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The Likelihood of Further Nuclear Proliferation

Submitted by

DEPUTY DIRECTOR OF CENTRAL INTELLIGENCE

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The following intelligence organizations participated in the preparation of this estimate:

The Central Intelligence Agency and the intelligence organizations of the Departments of State, Defense, and NSA.

Concurring:

Director of Intelligence and Research, Department of State
Director, Defense Intelligence Agency
Director of the National Security Agency
The Atomic Energy Commission Representative to the USIB

Abstaining:

The Assistant to the Director, Federal Bureau of Investigation, the subject being outside his jurisdiction.

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THE LIKELIHOOD OF FURTHER NUCLEAR PROLIFERATION

THE PROBLEM

To estimate the capabilities of additional countries to acquire nuclear weapons, and the likelihood that such countries will do so.

CONCLUSIONS

A. Beyond the present five nuclear powers, only India is likely to undertake a nuclear weapons program in the next several years. [redacted] (*Paras. 19-25, 34*)

[redacted] (*Paras. 26-27, 35*)

C. Pakistan and the UAR, and perhaps South Africa, are likely to want nuclear weapons in the next decade, but could obtain them only with substantial outside help. (*Paras. 30, 32-33*)

D. Present safeguard systems are likely to detect any significant diversion to unauthorized uses of nuclear materials or equipment which they cover. However, there are gaps and limitations in the system. In the future, competition among the major nations supplying nuclear materials and equipment may erode the effectiveness of safeguards. (*Paras. 10-15*)

E. Multilateral treaties against testing or nuclear proliferation would impose legal, moral, and political restraints of some consequence. But if a country came to the conclusion that possession of nuclear weapons was required by its vital interests, international treaties would be unlikely to prevent it from taking such action. (*Para. 17*)

F. It is technically possible for a country to conduct a small covert nuclear weapons program at least up to a test. The chances of warning would depend on the extent to which our suspicions had been aroused and the methods available or used to acquire information. (*Paras. 36-38*)

DISCUSSION

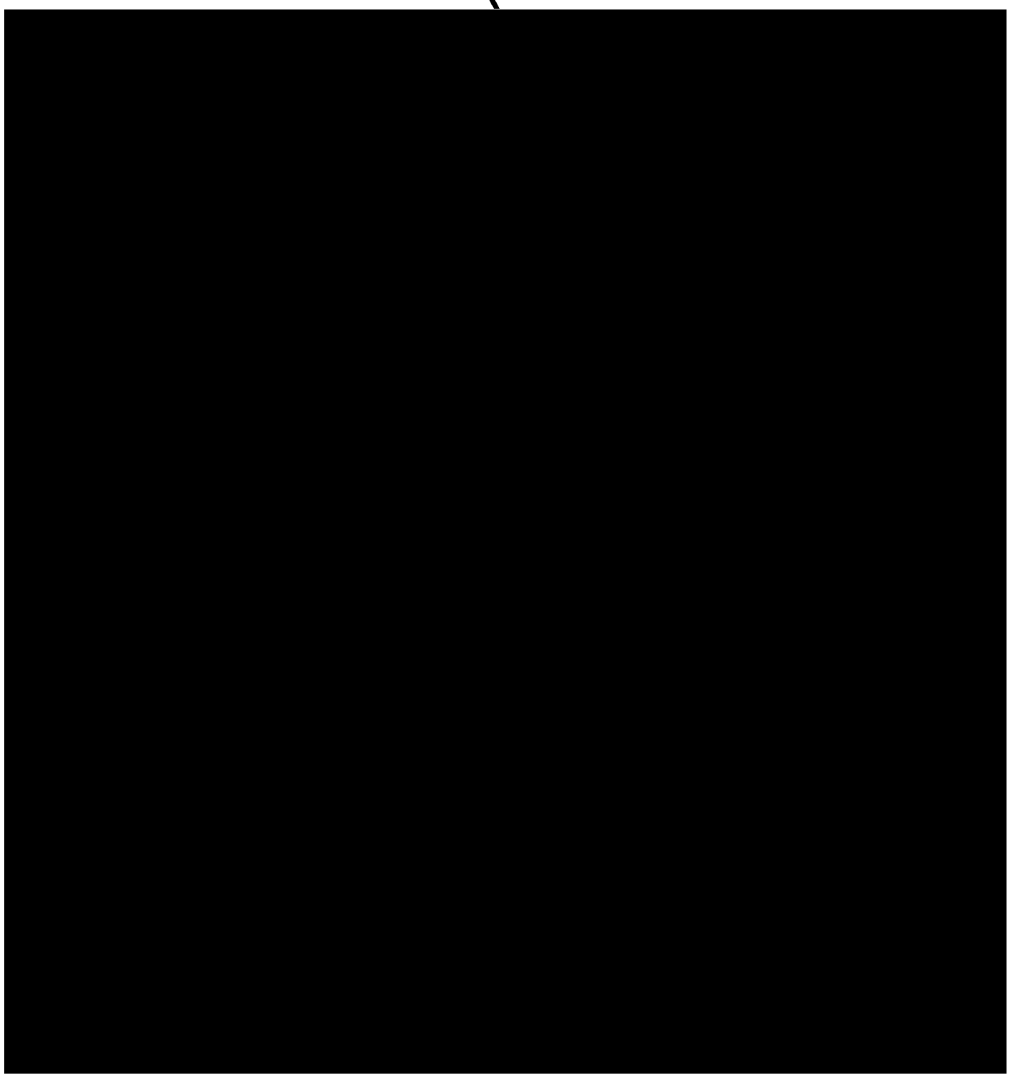
I. THE DIMENSIONS OF THE PROBLEM

1. Many nations in addition to the present five nuclear powers have a potential to develop nuclear weapons. Each year the technical problems and costs of making small numbers of plutonium weapons decrease.[1] This trend will continue. By the late 1970s, there will almost certainly be widespread use of nuclear power reactors which will produce, as a by-product, large amounts of plutonium. Although there will be industrial uses for this plutonium, its availability will reduce further the technical problems and costs of weapons production and increase the temptation to enter the nuclear weapons field. The decisions of the potential nuclear powers as to whether to acquire nuclear weapons will depend increasingly upon military, psychological, and political motivations and restraints.

II. DECISIONS TO ACQUIRE NUCLEAR WEAPONS

4. The factors which determine whether or not a nation will seek to acquire nuclear weapons differ widely from country to country. National needs and interests vary from case to case, as do systems of government and decision-making. Some governments have to take public opinion into account far more fully than others; in the case of some, a decision can be made by one or a very few leaders, while in others it is a matter of weighing conflicting interests or reckoning with divided counsels within the government, parliamentary bodies, or the public at large.

[1] See Annex for a discussion of the prerequisites for a nuclear weapons program and other technical and economic considerations facing nations which might embark on such a program, and for a list of the larger nuclear reactors in countries other than the present five nuclear powers.



5. In addition, levels of sophistication in nuclear matters and the bases of political thinking and military doctrine vary considerably from state to state and within states. What may appear to the US or to other experienced countries as critical deficiencies in a projected nuclear weapons program may not appear as such to the government considering the program; the latter may feel, for a mixture of political, military, and other reasons, that a given program would be a good investment.

6. Despite these variations, certain common motivations figure in the calculations of all potential contenders. The first and most compelling is that of national security. A nation may believe that it needs nuclear weapons as a

deterrent or for use in war if deterrence fails. The question may arise both in nations which are without close allies and in others which, though members of an alliance system, do not feel fully protected by it. In general, once a nation has concluded that nuclear weapons are vital to its security, no outside restraint other than force is likely to prevent it from trying to acquire them.

7. Another significant motivation—partly psychological and partly technical—to acquire nuclear weapons is to avoid being left behind. Nations dislike the idea that others of equal or less importance might move ahead of them. The more nations acquire weapons, the more others can find reasons to do likewise. Thus nuclear proliferation could have a snowball effect. Moreover, in some nations it is argued that entering the nuclear weapons field is necessary to keep abreast of technological and scientific developments.

8. Finally, there is the incentive of national prestige and political leverage. This motivation runs through all other calculations but, in the modern world, the feeling has grown that nuclear weapons are essential to front rank status—the French *force de dissuasion* being the prime example. De Gaulle, his supporters in France, and like-minded people elsewhere do not maintain that a nation must have a nuclear force rivaling that of the US or the USSR, but argue that even a small force enhances their opportunities for independent action by giving them leverage *vis a vis* the super powers.

III. RESTRAINTS ON THE ACQUISITION OF NUCLEAR WEAPONS

9. A wide range of domestic and international restraints operates to prevent further nuclear proliferation. There is, of course, the restraint of cost—not only of producing weapons but more importantly of acquiring a delivery system. Within every nation that is a potential addition to the nuclear ranks there are strong political and psychological forces working against proliferation. The major nuclear powers—the US, the USSR, and the UK—oppose the spread of nuclear weapons. They do so through both bilateral and multilateral arrangements. However, these nations may not be willing in all circumstances to give non-proliferation priority over other policy objectives. The attitudes of France and Communist China toward proliferation are ambiguous; it is possible that either might help certain other nations toward a nuclear capability. A number of industrialized but non-nuclear nations—West Germany, Japan, and Sweden, for example—are becoming major suppliers of nuclear equipment. The policies they follow in the sale of reactors, nuclear equipment and technology will influence the rate and extent of nuclear proliferation even if they themselves do not develop weapons. Although the foreign policies of the major powers tend to limit further proliferation, there is no certainty that they will prevent it.

A. Present Safeguard Systems

10. An elaborate restraint on nuclear proliferation is a system of "safeguards," or controls designed by international bodies or by nations exporting nuclear materials and equipment to detect any diversion of such products to unauthorized

purposes.[2] While the objective is to prevent diversion, safeguards *per se* are concerned more with detection than prevention. Like other international agreements, safeguard agreements could be abrogated or violated. The sanctions imposed on offenders would depend ultimately on the amount of political, economic, or military pressure which other countries were willing to bring to bear. In the case of recipients who are dependent on continuing supplies of materials, e.g., those using enriched uranium in reactors, the need to avoid alienating suppliers acts as a sanction to ensure compliance with safeguards.

11. We believe that the inspection and verification provisions of broad safeguards such as those administered by the IAEA and EURATOM are generally effective in fulfilling their limited function; i.e., they are likely to detect any significant diversion of materials or equipment from the uses intended by the supplier. In addition, the risk of detection is itself a deterrent of some importance against the unauthorized use of materials and equipment covered.

12. However, there are certain gaps and limitations in the safeguard systems. For example, some of the earlier transactions in nuclear material and equipment were under no safeguards or under agreements of limited scope.

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[2] Generally, safeguards consist of an agreement between the supplier and the recipient country under which the latter promises to use the imported goods only for specified purposes. In addition, the recipient often agrees to keep detailed written records of all activities involving the material and equipment, and to allow the supplying country to check these records as well as make on-site inspections to assure their accuracy. Such controls may be exercised over supplies of natural uranium, fissionable materials (principally plutonium and uranium enriched in U-235), heavy water and other scarce or expensive commodities associated with production of fissionable materials, tritium, reactors, components of reactors, and neutron generators. Safeguards may be administered by various bodies. The US, British, and Canadian governments, for example, place bilateral safeguards on their exports of nuclear-related products. EURATOM supervises safeguard arrangements on many nuclear facilities in the Common Market countries. The International Atomic Energy Agency (IAEA) administers safeguards on materials and equipment supplied by it and also under agreements in which it has been specified as the administering agency by the US and other countries. Some member nations have voluntarily submitted themselves to IAEA safeguards. Efforts are being made to bring more facilities of various countries under IAEA safeguards.

[redacted]

13. There is no formal agreement in existence among all potential suppliers that safeguards will be applied to reactors or nuclear materials or equipment; such safeguards as are applied result from the unilateral decisions of the suppliers. While it is present practice for the UK and Canada to require safeguards like those imposed by the US, France has rejected the policy of automatically requiring safeguards in connection with sales. Soviet and Chinese policy with regard to safeguards is unclear. The USSR as well as most East European countries are active members of the IAEA and approve the principle of safeguards, but no reactors in existence or under construction in the Sino-Soviet area have been placed under IAEA safeguards. Neither the USSR nor China has to date provided any other country with a reactor able to produce plutonium in quantities sufficient for weapons, except that the Soviets may have furnished the Chinese prior to 1960 with equipment and technology for building such a reactor. Nevertheless, reactors now under construction in Czechoslovakia and East Germany with Soviet assistance will be capable of producing enough plutonium for weapons. We do not know whether any safeguards are applicable to these reactors but almost certainly these countries will not undertake independent nuclear weapons programs.

14. There are no comprehensive controls over world trade in natural uranium, although there is an informal arrangement between the principal Western suppliers of uranium and some other materials to keep each other informed as to sales. It has been possible for both Israel and India to buy unsafeguarded uranium. Furthermore, there is no standard policy regarding the provision of technical information or specialized equipment.

15. There will be a substantial increase in the number of nuclear power reactors in operation in coming years; a considerable number are now under construction in India, Sweden, Japan, West Germany, Italy, and other countries.[3] All will produce some plutonium or other fissionable materials, many will produce large quantities. To the extent that these reactors are under safeguards, the country or agency administering the safeguards will have a means of knowing what use is made of the plutonium. However, competition in the sale of reactors already exists and is likely to grow. Such competition may erode the effectiveness of safeguards, particularly if the competitors include suppliers from countries which have no policy of strict safeguards. Such erosion would be most likely in the fields of equipment and ancillary technology.

B. Nuclear Sharing

16. It is possible that a nation which wanted nuclear weapons might have its aspirations satisfied, at least for some time, and be restrained from undertaking a national weapons program, by an arrangement under which it had a share in

[3] See Tables V and VI of Annex for major reactors now in operation or under construction in countries other than the five nuclear powers.

the control of weapons belonging to an existing nuclear power. We do not believe that useful generalizations can be made in this field. In each hypothetical case, a great variety of factors would bear on the effect of a sharing arrangement; e.g., the degree of control which the non-nuclear power had over weapons, the prospects for future greater control, the level of confidence between the sharing partners, the domestic and foreign incentives and restraints bearing on the non-nuclear power, etc. So far as the matter of proliferation is concerned, the effect of an offer to share could be judged only in terms of the particulars of the offer and an analysis of the individual case.

C. International Agreements

17. If the US and the USSR agreed on multilateral treaties further limiting or prohibiting testing, or prohibiting further nuclear proliferation, they could bring considerable pressure to bear on other nations to sign such treaties. More nations would probably sign a further treaty on testing than would sign a non-proliferation treaty, since this latter kind of treaty is considered by many countries as discriminatory in favor of the present nuclear powers. Such treaties would impose legal, moral, and political restraints of considerable consequence on the signatory nations. The 1963 partial test ban already constitutes some political and psychological curb on proliferation. However, most countries would sign such treaties only provided that they could withdraw if they later felt they must. We believe that if a country came to the conclusion that possession of nuclear weapons was required by its vital interests, international treaties would be unlikely to prevent it from testing or producing them.

D. Unilateral Measures

18. Various unilateral measures by the US or the USSR might restrain further proliferation. For example, the US or the USSR could cut off economic and military aid, e.g., to India or Israel, or disavow their alliances with any nation which began to develop nuclear weapons. In areas where US or Soviet political and economic leverage is strong, even threats or partial steps in this direction would constitute a significant restraint. In particular, any country dependent on continued imports of nuclear materials, e.g., those having reactors needing enriched uranium, would hesitate to disregard the pressures of its supplier. It is also possible that a potential nuclear power could be dissuaded from developing nuclear weapons on its own by a firm security guarantee or other inducements from the US or USSR. There are, of course, limitations on the willingness of the major powers to take such steps as discussed in this paragraph and they may not be prepared to give non-proliferation priority over other policy objectives.

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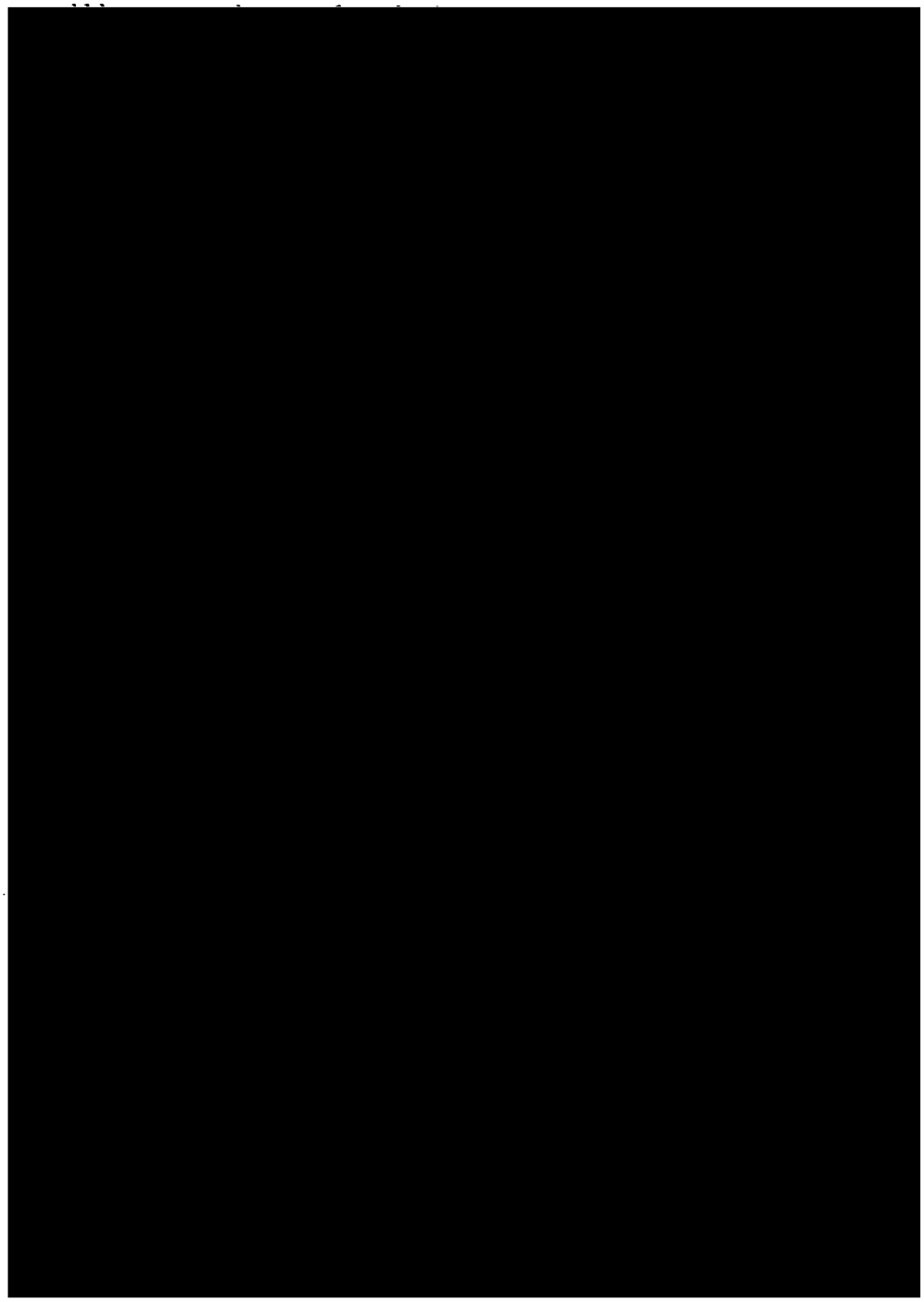

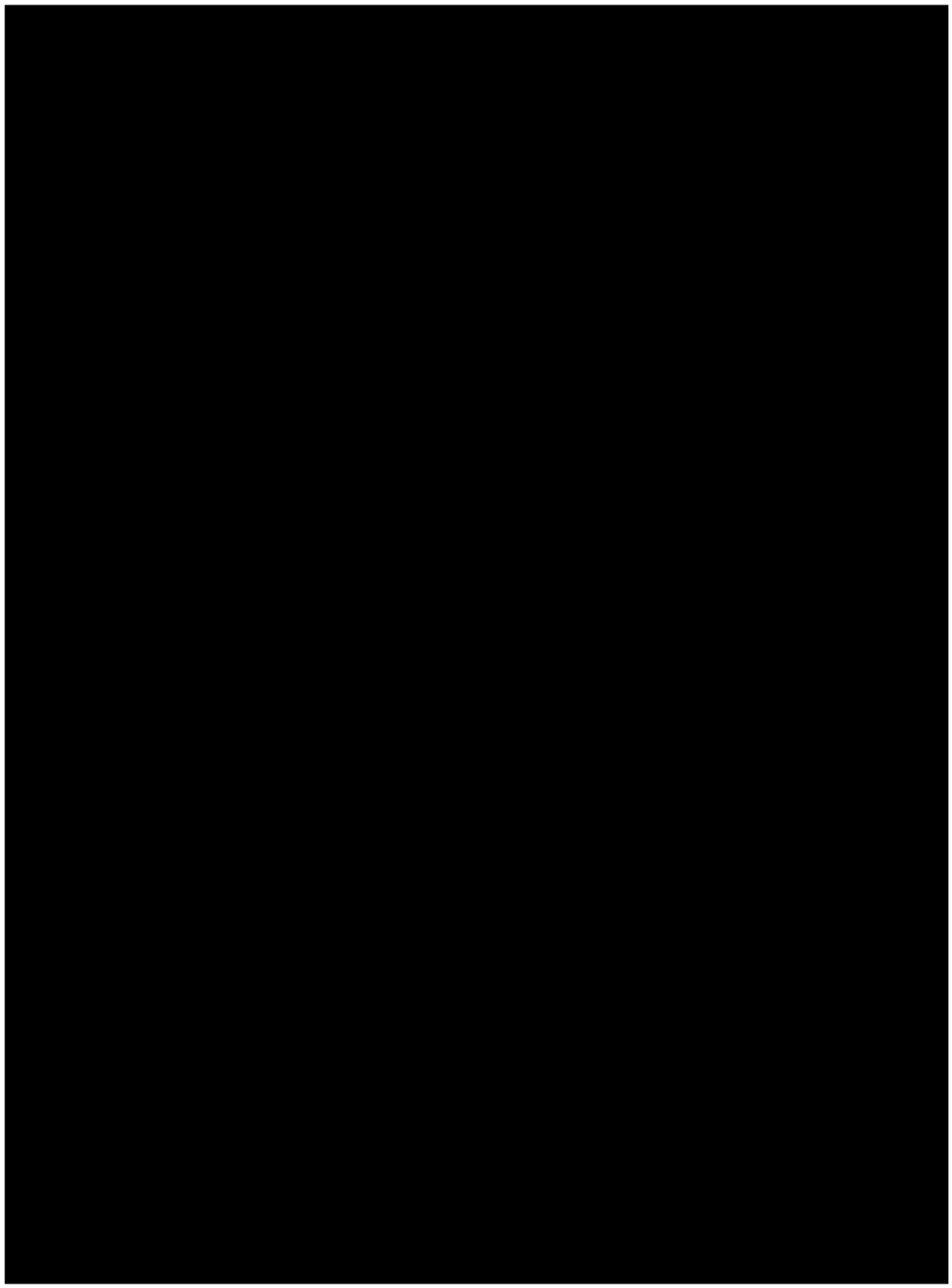

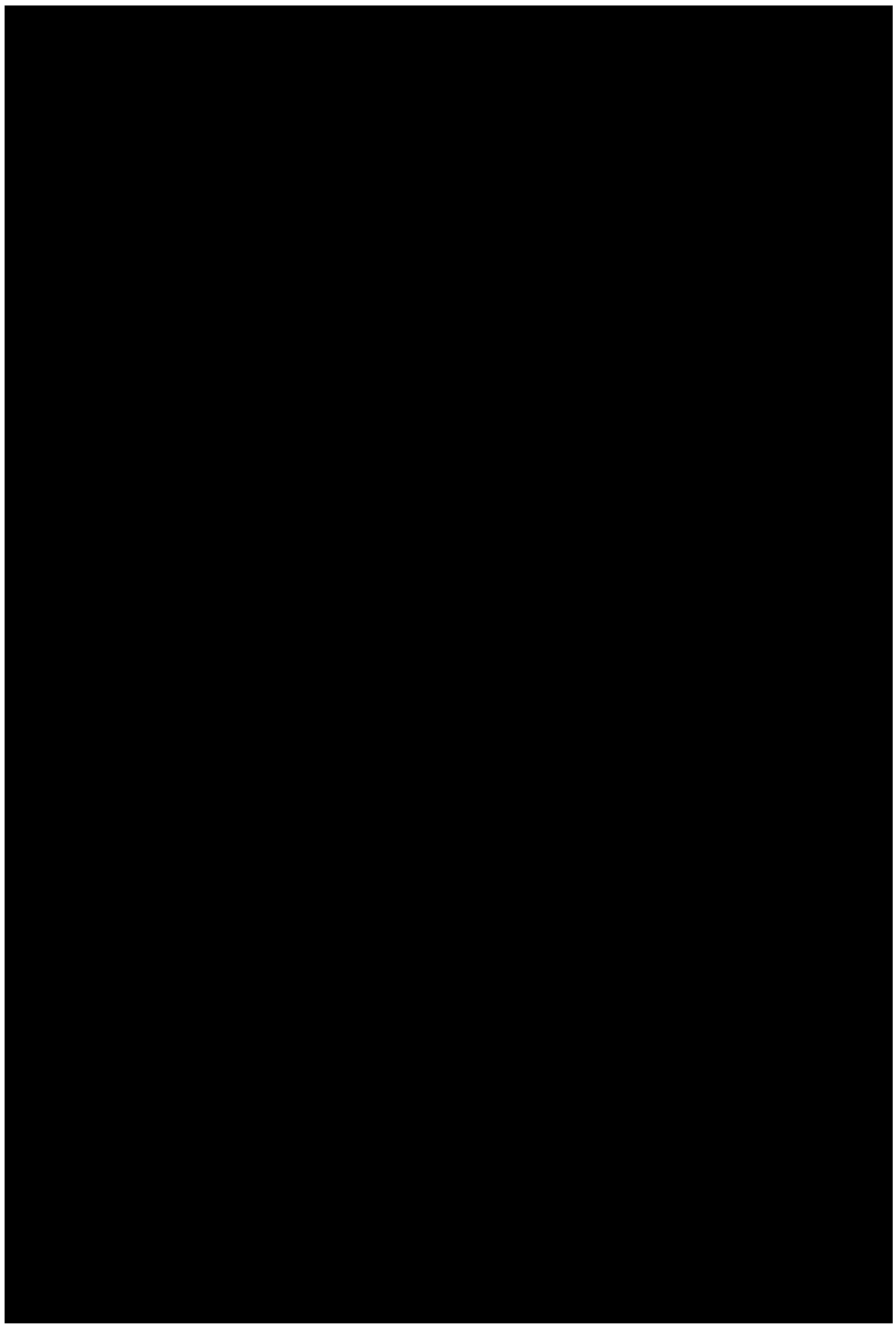

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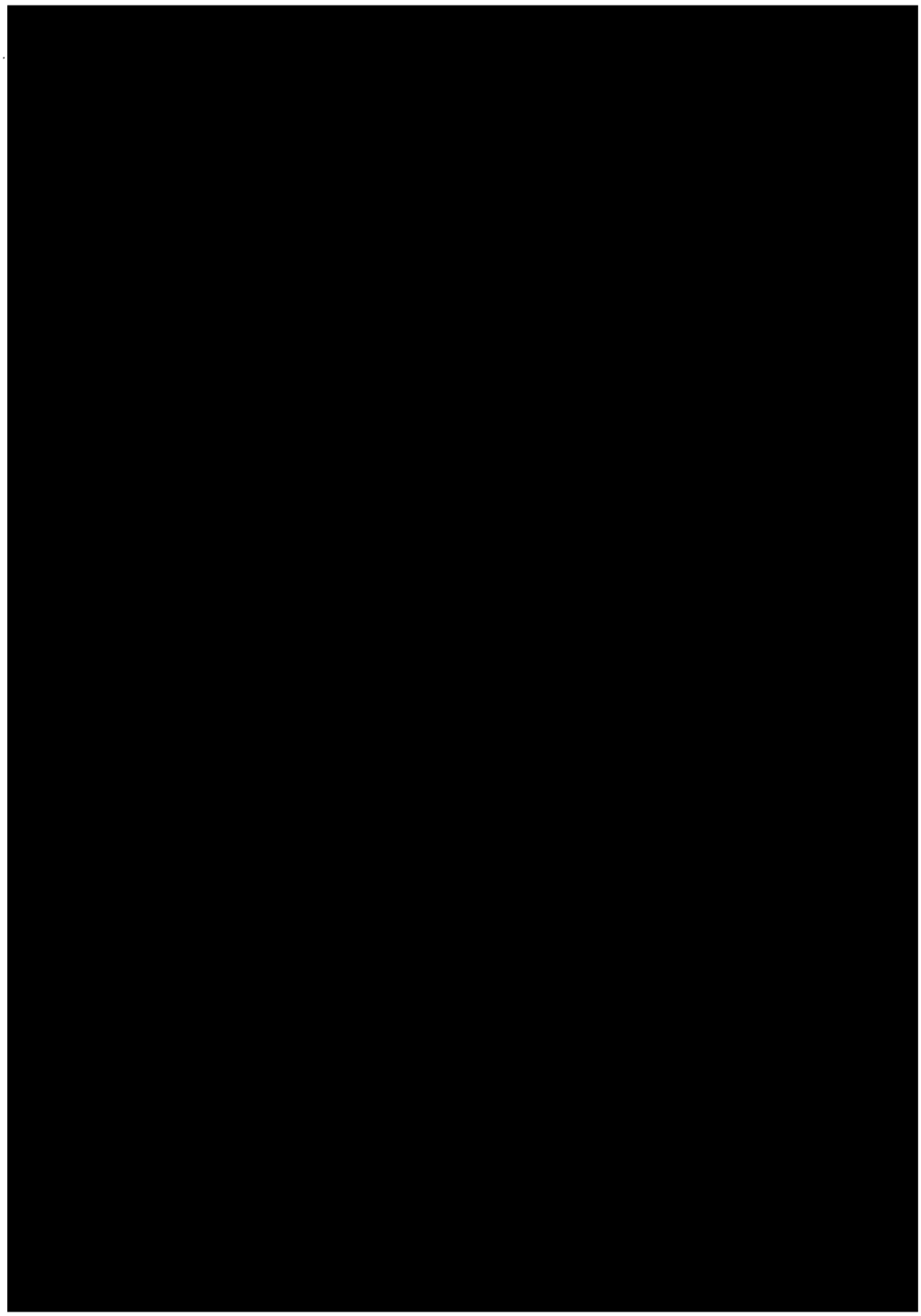

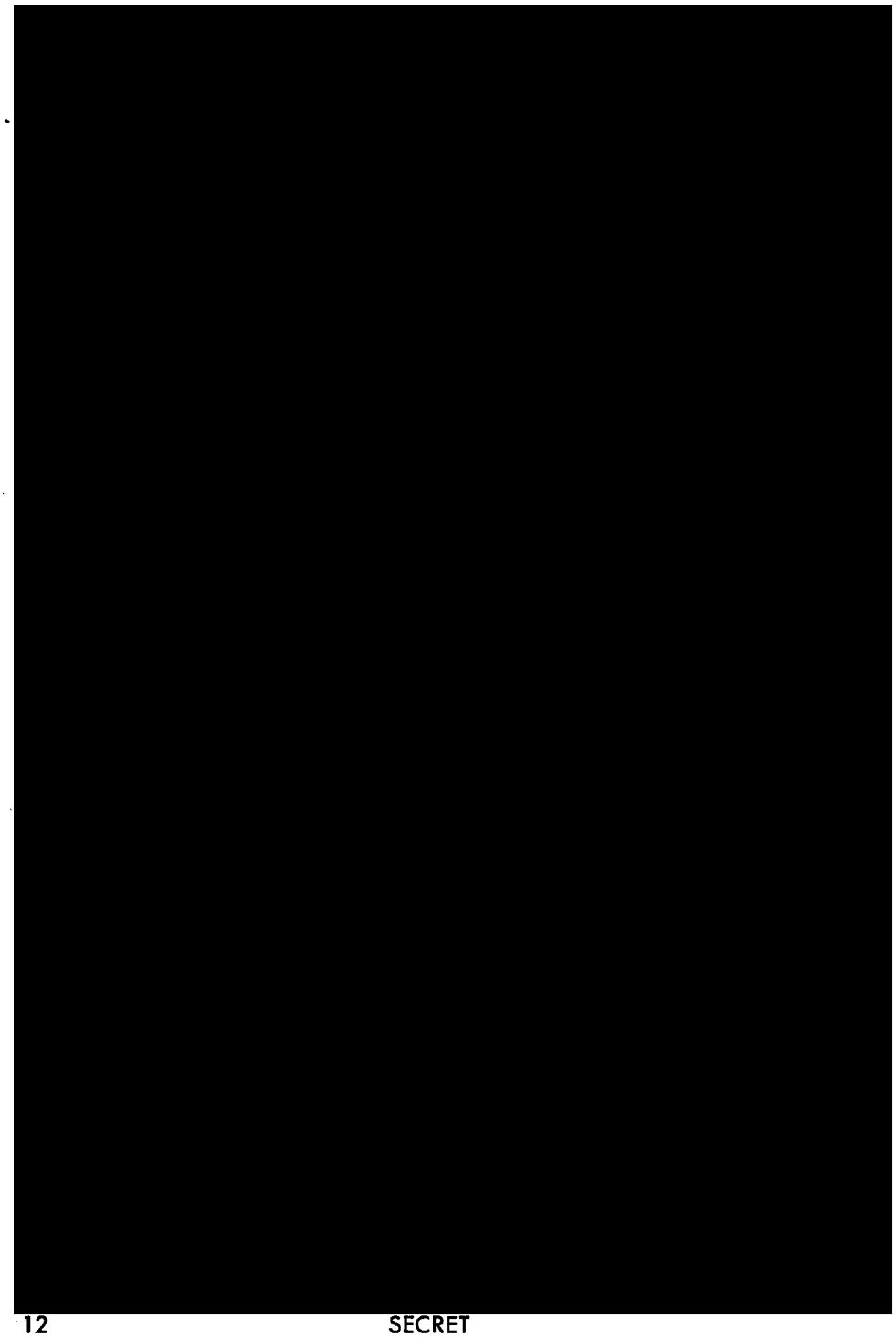

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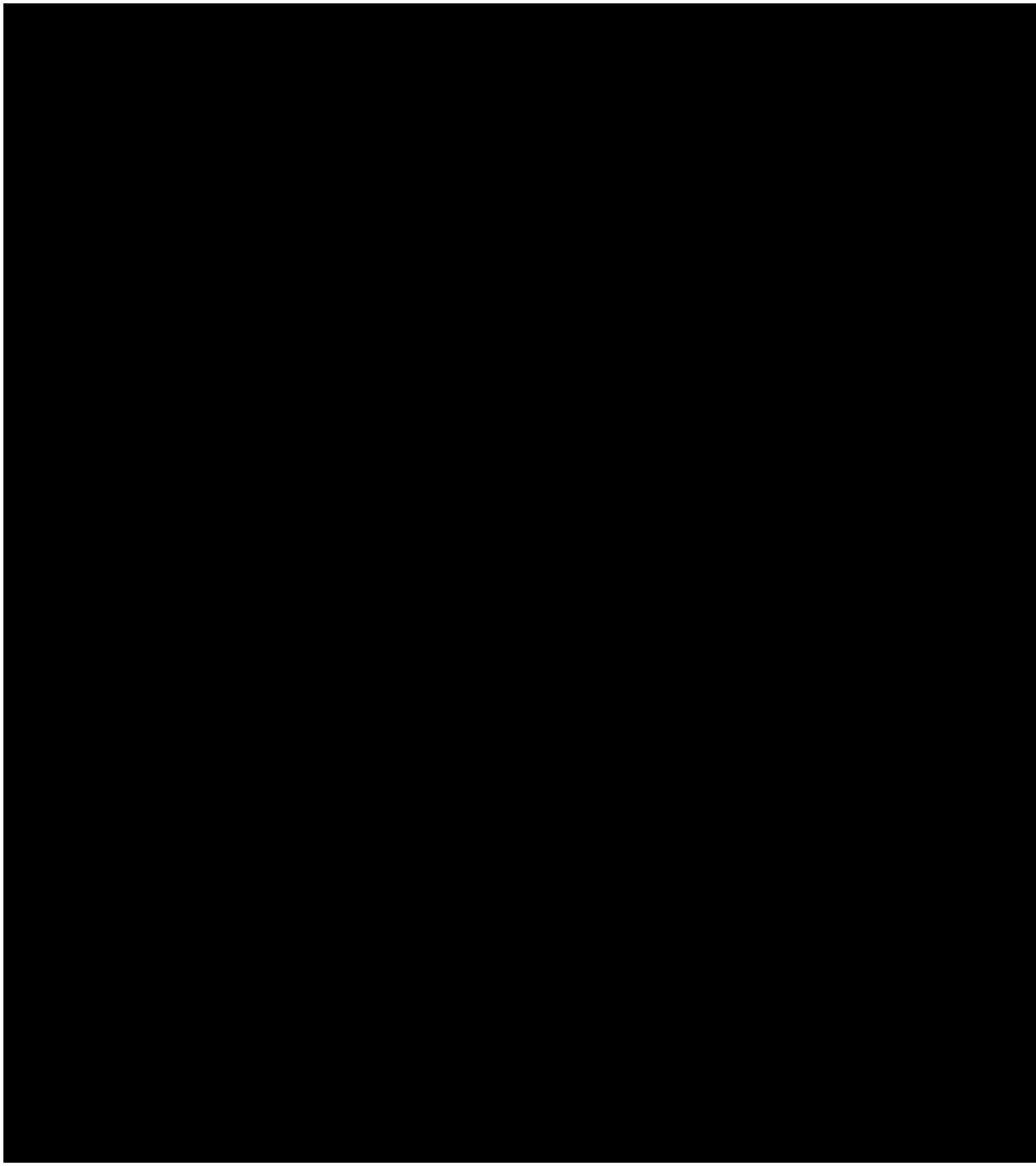

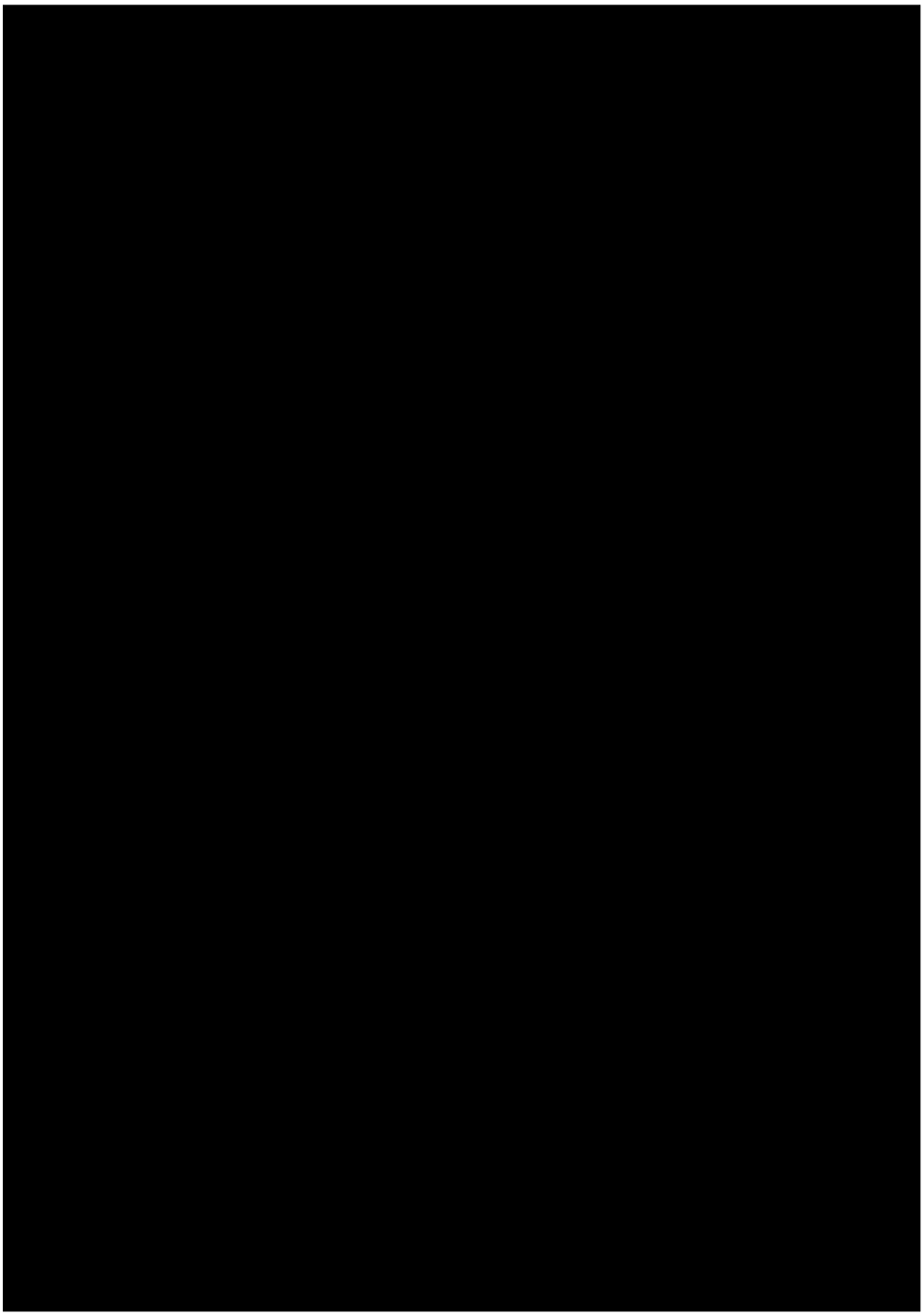

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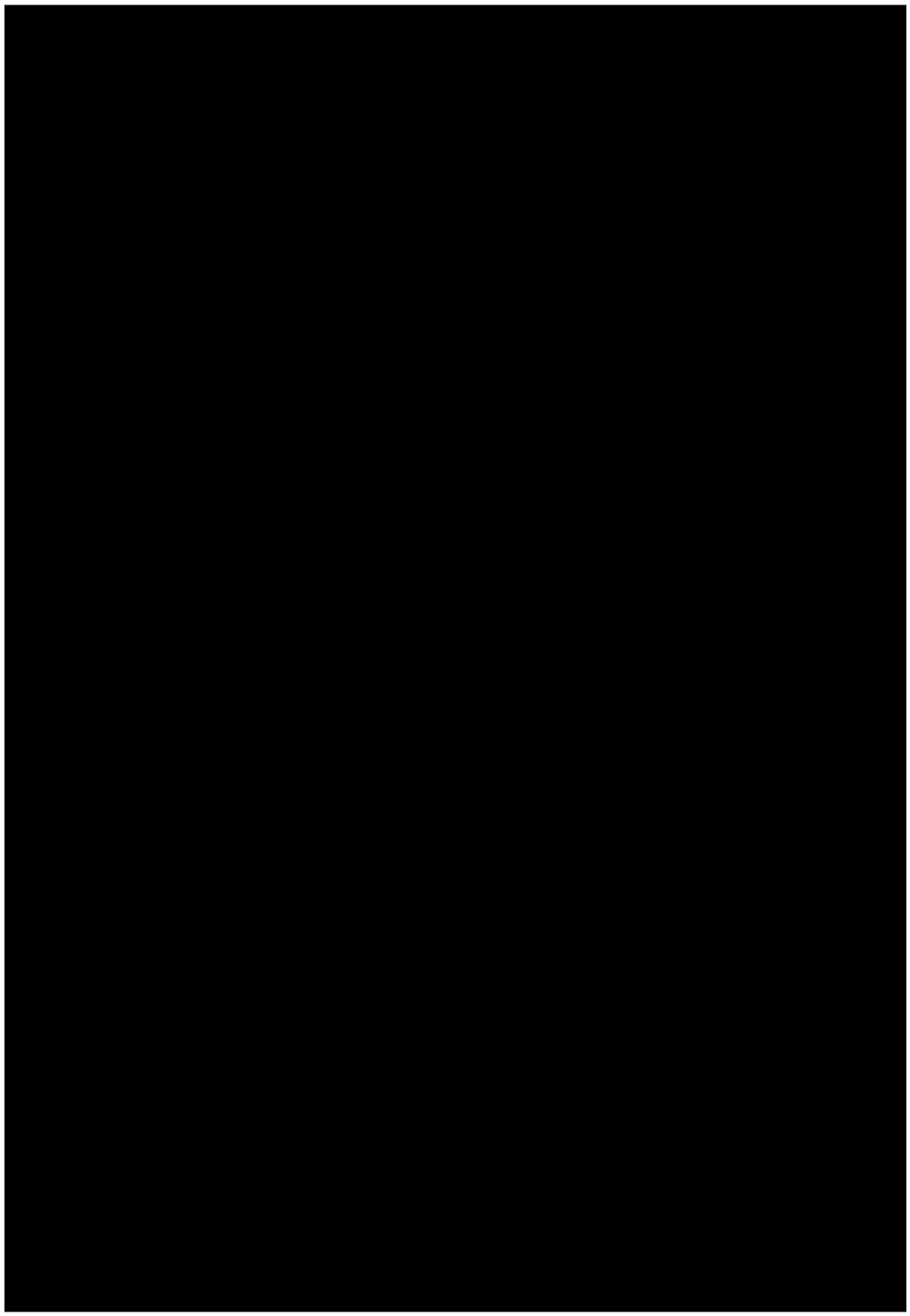

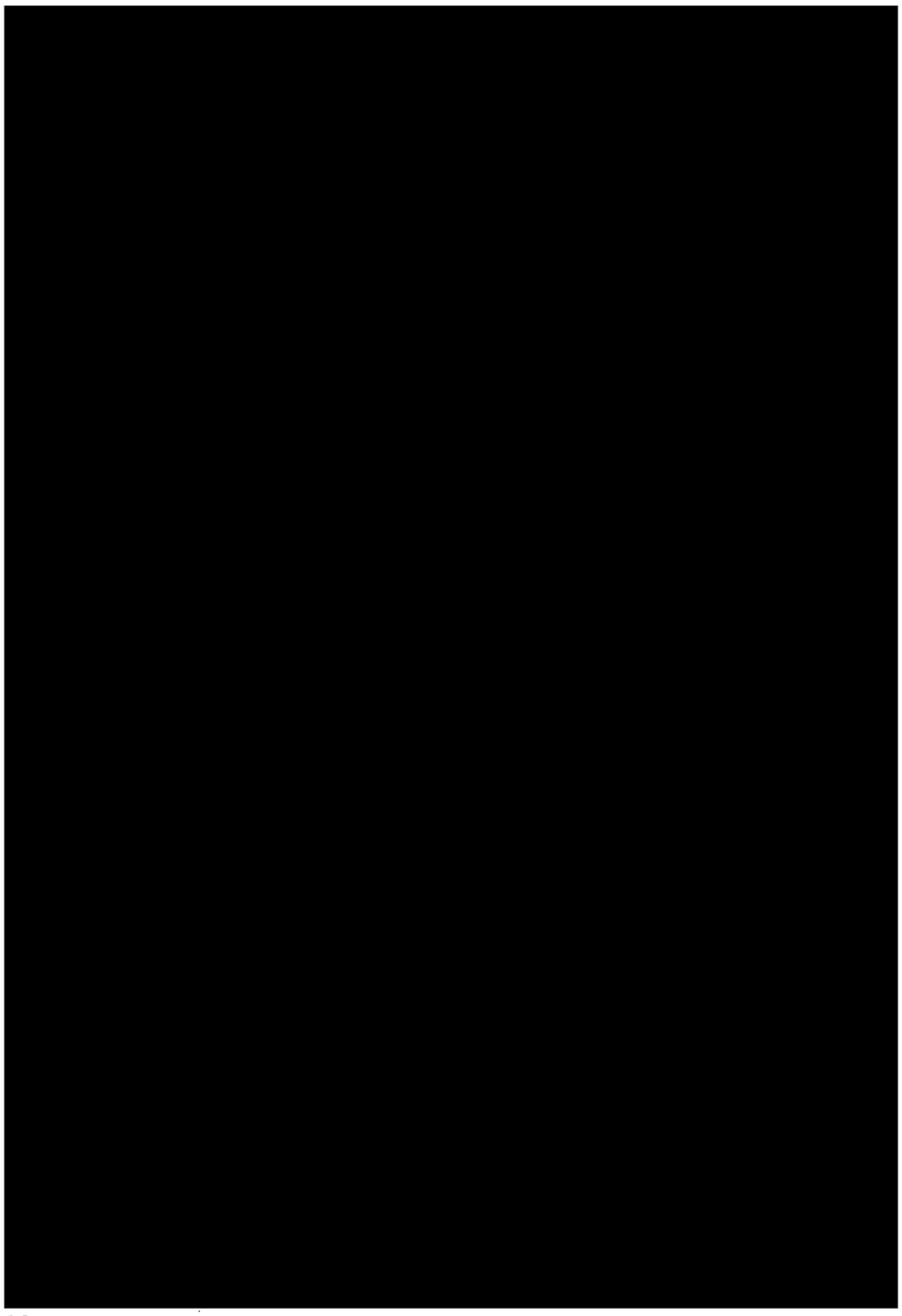

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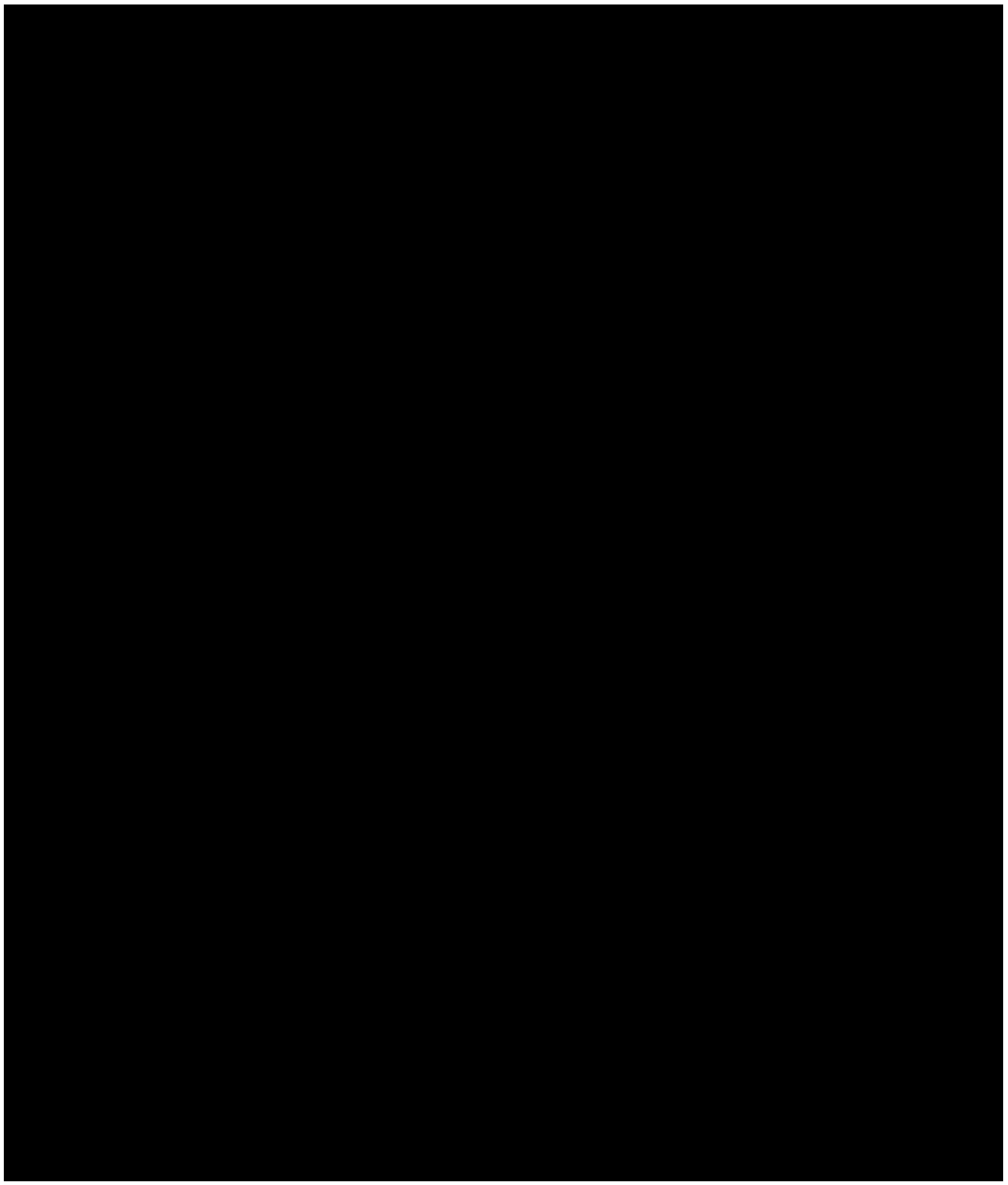

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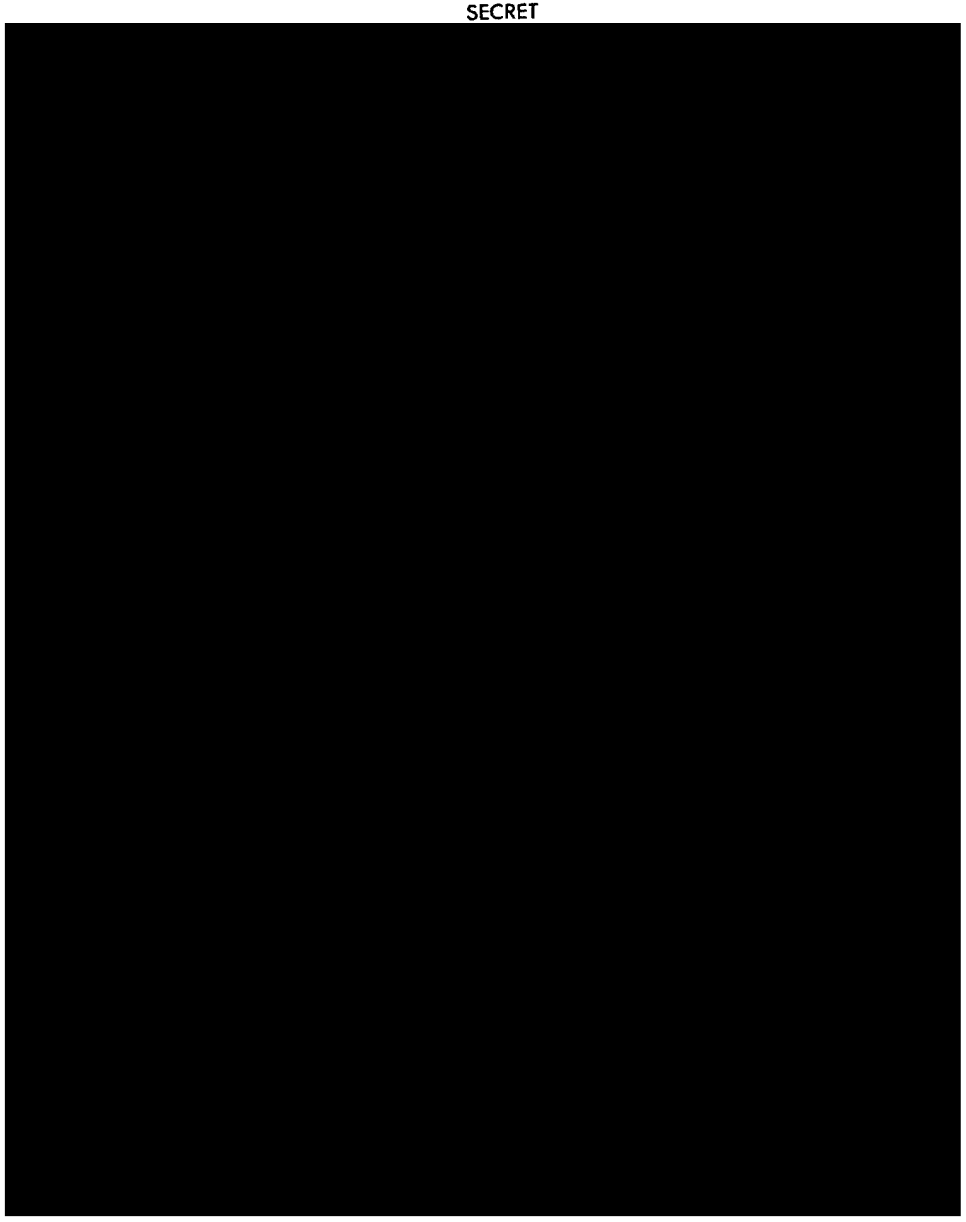

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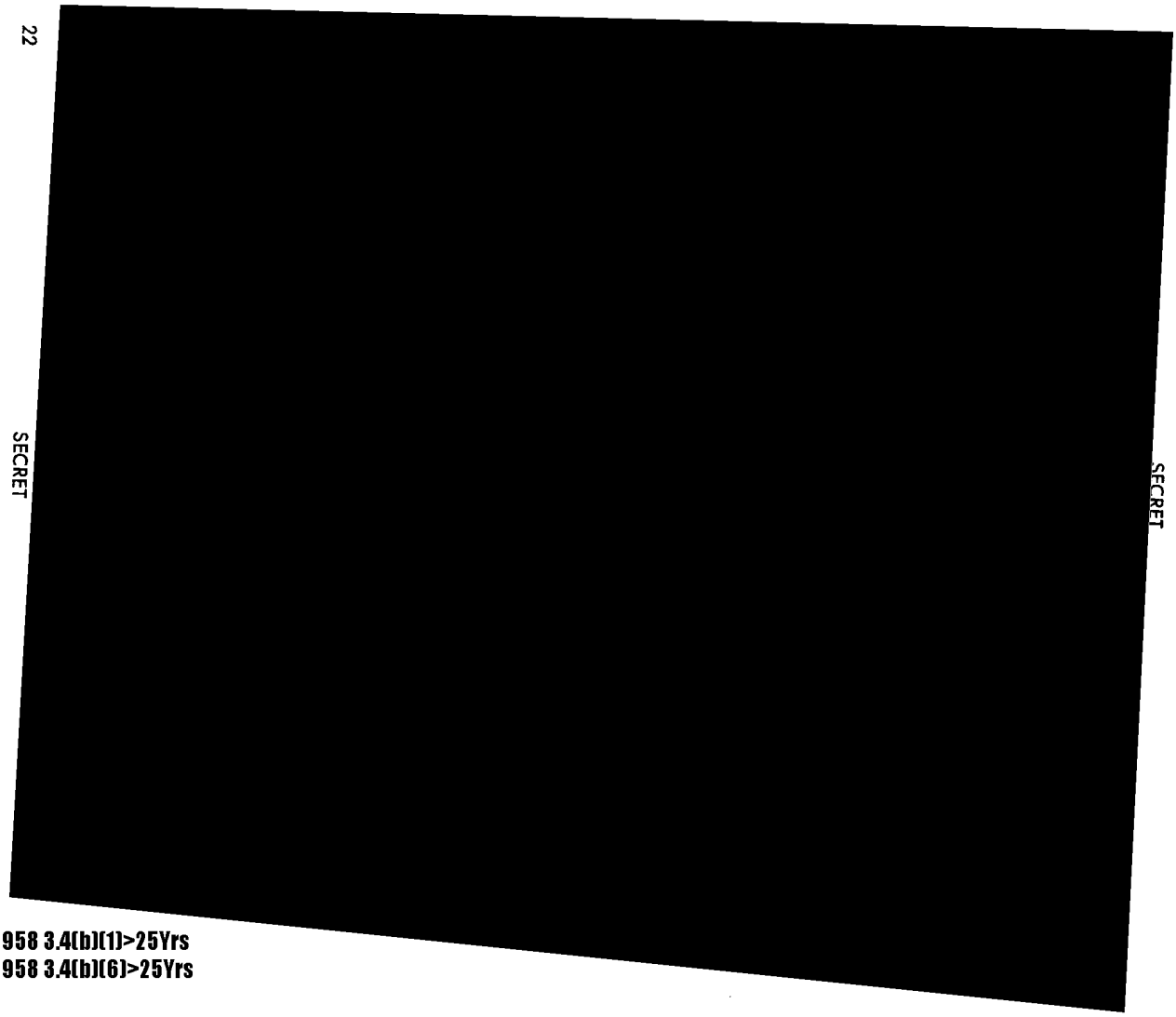

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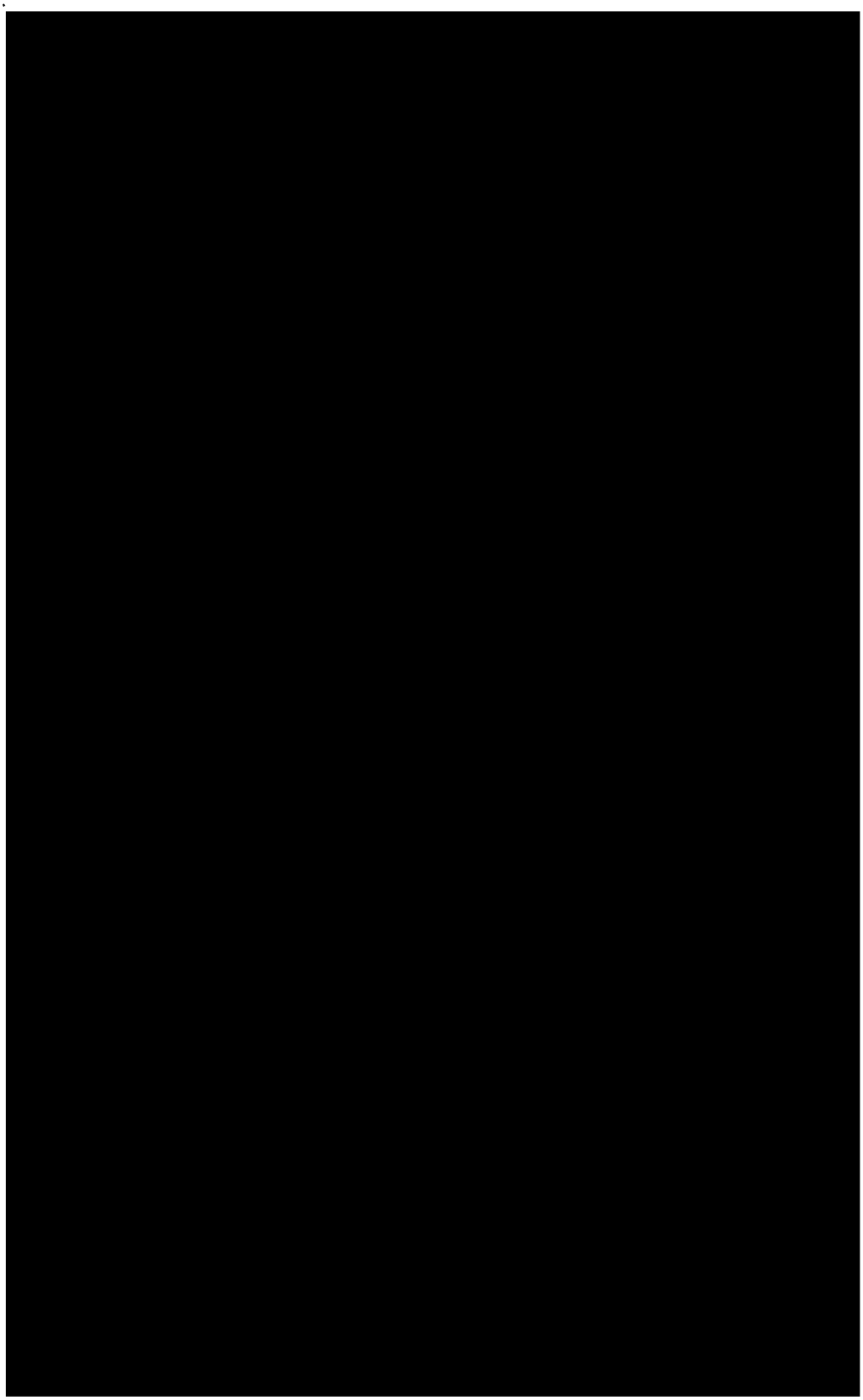

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