

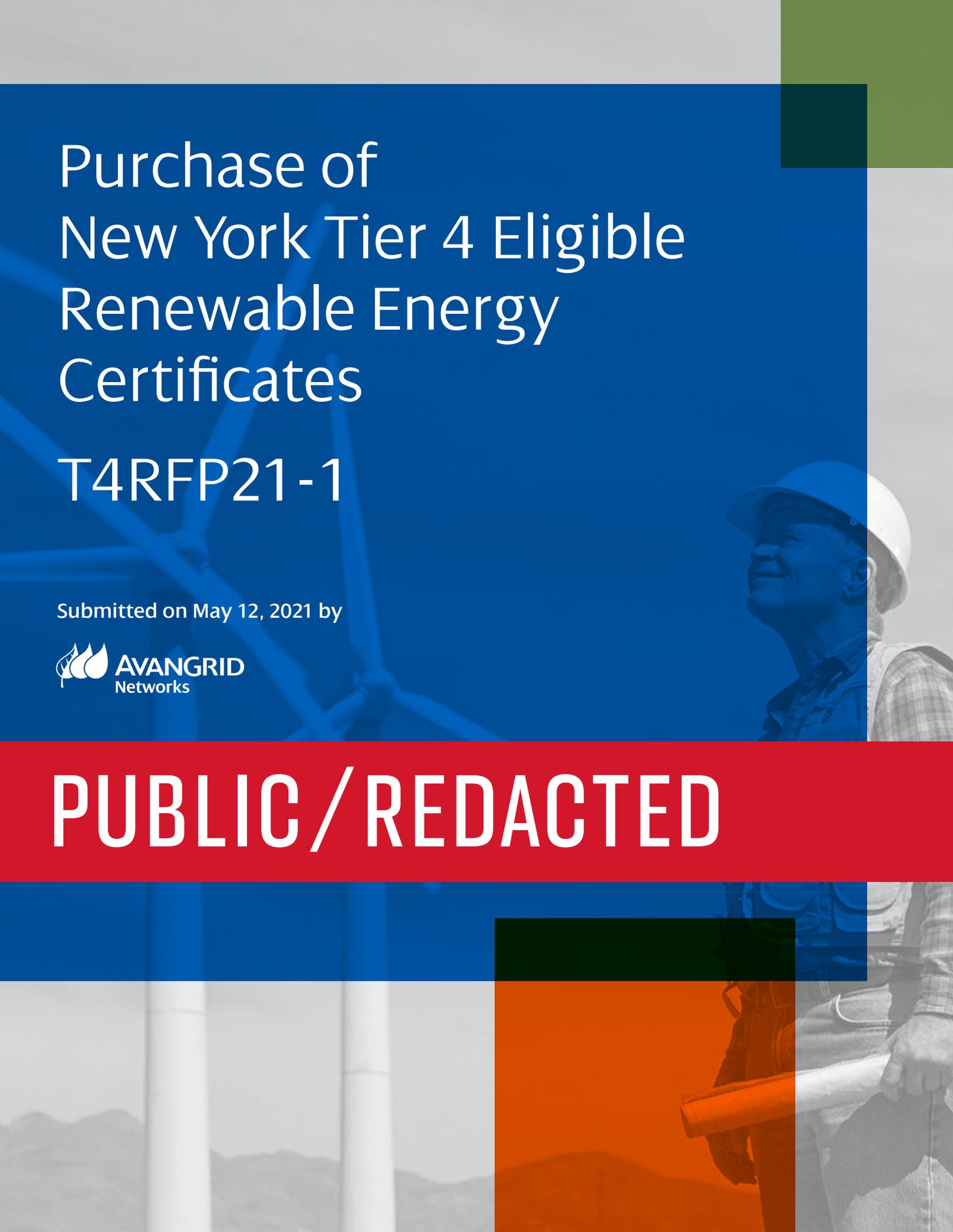
Purchase of New York Tier 4 Eligible Renewable Energy Certificates

T4RFP21-1

Submitted on May 12, 2021 by



PUBLIC / REDACTED





Catherine Stempien
President & CEO

May 12, 2021

Ms. Doreen Harris
President and CEO
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203

Re: Avangrid Network's Response to NYSERDA's Tier 4 REC RFP (T4RFP21-1)

Dear President Harris:

Avangrid Networks, Inc. is pleased to submit the Excelsior Connect Step Two proposal to NYSERDA in response to NYSERDA's call to procure Renewable Energy Certificates from eligible projects. Avangrid strongly supports the goal of Tier 4, which is to reduce New York City's reliance on fossil fuels by increasing the penetration of renewable energy into Zone J and by optimizing the deliverability of renewable resources throughout the state. Tier 4 is designed to advance the work needed to orderly and justly transition to clean energy that creates jobs and fosters a green economy.

The beneficial economic impact of Excelsior Connect in New York State is more than \$3 billion, as identified in an independent report by The Rockefeller Institute. Excelsior Connect is a strong electrical solution, designed to minimize environmental impacts that enables the matching of eligible renewable resources located in upstate New York with people who need a cleaner energy future in New York City. The intentional design of the transmission line provides short-term and long-term economic benefits to a variety of communities and we have provided a Communities Engagement Plan that embodies both the spirit of the Climate Leadership and Community Protection Act (CLCPA) and the practical realities of compliance with its requirements.

Excelsior Connect is a solution built entirely in New York, for the benefit of New Yorkers. Avangrid overcame challenges with convincing energy developers to participate in the response to the Tier 4 RFP and is highly confident we can deliver the proposed transmission solution that leverages our experience with HVDC technology to develop a realistic schedule for design, permitting, regulatory approvals and construction and a data driven CAPEX and OPEX financial models that

provide a reliable cost for the transmission rate. Avangrid directs NYSERDA's attention to the following elements of this proposal, which meet or exceed the Tier 4 requirements:

- At 1200 MW and 106 miles, Excelsior Connect offers the scope and size to make a definitive difference on the penetration of renewable energy in New York City by relieving congestion and enhancing the performance of the NYISO system. This plan will produce GHG savings equivalent to 1.6MM tons across the State of New York.
- 95% of the transmission route for Excelsior Connect follows the New York State DOT and Thruway existing right-of-way, which minimizes disruption to communities and reduces environmental impacts to the water ways, requiring only two river crossings.
- The Excelsior Connect project will be a catalyst for regional workforce development. We have a letter of intent to form a consortium with four SUNY community colleges that will include robust learning opportunities in everything from HVDC technology to heat pumps and photovoltaics.
- Our partnerships with labor and with community-based organizations, as demonstrated in the support letters included with this proposal, will further ensure that those affected by the project will have a say in it. The project's total direct, indirect and induced jobs creation accounts for more than 17,000 throughout the state.
- Our approach to innovative economic and community development programming, delivered through the Excelsior Connect Fund for New York in partnership with One Tree Planted, ensures project benefits accrue to Environmental Justice communities.

We have composed a team of solar and wind generators with an exemplary history of delivery in New York and elsewhere. Together with the Avangrid Networks transmission development team, they will collaborate under the overarching structure established by Avangrid Networks to deliver on the Excelsior Connect promise for a new generation of energy in New York.

We are confident that the Excelsior Connect project proposed by Avangrid Networks is the most valuable and environmentally sound solution for the State of New York. Based on our current Tier I portfolio of projects along with the possibility for NYSERDA to aggregate a much larger pool of renewable power under the Tier 4 structure, we firmly believe our offer provides the highest value for customers and most competitive REC price.

We welcome your questions and comments. Thank you for reviewing this submission.

Sincerely,



Catherine Stempien

President & CEO

Avangrid Networks, Inc.

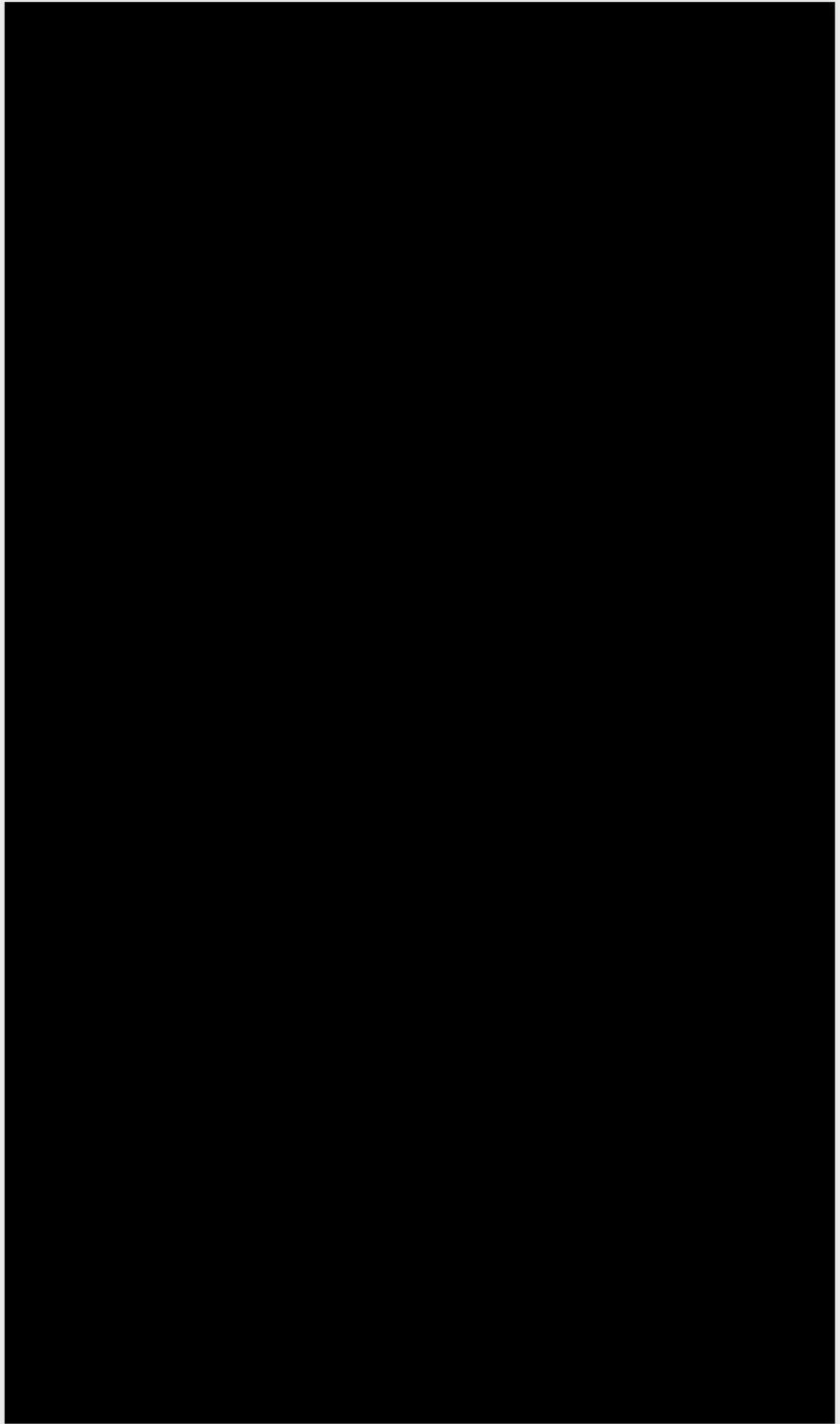


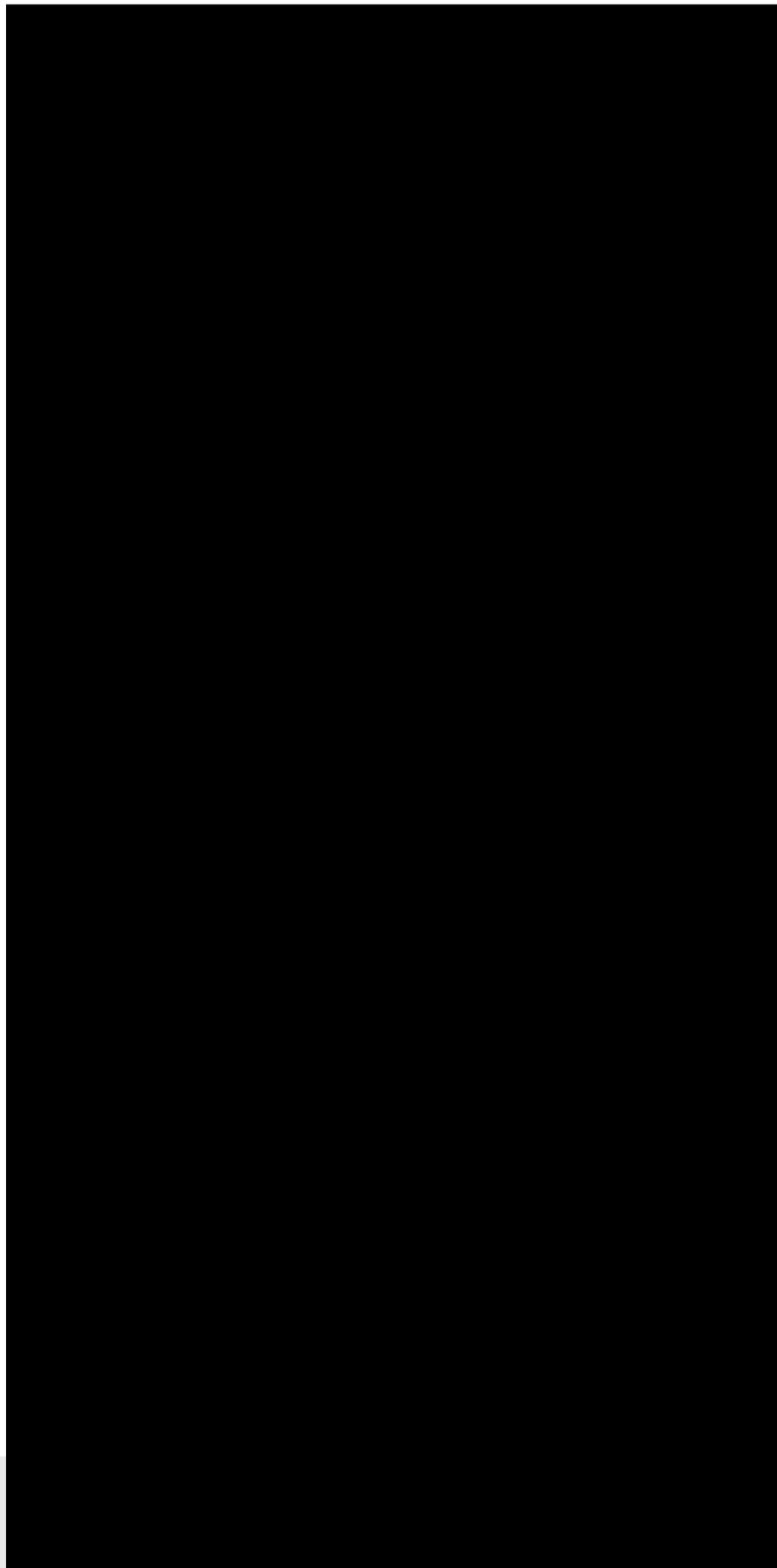
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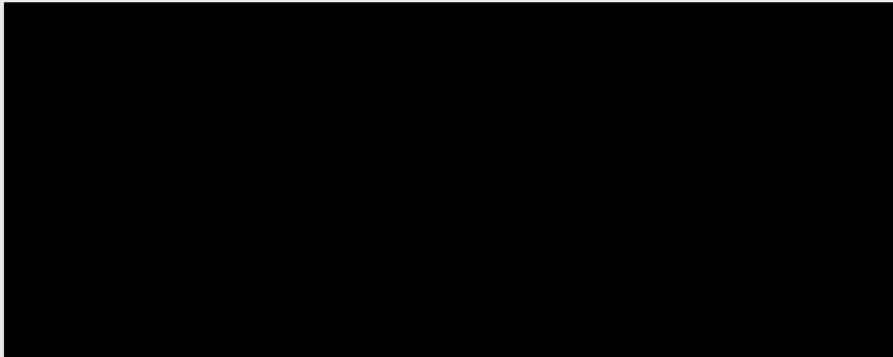




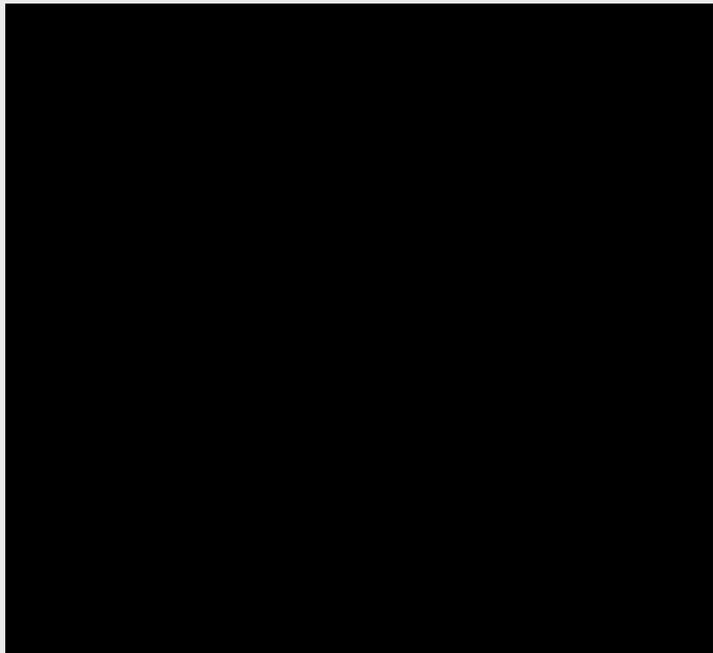
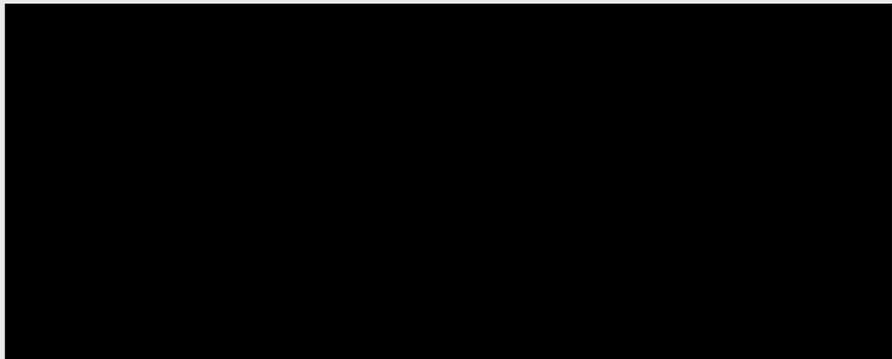


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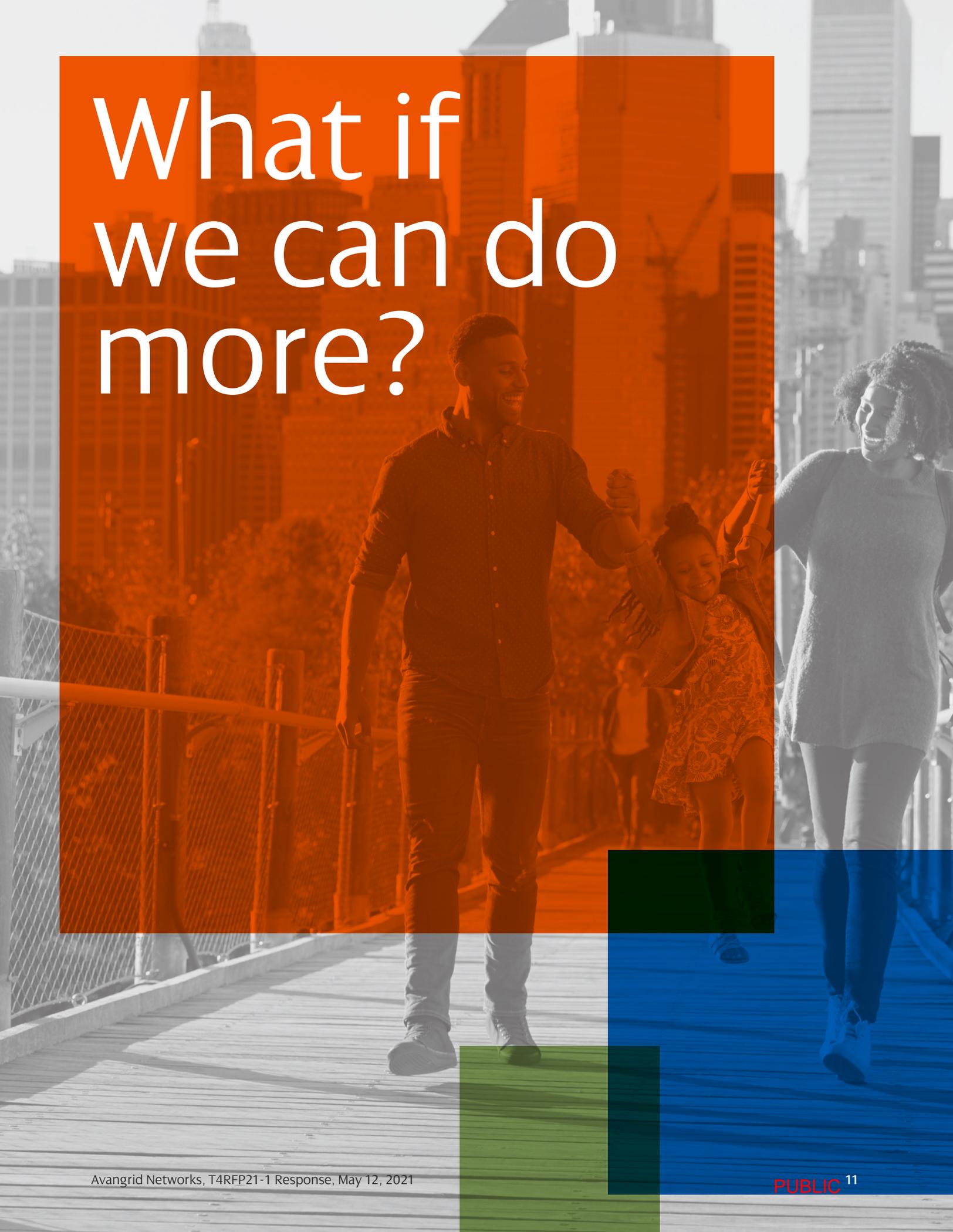
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What if we can do more?



The Excelsior Connect solution has been developed to support NYSERDA and the State of New York by addressing the following objectives:

1. Support New York in reaching the goals of the CLCPA
2. Deliver a cost-effective and cost-efficient energy solution for New Yorkers
3. Map an implementable solution that corrects issues of energy equity and makes smart and targeted investments in communities disproportionately impacted by high-emitting resources

Over the past months of preparing this submission:

- We have informed and engaged Environmental Justice leaders, exciting them about the possibilities of a new future and the potential of a new partnership.
- We have collaborated with local communities, labor and elected officials, considering their inputs and the concerns of their constituencies.
- We have sought to engage the best generators in solar and wind, energy storage and transmission, and have formed a powerful collective focused on the road ahead.

Our approach is underscored by a collective commitment to deliver a solution on paper that can be executed as submitted. But what if it could be even better? It has become clear that there is a significant opportunity for the State of New York to meet the energy needs of generations of New Yorkers to come through a slight shift, not in the goals, but rather in the approach to procurement. We propose NYSERDA consider a two-phase approach:

1. Choose among the Tier 4 submissions to select the transmission and storage solution that best meets the needs of the State
2. Facilitate generation matchmaking following the Tier 1 procurement process, with in-depth generator match analysis by the selected transmission solution

In this way, NYSERDA will secure the best of the best: the best transmission partnered with the best generation.



AVANGRID

Avangrid shares the fundamental goal of New York State for a successful clean energy transition where all New Yorkers benefit from both low-cost renewable energy and the environmental benefits of clean air and water. A well thought selection process for the Tier 4 solicitation will be key to meeting this goal. At the same time, AVANGRID recognizes the complexity of developing the necessary regulatory environment, procurement rules and processes that will lead to an expedited development of the infrastructure required.

The State's procurement of the bundled transmission and generation projects under Tier 4 has created significant challenges for both transmission and renewable developers, to the extent that some of the most experienced developers in the state will not participate in the process as it is currently structured. That creates a situation where our proposal, and most likely others, will not be evaluated for their optimal operational performance, but for a limited one. Given that 70% of the evaluation is price, and higher volumes of Tier 4 RECs are the most important factor in achieving a competitive price, success becomes primarily tied to recruiting generation rather than the soundness of the transmission or generation projects themselves. This makes it very difficult to determine which projects will actually deliver the most benefits for ratepayers in New York. The best transmission project for the state in terms of pricing, minimum environmental impact and feasibility, may be negatively impacted from a competitiveness perspective if inferior projects find themselves in a larger bidding consortium. Furthermore, the level of maturity of the agreements between transmission developers and generators should be closely analyzed, as significant risk might derive impacting the project's viability and prices.

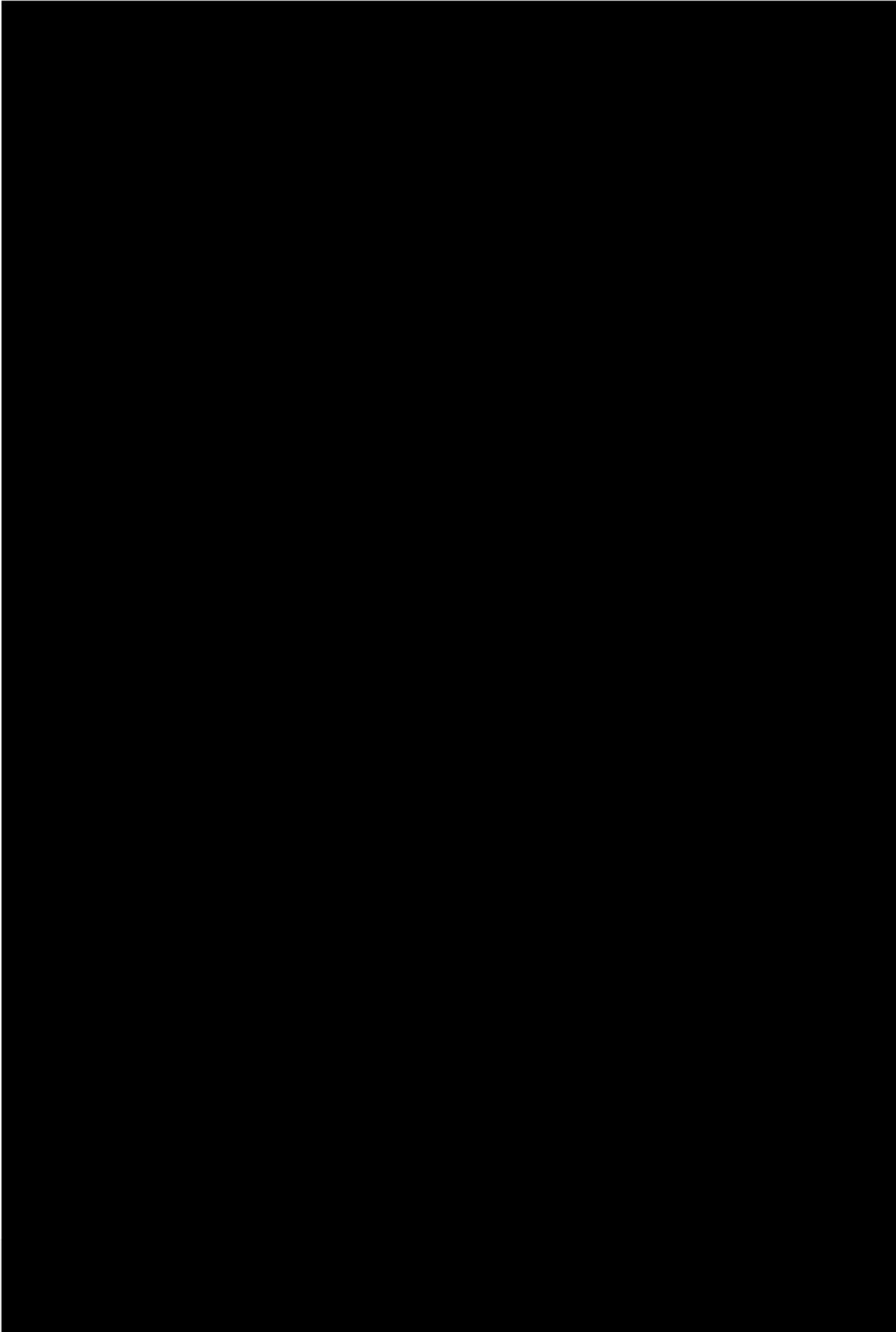
Avangrid Networks believes that the evaluation process could be enhanced within the existing authorities granted to NYSEERDA, allowing for an evaluation of the proposals that delivers the best outcome for all stakeholders. The ability to cost effectively and reliably meet the requirements of the Climate Leadership and Community Protection Act (CLCPA) could be achieved at a lower cost to ratepayers by considering some changes to the evaluation and contracting process.

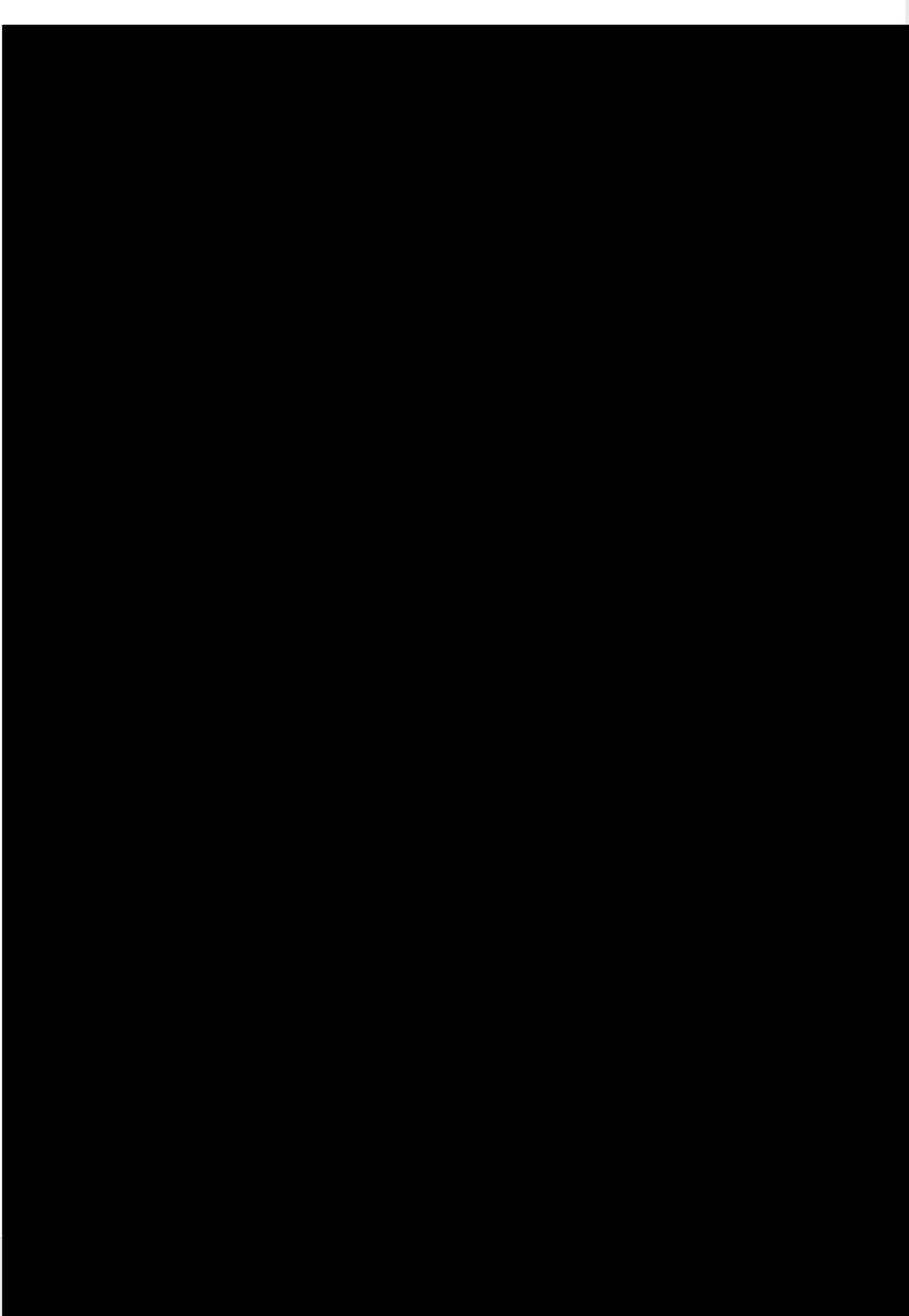
1. Collaborative selection of generation partners for new transmission

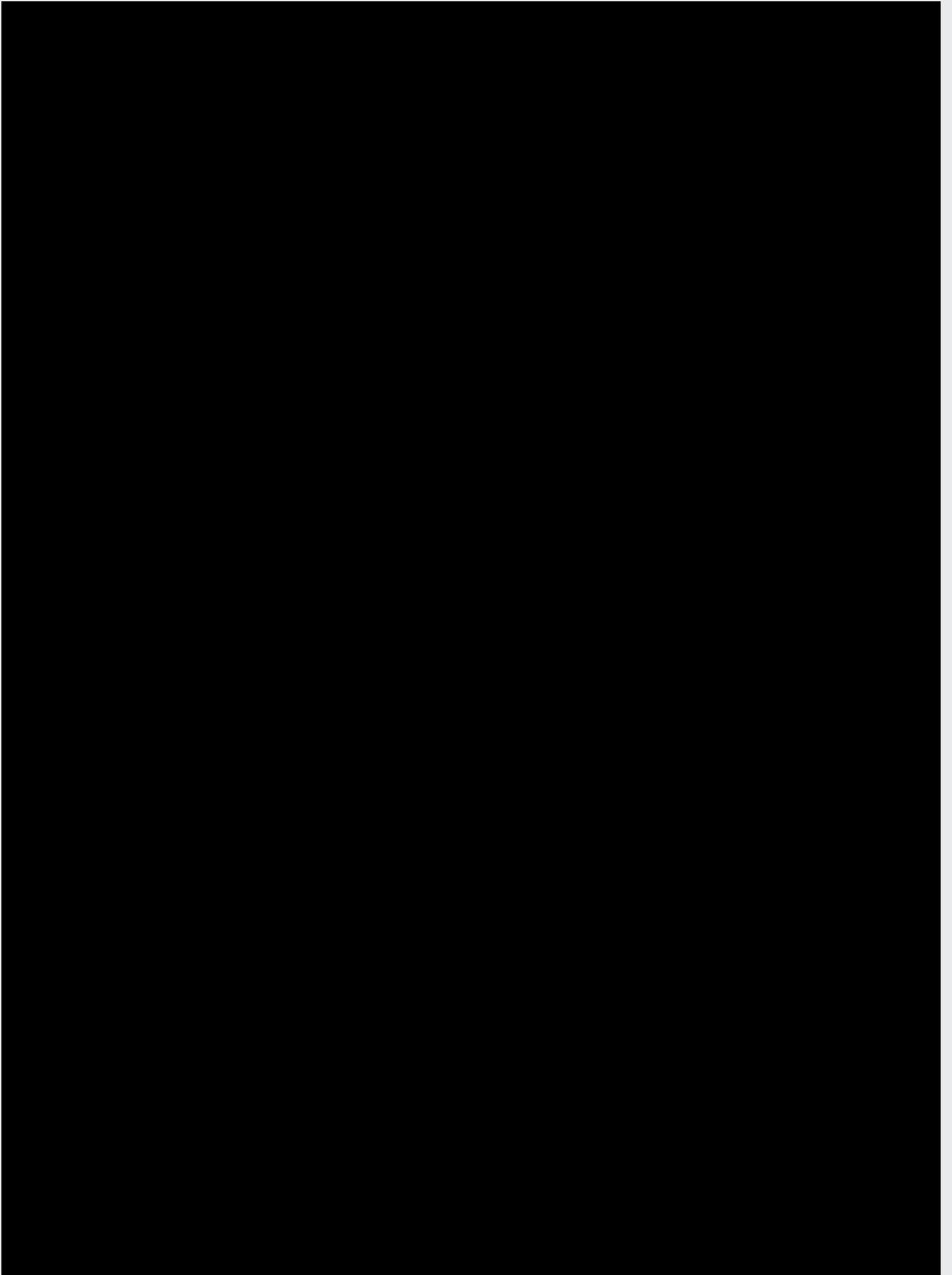
Rather than leaving generators and transmission developers to identify and come to agreement with each other, NYSEERDA could facilitate the matching of qualified generation units and qualified transmission solutions based on factors such as location, generation type, capacity factor, experience, etc. This would serve to minimize overall risk exposure from project development standpoint but also basis risk premiums included in offers for generation far from transmission interconnections and allow transmission providers to more effectively size their generation portfolios. This could be structured in a two-step process by NYSEERDA by first selecting the most valuable transmission solution and then procure the generation at the Withdrawal Point of such selected transmission solution.

2. Optimal operation of the line

The full value of new transmission can most effectively be realized if it is operated in accordance with







1. Executive Summary



1.1 Overview

In a groundbreaking White Paper released on June 18, 2020, New York State Energy Research and Development Authority (NYSERDA) and the New York Department of Public Service (DPS) recognized that without displacing a substantial portion of the fossil fuel-fired generation that New York City currently relies upon, the state's Climate Leadership and Community Protection Act (CLCPA) nation-leading goal of 70% renewable electricity sources by 2030 would be difficult to achieve.

Given upstate/downstate transmission constraints and the significant differential in the cleanliness between the upstate and downstate electricity systems, the need to facilitate the delivery of additional renewable energy into New York Independent System Operator (NYISO) Zone J (New York City and parts of Westchester County) was addressed by introducing a new Tier 4 of Renewable Energy Certificates (RECs). Applicants for Tier 4 are required to locate a utility-scale eligible resource directly in Zone J or demonstrate that the eligible resource will be delivered directly into Zone J using a new transmission interconnection. The new Tier 4 will increase the penetration of renewable energy into New York City, which is particularly dependent on polluting fossil fuel-fired generation.

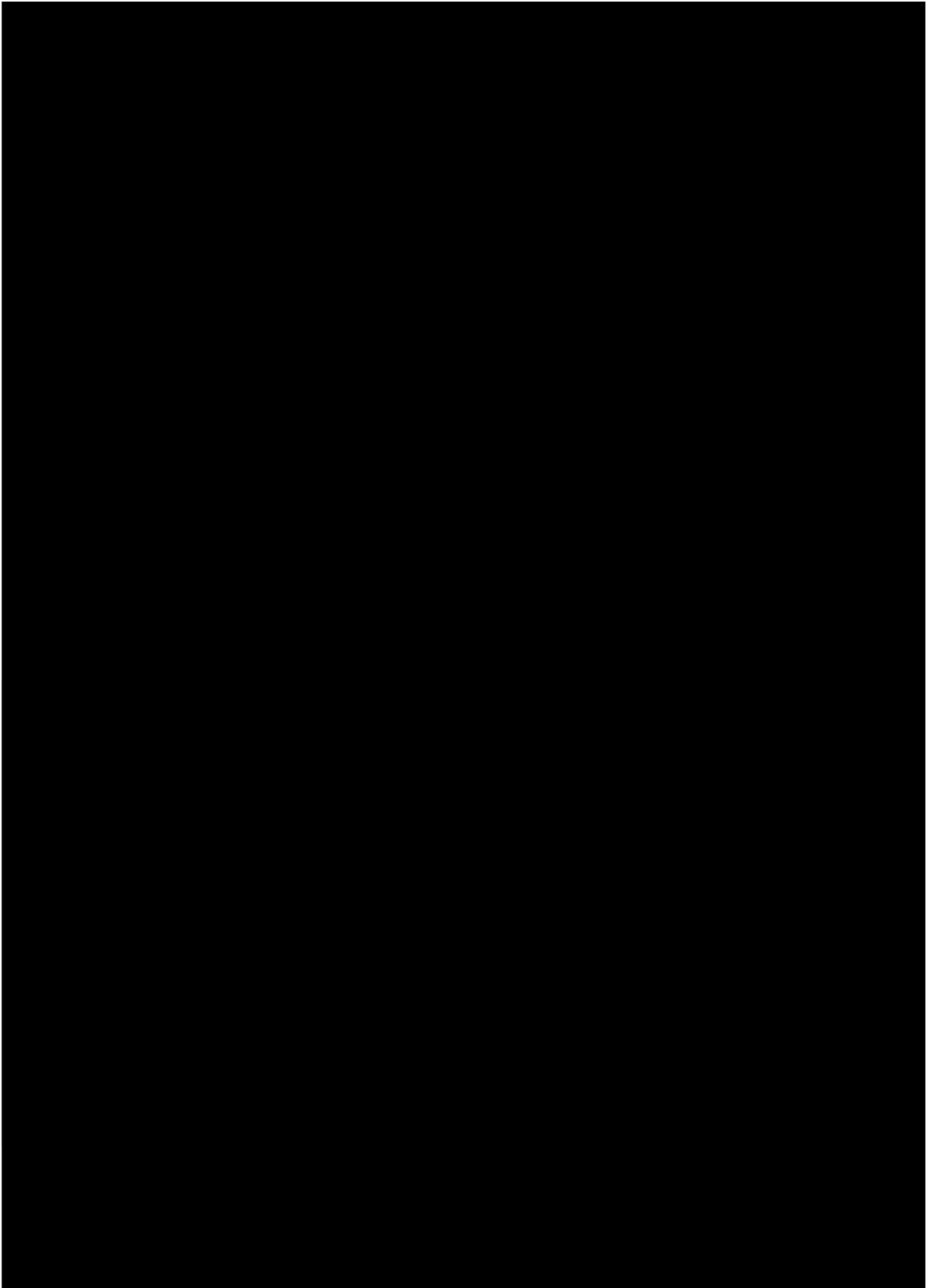
Through Tier 4, the State will procure the unbundled environmental attributes (in the form of Tier 4 RECs) associated with renewable generation delivered into Zone J. These environmental attributes include the avoidance of Green House Gas (GHG) emissions, as well as the avoidance of local pollutants, such as Nitrogen Oxides (NOx), Sulphur Oxides (SOx) and fine particulate matter.

In this proposal, Avangrid Networks Inc. (Avangrid) details an innovative, reliable and responsible solution to building an underground clean energy superhighway that will link the upstate and downstate regions of New York with a proposed 108-mile New Transmission line that will deliver renewable energy from Coopers Corners substation in Monticello, NY (NYISO Zone E) to Rainey substation in Queens (NYISO Zone J). The main body of the proposal focuses on the enabling infrastructure of Excelsior Connect, namely the New Transmission and energy storage solutions. The full details of the generations partners and projects can be found in Attachments 8.1-8.5.

[REDACTED]

[REDACTED]

TABLE 1-1



This project offers exemplary differentiators that will contribute environmental, economic, social, and technical benefits to New York State. The differentiators that make Excelsior Connect the preferred solution for a new generation of energy in New York include:

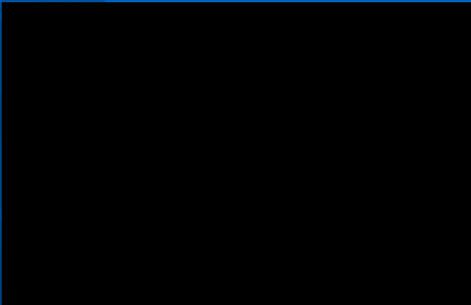
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Excelsior Connect is a New York-only project. Our clean energy generation will be located and built in New York by New Yorkers, accelerating climate action and delivering over \$1 billion in direct economic benefits to New Yorkers in the first 10 years of operation.

2

By locating Excelsior Connect underground, largely in the existing New York State Thruway (NYSTA) and New York State Department of Transportation (NYSDOT) state highway right of ways, Excelsior Connect will protect communities and preserve the Hudson River, one of the State's most important natural resources. Ninety-Eight (98) percent of Excelsior Connect will be located underground, within designated, active highway or roadway corridors, with the remainder of the Project located on lands comprising a mix of land uses for properties that abut the highway or road corridors including rural and vacant residential, highway commercial, and agricultural vacant land.

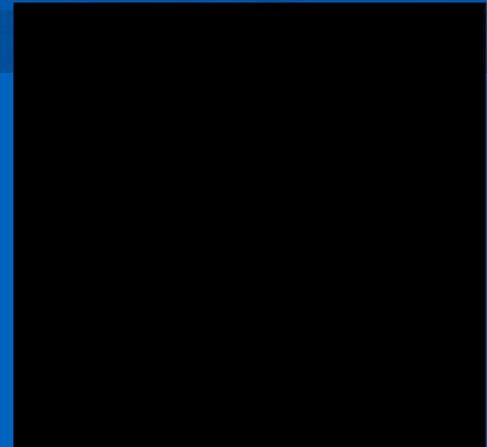
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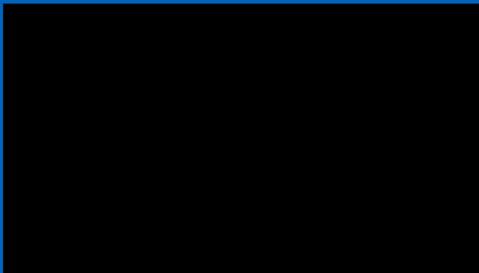
This proposal is a no-fossil fuel generation solution, moving New York State closer to the stated goal of the CLCPA of 70% renewable electricity sources by 2030.

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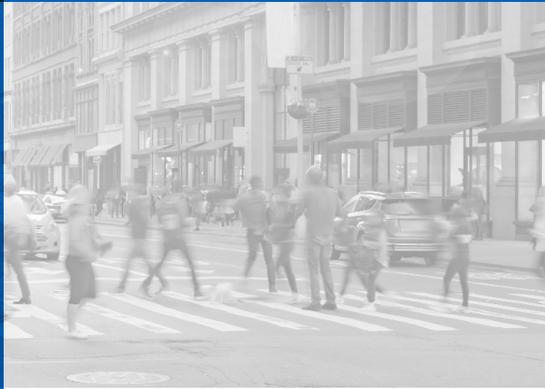
Avangrid Networks and its generation partners have worked collaboratively to validate that the project portfolio minimizes basis risk, prioritizes project viability and provides cost effective renewable energy for New York City that will result in a reduction in greenhouse gas emissions, the equivalent of taking 347,000 cars off the road (Daymark Energy Advisors).

9

Excelsior Connect brings the efficiency of proven state-of-the-art High Voltage Direct Current (HVDC) transmission technology that will enable the retirement of dirty fossil fuel generation plants in New York City that are currently required for load serving and reliability reasons. Avangrid is the only company in the United States currently constructing an HVDC transmission line, and this proposal reflects our expertise in delivering such a complex project on time and within budget.

10

AVANGRID delivers credibility. A leading sustainable energy company with \$38 billion in assets, operations in 24 US states, and eight electric utilities that serve more than 3.3 million customers in New York and New England. AVANGRID has been recognized by Forbes and Just Capital as one of the 2021 JUST 100 companies – a list of America’s best corporate citizens – and was ranked number one within the utility sector for its commitment to the environment and the communities it serves. The company supports the U.N.’s Sustainable Development Goals and was named among the World’s Most Ethical Companies in 2021 for the third consecutive year by the Ethisphere Institute. Goals.

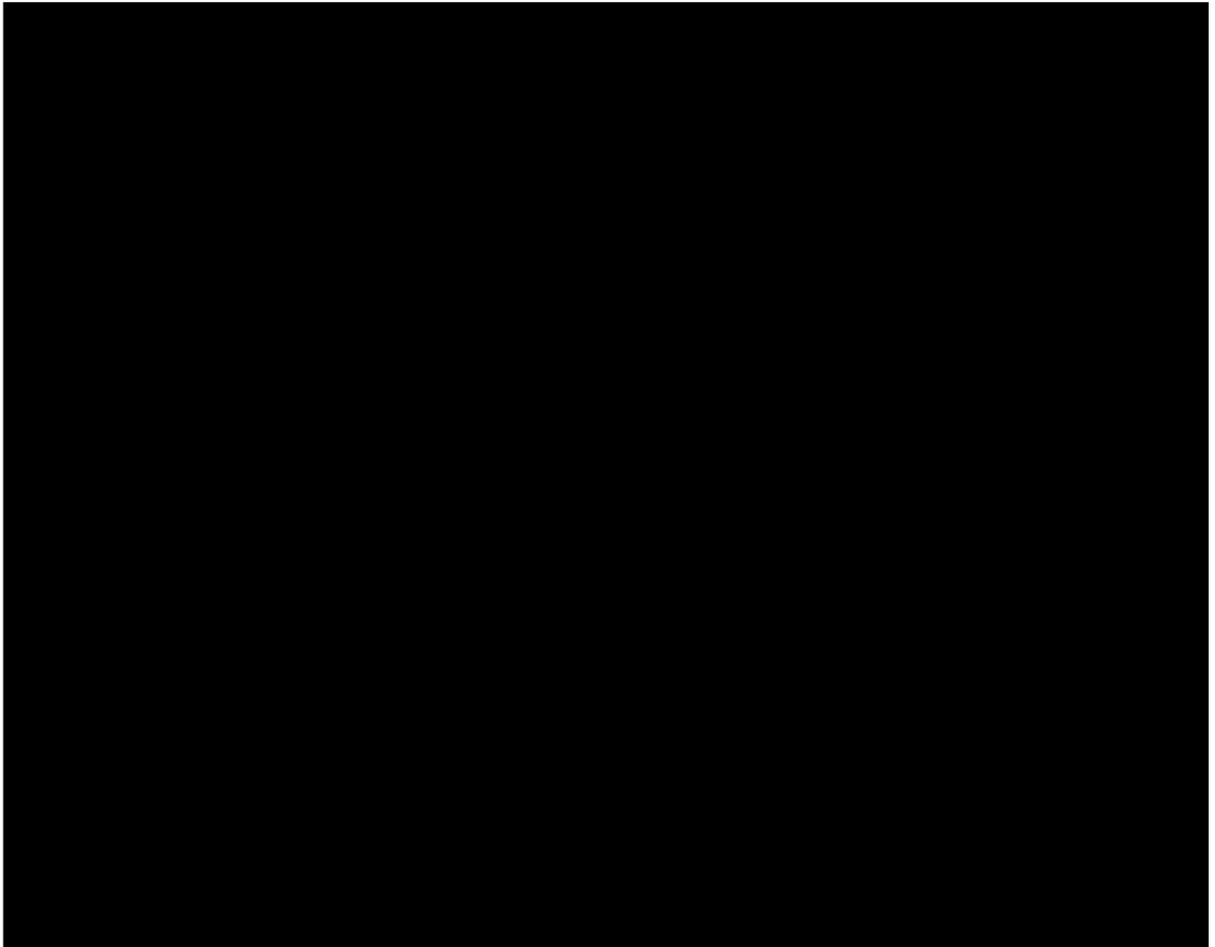


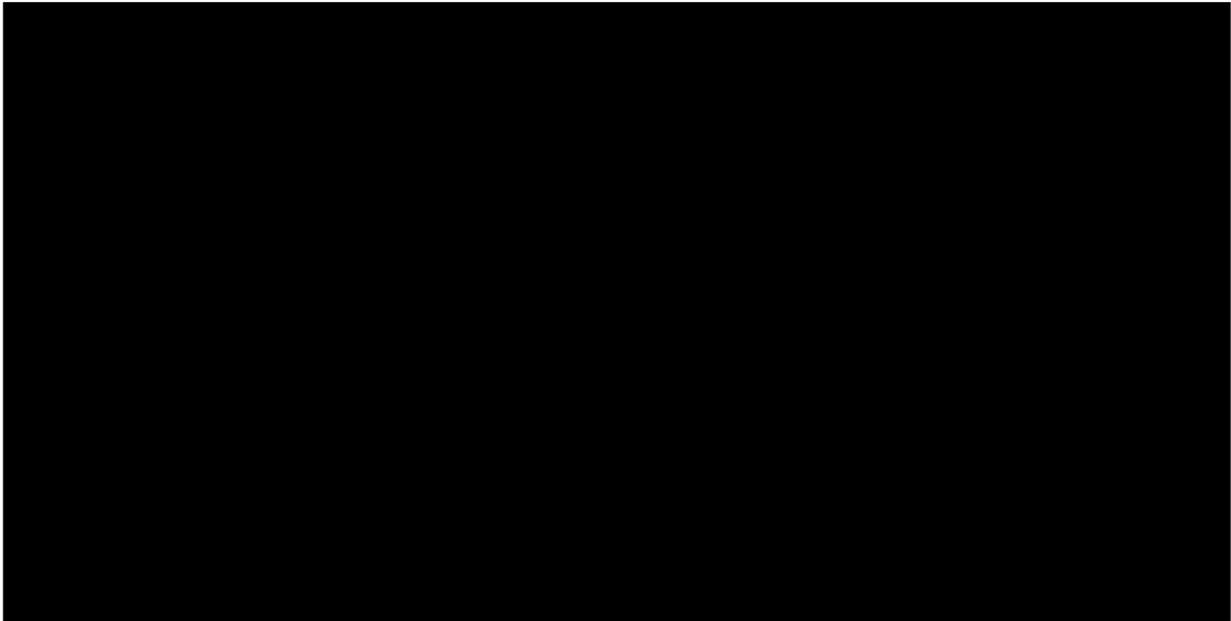
Project Viability

Avangrid Networks and the Excelsior Connect generation partners bring strong track records in completing large, complex projects like the proposed Excelsior Connect project on time and within budget. Drawing upon and leveraging the global experience of Iberdrola, Avangrid is among a handful of companies in the world with proven experience successfully managing the complexities of HVDC project development. This global expertise is matched with the company's experience building similar projects in New York and within the Northeast United States - A full summary of Proposer Experience is detailed in Section 3.

In this proposal, and in the proven success of its work in HVDC project development elsewhere, Avangrid has demonstrated that the HVDC solution offered with Excelsior Connect is both technically feasible and commercially available. Additionally, Avangrid is configuring Excelsior Connect to allow its equipment to last over 40 years under a very high utilization factor of 98.8% as it will be operated by the NYISO and dispatched based on market economics.

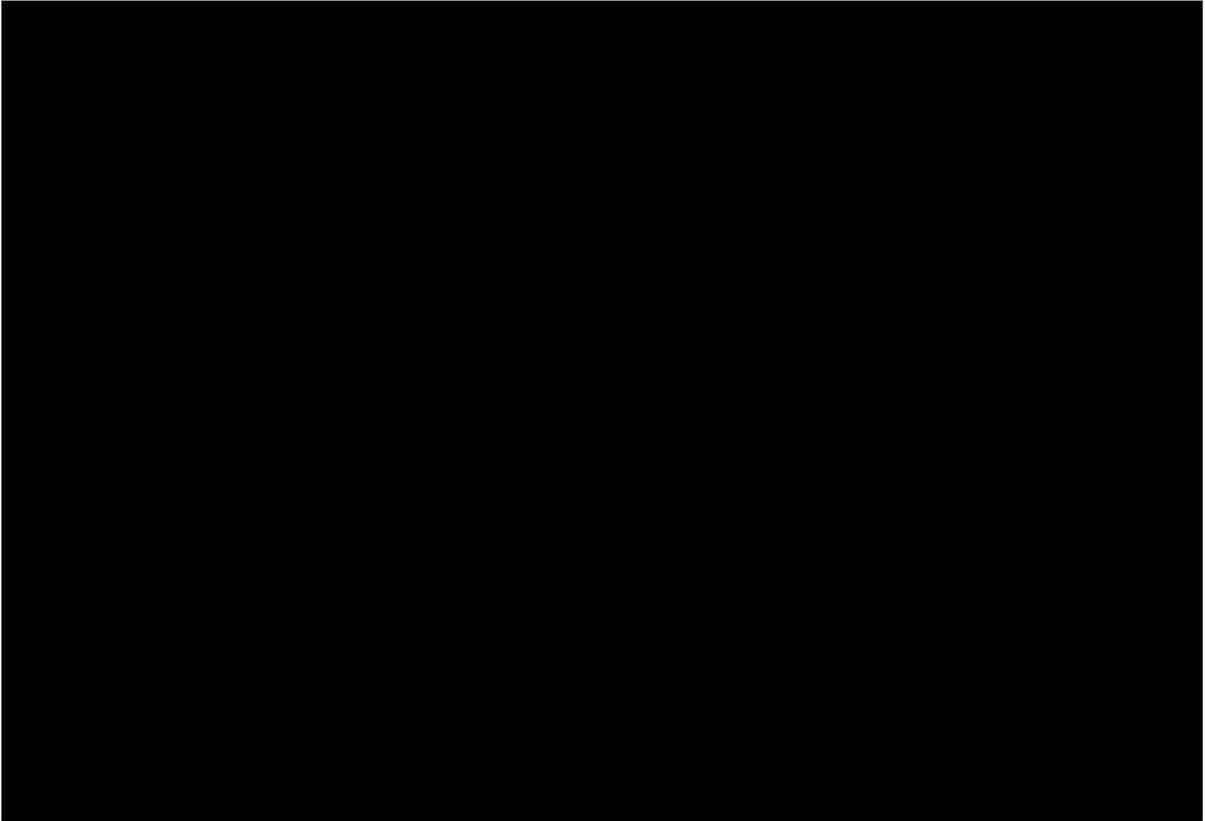
The proposed project ensures that reliable renewable energy will be delivered to Zone J with a detailed project plan and timeline. This plan, as detailed in Section 13, outlines that the project will meet interconnection and delivery milestones, permitting requirements, as well as other development milestones to successfully complete the project by the targeted Commercial Operation Date.





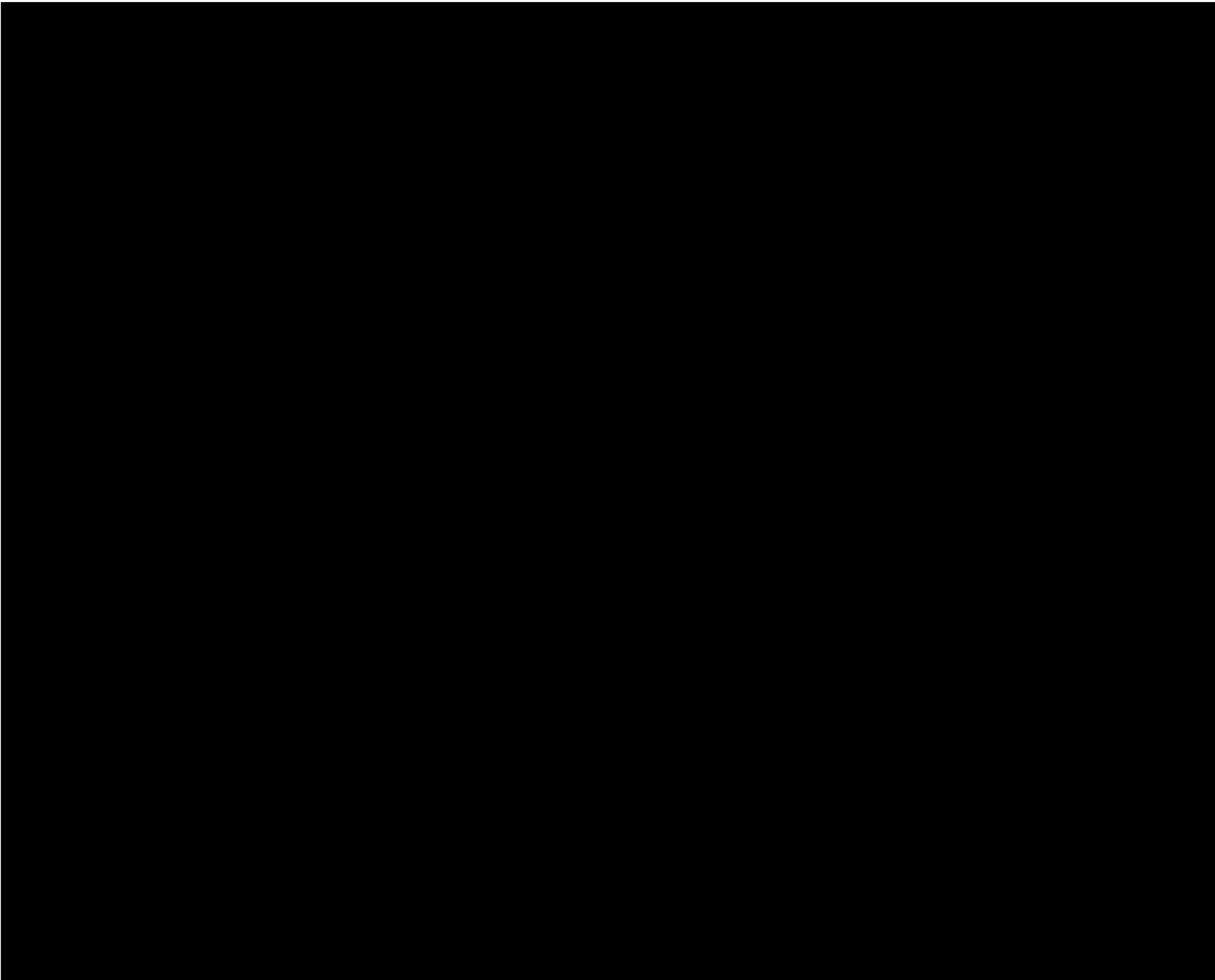
Excelsior Connect will be a proud New York project for New York customers, improving the reliability and resiliency of the power grid and significantly reducing greenhouse gas emissions while creating new jobs, generating new tax revenue and delivering essential investment in jobs, job training and economic development. In delivery of energy, environmental, community and economic benefits, the Excelsior Connect solution is The Power of New York.

1.2 Excelsior Connect Partners

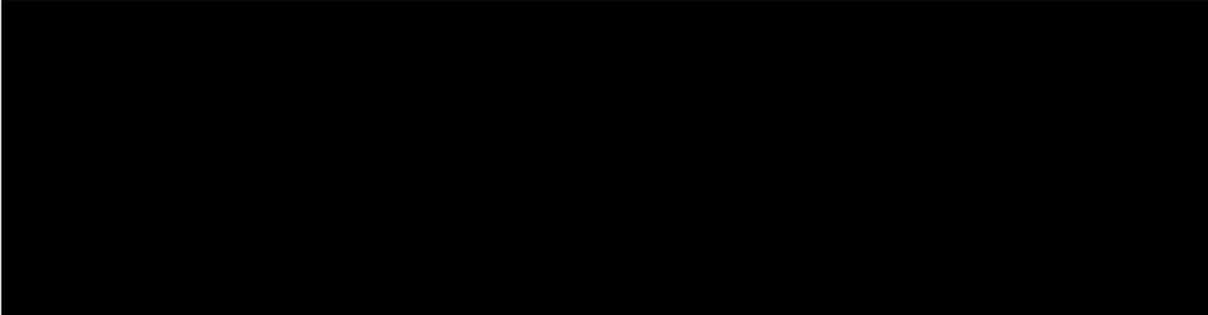




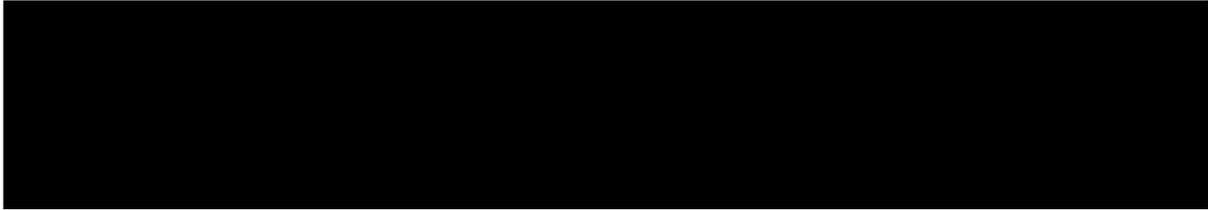
Using high-voltage direct current (HVDC) technology, the 1,200 MW bi-directional line will enable delivery of energy into New York State Independent Systems Operator (NYISO) Zone J and will support the state's Climate Leadership and Community Protection Act (CLCPA) targets.

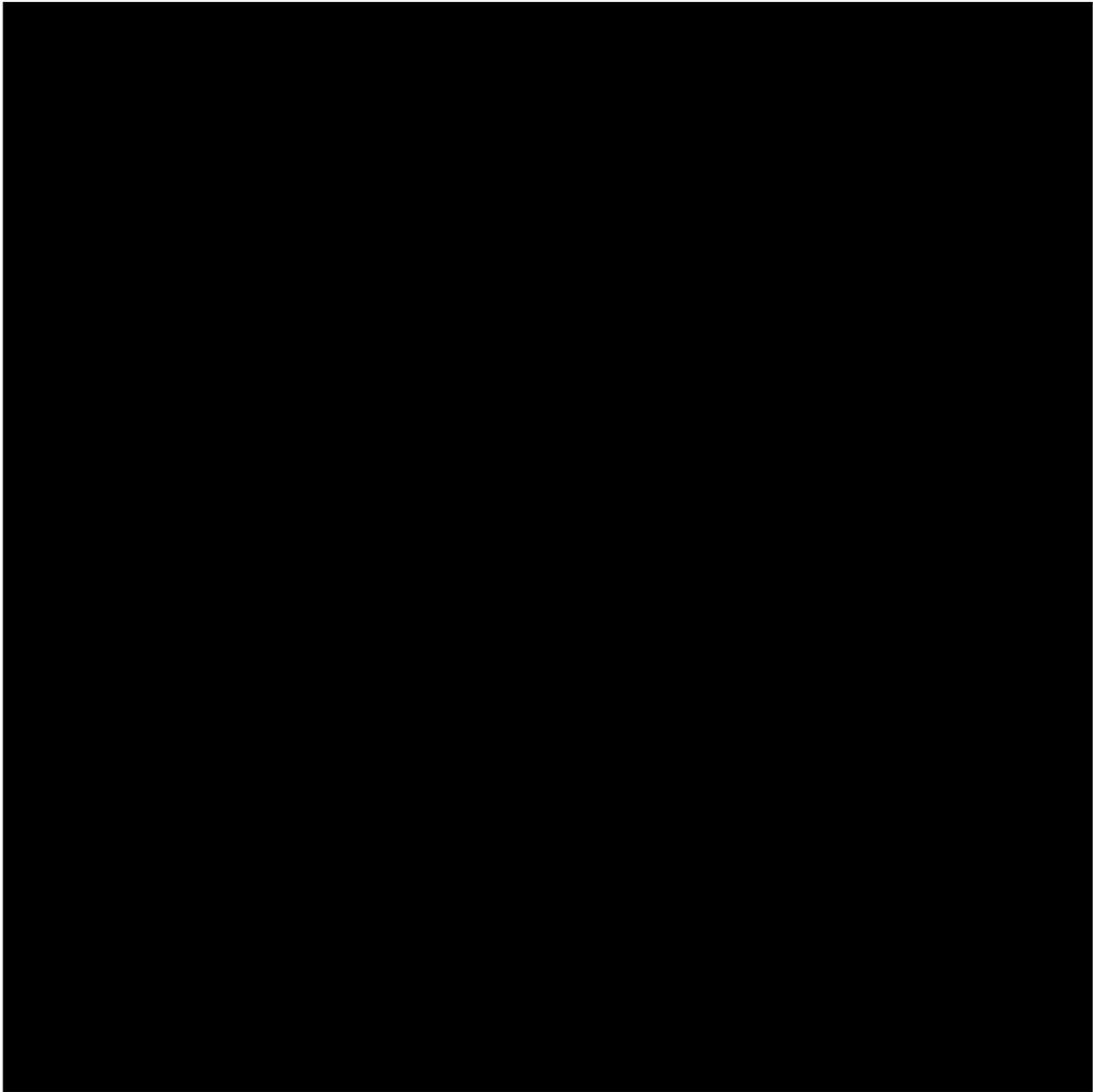


1.3 REC Pricing Proposal



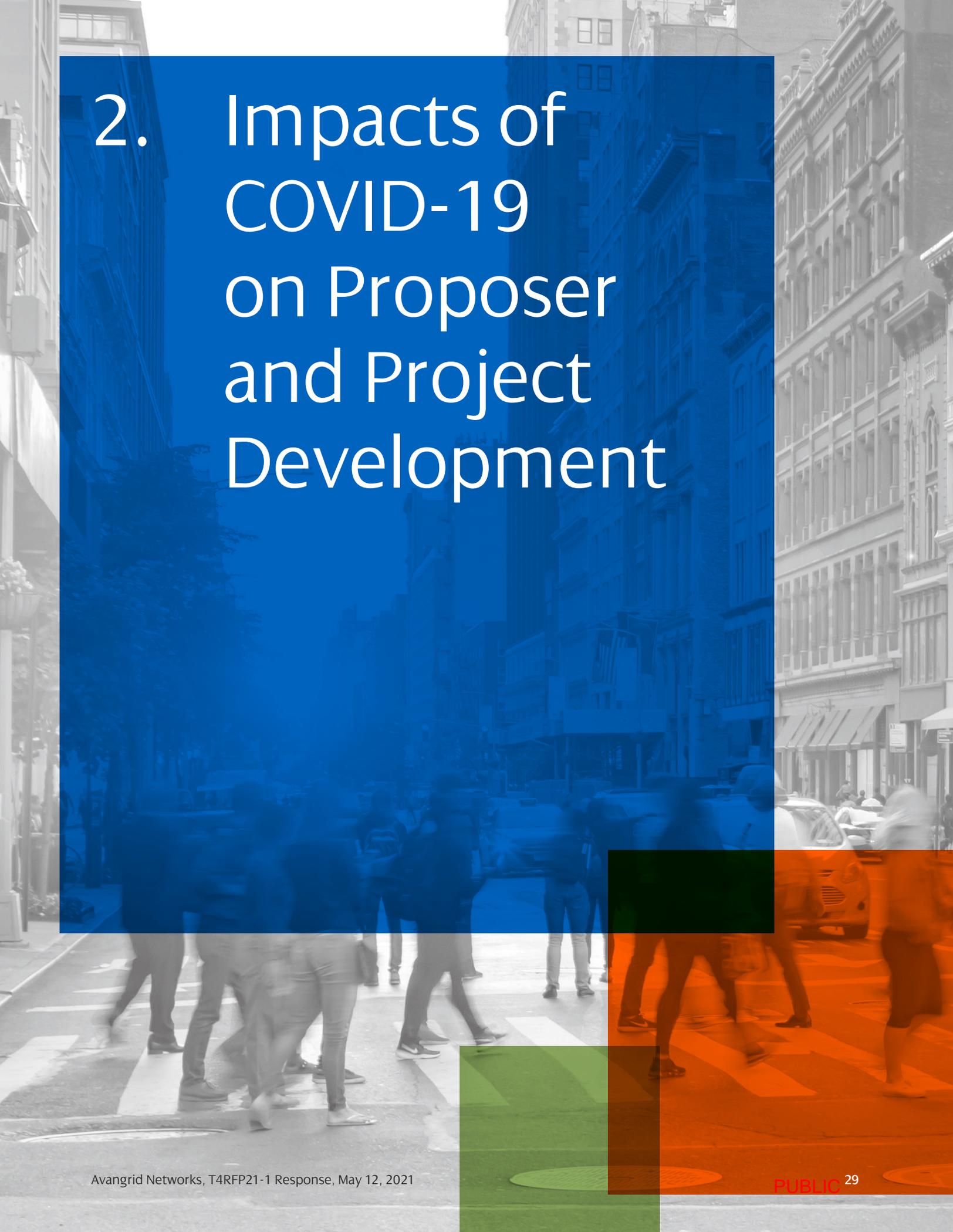
1.4 Non-Price Benefits of Excelsior Connect







The proposed Excelsior Connect Project has been developed to maximize operational flexibility. The value of selecting an HVDC project includes bidirectional, fast reversal flexibility, as well as Black Start capability, enhancing the ability of the grid to respond to operational situations.



2. Impacts of COVID-19 on Proposer and Project Development

The COVID-19 pandemic led to global economic disruption and volatility in financial markets and the United States economy, and while some of the impacts are dissipating as the pandemic appears to be slowing down, long-term global effects are not yet known. Avangrid has provided essential services to the United States during this global emergency and its response team communicates regularly with federal and State authorities and industry resources to ensure a coordinated response.

With \$38 billion in assets, operations in 24 states and service to 3.3 million utility customers in New York and New England, Avangrid recognizes its important role in system continuity and reliability, and incorporates crisis planning into an operational management approach that addresses business continuity and emergency response. Avangrid leveraged that proactive approach during the COVID-19 pandemic to ensure the ability to continue to provide service to our customers and support operational needs. The firm continues to monitor developments affecting its workforce and customers and takes precautions it determines to be necessary and appropriate. Throughout the COVID-19 pandemic, Avangrid has communicated regularly with customers, keeping them informed about tools and resources available. In addition to measures to protect its workforce and critical operations, Avangrid has established a cross-functional task force to plan for a safe and effective return to office.

Impact on Project Development

Recognizing that longer-term and ancillary impacts of the pandemic may continue to evolve, Avangrid and the Excelsior Connect generation partners in this pursuit are actively monitoring potential supply chain and transportation disruptions and are mapping precautionary plans to prevent or mitigate impact on project development.

The proposal team has conducted extensive outreach during the development of this submission, modifying our approach to meet social-distancing requirements, but not limiting the effort to interact with potentially impacted communities. Avangrid instead turned to technology to enable virtual meetings, teleconferences and video conferences, to inform, involve and engage Environmental Justice, business, social, economic and political stakeholders.

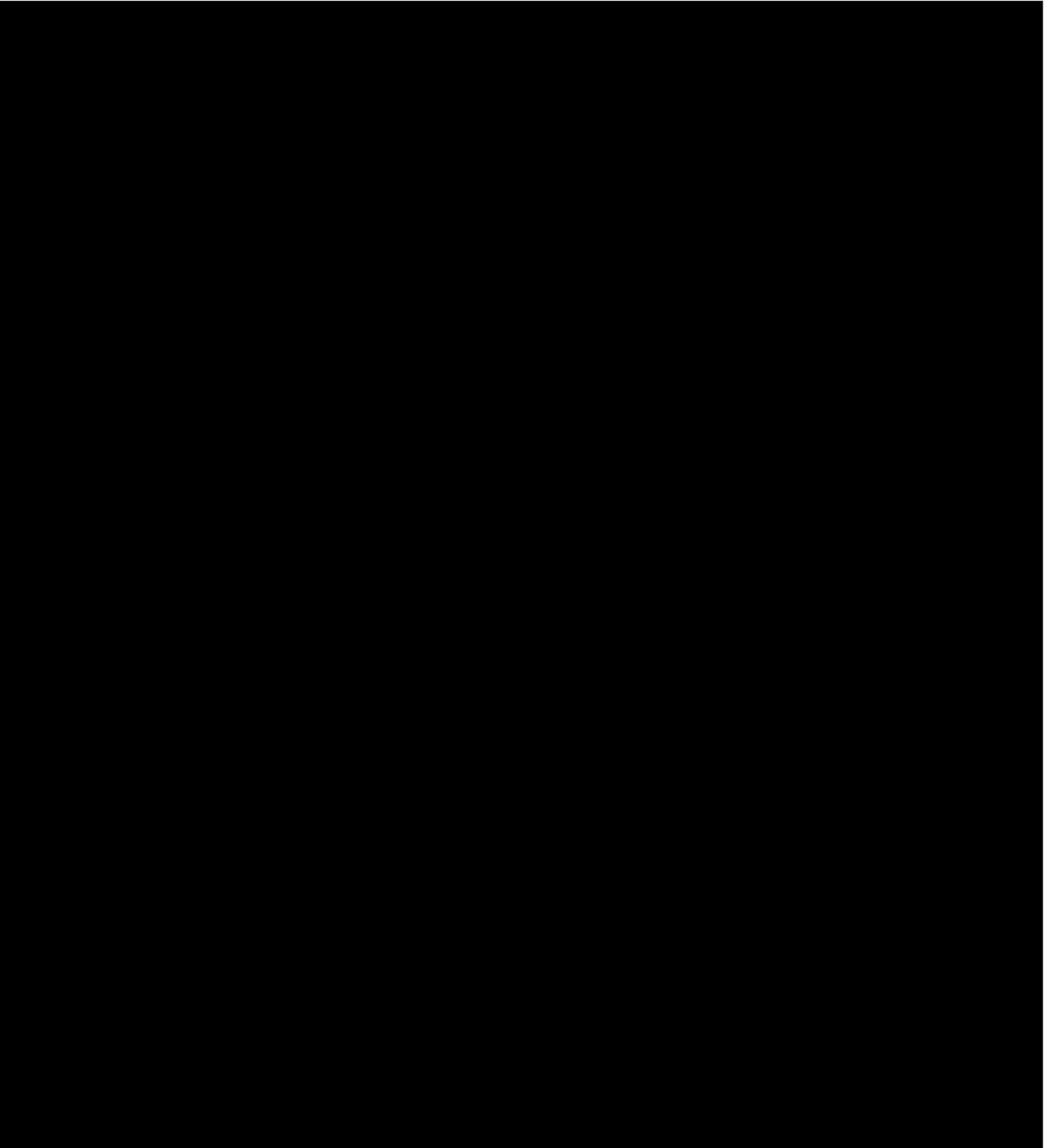
We have also leveraged technology to counteract the limits imposed by the pandemic on the acquisition of site control for the converter station in New York City. The limited in-person contact due to the pandemic constrained the ability of brokers to leverage more traditional approaches to establishing relationships with landowners. While we look forward to increase in-person interactions soon, we have pivoted our approach, and continue to leverage technology to enable open, transparent and continual communication.

3. Proposer Experience



3.1 Excelsior Connect Partners

Excelsior Connect
New Transmission
and Development
Team



NEW TRANSMISSION

Avangrid Networks

Avangrid Networks is a subsidiary of AVANGRID, Inc. 18.5% publicly traded under the ticker symbol AGR and 81.5% owned by Iberdrola, S.A. Iberdrola, S.A is one of the largest utilities in the world, with \$134 billion in assets. Iberdrola operates 718,684 miles of power lines around the world and 230,122 GWh of electric distributed power, supplying electricity to more than 34.4 million points of delivery.

AVANGRID's equity market capitalization is approximately \$15 billion. AVANGRID holds credit ratings from S&P (BBB), Moody's (Baa1) and Fitch (BBB+), has access to the credit markets in the form of a \$2.5 billion credit facility and has access to the debt capital markets (\$1.8 billion of bonds outstanding). AVANGRID owns eight regulated utilities in the Northeast U.S. under the Avangrid Networks umbrella and is one of the leading renewable generation owner/operators with a renewable energy portfolio in excess of 7,500 MW.

AVANGRID has experience developing, sponsoring and financing large complex projects, including the recently completed \$389 million Rochester Area Reliability Project. At present AVANGRID is developing the New England Clean Energy Connect (NECEC), a \$1 billion transmission project that is the only HVDC project currently under construction in the United States. Avangrid is also a partner in joint venture Vineyard Wind, which is developing a \$3 billion, 800 MW offshore wind generation facility expected to be the first large-scale offshore windfarm in the U.S. and Park City Wind, an 800MW offshore wind project for Connecticut.

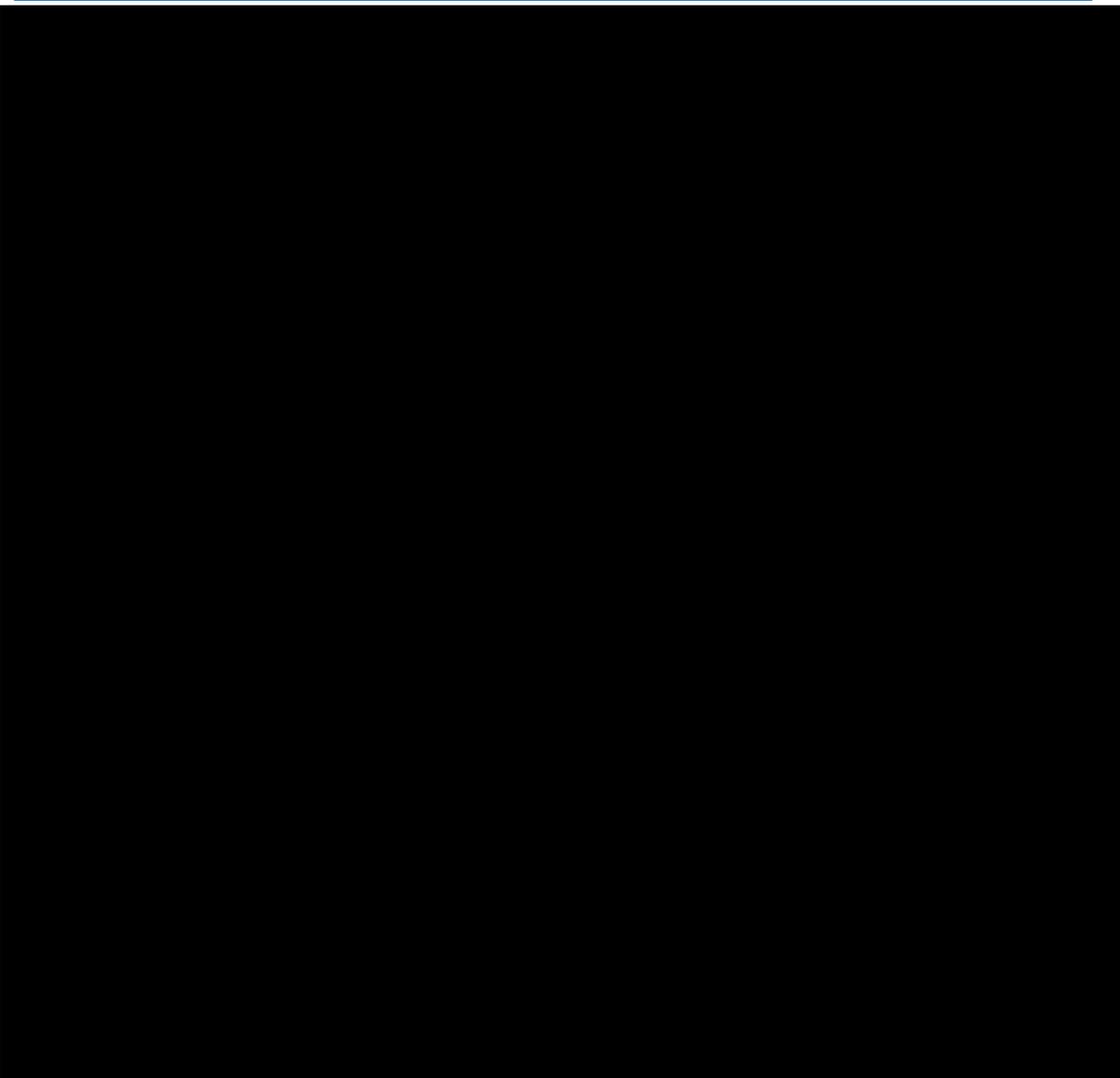
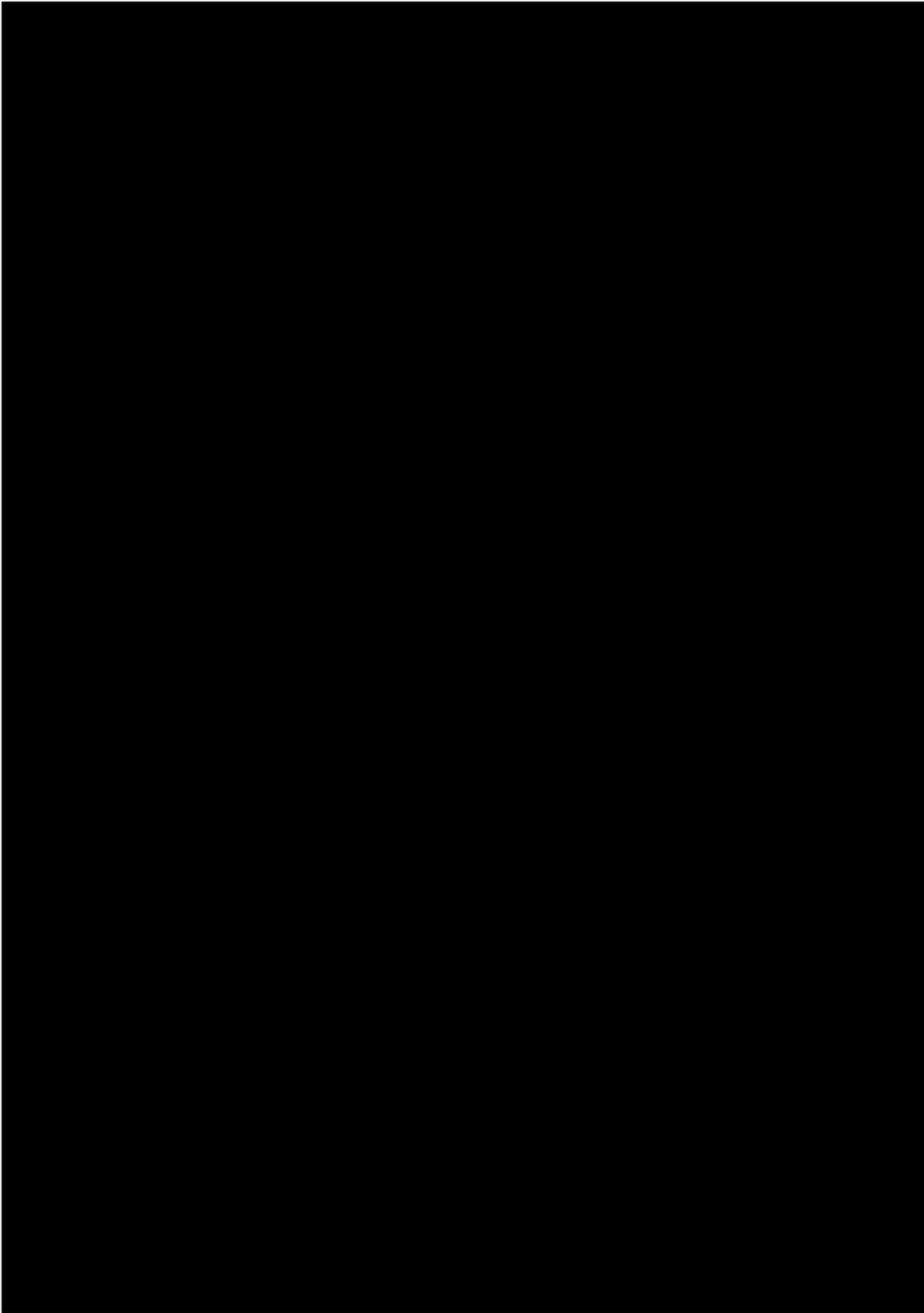
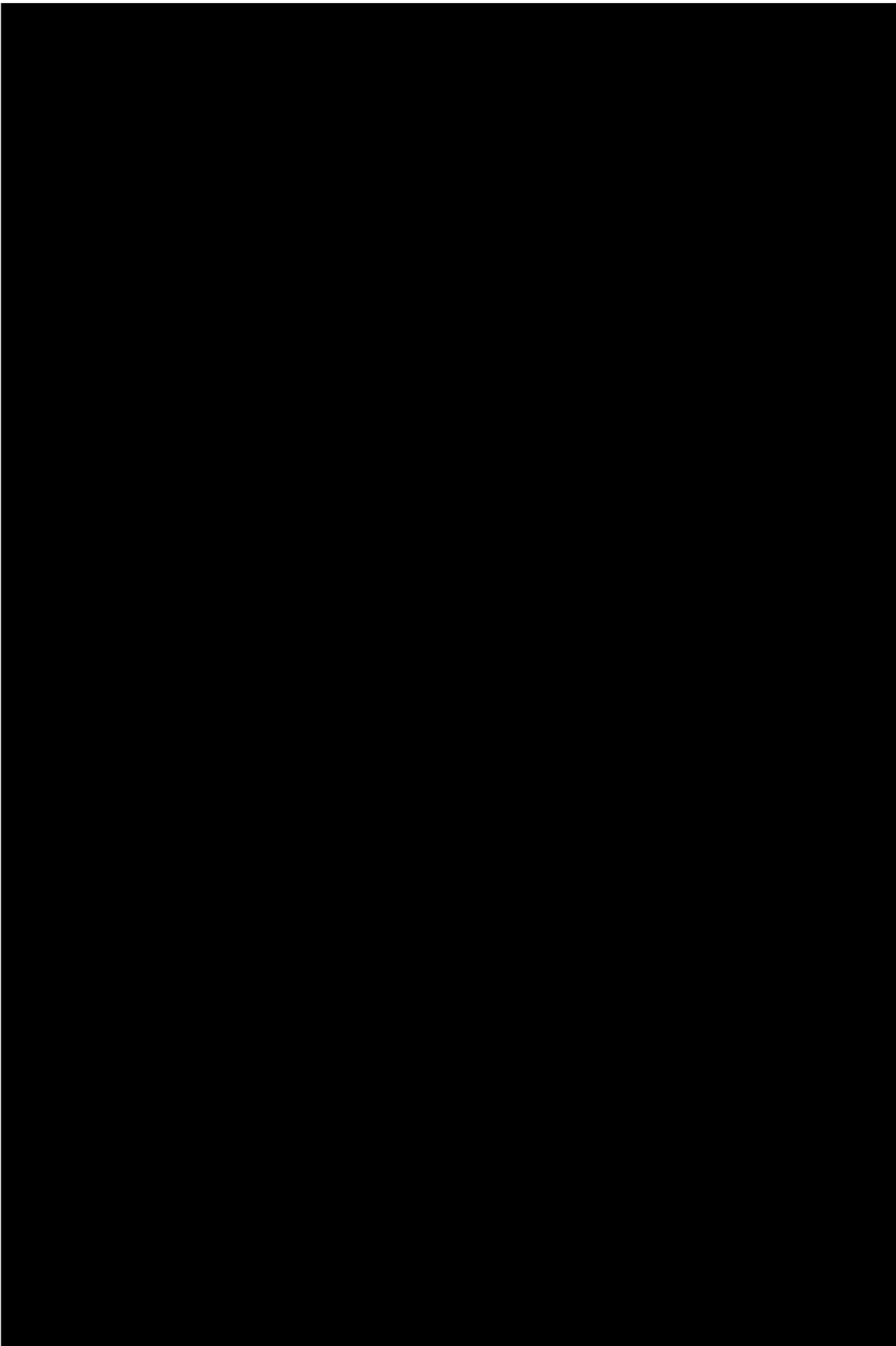
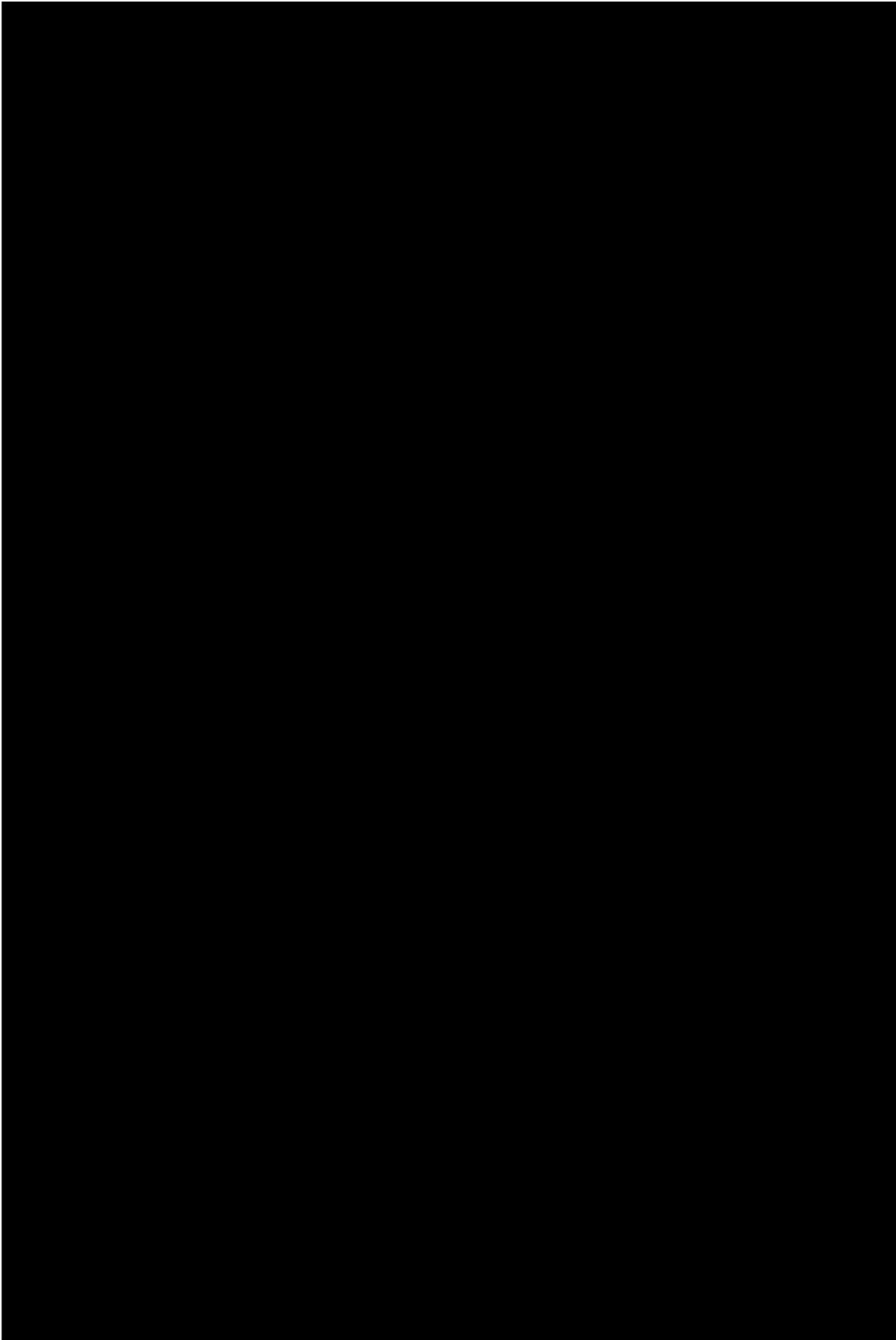


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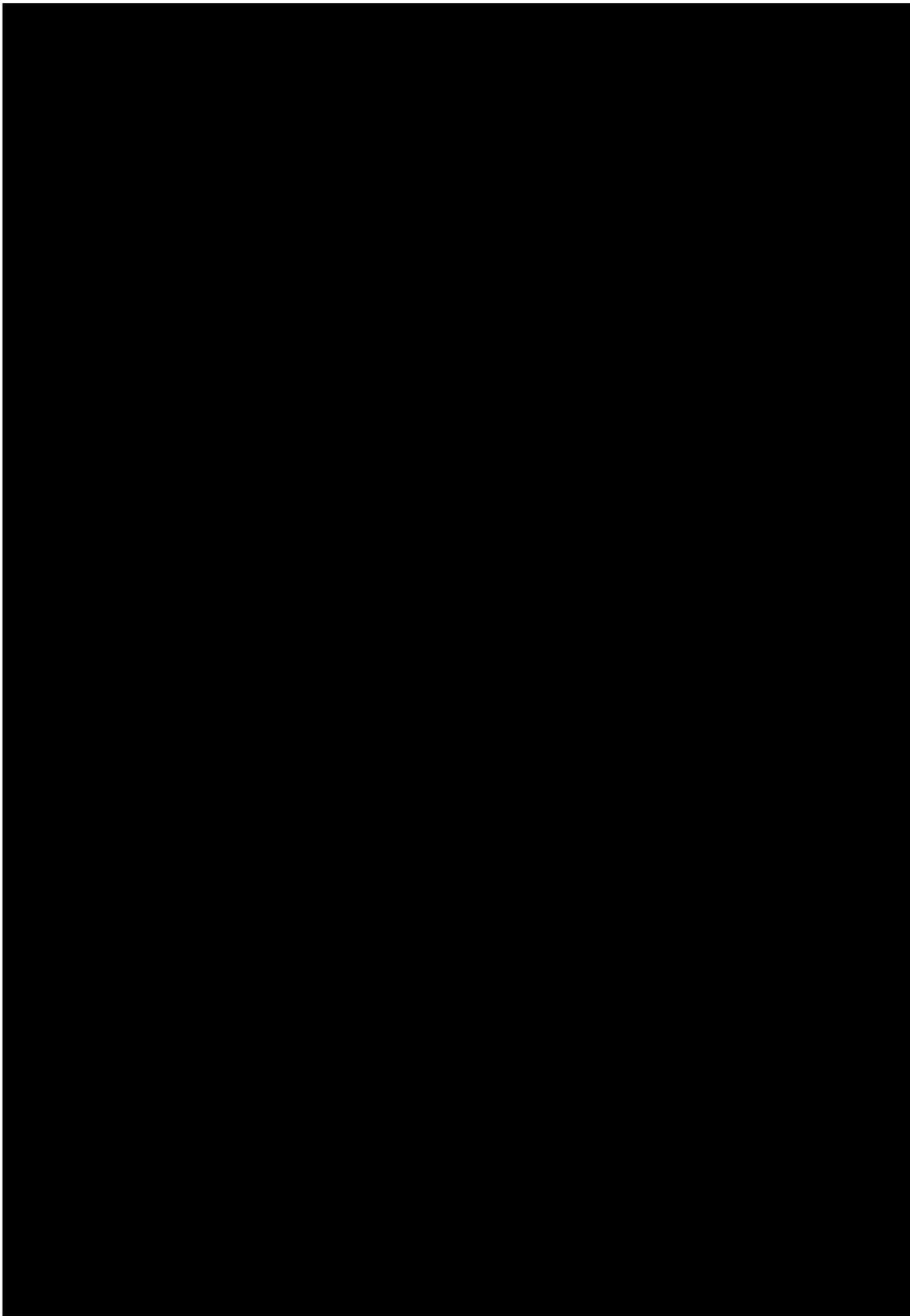
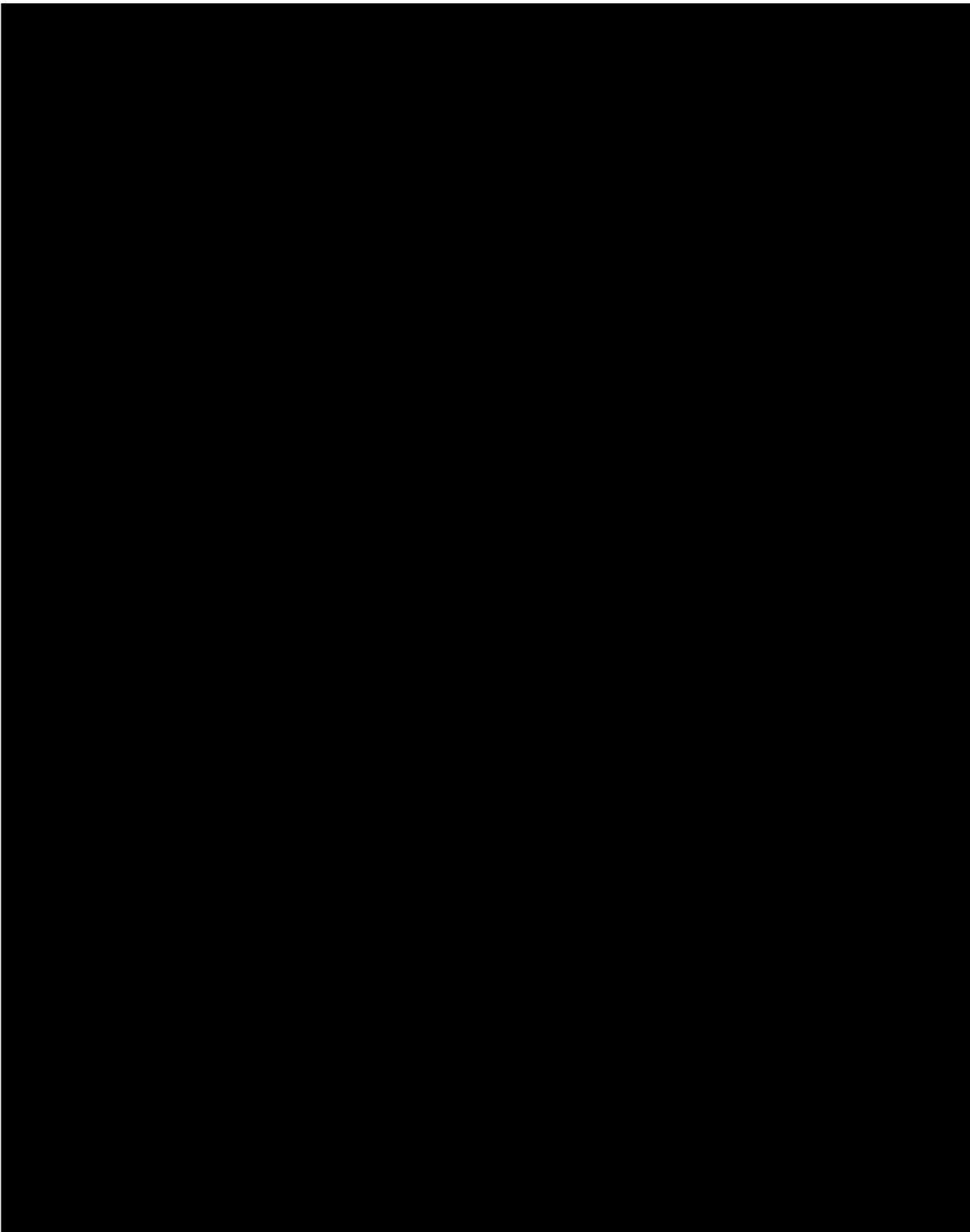


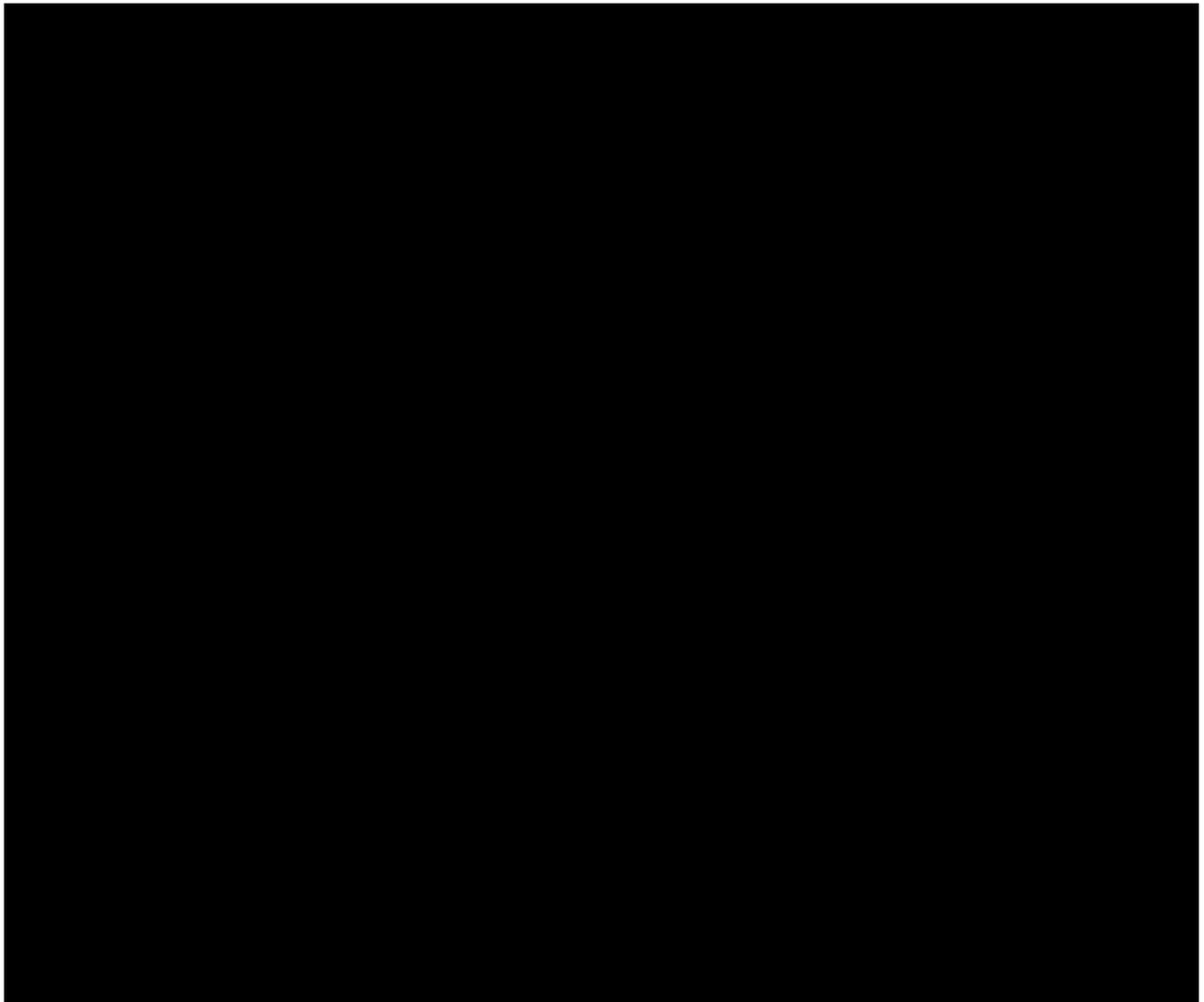
TABLE 3-2

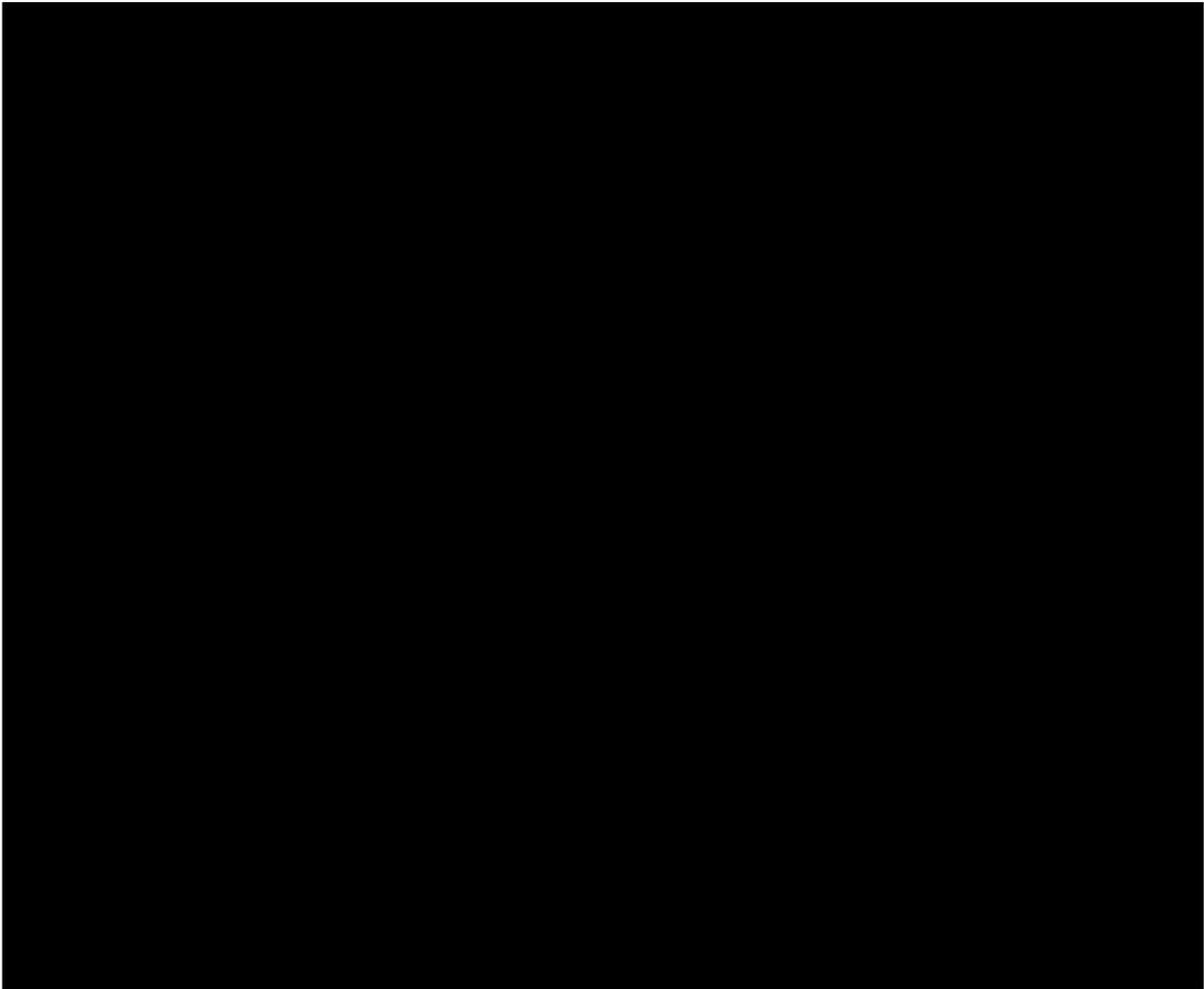
A small rectangular area within a blue header box is completely blacked out, indicating redacted content for Table 3-2.A large, vertical rectangular area of the page is completely blacked out, representing a large redacted table or figure.

3.2 Project Development team structure and corporate structure

The Excelsior Connect solution includes a detailed plan for project organization, coordination and management, detailed sufficiently to leverage our collective strength to reduce and mitigate risk. Recognizing that our generation portfolio projects and new transmission will be developed independently by each of the project participants, with each entity retaining ownership of its assets, Avangrid Networks has imposed an overarching corporate structure that will ensure project continuity, foster collaboration and serve the State of New York with a collective of capabilities, expertise and capacity to deliver a reliable, responsive and efficient solution.

Providing an overarching management structure and oversight, Avangrid Networks has established an Excelsior Connect Joint Steering Committee, comprising representatives of each of the contributing generators, which will track progress of the various project components and work collaboratively to bring the entire portfolio and new transmission to commercial operations in a timely manner with regular reporting requirements to both Avangrid Networks and NYSERDA. The Steering Committee will be supported by two subcommittees, Technical Subcommittee and Outreach Subcommittee. The collective team will have a monthly joint meeting, with more frequent meetings of the individual subcommittees.





3.3 Project Personnel

In addition to the Excelsior Connect Steering Committee, each company responsible for developing the generation and new transmission components of the project will have its own management structure dedicated to carrying out and overseeing the development and construction of its portion of the work. This section details the project personnel for Avangrid Networks. Please see Attachments 8.1-8.5 for information on Excelsior Connect generation partners.

3.3.1 New Transmission Project Personnel

3.3.1.1 Avangrid Networks

The Excelsior Connect executive sponsors will provide overall strategic leadership and oversight. They include [REDACTED]

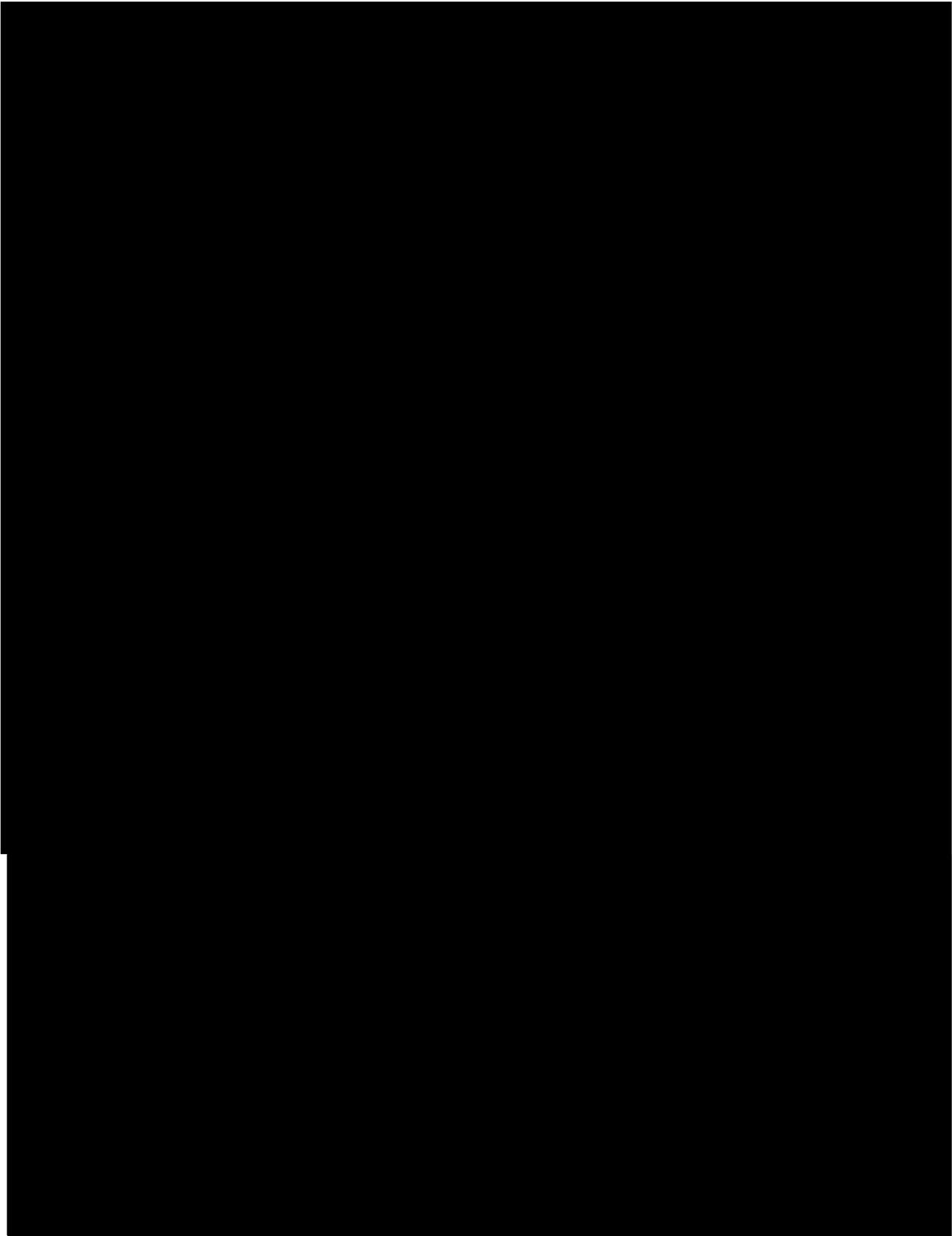
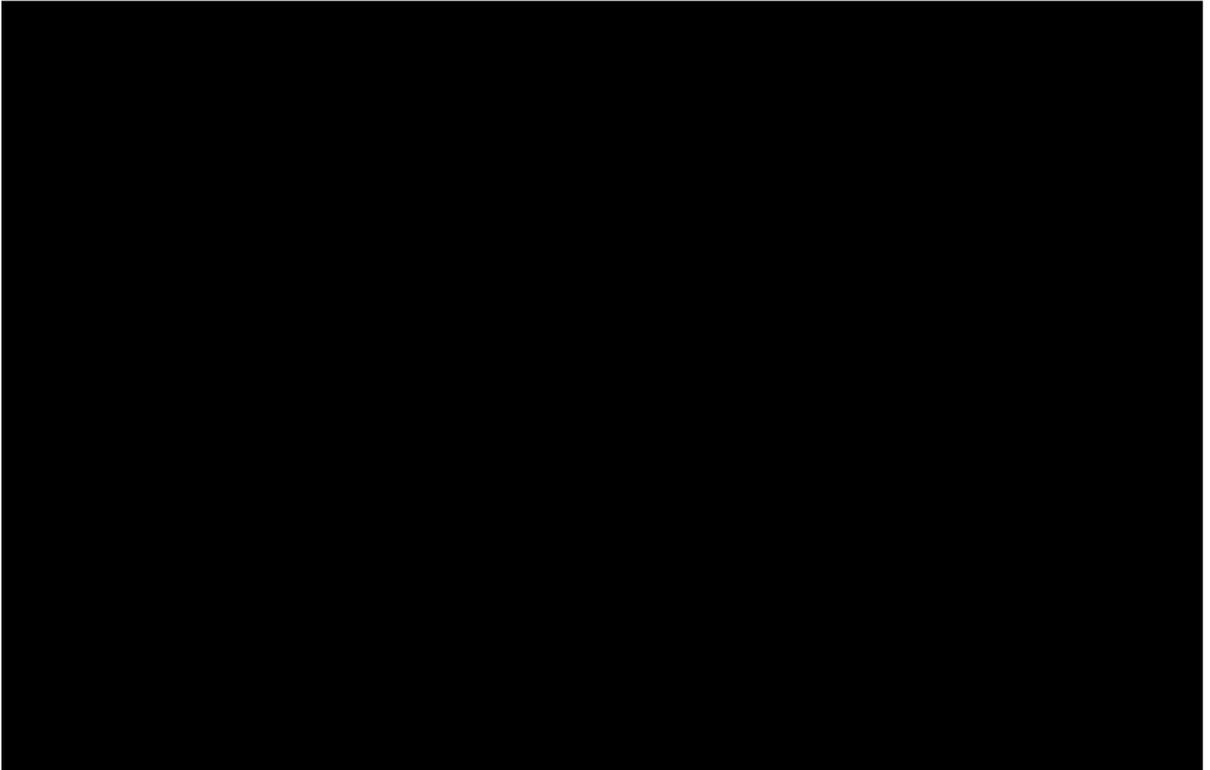


FIGURE 3-3

Avangrid
Networks Excelsior
Connect Project
Organization



3.4 Previous Project Experience

The Excelsior Connect project participants have successful track records developing transmission and generation projects in various markets. By working with regulatory oversight agencies, elected officials, impacted communities, and stakeholder groups, these companies bring projects from early-stage development through commercial operations. This section highlights key projects for each organization, with a more expansive project list, as well as references, available in Appendix 3-2.

3.4 Avangrid Networks

Project Name	Western HVDC Link
Location	Scotland and Wales, UK
Type, Size, and Technology	260-mi 600kV HVDC subsea transmission line
COD	2018
Estimated Capacity Factor	2200MW
Reference	Pearse Murray, Director of Scottish Power Transmission Ochil House, Technology Park, High Blantyre, South Lanarkshire, G72 0FD Pearse.Murray@ScottishPower.com Tel: (+44) 7753621585

This £1.2 billion (approximately \$1.7 billion USD), 2200MW capacity subsea HVDC project interconnects West Scotland to Wales via two bi-directional HVDC convertor stations and 260 miles of 600kV HVDC cable. The project was the first use of HVDC technology in Britain's transmission system, and enables renewable energy generated in Scotland to be transmitted to homes and businesses in Wales and England.

The project leverages mass impregnated non-draining cables in a bipolar arrangement without a return path, minimizing environmental impacts under the Irish Sea. A joint venture between Iberdola subsidiary Scottish Power and system operator National Grid completed the five-year project in October 2018.

Project Name	Maine Power Reliability Program (MPRP)
Location	Maine (several locations throughout the state)
Type, Size, and Technology	Reliability project involving 345-kv and 115-kv substation construction and upgrades, approximately 440 miles of new transmission lines
COD	2015
Reference	Douglas Herling, President – Central Maine Power 83 Edison Dr., Augusta, ME 04330 (207) 623-3521

At \$1.4 billion, the Maine Power Reliability Program (MPRP) was the largest construction project in Maine's history. This project, built by Avangrid subsidiary Central Maine Power (CMP) included the construction of five new 345kV substations, four 345/115kV autotransformer additions and six major substation expansions linked by approximately 440 miles of new and rebuilt 345 and 115kV transmission lines on over 5,000 structures. The five-year construction project involved coordination among more than 20 contractors and was completed on time and under budget despite covering a wide geographic area and numerous project components. MPRP was designed to ensure reliable service to customers and meet NERC, NPCC, ISO-NE, and local reliability standards and criteria under a variety of load, dispatch, and transfer conditions.

Project Name	New England Clean Energy Connect (NECEC)
Location	Lewiston, ME to Beattie Township, ME near the US-Canada border
Type, Size, and Technology	145-mi 320kV HVDC overhead transmission line and HVDC converter station
COD	2023
Estimated Capacity Factor	1200MW
Reference (Name Address, Telephone)	Bernardo Escudero, Director One City Center, 5th floor, Portland, ME 04101 (207) 629-1180

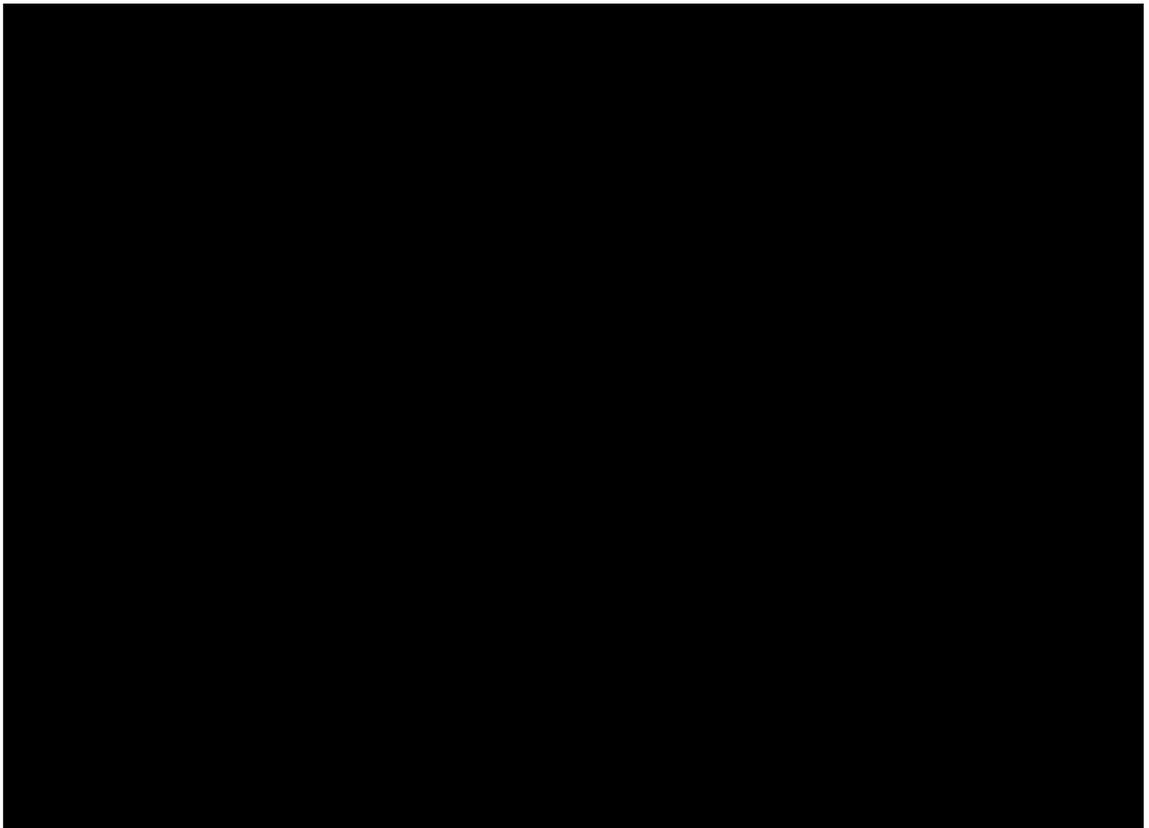
The New England Clean Energy Connect (NECEC) is a \$1 billion transmission project with capacity up to 1,200 MW to deliver over 9.5 terawatt-hours per year of hydropower energy to Massachusetts via the New England transmission grid. The 145-mile 320kv project connects to the New England grid at the Larrabee Road 345kV substation in Lewiston, ME. New England Clean Energy Connect is in response to a Request for Proposals by the Commonwealth of Massachusetts for long-term, clean energy contracts, which include hydropower and other clean energy generation, to achieve a more cost-effective, low-carbon energy future for the region.

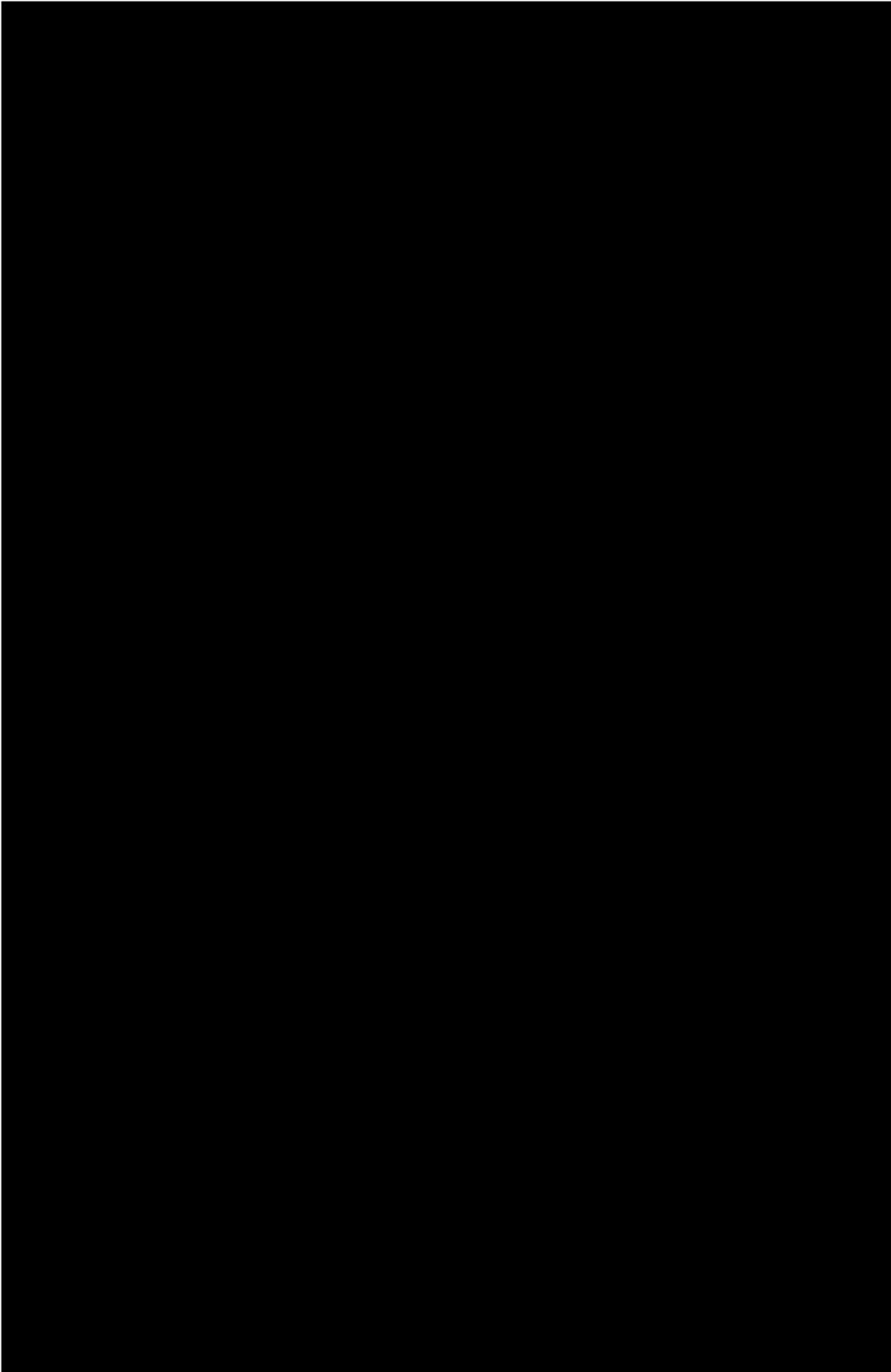
Project Name	Rochester Area Reliability Project
Location	Rochester, NY
Type, Size, and Technology	New 345kV substation construction, 345kv and 115kV transmission line construction (overhead and underground)
COD	April 2021
Reference	Carl Taylor, President Rochester Gas & Electric 89 East Avenue, Rochester NY 14604 (800) 743-2110

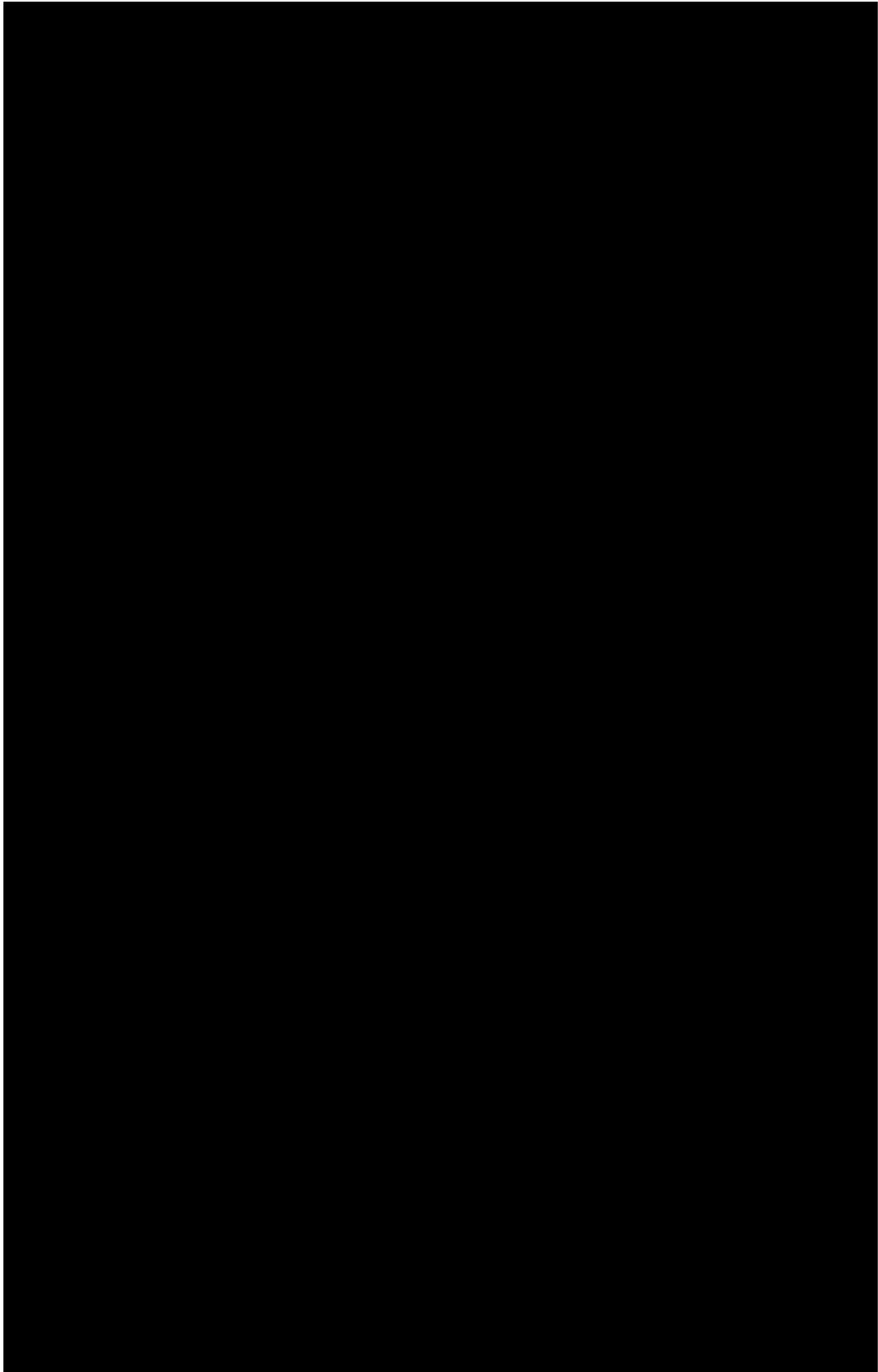
Rochester Area Reliability Project (RARP) – \$380 million project involves building a new 345kV substation; a new one-mile 345kV line; and two 115kV lines, one 10 miles and a second 14 miles with both overhead and underground portions. The project was placed in service April 2021. The benefit of the RARP project is that it improves reliability and supports future load growth, while ensuring compliance with reliability standards. RARP provides a new source to the Rochester Gas & Electric 115kV system with a new a substation on the cross-state 345kV lines. The project includes a new 345/115kV substation, connecting two 345kV transmission lines into the new substation, constructing a 345 kV and two 115kV lines, and installation of equipment upgrades and additions at five substations.

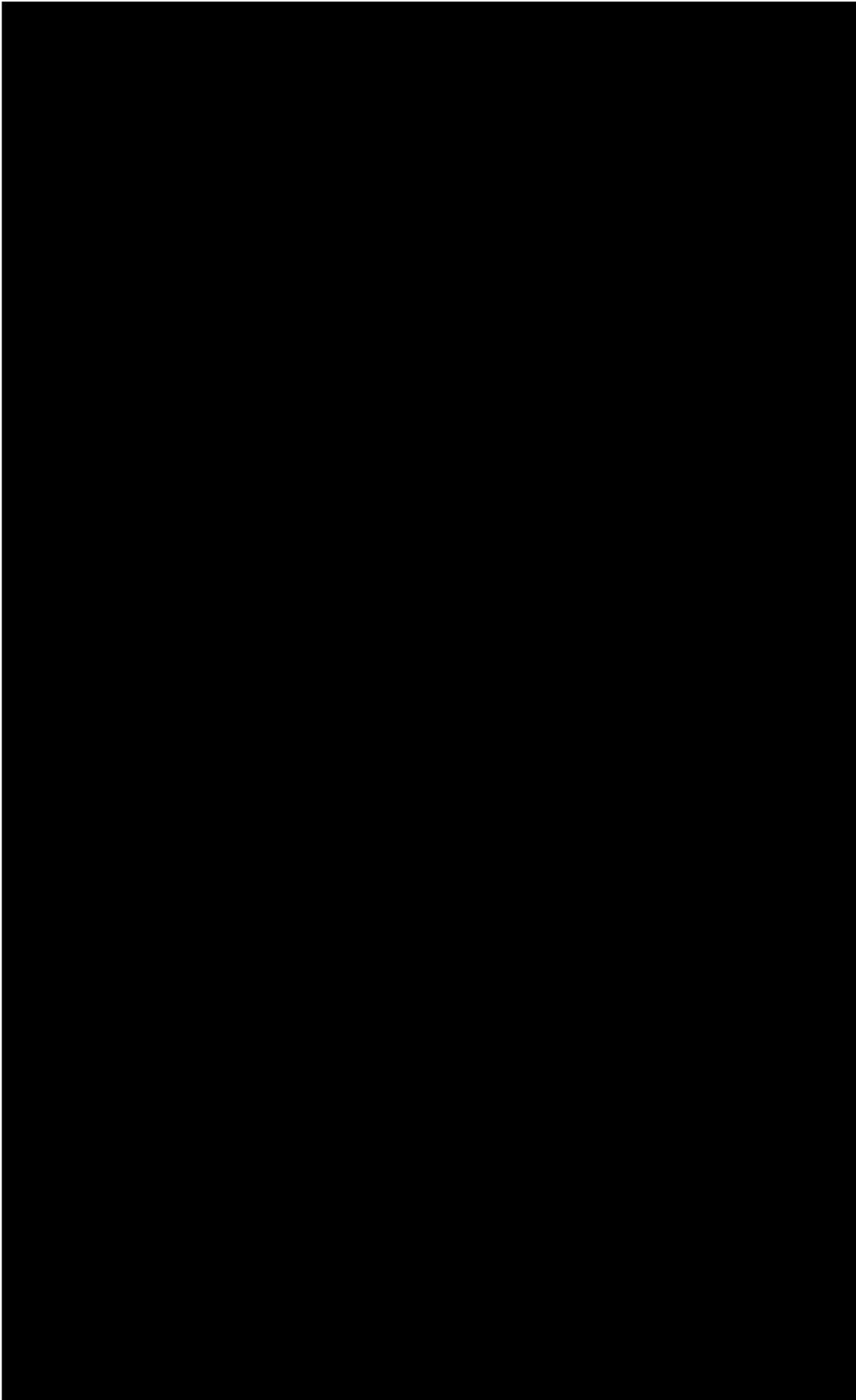
3.7 Project Entities

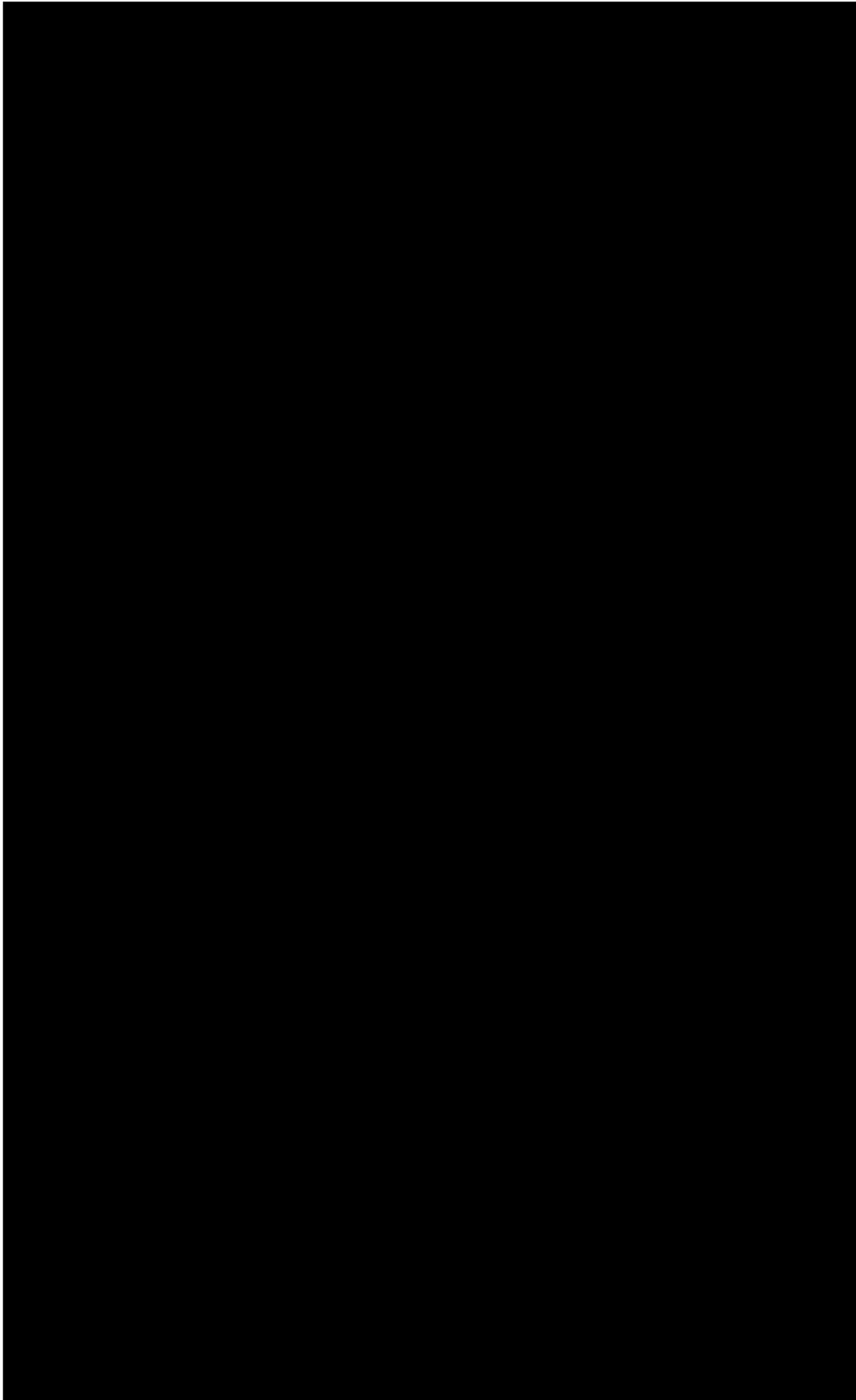
3.7.1 Avangrid Networks

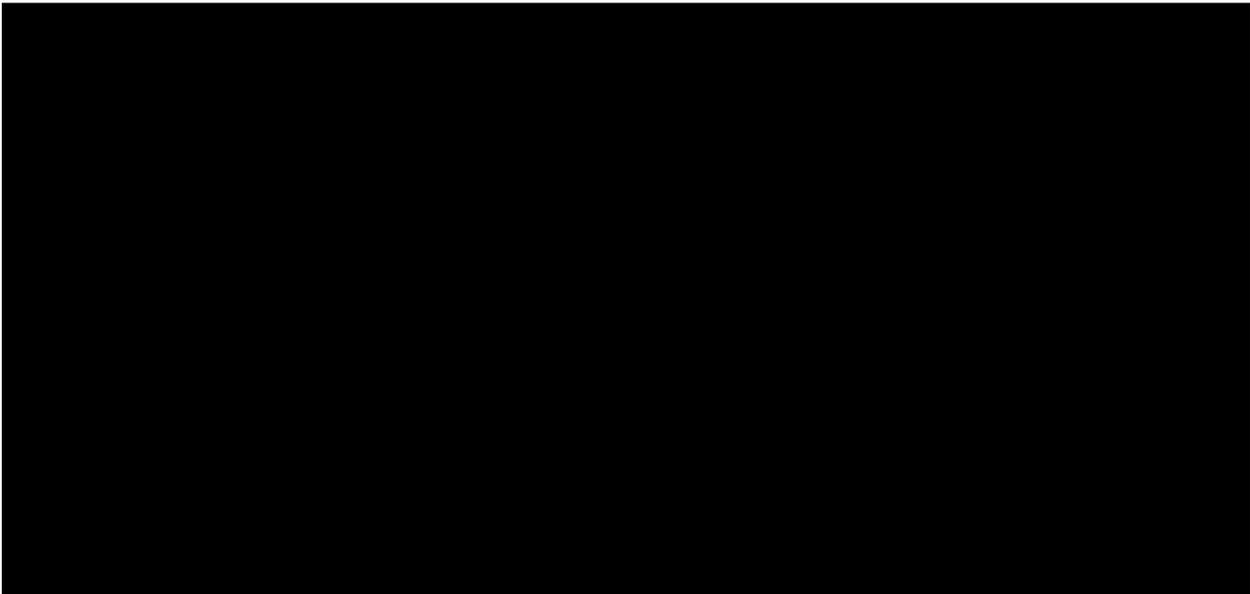












Avangrid Networks NYISO Experience

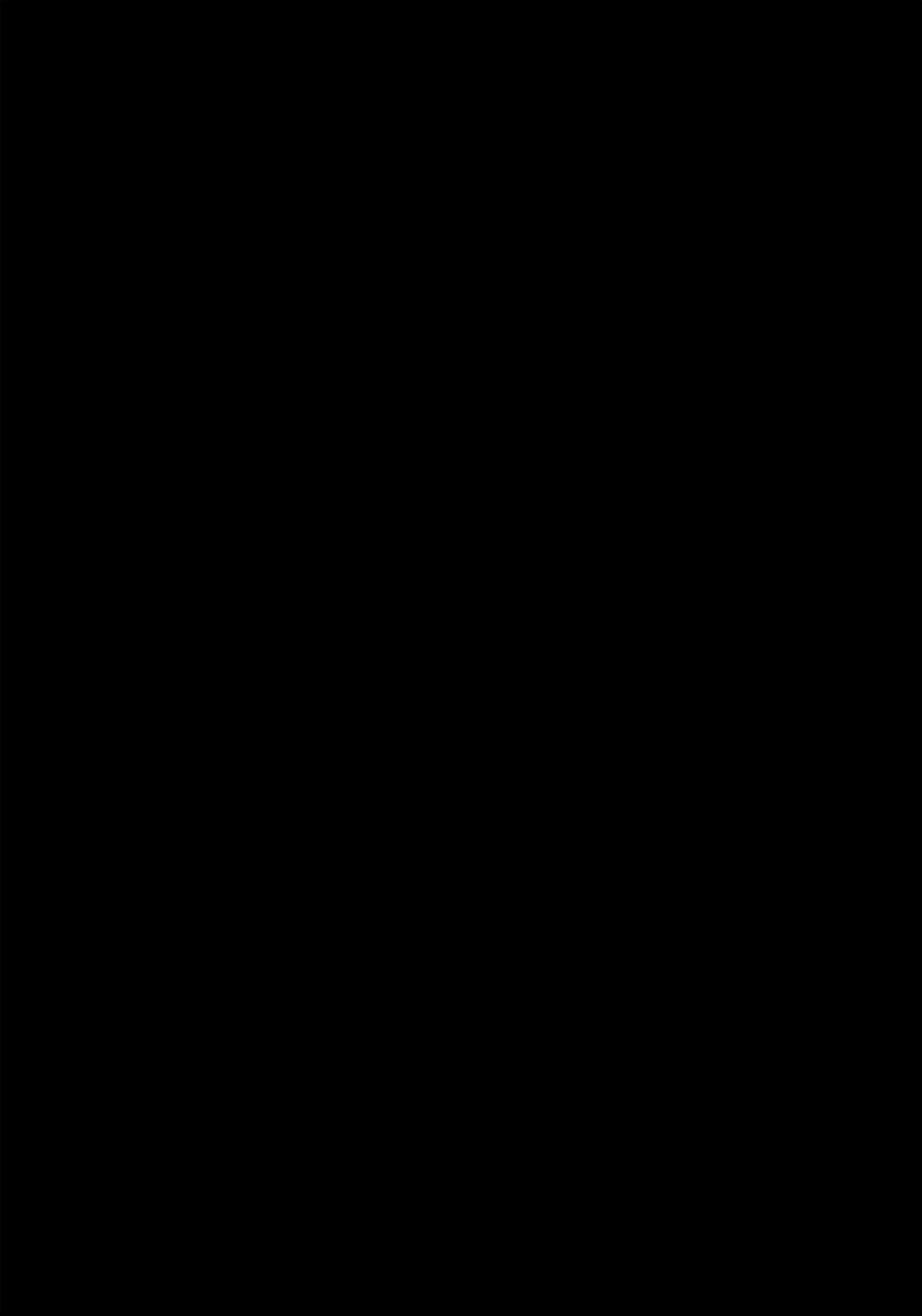
Avangrid Networks subsidiaries New York State Electric and Gas (NYSEG), and Rochester Gas and Electric (RG&E) are voting members of the NYISO Management, Business Issues, and Operating Committees representing the Transmission Owners sector. Stakeholders comprise each Party to the ISO Agreement, each of which populate one of the five Sector Groups (Generation Owners, Other Suppliers, Transmission Owners, End Use Consumers, Public Power/Environmental Parties). Representation and participation in these committees, related subcommittees, and working groups guides the ISO operations, policies, rules and procedures related to the efficient and non-discriminatory operation of electricity markets centrally coordinated by the ISO.

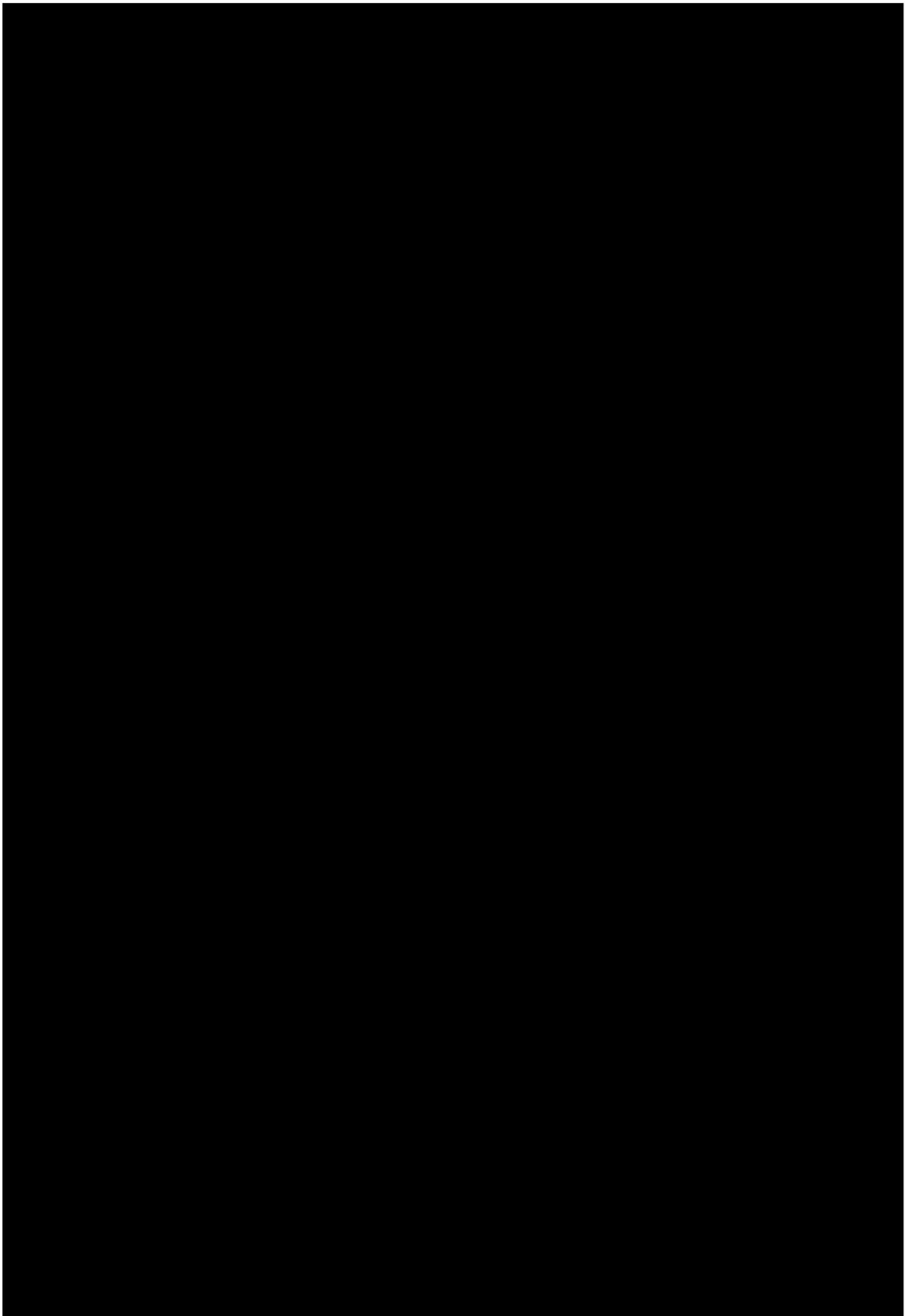
4. Resource Description and Site Control

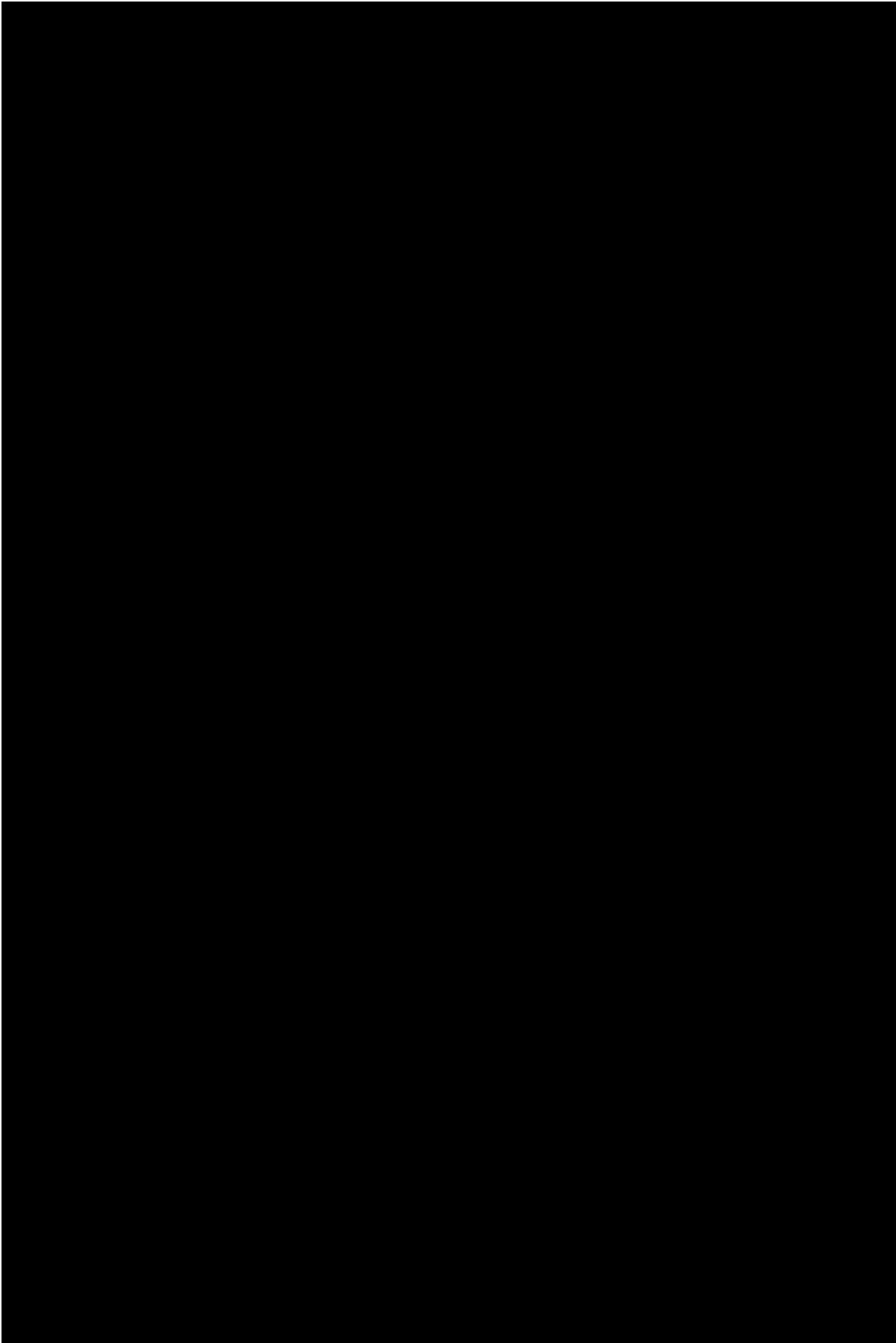


Excelsior Connect Solution Development

TABLE 4-1

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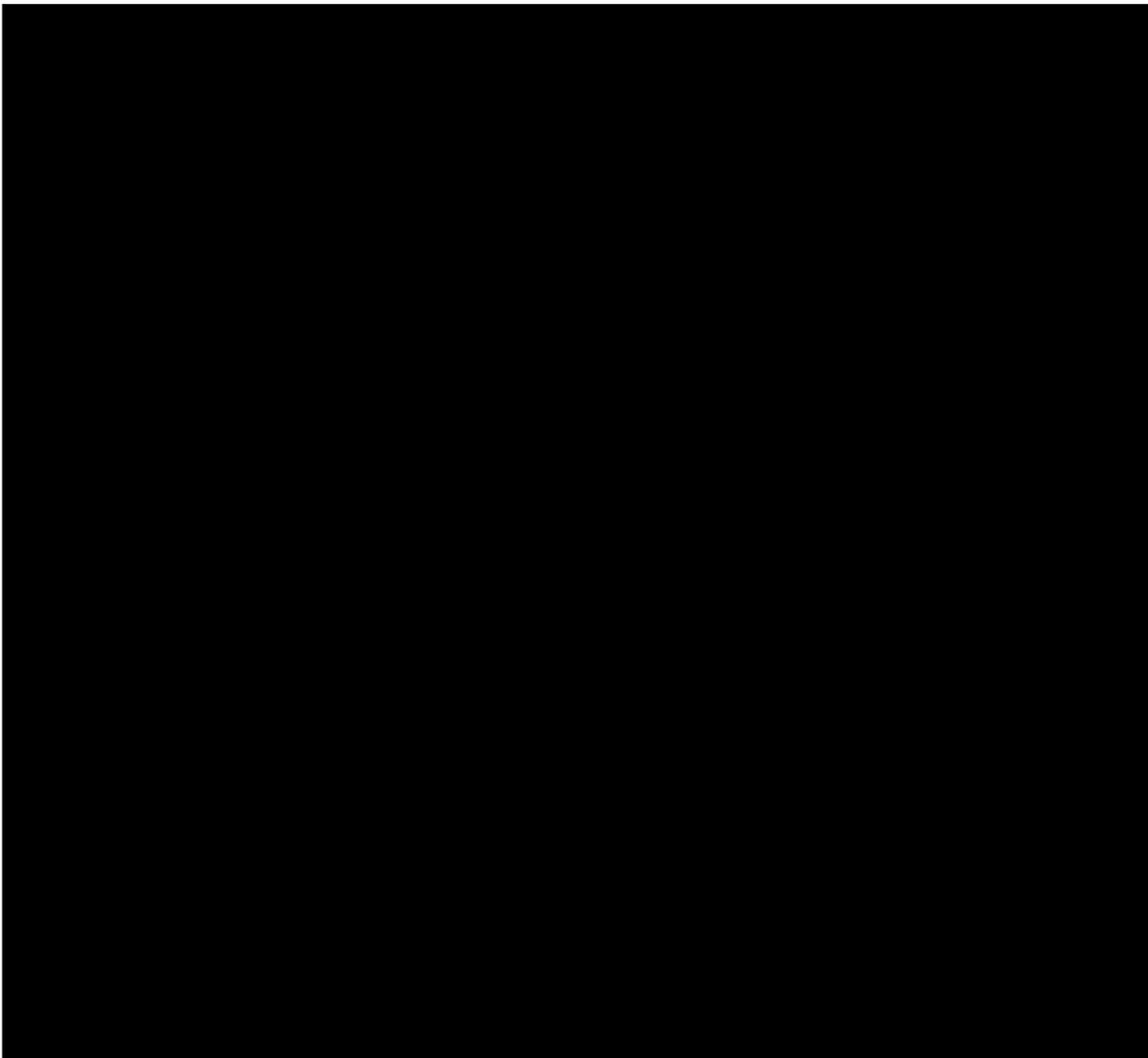
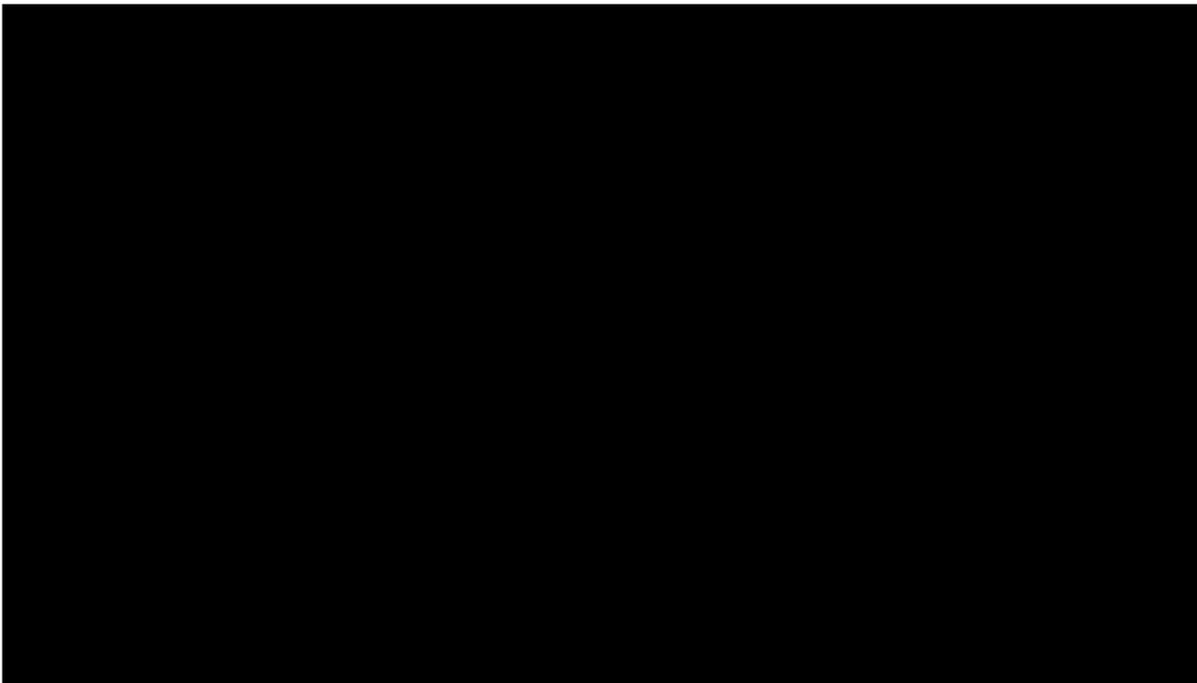
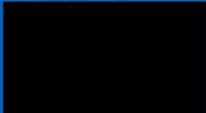
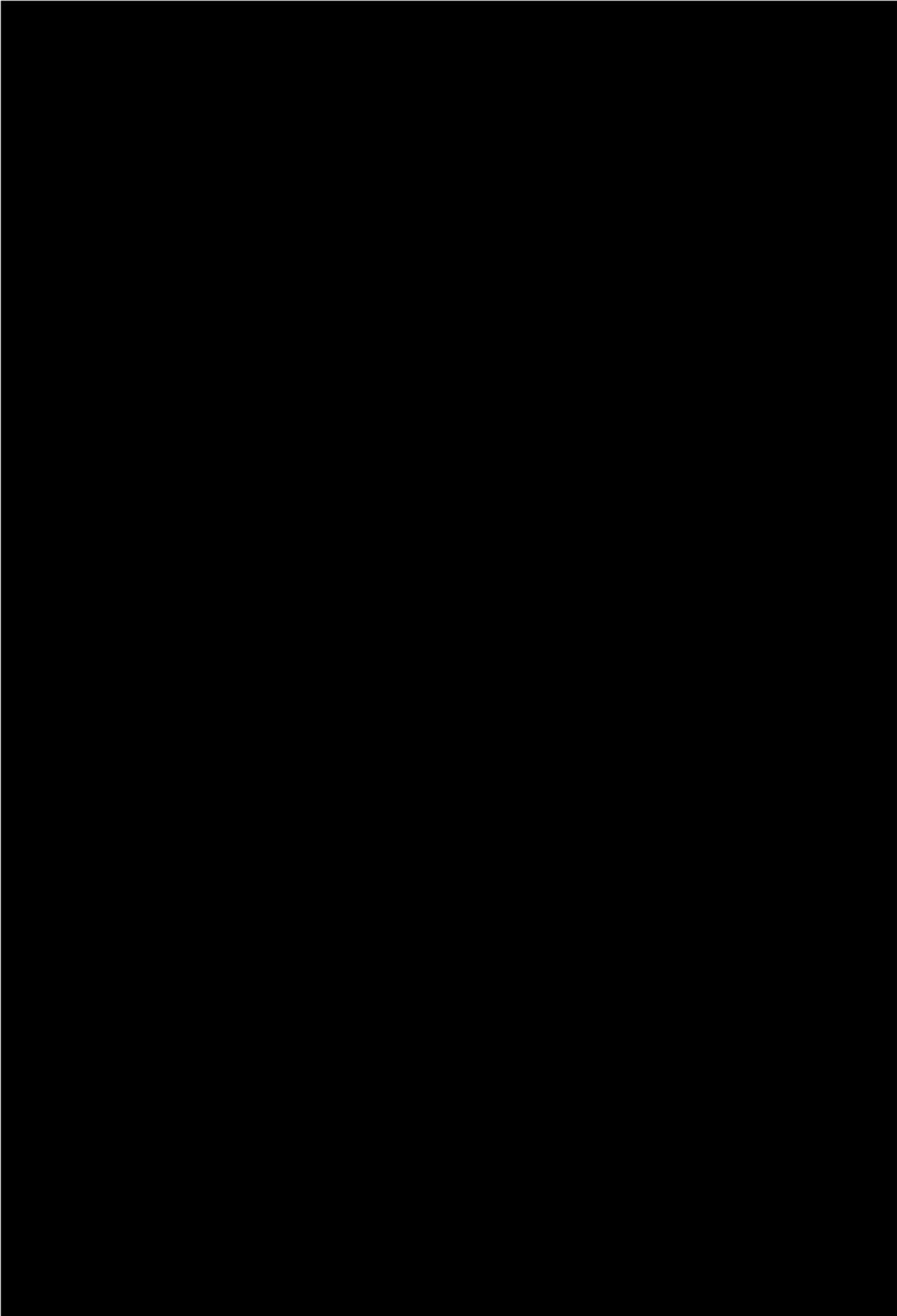
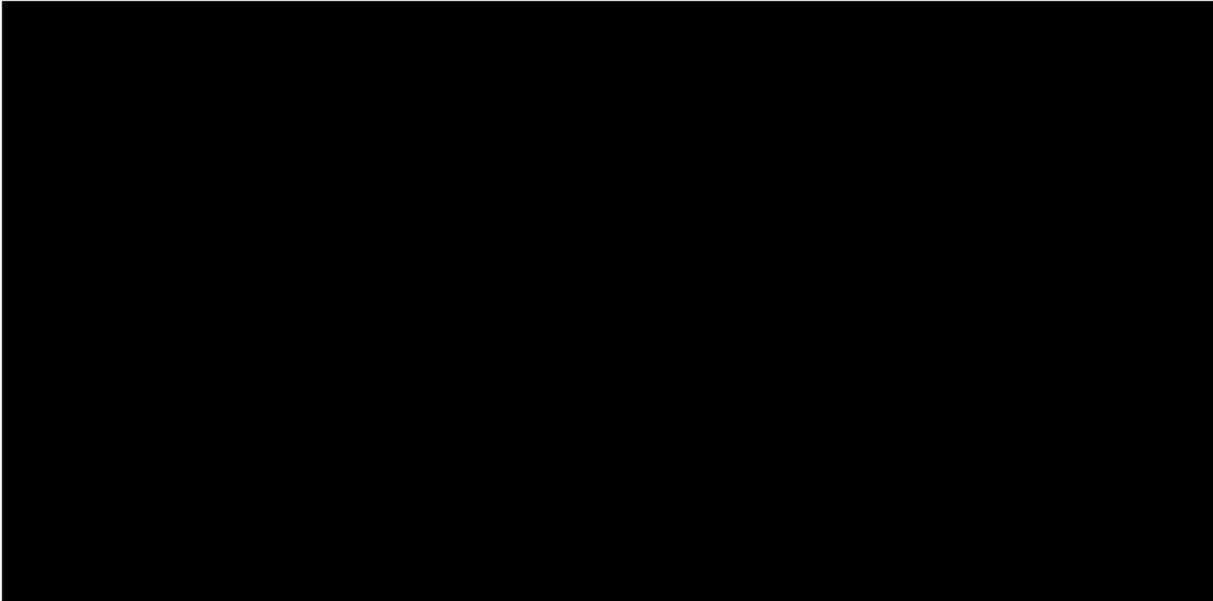


TABLE 4-2





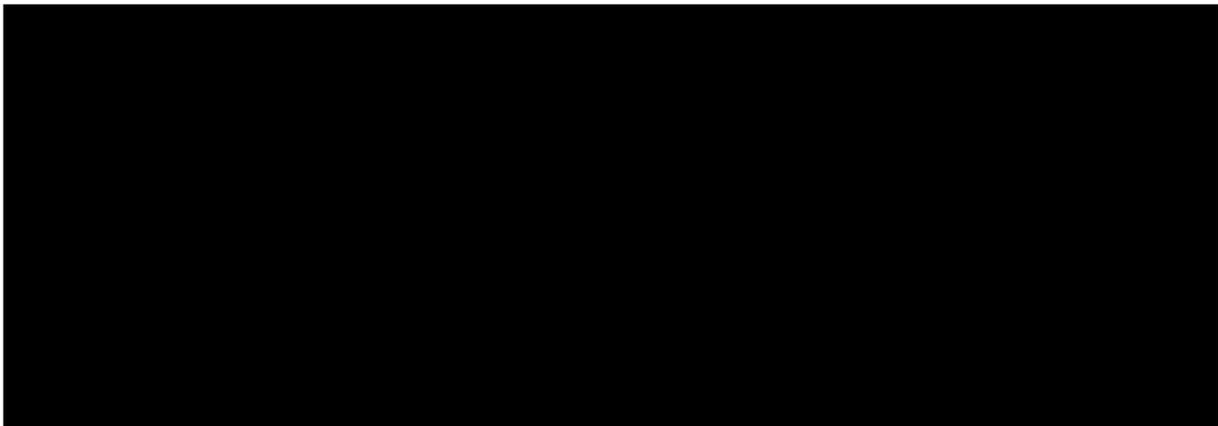


4.1 Description of Excelsior Connect Solution

4.1.1 Description of Excelsior Connect Solution

The Excelsior Connect project will deliver 1,200 MW of electricity to the POI in the New York City metro area. The project will have a northern POI in New York State. The POI will be connected to a state of the art new +/- 320kV north high voltage direct current (HVDC) converter station via a 345kV HVAC high voltage alternating current (HVAC) overhead transmission line. This north converter station will convert the HVAC to HVDC and transmit it via an underground HVDC cable system that will run from the north converter station to a new +/-320kV south converter station in New York City. This south converter station will convert HVDC to 345kV HVAC and transmit it via an underground cable circuit to the POI at Consolidated Edison's (ConEd) Rainey substation. Attachments 4.13 "345kV Cable Calculations" and 4.14 "HVDC Cable Sizing Calculations" are helpful attachments to review for insight on how the power delivery constraints of the solution were identified.

4.1.1.1.



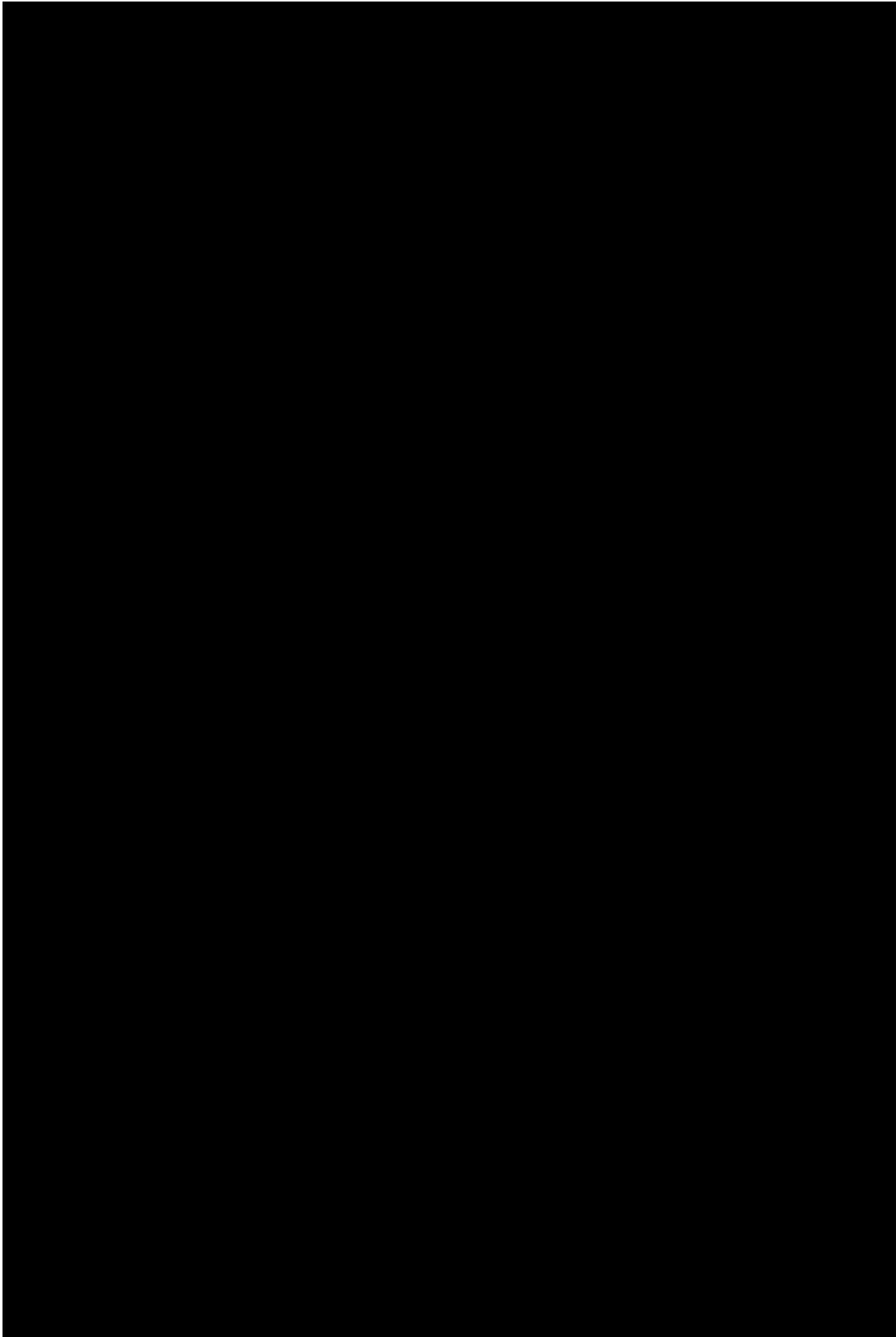
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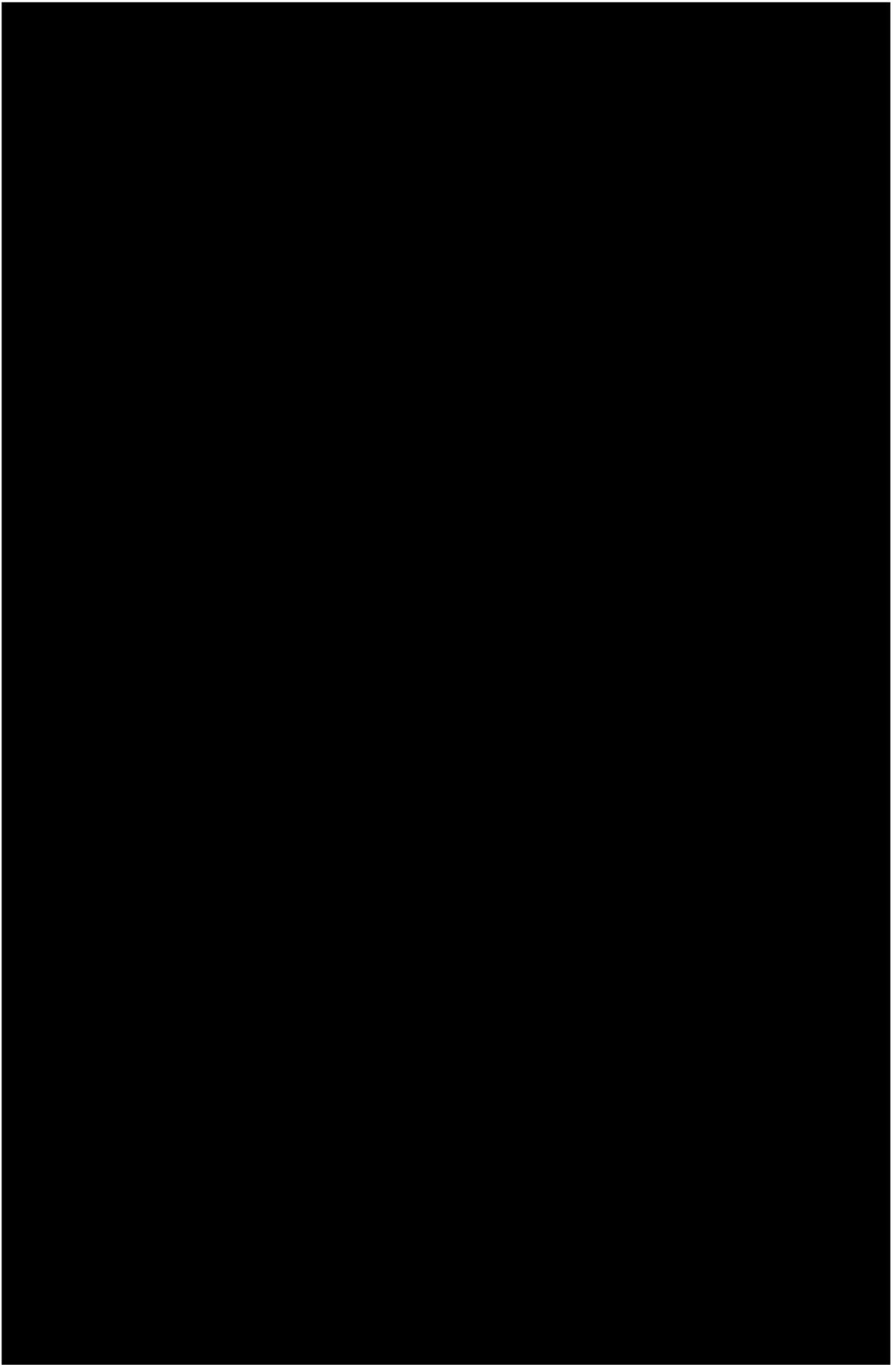
4.1.1.3.

4.1.2

TABLE 4-3

Elements of the
Connect New York
– Recommended
Solution





4.1.3

4.1.3.1

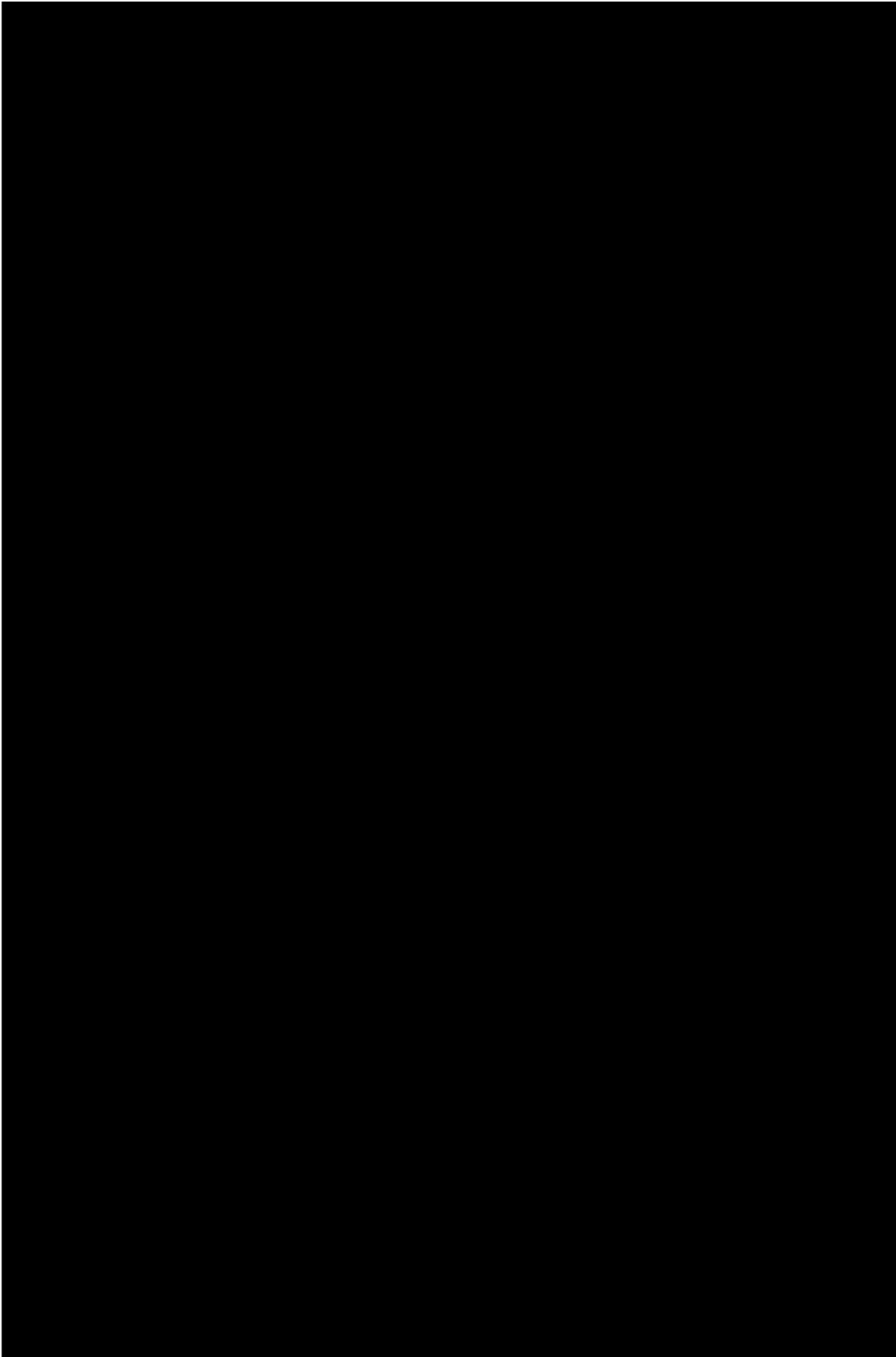
4.1.3.2

4.1.3.3

4.1.3.4

FIGURE 4-4

DC Cable Route
– Coopers
Corners to Rainey
Substation in
Zone J

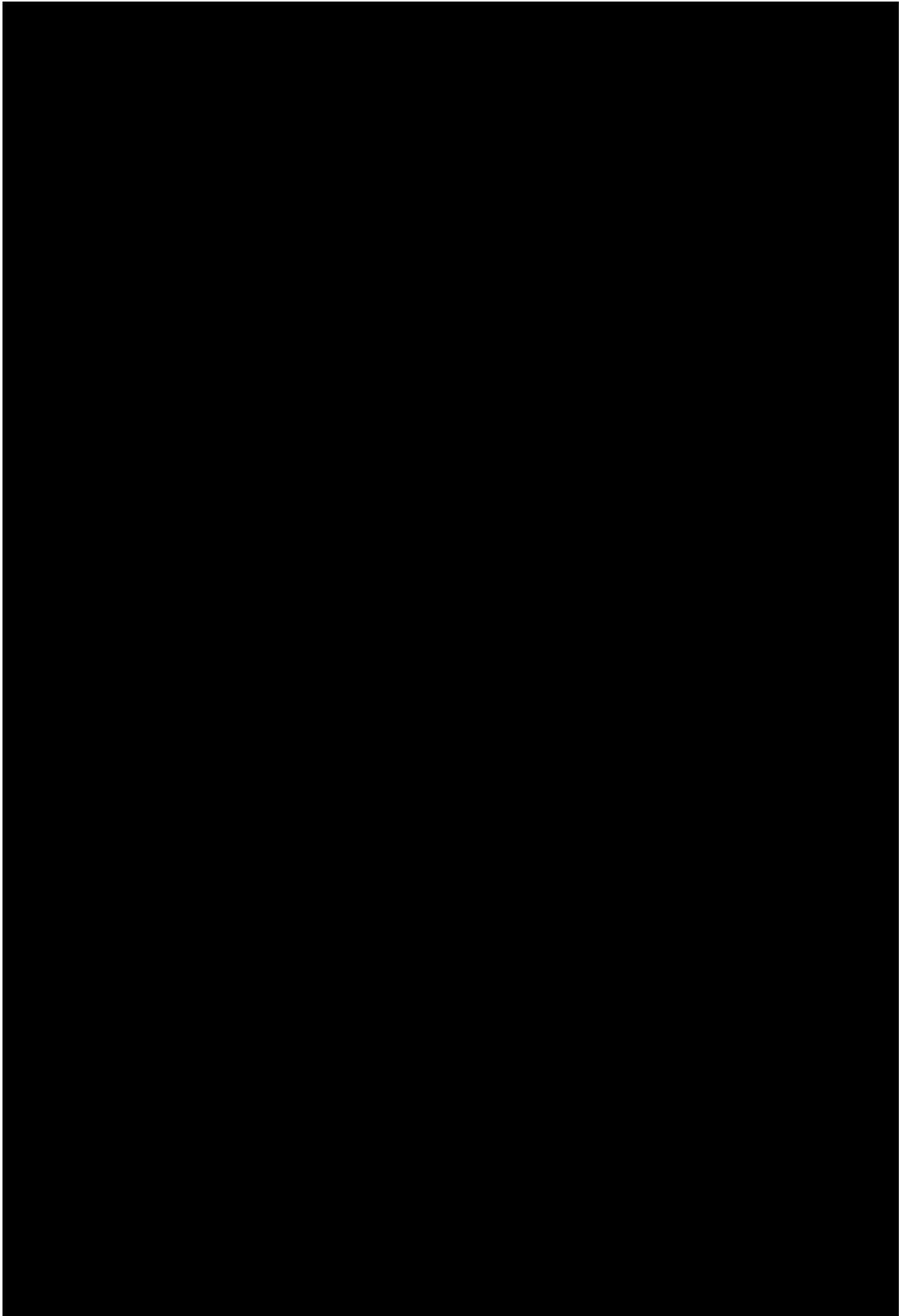


4.1.3.5

4.1.3.6

FIGURE 4-5

Southern portion
of the Project:
Bronx and Bronx
to Rainey

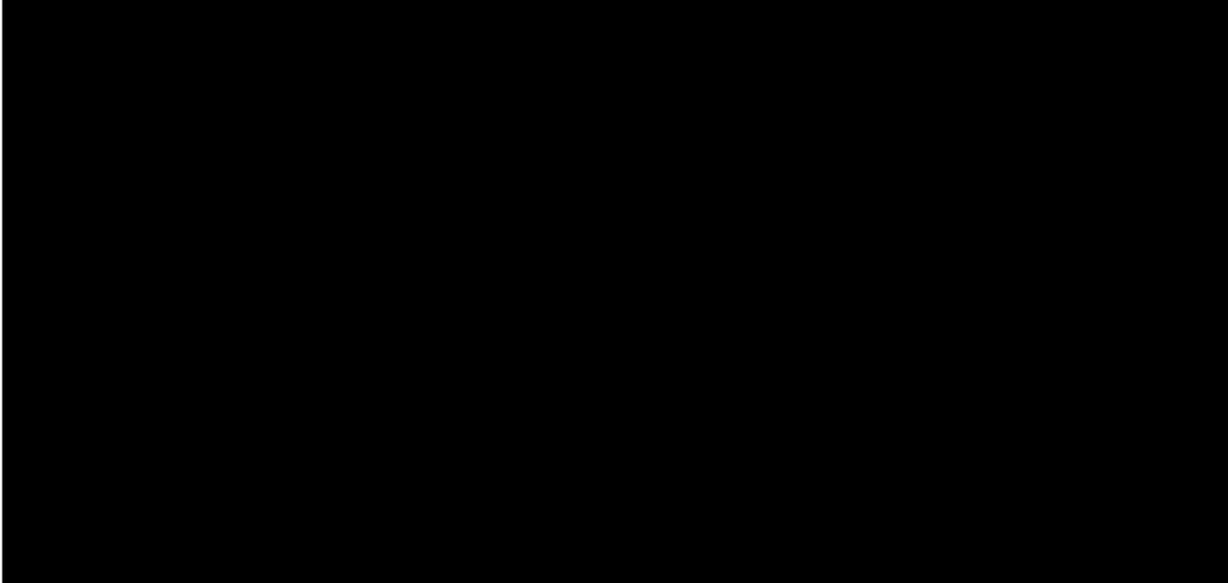


4.1.3.7

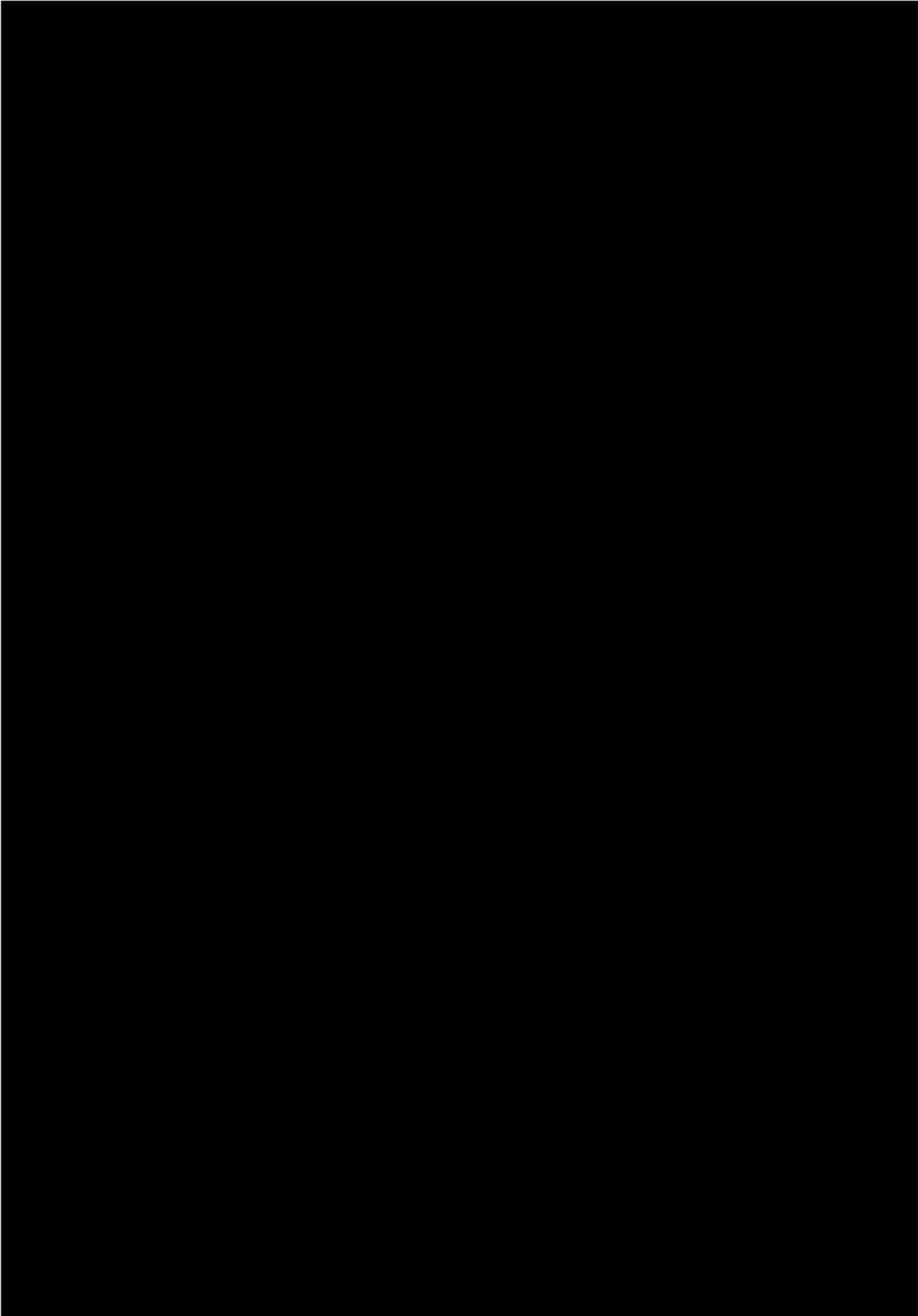


4.1.3.8

TABLE 4-6

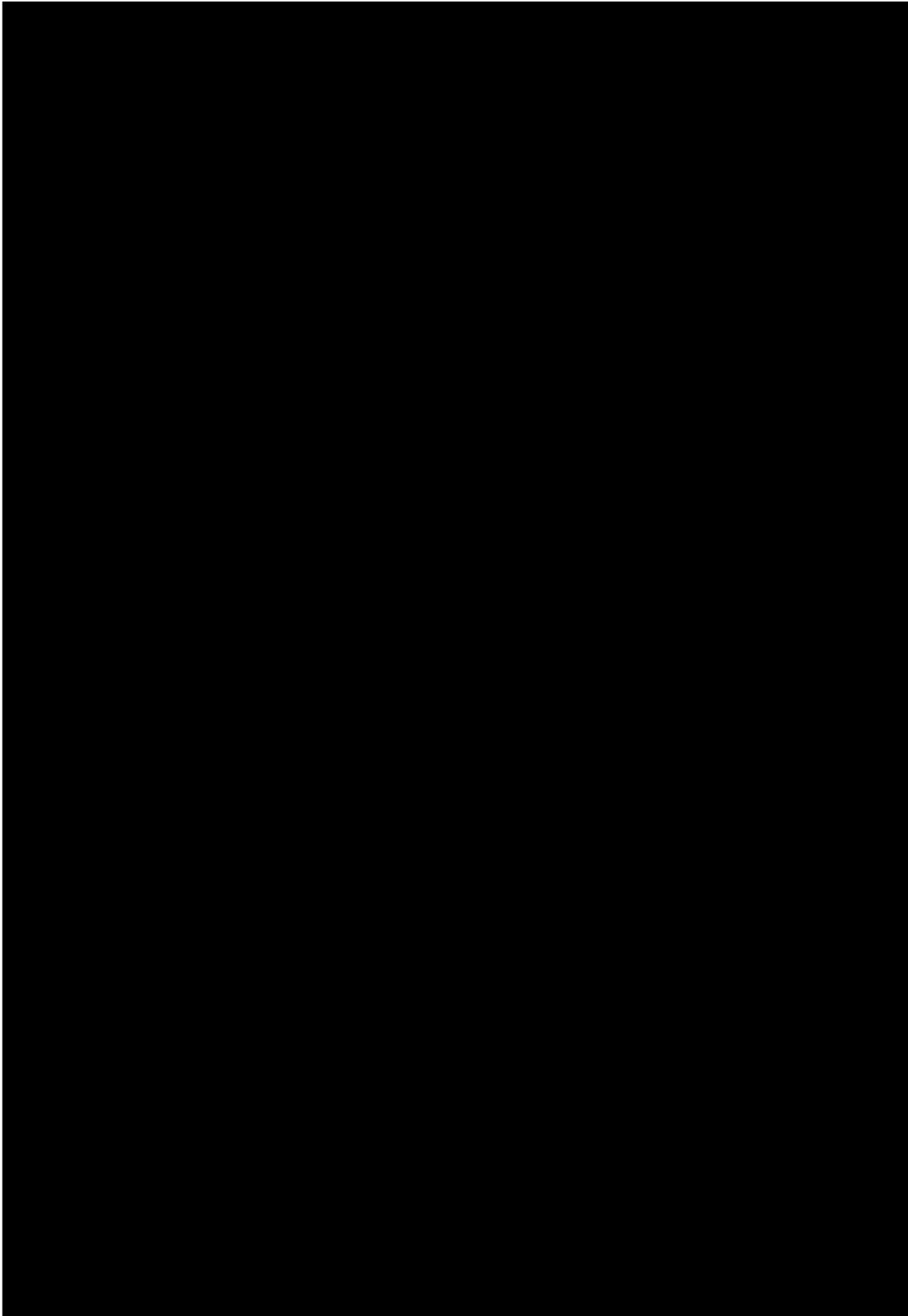


4.2



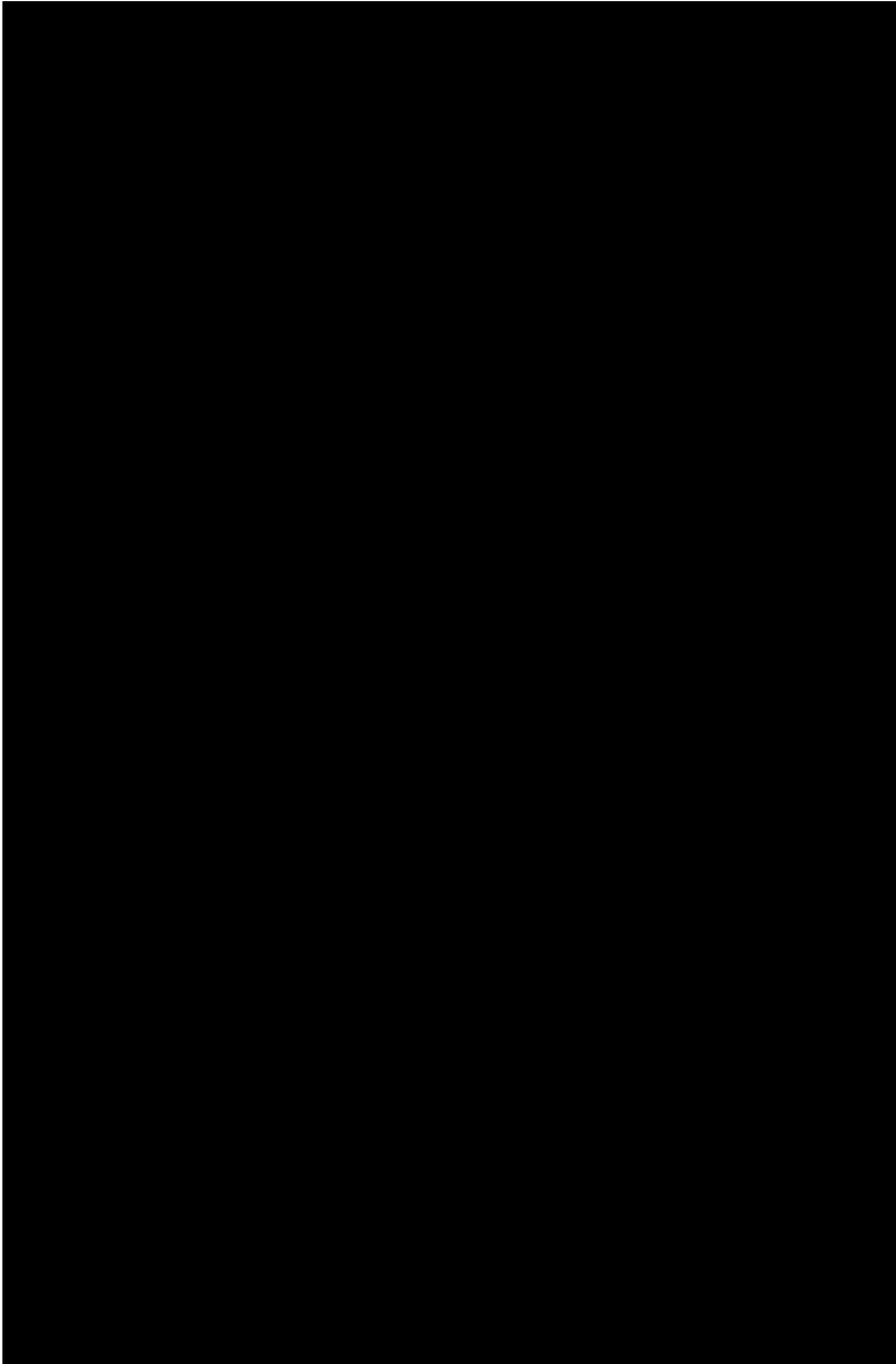
4.2.1

4.2.1.1



4.2.1.1.1

FIGURE 4-8

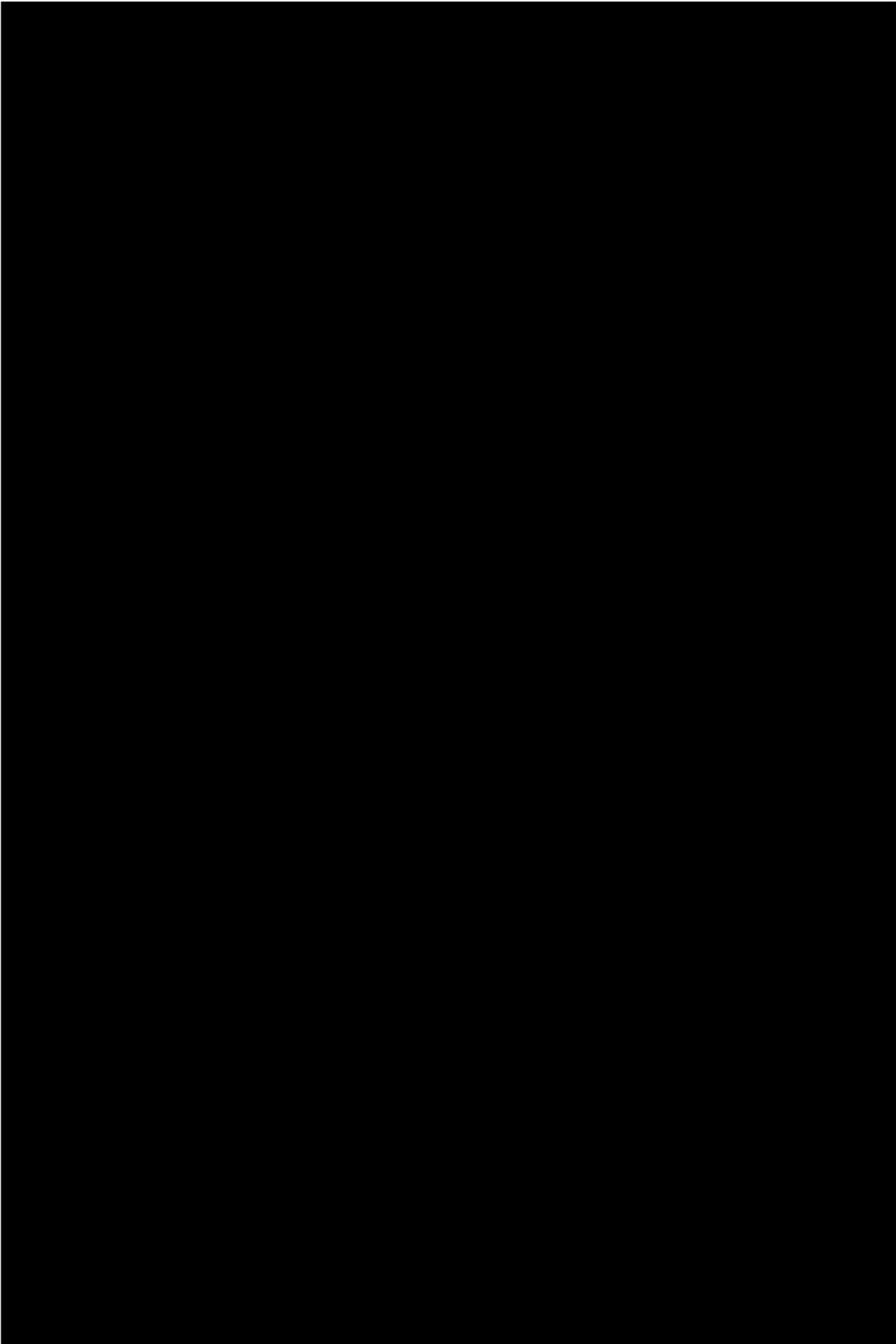


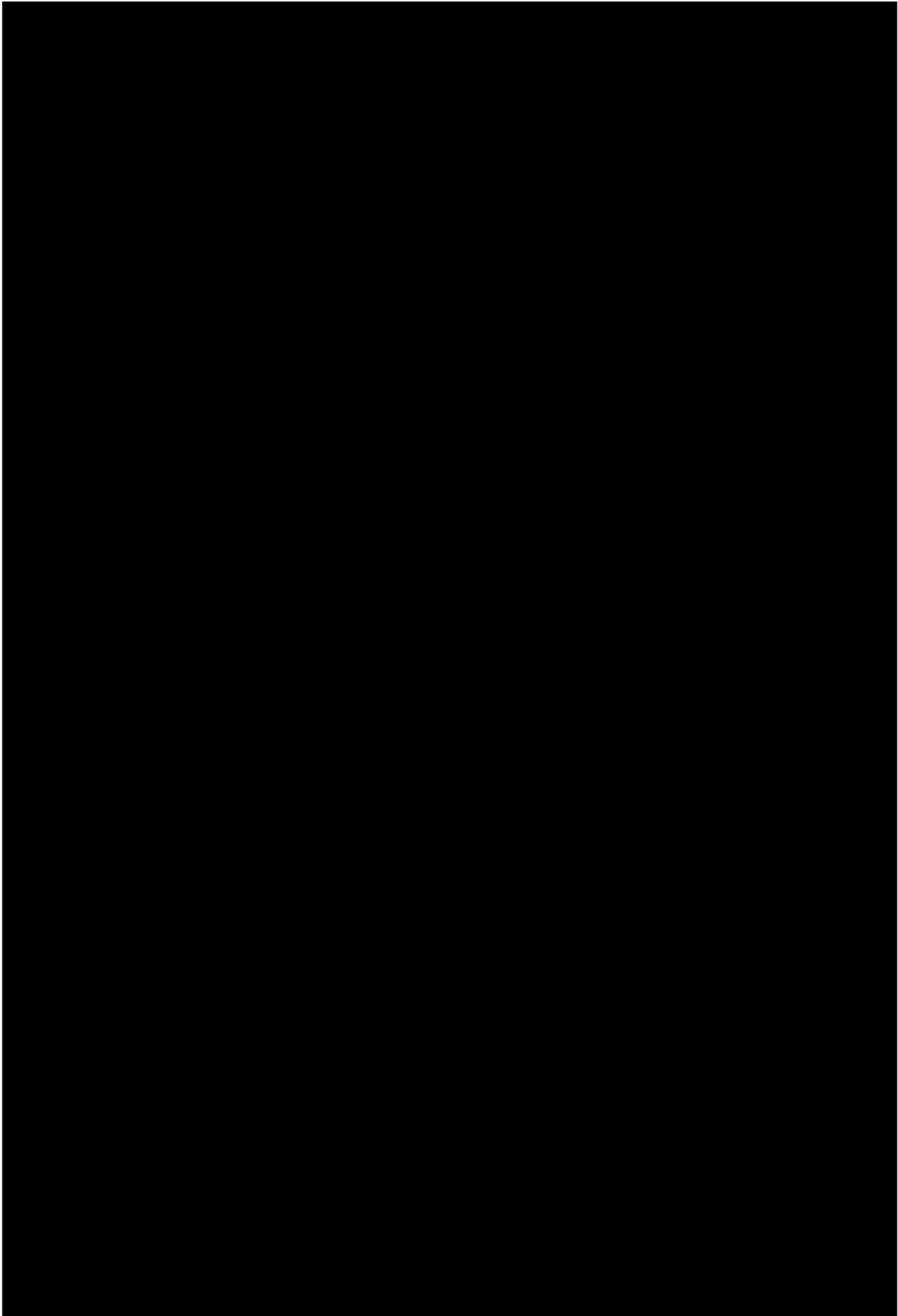
4.2.1.1.1.1

FIGURE 4-9



4.2.1.1.1.2





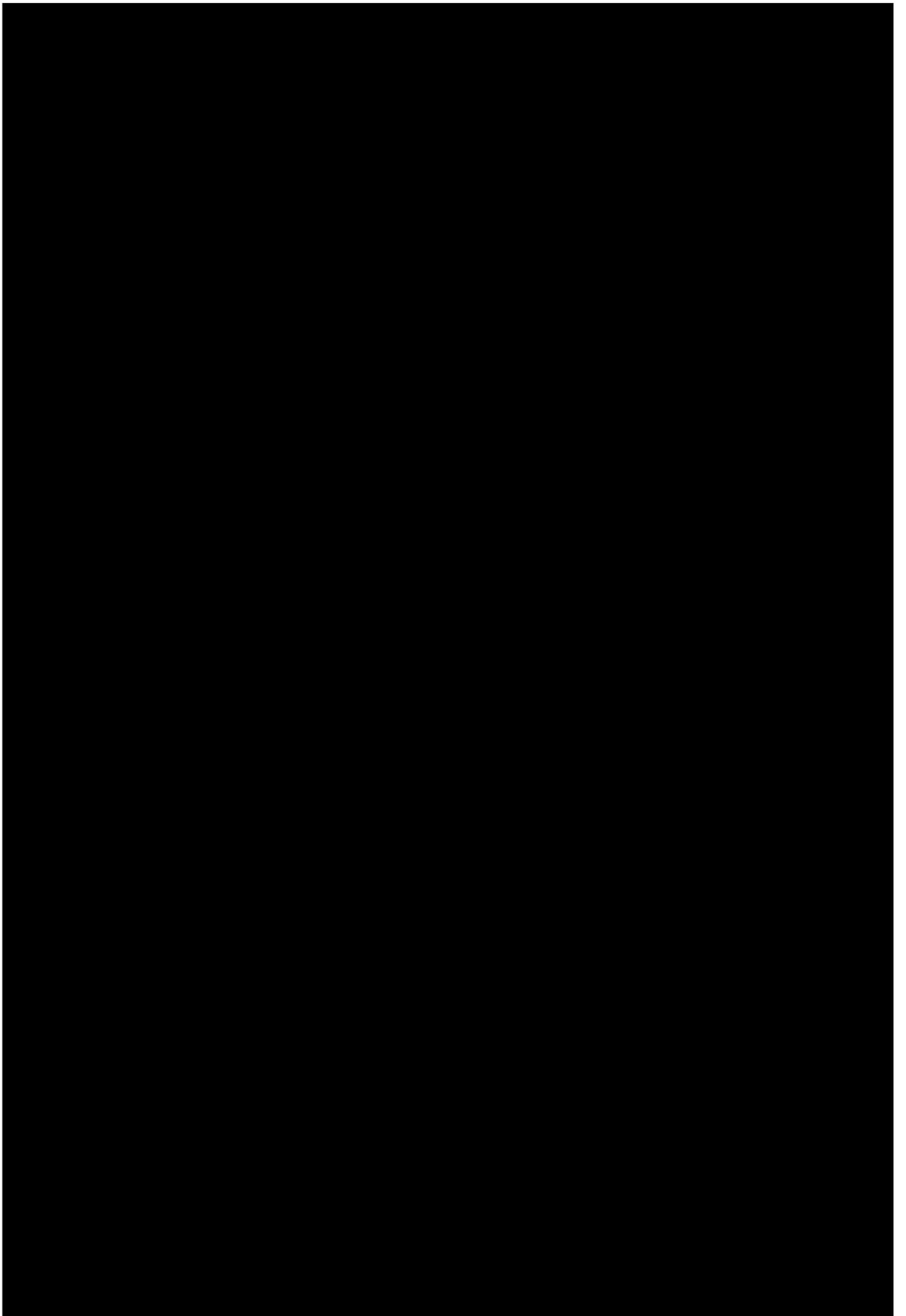
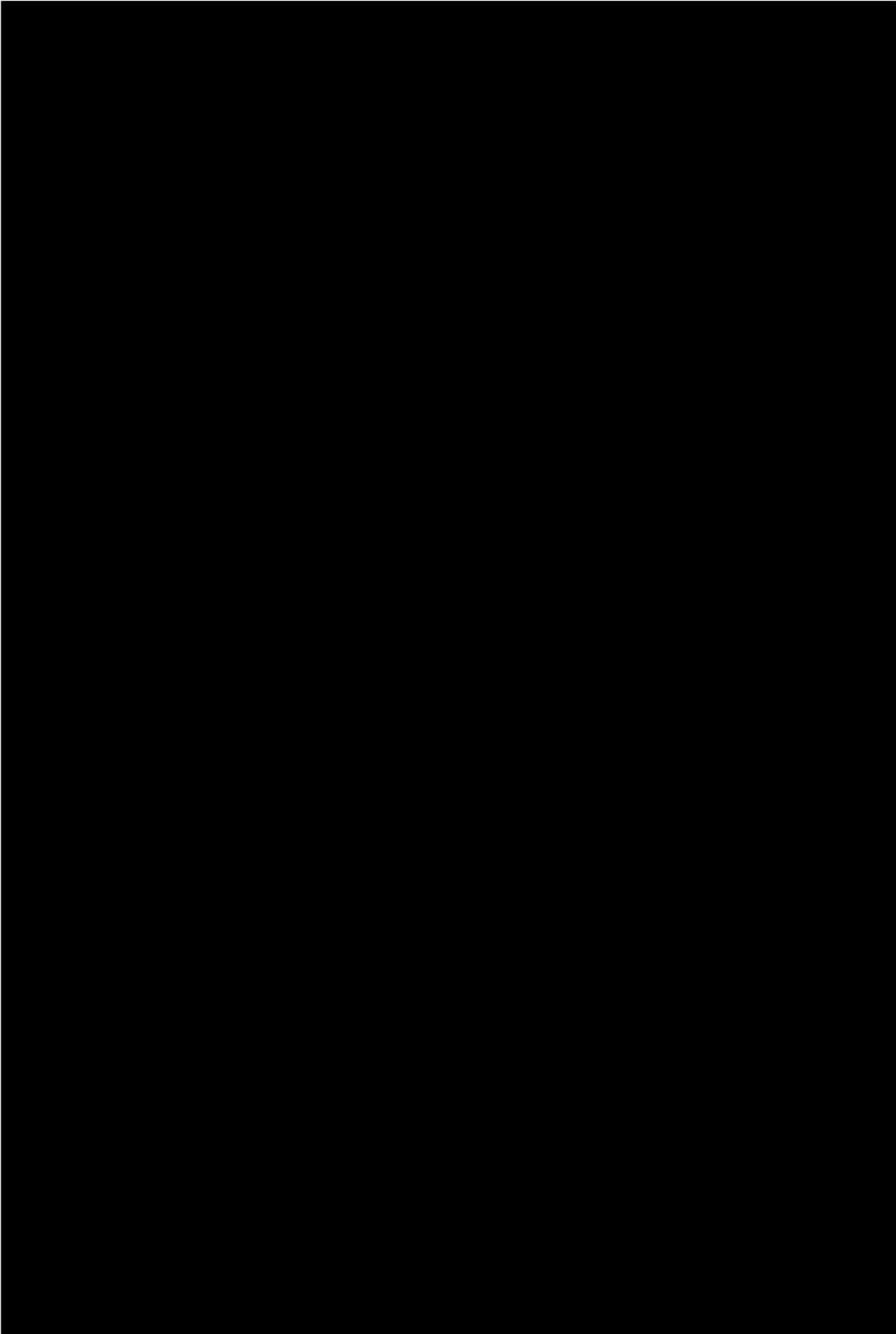
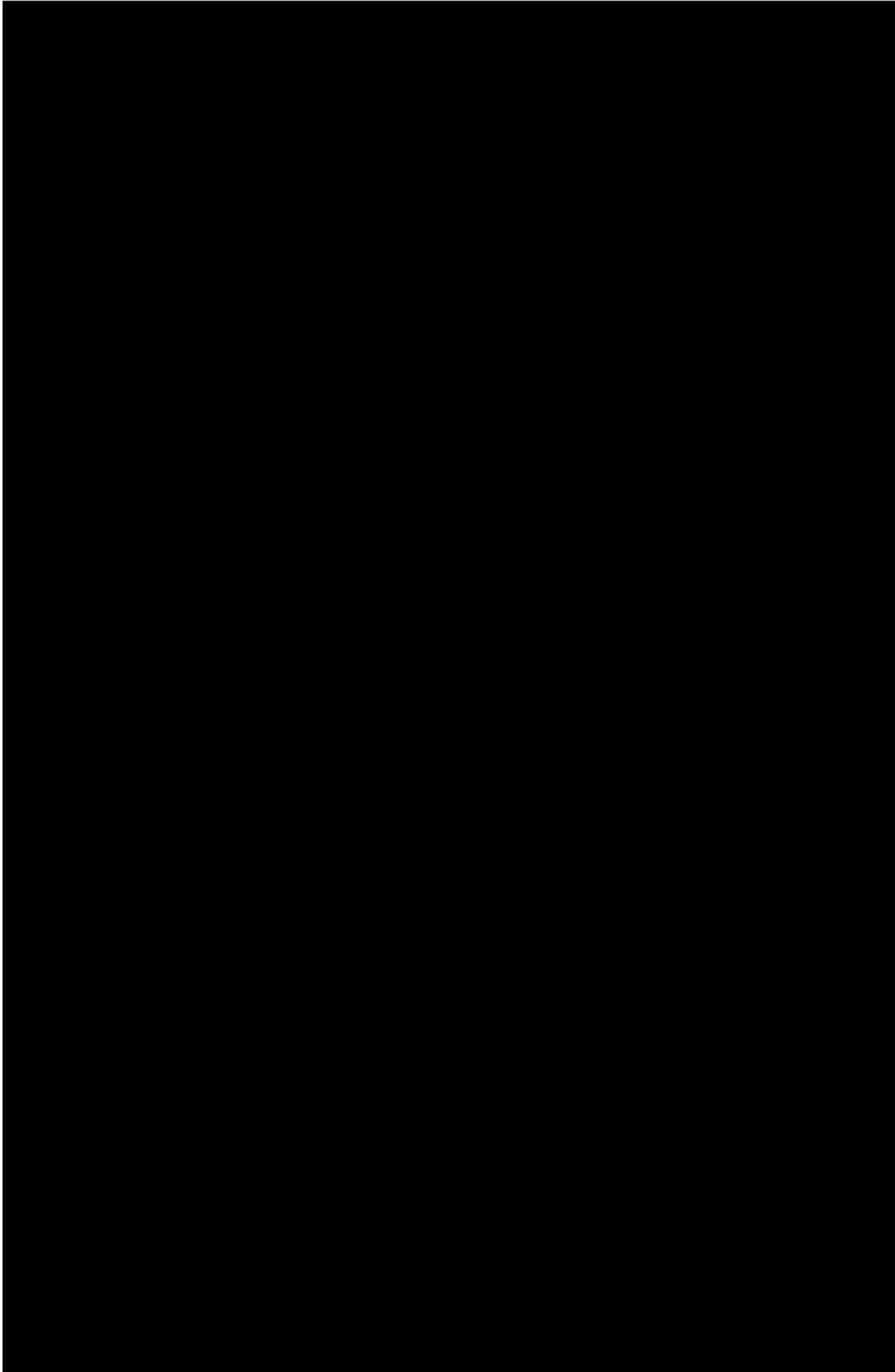


FIGURE 4-10

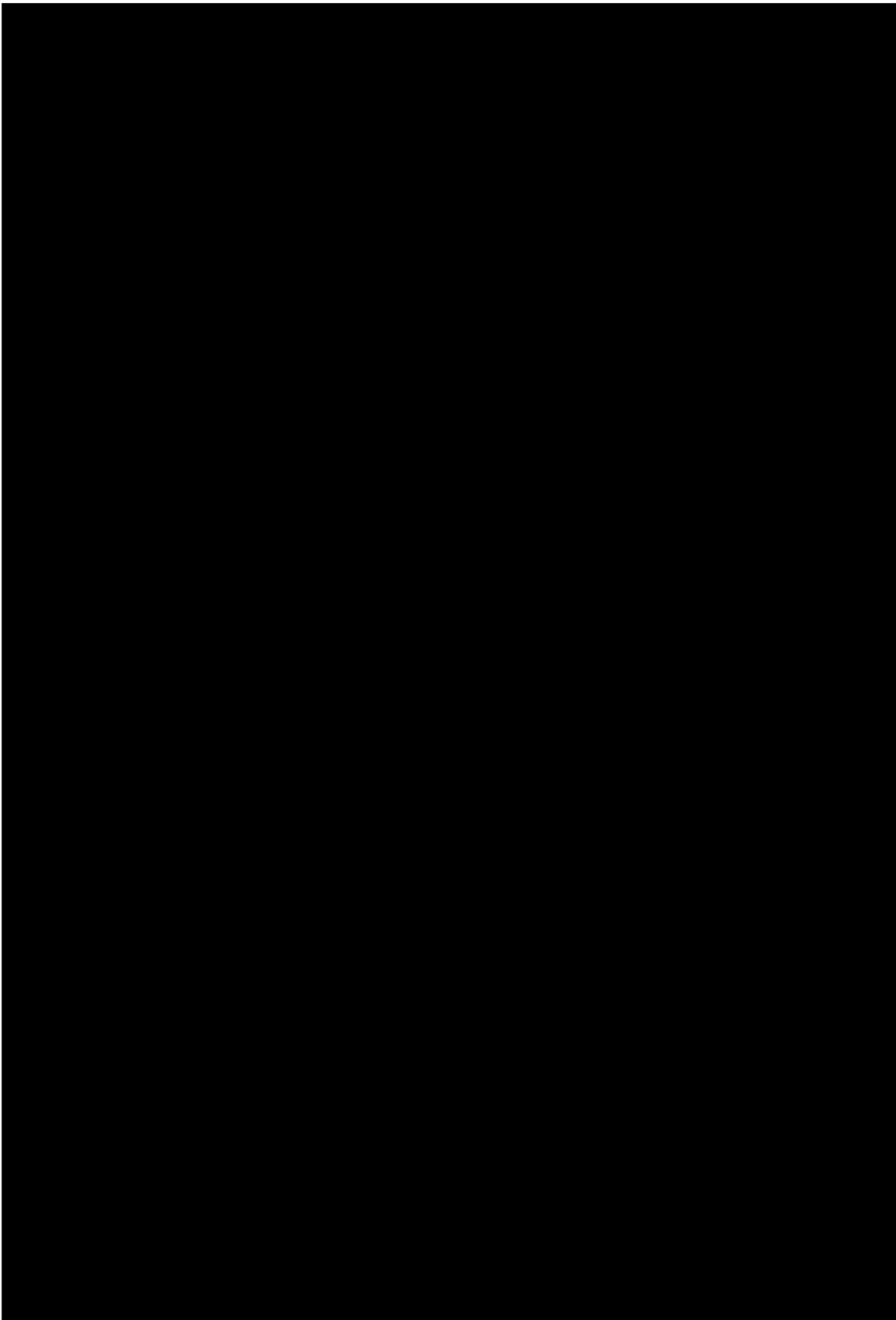


4.2.1.2.1

FIGURE 4-11



4.2.1.2.3

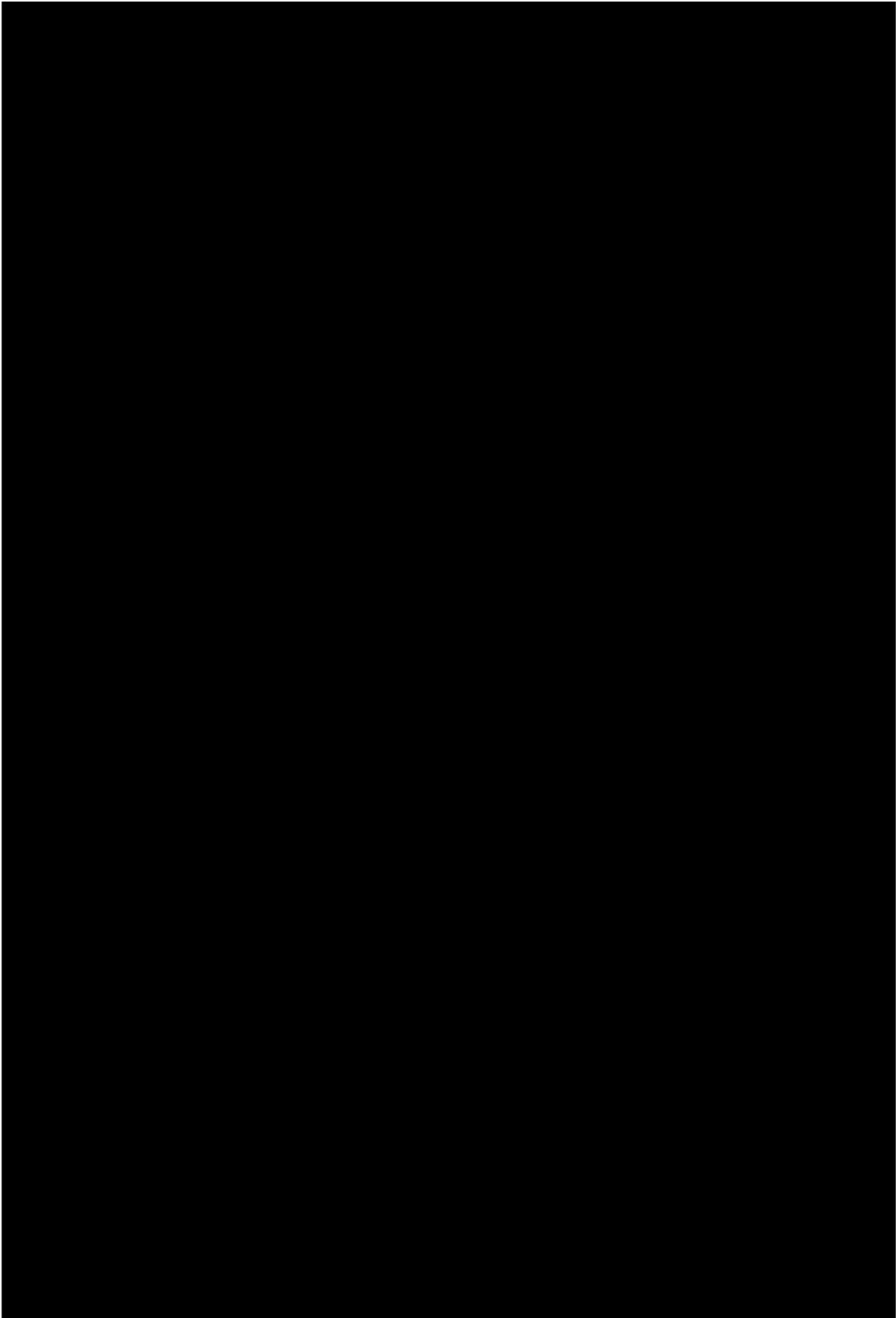


4.2.1.2

FIGURE 4-12



FIGURE 4-13



4.2.1.3

4.2.1.4

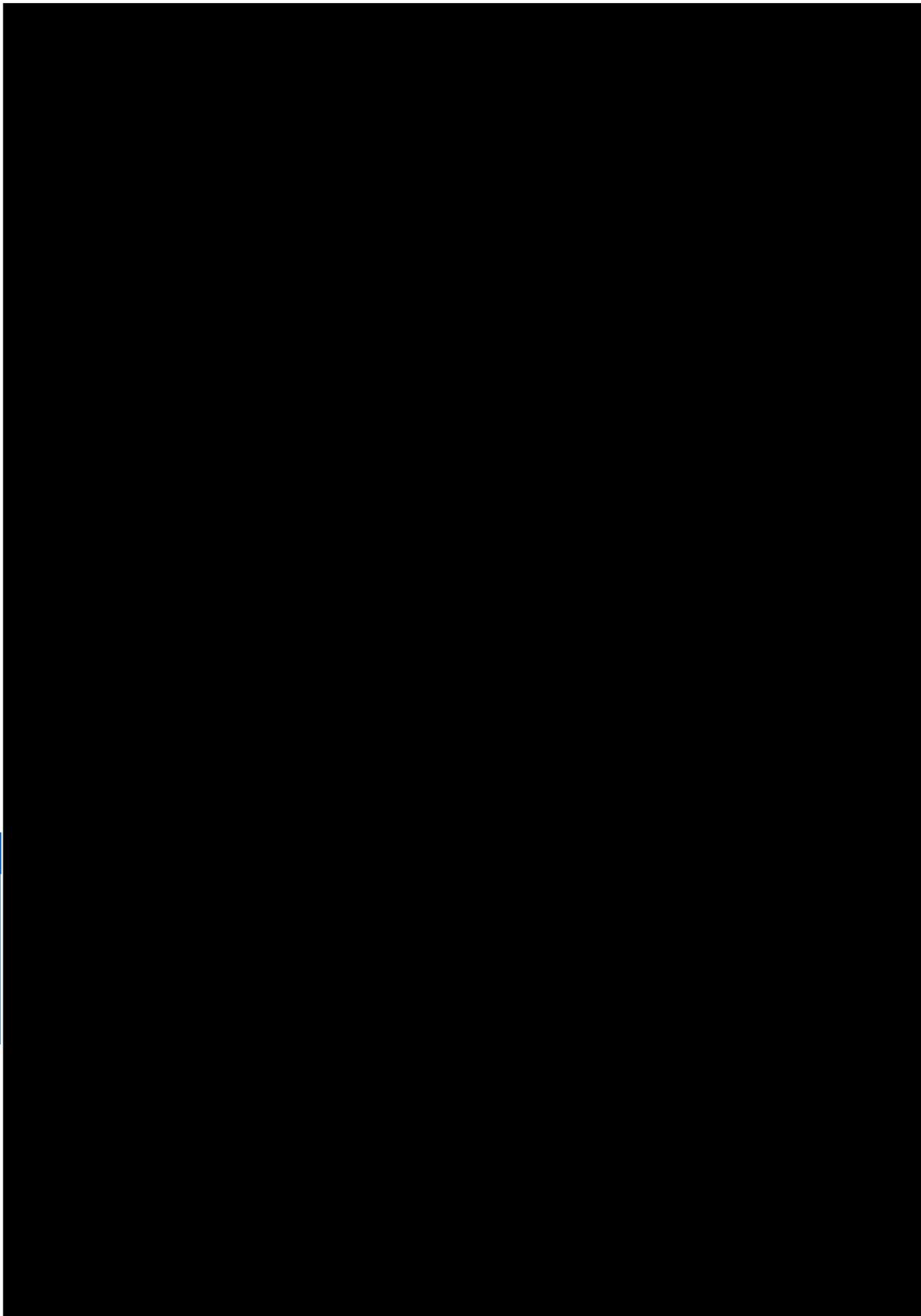


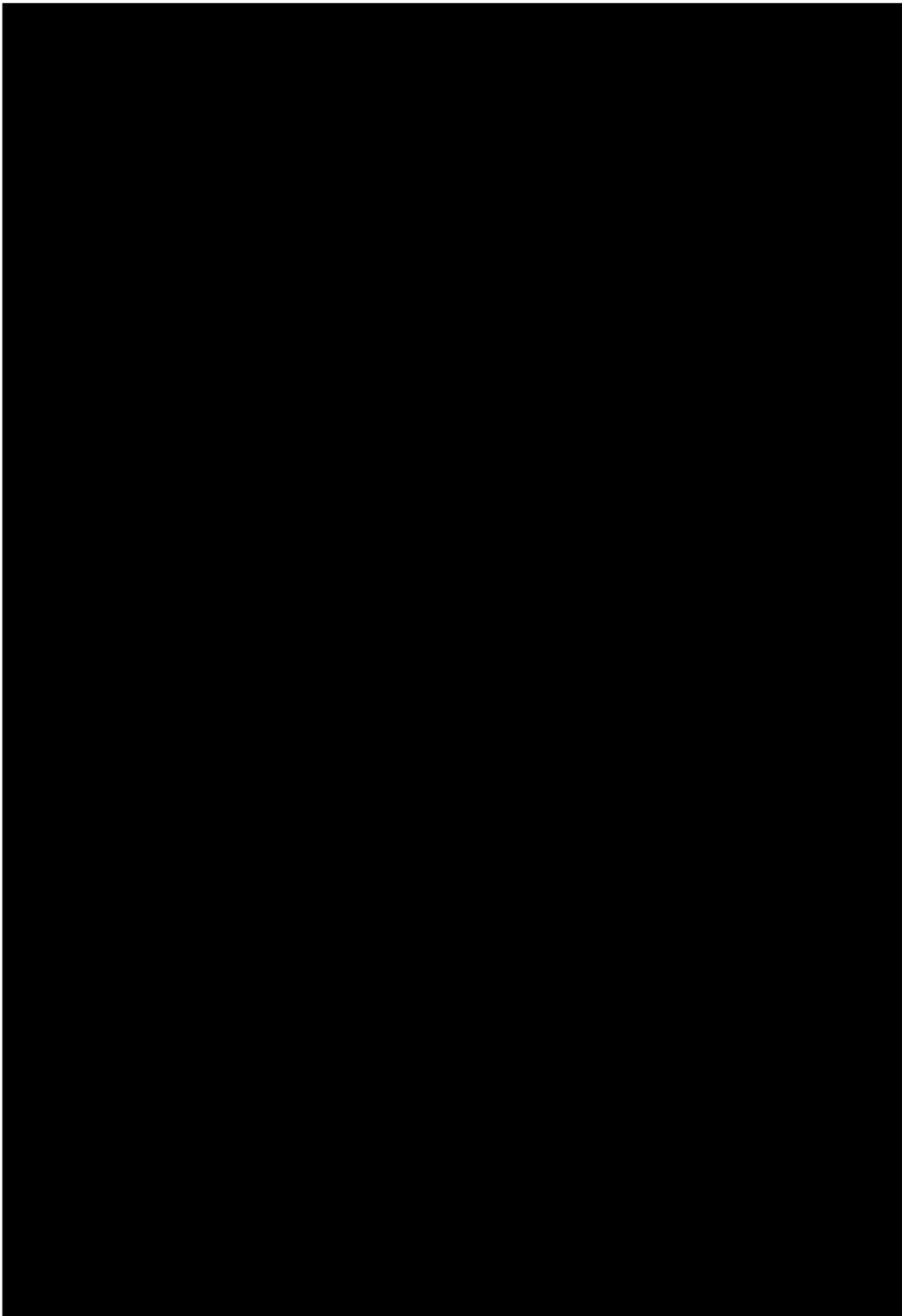
TABLE 4-14



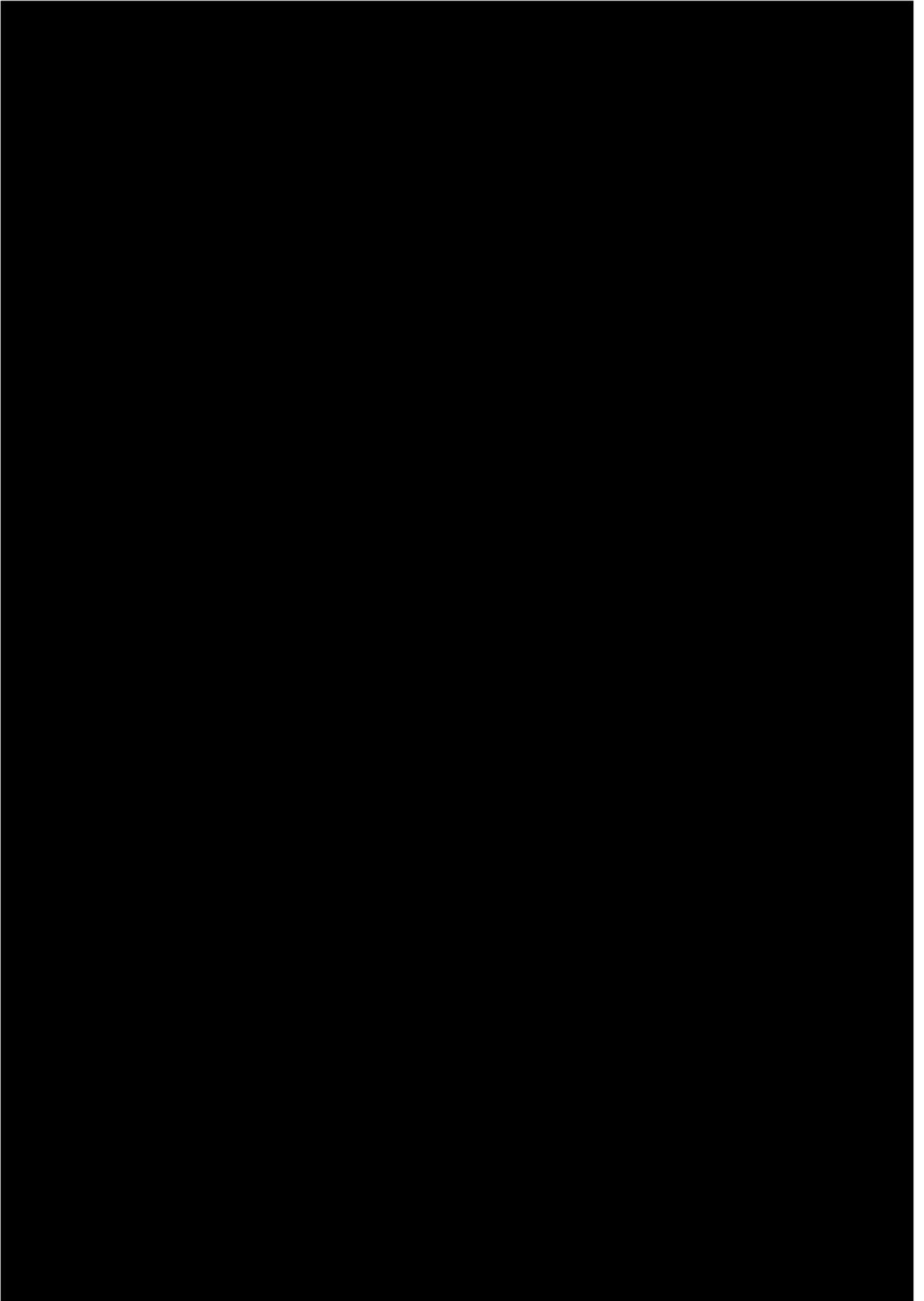
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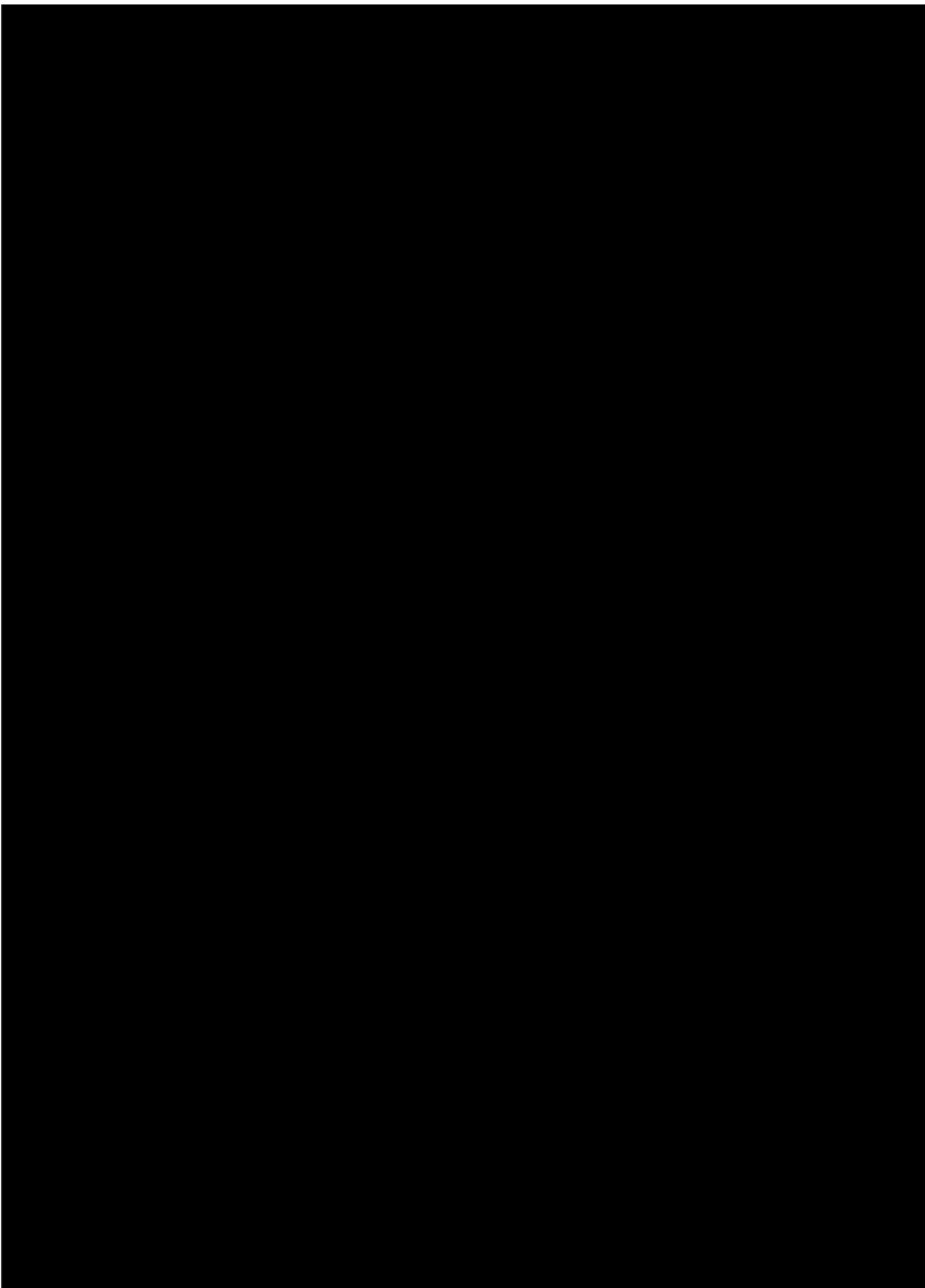
4.2.2

4.2.2.1



4.2.2.2





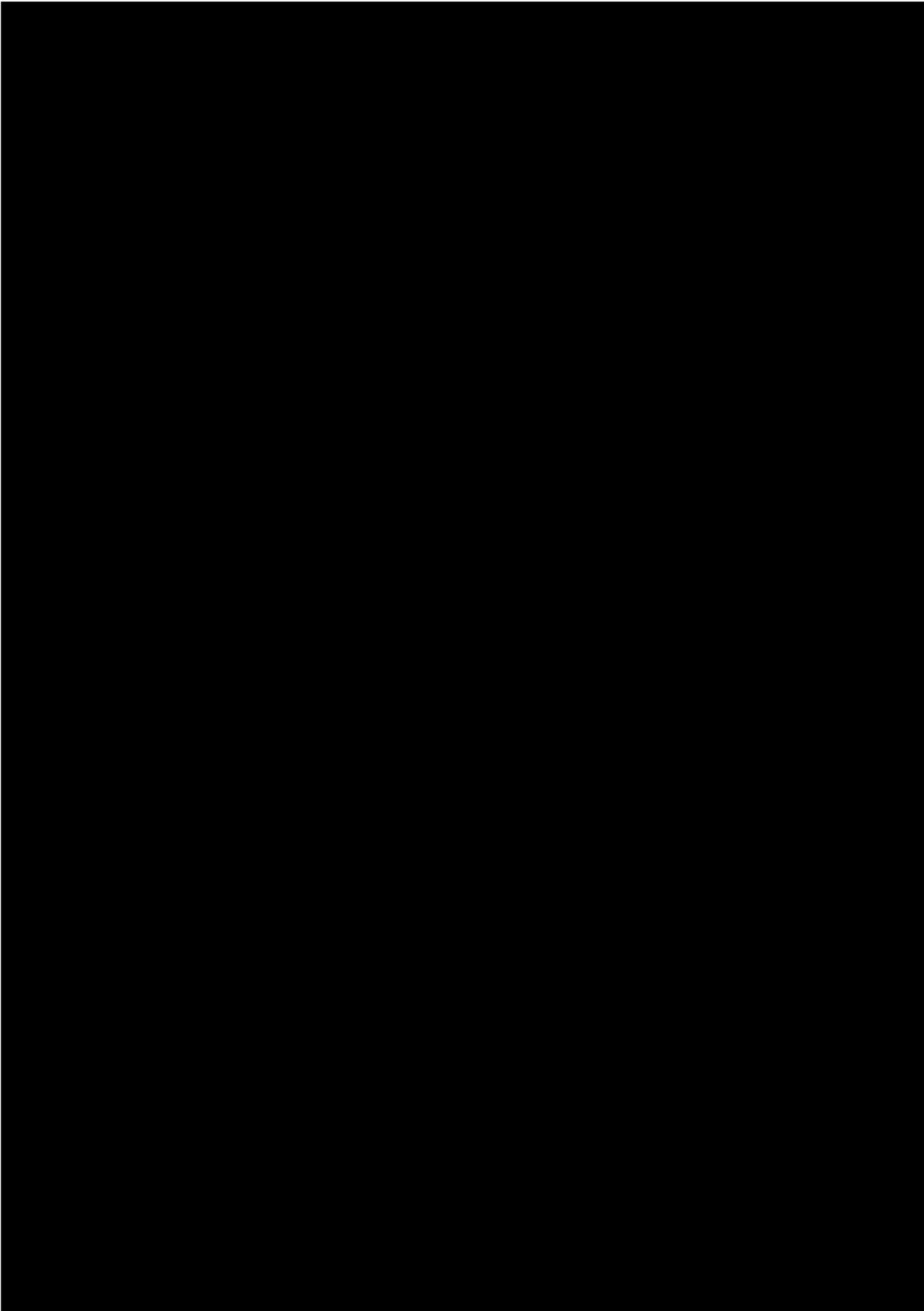
4.2.2.

4.3

4.3.1

4.3.1.1

4.3.1.1.1



4.3.1.2

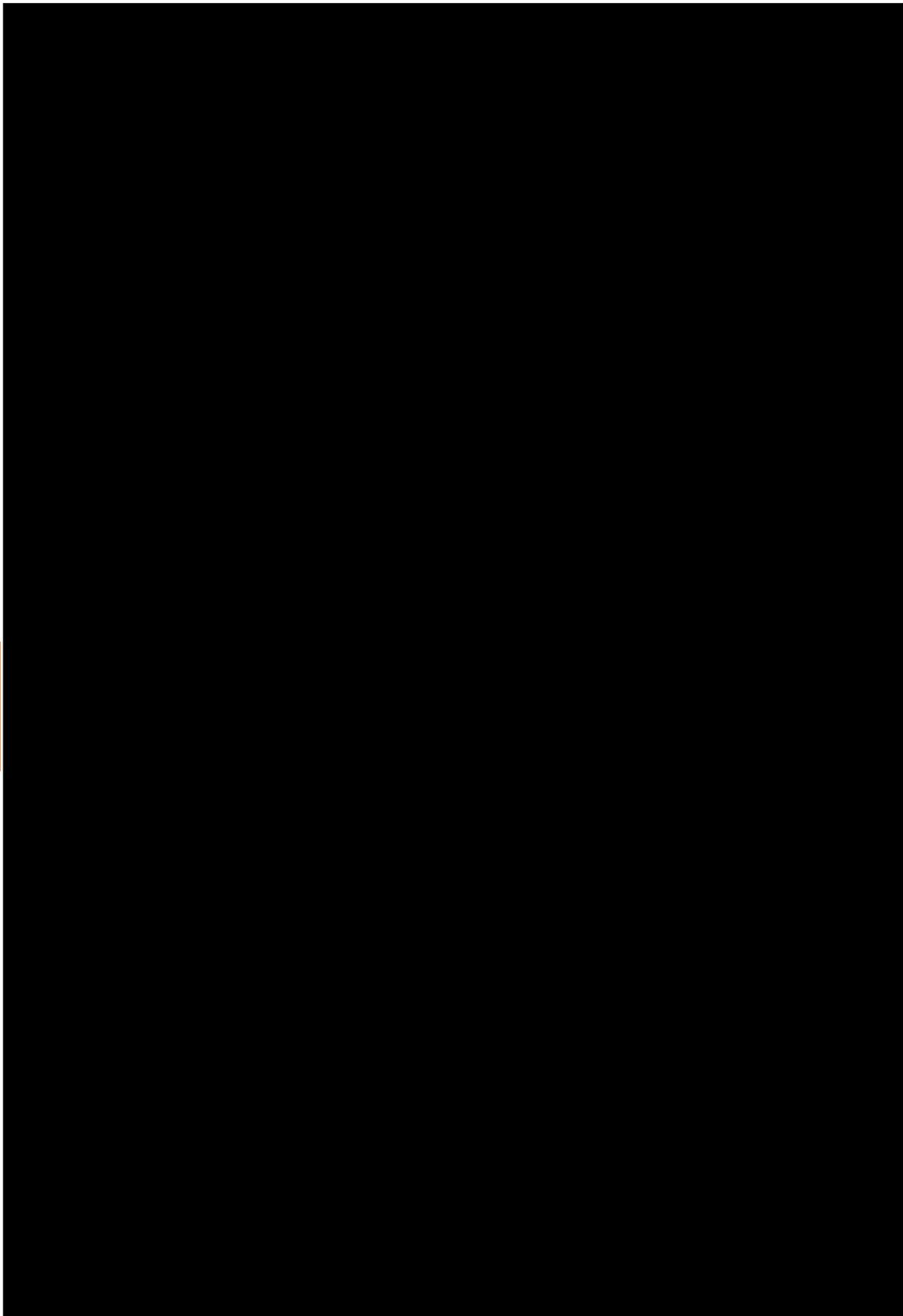
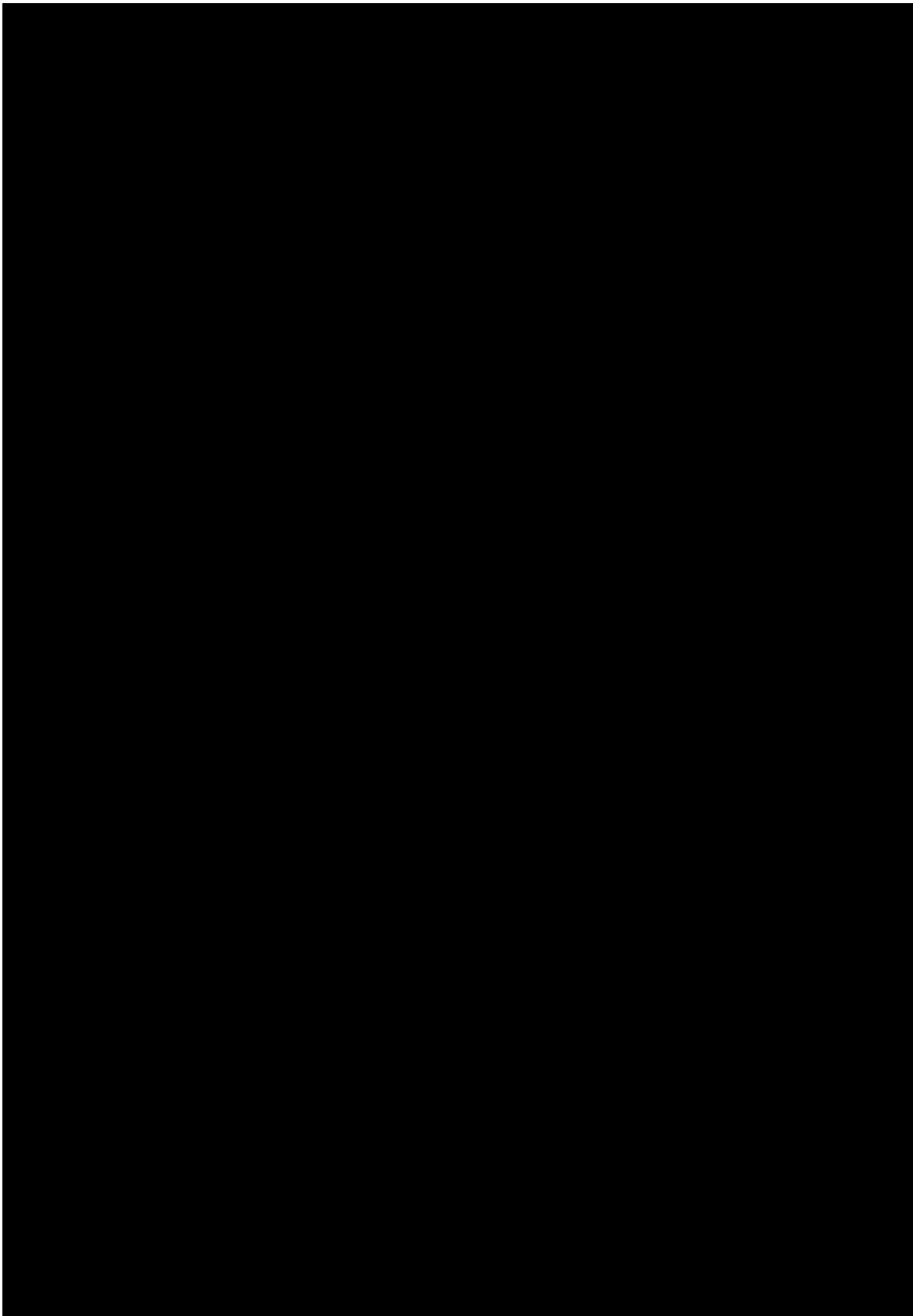
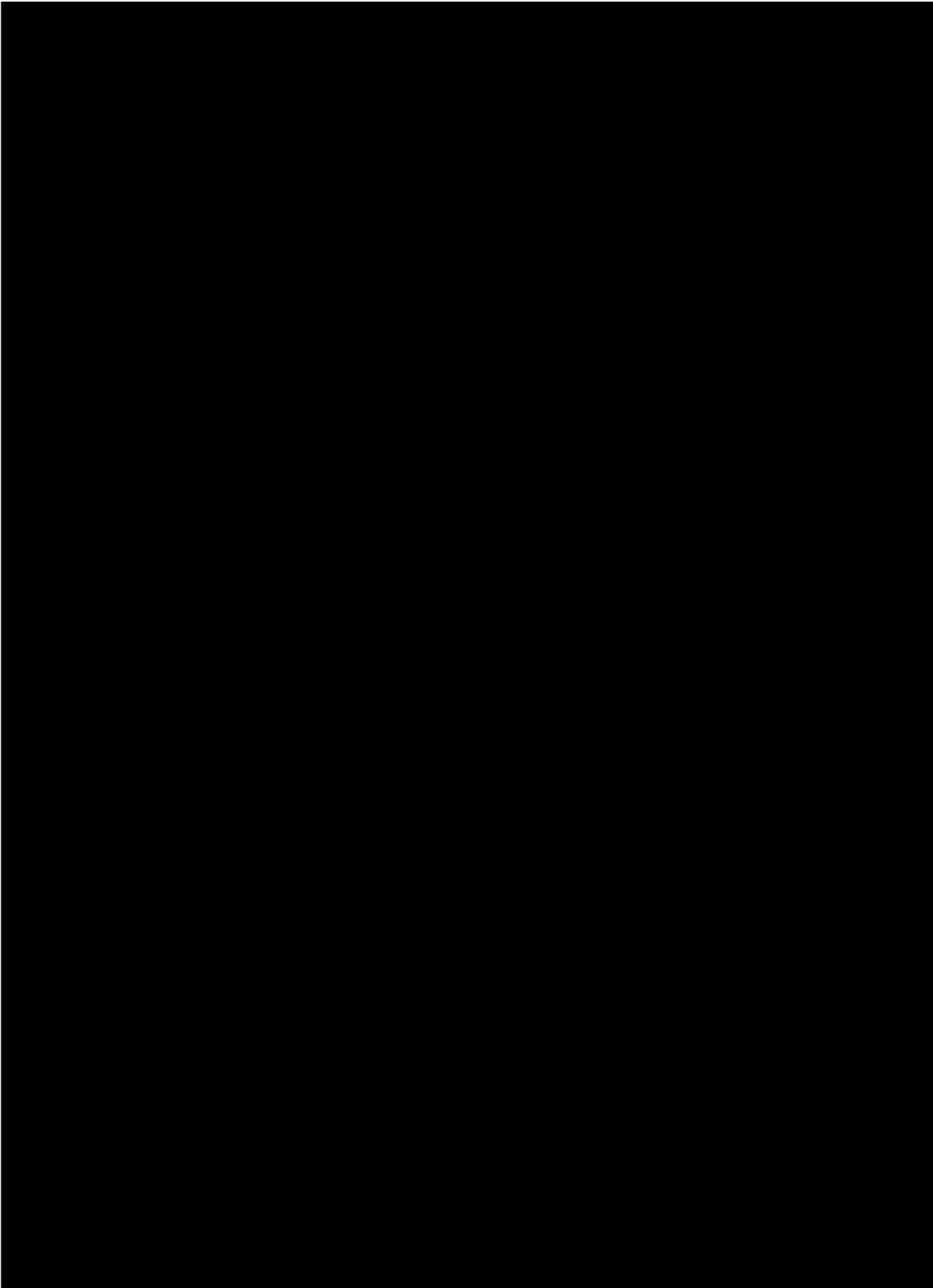


FIGURE 4-15





4.3.1.3



4.3.1.4

4.3.1.4.1

4.3.1.4.1.1

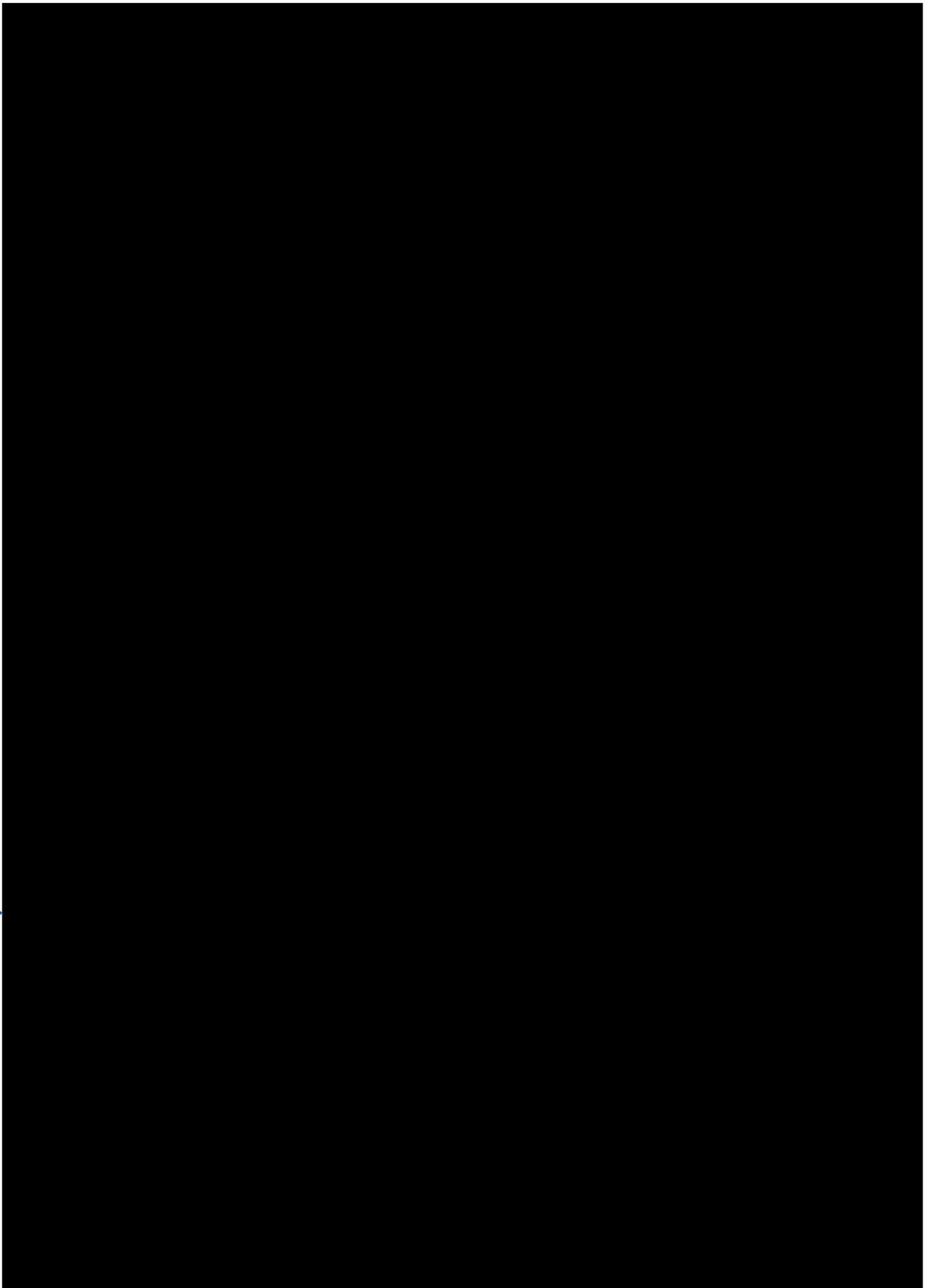
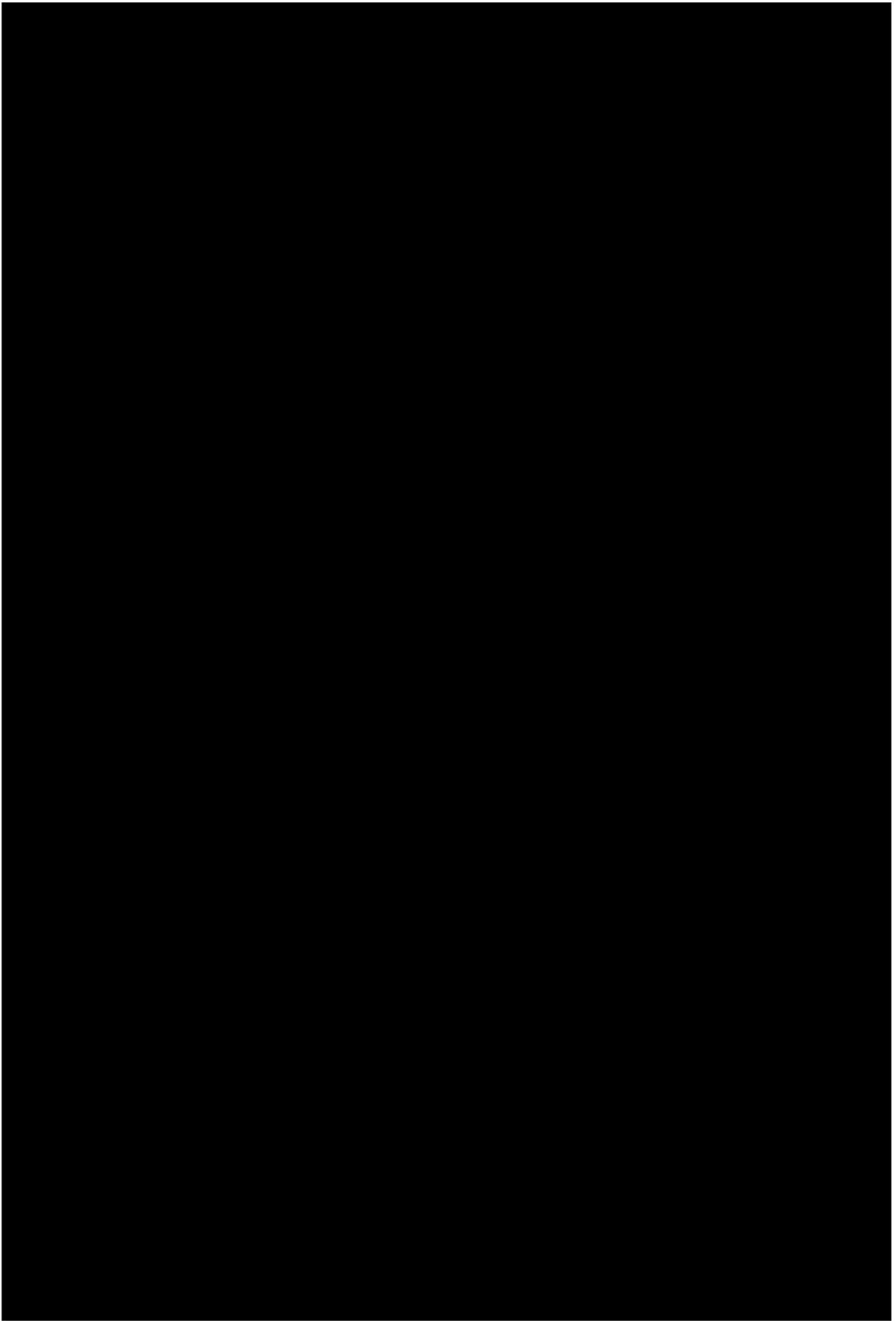


TABLE 4-16

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FIGURE 4-17

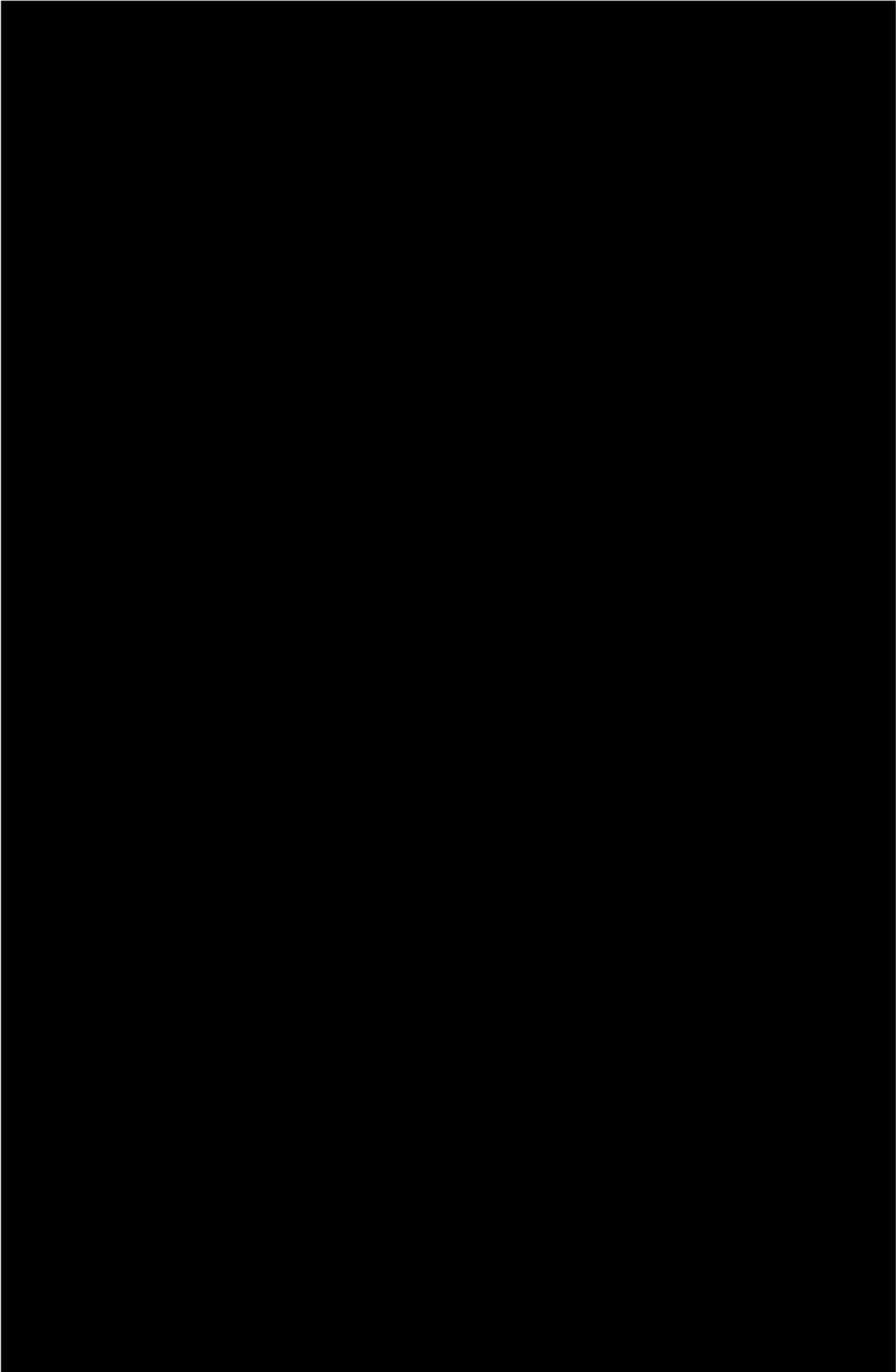


4.3.2

FIGURE 4-18



4.3.2.1



4.3.2.2

FIGURE 4-19



4.3.2.3

4.3.3

4.3.4

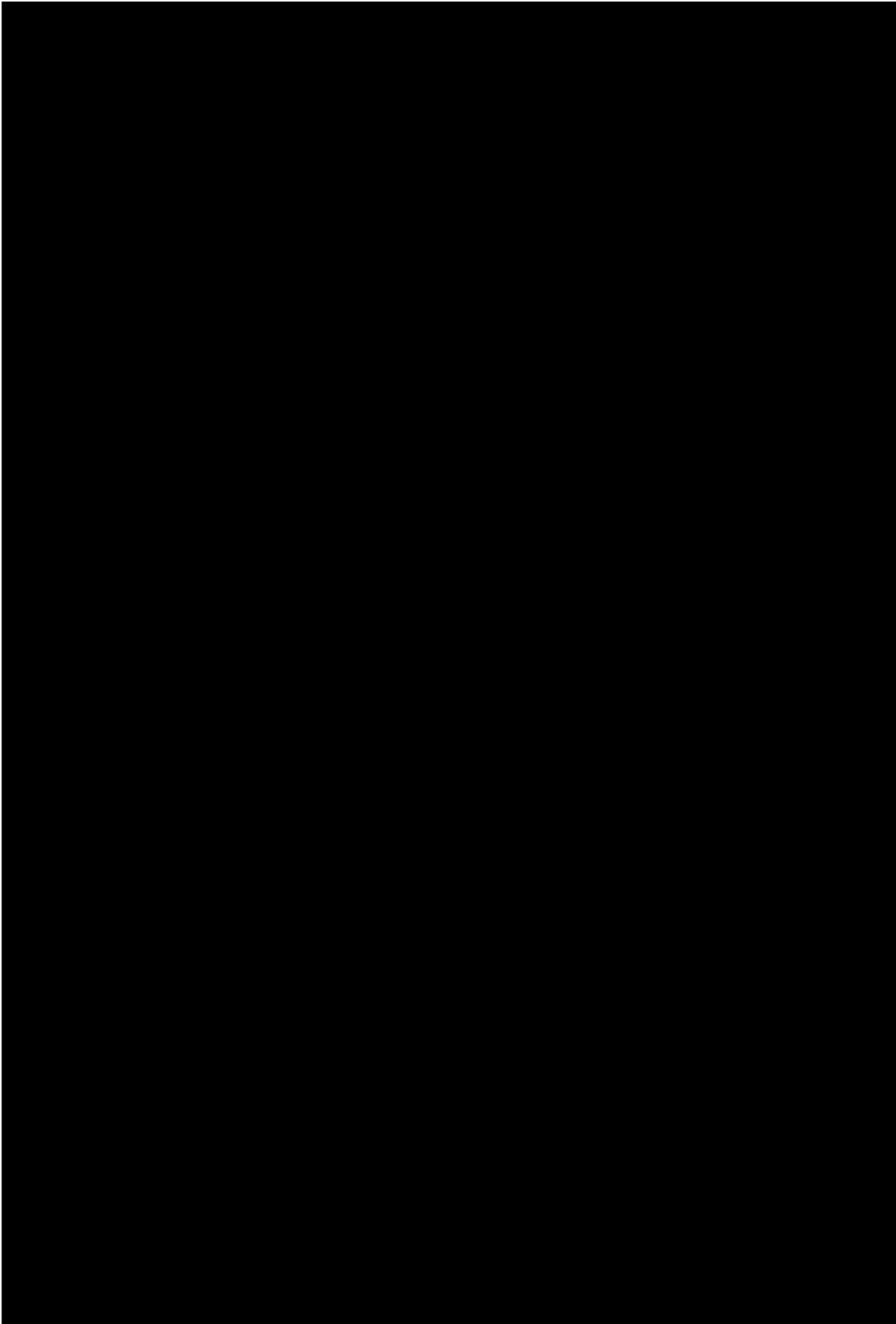
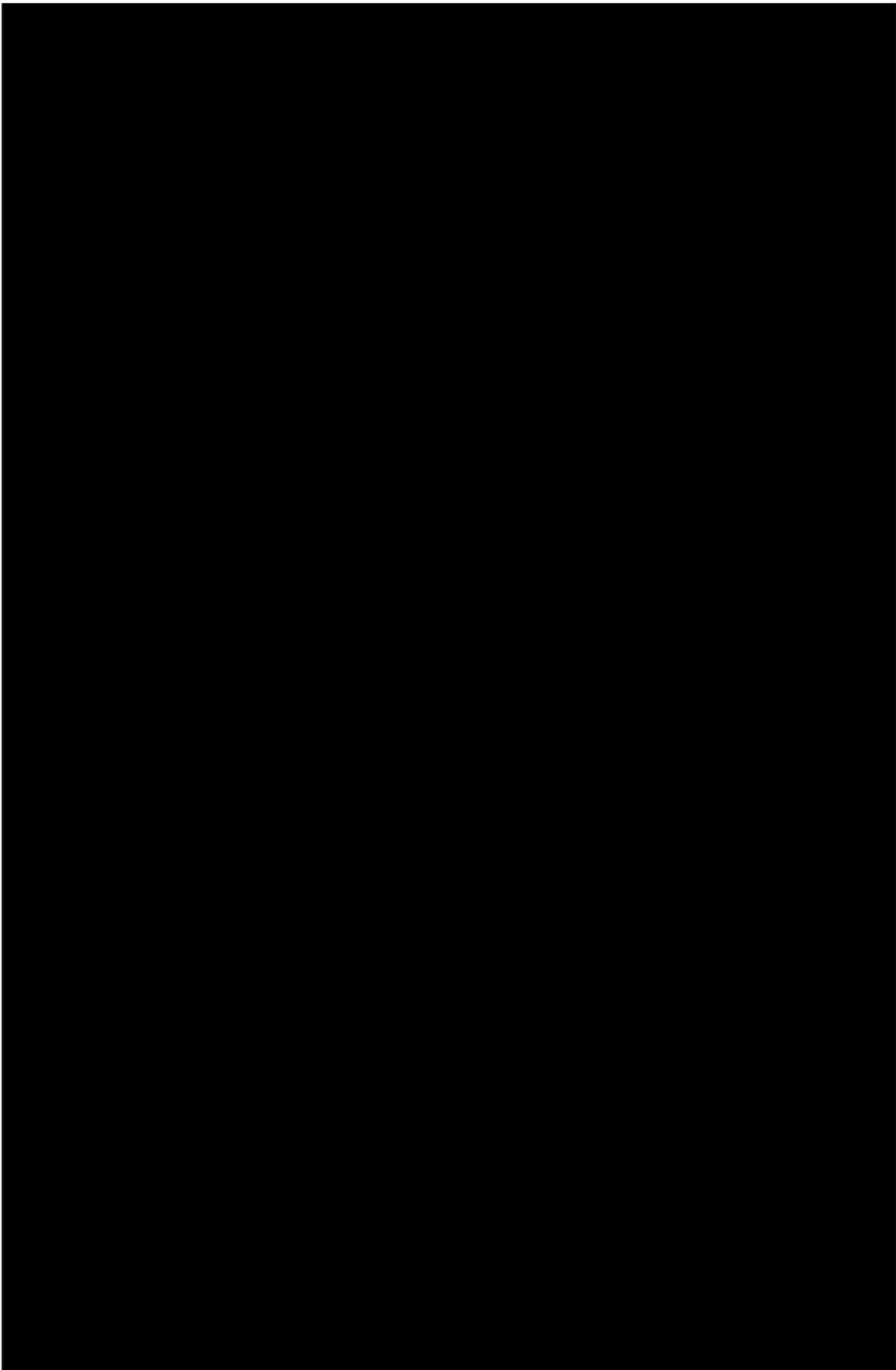
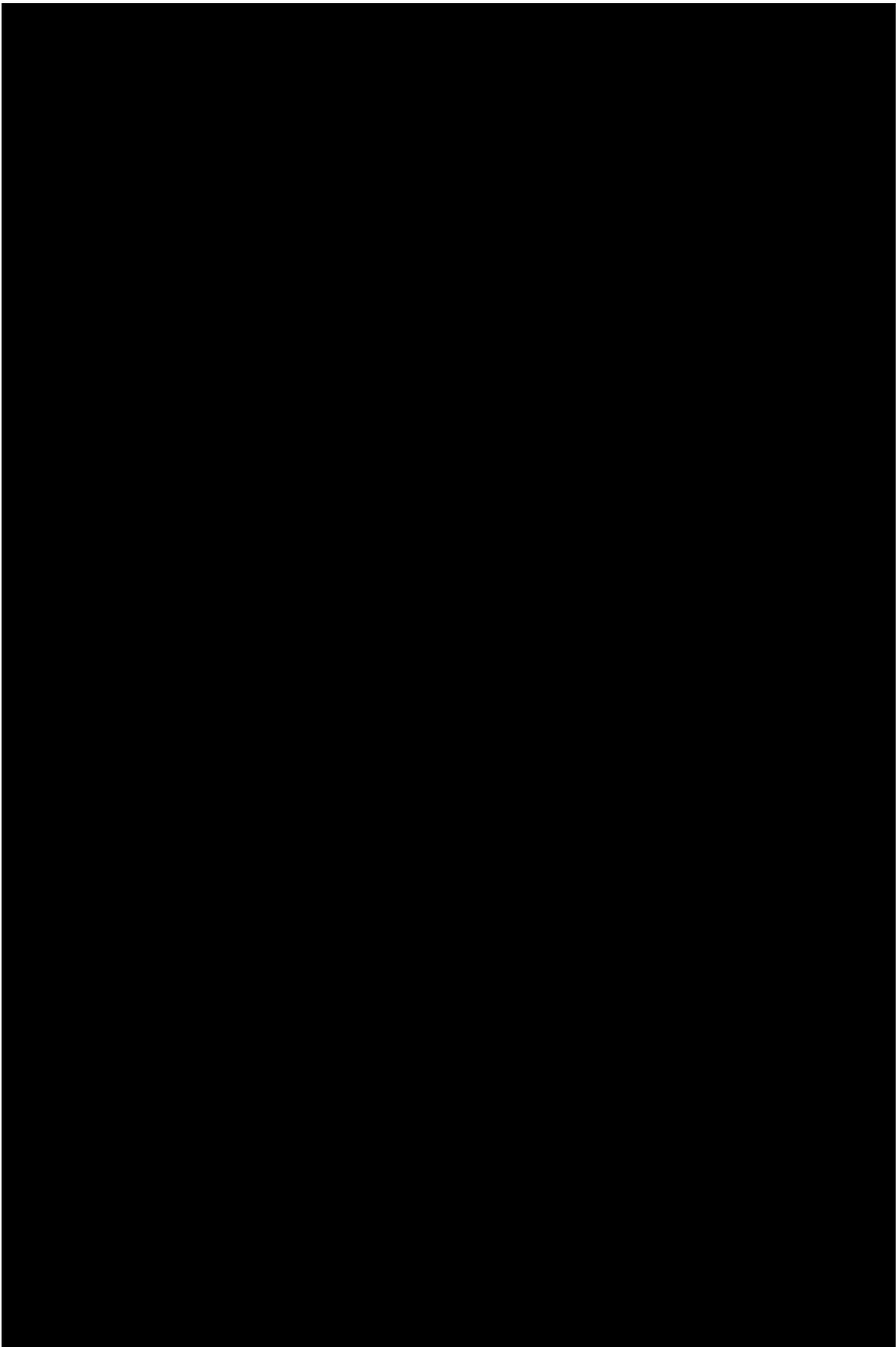


FIGURE 4-20

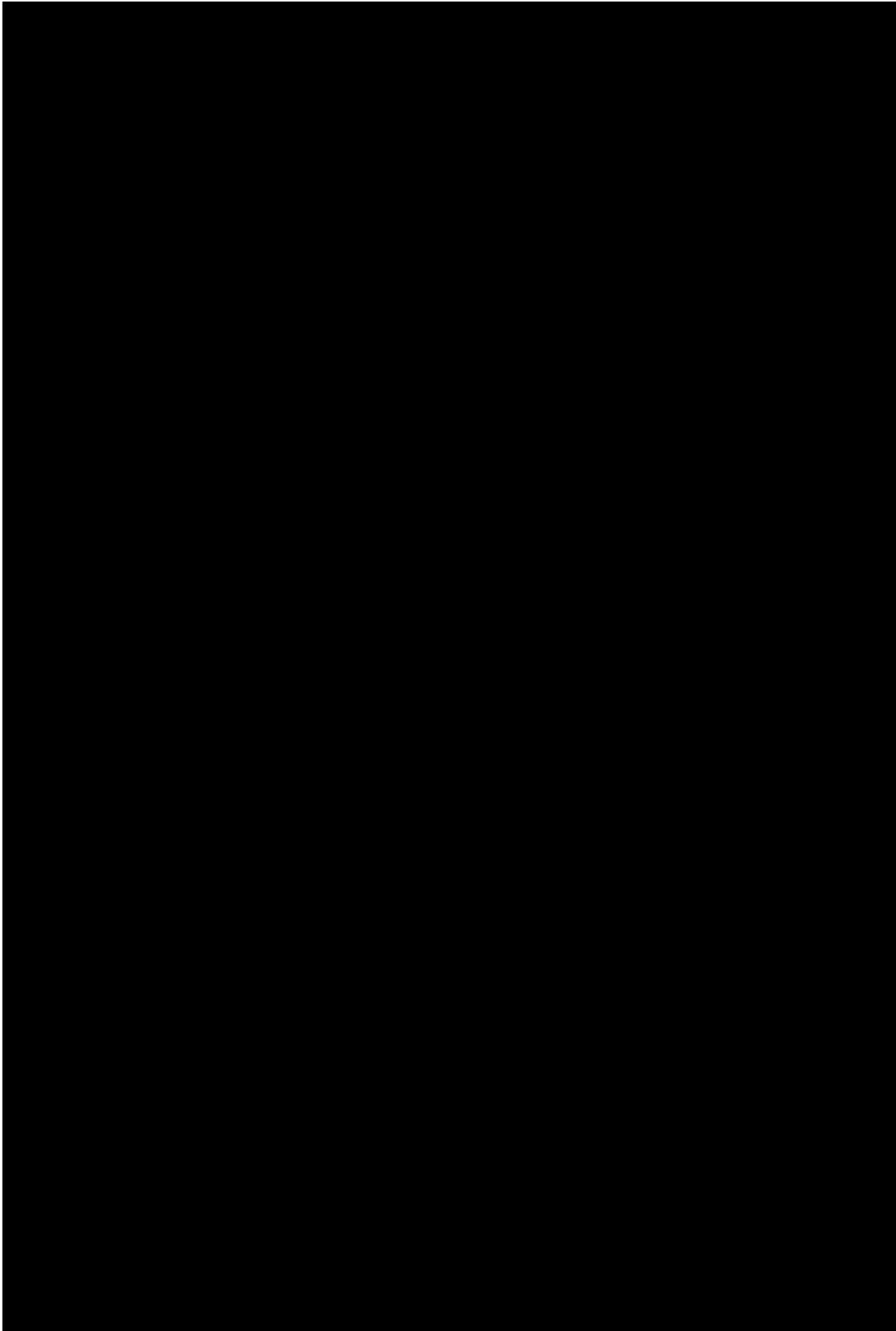


4.3.5

4.3.6



4.3.7



4.3.7.1

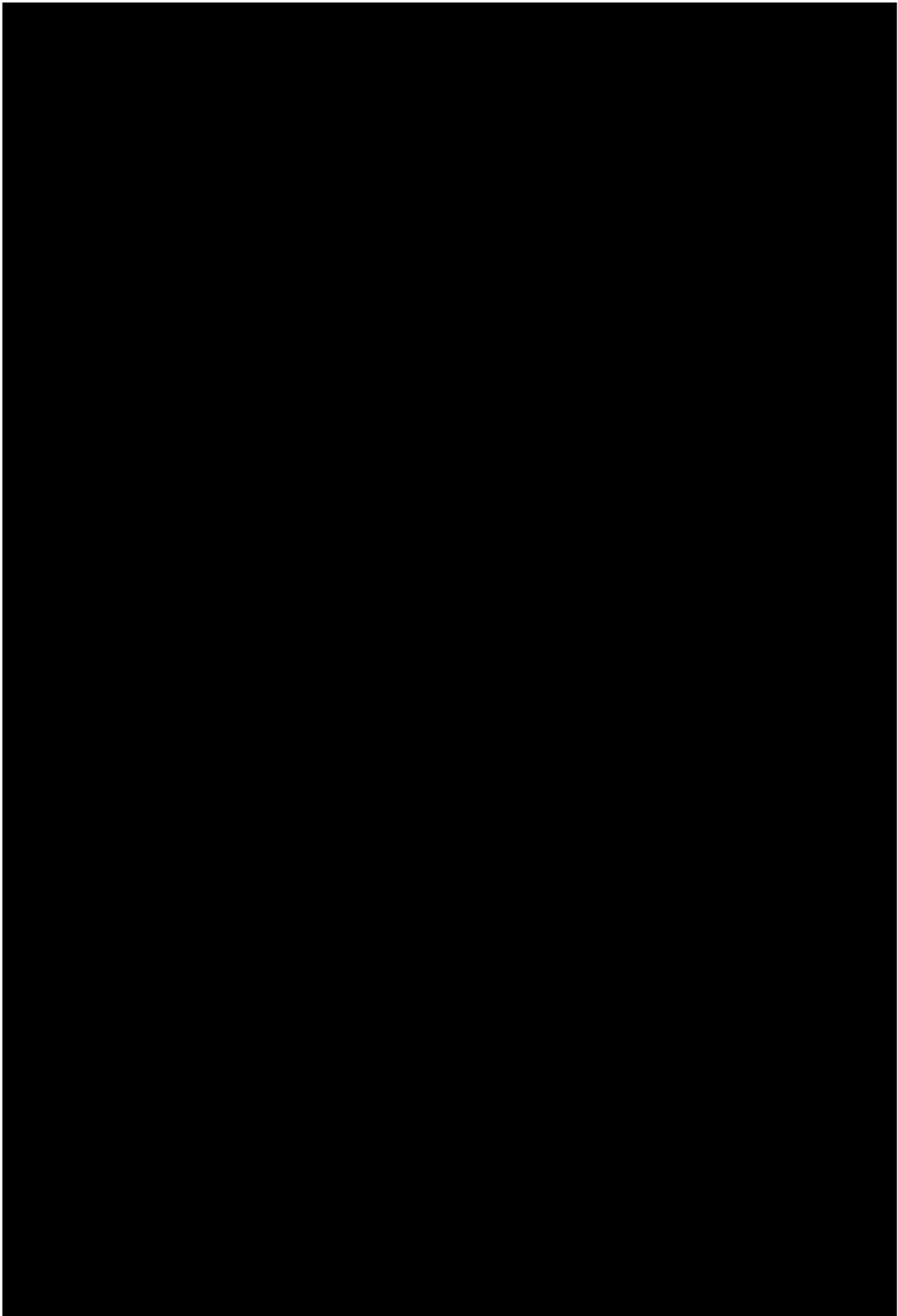


FIGURE 4-21



4.3.7.2

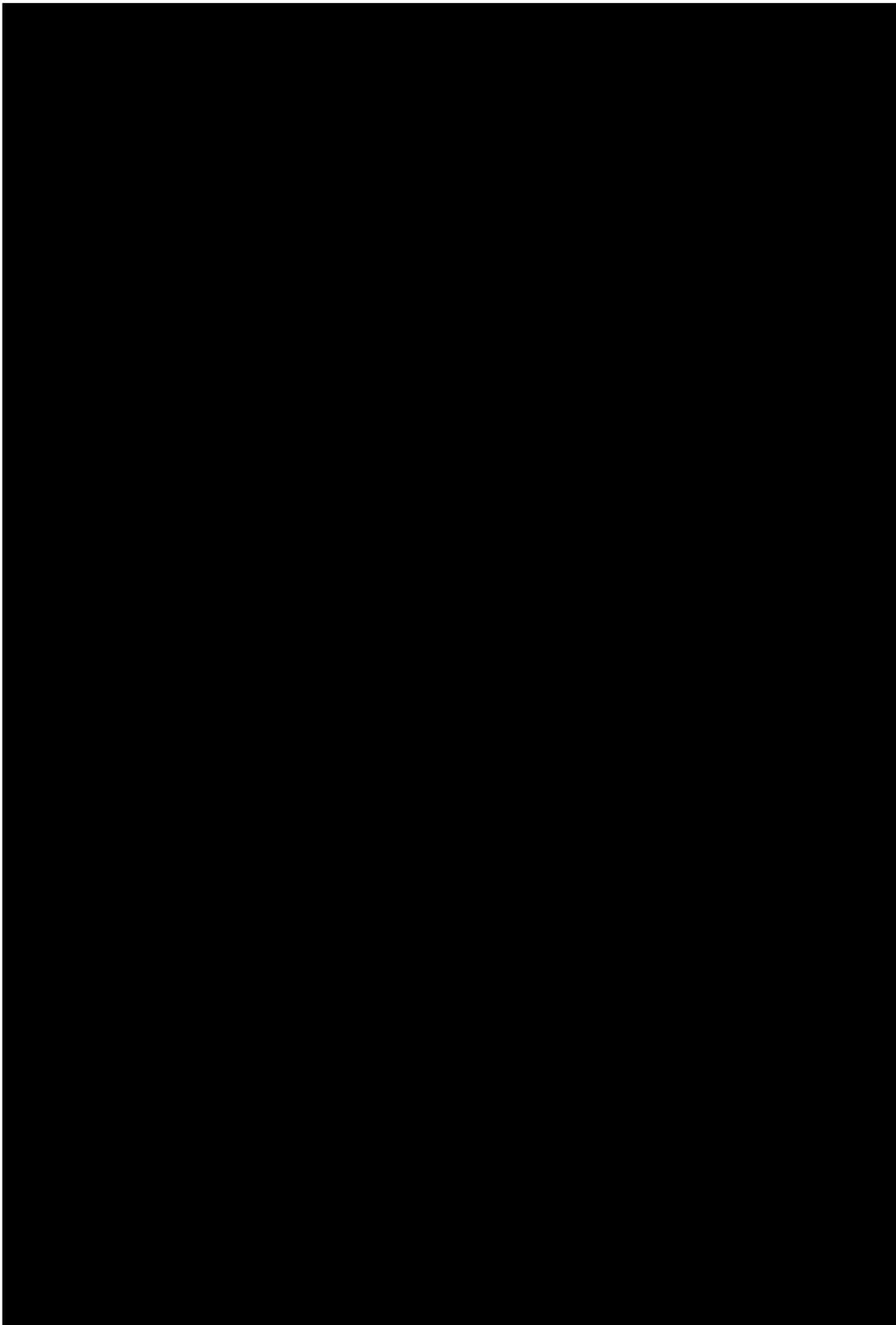


FIGURE 4-22



4.3.73

FIGURE 4-23



FIGURE 4-24

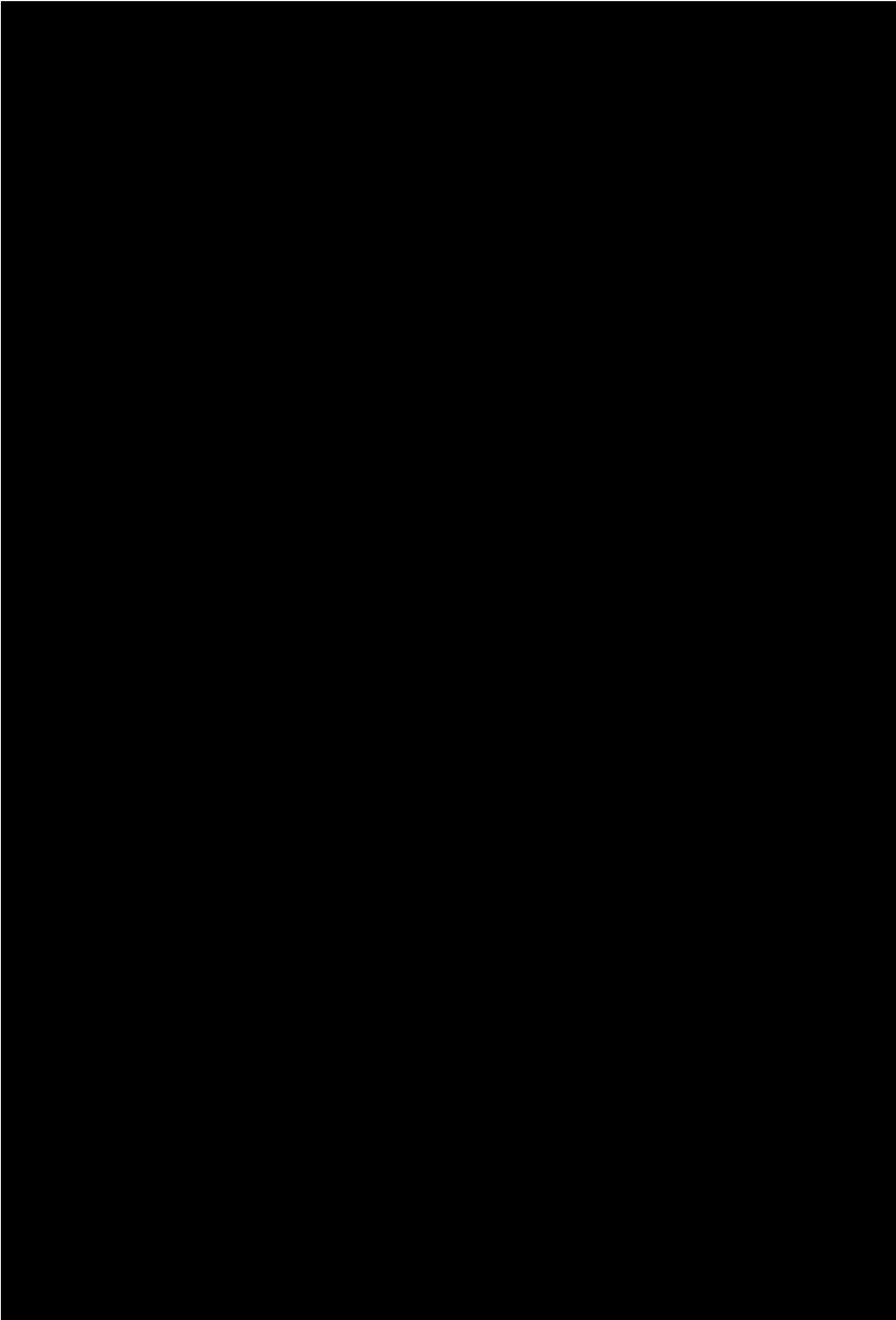


FIGURE 4-25



FIGURE 4-26

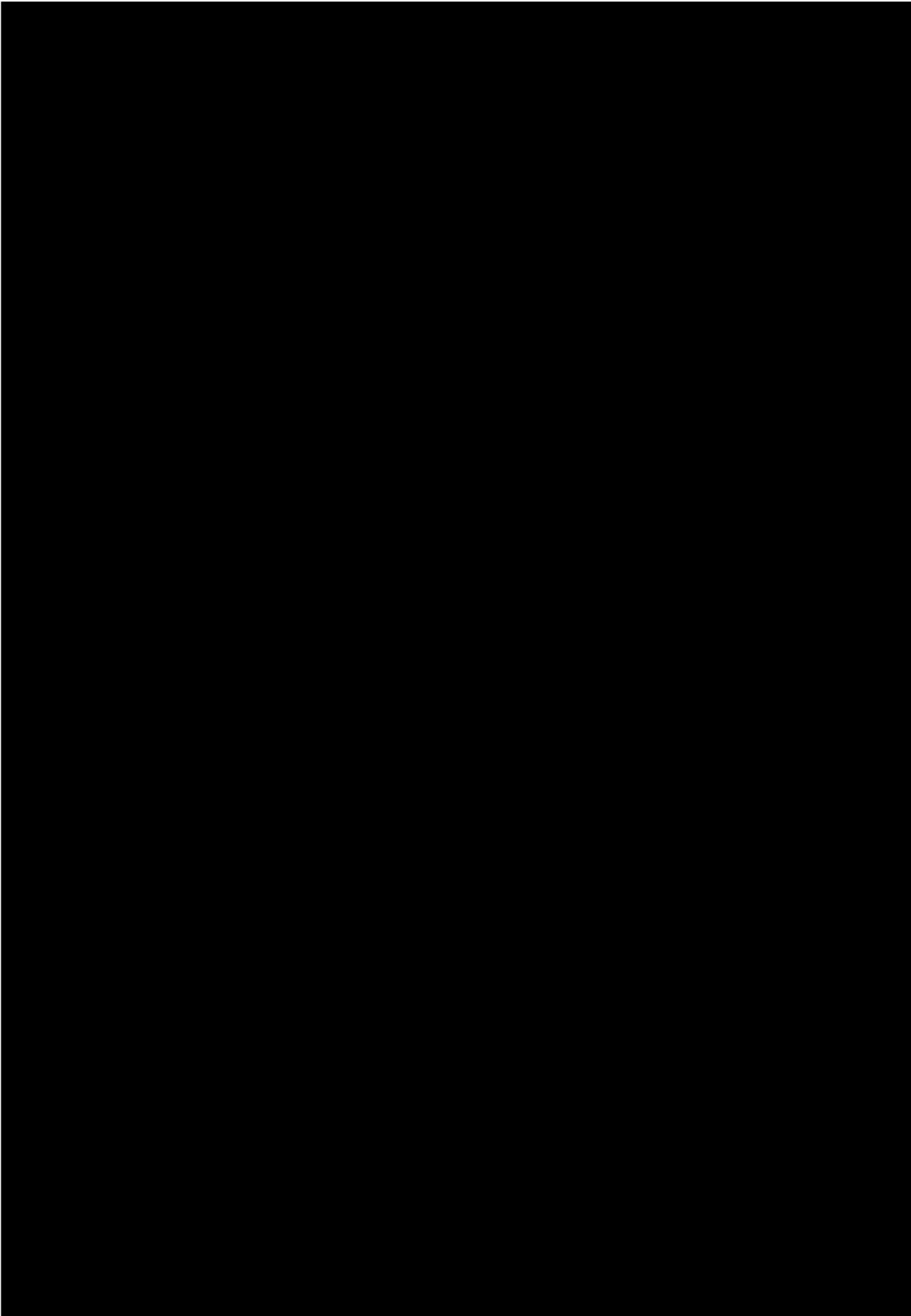


FIGURE 4-27



4.3.7.4

4.3.75

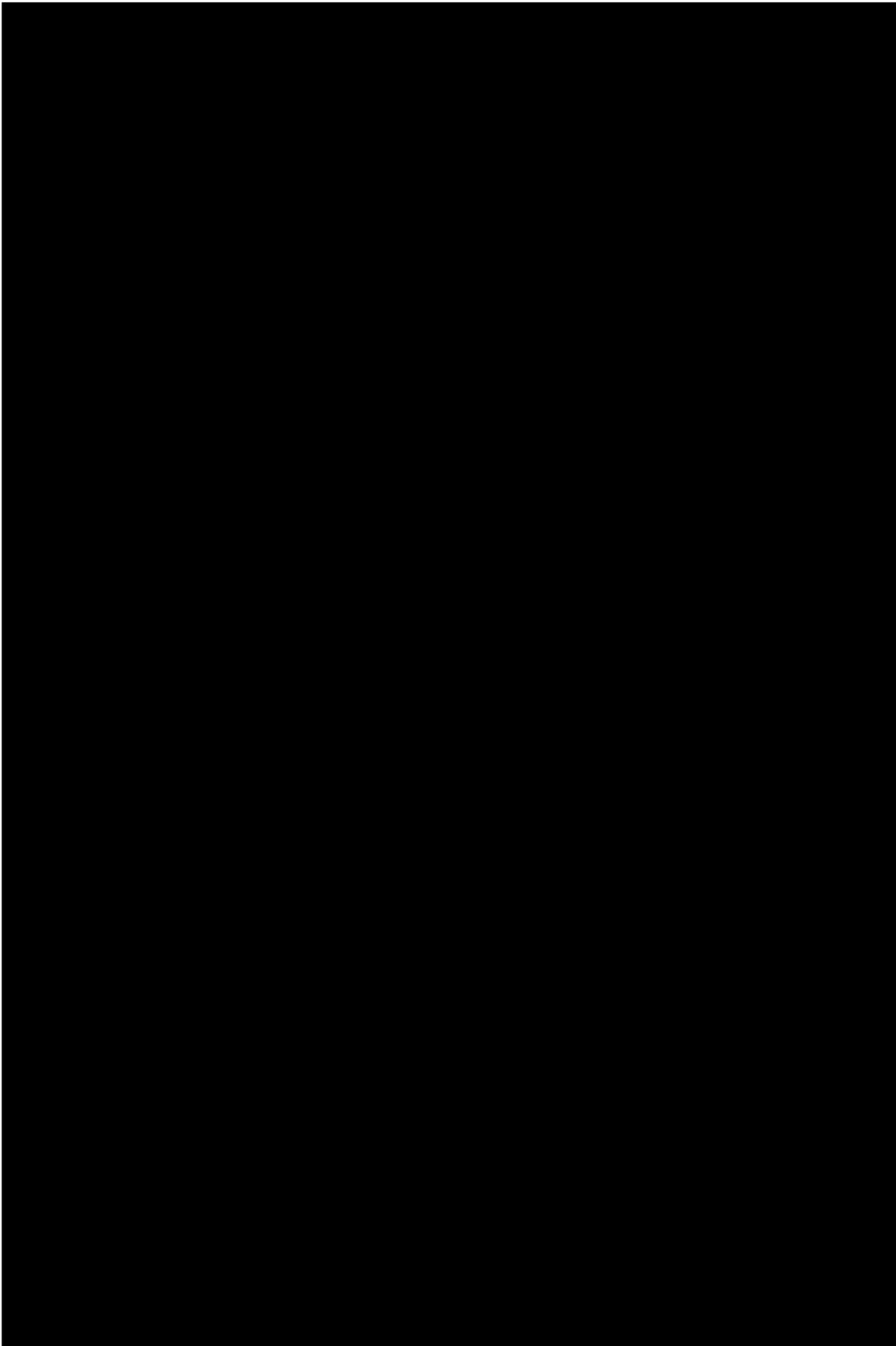
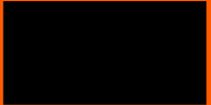


FIGURE 4-28



FIGURE 4-29



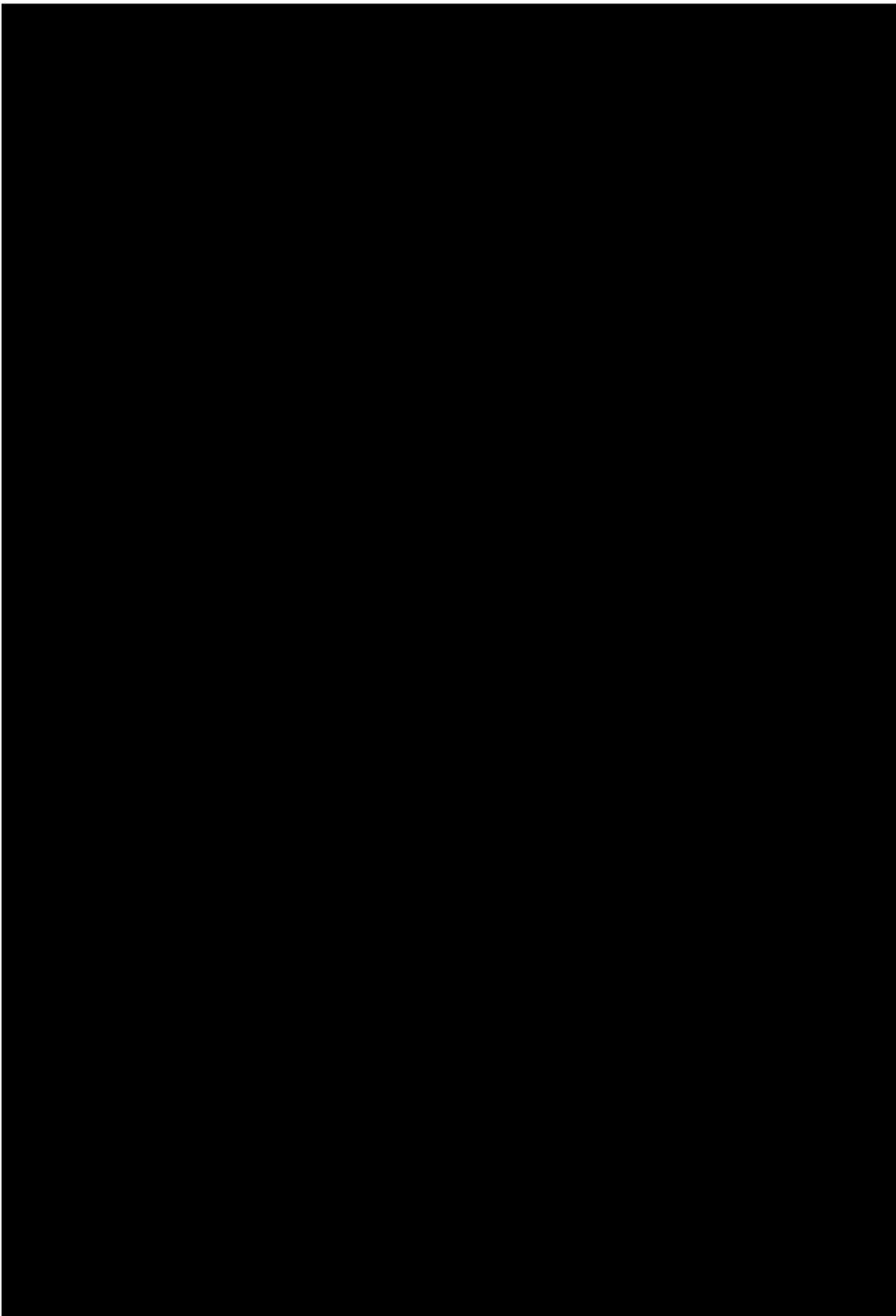


FIGURE 4-30



4.3.7.6

FIGURE 4-31

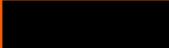
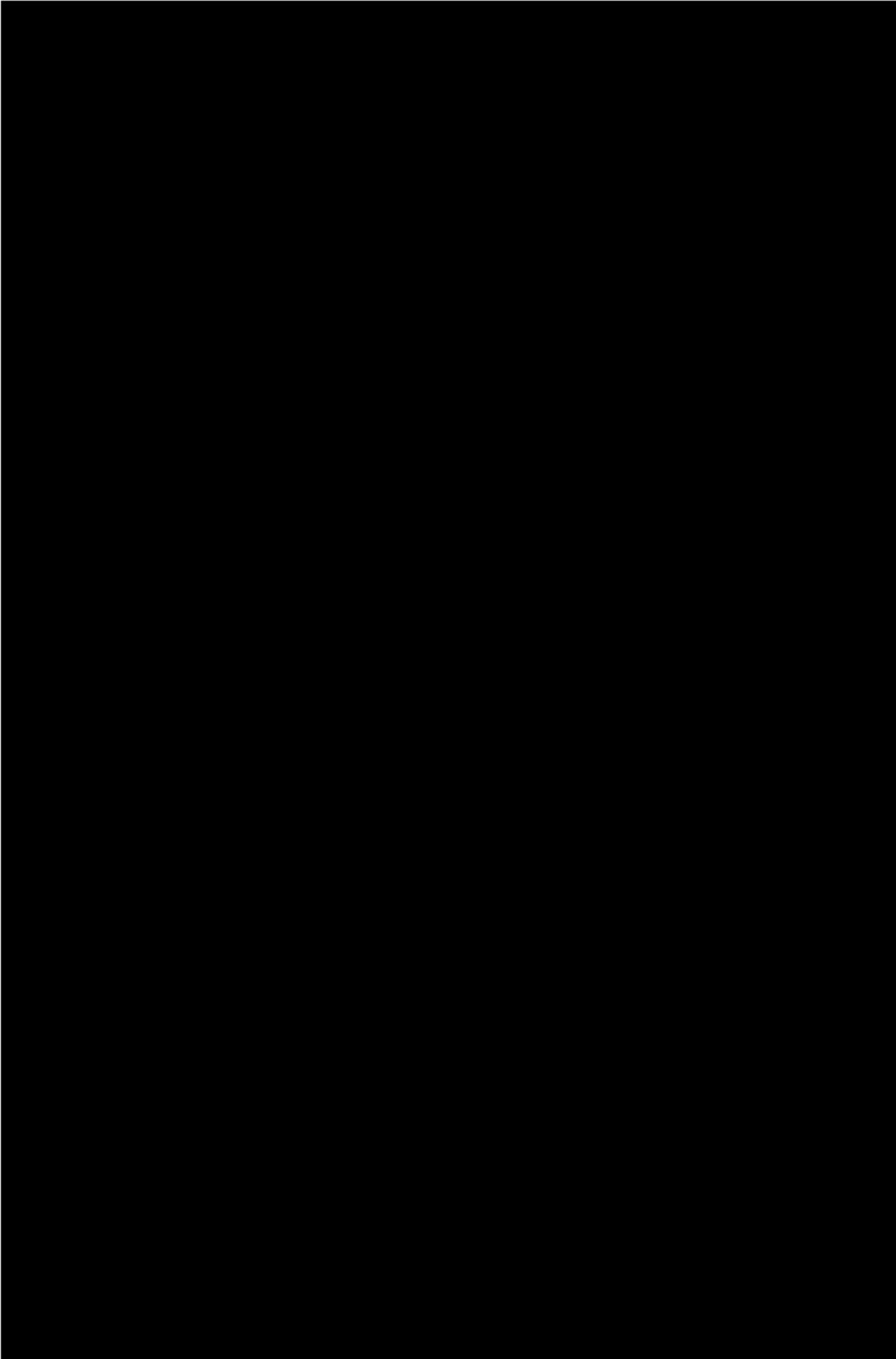


FIGURE 4-32

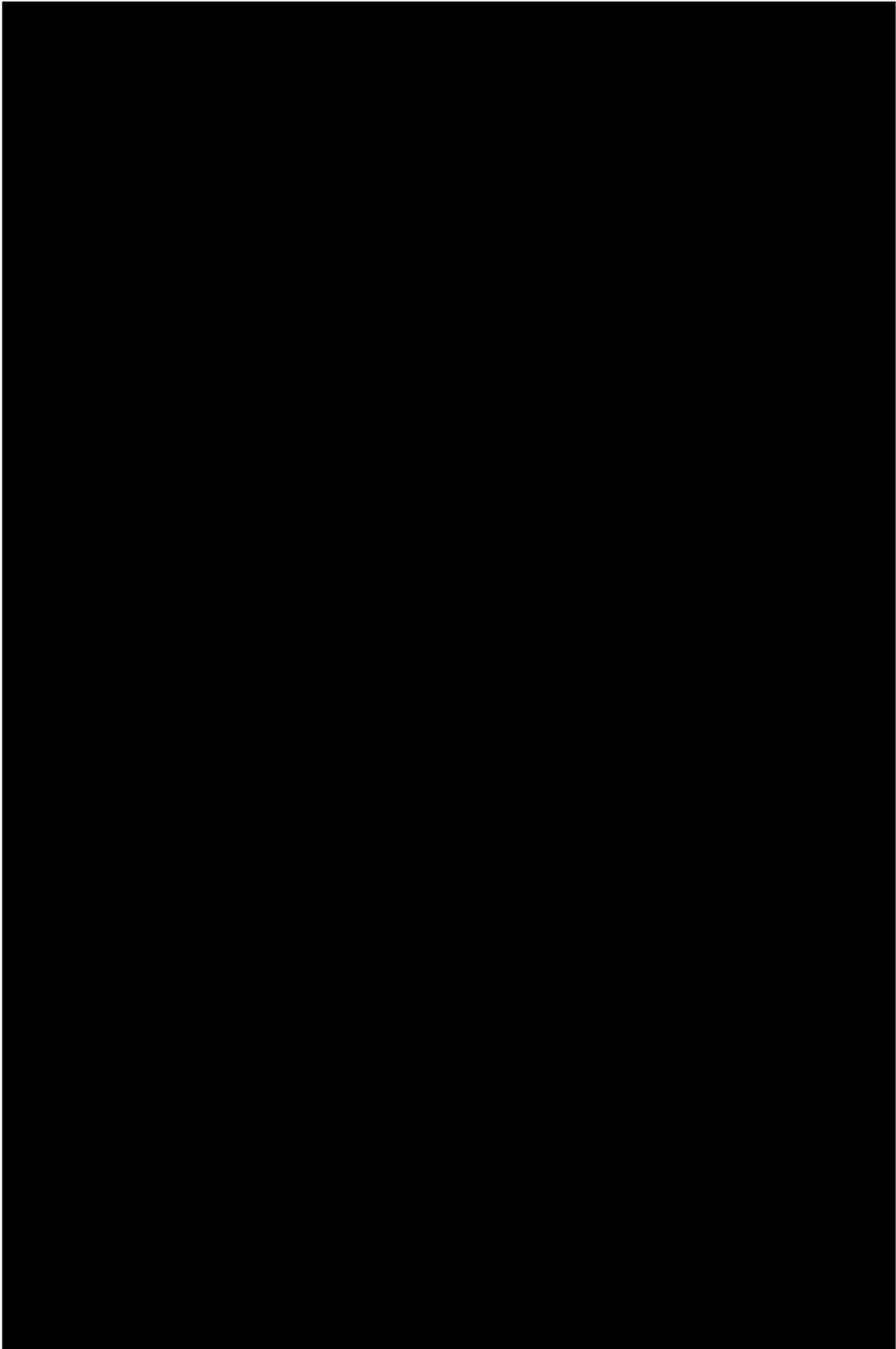


4.3.7.7

4.3.7.7.1

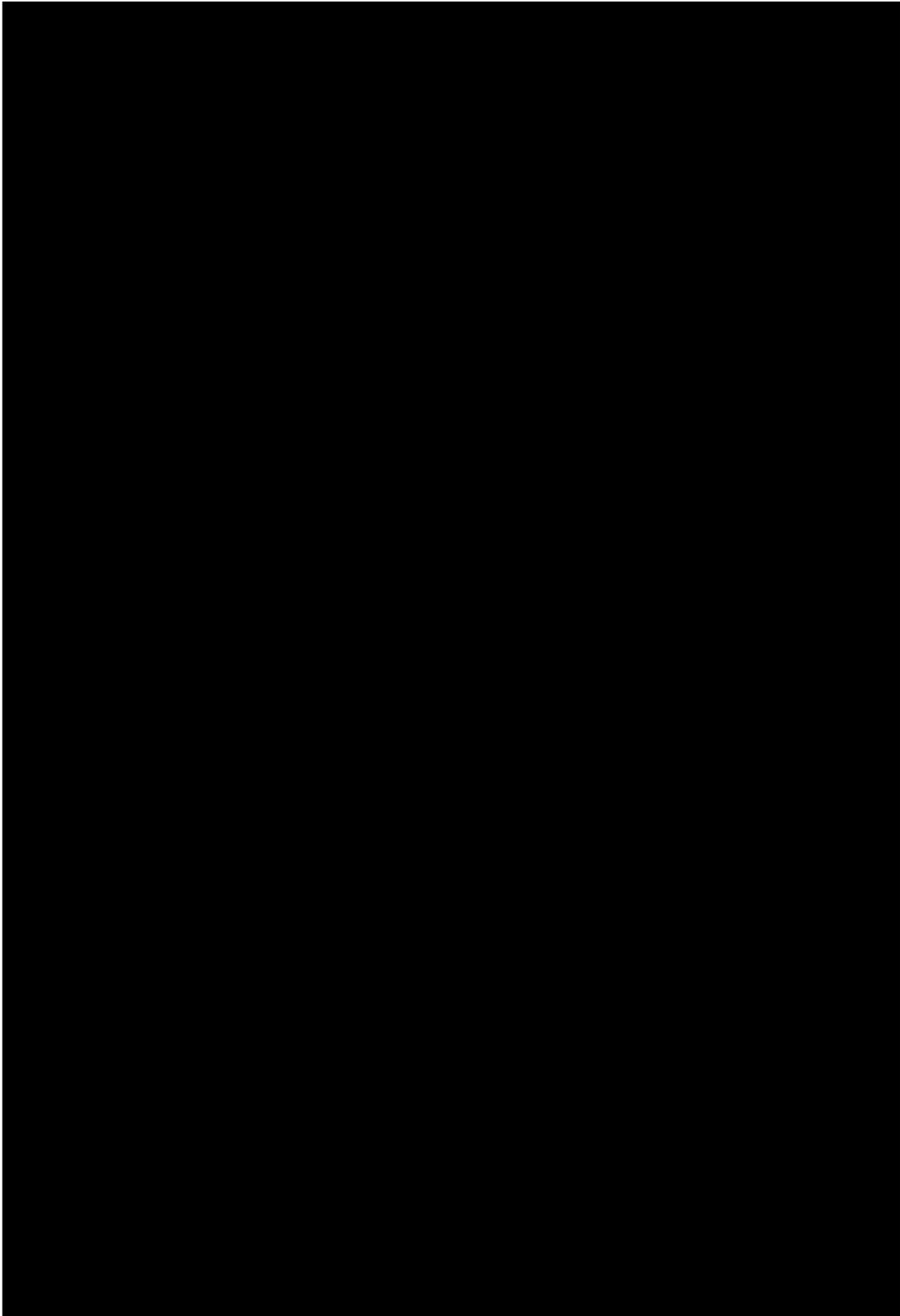
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4.3.7.7.3



4.3.7.7.4

4.3.7.7.5



4.3.8

4.3.8.1

4.3.8.2

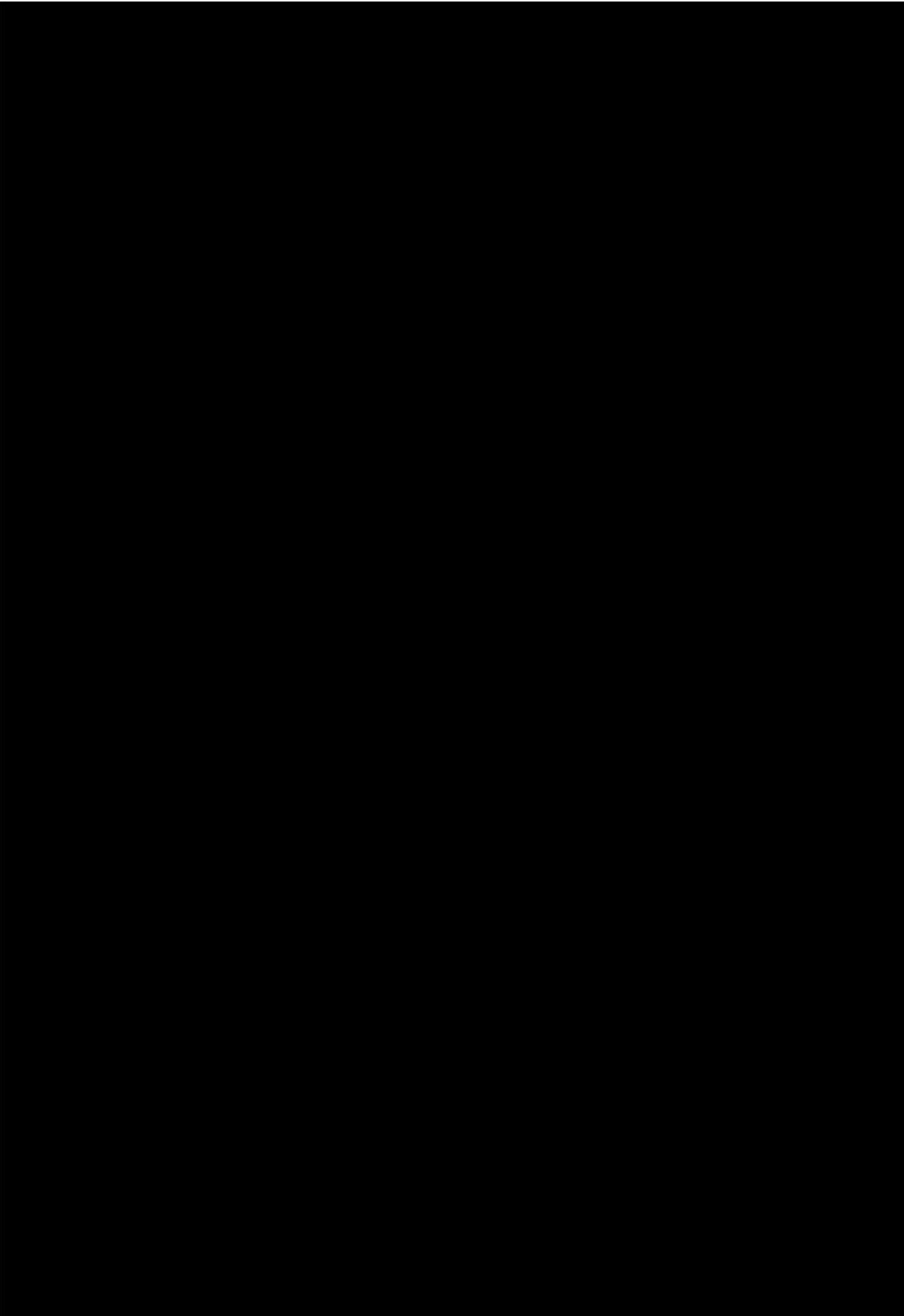
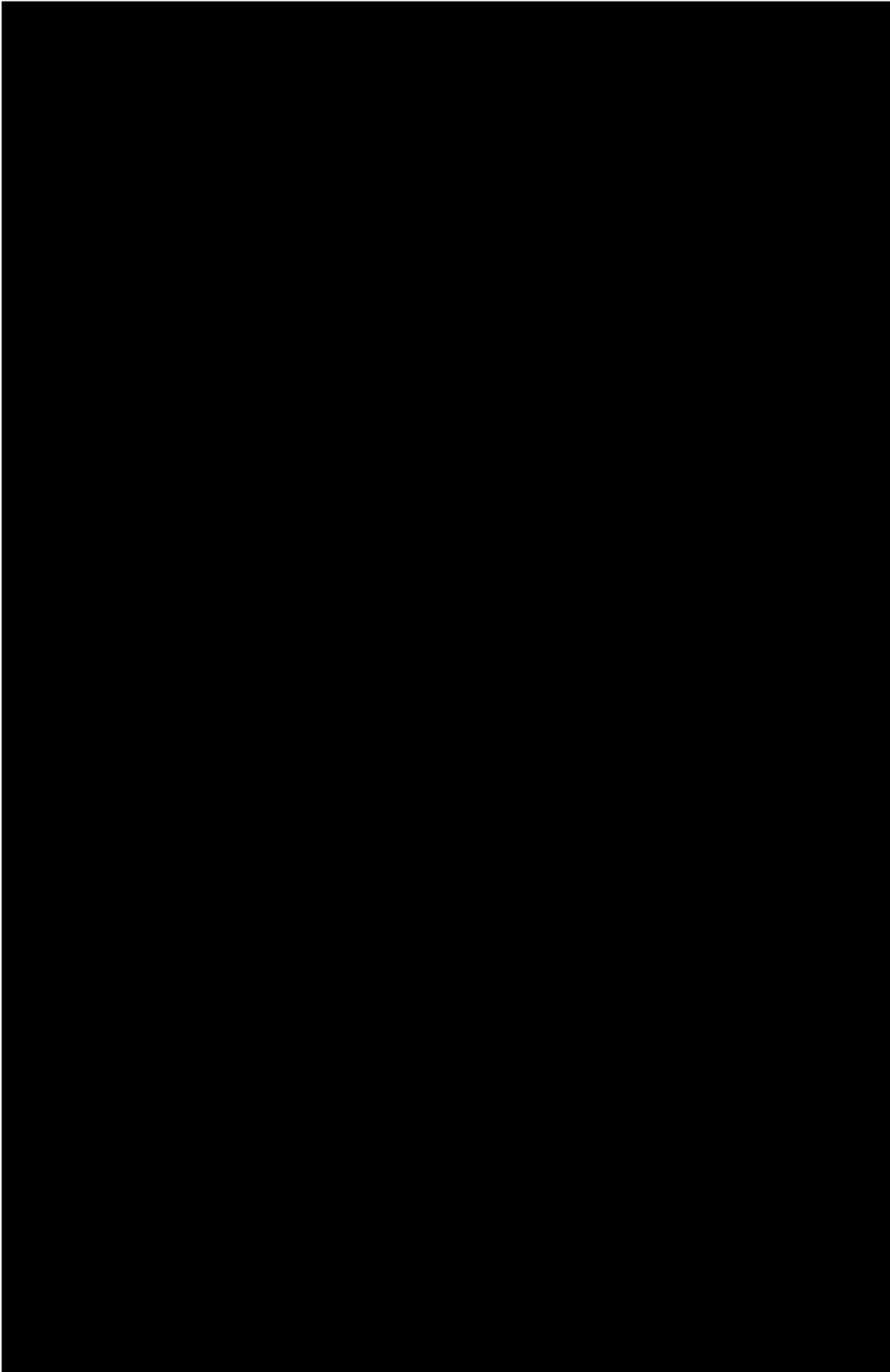


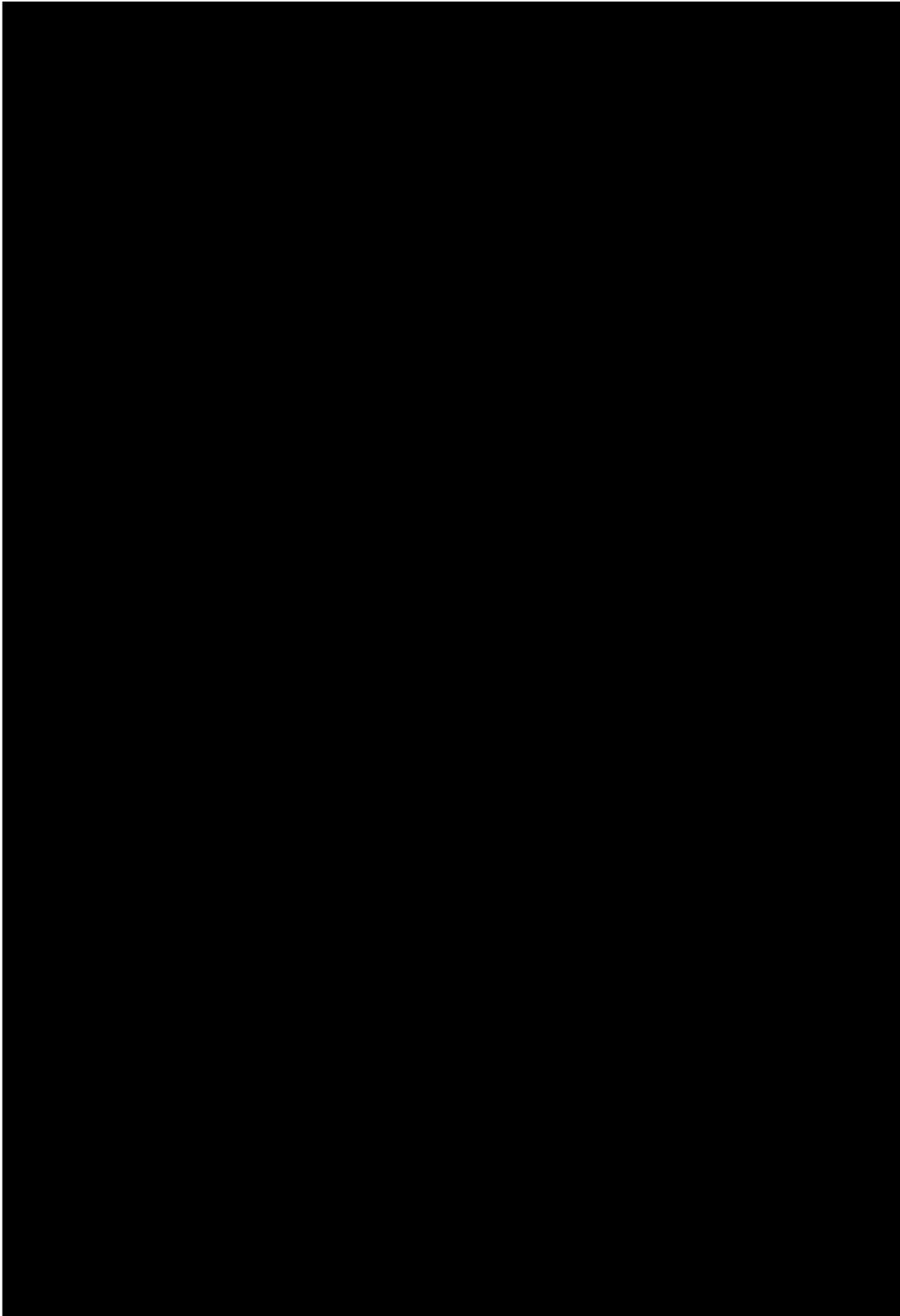
FIGURE 4-33



4.4

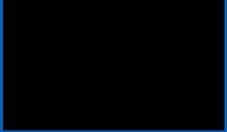
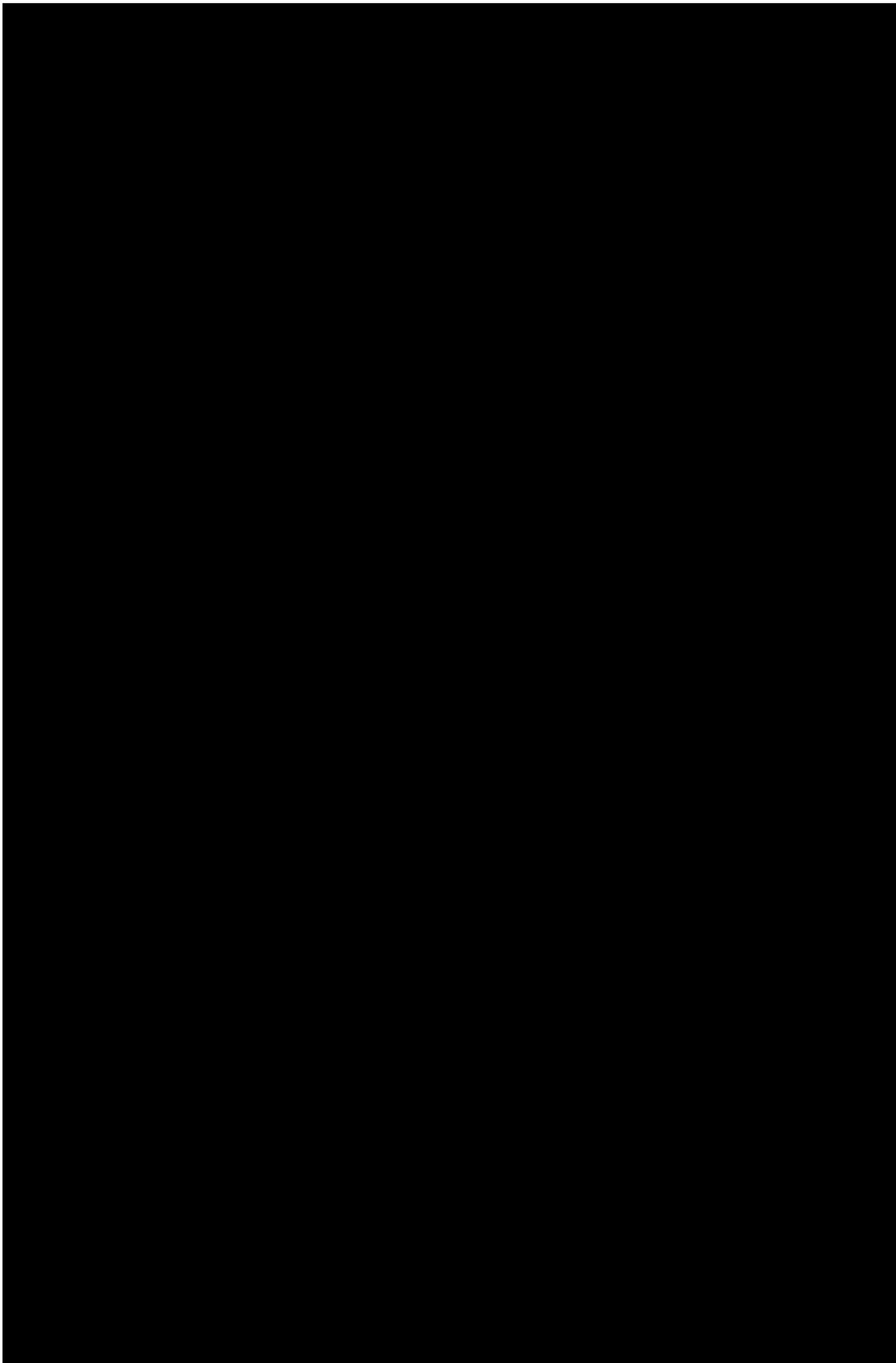
4.4.1

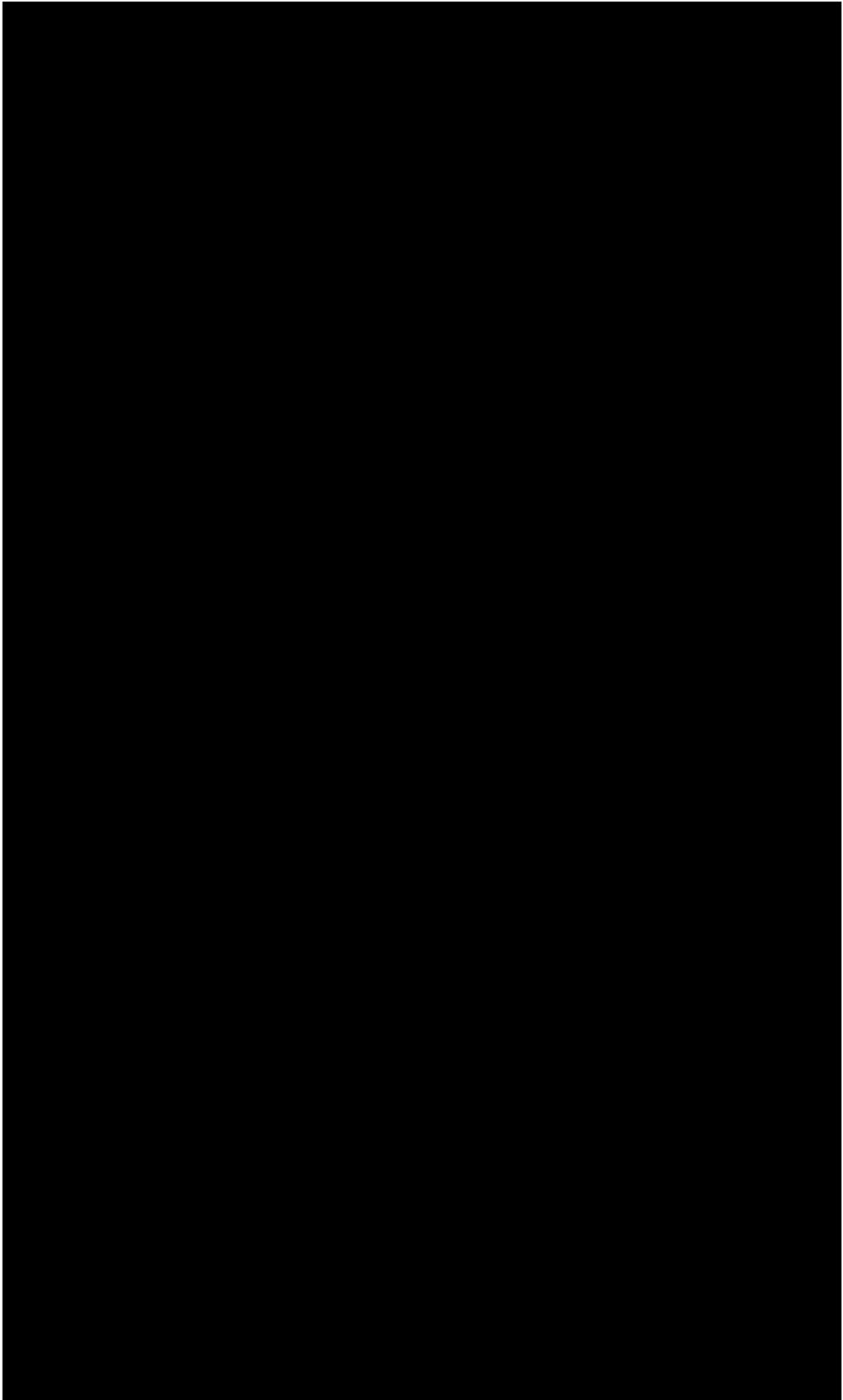
TABLE 4-33



4.4.3

TABLE 4-34

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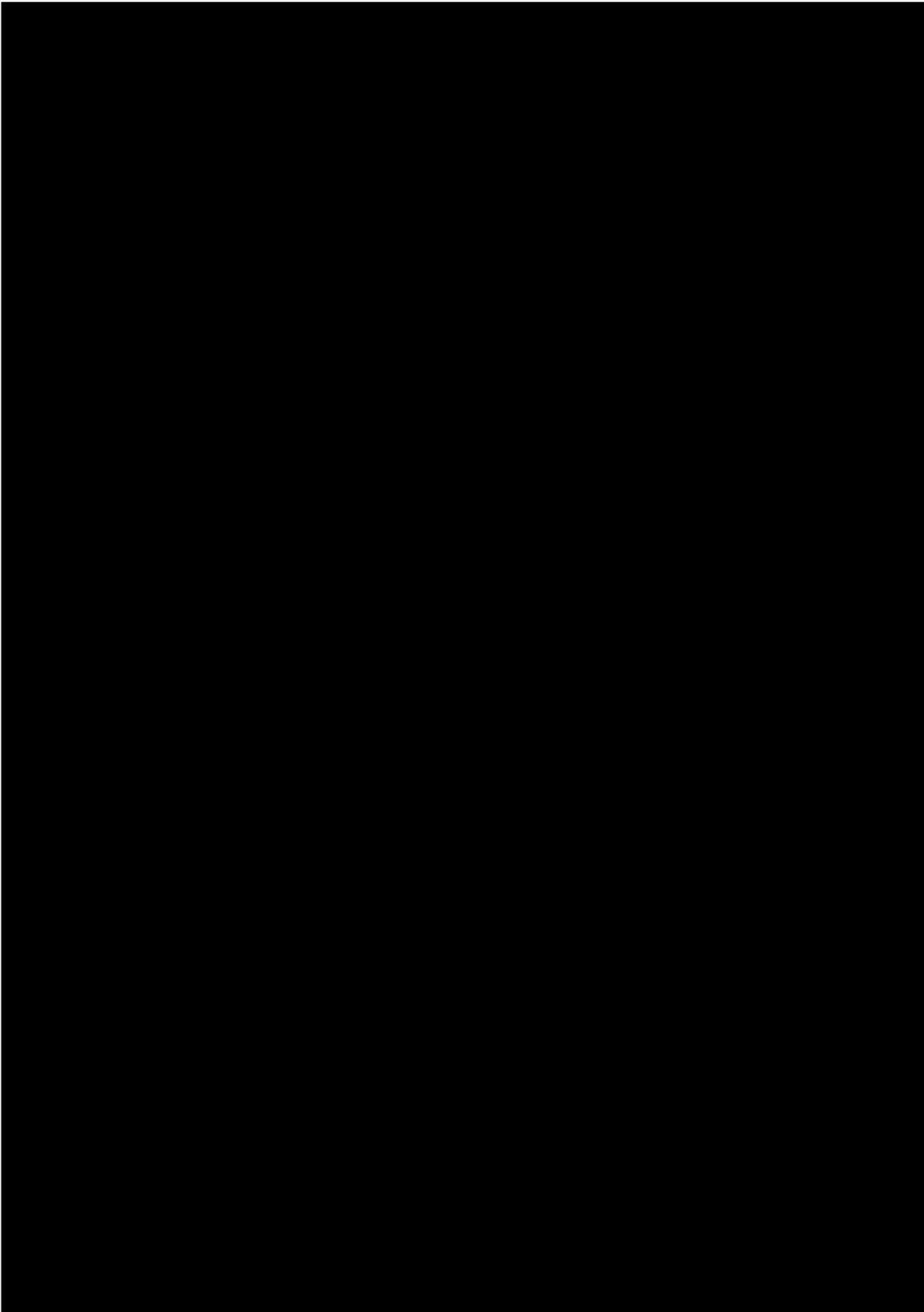
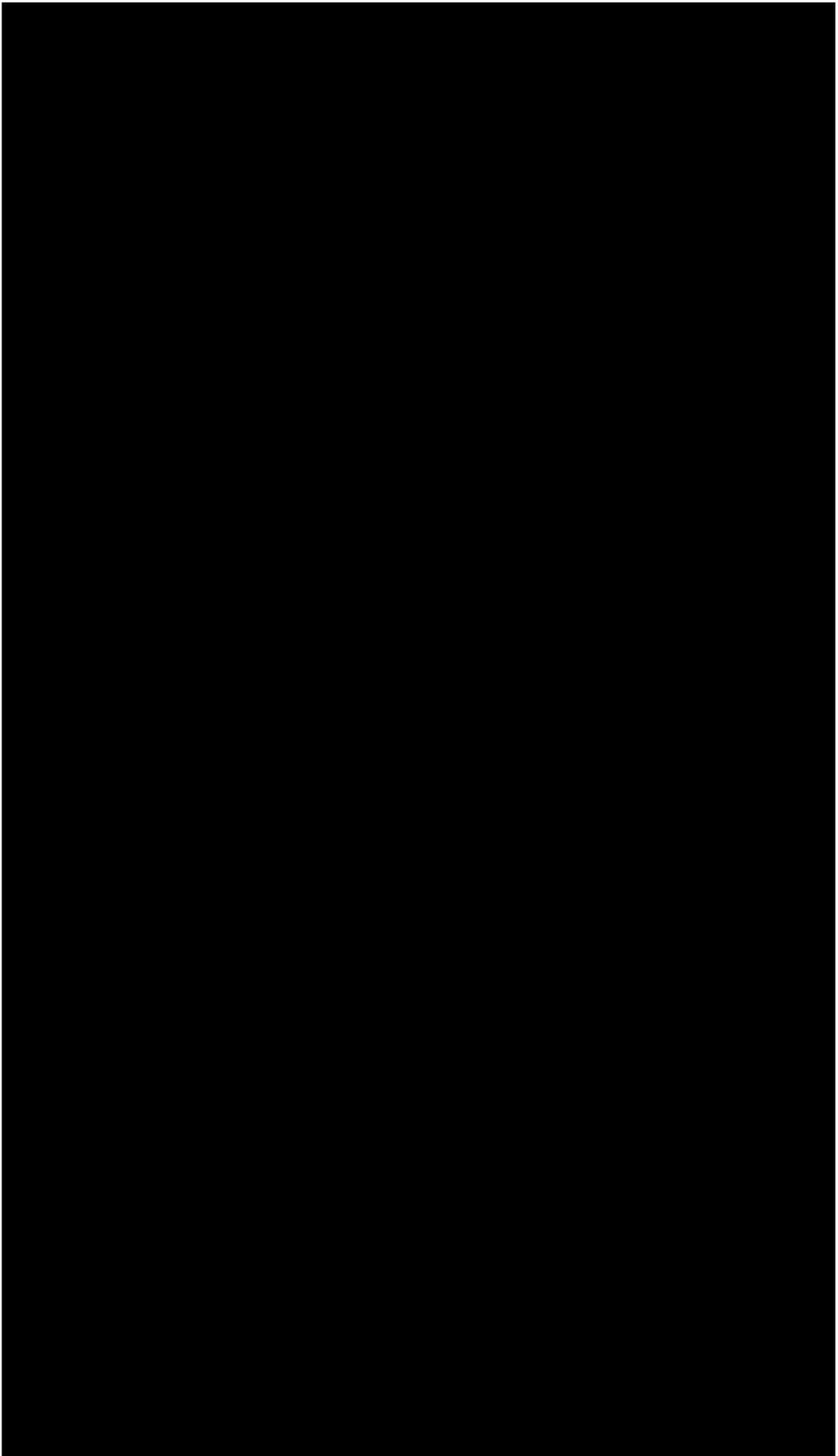


TABLE 4-35

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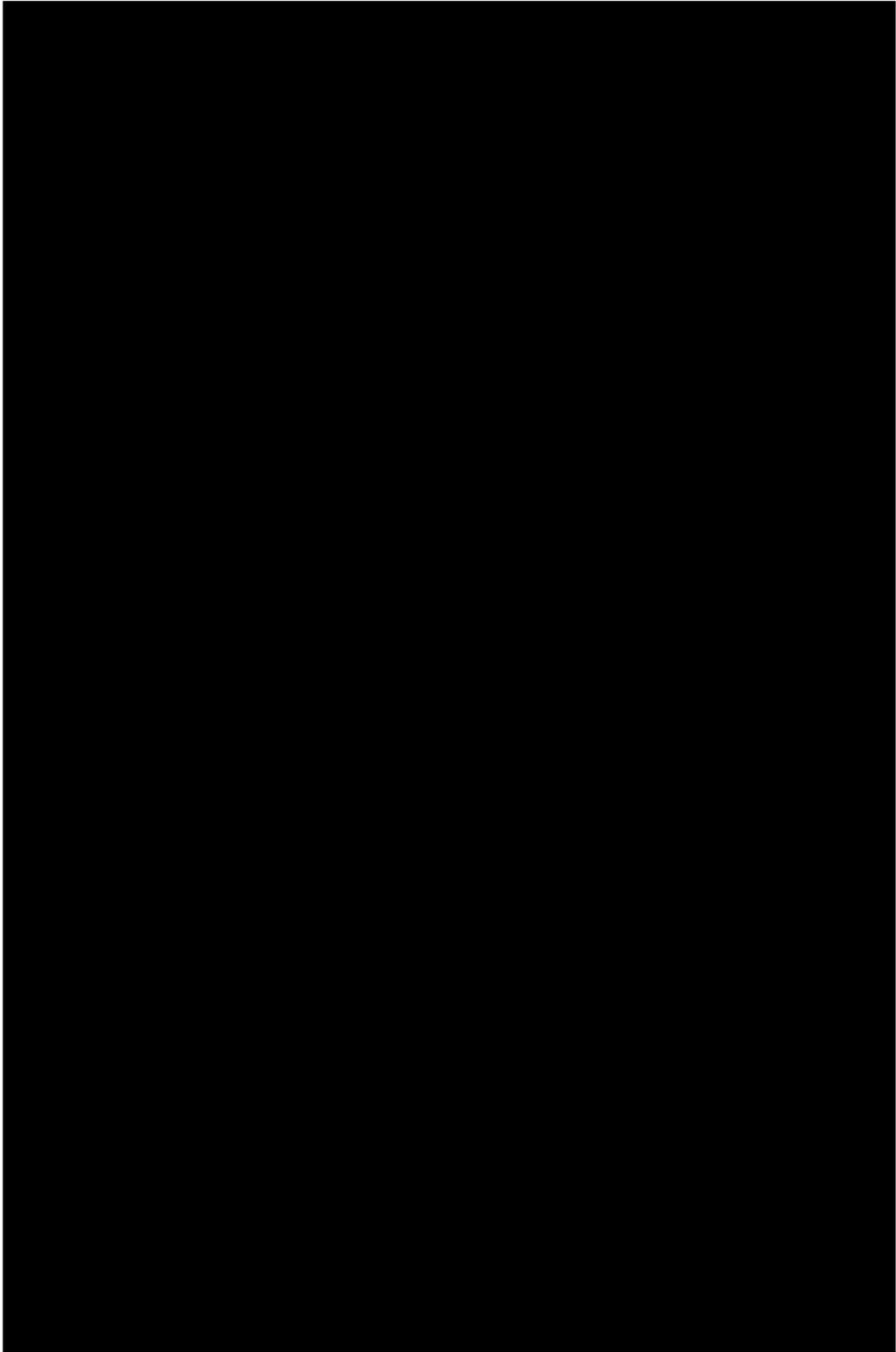


TABLE 4-36

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TABLE 4-37

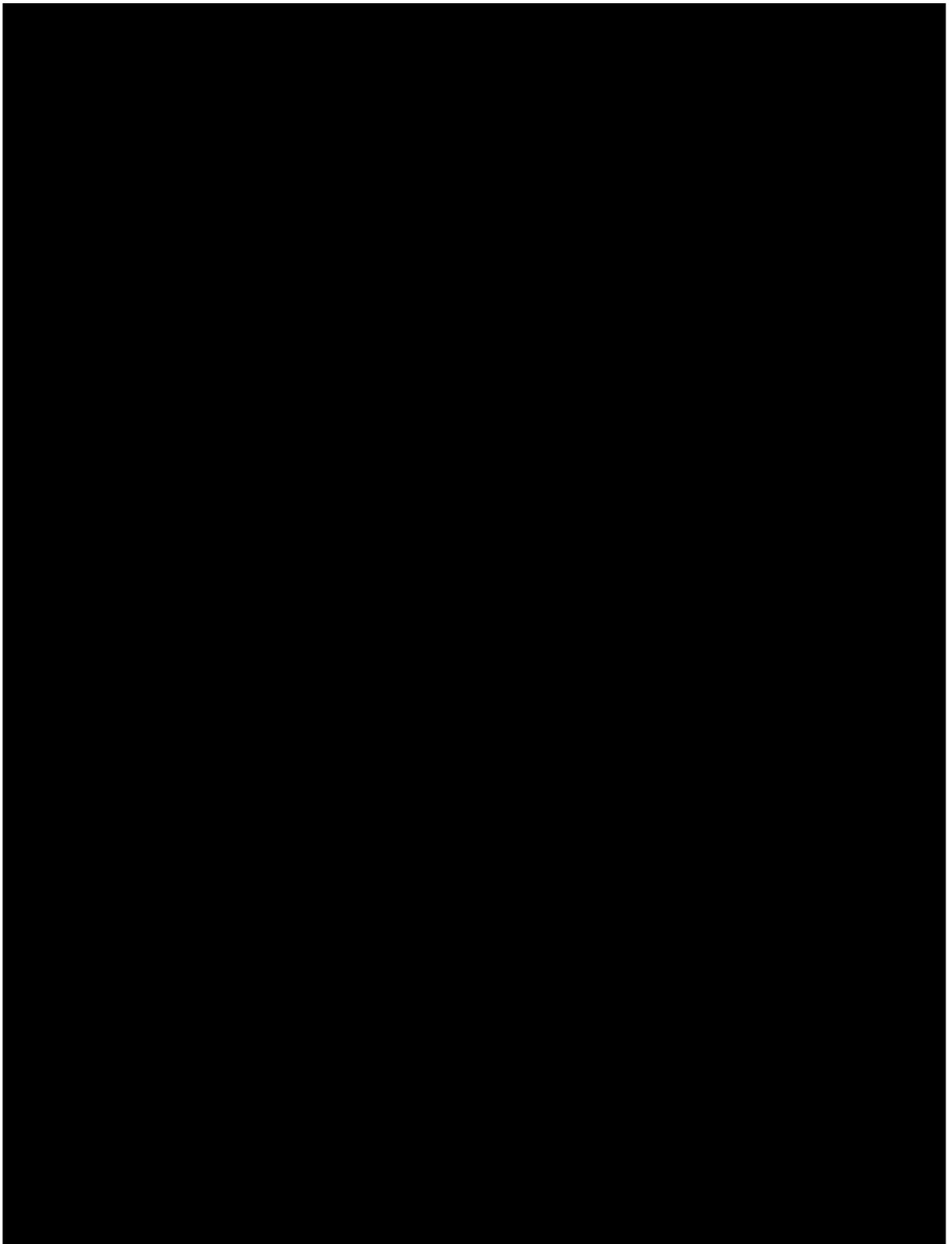
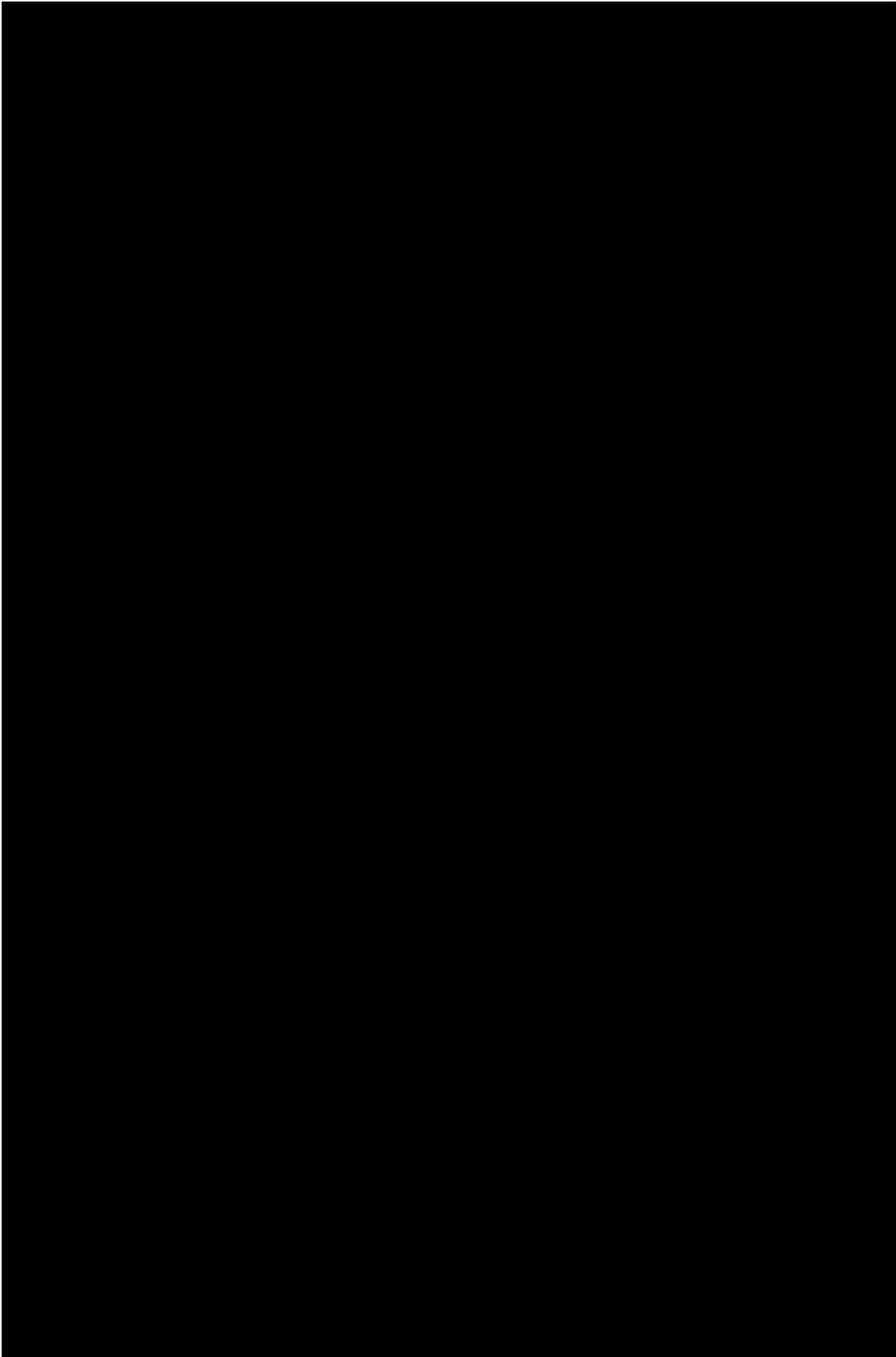
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TABLE 4-38

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TABLE 4-39

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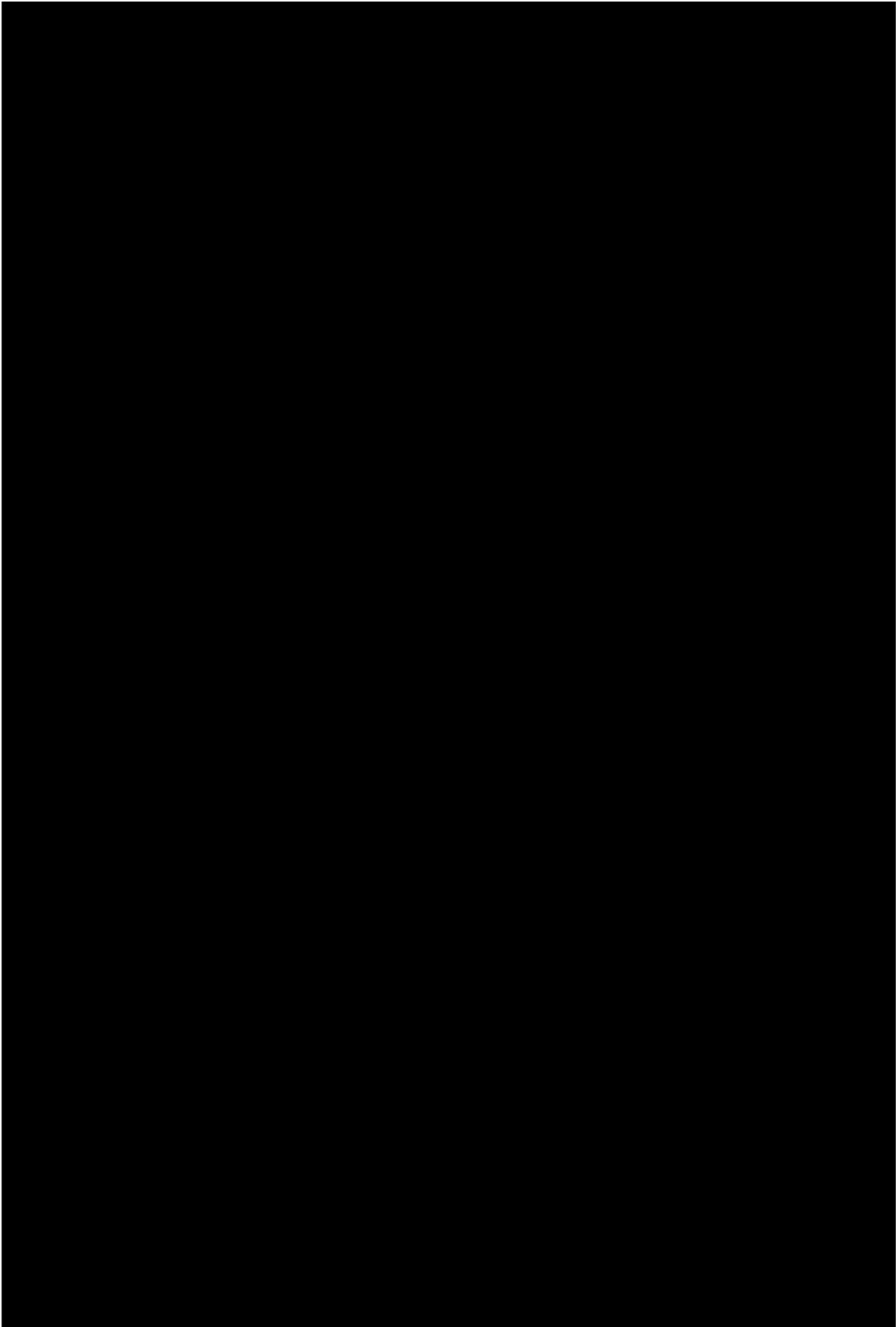
4.4.3

4.4.4

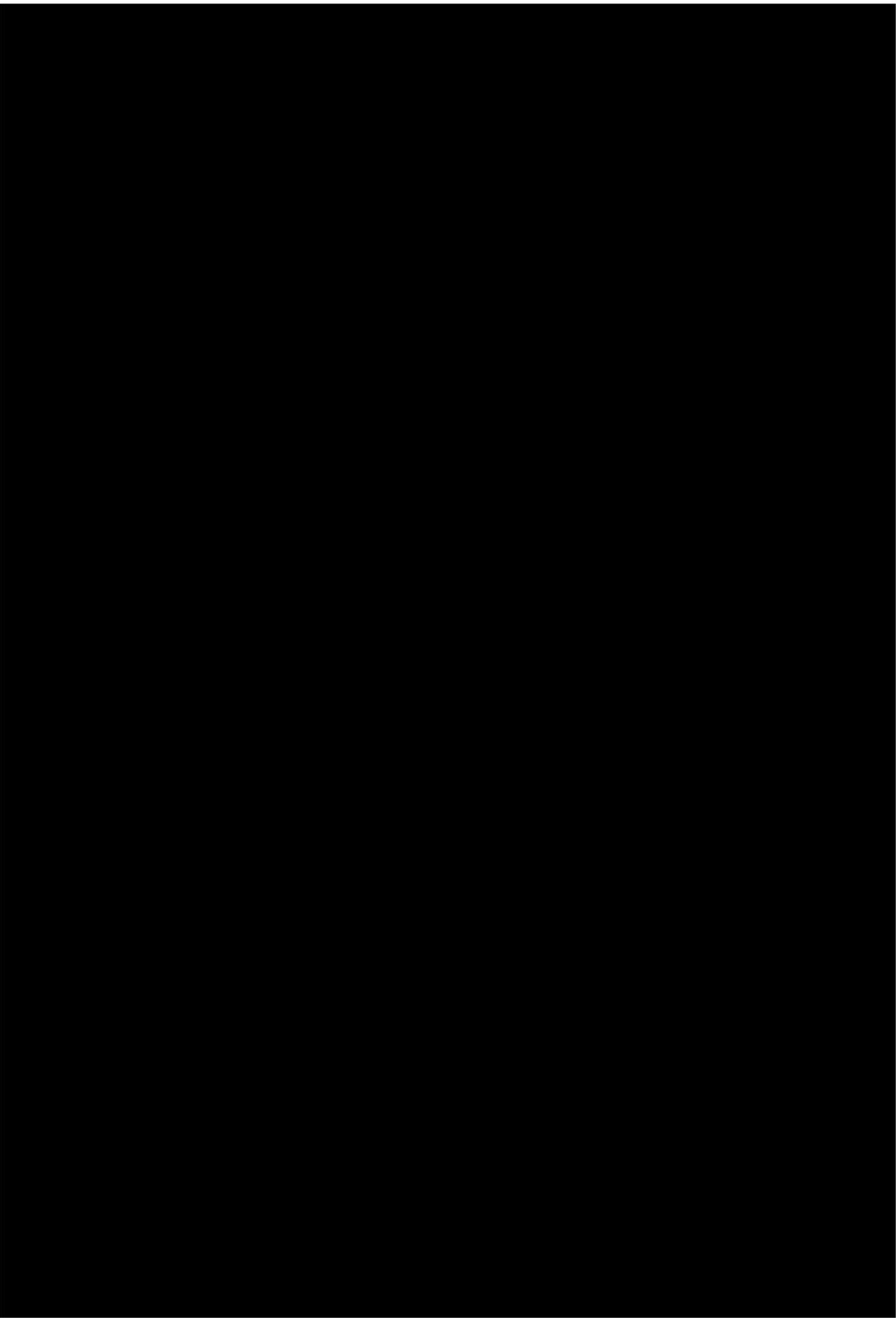
4.4.5

4.4.6

4.5



4.5.1



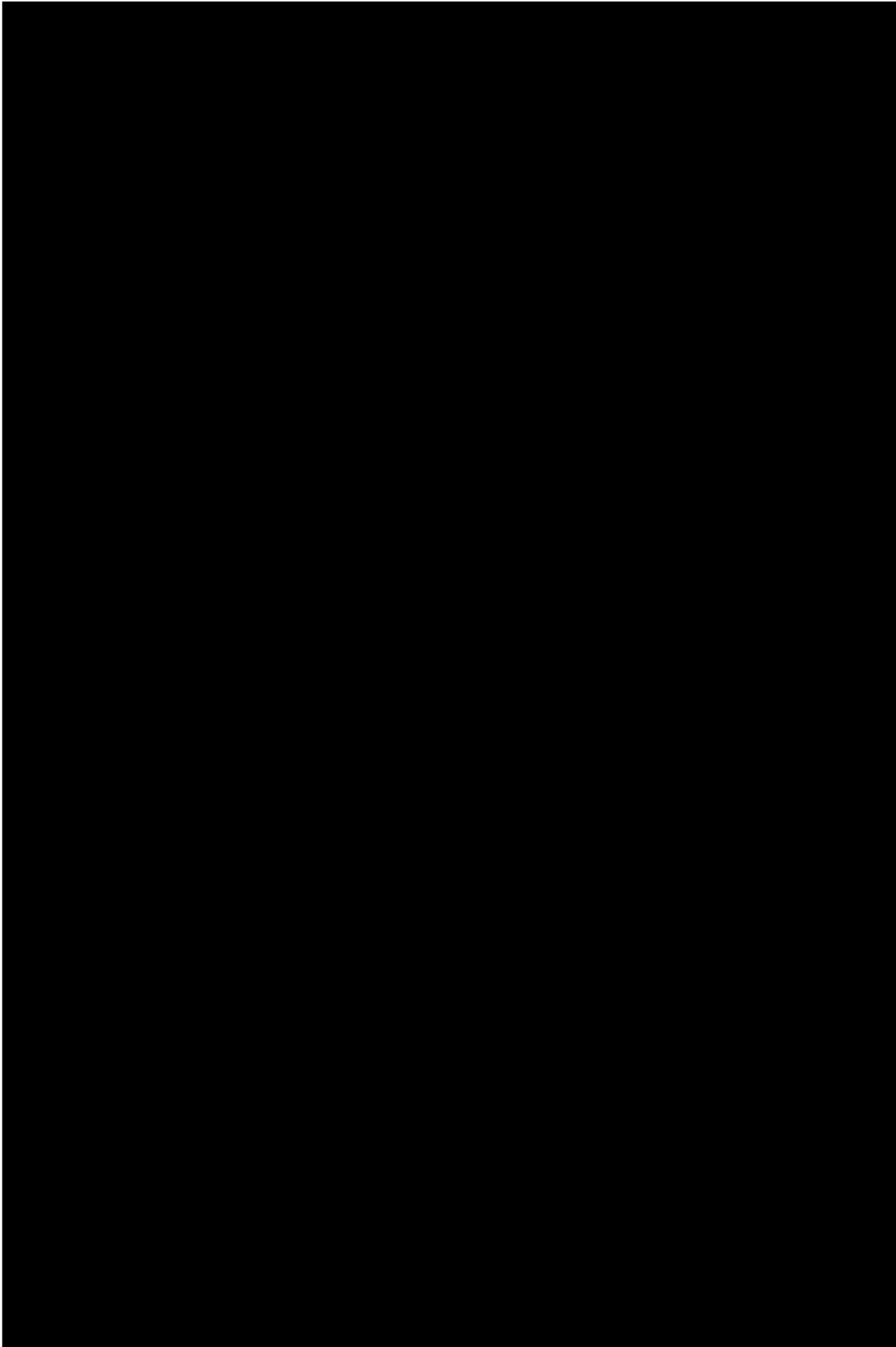
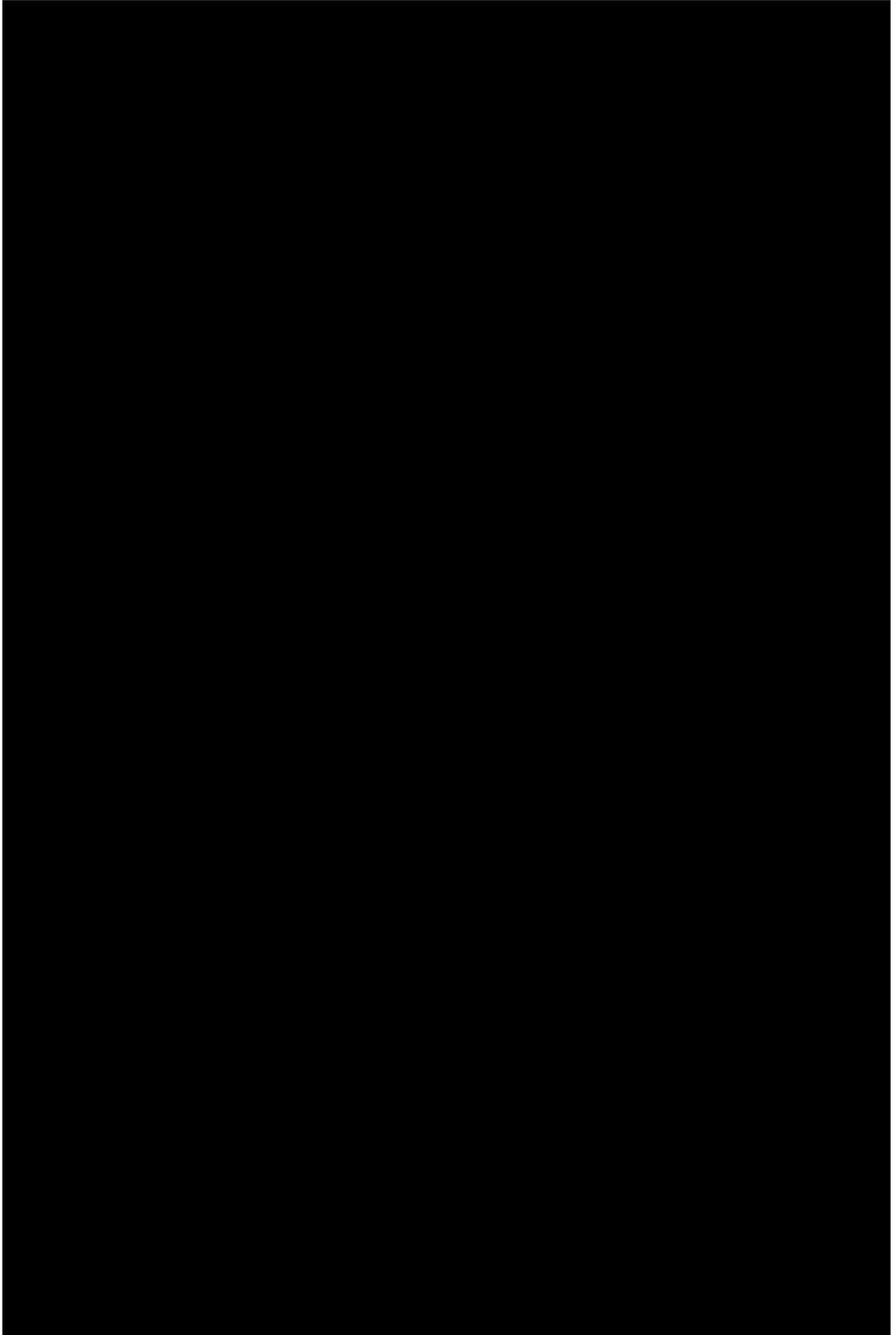
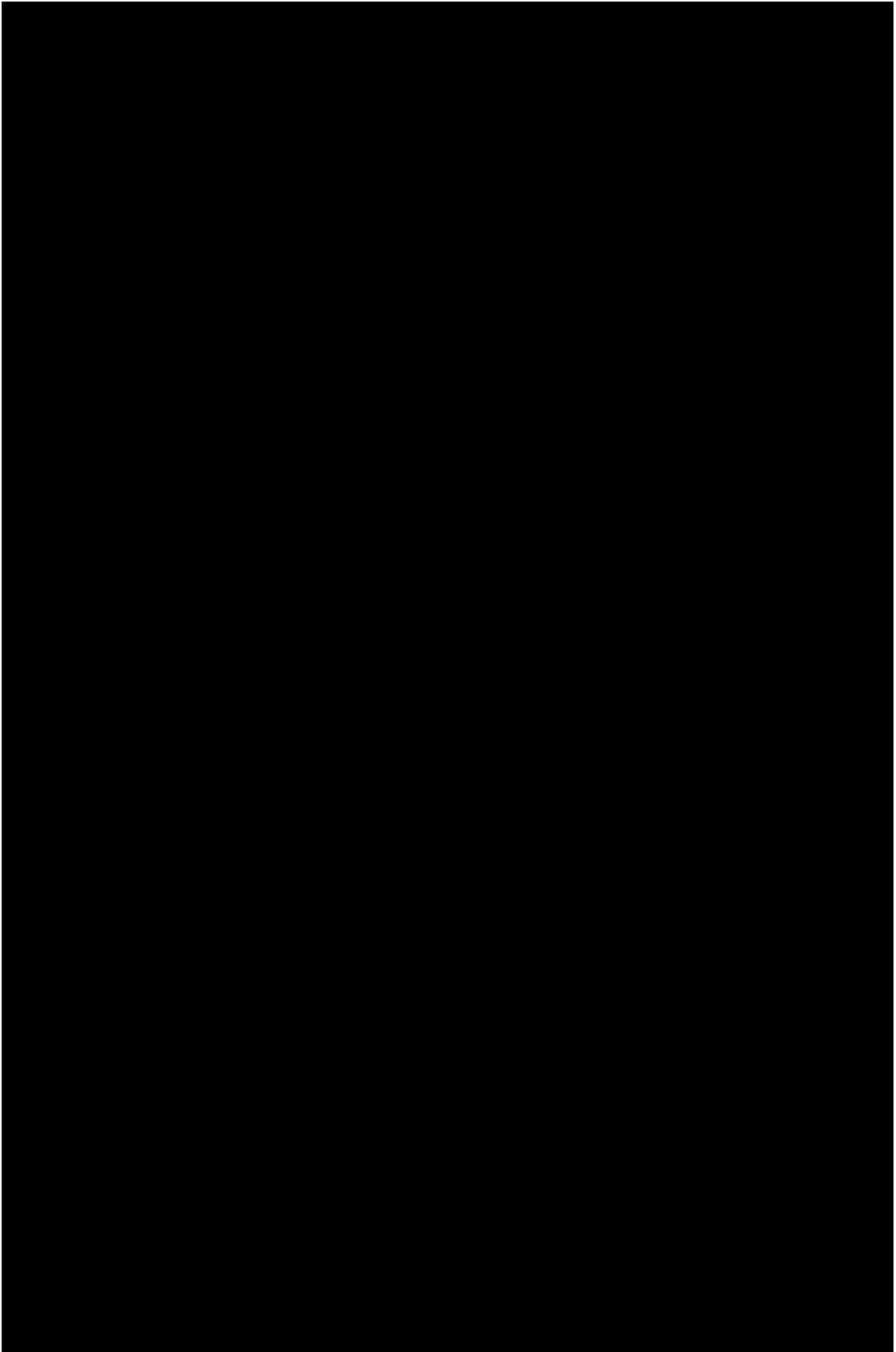


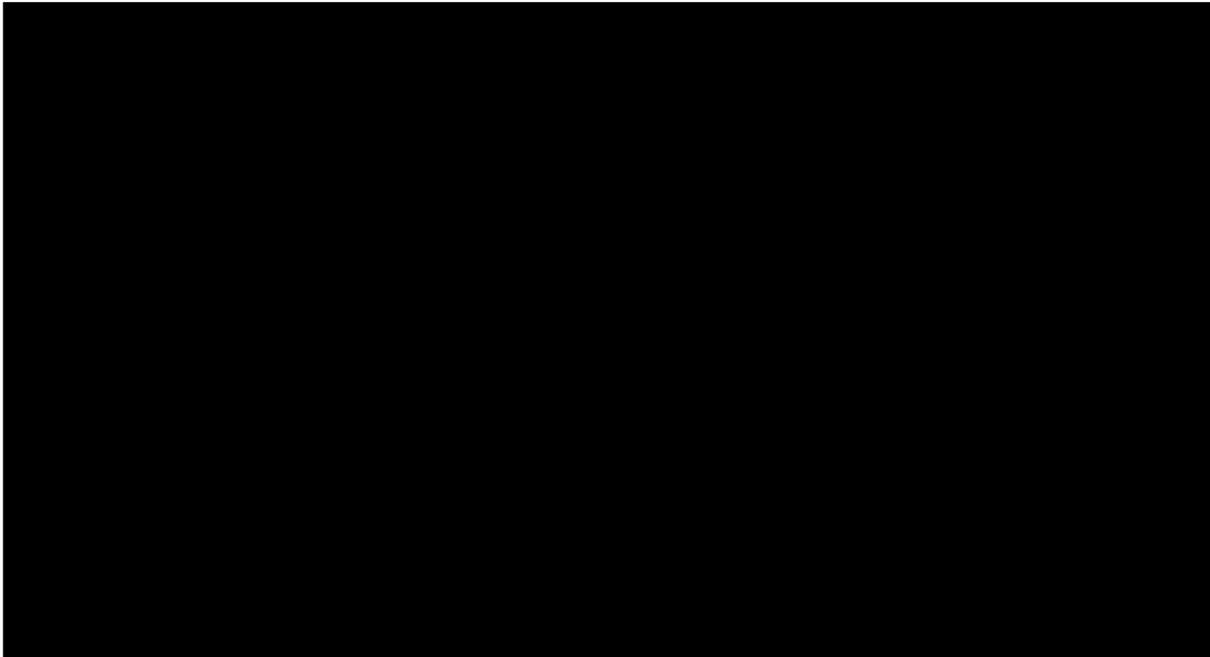
FIGURE 4-40



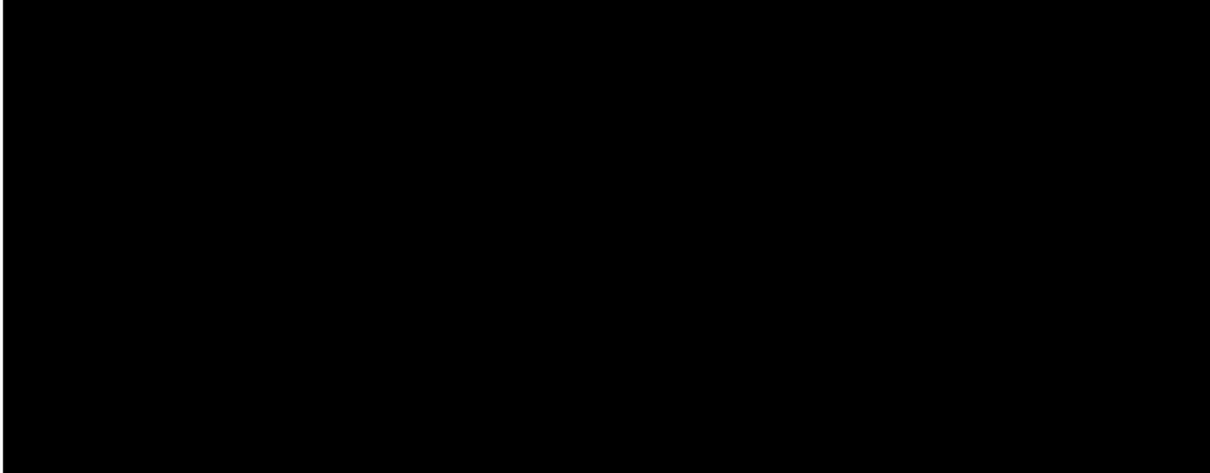
4.5.2



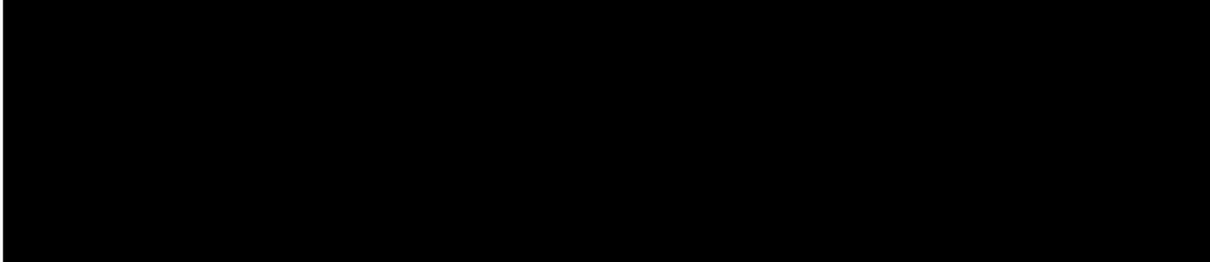
4.5.2.1



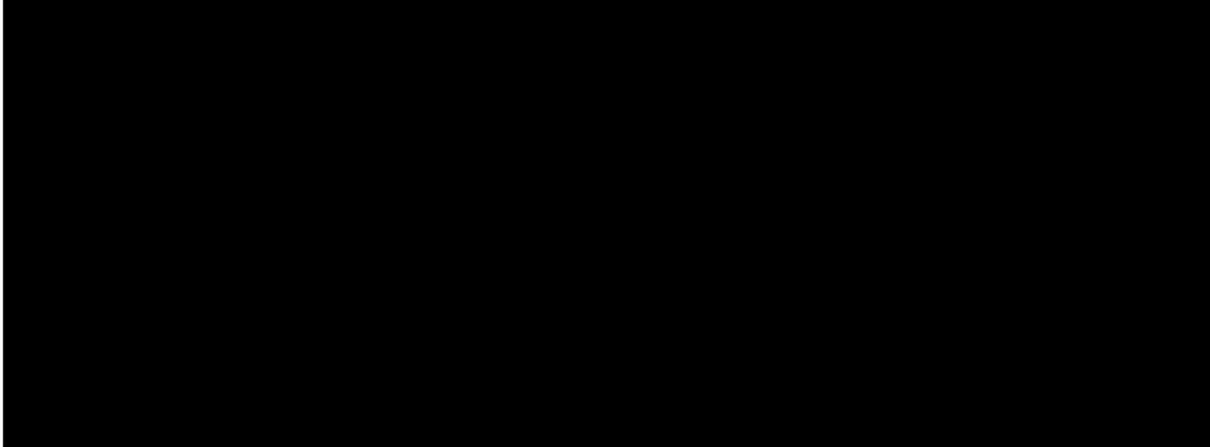
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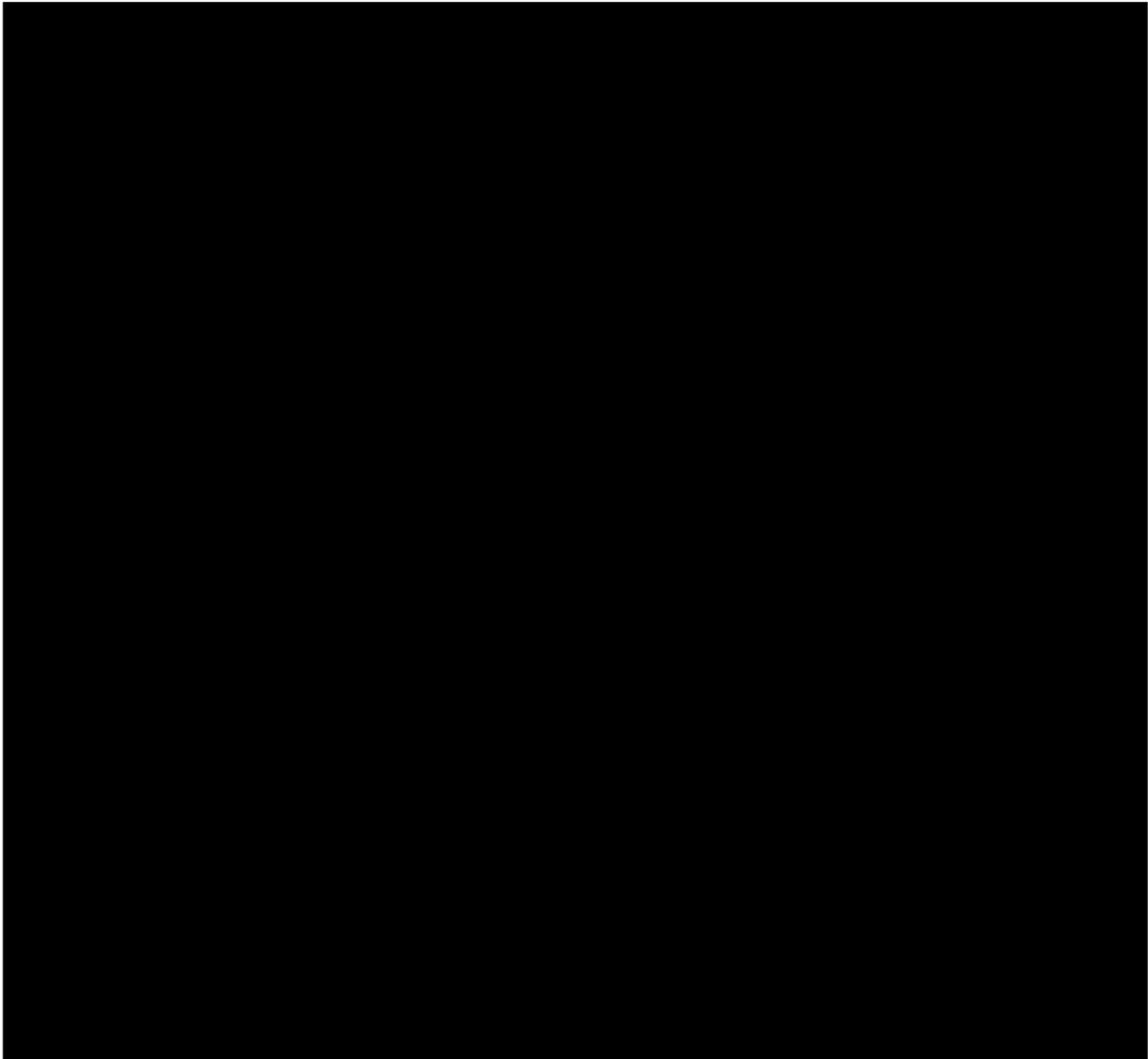


4.5.2.3



4.5.3





5. Delivery Plan



The Excelsior Connect Project Participants have developed a scheduling and settlement approach that aligns with the operating philosophy of New York Independent System Operator (NYISO), [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

By combining this transmission operation model with hourly matching as described in the following section, Excelsior Connect meets the goals of the CLCPA and Tier 4 program to deliver incremental clean energy into New York City, reducing the dependence on fossil fuels and increasing renewable penetration in the state, all while requiring minimal changes to the existing NYISO tariff or NYISERDA settlement mechanisms.

5.1

[REDACTED]

FIGURE 5-1

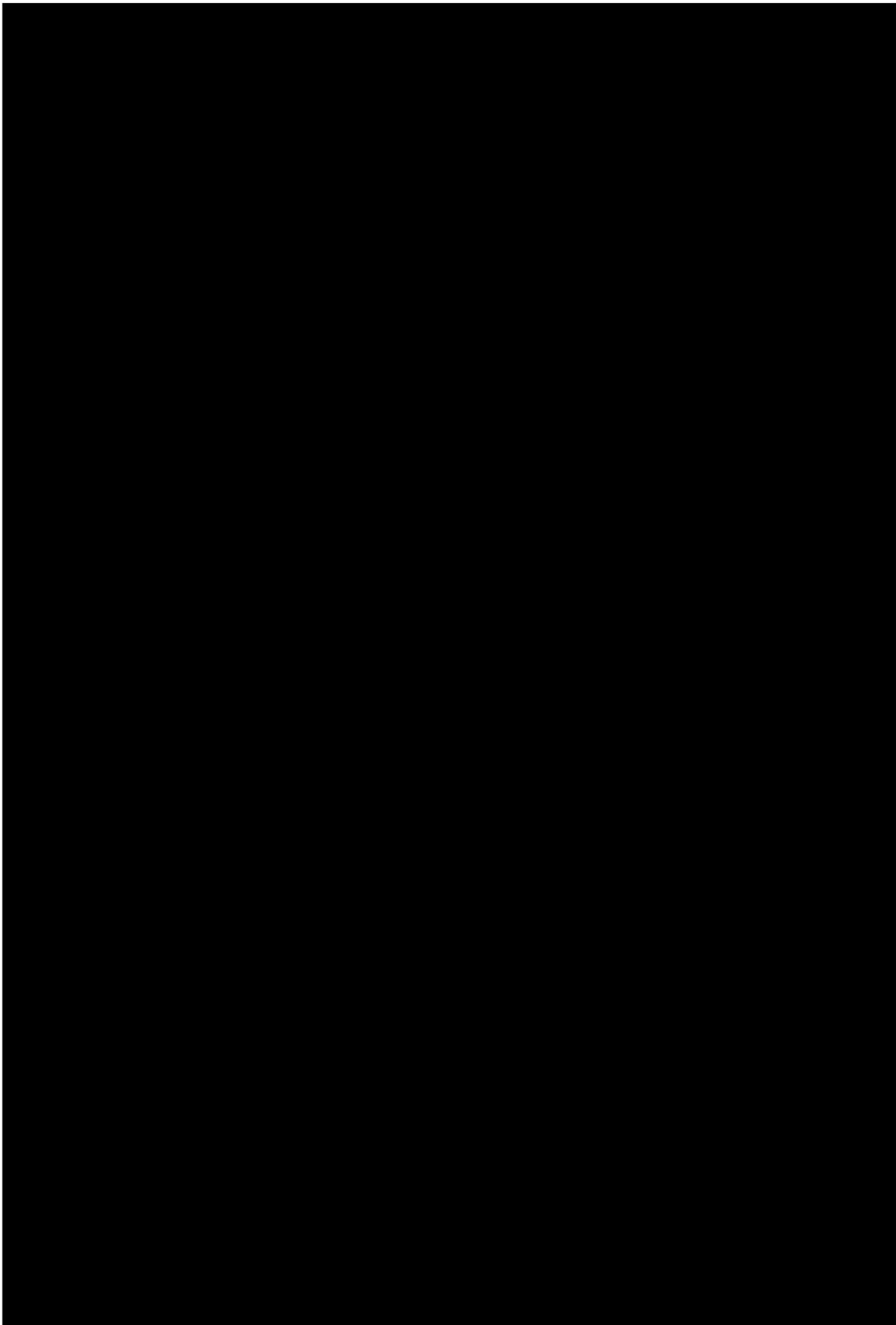
[REDACTED]

This is supported by the independent production cost modeling performed by [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

TABLE 5-2

Energy from
the modeled
Tier 4 resources
delivered to Zone J

5.2



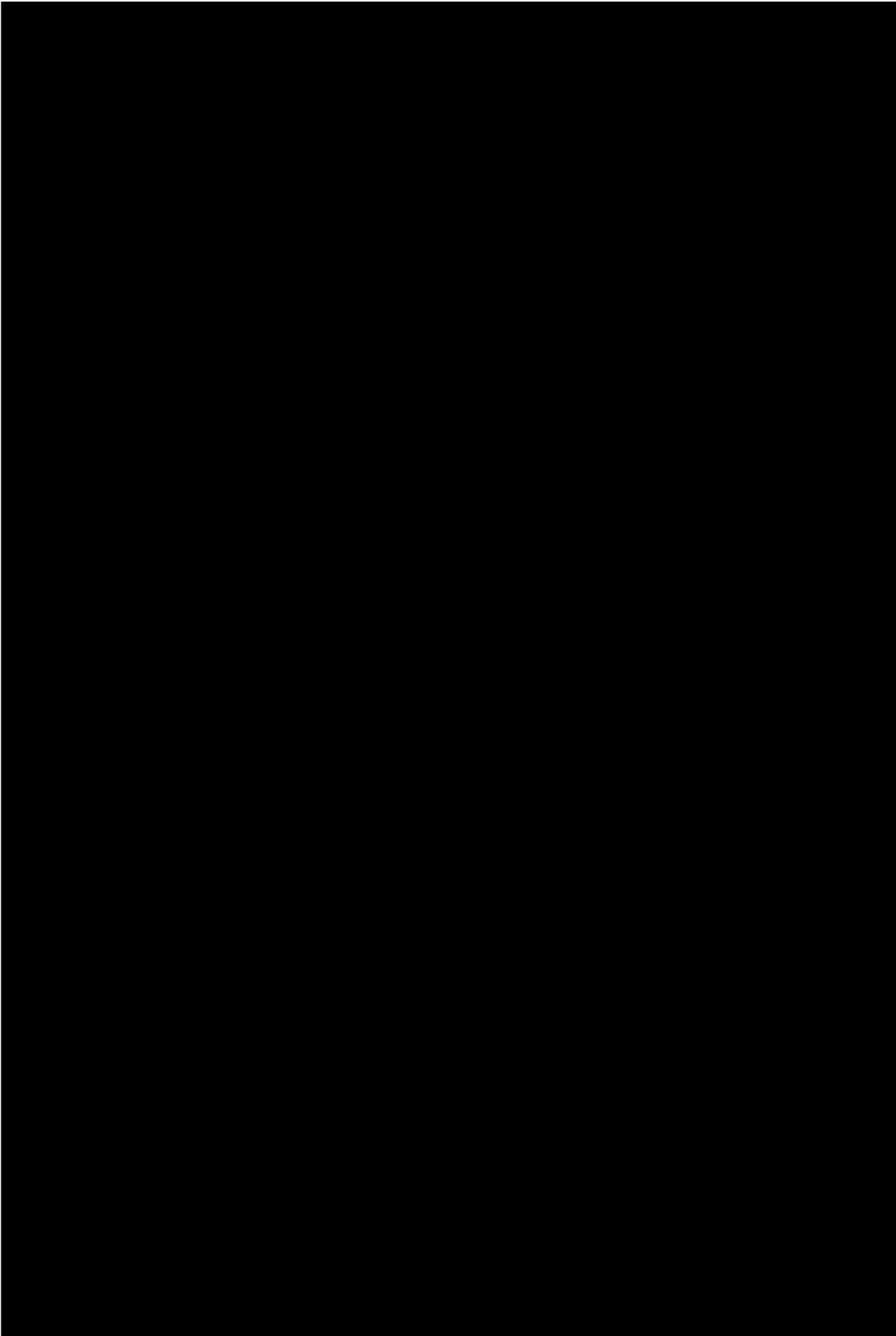
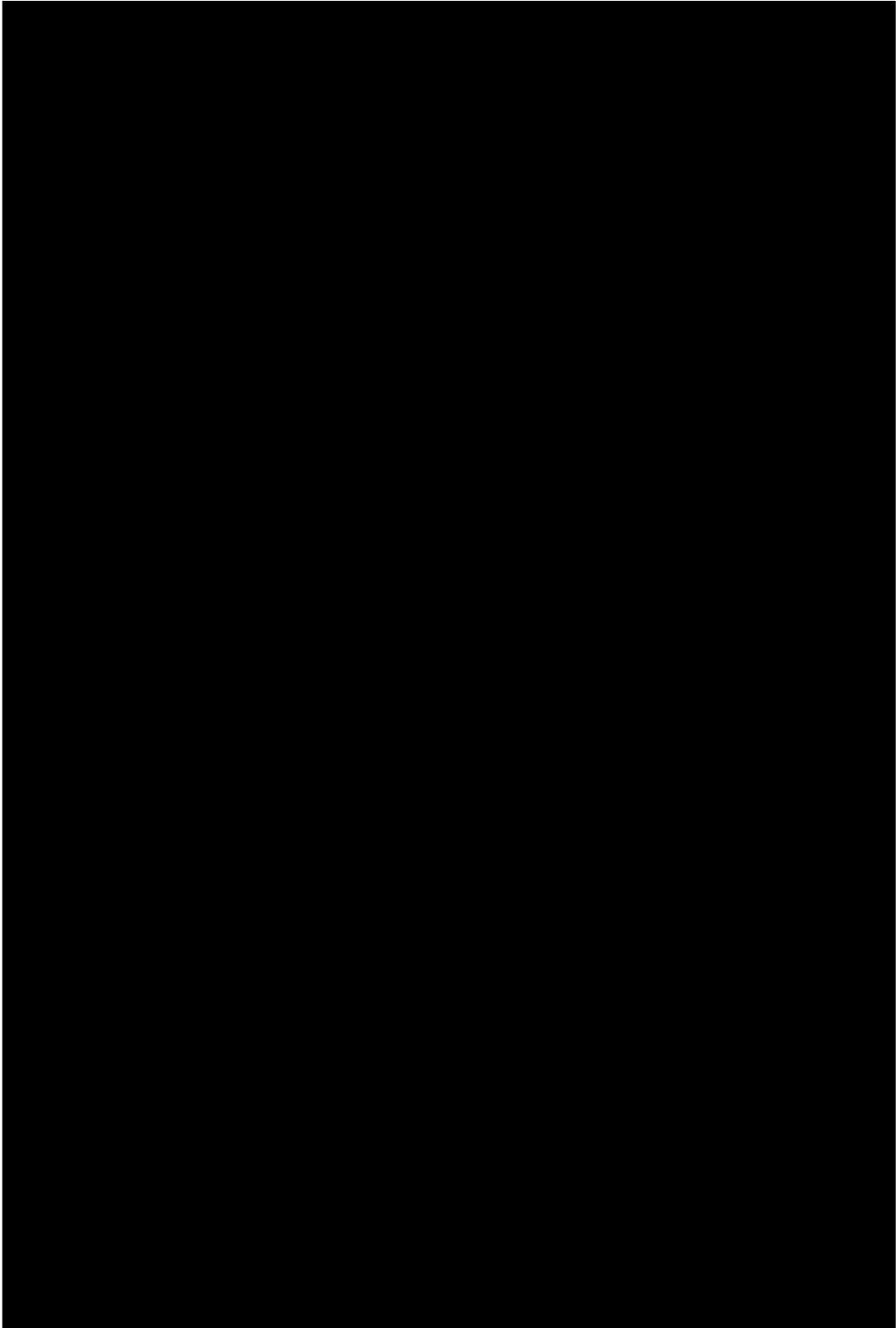


TABLE 5-3

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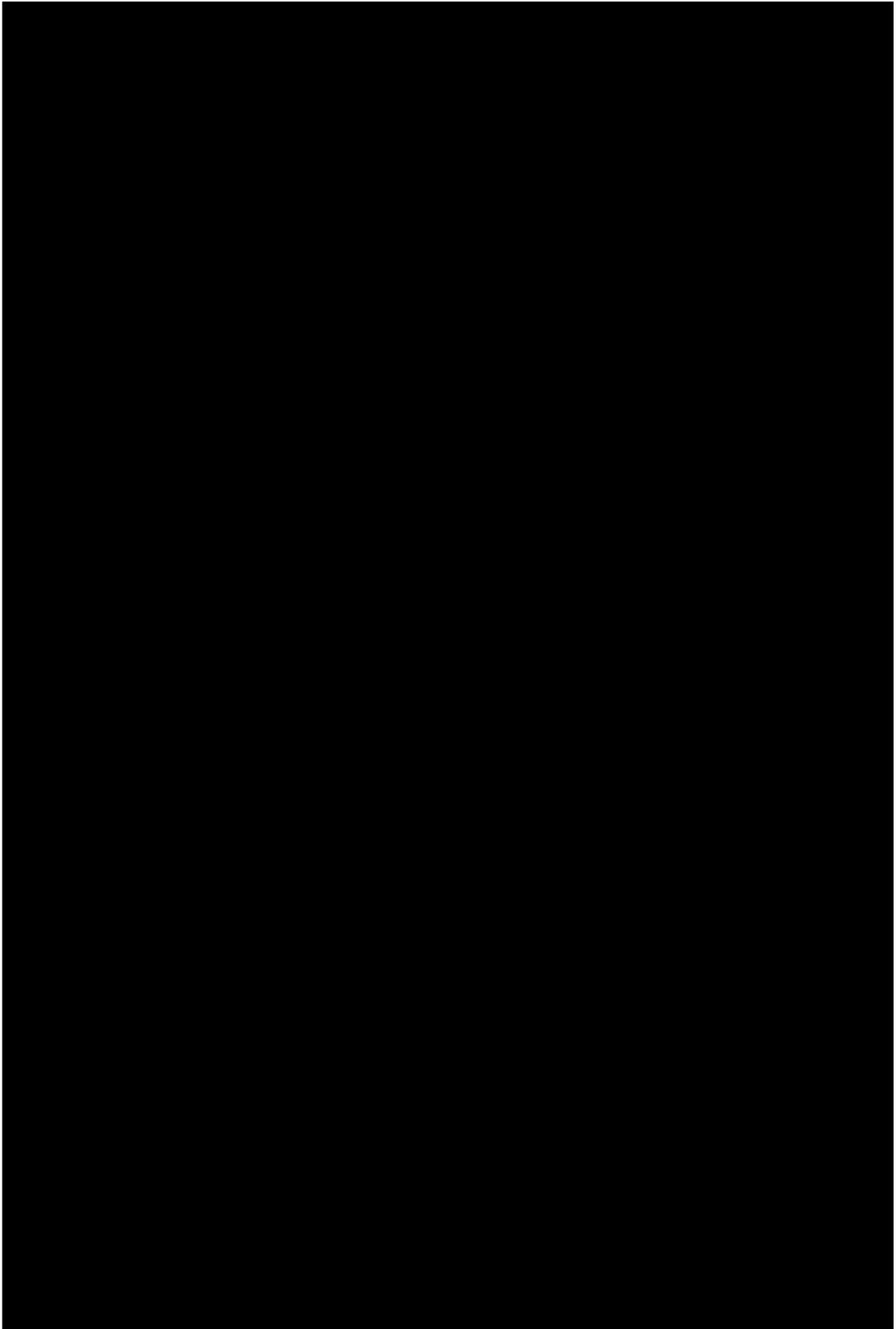
TABLE 5-4

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5.5



5.5.1

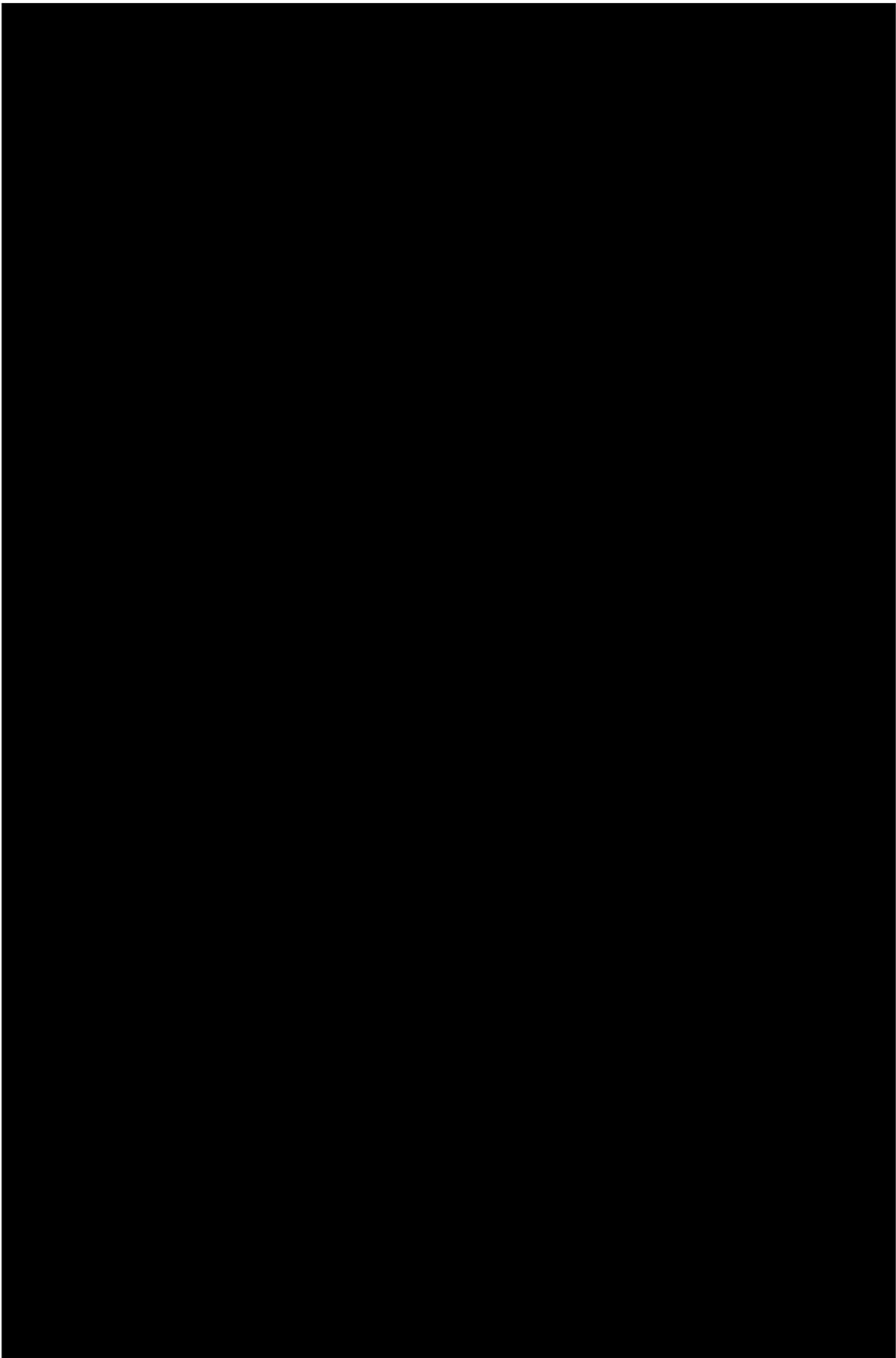
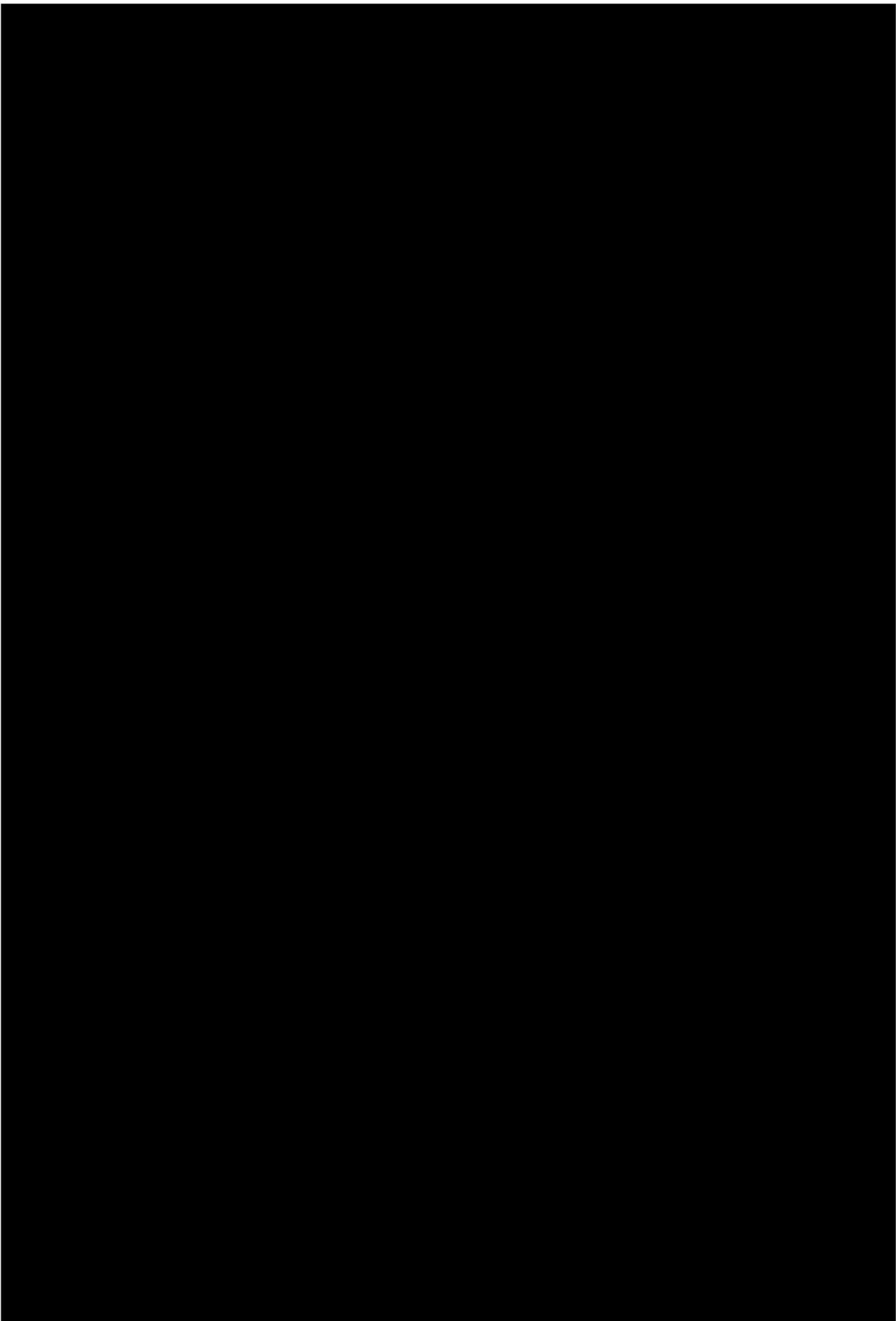


TABLE 5-5



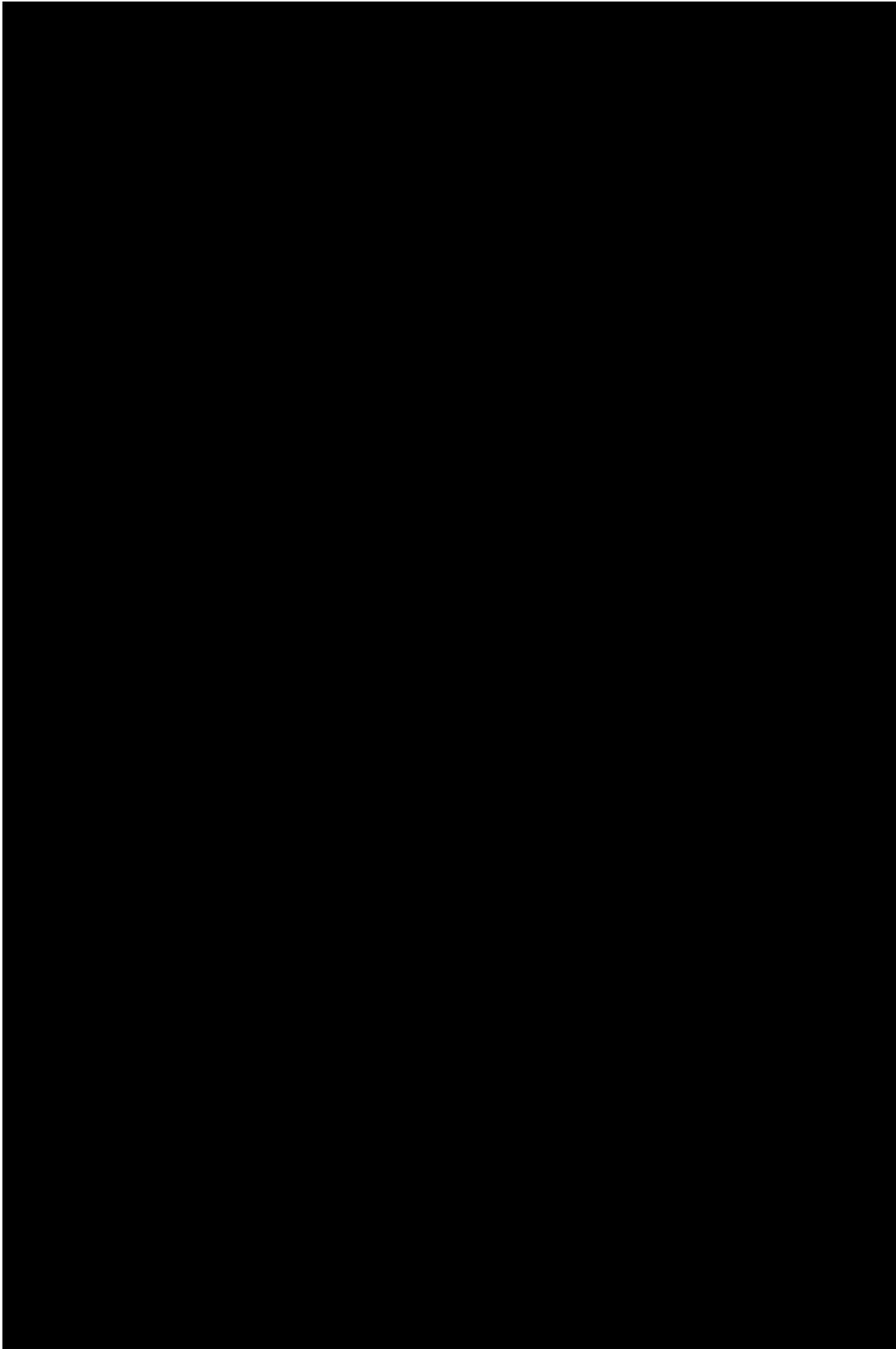
5.5.1.1

TABLE 5-6

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5.5.1.2

TABLE 5-7

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5.5.1.3 TPDA – Stability Peaker Retirement Sensitivity

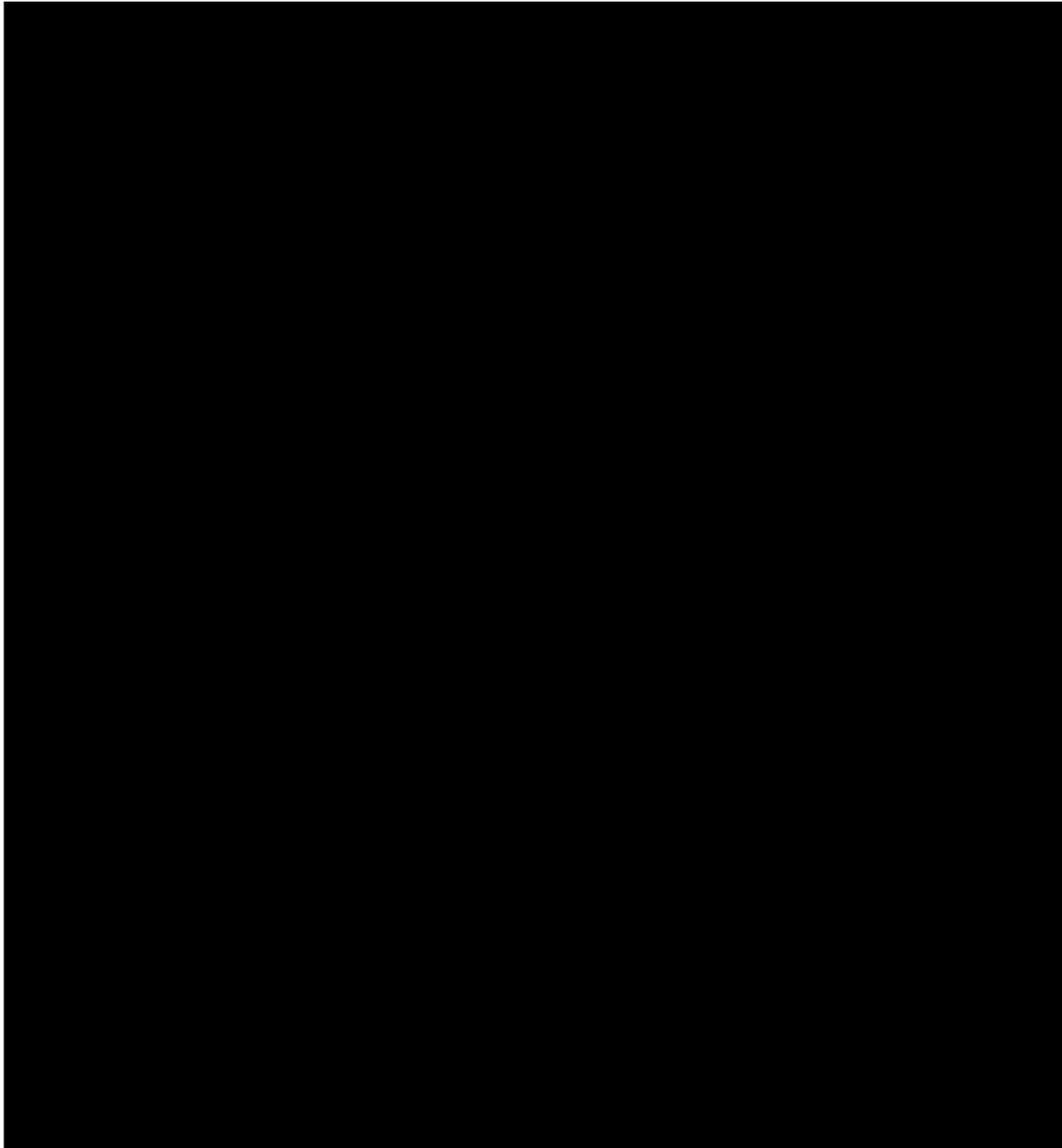


FIGURE 5-8

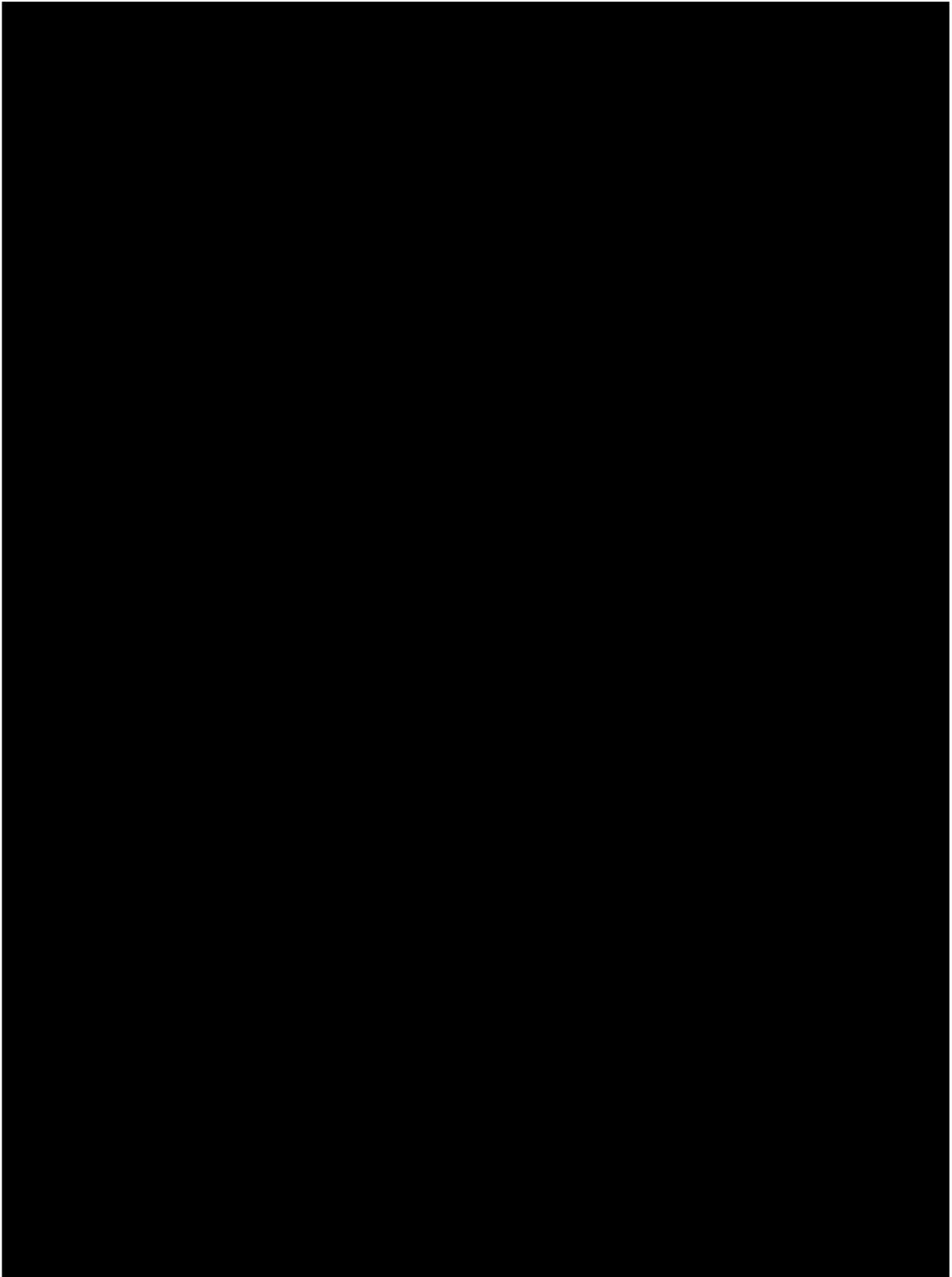


FIGURE 5-9



1 NYISO Presentation on RNA Stability Findings: https://www.nyiso.com/documents/20142/20255668/03%202020-2021RPP_PostRNABaseCaseUpdates_Dynamics.pdf/60e9535a-a5c2-2b43-7d24-97046c54575e

5.5.2



5.5.2.1

5.5.2.2

5.5.3

FIGURE 5-10



5.5.3.1

5.5.3.2

5.5.3.3

5.5.4

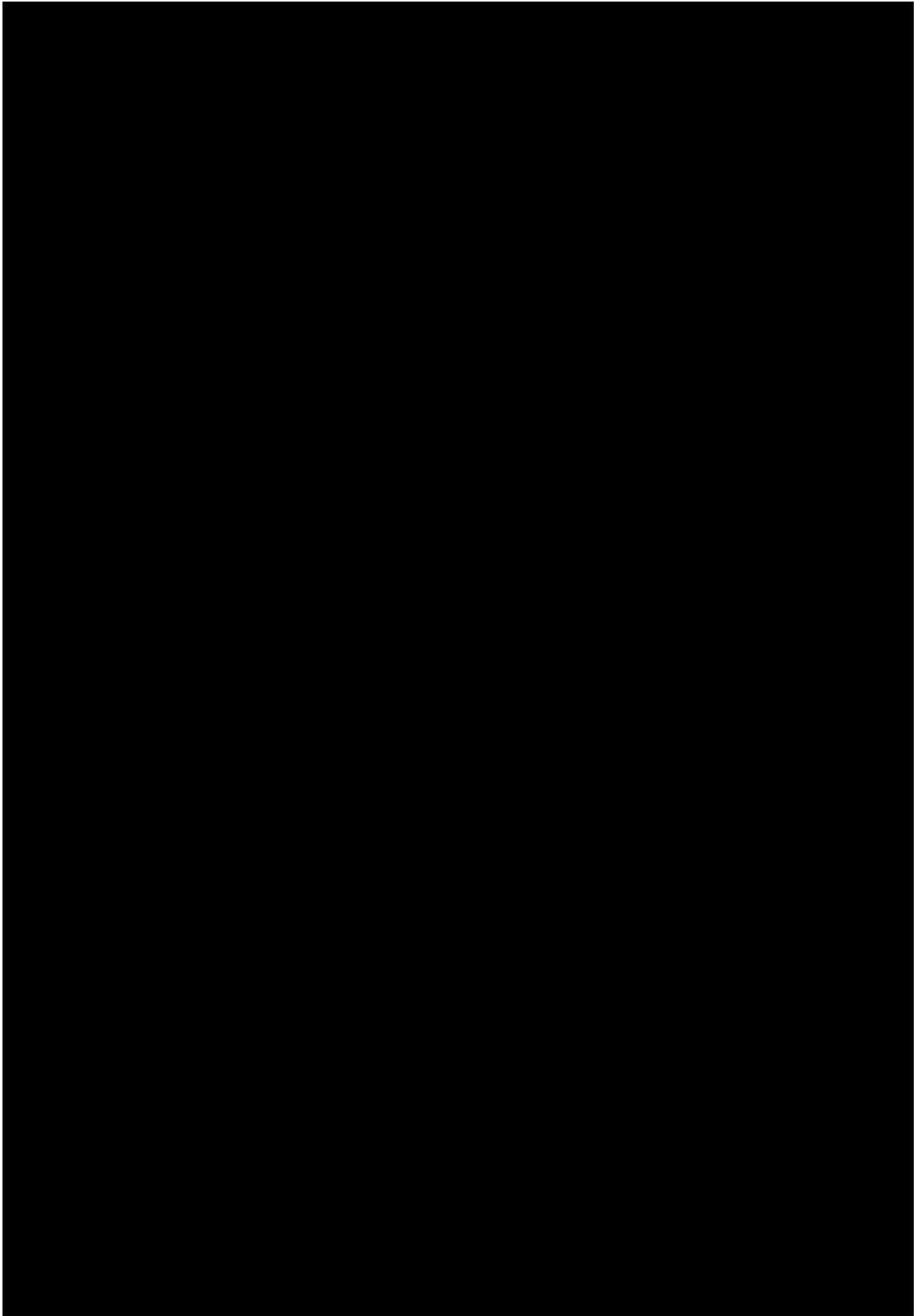
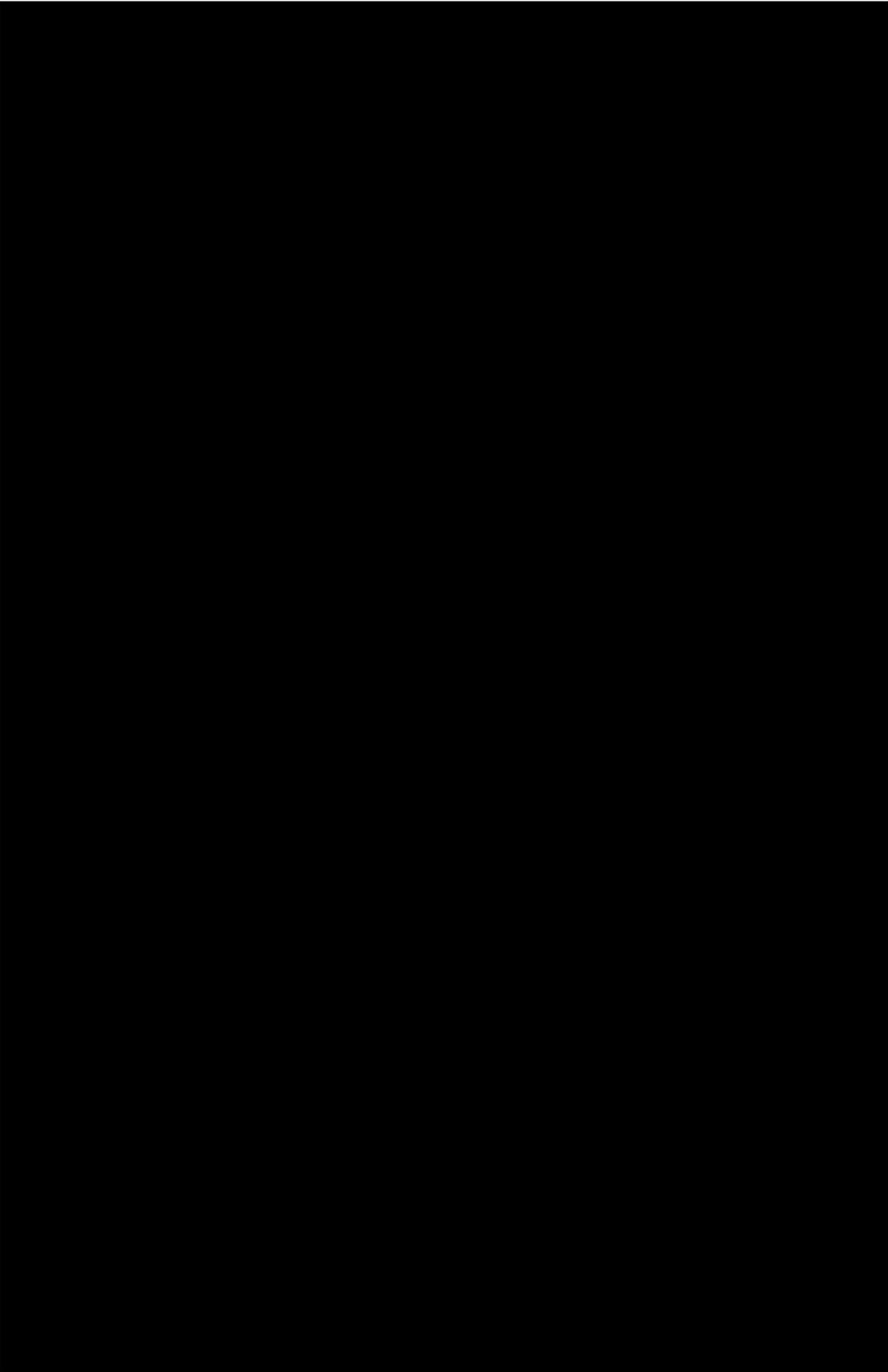


Figure 5-11



5.5.5

5.5.6

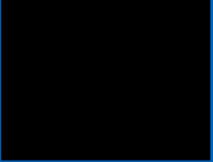
5.5.7

5.5.7.1

TABLE 5-12

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TABLE 5-13

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5.5.7.2

TABLE 5-14

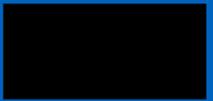
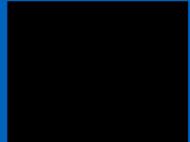
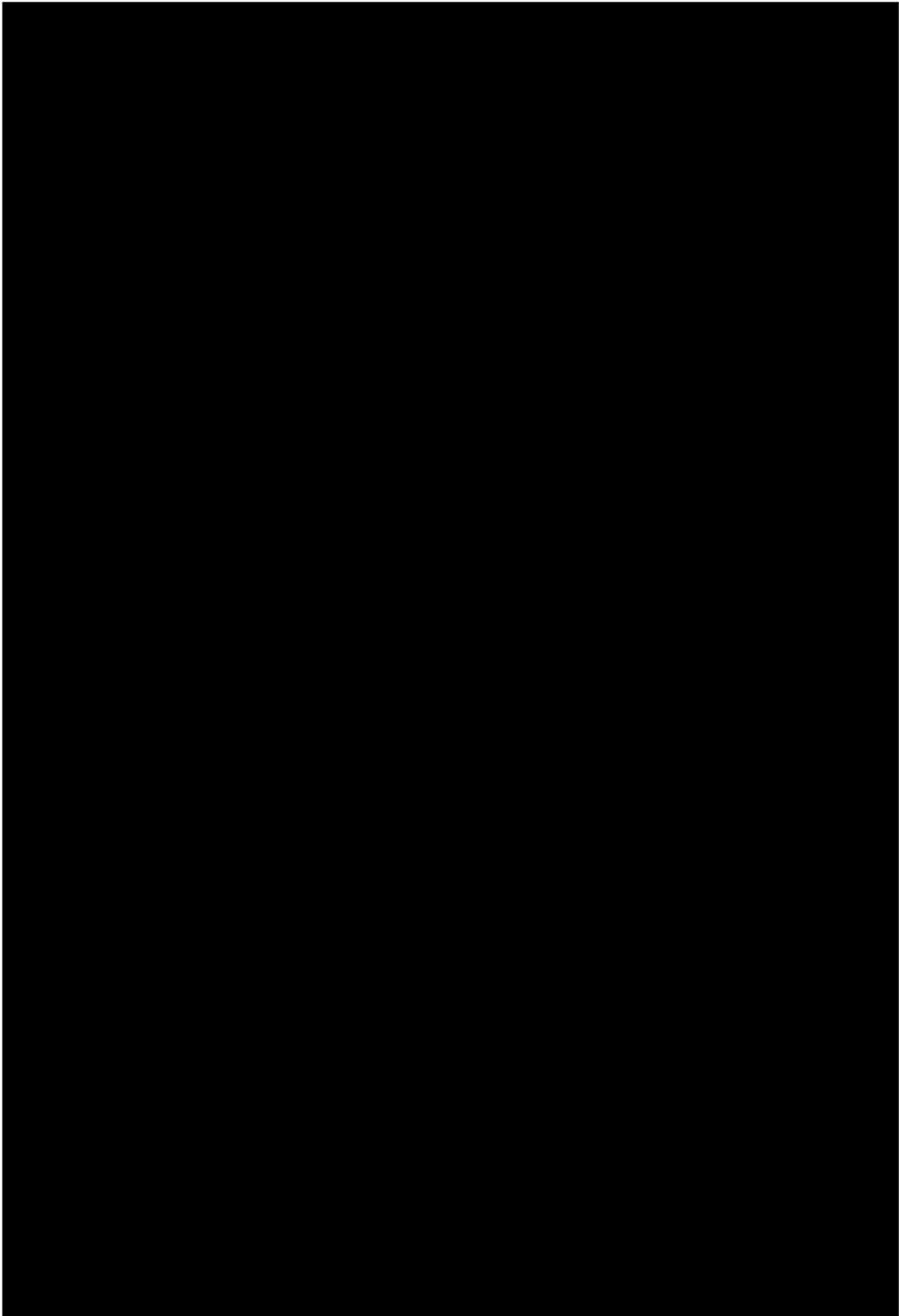
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TABLE 5-15

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5.5.7.3

TABLE 5-16

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5.5.7.4

TABLE 5-17

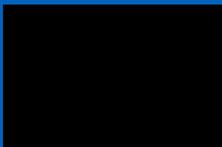
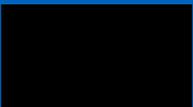
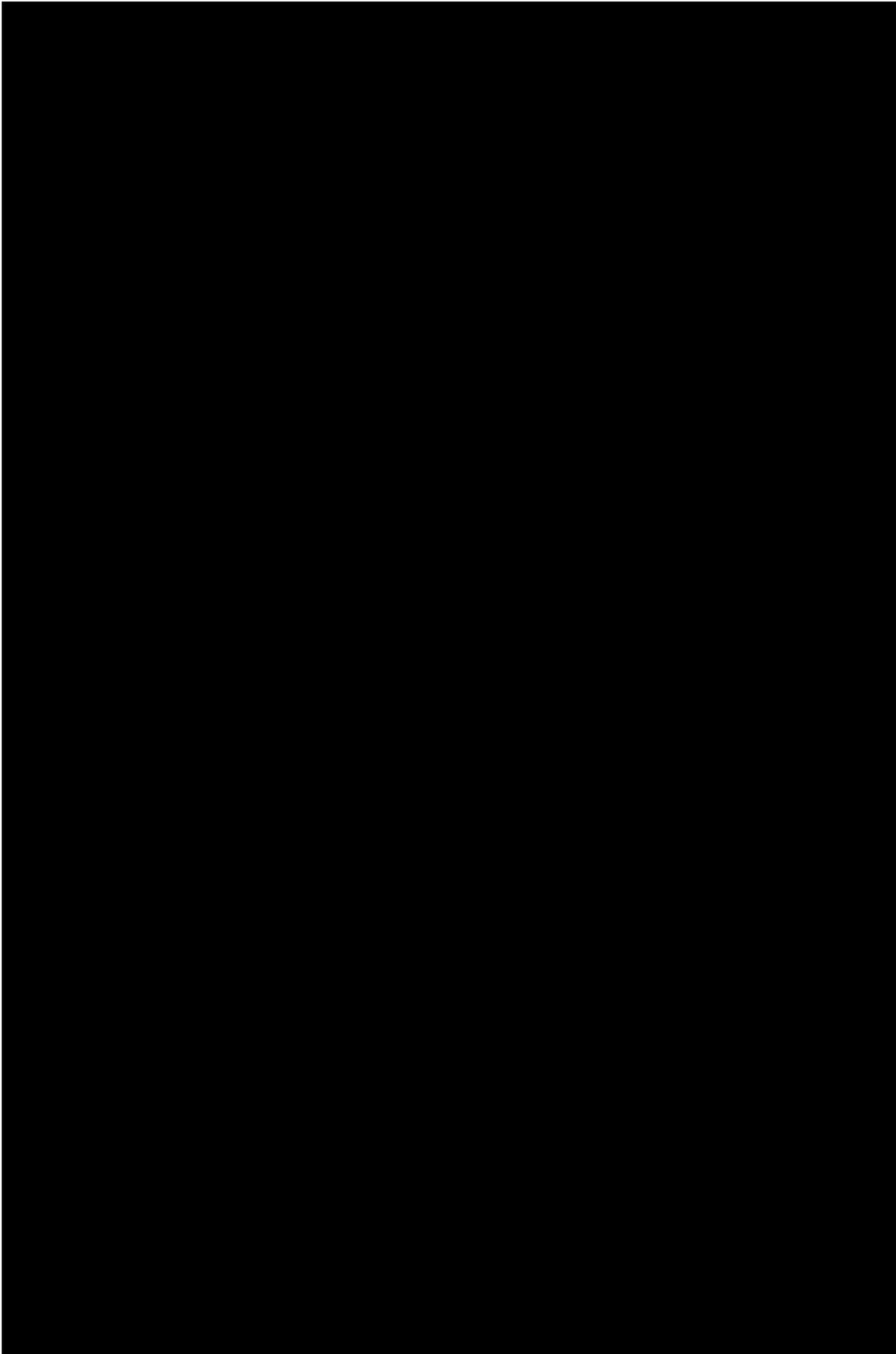
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TABLE 5-18

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5.5.7.5

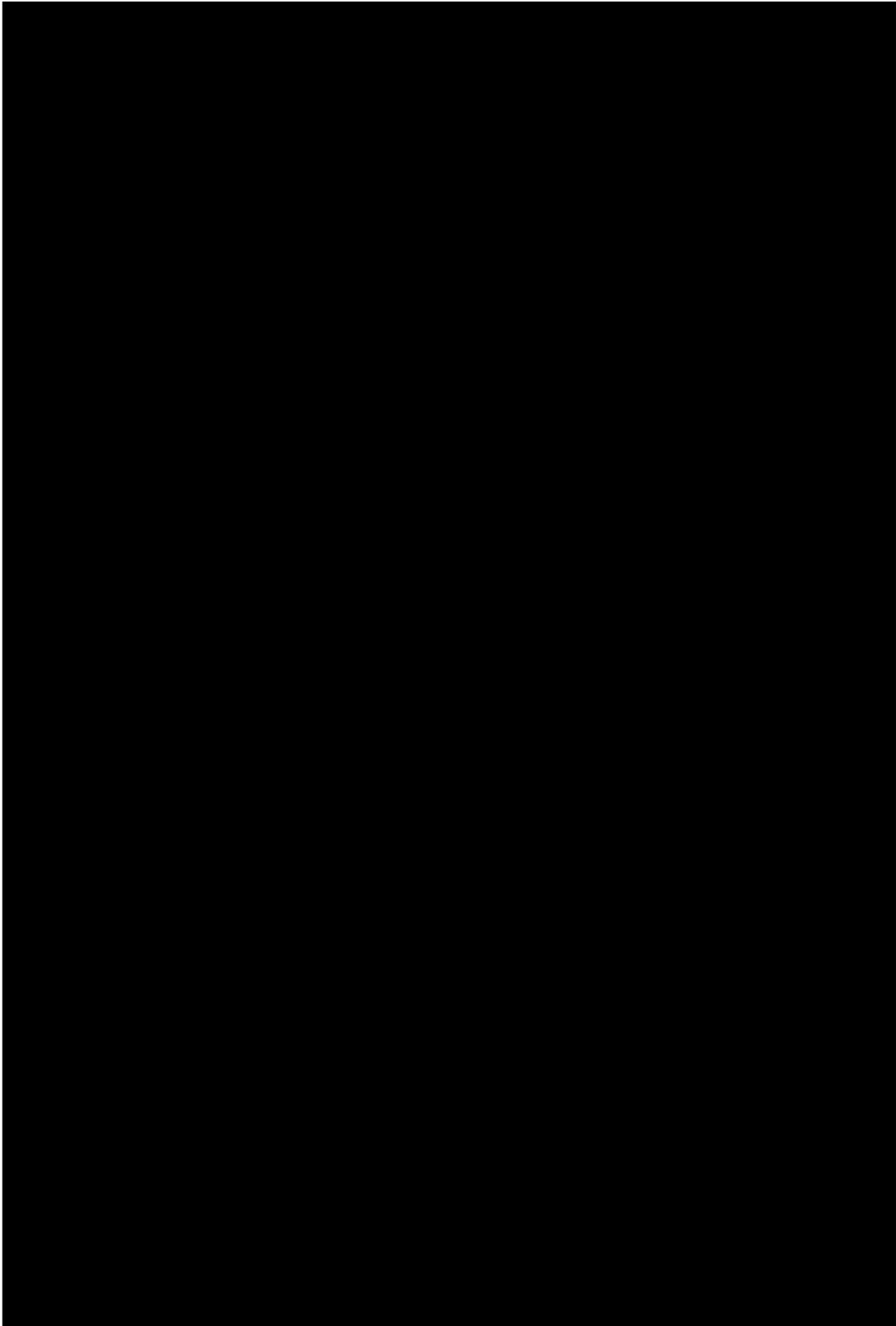


TABLE 5-19

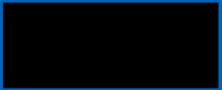
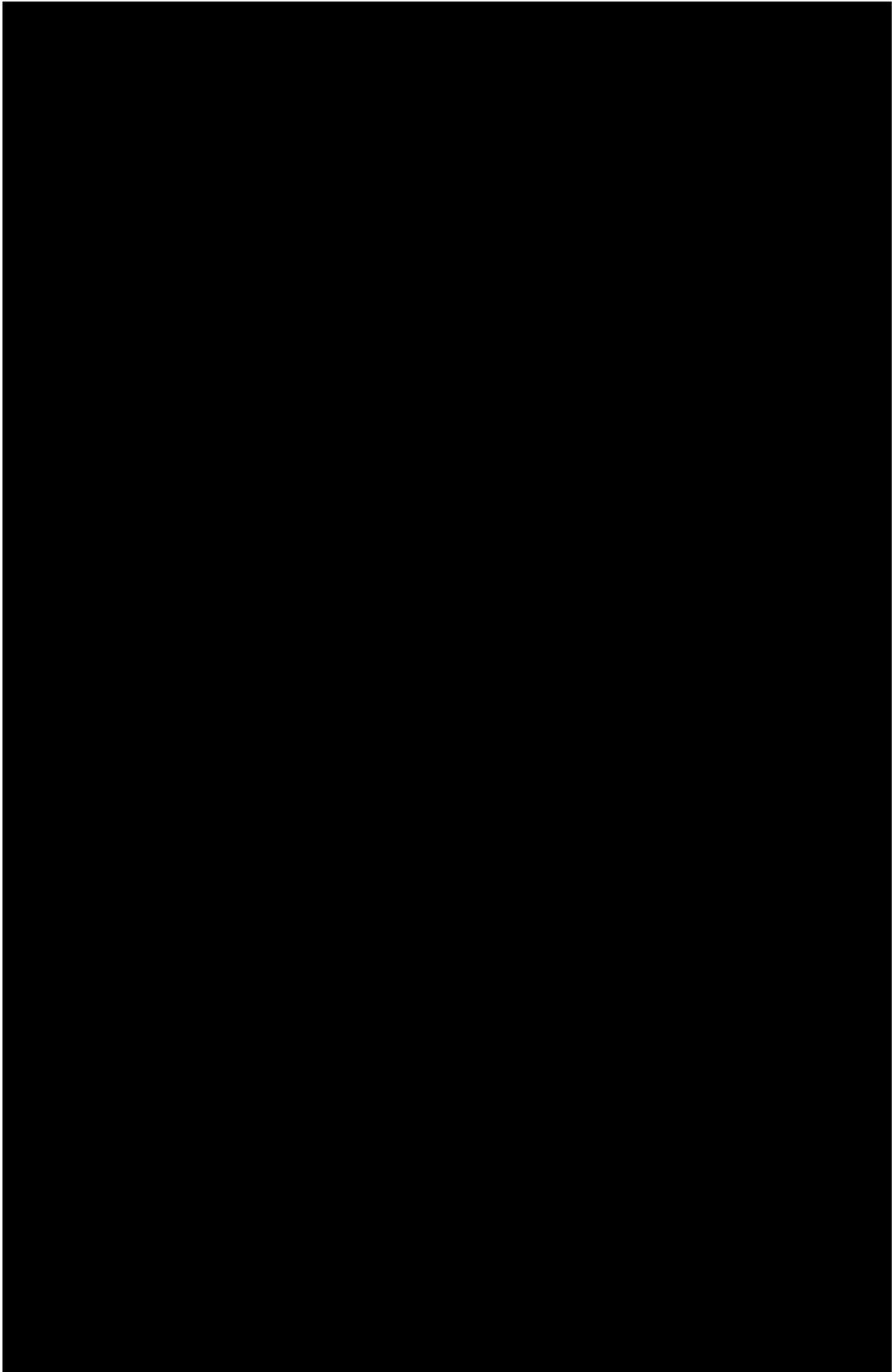
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5.5.8

5.5.9

5.6

TABLE 5-20

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6. Baseline Verification Plan

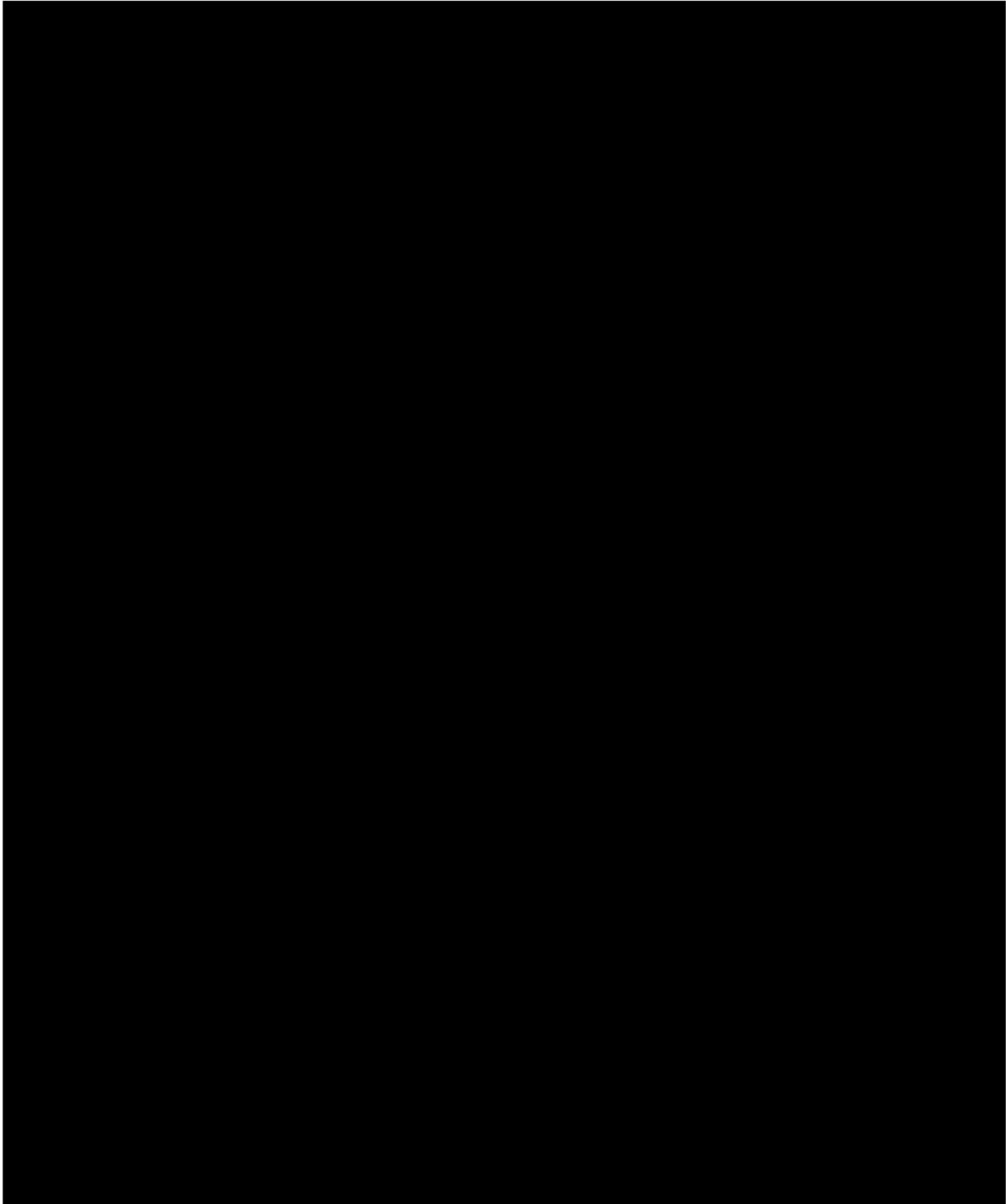


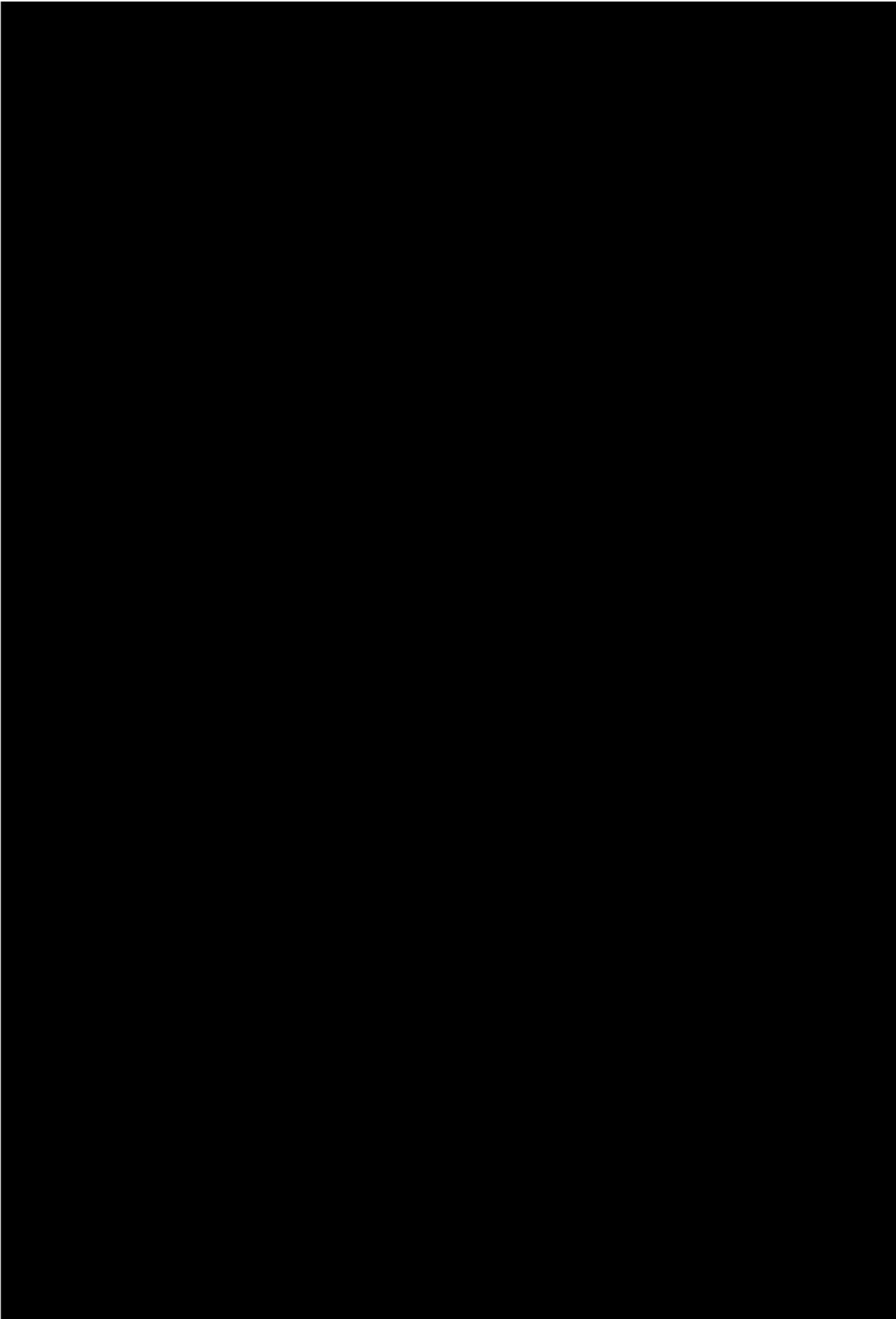
The Baseline Verification Plan is only applicable to projects that include hydropower resources.
Excelsior Connect does not include hydropower resources and as such, this section is not applicable.

7. Interconnection Plan

This section covers the status of each Resource's and the New Transmission interconnection application with the NYISO. All resources in this Excelsior Connect portfolio will complete the NYISO Interconnection Process (IP) and none of the projects will be required to complete a neighboring Area's IP. The queue position and related interconnection details for each interconnection request is discussed. All projects in the portfolio will be seeking [REDACTED] [REDACTED]. Please see the NYISO interconnection website for completed interconnection studies for each project. Proper clearance is required.

TABLE 7-1

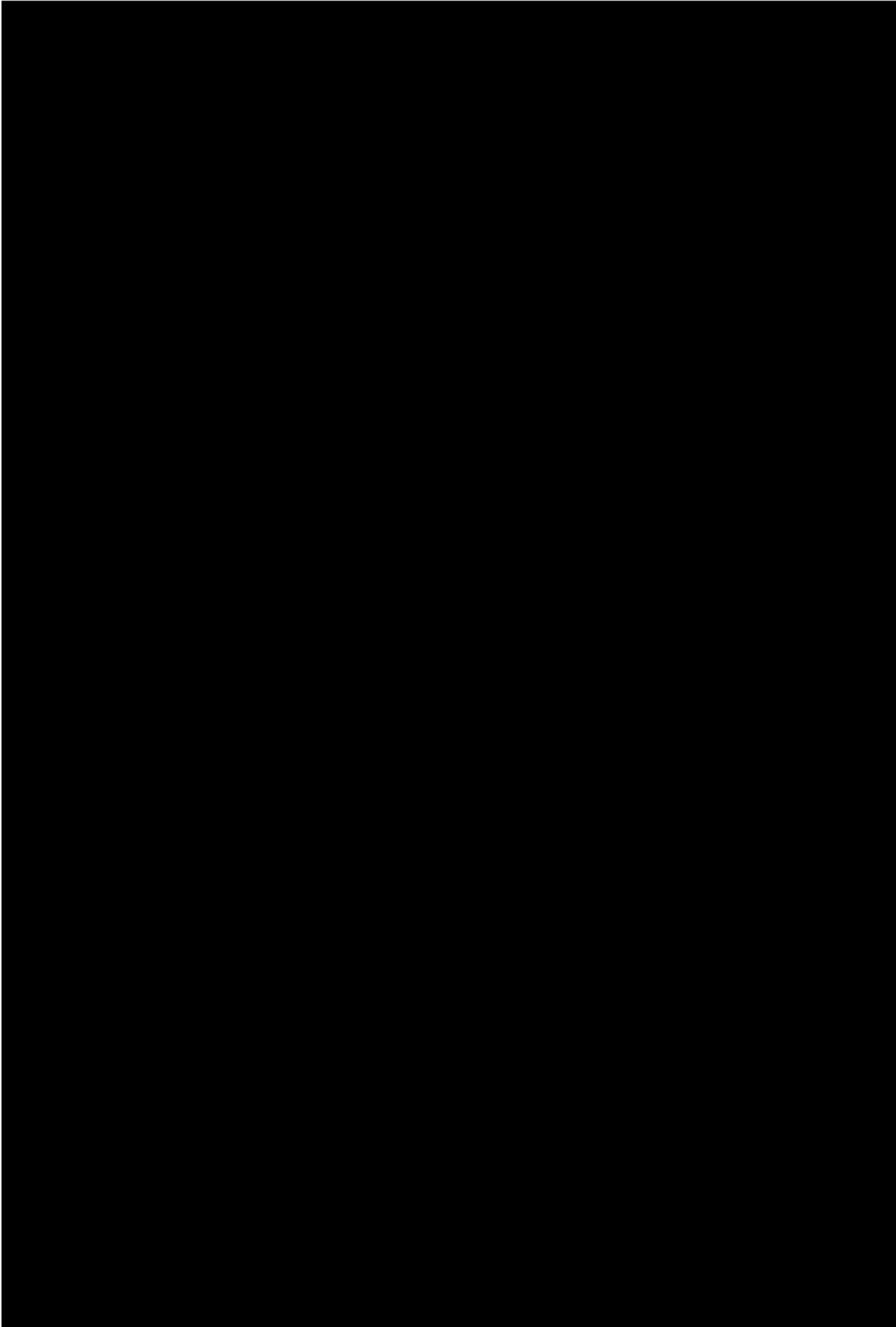




7.1

7.2

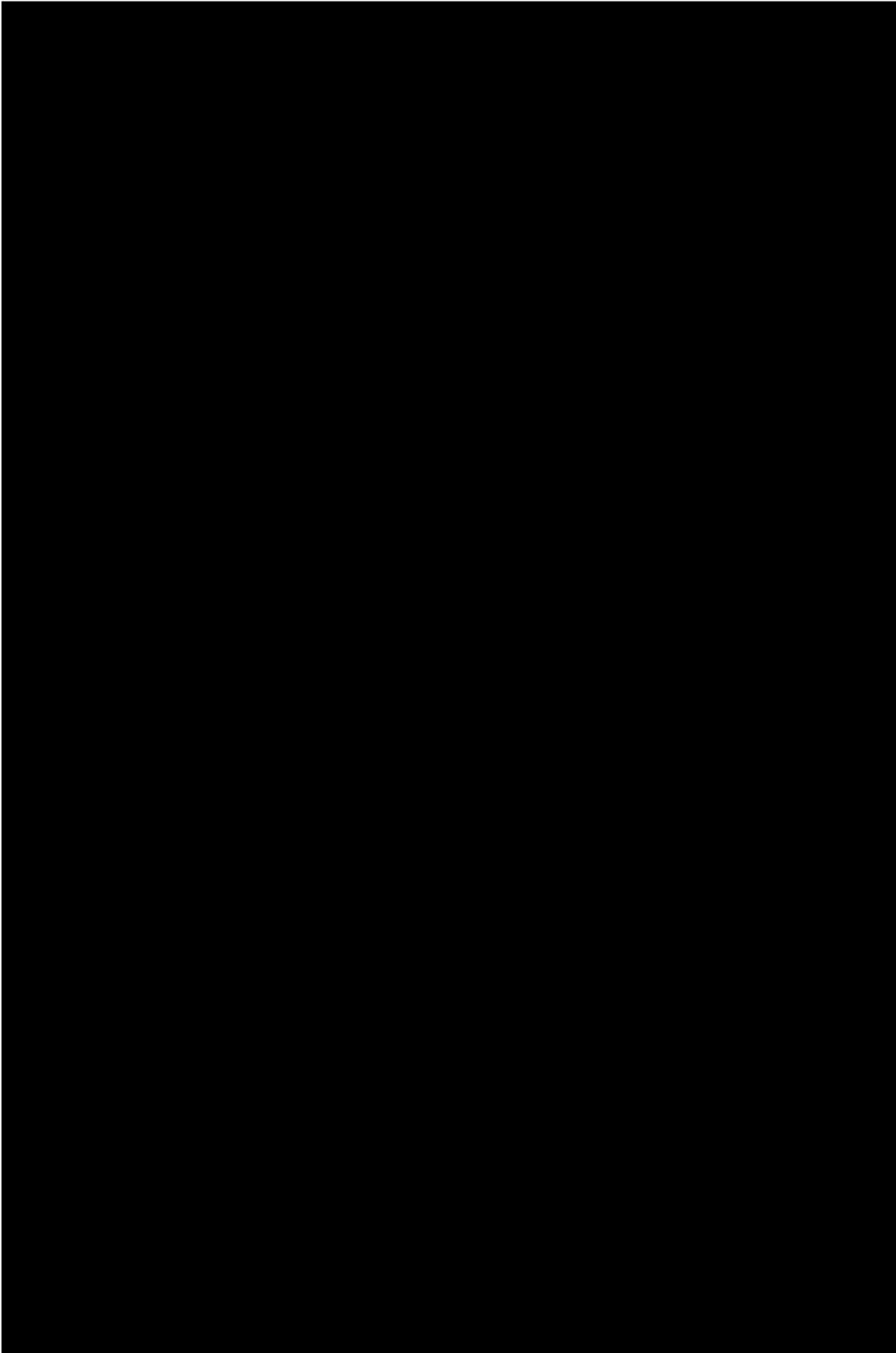
7.2.1



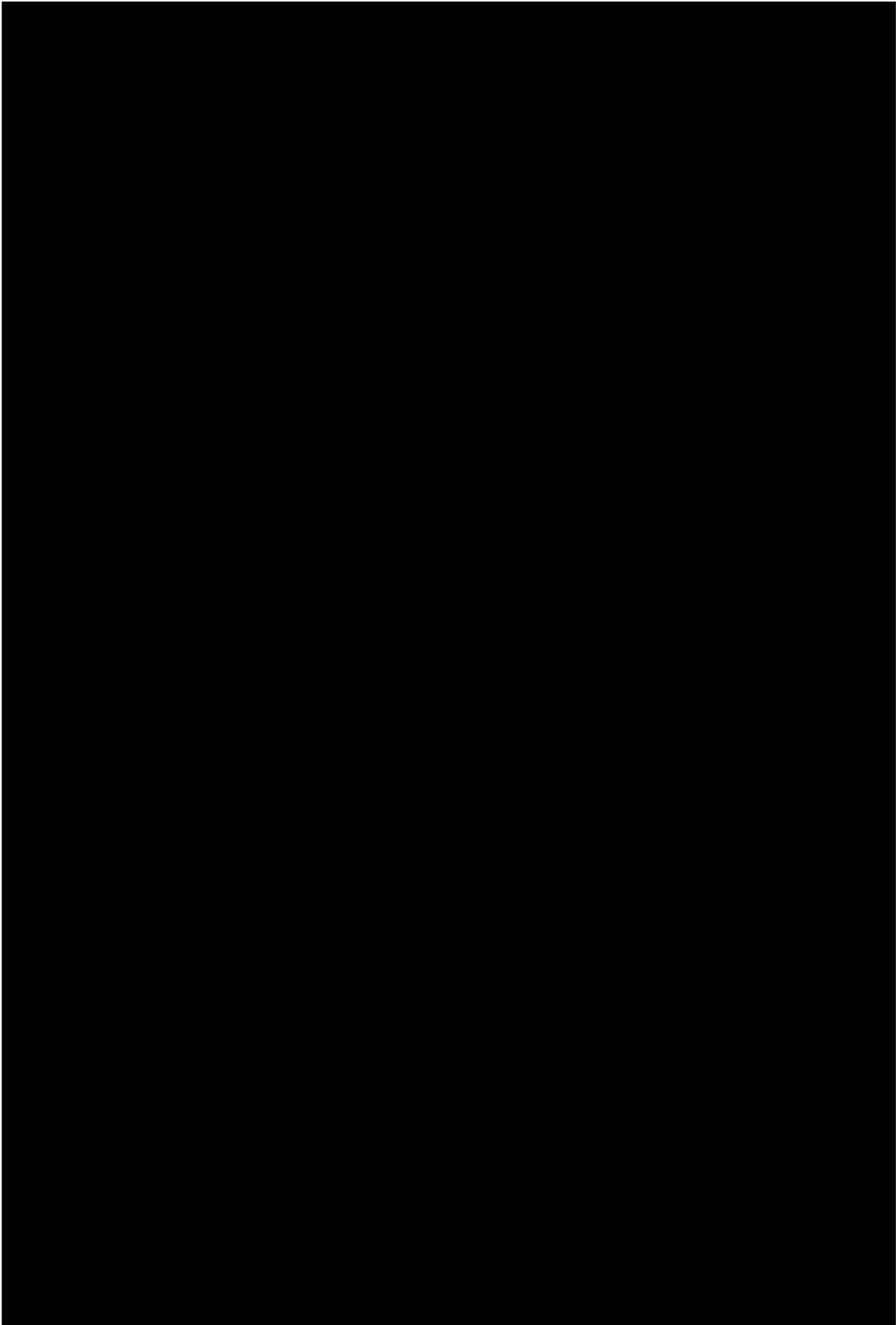
7.2.2

7.2.3

7.2.4



7.2.5

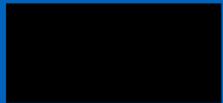


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7.2.7

7.2.8

TABLE 7-2

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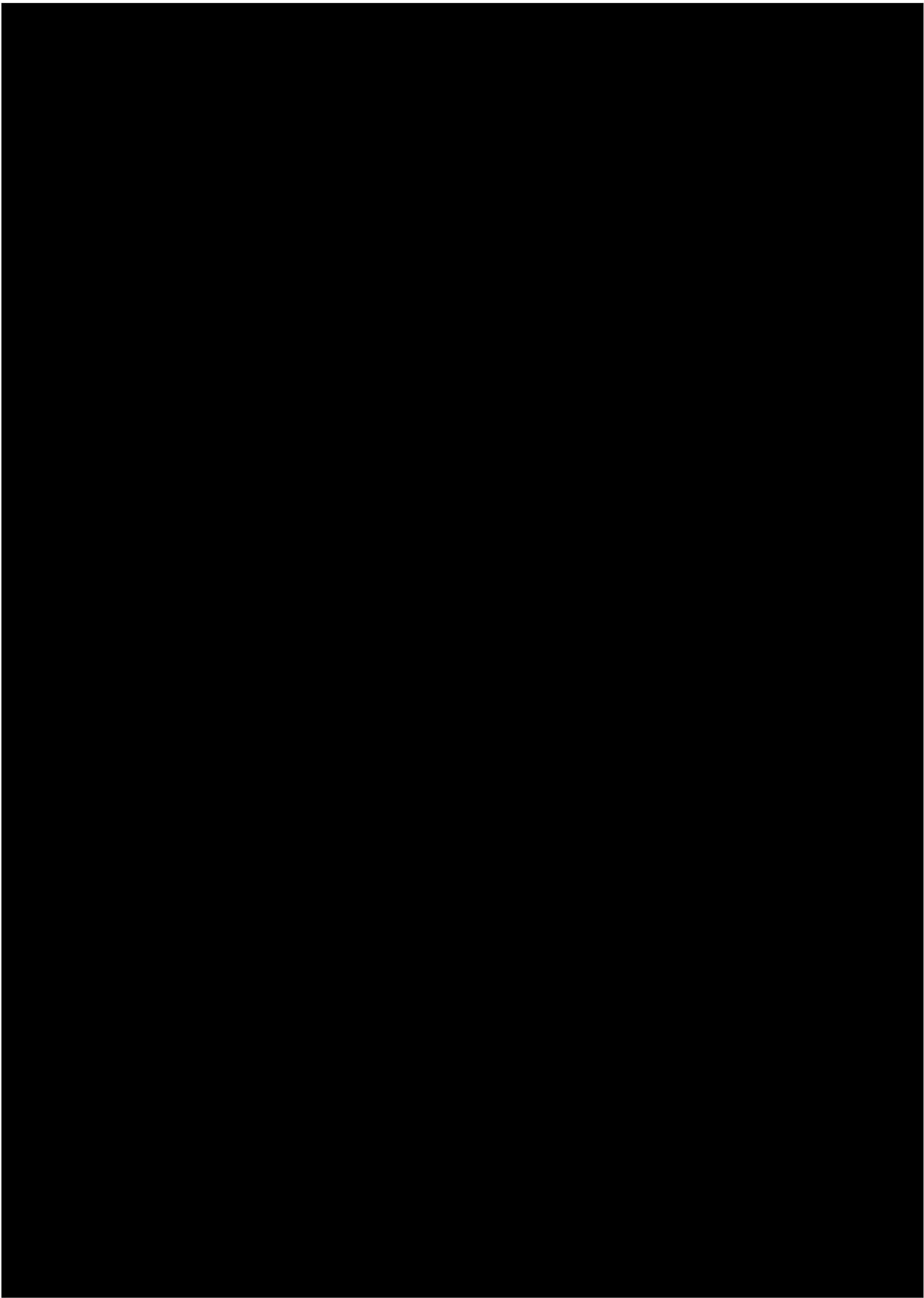
7.3

7.3.1

7.3.1.1

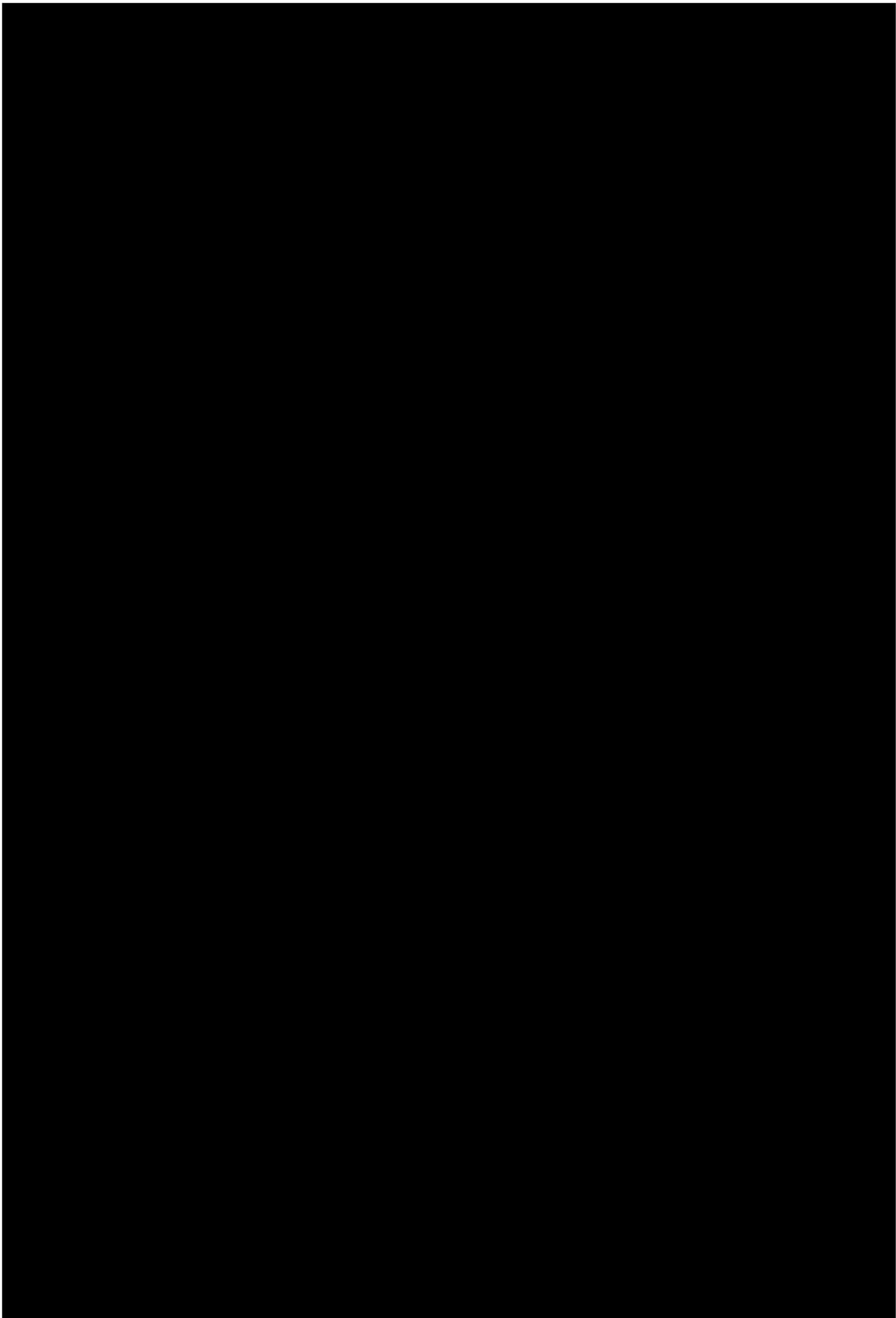
7.3.1.2

7.3.1.3

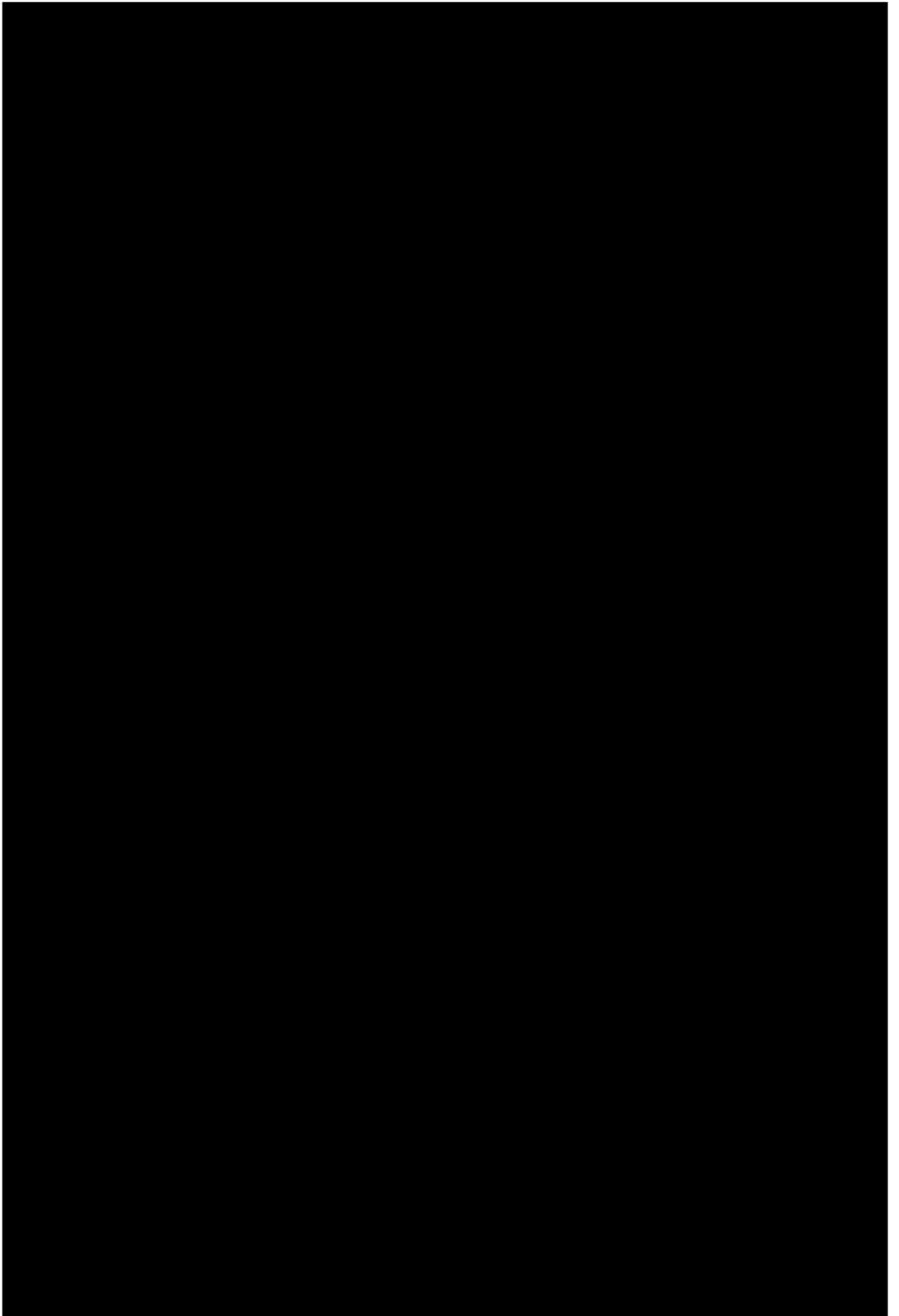


7.3.1.4

7.3.2



7.3.2.1



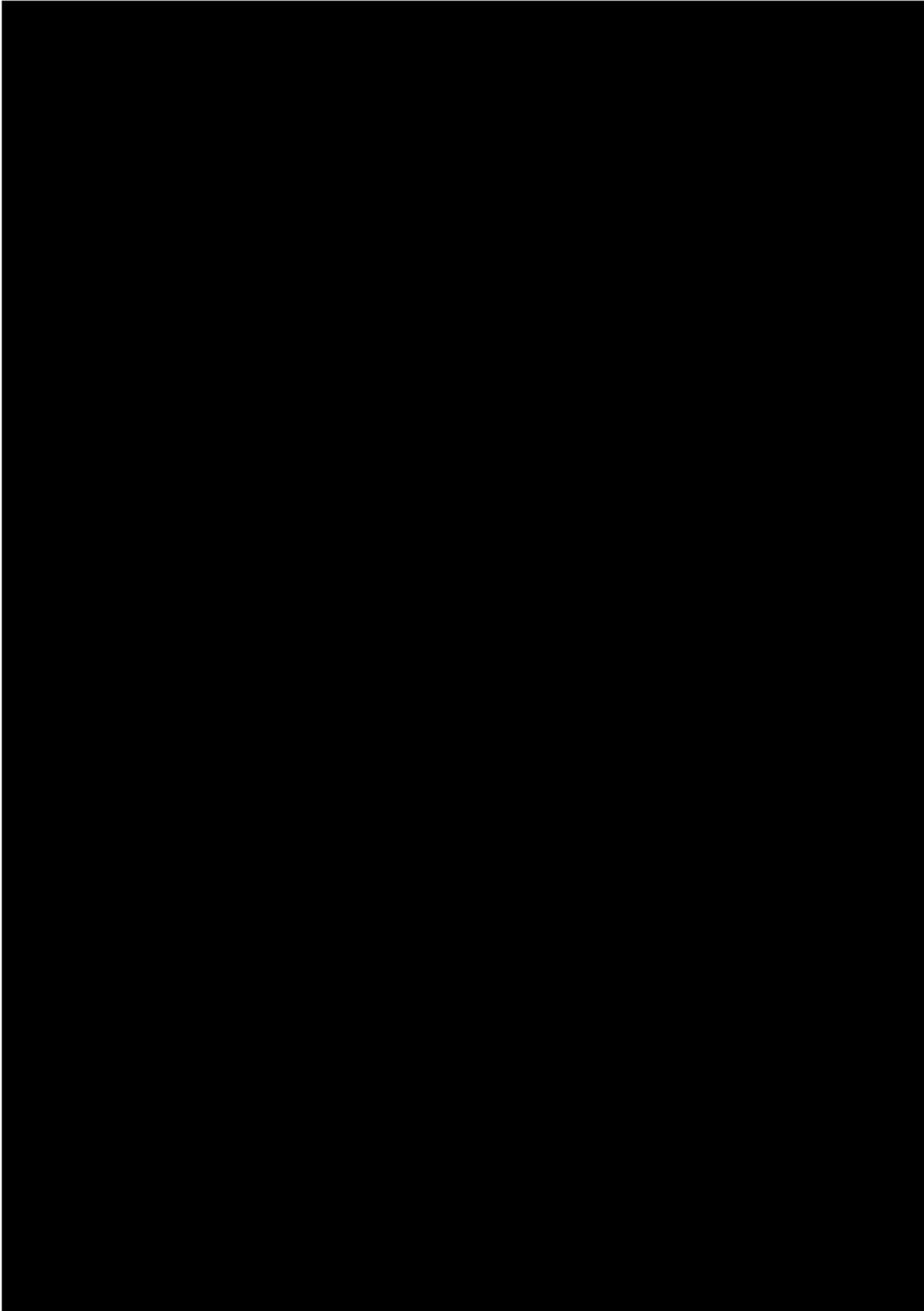
7.3.2.2

7.3.3

TABLE 7-3

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TABLE 7-4

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7.4 3rd Party Interconnection Study Findings (OFES and SRIS) – New Transmission

Transmission

AVANGRID Networks consulted [REDACTED] to perform a detailed study that will replicate the NYISO IP findings and the study specifically focuses on analysis that could result in additional system upgrades. The sections will include (A) OFES, (B) SRIS. The class year component of the 3rd Party Interconnection study (CYFS SUF Study, CYFS SDU and Additional SDU Study) will be discussed in Section 7.5. A detailed 3rd party report is found in Attachment 5-3.

7.4.1 OFES – New Transmission

Prior to determining the final POW and POI of the New Transmission, analysis was performed to determine the ideal locations for withdrawal and injection to meet New York State and Tier 4 objectives. Analysis also discussed in Section 5.5 – Energy Deliverability Assessment supports the justification and selection of the optimal New Transmission.

7.4.1.1 Pre-Project Considerations – New Transmission

The Public Service Commission’s October 15, 2020 Order establishes a new Tier 4 within the Clean Energy Standard (CES) in response to NYSERDA’s CES White Paper. The new Tier 4 will increase the penetration of renewable energy into New York City (NYISO Zone J), which is particularly dependent on polluting fossil fuel-fired generation. The Order authorizes NYSERDA to procure up to 3,000 MW of Tier 4 eligible renewable generation into Zone J to increase the deliverability of diversified renewable energy into Zone J and reduce NYC reliance on fossil fuel generation. The identification of system changes and potential gas and oil-generation retirements in NYC, the possible pathways for supporting new merchant transmission into NYC to deliver upstate renewable energy, and the location of potential future OSW generation to enable exporting excess energy to ROS were reviewed.

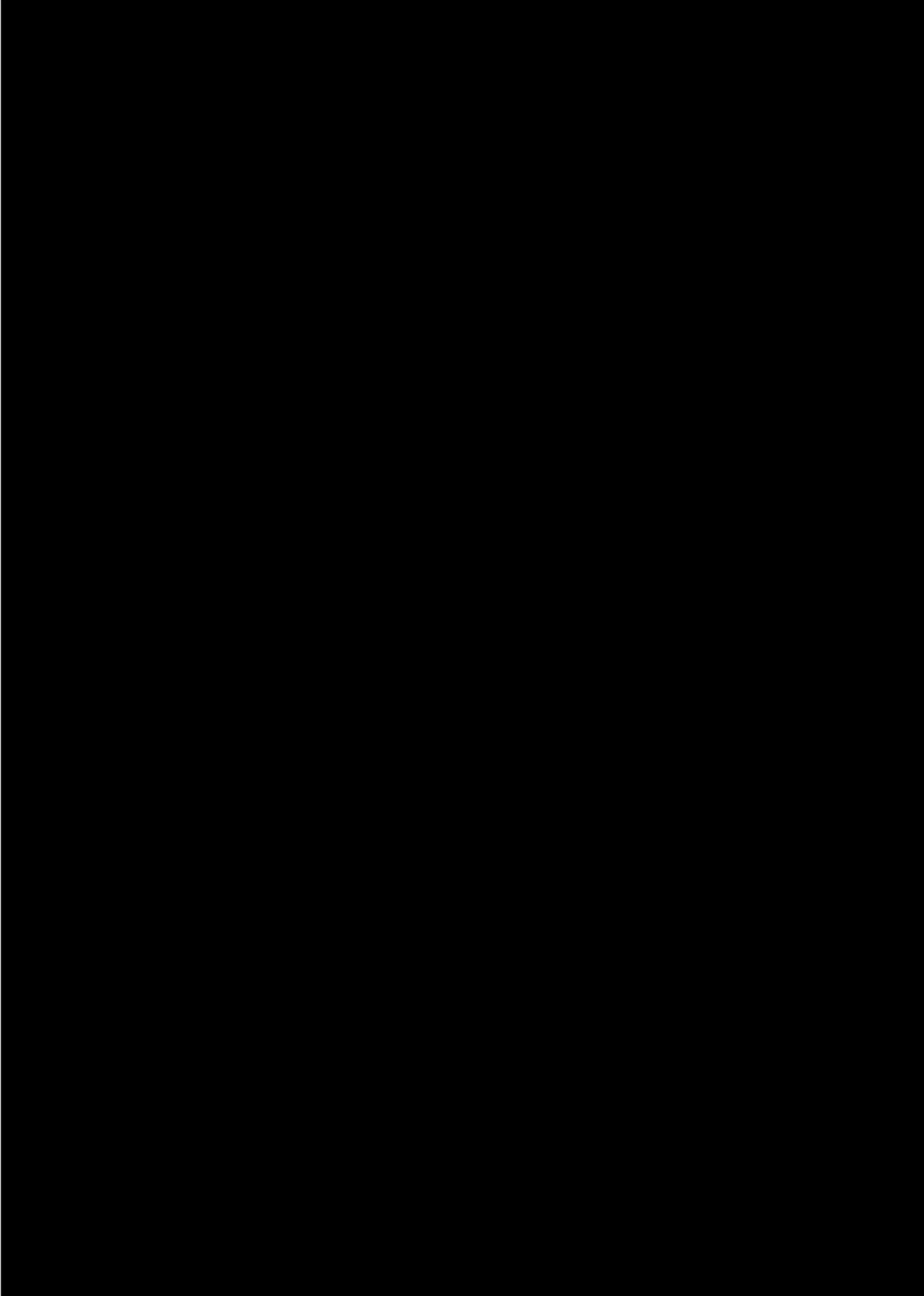
7.4.1.2 Injection Point Analysis – New Transmission

Major substations within NYC were considered as potential injection point for the New Transmission and are shown in Figure 7-5. An N-1 injection capability analysis was performed on each of these nodes and

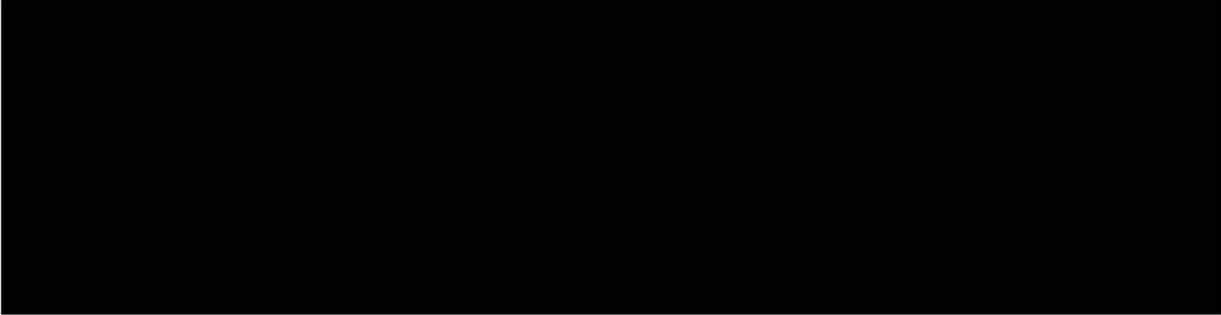
FIGURE 7-5



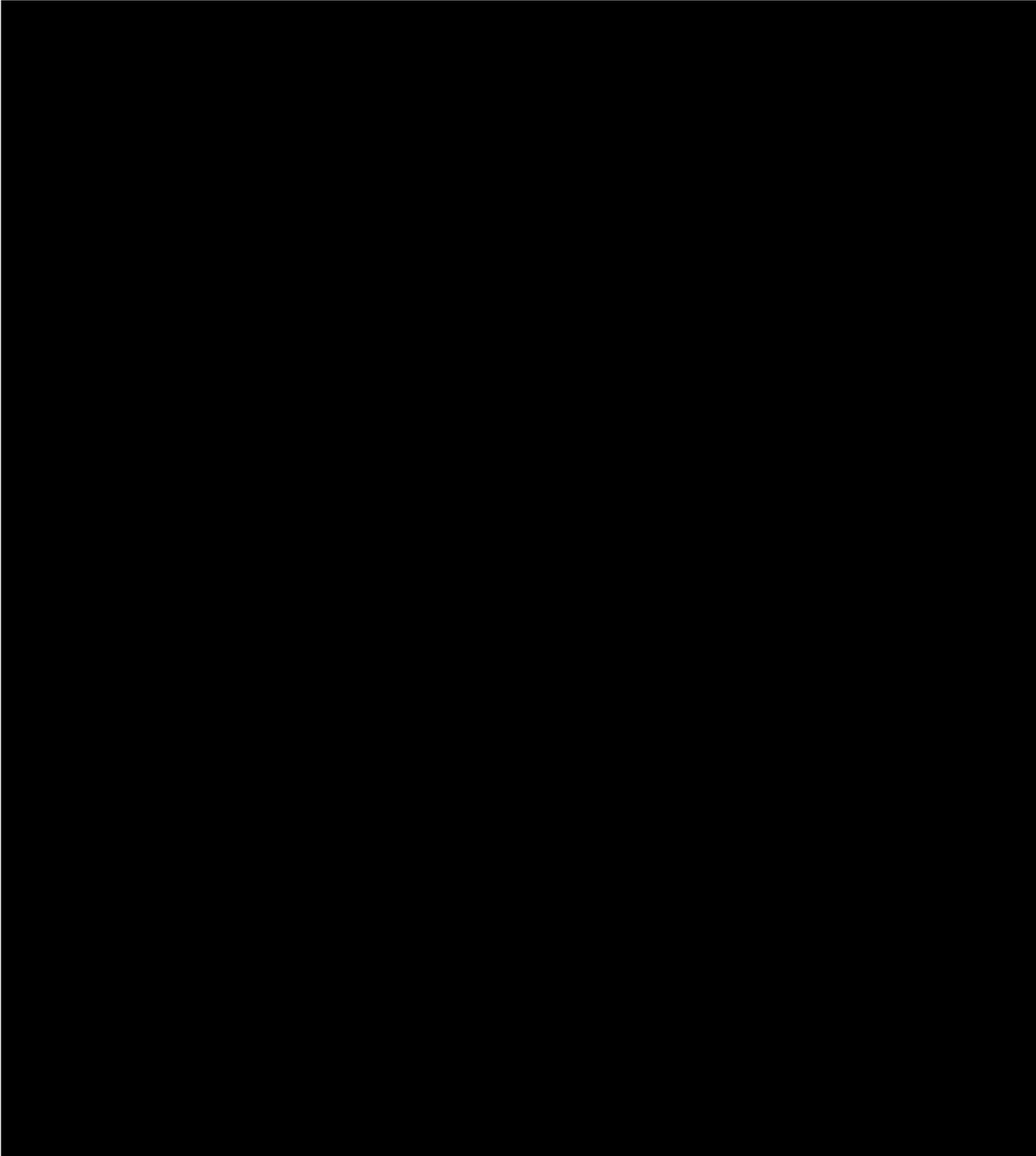
TABLE 7-6

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the results are summarized in Table 7-6. For the high performing stations north of Zone J, more detailed analyses were performed to justify the selection of the final POI for the New Transmission.



7.4.1.2.1



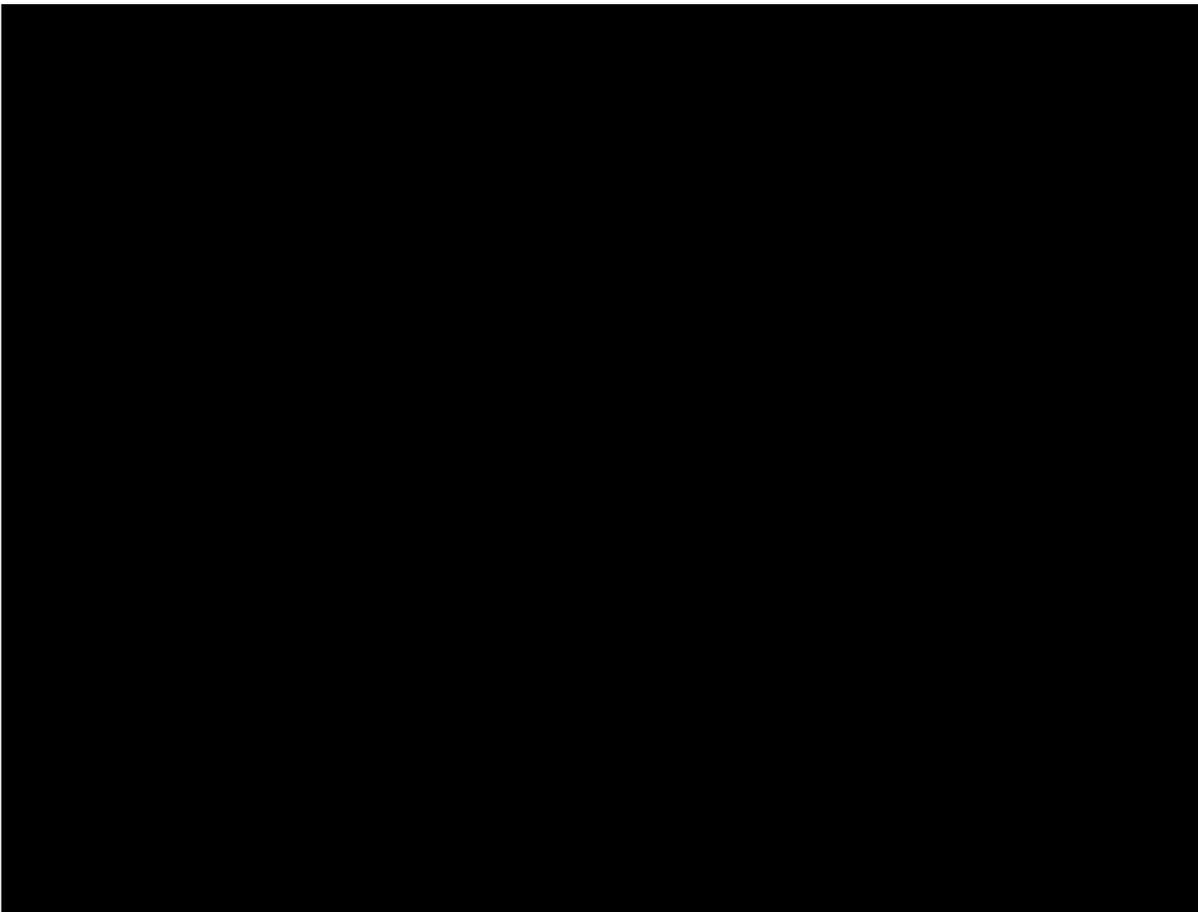


TABLE 7-7

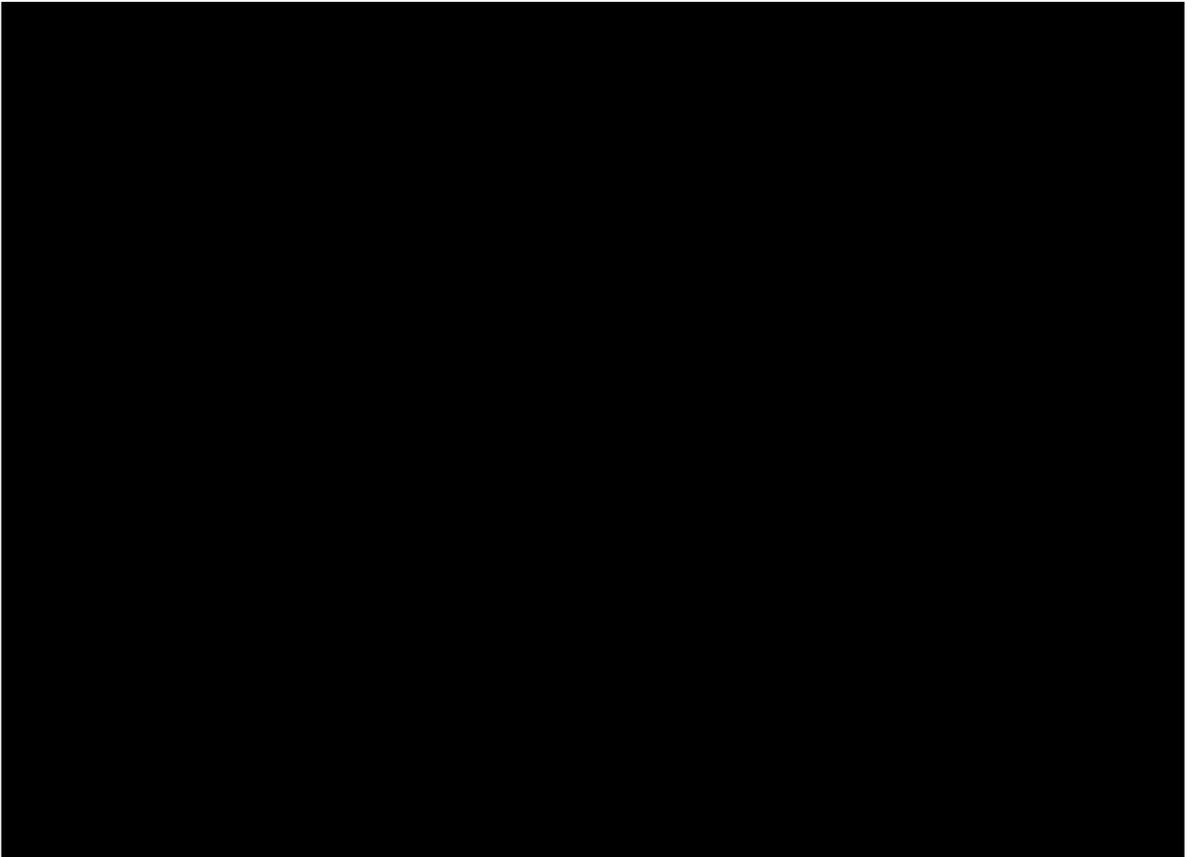
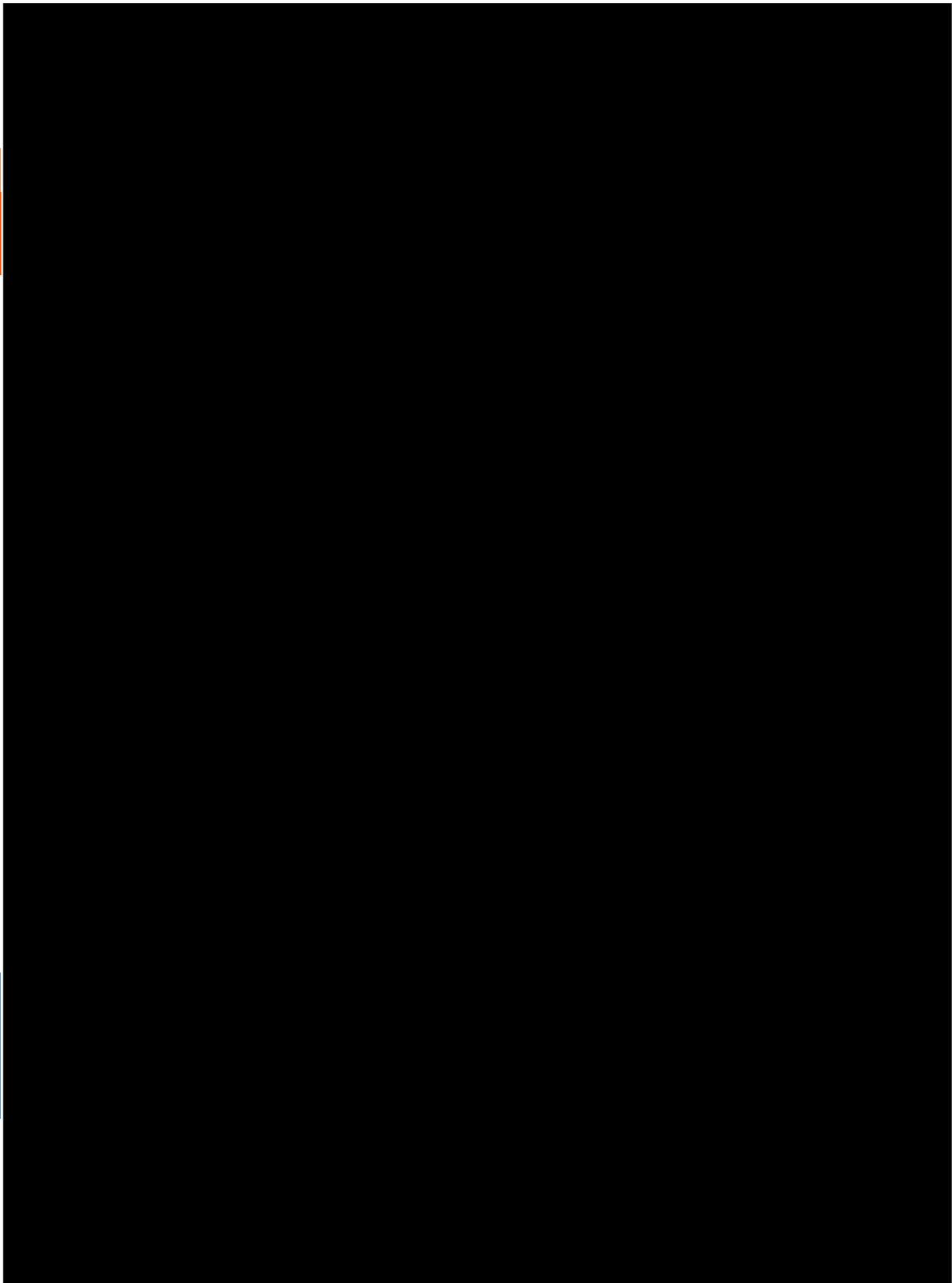
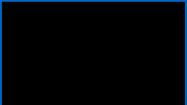


FIGURE 7-8

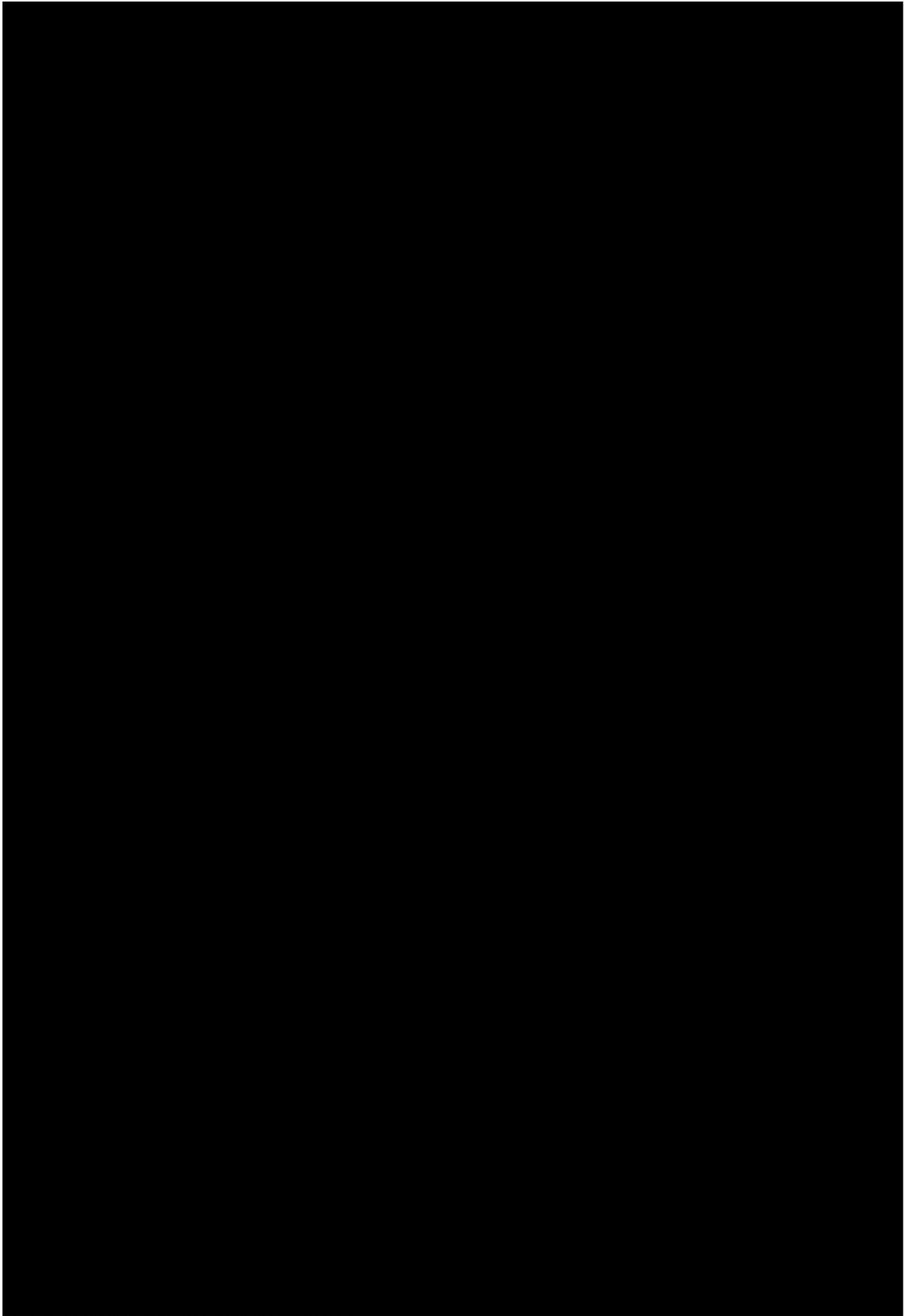


TABLE 7-9



7.4.1.3

7.4.2



are expected due to interface degradation.

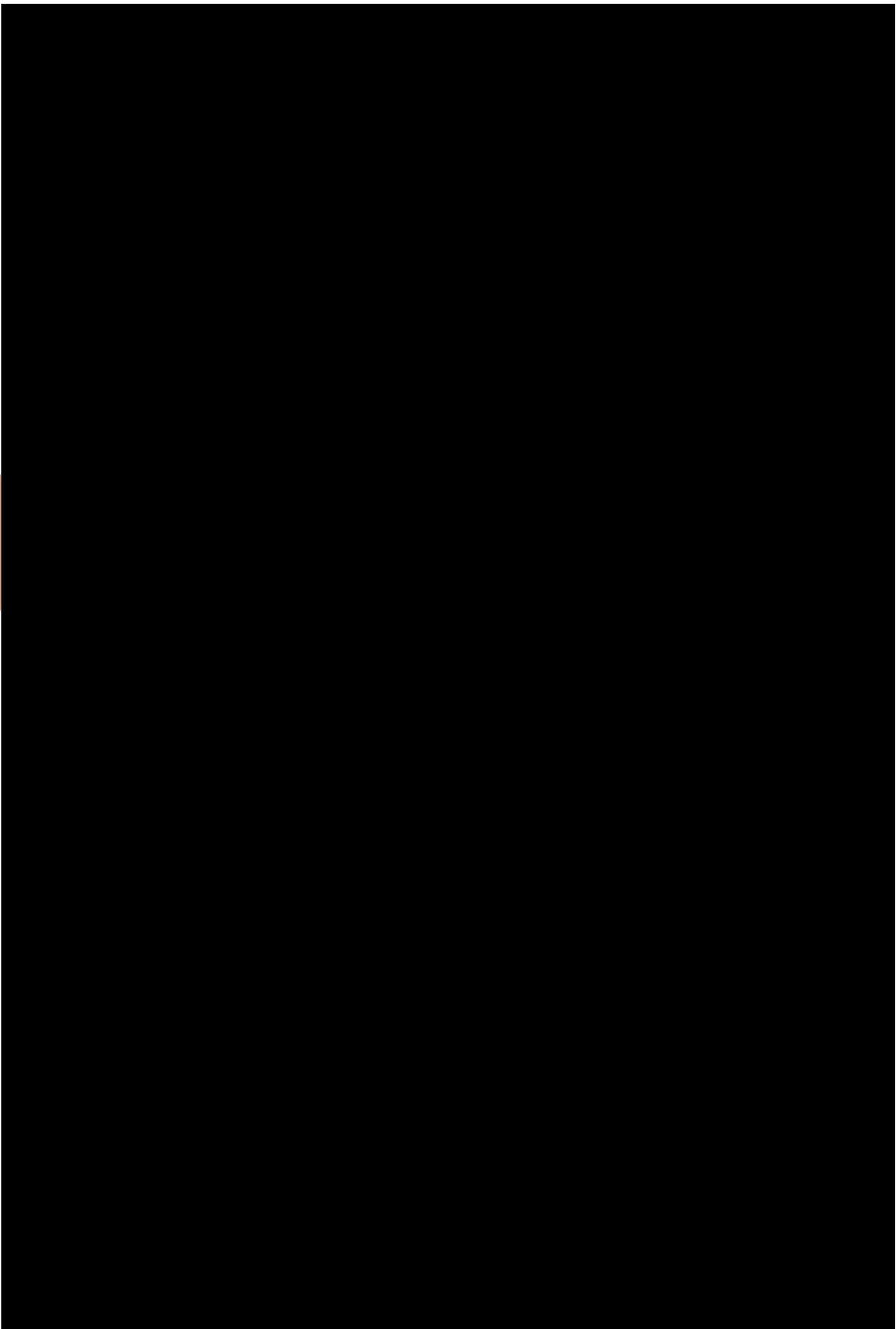
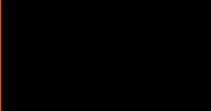


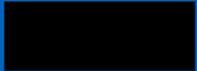
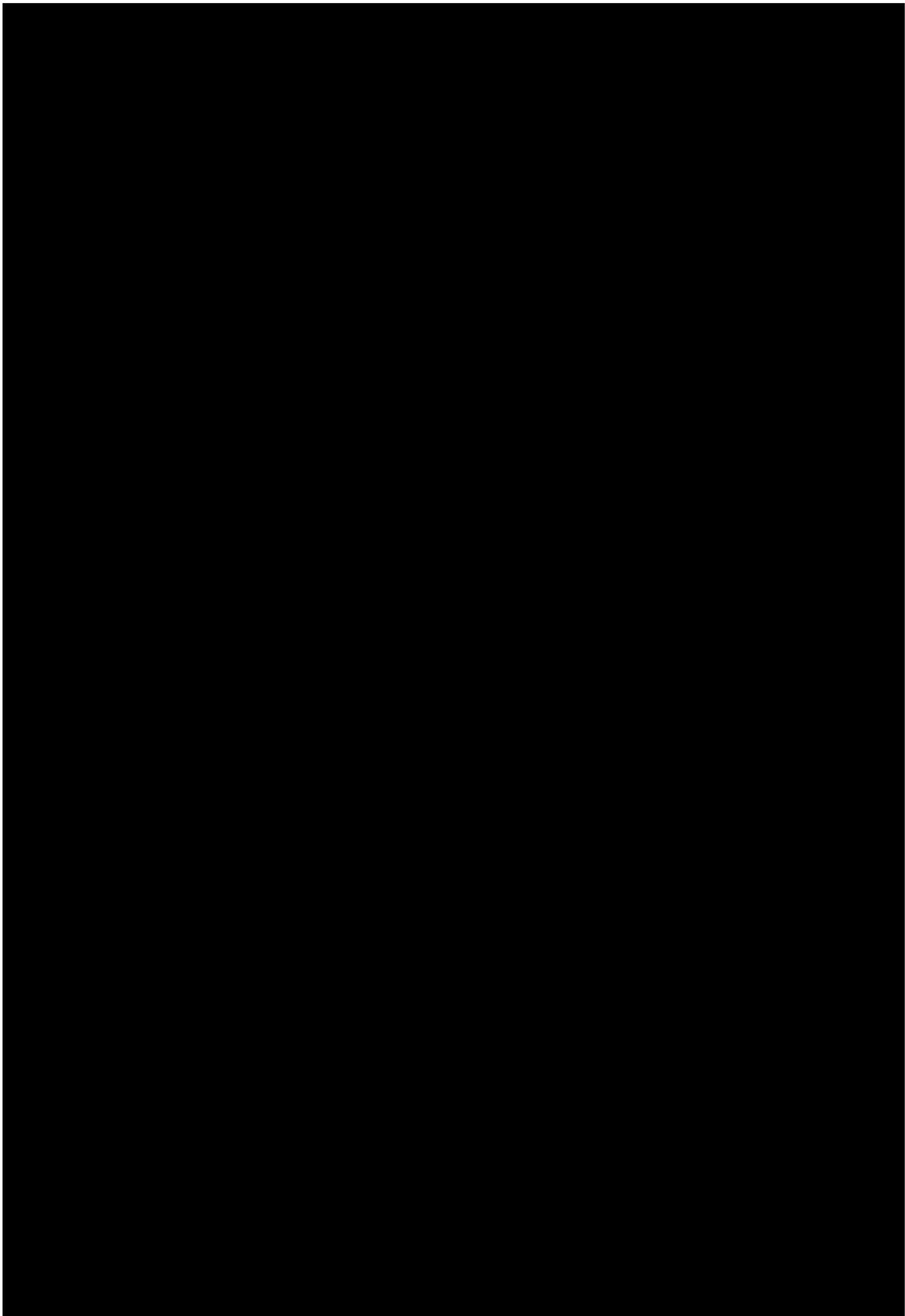
FIGURE 7-10



7.5

7.5.1

TABLE 7-11

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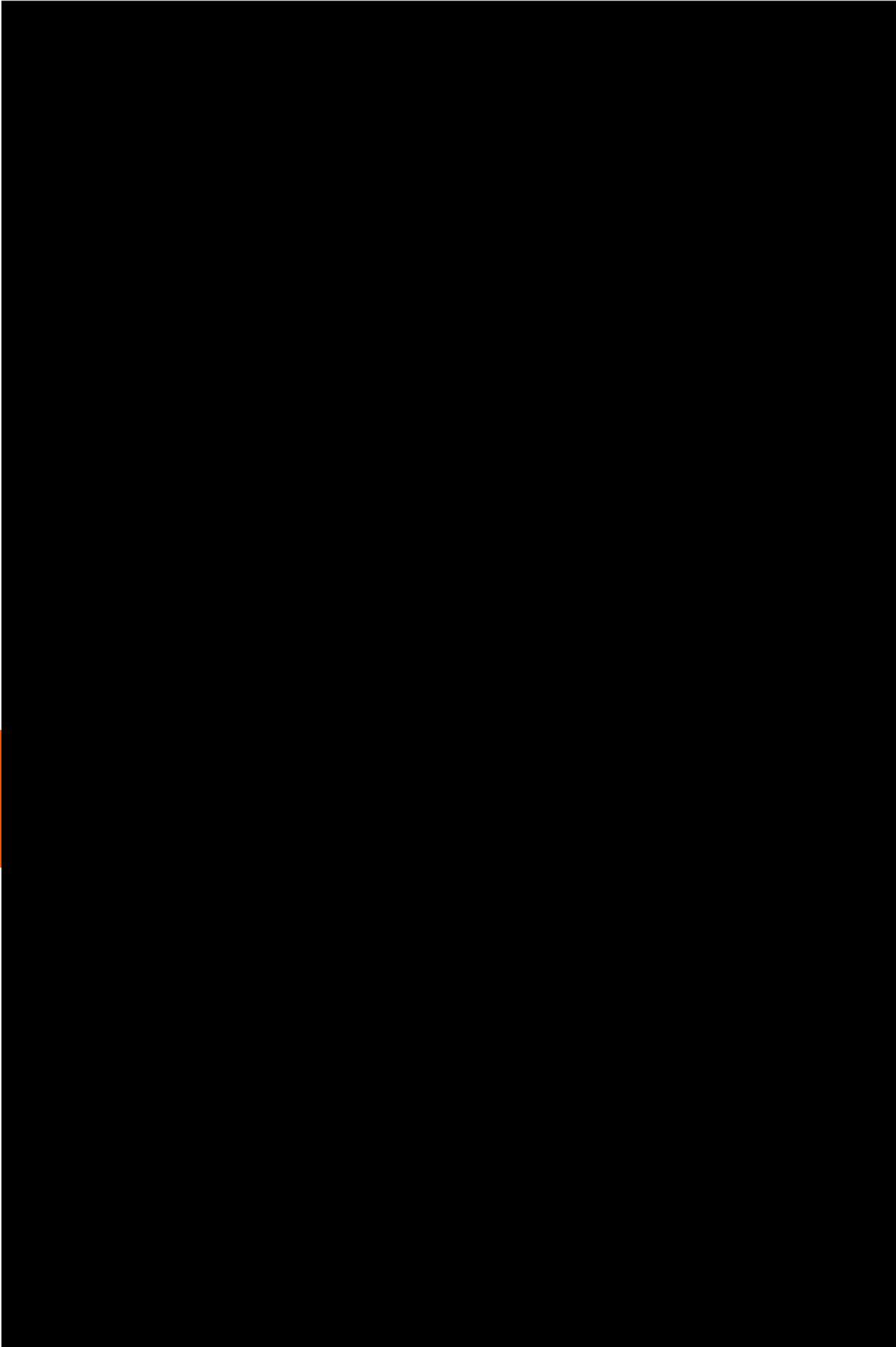


FIGURE 7-12



7.5.2

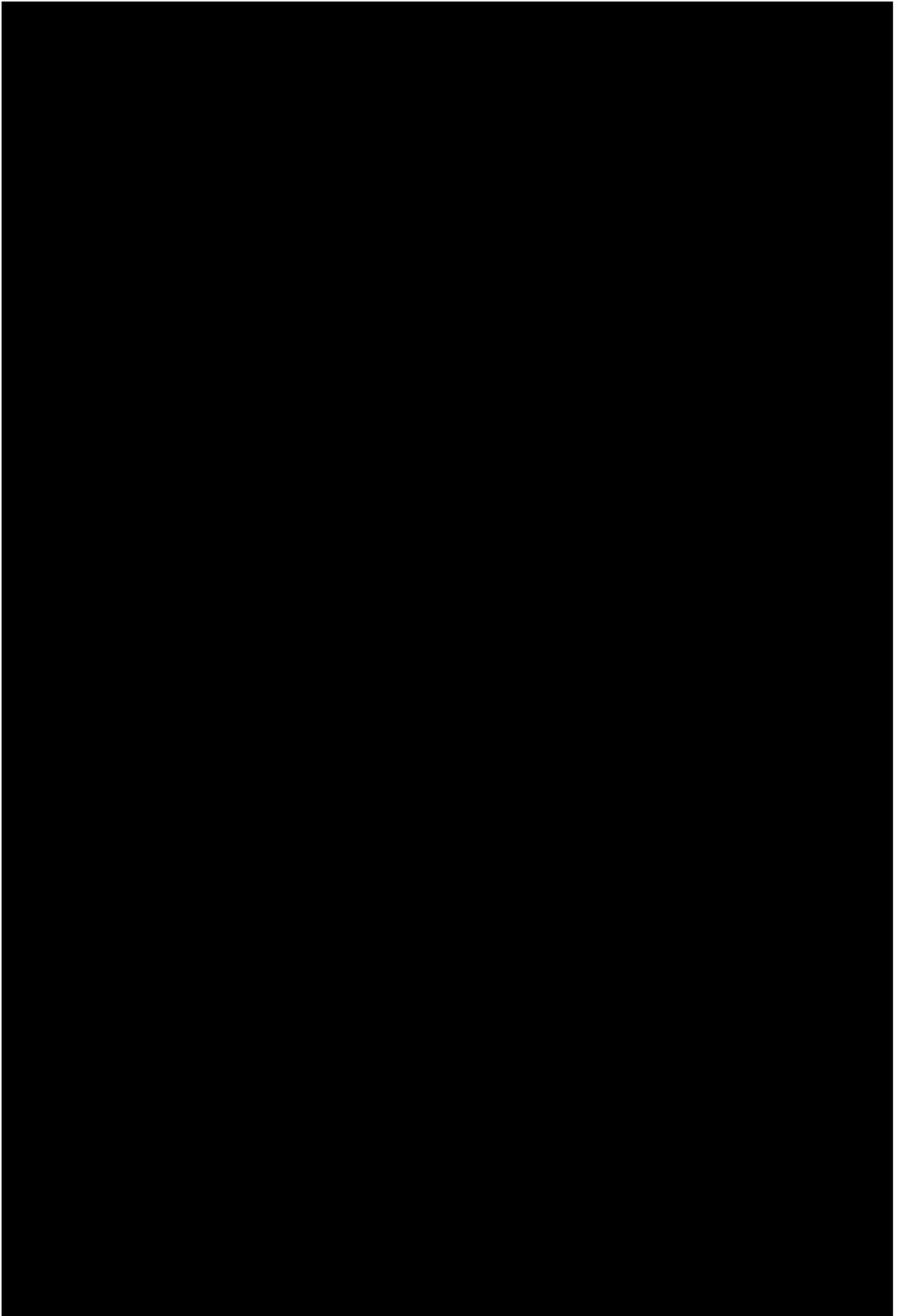


TABLE 7-13

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7.5.3

TABLE 7-14

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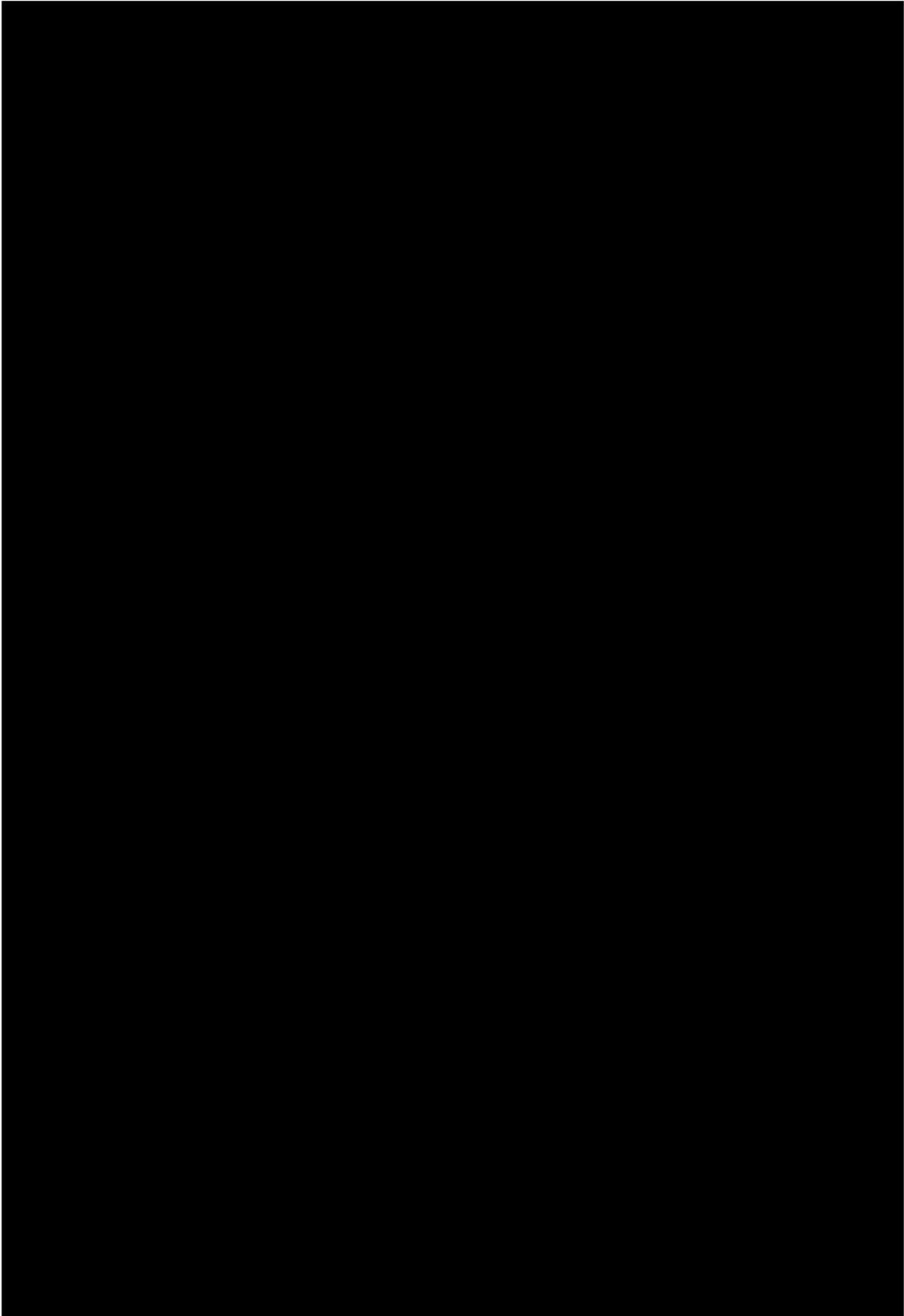
TABLE 7-15

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TABLE 7-16

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TABLE 7-17

A black rectangular redaction box covering the content of Table 7-17.

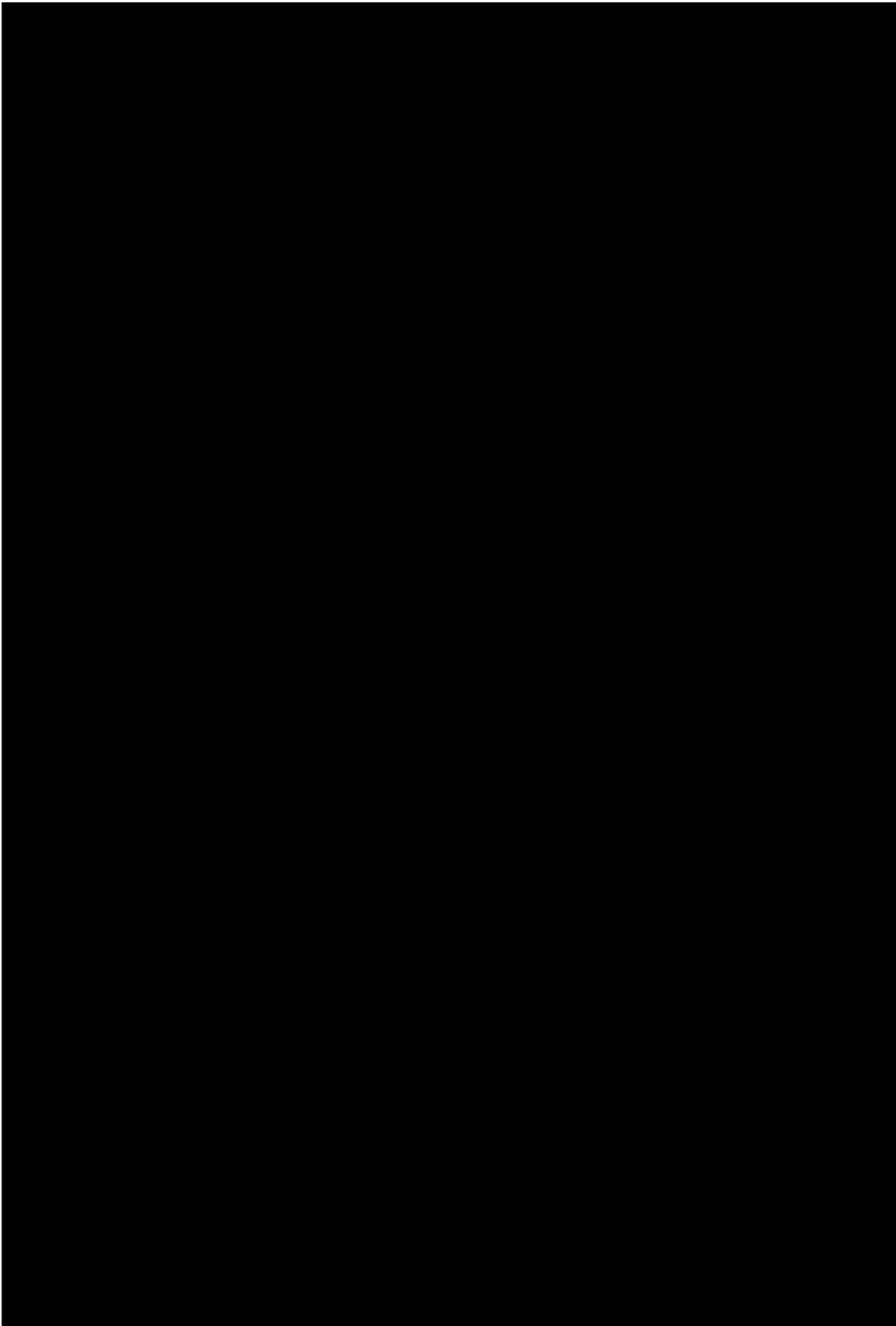
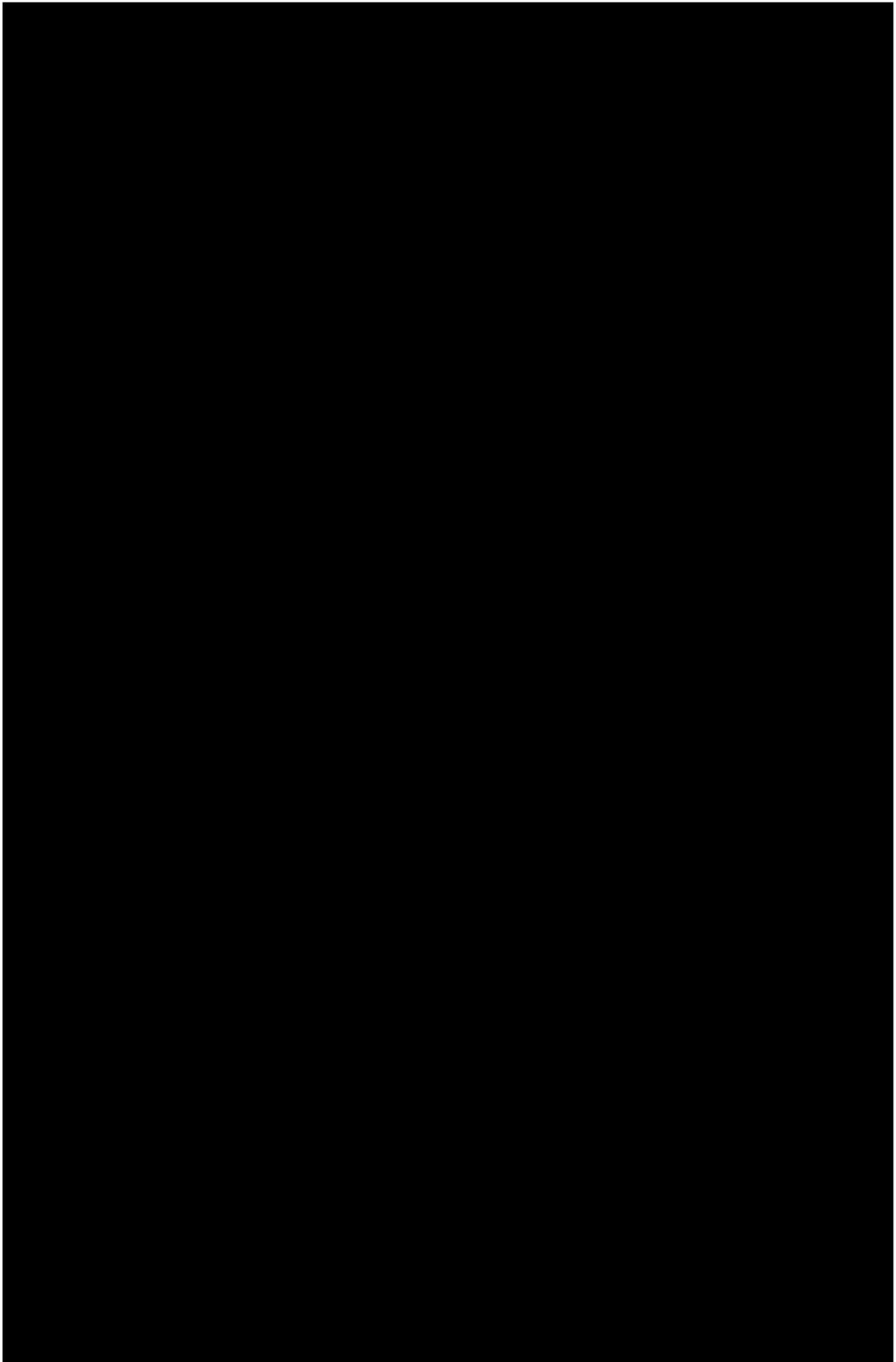


TABLE 7-19

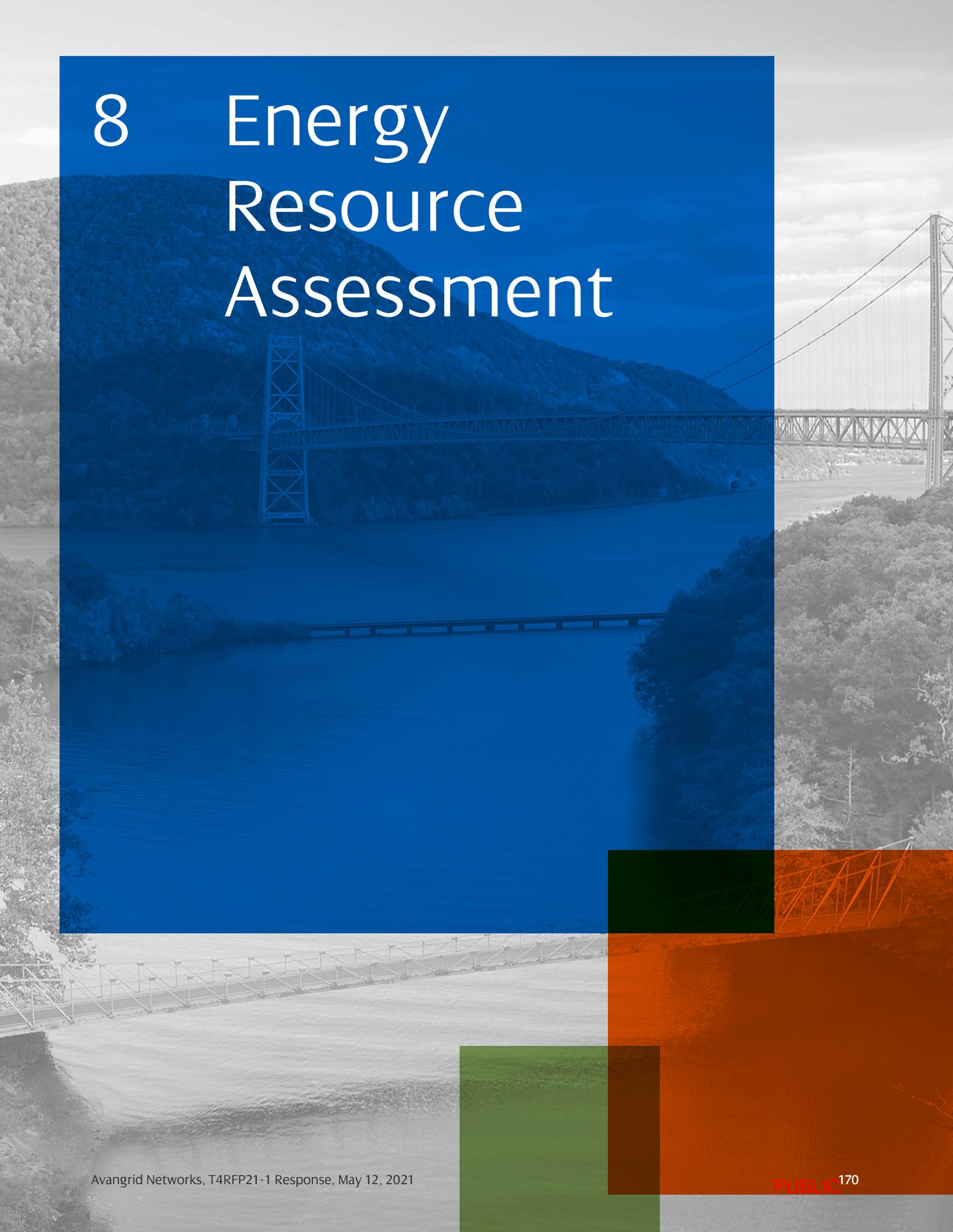
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7.5.4





8 Energy Resource Assessment



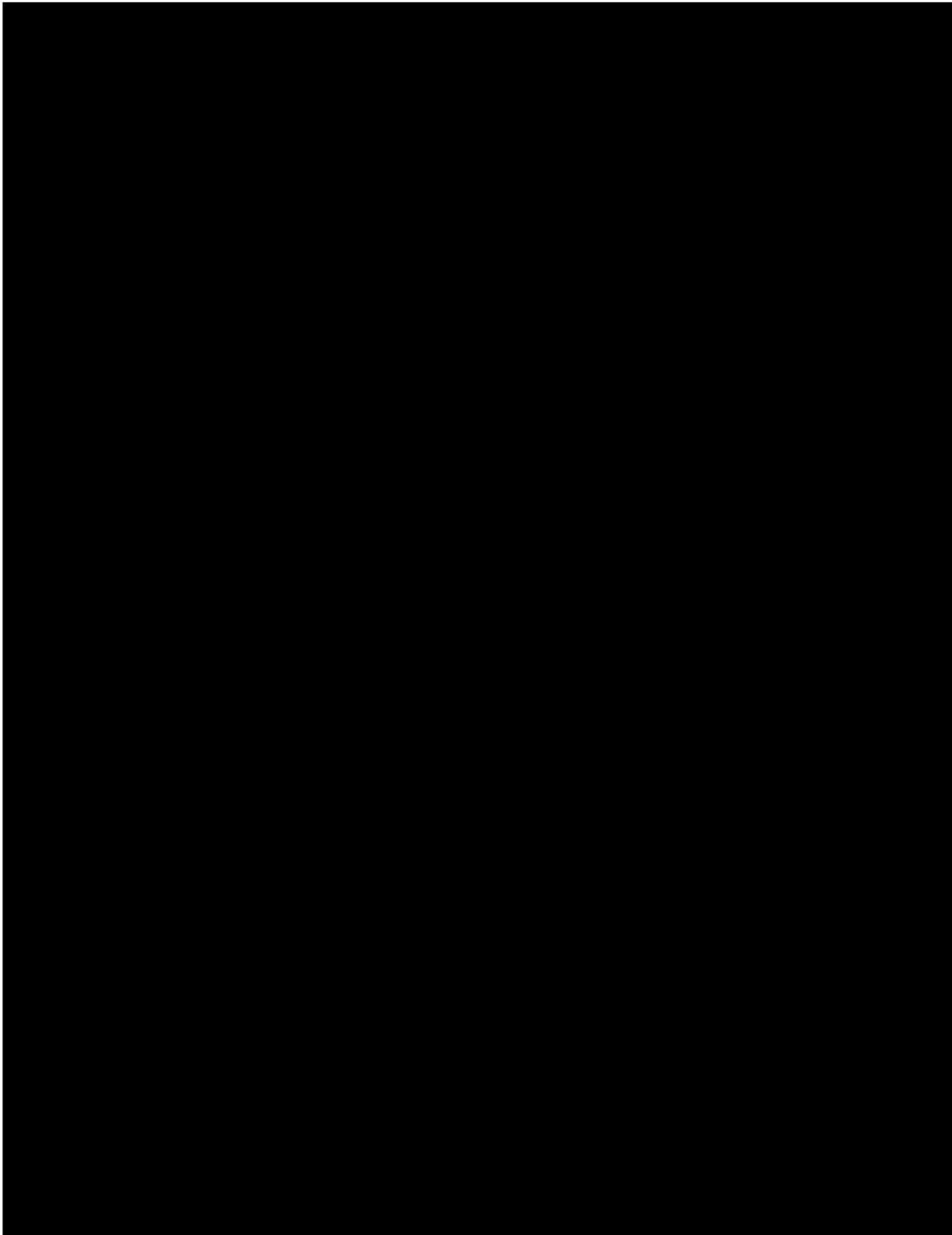
Excelsior Connect New Transmission developer Avangrid Networks is responsible for assembling the wind and solar resources comprising the Excelsior Connect generation portfolio. Avangrid Networks conducted an open solicitation to identify potential generation partners and worked collaboratively with those partners to fine tune and optimize the final projects to limit basis and curtailment risk and maximize Tier 4 REC delivery.

8.1

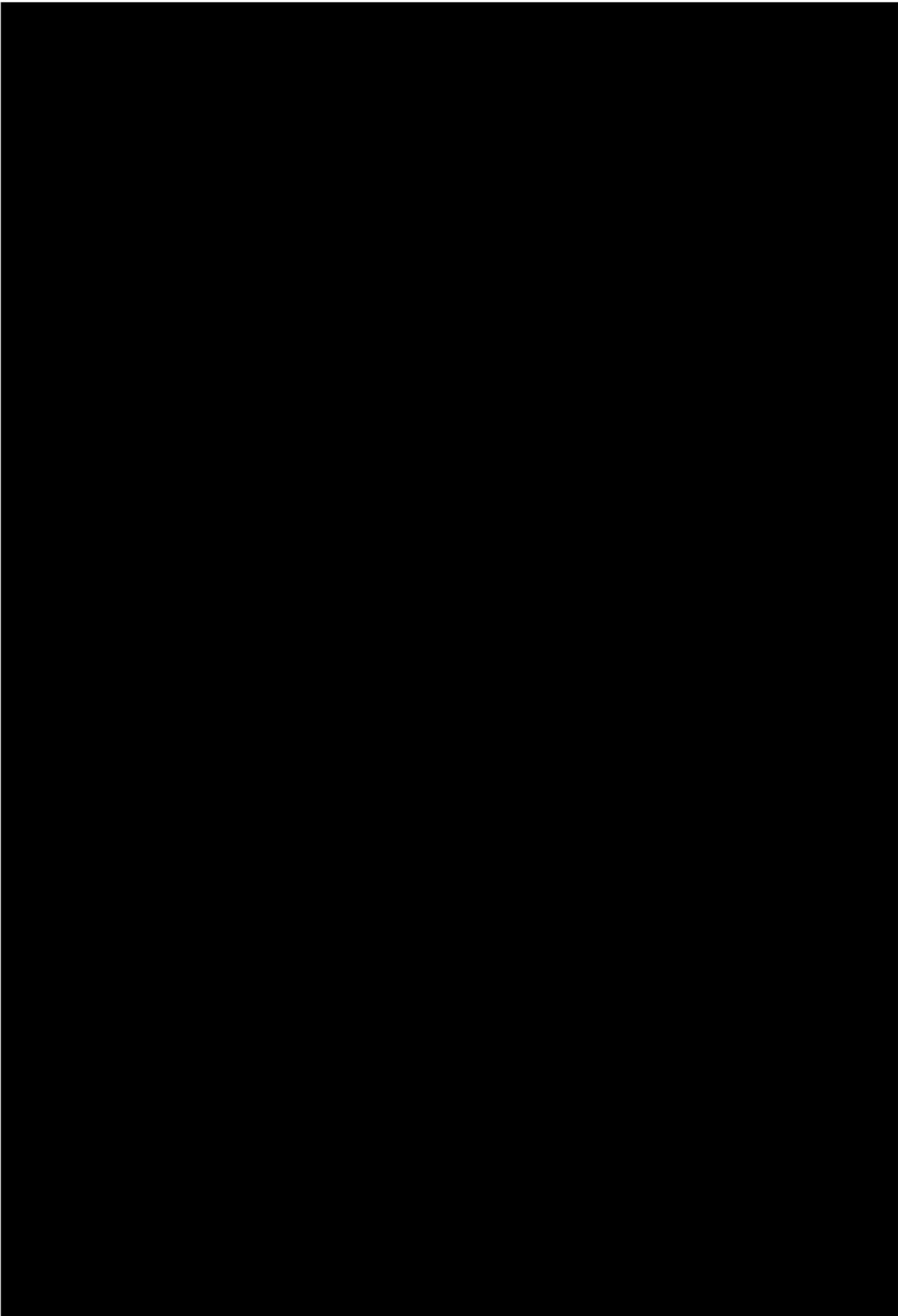
8.2

8.3

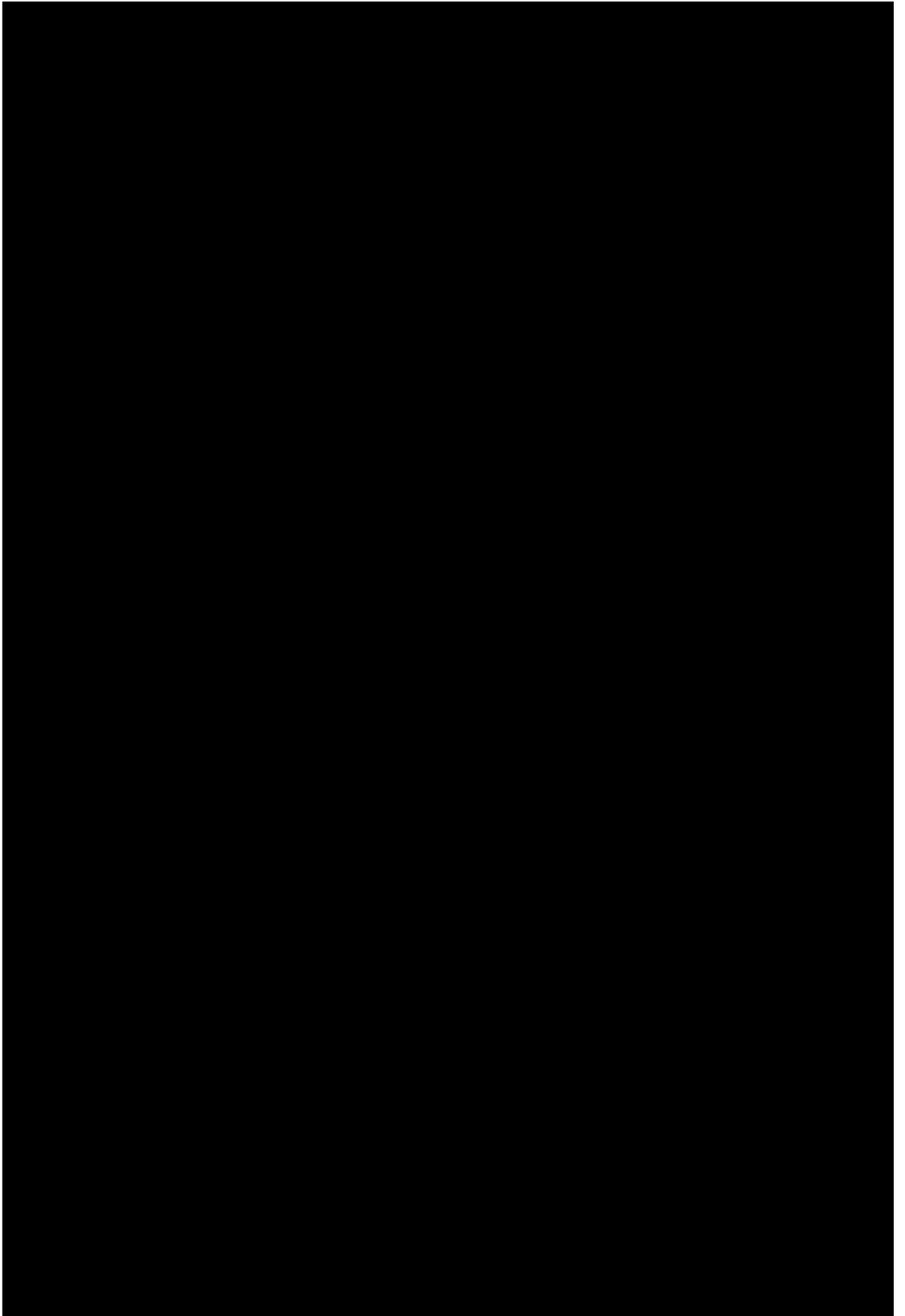
8.4

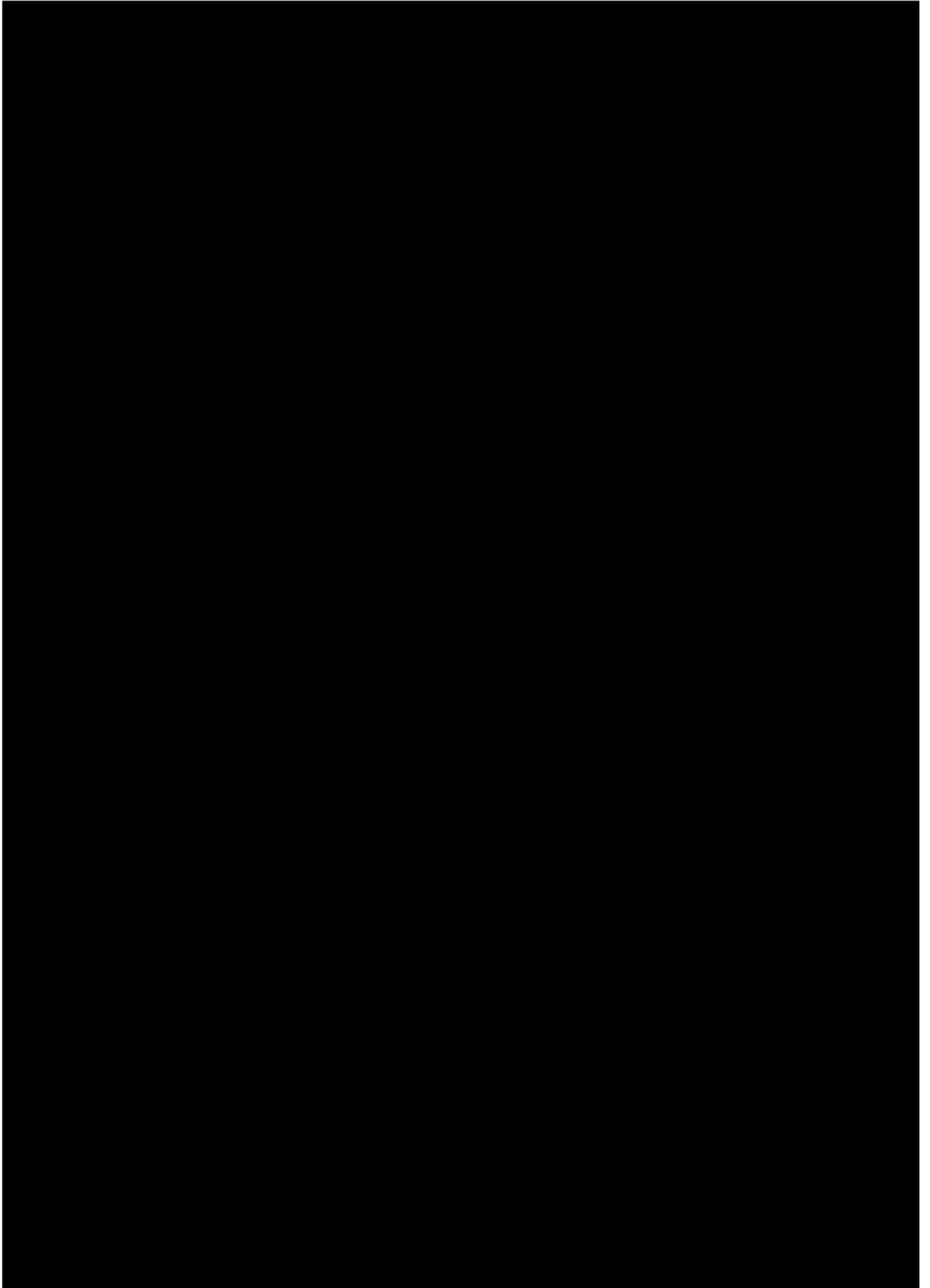


9 Energy Storage Operation Plan



9.1





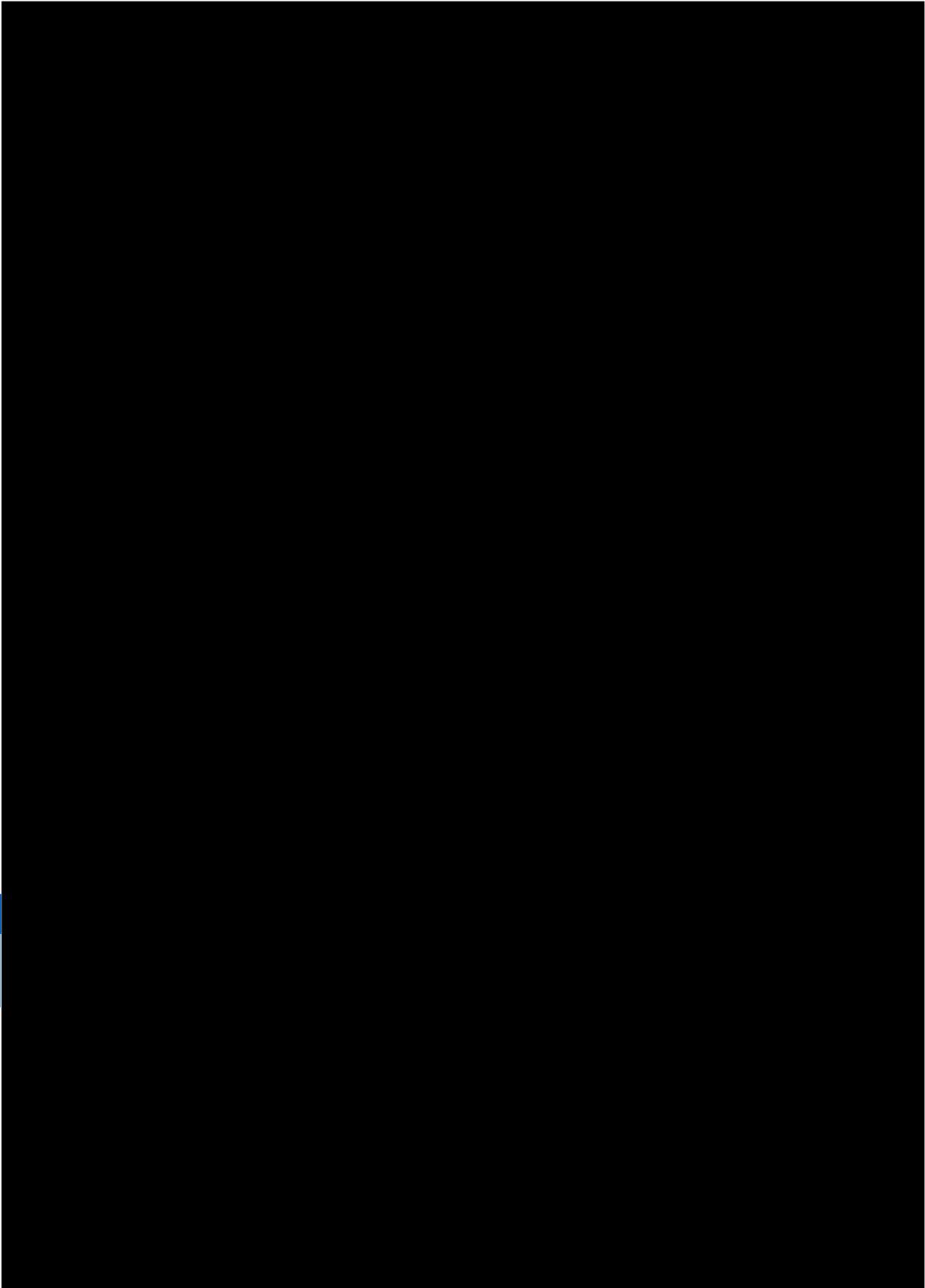


TABLE 9-1





10 Business Entity and Financing Plan

Avangrid Inc. (“AVANGRID”) has extensive experience financing large-scale energy infrastructure projects, as has been expressed in section 3. This section describes the specific strategy Avangrid will follow to finance the Excelsior Connect Project.



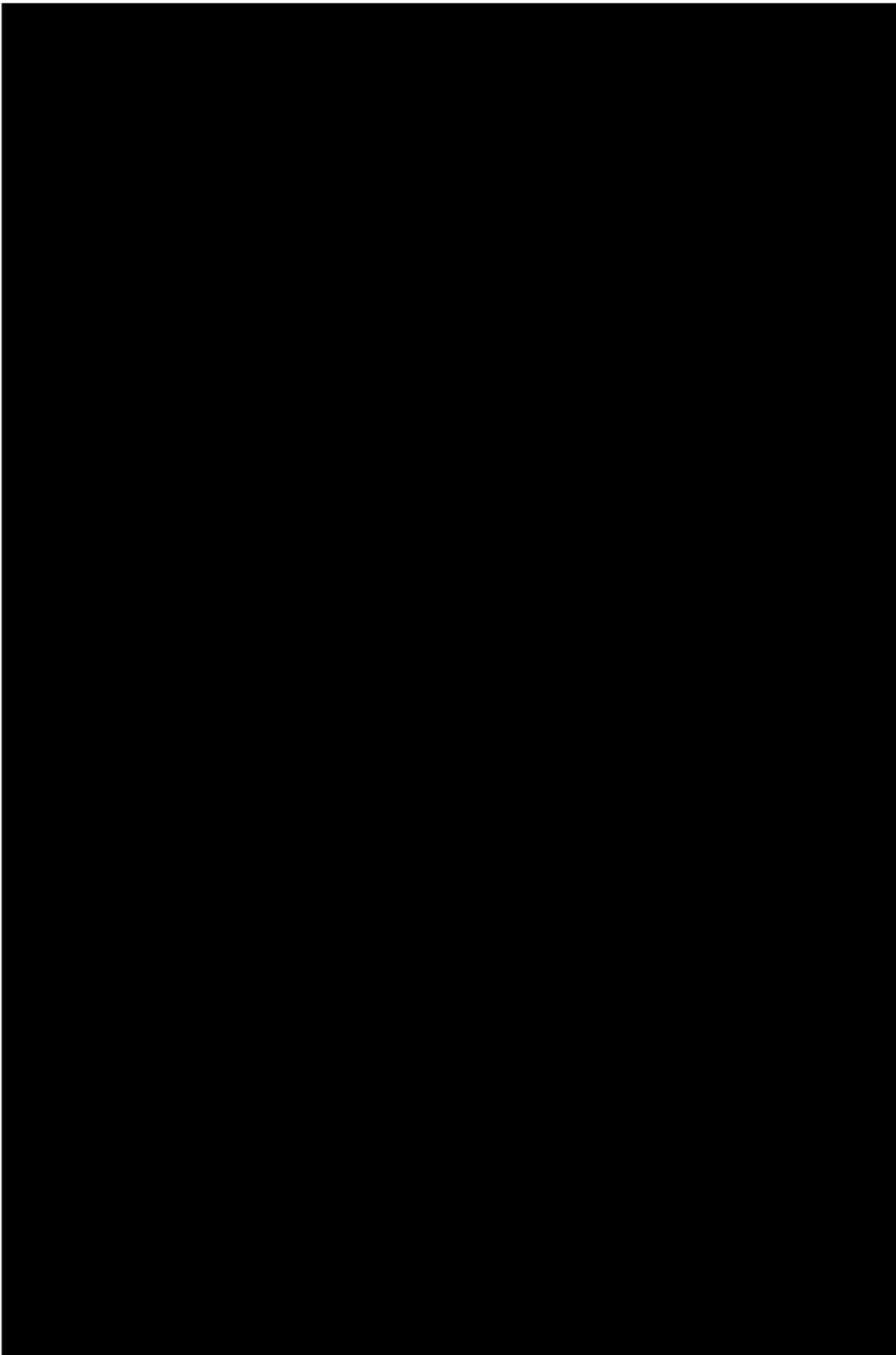
10.1 Benefits of a long-term contract

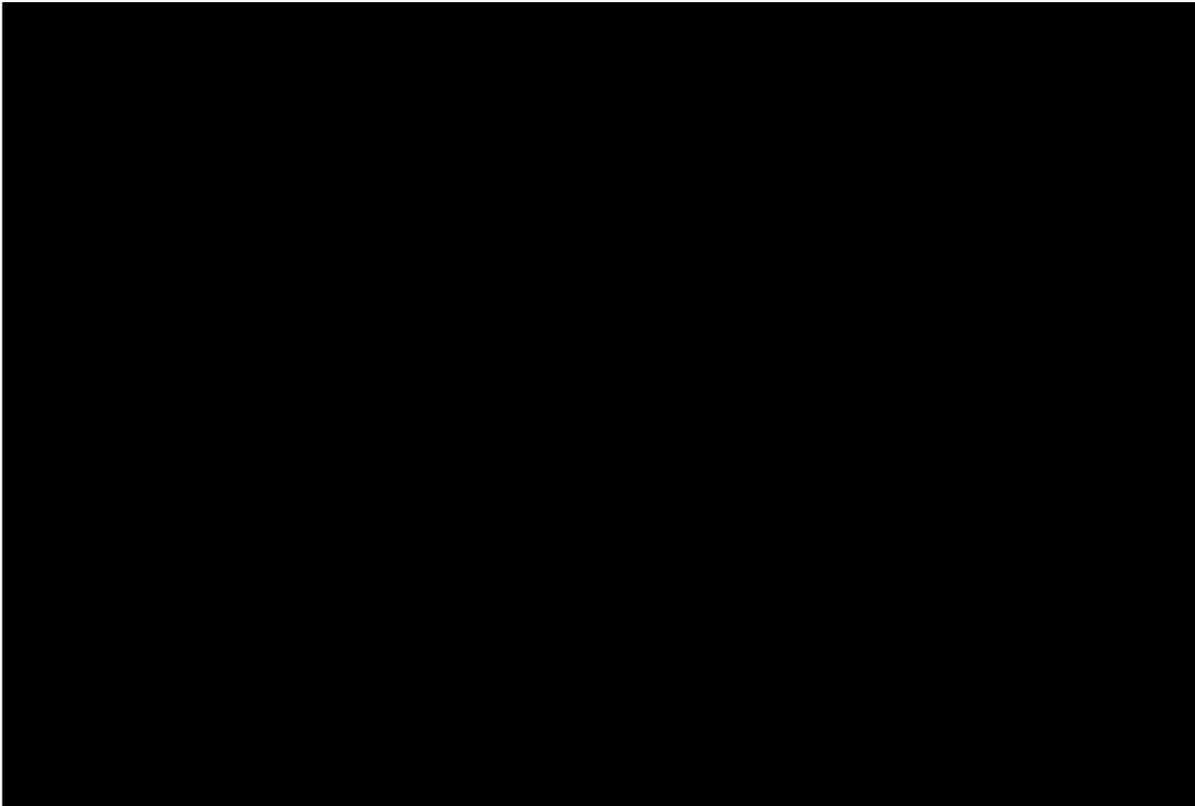
A long-term contract of twenty-five (25) years, like that proposed in the RFP, is beneficial to developers of new transmission and renewable resources. Long-term contracts provide cost certainty for assets that have long useful lives and high capital investment. The long-term contract also assists developers with obtaining project financing if needed or desired, especially when the counter party is a government entity with a high credit rating. A project like Excelsior Connect requires an award under the current RFP to attract and obtain third party financial backing for the project if that is the path Avangrid decides to take. There are no significant examples of pure-merchant transmission projects in the United States (those without an anchor tenant), indicating that the merchant transmission model is not a feasible one under the current market and regulatory environment. Long-term contracts for energy and environmental attributes like RECs for Avangrid’s energy development partners are a necessary condition for Avangrid to secure financing for the Excelsior Connect Transmission project because it secures payment for transmission.

10.2 Business Entity Structure

Avangrid Networks, Inc. or a newly formed entity will own all Excelsior Connect transmission facilities in New York and will be responsible for operating and maintaining these facilities when they are in-service. For a description of Avangrid’s entity structure, please see Section 3. The proposed business structure to generate and deliver Tier 4 RECs over new transmission to Zone J is depicted below.

10.3





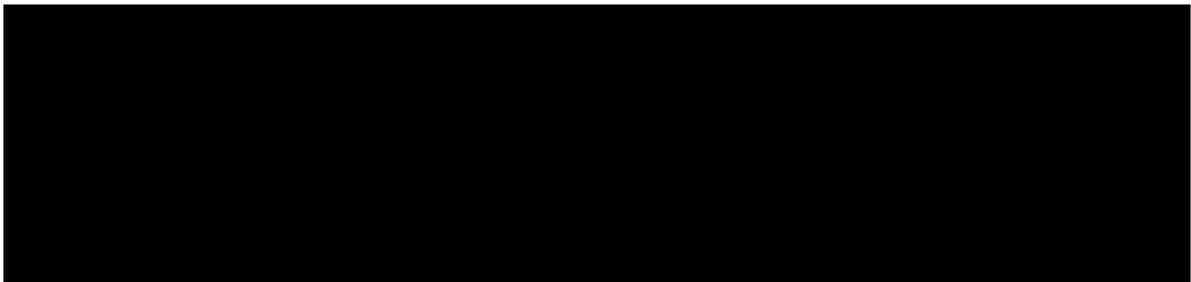
10.4 Experience Financing Transmission Development Projects

AVANGRID has recent experience financing, developing, constructing and operating projects of similar size and technology as Excelsior Connect as shown in the table below.

TABLE 10-1
Representative
Transmission
Development
Projects with
Secured Financing

Project Name and Location	Project Type and Size	Date of Construction and Permanent Financing	Form of Debt and Equity Financing	Status of Project
MPRP	████████	2009-2015 Financed on balance sheet by Central Maine Power with equity capital support from Avangrid	AGR common equity investment in CMP CMP first mortgage bonds	Completed 2015
NECEC	████████	2021- Construction financing approach same as proposed for Excelsior; permanent debt financing to be arranged at project completion	As described for Excelsior Connect Transmission Project	Under construction
Rochester Reliability Project	████████ ████████	2014-2021 Financed on balance sheet by Rochester Gas and Electric with equity capital support from Avangrid	AGR common equity investment in RG&E RG&E first mortgage bonds	Completed 2021

10.5

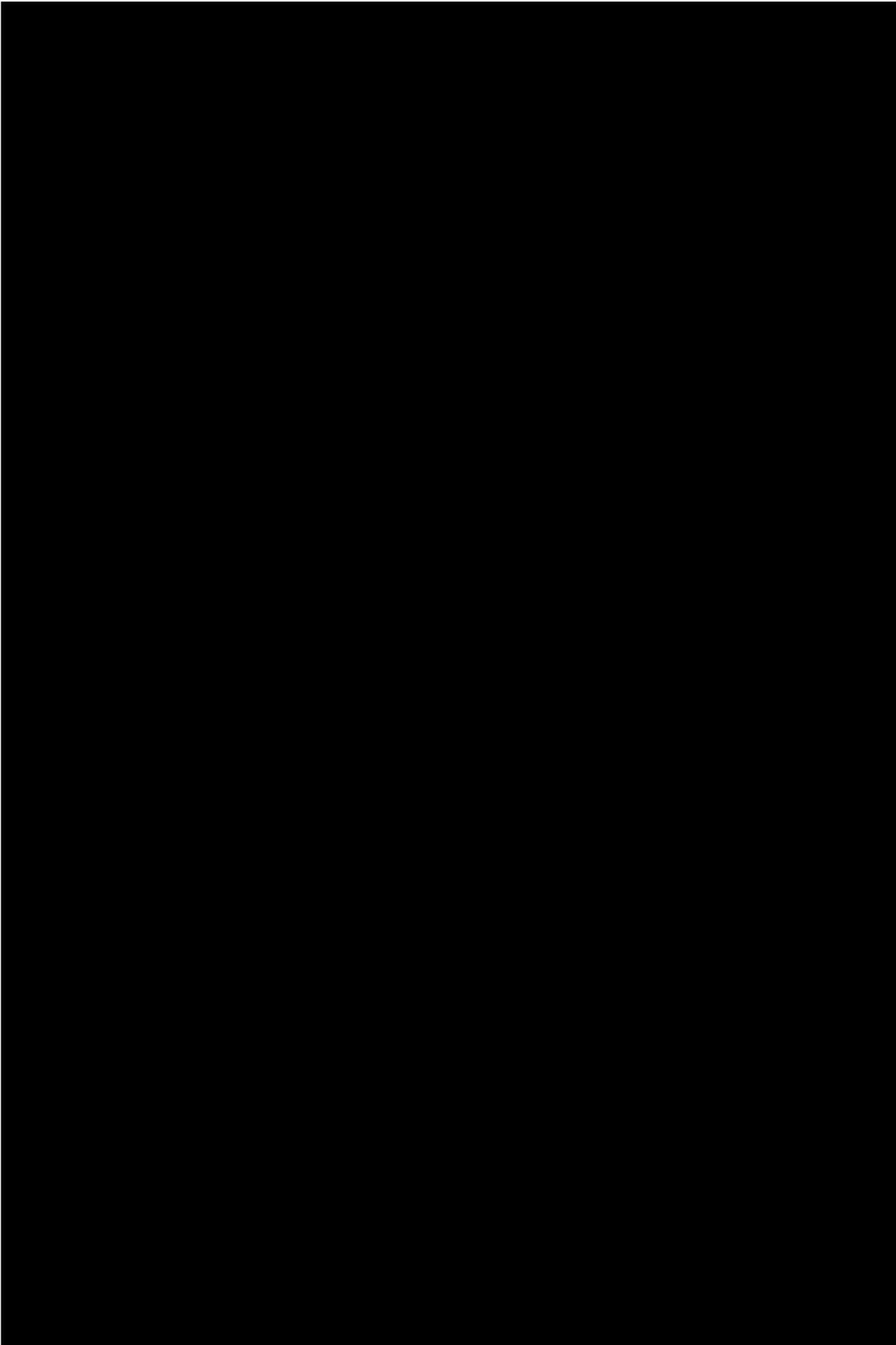


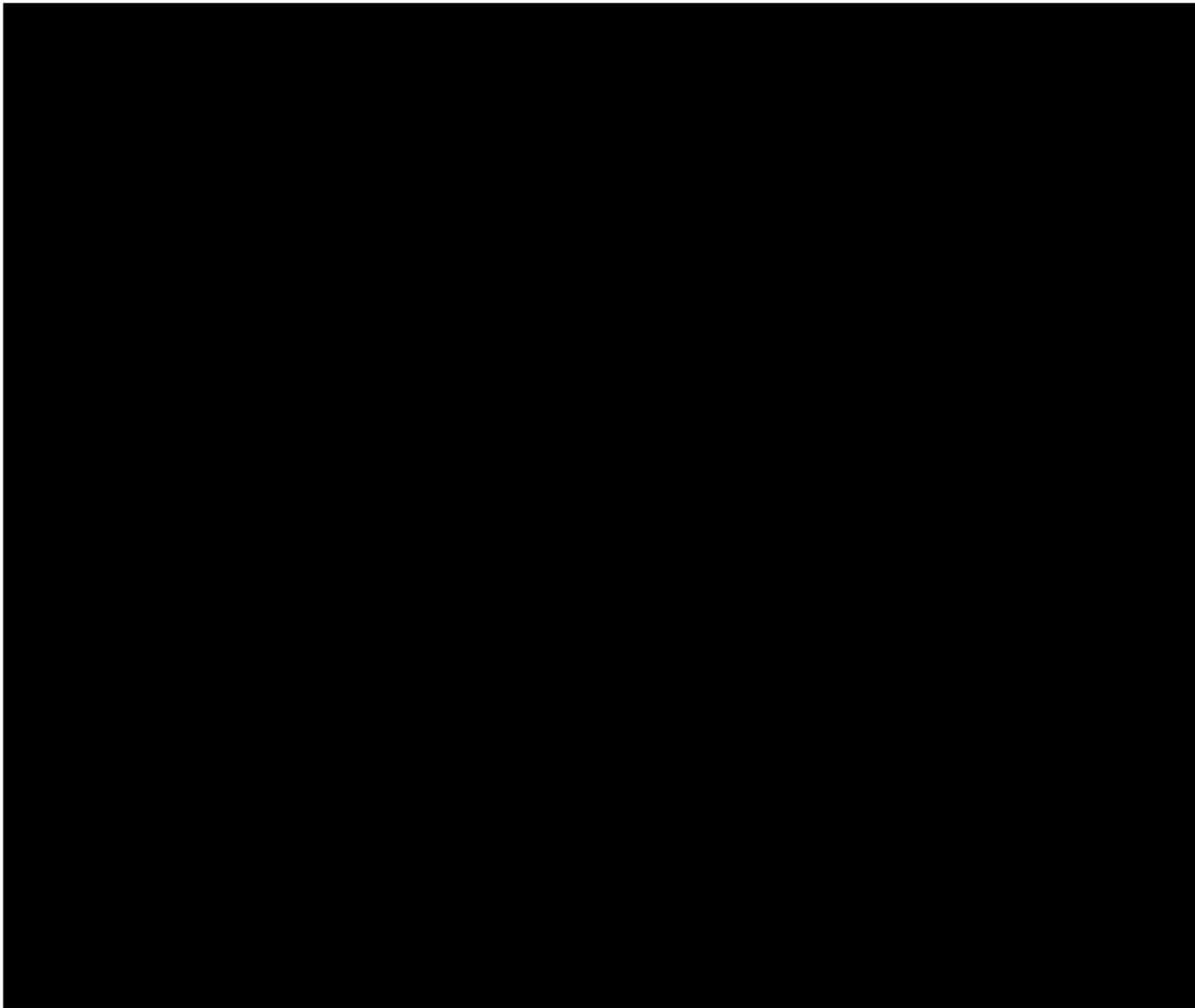
10.6

10.7

10.8

TABLE 10-2





The Officers of AVANGRID, Inc. for the current and previous three years are listed below.

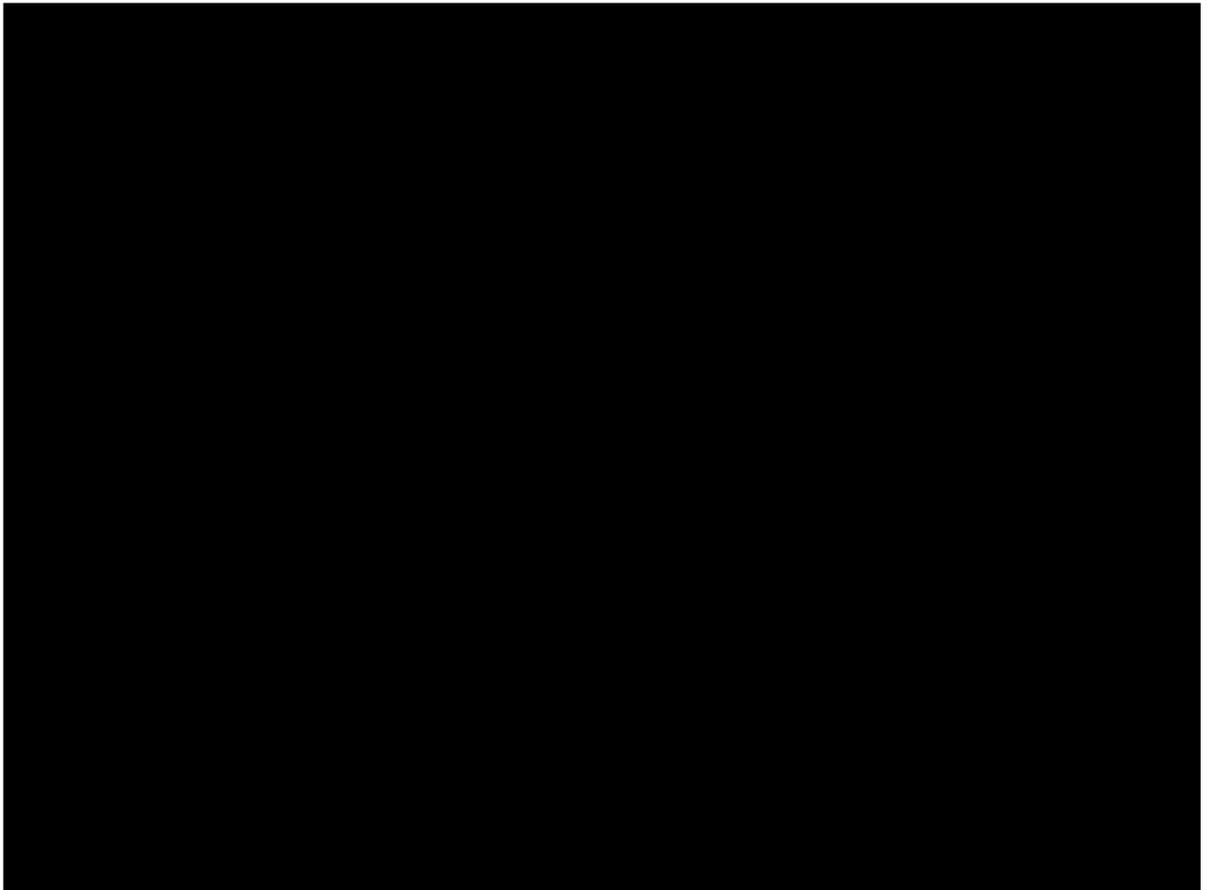
Current Officers Appointed by the AVANGRID Board:

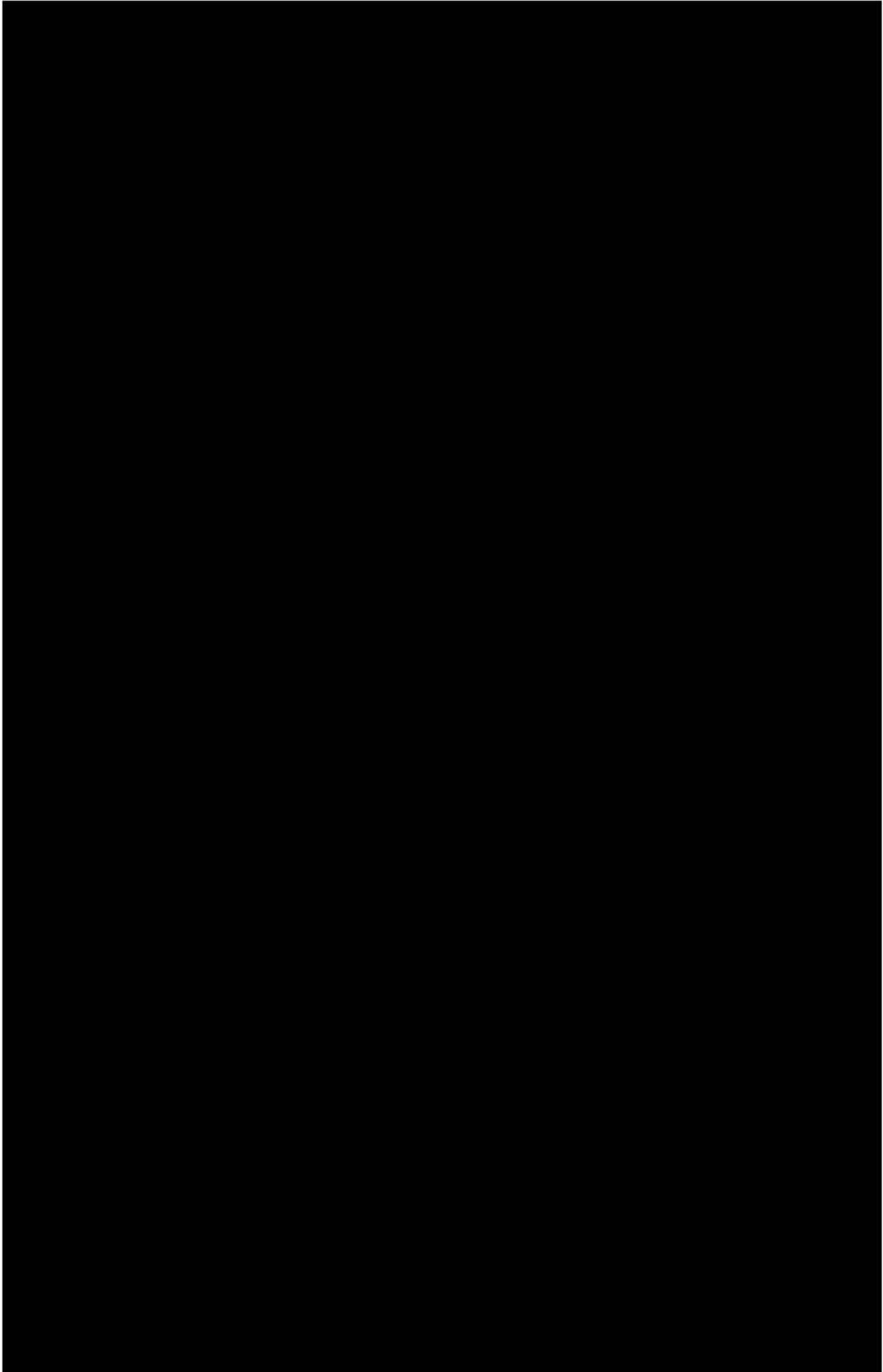
- Dennis V. Arriola – Chief Executive Officer
- Scott Tremble – Senior Vice President – Controller
- Ray Cardella – Vice President – Internal Audit
- Howard Coon – Vice President – Treasurer
- Peter Church – Senior Vice President – Human Resources & Corporate Administration
- Ignacio Estella – Senior Vice President – Corporate Development
- Manuel Gonzalez Iqual – Senior Vice President – Chief of Staff
- Brian Harrell – Chief Security Officer
- Robert Kump – Deputy Chief Executive Officer and President
- R. Scott Mahoney – Senior Vice President – General Counsel and Corporate Secretary
- Alistair Raymond – Vice President – Chief Compliance Officer
- Elizabeth Riotte – Deputy General Counsel and Assistant Corporate Secretary
- Leonard Rodriguez – Regulatory Compliance Officer

- Steven Stites – Vice President – Tax
- Douglas Stuver – Senior Vice President – Chief Financial Officer

Current Section 16 and Executive Officers identified in AVANGRID in Annual Report by the AVANGRID Board:

- Dennis V. Arriola
- Peter Church
- Alejandro de Hoz García-Bellido
- Ignacio Estella
- David T. Flanagan
- Robert Kump
- R. Scott Mahoney
- Franklyn Reynolds
- Catherine Stempien
- Douglas Stuver
- Carl Taylor
- Scott Tremble





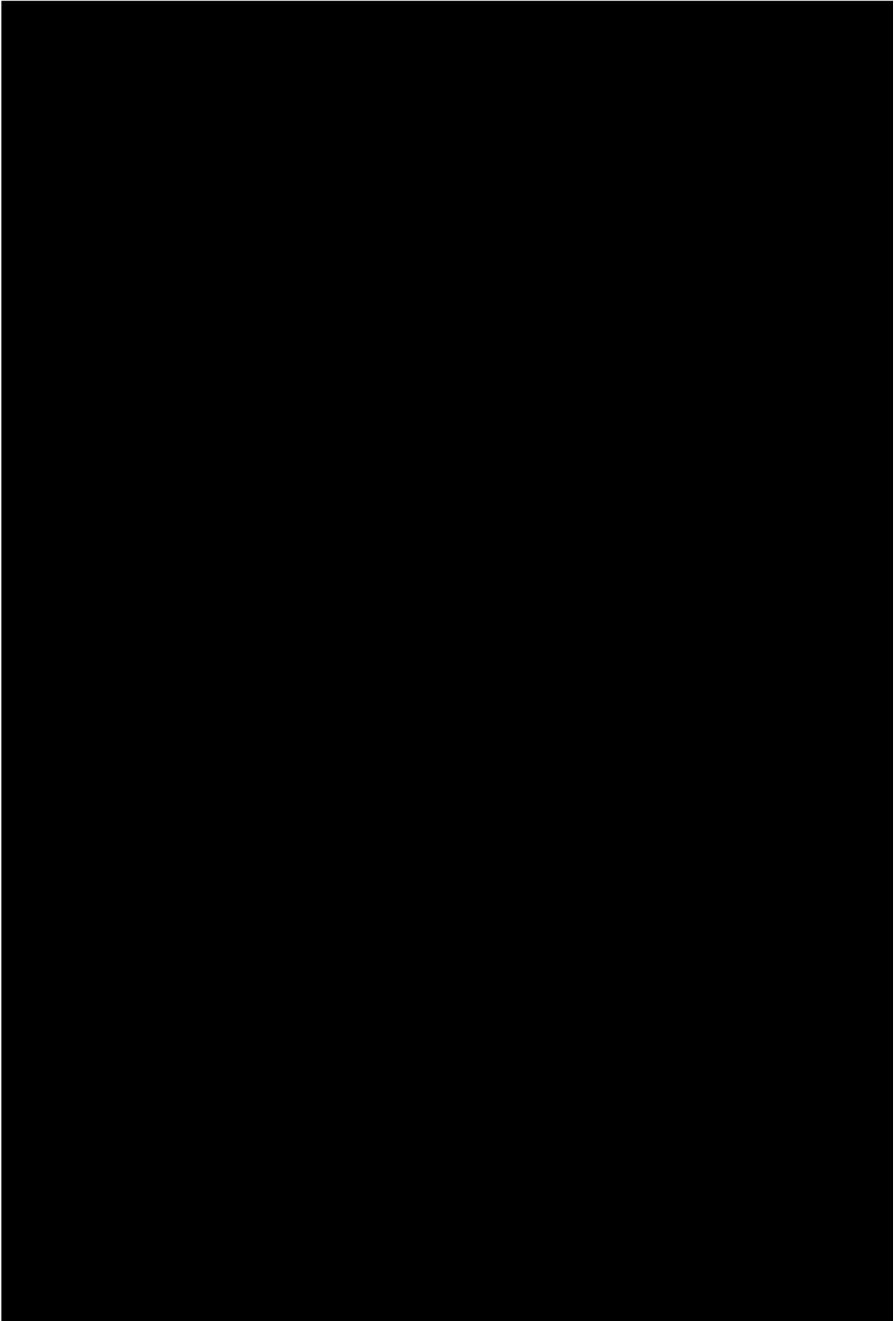


TABLE 10-3

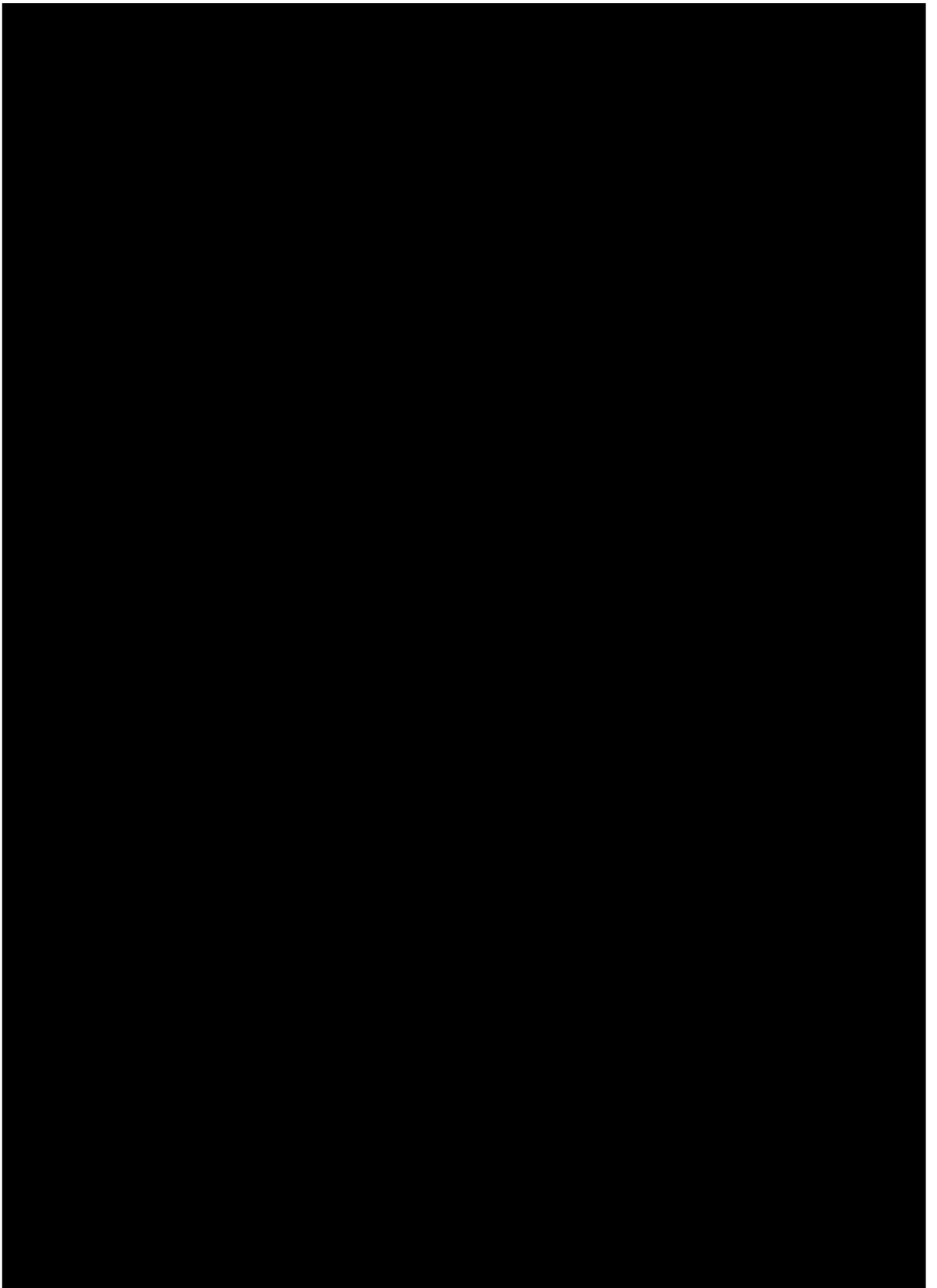
The Officers of Avangrid Networks, Inc. for the current and previous three years are listed below.

Current Officers:

- Richard J. DeJong – Director – Internal Audit
- Robert Fitzgerald – Vice President, Controller and Treasurer
- Andrew M. Jacobs – Chief Compliance Officer
- Noelle M. Kinsch – Vice President General Counsel and Secretary
- Catherine Stempien – President and Chief Executive Officer
- Carlisle Tuggey – Clerk
- Giancarlo Vassao de Souza – Chief Operating Officer

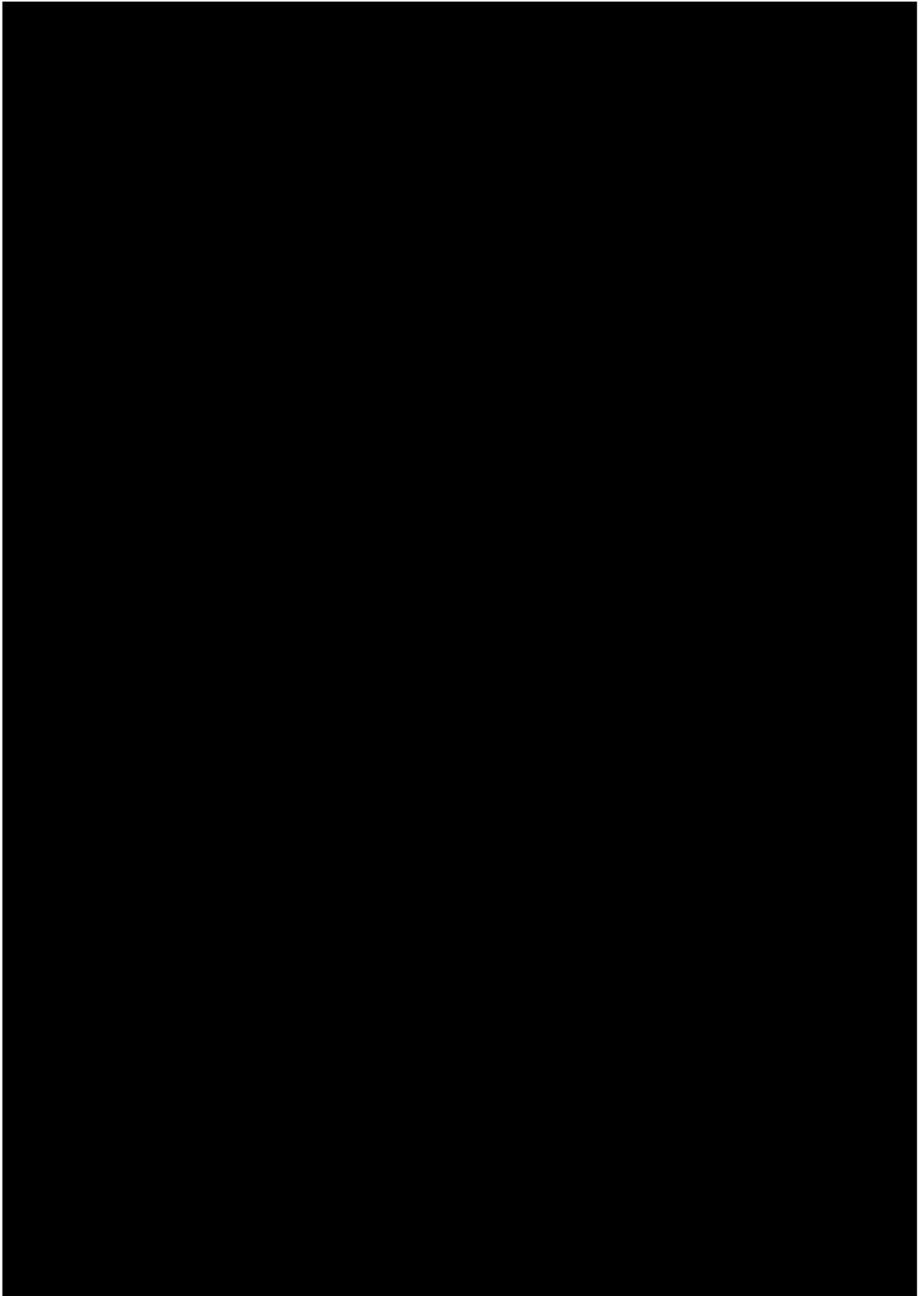
10.9

10.10



10.11

10.11.1

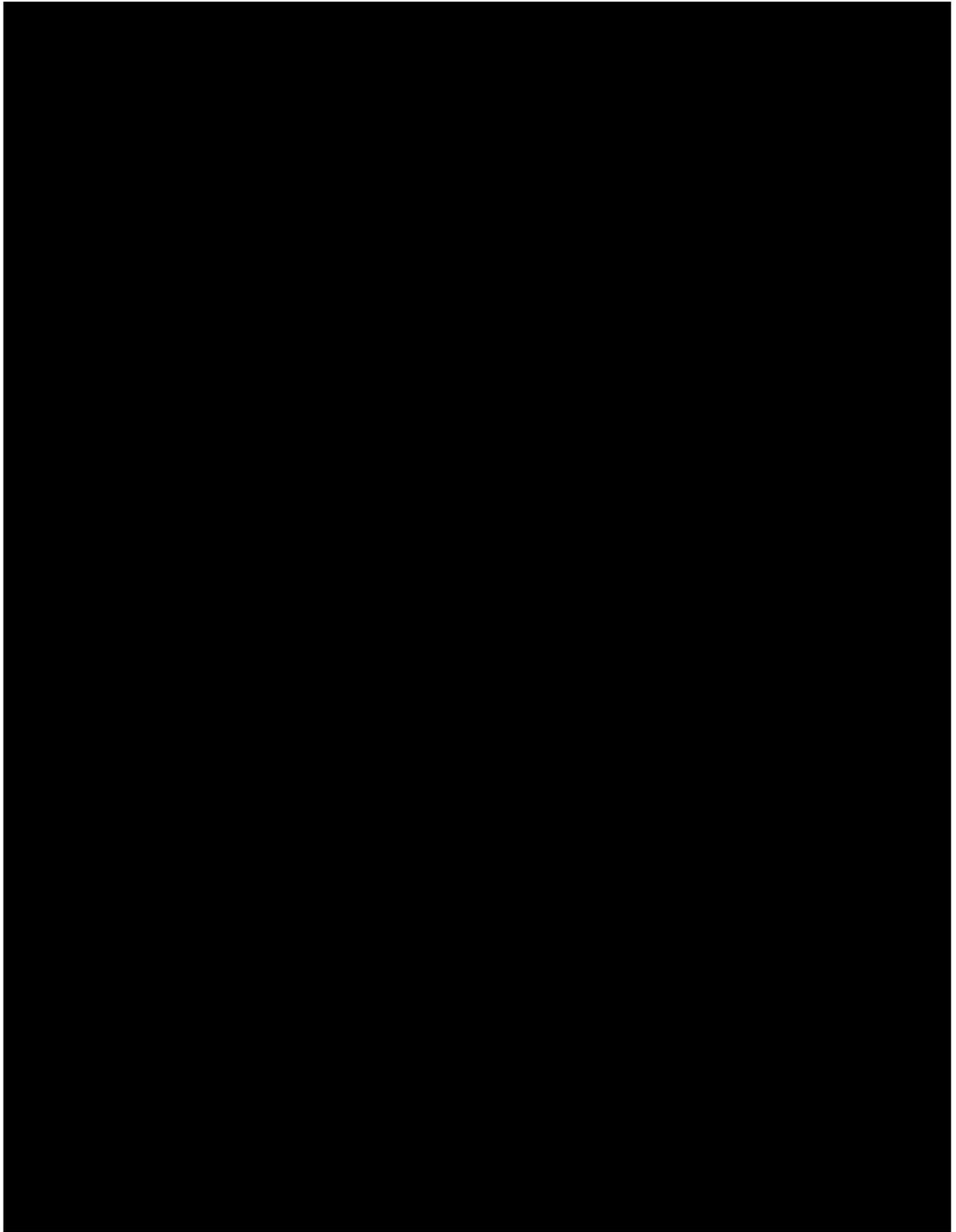


10.12

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10.15



11. Permitting Plan

The Excelsior Connect Generation and New Transmission projects are extensive and include multiple components and as such will involve permitting at the federal, state, and local levels. A high-level overview of permitting and approval requirements follows and a comprehensive and detailed listing of all required permits, approvals, environmental assessments, and environmental statements is provided below in Section 11.3 and the table presented in Section 11.3.1.

11.1 High Level Overview

As the Project will classify as a 'major electric transmission facility' under Article VII of the New York Public Service Law (Article VII), construction and operation will require a Certificate of Environmental Compatibility and Public Need (Certificate) from the New York State (NYS) Public Service Commission (PSC). Although state agencies and municipalities are precluded from requiring approvals and permits for construction or operation of projects certified under Article VII, due to the preemptive effect of PSL Section 130, federal requirements as well as some NYS, NYS Authority, and local permitting requirements remain effective. Principal among such permits is the need for NYS Thruway Authority (NYSTA) approval to occupy and work within the Thruway right-of-way (ROW). Similar approvals will be required from the NYS Department of Transportation (NYSDOT), New York City, and other affected municipalities for occupancy and work within NYS Highway and local streets or roads under their respective jurisdiction. Additionally, approval of the NY Office of General Services (NYSOGS) will be required for a submarine crossing of the Hudson River, approval of the NYSOGS will also be required for a submarine crossing of the East River, approval of the New York Independent System Operator (NYISO) will be required for the points of interconnection, and an approval from the NYS Legislature will be required for parkland alienation. Federal requirements include permits or approvals from the United States Army Corps of Engineers (USACE), the United States Coast Guard (USCG), the Federal Energy Regulatory Commission (FERC), the Federal Highway Administration (FHA) (for occupancy within the NYS Thruway and Interstate 87), and the National Park Service (NPS). Finally, federal approvals will require consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) as the State Historic Preservation Office designated under the National Historic Preservation Act as well as consultations with the United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) regarding threatened and endangered species under Section 7 of the Endangered Species Act.

11.2 Acquisition of Permits and Approvals

AVANGRID understands the potential challenges and risks connected with the Project. AVANGRID has extensive siting and routing experience to avoid or minimize impacts and managing the permitting of large-scale, complex transmission projects and will rely on a well-coordinated strategic approach to acquire permits and approvals.

11.2.1 General Approach

AVANGRID's general approach for acquisition of permits and approvals for the Project is:

- Early Project design development
- Avoidance and minimization of environmental impacts
- Coordination with applicable agencies and stakeholders
- Early submission of required permits and approvals.

Early development of the proposed route and conceptual design has integrated key strategies, highlighted below in Section 11.2.2, in order to reduce the overall environmental impact of the Project, and reduce regulated construction activities requiring permits and approvals. This careful planning minimizes permitting requirements and potentially reduces review times required by involved agencies.

Given the time requirements and pivotal importance of the Article VII certification process, preparation of the Article VII application has begun, including environmental and engineering assessments of the proposed Project route. Other permitting activities will be progressed throughout the Article VII review and certification process (the complete list of required permits and approvals is presented in Section 11.3). In order to expedite post-certification submission and approval of an effective Environmental Management and Construction Plan (EM&CP) key tasks such as survey work and detailed engineering will also progress during review of the Article VII application. This will also allow for concurrent preparation and submission of required Federal, State, and Local permit applications during review of the EM&CP.

AVANGRID is aware of the complexity of permitting and construction through New York City (NYC). As a result, a NYC-based consulting and engineering firm, inclusive of a NYC-registered "expeditor", will be retained to serve as the Project's NYC Expediting Team and will provide specific expertise service and allow this Project to navigate through local NYC agencies on permitting, utility crossings, traffic control, and coordination, and other ancillary issues associated with construction within the City. Permits required within the City will be from the NYC Department of Transportation (NYCDOT), NYC Department of Building (NYCDOB), NYC Department of Environmental Protection (NYCDEP), NYC Parks, and the Metropolitan Transportation Authority New York City Transit (MTA NYCT) The local NYC expertise has a comprehensive understanding of the standard details of NYC design and construction and applicable design and utility plan approval process to allow adequate planning and smooth construction through the City.

11.2.2 Key Strategies

The Project utilizes the following key strategies to pursue an efficient permitting approach.



Avoiding or Minimizing Impacts and Associated Permitting Requirements

Since many permitting and approval requirements are triggered and defined by specific impacts, avoiding or minimizing such impacts can simplify permitting requirements and protect the environment.

In order to significantly reduce environmental impacts, the Project route is located predominantly within previously disturbed areas presently occupied or maintained for transportation. Using the Thruway corridor and existing transmission corridors will make it unnecessary to establish a new route through naturally vegetated areas and areas of residential and commercial development. Therefore, the Excelsior Connect Transmission Project will avoid disturbance to wildlife habitat, minimize the adverse impact on historical and archeological resources and avoid construction and operational activity in areas with species sensitive to (or not acclimated to) human activities.

Utilizing the Thruway ROW and other transportation ROWs will significantly minimize, if not entirely eliminate, impacts on historic, archaeological and other important environmental resources for a majority of the Project route. Such resources within the ROW, as well as in lands adjacent to the Thruway and other transportation ROW, have been extensively studied and documented as a result of the required assessment of these resources for previous improvement projects. For this reason, the potential for exposure and impact to previously undiscovered archaeological resources and ecologically sensitive habitat in the ROW are extremely remote.

The Project will also make extensive use of buried transmission lines and will thereby avoid many of the concerns associated with aerial transmission lines and towers, including visual impacts and aesthetics, electromagnetic radiation effects, and real or perceived impacts on property value. Underground installation methods also render unavoidable potential impacts to sensitive resources (including but not limited to: wetlands, streams, rivers, historic and archeological sites) to be only temporary in nature. By using horizontal directional drilling (HDD) installation methods, impacts to creeks, streams, rivers and wetlands will be avoided.

The most frequent objection to transmission projects is the visual impact caused by towers and overhead

lines. This is a particularly critical issue because the Project is located in the historic and scenic Mohawk and Hudson River Valleys. The Project completely eliminates visual impact issues along the route by selecting buried high-voltage direct current (HVDC) cable technology. The only elements of the Project that will be above ground are the end point converter stations. The visual impact associated with the converter stations is limited to the immediate surrounding area. The visual impacts of these facilities are further reduced by having most of the equipment inside proposed buildings, which themselves can utilize unobtrusive architectural shapes and colors, as well as being sited within areas of similar character to the proposed development (e.g., existing utility, industrial, commercial).

[REDACTED]

[REDACTED]

[REDACTED]

To minimize impacts during construction within the congested nature of the NYC Metropolitan area, the Project will avoid disruption to multiple streets at a time. Instead, construction will traverse long stretches of the City streets to alleviate the potential for significant impacts to local traffic. Within the City, the Project will cross Bronx Kill and the East River. Construction crossing method for both river crossings will be HDD and thus eliminating direct impacts to the waterways.

Acquisition of Permits Issued by NYC

Navigating the labyrinth of public and private utilities beneath NYC's streets is a balancing act to satisfy everyone's particular requirements. The Project Expediting Team is aware of the designation intricacies on various sections of the City street (i.e., protected street, holiday embargo, 10-yr capital plan, etc.) and will coordinate closely with agencies and private utilities to discuss the design and its potential impacts to

the various entities located beneath the roadway. As the Project will affect multiple NYC agency stakeholders, it will be critical to receive proper feedback and comments on the proposed alignment as part of the design process. The approach that the Expediting Team has taken previously when working on capital reconstruction project within the NYCDOT ROW is to arrange for an alignment meeting with all public and private utility companies to discuss the design and its potential impacts to the various entities located beneath the roadway. This coordinated forum allows for the various utility companies to highlight any potential impacts within the proposed route and discuss ways to mitigate these issues without creating ripple effects for the adjacent utilities.

[REDACTED]

11.2.3 The Plan

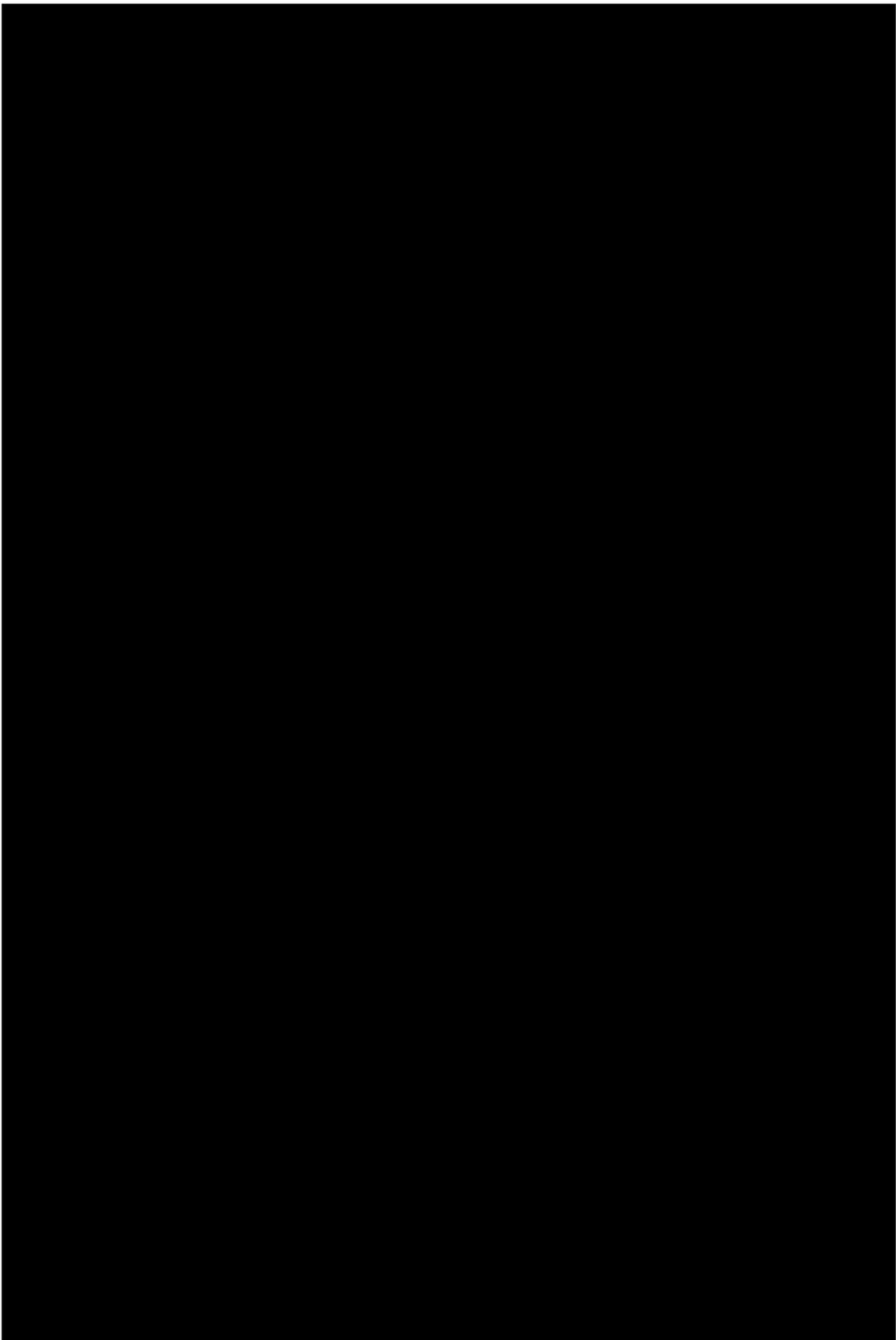
The Excelsior Connect Project permit plan is largely controlled by several permitting milestones, the two most prominent being issuance of an Article VII Certificate and subsequent approval of a Project EM&CP. In order to efficiently acquire all other agency approvals, described in Section 11.3, preparation of applications and development of supporting environmental assessments will occur during the PSC review process. [REDACTED]

[REDACTED]

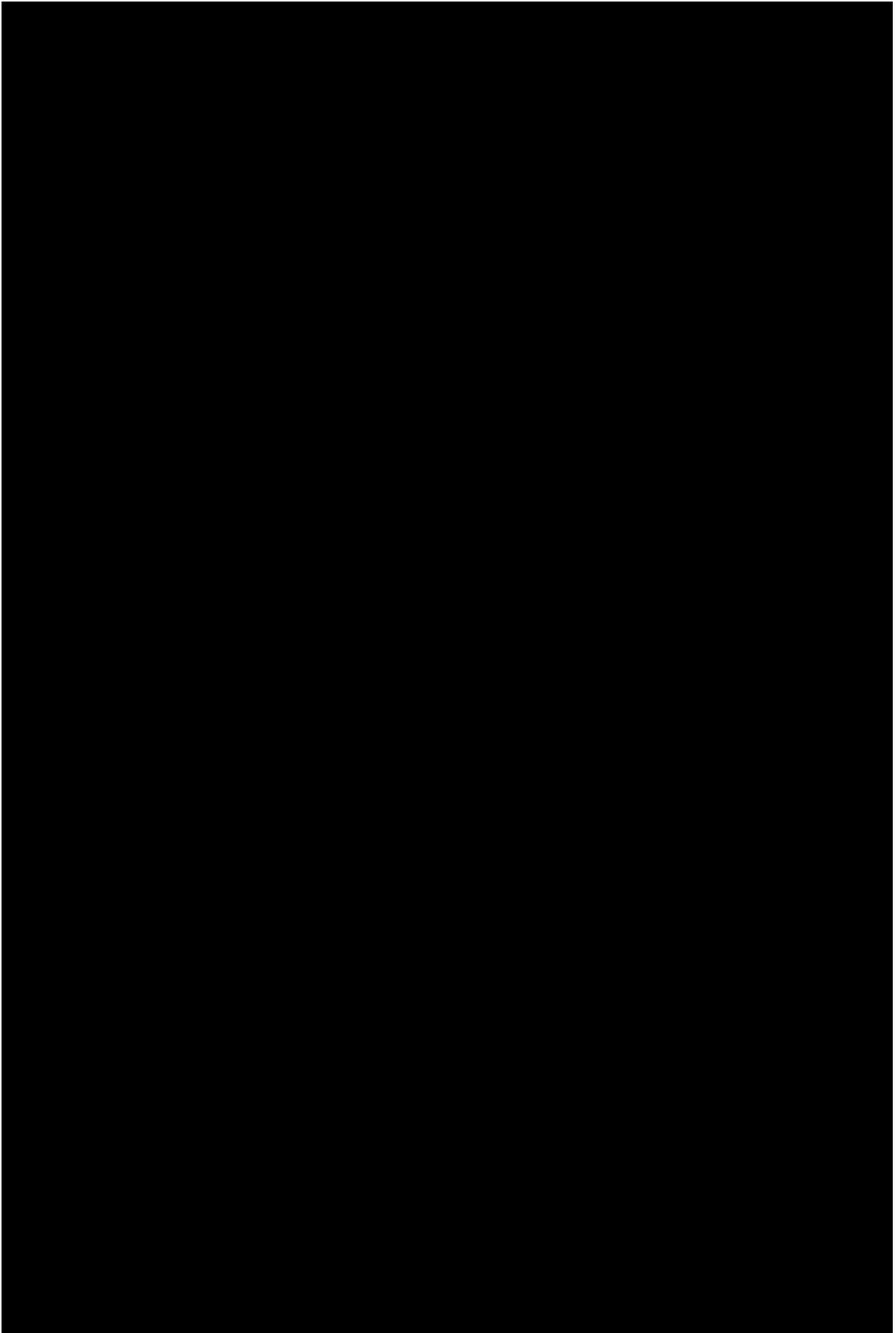
Environmental and cultural resource studies produced as part of the Article VII application process, as outlined in Section 11.3, will directly support other required federal and local approvals. Preparation and filing of other required permits and approvals will occur during EM&CP review and approval, as final Project design maturity allows. It is anticipated that other required filings and permit approvals, including approvals from the USACE and local agencies, will be obtained concurrently with or soon after EM&CP approval.

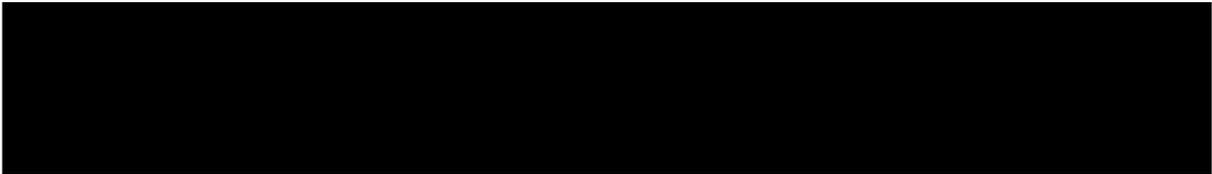
11.3

TABLE 11-1

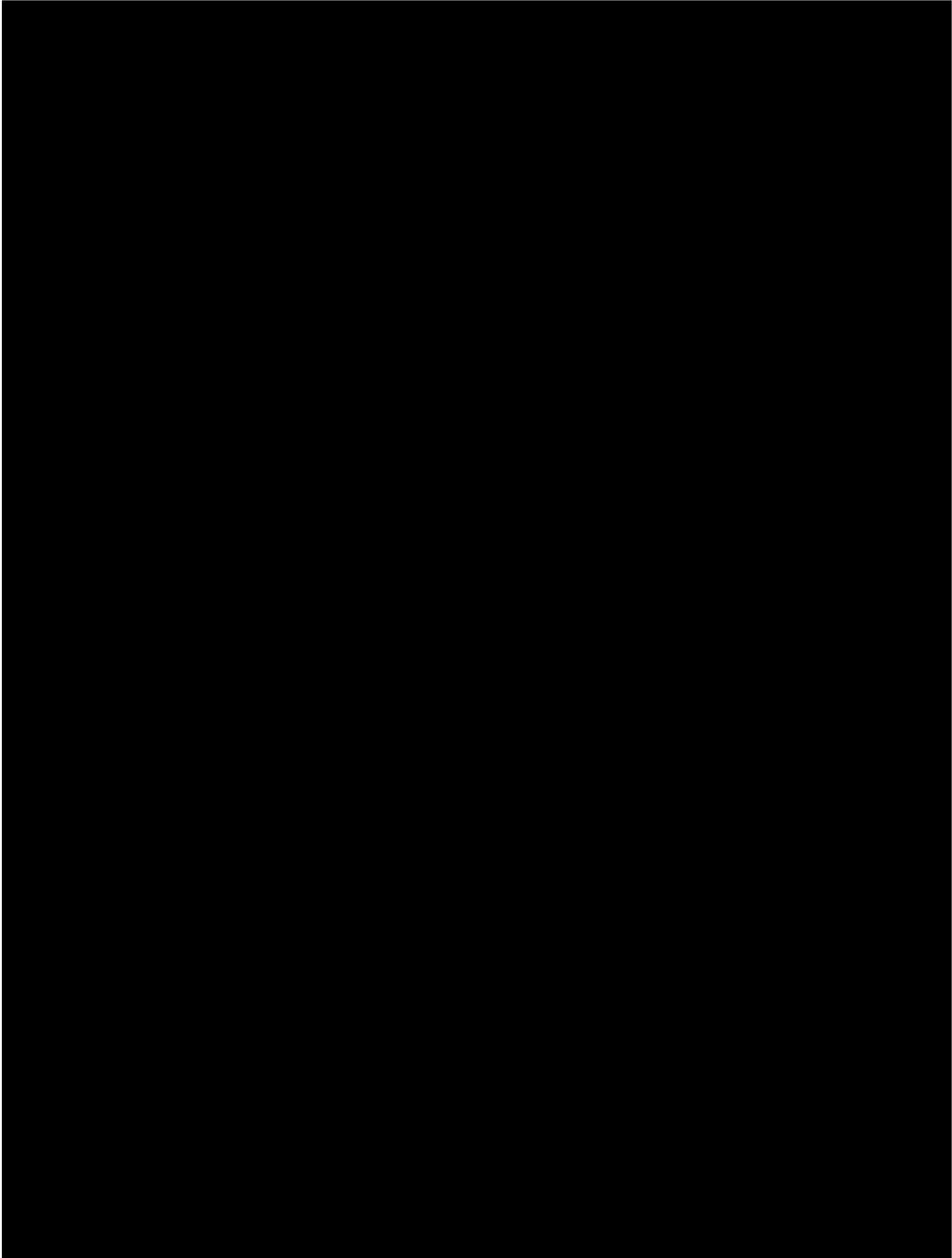
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11.3.1

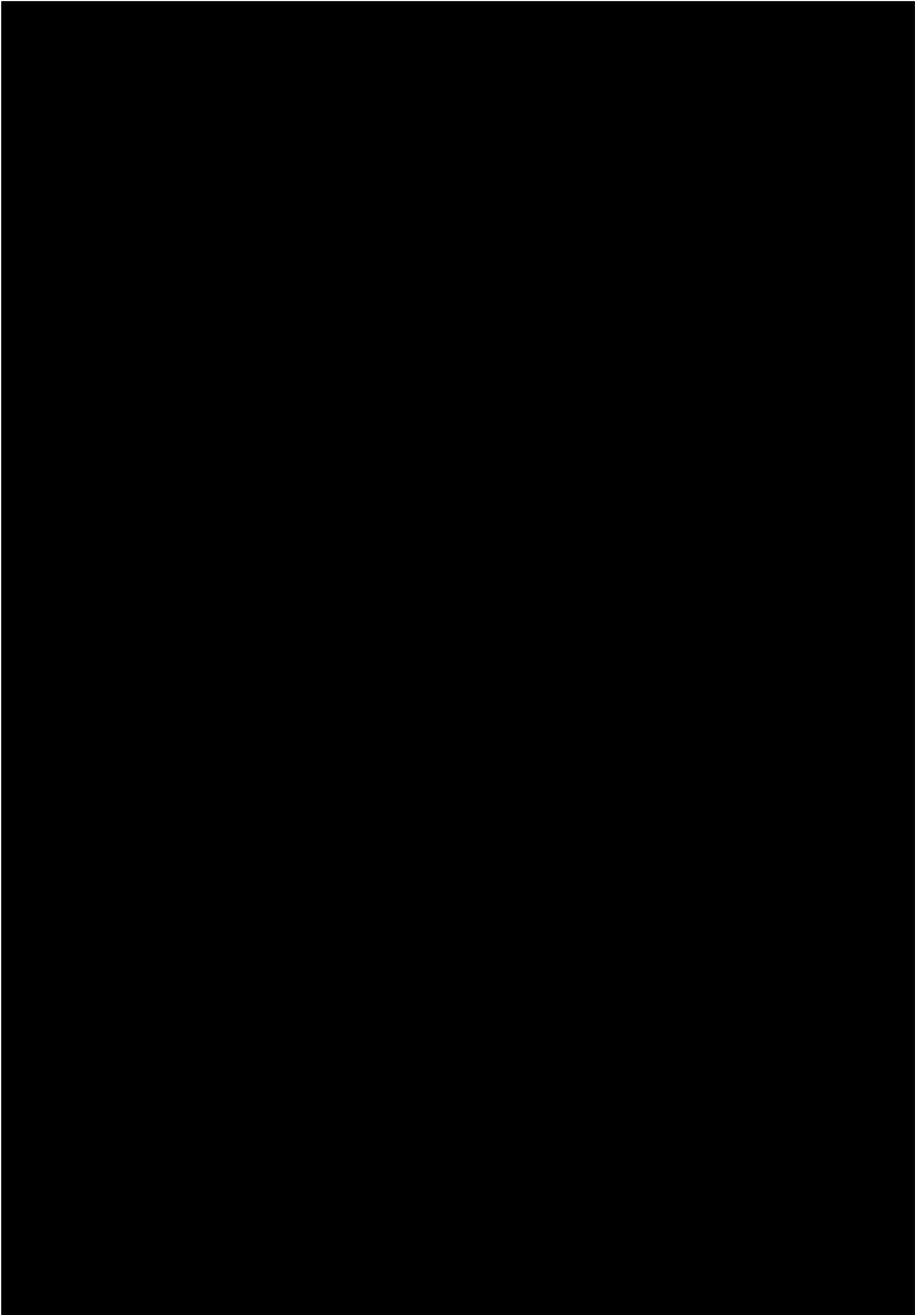




11.3.2



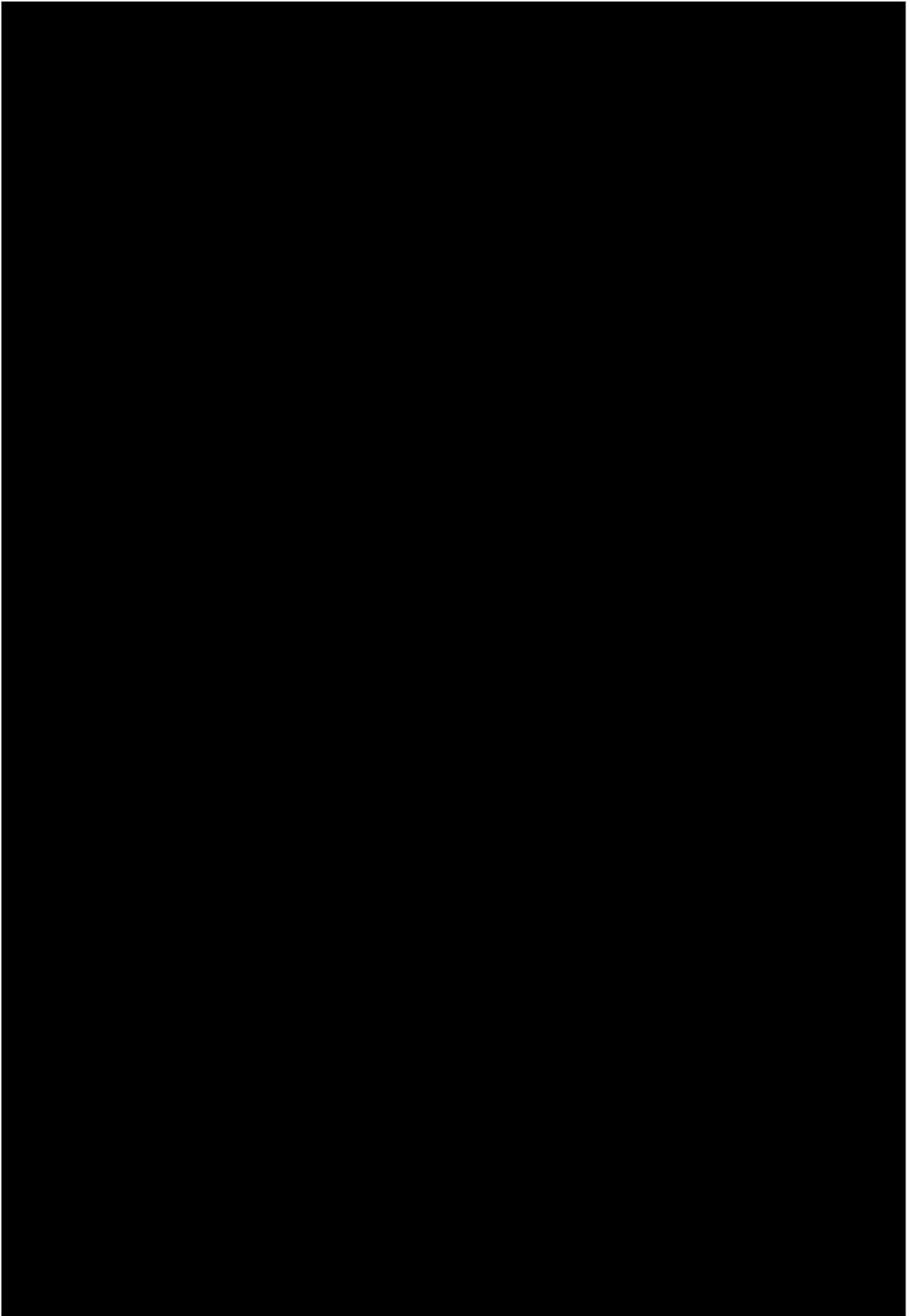
11.3.3



11.3.4

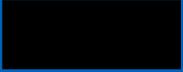
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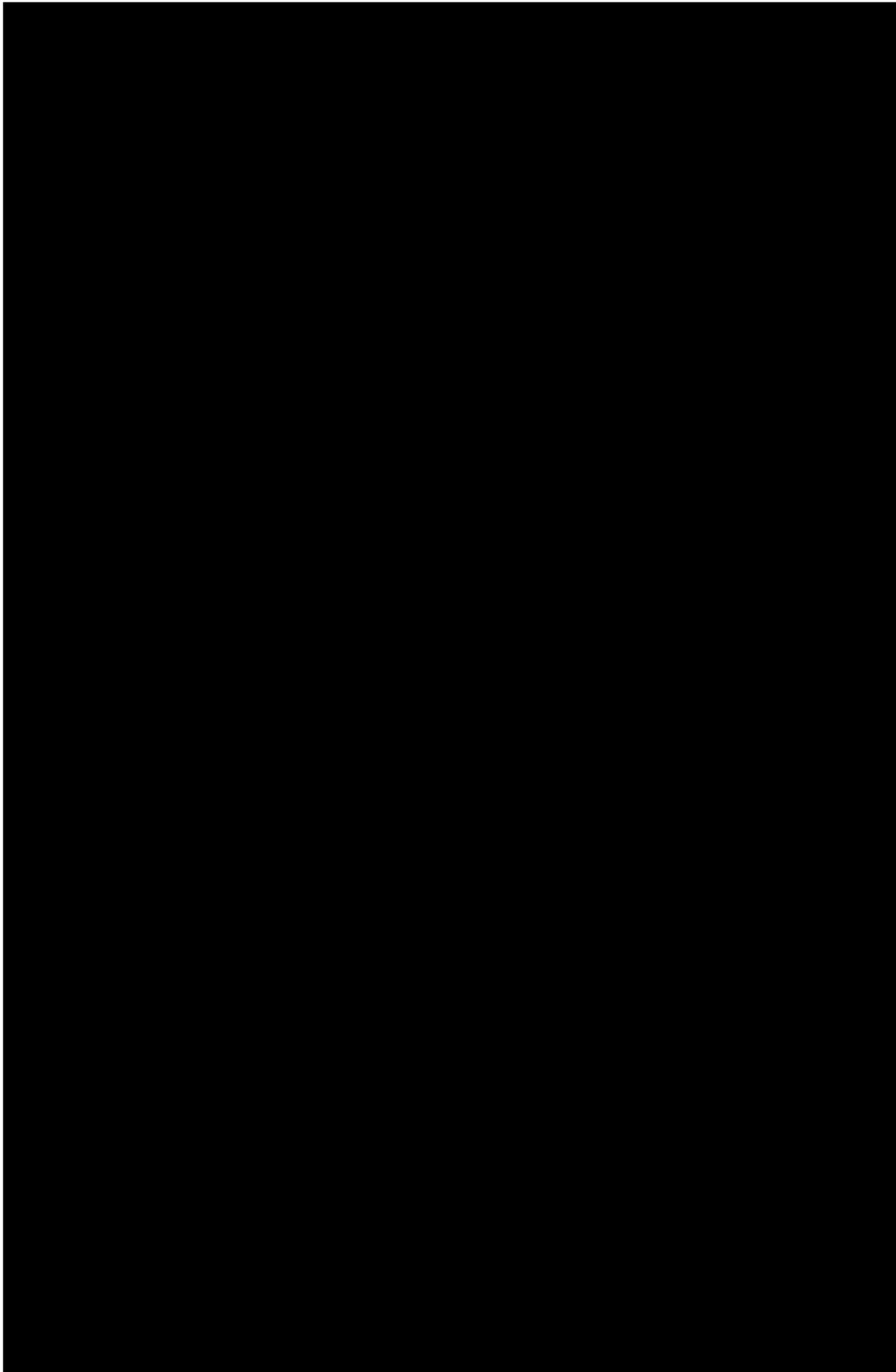
11.4



11.4.1

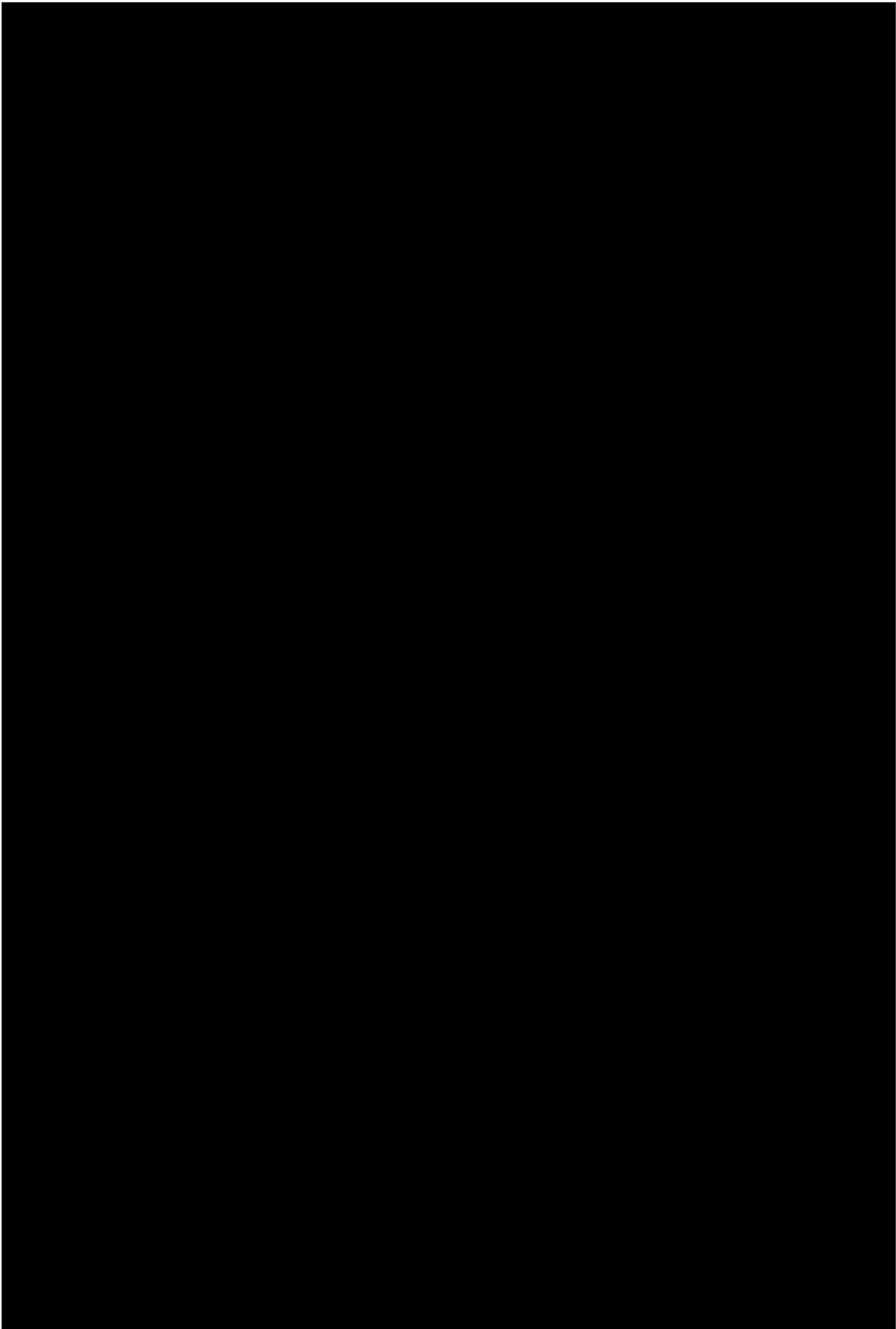
TABLE 11-2

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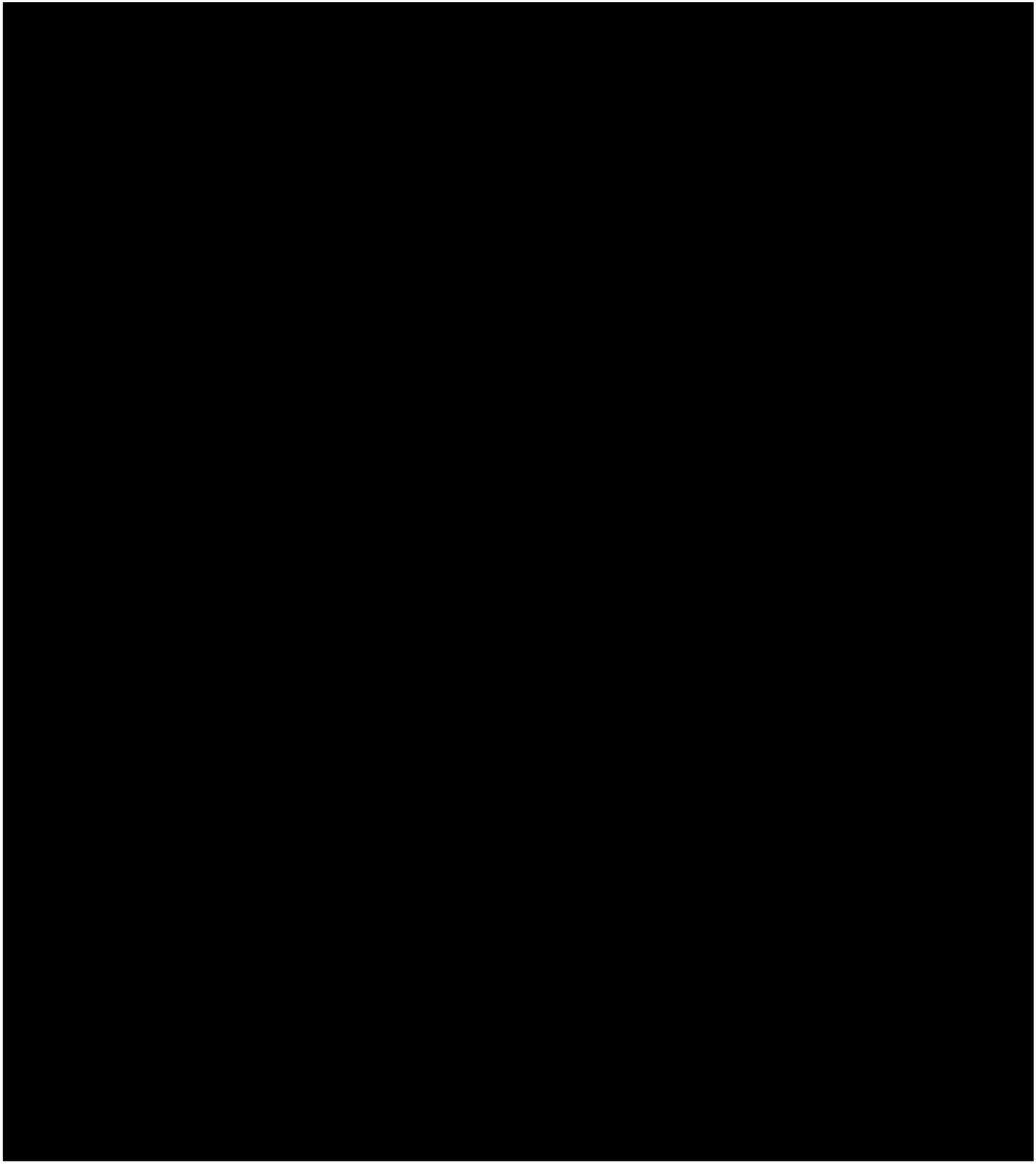


11.4.2

11.4.3



11.4.4



12. Environmental Mitigation Plan

12.1 Environmental Mitigation Plan Overview

The Proposer is making every effort during the planning and design phases of the Project to collaborate with key agencies to avoid impacting environmental and agricultural resources, thereby minimizing the need for mitigation. The most significant aspect of the overall mitigation plan for the Excelsior Connect Project is the decision to follow existing ROW for the New Transmission into Zone J. By following these existing routes with a fully undergrounded solution, the Project avoids adverse impacts to New York's key natural resources in the Mongaup and Hudson Valleys, including the Hudson River. In instances where impacting environmental resources is unavoidable, the Proposer is attempting to minimize the impacts to the greatest extent practical by working proactively and collaboratively with the applicable agencies and stakeholders. This early and consistent engagement will result in successful completion of the Project.

12.1.1 Collaboration with State, Federal and Other Agencies

The Proposer will proactively and consistently engage key agencies and stakeholders to discuss the Project in an effort to identify potential environmental and agricultural resources, and work with the agencies on the proper impact avoidance and minimization strategies. This effort includes collaborations with the NYSTA and NYSDOT to discuss the Project components, scope of work, and general approach. This effort will continue throughout the design and permitting phases and will be expanded to include all applicable agencies and stakeholders as the Project develops. In the event that impacts to specific resources are unavoidable, the Proposer will continue this collaboration with the applicable agencies and stakeholders to ensure that mitigation strategies are agreeable to all parties.

[REDACTED]

12.1.2 Avoidance of Potential Impacts

Excelsior Connect is being designed in a way that avoids potential impacts to environmental resources through strategic routing and design approaches. The New Transmission component is being designed to leverage major highways as much as possible in an effort to avoid impacts to environmental and agricultural resources, and to avoid utilizing local highways, roads and streets. [REDACTED]

[REDACTED]

Agriculture

[REDACTED]

[REDACTED] As the Project route begins from Coopers Corner Substation and follows existing transportation ROW; the route is located entirely within a previously disturbed and existing transportation corridors and no agricultural lands will be disturbed.

Vegetation and Heavily Timbered Areas

The existing transportation ROW is generally designated as developed, passing through areas that are populated with grassy or low-lying growth. Large growth, such as timbered or forested areas, within the ROW has mostly been removed. The overall Project route has been designed to utilize maintained transportation ROW in order to minimize necessary vegetative clearing.

Scenic and Recreational Resources

In operation, the buried transmission line will have no impact on scenic and recreational resources.

Historic/Archaeological Resources

[REDACTED]

[REDACTED] it is unlikely that historical and archeological resources will be significantly affected by the Project. If any unanticipated historic or archeological resources are discovered, investigation and mitigation during the Project construction will be performed.

Protected Species and General Wildlife

[REDACTED]

[REDACTED] Because the route primarily follows the previously disturbed Thruway ROW and existing transportation ROW, it is unlikely that this Project will impact any state or federally protected animal or plant species. Avangrid will pursue agency coordination for any work near potential protected species habitat (i.e., Hudson River crossing) to discuss avoidance and mitigation strategies if necessary. If any unforeseen conditions are observed, further investigations and mitigation efforts will be identified during Project planning.

Wetlands

The Project is located primarily in the Thruway ROW and transportation corridors. Many of the wetlands or stream crossings have previously been crossed and will not be disturbed by construction. Prior to construction, the ROW will be surveyed and all wetlands will be identified. Each identified area will be assessed to determine whether it can be avoided or what form of mitigation may be needed. Where wet-

land avoidance is not possible, short-term impacts from siltation and erosion during construction can be mitigated by utilizing best engineering construction practices and restoration as needed. The Project will avoid forested wetlands to the extent practical by utilizing existing previously cleared road shoulder. As such, the majority if not all disturbance to wetlands will be temporary and the Project will require minimal to no wetland mitigation.

Surface Water

Existing surface water and drainage conditions in the vicinity of the converter stations and along the Project route have been evaluated by identifying any streams within one mile of the converter stations and the Project route, and by reviewing drainage patterns around the converter stations and along the Project route. Not all of the streams crossed will be disturbed. The determination of which streams will be crossed by open cut and channel diversion, or traversed with horizontal directional drilling (HDD) will be determined in final design stage.

The Project has avoided lengthy linear placement in large water bodies (i.e., Hudson River, East River). The large water body crossings have been limited to the extent practical to avoid impacts to fisheries and aquatic ecosystems. Additionally, all waterbody crossings (i.e., streams and rivers) will be via trenchless installation (HDD, jack-and-bore, etc.) and an Inadvertent Return Plan will be utilized throughout construction to ensure any unanticipated negative impacts are identified and mitigated as quickly as possible.



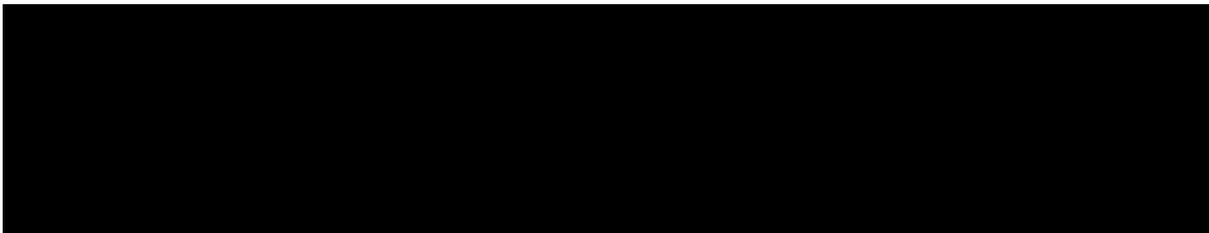
Visual Impact

The Project consists of buried electrical cables. As such, there will be no permanent visual impact along the Project route after it is constructed. Permanent above-ground features and structures will be built as part of the Northern and Southern converters. However, these stations occupy a relatively small footprint. The visual impacts of these facilities are further reduced by having most of the equipment inside proposed buildings, which themselves can utilize unobtrusive architectural shapes and colors, and are sited in areas of similar character (e.g., existing utility, industrial, commercial). As such, permanent visual impacts associated with converter stations will be minor.

Mitigation of Unavoidable Impacts

The Proposer will work with the applicable agencies to perform comprehensive mitigation for any unavoidable impacts to environmental resources. The Proposer anticipates that mitigation may be required for impacts to state and/or federal wetlands, specifically the conversion of forested wetland habitat (dredge of material) to emergent and/or scrub shrub wetland habitat due to tree clearing for ROW needs. However, the amount of forested wetland conversion is being minimized significantly by utilizing high-

ways for routing and by designing the transmission line in an underground duct bank to minimize the width of ROW clearing. No other permanent wetland impacts and subsequent mitigation is anticipated for the Project at this time.



The Proposer will also conduct comprehensive cultural resource surveys prior to construction to ensure that any known culturally sensitive areas are avoided. In the event that cultural resource impacts cannot be completely avoided, the project will be designed in a way that minimizes the impacts to the best extent possible. If unanticipated archaeological material is encountered during construction, the contractor will be required to stop work, stabilize the area, and protect the material from further damage. The Proposer will then consult with the applicable agencies to determine the best course of action and whether mitigation is required.

Mitigation of other unavoidable impacts is not anticipated at this time. In the event that Project details change then mitigation strategies will be determined through agency collaboration.

12.2 Contribution to Meeting New York State Climate Goals

Avangrid supports achievement of the 17 Sustainable Development Goals (SDGs) approved by the member states of the United Nations for the years 2015–2030. In particular, we are focused on the goals targeting affordable and clean energy (SDG 7) and climate action (SDG 13).

Avangrid has incorporated these goals into the company's strategy and sustainability policy. Pursuant to these principles, Avangrid focuses its efforts on affordable, clean energy while nurturing sustainable communities through investments in research, development and innovation and social action at the local and national levels. More information about Avangrid's strategy and sustainability policy is detailed below and can be further explored in Avangrid's 2020 Sustainability Report, which can be found on Avangrid's website, www.avangrid.com.

This is aligned with the company's continued stewardship for action on climate. Avangrid is committed to contributing to the social and economic development of the communities in which it operates, and to the protection of the environment through its sustainable energy business model.

Annually Avangrid reports on key indicators relating to climate and to the strategy of the fight against climate change and will incorporate key figures as part of the Excelsior Connect Project, including the

greenhouse gas emissions inventory; emissions intensity figures; reduction targets; energy use, intensity and mix; renewable installed capacity; use of water; and research, development and innovation (R,D&I).

Avangrid has set new goal targets

- Reduce the intensity of direct greenhouse gas emissions from sources that are owned or controlled by the AVANGRID Group such as power generation facilities, offices and fleet vehicles by 35% by the year 2025 compared to a year 2015 baseline and be neutral of such emissions by the year 2035; and
- Continue to focus on renewable energy, targeting an increase in renewables installed capacity of more than 100% by the year 2025 compared to a year 2015 baseline.

Avangrid publishes a Greenhouse Gas Emission Report to ensure the full transparency in its commitment to achieve above targets. In 2020, the emissions intensity from Avangrid's owned generation was 51 grams of CO₂ per kWh of electricity produced (113 lbs. per MWh). This is a 30% reduction compared to 2019, a year with an unprecedented need for power from the Klamath cogeneration plant which compensated for an atypically low level of hydroelectric generation in the Northwest last year. As Avangrid continues to grow its renewables footprint, the intensity of the emissions from its generation fleet keeps a downward trajectory. Compared to its baseline year 2015, CO₂ emissions intensity decreased 20%. Although Avangrid didn't reach its internal goal for 2020, mainly due to external factors that limited production like local transmission events or renewable supply curtailments experienced during the year, Avangrid is one of the cleanest energy companies in the U.S. with an intensity emission seven times lower than the U.S. utility average in 2020.⁴ As a leader in renewable energy, Avangrid is strongly committed to reduce its carbon intensity rate by investing in wind and solar generation technologies and to keeping that level well below the industry average.

[REDACTED]

the 2019 NYISO CARIS study and the Zero Carbon Emission study, it is expected the majority of energy upstate will be from zero-emission resources. The 2021 NYISO Goldbook estimates about 47.5 TWh of annual energy will be consumed in Zone J and 22 TWh of the consumed annual energy in Zone J were from Gas and/or Oil plants. [REDACTED]

[REDACTED]

As detailed in the Excelsior Connect: Production Cost Modeling Technical Report attached in Attachment 5-1, Daymark conducted modeling across multiple scenarios to assess the robustness of the proposal and quantify key system impacts and details can be found in the Energy Deliverability Assessment (Section 5.5). Based on guidance provided in the Tier 4 RFP, the primary scenario evaluated is a single-year hourly study of 2030 assuming a New York supply portfolio that meets the target of 70 percent renewable energy by 2030 ("70x30") as set out in the CLCPA. The analysis and metrics were specifically designed to focus on the priorities expressed in the Tier 4 RFP. [REDACTED]

TABLE 12-1

12.3 Embodied Carbon Accounting and Mitigation

Avangrid and the Generation Patners support and applaud NYSERDA's efforts to better understand and consider embodied carbon. As this section demonstrates, Excelsior Connect has endeavored to understand and is committed to minimize carbon emissions and embodied carbon. Excelsior Connect's efforts focus on carbon reductions that are real, meaningful, and achievable.

Throughout this section, "carbon emissions" will refer to direct carbon emissions from the construction, operation, and decommissioning of the Project. While more expansive definitions exist, and the difference between direct and indirect emissions is not always clear-cut, for the purposes of this Submission "embodied carbon" refers to indirect carbon emissions generated during the manufacturing and supply of Project components. Excelsior Connect is committed to a holistic approach for minimizing the Project carbon impacts.

12.3.1 Indirect Emissions

Embodied carbon refers to indirect carbon emission. Excelsior Connect's indirect emissions are those released throughout the supply chain and include emissions from raw material extraction/processing, fabrication of parts, and manufacturing/assembly of Project components. Embodied carbon depends on location, availability of raw materials, and supply chain structure.

A life cycle assessment of Great Britain's transmission network indicates that, assuming a static generation mix, the carbon equivalent emissions (or global warming potential) of the transmission network are around 11 gCO₂-eq/kWh of electricity transmitted and that almost 19 times more energy is transmitted by the network than is used in its construction and operation. Operational emissions account for 96% of this with transmission losses alone totaling 85% and sulphur hexafluoride (SF₆) emissions featuring significantly. However, the CO₂ embodied within the raw materials of the network infrastructure itself represents a modest 3%.

The Excelsior Connect has selected for its transmission line a +/- 320KV DC extruded cable technology that minimizes losses during operation, attacking the main source of GHG emissions as identified in the Grate Britain case. To tackle the 3% of embodied CO₂ from the raw materials and construction processes, Avangrid has procurement standards in place to ensure that suppliers account for emissions throughout the value chain. In its firm commitment to fight climate change, and as part of the Iberdrola group, Avangrid attempts to extend the effort to comply with emission-reduction objectives to its suppliers. Emissions data from suppliers is obtained via a yearly environmental awareness campaign to encourage the reduction of CO₂ emissions in the supply chain.

Through this initiative, Avangrid wants suppliers to demonstrate their effectiveness in managing, controlling and reducing greenhouse gas (GHG) emissions, while understanding the impact of climate change on their businesses and managing the associated risks appropriately.

With regard to the environmental evaluation of suppliers, within the whole Iberdrola group purchases made in 2019 from suppliers with an environmental management system accounted for 73% of the total orders issued. The report of activities on purchasing and supplier management and their contribution to the Iberdrola Group's sustainability in 2019-2020 can be found in Attachment 12-1.

13. Project Schedule



As part of the conceptual development of the Excelsior Connect Solution, the team considered all project development, engineering, procurement and construction activities resulting in a consistent and cohesive overall schedule, building in it strategies to optimize the timeline while also considering ways to be economically competitive and minimizing impacts to environment and communities. Above all, it is the commitment of the Excelsior Connect team to propose something we can deliver and uphold commitments of scope, schedule and budget to the State of New York. [REDACTED]

[REDACTED]

The Excelsior Connect development consortium has a track record of successfully delivering projects to market in New York and across the country. This experience informs the schedules for each of the projects in the portfolio and has resulted in realistic and commercially feasible schedules.

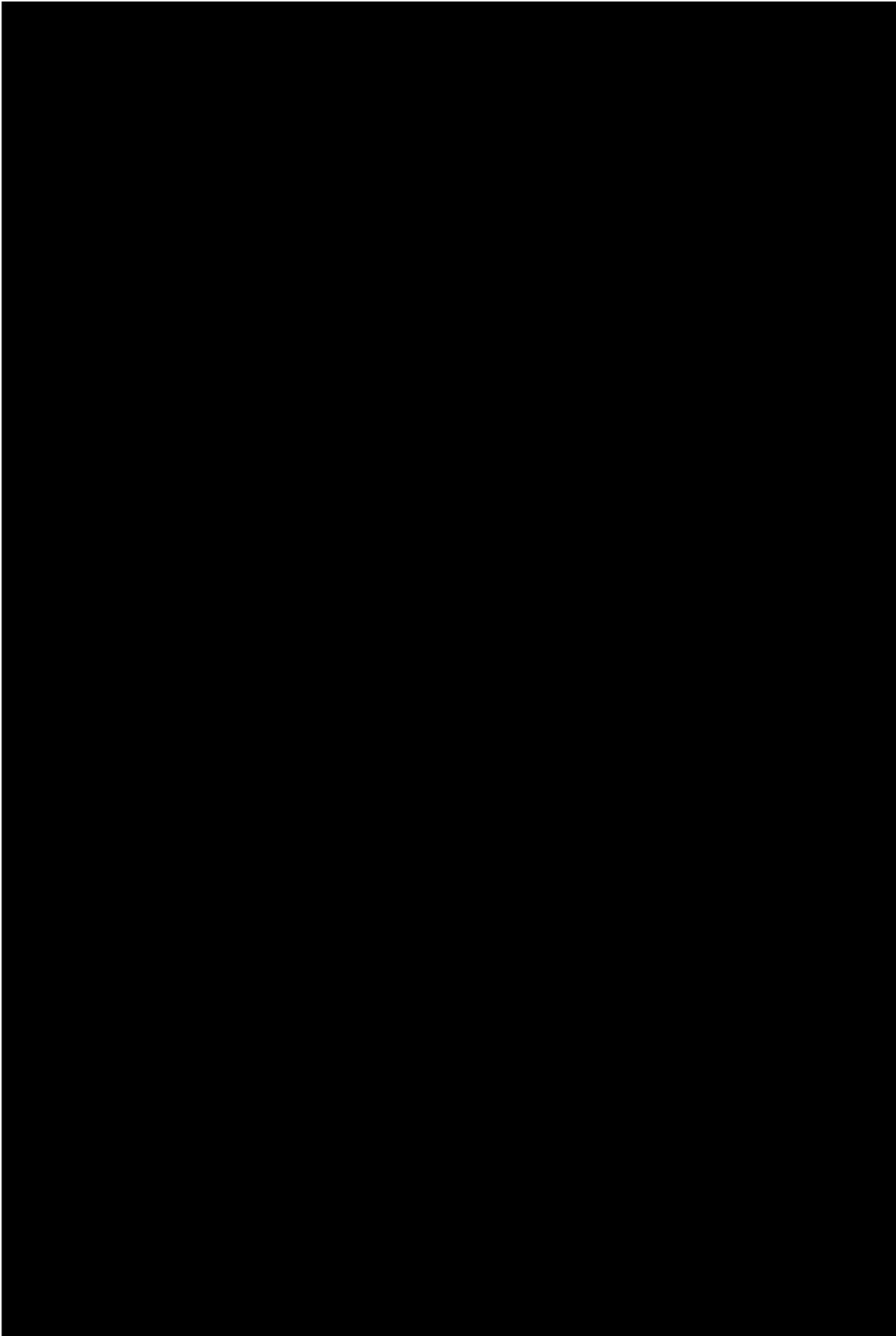
[REDACTED]

The transmission schedule leverages the project team’s strong presence, relationships and experience in New York to develop, finance, construct and energize the generation and transmission components of the project. The Proposer has drawn on its experience and vendor relationships to validate its schedule assumptions, accelerate key activities, and minimize the risk of delays. Schedule risks were modeled using analytical software to determine the likelihood that the in-service date for the project could be met, and these results were used to further optimize project activities.

[REDACTED]

[REDACTED]

FIGURE 13-1

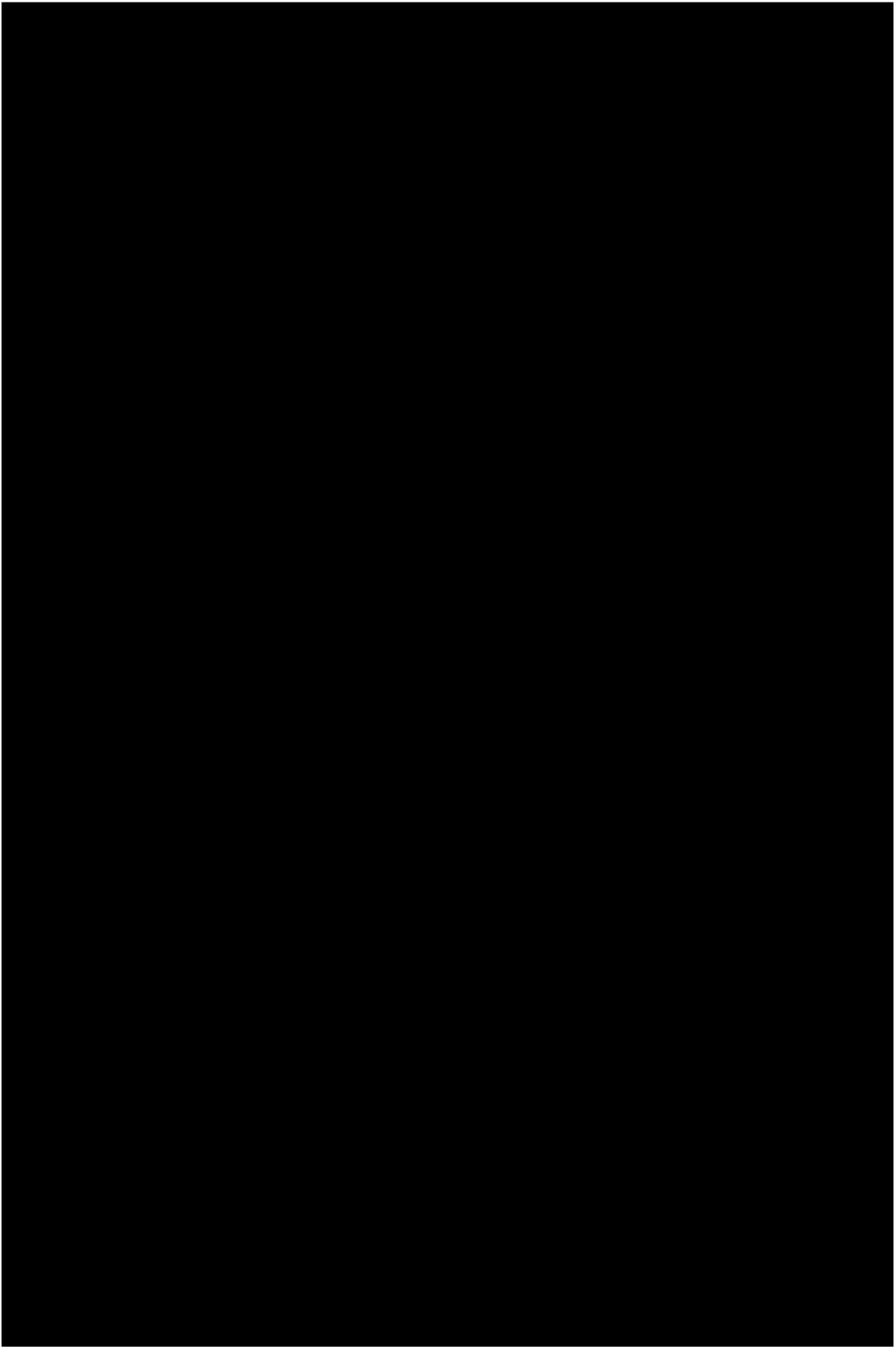


13.1

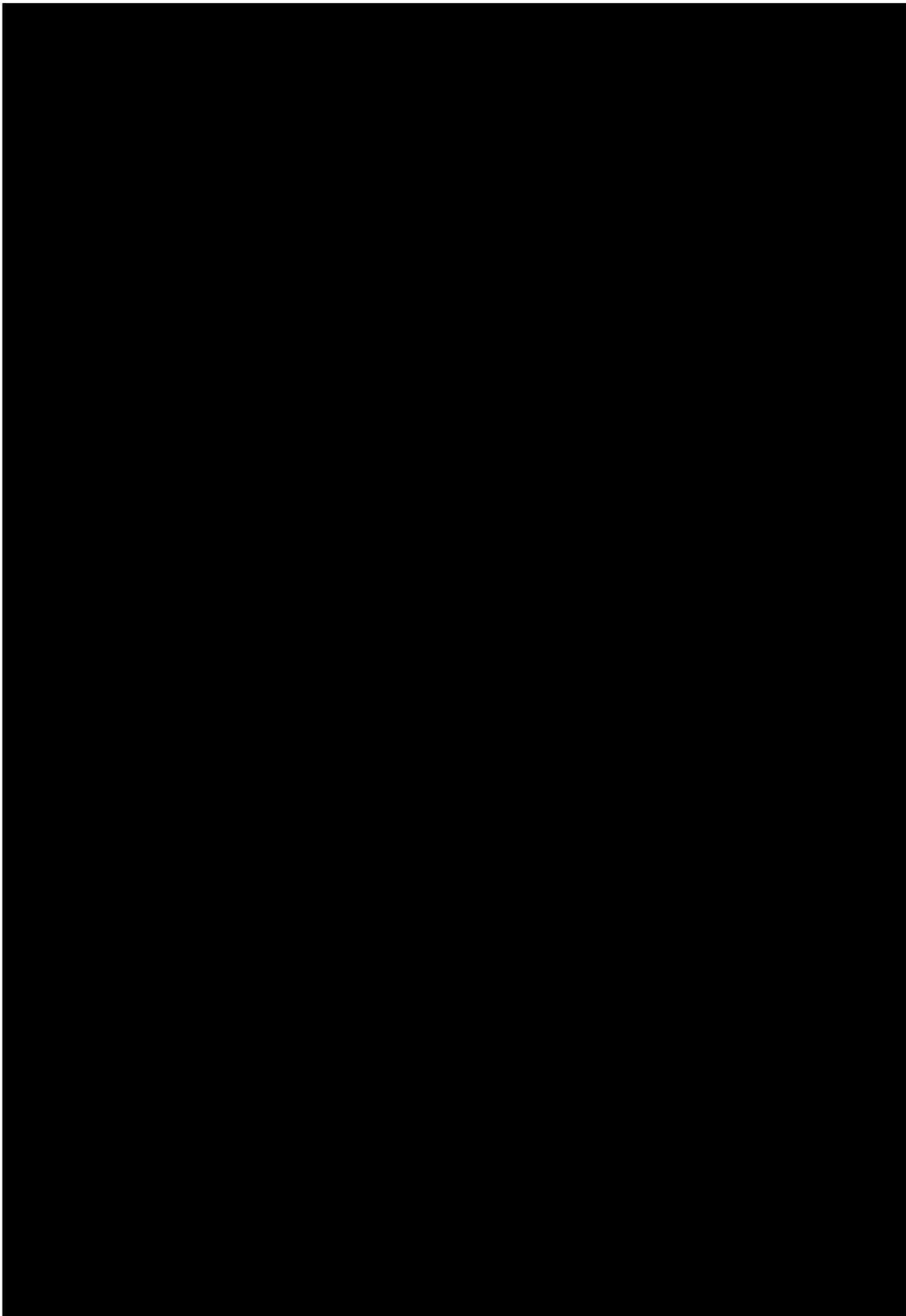
13.1.1

13.1.2

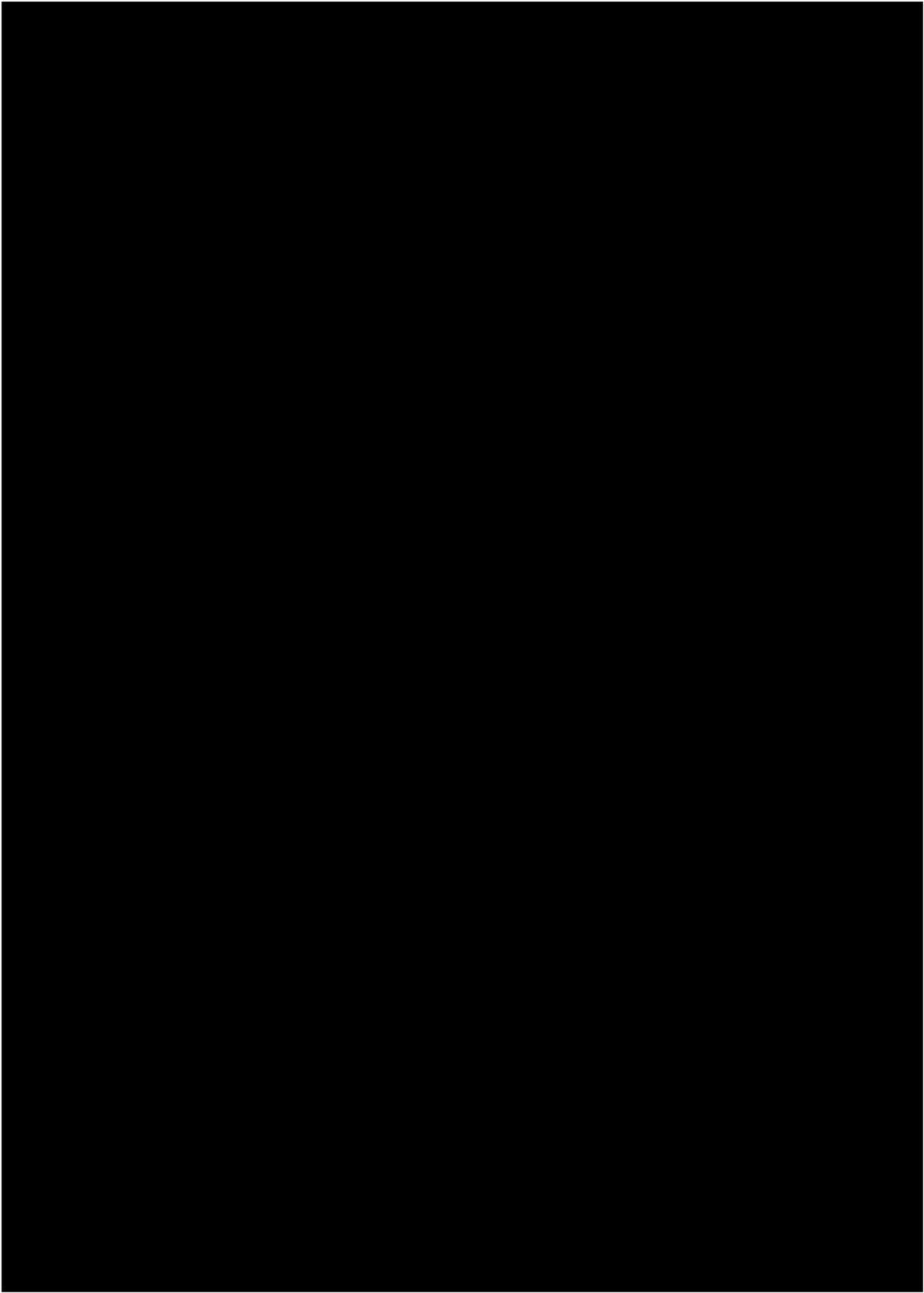
13.1.3



13.1.4



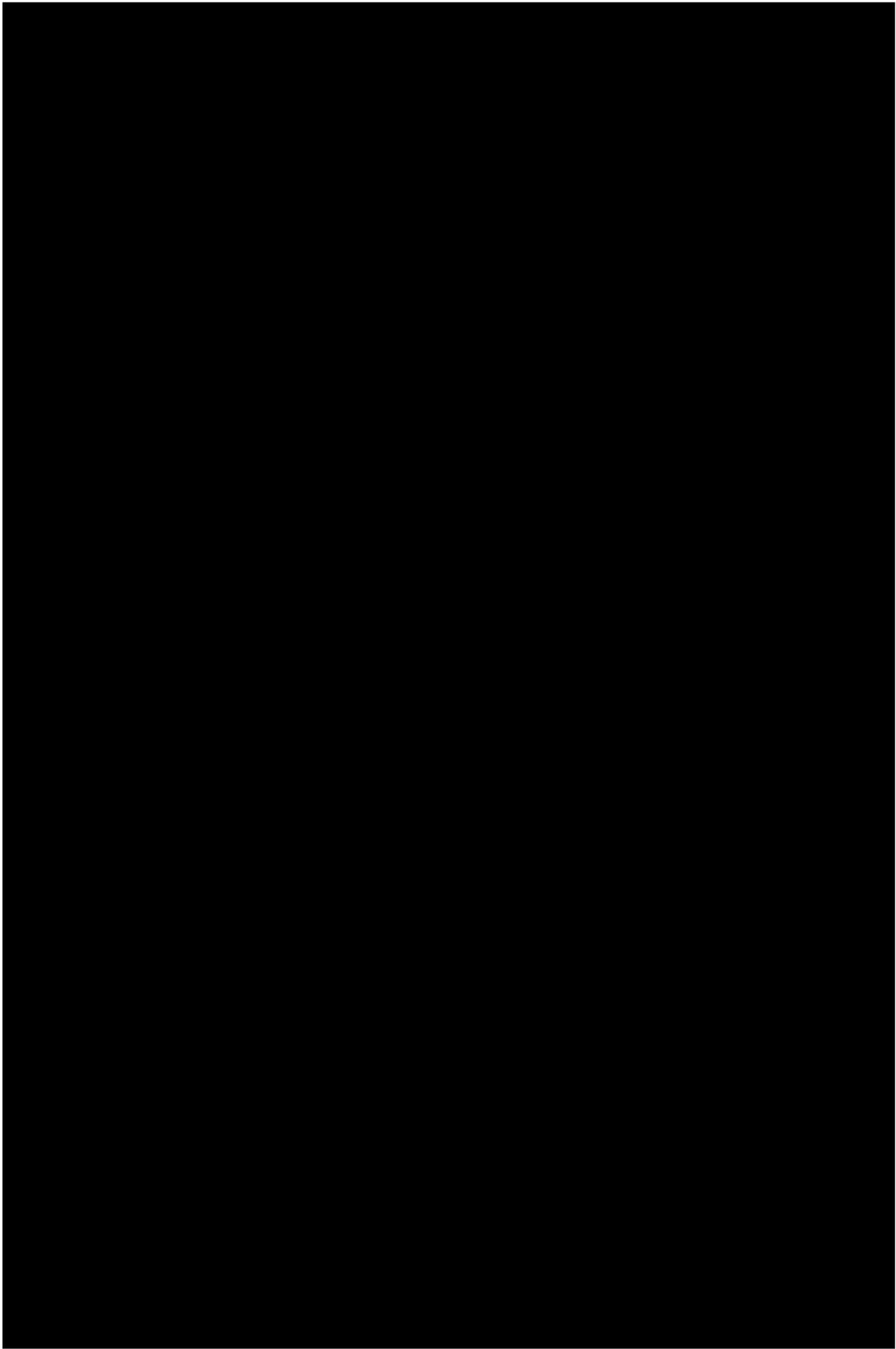
13.1.1



13.2

TABLE 13-2

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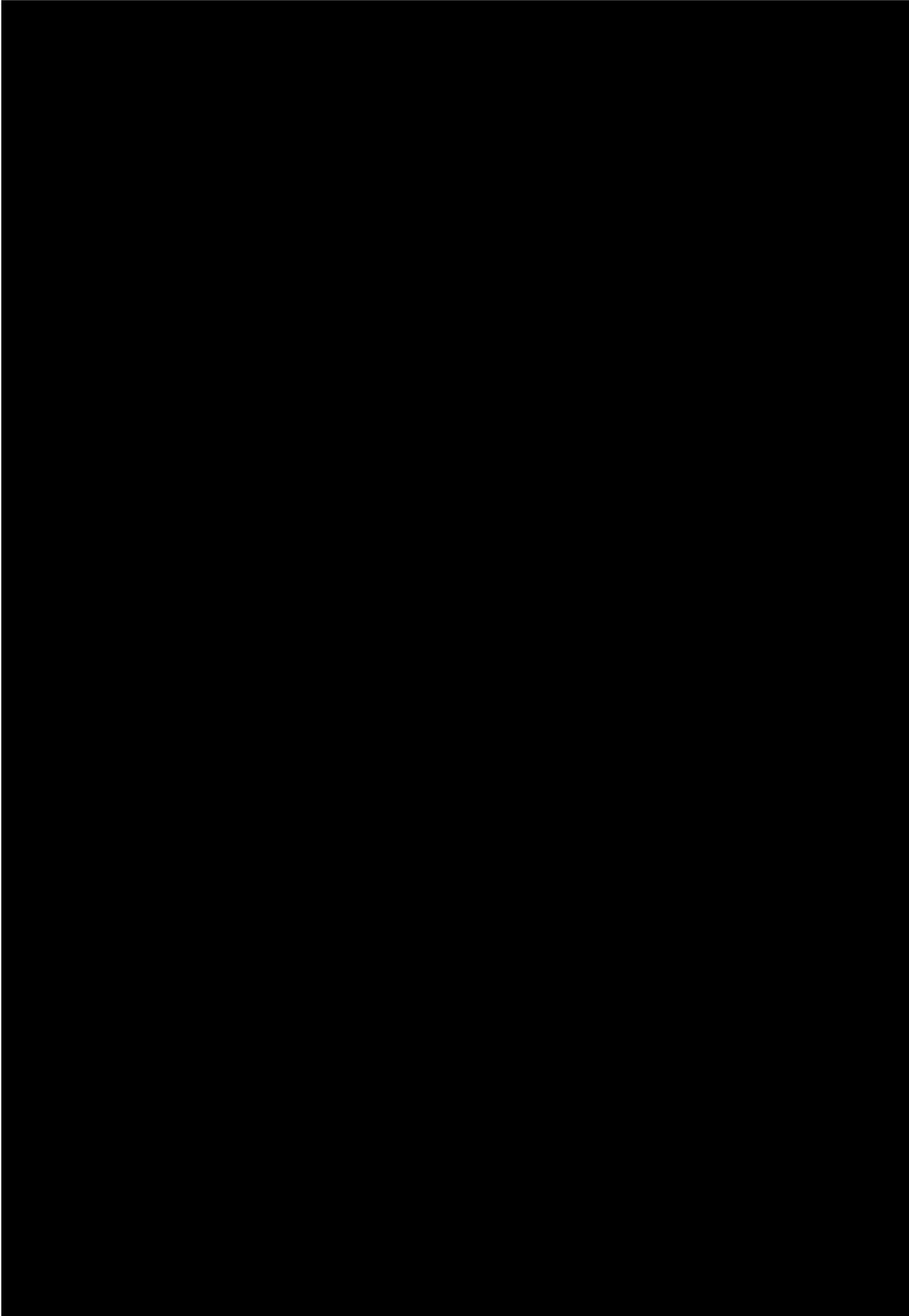


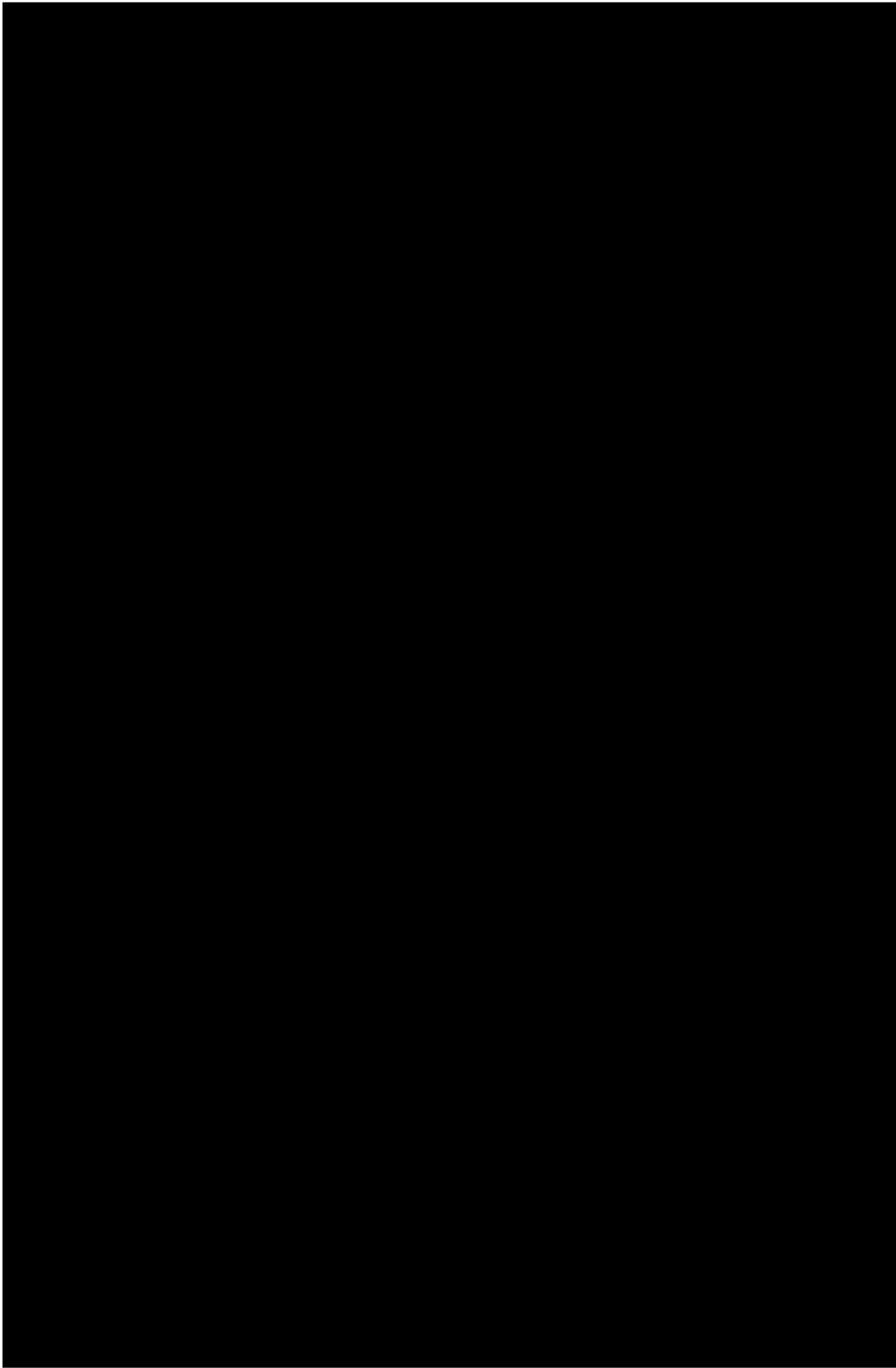
13.3

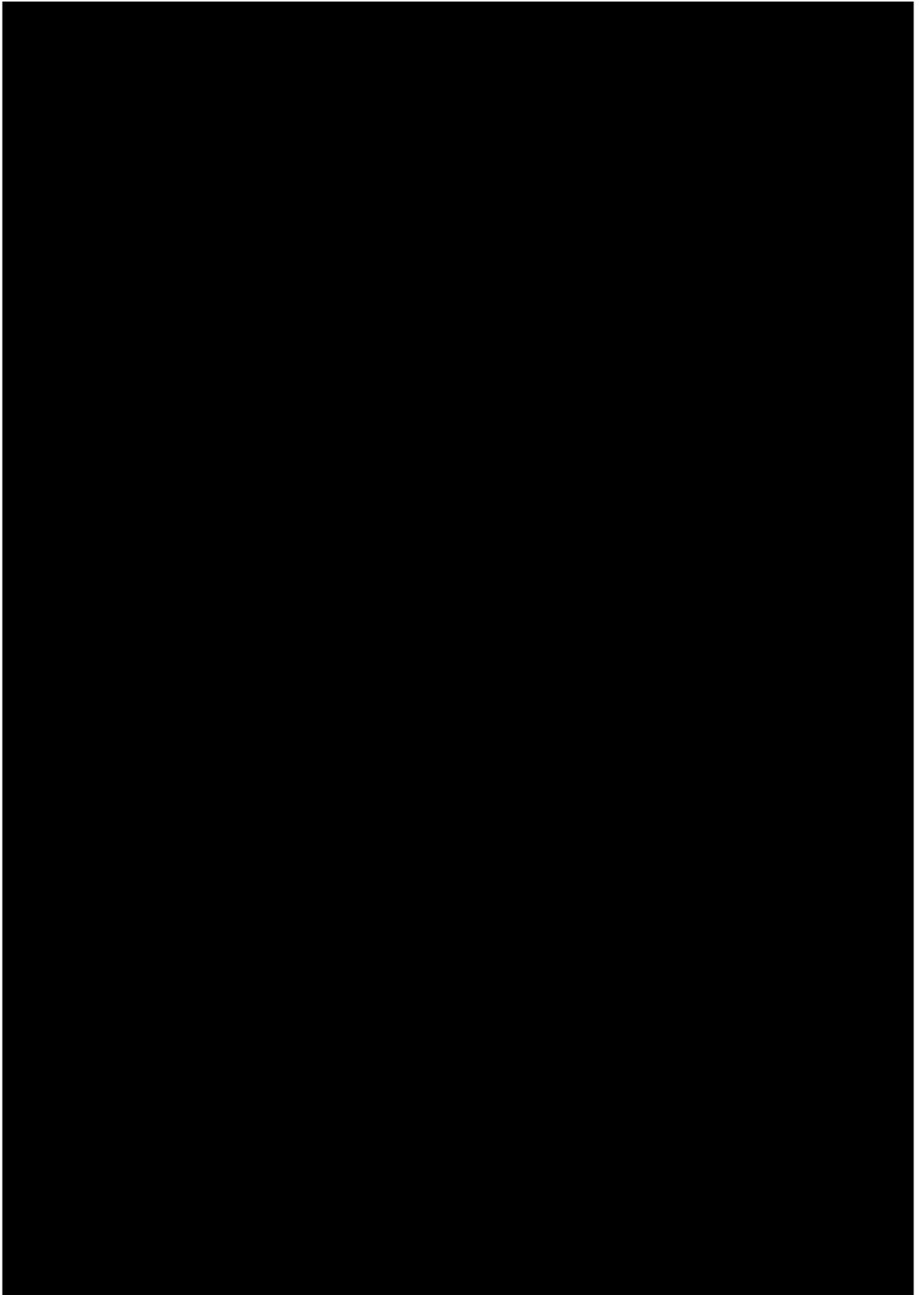
TABLE 13.3

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13.4

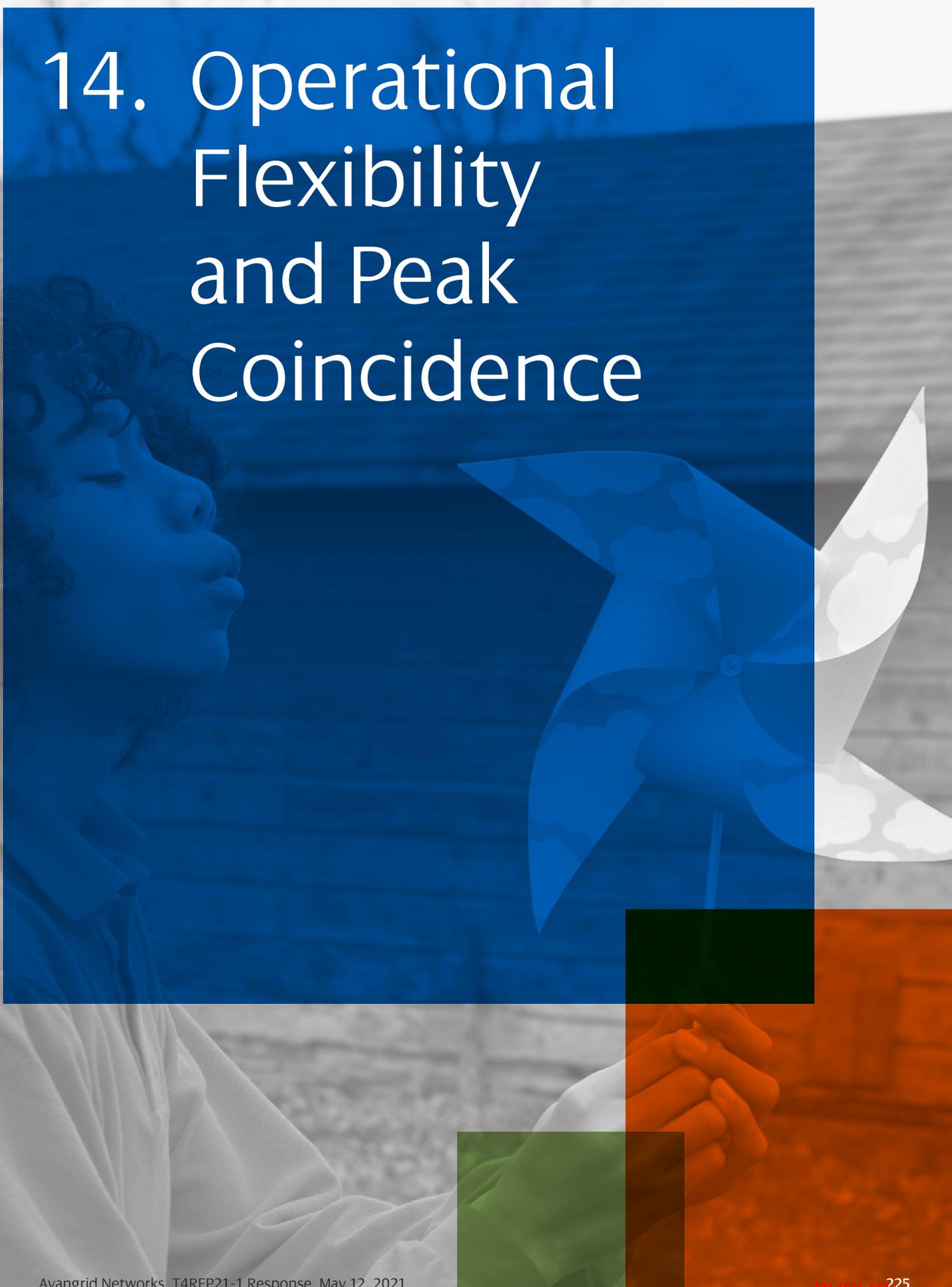








14. Operational Flexibility and Peak Coincidence



14.1

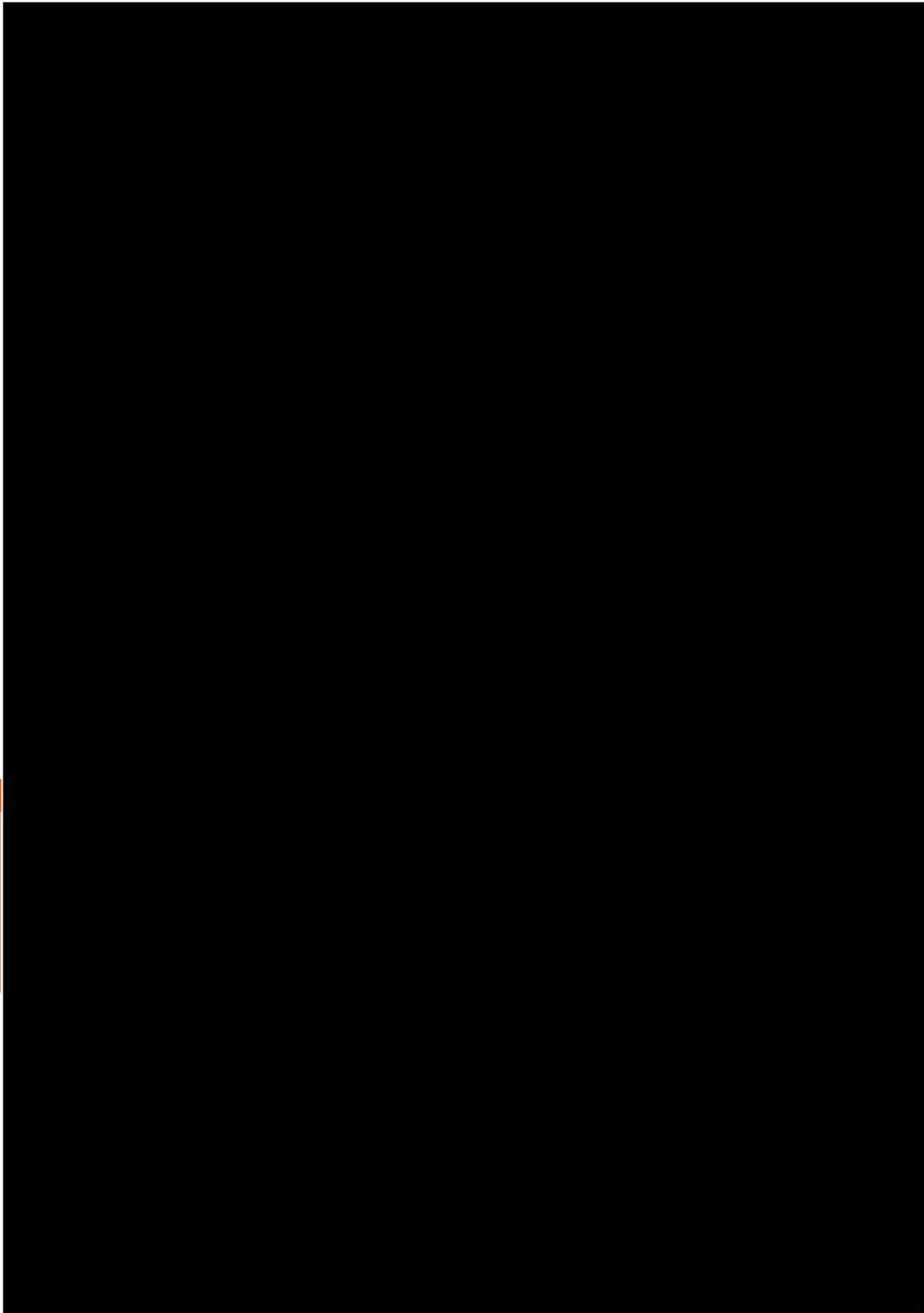


FIGURE 14-1

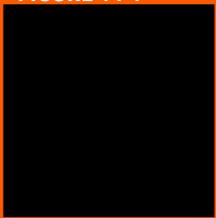
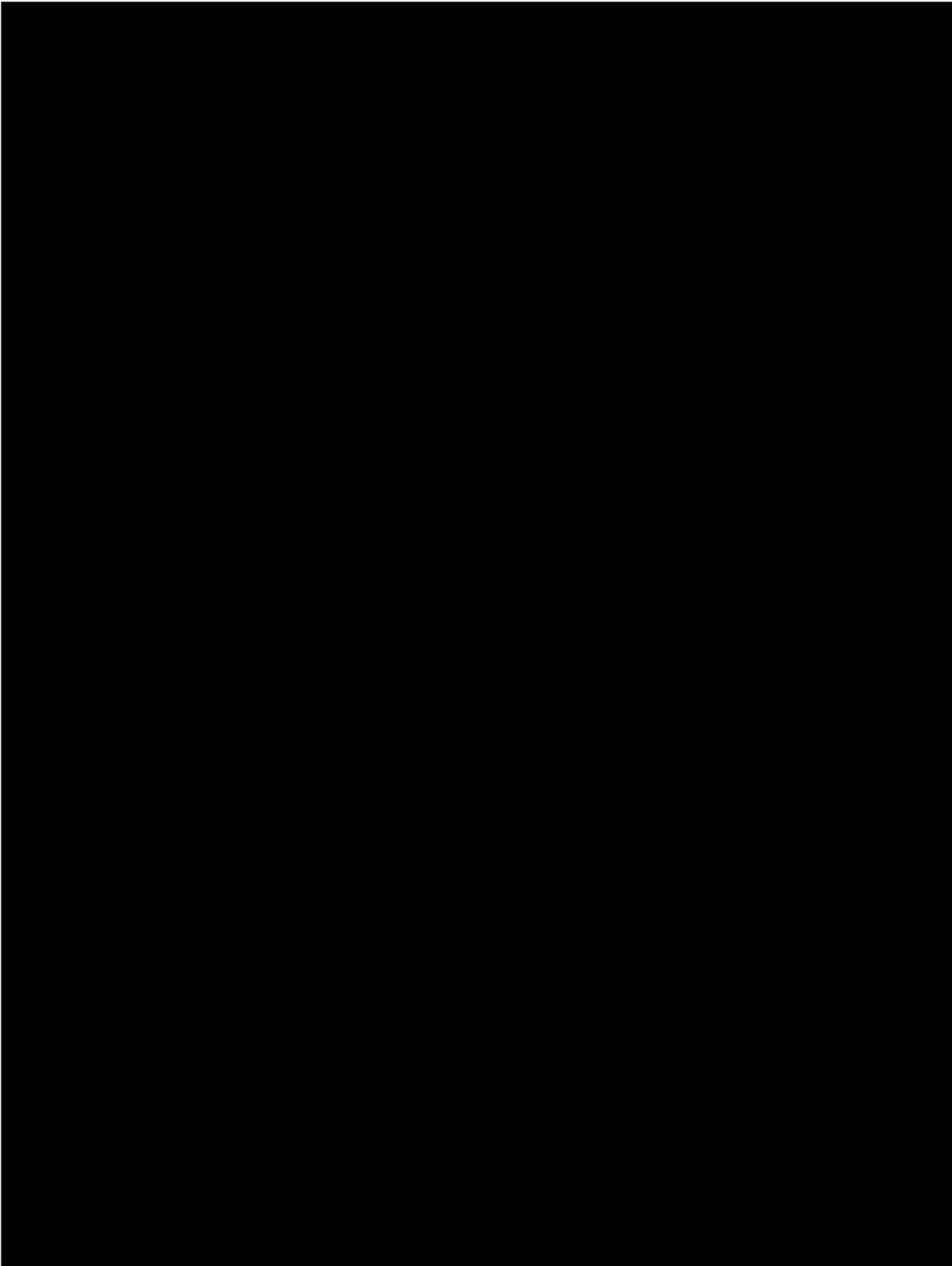
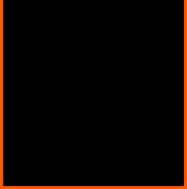


FIGURE 14-2



14.2

1 NYISO 2020 Load and Capacity Data Report (Gold Book)

14.3 Utilization of New York Converter Station and associated capacity on the New Transmission

At the point of withdrawal in Zone E Excelsior Connect would install a converter station that complies with the New York Converter Station requirement as established in the RFP number T4RFP21-1. This converter station will be used to withdraw electricity from the grid in alternate current at 345kV from the Coopers Corner substation and convert it into direct current at 320kV to be transported by the Excelsior Connect Transmission Line delivering the energy into Zone J, where another converter station will invert the electricity arriving as direct current at 320kV to alternate current at 345kV and injecting at the Rainey substation.



14.4 Grid Reliability Improvement

There are significant grid reliability benefits the New Transmission will provide to the NYS transmission system. These benefits include:

1. Addressing stability needs following peaker retirements. The 2020 NYISO RNA and STAR studies show there are stability deficiencies in Zone J related to the proposed NYC peakers. With the HVDC converter expected to provide dynamic reactive support at 0.95 leading/lagging, the interconnections studies in Section 7 demonstrated the New Transmission would resolve the identified stability needs.
2. Addressing Zone J bulk transmission needs following peaker retirement. The 2020 NYISO RNA and STAR studies showed there are bulk transmission needs on the 345 kV lines from Dunwoodie and Sprainbrook into Zone J post NYC peaker retirement. The Energy Deliverability Assessment in Section 5.5 showed the new transmission can resolve these reliability needs to ensure safe operation on the NYC electric system.
3. Providing additional capacity into Zone J to replace Capacity Market reliance on fossil fired units. Currently, NYISO Capacity Market significantly relies on peaking units to ensure Zone J LSE meets the Minimum Locational Capacity Requirements. Since the New Transmission is expected to obtain Unforced Capacity Deliverability Rights (UDRs) of up to 1200MW, the reliance on these peaking units to provide in-city capacity will be reduced.

4. Ancillary services benefits such as:

a. **Dynamic Reactive Power Capability:** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

b. **Transitory Dynamic Reactive Power Capability:** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

c. **Black Start Capability:** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

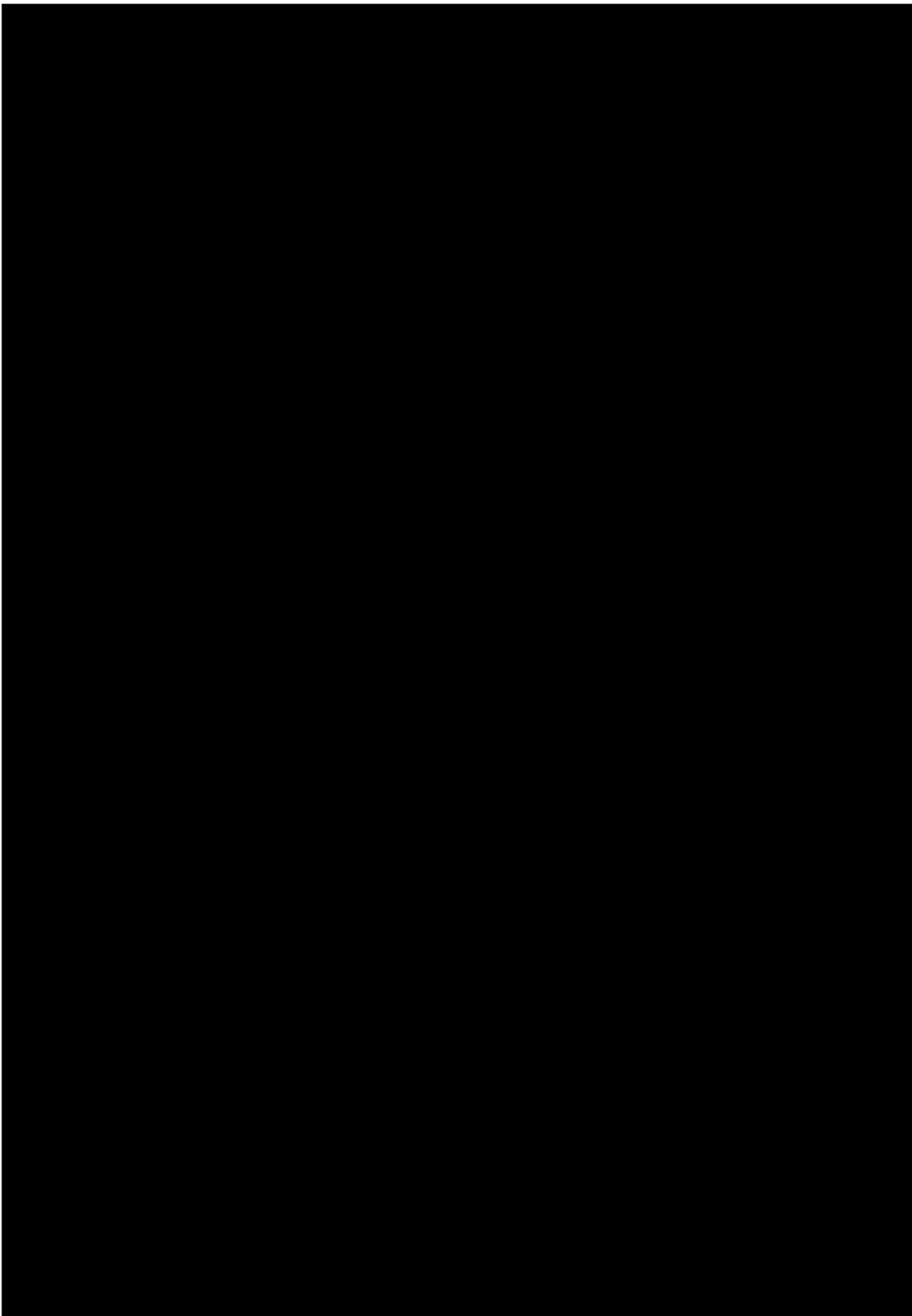
d. **Real Power Transmission Flow Direction Reversals:** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

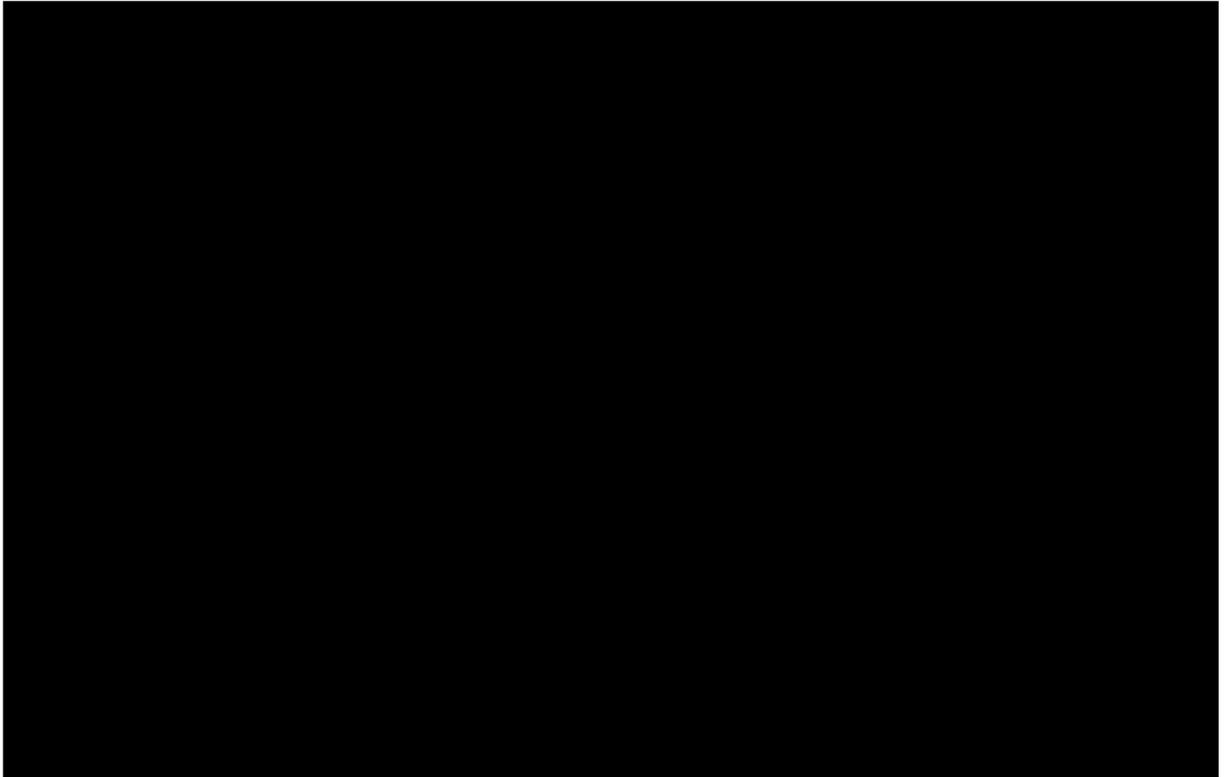
e. **AC Transmission System Change Tolerance:** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

f. **Flexibility to Add a Third Terminal:** [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

14.5





15. Communities Engagement Plan

15.1 Overview

The Communities Engagement Plan (CEP) that guides the participatory process for implementation of the Excelsior Connect Tier 4 program will demonstrate and affirm NYSERDA's commitment to engaging stakeholders in meaningful participation throughout the project, underscoring the value placed on the importance of inclusiveness in development of the project. Effectively implemented, the CEP will facilitate decision making by bringing multiple perspectives to the table and identifying critical issues early, increasing inclusiveness and ensuring successful delivery of the Project.

New York is a large and complex state, and no single process or method for public participation will serve every audience or community. Advancing an effective approach in New York calls for a considered public engagement schedule deployed through a robust slate of varied tactical approaches to inform, involve and engage a diverse array of stakeholders.

Avangrid Networks will lead the public outreach team, supported by Arch Street Communications (ASC) for overarching strategy and experience in advancing more than 80 public engagement projects in every region of New York. ASC has structured the strategic and implementation team to include a specific and dedicated leadership role for an Environmental Justice Outreach Liaison and has supplemented its capacity with members selected from ASC's Diversity Partners to ensure a robust collective to develop tactical approaches to define an inclusive process that engages underserved populations.

NYSERDA has raised the bar on transparency and community engagement in advancing the goals of the CLCPA with the release of the Tier 4 RFP, setting a community-first standard that prioritizes an inclusive process that engages host communities, ensures equitable distribution of project benefits, and specifically addresses the needs of environmental justice communities that have previously been underserved and under-engaged in large scale infrastructure projects that affect local residents. The Avangrid Networks team recognizes the role of inclusive communication, equitable distribution and broad outreach as components essential to realizing New York's aggressive goals for clean energy. In this response to community engagement requirements, we have identified a team of experts in public and stakeholder engagement, with specific experience in advancing large scale energy and infrastructure projects, and a deep bench of proven expertise in informing, involving and engaging environmental justice communities. We have mapped a plan that demonstrates clear understanding of local interests and concerns and which will deliver succinct, plain language and high-quality information advanced through a robust schedule of meaningful opportunities for participation by local leaders, community-based and special-interest organizations, and the public.

Our approach to community engagement is guided by policy and legislation to ensure an inclusive and transparent process, including:

- Americans with Disabilities Act (ADA)
- Title VI of the Civil Rights Act of 1964

- Environmental Justice Executive Order 12898
- Limited English Proficiency Executive Order 13166

The practiced engagement team draws upon fundamental principles of public participation advanced by the International Association of Public Participation (IAP2) to develop an objectives-driven process that customizes engagement activities to support different levels of participation, as shown in Exhibit 4. The exhibit provides examples of techniques employed in this approach, which are enhanced by ASC’s comprehensive toolbox of more than 100 in-person and virtual engagement methods to support a broad and inclusive process.

TABLE 15-1

Public Involvement Objectives and Techniques

Level of participation	Educate & Inform	Gather Feedback	Involve	Collaborate
Direction	One-way	Two-way	Iterative two-way	Iterative two-way
Objectives	To provide the public with balanced and objective information that helps them understand key issues, opportunities, alternatives, and decisions.	To obtain feedback that informs analyses and decisions.	To work directly with key stakeholders and the public at various intervals throughout the project to ensure local concerns are understood and considered.	To build consensus with key stakeholders and representatives of the public throughout each stage of the decision-making process.
Example Techniques	<ul style="list-style-type: none"> • Website • Fact sheet • Blog 	<ul style="list-style-type: none"> • Survey • Public meeting • Public hearing 	<ul style="list-style-type: none"> • Workshop • Expert panel 	<ul style="list-style-type: none"> • Technical working group • Policy advisory committee

A Focus on Equitable and Inclusive Engagement

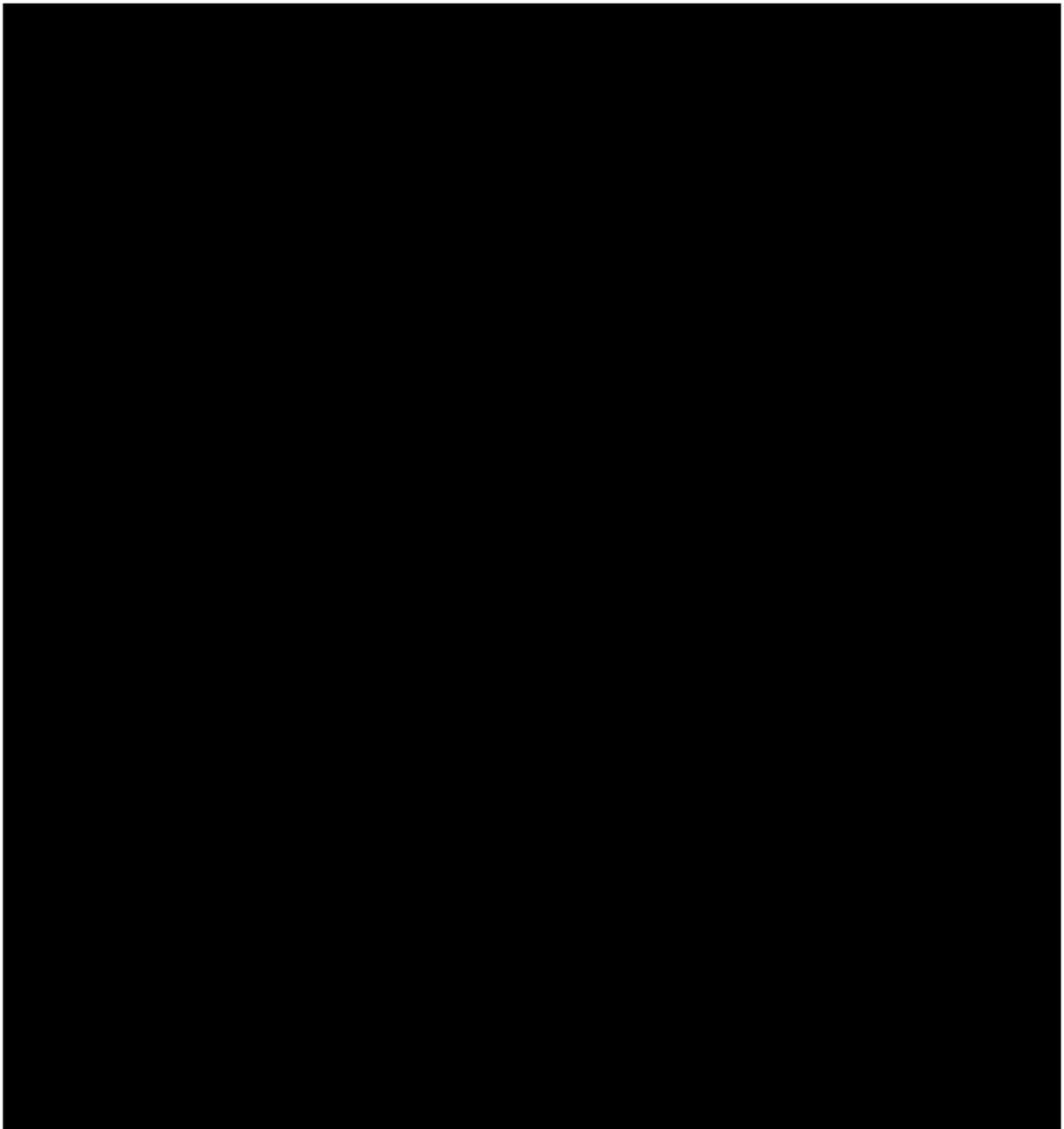
The Avangrid Networks outreach team embraces the spirit and letter of NYSERDA’s approach to public engagement, placing equity at the core of our planning for public involvement. The team will advance a program of education to inform and educate the public, encouraging meaningful participation by addressing the following:

1. **Plain Language:** Plain language principles are followed in all public-facing communications to translate complex ideas into easily understood concepts, using voice and vocabulary appropriate to the audience. A commitment to people-first language that respects the individual informs all communications, with uses such as “persons with disabilities,” as opposed to “disabled people.”
2. **Languages:** Public involvement materials will be made available in bilingual formats (English and Spanish) and can be translated into additional languages as needed, based on the common language of the target audience in each region, with respect to the needs of Limited English Proficiency (LEP) populations.
3. **Communication Channels:** Public involvement materials will be made available in formats that can be accessed by people with disabilities, including websites and PDFs. Compliance with Section 508 of the Rehabilitation Act—including open and closed captioning, telecommunications devices for

people with hearing impairments, large-type, and Braille versions for hard copy materials—will be reviewed. For meetings and workshops, venues will be identified that offer transit services and are accessible to people with physical limitations and meetings will be conducted with real-time captioning and sign language interpreters onsite.

- 4. Partnerships:** Where appropriate, the Avangrid Networks team will identify local organizations that support and serve underserved populations, engaging them as partners to assist with recruiting and coordination of public events, as well as disseminating information to these essential audiences.

A Cohesive Plan



The Excelsior Connect team shares the State's commitment to the CLCPA and realizing the 70 by 2030 re-



This is why Avangrid Networks has forged a communities engagement team that includes both an internal management structure, along with robust strategic and executional support from the ASC collective of experienced experts with direct experience in New York State large scale renewable projects and other state policy and infrastructure initiatives, including specific expertise in engaging environmental justice communities. The ASC collective includes women-owned and minority-owned business enterprises, certified by the State of New York and New York City.

This team will work in collaboration to help communities and stakeholders understand the benefits and opportunities of the project, deliver an equitable allocation of project benefits, and leverage the development and outcomes of the project to ensure that at least 40% of project benefits accrue to Environmental Justice communities. Included in this commitment is the advancement of initiatives such as a fund to support local programming in host and Environmental Justice communities,

[Redacted]

[Redacted]

[Redacted]

The Communities Engagement Team

The team that has been composed for this opportunity was selected for capability, capacity and proven success in similar projects, and will work in tandem with NYSERDA to implement best practices of engagement to build credibility and trust in the process among local governments and impacted communities.

The goals of the Communities Engagement Team are to:

- Encourage meaningful conversation and participation around project progress, concerns and opportunities;
- Develop and distribute tools and information that will be updated frequently and disseminated through organized processes to ensure a broad and diverse audience is continually informed; and
- Create awareness and understanding of project benefits, relevance and opportunities to participate through an education and outreach campaign that makes information available and accessible to all stakeholders in the project area.

The Communities Engagement Team is structured in a way that will ensure not only fast and effective engagement, but strategic long-term engagement as well. Under the management of the Avangrid Networks Community Engagement team, our engagement specialists are organized as follows:



Arch Street Communications (WBE)

ASC delivers strategic solutions that move infrastructure projects and public initiatives, facilitate change and drive growth. Since founding ASC in 1992, CEO Nora Madonick has led the firm to become a successful, sought-after, award-winning WBE/SBE firm working on Federal, State and regional campaigns and initiatives that affect the lives of Americans in a changing world in the energy, transportation, jobs, safety and the environmental markets. The firm’s proven “inside-out” approach to communication planning converts technical information into dynamic messaging with a communications process that reaches markets, stakeholders and constituencies with compelling information and calls to action. ASC

has advanced more than 80 public sector initiatives in New York State, along with projects from New York to Washington, DC, and for federal clients at USDOT and US EPA. During the pandemic, ASC developed a virtual toolkit and playbook to support the public sector in community and stakeholder engagement and outreach to vulnerable and underserved populations.

For this opportunity, ASC has expanded its leadership team to include urban strategist Ibrahim Abdul-Martin to guide community outreach specific to Environmental Justice populations.

The firm has completed more than 80 projects in every region of New York, including, but not limited to:

- NYSERDA Large Scale Renewables Public Engagement Strategy
- South Fork Wind Farm Article VII Public Engagement Plan
- Cricket Valley Energy/Cricket Valley Transmission Public Engagement Plans
- Cypress Creek Renewables Public Engagement Plan
- NYS Statewide Transportation Plan Outreach Strategy
- Governor Mario M. Cuomo Bridge Public Engagement Plan
- NYS Communities Rising Public Engagement Plan
- Battery Park City North, South and West Public Engagement Plans
- Lower Manhattan Coastal Resiliency Public Engagement Plan

Roffe Group

The Roffe Group is a full-service Government Relations and Administrative Law firm uniquely suited to generating positive results for a broad spectrum of clients, including Fortune 500 companies, professional associations, local governments, labor unions, not for profit companies and other commercial entities of all kinds and sizes doing business in New York State and its municipalities. The team applies decades of experience in Government Affairs, Procurement Advocacy, Compliance Expertise and Administrative Law to achieve client success on a full range of issues at all levels of state and local government in New York.

HollandWest (MBE)

HollandWest Productions is a creative development and production studio that works with agencies or clients directly to help tell designed stories through video, developing content and programming strategy, design and animation. ASC and HollandWest recently teamed to produce a series of 10 videos for NYSERDA's Clean Energy Communities program. HollandWest produced Michelle Obama's "When we all vote" video, Better Choices for a Better Life (Medicare), Full Potential (National Urban League), Veterans Watchmaker Initiative (Bulova), Food Brings Families Together (Patti LaBelle with Walmart), and more. They strive for a style and authenticity through collaborating with fellow creatives and developing personal connections with their clients to create solutions that incite conversation.

Florville Catalyst (MBE)

Florville Catalyst, Inc. is a full-service, award-winning multidisciplinary design firm with areas of expertise that include graphic design and project branding. ASC has worked with Patrick Florville to advance creative executions to increase efficiency in the production of high-quality graphic, add capacity to meet deadlines and support goals for MBE utilization.

Submersive Media

Submersive Media is a leading independent full-service digital agency located in New York. Founded in 2012, and currently co-owned by 2 industry veterans, Submersive is at the forefront of creative and digital development. Core services include website development and strategy, mobile development, social media & influencer activation, and media buying. Submersive Media has worked with a diverse client base, across a variety of industries, including: Government, Non-Profit, Media and Entertainment, and CPG. Submersive Media is certified to do business in New York State.

Brown Wynn Agency (M/WBE)

The Brown-Wynn Agency is a full-service special events, events production and public relations boutique agency. The firm has produced events for The Jackie Robinson Foundation, Black Enterprise Women of Power Summit, The Competitive Edge and VH-1, among others. ASC and Brown-Wynn collaborated on a state conference for the New York Power Authority and will support this effort with a carefully mapped logistics plan for outreach events, work sessions and meetings as needed.

Haas Media (M/WBE)

Haas Media is a multi-lingual public involvement firm that offers its services in a range of disciplines, including community outreach, communications, training, and translation services for construction, transportation and infrastructure projects. ASC regularly teams with Kim Haas and her team to provide insight into effectively engaging diverse constituencies, including Environmental Justice communities, through public and grassroots community outreach. Haas Media provides a range of translation services applied to meeting facilitation, focus groups and interactive outreach at community events, helping ensure a broad range of inclusiveness.

Avangrid Networks Communities Engagement Experience

Avangrid Networks affiliate Central Maine Power (CMP) has recent experience with the multi-year Maine Power Reliability Program (MPRP) project, which impacted over 80 municipalities and approximately 3,000 abutting landowners, demonstrates that on-going communication, early information, access to project details and regular updates about project specifics are instrumental in achieving “public permission” and ensuring timely completion of a major infrastructure project. Most recently, Avangrid Networks

has garnered experience from stakeholder engagement of the New England Clean Energy Connect (NECEC), as awarded from the Massachusetts Section 83(d) renewable energy procurement. As part of the communications plan for NECEC, since 2017, Avangrid Networks has hosted public open house meetings in priority regions of Maine and Massachusetts to encourage open dialogue with staff subject matter experts to answer concerns and questions.

Rochester Gas and Electric

In April 2021, Avangrid Networks affiliate Rochester Gas and Electric (RG&E), described in Section 3, announced the completion and energization of its Rochester Area Reliability Project (RARP). The \$389 million investment project led by RG&E and its parent company, Avangrid, took 10 years to complete. RARP is a new substation located in the Town of Henrietta (Station 255) with approximately 27.6 miles of new and rebuilt transmission lines in the City of Rochester and the towns of Gates, Chili and Henrietta. The company maintains publicly available RARP Community Relations team contact information for landowners and municipalities.

The RARP team communicated with municipal and state officials through the permitting process through various methods, including:

- Briefings explaining the project scope and planned construction activities;
- Contact with local fire chiefs and public safety officials to communicate schedule and other safety and emergency protocols as applicable;
- Regular notifications prior to each stage of construction through email, phone calls, or meetings.

Throughout construction, the project team communicated frequently with community members and leaders. This included landowner notifications, community meetings, the maintenance of a website with weekly construction notices and frequent updates to the towns and City. Town of Henrietta Supervisor Steve Schultz commented, "... with the large increase in traffic over the years within the East River Road corridor, it is nice to have a large tax-paying parcel that does not contribute any new traffic to the existing conditions. RG&E has been a valued partner with the Town and we are happy to have their latest addition to the Town." Town of Gates Supervisor Cosmo Giunta commented, "It was pleasure to work with the project team throughout the process, especially Ivette Torres [Government and Community Relations] and Alex Roth [Public Outreach]. With their diligence and understanding they successfully addressed all of the concerns or questions we or our residents had throughout the construction phase."

Columbia County Transmission Project

NYSEG, in partnership with National Grid, constructed a new 14.5-mile, 115-kV electric transmission line (and other modifications to existing electric transmission lines) from the City of Auburn to the Town of Elbridge routed along existing rights-of-way in the Towns of Throop, Brutus, Sennett and Elbridge, the Village of Elbridge, and the City of Auburn. This project addressed system reliability issues in the City

of Auburn and the surrounding area. There were 120 landowners who were either directly impacted or neighbored the project route. Three public open houses, as well as several community meetings were held throughout the permitting and construction process. Outreach also included landowner notifications, the maintenance of a website with weekly construction notices and frequent updates to the towns, Village and City. The public outreach team met with 67 landowners in person, more than 50% of these on multiple occasions. There were several points of contention, all of which were ultimately resolved.

After years of planning and implementation the Columbia County Transmission Project (CCTP) in NYSEG's Mechanicville Division is complete. The \$53 million project included the construction of the new Falls Park Substation, two new 115-kV transmission lines tapping an existing National Grid high voltage transmission line, and two new 34.5-kV distribution lines with automated reclosers and modern protection. Construction started in Spring 2018 and was completed in July 2020. Critically important to the success of this project was consistent and transparent public engagement. The team developed a standalone website dedicated to the CCTP and regularly updated the content and timeline. When work crews were visible to the public during distribution construction, several accolades were received and the final clean up and dedication of the team were appreciated. The final phase of construction consisted of the installation of underground distribution line at the southern end of the Columbia County Airport. The County Engineering Director Dean Knox had this to say, "I've reviewed the main conduit trench and ancillary work areas restoration work performed on the airport property by the crews and all looks very good on our end. We are pleased that the work on our airport property was done promptly, efficiently and well-coordinated/communicated! Thanks to all involved for the good work performed here in Columbia Co. with this entire project!"

Station 43 in the City of Rochester

Additionally, as part of an overarching effort to comply with more stringent reliability standards issued by the North American Electric Reliability Corporation (NERC), Avangrid/RG&E is conducting widespread upgrades to the components of the electric delivery systems throughout the network. Specifically, Station 43 in the City of Rochester: Located at 101 Wyand Crescent, the substation was originally constructed in the 1950s and has exceeded its peak capacity capabilities and is overloaded. Outdated and constrained by space, the station needs to be rebuilt to increase its capacity, improve its asset conditions, and enhance the reliability requirements of the station for the 6,500 commercial and residential customers that depend on it for safe and reliable power.

Initial outreach efforts to numerous impacted stakeholders consisted of municipal meetings, neighborhood service centers input, notification letters, the project's unique Fact Sheet, an FAQ document with frequently asked questions, and direct phone calls. With overwhelmingly positive feedback, the project team proceeded on task.

With the unexpected involvement of a powerful neighborhood association at the last minute, the Public

Outreach team sprinted into action to Design with the Community in Mind and exemplify our company's pledge of being a committed community partner. The team collaborated across the organization's many different departments to conduct several separate public meetings to gain additional feedback, obtain alternate options to satisfy aesthetic requests, compromise on scope of work plans, collaborate on both vegetative and design details, and arrive at a final project design that not only fulfilled the necessary upgrades, but also provided the residents with a sense of pride as their input was ultimately recognized and implemented. What began as some strong opposition with enough influence to potentially derail the entire project, ultimately ended with the community's full-fledged support. By engaging, listening, and responding with agility and collaboration, the Public Outreach team and their efforts were able to successfully redirect this project towards a very successful and happy ending.

In addition, as part of the RG&E Line 803 Rebuild Project to replace 2.9 miles of 46 kilovolt (kV) line in Putnam County, the company carefully considered and incorporated local communities feedback pertaining to environmentally sensitive ecosystem areas. Because these lines extend over existing wetlands, the company is taking extra care to reduce the impact through the use of timber mats designed to handle heavy machinery and equipment will protect the soft ground from trucks and other vehicles. Additionally, this project reduces the number of poles along the route, lessening the visual impact of the electricity transmission equipment.

15.2 The Excelsior Connect Strategy

Early Action Community Engagement

Avangrid Networks initiated community engagement prior to the submission of this proposal to ensure the proposal was informed by the needs, interests and concerns of the host communities, Environmental Justice communities, elected officials, stakeholders, special interest groups and community-based organizations. [REDACTED]

Elected Officials

[Redacted]

Environmental Organizations

[Redacted]

Health Organizations

[Redacted]

Job Training Organizations

[Redacted]

Labor

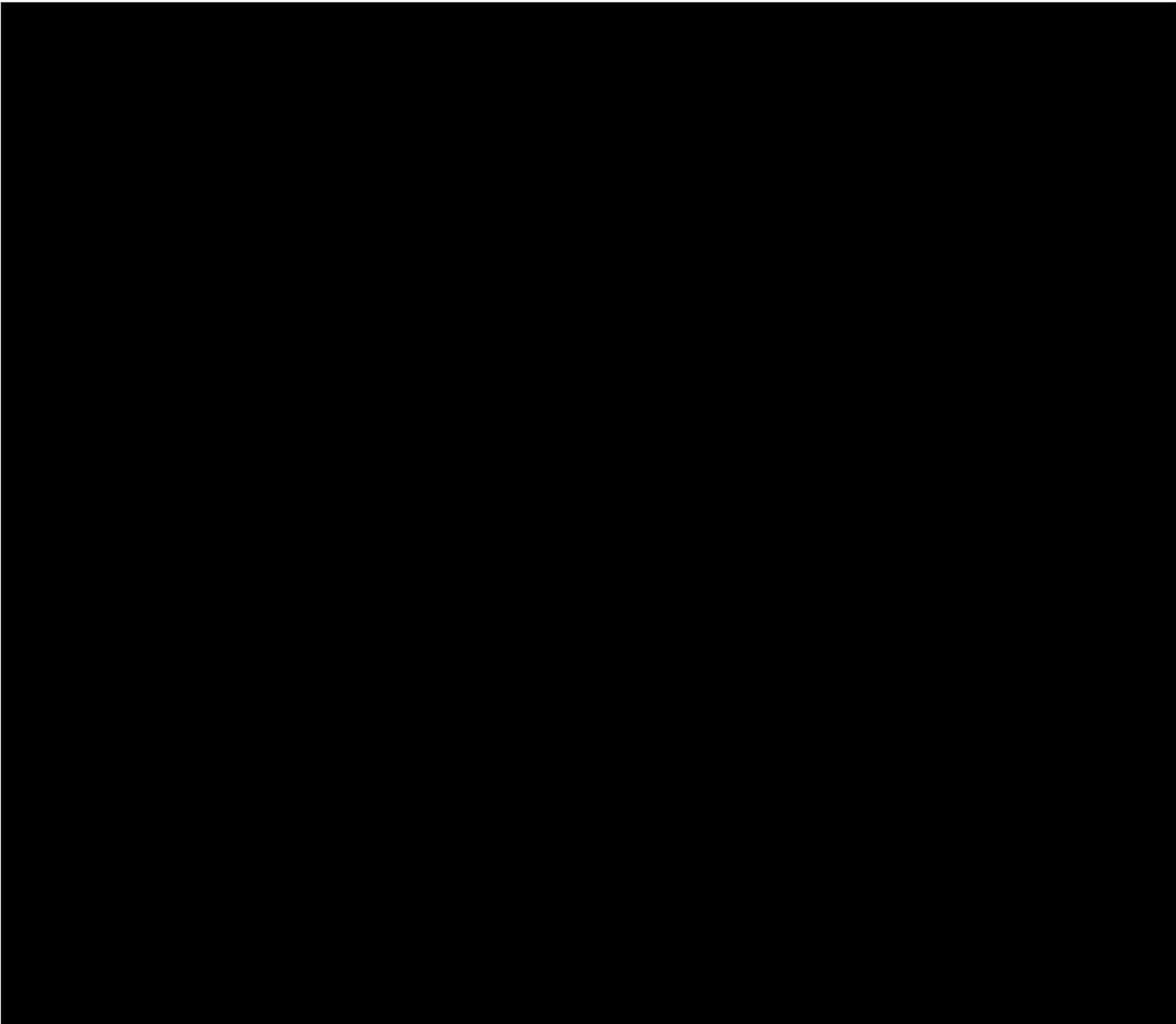
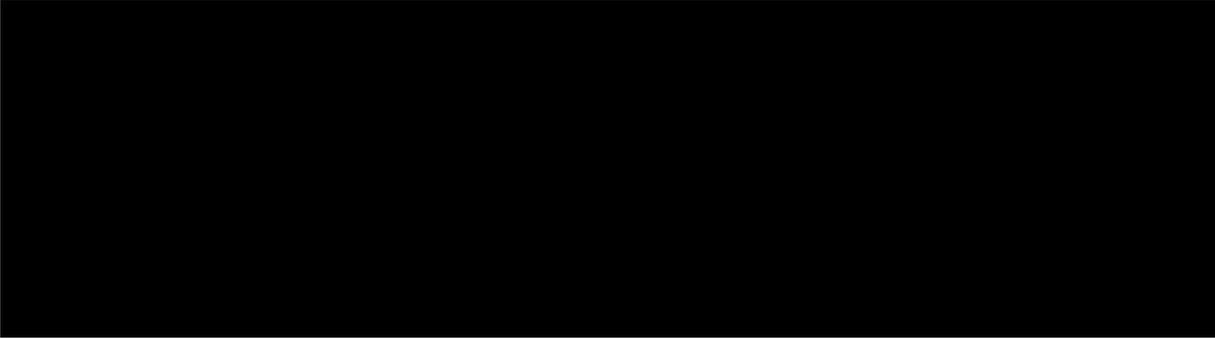
[Redacted]

Environmental Justice

[Redacted]



Economic Development





Plan Development

Recognizing that all project communications must stem from a set of bigger picture community engagement goals, Avangrid Networks has developed a long-term Communities Engagement Plan (the “CEP”) for Excelsior Connect, using an approach based on proven methods and in collaboration with leading community engagement partners. The CEP outlines a thoughtful approach to build Project support, respectfully respond to community and stakeholder concerns, and develop community benefits on a collaborative basis. This CEP encourages and champions community representation, putting disadvantaged and traditionally underserved communities at the forefront of initiatives to maximize environmental benefits, spur economic development, and create jobs in New York.

The development of the CEP included with this proposal (Appendix 15-1) was informed by research to identify and incorporate best practices, the collective experience of and lessons learned by the Avangrid Networks engagement team, stakeholder analysis and conversations with project stakeholders. The process of developing this plan included:

- We reviewed public engagement plans for similar large scale infrastructure projects elsewhere to collect best practices and lessons learned, including resources available from the U.S. Department of Energy, U.S. Department of Environmental Protection and Federal Highway Administration, guides and procedures as defined by NYSERDA, and plans and reports issued by the California Energy Commission, State of Victoria Community Engagement Planning for Renewable Energy Development and others;
- We leveraged the experience and lessons learned of Avangrid Networks and project partners, including, but not limited to Avangrid Network’s Rochester Areas Reliability Project, Line 803 Rebuilt Project and New England Clean Energy Connect HVDC Project; and ASC projects including South Fork Wind Farm, Cricket Valley Energy Center, Cypress Creek Renewables, NYSERDA Large Scale Renewables, Gov. Mario M Cuomo Bridge (and Tappan Zee Bridge EIS), Battery Park City North and South Coastal Resiliency Projects; Lower Manhattan Coastal Resiliency Project; the CTrail New Haven to Springfield Mass new commuter rail corridor and others conducted across New York State.

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community-based organization needs, concerns and interests, and to identify opportunities for benefit sharing approaches, strategies for engagement, key influencers, motivators, barriers and risks, preferred communication vehicles, participatory opportunities and potential collaborative partners.

Plan Objectives



Hybrid Approaches Responsive to Health Requirements

This CEP that was developed as a result of our early action engagement and market research will leverage every possible methodology, from virtual technologies to in-person engagements, to advance a hybrid communication effort that keeps the best of the virtual outreach practices learned during the pandemic, partnered with gradually increasing in-person opportunities as health and safety guidance allow.

Further, the Project will leverage social networks to increase accessibility to information, communicate with larger scale audiences, and post infographics and other content to simplify complex information. The Project's digital presence will also be used to share links to project documents and materials, and leverage an accessible, user friendly website structure that will create a communication hub to increase public access to material, advance a feedback loop to encourage public input, and promote opportunities to participate.

15.3 Community Benefits

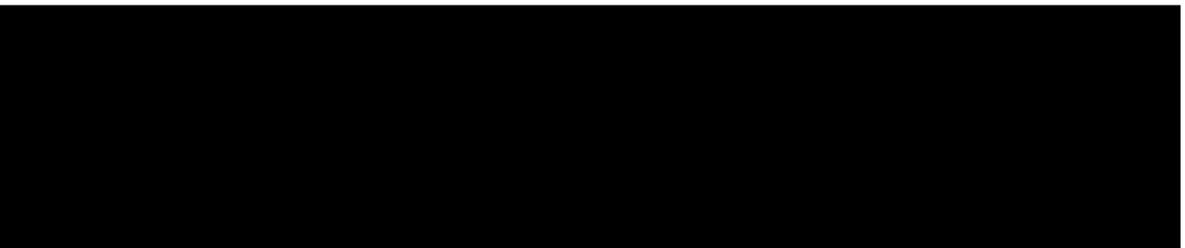
Climate Resiliency and Benefits

Capable of transporting 1,200 megawatts of electricity from upstate to the NYC metro area, advances the CLCPA target to reach 70% renewable energy consumption by 2030, as demonstrated through the production cost modeling (See Section 12). This project will help lower CO₂ emissions in Zone J by 23% and for New York State by 14% by reducing energy congestion and optimizing existing resources.

By employing state-of-the-art High-Voltage Direct Current technology, the Project is offering improved efficiency and reliability as compared with alternating current (AC). HVDC technology supports integration of renewables into the power grid by offering improved grid control and flexibility, facilitates construction of 1,200 megawatts of new renewables, including designated MWs of energy storage facilities. This new renewable generation, paired with storage and a controllable, bi-directional HVDC transmission line will facilitate balancing intermittent power sources and help ensure consistent, reliable green energy in New York City and New York State. Additionally, the underground construction in pre-existing roadways and rights-of-way limits local impact, significantly reduces need for property acquisition, protects the Hudson River, reduces the risk of challenging project opposition and minimizes impacts to environmentally sensitive areas (see Section 12).

Avoided Health and Social Costs

According to the US EPA report, Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy (2018), compliance with state RSPs in 2013 reduced national emissions from the power sector by 77,400 metric tons of sulfur dioxide (SO₂), 43,900 metric tons of nitrogen oxides (NO_x) and 4,800 metric tons of fine particulates (PM 2.5), pollutants which contribute to environmental problems that can harm human health, including poor air quality and climate change. Further, the report identified immediate positive benefits in reducing criteria air pollutants, such as incidences of premature death, asthma attacks and respiratory and heart disease, avoiding related health costs and reducing the number of missed school and workdays due to illnesses.



Community Focused Permitting Process

The permitting process for the Project will be focused on developing strong relationships with local communities and their stakeholders. Our generating partners will be committed to undertaking activities that include but are not limited to the signing of lease option agreements with landowners, the submission of

an interconnection application to NYISO, and meetings with officials from affected towns to introduce the generating partners and the proposed project. Relationships between our Project partners and host communities will be made transparent and collaborative with public hearings, newspaper notices and certified mailings to landowners. All communications and notices will be done in a timely matter to ensure residents are fully aware of the project and have the ability and access to participate in public meetings or submit comments or questions.

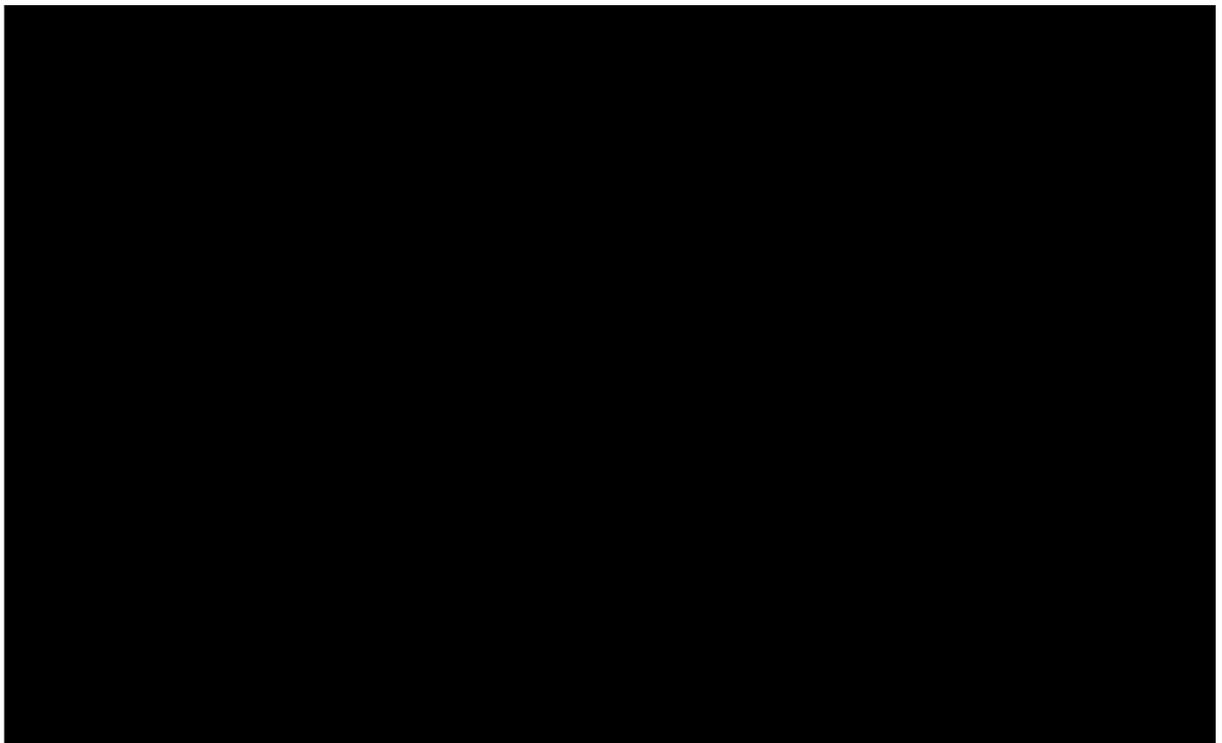
Jobs and Job Training

The Project's Low-income and Environmental Justice Partnerships will create new construction jobs, support economic development and generates property taxes along the right-of-way (see Section 16).

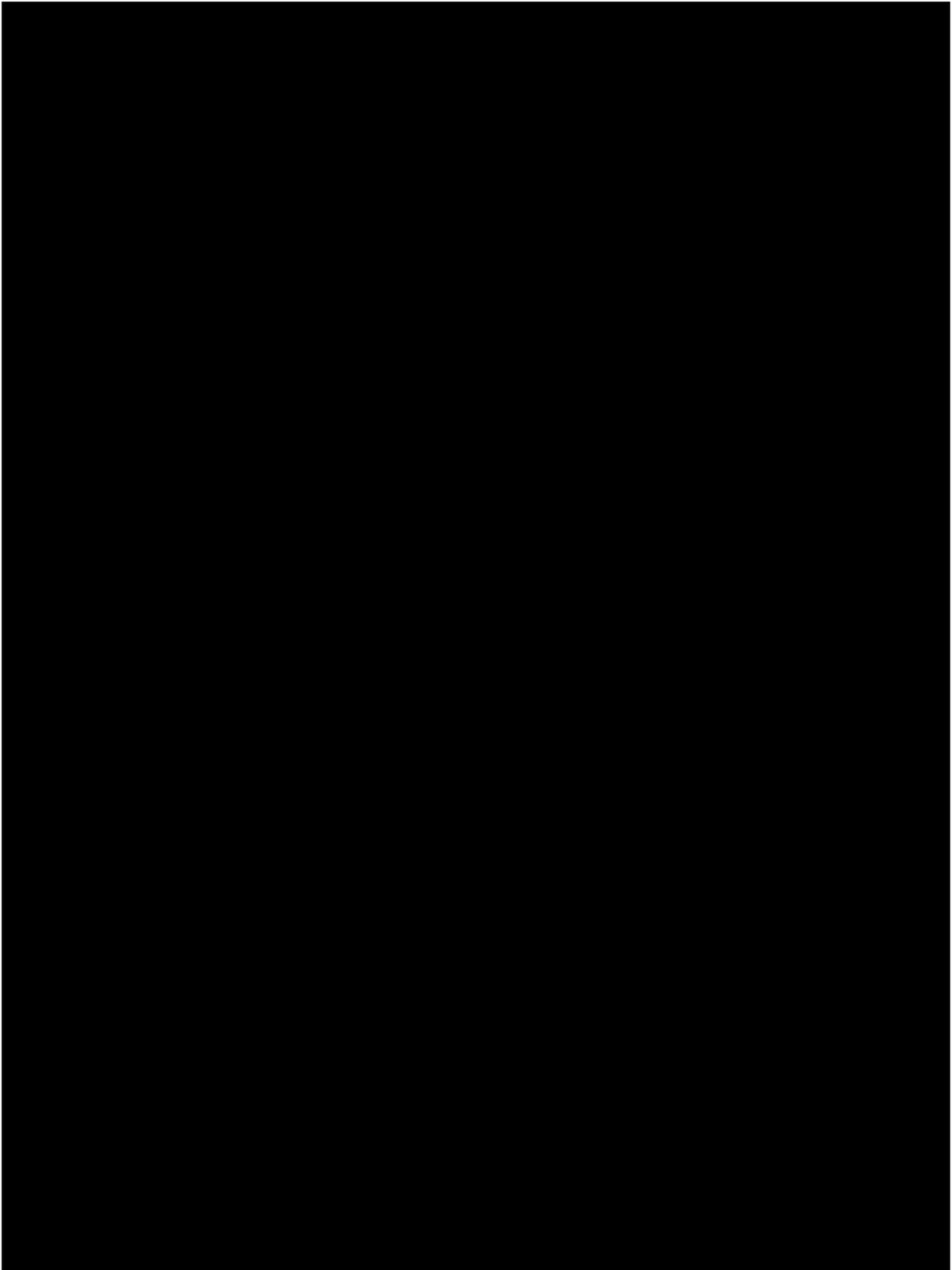
15.4 Environmental Justice and Alignment with CLCPA

Prioritizing Disadvantaged Communities

The Proposer believes that Tier 4 development has the potential to address decades of economic and environmental burdens in the energy sector that are disproportionately concentrated in low-income communities and communities of color. Avangrid Networks has therefore taken steps to ensure the benefits of Excelsior Connect are available and accessible to and/or realized in disadvantaged communities. The measures described below were designed with stakeholder input and incorporate lessons learned from the New England Clean Energy Connect project and a general companywide engagement in the renewable energy industry and environmental communities.



15.4.1



16 Incremental Economic Benefits Plan

The Excelsior Connect project brings a number of benefits to both the New York State economy and its electrical system. The combination of direct economic activity and the potential of the project to enable future renewable energy development and additional economic growth, while at the same time reducing the state's carbon footprint, make the investments associated with the Excelsior Connect project an investment in New York's future.

16.1

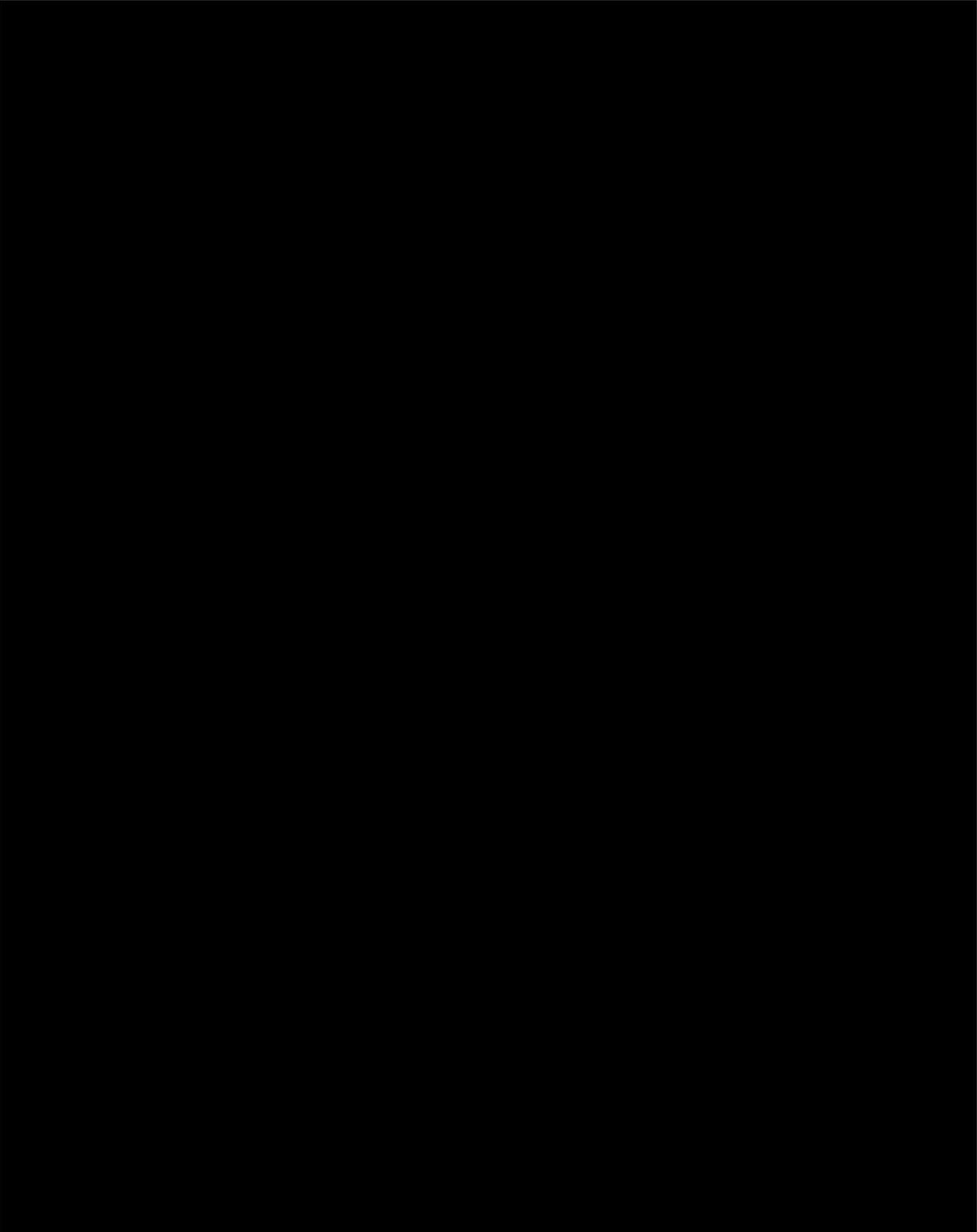
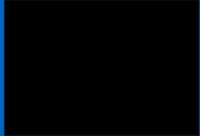


TABLE 16-1

Total Impact of
Transmission Line
Construction

TABLE 16-2

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16.1.1

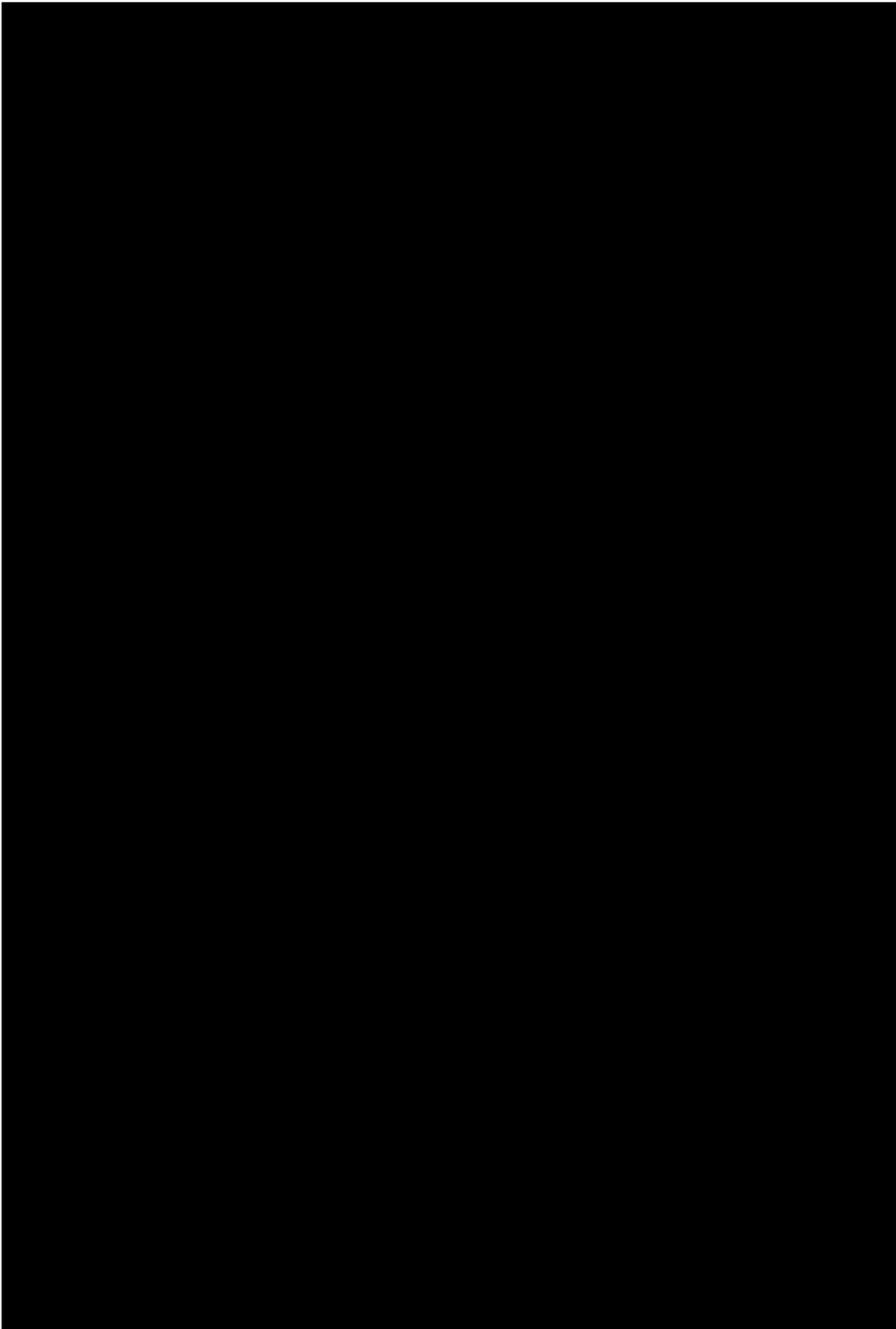
TABLE 16-3



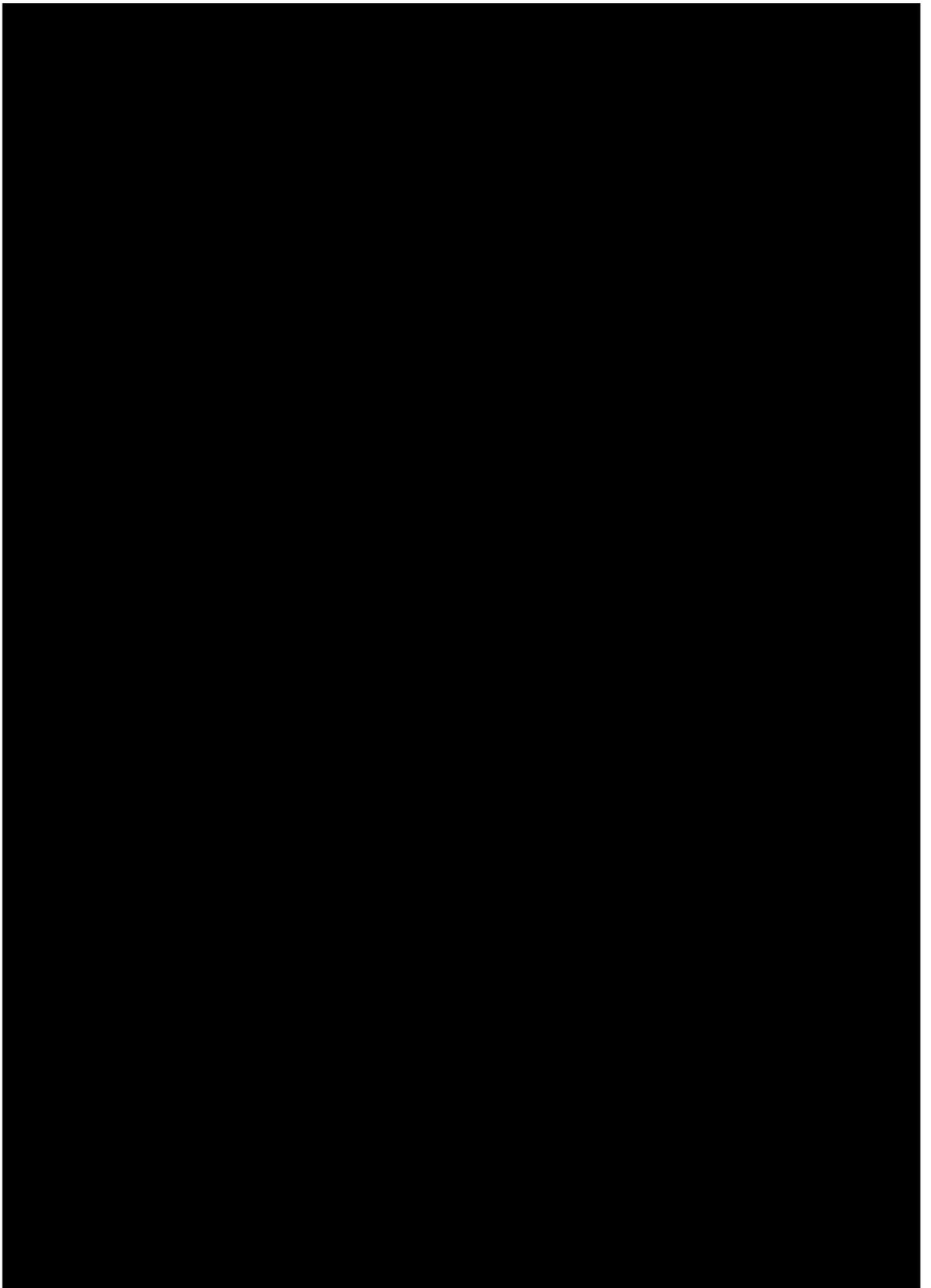
16.2

16.3

16.3.1



16.4



16.5

