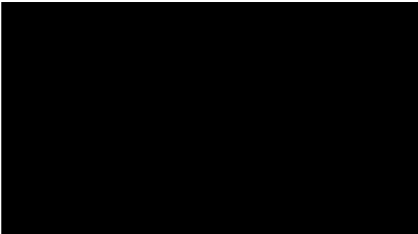2 August 1967

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1. In response to reference, you may advise ▓▓▓▓▓ that the Agency
has developed an "Automap System" designed to produce automatically a
map of any part of the earth's surface using any projection at any scale
and particularly suitable for maps at scales less than 1:1,000,000.
The data bases are stored in the form of geographic coordinates and
retrieved by a separate index. The plotting programs are modular in
nature and permit a wide variety of options such as 12 different projections,
3 different plotters, variable grid presentation, range rings, azimuths,
circles around a given point, spirals, flight paths, etc. The time ex-
pended for programming, computing, and plotting the attached map
(exclusive of type and watertone) is less than three hours. A digital
computer and an automatic plotter are required for operation of the
system. Optional is some sort of device to convert line data such as
coastlines into digital form. In this Agency we use an IBM 360/65 for
computing, either a Benson-Lehner LTE, an Electronic Associates, Inc.
3440, or a California Computer Products drum-type plotter for plotting,
and a Thomson Pencil Follower PF 10 LDS for digitizing.

2. With regard to "spatial increments", our system has a variable
increment filter which is adjusted to the optimum for each plotter. All
line data within the required map frame are converted to the proper X-Y
value for the projection, scale, and plotter. Each point is then examined
to see whether it exceeds or equals the established distance from the
last point. Those less than the required increment are deleted. The
resulting plot is an accurate generalization.

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3. The question of providing ▓▓▓▓▓ with a suitable copy of the
basic data file involves components other than this Office and is under
study.

4.   Publication of a handbook and a professional paper on the Automap System is now underway. Selected references which might be of interest are as follows:

A. S. Basile, "The Key to Automated Cartography - A Precision Digital Plotter System", paper presented at the Regional Convention, American Congress of Surveying and Mapping, Kansas City, 1964;

D. Bickmore, "The Oxford System of Automated Cartography", paper presented at the International Cartographic Association, Edinburgh, 1964;

G. Petrie, "Numerically Controlled Methods of Automatic Plotting and Draughting", The Cartographic Journal, Vol. 3.2 (Dec. 1966), pp. 60-73;

M. A. Richardson and J. S. Rollett, "The Oxford Cartographic Data Bank", paper presented at the Third International Conference on Cartography, Amsterdam, 1967;

D. Talley, "Automatic Plotting in the Third Generation", Datamation, Vol. 13.7 (July 1967), pp. 22-26;

W. R. Tobler, "An Experiment in the Computer Generalization of Maps", Technical Report No. 1, The University of Michigan, Dec. 1964;

W. R. Tobler, "Numerical Map Generalization", Michigan Inter-University Community of Mathematical Geographers Discussion Paper No. 8, Jan 1966.

Sincerely,

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Special Assistant
Director of Basic Intelligence

Attachment:
  Map as stated

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MISSING PAGE

ORIGINAL DOCUMENT MISSING PAGE(S):

Attachment