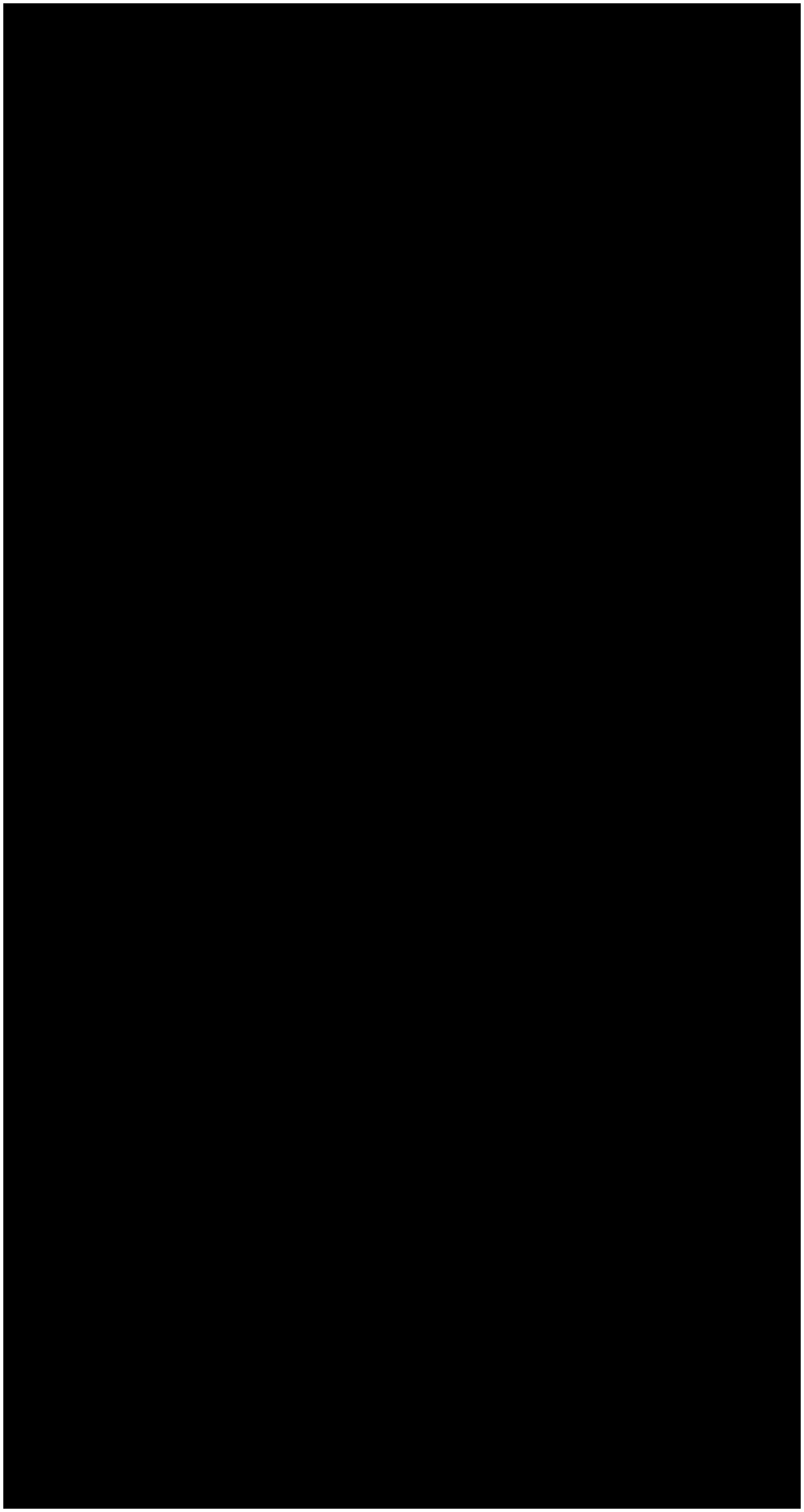


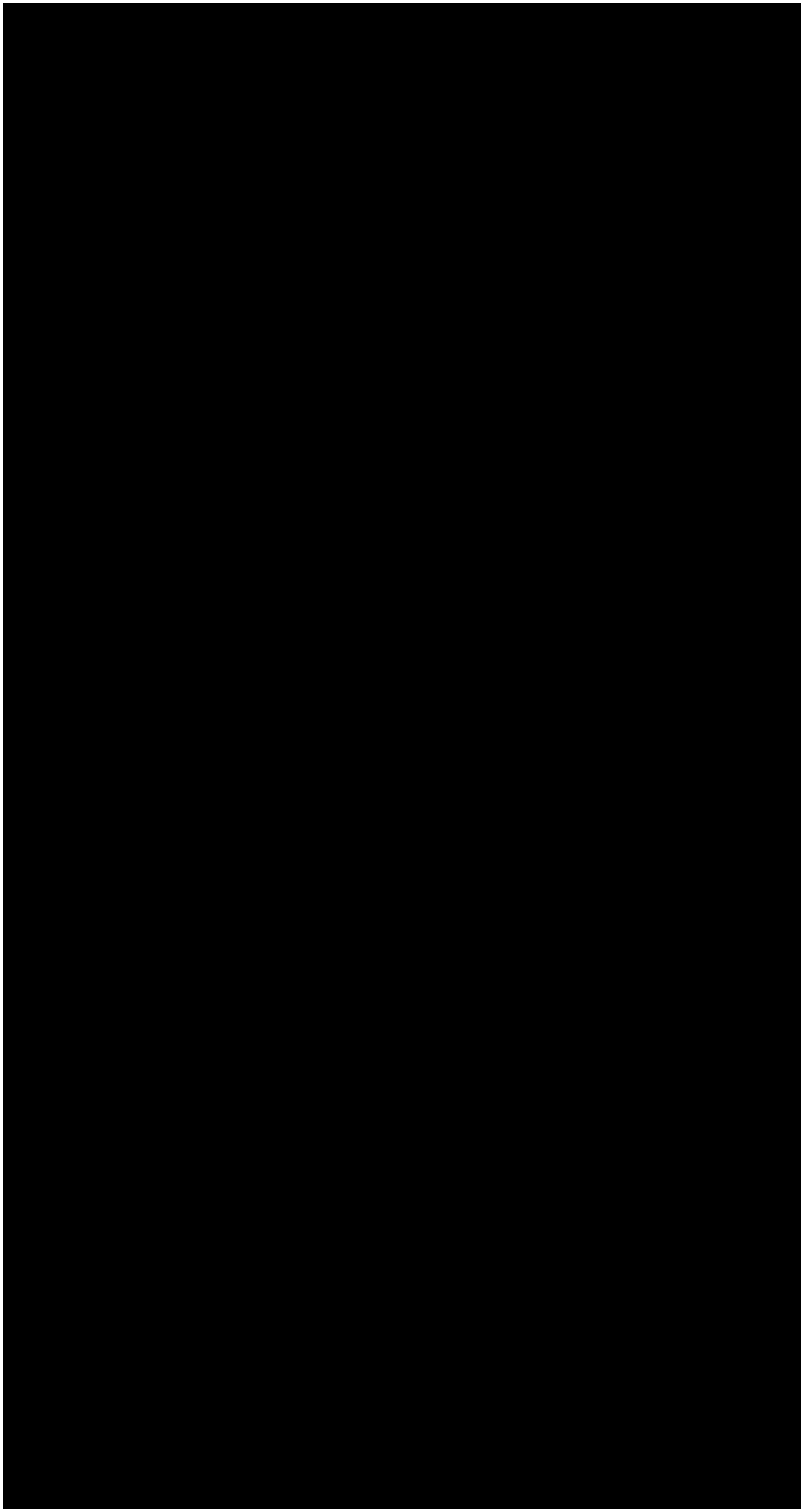


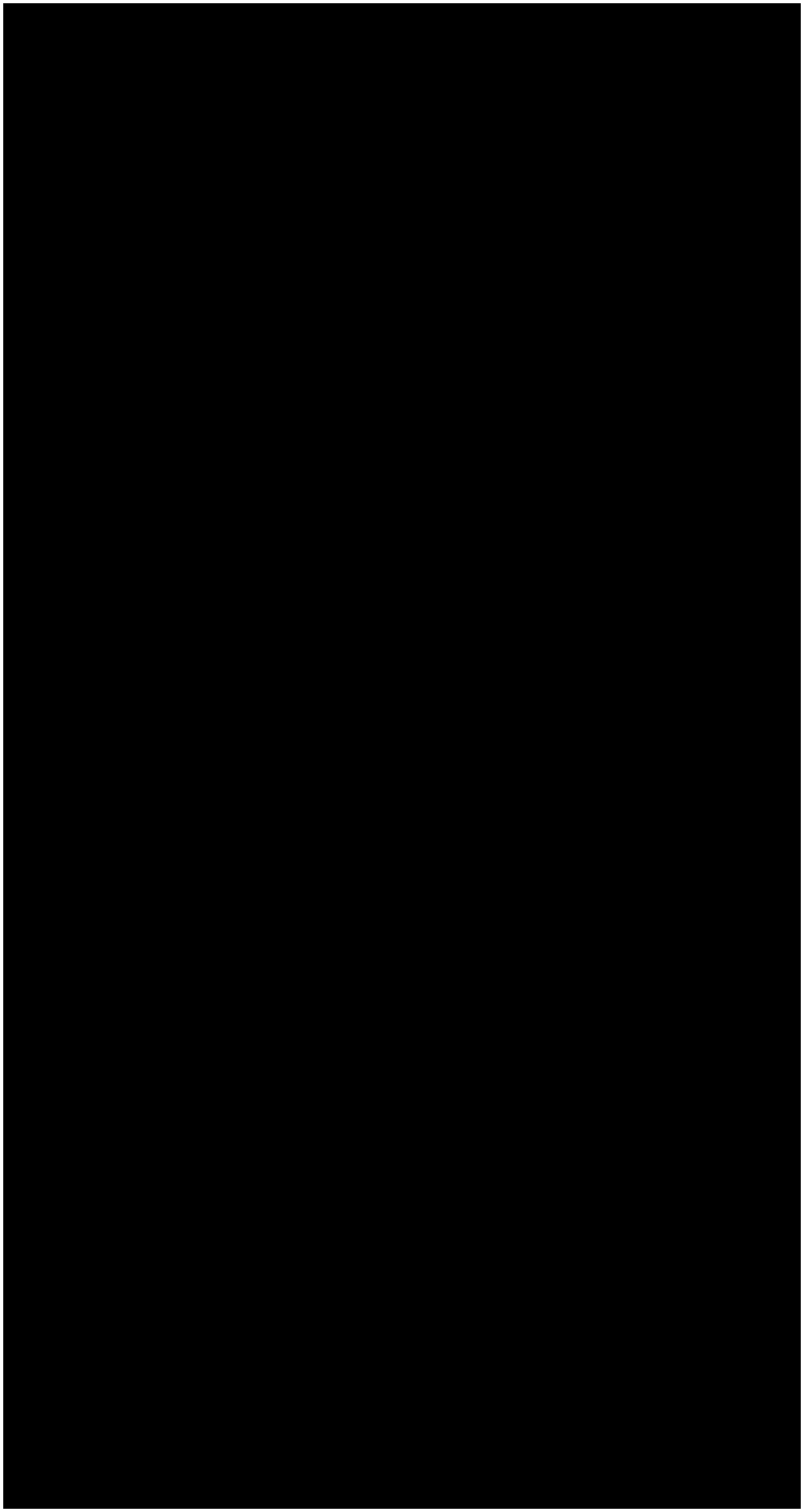


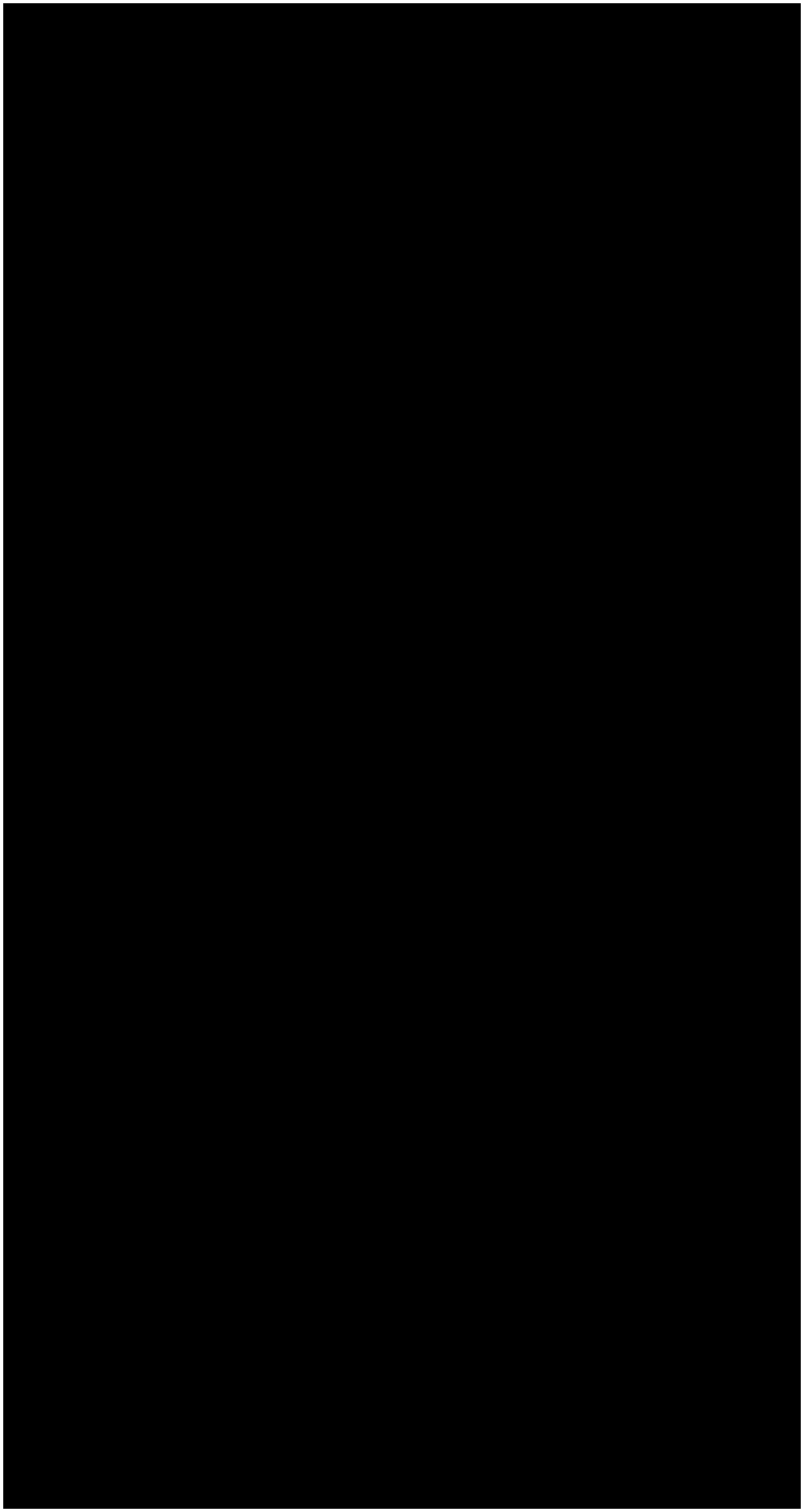


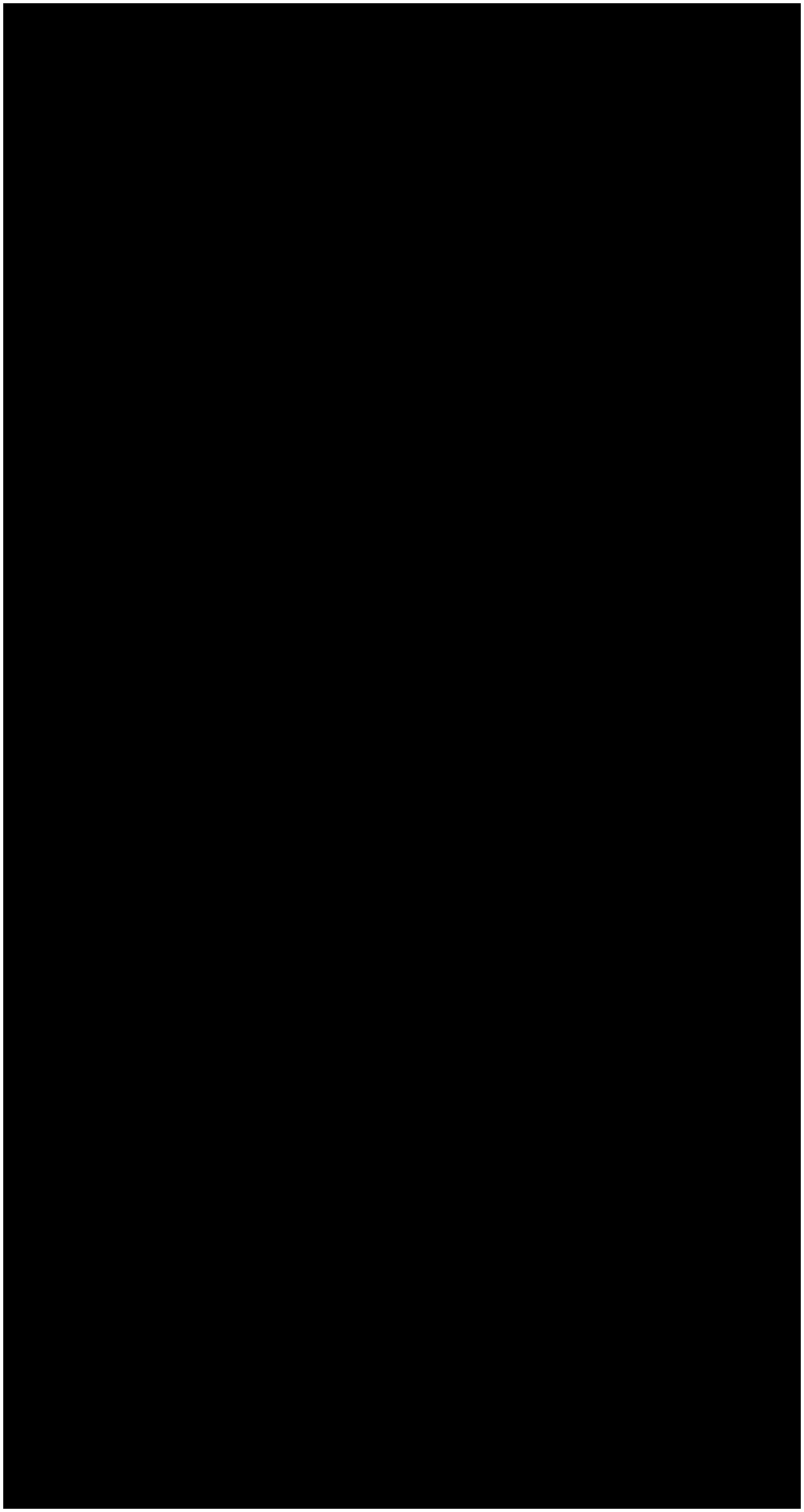


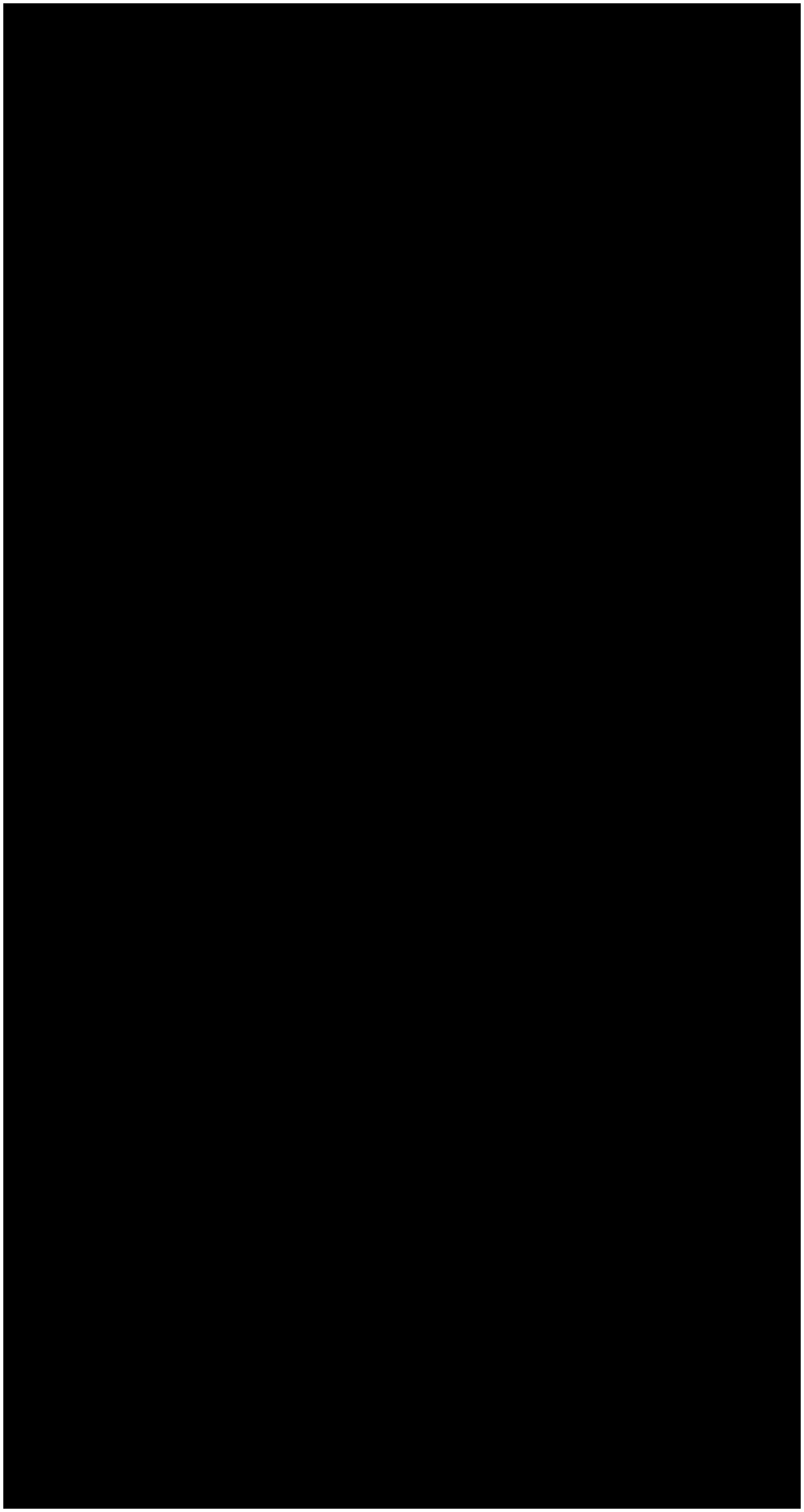


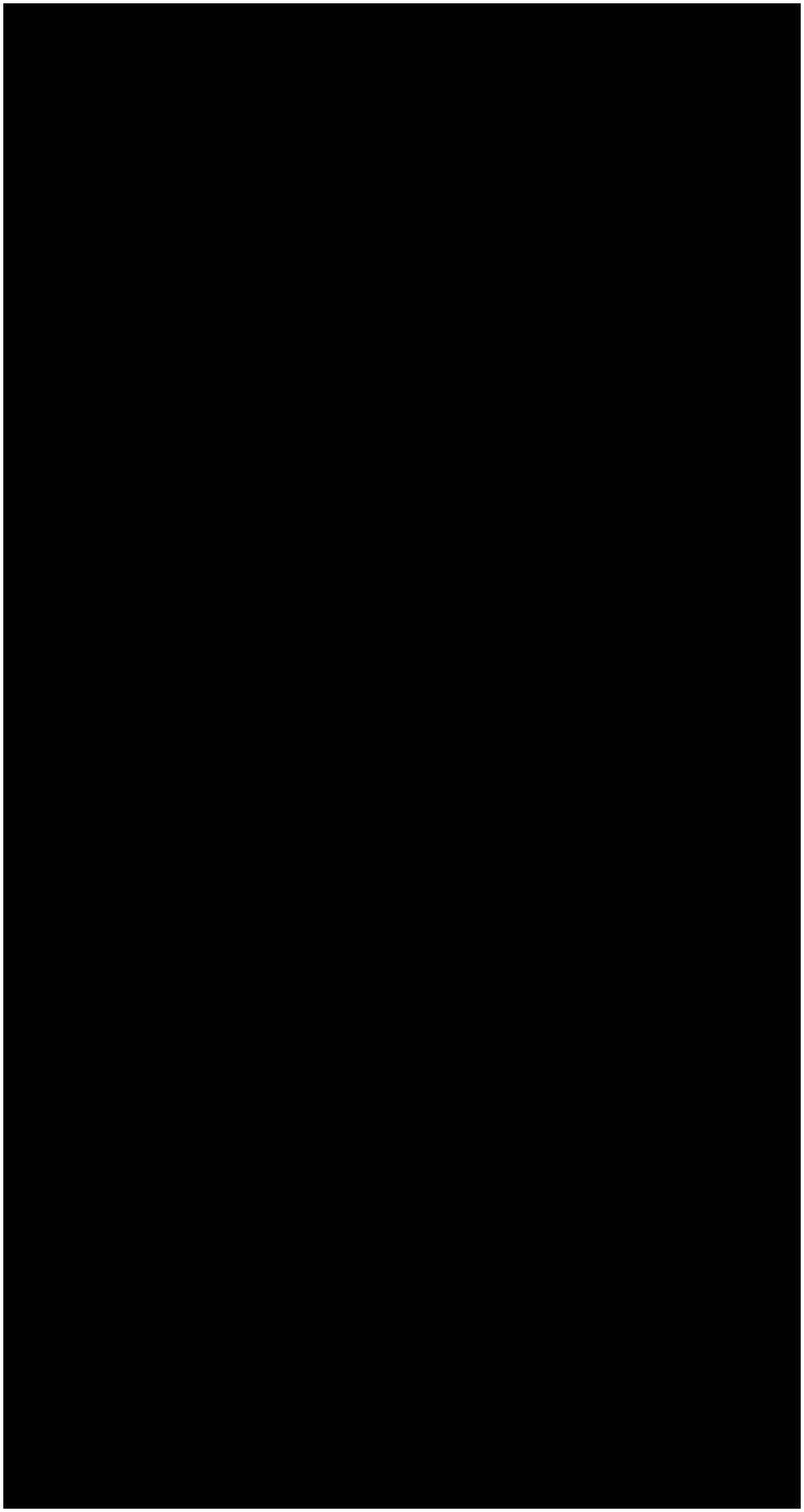


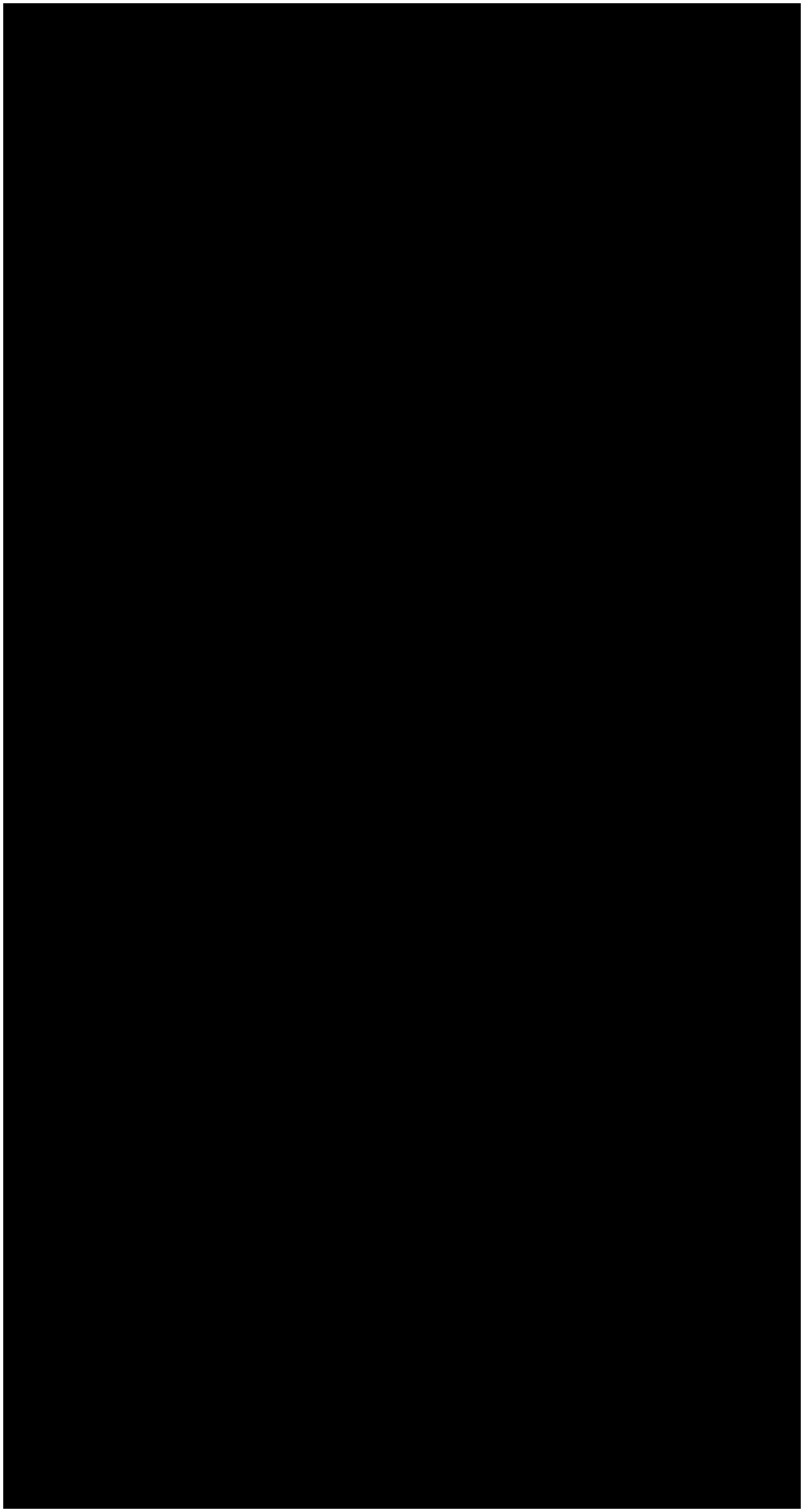














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
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Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
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Jun-26											
Jul-26											
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Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Incremental 12,500 Dth Empress Expansion (WXP) - Peaking Cost @ $40 per Dth AFTER YEAR 1

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2024-2025	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2025-2026	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2026-2027	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2027-2028	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
Total	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

Incremental 12,500 Dth Empress Expansion (WXP) - Peaking Cost @ $20 per Dth AFTER YEAR 1

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2024-2025	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2025-2026	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2026-2027	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
2027-2028	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-
Total	$ -	$ -	$ -	$ -	$ -	-	#DIV/0!	$ -	-

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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2025-2026						
2025-2026						
2025-2026						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						

2026-2027	[redacted]
2026-2027	
2026-2027	
2026-2027	
2026-2027	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



PORTFOLIO

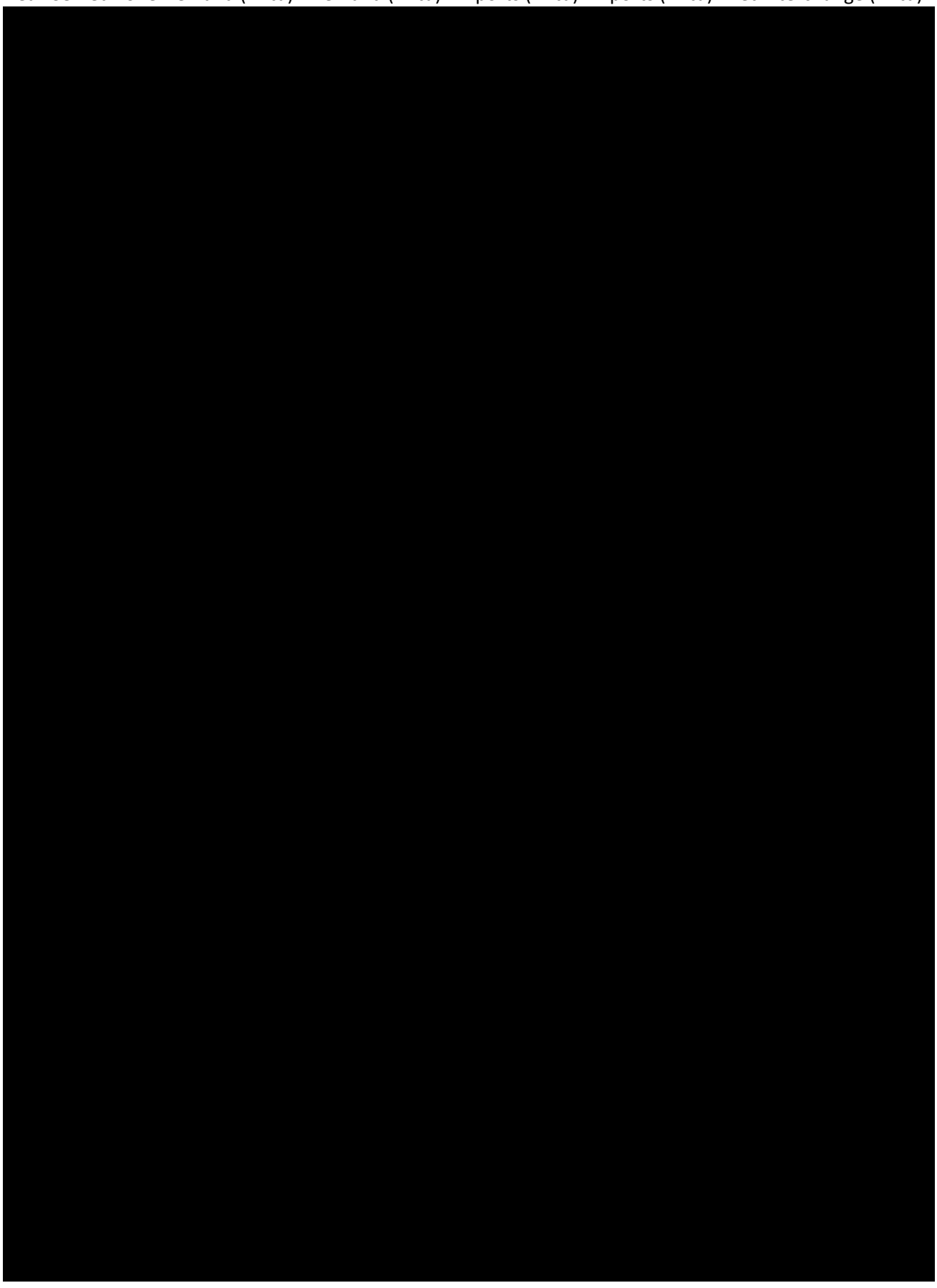
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





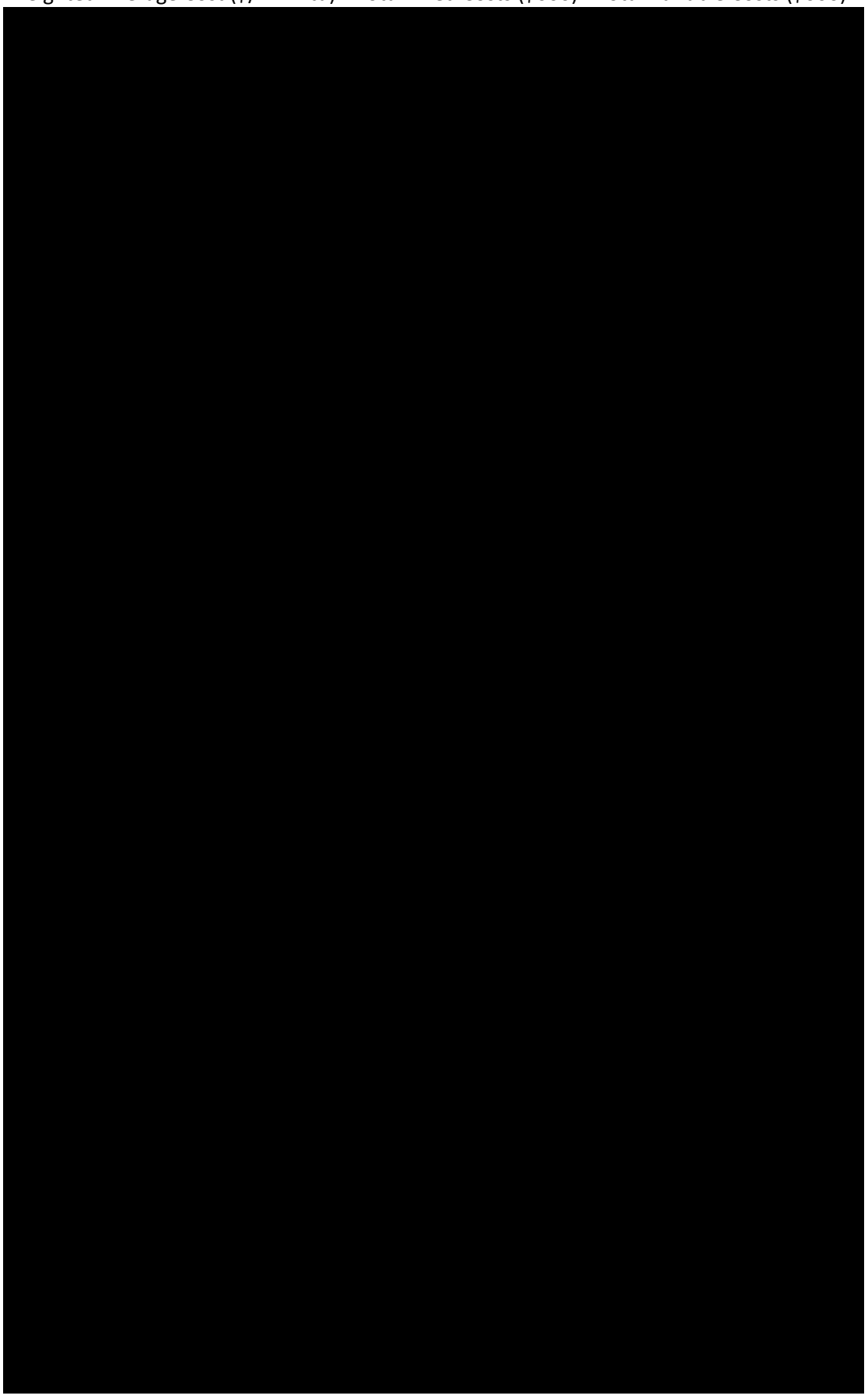
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

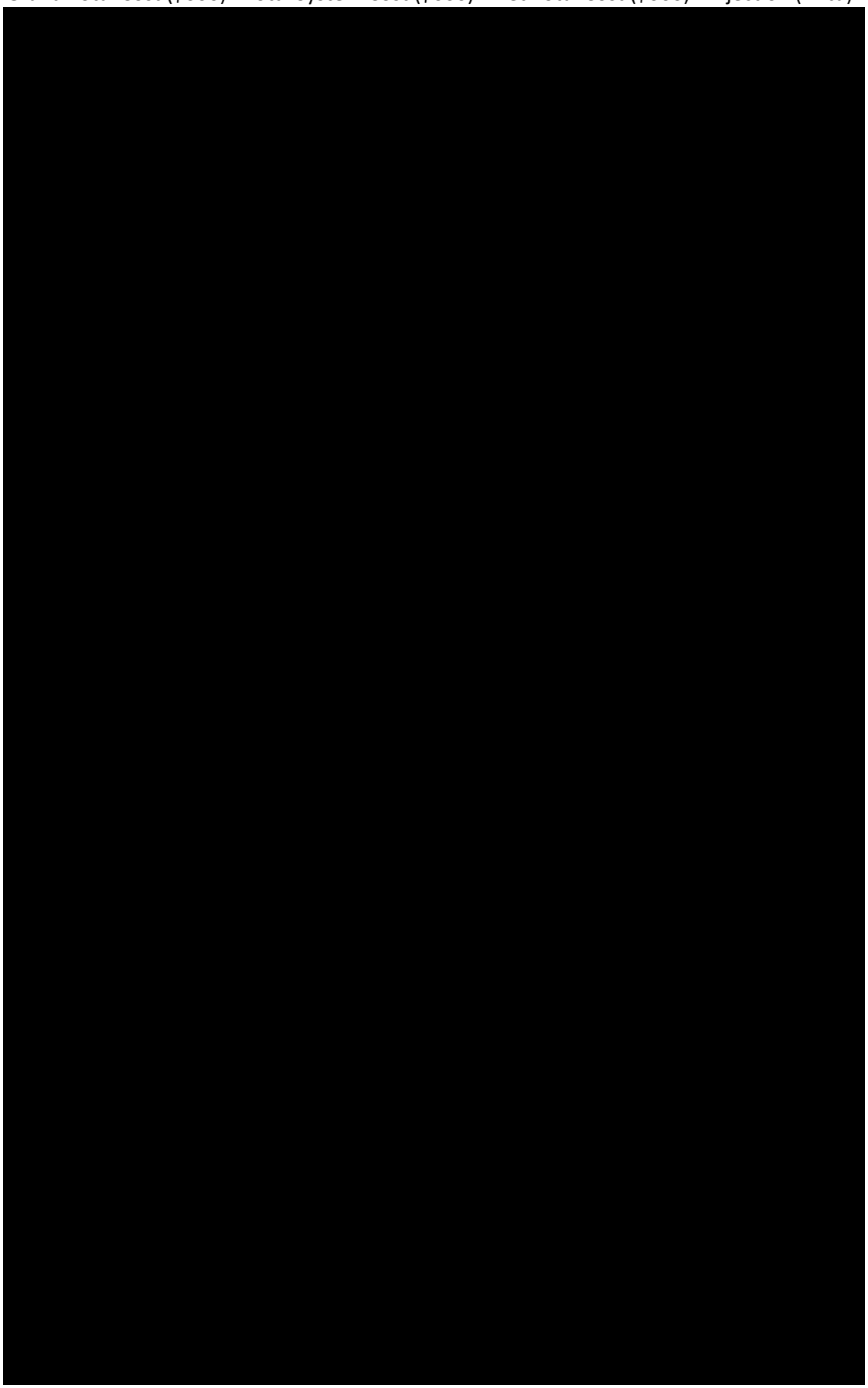


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

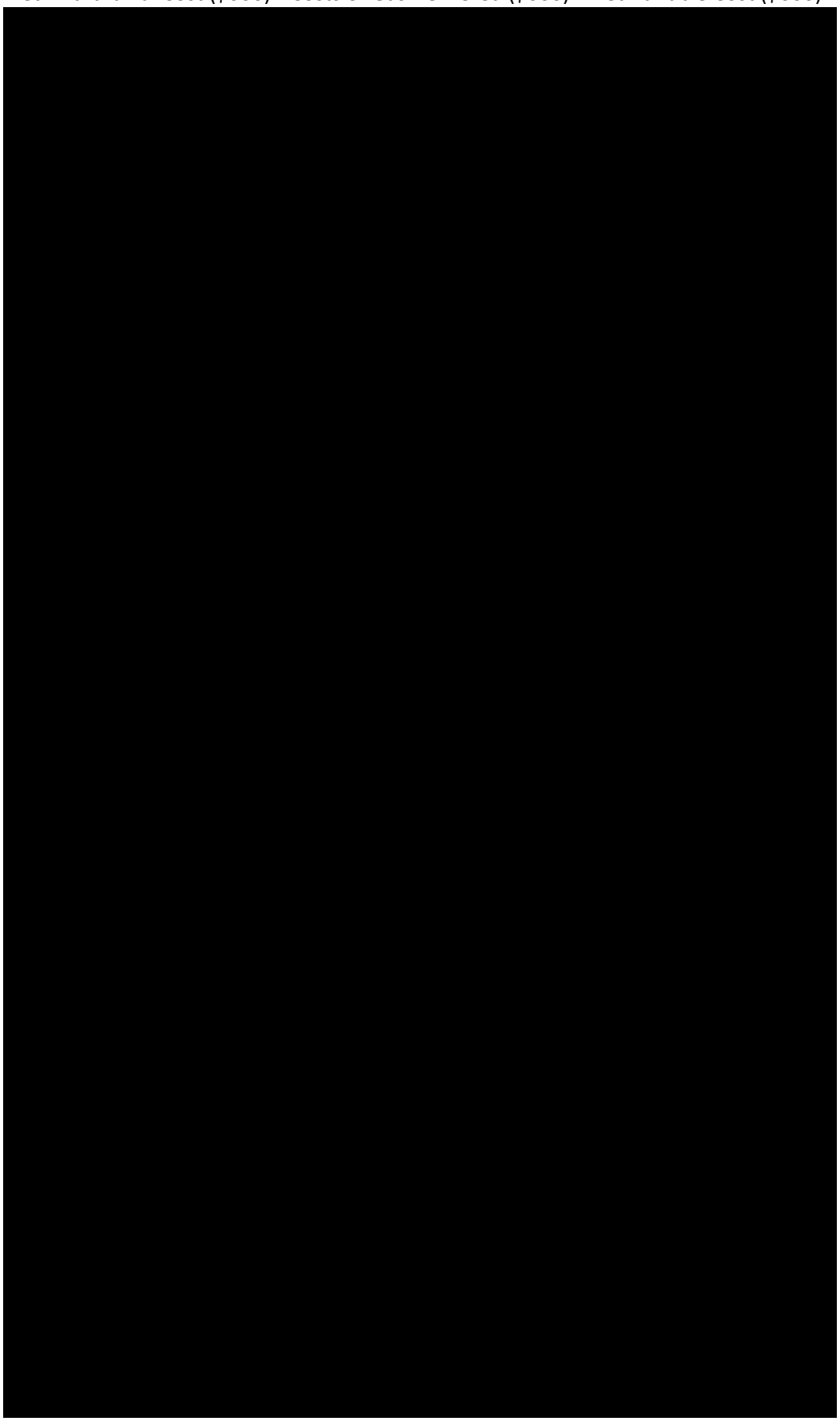




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

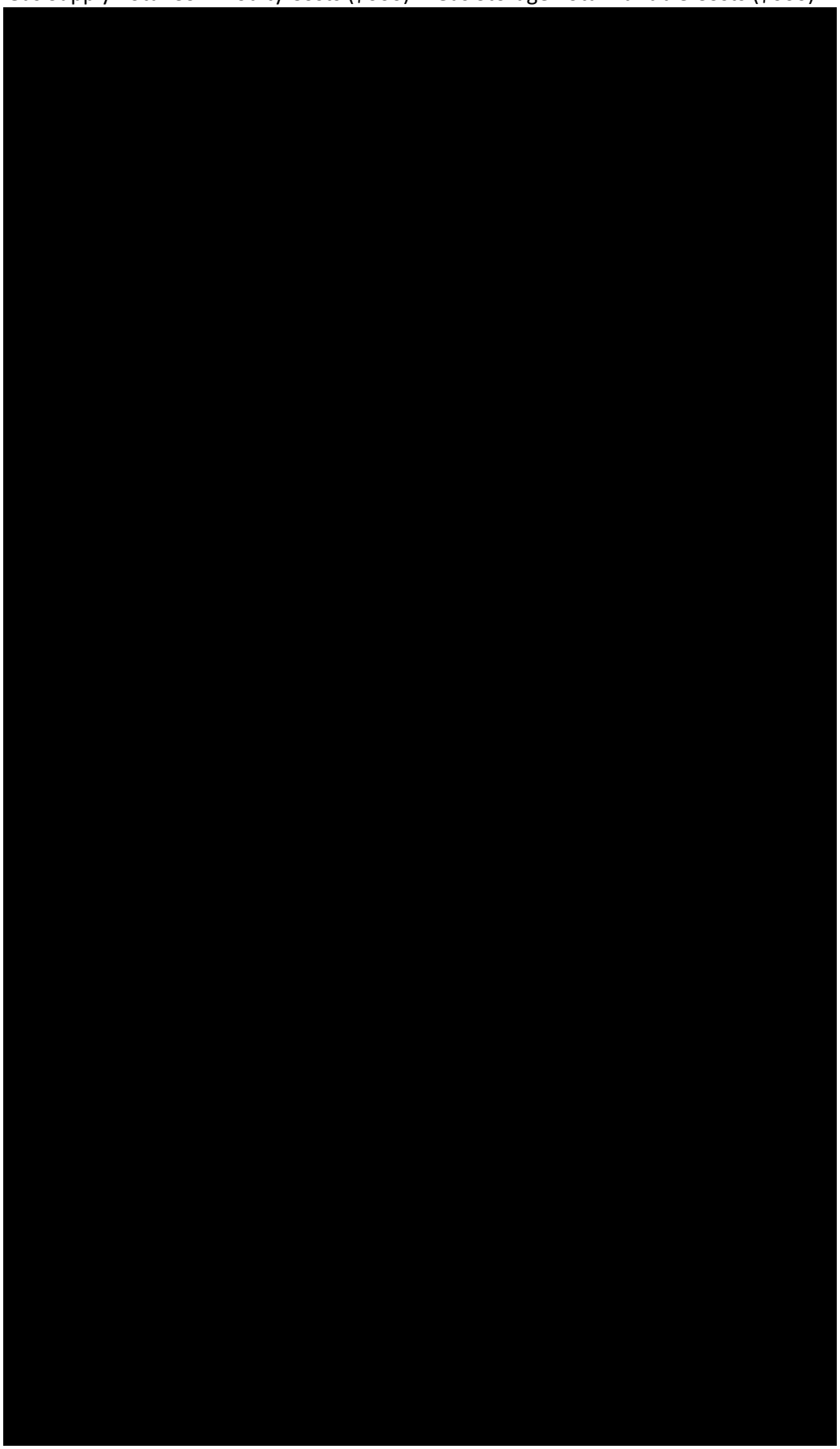




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

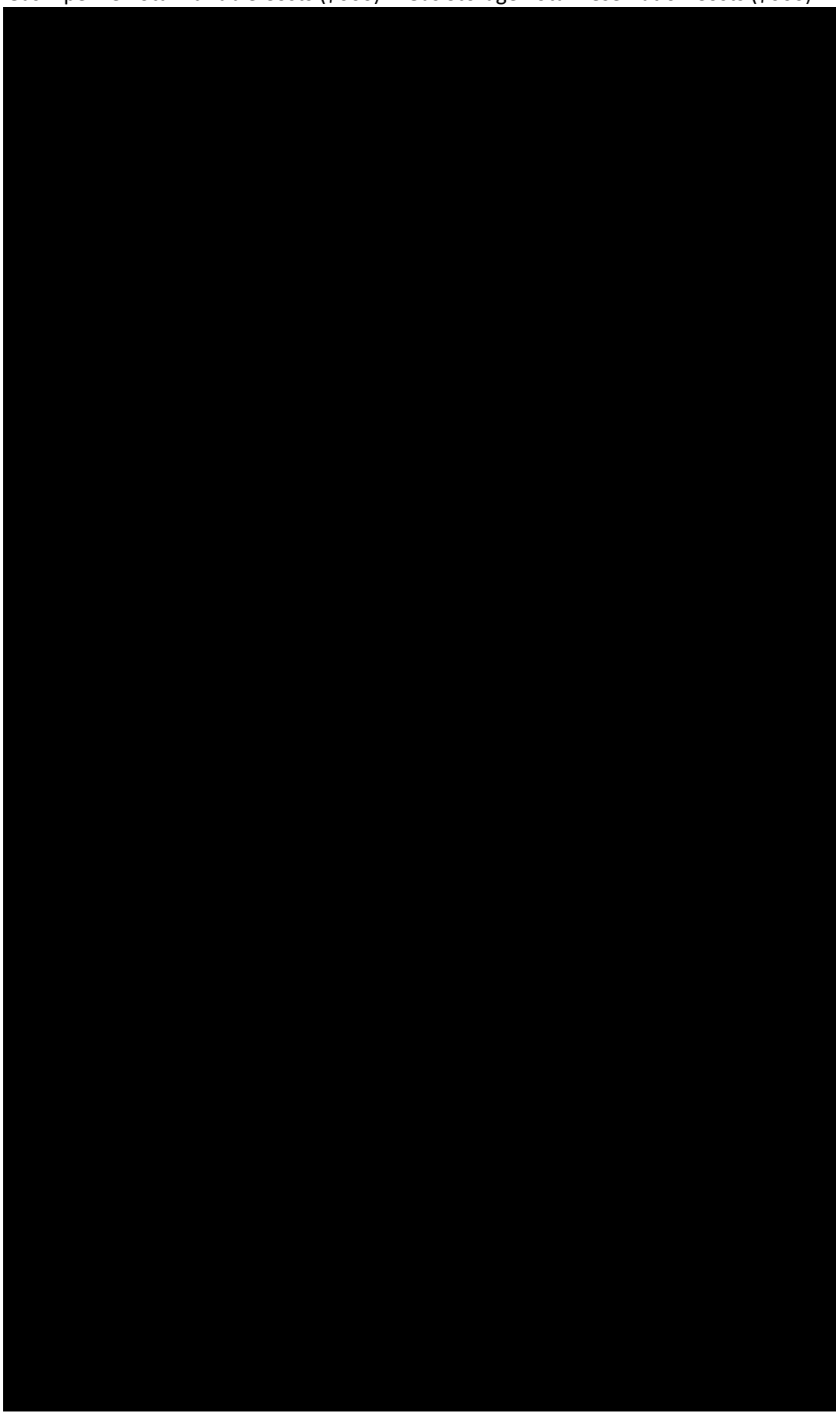


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



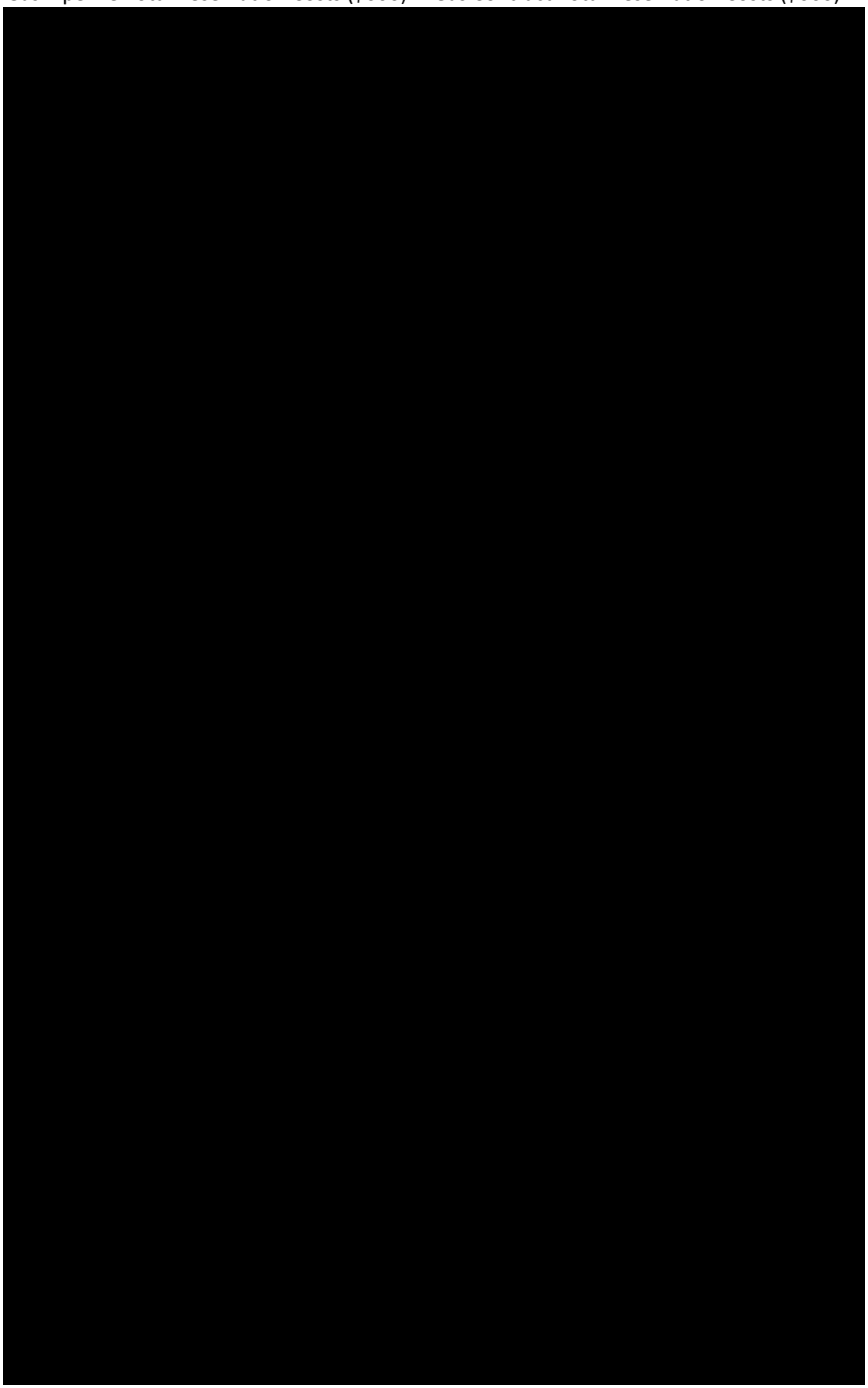


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



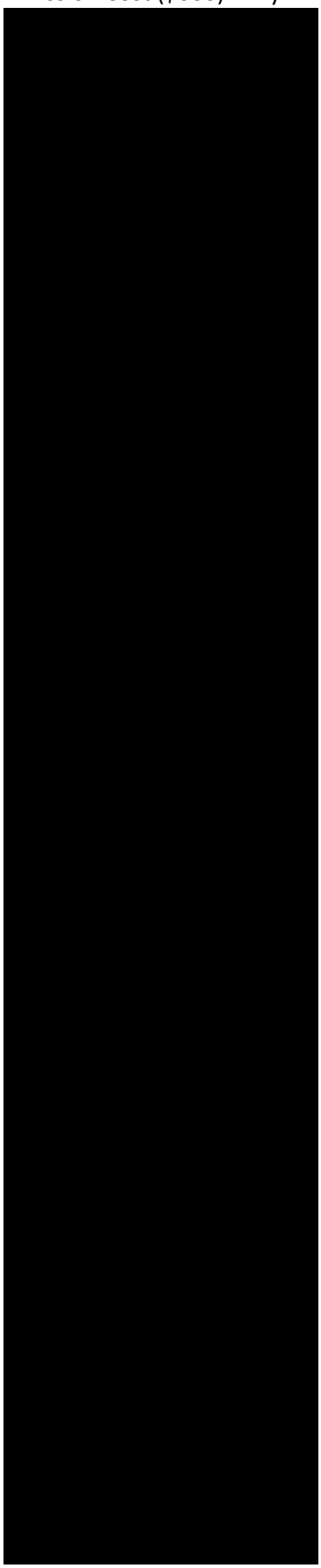


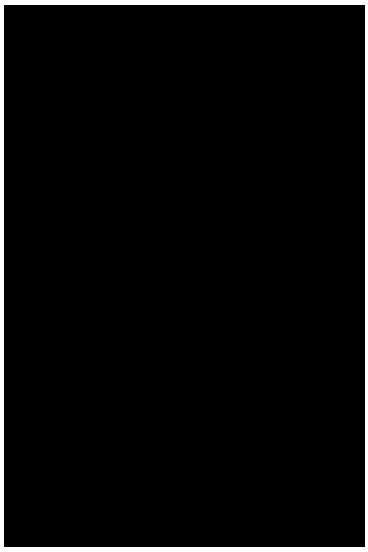
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



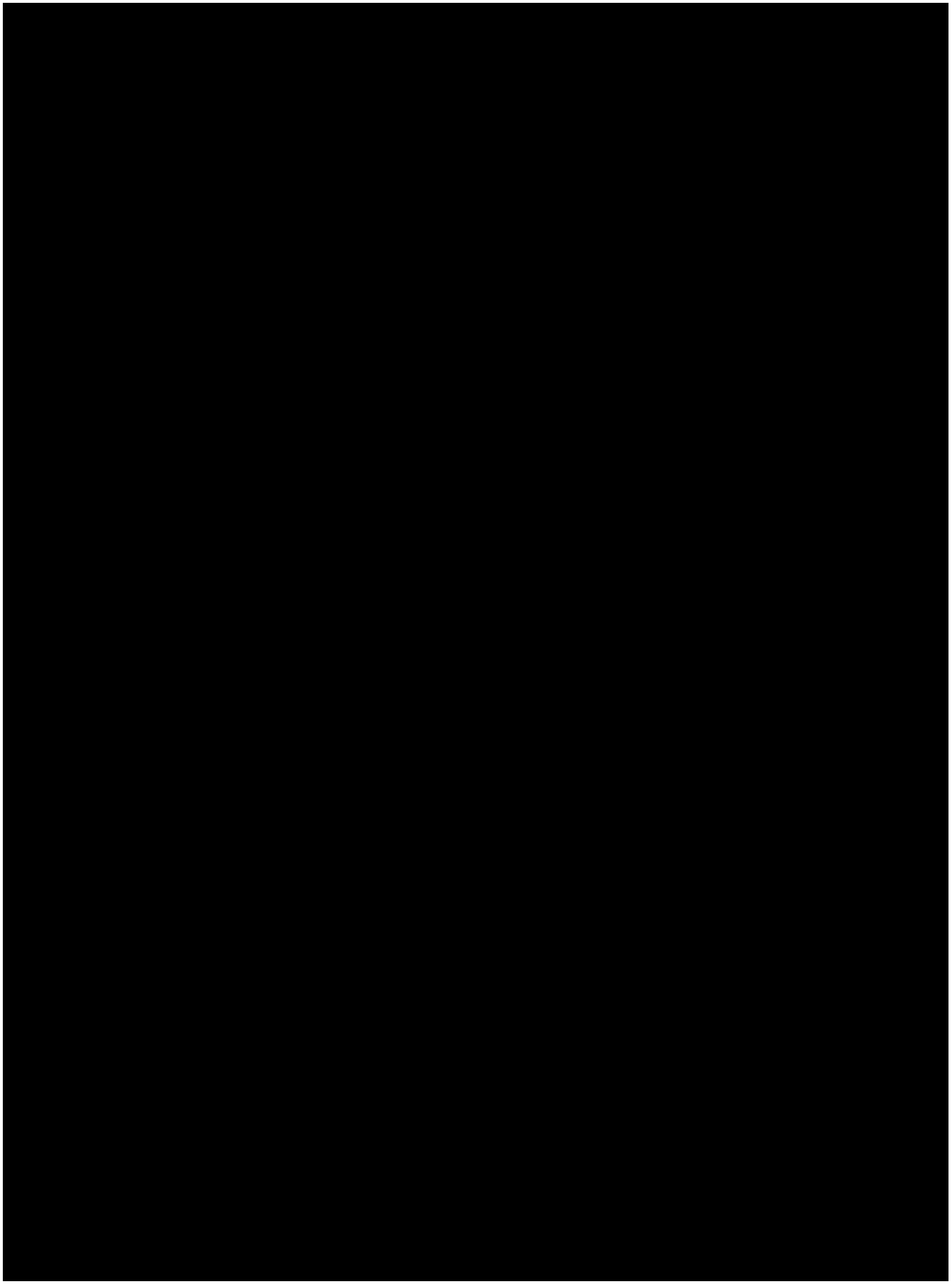


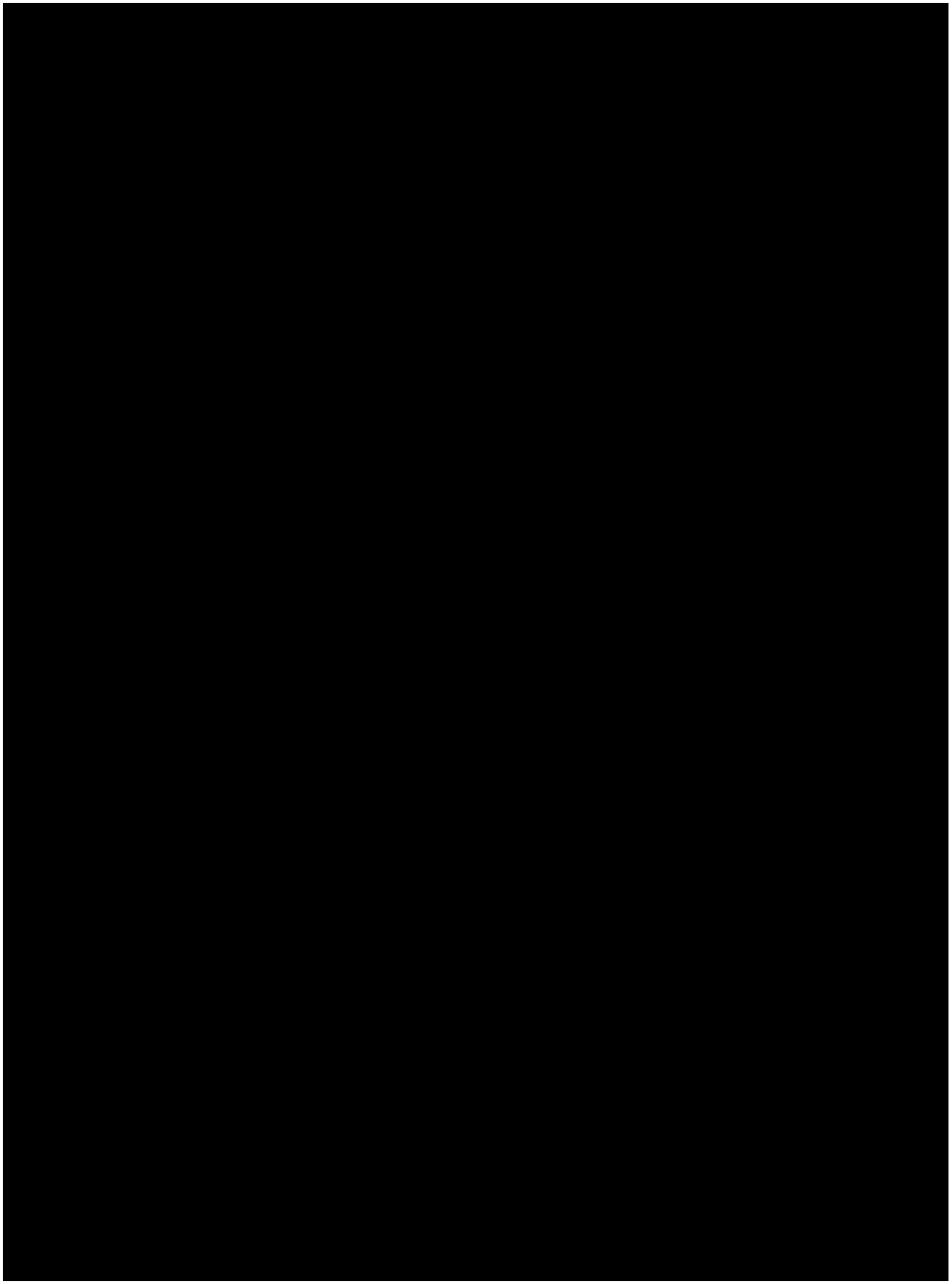
Emission Cost ($000) x y z

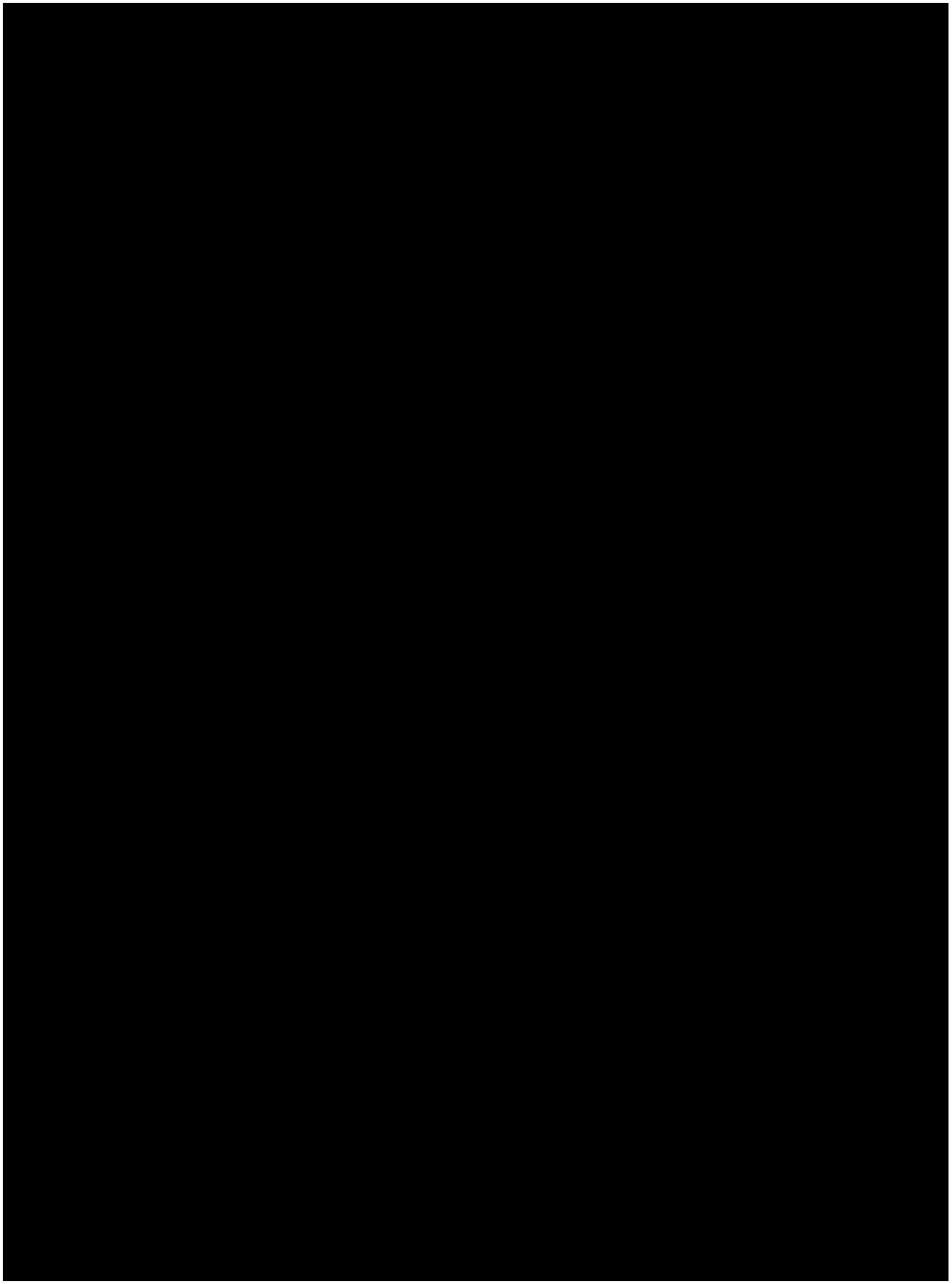


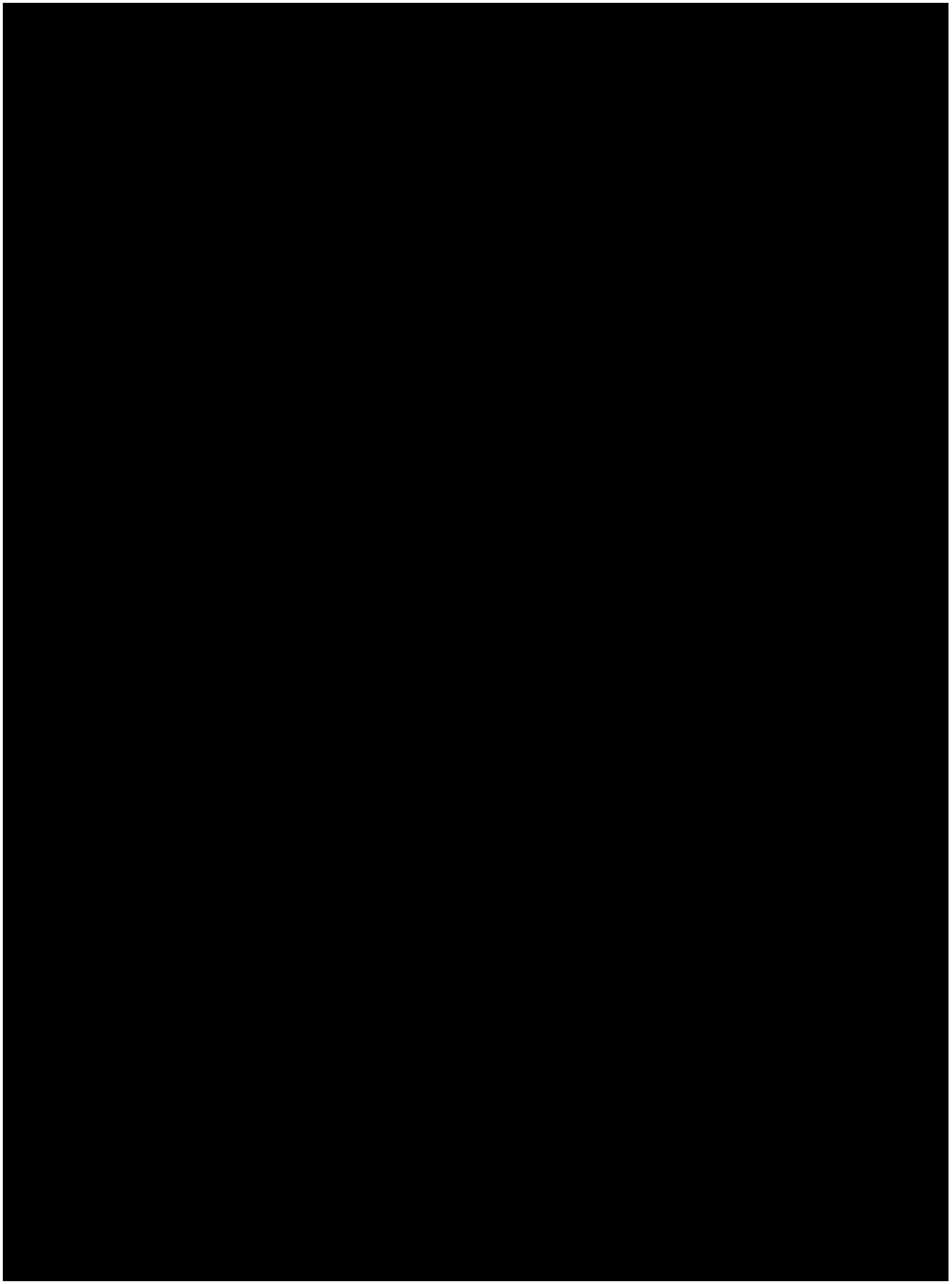


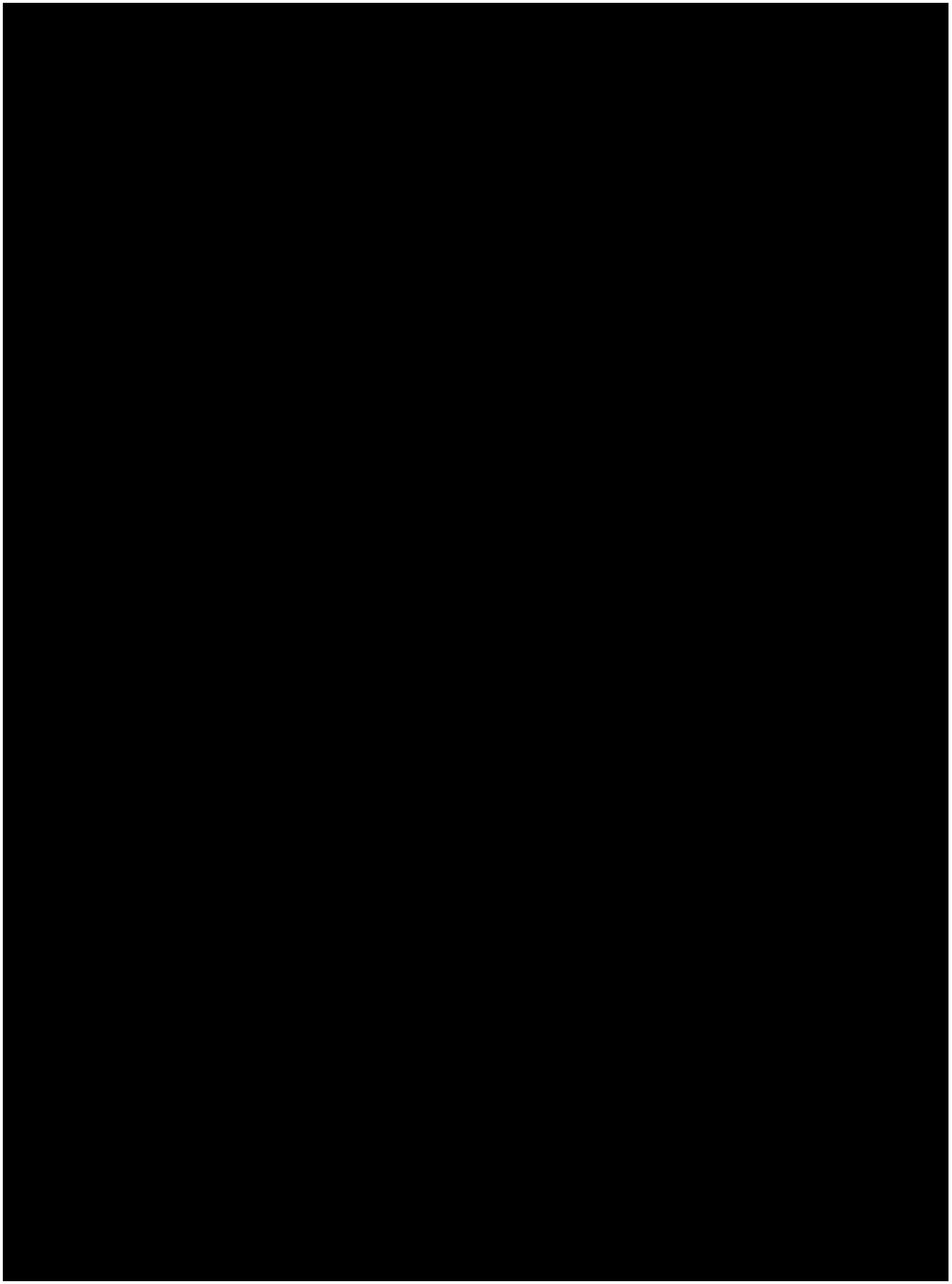
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

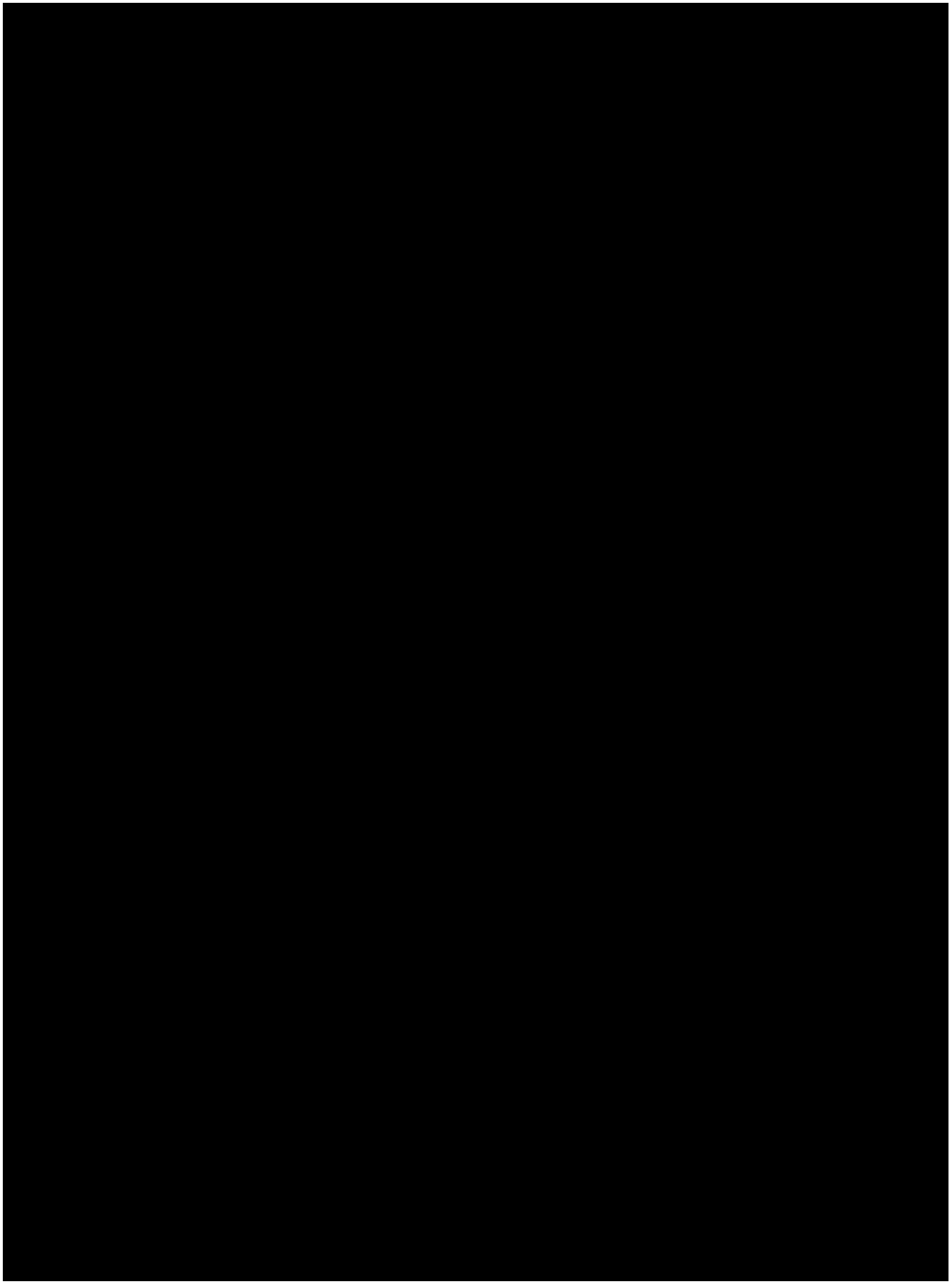


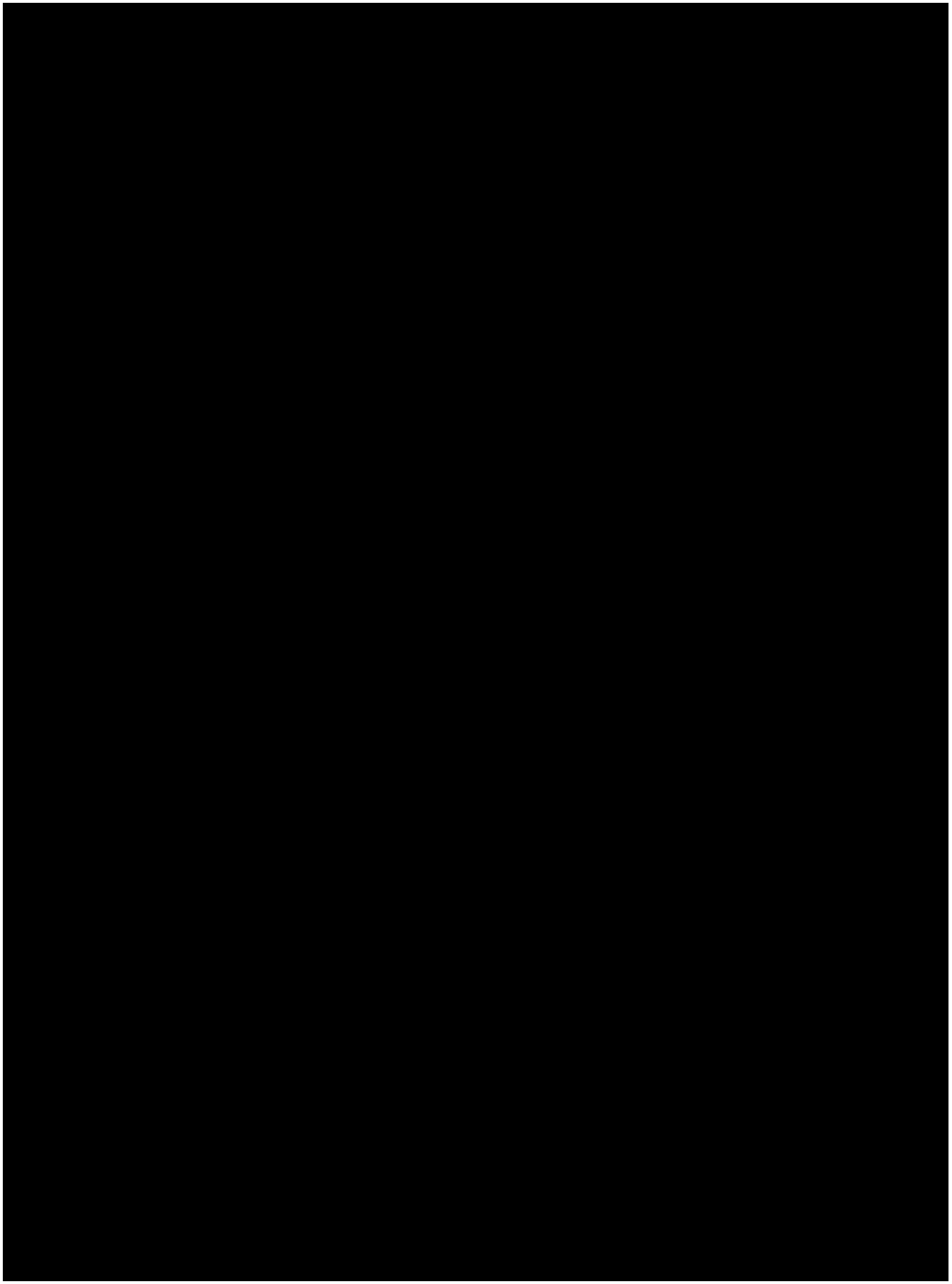


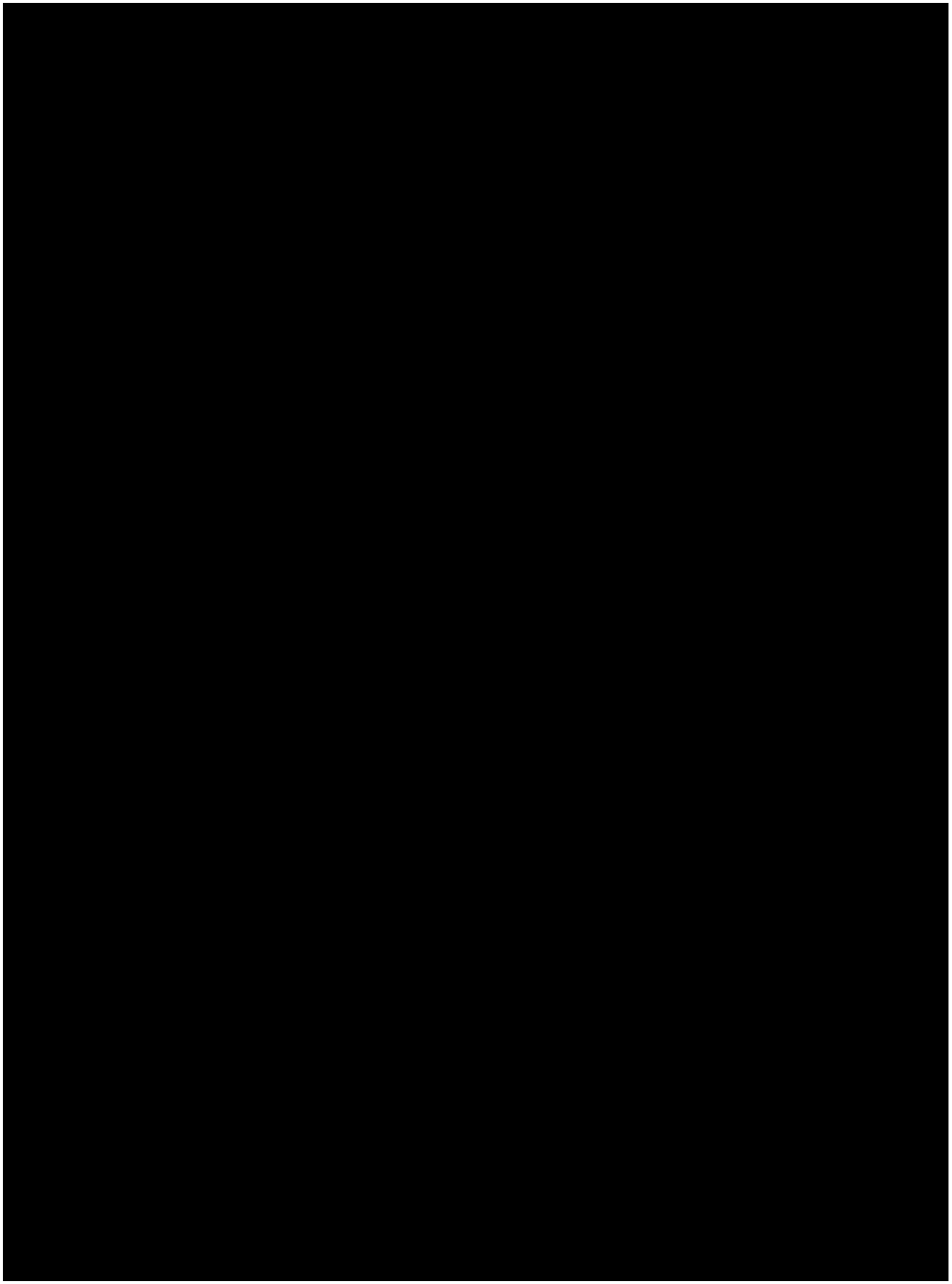


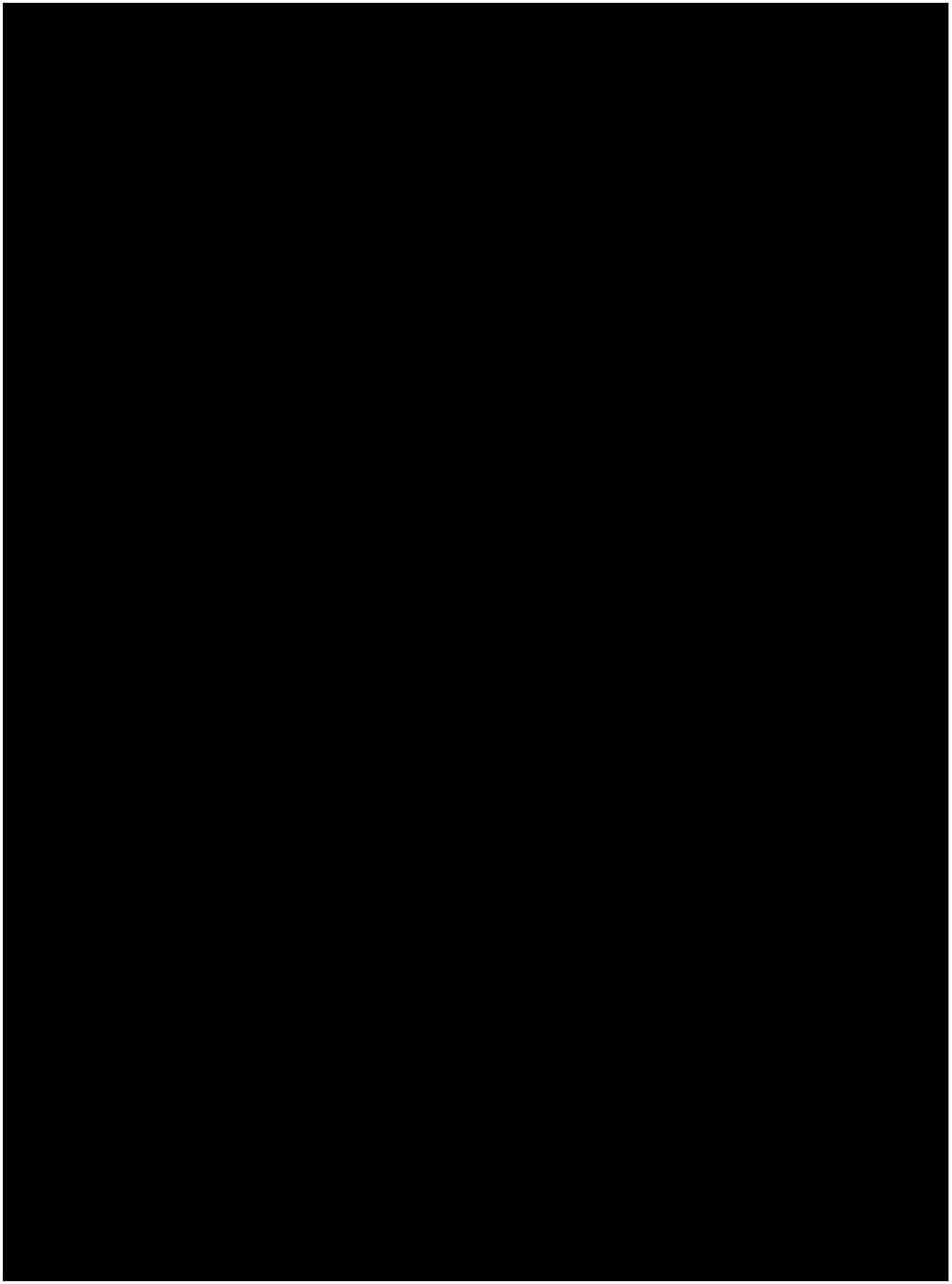


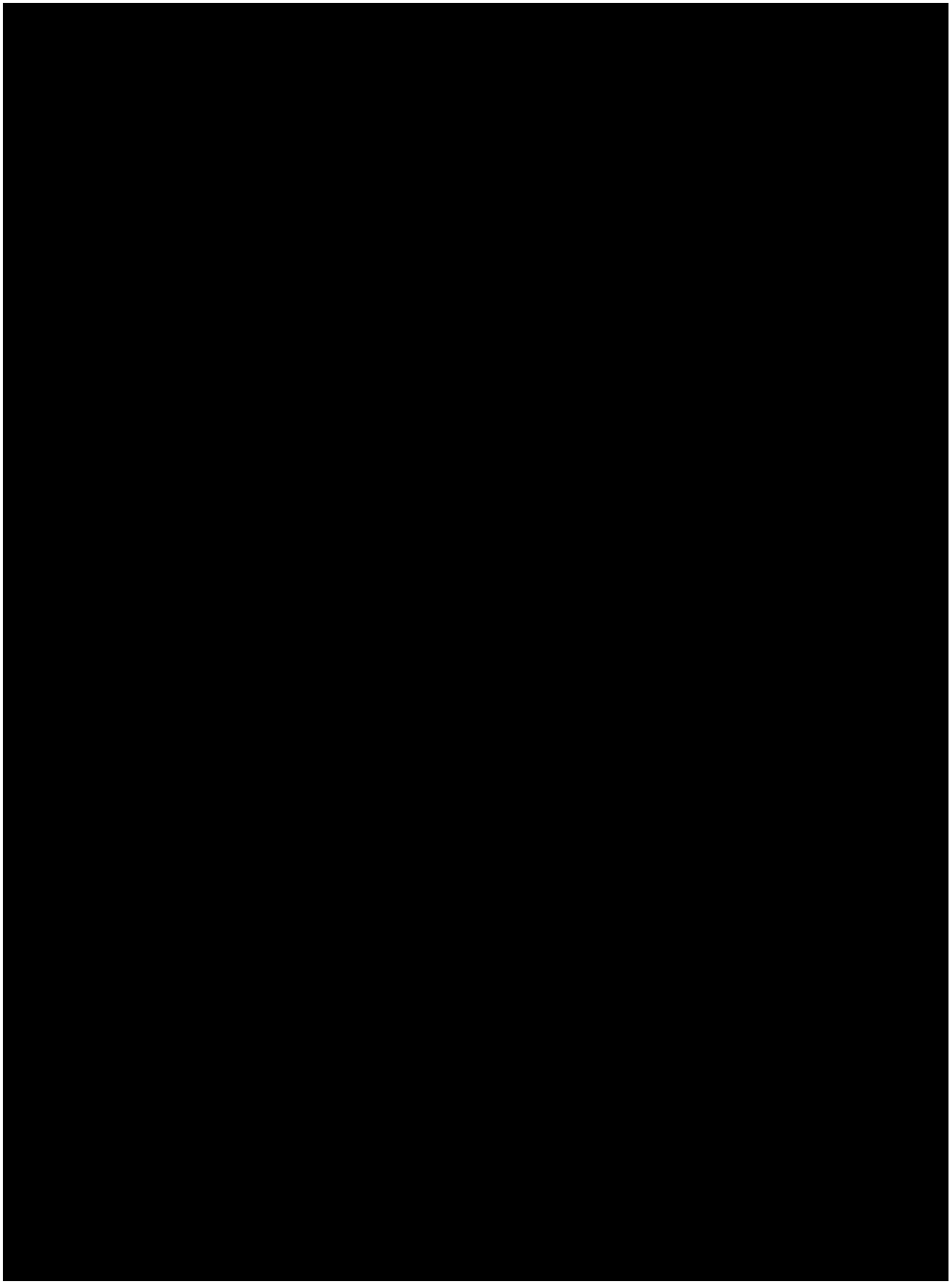


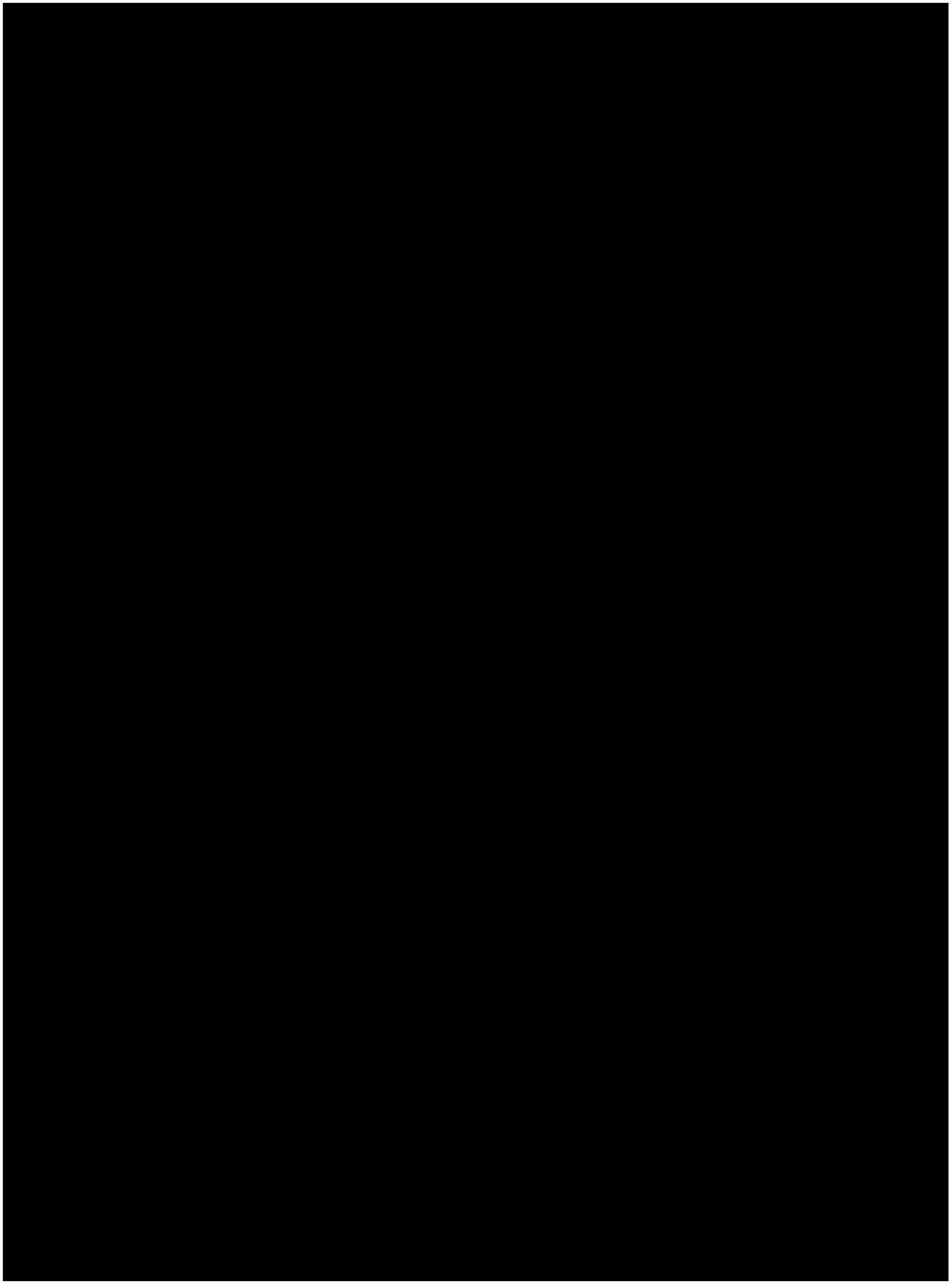


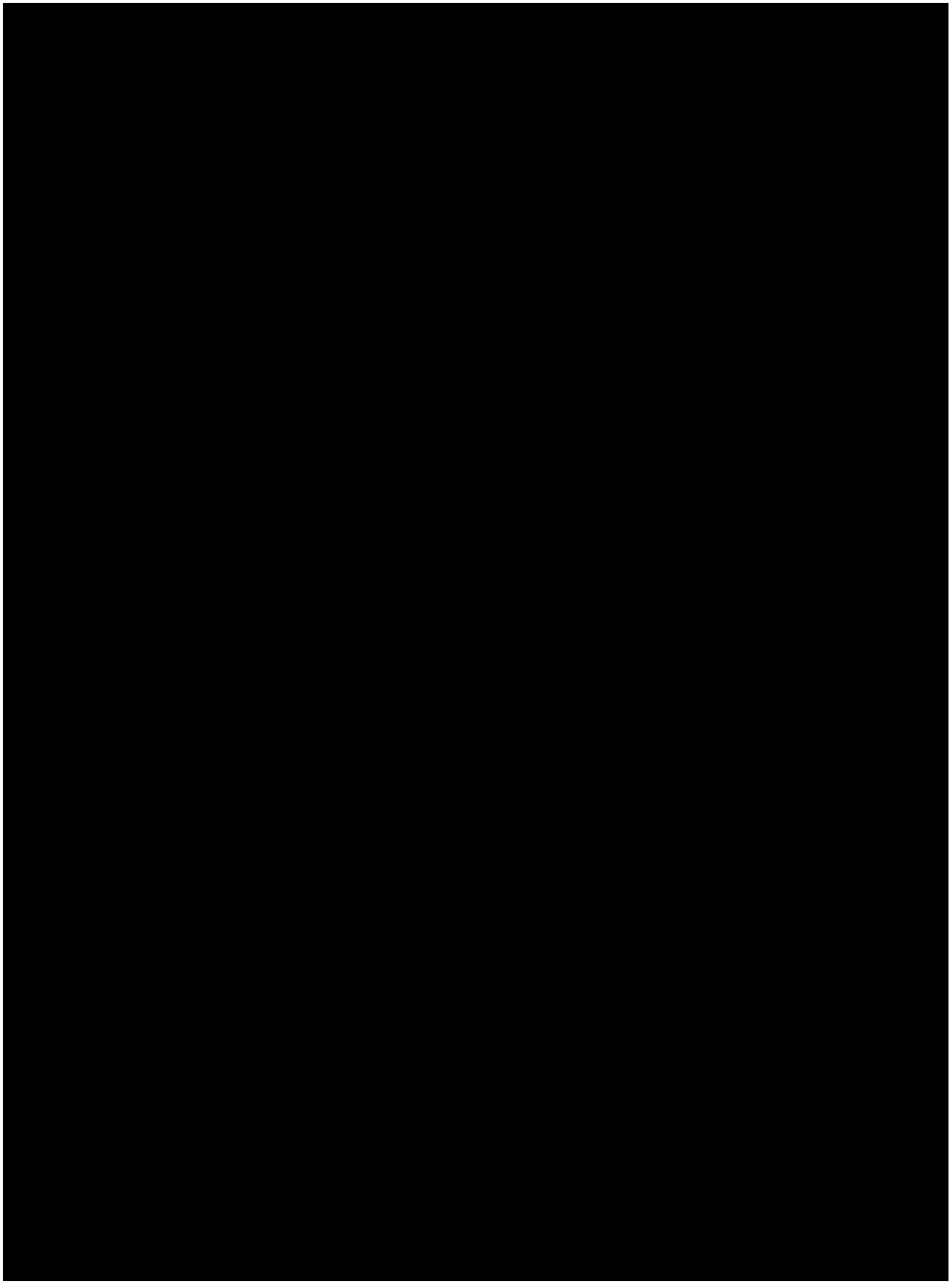


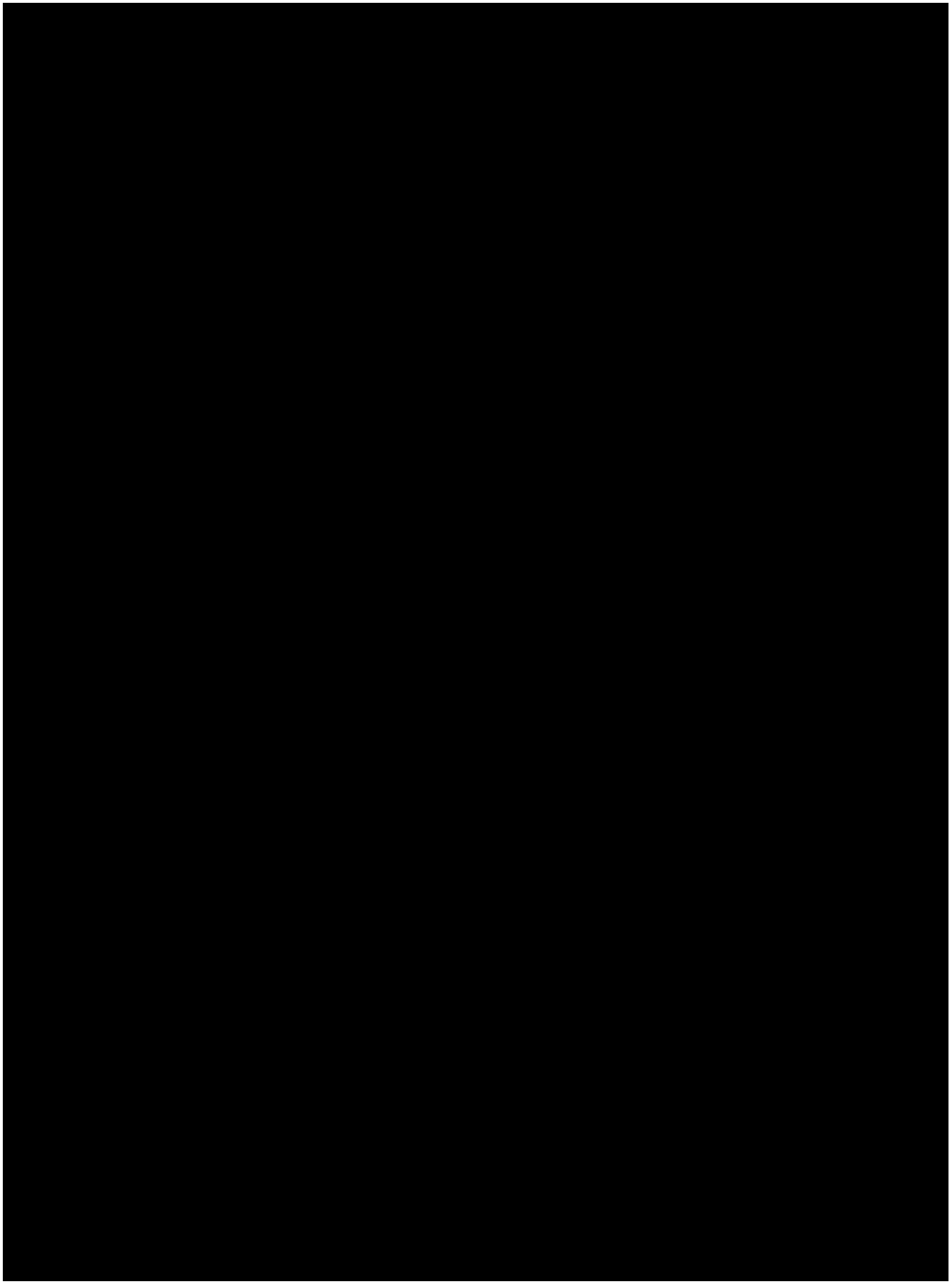


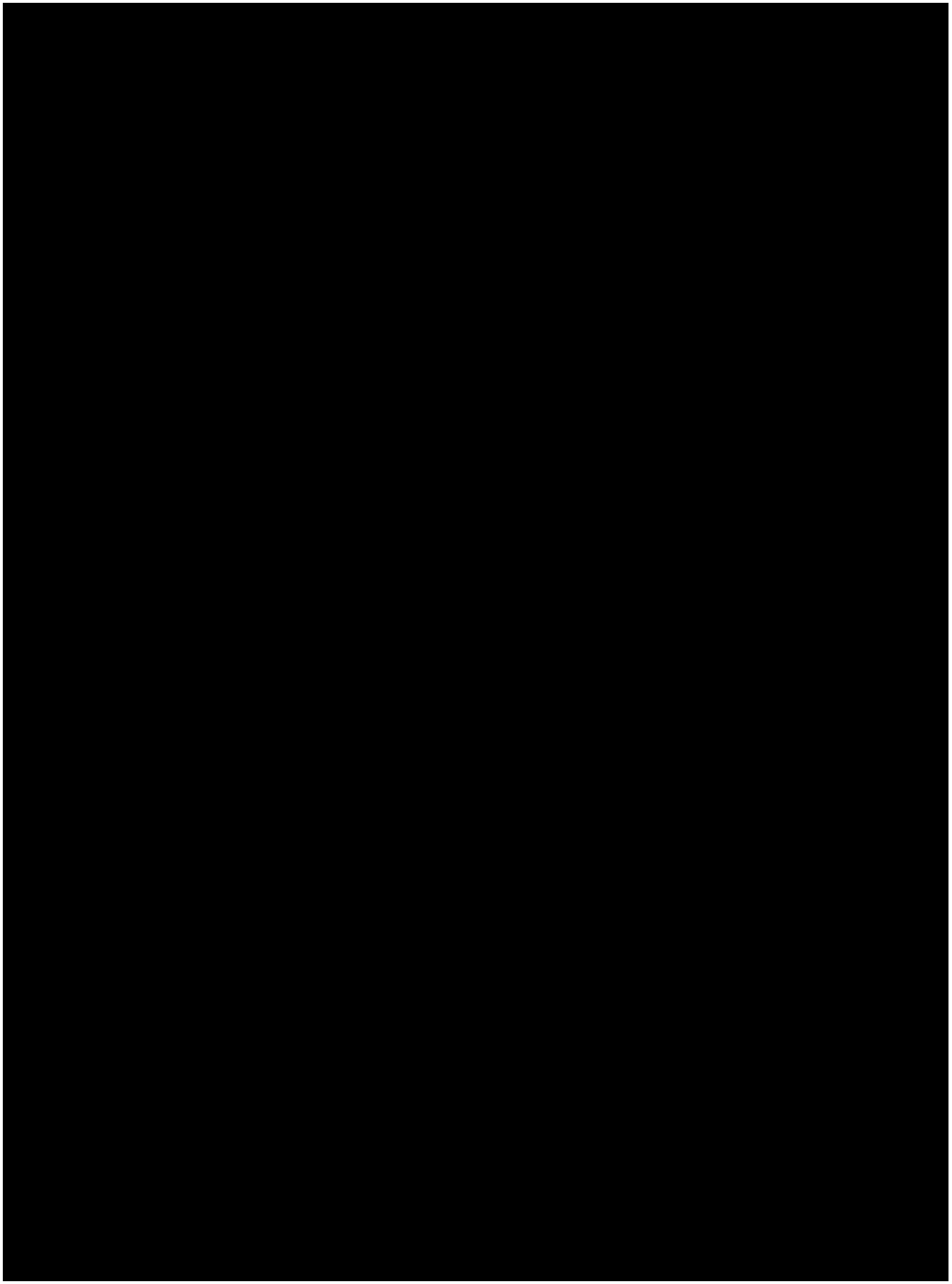


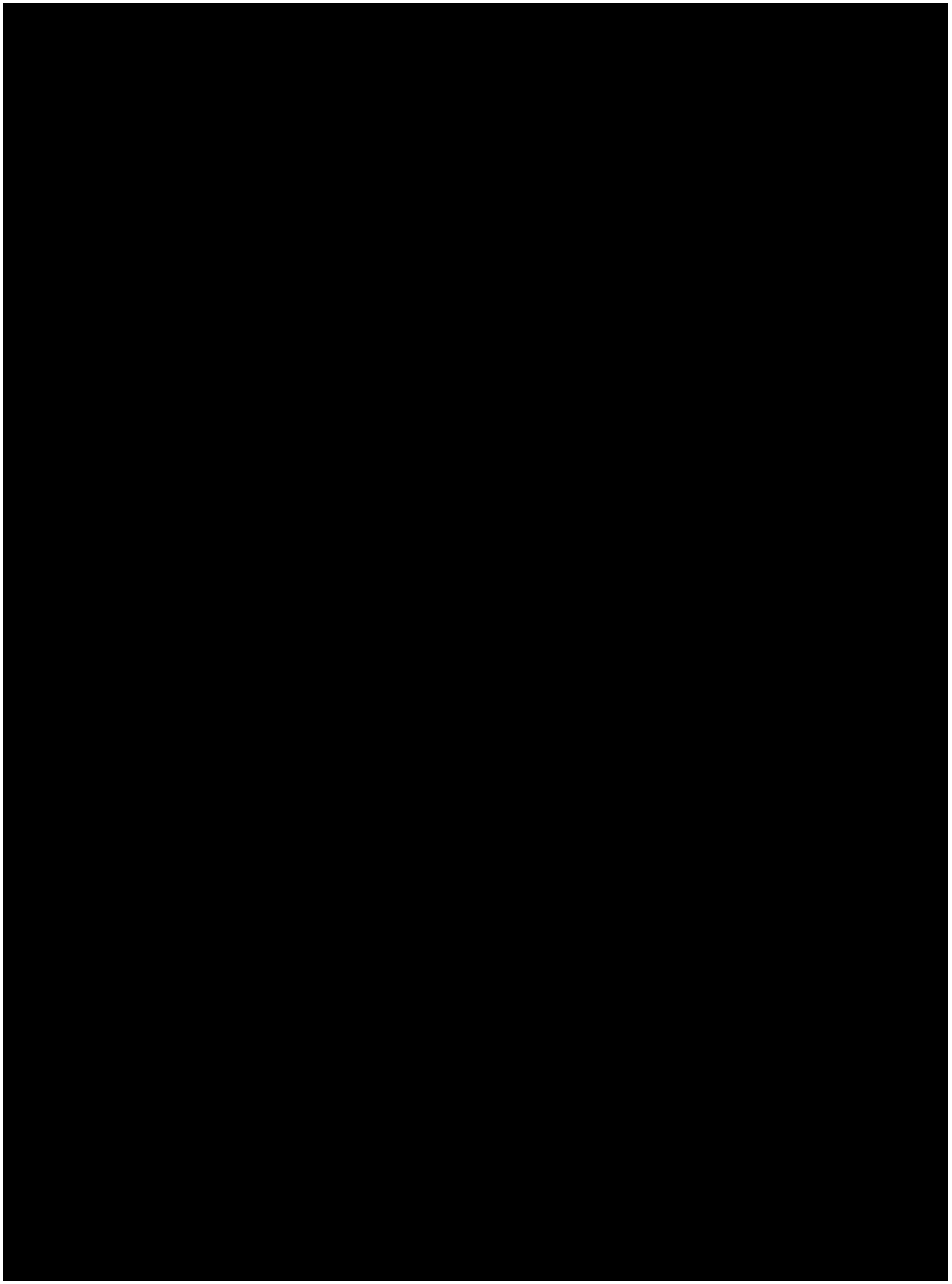


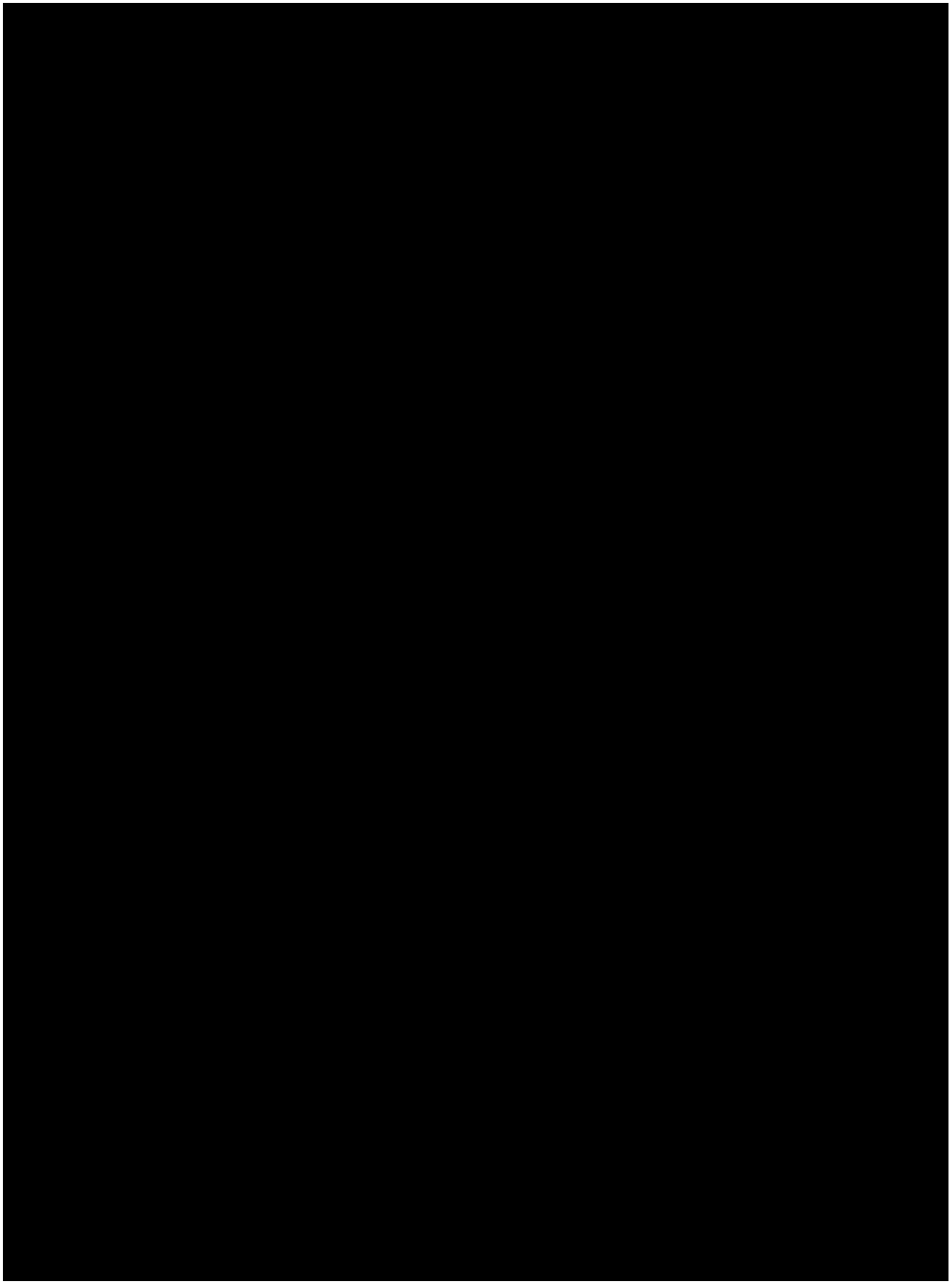


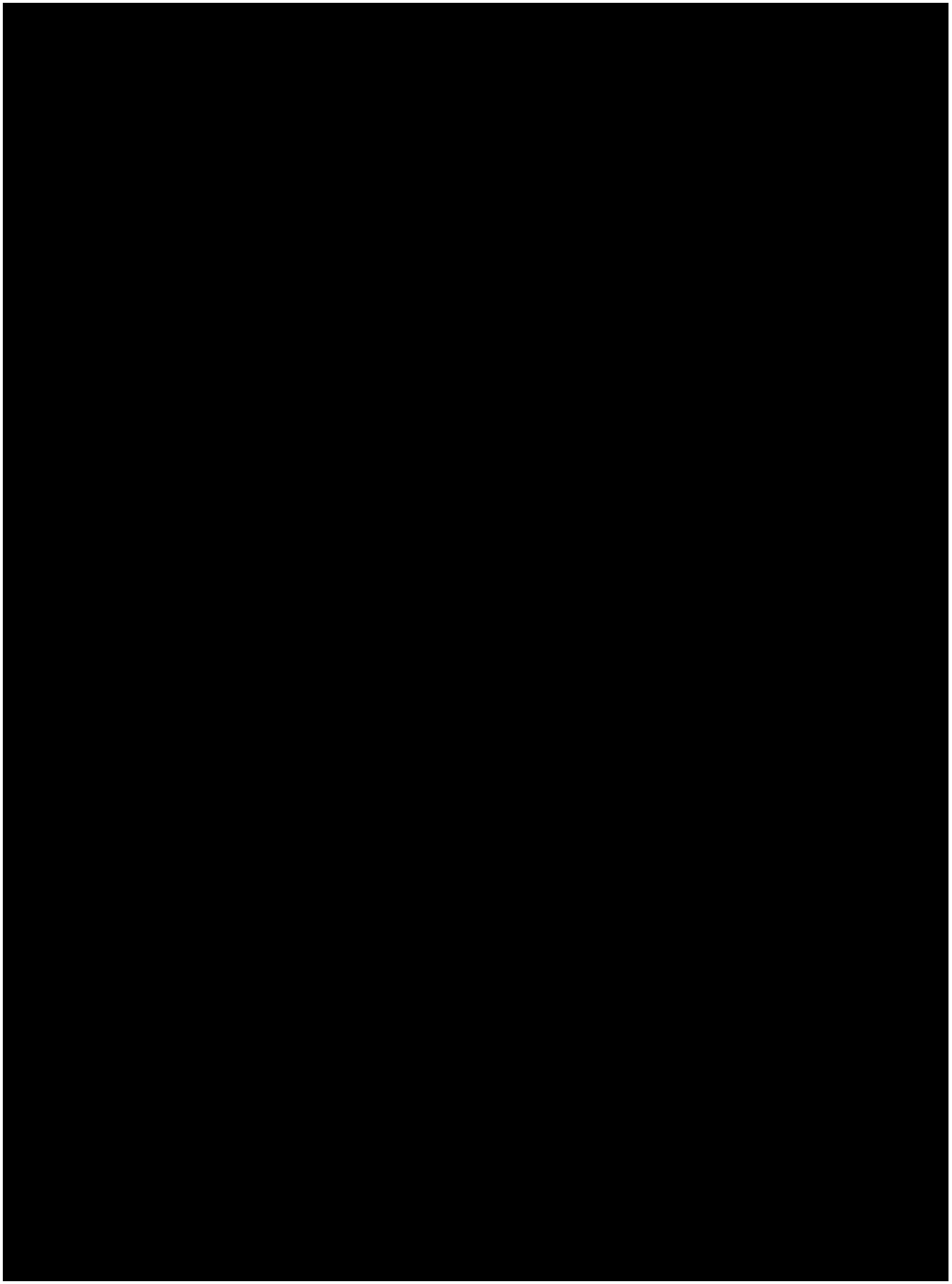


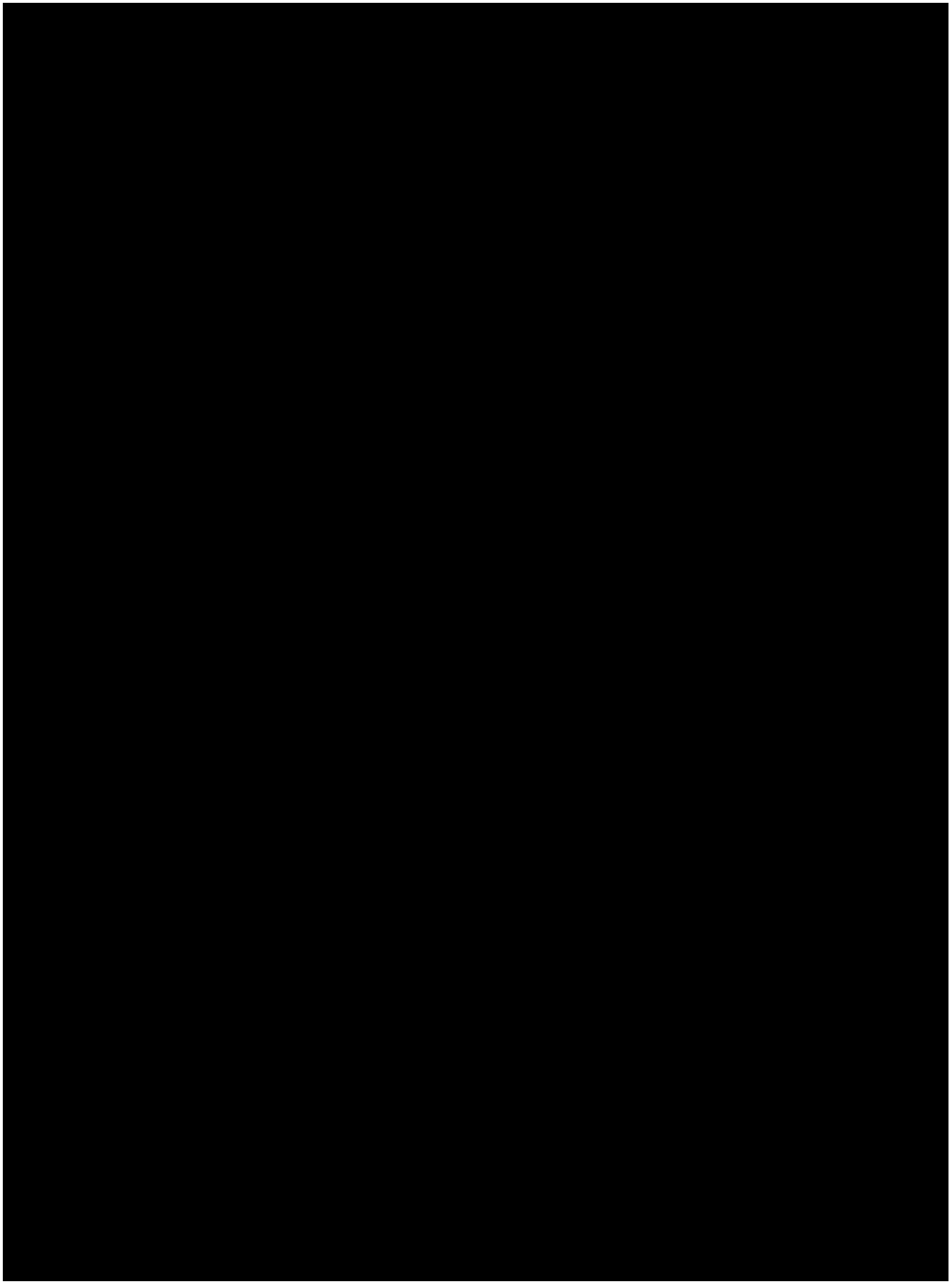




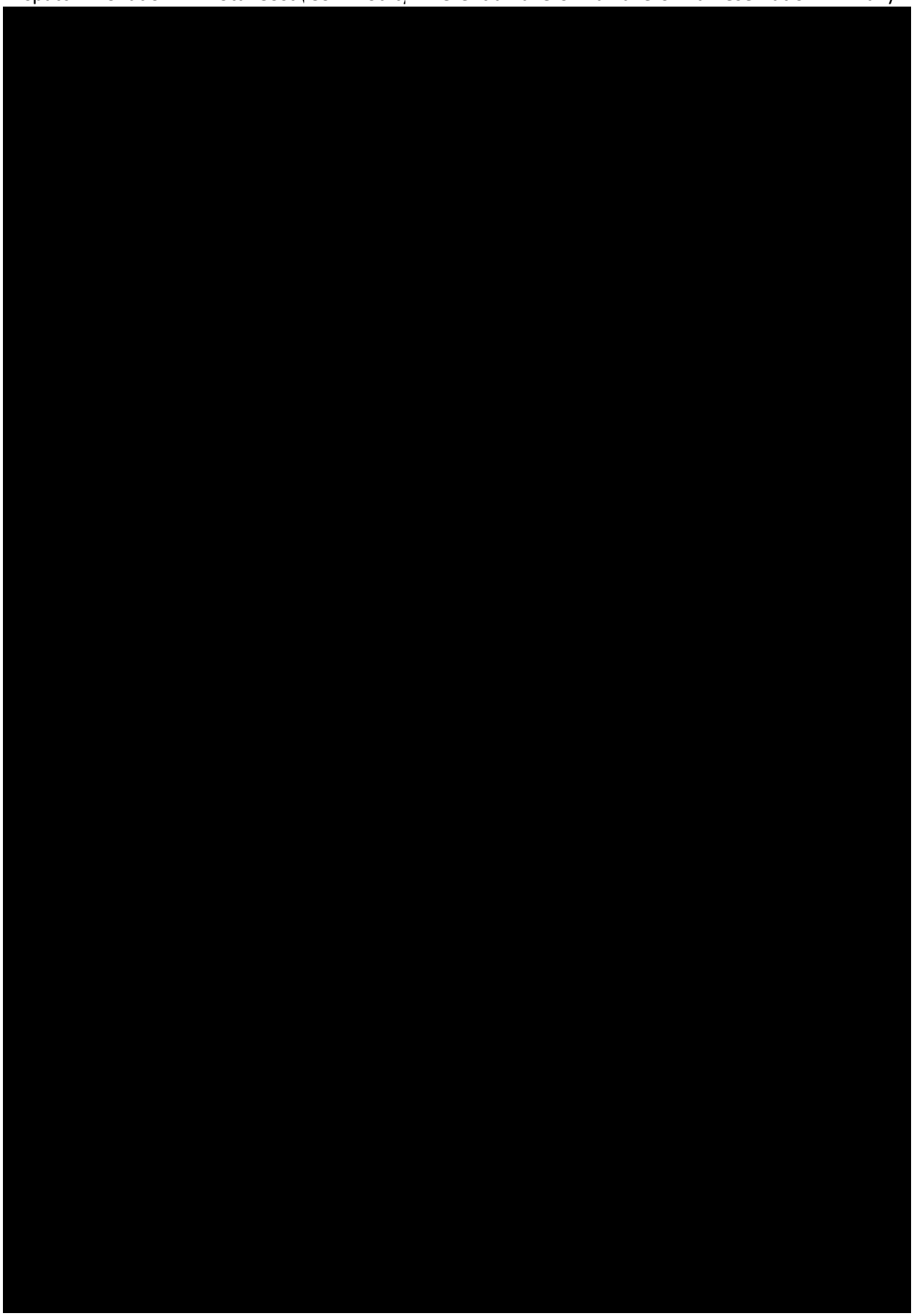


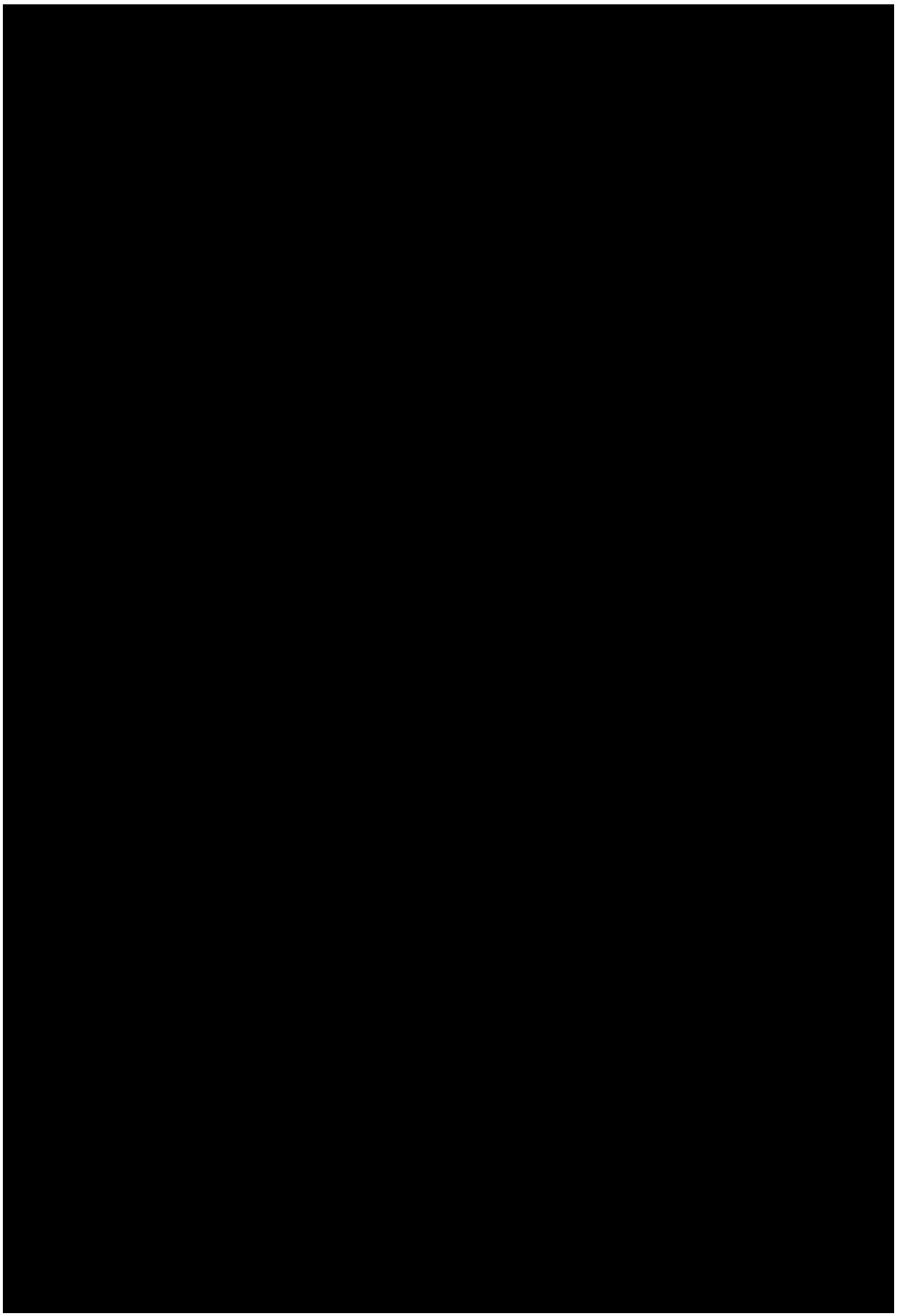


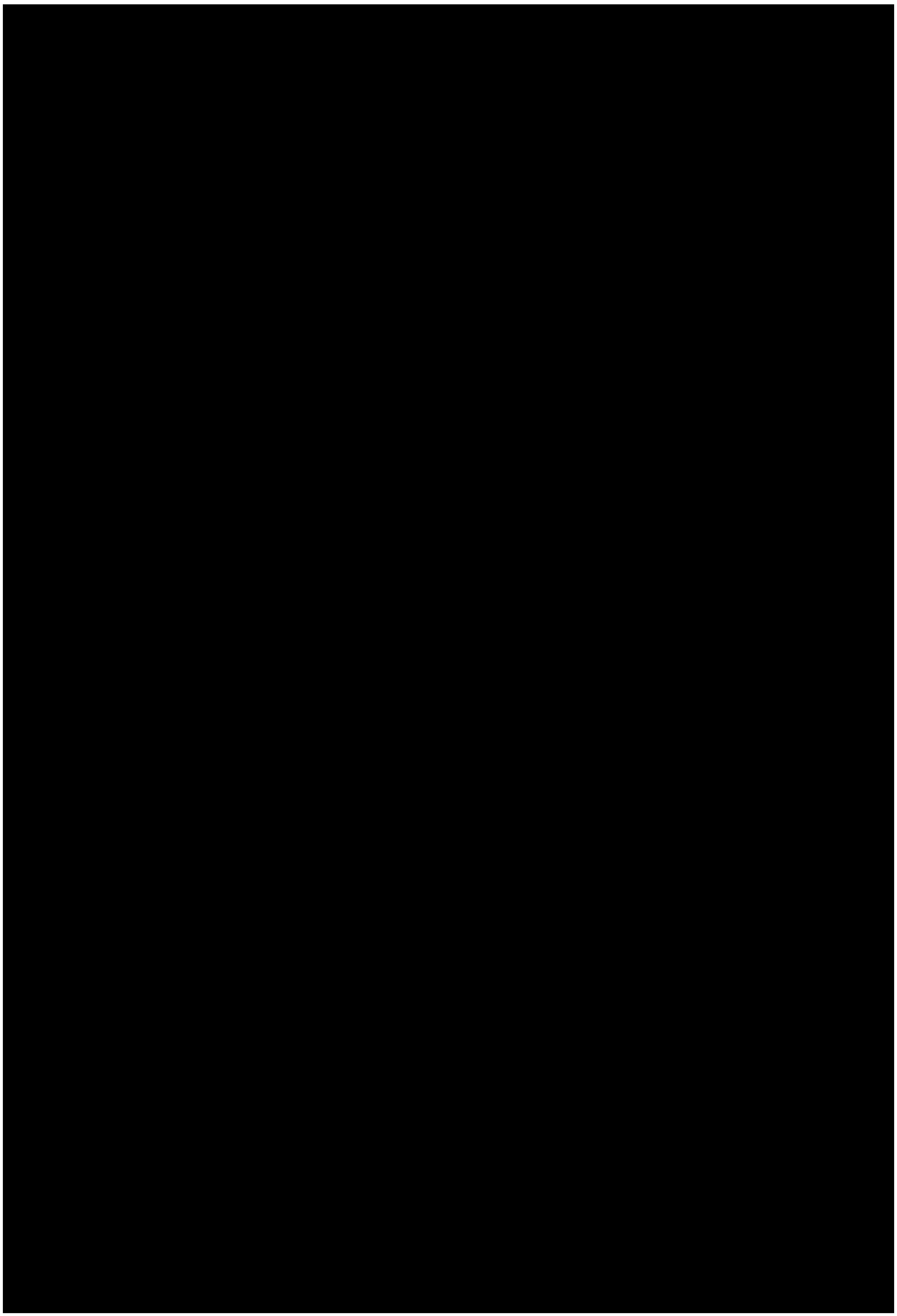


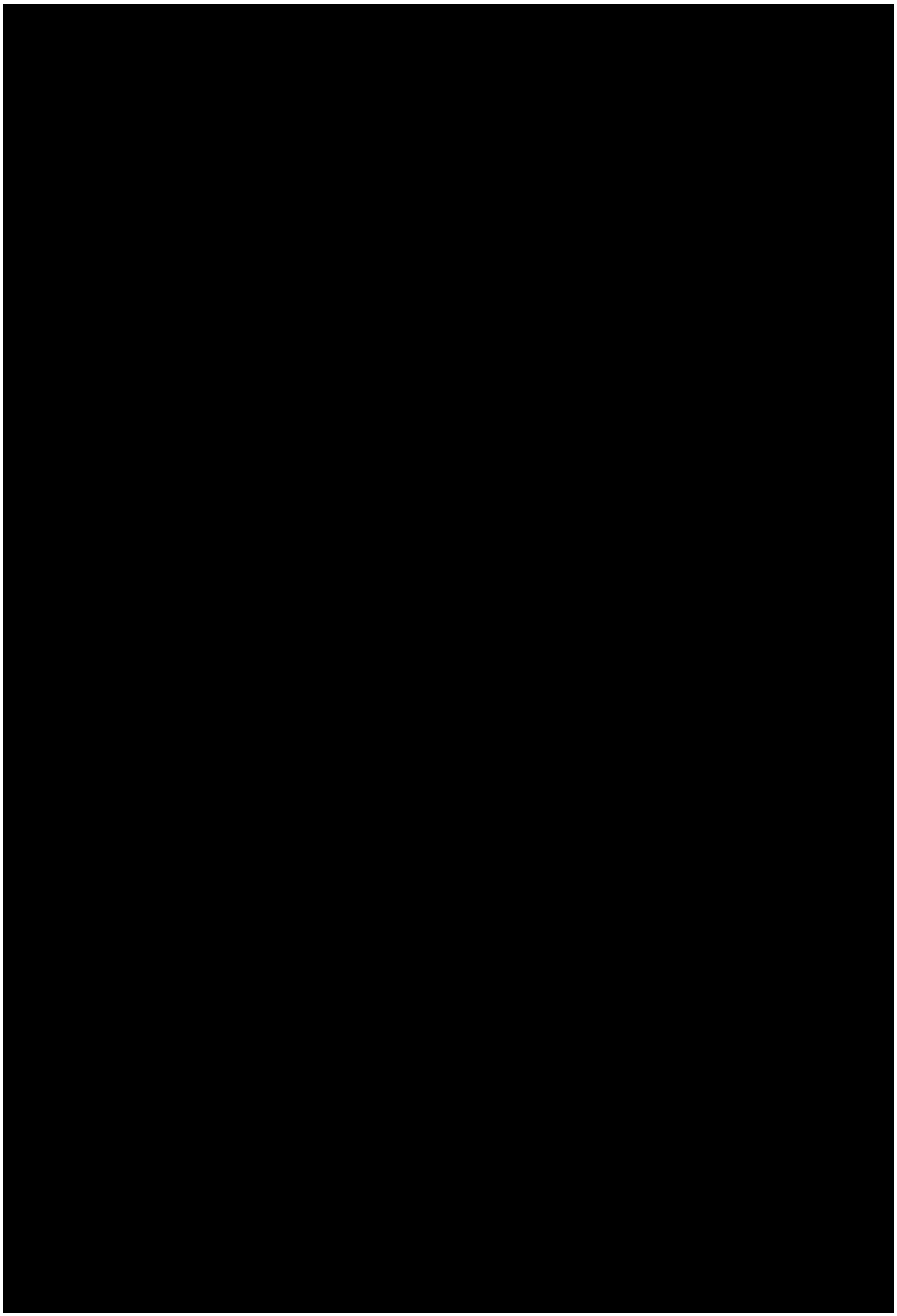


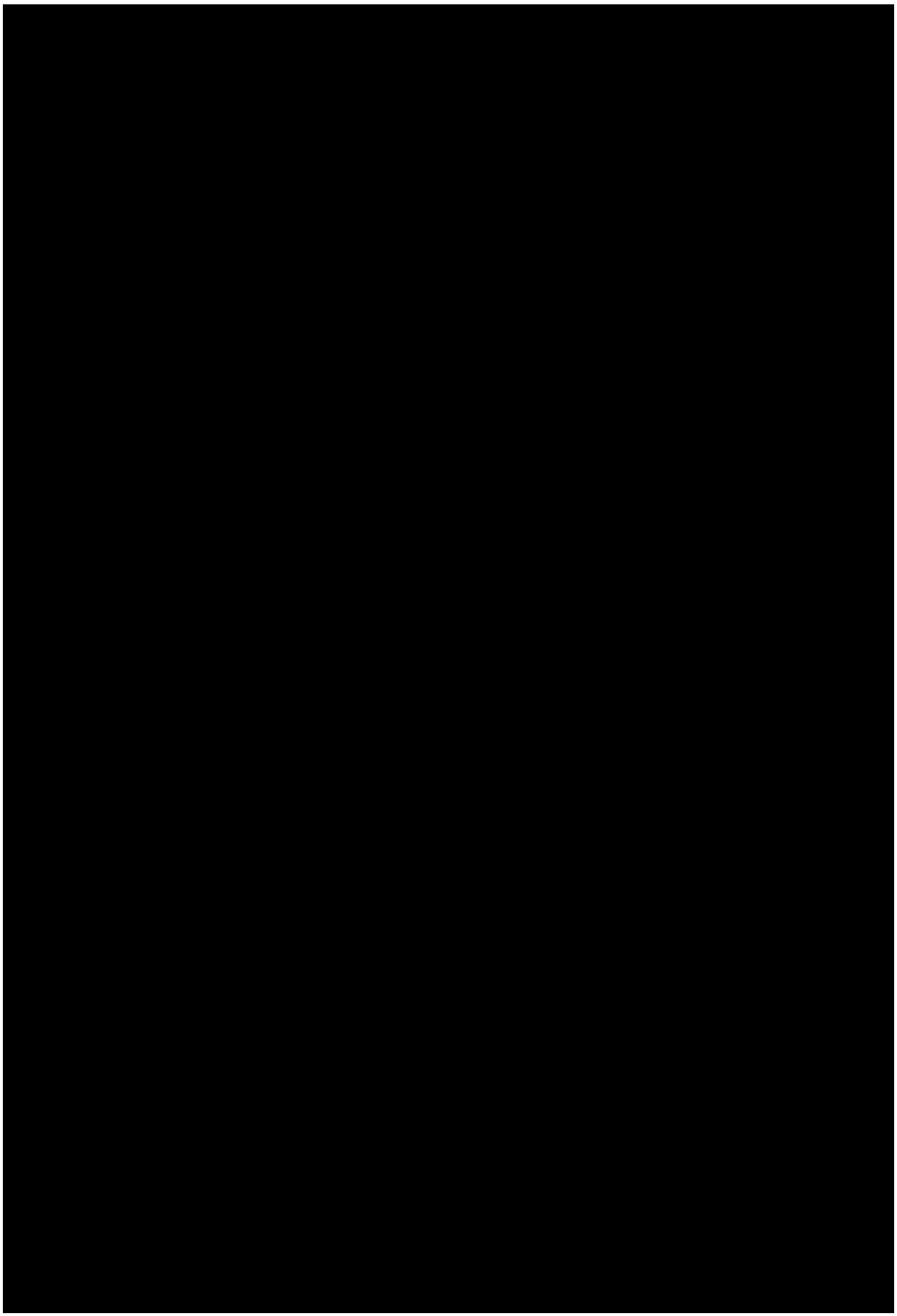


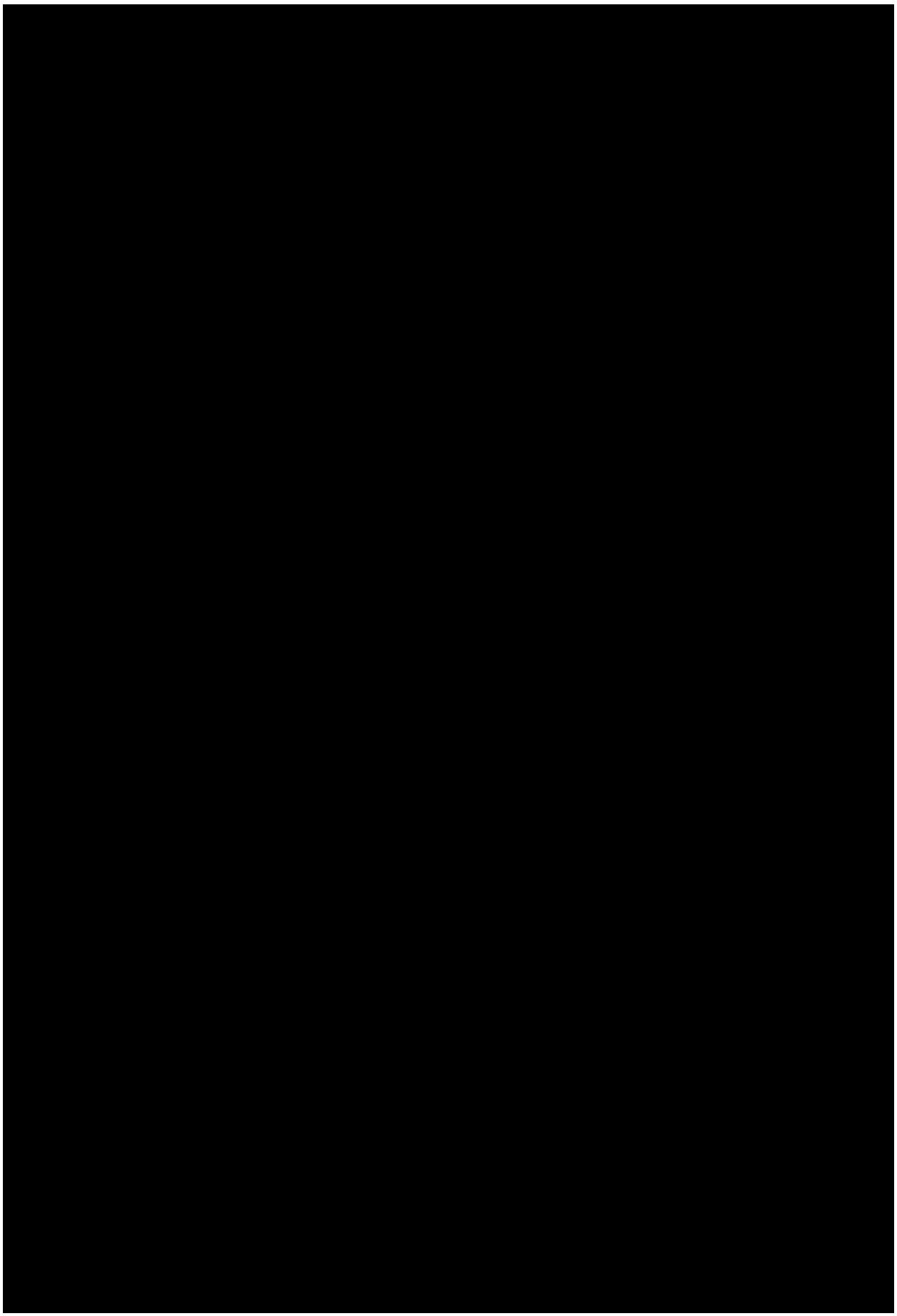

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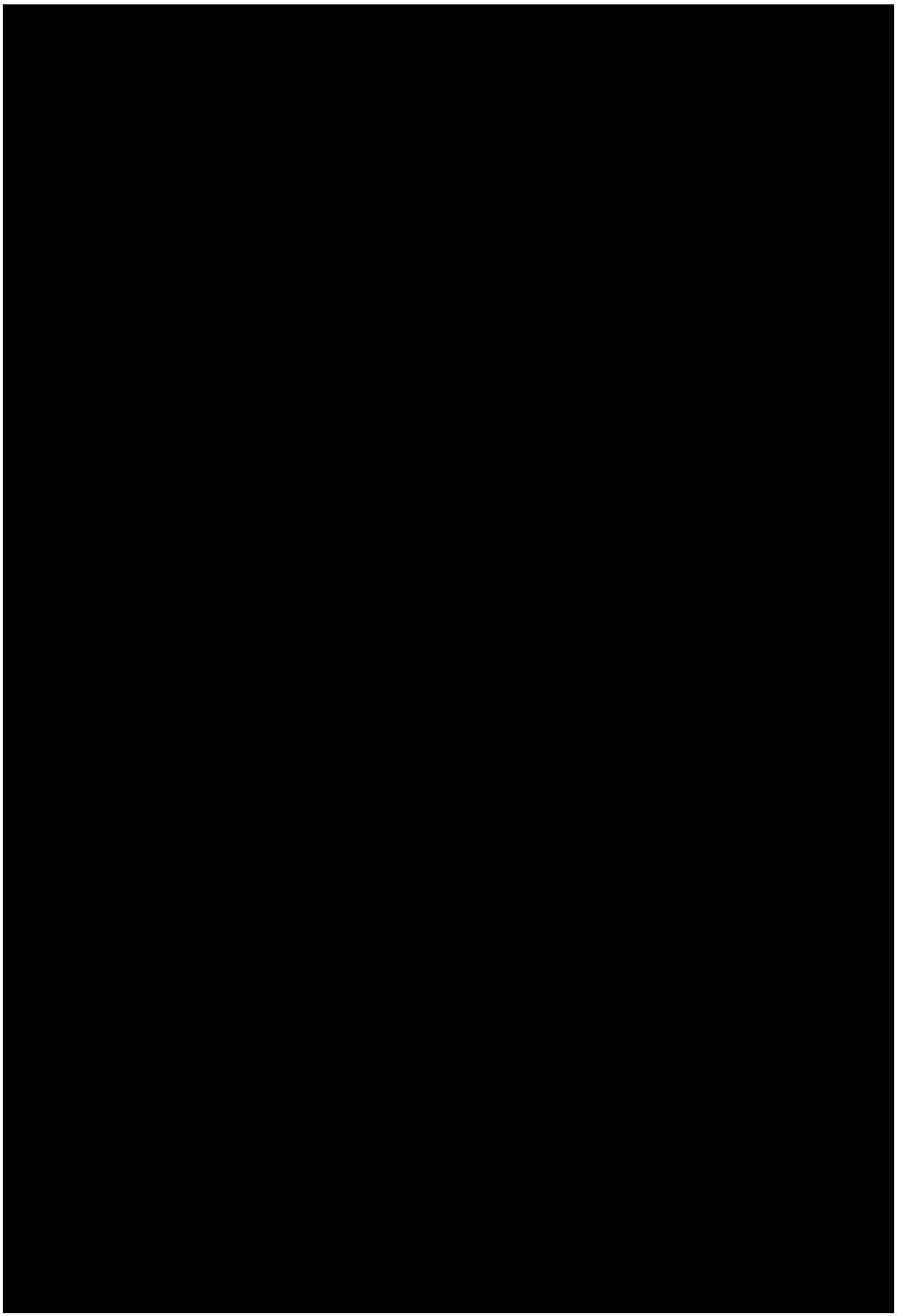


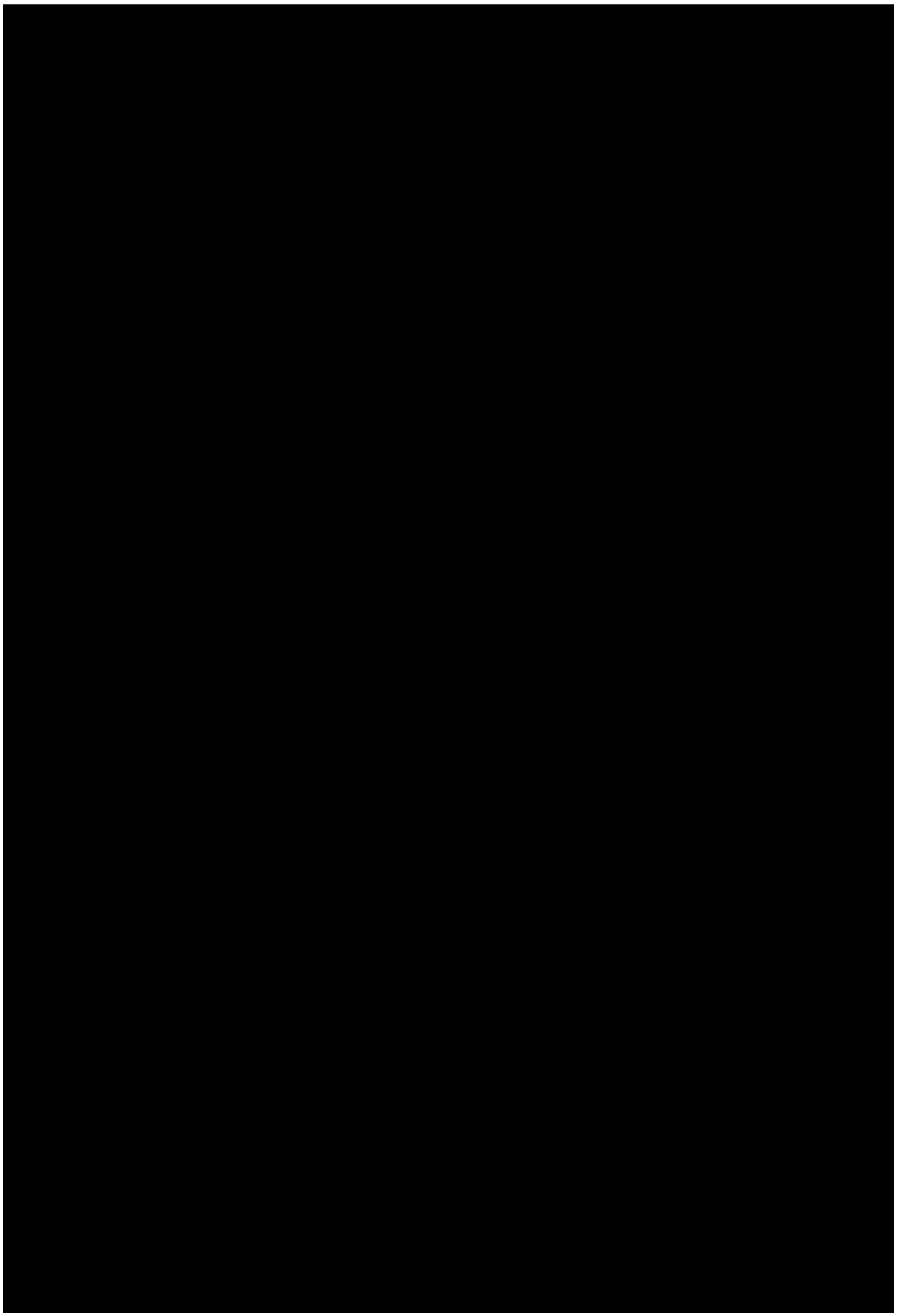


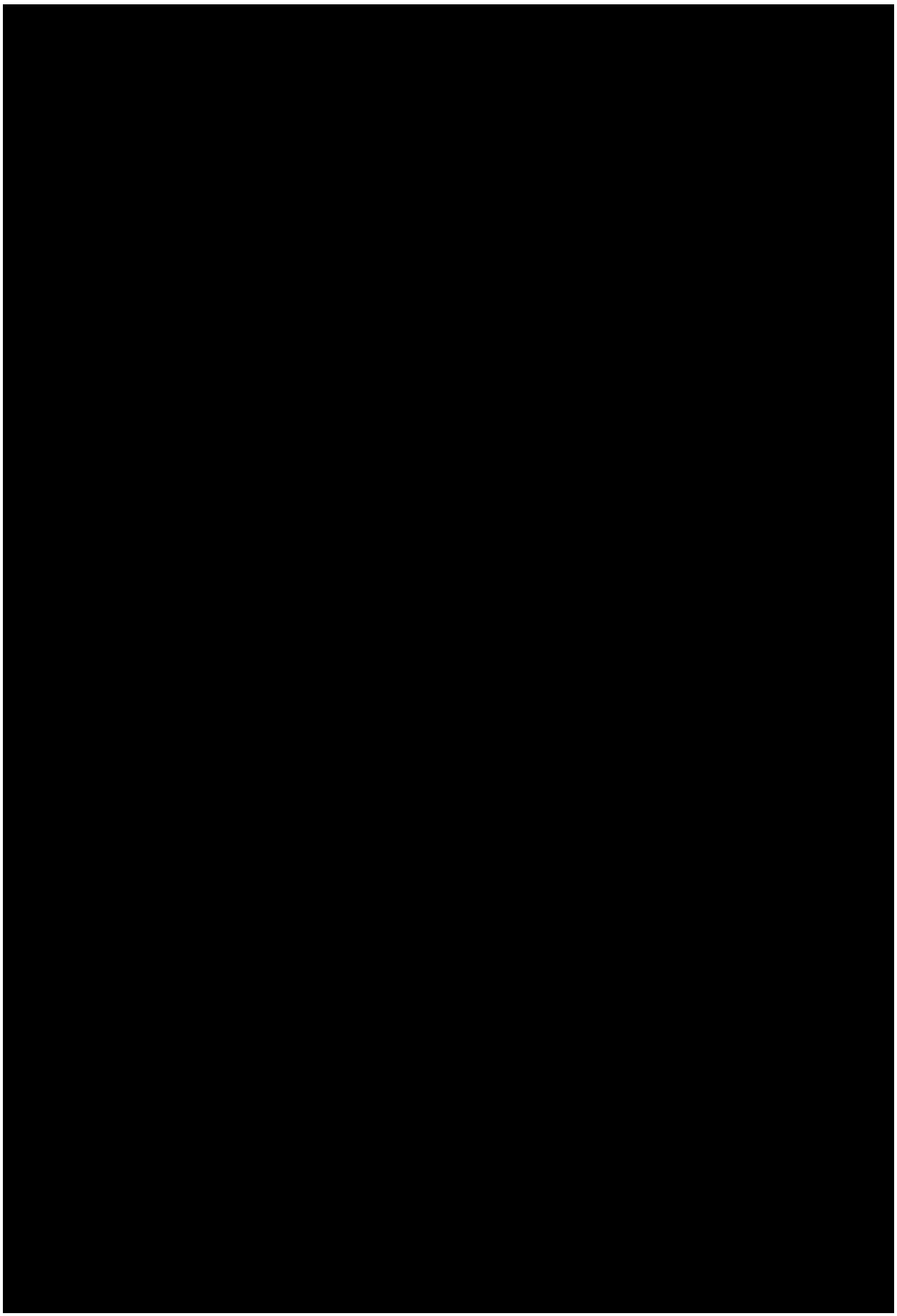


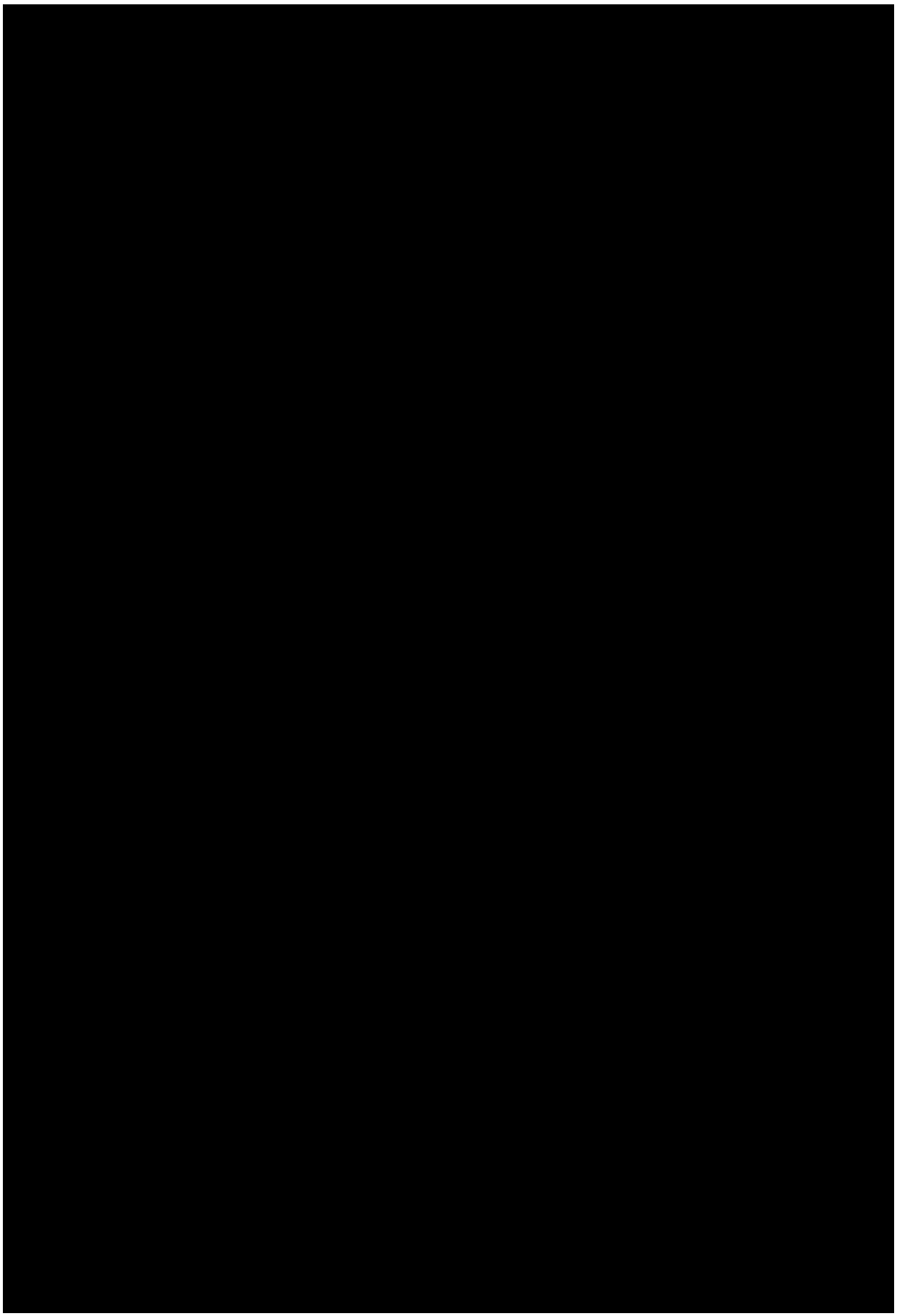


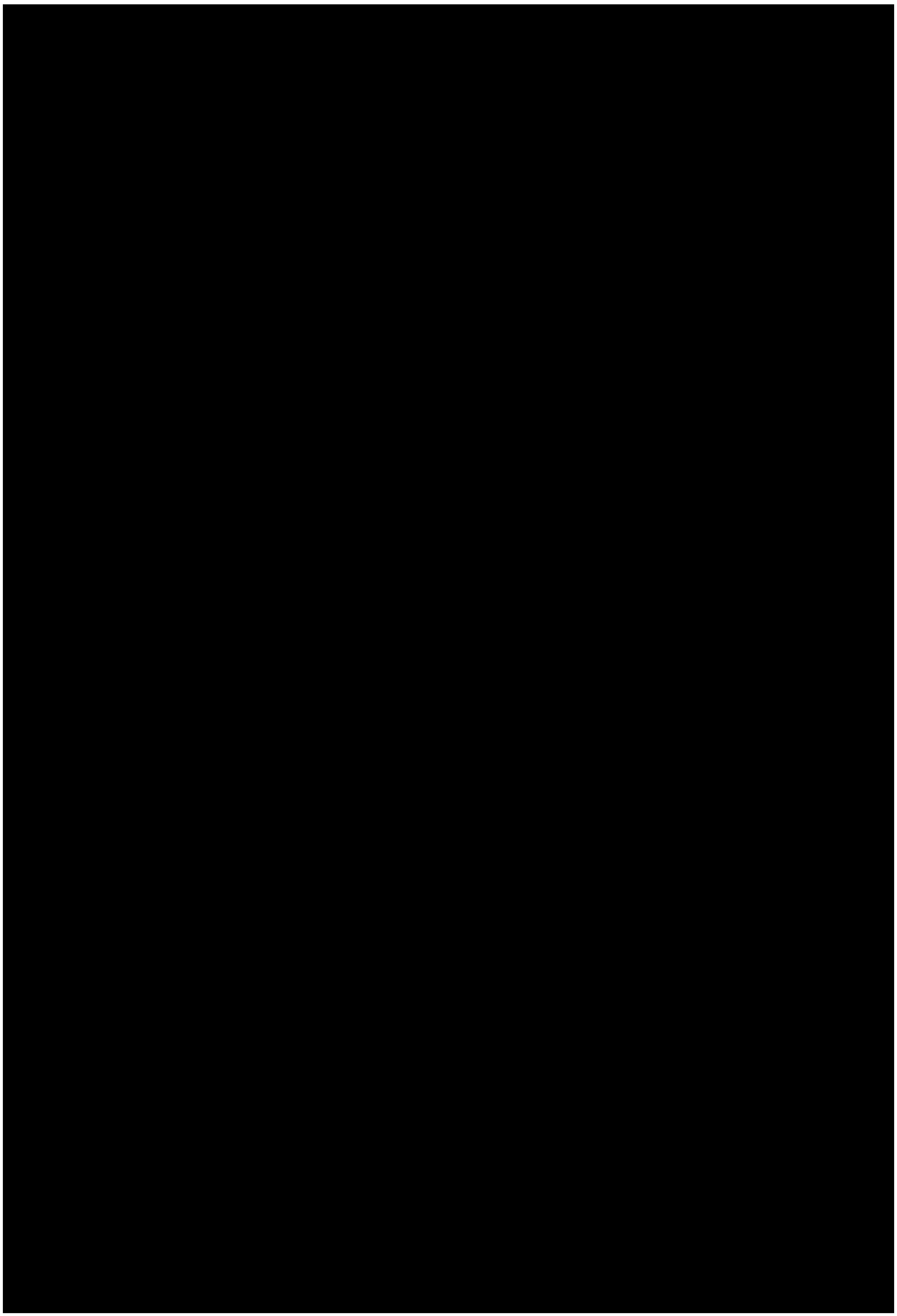


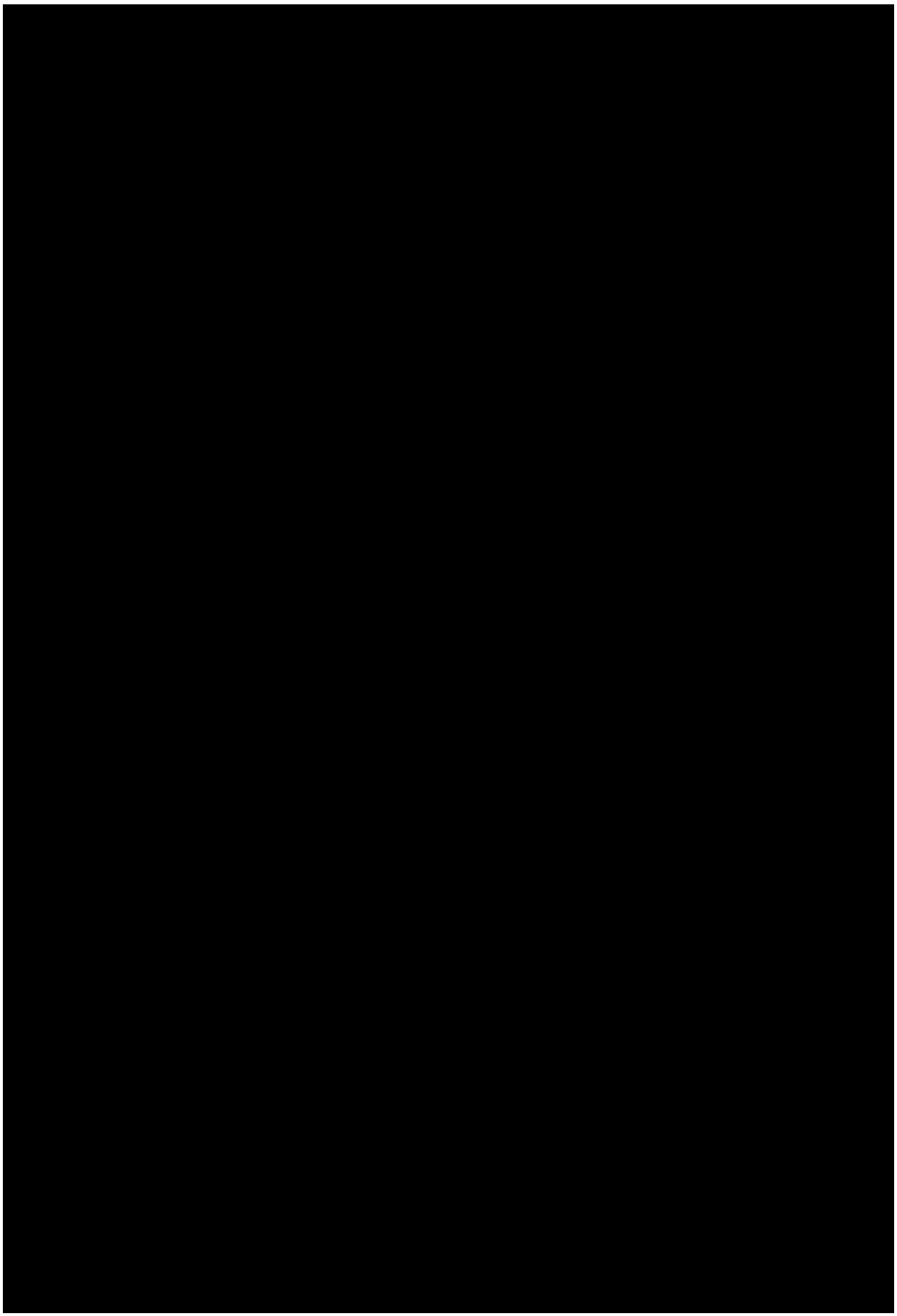


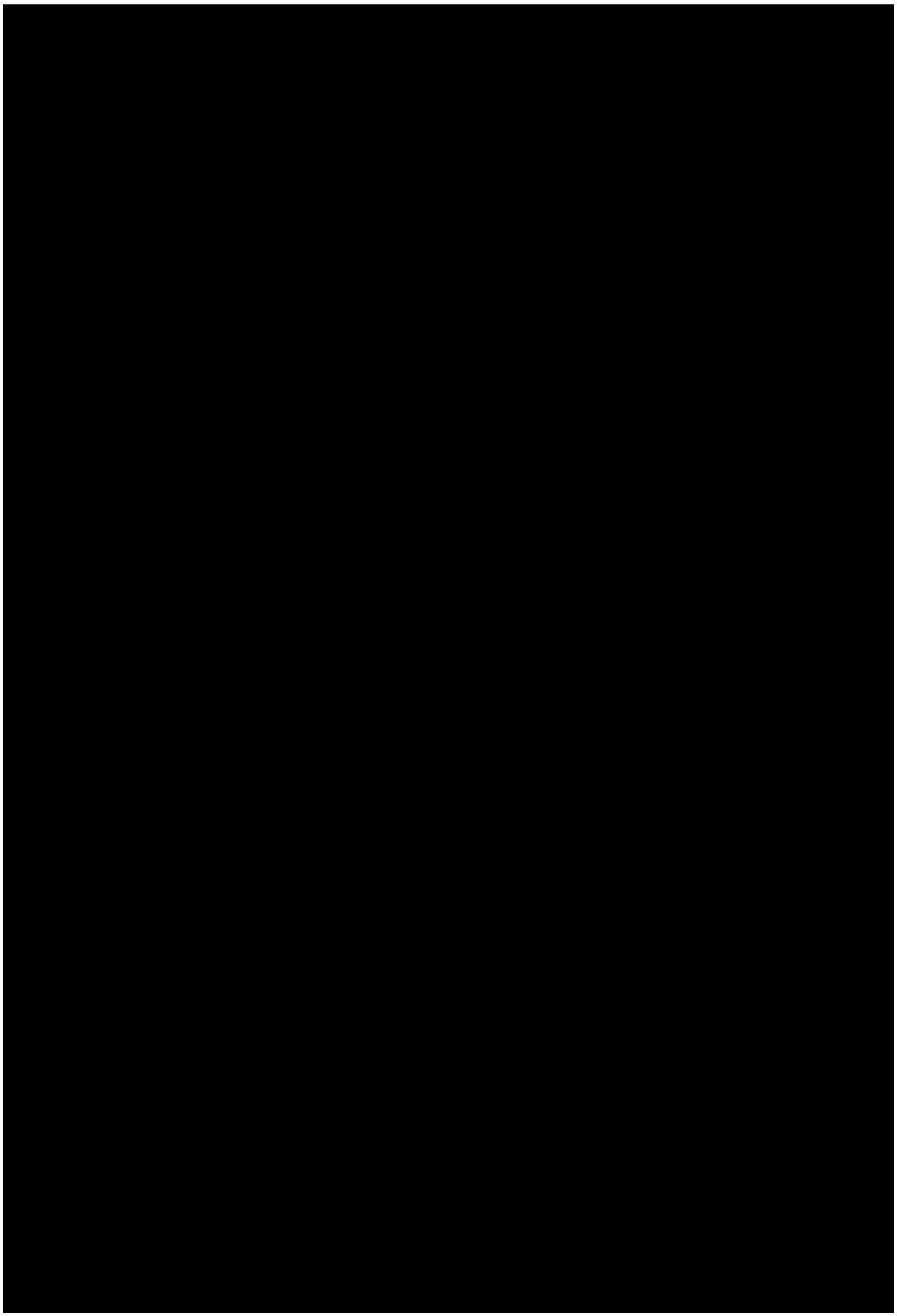


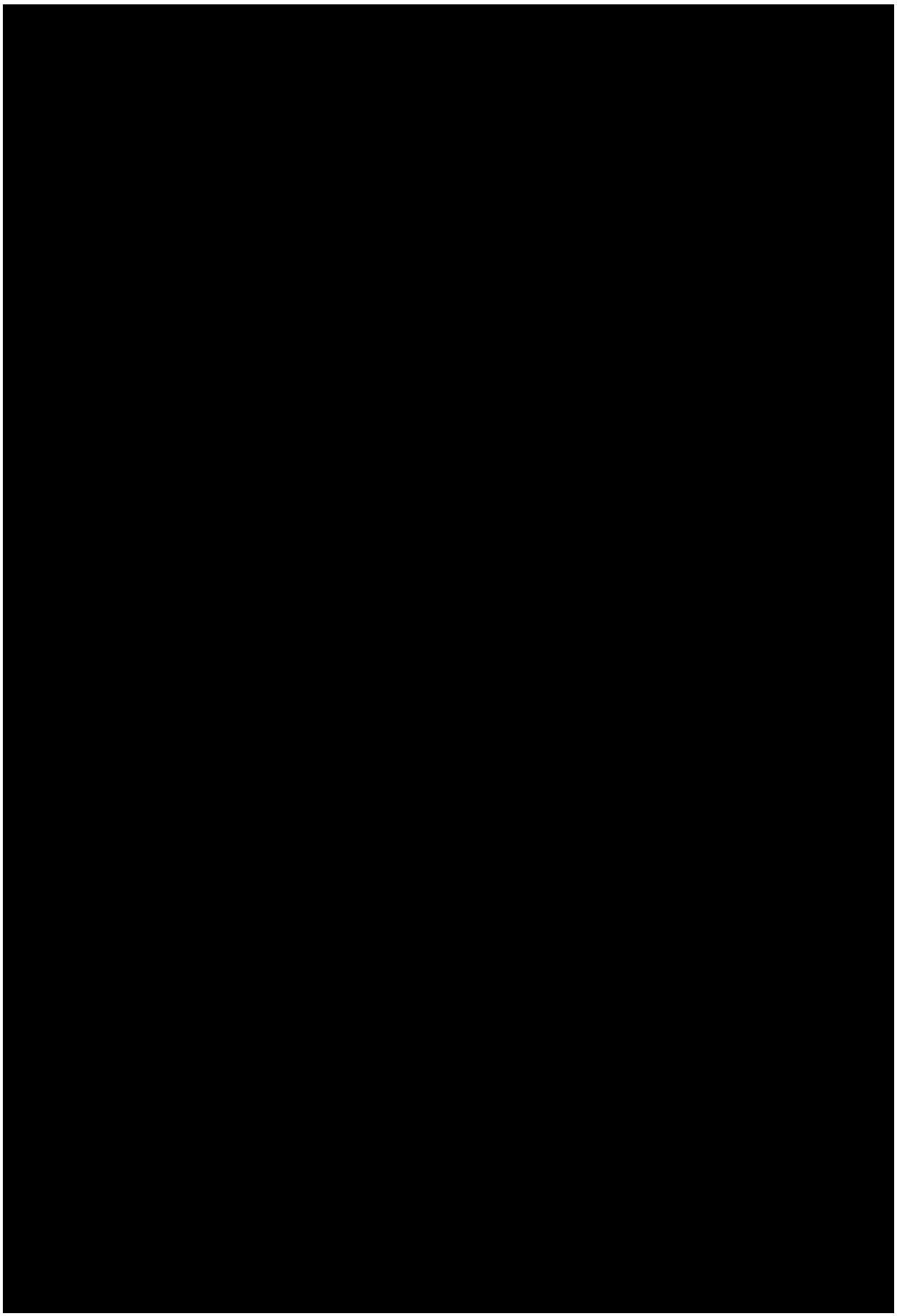


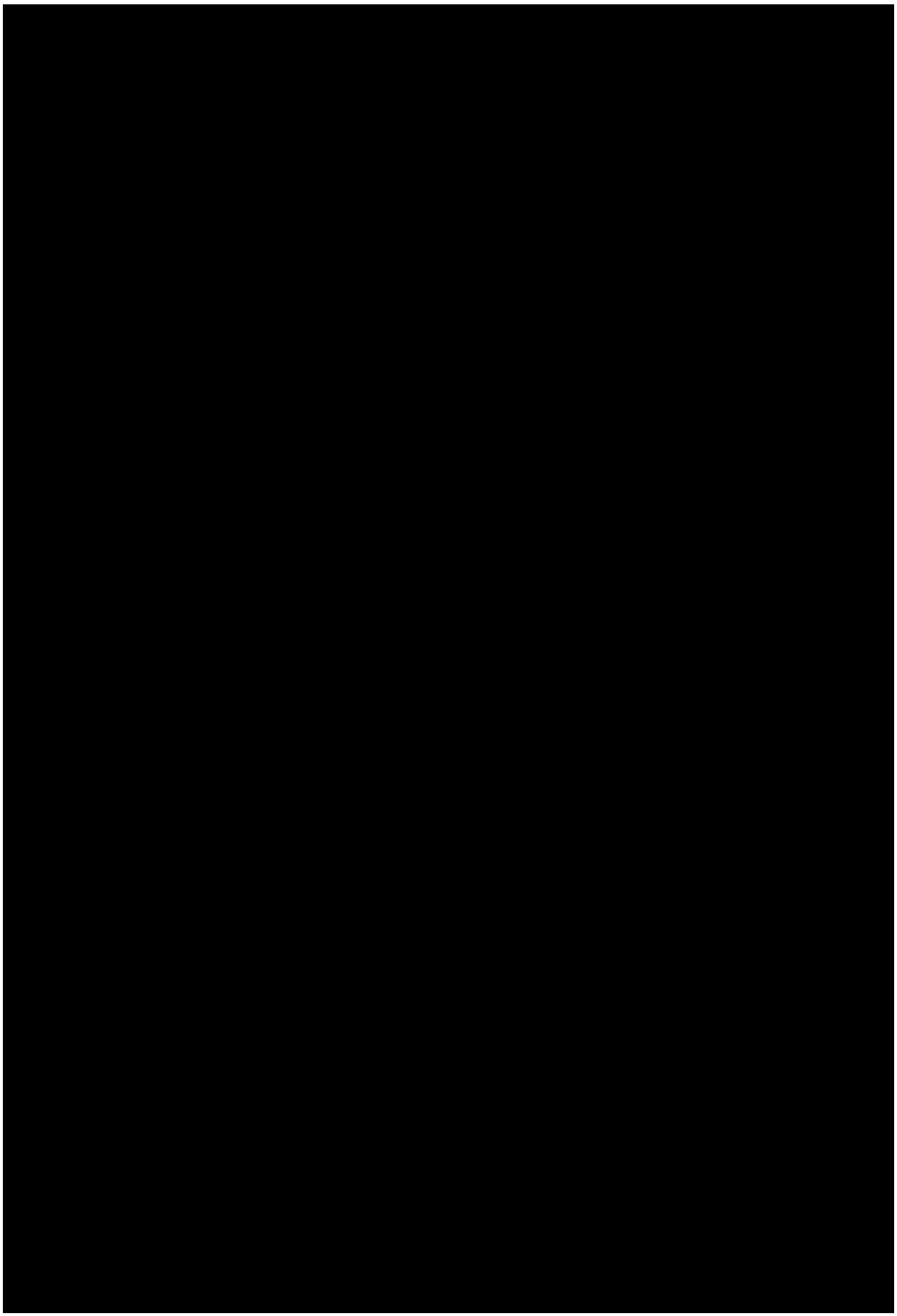


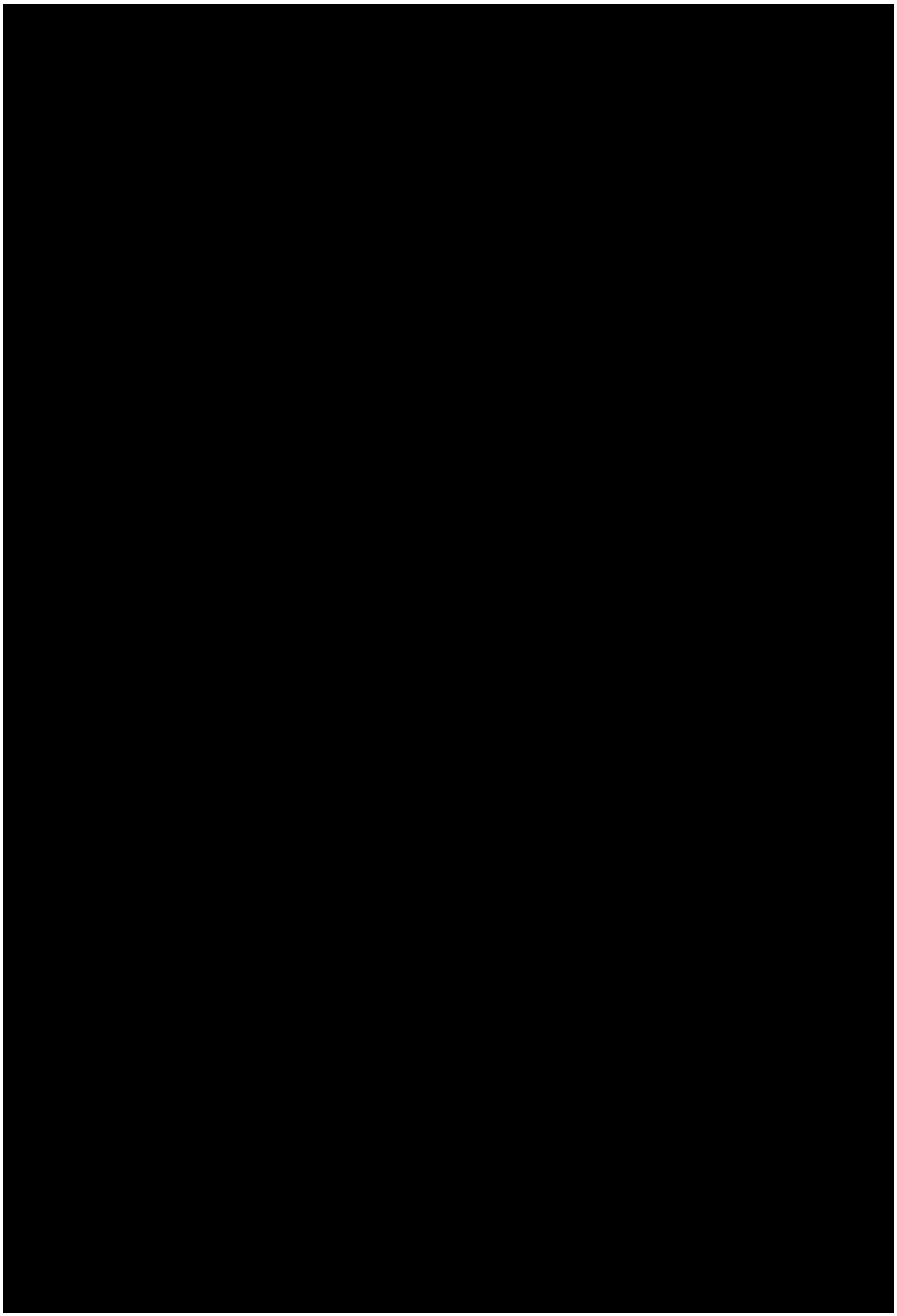


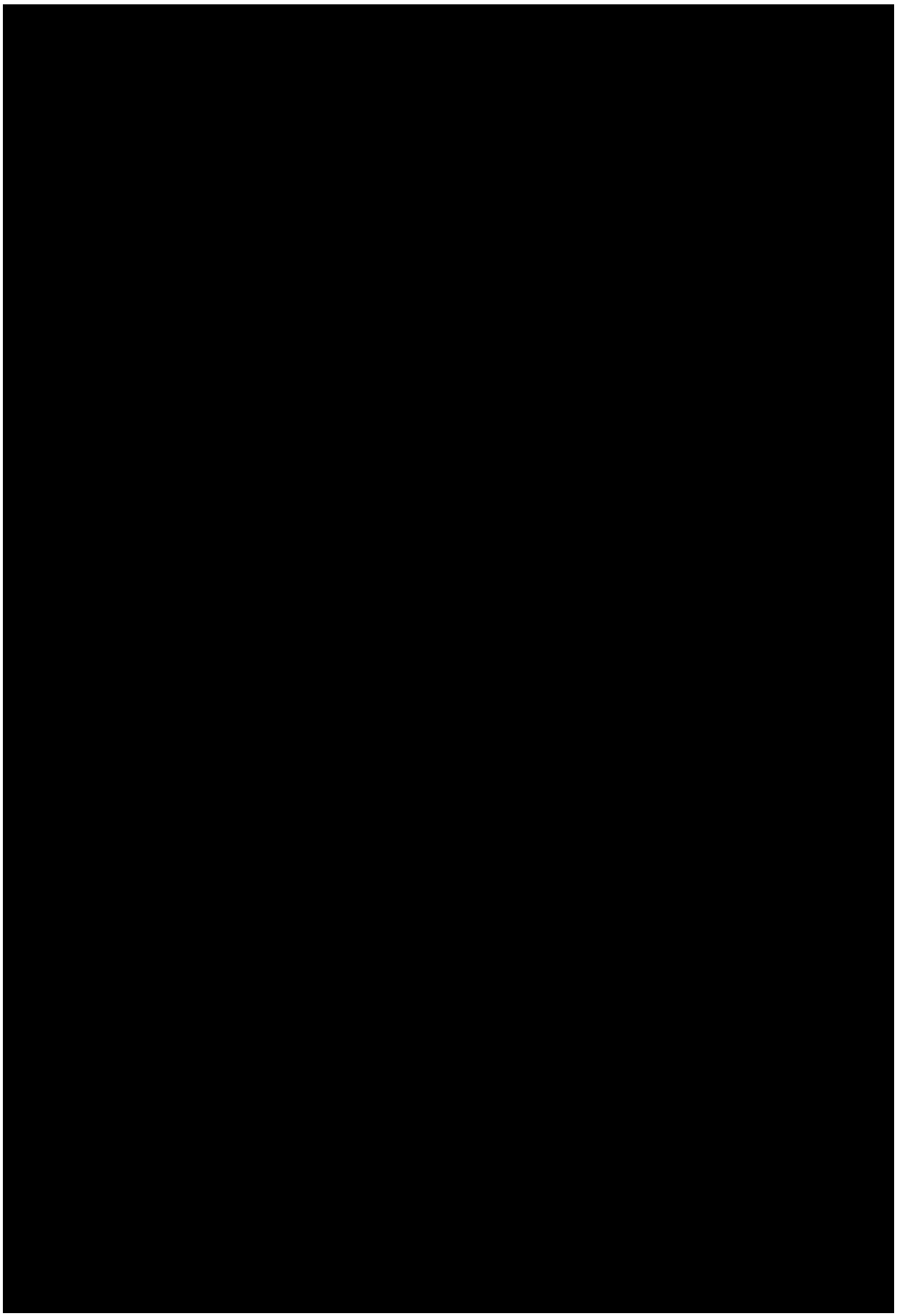


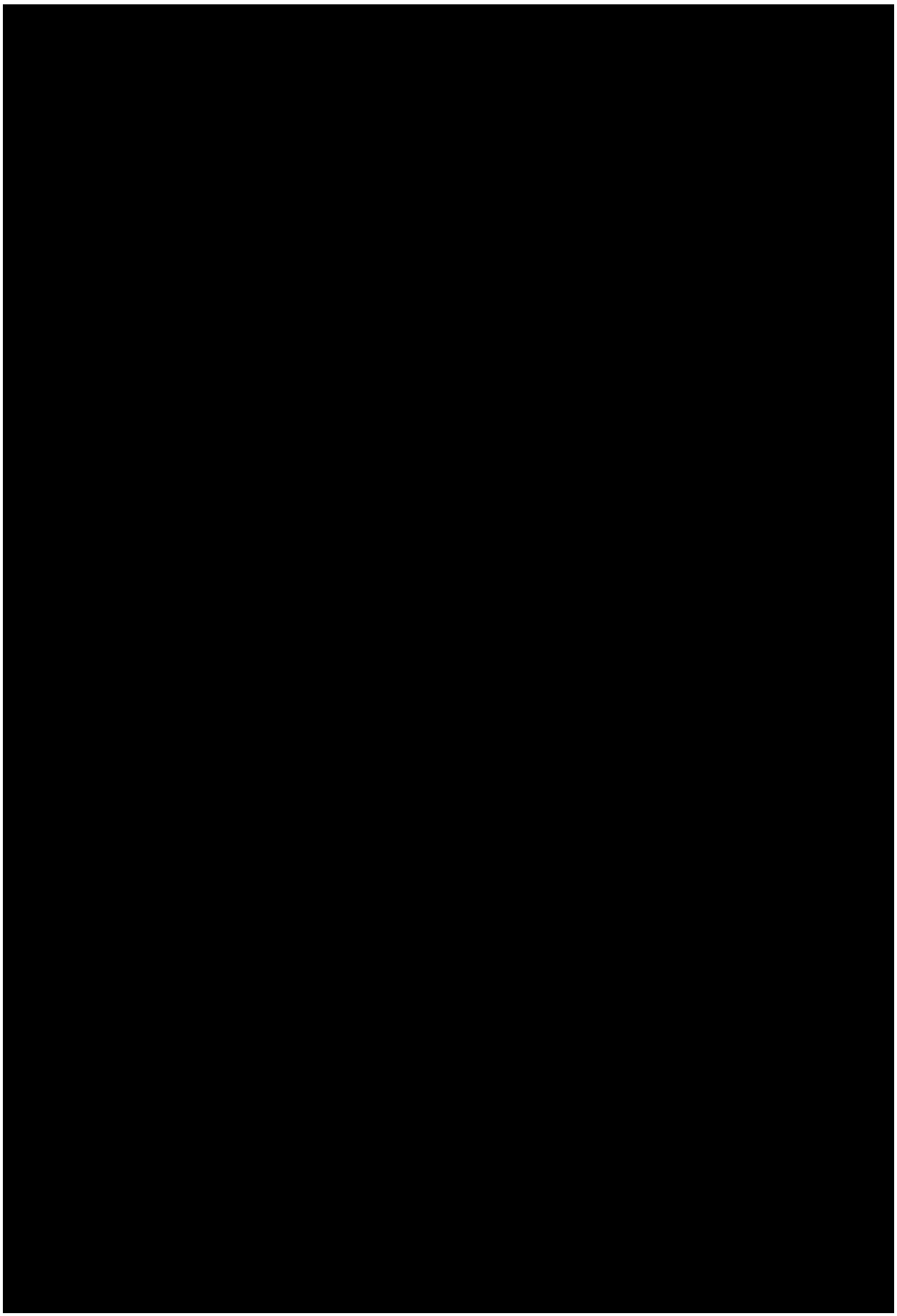


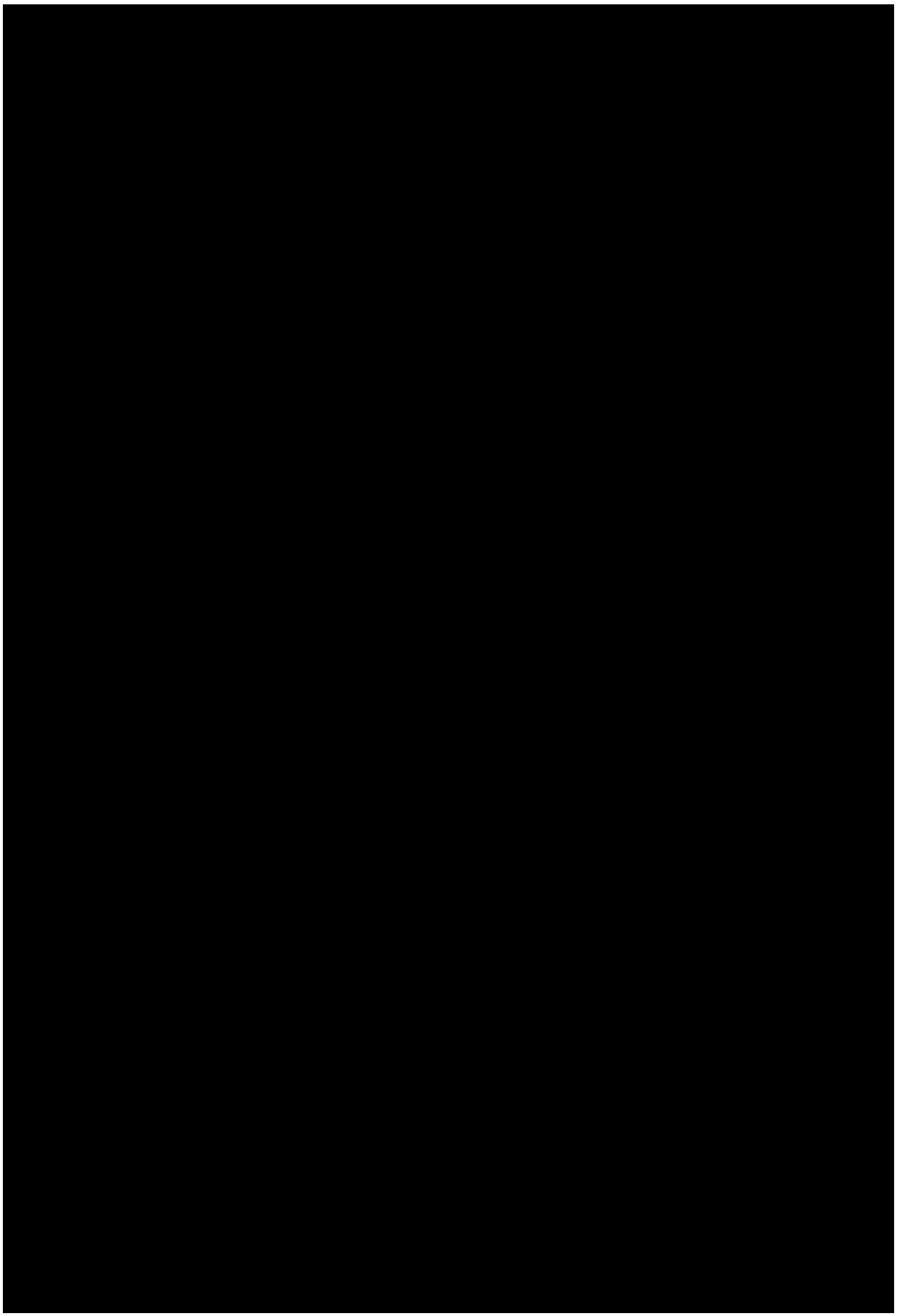






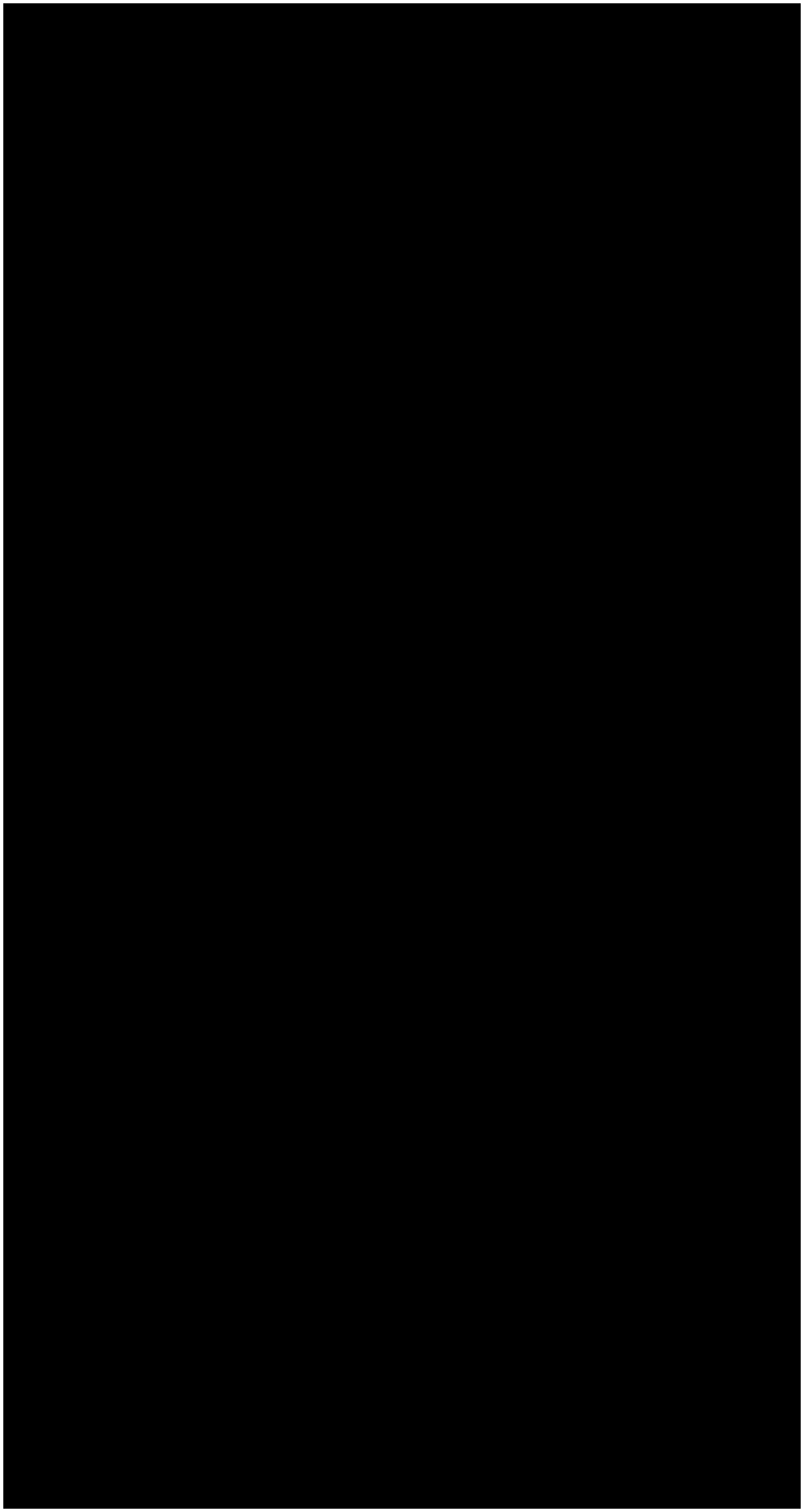


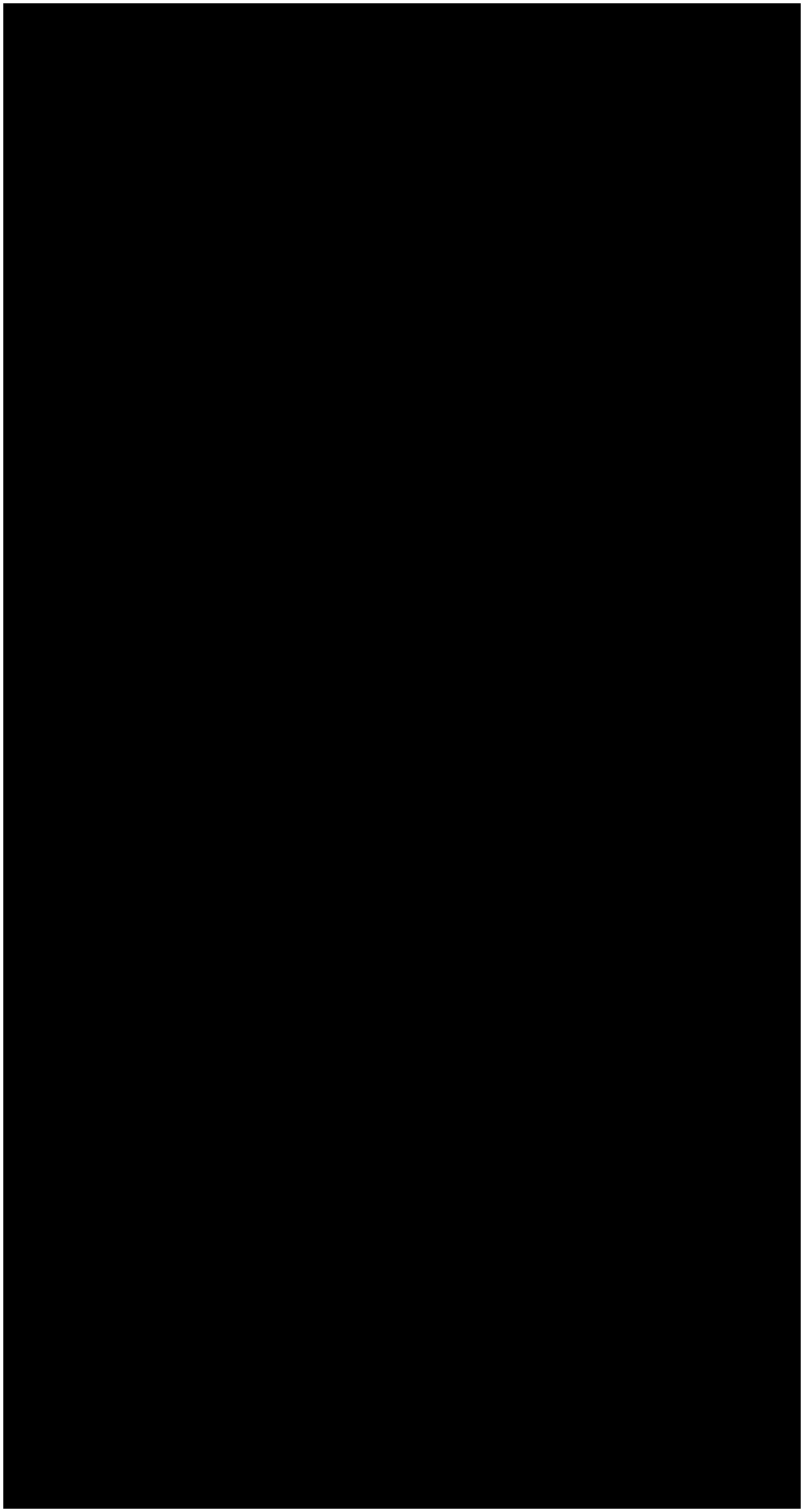


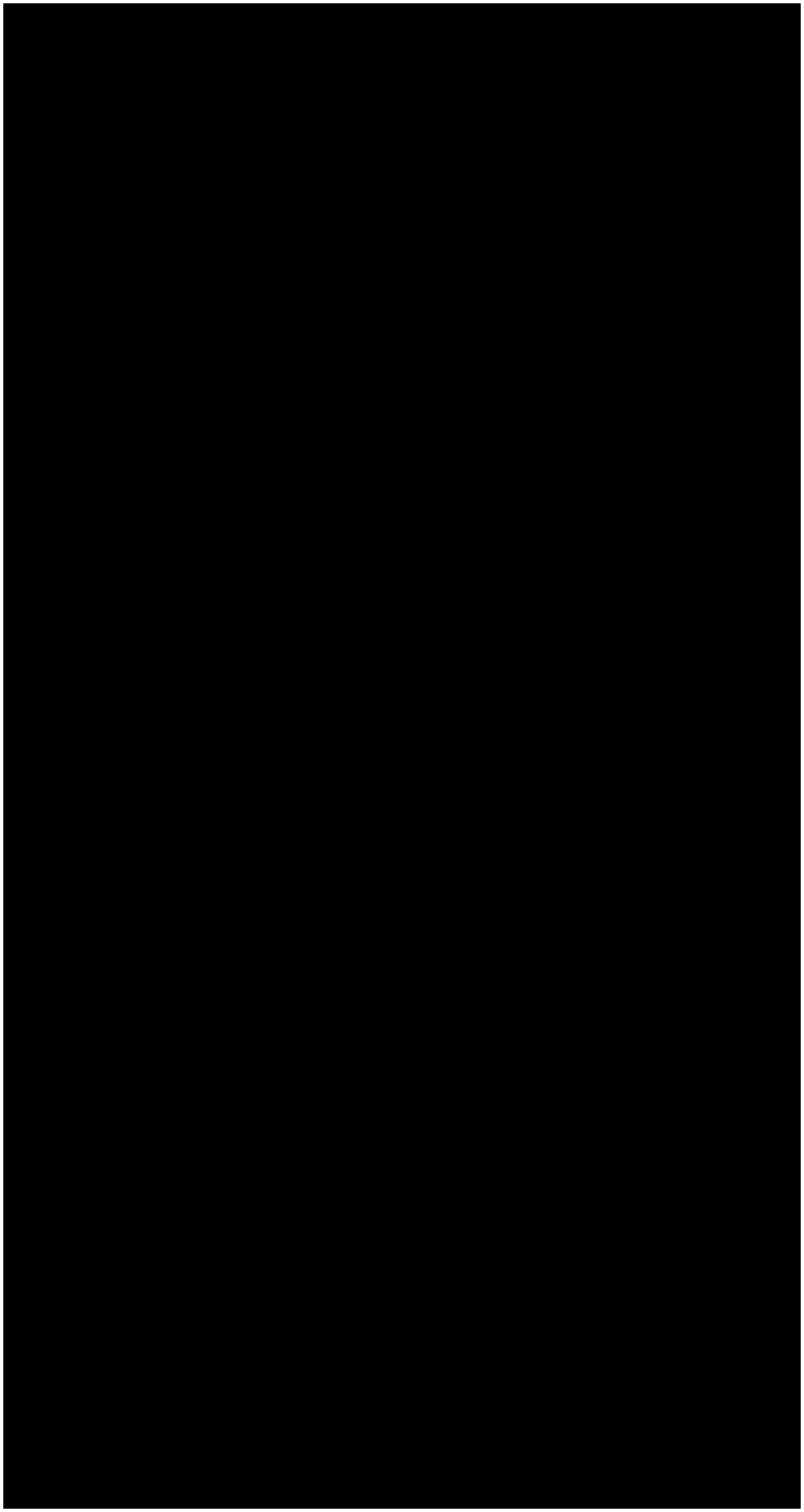


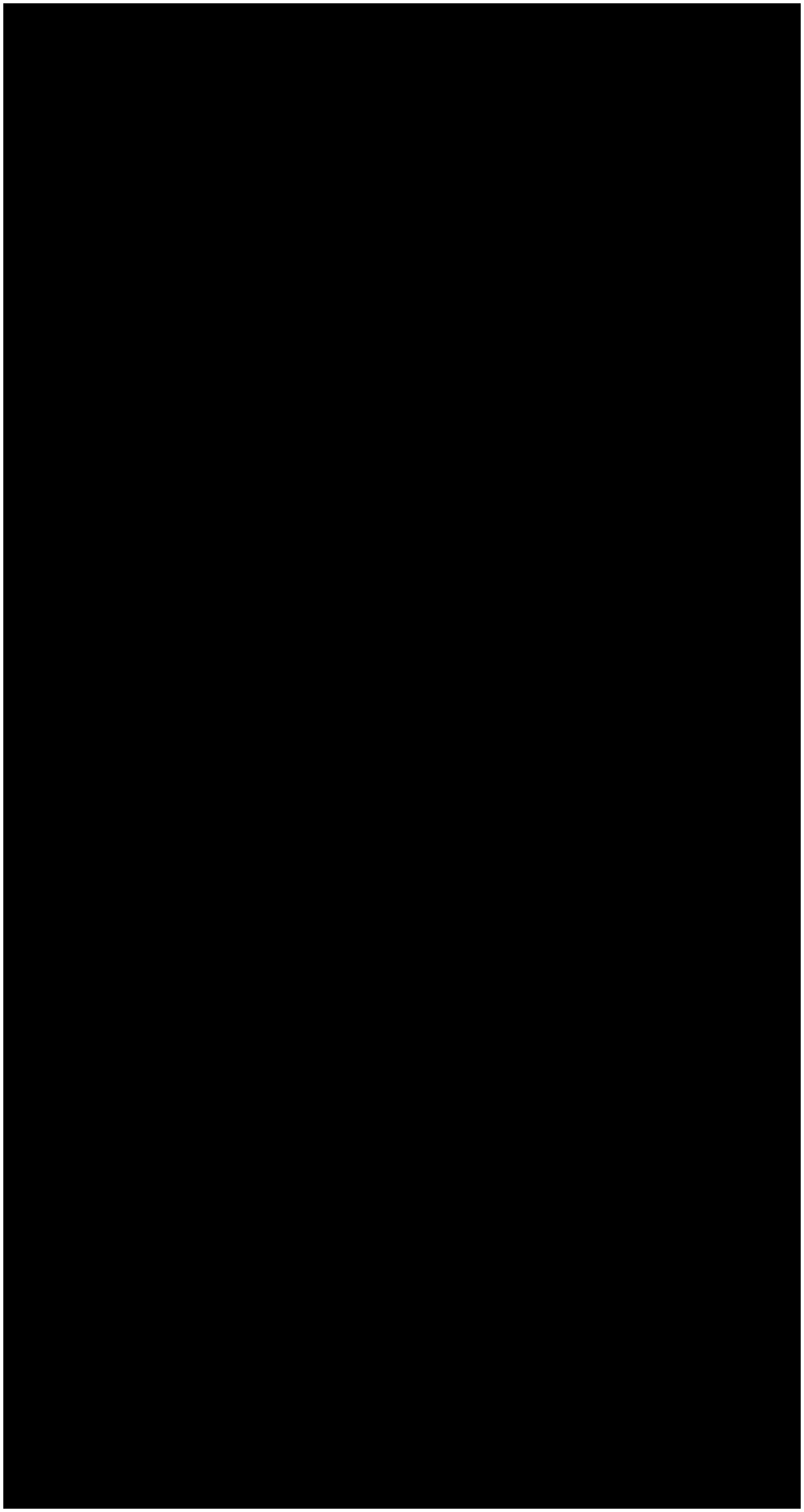


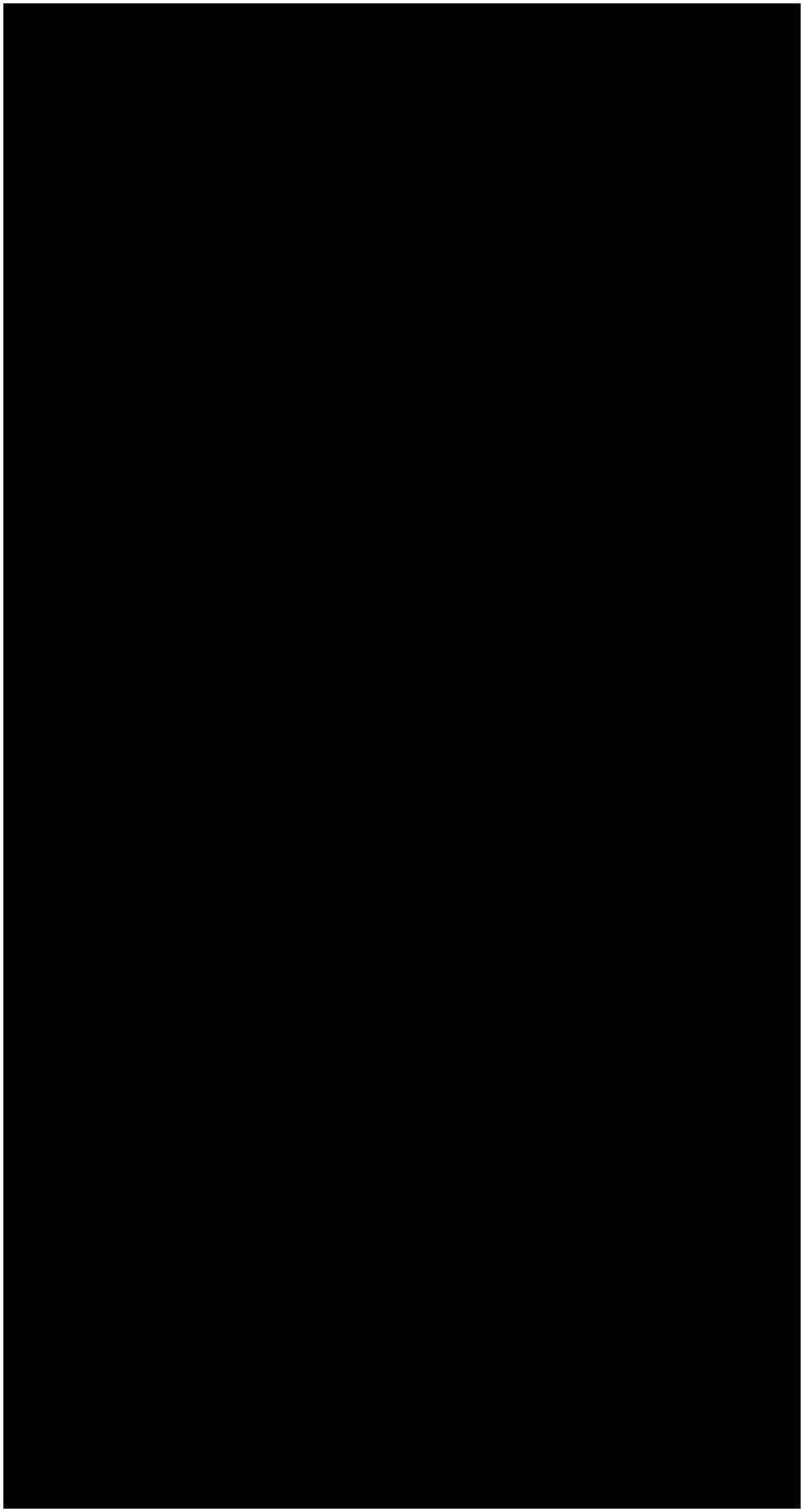
Max Daily T	Quantity D	Build Cost (	Quantity D	x	y	z
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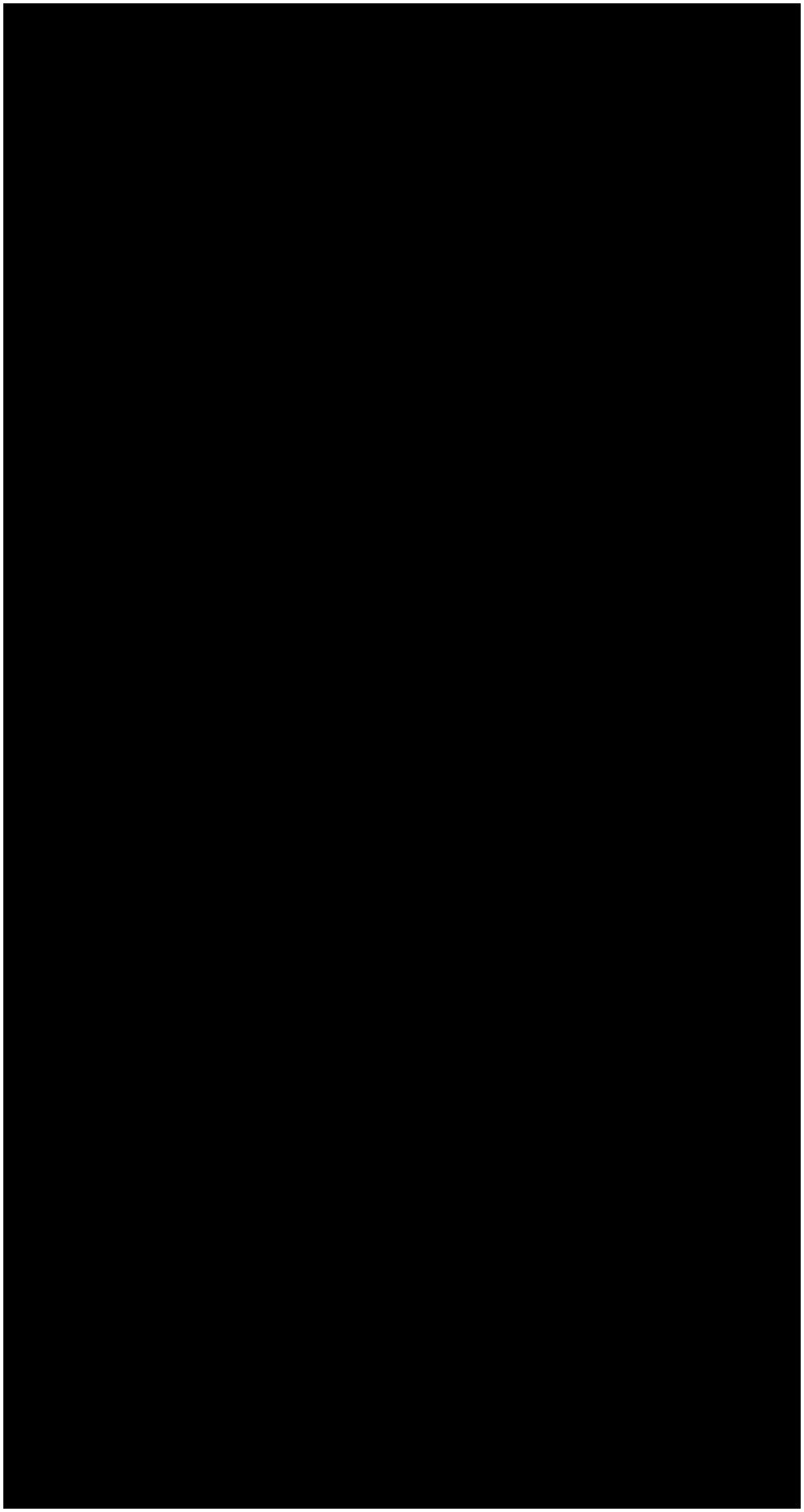


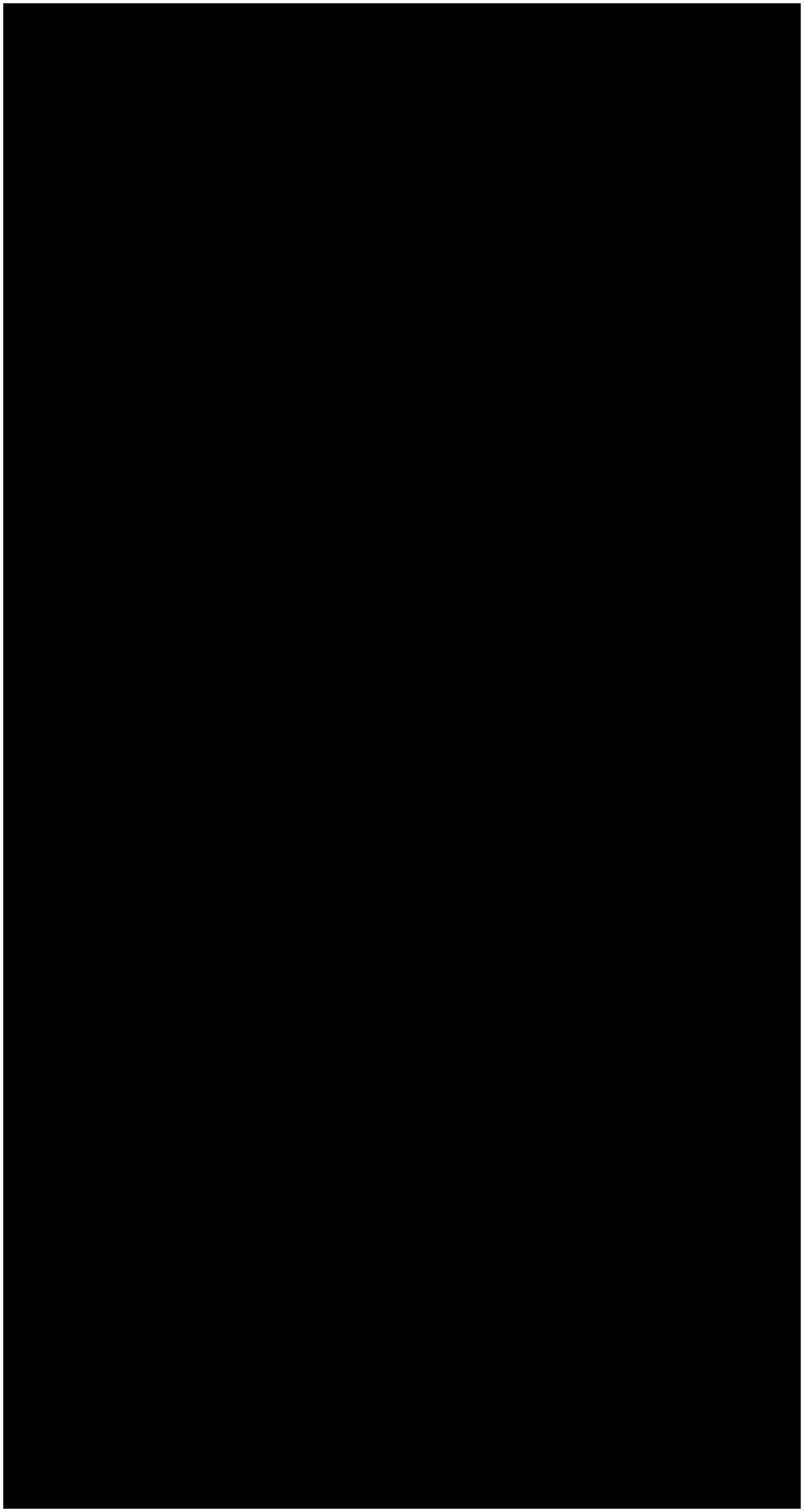


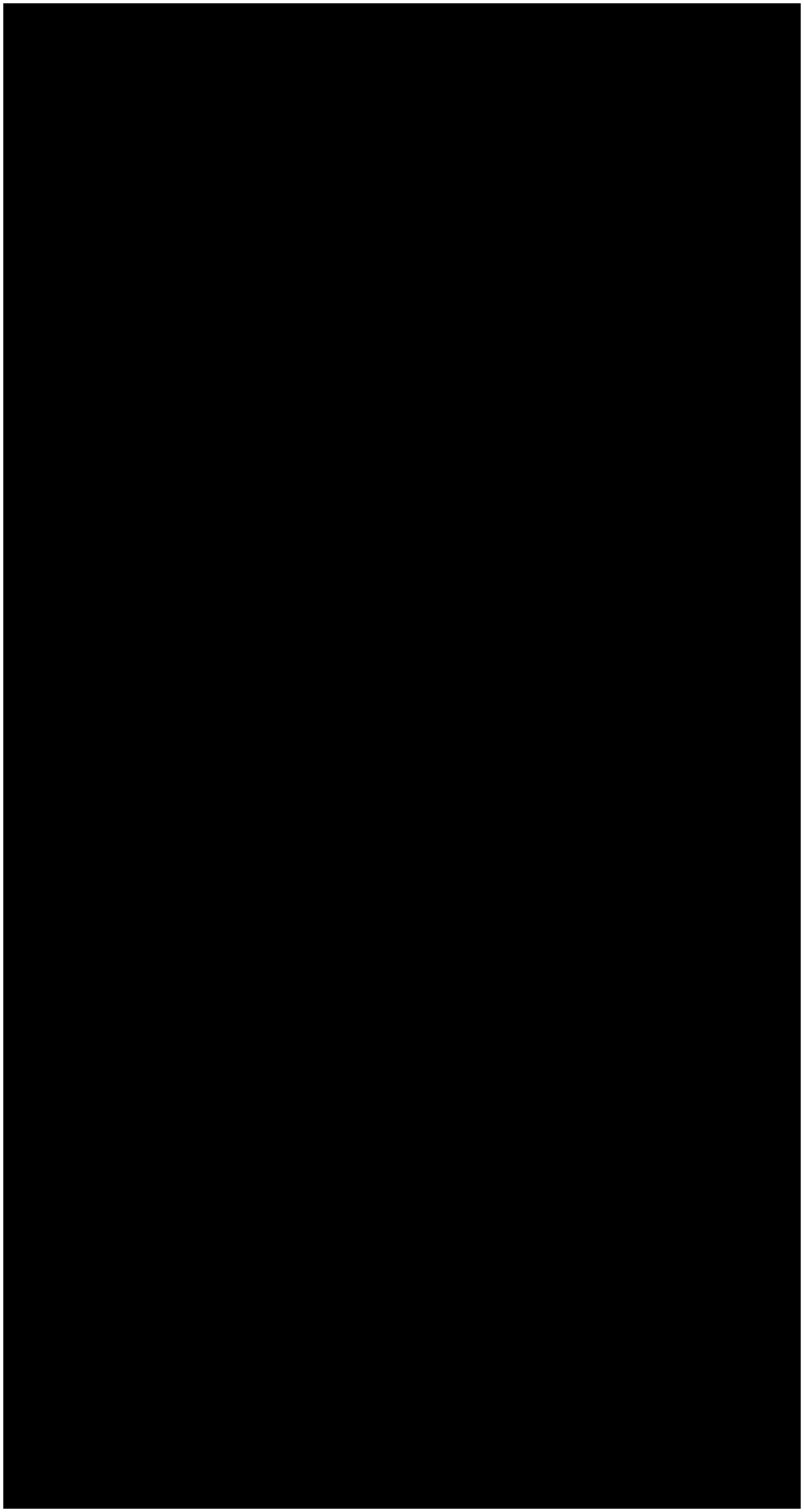


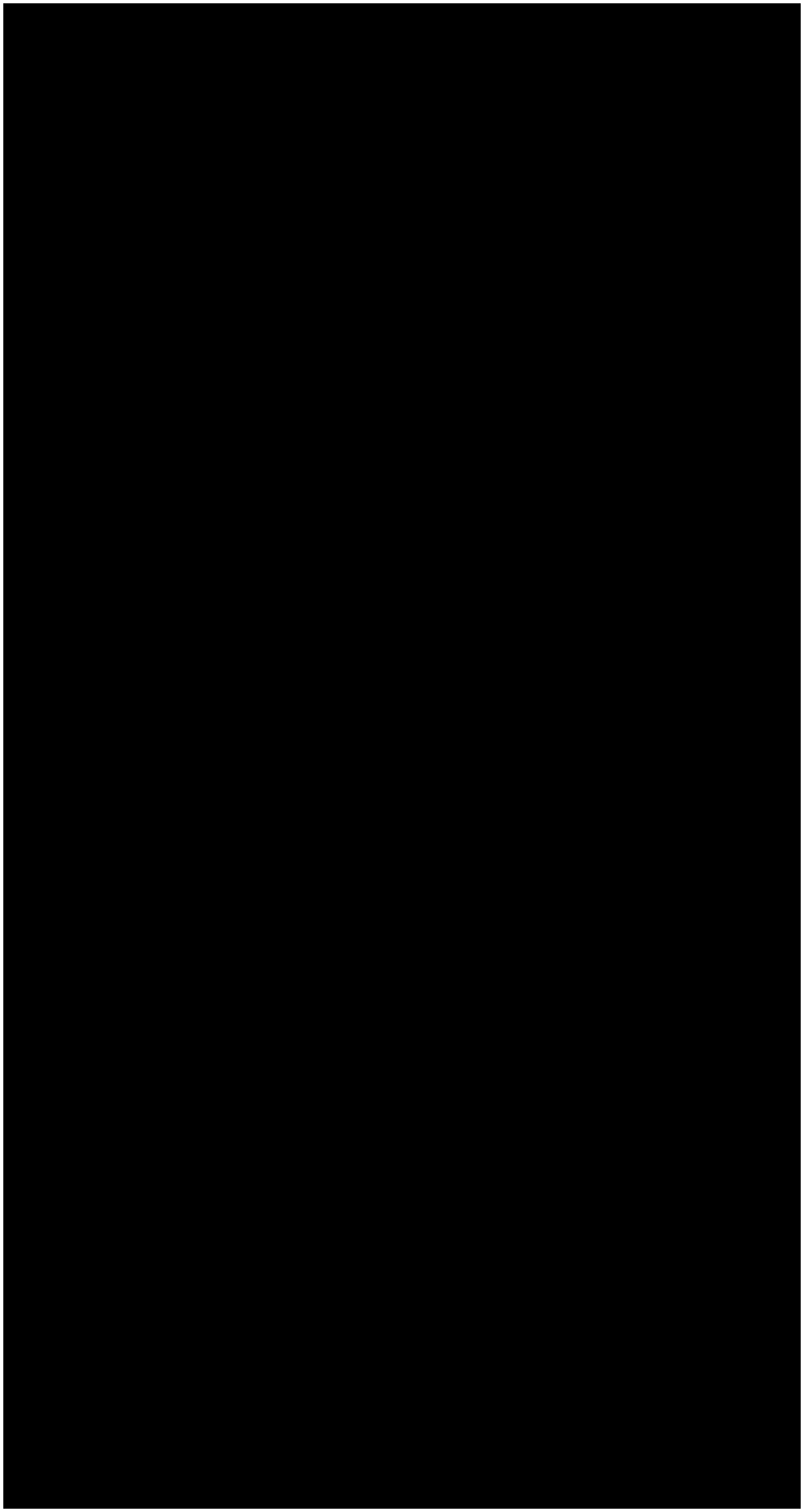


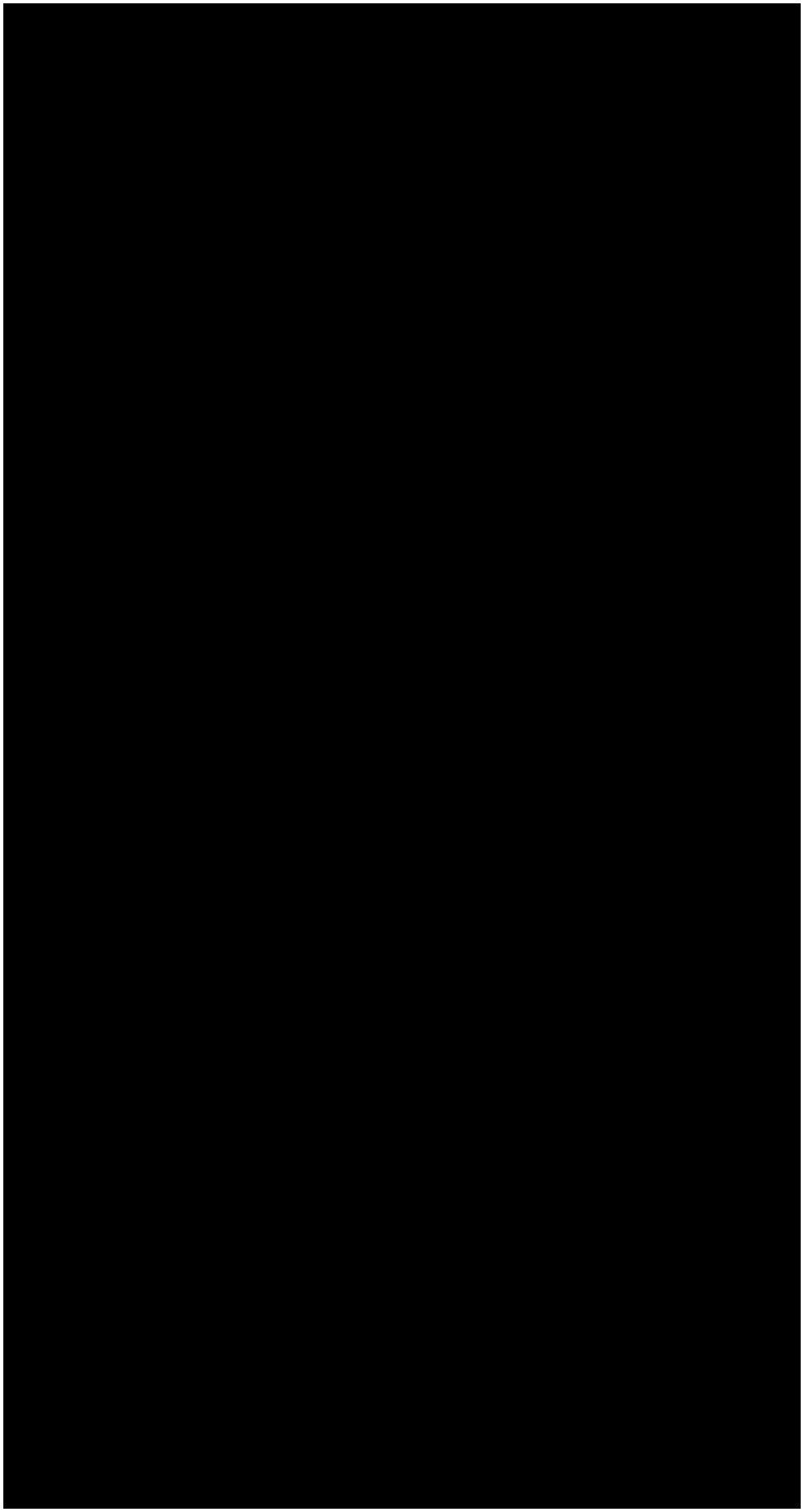


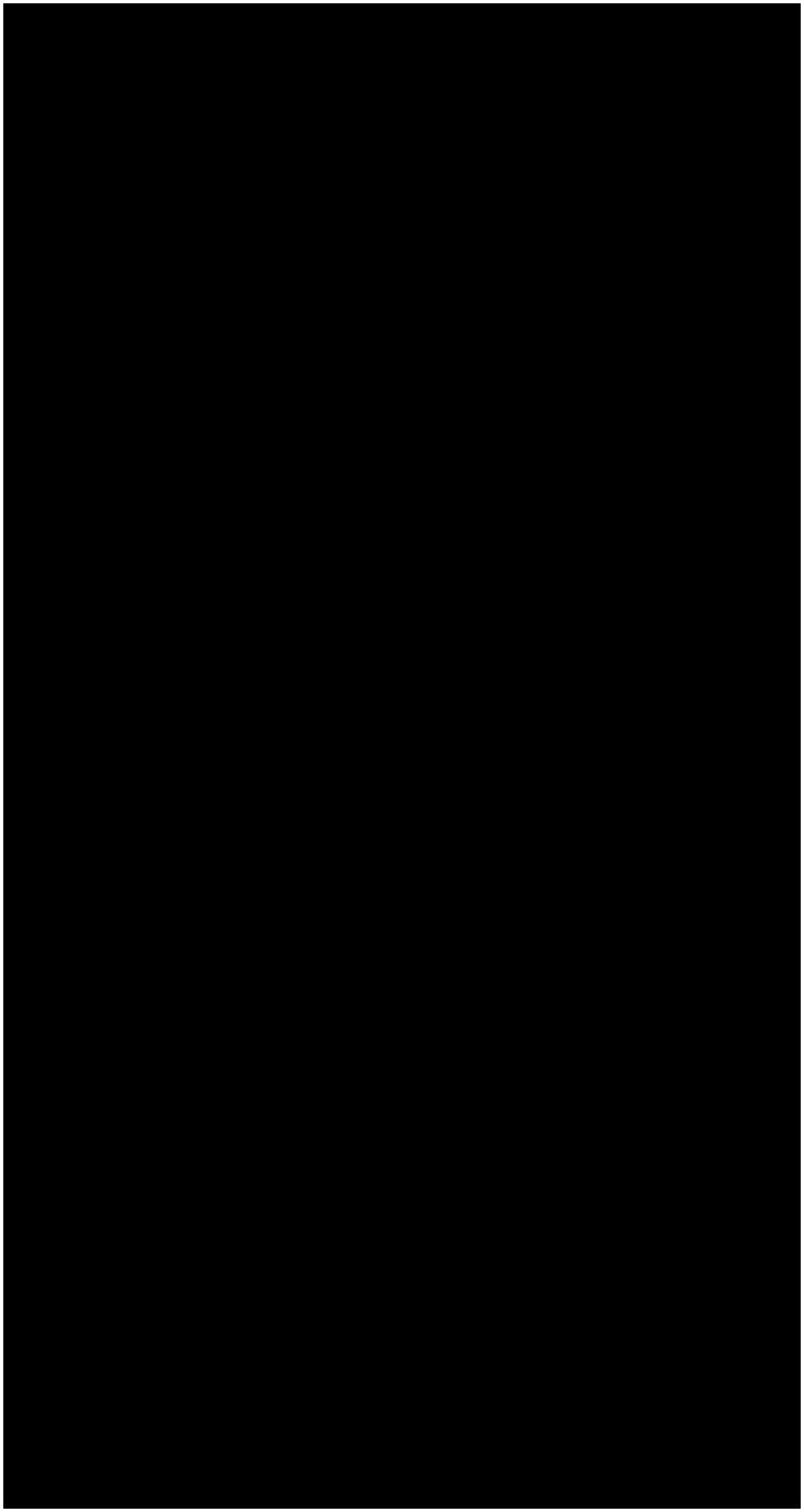


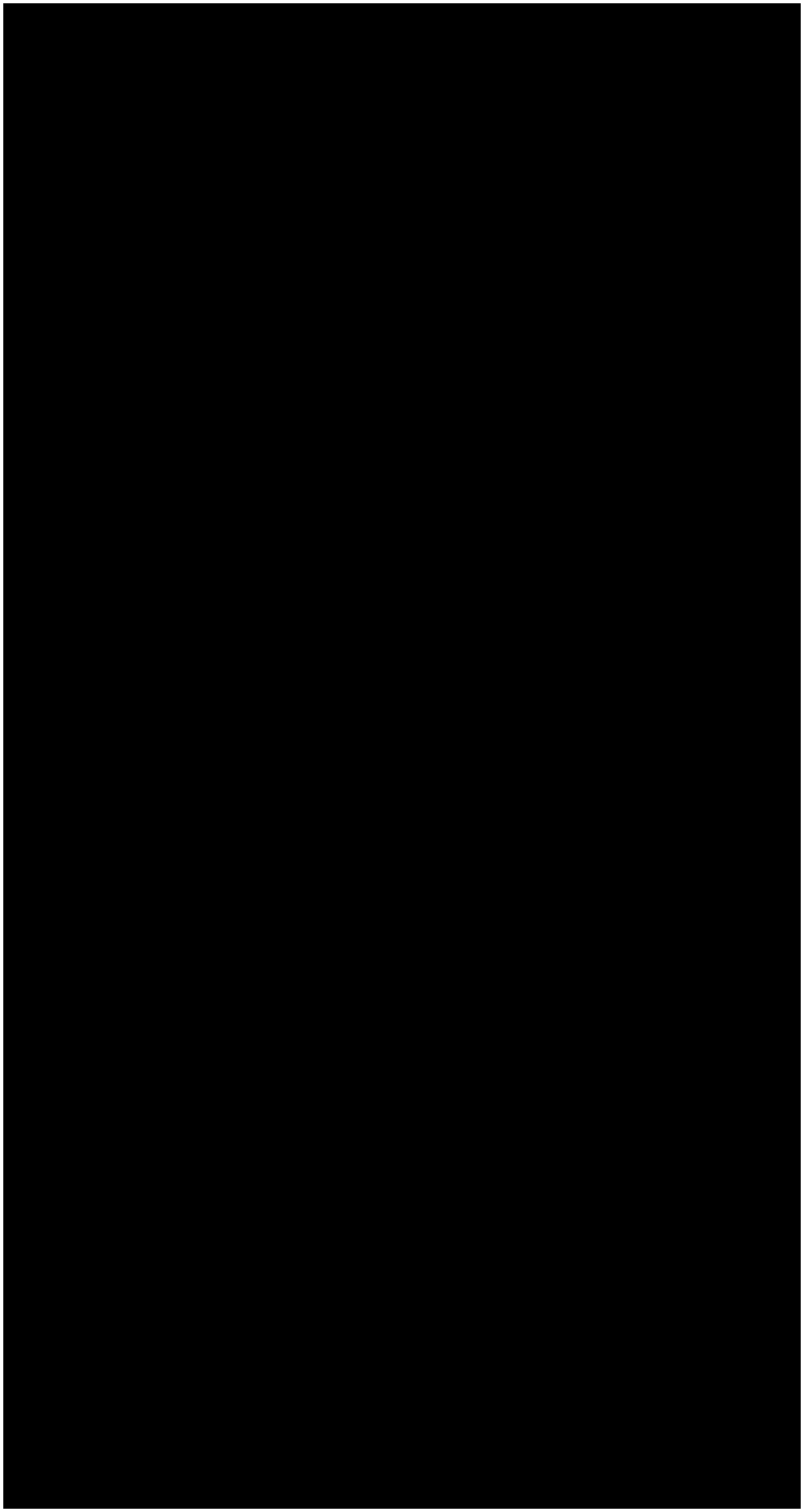


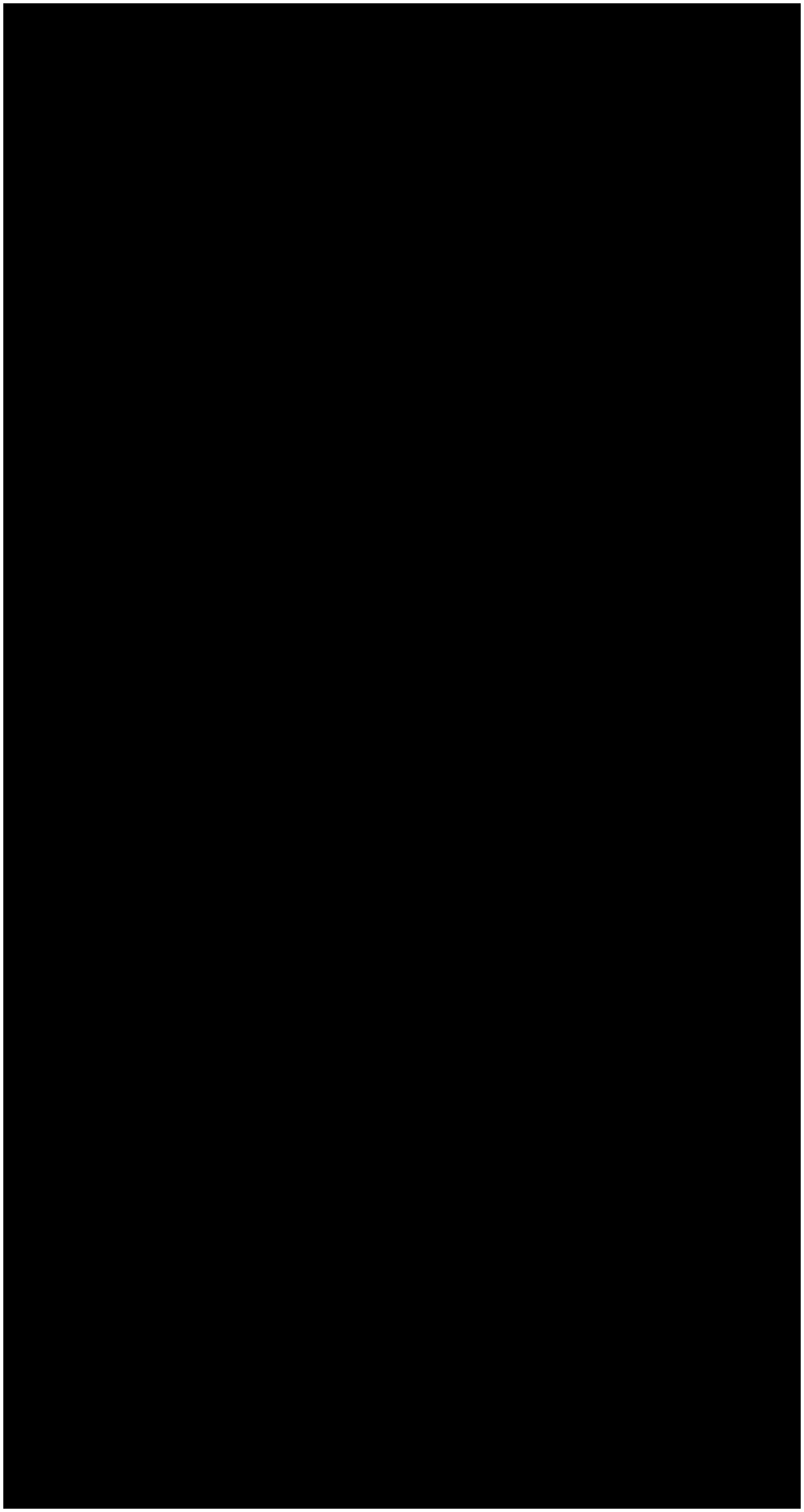


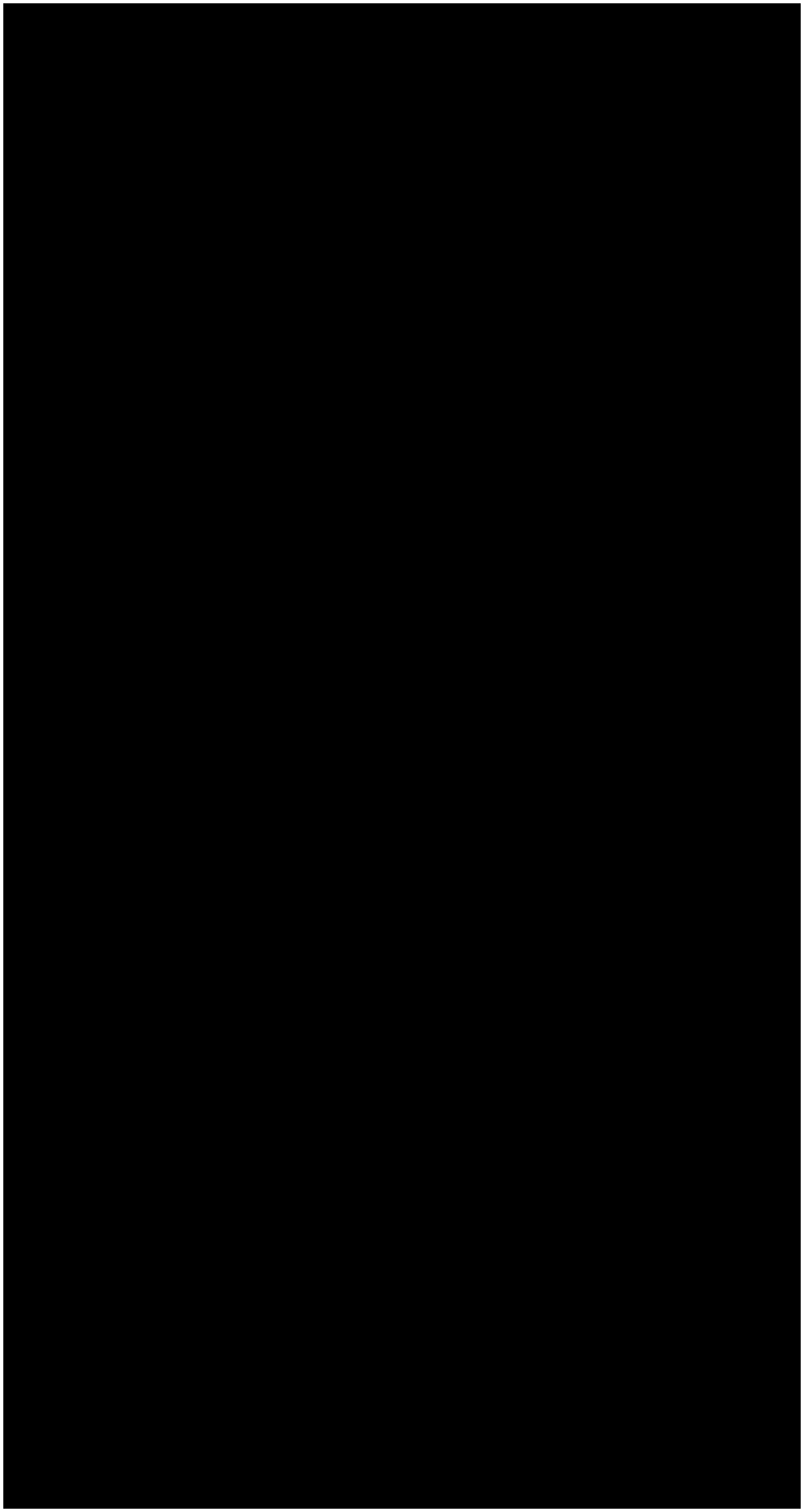


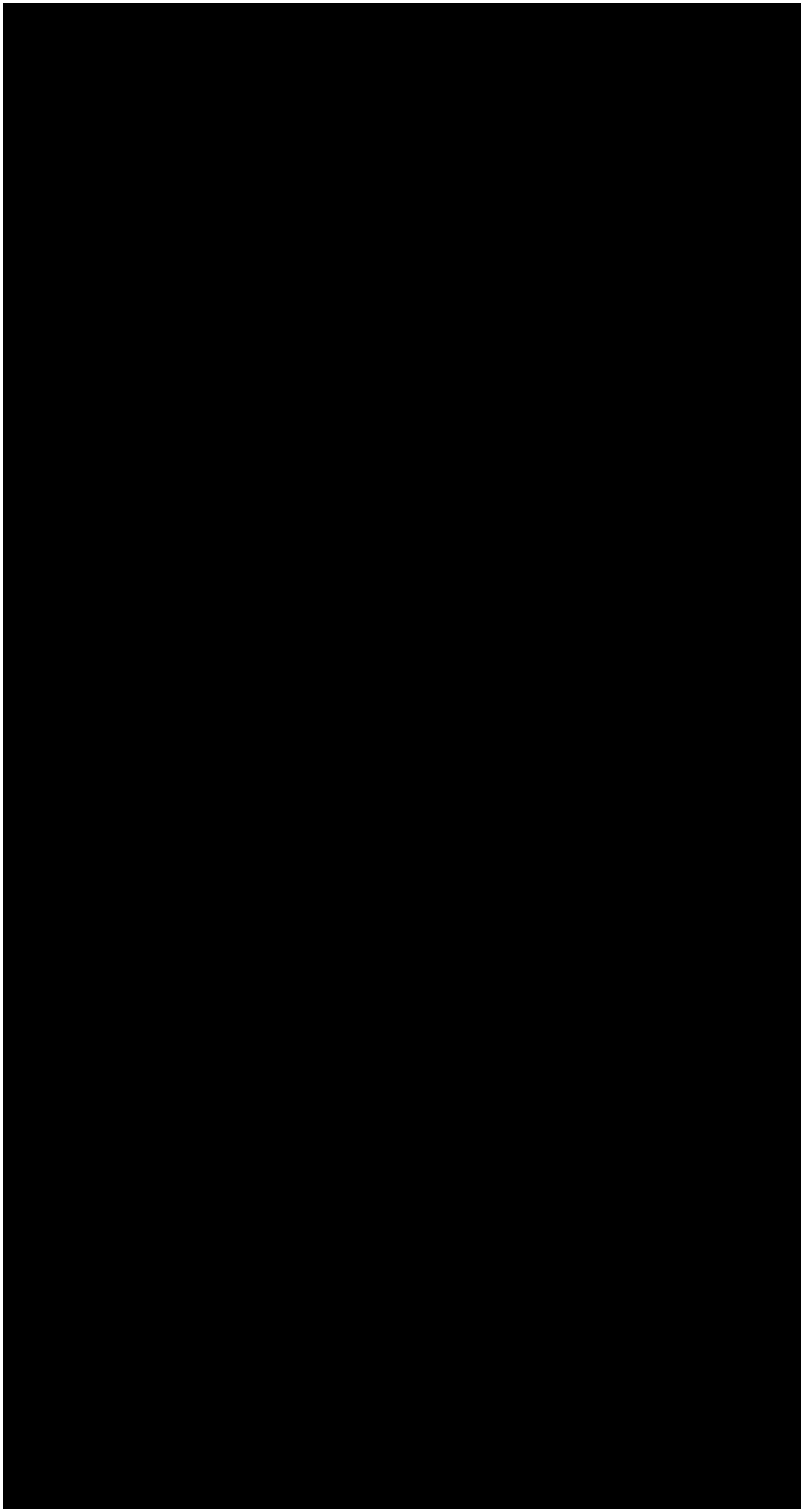


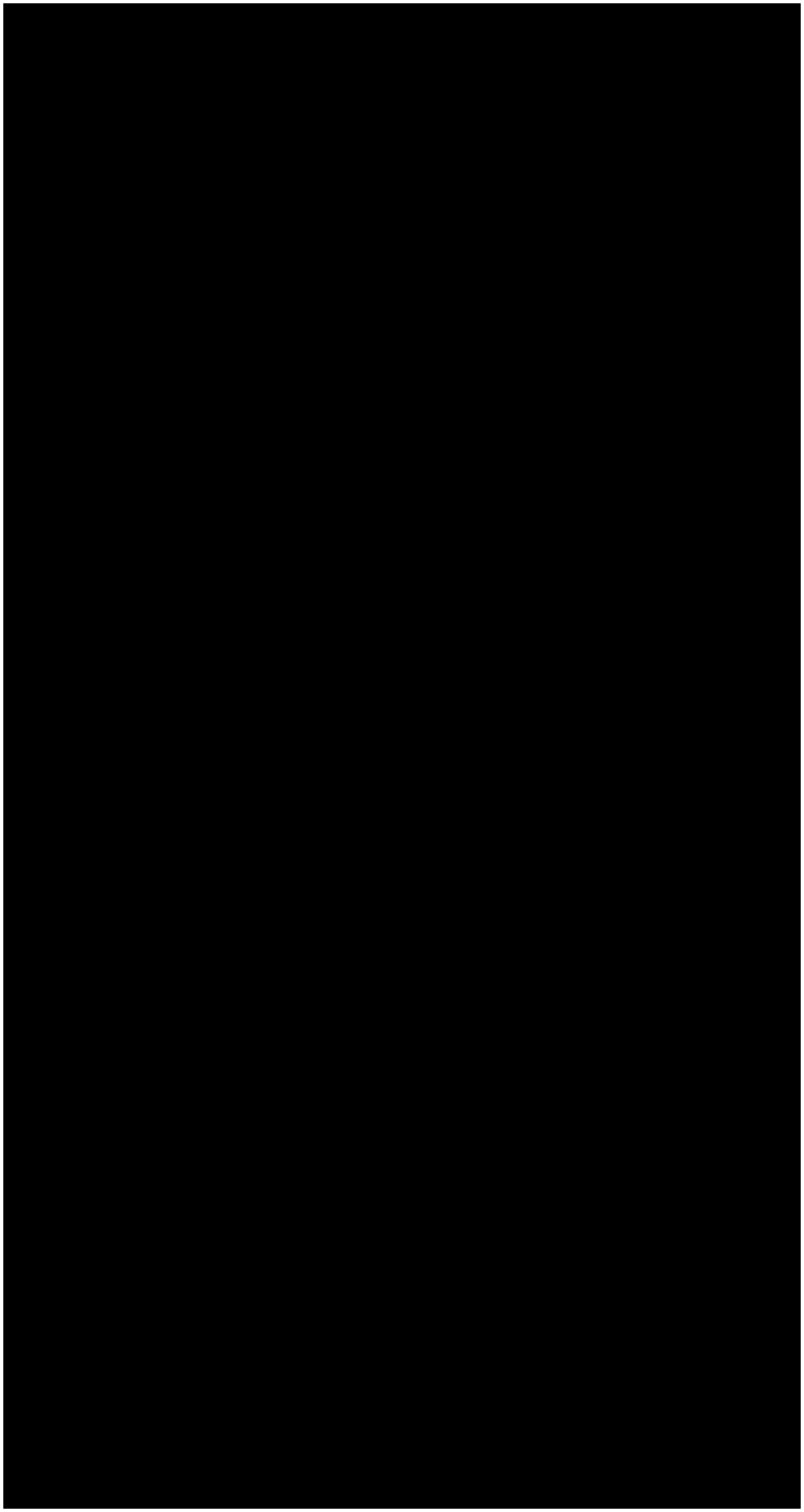


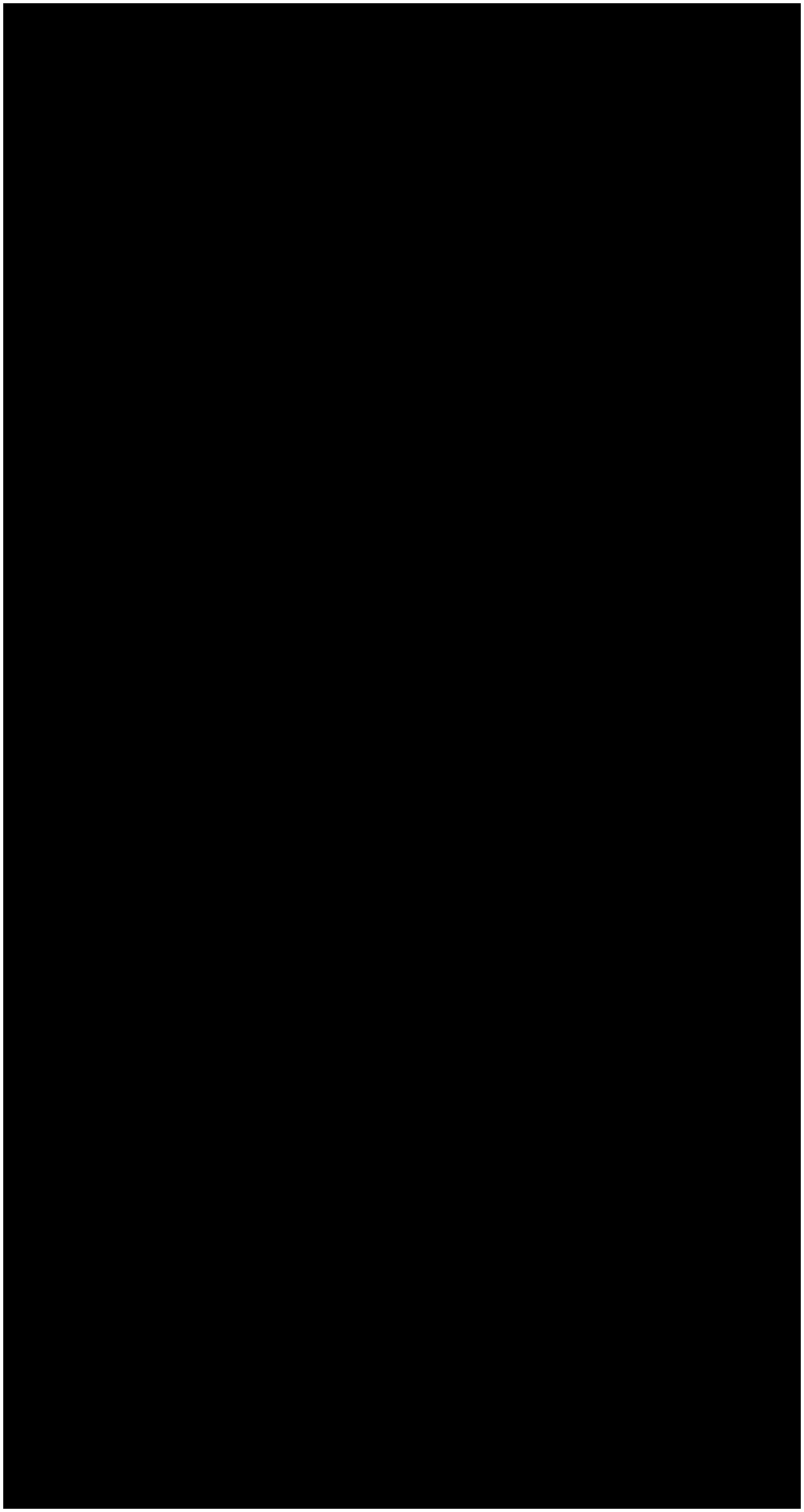


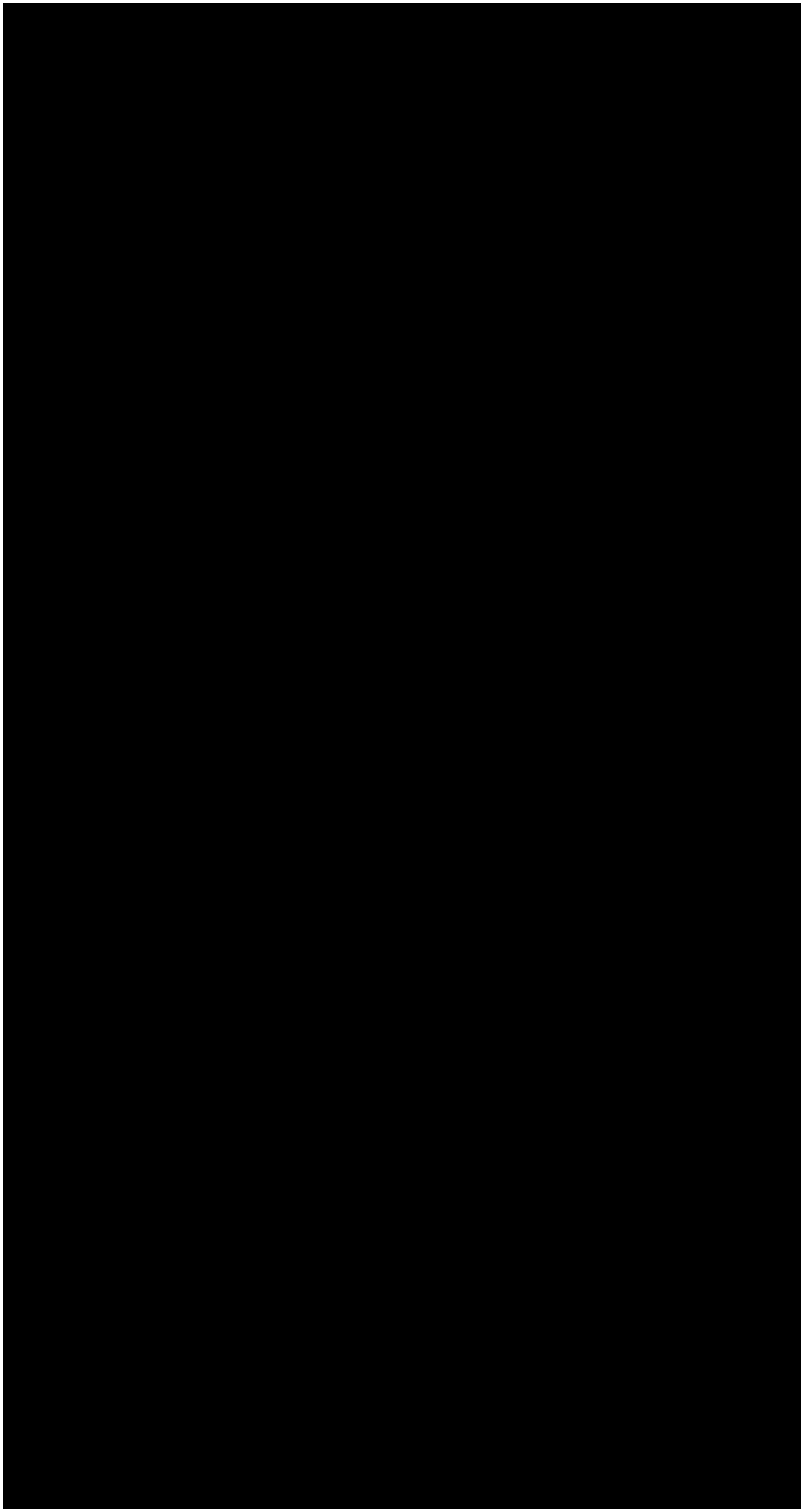














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
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Jul-26											
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Mar-27											
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May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
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Apr-25											
May-25											
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Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

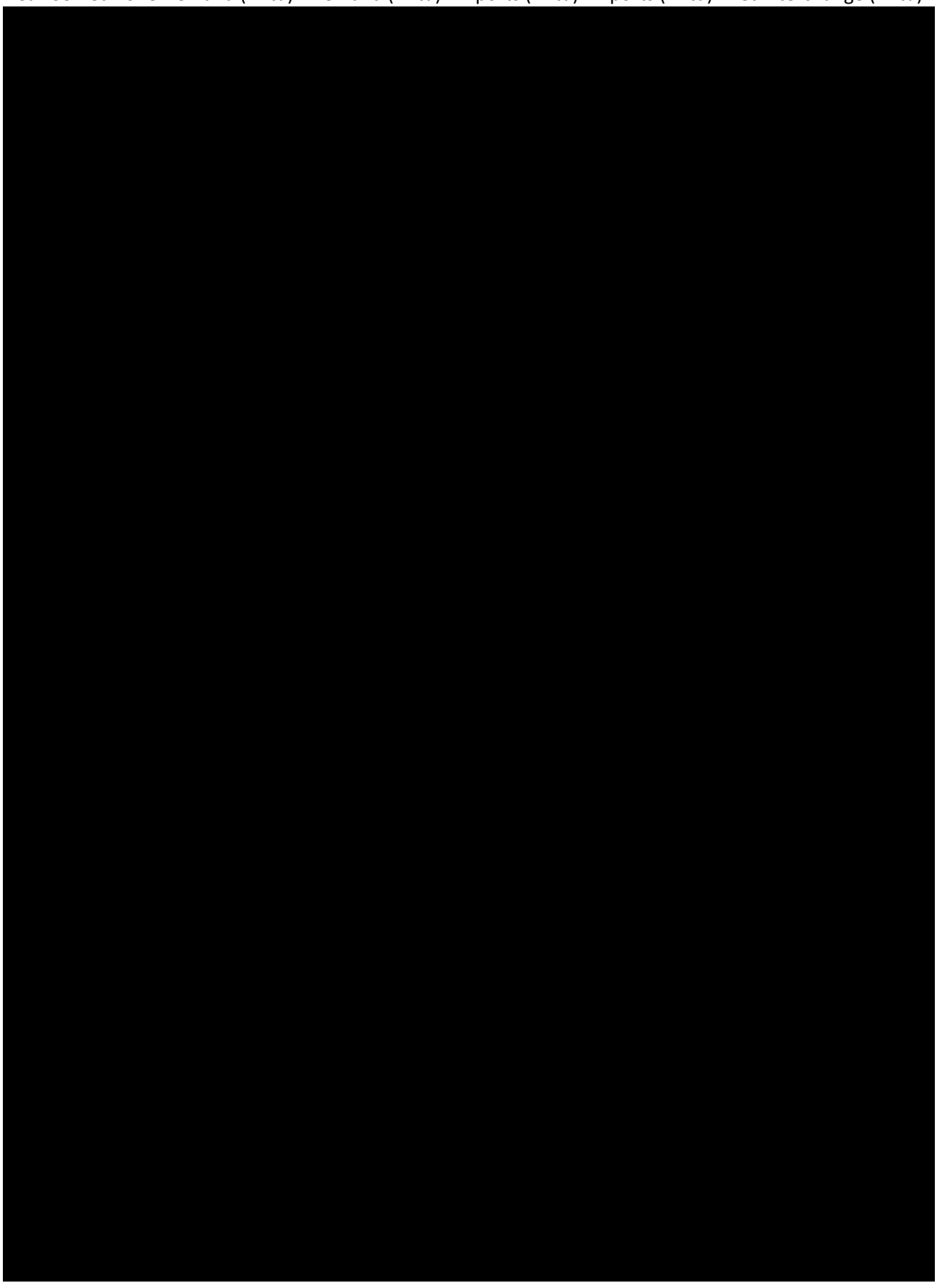
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
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Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





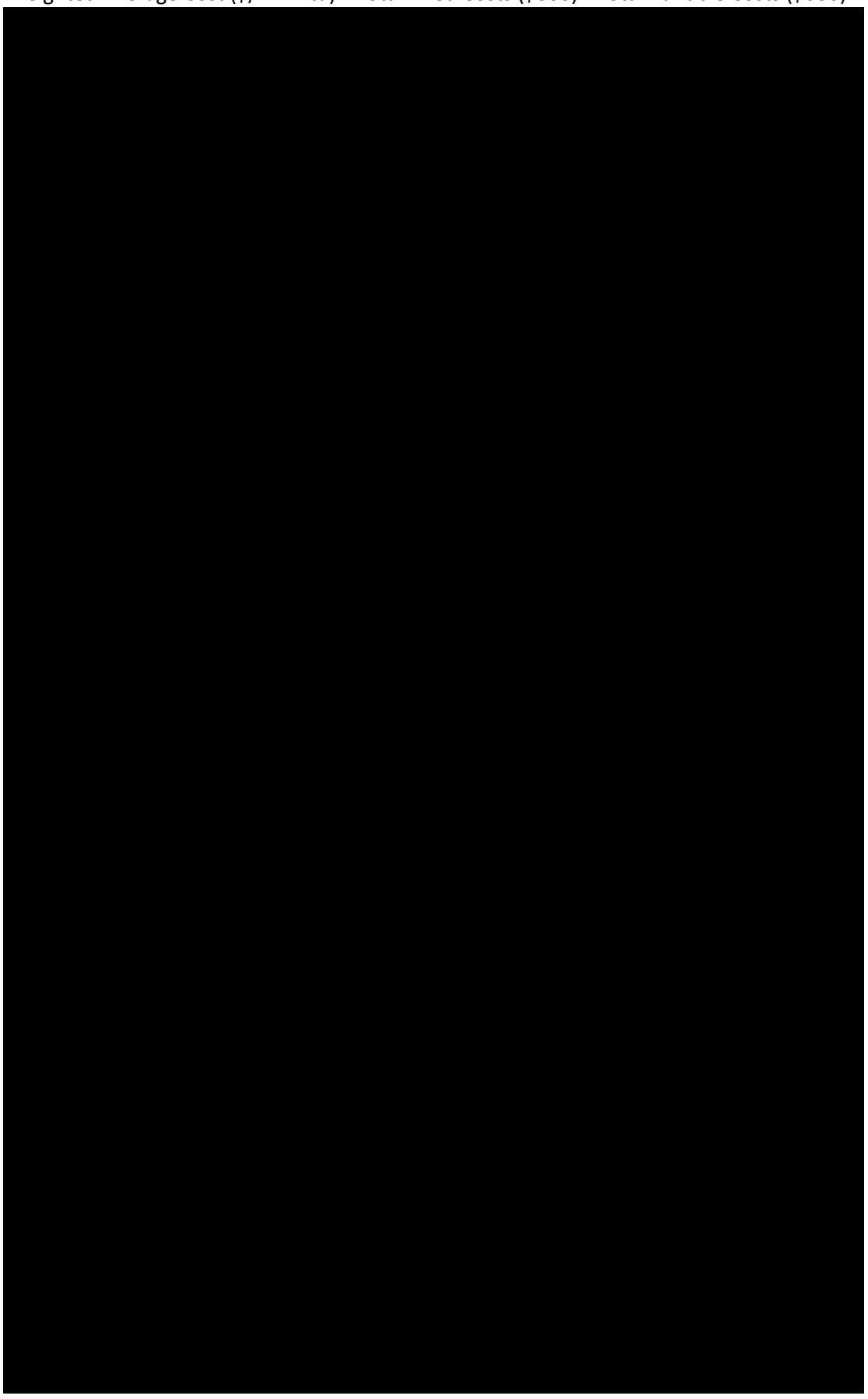
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

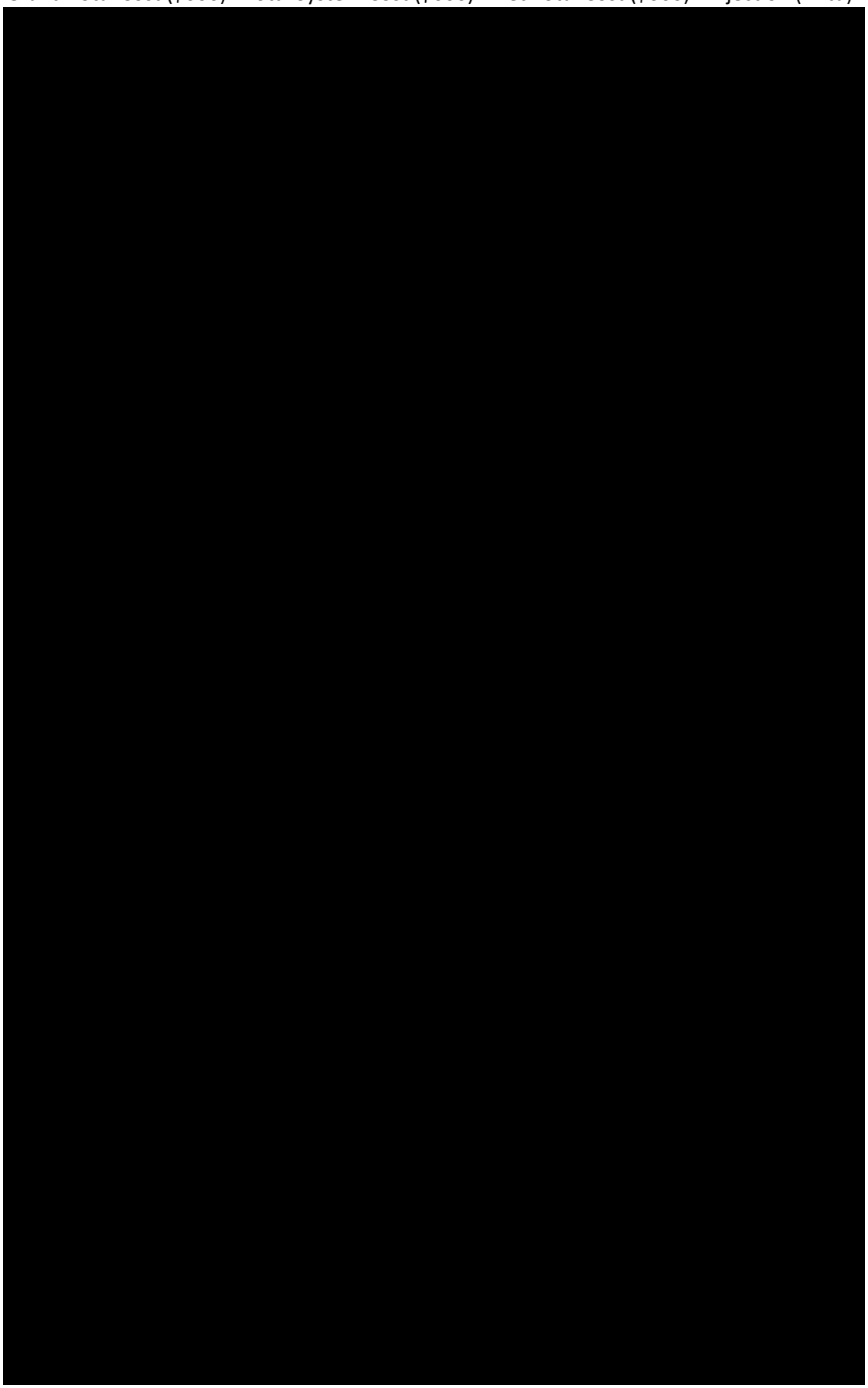


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

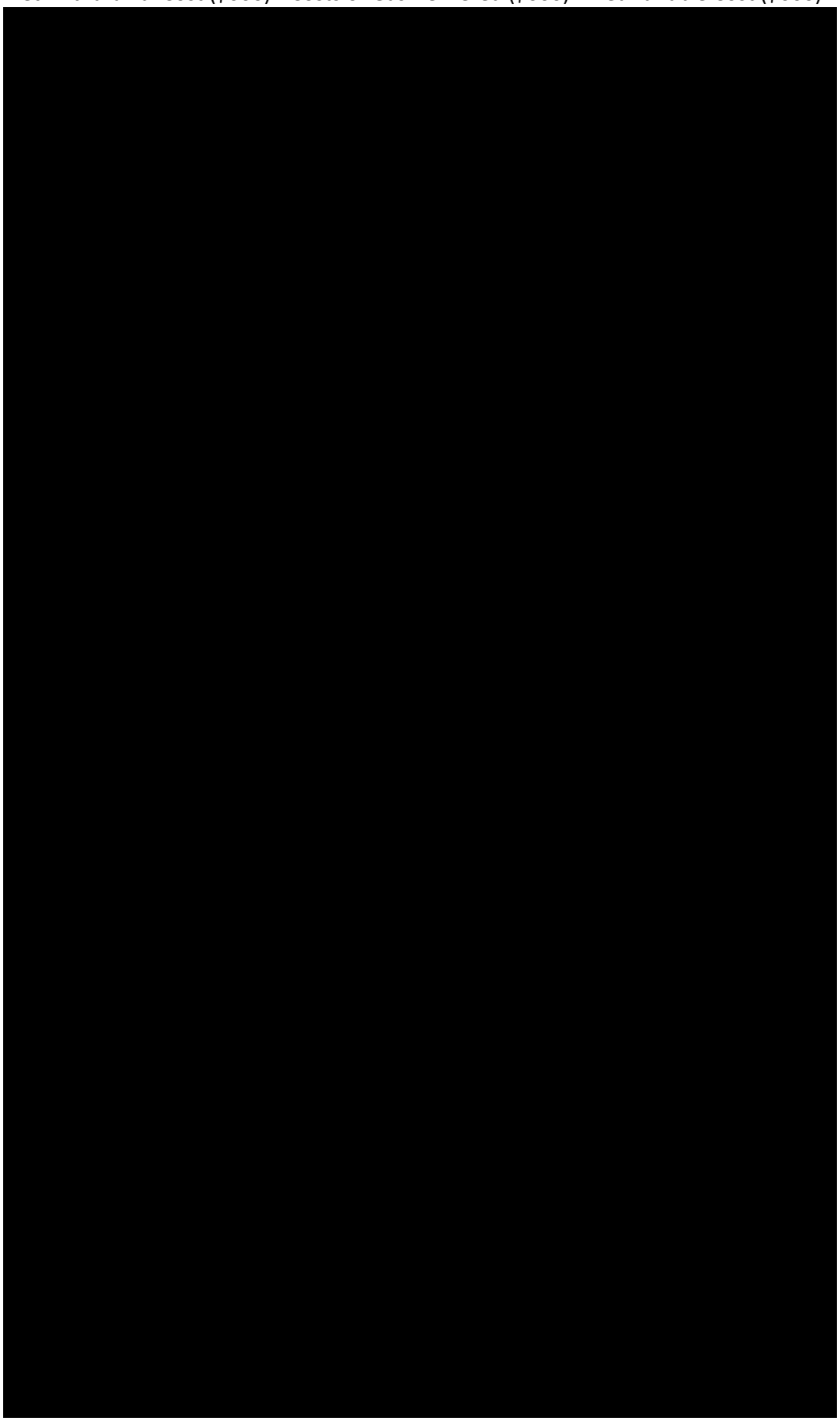




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

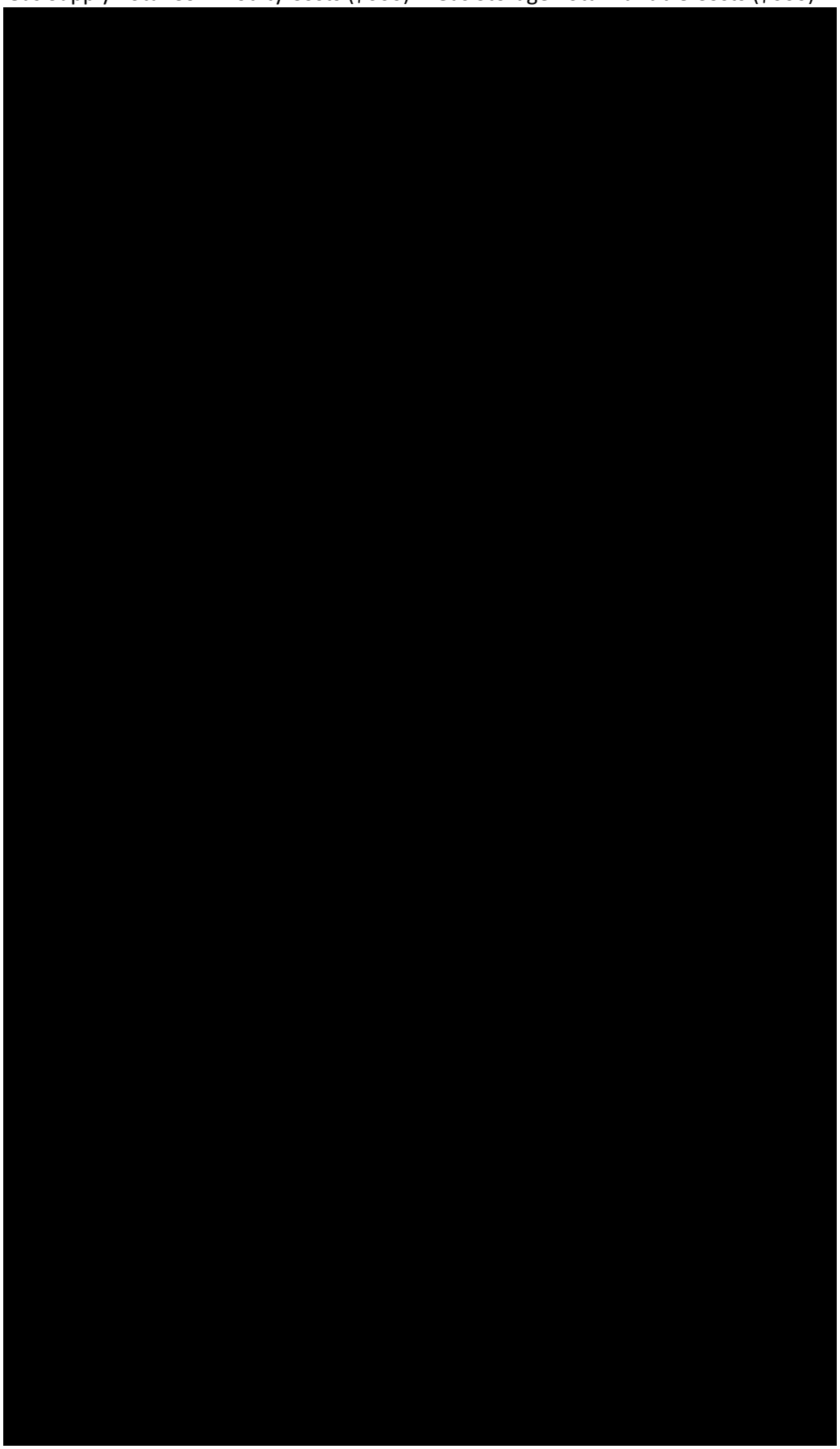




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

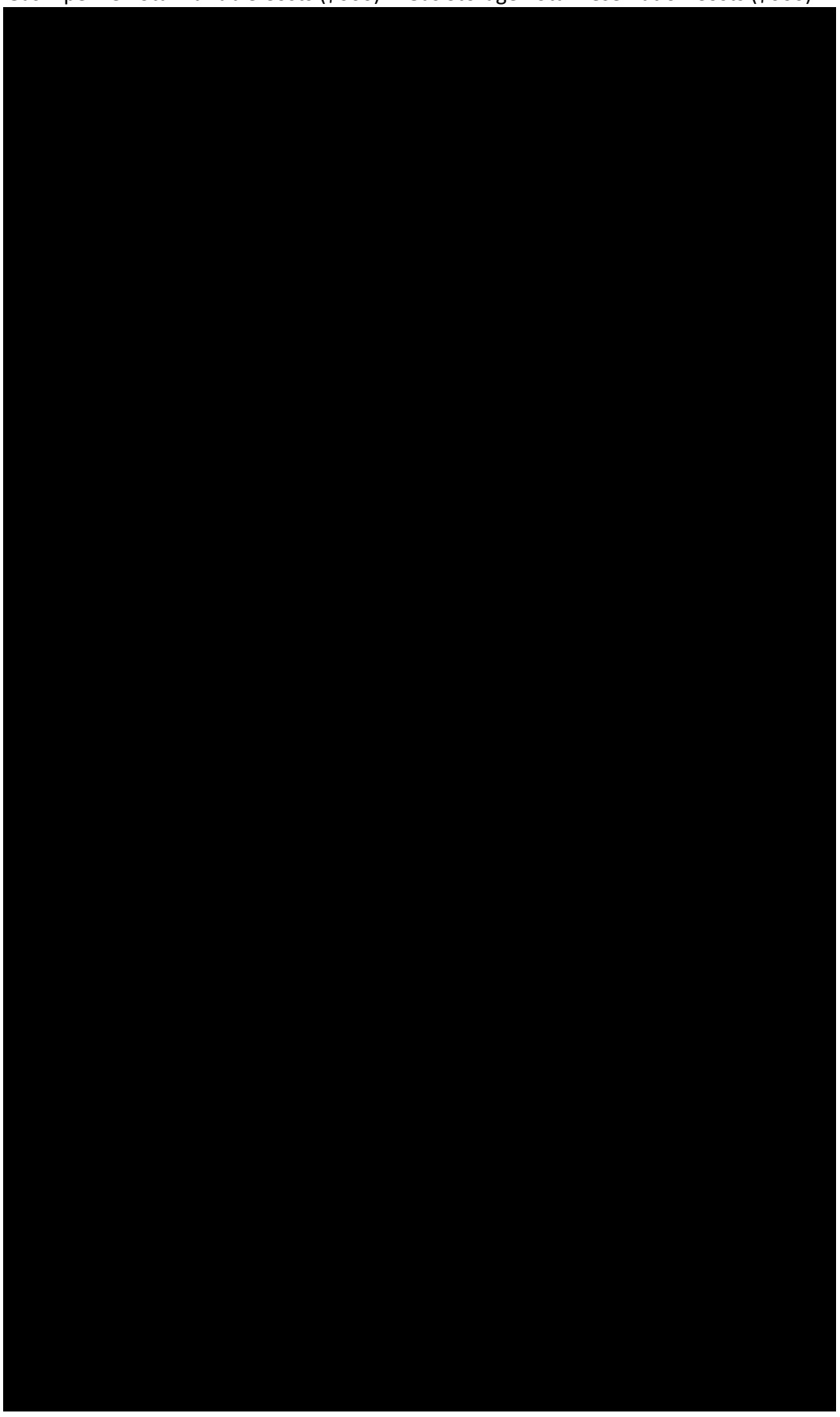


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



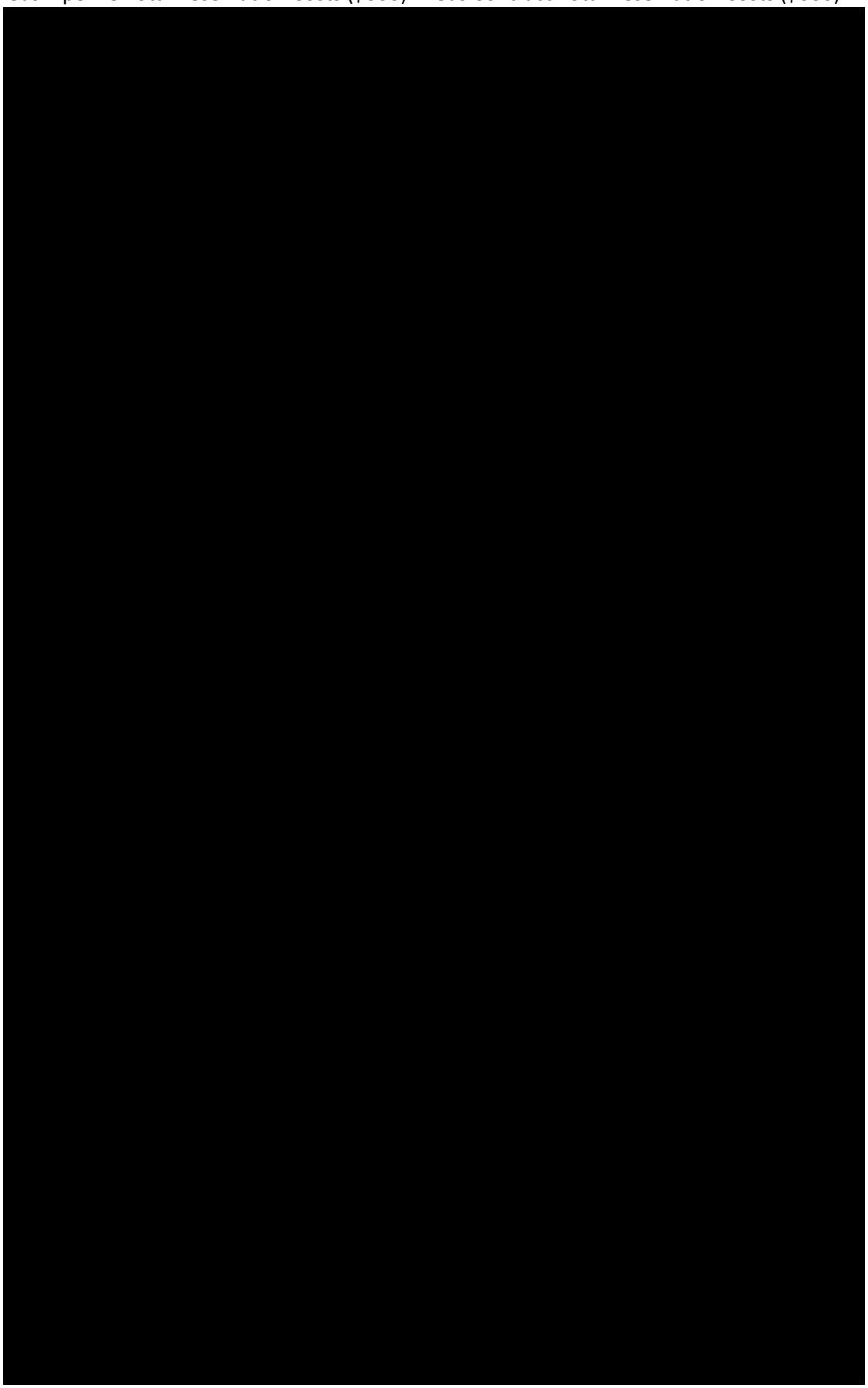


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



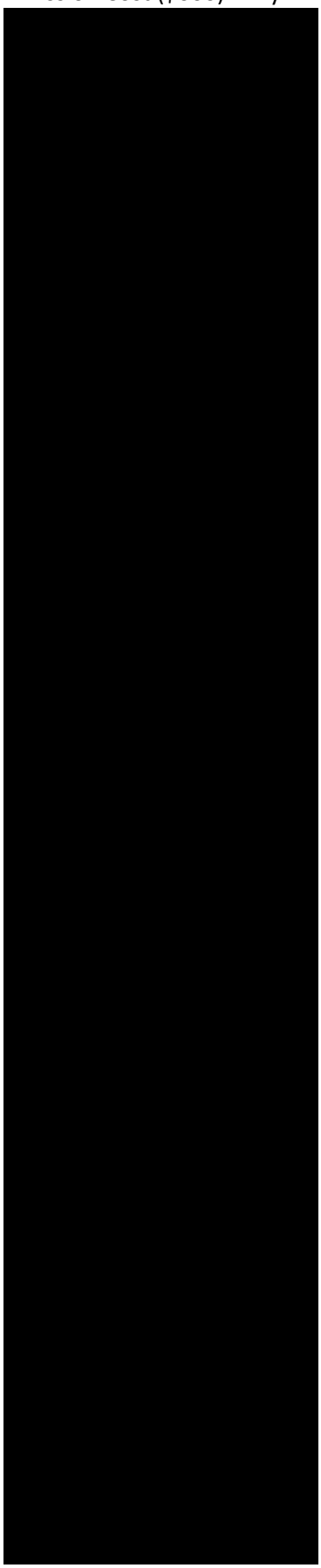


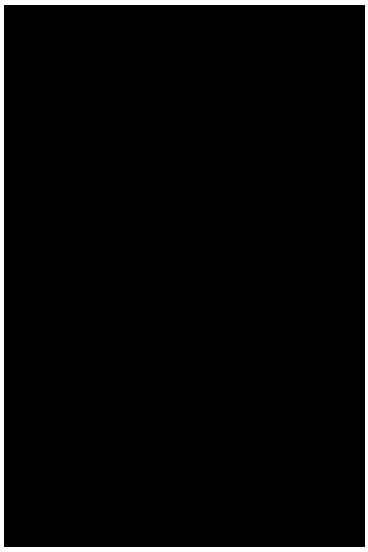
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



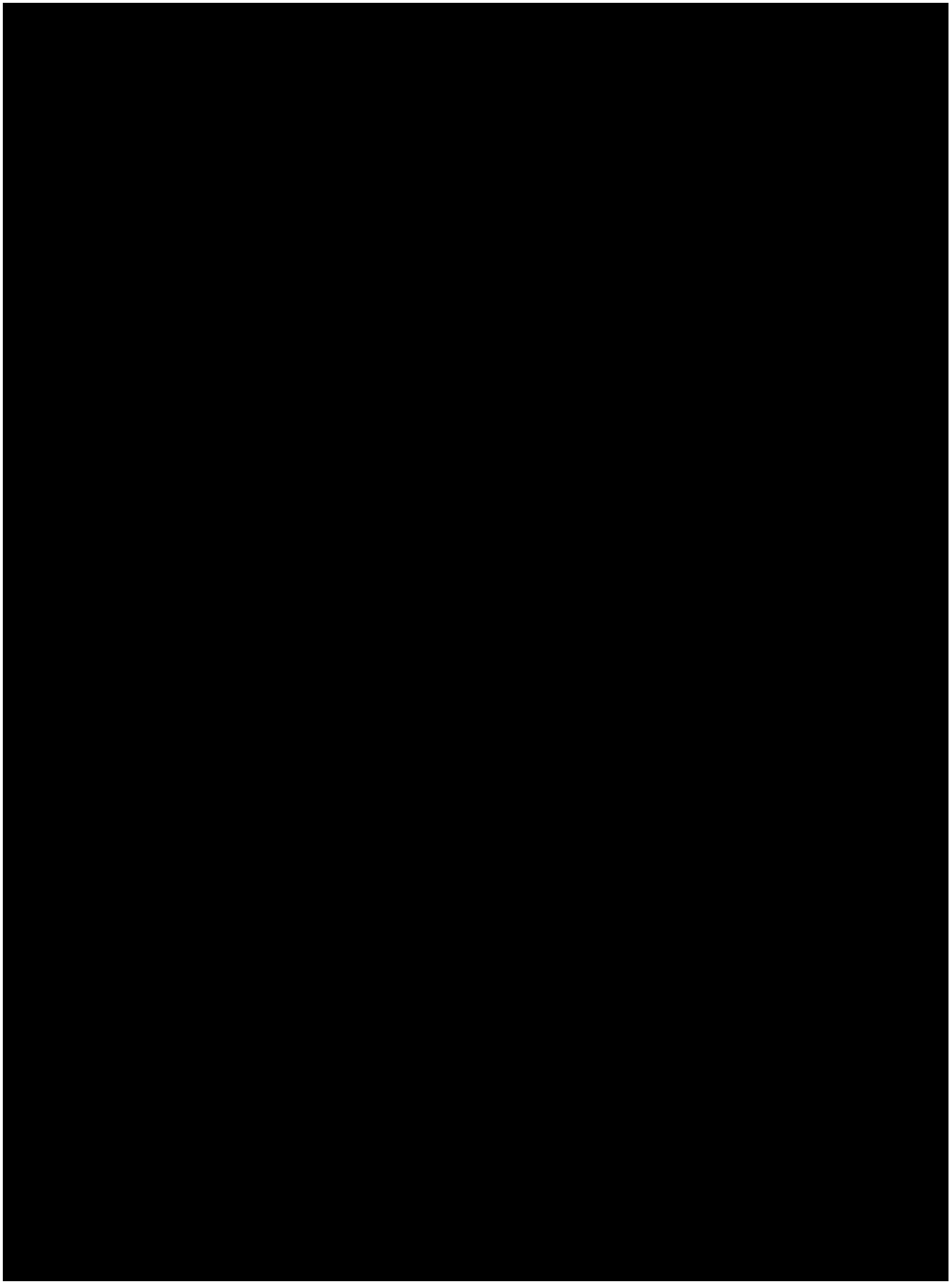


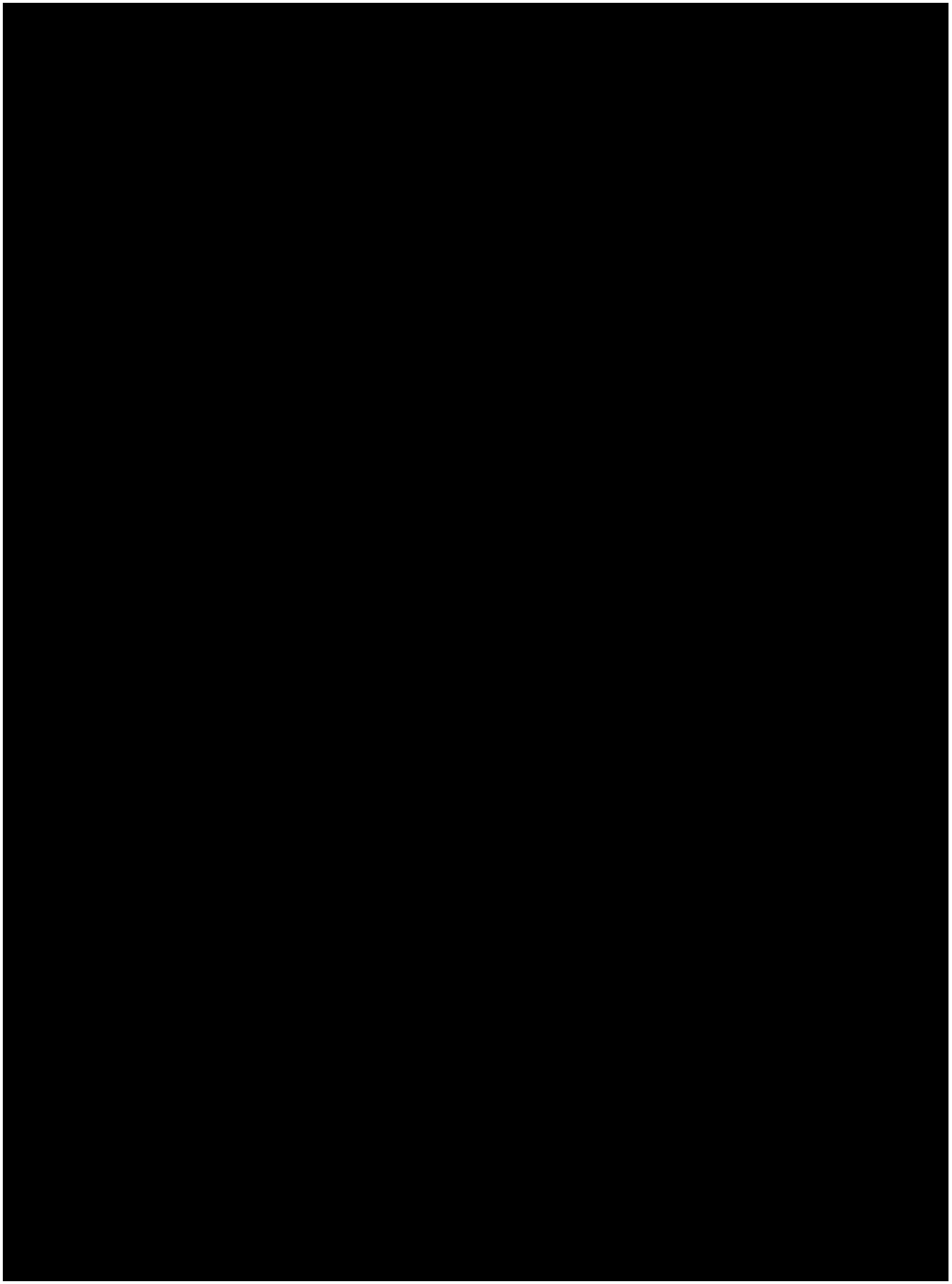
Emission Cost ($000) x y z

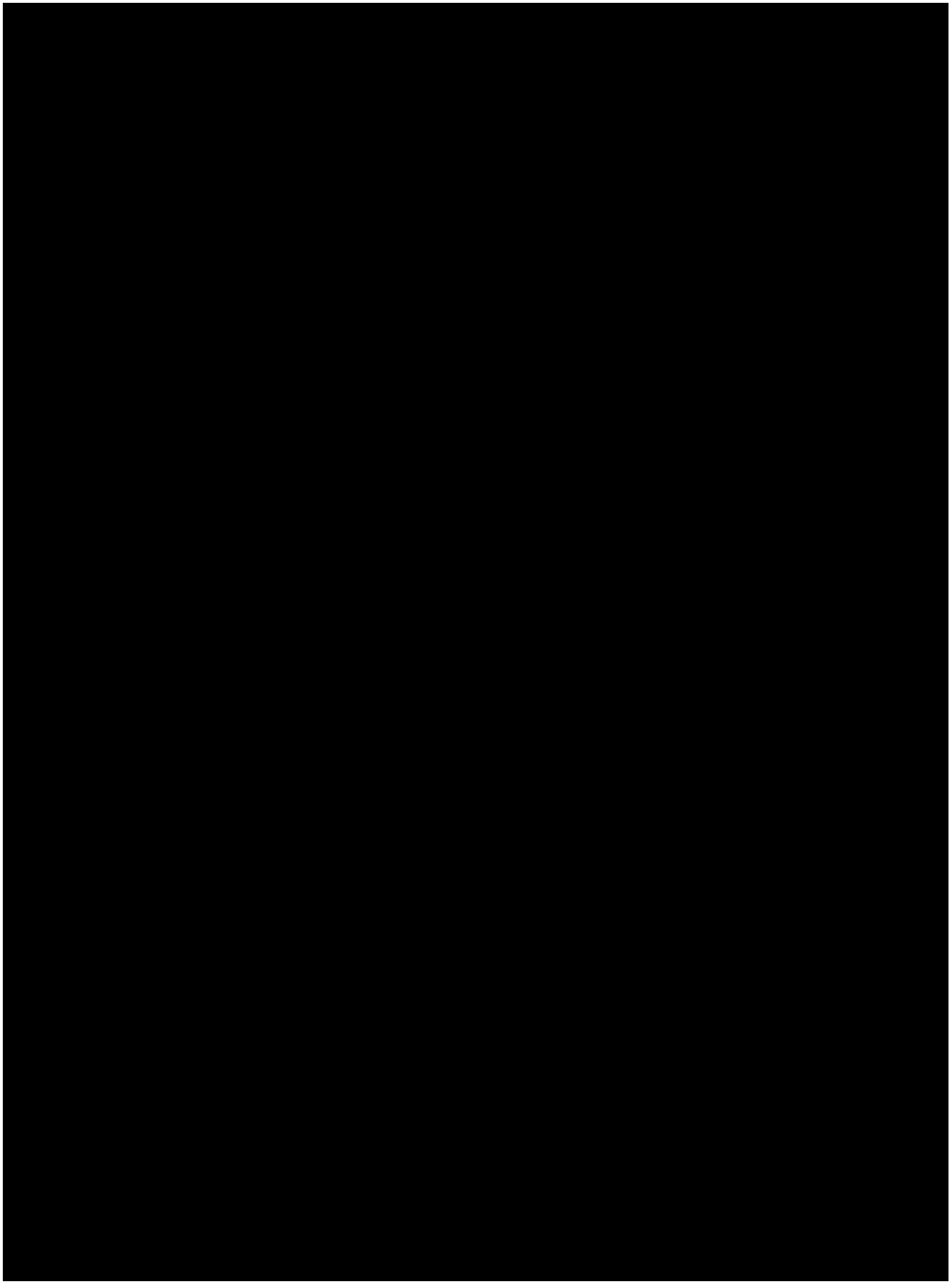


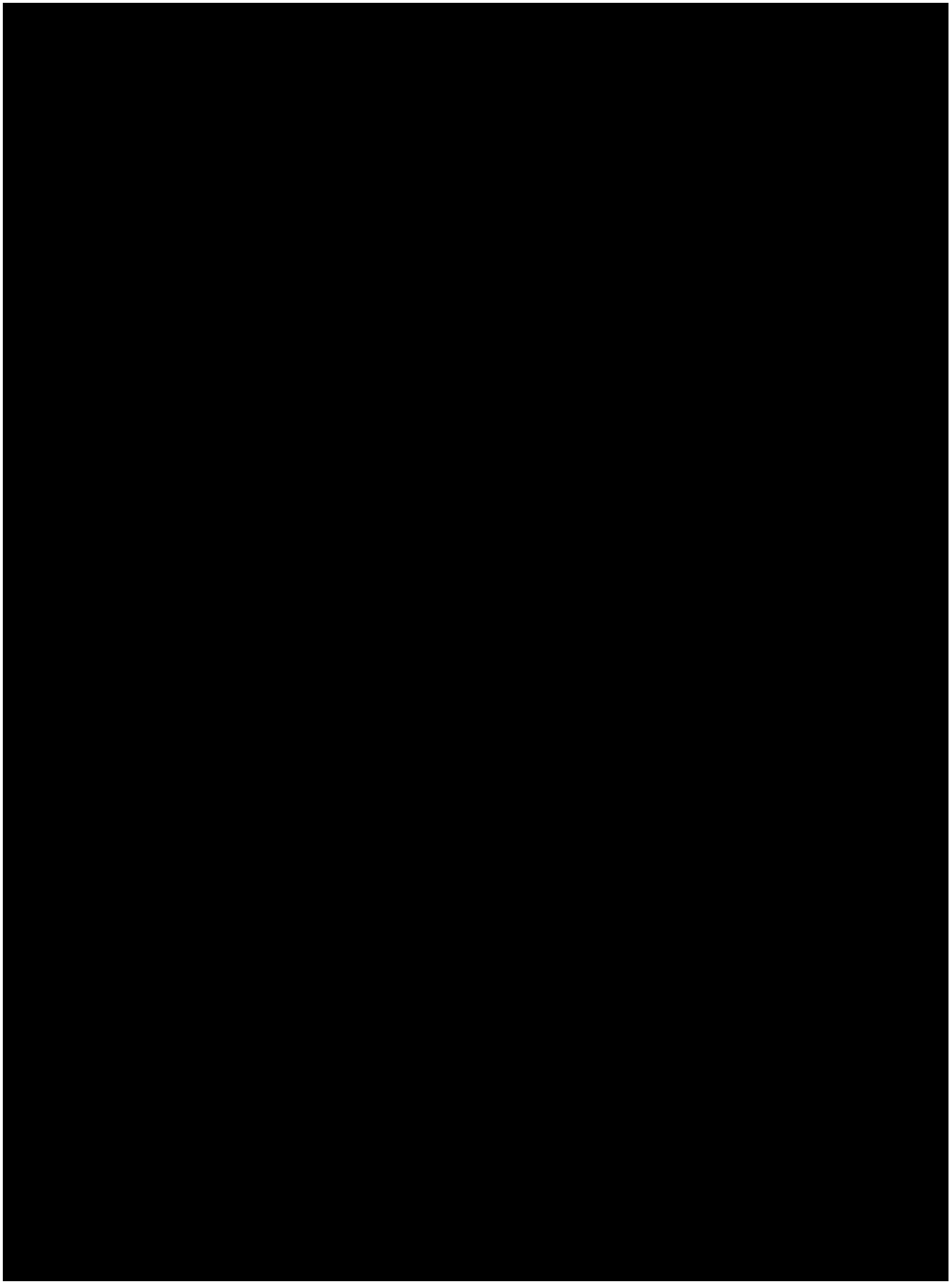


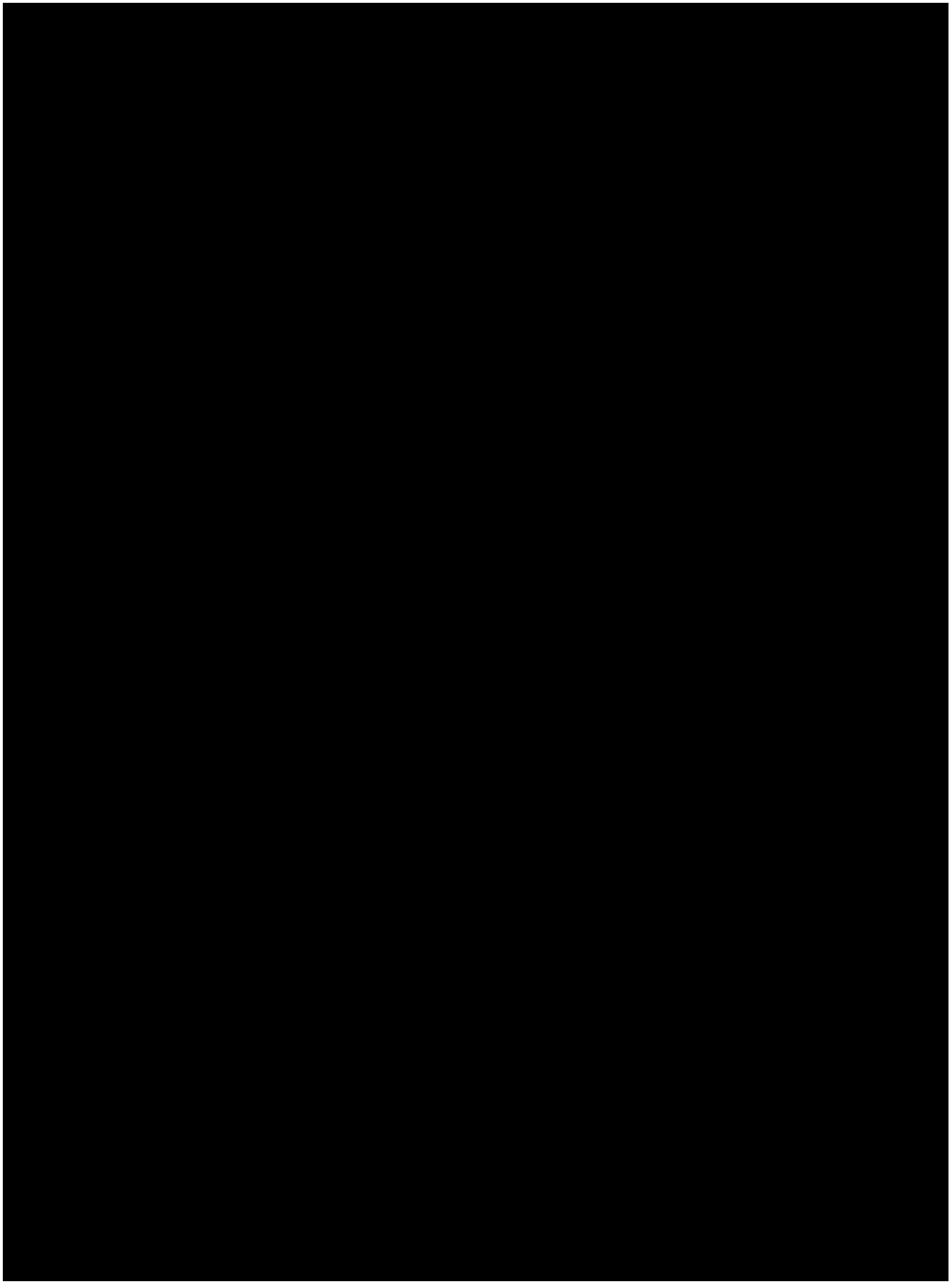
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
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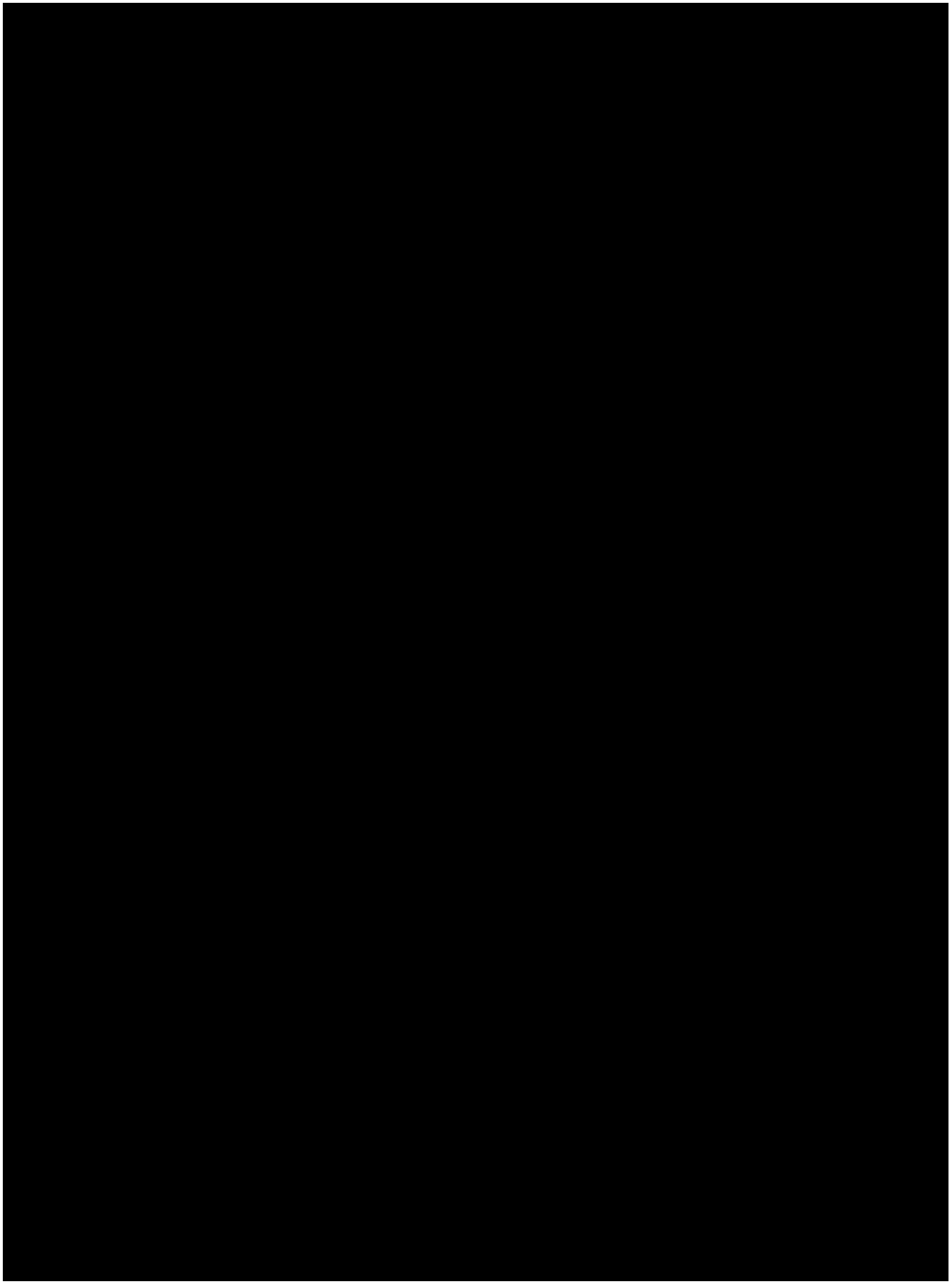


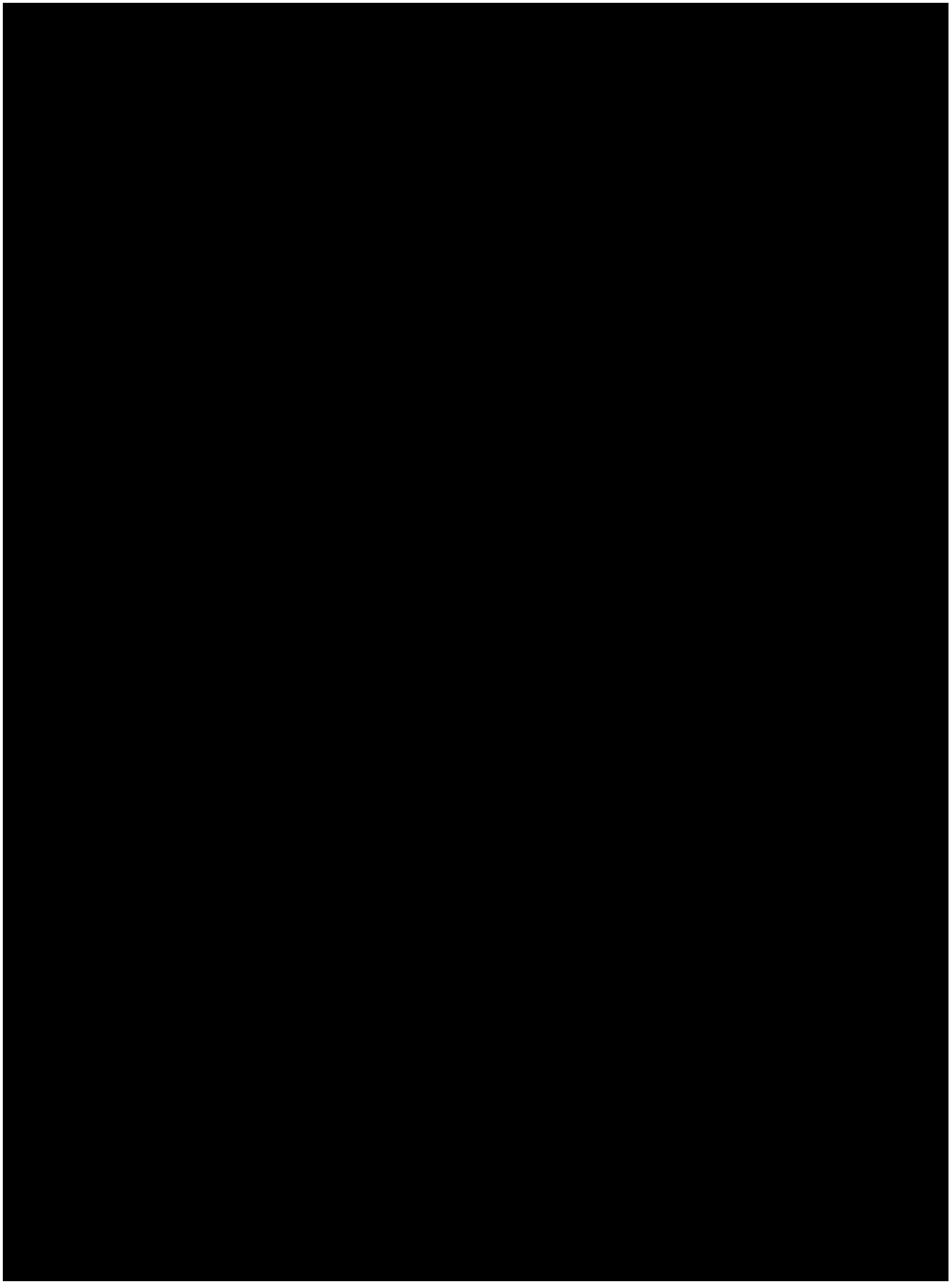


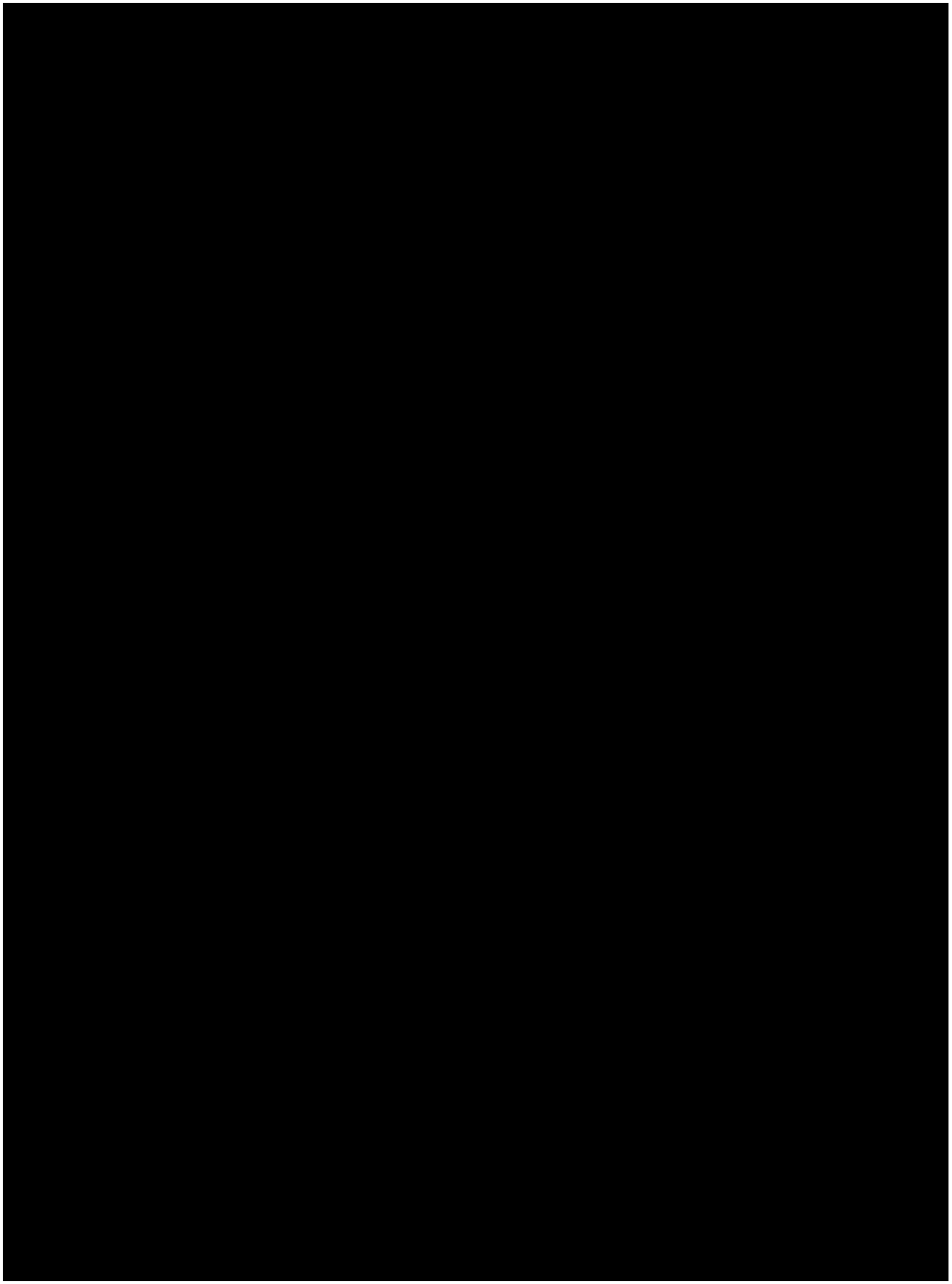


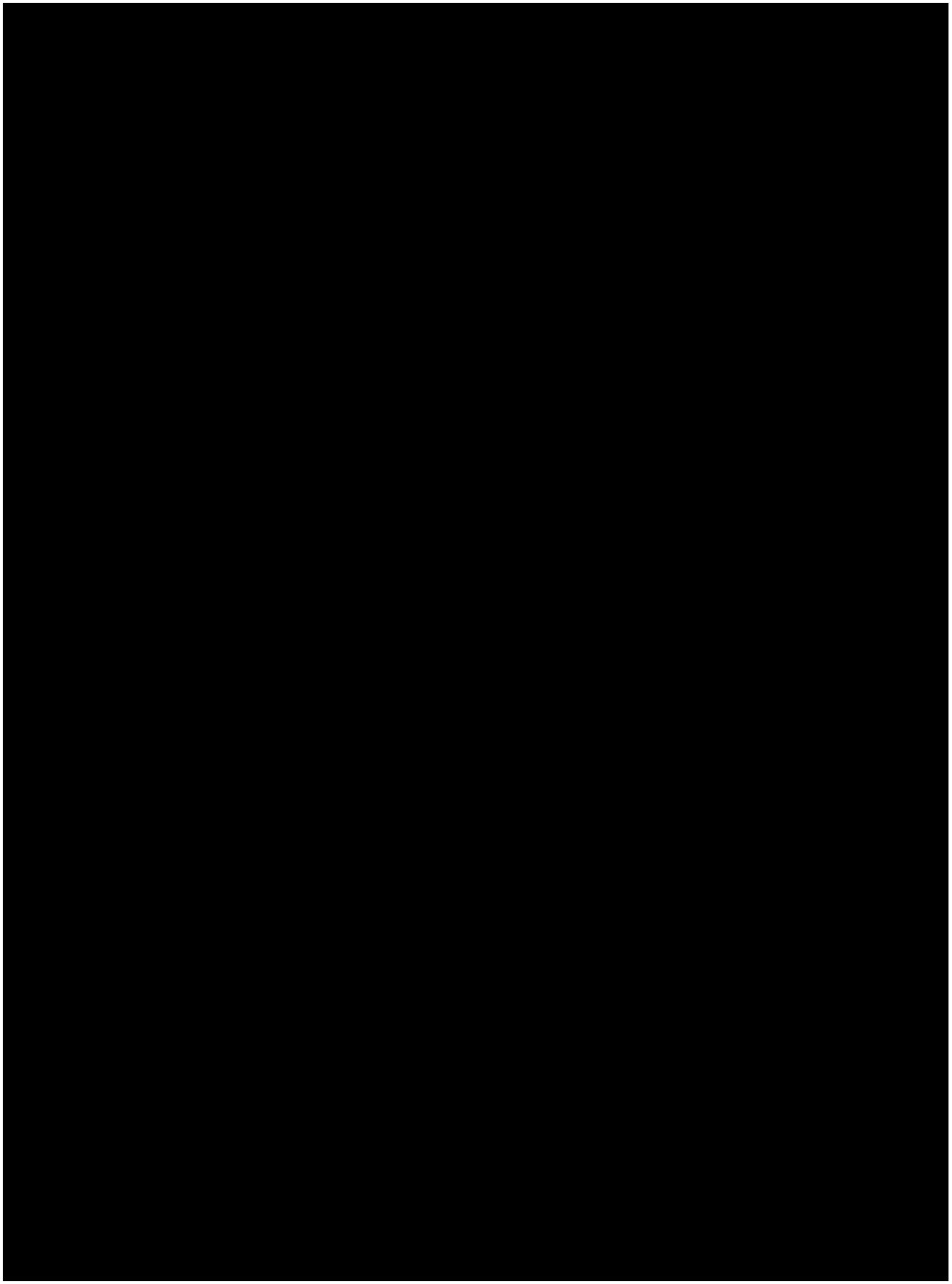


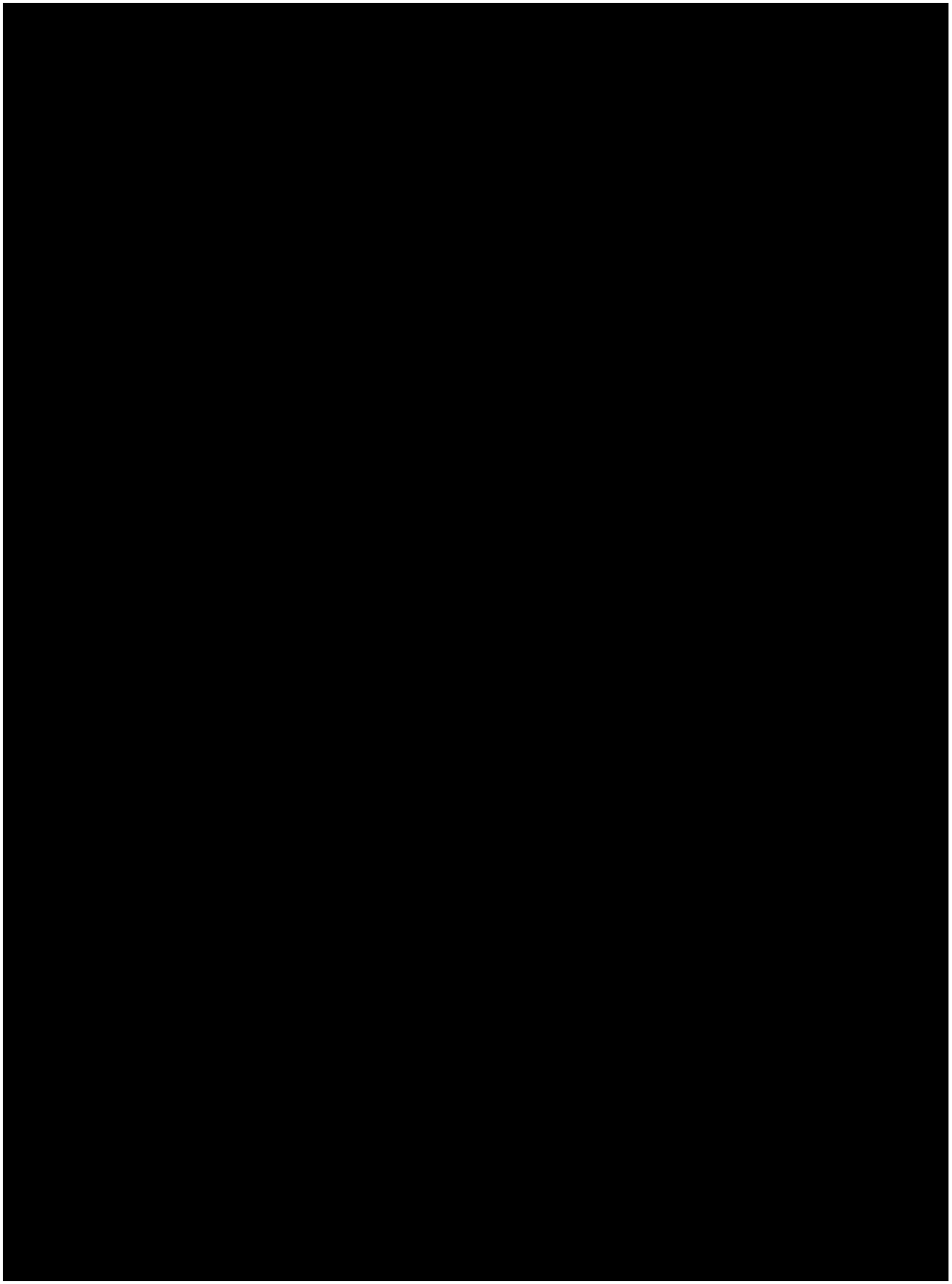


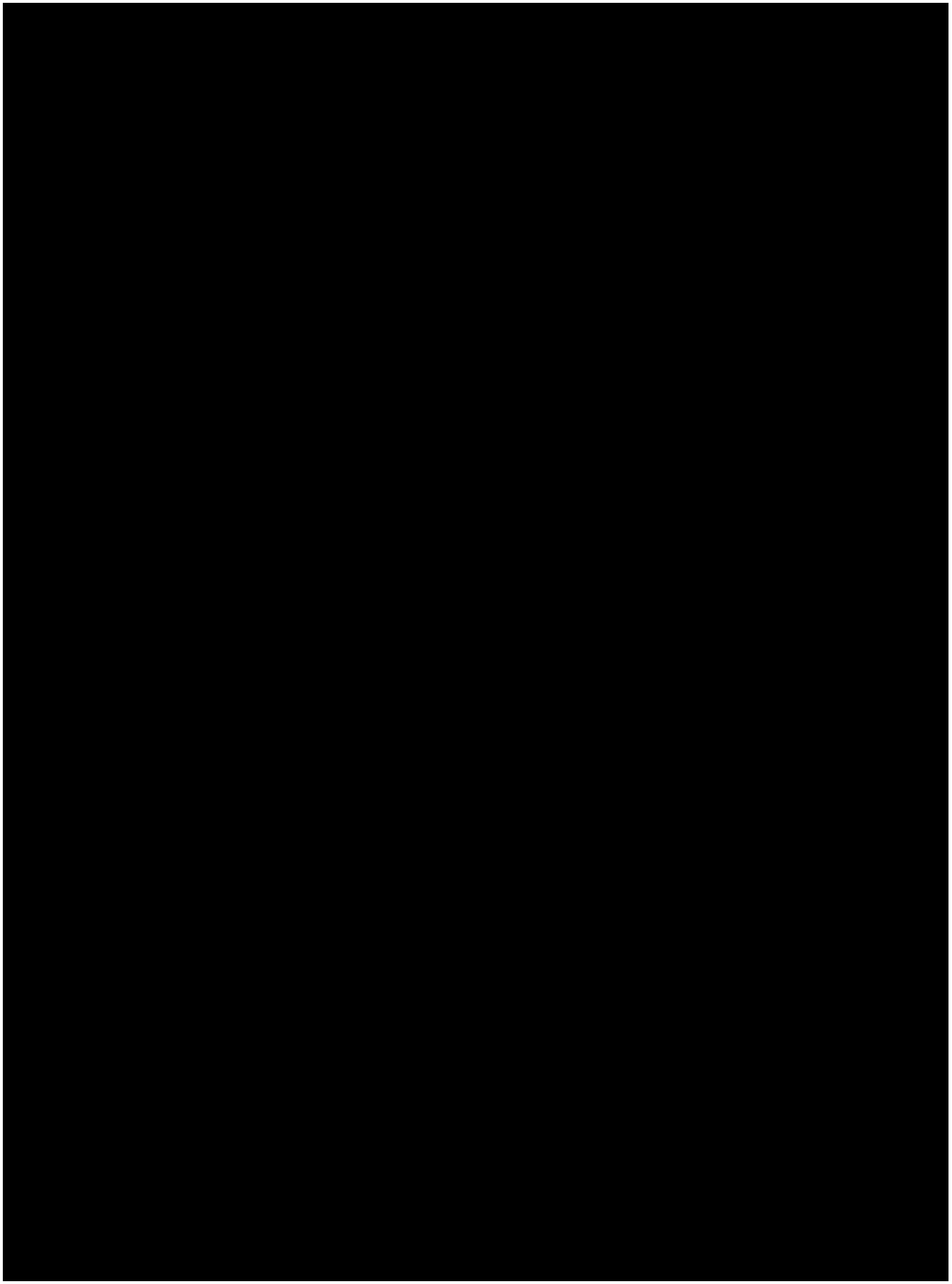


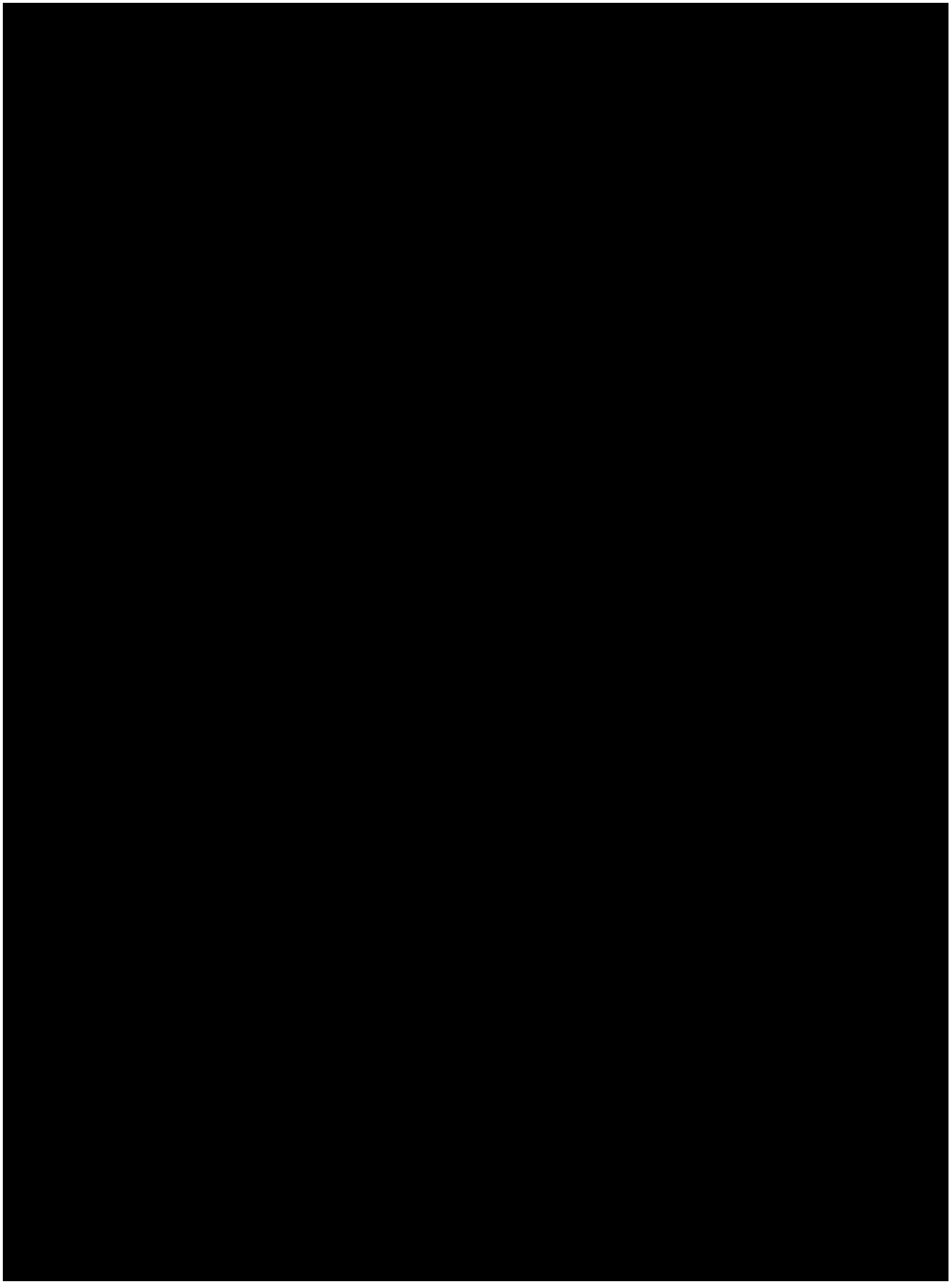


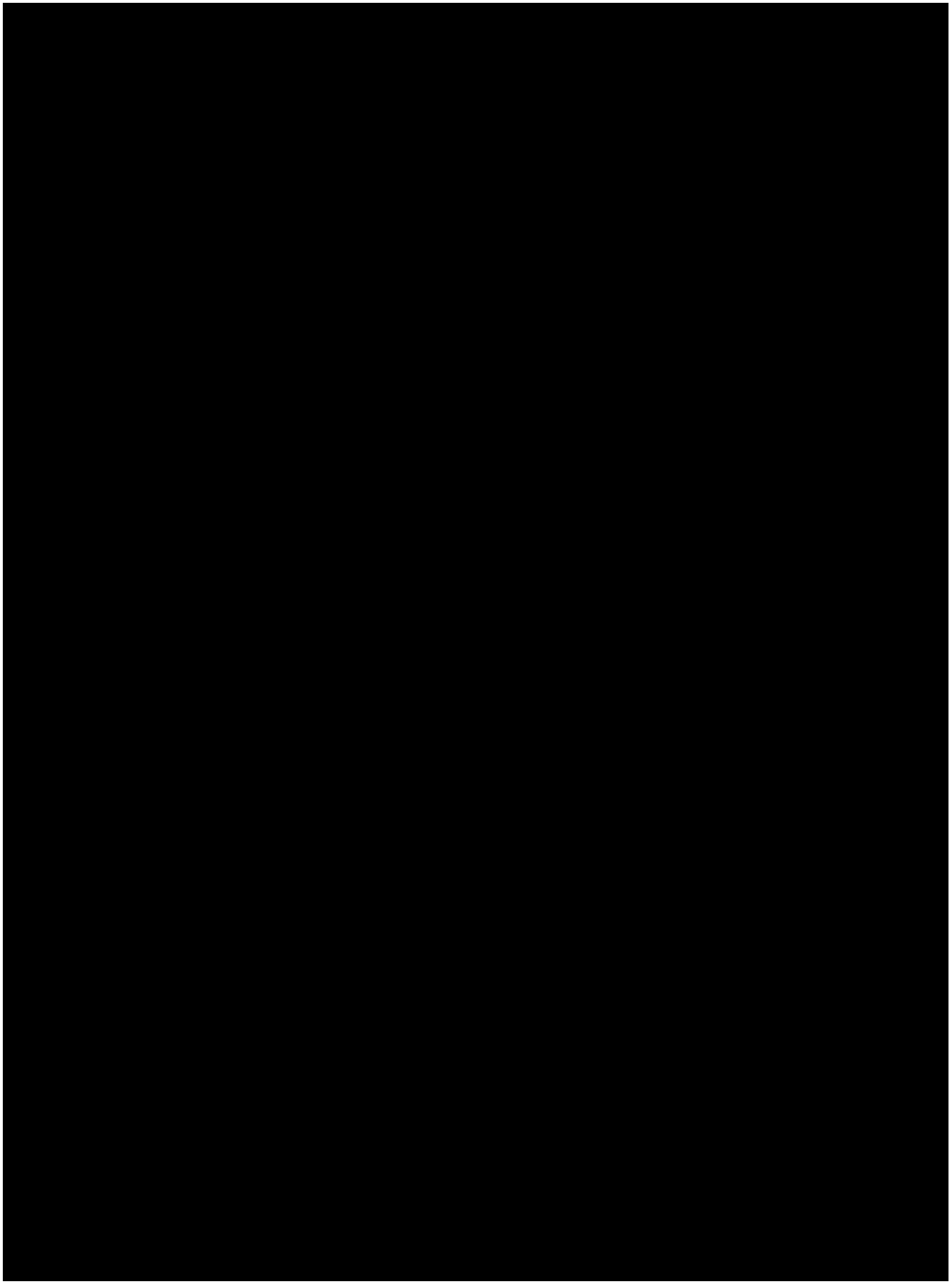


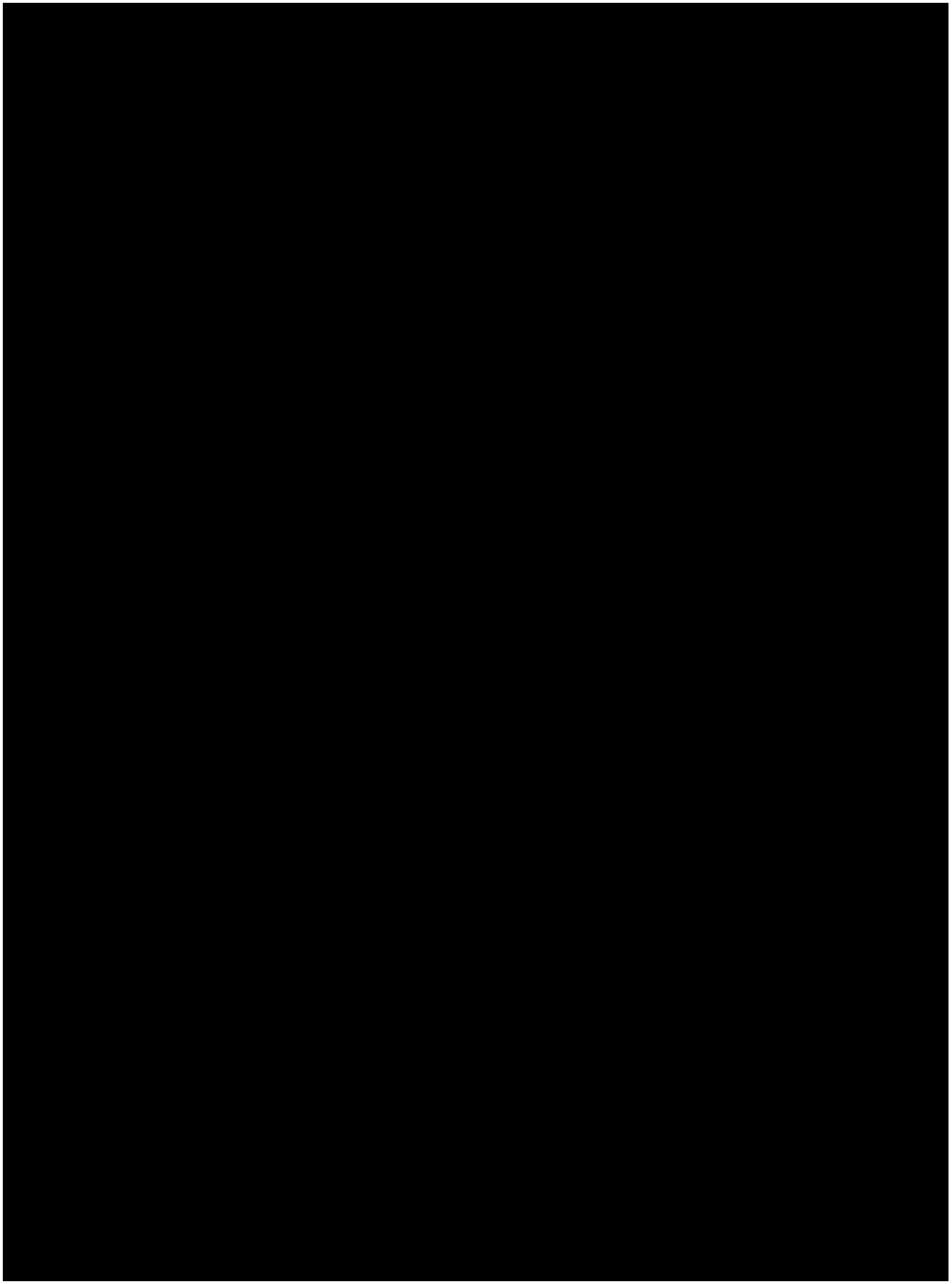


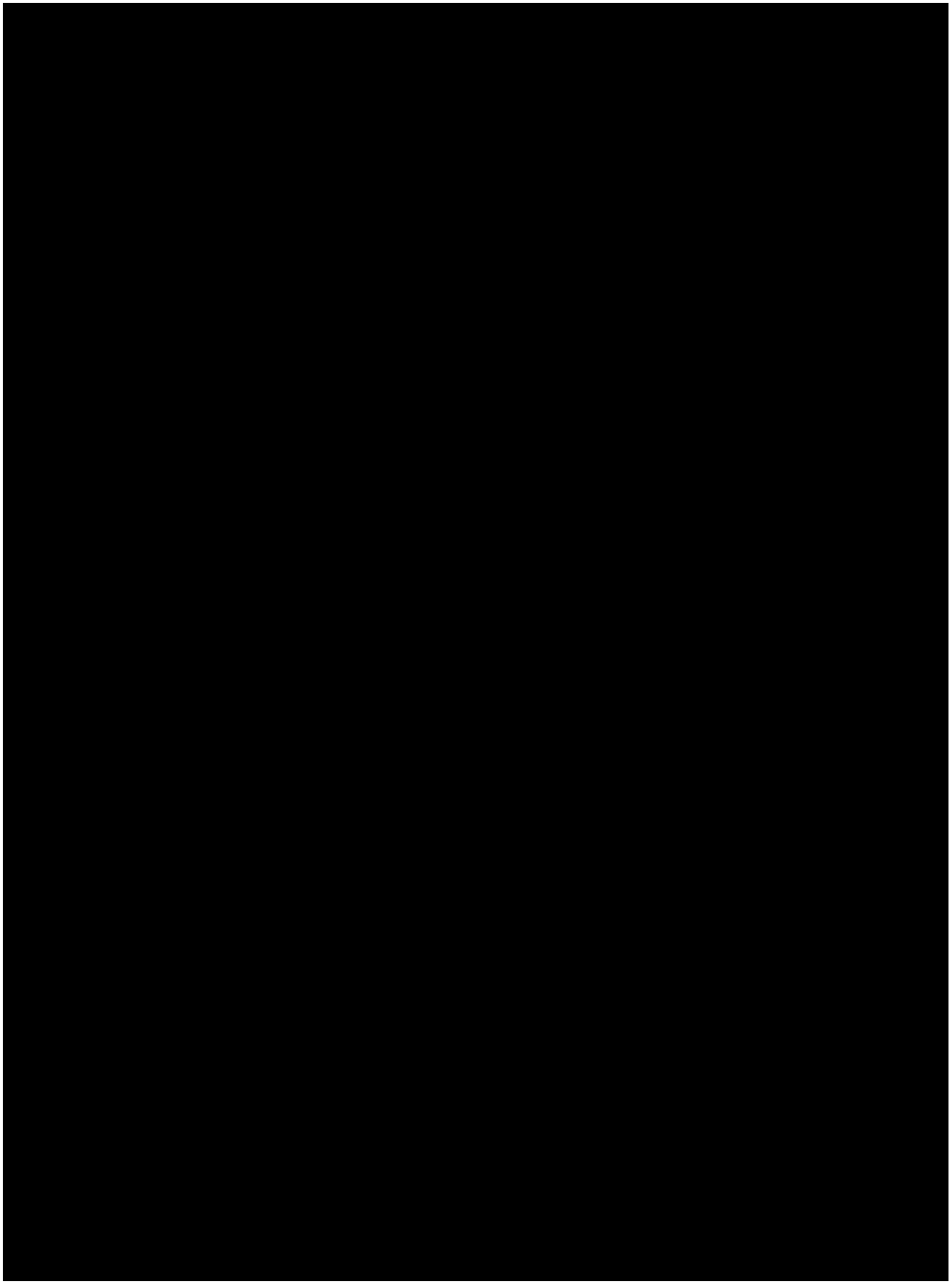


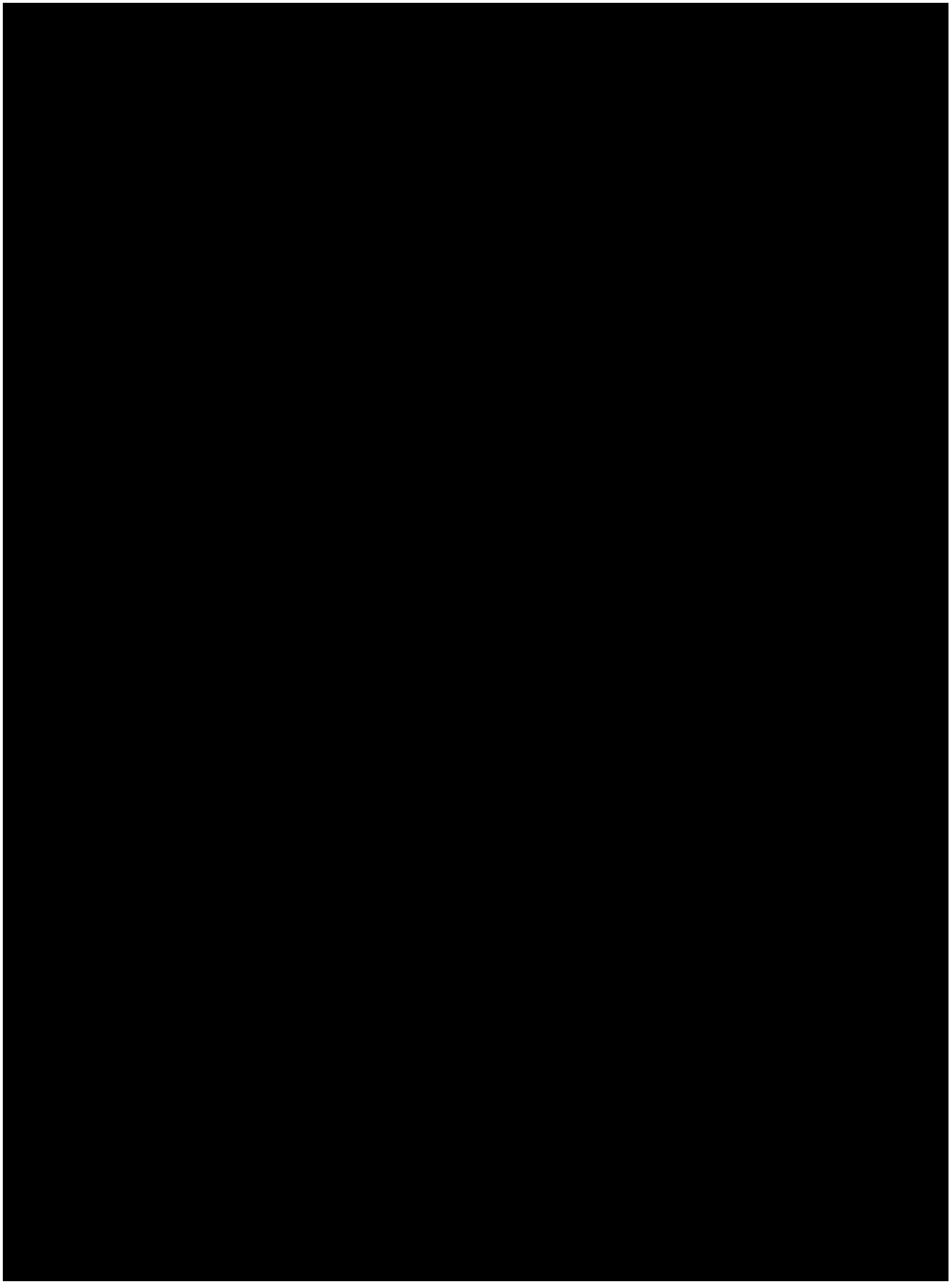


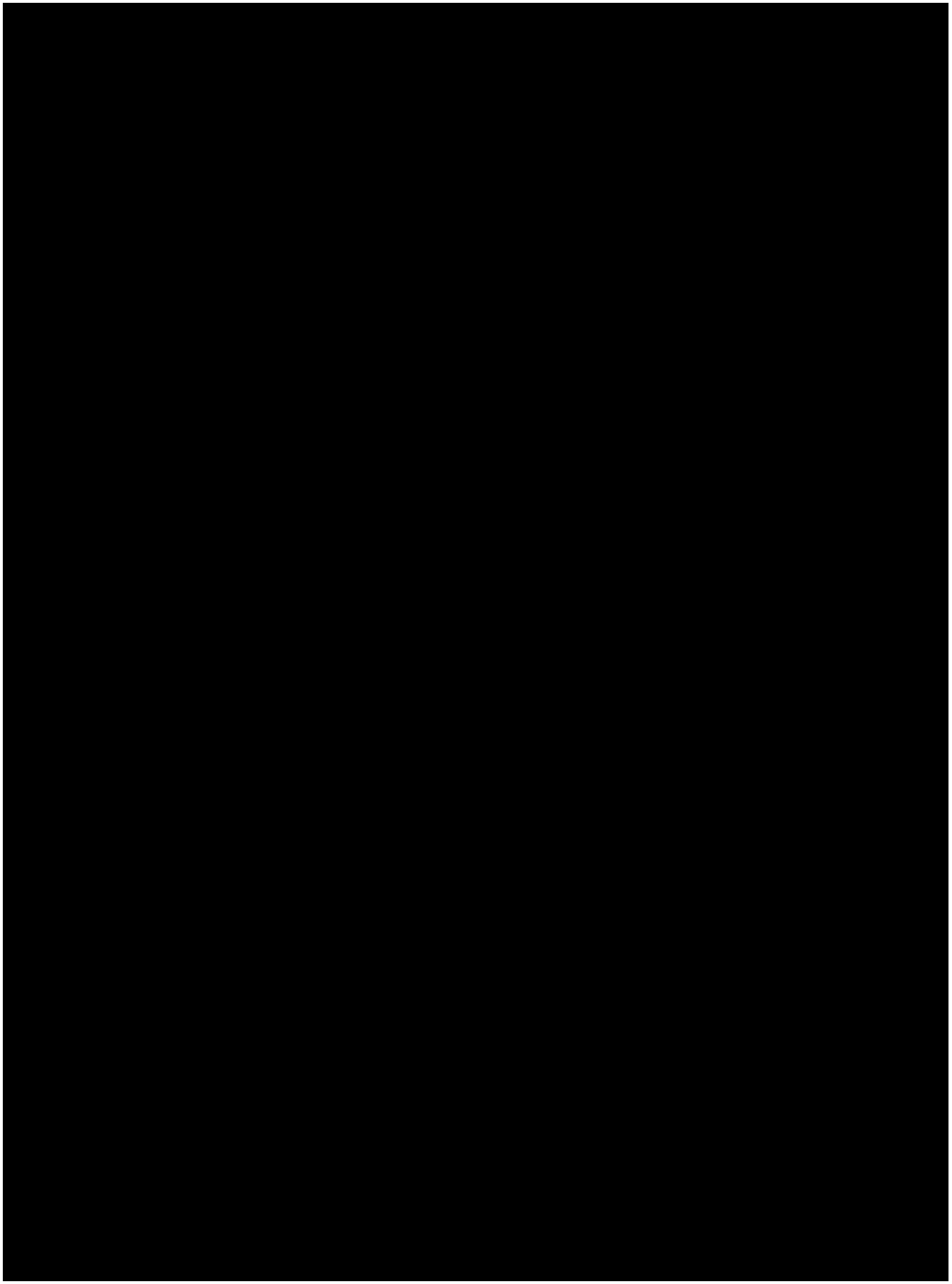


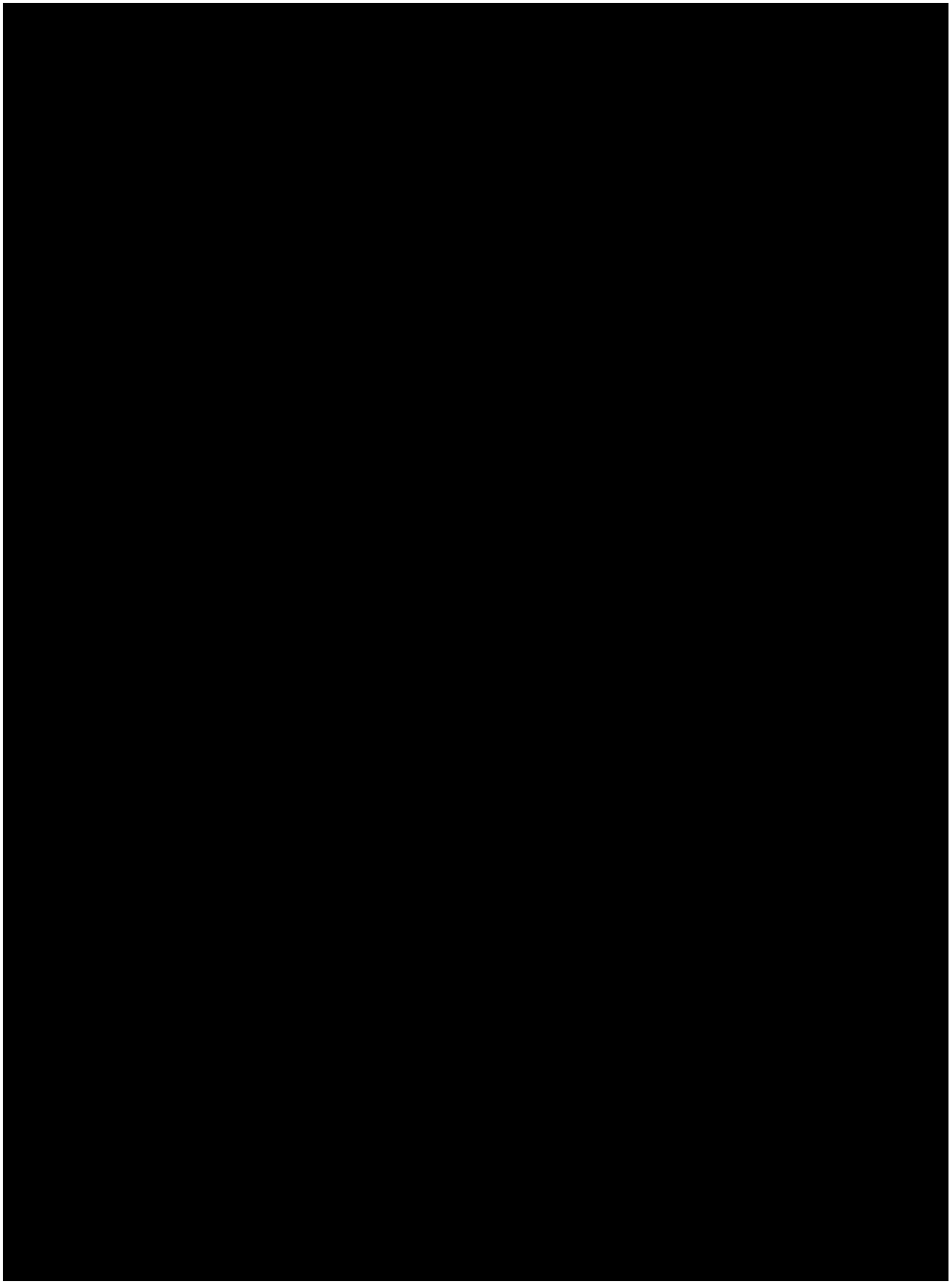




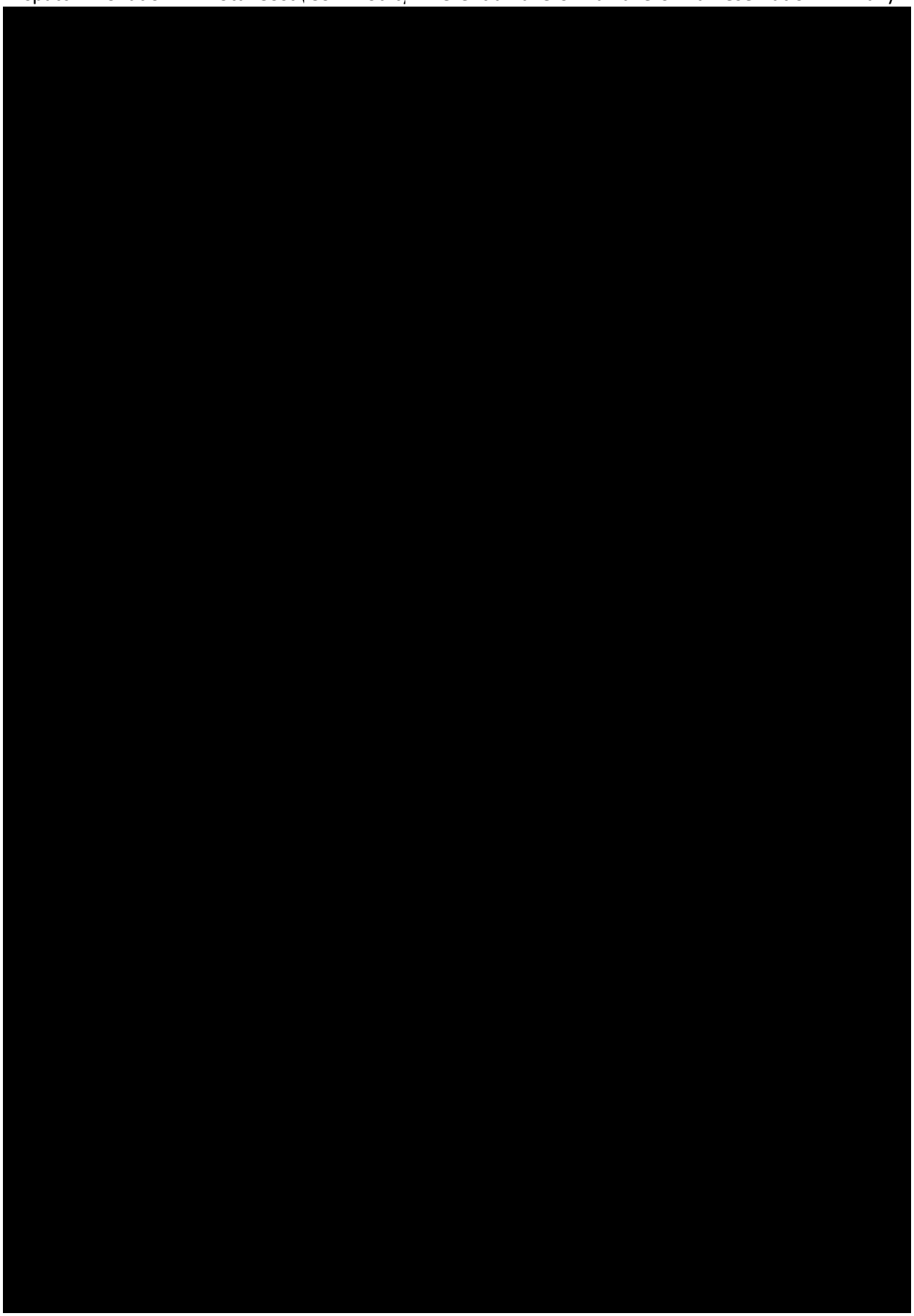


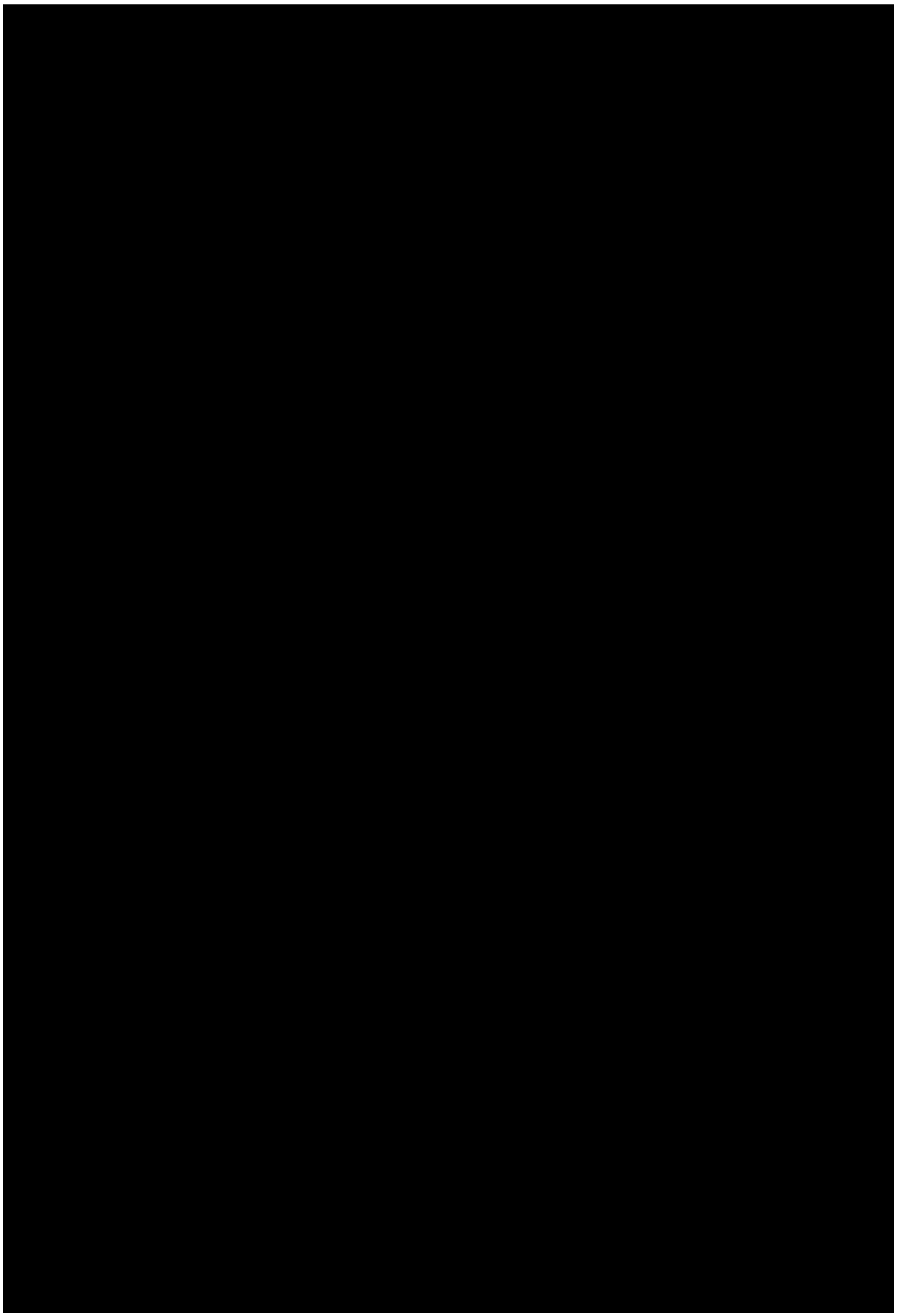


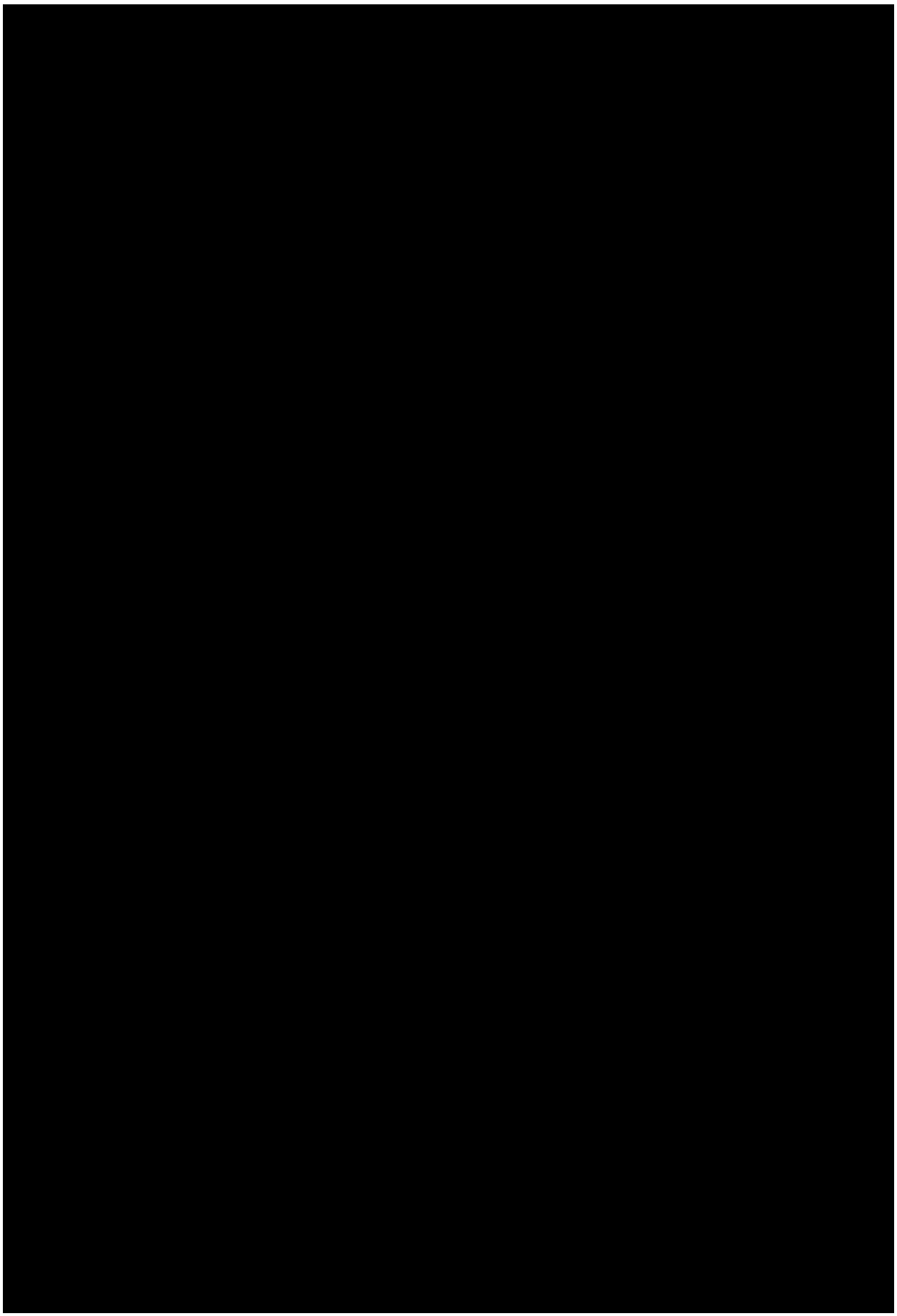


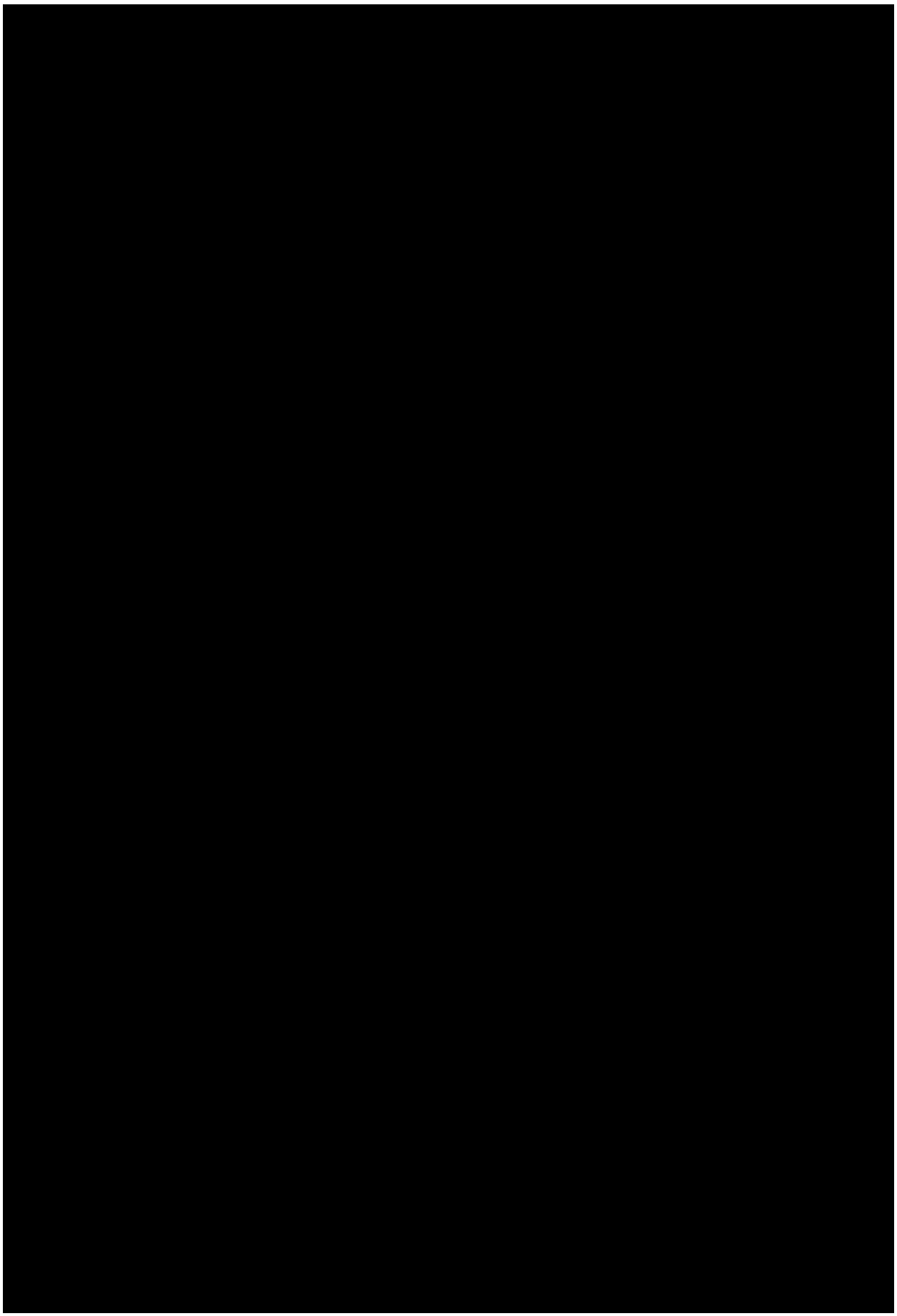


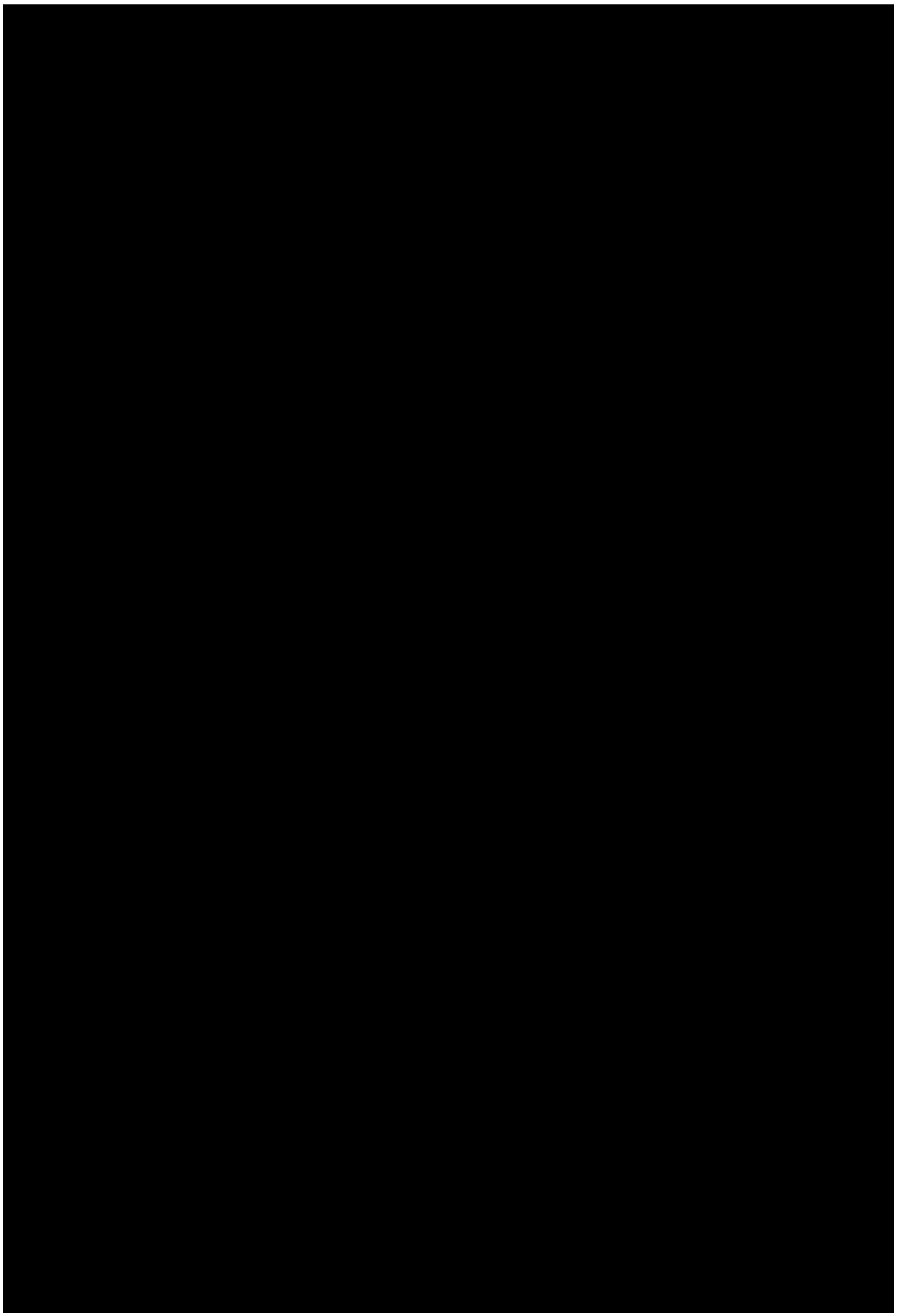


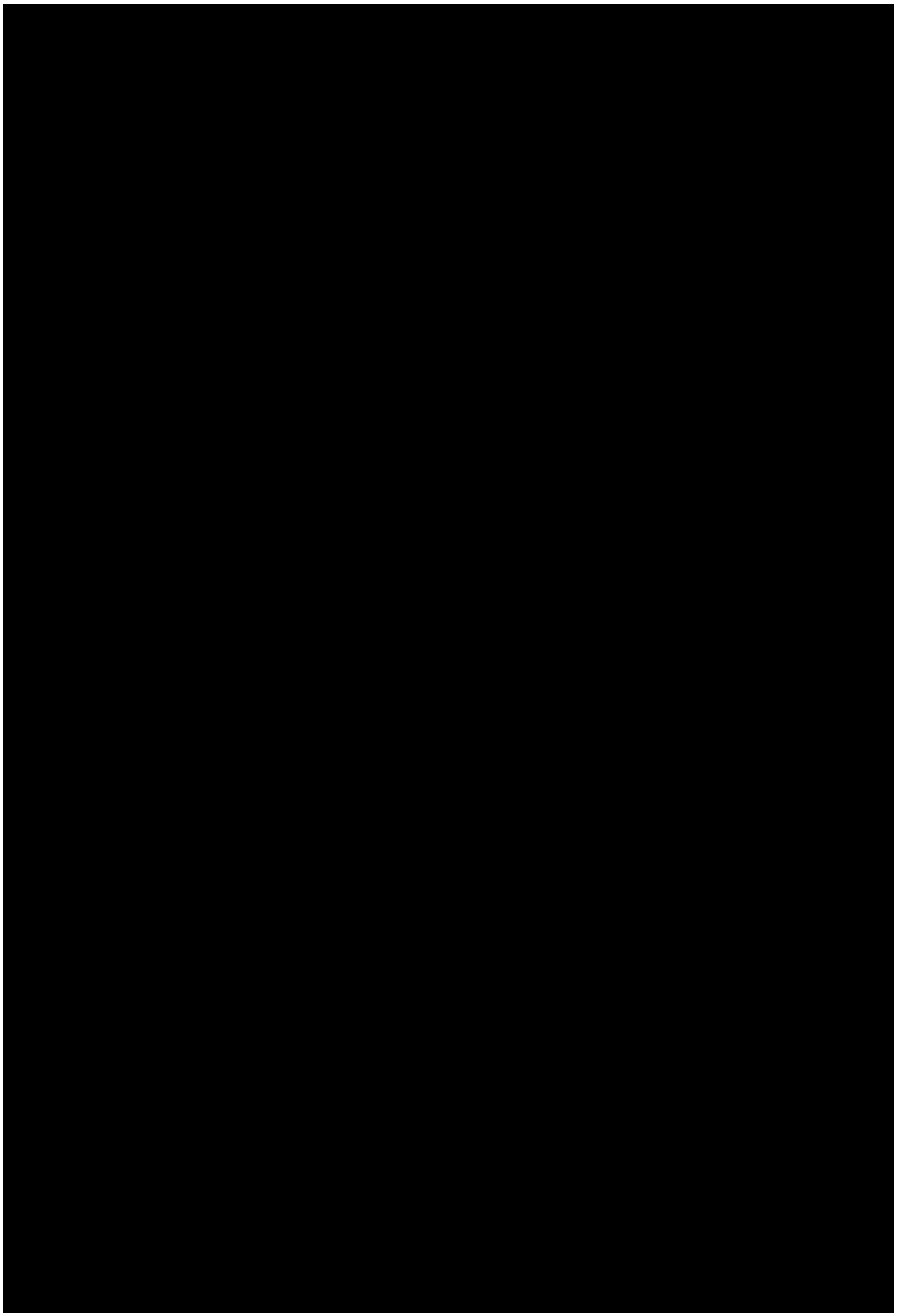

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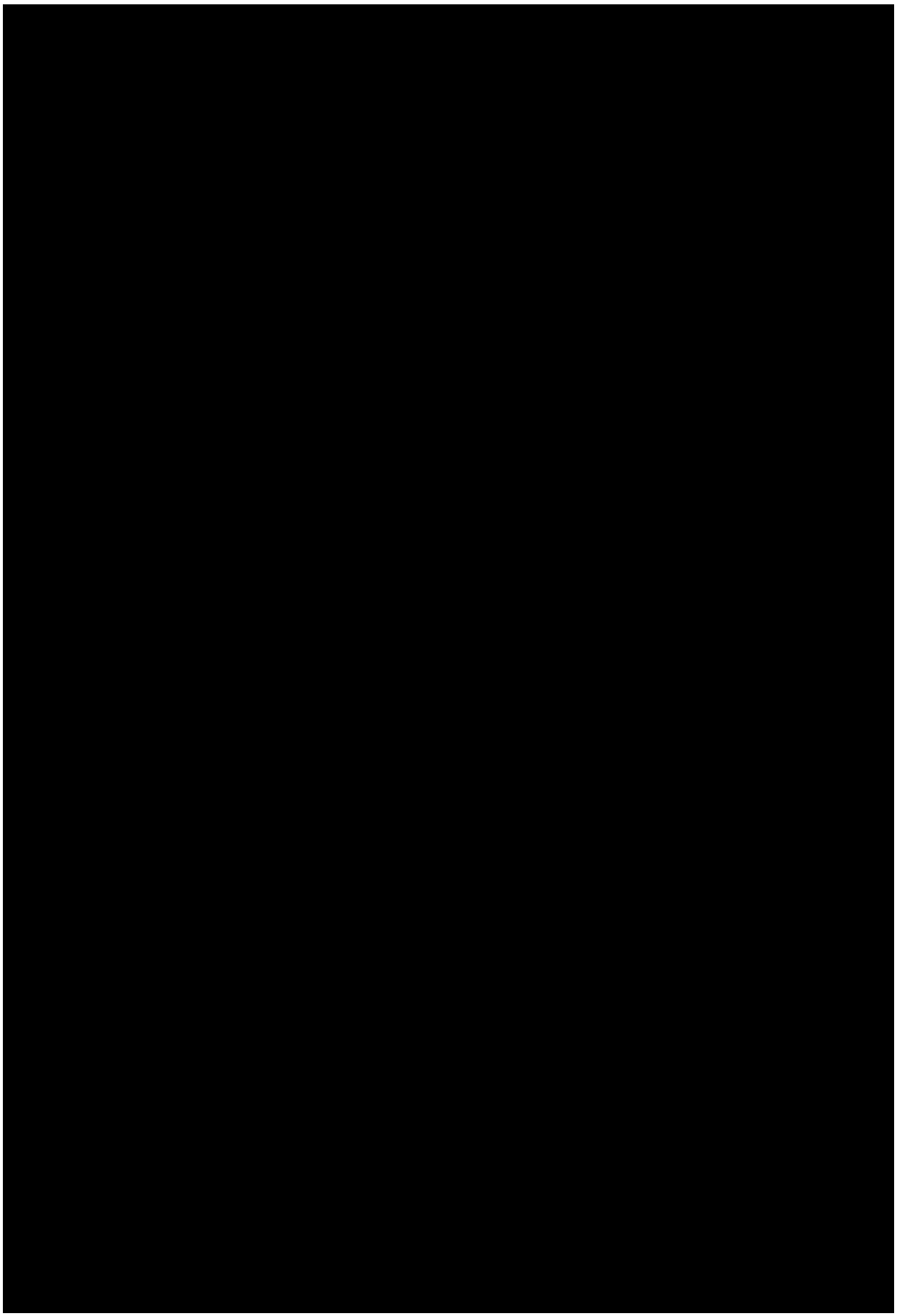


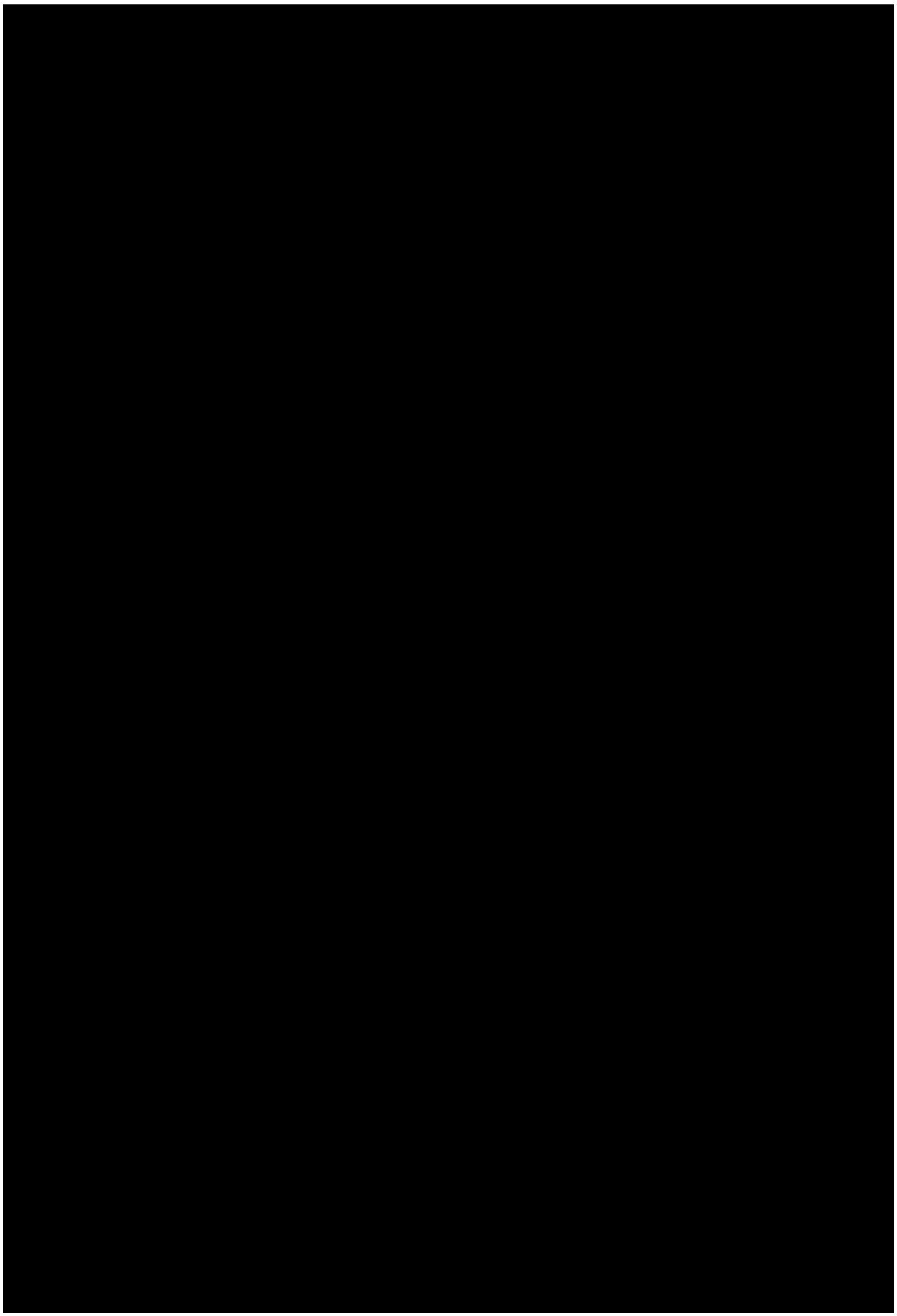


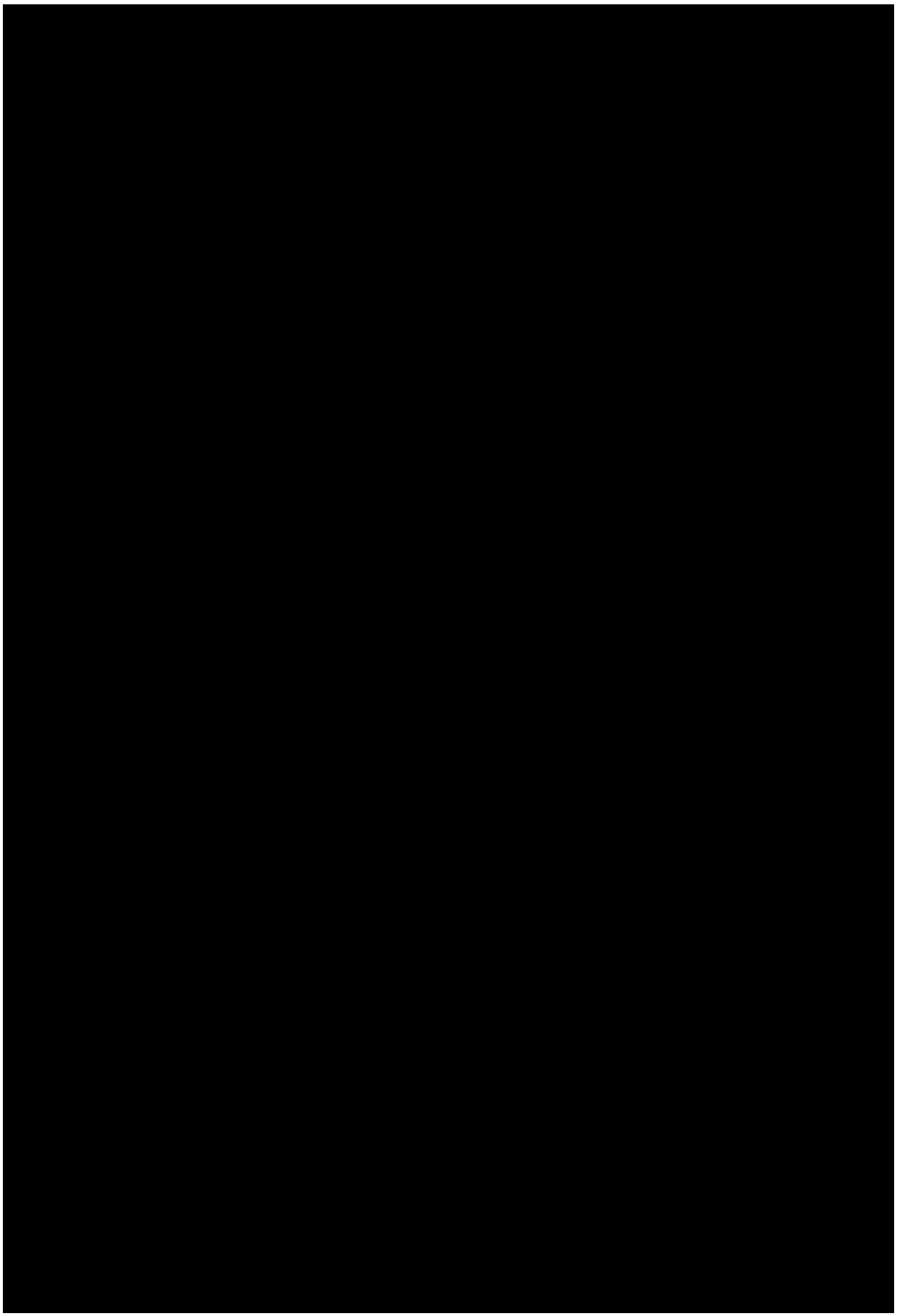


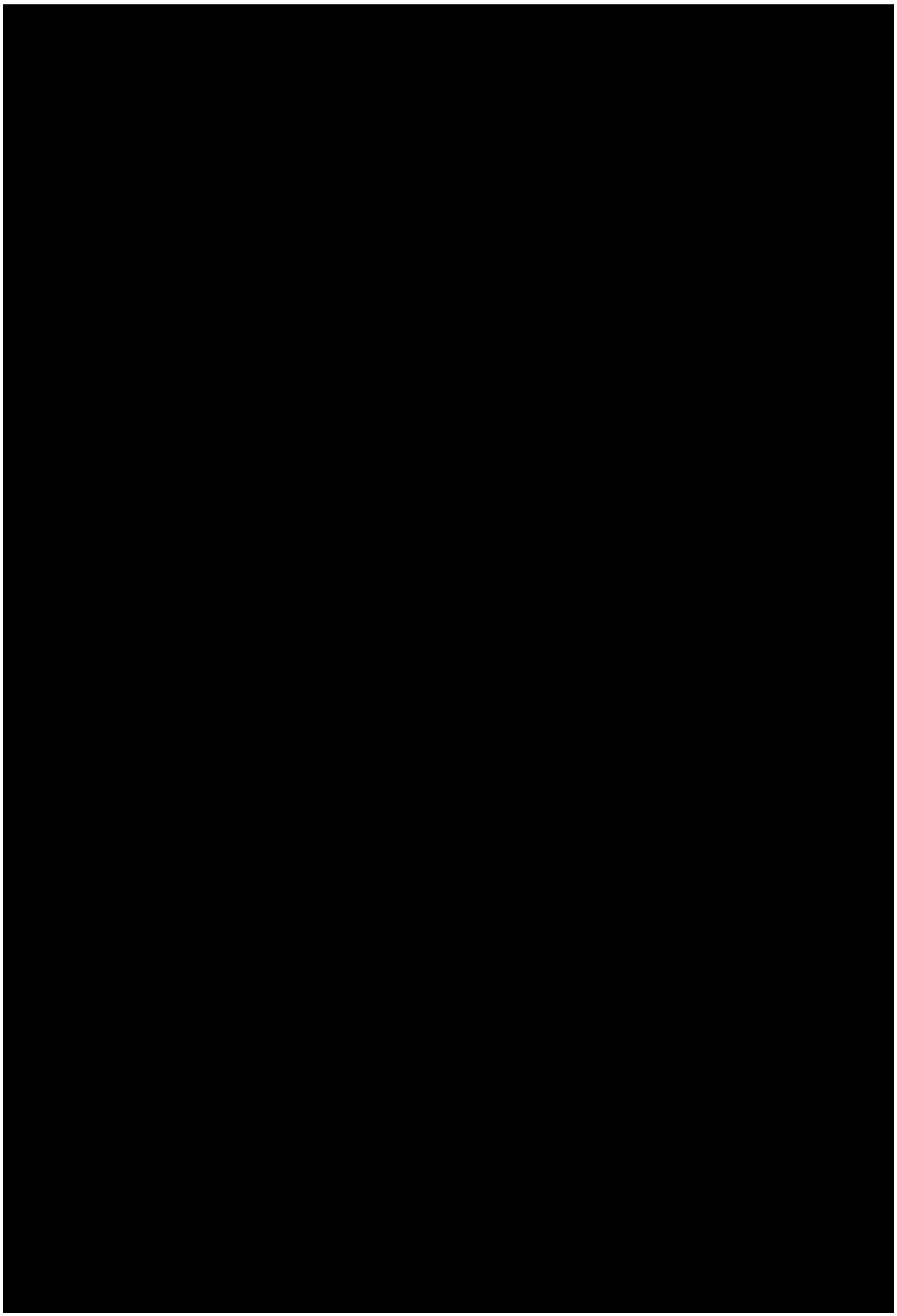


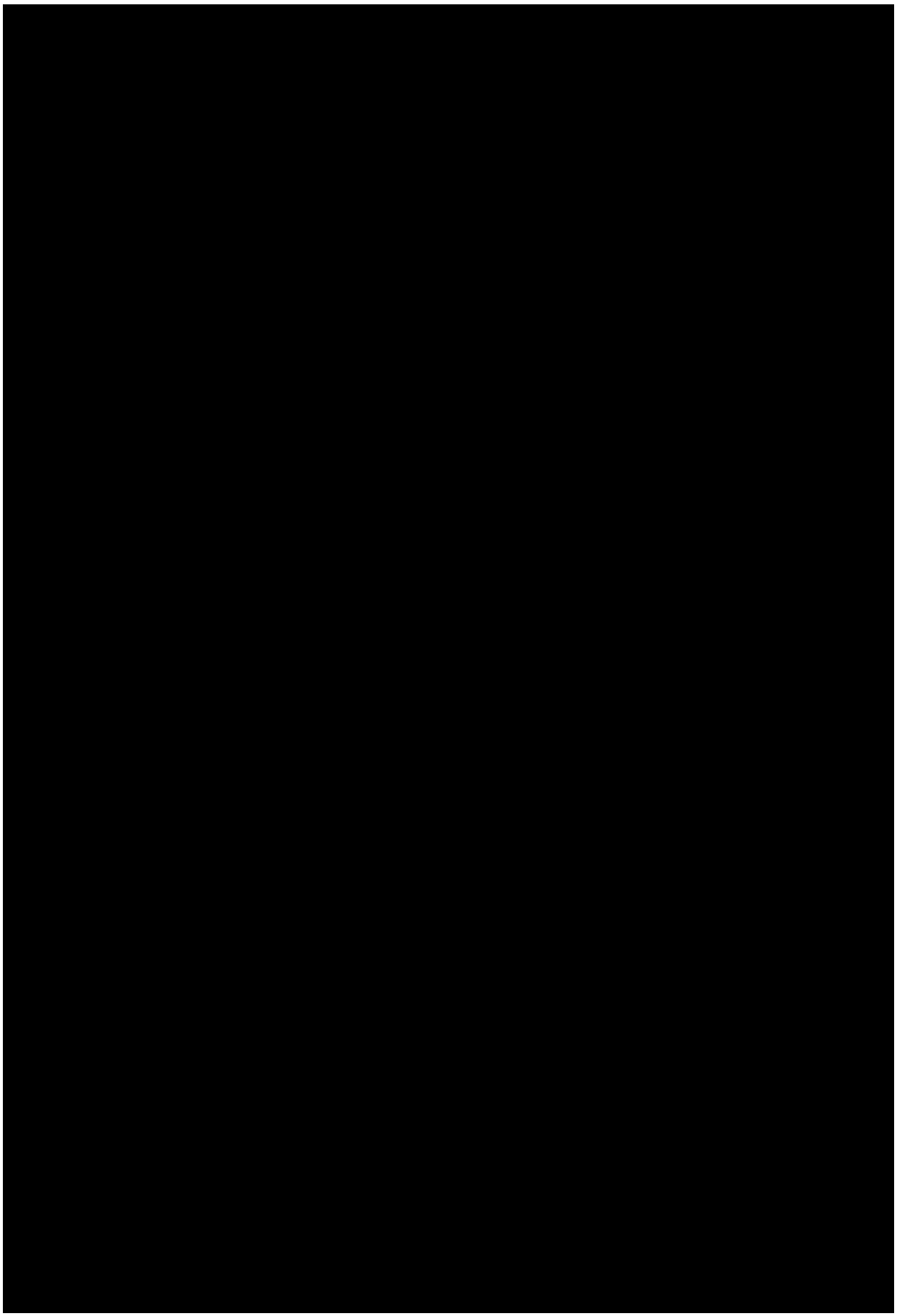


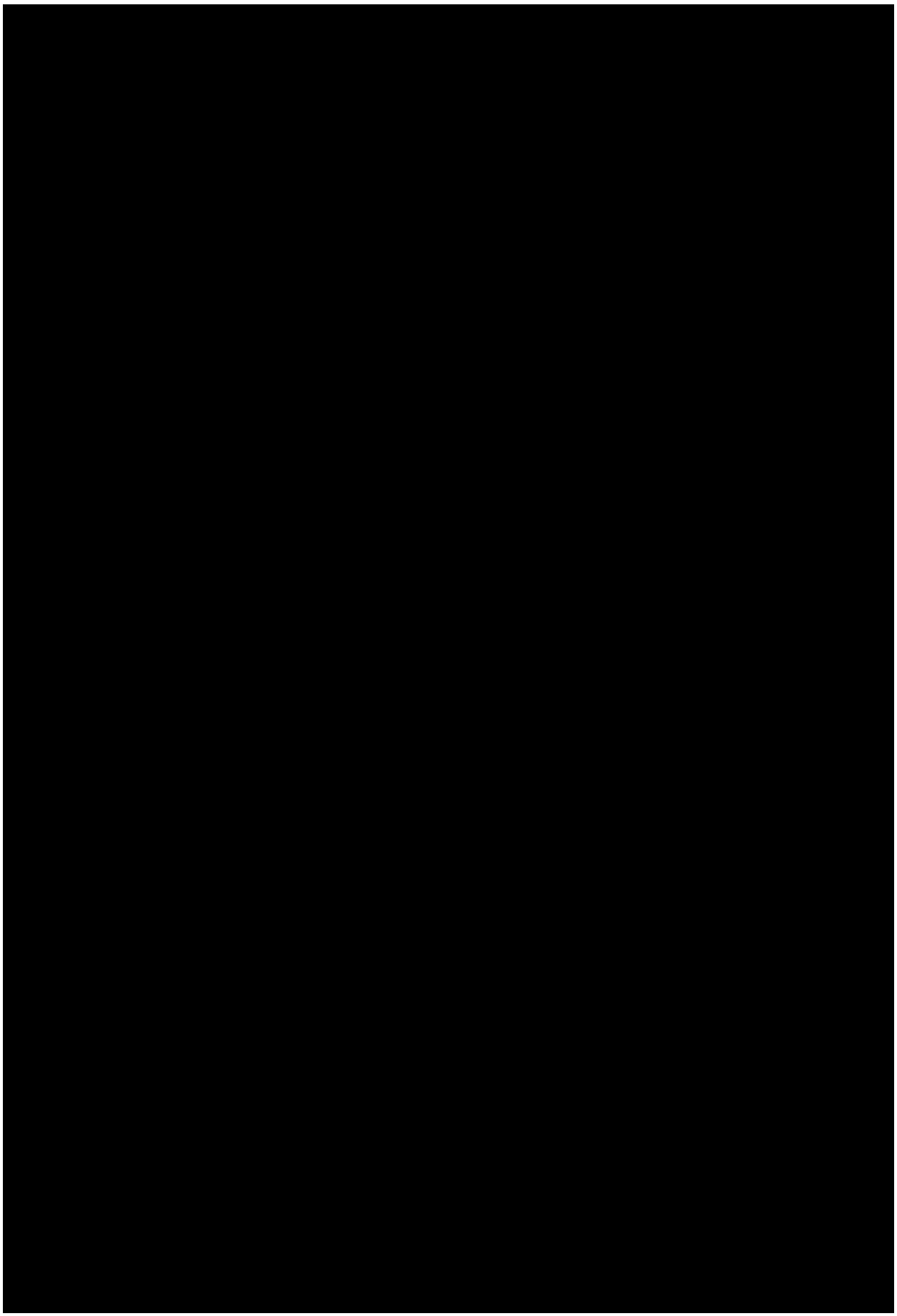


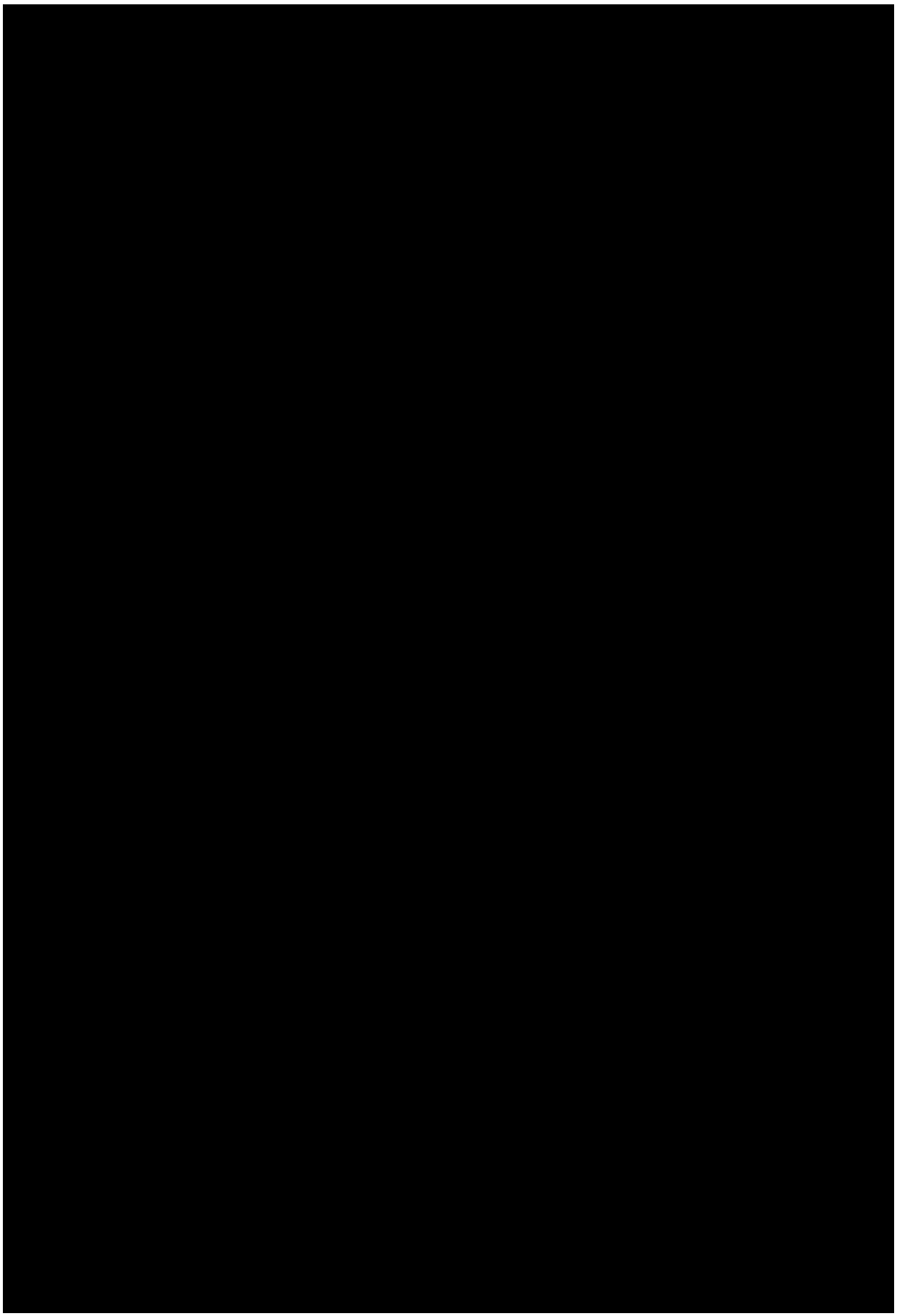


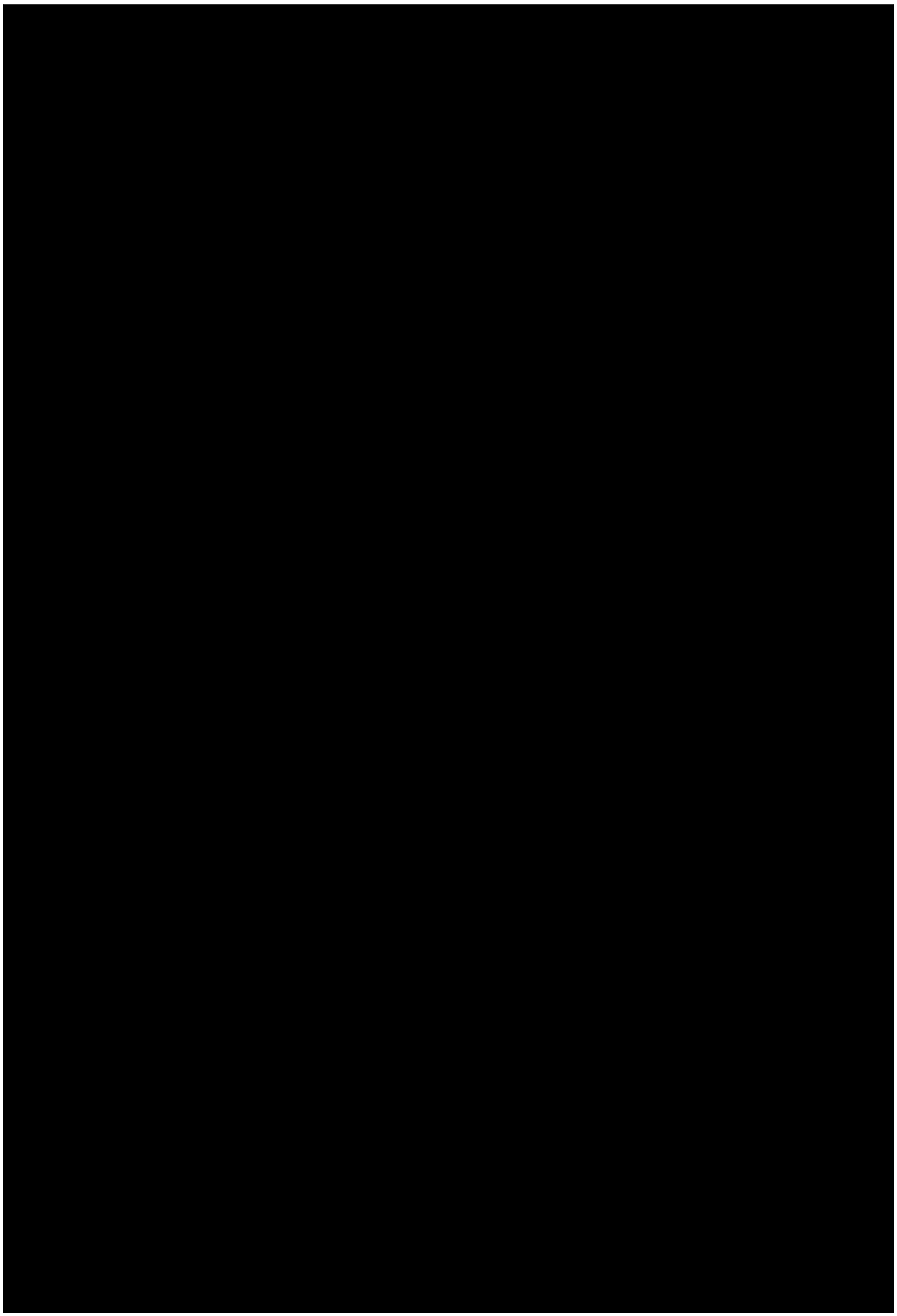


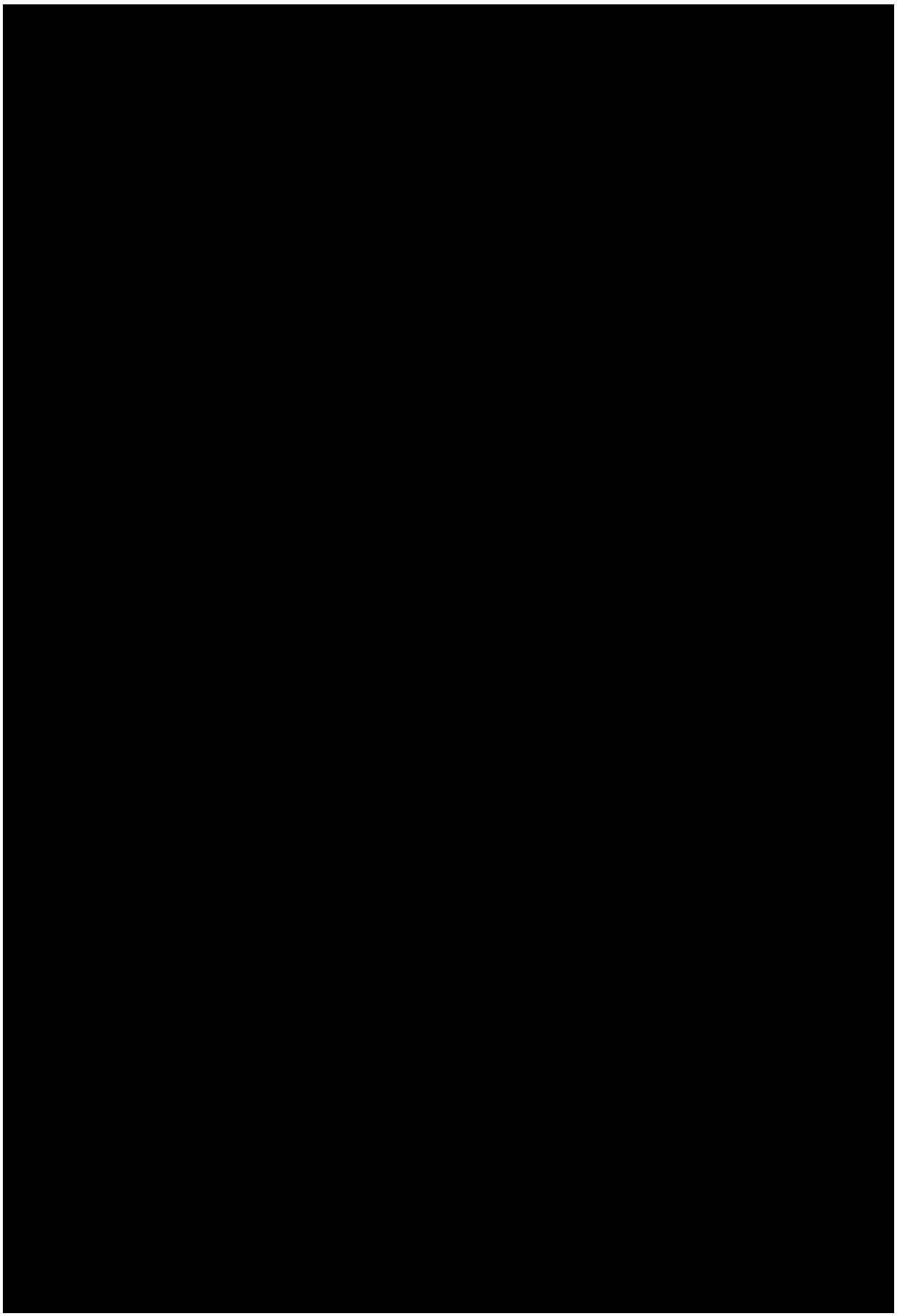


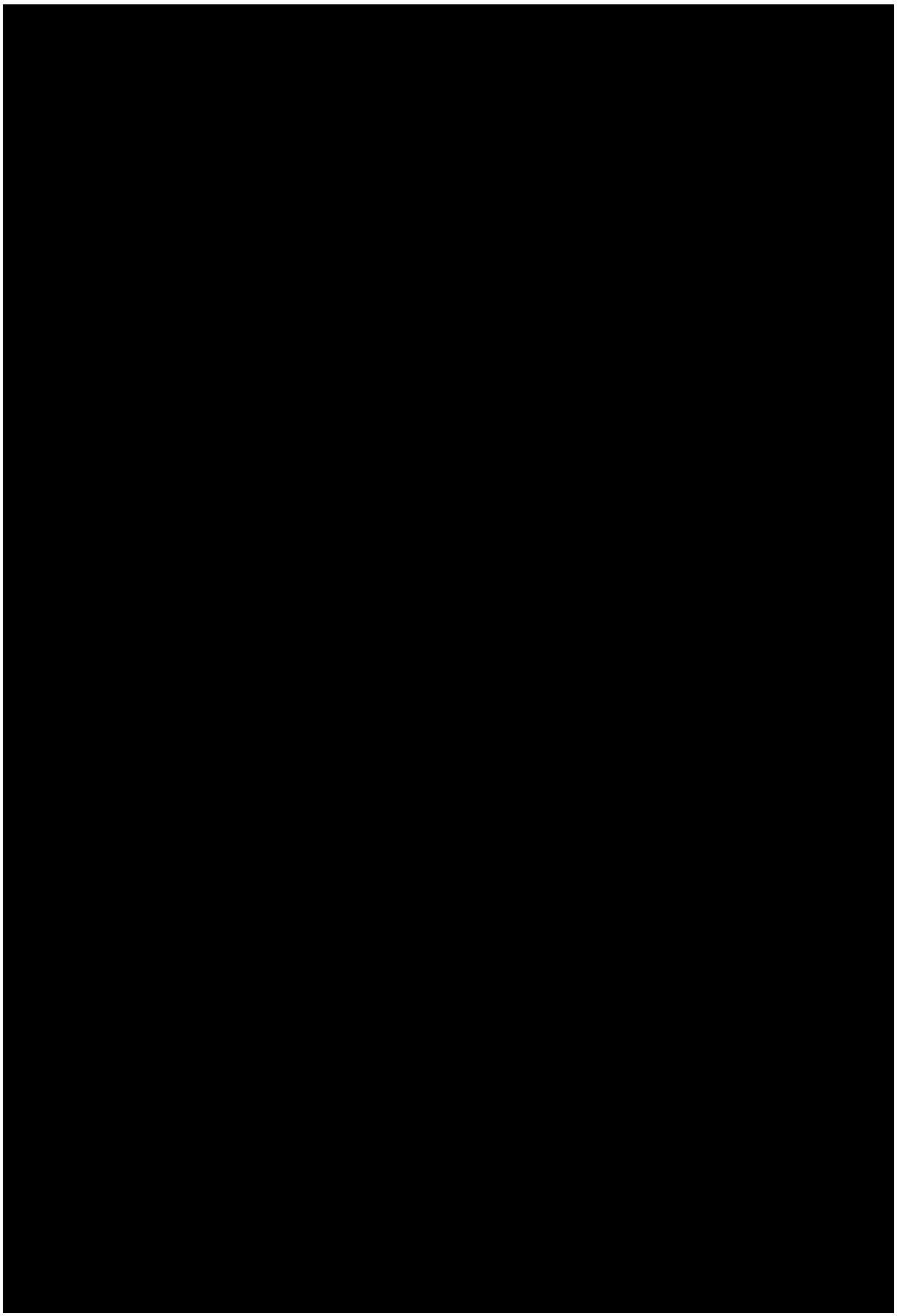


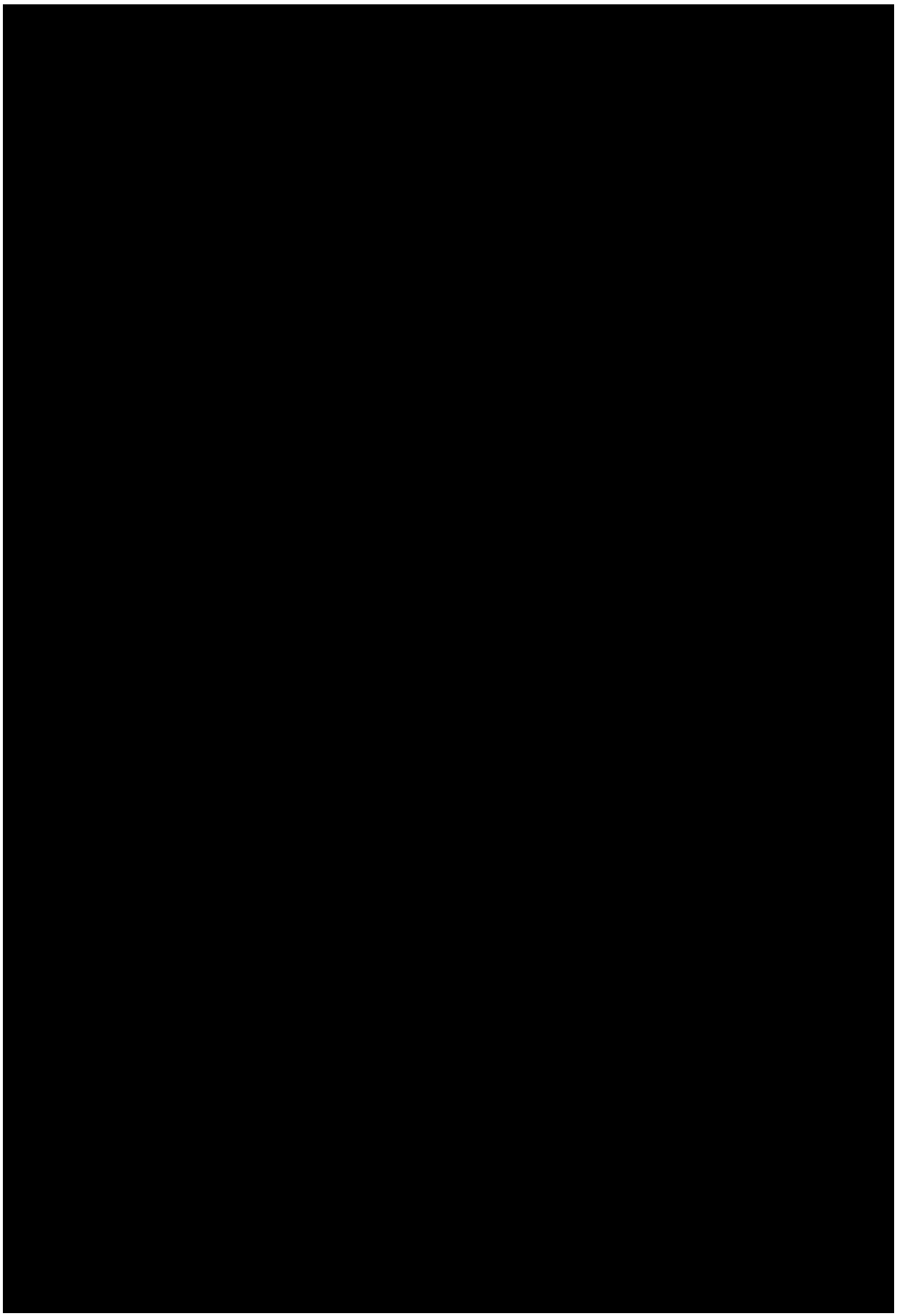


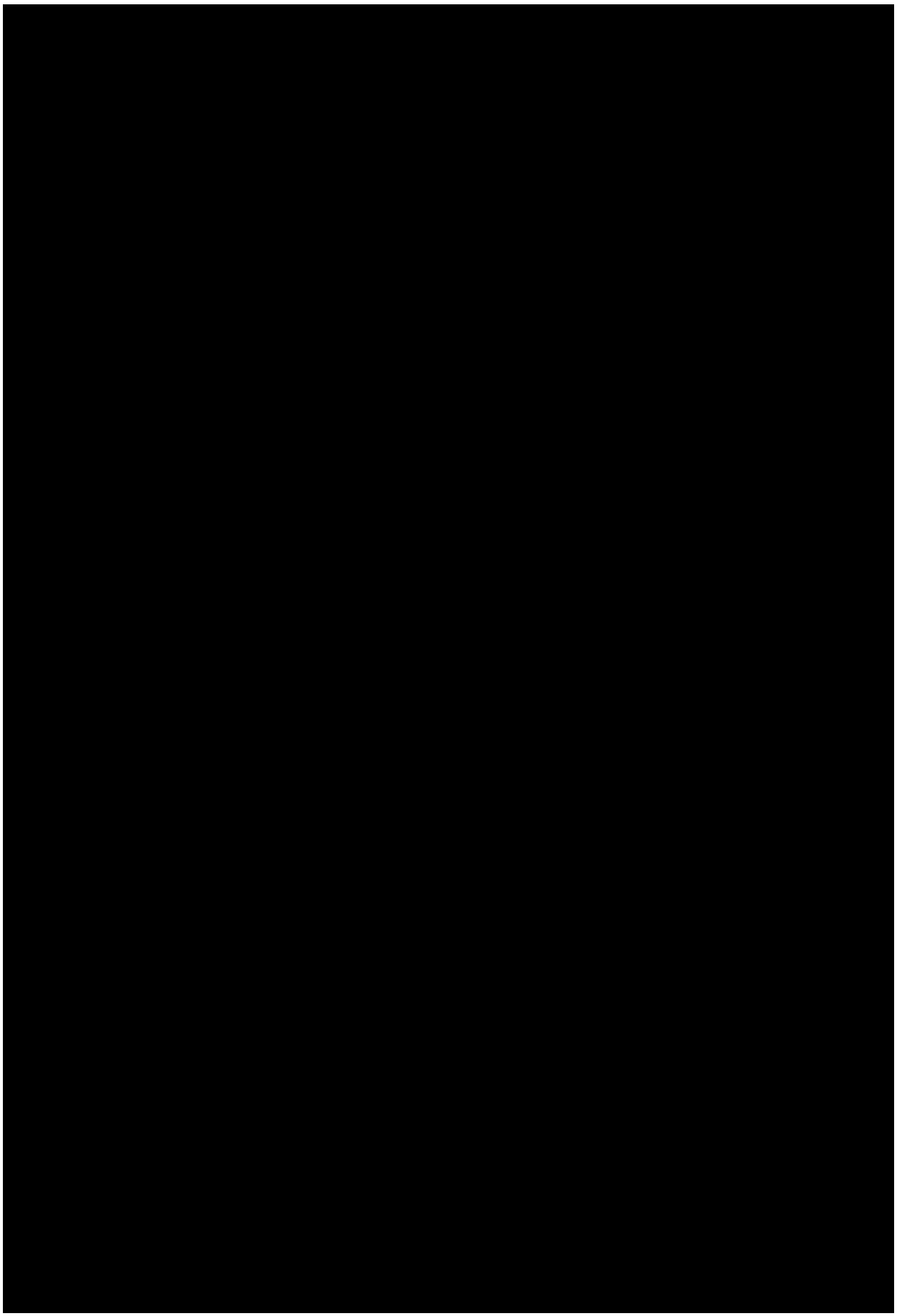


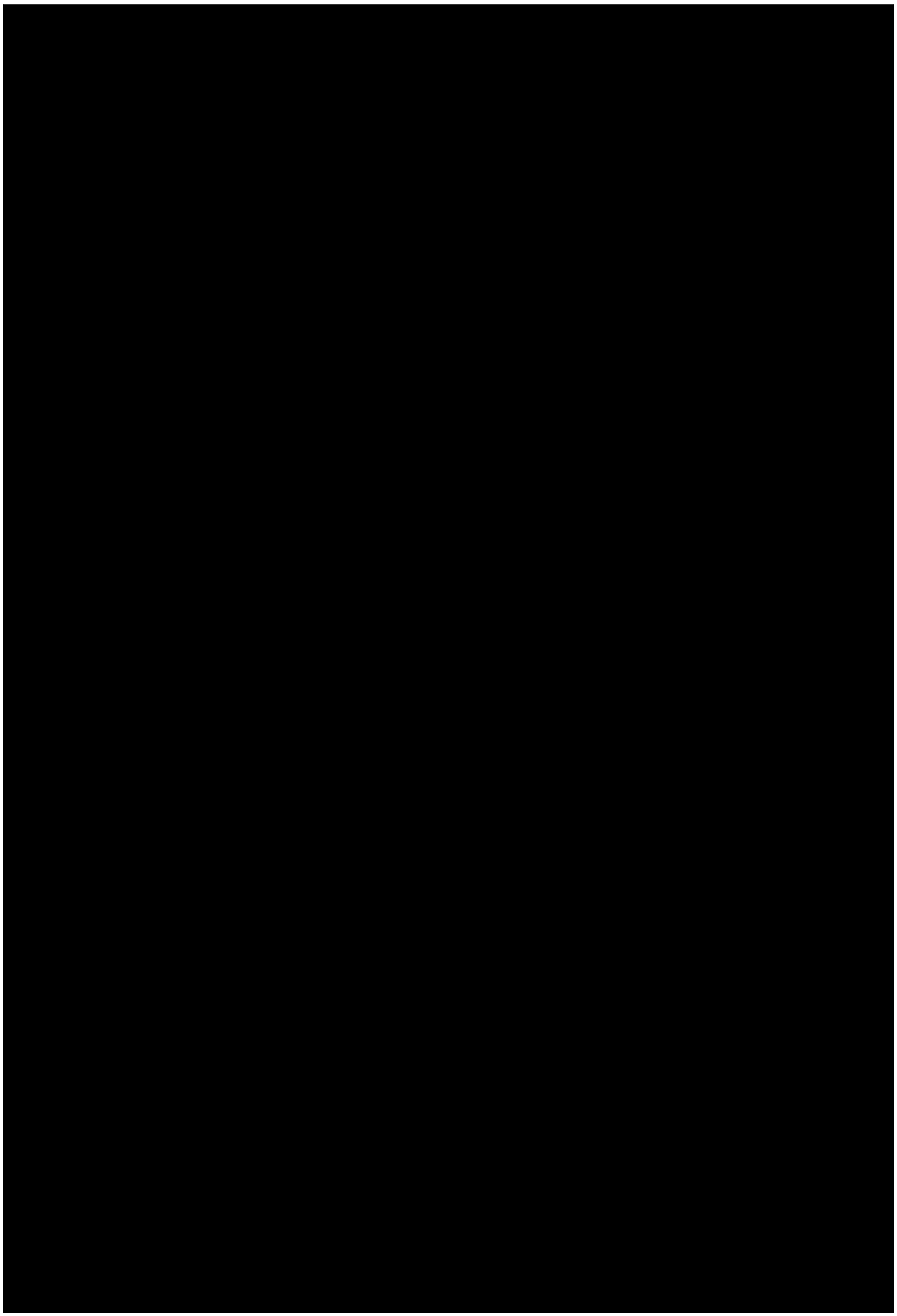






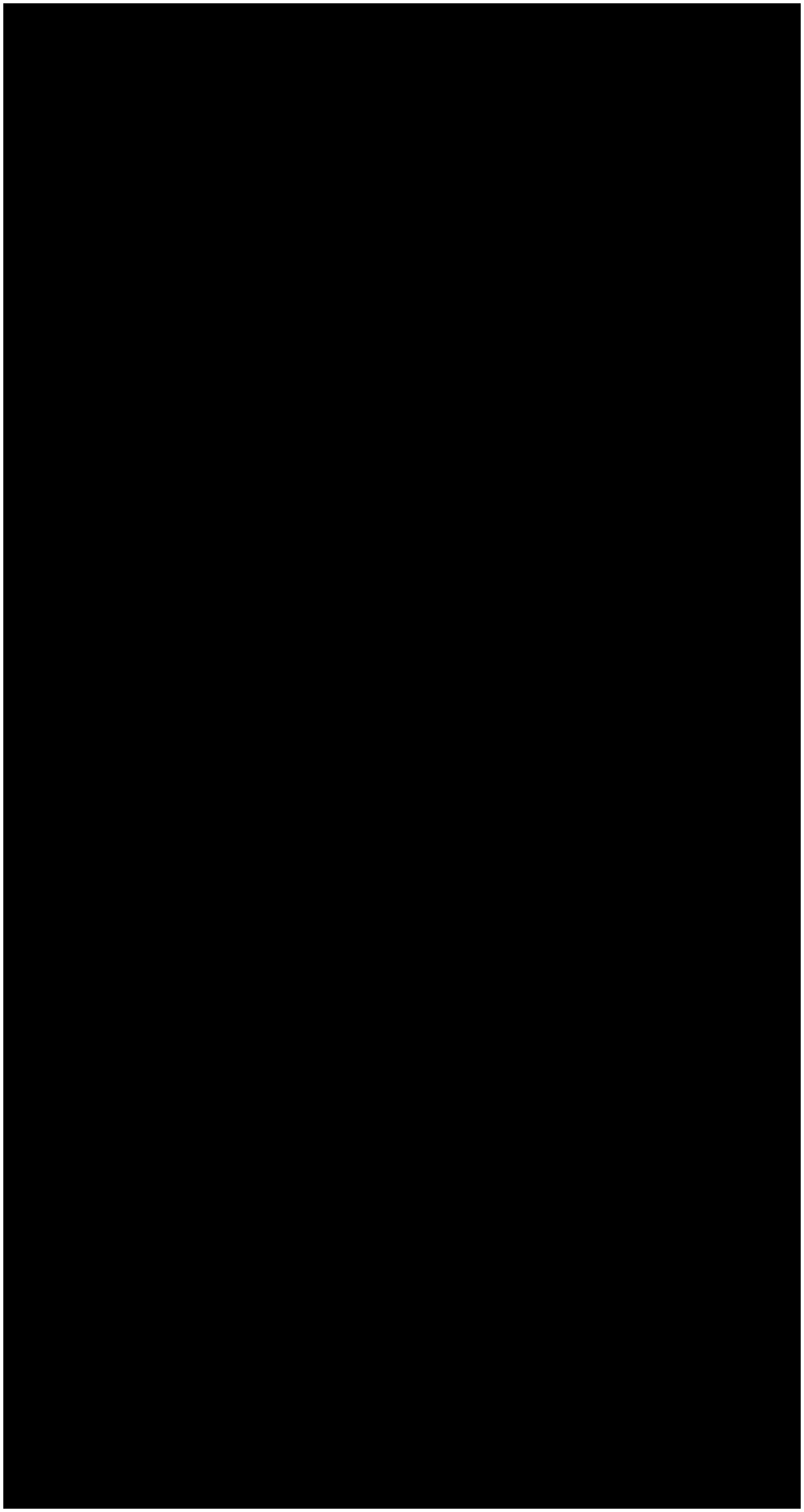


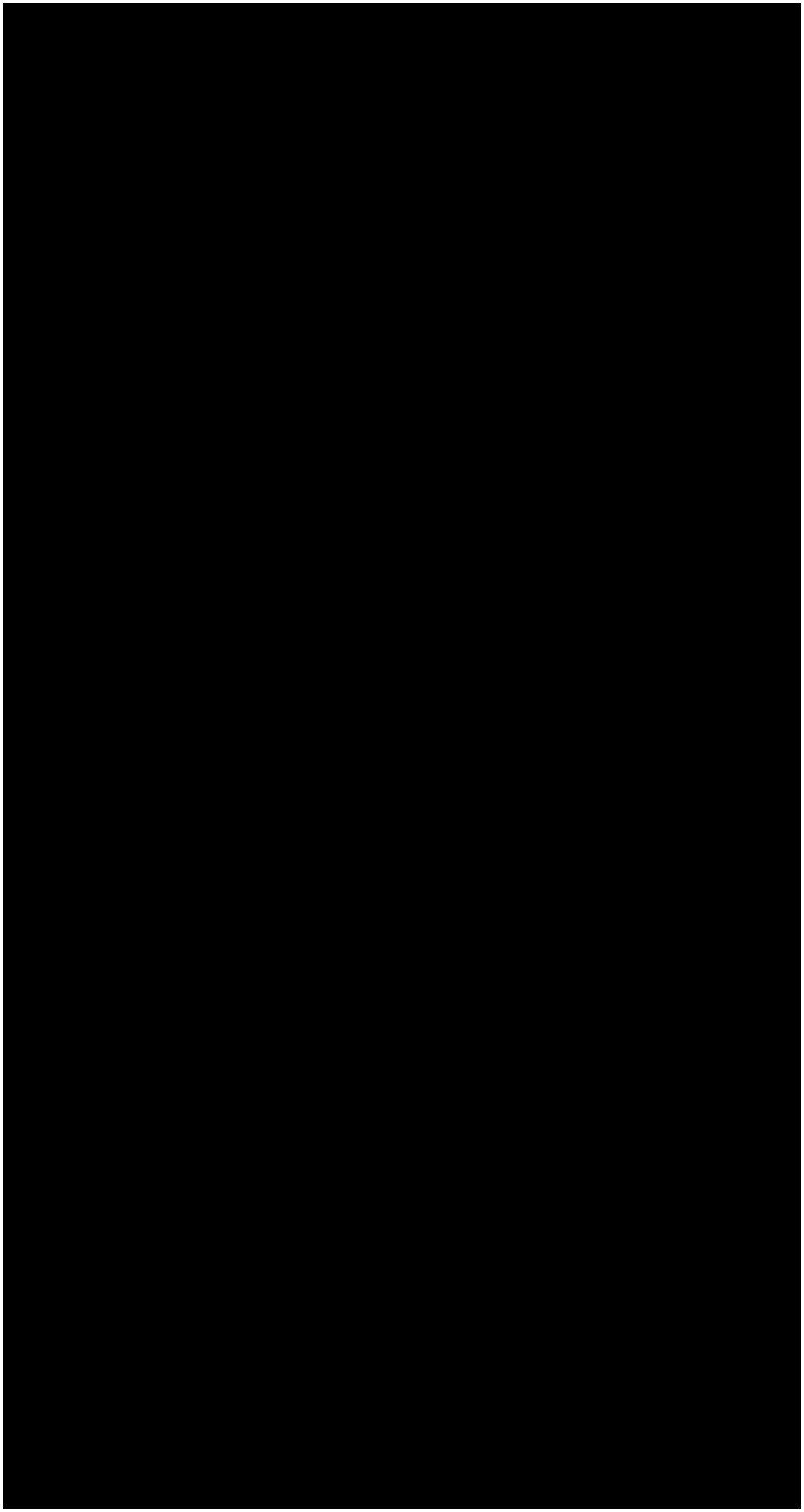


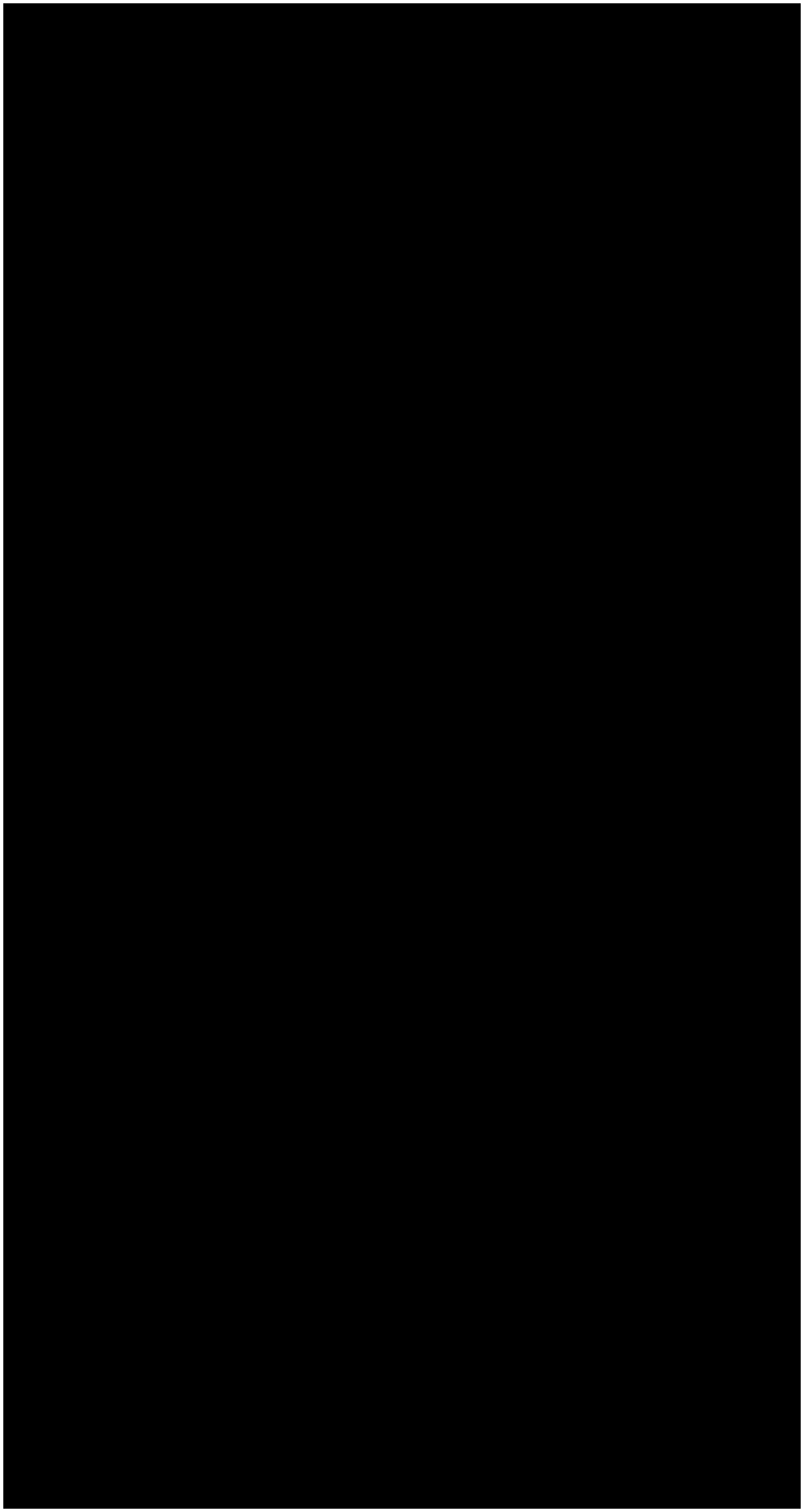


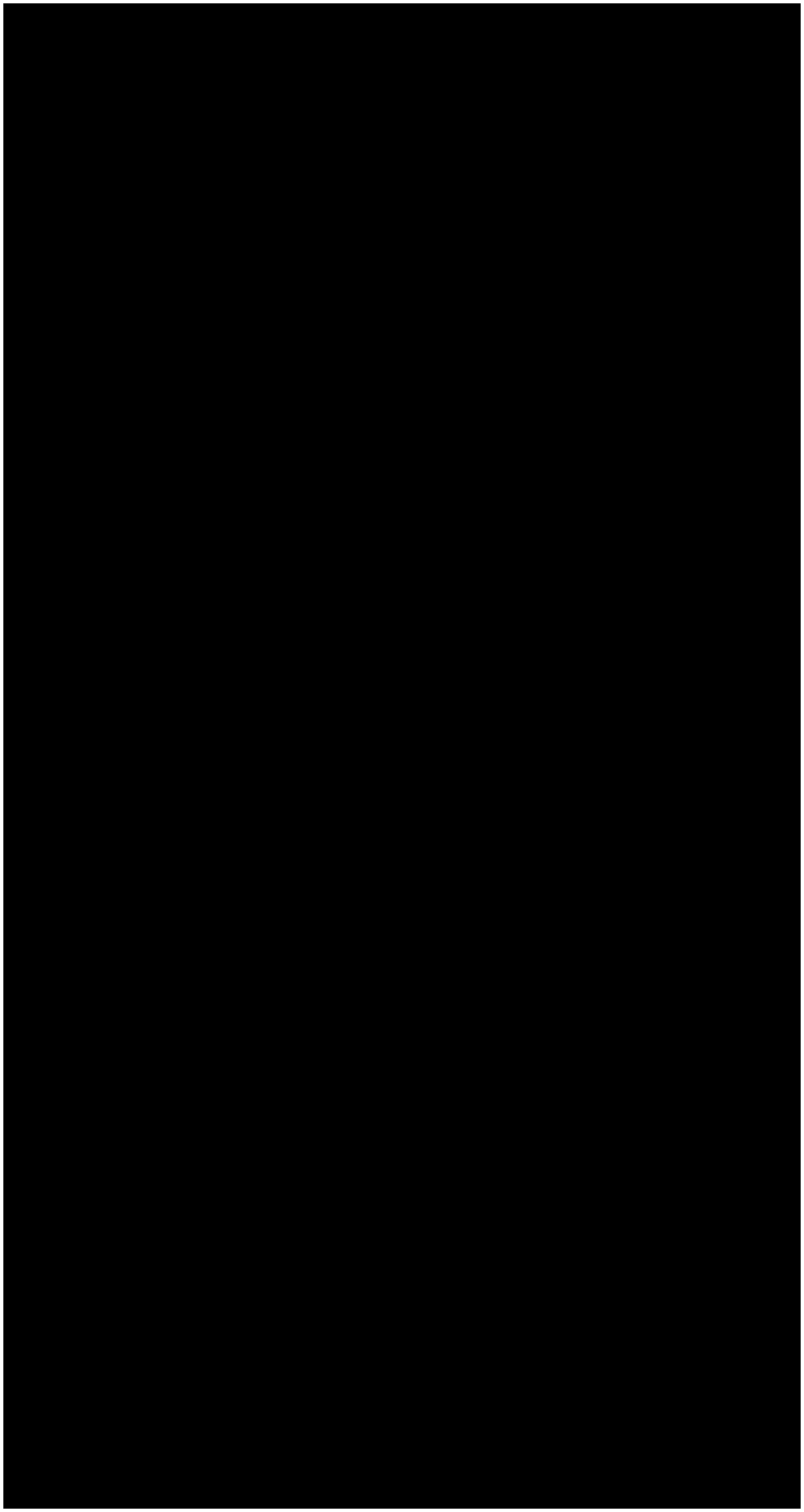


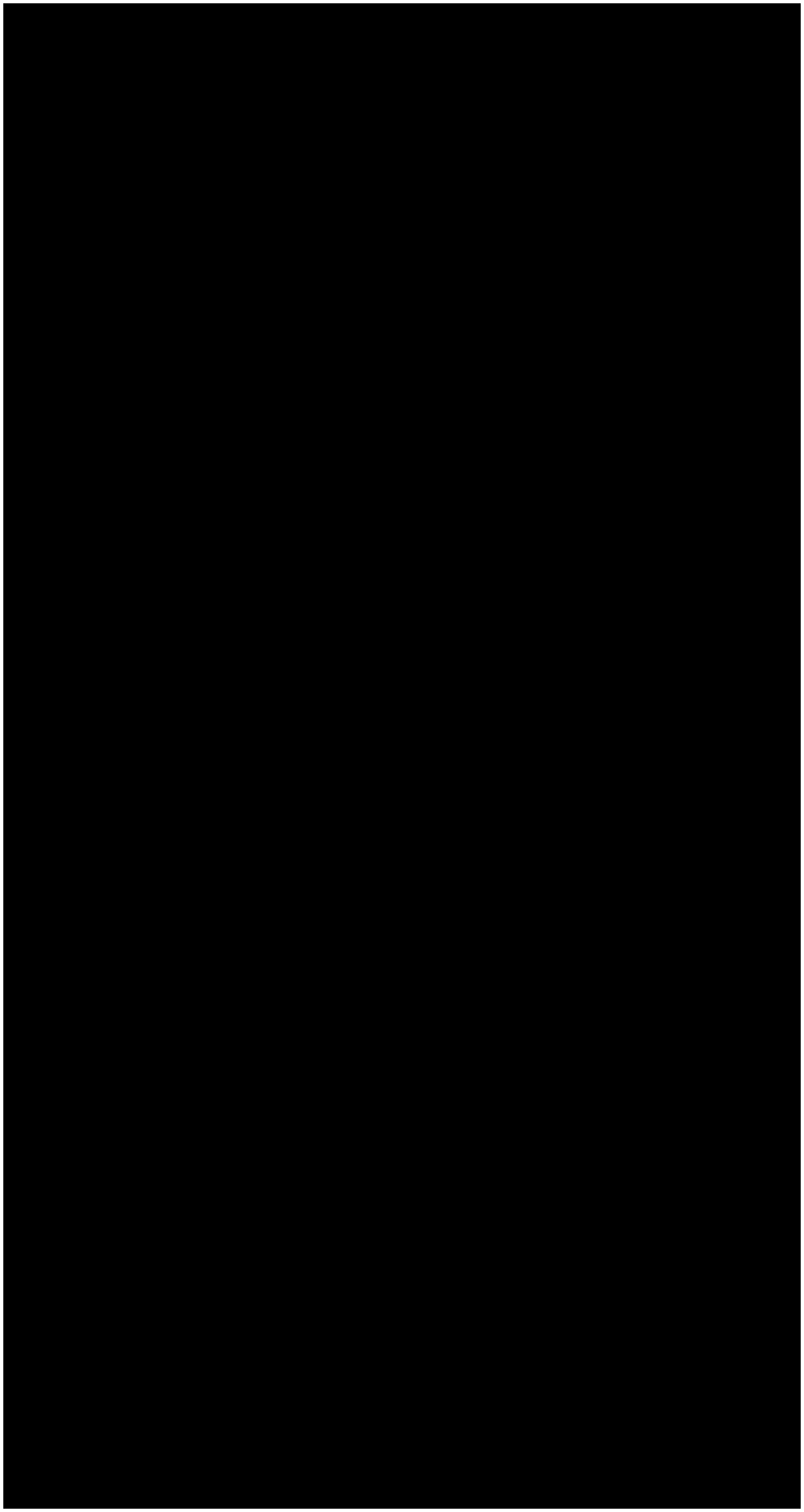
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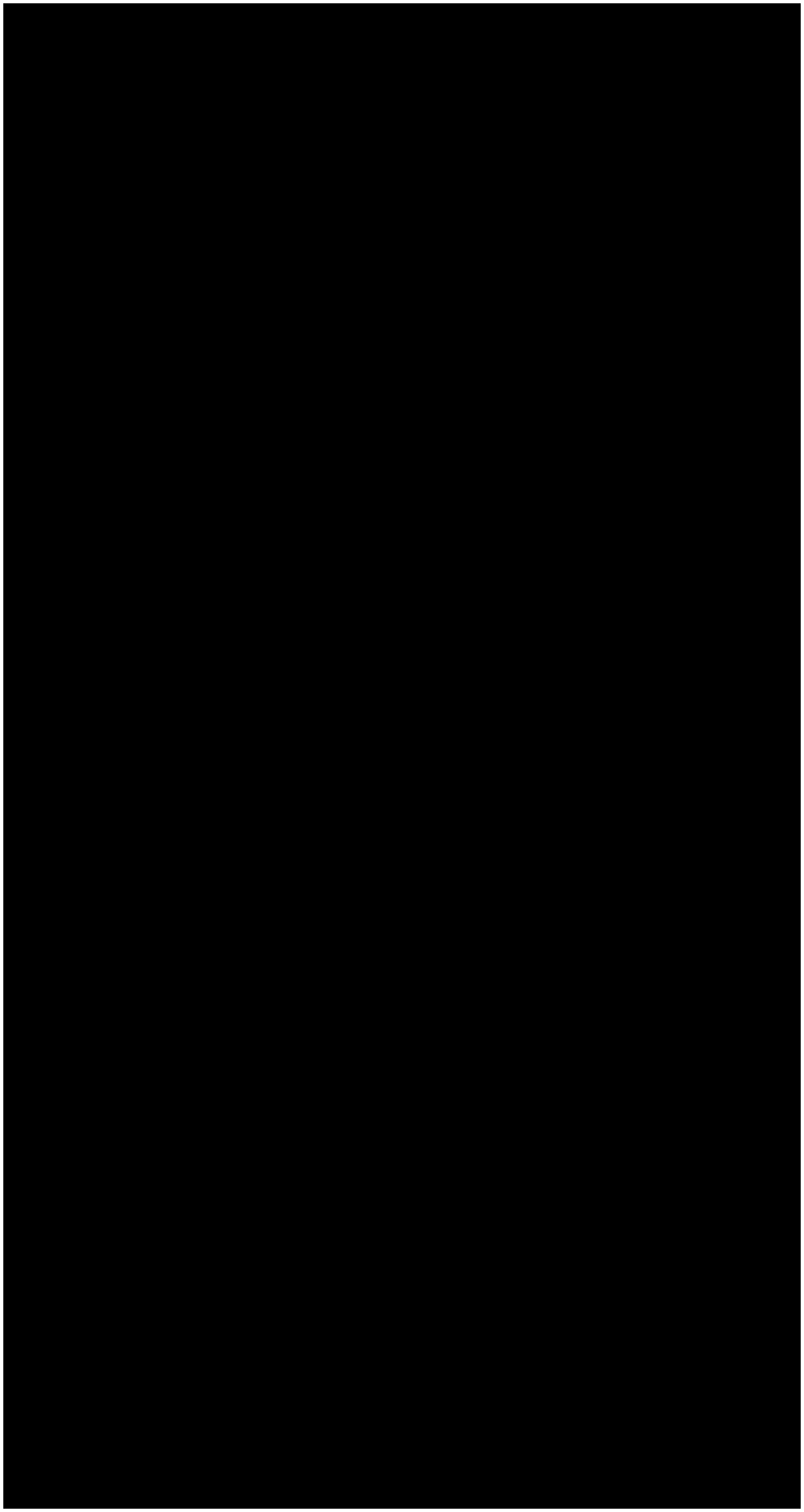


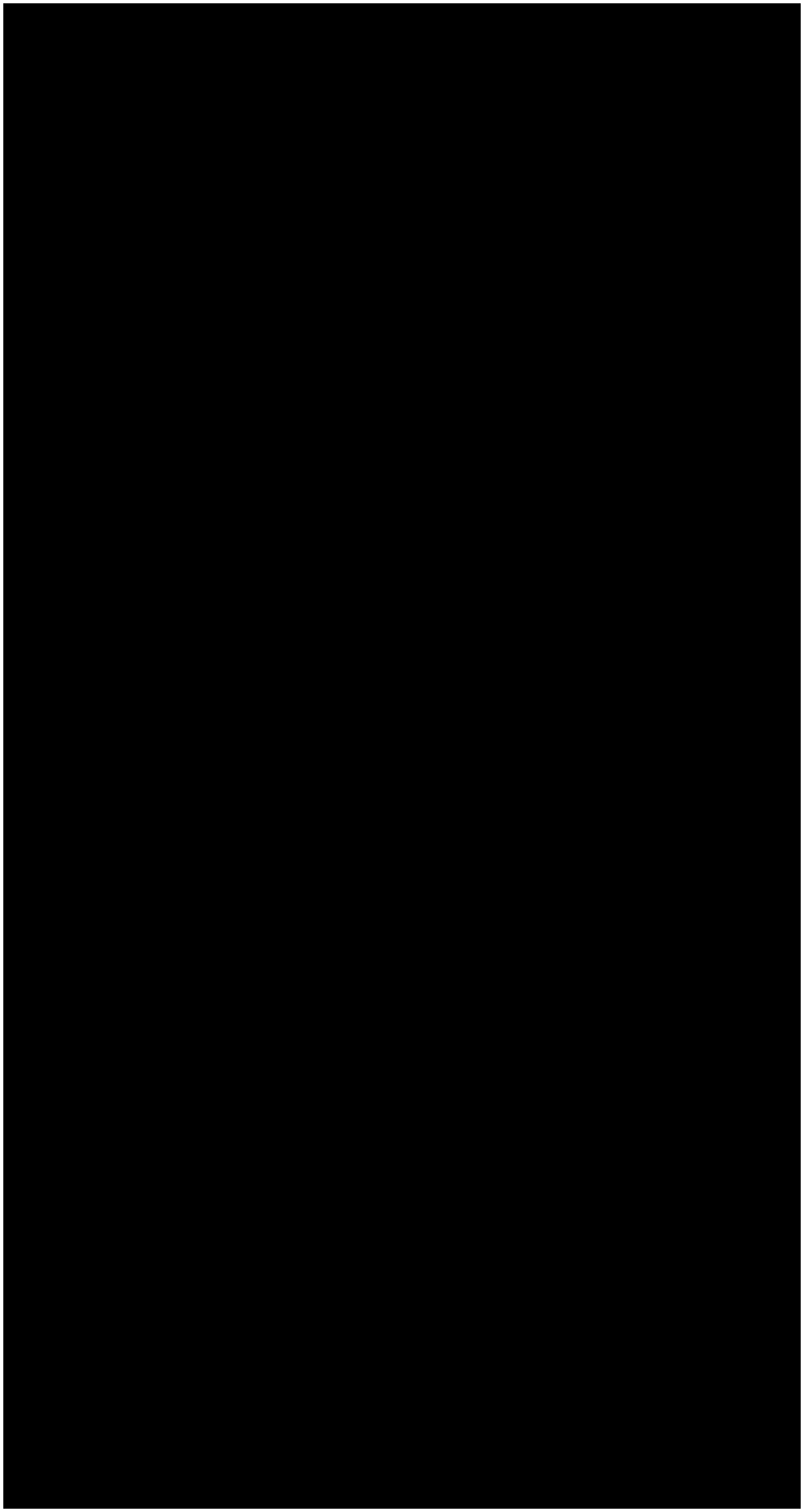


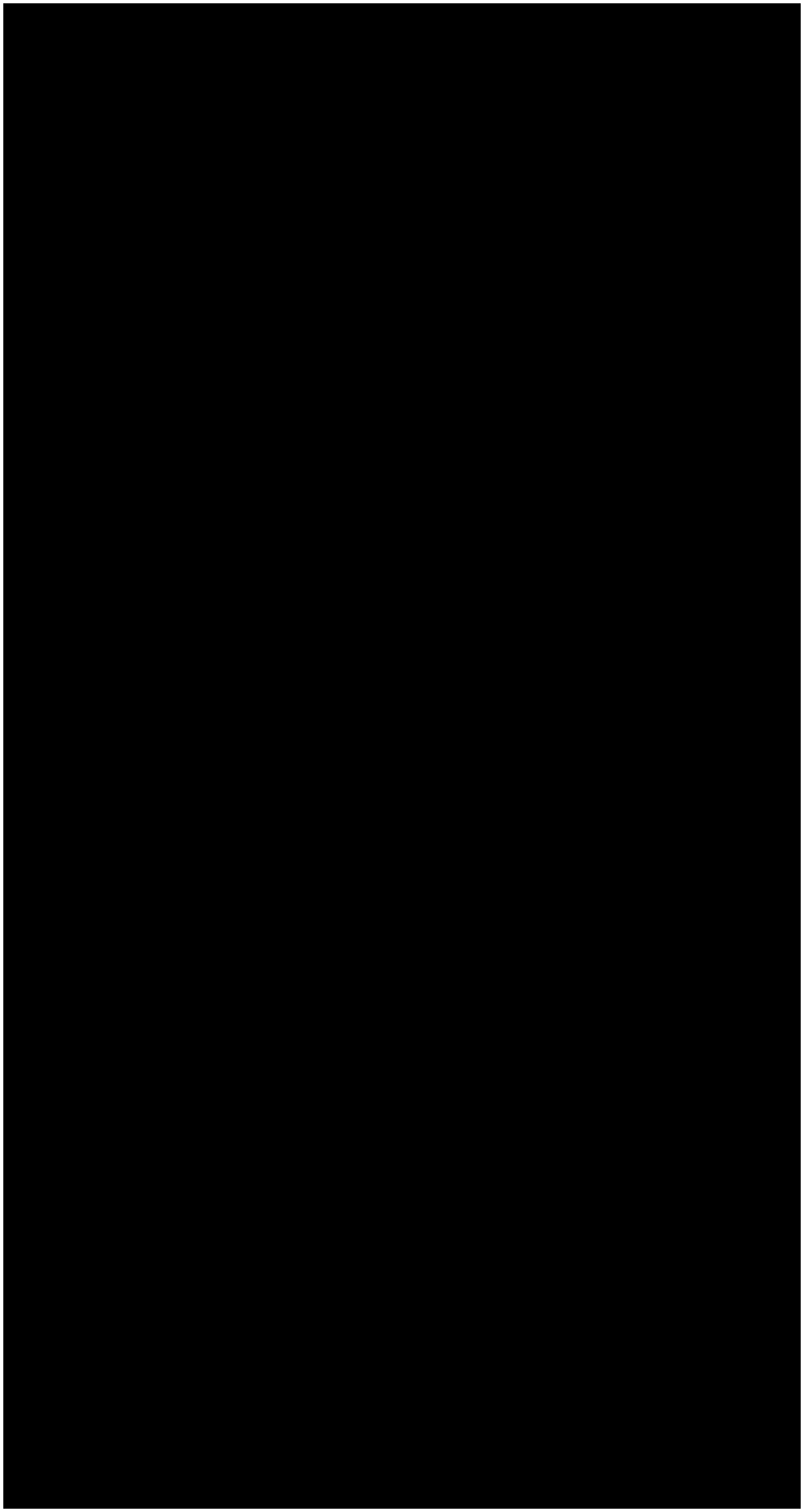


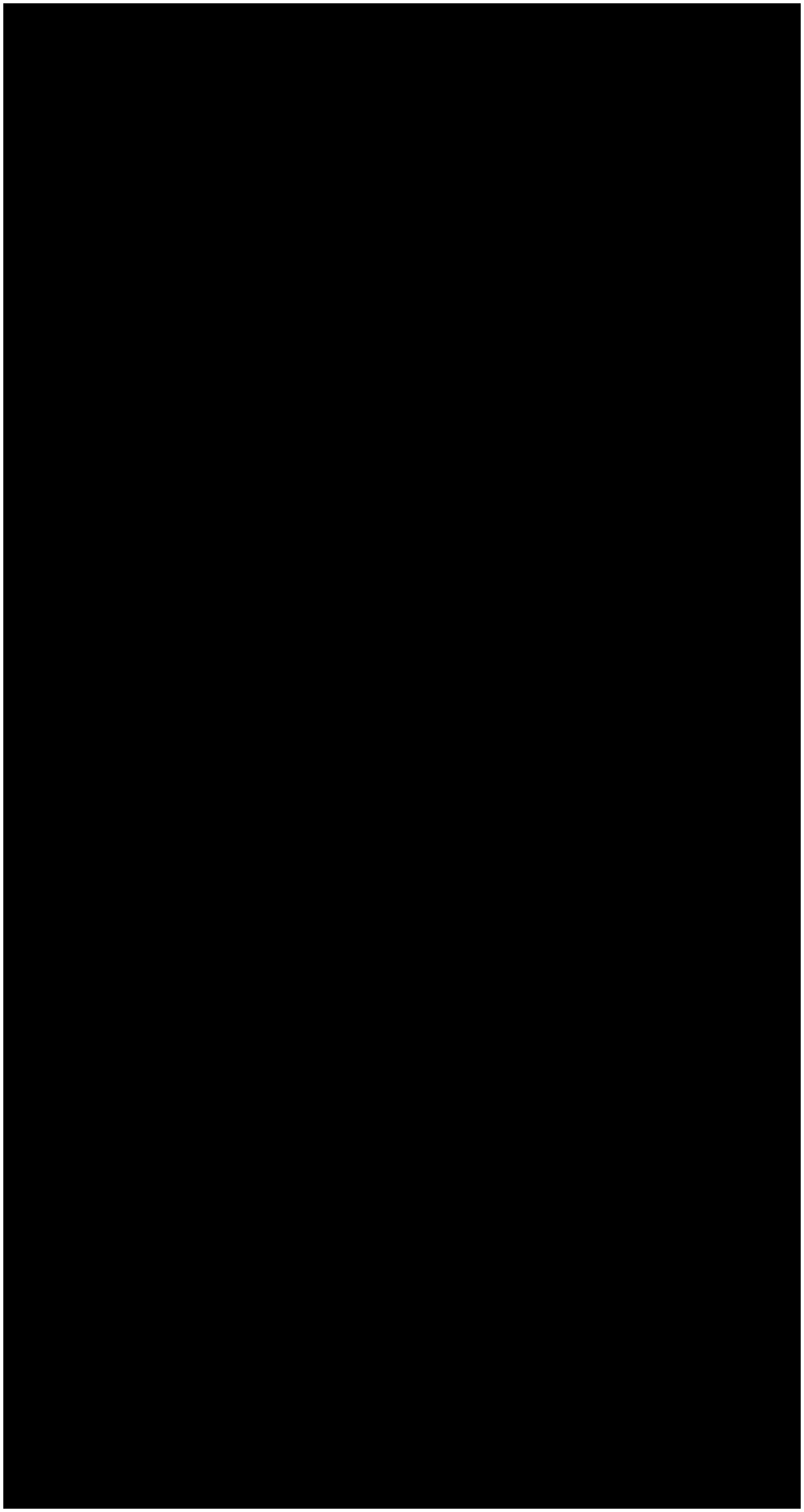


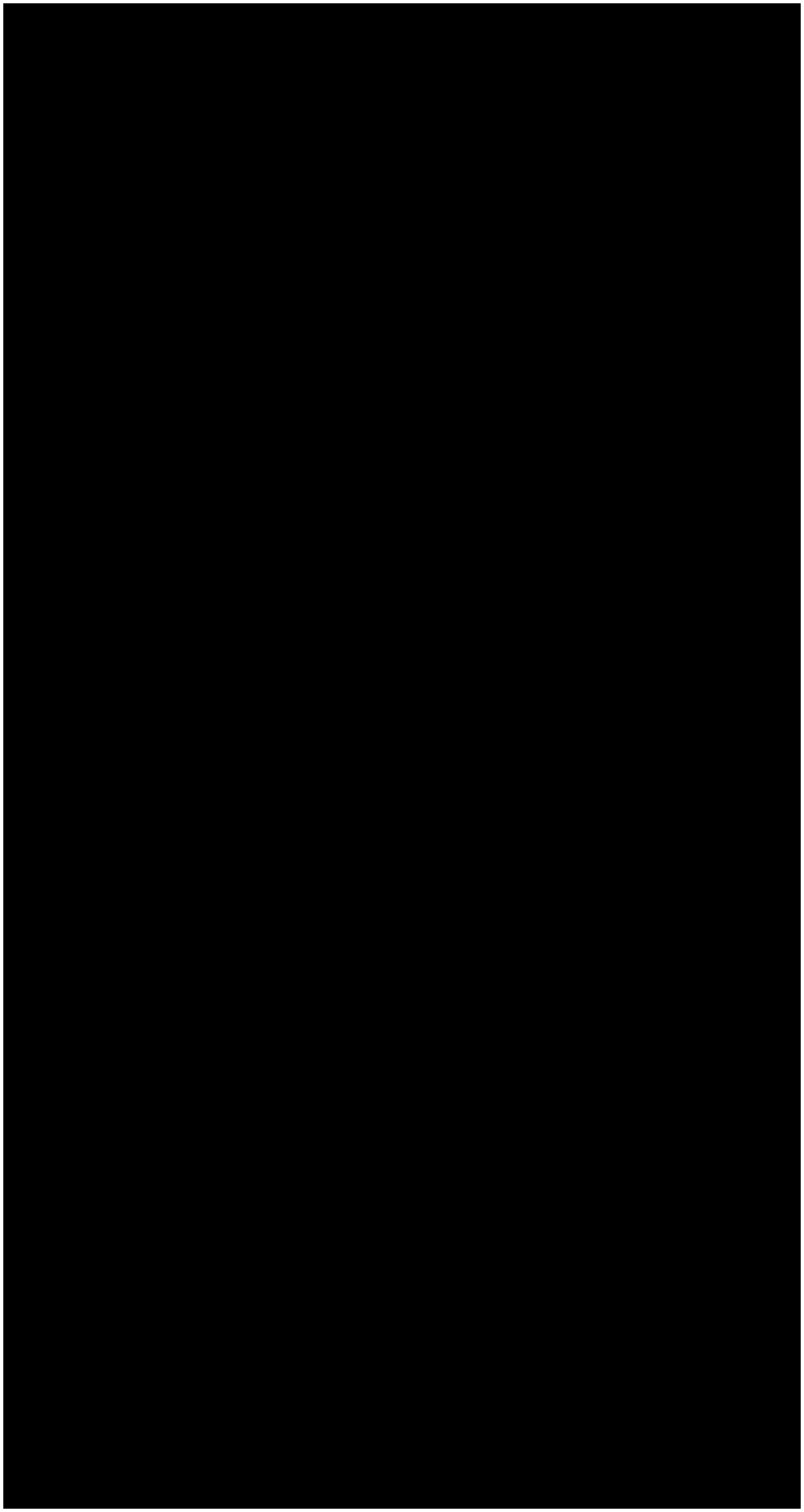


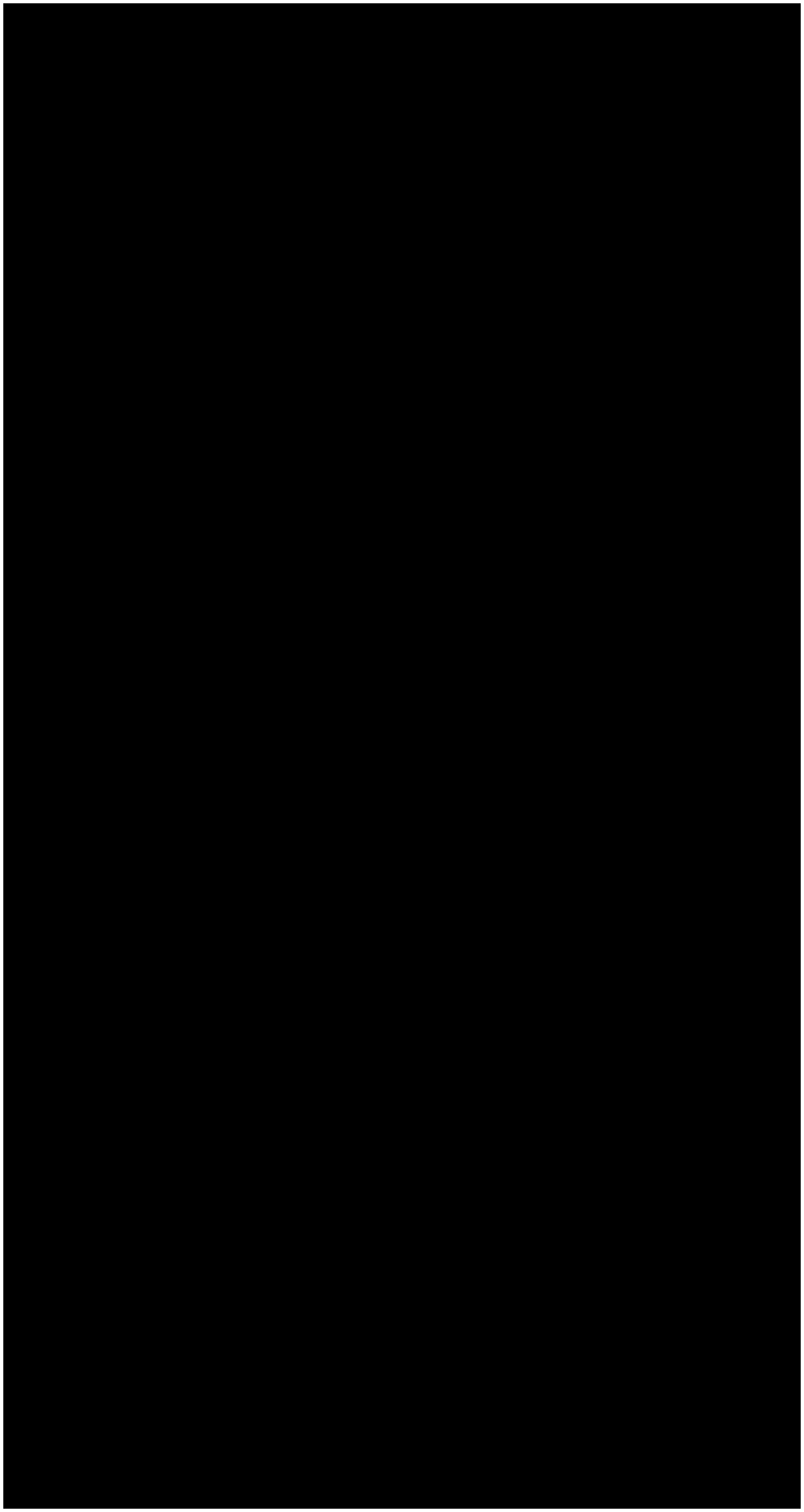


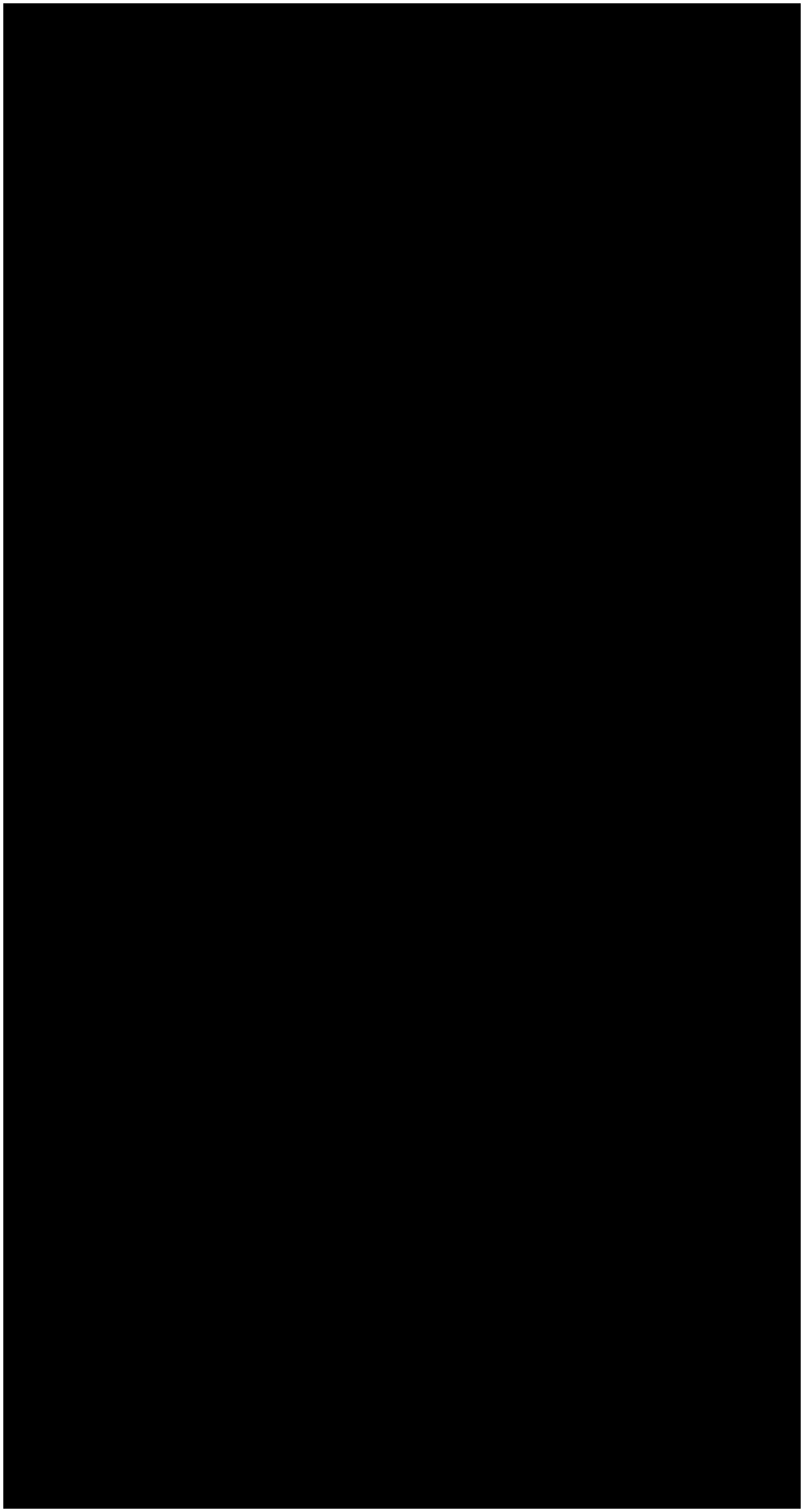


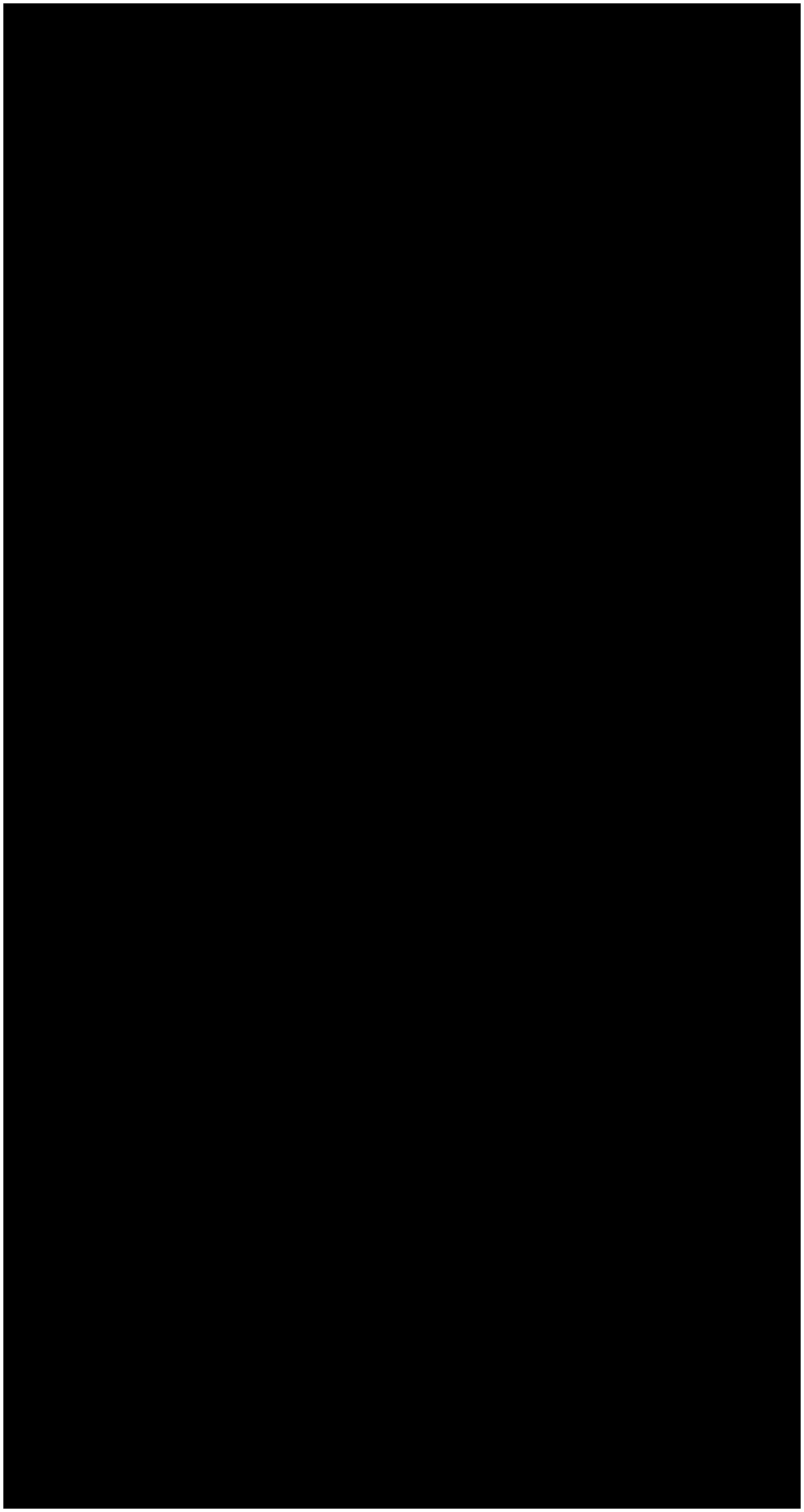


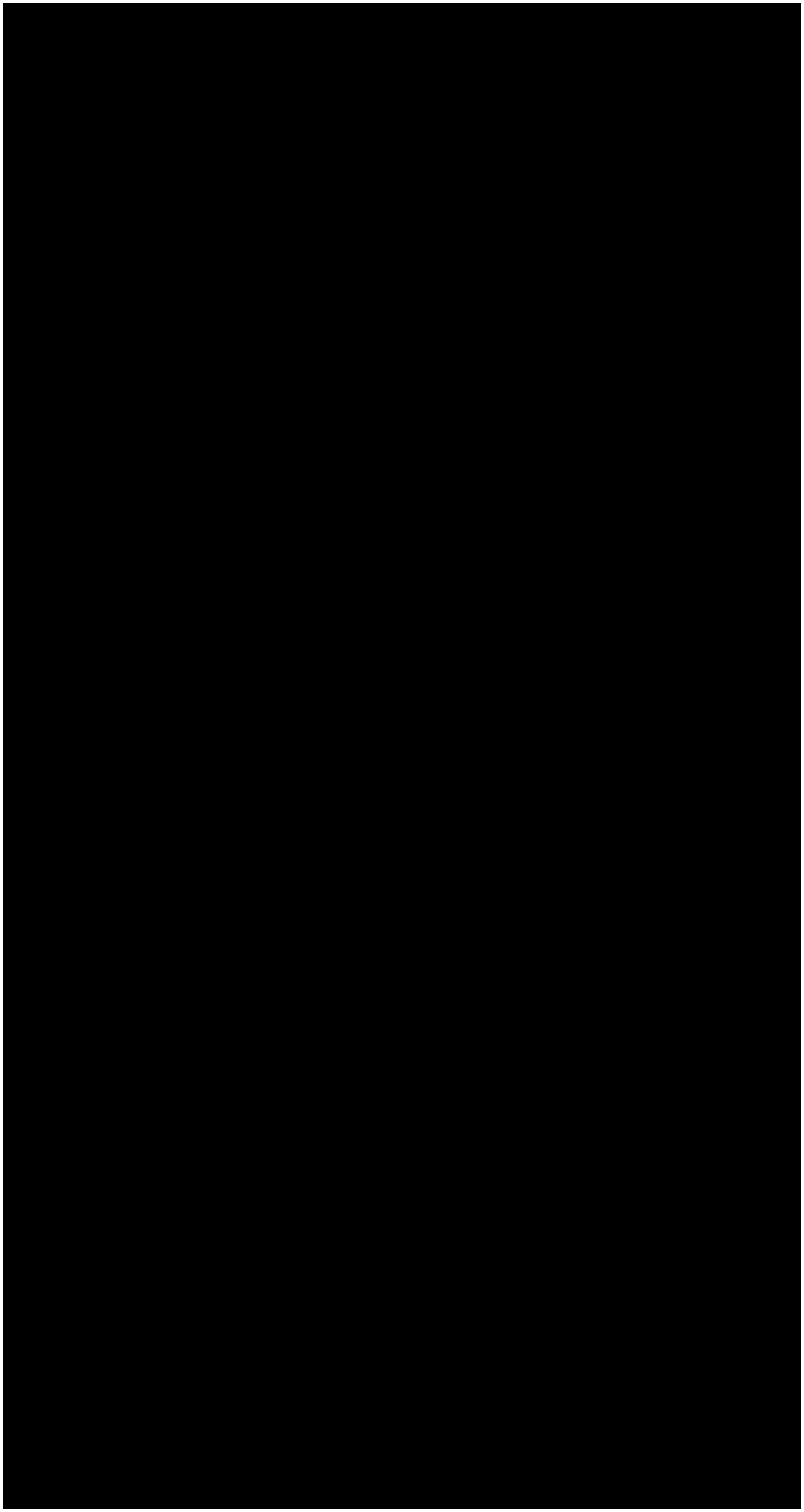


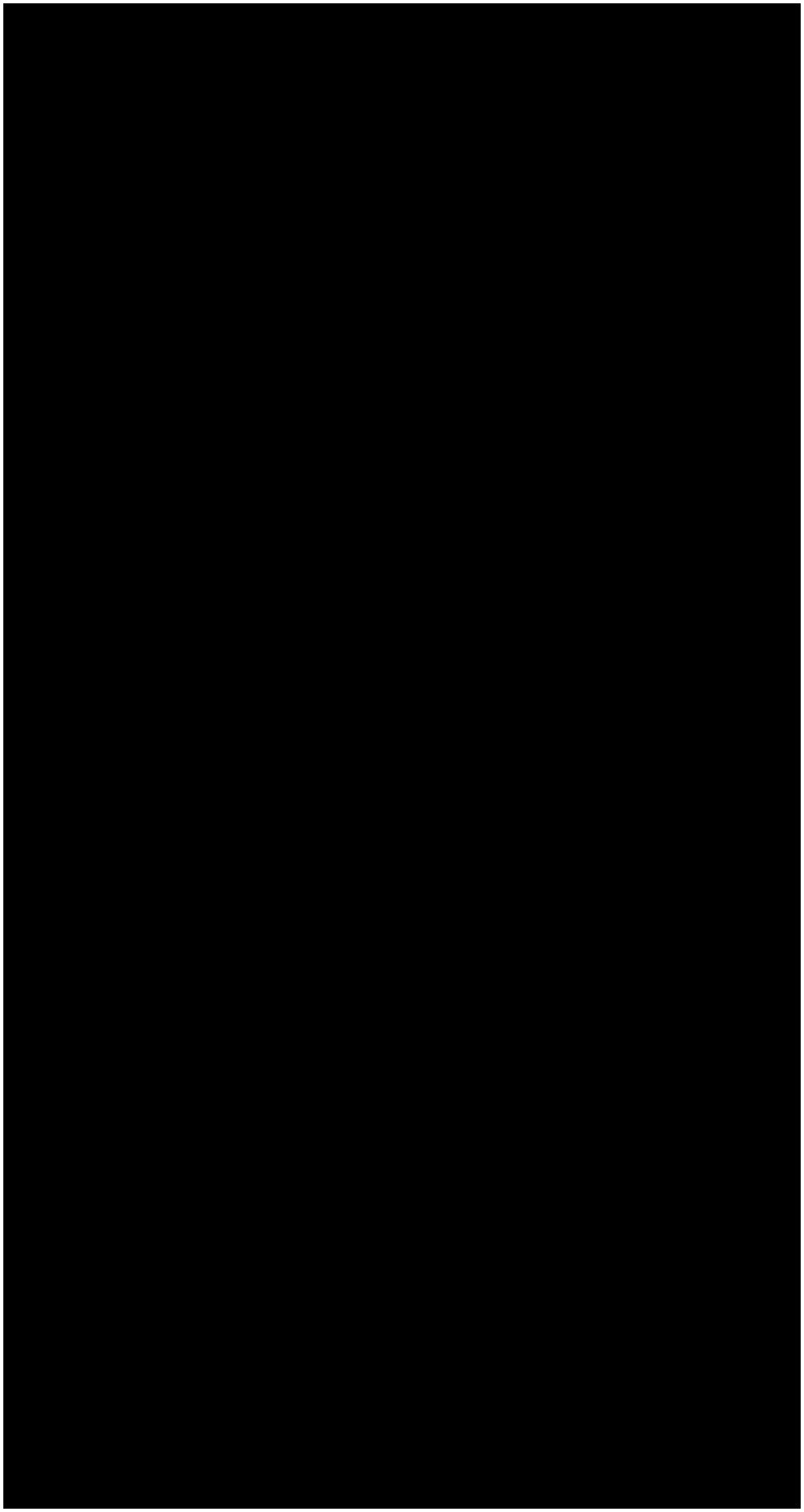


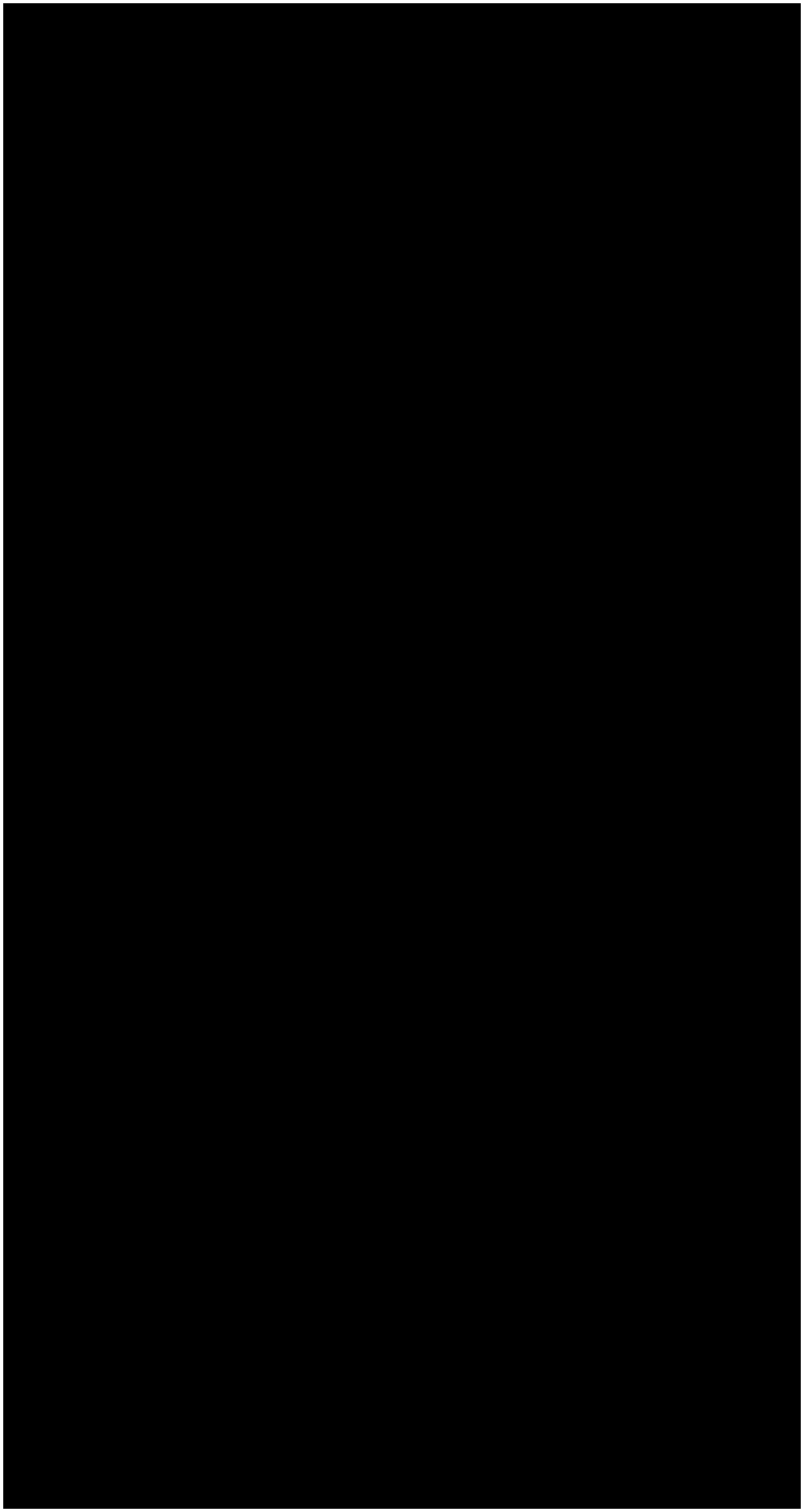


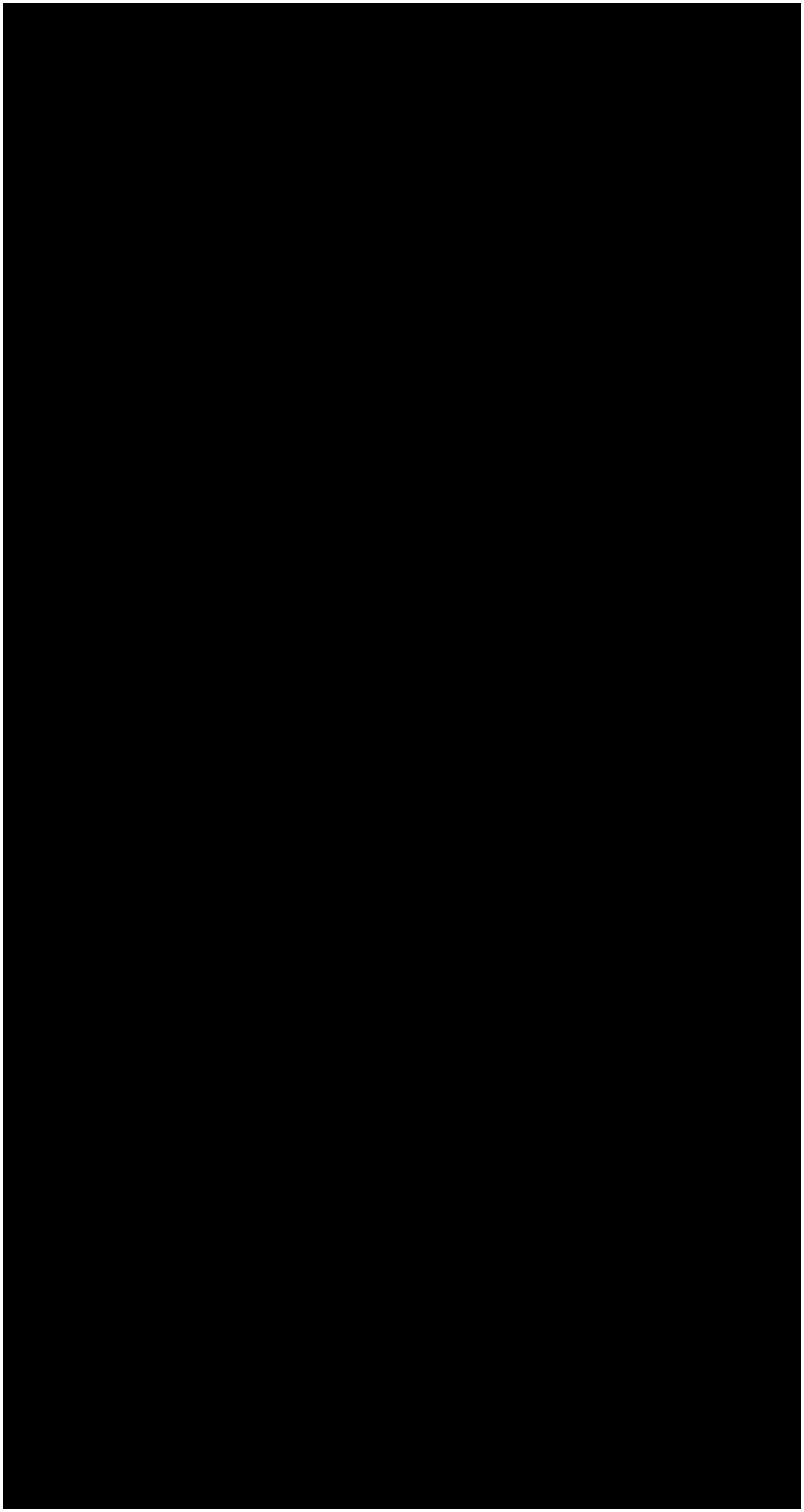


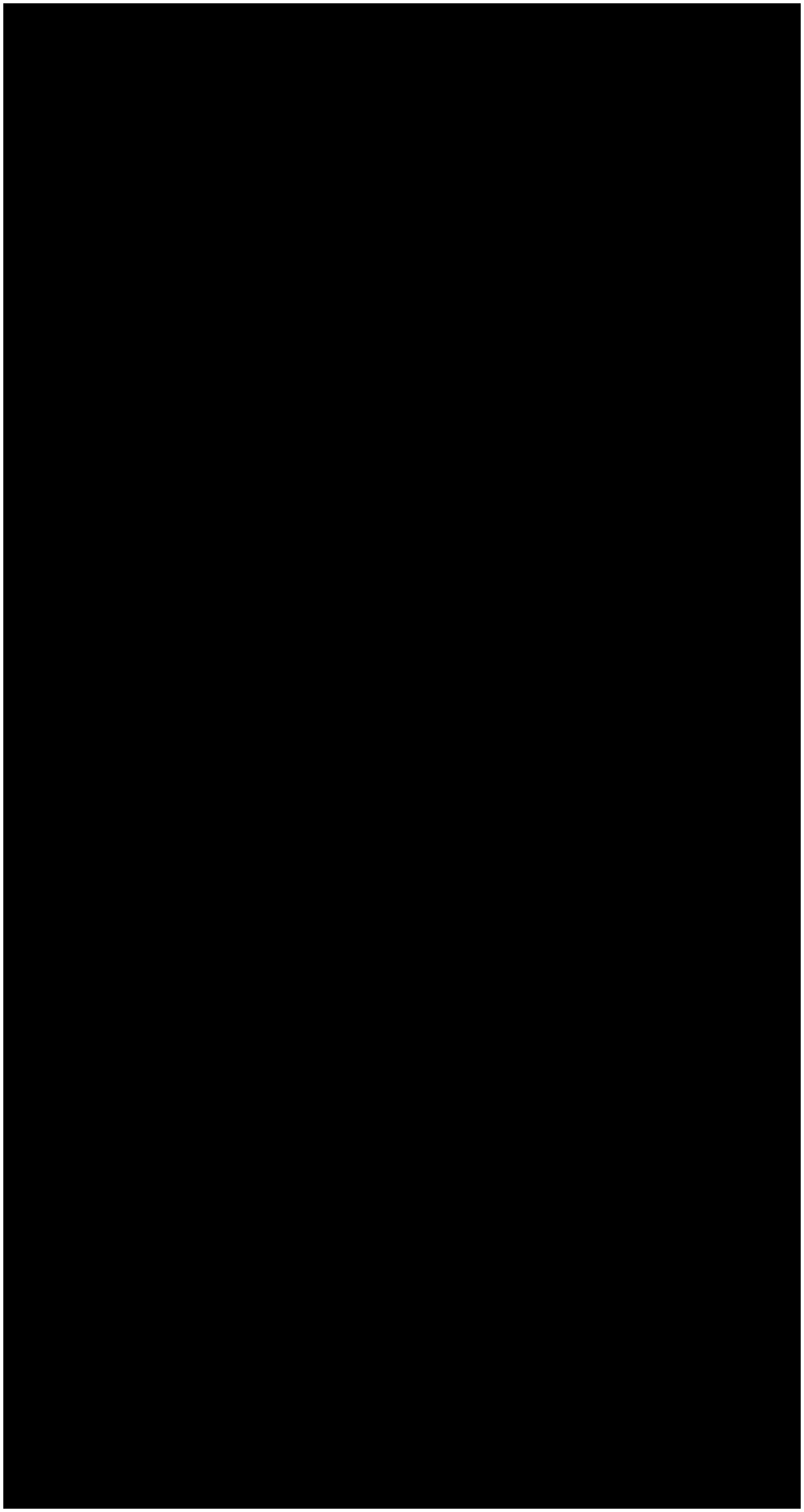














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
Aug-26											
Sep-26											
Oct-26											
Nov-26											
Dec-26											
Jan-27											
Feb-27											
Mar-27											
Apr-27											
May-27											
Jun-27											
Jul-27											
Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
Aug-25											
Sep-25											
Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
Jun-26											
Jul-26											
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Jun-27											
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Aug-27											
Sep-27											
Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

Projected Normal Year - Northern Utilities, Inc. Planning Load - Projected System Costs

[redacted]

Year	Total Fixed Costs (Adjusted for Proxy Peaking Contract Demand Cost)	Total Variable Costs	Storage Injection	Storage Withdrawal	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - NORMAL	Peaking Requirement NORMAL
2023-2024	[redacted]								
2024-2025									
2025-2026									
2026-2027									
2027-2028									
Total									

DAWN HUB EXPANSION

Year	Month	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal	Grand Total Cost
2023-2024	[redacted]					
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
2023-2024						
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2025-2026						
2025-2026						
2025-2026						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						
2026-2027						

2026-2027	[redacted]
2026-2027	
2026-2027	
2026-2027	
2026-2027	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	
2027-2028	

CURRENT F

Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement	Total Fixed Costs ($000)	Total Variable Costs ($000)	Storage Injection	Storage Withdrawal
[redacted]						



PORTFOLIO

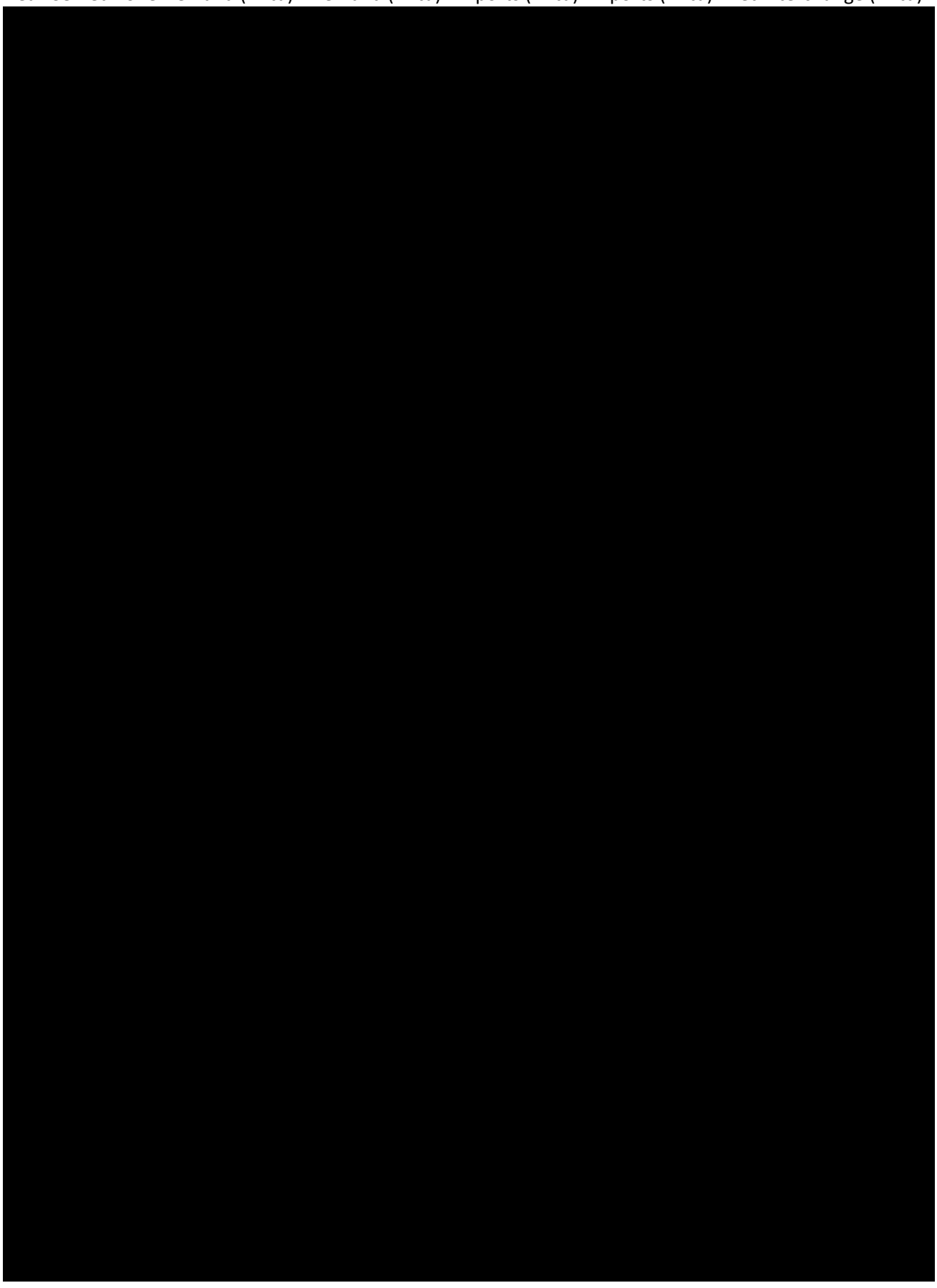
Grand Total Cost	Net Demand (BBtu)	PROXY Peaking Demand Cost	PROXY Peaking Requirement
[redacted]			



Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





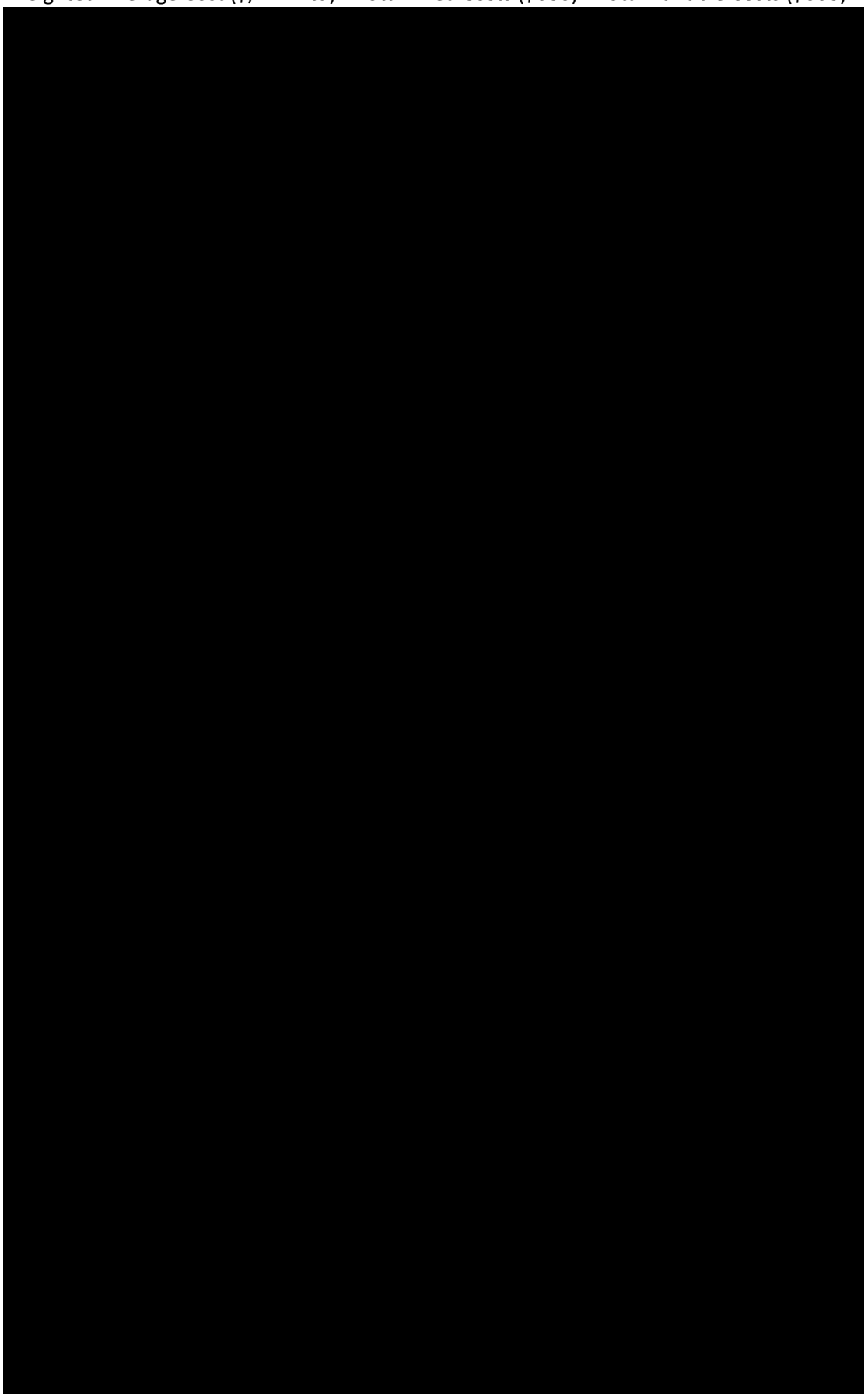
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

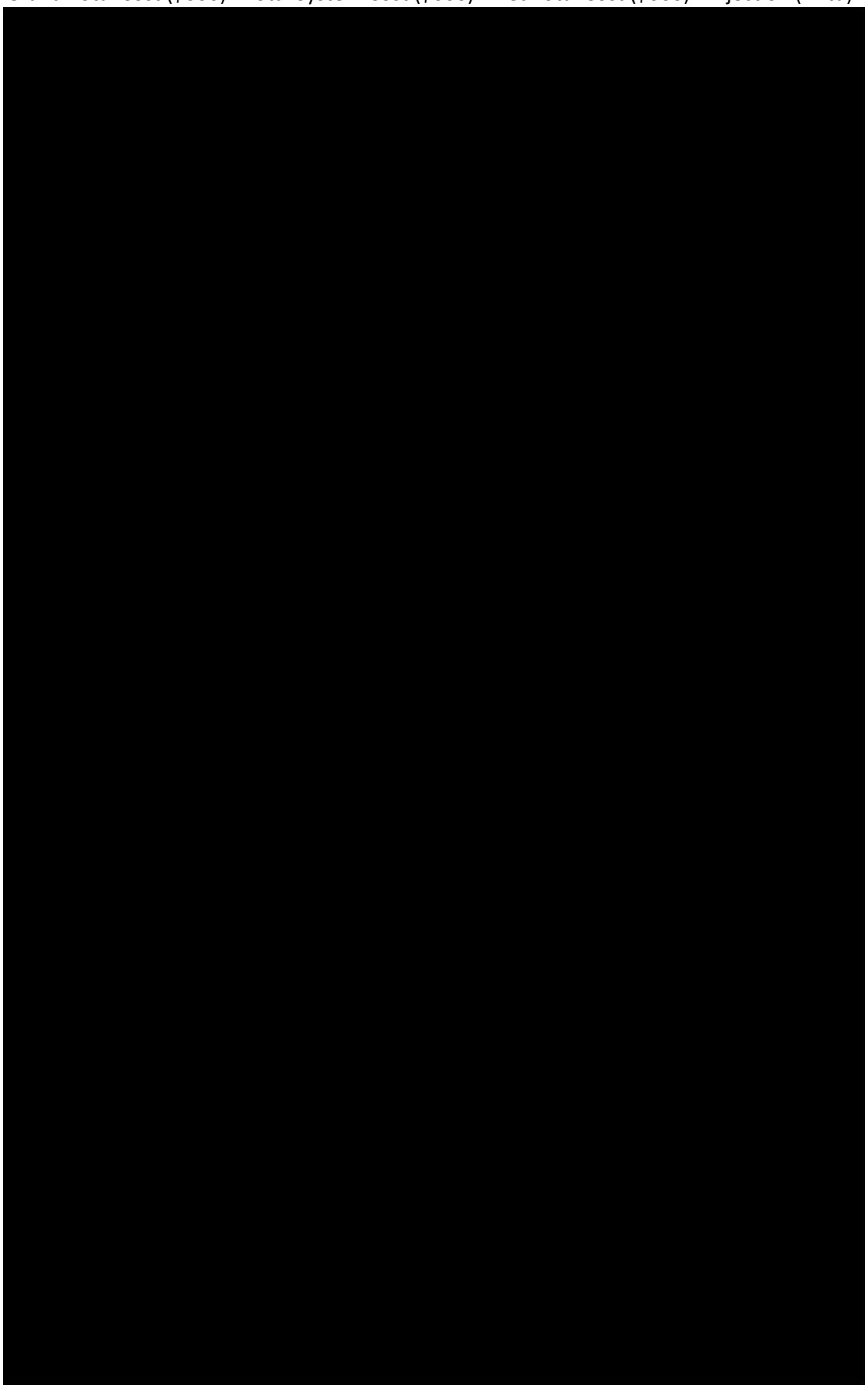


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

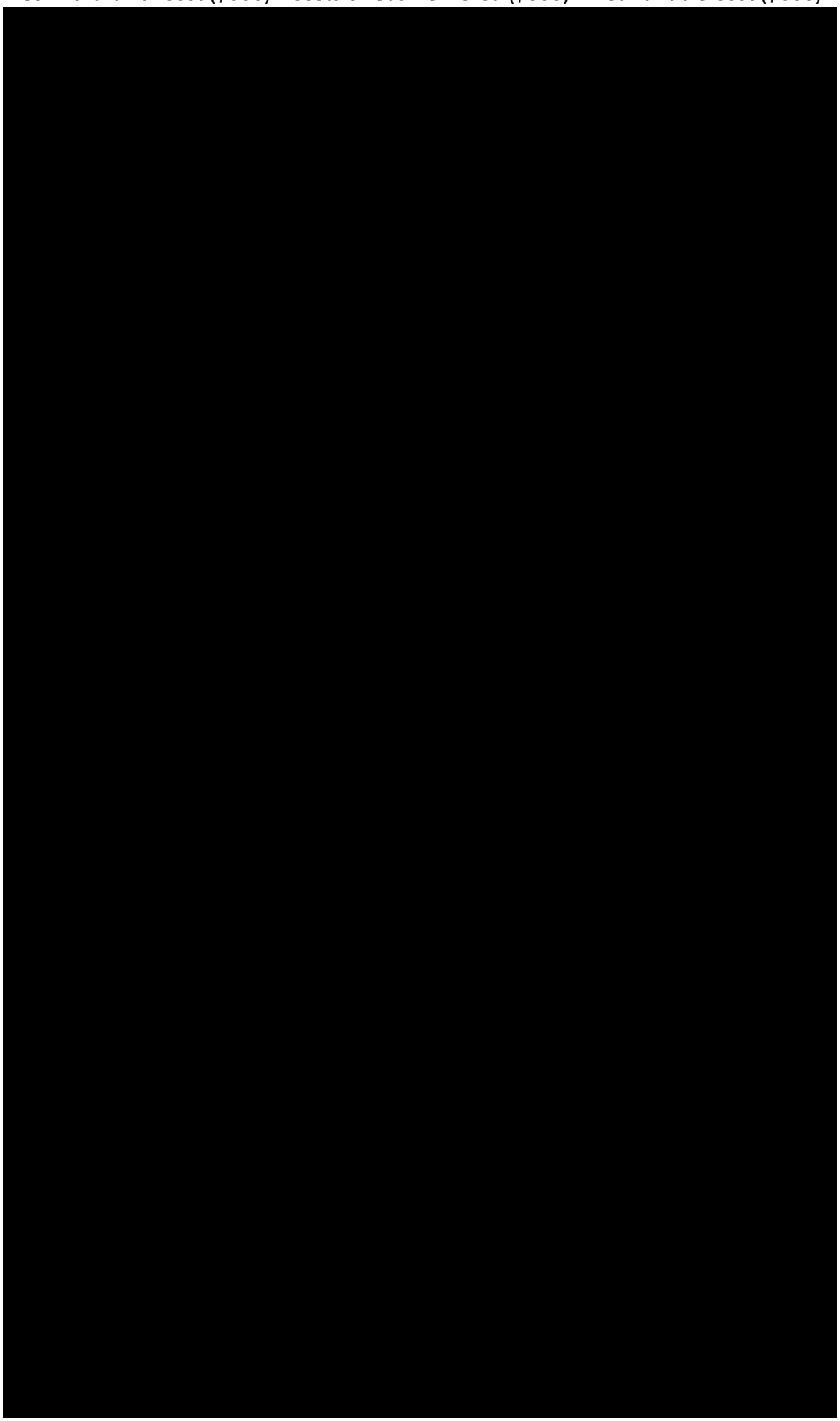




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

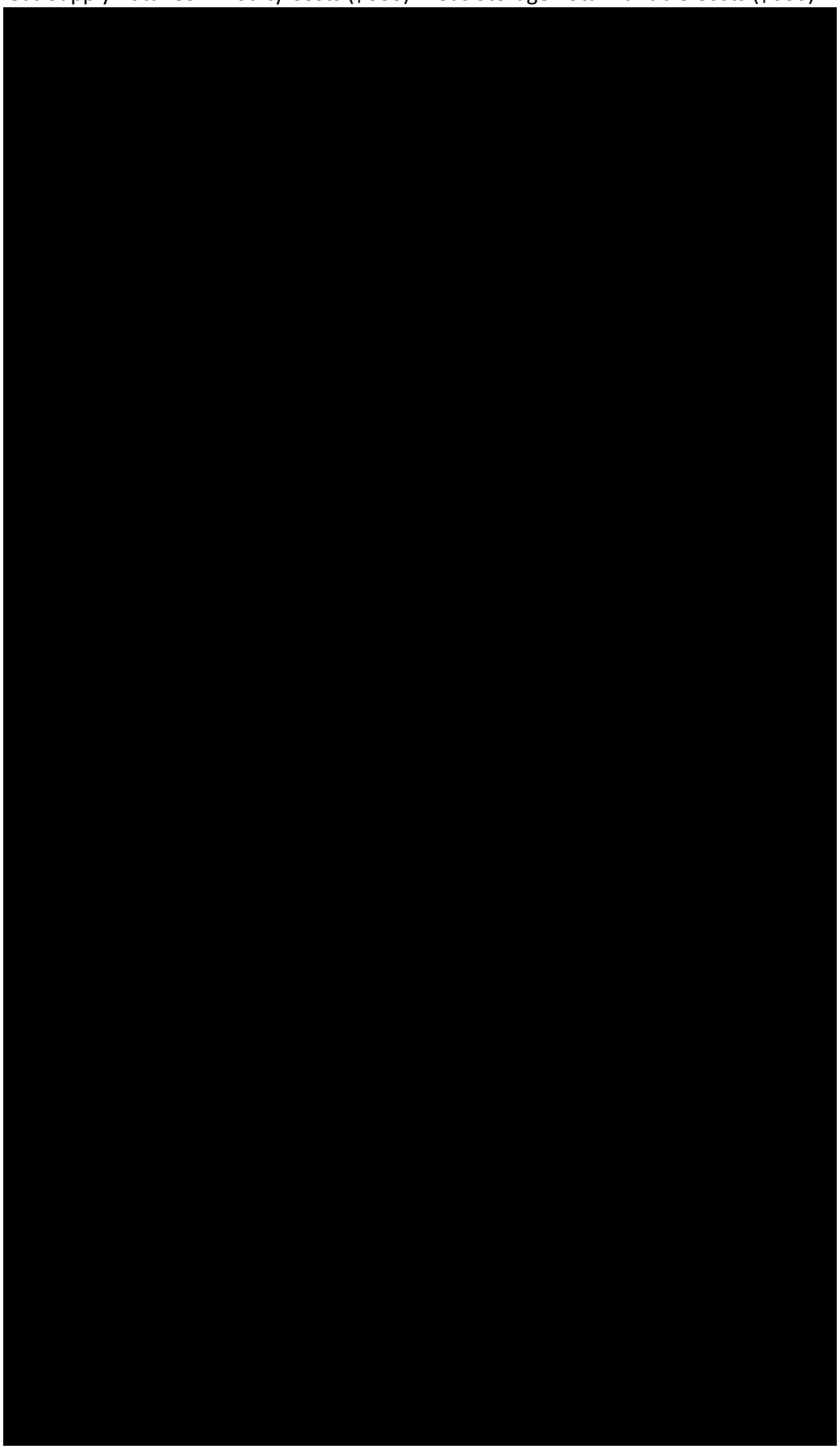




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

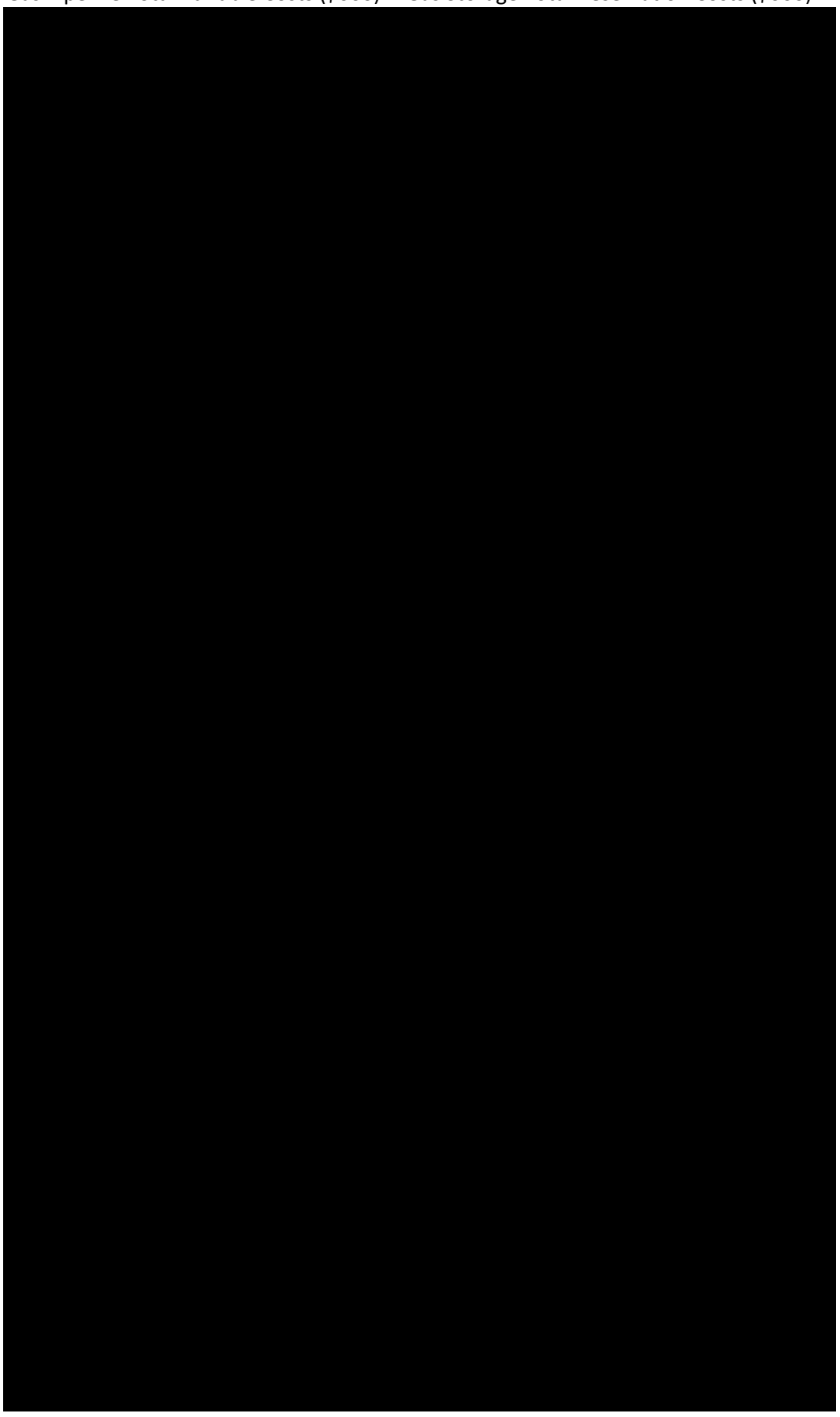


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



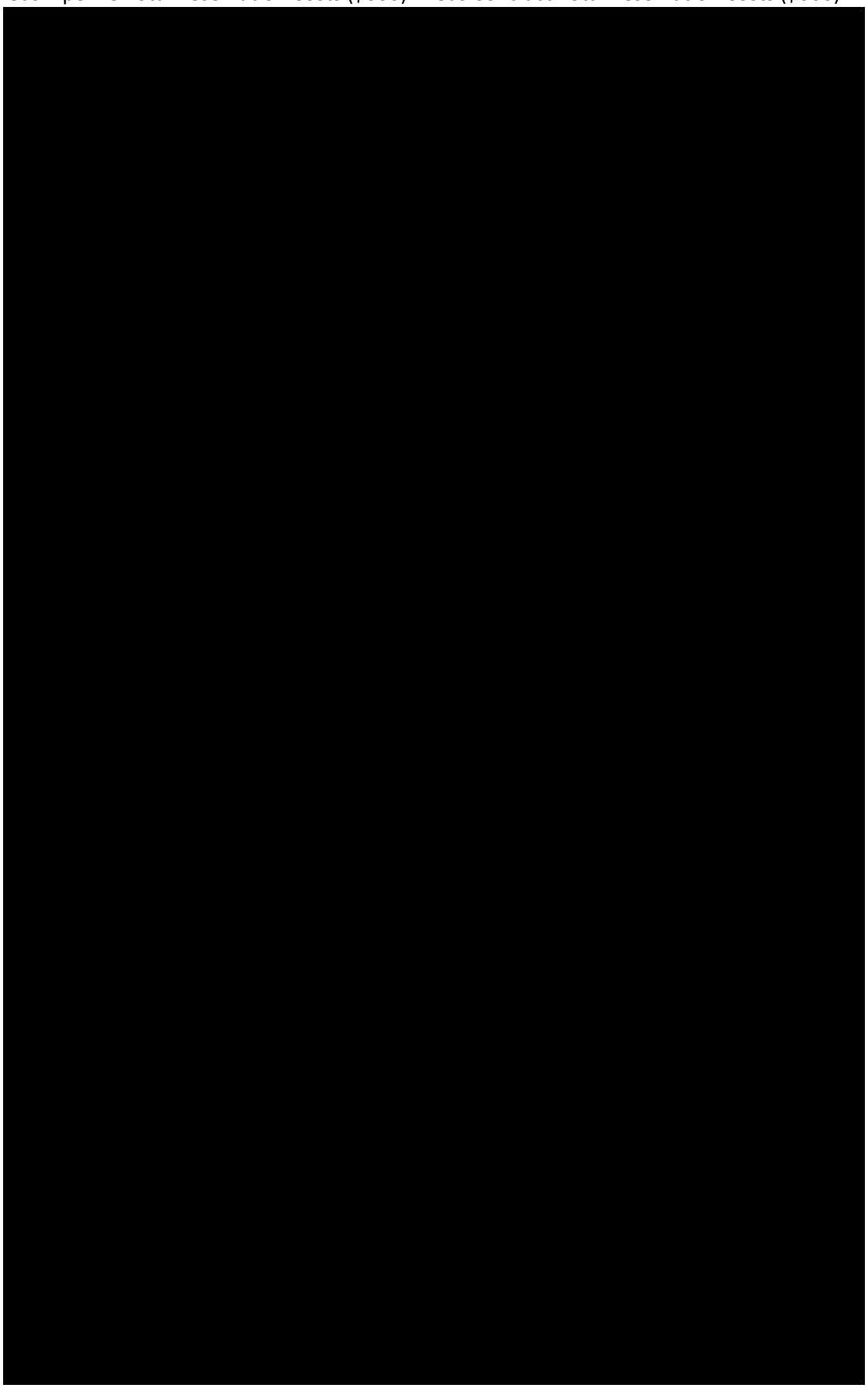


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



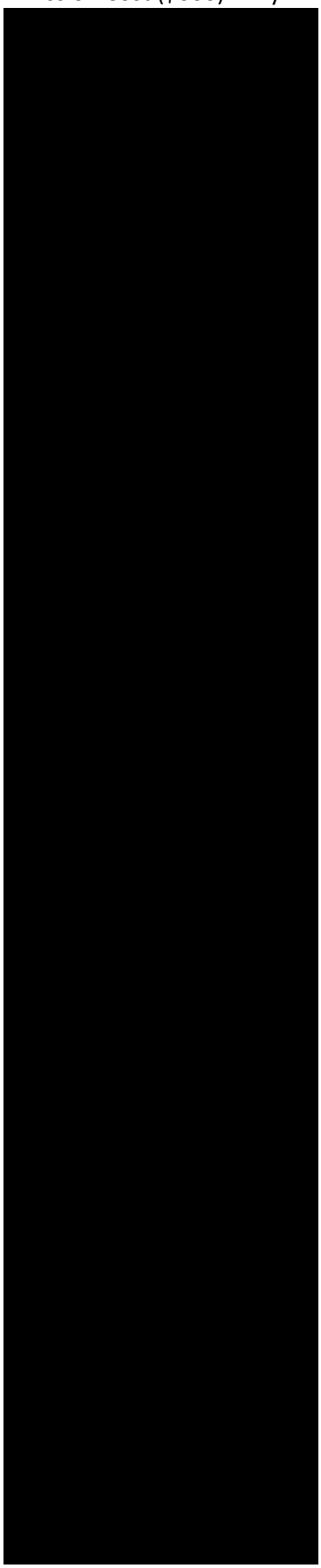


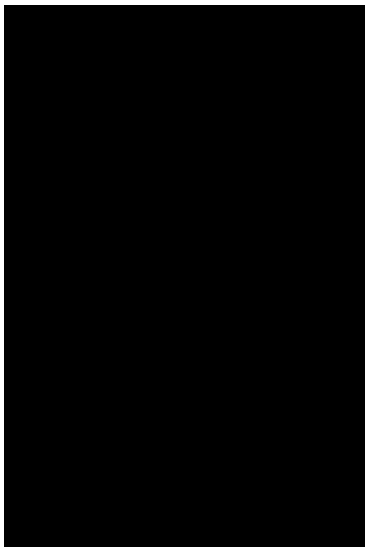
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



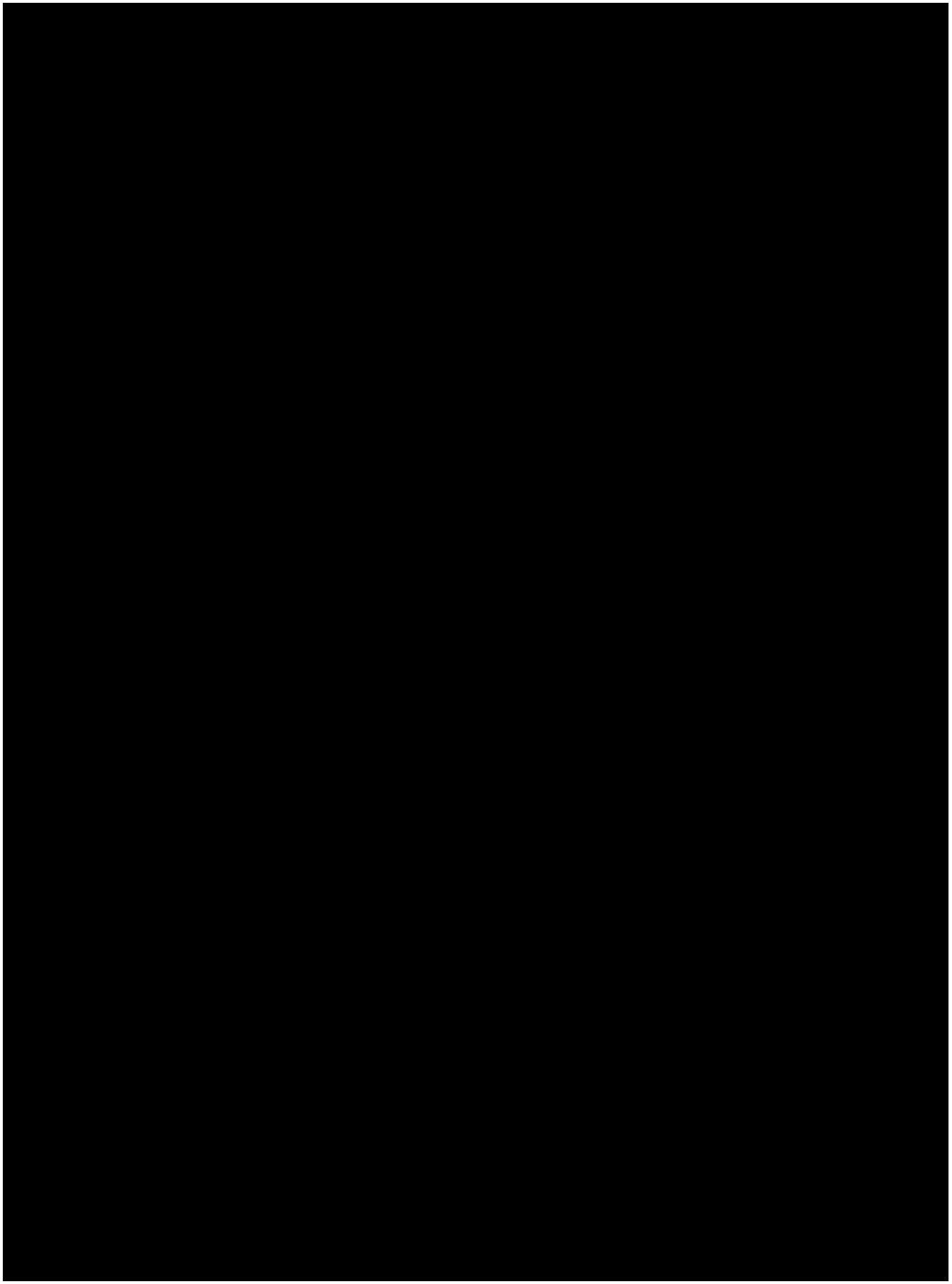


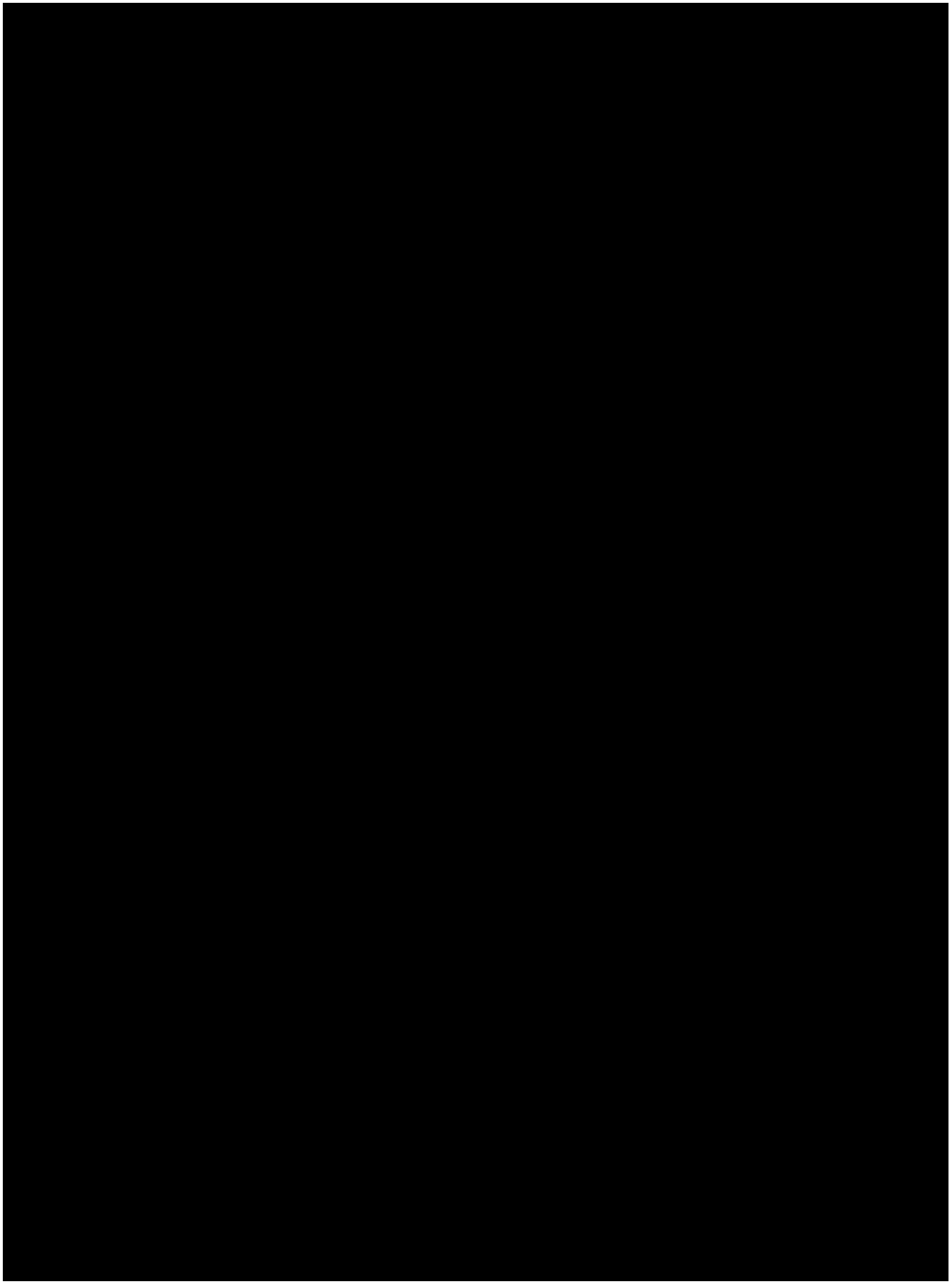
Emission Cost ($000) x y z

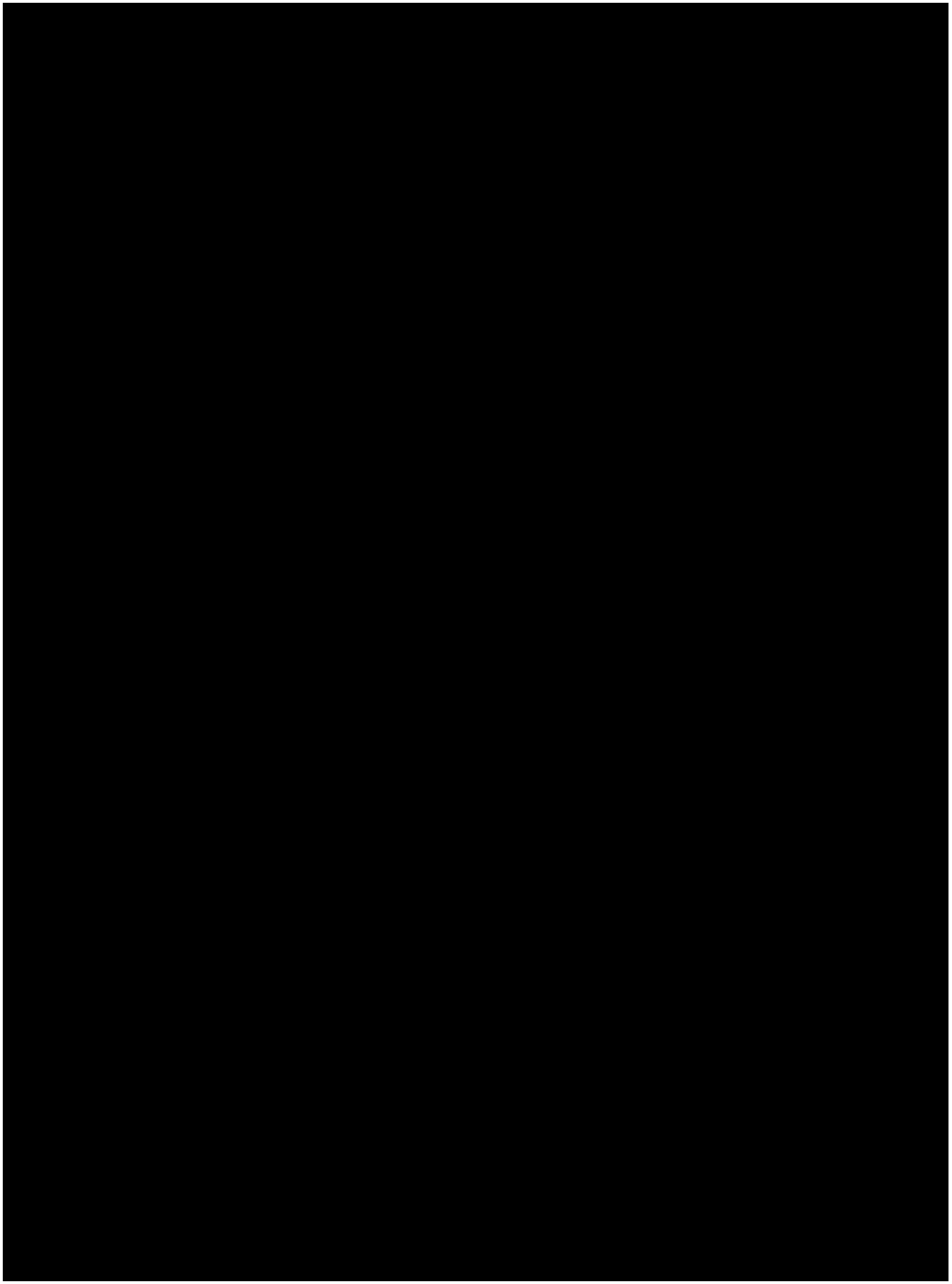


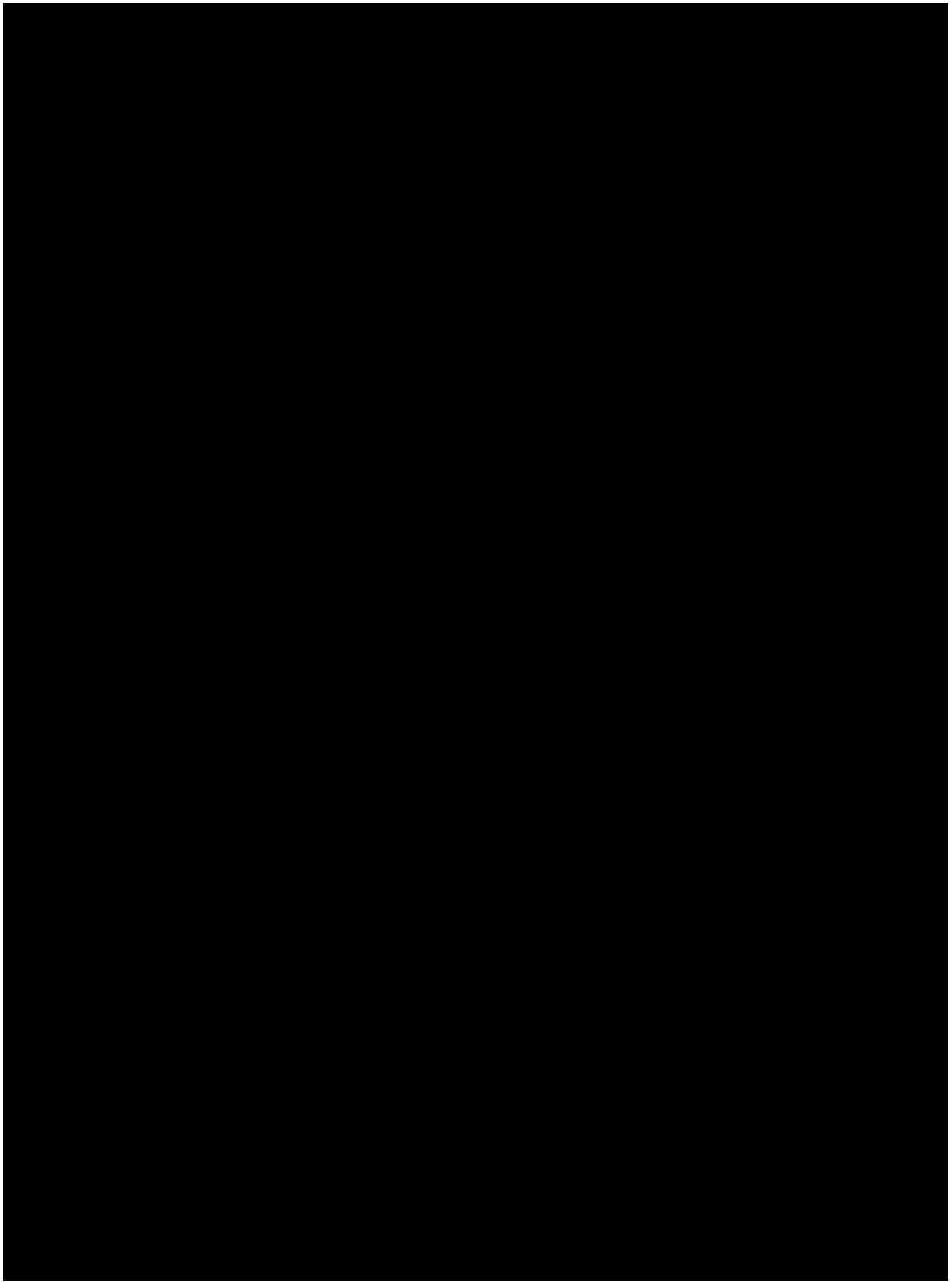


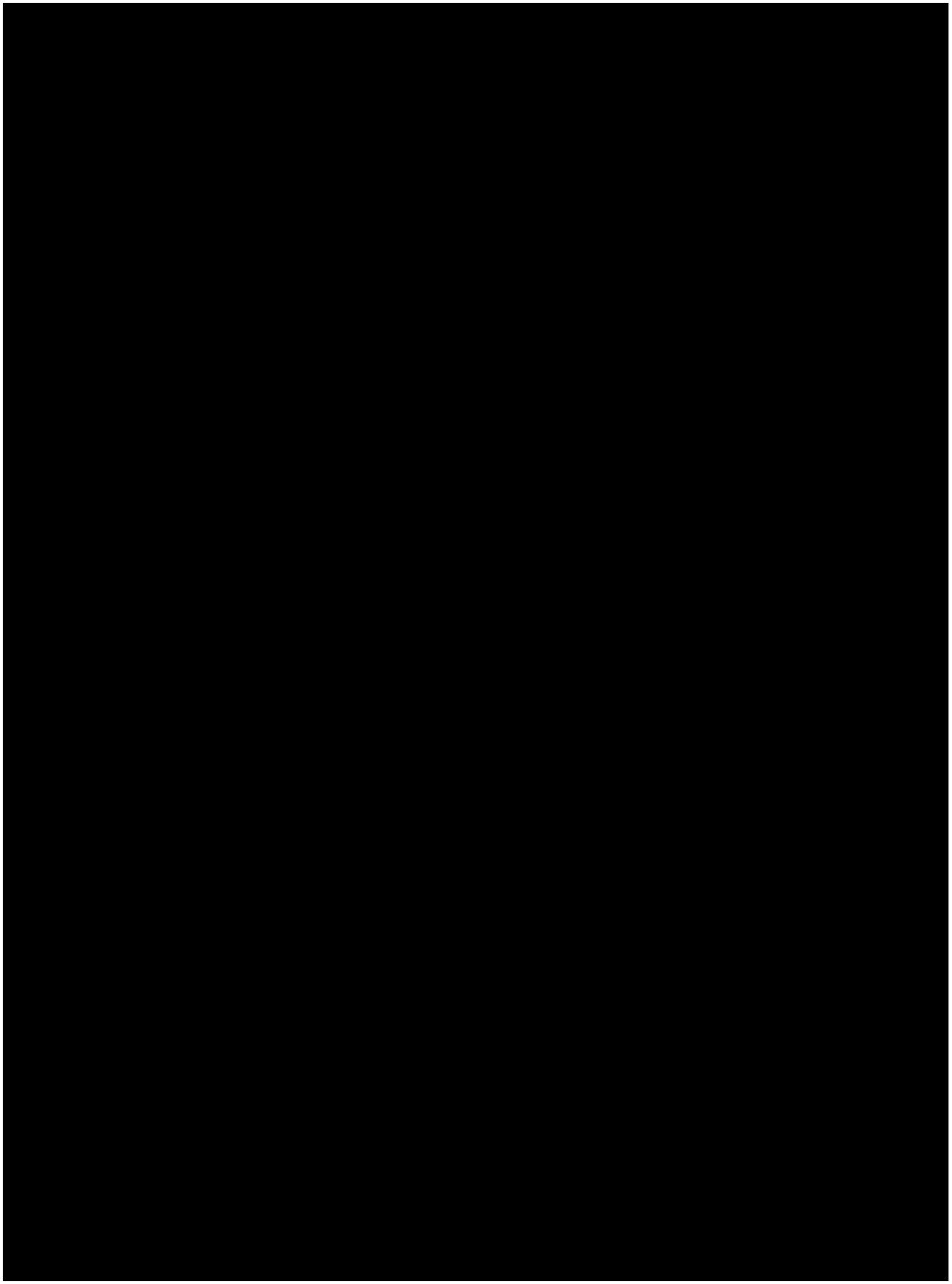
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

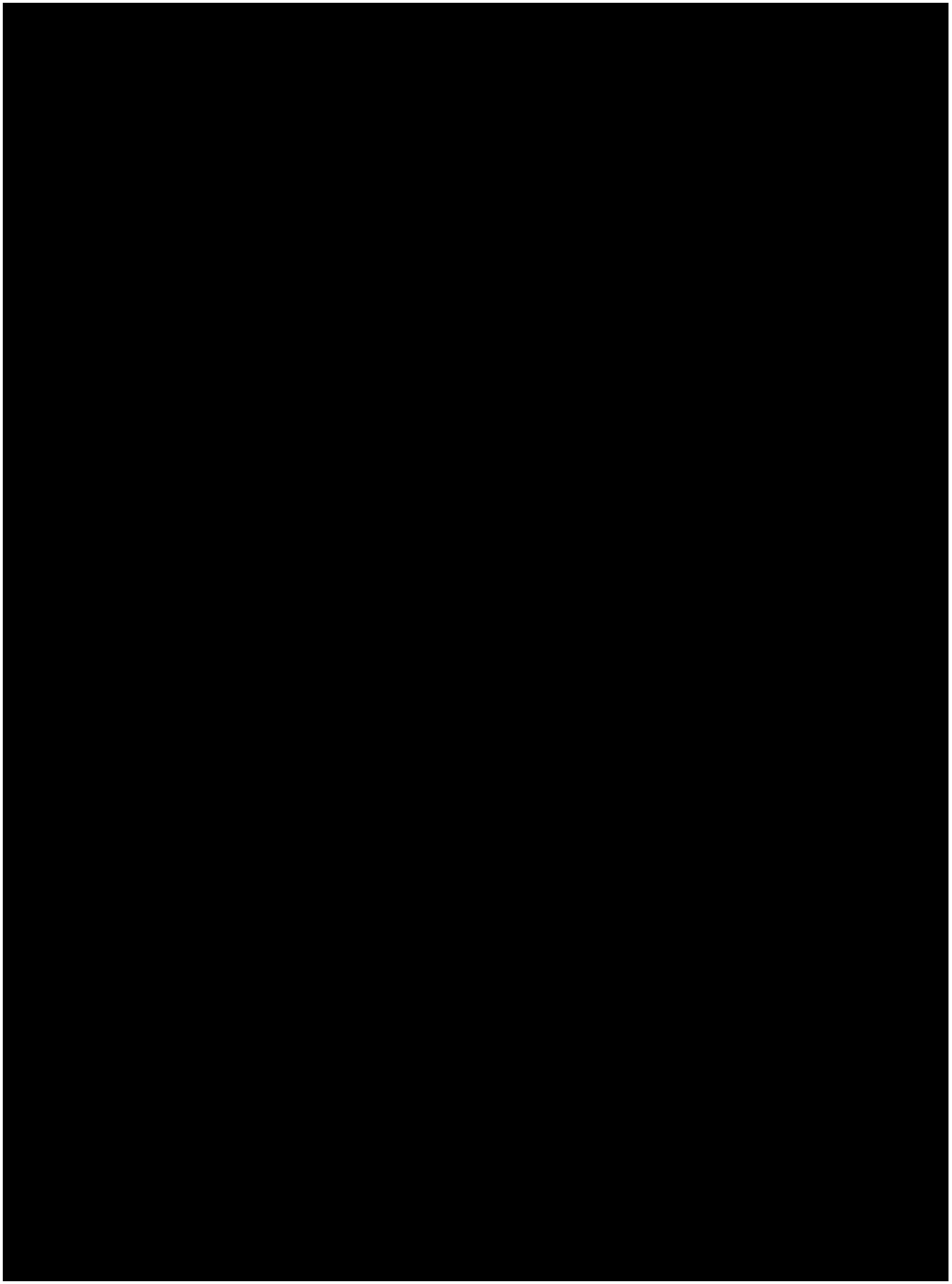


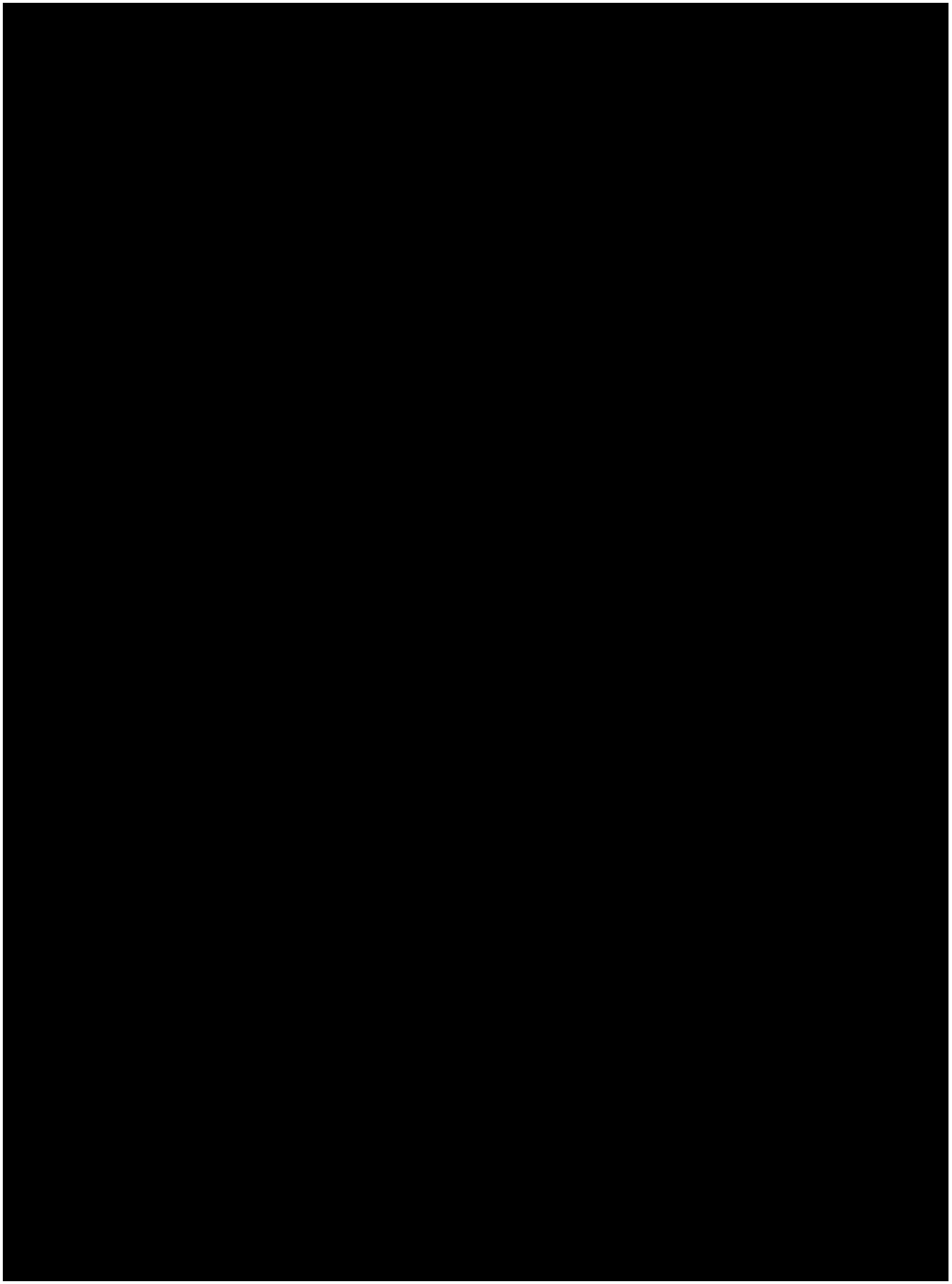


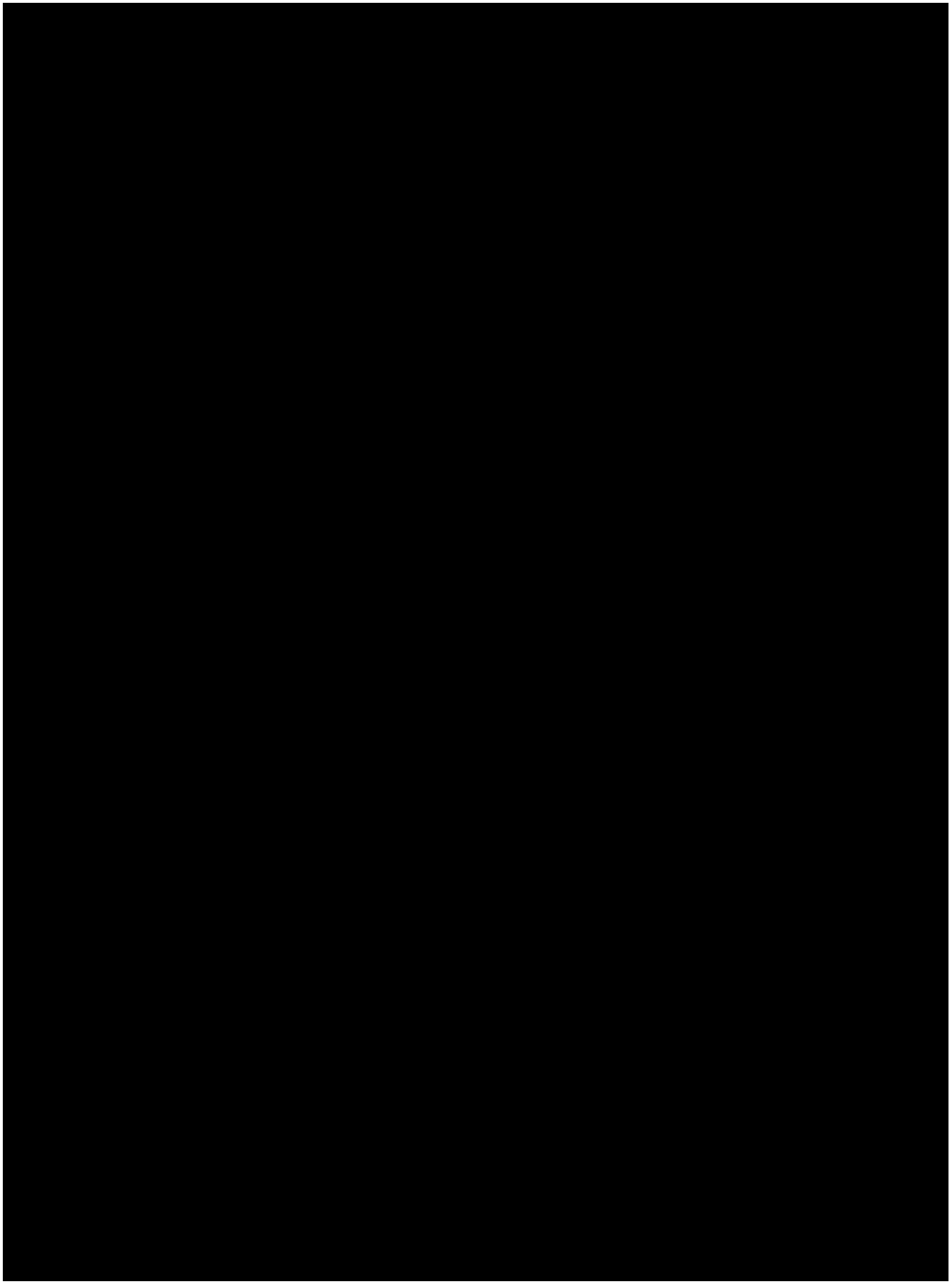


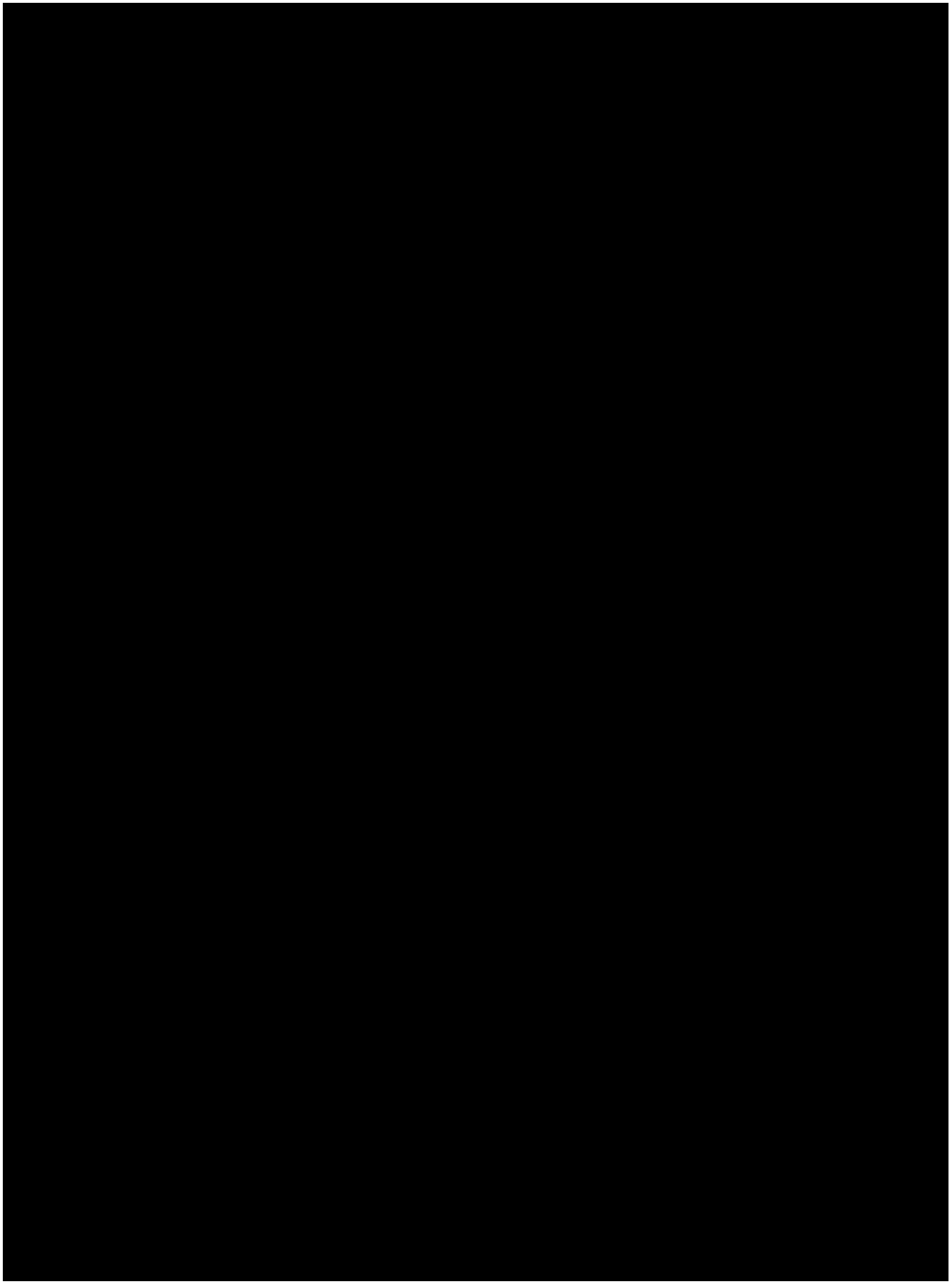


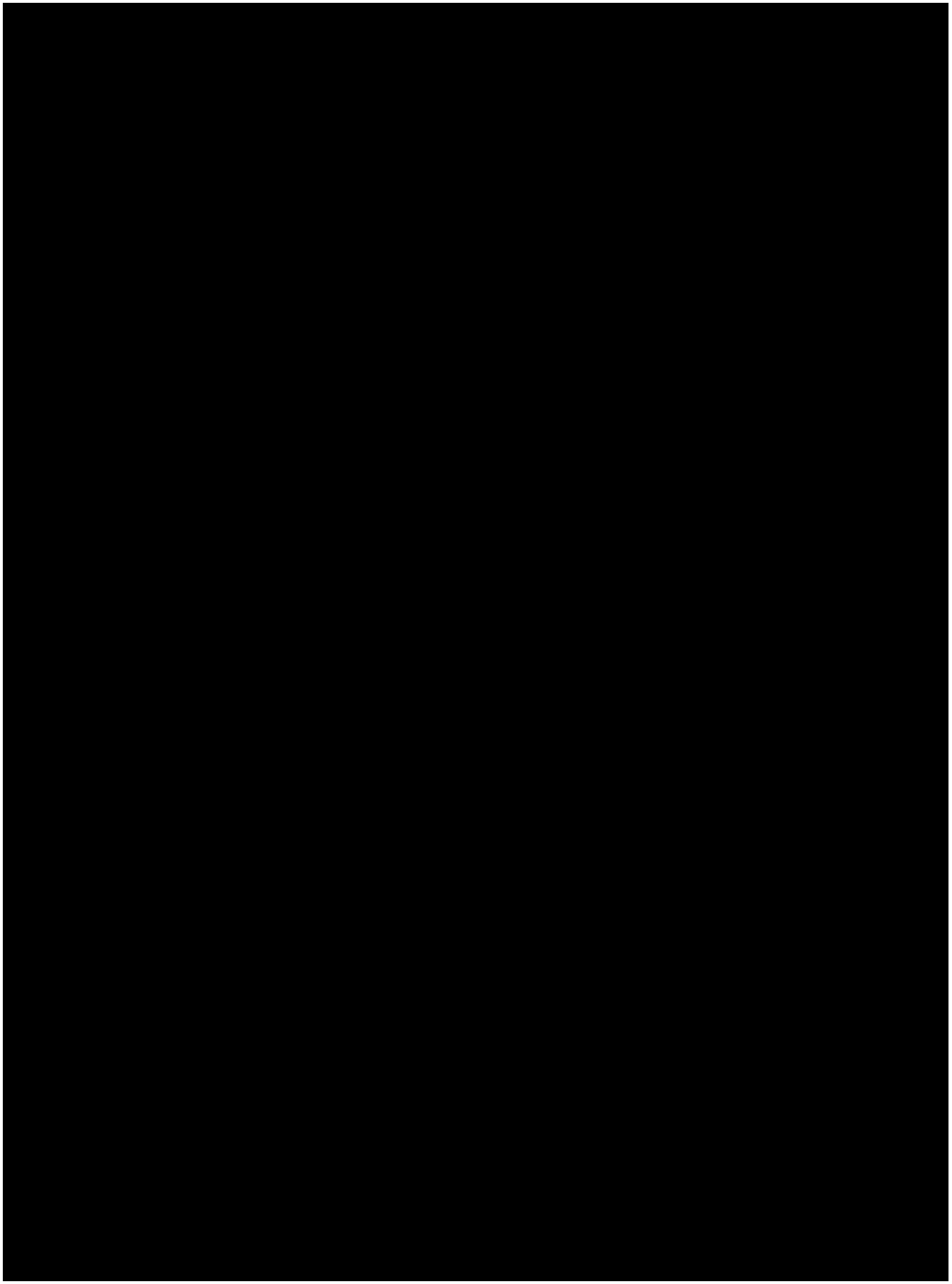


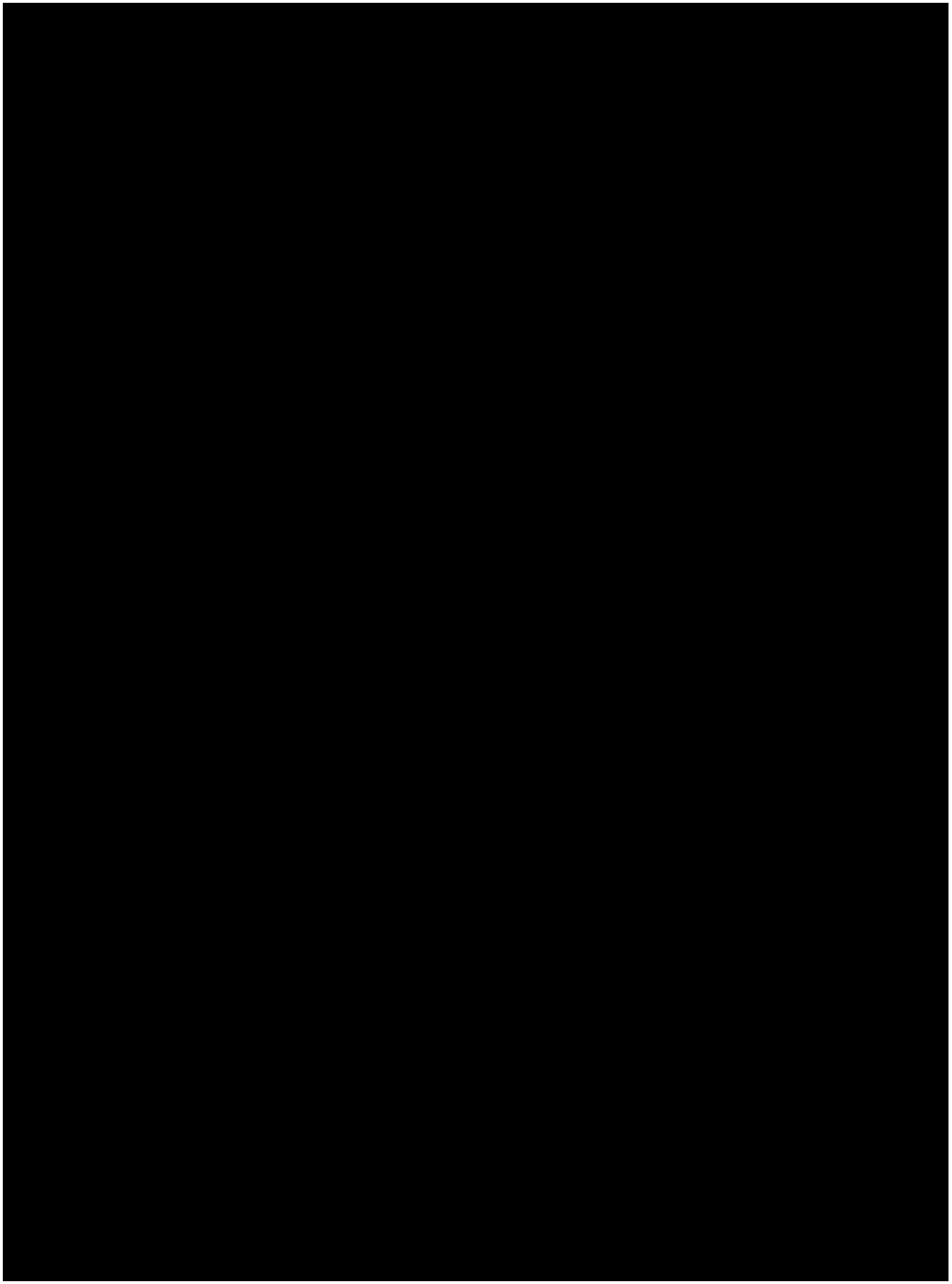


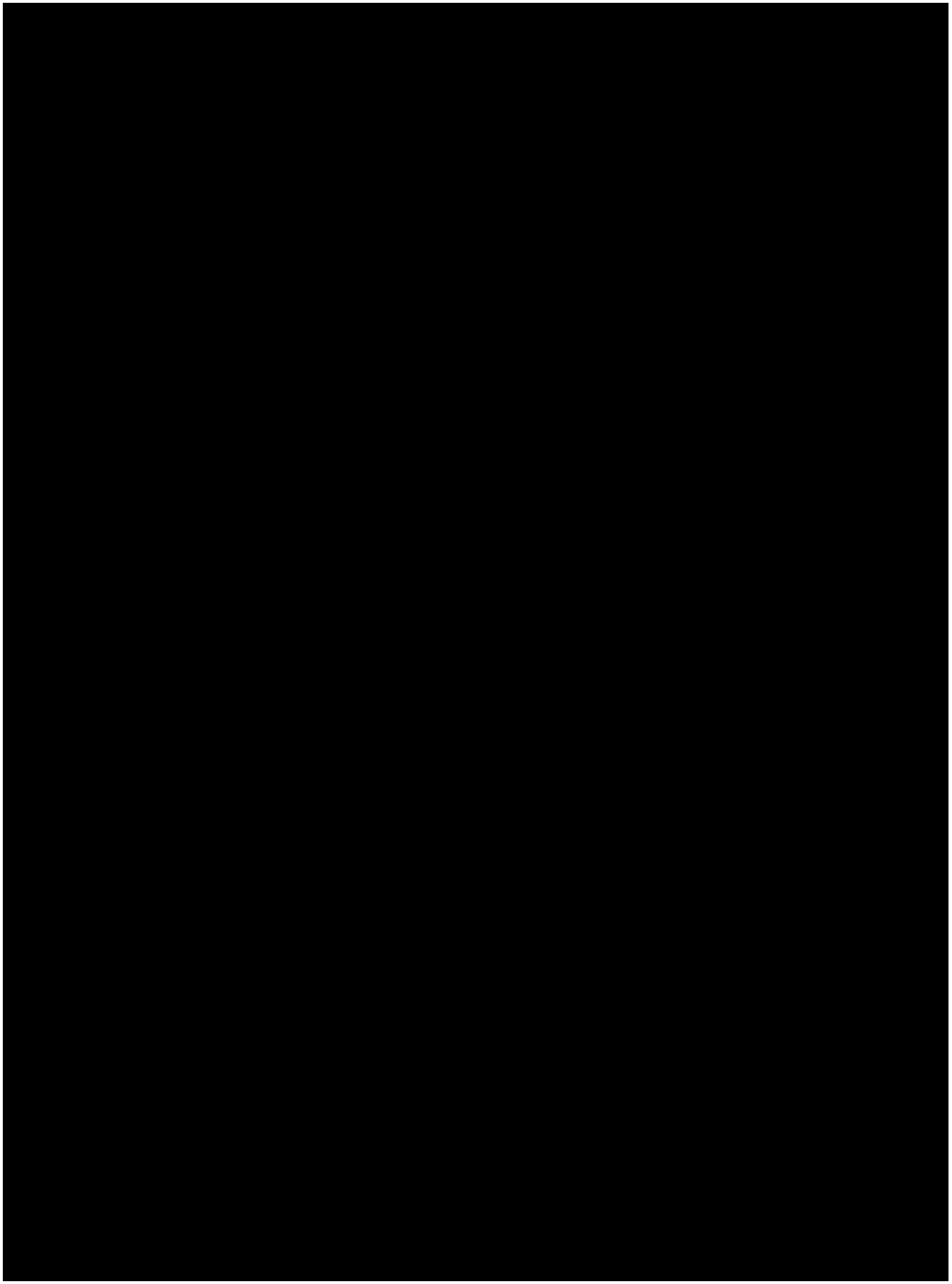


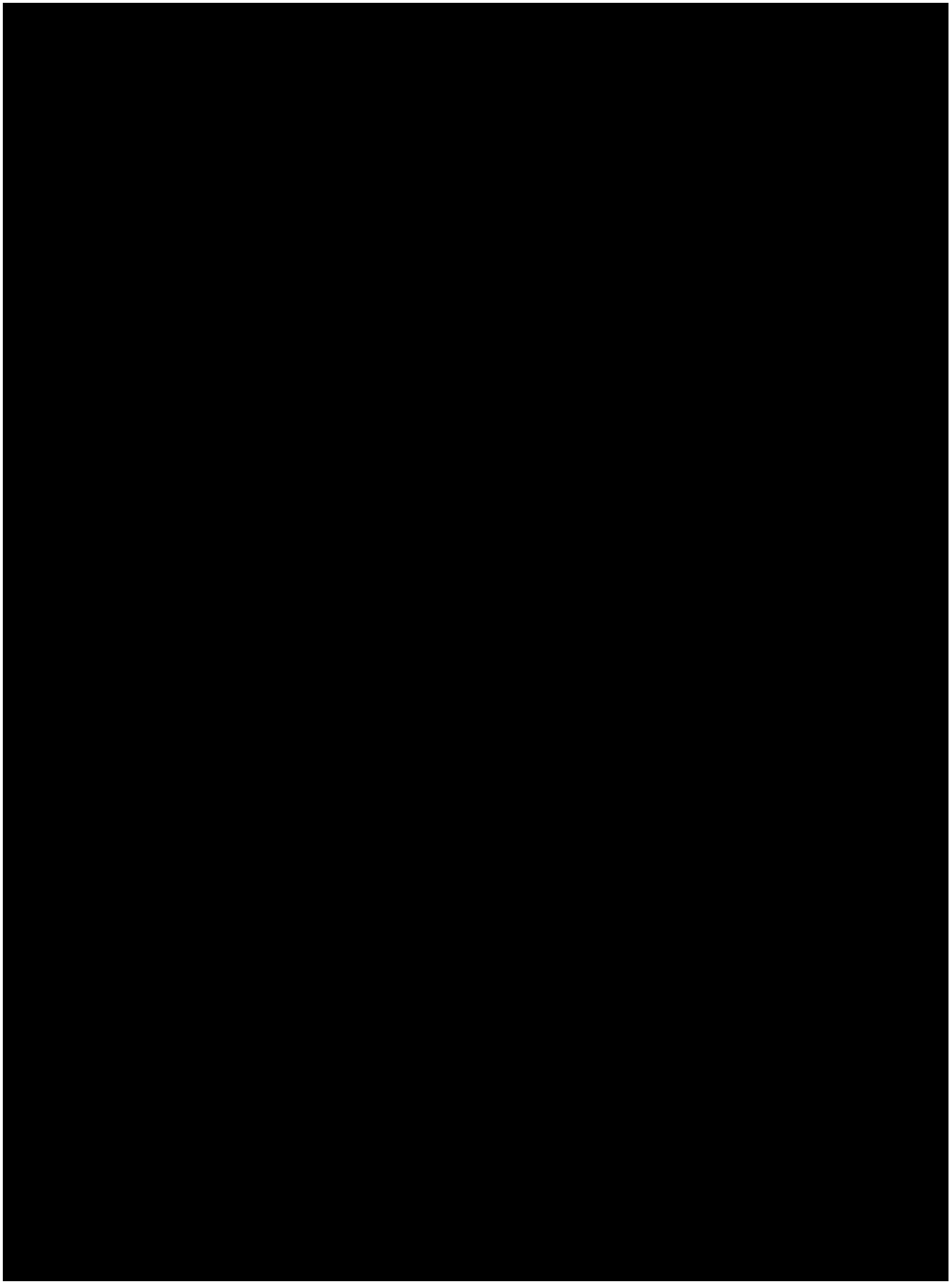


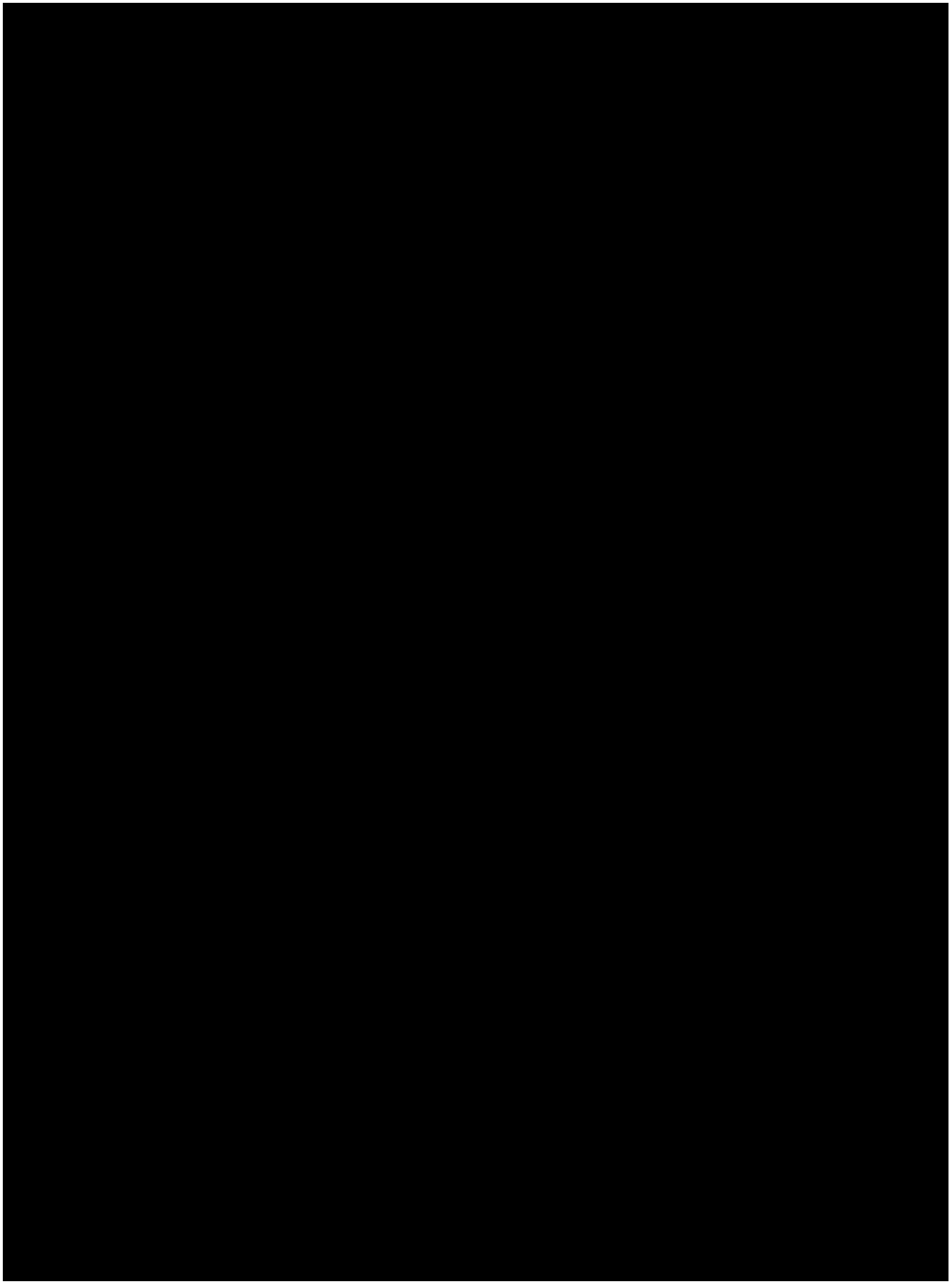


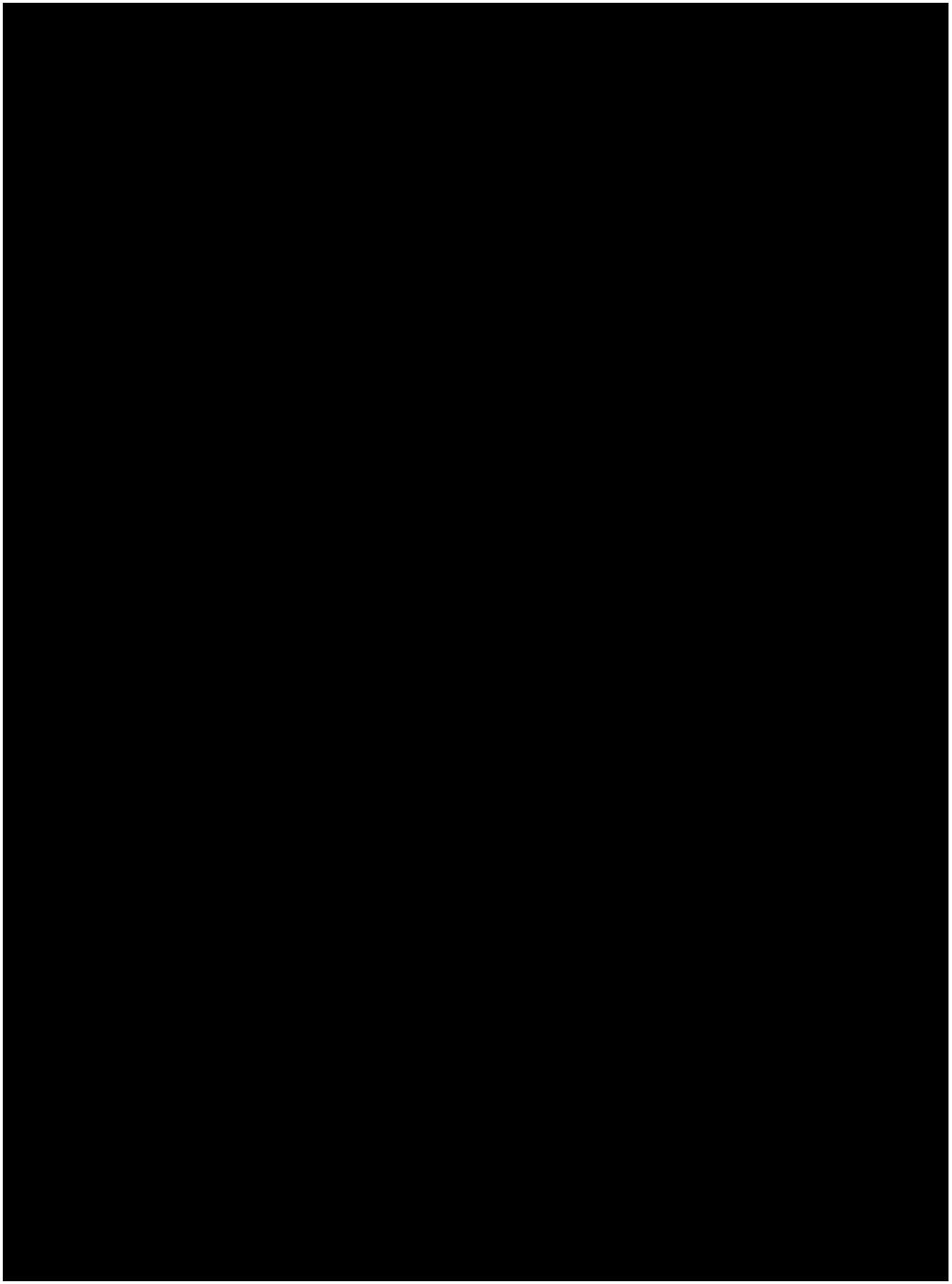


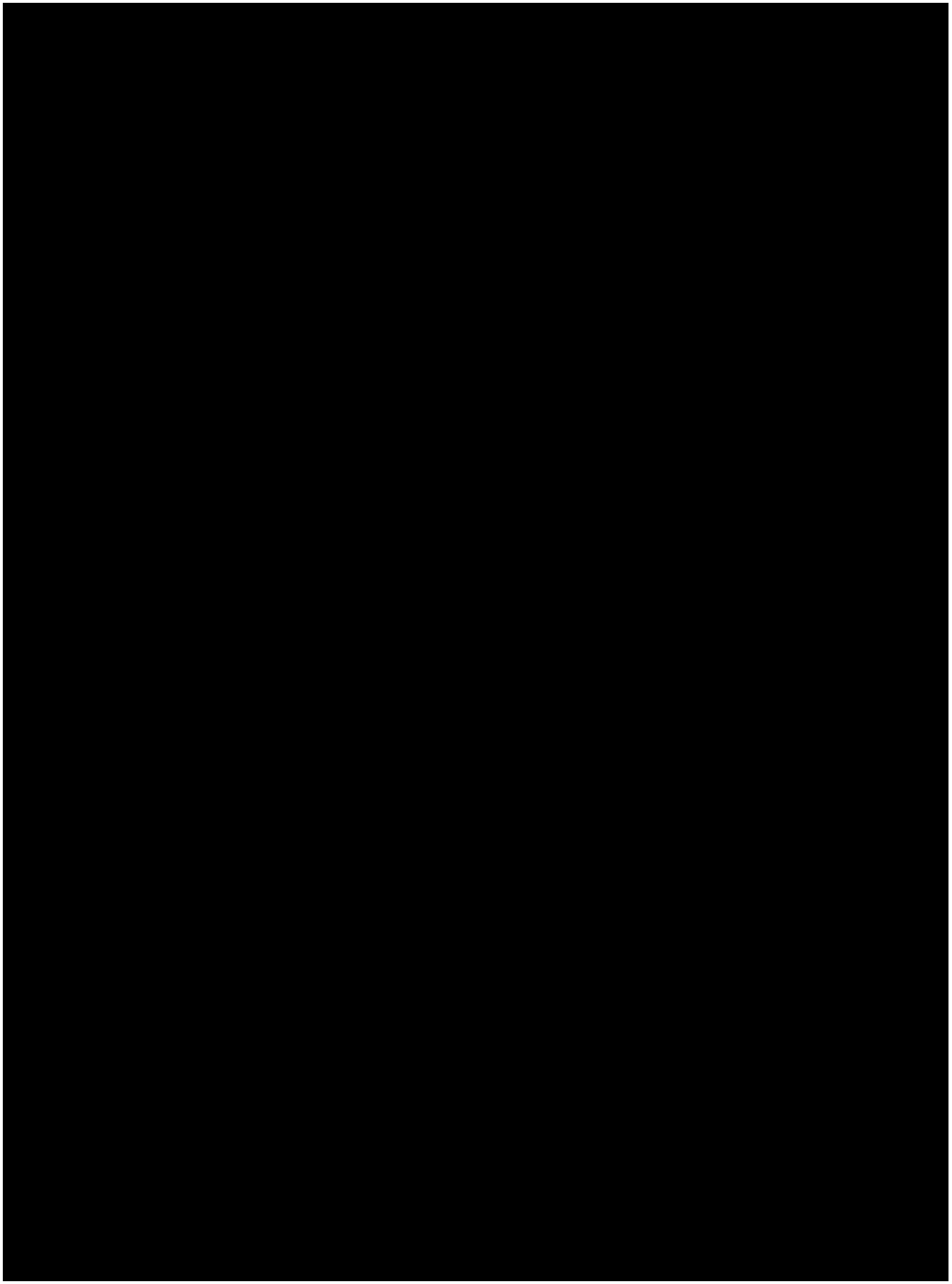


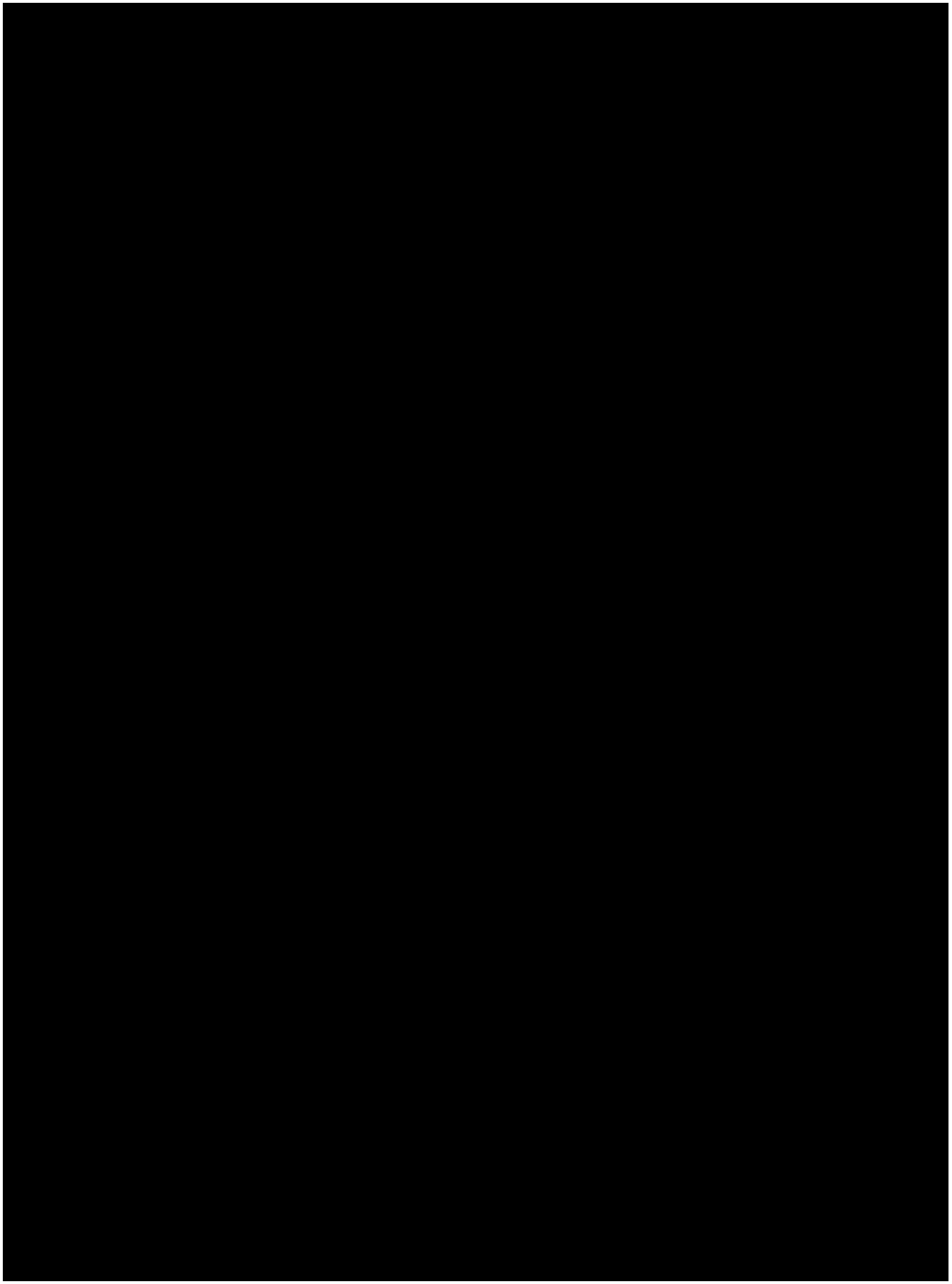


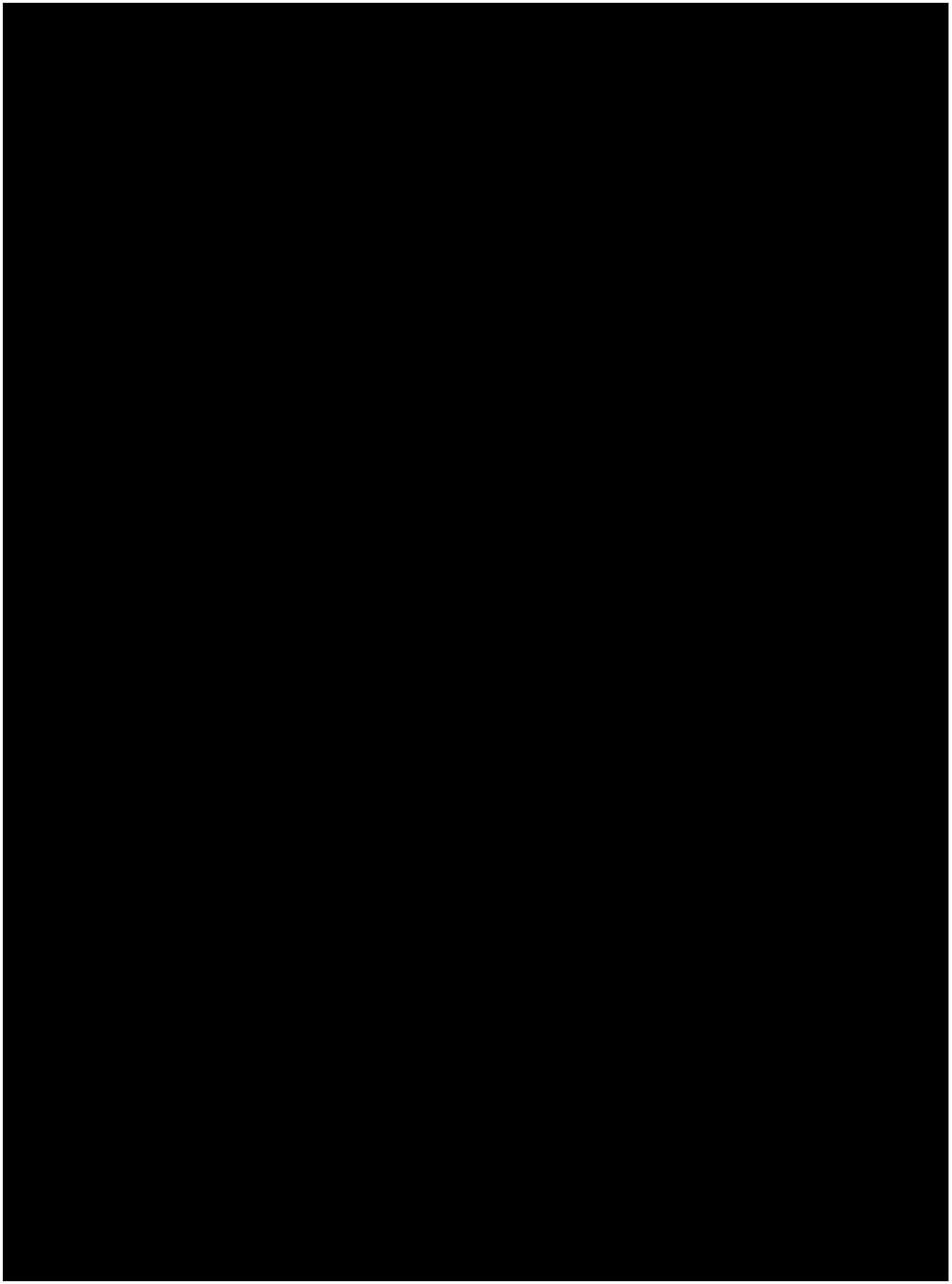




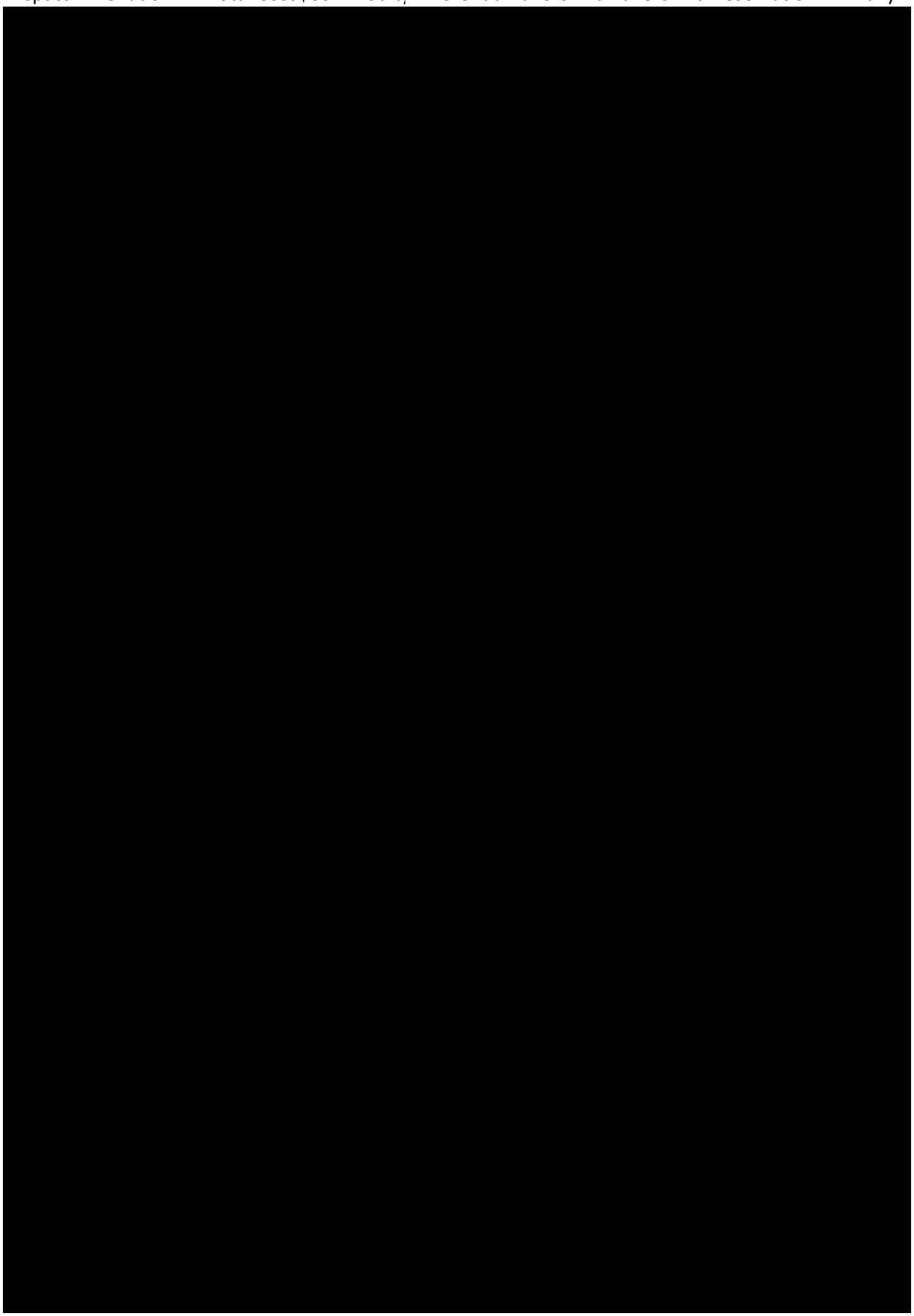


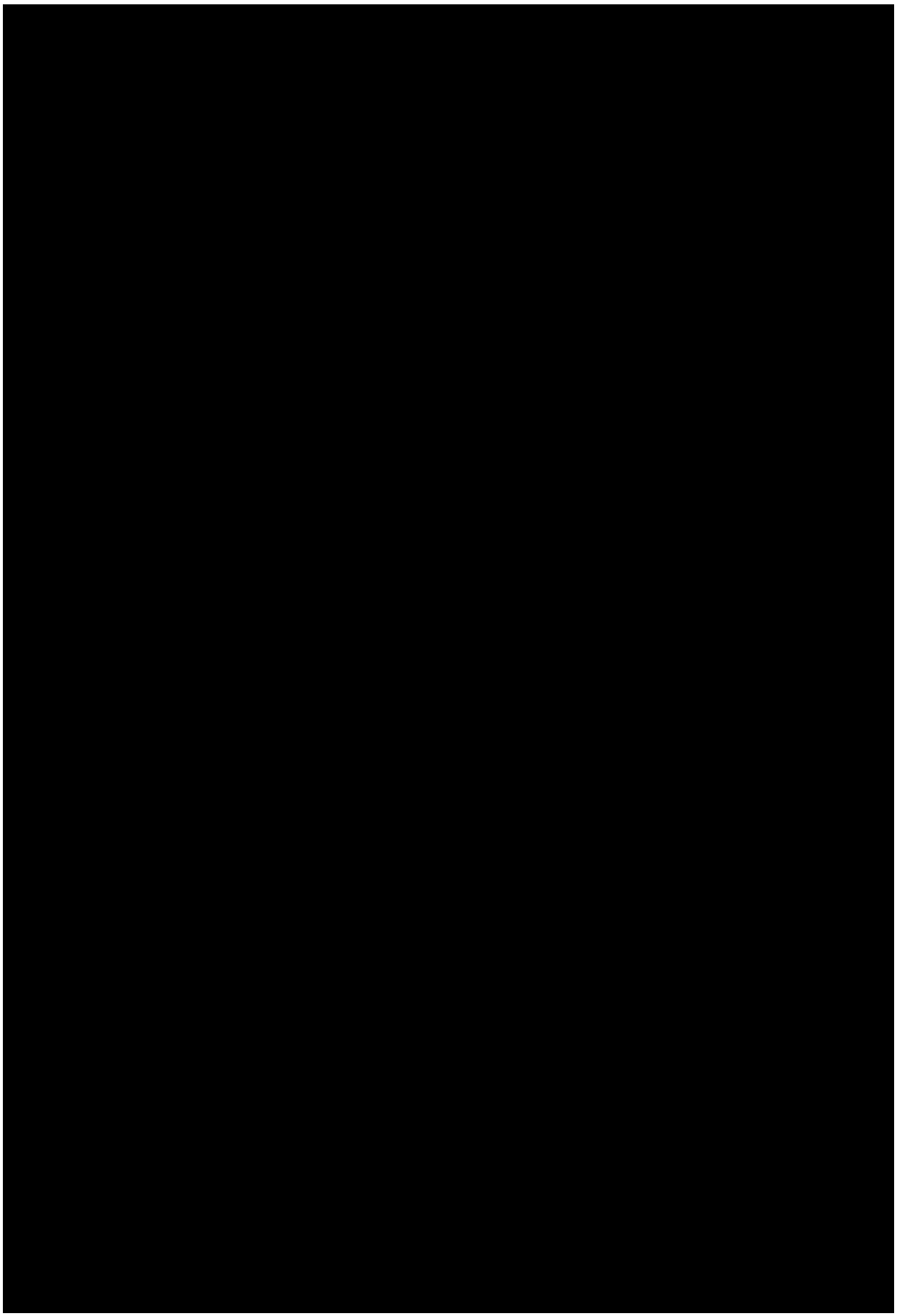


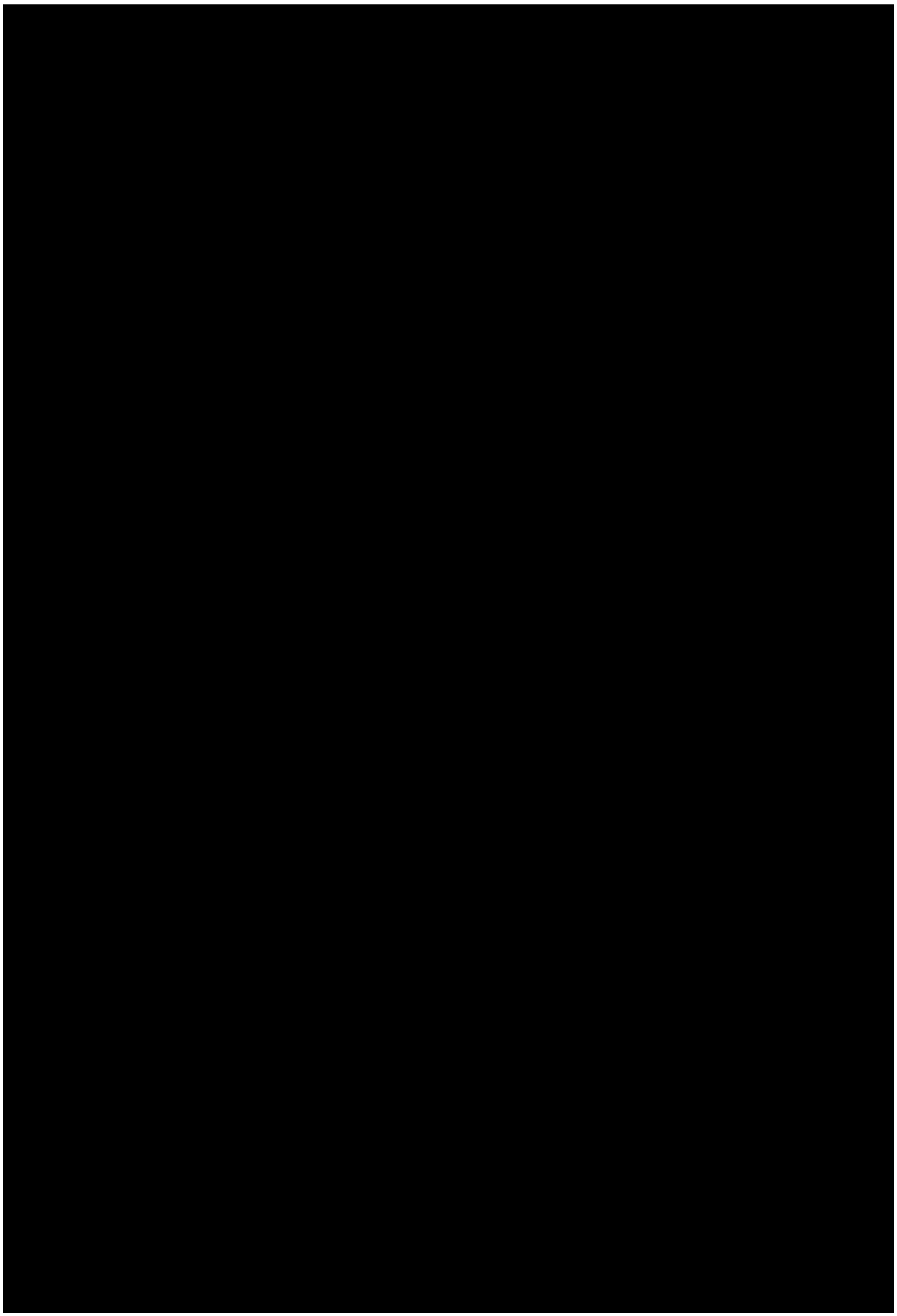


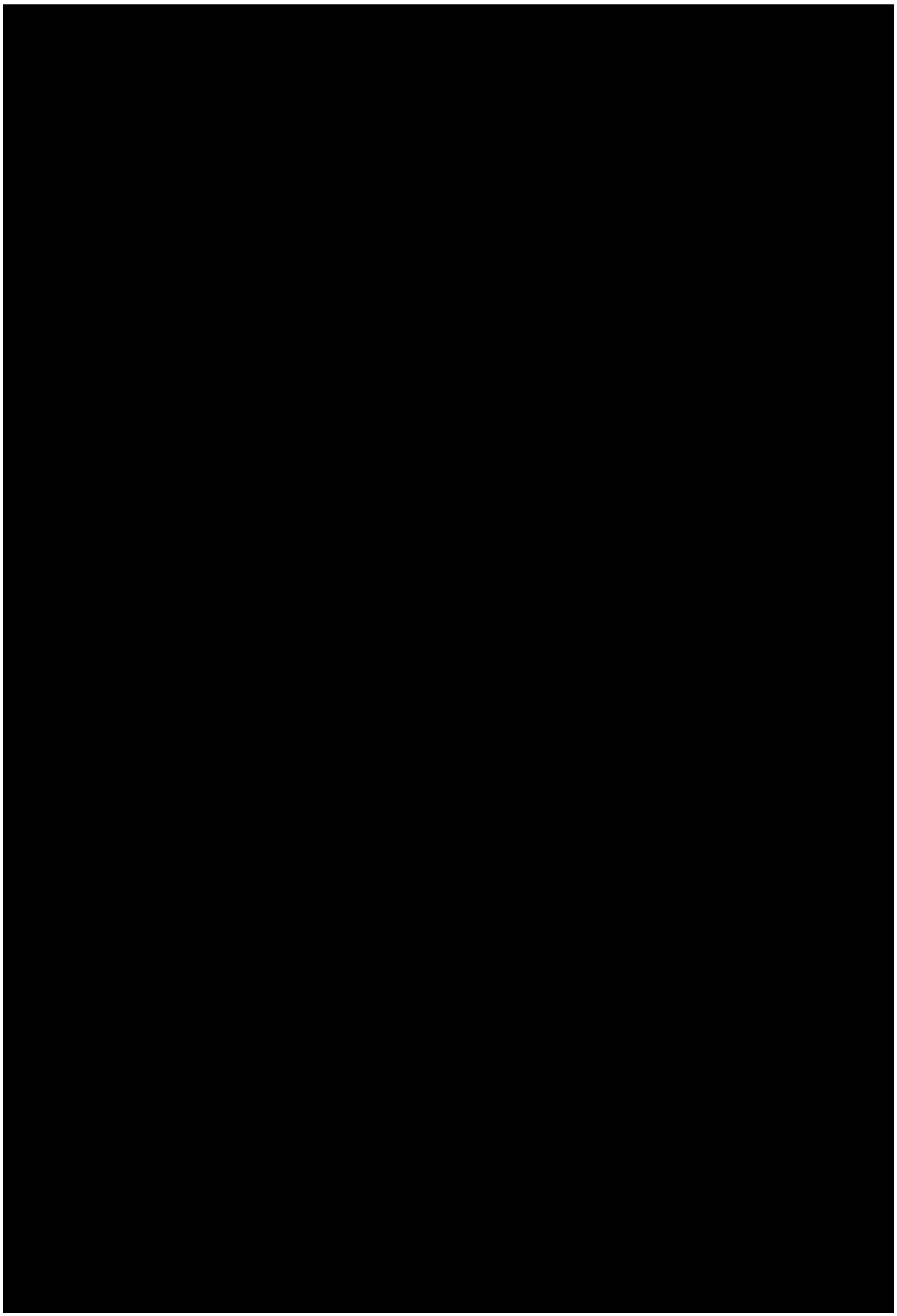


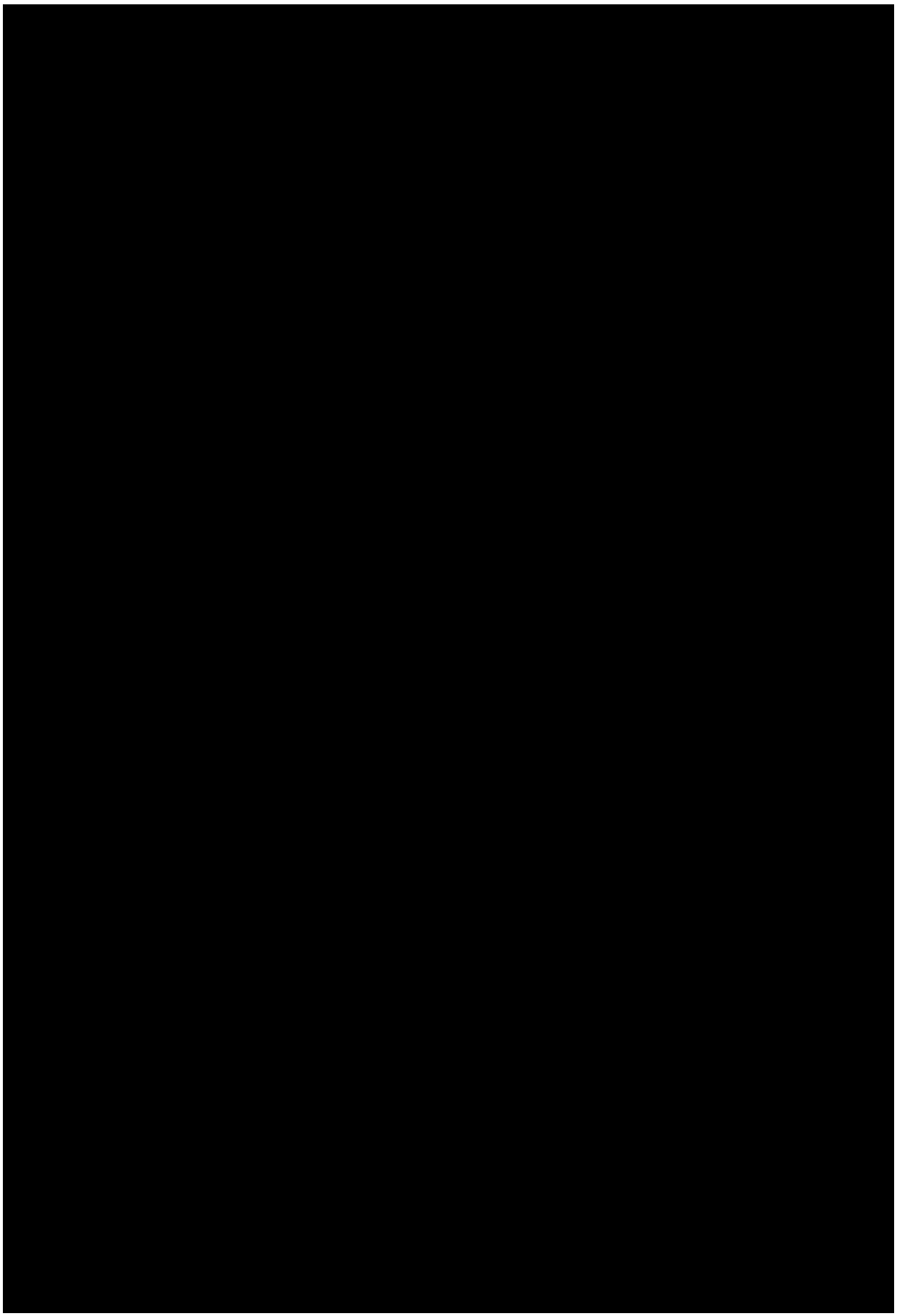


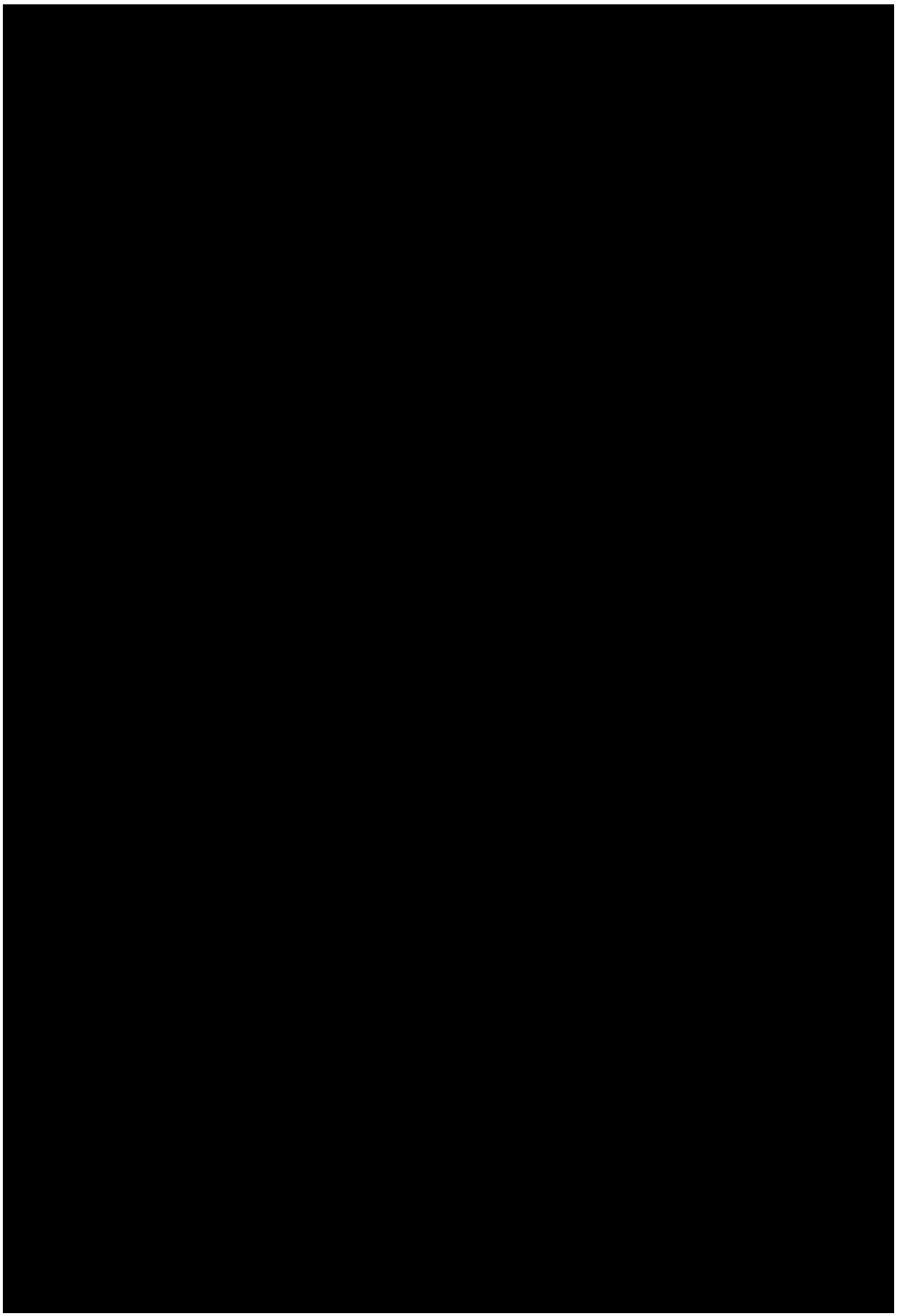

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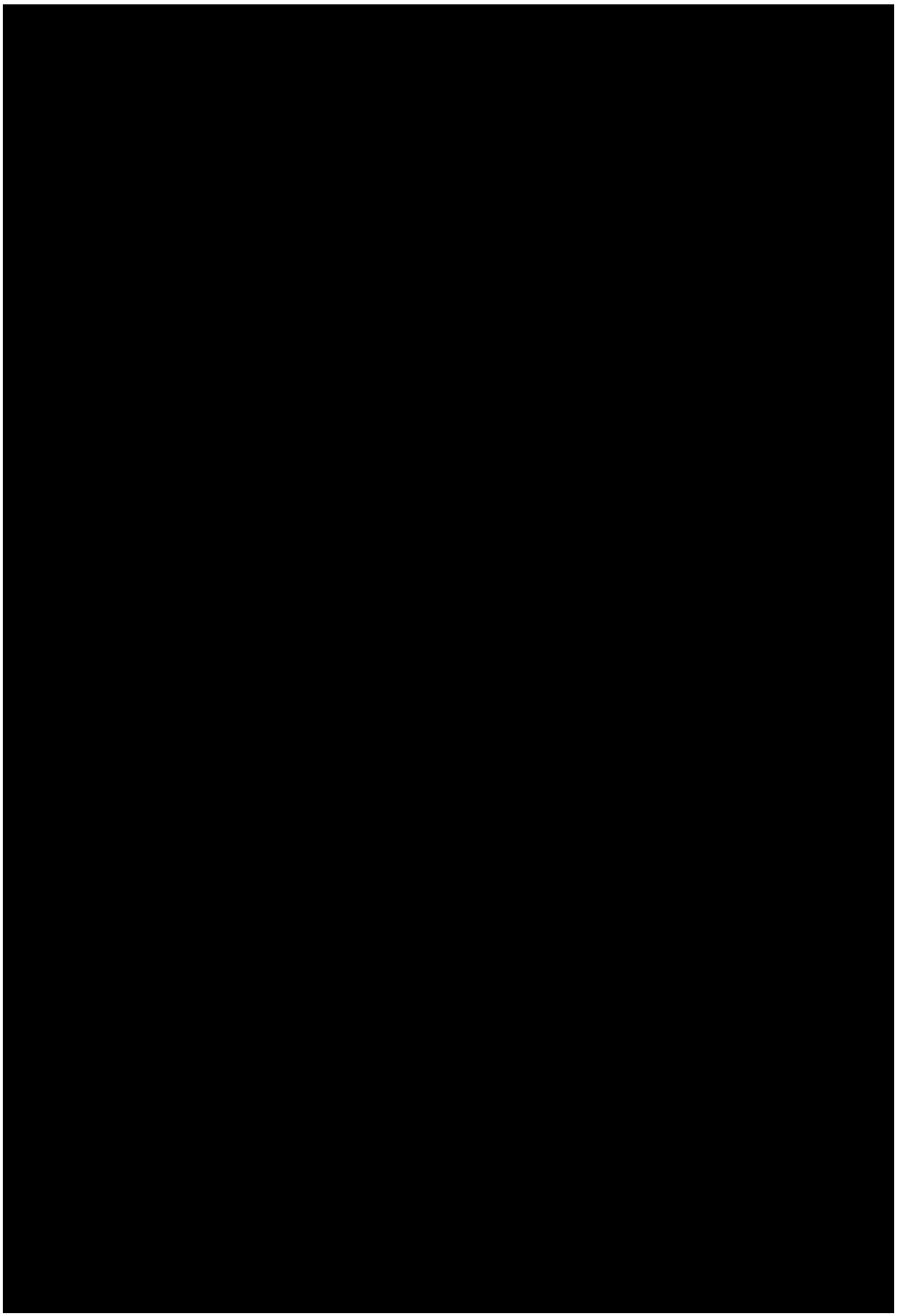


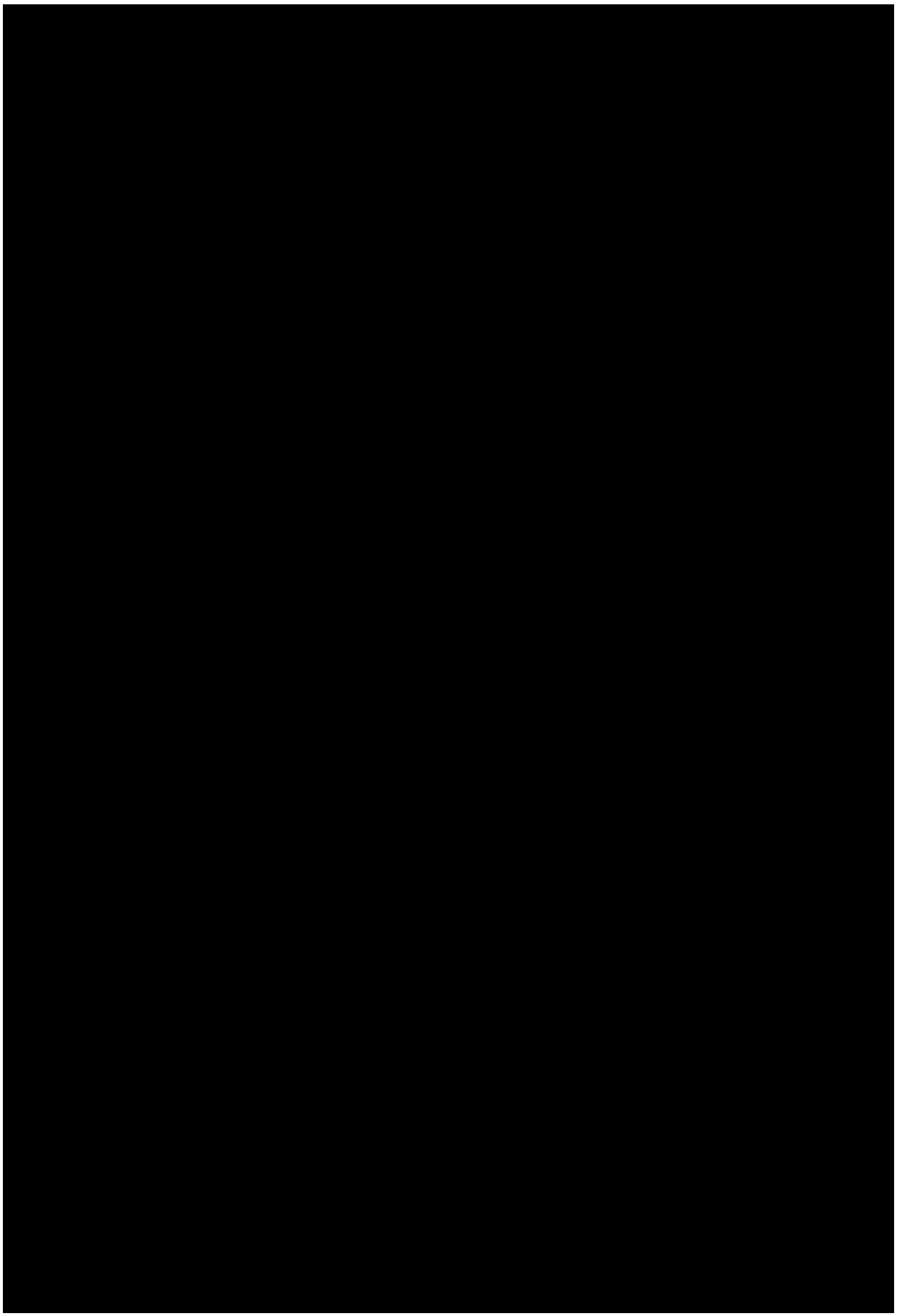


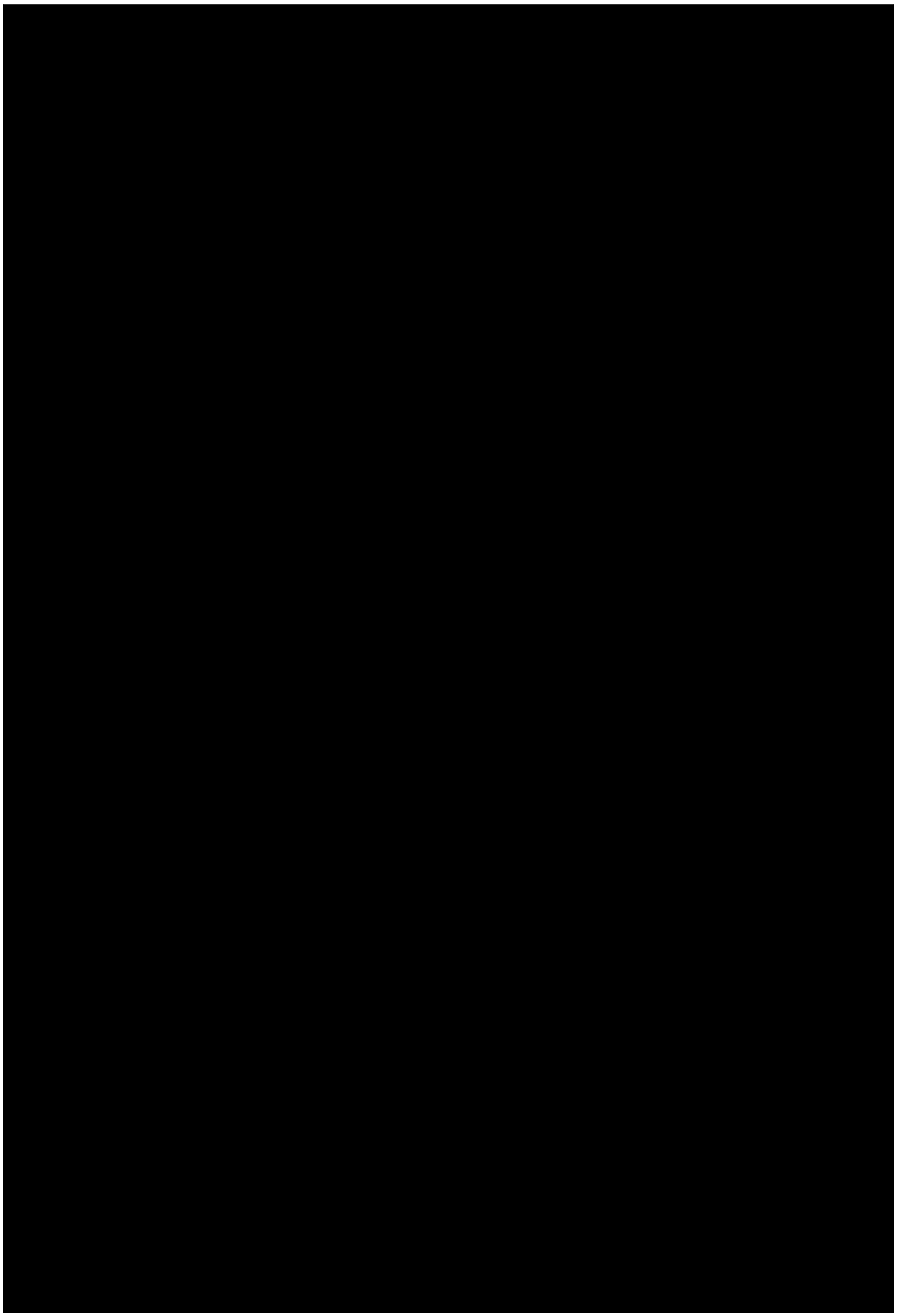


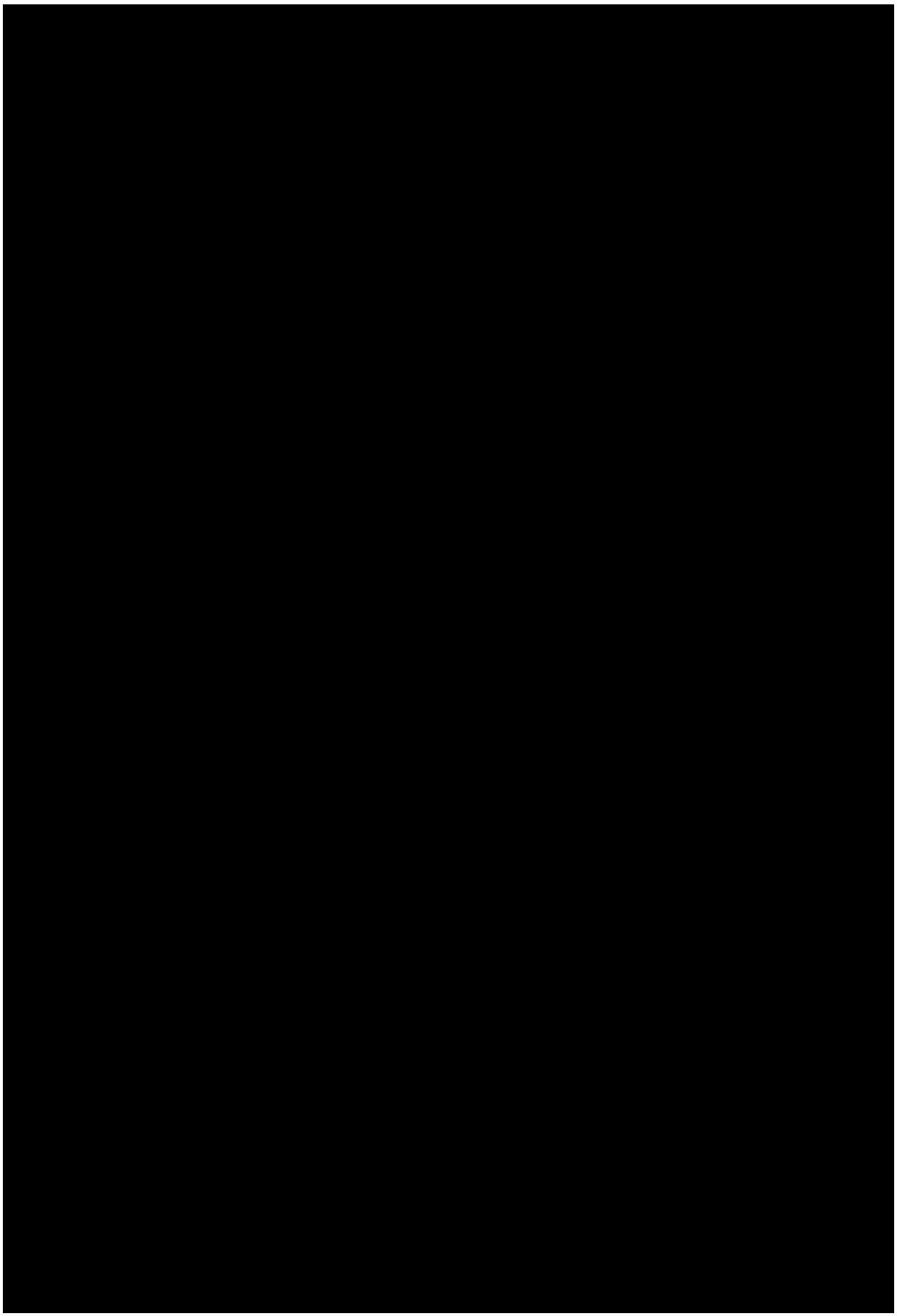


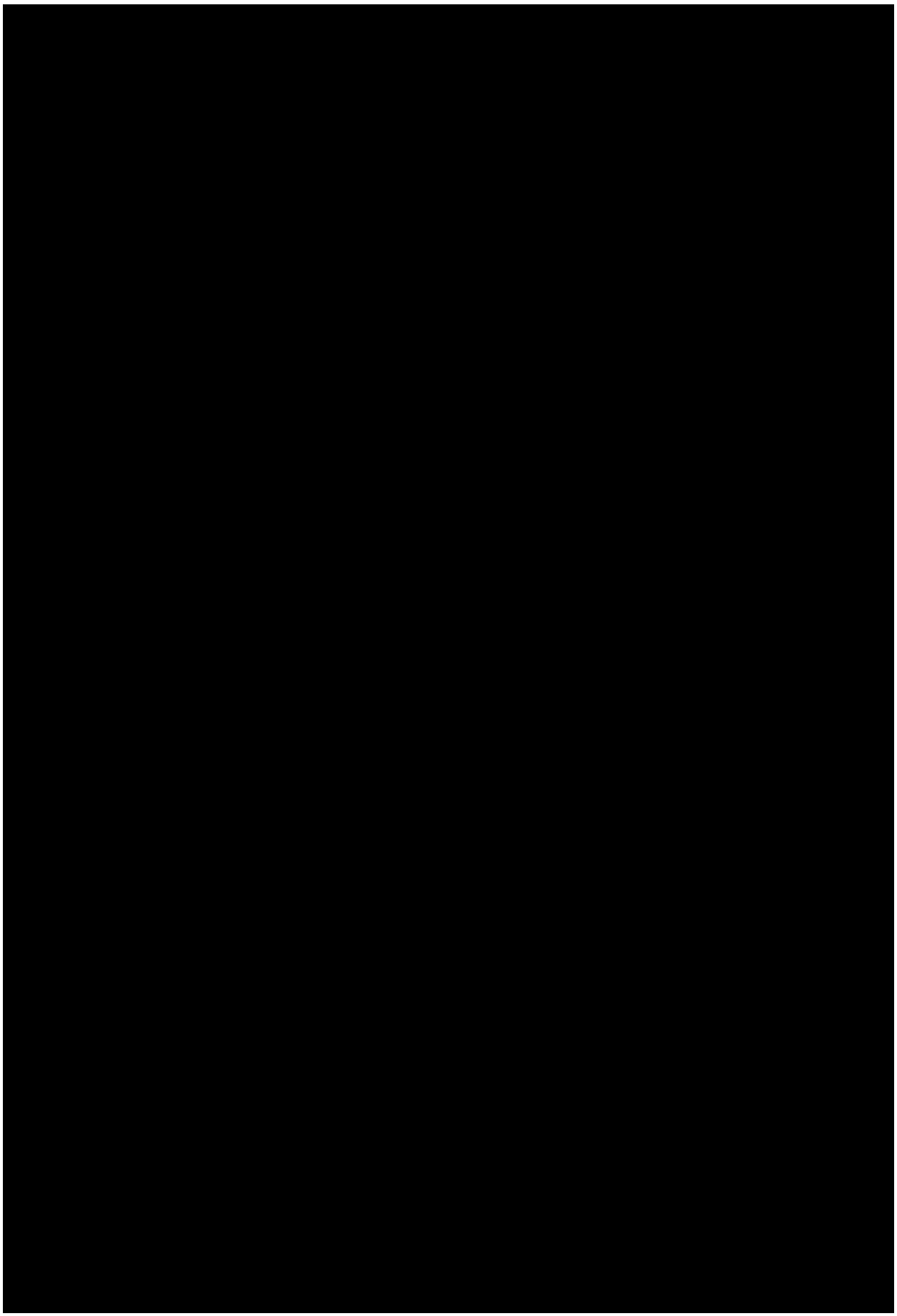


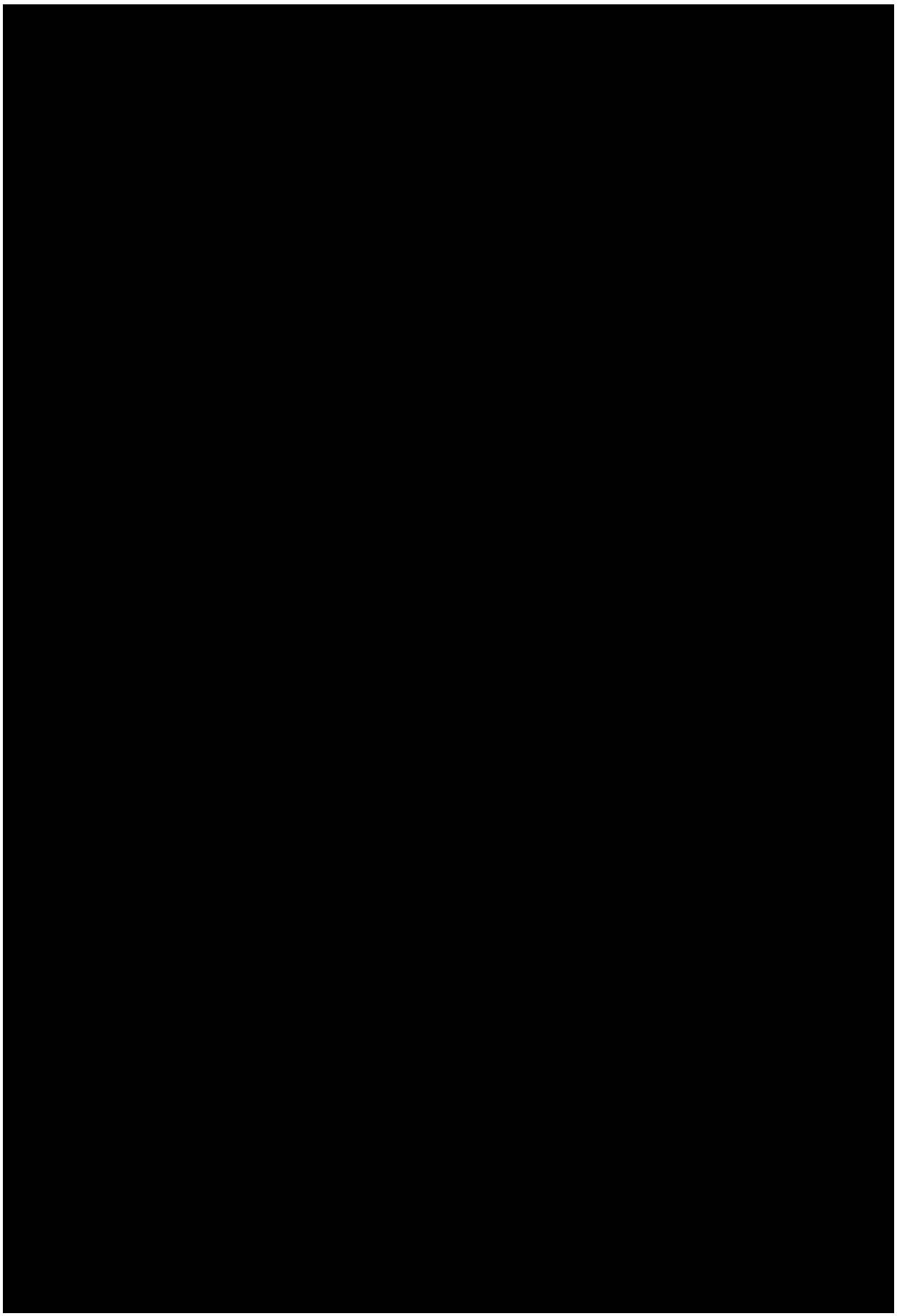


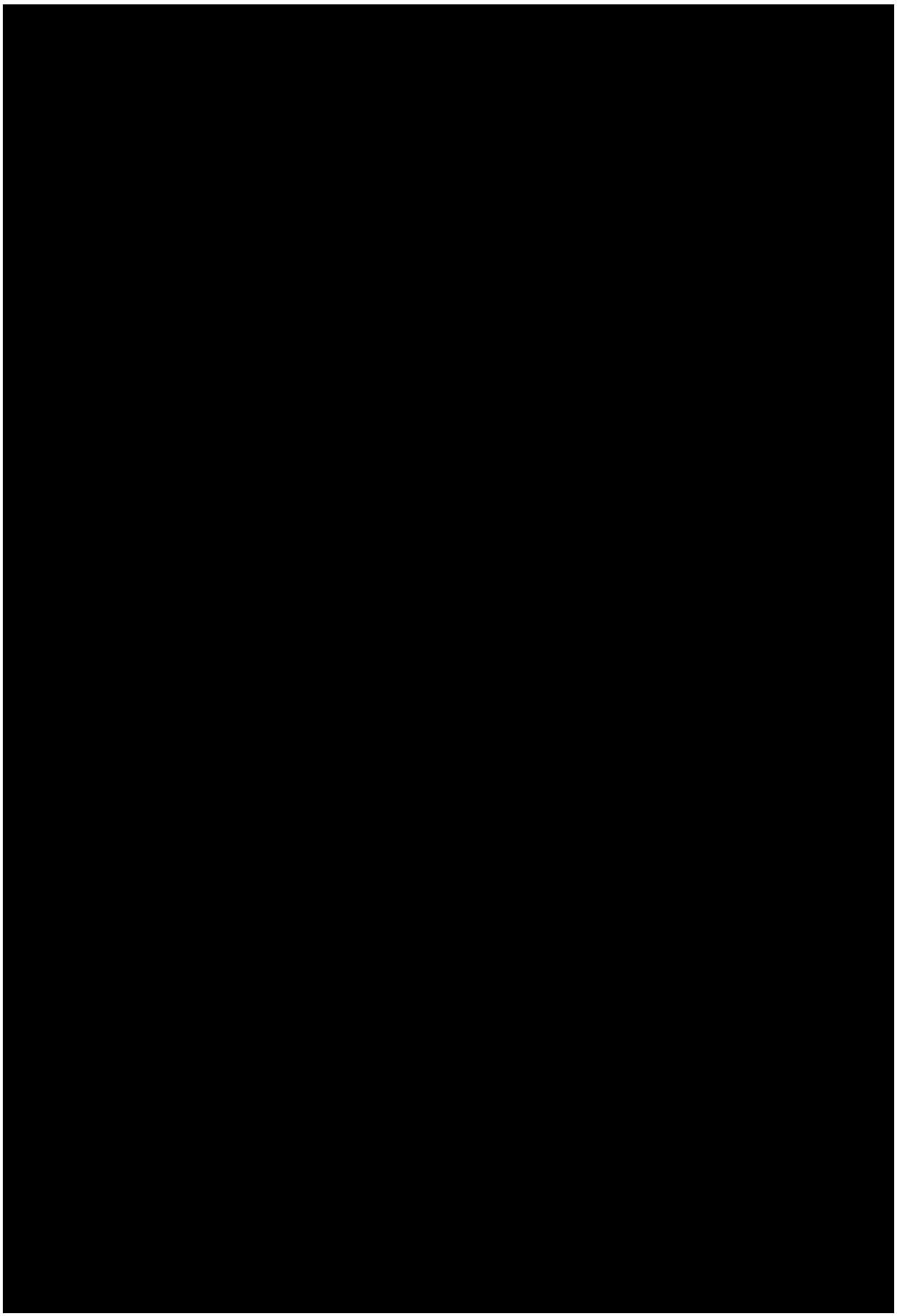


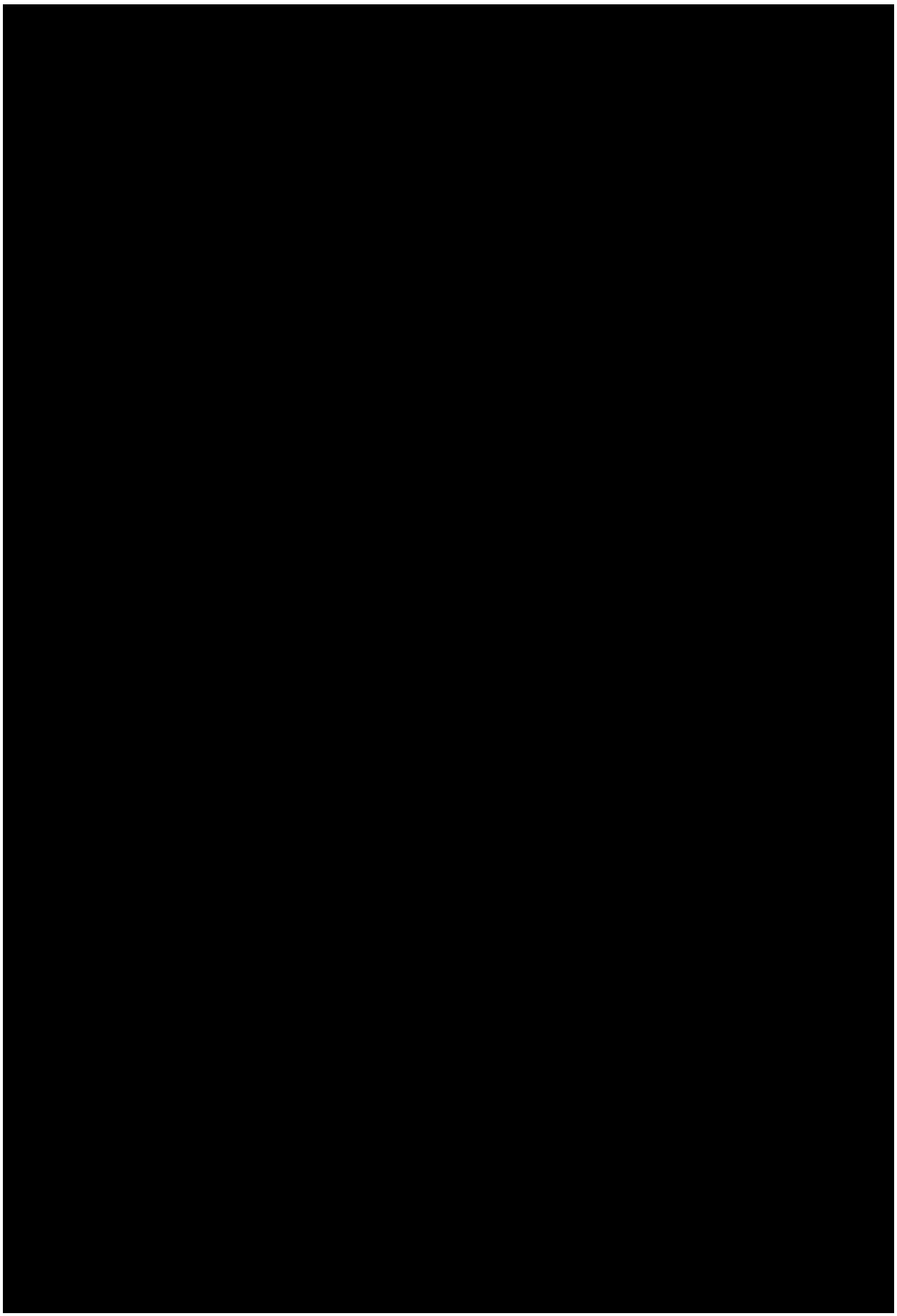


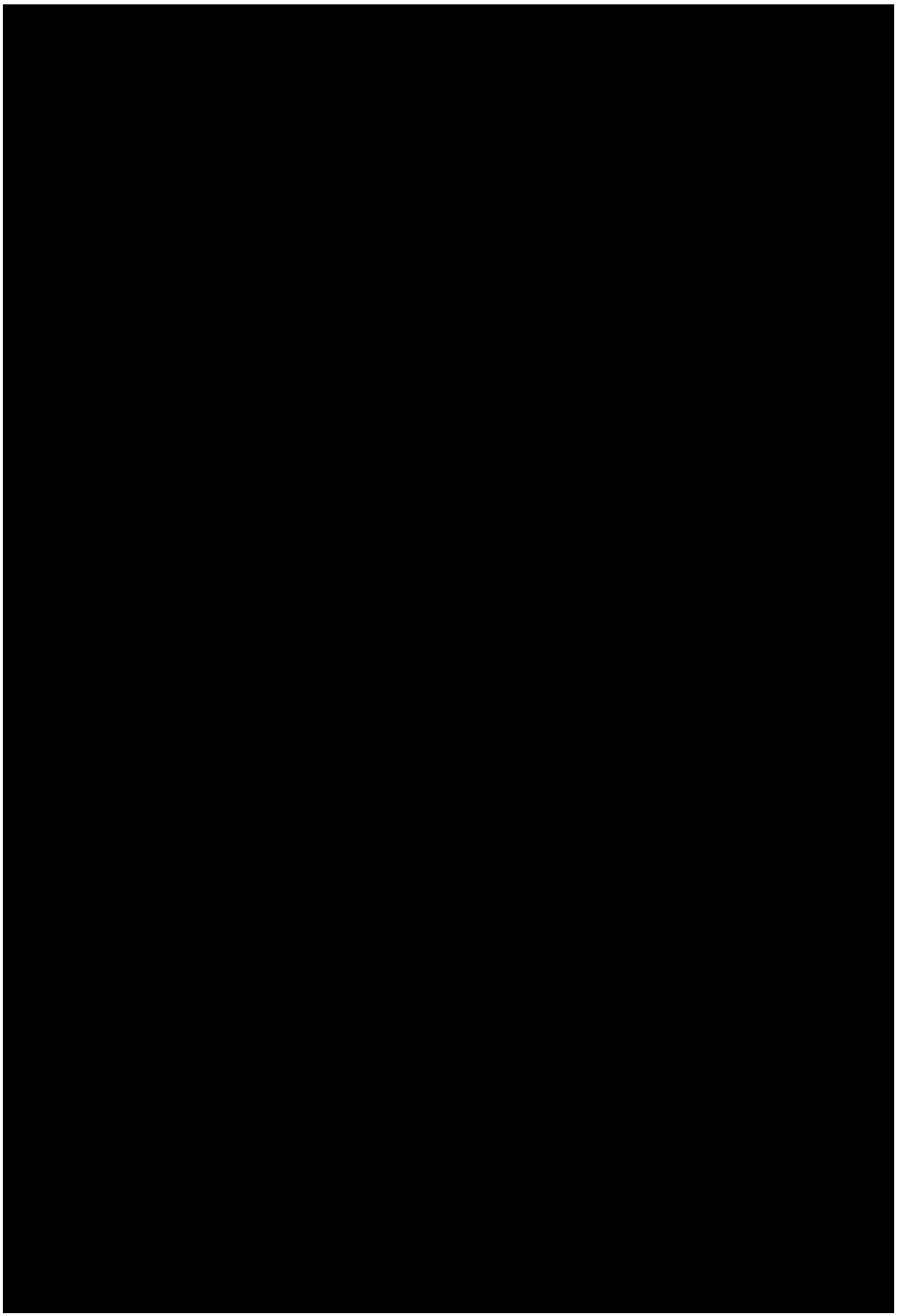


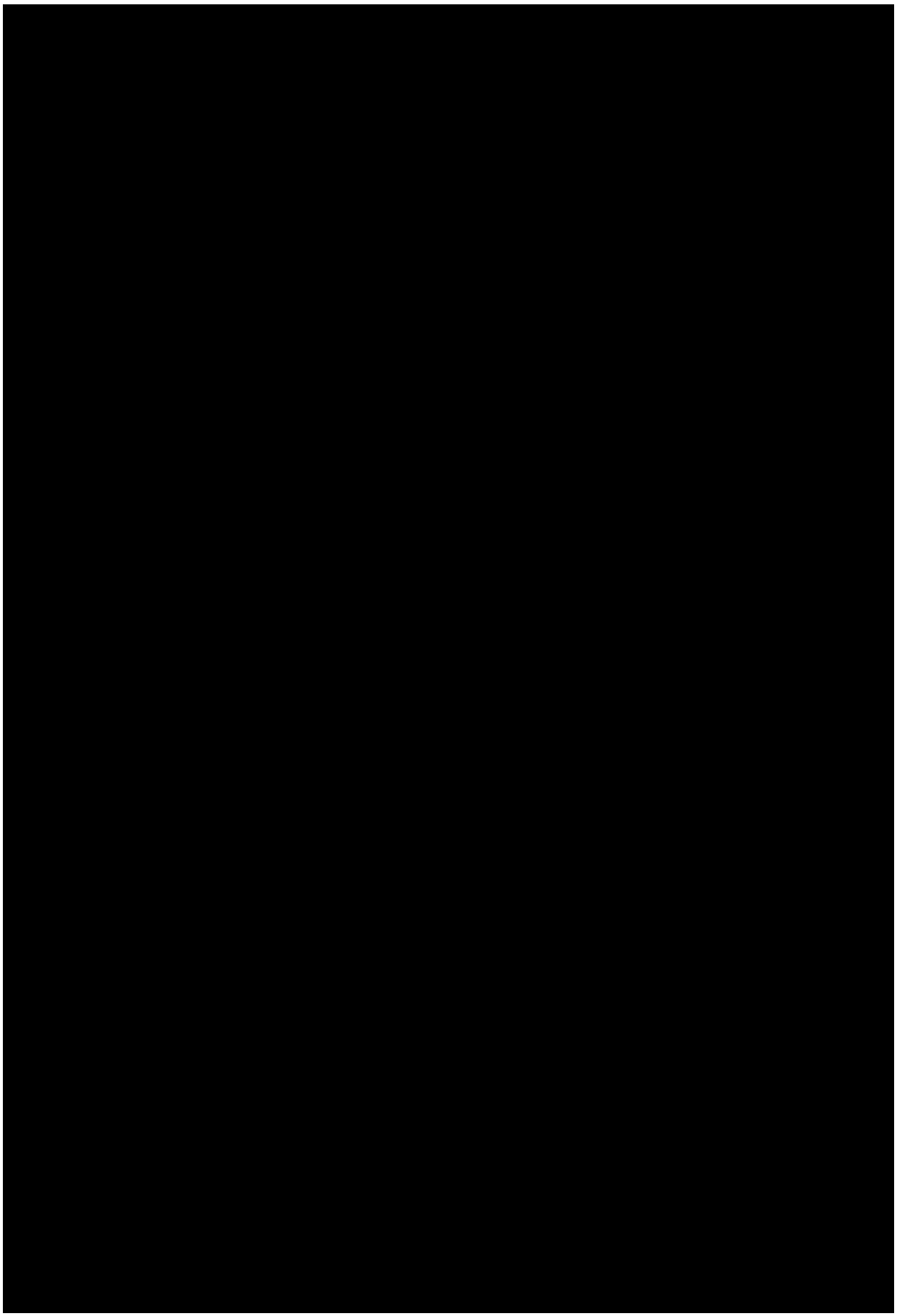


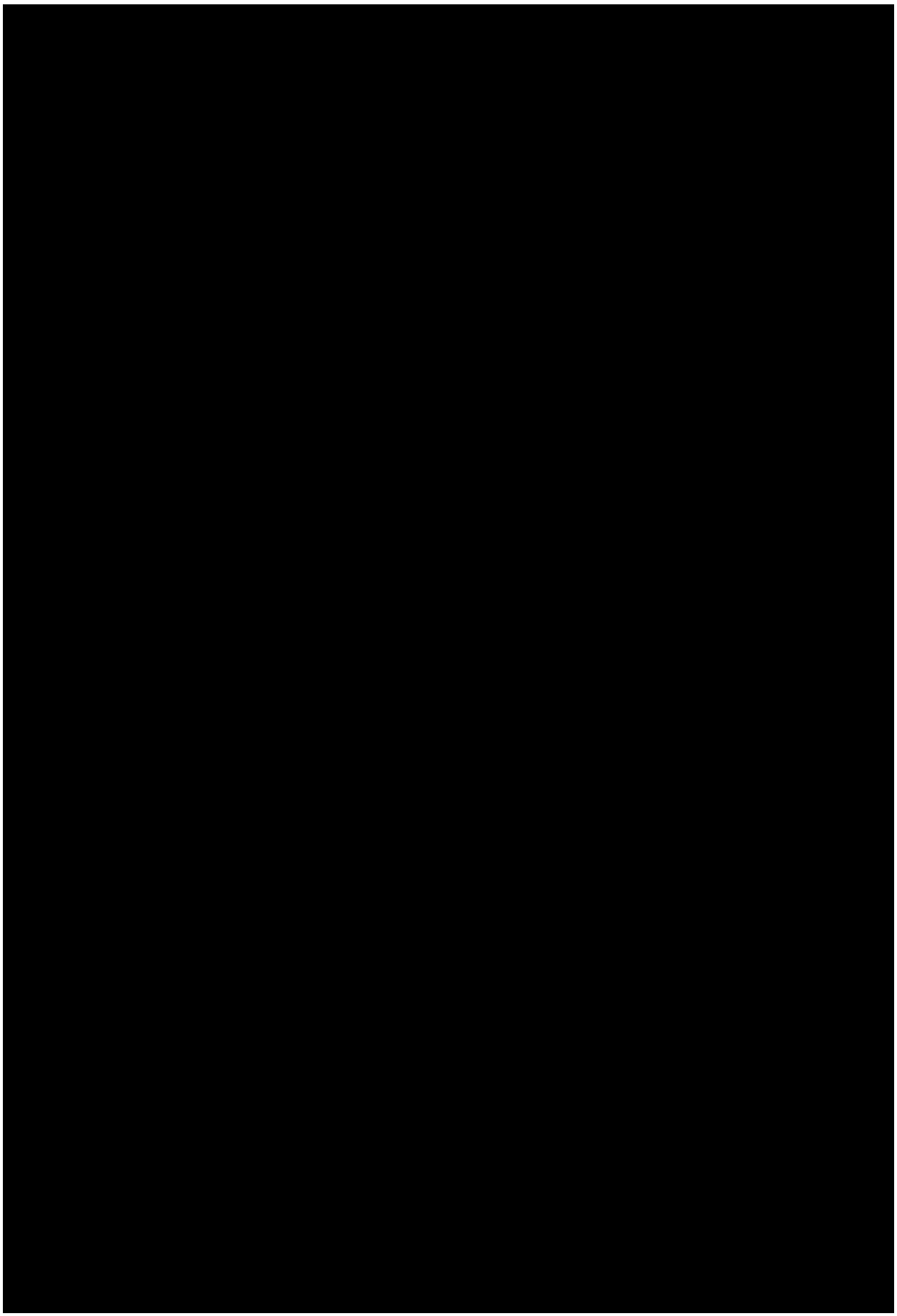


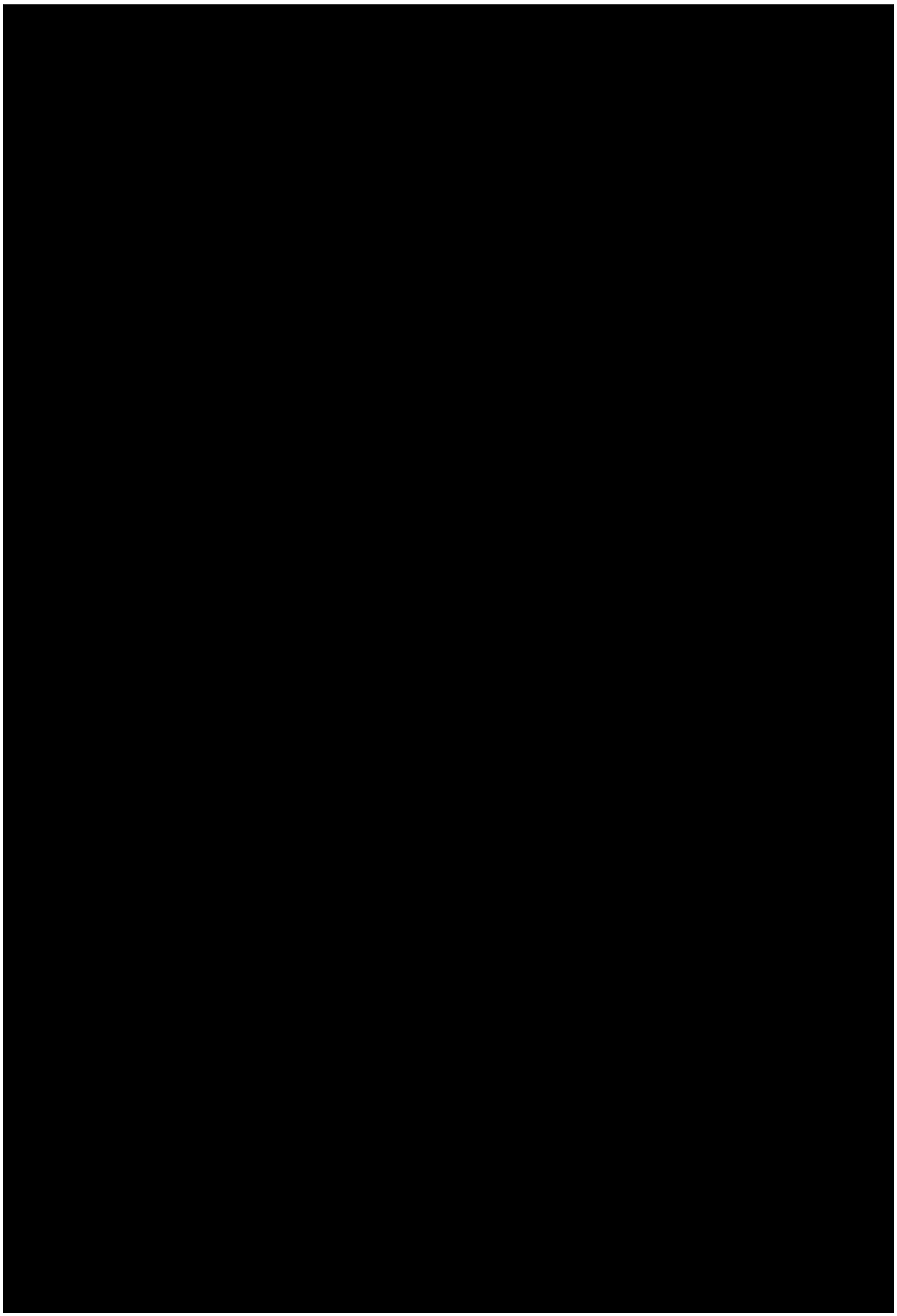


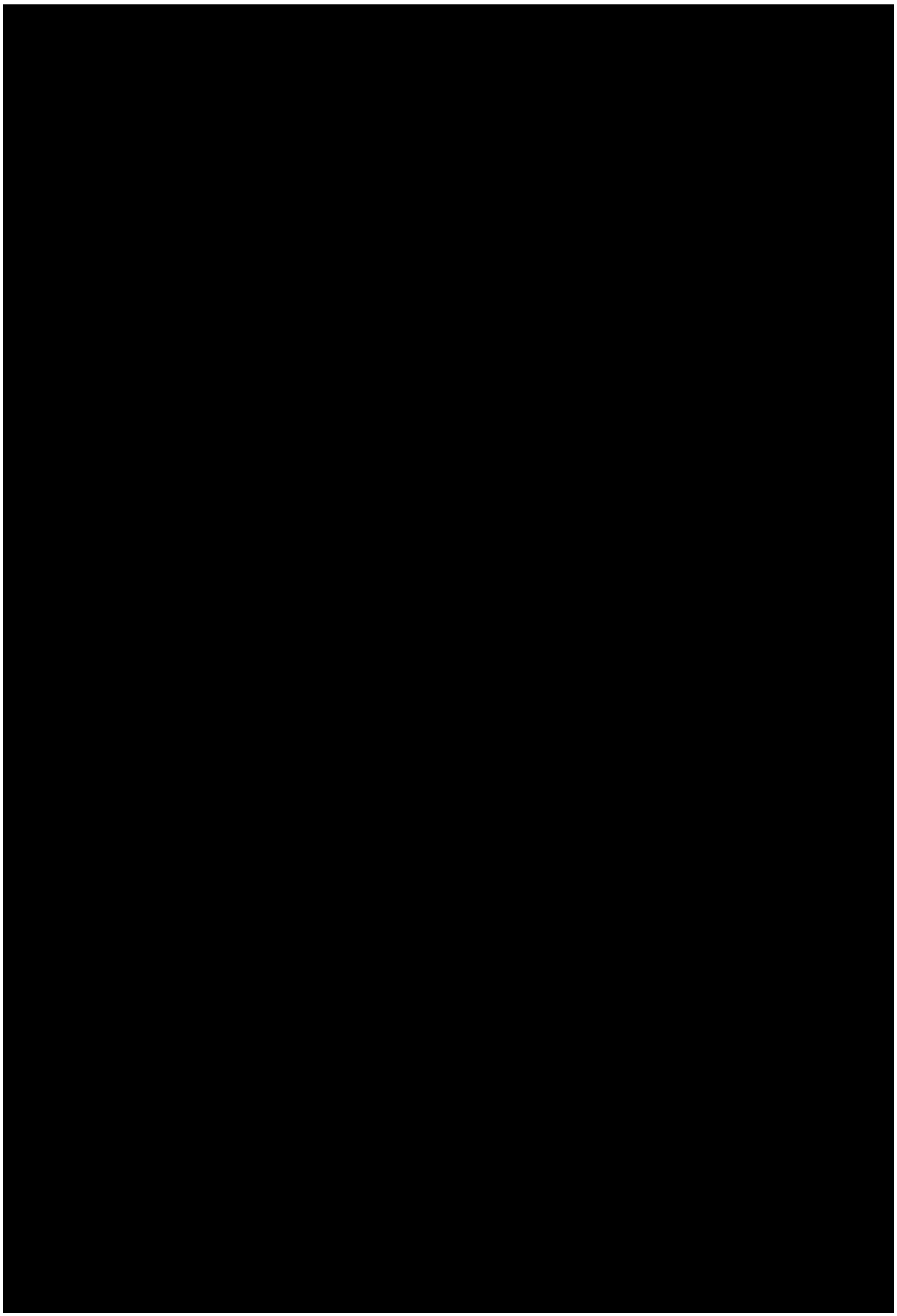






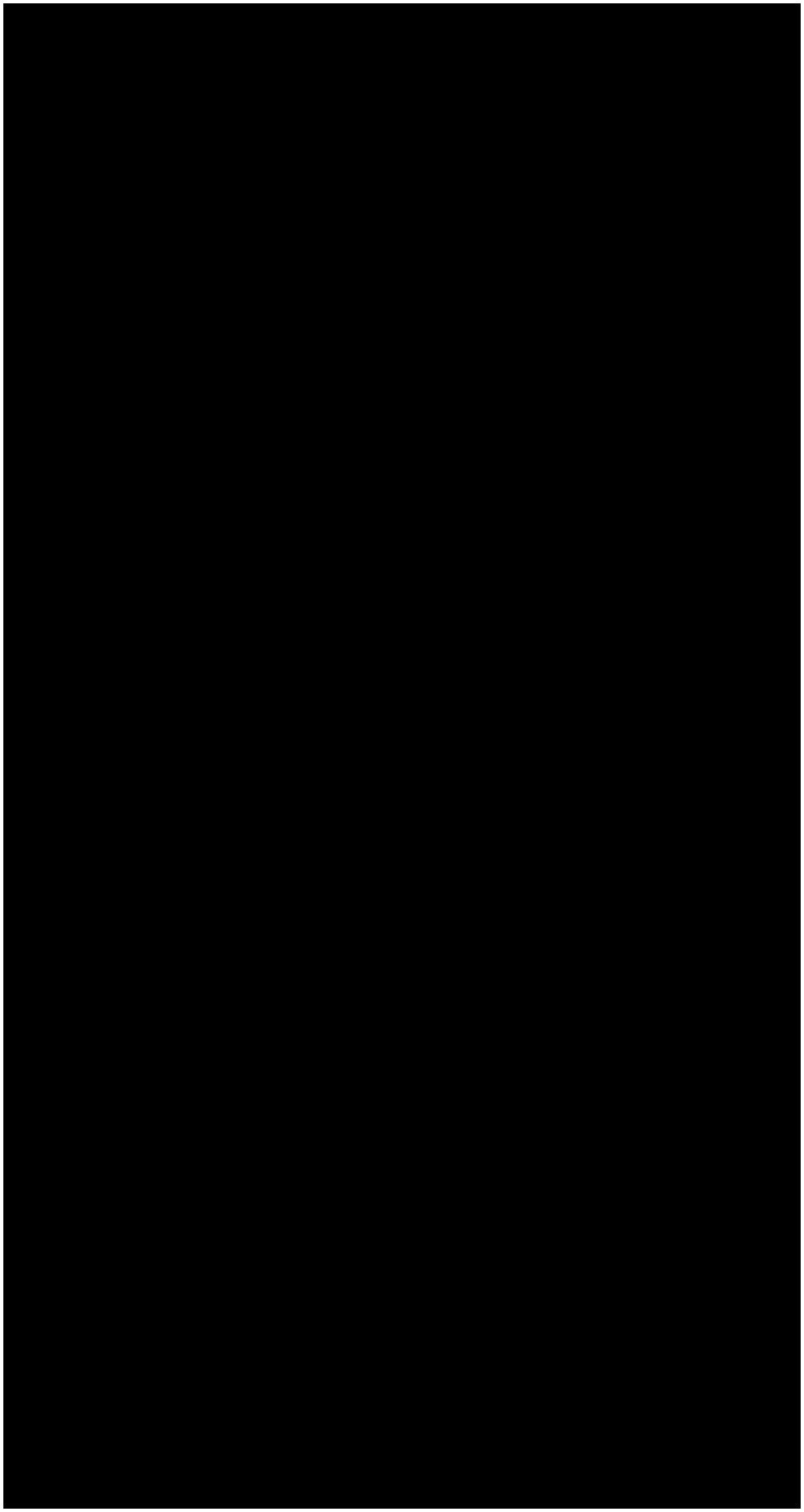


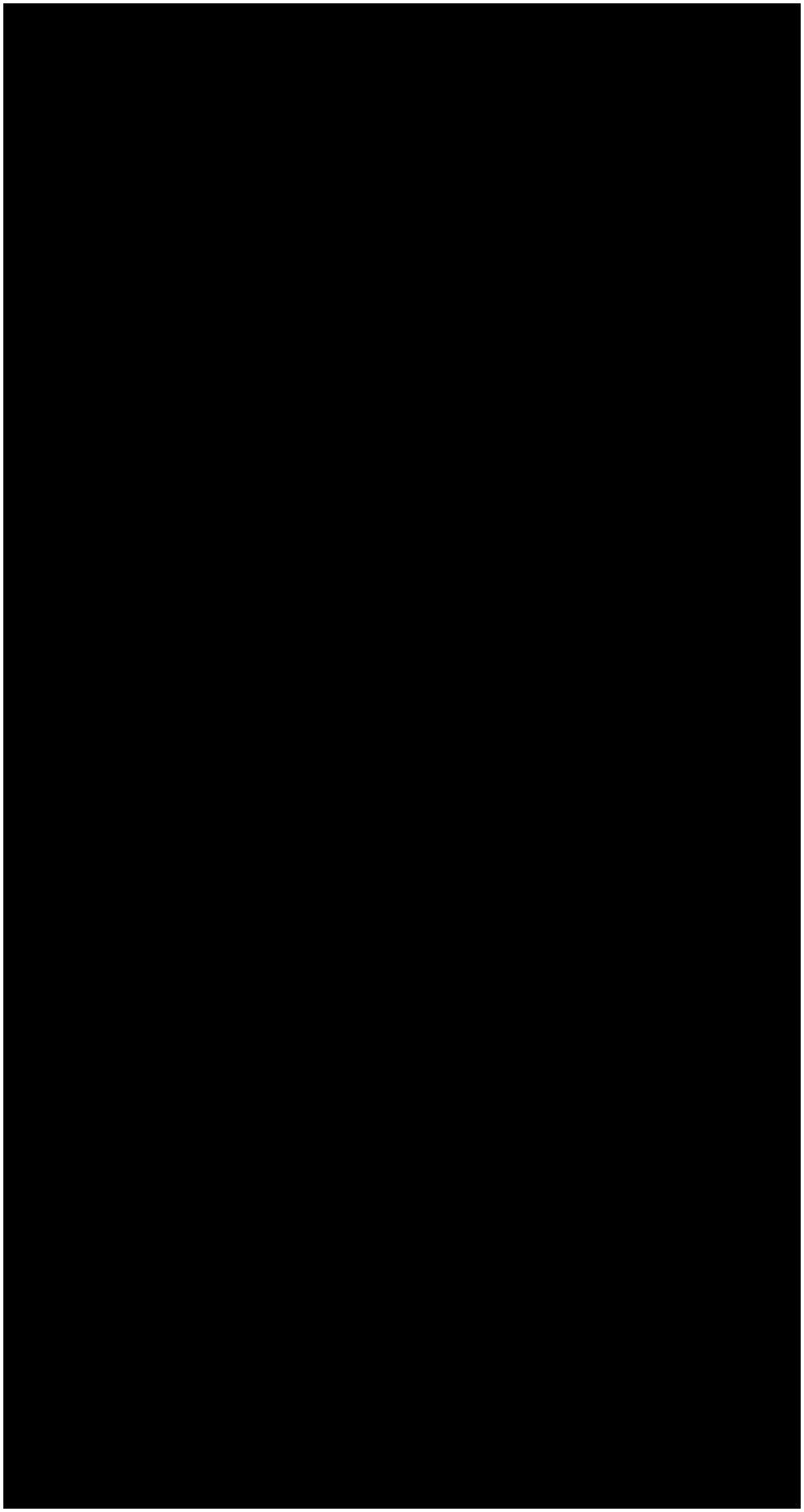


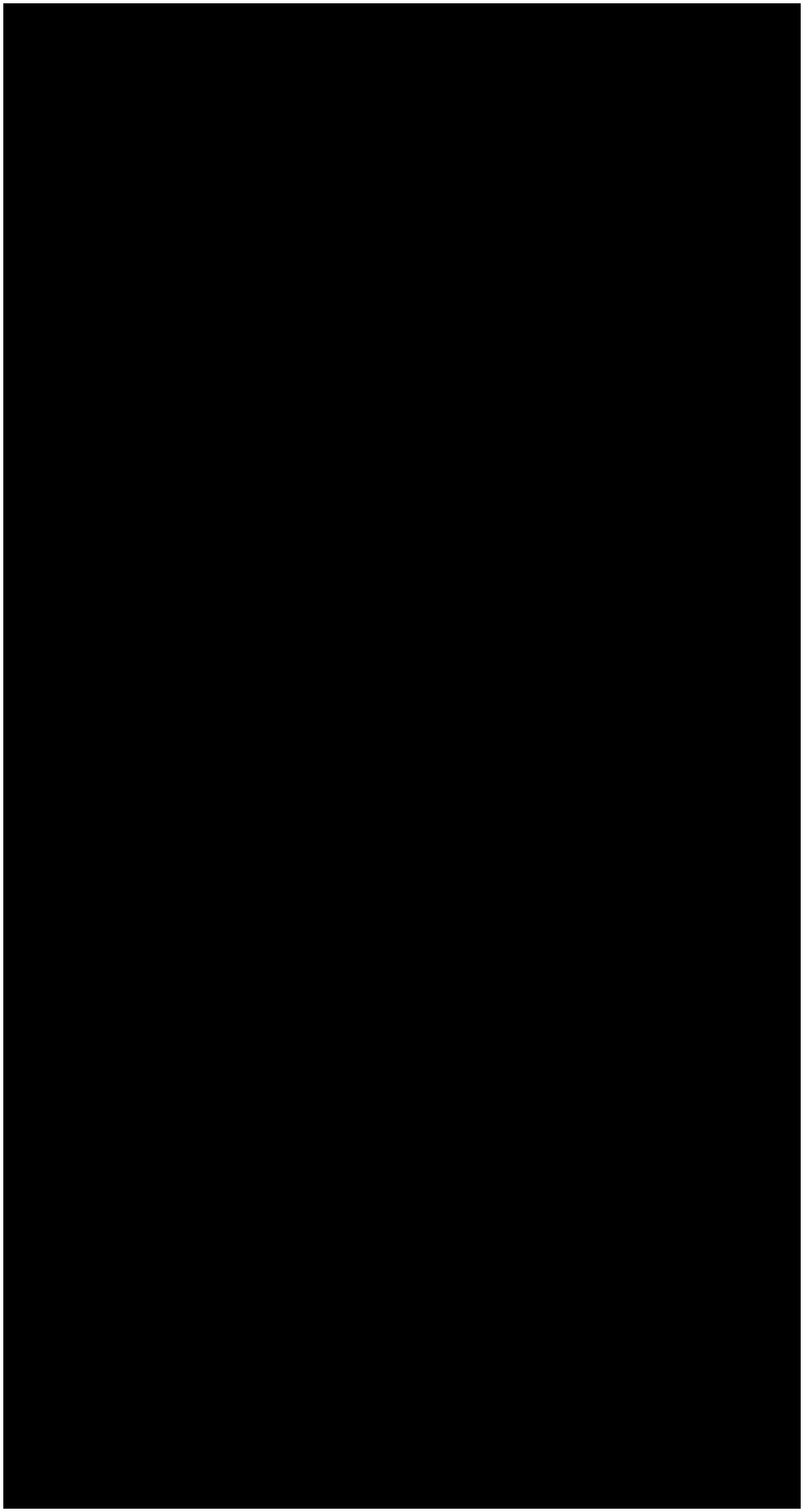


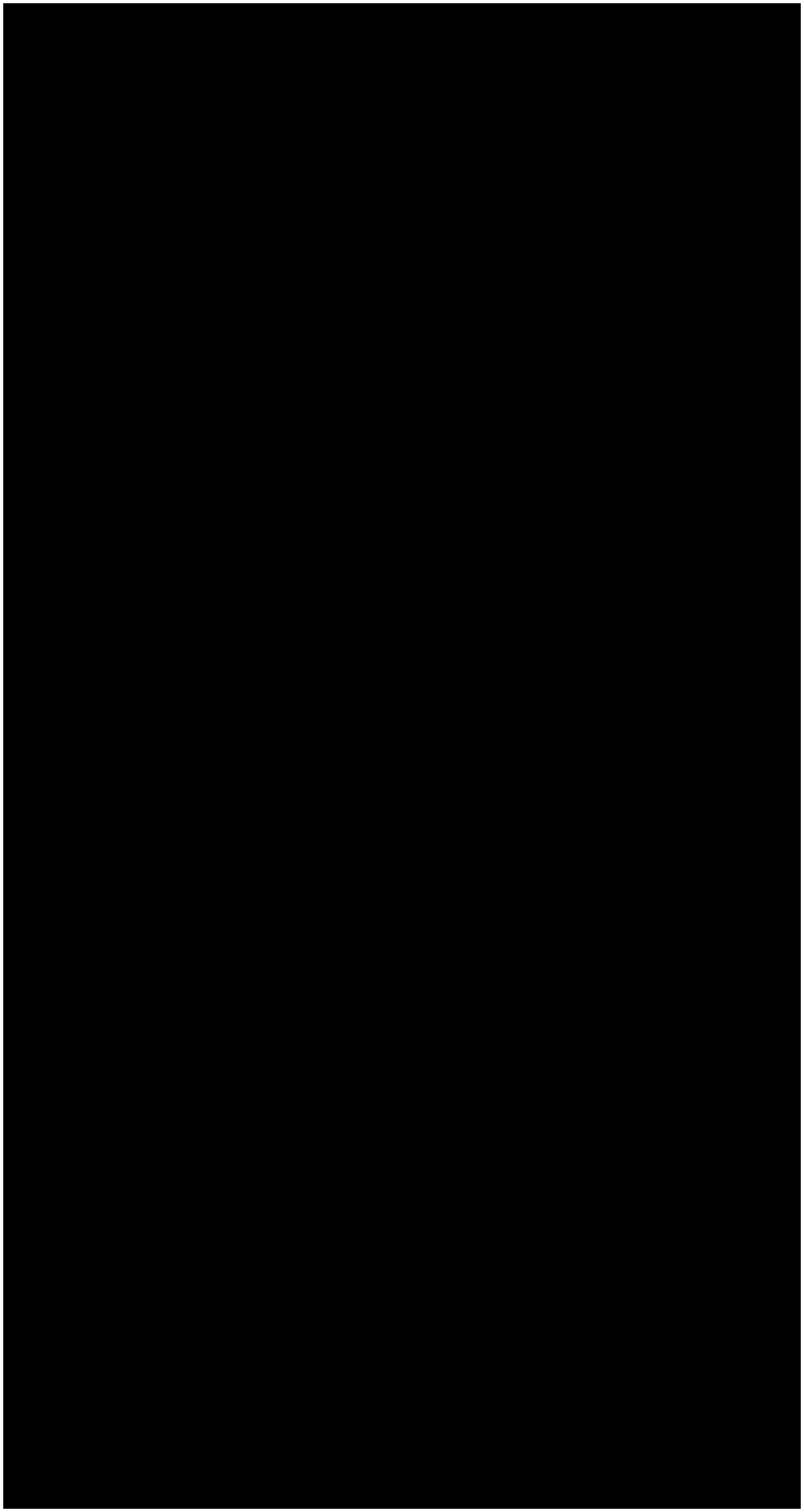


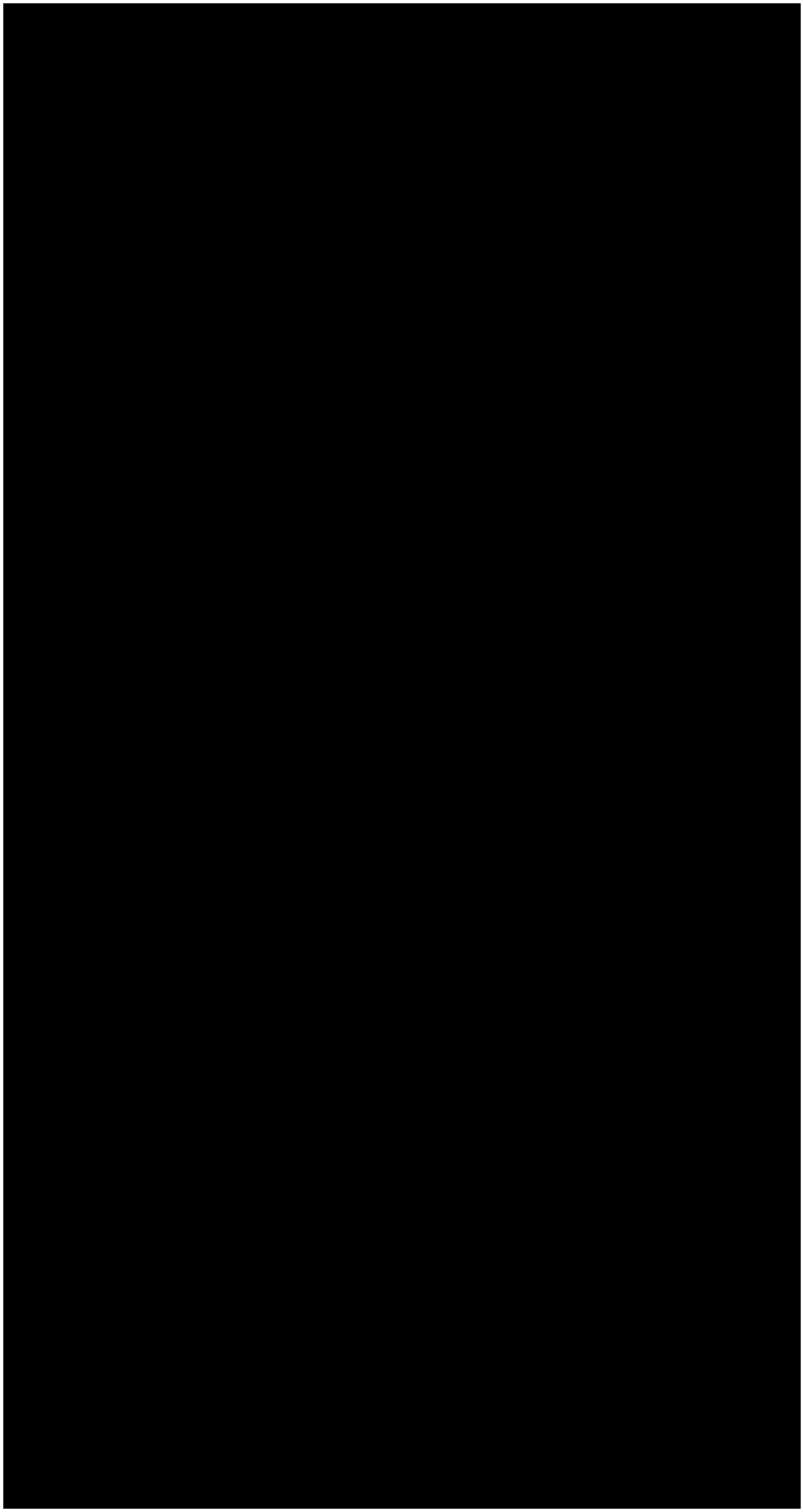
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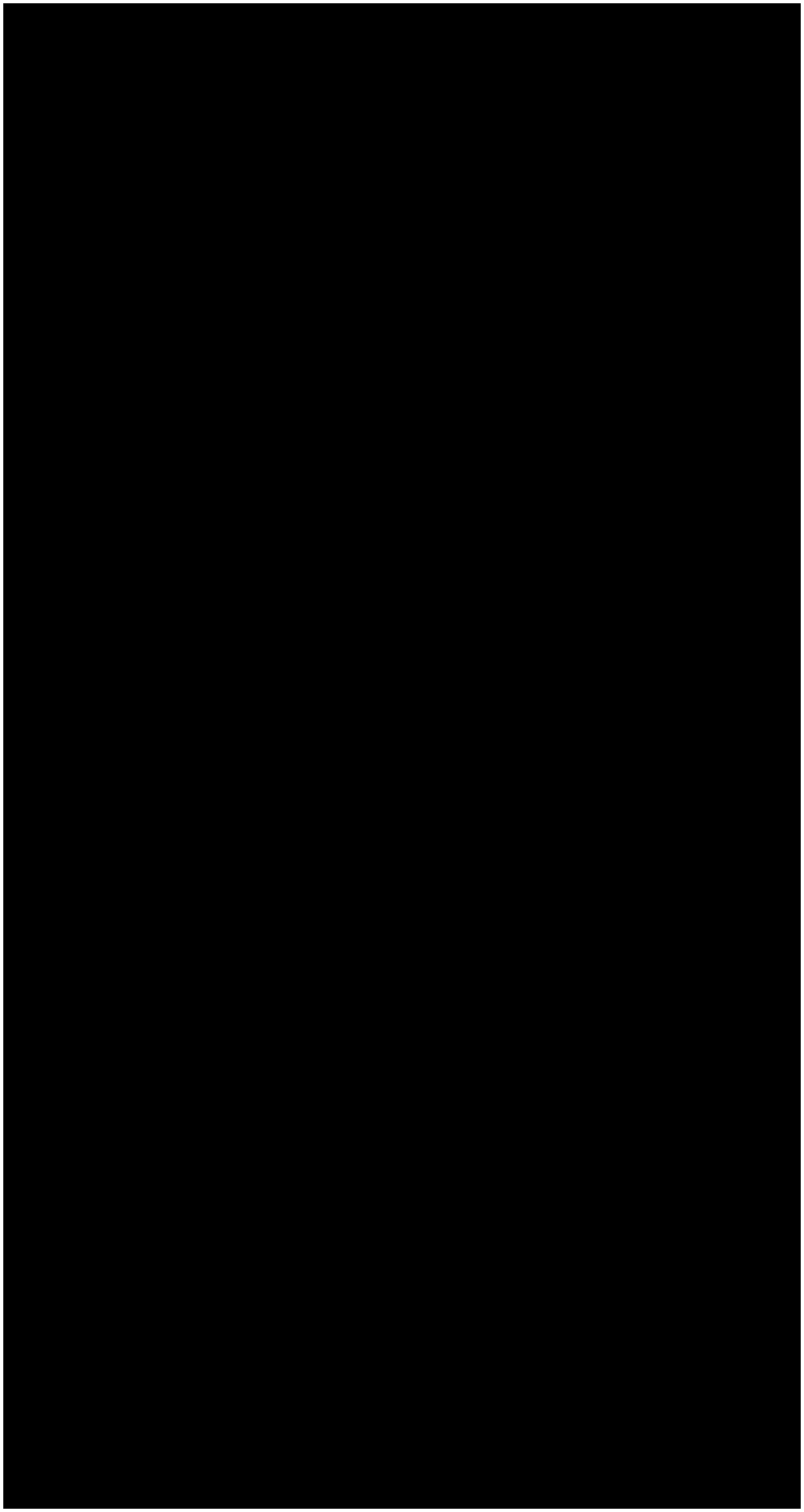


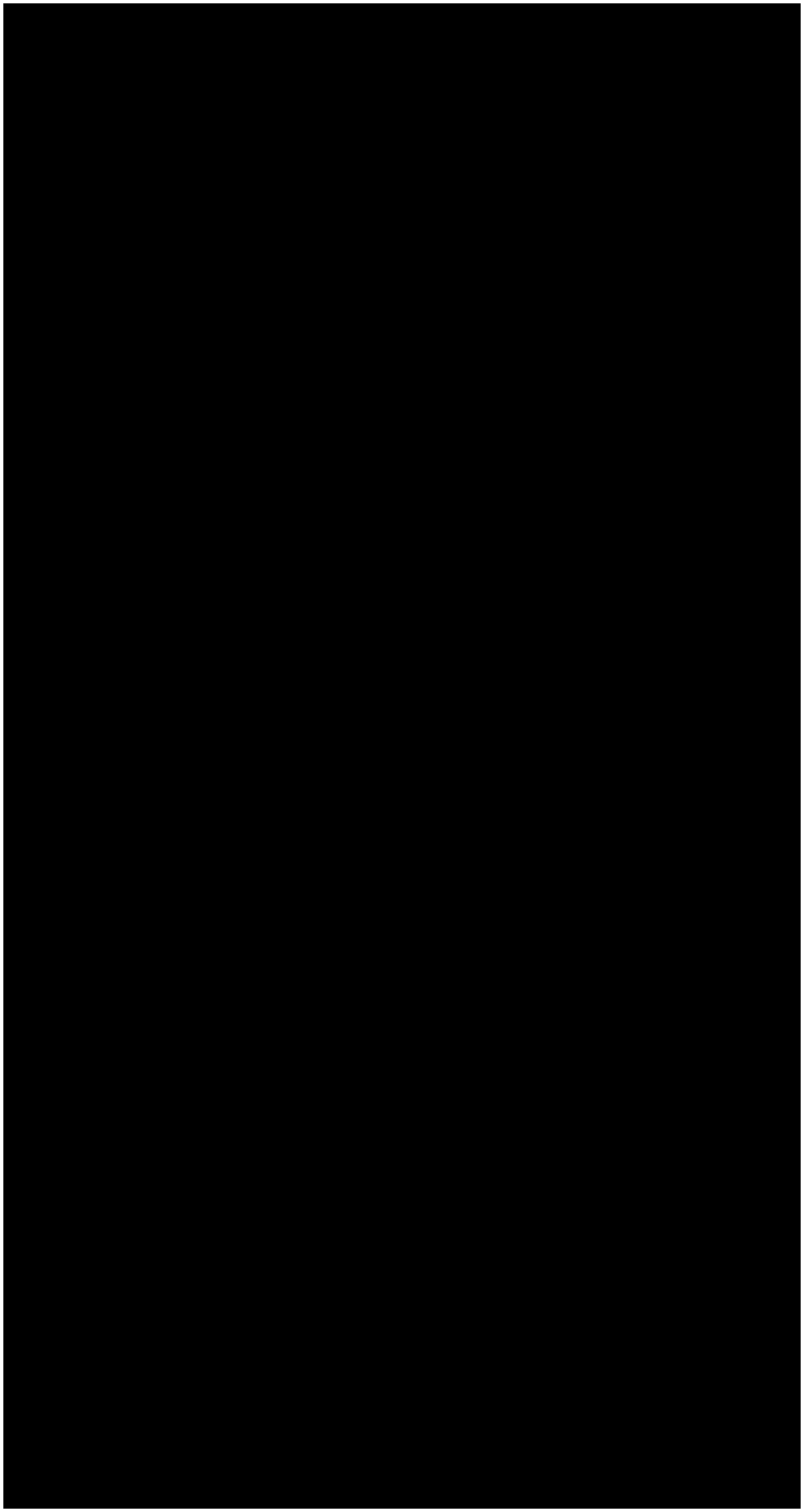


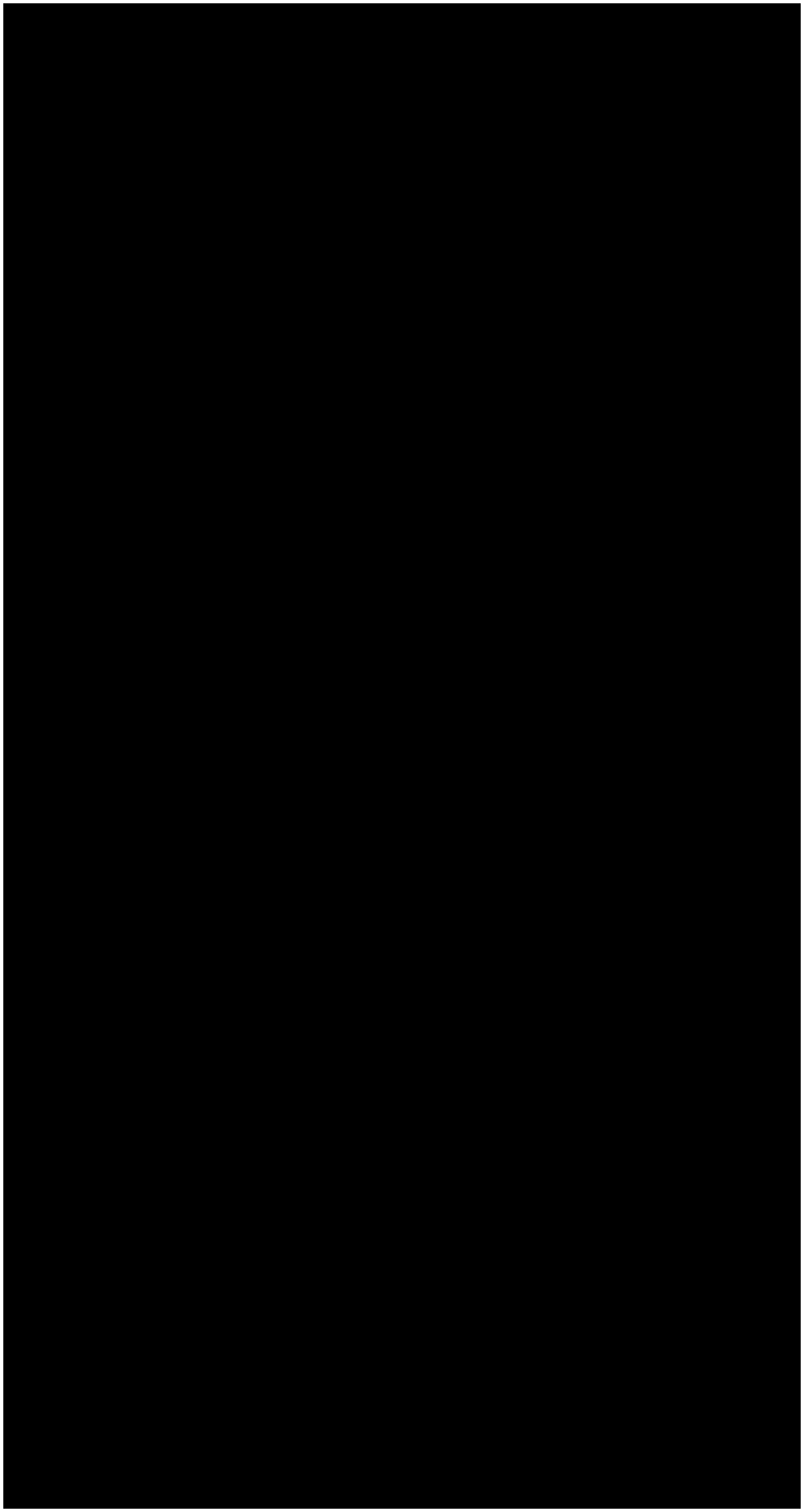


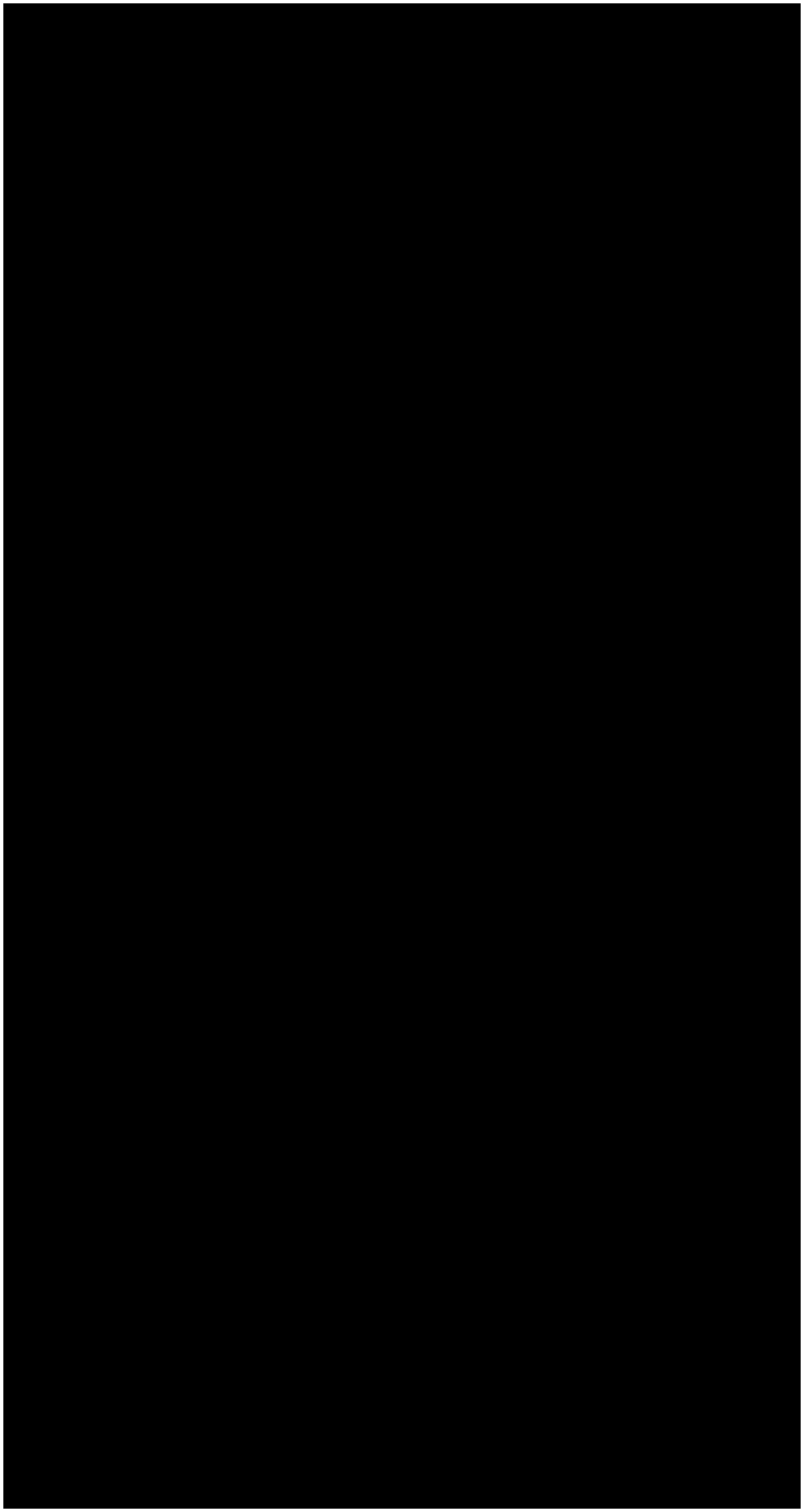


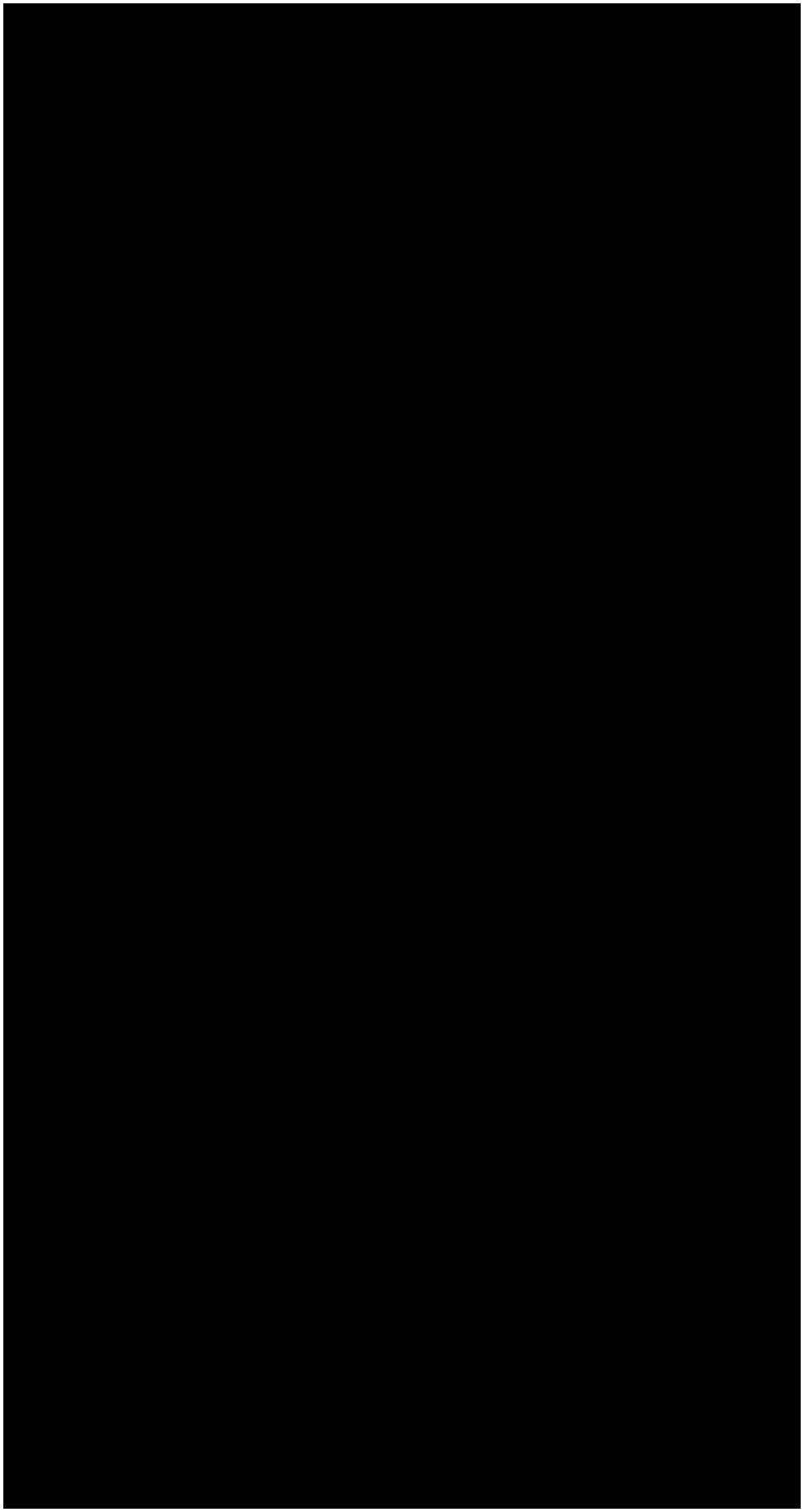


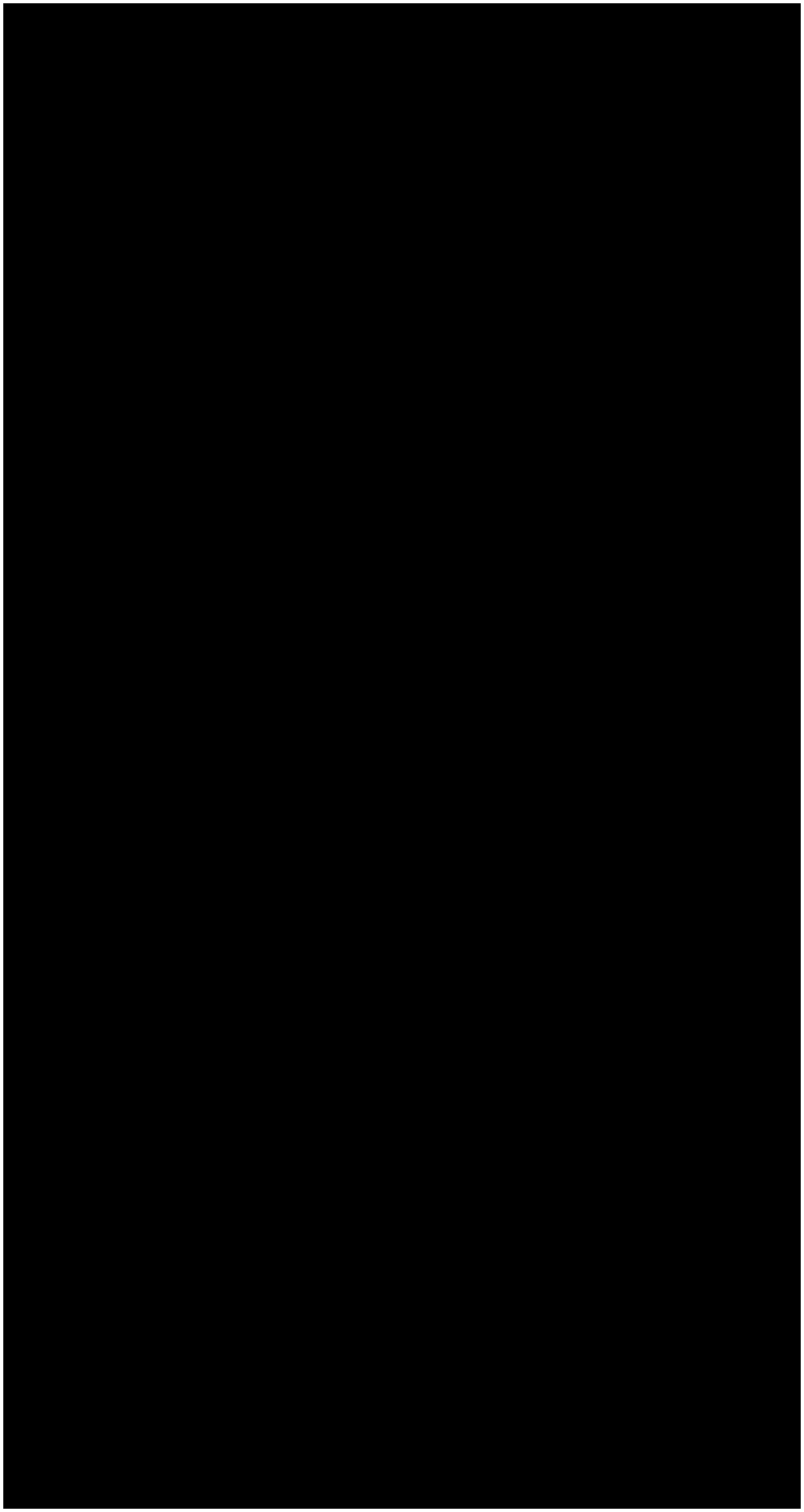


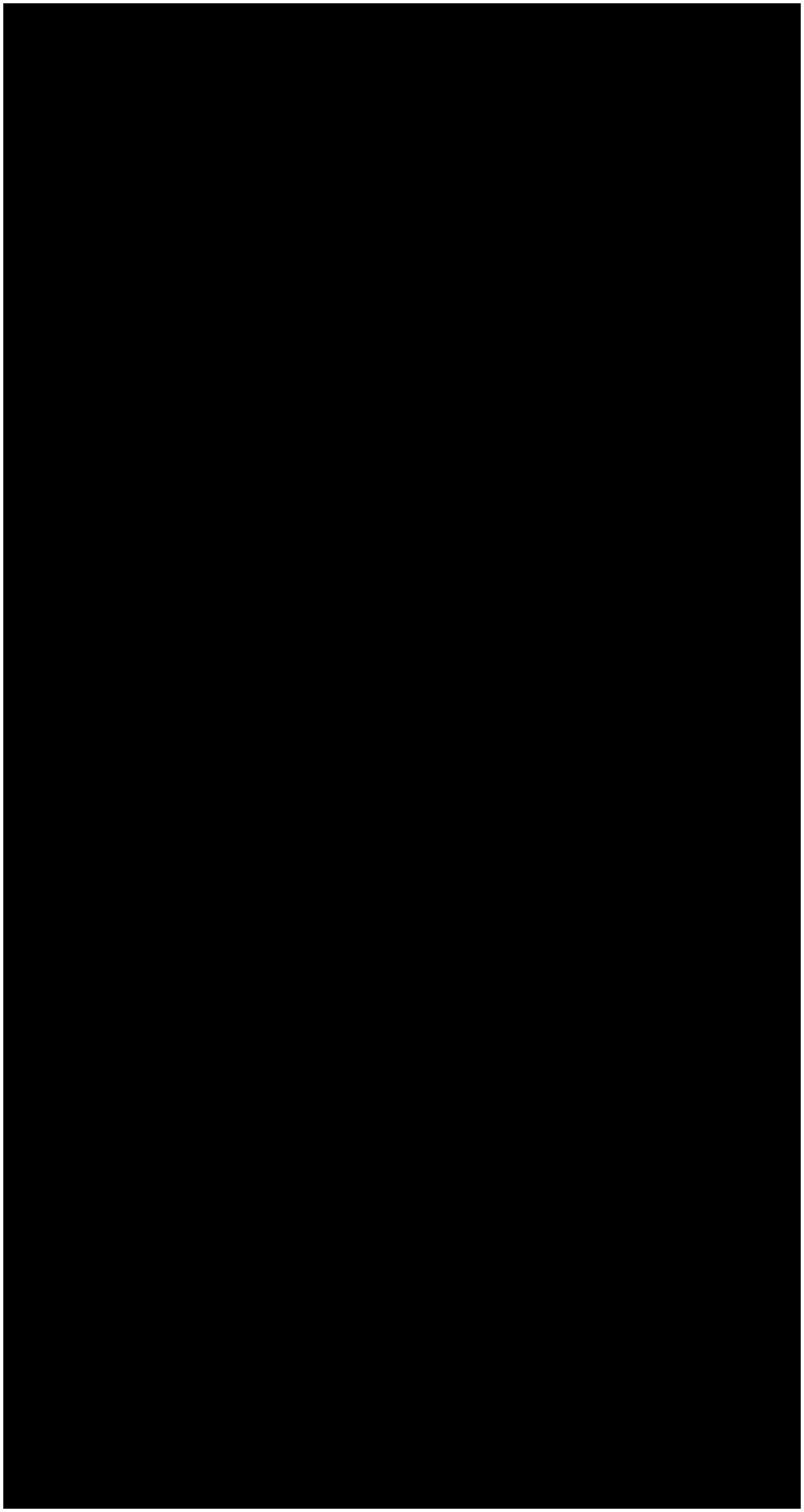


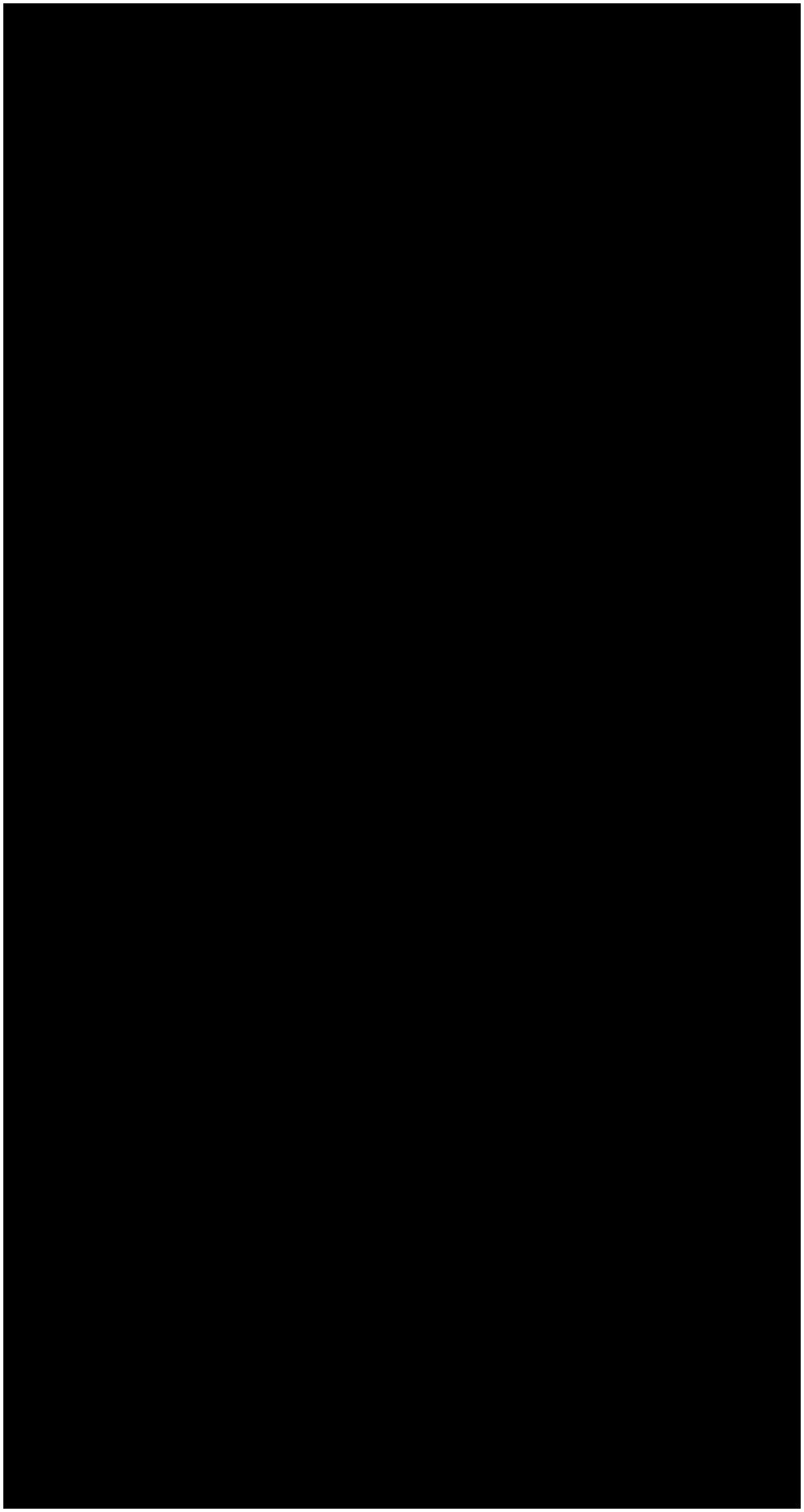


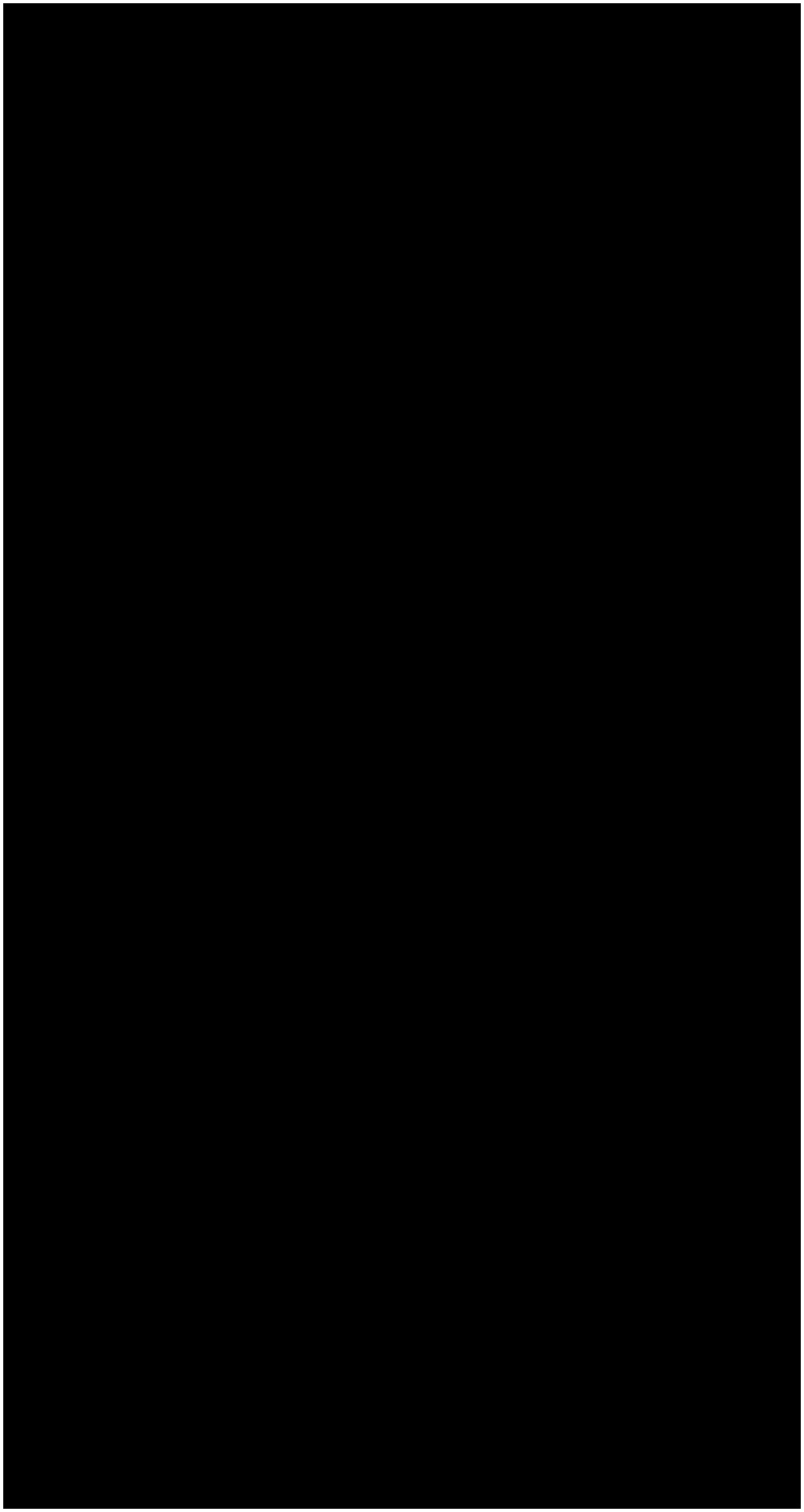


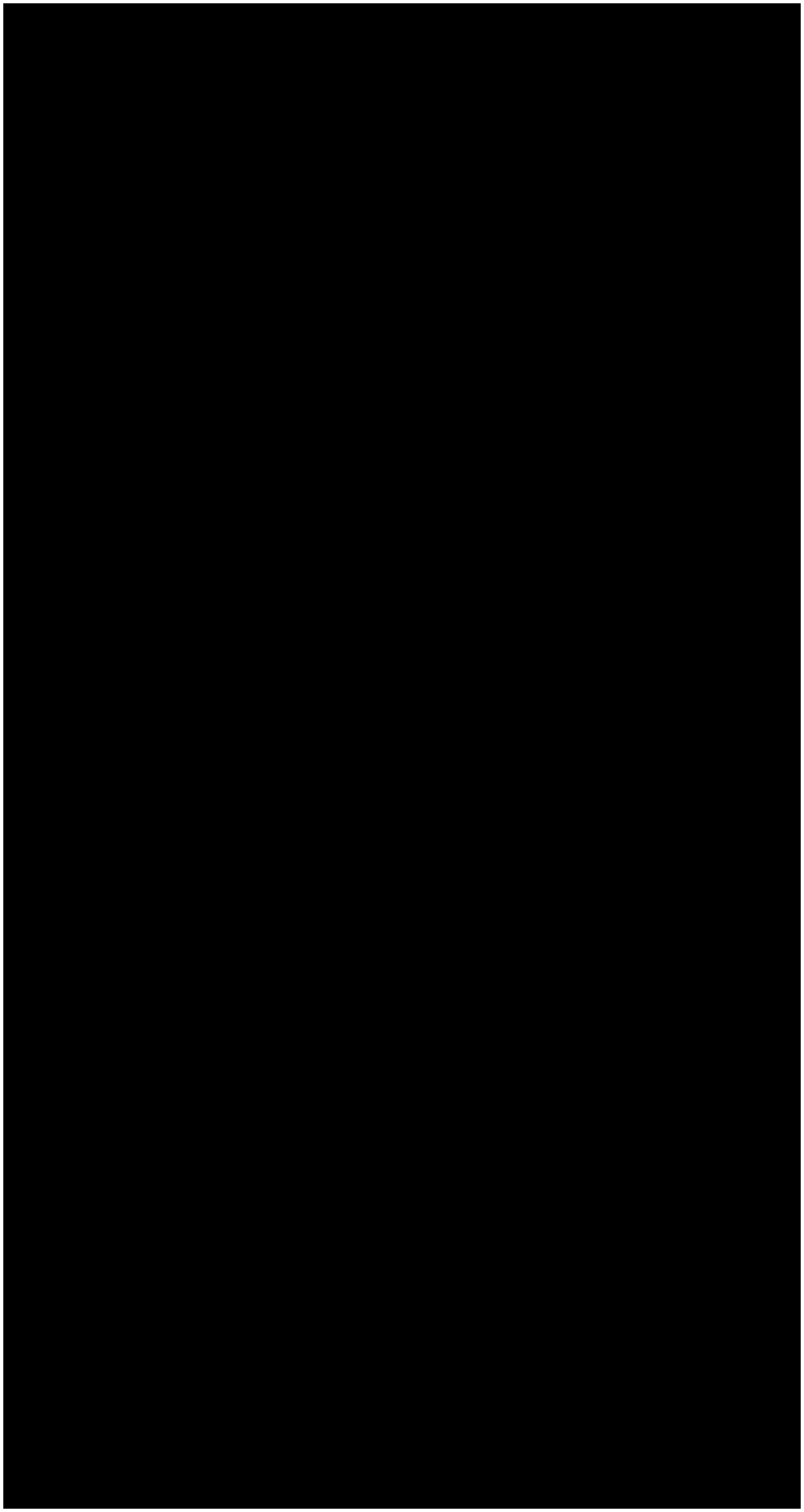


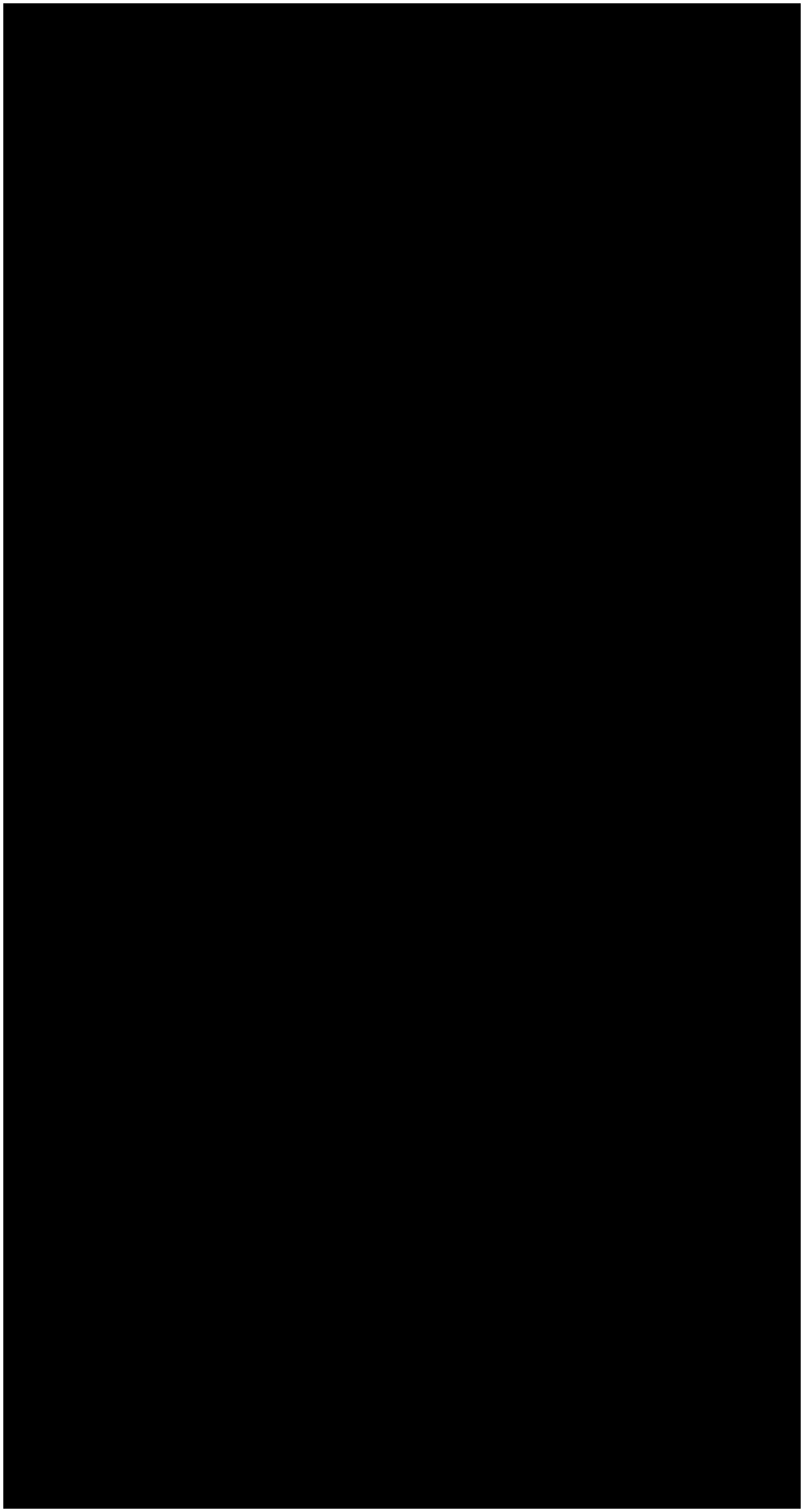


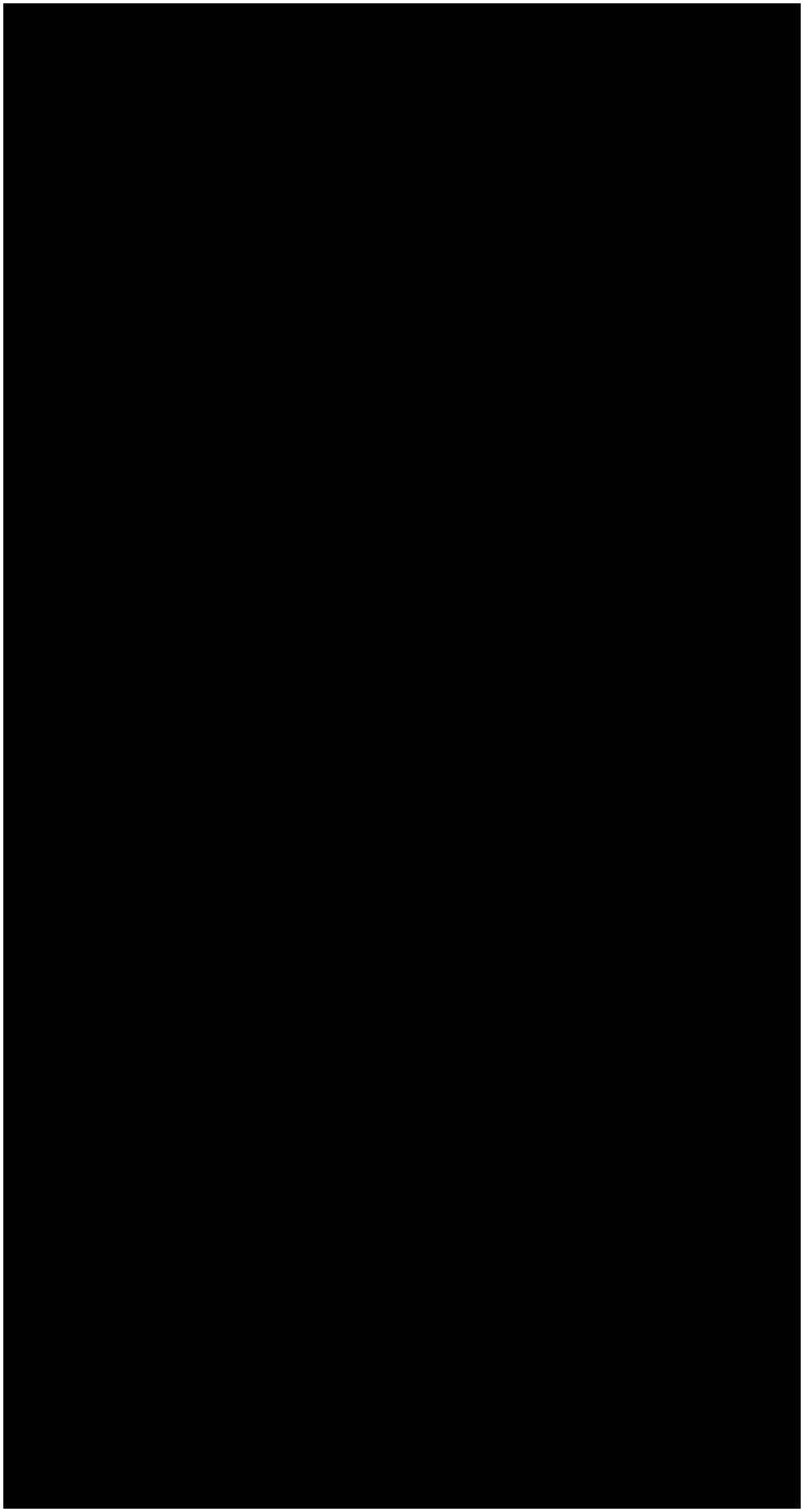


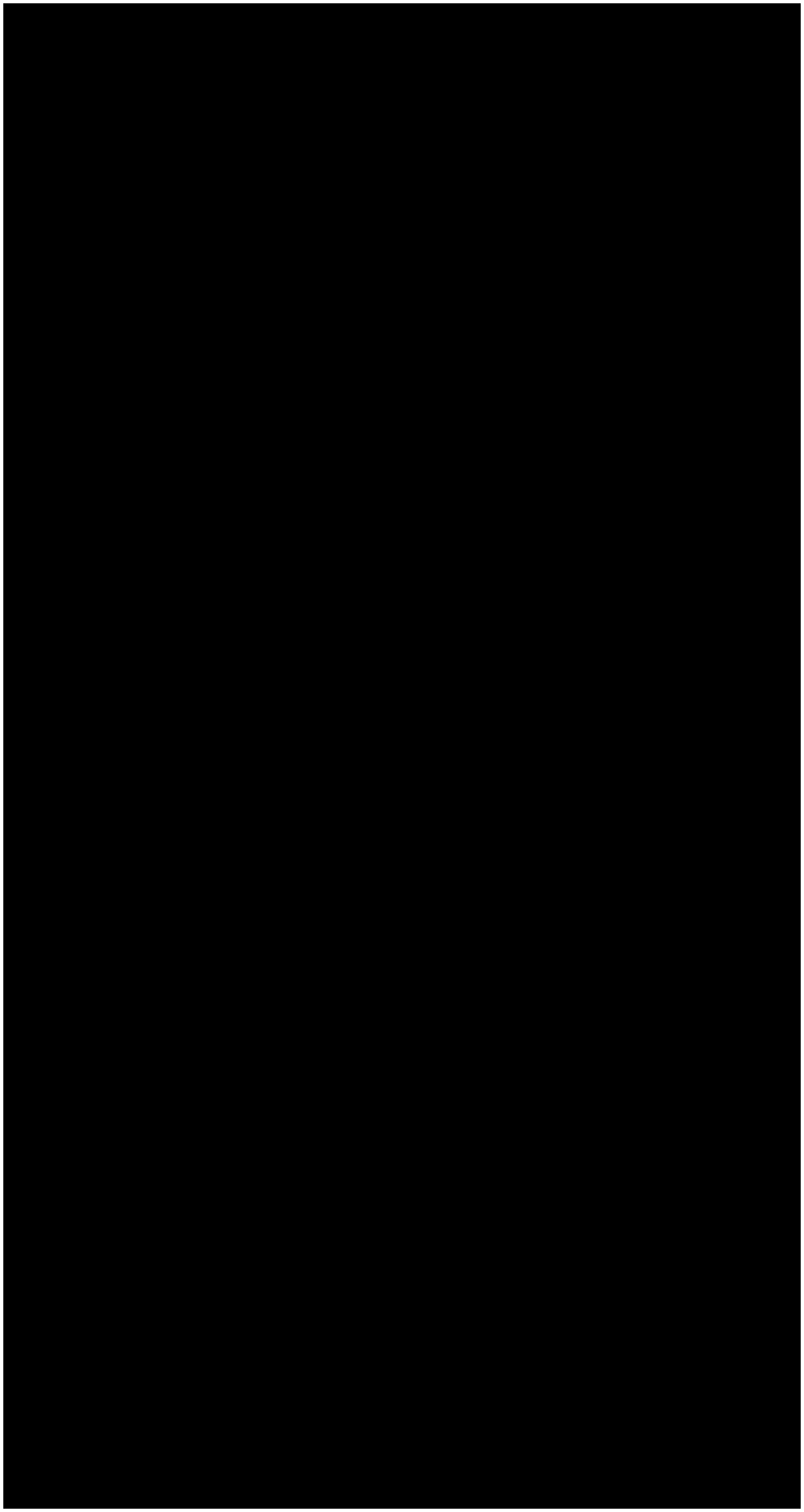














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
Dec-24											
Jan-25											
Feb-25											
Mar-25											
Apr-25											
May-25											
Jun-25											
Jul-25											
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Oct-25											
Nov-25											
Dec-25											
Jan-26											
Feb-26											
Mar-26											
Apr-26											
May-26											
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Jul-26											
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Apr-27											
May-27											
Jun-27											
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Aug-27											
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Oct-27											
Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											
Sep-28											
Oct-28											

Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
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Sep-28											
Oct-28											

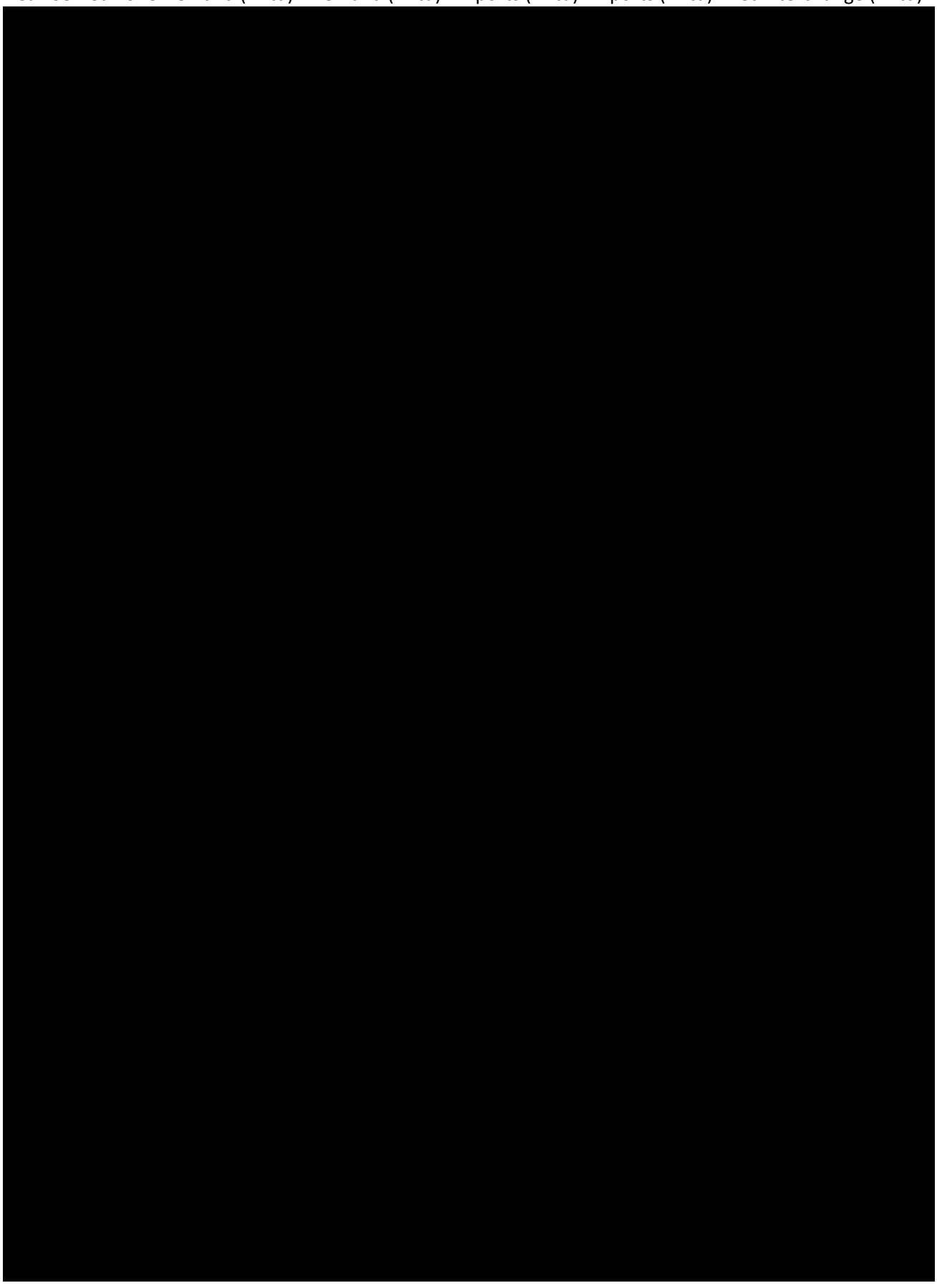
LNG Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
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Nov-27											
Dec-27											
Jan-28											
Feb-28											
Mar-28											
Apr-28											
May-28											
Jun-28											
Jul-28											
Aug-28											

Parent Name	Collection	Child Name	Category	Month	Production (BBtu)
[redacted]					



Peak Served Zone Demand (BBtu) Demand (BBtu) Imports (BBtu) Exports (BBtu) Net Interchange (BBtu)





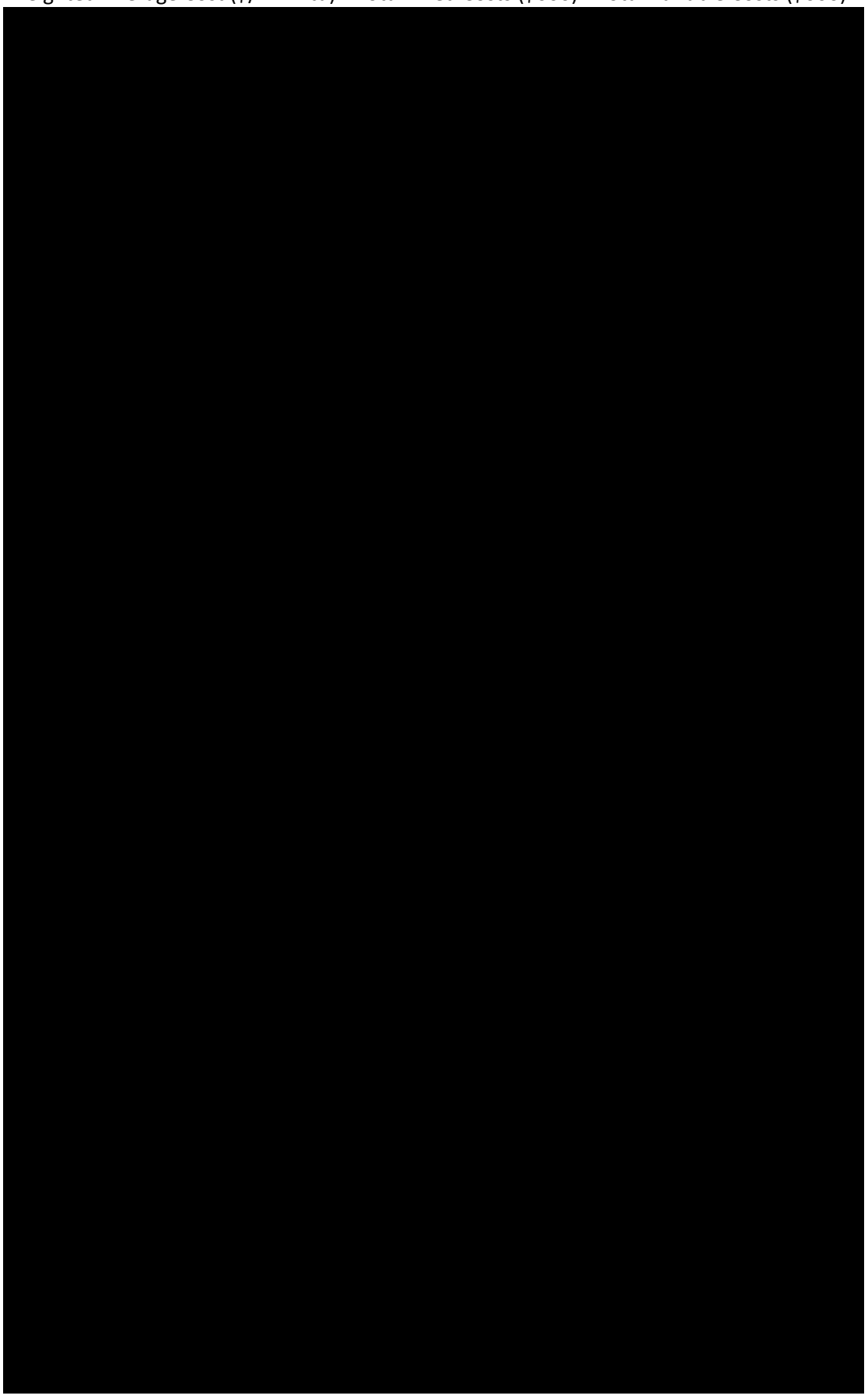
Initial Volume (BBtu)	End Volume (BBtu)	Shortage Hours (h)	Shortage (BBtu)	Shortage Cost ($000)
[redacted]				



Excess Hours (h)	Excess (BBtu)	Excess Cost ($000)	Net Demand (BBtu)	Cost ($000)	Price Paid ($/MMBtu)
[redacted]					

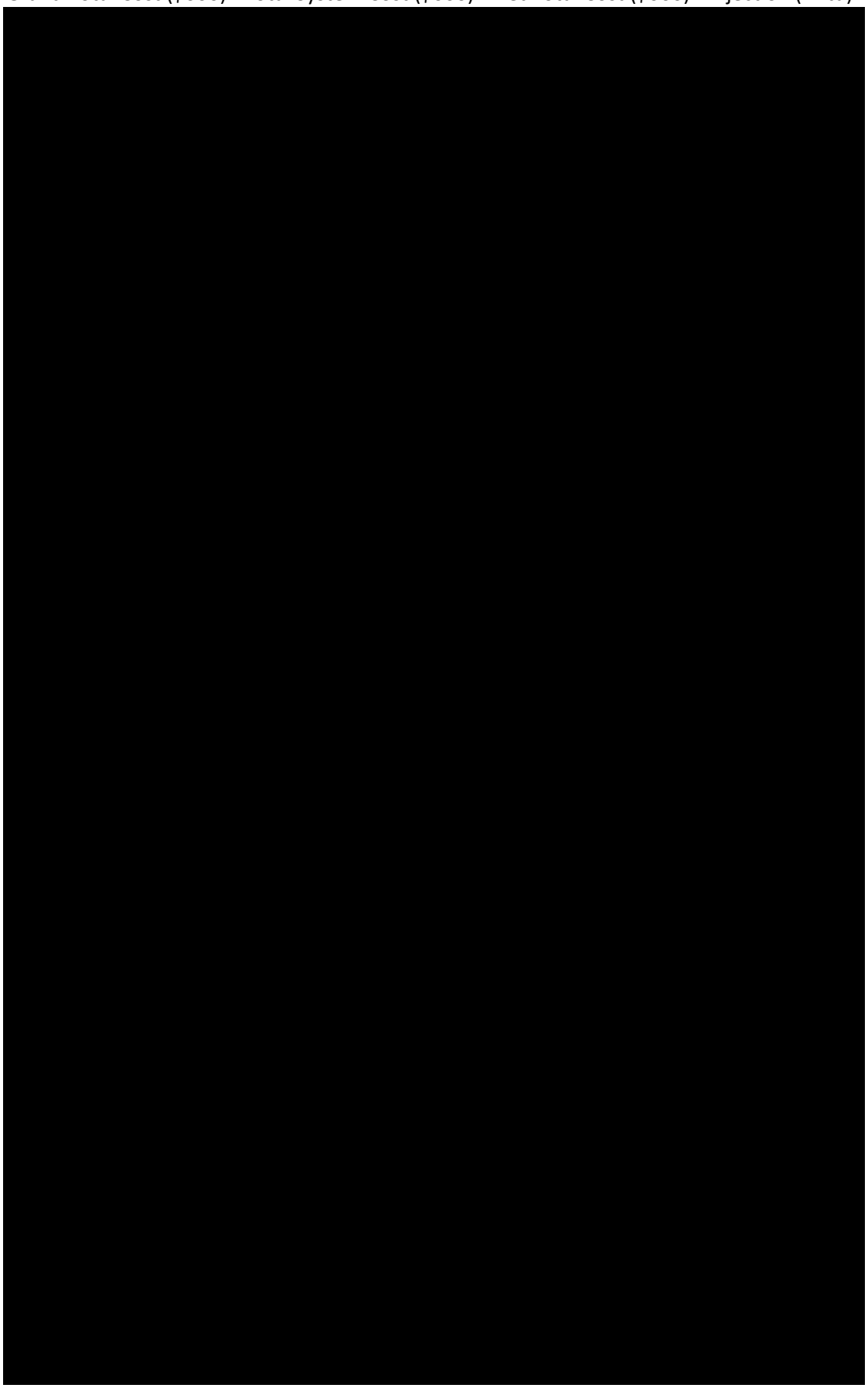


Weighted Average Cost ($/MMBtu) Total Fixed Costs ($000) Total Variable Costs ($000)





Grand Total Cost ($000) Total System Cost ($000) Net Total Cost ($000) Injection (BBtu)

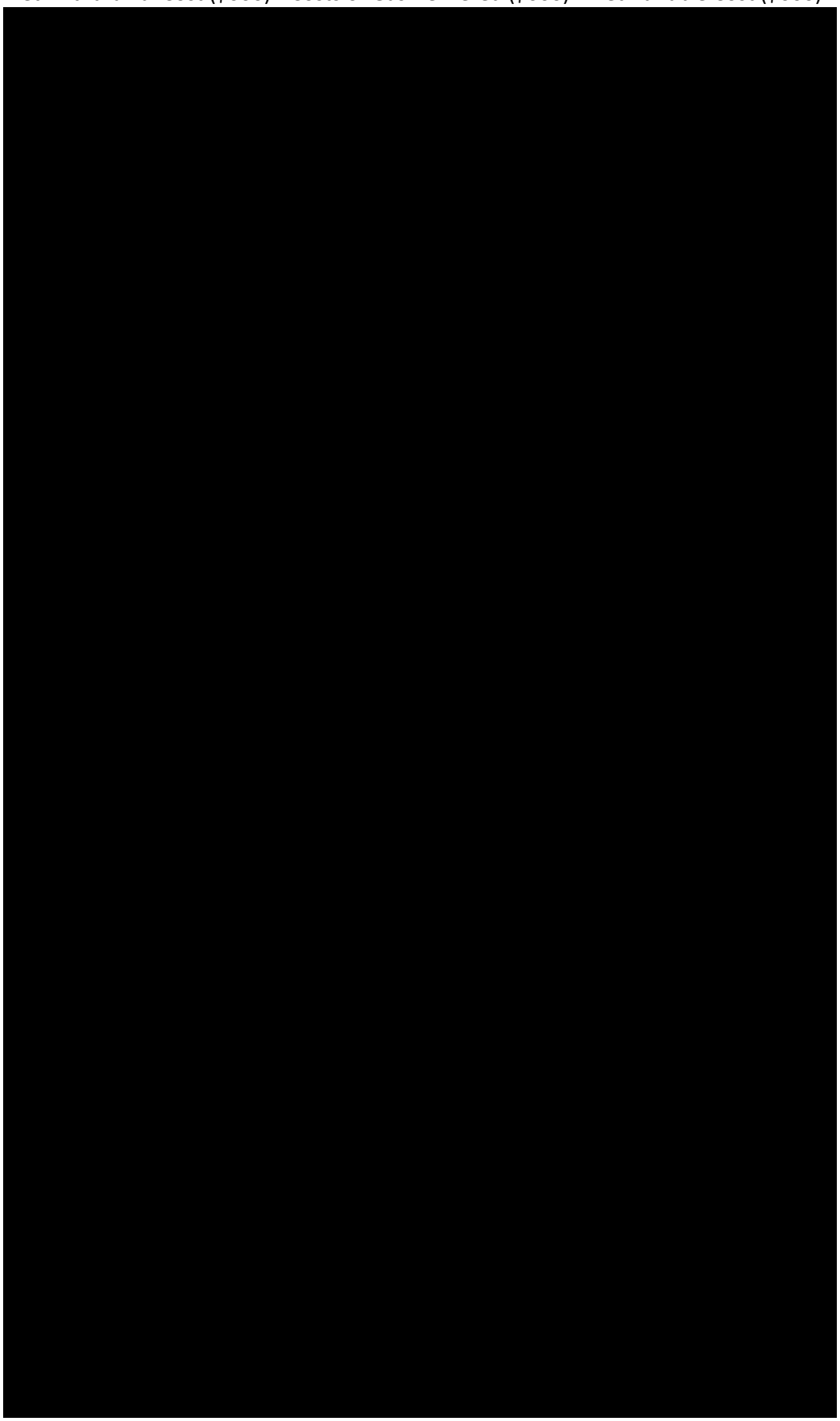




Net Injection (BBtu)	Net Injection Cost ($000)	Withdrawal (BBtu)	Net Withdrawal (BBtu)
[redacted]			



Net Withdrawal Cost ($000) Costs of Gas Delivered ($000) Net Variable Cost ($000)

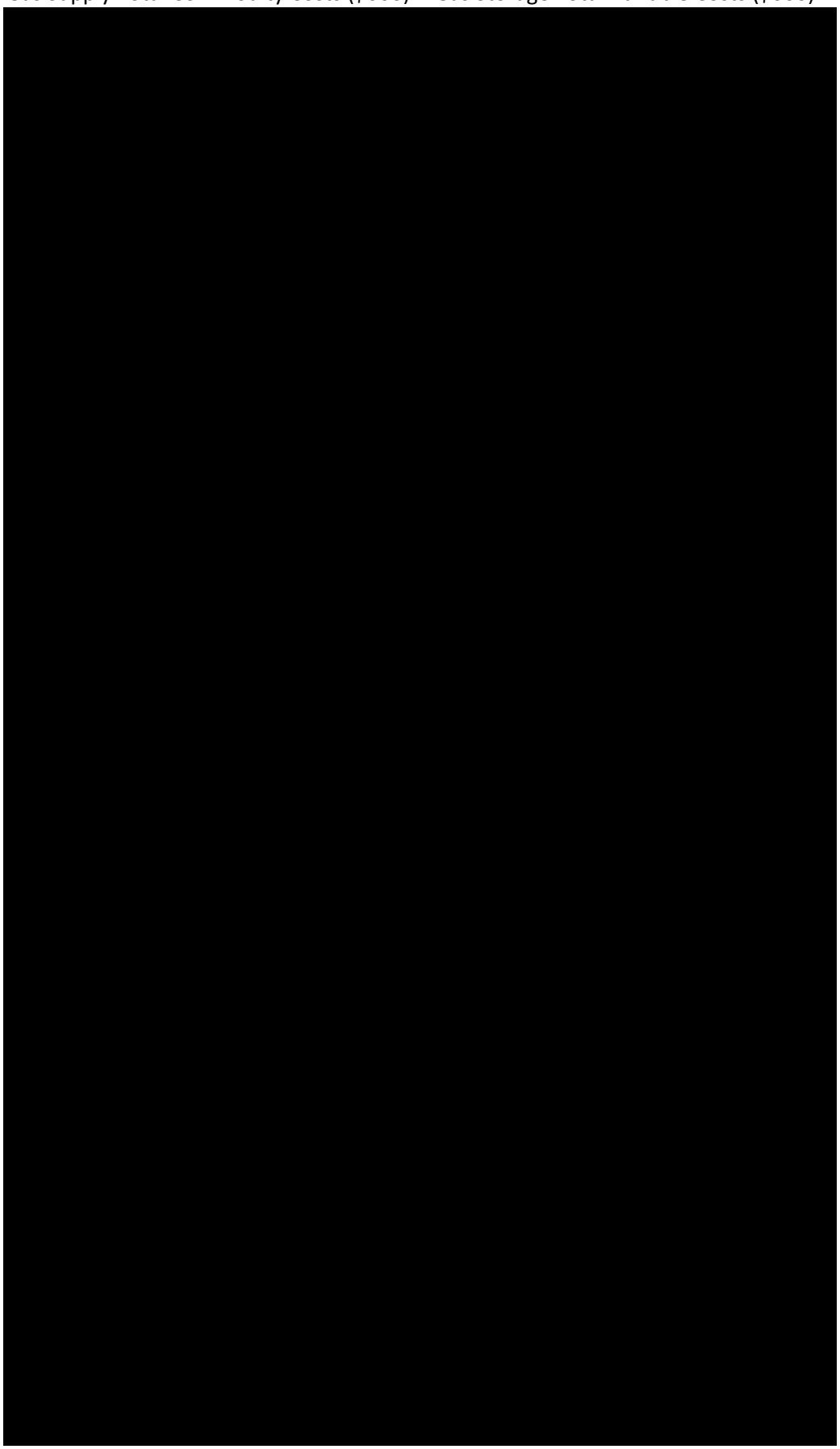




Forward Zone Flow (BBtu)	Back Zone Flow (BBtu)	Net Zone Flow (BBtu)
[redacted]		

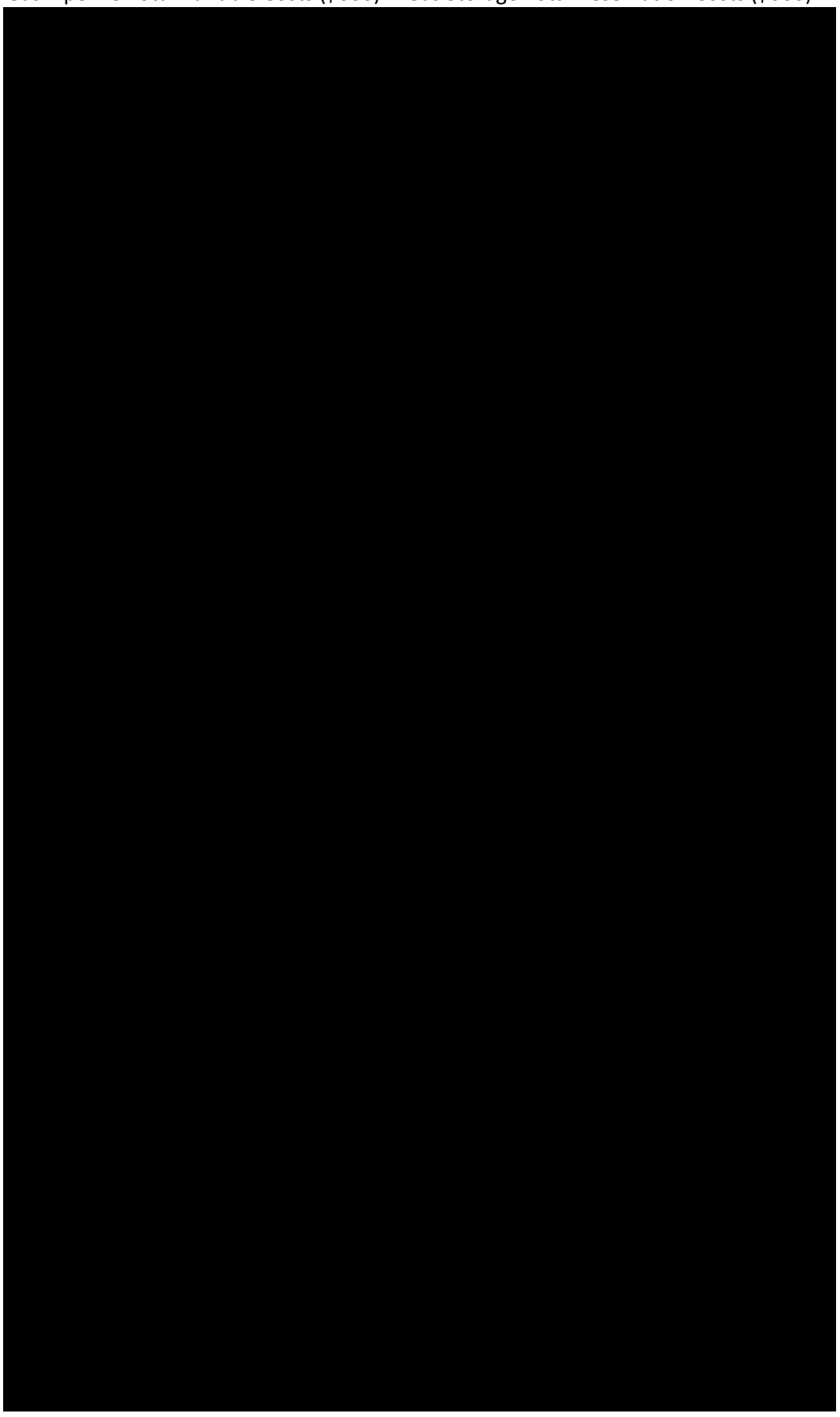


Gas Supply Total Commodity Costs ($000) Gas Storage Total Variable Costs ($000)



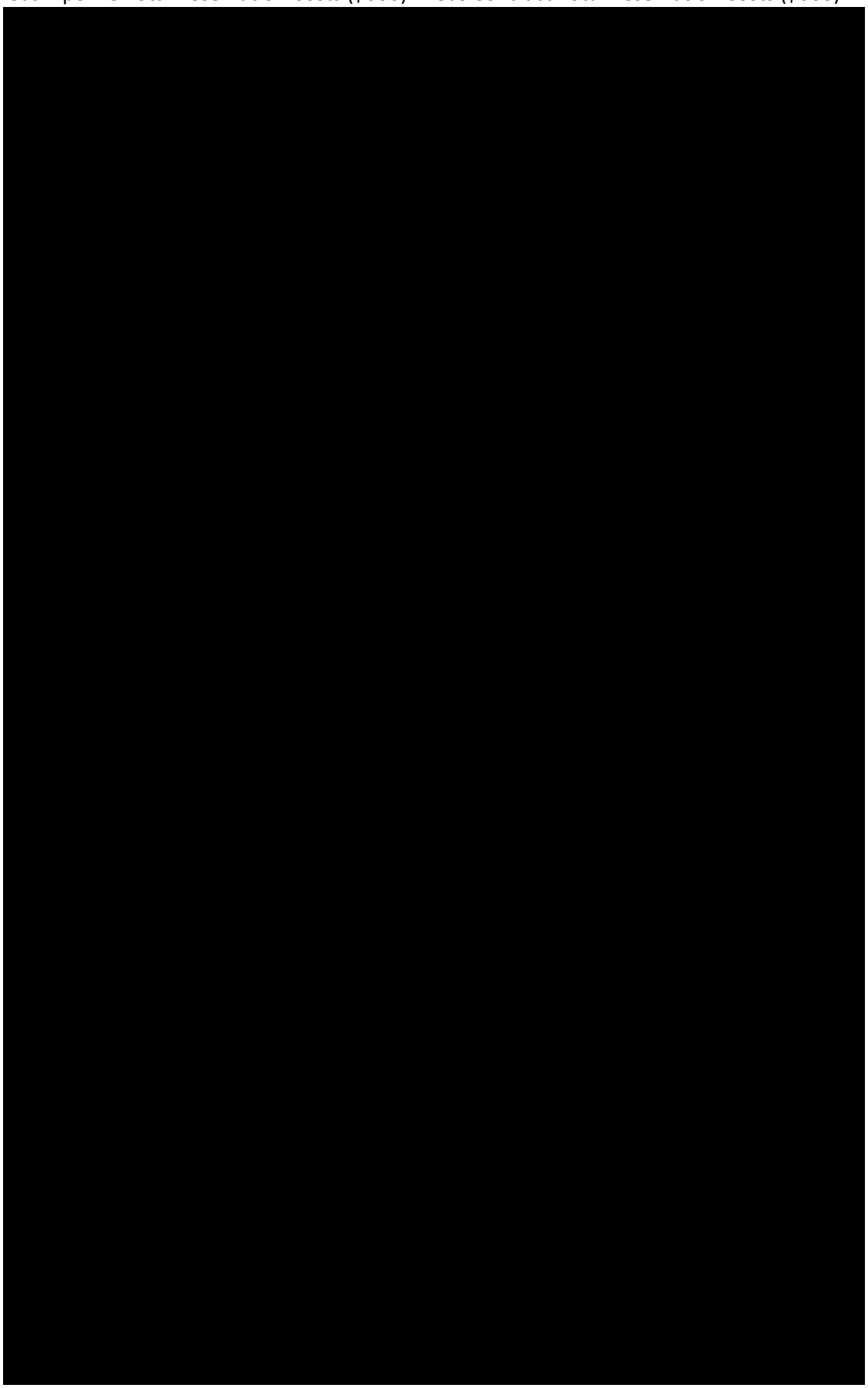


Gas Pipeline Total Variable Costs ($000) Gas Storage Total Reservation Costs ($000)



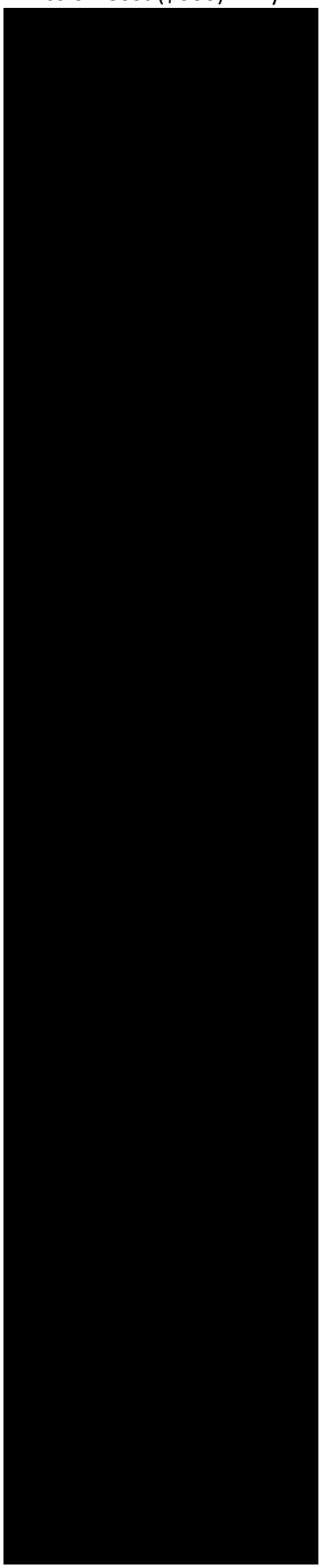


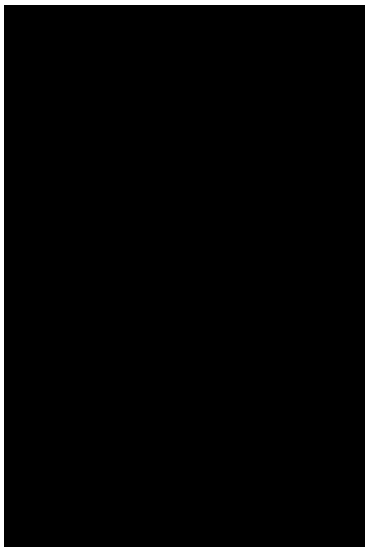
Gas Pipeline Total Reservation Costs ($000) Gas Contract Total Reservation Costs ($000)



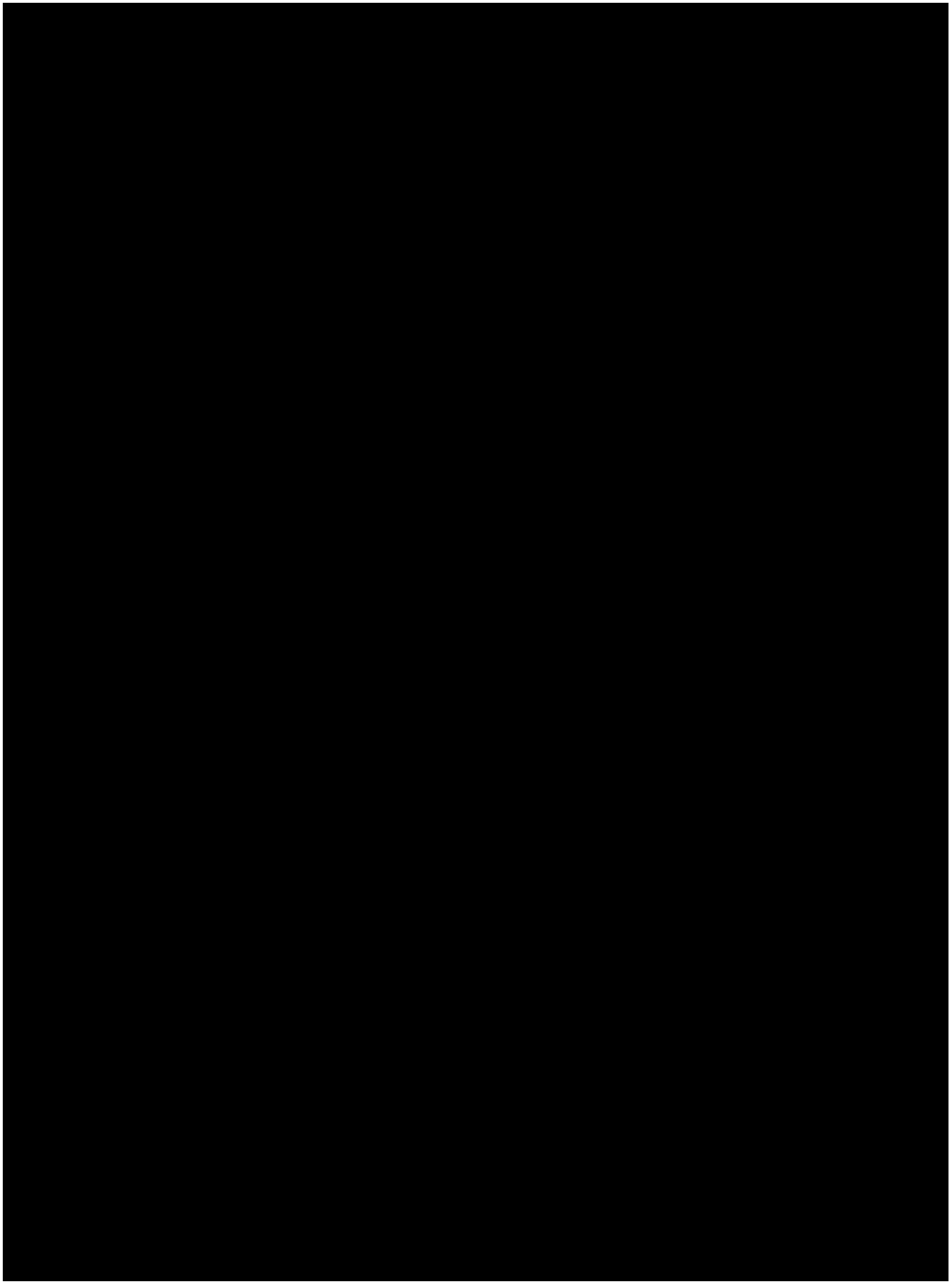


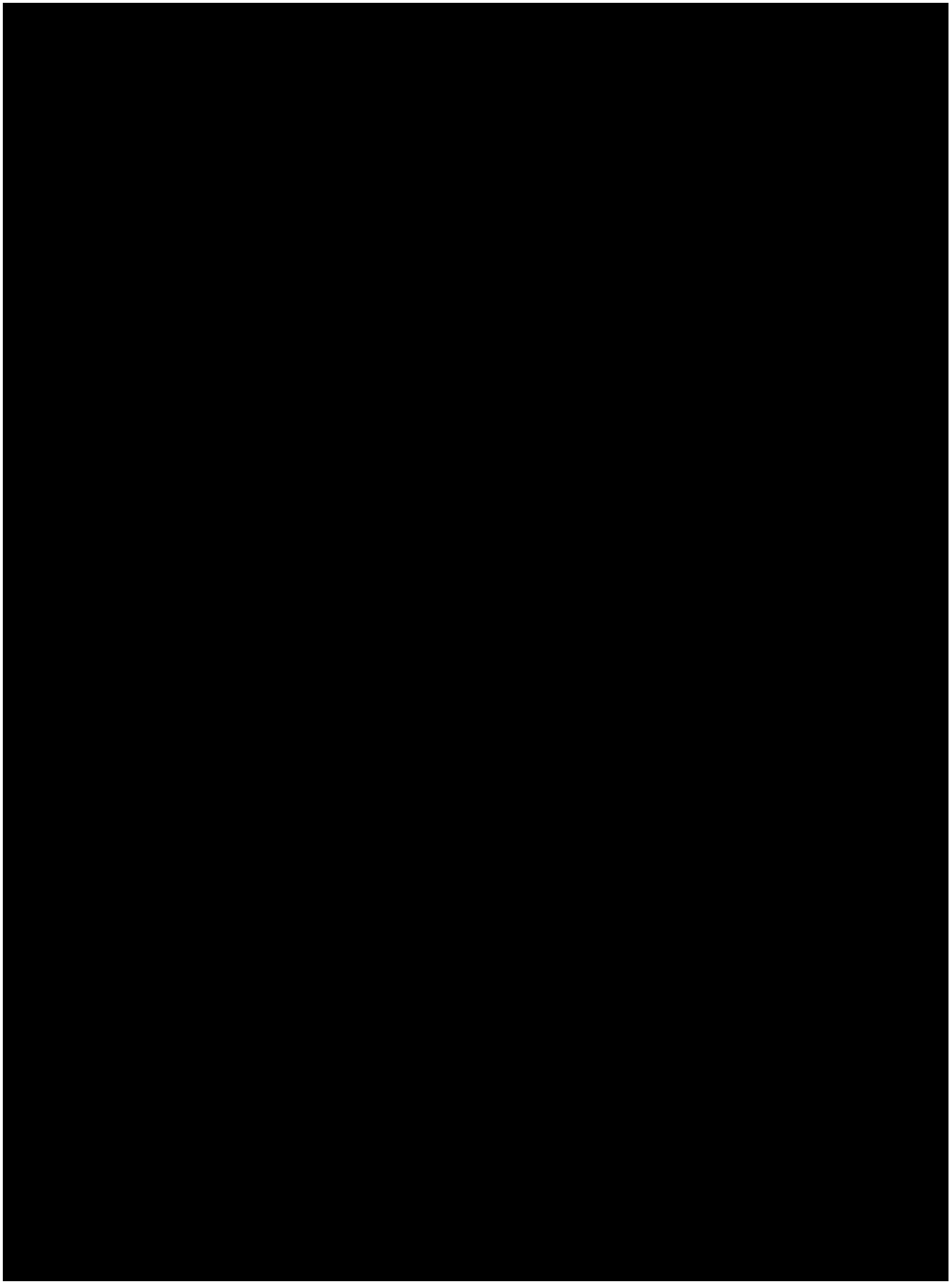
Emission Cost ($000) x y z

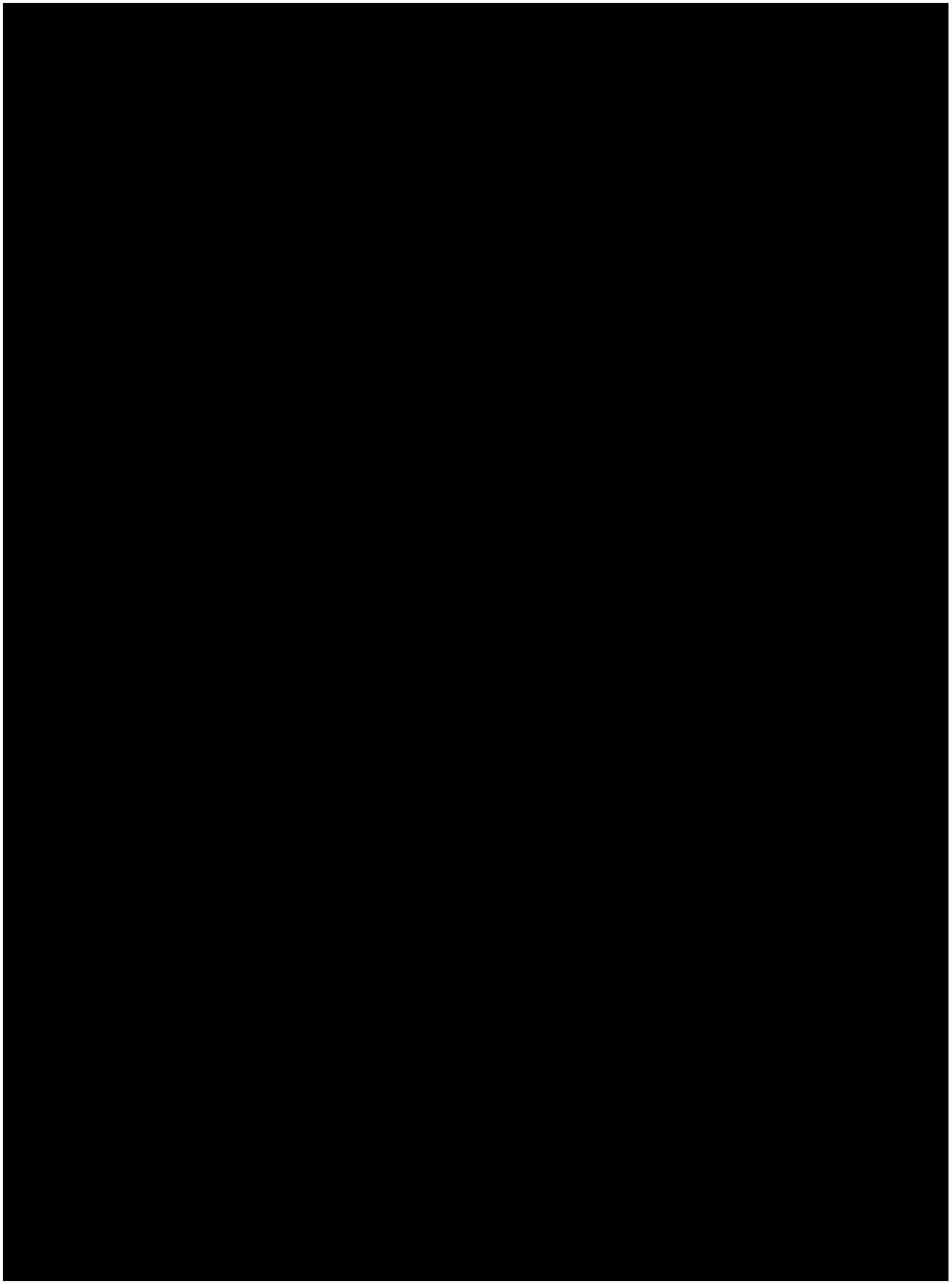


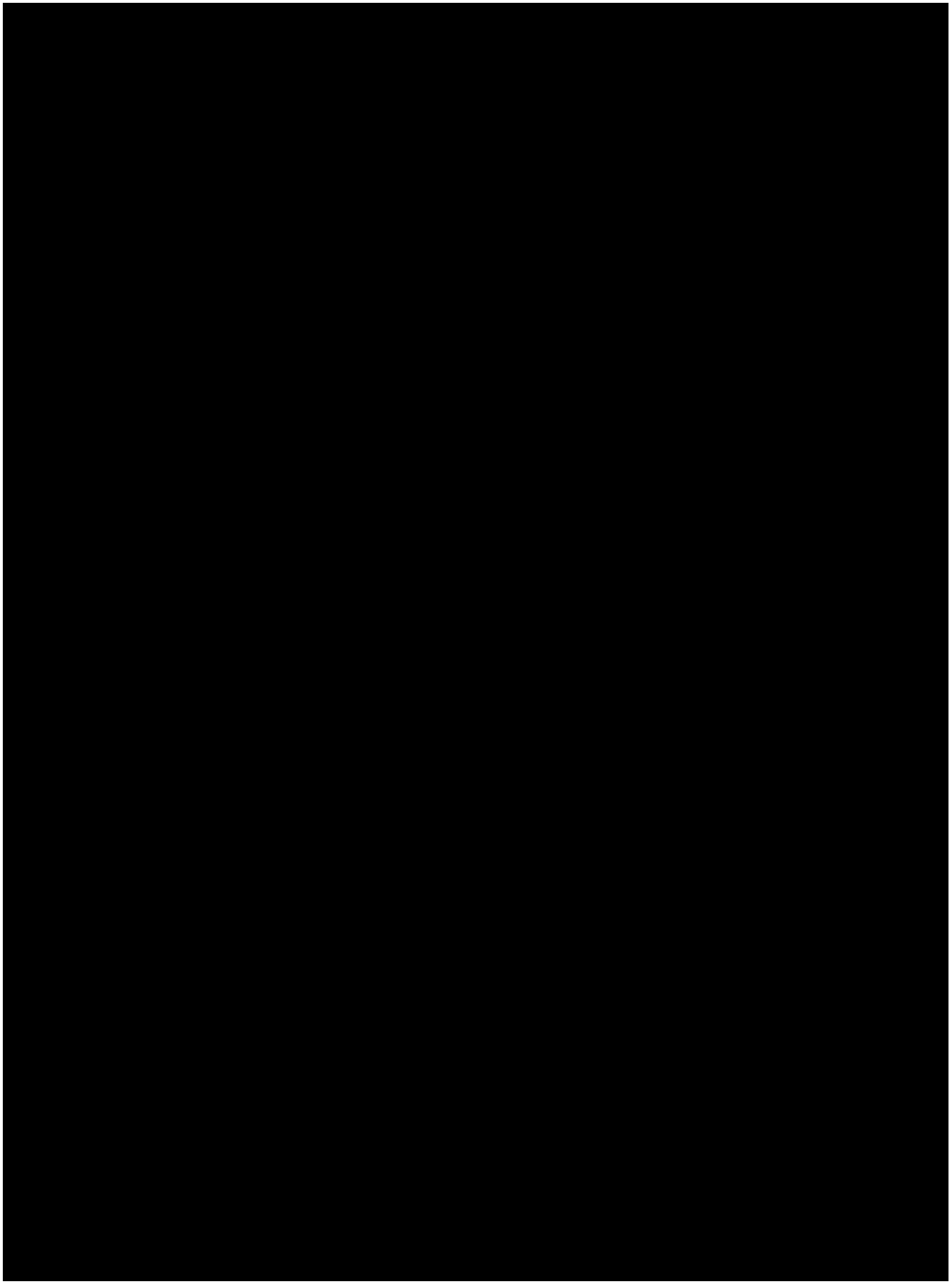


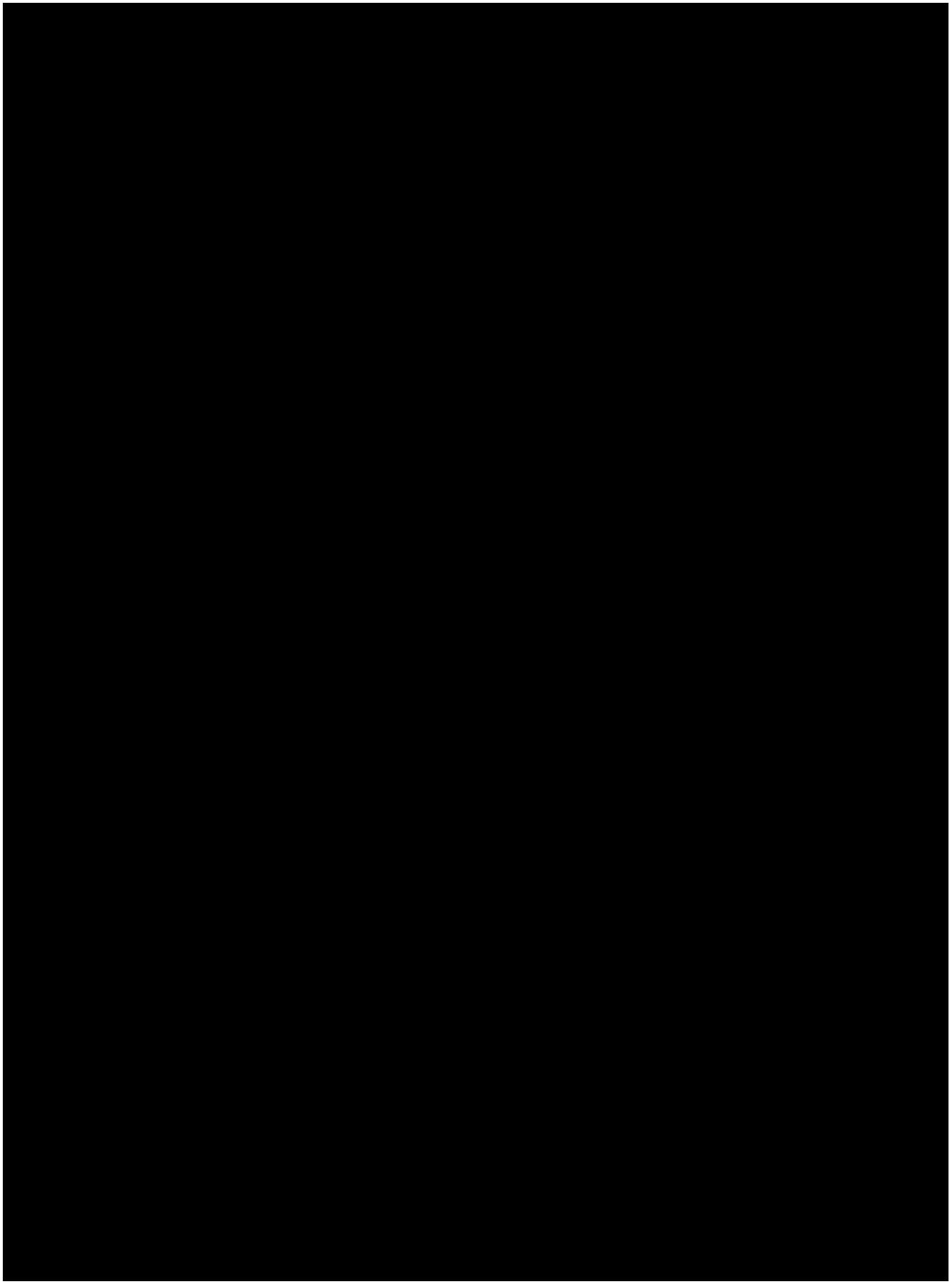
Parent Nan	Collection	Child Name	Category	Month	Take Quan	Supply Exc	Cost ($000	Price ($/MI
[redacted]								

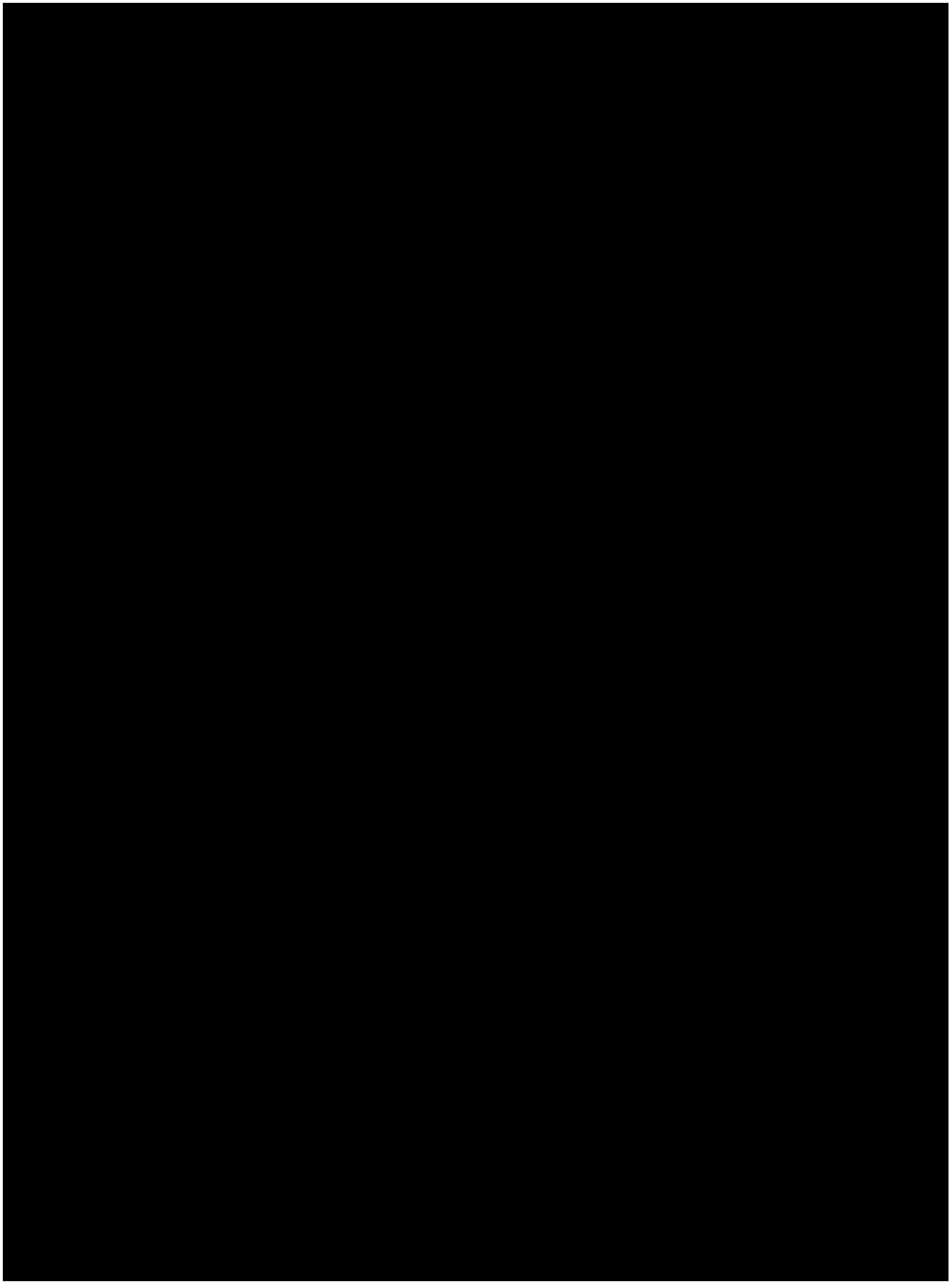


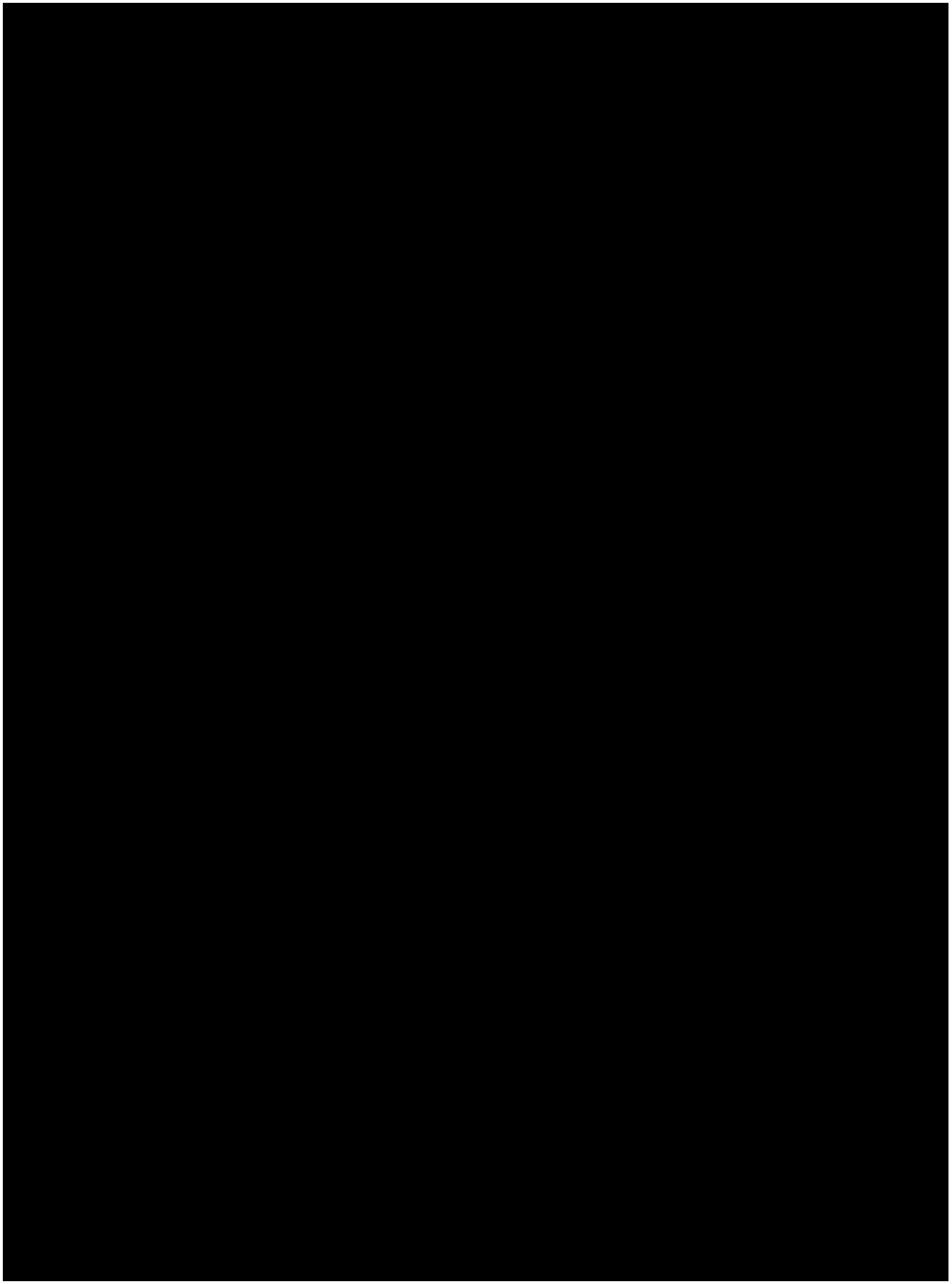


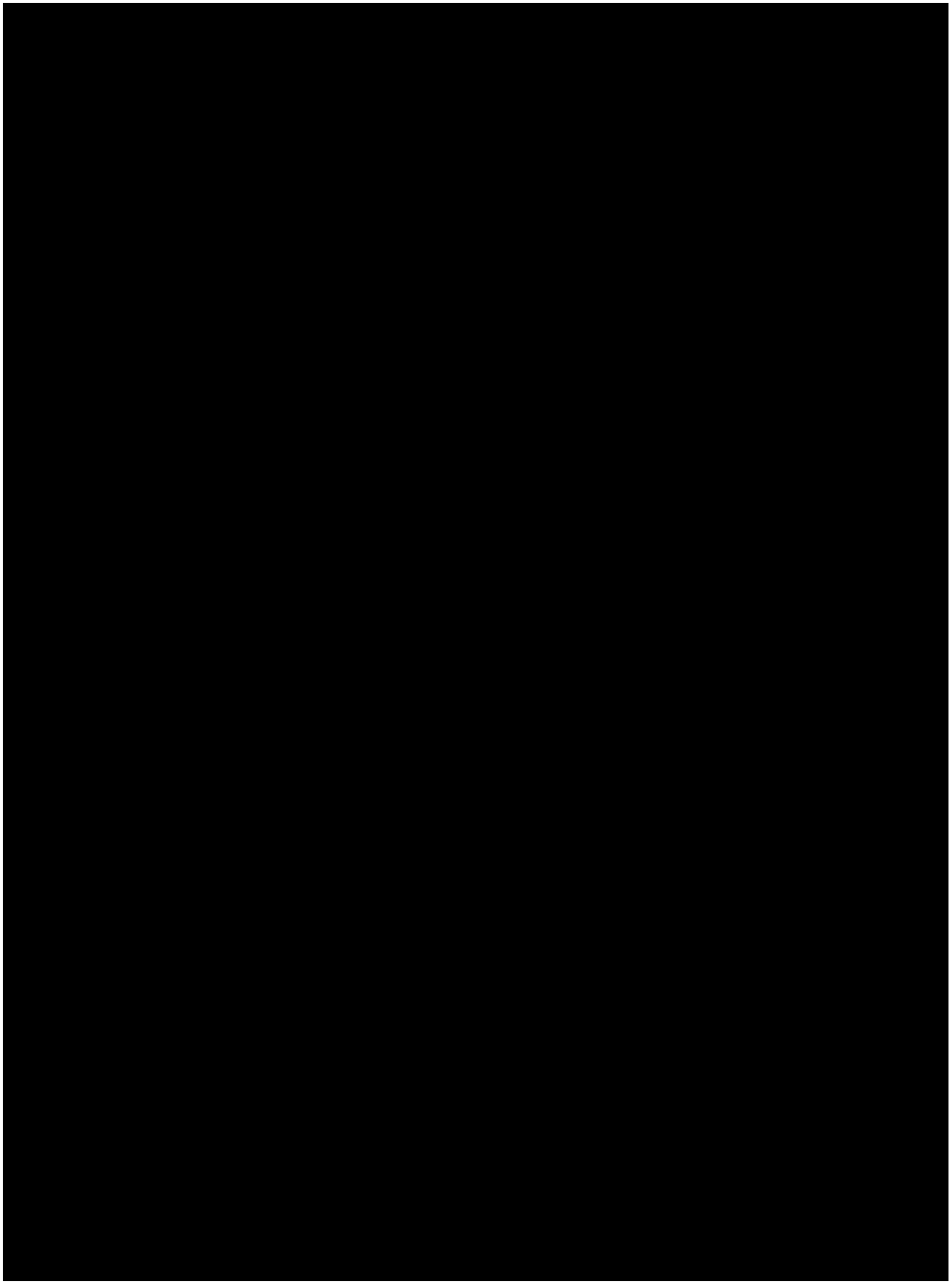


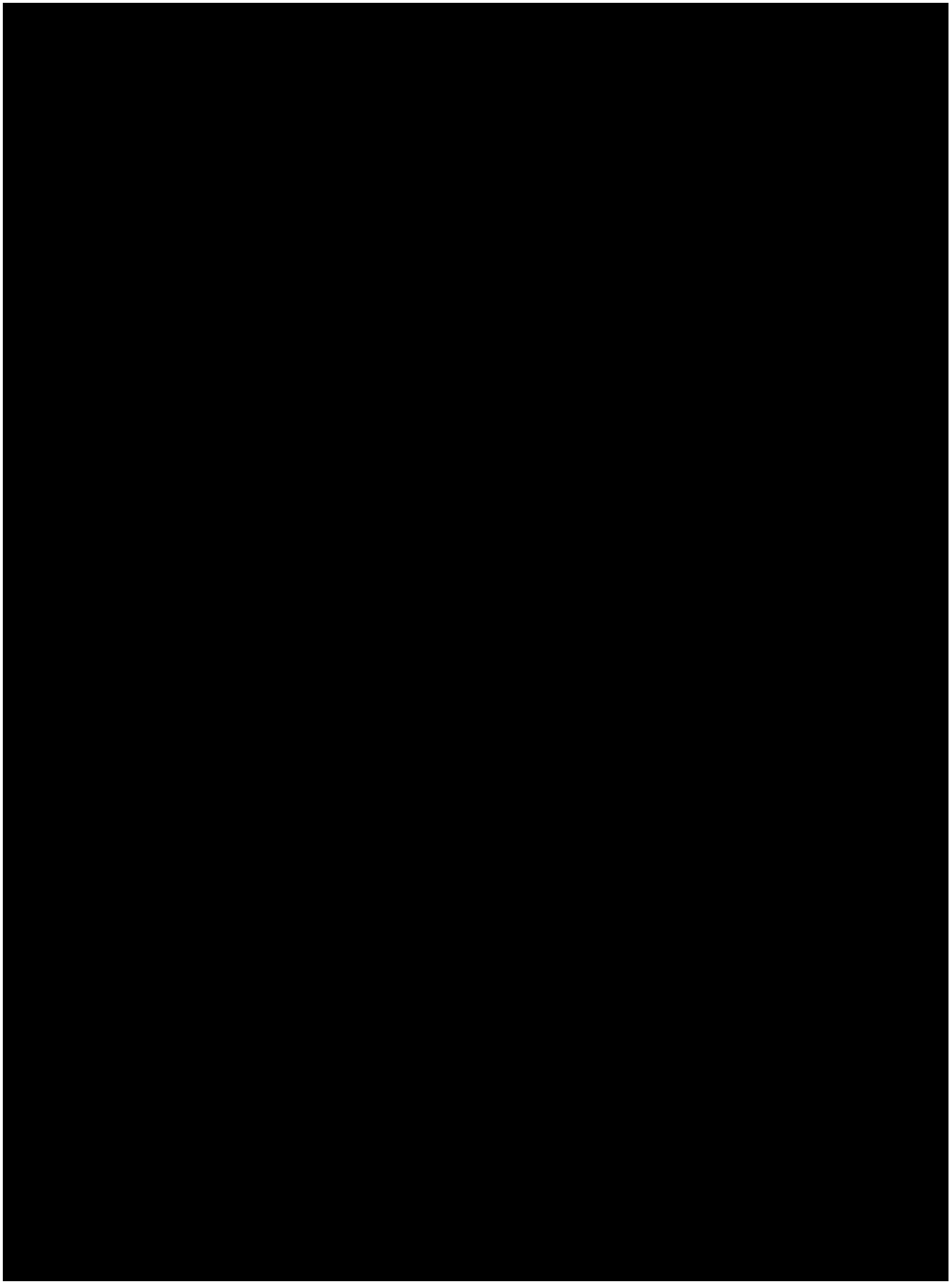


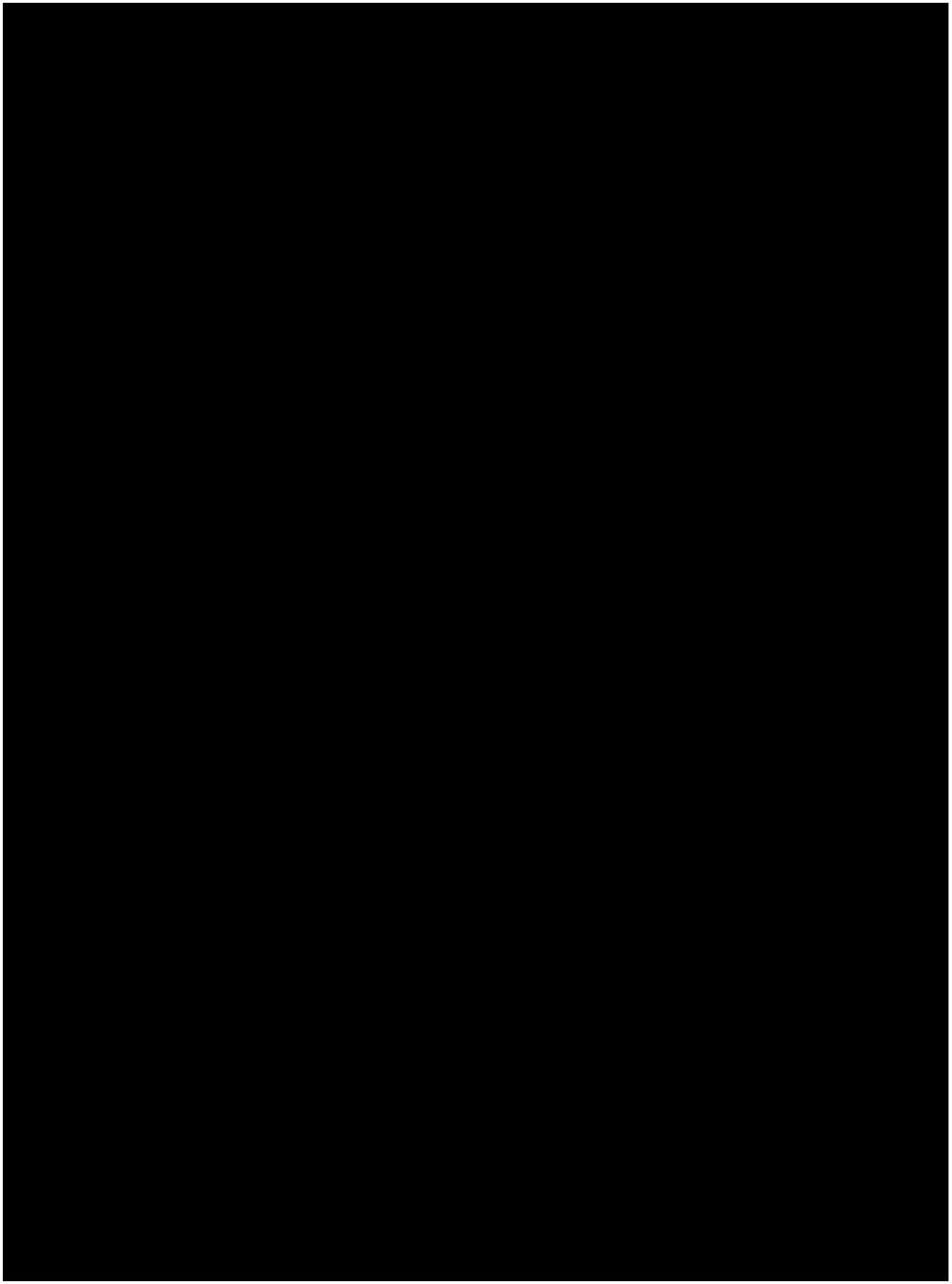


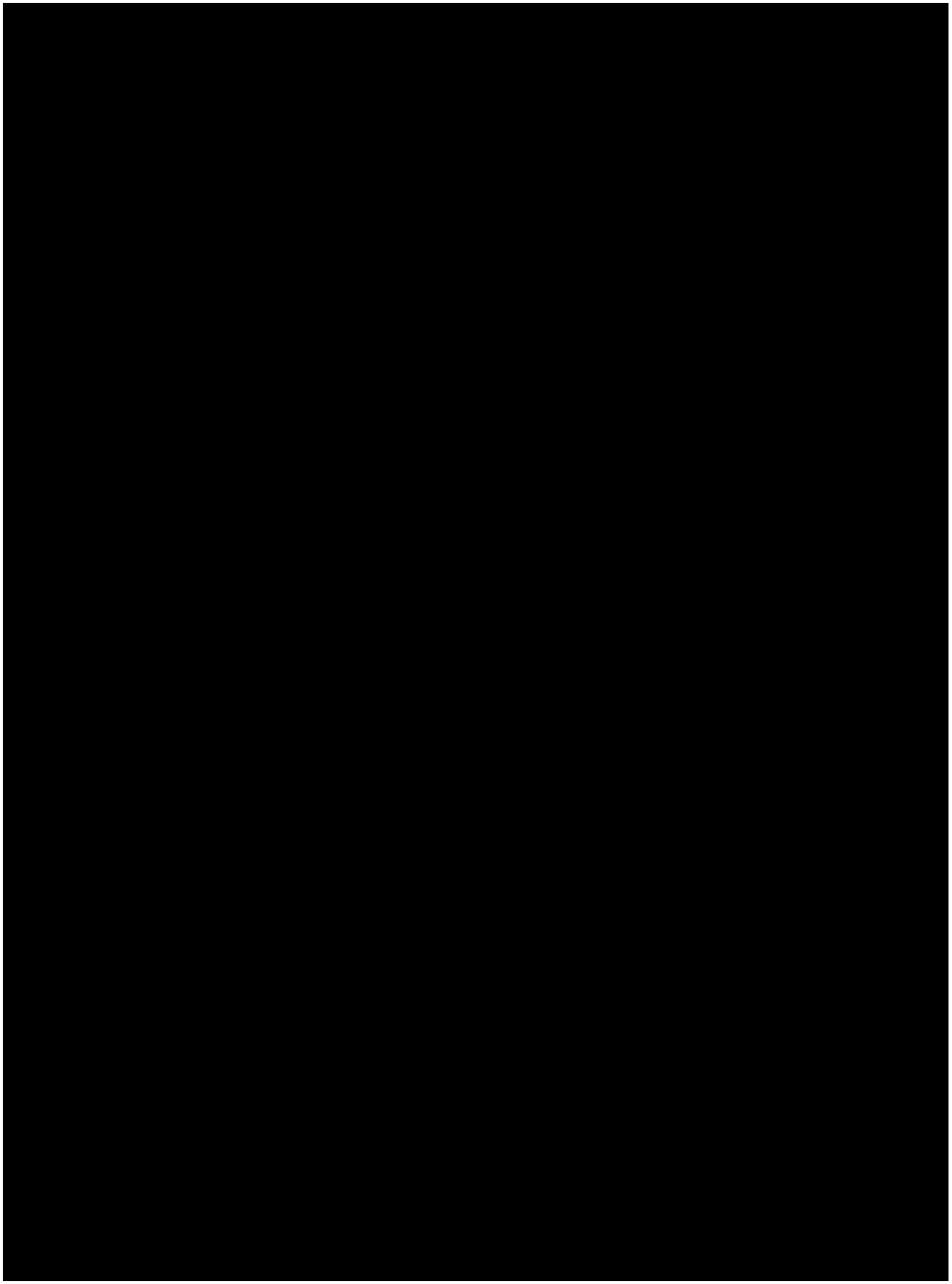


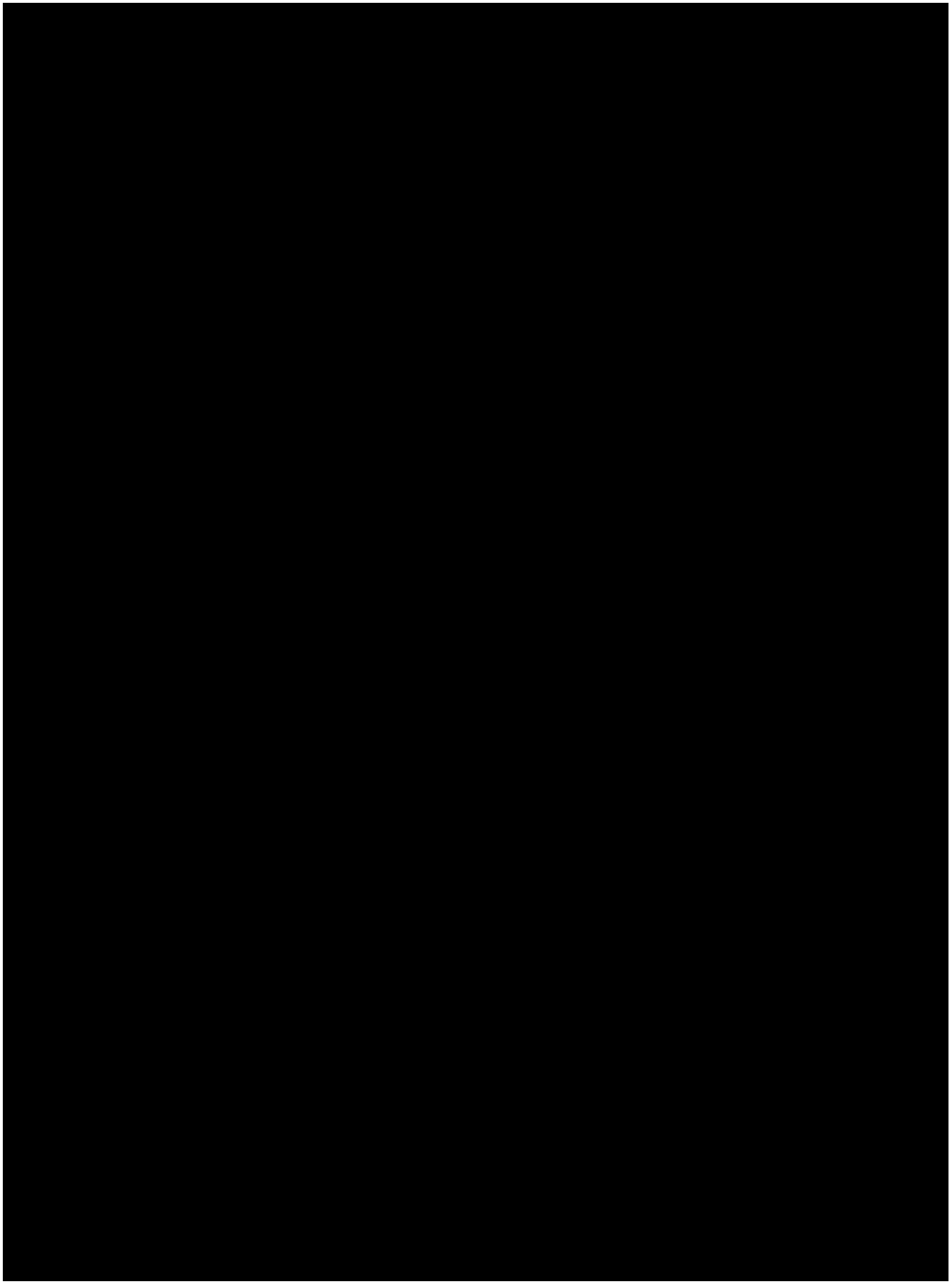


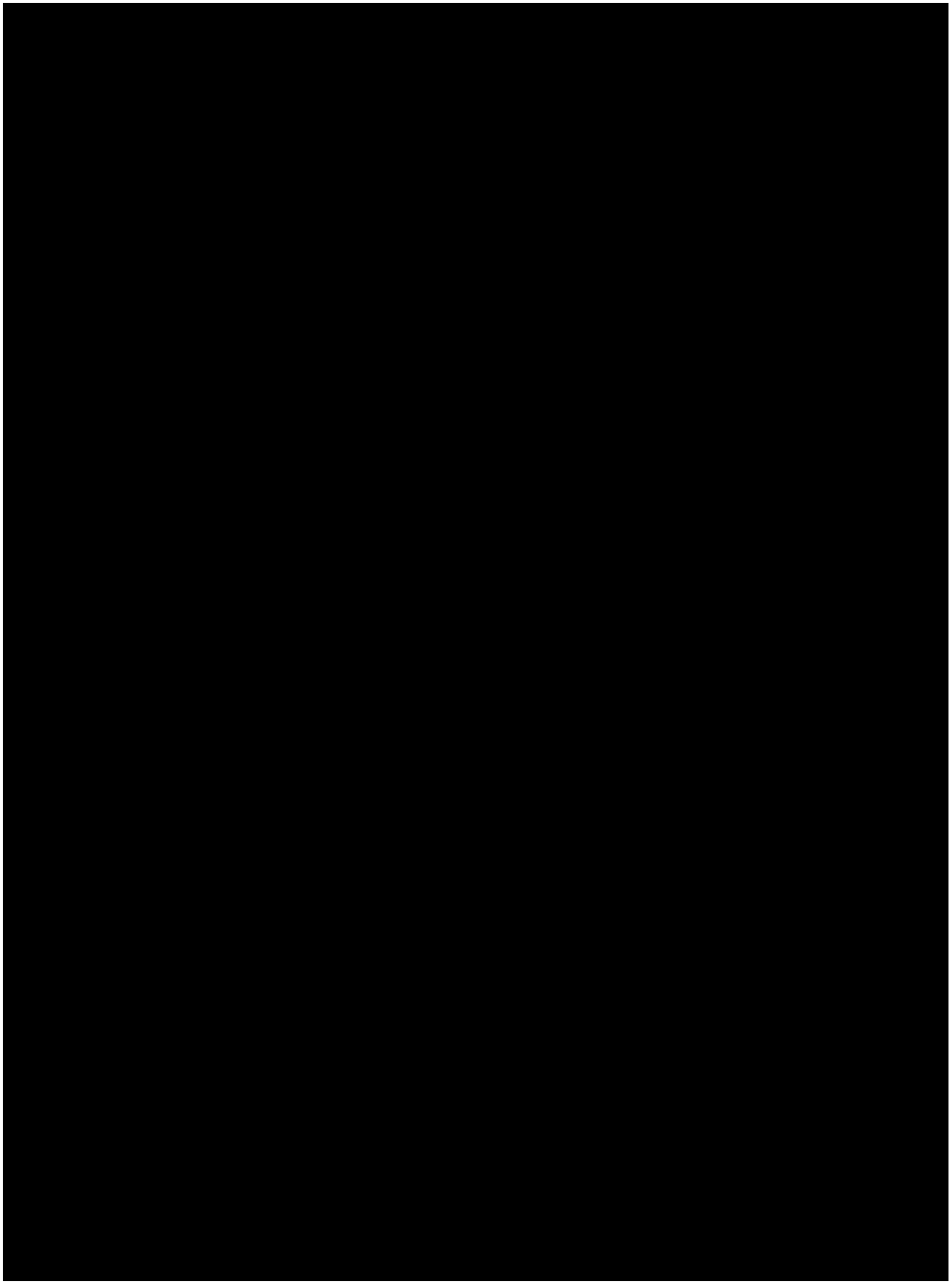


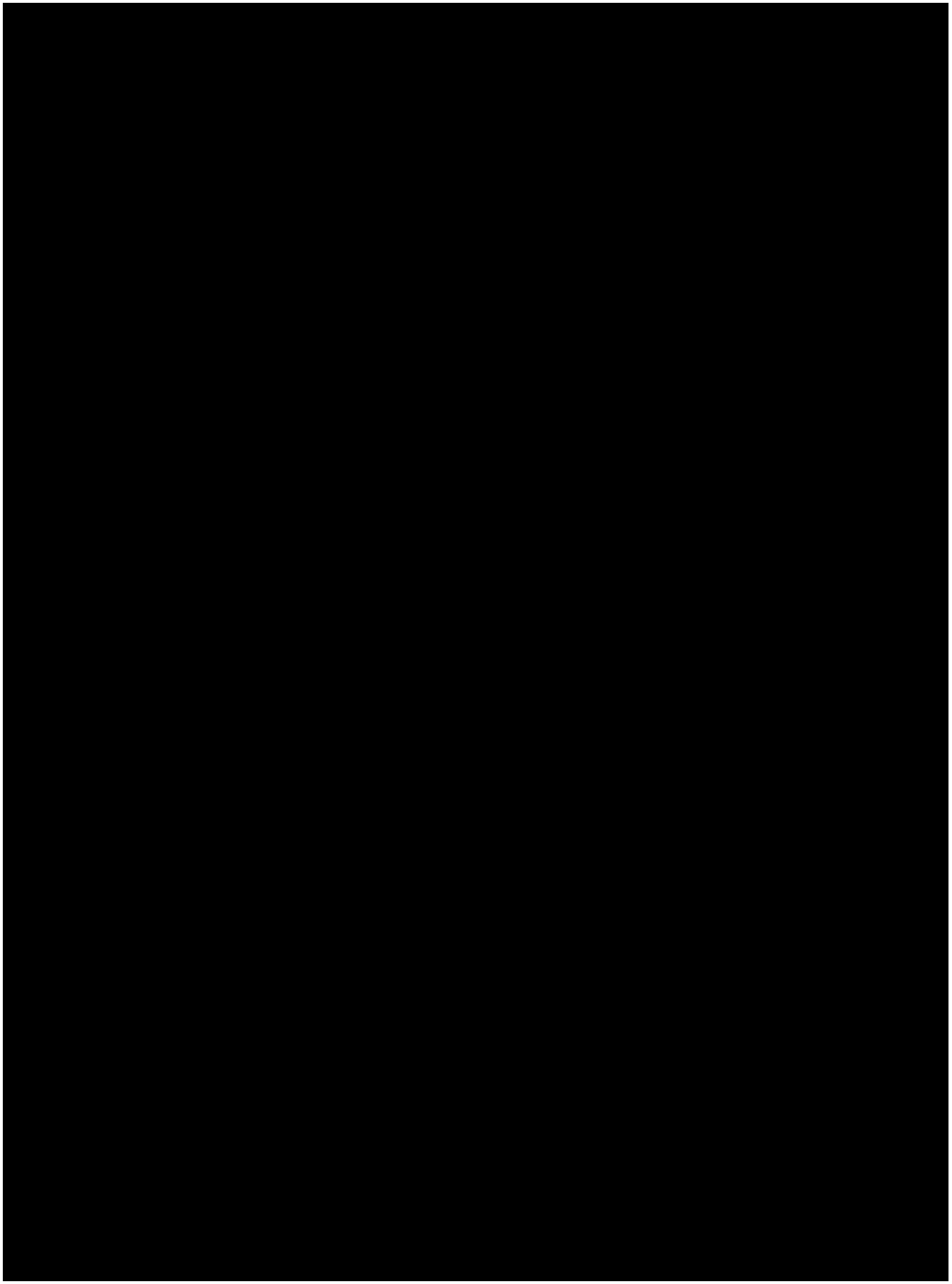


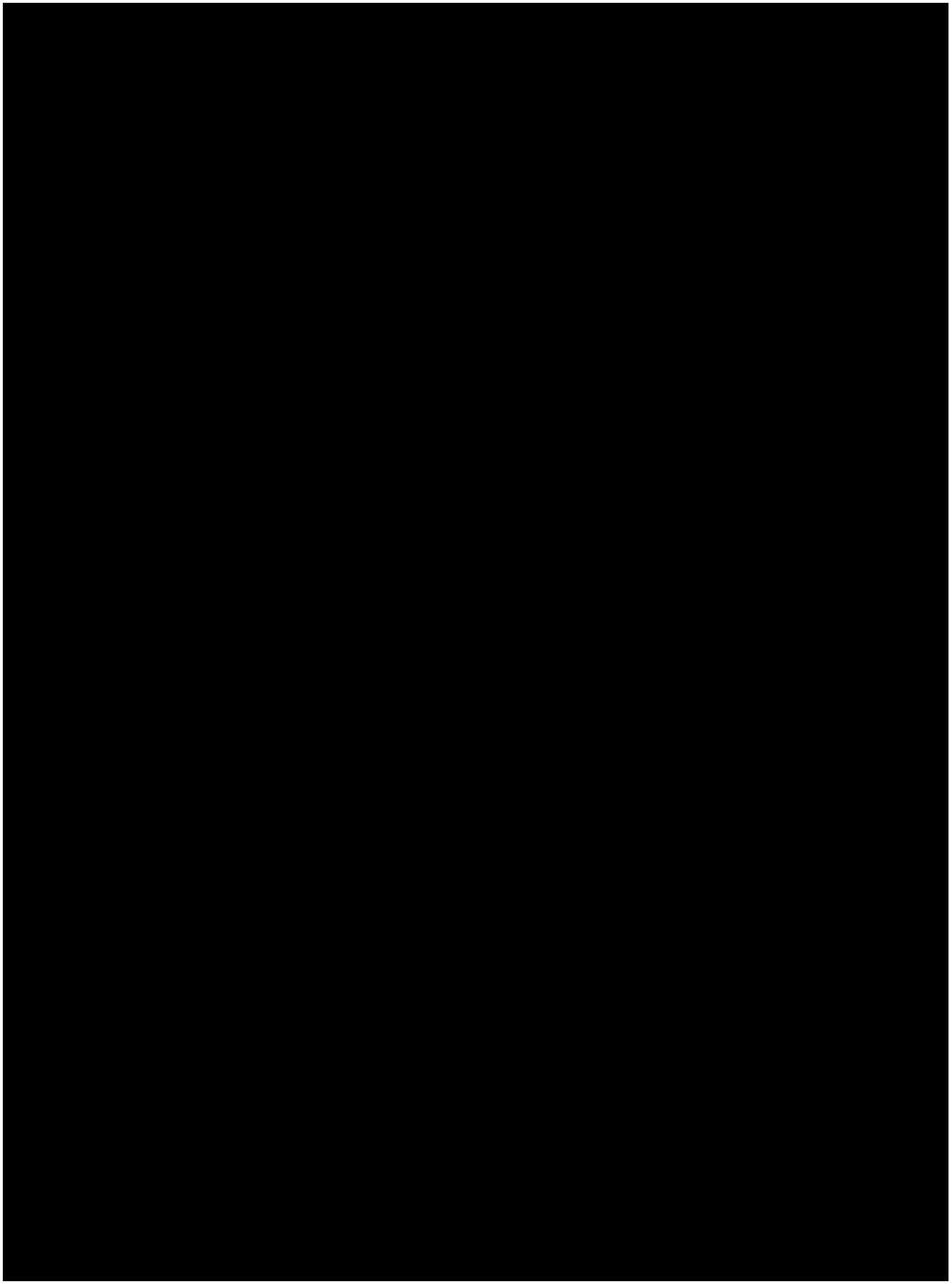


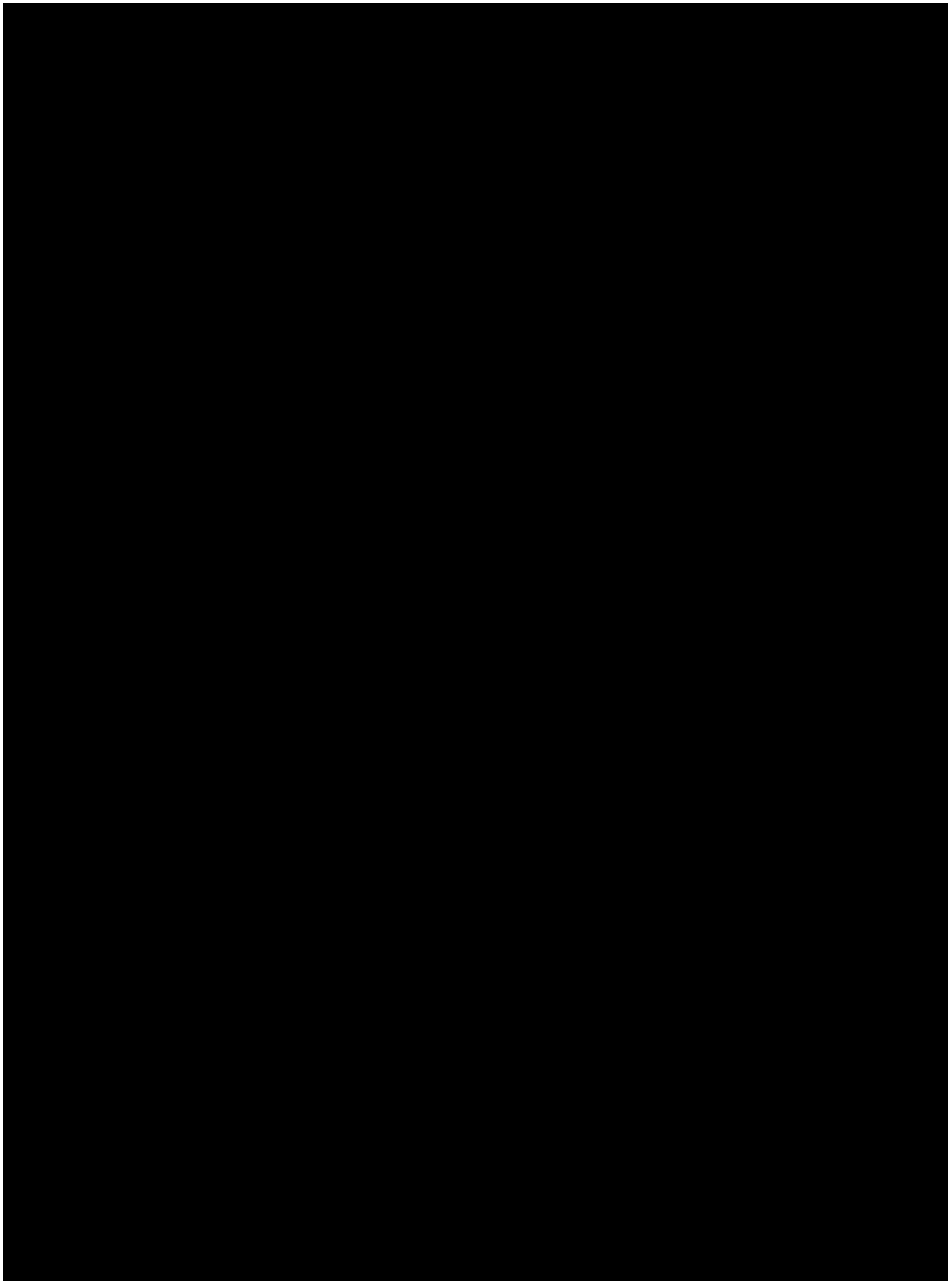


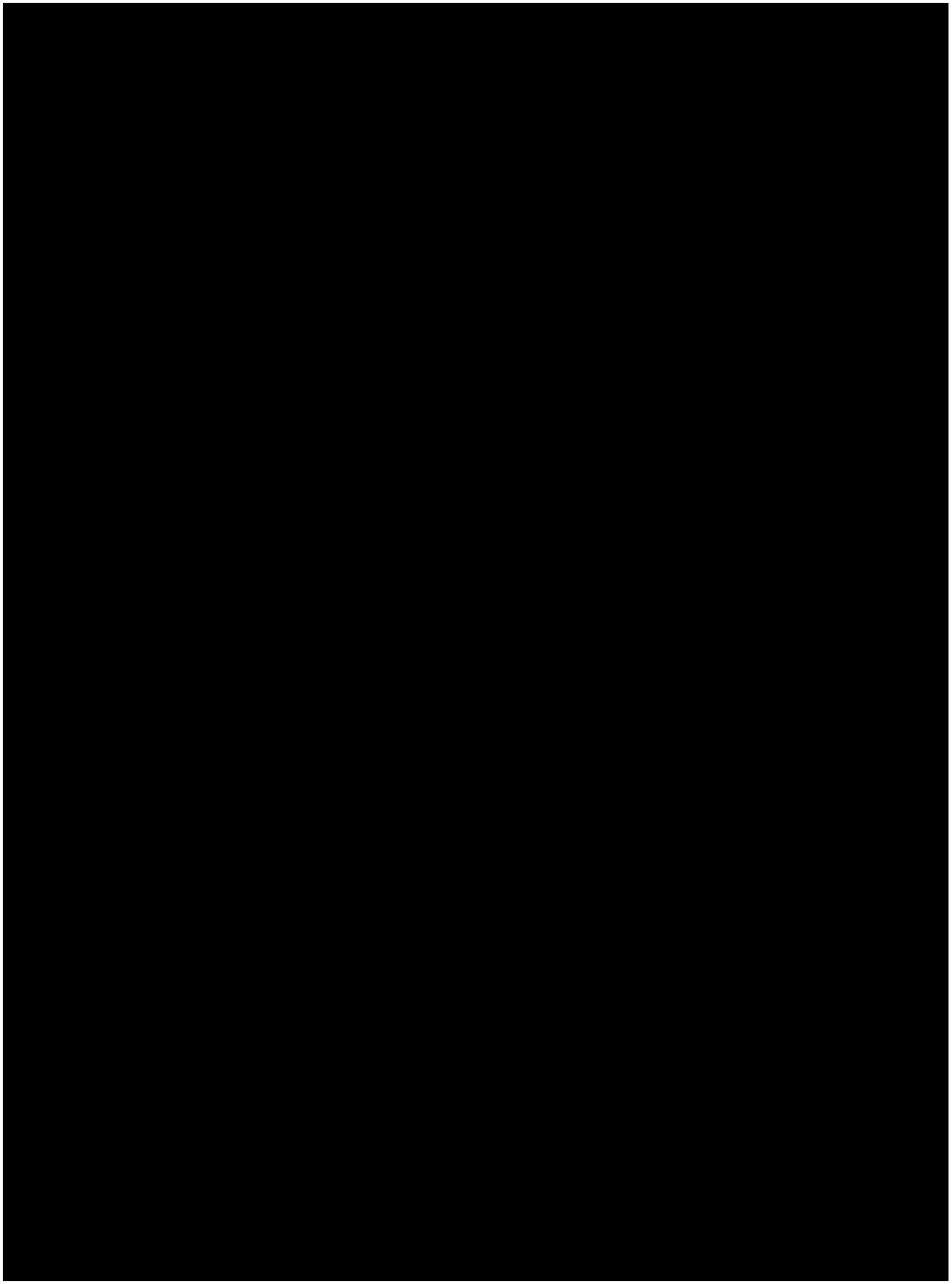


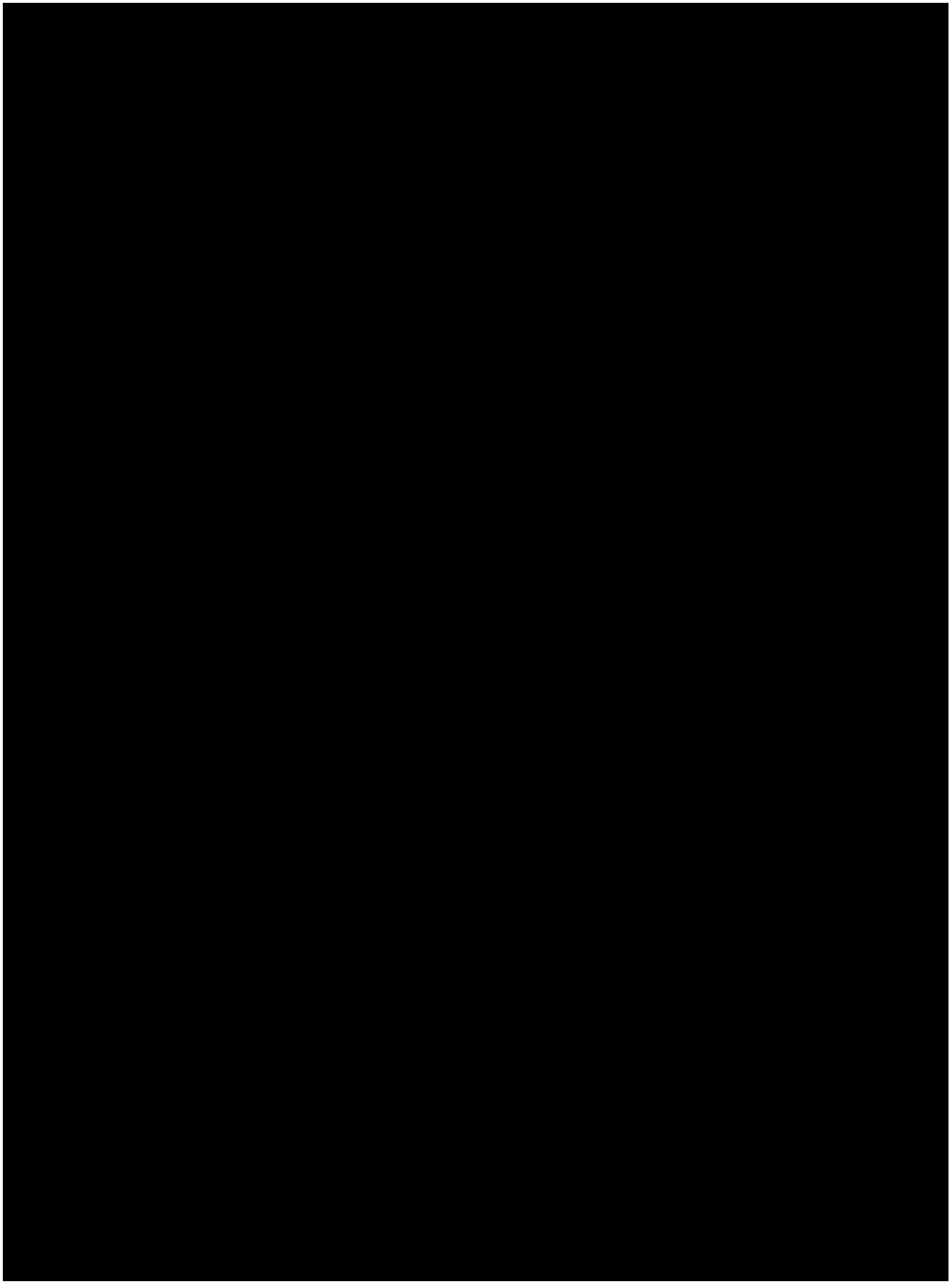




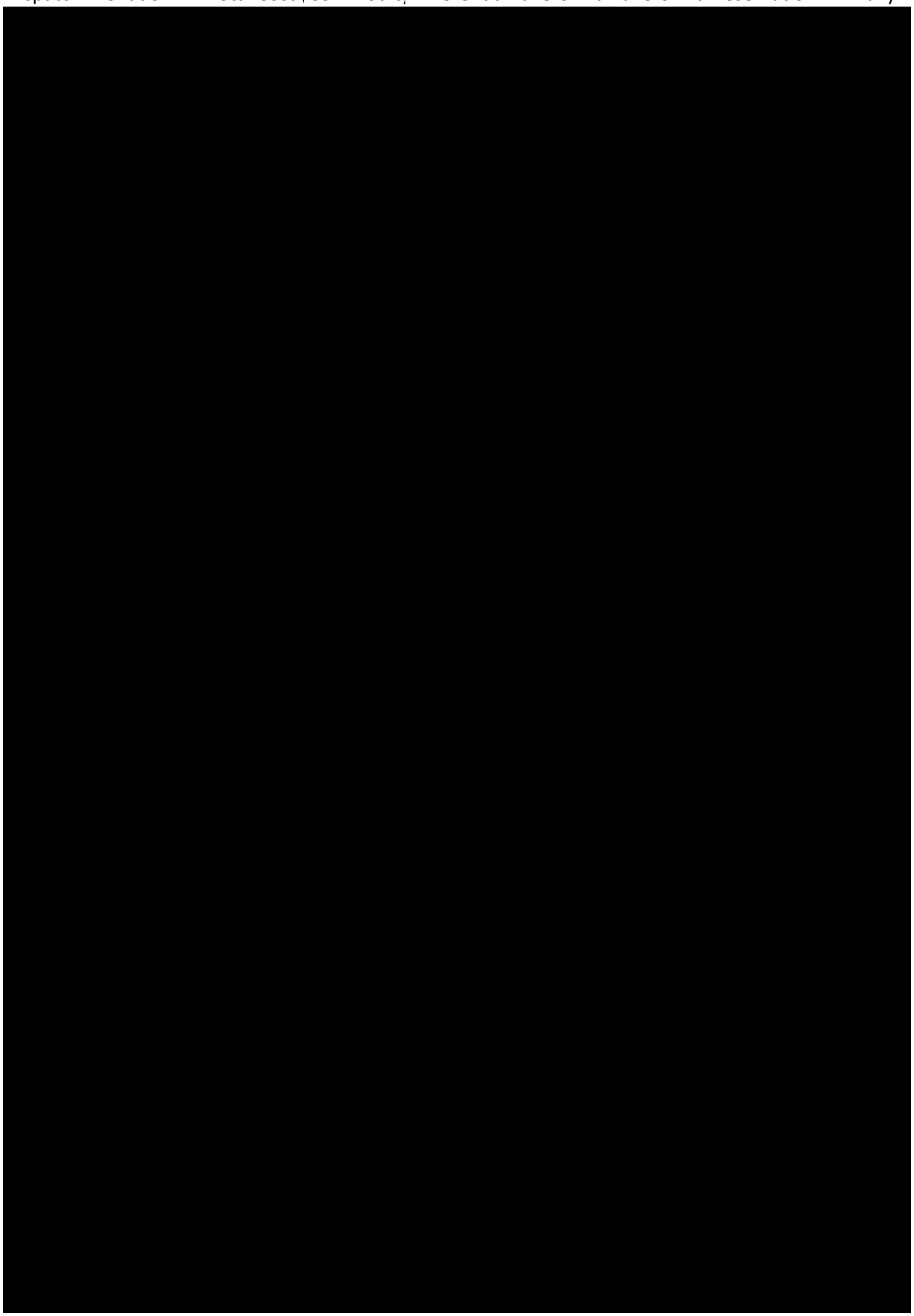


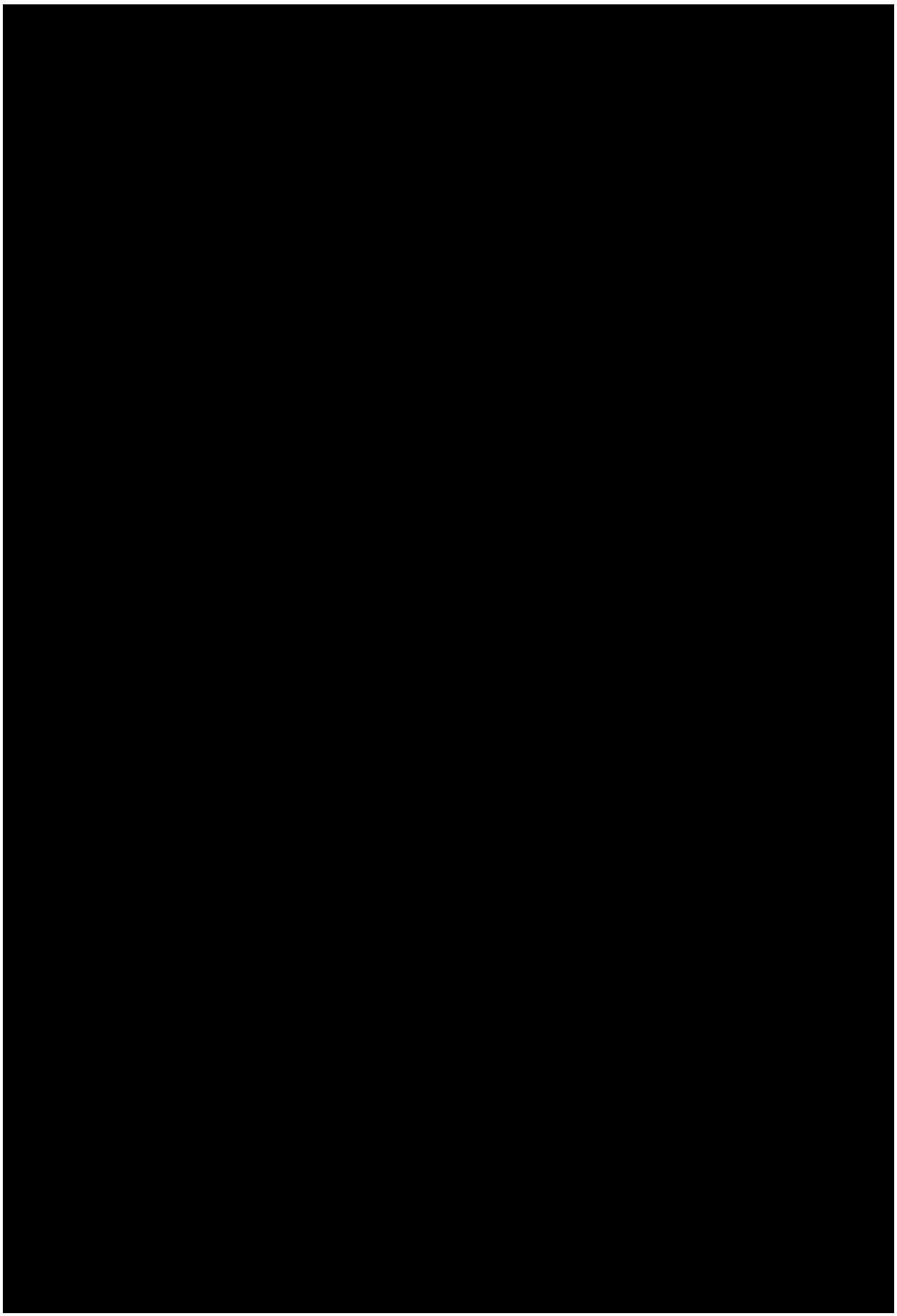


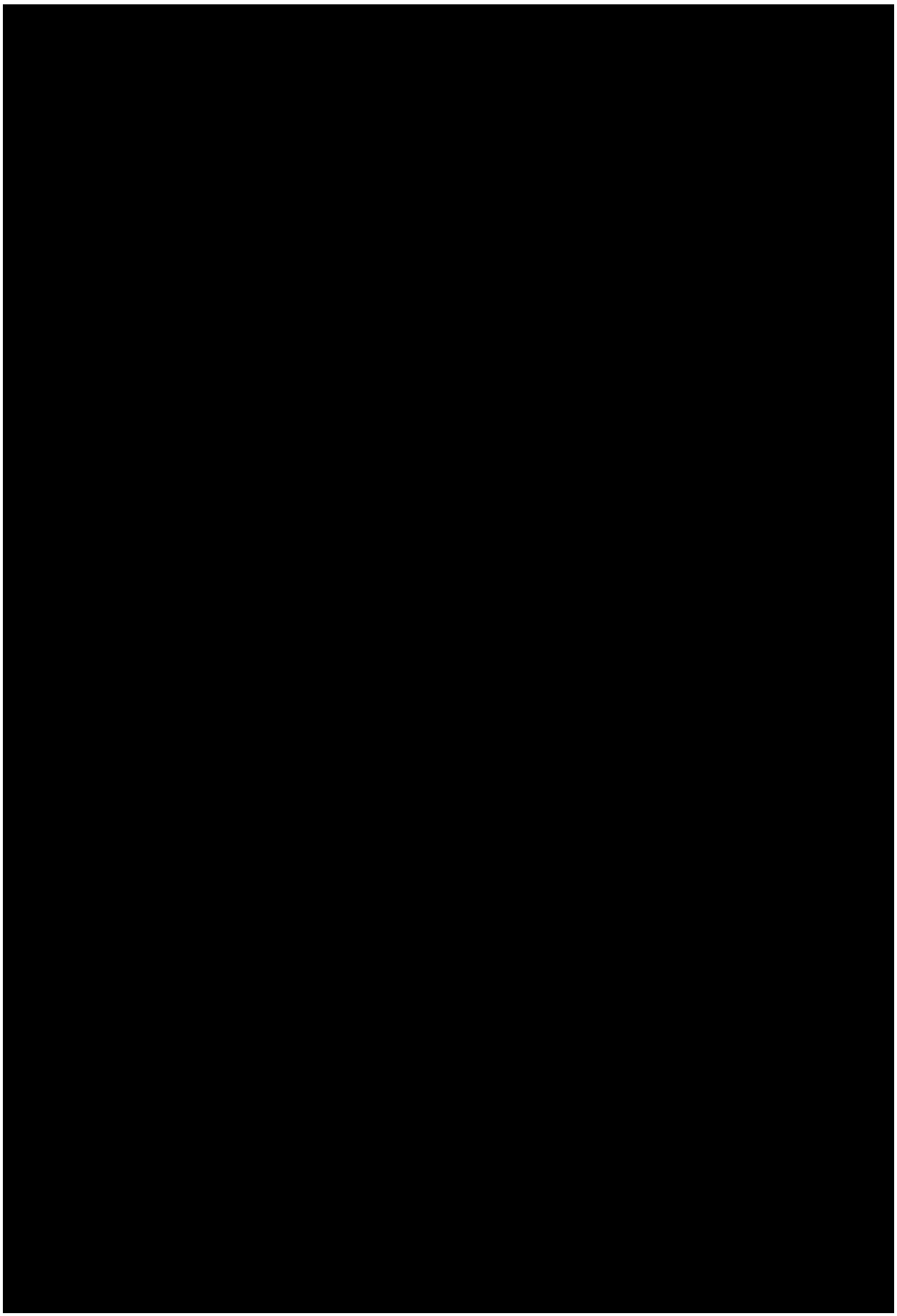


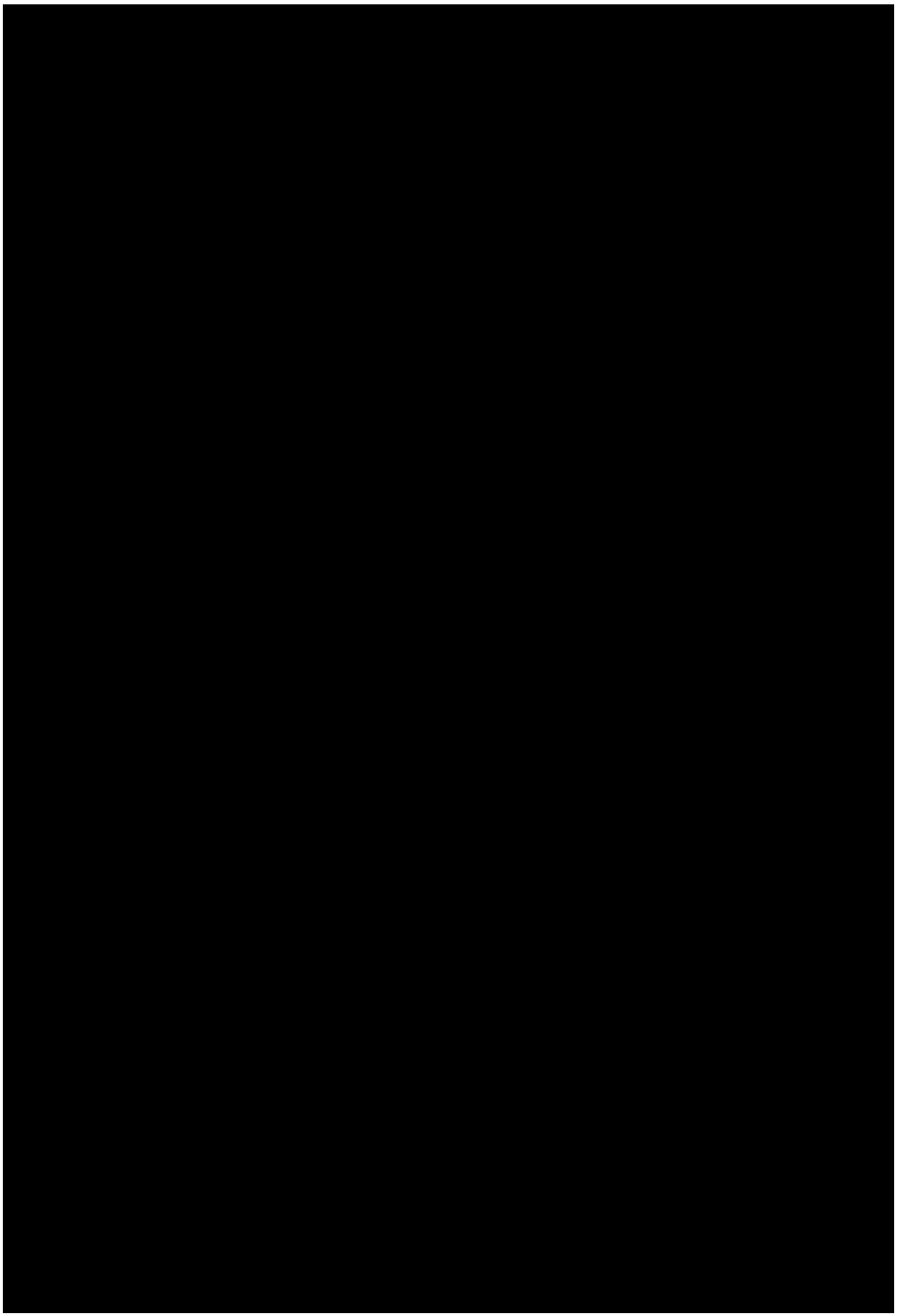


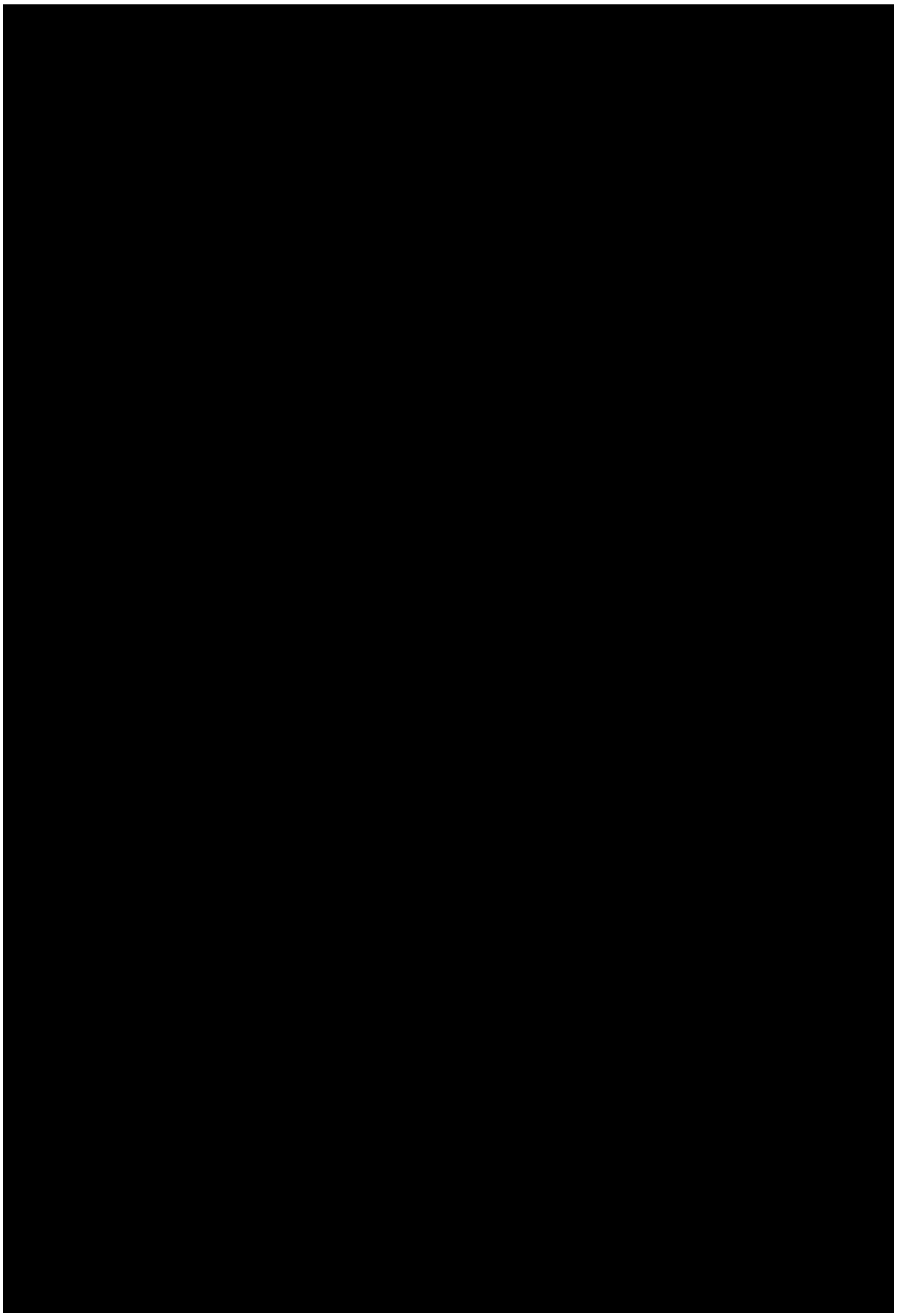


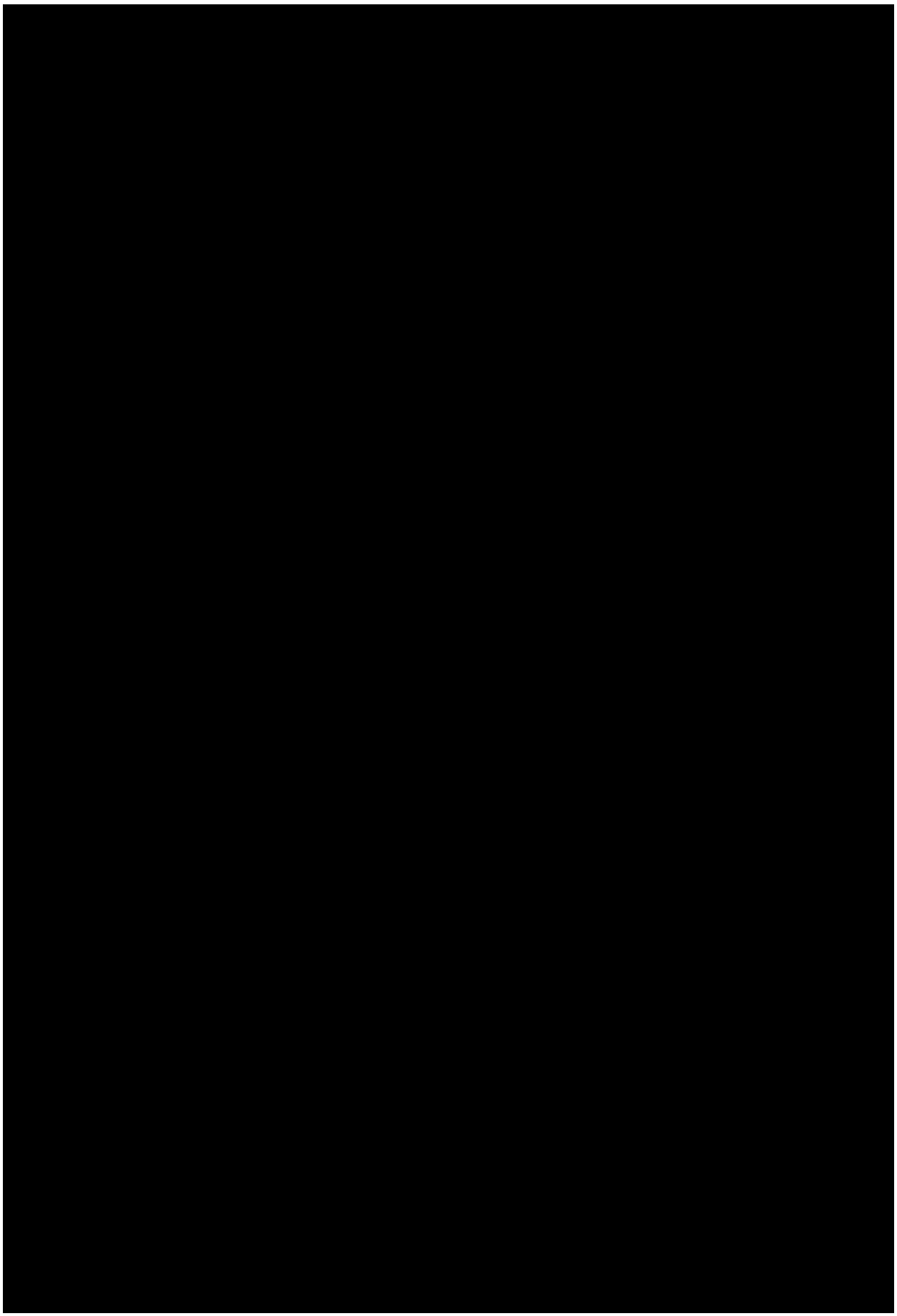

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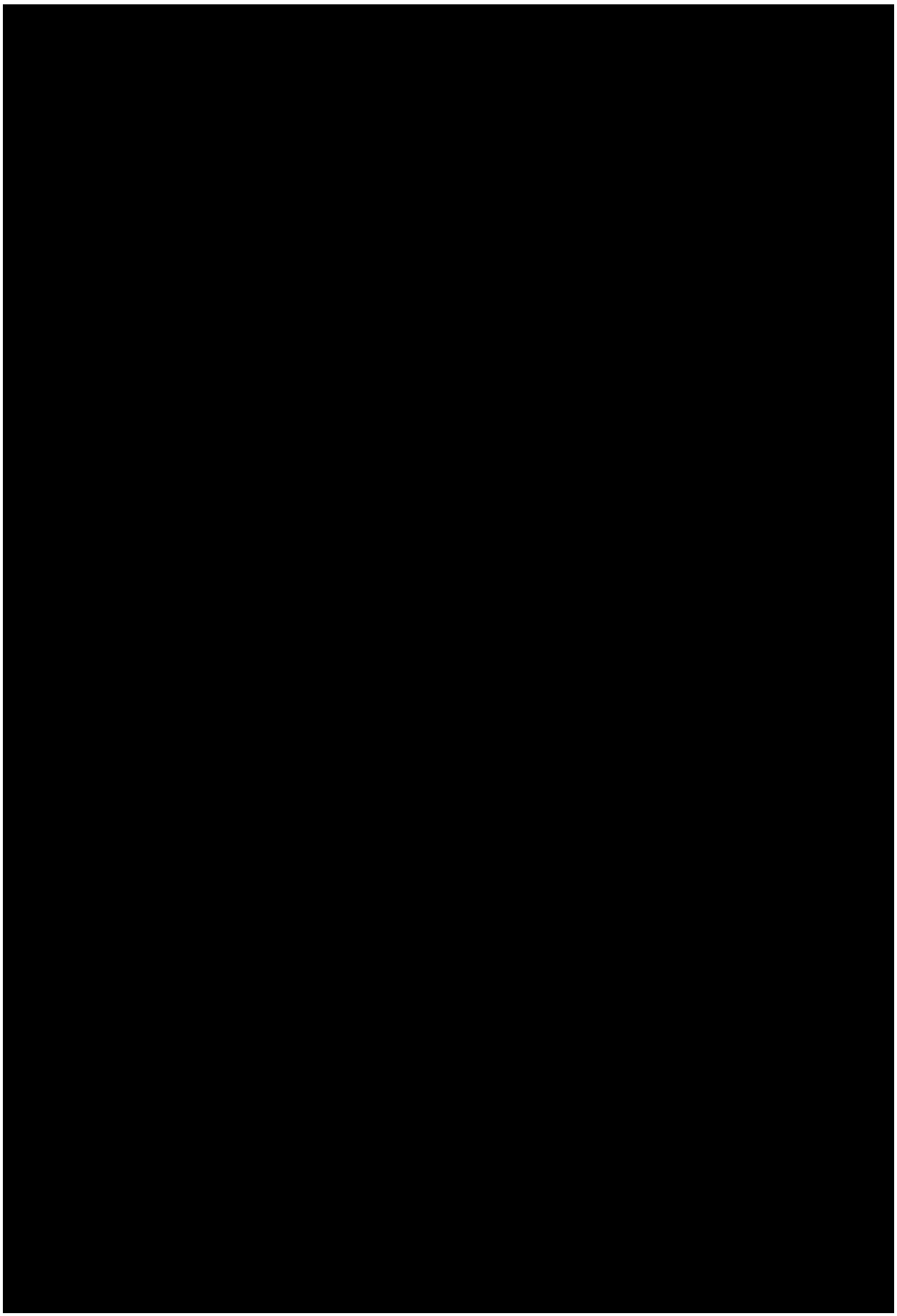


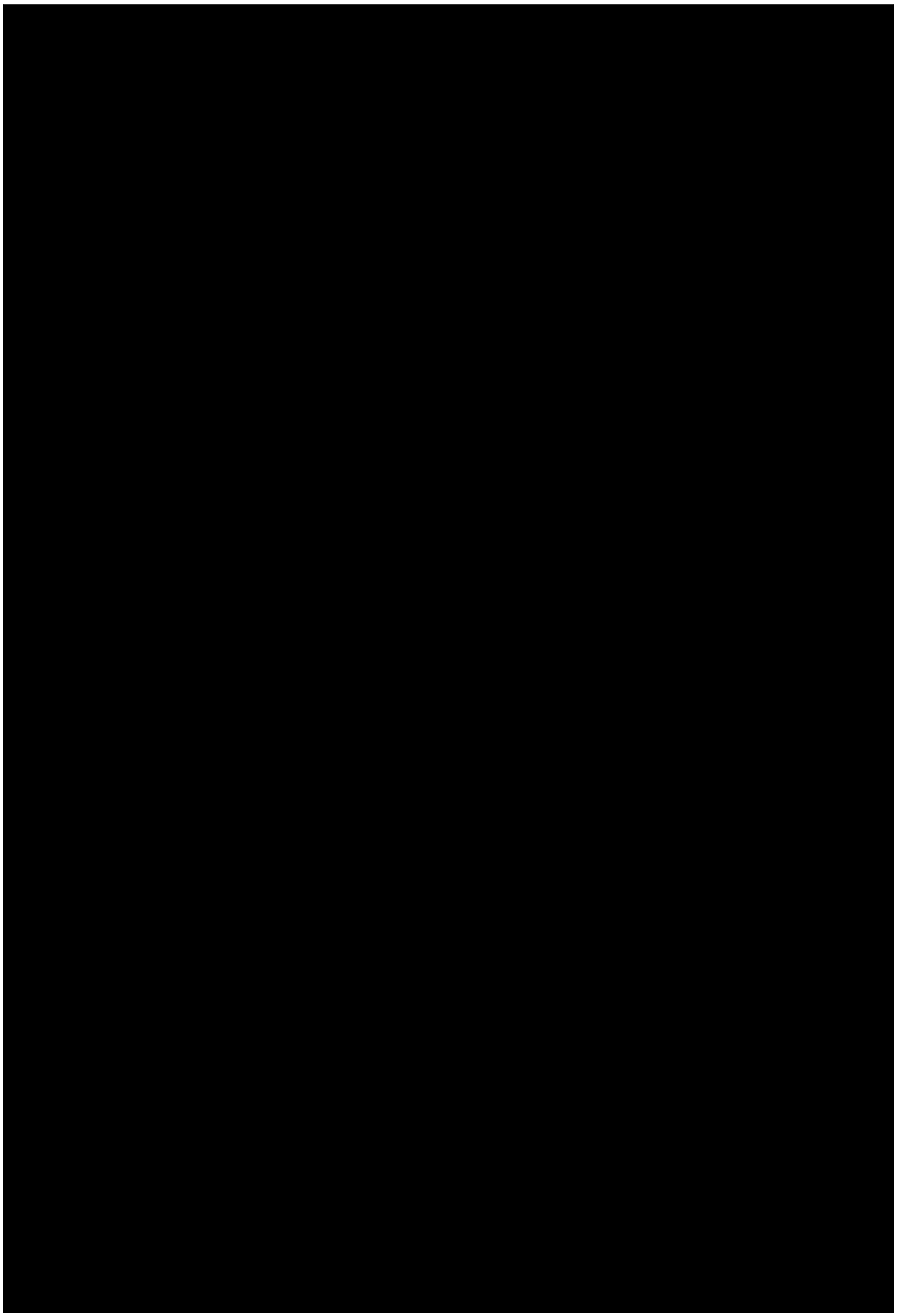


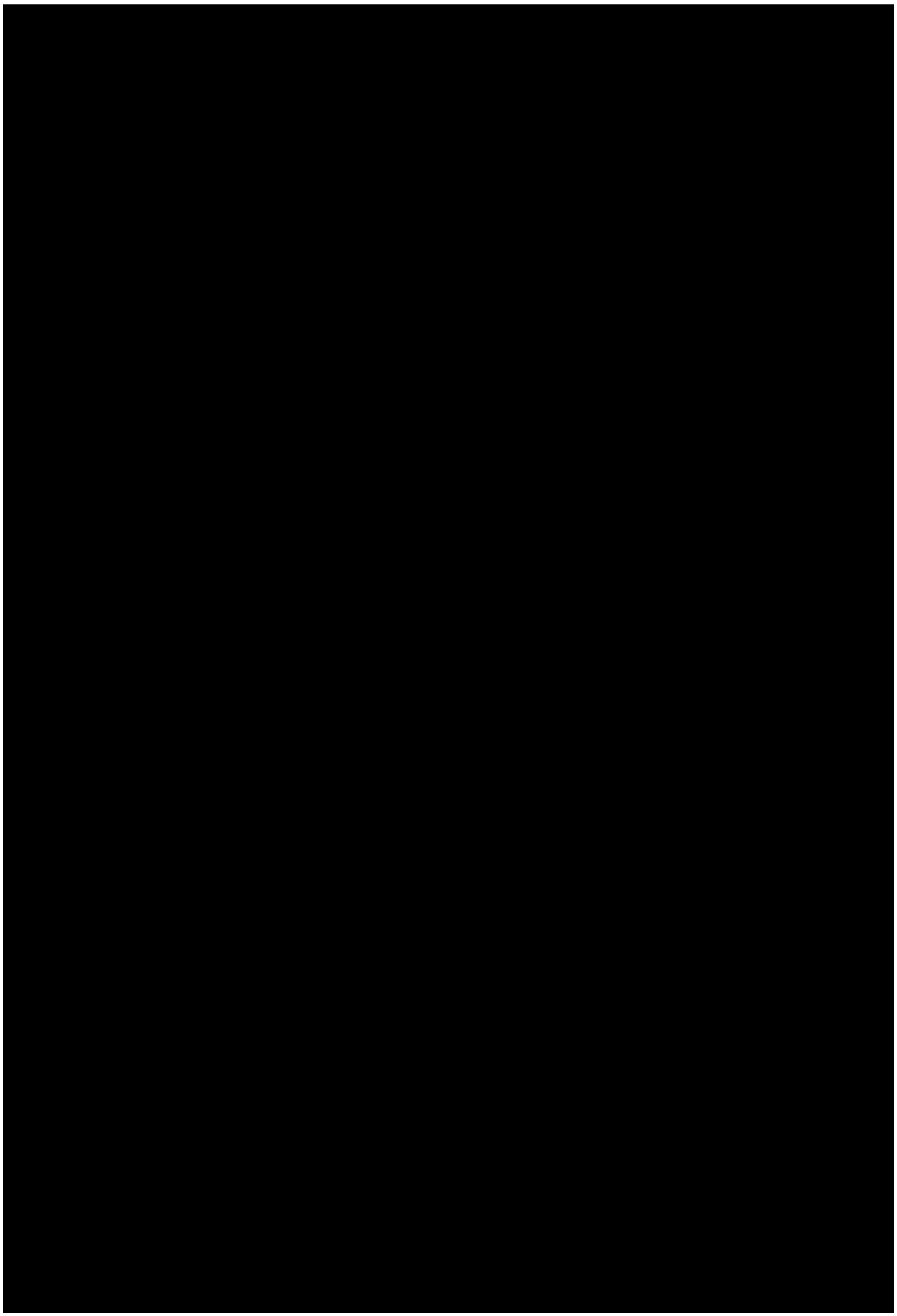


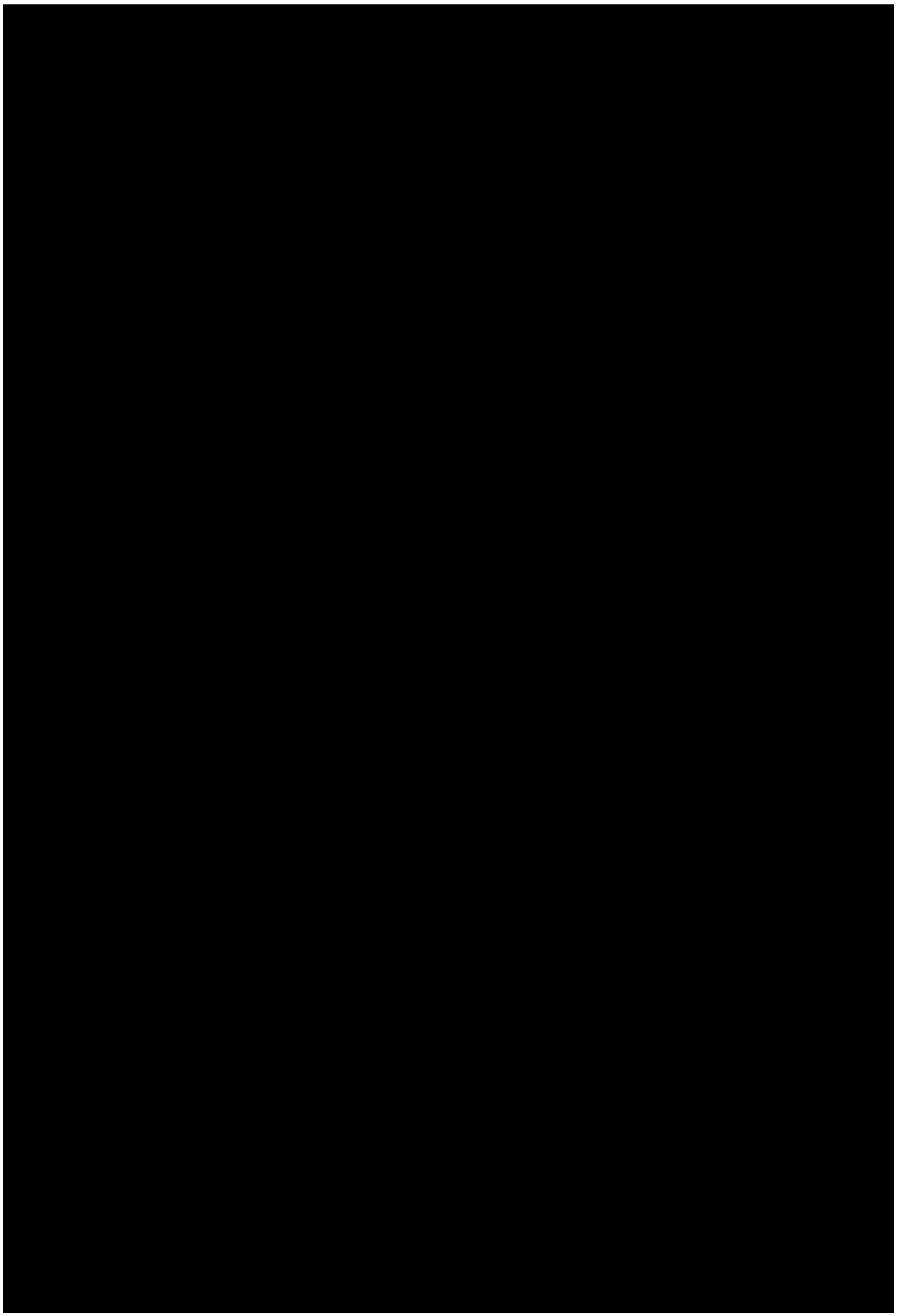


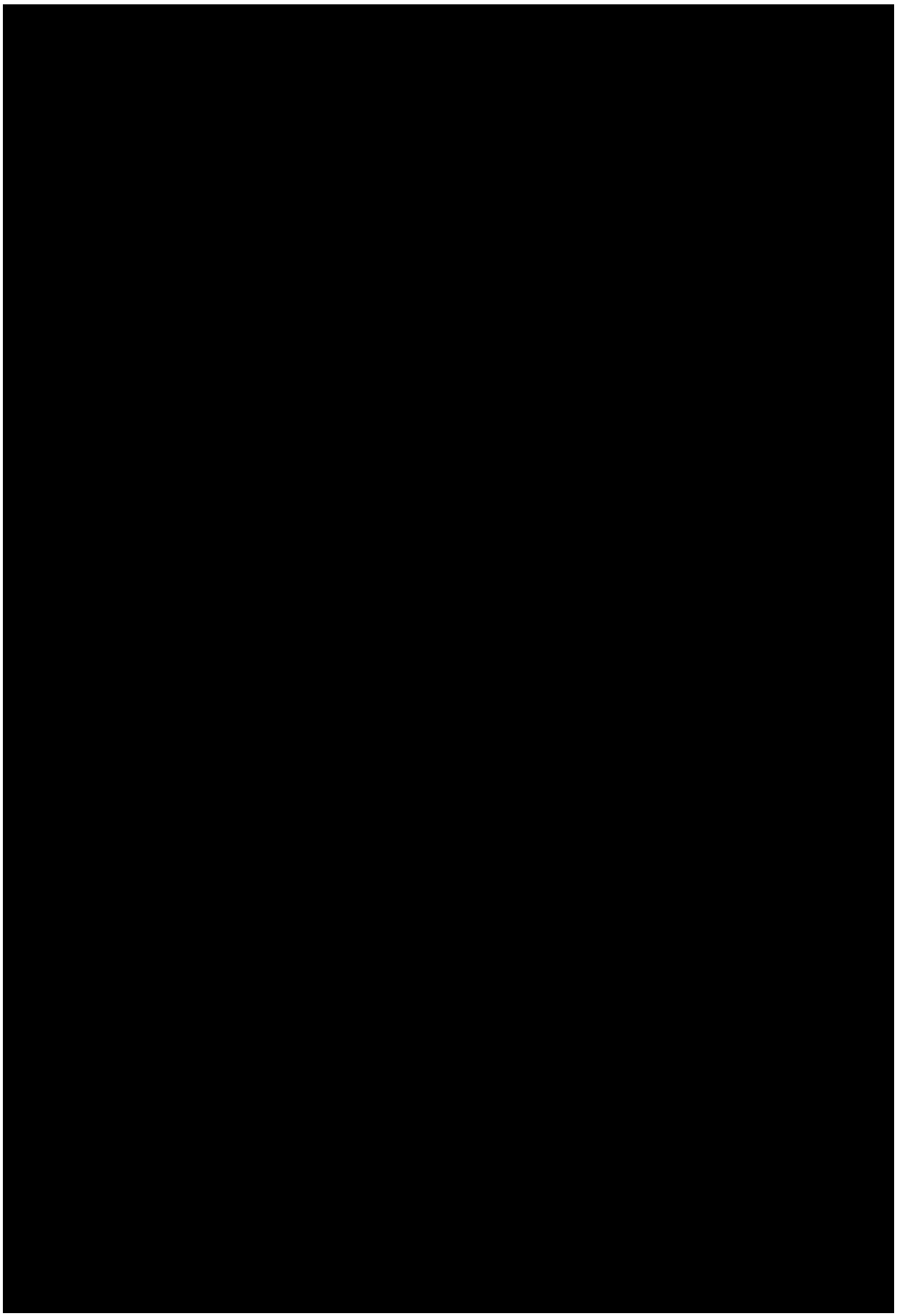


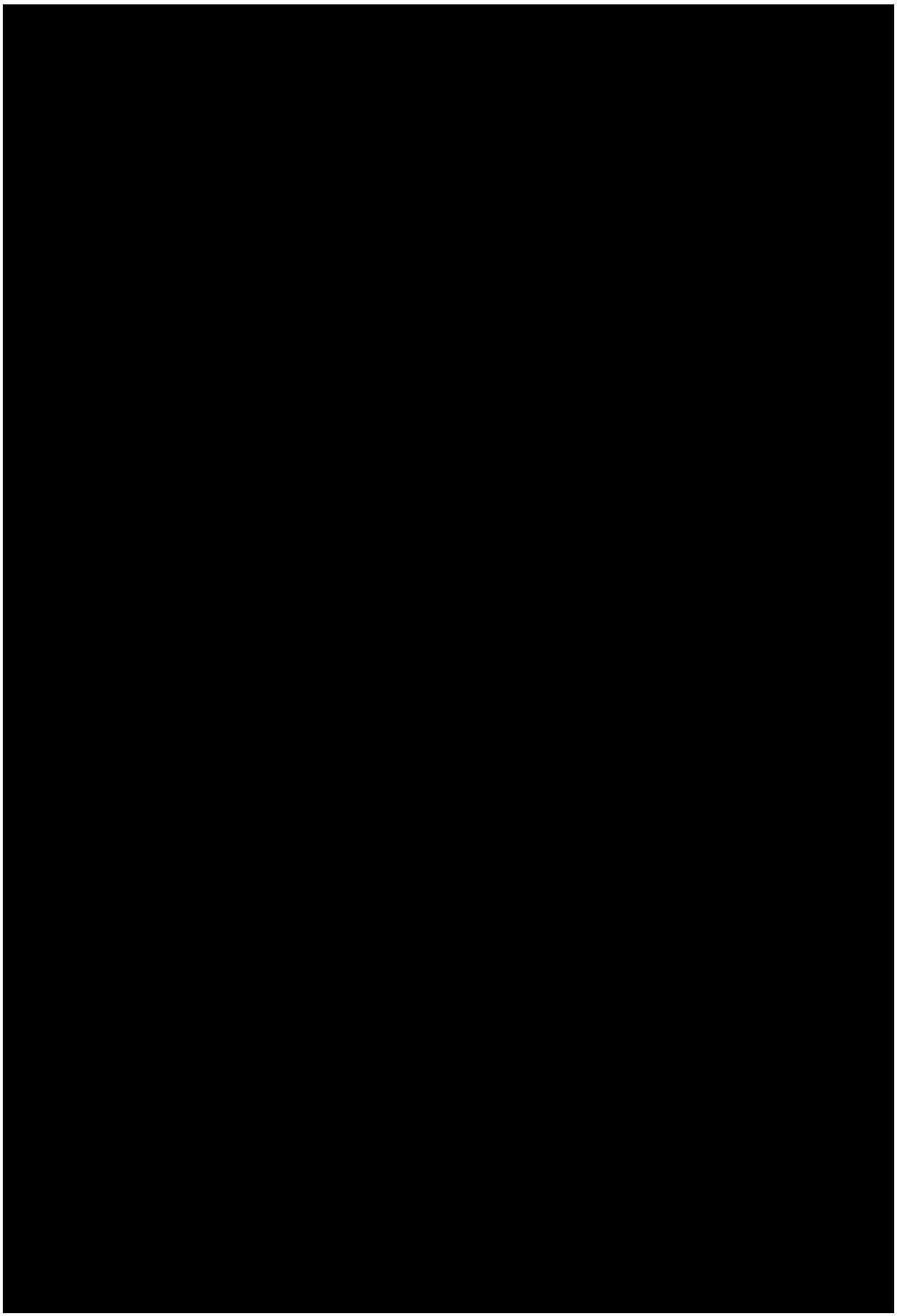


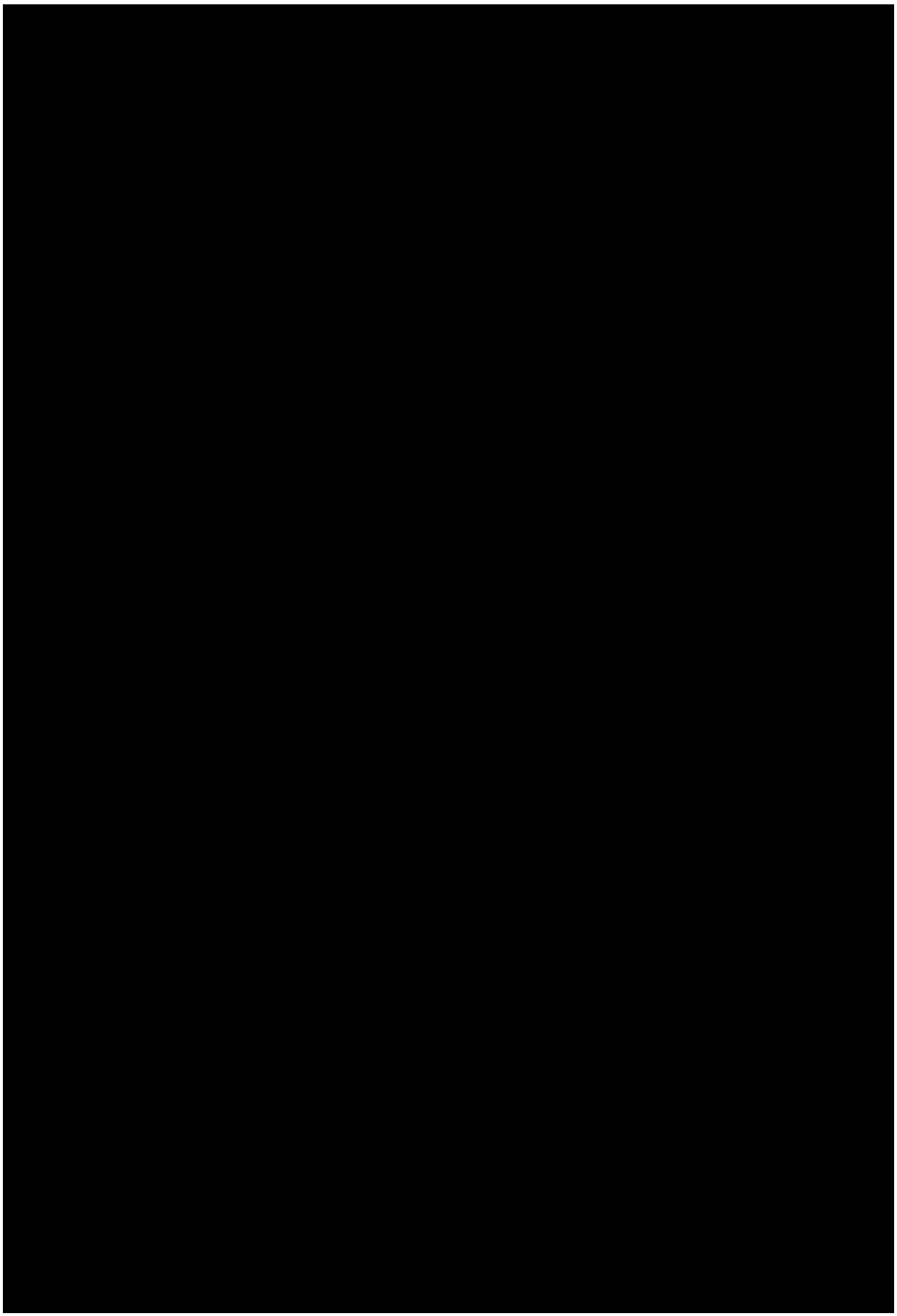


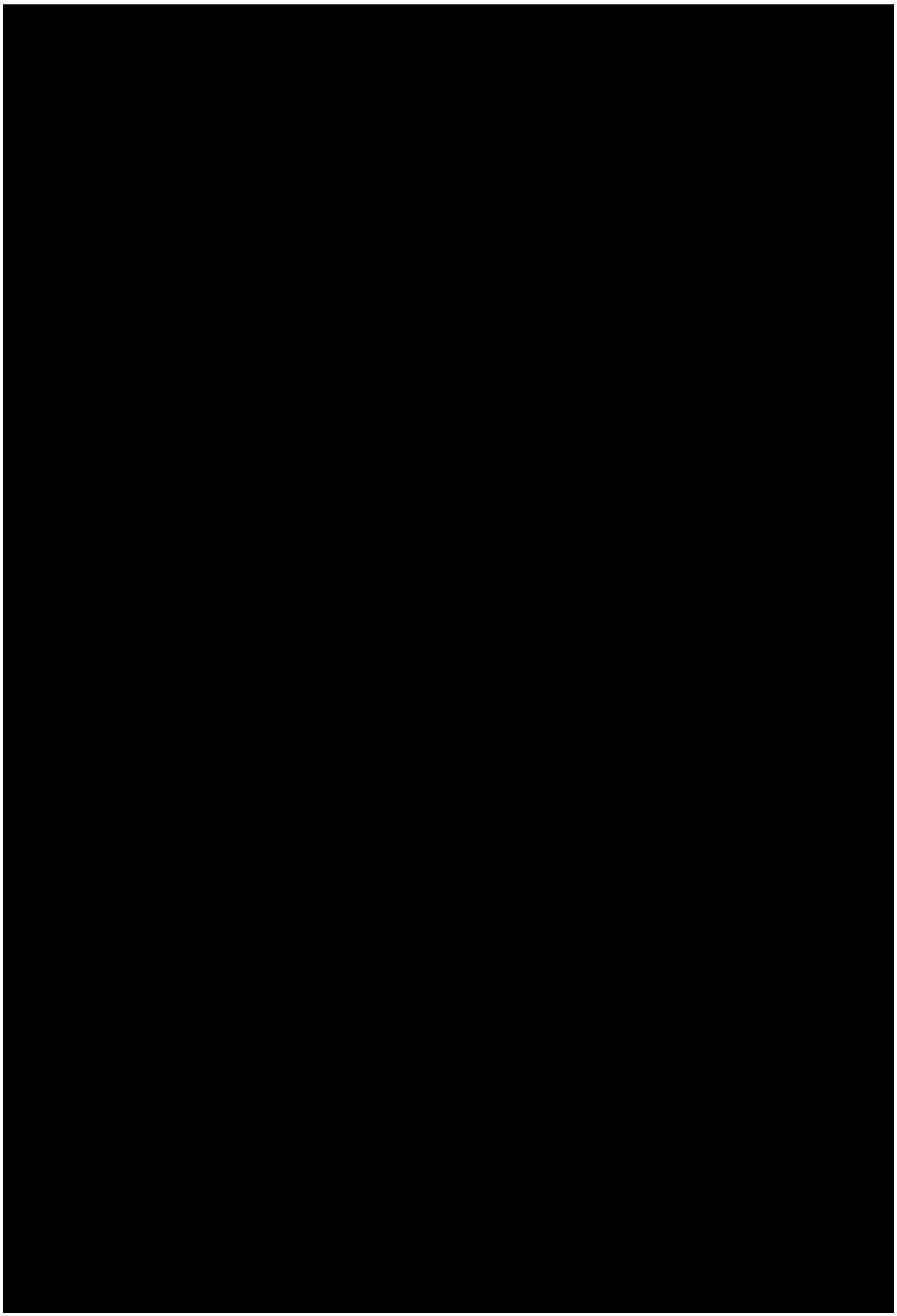


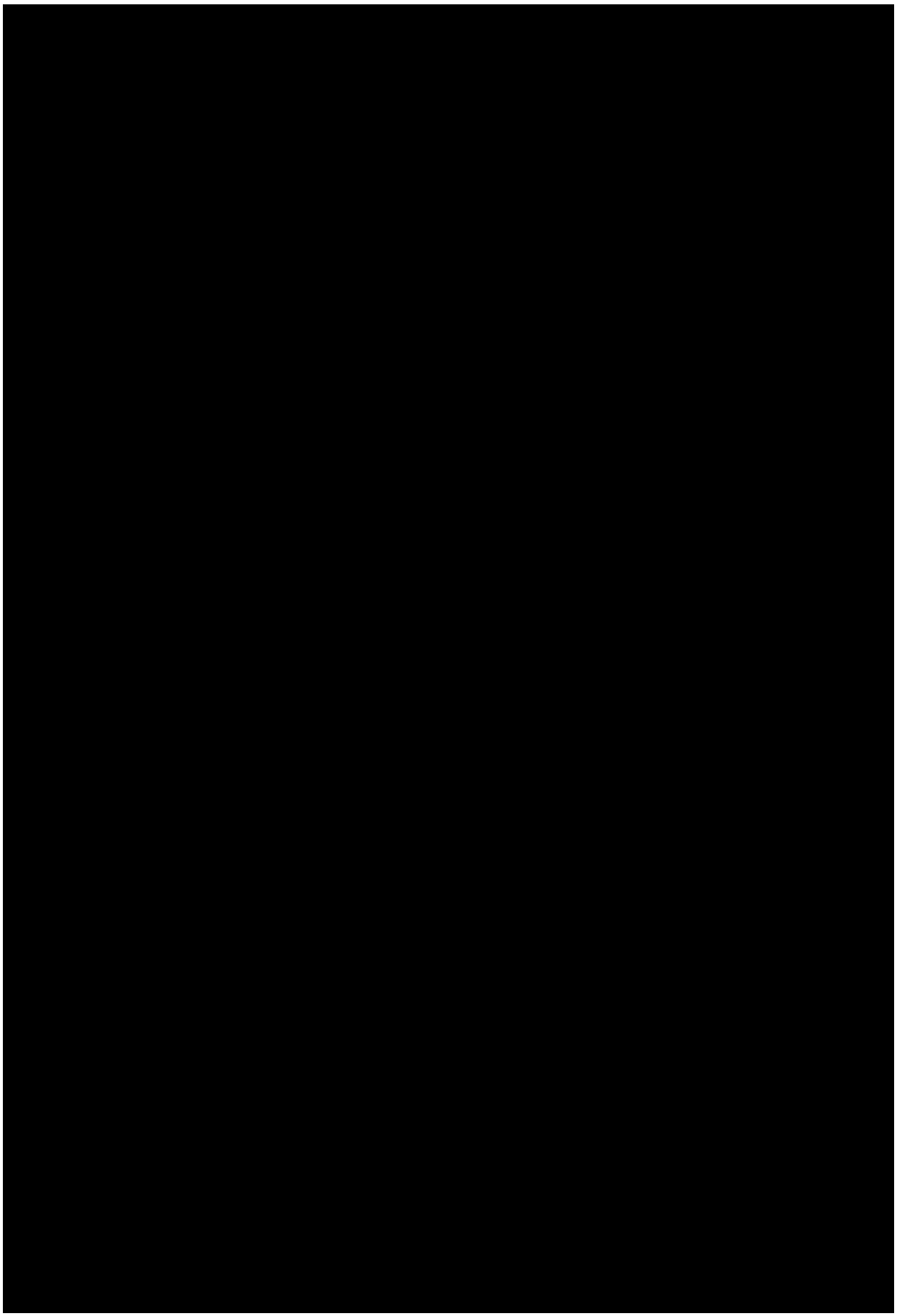


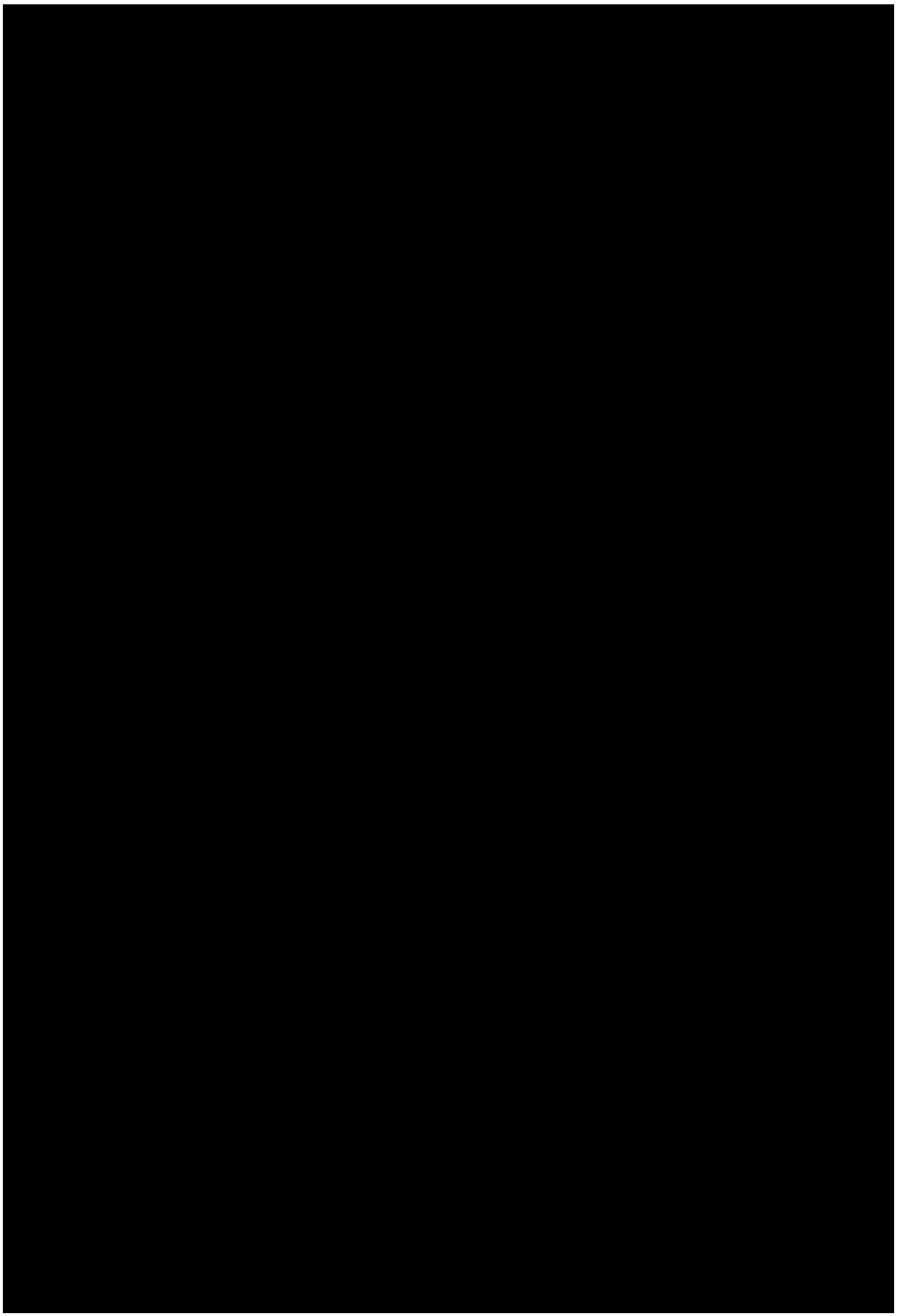


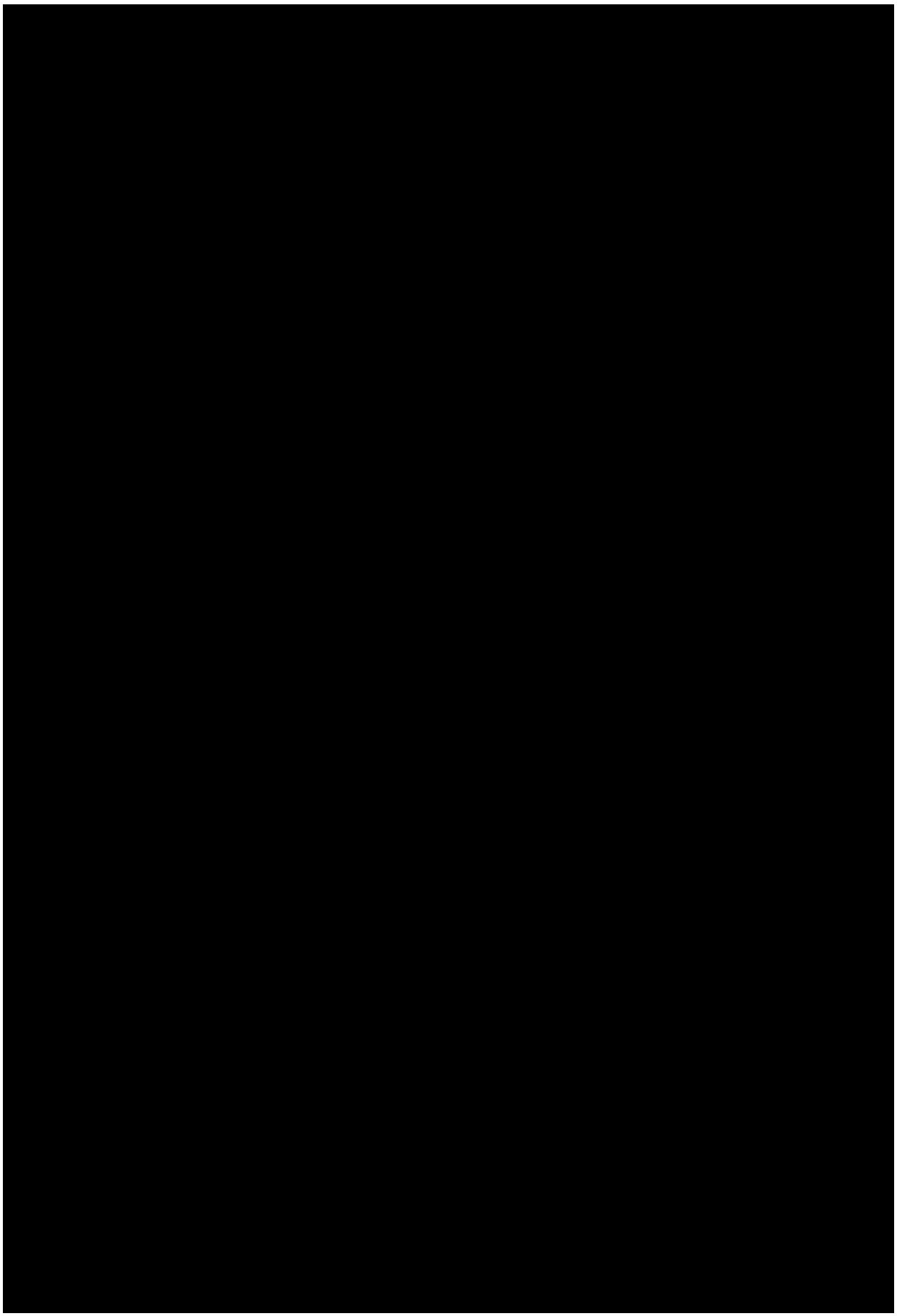


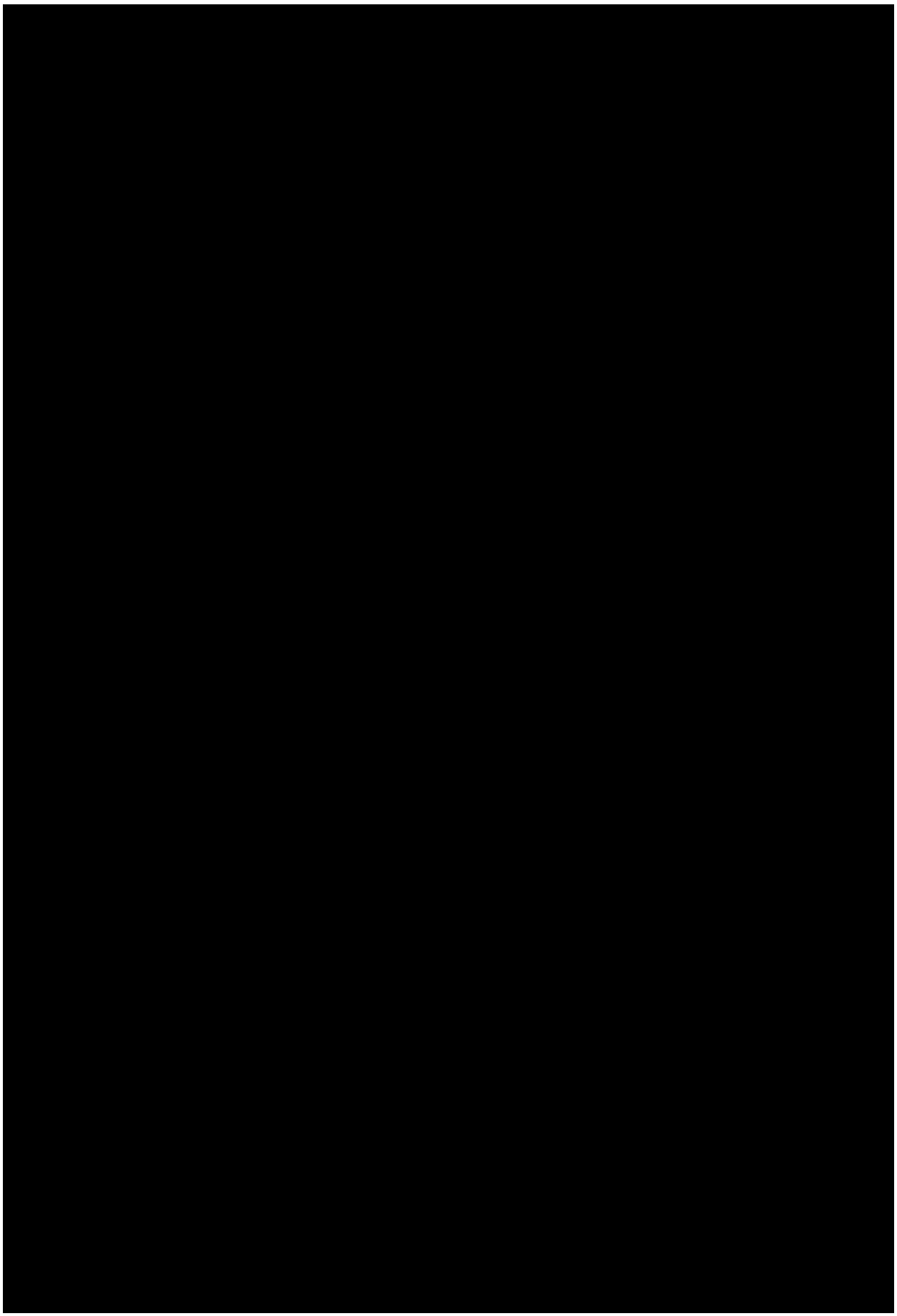


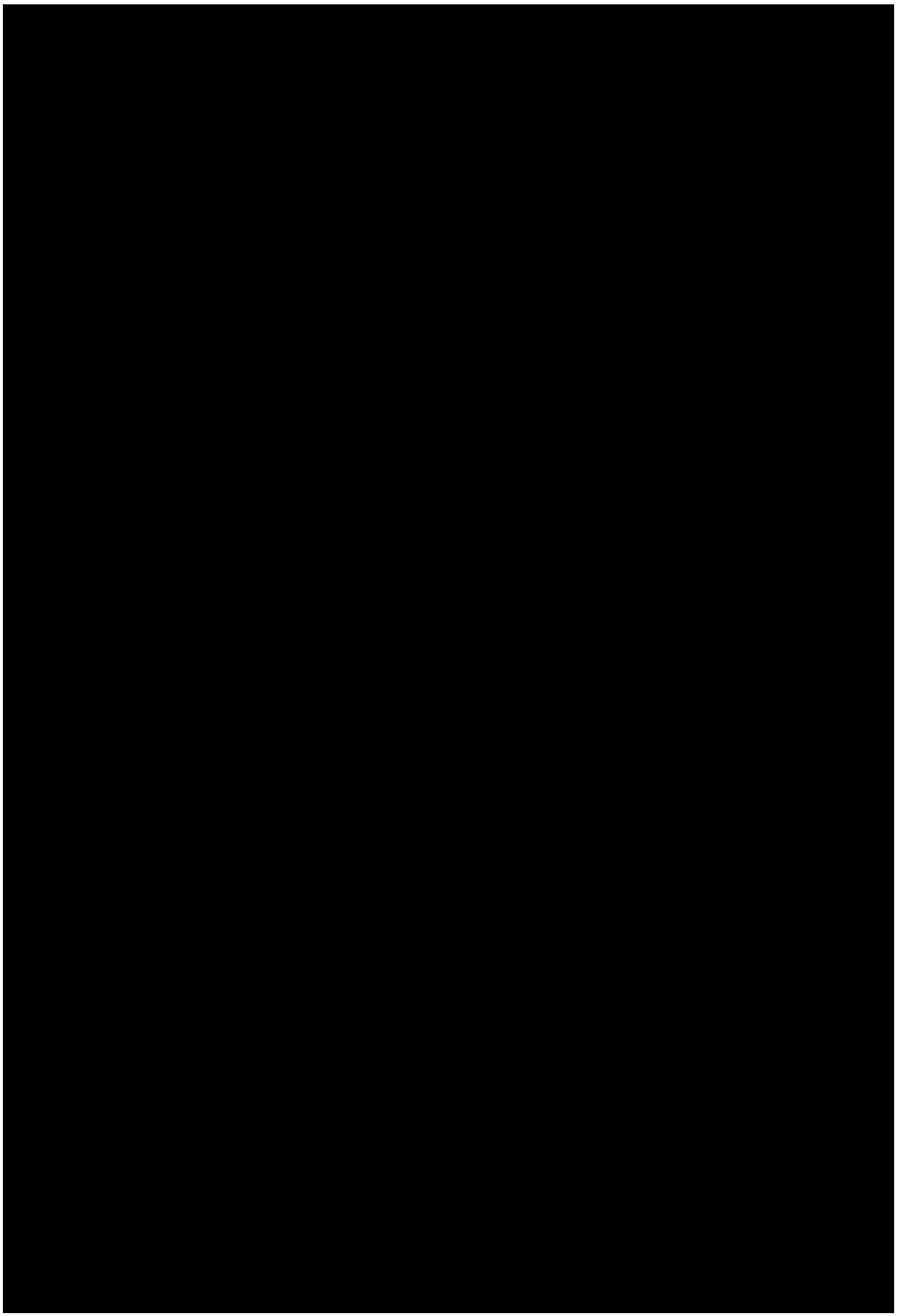






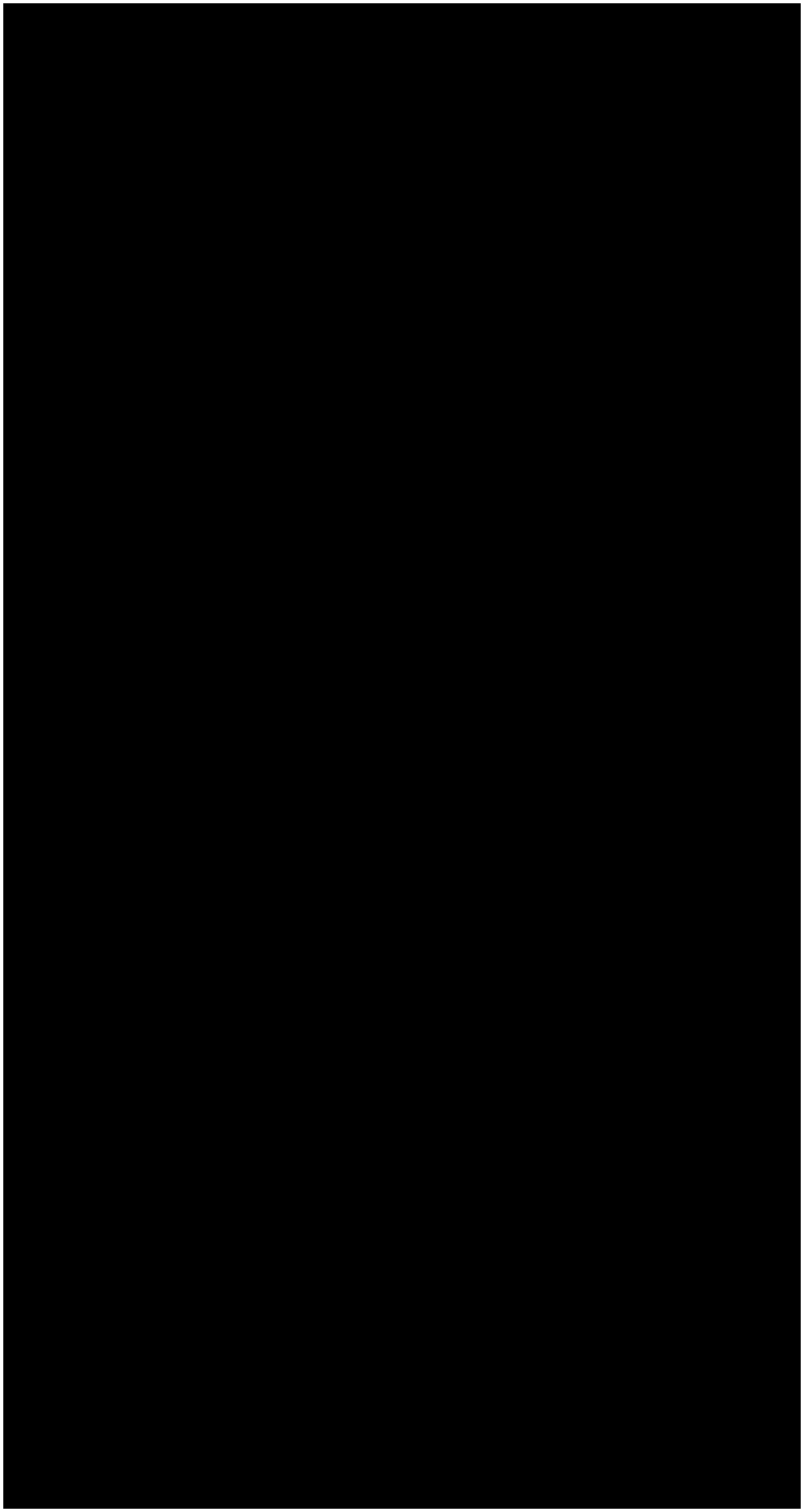


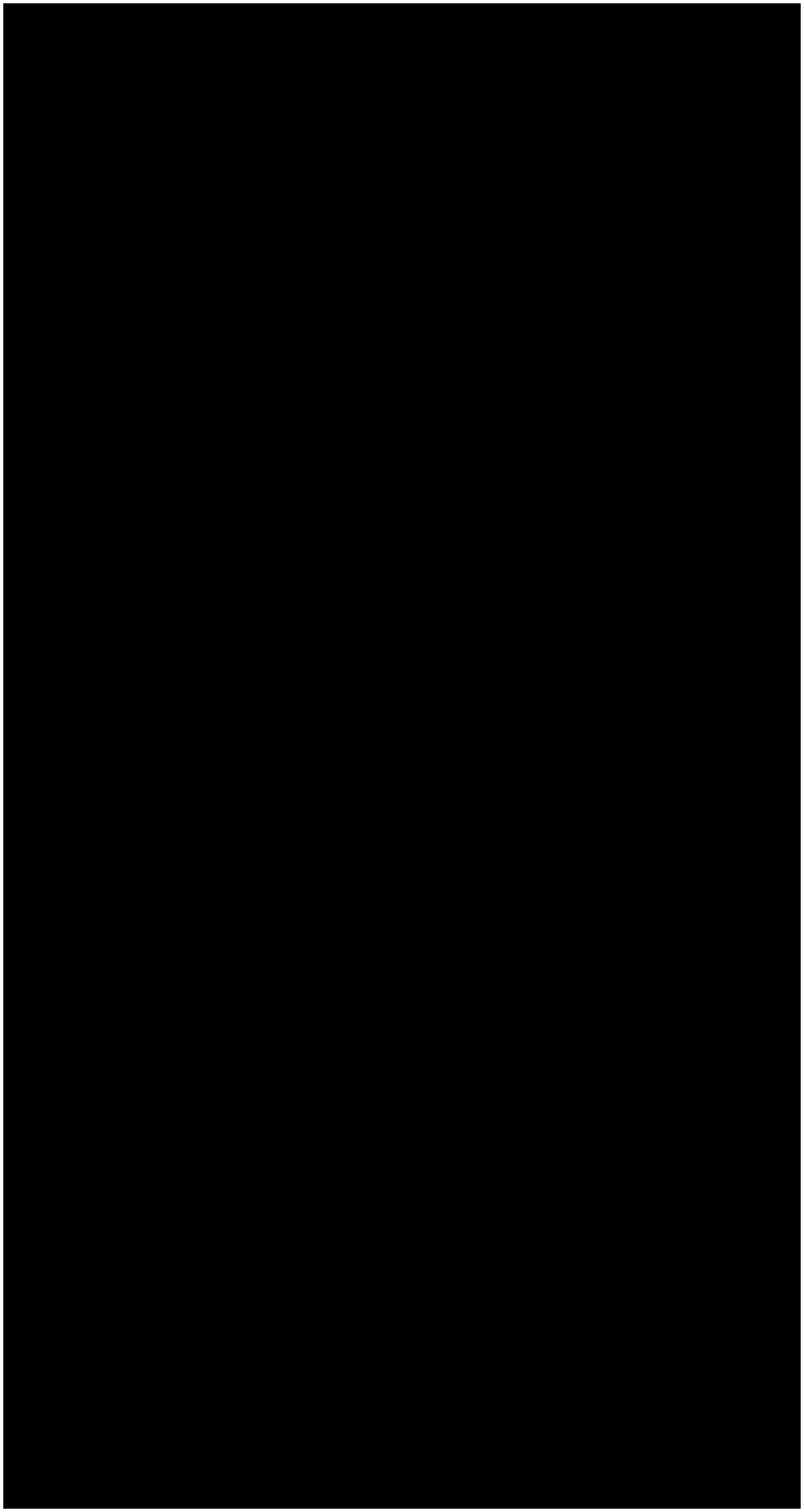


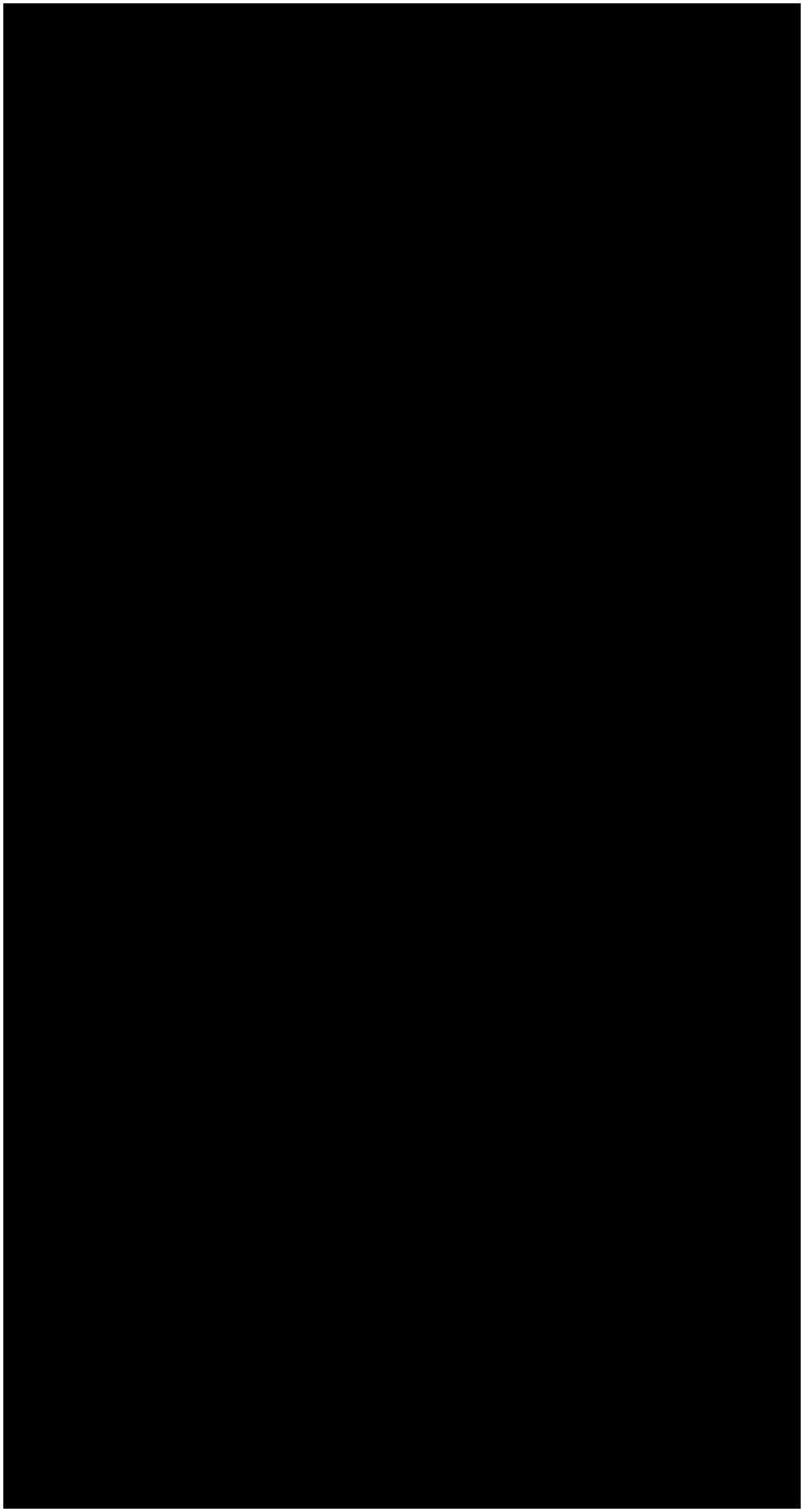


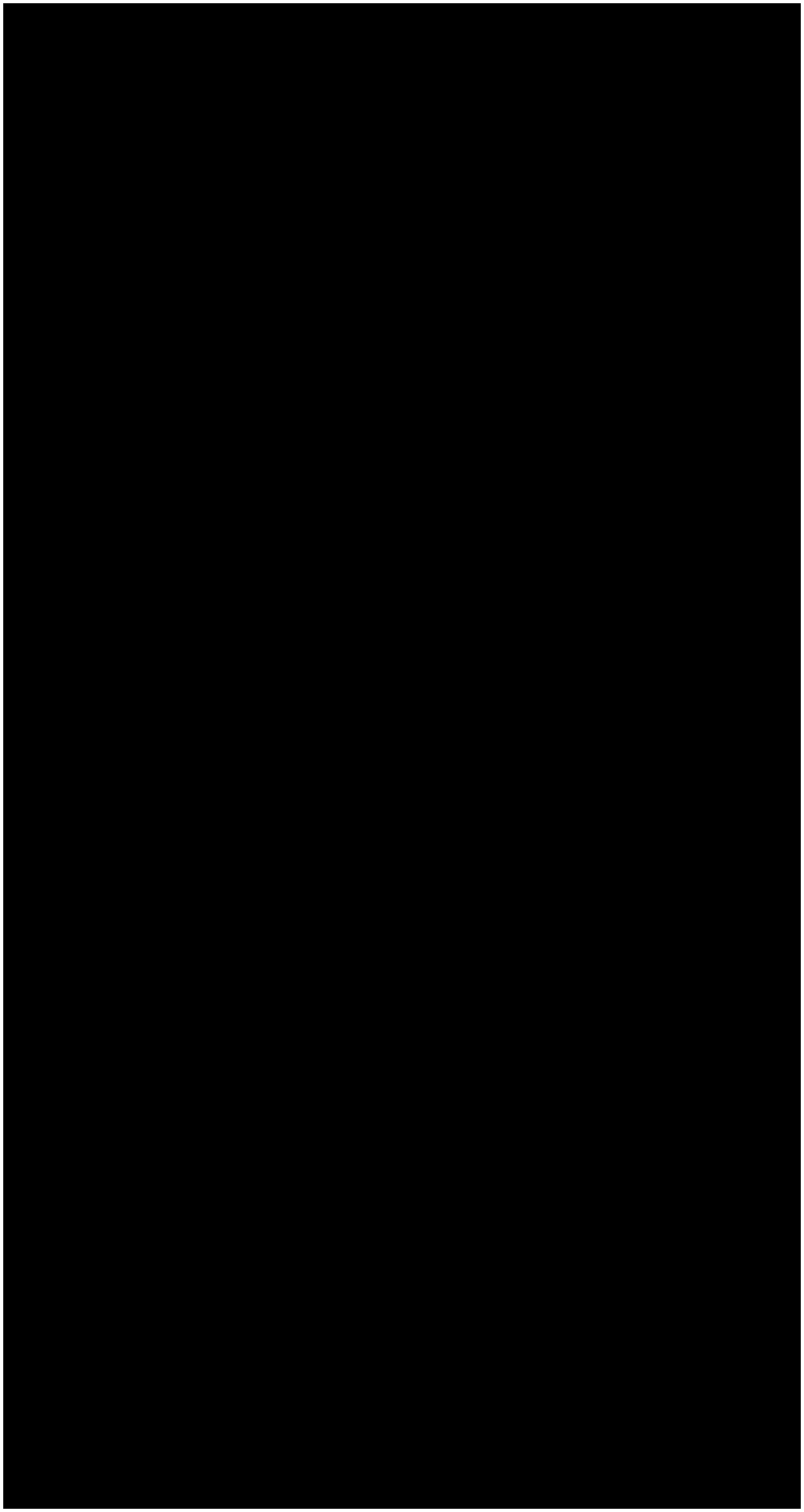


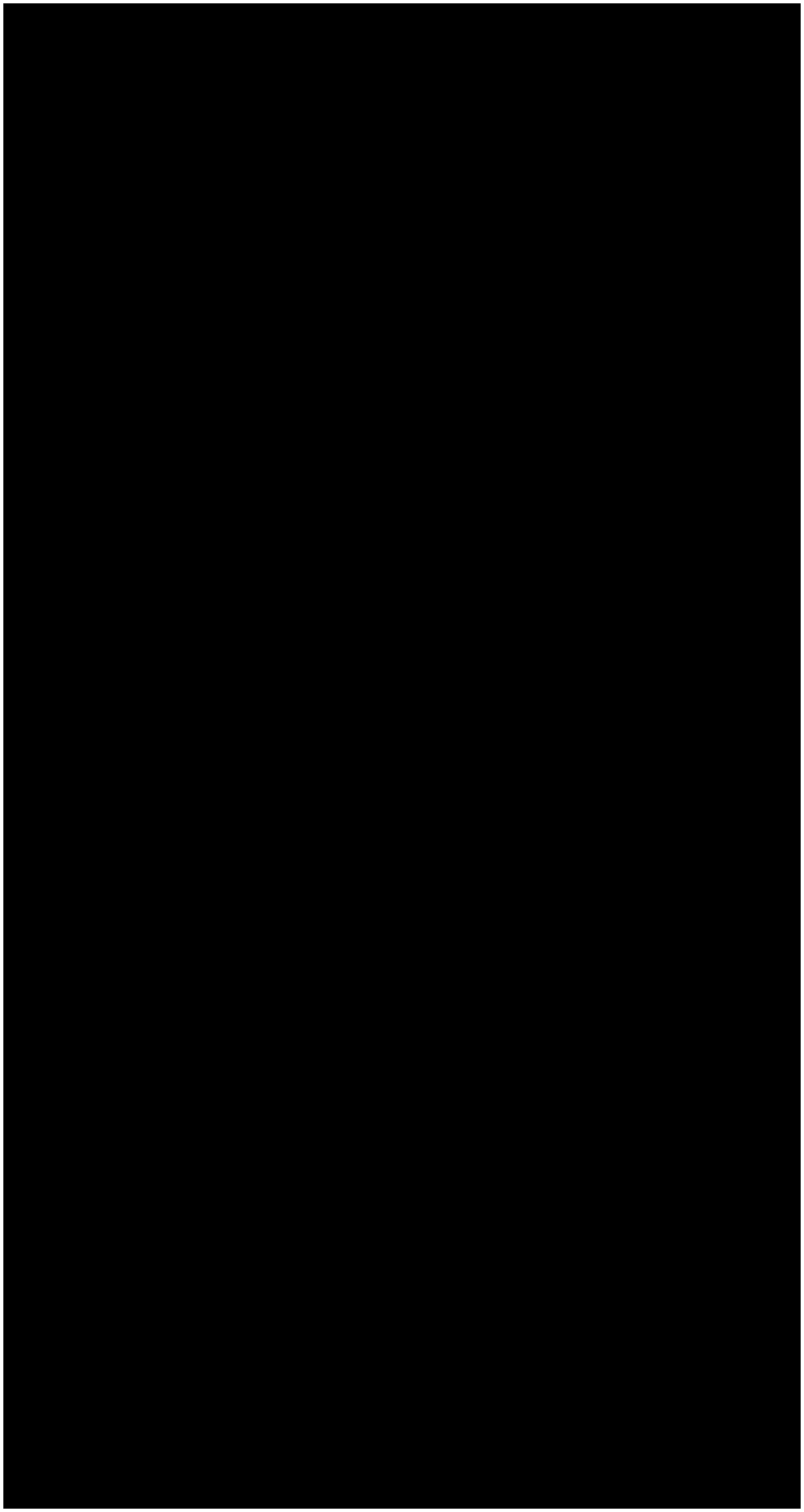
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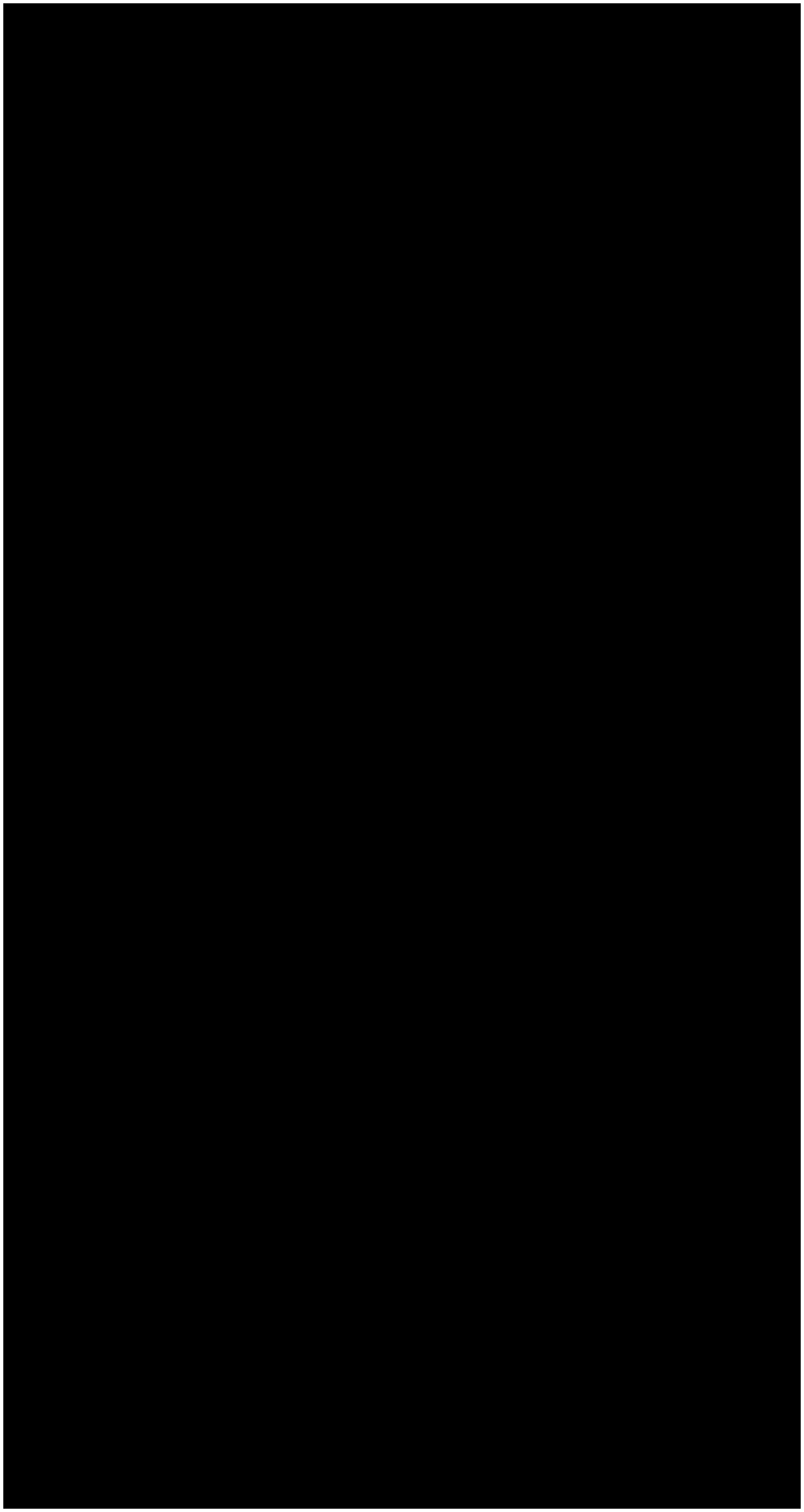


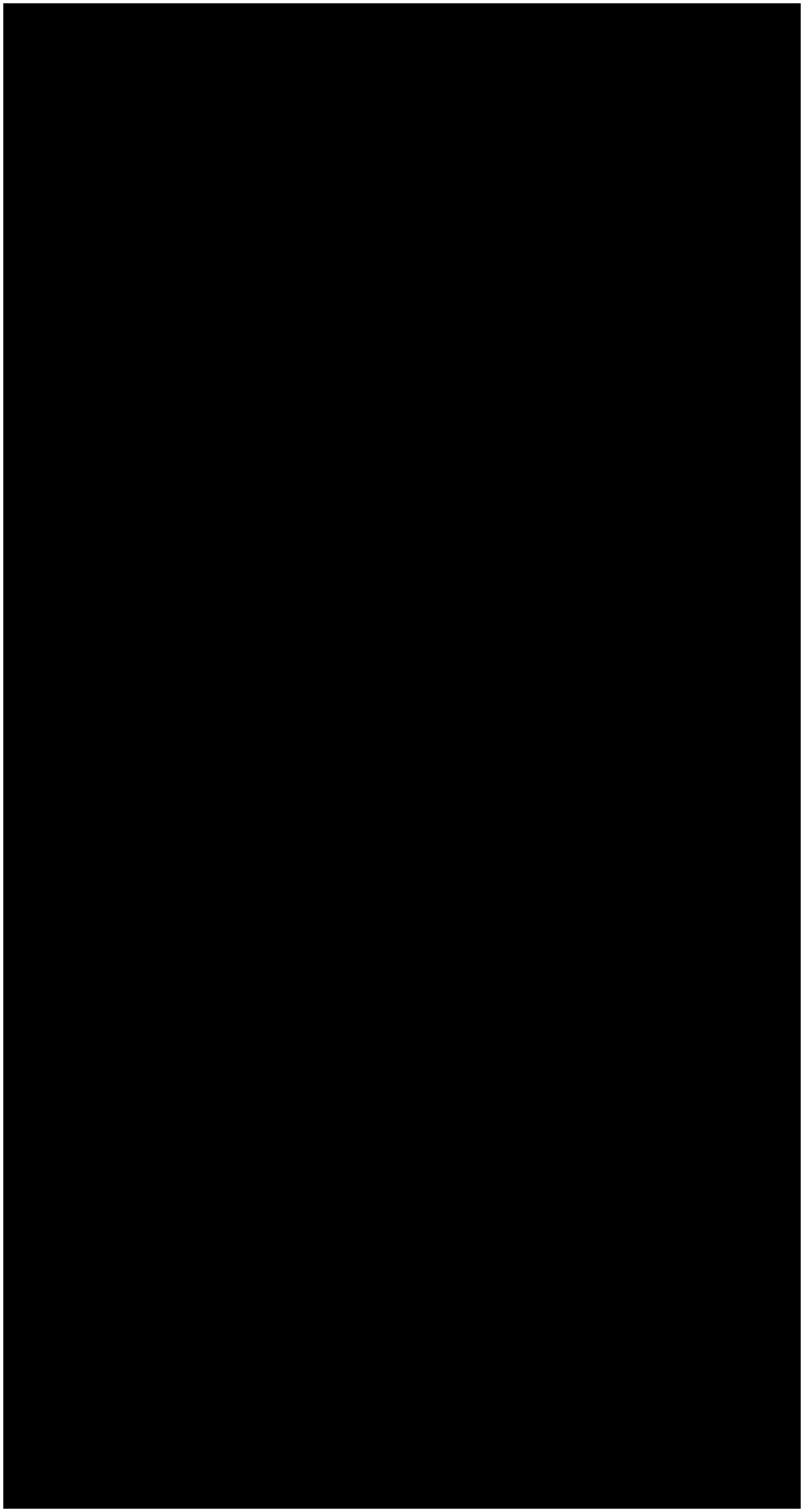


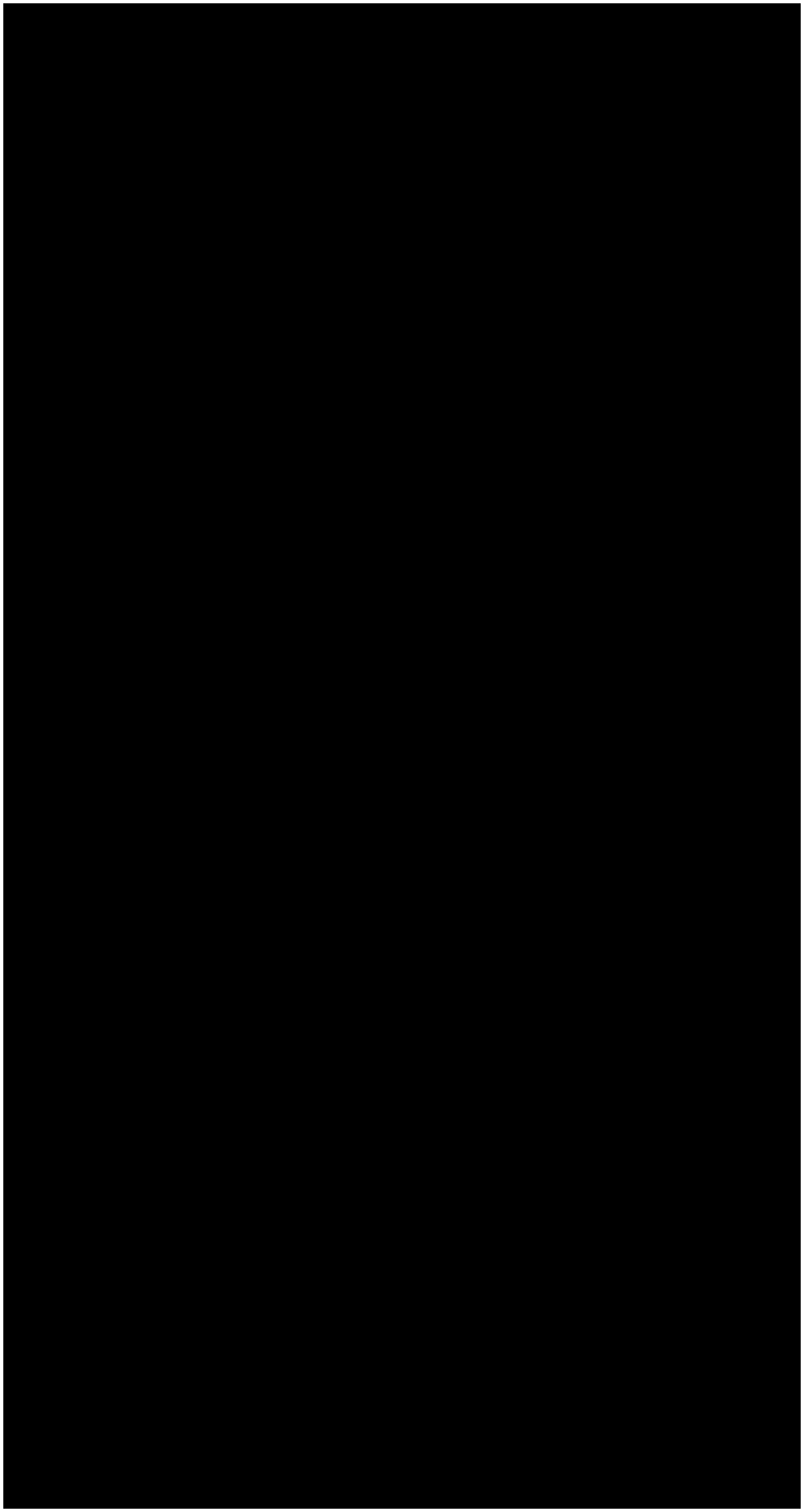


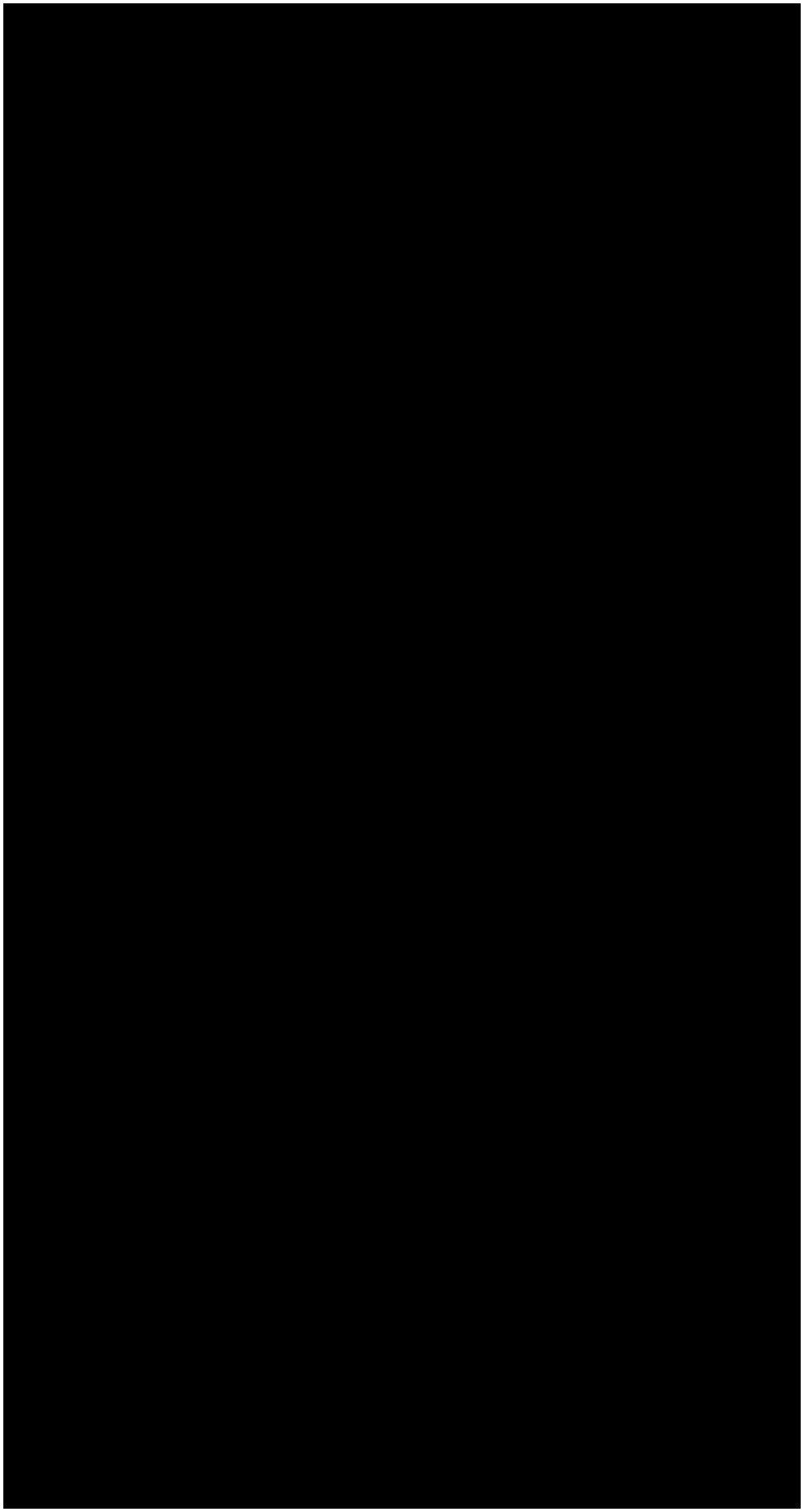


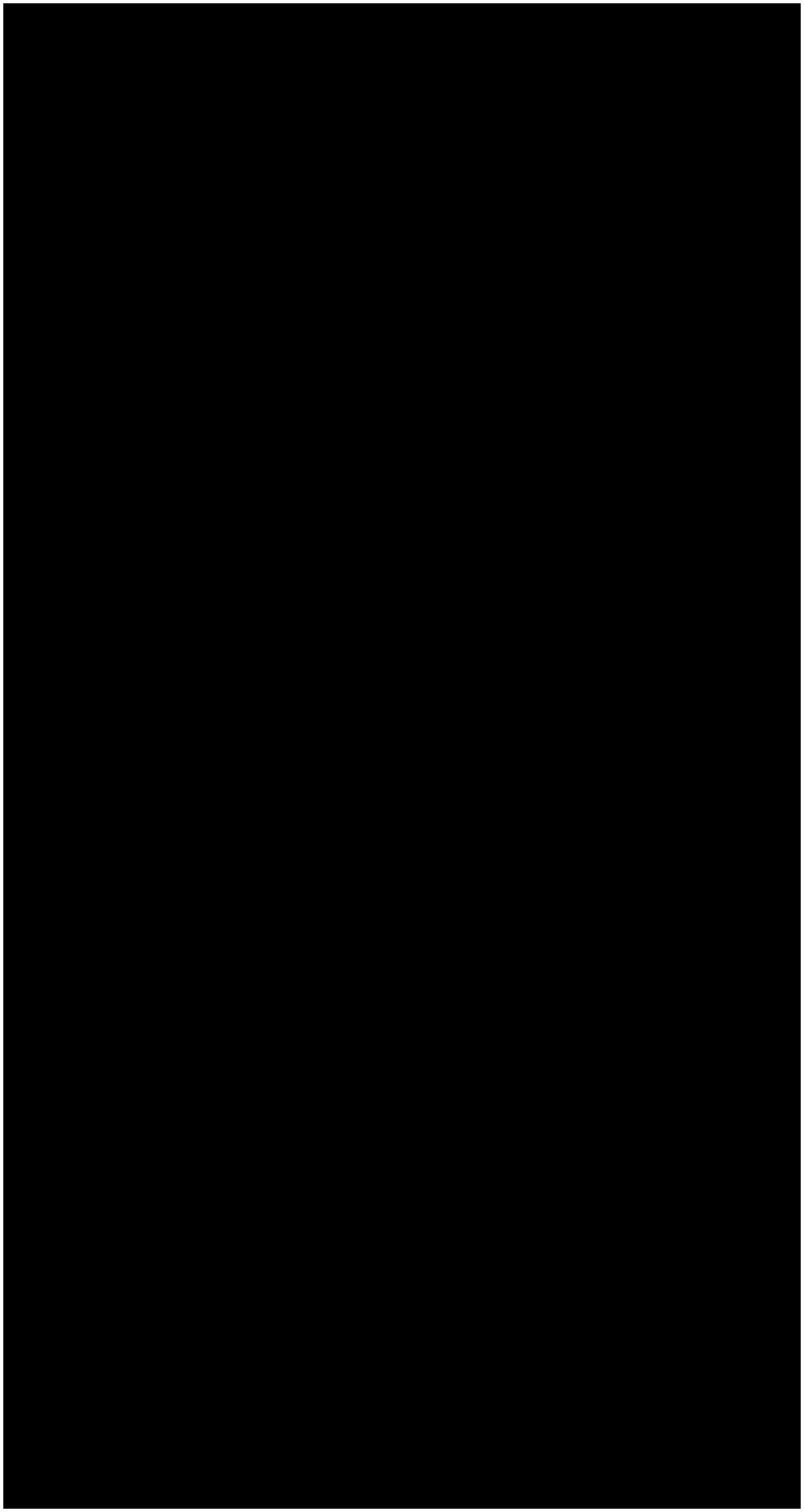


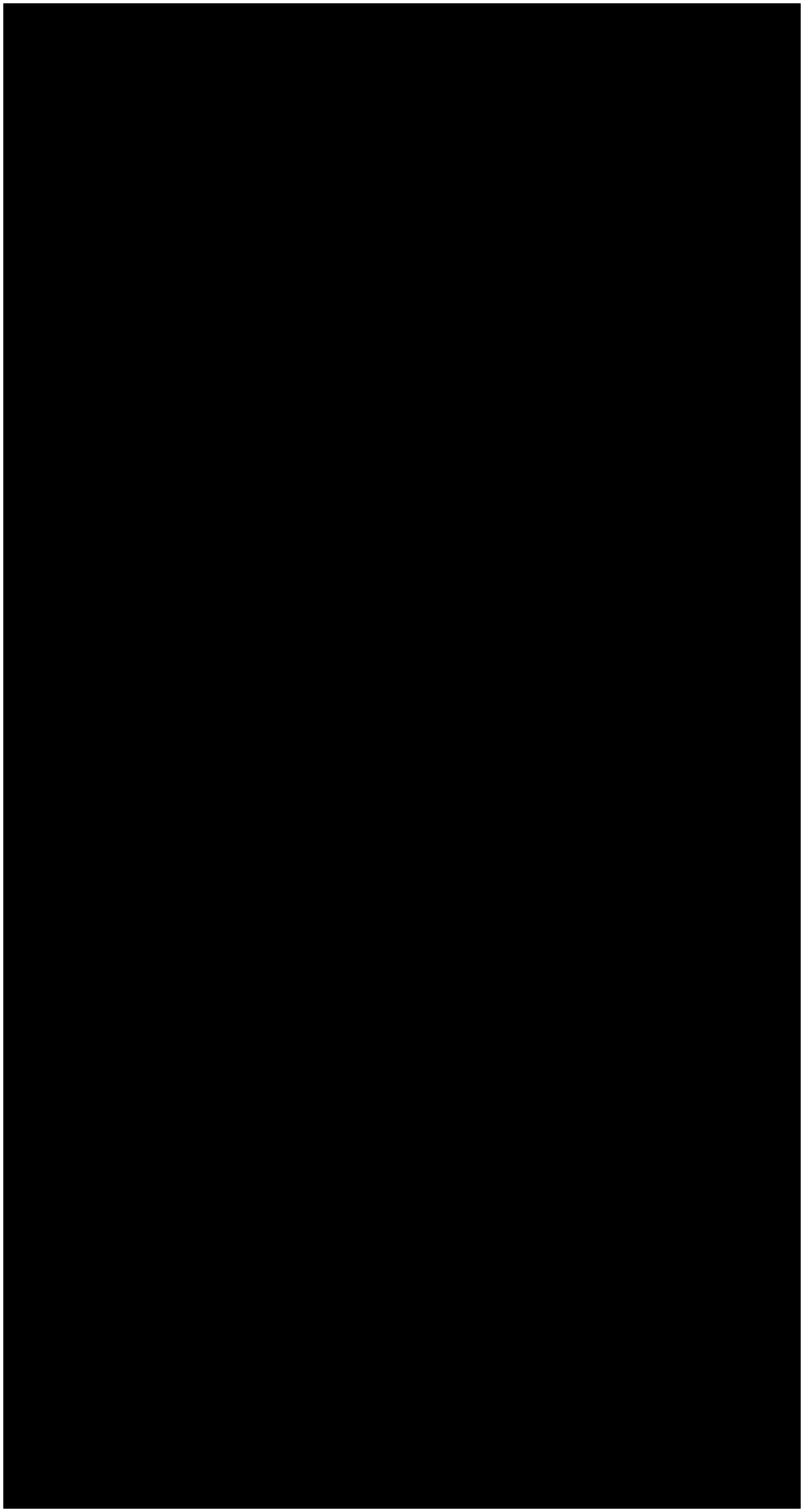


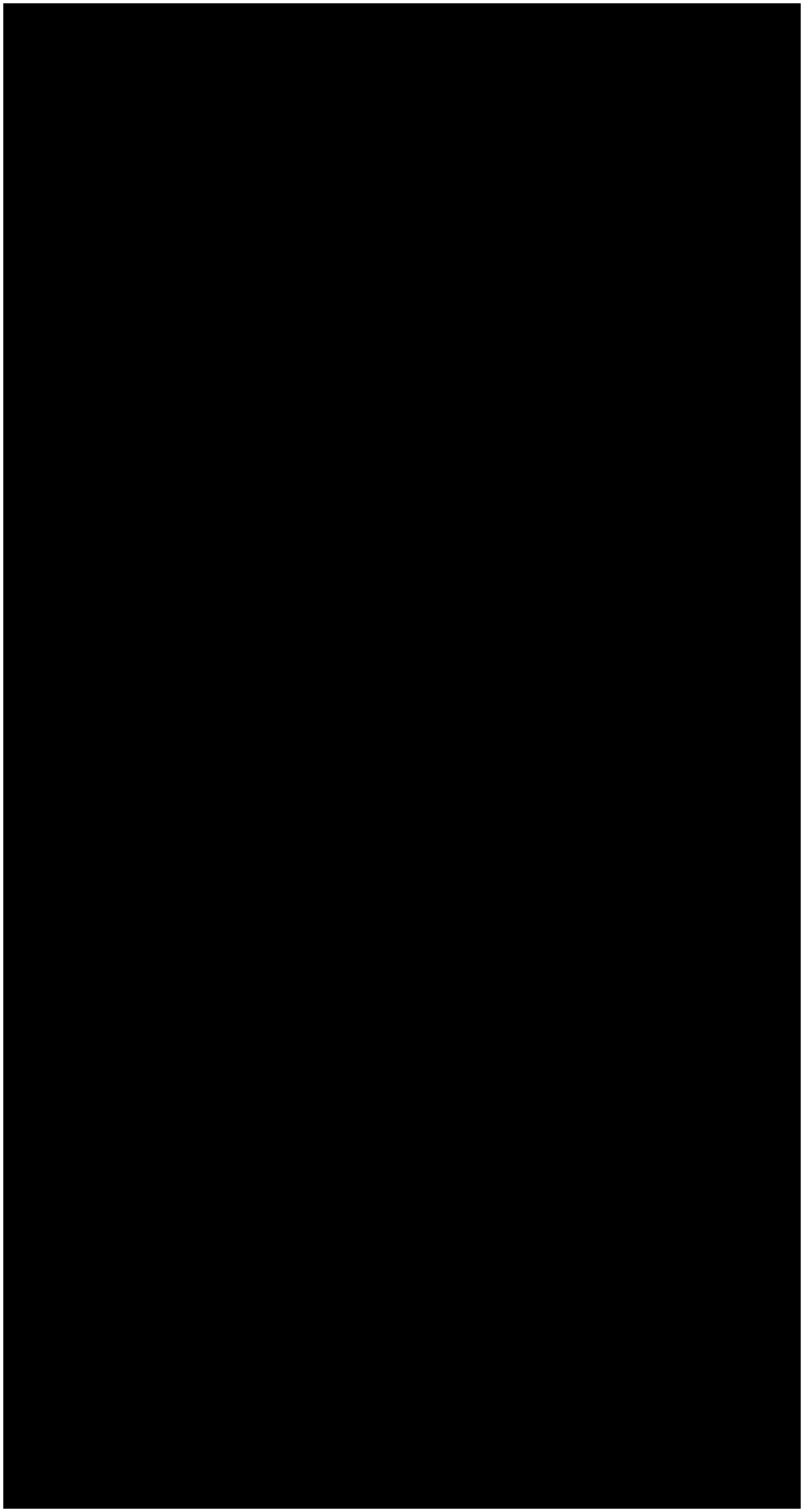


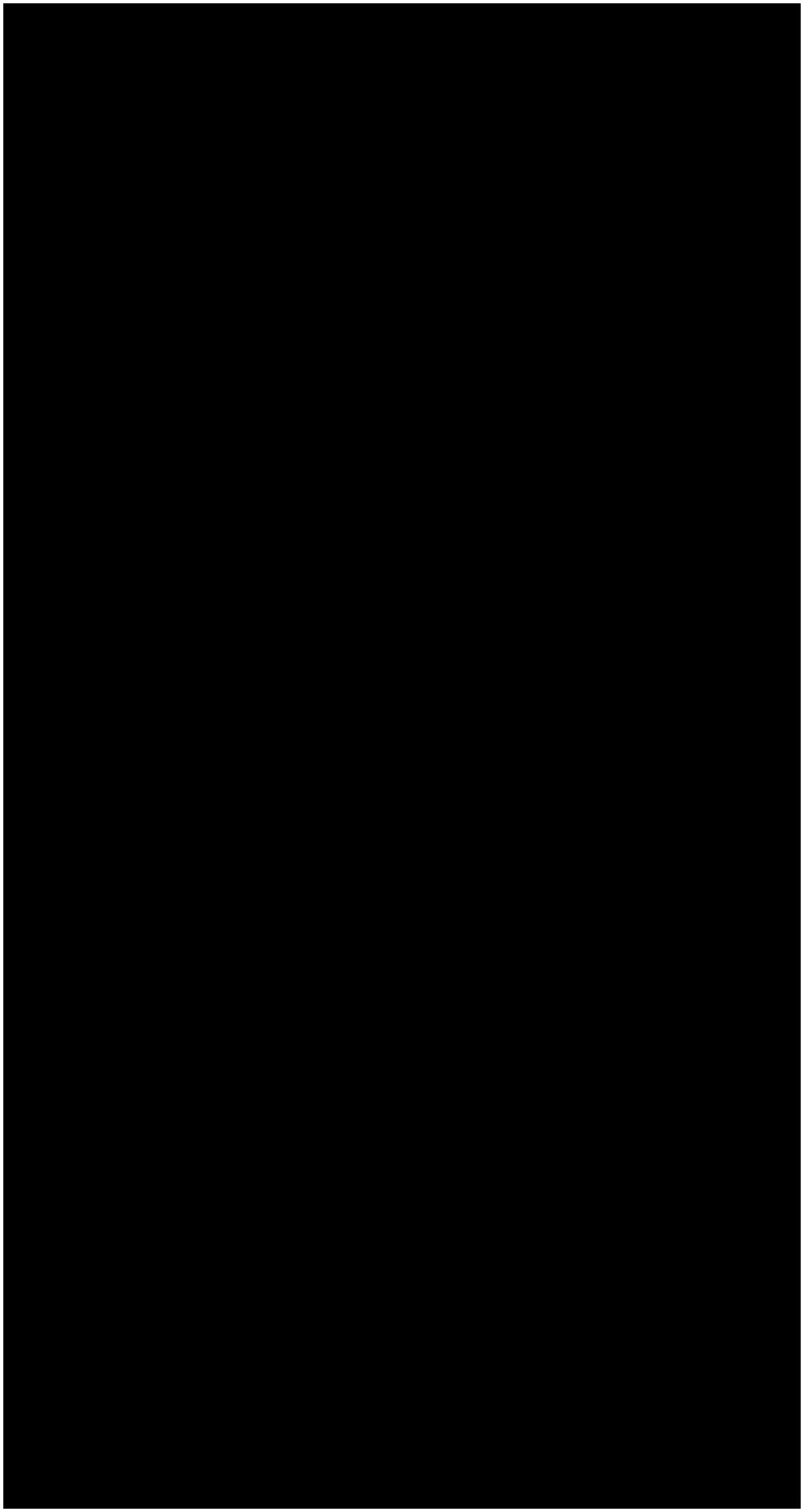


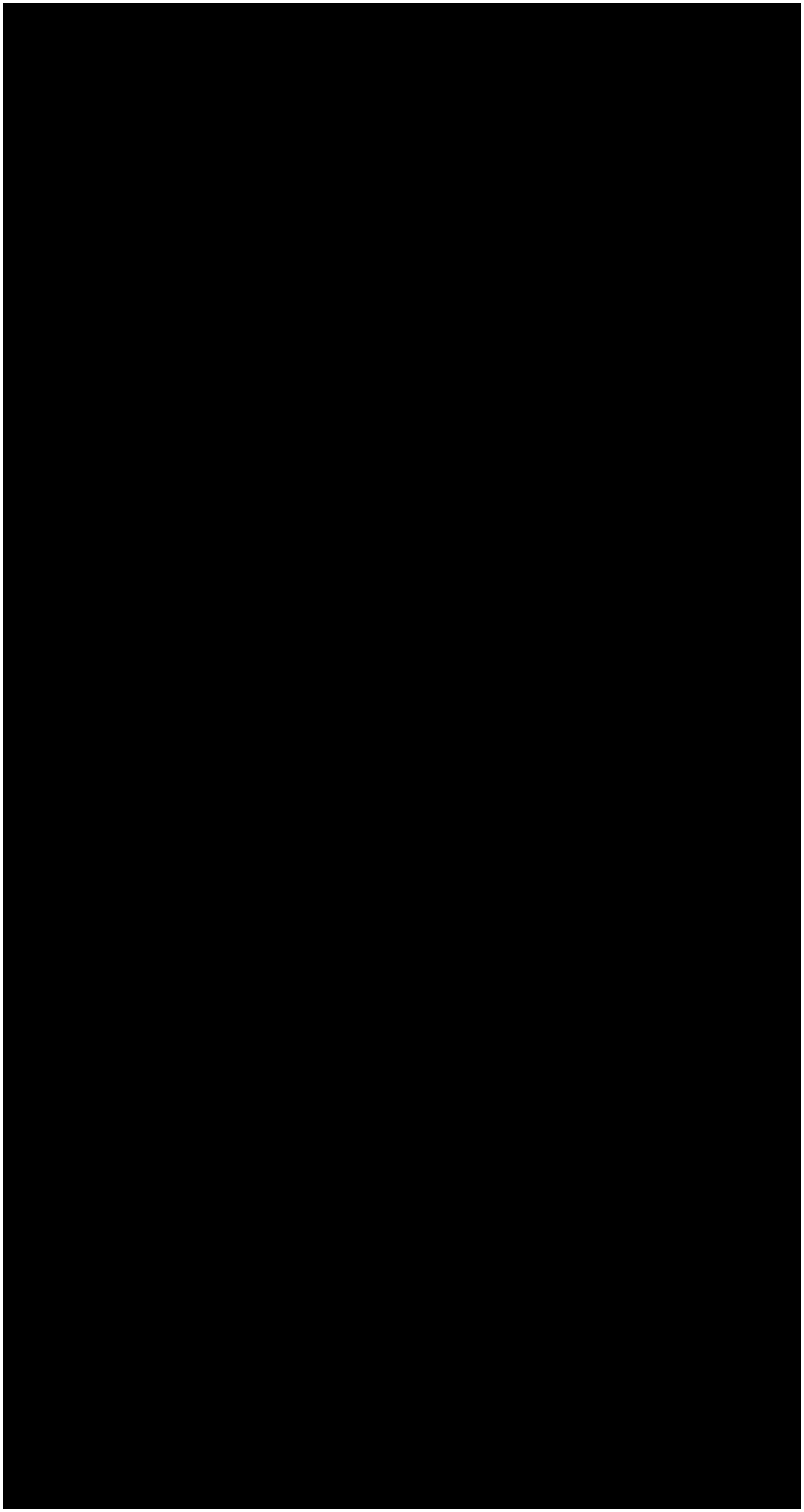


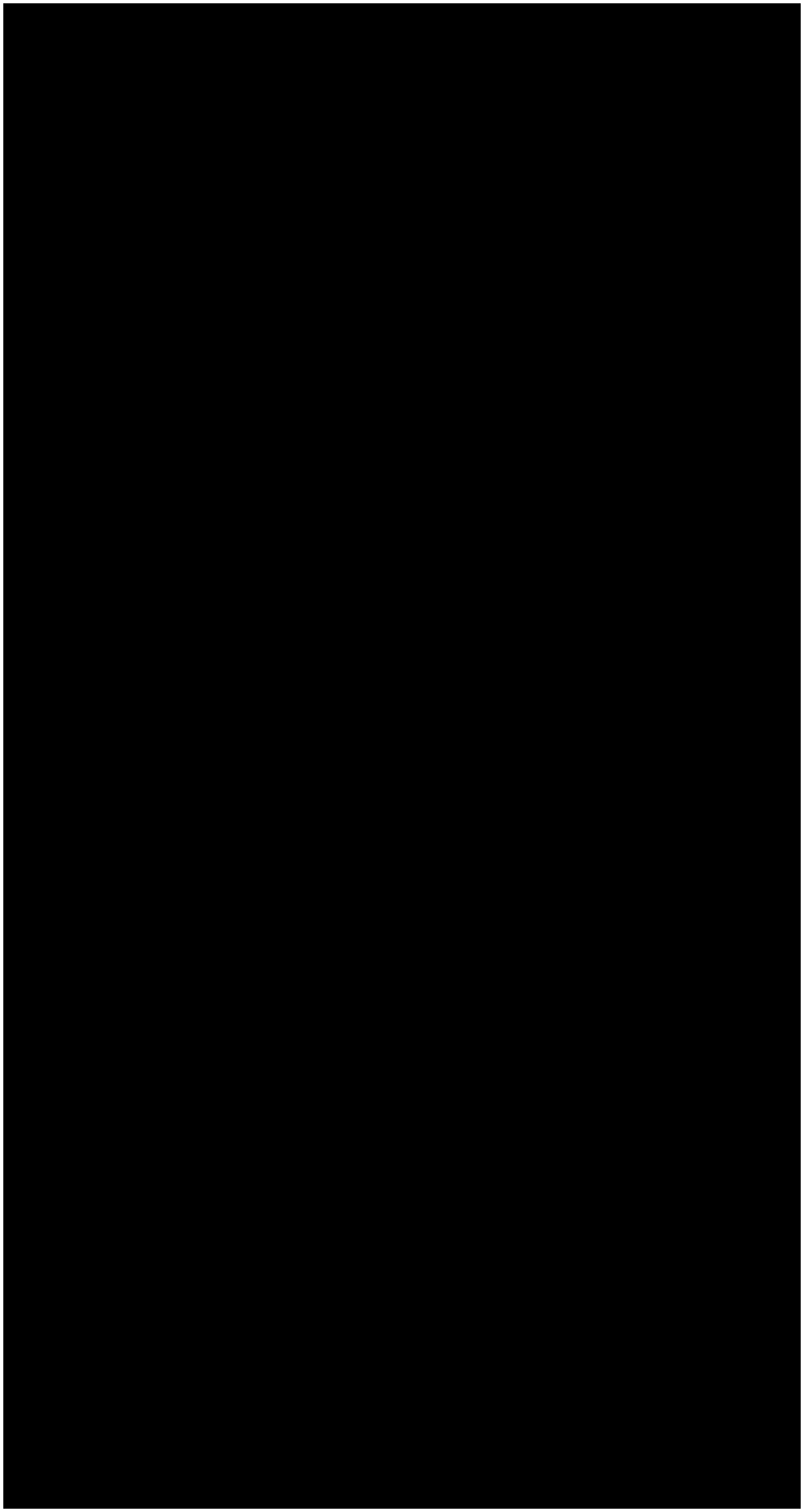


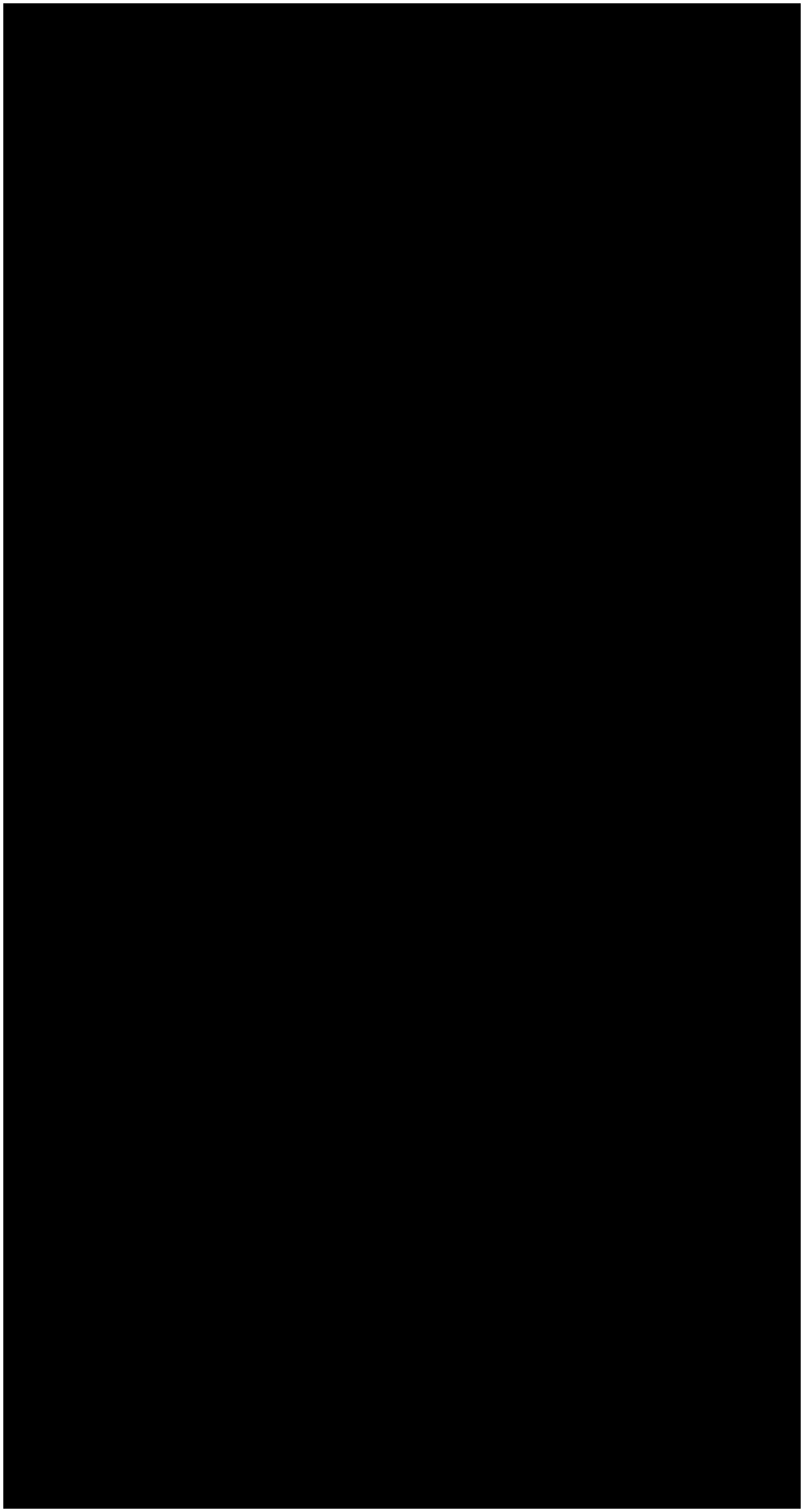


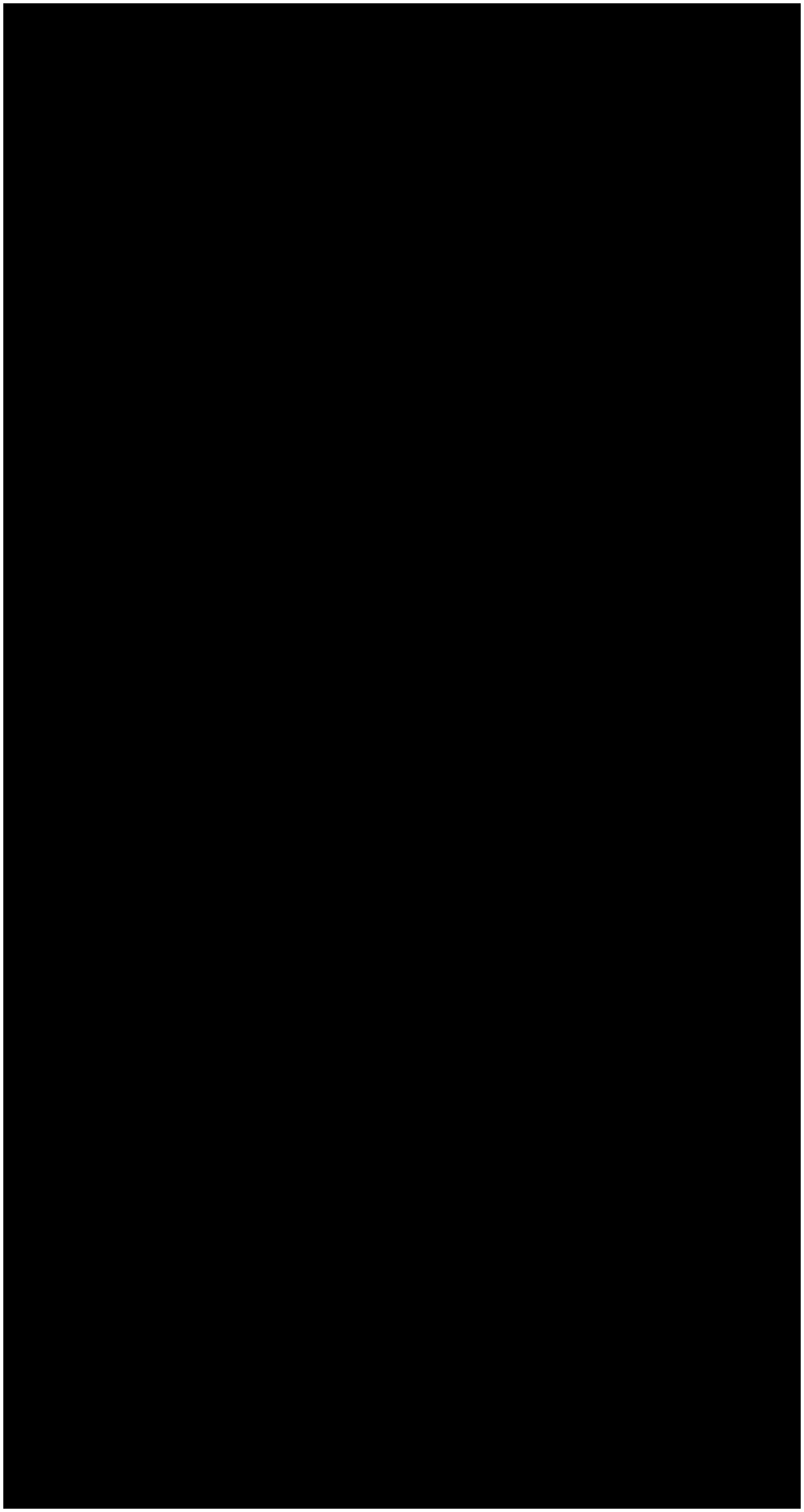


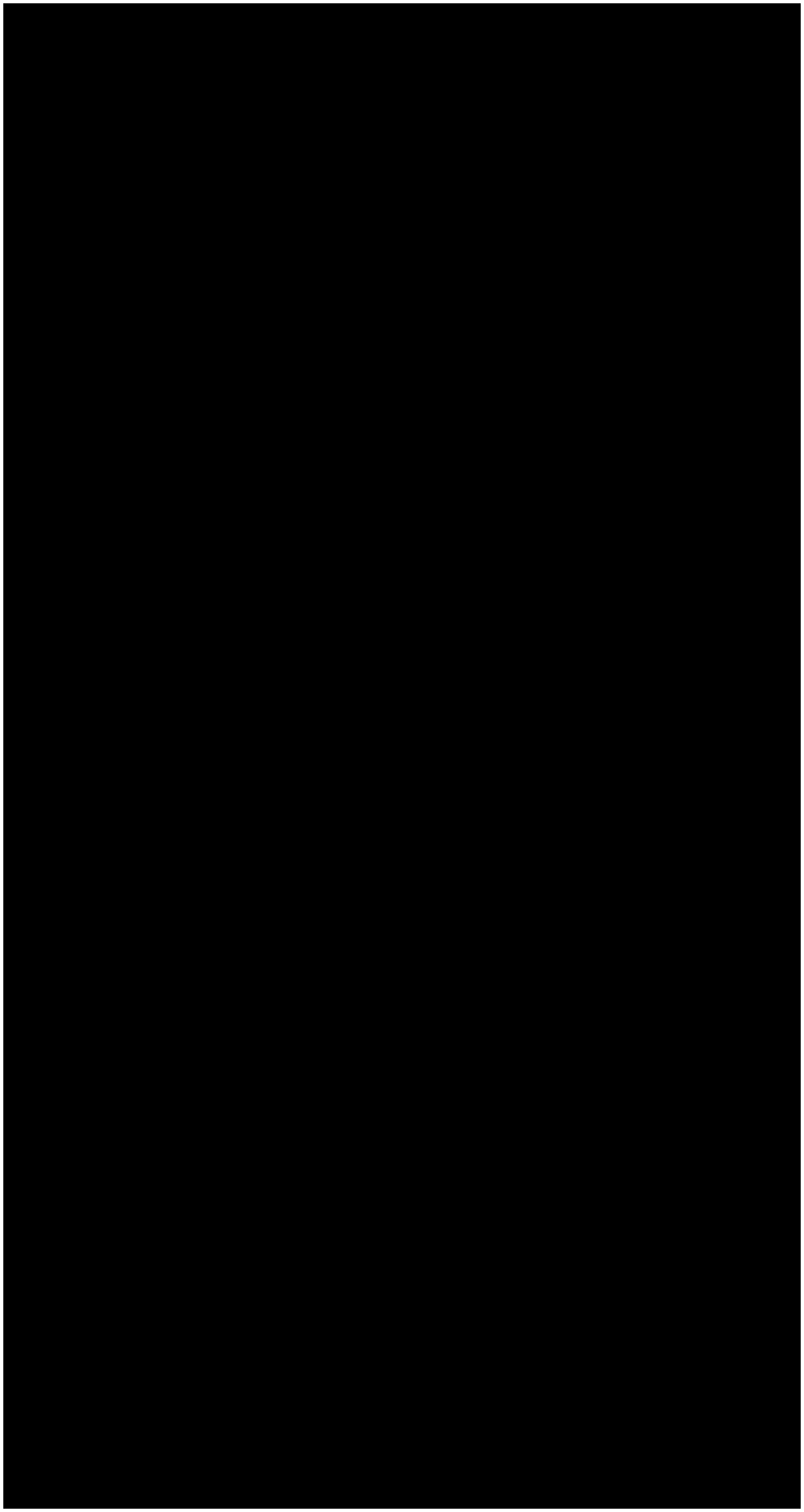














Northern Utilities, Inc.
Storage Analysis

Denotes Confidential Information

Union Dawn Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
Sep-24											
Oct-24											
Nov-24											
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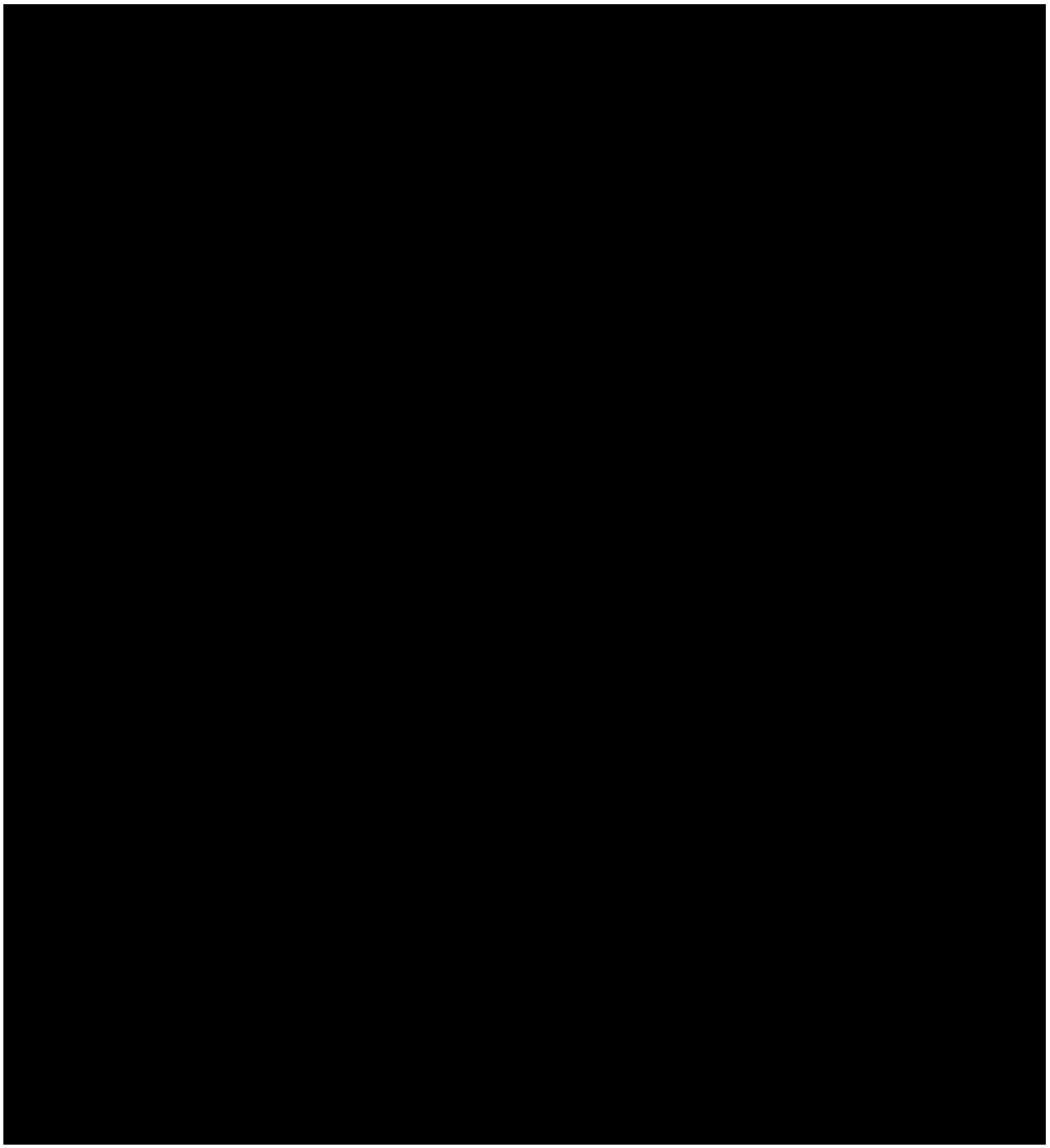
Tennessee Storage

Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
Jul-24											
Aug-24											
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LNG Storage

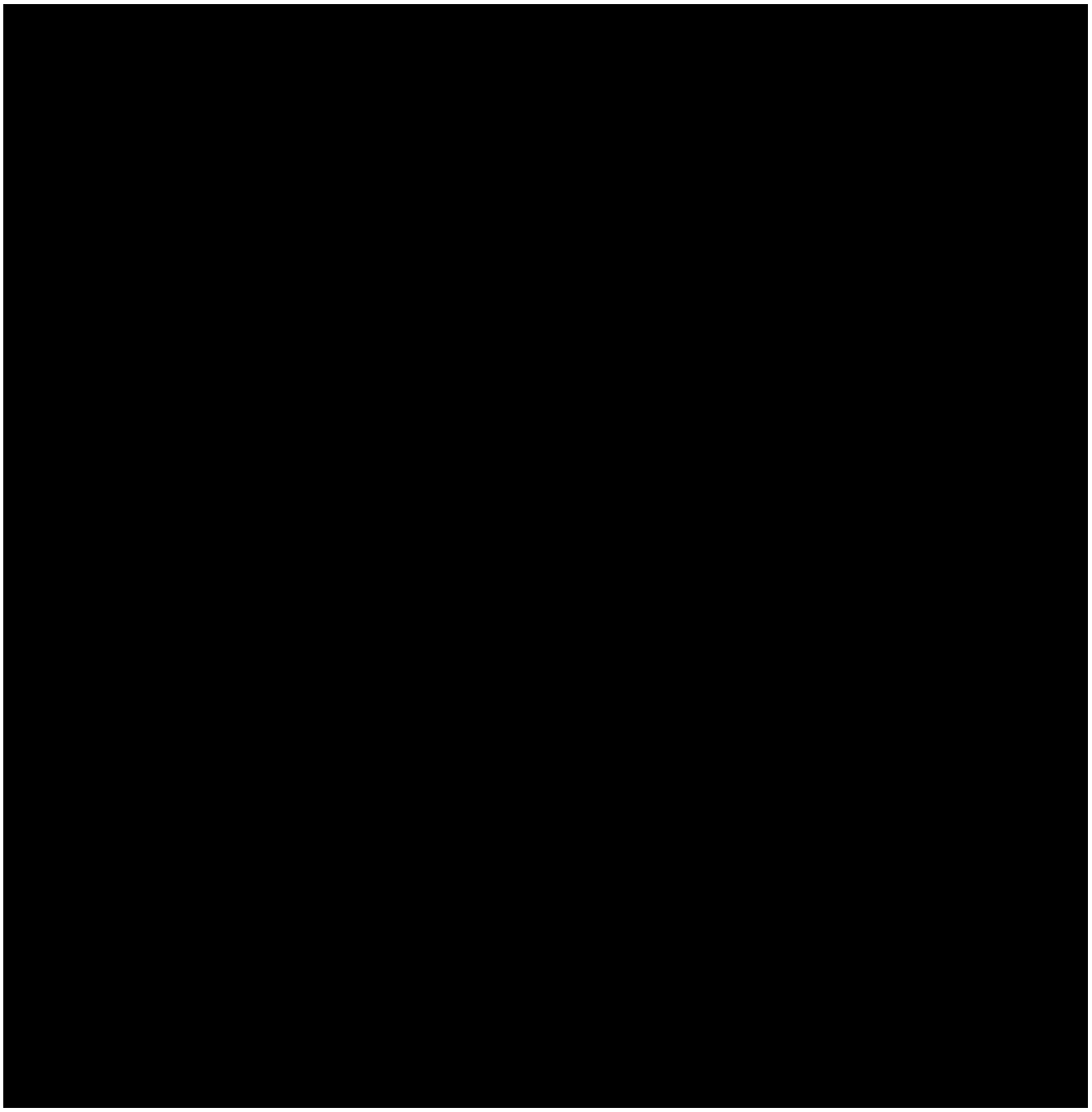
Month	Beginning Inventory Volume	Injections	Withdrawals	Ending Inventory Volume	Beginning Inventory Cost	Beginning Inventory Rate	Injection Rate	Injected Value	Withdrawal Rate	Withdrawn Value	Ending Inventory Value
Nov-23											
Dec-23											
Jan-24											
Feb-24											
Mar-24											
Apr-24											
May-24											
Jun-24											
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Jul-28											
Aug-28											





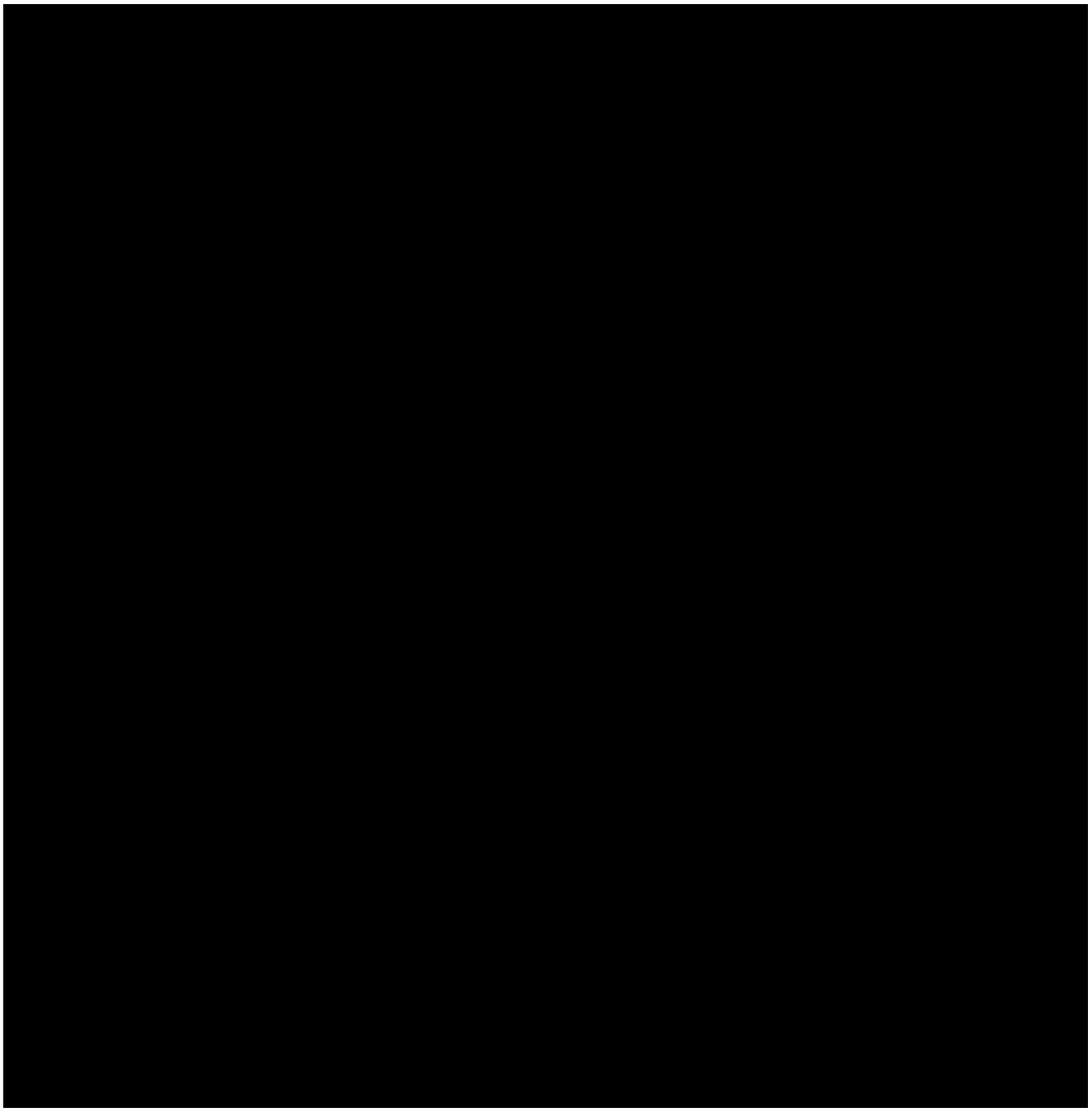
Delivered Supply - Alternative	Jan-00	Feb-00	Feb-00
Algonquin City-Gates	$1.20	$4.18	$8.15
NYMEX	$0.00	$0.00	$0.00
Total Commodity Price	$1.20	$4.18	$8.15
Joint Facilites Adder	$1.25	$1.25	$1.25

Delivered Supply Landed Cost	$2.45	$5.43	$9.40



Feb-00	Feb-00	Feb-00	Feb-00	Feb-00
$8.14	$8.14	$8.14	$8.14	$8.14
$0.00	$0.00	$0.00	$0.00	$0.00
$8.14	$8.14	$8.14	$8.14	$8.14
$1.25	$1.25	$1.25	$1.25	$1.25

$9.39	$9.39	$9.39	$9.39	$9.39



Feb-00	Feb-00	Feb-00	Feb-00	Annual
$8.14	$8.14	$8.14	$8.14	$7.23
$0.00	$0.00	$0.00	$0.00	$0.00
$8.14	$8.14	$8.14	$8.14	$7.23
$1.25	$1.25	$1.25	$1.25	$1.25

$9.39	$9.39	$9.39	$9.39	$8.48



[redacted]

Table VI-9 - Overview of Modelled Cost Analysis - Total Average Unit Co Northern Utilities, Inc. Planning Load - Projected System Costs 2023-2024 through			
Portfolio Scenario	Design Year $30/Dth Off-System Peaking Price	Normal Year $30/Dth Off-System Peaking Price	Normal Year $20/Dth Off-System Peaking Price
Current - No Expansion	$ -	$ -	$ -
Add 5K Empress	$ -	$ -	$ -
Add 10K Empress	$ -	$ -	$ -
Add 12.5K Empress	$ -	$ -	$ -
Add 15 K Empress	$ -	$ -	$ -

ost 2027-2028
Normal Year $40/Dth Off-System Peaking Price
$ -
$ -
$ -
$ -
$ -





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Projected Design Year Costs - Northern Utilities, Inc. Planning Load - Projected System Costs 2023-2024 through 2027-2028

Portfolio	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

IMPACT OF EXPANSION

Year	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

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Projected Normal Year Costs - Northern Utilities, Inc. Planning Load - Projected System Costs 2023-2024 through 2027-2028

Portfolio	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

IMPACT OF EXPANSION

Year	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

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Projected Normal Year Costs - Northern Utilities, Inc. Planning Load - Projected System Costs 2023-2024 through 2027-2028

Portfolio	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

IMPACT OF EXPANSION

Year	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

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Projected Normal Year Costs - Northern Utilities, Inc. Planning Load - Projected System Costs 2023-2024 through 2027-2028

[redacted]

Portfolio	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							

IMPACT OF EXPANSION

Year	Total Fixed Costs	Total Commodity Cost	Grand Total Cost	Net Demand (Dth)	Total Unit Cost ($/Dth)	Peaking Costs Above NYMEX - DESIGN	Peaking Requirement DESIGN
[redacted]							