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INTERAGENCY SECURITY CLASSIFICATION APPEALS PANEL,
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Scientific and Technical Intelligence Report

*Complex J at Tyuratam and Its Role in the
Soviet Manned Lunar Landing Program*



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August 1968
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Scientific and Technical Intelligence Report

**COMPLEX J AT TYURATAM AND ITS ROLE IN THE
SOVIET MANNED LUNAR LANDING PROGRAM**

Project Officers

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August 1968

CENTRAL INTELLIGENCE AGENCY

Directorate of Science and Technology
Foreign Missile and Space Analysis Center

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PREFACE

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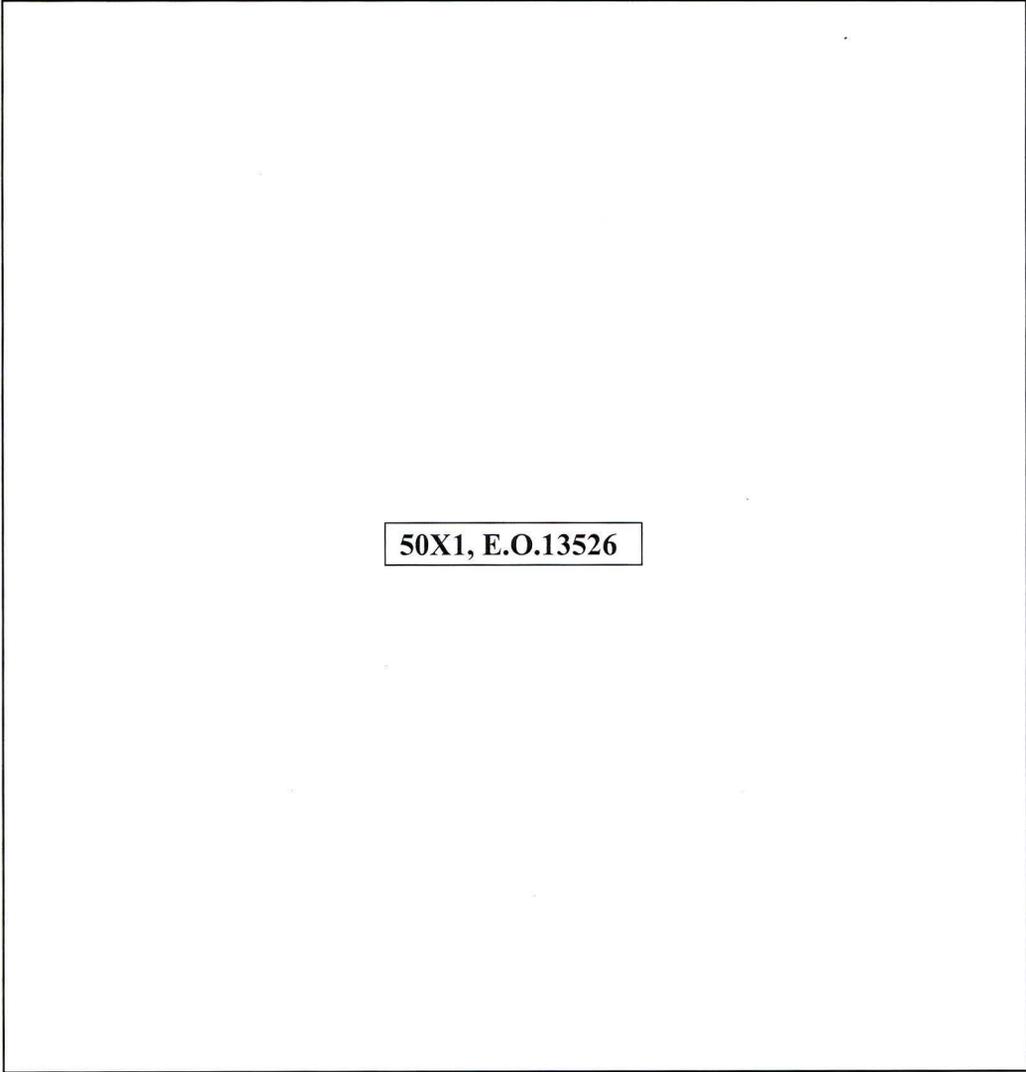
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COMPLEX J AT TYURATAM AND ITS ROLE IN THE SOVIET MANNED LUNAR LANDING PROGRAM

PROBLEM

To present an analysis of the launch and technical support facilities under construction at Tyuratam Complex J related to: 1) initial operational capability; 2) characteristics and capabilities of the launch vehicle; and 3) operational techniques to be used during assembly, checkout, and pre-launch operations. Also, to postulate a flight test program for the J-vehicle leading to a manned lunar landing.

CONCLUSIONS

1. Either a long duration static firing or the launch of a vehicle will take place from Complex J before the end of 1968. A launch attempted in that time frame might well be only a test of the launch vehicle without a mission related payload. A more likely time for a launch of a vehicle with a useful payload is the first quarter of 1969.

2. The first three stages of the vehicle will be assembled in the Missile Assembly Building (MAB) primarily from factory finished sections and components, checked out, and then transported horizontally to the launch pad for erection and launching. The capacity of the MAB is probably three, and possibly four, ready-for-launch vehicles per year. Some mission packages

(that portion of the vehicle above the third stage) will be assembled, checked out, and moved to the launch pad separately. Any manned spacecraft will most likely be prepared in a new Spacecraft Assembly Building at nearby Launch Complex A and moved by rail to Complex J.

3. The launch vehicle with payload will be about 325 feet long and about 50 feet in diameter at the base, with a lift-off thrust in the range of 12 to 14 million pounds. It will be capable of placing approximately 250,000 to 300,000 pounds in earth orbit. Initially the first three stages will use a conventional propellant combination—liquid oxygen oxidizer and probably an amine-type fuel. All stages above the third stage

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will also use conventional propellants, although probably not cryogenic.

4. Based on the derived thrust range for the J launch vehicle and the lack of high-energy propellant facilities at the rangehead, the Soviets will require a rendezvous operation, probably in earth orbit, to perform a manned lunar landing. From earth orbit the Soviets will probably perform a direct lunar landing without lunar orbit rendezvous. Considering the probable launch vehicle availability, a flight test program leading to this goal could achieve a manned lunar landing in the time period 1971/1972. Within this time span the most probable date for a manned

lunar landing is 1972. However, if serious problems are encountered in the test program it would be later.

5. The launch area at Complex J appears to be designed for ultimate launching of a larger vehicle than postulated for initial use, about 400 feet long and probably employing high-energy propellants. The use of high-energy upper stages on the J launch vehicle would double the payload into earth orbit (500,000 to 600,000 pounds). This weight would permit a manned lunar mission with a single launch. If the Soviets plan to use this mode for a manned lunar landing the mission will probably not take place until after 1972.

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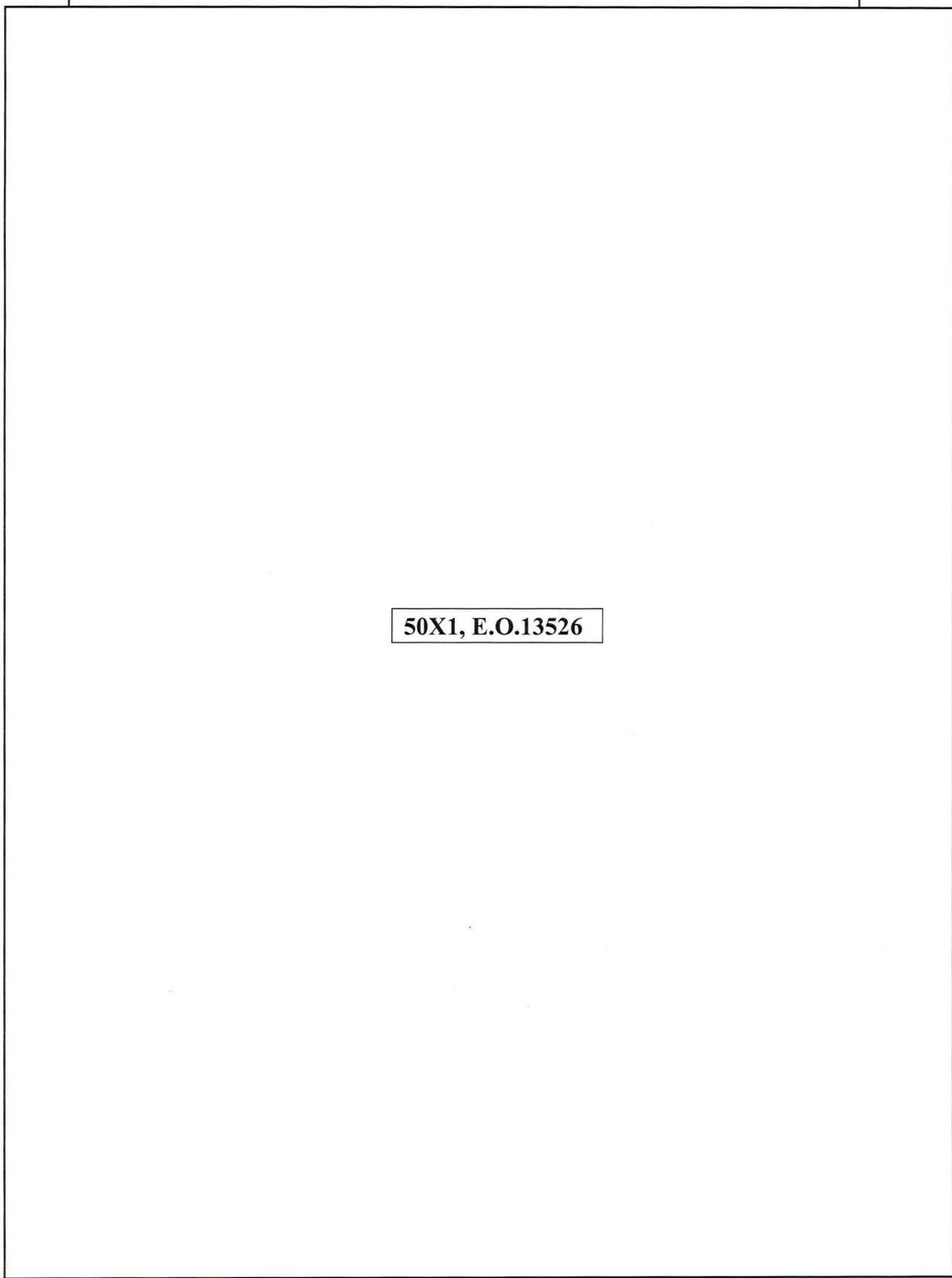
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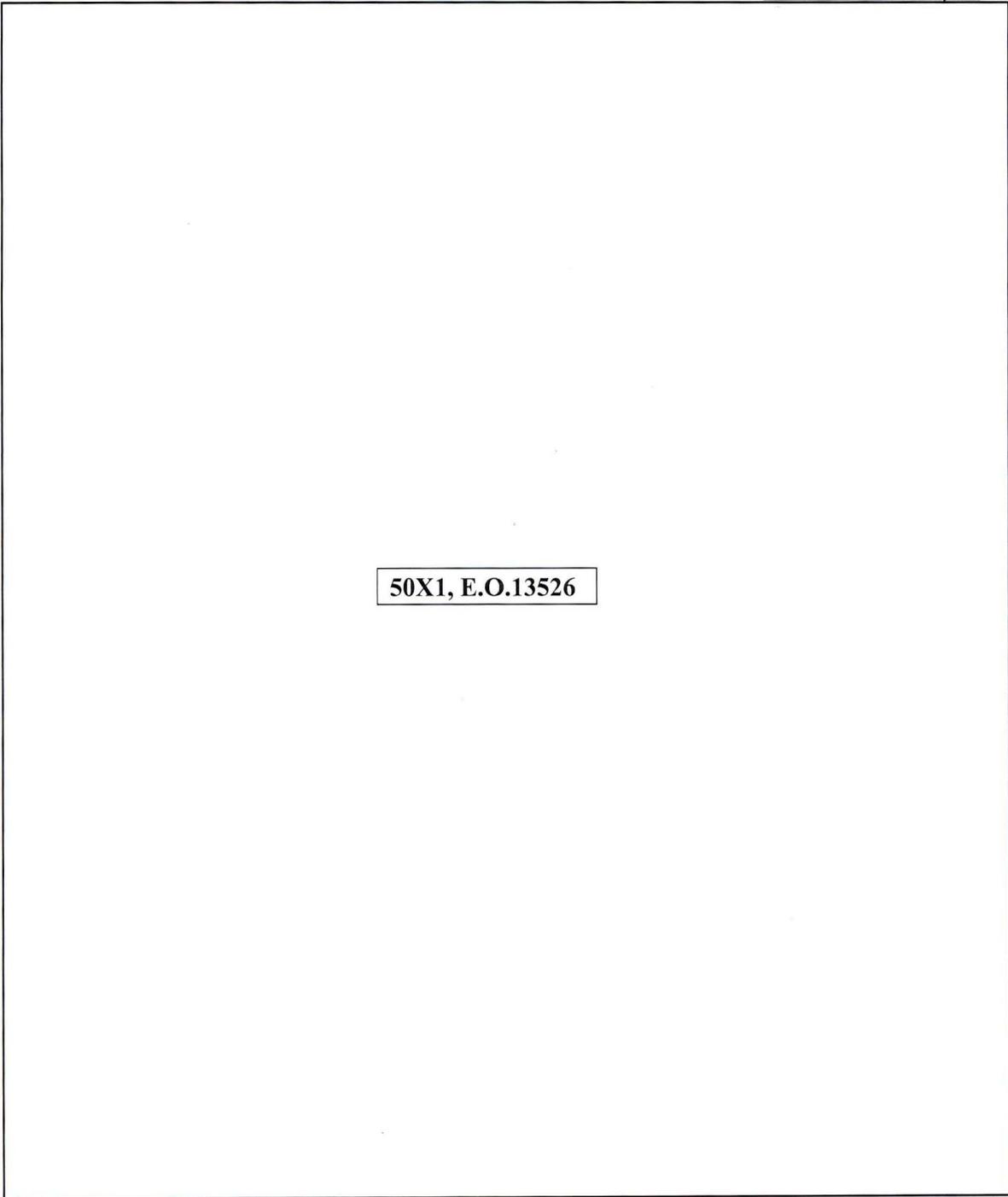
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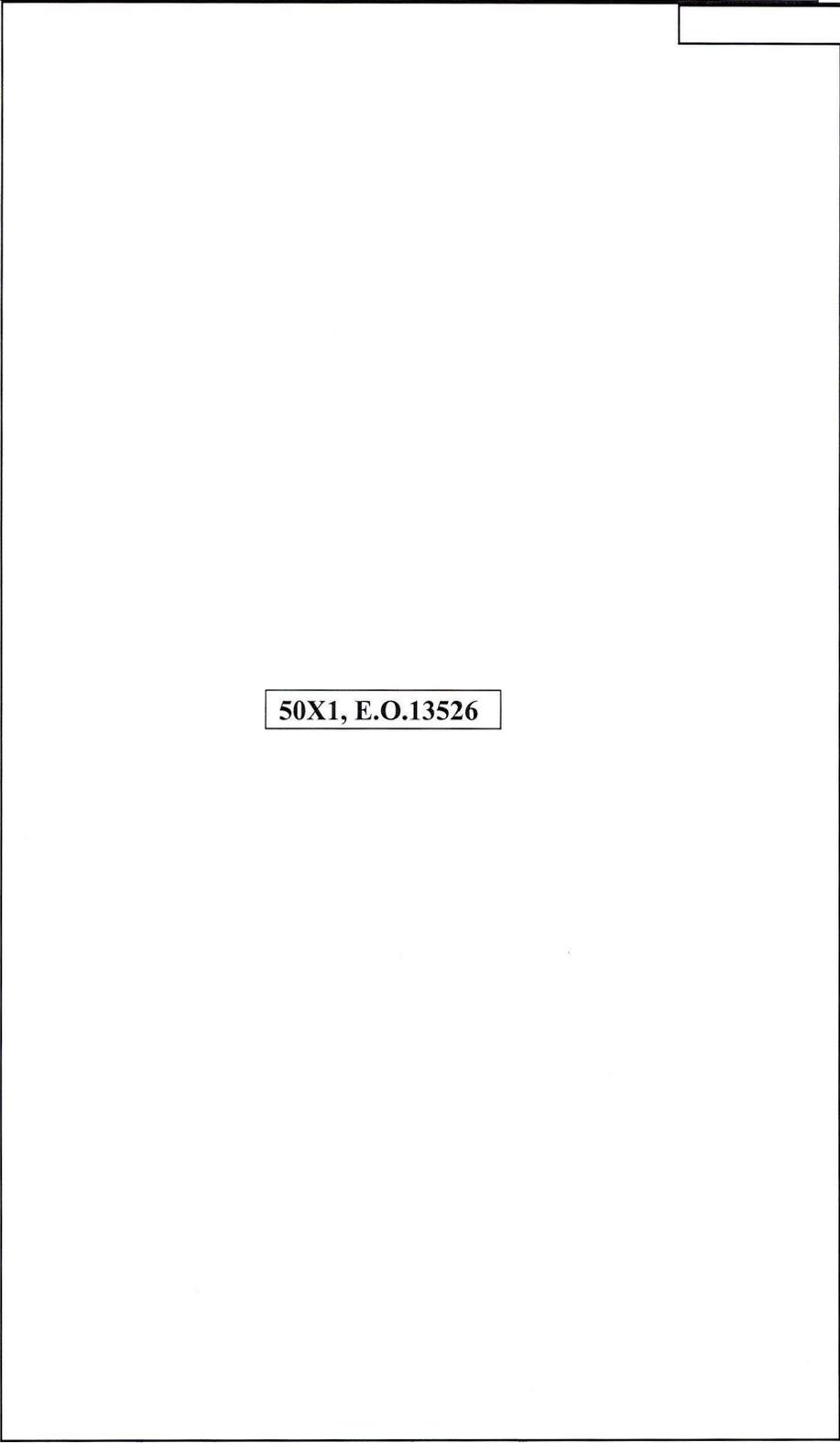
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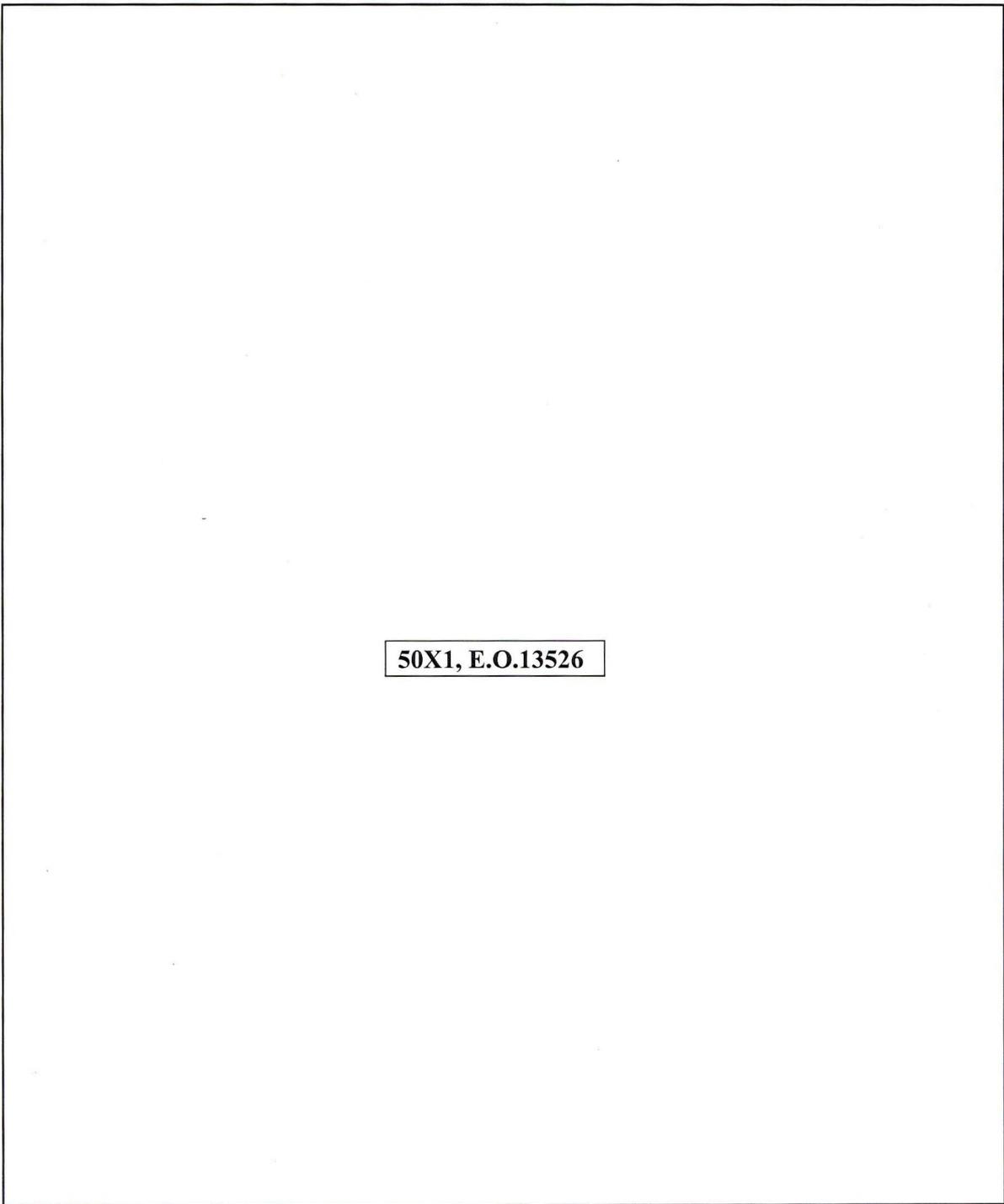
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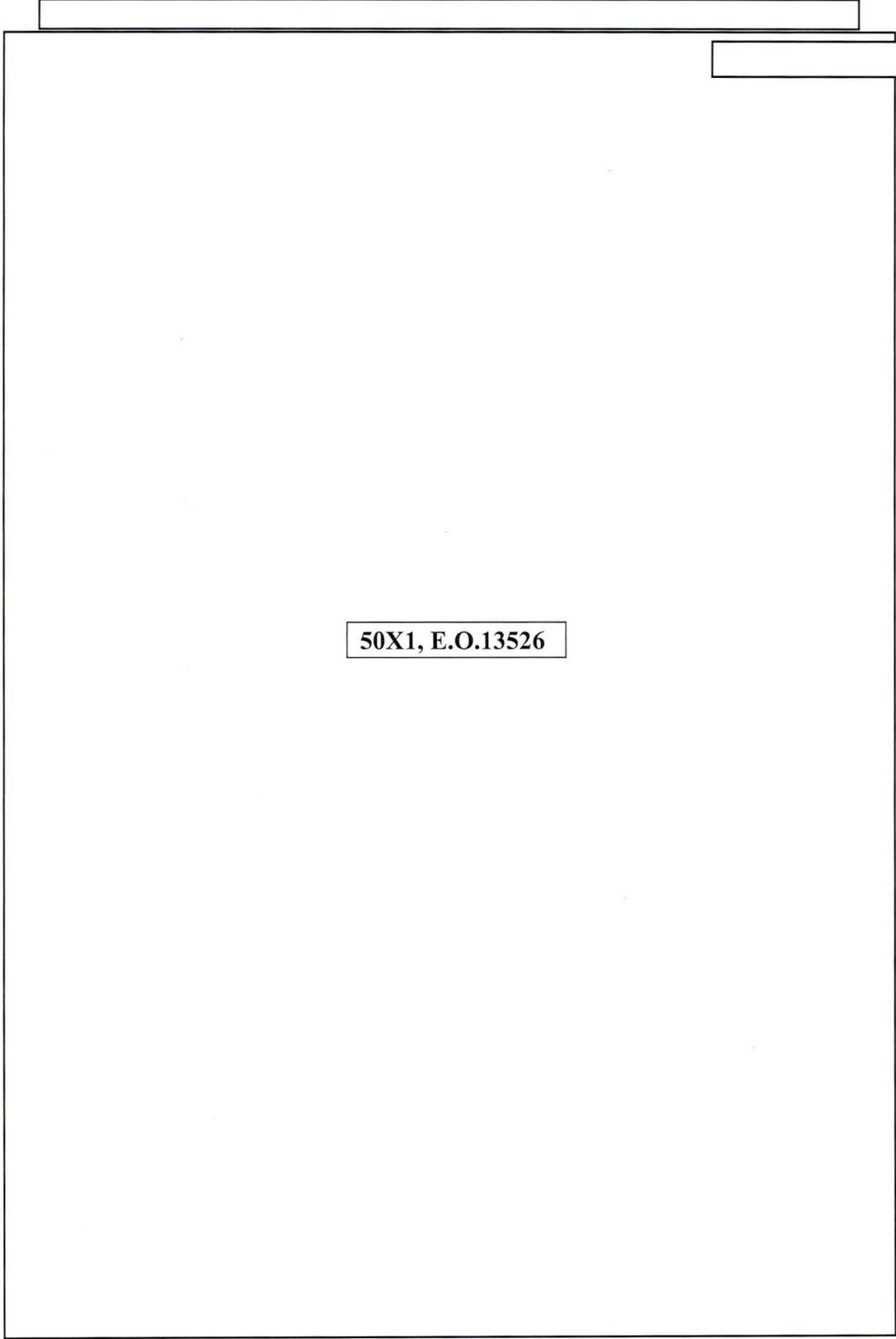
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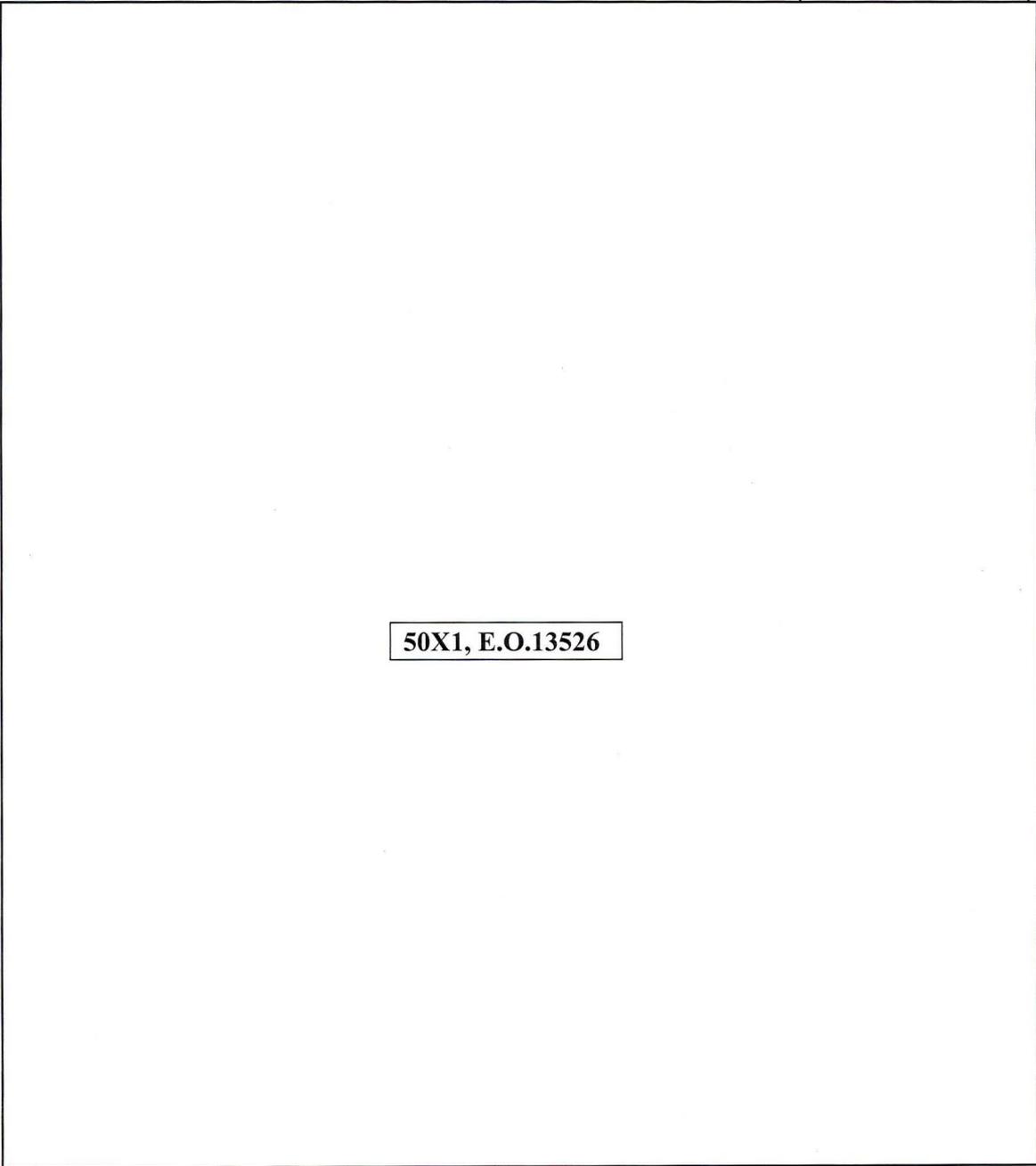
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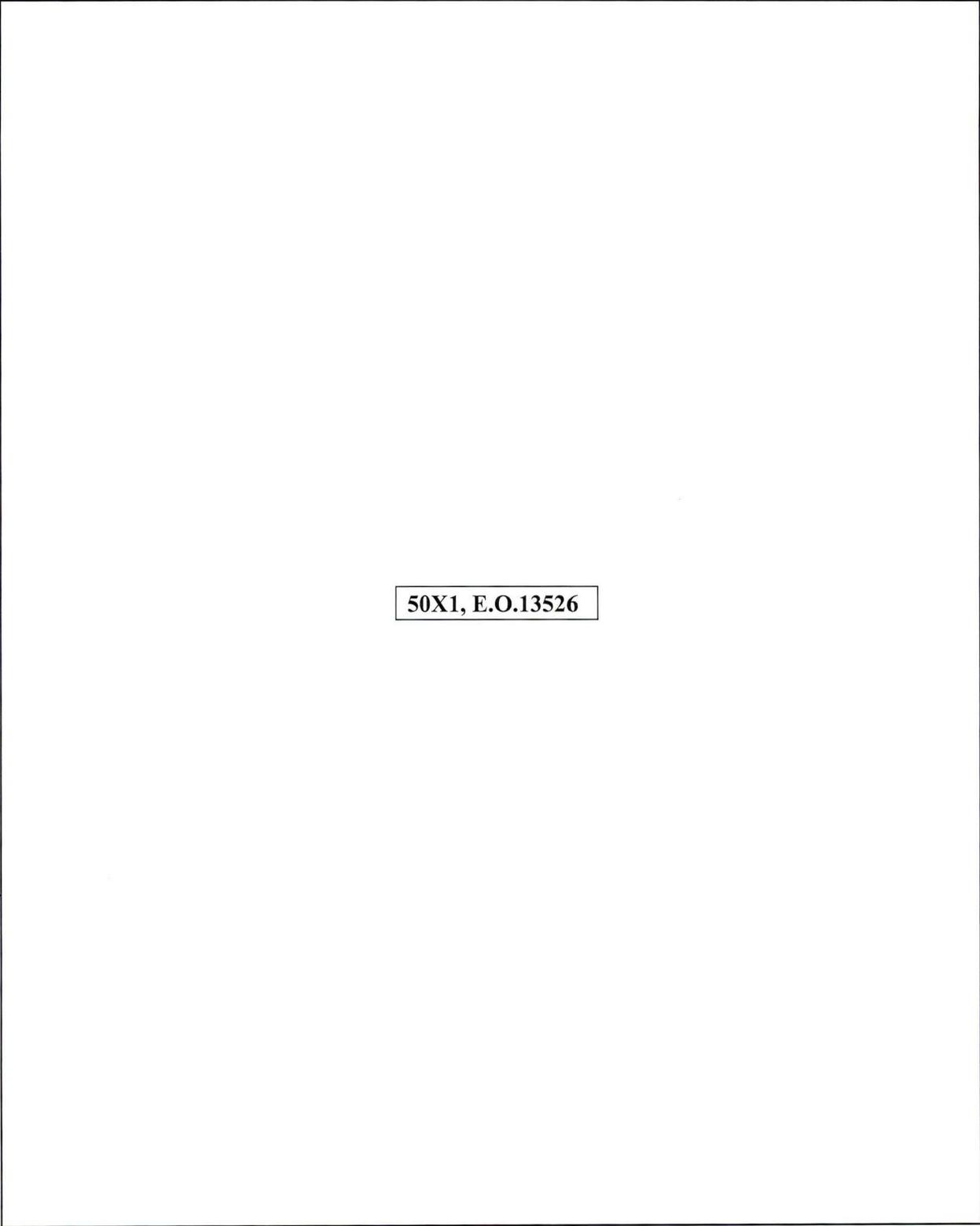
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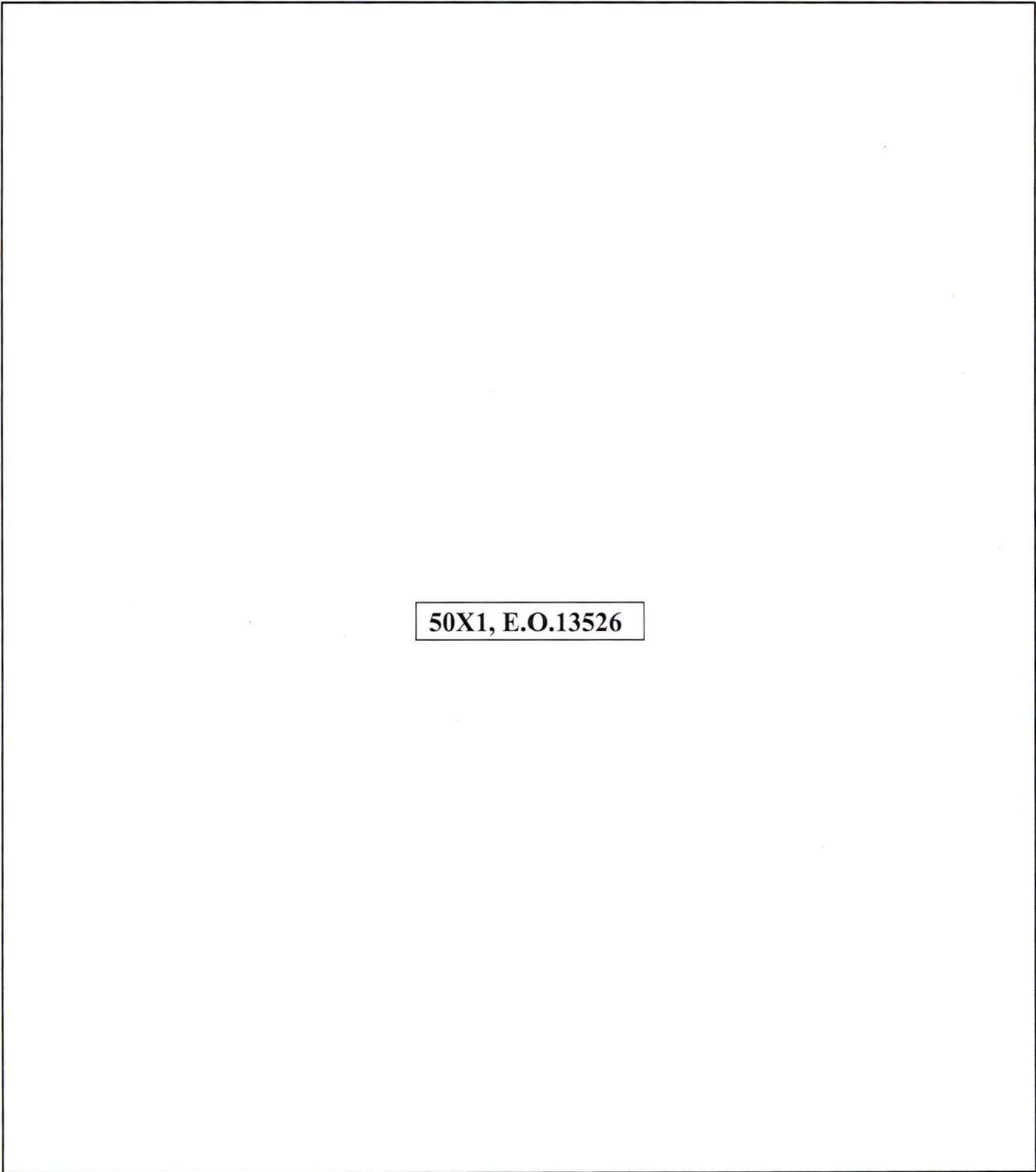
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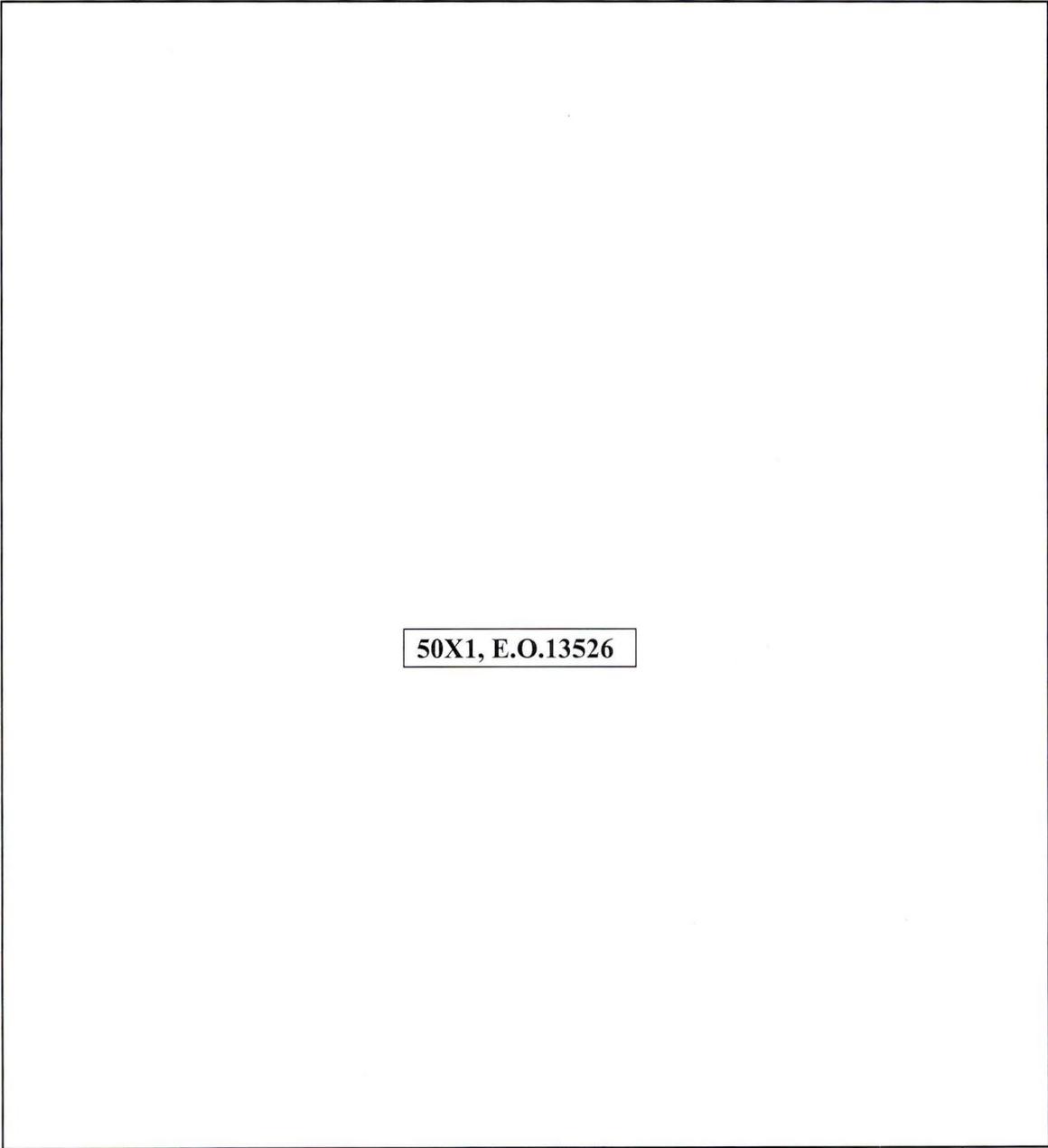
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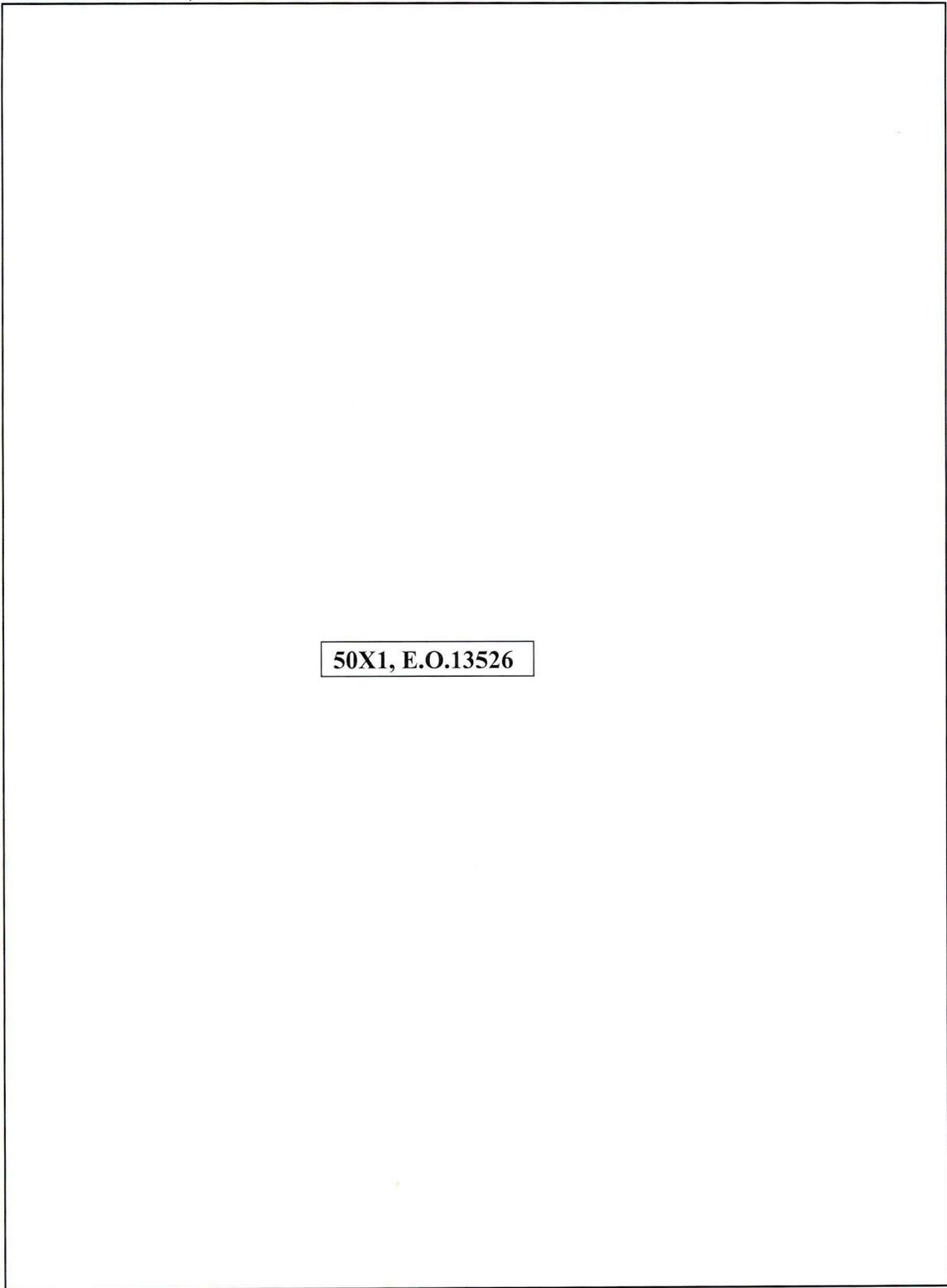
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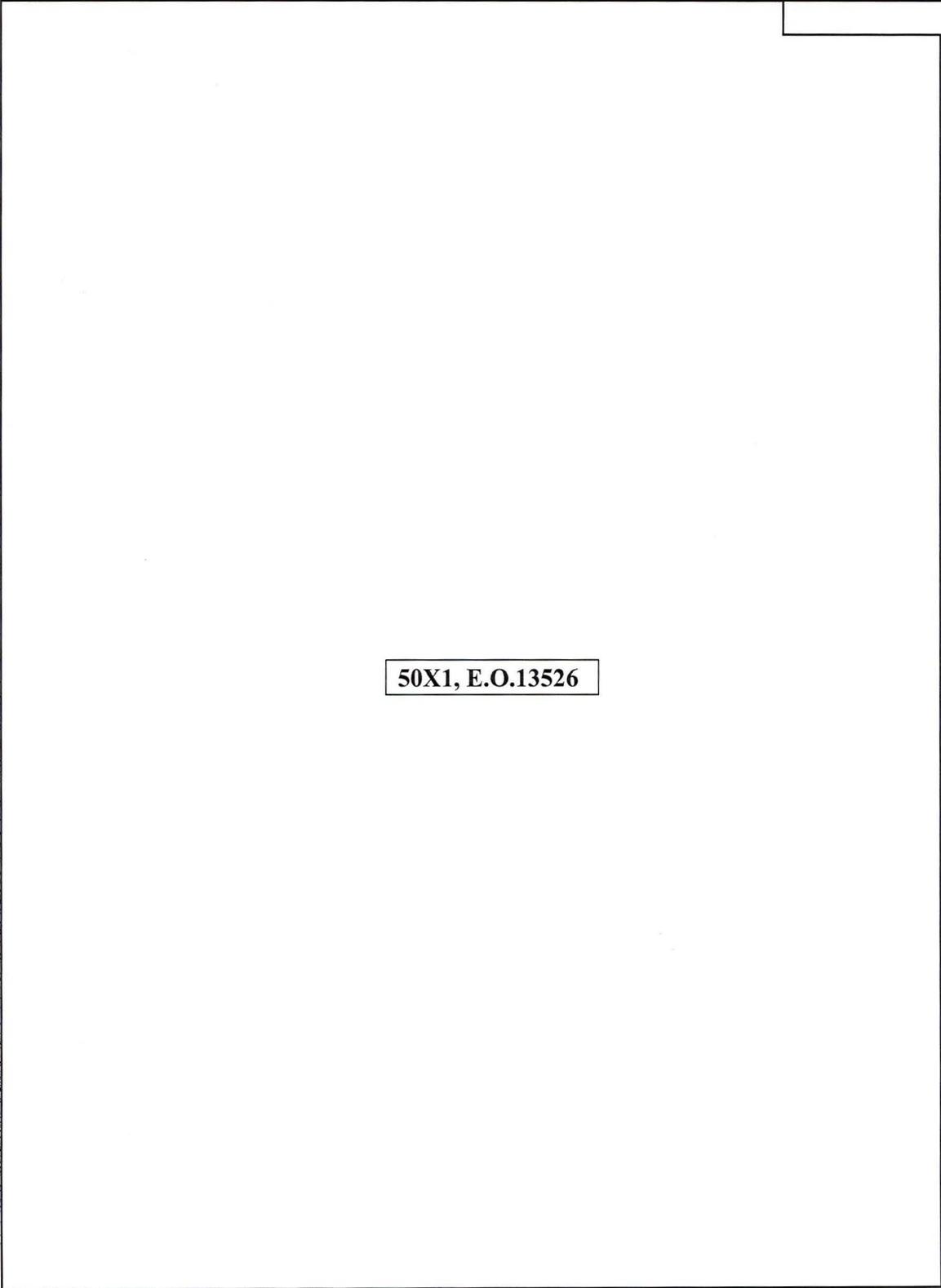
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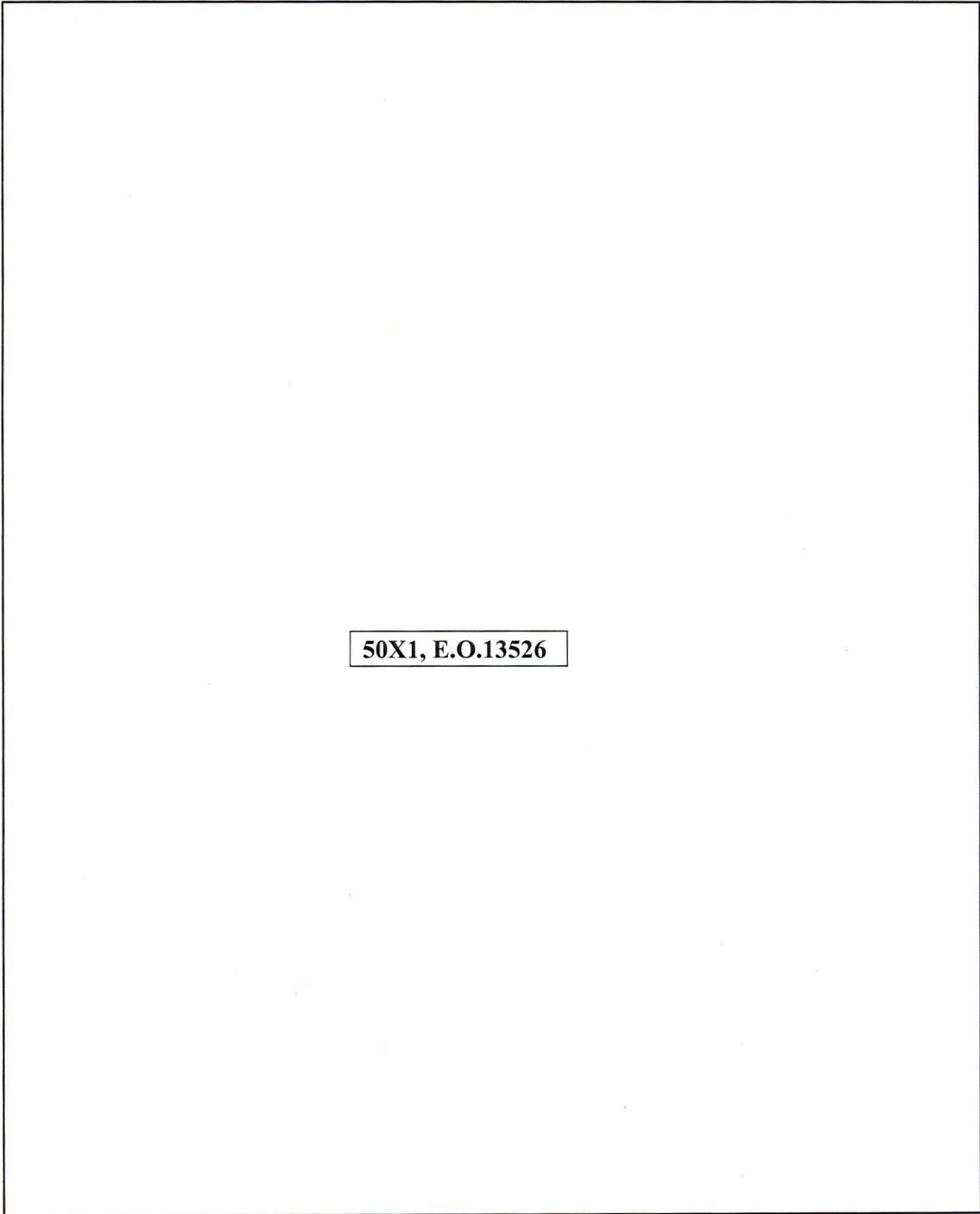
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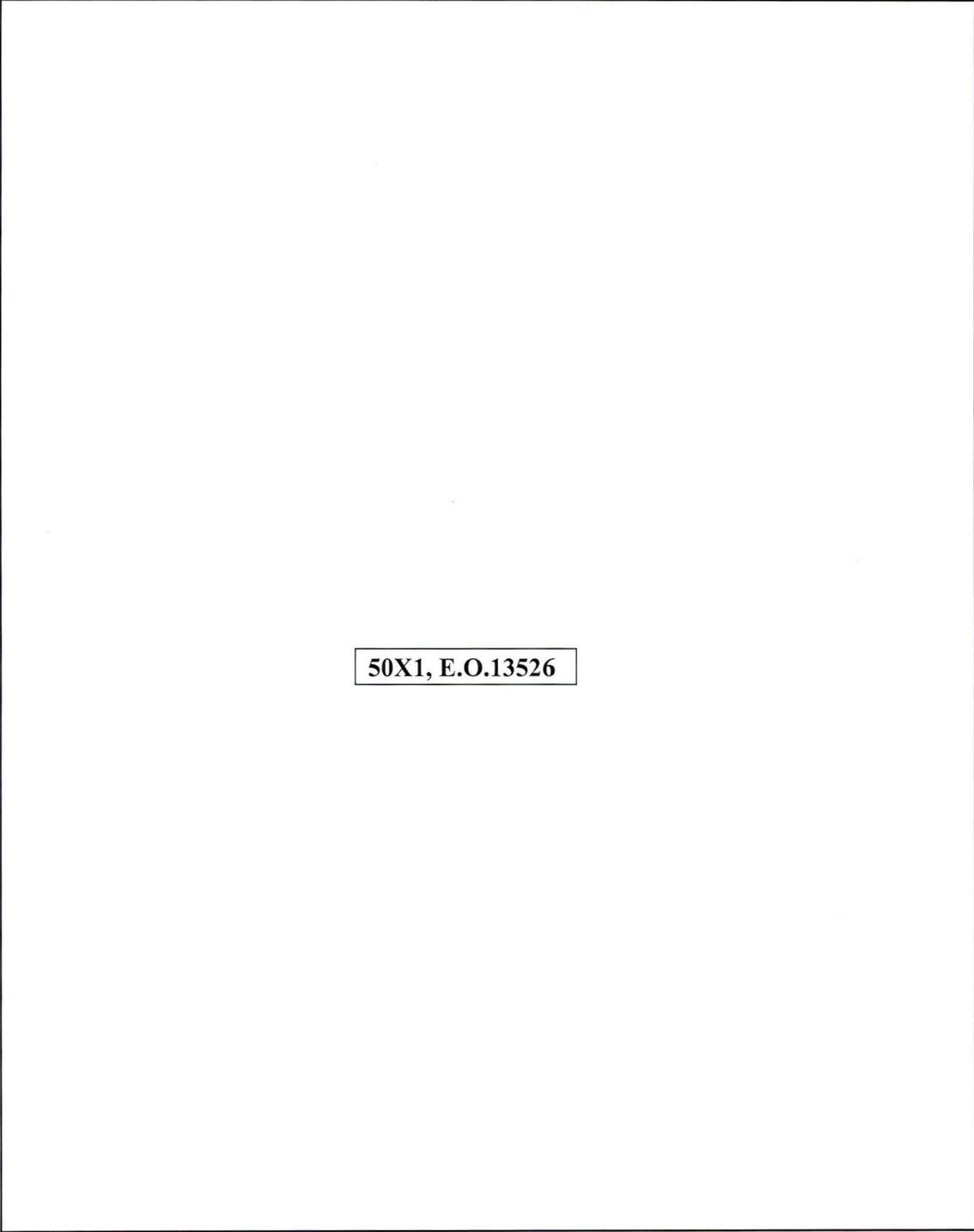
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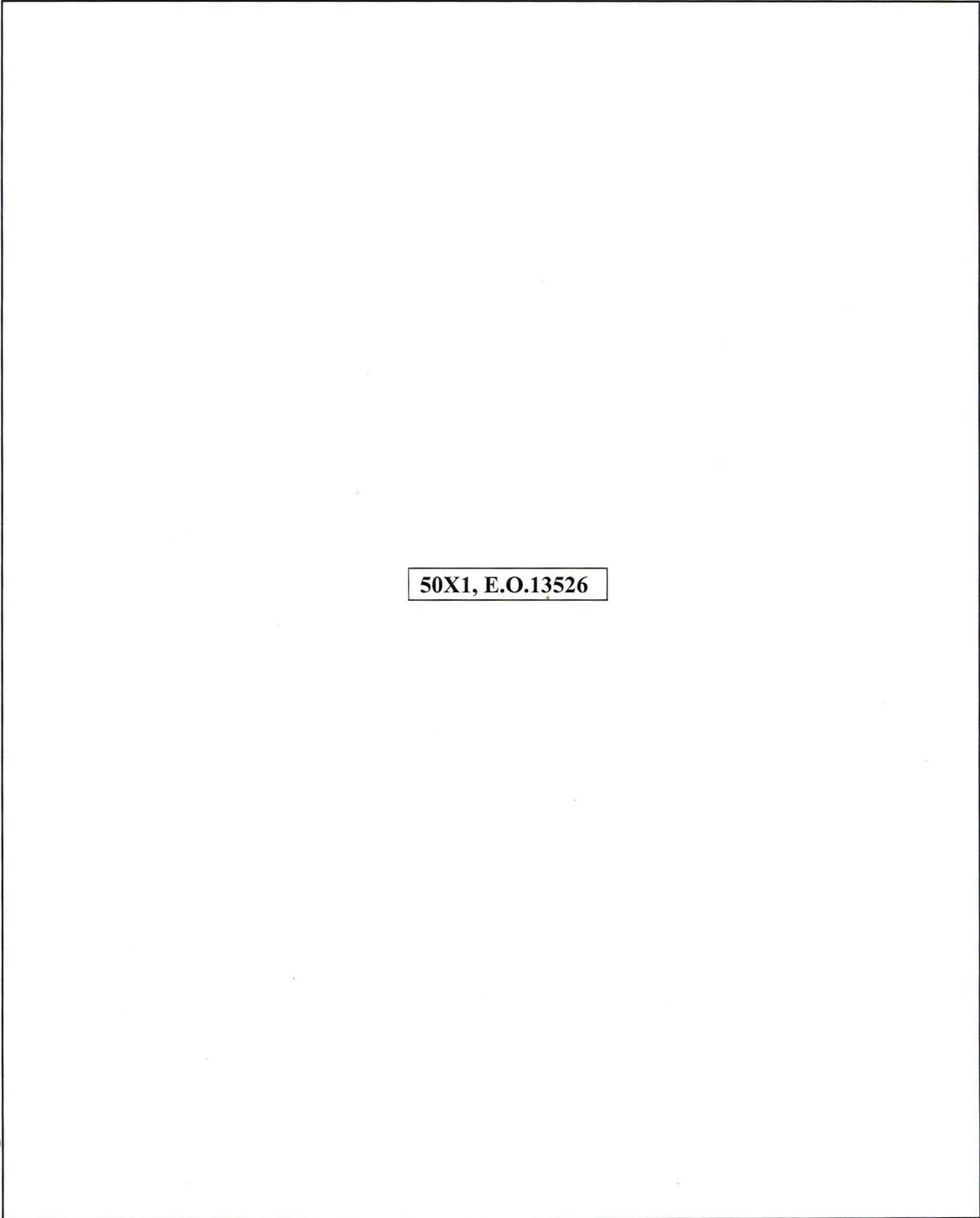
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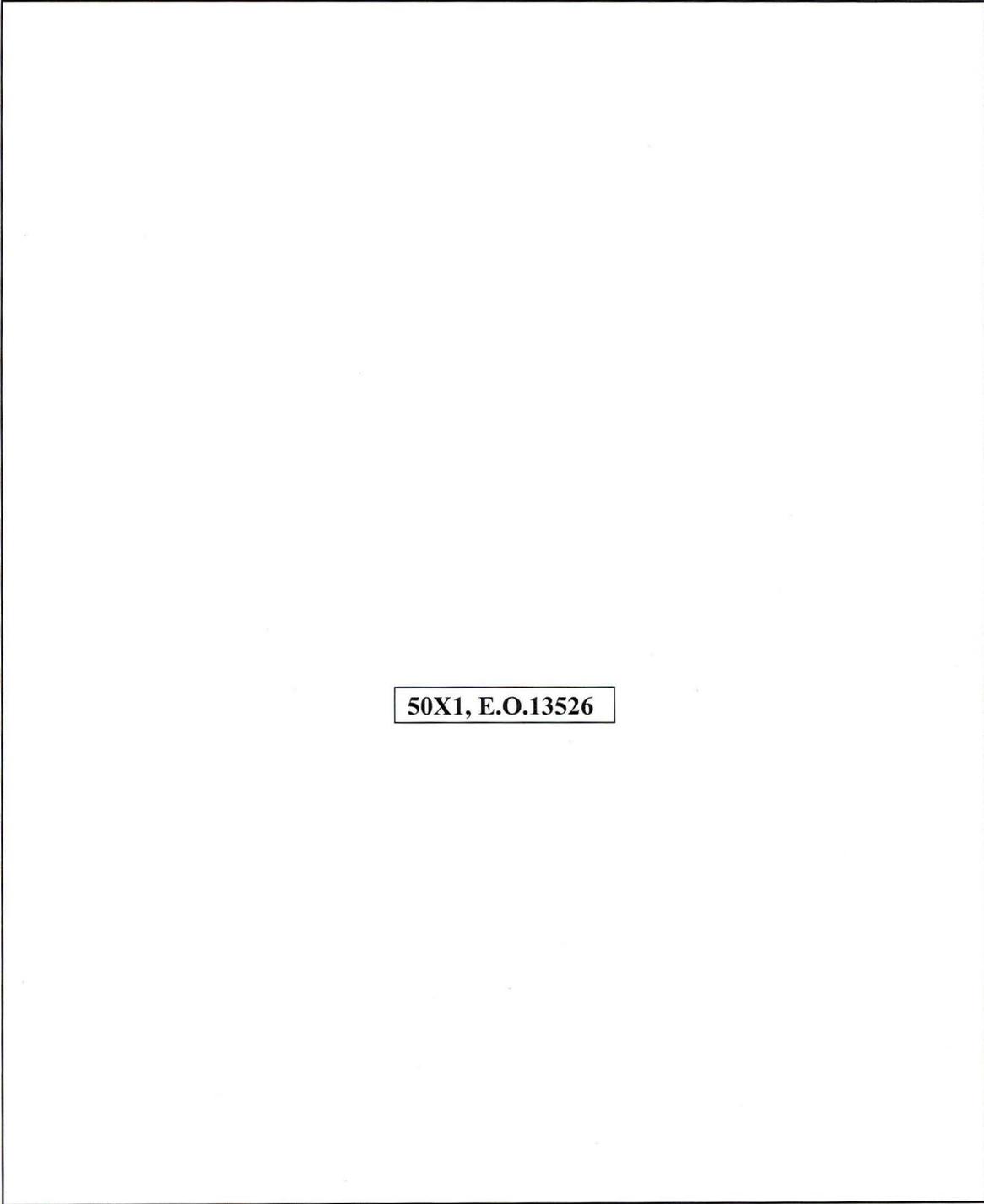
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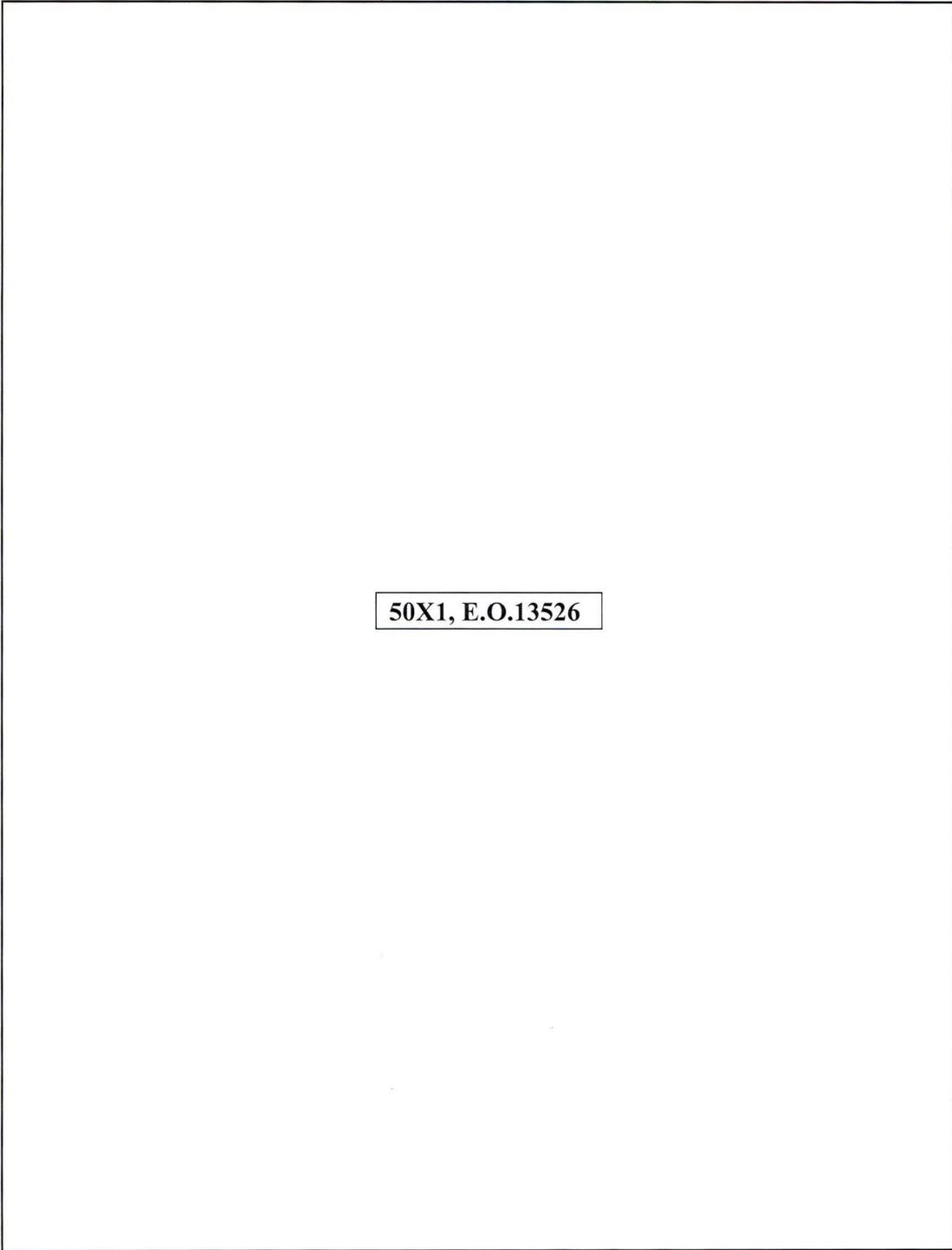
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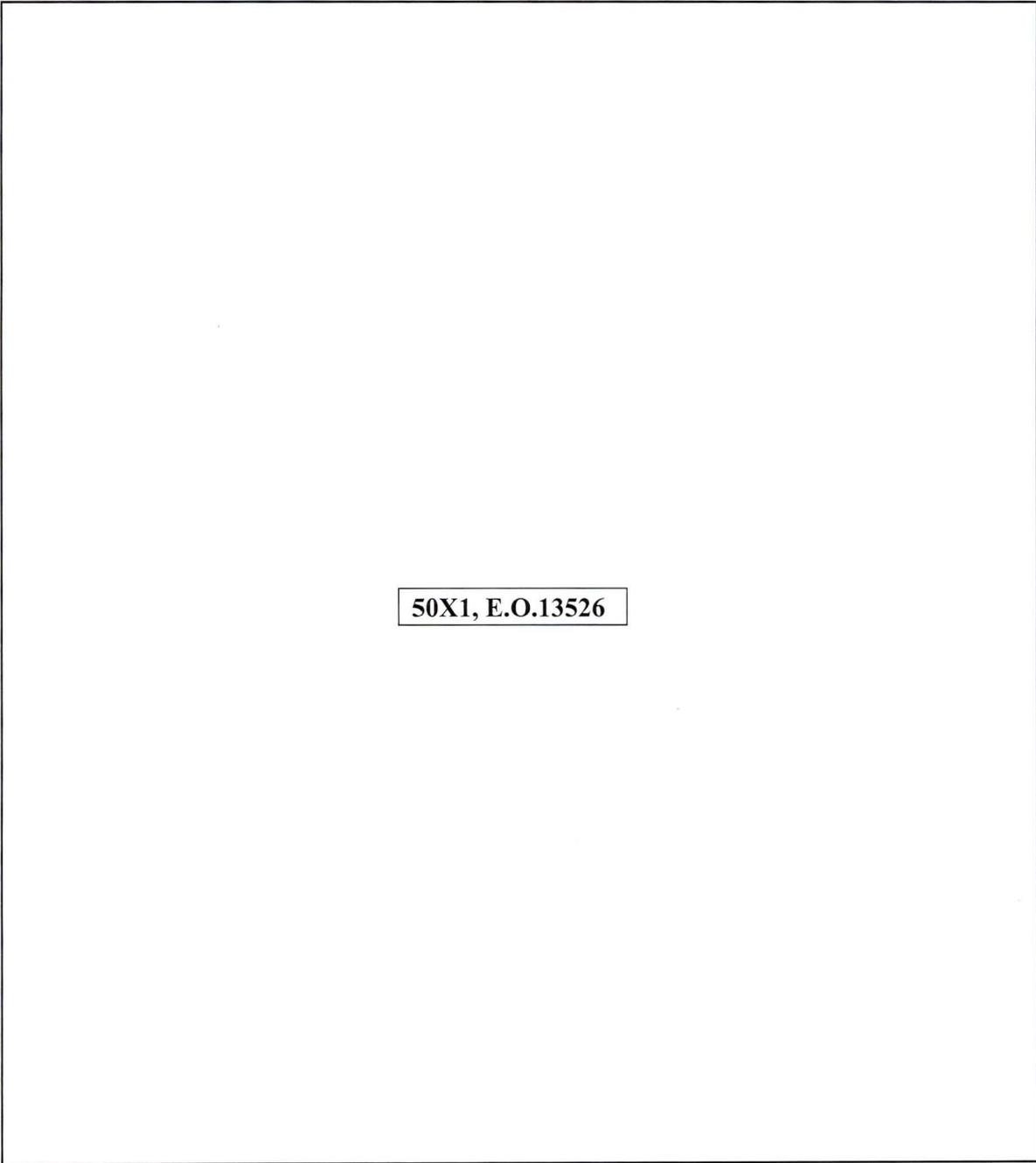
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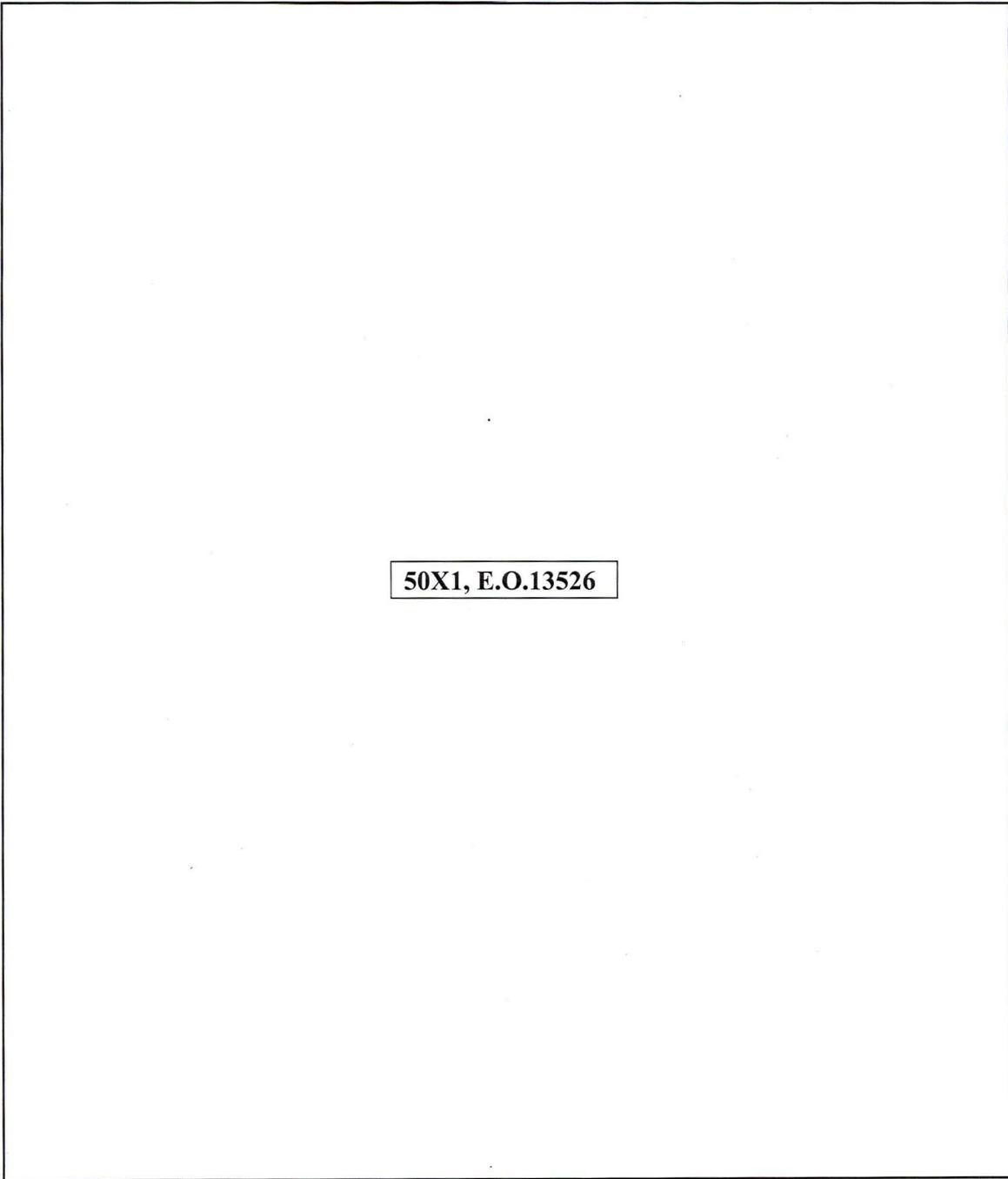
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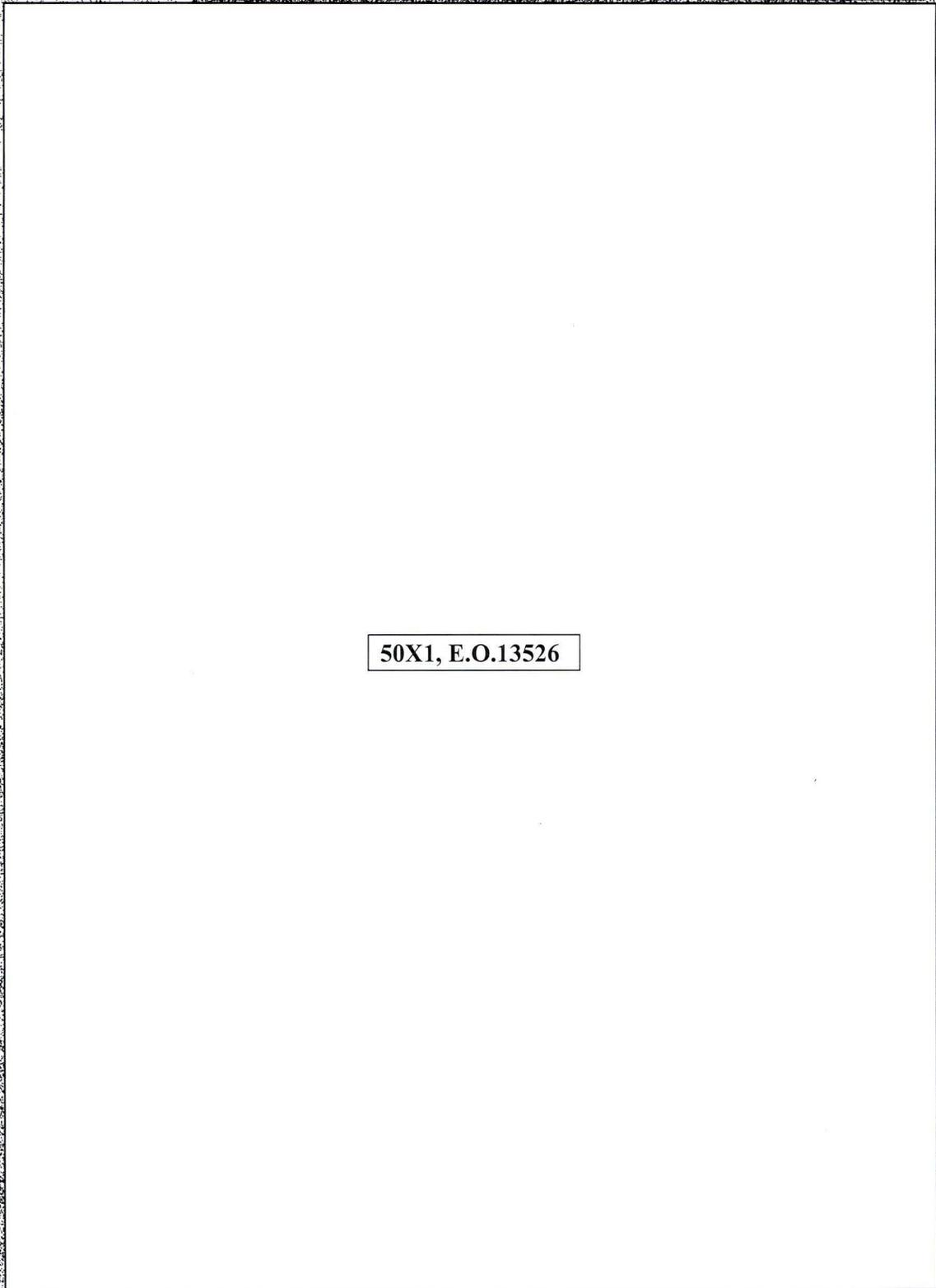
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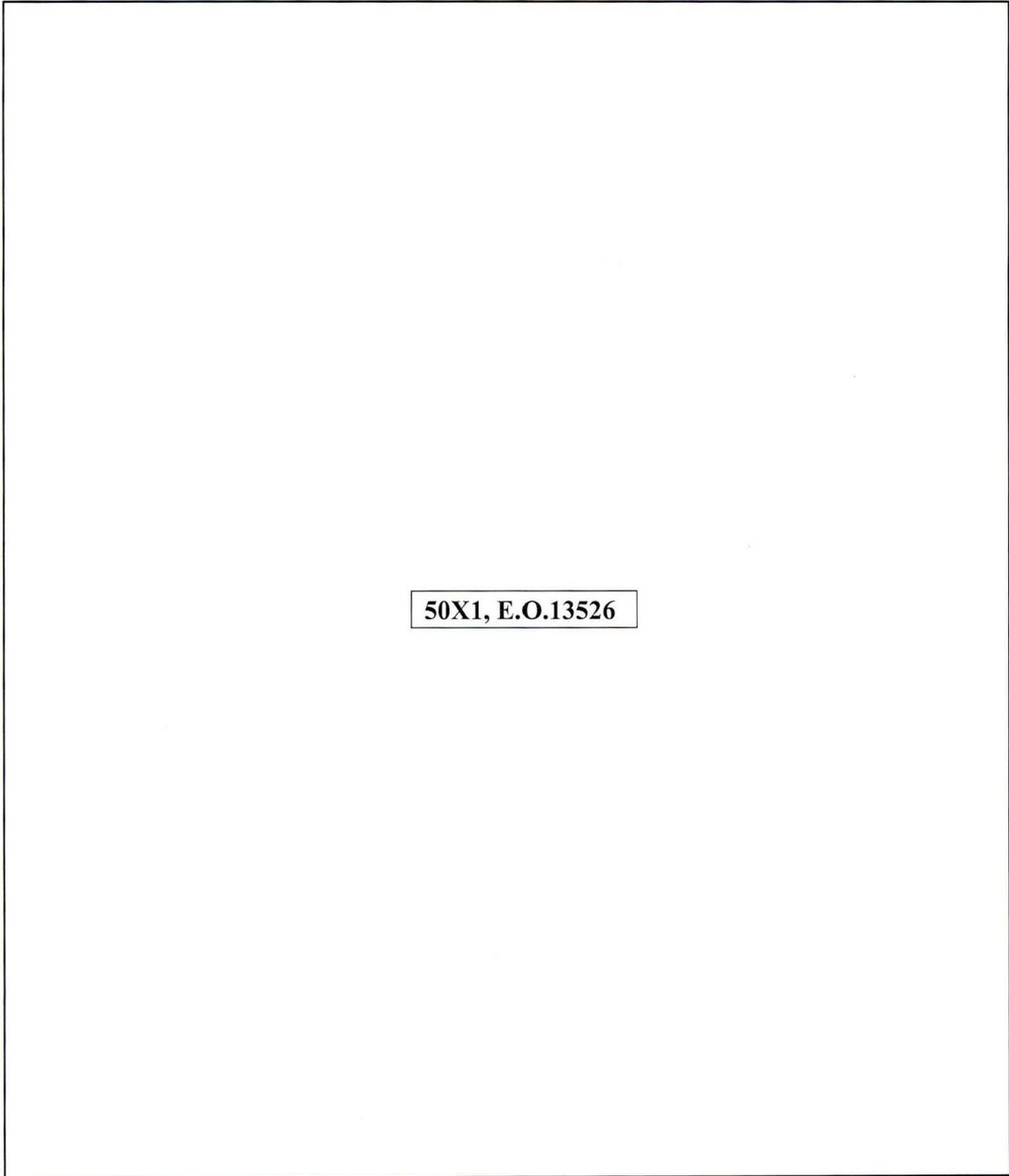
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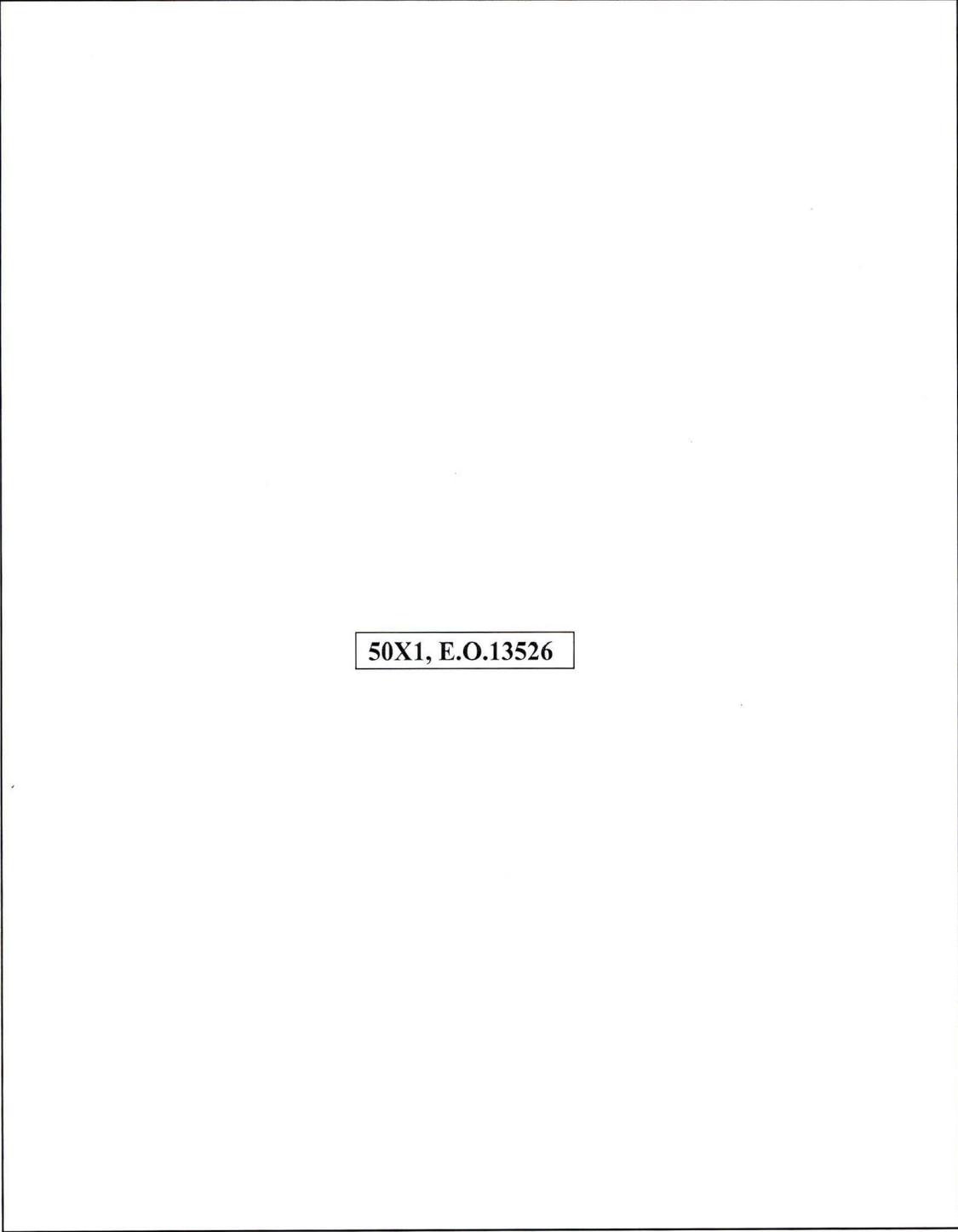
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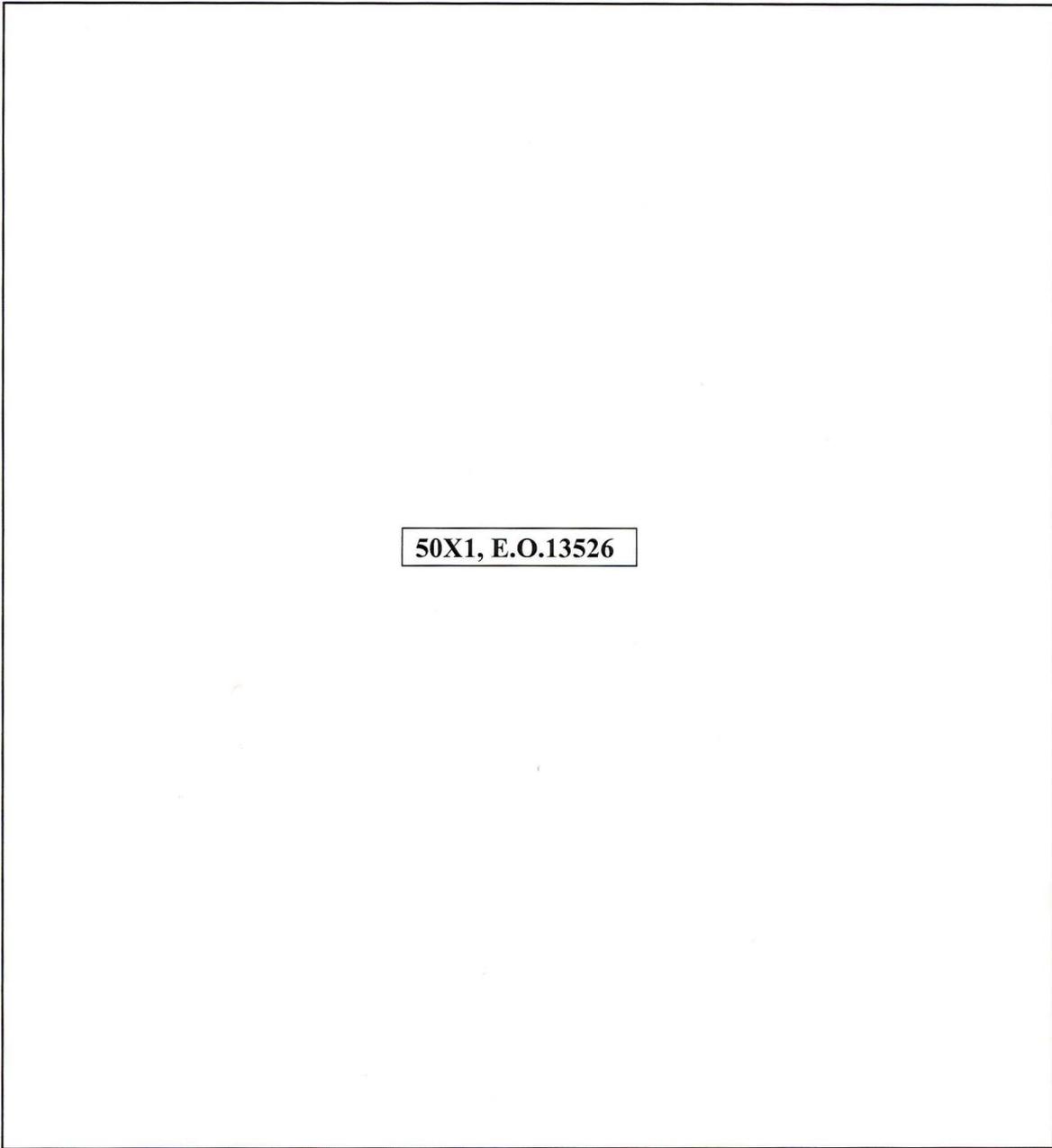
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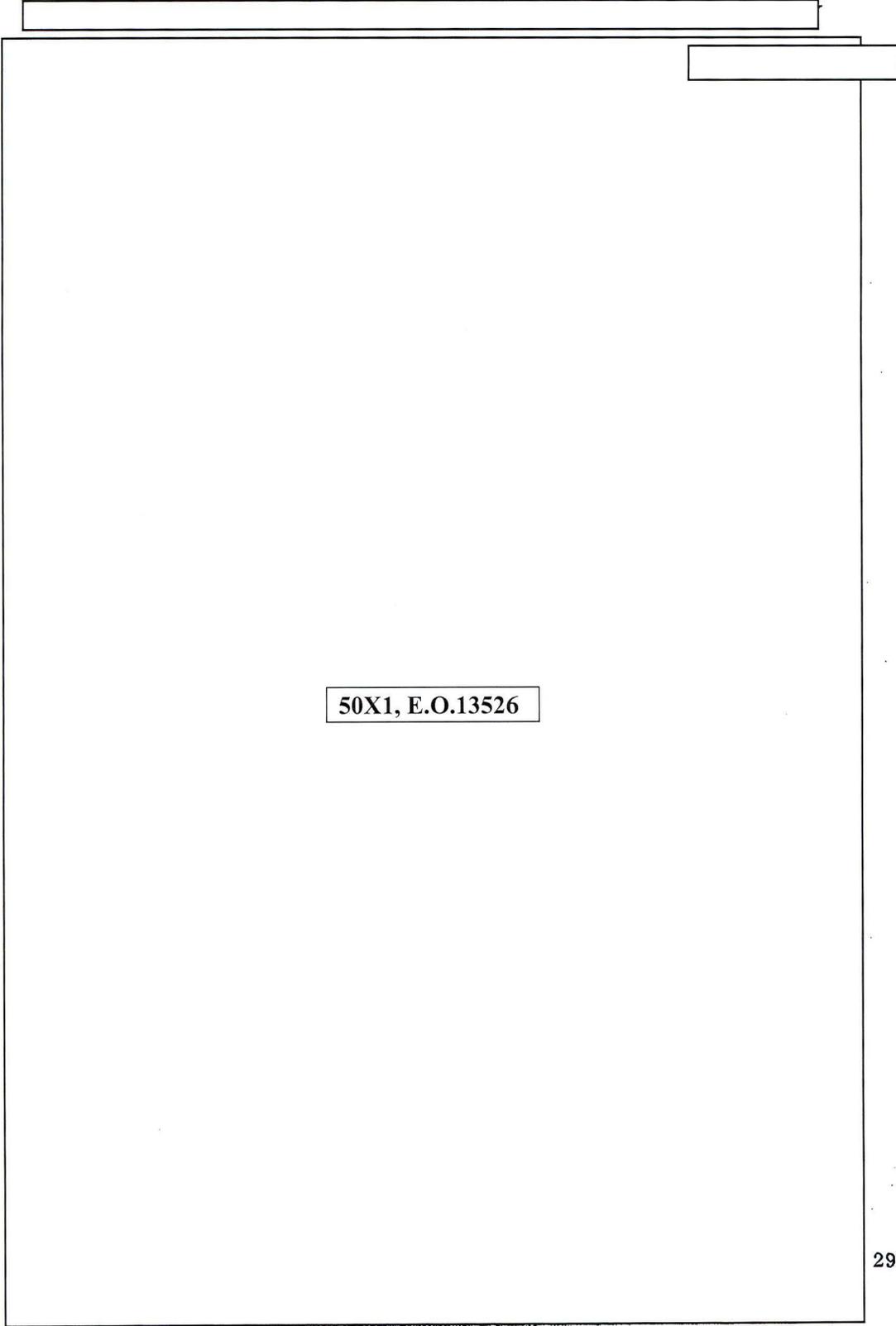
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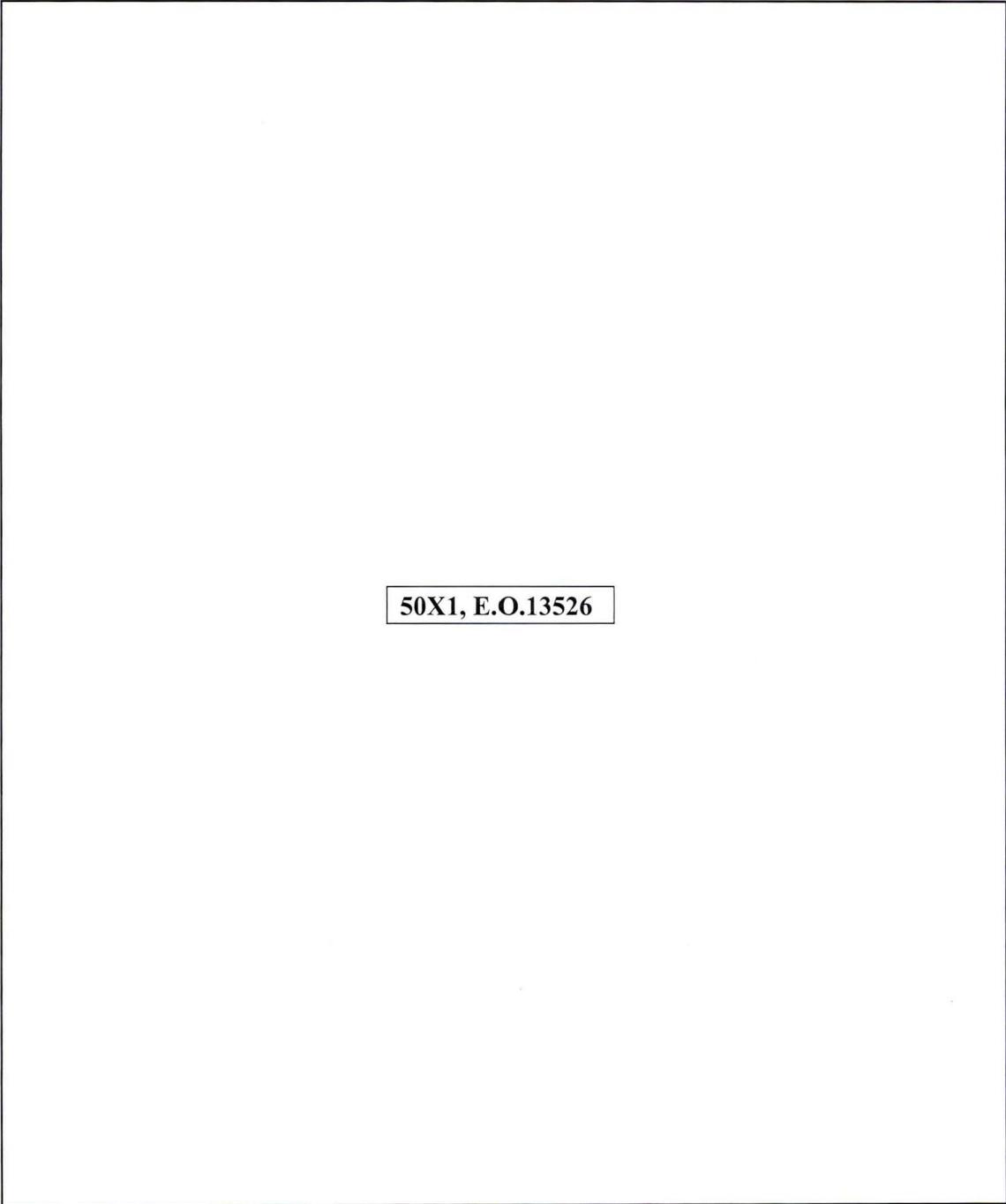
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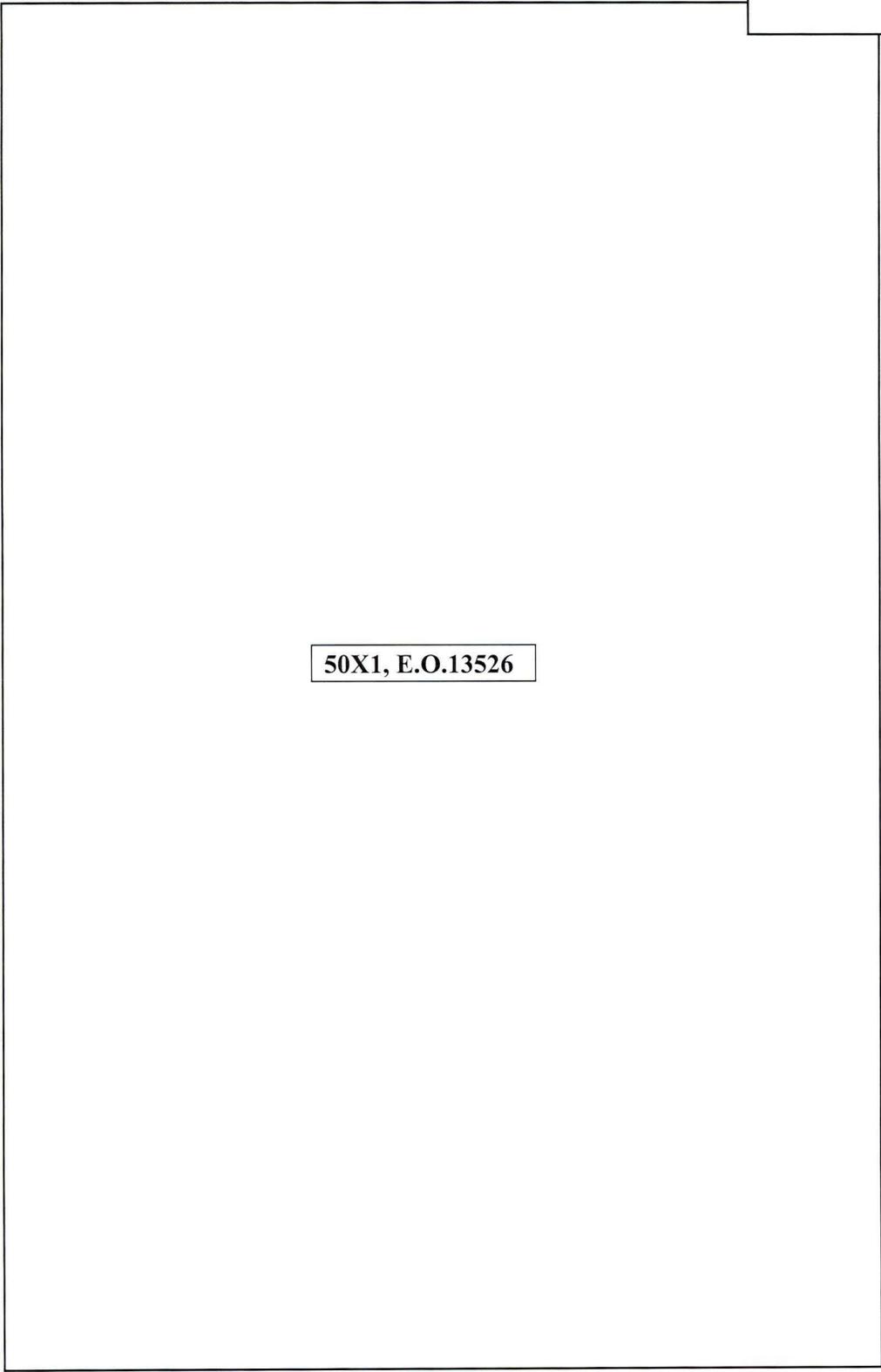
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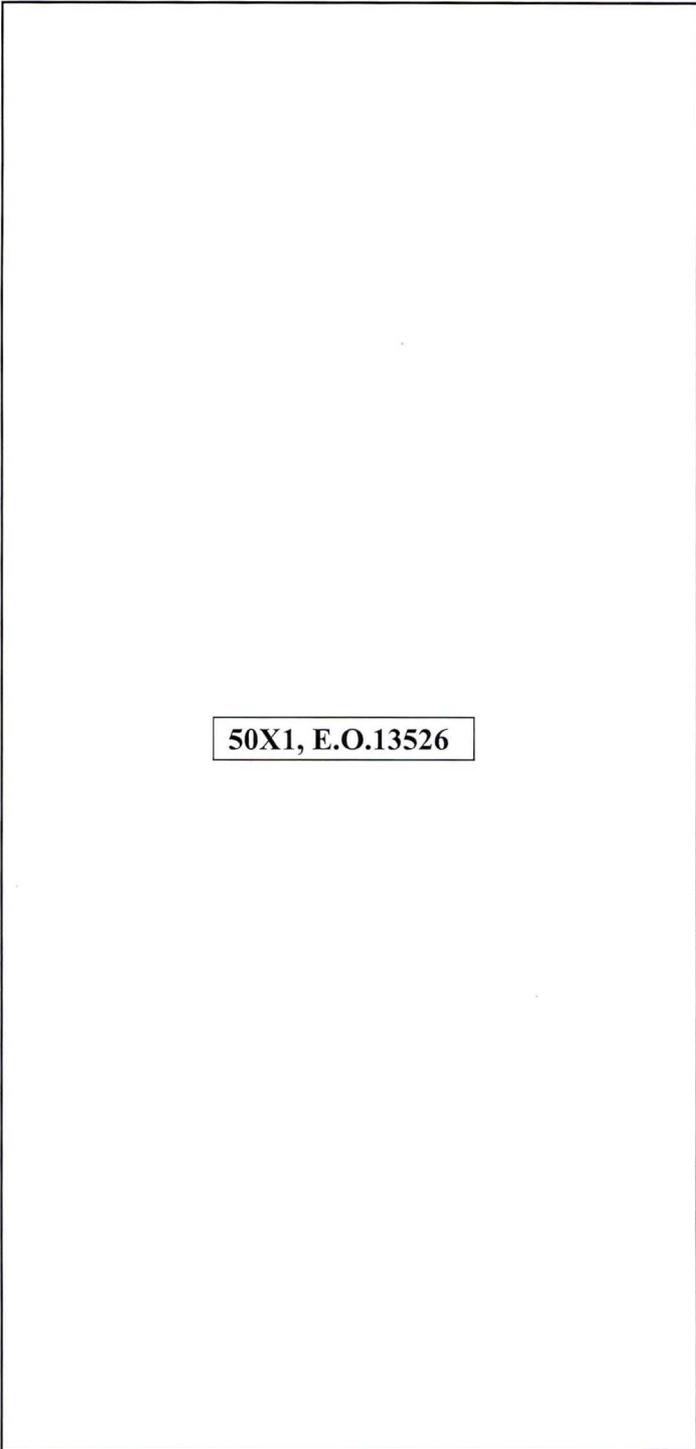
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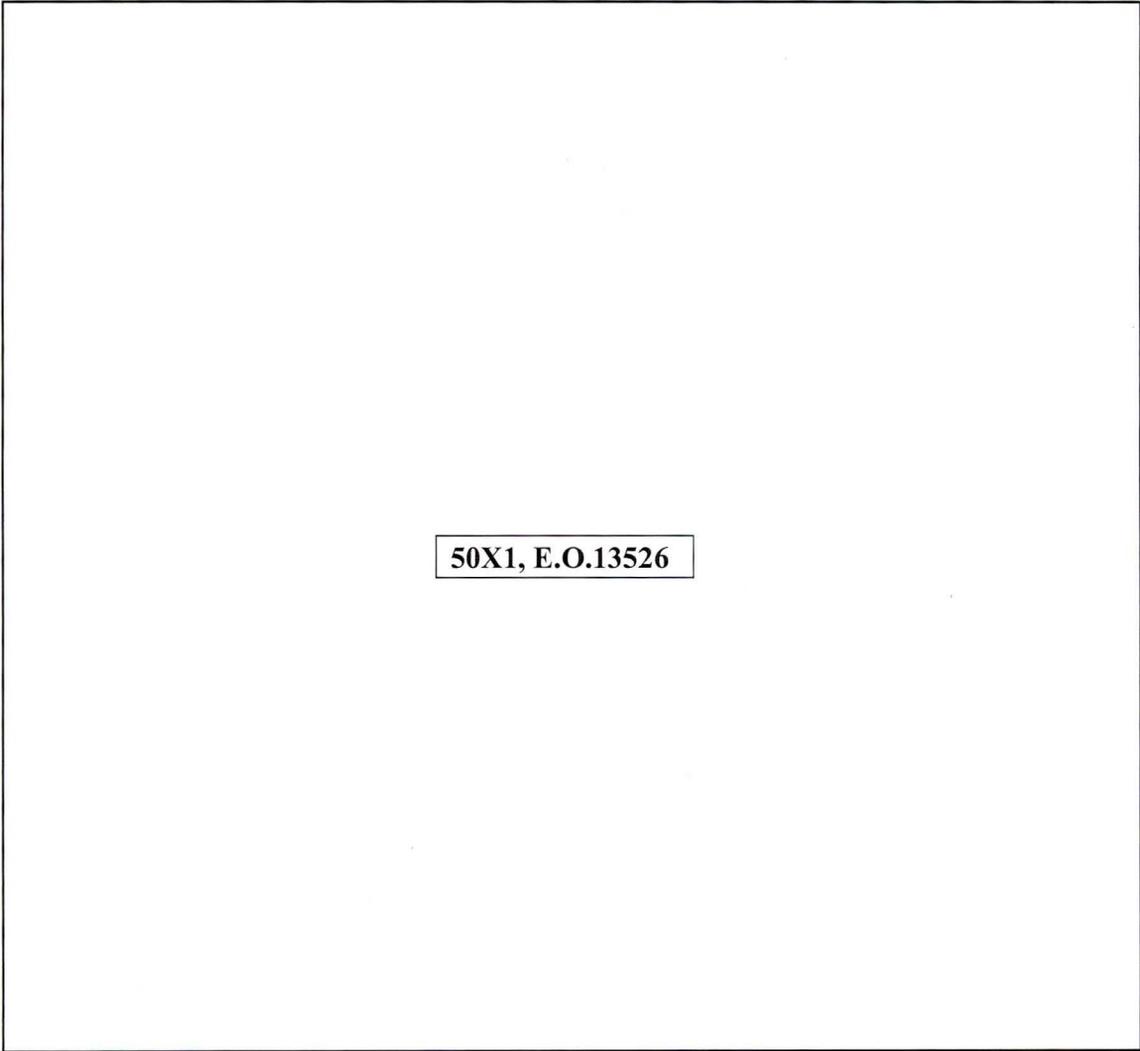
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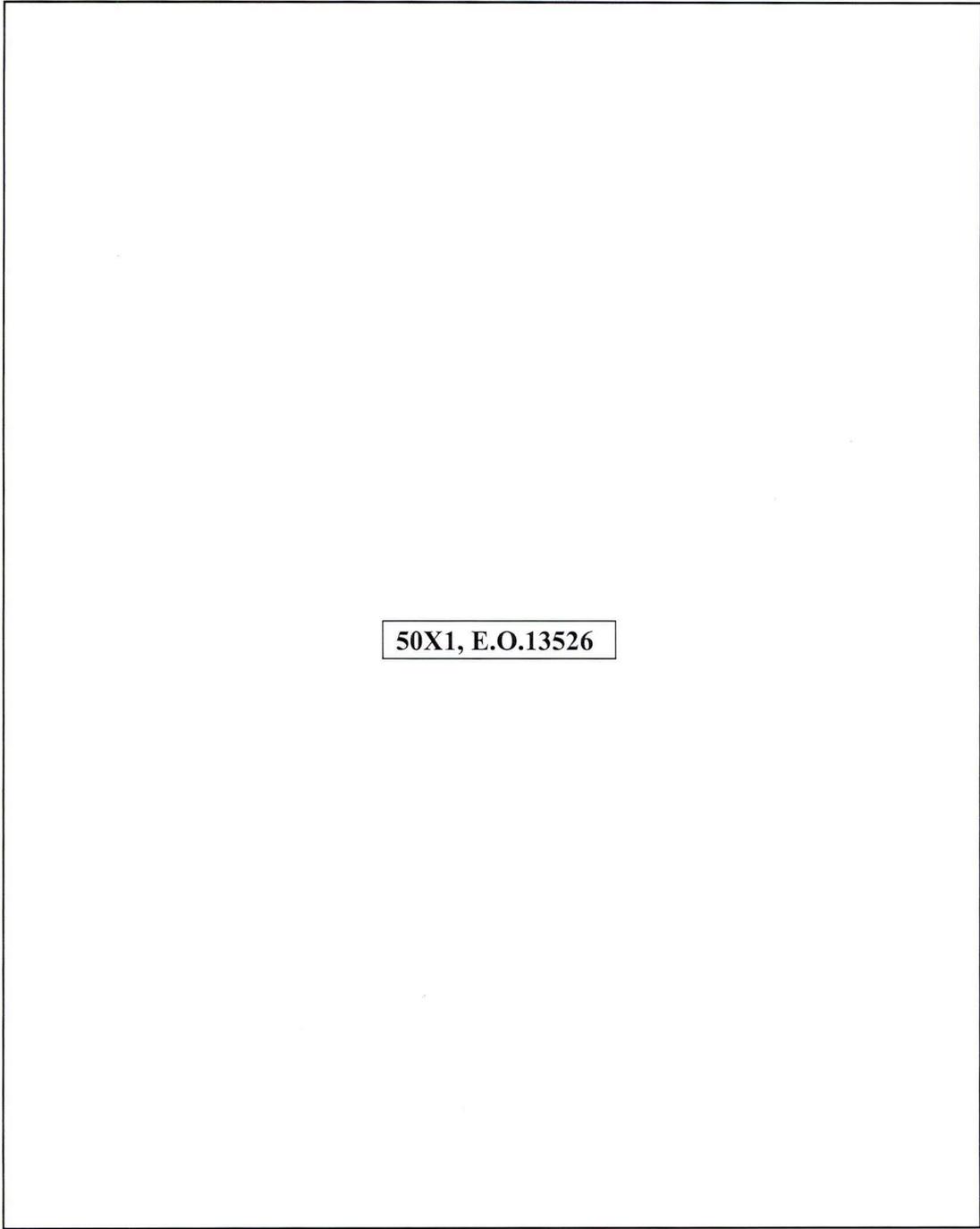
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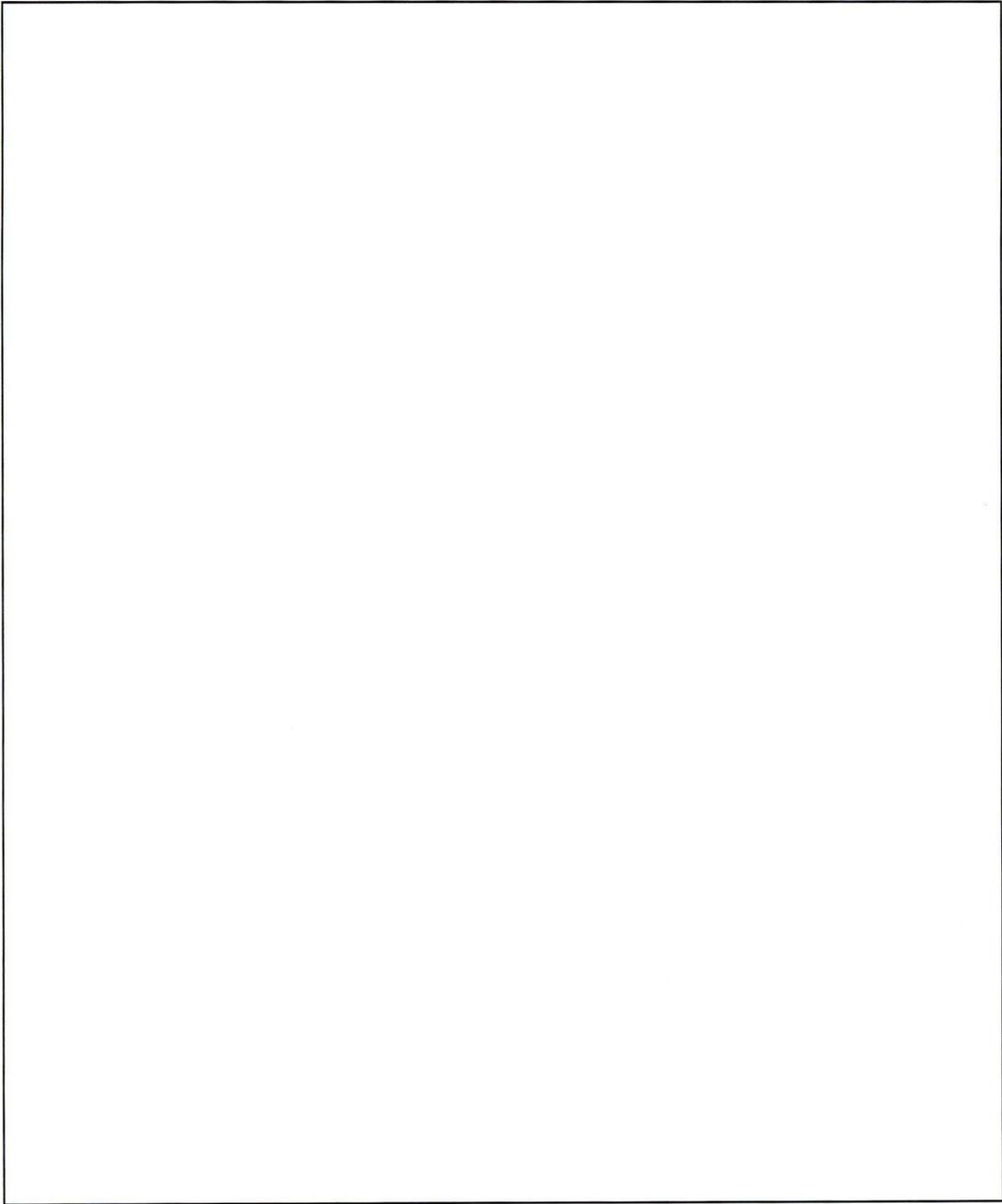
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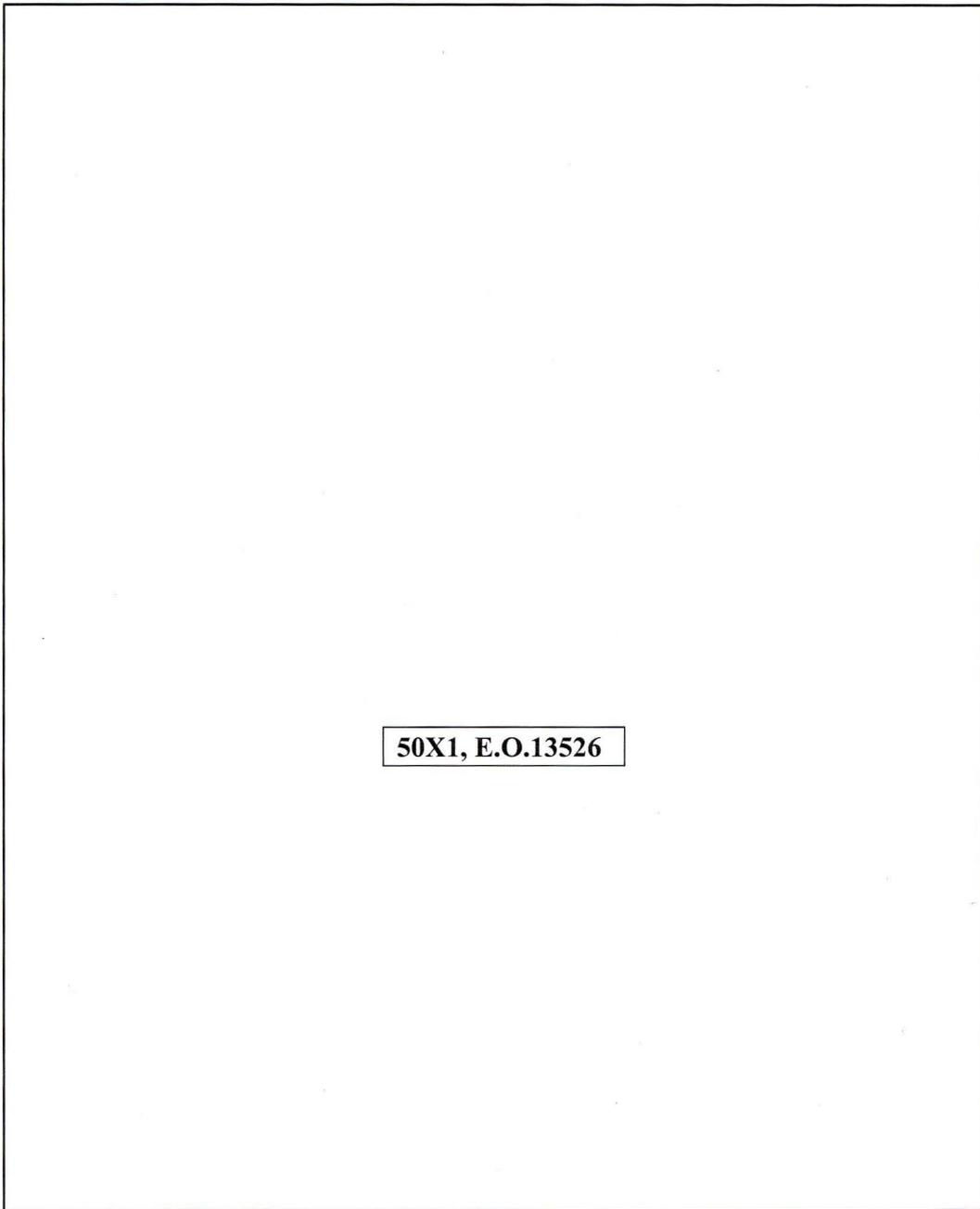
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Central Intelligence Agency Act of 1949 (50
U.S.C., section 403g)



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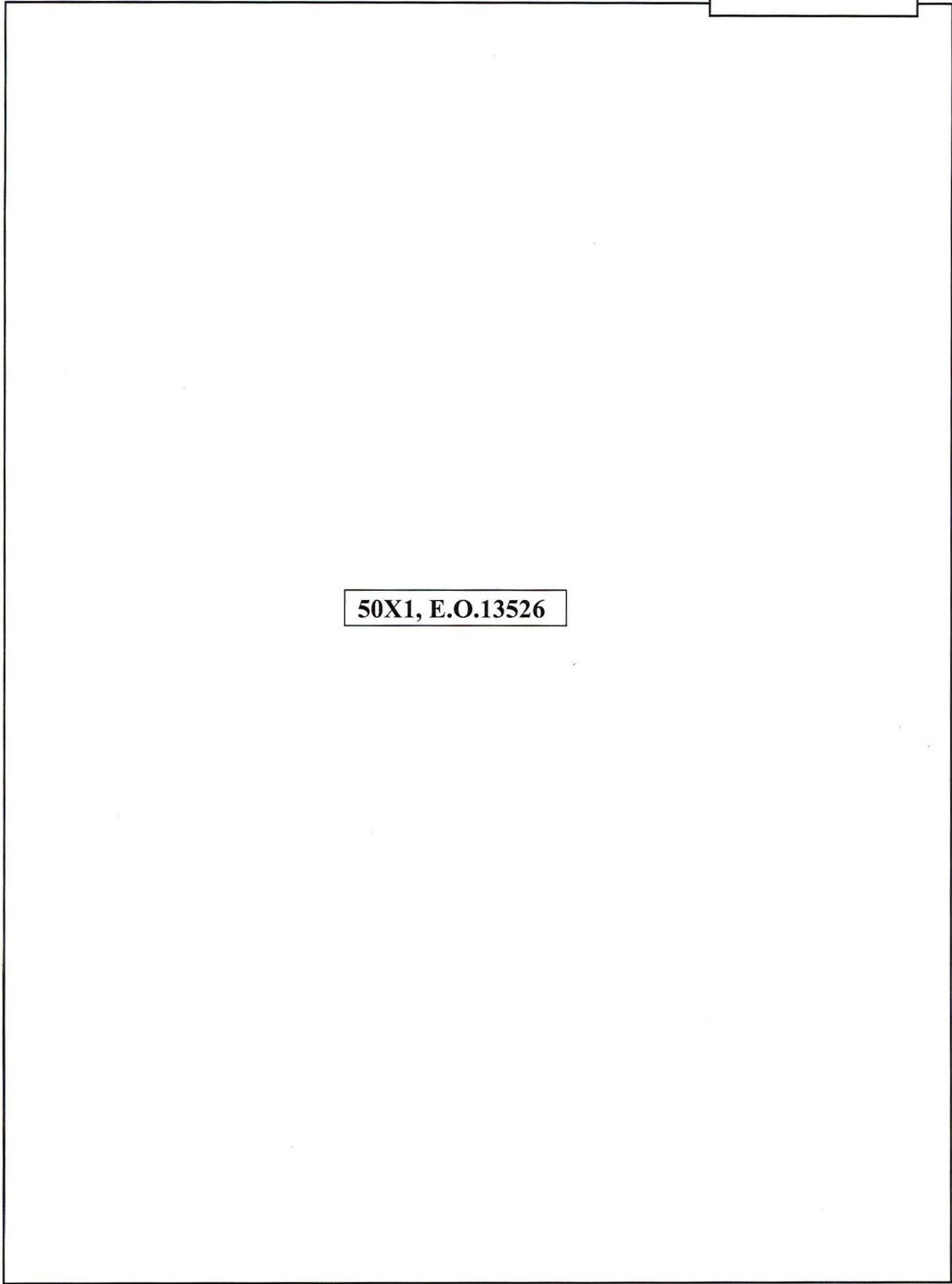
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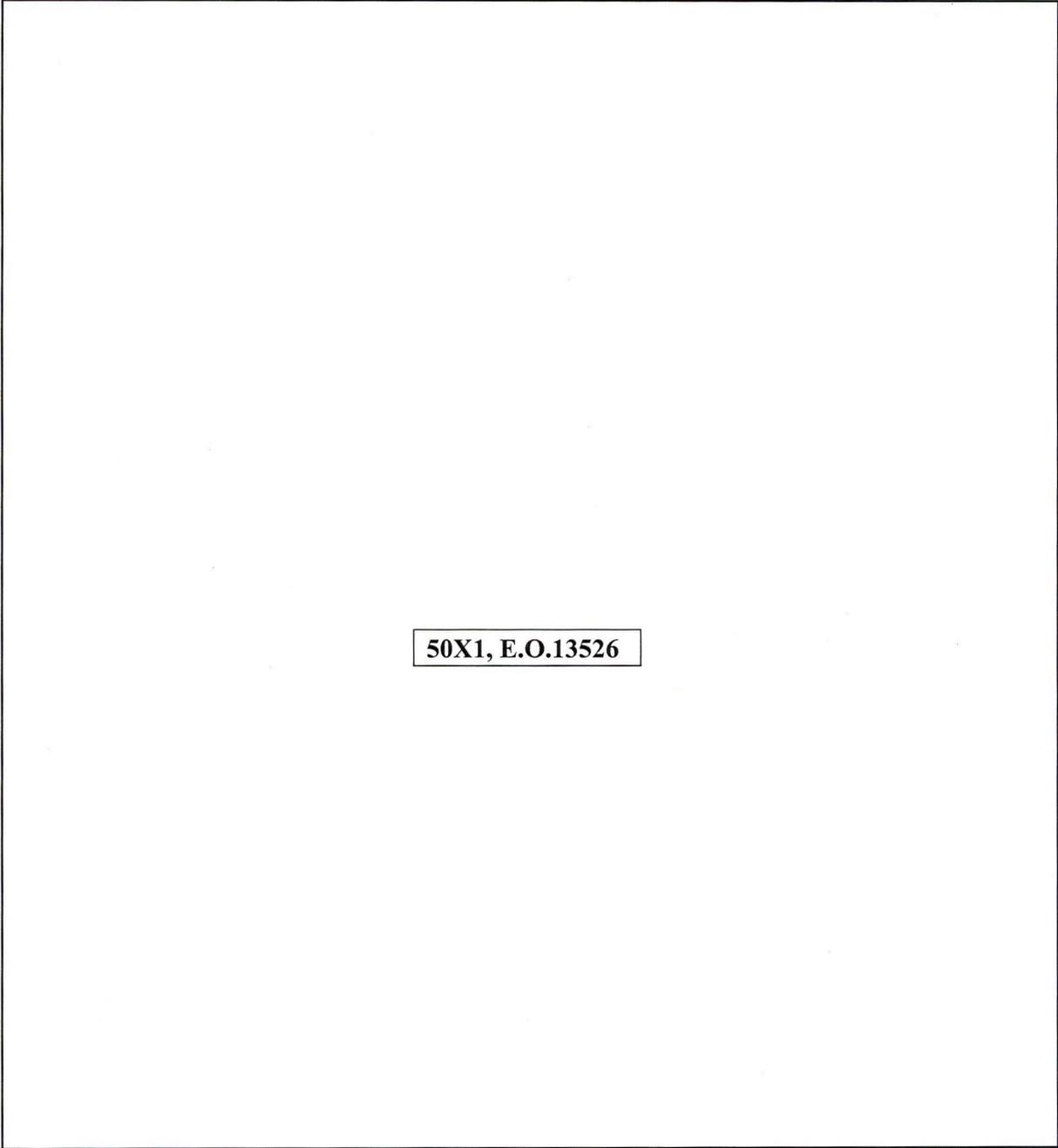
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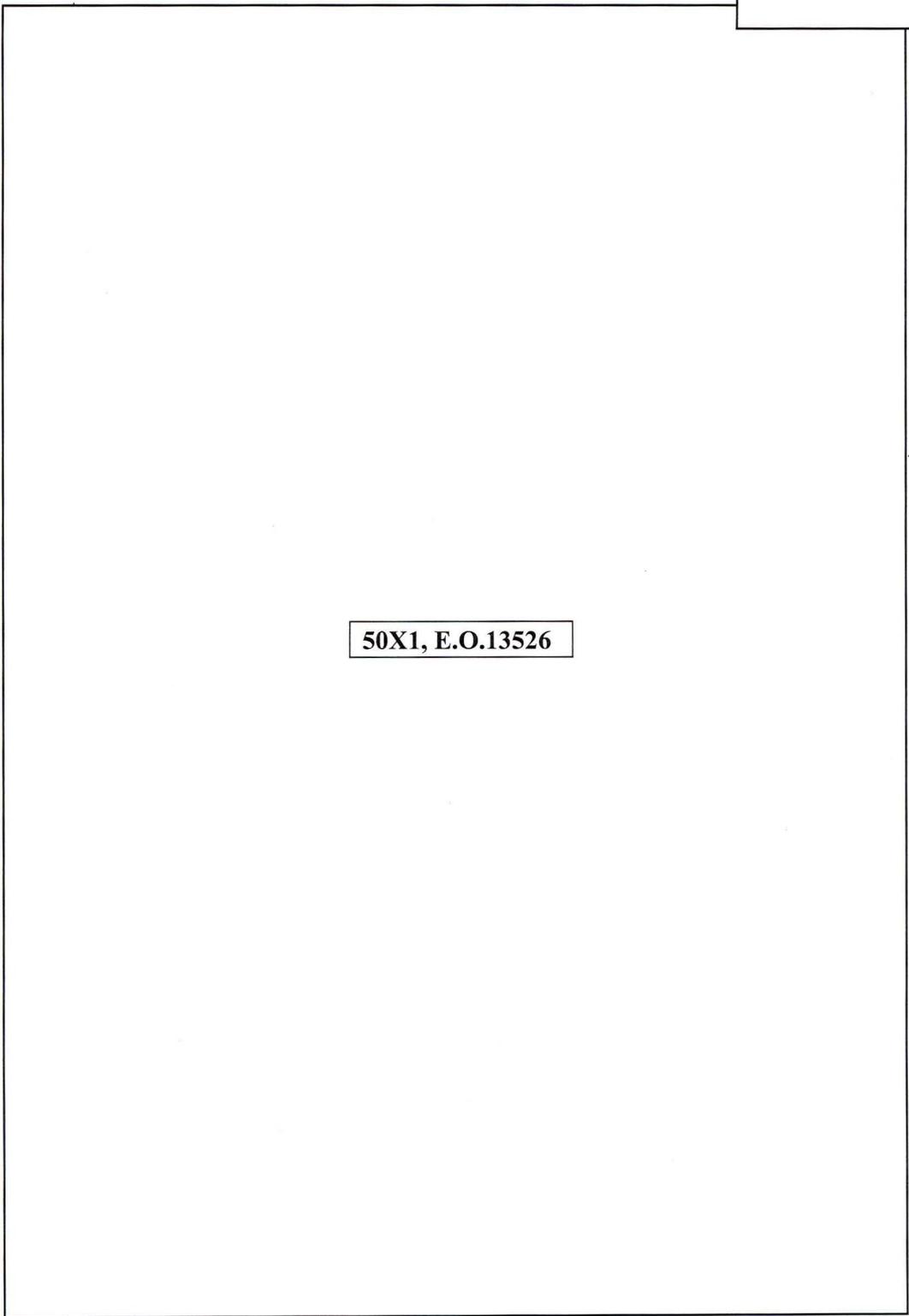
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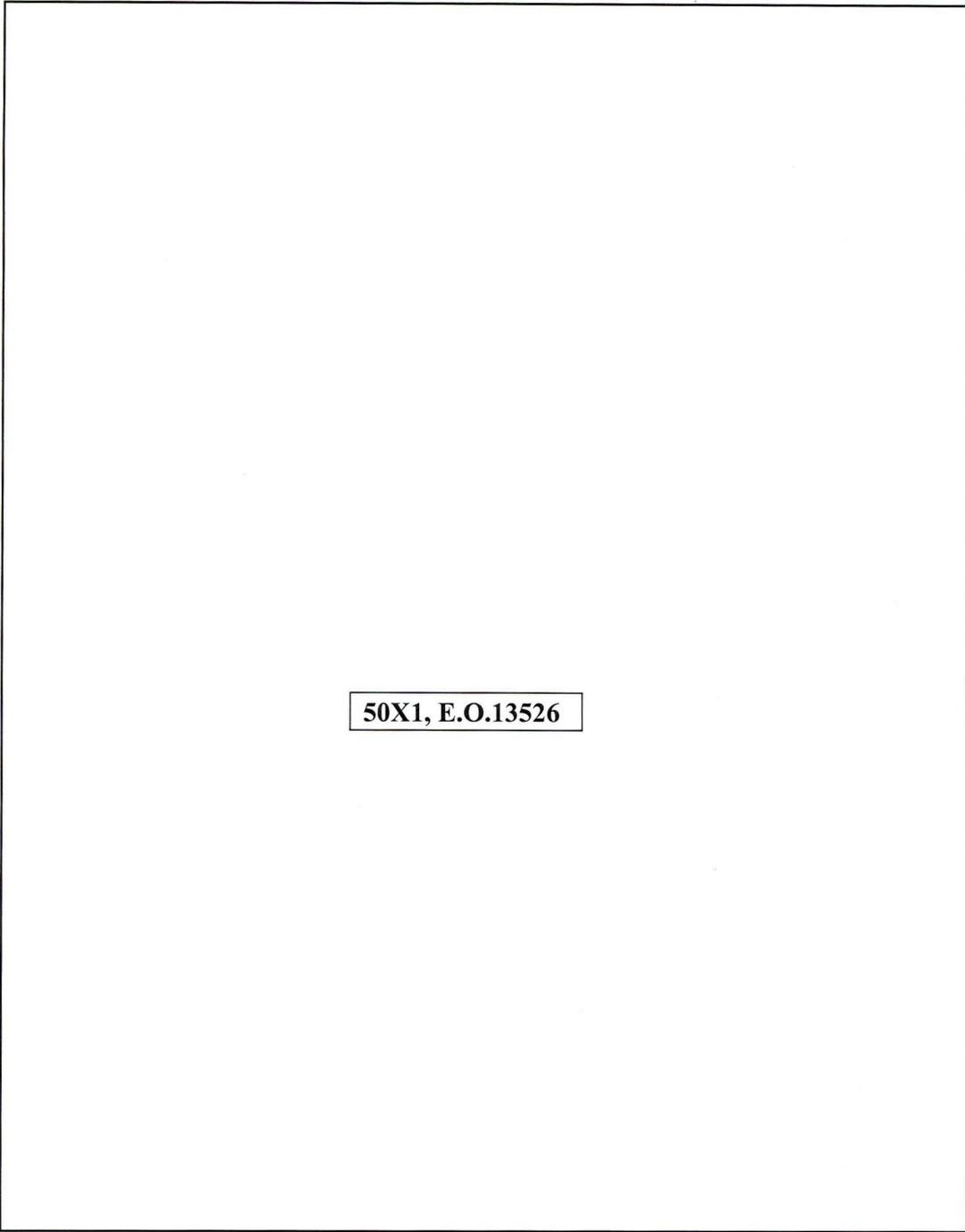
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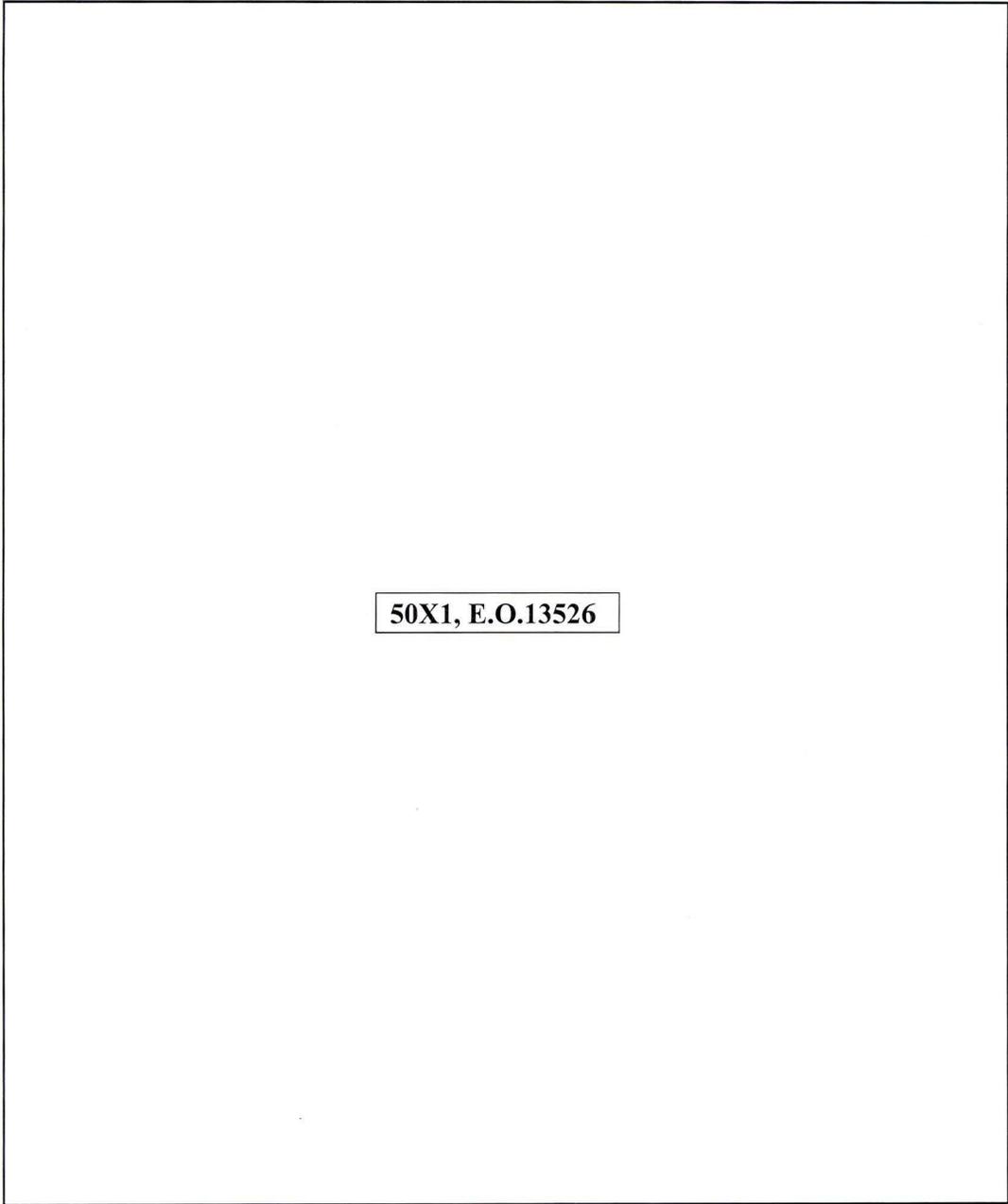
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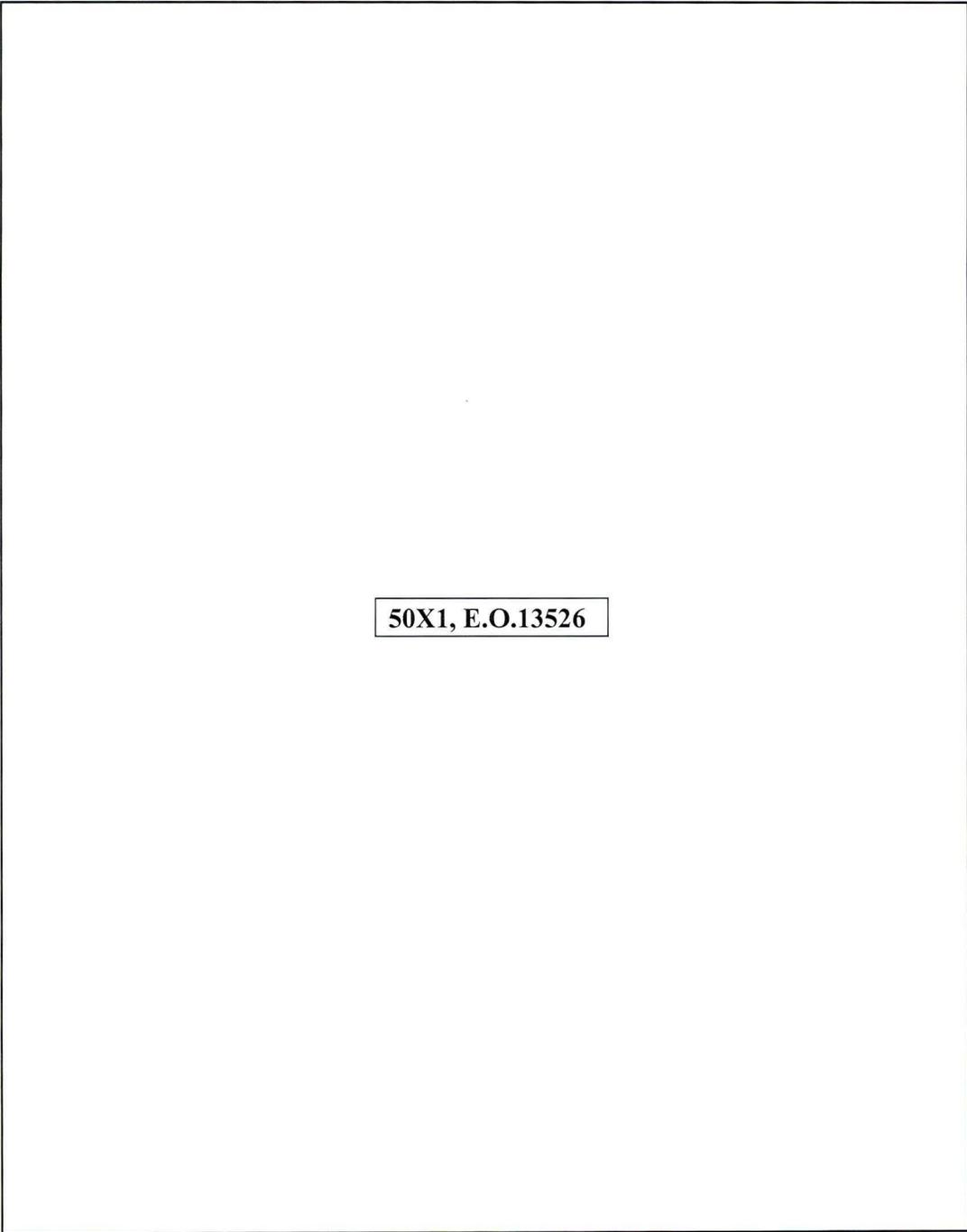
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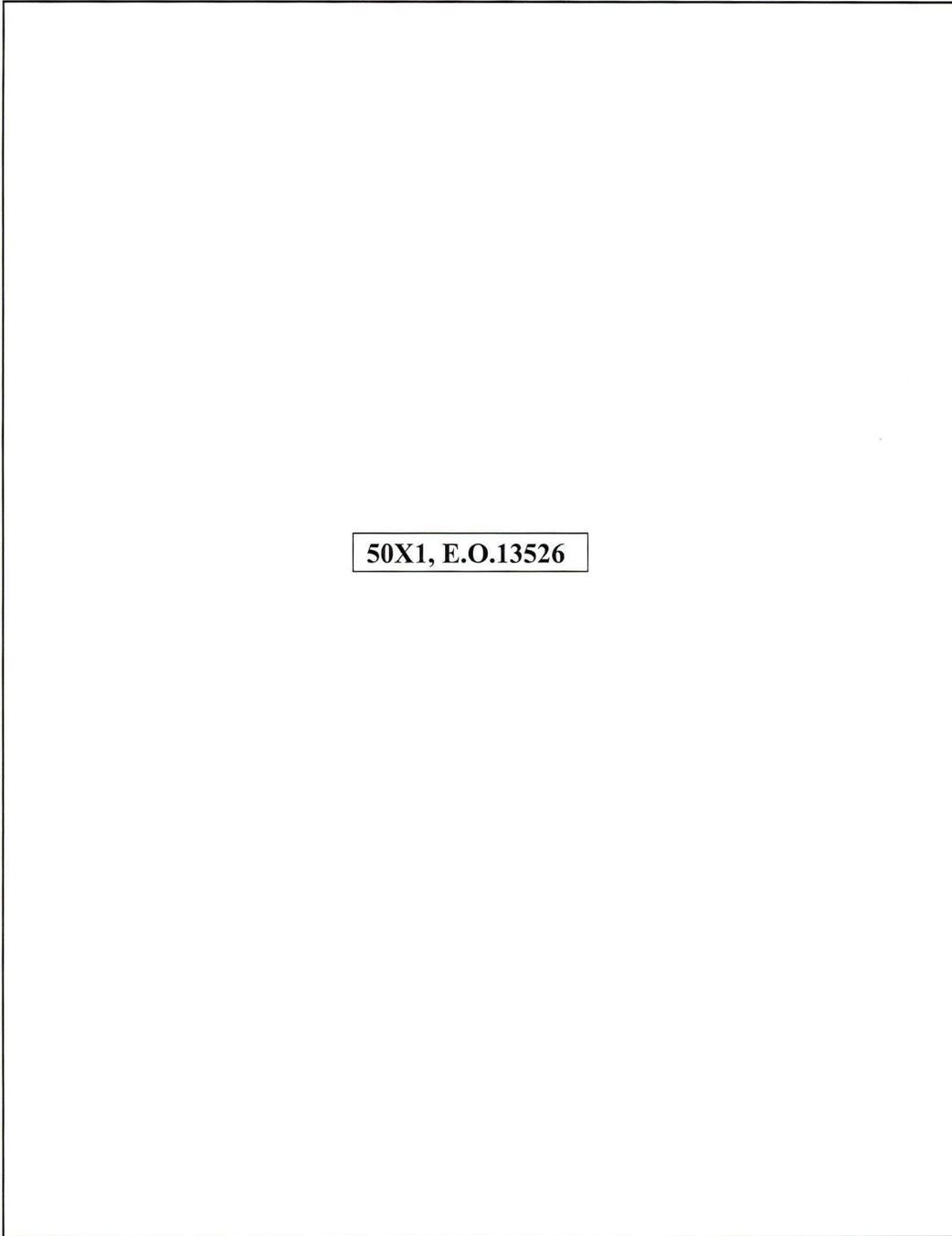
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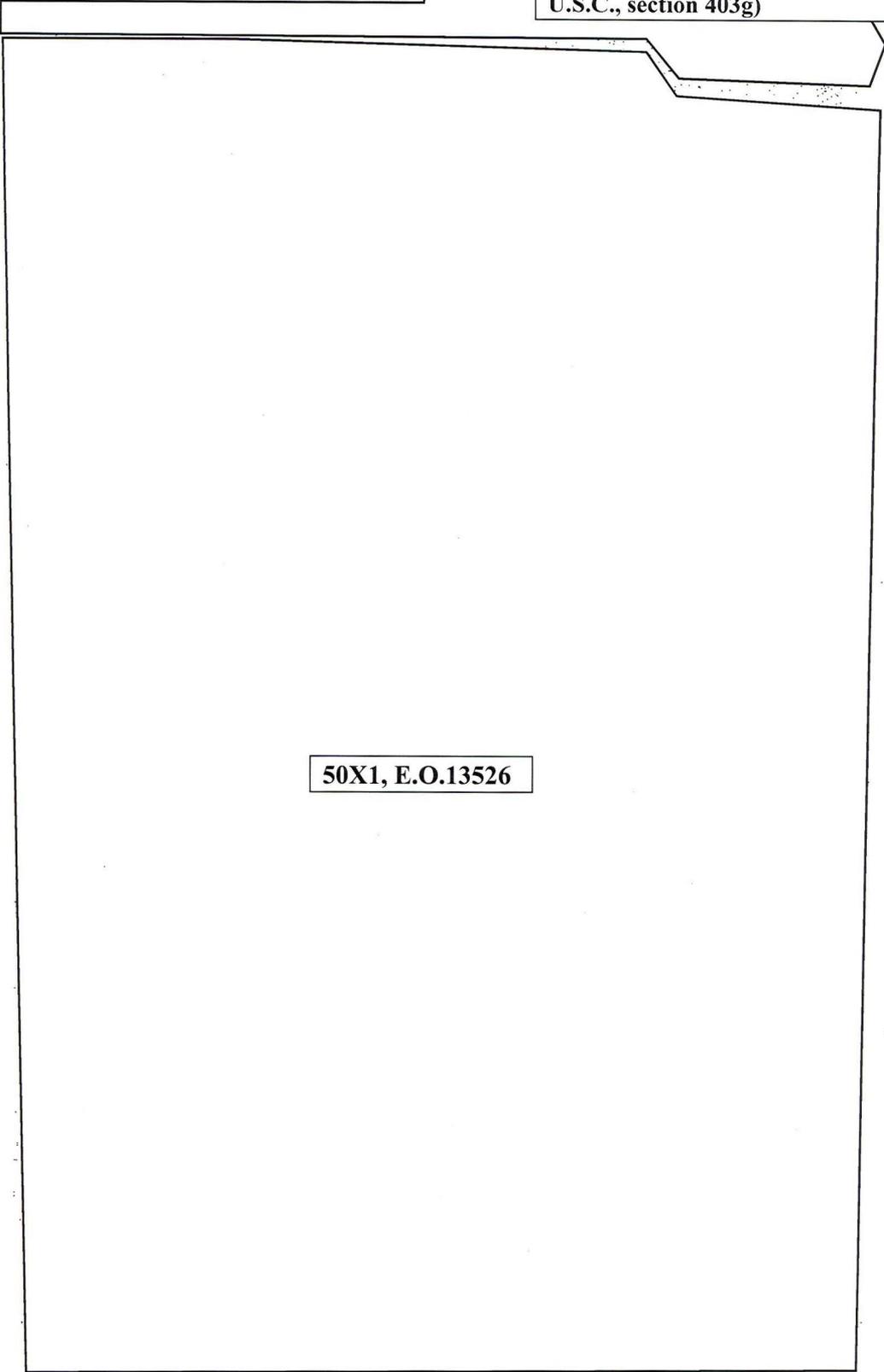
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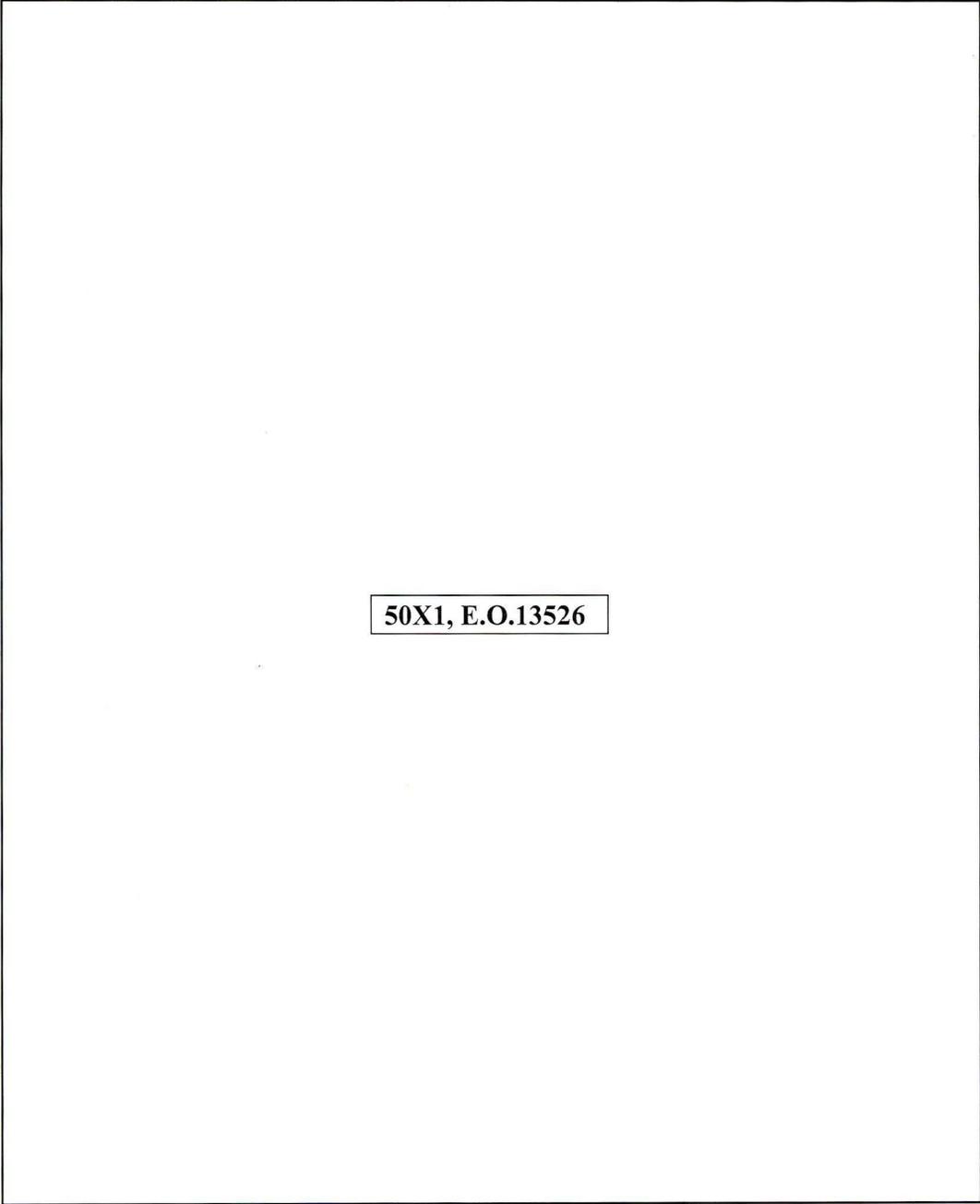
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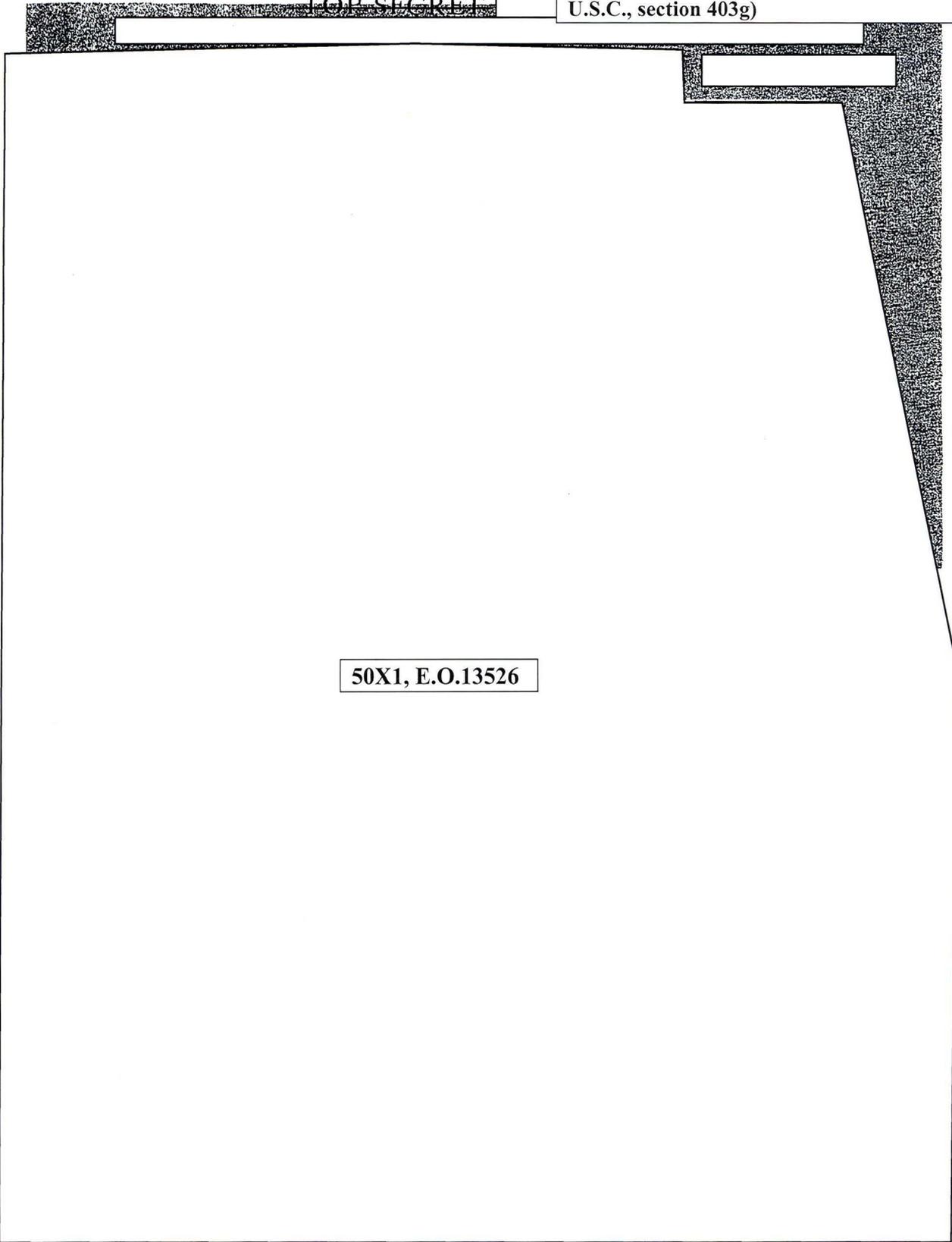
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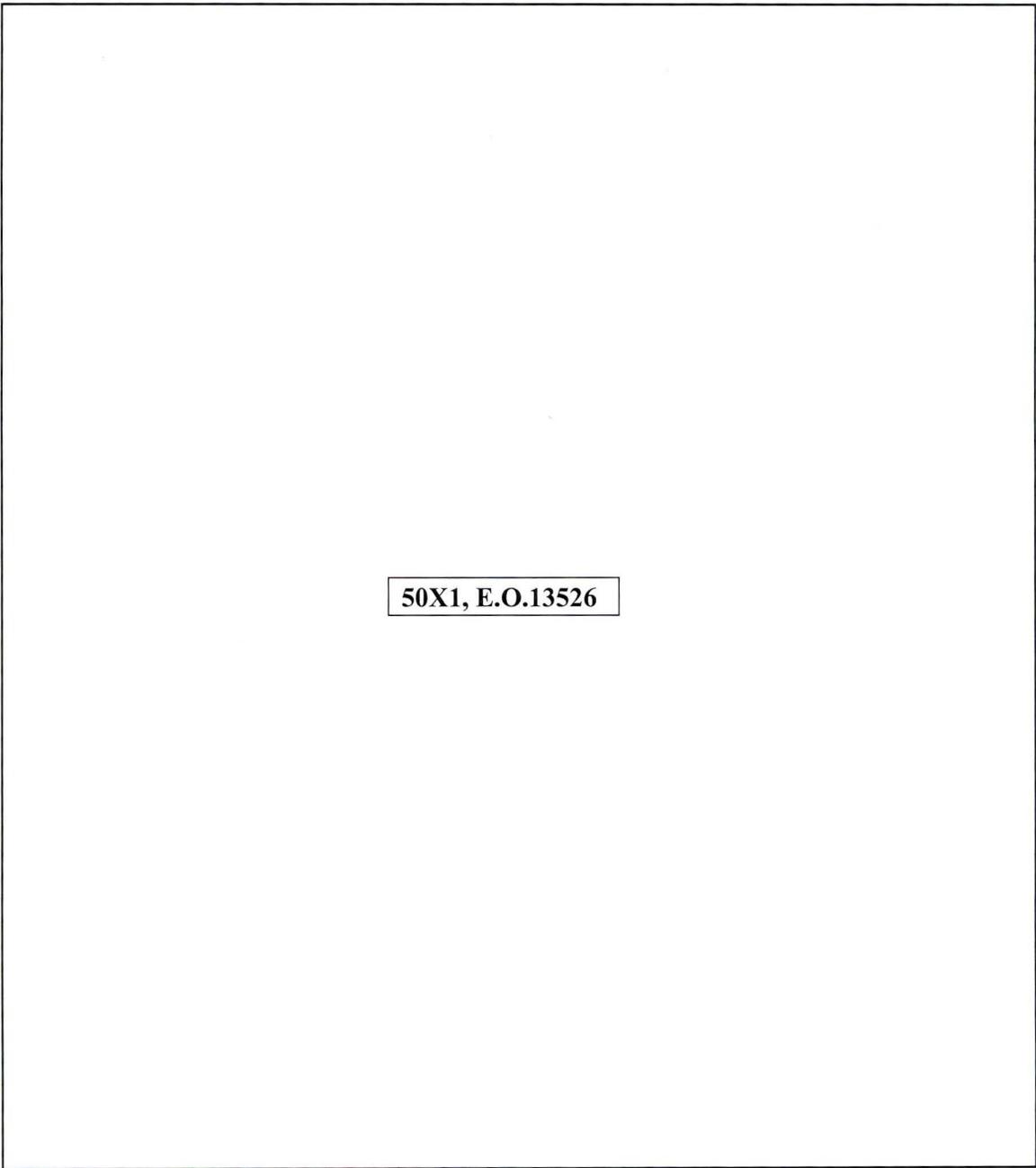
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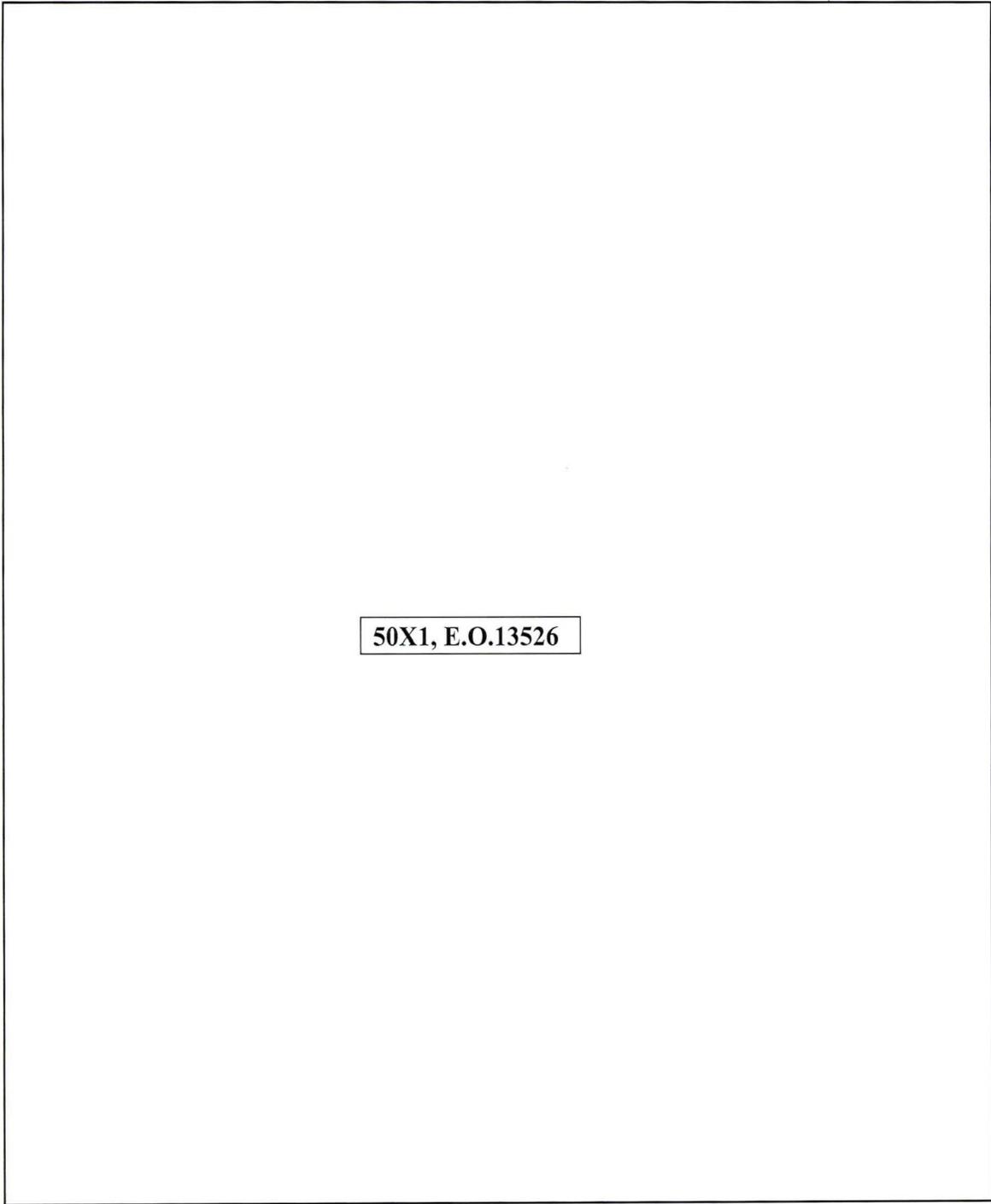
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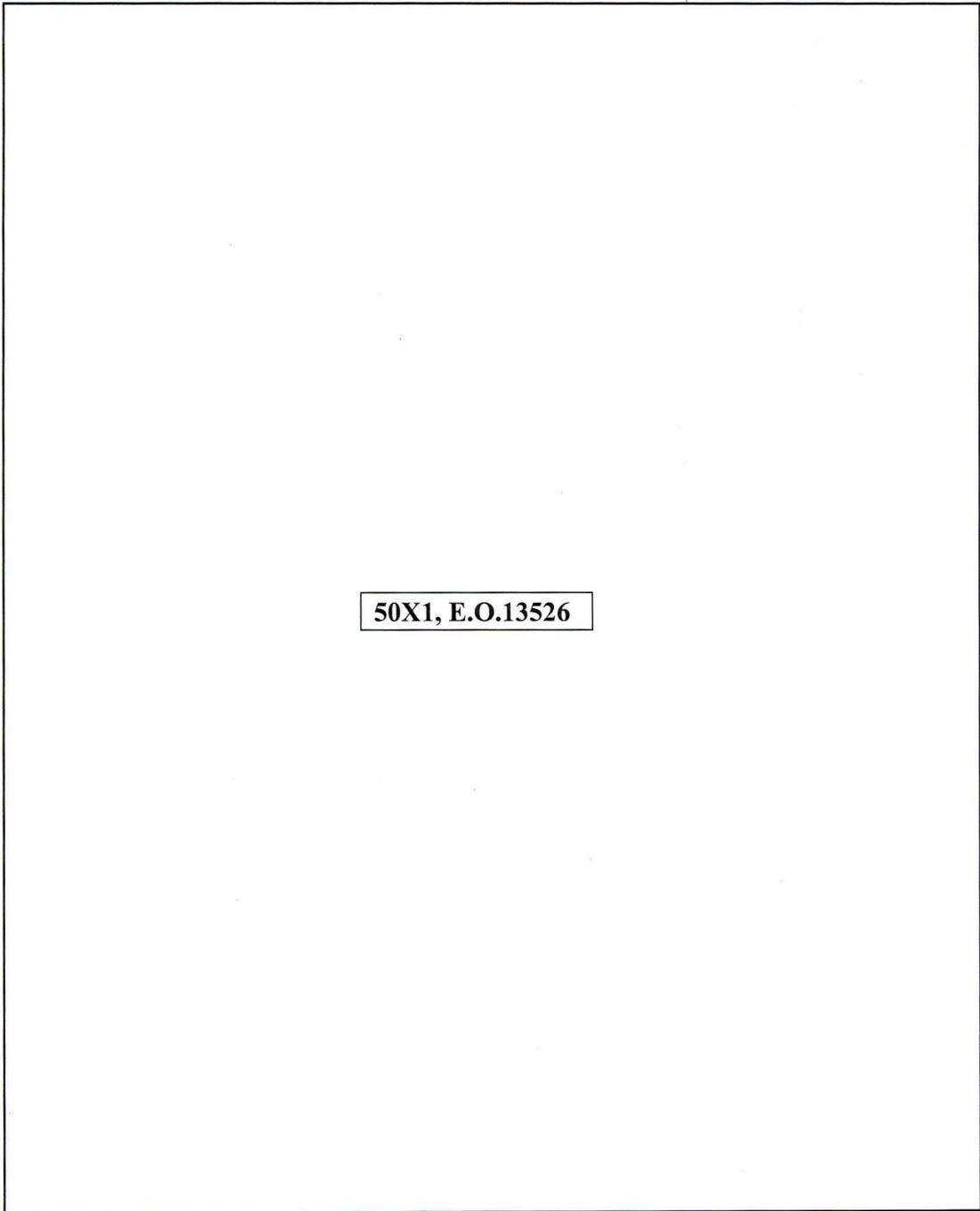
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