NO. 45350

AF MOLEY

SUMMARY REPORT OF THE PRELIMINARY

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TEST PROGRAM

The Electro-Mechanics Company

exas 78767

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SUMMARY REPORT OF THE PRELIMINARY

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TEST PROGRAM

15 May 1968

GROUP - 1

Excluded from Automatic Downgrading
and Declassification

THE ELECTRO-MECHANICS COMPANY

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ABSTRACT

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SECTION II

PRINCIPLE OF OPERATION

Theory of Operation:

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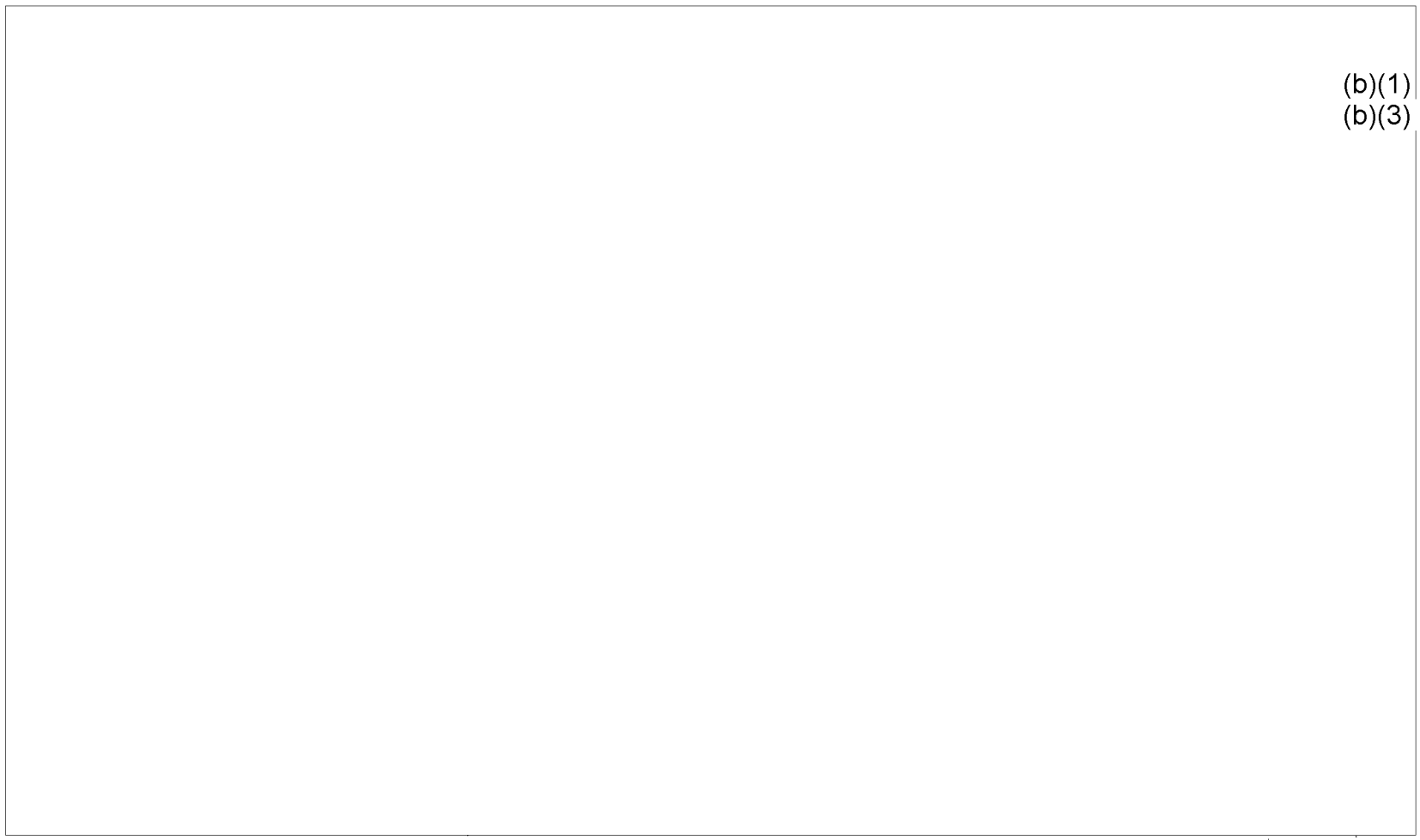

Fig. 1 System Block Diagram

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SECTION III

DISCUSSION OF PROGRAM

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Fig. 2 AMDS Detail Block Diagram

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Fig. 5 Piper Papoose

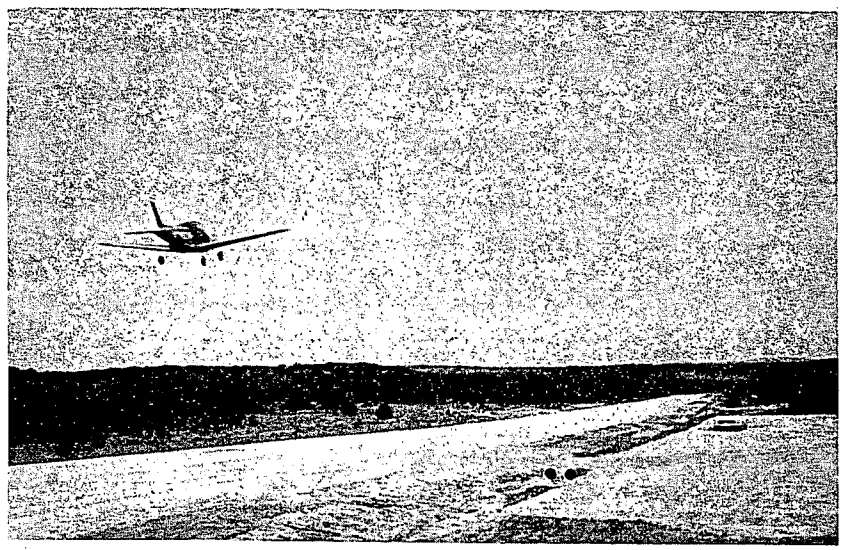

Fig. 6 Piper Papoose in Flight

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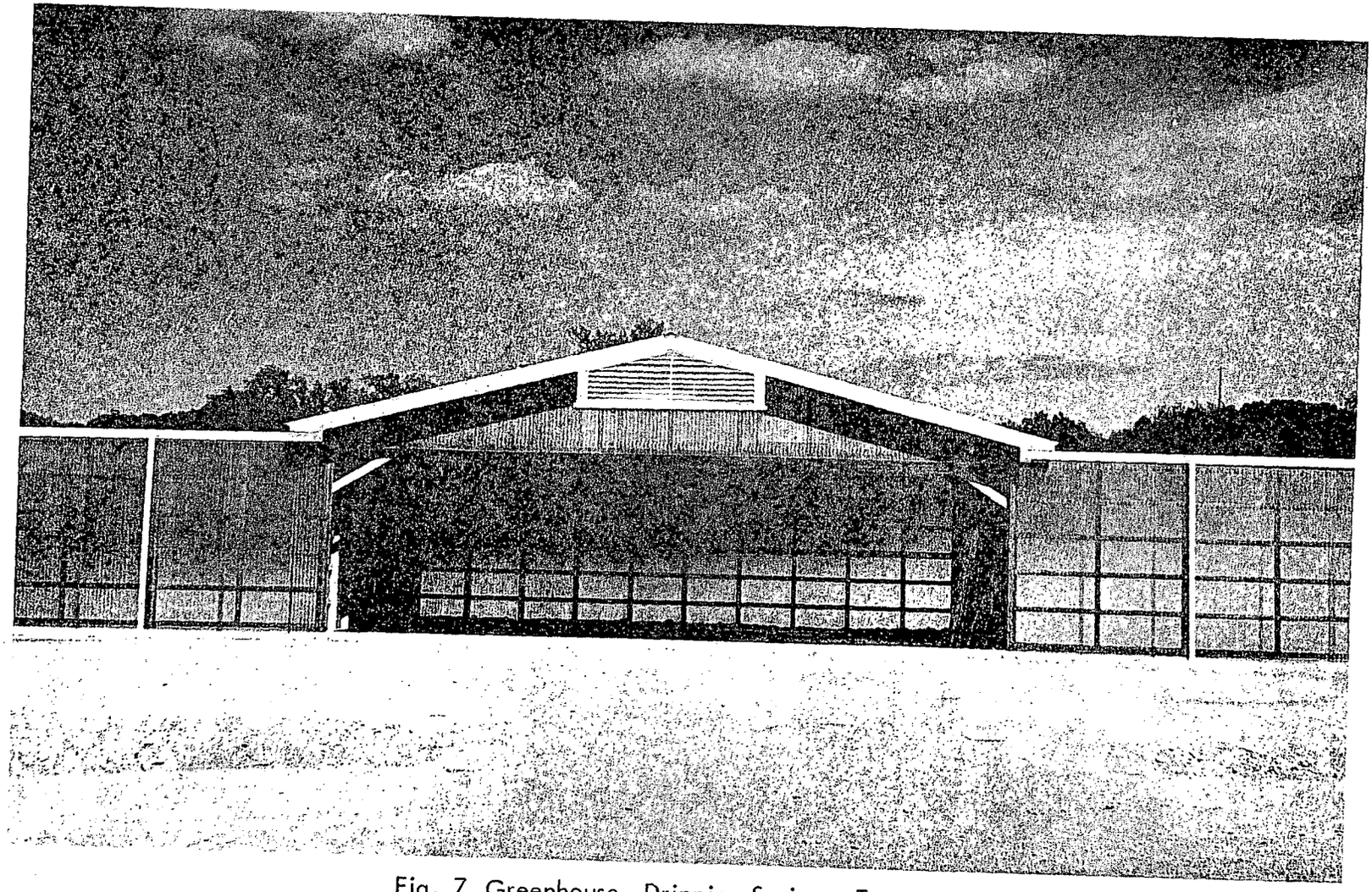

Fig. 7 Greenhouse, Dripping Springs, Texas

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Fig. 7 Greenhouse, Dripping Springs, Texas

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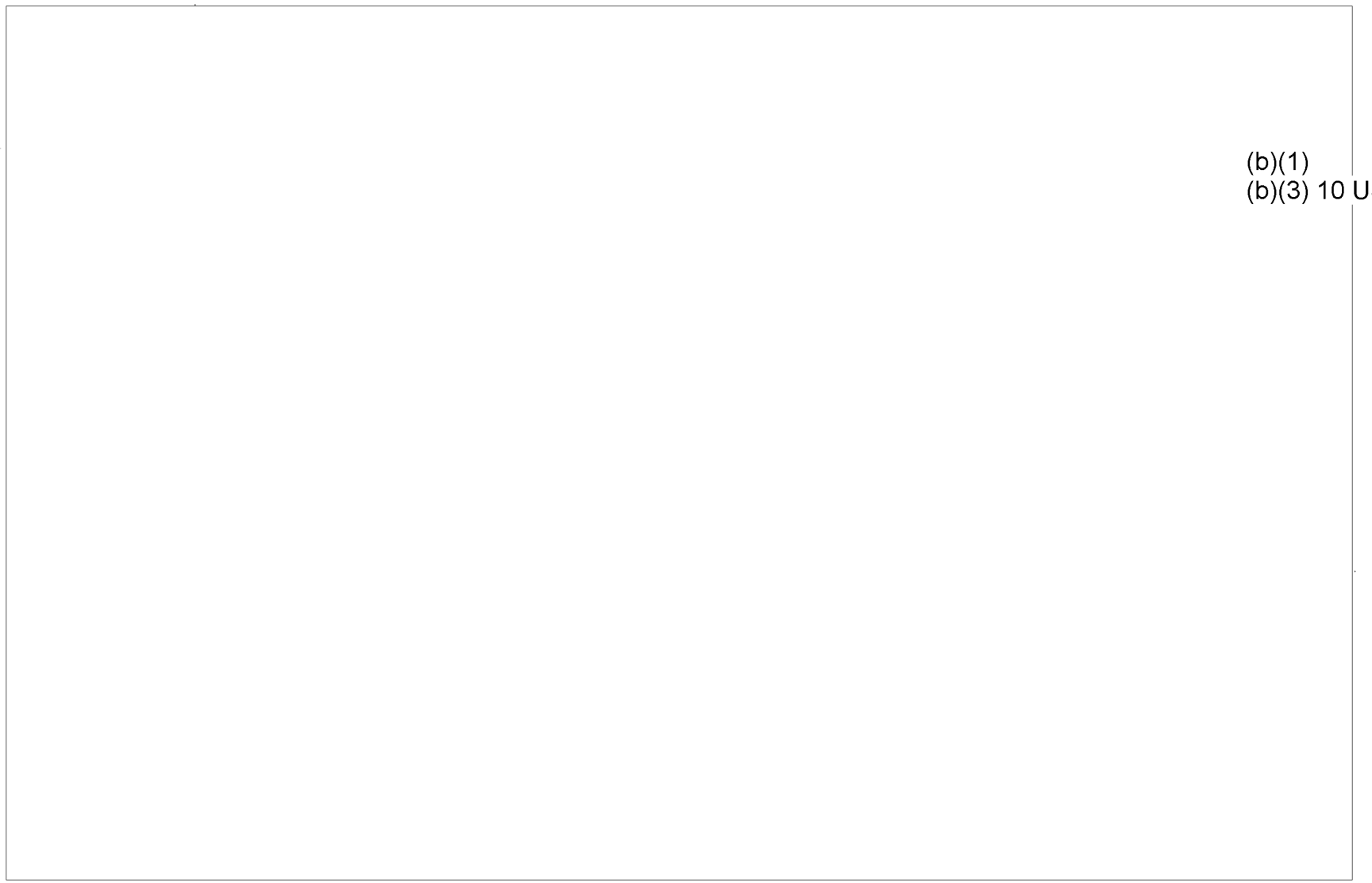

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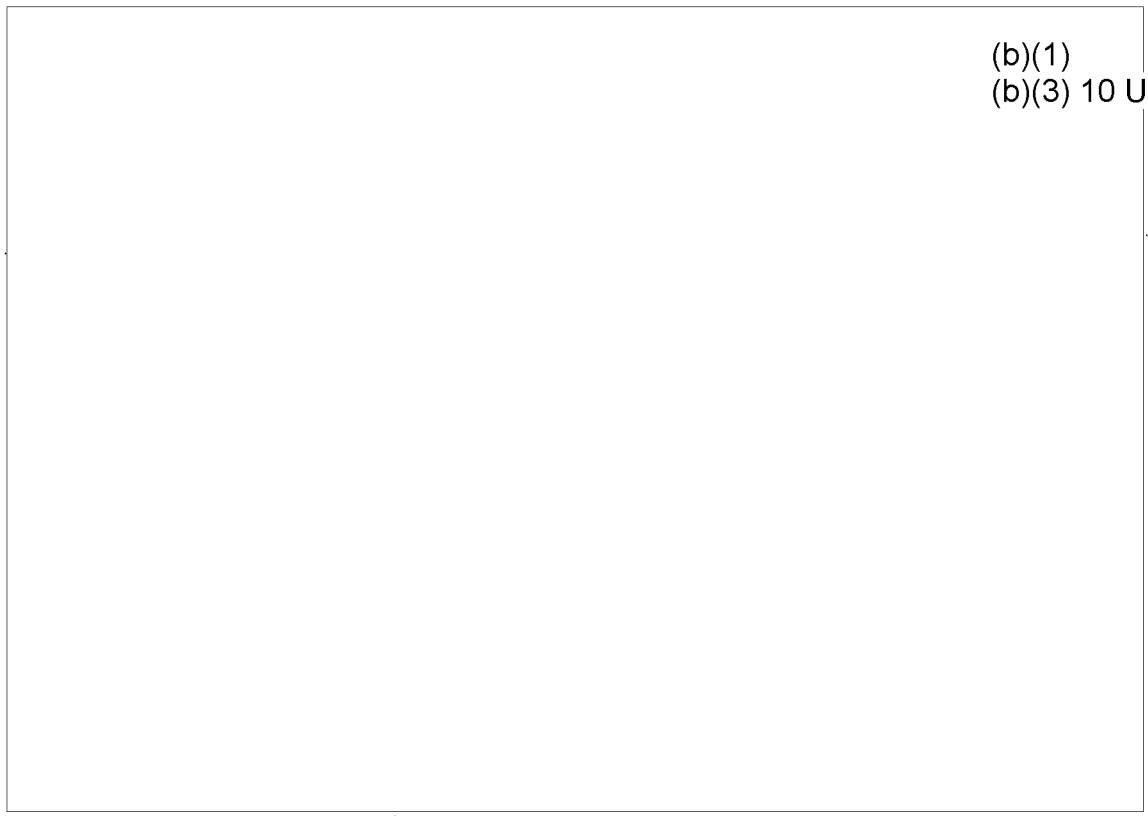

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Fig. 11 Recording of AMDS Data

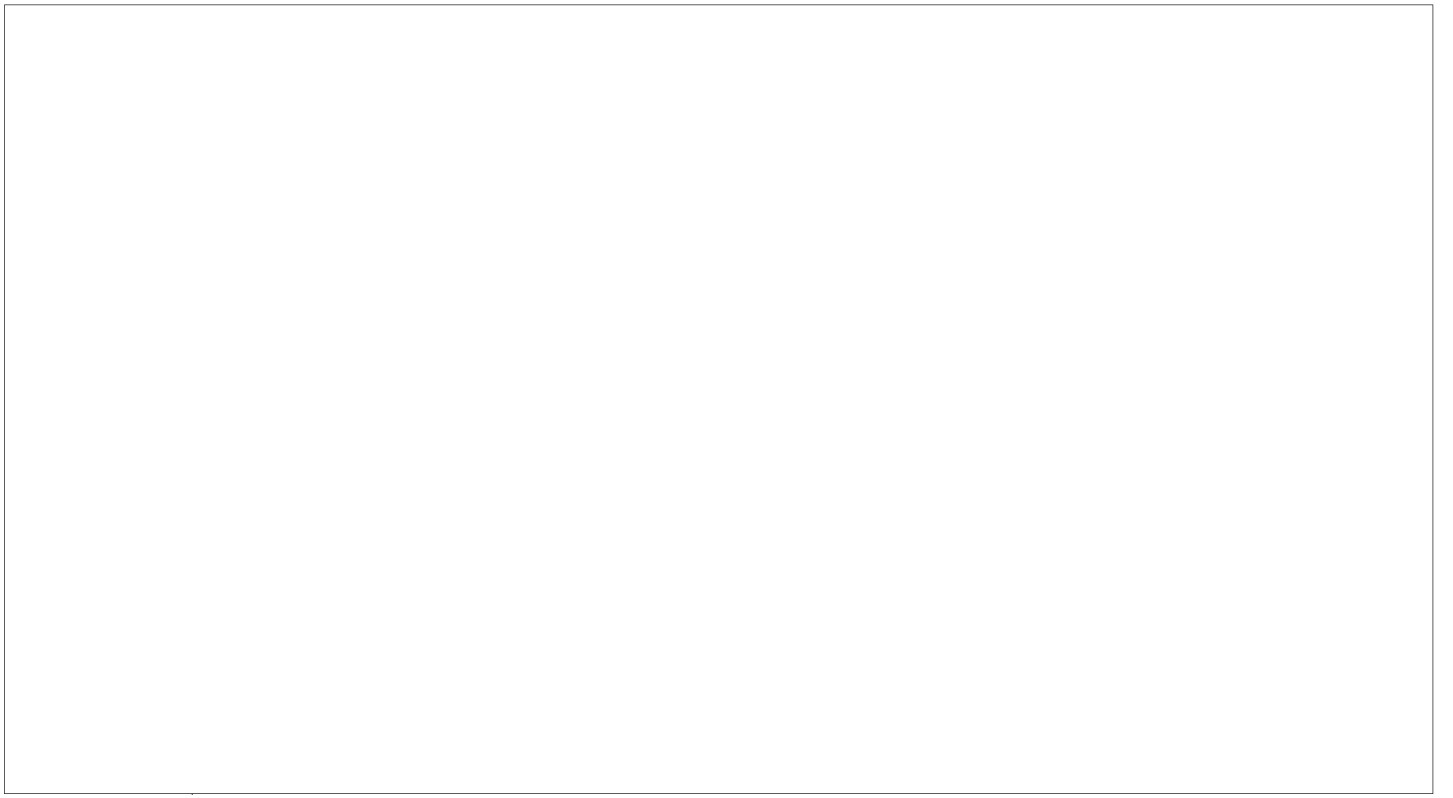

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Fig. 12 Block Diagram of Data Reduction System

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Fig. 13 Dripping Springs Data Record

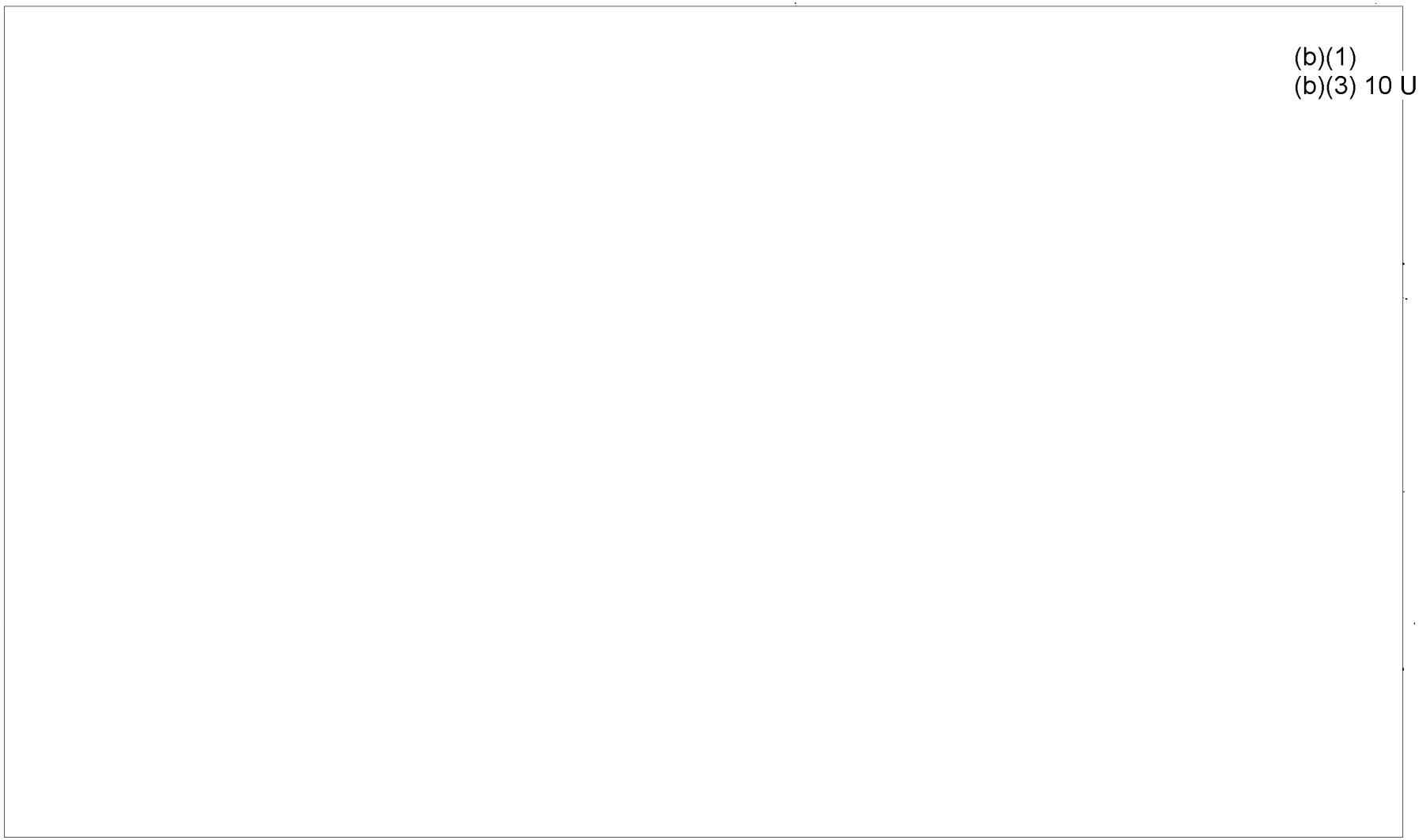

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Fig. 14 Ft. Hood Ripstein Creek Data Record, 29-21, Pass 3

Fig. 14 Ft. Hood Ripsaw Creek

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Fig. 15 Over-Under Test, Ft. Hood, Texas, 29-23, Pass 1

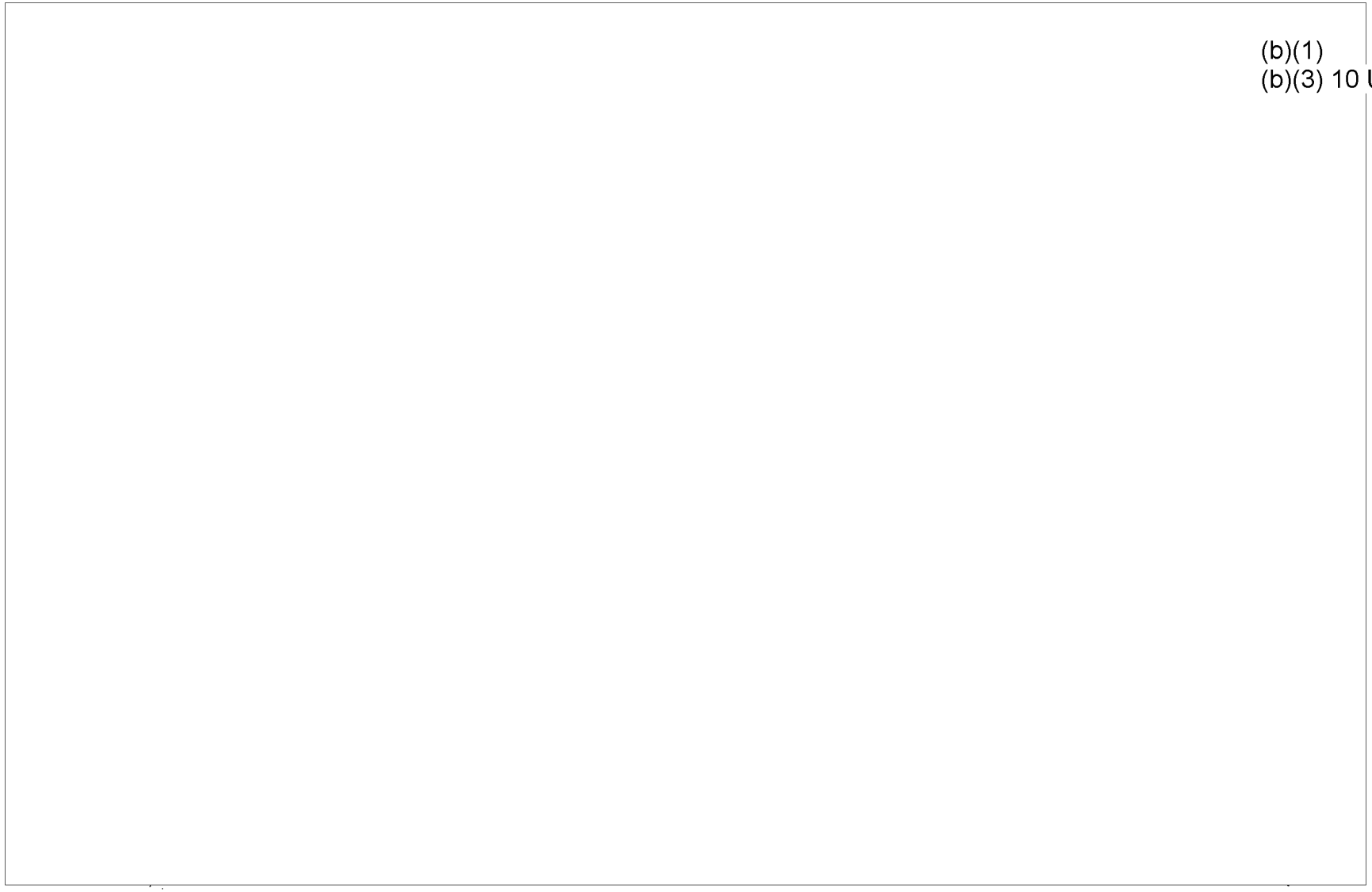

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Fig. 16 Over-Under Test, Ft. Hood, Texas, 29-23, Pass 3

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Fig. 17 Papoose Pass Over Mansfield Dam, 29-18, Pass 9

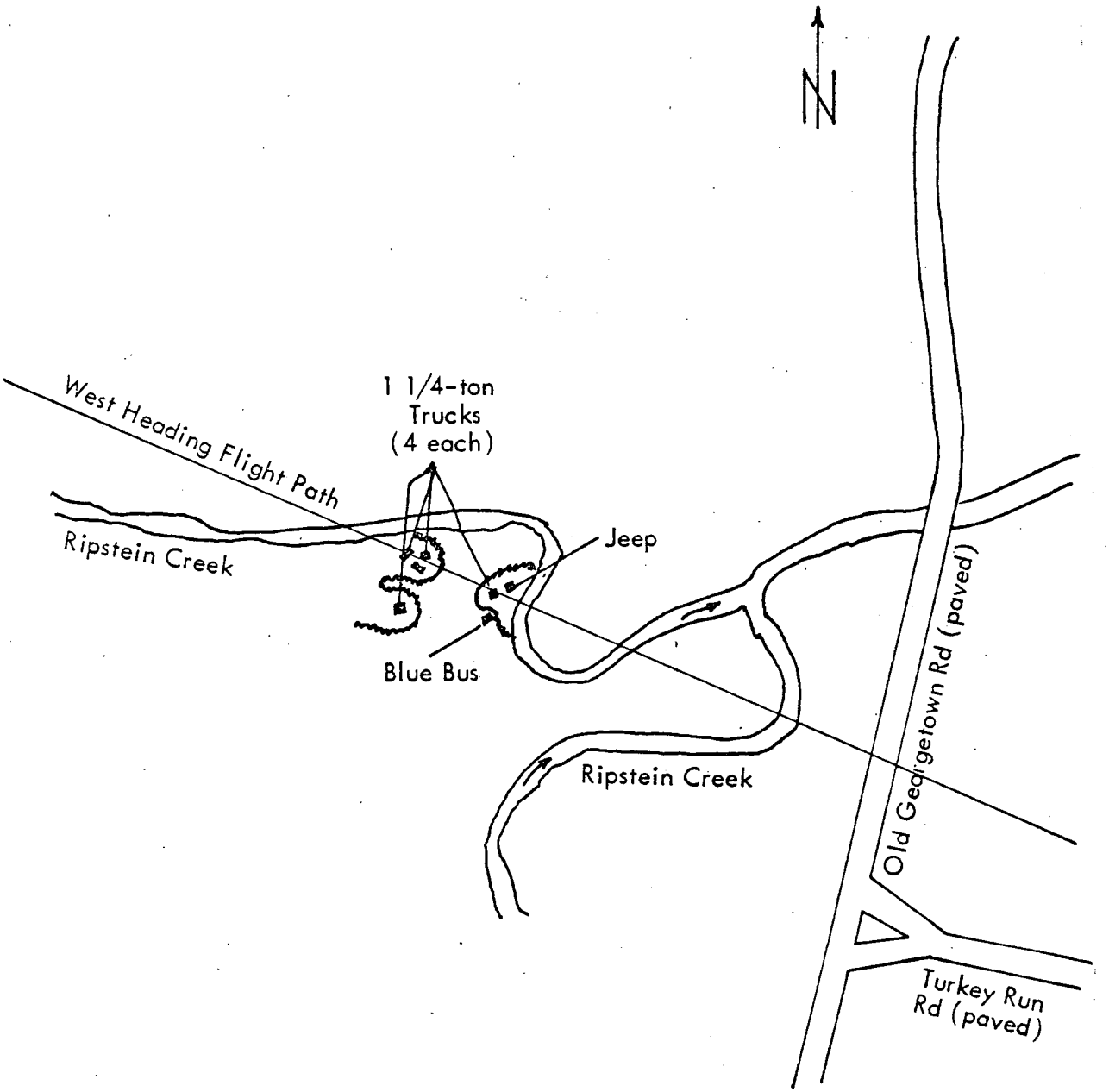

Fig. 18 Targets in Ripstein Creek Area, Ft. Hood, Texas

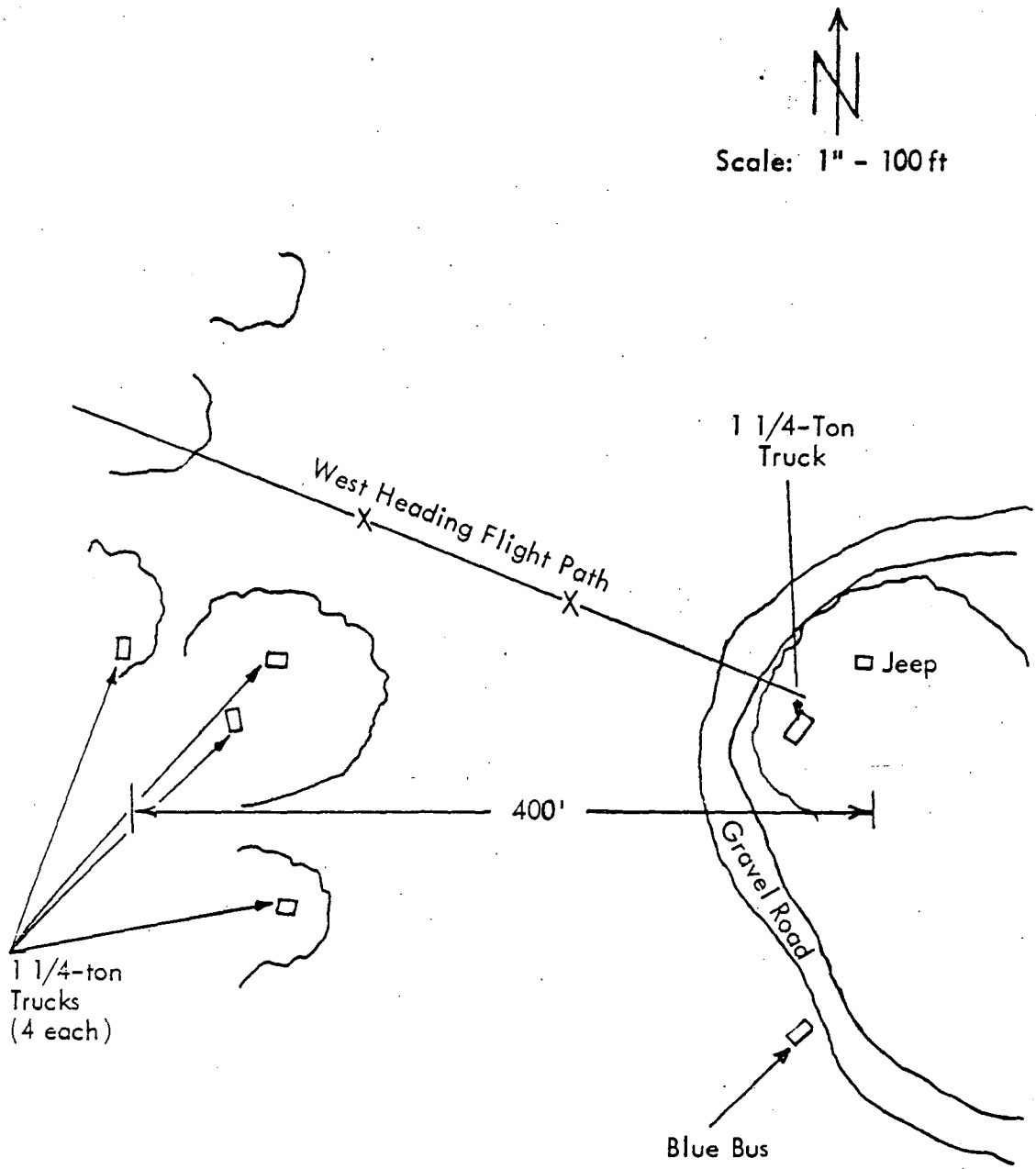

Fig. 19 Truck Locations in Ripstein Creek Area, Ft. Hood, Texas

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Fig. 20 Ft. Hood, Ripstein Creek Area, 5-8, Pass 16

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RECOMMENDATIONS

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A. A study program to advance the level of understanding of AMDS performance concepts. Included in this study would be:

1. Developing a mathematical model.
2. Investigation of the mechanisms which cause target responses.
3. Empirical testing to provide information for the above.

B. Further development of circuitry, especially of the basic system, but also to include circuitry for further needed innovations and improvements.

C. Continuation of flight testing in EMCO's light aircraft. This approach provides a convenient and economical means of gathering data, testing innovations to the system, and gaining flight experience for the system.

D. Testing of the AMDS in operational military aircraft. For each type of installation, tests would have to be made for compatibility before the decision can be made to make an operational installation.

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5. Installation in a wing-tip tank, for obvious flexibility.
6. Noise cone installation.

F. Reliability testing and upgrading of basic system circuitry for improved performance, stability and reliability.

G. Develop stringent test procedures for AMDS unit by unit and system electrical tests.

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APPENDIX A

Test Results

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Fig. 1 Dripping Springs Data Record, 29-11, Pass 3

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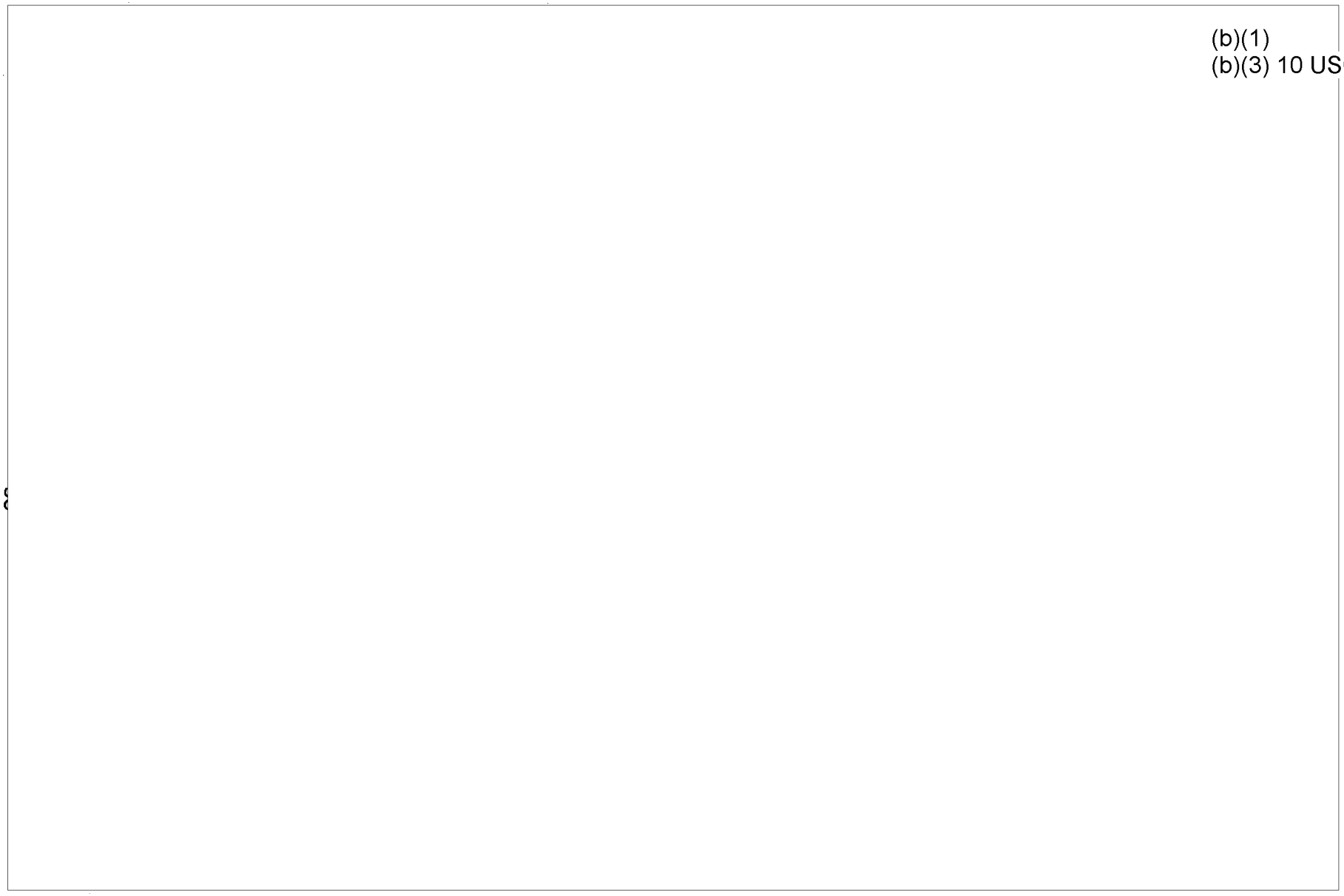

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Fig. 2 Dripping Springs Data Record, 29-16, Pass 2

Fig. 2 Dripping Springs Data Record, 29-16, Pass 2

Fig. 3 Dripping Springs Data Record, 29-18, Pass 8

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Fig. 4 Dripping Springs Data Record, 29-19, Pass 2

Fig. 4 Dripping Springs Data Record, 29-19, Pass 2

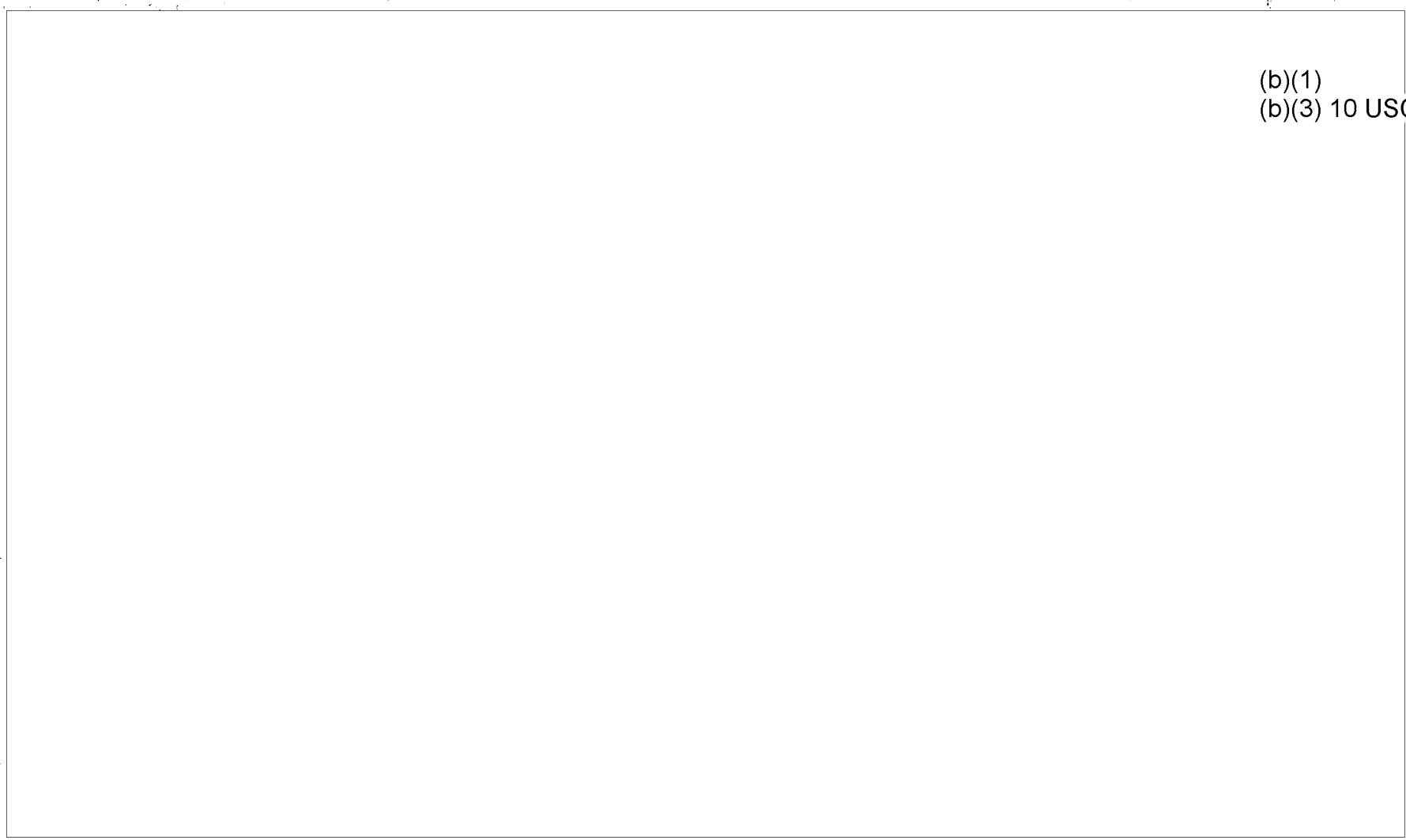

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Fig. 5 Dripping Springs Data Record, 29-19, Pass 6

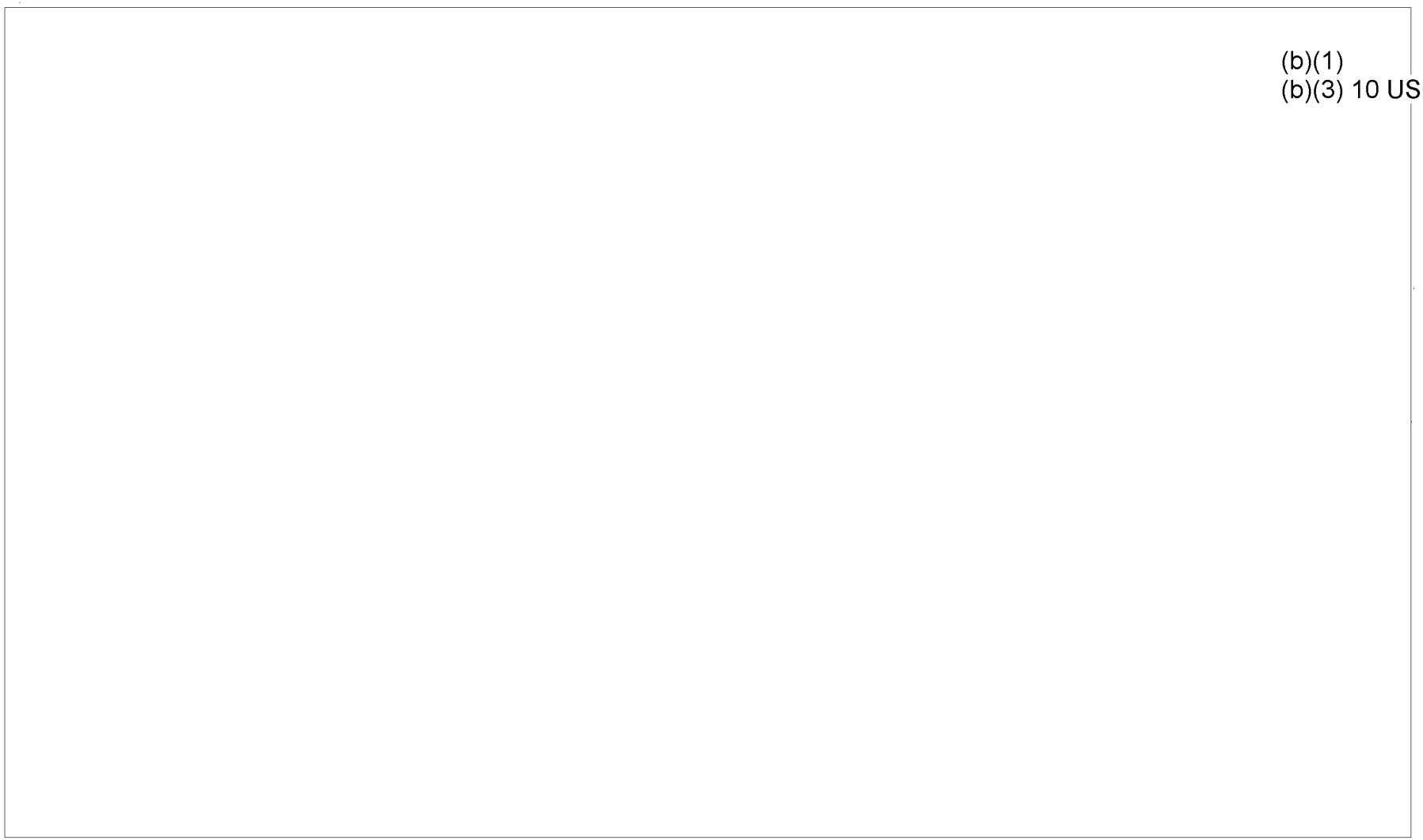

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Fig. 6 Dripping Springs Data Record, 29-18, Pass 7

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Fig. 7 Dripping Springs Data Record, 29-18, Pass 5

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Fig. 8 Dripping Springs Data Record, 29-7, Pass 4

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Fig. 9 Dripping Springs Data Record, 29-13, Pass 7

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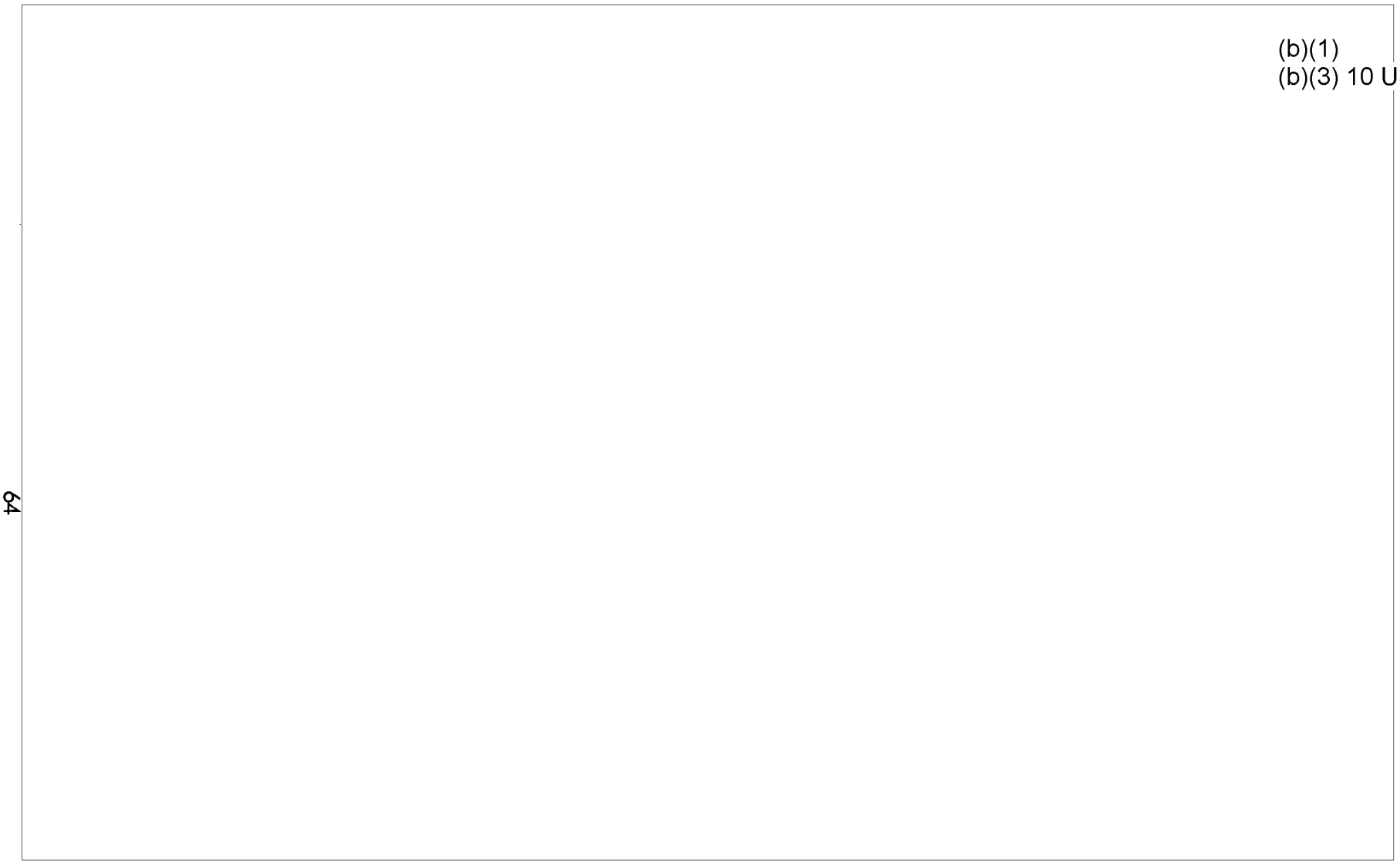

Fig. 10 Dripping Springs Data Record, 29-19, Pass 7

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Fig. 11 Dripping Springs Data Record, 29-16, Pass 8

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Fig. 12 Dripping Springs Data Record, 29-6a, Pass 6

Fig. 13 Dripping Springs Data Record, 29-6a, Pass 7

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Fig. 14 Dripping Springs Data Record, 29-6a, Pass 9

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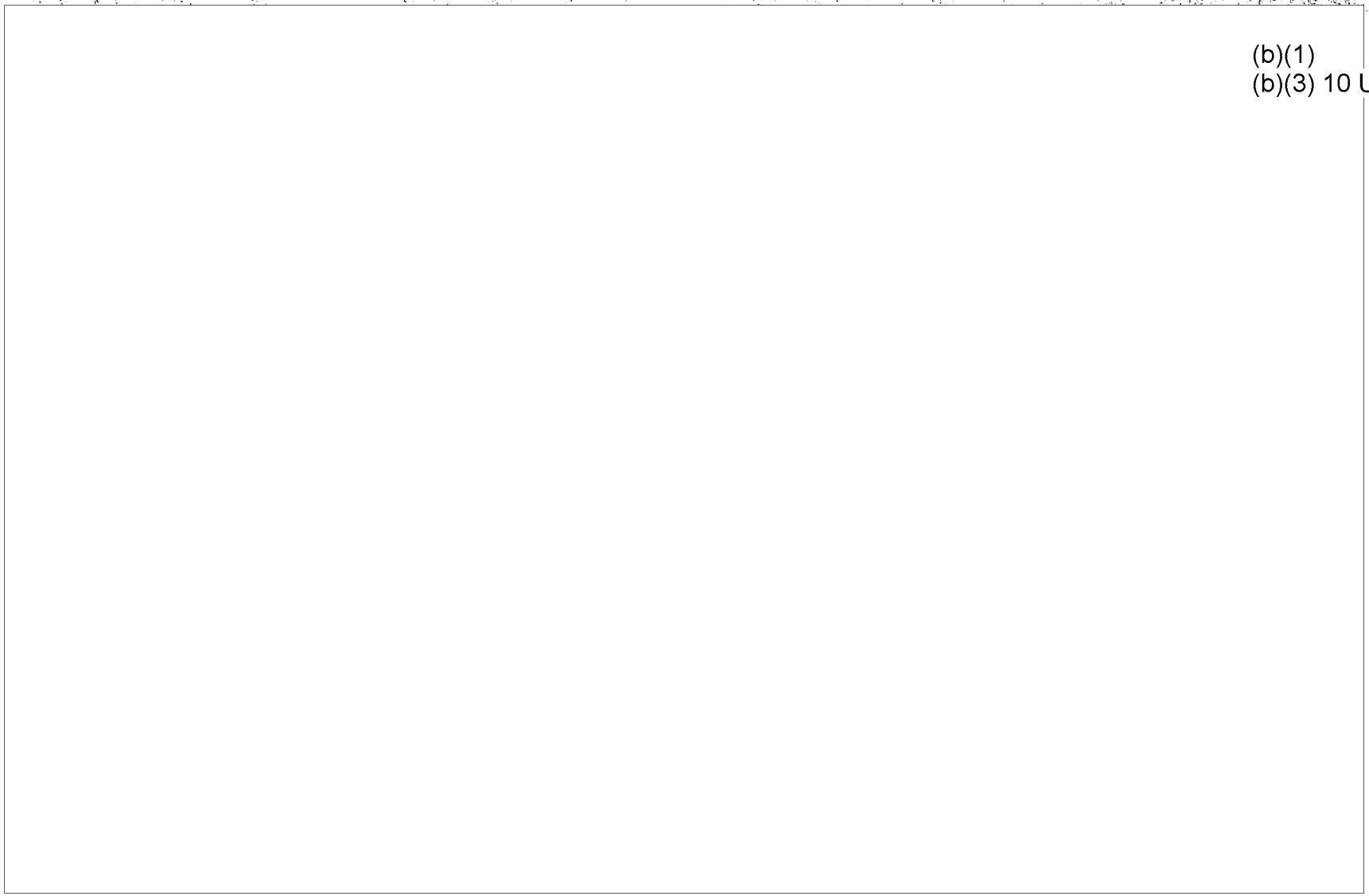

Fig. 15 Dripping Springs Data Record, 29-11, Pass 4

Fig. 16 Dripping Springs Data Record, 29-15, Pass 2

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Fig. 17 Dripping Springs Data Record, 29-15, Pass 3

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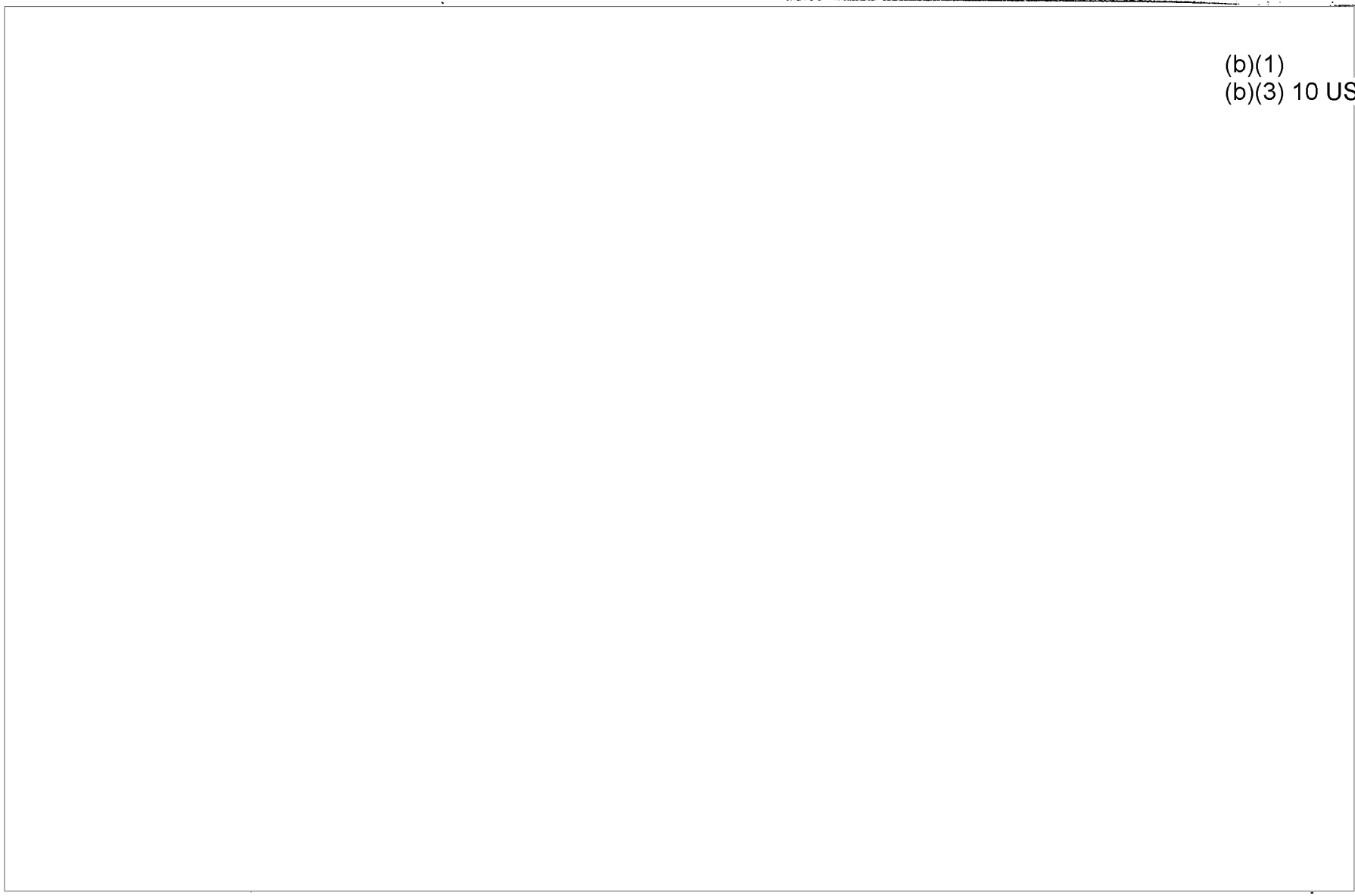

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Fig. 18 Dripping Springs Data Record, 29-15, Pass 4

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Fig. 19 Ft. Hood Ripstein Creek Data Record, 29-22, Pass 1

APPENDIX B

OPERATING INSTRUCTIONS FOR LIGHTWEIGHT [redacted] (b)(3) 10 USC 130

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Theory of Operation:

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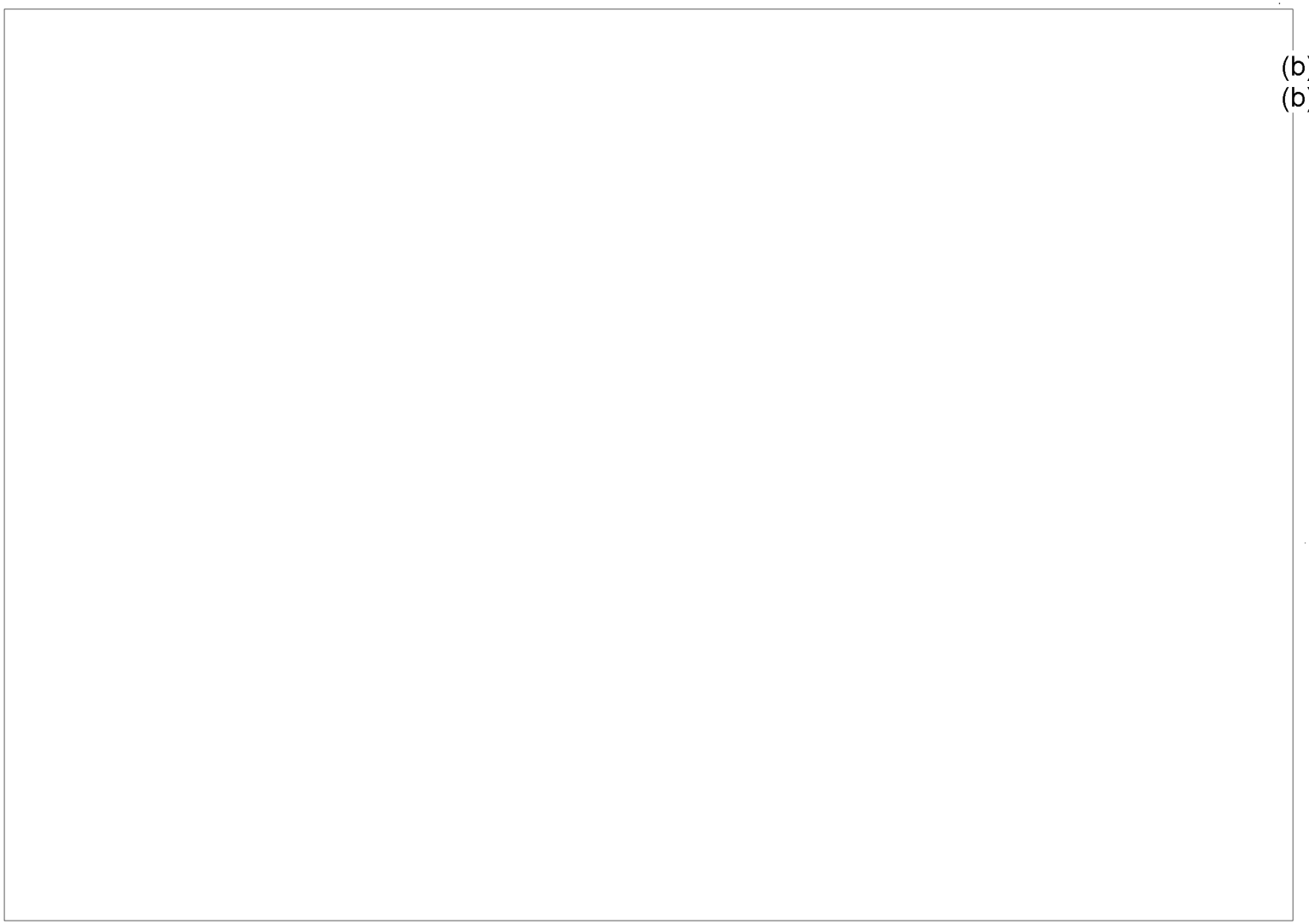

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Fig. 1 System Block Diagram

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Fig. 2 AMDS Detail Block Diagram

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Fig. 2 AMDS Detail Block Diagram

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Fig. 4 Receiver/Detector/Filter Front Panel

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Fig. 7 Block Diagram of Instrumentation

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SECTION IV

OPERATING INSTRUCTIONS

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SECTION V

RECORDING AND HANDLING OF DATA

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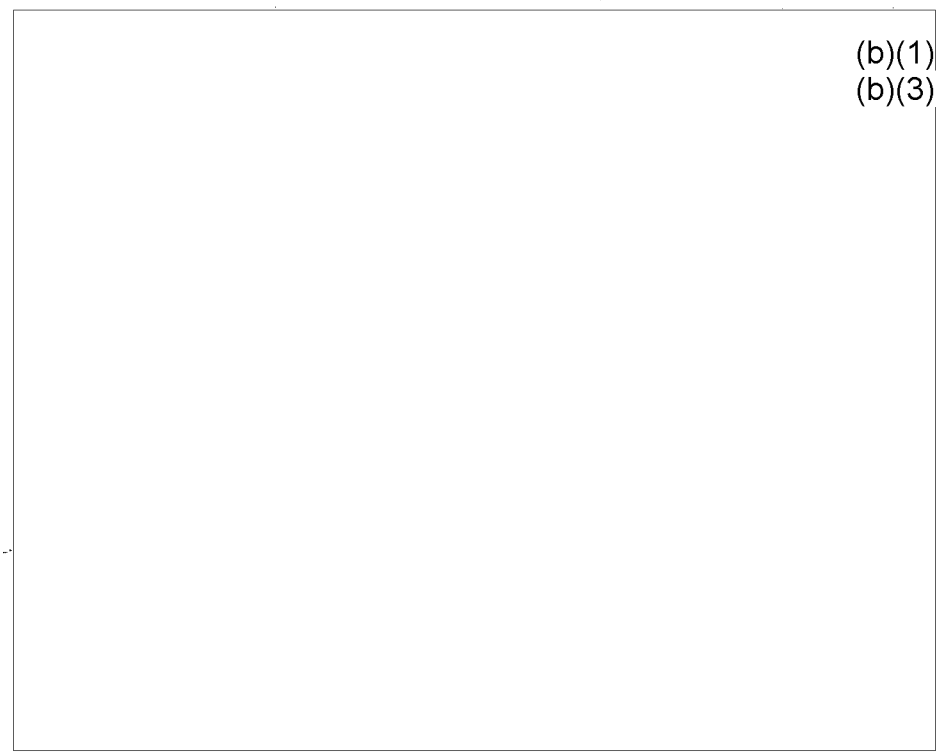

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Fig. 8 Recording of AMDS Data

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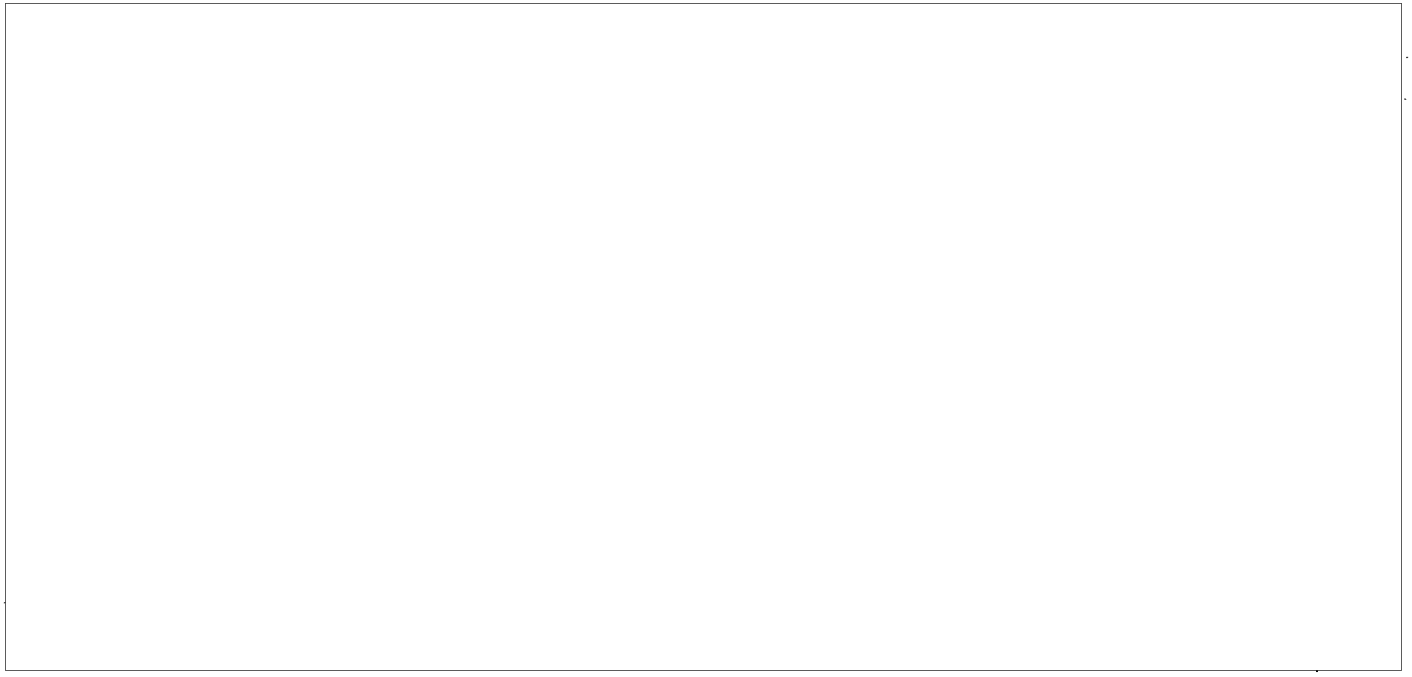

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Fig. 9 Block Diagram of Data Reduction System

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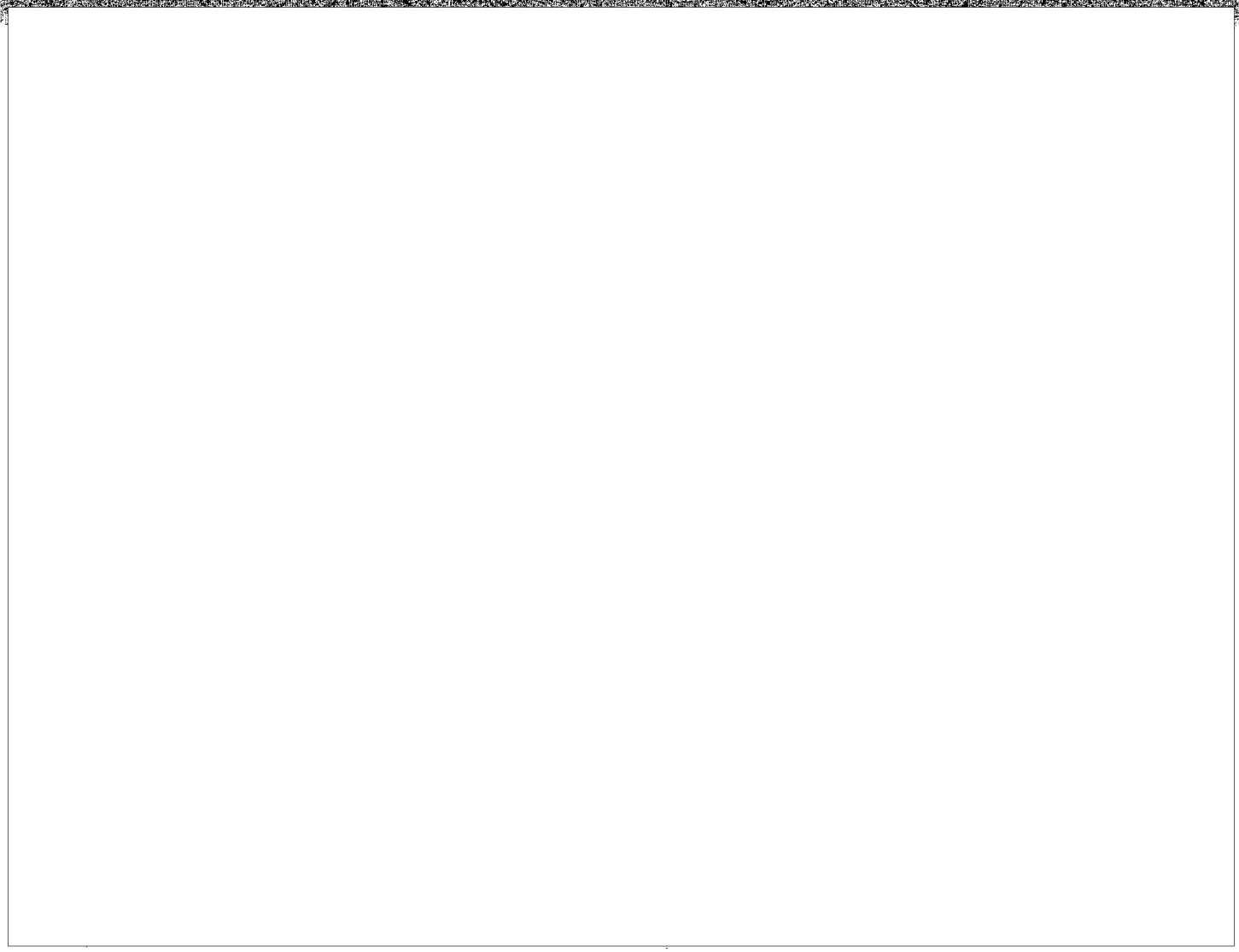
SECTION VI

BLOCK DIAGRAMS AND SCHEMATICS



MAIN POWER SUPPLY BLOCK DIAGRAM P 205

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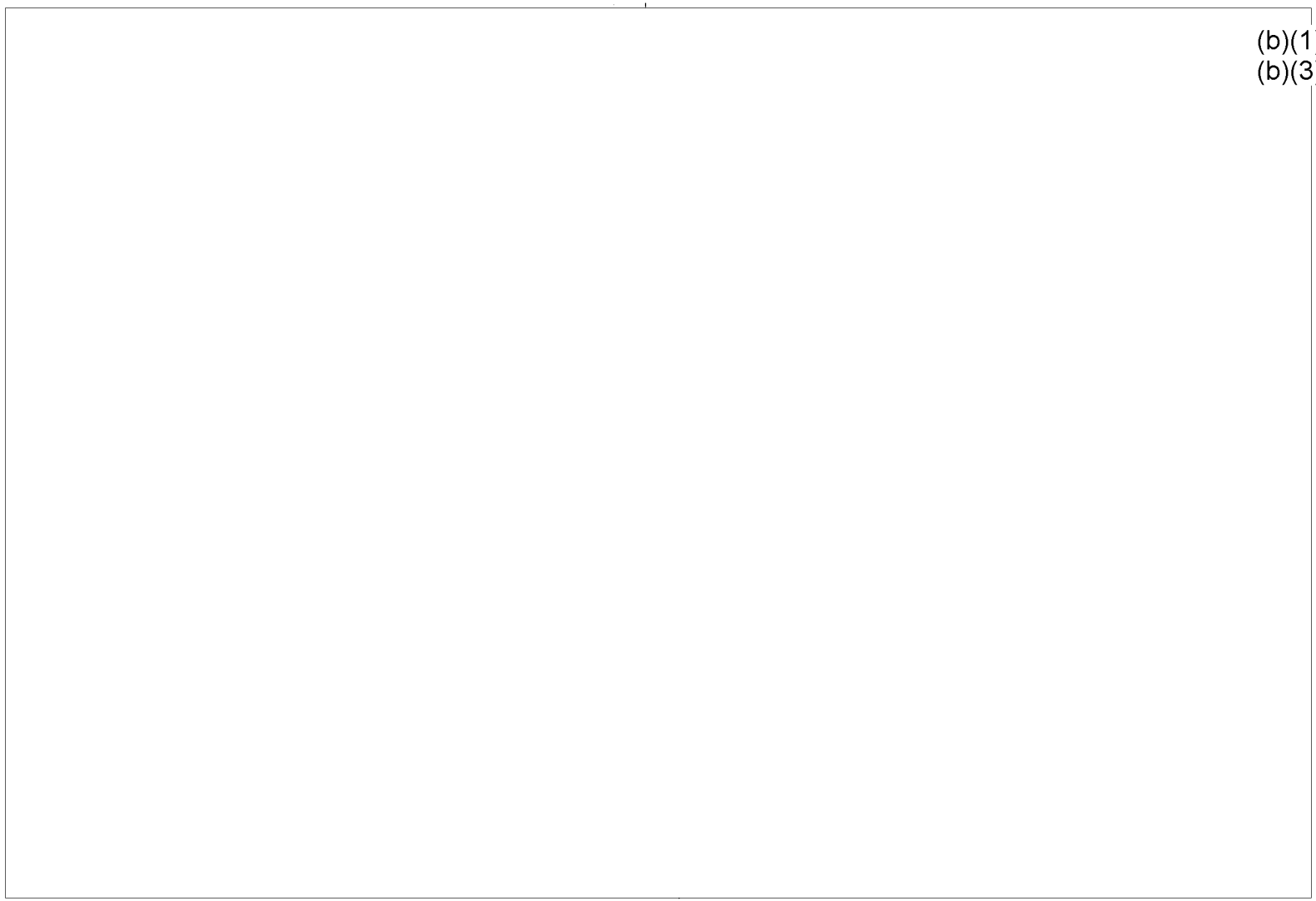

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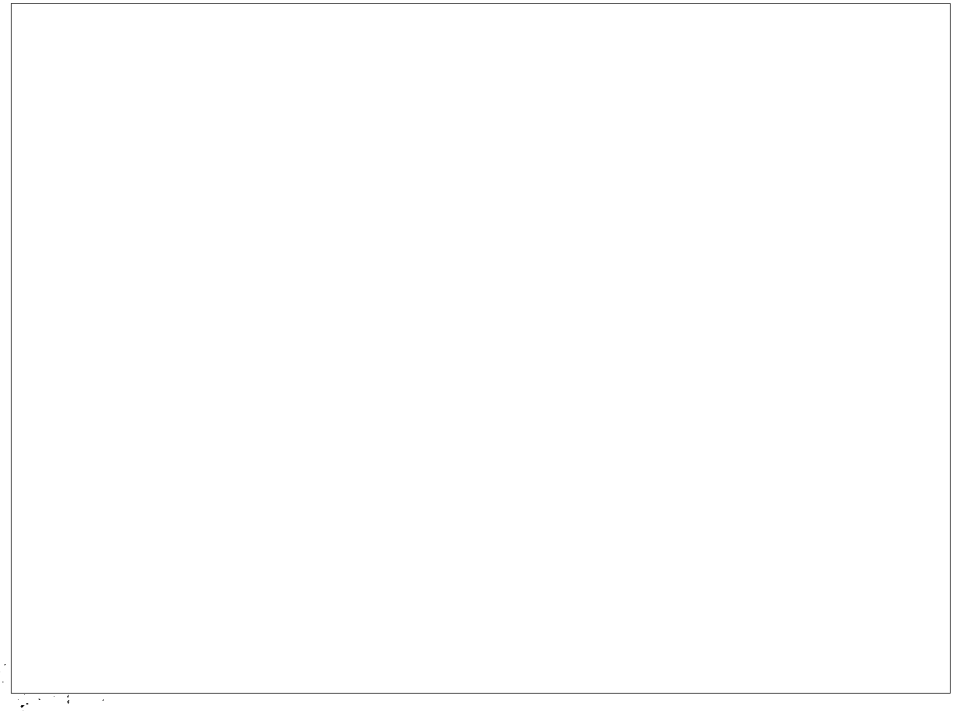

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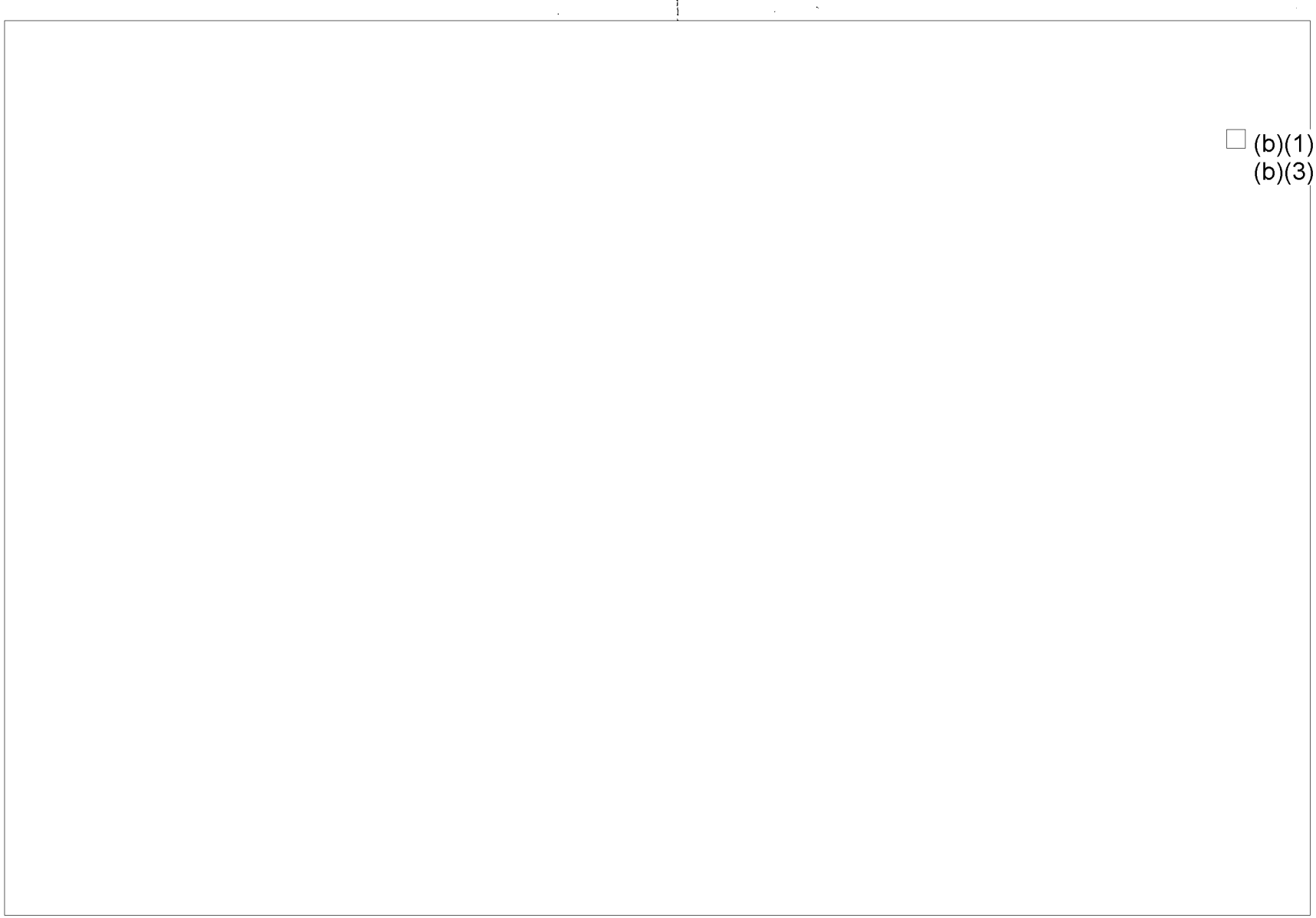

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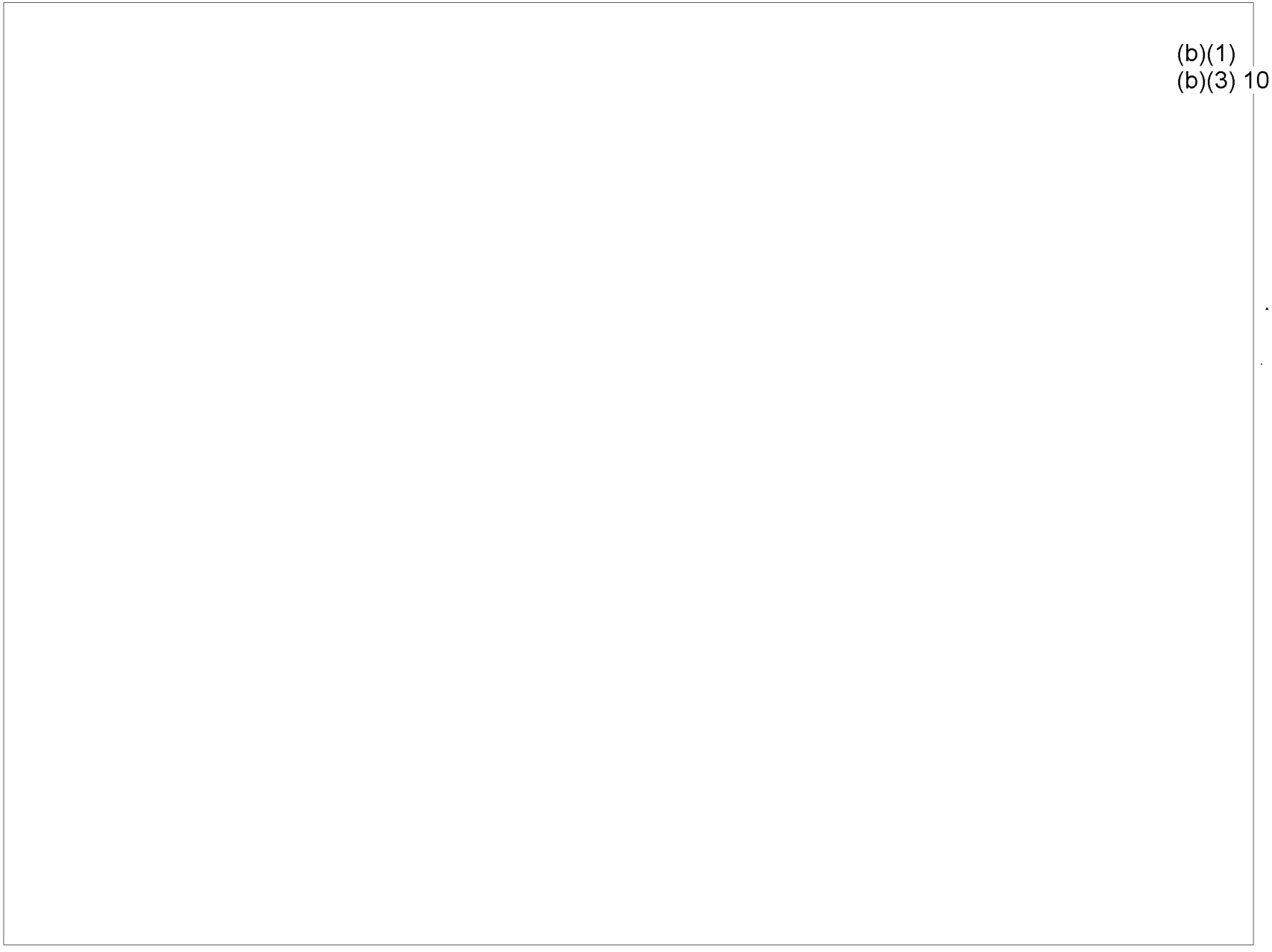

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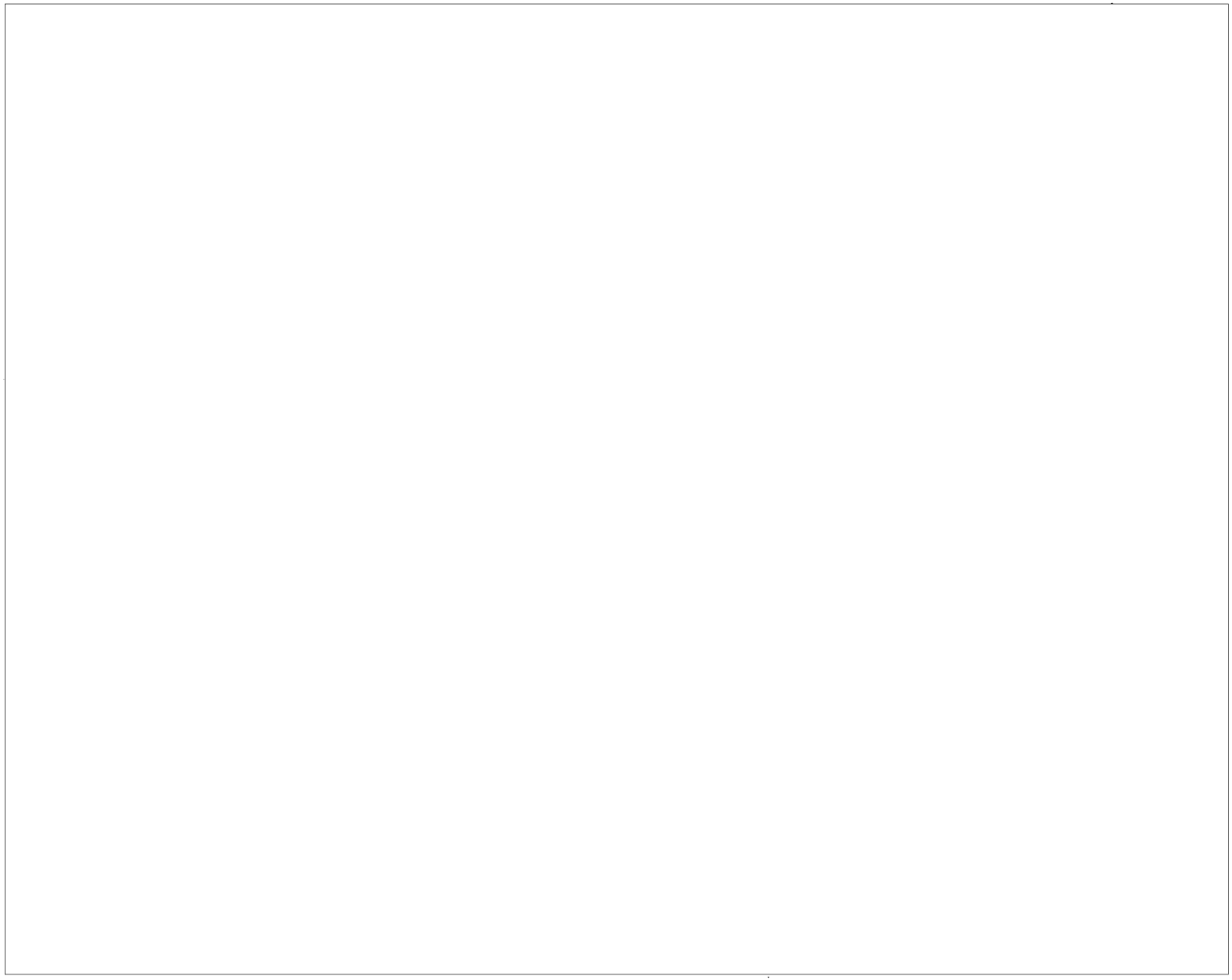

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