1 of 5

INTEGRATED BASELINE SYSTEM (IBS)
Version 1.03

UTILITIES GUIDE

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NOTICE

The Integrated Baseline System (IBS) is an emergency planning and training tool intended to supplement existing resources for emergency planning, training, and management. IBS results must NOT be used as the sole basis for a decision regarding public safety. Although IBS is operational, not all IBS software/models have been verified. The assumptions of the IBS software should be reviewed to ensure its appropriateness for an intended use.

Preface

The Integrated Baseline System (IBS) is an emergency management planning and analysis tool being developed under the direction of the Federal Emergency Management Agency. The following documents were developed to support system users. The audience for each is identified.

This *IBS Utilities Guide* explains how you can use IBS utility programs to manage and manipulate various kinds of IBS data. These programs include utilities for creating, editing, and displaying maps and other data that are referenced to geographic location. **Audience:** chiefly data managers but also system managers and some emergency management planners and analysts.

The *IBS User Guide* explains how to start and use the *IBS program*, which is designed to help civilian emergency management personnel to plan for and support their responses to a chemical-releasing *event* at a military chemical stockpile.^(a) **Audience:** all users of the IBS, especially emergency management planners and analysts.

The *IBS Models Guide* summarizes the IBS use of several computer models for predicting the results of emergency situations. These include models for predicting dispersion/doses of airborne contaminants, traffic evacuation, explosion effects, heat radiation from a fire, and siren sound transmission. The guide references additional technical documentation on the models when such documentation is available from other sources. **Audience:** chiefly emergency management planners and analysts, but also data managers and system managers.

The *IBS Data Management Guide* provides the information needed to manage the data files and database used to support the administrative, user-environment, database management, and operational capabilities of the IBS. **Audience:** chiefly database administrators and system managers, but also emergency management planners and analysts who want to know details of the emergency management data.

The *IBS System Management Guide* defines IBS hardware and software requirements and gives instructions for installing, upgrading, or transferring the IBS software package. **Audience:** system managers.

(a) The IBS program was developed as part of the U.S. Army's Chemical Stockpile Emergency Preparedness Program (CSEPP).

About This Guide

Purpose

The Integrated Baseline System (IBS) is an emergency management planning and analysis tool that was developed under the direction of the Federal Emergency Management Agency (FEMA).^(a) This *Utilities Guide* explains how to operate individual utility programs that are supplied as a part of the IBS. These utility programs are chiefly for managing and manipulating various kinds of IBS data and system administration files. Many of the utilities are for creating, editing, converting, or displaying map data and other data that are related to geographic location.

Scope

This guide is a reference document that provides an operational description for each IBS utility program. Procedures in other documents (such as the *IBS System Management Guide* and the *IBS Data Management Guide*) sometimes refer you to this guide for specific instructions about accomplishing system management and data management tasks.

Although the utility program descriptions vary in detail, each description tells you how to start and interact with the utility to achieve the desired results. The graphic display and editing utilities refer to the *IBS User Guide* for general concepts you should know about using IBS graphic map displays and function menus.

This guide often refers to standard IBS files and file formats. In general these files and formats are not described in detail here, although the guide does include an overview of IBS map data. For detailed descriptions of IBS data files, refer to the *IBS Data Management Guide*. Some system administration files are explained in the *IBS System Management Guide*.

(a) The IBS is being developed by the Pacific Northwest Laboratory (PNL). PNL is operated for the U.S. Department of Energy by Battelle Memorial Institute under contract DE-AC06-76RLO 1830.

Audience

Because this reference guide describes a host of IBS utility programs that are designed for many different purposes, it is addressed to a wide range of IBS users—from emergency management analysts and planners to IBS system managers and database administrators. Almost all the utilities require some knowledge of VAX/VMS computer disk directory and file conventions, if only to locate and use the files on which the utilities operate. Utilities aimed specifically at system managers and database administrators require a thorough knowledge of the VAX/VMS operating system, directory structures, and files.

Organization

This guide consists of the following two sections and four appendixes:

Section 1. Introduction

What you need to know before using the IBS utilities, and how to find the utilities that you need.

Section 2. Utility Program Descriptions

Instructions for how to operate each utility—ordered alphabetically by the utility names.

Appendix A. IBS Topographies (Map Layers)

A list of the names of the standard IBS topographies and the two-character topographic codes associated with each topography.

Appendix B. IBS Attribute Dictionary

A list of the contents of the IBS *attribute dictionary*—the current master set of attributes values that are used to assign physical or other descriptive features to spatial data objects in the IBS.

Appendix C. Map Projections in IBS Map Displays

Background about choosing how the earth's curved surface should be displayed when translated to a two-dimensional map on your terminal screen.

Appendix D. IBS Privilege Listings

Tables that cross-reference IBS programs and program options with IBS user privileges. An IBS system manager or database administrator assigns specific user privileges to control which IBS programs and program options can be used by each user.

How to Use This Guide

If you are looking for the operating instructions to a specific utility, look up the utility in Section 2, which is organized alphabetically by the utility names.

If you are browsing to find a desired function or a utility name, use the capsule utility descriptions in Section 1 to find out what the utilities can do. The capsule descriptions are grouped in overlapping task categories that can help you isolate the function that you need.

If you are working with IBS map data or with the IBS map database, you can use the *Overview of IBS Map Data* at the end of Section 1 as a brief reference on IBS map data terms and concepts. If those topics are unfamiliar to you, refer to the *IBS Data Management Guide* for detailed information.

Visual Conventions

You will find the following typographic conventions in this guide.

Type Style	Meaning
bold	Text that you must type at the keyboard. Example: \$ NEWUSER
<i>italic</i>	Placeholders for information that you must provide. Example: \$ DELETE <i>filename</i> Here you would type the actual name of a file instead of the word shown in italics.
ALL CAPITALS	Directory names, file names, program names, and acronyms
screen text typeface	Nongraphic text that appears on the terminal screen, such as in menus and prompts. Example: Enter a file name ==>
GRAPHIC MENU TYPEFACE	Menu options on graphic screen menus

Contents

Preface	iii
About This Guide	v

Section 1. Introduction

What You Need to Know Before Using the IBS Utility Programs	1.2
Finding the Utilities that You Need	1.3
Background Programs	1.3
General System Utilities	1.4
Graphic Map Display and Editing Utilities	1.4
Data File Modification Utilities	1.5
Data File Conversion Utilities	1.6
Database Administration Utilities	1.7
System Management Utilities	1.8
System Update Utilities	1.9
Diagnostic and Reporting Utilities	1.9
Overview of IBS Map Data	1.10
Map Data Terminology	1.10
IBS Map Databases	1.11
National Map Database	1.11
Components of an IBS Map Database	1.12

Section 2. Utility Program Descriptions

How the Program Descriptions are Organized	2.1
Starting and Using the Utility Programs	2.1
ALLSITE	2.2
What You Need to Know About Using ALLSITE	2.2
Generating a List of IBS Sites with ALLSITE	2.2
APPENDDMS	2.3
Appending One DMS File to Another with APPENDDMS	2.3
ASCIIXDMS	2.4
What You Need to Know Before Using ASCIIXDMS	2.4
Creating a DMS File from a DMX ASCII File with ASCIIXDMS	2.5
ASCXATT	2.6
What You Need to Know Before Using ASCXATT	2.6
Creating a Binary Attribute Dictionary File from an ASCII File	2.6
Results of Using ASCXATT	2.6

Contents

ATTXASC	2.7
What You Need to Know Before Using ATTXASC	2.7
Creating an ASCII Version of a Binary Attribute Dictionary	2.7
Results of Using ATTXASC	2.7
CHAT	2.8
What You Need to Know Before Using CHAT	2.8
Sending a Screen Message to an Individual User	2.8
Sending a Screen Message to All Active IBS Users	2.9
Sending a Screen Message from a Text File	2.9
CLIPDMS	2.10
What You Need to Know Before Using CLIPDMS	2.10
Creating Area Component Files from a DMS File with CLIPDMS	2.10
Clipping a Single Area File from a DMS File	2.10
Clipping Multiple Area Files from a DMS File	2.11
COLORDMS	2.12
CREATETAC	2.13
What You Need to Know Before Using CREATETAC	2.13
Creating a New TAC File with CREATETAC	2.13
CREATLIMITS	2.14
What You Need to Know Before Using CREATLIMITS	2.14
Creating a Binary Limits File with CREATLIMITS	2.14
Entering Data File Names Directly	2.15
Using a List of Data File Names	2.15
Results of Using CREATLIMITS	2.15
DECLUTTER_TOPO	2.16
Background: Using Attributes for Decluttering	2.16
Overview	2.17
Procedure for Applying Decluttering Attributes in a DMS File	2.17
Example of the DECLUTTER_TOPO Procedure	2.21
Using Decluttering Numbers	2.24
Altering the Procedure for a Different Range of Decluttering Numbers ...	2.25
DELPTDB	2.28
What You Need to Know Before Using DELPTDB	2.28
Deleting People Tracking Information with DELPTDB	2.28
DELSITE	2.29
Why delete a site database?	2.29
What You Need to Know Before Using DELSITE	2.29
Deleting a Site Database with DELSITE	2.30
Results of Using DELSITE	2.31

DELUSER	2.32
Why delete user accounts?	2.32
What You Need to Know Before Using DELUSER	2.32
Deleting a User Account with DELUSER	2.33
Results of Using DELUSER	2.33
DLGXDMS	2.34
What You Need to Know Before Using DLGXDMS	2.34
Converting DLG Data to DMS Format with DLGXDMS	2.35
Converting a DLG File <i>with</i> an Attribute (.ATT) File	2.35
Converting a DLG File <i>without</i> an Attribute (.ATT) File	2.36
DMSXASCII	2.37
Reading a DMS File with DMSXASCII	2.37
Creating an ASCII Information File from a DMS File	2.37
Displaying DMS File Information on Your Screen	2.39
DMSXDLG	2.40
What You Need to Know Before Using DMSXDLG	2.40
Converting DMS Data to DLG Format with DMSXDLG	2.40
DMSXFGEF	2.41
Converting DMS Data to Federal Geographic Exchange Format with DMSXFGEF	2.41
EVENT	2.44
What You Should Know About Using EVENT	2.44
Using EVENT	2.44
Restarting the EVENT Program	2.44
Stopping the EVENT Program	2.45
Getting Information about EVENT Transactions: Log and Flag Files	2.45
EXTRACT	2.46
Output File Name	2.46
Type of Extraction	2.46
Decluttering	2.48
Extracting from a Single File	2.48
Extracting from the Current Site DMS Database	2.49
FGEFXDMS	2.51
What You Need to Know Before Using FGEFXDMS	2.51
Converting FGEF Files to DMS Files with FGEFXDMS	2.51
FIX_CASEINDEX	2.52
What You Need to Know Before Using FIX_CASEINDEX	2.52
Updating CASEINDEX.DAT to IBS 1.0 Format with FIX_CASEINDEX	2.52
FIXMAPDB	2.53
FIXSITEDB	2.54

Contents

FLOPYXDMS	2.58
FTPSTART and FTPSTOP	2.59
What You Need to Know Before Using FTPSTART and FTPSTOP	2.59
Starting the Offpost/Onpost Modem Link with FTPSTART	2.59
Stopping the Offpost/Onpost Modem Link with FTPSTOP	2.60
GEDIT	2.61
Description of the GEDIT Software	2.61
What You Need to Know to Before Using GEDIT	2.61
For the Typical User of GEDIT	2.62
For the In-Depth User of GEDIT	2.62
Terminology for Graphic Data Structures	2.62
Starting a GEDIT Session	2.64
Using an Icon Control File	2.64
Specifying the Type of Map Projection	2.64
Specifying Input Files	2.65
Background: Screen Coordinates of Input Files	2.66
Using the GEDIT Menu	2.67
Exit (Save Changes)	2.68
Quit (Ignore Changes)	2.68
Help	2.68
Cancel	2.68
Continue	2.68
Attribute Functions	2.69
Attributes	2.69
Using Attribute Functions	2.70
Convert String to Polygon	2.76
Delete Composite String	2.77
Delete Line Segment	2.78
Delete Sub Polygon	2.79
Display Coordinates	2.80
Form Complex Polygon	2.81
Geometric Functions	2.82
Icon Functions	2.85
Insert	2.90
Merge Strings	2.95
Miscellaneous Functions	2.96
Modify Defaults	2.107
Polygon Fill Functions	2.110
Re-Color-Texture String	2.113
Refresh Screen	2.114
Restore Base Plot	2.115
Text Functions	2.116
Manipulating Text Strings	2.117
Changing Defaults	2.120
Controlling the Display	2.122
Text String Functions	2.123
Unsave Composite String	2.125
Zoom In	2.126
Zoom Out	2.127

LATLONXUTM	2.128
What You Need to Know Before Using LATLONXUTM	2.128
Converting TAC File Coordinate Data with LATLONXUTM	2.129
Results of Using LATLONXUTM	2.129
LINEAR_JOIN	2.130
What You Need to Know Before Using LINEAR_JOIN	2.130
Criteria for Joining Strings	2.130
Strategies for Joining Strings	2.131
Reducing the Number of Strings in a DMS File with LINEAR_JOIN	2.132
Results of Using LINEAR_JOIN	2.133
MAIL_C	2.134
What You Need to Know Before Using MAIL_C	2.134
Restarting the Mail Checking Process	2.134
Results of Using MAIL_C	2.134
MAIL_LIST	2.136
MAKEDMS	2.137
MAPDBGEN	2.139
Why create a "user-defined" map database?	2.139
What You Need to Know Before Using MAPDBGEN	2.139
Creating a User-Defined Map Database with MAPDBGEN	2.141
Results of Using MAPDBGEN	2.144
MAPDBUPDT	2.145
Where Does the Update Data Come From?	2.145
What Are the Requirements of Database Updating?	2.145
What Happens During an Update?	2.147
A Procedure for Updating a DMS Database	2.148
Example of Updating a Database Topography	2.150
MLMGR	2.153
What You Need to Know Before Using MLMGR	2.153
Updating the IBS Mail List	2.154
1 - Adding New Names to the Mail List	2.154
2 - Modifying Information about Users on the Mail List	2.155
3 - Deleting Users from the Mail List	2.156
MODTEXTNM	2.157
Changing the Text File Referenced in a DMS File Header	2.157
Results of Using MODTEXTNM	2.158
MPDISPLAY	2.159
Description of the MPDISPLAY Software	2.160
What You Need to Know to Use the MPDISPLAY Software	2.160
For the Typical User of MPDISPLAY	2.160
For the In-Depth User of MPDISPLAY	2.160
Terminology for MPDISPLAY	2.161

Contents

Starting an MPDISPLAY Session	2.162
Choosing a Region to Display	2.162
Choosing the Type of Map Projection	2.166
Choosing Topographic Features	2.167
Entering the Name of an Edit File	2.169
Using the MPDISPLAY Main Menu	2.170
Exit (Save Edit File)	2.171
Quit (Delete Edit File)	2.171
Help	2.171
Cancel	2.171
Continue	2.171
Attribute Functions	2.172
Edit Functions	2.180
Elevation Functions	2.181
Icon Functions	2.185
Item Display Functions	2.188
Screen View Functions	2.191
Select Topography	2.194
Displaying the List of Topographies	2.195
Picking Topographies from the Menu	2.195
Topographic Codes	2.196
Store Region	2.197
Results of using STORE REGION	2.199
Names of Map Display Data Files	2.199
Summary Functions	2.200
MYTAPE	2.208
NET_BMD	2.209
What You Should Know Before Using NET_BMD	2.209
Building a Master Directory List of Disk, User, and Site Names with NET_BMD	2.209
Results of Using NET_BMD	2.209
NEWSITE	2.210
Why create a new site database?	2.210
What You Need to Know Before Using NEWSITE	2.211
Using NEWSITE to Define an IBS Site Database	2.213
Results of Using NEWSITE	2.217
NEWUSER	2.218
Why create a new user account?	2.218
What You Need to Know Before Using NEWUSER	2.218
Creating or Modifying a User Account with NEWUSER	2.219
Results of Using NEWUSER	2.220
PDMGR	2.222
PLOTDMS	2.224
What You Need to Know Before Using PLOTDMS	2.224
Plotting the Contents of a DMS File with PLOTDMS	2.224

POPXDMS	2.226
What You Need to Know Before Using POPXDMS	2.226
Creating DMS Population Files from Census Bureau STF1B Files	2.227
Example of Converting Data Below the State Level	2.227
Example of Converting State-Level Data	2.228
RMMGR	2.230
What You Need to Know Before Using RMMGR	2.230
Using RMMGR	2.231
Using the FAC, RES, RM Menu	2.231
Using the FT, KP Menu	2.232
Modifying Facility Tracks Information	2.233
Modifying Known Points Information	2.233
Using the AG, PER, POS Menu	2.235
RMMGR_NOGR	2.237
What You Need to Know Before Using RMMGR_NOGR	2.237
Using RMMGR_NOGR	2.237
Using the FAC, RES, RM (Resource Management) Menu	2.238
Using the FT, KP (Facility Tracks, Known Points) Menu	2.239
Using the PER, POS, AG (Personnel Board) Menu	2.239
SEELIMITS	2.241
What You Need to Know Before Using SEELIMITS	2.241
Displaying the Contents of a Limits File with SEELIMITS	2.241
Saving the Contents of a Limits File with SEELIMITS	2.242
SITEBKP	2.243
Why save a backup copy of a site database?	2.243
What You Need to Know Before Using SITEBKP	2.243
Saving a Backup Copy of a Site Database with SITEBKP	2.244
Results of Using SITEBKP	2.245
SM_DUMP	2.246
What You Need to Know Before Using SM_DUMP	2.246
Copying Shared Memory to a File or to the Screen with SM_DUMP	2.246
SM_INIT	2.247
What You Need to Know Before Using SM_INIT	2.247
Initializing Shared Memory Variables with SM_INIT	2.247
SM_READ	2.248
What You Need to Know Before Using SM_READ	2.248
Initializing Emergency Function Variables in Shared Memory with SM_READ	2.248
SM_SET	2.249
What You Need to Know Before Using SM_SET	2.249
Setting Shared Memory Variables with SM_SET	2.249
SMOOTHER	2.250

Contents

STATDMS	2.251
What You Need to Know Before Using STATDMS	2.251
Producing DMS Data Statistics with STATDMS	2.251
Producing a Statistics Report for One DMS File	2.251
Producing a Report of DMS File Statistics for a DMS Database	2.252
TAC3XCONTXDMS	2.254
What You Should Know Before Using TAC3XCONTXDMS	2.254
Creating a Vector Contour File from a TAC File with TAC3XCONTXDMS	2.254
Results of Using TAC3XCONTXDMS	2.254
TBXDMS	2.256
What You Need to Know Before Using TBXDMS	2.256
Creating DMS Boundary Data Files from TIGER/Line Data Files	2.256
TESTICON	2.259
TIGERCVT	2.260
What You Need to Know Before Using TIGERCVT	2.260
Preparing for TIGER-to-DMS Data Conversion with TIGERCVT	2.261
Results of Using TIGERCVT	2.264
Converting Census Bureau Data Using TIGERXDMS.COM, POPXDMS.COM, and TBXDMS.COM	2.265
TIGERCVT Program Messages	2.266
TIGERXDMS	2.268
What You Need to Know Before Using TIGERXDMS	2.268
Creating DMS Data Files from TIGER/Line Data Files	2.269
TIGERXDMS Program Messages	2.270
UPDATEATT	2.272
What You Need to Know Before Using UPDATEATT	2.272
Updating the IBS Attribute Dictionary with UPDATEATT	2.273
A - Adding a New Attribute Record	2.273
C - Changing an Attribute Record	2.274
D - Deleting an Attribute Record	2.274
USERDBGEN	2.275
Example of Using USERDBGEN	2.276
USGS100KXDMS	2.279
Converting USGS Data Files for a Special-Purpose DMS Database	2.279
Requirements to Begin	2.280
Procedure	2.280
Executing USGS100KXDMS in Batch Mode	2.285
Errors Caused by Missing Attribute Codes	2.286
Results of Using USGS100KXDMS	2.286
USGSXDMS	2.287

USGSXTAC3	2.288
What You Need to Know Before Using USGSXTAC3	2.288
Creating TAC Data Files from DEM Data Files	2.288
Results of Using USGSXTAC3	2.288
WHO	2.289

Appendix A. IBS Topographies (Map Layers)

IBS Topographies (Map Layers)	A.1

Appendix B. IBS Attribute Dictionary

IBS Attribute Dictionary	B.1

Appendix C. Map Projections in IBS Map Displays

Why use different map projections?	C.1
Choosing a Map Projection Type	C.1

Appendix D. IBS Privilege Listings

Section 1

Introduction

The Integrated Baseline System (IBS) was developed by the Pacific Northwest Laboratory (PNL) for the Federal Emergency Management Agency (FEMA). This *IBS Utilities Guide* explains how you can use the IBS *utilities*—the utility programs included in the system. With few exceptions, these utilities are programs that support the use of the system by managing and manipulating various kinds of IBS files—rather than by performing tasks directly related to emergency management.

This section explains what you need to know before using the utilities and summarizes the tasks that the utilities were designed to accomplish. To help you find which utilities may be useful for your tasks, this section supplies capsule descriptions of each utility within several overlapping categories:

Tasks Accomplished Using IBS Utilities	In this section see ...	page
Use and monitor background programs that must be running before the system will function properly.	<i>Background Programs</i>	1.3
Use electronic mail; assist tape file transfers; send messages to other IBS users; list current system users	<i>General System Utilities</i>	1.4
Display IBS maps on a graphic terminal screen and edit the map data or associated data.	<i>Graphic Map Display and Editing Utilities</i>	1.4
Create individual map data files or modify their contents.	<i>Data File Modification Utilities</i>	1.5
Convert map data files to and from formats that can be used by the IBS.	<i>Data File Conversion Utilities</i>	1.6
Create, examine, and modify database files and database administration files.	<i>Database Administration Utilities</i>	1.7
Support system management tasks (such as creating user accounts, deleting user accounts, and creating system management files).	<i>System Management Utilities</i>	1.8
Modify certain system and data files to make files from earlier FEMA systems compatible with IBS 1.0.	<i>System Update Utilities</i>	1.9
Display and report information about various data files, database support files, system management files, and shared memory variables.	<i>Diagnosis and Reporting Utilities</i>	1.9

If you are an IBS system manager or database administrator, you can find many utilities that will help you maintain the IBS and keep it running correctly.

If you are an emergency management planner, analyst, or information manager, you are probably most interested in the utilities that manipulate IBS data: the graphic map display and editing utilities, the data file modification utilities, and the database administration utilities.

The rest of this section is divided into three parts:

- *What You Need to Know Before Using the IBS Utility Programs*
- *Finding the Utility that You Need* (capsule descriptions)
- *Overview of IBS Map Data.*

What You Need to Know Before Using the IBS Utility Programs

Before using the utility programs, you must be an authorized user with an IBS user account set up by the system manager. Then when you log in, the system automatically sets up your computer environment so that you have the proper access to IBS programs, directories, and files.

IBS Privileges. You must also have the proper authorizations or *IBS privileges* to use a specific utility program. Because the IBS utilities are designed for a wide range of users, they require a wide range of IBS privileges. Some utilities are for general use and require no special privilege; others are for use only by system managers or database administrators and may also require specific VAX/VMS privileges. If you find that you cannot use a specific utility program because you do not have the necessary privileges, contact your IBS system manager.

Using Your Equipment. You should be familiar with the operation of your computer terminal and with basic IBS interactions, both as described in Section 1 of the *IBS User Guide*. If you plan to use utilities that display graphic maps, you must have a supported graphics terminal with an attached graphic input device such as a mouse, *joydisk*, or *bit pad*.

IBS Map Data. Many of the IBS utilities concern the use of the IBS map database and map data. For this reason, the *Overview of IBS Map Data* later in this section summarizes terms and key concepts about IBS map databases and the Digital Mapping Structure (DMS) map data used by the IBS. For complete information about IBS map data, refer to the *IBS Data Management Guide*.

Finding the Utilities that You Need

The operational descriptions of the IBS utilities are listed *in alphabetical order by utility name* in Section 2 of this guide. To point your way into Section 2, the following sections furnish capsule descriptions of the IBS utilities within several functional or task categories:

- Background Programs
- General System Utilities
- Graphic Map Display and Editing Utilities
- Data File Modification Utilities
- Data File Conversion Utilities
- Database Administration Utilities
- System Management Utilities
- System Update Utilities
- Diagnostic and Reporting Utilities.

You can browse the capsule descriptions to find out what the utilities can do and then refer to Section 2 for more detail.

Some utilities occur in more than one category. For example, the *Diagnostic and Reporting Utilities* consist entirely of utilities found in other categories. Other utilities (such as the *Data File Conversion Utilities*) are restricted to a single category when they could be considered a special subset of a broader category (such as the *Database Management Utilities*).

Background Programs

The following programs are batch processes that normally start automatically when the computer system is started. These programs should *always* be running: they are necessary for other system functions to work correctly. Only the system manager or someone with the appropriate system privileges can restart these programs if they stop for some reason. (See also FTPSTART and FTPSTOP under *System Management Utilities*.)

Utility Name	Purpose / Description
EVENT	detects data sent from the onpost system and then informs IBS users or takes other appropriate actions
MAIL_C	checks the mail file of each IBS user once per minute and displays mail status messages

General System Utilities

The following general system utilities are of use to all IBS users and require no special privileges. The CHAT, MYTAPE, and WHO utilities have been added to the system as operating system commands.

<u>Utility Name</u>	<u>Purpose / Description</u>
CHAT	enables you to send messages to other people who are logged in to the system
MAIL_LIST	enables you to use electronic mail features; duplicates the mail features of Message Board in the IBS program
MYTAPE	simplifies tape file transfers between VAX systems and between VAX systems and other systems
WHO	lists the current users logged in to the system and their current processes

Graphic Map Display and Editing Utilities

These utility programs all display IBS graphic map data. Three of the programs—GEDIT, MPDISPLAY, and RMMGR—are interactive programs that enable you to modify and save map data or associated information.

<u>Utility Name</u>	<u>Purpose / Description</u>
GEDIT	provides tools for interactive graphic display and editing of DMS files
MPDISPLAY	graphically displays and stores map information from the IBS map database
PLOTDMS	displays graphic data from a DMS file
RMMGR	displays maps with resource and facility icons; enables you to update the contents of the personnel, resources, and facilities databases; duplicates features of Resource Management and Personnel Management in the IBS program.

Data File Modification Utilities

You can use the following utilities to produce individual map data files and to examine or modify their contents. Most of these utilities operate on DMS data files; a few operate on Terrain Analysis Cell (TAC) data files. These programs are all text-based programs: graphic map display and editing utilities are listed separately. Data file conversion utilities are also listed in a separate category.

Utility Name	Purpose / Description
CREATETAC	TAC File Utility: creates a TAC file with specified extents and uniform cell values
LATLONXUTM	TAC File Utility: converts TAC files both ways between the longitude-latitude coordinate system and the universal transverse mercator (UTM) coordinate system
APPENDDMS	appends one DMS file to another
CLIPDMS	clips a specific area of data from a DMS file to create one or more new DMS files; subdivides a DMS file into new DMS files based on longitude-latitude steps
EXTRACT	extracts selected data from a DMS file or database to create one or more new DMS files
COLORDMS	modifies a DMS file so that all features have one color
DECLUTTER_ TOPO	adds a <i>decluttering attribute</i> to a DMS file
MODTEXTNM	enables you to modify the name of the text file referenced in the header of a DMS file
LINEAR_JOIN	reads a single DMS file and joins any vector strings that have closely matching end points and common attributes
SMOOTHER	reduces the number of coordinate points that compose strings in a DMS file

Data File Conversion Utilities

The data conversion utilities convert map data files from one format to another, preserving the original files and creating new files in the second format. Reciprocal utilities for converting to and from DMS format are paired in the following list.

Utility Name	Purpose / Description
ASCIIXDMS & DMSXASCII	reads a "DMX" file (a specially formatted ASCII data file) and creates a new DMS file reads and reports the contents of DMS files; can create a "DMX" formatted ASCII file
DLGXDMS & DMSXDLG	reads a map data file in the USGS Digital Line Graph (DLG) <i>optional</i> format and creates one or more DMS files reads a DMS file and creates a new file in the USGS DLG <i>optional</i> format
FGEFXDMS & DMSXFGEF	reads an Federal Geographic Exchange Format (FGEF) data file and creates a new DMS file reads a DMS file and creates a new FGEF data file
MAKEDMS	creates a DMS file from a specially formatted sequential ASCII file
TIGERCVT	<i>For TIGER data:</i> creates command files for executing the POPXDMS, TIGERXDMS, and TBXDMS utilities
TIGERXDMS	<i>For TIGER data:</i> creates DMS data files from TIGER/Line data files provided by the Bureau of the Census
POPXDMS	<i>For TIGER data:</i> creates DMS data files from STF1B population data files provided by the Bureau of the Census
TBXDMS	<i>For TIGER data:</i> creates DMS boundary data files from TIGER/Line data files provided by the Bureau of the Census
FLOPYXDMS	creates DMS files from data files derived from USGS "status" files
USGS100KXDMS	creates a DMS file from a USGS DLG <i>standard</i> format file of 1:100,000-scale data (with some attribute conversion)
USGSXDMS	reads data files in USGS DLG <i>standard</i> format and creates new DMS files (without attribute conversion)
USGSXTAC3	creates TAC files from USGS Digital Elevation Mapping (DEM) data
TAC3XCONTXDMS	produces a DMS file of vector contours based on cell data from a TAC file

Database Administration Utilities

The following utilities are for database administration tasks associated with IBS site databases and functional databases. These include programs for creating and modifying data-level control files and for creating, modifying, archiving, and deleting databases.

Utility Name	Purpose / Description
ASCXATT & ATTXASC	creates an IBS <i>attribute dictionary</i> from a specially formatted ASCII file (reverses ATTXASC) creates a specially formatted ASCII file from an IBS <i>attribute dictionary</i> file (see ASCXATT)
UPDATEATT	enables an authorized user to update the IBS <i>attribute dictionary</i>
CREATLIMITS	creates a binary <i>limits file</i> to support one topography in a DMS database
SEELIMITS	reads and reports the contents of a binary <i>limits file</i>
TESTICON	checks to make sure that all the icons listed in the <i>icon control file</i> (MAP\$ICON\$CTL) are valid
MAPDBGEN	extracts a portion of a map database to create a separate "user-defined" map database
USERDBGEN	generates a command file for extracting selected objects from a DMS map database to create a separate "user-defined" database
Note: MAPDBGEN is the preferred database generation utility. See the description of USERDBGEN in Section 2.	
MAPDBUPDT	enables you to update a DMS database by adding new or modified files of topography data
DELPTDB	removes old data and resets startup values in the people tracking database used by the LOCATE program
RMMGR	displays maps with resource and facility icons; enables you to update the contents of the personnel, resources, and facilities databases
RMMGR_NOGR	enables you to update the contents of the personnel, resources, and facilities databases from a nongraphic terminal
NEWSITE	creates directories and assembles topographic, population, and other data files for a user's <i>site database</i>
DELSITE	deletes an entire site database from a user's directory
SITEBKP	makes an archival copy of your current site database

System Management Utilities

The following utilities support miscellaneous system management tasks for the IBS. For contexts concerning the use of these utilities, refer to the *IBS System Management Guide* and the *IBS Data Management Guide*.

Utility Name	Purpose / Description
NEWUSER	creates new IBS user accounts
DELUSER	deletes an IBS user account along with all the user's directories and files
PDMGR	changes IBS program privileges for IBS users
ALLSITE	creates ALLSITE.DAT, a listing of the locations of all user sites known to the system (which is used by NET_BMD)
NET_BMD	builds a master directory list of the valid disk names, user names, and site names on the system
SM_DUMP	reads and reports the current contents of the IBS <i>shared memory block</i>
SM_INIT	initializes the variables stored in the IBS <i>shared memory block</i>
SM_READ	initializes the Emergency Function shared memory variables that are used by the Implementing Procedures (IPs) in the IBS program
SM_SET	shows the current values of some of the shared memory variables and enables you to change them
MLMGR	enables an authorized person to add or delete names from the system master mailing list
FTP_START	establishes the modem link between compatible onpost and offpost systems supporting the Chemical Stockpile Emergency Preparedness Program (CSEPP)
FTP_STOP	stops the modem link established by FTP_START

System Update Utilities

The system update utilities are designed for use on earlier FEMA systems that are being updated to use the IBS. These programs modify certain system and data files to make the files compatible with IBS 1.0. These programs are generally intended for one-time use: once you have updated the necessary files, the utilities are no longer necessary. If your system is a new installation, you can ignore these programs. Refer to the *IBS System Management Guide*.

Utility Name	Purpose / Description
FIX_CASEINDEX	updates the index of model case numbers (CASEINDEX.DAT) to conform with the format required by IBS 1.0
FIXMAPDB	converts pre-IBS 1.0 <i>map</i> databases to IBS 1.0 format
FLXSITEDB	converts pre-IBS 1.0 <i>site</i> databases to IBS 1.0 format

Diagnostic and Reporting Utilities

These utilities display and/or report information about various parts of the IBS: data files, database support files, system management information, and variables in shared memory.

Utility Name	Purpose / Description
DMSXASCII	reads and reports the contents of DMS files (see ASCIIXDMS)
STATDMS	computes and displays summary statistics for attributes and objects in a DMS file
ATTXASC	creates a specially formatted ASCII file from an IBS attribute dictionary file (see ASCXATT)
SEELIMITS	reads and reports the contents of a binary <i>limits file</i>
TESTICON	checks to make sure that all the icons listed in the <i>icon control file</i> (MAP\$ICON\$CTL) are valid
ALLSITE	creates ALLSITE.DAT, a listing of the locations of all user sites known to the system (which is used by NET_BMD)
SM_DUMP	reads and reports the current contents of the IBS <i>shared memory block</i>
SM_SET	shows the current values of some of the shared memory variables and enables you to change them

Overview of IBS Map Data

The Integrated Baseline System (IBS) includes a geographic database and computer programs for the storage, graphic display, and editing of map-related data. These programs and database are the basic elements of the IBS's geographic information system (GIS), which is used to manage and manipulate data that are related to geographic location. These GIS functions extend into the emergency management modeling portion of the system, where they are used to graphically depict modeling results overlaid on site maps.

This section summarizes IBS map data concepts and terms used in many of the utility program descriptions in Section 2 of this guide. For complete details on IBS data and data management, please refer to the *IBS Data Management Guide*.

This overview includes the following topics:

- Map Data Terminology
- IBS Map Databases
  - National Map Database
  - Components of an IBS Map Database

Map Data Terminology

The following paragraphs define IBS map data terms that you should understand.

- **Digital Mapping Structure (DMS)** -- Digital Mapping Structure is the data file format used to store graphic data for use by the IBS mapping functions (such as the MPDISPLAY map display program and the GEDIT graphic editing program). DMS files typically contain line or irregular point data depicting topographic features (such as boundaries, railroads, or hospitals) at particular longitude-latitude locations. DMS files have ".DMS" as the file name extension. For more information on DMS files and format, see the *IBS Data Management Guide*.
- **Graphic data structures** -- DMS files can describe several kinds of *point-vector* graphic data structures for depicting map data items. These include:
  - *points* (zero-dimensional locations)
  - *line segments* (one-dimensional lines between two points)
  - *strings* (connected series of line segments)
  - *polygons* (closed strings)
  - *complex polygons* (multiple polygons)
  - *composite strings* (strings, polygons, and complex polygons).

- **IBS Map Database** -- The IBS map database for your site is a DMS database that contains site geographic information for shared use by all users. The database is generated by consolidating geographic information from various national, state, and local sources. For detailed information on the IBS map database, please refer to the *IBS Data Management Guide*.
- **Icon** -- Icons are graphic figures that can be associated with a particular point on a map. They always appear at a constant viewing size, regardless of the map scale. They provide a consistent means of representing facilities, resources, or any repeating topographic features that occur at point locations. A standard set of icons is available for use in the IBS.
- **Terrain Analysis Cell (TAC) data** -- This is the name of the data file format used to store *cell* data, which are numeric values associated with the cells of a regularly spaced grid. The only TAC data in the IBS map database is elevation data. The utilities that support the use of TAC elevation files are MPDISPLAY, GEDIT, USGSXTAC3, and TAC3XCONTXDMS. TAC data sets (.TAC and .TAA files) are defined in the *IBS Data Management Guide*.
- **Topography** -- In general terms, a topography is a graphic description of a geographic region. In the IBS, a topography (or *map layer*) is a set of DMS data files for depicting map features that have a common theme. For example, "railroads," "streams," and "water bodies" are all different topographies used by the IBS map database.

IBS Map Databases

IBS geographic map databases store graphic data that represent geographic features at specific longitude-latitude locations. These databases use the Digital Mapping Structure (DMS) file format and software developed for FEMA by the Pacific Northwest Laboratory.

National Map Database

FEMA maintains a National Map database that contains DMS map data for all 50 of the United States. This data is derived primarily from the 1:2,000,000-scale sectional maps of the National Atlas as distributed by the United States Geological Survey (USGS). Although most of the data is *vector* (point-line) data and text data that follow DMS conventions, the database also includes some 1:250,000-scale elevation data (*cell* data in the TAC format, NOT the DMS format). The National Map database is one source of data for building the map databases for each IBS site. Other sources are specified in the *IBS Data Management Guide*.

Components of an IBS Map Database

You do NOT need to know about the detailed structure of an IBS map database to display maps or map-related data. However, if you plan to examine, copy, or edit specific data, refer to the following summary of DMS database components. Details on actual DMS file and data structures are described in the *IBS Data Management Guide*. The rest of this section includes the following topics:

- Map Database Directories and Files
- Attributes and Attribute Dictionary.

Map Database Directories and Files

A map database consists of special support files and data files distributed within various subdirectories of an overall database directory. Figure 1.1 illustrates the basic directory structures and files in an IBS map database. (Although several other structures and files support a map database, these are the basic ones.) Specific directory and file names are shown in upper-case letters. Variable parts of file names and directory names are shown in lower-case letters.

Figure 1.1. IBS Map Database Directories and Files

The components of a map database (as depicted in Figure 1.1) are the following:

- **[map]**   The main (top-level) directory of the database. This may be a root directory or any subdirectory.
- **SETUPDB.COM**   *Setup control file.* This is a command file that assigns logical names so that the files of the DMS database can be accessed by the IBS software. The setup control file identifies the *topography control file* and the *topography description file* listed below.
- **TOPOCTL.FIL**   *Topography control file.* This control file contains the number and names of DMS file "cover maps" that depict one or more geographic areas within the database.
- **TOPODESC.FIL**   *Topography description file.* This control file lists the different topographies and the database directories where the topographic data reside.
- **[map.ATT]**   *Attribute dictionary directory.* This directory contains the *attribute dictionary* referenced by the database.
- **ATTRIBDIC.BIN**   *Attribute dictionary.* This is the binary file that defines the attributes that can be assigned to objects in a DMS file.
- **[map.ICON]**   *Icon directory.* This directory contains the *icon control file* referenced by the database.
- **ICON.CTL**   *Icon control file.* This ASCII file contains a list of the available icons and the names of the icon data files needed to draw each icon.
- **iconname.DMS**   *Icon data file.* This is a DMS file that contains the graphic data for one icon figure. Only the graphic description is contained in an icon data file. Specific location information is associated with *icon seed points*, which are stored in the topography data files.
- **[map.xx]**   *Topography subdirectories.* Each of these subdirectories contains all the data for one of the topographies listed in the topography description file. The name of the subdirectory is a two-letter *topographic code* assigned to that topography (see *Topographic Codes* on the next page).
- **LIMITxx.BIN**   *Topography Limit File.* This binary file specifies the names and geographic extents of all the DMS files (or TAC files) that make up the topography in that subdirectory.

- ***datanamexx.DMS*** ***Topography data file*** (one or more files of DMS topographic data in the subdirectory). The front part of the file name may be any descriptive name, but most file names end in "xx.DMS" where the two-letter topographic code is substituted for xx.
- ***dataname.TXT*** ***Text data file***. These files contain text labels or supplementary text information about features within DMS files. The DMS files contain no text but do contain the name of a separate text data file.
- ***datanameEL.TAC*** ***TAC header file***. This file is the first half of a TAC data set. It contains information about the cell data stored in the .TAA file.
- ***datanameEL.TAA*** ***TAC data file***. This file is the second half of a TAC data set. It contains the cell data described in the .TAC file.

More detailed descriptions and examples of these database components are supplied in the *IBS Data Management Guide*.

Topographic Codes. Each topography is associated with a two-letter topographic code that is used in the topography subdirectory and data file names. For example, AB signifies administrative boundary data. The administrative boundary data would reside in the [map.AB] subdirectory and consist of files named *filenameAB.DMS*. (The exception to this rule is the elevation topography, which would reside in the [map.EL] subdirectory and consist of files named *filenameEL.TAC* and *filenameEL.TAA*.) The topographic codes for standard IBS topographies are listed in Appendix A.

Attributes and Attribute Dictionary

Topographic data in DMS files are geographically defined by longitude-latitude and topologically defined as *points* or *composite strings*. Further database description of DMS data items is accomplished through *attributes*. Attributes are numeric values used to describe data items or some characteristic of data items. The main attribute values are the following three numbers:

- a ***Major attribute code*** (to indicate a major topographic group)
- a ***Minor attribute code*** (to indicate a feature within the group)
- a ***Parameter value*** (which *may* supply data about the specific feature).

These attribute values are often depicted as three numbers separated by semicolons: Major;Minor;Parameter. For example, 1;560;100 indicates a Major code of 1, a Minor code of 560, and a Parameter value of 100.

A special file called an *attribute dictionary* defines the meaning of each Major;Minor pair of attribute codes by associating the codes with a text description. For example, the attribute dictionary defines the following attribute code pairs:

Major	Minor	Description
1	0	HYDROGRAPHY
1	560	Lake or pond (permanent) (decameters)

The Major code of 1 indicates the major topographic group, hydrography. Notice in the second example that the parameter value is defined in parentheses at the end of the text description. Attribute codes may be specified without a parameter value; some attribute codes do not even *have* a parameter value defined. For example, the attribute dictionary defines 1;500 as just "Aqueduct."

The attribute dictionary for the standard IBS map database is listed in Appendix B.

Up to 15 attributes (Major;Minor;Parameter sets) can be assigned to a particular composite string or point in a DMS file. The attributes of a composite string usually identify the string as representing a topographic feature. The attributes of a point can identify that point as:

- an *icon seed point*: the location of an icon
- a *text seed point*: the location of a piece of text
- an *item point*: a point location that has only attributes without being associated with particular graphics or text.

Text attributes point to the location of text in a text data file. Any DMS data item can have text associated with it through its attributes. The name of the text data file is stored in the *DMS file header*, the initial portion of the DMS graphics file.

The MPDISPLAY documentation in Section 2 explains how you can view the attributes of items on the screen or use attributes as selection criteria for items to be displayed. For example, you can choose to display all lakes, only permanent lakes, or just permanent lakes that are smaller than 100 decameters across (see *Attribute Functions* in the description of MPDISPLAY).

The GEDIT documentation in Section 2 explains how you can assign attribute codes to data items (see *Attribute Functions* in the description of GEDIT).

Section 2

Utility Program Descriptions

This section explains the operation of individual IBS utility programs.

How the Program Descriptions are Organized

The program descriptions in this section appear in *alphabetical order by utility name*. We expect that you are looking up utilities named in other documents or in Section 1 of this guide. If you are browsing to find a desired function or a utility name, refer to the capsule descriptions of each utility, in Section 1. The capsule descriptions there are grouped in general task categories.

Starting and Using the Utility Programs

Startup commands are always specified in the utility program description. To start one of the utilities (in general), type the name of the utility at the VAX system prompt (which is often the dollar sign, \$) and then press the RETURN key:

```
$ utilityname <RETURN>
```

A few of the utilities require that you enter a complete command string instead of just the utility name:

```
$ RUN IEMIS$EXE:utilityname <RETURN>    (for program files)
or $ @IEMIS$EXE:utilityname <RETURN>    (for command files)
```

Examples of Interactions. The program descriptions include examples of program prompts and user responses. A sequence of interactions may be boxed like this with simulated responses shown in **bold typeface**:

```
$ ASCIIXDMS
Enter input DMS file name (DMS)      ==> MYFILE
Enter output list file name (DMX) [TT:] ==> MYFILE
```

Default Values and File Names. Default responses to program prompts may appear in brackets at the end of the prompt. To use this default, just press RETURN instead of entering the value. When a utility asks you to enter the name of a DMS file, you can enter a file name without the .DMS extension: the extension .DMS is appended to the file name automatically.

ALLSITE

The ALLSITE utility is a system management utility that generates a list of the locations of all user sites on the current system node. The only purpose of this list is to serve as input to the NET_BMD utility. The NET_BMD utility uses the list to create a binary file that in turn supports IBS capabilities to copy site and model case data between IBS users. The list of site locations is a temporary file named IEMIS\$SYFILES:ALLSITE.DAT.

What You Need to Know About Using ALLSITE

You must have system privilege (SYSPRV) to be able to use the ALLSITE utility. Before the utility can be used for the first time, the IBS system manager must edit the command file, [ISYFILES]ALLSITE.COM, to include system disk names. Documentation within the ALLSITE.COM file explains how to do this.

The ALLSITE utility is always used with NET_BMD in a two-step procedure:

1. Use ALLSITE to generate the site list for NET_BMD.
2. Use NET_BMD. (See NET_BMD in this guide.)

This procedure can be followed in three situations:

- when you first install the IBS on your computer system
- after you add an IBS site or user account to the system
- after you delete an IBS site or user account from the system.

Note: As a practical matter, you need not use ALLSITE when you add an IBS site because the NEWSITE utility updates ALLSITE.DAT anyway. NET_BMD must still be used to update the system, however.

Generating a List of IBS Sites with ALLSITE

To start the utility, just enter ALLSITE at the system prompt. That's all there is to it. The following example shows ALLSITE being used before NET_BMD:

```
$ ALLSITE
$ RUN IEMIS$EXE:NET_BMD
```

APPENDDMS

The APPENDDMS utility appends one DMS file to another to create a *new* DMS file that contains the data from both files. You can use APPENDDMS to merge a set of small DMS files together to create a single file. It is most often used to consolidate a group of common DMS files to create a new topography that can be output using IBS map display software, such as MPDISPLAY.

Appending One DMS File to Another with APPENDDMS

To start the utility, just enter APPENDDMS at the system prompt. A new version of the "appended to" file is always created. For example:

```
$APPENDDMS  
APPEND File > LITTLE.DMS  
To > BIG.DMS
```

This interaction causes a new version of BIG.DMS to be created with the data from LITTLE.DMS appended to it.

An example of how you can display the combined file is to change the file's name to match a topography of a "stored region" that was created using MPDISPLAY or GEDIT. You can then use MPDISPLAY to retrieve and display the stored region and the new topography.

ASCIIXDMS

The ASCIIXDMS utility creates a DMS file from a standard ASCII data file *when the ASCII file has the proper "DMX" file format*. Such an ASCII file could be created by a query from a DMS database, by a data conversion program (such as DMSXASCII), or by entering the data manually. For example, you can use the DMSXASCII utility to create an editable ASCII file from a DMS data file. After editing the ASCII file, you can use ASCIIXDMS to create a DMS data file from the edited ASCII file.

What You Need to Know Before Using ASCIIXDMS

The key to using ASCIIXDMS is being certain that the ASCII source file is properly formatted. To see the format of a *DMX-formatted ASCII file*, you can use the DMSXASCII utility to read a DMS file and produce its ASCII equivalent: a DMX file (see DMSXASCII). To understand what information is included in a DMX-formatted ASCII file, you can also use the DMSXASCII utility to produce a *commented* ASCII file that identifies the included numeric data.

The following paragraphs summarize the contents of a DMX file. For detailed information on the DMX file format, refer to the *IBS Data Management Guide*.

The first record of the DMX file contains the name of the *text file* that will be associated with the new DMS file if DMS text files are created. The name of the text file must have 12 characters or less, including a .TXT extension. An example of a valid text file name is NEWDATA.TXT: it is 11 characters long and has the correct extension.

The rest of the DMX file contains information that describes the graphical data types and attributes to be converted to DMS format. The information for one data type (point, line, or polygon), its associated attributes, and location (longitude-latitude) requires more than one record. These records are ordered as follows:

1. **data type header** (always)
2. **text information** (if the data type is text)
3. **polygon descriptors** (if the data type is a complex polygon)
4. **data points** (always).

The commented output from the DMSXASCII utility lists the data type definition required by the ASCIIXDMS utility.

Note: You must NOT use *commented* output from DMSXASCII as input to the ASCIIXDMS utility. If you wish to modify a DMS file by converting it to DMX-formatted ASCII form, editing the DMX file, and then converting it back to DMS form, use only *uncommented* output from DMSXASCII.

Creating a DMS File from a DMX ASCII File with ASCIIXDMS

The following example sequence would convert the ASCII data stored in the file called "MYFILE.DAT" to DMS format, creating a file called "CONVERTED.DMS":

Example:

```

$ASCIIXDMS
Enter name of input ASCII file (DMX) ==> MYFILE.DAT
Enter name of output DMS file (DMS) ==> CONVERTED.DMS

* * * MSG: # of Records processed:      534
* * * MSG: Done
  
```

The ASCIIXDMS utility asks you to specify the following items:

<i>name of input ASCII file</i>	This is the name of the special DMX-formatted ASCII file that ASCIIXDMS will read. If you do not specify a file name extension, the .DMX file extension is assumed. CTRL-Z cancels the program at this point.
<i>name of output DMS file</i>	This is a name for the new DMS file. If you do not specify a file name extension, the .DMS extension is used. You can also do the following instead of entering the output file name:

<u>Your Response</u>	<u>Result / Comments</u>
RETURN	Uses the same name as the ASCII file but with the .DMS extension.
CTRL-Z	Cancels the program at this point.

ASCXATT

The ASCXATT utility reads an ASCII text file version of an IBS *attribute dictionary* file and creates the binary attribute dictionary file. The binary form of the file is used to assign physical or other descriptive features to topographic data in the IBS. A complementary utility, ATTXASC, reverses the process to produce an ASCII version of the binary file. A database administrator can modify the ASCII attribute dictionary file and then convert the ASCII file back into binary form by using the ASCXATT utility. This is a means of modifying the attribute dictionary.

What You Need to Know Before Using ASCXATT

The utility prompts you to specify only two items:

<i>input ASCII file name</i>	This is the name of the ASCII attribute dictionary file. The extension .BIX is the IBS convention for an ASCII file translated from a binary attribute dictionary.
<i>output Dictionary file name</i>	This is the name of the binary attribute dictionary file to be created. The IBS master attribute dictionary is ATTRIBDIC.BIN, which is located in the MAP\$ATTRIB directory.

Creating a Binary Attribute Dictionary File from an ASCII File

To start the utility, enter ASCXATT at the system prompt. The following sequence is an example of using the utility to produce a binary attribute dictionary file, ATTRIBDIC.BIN.

```
$ ASCXATT
Enter input ASCII file name [ATTRIBDIC.BIX] ==> ATTCODES
Enter output Dictionary file name [MAP$ATT...] ==> <RETURN>
```

Results of Using ASCXATT

This produces a binary attribute dictionary file that contains the attribute codes (major code, minor code, parameter value) and other data for each item in the specified attribute dictionary. For details of the attribute dictionary file formats, see the descriptions of ATTRIBDIC.BIX and ATTRIBDIC.BIN in the *IBS Data Management Guide*.

ATTXASC

The ATTXASC utility reads a binary IBS *attribute dictionary* file and creates a ASCII text file version of the same information, which you easily read or edit. The attribute dictionary, ATTRIBDIC.BIN, identifies and interprets the attributes of objects in a DMS database. A database administrator can modify the ASCII attribute dictionary file and then convert the ASCII file back into binary form by using the ASCXATT utility. This is a means of modifying the attribute dictionary.

What You Need to Know Before Using ATTXASC

The utility prompts you to specify only two items:

<i>input dictionary file name</i>	This is the name of the binary attribute dictionary file. The IBS master attribute dictionary is ATTRIBDIC.BIN, which is located in the MAP\$ATTRIB directory.
<i>output file name</i>	This is the name of the ASCII file to be created. If you do not specify a file name, the name ATTRIBDIC.BIX is used. The extension .BIX is the IBS convention for an ASCII file translated from a binary attribute dictionary.

Creating an ASCII Version of a Binary Attribute Dictionary

To start the utility, enter ATTXASC at the system prompt. The following example sequence produces an ASCII file named ATTCODES.BIX.

```
$ ATTXASC
Enter input dictionary file name [MAP$ATT...] ==>
MAP$ATTRIB:ATTRIBDIC.BIN
Enter output file name [ATTRIBDIC.BIX] ==> ATTCODES.BIX
```

Results of Using ATTXASC

This produces an ASCII file that lists the attribute codes (major code, minor code, parameter value) for each item in the specified attribute dictionary. Also listed are the default pen type, default line type, decluttering code, and decluttering scale factor for each item. You can edit this ASCII file so that it can be used as input to the ASCXATT or DECLUTTER_TOPO utilities. For details of the ASCII attribute dictionary file format, see the description of ATTRIBDIC.BIX in the *IBS Data Management Guide*.

CHAT

The CHAT utility enables you to send messages to other people who are logged in to the system. The people who receive the messages will see the messages on their terminal screens. This is not "E-mail" but rather a quick way of sending short messages to individual users or to all users who are currently working on the system. The message temporarily interrupts whatever is happening on the users' screens, so keep this in mind.

What You Need to Know Before Using CHAT

If you want to send a message to one person, you must know that person's **terminal code**. To see a list of the terminal codes for people who are logged in to the system, use the WHO command. The WHO command utility produces a listing of all current system users.

Example of WHO:

```
$ WHO
```

Terminal	Username	Process Name	Project	PID	Current Images
OPAO	SYSTEM	MANAG_0944	SYSTEM	000944	
TXA3	J_SMITH	J_SMITH_0768	USER	000768	MAIL
TXA5	M_JONES	M_JONES_0761	USER	000761	IBS

To send a message to user J_SMITH, you would need to know that J_SMITH's terminal code is TXA3.

Sending a Screen Message to an Individual User

To send a message to one person, enter the following at the system prompt:

```
$ CHAT terminal-code
```

where you insert the person's actual terminal code. The utility then prompts you to type the message and end it by pressing CTRL-Z.

For example, the following interaction sends a message to the user on terminal TXA3:

Example:

```
$ CHAT TXA3
Enter text (terminate with <Ctrl-Z>)
>This is a message to test that CHAT works OK. <RETURN>
>If it doesn't work, you'll never know. <CTRL-Z>
```

The message may be several lines long. Press RETURN at the end of each line to start the next line. When you complete the message that you want to send, press CTRL-Z to finish and send the message.

Sending a Screen Message to All Active IBS Users

To send a message to *all* IBS users who are logged on the system, use the /IBS_USERS qualifier instead of typing an individual user's terminal code:

```
$ CHAT /IBS_USERS
```

The message that you send then appears on all active IBS terminals. The /IBS_USERS qualifier works by sending the message only to active system users who are listed in the IBS permissions file (PERMITI.DAT). If this file is not found, or if another error occurs, then all active terminals on the general system will receive the message.

Sending a Screen Message from a Text File

Instead of typing a message, you can instruct the CHAT utility to display the contents of an existing text file. To send a message from a text file, use the /INPUT=*filename* qualifier. For example, to display the text file MYNOTE.DAT to all terminals, you can type the following:

```
$ CHAT /ALL /INPUT=MYNOTE.DAT
```

CLIPDMS

The CLIPDMS utility enables you to subdivide a single DMS data file based on fixed longitude-latitude step sizes, creating one or more new DMS files that each contain part of the data from the original DMS file. This utility is useful when you need to create a DMS database from a single large data file, or when you wish to extract a particular area from within a given file. CLIPDMS is a text program and can be executed from a nongraphic terminal.

What You Need to Know Before Using CLIPDMS

You can use CLIPDMS in two ways: 1) you can create a single DMS file that is "clipped" from a larger DMS file, or 2) you can create multiple DMS files, each clipped to the same area extents. In the first case you must know the longitude-latitude extents of the area that you want to clip. In the second case, you must know a starting longitude-latitude and decide on a fixed longitude-latitude step size for subdividing the original DMS file.

Creating Area Component Files from a DMS File with CLIPDMS

To start the utility, enter CLIPDMS at the system prompt. The utility begins asking whether a single area is to be selected:

```
$CLIPDMS
Is a single area to be selected >
```

If you want to create a single file, answer Y.
If you want to create several files, answer N.

Clipping a Single Area File from a DMS File

If you choose to create a single file, CLIPDMS prompts you for input and output file names followed by the longitude-latitude extents of the area to be selected. The following example illustrates the creation of a file called NEWMAP.DMS covering longitude -110 to -108 and latitude 42 to 43.5 from a file called BIGMAP.DMS.

\$CLIPDMS

```
Is a single area to be selected > yes
Enter Input File Name > BIGMAP.DMS
Enter Output File Name > NEWMAP.DMS
Enter LIMITS XN,XX,YN,YX > -110, -108, 42, 43.5
```

Clipping Multiple Area Files from a DMS File

If you choose to cut the DMS file into several smaller area files, CLIPDMS prompts you for the input filename, a five-character designator that all new files will use as the basis for their names, the starting longitude-latitude for file creation, and the longitude-latitude step sizes to be used when determining the limits of the new files. For example, the following sequence subdivides the file BIGMAP.DMS (spanning the area of -105 to -90 longitude and 34 to 45 latitude) into multiple files, each containing data for 1 degree of longitude and 1/2 degree of latitude.

\$CLIPDMS

```
Is a single area to be selected > no
Enter Input filename > BIGMAP.DMS
Enter 5 character File Designator > NEWMP
Enter Starting Longitude, Latitude > -105, 34
Enter Longitude, Latitude step sizes > 1, .5
```

The first file created (NEWMP0001.DMS) will then contain data clipped to (-105, -104) degrees longitude and (34, 34.5) degrees latitude. Subsequent files are created until the complete extent of BIGMAP.DMS is covered. When CLIPDMS creates multiple files in this way, it also creates a binary *limit file* (LIMIT.BIN) that can be used if the new files are intended to be topography files for a DMS database. The limit file is a support file that lists the names and extents of a set of DMS topography files. (See CREATLIMITS.)

COLORDMS

The COLORDMS utility modifies all features within a DMS file such that they will be displayed using a single color.

Upon initialization, the program requests that you enter the input filename, output filename, and pen number (color) to be used during display. For example:

```
$COLORDMS  
Enter Input Filename > OLD.DMS  
Enter Output Filename > NEW.DMS  
Enter New Pen Number > 6
```

creates NEW.DMS from OLD.DMS with all pen numbers in NEW.DMS being equal to 6.

CREATETAC

The CREATETAC utility creates a Terrain Analysis Cell (TAC) data file with longitude-latitude extents and a uniform cell value that you specify. This capability in the IBS is intended only for supporting elevation data files and the sound impedance files used by the Outdoor Sound Propagation (OSPM) siren model.

What You Need to Know Before Using CREATETAC

The utility prompts you for the following items:

<i>NAME OF TAC FILE</i>	This is the name of the TAC file to be created. If you do not specify a path name with the file name, the file is created in your default directory.
<i>LONGITUDE, LATITUDE</i>	These are the extents of the new TAC file, the minimum and maximum longitude and latitude.
<i>NUMBER OF COLUMNS, NUMBER OF ROWS</i>	This is the grid size of the new TAC file: the columns and rows in the grid of cells.
<i>CELL VALUE</i>	This is the data value that will be stored for all cells of the file.
<i>SIZE OF DATA TYPE</i>	This is the number of bytes to be used for each cell data value. A value of 1 designates the data type as "byte," for example.

Creating a New TAC File with CREATETAC

To start the utility, enter CREATETAC at the system prompt. The following sequence is an example of using CREATETAC. As a result of this sequence, the utility would create a new file named TESTOSPM1.TAC (and the associated file TESTOSPM1.TAA) with a grid size of 500x600 cells and a 1-byte value of zero in all cells.

```
$ CREATETAC
ENTER NAME OF TAC FILE : TESTOSPM1
ENTER MINIMUM LONGITUDE : -125.0
ENTER MAXIMUM LONGITUDE : -116.5
ENTER MINIMUM LATITUDE : 41.5
ENTER MAXIMUM LATITUDE : 46
ENTER NUMBER OF COLUMNS : 500
ENTER NUMBER OF ROWS : 600
ENTER CELL VALUE : 0
ENTER SIZE OF DATA TYPE (1-Byte, 2-Integer*2, 4-Integer*4): 1
```

CREATLIMITS

The CREATLIMITS utility creates a binary *limits file* (LIMITxx.BIN), which is a database support file that must be located in each topography (map layer) subdirectory of a DMS geographic database. It specifies the names and geographic extents of all the topographic data files in the subdirectory (where "xx" is the two-character code for that topography and also the subdirectory name). In general, CREATLIMITS is used only when you are creating a special *user-defined topography* for an existing DMS database.

To see what information is included in a particular binary limits file, you can use the SEELIMITS utility.

What You Need to Know Before Using CREATLIMITS

The utility creates the binary limits file in your default directory. Before using CREATLIMITS, set the default directory to the topography subdirectory where the DMS (or TAC) topography files are located. For example, the following command sets the default directory to the WB or "water bodies" topography subdirectory of the current DMS database:

```
$ SET DEFAULT MAP$DATA$WB
```

For CREATLIMITS to do its job, you must also supply the utility program with the names of the topography data files. You can do this in one of two ways:

- Specify the names of the data files individually at the keyboard.
- OR
- Specify the name of a separate file that contains a list of the data file names.

If there are only a few data files, you may prefer to enter the file names directly. If there are many data files, it might be more practical to create a list of the data file names, which CREATLIMITS would then read. The list file is just an ASCII text list of the data file names with one file name on each line record of the list.

Creating a Binary Limits File with CREATLIMITS

The following examples show how to create a binary limits file in the default "water bodies" topography subdirectory (MAP\$DATA\$WB), which contains two data files, LAKE.DMS and RIVER.DMS.

Entering Data File Names Directly

This example shows how to create a binary limits file, LIMITWB.BIN, by directly entering the names of the topography data files at the keyboard.

Example:

```
$ CREATLIMITS
ENTER NAME OF FILE CONTAINING DATA FILE NAMES > TT:
LAKE.DMS <RETURN>
RIVER.DMS <RETURN>
<CTRL-Z>
      2 FILES READ
```

1. To start the utility, just enter **CREATLIMITS** at the system prompt.
2. When **CREATLIMITS** prompts for the name of a file, enter **TT:** instead.

CREATLIMITS then accepts entries from the keyboard.
3. Enter the names of each data file, following each name with a carriage return.
4. To finish the list of file names, press **CTRL-Z**.

Using a List of Data File Names

This example shows how to create a binary limit file, LIMITWB.BIN, given a file (T.DAT) containing the list of DMS (or TAC) files in the topography. In this example T.DAT contains the names of two files, LAKE.DMS and RIVER.DMS.

```
$ CREATLIMITS
ENTER NAME OF FILE CONTAINING DATA FILE NAMES > T
      2 FILES READ
```

Results of Using CREATLIMITS

For these examples, **CREATLIMITS** would create a binary file, LIMITWB.BIN, that specifies the names and geographic extents of LAKE.DMS and RIVER.DMS. To see what information is included in a particular binary limits file, you can use the **SEELIMITS** utility.

DECLUTTER_TOPO

The system map display software includes a function for *decluttering*—reducing the detail and number of objects shown in a graphic display. Decluttering may be based on an absolute level or on the scale of the area displayed. The decluttering function depends on the attribute parameter values of the objects, but some objects do not have usable (nonzero) attribute parameter values.

The DECLUTTER_TOPO utility allows you to add a special *decluttering attribute* to objects in a DMS file; this allows the screen display of that file to be decluttered when using MPDISPLAY. You can find more information about decluttering attributes in this discussion and in Appendix B, *IBS Attribute Dictionary*.

Background: Using Attributes for Decluttering

Attributes may be assigned to any data item (object) of any topography and can be either *categorical* or *numeric*. All attributes consists of a major code, minor code, parameter value, and a text string description.

Categorical attributes have a parameter value of zero and are used to classify an object. For example:

MAJOR	MINOR	PARAM	DESCRIPTION
5	150	0	Road or Street, Class 4

Numeric attributes have a numeric parameter value that is associated with the object (such as a road number or a stream's rate of flow). For example:

MAJOR	MINOR	PARAM	DESCRIPTION
5	650	90	Interstate Route Number

See Appendix B for a list of the attributes in the standard IBS attribute dictionary.

Since decluttering is based on parameter values, there is no means to directly declutter based on categorical attributes. The following instructions explain how to use DECLUTTER_TOPO within an overall process of adding and using decluttering attributes within a DMS file.

Overview

There are several steps in setting up a DMS file for screen display decluttering:

1. Create an ASCII Attribute Dictionary File using the ATTXASC utility.
2. Edit the ASCII file to create a Declutter Input File.
3. Run DECLUTTER_TOPO. (Inputs: the Declutter Input File and a DMS file)
4. Add a decluttering attribute to the binary Attribute Dictionary using the UPDATEATT utility.

Procedure for Applying Decluttering Attributes in a DMS File

1. Create an ASCII Attribute Dictionary file using the ATTXASC utility:

At the prompt, enter the name of the attribute dictionary binary file. Enter CODES.DOS when prompted for the output file name.

```
$ ATTXASC
Enter input dictionary file name [MAP$ATT...] ==>
MAP$ATTRIB:ATTRIBDIC.BIN
Enter output file name [ATTRIBDIC.BIX] ==> CODES.DOS
```

This produces an ASCII file that contains the attribute codes (Major code, Minor code, parameter value) for each item in the current attribute dictionary. The name of the file will be CODES.DOS. You will next edit this file so that it can be used as input to DECLUTTER_TOPO.

2. Edit the ASCII file (CODES.DOS) to create a Declutter Input File: You can use the VAX/VMS editor (EDT) to edit the CODES.DOS file.

Delete all records not in the selected category.

That is, delete all records that do not apply to the topography to which you are adding decluttering attributes. For example, if you are adding decluttering attributes to objects in a ROADS & TRAILS topographic file, then you would delete all records except those that have a Major code of 5--ROADS & TRAILS.

Further, you may delete any attributes that are NOT used by objects in the DMS file.

- b. For each remaining record (set of attributes), change the parameter value to one of the values shown in the following range:

<u>Parameter Value</u>		
32,000		
16,000		
8,000		
4,000		
2,000		
1,000		
500		
250		
125		
63		
32		
16		
8		
4		
2		
1		
Object more likely to be displayed.		
Object less likely to be displayed.		

A higher parameter value represents an attribute of an object that is more likely to be displayed when decluttering is applied. That is, an object with attributes having a parameter value of 1 will be removed from the display before an object with attributes having a parameter value of 32,000.

- c. Save the edited copy of CODES.DOS for use as a Declutter Input File for DECLUTTER_TOPO.
3. Run DECLUTTER_TOPO.
- a. Enter RUN IEMIS\$EXE:DECLUTTER_TOPO at the VAX \$ prompt.

In steps 3b through 3f, you will see the following series of prompts, one at a time:

```
Enter Declutter Input File name >
Enter DMS Input File name      >
Enter Major and Minor codes of the new "declutter" attribute >
Enter DMS Output File name     >
Enter name of Exception File   >
```

- b. Enter CODES.DOS as the Declutter Input File name.
- c. Enter the name of the DMS file to which you wish to add decluttering attributes.
- d. Enter the Major and Minor codes of the decluttering attribute (separate them with a comma):
  - Type a Major code number corresponding to the major topographic category.
  - Type 888 as the minor code to be used for the decluttering attribute.
- e. Enter the name of the new DMS file that will contain the decluttering attributes. (The input file name is the default name for the new DMS file.)
- f. Enter the name of an *exception file*: (see *Exception File* below).

After DECLUTTER_TOPO has finished, you will have two new files:

- A new DMS file: This file will be identical to the original DMS file except that each object that has (one or more of the) attributes listed in the Declutter Input File will also have an additional attribute—a decluttering attribute:

(Major code); 888; (parameter value)

where the parameter value is the (highest) value listed in the Declutter Input File for any attributes of the object. (See the example.)

- Exception File: This output file will contain special error messages and information if DECLUTTER_TOPO cannot correctly add a decluttering attribute to an object.

For example, messages will be recorded for objects that already have the maximum number of attributes allowed (15) and for objects that either have no attributes or have only attributes with parameter values of zero. (In the latter cases, the parameter values of the new decluttering attributes will be zero, which is not usable.)

4. **Add a decluttering attribute to the binary Attribute Dictionary using the UPDATEATT utility:** Before you can use decluttering with the new DMS file, you must add a corresponding decluttering attribute to the system Attribute Dictionary.

- a. Enter **RUN IEMIS\$EXE:UPDATEATT** at the VAX \$ prompt.

You will see a prompt that asks you to select an option for updating the Attribute Dictionary.

- b. Enter **A** to "Add a new attribute record."

You will see a data form that contains default values in six data fields. You will alter some of these fields to add the decluttering attribute.

Conventions for entering data on the form: Use the arrow keys to move from one field to another on the form. When you are finished, press **GOLD Z** to accept the entries--or press **CTRL-W** to quit and restore the original contents of the form. Pressing **RETURN** also advances from one field to the next. In the last field of the form, pressing **RETURN** (like **GOLD Z**) accepts the current form data and then exits the form. (See the description of **UPDATEATT** for more information.)

- c. Enter values in the following fields:

Attribute Code:

- Type the "Major Code" number that corresponds to the topographic category.
- Type **888** as the "Minor Code" for the decluttering attribute.
- Type **500** as the "parameter value."

Attribute Description: Enter **Decluttering attribute (Range 12-27)** as the text description. (See *Using Decluttering Numbers*, page 2.24)

Decluttering Code: Enter **21** as the decluttering code.

Parameter-Decluttering Scale Factor: Enter 1 as the scale factor.

- d. Press CTRL-Z to accept the changes and exit the data form.

Again you will see the prompt that asks you to select an option for updating the Attribute Dictionary.

- e. Enter E to "Exit" the program and update the Attribute Dictionary.

The Attribute Dictionary will be updated to include the decluttering attribute for the selected topographic category.

Example of the DECLUTTER_TOPO Procedure

The following example creates an output DMS file that has the decluttering attributes added, allowing the decluttering option to be used in MPDISPLAY. With decluttering "on," MPDISPLAY will display the most significant roads in the new file when you are viewing a large area and more secondary roads when you zoom in on a smaller area.

Starting DMS File: AFTRD01RD.DMS, a topographic file of "Roads & Trails" data.

Product DMS File: NEWFILE.DMS, the same "Roads & Trails" data with decluttering attributes added

1. Create an ASCII Attribute Dictionary file using the ATTXASC utility:

```
$ ATTXASC
Enter input dictionary file name [MAP$ATT...] ==>
MAP$ATTRIB:ATTRIBDIC.BIN
Enter output file name [ATTRIBDIC.BIX] ==> CODES.DOS
```

This produces the ASCII attribute dictionary file CODES.DOS in your current directory.

2. Edit the ASCII file (CODES.DOS) to create a Declutter Input File: The following portion of CODES.DOS is shown for the ROADS & TRAILS category.

The format of CODES.DOS should be as follows (headings added):

MAJOR	MINOR	PARAM	DESCRIPTION
5	0	0	Road and Trails
5	10	0	Bridge Abutment
5	20	0	Tunnel Portal
5	30	0	Gate
5	40	0	Cul-de-sac
5	50	0	Dead End
5	51	0	Interstate (Proposed)

It is necessary to edit these parameter values, replacing them with values that range from 1 (detail that is removed first when large-area displays are decluttered) to 32,000 (objects that are removed last when decluttering is on). That is, the larger the parameter value, the more likely it is that the object will remain displayed when decluttering is applied. (See page 2.18 for a full list of the parameter values.)

The following is a partial sample of our edited CODES.DOS file:

5	0	0	Roads and Trails
5	10	0	Bridge Abutment
5	20	0	Tunnel Portal
5	30	0	Gate
5	40	0	Cul-de-sac
5	50	0	Dead End
5	1	32,000	Interstate (Proposed)
5	52	32,000	Interstate
5	53	32,000	Interstate (Under Construction)
5	54	16,000	U.S. Highway
5	55	16,000	U.S. Highway (Under Construction)
5	56	8,000	State Highway
5	57	8,000	State Highway (Under Construction)
5	58	4,000	Secondary State and County
5	59	4,000	Secondary State and County (UC)
5	60	2,000	Primary Route, Class 1, Symbol, Undiv.

3. Run DECLUTTER_TOPO

The following sequence of DECLUTTER_TOPO prompts and responses will create the NEWFILE.DMS with a declutter attribute added to every object in the DMS file AFTRD01RD.DMS.

```

$ DECLUTTER_TOPO
Enter Declutter Input File name > CODES.DOS
Enter DMS Input File name      > AFTRD01RD
Enter Major and Minor codes of the new "declutter" attribute
> 5,888
Enter DMS Output File name     > NEWFILE
Enter name of Exception File   > EXCEPT

```

New DMS File. The DMS output file, NEWFILE.DMS, contains all the objects from AFTRD01RD.DMS. Each object contains an additional new decluttering attribute. The major and minor codes of this attribute are 5 and 888, respectively. The parameter value assigned to the attribute 5,888 is the largest parameter value (from CODES.DOS) corresponding to the attributes of the object.

For example, if the attributes of an object in AFTRD01RD.DMS have the attributes:

MAJOR	MINOR	PARAMETER
5	51	0
5	60	0

The same object in NEWFILE.DMS will have the attributes:

MAJOR	MINOR	PARAMETER
5	51	0
5	60	0
5	888	32,000

Exceptions File. In the example, DECLUTTER_TOPO creates an exception file named EXCEPT.DAT. This file contains any error messages that might have been displayed during execution and additional diagnostic information.

Using Decluttering Numbers

MPDISPLAY uses the attribute parameter values and the Attribute Dictionary's decluttering attribute to calculate a *decluttering number* that is applied in decluttering a graphics display:

$$\text{decluttering \#} = \text{decluttering code} + \log(\text{PV}'/\text{PV})/[(\log 2) * \text{scale factor}]$$

where

- decluttering code** = the "Decluttering Code" entered in the Attribute Dictionary. (This number is approximately 6 less than the maximum decluttering number.)
- PV'** = the parameter value (obtained from the decluttering attribute attached to every object in the DMS file).
- PV** = the parameter value of the attribute in the Attribute Dictionary (which is 500 for the decluttering attribute as shown in the procedure).
- scale factor** = the "Parameter-Decluttering Scale Factor" of the decluttering attribute in the attribute dictionary (which is 1 for the decluttering attribute as shown in the procedure.)

The procedure for adding decluttering attributes creates decluttering attributes whose parameter values will be used in the formula above to calculate decluttering numbers in the range from 12 to 27 (as shown in Table 2.1).

The selection of the "declutter code" and parameter values in the DECLUTTER_TOPO procedure to achieve this range of program-calculable decluttering numbers was somewhat arbitrary. (See the following discussion, *Altering the Procedure for a Different Range of Decluttering Numbers*.)

The "Item Display Functions" menu of the MPDISPLAY software includes a DECLUTTER ON/OFF option that allows you to 1) turn decluttering on or off and 2) enter an optional "decluttering level" (decluttering number). If you enter a decluttering number, then the decluttering level remains constant, regardless of display scale, and all objects evaluated (with the formula) at LESS THAN the selected decluttering number will NOT be displayed.

Altering the Procedure for a Different Range of Decluttering Numbers

Although the procedure arbitrarily provides parameter numbers in the range from 12 to 27, you could alter the procedure to give a higher or lower range. It may be that the automatic decluttering (according to scale) does not work the way you want it to work with a specific topography. Or you might wish to do this if you need to coordinate the decluttering of two or more topographies. Then each topography might use a different range of decluttering numbers and a different decluttering attribute in the *attribute dictionary*.

Table 2.1. Correspondence Between Decluttering Numbers and Attribute Parameter Values (for the DECLUTTER_TOPO procedure)

<u>Decluttering Number</u>	<u>Parameter Value</u>
27	32,000
26	16,000
25	8,000
24	4,000
23	2,000
22	1,000
21	500
20	250
19	125
18	63
17	32
16	16
15	8
14	4
13	2
12	1

To use a different range of decluttering numbers, you would need to figure what parameter values should be entered in CODES.DOS to give the desired range:

1. **Decide what range of declutter numbers is necessary to obtain the desired output:**

- The declutter code = (maximum declutter number - 6). For any given "declutter code", there is a maximum declutter number range of about 16.
- It may be necessary to experiment with several sets of parameter values to obtain the desired output.
- Example: In the procedure, we chose a maximum declutter level of 27 for all objects. This level results in a declutter value range of 12 to 27. The declutter code should be 6 less than the maximum declutter level:

$$27 - 6 = 21$$

2. **Use the decluttering number equation to back-calculate the parameter value (PV) that must be entered in the attribute dictionary.**

- A parameter value may vary in value from -32768 to 32767. Use 32,000 for the attribute parameter value of the objects associated with largest decluttering number selected.
- Use a scale factor of 1.
- Example: Substituting these values into the decluttering number equation gives:

$$27 = 21 + \log(32,000/PV)/[(\log 2) * 1]$$

which reduces to

$$PV = 500$$

where 500 is the parameter value for the new decluttering attribute that should be added to the attribute dictionary.

3. **Solve the equation for PV' to generate a table of parameter values corresponding to the remaining decluttering numbers in the chosen range.**

- Example: Substituting the next decluttering value (26) and the PV value of 500 in the equation gives:

$$26 = 21 + \log(PV'/500)/[(\log 2) * 1]$$

which reduces to

$$PV' = 16,000$$

4. **Enter these parameter values (PV') in the parameter column of the Declutter Input File (CODES.DOS) and then run DECLUTTER_TOPO.**
5. **Add the decluttering attribute to the Attribute Dictionary.**
  - Use the chosen "Declutter Code" and the calculated parameter value (PV).

DELPTDB

The DELPTDB (DELeTe People Tracking DataBase data) utility clears old data and resets startup values in the people tracking database used by the LOCATE program. DELPTDB should be used to set up initial values in the database under these circumstances:

- when the system is first installed
- after an event is over and all post-event analysis of the people tracking data has been completed (for either a real or exercise event).

LOCATE is a people-tracking program supports the Chemical Stockpile Emergency Preparedness mission of the IBS program. Refer to the *IBS User Guide* for specific information about the LOCATE and IBS programs.

What You Need to Know Before Using DELPTDB

You must have "Locate Manager" privilege before you can use DELPTDB.

The DELPTDB utility

- deletes from the database all the people entered by the LOCATE program
- sets all the reception facilities to "Inactive"
- inserts zeros for the numbers of people received, released, and remaining at all facilities.

Unless you make a backup of the data before using DELPTDB, all the information in the people tracking database is *gone*.

Deleting People Tracking Information with DELPTDB

To use the utility, enter DELPTDB at the system prompt. No other interaction is necessary.

DELSITE

The DELSITE utility deletes an entire IBS site database from the system, removing all the directories, subdirectories, and files associated with the site database. Anyone with the appropriate IBS privilege can delete a site database by using DELSITE. DELSITE is a stand-alone utility but is also accessible as the IBS program's "Delete Site" option under **SETUP-COPY CASE OR SITE FILES**.

Caution

DELSITE permanently removes a site database. Once deleted, a site database cannot be recovered unless it is available on system backups.

This discussion covers the following topics:

- Why delete a site database?
- What You Need to Know Before Using DELSITE
- Deleting a Site Database with DELSITE
- Results of Using DELSITE.

Why delete a site database?

If for some reason a site database becomes obsolete and is no longer needed, it can be removed by any user with the appropriate IBS privilege. The disk space used by the site database then becomes available for system use.

What You Need to Know Before Using DELSITE

Before using DELSITE, you must know the following information, which DELSITE will request as input:

disk This is the name of the disk device on which the user account currently resides.

Example: `DISK1`

user This is the name of the user account under which the site database is located. All IBS site databases are located as subdirectories under a user account directory.

site This refers to the four-character *site code* that serves as the subdirectory name of the site database to be deleted.

Examples: ABCD or TEST

Before using the DELSITE utility, make sure that this information is correct. If this information is wrong, DELSITE could remove the wrong site database. You could expect the owners of a wrongfully wiped database to be unhappy.

Note: To update system files that support site information, you should use the NET_BMD utility whenever you delete a site from the system. See NET_BMD.

Deleting a Site Database with DELSITE

The following is an example of how to delete a site database using the DELSITE utility.

To start the utility, just enter **DELSITE** at the system prompt. The program then prompts you for the information outlined in the previous section. The series of prompts will look like the following (simulated answers are in **bold**):

```
$ DELSITE
*****
      W A R N I N G
You are about to delete an entire site.
You must specify the disk, user, & site.
*****
Enter disk (<Ctrl-Z>=Exit) ==> DISK1
Enter user (<Ctrl-Z>=Exit) ==> JDOE
Enter site (<Ctrl-Z>=Exit) ==> ABCD
```

To cancel the deletion process at any of these prompts and exit, press **CTRL-Z**.

To delete a specific database, enter the appropriate disk, user, and site names as requested. Once you have supplied this information, the utility deletes the site database, displaying a sequence of messages similar to the following:


```
Now Deleting From DISK1:[JDOE.SITES.ABCD.BCK]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.CHEMS]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.D2]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.DYNEV]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.IP]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.MAPS.D2]
Now Deleting From DISK1:[JDOE.SITES.ABCD.INPUT.MAPS.DA].
.
.
.
NOW Deleting From DISK1:[JDOE.SITES.ABCD]
* * * MSG: Site deleted
```

Results of Using DELSITE

DELSITE removes all the directories and files associated with a site database. Once removed, the files cannot be restored through any IBS utilities. If a mistake is made, the only possible way you could recover the data would be to retrieve it from system backups made earlier.

DELUSER

The DELUSER utility is used by the system manager to delete user accounts.

Caution

Once deleted, accounts cannot be recovered unless they are available on system backups. This utility should be used with extreme caution.

This section covers the following topics:

- Why delete user accounts?
- What You Need to Know Before Using DELUSER
- Deleting a User Account with DELUSER
- Results of Using DELUSER

Why delete user accounts?

When a user is no longer with a project, or has been denied access to your system, you will want to remove his or her account to ensure that he or she cannot access your system. Deleting a user account removes all the information from the account and prevents the user from logging in. Once deleted, this information cannot be retrieved unless it is stored on system backups.

What You Need to Know Before Using DELUSER

Before using DELUSER, there are certain pieces of information you need to know.

<i>username</i>	The <i>username</i> is the name under which the user will log in. The user enters this name at the system login prompt.
<i>userdisk</i>	The <i>userdisk</i> is the name of the disk on which the account currently resides.

Example: DISK1

Before using the DELUSER utility, make sure that this information is correct. If this information is wrong, DELUSER could remove the wrong user by accident.

Deleting a User Account with DELUSER

The following is an example of how to delete a user account using the DELUSER utility.

To run the utility, just type **DELUSER** at the system prompt. You will then see prompts for the username and userdisk, as just outlined. The series of prompts will look like the following (simulated answers are in **bold**):

```
$ DELUSER
USERNAME? : test
USERDISK? : DISK1
```

Once you have entered this information, the utility will prompt you for confirmation with the following message:

```
*****
                W A R N I N G
    You are about to delete the user account for: TEST
    You are about to delete the directories DUAO:[TEST...]
*****
Continue? (y|N) ==> :
```

Entering Y at this prompt indicates to the system that you want to delete the account; entering N aborts the deletion process. This is the last confirmation prompt before the account is deleted.

Once you confirm a deletion, the DELUSER utility automatically removes all the files and data related to the specified user account.

Results of Using DELUSER

DELUSER removes all the files associated with a user account. Once this is done, the files cannot be restored through any IBS utilities.

DLGXDMS

The DLGXDMS utility reads a map data file in the USGS Digital Line Graph (DLG) optional distribution format (1:100,000-scale or 1:24,000-scale map format) and then creates one or more files in the IBS Digital Mapping Structure (DMS) format. These DMS files can then be used by IBS mapping functions. DLGXDMS and its complement, the DMSXDLG utility, can be used to convert back and forth between formats.

What You Need to Know Before Using DLGXDMS

The DLGXDMS utility asks you to specify at least three items:

<i>input DLG file name</i>	This is the name of the DLG file to be read.
<i>attribute file name</i>	This is the name of an ancillary attribute file (.ATT file name extension) associated with the DLG file. Only DLG files created by the DMSXDLG utility will have an separate ancillary attribute file. This ancillary attribute file stores the DMS attributes, pen numbers, and line types when DMSXDLG is used to convert DMS data to the DLG format (because this information is not directly transferable to the DLG format). DLG files produced by DMSXDLG contain no attributes.
<i>output DMS file name</i>	This is the name of the DMS file to be created.

If the DLG file is not associated with an attribute (.ATT) file, then the DLGXDMS utility also asks you to specify the following information for each category of DLG data contained in the DLG file:

<i>2 character code</i>	This is a two-character that indicates what type of topography (map layer) is to be created. DLGXDMS appends this code to the name of the resulting DMS file. If you wish to follow IBS topographic code conventions, see Appendix A for a list of codes.
<i>DMS pen number (0-15)</i>	This is a number that indicates which color is used to draw the map layer. If you wish to follow the color conventions used in the IBS geographic databases, you will need to know the pen numbers associated with your topographies. You can examine an existing DMS topography file and identify the pen number by using the utility DMSXASCII.

DMS line type (0-7)

This is a number that indicates which line type is used to draw the map layer. DLGXDMS lists your choices.

Converting DLG Data to DMS Format with DLGXDMS

To start the DLGXDMS utility, just enter **DLGXDMS** at the system prompt. The following sections are two example sequences for reading a DLG file to create corresponding file(s) in DMS format.

- The first example creates a DMS file from a DLG file *with* an associated attribute file. This means that the DLG file must have been generated by the DMSXDLG utility in an earlier data conversion.
- The second example creates a DMS file from a DLG file *without* an associated attribute file. The source of the DLG file in this example could be the U.S. Geological Survey.

The utility prompts you for the information outlined in the previous section.

Converting a DLG File *with* an Attribute (.ATT) File

The following sequence illustrates the conversion of a DLG file with an ancillary attribute file.

Example:

```
$ DLGXDMS
Enter input  DLG file name (DLG)           ==> MAP1.DLG
Enter attribute file name (<RETURN> = none) ==> MAP1.ATT
Enter output DMS file name (DMS)           ==> MAP1.DMS

DLG -> DMS conversion complete.
Files created:
MAP1.DMS
```

If the DLG file has an associated ancillary attribute file, enter the name of the attribute file at the program prompt.

Result: DLGXDMS creates a single DMS file, using the DMS attribute, pen number, and line type information from the ancillary attribute file.

Converting a DLG File *without* an Attribute (.ATT) File

The following sequence illustrates the conversion of a DLG file that contains a single data category (Transportation, Roads, and Trails) with no ancillary attribute file.

Example:

```

$ DLGXDMS
Enter input DLG file name (DLG)          ==> MAP2.DLG
Enter attribute file name (<RETURN> = none) ==> <RETURN>
Enter output DMS file name (DMS)         ==> MAP2.DMS

DLG Category: Transportation, Roads, and Trails
-----
Enter 2 character code                    ==> TR
Enter DMS pen number (0-15)              ==> 7
  (0 = Solid Line)
  (1 = Dotted Line)
  (2 = Dash Dot Line)
  (3 = Short Dashed Line)
  (4 = Long Dashed Line)
  (5 = 3 Dots Dash Line)
  (6 = Wide Line)
  (7 = Extra Wide Line)
Enter DMS line type (0-7)                ==> 0

DLG -> DMS conversion complete.
Files created:
MAP2TR.DMS

```

If the DLG file does not have an ancillary attribute file, just press the RETURN key when the utility prompts you for the attribute file name.

Then for each DLG data category within the DLG file, DLGXDMS prompts you to enter the two-character code, a DMS pen number, and a line type to be used for DMS data within that category. USGS 1:100,000-scale map attributes that have a corresponding DMS attribute are converted to the equivalent DMS attributes. If there is no equivalent DMS attribute, the utility assigns a default DMS attribute (major = 0, minor = 0, parameter = 0), which indicates that an attribute is present for the data object but that there was no DMS equivalent.

Result: DLGXDMS creates one DMS file for each category of data in the DLG file. This has the effect of decomposing the DLG data into separate map layers, one DMS file for each map layer. Each DMS file created will have the two-character code appended to the file name.

DMSXASCII

The DMSXASCII utility reads DMS files and creates ASCII records suitable for display at a terminal or for storage within an ASCII sequential file. This enables you to see the DMS file header information, to see when the file was created, and to determine the data's area extents. You can also produce a formatted ASCII data file (.DMX extension) for use in other programs (such as ASCIIXDMS) or examine a file for the points used to create map objects. DMSXASCII can produce information about the file header, record header, and object coordinates.

In earlier versions of the software, this utility was named READDMS. You can still start the software by entering READDMS at the system prompt.

Reading a DMS File with DMSXASCII

To start the utility, just enter DMSXASCII at the system prompt.

The following sections are two example sequences for creating ASCII information from a DMS file:

- The first example creates an ASCII file that contains information from the DMS file.
- The second example displays the information on the terminal screen.

Creating an ASCII Information File from a DMS File

In the following example, DMSXASCII reads the contents of MYFILE.DMS and creates an ASCII version of the information in MYFILE.DMX:

```
$ DMSXASCII
Enter input DMS file name (DMS)      ==> MYFILE
Enter output list file name (DMX) [TT:] ==> MYFILE
List Data Points? (Y/N/^Z=Header)    [N] ==> Y
Commented Output? (Y/N)              [Y] ==> N
```

The DMSXASCII utility asks you to specify the following items:

<i>input DMS file name</i>	This is the name of the DMS file that DMSXASCII will read. If you do not specify an extension, the .DMS file extension is used. CTRL-Z cancels the program at this point.

output list file name

This is a name for the ASCII file. If you do not specify a file name extension, the .DMX extension is used. You can also do the following instead of entering the output file name:

<u>Your Response</u>	<u>Result / Comments</u>
CTRL-Z	Uses the same name as the DMS file but with the .DMX extension.
RETURN	Displays the results on the terminal screen (TT:).

List Data Points?

Here you must indicate what information you wish to extract from the DMS file:

<u>Your Response</u>	<u>Result / Comments</u>
Y	Includes all information.
N or RETURN	Excludes point coordinates, text strings, arc/polygon extents, and complex polygon information.
CTRL-Z	Includes only information from the DMS file header: extents, scale, dates, and text file name.

Commented Output?

Here you can choose whether or not to include automatic comments that identify the information in the ASCII text. Your response depends on how you plan to use the information:

<u>Your Response</u>	<u>Result / Comments</u>
Y or RETURN	Comments are inserted in the ASCII text to identify the information.
N	Produces only numeric information without comments. Do this if you wish to edit the resulting ASCII file and later convert it back to a DMS file (with the ASCII2DMS utility).
CTRL-Z	CTRL-Z is ignored here.

Displaying DMS File Information on Your Screen

In the following example, DMSXASCII reads the contents of MYFILE.DMS and displays only information from the file's header on the terminal screen:

```
$ DMSXASCII
Enter input DMS filename (DMS)          ==> MYFILE.DMS
Enter output list file name (DMS) [TT:] ==> <RETURN>
List Data Points? (Y/N/^Z=Header)      [N] ==> <CTRL-Z>
Commented output? (Y/N)                 [Y] ==> Y
```

TT: designates your terminal, so the output is displayed on the screen.

DMSXDLG

The DMSXDLG utility reads a DMS file and creates a new file in the USGS Digital Line Graph (DLG) optional distribution format (1:100,000-scale map format). DMSXDLG and its complement, the DLGX DMS utility, can be used to convert back and forth between formats.

What You Need to Know Before Using DMSXDLG

The DMSXDLG utility asks you to specify two items:

<i>input DMS file name</i>	This is the name of the DMS file to be read.
<i>output DLG file name</i>	This is the name of the DLG file to be created.

Converting DMS Data to DLG Format with DMSXDLG

To start the DMSXDLG utility, just enter DMSXDLG at the system prompt. The following is an example of the sequence used to convert a DMS file, MAP.DMS, to DLG format. The utility prompts you for the information outlined in the previous section.

Example:

```
$ DMSXDLG
Enter input  DMS file name (DMS) ==> MAP.DMS
Enter output DLG file name (DLG) ==> MAP.DLG

DMS -> DLG conversion complete.
Files created:
MAP.DLG
MAP.ATT
```

Result: DMSXDLG creates two files--a DLG file and an ancillary attribute file. For the *DLG file*, the utility converts DMS point data to DLG node data, DMS line data to DLG line data, and DMS polygon and complex polygon data to DLG line data. The DLG file is in level 2 format, so that "data linkage" information (such as which lines are adjacent to a given area) is not present.

The *ancillary attribute file* (.ATT file name extension) stores the DMS attributes, pen numbers and line types for the DMS data (because this information is not directly transferable to the DLG format). No attributes are contained within the DLG file. See the *IBS Data Management Guide* for more detailed information on the format of the DLG and ATT file formats.

DMSXFGEF

The DMSXFGEF utility reads a DMS data file and creates a new data file in a valid Federal Geographic Exchange Format (FGEF). FGEF was an interim data format produced by the Federal Interagency Coordinating Committee on Digital Cartography (FICCDC) in the course of developing a federal standard for digital cartographic information interchange.

Note: This utility is NOT now intended to be used as a practical path for cartographic information interchange. The DMSXFGEF utility (and the reverse-direction FGEFXDMS utility) were produced primarily as a test of the FGEF interim format. This format has since been superseded by a different federal standard for digital cartographic data interchange. These programs served as templates for producing data conversion programs for converting other digital cartography data structures to and from the FGEF format.

Converting DMS Data to Federal Geographic Exchange Format with DMSXFGEF

To start the utility, just enter DMSXFGEF at the system prompt.

The program prompts you for the name of the DMS file and the name of the new FGEF file, as shown in the following example. The name of the new file can be up to characters long, not including the extension.

```
$ DMSXFGEF
```

```
ENTER THE NAME OF THE DMS FILE YOU WANT TRANSLATED > COUNTYX.DMS  
ENTER THE NAME OF THE FGEF FILE YOU WISH TO CREATE > COUNTYX.FGF
```

```
FORTTRAN STOP
```

The message "FORTTRAN STOP" indicates that the system was successful in creating the new FGEF file: COUNTYX.FGF.

To examine the contents of the newly created FGEF file, use the utility FGEFUTL. The following example illustrates how FGEFUTL is used to create a text file that reports the contents of a newly created FGEF file named COUNTYX.FGF:

1. Enter IEMIS\$EXE:FGEFUTL .

The utility asks for the inspection option you desire:

```
** SELECT FGEF FILE INSPECTION OPTION : **
**      S = SUMMARY REPORT              **
**      L = LISTING                     **
**      D = DUMP (formatted)            **
**                                     **
** option (S, L, D)?                    **
```

2. Enter L .

The utility asks where you want the results displayed:

```
** DISPLAY RESULTS WHERE ?              **
**      T = USER TERMINAL              **
**      F = FILE (disk)                 **
**                                     **
** option (T, F) ?                      **
```

3. Enter F .

The utility asks for the unit number of the disk file:

```
** NAME AND UNIT NUMBER FOR DISK FILE ? **
**                                     **
** unit number ?                        **
```

4. Enter 10 .

The utility asks you for the name of the disk file:

```
** name (< = 8 CHAR./ no extens.)?    **
```

5. Enter a seven-character file output file name, such as LISTFGF.

The utility asks for the unit number of the input files:

```

** NAME AND UNIT NUMBER FOR FGEF FILE ?      **
**                                           **
** unit number ?                             **

```

6. Enter 11

The utility asks you for the name of the input file:

```

** name (nnnnnnnn.ext ) ?                  **

```

7. Enter the input file name with an extension (COUNTYX.FGF)

The utility then displays this message:

```

COMPLETED NORMALLY

```

The message "COMPLETED NORMALLY" indicates that the system was successful in creating the output report file. For this example, the report file would be named LISTFGF.REP with the ".REP" file name extension added.

8. For this example, enter TYPE LISTFGF.REP to display the report on your terminal screen.

EVENT

The EVENT program is responsible for processing data files sent from the onpost system or from the people registration program, LOCATE. Depending on the contents of the files, EVENT can notify IBS users of new data, update shared memory (variables that identify the current operational environment and are accessible to many users simultaneously), and/or declare an event.

What You Should Know About Using EVENT

The EVENT program runs in background (batch) mode on the VAX computer, and should be kept running at all times. Under normal conditions, this batch process is already running and does not need to be started independently: the process is started whenever the computer is rebooted via the following path:

```
SYSS$MANAGER:SYSTARTUP_V5.COM
    executes
PNLDEVDB:[ISYSFILES]PNLEXECUT.COM,
    which executes
IEMIS$EXE:EVENT.BIS,
    which starts the batch process.
```

It is important that EVENT *always* be running. If it is stopped for some reason, the IBS will NOT be notified of any new files from the onpost system. Only a database administrator or system manager is authorized to restart EVENT. To restart it, you must have "BYPASS" and "CMKRNL" privileges.

For a listing of the onpost files that are detected by EVENT, see the description of XFERLIST.DAT in the *IBS Data Management Guide*. EVENT also detects SITE\$OFF:P_T_UPDATE.DAT from the LOCATE program.

Using EVENT

The following instructions explain how to restart the program if it has stopped, how to stop the program, and how to check what the program is doing.

Restarting the EVENT Program

To restart the program, just enter EVENT at the system prompt, or type:

```
$ @IEMIS$EXE:EVENT.BIS
```

If the program is already running, you will not be able to restart it.

Stopping the EVENT Program

To see if the program is running, check the batch queue for the EVENT job:

\$ SHOW QUEUE/ALL SYS\$BATCH

If you need to stop the program for some reason, you must remove the job from the batch queue, using the entry number listed with the previous command:

\$ DELETE SYS\$BATCH/ENTRY=*entry* #

Getting Information about EVENT Transactions: Log and Flag Files

The program creates a *log file* in the INFO\$DIR directory. To look at the log file, enter:

\$ TYPE/PAGE INFO\$DIR:EVENT.LOG

However, since EVENT normally just chugs along, saying nothing unless it runs into problems, you will not be able to see what is really happening. You can force the program to be more verbose by creating a *flag file*:

\$ CREATE IEMISS\$SYSFILES:EVENT.DBG <CTRL-Z>

The program will then record in the log file an informative message about each file received from the onpost system (or the LOCATE program).

Note: You can create the flag file while the program is running—the messages will begin when the next onpost or LOCATE file is processed.

Deleting the Flag File. If the program is in verbose mode and many files are sent from LOCATE or the onpost system, then the log file could become quite large. You can either restart the program and delete the log file, or you can turn off verbose mode (while the program is still running) by deleting the flag file:

\$ DELETE IEMISS\$SYSFILES:EVENT.DBG;*

Deleting the Log File. If you stop the program, you may want to delete the log file because it just takes up valuable disk space. Enter:

\$ DELETE INFO\$DIR:EVENT.LOG;*

EXTRACT

The EXTRACT utility is a nongraphic, text-based program that allows you to select data from your current site DMS database or from an individual DMS data file. The extracted data are deposited into files within your current default directory. These files may then be processed with system mapping software.

EXTRACT's basic interactions are the following:

```
$EXTRACT
Enter 7 character filename for data being extracted >
Enter type of extraction, 1 = Supply Long-Lat Limits
                        2 = Supply Radius
                        3 = Supply Polygon Descrip
                        4 = Supply Geo-Political
                        5 = Supply File Name
>
Is decluttering to be used?
Is attribute selection to be used?
```

Depending on how you respond to these prompts, EXTRACT will ask you for further information, as explained here.

Output File Name

Upon execution, EXTRACT queries for a "filename" (up to seven characters) for the file to be created. In most cases, EXTRACT will append a two-character topographic code to construct the final output file name. **If you are extracting from a single DMS data file**, EXTRACT will use the output file name exactly as you enter it.

Type of Extraction

EXTRACT then offers five basic ways of extracting the data:

1. longitude-latitude limits	] for specifying the boundary of the area to be selected from a DMS database
2. radius specification	
3. polygon descriptor	
4. geo-political specification	
5. DMS file name	] for selecting data from an individual DMS data file

Depending on which type of extraction you select, EXTRACT prompts you for the necessary information:

- Longitude-latitude limits: EXTRACT will prompt for the minimum and maximum longitudes and latitudes of the area to be extracted.
- Radius specification: EXTRACT will ask whether the radius is to be entered in miles or kilometers. Then EXTRACT will prompt for the radius and the longitude-latitude of the center of the area.
- Polygon descriptor: EXTRACT will prompt for the name of the file containing the polygon to be used for setting the limits of the extraction. The data extracted are based on a rectangle which surrounds the polygon and are therefore not limited precisely to the polygon boundary. When the **STORE REGION** function is used within MPDISPLAY or GEDIT, a polygon clip file is created that could be used as the polygon descriptor file for EXTRACT.
- Geo-political specification: This type of extraction may be used if you have previously created a **geo-political master file** containing FIPS codes, area names, and area limits. EXTRACT will first ask for the name of the geo-political master file and then whether the selection is to be performed by FIPS code or by area name. Finally EXTRACT prompts for the FIPS code or area name for the region to be extracted.

Geo-political master files are sequential ASCII files that are best created or modified by a text editor. Two records exist for each region to be defined within the file. The first record contains the FIPS code in columns 1-10 and the region name in columns 11-30. The second record contains the minimum and maximum longitude and latitude in free field format (separated by commas or spaces).

For example if Washington State and Oregon were to be defined within a geo-political master file, they may appear as follows:

```
0000327651WASHINGTON STATE
-125.0, -116.5, 45.0, 49.0
0000327652OREGON STATE
-125.0, -116.5, 41.5, 46.0
```

Once the area to be selected has been identified, regardless of the type of extraction used, EXTRACT allows you to further refine the selection criteria based on *decluttering values* or *attribute values*.

Decluttering

If you request that decluttering be used during data selection, EXTRACT will prompt for the decluttering value to be used throughout this process:

ENTER DECLUTTERING VALUE (-1 => SELECT AREA) >

Decluttering values range in magnitude from 1 to 30, where 1 indicates no decluttering and 30 indicates the maximum amount of decluttering. Typically, you would enter a value of 23 or 24 if a region the size of an average state were being retrieved or values such as 26 or 27 if multiple states or the entire United States were being extracted. If you would prefer EXTRACT to compute a decluttering value (based on the size of the area being extracted), enter a -1 in response to this prompt. Data items may also be selected based on attribute values. If you request this option, EXTRACT will ask for the attribute selection criteria:

DEFINE ATTRIBUTE SELECTION CRITERIA >

You must then enter a Boolean expression that combines attribute codes and the following operators and symbols:

^	--	logical AND	(a^b)
V	--	logical OR	(aVb)
-	--	logical NOT	(-a)
:	--	range specifier	(a:b)
,	--	comma	
(	--	left parenthesis	
)	--	right parenthesis	

For example: 6;13^(4;5;4;100) indicates all data items having an attribute with a Major code of 6 and a Minor code of 13 AND also having an attribute with a Major code of 4 and a Minor code of 5 to 100 (inclusive).

Extracting from a Single File

If you initially chose to extract data from a single file, EXTRACT will then extract data based on the selection criteria (either decluttering or attribute selection.)

For example, if your goal were to extract only current state highway data (attribute 5;56) from a single ROADS & TRAILS data file named ALLROADRT.DMS, the following sequence would be entered:

\$EXTRACT

Enter 7 character filename for data being extracted > MYFILE

Enter type of extraction, 1 = Supply Long-Lat Limits

2 = Supply Radius

3 = Supply Polygon Descrip

4 = Supply Geo-Political

5 = Supply File Name

> 5

Enter file name> ALLROADRT.DMS

Is Decluttering to be used? N

Is attribute selection to be used? Y

Define attribute criteria > 5;56

The result would be a single file, MYFILE.DMS, which would contain vector data describing state highways. In this case, EXTRACT does NOT append a two-character topographic code to the output file name.

Extracting from the Current Site DMS Database

If you initially chose to extract data from the current site DMS database, EXTRACT will display a list of the available topographies and allow you to indicate which types of topographic data are desired. For example, if you wished to extract RAILROAD and WATER BODY data within an 800-mile radius of 100 degrees west longitude and 42 degrees north latitude, conforming to a decluttering value of 25 (or greater), the following sequence would be entered:

\$EXTRACT

Enter 7 character filename for data being extracted > MYFILE

Enter type of extraction, 1 = Supply Long-Lat Limits

2 = Supply Radius

3 = Supply Polygon Descrip

4 = Supply Geo-Political

5 = Supply File Name

> 2

Is radius to be entered in kilometers or miles (K or M)? M

Enter Radius, Center Point (long, lat) > 800, -100.0, 42.0

Is decluttering to be used? yes

Enter decluttering value (-1 => Select by Area) > 25

Is attribute selection to be used? no

The available topographies are:

*(The list of available
topographies may vary.)*

1 Administrative Boundary

2 Political Boundaries

3 Cultural Features

4 Hypsography

5 Railroads

6 Roads and Trails

7 Streams

8 Water Bodies

9 Features (ICONS)

10 Color Flood Points

Select a topography entry (<CTRL> Z To terminate) > 5

Select a topography entry (<CTRL> Z To terminate) > 8

Select a topography entry (<CTRL> Z To terminate) > <CTRL-Z>

EXTRACT would then create files MYFILERR.DMS and MYFILEWB.DMS, which would contain the railroad and water body data for the desired region. Notice that EXTRACT appends the two-character topographic codes to your original output file name.

FGEFXDMS

The FGEFXDMS utility reads a specifically formatted data file in Federal Geographic Exchange Format (FGEF) and creates a DMS data file. FGEF was an interim data format produced by the Federal Interagency Coordinating Committee on Digital Cartography (FICCDC) in the course of developing a federal standard for digital cartographic information interchange.

Note: This utility is NOT now intended to be used as a practical path for cartographic information interchange. The FGEFXDMS utility (and the reverse-direction DMSXFGEF utility) were produced primarily as a test of the FGEF interim format. This format has since been superseded by a different federal standard for digital cartographic data interchange. These programs served as templates for producing data conversion programs for converting other digital cartography data structures to and from the FGEF format.

What You Need to Know Before Using FGEFXDMS

FGEFXDMS is NOT a general FGEF-to-DMS converter. The FGEF file must contain only the graphical structures supported by DMS. Also, the FGEF record description for these structures must be presented using a predefined set of entities and data types. These data types are defined in the DMSXFGEF FORTRAN source code and described in *Federal Geographic Exchange Format*, produced by the FICCDC Standards Working Group of FICCDC (August 21, 1986).

Converting FGEF Files to DMS Files with FGEFXDMS

To start the utility, just enter FGEFXDMS at the system prompt.

The following example sequence would create a DMS file called COUNTY2.DMS from an FGEF file named COUNTY2.FGF.

```
$FGEFXDMS
ENTER THE NAME OF THE FGEF FILE YOU WISH TO CONVERT > COUNTY2.FGF
ENTER THE NAME OF THE DMS FILE YOU WANT CREATED > COUNTY2.DMS
FORTRAN STOP
```

The message "FORTRAN STOP" indicates that the system was successful in creating the new DMS file.

You can run the PLOTDMS utility to examine the newly created DMS file.

FIX_CASEINDEX

The CASEINDEX.DAT file maintains an index of case numbers in use for all models for a specific site. Systems that have pre-1.0 software (versions of the software earlier than IBS 1.0) must be updated to have CASEINDEX.DAT files in the correct format. The FIX_CASEINDEX utility updates the CASEINDEX.DAT file to conform with the file format required by IBS 1.0.

What You Need to Know Before Using FIX_CASEINDEX

When you use FIX_CASEINDEX, the CASEINDEX.DAT file must be in your current default directory.

This utility was created as a development aid and is NOT expected to be needed by most users of IBS. IBS Information Managers could use FIX_CASEINDEX when the information in a site's CASEINDEX.DAT file is correct except for the format. Other IBS users who own pre-1.0 site databases can use a separate utility, FIXSITEDB, which updates pre-1.0 site databases to IBS 1.0 format, in the process creating a new CASEINDEX.DAT based on existing model cases.

Updating CASEINDEX.DAT to IBS 1.0 Format with FIX_CASEINDEX

Before using FIX_CASEINDEX, set your default directory to the site database directory where CASEINDEX.DAT is located:

```
$ SET DEFAULT [username.SITES.site]
```

where *username* is the username/account where the site database is located and *site* is the four-character site code.

To start the utility, enter **RUN IEMIS\$EXE:FIX_CASEINDEX** at the system prompt.

The utility then creates a new version of CASEINDEX.DAT by appending an 8-byte model name to the end of each record.

FIXMAPDB

The FIXMAPDB (Fix Map Database) utility is a database administration program for converting pre-IBS 1.0 map databases to IBS 1.0 format.

Required Privileges:

- System Privilege (SYSPRV)

File Input:

- PNLDEVDB:[ISYSFILES]SETUPDB.COM_TEMPLATE
- PNLDEVDB:[ISYSFILES]TOPODESC.FIL_TEMPLATE

File Input/output:

- PNLDEVDB:[ISYSFILES]ASS_DISK_LOG.COM
- PNLDEVDB:[ISYSFILES]ASS_MAP_SYM.COM
- PNLDEVDB:[ISYSFILES]ASS_MAP_LOG.COM

File output:

- SETUPDB.COM
- TOPOCTL.FIL
- TOPODESC.FIL

Interactive Input:

- Y or N responses to three prompts asking whether to create files

Example:

1. First, move to the top directory of the map database.

```
$ SET DEFAULT disk:[directory]
```

2. Run the FIXMAPDB utility.

```
$ FIXMAPDB (or @IEMIS$EXE:FIXMAPDB)
```

- a. Answer Y to the prompt,

```
Create SETUPDB.COM? (Y|n) ==> : Y
```

This creates the setup file which assign logical names pointing to the map database. If necessary, it updates PNLDEVDB:[ISYSFILES]ASS_DISK_LOG.COM, adding a disk logical to point to the map database disk. If necessary, it also updates PNLDEVDB:[ISYSFILES]ASS_MAP_SYM.COM, adding symbols to setup IBS to use the map database.

- b. Answer Y to the prompt,

```
Create TOPOCTL.FIL? (Y|n) ==> : Y
```

This creates the topography control file which points to the icon control file and the cover maps.

- c. Answer Y to the prompt,

```
Create TOPODESC.FIL? (Y|n) ==> : Y
```

This creates the topography description file which defines the map layers (topographies) available to IBS users. If necessary, it updates PNLDEVDB:[ISYSFILES]ASS_MAP_LOG.COM, adding logical names for topographies in your map database which are not part of normal map databases.

If any of the files in PNLDEVDB:[ISYSFILES] are updated, they will be invoked, making the map database accessible upon completion of FIXMAPDB.

FIXSITEDB

The FIXSITEDB (Fix Site Database) utility is a database administration program for converting pre-IBS 1.0 site databases to IBS 1.0 format. Each IBS user must run the utility to convert private site databases. The following occurs:

1. Create missing directories. These are the same directories created by the NEWSITE utility.
2. Move TAC files from [.INPUT.MAPS]. They are gridded cell data used by the OSPM and MESORAD models.
3. Delete setup & control files in [.INPUT.MAPS]. The setup file has been completely rewritten and moved, whereas the control files are no longer used.
4. Delete unused directories. These include directories for the old FLOOD and HEAT models, plus the SRFX-91 EMP directory.
5. Delete volatile topographies (DA,EI,RM,RP,SR,WD,WI). These are no longer private, but shared topographies under [OFFSITE.site].
6. Delete files in [.INPUT.OFF]. These are no longer private, but shared files under [OFFSITE.site], except for the Current Risk Area file, whose format has changed anyway.
7. Create a new SETUP.COM file. This is the replacement for the file deleted earlier (step 3).
8. Create a new CASEINDEX.DAT file. For each model case in the site database, set its corresponding flag in the file. This can be done as a stand-alone activity using the FIXCNX utility (@IEMIS\$EXE:FIXCNX), but you must first be in the correct directory, SITE\$DIR ([user.SITES.site]).

Required Privileges:

- none

File output:

- [user.SITES.site]SETUP.COM
- [user.SITES.site]CASEINDEX.DAT

Interactive input:

- Site name
- Map Database name

Notes:

- All references to "[" really mean "[user.SITES.SITE.".
- Running the utility on an IBS 1.0 site database should cause no problems, but it will replace your existing SETUP.COM and CASEINDEX.DAT files. The new files should be correct, but you may want to verify this.
- Files and directories are not really deleted, just moved to a temporary directory, [.OLD], from which you can delete them later if the converted site database is correct.

Example:

1. Run the FIXSITEDB utility.

```
$ FIXSITEDB (or @IEMIS$EXE:FIXSITEDB)
```

2. Enter the name of the site to convert.

```
Enter name of Site to convert ==> : site
```

3. Enter the name of associated map database.

```
Enter Map Database name [Map] ==> : mapdb
```

The default is the current map database shown in brackets, *Map*. This is needed when creating the SETUP.COM file so that it knows which map database SETUPDB.COM file to use.

The utility will then proceed to convert the site database. While doing so, a number of informational messages describing progress will appear. They may include the following:

```
* * * MSG: Creating missing directories
* * * MSG: Moving TAC files from [.INPUT.MAPS] to []
* * * MSG: Deleting setup & control files in [.INPUT.MAPS]
* * * MSG: Deleting unused directories
* * * MSG: Deleting volatile topographies (DA,EI,RP,SR,WD,WI)
* * * MSG: Deleting files in [.INPUT.OFF]
* * * MSG: Creating a new SETUP.COM file in [] (Delete old one)
* * * MSG: Creating a new CASEINDEX.DAT file in [] (Delete old one)
* * * MSG: Deleted files saved in [.OLD] directory
* * * MSG: Removing temporary [.OLD] directory
* * * MSG: Done converting site database: SITE
```

Any error will result in one of the following messages:

```
* * * ERR: You have not site: SITE  
* * * ERR: Aborting..."
```

FLOPYXDMS

USGS provides IBM PC status floppies for the 1:100,000 digitization effort currently under way. These floppies contain DBASE II files describing the status of all four files being developed (Roads & Trails, Railroads, Hydrography, and Miscellaneous features). The USGS status files used by MPDISPLAY were generated from files transferred to the VAX from the IBM PC. The FLOPYXDMS utility converts these ASCII files into the status displays in DMS format.

The following sequence would create the DMS file USAMAPFT.DMS from the ASCII input file STATUS.DAT:

```
$FLOPYXDMS
Enter ASCII input filename > STATUS.DAT
Enter DMS output filename > USAMAPFT.DMS
```

The FLOPYXDMS utility is unlikely to be needed by typical users.

FTPSTART and FTPSTOP

The FTPSTART utility establishes the modem link between *some* CSEPP onpost and offpost systems (see *What You Need to Know...* below). IBS users may then send or receive files to or from the onpost system using the local File Transfer Protocol (FTP) software. It is expected that the modem link will be periodically established (perhaps each morning) and disconnected (perhaps each evening). This link *must* be established before anyone can transfer IBS reports to the onpost system (by using the IBS program's **MESSAGE BOARD** option, for example). If the link is not established, the reports will NOT be sent between systems.

The FTPSTOP utility disconnects the modem link that was established by FTPSTART. This can be done when the connection is not needed.

What You Need to Know Before Using FTPSTART and FTPSTOP

FTPSTART and FTPSTOP are specifically set up for using the WIN/tcp software package. If your system has a different transport control protocol (tcp) package, you will NOT be able to use FTPSTART or FTPSTOP. The modem link would have to be established by other means.

You must have special user privileges to use either FTPSTART or FTPSTOP.

Starting the Offpost/Onpost Modem Link with FTPSTART

To use the utility, just enter **FTPSTART** at the system prompt. That's all there is to it. You may then see one or more of the following messages:

- * * * MSG: SLIP LINK running
You will see this message when the link is established (or if the link was already established when you tried to use FTPSTART).
- * * * MSG: SLIP LINK not running
You will see this message before the program attempts to establish the modem link. As it attempts to establish the link, the program also checks every 30 seconds to see whether the link has been established. The program will check up to 20 times over the first 10 minutes, displaying one of the two status messages after each check. If you see 20 lines of the * * * MSG: SLIP LINK not running message and never see a * * * MSG: SLIP LINK running message, then the link attempt failed.
- * * * ERR: No privilege to check SLIP LINK
You will see this message if you do not have the correct privilege to establish the modem link.

Stopping the Offpost/Onpost Modem Link with FTPSTOP

To use the utility, just enter **FTPSTOP** at the system prompt. That's all there is to it. You may then see one or more of the following messages:

- * * * **MSG: SLIP LINK stopped**
You will see this message if the program successfully breaks the link.
- * * * **ERR: SLIP LINK not started**
You will see this message if the link has not been established and there is no link to stop.
- * * * **ERR: No privilege to check or stop SLIP LINK**
You will see this message if you do not have the correct privilege to break the link.

GEDIT

The GEDIT utility is an interactive *graphics editor* program that enables you to edit and create graphic representations of two-dimensional data. GEDIT requires a graphics workstation. This section covers the following topics.

- Description of the GEDIT Software
- What You Need to Know to Use the GEDIT Software
- Terminology for Graphic Data Structures
- Starting a GEDIT Session
- Using the GEDIT Menu.

Description of the GEDIT Software

GEDIT is an interactive program that enables you to edit or create graphic representations of two-dimensional data. Graphics input devices are used to manipulate graphic data structures (points, line segments, polygons, etc.) that are stored in and retrieved from the data files of a DMS map database.

GEDIT operates on data files that use *Digital Mapping Structure* (DMS), the data file structure established for the FEMA geo-coded database. GEDIT can be used to customize map data from the IBS site map database to include special information for specific applications.

The GEDIT (graphic map editing) software and the related MPDISPLAY (graphic map display) software were created by Pacific Northwest Laboratory. They contain a library of subprograms that are accessible by other programs for creating, storing, and displaying two-dimensional data.

What You Need to Know to Before Using GEDIT

This discussion is intended as a guide for new users of the GEDIT software. It contains information on the operation of GEDIT and assumes that you will apply GEDIT to the current IBS database or to another database that is constructed according to IBS standards for graphically represented geographic data. You should be familiar with the graphics input device attached to your terminal.

2 of 5

For the Typical User of GEDIT

This documentation covers all the concepts and interactions necessary for using the GEDIT software: terminology for graphic data structures (page 2.62), starting a GEDIT session (page 2.64), and using the GEDIT main menu (page 2.67). The section on terminology defines some terms that are used in the rest of the GEDIT discussion.

Typical users need not be closely concerned with IBS standards and file structures, although review of those standards can provide insight into what and how data is stored.

For the In-Depth User of GEDIT

In-depth users of GEDIT can find standards and structures for an IBS map database in the *IBS Data Management Guide*. A procedure for creating *icons* (graphical figures that always appear the same size) is also described in the *IBS Data Management Guide*.

Terminology for Graphic Data Structures

GEDIT operates on data files that are in DMS format. DMS files explicitly associate longitude and latitude values with several kinds of data: *points*, *line segments*, *strings*, *polygons*, and *complex polygons*. The data for these structures are stored sequentially, and there is no implicit order in which data appear within the file.

The display of *text* and graphic *icons* is also supported in DMS, and *attributes* may be associated with any data item to further define its characteristics. The following is a description of terms as they are used in this manual:

- A *point* is a 0-dimensional object that specifies geometric location. One set of coordinates specifies the location of each point.
- A *line segment* is a 1-dimensional object that is a direct line between two points.
- A *string* is a connected series of line segments.
- *Polygons* are areas enclosed by a single geometric boundary that does not cross itself (i.e., a polygon is a closed string).
- *Complex polygons* are structures that define areas composed of multiple simple polygons.

The simple polygons that compose a complex polygon are called *subpolygons*.

- *Inclusive subpolygons* define areas inside their boundaries.
- *Exclusive subpolygons* define areas outside their boundaries.

Some GEDIT operations work on the complex polygon as a single entity; other functions allow the manipulation of subpolygons.

- *Composite strings* are a series of strings, or X-Y pairs that are connected physically or logically.

For example, a composite string is a series of line segments which may be drawn on a flatbed plotter without removing the pen from the plotting surface. In general, the term composite string refers to the string, polygon, and complex polygon data structures as a set.

- An *attribute* is a special set of numeric values that describe additional characteristics of data items. For example, an attribute may identify a particular polygon as a lake of a particular kind. Attributes consist of three *attribute descriptors*: a Major attribute code, a Minor attribute code, and a Parameter value. These values can act as pointers into predefined table files that contain descriptions of each attribute. A major file of this type is the *attribute dictionary*, which contains a master list of the Major/Minor attribute codes and their definitions in DMS files.

All data structures may have attributes associated with them. For example, the attributes of a point can identify that point as

- an *icon seed point*: the location of an icon (see Icon, below)
  - a *text point*: the starting location of a piece of text
  - a *color flood seed point*: the starting location of a color flood point
  - an *item point*: a point location that has only attributes without being associated with particular graphics or text.
- *Text* attributes point to the location of text in a text data file. Any data item can have text associated with it through its attributes. The name of the text data file is stored in the *DMS file header*, the initial portion of the DMS graphics file.
  - *Icons* are graphic figures that can be associated with a particular data point (called an *icon seed point*). Icons always appear at a constant viewing size, regardless of the map scale. They provide a consistent means of representing hospitals, airports, schools, or any topographic feature that occurs repeatedly.

A predefined *icon control file* includes attribute codes, a descriptor name for each icon, and the names of files that contain the graphical descriptions, in standard DMS format, of each icon.

Starting a GEDIT Session

Start a GEDIT session by entering **GEDIT** at the system prompt. For example:

```
$ GEDIT <RETURN>
```

You will then choose the type of geographic projection into which the data is to be mapped, and specify the input files that are to be edited (or created). All of the files that are to be used or updated during a GEDIT session must be specified at the beginning of the session. The files may include an *icon control file* and one or more data files.

Using an Icon Control File

GEDIT begins processing by looking for an icon control file. The icon control file contains the current list of available icons and the data files that are needed to plot each icon. Generally, the System Manager will have already defined a system default icon control file that GEDIT (and MPDISPLAY) will use unless you specify otherwise. If no icon control file has been defined, GEDIT will display a message to let you know and then continue processing.

If you wish to use a different set of icons (for example, icons that are not designated in the system default icon control file), then you must redefine the icon control file. For more information on creating and using your own icons, please refer to the *IBS Data Management Guide*.

Specifying the Type of Map Projection

GEDIT begins by presenting the options for displaying map projections:

```
Currently available map projection types are
  1 = "Geographic"
  2 = "U T M"
  3 = "Albers Conical Equal-area"
  4 = "Lambert Conformal Conic"
  5 = "Mercator"
  6 = "Polar Stereographic"
  7 = "Transverse Mercator"
Enter Projection Type >
```

For most cases (up to 100-mile radius), press the RETURN key to select the default projection, "Geographic." The Geographic projection is a straightforward projection onto a regular x,y plane. Enter a number (2 to 7) if you desire a

projection other than Geographic. The following table is a simple summary of how the different map projections might be used. See Appendix C for background on the projection types.

Map Projection Type	Situations for Use
Geographic	small areas (up to a 100-mile radius)
Universal Transverse Mercator (UTM) or Transverse Mercator	medium-sized areas (up to 1000-mile radius) or where the largest extent of the mapped area extends north-south rather than east-west
Albers Conical Equal-Area or Lambert Conformal Conic	larger areas, or where the largest extent of the mapped area extends east-west
Polar Stereographic	polar areas of the globe

After you select a projection type, GEDIT will ask you to specify input files.

Specifying Input Files

GEDIT now begins prompting for the input files (for example, topography files containing map data that you have stored using the MPDISPLAY software).

ENTER INPUT FILE NAME >

To enter input file names:

1. Type the name of an input file at the prompt, and tap RETURN.

If the file you specify does not currently exist, GEDIT will open a new data file for you. If you press CTRL-Z instead of entering a file name, GEDIT will return you to the system prompt.

The first file you specify will be the default file for subsequent GEDIT operations: GEDIT INSERT functions will apply only to this default file (until you change the default file through the MODIFY DEFAULTS option on the GEDIT main menu).

2. Repeat step 1 for up to 10 input files.

Up to 10 files may be edited simultaneously; however, insertions only apply to one file at a time, the default file. To edit a region that you have stored using the MPDISPLAY software, enter the name of each topography file that you need to edit. For example:

ENTER INPUT FILES > HAWAII2RT <RETURN>

ENTER INPUT FILES > HAWAII2WB <RETURN>

The input files specified are the *Roads and Trails* (RT) topography file and the *Water Bodies* (WB) topography file for a region named HAWAII2.

3. After entering the last file name, press CTRL-Z.

This indicates to GEDIT that all files have been specified. GEDIT will display the input file data (if there is any) on the graphics screen. Next to the data display will be the main menu that lists graphic editor options for altering or adding to the displayed data.

Background: Screen Coordinates of Input Files

If you create a new input file (with no old input files in the same GEDIT session), GEDIT assigns an arbitrary set of X-Y coordinates to the (initially) blank screen display area. The coordinates will be in screen inches with X=0, Y=0 at the center of the display area. The approximate extent of the screen will be about -5 to +5.

Data drawn into the arbitrary coordinate system can be converted into a known coordinate system by using then **REGISTER POINTS** option, which is selectable from the **MISCELLANEOUS FUNCTIONS** submenu. If you convert to a known coordinate system and then EXIT, the new file will be saved in that form. When you next use the file as the first input file (default file) of a different GEDIT session, the data will be redrawn into the known coordinate system.

If you draw data into the arbitrary coordinate system of a new file and then EXIT *without* converting to a known coordinate system, the file will be saved *without* specific coordinate references. When you next use the file as the first input file (default file) of a different GEDIT session, GEDIT will redraw the data *to fill the screen area*. Thus the graphic elements of the recalled file may be drawn with proportions different than the original screen display.

Using the GEDIT Menu

After reading in the input files, GEDIT presents the following menu:

EXIT (SAVE CHANGES)
QUIT (IGNORE CHANGES)
HELP
CANCEL
CONTINUE

These general options are explained together on the following page.

DELETE LINE SEGMENT
DELETE SUB POLYGON
DELETE COMPOSITE STRING
UNSAVE COMPOSITE STRING
RE-COLOR-TEXTURE STRING
MERGE STRINGS
INSERT

These specific functions are explained *in alphabetical order* following the general options.

CONVERT STRING TO POLYGON
FORM COMPLEX POLYGON

ZOOM IN
ZOOM OUT
RESTORE BASE PLOT
REFRESH SCREEN

ATTRIBUTE FUNCTIONS
ICON FUNCTIONS
TEXT FUNCTIONS
TEXT STRING FUNCTIONS
GEOMETRIC FUNCTIONS
MISCELLANEOUS FUNCTIONS
DISPLAY COORDINATES
MODIFY DEFAULTS
POLYGON FILL FUNCTIONS

The selection of some options on the main menu will result in the display of another menu from which further selections must be made.

The options of the GEDIT menu are explained in the following pages. Before continuing, it is important that you understand what happens to the data files at the end of a GEDIT session.

What Happens to Data Files at the End of a GEDIT Session

- Pick **EXIT** to *save* all your changes. The GEDIT functions change the data displayed on the screen. However, no data *files* are permanently changed until you end the editing session by picking **EXIT (SAVE CHANGES)**. The data files you specified as input to GEDIT are then updated to reflect the changes made during the editing session.
- Pick **QUIT** to end *without saving* your changes. If you do not want to modify the data files in accordance with the changes made during an editing session, pick **QUIT** instead of **EXIT**. The data files will NOT be updated.

The following paragraphs describe the general options on the GEDIT menu.

Exit (Save Changes)

Picking **EXIT (SAVE CHANGES)** incorporates your changes into new versions of the input files and then ends the session. On other menus, **EXIT** signals that you are through with the current menu and the operations on that menu. Operational control then returns to the previous or calling menu.

Quit (Ignore Changes)

Picking **QUIT (IGNORE CHANGES)** ends the GEDIT session without incorporating any changes in the input files. That is, any changes or insertions made during the session are discarded, and new versions of the input files are NOT created.

Help

Picking **HELP** displays information about the current menu.

Cancel

Picking **CANCEL** terminates the current function. Use this function when it becomes undesirable to complete a function that has been started. If the cursor disappears during the completion of a function, you will be unable to use **CANCEL** until the cursor reappears.

Continue

Picking **CONTINUE** signals the completion of functions such as the selection of points or composite strings. For example, in an operation that requires you to choose a point on the screen, you might pick several points before finding the correct one and then selecting **CONTINUE**.

Attribute Functions

You can use **ATTRIBUTE FUNCTIONS** to add, delete, modify, or look up the attributes of a graphic data item. Display programs, such as MPDISPLAY, can use attributes as selection criteria for displaying (or not displaying) specific data items.

Two kinds of data items can have attributes: *points* and *composite strings*. Points are specified by a single set of x,y coordinates such as a longitude-latitude location. The attributes of a point can identify that point as

- an *icon seed point*: the location of an icon
- a *text seed point*: the location of a piece of text
- a *color flood seed point*: the starting location of a color flood point
- an *item point*: a point location that has only attributes without being associated with particular graphics or text.

Composite strings may represent data items such as roads or rivers, which may have attribute information associated with them.

The following sections discuss attributes and how to use the Attribute Functions menu.

Attributes

Attributes are numeric values used to describe data items or some characteristic of data items. Attributes consist of three numbers separated by semicolons:

- a Major attribute code (to indicate a major topographic group)
- a Minor attribute code (to indicate a feature within the group)
- a Parameter value (which may give data about the specific feature).

For instance, 1;560;300 indicates

- a Major code of 1 (Hydrography)
- a Minor code of 560 (Permanent lake or pond)
- a Parameter value of 300 (length of the lake in decameters).

A graphic data item within a DMS file may have up to 15 sets of different attributes. GEDIT (and other IBS software) interprets these attributes by using a standardized dictionary file of IBS attributes—the *attribute dictionary*. The attribute dictionary defines the meaning of each *Major;Minor* pair of attribute codes. Appendix B lists the attribute codes contained in the IBS attribute dictionary.

The attribute functions enable you to assign attributes to various items. Included on the menu are options for inserting and deleting points with attributes and for displaying the locations of attribute points.

Using Attribute Functions

Picking **ATTRIBUTE FUNCTIONS** results in the following submenu:

```
EXIT

HELP
CANCEL
CONTINUE

DISPLAY ATTRIBUTES
ADD ATTRIBUTE
DELETE ATTRIBUTE
MODIFY ATTRIBUTE
LOOKUP ATTRIBUTE

INSERT POINT
DELETE POINT
ENABLE POINT
DISABLE POINT
REFRESH SCREEN
```

The principal options of the submenu are explained here.

- **DISPLAY ATTRIBUTES:** Displays the attributes associated with a particular data item.

1. Pick **DISPLAY ATTRIBUTES**.
2. Pick a point on or near the desired point or composite string.

The data item will blink and, if it has attributes associated with it, they will be displayed in a table. For example, this table displays information on two attributes:

#	MAJOR	MINOR	PARAM	DESCRIPTION
1	7	150	0	Seaplane ramp or landing area
2	8	7	6	NO ENTRY IN ATTRIBUTE DICTIONARY

where # is the index number and the following four columns list each attribute (the Major code, the Minor code, and the Parameter value) plus a text description of the data item (if a description exists in the attribute dictionary). Notice that the second set of attributes has "NO ENTRY IN ATTRIBUTE DICTIONARY"; that is, the attributes 8;7;6 might have some meaning for the person who created the data item, but they are not in the attribute dictionary (the master list of attributes) normally used by GEDIT.

3. Repeat step 2 for any other data item.

As you continue to pick data items, old attribute information is retained on the text screen. To clear the screen and make it easier to read, press the <D ERASE> key.

4. Pick any other submenu item to end the **DISPLAY ATTRIBUTES** function.

■ **ADD ATTRIBUTE:** Allows association of a new attribute with a data item.

1. Pick **ADD ATTRIBUTE**.
2. Pick a point on or near the desired point or composite string.

The data item will blink and any attributes already associated with the data item will be listed in the dialogue area, as shown for the **DISPLAY ATTRIBUTES** function.

3. Pick **CONTINUE**.

GEDIT will then prompt for a new attribute to be added.

ENTER ATTRIBUTE VALUE TO BE ADDED AS MAJ MIN PARAMETER >

4. Type a major code (**MAJ**), minor code (**MIN**), and parameter; then press **RETURN**. (Type spaces or commas between items; do not type parentheses.)

■ **DELETE ATTRIBUTE:** Allows deletion of an attribute already associated with a data item.

1. Pick **DELETE ATTRIBUTE**.
2. Pick a point on or near the desired point or composite string.

The data item will blink, and any attributes associated with the data item will be listed in the dialogue area, as shown for the **DISPLAY ATTRIBUTES** function.

3. Pick **CONTINUE**.

GEDIT will then prompt for the index number (#) of the attribute to be deleted:

ENTER INDEX # OF ATTRIBUTE TO BE DELETED >

4. Type the desired index number and press RETURN.

GEDIT will delete the selected attribute from the data item's attributes. You can use the **DISPLAY ATTRIBUTES** function to verify that a particular attribute has been deleted.

- **MODIFY ATTRIBUTE:** Allows modification of an attribute already associated with a data item.

1. Pick **MODIFY ATTRIBUTE**.
2. Pick a point on or near the desired point or composite string.

The data item will blink, and any attributes already associated with the data item will be listed in the dialogue area, as shown for the **DISPLAY ATTRIBUTES** function.

3. Pick **CONTINUE**.

GEDIT will prompt you for the index number of the attribute to modify and the new attribute values:

ENTER INDEX # AND NEW ATTRIBUTE VALUE AS MAJ MIN
PARAMETER >

4. Type an index number (**INDEX #**), major code (**MAJ**), minor code (**MIN**), and parameter; then press RETURN. (Type spaces or commas between items.)

GEDIT will modify the attribute as specified.

- **LOOKUP ATTRIBUTE:** Enables you to look up an attribute in the attribute dictionary. You can reference an attribute by attribute codes or by the description in the attribute dictionary.

Picking **LOOKUP ATTRIBUTE** displays the following submenu:

EXIT
HELP
MAJOR/MINOR LOOKUP
DESCRIPTION LOOKUP

The principal options of this submenu are explained here.

- ❑ **MAJOR/MINOR LOOKUP:** Enables you to display the attribute associated with a particular pairing of Major and Minor attribute codes in the attribute dictionary. A master list of the attributes in the attribute dictionary is presented in Appendix B of this guide.

You will see the prompt

ENTER MAJOR MINOR ATTRIBUTE CODE >

Type a Major attribute code (up to two digits), a comma, and a Minor attribute code (up to four digits). Then press RETURN.

Example: 7,150

If the Major/Minor code pairing exists in the attribute dictionary, your entry will be displayed along with a parameter value (PARAM) and a description, as in this example:

MAJOR	MINOR	PARAM	DESCRIPTION
7	150	0	Seaplane ramp or landing area

If no entry exists for the Major/Minor code pairing, the description note will read, "NO ENTRY IN ATTRIBUTE DICTIONARY."

Note: To see a list of all attributes that contain a particular Major code, enter a Minor code of zero. For example, the entry 5,0 will list every attribute that has a Major code of 5 (Roads and Trails) in the attribute dictionary. Be ready to press <CTRL-S> to "freeze" the listing as it prints on the screen: such listings are usually more than one screen long and can scroll by quickly. Press <CTRL-Q> to restart the listing.

- ❑ **DESCRIPTION LOOKUP:** Enables you to display the attribute associated with a particular character string in the attribute dictionary descriptions.

You will see the prompt

ENTER DESCRIPTION TO LOOKUP >

Type a string of characters that you are seeking in the attribute dictionary descriptions (Example: **car**); then press RETURN.

You will see a form of your entry listed under **DESCRIPTION**, along with the corresponding major and minor codes and parameter value (**PARAM**) as in this example:

MAJOR	MINOR	PARAM	DESCRIPTION
1	280	0	Outline of a Carolina Bay
6	50	0	Carline
9	210	0	Carrying contour
9	560	0	Evacuee Reception/care points

Note: Any **DESCRIPTION** that contains your character string in the dictionary will be displayed.

- **INSERT POINT:** Associates a user-entered attribute with a new point location.

1. Pick **INSERT POINT**.

GEDIT will prompt you for a new attribute to be added:

ENTER ATTRIBUTE VALUE TO BE ADDED AS MAJ MIN PARAMETER >

2. Enter a Major (**MAJ**) attribute code (up to two digits), a comma, a Minor (**MIN**) attribute code (up to four digits), a comma, a parameter (up to three digits) and press RETURN. Example: **1,190,0**
3. Pick a point in the display where you want the attribute positioned.

- **DELETE POINT:** Enables you to delete a data point and its associated attributes.

1. Pick **DELETE POINT**.
2. Pick a point on or near the point that you wish to delete.

The data point will blink.

3. Pick **CONTINUE**.

The data point will be deleted.

- **ENABLE POINT:** Places an asterisk "*" at the location of every point with attributes in each input file.

These points denote item points, icon seed points, text points, and color flood seed points. For example, if you are editing a single file that contains text, this feature will show how many text items there are and where the starting point of each item is located without taking the (possibly long) time to plot the text. **ENABLE POINTS** is particularly useful for locating text when the decluttering factor does not allow the text to be plotted on the screen.

- **DISABLE POINT:** Disables the display of points with attributes, allowing future plots to be created without showing the locations of attribute/point data.

DISABLE POINT allows you to remove the attribute/point markers from screen when used in conjunction with **REFRESH SCREEN**: Pick **DISABLE POINT**; then pick **REFRESH SCREEN**. The system will redraw the screen without the attribute/point markers.

- **REFRESH SCREEN:** Redraws the existing display image using the current **ENABLE POINT** and **DISABLE POINT** settings.

Convert String to Polygon

This function converts a string to a polygon. The string can be in any input file that was read in at the beginning of the session. A polygon converted from a string will be contained in the same file that contained the string.

1. Pick **CONVERT STRING TO POLYGON**.
2. Pick a point on or near the desired string.

The selected string will blink.

3. Pick **CONTINUE**.

If the string was closed (that is, if the end points of the string are identical), then the string will become a polygon without any modifications. If the string was not closed, a line will be drawn between the two end points to form a closed string.

Delete Composite String

To delete a composite string, pick the **DELETE COMPOSITE STRING** menu item and then pick the composite string to be deleted:

1. Pick **DELETE COMPOSITE STRING**.
2. Pick a point on or near composite string to be deleted.

The cursor will disappear while GEDIT searches for a composite string near the point selected. When the cursor reappears, the closest composite string will be blinking. If this is not the correct item to be modified, or if no composite string is blinking, move the cursor closer to the correct composite string and pick another point.

3. Pick **CONTINUE**.

The composite string will disappear from the screen, as will any attributes of the composite string.

When you pick a composite string to be deleted, the composite string is copied into a special holding area of computer memory called the *save buffer*. This occurs whether or not you actually continue and delete the composite string. Once the copy of the composite string is in the save buffer, you can use the **UNSAVE COMPOSITE STRING** function to insert a copy (or copies) of the composite string into the screen display.

Delete Line Segment

To delete a line segment, pick the **DELETE LINE SEGMENT** menu item and then pick the line segment to be deleted:

1. Pick **DELETE LINE SEGMENT**.
2. Pick a point on or near the line segment to be deleted.

The cursor will disappear while GEDIT searches for a line segment near the point selected. When the cursor reappears, the closest line segment will be blinking. If this is not the line segment to be modified, or if no line segment is blinking, move the cursor closer to the line segment and pick another point.

3. Pick **CONTINUE**.

The line segment will disappear from the screen, as will any attributes of the line segment.

Delete Sub_Polygon

A subpolygon is a simple polygon that has been combined with other polygons to form a complex polygon (see **FORM COMPLEX POLYGON**, page 2.81). Picking **DELETE SUB_POLYGON** enables you to delete a subpolygon in the same way as you would delete a line segment.

1. Pick **DELETE SUB_POLYGON**.
2. Pick a point on or near the subpolygon to be deleted.

The cursor will disappear while GEDIT searches for the subpolygon near the point selected. When the cursor reappears, the closest subpolygon will be blinking. If this is not the correct subpolygon, or if no subpolygon is blinking, move the cursor closer to the subpolygon and pick another point.

3. Pick **CONTINUE**.

GEDIT will delete the subpolygon. If the item selected was not a subpolygon, a message will appear on the terminal, "ERROR, Sub Polygon not selected," and no action will take place.

Display Coordinates

Picking **DISPLAY COORDINATES** and then a point on the display results in the following information on the text screen:

- longitude-latitude of the point
- the Great Circle distance from the point to the center of the display (shortest arc over the surface of the earth)
- the change in distance from one picked point to the next
- the cumulative distance (total miles) from the first point picked for coordinates.

Picking subsequent points will display this information until you terminate the function by picking any item on the main menu.

If you are using GEDIT to create a map or drawing from scratch, the longitude and latitude values will be an arbitrary set of coordinate values. To register points on the display with real longitude-latitude values, refer to the **REGISTER POINTS** option on the **MISCELLANEOUS FUNCTIONS** submenu (page 2.96).

Form Complex Polygon

This function combines simple polygons to form a complex polygon or combines an already existing complex polygon with a simple polygon to form a new complex polygon. The polygons involved may be in any of the input files read in at the beginning of the GEDIT session.

1. Pick **FORM COMPLEX POLYGON**.

The menu item will continue to blink until the function is complete.

2. Pick a point on or near a simple or complex polygon.

The selected polygon will blink. If no polygon is blinking, or if the wrong polygon is blinking, reposition the cursor and pick another point that is closer to the desired polygon.

3. Pick **CONTINUE**.

If a simple polygon was selected, GEDIT will prompt you to indicate whether the polygon is to define an inclusive or exclusive area:

INCLUSIVE OR EXCLUSIVE>

An *inclusive polygon* defines the area inside its boundary.

An *exclusive polygon* defines the area outside its boundary.

(For example, consider a small triangle contained completely within a larger triangle. The small triangle could be specified as defining an **exclusive** area outside its boundary, while the larger triangle could be specified as defining an **inclusive** area inside its boundary. The complex polygon would then describe the area between the two boundaries. GEDIT's polygon fill capabilities could be applied to fill that area with a color or pattern (described on page 2.110).

4. If GEDIT prompts you,) type "I" for Inclusive or "E" for Exclusive, and press RETURN.

GEDIT will temporarily remove the selected polygon from the display. The **FORM COMPLEX POLYGON** menu item will still be blinking, indicating that a second polygon must be selected to form the complex polygon.

5. Repeat steps 2 through 4 (and 5, as necessary) to select a second polygon that is to be combined with the first to form a complex polygon.

The complex polygon formed by this function will have the same color and reside in the same file as the first polygon picked, in step 2. The second polygon will be deleted from its file.

Geometric Functions

The geometric functions include the capabilities for drawing, scaling, rotating, and horizontally inverting polygons (which are referred to as composite strings). The drawing function enables you to produce n-sided regular polygons with different horizontal and vertical dimensions, including circles and ellipses (high-n polygons).

Picking **GEOMETRIC FUNCTIONS** results in the following submenu:

```
EXIT

HELP
CANCEL
CONTINUE

DRAW COMPOSITE STRING
SCALE COMPOSITE STRING
ROTATE COMPOSITE STRING
INVERT COMPOSITE STRING

SCALE SUB POLYGON
ROTATE SUB POLYGON
INVERT SUB POLYGON
```

The principal options of this submenu are explained in the following paragraphs.

- **EXIT:** Returns operation to the GEDIT main menu. Any of the draw, scale, rotate, or invert functions may be aborted by picking **EXIT** or another function before picking **CONTINUE**.
- **DRAW COMPOSITE STRING:** Used to create a regular n-sided polygon with independent X (horizontal) and Y (vertical) dimensions. The polygons created are inserted into the default file.

1. Pick **DRAW COMPOSITE STRING**.

GEDIT will prompt for an X and Y radius (in screen inches) and the number of sides for the geometric figure.

2. Type the three values, separated by commas (or spaces) and followed by **RETURN**, as in this example:

ENTER X RADIUS, Y RADIUS, AND # OF SIDES >1,1,4 <RETURN>

3. Pick a point on the display screen where the figure is to be drawn.

The figure (a 1X1 square in the example) will be drawn at that point on the display and inserted into the default file.

■ **SCALE COMPOSITE STRING:** Used to change the size of a composite string.

1. Pick **SCALE COMPOSITE STRING**.

GEDIT will respond with a prompt for a scale factor.

2. Type a scale factor (decimal or decimal fraction), as in this example:

```
ENTER SCALE FACTOR >.75 <RETURN>
```

3. Pick a point on or near the string that is to be scaled.

The cursor will disappear while GEDIT searches for the nearest composite string. When the cursor reappears, the closest composite string will be blinking. If no composite string is blinking, or if the wrong composite string is blinking, reposition the cursor and pick a point closer to the desired string.

4. Pick **CONTINUE**.

The selected string will be erased and redrawn, scaled to the desired size (three-quarter size in the example).

■ **ROTATE COMPOSITE STRING:** Used to rotate a string on the display.

1. Pick **ROTATE COMPOSITE STRING**.

GEDIT will prompt for the number of degrees of rotation (clockwise positive; counterclockwise negative).

2. Type a rotation angle (0 - 360), followed by **RETURN**, as in this example:

```
ENTER ROTATION FACTOR IN DEGREES >45 <RETURN>
```

3. Pick a point on or near the string to be rotated.

The string nearest the picked point will blink.

4. Pick **CONTINUE**.

The selected string will be erased and redrawn at the designated rotation.

- **INVERT COMPOSITE STRING:** Used to invert (horizontally flip) a composite string.

1. Pick **INVERT_COMPOSITE_STRING**.
2. Pick the string to be inverted, using **CONTINUE**.

The string will be erased, redrawn, and inverted on the screen.

- **SCALE SUB_POLYGON, ROTATE SUB_POLYGON, and INVERT SUB_POLYGON:** These functions work the same as the corresponding functions for composite strings but operate on subpolygons instead of composite strings.

Icon Functions

An icon is a graphical figure that can be associated with a particular data point (location). Icons always appear at a constant viewing size, regardless of the map scale (which can be changed with the zoom functions). The location of icons is governed by *icon seed points*, which indicate the type of icon to be drawn and where to center the icon.

The icons available for display are listed in the *icon control file*. The icon control file also contains the locations of the DMS files that are needed to plot each icon. A system default icon control file is used if you do not specify one.

Picking **ICON FUNCTIONS** results in the following submenu:

EXIT

HELP

CONTINUE

INSERT SEED POINT

DELETE SEED POINT

MOVE SEED POINT

CHANGE DEFAULT ICON

ICON DISPLAY LIST

ENABLE ICON PLOT

DISABLE ICON PLOT

REFRESH SCREEN

The principal options of the submenu are explained below.

- **INSERT SEED POINT:** Allows insertion of an icon seed point at the next point picked on the display.

1. Pick **INSERT SEED POINT**.
2. Pick a point (seed point) on the display where you want to display the **default icon**. (Refer to the **CHANGE DEFAULT ICON** function.)

GEDIT will position an icon seed point at that picked location on the display. The seed point will be inserted into the default file, and the default icon will be displayed at the chosen point.

- **DELETE SEED POINT:** Allows removal of an icon seed point from the appropriate file.

1. Pick **DELETE SEED POINT**.
2. Pick a point near the seed point you want to delete.

Seed points can be located by enabling icon plotting so that the icons are displayed. The seed point nearest to the picked point will blink. If this is not the correct seed point, pick other points on the display until you find the correct seed point.

3. Pick **CONTINUE**.

GEDIT will delete the blinking seed point and associated icon and remove the seed point from the appropriate file.

- **MOVE SEED POINT:** Allows relocation of an existing icon seed point.

1. Pick **MOVE SEED POINT**.
2. Pick a point near the seed point you want to move.

Seed points can be located by enabling icon plotting so that the icons are displayed. The seed point nearest to the picked point will blink. If this is not the correct seed point, pick other points on the display until you find the correct seed point.

3. Pick **CONTINUE**.
4. Pick a new point where you want to relocate the icon.

GEDIT will delete the blinking seed point and associated icon and relocate the seed point at the new location.

- **CHANGE DEFAULT ICON:** Changes the default icon, which is the icon associated with any insertion of an icon seed point. Picking **CHANGE DEFAULT ICON** results in a menu of available icons.

The current default icon is always listed at the top of the menu, as shown:

```
EXIT
HELP

DEFAULT ICON =
(default icon descriptor)

FORWARD
BACKWARD
GO TO

icon descriptor #1
icon descriptor #2
.
.
.
icon descriptor #n
```

To switch to a different default icon, pick an alternative from the list provided. The new icon will then appear at the top of the menu. Once the desired icon has been selected, pick **EXIT** to return control to the **ICON FUNCTIONS** menu.

All available icons are in a paged menu with 16 icons per page. To scroll through the icon list, select the menu item (**FORWARD**, **BACKWARD**, **GO TO**) that describes which way you want to go:

- ☐ **FORWARD:** Shows the next page of 16 icons. If you reach the end of the list, the system will return you to the first page of the icon listing.
- ☐ **BACKWARD:** Shows the previous page of 16 icons. If you reach the first page of the list, the system will return you to the last page of the icon listing.
- ☐ **GO TO:** After you select **GO TO**, the system will prompt you for the page number desired (**ENTER PAGE # OF ICONS DESIRED >**). The system then shows you the icon page requested. If the page number requested is less than 1, the system will display the first page of icons. If the page number requested is greater than the number of icon pages available, the system will send you to the last page of icons.

If you change the default icon (or modify the icon display list), then the next time you use the function, the icon list will start at the page of the last icon changed (or modified).

- **ICON DISPLAY LIST:** Specifies which of the available icons may be displayed. GEDIT will present a submenu that lists the available icons:

```
EXIT

FORWARD
BACKWARD
GO TO

Icon descriptor #1
Icon descriptor #2
.
.
.
Icon descriptor #n
```

For example, the default IBS icon control file results in this icon display list:

```
EXIT

FORWARD
BACKWARD
GO TO

DAM
TRAFFIC CONTROL
TRAFFIC CONTROL (INACT)
POWER STATION
HYDROELECTRIC PLANT
CIVILIAN AIRPORT
AIRPORT
CIVILIAN AIR HUB
MILITARY AIRPORT
TRANSPORTATION
FACILITY
CHURCH
SCHOOL
HOSPITAL
HOSPITAL (INACTIVE)
UMAC HOSPITAL
PUBLIC UTILITY
```

Select icon categories or types to be displayed by picking the appropriate descriptor in the menu. As a descriptor is selected, its color will toggle between the standard menu color (normally orange) and a secondary color (normally green) to indicate that the icon has been selected. By default all icons are set to be displayed.

To cancel a selection, simply pick that item again, and its color will toggle back to the standard color. The selected icons are eligible for display and will be plotted if **ENABLE ICON PLOT** has been picked and seed points exist for the selected area.

Picking **EXIT** in the **ICON DISPLAY LIST** menu returns control to the **ICON FUNCTIONS** menu.

Picking **FORWARD**, **BACKWARD**, or **GOTO** on the menu enables you to page through the icon display list as described for the **CHANGE DEFAULT ICONS** function. If you modify the icon display list (or change the default icon), then the next time you use the function, the icon list will start at the page of the last icon selected for display (or the last default icon changed).

- **ENABLE ICON PLOT:** Used (along with **DISABLE ICON PLOT**) to specify *whether* the icons selected on the icon display list are actually displayed. When you pick **ENABLE ICON PLOT**, GEDIT checks to see if any of the selected icon types occur in the display area and draws the icons at seed points on the display.
- **DISABLE ICON PLOT:** Switches off the capability to display icons (without erasing any icons that are currently on the screen).

Use the **REFRESH SCREEN** option to subsequently erase disabled icons.

- **REFRESH SCREEN:** Redraws the current display, just as in the main menu. The **REFRESH SCREEN** function is included in this menu for convenience in using the icon functions. Use the **REFRESH SCREEN** option to erase icons after disabling icon plotting or after changing the Icon Display List.

Insert

The **INSERT** function allows insertion of a string of the default color and line type. Picking **INSERT** results in the following submenu, which gives you options for how a string is inserted:

```

EXIT
HELP
CONTINUE
INSERT
INSERT-MATCH VERTEX JOIN
INSERT-MATCH VERTEX SEPR
  
```

The principal options of the submenu are explained below.

- **INSERT:** Inserts a string. As you pick points on the display, the **INSERT** function draws line segments between the points, from the first point to the second, from the second to the third, and so on.

1. Pick **INSERT** on the **INSERT** menu.
2. Pick a starting point on the display.
3. Pick another point on the display.

GEDIT will draw a line between this point and the previous point.

4. Repeat step 3, as desired.

GEDIT will continue to build the string as a continuing series of line segments.

5. Pick **CONTINUE**.

This accepts the string as part of the current display and the current default file (although the file is not actually updated until you pick "EXIT" at the end of a GEDIT session). Picking any other menu item will cancel the **INSERT** function and erase the string from the display.

- **INSERT-MATCH VERTEX JOIN:** Enables you to attach a new string to an existing string by starting the new string at a vertex of the existing string. That is, **INSERT-MATCH VERTEX JOIN** forces the starting point alignment of a new string at an endpoint or midstring vertex of the existing string.

1. Pick **INSERT-MATCH VERTEX JOIN** on the **INSERT** menu.

The menu item will blink to indicate selection.

2. Pick a point on or near a vertex at which a new string is to be attached.

The cursor will disappear while GEDIT searches for the nearest vertex. When the cursor reappears, an asterisk (*) will be blinking on the nearest vertex. (If no vertex is blinking or if the wrong vertex is blinking, reposition the cursor and pick another point that is closer to the desired vertex.)

3. Pick **CONTINUE**.

The **INSERT** menu item will blink to indicate that you are now in **INSERT** mode. The selected vertex will serve as the starting point for a new string. You can continue to build the new string by picking points and then picking **CONTINUE**, as described for the **INSERT** function.

- If the vertex IS an endpoint of the existing string and the existing string is in the default file, the new string being inserted will be appended to (become part of) the existing string. The new composite string will have the same attributes as the original string (see *Attribute Functions*, page 2.69).
- If the vertex is NOT an endpoint or if the existing string is NOT in the default file, then the new string does NOT become part of the existing string.

To draw a string that connects two vertices of one or more existing string(s):
Continue from step 3 and follow steps 4 through 6 below.

4. Pick **INSERT-MATCH VERTEX JOIN** again (after step 3).

The menu item will again blink.

5. Pick a point on or near the second desired vertex.

The picked vertex will blink to indicate selection.

6. Pick **CONTINUE**.

A line segment will be drawn between the two selected vertices. The new string will be appended to the existing string(s) at any vertex that is also the endpoint of a string in the default file. If the two selected vertices were the endpoints of two different strings in the default file, then all the strings will be joined as one composite string. This method can be used

to merge two strings at endpoints other than their closest endpoints. The **MERGE STRINGS** function automatically merges two strings at their closest endpoints.

To connect a string in progress to an existing string: Use the **INSERT-MATCH VERTEX** function from within the insert mode:

1. Pick **INSERT** on the **INSERT** menu.

The menu item will blink to indicate selection.

2. Pick points, as desired, to define a string of line segments.

GEDIT will draw segments from one point to the next in the default color.

3. Pick **INSERT-MATCH VERTEX JOIN**.

The menu item will blink.

4. Pick a point on or near the desired vertex.

The vertex will blink. (If no vertex is blinking or if the wrong vertex is blinking, reposition the cursor and pick another point that is closer to the desired vertex.)

5. Pick **CONTINUE**.

GEDIT will draw a line between the selected vertex and the endpoint (last point) of the string being inserted. The new string is inserted into the display, and the **INSERT** function ends.

- **INSERT-MATCH VERTEX SEPR:** Enables you to draw a new string, starting from the vertex of an existing string. This function works the same as **INSERT-MATCH VERTEX JOIN**, except the new string is independent and is NOT stored as a part of the existing string. The new string will have no attributes (unless you add attributes later with **ATTRIBUTE FUNCTIONS**, page 2.69).

It is possible to use any combination of the **INSERT** menu items to insert strings that connect in various ways. For example:

To insert a new string between the endpoints of two existing strings, joining with one string but not the other:

1. Pick **INSERT-MATCH VERTEX JOIN**.
2. Pick a point on or near the endpoint of the string to be joined.
3. Pick **CONTINUE**.

The **INSERT** menu item will blink to indicate that you are now in insert mode. The selected vertex will serve as the starting point for a new string. You can continue to build the new string by picking points and then picking **CONTINUE**, as described for the **INSERT** function.

4. To connect the new string to the second existing string, pick **INSERT-MATCH VERTEX SEPR**.
5. Pick a point on or near the selected endpoint of the second string.
6. Pick **CONTINUE**.

The new segment is now part of the first string and has all the attributes of the first string. This new composite string "connects" to the endpoint of the second string on the screen but does not contain the second string or share its attributes.

Other options for using the **INSERT** menu items include:

- Start with **SEPR** and end with **JOIN**.
- Start with **JOIN** and end with **JOIN**.
- Start with **SEPR** and end with **SEPR**.

Attributes of the Inserted Strings. When a composite string is created by using **INSERT-MATCH VERTEX JOIN**, the new string will get **ALL** the attributes of **ALL** the joined strings. When a string is inserted by using **INSERT-MATCH VERTEX SEPR**, the new string has no attributes because it is not actually joined to anything. For example, Table 2.2 shows the attributes of strings resulting from connecting "String 1" with "String 2" with various combinations of **INSERT** menu functions.

Table 2.2. Attributes Resulting from INSERT Functions

Order of Using the INSERT- MATCH VERTEX Functions			Attributes of the Joined String
JOIN	then	JOIN	Attributes of String 1 AND String 2
JOIN	then	SEPR	Attributes of String 1 ONLY
SEPR	then	JOIN	Attributes of String 2 ONLY
SEPR	then	SEPR	NO attributes

Merge Strings

The **MERGE STRINGS** function joins two line strings into a single element by connecting them at their nearest endpoints. Only lines are processed by this function; attempting to merge points or polygons will result in an error.

1. Pick **MERGE STRINGS**.
2. Pick a point on or near one of the strings to be merged.

The string will blink.

3. Pick **CONTINUE**.
4. Repeat steps 2 and 3 for the second string.

GEDIT will connect the two strings at their nearest endpoints. The color and line type of the merged string will be the same as the first string selected, while the attributes of the new string will be a union of those from both strings selected.

Miscellaneous Functions

Picking this option results in a submenu containing several unrelated functions:

```
EXIT  
  
HELP  
CANCEL  
CONTINUE  
  
REGISTER POINTS  
  
MANUAL STRING ENTRY  
STORE REGION  
PASTE REGION  
DELETE REGION  
MAP ZOOM  
DRAW BACKGROUND  
SHOW STRING ENDPOINTS  
  
EDIT ELEVATION FILE  
  
ZOOM IN  
ZOOM OUT  
RESTORE BASE PLOT  
REFRESH SCREEN
```

The principal options of this submenu are explained below.

- **REGISTER POINTS:** Converts an existing set of data points into a known coordinate system. For example, points on a map that was digitized in an arbitrary coordinate system may need to be converted to longitude and latitude (long-lat points). This process is referred to as map registration.

To accomplish map registration, location values (e.g., longitude-latitude) of four different locations must be entered and then their positions must be picked on the display. It is best if these four points lay more or less on the four corners of the rectangular area of interest on the display. The four points used in calibrating the registration process are referred to as *known points*.

Known point registration can be used for maps as well as any other coordinate system. GEDIT will first query to determine if long-lat values will be input. If the schematic being digitized is not a map, input is specified as decimal numbers. To digitize "known points" for a map, you must specify whether long-lat values will be input as degrees-minutes-seconds or as decimal numbers. For each of the four points, GEDIT first instructs you to select the point on the display. Then the long-lat values must be entered for that point.

After the long-lat values for the four points have been entered, pick **CONTINUE** to register to these points; you will then need to specify a map projection type as described on page 2.64. If you do not pick **CONTINUE**, no registration occurs.

- **MANUAL STRING ENTRY:** Draws line segments between points specified by input of coordinates.

A prompt will appear on the screen asking for entry of the X and Y coordinates. Type X and Y coordinates, separated by a comma and followed by RETURN. GEDIT will continue prompting for X and Y coordinates until a CTRL-Z is pressed.

- **STORE REGION:** Allows storage of areas of the display for later use.

You may store the entire region displayed in the current display area or define a smaller area within the region:

- To store the entire region in the current display: Use the graphics cursor to pick **STORE REGION**. Then pick **SELECT CONTINUE**.
- To store a region within the current display:
  1. Pick **STORE REGION**.
  2. Use the graphics cursor to pick points on the display that define a polygon that surrounds the desired region.

GEDIT will draw lines between the points as they are entered, indicating the boundary of the desired region.

3. After picking the last point, pick **CONTINUE** to draw a line between the first and the last point, completing the polygon.

The area inside the polygon will then be saved in a file. Files with ".CLP" extensions will be created for each file being edited by GEDIT. Thus, if ROADS.DMS, LAKES.DMS and STREAMS.DMS were currently being edited, three new files (ROADS.CLP, LAKES.CLP, and STREAMS.CLP) would be created by the STORE REGION function. If any of the "clipped" area contained text strings, then GEDIT creates one text file called CLIP.TXT. Each clipped file that contains text will refer to this file in its header, and all text data points will reference text strings within this file.

The **STORE REGION** command always creates a file that describes the bounding polygon for the clipped region. This file is provided for use with the **PASTE REGION** command. The file name is always **GEDIT.CLP**.

- **PASTE REGION:** Provides a means of merging an existing file with one currently being modified by **GEDIT**.

When **PASTE REGION** is activated, **GEDIT** solicits, from the terminal, the file names of 1) a file containing the description of a closed polygon defining the region in which clipping is to occur (usually **GEDIT.CLP**), and 2) the file which will be appended to the current default file.

After entering the second file name, the polygon will be temporarily displayed and the default file clipped to outside the polygon. Then the second file is appended to the default file. Only the default file is affected by the **PASTE REGION** command.

- **DELETE REGION:** Allows deletion of data within a user-defined polygon. This function can be used to clear an area of the display and quickly delete unwanted elements.

1. Pick **DELETE REGION**.

(If you then immediately pick **CONTINUE**, all the data within the current screen display will be deleted.)

2. Pick points on the screen that define a polygon surrounding the area that you want to delete.

GEDIT will draw segments between the points as they are entered, indicating the boundary of the desired region.

3. After picking the last point, pick **CONTINUE** to draw a segment between the first and the last point, completing the polygon.

GEDIT will then delete all the data within the defined polygon. Remember that your original input files are not actually changed to reflect any graphic editing until you leave **GEDIT** by using the **EXIT** function.

- **DRAW BACKGROUND GRID:** Puts a grid of squares or concentric rings (target) as background on the screen.

GEDIT will query whether the grid is to be a square or a target.

1. Type **S** for square or **T** for target, followed by **RETURN**.
2. Pick a point on the display to be the center point of the grid.

If the grid is to be a target, GEDIT will prompt you for the radius of the target (in miles) and the number of rings. If the grid is to be a square, GEDIT will prompt you for the number of cells and the distance to the edge from the center (in miles).

3. Type the appropriate values, and press RETURN.

The grid will be drawn over the specified area.

- **SHOW STRING ENDPOINTS:** Shows the endpoints of each displayed string by plotting an asterisk(*) to mark each endpoint.

This function is helpful when you want to merge strings (page 2.95) or continue drawing a string from an endpoint (page 2.90). This function is a "one-time" function: any screen refresh or redraw will redraw the screen without the endpoint markers.

- **EDIT ELEVATION FILE:** Picking this option results in the following prompt:

ENTER NAME OF ELEVATION FILE :

You must then enter the name of a TAC elevation file. (Terrain Analysis Cell files are described in the *IBS Data Management Guide*.) After you enter the name of an elevation file, GEDIT zooms the display so that the elevation data fills the map display area. (To restore the display size after leaving the elevation editing functions, use **RESTORE BASE PLOT**.)

You will see the following submenu of elevation-related options.

EXIT (SAVE TAC FILE CHANGES)
QUIT (DEL TAC FILE CHANGES)
HELP
CANCEL
CONTINUE

MODIFY ELEVATION POINT

**MODIFY GROUPED ELEVATION
POINTS**

RETURN ELEVATION
RETURN SLOPE
ENABLE ELEVATION RESOLUTION
DISABLE ELEVATION RESOLUTION

DISPLAY ELEVATION STATISTICS
DISPLAY ATTRIBUTES

ZOOM IN
ZOOM OUT
RESTORE BASE AREA
REFRESH SCREEN

The principal options of this submenu are explained below.

- ☐ **EXIT (SAVE TAC FILE CHANGES):** Returns to the GEDIT main menu, saving a new version of the elevation file. This new version will include any changes that you make to the elevation data.
- ☐ **QUIT (DEL TAC FILE CHANGES):** Returns to the GEDIT menu but does NOT save elevation changes and does not create a new version of the elevation file.
- ☐ **MODIFY ELEVATION POINT:** Enables you to find and modify an elevation data value.
  1. Pick **MODIFY ELEVATION POINT**.
  2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

3. Pick **CONTINUE**.

You will see a message and prompt such as the following:

```
CURRENT CELL VALUE: 216 Elevation data  
ENTER NEW CELL VALUE (<CTRL-Z> TO ABORT) :
```

4. Enter a new value (or press <CTRL-Z> to avoid entering a new value).

- **MODIFY GROUPED ELEVATION POINTS:** Displays a submenu that enables you to modify all cell values within a specified polygon area or within the current screen area:

```
EXIT  
  
HELP  
CANCEL  
CONTINUE  
  
CURRENT SCREEN  
DRAW POLYGON  
SELECT POLYGON  
  
EDIT POLYGON CELL VALUES
```

The principal options of this submenu are explained below.

- **CURRENT SCREEN:** Selects the currently displayed screen area as a polygon within which you can change elevation cell values. The menu item will blink in green as long as the current screen is the selected polygon. (See **EDIT POLYGON CELL VALUES**, next page.)
- **DRAW POLYGON:** Enables you to define a polygon within which you can change elevation values.

1. Pick **DRAW POLYGON**.

2. Pick three or more points that define the sides of a polygon.

GEDIT will draw segments between each new point and the previous point.

3. Pick **CONTINUE** to complete the polygon.

GEDIT will draw the final segment between the first and last points picked. The polygon will blink in green to indicate that

the polygon is selected. The polygon can then be used for **EDIT POLYGON CELL VALUES**.

- **SELECT POLYGON:** Enables you to pick an existing polygon within which you can change elevation values.

1. Pick **SELECT POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick any point on a polygon displayed on the screen.

The polygon will blink in white to indicate a pick. If the wrong polygon is highlighted, pick again on the desired polygon until it is highlighted.

3. Pick **CONTINUE** to confirm the polygon selection.

The polygon will blink in green to indicate that the polygon was properly selected. The menu option will stop blinking to indicate that no further input is required for polygon selection. The polygon can then be used with **EDIT POLYGON CELL VALUES**.

- **EDIT POLYGON CELL VALUES:** Enables you to enter one elevation value for all cells within the currently selected polygon (which can be the entire screen area).

1. Identify an area by using one of the three menu options: **CURRENT SCREEN**, **DRAW POLYGON**, or **SELECT POLYGON**.
2. Pick **EDIT POLYGON CELL VALUES**.

You will see this prompt:

ENTER NEW CELL VALUE (<CTRL-Z> TO ABORT) :

3. Enter an elevation value (or press **CTRL-Z** to cancel the request).

If you enter an elevation value, that value will apply to all cells within the selected polygon.

- **RETURN ELEVATION:** Displays the elevation at a selected point.

1. Pick **RETURN ELEVATION**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

The elevation of the selected point (center point of the cell) will be displayed. You can continue to pick points and display elevation values or pick another menu item to cancel **RETURN ELEVATION**.

- **RETURN SLOPE:** Displays the absolute difference between the elevation values at two selected points.

1. Pick **RETURN SLOPE**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

3. Pick **CONTINUE**.
4. Pick a second point on the screen.

A second yellow asterisk will appear.

5. Pick **CONTINUE** again.

A line connecting the two points will be drawn. The absolute difference between the elevation values will be displayed on the terminal screen.

- **ENABLE ELEVATION RESOLUTION:** Shows the resolution of the elevation data by drawing white grid lines around the elevation data cells.

To show the elevation data grid, just pick **ENABLE ELEVATION RESOLUTION**. If the current display screen requires more than 50 rows or columns of cells in the elevation data grid, you will see a warning message and a count of the number of rows and columns:

COLUMNS : XXXX
ROWS : XXXX

DO YOU STILL WISH TO PLOT THE CURRENT DENSITY?

Because displaying a dense elevation data grid can effectively obliterate the other displayed data, you should consider answering "No" and zooming in to a smaller area before displaying the elevation grid.

- ☐ **DISABLE ELEVATION RESOLUTION:** Turns off the capability to display a line grid of elevation data cells.

This option does not erase currently marked elevation cells, but the markers will disappear the next time the screen is redrawn.

- ☐ **DISPLAY ELEVATION STATISTICS:** Displays information about the elevation data with respect to 1) the base map and 2) the current view (screen display).

EXAMPLE: When the Base Map and the Current View are the Same

CURRENT ELEVATION DATA STATISTICS

MINIMUM LONG : -120.000000
MAXIMUM LONG : -119.000000
MINIMUM LAT : 46.000000
MAXIMUM LAT : 47.000000
COLUMNS : 1201
ROWS : 1201
X STEPSIZE : 0.000833
Y STEPSIZE : 0.000833

ELEVATION DATA IN THE CURRENT VIEW

MINIMUM LONG : -120.000000
MAXIMUM LONG : -119.000000
MINIMUM LAT : 46.000000
MAXIMUM LAT : 47.000000
COLUMNS : 1201
ROWS : 1201

- ☐ **DISPLAY ATTRIBUTES:** Displays the attributes associated with a selected data item.

1. Pick **DISPLAY ATTRIBUTES**.

2. Pick a point on or near the desired point or composite string.

The data item will blink, and if it has attributes associated with it, they will be displayed in a table. For example, this table displays information on two attributes:

#	MAJOR	MINOR	PARAM	DESCRIPTION
1	7	150	0	Seaplane ramp or landing area
2	8	7	6	NO ENTRY IN ATTRIBUTE DICTIONARY

where # is the index number and the following four columns list each attribute (the Major code, the Minor code, and the Parameter value) plus a text description of the data item (if a description exists in the attribute dictionary). Notice that the second set of attributes has "NO ENTRY IN ATTRIBUTE DICTIONARY": that is, the attributes 8;7;6 might have some meaning for the person who created the data item, but they are not in the attribute dictionary (the master list of attributes) normally used by GEDIT. (See Appendix B for a list of attributes in the attribute dictionary.)

3. Repeat step 2 for any other data item.

As you continue to pick data items, old attribute information is retained on the text screen. To clear the screen and make it easier to read, press the <D ERASE> key.

4. Pick any other submenu item to end the **DISPLAY ATTRIBUTES** function.

The following four viewing functions are included in the **EDIT ELEVATION FILE** menu for convenience. Their functions are described in detail as options of the GEDIT main menu.

- ☐ **ZOOM IN:** Enlarges a square portion of the displayed area, as described for the same option on the main menu.
- ☐ **ZOOM OUT:** Reduces the currently displayed area to a square area within a larger displayed area, as described for the same option on the main menu.
- ☐ **RESTORE BASE PLOT:** Redraws the *base plot* in the display area, as described for the same option on the main menu.
- ☐ **REFRESH SCREEN:** Redraws the current display, as described for the same option on the main menu.

The following viewing functions are included in the **MISCELLANEOUS FUNCTIONS** menu for convenience. All these functions except **MAP ZOOM** are described in detail as options of the **GEDIT** main menu.

- **ZOOM IN:** Enlarges a square portion of the displayed area, as described for the same option on the main menu.
- **ZOOM OUT:** Reduces the currently displayed area to a square area within a larger displayed area, as described for the same option on the main menu.
- **MAP ZOOM:** Centers the displayed area at a specified long-lat point and a specified radius of display. **This function should be used only when the input files contain map data in longitude-latitude.** Hint: You can use the **COORDINATE PICK** function to find the longitude-latitude of a point on the display and to determine distances that could be used for a display radius.

1. Pick **MAP ZOOM**.

GEDIT will query for the radius (in miles) and the center point (long-lat) of the area to be displayed. (If you have used the **COORDINATE PICK** function previously, the longitude-latitude of the last-picked point may be on the text screen, if other functions have not used the screen for other purposes.)

2. Type the radius, the longitude, and the latitude (separated by commas or spaces).

(Pressing **CTRL-Z** will exit and abort the **MAP ZOOM** function.)

3. Tap **RETURN**.

GEDIT will redraw the displayed area with the specified point at the center. If you do not see what you expected, recheck the radius and the longitude-latitude values.

- **RESTORE BASE PLOT:** Redraws the *base plot* in the display area, as described for the same option on the main menu.
- **REFRESH SCREEN:** Redraws the current display, as described for the same option on the main menu.

Modify Defaults

Picking this option results in a submenu for modifying several default items:

```
EXIT
HELP
CHANGE DEFAULT COLOR
CHANGE DEFAULT FILE
CHANGE DEFAULT LINE TYPE
MODIFY BASE WINDOW
```

The principal options of this submenu are explained below.

- **CHANGE DEFAULT COLOR:** Enables you to change the color that is automatically used for string insertion, color flooding, and polygon definition.

During insertion, flooding, and polygon definition, lines are drawn with the *default color* (pen #). Picking **CHANGE DEFAULT COLOR** enables you to select a new default pen number (0 - 255) through the following submenu:

```
EXIT
HELP
DEFAULT COLOR
PEN # n
FORWARD
BACKWARD
PEN # 0
.
.
.
PEN # 15
```

<— default pen number
(displayed in the default color)

<— background color, not visible

The default color entry at the top of the menu is provided for reference and is displayed using the default color. Each **PEN # x** item on the menu is displayed in the corresponding color.

- **FORWARD (or BACKWARD):** Displays the next (or previous) 16 pen colors in the menu area. There are 256 possible colors with pen numbers that range from 0 to 255.

- **PEN # X:** Causes *X* to become the default color, and the **DEFAULT COLOR** item at the top of the menu is redisplayed in that color. (Note that pen # 0 is the background color and will not be visible. However, pen # 0 can be selected by picking the appropriate area on the menu. To check that pen #0 has been selected, watch the **DEFAULT COLOR** item. If it disappears, the default color has become pen # 0.
- **CHANGE DEFAULT FILE:** Allows selection of a different file for insertions and pasted regions.

When multiple files are being edited, insertions and pasted regions only modify the current default file. **CHANGE DEFAULT FILE** enables you to select a new default file so that insertions will be associated with the appropriate file. Picking **CHANGE DEFAULT FILE** displays the following submenu:

(default file name)

EXIT

(file # 1)

(file # 2)

.

.

.

(file # n)

The name of the current default file is listed at the top of the menu for reference and is displayed in a different color than the rest of the menu. Picking *file # n* causes that file to become the Default File, and the first line of the menu will be rewritten with the selected file name.

- **CHANGE DEFAULT LINE TYPE:** Enables you to change the type of line that will be used for subsequent drawing and inserting. Picking **CHANGE DEFAULT LINE TYPE** displays the following menu.


```
EXIT
HELP
DEFAULT LINE TYPE =
(default line type)
SOLID
DOTTED
DASH DOT
DASH
DOT DOT DOT DASH
WIDE LINE
EXTRA WIDE LINE
```

The current default line type is listed at the top of the menu for reference and is displayed in a different color than the rest of the menu.

Picking **EXIT** terminates the command and returns control to the **MODIFY DEFAULTS** menu. Picking any other item on the submenu causes the selected line type to become the new default line type, listing it at the top of the menu.

- **MODIFY BASE WINDOW:** Used to alter the minimum and maximum location values for restoring and displaying the base plot.

Picking **MODIFY BASE WINDOW** results in the following prompt for new base limits:

```
XMIN= xxx XMAX= XXX YMIN= yyy YMAX= YYY
ENTER NEW BASE VALUES >
```

Press **CTRL-Z** to abort the function, or enter new limits by typing

1. minimum horizontal value (followed by a comma or **RETURN**)
2. maximum horizontal value (followed by a comma or **RETURN**)
3. minimum vertical value (followed by a comma or **RETURN**)
4. maximum vertical value (followed by **RETURN**).

If the display data has been registered to known longitude-latitude values, then these limits would be longitude (y and Y) and latitude (x and X) values. If the display data has not been registered to a specific coordinate system, then these base window limits refer to an arbitrary default system of horizontal (x) and vertical (y) coordinates.

Polygon Fill Functions

POLYGON FILL FUNCTIONS enables you to fill the areas inside a polygon with a color or pattern. The pattern type, pattern spacing, and fill color can all be specified. Any polygon can have polygon fill characteristics associated with it.

Picking **POLYGON FILL FUNCTIONS** results in the following submenu for controlling the filling of polygon areas with a color pattern:

```
EXIT

HELP
CANCEL
CONTINUE

FILL POLYGON
UNFILL POLYGON

CHANGE DEFAULT FILL
CHANGE DEFAULT SPACING
CHANGE DEFAULT COLOR

ENABLE POLYGON FILL
DISABLE POLYGON FILL
REFRESH SCREEN
```

The principal options of this submenu are explained below.

■ **FILL POLYGON:** Associates fill characteristics with a polygon.

1. Pick **FILL POLYGON**.
2. Pick a point on or near the polygon to be filled.

The selected polygon will blink. If no polygon is blinking or if the wrong polygon is blinking, pick another point that is closer to the desired polygon.

3. Pick **CONTINUE**.

The selected polygon will disappear temporarily. GEDIT will respond with the following prompt for pen (color), fill (pattern), and pattern spacing (space between lines in the fill pattern).

ENTER PEN #, FILL #, _ & SPACING >

4. Press CTRL-Z to accept the current default values or type in three numerical values (separated by commas or RETURNS) for

pen # (0 to 255 -- see Modify Defaults, page 2.107)
fill # (0 to 6 -- see Change Default Fill, below)
spacing (pattern line spacing in inches)

Example:

ENTER PEN #, FILL #, _& SPACING >6,6,.25 <RETURN>

After you press RETURN, GEDIT will fill the polygon, and those fill characteristics will be associated with the polygon. In the example, the polygon fill would be an aqua (6) crosshatch fill (6) with 1/4-inch (0.25) spacing.

- **UNFILL POLYGON:** Cancels the fill characteristics associated with a polygon. Pick a polygon as above; then pick **CONTINUE**. If the polygon is already filled, the fill will be erased.
- **CHANGE DEFAULT FILL:** Used to change the default fill type. Picking **CHANGE DEFAULT FILL** results in the following submenu:

EXIT

HELP

DEFAULT FILL =
(default fill type)

0 SOLID FILL
1 HORIZONTAL FILL
2 VERTICAL FILL
3 BOX FILL
4 45 DEGREE FILL
5 135 DEGREE FILL
6 CROSSHATCH FILL

The top line shows the current default fill. This can be changed by picking any of the entries 0 - 6. If a different type is selected, the top line will change to reflect the new default fill type. Picking **EXIT** returns you to the **POLYGON FILL FUNCTIONS** submenu.

- **CHANGE DEFAULT SPACING:** Used to change the spacing between the lines of the fill pattern.

1. Pick **CHANGE DEFAULT SPACING**.

The current spacing will be printed on the text screen along with a message requesting a new spacing number.

2. Type a new spacing number and press RETURN, as in the example below.

```
CURRENT DEFAULT SPACING (INCHES) = 0 (or whatever)
ENTER NEW DEFAULT SPACING FOR POLYGON FILL > .50
<RETURN>
```

The numbers entered are interpreted as inches relative to the graphics screen coordinates. In this example, the spacing of 0.50 will result in 1/2-inch spacing between the lines in the fill pattern.

- **CHANGE DEFAULT COLOR:** Used to change the default color for further polygon definitions (or other operations). The **CHANGE DEFAULT COLOR** function is included in this menu for convenience and operates as described in the **MODIFY DEFAULTS** menu (see page 2.107).
- **ENABLE POLYGON FILL:** Fills all polygons that have fill characteristics. A polygon to be filled must have already been associated with a fill color and pattern.
- **DISABLE POLYGON FILL:** Disables the automatic filling of polygons, negating the **ENABLE POLYGON FILL** command. You can still use the **FILL POLYGON** function. To erase prior polygon fills, pick **DISABLE POLYGON FILL**; then pick **REFRESH SCREEN**.
- **REFRESH SCREEN:** Redraws the current display, just as in the main menu. The **REFRESH SCREEN** function is included in this menu for convenience in using the polygon fill functions.

Re-Color-Texture String

This function changes the color and texture (line type) of a composite string to the "default" color and line type. Therefore, it is important to first pick the desired "default color" and the desired "default line type" (see page 2.107, **MODIFY DEFAULTS**). After setting the desired defaults:

1. Pick **RE-COLOR-TEXTURE STRING**.
2. Pick a point on or near the desired string.

The composite string will then blink. If this is not the desired string, pick a different one.

3. Pick **CONTINUE** to modify the color and texture of the string to the default values.

Refresh Screen

Picking **REFRESH SCREEN** redraws the current display.

This command will restore display elements that might have been damaged, for instance, when an overlapping string was deleted. This command can also be useful for removing display elements that you no longer wish to display, such as text after text display has been disabled (see *Text Functions* in this section).

Restore Base Plot

Initially the base plot is the area displayed when the main menu is first presented. The base plot is defined by the minimum and maximum values of the input data. These limits can be reset by using the **MODIFY BASE WINDOW** command (see page 2.107, **MODIFY DEFAULTS**).

Picking **RESTORE BASE PLOT** causes the base plot to be redrawn in the display area of the screen. This function might be used after zooming, for instance, to restore the display to its original scale and location.

Text Functions

Picking **TEXT FUNCTIONS** results in the following submenu for manipulating text strings:

Several functions on this submenu require you to pick a text string (on the display) for subsequent operations. This is the procedure:

To Pick a Text String:

1. Use the graphics cursor to pick a point on the text (usually near the bottom middle of the first line of text, unless the text has been centered.)

A small point indicator will begin blinking to indicate which line of text has been picked.

2. Pick **CONTINUE**.

GEDIT will then continue with the selected function.

The principal options of the submenu are explained in the following list, which has been grouped according to the annotations on the menu above.

Manipulating Text Strings

- **INSERT TEXT STRING:** Used to insert text into the display.

1. **INSERT TEXT STRING.**

GEDIT will display the following prompt:

ENTER TEXT PEN, SIZE, ROTATION, AND FONT >

2. Press **CTRL-Z** to accept the current default values for text pen (color), size, rotation, and font type, *or* type new values (separated by commas or spaces) followed by **RETURN**.

The required parameters are

Text pen: a number indicating the text color (see Changing Defaults)

Text size: inches or decimal fractions of inches

Rotation: 0 - 360 degrees, clockwise from horizontal

Font type: 0 - 4: 0 = Stick

1 = Enhanced Stick

2 = Script

3 = Roman Triplex

4 = Gothic

When you start GEDIT, the default values are 0.1-inch text size, 0 degrees rotation, and 0 (Stick) font type. These default items can be changed using the corresponding **CHANGE DEFAULT** items in this submenu.

Next GEDIT will display a prompt for lines of text:

ENTER LINE OF TEXT >

3. Type a line of text, followed by **RETURN**.

GEDIT will repeat the prompt for text input.

4. Repeat step 3, entering each text line (up to 5 lines) until the text string is complete.
5. After you are done entering strings of text, press **CTRL-Z** in response to the text input prompt.

6. Pick a point on the display where the text string is to begin.

Once the position has been selected, GEDIT will determine if a text file already exists for the default data file. If a text file exists, the new text string will be inserted into that file.

If a text file does not exist, GEDIT will prompt you for the name of a text file:

Enter TEXT file name >

7. If you see this prompt, either a) enter a text file name of 7 characters or less (with no filename extension) or b) press RETURN or CTRL-Z to create a text file that has the same name as the current DMS data file but with a ".TXT" extension.

GEDIT puts the text file in your default directory and then inserts the name of the text file into the current DMS data file.

■ **DELETE TEXT STRING:** Allows deletion of a picked text string.

1. Pick **DELETE TEXT STRING**.
2. Pick the text string to be deleted. Then pick **CONTINUE**.

GEDIT will remove the text string from the display (and from the appropriate text file).

■ **ROTATE TEXT STRING:** Allows input of a degrees value for rotation of the text string on the display.

1. Pick **ROTATE TEXT STRING**.
2. Pick the text string to be rotated. Then pick **CONTINUE**.

GEDIT will display the following prompt:

CURRENT TEXT ROTATION (IN DEGREES) = 0.0 (or whatever)
ENTER NEW TEXT ROTATION (IN DEGREES) >

3. Type a rotation value, in degrees clockwise from horizontal (0 - 360), followed by RETURN. (Negative degrees are counterclockwise.)

The text string will be erased, redrawn, and rotated by the desired amount.

- **MOVE TEXT STRING:** Allows relocation of a text string within the display area.

1. Pick **MOVE TEXT STRING**.
2. Pick the text string to be moved. Then pick **CONTINUE**.
3. Pick a point on the screen where the text is to be relocated.

The text will be erased and redrawn at the new location.

- **RE-SIZE TEXT STRING:** Used to modify the size of an existing text string.

1. Pick **RE-SIZE_ TEXT_ STRING**.
2. Pick the text string to be re-sized. Then pick **CONTINUE**.

GEDIT will display the following prompt:

```
CURRENT TEXT SIZE (IN INCHES) = 0.1000 (or whatever)
ENTER NEW TEXT SIZE (IN INCHES) >
```

3. Type in a new text size value, and press RETURN.

GEDIT will erase the text string and redraw it at the entered size.

- **RE-FONT TEXT STRING:** Used to redraw an existing text string in a different font (typeface).

1. Pick **RE-FONT TEXT STRING**.
2. Pick the text string to be drawn in a different font. Then pick **CONTINUE**.

GEDIT will display the following prompt:

```
ENTER NEW FONT TYPE:
```

3. Type a new font value (0 - 4) and press RETURN.

The text string will be redrawn in the new font. (See the description of **CHANGE DEFAULT FONT** in this section for a list of fonts and their corresponding integer values.)

- **RE-COLOR TEXT STRING:** Used to redraw a text string in the default color. To redraw a string in a color other than the default color, first use the **CHANGE DEFAULT COLOR** option described later in this section.

1. Pick **RE-COLOR TEXT STRING**.
2. Pick the text string to be re-colored. Then pick **CONTINUE**.

The text string will be erased and redrawn in the current default color.

- **REPLACE TEXT STRING:** Used to replace one text string with another at the same location.

1. **REPLACE TEXT STRING.**

GEDIT will respond with the prompts to specify a pen (color), size, rotation, font, and new text.

2. Enter text, following the same procedure used for **INSERT TEXT STRING**.
3. After pressing **CTRL-Z** to signal the last line of new text, pick the text string to be replaced. Then pick **CONTINUE**.

The selected text string will be erased and replaced with the new text.

Changing Defaults

Changing the default values for text size, rotation, font, and color will affect these characteristics for any new text strings. Changing the default *color* will affect any new data element.

- **CHANGE DEFAULT TEXT SIZE:** Displays the current default text size (in inches) and prompts for a new default value. Type a new value followed by **RETURN** *or* press **CTRL-Z** to abort the function and retain the current value.
- **CHANGE DEFAULT ROTATION:** Displays the current default rotation (in clockwise degrees) and prompts for a new default value. Type a new value followed by **RETURN** *or* press **CTRL-Z** to abort the function and retain the current value.
- **CHANGE DEFAULT FONT:** Displays the following submenu for selecting an alternative font and prompts for a new font value:

(current default font)

EXIT

0 = STICK
1 = ENHANCED STICK
2 = SCRIPT
3 = ROMAN TRIPLEX
4 = GOTHIC

Type a new value followed by RETURN or press CTRL-Z to abort the function and retain the current value. The new default font will be listed at the top of the submenu. Some fonts may not support all ASCII characters, especially punctuation.

- **CHANGE DEFAULT COLOR:** Displays a submenu for selecting an alternative default color. This function is included in the **TEXT FUNCTIONS** menu for convenience and operates as described for the **MODIFY DEFAULTS** option of the main menu (see page 2.107).

The text that you insert may be **left justified** (the initial default) or **centered**. The text may also be **variable size** (the initial default) or **constant size**.

- **CENTERED TEXT:** Causes any new text string to be **centered** about the location selected for the text string.
- **LEFT JUSTIFIED TEXT:** Causes any new text string to begin at the location selected for the text string, on a line defined by the selected point and the text rotation.
- **CONSTANT SIZE TEXT:** Causes any new text string to be displayed at the default text size, regardless of any zooming or changes in the scale of the display area.
- **VARIABLE SIZE TEXT - ZOOM:** Causes any new text to change in size when the size of the display area changes (that is, the text string will be affected by zooming).

Controlling the Display

The **ENABLE TEXT DISPLAY** and **DISABLE TEXT DISPLAY** functions are on/off switches for telling GEDIT whether or not to display available text.

- **ENABLE TEXT DISPLAY:** Turns on the capability to display any text information associated with the input files, and draws the text on the display. By default, text display is disabled upon entering GEDIT.

(Text will not be displayed if the currently displayed area is considerably larger than the scale at which the text was originally entered. If expected text is not displayed when you pick **ENABLE TEXT DISPLAY**, use a zoom function from the main menu to magnify the display to a scale that is close to that used when the text was entered. The text should then appear on the display.)

- **DISABLE TEXT DISPLAY:** Turns off the capability to display text information.

Any text on the screen will remain there until the screen is redrawn (for example, by picking **REFRESH SCREEN**).

- **REFRESH SCREEN:** Redraws the current display, just as in the main menu. The **REFRESH SCREEN** function is included in this menu for convenience in using the text functions. Use the **REFRESH SCREEN** option from the main menu to subsequently erase disabled text.

Text String Functions

Picking **TEXT STRING FUNCTIONS** results in the following submenu for manipulating text strings:

EXIT
HELP
CANCEL
CONTINUE
INSERT STRING
EDIT TEXT STRING

The principal options of this submenu are explained in the following list.

- **INSERT STRING:** Used to insert a text seed point and text associated with that point location. This text is normally invisible and can only be viewed by using attribute selection functions (see **ATTRIBUTE FUNCTIONS**, page 2.69). This text will NOT be displayed when you pick **ENABLE TEXT DISPLAY** on the **TEXT FUNCTIONS** menu. This can be useful in associating text with certain topographic features, such as different portions of a road or different areas of a lake.

1. Pick **INSERT STRING**.

GEDIT will display the following prompt:

ENTER Line of string >

2. Type a line of text, followed by RETURN.
3. Repeat step 2, entering up to a total of 5 lines of text.
4. When you are done entering text, press CTRL-Z in response to the text input prompt.
5. Position the cross-hairs to the desired area of the map, and pick a point location.

- If there is no text file associated the current "edit file," the system will inform you and request a TEXT file name:

No TEXT file associated with filename.dms

Enter TEXT file name >

- If you see this prompt, enter a file name for the text.

A seed-point marker (a white asterisk) will appear at that point, and the function is complete.

- **EDIT TEXT STRING:** Enables you to add or replace the text associated with a text seed point. If no text is associated with the given seed point, the new text will simply be added to the other attributes associated with the point. If on the other hand, there is already text associated with the seed point, the new text will replace the old text. In other words, you may only have one text string associated with a point at a time. For a complete mapping of all seed points for possible editing, you need to first **ENABLE POINT** data (see **ATTRIBUTE FUNCTIONS**, page 2.69)

1. Pick **EDIT TEXT STRING**.

GEDIT will display the following prompt:

ENTER Line of string >

2. Type a line of text, followed by RETURN.
3. Repeat step 2, entering up to a total of 5 lines of text.
4. When you are done entering text, press CTRL-Z in response to the text input prompt.

Now you need to choose the seed point to be edited.

5. Position the cross-hairs to pick an existing point.

A seed-point marker will begin blinking.

6. If this is the correct point, pick **CONTINUE**.

If you wish a different point, repeat step 5 until you are satisfied with your selection. Then pick **CONTINUE**.

When the seed point marker stops blinking, the function is complete.

Unsave Composite String

This option enables you to insert (into the screen display) a composite string that has been previously stored in a special holding area of computer memory called the *save buffer*.

The **DELETE COMPOSITE STRING** and **RE-COLOR-TEXTURE STRING** functions place a copy of a composite string into the save buffer when you pick a composite string to be deleted, recolored, or retextured. Once the picked composite string begins to blink, the copy is in the save buffer, whether or not you continue the deletion or recoloring/retexturing.

Note: Other functions also use the save buffer for temporary storage. If you want to use the string stored in the save buffer, retrieve it as soon as possible after storing it—before using another function that would replace the string with something else.

The following procedure is a typical sequence of functions that uses **UNSAVE COMPOSITE STRING** to copy a composite string.

To copy a composite string at another location on the screen display:

1. Pick **DELETE COMPOSITE STRING**.

The menu item will blink in a second color.

2. Pick a point on or near the composite string to be deleted.

The composite string will be copied into the save buffer and then begin to blink on the screen.

3. Pick **CANCEL** so that you do not have to continue with the delete function.

The composite string will stop blinking, but the copy will be retained in the save buffer.

4. Pick **UNSAVE COMPOSITE STRING**.

The menu item will blink in a second color.

5. Pick the location on the display where the string is to be copied.

The composite string will be redrawn at that location.

Zoom In

Pick **ZOOM IN** to enlarge a square portion of the displayed area.

1. Pick **ZOOM IN**.
2. Pick a point on the display at the center of the area that you want to enlarge.
3. Pick a second point that would lie on one side of the square area that you want to enlarge with the first point at the center.

After you define the area, GEDIT will redraw the display, enlarging the defined area to fill the display area.

If you are not satisfied with the area that you have enlarged, you can pick **RESTORE BASE PLOT** to redraw the area as it was first displayed (see **RESTORE BASE PLOT** in this section).

Zoom Out

Pick **ZOOM OUT** to reduce the currently displayed area to a square within a larger area. Define the area to be reduced (scaled down) in the same manner as described for the **ZOOM IN** command:

1. Pick **ZOOM OUT**.
2. Pick a point on the map at the center of the area that you want to reduce (scale down).
3. Pick a point on the display that would lie on the edge of a square with the first point at the center.

The currently displayed area will be rescaled to the size of the square, and the center point of the square will be centered in the display area.

It is possible to zoom out beyond the maximum values of the input data, resulting in "blank" areas at the edges of the redrawn display window. You can always use the **RESTORE BASE PLOT** command to redraw the base plot display.

LATLONXUTM

The LATLONXUTM utility reads elevation data from an existing Terrain Analysis Cell (TAC) file (and its associated TAA file), and creates a new TAC file (and TAA file) with the X-Y coordinate data in a different coordinate system. LATLONXUTM can convert TAC data between the longitude-latitude coordinate system and the Universal Transverse Mercator (UTM) coordinate system in both directions:

What You Need to Know Before Using LATLONXUTM

The LATLONXUTM utility prompts you for the following items:

<i>Input File (.TAC)</i>	This is the name of the TAC file to be read.						
<i>Output File (.TAC)</i>	This is the name of the TAC file to be created.						
<i>Min and Max X and Y of the output map</i>	These are the minimum and maximum X and Y coordinate extents of the new map file (where X refers to the east-west values and Y refers to the north-south value).						
<i>Pad Type</i>	The <i>pad value</i> is a numeric value that will be used to fill in the output map cells at edge areas where the input map does not overlap the output map. This situation occurs when there are differences between the areas covered by the input and output map projections. The cells that contain these pad values are said to be "padded." The utility prompts you to choose one of the following <i>pad types</i> or methods for choosing pad values: <table><tr><td><i>None</i></td><td>A pad type of "None" means that the background value (0) will be used.</td></tr><tr><td><i>User supplied</i></td><td>A pad type of "User supplied" means that the utility will then prompt you to enter a pad value.</td></tr><tr><td><i>Nearest Neigh</i></td><td>A pad type of "Nearest Neighbor" means that the pad values will be taken from the cells nearest to the cells to be padded. This is the default choice.</td></tr></table>	<i>None</i>	A pad type of "None" means that the background value (0) will be used.	<i>User supplied</i>	A pad type of "User supplied" means that the utility will then prompt you to enter a pad value.	<i>Nearest Neigh</i>	A pad type of "Nearest Neighbor" means that the pad values will be taken from the cells nearest to the cells to be padded. This is the default choice.
<i>None</i>	A pad type of "None" means that the background value (0) will be used.						
<i>User supplied</i>	A pad type of "User supplied" means that the utility will then prompt you to enter a pad value.						
<i>Nearest Neigh</i>	A pad type of "Nearest Neighbor" means that the pad values will be taken from the cells nearest to the cells to be padded. This is the default choice.						

Converting TAC File Coordinate Data with LATLONXUTM

To start the LATLONXUTM utility, just enter LATLONXUTM at the system prompt.

The following sequence is an example of creating a TAC file in the UTM coordinate system from a TAC file with longitude-latitude coordinates. The reverse sequence for creating a longitude-latitude TAC file from a UTM TAC file is identical except that a TAC file in UTM coordinates is used as the input file.

Example:

```
$ LATLONXUTM
Enter Input File (.TAC): TACLONLAT.TAC
Enter Output File (.TAC): TACUTM.TAC
Do you wish to convert Lat-Long TAC file to UTM [y]? Y
Enter Min X of Output Map [329270.0]: <RETURN>
Enter Max X of Output Map [415895.0]: <RETURN>
Enter Min Y of Output Map [4428026.0]: <RETURN>
Enter Max Y of Output Map [4540471.0]: <RETURN>
Pad Type (0=None, 1=User supplied, 2=Nearest Neigh) [2]: <RETURN>
```

The utility provides default values for the output map extents; these are the extents of the input map. To accept the default output map extents, press RETURN at each prompt. Similarly, to accept the pad type default of "nearest neighbor," press RETURN.

Results of Using LATLONXUTM

After using LATLONXUTM, you will have a new TAC data set: one TAC file (.TAC extension) and its associated TAA file (.TAA extension). In the example here, LATLONXUTM creates a TAC data set in the UTM coordinate system from a TAC data set in longitude/latitude. LATLONXUTM can also be used to create TAC data in longitude/latitude coordinates from TAC data in UTM coordinates.

LINEAR_JOIN

A DMS file that has been built from other DMS files and/or from different data sources may contain discrete strings that *should* have exactly matching endpoints but which do not. The LINEAR_JOIN utility reads a single DMS file and joins any vector strings that have closely matching end points and common attributes. The result is a new DMS file that contains a reduced number of strings. This reduces the number of "nodes" for network models that use the strings, such as the system evacuation model.

Caution

A joined string that results from joining other strings may *lose* some attributes of the independent strings. Please read the following section carefully before using LINEAR_JOIN.

What You Need to Know Before Using LINEAR_JOIN

LINEAR_JOIN first asks you to specify the names of the original DMS file and the new DMS file that will contain the joined strings. The utility then enables you to control which vector strings will be joined by specifying criteria. The following sections describe criteria and strategies for joining strings with LINEAR_JOIN.

Criteria for Joining Strings

You can specify three criteria for joining strings within a DMS file:

<i>attributes to INclude</i>	This refers to the attribute values (major, minor, and parameter values) that the strings to be joined must <i>share in common</i> . You may specify up to 15 sets of attributes to INclude. To be joined, two strings must share <i>all</i> of these attributes.
<i>attributes to EXclude</i>	This refers to the attribute values that the strings to be joined must NOT share. Any string that contains these attributes is NOT joined, even if the string has all the "attributes to INclude." You may specify up to 15 sets of attributes to EXclude. To be joined, two strings must not contain <i>any</i> of these attributes.
<i>epsilon (in degrees)</i>	This refers to how close the endpoints of two strings must be to qualify for being joined. Two strings that have endpoints separated by no more than this number of degrees (of longitude and latitude) are considered to have a common endpoint.

A fourth criterion, which you cannot control, is that only two strings can be joined at a common endpoint: if more than two strings meet the first three criteria, then *none* of those strings are joined.

In other words, LINEAR_JOIN will join *two* strings within a DMS file if those strings do the following:

- 1) share *all* the "INclude" attributes,
- 2) do NOT share *any* "EXclude" attributes,
- 3) have endpoints that are within "epsilon" degrees of each other, and
- 4) are NOT within "epsilon" degrees of any other string endpoint.

Caution

A resulting joined string will have the display characteristics of the first string and *only the specified "INclude" attributes*. Any other attributes are *discarded*. Consider this as you plan how to use LINEAR_JOIN.

To specify attributes, you will need to know attributes values for the attributes you wish to specify. You can find a list of IBS attribute values in Appendix B.

Strategies for Joining Strings

If multiple attributes describe a classification of strings that you want to join, you may need to use LINEAR_JOIN multiple times to get the best results. In general you may want to start at the highest resolution of attributes and work toward the lowest resolution. For example, *class 1* roads is a general attribute for roads in IBS databases. Other attributes are used to further define class 1 roads as *undivided*, *divided*, *one way*, and so on. If you wanted to join all of the "class 1 roads" in a DMS file together, you might want to start first by joining these subcategories of roads, executing LINEAR_JOIN once for each of these attributes (combined with the general class 1 attribute). Each output file would then be used as the input file for the next use of LINEAR_JOIN. After the subcategories of strings were joined, you could then join all the class 1 strings under the general class 1 attributes.

If more than two strings are estimated to have a common endpoint (within the epsilon distance), LINEAR_JOIN does not attempt to join these multiple strings. To join these strings correctly, you will need to examine each string individually and join them manually: the GEDIT utility enables you to join specified strings.

Reducing the Number of Strings in a DMS File with LINEAR_JOIN

To start the utility, just enter **LINEAR_JOIN** at the system prompt.

The following simple example joins "Class 3 road" strings contained in a file named **TOOELE.DMS**. Two strings will be joined when the following criteria are met:

- Both strings have the attribute 5,140,0 (both strings are Class 3 roads).
- Neither string has the attribute 5,180,0 (neither string is a bridge).
- The two strings have endpoints that match within 0.00001 degrees of both longitude and latitude (specified).
- No other strings meet at their common end point.

Example:

```
$ LINEAR_JOIN
```

```
Enter name of input DMS file (DMS) ==> TOOELE
```

```
Enter name of output DMS file (DMS) ==> NEWTOOELE
```

```
Enter epsilon (in degrees) to match arc endpoints [0.0001] ==>
0.00001
```

```
Provide major, minor, param values of attributes to INclude
(^Z to exit)
```

```
1 Enter major value ==> 5
1 Enter minor value ==> 140
1 Enter param value ==> 0
```

```
2 Enter major value ==> <CTRL-Z>
```

```
Provide major, minor, param values of attributes to EXclude
(^Z to exit)
```

```
1 Enter major value ==> 5
1 Enter minor value ==> 180
1 Enter param value ==> 0
```

```
2 Enter major value ==> <CTRL-Z>
```

If you just press RETURN instead of entering an epsilon (endpoint separation) value, the default value of 0.0001 degrees is used. If this value is inappropriate for your data—if the results are not as they should be—you can enter a smaller (stricter) value to assure more exact matching, or you can enter a larger (less strict) value to join strings whose endpoints are further apart than 0.0001 degrees.

You can enter up to 15 attributes to INclude and 15 attributes to EXclude. To quit entering attribute values, press CTRL-Z at the "major value" prompt as indicated in the example.

Results of Using LINEAR_JOIN

LINEAR_JOIN searches through the DMS file's set of string objects in repetitive cycles, on each cycle 1) finding a string that meets the LINEAR_JOIN criteria and 2) attempting to match and join it with a second qualifying string. A resulting joined string will have the display characteristics of the first string and *only the specified "inclusion" attributes*. Any other attributes are discarded.

When LINEAR_JOIN is finished, it creates a new DMS file that contains the same data as the original DMS file except that the new DMS file should contain fewer strings (because some strings have been joined) and fewer string attributes (because some attributes may have been discarded).

As it runs, the program displays a series of status messages that indicate how many string objects have been processed and how many have been "saved" in the new file. If strings have been joined successfully, the number of objects saved should be fewer than the number of objects processed. In the following example, the status messages indicate that a total of 219 objects in the original DMS file were reduced to 187 objects in the new DMS file.

Example:

```
*** MSG: Reading objects from input DMS file
*** MSG: Processing object #: 100
*** MSG: Processing object #: 200
*** MSG: # of objects processed: 219
*** MSG: Saving object #: 100
*** MSG: # of objects saved: 187
*** MSG: Done
```

MAIL_C

The MAIL_C utility checks the mail file of each IBS user once per minute to see if the user's mail status has changed. If a user's mail status has changed, MAIL_C updates a mail status message (which may be no message when there is no mail) at the bottom of the terminal screen.

MAIL_C is used in a background process that must be running *at all times* or else mail status messages will NOT change.

What You Need to Know Before Using MAIL_C

The MAIL_C utility runs in background (batch) mode on the VAX computer. Under usual conditions, this background process is already running and does not need to be started independently: the process is started by the batch command file IEMIS\$EXE:MAIL_C.BIS, which is executed when the system startup command file SYSS\$MANAGER:SYSTARTUP_V5.COM is run at installation or whenever the computer is rebooted.

If this background process is stopped for some reason, IBS users will NOT be notified of any changes to their mail status. To restart this process, a user must have system privileges (SYSPRV).

Restarting the Mail Checking Process

To restart the background process that runs MAIL_C, enter @IEMIS\$EXE:MAIL_C.BIS at the system prompt.

MAIL_C should run once a minute until someone stops the process.

Results of Using MAIL_C

MAIL_C checks to see if the status of each user's mail has changed: if new mail has arrived, if unread mail has expired, or if all messages have been read. If the mail status has changed, the MAIL_C utility notifies IBS, and IBS displays an appropriate message at the bottom of the user's screen:

<u>Mail Status Change</u>	<u>Message Displayed</u>
New mail has arrived.	NEW MAIL

<u>Mail Status Change</u>	<u>Message Displayed</u>
Existing mail has <i>expired</i> (not been read by a specified time)	LATE MAIL
All messages have been read.	<i>no message displayed</i>

Note: The message displayed on the IBS screen does not change immediately when the mail status changes: The message changes only after MAIL_C checks the mail status, once every minute.

When MAIL_C is running, the status of mail can also be checked by selecting **SHOW USER ENVIRONMENT** from the **STATUS BOARD** menu in the IBS program. If MAIL_C is not running, the **SHOW USER ENVIRONMENT** function may not report new or past due mail correctly. For further information, see the *IBS User Guide*.

MAIL_LIST

The MAIL_LIST utility enables you to use the electronic mail features of the system: sending and receiving messages; checking mail messages; and using mail distribution lists. MAIL_LIST is a stand-alone program that duplicates the mail-related functions of the MESSAGE BOARD menu in the IBS program, which is documented in the *IBS User Guide*.

To use the MAIL_LIST utility, enter MAIL_LIST at the system prompt.

\$ MAIL_LIST

MAIL_LIST then displays the following menu.

```
-----  
      MAIN MAIL LIST MENU  
-----  
0 : EXIT  
1 : VAX mail  
2 : CREATE/EDIT mail distribution list  
3 : SEND mail  
4 : CHECK sent mail  
-----  
      Choice (?=Help) ==>
```

Pick the number of the option you wish to use and follow the prompts. For further information about each option, see the instructions for MESSAGE BOARD in the *IBS User Guide*.

MAKEDMS

The MAKEDMS utility enables you to create DMS format files from sequential ASCII files (which you can create by using a text editor). You may include point or line structures in the ASCII input file.

Each entry within the input file contains two logical records. The first record describes the data type, display parameters, attributes, and number of longitude-latitude coordinates. The second record contains the longitude-latitude coordinates. Both logical records are entered in free field format (commas or spaces between parameters) and may span lines if necessary.

The format for the first record is:

```
PLOTFLAG, NPEN, # of Attributes, # of points, {Attributes}
```

where PLOTFLAG may be 0 or 1 (0 indicates a line data type, 1 indicates point) and NPEN is the pen number to be used when displaying the feature.

Each attribute has three subfields: Major code, Minor code, and parameter value. These three subfields are repeated for each attribute included with the feature. If the feature is a point for which an icon is to be displayed, the attribute describing the icon must be the first to appear in the attribute list.

The format of the second record is:

```
LONG1, LAT1, LONG2, LAT2, ...LONGn, LATn.
```

where longitude and latitude are described as decimal degrees.

The following is an example of a file containing one point and one line element. The line will be displayed using pen number 6 and consists of 4 points. The point has one attribute associated with it, which may be presumed to signify the icon to be displayed.

```
1, 1, 1, 1, 9, 210, 0
-110.3, 42.665
0, 6, 0, 4
98.66, 38.7257, -98.66, 37.0, -100.2,
37.6, -99.55, 38.222463
```

If this data were contained in MYFILE.DAT, then the following sequence would create the file MYFILE.DMS with the point and line data in DMS format:

\$MAKEDMS

Enter ASCII input filename > MYFILE.DAT

Enter DMS output filename > MYFILE.DMS

MAPDBGEN

The MAPDBGEN utility is used to extract a portion of a map database to create a separate "user-defined" map database. You may then modify the new map database to suit your needs.

This section covers the following topics:

- Why create a "user-defined" map database?
- What You Need to Know Before Using MAPDBGEN
- Creating a User-Defined Map Database with MAPDBGEN
- Results of Using MAPDBGEN.

Why create a "user-defined" map database?

A "user-defined" database is a separate subset of a larger DMS database. The difference between these databases, apart from size, is that you can edit and modify a "user-defined" map database without making system-wide changes. This allows you to tailor your DMS files for your own purposes.

What You Need to Know Before Using MAPDBGEN

Before using MAPDBGEN, there are certain pieces of information you need to know. If you are unsure about where to obtain this information, or if you need help, please contact your database administrator for more details.

MAPDBGEN asks you to specify the following information for the map database you are creating:

Top Level Directory The database top level directory is the actual path name of the directory where the new database will reside when it has been created.

Examples: Entering **aaa** would create the map database in a directory named **aaa** under your current directory.

Entering **[aaa]** would create the map database in the top level directory named **[aaa]**.

You will also need to know what geographic area you wish to extract from the existing map database to include in your new map database. This area can be defined in one of the three following ways:

<i>Long/Lat Corners</i>	Requires two sets of longitude and latitude coordinates.
<i>Center & Radius (mi)</i>	Requires one set of longitude and latitude coordinates and a radius distance in miles.
<i>Center & Radius (km)</i>	Requires one set of longitude and latitude coordinates and a radius distance in kilometers.

Before you start creating the map database, make sure you have determined which longitude and latitude coordinates and which radius you plan to use (the following diagram clarifies those parameters). This kind of information can be obtained easily through the graphic mapping utilities in IBS (see MPDISPLAY, for example).

Methods for Defining Geographic Areas

In addition to these parameters, you will also be asked if you wish to select *cover maps*. Cover maps (or overview maps) are displayed by the MPDISPLAY utility to show a database area from which you may select a region for display. Cover maps are usually low-detail maps that are represented by a single DMS file in the top directory of a map database.

If you do not use a cover map from the existing map database, you must furnish one before you can use the new database. This can be done by 1) placing one or more cover map DMS files in the top directory and 2) editing the topography control file, TOPOCTL.FIL, to contain the name(s) of the cover map file(s).

Creating a User-Defined Map Database with MAPDBGEN

The following is an example of how to create a "user-defined" map database using the MAPDBGEN utility.

Before beginning this process, you must know the system and topographic information explained in the previous section.

1. To run the utility, just enter **MAPDBGEN** at the system prompt. The utility starts by displaying the following prompt:

```
* * * Welcome to MAPDBGEN * * *  
  
Enter top level directory ==>
```

2. Type the name of the directory where you want your "user-defined" database to reside. When you are done, press RETURN. This tells the utility where to place any information you want to extract from the current map database.

```
* * * MSG: Welcome to the topo data copy utility  
* * * MSG: Map directory: xxxx:[yyyy.zzzz]  
  
      Area Selection Menu  
-----  
0 : Exit  
1 : Long/Lat Corners  
2 : Center & Radius (Mi)  
3 : Center & Radius (Km)  
-----  
Choice (?=Help) ==>
```

3. Select the option with which you want to define the area to be included in your "user-defined" map database.

If you need more information about the kind of input required by the area selection options, see *What You Need to Know Before Using MAPDBGEN*. Selecting Exit (0) in this menu returns you to the system prompt. Selecting one of the other options displays a screen asking you to enter the coordinates for the area.

4. Enter the coordinates that define the area of your map database. When you are done, another prompt asks you if you want to select cover maps:

```

Select from available cover maps? [N] ==>

```

5. To select cover map(s), enter Y. Or to bypass cover map selection, enter N (or just press RETURN).

If you answer Y (yes), a menu similar to the following is displayed. If you answer N (no), skip ahead to the Available Topos shown in step 7.

```

Available Cover Maps
-----

```

```

0 : Exit
1 : Conterminous U.S.
2 : TOOELE
-----

```

```

Choice (?=Help) ==>

```

6. To select a cover map for your "user-defined" map database, type the number next to it and press RETURN. An asterisk (*) then appears next to the selection, indicating that it will be included in the database. To deselect a map, enter the number again; the asterisk disappears, indicating that the map will not be copied.
7. When you have made all your cover map choices, select Exit (0).

The following menu then displays (note that different options may be in the menu, depending on your system setup):

```

Available Topos      1/10
-----

```

```

0 : EXIT
1 : ADMINISTRATIVE BOUNDARY
2 : AGRICULTURE
3 : BASE MAP
4 : CONGRESSIONAL DISTRICTS
5 : CULTURAL FEATURES
6 : RECOVERY AREAS
7 : CENSUS TRACT/ED
8 : ELEVATION CONTOUR(300M)
9 : ELEVATION
10 : ELECTRICAL POWER GRID
----- M O R E -----

```

```

Choice (?=Help) ==>

```

A few things should be noted about the Available Topos menu:

- The 1/10 next to the title is an indication of the page currently being displayed, in this case, page 1 of 10. To see different pages of the menu, type **U** to move up a page or **D** to move down a page.
- To select a topography (map layer), type the number after "Choice" and press RETURN. An asterisk (*) is then displayed next to the topography you wish to copy. If you type the same number again, the asterisk disappears, indicating that the topography will NOT be copied.
- When you have selected all the topographies you want to copy to your current site, select Exit (0). This indicates to MAPDBGEN that all topographies have been selected and that you are ready to copy them to your new map database. If you wish to discontinue this operation, type **Q** to quit the menu.

8. Select topographies from the Available Topos menu.

Caution

Be careful not to select topographies that already exist. If you select a topography that you have previously modified in your current site, you will overwrite the files and lose your work.

9. When you have made all your topography choices, select Exit (0).

You will then see a sequence of messages similar to the following:

```
* * * MSG: Creating topo directories & copying data
* * * MSG: Processing topography name
.
.
.
* * * MSG: Processing topography name
* * * MSG: Creating/Modifying SETUP file
* * * MSG: Database generation complete
<RETURN> to continue
```

Once you press RETURN, the Area Selection menu in step 2 appears again. You have just completed creating a new map database. If you wish to add more topographies, you can do so by starting again at step 3.

Results of Using MAPDBGEN

For each topography you choose, MAPDBGEN examines the longitude-latitude extents of every DMS file corresponding to that topography in the existing map database. If the area of a topography file overlaps the area of the new map database, then the entire topography file is copied over into the new map database. The actual coverage of the new map database will be greater than the specified area because some of the copied DMS files will have areas that partially overlap the specified area and partially overlap a region outside the specified area.

MAPDBUPDT

The MAPDBUPDT utility enables you to update a DMS database by adding new or modified files of topography data. Because this program has the potential to distort, lose, or otherwise damage necessary mapping information, it is important that you have a complete understanding of the update process before using MAPDBUPDT.

Where Does the Update Data Come From?

The simplest way to update topography data is to modify one of the topography files contained in a topography subdirectory of the database. In that case, the new version of the topography file is the update and MAPDBUPDT is not needed. A more likely path is that you will do one of the following:

- Use the EXTRACT utility or MPDISPLAY's **STORE REGION** function to extract a region from the database, and then modify the topographies in that region.
- Create new data by digitizing geographic information from a map.
- Add or append new data converted to DMS format from an outside source of topographic data.
- Some combination of those methods.

For example, you might use the EXTRACT utility to copy a city region from the database, add detailed roads, and place name data, and then want to add the new data to the database. Whatever the method of obtaining the data, the result should be a topography file (or set of topography files) containing new data for a specific region.

What Are the Requirements of Database Updating?

To update a DMS database for a specific region, each altered topography of the region must be updated--one at a time. Each topography file containing new information is an *Update File*. Update Files have two requirements:

- Each Update File must be associated with a specific *Update Region*. This Update Region can be either
  - the geographic *extents* (longitude-latitude limits) listed in the DMS file header, or

- a region defined by a *polygon file* (a separate DMS file containing a polygon that describes the Update Region).
- Each Update File must represent *all* of the data for a particular topography within the Update Region.

The latter point is important: For the *entire Update Region*, MAPDBUPDT deletes old data for the topography and replaces it with the topography data in the Update File. Any "old" topography data that you want to save must be included in the Update File or that "old" data will disappear during the update. If the Update Region is larger than the area you really wish to change, a patch of "nothing" will appear along one or more edges of the area when the topography is displayed from the updated database. For this reason, it is crucial that the Update Region is exactly what you want it to be. Because the geographic extents of a DMS topography file can change during various storing, editing, appending, and manipulation operations...

Note: We strongly recommend that you create a *polygon file* that defines a polygon around the Update Region and then make sure that each topography you update contains the complete set of topography data for that region.

You can create a polygon file in several ways:

- You can use GEDIT to display topography files and draw a polygon defining the Update Region in a separate input file. (See *Specifying Input Files* in the description of GEDIT.) You can continue to display the polygon as you edit topography data in other input files.
- MPDISPLAY's **STORE REGION** option automatically saves a polygon of the stored region under the region name: For example, a stored region named MYAREA includes a polygon file named MYAREA.DMS.
- GEDIT's **STORE REGION** option automatically saves a polygon of the stored region under the name GEDIT.CLP.

You can check the correspondence between an Update Region polygon and the Update File by entering both DMS files as input files to PLOTDMS, a utility program that quickly plots DMS data. If there is a sharply defined empty space between the polygon and the topographic data, then there will likely be data lost if those files are used for an update.

What Happens During an Update?

Background. Every topography in a DMS database has its own subdirectory. Each subdirectory contains a binary *limit file* named LIMITxx.BIN, where "xx" is the two-character code of the topography. This binary file specifies the names and geographic extents of all the topography files that make up the topography in that subdirectory. Each subdirectory also contains a reference file, T.COM, which lists the names of the topography files.

Running MAPDBUPDT. MAPDBUPDT starts by asking you to specify a) the two-character abbreviation code of the topography you wish to update, b) the name of the Update File, and c) the Update Region.

The program then enters the corresponding topography subdirectory and reads the LIMIT file. For each database file specified in the LIMIT file, MAPDBUPDT determines whether the database file overlaps the Update Region.

- If no overlap occurs, the name and extents of the database file are placed in a new LIMIT file.
- If a complete overlap occurs, the name and extents of the database file are NOT included in the new LIMIT file.
- If a partial overlap occurs, the program creates a new version of the database file, *deleting the graphics data* in the overlapping area. The name and extents of the new database file are placed in the new LIMIT file.

After each database file specified in the original LIMIT file has been processed, a new version of the Update File is copied into the topography subdirectory, and the name of the new Update File is placed into the new LIMIT file. The new version of the Update File contains only the topographic data from within the Update Region. Each file name included in the LIMIT file is also placed in a new T.COM file.

At the end of updating one topography, the topography subdirectory should contain:

- a new version of the Update File
- the rest of the data files that now constitute the database topography
- a new LIMIT file, LIMITxx.BIN, which specifies the names and extents of the new Update File and the rest of the files that now constitute the topography
- a new T.COM file that lists the names of the same files

- some old versions of files that are no longer part of the database data for that topography.

A Procedure for Updating a DMS Database

If an error occurs during the updating of a database, you must be able to reconstruct the original DMS database, determine what went wrong, and try again. The following is a methodology for using MAPDBUPDT to safely update a database.

1. Create one or more *Update Files*.

Remember, each Update File consists of all the data for a particular topography within a specific Update Region. It is preferable that the Update Region is specifically defined by a polygon in a separate DMS file.

2. If you are updating a user-defined DMS Database, set the default directory to the top-level database directory and enter @SETUP to assign the logical names to access the database.

Or if you are a system database (national maps) manager, enter SYSDATABASE to be sure that you are accessing the system database.

3. Set the default directory to the database subdirectory of one topography that you wish to update.
4. Check the topography subdirectory to become familiar with the topography files and to confirm that the LIMITxx.BIN and T.COM files are in the subdirectory.
5. Copy the Update File for the particular topography into the subdirectory. (If you have a polygon file defining the Update Region, copy that file into the subdirectory also.)
6. If there is a separate text file (xxx.TXT) associated with the topography file, copy that file into the subdirectory also.
7. **SAFETY FIRST:** Create a complete copy of the topography subdirectory and its files where you can retrieve them and reconstruct the database if problems arise.
8. To start the update program, enter MAPDBUPDT.

You will see the following three (or four) prompts. The responses expected are explained as items A, B, C, and D.

Enter the 2 character abbreviation of the
topography you wish to update > * A *

Enter the name of file you want to add to the database > * B *

Is the geographical data in the update file bounded by the
lat/long extent or a user defined polygon? (E or P) * C *

Enter the name of the file that contains
the update region polygon > * D *

- * A * Be sure to enter the correct abbreviation code for the topography you are updating.
  - * B * The Update File you specify must reside in the current default directory. If you specify a file name that points to a different directory, the program will respond with an error message and stop processing.
  - * C * If you enter E, MAPDBUPDT uses the longitude-latitude extents of the Update File as the Update Region and does not prompt for an update region polygon. If you enter P, you will see the prompt for the update region polygon.
  - * D * Enter the name of the polygon file to designate the Update Region.
9. If an error message appears and the program does not run to completion:
- a. Reload the original topography data, if necessary, and make the necessary corrections.
  - b. Try again, restarting the update process.
  - c. If the program terminated without a message or if you are completely stumped by what happened, reload the original database data and contact your System Manager.
10. If the program runs to completion without any error messages, check the update:
- a. Check the directory to confirm that new versions of the LIMIT file and T.COM have been created.
  - b. Check the contents of T.COM to see that the name of the Update File has been added to the list of topography files.

11. Run MPDISPLAY to examine the Update Region and the area surrounding it.
12. If you see blank patches of missing data at the edges of the Update Region, reload the original database data. Then—
  - a. Determine a new, smaller Update Region, or
  - b. Modify the Update File to include the missing information.
  - c. Restart the update procedure.
13. If everything looks correct,
  - a. PURGE the topography subdirectory to delete old file versions.
  - b. Examine the T.COM file to determine what files in the directory are still current.

Any remaining topography files that are not listed in the T.COM file are for data that were totally overlapped by the Update File data.
  - c. Delete the topography files that were totally overlapped by the Update File data.
  - d. Delete the Update Region polygon file, if one was used.

If you have successfully completed this procedure, then you have updated one database topography for a particular Update Region. Repeat the procedure for each topography you wish to update, restarting at step 3.

Example of Updating a Database Topography

Suppose that you have a user-defined Database that includes an AIRLINE ROUTES topography with a two-letter topographic code of "AR". Suppose that you wish to update the AIRLINE ROUTES data and have already completed steps 1 through 6 of the update procedure. The topography subdirectory [.AR] now includes 6 files:

- **UPDATESAR.DMS;1:** your Update File of new or modified AIRLINE ROUTES data
- **ARREGION.DMS;1:** a file containing a polygon that defines the Update Region

- **LIMITAR.DMS;1**: the binary LIMIT file for the AIRLINE ROUTES topography
- **NORTHAR.DMS;1**: a topography file that partially overlaps the data in UPDATESAR.DMS
- **SOUTHAR.DMS;1**: a topography file that completely overlaps the data in UPDATESAR.DMS
- **T.COM;1**: a file that contains two file names, NORTHAR.DMS and SOUTHAR.DMS (the two current data files of the AIRLINE ROUTES topography)

Starting from the [.AR] subdirectory, the interaction with MAPDBUPDT would look like this:

```
$ MAPDBUPDT
```

```
Enter the 2 character abbreviation of the NATMAP  
topography you wish to update > AR
```

```
Enter the name of file you want to add to the database >  
UPDATESAR.DMS
```

```
Is the geographical data in the update file bounded by the  
lat/long extent or a user defined polygon? (E or P) P
```

```
Enter the name of the file that contains  
the update region polygon > ARREGION.DMS
```

If the update was successful, the AIRLINE ROUTES subdirectory would then contain these 10 files:

- **UPDATESAR.DMS;1** and **UPDATESAR.DMS;2**, a new file version that contains data only from within the Update Region
- **ARREGION.DMS;1**
- **LIMITAR.DMS;1** and **LIMITAR.DMS;2**, a new version of the LIMIT file
- **NORTHAR.DMS;1** and **NORTHAR.DMS;2**, a smaller, updated file that does not overlap the data in UPDATESAR.DMS;2
- **SOUTHAR.DMS;1**
- **T.COM;1** and **T.COM;2**, a new file version that contains two file names, NORTHAR.DMS and UPDATESAR.DMS (the two current data files of the AIRLINE ROUTES topography)

Purging would remove the old file versions from the subdirectory. After ARREGION.DMS (the Update Region polygon) and SOUTHAR.DMS (the completely overlapped data) were deleted, the update for the AIRLINE ROUTES topography would be complete (for that Update Region).

MLMGR

Options in the IBS program enable IBS users to send electronic mail to each other by picking names from a list (see the **MESSAGE BOARD** option in the *IBS User Guide*). The MLMGR utility enables a system manager (or someone else with appropriate IBS privileges) to update the system master mail list by adding or deleting names.

The MLMGR utility should be used whenever new IBS user accounts are added or old accounts are deleted so that the system master mail list will be up to date.

What You Need to Know Before Using MLMGR

If you are *adding* people to the mail list, you need to supply the following information about each person:

NAME	The name information includes the last name, first name, and middle initial for each person.
JOB TITLE	This is the position that will be listed for each person.
USERNAME	If the person's user account is on a computer system node that is networked to other nodes by DECNET, then USERNAME refers to just the name of the person's account or home directory. If the person is on a node that is NOT connected by DECNET (this includes users of the onpost system), then USERNAME refers to the <i>entire</i> mailing address. For example, if the user has an InterNet mailing address, you would enter that address.
NODE	If the person's user account is on a computer system node that is networked to other systems by DECNET, then NODE refers to the name of that node where the user account resides. If the person is on a node that is NOT connected by DECNET, then NODE is left blank (not used).

If you are *deleting* people from the mail list, you must be able to pick their names from a listing of the mail list.

Updating the IBS Mail List

To start this utility, enter MLMGR at the system prompt. The program starts by giving you a choice between adding, modifying, or deleting user information on the IBS system mail list:

```
      UPDATE MAIL LIST MENU
-----
0 : EXIT
1 : ADD new user
2 : MODIFY user
3 : DELETE user
-----
      Choice (?=Help) ==>
```

- To add new users to the list, enter 1.
- To modify information about a user, enter 2.
- To delete existing users from the list, enter 3.

1 - Adding New Names to the Mail List

If you choose "ADD new user," the program displays the following screen form for adding one name:

MAIL LIST MAINTENANCE		
LAST NAME:	FIRST NAME:	MI:
_____	_____	_____
JOB TITLE:		
_____		
USERNAME:		
_____		
NODE:		
_____		

Enter the user's name, job title, computer username, and node name as described in the previous section. Then press **GOLD Z** to exit the form and add the new user to the system mailing list.

Note: Remember that if the user's node is NOT connected to IBS by DECNET, then leave the NODE blank and enter the *entire* mailing address in the USERNAME field.

2 - Modifying Information about Users on the Mail List

If you choose "Modify user," you will see a menu for choosing how you want to list the users on the mail list:

```
MAIL LIST CRITERIA
-----
0 : EXIT
1 : Mail distribution by USERNAME
2 : Mail distribution by NAME
3 : Mail distribution by TITLE
-----
Choice (?=Help) ==>
```

Each option presents a menu list of mail users for selecting which ones to modify. Each menu list is alphabetically sorted according to the indicated criterion:

- Option 1 lists the people by their system usernames.
- Option 2 lists the people by their real names, followed by their job titles.
- Option 3 lists the people by their job titles, followed by their real names.

For example, the following menu list is sorted by real name (option 2).

```
Select Users by Real Name
-----
0 : EXIT
1 : BARTON      CLARA      T : PROJECT MANAGER
2 : BOWIE       JAMES       C : SUB-CONTRACTOR
3 : CARTER      JOHN        B : SOFTWARE ENG.
4 : CROCKETT    DAVID       J : SOFTWARE ENG.
-----
Choice (?=Help) ==>
```

1. To choose the person you wish to modify, enter the corresponding number.

You are then presented with a form similar to the one described for adding a new user. The information for the chosen person is already filled in.

2. Modify any of the information items (name, job title, computer username, and node name).
3. To **confirm** the changes and save the modified information, press **GOLD Z**.
OR
To **cancel** the changes and exit without modifying the list, press **GOLD Y**.

After either confirming or canceling, you will return to MLMGR's initial menu.

3 - Deleting Users from the Mail List

If you choose "DELETE user," you will see a menu list from which you can pick names to delete:

MAIL LIST SELECTION MENU					
Enter the description to search for: _____					
Pick	Last Name	First Name	MI	Position	Username
-	Bailey	Blanche	M	Contractor Rep.	D3A274
-	Bower	John	W	Subcontractor	BOWER
-	Brown	James	B	Software Eng.	D43456
.	.	.	.	.	.

<GOLD><Z> to exit <GOLD><Y> to quit.

1. To search for a specific name, enter up to 10 letters of the account owner name in the "search" field at the top of the Mail List Selection Menu.

If a matching letter sequence occurs on the list, the cursor moves to that portion of the list in the "Pick" column. You can then use the arrow keys to scroll up or down to find a specific name.

2. To mark a name for deletion from the system mail distribution list, place an "X" in the "Pick" column to the left of the name.
OR
To cancel the marking of a name for deletion from the list, replace the "X" with a blank space.

Whenever you enter either an "X" or a blank space in the "Pick" column, the cursor returns to the top of the page to await another search.

3. To **confirm** the deletions and delete the marked names, press **GOLD Z**.
OR
To **cancel** the deletions and ignore the specified deletions, press **GOLD Y**.

After either confirming or canceling, you will return to MLMGR's initial UPDATE MAIL LIST menu.

3 of 5

MODTEXTNM

Each DMS file containing graphically displayable text points has a *text (.TXT) file* associated with it. The name of this text file is included in the header section of the DMS file. If you rename a text file that is associated with a DMS file, you must also alter the contents of the DMS file header to refer to the correct text file.

The MODTEXTNM utility enables you to modify the name of the text file in the DMS file header.

Changing the Text File Referenced in a DMS File Header

To start the utility, just enter **MODTEXTNM** at the system prompt. The following is an example sequence that places a reference to the text file NEW.TXT in the header of a DMS file named MYFILE.DMS.

```
$ MODTEXTNM
Enter DMS file name      (DMS) ==> MYFILE
Enter new TXT file name (TXT) ==> NEW
Changing DMS TXT file from: MYFILE.DMS
                        to: NEW.TXT
```

After you start MODTEXTNM, the utility asks you to specify the following items:

DMS file name   This is the name of the DMS file that you want to alter. If you do not specify an extension, the .DMS file extension is assumed. To cancel the program at this point, press CTRL-Z.

new TXT file name   This is the new TXT file name to be included in the DMS file header. If you do not specify a file name extension, the .TXT extension is used. You can also do the following instead of entering the TXT file name:

<u>To get this result:</u>	<u>Do this</u>
To use the same name as the DMS file but with the .TXT extension:	Press RETURN.
To remove the text file reference and dissociate the DMS file from any text file:	Enter a blank space.
To cancel the program:	Press CTRL-Z.

Results of Using MODTEXTNM

MODTEXTNM changes only the name of the text file referenced in the DMS file header. It does NOT rename the actual text file. To rename a text file, use the VMS RENAME command.

MPDISPLAY

The MPDISPLAY utility enables you to selectively view and store IBS map information for different geographic areas. MPDISPLAY requires a graphic workstation of the type described in Section 1. This documentation covers the following topics:

- Description of the MPDISPLAY Software
- What You Need to Know Before Using MPDISPLAY
- Terminology for MPDISPLAY
- Starting an MPDISPLAY Session
- Using the MPDISPLAY Main Menu

Topic	Menu Item/Function
- How to display topographic features	SELECT TOPOGRAPHY
- How to "store" the displayed region for later use	STORE REGION
- How to limit the display of data through attributes	ATTRIBUTE FUNCTIONS
- How to add and edit graphic data	EDIT FUNCTIONS
- How to display elevation data	ELEVATION FUNCTIONS
- How to specify which icons are available for display	ICON FUNCTIONS
- How to display icons, text, points, and filled polygons	ITEM DISPLAY FUNCTIONS
- How to vary the display area	SCREEN VIEW FUNCTIONS
- How to display statistics associated with displayed features	SUMMARY FUNCTIONS

These principal functions of the MPDISPLAY main menu are explained in *alphabetical order*, starting on page 2.172.

Description of the MPDISPLAY Software

MPDISPLAY is a program that allows you to access the DMS databases on the IBS. You can interactively select regions and topographic features for display by using graphics input devices and menus. Standard topographic features, such as roads and streams, can be supplemented with user-defined data, such as specific buildings or populations that are linked to location. Individually tailored maps containing user-selected regions and features can then be clipped and stored for other applications and processing.

The map display software MPDISPLAY and the related map editing software GEDIT were created by the Pacific Northwest Laboratory. They contain a library of subprograms that are accessible by other programs for creating, storing, and displaying two-dimensional data. The map-related features of the system modeling functions are based on MPDISPLAY.

What You Need to Know to Use the MPDISPLAY Software

This documentation is intended as a guide for new users of the MPDISPLAY software. It contains information on the operation of MPDISPLAY and assumes that you will apply MPDISPLAY to the IBS map database or to another database that is constructed according to IBS standards for graphically represented geographic data. You should be familiar with using the graphics input device attached to your terminal—refer to the *IBS User Guide*.

For the Typical User of MPDISPLAY

This MPDISPLAY documentation covers all the concepts and interactions necessary to use the software for map display functions: choosing a region to display, choosing a type of map projection, choosing topographic features, using an *edit file*, and using the MPDISPLAY main menu. Graphics editing functions, some of which are accessible through MPDISPLAY, are described in the documentation for the GEDIT utility. Typical users need not be closely concerned with IBS geographic data standards and file structures.

For the In-Depth User of MPDISPLAY

In-depth users of MPDISPLAY can find map graphics standards described in the *IBS Data Management Guide*.

Terminology for MPPDISLAY

- **Digital Mapping Structure (DMS)** -- Digital Mapping Structure is the data file format used to store graphic data for use by the IBS mapping functions (such as the MPPDISLAY map display program and the GEDIT graphic editing program). DMS files typically contain line or irregular point data depicting topographic features (such as boundaries, railroads, or hospitals) at particular longitude-latitude locations. DMS files have ".DMS" as the file name extension and are often part of a map database—a specially structured set of DMS data files that describe a geographic area. MPPDISLAY is used to display topographic features of regions within the database area.
- **Edit file** -- MPPDISLAY's **EDIT FUNCTIONS** allow you to use a subset of the graphic drawing and editing capabilities described for the GEDIT graphic editing utility in this guide. You can use these functions to modify *one* DMS file of your choice. This DMS file is referred to as the *edit file*.
- **IBS Map Database** -- The IBS map database for your site is a DMS database that contains site geographic information for use by all users. The database is generated by consolidating geographic information from various national, state, and local sources. Although most of the data is *vector* (line) data and text data that follow DMS conventions, it may also contain some 1:250,000-scale *cell* (elevation) data for limited use. For detailed information on the IBS map database, please refer to the *IBS Data Management Guide*.
- **MPPDISLAY** -- MPPDISLAY is the name of the program that starts when you enter the MPPDISLAY command at the system prompt.
- **Stored region** -- A "stored region" is a set of graphic data that has been copied from a region in the IBS map database. A stored region consists of 1) a DMS file containing a polygon that describes the boundaries of the stored region and 2) one DMS topography data file for each type of topography in the stored region. Stored regions are created by MPPDISLAY's **STORE REGION** option or by the EXTRACT utility program. The data files for a stored region are placed in your current default directory.
- **Topography** -- In general terms, a topography is a graphic description of a geographic region. In MPPDISLAY and the IBS, a topography (or *map layer*) is a set of graphic data that depicts a particular type of map feature. For example, "railroads," "streams," and "water bodies" are all different topographies used by the IBS map database. In MPPDISLAY you can choose which features are displayed by selecting them from a menu of topographies.

Starting an MPDISPLAY Session

Start the MPDISPLAY software by entering **MPDISPLAY** at the system prompt. For example:

```
$ MPDISPLAY <RETURN>
```

The program starts by reading control files that specify the database areas, topographies, and actual data files within the database. This may take a few minutes if the system is heavily loaded or if the database contains a large number of files.

MPDISPLAY then presents a blank square outline (map grid) where the maps of geographic regions will be displayed. Next to the blank grid will be a graphics menu for selecting a geographic region. Your initial tasks are:

1. Choose a region to display.
2. Specify the type of geographic projection to be used.
3. Choose topographic features for display.
4. Enter the name of an "edit file."

These tasks are explained in the following subsections.

Choosing a Region to Display

MPDISPLAY's first menu lists options for choosing a region to display.

EXIT	
HELP	
DIRECT AREA ACCESS	
PREVIOUSLY STORED REGION	<-- A user-defined region, stored previously
area #1	<-- These predefined areas will
area #2	<-- vary, depending on your site.
.	<-- There may be only a single
area #n	<-- area from which to choose.

This menu allows you to access predefined areas (portions) of the database or regions that have already been stored with MPDISPLAY. The menu's principal options and their uses are described in the following list.

- **EXIT:** If you select **EXIT**, MPDISPLAY will erase the current menu display and return you to the system prompt.

- **DIRECT AREA ACCESS:** If you select a **DIRECT AREA ACCESS**, MPPDISLAY will display a submenu:

EXIT

HELP

PRE-DEFINED POLYGON
LONG/LAT EXTENTS
RADIUS - LONG/LAT

The principal options of this submenu are three different methods for *directly* specifying a display region from within either a previously stored region or a predefined area of the database. When you know the location and boundary of the region you want to display, direct area access is often the quickest way of displaying a region.

- **PRE-DEFINED POLYGON:** Selecting this option allows you to enter the name of a *polygon description file*. A polygon description file is just a DMS file that contains a geographically defined polygon representing the boundary of the region you wish to display. You will see the prompt:

ENTER POLYGON DESCRIPTION FILE NAME >

After you enter the name of the polygon description file, MPPDISLAY uses the polygon as the basis for extracting display information. For information on how to *create* a polygon description file, refer to the **STORE REGION** function (page 2.197).

- **LONG/LAT EXTENTS:** Selecting this option allows you to enter minimum and maximum longitude-latitude limits to define the boundary of the region you wish to display. You will see the prompt:

ENTER THE LONG/LAT EXTENTS OF THE AREA
(MIN-X, MAX-X, MIN-Y, MAX-Y) >

Enter each extent (longitude values first), separating the values with commas or spaces. If the first longitude value is greater than the second (if MIN-X > MAX-X), then you will see an additional prompt that asks whether you want to cross the *international dateline*: enter NO. (See the following NOTE on crossing the international dateline.)

- **RADIUS - LONG/LAT:** Selecting this option allows you to enter a longitude-latitude location and a radius around that location to define the boundary of the region you wish to display. You will see the prompt:

Enter RADIUS (in miles), Long, Lat >

Enter the three values, separating the values with commas or spaces. If the defined region crosses the international dateline, you will see an additional message to that effect, and MPDISPLAY will attempt to display the defined region. Areas that contain no data will appear blank.

Note: MPDISPLAY will display a region that crosses the international dateline, as indicated above. The **DIRECT AREA ACCESS** of a region in the main database is the only way of accomplishing this. When displaying such a region, MPDISPLAY imposes some limitations:

- After the topographic features of the region are displayed initially, additional topographies cannot be added by the **SELECT TOPOGRAPHY** function (page 2.194).
- There will be no "edit file" for the region (page 2.169).

These limitations are consequences of the display method. A region that spans the international dateline can be stored by the **STORE REGION** function (page 2.197), but the longitude coordinates are shifted to allow storage within a normal DMS file. Although the latitudes and all other map relationships remain correct, the longitude coordinates are deliberately offset. For example, when the stored region is retrieved (using **PREVIOUSLY STORED REGION**), using **RETURN COORDINATE** (page 2.200) would yield faulty longitude values. The system database contains no data in the region of the international dateline, so such displays would be important only to those using a special DMS database.

After using one of these three methods to specify a display region, pick **EXIT** on the **DIRECT AREA ACCESS** menu. MPDISPLAY will redisplay the initial menu, allowing you to directly extract the display region from either a "previously stored region" or a predefined database area. Whichever of the three methods you use, the display region defined must exist *entirely within the region from which the extraction is made*. If this is not the case, blank areas will appear on the display where there is no data.

Pick either **PREVIOUSLY STORED REGION** or one of the predefined database areas to identify which data you wish to directly access. If you pick a previously stored region, MPDISPLAY will prompt for the name of the stored region from which the display region data is to be extracted. This name would be the name that was entered when the **STORE REGION** command was used to store the region (page 2.197).

After you either enter the name of a previously stored region or pick a predefined database area, MPDISPLAY will ask you to choose the type of map projection (see page 2.166).

- **PREVIOUSLY STORED REGION:** If you want to retrieve data for an entire stored region, pick **PREVIOUSLY STORED REGION** instead of **DIRECT AREA ACCESS**. MPPDISPPLAY will prompt you for the name of the region. This name would be the name that was entered when the **STORE REGION** command was used to store the region (page 2.197). In conjunction with **STORE REGION**, this function provides a means of displaying data stored in local, user-owned files that are not associated with the main database.

After you enter the name of the previously stored region at your terminal keyboard, MPPDISPPLAY will present several options for choosing the type of map projection to display (see page 2.166).

- **area #1/area #2/.../area #n** (Predefined Database Areas): Some databases (such as the FEMA's National Map database) consist of areas so large that it is advisable to represent the database as several database areas (such as Alaska, Hawaii, and the conterminous United States). These predefined areas may be single sites or larger areas from which you would normally extract a smaller portion for display. It is possible that only your site map database will be listed.

If you pick one of the database areas (instead of **DIRECT AREA ACCESS** or **PREVIOUSLY STORED REGION**), MPPDISPPLAY will draw a low-detail overview map of the area and display a submenu with the following options:

EXIT

HELP

CONTINUE

DISPLAY COORDINATES

** SELECT REGION **

The principal options are described below:

- **DISPLAY COORDINATES:** Picking **DISPLAY COORDINATES** and then a point on the map results in the display of
  - longitude-latitude of the point
  - the Great Circle distance from the point to the center of the display (shortest arc over the surface of the earth)
  - the cumulative distance from the first point picked for a **DISPLAY COORDINATES**.

The **DISPLAY COORDINATES** function is a handy way of getting some quick coordinate information, which might be used for a **DIRECT AREA ACCESS**, for example. Picking subsequent points will continue to display coordinate information until you terminate the **DISPLAY COORDINATES** function by picking any menu item.

- **SELECT REGION:** This option allows you to select a region on the over-view map by defining a square area that contains the desired region.

1. Use the graphics input device to "pick" a point on the map that is the center of the region that you want to capture for display:

Place the graphics cursor over a point on the map that is the center of the area that you want to capture, and press the SPACEBAR.

2. Place the cursor over a second point that will define a side of the captured area, and press the SPACEBAR.

Keep in mind that selecting a large region (such as an entire state) may mean that a large amount of data will have to be accessed to display the area, depending on what features are displayed. The time necessary to access the data and draw the map will increase with the number of topographies and the size of the area selected.

After you have chosen a region to display (by **DIRECT ACCESS**, by retrieving a **PREVIOUSLY STORED REGION**, or by extracting from a predefined database area), MPDISPLAY will present several options for the type of map projection to display.

Choosing the Type of Map Projection

MPDISPLAY then presents the options for displaying map projections:

```
Currently available map projection types are
1 = "Geographic"
2 = "U T M"
3 = "Albers Conical Equal-area"
4 = "Lambert Conformal Conic"
5 = "Mercator"
6 = "Polar Stereographic"
7 = "Transverse Mercator"
Enter Projection Type >
```

For most cases (up to 100-mile radius), press the RETURN key to select the default projection, "Geographic." The Geographic projection is a straightforward projection onto a regular X,Y plane. If you desire a projection other than Geographic, enter a number (2 to 7) to choose one of the other projections. The following table is a simple summary of how the different map projections might be used. See Appendix C for background on the projection types.

Map Projection Type	Situations for Use
Geographic	small areas (up to a 100-mile radius)
Universal Transverse Mercator (UTM) or Transverse Mercator	medium-sized areas (up to 1000-mile radius) or where the largest extent of the mapped area extends north-south rather than east-west
Albers Conical Equal-Area or Lambert Conformal Conic	larger areas, or where the largest extent of the mapped area extends east-west
Polar Stereographic	polar areas of the globe

After you select a projection type, MPDISPLAY will present a menu for choosing topographic features.

Choosing Topographic Features

The topography selection menu lists the *topographies* (topographic features or map layers) that are available for display, such as these standard IBS topographies:

EXIT

HELP

FORWARD

BACKWARD

GO TO

ADMINISTRATIVE BOUNDARY

AGRICULTURE

BASE MAP

CONGRESSIONAL DISTRICTS

CULTURAL FEATURES

RECOVERY AREAS

CENSUS TRACT/ED

ELEVATION CONTOUR(300M)

ELEVATION

ELECTRICAL POWER GRID

EVACUATION ZONE

FAULT LINES

FEATURES (ICONS)

GNIS (Geographic Names)

HYDROLOGY

100K HYDROGRAPHY

This list of topographies may vary if your database administrator has added or subtracted topographies.

Examples

city boundaries

farmland

congressional districts

airports (military and civilian)

gridded elevation data

power lines

evacuation model boundary

user-defined items

rivers, cemeteries, schools (USGS)

Use the graphics input device to pick topographic features for display:

1. Pick each topographic feature (topography) that you want to display.

Each menu item picked will change color to indicate selection. If you change your mind about an item that you picked, pick it again. The menu item will return to its former color, indicating no selection.

If the menu area is not large enough to list all the topographies at one time, pick **FORWARD** to see the next part of the list. Pick **BACKWARD** to see a previous part of the list (after using **FORWARD**).

Do NOT pick a particular topography if you intend to edit that topography using the *edit file* (see *Entering the Name of an Edit File*, page 2.169).

2. When you have finished choosing topographies, pick the top menu item, **EXIT**.

The cursor will disappear momentarily, and the system will display a message:
READING DATA. PLEASE WAIT.

What happens next depends on whether the display region is from a previously stored region or from a predefined database area:

Previously Stored Regions: For each topography that you choose, MPDISPLAY will read in the contents of one topographic data file containing the corresponding topographic information. (If you have used the **DIRECT AREA ACCESS** function to specify a portion of a stored region, then only a portion of each topographic data file may be read in.)

Extraction from a Database Area: For each topographic feature that you choose, MPDISPLAY will extract the corresponding topographic data from the current site map database for the area that you have defined. If you subsequently store the region, MPDISPLAY stores the data for each topographic feature in a separate data file. Refer to **STORE REGION** and **SELECT TOPOGRAPHY**.

The amount of time necessary to read (and subsequently display) the topographic data from the database is directly proportional to the size of the region selected and the number of topographies. After the system reads in the topographic data but before the topographies are displayed, you must specify the name of an *edit file*.

Entering the Name of an Edit File

When MPDISPLAY prompts you for the name of an *edit file*:

```
Enter edit file name >
```

just type a file name and press RETURN.

Any *graphic editing* during the MPDISPLAY session will affect only this "edit file." (MPDISLAY's **EDIT FUNCTIONS** option—page 2.180—allows you to use some of the editing functions of the GEDIT software.)

If you specify the name of an *existing* file, it must be a Digital Mapping Structure (DMS) file—such as a topographic data file, a previous "edit file," or a file created with the GEDIT software. Specifying a topographic data file from a previously stored region gives you the capability to edit the map data *for that one file only*. If you specify a topographic data file as the "edit file," do NOT also choose that topographic feature for display. Such a duplication could result in confusing displays that would not represent the available data.

If you specify a *new* file name, any text or graphics data that you add will be stored in that file, but the file will not be associated with the topographic data for the region.

After you specify an edit file name, MPDISPLAY will draw the map features on the map grid (as well as any graphic elements from the edit file).

The map area that is initially drawn within the map grid constitutes the *base plot* of the current MPDISPLAY session, the area for which topographic features are read in from the database. This base plot may be redefined later to expand or reduce the area for which topographic data may be input. When the map of the region is complete, MPDISPLAY will present its main menu of functions for manipulating the map.

Using the MPDISPLAY Main Menu

After the initial startup tasks, MPDISPLAY presents the following main menu of map display functions:

EXIT (SAVE EDIT FILE)
QUIT (DELETE EDIT FILE)
HELP
CANCEL
CONTINUE

These general functions are explained together on the following page.

SELECT TOPOGRAPHY
STORE REGION

These specific functions are explained in *alphabetical order* following the general functions.

SCREEN VIEW FUNCTIONS
ITEM DISPLAY FUNCTIONS

SUMMARY FUNCTIONS

ATTRIBUTE FUNCTIONS

ICON FUNCTIONS

ELEVATION FUNCTIONS

EDIT FUNCTIONS

Each item named **FUNCTIONS** results in a submenu of related options:

- **SCREEN VIEW FUNCTIONS** are options for changing the scale of the displayed area (ZOOM options) and for changing the boundaries of displayable topographic data.
- **ITEM DISPLAY FUNCTIONS** are options for enabling and disabling the display of specific data items (icons, text, attribute points, polygons) on the screen.
- **SUMMARY FUNCTIONS** are options for displaying numeric data values and statistics (coordinates, populations, attribute values, elevations, differences in elevation, areas, etc.) for data items and areas on the screen.
- **ATTRIBUTE FUNCTIONS** are options for displaying other "attribute" information about map features and for selecting some features for display while eliminating others (based on attributes of the features).
- **ICON FUNCTIONS** are options for controlling which icons (graphic figures associated with point data) are displayed.

- **ELEVATION FUNCTIONS** are options for displaying elevation information (elevation, slope, summary statistics, elevation grid resolution, and contours) when elevation data are available for the displayed area.
- **EDIT FUNCTIONS** presents a submenu of graphic editing functions. These functions are a subset of the functions described for the GEDIT utility.

These "functions" menus and their options are described in *alphabetical order* after the following descriptions of the general functions on the MPDISPLAY menu.

Exit (Save Edit File)

Picking **EXIT (SAVE EDIT FILE)** saves the current *edit file* and returns control to MPDISPLAY's first menu (page 2.162) for selecting another region for display. On other menus, **EXIT** signals that you are through with the current menu and the operations on that menu. Operational control then returns to the previous or calling menu.

Quit (Delete Edit File)

Picking **QUIT (DELETE EDIT FILE)** cancels the current map display and returns control to MPDISPLAY's first menu (page 2.162) for selecting another region for display. Any graphic editing changes to the edit file are discarded.

Help

Picking **HELP** displays information about the current menu. When more than one screen of text is available, press RETURN to continue with the next screen.

Cancel

Picking **CANCEL** terminates the current function. Use this function when it becomes undesirable to complete a function that has been started. If the cursor disappears during the completion of a function, you will be unable to use **CANCEL** until the cursor reappears.

Continue

Picking **CONTINUE** signals the completion of an operation after you are satisfied that you have accomplished the correct action. For example, in an operation that requires you to choose a point on the screen, you might pick several points before finding the correct one and then selecting **CONTINUE**.

Attribute Functions

You can use attribute functions to display text information about map features and to select some features for display while eliminating others. This is done by using *attributes* of the map features. Attributes are summarized here and explained in more detail in Appendix B and in the *IBS Data Management Guide*.

Attributes are numeric values used to describe data items or some characteristic of data items. Attributes consist of three numbers separated by semicolons:

- a Major attribute code (to indicate a major topographic group)
- a Minor attribute code (to indicate a feature within the group)
- a Parameter value (which *may* give data about the specific feature).

For instance, 1;560;300 indicates

- a Major code of 1 (hydrography)
- a Minor code of 560 (permanent lake or pond)
- a Parameter value of 300 (length of the lake in decameters).

For each DMS database, a special file called an *attribute dictionary* defines the meaning of each Major;Minor pair of attribute codes. (The attribute dictionary for a standard IBS DMS database is listed in Appendix B.) Graphic data items may have up to 15 sets of different attributes. You can assign attributes to map data items of a DMS file by using the GEDIT utility (see **ATTRIBUTE FUNCTIONS** in GEDIT.)

The purpose of the attribute functions is that attributes can be used to control the display of graphic data. For example, because lakes are differentiated as permanent (Minor code = 560) or intermittent (Minor code = 562), you can specify the display of only permanent lakes, only intermittent lakes, both, or neither. **ATTRIBUTE FUNCTIONS** also includes some utility functions for finding attribute points in the display, displaying the attributes of data items, summarizing attribute point data, and looking up attributes in the attribute dictionary.

Selecting **ATTRIBUTE FUNCTIONS** displays the following submenu:

```
EXIT  
  
HELP  
CANCEL  
CONTINUE  
  
ATTRIBUTE SELECTION  
  
DISPLAY ATTRIBUTES  
  
DICTIONARY LOOKUP  
  
POINT DATA SUMMARY  
  
ENABLE POINT DATA  
DISABLE POINT DATA  
  
REFRESH SCREEN
```

The principal options of this submenu are explained here.

- **ATTRIBUTE SELECTION:** Allows you to selectively display only certain data items by specifying attribute codes.

After you pick **ATTRIBUTE SELECTION** on the menu, MPDISPLAY will prompt for a Boolean expression that indicates the criteria for selecting attributes:

ENTER SELECTION CRITERIA >

Your options are 1) press the RETURN key, which disables attribute selection, 2) enter a legal Boolean expression, or 3) press CTRL-Z, which aborts the function and returns control to the main menu.

The Boolean logical expression may be formed from the following list of operators and symbols:

^	--	logical AND	(a^b)
V	--	logical OR	(aVb)
-	--	logical NOT	(-a)
:	--	range specifier	(a:b)
,	--	comma	
(	--	left parenthesis	
)	--	right parenthesis	

The attribute codes are combined with these symbols to create Boolean logical expressions.

- Examples: 4;5;4;100 indicates all data items having an attribute with a Major code of 4 and a Minor code of 5 to 100 (inclusive)
- 6;13^(4;5;4;100) indicates all data items having an attribute with a Major code of 6 and a Minor code of 13 AND (as well as) having an attribute with a Major code of 4 and a Minor code of 5 to 100 (inclusive)
- 5;8V(6;13^(4;5;4;100)) indicates any data items having an attribute with EITHER a Major code of 5 and a Minor code of 8 OR the same code specifications as the previous example.

- **DISPLAY ATTRIBUTES:** Displays the attributes associated with a particular data item.

1. Pick **DISPLAY ATTRIBUTES**.
2. Pick a point on or near the desired point or composite string.

The data item will blink, and if it has attributes associated with it, they will be displayed in a table. For example, this table displays information on two attributes:

#	MAJOR	MINOR	PARAM	DESCRIPTION
1	7	150	0	Seaplane ramp or Landing area
2	8	7	6	NO ENTRY IN ATTRIBUTE DICTIONARY

where # is the index number and the following three columns list each attribute (the Major code, the Minor code, and the Parameter value) plus a text description of the data item (if a description exists in the attribute dictionary). Notice that the second set of attributes has "NO ENTRY IN ATTRIBUTE DICTIONARY": that is, the attributes 8;7;6 might have some meaning for the person who created the data item, but they are not in the master list of attributes normally used by GEDIT.

3. Repeat step 2 for any other data item.

As you continue to pick data items, old attribute information is retained on the text screen. To clear the screen and make it easier to read, use the dialogue erase key (<D ERASE>).

4. Pick any other submenu item to end the **DISPLAY ATTRIBUTES** function.

- **DICTIONARY LOOKUP:** Allows you to look up an attribute in the attribute dictionary. You can reference an attribute by attribute codes or by the description in the attribute dictionary.

Picking **DICTIONARY LOOKUP** displays the following submenu:

```
EXIT
HELP
MAJOR/MINOR LOOKUP
DESCRIPTION LOOKUP
```

The two principal options of this submenu are explained here.

- **MAJOR/MINOR LOOKUP:** Allows you to display the attribute associated with a particular pairing of Major and Minor attribute codes in the attribute dictionary.

You will see the prompt

```
ENTER MAJOR MINOR ATTRIBUTE CODE >
```

Type a Major attribute code (up to two digits), a comma, and a Minor attribute code (up to four digits). Then press RETURN.

Example: 7,150

If the Major/Minor code pairing exists in the attribute dictionary, your entry will be displayed along with a parameter value (PARAM) and a description, as in this example:

MAJOR	MINOR	PARAM	DESCRIPTION
7	150	0	Seaplane ramp or landing area

If no entry exists for the Major/Minor code pairing, the description note will read, "NO ENTRY IN ATTRIBUTE DICTIONARY."

Note: To see a list of *all* attributes that contain a particular Major code, enter a Minor code of zero. For example, the entry 5,0 will list every attribute that has a Major code of 5 (Roads and Trails) in the attribute dictionary. Be ready to press CTRL-S to "freeze" the listing as it prints on the screen: such listings are usually more than one screen long and can scroll by quickly. Press CTRL-Q to restart the listing.

- **DESCRIPTION LOOKUP:** Allows you to display the attribute associated with a particular character string in the attribute dictionary descriptions.

You will see the prompt

ENTER DESCRIPTION TO LOOKUP >

Type a string of characters that you are seeking in the attribute dictionary descriptions (Example: **car**); then press RETURN.

You will see a form of your entry listed under **DESCRIPTION**, along with the corresponding major and minor codes and parameter value (**PARAM**) as in this example:

MAJOR	MINOR	PARAM	DESCRIPTION
1	280	0	Outline of a Carolina Bay
6	50	0	Carline
9	210	0	Carrying contour
9	560	0	Evacuee Reception/care points

Note: Any **DESCRIPTION** that contains your character string in the dictionary will be displayed.

- **POINT DATA SUMMARY:** Allows you to obtain a summary that tells how many points have a particular set of attribute codes in a specific area of the display.

Initially, you should select a mode for defining the area on which the attribute summary should be performed. The menu items **CURRENT SCREEN**, **DRAW POLYGON**, and **SELECT POLYGON** are the three means of defining an area. Only one of the above options, at most, is active at any given time. Selecting a second area input mode will disable the first.

Picking **POINT DATA SUMMARY** displays the following submenu:

EXIT   HELP CANCEL CONTINUE   CURRENT SCREEN DRAW POLYGON SELECT POLYGON   PERFORM ATTRIBUTE SUMMARY

The principal options of this submenu are explained here.

- ☐ **CONTINUE:** Used in conjunction with **DRAW POLYGON** and **SELECT POLYGON**. Signals the completion of functions.
- ☐ **CURRENT SCREEN:** Sets the entire display screen as the area to which an attribute summary will apply. Subsequent attribute summaries will apply to this area until you define another area via **DRAW POLYGON**, or **SELECT POLYGON**.
- ☐ **DRAW POLYGON:** Allows you to pick points to define a selective area for performing an attribute summary. Subsequent attribute summaries will apply to this area until you define another area via **CURRENT SCREEN**, **DRAW POLYGON**, or **SELECT POLYGON**. When you select one of the above menu options to define a new area, the current polygon will disappear.

1. Pick **DRAW POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick points that define the sides of a polygon.

MPDISPLAY will draw line segments from point to point.

3. Pick **CONTINUE** to complete the polygon.

The polygon will blink in green to indicate that a polygon has been properly selected. The menu option will stop blinking to indicate that no further input is required in selecting the polygon.

MPDISPLAY will draw the final side between the first point and the last, closing the polygon area.

- **SELECT POLYGON:** Allows you to pick a predefined polygon on which to perform the attribute summary. Subsequent attribute summaries will apply to this area until you define another area via **CURRENT SCREEN**, **DRAW POLYGON**, or **SELECT POLYGON**. When you select one of the above menu options to define a new area, the current polygon will reappear in its original color.

1. Pick **SELECT POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick any point on a preexisting polygon.

The polygon will blink in white to indicate a pick. If the wrong polygon is highlighted, pick again on the desired polygon until it is properly selected.

3. Pick **CONTINUE** to confirm the polygon selection.

The polygon will blink in green to indicate that a polygon has been properly selected. The menu option will stop blinking to indicate that no further input is required in selecting the polygon.

- **PERFORM ATTRIBUTE SUMMARY:** Allows you to enter major and minor attribute codes to select attributes points to be summarized.

If used without selecting an "interactive area," this function can be used to search the entire screen.

You will see the prompt

ENTER MAJOR MINOR CODE >

Enter the major and minor code of an attribute point and press RETURN. Example: 1, 2

You will see summary table headings and the appropriate data, such as

MAJOR	MINOR	COUNT	TOTAL	MINIMUM	MAXIMUM	AVG
1	2	13	906	3	333	69

- **ENABLE POINT DATA:** Places an asterisk "*" at the location of every point with attributes in each input file.

These points denote item points, icon seed points, text points, and color flood seed points. For example, if you are editing a single file that contains text, this feature will show how many text items there are and where the starting point of each item is located without taking the (possibly long) time to plot the text. **ENABLE POINT DATA** is particularly useful for locating text when the decluttering factor does not allow the text to be plotted on the screen.

- **DISABLE POINT DATA:** Disables the display of points with attributes, allowing future plots to be created without showing the locations of attribute/point data.

DISABLE POINT DATA allows you to remove the attribute/point markers from the screen when used in conjunction with **REFRESH SCREEN**: Pick **DISABLE POINT**; then pick **REFRESH SCREEN**. The system will redraw the screen without the attribute/point markers.

- **REFRESH SCREEN:** Redraws the existing display image using the current **ENABLE POINT** and **DISABLE POINT** settings.

Edit Functions

Picking the **EDIT FUNCTIONS** menu item will cause MPDISPLAY to present a sub-menu of functions for graphic editing. These functions (listed below) are a subset of the functions in the GEDIT utility.

EXIT

HELP
CANCEL
CONTINUE

DELETE LINE SEGMENT
DELETE SUB POLYGON
DELETE COMPOSITE STRING
UNSAVE COMPOSITE STRING
RE-COLOR-TEXTURE STRING
MERGE STRINGS
INSERT

CONVERT STRING TO POLYGON
FORM COMPLEX POLYGON

ZOOM IN
ZOOM OUT
RESTORE BASE PLOT
REFRESH SCREEN

ATTRIBUTE FUNCTIONS
ICON FUNCTIONS
TEXT FUNCTIONS
TEXT STRING FUNCTIONS
GEOMETRIC FUNCTIONS
MANUAL STRING ENTRY
DISPLAY COORDINATES
MODIFY DEFAULTS
POLYGON FILL FUNCTIONS

The selection of some options on this menu will result in the display of submenus from which further selections must be made. Please refer to the GEDIT utility for full descriptions of these functions.

These graphic editing functions may be used to modify the *edit file*, which you must specify at the beginning of a MPDISPLAY session (see *Specifying the Name of an Edit File*, page 2.169). This edit file is separate from the topographic data files that make up the rest of the displayed map, and any graphic editing during a MPDISPLAY session affects *only* the edit file.

Elevation Functions

This option is active only if the current geographic database is set up with an elevation topography and only if you have chosen to display the elevation topography (by selecting it when MPDISPLAY starts or by using the **SELECT TOPOGRAPHY** option). Otherwise you will see a message—**NO ELEVATION TOPOGRAPHY EXISTS IN CURRENT DATABASE**—and picking the option will have no effect. If an elevation topography is available, then picking the **ELEVATION FUNCTIONS** menu item displays the following submenu:

EXIT

HELP
CANCEL
CONTINUE

RETURN ELEVATION

RETURN SLOPE

DISPLAY ELEVATION STATISTICS

ENABLE ELEVATION RESOLUTION
DISABLE ELEVATION RESOLUTION

REFRESH SCREEN
CONTOUR ELEVATION

The principal options of this menu are explained here.

■ **CONTINUE:** Used in conjunction with **RETURN ELEVATION** and **RETURN SLOPE**.

■ **RETURN ELEVATION:** Displays the elevation at a selected point.

1. Pick **RETURN ELEVATION**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

The elevation of the selected point (center point of the cell) will be displayed. You can continue to pick points and display elevation values or pick another menu item to cancel **RETURN ELEVATION**.

- **RETURN SLOPE:** Displays the absolute difference between the elevation values at two selected points.

1. Pick **RETURN SLOPE**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

3. Pick **CONTINUE**.
4. Pick a second point on the screen.

A second yellow asterisk will appear.

5. Pick **CONTINUE** again.

A line connecting the two points will be drawn. The absolute difference between the elevation values will be displayed on the terminal screen.

- **DISPLAY ELEVATION STATISTICS:** Displays information about the elevation data with respect to 1) the base map and 2) the current view (screen display).

EXAMPLE: When the Base Map and the Current View are the Same

```
CURRENT ELEVATION DATA STATISTICS
  MINIMUM LONG      : -120.000000
  MAXIMUM LONG      : -119.000000
  MINIMUM LAT       :  46.000000
  MAXIMUM LAT       :  47.000000
  COLUMNS          : 1201
  ROWS              : 1201
  X STEPSIZE        :  0.000833
  Y STEPSIZE        :  0.000833
```

```
ELEVATION DATA IN THE CURRENT VIEW
  MINIMUM LONG      : -120.000000
  MAXIMUM LONG      : -119.000000
  MINIMUM LAT       :  46.000000
  MAXIMUM LAT       :  47.000000
  COLUMNS          : 1201
  ROWS              : 1201
```

- **ENABLE ELEVATION RESOLUTION:** Shows the resolution of the elevation data by drawing white grid lines around the elevation data cells.

To show the elevation data grid, just pick **ENABLE ELEVATION RESOLUTION**. If the current display screen requires more than 50 rows or columns of cells in the elevation data grid, you will see a warning message and a count of the number of rows and columns:

WARNING: Elevation data in current window is extremely dense.

```
COLUMNS : XXXX
ROWS      : XXXX
```

Do you still wish to plot the current density?

Because displaying a dense elevation data grid can effectively obliterate other displayed data, you should consider answering "No" and zooming in to a smaller area before displaying the elevation grid.

- **DISABLE ELEVATION RESOLUTION:** Turns off the capability to display a line grid of elevation data cells.

This option does not erase currently marked elevation cells, but the markers will disappear the next time the screen is redrawn.

- **REFRESH SCREEN:** Redraws the existing display image.

- **CONTOUR ELEVATION:** Produces a display of vector contours that represent isopleths of the elevation data. You will see a display and prompt similar to the following:

```
MINIMUM ELEVATION      0
MAXIMUM ELEVATION      30
AVERAGE ELEVATION      0
Generate contours at regular intervals? (Y or N)
```

(Values will vary with the data)

Note: If the map display is zoomed out and showing a large area (for example, if **DISPLAY ELEVATION STATISTICS** would report more than 100 or so rows and columns of elevation cells), then MPDISPLAY may take several minutes to check the elevation data before prompting you for information.

1. Enter Y (for regular intervals) or N (to specify intervals).

If you answer N, the program will ask you to enter "contour levels" (elevations) one at a time. The program will keep prompting you until you press CTRL-Z to exit:

Enter contour level 1 <CTRL Z to exit>

If you answer Y, you will see the following prompt:

Enter start elevation, end elevation and spacing

2. Enter the contour values as indicated.

After you have specified the contour levels (either individually or by spacing) MPDISPLAY prompts you to choose the color(s) of each or all contours.

3. Enter your choice of contour color(s).

The following example shows how you can choose individual colors for each contour.

4. Enter the name of the DMS file that will contain the new contours.

The following example results in the creation of a DMS file, 400CONTOURS.DMS, which contains multicolored contour levels spaced 400 (feet) apart. User responses in the example are **boldface** and aligned to make them easier to distinguish.

Example of Using CONTOUR ELEVATION

```
MINIMUM ELEVATION          550
MAXIMUM ELEVATION          1740
AVERAGE ELEVATION          920
Generate contours at regular intervals? (Y or N) Y

Enter start elevation, end elevation and spacing 550, 1740, 400
Contour level              1 is      550
Contour level              2 is      950
Contour level              3 is     1350
Contour level              4 is     1740

The default line color is white
Do you want to modify the line color? (Y or N)   Y
Do you want all lines the same color? (Y or N)   N
1 = RED
2 = GREEN
3 = BLUE
4 = YELLOW
5 = MAGENTA
6 = CYAN
7 = WHITE
Enter the line color you want for contour      1      6
Enter the line color you want for contour      2      3
Enter the line color you want for contour      3      2
Enter the line color you want for contour      4      4
WHAT IS THE NAME OF THE DMS FILE TO CREATE      400CONTOURS
```

Icon Functions

An icon is a graphical figure that can be associated with a particular data point (location). Icons always appear at a constant viewing size, regardless of the map scale (which can be changed with the zoom functions). Figure 2.1 shows some examples of icons used by FEMA's Integrated Emergency Management Information System. The location of icons is governed by *icon seed points*, which indicate the type of icon to be drawn and where to center the icon.

The icons available for display are listed in the *icon control file*. The icon control file also contains the locations of the DMS files that are needed to plot each icon. A system default icon control file is used if you do not specify one (see *Using an Icon Control File* under the GEDIT utility). For examples of most of the standard icons supplied with the IBS, see the *IBS User Guide*.

Figure 2.1. Examples of Icons

Selecting ICON FUNCTIONS displays the following submenu:

The principal menu options are explained below.

- **ICON DISPLAY LIST:** Used to specify *which* of the available icons may be displayed. MPDISPLAY will present a submenu that lists the available icons:

```
EXIT

FORWARD
BACKWARD
GO TO

Icon descriptor #1
Icon descriptor #2
.
.
Icon descriptor #n
```

For example, the default icon control file used by the Federal Emergency Management Agency results in the following icon display list:

```
EXIT

FORWARD
BACKWARD
GO TO

AIRPORT
MILITARY AIRPORT
CHURCH
HOSPITAL
POLICE STATION
FIRE STATION
FUEL TANK
SCHOOL
RESERVOIR/TANK
(etc.)
```

All available icons are in a paged menu with 16 icons per page. To scroll through the icon list, select the menu item (**FORWARD**, **BACKWARD**, **GO TO**) that describes which way you want to go:

- ❑ **FORWARD:** Shows the next page of 16 icons. If you reach the end of the list, the system will return you to the first page of the icon listing.
- ❑ **BACKWARD:** Shows the previous page of 16 icons. If you reach the first page of the list, the system will return you to the last page of the icon listing.

- **GO TO:** After selection of **GO TO**, the system will prompt you for the page number desired (**ENTER PAGE # OF ICONS DESIRED >**). The system then shows you the icon page requested. If the page number requested is less than 1, the system will display the first page of icons. If the page number requested is greater than the number of icon pages available, the system will send you to the last page of icons.
- **Icons:** Select icon categories or types to be displayed by picking the appropriate descriptor in the menu. As a descriptor is selected, its color will toggle between the standard menu color (normally orange) and a secondary color (normally green) to indicate that the icon has been selected. By default *all* icons are set to be displayed.

To cancel a selection, simply pick that item again, and its color will toggle back to the standard color. The selected icons are eligible for display and will be plotted if **ENABLE ICON PLOT** has been picked and seed points exist for the selected area.

If you modify the icon display list, then the next time you use the function, the icon list will start at the page of the last icon selected for display.

- **ENABLE ICON PLOTTING:** Used (along with **DISABLE ICON PLOT**) to specify *whether* the icons selected on the icon display list are actually displayed. When you pick **ENABLE ICON PLOT**, MPDISPLAY checks to see if any of the selected icon types occur in the display area and draws them at seed points on the display.
- **DISABLE ICON PLOTTING:** Switches off the capability to display icons (without erasing any icons that are currently on the screen). Use the **REFRESH SCREEN** option to subsequently erase disabled icons.
- **REFRESH SCREEN:** Redraws the current display. The **REFRESH SCREEN** function is included in the **ICON FUNCTIONS** menu for convenience in using the icon functions. Use the **REFRESH SCREEN** option to erase icons after disabling icons or after changing the Icon Display List.

Item Display Functions

Picking **ITEM DISPLAY FUNCTIONS** displays the following submenu for displaying data items (icons, text, attribute points, polygons) on the screen.

EXIT

HELP

ENABLE ICONS
DISABLE ICONS

ENABLE TEXT
DISABLE TEXT

ENABLE POINT
DISABLE POINT

ENABLE POLYGON FILL
DISABLE POLYGON FILL

DECLUTTER ON/OFF

REFRESH SCREEN

The principal options of this menu are explained below.

- **ENABLE ICONS:** Used (along with **DISABLE ICON PLOT**) to specify *whether* the icons selected on the icon display list are actually displayed. When you pick **ENABLE ICON PLOT**, MPDISPLAY checks to see if any of the selected icon types occur in the display area and draws them at seed points on the display.
- **DISABLE ICONS:** Switches off the capability to display icons (without erasing any icons that are currently on the screen). Use the **REFRESH SCREEN** option from the main menu to subsequently erase disabled icons.
- **ENABLE TEXT:** Displays any text associated with the DMS file topographic information displayed on the screen. (That is, the text must have already been created by the GEDIT software for the current region.) By default, text display is disabled upon entering MPDISPLAY.

Text will not be displayed if the currently displayed area is considerably larger than the scale at which the text was originally entered. If expected text is not displayed when you pick **ENABLE TEXT DISPLAY**, use a zoom function from the main menu to magnify the display to a scale that is close to that used when the text was entered. The text should then appear on the display.)

- **DISABLE TEXT:** Switches off the text display capability. Any text on the screen will remain there until the screen is redrawn (for example, by picking **REFRESH SCREEN**).

- **ENABLE POINT:** Places an asterisk * at the location of every point with attributes in each input file.

These points denote item points, icon seed points, text points, and color flood seed points. For example, if you are displaying a single file that contains text, this feature will show how many text items there are and where the starting point of each item is located without taking the (possibly long) time to plot the text. **ENABLE POINT** is particularly useful for locating text when the decluttering factor does not allow the text to be plotted on the screen.

- **DISABLE POINT:** Disables the display of points with attributes, allowing future plots to be created without showing the locations of attribute/ point data.

DISABLE POINT allows you to remove the attribute/point markers from the screen when used in conjunction with **REFRESH SCREEN**: Pick **DISABLE POINT**; then pick **REFRESH SCREEN**. The system will redraw the screen without the attribute/point data.

- **ENABLE POLYGON FILL:** Draws and fills all polygon(s) that have an associated fill pattern or color.

This is a software function. A polygon to be filled must have already been associated with the fill color or pattern. This is usually accomplished through appropriate functions in the GEDIT utility.

- **DISABLE POLYGON FILL:** Disables the automatic filling of polygons, negates the **ENABLE POLYGON FILL** command. To erase prior polygon fills, pick **DISABLE POLYGON FILL**; then pick **REFRESH SCREEN**.

- **DECLUTTER ON/OFF:** The **DECLUTTER ON/OFF** function can be used to declutter (reduce the detail and number of) features displayed on the map grid. When you pick the **DECLUTTER ON/OFF**, MPDISPLAY will prompt you for a decluttering factor (0-30) that will be used in determining whether a feature will be displayed or removed from the screen:

ENTER DECLUTTERING LEVEL (CTRL Z TO TOGGLE) >

To enter a decluttering level, type a number from 0 to 30 (inclusive) and press RETURN. A higher number represents more decluttering. MPDISPLAY will indicate that decluttering has been turned on. When you set the decluttering level in this fashion, the decluttering level remains constant, even if you use **ZOOM** functions to change the display scale.

If you press **CTRL-Z** instead of entering a decluttering factor, **MPDISPLAY** will calculate a decluttering factor based on the size of the current plot. If you use any of the **ZOOM** functions, **MPDISPLAY** will recalculate the decluttering factor according to the display scale.

Subsequently selecting **DECLUTTER ON/OFF** and pressing **CTRL-Z** will turn off the decluttering function.

- **REFRESH SCREEN:** Picking **REFRESH SCREEN** redraws the current display.

Screen View Functions

Picking **SCREEN VIEW FUNCTIONS** results in a submenu for changing the size of the display and the area for which topographic data are available.

EXIT

HELP

ZOOM IN
ZOOM OUT
MAP ZOOM

RESTORE BASE PLOT

RESET BASE AREA

REFRESH SCREEN

The principal options of this menu are explained below.

■ **ZOOM IN:** Pick **ZOOM IN** to enlarge a square portion of the displayed area.

1. Pick **ZOOM IN**.
2. Pick a point on the map at the center of the area that you want to enlarge.
3. Pick a second point that would lie on one side of the square area that you want to enlarge with the first point at the center.

After you define the area, **MPDISPLAY** will redraw the map, enlarging the defined area to fill the map grid.

If you are not satisfied with the area that you have enlarged, you can pick **RESTORE BASE PLOT** to redraw the area as it was first displayed (see **RESTORE BASE PLOT**).

■ **ZOOM OUT:** Pick **ZOOM OUT** to reduce the displayed area to a square within a larger area. Define the area to be reduced (scaled down) in the same manner as described for the **ZOOM IN** command:

1. Pick **ZOOM OUT**.
2. Pick a point on the map at the center of the area that you want to reduce (scale down).

3. Pick a point on the map that would lie on the edge of a square with the first point at the center.

The currently displayed map area will be rescaled to the size of the square, and the new display will be centered at the center point of the square.

It is possible to zoom out too far, scaling the map down to be surrounded by a "blank" area within the map grid box. You can always use **RESTORE BASE PLOT** command to redraw the map at its original size.

- **MAP ZOOM:** Pick **MAP ZOOM** to center the displayed area at a longitude-latitude (long-lat) that you provide. You can use the **COORDINATE PICK** function to find the longitude-latitude of a point on the display. Note that longitudes in the western hemisphere are expressed as negative numbers.

1. Pick **MAP ZOOM**.

MPDISPLAY will query for the radius (in miles) and the center point (long-lat) of the area to be displayed. (If you have used the **COORDINATE PICK** function previously, the longitude-latitude of the last point picked may be on the text screen, if other functions have not used the screen for other purposes.)

2. Type the radius (in miles), the longitude, and then the latitude, separated by commas (or spaces).

(Pressing CTRL-Z will exit and abort the **MAP ZOOM** function.)

3. Press RETURN.

MPDISPLAY will redraw the displayed area with the specified point at the center.

- **RESTORE BASE PLOT:** Initially the base plot is the area displayed when the main menu is first presented. The base area may be redefined later (see the next menu item, **RESET BASE AREA**). The concept of a base plot is extremely important because selection of topographic data is a function of the base plot area (see **SELECT TOPOGRAPHY**, page 2.194).

Picking **RESTORE BASE PLOT** causes the base plot to be redrawn in the display area of the screen. This function might be used after zooming, for instance, to restore the display to its original scale.

- **RESET BASE AREA:** Picking **RESET BASE AREA** sets the base plot to the area currently being displayed. It enables you to restrict the amount of data being retrieved by the **SELECT TOPOGRAPHY** command.

- **REFRESH SCREEN:** Picking **REFRESH SCREEN** redraws the current display.

This command can be useful for removing display elements that you no longer wish to display, such as text.

Select Topography

Use the **SELECT TOPOGRAPHY** menu item to designate which topographic features are displayed (which DMS files are read in for use by MPDISPLAY). When **SELECT TOPOGRAPHY** is picked, MPDISPLAY presents a menu of the following type:

```
EXIT  
  
HELP  
  
FORWARD  
BACKWARD  
GO TO  
  
topographic descriptor #1  
topographic descriptor #2  
.  
.  
.  
topographic descriptor #n
```

For example, the system database may include topographic descriptors such as the following:

ADMINISTRATIVE BOUNDARY	ELEVATION
AGRICULTURE	ELECTRICAL POWER GRID
BASE MAP	EVACUATION ZONE
CONGRESSIONAL DISTRICTS	FAULT LINES
CULTURAL FEATURES	FEATURES (ICONS)
RECOVERY AREAS	GNIS (Geographic Names)
CENSUS TRACT/ED	HYDROLOGY
ELEVATION CONTOUR(300M)	100K HYDROGRAPHY

The topography selection menu may contain different descriptors, depending on the particular database in use. If there is not enough space to show all topographies at once, the system lists the topographies one "page" at a time.

Displaying the List of Topographies

All available topographies are listed in a paged menu with 19 topographies per page. To scroll through the topography list, select the menu item (**FORWARD**, **BACKWARD**, **GO TO**) that describes which way you want to go:

- **FORWARD**: Shows the next page of topographies. If you reach the end of the list, the next **FORWARD** will return to the first page.
- **BACKWARD**: Shows the previous page of topographies. If you reach the first page of the list, the next **BACKWARD** will return to the last page.
- **GO TO**: Allows you to go directly to a specific page. After selection of **GO TO**, the system prompts, "ENTER PAGE # OF TOPOS DESIRED >". After your entry, the system shows the requested page of topographies. If the page number requested is less than 1, the system displays the first page of topographies. If the page number requested is greater than the number of pages available, the system sends you to the last page.

If you select a topography, then the next time you use the function, the list will start at the page of the last topography selected.

Picking Topographies from the Menu

Use the graphics input device to select topographic features for display by picking the appropriate descriptor in the menu:

1. Pick each topographic feature that you want to display.

Each menu item picked will change color to indicate selection. If you change your mind about an item that you picked, pick it again. The menu item will return to the standard menu color, indicating no selection.

Any combination of topographies may be selected for simultaneous display.

2. When you have chosen all desired topographies, pick the top menu item, **EXIT**.

The cursor will disappear momentarily, and the system will display a message:

READING DATA. PLEASE WAIT.

This indicates that MPDISPLAY is reading in the data files for the selected topographic features. No topographic data is read in until you pick **EXIT**. After a period, MPDISPLAY will draw (or redraw) the map features in the map display area. The amount of data read is related to the number of topographies selected and to the area specified as the current base plot (see **RESET BASE AREA** under **SCREEN VIEW FUNCTIONS**).

The amount of time necessary to read the topographic data from the database increases with the size of the region and the number of topographies selected.

If no topographies are selected when **EXIT** is picked, **MPDISPLAY** will erase the plot area and redisplay the main menu. This is a handy means of exiting the **SELECT TOPOGRAPHY** function without reading from the database.

Topographic Codes

Each topography is associated with a two-letter topographic code that is used in the topography subdirectory and data file names. For example, **RT** is the code for **ROADS & TRAILS**. Generally you will have no reason to use these codes unless you individually access specific topography data files. (For a list of topographic codes, see Appendix A.)

Store Region

Use the **STORE REGION** command to store areas of the map grid as a set of DMS data files for later use. **STORE REGION** is useful for combining DMS files and elevation data files (TAC files) across file boundaries. The resulting files of topographic data are stored in your current directory. **STORE REGION** does NOT store any graphics editing that you may have done in the "edit file." (For information on the *edit file*, see *Specifying the Name of an Edit File*, page 2.169.)

You may store the entire region displayed in the map grid or define a smaller area within the region (as shown in the following procedures).

To store the entire region in the current display:

1. Use the graphics cursor to pick **STORE REGION**.
2. Then pick **CONTINUE**.
3. Continue at step 4 of the following procedure.

To store a portion of the region within the current display:

1. Pick **STORE REGION**.
2. Use the graphics cursor to pick points on the map display that define a polygon that surrounds the desired region.

MPDISPLAY will draw lines between the points as they are entered, indicating the boundary of the desired region.

3. After picking the last point, pick **CONTINUE** to draw a line between the first and the last point, completing the polygon.

After you have specified the region to be stored (by either method), MPDISPLAY will present a **STORE REGION** submenu:

EXIT
HELP
CANCEL
CONTINUE
ENABLE STORE TEXT
DISABLE STORE TEXT

4. Choose whether to store text data associated with the specified region. (This step is optional):

- ☐ **ENABLE STORE TEXT:** Chooses to store all text for all topographies in the region (regardless of whether the text is currently displayed).
- ☐ **DISABLE STORE TEXT:** Chooses to NOT store any text for the stored region (regardless of whether the text is currently displayed).

If you choose *neither* of these options, only text that is currently displayed will be saved with the stored region.

5. Pick **EXIT** on the **STORE REGION** submenu.

MPDISPLAY will then ask for an "output file designation" (name for the stored region) of *up to* seven characters:

ENTER OUTPUT FILE DESIGNATION (7 CHARACTERS) >

6. Type a name for the stored region and press RETURN.

MPDISPLAY will then query to determine if a direct access (polygon description) file is to be created:

DO YOU WANT A DIRECT AREA ACCESS FILE >

7. Enter Y for "yes" or N for "no."

If you answer yes, a DMS file will be created to contain a bounding polygon for selected region. *No other data will be stored.* This polygon description file is called a "direct access file" because you may use the file along with the **DIRECT AREA ACCESS** function to retrieve data for the bounded region without selecting from a database area (page 2.162).

If you answer no, MPDISPLAY will create a full set of data files describing the selected region, including the polygon description file. The contents and naming conventions for these data files are described after step 8. If you have also selected ELEVATION data to be stored (and elevation data exists), then MPDISPLAY gives you the opportunity to modify the resolution of the elevation data that will be saved:

THE CURRENT X STEPSIZE = 0.00083 DEGREES
ENTER X STEPSIZE OF ELEVATION FILE (^Z FOR CURRENT) :

THE CURRENT Y STEPSIZE = 0.00083 DEGREES
ENTER Y STEPSIZE OF ELEVATION FILE (^Z FOR CURRENT) :

X refers to "horizontal" east-west increments; Y refers to "vertical" north-south increments. The resolution shown may vary.

8. Enter modified step sizes, or just press CTRL-Z at each prompt to retain the resolution of the current elevation data.

Results of using STORE REGION

MPDISPLAY then takes a moment to save the data files. If you had entered an output file designation of "MYDATA," then when you exit, you would find the following files in your current directory:

- MYDATA.DMS   a polygon description file for the site area
- MYDATAxx.DMS   one file for each selected vector topography, where "xx" is the two-character topographic code

If you included elevation data, these files would also be produced:

- MYDATAEL.TAC   the information "header file" for the TAC data set
- MYDATAEL.TAA   the cell data file for the TAC data set.

Names of Map Display Data Files

The "output file designation" (region specification) will be the major portion of the filenames for the files created by **STORE REGION**. For each topography in the current display, MPDISPLAY creates a file with the ".DMS" filename extension in the current default directory. A two-character topographic code is appended to the end of the region specification to identify each topography file.

For instance, suppose that streams and railroads are among the features in the current display. If the topographic code for streams is ST and the code for railroads is RR, then supplying "MYPLOT" as the region specification would result in the creation of the files MYPLOTST.DMS and MYPLOTRR.DMS. The codes for the standard IBS topographies are listed in Appendix A. (This list may vary if topographies are added or deleted by the database manager.)

The **STORE REGION** command in MPDISPLAY always creates a file that describes the bounding polygon for the clipped region. This polygon description file is provided for use with the **DIRECT AREA ACCESS** option (page 2.162) and the **PASTE REGION** command in the GEDIT software. The filename is derived by appending ".DMS" to the region specification—MYPLOT.DMS in the example above.

Summary Functions

Picking **SUMMARY FUNCTIONS** displays the following submenu for displaying data values and statistics (coordinates, populations, attribute values, elevations, differences in elevation, areas, etc.) for items and areas on the screen.

EXIT   HELP CANCEL CONTINUE   RETURN COORDINATE   RETURN POPULATION   RETURN ATTRIBUTES   RETURN ELEVATION   RETURN SLOPE   DETERMINE AREA   POINT DATA SUMMARY   REFRESH SCREEN

The principal options of this menu are explained here.

■ **RETURN COORDINATE:** Picking **RETURN COORDINATE** and then a point on the map displays the

- longitude-latitude of the point
- the Great Circle distance from the point to the center of the display (shortest arc over the surface of the earth)
- the cumulative distance from the first point picked.

Picking subsequent points will display this information until you terminate the function by picking any menu item.

- **RETURN POPULATION:** **RETURN POPULATION** will display the population for an area that you define. Define the area of interest by specifying a polygon:

Initially, you should select a mode for defining the area on which the population gathering should be performed. The menu items **DRAW POLYGON**, and **SELECT POLYGON** are the two methods for defining the area. Only one of the above options, at most, is active at any given time. Selecting the alternative area input mode will disable the first.

Selecting the **RETURN POPULATION** option will bring up the following submenu:

EXIT
HELP
CANCEL
CONTINUE
DRAW POLYGON
SELECT POLYGON

The principal options of this submenu are explained here.

- **CONTINUE:** Used in conjunction with **DRAW POLYGON** and **SELECT POLYGON**. Signals the completion of functions.
- **DRAW POLYGON:** Allows you to pick points to define a polygon on which to perform population gathering. When you select **DRAW POLYGON** or **SELECT POLYGON** to define a new area, the current polygon will disappear.

1. Pick **DRAW POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick points that define the sides of a polygon.
3. Pick **CONTINUE** to complete the polygon.

The polygon will blink in green to indicate that a polygon has been properly selected. The menu option will stop blinking to indicate that no further input is required in selecting the polygon. The polygon will be redrawn in white. The population of that bounded region will appear on the text screen.

- **SELECT POLYGON:** Allows you to pick a predefined polygon on which to perform population gathering. When you select **DRAW POLYGON** or **SELECT POLYGON** to define a new area, the current polygon will reappear in its original color.

1. Pick **SELECT POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick any point on a preexisting polygon.

The polygon will blink in white to indicate pick. If the wrong polygon is highlighted, pick again on the desired polygon until it is properly selected.

3. Pick **CONTINUE** to confirm the polygon selection.

The polygon will be redrawn in its original color. The menu option will stop blinking to indicate that no further input is required in selecting the polygon. The population of that bounded region will appear on the text screen.

- **RETURN ATTRIBUTES:** Displays the attributes associated with a particular data item.

1. Pick **RETURN ATTRIBUTES**.
2. Pick a point on or near the desired point or composite string.

The data item will blink, and if it has attributes associated with it, they will be displayed in a table. For example, this table displays information on two attributes:

#	MAJOR	MINOR	PARAM	DESCRIPTION
1	7	150	0	Seaplane ramp or Landing area
2	8	7	6	NO ENTRY IN ATTRIBUTE DICTIONARY

where # is the index number and the following four columns list each attribute (the Major code, the Minor code, and the Parameter value) plus a text description of the data item (if a description exists in the attribute dictionary). Notice that the second set of attributes has "NO ENTRY IN ATTRIBUTE DICTIONARY": that is, the attributes 8;7;6 might have some meaning for the person who created the data item, but they are not in the master list of attributes normally used by the IBS.

3. Repeat step 2 for any other data item.

As you continue to pick data items, old attribute information is retained on the text screen. To clear the screen and make it easier to read, press SHIFT and the dialogue erase key (<D ERASE>).

4. Pick any other submenu item to end the **RETURN ATTRIBUTES** function.

- **RETURN ELEVATION:** Displays the elevation at a selected point. This option is active only if the current geographic database is set up with an elevation topography. Otherwise you will see a message—**NO ELEVATION TOPOGRAPHY EXISTS IN CURRENT DATABASE**—and the option will have no effect.

1. Pick **RETURN ELEVATION**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

3. Pick **CONTINUE**.

The elevation of the selected point (center point of the cell) will be displayed.

- **RETURN SLOPE:** Displays the absolute difference between the elevation values at two selected points (if an elevation topography is used in the current geographic database).

1. Pick **RETURN SLOPE**.
2. Pick a point on the screen.

A yellow asterisk (*) will mark the selected location. Depending on the screen density of the elevation data, a box representing the borders of the elevation data cell may also appear.

3. Pick **CONTINUE**.
4. Pick a second point on the screen.

A second yellow asterisk will appear.

5. Pick **CONTINUE** again.

A line connecting the two points will be drawn. The absolute difference between the elevation values will be displayed on the terminal screen.

- **DETERMINE AREA:** Picking **DETERMINE AREA** results in a submenu for determining the area of a region that you define graphically on the map. You will draw a polygon around the desired region.

EXIT   HELP CANCEL HELP   DRAW POLYGON SELECT POLYGON

Initially, you should select a mode for defining the area on which the calculation should be performed. The menu items **DRAW POLYGON**, and **SELECT POLYGON** are the two methods for defining the area. Only one of the above options, at most, is active at any given time. Selecting the alternative area input mode will disable the first. The principal options of the submenu are explained here.

- **CONTINUE:** Used in conjunction with **DRAW POLYGON** and **SELECT POLYGON**. Signals the completion of functions.
- **DRAW POLYGON:** Allows you to pick points to define a polygon on which to perform area and circumference calculations. When you select this option to define a new area the current polygon will disappear.

1. Pick **DRAW POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick points that define the sides of a polygon.

3. Pick **CONTINUE** to complete the polygon.

The polygon will be redrawn in white. The menu option will stop blinking to indicate that no further input is required in selecting the polygon. The area (square miles) and circumference of the bounded region will appear on the text screen.

- **SELECT POLYGON:** Allows you to pick a predefined polygon on which to perform area and circumference calculations. When you select this

option to define a new area the current polygon will reappear in its original color.

1. Pick **SELECT POLYGON**.

The menu item will blink in green to indicate that further input is required.

2. Pick any point on a preexisting polygon.

The polygon will blink in white to indicate a pick. If the wrong polygon is highlighted pick again on the desired polygon until it is properly selected.

3. Pick **CONTINUE** to confirm the polygon selection.

The polygon will be redrawn in its original color. The menu option will stop blinking to indicate that no further input is required in selecting the polygon. The area (square miles) and circumference of the bounded region will appear on the text screen.

- **POINT DATA SUMMARY:** Allows you to obtain a summary that tells how many points have a particular set of attribute codes in a specific area of the display.

Initially, you should select a mode for defining the area on which the attribute summary should be performed. The menu items **CURRENT SCREEN**, **DRAW POLYGON**, and **SELECT POLYGON** are the three means of defining an area. Only one of the above options, at most, is active at any given time. Selecting a second area input mode will disable the first.

Picking **POINT DATA SUMMARY** displays the following submenu:

EXIT
HELP
CANCEL
CONTINUE
CURRENT SCREEN
DRAW POLYGON
SELECT POLYGON
PERFORM ATTRIBUTE SUMMARY

The principal options of this submenu are explained here.

- ❑ **CONTINUE:** Used in conjunction with **DRAW POLYGON** and **SELECT POLYGON**. Signals the completion of functions.
- ❑ **CURRENT SCREEN:** Sets the entire display screen as the area to which an attribute summary will apply. Subsequent attribute summaries will apply to this area until you define another area via **DRAW POLYGON**, or **SELECT POLYGON**.
- ❑ **DRAW POLYGON:** Allows you to pick points to define a selective area for performing an attribute summary. Subsequent attribute summaries will apply to this area until you define another area via **CURRENT SCREEN**, **DRAW POLYGON**, or **SELECT POLYGON**. When you select one of the above menu options to define a new area, the current polygon will disappear.
  1. Pick **DRAW POLYGON**.

The menu item will blink in green to indicate that further input is required.
  2. Pick points that define the sides of a polygon.

MPDISPLAY will draw line segments from point to point.
  3. Pick **CONTINUE** to complete the polygon.

The polygon will blink in green to indicate that a polygon has been properly selected. The menu option will stop blinking to indicate that no further input is required in selecting the polygon.
MPDISPLAY will draw the final side between the first point and the last, closing the polygon area.
- ❑ **SELECT POLYGON:** Allows you to pick a predefined polygon on which to perform the attribute summary. Subsequent attribute summaries will apply to this area until you define another area via **CURRENT SCREEN**, **DRAW POLYGON**, or **SELECT POLYGON**. When you select one of the above menu options to define a new area, the current polygon will reappear in its original color.
  1. Pick **SELECT POLYGON**.

The menu item will blink in green to indicate that further input is required.
  2. Pick any point on a preexisting polygon.

The polygon will blink in white to indicate a pick. If the wrong polygon is highlighted, pick again on the desired polygon until it is properly selected.

3. Pick **CONTINUE** to confirm the polygon selection.

The polygon will blink in green to indicate that a polygon has been properly selected. The menu option will stop blinking to indicate that no further input is required in selecting the polygon.

- **PERFORM ATTRIBUTE SUMMARY:** Allows you to enter major and minor attribute codes to select attributes points to be summarized.

If used without selecting an "interactive area," this function can be used to search the entire screen.

You will see the prompt

ENTER MAJOR MINOR CODE >

Enter the major and minor code of an attribute point and press RETURN. Example: 1, 2

You will see summary table headings and the appropriate data, such as

MAJOR	MINOR	COUNT	TOTAL	MIN.	MAX.	AVG.
1	2	13	906	3	333	69

MYTAPE

The MYTAPE utility is a foreign tape processing program that simplifies tape file transfers between the VAX computer system and other systems. For example, the description of the USGS100KXDMS utility includes an example of using MYTAPE to transfer USGS Digital Line Graph (DLG) data files from tape to disk before conversion to DMS format.

MYTAPE is added to the VAX Digital Command Language (DCL) command tables when the IBS is initialized at the time of system installation.

To start MYTAPE, just enter **MYTAPE** at the system prompt. The program then displays its own command prompt for further tape processing commands:

```
$ MYTAPE
Beginning MYTAPE session 17-AUG-1992 11:37:58

MYTAPE>
```

For detailed information on using the program and on MYTAPE commands, please refer to the complete documentation, which is available as PNL\$DOCUMENT:MYTAPE.DOC. To see online help messages, enter **HELP** at the MYTAPE > prompt.

NET_BMD

The NET_BMD utility (NETwork Build Master Directory) builds a master directory list of the valid disk names, user names, and site names on the system (MASTER_DIRECTORY.BIN). This list is used as a source of online "help" information for IBS capabilities that transfer or copy model case files and site files between users. These capabilities are available as **COPY CASE OR SITE FILE** functions under **SETUP** in the IBS program.

NET_BMD should be used regularly whenever new user, site, model, or topography directories are added to the system. Otherwise these new data will NOT be accessible to the **COPY CASE OR SITE FILE** functions.

What You Should Know Before Using NET_BMD

The NET_BMD program uses as its primary input a file named ALLSITE.DAT, which is a list of the locations of all user sites known to the system. Therefore the ALLSITE.DAT file must be up to date for NET_BMD to be successful. The ALLSITE utility creates IEMIS\$SYFILES:ALLSITE.DAT.

System managers should use the utilities ALLSITE and NET_BMD whenever they add a new user to the system so that the user and the user's data will be recognized as options when IBS users copy or transfer case and site files.

Building a Master Directory List of Disk, User, and Site Names with NET_BMD

To start the utility, enter **RUN IEMIS\$EXE:NET_BMD** at the system prompt. NET_BMD does not normally require any further interaction. For example:

```
$ RUN IEMIS$EXE:NET_BMD
IEMIS$SYFILES:MASTER_DIRECTORY.BIN written.
Total records written =      168
```

Results of Using NET_BMD

NET_BMD writes a set of six help records into a new version of the master directory list for each site reference found in IEMIS\$SYFILES:ALLSITE.DAT. In the example shown here, 28 site records were processed. For each site record processed, NET_BMD examines the contents of the user's site directory. This example required about 45 seconds to complete on a VAX 4000.

NEWSITE

The NEWSITE utility is used to assemble topographic, population, and other data that define a geographic site: an IBS *site database*. Once a site is created, it can be used as the "current site" for map display and computational modeling in the IBS.

This section covers the following topics:

- Why create a new site database?
- What You Need to Know Before Using NEWSITE
- Using NEWSITE to Define an IBS Site Database
- Results of Using NEWSITE.

Why create a new site database?

Emergency management analysts can set up different site databases for developing different scenarios and simulations using the various computational models available in IBS. The IBS site databases can be divided into the classes shown here:

- planning site databases
- operational site databases —
  - real site databases
  - exercise site databases

Planning site databases are located under individual user accounts. *Operational site databases* are located under the Information Manager (INFOMANAGER) account, and only one operational database is active at a time—the "current" operational site database. When the Information Manager and other IBS users use the current operational site database, they are said to be in *operational mode*. When the Information Manager and other IBS users are NOT using the current operational site database, they are said to be in *planning mode*.

The real difference between the current operational site database and all other site databases is that several users can use the current operational site database at once, in essence, sharing the data. Changes made to the data by one user are immediately reflected in the data available to the other operational-mode users. However, data in planning site databases or in non-current operational site databases is NOT shared: only one user at a time can use the data (the user under whose account the database is located).

Planners require their own private site databases so that they can run model simulations and prepare Implementing Procedures (IPs) in the IBS program

without affecting data in operational site databases or other users' site databases. Moreover, if a planner intends to modify topographic data, a private copy is necessary for the same reasons. After making changes to the data, the planner can, depending on privileges, copy the data to one of the operational site databases or copy the modified topographic data back into the map database.

There are two classes of operational site databases: *real* and *exercise*. Every exercise site must be associated with a real site, though not all real sites require an associated exercise site. Exercise site databases are used during exercises; real ones are not.

What You Need to Know Before Using NEWSITE

Before you create a site, you must know what type of site you are creating and where the site should be located on the system. If you are unsure about where to obtain this information, or need help, please contact your database administrator for more details.

The following information is used to specify the type of site and where it will be placed on the system:

<i>Site Code</i>	This code must be four characters long. It will be used to identify the site that is to be created; for example, ABCD, TEST, TST2.
<i>Site Name</i>	The site name can be up to forty characters long and is used as the full name of the site.
<i>Disk Name</i>	The disk name is six characters long and is used to determine on which disk the site is to be created. This name can be either a device name or a logical name for a device. If no value is input, the default is your login disk.

Note: You can have sites on multiple disks as long as a top-level directory with your user name exists on each disk.

<i>Site Type</i>	The site type is one character long and is used to define the kind of site to be created. Three different types exist (the default type is P):

R	Real site (only under the INFOMANAGER account)
E	Exercise site (only under the INFOMANAGER account)
P	Planning site (not under the INFOMANAGER account)

Assoc Site This is the 4-character code of the "associated site." Only Exercise and Planning site *require* an associated site: any new Exercise or Planning site *must* be associated with a Real site. Real sites, on the other hand, do not necessarily have an associated site. If an Exercise site does or will exist for a Real site, use the name of that Exercise site as the associated site.

New Site Type	Assoc Site
Real	= > Exercise site code (possible)
Exercise	= > Real site code (required)
Planning	= > Real site code (required)

Map Name This is the name of the map database from which topographic data will be used for the new site. If you are unsure about what map databases are available, consult the database administrator at your site.

ONSITE Code The "ONSITE code" is a 4-character code that identifies the onpost depot that corresponds to an operational (Real or Exercise) site being created under the INFOMANAGER account. Planning sites do not require an onsite code.

In addition to the parameters just defined, you must also know what geographic area you want to include in your site. For Planning and Exercise sites, the default is the same area as that used by the associated Real operational site, so you need not specify any area. If you want to change the area to something else, or if you are creating a Real operational site, four options are available for specifying what area to include in your site:

Longitude/Latitude Corners	Requires two sets of longitude and latitude coordinates.
Center & Radius (miles)	Requires one set of longitude and latitude coordinates and a radius distance in miles.
Center & Radius (kilometers)	Requires one set of longitude and latitude coordinates and a radius distance in kilometers.
Defaults: -112.34 40.30 37	Specifies defaults (site center and radius) that are set up specifically for each IBS installation and requires no further information. In this example, the longitude is -112.34, the latitude is 40.30, and the radius (in miles) is 37.

If you plan to use one of the first three options to define the site area, then before you start creating the new site, make sure you have determined which longitude and latitude coordinates and which radius you will use. You can easily obtain this

kind of information through the graphic mapping utilities in IBS. (See MPDISPLAY, for example.) The following diagram clarifies the methods for defining geographic areas in the first three options.

Methods for Defining Geographic Areas

Using NEWSITE to Define an IBS Site Database

The following is an example of how to create a new site using the NEWSITE utility. This example steps through the process of creating new directories for a site and copying topographic data into the new directories.

Before beginning this process, you must know the system and topographic information explained in the previous section.

Creating Directories for the New Site

1. To start the utility, just type **NEWSITE** at the system prompt. The utility begins by displaying the main menu for NEWSITE:

```

$NEWSITE

      Select NEW SITE option
-----
0 : EXIT
1 : Create directories for new site
2 : Copy topo data to current site
-----
Choice (?=Help) ==>
  
```

2. Select option 1 to define the new site system information.

This displays the following screen form, which indicates the system information you need to provide:

CREATE NEW SITE

Site Code : (4 characters)

Site Name : (full name, up to 40 characters)

Disk Name : (6 characters, device name or logical name)

Site Type : (R-Real, E-Exercise, or P-Planning)

Assoc Site: (see What You Need to Know Before Using NEWSITE)

Map Name : (the name of the map database to be used)

3. Enter the appropriate site code, site name, disk name, site type, associated site, and map name. Press **GOLD Z** to finish and approve your entries (or press **CTRL-W** to abort the process).

Note: If you are creating a new operational (Real or Exercise) site under the INFOMANAGER account, then NEWSITE prompts you to enter a 4-character code that identifies the onpost depot that corresponds to the new OFFSITE directory:

Enter ONSITE code that corresponds to OFFSITE code:xxxx ==>

After you approve your entries (or after you enter the ONSITE code), NEWSITE begins the process of creating the site directories and copying some standard files that serve as templates for supporting database files. After the site directories have been created and the necessary template files have been copied and possibly modified, NEWSITE returns you to the main menu.

You have just created a working site. The new site is now your current site, and you can use it in IBS applications with no further modifications or additions.

Copying Topographic Data to the New Site

Note: In general, most people do NOT need a private copy of any of the static topographic data—the standard map layer data that normally do not change, such as roadways. However, if you want to have a private copy of some of the static topographic data, then continue with the following procedure.

1. To include copies of the normally static topographic data, select option 2 (Copy topo data to current site) from the NEWSITE menu. This displays the Area Selection Menu, which looks similar to the following example.

```
-----  
Area Selection Menu  
-----  
0 : EXIT  
1 : Long/Lat Corners  
2 : Center & radius (Mi)  
3 : Center & radius (Km)  
4 : Defaults: -112.34  40.30  37.  
-----  
Choice (?=Help) ==>
```

2. Select how you want to define the area for topographies to be included in your new site database:
  - Option 1 displays a screen that asks you to enter the minimum and maximum longitude and latitude coordinates of the area.
  - Options 2 and 3 display a screen that asks you to enter the site center coordinates and radius.
  - Option 4 automatically sets the area to the default area (longitude, latitude, and radius in miles) shown in the menu.
  - EXIT (0) returns you to the main menu.

If you need more information about the kind of input required by the area selection options, see *What You Need to Know Before Using NEWSITE*.

3. If you selected an option other than 4, enter the coordinates (and radius, if necessary) that define the area for which you want topographic information.

The following menu then appears. Different topographies (map layers) may be listed in the menu, depending on your system setup.

Available Topos		1/10

0	:	EXIT
1	:	ADMINISTRATIVE BOUNDARY
2	:	AGRICULTURE
3	:	BASE MAP
4	:	CONGRESSIONAL DISTRICTS
5	:	CULTURAL FEATURES
6	:	RECOVERY AREAS
7	:	CENSUS TRACT/ED
8	:	ELEVATION CONTOUR(300M)
9	:	ELEVATION
10	:	ELECTRICAL POWER GRID
----- M O R E -----		
Choice (?=Help) ==>		

A few things should be noted about the Available Topos menu:

- The 1/10 next to the title is an indication of the page currently being displayed, in this case, page 1 of 10. To see different pages of the menu, type **U** to move up a page or **D** to move down a page.
  - To select a topography (map layer), type the number after "Choice" and press RETURN. An asterisk (*) is then displayed next to the topography you want to copy. If you type the same number again, the asterisk disappears, indicating that the topography will NOT be copied to the current site.
  - When you have selected all the topographies you want to copy to your current site, select EXIT (0). This indicates to NEWSITE that all topographies have been selected and that you are ready to copy them to your current site. If you want to discontinue this operation, type **Q** to quit the menu.
4. Select topographies from the Available Topos menu.

Caution

Be careful not to overwrite topographies that already exist. If you select a topography that you have previously modified in your current site, you will overwrite the files and lose your work.

5. When you have made all your topography choices, select EXIT (0).

If you elected to enter coordinates by selecting options 1, 2, or 3 in Step 2, the following prompt then appears:

```
Use Lon/Lat values for this site's default values?  
(Y/N/<Ctrl-Z>=Abort) ==>
```

Enter Y or N to choose whether to use the new coordinate values as the default values for the IBS program.

- Y inserts these values as default values in your SITE.DAT file. When the IBS program starts, it checks SITE.DAT and displays the initial map using those coordinates.
- N continues and does NOT change the SITE.DAT file.

After you finish, a sequence of messages tracks the status of the process:

```
* * * MSG: Creating topo directories & copying data  
* * * MSG: Processing topography name  
.  
.  
.  
* * * MSG: Processing topography name  
* * * MSG: Creating/Modifying SETUP file  
* * * MSG: Database generation complete  
<RETURN> to continue
```

Once you press RETURN, the NEWSITE initial menu appears again. You have just completed adding topographies to the new site. If you want to add more topographies, you can do so by starting again at step 1 of the procedure.

Results of Using NEWSITE

NEWSITE creates a directory structure that contains site information. This directory structure can be used for simulations of the various models available in IBS. It is identical to the one described under the [INFOMANAGER].[SITES] tree in the *IBS Data Management Guide*.

NEWSITE also modifies the site database "SETUP" and control files so that your current site is set to whatever new site was created.

NEWUSER

The NEWUSER utility is used by the system manager to create new user accounts for IBS users. Once created, a new user can login and access data on the system.

This section covers the following topics:

- Why create new user accounts?
- What You Need to Know Before Using NEWUSER
- Creating or Modifying a New User Account with NEWUSER
- Results of Using NEWUSER.

Why create a new user account?

It is necessary to create new user accounts to allow people to use IBS. By adding an account, you provide users with the ability to access IBS databases and perform whatever tasks they may be assigned to do. The NEWUSER utility provides a simple and direct means of adding user accounts and configuring them for use in IBS.

What You Need to Know Before Using NEWUSER

Before using NEWUSER, there are certain pieces of information you need to know. Some of this information may need to be obtained from the new user.

username   The *username* is the name under which the user will login. It is the information which will be entered by the new user at the system login prompt.

real name   The *real name* is the user's actual name. If specified in quotes, lowercase letters will be preserved in the name, if quotes are not used, the name will be converted to all caps.

Example: "John Doe"   -> John Doe
                      John Doe   -> JOHN DOE

disk   This *disk* is the name of the disk on which the account is to be created.

Example: DISK1

account The *account* can be used to identify what type of account the new user will have access to. If you have a billing system for CPU time, this field can be used to specify who gets billed for use of the system. The account is specified as a string.

group number The *group number* is used to specify what group a user belongs to. Users working on the same projects should have identical group numbers. The group number is specified in octal.

Note: It is strongly recommended that all IBS users have the same group number.

member number The *member number* should be a unique number for each user within a specific group. The member number is specified in octal.

Make sure you have this information before you use the NEWUSER utility. Without it, it is impossible to create a new account correctly.

When a new account is created using NEWUSER, the password is automatically set to be the same as the username and to expire upon the first login.

Creating or Modifying a User Account with NEWUSER

The following is an example of how to create or modify a user account using the NEWUSER utility.

Before beginning this process you will have to know certain system and user information. Please refer to the previous section, *What You Need to Know Before Using NEWUSER*.

To start the utility, just type **NEWUSER** at the system prompt. The program then prompts you for the information outlined in the previous section. The series of prompts will look like the following (simulated answers are in **bold**):

\$NEWUSER

```
USERNAME for new user?      : test
User's REAL NAME?          : "John Doe"
User's DISK?                : DISK1
User's ACCOUNT?             : ibs
User's GROUP NUMBER?       : 43
User's MEMBER NUMBER?      : 30
```

Once these fields have been entered, the utility will automatically create and configure the account for the new user. NEWUSER will generate messages that look something like the following:

```
* * * MSG: Creating command file to see if user account exists
* * * MSG: Executing command file to see if user account exists
* * * MSG: Creating command file to create user account
* * * MSG: Creating user account
* * * MSG: Creating directories for user if necessary
* * * MSG: Moving files to user directory if necessary
* * * MSG: Checking permissions in PERMITI.DAT
* * * MSG: Done creating account for TEST
```

The password for the new user will automatically be the same as the username (so in the above example, the password would be TEST) and is set to expire upon the first login.

Results of Using NEWUSER

NEWUSER creates a new account using the information which you provide it. It sets up the new user's password, and copies a base set of files into the new account. These files include JOB_ENV.DAT, LOGIN.COM and SITE.DAT. SITE.DAT contains no sites, just a couple of blank records. LOGIN.COM configures the user's environment so that the user can run IBS, and JOB_ENV.DAT contains IBS environment information. A SITES subdirectory [*username*.SITES] is also created, but it will be empty initially.

NEWUSER also modifies PERMITI.DAT so that the new user has the appropriate permissions to access the IBS databases.

If NEWUSER is used on an existing account, it will reset quota information to the IBS defaults. The quotas and their defaults are listed below:

Process Quotas

<u>Quota Parameter</u>	<u>Value</u>
ASTLM	24
BIOLM	24
BYTLM	65536
CPUTIME	0
DIOLM	18
ENQLM	600
FILLM	70
JTQUOTA	8192
MAXACCTJOBS	0
MAXJOBS	0
PBYTLM	0
PGFLQUOTA	180000
PRCLM	4
PRIORITY	4
PWDMINIMUM	8
QUEPRIO	0
SHRFILLM	0
TQELM	10
WSDEFAULT	150
WSEXTENT	4096
WSQUOTA	1024

PDMGR

The PDMGR (Permiti.Dat Manager) utility is used by the database administrator or system manager to change IBS privileges for IBS users. The IBS privileges, specified in the IBS authorization file (PERMITI.DAT), control which programs and program functions an IBS user can use or see.

Privilege Required to Use PDMGR:

- Change Privilege (75: PRIV_MOD_PERMITI)

File Input:

- IEMISSYSFILES:PERMITI.DAT, the IBS authorization file

File Output:

- IEMISSYSFILES:PERMITI.DAT, the IBS authorization file
- IEMISSYSFILES:PERMITI.DOC, the PDMGR help file

Interactive Input:

- Username
- YES or NO on form to grant/revoke associated privilege

Example:

1. To start the utility, enter **PDMGR** at the system prompt:

```
$ PDMGR
```

2. Enter the IBS username, the EOC Manager in this example:

```
Change privileges for which user? ==> EOCMGR
```

The Permission Management form (shown on the following page) then appears on your screen, showing the first ten (of 120) privileges available to IBS users.

Appendix D lists the IBS privileges and their correlation to IBS programs and program functions.

Permission Management		Permission Form V1.00
Current	Privilege Description	User : EOCMGR
NO	EESF	
NO	REA	
NO	REP Support System	
NO	Presentation Graphics	
YES	National Map Display	
YES	Graphics Editor	
YES	Map Utilities	
NO	Weather Access	
YES	Training menu	
NO	TIMM	

3. Enter YES or NO beside the privileges you want to grant or revoke.

Use the arrow keys to move between fields. Pressing the up/down arrow key when on the first/last line of the form will show the previous/next ten privileges, if there are any.

4. As with all IBS forms:

- To SAVE your modifications and exit the form, press **GOLD Z**. This message confirms that privileges were changed:

* * * MSG: Privileges changed for user EOCMGR
- To CANCEL your modifications and exit the form, press **GOLD Y**. This message confirms that privileges were NOT changed:

* * * MSG: Privileges NOT changed for user EOCMGR

PLOTDMS

The PLOTDMS utility displays one or more DMS files graphically on the terminal screen without border lines or menus.

You can use PLOTDMS as a simple way to visually verify the contents of a DMS file, perhaps after using data creation or conversion programs that create DMS files. A visual examination, coupled with numeric output from DMSXASCII and summary data from STATDMS, should verify whether or not the desired DMS file was created.

What You Need to Know Before Using PLOTDMS

Once a series of DMS files are created, you may wish to create some form of final copy. PLOTDMS provides this capability. The DMS files are plotted in the order they are entered. Thus, if a particular file contains data that you want overlaid on a base map, be sure to specify it last. Remember that the entire contents of each DMS file is plotted, so you may want to make sure the files are within the same area by using the DMSXASCII utility to check each file's extents.

Plotting the Contents of a DMS File with PLOTDMS

To start the utility, just enter **PLOTDMS** at the system prompt. The utility then asks you for the type of projection to be used, as well as rotation, scale, and offset factors. Offset factors are entered in inches and result in horizontal or vertical displacement of the display.

For example, if you wanted to display the streams and water bodies for New York using an Albers projection, with no rotation, at twice the scale, and with the display repositioned one inch higher, your responses might look like this:

```
$ PLOTDMS
```

```
Currently available map projection types are :
```

- 1 = "Geographic"
- 2 = "UTM"
- 3 = "Albers Conical Equal-Area"
- 4 = "Lambert conformal Conic"
- 5 = "Mercator"
- 6 = "Polar Stereographic"
- 7 = "Transverse Mercator"

```
Enter projection type > 3
```

```
Enter rotation, scale, Xoffset, Yoffset > 0., 2., 0., 1.
```

```
Enter input filename > NEWYORKST.DMS
```

```
Enter input filename > NEWYORKWB.DMS
```

```
Enter input filename > <CTRL Z>
```

Choosing the Map Projection Type. For most cases (up to 100-mile radius), you will probably want to enter a 1 (or just press the RETURN key) to select the default "Geographic" projection. Enter a number (2 to 7) if you desire a projection other than Geographic. The following table is a simple summary of how the different map projections might be used. See Appendix C for background on the projection types.

Map Projection Type	Situations for Use
Geographic	small areas (up to a 100-mile radius)
Universal Transverse Mercator (UTM) or Transverse Mercator	medium-sized areas (up to 1000-mile radius) or where the largest extent of the mapped area extends north-south rather than east-west
Albers Conical Equal-Area or Lambert Conformal Conic	larger areas, or where the largest extent of the mapped area extends east-west
Polar Stereographic	polar areas of the globe

Entering Rotation, Scale, Xoffset, and Yoffset. If you press CTRL-Z in response to the prompt for rotation, scale, and offsets, PLOTDMS uses the following default values: Rotation = 0.0; Scale = 1.0; Xoffset = 0.0; Yoffset = 0.0.

POPXDMS

The POPXDMS utility creates DMS data files from STF1B data files provided by the U.S. Department of Commerce, Bureau of the Census. The Bureau of the Census makes population data available at state, county, place, tract, group, and block levels. POPXDMS is designed to handle one county at a time.

Note: You will normally NOT use POPXDMS directly: for most purposes you will want to use the TIGERCVT utility program, which creates a special command file that runs POPXDMS for you. (See TIGERCVT.)

What You Need to Know Before Using POPXDMS

You will normally want to use the TIGERCVT utility rather than POPXDMS, as noted above. If you do use POPXDMS independently, you must specify at least some of the following items either by entering them or by choosing them from a menu:

<i>Population Type</i>	This is the type of population data that will be converted for the county: state, county, county subdivision, place, census tract, block group, or block.
<i>state name</i>	<i>For the state population data only:</i> This is the name of the state for which you want state-level population data.
<i>county name</i>	<i>For population data other than state:</i> This is the name of the county for which you want population data.
<i>county/state limits</i>	These are the longitude-latitude extents of the county (or state, for state data): the minimum and maximum longitude and the minimum and maximum latitude, in that order.
<i>combined state and county code</i>	<i>For data types other than state:</i> This five-digit code consists of the two-digit FIPS state code followed by the three-digit FIPS county code.
<i>census directory and filename</i>	This is the name of the directory where the census files are located and the name of the file. If you do not specify a directory name, the program looks for the file in the current default directory.

Creating DMS Population Files from Census Bureau STF1B Files

To start the utility, just enter **POPXDMS** at the system prompt. You will then see prompts for the information described in the previous section. The series of prompts will resemble the following two examples, which illustrate using POPXDMS for 1) data below the state level and for 2) data at the state level. (The state data is the same for all counties in a state; therefore, state data does not need to be converted more than once.) Simulated responses are in **bold**.

If subdirectories for each of the new map layers have not been created under the database top-level directory, POPXDMS will create the necessary subdirectories.

Example of Converting Data Below the State Level

```

$ POPXDMS

      Population Type Menu
-----
0 : EXIT
1 : State
2 : County
3 : County Subdivision
4 : Place
5 : Census Tract
6 : Block Group
7 : Block
-----

Choice (?=Help) ==> 2

Enter county name                ==> CALHOUN
If county/state limits are not known, run utility TIGERCVT
Enter county/state limits: min/max long/lat ==>
85.520989, 86.147628, 33.559792, 33.968361
Enter combined state and county code      ==> 01015
Enter census directory and filename      ==> Disk1:[TIGER]BC3036.DAT
  
```

As POPXDMS processes the individual data records for conversion to DMS format, you will see a series of messages:

```

**** Record # 1
**** Record # 2
.
.
**** Record # n
  
```

After all records have been read and the DMS files have been created, the program ends and the system prompt reappears.

Example of Converting State-Level Data

The state data is the same for all counties in a state; therefore, state data does not need to be converted more than once.

```

$ POPXDMS

      Population Type Menu
-----
0 : EXIT
1 : State
2 : County
3 : County Subdivision
4 : Place
5 : Census Tract
6 : Block Group
7 : Block
-----

      Choice (?=Help) ==> 1

Enter state name                      ==> UTAH
If county/state limits are not known, run utility TIGERCVT
Enter county/state limits: min/max long/lat ==>
85.520989, 86.147628, 33.559792, 33.968361
Enter census directory and filename ==> Disk1:[TIGER]BC3036.DAT

```

When you choose state data, the program prompts for the state name and the state extents. The extents should be set wide enough to include the entire state, as the exact location of the Census Bureau centroid for state data is not known. (See TIGERCVT). When you are converting state data, the prompt for a "combined state and county code" does not occur.

POPXDMS Program Messages

```
[directory]filename FILE COULD NOT BE OPENED
  The data file did not exist in the directory specified. Check that the directory
  name is correct and that the data file is there.
```

```
*MSG* Problem with logical record numbers
  The logical record numbers in the current TIGER record did not match. The
  program will ignore that record and proceed to the next.
```

MSG Longitude/Latitude equals zero

Either the longitude or the latitude of the current TIGER record was given as zero. The program will ignore that record and proceed to the next.

MSG Out of object limits

The object specified in the current TIGER record did not fall within the long/lat limits specified for the current county. The program will ignore that record and proceed to the next.

MSG Invalid block suffix

The program encountered an invalid block suffix specification when converting TIGER block data. The program will ignore that record and proceed to the next.

MSG COULD NOT OPEN FILE... nnn

The program encountered an error opening the DMS format files. Check that the logical names for the topography directories are correct, and that the directories exist.

RMMGR

The RMMGR (Resource Management ManaGeR) utility is a tool for managing information about the personnel, resources, and facilities that may be needed to handle an event. RMMGR displays site maps and graphic icons that show the locations of resources (materials, equipment, capabilities) and facilities (resource locations). RMMGR operates on data for the current site. A non-graphic version of the RMMGR program is available: the RMMGR_NOGR utility provides many of the same capabilities but does not display maps or require a graphics terminal.

Most of the capabilities of RMMGR are duplicated in the Resource Management, Personnel Management, and Map Analysis portions of the IBS program. Information managers and resource planners can use RMMGR for quick access to those assembled capabilities without running the IBS program. RMMGR also includes a few capabilities that are NOT found in the IBS program: these capabilities are of interest mostly to Information Managers.

Described here are the overall menus and operation of the RMMGR program as well as the capabilities that are unique in RMMGR. For background, terminology, and descriptions of the capabilities that overlap the IBS program, please refer to the *IBS User Guide*.

What You Need to Know Before Using RMMGR

You should be familiar with operating the IBS program as explained in Chapter 1 of the *IBS User Guide*. RMMGR operates with a graphic map display and a menu area similar to those used in the IBS program. The key operational difference between RMMGR and the IBS program is that you can choose functions from the principal RMMGR menus by typing a letter or number that corresponds to the item of your choice. For example, the top parts of the three principal menus in RMMGR are identical and provide direct access to each other by typing 2, 3, or 4:

1. EXIT
2. Go to FAC, RES, RM MENU
3. GO to FT, KP MENU
4. Go to AG, PER, POS MENU

RMMGR Principal Menus:

- <-- Facilities, Resources, Resource Mgt
- <-- Facility Tracks, Known Points
- <-- Agencies, Personnel, Positions

The Map Analysis menu and capabilities described in the *IBS User Guide* are directly accessible from all three of these menus. The RMMGR menus and associated capabilities are summarized on the following pages. As in the IBS program, an asterisk after a menu option indicates that special IBS privileges are required to use that capability. If you do not have privileges to use an option, or it is unavailable in your current site, then that option will not appear on the menu.

Using RMMGR

To start the utility, just enter **RMMGR** at the system prompt. The screen map displays graphic icons that depicts the locations of facilities and resources used in IBS resource management and planning.

Using the FAC, RES, RM Menu

The Facilities, Resources, Resource Management Menu is the menu that displays when you first start RMMGR. This menu includes all the capabilities of the **RESOURCE MANAGEMENT** menus in the IBS program. (See *Resource Management* in the *IBS User Guide*.)

1. EXIT
2. Go to FAC, RES, RM MENU
3. GO to FT, KP MENU
4. Go to AG, PER, POS MENU

* * * FAC, RES, RM * * *

A. MAP ANALYSIS		<-- See <i>Map Analysis</i> in the <i>IBS User Guide</i> .
B. CONTINUE		
C. ADD	FACILITIES	* <-- Add a new facility to the database.
D. MODIFY	FACILITIES	* <-- Modify facility information.
E. DELETE	FACILITIES	* <-- Delete a facility from the database.
F. LIST	FACILITIES	<-- Print a listing of current facilities.
G. DESCRIBE	FACILITIES	<-- Show facility information & resources.
H. HIGHLIGHT	FACILITIES	<-- Show facilities that contain selected resources.
I. SUMMARIZE	FACILITIES	<-- Show a summary of facilities.
J. DEFINE	RESOURCES	* <-- Define a new resource.
K. ASSIGN	RESOURCES	* <-- Assign resources to a facility.
L. MODIFY	RESOURCES	* <-- Modify resource information.
M. MOVE	RESOURCES	* <-- Move resources to another facility.
N. DELETE	RESOURCES	* <-- Delete a resource from the database.
O. LIST	RESOURCES	<-- Print a listing of current resources.
P. DESCRIBE	RESOURCES	<-- Show information about a resource.
Q. SUMMARIZE	RESOURCES	<-- List resources contained within a specific area.
R. ENABLE	RESOURCES	<-- Turn on selected resource icons.
S. DISABLE	RESOURCES	<-- Remove selected resource icons from screen.
T. VALIDATE	RESOURCES	* <-- Check resources per those req'd by current IP.
U. ZOOM IN		<-- Enlarge a portion of the current screen.
V. ZOOM OUT		<-- Expand the view to show a larger area.
W. REFRESH SCREEN		<-- Redraw (and clean up) the current screen.

Using the FT, KP Menu

The Facility Tracks, Known Points Menu enables you to directly create or update database information about

- 1) *facility tracks* (facility names; facility status as active or inactive; numbers of people received at, remaining at, and released from facilities)
- 2) *known points* (point locations such as the locations of facilities).

1. EXIT	
2. Go to FAC, RES, RM MENU	
3. GO to FT, KP MENU	
4. Go to AG, PER, POS MENU	
* * * FT, KP * * *	
A. MAP ANALYSIS	<-- See <i>Map Analysis</i> in the <i>IBS User Guide</i> .
B. CONTINUE	
C. ADD FACILITY TRACKS *	<-- Add tracking information for one facility.
D. MODIFY FACILITY TRACKS (F) *	<-- Add information for a facility even if the facility does not actually exist at the moment.
F. DELETE FACILITY TRACKS *	<-- Remove information about one facility.
G. LIST FACILITY TRACKS	<-- List active facilities and facilities that have tracking information associated with them.
I. ADD KNOWN POINTS *	<-- Add new location to the points database.
J. MODIFY KNOWN POINTS *	<-- Change the name/location of a known point.
K. DELETE KNOWN POINTS *	<-- Delete known point location.
L. LIST KNOWN POINTS	<-- List the names and longitude-latitude coordinates of all the known points.
U. ZOOM IN	<-- Enlarge a portion of the current screen.
V. ZOOM OUT	<-- Expand the view to show a larger area.
W. REFRESH SCREEN	<-- Redraw (and clean up) the current screen.

These capabilities are summarized on the following pages.

Modifying Facility Tracks Information

The facility tracks capabilities affect the contents of the facility tracking/loading data (contained in the FACILITY_TRACK.DAT file). This information includes the facility status (active or inactive) and people loading data for each facility: numbers of people received; current numbers of people; and numbers of people released.

Caution

Some of the facility track capabilities can *corrupt data*: see the specific capability descriptions here.

- **ADD FACILITY TRACKS:** This simulates the actions taken by the LOCATE program, enabling you to add facility track information for a specified existing facility. To specify which facility, you must enter the facility name.
- **ADD FACILITY TRACKS (F):** This behaves exactly like **ADD FACILITY TRACKS** above, except that the information is added to the facility tracks file regardless of whether or not the facility you typed in really exists.
CAUTION: This function can easily corrupt your facility tracks database and should be used rarely (if ever).
- **DELETE FACILITY TRACKS:** This removes the facility tracks information from a facility. **CAUTION:** This function can easily corrupt your facility tracks database and should be used rarely (if ever).
- **LIST FACILITY TRACKS:** This displays a list of facilities that are currently active and those that have a facility track associated with them.

Modifying Known Points Information

- **ADD KNOWN POINTS:** This adds a new location to the database of *Known Points*. The following prompt appears first:

Enter new Known Point name ==>

1. Enter any name (up to 40 characters) or press CTRL-Z to exit.

This location name also serves as the facility name for any facility that is added at that location.

If you enter a name that is already used for a location, the system prompts you to enter another name. After you enter a valid new location name, the following prompt appears:

* * * MSG: Select new Known Point location using mouse

2. Pick a location on the map screen.

If you pick a location that is already specified as a Known Point location, the system prompts you to select another point.

After you pick a valid location, that location is placed in the database of Known Points. The system then returns to step 1, where you can continue to add point locations until you quit by pressing CTRL-Z.

- **MODIFY KNOWN POINTS:** This enables you to change either the name or location of a Known Point. First select a Known Point by using the cross hairs or one of the other methods on the Known Points Selection menu:

```
Known Point Selection Method menu
-----
0 : EXIT
1 : Type in Known Point name
2 : Select Known Point name from a list
3 : Type in long/lat coordinates
4 : Use mouse to select Known Point
-----
Choice (?=Help) ==>
```

After you have selected a point, the program displays:

Modify the Known Point name? [Y] ==>

- To change the name, enter Y. The program displays:

Enter new Known Point name ==>

Enter any name (up to 40 characters) or press CTRL-Z to exit. If you enter a name that is already used for a location, the system prompts you to enter another name.

- To change the Known Point location (and its associated facility, if any), enter N. Select the new location for the Known Point with the cross hairs, and the Known Point location is changed.

- **DELETE KNOWN POINTS:** This enables you to remove any locations from your database of Known Points. First select a Known Point. If there is no facility located at the Known Point, the point is removed immediately. If there is a facility located at the Known Point you select, the program asks if you really want to delete this facility: To confirm the deletion and remove the facility, enter Y.
- **LIST KNOWN POINTS:** This lists all Known Points, giving the longitude and latitude of the point as well as the Known Point names.

Using the AG, PER, POS Menu

The Agency, Personnel, Position Menu duplicates many of the capabilities of the **PERSONNEL MANAGEMENT** menu in the IBS program. (See *Personnel Management* in the *IBS User Guide*.) The descriptions of items that are unique to RMMGR are highlighted in **bold** below.

1. EXIT
2. Go to FAC, RES, RM MENU
3. GO to FT, KP MENU
4. Go to AG, PER, POS MENU

* * * AG, PER, POS * * *

A. MAP ANALYSIS	<--	See <i>Map Analysis</i> in the <i>IBS User Guide</i> .
B. CONTINUE		
C. ADD PEOPLE	* <--	Fill in new information form for one person.
D. MODIFY PEOPLE	* <--	Modify information form for one person.
E. DELETE PEOPLE	* <--	Delete information form for one person.
F. LIST PEOPLE	<--	List all personnel info, one screen at a time.
G. LIST PEOPLE BY NAME	<--	List info for personnel selected by name.
H. LIST PEOPLE BY AGENCY	<--	List personnel at a specific agency.
I. LIST PEOPLE BY POSITION	<--	List personnel by position (assignment).
J. VALIDATE PERSONNEL FILE	* <--	Verify that agencies/positions for personnel exist in the agency/position database.
L. ADD AGENCIES	* <--	Add to list of agencies in the database.
M. MODIFY AGENCIES	* <--	Modify list of agencies in the database.
N. DELETE AGENCIES	* <--	Delete list of agencies in the database.
O. LIST AGENCIES	<--	List the agencies in the database.
Q. ADD POSITIONS	* <--	Add to list of positions at agencies.
R. MODIFY POSITIONS	* <--	Modify list of positions at agencies.
S. DELETE POSITIONS	* <--	Delete list of positions at agencies.
T. LIST POSITIONS	<--	List positions (assignments) at agencies.
U. ZOOM IN	<--	Enlarge a portion of the current screen.
V. ZOOM OUT	<--	Expand the view to show a larger area.
W. REFRESH SCREEN	<--	Redraw (and clean up) the current screen.

The two unique capabilities, **LIST PEOPLE** and **VALIDATE PERSONNEL FILE**, are explained here.

- **LIST PEOPLE:** This lists all information in the personnel database, one screenful at a time.
- **VALIDATE PERSONNEL FILE:** This verifies that all agencies and positions listed in the personnel database actually exist in the agency/position database.

If a discrepancy is found, the utility gives you the following options for handling the discrepancy:

- Y :** The data is correct; add it to the agency/position database.
- N :** The data is NOT correct; select an actual agency/position from a list.
- C :** The data is correct, but do the next Position for this person.
- X :** Done. Stop fixing the agency/position file and save changes.
- Q :** Done. Stop fixing the file, but do NOT save changes.

RMMGR_NOGR

The RMMGR_NOGR (Resource Management ManaGeR, NOn-GRaphic) utility is a version of the RMMGR program that contains many of the same functions but which does not display maps or require a graphics terminal. Like RMMGR, the RMMGR_NOGR utility is a tool for managing information about the personnel, resources, and facilities that may be needed to handle an event.

The capabilities of RMMGR_NOGR are duplicated in RMMGR and in the Resource Management, Personnel Management, and Map Analysis portions of the IBS program. Described here are the overall menus and operation of the RMMGR_NOGR program. For background, terminology, and specific operational descriptions, please refer to RMMGR and to the *IBS User Guide*.

What You Need to Know Before Using RMMGR_NOGR

All operational menus in RMMGR_NOGR are text menus. You must choose the menu options only by typing a letter or number that corresponds to the item of your choice (rather than by selecting items with a mouse or joydisk). These menu options correspond to the options with the same names in the RMMGR program.

As in RMMGR, any option that requires special privileges is followed by an asterisk *. If you do not have privileges to use an option, or it is unavailable in your current site, it will not appear in the menu of choices. The other menu options are then moved up on the menu accordingly and leave no blank spaces. Therefore the actual screens you see may look slightly different from the examples shown here.

Using RMMGR_NOGR

To begin the program, enter **RUN IEMIS\$EXE:RMMGR_NOGR** at the system prompt. This displays the initial "Main Menu":

```
$ RUN IEMIS$EXE:RMMGR_NOGR
```

```
Non-Graphic RMMGR Main Menu
```

```
-----  
0 : EXIT  
1 : FAC, RES, RM Menu  
2 : FT, KP Menu  
3 : PER, POS, AG Menu  
-----
```

```
Choice (?=Help) ==>
```

The Non-Graphic RMMGR Main Menu gives you access to the other principal menus of the program:

1. FAC, RES, RM menu (Facilities, Resources, Resource Management)
2. FT, KP menu (Facility Tracks, Known Points)
3. PER, POS, AG menu (Personnel, Positions, Agencies).

These menus are illustrated in the following sections.

Using the FAC, RES, RM (Resource Management) Menu

This Resource Management menu enables you to choose to work with either the resource database or the facility database:

```

Resource Management
-----
0 : EXIT
1 : Resources
2 : Facilities
-----
Choice (?=Help) ==>

```

EXIT (0) on this menu returns you to the Non-Graphic RMMGR Main Menu. Choosing one of the other options plays either the Resource Management menu or the Facility Management menu.

Resource Management		Facility Management	
-----			
0 : EXIT		0 : EXIT	
1 : Define Resources	*	1 : Add Facilities	*
2 : Assign Resources	*	2 : Modify Facilities	*
3 : Modify Resources	*	3 : Delete Facilities	*
4 : Move Resources	*	4 : List Facilities	
5 : Delete Resources	*	5 : Describe Facilities	
6 : List Resources		-----	
7 : Describe Resources		Choice (?=Help) ==>	
8 : Validate Resources	*		

Choice (?=Help) ==>			

Selecting EXIT (0) on either of these menus returns you to the Resource Management menu. The other options correspond to the same options on the **RESOURCE MANAGEMENT** menus in the IBS program. For instructions on using these capabilities, see *Resource Management* in the *IBS User Guide*.

Note: Any graphic selection methods requiring the mouse or joydisk are of course NOT usable in RMMGR_NOGR.

Using the FT, KP (Facility Tracks, Known Points) Menu

This menu enables you to work with *facility tracks* and *Known Points data* for facility management tasks:

```

      Facility Management
-----
0 : EXIT
1 : Add Facility Tracks      *
2 : Add Facility Tracks (F) *
3 : Delete Facility Tracks  *
4 : List Facility Tracks
5 : List Known Points
-----
Choice (?=Help) ==>
```

Selecting EXIT (0) returns you to the RMMGR_NOGR main menu. The other options correspond to the menu choices of the same names in the FT, KP Menu in the RMMGR program. For instructions on using these capabilities, see *Using the FT, KP Menu* under RMMGR.

Using the PER, POS, AG (Personnel Board) Menu

This menu enables you to choose "Personnel Board" options to work with either the people database or the Agencies/Positions database:

```

      Personnel Board
-----
0 : EXIT
1 : People
2 : Agencies/Positions
-----
Choice (?=Help) ==>
```

Selecting EXIT (0) returns you to the RMMGR_NOGR main menu. Choosing one of the other options displays either the People menu or the Agencies/Positions menu:

```

      Personnel Board - People
-----
0 : EXIT
1 : Add    People      *
2 : Modify People      *
3 : Delete People      *
4 : List   People by Name
5 : List   People by Agency
6 : List   People by Position
-----
Choice (?=Help) ==>
```

```
          Personnel Board - Agencies/Positions
-----
0 : EXIT
1 : Add   Agencies  *
2 : Modify Agencies  *
3 : Delete Agencies  *
4 : List   Agencies
5 : Add   Positions *
6 : Modify Positions *
7 : Delete Positions *
8 : List   Positions
-----
Choice (?=Help) ==>
```

Selecting EXIT (0) on either of these menus returns you to the Personnel Board menu. The other options correspond to the same options on the **PERSONNEL MANAGEMENT** menus in the IBS program. For instructions on using these capabilities, see *Personnel Management* in the *IBS User Guide*.

SEELIMITS

The SEELIMITS utility enables you to display the contents of a binary *limits file* or to save those contents in a readable ASCII text file.

What You Need to Know Before Using SEELIMITS

A binary limits file (LIMITxx.BIN) is a database support file located in each topography (map layer) subdirectory of a DMS geographic database. It specifies the names and geographic extents of all the topographic data files in the subdirectory (where "xx" is the two-character code for that topography and also the subdirectory name). To create a binary limits file, you can use the CREATLIMITS utility.

The SEELIMITS utility asks you to specify two items:

<i>input binary limits filename</i>	This is the name of the limits file that you want to display or to save in ASCII form. If the limits file is not in the current default directory, you should specify the path along with the filename.
<i>output filename</i>	This is the name of the ASCII file that you want to create.

Displaying the Contents of a Limits File with SEELIMITS

The following example shows how to list the binary limits file, LIMITWB.BIN, on the screen. Assumption for this example: You have set the default directory to be the MAP\$DATA\$WB directory.

```
$ SEELIMITS
Enter input  binary limits filename ==> LIMITWB
Enter output filename      [TT:] ==> <RETURN>
  1:LAKE.DMS               -112.4344 -111.8590   40.2331   40.9003
  1:RIVER.DMS              -124.7835 -109.0509   35.0090   42.0044
      2 FILES READ
```

Result: The name and extents of each DMS topography file are displayed on the screen as shown.

Saving the Contents of a Limits File with SEELIMITS

The following example shows how to save the same binary limits file to an ASCII file, LIMITWB.DAT. Assumption for this example: You have NOT set the default directory to be the MAP\$DATA\$WB directory. Therefore the name of the path must be included with the input binary limits filename.

```
$ SEELIMITS
Enter input  binary limits filename ==> MAP$DATA$WB:LIMITWB.BIN
Enter output filename                [TT:] ==> LIMITWB
      2 FILES READ
```

Result: The text file LIMITWB.DAT is created in your current default directory.

SITEBKP

The SITEBKP utility *archives* your current site database: that is, it makes a special copy of the directories and data in your current site database and stores it in a site archive directory. Once archived, the site database can be recovered only through the backup utilities provided with the VAX/VMS operating system. No special IBS utilities are available for recovering archived sites.

This discussion covers the following topics:

- Why save a backup copy of a site database?
- What You Need to Know Before Using SITEBKP
- Saving a Backup Copy of a Site Database with SITEBKP
- Results of Using SITEBKP.

Why save a backup copy of a site database?

If you are done working on a site database or if you just want to preserve a site database in a particular condition, you can archive it to maintain a copy of all the files related to that site database. This enables you to keep a record of the state of your work at a particular time. If needed, files from these archives can be recovered later.

What You Need to Know Before Using SITEBKP

SITEBKP automatically makes a copy of your "current" site database. The program does NOT ask you to identify a specific site database: it is designed to archive only the current working site database. If you want to archive a site database different from the one in which you are working, switch your current site database to the one you wish to archive and then use SITEBKP. If you have the appropriate IBS privilege, you can switch between site databases by using the **CHANGE SITE** option under **SETUP** in the IBS program (please refer to the *IBS User Guide*).

The SITEBKP utility does NOT delete the site database or any data; it just copies the database files to a special set of archive files. If you have the appropriate IBS privilege, you can use the DELSITE utility to delete a site database.

Saving a Backup Copy of a Site Database with SITEBKP

The following is an example of how to backup the current site database using the SITEBKP utility.

To start the utility, just enter **SITEBKP** at the system prompt. The program starts by asking whether you want *logging* turned on. If you choose to turn on logging, SITEBKP will display the archiving commands to the screen as they are executed. This enables you to monitor the progress of the archiving process.

The initial sequence for starting SITEBKP and answering program prompts will look like the following (simulated answers are in **bold**):

```
$ SITEBKP

Turn on Logging? [N] ==> Y

* * * MSG: You are about to archive your entire SITE & OFFSITE
      databases
* * * MSG: This may take a considerable amount of time.
Do you wish to continue? (Y/N/<Ctrl-Z>=Abort) ==> Y
```

If you wish to quit at this point, enter N or press CTRL-Z.

If you wish to continue, enter Y. SITEBKP then begins archiving the site database. If you elected to turn logging on, you will see a sequence of messages similar to the following:

```
Archiving Database. Please wait...
$ BACKUP /EXC=[*...]*.BCK xxxx:[JDOE.SITES.ABCD...]*.*;
SITE$BCK:920721_SITE.BCK/SAVE/LOG

%BACKUP-S-COPIED, copied xxxx:[JDOE.SITES.ABCD]BCK.DIR;1
%BACKUP-S-COPIED, copied xxxx:[JDOE.SITES.ABCD]CASEINDEX.DAT;1
.
.
.
Press <RETURN> to Continue...
* * * MSG: Site database archived successfully
```

If you did not turn logging on, none of the backup messages shown after the "Archiving Database" message are displayed, but the system still archives the database.

Results of Using SITEBKP

SITEBKP uses the VAX/VMS Backup utility to copy the files in a site database into two archive files: *yymmdd SITE.BCK* and *yymmdd OFFSITE.BCK*, where the initial six characters of each archive file name is the date (year, month, day). The two archive files are placed in the SITE\$BKP directory. Once created, the archived files can be retrieved by using the VAX/VMS Backup utility again. For more information on the procedures involved in recovering backed up files, consult the *VAX/VMS System Management* documentation and the *VAX/VMS Backup Utility Reference Manual*.

SM_DUMP

The SM_DUMP (Shared Memory DUMP) utility copies the current contents of the IBS *shared memory block* to a file or to the terminal screen.

What You Need to Know Before Using SM_DUMP

SM_DUMP is one of several related utilities that display or manipulate the shared memory block used by the IBS program. The IBS program uses this block of shared memory for storing shared variables that identify current operational data. SM_DUMP is primarily a tool for software developers or troubleshooters: you must have intimate knowledge of the IBS program to have any use for the information that SM_DUMP will produce.

Copying Shared Memory to a File or to the Screen with SM_DUMP

To start SM_DUMP, enter RUN IEMIS\$EXE:SM_DUMP at the system prompt. You will then be prompted for an output file name:

```
$ RUN IEMIS$EXE:SM_DUMP
Enter output file name [TT:] ==>
```

To save the contents of the shared memory block as a file, enter a file name.

Or to display the contents of the shared memory block on your screen, just press RETURN instead.

SM_INIT

The SM_INIT utility initializes the variables stored in the *shared memory block* used by the IBS. This initialization of variables is necessary after the IBS system has been completely rebuilt from the program code.

What You Need to Know Before Using SM_INIT

Caution

SM_INIT modifies the shared memory block used by the IBS program for storing shared variables that identify current operational data. If SM_INIT is used at the wrong time, it could overwrite this information. The SM_INIT utility is intended for use only by an IBS system manager or database administrator.

Normally, SM_INIT would not be used independently: if the system is being completely rebuilt, the command file to completely rebuild the system should contain the command to run SM_INIT after the executable files have been rebuilt. The BUILDALL.BIS batch job file and BUILD*.COM command files for rebuilding the system do this already.

Initializing Shared Memory Variables with SM_INIT

To execute SM_INIT, just enter `RUN IEMIS$EXE:SM_INIT` at the system prompt. No further interaction is necessary.

```
$ RUN IEMIS$EXE:SM_INIT
```

SM_READ

The SM_READ utility initializes the Emergency Function shared memory variables that are used by the Implementing Procedures (IPs). It reads the file OFF\$DIR:SITE_EF.DAT and updates the shared variables with the contents of that file.

This program would normally be used only after the Information Manager has edited the SITE_EF.DAT file to add a customized Emergency Function or to change or delete an existing Emergency Function.

What You Need to Know Before Using SM_READ

Caution

SM_READ modifies the shared memory block used by the IBS program for storing shared variables. If SM_READ is used at the wrong time, it could overwrite this information. The SM_READ utility is intended for use only by an IBS system manager or database administrator.

Initializing Emergency Function Variables in Shared Memory with SM_READ

To execute SM_READ, enter RUN IEMIS\$EXE:SM_READ at the system prompt. Unless an error occurs, there is no visible output from executing this program.

```
$ RUN IEMIS$EXE:SM_READ
```

SM_SET

The SM_SET utility shows the current values of some of the shared memory variables and then enables you to change them.

What You Need to Know Before Using SM_SET

Caution

SM_SET modifies the shared memory block used by the IBS program for storing shared variables. If SM_SET is used at the wrong time, it could overwrite this information. The SM_SET utility is intended for use only by an IBS system manager or database administrator.

You must have intimate knowledge of the IBS program and your system before you can use this utility effectively.

Setting Shared Memory Variables with SM_SET

To start SM_SET, enter RUN IEMIS\$EXE:SM_SET at the system prompt. A series of prompts then asks you to enter values for the following specific variables:

```
$ RUN IEMIS$EXE:SM_SET
Enter SM_CUR_SITE [xxxx] ==>
Enter SM_CUR_ONSITE [xxxx] ==>
Enter SM_CUR_D2_CASE_NUMBER [###] ==>
Enter SM_CUR_D2_CASE [###] ==>
Enter SM_IP_NUMBER [###] ==>
Enter SM_LAST_PRINTED_LOG_RECORD # [###] ==>
Enter SM_EVENT_DECLARED? [x] ==>
```

For each variable, enter a value or just press RETURN to accept the default values shown in brackets:

- For the current operational site (SM_CUR_SITE) and the associated onpost depot (SM_CUR_ONSITE), enter the four-character site codes.
- For the D2 case, IP, and printed log numbers, enter valid numeric values.

Note: SM_SET does NOT check to ensure that the case numbers you are selecting actually exist. You must know before you run this program which case numbers are valid and which are not.

- For whether an event has been declared (SM_EVENT_DECLARED), enter T or F (to stand for "true" or "false").

SMOOTHER

The SMOOTHER utility enables you to reduce the number of coordinate points that compose strings in a DMS file. This is useful when the DMS file contains data to a greater precision than is needed. For example, if you extracted all the state boundaries from the 1:2,000,000 database with the intention of displaying regional maps (such as a 400-mile radius), many coordinates would map to identical pixels on the display device at this scale. SMOOTHER can be used to remedy this situation and reduce the size of the DMS file.

SMOOTHER requests that you enter the original DMS file name and the name of the new DMS file that you want to create. You can also specify a plot radius parameter for controlling the data reduction or you can choose to have SMOOTHER compute a default value that is based on the size of the area contained within the input file.

For example, the following interactions would reduce the data within the DMS file USAMAP.DMS, creating a second DMS file that contains only data that would be used in displaying a region of radius 500 miles or greater:

```
$SMOOTHER
Enter input filename > USAMAP.DMS
Enter output filename > USAMAP2.DMS
Enter radius of plot (or <CTRL Z> to use file limits) > 500
```


STATDMS

The STATDMS utility computes and lists summary statistics about the attributes, lines, points, polygons, etc., contained in a DMS file. Normally STATDMS reads only one DMS file at a time; however, you do have the option of requesting summary information for a DMS database by supplying the name of the *limit file* associated with that database.

What You Need to Know Before Using STATDMS

If you are going to request statistics for (one topography of) an entire database, you must know the name of the database *limit file*.

Producing DMS Data Statistics with STATDMS

To start the utility, just enter STATDMS at the system prompt. STATDMS begins by asking if you wish to use a database limit file:

```
$STATDMS
Use a data base limit file? [N]      ==>
```

Your response to this request depends on what results you want:

<u>To get this result:</u>	<u>Do this:</u>
To compute statistics for a single DMS file:	Enter N or press RETURN.
To compute statistics for an entire database (for one topography):	Enter Y.
To cancel the program:	Press CTRL-Z.

The following sections include examples of producing statistical reports for a single DMS file and for an entire database.

Producing a Statistics Report for One DMS File

The following example sequence shows how you can display summary statistics for a single DMS file (MYFILE.DMS) on your terminal screen:

---

4 of 5

\$STATDMS

Use a data base limit file? [N] ==> N
 Enter DMS file name (DMS) ==> MYFILE.DMS
 Enter output file name (STAT) [TT:] ==> <RETURN>

Filename	Max # of Attr.	Max # of Data	Max # of Polyg	Number of Line	Number of Point	Number of Polygn	Number Complex Polygn	Current Number Entries	Total Number Data
MYFILE.DMS	1	852	0	0	0	211	0	211	6846

After you choose NOT to use a database limit file, the STATDMS utility asks you to specify the following items:

DMS file name

This is the name of the DMS file for which STATDMS will produce statistics. If you do not specify an extension, the .DMS file extension is assumed. To cancel this prompt and return to the first prompt, press CTRL-Z.

output file name

This is a name for the statistical report file. If you do not specify a file name extension, the .STAT extension is used. You can also do the following instead of entering the output file name:

To get this result:

Do this

To use the same name as the DMS file but with the .STAT extension:

Press CTRL-Z.

To display the results on the terminal screen (TT:):

Press RETURN.

Producing a Report of DMS File Statistics for a DMS Database

The next example shows how you can calculate statistics for an entire database (one topography) and produce the statistics report in the file MYDBASE.STAT.

\$STATDMS

Use a data base limit file? [N] ==> Y
 Enter data base limit file name (BIN) ==> MYDBASE.BIN
 Enter output file name (STAT) [TT:] ==> <CTRL-Z>

After you choose to use a database limit file, the STATDMS utility asks you to specify the following items:

*data base limit
file name* This is the name of the limit file, which lists several DMS files for STATDMS. If you do not specify an extension, the .BIN file extension is assumed. To cancel this prompt and return to the first prompt about the limit file, press CTRL-Z here.

output file name This is a name for the statistical report file. If you do not specify a file name extension, the .STAT extension is used. You can also do the following instead of entering the output file name:

To get this result:	Do this
To use the same name as the limit file but with the .STAT extension:	Press CTRL-Z.
To display the results on the terminal screen (TT:):	Press RETURN.

TAC3XCONTXDMS

The TAC3XCONTXDMS utility produces a DMS-format file of vector contours based on cell data from a Terrain Analysis Cell (TAC) file. The purpose of the program is to provide displayable vector contours that represent isopleths of the cell data for use by models in the system. At present this utility is used only for the contouring of elevation data as provided by the USGS.

What You Should Know Before Using TAC3XCONTXDMS

Before starting the utility, set the default directory to the directory where the TAC data reside:

```
$ SET DEFAULT directoryname
```

TAC3XCONTXDMS must be executed from the directory where the TAC data reside or else the TAC data may not be read correctly.

Program Input. The primary input to TAC3XCONTXDMS is a TAC data set (a .TAC file and a .TAA file). The TAC format is described in the *Data Management Guide*.

Creating a Vector Contour File from a TAC File with TAC3XCONTXDMS

To start the utility, just enter TAC3XCONTXDMS at the system prompt.

The program then prompts you to enter several items:

- the name of an input TAC file (including the .TAC file name extension)
- the name of an output file (including the .DMS file name extension)
- the spacing (change in elevation) between contour lines
- the color of contour lines.

See the following page for an example of using TAC3XCONTXDMS

Results of Using TAC3XCONTXDMS

TAC3XCONTXDMS produces one DMS-format file of vectors representing elevation contours. The utility will also display statistics on the minimum and maximum cell values (elevations) found in the input file, and on the size of the vector strings produced in the output file.

The following is an example of using TAC3XCONTXDMS. See the notes below for information about special places in the sequence.

Example:

```

WHAT IS THE NAME OF THE TAC FILE TO CONTOUR? DMA0674.TAC
READING DATA...
MINIMUM ELEVATION      0
MAXIMUM ELEVATION      30
AVERAGE ELEVATION      0
(a) Generate contours at regular intervals? (Y or N) Y
Enter the start elevation, end elevation and spacing 10, 20, 10
Contour level 1 is 10.00000
Contour level 2 is 20.00000

The default color is white.
Do you want to modify the line color? (Y or N) Y
(b) Do you want all lines the same color? (Y or N) Y
1 = RED          5 = MAGENTA
2 = GREEN        6 = CYAN
3 = BLUE         7 = WHITE
4 = YELLOW
Enter the number for the line color you want 6
Contouring level 1
(c) Writing level 1

WHAT IS THE NAME OF THE DMS FILE TO CREATE? DMA0674.DMS
Contouring level 2
Writing level 2

```

- (a) If you enter N to choose irregular intervals, the program will ask you to enter "contour levels" (elevations) one at a time:

Enter contour level 1 <CTRL Z to exit>

When you enter a contour level value, the program prompts for the next contour level (2, 3, etc.) until you finish by pressing CTRL-Z.

- (b) If you enter N to choose differing contour line colors, the program asks you to enter a line color for each contour, one at a time:

Enter the line color you want for contour 1

After you have entered a color number for each contour, the program will begin creating the contours.

- (c) Note that the longest vector string currently allowable in the system is 15000 points. If the longest string is more than 15000, TAC3XCONTXDMS will break the contour into separate strings of 15000 points (or fewer) and display a message that tells you this.

TBXDMS

The TBXDMS utility creates DMS boundary data files from TIGER/Line data files provided by the U.S. Department of Commerce, Bureau of the Census. The Bureau of the Census makes TIGER/Line data available for individual counties. TBXDMS is designed to handle one county at a time, converting boundary data from the Basic Data Record (Record Type 1) and Shape Coordinate Points (Record Type 2) files. Other data records of the TIGER/Line data files are ignored.

Note: You will normally NOT use TBXDMS directly: for most purposes you will want to use the TIGERCVT utility program, which creates a special command file that runs TBXDMS for you. (See TIGERCVT.)

What You Need to Know Before Using TBXDMS

You will normally want to use the TIGERCVT utility rather than TBXDMS, as noted above. If you do use TBXDMS independently, you must supply the following information:

<i>county name</i>	This is the name of the county for which you want data.
<i>county limits</i>	These are the longitude-latitude extents of the county: the maximum and minimum longitude and the maximum and minimum latitude.
<i>combined state and county code</i>	This five-digit code consists of the two-digit FIPS state code followed by the three-digit FIPS county code.
<i>drive:[directory] of TIGER data</i>	This is the name of the device and directory where the TIGER files are located.

Creating DMS Boundary Data Files from TIGER/Line Data Files

To start the utility, just enter **TBXDMS** at the system prompt. You will then see prompts for the information described in the previous section. The series of prompts will resemble the following example (simulated responses are in **bold**).


```

$ TBXDMS
Enter county name (5 characters)          ==> CALHOUN
If you do not know the limits, run the TIGERCVT utility
to find them.
Enter the min/max long/lat county limits ==>
85.520989, 86.147628, 33.559792, 33.968361
Enter combined state & county code       ==> 01015
Enter the drive:[directory] of TIGER data ==>
DISK1: [TIGER.ALABAMA]

```

Select boundary type

```

-----
0 : EXIT
1 : Block                T$BB:
2 : Census Tract         T$TB:
3 : Place                T$LB:
4 : County Subdivision   T$VB:
5 : County               T$CB:
-----

```

Choice (?=Help) ==> 5

When TBXDMS begins reading the Record Type 1 file, you will see a series of messages:

```

**** Record Type 1 ****

In: [TIGER.ALABAMA]TGR01015.S41
In: [TIGER.ALABAMA]TGR01015.S42

**** Record # 1
**** Record # 2
.
.
**** Record # n

```

After all records have been read and the DMS files have been created, the program ends and the system prompt reappears.

Note: Some of the TIGER/Line boundary data is incomplete. After converting this data, you should view it with GEDIT, as editing may be necessary.

TBXDMS Program Messages

MSG [directory]TGRnnnnn.S41 FILE COULD NOT BE OPENED

MSG [directory]TGRnnnnn.S42 FILE COULD NOT BE OPENED

The program encountered an error while attempting to open the indicated TIGER/Line file. The program will terminate. Check the combined state and county code and the location of the TIGER/Line files.

MSG Out of object limits

The program encountered an object that did not fall within the longitude/latitude extents for the county. The program will ignore the object. Check the longitude/latitude extents.

MSG Conflicting data for single-sided boundary

The program encountered a county boundary not listed as single-sided.

MSG COULD NOT OPEN FILE...1

The program encountered an error opening one of the DMS format files. The program will create the remaining files.

TESTICON

The TESTICON utility checks to make sure that all the icons listed in the *icon control file* (MAP\$ICON\$CTL) are valid.

To execute this program, enter **TESTICON** at the system prompt.

If an icon specified in the icon control file does not exist, TESTICON displays the code of the error that occurred, the major and minor codes listed for the icon, the icon description, and the name of the icon file listed. When TESTICON completes its check of the entire icon control file, it prints out the number of icons processed.

TIGERCVT

The TIGERCVT utility aids in creating DMS data files that are converted from TIGER/Line data files and STF1B population files provided by the U.S. Department of Commerce, Bureau of the Census. TIGERCVT automatically reads the longitude-latitude extents of the TIGER/Line data and checks to see whether the data should be divided for separate, equal-area DMS files. TIGERCVT then creates command files that contain all the necessary inputs to the TIGERXDMS, POPXDMS, and TBXDMS data conversion utilities.

What You Need to Know Before Using TIGERCVT

Data files provided by the Census Bureau sometimes contain inaccurate data. Therefore it may be necessary to edit these Census Bureau data files with a text editor (such as EDT) before conversion with the TIGERXDMS, POPXDMS, and TBXDMS utilities is possible. After conversion, it may be necessary to edit the map graphics files with the GEDIT utility.

You should keep the following in mind when converting the Census Bureau Data:

- State population totals are placed at the state centroid specified in the Census Bureau STF1B files. Although this point is within the state for which the data is being stored, it may or may not lie within the site database radius.
- A census division (block, tract, etc.) may have more than one point at which data is stored.

The TIGERCVT utility asks you to specify several items, either by entering them or by choosing them from menus:

<i>Population Type</i>	This refers to the type of population data to be converted to DMS format: state, county, county subdivision, place, census tract, block group, or block.
<i>state name</i>	<i>For the state population data only:</i> This is the name of the state for which you want state-level population data. The state name must be at least 5 characters in length.
<i>Boundary Type</i>	This refers to type of boundary data to be converted to DMS format: county, county subdivision, place, census tract, or block.
<i>county name</i>	<i>For population data other than state:</i> This is the name of the county for which you want population data. The county name must be at least 5 characters in length.
<i>drive:[directory] of TIGER data</i>	This is the name of the disk device and directory where the TIGER census data files are located.

<i>basic record filename</i>	This is the name of the file containing the TIGER/Line Basic Record Type (Record Type 1).
<i>shape record filename</i>	This is the name of the file containing the Shape Coordinate Points (Record Type 2).
<i>population filename</i>	This is the name of the Census Population (STF1B) file.
<i>database name</i>	This is the database name or top-level directory under which the new DMS files will later be stored (in subdirectories).
<i>themes</i>	The <i>themes</i> are the categories of topographic data that you wish to convert to DMS format. You can choose to convert some or all available themes.

The creation of DMS data files from TIGER/Line and STF1B population files is a two-part process:

- I. Prepare for data conversion (create special command files) with TIGERCVT.
- II. Create DMS files from Census Bureau data by using the special command files (which use the TIGERXDMS, POPXDMS, and TBXDMS utilities).

The following sections illustrate this process.

Preparing for TIGER-to-DMS Data Conversion with TIGERCVT

The following is an example of how you can use TIGERCVT to set up the creation of DMS data files from TIGER/Line and population data files. Simulated responses appear in **bold**.

1. To start the utility, just enter **TIGERCVT** at the system prompt.

The following menu prompts you to select the types of population data to be converted for the county that you will select.

Note: The state data is the same for all counties in a state; therefore, state data does not need to be converted more than once.

```
Population Type Menu
```

```
-----
0 : EXIT
1 : State
2 : County
3 : County Subdivision
4 : Place
5 : Census Tract
6 : Block Group
7 : Block
-----
```

```
Choice (?=Help) ==> 2
```

2. Choose the population type that you wish to convert from the Population Type Menu.

If you choose state data as the population type, the program prompts next for the state name:

```
Enter state name ==>
```

In that case, enter the state name before continuing. The state name must be at least 5 characters in length.

In all cases, the program then prompts for the type of boundary data to be converted:

```
Boundary Type Menu
```

```
-----
0 : EXIT
1 : Block
2 : Census Tract
3 : Place
4 : County Subdivision
5 : County
-----
```

```
Choice (?=Help) ==> 3
```

3. Choose one of the boundary types from the Boundary Type Menu.

Next the program prompts for the county name.

```
Enter county name ==>
```

4. Enter a county name of 5 characters or longer.

The program then prompts for the location of the Census Bureau data files.

```
Enter drive:[directory] of TIGER data ==> DISK1:[TIGER]
```

5. Specify both the disk drive *and* directory where the data files are located.

Next the program prompts for the names of the TIGER/Line Basic Record Type (Record Type 1), Shape Coordinate Points (Record Type 2), and Census Population (STF1B) files. If you do not wish to convert the population data file, press RETURN when prompted for the population filename.

```
Enter basic record filename    ==> TGR01015.F41
Enter shape record filename    ==> TGR01015.F42
Enter population filename      ==> BC3036.DAT
```

6. Enter the names of the Census Bureau data files.

The program then prompts you to choose which theme(s) to convert:

```
Theme Selection Menu
```

```
-----
0 : EXIT
1 : Roads & Trails
2 : Railroads
3 : Misc Transportation
4 : Landmarks
5 : Hydrography
-----
```

```
Choice (?=Help) ==>
```

7. Enter the number of each theme that you wish to convert.

An asterisk appears to the left of each theme that you choose, indicating which themes will be converted.

8. When you are finished selecting themes, enter 0 to exit the Theme Selection Menu.

Next the program prompts for the name of the database where the new DMS files will be stored. The currently selected database is shown in square brackets [ ]. For example:

```
Enter the database name [ANAD] ==> ANAD
```

9. To specify the database, enter the database name.
OR
To use the current database [in brackets], just press RETURN.

The program then begins creating the command files.

Results of Using TIGERCVT

After you finish identifying the required information, TIGERCVT does the following:

- It reads the TIGER/Line Basic Data Record and Shape Coordinate Points files to determine the number of features of each theme and the longitude-latitude extents of the county. When this is complete, the following messages appear with statistical information filled in:

```
# Roads      : nnn
# Street Names : nnn
# Addresses   : nnn
# Railroads   : nnn
# Misc. Trans. : nnn
# Landmarks   : nnn
# Hydrography  : nnn
Basic record file extents:
  Min Longitude:      nnn.nnnnnnnnn
  Max Longitude:      nnn.nnnnnnnnn
  Min Latitude:       nnn.nnnnnnnnn
  Max Latitude:       nnn.nnnnnnnnn
Map Name: [ANAD]CALHO.DMS
```

- The program then displays the following messages as it creates three command files in the current directory:


```
* * * MSG: Creating file TIGERXDMS.COM
* * * MSG: Creating file TBXDMS.COM
* * * MSG: Creating file POPXDMS.COM
* * * MSG: Done
```

These command files—TIGERXDMS.COM, POPXDMS.COM, and TBXDMS.COM—can be used to execute the TIGERXDMS, POPXDMS, and TBXDMS utilities, respectively.

Converting Census Bureau Data Using TIGERXDMS.COM, POPXDMS.COM, and TBXDMS.COM

The following procedure describes the sequence for using the three command files to automatically run the TIGERXDMS, POPXDMS, and TBXDMS utilities. If subdirectories for each of the new map layers have not been created under the database top-level directory, the three utilities will create the necessary subdirectories.

1. Set the default directory to the directory where the command files TIGERXDMS.COM, POPXDMS.COM, and TBXDMS.COM are located. For example:

```
$ SET DEFAULT [ANAD]
```

2. Then use TIGERXDMS.COM to execute TIGERXDMS and convert TIGER/Line data to DMS format:

```
$ @TIGERXDMS
```

TIGERXDMS.COM automatically directs TIGERXDMS to sort the TIGER/Line data files and convert the entire county set of TIGER/Line data to DMS files. For more information and a list of TIGERXDMS operating messages, see TIGERXDMS.

If a selected topographic theme exceeds 5000 data objects, the theme data are split into a number of DMS files that represent equal-area sections of the county. The DMS file name for a theme that has been split into sections has three parts:

- the first three letters of the county name
- the number of the section
- the two-character code of the data theme.

For example, if Calhoun county contained 9,000 roads, the county would be split into two sections (01 and 02), and the RD subdirectory after conversion would contain the following roads-and-trails data files and associated text files:

CAL01RD.DMS CAL02RD.DMS CAL01RD.TXT CAL02RD.TXT

3. Use POPXDMS.COM to execute POPXDMS and convert Census Bureau population data to DMS format:

\$ @POPXDMS

For more information and a list of POPXDMS operating messages, see POPXDMS.

4. Finally, use TBXDMS.COM to execute TBXDMS and convert TIGER/Line boundary data to DMS format:

\$ @TBXDMS

This executes TBXDMS.COM, which will run the TBXDMS program with the correct longitude-latitude extents and county name. For more information and a list of TBXDMS operating messages, see TBXDMS.

You can use the new DMS files and subdirectories as an independent DMS database. For example, to view the county data, you can enter **GEDIT** to start the IBS map editing utility.

Note: Some of the TIGER/Line boundary data is incomplete. After converting this data, you should view it with **GEDIT**: editing may be necessary.

TIGERCVT Program Messages

The following is a list of messages that you might see while using TIGERCVT. The list includes interpretations of each message and suggested actions.

- * * * **ERR: Bad directory**
- * * * **ERR: Creating directory [name]**
The directory name you specified was not a correct directory name. Check to make sure that the name contains the proper characters.
- * * * **ERR: Bad theme. Try again**
The theme number you selected was not in the proper range. Enter a new value.

- * * * ERR: Inconsistent state and county codes
The five-digit combined state and county code you specified in the TIGER filenames is not consistent. Check the names of the TIGER files.
- * * * ERR: *nn* Opening file *filename*
An error occurred when the program attempted to open the file specified. Check that the directory specification is correct.
- * * * ERR: *nn* Reading file *filename*
An error occurred when the program attempted to read a record from the file specified.
- * * * ERR: *nn* Writing file *filename*
An error occurred when the program attempted to write a record to the file specified.
- * * * ERR: Stopping
Due to an input/output error, the program is stopping execution.

TIGERXDMS

The TIGERXDMS utility creates DMS data files from TIGER/Line data files provided by the U.S. Department of Commerce, Bureau of the Census. The Bureau of the Census makes TIGER/Line data available for individual counties. TIGERXDMS is designed to handle one county at a time, converting data from the following records:

Record Type	Description
1	Basic Data Record
2	Shape Coordinate Points
4	Index to Alternate Feature Names
5	Feature Names Lists
6	Additional Address Range and Zip Code Data
7	Landmark Features
8	Area Landmarks
P	Polygon Location

Other data records of the TIGER/Line data files are ignored.

Note: You will normally NOT use TIGERXDMS directly: for most purposes you will want to use the TIGERCVT utility program, which creates a special command file that runs TIGERXDMS for you. If a topographic *theme* (such as railroads) contains a large number of vector objects, the theme data may need to be split into more than one DMS file. TIGERCVT automatically reads the TIGER/Line data extents and (if necessary) manages the splitting of a county's data into separate DMS files. (See TIGERCVT.)

What You Need to Know Before Using TIGERXDMS

You will normally want to use the TIGERCVT utility rather than TIGERXDMS, as noted above. If you do use TIGERXDMS independently, you must supply the following information:

<i>county name</i>	This is the name of the county for which you want data.
<i>county limits</i>	These are the longitude-latitude extents of the county: the minimum and maximum longitude and the minimum and maximum latitude.

<i>combined state and county code</i>	This five-digit code consists of the two-digit FIPS state code followed by the three-digit FIPS county code.
<i>drive:[directory] of TIGER data</i>	This is the name of the disk device and directory where the TIGER files are located.
<i>theme</i>	The <i>theme</i> is the category of topographic data that you wish to convert to DMS format. You can choose to convert one theme at a time. Your selection determines which records the program selects to convert to DMS format.

Creating DMS Data Files from TIGER/Line Data Files

To start the utility, just enter **TIGERXDMS** at the system prompt. You will then see prompts for the information described in the previous section. The series of prompts will resemble the following example (simulated responses are in **bold**).

```

$ TIGERXDMS

Enter county name                      ==> CALHOUN

If county/state limits are not known, run utility TIGERCVT
Enter county/state limits: min/max long/lat ==>
85.520989, 86.147628, 33.559792, 33.968361

Enter combined state & county code      ==> 01015
Enter the drive:[directory] of TIGER data ==> DISK1:[TIGER]

      Theme Selection Menu
-----
0 : EXIT
1 : Roads & Trails
2 : Railroads
3 : Misc Transportation
4 : Landmarks
5 : Hydrography
-----
Choice (?=Help) ==> 4

```

When TIGERXDMS begins reading the TIGER data for the data conversion, you will see a series of messages as the program reads each record:

```
**** Record Type 1 ****
**** Record # 1
**** Record # 2
.
.
**** Record # n
.
.
**** RECORD TYPE 7 ****
**** Landmark ID 1
**** Landmark ID 2
.
.
**** Landmark ID n
```

After all records have been read and the DMS files have been created, the program ends and the system prompt reappears.

TIGERXDMS Program Messages

MSG [directory]TGRnnnnn.Smm FILE COULD NOT BE OPENED.

Here, the number *nnnnn* represents the five-digit state/county code that you have entered. One of the TIGER data files needed for the conversion could not be opened. If this happens, the program attempts to open the remaining files but will not perform a conversion. Check the directory and FIPS code, and make sure that all of the TIGER files needed are present.

BAD THEME NUMBER. TRY AGAIN

The theme number must be between one and five. Enter a new value.

MSG Out of object limits

The object specified in the current TIGER record did not fall within the longitude-latitude limits specified for the current county. The program will ignore that record and proceed to the next.

MSG Landmark not a single point

A TIGER landmark record that refers to more than one point was encountered.

MSG COULD NOT OPEN FILE... nnn

The program encountered an error opening the DMS format files. Check that the logical names for the topography directories are correct, and that the directories exist.

MSG Feature not found in Record Type 5 file

The name of a feature listed in another record was not found in the Feature Name List (Record Type 5) file. The feature will be stored without a name.

- *MSG* Address range on landmark feature
An address range was specified for a landmark feature.
- *MSG* Unexpected CFCC
The program encountered a record in the Landmark Features file with a Census Feature Class Code (CFCC) specifying something other than Landmark Feature or Hydrography.
- *MSG* nnnnnnnnnn Landmark ID not found in Record Type 8 File
The program encountered a landmark record that referred to the Landmark Area (Record Type 8) file, which lists landmarks consisting of areas instead of points. However, no record was found in the Record Type 8 File.
- *MSG* nnnnnnnnnn Polygon not found in Record Type P
The program encountered a record referring to a polygon listed in the Polygon Location (Record Type P) file. However, no such record was found in the Type P file.
- *MSG* Duplicate landmark point at nnnnnnnnnnnn nnnnnnnnnn
The program encountered a landmark record containing the given longitude-latitude coordinates, which were already used by an earlier record. The duplicate landmark will be ignored.

UPDATEATT

An IBS database administrator or system manager can use the UPDATEATT utility to update the system *attribute dictionary*—the master listing of attribute codes that can be used to describe objects in a DMS file. The utility displays specified attributes on the terminal screen, enabling you to modify values associated with each attribute. The IBS attribute dictionary is MAP\$ATTRIB:ATTRIBDIC.BIN.

Note: An alternative to using UPDATEATT is to use the ATTXASC and ASCXATT utilities in combination. ATTXASC reads an attribute dictionary and creates an editable ASCII text version of the dictionary. After you carefully edit the ASCII file, ASCXATT can read the updated text file and create a new binary attribute dictionary file.

What You Need to Know Before Using UPDATEATT

To ensure consistency between IBS systems in the emergency management community, updates to the attribute dictionary should be managed through a central authority within FEMA. Persons responsible for maintenance of the master file should take great care to preserve consistency when updating the attribute list. Whenever a new attribute code is a candidate for insertion into the list, criteria similar to the following should be used for evaluating the code's applicability:

- Is the code unique from others currently in the master attribute file?
- Which major category best describes the code?
- Could parameter values on current codes be used to describe this attribute?
- Because a limit of 16 major categories is presently imposed, no new major category should be added unless it is to contain a sizable number of attributes (at least 20). Also, the new category should be viewed as a substantial subdivision of geo-coded data.

If you want to change existing attributes, you must know the major and minor attribute codes for these attributes. For a listing of attributes in the IBS standard attribute dictionary, see Appendix B.

UPDATEATT enables you to display each attribute for updating on the terminal screen. The data record of one attribute that you specify is displayed in a form (data input screen) that contains fields (data entry spaces on the form). To update an attribute, you just change values of the data fields.

Keyboard Commands for Using the Data Forms. The data input forms follow the conventions explained in Section 1 of the *IBS User Guide*. If you have not already done so, please read that section. In brief: Use the arrow keys to move from one field to another on a form. When you are finished making entries, press **GOLD Z** to accept the entries--or press CTRL-W to quit and restore the original contents of the form. Pressing RETURN also advances from one field to the next. In the last field of a form, pressing RETURN (like **GOLD Z**) accepts the current form data and then exits.

Accepting Updates to the Attribute Dictionary. The utility stores all the changes and updates you make until you leave the utility. At that time, UPDATEATT gives you an opportunity to cancel all your updates (*Quit*) or to accept the updates and create a new attribute dictionary (*Exit*).

Updating the IBS Attribute Dictionary with UPDATEATT

To start the utility, just enter UPDATEATT at the system prompt. UPDATEATT then displays its menu prompt:

```
$ UPDATEATT
DO YOU WANT TO (A)dd, (C)hange, (D)elete, (E)xit or (Q)uit >
```

To choose one of the options, just enter the appropriate letter:

- A - Add a new attribute record.
- C - Change any field on an existing attribute record.
- D - Delete an attribute record.
- E - Exit the program and *update the attribute dictionary*.
- Q - Quit the program *without updating the attribute dictionary*.

The three options for updating individual attributes are explained in the following sections.

A - Adding a New Attribute Record

When you choose option A, the Attribute Description update form appears on the screen with only default data in all of the fields (see the following page). When a form is displayed, the first data field is highlighted to show that the field can be edited: you can change values in any of the fields. If a record already exists for the major and minor attribute codes entered, a new record will NOT be created.

Attribute Description Update Form

ATTRIBUTE DESCRIPTION

MAJOR MINOR PARAMETER

  0   0   0

DESCRIPTION

DEFAULTS

PEN	LINE	DECLUTTERING	SCALE
NUMBER	TYPE	CODE	FACTOR
<u> 1 </u>	<u> 0 </u>	<u> -1 </u>	<u> 1.0000 </u>

Press <RETURN> or the GOLD <F5> key followed by a 'Y'
to go back to Modify Selection Menu.

C - Changing an Attribute Record

When you choose option C, the program will prompt for a major and minor attribute code:

Example

```
DO YOU WANT TO (A)dd, (C)hange, (D)elete, (E)xit or (Q)uit >c
ENTER THE MAJOR AND MINOR ATTRIBUTE CODES>5,20
```

Enter the major and minor codes, separating them with a comma. For a listing of attributes in the IBS standard attribute dictionary, see Appendix B. After you enter these codes, the Attribute Description update form appears on the screen with the values for the specified attribute displayed in the form fields. You can change any field.

D - Deleting an Attribute Record

When you choose option D, the program prompts for a major and minor attribute code in the same way as for changing an attribute. After you enter these codes, you will return to the menu prompt.

USERDBGEN

The USERDBGEN utility generates a command file for extracting selected objects from a DMS map database to create a separate "user-defined" database.

Note: Although historical documentation for USERDBGEN is supplied here for people who may have used USERDBGEN in the past, the utility will no longer be supported in the IBS software. Please see the MAPDBGEN utility, which has been updated for the new IBS software.

Section 1 of this document contains general—and possibly helpful—information on the directory structures and support files necessary for a DMS database. USERDBGEN operates almost the same as (an older version of) MAPDBGEN with the following exceptions:

- MAPDBGEN enabled you to extract data based on location and type of topography; so does USERDBGEN. In addition, USERDBGEN allows you to select data based on decluttering and attribute values.
- The product of MAPDBGEN is a user-defined DMS database. The product of USERDBGEN is a command file (NEWDB.COM) that can be executed to create a user-defined DMS database.

Database creation with USERDBGEN is accomplished in two stages:

1. **Execute USERDBGEN:** The program first asks you to enter information that identifies which data you wish to extract from the database:
  - a. Enter the limits of the geographic area (either the maximum and minimum longitude-latitude OR a radius and the longitude-latitude of a center point).
  - b. Enter the name of the directory where the new database will reside (a subdirectory of your current directory).
  - c. Choose the "cover map(s)" (overview maps) that you want to copy from the existing DMS database.
  - d. Indicate (yes or no) whether decluttering is to be used to limit the data. (If yes, enter a decluttering value: see the discussion of decluttering after the example.)
  - e. Indicate (yes or no) whether attributes are to be used to limit the data extraction. (If yes, enter attribute selections: see the discussion of attributes after the example.)

- f. Choose which topographies you want to copy from the existing DMS database.

In your current directory, USERDBGEN creates a new database "top-level" directory, a subdirectory for each selected topography, and the support files necessary to support the new database. USERDBGEN also checks each selected topography in the existing database to identify data files that fall within the selected area. File names whose limits are within the selected area are then included in the NEWDB.COM command file.

2. Exit IBS and execute NEWDB.COM from the \$ prompt:

```
$ @NEWDB
```

No further interaction is necessary. NEWDB.COM opens the existing spatial database files within the area of interest, extracts the selected data (using the EXTRACT utility), and then stores the new topography files in the new directory structure.

For more information on creating a DMS database, please refer to MAPDBGEN.

Example of Using USERDBGEN

The following is an example of using USERDBGEN. The area specified for the new database represents the eastern third of the United States. The top directory of the new database is FEMA01:[FEMA.EAST].

```
$ USERDBGEN
```

```
CHOOSE METHOD TO DEFINE AREA, 1 => SUPPLY LONG-LAT LIMITS
                              2 => SUPPLY RADIUS AND CENTER POINT
                              >1
```

```
ENTER MIN LONG, MIN LAT, MAX LONG, MAX LAT : -91.346 21.860
-60.170 48.147
```

```
ENTER TOP-LEVEL DIRECTORY NAME. (THIS WILL BE A SUBDIRECTORY
OF YOUR CURRENT DIRECTORY) : FEMA01:[FEMA.EAST]
DO YOU WISH TO SELECT FROM AVAILABLE COVER MAPS? Y
```

```
AVAILABLE COVER MAPS ARE :
```

- 1 ALASKA
- 2 HAWAIIAN ISLANDS
- 3 CONTERMINOUS U.S.
- 4 COMPLETE U.S.

```
SELECT COVER MAP ENTRY (<CTRL-Z> to terminate) : 3
SELECT COVER MAP ENTRY (<CTRL-Z> to terminate) : <CTRL-Z>
```

(continued on next page)

(continued from the previous page)

IS DECLUTTERING TO BE USED? Y

ENTER A DECLUTTERING VALUE (-1 => SELECT BY AREA) > 26

IS ATTRIBUTE SELECTION TO BE USED? N

AVAILABLE TOPOGRAPHIES ARE

- 1 ADMINISTRATIVE BOUNDARY
- 2 POLITICAL BOUNDARIES
- 3 CONGRESSIONAL DISTRICTS
- 4 CULTURAL FEATURES
- 5 HYPSOGRAPHY
- 6 RAILROADS
- 7 ELECTRICAL POWER GRID
- 8 ROADS & TRAILS
- 9 STREAMS
- 10 WATER BODIES
- 11 GNIS (Geographic Names)
- 12 POPULATED PLACE NAMES
- 13 POPULATION
- 14 COLOR FLOOD POINTS
- 15 NAPB TARGETS
- 16 HAZMAT SITES
- 17 NUC POWER PLANTS
- 18 FEATURES (ICONS)
- 19 ELEVATION

SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 1
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 2
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 3
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 6
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 7
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 8
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 9
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 10
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : 12
SELECT A TOPOGRAPHY ENTRY (<CTRL-Z> to terminate) : <CTRL-Z>
- ADMINISTRATIVE BOUNDARY
- POLITICAL BOUNDARIES
- CONGRESSIONAL DISTRICTS
- RAILROADS
- ELECTRICAL POWER GRID
- ROADS & TRAILS
- STEAMS
- WATER BODIES
- POPULATED PLACE NAMES

Decluttering. If you request that decluttering be used during data selection, USERDBGEN will prompt for the decluttering value to be used throughout this process: ENTER DECLUTTERING VALUE (-1 => SELECT AREA) > .

Decluttering values range in magnitude from 1 to 30, where 1 indicates no decluttering and 30 indicates the maximum amount of decluttering. Typically, you

would enter a value of 23 or 24 if a region the size of an average state were being retrieved or values such as 26 or 27 if multiple states or the entire United States were being extracted. If you would prefer to use a computed a decluttering value (based on the size of the area being extracted), enter a -1 in response to this prompt.

Attribute Selection. Data items may also be extracted based on attribute values. If you request this option, USERDBGEN will ask for the attribute selection criteria: **DEFINE ATTRIBUTE SELECTION CRITERIA > .**

You must then enter a Boolean expression that is formed from the following list of operators and symbols:

^	--	logical AND	(a^b)
V	--	logical OR	(aVb)
-	--	logical NOT	(-a)
:	--	range specifier	(a:b)
,	--	comma	
(	--	left parenthesis	
)	--	right parenthesis	

The attribute codes are combined with these symbols to create Boolean logical expressions for attribute selection.

Examples:

4;5;4;100	indicates all data items having an attribute with a Major code of 4 and a Minor code of 5 to 100 (inclusive)
6;13^(4;5;4;100)	indicates all data items having an attribute with a Major code of 6 and a Minor code of 13 AND (as well as) having an attribute with a Major code of 4 and a Minor code of 5 to 100 (inclusive)
5;8V(6;13^(4;5;4;100))	indicates any data items having an attribute with EITHER a Major code of 5 and a Minor code of 8 OR the same code specifications as the previous example.

USGS100KXDMS

The USGS100KXDMS utility creates a DMS file from a USGS Digital Line Graph (DLG) data file that stores 1:100,000-scale data. For example, the following sequence will convert the data in a DLG file called BR201RD.DAT to DMS format in a file called BR201RDRT.DMS.

```
$USGS100KXDMS
Enter input filename > BR201RD.DAT
Enter 7 char output filename > BR201RD
Enter 2 byte description for 'ROADS AND TRAILS' > RT
Enter pen # for 'ROADS AND TRAILS' > 1
```

Converting USGS Data Files for a Special-Purpose DMS Database

The following procedure is designed to assist a System Manager or knowledgeable user in the process of extracting DLG data files from magnetic tape and converting them to DMS format. Your goal in converting files from DLG to DMS format may be to create a special-purpose DMS database or to add data for use with an existing DMS database. The conversion process is pertinent to the development of site-specific DMS databases as described in the *IBS Data Management Guide*.

Overview. You are starting with a set of magnetic tapes and a list of the DLG files on those tapes. You will follow three main steps:

1. Extract the DLG data files from magnetic tapes onto disk, using the MYTAPE utility.
2. Separate the files into topography subdirectories.
3. Convert each data file in each subdirectory to DMS format, using the USGS100KXDMS utility.

The final product is several subdirectories containing DMS formatted files. The conversion process is depicted by the following flow:

The transformations represent the state of the topographical data, and the descriptions beneath the arrows represent utilities that operate on the data. We recommend that you convert the DLG files from one magnetic tape at a time, rather than all at once. The reason for this is that the USGS data files consume

several times more disk space than the DMS files. You may need to delete USGS data files after DMS conversion to reserve enough disk space for extracting files from other tapes. Monitor disk space carefully throughout the conversion process.

Requirements to Begin

- data tape(s) containing the DLG files
- a list of the files on the tape(s)
- the number of characters for each logical record
- nine-track, 1600-bpi compatible tape drive
- MYTAPE utility (version 3.5 or later).

It is also expected that you are familiar with certain aspects of DMS topography files: the two-character "topographic codes" associated with DMS topographies and the "pen" numbers or colors used to draw topographic features on the screen. (Please refer to steps 2b, 3e, and 3f in the following procedure.)

Procedure

1. **Extract the DLG data files from magnetic tapes onto disk:** You will use the MYTAPE utility to get the DLG data files to disk. Complete MYTAPE documentation is available as PNL\$DOCUMENT:MYTAPE.DOC.
  - a. Load the tape physically on the tape drive.
  - b. Set the default to the directory where the DMS files are to be located.
  - c. Enter MYTAPE

The MYTAPE prompt will appear as "MYTAPE>". From this prompt, you may enter any MYTAPE command.

- d. To mount the magnetic tape, enter a MOUNT command:

```
MYTAPE> MOUNT device_name:/RECORD_SIZE=record_length-  
/BLOCK_SIZE=block_size/DENSITY=tape_density-  
/CHAR_SET=ASCII
```

The parameter and /qualifier values that you must enter are:

device_name: physical name of tape drive used (MTA0:, MMA0:, MSA0:, etc.) or the logical name (TAPE0:, TAPE1:, etc.)

record_length number of bytes in a tape record

<i>block_size</i>	number of bytes in a tape block
<i>tape_density</i>	density of tape in bytes per inch (bpi).

The record length, block size, and tape density should appear on the label of the magnetic tape. The /CHAR_SET (character set) qualifier should always be "ASCII" for this use.

Example:

```
MYTAPE> MOUNT TAPE1/RECORD_SIZE=144/BLOCKSIZE=1440-  
/DENSITY=1600/CHAR_SET=ASCII
```

- e. To retrieve each file from the magnetic tape, enter a **COPY** command:

```
MYTAPE> COPY device_name: file_name  
/CARRIAGE_CONTROL=FORTRAN
```

The parameters and /qualifier values that you must enter are:

<i>device_name:</i>	physical name (or logical name) of the tape drive used
<i>file_name</i>	the name of the USGS data file

The /CARRIAGE_CONTROL qualifier should always be "FORTRAN" to designate a FORTRAN carriage return as the end-of-line character. To retrieve a set of files, you may place a number of filenames in a separate description file and then pass the name of the description file as a parameter to the MYTAPE COPY command:

```
MYTAPE> COPY device_name: description_file/FILE_LIST-  
/CARRIAGE_CONTROL=FORTRAN
```

The FILE_LIST qualifier indicates that the input file is a list of filenames.

- f. To dismount the magnetic tape drive, enter a **DISMOUNT** command:

```
MYTAPE> DISMOUNT device_name:
```

- g. Exit the MYTAPE utility:

```
MYTAPE> EXIT
```

Example of MYTAPE execution:

```
$ MYTAPE
Beginning MYTAPE session 17-AUG-1992 11:37:58

MYTAPE>MOUNT
MTA1:/DENSITY=1600/BLOCKSIZE=1440/RECORD_SIZE=144/CHAR_SET=ASCII
MYTAPE> COPY MTA1: BR2HY01.DAT/CARRIAGE_CONTROL=FORTRAN
MYTAPE> COPY MTA1: BR2HY02.DAT/CARRIAGE_CONTROL=FORTRAN
MYTAPE> COPY MTA1: BR2HY03.DAT/CARRIAGE_CONTROL=FORTRAN
MYTAPE> DISMOUNT MTA1:
MYTAPE> EXIT

MYTAPE ended 17-AUG-1992 11:39:28
```

Output files created by this example:

- BR2HY01.DAT
- BR2HY02.DAT
- BR2HY03.DAT

Example of MYTAPE execution with a description list file:

For this example, the description file, BR2HY.LIS, contains the names of three DLG data files:

- BR2HY01.DAT
- BR2HY02.DAT
- BR2HY03.DAT

```
$ MYTAPE
Beginning MYTAPE session 17-AUG-1992 11:43:58

MYTAPE>MOUNT
MTA1:/DENSITY=1600/BLOCKSIZE=1440/RECORD_SIZE=144/CHAR_SET=ASCII
MYTAPE> COPY MTA1: BR2HY.LIST/FILE_LIST/CARRIAGE_CONTROL=FORTRAN
MYTAPE> DISMOUNT MTA1:
MYTAPE> EXIT

MYTAPE ended 17-AUG-1992 11:45:13
```

Output files created by this example:

- BR2HY01.DAT
- BR2HY02.DAT
- BR2HY03.DAT

2. **Separate the data files into topographic subdirectories:** Once a set of data files has been extracted from magnetic tape, the files should be sorted into topography subdirectories.

- a. Check the output listing of the magnetic tape(s) to determine what topographic information is in the data file(s).

This listing should have been provided with the magnetic tapes. The two-letter topographic code will be embedded in the original data file filename. Typical codes are HY (hypsography), RD (roads and trails), RL (railroads), and MT (miscellaneous transportation).

- b. For each topography file in the listing, locate the associated, extracted file and place that file in the appropriate DMS topography subdirectory.

An "appropriate DMS topography subdirectory" means 1) a subdirectory of a DMS database directory; 2) a subdirectory named with a two-character "topographic code" that corresponds to the type of data in the topography files. (Please refer to step 3e of this procedure.)

3. **Convert each data file in each subdirectory to DMS format:** You will use the USGS100KXDMS utility.

- a. SET DEFAULT to the topography subdirectory.
  - b. Enter USGS100KXDMS

This executes the conversion utility. (See also, *Executing USGS100KXDMS in Batch Mode*, after step 3g).

The utility will prompt you to enter an "input filename," an "output filename," a topography "description," and a "pen #," as shown in steps 3c, 3d, and 3e.

- c. Enter the name of the DLG file to be converted.

Example: ENTER INPUT FILENAME > BR201RD.DAT

- d. Enter a name for the new DMS file (up to 7 characters).

Example: ENTER 7 CHAR OUTPUT FILENAME > BR201RD

(If the name of the DMS file is to be the same as the DLG filename, press the UP arrow or <scrollback> key; this will insert the input filename to the screen. Then delete the '.DAT' characters.)

USGS100KXDMS will check the DLG file to identify the topographic data.

- e. Enter a 2-character topographic code for the DMS file.

Example: ENTER 2 BYTE DESCRIPTION FOR 'ROADS AND TRAILS'
> RT

The utility will append the two characters to complete the name of the new DMS file.

The following list shows examples of topographies and topographic codes used in the IBS. Appendix A is a complete list of IBS topographies and their codes.

Topographic Descriptor	Two-Character Code
ADMINISTRATIVE BOUNDARY	AB
AGRICULTURE	AG
BASE MAP	BM
CONGRESSIONAL DISTRICTS	CD
CULTURAL FEATURES	CF
RECOVERY AREAS	CN
CENSUS TRACT/ED	CT
ELEVATION CONTOUR(300M)	EC
ELEVATION	EL
ELECTRICAL POWER GRID	EP
EVACUATION ZONE	EZ
FAULT LINES	FQ
FEATURES (ICONS)	FT
GNIS (Geographic Names)	GN
HYDROLOGY	HD
100K HYDROGRAPHY	HG
HYPSONOGRAPHY	HY
HAZMAT SITES	HZ
LIVESTOCK	LS
LAND USES	LU
100K MISC TRANSPORT	MT

- f. Enter a pen number ("color" number) for the topographic data type.

Example: ENTER PEN # FOR 'ROADS & TRAILS' > 1

The FEMA National Map database, for example, uses pen 1 for roads and trails, pen 4 for miscellaneous transportation, and pen 5 for railroads. When the topographic data are drawn with the system mapping functions, they will be drawn in the "color" corresponding to the pen number.

If you wish to follow the color conventions used in the IBS map databases, you will need to know the pen numbers associated with your topographies. You can examine an existing DMS topography file and identify the pen number by using the utility DMSXASCII.

USGS100KXDMS has completed when the \$ prompt returns.

- g. Repeat 3a - 3f for each DLG file in each topography subdirectory.
h. Delete the unconverted USGS files from each topography subdirectory.

Executing USGS100KXDMS in Batch Mode

USGS100KXDMS can be executed using a command file. If you execute the utility from a command file as part of a batch job, use the /LOG_FILE qualifier to generate a batch log. This will be helpful if an error occurs. The following example command file will convert three DLG input files (BR2D01.DAT, BR2D02.DAT, and BR2D03.DAT) to three DMS "roads and trails" files.

Command File Example:

```
$ RUN USGS100KXDMS
BR2RD01.DAT
BR2RD01
RT
1
$ RUN USGS100KXDMS
BR2RD02.DAT
BR2RD02
RT
1
$ RUN USGS100KXDMS
BR2RD03.DAT
BR2RD03
RT
1
```

Output files created by this example command file:

- BR2RD01RT.DMS
- BR2RD02RT.DMS
- BR2RD03RT.DMS

Errors Caused by Missing Attribute Codes

To translate from DLG to DMS files, USGS100KXDMS contains a table of USGS attribute codes. If the DLG file contains new attribute codes that are not in the table, then USGS100KXDMS will stop and list the missing attributes by Major and Minor code. To fix this problem and complete the file conversion, someone must update the appropriate subroutine (called CNVT_ATT) in the USGS100KXDMS utility, recompile and re-link the program code, and then re-execute the program for the DLG file that caused the error.

Results of Using USGS100KXDMS

At the end of this procedure you should have one or more topography subdirectories, each containing DMS files converted from the DLG data files.

If you are using the new DMS files to create a new DMS database, please refer to *Generating a Site-Specific Map Database* in the *IBS Data Management Guide*. That discussion explains the strategy for getting your data into the new database.

USGSXDMS

The USGSXDMS utility reads data files in USGS format creates new data files in DMS format. In general, the USGS files will be the output of processing a foreign tape using the MYTAPE utility.

To start the utility, just enter USGSXDMS at the system prompt.

As USGSXDMS reads the data file header information, it requests that you supply file names, topographies, and pen (color) numbers to be used in the data conversion process.

The USGSXDMS utility does NOT convert DLG attribute codes to the corresponding DMS attribute codes. Rather, the major and minor code values are stored in the newly created DMS file. To translate DLG attributes information to DMS attribute codes, use the USGS100KXDMS utility.

To convert USGS Digital Line Graph (DLG) files to DMS format, use the DLGXDMS utility.

USGSXTAC3

The USGSXTAC3 utility converts Digital Elevation Mapping (DEM) data provided by the U.S. Geological Survey (USGS) into the Terrain Analysis Cell (TAC) format used by some models in IBS. The DEM data must be for 1:250,000-scale, 1-degree by 1-degree map sheets. The purpose of the program is to provide elevation data files for model and utility use in IBS.

What You Need to Know Before Using USGSXTAC3

The inputs to USGSXTAC3 are ASCII format DEM files provided on tapes by the USGS. The files are structured with a record size of 1024 bytes. One file (product) is provided for each 1-degree by 1-degree map sheet for which data is requested. Further information on file content is available in the USGS document, *Digital Elevation Models, Data Users Guide 5*.

The files should be read with the MYTAPE utility provided with the system.

Creating TAC Data Files from DEM Data Files

To start the utility, just enter USGSXTAC3 at the system prompt.

The program then prompts you for an input DEM file name; if you do not specify a file name extension, an extension of .DEM is assumed. The output file name will have the same name as this input file but with a .TAC extension. An example of its use follows:

```
$USGSXTAC3
Enter input filename (.DEM) > BENDW
* * * MSG: Processing data -- please stand by...
BEND-W OR NLW-12W
* * * MSG: Done reading file
* * * MSG: # Records read: 9609
* * * MSG: Processing complete
```

Results of Using USGSXTAC3

USGSXTAC3 produces TAC data files, which have a binary format. One TAC data set (a .TAC file and a .TAA file) is produced for each input file. The TAC formats are described in the *IBS Data Management Guide*.

WHO

The WHO utility enables you to list the current users logged in to the system and see what programs they are using. This list includes both interactive users and batch program users.

To get a list of local users, just enter **WHO** at the system prompt.

Example:

```
$ WHO
```

Terminal	Username	Process Name	Project	PID	Current Images
OPAO	SYSTEM	MANAG_0944	SYSTEM	000944	
TXA3	J_SMITH	J_SMITH_0768	USER	000768	MAIL
TXA5	M_JONES	M_JONES_0761	USER	000761	IBS

This can be useful if you need to check another person's username before sending electronic mail or if you want to know whether someone is currently using the system and available for receiving mail.

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Appendix A

IBS Topographies (Map Layers)

This appendix lists the names of the standard IBS topographies or map layers. In general terms, a topography is a graphic representation of the physical features of a geographic region. In IBS, a topography is a set of geographic data for depicting map features that have a common theme. Each topography has a name that describes that theme (for example: agriculture, roads, water bodies).

A topography consists of DMS files that contain data for mutually exclusive areas within a larger region (like tiles covering a floor).

- **Static topographies** contain DMS files that are not changed by anyone other than the IBS database administrator. These files are generated by the database administrator, placed in a topography within the map database, and made available to all users (who cannot modify them).
- **Volatile topographies** contain DMS files that can be modified by IBS users only through specific functions of the IBS application software. The volatile topographies usually represent features that change over time (for example: explosion contours, search/rescue areas). Before you can create or modify a volatile DMS file, the database administrator must authorize you to use that function of the IBS software.

The DMS files for a single static topography are stored in a common map database subdirectory, `MAP$DATA$xx`, where `xx` is a different two-character **topographic code** for each topography. The DMS files for a single volatile topography are stored in a common subdirectory, `VMAP$DATA$xx`. By convention, the names of the individual DMS files of one topography also include the topographic code: `namexx.DMS`.

For each topography of the standard IBS map database, this appendix includes the following:

- the topography name
- the topographic code
- an indication of whether the topography is static or volatile
- an expanded description (sometimes).

Appendix A: IBS Topographies (Map Layers)

Topography Name	Code	Type	Additional Description
Administrative Boundary	AB	Static	--
Agriculture	AG	Static	--
Base Map	BM	Static	--
Congressional Districts	CD	Static	--
Cultural Features	CF	Static	--
Recovery Areas	CN	Static	--
Census Tract/ed	CT	Static	--
Elevation Contour(300m)	EC	Static	--
Elevation	EL	Static	--
Electrical Power Grid	EP	Static	--
Evacuation Zone	EZ	Static	--
Fault Lines	FQ	Static	--
Features (Icons)	FT	Static	--
GNIS (Geographic Names)	GN	Static	--
Hydrology	HD	Static	--
100K Hydrography	HG	Static	--
Hypsography	HY	Static	--
Hazmat Sites	HZ	Static	--
Livestock	LS	Static	--
Land Uses	LU	Static	--
100K Misc Transport	MT	Static	--
NAPB Targets	NA	Static	--
New Features (Icons)	NF	Static	--
Pipe Lines	NG	Static	--
Nuc Power Plants	NP	Static	--
Political Boundries	PB	Static	--
Populated Place Names	PL	Static	--
Population	PO	Static	--
500K Roads	RS	Static	--
100K Roads	RD	Static	--
100K Railroads	RL	Static	--
Railroads	RR	Static	--
Roads	RT	Static	--
APA Sectors	SC	Static	--
Streams	ST	Static	--
Traffic Control	TC	Static	--
Tract Population	TP	Static	--
Water Bodies	WB	Static	--
Wells	WE	Static	--
Wildlife	WL	Static	--
Watersheds	WS	Static	--
D2 Track	D2	Volatile	--
Explosion Contours	EX	Volatile	--
Fire Contours	FI	Volatile	--
Vapor Contours	VA	Volatile	--
Damage Assessment Areas	DA	Volatile	--
Environment Icons	EI	Volatile	--

Appendix A: IBS Topographies (Map Layers)

Topography Name	Code	Type	Additional Description
Facilities & Resources	RM	Volatile	--
Risk Areas	RP	Volatile	--
Search/rescue Areas	SR	Volatile	--
Onpost D2 Track	WD	Volatile	--
Weather Icons	WI	Volatile	--
Boundary - Block	BB	Static	--
Boundary - County	CB	Static	--
Boundary - Place	LB	Static	--
Boundary - Tract	TB	Static	--
Boundary - Subdivision	VB	Static	--
Street Names (TIGER)	SN	Static	--
Addresses (TIGER)	TA	Static	--
Landmarks (TIGER)	TF	Static	--
Misc Trans (TIGER)	TM	Static	--
Street Names (TIGER)	TN	Static	--
Railroads (TIGER)	TR	Static	--
Streams (TIGER)	TS	Static	--
Roads (TIGER)	TT	Static	--
Water Bodies (TIGER)	TW	Static	--
Water Body Names (TIGER)	WN	Static	--
Population - Block	B1	Static	Population
Demographic - Block	B2	Static	Demographics
House Size - Block	B3	Static	Households
Special Pop - Block	B4	Static	Special Population
Housing - Block	B5	Static	Housing
House Struct - Block	B6	Static	Household Structures
House Value - Block	B7	Static	Household Values
House Type - Block	B8	Static	Household Types
Population - County	C1	Static	Population
Demographic - County	C2	Static	Demographics
House Size - County	C3	Static	Households
Special Pop - County	C4	Static	Special Population
Housing - County	C5	Static	Housing
House Struct - County	C6	Static	Household Structures
House Value - County	C7	Static	Household Values
House Type - County	C8	Static	Household Types
Population - Group	G1	Static	Population
Demographic - Group	G2	Static	Demographics
House Size - Group	G3	Static	Households
Special Pop - Group	G4	Static	Special Population
Housing - Group	G5	Static	Housing
House Struct - Group	G6	Static	Household Structures
House Value - Group	G7	Static	Household Values
House Type - Group	G8	Static	Household Types
Population - Place	P1	Static	Population
Demographic - Place	P2	Static	Demographics
House Size - Place	P3	Static	Households

Appendix A: IBS Topographies (Map Layers)

Topography Name	Code	Type	Additional Description
Special Pop - Place	P4	Static	Special Population
Housing - Place	P5	Static	Housing
House Struct - Place	P6	Static	Household Structures
House Value - Place	P7	Static	Household Values
House Type - Place	P8	Static	Household Types
Population - State	S1	Static	Population
Demographic - State	S2	Static	Demographics
House Size - State	S3	Static	Households
Special Pop - State	S4	Static	Special Population
Housing - State	S5	Static	Housing
House Struct - State	S6	Static	Household Structures
House Value - State	S7	Static	Household Values
House Type - State	S8	Static	Household Types
Population - Tract	T1	Static	Population
Demographic - Tract	T2	Static	Demographics
House Size - Tract	T3	Static	Households
Special Pop - Tract	T4	Static	Special Population
Housing - Tract	T5	Static	Housing
House Struct - Tract	T6	Static	Household Structures
House Value - Tract	T7	Static	Household Values
House Type - Tract	T8	Static	Household Types
Population - Subdiv	V1	Static	Population
Demographic - Subdiv	V2	Static	Demographics
House Size - Subdiv	V3	Static	Households
Special Pop - Subdiv	V4	Static	Special Population
Housing - Subdiv	V5	Static	Housing
House Struct - Subdiv	V6	Static	Household Structures
House Value - Subdiv	V7	Static	Household Values
House Type - Subdiv	V8	Static	Household Types

Appendix B

IBS Attribute Dictionary

This appendix lists the contents of the IBS *attribute dictionary*—the current master set of attributes values that are used to assign physical or other descriptive features to spatial data objects in the Integrated Baseline System. Each spatial data object can be associated with one or more sets of attribute values that define and describe the object.

The attribute dictionary listing in this appendix contains the following fields:

- **Major code:** The major attribute code designates a major category of spatial data. The major code may range in value from 0 to 15. The current major code values and their respective categories are as follows:

Major Code	Major Category of Spatial Data
01	Hydrography
02	Surface Cover
03	Boundaries
04	<i>Undisplayed Text</i> ^(a)
05	Roads and Trails
06	Railroads
07	Pipelines, Trans. Lines, Miscellaneous Transportation Features
08	Other Significant Man-Made Features
09	Miscellaneous
10	Text Strings 1 (<i>Displayed Text</i>) ^(b)
11	Place of Work Data
12	Hazardous Material Sites
13	Resources
14	Land Use and Soil Type
15	Property Values

(a) This text is NOT displayed on the screen map but is useful for associating additional descriptive text with certain topographic features (such as different portions of a road or different areas of a lake).

(b) This type of text is displayed on the map, often as the labels of point objects (the names of cities, for example).

Appendix B: IBS Attribute Dictionary

- **Minor code:** The minor code can be used to further define items within a category. For example, a minor code value of 560 designates a permanent lake in the hydrography category (major code = 5).

Note: Some categories do not use the minor code construct in this way. For example, within the category of displayed text strings (major code = 10), the minor code is used in combination with the parameter value to compose an index into a separate file that contains the text strings that are drawn on the map. The minor code may range in value from 0 to 4095.

- **Parameter value:** The parameter value is a way of associating a specific value with a particular occurrence of an attribute. For example, if the major and minor codes define the attribute to be "number of hospital beds," then the parameter value could contain the actual number of beds at a particular hospital. The parameter value is not specified for most attribute codes. The parameter value may range from -32768 to 32767. (See the description of the *parameter-decluttering scale factor* for more information on how the parameter value is used.)

Also included in this attribute dictionary listing are the default *pen type*, the default *line type*, and the *decluttering code* associated with each set of attribute values.

- **Attribute description:** The attribute description is a text description of the spatial data item specified by the attribute codes (up to 60 characters long).
- **Default pen number:** This field associates a pen number (color) with the attribute code. This can be used by map display software to provide a consistent display of DMS data based on attribute codes rather than on the DMS record pen number. The value of this field ranges from 0 to 127.
- **Default line type:** This field associates a line type (texture, width, etc.) with an attribute value. This can be used by graphics software to provide consistent display of DMS data based on attribute codes rather than on the DMS record line types. The value of this field ranges from 0 to 127.
- **Decluttering code:** This field indicates the *decluttering code number* (from 0 to 100) for an attribute and is used by map display software to determine whether or not it is reasonable to display data items based on a specific window size (the size of an area viewed on the graphics display). That is, the map display software will "*declutter*" a graphics display, using the decluttering number as a basis for removing data items when the display is scaled such that some data items would become distracting clutter. For example, if you display a map that is 200 miles wide, detailed road data at the neighborhood level could be time-consuming to draw and unreadable afterward. A negative one (-1) in the decluttering code field indicates that no decluttering is to occur for an attribute.

If the attribute code has a value in the parameter value field, then the decluttering code field is used as the base index for calculating the actual *decluttering number*. See the following description of the *parameter-decluttering scale factor* for more information on how the decluttering code is used in combination with the parameter value.

- **Parameter-decluttering scale factor:** This field is used in conjunction with the decluttering code and parameter value to calculate a *decluttering number*. A default value of 1.00 is used for this field if no scaling is required and the decluttering code field contains a value other than -1.

Note: The parameter-decluttering scale factors for all current attributes in the attribute dictionary are 1.00. These are not included in this appendix listing of attribute dictionary values.

Decluttering numbers for attributes with parameter values are derived as follows:

$$\text{decluttering \#} = \text{decluttering code} + \log(\text{PV}'/\text{PV})/[(\log 2) * \text{scale factor}]$$

where PV' is the parameter value obtained from the decluttering attribute in the DMS data and PV is the parameter value of the attribute in the attribute dictionary. The decluttering number will always be clipped to [0,30].

For example, if the attribute code was "river flow rate in cubic feet per second (CFS)", then the parameter field of any occurrence in a DMS file would contain the actual flow rate in CFS. If the attribute dictionary contained the following values:

Parameter Value = 16,000
Decluttering Code = 28
Parameter-Decluttering Scale Factor = 1

then rivers could be assigned decluttering values based on their flow rates as follows:

Flow Rate	Decluttering #
2,000	$28 + \log(.125)/\log(2) = 25.00$
7,000	$28 + \log(.4375)/\log(2) = 26.81$
10,000	$28 + \log(.625)/\log(2) = 27.32$
34,000	$28 + \log(2.125)/\log(2) = 29.09$

For examples about using decluttering values, see the utility DECLUTTER_TOPO.

Appendix B: IBS Attribute Dictionary
HYDROGRAPHY

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
1	0	0	0	0	-1	HYDROGRAPHY
1	10	0	0	0	-1	Upper origin of stream
1	20	0	0	0	-1	Upper origin of stream at water body
1	30	0	0	0	-1	Sink
1	40	0	0	0	-1	Stream entering water body
1	50	0	0	0	-1	Stream exiting water body
1	60	300	0	0	22	Alkali flat (decameters)
1	70	0	0	0	-1	Reservoir
1	80	0	0	0	-1	Covered reservoir
1	90	300	0	0	22	Glacier or permanent snow field (decameters)
1	100	0	0	0	-1	Salt Evaporator
1	110	0	0	0	-1	Inundation area
1	120	0	0	0	-1	Fish hatchery or farm
1	130	0	0	0	-1	Industrial water impoundment
1	140	0	0	0	-1	Area to be submerged
1	150	0	0	0	-1	Sewage disposal pond or filtration beds
1	160	0	0	0	-1	Tailings pond
1	170	300	0	0	22	Marsh, wetland, swamp, bog (decameters)
1	180	0	0	0	-1	Mangrove area
1	190	0	0	0	-1	Rice field
1	200	0	0	0	-1	Cranberry bog
1	210	0	0	0	-1	Flats (tidal, mud, sand, gravel)
1	230	0	0	0	-1	Shoreline
1	240	0	0	0	-1	Manmade shoreline
1	250	0	0	0	-1	Closure line, (water-water)
1	260	0	0	0	-1	Indefinite shoreline
1	270	0	0	0	-1	Apparent limit
1	280	0	0	0	-1	Outline of a Carolina bay
1	290	0	0	0	-1	Spring
1	300	0	0	0	-1	Non-Flowing well
1	310	0	0	0	-1	Flowing well
1	320	0	0	0	-1	Riser
1	330	0	0	0	-1	Geyser
1	340	0	0	0	-1	Windmill
1	350	0	0	0	-1	Rapids
1	360	0	0	0	-1	Falls
1	370	0	0	0	-1	Gravel pit or quarry filled with water
1	380	0	0	0	-1	Gauging station
1	390	0	0	0	-1	Pumping station
1	400	0	0	0	-1	Water intake
1	410	0	0	0	-1	Dam or weir
1	420	0	0	0	-1	Canal lock or sluice gate
1	430	0	0	0	-1	Spillway
1	440	0	0	0	-1	Gate (flood, tidal, head, check)
1	450	0	0	0	-1	Exposed Rock
1	460	0	0	0	-1	Crevasse
1	470	750	0	0	24	Stream (CFS)
1	472	750	0	0	22	Intermittent Stream (CFS)
1	480	0	0	0	-1	Braided stream
1	490	0	0	0	-1	Ditch or canal

Appendix B: IBS Attribute Dictionary
HYDROGRAPHY

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
1	495	0	0	0	-1	Ditch or canal - navigable
1	500	0	0	0	-1	Aqueduct
1	510	0	0	0	-1	Flume
1	520	0	0	0	-1	Penstock
1	530	0	0	0	-1	Siphon
1	540	0	0	0	-1	Channel in water area
1	550	0	0	0	-1	Wash or ephemeral drain
1	560	300	0	0	22	Lake or pond (Permanent) (decameters)
1	562	300	0	0	22	Lake or pond (Intermittant) (decameters)
1	570	0	0	0	-1	Coral reef
1	580	0	0	0	-1	Underground
1	590	0	0	0	-1	Overpassing
1	600	0	0	0	-1	Elevated
1	610	0	0	0	-1	Tunnel
1	620	0	0	0	-1	Right bank
1	630	0	0	0	-1	Left bank
1	640	0	0	0	-1	Under construction
1	650	0	0	0	-1	Salt
1	660	0	0	0	-1	Unsurveyed
1	670	0	0	0	-1	Intermittent
1	680	0	0	0	-1	Abandoned
1	690	0	0	0	-1	Submerged
1	700	0	0	0	-1	Wooded
1	710	0	0	0	-1	Dry
1	720	0	0	0	-1	Mineral or hot (sulphur, alkali etc.)
1	730	0	0	0	-1	Navigable - Transportation
1	735	0	0	0	-1	Intercoastal Waterway
1	740	0	0	0	-1	Underpassing
1	750	0	0	0	-1	Earthen construction
1	760	0	0	0	-1	Bays, estuaries, gulfs, oceans, seas
1	800	0	0	0	-1	Arroyo
1	810	0	0	0	-1	Bar
1	820	0	0	0	-1	Bend
1	830	0	0	0	-1	Cape
1	840	0	0	0	-1	Gut
1	850	0	0	0	-1	Harbor
1	860	0	0	0	-1	Shoal
1	870	0	1	0	-1	Lagoon
1	1000	0	0	0	-1	Water surface elevation
1	1010	0	0	0	-1	River mile
1	1020	0	1	0	-1	WATER FEATURE, CLASS UNKNOWN
1	1040	0	1	0	-1	PERENNIAL
1	1050	0	1	0	-1	NONVISIBLE WATER DEFINITION BOUNDARY
1	1060	0	1	0	-1	USGS CLOSURE LINE
1	1070	0	1	0	-1	CENSUS-COMPUTED CENTER LINE
1	1080	0	1	0	-1	CENSUS INTERNATIONAL WATER BOUNDARY
1	1090	0	1	0	-1	CENSUS WATER BOUNDARY, INLAND/COASTAL/GREAT LAKE
1	1100	0	1	0	-1	WATER BUDGET: TOTAL (ACRE/FT/YR)

Appendix B: IBS Attribute Dictionary
HYDROGRAPHY

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
1	1110	0	1	0	-1	WATER BUDGET: M & I DIVERSION (ACRE/FT/YR)
1	1120	0	1	0	-1	WATER BUDGET: IRRIGATION DIVERSION (ACRE/FT/YR)
1	1130	0	1	0	-1	WATER BUDGET: WILDLIFE REQUIREMENT (ACRE/FT/YR)
1	1140	0	1	0	-1	WATER BUDGET: LIFESTOCK REQUIREMENT (ACRE/FT/YR)
1	1150	0	1	0	-1	WATER BUDGET: EVAPORATION (ACRE/FT/YR)
1	1160	0	1	0	-1	WATER BUDGET: BALANCE (ACRE/FT/YR)
1	2000	0	1	0	-1	3-MILE LIMIT WATER BOUNDARY
1	2010	0	1	0	-1	SODA EVAPORATOR
1	2020	0	1	0	-1	DANGER CURVE
1	2030	0	1	0	-1	SAND IN OPEN WATER
1	2040	0	1	0	-1	SPOIL AREA
1	2050	0	1	0	-1	ANGLE OF CLOCKWISE ROTATION
1	2060	0	1	0	-1	BEST ESTIMATE OF CLASS OR POSITION
1	2070	0	1	0	-1	COICIDENT FEATURE
1	2080	0	1	0	-1	PHOTOREVISED FEATURE
1	2090	0	1	0	-1	WELL ID
1	3000	0	1	0	-1	WELL NUMBER "A"
1	3010	0	1	0	-1	WELL NUMBER "B"
1	3020	0	1	0	-1	DIAMETER (INCHES)
1	3030	0	1	0	-1	DEPTH FROM (FEET)
1	3040	0	1	0	-1	DEPTH TO (FEET)
1	3070	0	1	0	-1	CFS X 1.0
1	3071	0	1	0	-1	CFS X 0.1
1	3072	0	1	0	-1	CFS X 0.01
1	3073	0	1	0	-1	CFS X 0.001
1	3074	0	1	0	-1	CFS X 0.0001
1	3075	0	1	0	-1	CFS X 0.00001
1	3080	0	1	0	-1	ACRE FEET X 1
1	3081	0	1	0	-1	ACRE FEET X 0.1
1	3082	0	1	0	-1	ACRE FEET X 0.01
1	3083	0	1	0	-1	ACRE FEET X 0.001

Appendix B: IBS Attribute Dictionary
SURFACE COVER

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
2	0	0	0	0	-1	SURFACE COVER
2	5	0	1	0	-1	TOPOGRAPHIC FEATURE
2	10	0	0	0	-1	Woods or brushwood
2	20	0	0	0	-1	Scrub
2	30	0	0	0	-1	Orchard or plantation
2	40	0	0	0	-1	Vineyard
2	50	0	0	0	-1	Scattered trees
2	60	0	0	0	-1	Edge of surf. cov. at build up, house omission, urban area
2	70	0	0	0	-1	Glacial moraine
2	80	0	0	0	-1	Beach
2	81	0	0	0	-1	Gravel beach
2	82	0	0	0	-1	Sand beach
2	90	0	0	0	-1	Shifting sand or dune area
2	100	0	0	0	-1	Lava
2	110	0	0	0	-1	Arch
2	120	0	0	0	-1	Area
2	130	0	0	0	-1	Basin
2	140	0	0	0	-1	Bench
2	150	0	0	0	-1	Cave
2	160	0	0	0	-1	Cliff
2	170	0	0	0	-1	Crater
2	180	0	0	0	-1	Flat
2	200	0	0	0	-1	Forest
2	210	0	0	0	-1	Gap
2	220	0	0	0	-1	Island
2	230	0	0	0	-1	Isthmus
2	340	0	0	0	-1	Pass
2	350	0	0	0	-1	Peak
2	360	0	0	0	-1	Pillar
2	370	0	0	0	-1	Plain
2	380	0	0	0	-1	Range
2	390	0	0	0	-1	Ridge
2	400	0	0	0	-1	Slope
2	410	0	0	0	-1	Summit
2	420	0	0	0	-1	Valley
2	430	0	1	0	-1	Mountain, Hill
2	440	0	1	0	-1	Rock
2	450	0	1	0	-1	Meadow
2	460	0	1	0	-1	Desert
2	470	0	1	0	-1	Plateau
2	480	0	1	0	-1	PHYSICAL FEATURE, CLASS UNKNOWN
2	490	0	0	0	-1	IMPROVED LANDS
2	500	0	0	0	-1	CROPLAND
2	510	0	0	0	-1	GRASSY/PHREATO./OPEN WATER AREAS
2	520	0	0	0	-1	RANGELAND
2	540	0	0	0	-1	NON-AGRICULTURAL USE
2	790	0	0	0	-1	HORTICULTURE & SPECIALTY CROPS
2	800	0	0	0	-1	ROW AND CLOSE GROWN CROPS
2	810	0	0	0	-1	FRUIT

Appendix B: IBS Attribute Dictionary
SURFACE COVER

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
2	820	0	0	0	-1	NUTS
2	830	0	0	0	-1	BUSH FRUIT
2	840	0	0	0	-1	BERRIES
2	850	0	0	0	-1	OTHER HORTICULTURE
2	860	0	0	0	-1	OTHER SPECIALTY CROPS
2	870	0	0	0	-1	CHERRY
2	880	0	0	0	-1	APPLE
2	890	0	0	0	-1	PEACH
2	900	0	0	0	-1	PEAR
2	910	0	0	0	-1	APRICOT
2	920	0	0	0	-1	OTHER FRUIT
2	930	0	0	0	-1	WALNUT
2	940	0	0	0	-1	PECAN
2	950	0	0	0	-1	OTHER NUTS
2	960	0	0	0	-1	GRAIN
2	970	0	0	0	-1	VEGETABLES
2	980	0	0	0	-1	FORAGE CROPS
2	990	0	0	0	-1	HAYLAND CROPS
2	1000	0	0	0	-1	OTHER CROP
2	1010	0	0	0	-1	CORN
2	1020	0	0	0	-1	SORGHUM
2	1030	0	0	0	-1	WHEAT
2	1040	0	0	0	-1	BARLEY
2	1050	0	0	0	-1	OATS
2	1060	0	0	0	-1	OTHER GRAINS
2	1070	0	0	0	-1	DRY BEANS
2	1080	0	0	0	-1	SAFFLOWER
2	1100	0	0	0	-1	OTHER GRAIN, BEANS, SEEDS
2	1110	0	0	0	-1	POTATOES
2	1120	0	0	0	-1	ONIONS
2	1130	0	0	0	-1	BEANS
2	1140	0	0	0	-1	TOMATOES
2	1150	0	0	0	-1	SWEET CORN
2	1160	0	0	0	-1	OTHER VEGETABLES
2	1170	0	0	0	-1	ALFALFA
2	1180	0	0	0	-1	GRASS HAY
2	1190	0	0	0	-1	GRASS/TURF
2	1200	0	0	0	-1	PASTURE
2	1220	0	0	0	-1	OTHER FORAGE CROP
2	1230	0	0	0	-1	OTHER HAYLAND CROPS
2	1240	0	0	0	-1	FALLOW
2	1250	0	0	0	-1	IDLE
2	1260	0	0	0	-1	IRRIGATED
2	1270	0	0	0	-1	NON-IRRIGATED CROPLAND
2	1280	0	0	0	-1	GRASSY/PHREATO./OPEN WATER AREAS/GRASSY ASPECT
2	1290	0	0	0	-1	CATTAIL/BULLRUSH ASPECT
2	1300	0	0	0	-1	WET FLATS
2	1310	0	0	0	-1	GRASSY/PHREATO./OPEN WATER AREAS/SHRUB ASPECT

Appendix B: IBS Attribute Dictionary
SURFACE COVER

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
2	1320	0	0	0	-1	RIPARIAN
2	1330	0	0	0	-1	OPEN WATER
2	1350	0	0	0	-1	RIPARIAN FORESTED ASPECT
2	1360	0	0	0	-1	RIPARIAN SHRUB ASPECT
2	1370	0	0	0	-1	STREAMS
2	1380	0	0	0	-1	RESERVOIRS
2	1390	0	0	0	-1	PONDS & LAKES
2	1400	0	0	0	-1	OTHER OPEN WATER
2	1410	0	0	0	-1	TEMPORARY FLOODED
2	1420	0	0	0	-1	SEWAGE LAGOON
2	1430	0	0	0	-1	EVAPORATION POND
2	1510	0	0	0	-1	ALPINE PLANT COMMUNITIES
2	1520	0	0	0	-1	CONIFER
2	1530	0	0	0	-1	DECIDUOUS
2	1540	0	0	0	-1	RANGELAND & FOREST/GRASSY ASPECT
2	1550	0	0	0	-1	RANGELAND & FOREST/SHRUB ASPECT
2	1560	0	0	0	-1	DOUGLAS FIR - WHITE FIR
2	1570	0	0	0	-1	PONDEROSA PINE
2	1580	0	0	0	-1	FIR - SPRUCE
2	1590	0	0	0	-1	LODGEPOLE PINE
2	1600	0	0	0	-1	PINION PINE - JUNIPER
2	1610	0	0	0	-1	OTHER CONIFER
2	1620	0	0	0	-1	ASPEN
2	1630	0	0	0	-1	MOUNTAIN BRUSH
2	1640	0	0	0	-1	OTHER DECIDUOUS
2	1650	0	0	0	-1	DRY PASTURES - IMPROVED
2	1660	0	0	0	-1	NATIVE GRASSES
2	1670	0	0	0	-1	OTHER GRASS
2	1680	0	0	0	-1	NORTHERN DESERT SHRUBS
2	1690	0	0	0	-1	SOUTHERN DESERT SHRUBS
2	1700	0	0	0	-1	SALT DESERT SHRUBS
2	1710	0	0	0	-1	SAGEBRUSH
2	1720	0	0	0	-1	OTHER NORTHERN DESERT SHRUB
2	1730	0	0	0	-1	CREOSOTE BUSH
2	1740	0	0	0	-1	OTHER SOUTHERN DESERT SHRUB
2	1750	0	0	0	-1	SHADSCALE
2	1760	0	0	0	-1	GREASEWOOD
2	1770	0	0	0	-1	SALTBRUSH
2	1780	0	0	0	-1	DESERT MOLLEY
2	1790	0	0	0	-1	OTHER SALT DESERT SHRUB
2	1800	0	0	0	-1	BARE SOIL/SAND
2	1810	0	0	0	-1	ROCK OUTCROPS
2	1820	0	0	0	-1	EXCAVATED LANDS
2	1830	0	0	0	-1	OTHER BARREN LANDS
2	1840	0	0	0	-1	FARMSTEADS
2	1850	0	0	0	-1	RESIDENTIAL
2	1860	0	0	0	-1	COMMERCIAL/INDUSTRIAL
2	1870	0	0	0	-1	TRANSPORTATION, COMMUNICATIONS, UTILITIES
2	1880	0	0	0	-1	OTHER IMPROVED LANDS

Appendix B: IBS Attribute Dictionary
SURFACE COVER

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
2	1990	0	1	0	-1	OPEN SPACE
2	2000	0	0	0	-1	FARMSTEAD BUILDINGS/HOMES
2	2010	0	0	0	-1	FARMSTEAD OPEN SPACES
2	2020	0	0	0	-1	HIGH DENSITY RESIDENTIAL BUILDINGS/HOMES
2	2030	0	0	0	-1	LOW DENSITY RESIDENTIAL BUILDINGS/HOMES
2	2040	0	0	0	-1	RESIDENTIAL OPEN SPACES
2	2050	0	0	0	-1	RESIDENTIAL IDLE SPACES
2	2060	0	0	0	-1	COMMERCIAL
2	2070	0	0	0	-1	INDUSTRIAL
2	2080	0	0	0	-1	COMMERCIAL/INDUSTRIAL OPEN SPACES
2	2090	0	0	0	-1	DRY SALT FLATS
2	2100	0	0	0	-1	NOT CLASSIFIED
2	2110	0	0	0	-1	OTHER BARE SOIL/SAND

**Appendix B: IBS Attribute Dictionary
BOUNDARIES**

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
3	0	0	0	0	-1	BOUNDARIES
3	10	0	0	0	-1	Monumented point on a boundary
3	15	0	0	0	29	State boundary
3	20	0	0	0	-1	Civil township, district, precinct, or barrio
3	30	0	0	0	-1	Large incorporated city
3	40	0	0	0	-1	Nat. park, monumnt, lakeshore, prkwy, battlefld, rec. area
3	45	0	0	0	-1	Large city, county or private park
3	47	0	0	0	-1	Small city, county, or private park
3	50	0	0	0	-1	National forest or grassland
3	60	0	0	0	-1	National wildlife refuge, game preserve, or fish hatchery
3	70	0	0	0	-1	National scenic waterway or wilderness area
3	80	0	0	0	-1	Indian reservation
3	90	0	0	0	-1	Military reservation (active)
3	100	0	0	0	-1	Non-military government reservation
3	110	0	0	0	-1	Federal prison
3	120	0	0	0	-1	State park, recreation area, arboretum, or lake
3	130	0	0	0	-1	State wildlife refuge, game preserve, or fish hatchery
3	131	0	1	0	-1	CRITICAL WILDLIFE HABITAT BOUNDARY:
						FISHERIES
3	132	0	1	0	-1	CRITICAL WILDLIFE HABITAT BOUNDARY:
						BIG GAME
3	133	0	1	0	-1	CRITICAL WILDLIFE HABITAT BOUNDARY:
						UPLAND GAME BIRD
3	135	0	1	0	-1	OTHER FEDERAL LAND
3	140	0	0	0	-1	State forest or grassland
3	150	0	0	0	-1	State prison
3	160	0	0	0	-1	County game preserve
3	170	0	0	0	25	County Boundary
3	180	0	0	0	24	Small city, village, town, borough, or hamlet
3	185	0	0	0	-1	International treaty line
3	190	0	0	0	-1	USSR
3	200	0	0	0	-1	Canada
3	210	0	0	0	-1	Mexico
3	220	0	0	0	-1	Non-sovereign area outside of United States boundaries
3	225	0	0	0	-1	National boundary (land)
3	226	0	0	0	-1	National boundary (water)
3	227	0	0	0	-1	Continental Divide
3	230	0	0	0	-1	Approximate boundary
3	240	0	0	0	-1	Indefinite boundary
3	250	0	0	0	-1	Disputed boundary
3	260	0	0	0	-1	Historical line
3	270	0	0	0	-1	Boundary closure line
3	280	0	0	0	-1	Reference monuments for monumented point on boundary
3	290	0	0	0	-1	Civil
3	300	0	0	0	-1	Populated Place (ppl)
3	310	0	0	0	-1	Park

Appendix B: IBS Attribute Dictionary
BOUNDARIES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
3	400	0	0	0	-1	State FIPS code
3	405	0	0	0	29	Congressional district State code
3	406	0	0	0	28	Congressional district FIPS code
3	410	0	0	0	-1	County or county equivalent FIPS code
3	450	0	0	0	-1	Monument numbers
3	460	0	0	0	-1	Nuclear Site Boundary
3	470	0	0	0	-1	Site Center - 10Mile Radius
3	480	0	3	2	-1	EVACUATION BOUNDARY
3	490	0	1	0	-1	NONVISIBLE BOUNDARY, CLASS UNKNOW
3	500	0	1	0	-1	NONVISIBLE POLITICAL BOUNDARY
3	510	0	1	0	-1	OFFSET CORPORATE BOUNDARY
3	520	0	1	0	-1	CORPORATE CORRIDOR
3	530	0	1	0	-1	NONVISIBLE INTERPOLATED BOUNDARY
3	540	0	1	0	-1	FEATURE EXTENSION
3	550	0	1	0	-1	AUTOMATED EXTENSION
3	560	0	1	0	-1	MANUALLY ADDED BLOCK EXTENSION
3	570	0	1	0	-1	CLOSURE EXTENSION
3	580	0	1	0	-1	NONVISISBLE SEPERATION LINE
3	590	0	1	0	-1	NONVISISBLE CORPORATE CORRIDOR
						CENTERLINE
3	600	0	1	0	-1	POINT-TO-POINT LINE
3	610	0	1	0	-1	PROPERTY LINE
3	620	0	1	0	-1	ZIP CODE BOUNDARY
3	630	0	1	0	-1	MAP EDGE
3	640	0	1	0	-1	STATISTICAL AREA BOUNDARY
3	650	0	1	0	-1	1980STATISTICAL AREA BOUNDARY
3	660	0	1	0	-1	1990BLOCK BOUNDARY
3	670	0	1	0	-1	URBANIZED AREA LAND USE BOUNDARY
3	680	0	1	0	-1	1990STATISTICAL AREA BOUNDARY
3	690	0	7	0	-1	DAMAGE ASSESSMENT AREA
3	700	0	7	0	-1	CGNTAMINATED AREA
3	710	0	7	0	-1	EMERGENCY PLANNING ZONE BOUNDARY
3	720	0	7	0	-1	NATIONAL DEFENSE BOUNDARY
3	750	0	1	0	-1	KNOWN POLYGON ID
3	800	0	1	0	-1	FIPS MCD/CCD BOUNDARY (DIGITS 3-5)
3	810	0	1	0	-1	FIPS MCD/CCD BOUNDARY (DIGITS 1-2)
3	820	0	1	0	-1	FIPS PLACE BOUNDARY (DIGITS 3-5)
3	830	0	1	0	-1	FIPS PLACE BOUNDARY (DIGITS 1-2)
3	840	0	1	0	-1	CENSUS TRACT/BNA BOUNDARY
3	850	0	1	0	-1	CENSUS TRACT/BNA BOUNDARY SUFFIX
3	860	0	1	0	-1	CENSUS BLOCK BOUNDARY SUFFIX
3	870	0	1	0	-1	FIPS STATE
3	880	0	1	0	-1	FIPS COUNTY
3	890	0	1	0	-1	FIPS MCD/CCD (DIGITS 3-5)
3	900	0	1	0	-1	FIPS MCD/CCD (DIGITS 1-2)
3	910	0	1	0	-1	FIPS PLACE (DIGITS 3-5)
3	920	0	1	0	-1	FIPS PLACE (DIGITS1-2)
3	930	0	1	0	-1	CENSUS TRACT/BNA
3	940	0	1	0	-1	CENSUS TRACT /BNA SUFFIX
3	950	0	1	0	-1	CENSUS BLOC..

**Appendix B: IBS Attribute Dictionary
BOUNDARIES**

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Declr</u>	<u>Attribute Description</u>
3	960	0	1	0	-1	CENSUS BLOCK SUFFIX
3	970	0	1	0	-1	BLOCK GROUP

Appendix B: IBS Attribute Dictionary
ROADS AND TRAILS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
5	0	0	0	0	-1	ROADS AND TRAILS
5	10	0	0	0	-1	Bridge abutment
5	20	0	0	0	-1	Tunnel portal
5	30	0	0	0	-1	Gate
5	40	0	0	0	-1	Cul-desac
5	50	0	0	0	-1	Dead end
5	51	0	0	0	-1	Interstate (Proposed)
5	52	0	0	0	30	Interstate
5	53	0	0	0	-1	Interstate (Under Construction)
5	54	0	0	0	22	U.S. Highway
5	55	0	0	0	-1	U.S. Highway (Under Construction)
5	56	0	0	0	15	State Highway
5	57	0	0	0	-1	State Highway (Under Construction)
5	58	0	0	0	7	Secondary state and county
5	59	0	0	0	-1	Secondary state and county (Under Construction)
5	60	0	0	0	-1	Primary route, class 1, symbol undivided
5	70	0	0	0	-1	Primary route, class 1, symbol divided by centerline
5	80	0	0	0	-1	Primary route, class 1, divided, lanes separated
5	90	0	0	0	-1	Primary route, class 1, one way, other than divided highway
5	91	0	1	0	-1	PRIMARY ROUTE, CLASS 1
5	100	0	0	0	-1	Secondary route, class 2, symbol undivided
5	110	0	0	0	-1	Secondary route, class 2, symbol divided by centerline
5	120	0	0	0	-1	Secondary route, class 2, symbol divided, lanes separated
5	130	0	0	0	-1	Secondary route, class 2, one way, other than divided highway
5	131	0	1	0	-1	SECONDARY ROUTE, CLASS 2
5	140	0	0	0	-1	Road or street, class 3
5	141	0	1	0	-1	ROAD, CLASS 3, DIVIDED
5	142	0	1	0	-1	ROAD, CLASS 3, UNDIVIDED
5	150	0	0	0	-1	Road or street, class 4
5	151	0	1	0	-1	ROAD OR STREET, CLASS 4, DIVIDED
5	152	0	1	0	-1	ROAD OR STREET, CLASS 4, UNDIVIDED
5	160	0	0	0	-1	Trail, class 5, other than four wheel drive vehicle
5	170	0	0	0	-1	Trail, class 5, four wheel drive vehicle
5	171	0	1	0	-1	TRAIL, CLASS 5, UNDIVIDED
5	172	0	1	0	-1	ROAD, CLASSIFICATION UNKNOWN
5	173	0	1	0	-1	ROAD, UNDIVIDED
5	174	0	1	0	-1	ROAD DIVIDED
5	175	0	0	0	-1	Interstate Connector
5	179	0	1	0	-1	ROAD-RELATED ATTRIBUTE ADDED BY JRW 'CUZ FILE REFD IT
5	180	0	0	0	-1	Bridge
5	181	0	0	0	-1	Footbridge
5	190	0	0	0	-1	Ferry crossing
5	200	0	0	0	-1	Perimeter of parking area
5	210	0	0	0	-1	Arbitrary extension of line (join or closure)
5	220	0	0	0	-1	Road or street, class 3, symbol divided by centerline
5	230	0	0	0	-1	Road or street, class 3, divided, lanes separated

Appendix B: IBS Attribute Dictionary
ROADS AND TRAILS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
5	240	0	0	0	-1	Traffic circle
5	250	0	0	0	-1	Cloverleaf or interchange
5	260	0	0	0	-1	Toll gate, toll plaza or perimeter of toll plaza
5	270	0	0	0	-1	Historical
5	280	0	0	0	-1	In tunnel
5	290	0	0	0	-1	Overpassing, on bridge
5	300	0	0	0	-1	Under construction, classification known
5	310	0	0	0	-1	Under construction, classification unknown
5	320	0	0	0	-1	Labeled "old railroad grade"
5	330	0	0	0	-1	Submerged or in ford
5	340	0	0	0	-1	Underpassing
5	350	0	0	0	-1	Limited access
5	360	0	0	0	-1	Toll Road
5	365	0	0	0	-1	Toll Connector
5	370	0	0	0	-1	Privately operated or controlled public access
5	380	0	0	0	-1	Proposed
5	390	0	0	0	-1	Double-decked
5	400	0	0	0	-1	In service facility or rest area
5	410	0	0	0	-1	Elevated
5	420	0	0	0	-1	Bypass route
5	430	0	0	0	-1	Alternate route
5	440	0	0	0	-1	Business route
5	450	0	0	0	-1	On drawbridge
5	453	0	1	0	-1	ROAD WIDTH 16-25FEET, .010INCHES AT 1:24,000
5	454	0	1	0	-1	ROAD WIDTH 26-35FEET, .015INCHES AT 24:000
5	455	0	1	0	-1	ROAD WIDTH 36-45FEET, .020INCHES AT 1:24,000
5	460	0	0	0	-1	Road width 46-55feet, .025inches at 1:24,000
5	470	0	0	0	-1	Road width 46-65feet, .030inches at 1:24,000
5	480	0	0	0	-1	Road width 66-75feet, .035inches at 1:24,000
5	490	0	0	0	-1	Road width 76-85feet, .040inches at 1:24,000
5	500	0	0	0	-1	Road width 86-95feet, .045inches at 1:24,000
5	510	0	0	0	-1	Road width 96-105feet, .055inches at 1:24,000
5	520	0	0	0	-1	Road width 106-115feet, .055inches at 1:24,000
5	530	0	0	0	-1	Road width 116-125feet, .060inches at 1:24,000
5	540	0	0	0	-1	Road width 126-135feet, .065inches at 1:24,000
5	550	0	0	0	-1	Road width 136-145feet, .070inches at 1:24,000
5	600	0	0	0	-1	Number of lanes
5	650	0	0	0	-1	Interstate route number
5	700	0	0	0	-1	U.S. route number
5	750	0	0	0	-1	State route number
5	800	0	0	0	-1	Reservation, park, or military route number
5	850	0	0	0	-1	County route
5	860	0	1	0	-1	RAIL LINE IN CENTER
5	888	500	1	0	21	DECLUTTERING ATTRIBUTE
5	930	0	1	0	-1	SERVICE DRIVE
5	940	0	1	0	-1	SPECIAL ROAD FEATURE
5	950	0	1	0	-1	OTHER THOROUGHFARE
5	960	0	1	0	-1	WALKWAY

Appendix B: IBS Attribute Dictionary
ROADS AND TRAILS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
5	970	0	1	0	-1	STAIRWAY
5	980	0	1	0	-1	ALLEY
5	990	0	1	0	-1	WEIGH STATION
5	1000	0	1	0	-1	SPUR
5	1010	0	1	0	-1	XXYY ALPHABETIC PORTION OF ROUTE NUMBER
5	1020	0	1	0	-1	COINCIDENT FEATURE
5	1030	0	1	0	-1	BEST ESTIMATE OF CLASS OR POSITION
5	1040	0	1	0	-1	PHOTOREVISED FEATURE
5	1100	0	1	0	-1	TRAFFIC CONTROL
5	1101	0	1	0	-1	TRAFFIC CONTROL (INACT)

Appendix B: IBS Attribute Dictionary
RAILROADS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
6	0	0	0	0	-1	RAILROADS
6	10	0	0	0	-1	Bridge abutment
6	20	0	0	0	-1	Tunnel portal
6	30	0	0	0	-1	Railroad
6	40	0	0	0	-1	Railroad in street or road
6	50	0	0	0	-1	Carline
6	60	0	0	0	-1	Cog railroad, incline railway, logging tram
6	70	0	0	0	-1	Ferry crossing
6	80	0	0	0	-1	Railroad siding
6	90	0	0	0	-1	Perimeter or limit of yard
6	100	0	0	0	-1	Arbitrary line extension (join, closure)
6	110	0	0	0	-1	Railroad station, perimeter of station
6	120	0	0	0	-1	Turntable
6	130	0	0	0	-1	Roundhouse
6	140	0	0	0	-1	Historical
6	150	0	0	0	-1	In tunnel
6	160	0	0	0	-1	Overpassing, on bridge
6	170	0	0	0	-1	Abandoned
6	180	0	0	0	-1	Dismantled
6	190	0	0	0	-1	Underpassing
6	200	0	0	0	-1	Narrow gauge
6	210	0	0	0	-1	In snowshed or under structure
6	220	0	0	0	-1	Under construction
6	230	0	0	0	-1	Elevated
6	240	0	0	0	-1	Rapid transit
6	250	0	0	0	-1	On drawbridge
6	300	0	0	0	-1	Number of tracks
6	310	0	1	0	-1	RAILROAD MAIN TRACK
6	320	0	1	0	-1	RAILROAD SPUR TRACK
6	330	0	1	0	-1	RAILROAD YARD
6	340	0	1	0	-1	OTHER RAIL FEATURE
6	350	0	1	0	-1	PRIVATE
6	360	0	1	0	-1	U.S. GOVERNMENT
6	370	0	1	0	-1	JUXTAPOSITION
6	380	0	1	0	-1	PHOTOREVISED FEATURE
6	390	0	1	0	-1	NUMBER OF TRACKS
6	400	0	1	0	-1	BEST ESTIMATE OF CLASS OR POSITION
6	410	0	1	0	-1	COINCIDENT FEATURE
6	3646	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 10TO 19

Appendix B: IBS Attribute Dictionary
PIPELINES, TRANS. LINES, MISC. TRANSPORTATION FEATURES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
7	0	0	0	0	-1	PIPELINES, TRANS. LINES, MISC. TRANSPORTATION FEATURES
7	10	0	0	0	-1	End of trans. line at power sta., substa., hydro. plant
7	20	0	0	0	-1	End of pipeline at oil or gas field
7	30	0	0	0	-1	End of pipeline at refinery, depot, or tank farm
7	40	0	0	0	-1	Pipeline
7	50	0	0	0	-1	Power transmission line
7	60	0	0	0	-1	Telephone or telegraph line
7	70	0	0	0	-1	Aerial tramway, monorail, ski lift
7	80	0	0	0	-1	Power Station
7	90	0	0	0	-1	Substation
7	100	0	0	0	-1	Hydroelectric Plant
7	110	0	0	0	-1	Landing strip, airport, perimeter of airport
7	111	0	0	0	-1	AIRPORT
7	112	0	6	0	-1	CIVILIAN AIR HUB
7	115	0	0	0	-1	Military Landing strip, airport, perimeter of airport
7	120	0	0	0	-1	Heliport, perimeter of heliport
7	130	0	0	0	-1	Launch complex, perimeter of launch complex
7	140	0	0	0	-1	Pumping station (other than water)
7	150	0	0	0	-1	Seaplane ramp or landing area
7	160	0	0	0	-1	Underground
7	170	0	0	0	-1	Under construction
7	180	0	0	0	-1	Abandoned
7	190	0	0	0	-1	Above ground
7	200	0	0	0	-1	Labeled "closed"
7	210	0	0	0	-1	Unimproved, loose surface
7	220	0	1	0	-1	SPECIAL TRANSPORTATION FEATURE, CLASS UNKNOWN
7	230	0	1	0	-1	OTHER SPECIAL TRANSPORTATION FEATURE
7	240	0	1	0	-1	FEATURE NOT ELSEWHERE CLASSIFIED
7	250	0	1	0	-1	TRANSPORTATION TERMINAL
7	260	0	1	0	-1	ARBITRARY EXTENSION CLOSURE LINE
7	270	0	1	0	-1	SUBMERGED
7	280	0	1	0	-1	NUCLEAR
7	290	0	1	0	-1	PHOTOREVISED FEATURE
7	300	0	1	0	-1	ANGLE OF CLOCKWISE ROTATION
7	310	0	1	0	-1	BEST ESTIMATE OF CLASS OR POSITION
7	320	0	1	0	-1	COINCIDENT FEATURE
7	330	0	1	0	-1	SEAPLANE ANCHORAGE
7	340	0	1	0	-1	MARINE TERMINAL

Appendix B: IBS Attribute Dictionary
OTHER SIGNIFICANT MAN-MADE STRUCTURES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
8	0	0	0	0	-1	OTHER SIGNIFICANT MAN-MADE STRUCTURES
8	1	0	0	0	-1	End point of linear man-made feature
8	2	0	0	0	-1	Point on linear man-made feature
8	10	0	0	0	-1	Church complex
8	20	0	0	0	-1	School campus
8	30	0	0	0	-1	Hospital complex
8	31	0	1	0	-1	VETERANS ADMINISTRATION HOSPITAL COMPLEX
8	32	0	1	0	-1	HOSPITAL (INACTIVE)
8	35	0	1	0	-1	NURSING HOME
8	40	0	0	0	-1	Orphanage
8	45	0	1	0	-1	CUSTODIAL FACILITY
8	46	0	1	0	-1	COUNTY HOME OR POOR FARM
8	50	0	0	0	-1	Prison compound
8	55	0	1	0	-1	HALFWAY HOUSE
8	60	0	0	0	-1	Trailer park
8	70	0	0	0	-1	Ski area
8	80	0	0	0	-1	Stadium
8	90	0	0	0	-1	Athletic fields
8	100	0	0	0	-1	Golf course
8	110	0	0	0	-1	Shopping center
8	120	0	0	0	-1	Zoo
8	130	0	0	0	-1	Drive-in theater
8	140	0	0	0	-1	Race track
8	150	0	0	0	-1	Raceway, drag strip
8	160	0	0	0	-1	Marina
8	170	0	0	0	-1	Cable area
8	175	0	1	0	-1	BUS TERMINAL
8	180	0	0	0	-1	Urban area, house omission area
8	181	0	0	0	-1	PUBLIC UTILITY
8	185	0	0	0	-1	TRANSPORTATION FACILITY
8	190	0	0	0	-1	Industrial park
8	195	0	0	0	-1	PRIVATE BUSINESS
8	200	0	0	0	-1	Materials storage area
8	205	0	4	0	-1	NUCLEAR PLANT
8	210	0	0	0	-1	Refinery or plant
8	215	0	1	0	-1	EMPLOYMENT CENTER
8	216	0	1	0	-1	OTHER EMPLOYMENT CENTER
8	220	0	0	0	-1	Tailings
8	230	0	0	0	-1	Intricate surface area
8	240	0	0	0	-1	Oil sump or sludge pit
8	250	0	0	0	-1	Slurry disposal area
8	260	0	0	0	-1	Tank farm
8	270	0	0	0	-1	Feedlot
8	280	0	0	0	-1	Experimental farm
8	290	0	0	0	-1	Proving grounds
8	300	0	0	0	-1	Firing range
8	310	0	0	0	-1	Conveyor
8	320	0	0	0	-1	Boardwalk
8	330	0	0	0	-1	Wall

Appendix B: IBS Attribute Dictionary
OTHER SIGNIFICANT MAN-MADE STRUCTURES

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
8	340	0	0	0	-1	Sea wall
8	350	0	0	0	-1	Levee
8	360	0	0	0	-1	Fence Line
8	370	0	0	0	-1	Cross
8	380	0	0	0	-1	Flag
8	390	0	0	0	-1	Sewer line
8	400	0	0	0	-1	Spoil bank
8	410	0	0	0	-1	Coke ovens
8	420	0	0	0	-1	Arbitrary closure line
8	430	0	0	0	-1	Grave site
8	440	0	0	0	-1	Historical marker
8	441	0	1	0	-1	SPECIAL PURPOSE LANDMARK
8	445	0	1	0	-1	LANDMARK FEATURE, CLASSIFICATION UNKNOWN OR NOT ELSEWHERE
8	450	0	0	0	-1	Mine funnel entrance or cave
8	460	0	0	0	-1	Mine shaft
8	470	0	0	0	-1	Prospect
8	480	0	0	0	-1	Tower
8	490	0	0	0	-1	Burner/stack
8	500	0	0	0	-1	Drilled well
8	510	0	0	0	-1	Cliff dwelling
8	520	0	0	0	-1	Light
8	530	0	5	0	-1	SHELTER
8	536	0	1	0	-1	SHELTER (INACTIVE)
8	540	0	0	0	-1	Class 1building
8	550	0	0	0	-1	Class 2building
8	560	0	0	0	-1	Police Station.
8	561	0	1	0	-1	POLICE STATION (INACTIVE)
8	570	0	0	0	-1	Fire Station
8	571	0	1	0	-1	FIRE STATION (INACTIVE)
8	575	0	10	0	-1	RESCUE SQUAD
8	576	0	1	0	-1	RESCUE SQUAD (INACTIVE)
8	580	0	0	0	-1	Municipal building
8	585	0	0	0	-1	GOVERNMENT BUILDING
8	590	0	0	0	-1	Court house
8	600	0	0	0	-1	Post office
8	610	0	0	0	-1	City or town hall
8	620	0	1	0	-1	EMERGENCY OPERATING CENTER
8	621	0	1	0	-1	EMERGENCY OPERATIONS CENTER (INACTIVE)
8	630	0	1	0	-1	HOTEL
8	635	0	1	0	-1	ROOMING OR BOARDING HOUSE
8	636	0	1	0	-1	SORORITY OR FRATERNITY
8	637	0	1	0	-1	HOUSING FACILITY FOR WORKERS
8	640	0	0	0	-1	Town, village, settlement, locality, unincorporated village
8	660	0	0	0	-1	Cemetery
8	670	0	0	0	-1	Sewage disposal plant
8	680	0	0	0	-1	Waterworks
8	690	0	0	0	-1	Oil reservoir

Appendix B: IBS Attribute Dictionary
OTHER SIGNIFICANT MAN-MADE STRUCTURES

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
8	700	0	0	0	-1	Drilled well field
8	710	0	0	0	-1	Tank
8	720	0	0	0	-1	Oil or gas platform
8	730	0	0	0	-1	Mine
8	731	0	0	0	-1	Mine dump
8	732	0	0	0	-1	Mine (open pit)
8	733	0	0	0	-1	Quarry
8	735	0	0	0	-1	Mine (strip)
8	750	0	1	0	-1	LAND FILLS
8	760	0	0	0	-1	Pit, unconsolidated materials
8	770	0	0	0	-1	Radio or television facility
8	780	0	0	0	-1	Storage bin
8	790	0	0	0	-1	Fairgrounds
8	800	0	0	0	-1	Rodeo grounds
8	810	0	0	0	-1	Corral
8	820	0	0	0	-1	Boat ramp
8	830	0	0	0	-1	Campground, campsite
8	831	0	1	0	-1	REC AREA
8	840	0	0	0	-1	Fort
8	850	0	0	0	-1	Swimming pool
8	860	0	0	0	-1	Archeological site, ruins
8	870	0	0	0	-1	Cliff dwelling
8	880	0	0	0	-1	Picnic area
8	890	0	0	0	-1	Port of Entry
8	900	0	0	0	-1	Pile, dolphin, stump or snag(s)
8	910	0	0	0	-1	Breakwater, jetty, pier or wharf
8	920	0	0	0	-1	Exposed wreck or wreckage
8	930	0	0	0	-1	Sunken wreck
8	940	0	0	0	-1	Drydock
8	950	0	0	0	-1	Underground
8	960	0	0	0	-1	Under construction
8	970	0	0	0	-1	Abandoned
8	980	0	0	0	-1	Water
8	990	0	0	0	-1	Oil
8	1000	0	0	0	-1	Gas
8	1010	0	0	0	-1	Chemical
8	1020	0	0	0	-1	Covered
8	1030	0	0	0	-1	Gravel
8	1040	0	0	0	-1	Sand
8	1050	0	0	0	-1	Clay
8	1060	0	0	0	-1	Borrow
8	1070	0	0	0	-1	Radio
8	1080	0	0	0	-1	Lookout
8	1090	0	0	0	-1	Unincorporated
8	1100	0	0	0	-1	No population
8	1110	0	0	0	-1	Submerged
8	1120	0	0	0	-1	Ruin
8	1130	0	0	0	-1	Displaced or reversed to clear other symbol
8	1200	0	0	0	-1	Locale
8	1210	0	0	0	-1	Military

Appendix B: IBS Attribute Dictionary
OTHER SIGNIFICANT MAN-MADE STRUCTURES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
8	1300	0	0	0	-1	Oilfield
8	1400	0	1	0	-1	SIREN - ROTATING
8	1401	0	1	0	-1	SIREN - NON-ROTATING
8	1402	0	1	0	-1	SIREN

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	0	0	0	0	-1	MISCELLANEOUS
9	10	0	0	0	-1	Population number
9	20	0	0	0	-1	Population number in 10's
9	21	0	1	0	-1	POPULATION 0-5YRS IN 10'S
9	22	0	1	0	-1	POPULATION 6-19YRS IN 10'S
9	23	0	1	0	-1	POPULATION 20-64YRS IN 10'S
9	24	0	1	0	-1	POPULATION 65YRS OR OLDER IN 10'S
9	30	0	0	0	-1	Population number in 100's
9	31	0	1	0	-1	POPULATION 0-5YRS IN 100'S
9	32	0	1	0	-1	POPULATION 6-19YRS IN 100'S
9	33	0	1	0	-1	POPULATION 20-64YRS IN 100'S
9	34	0	1	0	-1	POPULATION 65YRS OR OLDER IN 100'S
9	40	0	1	0	-1	Population number in 1000's
9	41	0	1	0	-1	POPULATION 0-5YRS IN 1000'S
9	42	0	1	0	-1	POPULATION 6-19YRS IN 1000'S
9	43	0	1	0	-1	POPULATION 20-64YRS IN 1000'S
9	44	0	1	0	-1	POPULATION 65YRS OR OLDER IN 1000'S
9	50	0	1	0	-1	SPECIAL POPULATION
9	51	0	1	0	-1	INSTITUTIONAL, TRAANSIT-DEPENDENT POPULATION
9	52	0	1	0	-1	NON-INSTITUTIONAL, TRANSIT-DEPENDENT POPULATION
9	53	0	1	0	-1	CREW OF VESSEL
9	99	0	0	0	-1	Polygon fill descriptor (graphics: spacing, pen, fill)
9	100	0	0	0	-1	Sensors
9	200	0	0	0	-1	Basic contour
9	210	0	0	0	-1	Carrying contour
9	220	0	0	0	-1	Supplementary contour
9	230	0	0	0	-1	Continuation contour
9	240	0	0	0	-1	Auxiliary contour
9	250	0	0	0	-1	Bathymetric contour
9	260	0	0	0	-1	Depth curve
9	270	0	0	0	-1	Spot elevation, less than third order
9	280	0	0	0	-1	Decimal fractions of feet or meters
9	290	0	0	0	-1	Approximate
9	300	0	0	0	-1	Depression
9	310	0	0	0	-1	Glacier or snow field
9	320	0	0	0	-1	Underwater
9	330	0	0	0	-1	Cut
9	340	0	0	0	-1	Fill
9	350	0	0	0	-1	Levee
9	360	0	0	0	-1	Elevation in whole feet or meters, right-justified
9	370	0	0	0	-1	Horiz. control station - 3rd order or better, permanent mark
9	375	0	0	0	-1	Horizontal control station - 3rd order or better
9	380	0	0	0	-1	Horizontal control station - vertical angle, bench mark
9	385	0	0	0	-1	Horizontal control station - checked spot elevation
9	390	0	0	0	-1	Vertical control station - 3rd order or better - tablet
9	395	0	0	0	-1	Vert. cont. sta. -recov. mark-3rd ord. or better - no tablet

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
9	400	0	0	0	-1	Boundary monument - 3rd order or better - tablet
9	405	0	0	0	-1	Boundary monument - 3rd order or better - no tablet
9	410	0	0	0	-1	Reference monument
9	420	0	0	0	-1	U.S. Mineral or location monument
9	430	0	0	0	-1	Other control point
9	500	0	0	0	-1	State FIPS code
9	510	0	0	0	-1	County FIPS code
9	520	0	0	0	-1	Elevation to nearest foot
9	530	0	0	0	-1	Elevation to nearest meter
9	550	0	0	0	-1	Evacuee Origination Points
9	560	0	0	0	-1	Evacuee Reception/Care Points
9	561	0	1	0	-1	RECEPTION CENTER
9	562	0	1	0	-1	RECEPTION CENTER CAPACITY
9	563	0	1	0	-1	RECEPTION CENTER LOAD
9	565	0	1	0	-1	RECEPTION CENTER (INACTIVE)
9	566	0	1	0	-1	DECONTAMINATION CENTER
9	567	0	1	0	-1	DECONTAMINATION CENTER (INACTIVE)
9	570	0	1	0	-1	MORGUE
9	571	0	1	0	-1	MORGUE (INACTIVE)
9	600	0	0	0	-1	Time (year/mo)
9	601	0	0	0	-1	Time (day/hr/min)
9	602	0	0	0	-1	Time (milliseconds)
9	603	0	1	0	-1	TIME STEP
9	610	0	1	0	-1	SET CODE
9	611	0	1	0	-1	SET ELEMENT POINTER
9	620	0	1	0	-1	CONCENTRATION PARTS PER MILLION (PPM)
9	621	0	1	0	-1	CONCENTRATION PARTS PER BILLION (PPB)
9	622	0	1	0	-1	HEAT FLUX WATTS/M**2
9	623	0	1	0	-1	HEAT FLUX K WATTS/M**2
9	624	0	1	0	-1	POOL FIRE POOL BOUNDARY
9	630	0	1	0	-1	EXPLOSION DAMAGE CONTOUR
9	631	0	1	0	-1	THRESHOLD LUNG COLLAPSE
9	632	0	1	0	-1	THRESHOLD EAR RUPTURE
9	633	0	1	0	-1	THRESHOLD SKULL DAMAGE
9	634	0	1	0	-1	THRESHOLD FATALITIES
9	635	0	1	0	-1	THRESHOLD GLASS BREAKAGE
9	636	0	1	0	-1	THRESHOLD BUILDING DAMAGE
9	637	0	1	0	-1	DISTANCE IN THOUSANDTHS OF METERS
9	638	0	1	0	-1	DISTANCE IN HUNDREDTHS OF METERS
9	639	0	1	0	-1	DISTANCE IN TENTHS OF METERS
9	640	0	1	0	-1	DISTANCE IN METERS
9	641	0	1	0	-1	YEAR/MONTH DATE FOR TIP OF PLUME
9	642	0	1	0	-1	DAY FOR TIP OF PLUME
9	643	0	1	0	-1	TIME IN TENTHS OF MINUTES OF TIP OF PLUME
9	644	0	1	0	-1	YEAR/MONTH DATE FOR TAIL OF PLUME
9	645	0	1	0	-1	DAY FOR TAIL OF PLUME
9	646	0	1	0	-1	TIME IN TENTHS OF MINUTES FOR TAIL OF PLUME

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	647	0	1	0	-1	MAXIMUM DOSAGE IN MG-MIN/METERS CUBED
9	648	0	1	0	-1	TOTAL DOSAGE IN MG-MIN/METERS CUBED
9	649	0	1	0	-1	LOW PORTION OF DOSAGE IN TENTHS OF %
9	650	0	1	0	-1	MEDIUM PORTION OF DOSAGE IN TENTHS OF %
9	651	0	1	0	-1	HIGH PORTION OF DOSAGE IN TENTHS OF %
9	652	0	1	0	-1	TIME FOR DOSAGE TO EQUAL LOW DOSAGE IN TENTHS OF MINUTES
9	653	0	1	0	-1	TIME FOR DOSAGE TO EQUAL MEDIUM DOSAGE IN TENTHS OF MINUTES
9	654	0	1	0	-1	TIME FOR DOSAGE TO EQUAL HIGH DOSAGE IN TENTHS OF MINUTES
9	655	0	1	0	-1	LOW DOSAGE PLUME IN TENTHS (MG-MIN/M**3)
9	656	0	1	0	-1	MEDIUM DOSAGE PLUME IN TENTHS (MG-MIN/M**3)
9	657	0	1	0	-1	HIGH DOSAGE PLUME IN TENTHS (MG-MIN/M**3)
9	658	0	1	0	-1	LOW CONCENTRATION IN TENTHS (MG/M**3) PLUME
9	659	0	1	0	-1	MEDIUM CONCENTRATION IN TENTHS (MG/M**3) PLUME
9	660	0	1	0	-1	HIGH CONCENTRATION IN TENTHS (MG/M**3) PLUME
9	661	0	1	0	-1	LOW CONCENTRATION IN TENTHS (PPM) PLUME
9	662	0	1	0	-1	MEDIUM CONCENTRATION IN TENTHS (PPM) PLUME
9	663	0	1	0	-1	HIGH CONCENTRATION IN TENTHS (PPM) PLUME
9	664	0	1	0	-1	LOW FUMIGATION CONCENTRATION IN TENTHS PLUME
9	665	0	1	0	-1	MEDIUM FUMIGATION CONCENTRATION IN TENTHS PLUME
9	666	0	1	0	-1	HIGH FUMIGATION CONCENTRATION IN TENTHS PLUME
9	667	0	1	0	-1	WIND DIRECTION (FROM)
9	670	0	7	0	-1	RISK POLYGON
9	671	0	7	0	-1	USER DEFINED RISK POLYGON
9	700	0	5	0	-1	EARTHQUAKE FAULT
9	701	0	5	0	-1	TROPICAL STORM
9	702	0	1	0	-1	HURRICANE
9	703	0	1	0	-1	EARTHQUAKE (ICON)
9	704	0	1	0	-1	FIRE ICON
9	705	0	1	0	-1	BLIZZARD ICON
9	706	0	1	0	-1	TORNADO ICON
9	707	0	1	0	-1	FLOOD ICON
9	708	0	1	0	-1	CITY ICON
9	709	0	1	0	-1	

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	710	0	1	0	-1	POLICE STATION
9	711	0	1	0	-1	FIRE STATION
9	712	0	1	0	-1	MOBILE MEDICAL UNIT
9	713	0	1	0	-1	HOSPITAL RESOURCE
9	714	0	1	0	-1	EQUIPMENT
9	715	0	1	0	-1	PRIVATE RESIDENCE
9	730	0	7	0	-1	SEARCH & RESCUE AREA
9	740	0	1	0	-1	KNOWN POINT ID
9	760	0	1	0	-1	KNOWN ROUTE ID
9	812	0	1	0	-1	ENVIRONMENT REPORT
9	900	0	1	0	-1	N.A.P.B. TARGET -- KILOTONNAGE
9	901	0	1	0	-1	CANADA
9	902	0	1	0	-1	TARGET - MILITARY INSTALLATION
9	903	0	1	0	-1	TARGET -- OTMIL
9	904	0	1	0	-1	TARGET -- PORT
9	905	0	1	0	-1	HAZARD
9	906	0	1	0	-1	HAZMAT SITE
9	907	0	1	0	-1	TARGET - POLITICAL
9	908	0	1	0	-1	TARGET -- POWER
9	909	0	1	0	-1	TARGET -- COFCE
9	1000	0	1	0	-1	TARGET -- CHEMICAL
9	1001	0	1	0	-1	TARGET -- MREFIN
9	1002	0	1	0	-1	ZIP CODE
9	1003	0	1	0	-1	EOC SQUARE FOOTAGE
9	1004	0	1	0	-1	PERSONNEL STAFFING - EMERGENCY
9	1005	0	1	0	-1	PERSONNEL STAFFING - NORMAL
9	1006	0	1	0	-1	REFINERY
9	1007	0	1	0	-1	COAL MINE
9	1008	0	1	0	-1	COKE PRODUCTION
9	1009	0	1	0	-1	NATURAL GAS PRESSURE PLANT
9	1010	0	1	0	-1	NATURAL GAS UNDERGROUND STORAGE
9	1011	0	1	0	-1	PETROLEUM IMPORT FACILITY
9	1012	0	1	0	-1	PORT FACILITY
9	1013	0	1	0	-1	GRAIN STORAGE FACILITY
9	1014	0	1	0	-1	FLOUR MILLS
9	1015	0	1	0	-1	FOOD DISTRIBUTION FACILITY
9	1016	0	1	0	-1	POULTRY PRODUCTION
9	1017	0	1	0	-1	AGRICULTURE EMERGENCY OPS CENTER
9	1018	0	1	0	-1	EGG PRODUCERS
9	1019	0	1	0	-1	FOOD PRODUCTION FACILITY
9	1020	0	0	0	-1	NUMBER OF DAIRY COWS
9	1021	0	1	0	-1	PLANT CAPACITY
9	2001	0	1	0	-1	ALLENS CREEK NPP
9	2002	0	1	0	-1	ARKANSAS NPP
9	2003	0	1	0	-1	DUANE ARNOLD NPP
9	2004	0	1	0	-1	BEAVER VALLEY NPP
9	2005	0	1	0	-1	BELLEFONTE NPP
9	2006	0	1	0	-1	BIG ROCK POINT NPP
9	2007	0	1	0	-1	BRAIDWOOD NPP
9	2008	0	1	0	-1	BROWNS FERRY NPP

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
9	2009	0	1	0	-1	BRUNSWICK NPP
9	2010	0	1	0	-1	BYRON NPP
9	2011	0	1	0	-1	CALLAWAY NPP
9	2012	0	1	0	-1	CALVERT CLIFFS NPP
9	2013	0	1	0	-1	CATAWBA NPP
9	2014	0	1	0	-1	CLINTON NPP
9	2015	0	1	0	-1	COMANCHE PEAK
9	2016	0	1	0	-1	COOK NPP
9	2017	0	1	0	-1	COOPER NPP
9	2018	0	1	0	-1	CRYSTAL RIVER NPP
9	2019	0	1	0	-1	DAVIS-BESSIE NPP
9	2020	0	1	0	-1	DIABLO CANYON NPP
9	2021	0	1	0	-1	DRESDEN NPP
9	2022	0	1	0	-1	FARLEY NPP
9	2023	0	1	0	-1	FERMI NPP
9	2024	0	1	0	-1	FITZPATRICK NPP
9	2025	0	1	0	-1	FORT CALHOUN NPP
9	2026	0	1	0	-1	FORT ST. VRAIN NPP
9	2027	0	1	0	-1	GINNA (BROOKWOOD) NPP
9	2028	0	1	0	-1	GRAND GULF NPP
9	2029	0	1	0	-1	HADDAM NECK (CONN YANKEE) NPP
9	2030	0	1	0	-1	HATCH NPP
9	2031	0	1	0	-1	HOPE CREEK NPP
9	2032	0	1	0	-1	HUMBOLDT BAY NPP
9	2033	0	1	0	-1	INDIAN POINT NPP
9	2034	0	1	0	-1	KEWAUNEE NPP
9	2035	0	1	0	-1	LA CROSSE (GENOA) NPP
9	2036	0	1	0	-1	LASALLE NPP
9	2037	0	1	0	-1	LIMERICK NPP
9	2038	0	1	0	-1	MAINE YANKEE NPP
9	2039	0	1	0	-1	MCGUIRE NPP
9	2040	0	1	0	-1	MILLSTONE NPP
9	2041	0	1	0	-1	MONTICELLO NPP
9	2042	0	1	0	-1	NINE MILE POINT NPP
9	2043	0	1	0	-1	NORTH ANNA NPP
9	2044	0	1	0	-1	OCONEE NPP
9	2045	0	1	0	-1	OYSTER CREEK NPP
9	2046	0	1	0	-1	PALISADES NPP
9	2047	0	1	0	-1	PALO VERDE NPP
9	2048	0	1	0	-1	PEACH BOTTOM NPP
9	2049	0	1	0	-1	PERRY NPP
9	2050	0	1	0	-1	PILGRIM (ROCKY POINT) NPP
9	2051	0	1	0	-1	POINT BEACH NPP
9	2052	0	1	0	-1	PRAIRIE ISLAND NPP
9	2053	0	1	0	-1	QUAD CITIES NPP
9	2054	0	1	0	-1	RANCHO SECO NPP
9	2055	0	1	0	-1	RIVER BEND NPP
9	2056	0	1	0	-1	ROBINSON NPP
9	2057	0	1	0	-1	ST. LUCIE NPP
9	2058	0	1	0	-1	SALEM NPP

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2059	0	1	0	-1	SAN ONOFRE NPP
9	2060	0	1	0	-1	SEABROOK NPP
9	2061	0	1	0	-1	SEQUOYAH NPP
9	2062	0	1	0	-1	SHEARON HARRIS
9	2063	0	1	0	-1	SHOREHAM NPP
9	2064	0	1	0	-1	SOUTH TEXAS NPP
9	2065	0	1	0	-1	SUMMER NPP
9	2066	0	1	0	-1	SURRY NPP
9	2067	0	1	0	-1	SUSQUEHANNA NPP
9	2068	0	1	0	-1	THREE MILE ISLAND NPP
9	2069	0	1	0	-1	TROJAN NPP
9	2070	0	1	0	-1	TURKEY POINT NPP
9	2071	0	1	0	-1	VERMONT YANKEE NPP
9	2072	0	1	0	-1	VOGTLE NPP
9	2073	0	1	0	-1	WPPSS STEAM/N-REACTOR
9	2074	0	1	0	-1	WPPSS 2NPP
9	2075	0	1	0	-1	WATERFORD NPP
9	2076	0	1	0	-1	WOLF CREEK NPP
9	2077	0	1	0	-1	YANKEE NPP
9	2078	0	1	0	-1	ZION NPP
9	2201	0	1	0	-1	SITE NAME: WALLIS, TEXAS
9	2202	0	1	0	-1	SITE NAME: RUSSELLVILLE, ARKANSAS
9	2203	0	1	0	-1	SITE NAME: PALO, IOWA
9	2204	0	1	0	-1	SITE NAME: SHIPPINGPORT, PENNSYLVANIA
9	2205	0	1	0	-1	SITE NAME: SCOTTSBORO, ALABAMA
9	2206	0	1	0	-1	SITE NAME: BIG ROCK POINT, MICHIGAN
9	2207	0	1	0	-1	SITE NAME: BRAIDWOOD, ILLINOIS
9	2208	0	1	0	-1	SITE NAME: DECATUR, ALABAMA
9	2209	0	1	0	-1	SITE NAME: SOUTHPORT, NORTH CAROLINA
9	2210	0	1	0	-1	SITE NAME: BYRON, ILLINOIS
9	2211	0	1	0	-1	SITE NAME: FULTON, MISSOURI
9	2212	0	1	0	-1	SITE NAME: LUSBY, MARYLAND
9	2213	0	1	0	-1	SITE NAME: LAKE WYLIE, SOUTH CAROLINA
9	2214	0	1	0	-1	SITE NAME: CLINTON, ILLINOIS
9	2215	0	1	0	-1	SITE NAME: GLEN ROSE, TEXAS
9	2216	0	1	0	-1	SITE NAME: BRIDGMAN, MICHIGAN
9	2217	0	1	0	-1	SITE NAME: BROWNVILLE, NEBRASKA
9	2218	0	1	0	-1	SITE NAME: RED LEVEL, FLORIDA
9	2219	0	1	0	-1	SITE NAME: OAK HARBOR, OHIO
9	2220	0	1	0	-1	SITE NAME: DIABLO CANYON, CALIFORNIA
9	2221	0	1	0	-1	SITE NAME: MORRIS, ILLINOIS
9	2222	0	1	0	-1	SITE NAME: DOTHAN, ALABAMA
9	2223	0	1	0	-1	SITE NAME: NEWPORT, MICHIGAN
9	2224	0	1	0	-1	SITE NAME: SCRIBA, NEW YORK
9	2225	0	1	0	-1	SITE NAME: FORT CALHOUN, NEBRASKA
9	2226	0	1	0	-1	SITE NAME: PLATTVILLE, COLORADO
9	2227	0	1	0	-1	SITE NAME: ONTARIO, NEW YORK
9	2228	0	1	0	-1	SITE NAME: PORT GIBSON, MISSISSIPPI
9	2229	0	1	0	-1	SITE NAME: HADDAM NECK, CONNECTICUT
9	2230	0	1	0	-1	SITE NAME: BAXLEY, GEORGIA

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2231	0	1	0	-1	SITE NAME: SALEM, NEW JERSEY
9	2232	0	1	0	-1	SITE NAME: EUREKA, CALIFORNIA
9	2233	0	1	0	-1	SITE NAME: BUCHANAN, NEW YORK
9	2234	0	1	0	-1	SITE NAME: CARLTON, WISCONSIN
9	2235	0	1	0	-1	SITE NAME: LA CROSSE, WISCONSIN
9	2236	0	1	0	-1	SITE NAME: SENECA, ILLINOIS
9	2237	0	1	0	-1	SITE NAME: POTTSTOWN, PENNSYLVANIA
9	2238	0	1	0	-1	SITE NAME: WISCASSET, MAIN
9	2239	0	1	0	-1	SITE NAME: COWANSFORD DAM, NORTH CAROLINA
9	2240	0	1	0	-1	SITE NAME: WATERFORD, CONNECTICUT
9	2241	0	1	0	-1	SITE NAME: MONTICELLO, MINNESOTA
9	2242	0	1	0	-1	SITE NAME: SCRIBA, NEW YORK
9	2243	0	1	0	-1	SITE NAME: MINERAL, VIRGINIA
9	2244	0	1	0	-1	SITE NAME: SENECA, SOUTH CAROLINA
9	2245	0	1	0	-1	SITE NAME: TOMA RIVER, NEW JERSEY
9	2246	0	1	0	-1	SITE NAME: SOUTH HAVEN, MICHIGAN
9	2247	0	1	0	-1	SITE NAME: WINTERSBURG, ARIZONA
9	2248	0	1	0	-1	SITE NAME: PEACH BOTTOM, PENNSYLVANIA
9	2249	0	1	0	-1	SITE NAME: PERRY, OHIO
9	2250	0	1	0	-1	SITE NAME: PLYMOUTH, MASSACHUSETTS
9	2251	0	1	0	-1	SITE NAME: TWO CREEKS, WISCONSIN
9	2252	0	1	0	-1	SITE NAME: RED WING, MINNESOTA
9	2253	0	1	0	-1	SITE NAME: CORDOVA, ILLINOIS
9	2254	0	1	0	-1	SITE NAME: CLAYSTATION, CALIFORNIA
9	2255	0	1	0	-1	SITE NAME: ST. FRANCISVILLE, LOUISIANA
9	2256	0	1	0	-1	SITE NAME: HARTSVILLE, SOUTH CAROLINA
9	2257	0	1	0	-1	SITE NAME: FT. PIERCE, FLORIDA
9	2258	0	1	0	-1	SITE NAME: SALEM, NEW JERSEY
9	2259	0	1	0	-1	SITE NAME: SAN CLEMENTE, CALIFORNIA
9	2260	0	1	0	-1	SITE NAME: SEABROOK, NEW HAMPSHIRE
9	2261	0	1	0	-1	SITE NAME: DAISY, TENNESSEE
9	2262	0	1	0	-1	SITE NAME: BONSAI, NORTH CAROLINA
9	2263	0	1	0	-1	SITE NAME: BROOKHAVEN, NEW YORK
9	2264	0	1	0	-1	SITE NAME: MATAGORDA COUNTY, TEXAS
9	2265	0	1	0	-1	SITE NAME: BROAD RIVER, SOUTH CAROLINA
9	2266	0	1	0	-1	SITE NAME: GRAVEL NECK, VIRGINIA
9	2267	0	1	0	-1	SITE NAME: BERWICK, PENNSYLVANIA
9	2268	0	1	0	-1	SITE NAME: MIDDLETOWN, PENNSYLVANIA
9	2269	0	1	0	-1	SITE NAME: PRESCOTT, OREGON
9	2270	0	1	0	-1	SITE NAME: FLORIDA CITY, FLORIDA
9	2271	0	1	0	-1	SITE NAME: VERNON, VERMONT
9	2272	0	1	0	-1	SITE NAME: WAYNESBORO, GEORGIA
9	2273	0	1	0	-1	SITE NAME: RICHLAND, WASHINGTON
9	2274	0	1	0	-1	SITE NAME: RICHLAND, WASHINGTON
9	2275	0	1	0	-1	SITE NAME: TAFT, LOUISIANA
9	2276	0	1	0	-1	SITE NAME: BURLINGTON, KANSAS
9	2277	0	1	0	-1	SITE NAME: ROWE, MASSACHUSETTS
9	2278	0	1	0	-1	SITE NAME: ZION, ILLINOIS

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2401	0	1	0	-1	COUNTY NAME: AUSTIN
9	2402	0	1	0	-1	COUNTY NAME: POPE
9	2403	0	1	0	-1	COUNTY NAME: LINN
9	2404	0	1	0	-1	COUNTY NAME: BEAVER
9	2405	0	1	0	-1	COUNTY NAME: JACKSON
9	2406	0	1	0	-1	COUNTY NAME: CHARLEVOIX
9	2407	0	1	0	-1	COUNTY NAME: WILL
9	2408	0	1	0	-1	COUNTY NAME: MORGAN
9	2409	0	1	0	-1	COUNTY NAME: BRUNSWICK
9	2410	0	1	0	-1	COUNTY NAME: MACON
9	2411	0	1	0	-1	COUNTY NAME: CALLAWAY
9	2412	0	1	0	-1	COUNTY NAME: CALVERT
9	2413	0	1	0	-1	COUNTY NAME: YORK
9	2414	0	1	0	-1	COUNTY NAME: DE WITT
9	2415	0	1	0	-1	COUNTY NAME: SOMERVELL
9	2416	0	1	0	-1	COUNTY NAME: BERRIEN
9	2417	0	1	0	-1	COUNTY NAME: NEMAHA
9	2418	0	1	0	-1	COUNTY NAME: CITRUS
9	2419	0	1	0	-1	COUNTY NAME: OTTAWA
9	2420	0	1	0	-1	COUNTY NAME: SAN LUIS OBISPO
9	2421	0	1	0	-1	COUNTY NAME: GRUNDY
9	2422	0	1	0	-1	COUNTY NAME: HOUSTON
9	2423	0	1	0	-1	COUNTY NAME: MONROE
9	2424	0	1	0	-1	COUNTY NAME: OSWEGO
9	2425	0	1	0	-1	COUNTY NAME: WASHINGTON
9	2426	0	1	0	-1	COUNTY NAME: WELD
9	2427	0	1	0	-1	COUNTY NAME: WAYNE
9	2428	0	1	0	-1	COUNTY NAME: CLAIBORNE
9	2429	0	1	0	-1	COUNTY NAME: MIDDLESEX
9	2430	0	1	0	-1	COUNTY NAME: APPLING
9	2431	0	1	0	-1	COUNTY NAME: SALEM
9	2432	0	1	0	-1	COUNTY NAME: HUMBOLDT
9	2433	0	1	0	-1	COUNTY NAME: WESTCHESTER
9	2434	0	1	0	-1	COUNTY NAME: KEWAUNEE
9	2435	0	1	0	-1	COUNTY NAME: LA CROSSE
9	2436	0	1	0	-1	COUNTY NAME: LA SALLE
9	2437	0	1	0	-1	COUNTY NAME: BERKS
9	2438	0	1	0	-1	COUNTY NAME: LINCOLN
9	2439	0	1	0	-1	COUNTY NAME: LINCOLN
9	2440	0	1	0	-1	COUNTY NAME: NEW LONDON
9	2441	0	1	0	-1	COUNTY NAME: WRIGHT
9	2442	0	1	0	-1	COUNTY NAME: OSWEGO
9	2443	0	1	0	-1	COUNTY NAME: LOUISA
9	2444	0	1	0	-1	COUNTY NAME: OCONEE
9	2445	0	1	0	-1	COUNTY NAME: OCEAN
9	2446	0	1	0	-1	COUNTY NAME: VAN BUREN
9	2447	0	1	0	-1	COUNTY NAME: MARICOPA
9	2448	0	1	0	-1	COUNTY NAME: LANCASTER
9	2449	0	1	0	-1	COUNTY NAME: LAKE
9	2450	0	1	0	-1	COUNTY NAME: PLYMOUTH

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2451	0	1	0	-1	COUNTY NAME: MANITOWOC
9	2452	0	1	0	-1	COUNTY NAME: GOODHUE
9	2453	0	1	0	-1	COUNTY NAME: ROCK ISLAND
9	2454	0	1	0	-1	COUNTY NAME: AMADOR
9	2455	0	1	0	-1	COUNTY NAME: POINTE COUPEE
9	2456	0	1	0	-1	COUNTY NAME: DARLINGTON
9	2457	0	1	0	-1	COUNTY NAME: ST. LUCIE
9	2458	0	1	0	-1	COUNTY NAME: SALEM
9	2459	0	1	0	-1	COUNTY NAME: ORANGE
9	2460	0	1	0	-1	COUNTY NAME: ROCKINGHAM
9	2461	0	1	0	-1	COUNTY NAME: HAMILTON
9	2462	0	1	0	-1	COUNTY NAME: WAKE
9	2463	0	1	0	-1	COUNTY NAME: SUFFOLK
9	2464	0	1	0	-1	COUNTY NAME: MATAGORDA
9	2465	0	1	0	-1	COUNTY NAME: FAIRFIELD
9	2466	0	1	0	-1	COUNTY NAME: SURRY
9	2467	0	1	0	-1	COUNTY NAME: COLUMBIA
9	2468	0	1	0	-1	COUNTY NAME: DAUPHIN
9	2469	0	1	0	-1	COUNTY NAME: COLUMBIA
9	2470	0	1	0	-1	COUNTY NAME: DADE
9	2471	0	1	0	-1	COUNTY NAME: WINDHAM
9	2472	0	1	0	-1	COUNTY NAME: BURKE
9	2473	0	1	0	-1	COUNTY NAME: BENTON
9	2474	0	1	0	-1	COUNTY NAME: BENTON
9	2475	0	1	0	-1	COUNTY NAME: ST. JOHN THE BAPTIST
9	2476	0	1	0	-1	COUNTY NAME: COFFEE
9	2477	0	1	0	-1	COUNTY NAME: FRANKLIN
9	2478	0	1	0	-1	COUNTY NAME: LAKE
9	2601	0	1	0	-1	FIPS CODE: 48015
9	2602	0	1	0	-1	FIPS CODE: 05115
9	2603	0	1	0	-1	FIPS CODE: 19113
9	2604	0	1	0	-1	FIPS CODE: 42007
9	2605	0	1	0	-1	FIPS CODE: 01071
9	2606	0	1	0	-1	FIPS CODE: 26029
9	2607	0	1	0	-1	FIPS CODE: 17197
9	2608	0	1	0	-1	FIPS CODE: 01103
9	2609	0	1	0	-1	FIPS CODE: 37019
9	2610	0	1	0	-1	FIPS CODE: 17141
9	2611	0	1	0	-1	FIPS CODE: 29027
9	2612	0	1	0	-1	FIPS CODE: 24009
9	2613	0	1	0	-1	FIPS CODE: 45091
9	2614	0	1	0	-1	FIPS CODE: 17039
9	2615	0	1	0	-1	FIPS CODE: 48425
9	2616	0	1	0	-1	FIPS CODE: 26021
9	2617	0	1	0	-1	FIPS CODE: 31127
9	2618	0	1	0	-1	FIPS CODE: 12017
9	2619	0	1	0	-1	FIPS CODE: 39123
9	2620	0	1	0	-1	FIPS CODE: 06079
9	2621	0	1	0	-1	FIPS CODE: 17063
9	2622	0	1	0	-1	FIPS CODE: 01069

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2623	0	1	0	-1	FIPS CODE: 26115
9	2624	0	1	0	-1	FIPS CODE: 36075
9	2625	0	1	0	-1	FIPS CODE: 31177
9	2626	0	1	0	-1	FIPS CODE: 08123
9	2627	0	1	0	-1	FIPS CODE: 36117
9	2628	0	1	0	-1	FIPS CODE: 28021
9	2629	0	1	0	-1	FIPS CODE: 09007
9	2630	0	1	0	-1	FIPS CODE: 13001
9	2631	0	1	0	-1	FIPS CODE: 34033
9	2632	0	1	0	-1	FIPS CODE: 06023
9	2633	0	1	0	-1	FIPS CODE: 36119
9	2634	0	1	0	-1	FIPS CODE: 55061
9	2635	0	1	0	-1	FIPS CODE: 55063
9	2636	0	1	0	-1	FIPS CODE: 17099
9	2637	0	1	0	-1	FIPS CODE: 42011
9	2638	0	1	0	-1	FIPS CODE: 23015
9	2639	0	1	0	-1	FIPS CODE: 37109
9	2640	0	1	0	-1	FIPS CODE: 09011
9	2641	0	1	0	-1	FIPS CODE: 27171
9	2642	0	1	0	-1	FIPS CODE: 36075
9	2643	0	1	0	-1	FIPS CODE: 51109
9	2644	0	1	0	-1	FIPS CODE: 45073
9	2645	0	1	0	-1	FIPS CODE: 34029
9	2646	0	1	0	-1	FIPS CODE: 26159
9	2647	0	1	0	-1	FIPS CODE: 04013
9	2648	0	1	0	-1	FIPS CODE: 42071
9	2649	0	1	0	-1	FIPS CODE: 39085
9	2650	0	1	0	-1	FIPS CODE: 25023
9	2651	0	1	0	-1	FIPS CODE: 55071
9	2652	0	1	0	-1	FIPS CODE: 27049
9	2653	0	1	0	-1	FIPS CODE: 17161
9	2654	0	1	0	-1	FIPS CODE: 06005
9	2655	0	1	0	-1	FIPS CODE: 22077
9	2656	0	1	0	-1	FIPS CODE: 45031
9	2657	0	1	0	-1	FIPS CODE: 12111
9	2658	0	1	0	-1	FIPS CODE: 34033
9	2659	0	1	0	-1	FIPS CODE: 06059
9	2660	0	1	0	-1	FIPS CODE: 33015
9	2661	0	1	0	-1	FIPS CODE: 47065
9	2662	0	1	0	-1	FIPS CODE: 37183
9	2663	0	1	0	-1	FIPS CODE: 36103
9	2664	0	1	0	-1	FIPS CODE: 48321
9	2665	0	1	0	-1	FIPS CODE: 45039
9	2666	0	1	0	-1	FIPS CODE: 51181
9	2667	0	1	0	-1	FIPS CODE: 42037
9	2668	0	1	0	-1	FIPS CODE: 42043
9	2669	0	1	0	-1	FIPS CODE: 41009
9	2670	0	1	0	-1	FIPS CODE: 12025
9	2671	0	1	0	-1	FIPS CODE: 50025
9	2672	0	1	0	-1	FIPS CODE: 13033

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2573	0	1	0	-1	FIPS CODE: 53005
9	2674	0	1	0	-1	FIPS CODE: 53005
9	2675	0	1	0	-1	FIPS CODE: 22095
9	2676	0	1	0	-1	FIPS CODE: 20031
9	2677	0	1	0	-1	FIPS CODE: 25011
9	2678	0	1	0	-1	FIPS CODE: 17098
9	2801	0	1	0	-1	UTILITY: HOUSTON LIGHTING & POWER CO.
9	2802	0	1	0	-1	UTILITY: ARKANSAS POWER & LIGHT CO.
9	2803	0	1	0	-1	UTILITY: IOWA ELECTRIC LIGHT & POWER CO.
9	2804	0	1	0	-1	UTILITY: DUQUESNE LIGHT CO. -OHIO EDISON
9	2805	0	1	0	-1	UTILITY: TENNESSEE VALLEY AUTHORITY
9	2806	0	1	0	-1	UTILITY: CONSUMERS POWER CO.
9	2807	0	1	0	-1	UTILITY: COMMONWEALTH EDISON CO.
9	2808	0	1	0	-1	UTILITY: TENNESSEE VALLEY AUTHORITY
9	2809	0	1	0	-1	UTILITY: CAROLINA POWER & LIGHT CO.
9	2810	0	1	0	-1	UTILITY: COMMONWEALTH EDISON CO.
9	2811	0	1	0	-1	UTILITY: UNION ELECTRIC CO.
9	2812	0	1	0	-1	UTILITY: BALTIMORE GAS & ELECTRIC CO.
9	2813	0	1	0	-1	UTILITY: DUKE POWER CO.
9	2814	0	1	0	-1	UTILITY: ILLINOIS POWER CO.
9	2815	0	1	0	-1	UTILITY: TEXAS UTILITIES SVC., INC.
9	2816	0	1	0	-1	UTILITY: INDIANA & MICHIGAN ELECTRIC CO.
9	2817	0	1	0	-1	UTILITY: NEBRASKA PUBLIC POWER DIST & IOWA P & L CO.
9	2818	0	1	0	-1	UTILITY: FLORIDA POWER CORP.
9	2819	0	1	0	-1	UTILITY: TOLEDO EDISON-CLEVELAND EL. ILLUM CO.
9	2820	0	1	0	-1	UTILITY: PACIFIC GAS & ELECTRIC CO.
9	2821	0	1	0	-1	UTILITY: COMMONWEALTH EDISON CO.
9	2822	0	1	0	-1	UTILITY: ALABAMA POWER CO.
9	2823	0	1	0	-1	UTILITY: DETROIT EDISON CO.
9	2824	0	1	0	-1	UTILITY: POWER AUTHORITY OF THE STATE OF NEW YORK
9	2825	0	1	0	-1	UTILITY: OMAHA PUBLIC POWER DISTRICT
9	2826	0	1	0	-1	UTILITY: PUBLIC SERVICE CO. OF COLORADO
9	2827	0	1	0	-1	UTILITY: ROCHESTER GAS & ELEC. CORP.
9	2828	0	1	0	-1	UTILITY: MISSISSIPPI POWER & LIGHT CO.
9	2829	0	1	0	-1	UTILITY: CONN. YANKEE ATOMIC POWER CO.
9	2830	0	1	0	-1	UTILITY: GEORGIA POWER CO.
9	2831	0	1	0	-1	UTILITY: PUBLIC SERVICE ELECTRIC & GAS, NEW JERSEY
9	2832	0	1	0	-1	UTILITY: PACIFIC GAS & ELECTRIC CO.
9	2833	0	1	0	-1	UTILITY: CONSOLIDATED EDISON
9	2834	0	1	0	-1	UTILITY: WISCONSIN PUBLIC SVC. CORP.
9	2835	0	1	0	-1	UTILITY: DAIRYLAND POWER COOPERATIVE

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	2836	0	1	0	-1	UTILITY: COMMONWEALTH EDISON CO.
9	2837	0	1	0	-1	UTILITY: PHILADELPHIA ELECTRIC CO.
9	2838	0	1	0	-1	UTILITY: MAINE YANKEE ATOMIC POWER CO.
9	2839	0	1	0	-1	UTILITY: DUKE POWER CO.
9	2840	0	1	0	-1	UTILITY: NORTHEAST NUCLEAR ENERGY CO.
9	2841	0	1	0	-1	UTILITY: NORTHERN STATES POWER CO.
9	2842	0	1	0	-1	UTILITY: NIAGARA MOHAWK POWER CORP.
9	2843	0	1	0	-1	UTILITY: VIRGINIA ELEC. & POWER CORP.
9	2844	0	1	0	-1	UTILITY: DUKE POWER CO.
9	2845	0	1	0	-1	UTILITY: JERSEY CENTRAL POWER & LIGHT CO.
9	2846	0	1	0	-1	UTILITY: CONSUMERS POWER CO.
9	2847	0	1	0	-1	UTILITY: ARIZONA PUBLIC SERVICE
9	2848	0	1	0	-1	UTILITY: PHILADELPHIA ELECTRIC CO.
9	2849	0	1	0	-1	UTILITY: CLEVELAND ELEC. ILLUM. CO.
9	2850	0	1	0	-1	UTILITY: BOSTON EDISON CO.
9	2851	0	1	0	-1	UTILITY: WISCONSIN-MICHIGAN POWER CO.
9	2852	0	1	0	-1	UTILITY: NORTHERN STATES POWER CO.
9	2853	0	1	0	-1	UTILITY: COMM. ED. CO.-IA. -ILL. GAS & ELEC. CO.
9	2854	0	1	0	-1	UTILITY: SACRAMENTO MUNICIPAL UTILITY DISTRICT
9	2855	0	1	0	-1	UTILITY: GULF STATES UTILITIES CO.
9	2856	0	1	0	-1	UTILITY: CAROLINA POWER & LIGHT CO.
9	2857	0	1	0	-1	UTILITY: FLORIDA POWER & LIGHT CO.
9	2858	0	1	0	-1	UTILITY: PUBLIC SVC. ELECTRIC & GAS, NEW JERSEY
9	2859	0	1	0	-1	UTILITY: SO. CALIF. ED. & SAN DIEGO GAS & ELECT CO.
9	2860	0	1	0	-1	UTILITY: PUBLIC SERVICE OF NEW HAMPSHIRE
9	2861	0	1	0	-1	UTILITY: TENNESSEE VALLEY AUTHORITY
9	2862	0	1	0	-1	UTILITY: CAROLINA POWER & LIGHT CO.
9	2863	0	1	0	-1	UTILITY: LONG ISLAND LIGHTING CO.
9	2864	0	1	0	-1	UTILITY: CENTRAL POWR & LT. -HOUSTON LT. & POWER
9	2865	0	1	0	-1	UTILITY: SOUTH CAROLINA ELEC. & GAS CO.
9	2866	0	1	0	-1	UTILITY: VIRGINIA ELECT & POWER CO.
9	2867	0	1	0	-1	UTILITY: PENNSYLVANIA POWER & LIGHT
9	2868	0	1	0	-1	UTILITY: METROPOLITAN EDISON CO.
9	2869	0	1	0	-1	UTILITY: PORTLAND GENERAL ELECTRIC CO.
9	2870	0	1	0	-1	UTILITY: FLORIDA POWER & LIGHT CO.
9	2871	0	1	0	-1	UTILITY: VERMONT YANKEE NUCLEAR POWER CORP.
9	2872	0	1	0	-1	UTILITY: GEORGIA POWER CO.
9	2873	0	1	0	-1	UTILITY: DEPARTMENT OF ENERGY

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
9	2874	0	1	0	-1	UTILITY: WASH. PUBLIC. POWER SUPPLY SYSTEMS
9	2875	0	1	0	-1	UTILITY: LOUISIANA POWER & LIGHT CO.
9	2876	0	1	0	-1	UTILITY: KANSAS GEAS & ELEC. -KC P&L
9	2877	0	1	0	-1	UTILITY: YANKEE ATOMIC ELECTRIC CO.
9	2878	0	1	0	-1	UTILITY: COMMONWEALTH EDISON CO.
9	3001	0	1	0	-1	WEEKDAY POPULATION: FEMALE
9	3002	0	1	0	-1	WEEKDAY POPULATION: MALE
9	3003	0	1	0	-1	EVENING POPULATION: FEMALE
9	3004	0	1	0	-1	EVENING POPULATION: MALE
9	3005	0	1	0	-1	NIGHT POPULATION: FEMALE
9	3006	0	1	0	-1	NIGHT POPULATION: MALE
9	3010	0	1	0	-1	POPULATION 0-5YRS: TOTAL
9	3011	0	1	0	-1	POPULATION 0-5YRS: TOTAL FEMALE
9	3012	0	1	0	-1	POPULATION 0-5YRS: CAUCASIAN FEMALE
9	3013	0	1	0	-1	POPULATION 0-5YRS: NON-CAUCASION FEMALE
9	3021	0	1	0	-1	POPULATION 0-5YRS: TOTAL MALE
9	3022	0	1	0	-1	POPULATION 0-5YRS: CAUCASIAN MALE
9	3023	0	1	0	-1	POPULATION 0-5YRS: NON-CAUCASIAN MALE
9	3030	0	1	0	-1	POPULATION 6-19YRS: TOTAL
9	3031	0	1	0	-1	POPULATION 6-19YRS: TOTAL FEMALE
9	3032	0	1	0	-1	POPULATION 6-19YRS: CAUCASIAN FEMALE
9	3033	0	1	0	-1	POPULATION 6-19YRS: NON-CAUCASION FEMALE
9	3041	0	1	0	-1	POPULATION 6-19YRS: TOTAL MALE
9	3042	0	1	0	-1	POPULATION 6-19YRS: CAUCASIAN MALE
9	3043	0	1	0	-1	POPULATION 6-19YRS: NON-CAUCASIAN MALE
9	3050	0	1	0	-1	POPULATION 20-64YRS: TOTAL
9	3051	0	1	0	-1	POPULATION 20-64YRS: TOTAL FEMALE
9	3052	0	1	0	-1	POPULATION 20-64YRS: CAUCASIAN FEMALE
9	3053	0	1	0	-1	POPULATION 20-64YRS: NON-CAUCASION FEMALE
9	3061	0	1	0	-1	POPULATION 20-64YRS: TOTAL MALE
9	3062	0	1	0	-1	POPULATION 20-64YRS: CAUCASIAN MALE
9	3063	0	1	0	-1	POPULATION 20-64YRS: NON-CAUCASIAN MALE
9	3070	0	1	0	-1	POPULATION 65YRS OR OLDER: TOTAL
9	3071	0	1	0	-1	POPULATION 65YRS OR OLDER: TOTAL FEMALE
9	3072	0	1	0	-1	POPULATION 65YRS OR OLDER: CAUCASIAN FEMALE
9	3073	0	1	0	-1	POPULATION 65YRS OR OLDER: NON-CAUCASIAN FEMALE
9	3081	0	1	0	-1	POPULATION 65YRS OR OLDER: TOTAL MALE
9	3082	0	1	0	-1	POPULATION 65YRS OR OLDER: CAUCASIAN MALE

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	3083	0	1	0	-1	POPULATION 65YRS OR OLDER: NON-CAUCASIAN MALE
9	3101	0	1	0	-1	AGE: UNDER 1YEAR
9	3102	0	1	0	-1	AGE: 1AND 2YEARS
9	3103	0	1	0	-1	AGE: 3AND 4YEARS
9	3104	0	1	0	-1	AGE: 5YEARS
9	3105	0	1	0	-1	AGE: 6YEARS
9	3106	0	1	0	-1	AGE: 7TO 9YEARS
9	3107	0	1	0	-1	10AND 11YEARS
9	3108	0	1	0	-1	AGE: 12AND 13YEARS
9	3109	0	1	0	-1	AGE: 14YEARS
9	3110	0	1	0	-1	AGE: 15YEARS
9	3111	0	1	0	-1	AGE: 16YEARS
9	3112	0	1	0	-1	AGE: 17YEARS
9	3113	0	1	0	-1	AGE: 18YEARS
9	3114	0	1	0	-1	AGE: 19YEARS
9	3115	0	1	0	-1	AGE: 20YEARS
9	3116	0	1	0	-1	AGE: 21YEARS
9	3117	0	1	0	-1	AGE: 22TO 24YEARS
9	3118	0	1	0	-1	AGE: 25TO 29YEARS
9	3119	0	1	0	-1	AGE: 30TO 34YEARS
9	3120	0	1	0	-1	AGE: 35TO 39YEARS
9	3121	0	1	0	-1	AGE: 31TO 44YEARS
9	3122	0	1	0	-1	AGE: 45TO 49YEARS
9	3123	0	1	0	-1	AGE: 50TO 54YEARS
9	3124	0	1	0	-1	AGE: 55TO 59YEARS
9	3125	0	1	0	-1	AGE: 60AND 61YEARS
9	3126	0	1	0	-1	AGE: 62TO 64YEARS
9	3127	0	1	0	-1	AGE: 65TO 69YEARS
9	3128	0	1	0	-1	AGE: 70TO 74YEARS
9	3129	0	1	0	-1	AGE: 75TO 79YEARS
9	3130	0	1	0	-1	AGE: 80TO 84YEARS
9	3131	0	1	0	-1	AGE: 85YEARS AND OVER
9	3141	0	1	0	-1	AGE OF HOUSEHOLD MEMBERS, 1OR MORE OVER 65: 1PERSON
9	3142	0	1	0	-1	AGE OF HOUSEHOLD MEMBERS, 65OR OVER: >2, FAMILY HOUSEHOLD
9	3143	0	1	0	-1	AGE OF MEMBERS, 65OR OVER: >2NON FAMILY HOUSEHOLDS
9	3144	0	1	0	-1	AGE OF MEMBERS, NONE 65OR OVER: 1PERSON
9	3145	0	1	0	-1	AGE OF MEMBERS, NONE 65: >1, FAMILY HOUSEHOLD
9	3146	0	1	0	-1	AGE OF MEMBERS, NONE 65: >1, NONFAMILY HOUSEHOLD
9	3151	0	1	0	-1	PERSONS BY RACE: WHITE
9	3152	0	1	0	-1	PERSONS BY RACE: BLACK
9	3153	0	1	0	-1	PERSONS BY RACE: AMERICAN INDIAN, ESKIMO, OR ALEUT

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
9	3154	0	1	0	-1	PERSONS BY RACE: ASIAN OR PACIFIC ISLANDER
9	3155	0	1	0	-1	PERSONS BY RACE: OTHER
9	3156	0	1	0	-1	PERSONS OF HISPANIC ORIGIN
9	3160	0	1	0	-1	PERSONS BY SEX: MALE
9	3170	0	1	0	-1	PERSONS BY SEX: FEMALE
9	3200	0	1	0	-1	TOTAL FAMILIES
9	3201	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,2
9	3202	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,3
9	3203	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,4
9	3204	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,5
9	3205	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,6
9	3206	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - FAMILY,7OR MORE
9	3210	0	1	0	-1	TOTAL HOUSEHOLDS
9	3211	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,1
9	3212	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,2
9	3213	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,3
9	3214	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,4
9	3215	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,5
9	3216	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,6
9	3217	0	1	0	-1	HOUSEHOLD TYPE AND SIZE - NONFAMILY,7OR MORE
9	3221	0	1	0	-1	PERSONS IN HOUSEHOLD: HOUSEHOLDER
9	3222	0	1	0	-1	PERSONS IN HOUSEHOLD: SPOUSE
9	3223	0	1	0	-1	PERSONS IN HOUSEHOLD: CHILD, NATURAL BORN OR ADOPTED
9	3224	0	1	0	-1	PERSONS IN HOUSEHOLD: CHILD, STEP
9	3225	0	1	0	-1	PERSONS IN HOUSEHOLD: CHILD, GRANDCHILD
9	3226	0	1	0	-1	PERSONS IN HOUSEHOLD: CHILD, OTHER RELATIVE
9	3227	0	1	0	-1	PERSONS IN HOUSEHOLD: CHILD, NONRELATIVES
9	3231	0	1	0	-1	NON FAMILY HOUSEHOLD: HOUSEHOLDER LIVING ALONE
9	3232	0	1	0	-1	NON FAMILY HOUSEHOLD: HOUSEHOLDER NOT LIVING ALONE
9	3233	0	1	0	-1	NON FAMILY HOUSEHOLD: NONRELATIVES
9	3300	0	1	0	-1	PERSONS IN HOUSEHOLD, GROUP QUARTERS: INSTITUTIONALIZED
9	3301	0	1	0	-1	GROUP QUARTERS;INSTITUTIONS,CORRECTIONAL INSTITUTIONS
9	3302	0	1	0	-1	GROUP QUARTERS; INSTITUTIONS, NURSING HOMES
9	3303	0	1	0	-1	GROUP QUARTERS; INSTITUTIONS, MENTAL HOSPITALS
9	3304	0	1	0	-1	GROUP QUARTERS; INSTITUTIONS, JUVENILE
9	3305	0	1	0	-1	GROUP QUARTERS; INSTITUTIONS, OTHERS

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	3310	0	1	0	-1	PERSONS IN HOPUSEHOLD, GROUP QUARTERS: OTHERS
9	3311	0	1	0	-1	GROUP QUARTERS; OTHER, COLLEGE DORMITORIES
9	3312	0	1	0	-1	GROUP QUARTERS; OTHER, MILITARY QUARTERS
9	3313	0	1	0	-1	GROUP QUARTERS; OTHER, EMERGENCY SHELTERS FOR HOMELESS
9	3314	0	1	0	-1	GROUP QUARTERS; OTHER, VISIBLE IN STREET LOCATIONS
9	3315	0	1	0	-1	GROUP QUARTERS; OTHER, OTHER NONINSTITUTIONAL
9	3600	0	1	0	-1	TOTAL HOUSING UNITS
9	3611	0	1	0	-1	HOUSING OCCUPANCY STATUS; OCCUPIED
9	3612	0	1	0	-1	HOUSING OCCUPANCY STATUS; VACANT
9	3615	0	1	0	-1	OCCUPIED HOUSING TENURE; OWNER
9	3616	0	1	0	-1	OCCUPIED HOUSING TENURE; RENTER
9	3621	0	1	0	-1	NUMBER OF HOUSING UNITS INSIDE URBANIZED AREA
9	3622	0	1	0	-1	NUMBER OF HOUSING UNITS OUTSIDE URBANIZED AREA
9	3623	0	1	0	-1	NUMBER OF RURAL HOUSING UNITS
9	3624	0	1	0	-1	NUMBER OF HOUSING UNITS NOT DEFINED IN URBAN OR RURAL AREAS
9	3631	0	1	0	-1	VACANT HOUSING UNITS FOR RENT
9	3632	0	1	0	-1	VACANT HOUSING UNITS FOR SALE
9	3633	0	1	0	-1	VACANT HOUSING UNITS RENTED OR SOLD, NOT OCCUPIED
9	3634	0	1	0	-1	VACANT HOUSING UNITS FOR SEASONAL, RECR., OR OCCASIONAL USE
9	3635	0	1	0	-1	VACANT HOUSING FOR MIGRANT WORKERS
9	3636	0	1	0	-1	VACANT HOUSING UNITS, OTHER VACANT
9	3641	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 1, DETACHED
9	3642	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 1 ATTACHED
9	3643	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 2
9	3644	0	1	0	-1	NUMBER OF UNITS IN HOUSING STRUCTURE UNIT - 3 OR 4
9	3645	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 5 TO 9
9	3647	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 20 TO 49
9	3648	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - 50 OR MORE
9	3649	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - MOBILE HOME
9	3650	0	1	0	-1	NUMBER OF UNITS IN HOUSING UNIT STRUCTURE - OTHER

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	3660	0	1	0	-1	NUMBER OF AGGREGATE ROOMS IN EACH HOUSING UNIT; TOTAL
9	3671	0	1	0	-1	BOARDED UP VACANT HOUSING UNITS
9	3672	0	1	0	-1	VACANT HOUSING UNITS NOT BOARDED UP
9	3700	0	1	0	-1	AGGREGATE VALUE OF OWNER OCCUPIED HOUSING UNITS; TOTAL
9	3701	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE, LESS THAN \$15,000
9	3702	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 15,000TO 19,999
9	3703	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 20,000TO 24,999
9	3704	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 25,000TO 29,999
9	3705	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 30,000TO 34,999
9	3706	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 35,000TO 39,999
9	3707	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 40,000TO 44,999
9	3708	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 45,000TO 49,999
9	3709	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 50,000TO 54,999
9	3710	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 55,000TO 59,999
9	3711	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 60,000TO 64,999
9	3712	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 65,000TO 69,999
9	3713	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 70,000TO 74,999
9	3714	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 75,000TO 79,999
9	3715	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 80,000TO 84,999
9	3716	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 85,000TO 89,999
9	3717	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 90,000TO 94,999
9	3718	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 95,000TO 99,999
9	3719	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 100,000TO 104,999
9	3720	0	1	0	-1	OWNER OCCUPIED HOUSING VALUE (\$) 105,000TO 109,999
9	3730	0	1	0	-1	AGGREGATE CONTRACT RENT FOR RENTER OCCUPIED HOUSING UNITS
9	3750	0	1	0	-1	AGGREGATE PRICE ASKED FOR VACANT-FOR-SALE-ONLY HOUSING UNITS

Appendix B: IBS Attribute Dictionary
MISCELLANEOUS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
9	3760	0	1	0	-1	AGGREGATE RENT ASKED IN VACANT-FOR-RENT HOUSING UNITS; TOTAL

Appendix B: IBS Attribute Dictionary
TEXT STRINGS

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
10	0	0	0	0	-1	TEXT STRINGS 1
11	0	0	1	0	-1	PLACE OF WORK DATA
11	10	0	0	0	-1	AGRICULTURAL PRODUCTION, CROPS
11	11	0	0	0	-1	AGRICULTURAL PRODUCTION, LIVESTOCK
11	20	0	0	0	-1	AGRICULTURAL SERVICES, EXCEPT HORTICULTURAL
11	21	0	0	0	-1	HORTICULTURAL SERVICES
11	30	0	0	0	-1	FORESTRY
11	31	0	0	0	-1	FISHING, HUNTING, & TRAPPING
11	40	0	0	0	-1	METAL MINING
11	41	0	0	0	-1	COAL MINING
11	42	0	0	0	-1	CRUDE PETROLEUM & NATURAL GAS EXTRACTION
11	50	0	0	0	-1	NONMETALLIC MINING & QUARRYING, EXCEPT FUEL
11	60	0	0	0	-1	CONSTRUCTION
11	100	0	0	0	-1	MEAT PRODUCTS
11	101	0	0	0	-1	DAIRY PRODUCTS
11	102	0	0	0	-1	CANNED & PRESERVED FRUITS & VEGETABLES
11	110	0	0	0	-1	GRAIN MILL PRODUCTS
11	111	0	0	0	-1	BAKERY PRODUCTS
11	112	0	0	0	-1	SUGAR & CONFECTIONERY PRODUCTS
11	120	0	0	0	-1	BEVERAGE INDUSTRIES
11	121	0	0	0	-1	MISCELLANEOUS FOOD PREPARATIONS & KINDRED PRODUCTS
11	122	0	0	0	-1	NOT SPECIFIED FOOD INDUSTRIES
11	130	0	0	0	-1	TOBACCO MANUFACTURES
11	132	0	0	0	-1	KNITTING MILLS
11	140	0	0	0	-1	DYEING & FINISHING TEXTILES, EXCEPT WOOL & KNIT GOODS
11	141	0	0	0	-1	FLOOR COVERINGS, EXCEPT HARD SURFACE
11	142	0	0	0	-1	YARN, THREAD, & FABRIC MILLS
11	150	0	0	0	-1	MISCELLANEOUS TEXTILE MILL PRODUCTS
11	151	0	0	0	-1	APPAREL & ACCESSORIES, EXCEPT KNIT
11	152	0	0	0	-1	MISCELLANEOUS FABRICATED TEXTILE PRODUCTS
11	160	0	0	0	-1	PULP, PAPER, & PAPERBOARD MILLS
11	161	0	0	0	-1	MISCELLANEOUS PAPER & PULP PRODUCTS
11	162	0	0	0	-1	PAPERBOARD CONTAINERS & BOXES
11	171	0	0	0	-1	NEWSPAPER PUBLISHING & PRINTING
11	172	0	0	0	-1	PRINTING, PUBLISHING, & ALLIED INDUSTRIES, EXCEPT NEWSPAPERS
11	180	0	0	0	-1	PLASTICS, SYNTHETICS, & RESINS
11	181	0	0	0	-1	DRUGS
11	182	0	0	0	-1	SOAPS & COSMETICS
11	190	0	0	0	-1	PAINTS, VARNISHES, & RELATED PRODUCTS
11	191	0	0	0	-1	AGRICULTURAL CHEMICALS
11	2	0	0	0	-1	INDUSTRIAL & MISCELLANEOUS CHEMICALS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	200	0	0	0	-1	PETROLEUM REFINING
11	201	0	0	0	-1	MISCELLANEOUS PETROLEUM & COAL PRODUCTS
11	210	0	0	0	-1	TIRES & INNER TUBES
11	211	0	0	0	-1	OTHER RUBBER PRODUCTS, & PLASTICS FOOTWEAR & BELTING
11	212	0	0	0	-1	MISCELLANEOUS PLASTICS PRODUCTS
11	220	0	0	0	-1	LEATHER TANNING & FINISHING
11	221	0	0	0	-1	FOOTWEAR, EXCEPT RUBBER & PLASTIC
11	222	0	0	0	-1	LEATHER PRODUCTS, EXCEPT FOOTWEAR
11	230	0	0	0	-1	LOGGING
11	231	0	0	0	-1	SAWMILLS, PLANING MILLS, & MILLWORK
11	232	0	0	0	-1	WOOD BUILDINGS & MOBILE HOMES
11	241	0	0	0	-1	MISCELLANEOUS WOOD PRODUCTS
11	242	0	0	0	-1	FURNITURE & FIXTURES
11	250	0	0	0	-1	GLASS & GLASS PRODUCTS
11	251	0	0	0	-1	CEMENT, CONCRETE, GYPSUM, & PLASTER PRODUCTS
11	252	0	0	0	-1	STRUCTURAL CLAY PRODUCTS
11	261	0	0	0	-1	POTTERY & RELATED PRODUCTS
11	262	0	0	0	-1	MISCELLANEOUS NONMETALLIC MINERAL & STONE PRODUCTS
11	270	0	0	0	-1	BLAST FURNACES, STEELWORKS, ROLLING & FINISHING MILLS
11	271	0	0	0	-1	IRON & STEEL FOUNDRIES
11	272	0	0	0	-1	PRIMARY ALUMINUM INDUSTRIES
11	280	0	0	0	-1	OTHER PRIMARY METAL INDUSTRIES
11	281	0	0	0	-1	CUTLERY, HAND TOOLS, & OTHER HARDWARE
11	282	0	0	0	-1	FABRICATED STRUCTURAL METAL PRODUCTS
11	290	0	0	0	-1	SCREW MACHINE PRODUCTS
11	291	0	0	0	-1	METAL FORGINGS & STAMPINGS
11	292	0	0	0	-1	ORDNANCE
11	300	0	0	0	-1	MISCELLANEOUS FABRICATED METAL PRODUCTS
11	301	0	0	0	-1	NOT SPECIFIED METAL INDUSTRIES
11	310	0	0	0	-1	ENGINES & TURBINES
11	311	0	0	0	-1	FARM MACHINERY & EQUIPMENT
11	312	0	0	0	-1	CONSTRUCTION & MATERIAL HANDLING MACHINES
11	320	0	0	0	-1	METALWORKING MACHINERY
11	321	0	0	0	-1	OFFICE & ACCOUNTING MACHINES
11	322	0	0	0	-1	ELECTRONIC COMPUTING EQUIPMENT
11	331	0	0	0	-1	MACHINERY, EXCEPT ELECTRICAL, N.E.C.
11	332	0	0	0	-1	NOT SPECIFIED MACHINERY
11	340	0	0	0	-1	HOUSEHOLD APPLIANCES
11	341	0	0	0	-1	RADIO, TV, & COMMUNICATION EQUIPMENT
11	342	0	0	0	-1	ELECTRICAL MACHINERY, EQUIPMENT, & SUPPLIES, N.E.C.

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	350	0	0	0	-1	NOT SPECIFIED ELECTRICAL MACHINERY, EQUIPMENT, & SUPPLIES
11	351	0	0	0	-1	MOTOR VEHICLES & MOTOR VEHICLE EQUIPMENT
11	352	0	0	0	-1	AIRCRAFT & PARTS
11	360	0	0	0	-1	SHIP & BOAT BUILDING & REPAIRING
11	361	0	0	0	-1	RAILROAD LOCOMOTIVES & EQUIPMENT
11	362	0	0	0	-1	GUIDED MISSILES, SPACE VEHICLES & PARTS
11	370	0	0	0	-1	CYCLES & MISCELLANEOUS TRANSPORTATION EQUIPMENT
11	371	0	0	0	-1	SCIENTIFIC & CONTROLLING INSTRUMENTS
11	372	0	0	0	-1	OPTICAL & HEALTH SERVICES SUPPLIES
11	380	0	0	0	-1	PHOTOGRAPHIC EQUIPMENT & SUPPLIES
11	381	0	0	0	-1	WATCHES, CLOCKS, & CLOCKWORK OPERATED DEVICES
11	382	0	0	0	-1	NOT SPECIFIED PROFESSIONAL EQUIPMENT
11	390	0	0	0	-1	TOYS, AMUSEMENT, & SPORTING GOODS
11	391	0	0	0	-1	MISCELLANEOUS MANUFACTURING INDUSTRIES
11	392	0	0	0	-1	NOT SPECIFIED MANUFACTURING INDUSTRIES
11	400	0	0	0	-1	RAILROADS
11	401	0	0	0	-1	BUS SERVICE & URBAN TRANSIT
11	402	0	0	0	-1	TAXICAB SERVICE
11	410	0	0	0	-1	TRUCKING SERVICE
11	411	0	0	0	-1	WAREHOUSING & STORAGE
11	412	0	0	0	-1	U.S. POSTAL SERVICE
11	420	0	0	0	-1	WATER TRANSPORTATION
11	421	0	0	0	-1	AIR TRANSPORTATION
11	422	0	0	0	-1	PIPE LINES, EXCEPT NATURAL GAS
11	432	0	0	0	-1	SERVICES INCIDENTAL TO TRANSPORTATION
11	440	0	0	0	-1	RADIO & TELEVISION BROADCASTING
11	441	0	0	0	-1	TELEPHONE (WIRE & RADIO)
11	442	0	0	0	-1	TELEGRAPH & MISCELLANEOUS COMMUNICATION SERVICES
11	460	0	0	0	-1	ELECTRIC LIGHT & POWER
11	461	0	0	0	-1	GAS & STEAM SUPPLY SYSTEMS
11	462	0	0	0	-1	ELECTRIC & GAS, & OTHER COMBINATIONS
11	470	0	0	0	-1	WATER SUPPLY & IRRIGATION
11	471	0	0	0	-1	SANITARY SERVICES
11	472	0	0	0	-1	NOT SPECIFIED UTILITIES
11	500	0	0	0	-1	MOTOR VEHICLES & EQUIPMENT
11	501	0	0	0	-1	FURNITURE & HOME FURNISHINGS
11	502	0	0	0	-1	LUMBER & CONSTRUCTION MATERIALS
11	510	0	0	0	-1	SPORTING GOODS, TOYS, & HOBBY GOODS
11	511	0	0	0	-1	METALS & MINERALS, EXCEPT PETROLEUM
11	512	0	0	0	-1	ELECTRICAL GOODS
11	521	0	0	0	-1	HARDWARE, PLUMBING & HEATING SUPPLIES

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	522	0	0	0	-1	NOT SPECIFIED ELECTRICAL & HARDWARE PRODUCTS
11	530	0	0	0	-1	MACHINERY, EQUIPMENT, & SUPPLIES
11	531	0	0	0	-1	SCRAP & WASTE MATERIALS
11	532	0	0	0	-1	MISCELLANEOUS WHOLESALE, DURABLE GOODS
11	540	0	0	0	-1	PAPER & PAPER PRODUCTS
11	541	0	0	0	-1	DRUGS, CHEMICALS, & ALLIED PRODUCTS
11	542	0	0	0	-1	APPAREL, FABRICS, & NOTIONS
11	550	0	0	0	-1	GROCERIES & RELATED PRODUCTS
11	551	0	0	0	-1	FARM PRODUCTS-RAW MATERIALS
11	552	0	0	0	-1	PETROLEUM PRODUCTS
11	560	0	0	0	-1	ALCOHOLIC BEVERAGES
11	561	0	0	0	-1	FARM SUPPLIES
11	562	0	0	0	-1	MISCELLANEOUS WHOLESALE, NONDURABLE GOODS
11	571	0	0	0	-1	NOT SPECIFIED WHOLESALE TRADE
11	580	0	0	0	-1	LUMBER & BUILDING MATERIAL RETAILING
11	581	0	0	0	-1	HARDWARE STORES
11	582	0	0	0	-1	RETAIL NURSERIES & GARDEN STORES
11	590	0	0	0	-1	MOBILE HOME DEALERS
11	591	0	0	0	-1	DEPARTMENT STORES
11	592	0	0	0	-1	VARIETY STORES
11	600	0	0	0	-1	MISCELLANEOUS GENERAL MERCHANDISE STORES
11	601	0	0	0	-1	GROCERY STORES
11	602	0	0	0	-1	DAIRY PRODUCTS STORES
11	610	0	0	0	-1	RETAIL BAKERIES
11	611	0	0	0	-1	FOOD STORES, N.E.C.
11	612	0	0	0	-1	MOTOR VEHICLE DEALERS
11	620	0	0	0	-1	AUTO & HOME SUPPLY STORES
11	621	0	0	0	-1	GASOLINE SERVICE STATIONS
11	622	0	0	0	-1	MISCELLANEOUS VEHICLE DEALERS
11	630	0	0	0	-1	APPAREL & ACCESSORY STORES, EXCEPT SHOE
11	631	0	0	0	-1	SHOE STORES
11	632	0	0	0	-1	FURNITURE & HOME FURNISHINGS STORES
11	640	0	0	0	-1	HOUSEHOLD APPLIANCES, TV, & RADIO STORES
11	641	0	0	0	-1	EATING & DRINKING PLACES
11	642	0	0	0	-1	DRUG STORES
11	650	0	0	0	-1	LIQUOR STORES
11	651	0	0	0	-1	SPORTING GOODS, BICYCLES, & HOBBY STORES
11	652	0	0	0	-1	BOOK & STATIONERY STORES
11	660	0	0	0	-1	JEWELRY STORES
11	661	0	0	0	-1	SEWING, NEEDLEWORK, & PIECE GOODS STORES
11	662	0	0	0	-1	MAIL ORDER HOUSES
11	670	0	0	0	-1	VENDING MACHINE OPERATORS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	671	0	0	0	-1	DIRECT SELLING ESTABLISHMENTS
11	672	0	0	0	-1	FUEL & ICE DEALERS
11	681	0	0	0	-1	RETAIL FLORISTS
11	682	0	0	0	-1	MISCELLANEOUS RETAIL STORES
11	691	0	0	0	-1	NOT SPECIFIED RETAIL TRADE
11	700	0	0	0	-1	BANKING
11	701	0	0	0	-1	SAVINGS & LOAN ASSOCIATIONS
11	702	0	0	0	-1	CREDIT AGENCIES, N.E.C.
11	710	0	0	0	-1	SECURITY, COMMODITY BROKERAGE, & INVESTMENT COMPANIES
11	711	0	0	0	-1	INSURANCE
11	712	0	0	0	-1	REAL ESTATE, INCLUDING REAL ESTATE-INSURANCE-LAW OFFICES
11	721	0	0	0	-1	ADVERTISING
11	722	0	0	0	-1	SERVICES TO DWELLINGS & OTHER BUILDINGS
11	730	0	0	0	-1	COMMERCIAL RESEARCH, DEVELOPMENT, & TESTING LABS
11	731	0	0	0	-1	PERSONNEL SUPPLY SERVICES
11	732	0	0	0	-1	BUSINESS MANAGEMENT & CONSULTING SERVICES
11	740	0	0	0	-1	COMPUTER & DATA PROCESSING SERVICES
11	741	0	0	0	-1	DETECTIVE & PROTECTIVE SERVICES
11	742	0	0	0	-1	BUSINESS SERVICES, N.E.C.
11	750	0	0	0	-1	AUTOMOTIVE SERVICES, EXCEPT REPAIR
11	751	0	0	0	-1	AUTOMOTIVE REPAIR SHOPS
11	752	0	0	0	-1	ELECTRICAL REPAIR SHOPS
11	760	0	0	0	-1	MISCELLANEOUS REPAIR SERVICES
11	761	0	0	0	-1	PRIVATE HOUSEHOLDS
11	762	0	0	0	-1	HOTELS & MOTELS
11	770	0	0	0	-1	LODGING PLACES, EXCEPT HOTELS & MOTELS
11	771	0	0	0	-1	LAUNDRY, CLEANING, & GARMENT SERVICES
11	772	0	0	0	-1	BEAUTY SHOPS
11	780	0	0	0	-1	BARBER SHOPS
11	781	0	0	0	-1	FUNERAL SERVICE & CREMATORIES
11	782	0	0	0	-1	SHOE REPAIR SHOPS
11	790	0	0	0	-1	DRESSMAKING SHOPS
11	791	0	0	0	-1	MISCELLANEOUS PERSONAL SERVICES
11	800	0	0	0	-1	THEATERS & MOTION PICTURES
11	801	0	0	0	-1	BOWLING ALLEYS, BILLIARD & POOL PARLORS
11	802	0	0	0	-1	MISCELLANEOUS ENTERTAINMENT & RECREATION SERVICES
11	812	0	0	0	-1	OFFICES OF PHYSICIANS
11	820	0	0	0	-1	OFFICES OF DENTISTS
11	821	0	0	0	-1	OFFICES OF CHIROPRACTORS
11	822	0	0	0	-1	OFFICES OF OPTOMETRISTS
11	830	0	0	0	-1	OFFICES OF HEALTH PRACTITIONERS, N.E.C.

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	831	0	0	0	-1	HOSPITALS
11	832	0	0	0	-1	NURSING & PERSONAL CARE FACILITIES
11	840	0	0	0	-1	HEALTH SERVICES, N.E.C.
11	841	0	0	0	-1	LEGAL SERVICES
11	842	0	0	0	-1	ELEMENTARY & SECONDARY SCHOOLS
11	850	0	0	0	-1	COLLEGES & UNIVERSITIES
11	851	0	0	0	-1	BUSINESS, TRADE, & VOCATIONAL SCHOOLS
11	852	0	0	0	-1	LIBRARIES
11	860	0	0	0	-1	EDUCATIONAL SERVICES, N.E.C.
11	861	0	0	0	-1	JOB TRAINING & VOCATIONAL REHABILITATION SERVICES
11	862	0	0	0	-1	CHILD DAY CARE SERVICES
11	870	0	0	0	-1	RESIDENTIAL CARE FACILITIES, WITHOUT NURSING
11	871	0	0	0	-1	SOCIAL SERVICES, N.E.C.
11	872	0	0	0	-1	MUSEUMS, ART GALLERIES, & ZOOS
11	880	0	0	0	-1	RELIGIOUS ORGANIZATIONS
11	881	0	0	0	-1	MEMBERSHIP ORGANIZATIONS
11	882	0	0	0	-1	ENGINEERING, ARCHITECTURAL, & SURVEYING SERVICES
11	890	0	0	0	-1	ACCOUNTING, AUDITING, & BOOKKEEPING SERVICES
11	891	0	0	0	-1	NONCOMMERCIAL EDUCATIONAL & SCIENTIFIC RESEARCH
11	892	0	0	0	-1	MISCELLANEOUS PROFESSIONAL & RELATED SERVICES
11	900	0	0	0	-1	EXECUTIVE & LEGISLATIVE OFFICES
11	901	0	0	0	-1	GENERAL GOVERNMENT, N.E.C.
11	910	0	0	0	-1	JUSTICE, PUBLIC ORDER, & SAFETY
11	921	0	0	0	-1	PUBLIC FINANCE, TAXATION, & MONETARY POLICY
11	922	0	0	0	-1	ADMINISTRATION OF HUMAN RESOURCES PROGRAMS
11	930	0	0	0	-1	ADMINISTRATION OF ENVIRONMENTAL QUALITY & HOUSING PROGRAMS
11	931	0	0	0	-1	ADMINISTRATION OF ECONOMIC PROGRAMS
11	932	0	0	0	-1	NATIONAL SECURITY & INTERNATIONAL AFFAIRS
11	1003	0	0	0	-1	LEGISLATORS
11	1004	0	0	0	-1	CHIEF EXECUTIVES & OFFICIALS, PUBLIC ADMINISTRATION
11	1005	0	0	0	-1	ADMINISTRATORS & OFFICIALS, PUBLIC ADMINISTRATION
11	1006	0	0	0	-1	ADMINISTRATORS, PROTECTIVE SERVICES
11	1007	0	0	0	-1	FINANCIAL MANAGERS
11	1008	0	0	0	-1	PERSONNEL & LABOR RELATIONS MANAGERS
11	1009	0	0	0	-1	PURCHASING MANAGERS
11	1013	0	0	0	-1	MANAGERS, MARKETING, ADVERTISING & PUBLIC RELATIONS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1014	0	0	0	-1	ADMINISTRATORS, EDUCATION & RELATED FIELDS
11	1015	0	0	0	-1	MANAGERS, MEDICINE & HEALTH
11	1016	0	0	0	-1	MANAGERS, PROPERTIES & REAL ESTATE
11	1017	0	0	0	-1	POSTMASTERS & MAIL SUPERINTENDENTS
11	1018	0	0	0	-1	FUNERAL DIRECTORS
11	1019	0	0	0	-1	MANAGERS & ADMINISTRATORS, N.E.C.
11	1023	0	0	0	-1	ACCOUNTANTS & AUDITORS
11	1024	0	0	0	-1	UNDERWRITERS
11	1025	0	0	0	-1	OTHER FINANCIAL OFFICERS
11	1026	0	0	0	-1	MANAGEMENT ANALYSTS
11	1027	0	0	0	-1	PERSONNEL, TRAINING, & LABOR RELATIONS SPECIALISTS
11	1028	0	0	0	-1	PURCHASING AGENTS & BUYERS, FARM PRODUCTS
11	1029	0	0	0	-1	BUYERS, WHOLESALE & RETAIL, EXCEPT FARM PRODUCTS
11	1033	0	0	0	-1	PURCHASING AGENTS & BUYERS, N.E.C.
11	1034	0	0	0	-1	BUSINESS & PROMOTION AGENTS
11	1035	0	0	0	-1	CONSTRUCTION INSPECTORS
11	1036	0	0	0	-1	INSPECTORS & COMPLIANCE OFFICERS, EXCEPT CONSTRUCTION
11	1037	0	0	0	-1	MANAGEMENT RELATED OCCUPATIONS, N.E.C.
11	1043	0	0	0	-1	ARCHITECTS
11	1044	0	0	0	-1	AEROSPACE ENGINEERS
11	1045	0	0	0	-1	METALLURGICAL & MATERIALS ENGINEERS
11	1046	0	0	0	-1	MINING ENGINEERS
11	1047	0	0	0	-1	PETROLEUM ENGINEERS
11	1048	0	0	0	-1	CHEMICAL ENGINEERS
11	1049	0	0	0	-1	NUCLEAR ENGINEERS
11	1053	0	0	0	-1	CIVIL ENGINEERS
11	1054	0	0	0	-1	AGRICULTURAL ENGINEERS
11	1055	0	0	0	-1	ELECTRICAL & ELECTRONIC ENGINEERS
11	1056	0	0	0	-1	INDUSTRIAL ENGINEERS
11	1057	0	0	0	-1	MECHANICAL ENGINEERS
11	1058	0	0	0	-1	MARINE ENGINEERS & NAVAL ARCHITECTS
11	1059	0	0	0	-1	ENGINEERS, N.E.C.
11	1063	0	0	0	-1	SURVEYORS & MAPPING SCIENTISTS
11	1064	0	0	0	-1	COMPUTER SYSTEMS ANALYSTS & SCIENTISTS
11	1065	0	0	0	-1	OPERATIONS & SYSTEMS RESEARCHERS & ANALYSTS
11	1066	0	0	0	-1	ACTUARIES
11	1067	0	0	0	-1	STATISTICIANS
11	1068	0	0	0	-1	MATHEMATICAL SCIENTISTS, N.E.C.
11	1069	0	0	0	-1	PHYSICISTS & ASTRONOMERS
11	1073	0	0	0	-1	CHEMISTS, EXCEPT BIOCHEMISTS
11	1074	0	0	0	-1	ATMOSPHERIC & SPACE SCIENTISTS
11	1075	0	0	0	-1	GEOLOGISTS & GEODESISTS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1076	0	0	0	-1	PHYSICAL SCIENTISTS, N.E.C.
11	1077	0	0	0	-1	AGRICULTURAL & FOOD SCIENTISTS
11	1078	0	0	0	-1	BIOLOGICAL & LIFE SCIENTISTS
11	1079	0	0	0	-1	FORESTRY & CONSERVATION SCIENTISTS
11	1083	0	0	0	-1	MEDICAL SCIENTISTS
11	1084	0	0	0	-1	PHYSICIANS
11	1085	0	0	0	-1	DENTISTS
11	1086	0	0	0	-1	VETERINARIANS
11	1087	0	0	0	-1	OPTOMETRISTS
11	1088	0	0	0	-1	PODIATRISTS
11	1089	0	0	0	-1	HEALTH DIAGNOSING PRACTITIONERS, N.E.C.
11	1095	0	0	0	-1	REGISTERED NURSES
11	1096	0	0	0	-1	PHARMACISTS
11	1097	0	0	0	-1	DIETITIANS
11	1098	0	0	0	-1	INHALATION THERAPISTS
11	1099	0	0	0	-1	OCCUPATIONAL THERAPISTS
11	1103	0	0	0	-1	PHYSICAL THERAPISTS
11	1104	0	0	0	-1	SPEECH THERAPISTS
11	1105	0	0	0	-1	THERAPISTS, N.E.C.
11	1106	0	0	0	-1	PHYSICIANS' ASSISTANTS
11	1113	0	0	0	-1	EARTH, ENVIRONMENTAL, & MARINE SCIENCE TEACHERS
11	1114	0	0	0	-1	BIOLOGICAL SCIENCE TEACHERS
11	1115	0	0	0	-1	CHEMISTRY TEACHERS
11	1116	0	0	0	-1	PHYSICS TEACHERS
11	1117	0	0	0	-1	NATURAL SCIENCE TEACHERS, N.E.C.
11	1118	0	0	0	-1	PSYCHOLOGY TEACHERS
11	1119	0	0	0	-1	ECONOMICS TEACHERS
11	1123	0	0	0	-1	HISTORY TEACHERS
11	1124	0	0	0	-1	POLITICAL SCIENCE TEACHERS
11	1125	0	0	0	-1	SOCIOLOGY TEACHERS
11	1126	0	0	0	-1	SOCIAL SCIENCE TEACHERS, N.E.C.
11	1127	0	0	0	-1	ENGINEERING TEACHERS
11	1128	0	0	0	-1	MATHEMATICAL SCIENCE TEACHERS
11	1129	0	0	0	-1	COMPUTER SCIENCE TEACHERS
11	1133	0	0	0	-1	MEDICAL SCIENCE TEACHERS
11	1134	0	0	0	-1	HEALTH SPECIALTIES TEACHERS
11	1135	0	0	0	-1	BUSINESS, COMMERCE, & MARKETING TEACHERS
11	1136	0	0	0	-1	AGRICULTURE & FORESTRY TEACHERS
11	1137	0	0	0	-1	ART, DRAMA, & MUSIC TEACHERS
11	1138	0	0	0	-1	PHYSICAL EDUCATION TEACHERS
11	1139	0	0	0	-1	EDUCATION TEACHERS
11	1143	0	0	0	-1	ENGLISH TEACHERS
11	1144	0	0	0	-1	FOREIGN LANGUAGE TEACHERS
11	1145	0	0	0	-1	LAW TEACHERS
11	1146	0	0	0	-1	SOCIAL WORK TEACHERS
11	1147	0	0	0	-1	THEOLOGY TEACHERS
11	1148	0	0	0	-1	TRADE & INDUSTRIAL TEACHERS
11	1149	0	0	0	-1	HOME ECONOMICS TEACHERS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
11	1153	0	0	0	-1	TEACHERS, POSTSECONDARY, N.E.C.
11	1154	0	0	0	-1	POSTSECONDARY TEACHERS, SUBJECT NOT SPECIFIED
11	1155	0	0	0	-1	TEACHERS, PREKINDERGARTEN & KINDERGARTEN
11	1156	0	0	0	-1	TEACHERS, ELEMENTARY SCHOOL
11	1157	0	0	0	-1	TEACHERS, SECONDARY SCHOOL
11	1158	0	0	0	-1	TEACHERS, SPECIAL EDUCATION
11	1159	0	0	0	-1	TEACHERS, N.E.C.
11	1163	0	0	0	-1	COUNSELORS, EDUCATIONAL & VOCATIONAL
11	1164	0	0	0	-1	LIBRARIANS
11	1165	0	0	0	-1	ARCHIVISTS & CURATORS
11	1166	0	0	0	-1	ECONOMISTS
11	1167	0	0	0	-1	PSYCHOLOGISTS
11	1168	0	0	0	-1	SOCIOLOGISTS
11	1169	0	0	0	-1	SOCIAL SCIENTISTS, N.E.C.
11	1173	0	0	0	-1	URBAN PLANNERS
11	1174	0	0	0	-1	SOCIAL WORKERS
11	1175	0	0	0	-1	RECREATION WORKERS
11	1176	0	0	0	-1	CLERGY
11	1177	0	0	0	-1	RELIGIOUS WORKERS, N.E.C.
11	1178	0	0	0	-1	LAWYERS
11	1179	0	0	0	-1	JUDGES
11	1183	0	0	0	-1	AUTHORS
11	1184	0	0	0	-1	TECHNICAL WRITERS
11	1185	0	0	0	-1	DESIGNERS
11	1186	0	0	0	-1	MUSICIANS & COMPOSERS
11	1187	0	0	0	-1	ACTORS & DIRECTORS
11	1188	0	0	0	-1	PAINTERS, SCULPTORS, CRAFT-ARTISTS, & ARTIST PRINTMAKERS
11	1189	0	0	0	-1	PHOTOGRAPHERS
11	1193	0	0	0	-1	DANCERS
11	1194	0	0	0	-1	ARTISTS, PERFORMERS, & RELATED WORKERS, N.E.C.
11	1195	0	0	0	-1	EDITORS & REPORTERS
11	1197	0	0	0	-1	PUBLIC RELATIONS SPECIALISTS
11	1198	0	0	0	-1	ANNOUNCERS
11	1199	0	0	0	-1	ATHLETES
11	1203	0	0	0	-1	Health Technologists & Technicians
11	1204	0	0	0	-1	DENTAL HYGIENISTS
11	1205	0	0	0	-1	HEALTH RECORD TECHNOLOGISTS & TECHNICIANS
11	1206	0	0	0	-1	RADIOLOGIC TECHNICIANS
11	1207	0	0	0	-1	LICENSED PRACTICAL NURSES
11	1208	0	0	0	-1	HEALTH TECHNOLOGISTS & TECHNICIANS, N.E.C.
11	1213	0	0	0	-1	ELECTRICAL & ELECTRONIC TECHNICIANS
11	1214	0	0	0	-1	INDUSTRIAL ENGINEERING TECHNICIANS
11	1215	0	0	0	-1	MECHANICAL ENGINEERING TECHNICIANS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1216	0	0	0	-1	ENGINEERING TECHNICIANS, N.E.C.
11	1217	0	0	0	-1	DRAFTING OCCUPATIONS
11	1218	0	0	0	-1	SURVEYING & MAPPING TECHNICIANS
11	1223	0	0	0	-1	BIOLOGICAL TECHNICIANS
11	1224	0	0	0	-1	CHEMICAL TECHNICIANS
11	1225	0	0	0	-1	SCIENCE TECHNICIANS, N.E.C.
11	1226	0	0	0	-1	AIRPLANE PILOTS & NAVIGATORS
11	1227	0	0	0	-1	AIR TRAFFIC CONTROLLERS
11	1228	0	0	0	-1	BROADCAST EQUIPMENT OPERATORS
11	1229	0	0	0	-1	COMPUTER PROGRAMMERS
11	1233	0	0	0	-1	TOOL PROGRAMMERS, NUMERICAL CONTROL
11	1234	0	0	0	-1	LEGAL ASSISTANTS
11	1235	0	0	0	-1	TECHNICIANS, N.E.C.
11	1243	0	0	0	-1	SUPERVISORS & PROPRIETORS, SALES OCCUPATIONS
11	1253	0	0	0	-1	INSURANCE SALES OCCUPATIONS
11	1254	0	0	0	-1	REAL ESTATE SALES OCCUPATIONS
11	1255	0	0	0	-1	SECURITIES & FINANCIAL SERVICES SALES OCCUPATIONS
11	1256	0	0	0	-1	ADVERTISING & RELATED SALES OCCUPATIONS
11	1257	0	0	0	-1	SALES OCCUPATIONS, OTHER BUSINESS SERVICES
11	1258	0	0	0	-1	SALES ENGINEERS
11	1259	0	0	0	-1	SALES REPRESENTATIVES
11	1263	0	0	0	-1	SALES WORKERS, MOTOR VEHICLES & BOATS
11	1264	0	0	0	-1	SALES WORKERS, APPAREL
11	1265	0	0	0	-1	SALES WORKERS, SHOES
11	1266	0	0	0	-1	SALES WORKERS, FURNITURE & HOME FURNISHINGS
11	1267	0	0	0	-1	SALES WORKERS; RADIO, TELEVISION, HI-FI, & APPLIANCES
11	1268	0	0	0	-1	SALES WORKERS, HARDWARE & BUILDING SUPPLIES
11	1269	0	0	0	-1	SALES WORKERS, PARTS
11	1274	0	0	0	-1	SALES WORKERS, OTHER COMMOD.
11	1275	0	0	0	-1	SALES COUNTER CLERKS
11	1276	0	0	0	-1	CASHIERS
11	1277	0	0	0	-1	STREET & DOOR-TO-DOOR SALES WORKERS
11	1278	0	0	0	-1	NEWS VENDORS
11	1283	0	0	0	-1	DEMONSTRATORS, PROMOTERS & MODELS, SALES
11	1284	0	0	0	-1	AUCTIONEERS
11	1285	0	0	0	-1	SALES SUPPORT OCCUPATIONS, N.E.C.
11	1303	0	0	0	-1	SUPERVISORS, GENERAL OFFICE
11	1304	0	0	0	-1	SUPERVISORS, COMPUTER EQUIPMENT OPERATORS
11	1305	0	0	0	-1	SUPERVISORS, FINANCIAL RECORDS PROCESSING

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
11	1306	0	0	0	-1	CHIEF COMMUNICATIONS OPERATORS
11	1307	0	0	0	-1	SUPERVISORS; DISTRIBUTION, SCHEDULING, & ADJUSTING CLERKS
11	1308	0	0	0	-1	COMPUTER OPERATORS
11	1309	0	0	0	-1	PERIPHERAL EQUIPMENT OPERATORS
11	1313	0	0	0	-1	SECRETARIES
11	1314	0	0	0	-1	STENOGRAPHERS
11	1315	0	0	0	-1	TYPISTS
11	1316	0	0	0	-1	INTERVIEWERS
11	1317	0	0	0	-1	HOTEL CLERKS
11	1318	0	0	0	-1	TRANSPORTATION TICKET & RESERVATION AGENTS
11	1319	0	0	0	-1	RECEPTIONISTS
11	1323	0	0	0	-1	INFORMATION CLERKS, N.E.C.
11	1325	0	0	0	-1	CLASSIFIED-AD CLERKS
11	1326	0	0	0	-1	CORRESPONDENCE CLERKS
11	1327	0	0	0	-1	ORDER CLERKS
11	1328	0	0	0	-1	PERSONNEL CLERKS, EXCEPT PAYROLL & TIMEKEEPING
11	1329	0	0	0	-1	LIBRARY CLERKS
11	1335	0	0	0	-1	FILE CLERKS
11	1336	0	0	0	-1	RECORDS CLERKS
11	1337	0	0	0	-1	BOOKKEEPERS, ACCOUNTING, & AUDITING CLERKS
11	1338	0	0	0	-1	PAYROLL & TIMEKEEPING CLERKS
11	1339	0	0	0	-1	BILLING CLERKS
11	1343	0	0	0	-1	COST & RATE CLERKS
11	1344	0	0	0	-1	BILLING, POSTING, & CALCULATING MACHINE OPERATORS
11	1345	0	0	0	-1	DUPLICATING MACHINE OPERATORS
11	1346	0	0	0	-1	MAIL PREPARING & PAPER HANDLING MACHINE OPERATORS
11	1347	0	0	0	-1	OFFICE MACHINE OPERATORS, N.E.C.
11	1348	0	0	0	-1	TELEPHONE OPERATORS
11	1349	0	0	0	-1	TELEGRAPHERS
11	1353	0	0	0	-1	COMMUNICATIONS EQUIPMENT OPERATORS, N.E.C.
11	1354	0	0	0	-1	POSTAL CLERKS, EXCEPT MAIL CARRIERS
11	1355	0	0	0	-1	MAIL CARRIERS, POSTAL SERVICE
11	1356	0	0	0	-1	MAIL CLERKS, EXCEPT POSTAL SERVICE
11	1357	0	0	0	-1	MESSENGERS
11	1359	0	0	0	-1	DISPATCHERS
11	1363	0	0	0	-1	PRODUCTION COORDINATORS
11	1364	0	0	0	-1	TRAFFIC, SHIPPING, & RECEIVING CLERKS
11	1365	0	0	0	-1	STOCK & INVENTORY CLERKS
11	1366	0	0	0	-1	METER READERS
11	1368	0	0	0	-1	WEIGHERS, MEASURERS, & CHECKERS
11	1369	0	0	0	-1	SAMPLERS
11	1373	0	0	0	-1	EXPEDITERS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1374	0	0	0	-1	MATERIAL RECORDING, SCHEDULING, & DISTRIB. CLERKS, N.E.C.
11	1375	0	0	0	-1	INSURANCE ADJUSTERS, EXAMINERS, & INVESTIGATORS
11	1376	0	0	0	-1	INVESTIGATORS & ADJUSTERS, EXCEPT INSURANCE
11	1377	0	0	0	-1	ELIGIBILITY CLERKS, SOCIAL WELFARE
11	1378	0	0	0	-1	BILL & ACCOUNT COLLECTORS
11	1379	0	0	0	-1	GENERAL OFFICE CLERKS
11	1383	0	0	0	-1	BANK TELLERS
11	1384	0	0	0	-1	PROOFREADERS
11	1385	0	0	0	-1	DATA-ENTRY KEYERS
11	1386	0	0	0	-1	STATISTICAL CLERKS
11	1387	0	0	0	-1	TEACHERS' AIDES
11	1389	0	0	0	-1	ADMINISTRATIVE SUPPORT OCCUPATION, N.E.C.
11	1403	0	0	0	-1	LAUNDERERS & IRONERS
11	1404	0	0	0	-1	COOKS, PRIVATE HOUSEHOLD
11	1405	0	0	0	-1	HOUSEKEEPERS & BUTLERS
11	1406	0	0	0	-1	CHILD CARE WORKERS, PRIVATE HOUSEHOLD
11	1407	0	0	0	-1	PRIVATE HOUSEHOLD CLEANERS & SERVANTS
11	1413	0	0	0	-1	SUPERVISORS, FIREFIGHTING & FIRE PREVENTION OCCUPATIONS
11	1414	0	0	0	-1	SUPERVISORS, POLICE & DETECTIVES
11	1415	0	0	0	-1	SUPERVISORS, GUARDS
11	1416	0	0	0	-1	FIRE INSPECTION & FIRE PREVENTION OCCUPATIONS
11	1417	0	0	0	-1	FIREFIGHTING OCCUPATIONS
11	1418	0	0	0	-1	POLICE & DETECTIVES, PUBLIC SERVICE
11	1423	0	0	0	-1	SHERIFFS, BAILIFFS, & OTHER LAW ENFORCEMENT OFFICERS
11	1424	0	0	0	-1	CORRECTIONAL INSTITUTION OFFICERS
11	1425	0	0	0	-1	CROSSING GUARDS
11	1426	0	0	0	-1	GUARDS & POLICE, EXCEPT PUBLIC SERVICE
11	1427	0	0	0	-1	PROTECTIVE SERVICE OCCUPATIONS, N.E.C.
11	1433	0	0	0	-1	SUPERVISORS, FOOD PREPARATION & SERVICE OCCUPATIONS
11	1434	0	0	0	-1	BARTENDERS
11	1435	0	0	0	-1	WAITERS & WAITRESSES
11	1436	0	0	0	-1	COOKS, EXCEPT SHORT ORDER
11	1437	0	0	0	-1	SHORT-ORDER COOKS
11	1438	0	0	0	-1	FOOD COUNTER, FOUNTAIN & RELATED OCCUPATIONS
11	1439	0	0	0	-1	KITCHEN WORKERS, FOOD PREPARATION
11	1443	0	0	0	-1	WAITERS' & WAITRESSES' ASSISTANTS
11	1444	0	0	0	-1	MISCELLANEOUS FOOD PREPARATION OCCUPATIONS
11	1445	0	0	0	-1	DENTAL ASSISTANTS

5 of 5

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1446	0	0	0	-1	HEALTH AIDES, EXCEPT NURSING
11	1447	0	0	0	-1	NURSING AIDES, ORDERLIES, & ATTENDANTS
11	1448	0	0	0	-1	SUPERVISORS, CLEANING & BUILDING SERVICE WORKERS
11	1449	0	0	0	-1	MAIDS & HOUSEMEN
11	1453	0	0	0	-1	JANITORS & CLEANERS
11	1454	0	0	0	-1	ELEVATOR OPERATORS
11	1455	0	0	0	-1	PEST CONTROL OCCUPATIONS
11	1456	0	0	0	-1	SUPERVISORS, PERSONAL SERVICE OCCUPATIONS
11	1457	0	0	0	-1	BARBERS
11	1458	0	0	0	-1	HAIRDRESSERS & COSMETOLOGISTS
11	1459	0	0	0	-1	ATTENDANTS, AMUSEMENT & RECREATION FACILITIES
11	1463	0	0	0	-1	GUIDES
11	1464	0	0	0	-1	USHERS
11	1465	0	0	0	-1	PUBLIC TRANSPORTATION ATTENDANTS
11	1466	0	0	0	-1	BAGGAGE PORTERS & BELLHOPS
11	1467	0	0	0	-1	WELFARE SERVICE AIDES
11	1468	0	0	0	-1	CHILD CARE WORKERS, EXCEPT PRIVATE HOUSEHOLD
11	1469	0	0	0	-1	PERSONAL SERVICE OCCUPATIONS, N.E.C.
11	1473	0	0	0	-1	FARMERS, EXCEPT HORTICULTURAL
11	1474	0	0	0	-1	HORTICULTURAL SPECIALTY FARMERS
11	1475	0	0	0	-1	MANAGERS, FARMS, EXCEPT HORTICULTURAL
11	1476	0	0	0	-1	MANAGERS, HORTICULTURAL SPECIALTY FARMS
11	1477	0	0	0	-1	SUPERVISORS, FARM WORKERS
11	1479	0	0	0	-1	FARM WORKERS, AGRICULTURAL PRODUCTION, CROPS
11	1483	0	0	0	-1	MARINE LIFE CULTIVATION WORKERS
11	1484	0	0	0	-1	NURSERY WORKERS
11	1485	0	0	0	-1	SUPERVISORS, RELATED AGRICULTURAL OCCUPATIONS
11	1486	0	0	0	-1	GROUNDSKEEPERS & GARDENERS, EXCEPT FARM
11	1487	0	0	0	-1	ANIMAL CARETAKERS, EXCEPT FARM
11	1488	0	0	0	-1	GRADERS & SORTERS, AGRICULTURAL PRODUCTS
11	1489	0	0	0	-1	INSPECTORS, AGRICULTURAL PRODUCTS
11	1494	0	0	0	-1	SUPERVISORS, FORESTRY & LOGGING WORKERS
11	1495	0	0	0	-1	FORESTRY WORKERS, EXCEPT LOGGING
11	1496	0	0	0	-1	TIMBER CUTTING & LOGGING OCCUPATIONS
11	1497	0	0	0	-1	CAPTAINS & OTHER OFFICERS, FISHING VESSELS
11	1498	0	0	0	-1	FISHERS
11	1499	0	0	0	-1	HUNTERS & TRAPPERS
11	1503	0	0	0	-1	SUPERVISORS, MECHANICS & REPAIRERS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1505	0	0	0	-1	AUTOMOBILE MECHANICS, EXCEPT APPRENTICES
11	1506	0	0	0	-1	AUTOMOBILE MECHANIC APPRENTICES
11	1507	0	0	0	-1	BUS, TRUCK, & STATIONARY ENGINE MECHANICS
11	1508	0	0	0	-1	AIRCRAFT ENGINE MECHANICS
11	1509	0	0	0	-1	SMALL ENGINE REPAIRERS
11	1514	0	0	0	-1	AUTOMOBILE BODY & RELATED REPAIRERS
11	1515	0	0	0	-1	AIRCRAFT MECHANICS, EXCEPT ENGINE
11	1516	0	0	0	-1	HEAVY EQUIPMENT MECHANICS
11	1517	0	0	0	-1	FARM EQUIPMENT MECHANICS
11	1518	0	0	0	-1	INDUSTRIAL MACHINERY REPAIRERS
11	1519	0	0	0	-1	MACHINERY MAINTENANCE OCCUPATIONS
11	1523	0	0	0	-1	ELECTRONIC REPAIRERS, COMMUNICATIONS & INDUSTRIAL EQUIPMENT
11	1525	0	0	0	-1	DATA PROCESSING EQUIPMENT REPAIRERS
11	1526	0	0	0	-1	HOUSEHOLD APPLIANCE & POWER TOOL REPAIRERS
11	1527	0	0	0	-1	TELEPHONE LINE INSTALLERS & REPAIRERS
11	1529	0	0	0	-1	TELEPHONE INSTALLERS & REPAIRERS
11	1533	0	0	0	-1	MISCELLANEOUS ELECTRICAL & ELECTRONIC EQUIPMENT REPAIRERS
11	1534	0	0	0	-1	HEATING, AIR CONDITIONING, & REFRIGERATION MECHANICS
11	1535	0	0	0	-1	CAMERA, WATCH, & MUSICAL INSTRUMENT REPAIRERS
11	1536	0	0	0	-1	LOCKSMITHS & SAFE REPAIRERS
11	1538	0	0	0	-1	OFFICE MACHINE REPAIRERS
11	1539	0	0	0	-1	MECHANICAL CONTROLS & VALVE REPAIRERS
11	1543	0	0	0	-1	ELEVATOR INSTALLERS & REPAIRERS
11	1544	0	0	0	-1	MILLWRIGHTS
11	1547	0	0	0	-1	SPECIFIED MECHANICS & REPAIRERS, N.E.C.
11	1549	0	0	0	-1	NOT SPECIFIED MECHANICS & REPAIRERS
11	1553	0	0	0	-1	SUPERVISORS; BRICKMASONS, STONEMASONS, & TILE SETTERS
11	1554	0	0	0	-1	SUPERVISORS, CARPENTERS & RELATED WORKERS
11	1555	0	0	0	-1	SUPERVISORS, ELECTRICIANS & POWER TRANSMISSION INSTALLERS
11	1556	0	0	0	-1	SUPERVISORS; PAINTERS, PAPERHANGERS, & PLASTERERS
11	1557	0	0	0	-1	SUPERVISORS; PLUMBERS, PIPEFITTERS, & STEAMFITTERS
11	1558	0	0	0	-1	CONSTRUCTION TRADES SUPERVISORS, N.E.C.
11	1563	0	0	0	-1	BRICKMASONS & STONEMASONS, EXCEPT APPRENTICES
11	1564	0	0	0	-1	BRICKMASON & STONEMASON APPRENTICES
11	1565	0	0	0	-1	TILE SETTERS, HARD & SOFT

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1566	0	0	0	-1	CARPET INSTALLERS
11	1567	0	0	0	-1	CARPENTERS, EXCEPT APPRENTICES
11	1569	0	0	0	-1	CARPENTER APPRENTICES
11	1573	0	0	0	-1	DRYWALL INSTALLERS
11	1575	0	0	0	-1	ELECTRICIANS, EXCEPT APPRENTICES
11	1576	0	0	0	-1	ELECTRICIAN APPRENTICES
11	1577	0	0	0	-1	ELECTRICAL POWER INSTALLERS & REPAIRERS
11	1579	0	0	0	-1	PAINTERS, CONSTRUCTION & MAINTENANCE
11	1583	0	0	0	-1	PAPERHANGERS
11	1584	0	0	0	-1	PLASTERERS
11	1585	0	0	0	-1	PLUMBERS, PIPEFITTERS, & STEAMFITTERS, EXCEPT APPRENTICES
11	1587	0	0	0	-1	PLUMBER, PIPEFITTER, & STEAMFITTER APPRENTICES
11	1588	0	0	0	-1	CONCRETE & TERRAZZO FINISHERS
11	1589	0	0	0	-1	GLAZIERS
11	1593	0	0	0	-1	INSULATION WORKERS
11	1594	0	0	0	-1	PAVING, SURFACING, & TAMPING EQUIPMENT OPERATORS
11	1595	0	0	0	-1	ROOFERS
11	1596	0	0	0	-1	SHEETMETAL DUCT INSTALLERS
11	1597	0	0	0	-1	STRUCTURAL METAL WORKERS
11	1598	0	0	0	-1	DRILLERS, EARTH
11	1599	0	0	0	-1	CONSTRUCTION TRADES, N.E.C.
11	1613	0	0	0	-1	SUPERVISORS, EXTRACTIVE OCCUPATIONS
11	1614	0	0	0	-1	DRILLERS, OIL WELL
11	1615	0	0	0	-1	EXPLOSIVES WORKERS
11	1616	0	0	0	-1	MINING MACHINE OPERATORS
11	1617	0	0	0	-1	MINING OCCUPATIONS, N.E.C.
11	1633	0	0	0	-1	SUPERVISORS, PRODUCTION OCCUPATIONS
11	1634	0	0	0	-1	TOOL & DIE MAKERS, EXCEPT APPRENTICES
11	1635	0	0	0	-1	TOOL & DIE MAKER APPRENTICES
11	1636	0	0	0	-1	PRECISION ASSEMBLERS, METAL
11	1637	0	0	0	-1	MACHINISTS, EXCEPT APPRENTICES
11	1639	0	0	0	-1	MACHINIST APPRENTICES
11	1643	0	0	0	-1	BOILERMAKERS
11	1644	0	0	0	-1	PRECISION GRINDERS, FILERS, & TOOL SHARPENERS
11	1645	0	0	0	-1	PATTERNMAKERS & MODEL MAKERS, METAL
11	1646	0	0	0	-1	LAY-OUT WORKERS
11	1647	0	0	0	-1	PRECIOUS STONES & METALS WORKERS (JEWELERS)
11	1649	0	0	0	-1	ENGRAVERS, METAL
11	1653	0	0	0	-1	SHEET METAL WORKERS, EXCEPT APPRENTICES
11	1654	0	0	0	-1	SHEET METAL WORKER APPRENTICES
11	1655	0	0	0	-1	MISCELLANEOUS PRECISION METAL WORKERS
11	1656	0	0	0	-1	PATTERNMAKERS & MODEL MAKERS, WOOD

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1657	0	0	0	-1	CABINET MAKERS & BENCH CARPENTERS
11	1658	0	0	0	-1	FURNITURE & WOOD FINISHERS
11	1659	0	0	0	-1	MISCELLANEOUS PRECISION WOODWORKERS
11	1666	0	0	0	-1	DRESSMAKERS
11	1667	0	0	0	-1	TAILORS
11	1668	0	0	0	-1	UPHOLSTERERS
11	1669	0	0	0	-1	SHOE REPAIRERS
11	1673	0	0	0	-1	APPAREL & FABRIC PATTERNMAKERS
11	1674	0	0	0	-1	MISCELLANEOUS PRECISION APPAREL & FABRIC WORKERS
11	1675	0	0	0	-1	HAND MOLDERS & SHAPERS, EXCEPT JEWELERS
11	1676	0	0	0	-1	PATTERNMAKERS, LAY-OUT WORKERS, & CUTTERS
11	1677	0	0	0	-1	OPTICAL GOODS WORKERS
11	1678	0	0	0	-1	DENTAL LABORATORY & MEDICAL APPLIANCE TECHNICIANS
11	1679	0	0	0	-1	BOOKBINDERS
11	1683	0	0	0	-1	ELECTRICAL & ELECTRONIC EQUIPMENT ASSEMBLERS
11	1684	0	0	0	-1	MISCELLANEOUS PRECISION WORKERS, N.E.C.
11	1686	0	0	0	-1	BUTCHERS & MEAT CUTTERS
11	1687	0	0	0	-1	BAKERS
11	1688	0	0	0	-1	FOOD BATCHMAKERS
11	1689	0	0	0	-1	INSPECTORS, TESTERS, & GRADERS
11	1693	0	0	0	-1	ADJUSTERS & CALIBRATORS
11	1694	0	0	0	-1	WATER & SEWAGE TREATMENT PLANT OPERATORS
11	1695	0	0	0	-1	POWER PLANT OPERATORS
11	1696	0	0	0	-1	STATIONARY ENGINEERS
11	1699	0	0	0	-1	MISCELLANEOUS PLANT & SYSTEM OPERATORS
11	1703	0	0	0	-1	LATHE & TURNING MACHINE SET-UP OPERATORS
11	1704	0	0	0	-1	LATHE & TURNING MACHINE OPERATORS
11	1705	0	0	0	-1	MILLING & PLANING MACHINE OPERATORS
11	1706	0	0	0	-1	PUNCHING & STAMPING PRESS MACHINE OPERATORS
11	1707	0	0	0	-1	ROLLING MACHINE OPERATORS
11	1708	0	0	0	-1	DRILLING & BORING MACHINE OPERATORS
11	1709	0	0	0	-1	GRINDING, ABRADING, BUFFING, & POLISHING MACHINE OPERATORS
11	1713	0	0	0	-1	FORGING MACHINE OPERATORS
11	1714	0	0	0	-1	NUMERICAL CONTROL MACHINE OPERATORS
11	1715	0	0	0	-1	MISC. METAL, PLASTIC, STONE, & GLASS WORKING MACHINE OPS.
11	1717	0	0	0	-1	FABRICATING MACHINE OPERATORS, N.E.C.
11	1719	0	0	0	-1	MOLDING & CASTING MACHINE OPERATORS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1723	0	0	0	-1	METAL PLATING MACHINE OPERATORS
11	1724	0	0	0	-1	HEAT TREATING EQUIPMENT OPERATORS
11	1725	0	0	0	-1	MISCELLANEOUS METAL & PLASTIC PROCESSING MACHINE OPERATORS
11	1726	0	0	0	-1	WOOD LATHE, ROUTING, & PLANING MACHINE OPERATORS
11	1727	0	0	0	-1	SAWING MACHINE OPERATORS
11	1728	0	0	0	-1	SHAPING & JOINING MACHINE OPERATORS
11	1729	0	0	0	-1	NAILING & TACKING MACHINE OPERATORS
11	1733	0	0	0	-1	MISCELLANEOUS WOODWORKING MACHINE OPERATORS
11	1734	0	0	0	-1	PRINTING MACHINE OPERATORS
11	1735	0	0	0	-1	PHOTOENGRAVERS & LITHOGRAPHERS
11	1736	0	0	0	-1	TYPESETTERS & COMPOSITORS
11	1737	0	0	0	-1	MISCELLANEOUS PRINTING MACHINE OPERATORS
11	1738	0	0	0	-1	WINDING & TWISTING MACHINE OPERATORS
11	1739	0	0	0	-1	KNITTING, LOOPING, TAPING, & WEAVING MACHINE OPERATORS
11	1743	0	0	0	-1	TEXTILE CUTTING MACHINE OPERATORS
11	1744	0	0	0	-1	TEXTILE SEWING MACHINE OPERATORS
11	1745	0	0	0	-1	SHOE MACHINE OPERATORS
11	1747	0	0	0	-1	PRESSING MACHINE OPERATORS
11	1748	0	0	0	-1	LAUNDERING & DRY CLEANING MACHINE OPERATORS
11	1749	0	0	0	-1	MISCELLANEOUS TEXTILE MACHINE OPERATORS
11	1753	0	0	0	-1	CEMENTING & GLUING MACHINE OPERATORS
11	1754	0	0	0	-1	PACKAGING & FILLING MACHINE OPERATORS
11	1755	0	0	0	-1	EXTRUDING & FORMING MACHINE OPERATORS
11	1756	0	0	0	-1	MIXING & BLENDING MACHINE OPERATORS
11	1757	0	0	0	-1	SEPARATING, FILTERING, & CLARIFYING MACHINE OPERATORS
11	1758	0	0	0	-1	COMPRESSING & COMPACTING MACHINE OPERATORS
11	1759	0	0	0	-1	PAINTING & PAINT SPRAYING MACHINE OPERATORS
11	1763	0	0	0	-1	ROASTING & BAKING MACHINE OPERATORS, FOOD
11	1764	0	0	0	-1	WASHING, CLEANING, & PICKLING MACHINE OPERATORS
11	1765	0	0	0	-1	FOLDING MACHINE OPERATORS
11	1766	0	0	0	-1	FURNACE, KILN, & OVEN OPERATORS, EXCEPT FOOD
11	1768	0	0	0	-1	CRUSHING & GRINDING MACHINE OPERATORS
11	1769	0	0	0	-1	SLICING & CUTTING MACHINE OPERATORS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1773	0	0	0	-1	MOTION PICTURE PROJECTIONISTS
11	1774	0	0	0	-1	PHOTOGRAPHIC PROCESS MACHINE OPERATORS
11	1777	0	0	0	-1	MISCELLANEOUS MACHINE OPERATORS, N.E.C.
11	1779	0	0	0	-1	MACHINE OPERATORS, NOT SPECIFIED
11	1783	0	0	0	-1	WELDERS & CUTTERS
11	1784	0	0	0	-1	SOLDERERS & BRAZERS
11	1785	0	0	0	-1	ASSEMBLERS
11	1786	0	0	0	-1	HAND CUTTING & TRIMMING OCCUPATIONS
11	1787	0	0	0	-1	HAND MOLDING, CASTING, & FORMING OCCUPATIONS
11	1789	0	0	0	-1	HAND PAINTING, COATING, & DECORATING OCCUPATIONS
11	1793	0	0	0	-1	HAND ENGRAVING & PRINTING OCCUPATIONS
11	1794	0	0	0	-1	HAND GRINDING & POLISHING OCCUPATIONS
11	1795	0	0	0	-1	MISCELLANEOUS HAND WORKING OCCUPATIONS
11	1796	0	0	0	-1	PRODUCTION INSPECTORS, CHECKERS, & EXAMINERS
11	1797	0	0	0	-1	PRODUCTION TESTERS
11	1798	0	0	0	-1	PRODUCTION SAMPLERS & WEIGHERS
11	1799	0	0	0	-1	GRADERS & SORTERS, EXCEPT AGRICULTURAL
11	1803	0	0	0	-1	SUPERVISORS, MOTOR VEHICLE OPERATORS
11	1804	0	0	0	-1	TRUCK DRIVERS, HEAVY
11	1805	0	0	0	-1	TRUCK DRIVERS, LIGHT
11	1806	0	0	0	-1	DRIVER-SALES WORKERS
11	1808	0	0	0	-1	BUS DRIVERS
11	1809	0	0	0	-1	TAXICAB DRIVERS & CHAUFFEURS
11	1813	0	0	0	-1	PARKING LOT ATTENDANTS
11	1814	0	0	0	-1	MOTOR TRANSPORTATION OCCUPATIONS, N.E.C.
11	1823	0	0	0	-1	RAILROAD CONDUCTORS & YARDMASTERS
11	1824	0	0	0	-1	LOCOMOTIVE OPERATING OCCUPATIONS
11	1825	0	0	0	-1	RAILROAD BRAKE, SIGNAL, & SWITCH OPERATORS
11	1826	0	0	0	-1	RAIL VEHICLE OPERATORS, N.E.C.
11	1828	0	0	0	-1	SHIP CAPTAINS & MATES, EXCEPT FISHING BOATS
11	1829	0	0	0	-1	SAILORS & DECKHANDS
11	1833	0	0	0	-1	MARINE ENGINEERS
11	1834	0	0	0	-1	BRIDGE, LOCK, & LIGHTHOUSE TENDERS
11	1843	0	0	0	-1	SUPERVISORS, MATERIAL MOVING EQUIPMENT OPERATORS
11	1844	0	0	0	-1	OPERATING ENGINEERS
11	1845	0	0	0	-1	LONGSHORE EQUIPMENT OPERATORS
11	1848	0	0	0	-1	HOIST & WINCH OPERATORS

Appendix B: IBS Attribute Dictionary
PLACE OF WORK DATA

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
11	1849	0	0	0	-1	CRANE & TOWER OPERATORS
11	1853	0	0	0	-1	EXCAVATING & LOADING MACHINE OPERATORS
11	1855	0	0	0	-1	GRADER, DOZER, & SCRAPER OPERATORS
11	1856	0	0	0	-1	INDUSTRIAL TRUCK & TRACTOR EQUIPMENT OPERATORS
11	1859	0	0	0	-1	MISCELLANEOUS MATERIAL MOVING EQUIPMENT OPERATORS
11	1863	0	0	0	-1	SUPERVISORS; HANDLERS, EQUIP. CLEANERS, & LABORERS, N.E.C.
11	1864	0	0	0	-1	HELPERS, MECHANICS & REPAIRERS
11	1865	0	0	0	-1	HELPERS, CONSTRUCTION TRADES
11	1866	0	0	0	-1	HELPERS, SURVEYOR
11	1867	0	0	0	-1	HELPERS, EXTRACTIVE OCCUPATIONS
11	1869	0	0	0	-1	CONSTRUCTION LABORERS
11	1873	0	0	0	-1	PRODUCTION HELPERS
11	1875	0	0	0	-1	GARBAGE COLLECTORS
11	1876	0	0	0	-1	STEVEDORES
11	1877	0	0	0	-1	STOCK HANDLERS & BAGGERS
11	1878	0	0	0	-1	MACHINE FEEDERS & OFFBEARERS
11	1883	0	0	0	-1	FREIGHT, STOCK, & MATERIAL HANDLERS, N.E.C.
11	1885	0	0	0	-1	GARAGE & SERVICE STATION RELATED OCCUPATIONS
11	1887	0	0	0	-1	VEHICLE WASHERS & EQUIPMENT CLEANERS
11	1888	0	0	0	-1	HAND PACKERS & PACKAGERS
11	1889	0	0	0	-1	LABORERS, EXCEPT CONSTRUCTION
11	2000	0	1	0	-1	RESTRICTED BY HANDICAP
11	2001	0	1	0	-1	# OF HOURS WORKED PER WEEK
11	2002	0	1	0	-1	CLASS OF WORKER
11	2003	0	1	0	-1	TIME
11	2004	0	1	0	-1	SOCIAL SECURITY INCOME (THOUSANDS)
11	2005	0	1	0	-1	WAGE INCOME (THOUSANDS)
11	2006	0	1	0	-1	PUBLIC ASSISTANCE INCOME (THOUSANDS)
11	2007	0	1	0	-1	NON FARM SECTOR INCOME (THOUSANDS)
11	2008	0	1	0	-1	OTHER INCOME (THOUSANDS)
11	2009	0	1	0	-1	FARM SECTOR EMPLOYMENT INCOME (THOUSANDS)
11	2010	0	1	0	-1	PROPERTY INCOME (THOUSANDS)
11	2011	0	1	0	-1	TOTAL INCOME (THOUSANDS)
11	3200	0	0	0	-1	NUMBER OF FARMS (1- 9ACRES)
11	3210	0	0	0	-1	NUMBER OF FARMS (10- 49ACRES)
11	3220	0	0	0	-1	NUMBER OF FARMS (50- 179ACRES)
11	3230	0	0	0	-1	NUMBER OF FARMS (180- 499ACRES)
11	3240	0	0	0	-1	NUMBER OF FARMS (500- 999ACRES)
11	3250	0	0	0	-1	NUMBER OF FARMS (1000- 1999ACRES)
11	3260	0	0	0	-1	NUMBER OF FARMS (2000OR MORE ACRES)
11	3280	0	0	0	-1	NUMBER OF POULTRY FARMS

Appendix B: IBS Attribute Dictionary
HAZARDOUS MATERIAL SITES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
12	0	0	1	0	-1	HAZARDOUS MATERIAL SITES
						RESOURCES
13	1	0	1	0	-1	1ST AID
13	2	0	1	0	-1	BARRICAD
13	3	0	1	0	-1	CARS
13	4	0	1	0	-1	COMM EQ
13	5	0	1	0	-1	CONST EQ
13	6	0	1	0	-1	DRY GOOD
13	7	0	1	0	-1	EMERG EQ
13	8	0	1	0	-1	FOOD
13	9	0	1	0	-1	GENERATR
13	10	0	1	0	-1	HAND TL
13	11	0	1	0	-1	HEAVY EQ
13	12	0	1	0	-1	LIGHTS
13	13	0	1	0	-1	MEDIC EQ
13	14	0	1	0	-1	OFFICE M
13	15	0	1	0	-1	PAVE EQ
13	16	0	1	0	-1	PEOPLE
13	17	0	1	0	-1	POWER TL
13	18	0	1	0	-1	PREFAB B
13	19	0	1	0	-1	RESCUE
13	20	0	1	0	-1	SCALES
13	21	0	1	0	-1	SIREN-NR
13	22	0	1	0	-1	SIREN-R
13	23	0	1	0	-1	TRANSPRT
13	24	0	1	0	-1	TRUCKS
13	25	0	1	0	-1	WATER
13	26	0	1	0	-1	WEAPONS
13	3089	0	1	0	-1	BARRICADES
13	3425	0	1	0	-1	HAND SAWS
13	3433	0	1	0	-1	HEATERS
13	3464	0	1	0	-1	STEEL SHAPES FOR SHORING
13	3482	0	1	0	-1	MODULAR BUILDINGS
13	3483	0	1	0	-1	MOBILE OFFICES
13	3484	0	1	0	-1	OFFICE TRAILERS
13	3485	0	1	0	-1	STORAGE CONTAINERS
13	3495	0	1	0	-1	LADDER
13	3531	0	1	0	-1	DOZERS
13	3532	0	1	0	-1	LOADERS
13	3533	0	1	0	-1	TRACTOR
13	3534	0	1	0	-1	CRAWLER DOZER
13	3535	0	1	0	-1	CRANE
13	3536	0	1	0	-1	CRAWLER MOUNT CRANE
13	3537	0	1	0	-1	EXCAVATOR
13	3538	0	1	0	-1	SCRAPER/BLADE
13	3539	0	1	0	-1	GRADER
13	3540	0	1	0	-1	BACKHOE
13	3541	0	1	0	-1	BOOM TRUCK
13	3542	0	1	0	-1	ROLLER

**Appendix B: IBS Attribute Dictionary
RESOURCES**

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
13	3543	0	1	0	-1	TRACTOR TRAILER
13	3544	0	1	0	-1	FORK LIFT
13	3545	0	1	0	-1	CONVEYOR
13	3546	0	1	0	-1	BOBCAT
13	3551	0	1	0	-1	VIBRATORS
13	3552	0	1	0	-1	WELDER
13	3553	0	1	0	-1	JACK HAMMER
13	3554	0	1	0	-1	HAND HELD POWER SAWS
13	3555	0	1	0	-1	NAIL GUN
13	3556	0	1	0	-1	STEEL CUTTING EQUIPMENT
13	3557	0	1	0	-1	CONCRETE SAW
13	3558	0	1	0	-1	GRINDERS
13	3561	0	1	0	-1	DRILL
13	3562	0	1	0	-1	WATER PUMP
13	3563	0	1	0	-1	AIR COMPRESSOR
13	3564	0	1	0	-1	STEAM CLEANER
13	3565	0	1	0	-1	COMPACTOR
13	3579	0	1	0	-1	COPIERS
13	3581	0	1	0	-1	MOBILE ASPHALT PLANT
13	3582	0	1	0	-1	CRUSHING EQUIPMENT
13	3584	0	1	0	-1	ROCK CRUSHING SPREAD
13	3596	0	1	0	-1	SCALES
13	3620	0	1	0	-1	GENERATOR
13	3648	0	1	0	-1	WARNING LIGHTS
13	3662	0	1	0	-1	FAX MACHINE
13	3685	0	1	0	-1	FLOODLIGHTS
13	3713	0	1	0	-1	PICKUP TRUCK
13	3714	0	1	0	-1	FLATBED TRUCK
13	3715	0	1	0	-1	END DUMP TRUCK
13	3716	0	1	0	-1	BOTTOM DUMP TRUCK
13	3717	0	1	0	-1	WATER TRUCK
13	3721	0	1	0	-1	FIRE TRUCK - PUMPER
13	3722	0	1	0	-1	FIRE TRUCK - TANKER
13	3723	0	1	0	-1	BRUSH TRUCK
13	3733	0	1	0	-1	AMBULANCE
13	3741	0	1	0	-1	SCHOOL BUS
13	3993	0	1	0	-1	SIGNS

Appendix B: IBS Attribute Dictionary
LAND USE

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
						LAND USE
14	1100	0	0	0	-1	FARMLAND: RANGE, WATER SURFACE AREA, ETC. (ACRES)
14	1200	0	0	0	-1	FARMLAND: PRIME (ACRES)
14	1300	0	0	0	-1	FARMLAND: UNDESIGNATED (ACRES)
14	1400	0	0	0	-1	FARMLAND: STATEWIDE IMPORTANCE (ACRES)
14	1500	0	0	0	-1	FARMLAND: URBANIZED LAND (ACRES)
14	2010	0	0	0	-1	HORTICULTURE (ACRES)
14	2110	0	0	0	-1	IRRIGATED FIELD CROP (ACRES)
14	2111	0	0	0	-1	IRRIGATED CROP: GRAIN (BUSHELS/ACRES)
14	2112	0	0	0	-1	NON-IRRIGATED CROP: GRAIN (BUSHELS/ACRES)
14	2114	0	0	0	-1	VEGETABLES (ACRES)
14	2125	0	0	0	-1	IRRIGATED CROP: PASTURE (AUM)
14	2126	0	0	0	-1	NON-IRRIGATED CROP: PASTURE (AUM)
14	2131	0	0	0	-1	IRRIGATED CROP: ALFALFA (TONS/ACRES)
14	2132	0	0	0	-1	NON-IRRIGATED CROP: ALFALFA (TONS/ACRES)
14	2133	0	0	0	-1	IRRIGATED CROP: CORN (TONS/ACRE)
14	2134	0	0	0	-1	NON-IRRIGATED CROP: CORN (TONS/ACRE)
14	2210	0	0	0	-1	IRRIGATED SOD (ACRES)
14	2220	0	0	0	-1	IMPROVED PASTURE (ACRES)
14	2240	0	0	0	-1	IRRIGATED MEADOW (ACRES)
14	3000	0	1	0	-1	RANGE HABITAT FOR UPLAND BIG GAME: TOTAL (ACRES)
14	3010	0	1	0	-1	RANGE HABITAT FOR UPLAND BIG GAME: WINTER HABITAT (ACRES)
14	3020	0	1	0	-1	RANGE HABITAT FOR UPLAND BIG GAME: SUMMER HABITAT (ACRES)
14	3030	0	1	0	-1	RANGE HABITAT FOR UPLAND BIG GAME: YEARLONG HABITAT(ACRES)
14	3040	0	1	0	-1	RANGE HABITAT FOR UPLAND BIG GAME: PRODUCTION
14	3500	0	1	0	-1	RANGE HABITAT FOR UPLAND GAME BIRD: TOTAL (ACRES)
14	3510	0	1	0	-1	RANGE HABITAT FOR UPLAND GAME BIRD: WINTER HABITAT (ACRES)
14	3520	0	1	0	-1	RANGE HABITAT FOR UPLAND GAME BIRD: SUMMER HABITAT (ACRES)
14	3530	0	1	0	-1	RANGE HABITAT FOR UPLAND GAME BIRD: YEARLONG HABITAT(ACRES)
14	3540	0	1	0	-1	RANGE HABITAT FOR UPLAND GAME BIRD: PRODUCTION
14	4000	0	1	0	-1	RANGE HABITAT FOR FISHERIES: TOTAL
14	4010	0	1	0	-1	RANGE HABITAT FOR FISHERIES: WINTER HABITAT (ACRES)
14	4020	0	1	0	-1	RANGE HABITAT FOR FISHERIES: SUMMER HABITAT (ACRES)

Appendix B: IBS Attribute Dictionary
LAND USE

Major	Minor	Param	Pen	Line	Decltr	Attribute Description
14	4030	0	1	0	-1	RANGE HABITAT FOR FISHERIES: YEARLONG HABITAT (ACRES)
14	4040	0	1	0	-1	RANGE HABITAT FOR FISHERIES: PRODUCTION
14	4500	0	1	0	-1	WATERSHED (ACRES)
14	4501	0	1	0	-1	ALKALI BOTTOM (ACRES)
14	4502	0	1	0	-1	ALKALI FLAT (ACRES)
14	4503	0	1	0	-1	DESERT ALKALI SAND (ACRES)
14	4504	0	1	0	-1	DESERT SALT FLAT (ACRES)
14	4505	0	1	0	-1	DESERT SILT FLAT (ACRES)
14	4506	0	1	0	-1	DESERT GAVELLY LOAM (ACRES)
14	4507	0	1	0	-1	DESERT FLAT (ACRES)
14	4508	0	1	0	-1	DESERT LOAM (ACRES)
14	4509	0	1	0	-1	DESERT SAND (ACRES)
14	4511	0	1	0	-1	HIGH MOUNTAIN LOAM (ASPEN) (ACRES)
14	4512	0	1	0	-1	HIGH MOUNTAIN STONY LOAM (CONIFER) (ACRES)
14	4513	0	1	0	-1	LOAMY BOTTOM (BASIN BIG SAGEBRUSH) (ACRES)
14	4514	0	1	0	-1	MOUNTAIN GRAVELLY LOAM (ACRES)
14	4515	0	1	0	-1	MOUNTAIN GRAVELLING LOAM (OAK) (ACRES)
14	4516	0	1	0	-1	MOUNTAIN LOAM (SHRUB) (ACRES)
14	4517	0	1	0	-1	MOUNTAIN SHALLOW LOAM (MOUNTAIN MAHOGANY) (ACRES)
14	4518	0	1	0	-1	MOUNTAIN STONY LOAM (ACRES)
14	4519	0	1	0	-1	MOUNTAIN WINDSWEPT RIDGE (ACRES)
14	4520	0	1	0	-1	OOLITIC DUNES (ACRES)
14	4521	0	1	0	-1	SALTY SILT (ACRES)
14	4522	0	1	0	-1	SEMIDESERT GRAVELLY LOAM (WYOMING SAGEBRUSH) (ACRES)
14	4523	0	1	0	-1	SEMIDESERT LOAM (WYOMING SAGEBRUSH) (ACRES)
14	4524	0	1	0	-1	SEMIDESERT SAND (UTAH JUNIPER) (ACRES)
14	4525	0	1	0	-1	SEMIDESSERT SHALLOW HARDPAN (ACRES)
14	4526	0	1	0	-1	MOUNTAIN SHALLOW LOAM (ACRES)
14	4527	0	1	0	-1	SEMIDESSERT STONY LOAM (BLANCK SAGEBRUSH)
14	4528	0	1	0	-1	SEMIWET FRESH STREAMBANK (ACRES)
14	4529	0	1	0	-1	UPLAND GRAVELLY LOAM (ACRES)
14	4530	0	1	0	-1	UPLAND LOAM (ACRES)
14	4531	0	1	0	-1	UPLAND SHALLOW HARDPAN (JUNIPER-PINYON) (ACRES)
14	4532	0	1	0	-1	UPLAND SHALLOW LOAM (JUNIPER-PINYON) (ACRES)
14	4533	0	1	0	-1	UPLAND STONY LOAM (JUNIPER-PINYON) (ACRES)
14	4534	0	1	0	-1	WET SALINE MEADOW (ACRES)

Appendix B: IBS Attribute Dictionary
PROPERTY VALUES

<u>Major</u>	<u>Minor</u>	<u>Param</u>	<u>Pen</u>	<u>Line</u>	<u>Decltr</u>	<u>Attribute Description</u>
						PROPERTY VALUES
15	1111	0	1	0	-1	PROPERTY VALUE (1000'S)
15	2111	0	0	0	-1	CROP VALUE: GRAIN (\$ IN 100'S)
15	2112	0	0	0	-1	CROP VALUE: WHEAT (\$ IN 100'S)
15	2131	0	0	0	-1	CROP VALUE: ALFALFA (\$ IN 100'S)
15	2132	0	0	0	-1	CROP VALUE: CORN (\$ IN 100'S)
15	2210	0	0	0	-1	CROP VALUE: PASTURE (NEGATIVE \$ IN 100'S)
15	2220	0	0	0	-1	CROP VALUE: MEADOW (\$ IN 100'S)
15	2240	0	0	0	-1	CROP VALUE: SOD (\$ IN 100'S)
15	3005	0	1	0	-1	VALUE OF CATTLE COMMODITY (\$ IN 100'S)
15	3110	0	1	0	-1	VALUE OF SHEEP, LAMB, WOOL (\$ IN 100'S)
15	3115	0	1	0	-1	VALUE OF OTHER LIVESTOCK (\$ IN 100'S)
15	3120	0	1	0	-1	VALUE OF FEED GRAIN
15	3200	0	1	0	-1	VALUE OF HAY (\$100'S)

Appendix C

Map Projections in IBS Map Displays

The map display utilities GEDIT, MPDISPLAY, and PLOTDMS all request that you choose what type of *map projection* to use when displaying map data:

```
Currently available map projection types are
1 = "Geographic"
2 = "U T M"
3 = "Albers Conical Equal-area"
4 = "Lambert Conformal Conic"
5 = "Mercator"
6 = "Polar Stereographic"
7 = "Transverse Mercator"
Enter Projection Type >
```

To choose one of the map projections, enter the corresponding number.

Why use different map projections?

Whenever map data from the earth's curved surface is to be represented by a flat display, choices must be made about what kinds of distortions can be tolerated in that display. Will relative areas be correct? Will relative linear distances be correct? Will the display be continuous? Or will the display be broken like an orange peel that is sliced and pressed flat? The different map projections represent different solutions for what (and how much) map qualities are distorted.

Choosing a Map Projection Type

For most cases (up to 100-mile radius), you will probably want to enter a 1 (or just press the RETURN key) to select the default "Geographic" projection. Enter a number (2 to 7) if you desire a projection other than Geographic.

The proper choice of projection depends on what kind of area is included and what the projected map will be used for. In many cases there is no clear advantage to using one type of projection over another. Because a complete discussion of the different types of map projection is beyond the scope of this document, the following are *very simplified* descriptions of how the different map projections might be used.

Appendix C: Map Projections in IBS Map Displays

The *Geographic* projection is just a straightforward projection of coordinates onto a regular X-Y plane. This projection is fine for small areas (say, up to a 100-mile radius) where the difference between a flat plane and the curved surface of the earth is not very large. The Geographic projection requires no special processing of coordinates, so it is the fastest projection. For most uses, especially for small areas and for applications where speed is important, the Geographic projection is adequate.

In general the *Universal Transverse Mercator (UTM)* and *Transverse Mercator* projections are useful for medium-sized areas (up to 1000-mile radius) or where the largest extent of the mapped area extends north-south rather than east-west. For larger areas, or where the largest extent of the mapped area extends east-west, you might use the *Albers*, *Lambert*, or *Mercator* projections. The *Polar Stereographic* projection might be the projection of choice for either of the polar areas of the globe. The following table summarizes these general applications.

Map Projection Type	Situations for Use
Geographic	small areas (up to a 100-mile radius)
Universal Transverse Mercator (UTM) or Transverse Mercator	medium-sized areas (up to 1000-mile radius) or where the largest extent of the mapped area extends north-south rather than east-west
Albers Conical Equal-Area or Lambert Conformal Conic	larger areas, or where the largest extent of the mapped area extends east-west
Polar Stereographic	polar areas of the globe

Appendix D

IBS Privilege Listings

The PDMGR (Permiti.Dat Manager) utility is used by the database administrator or system manager to change IBS privileges for IBS users. The IBS privileges for all users are specified in the IBS authorization file (PERMITI.DAT). Most IBS programs then access PERMITI.DAT to see whether a specific user has privileges to use the programs or modules within the programs.

PDMGR first requests that you identify whose privileges are to be modified:

```
Change privileges for which user? ==> EOCMGR
```

The Permission Management form then appears on your screen, showing the first ten (of about 120) privileges available to IBS users.

Permission Management		Permission Form V1.00
Current	Privilege Description	User : EOCMGR
NO	EESF	
NO	REA	
NO	REP Support System	
NO	Presentation Graphics	
YES	National Map Display	
YES	Graphics Editor	
YES	Map Utilities	
NO	Weather Access	
YES	Training menu	
NO	TIMM	

You can then grant or revoke privileges for the specific user by entering YES or NO alongside the corresponding privileges. See PDMGR in Section 2 of this document for operational details.

Table D.1 lists the PDMGR privileges according to various programs and menu options of the CSEPP IBS program. Table D.2 is a reverse list of the CSEPP IBS program menu options listed according to privileges in PDMGR. Table D.3 is a list of all IBS privileges (in the order they appear in PDMGR) and the other general programs and functions that require these privileges.

Appendix D: IBS Privilege Listings

Table D.1. Privileges Listed by Program & by Menu Options in the IBS Program

These Programs and Options in the IBS	Are Controlled by These Privileges in PDMGR
► IBS Programs	
IBS	IBS User
PDMGR	Change Privileges
SITE_WIPE	Delete Site
LOCATE	Locate Manager
- Search for Missing Persons	-none-
► Menu Options in the IBS Program	
Message Board	-none-
- Create IBS -> Onpost Report	IBS -> WATCH Reports
- Change Combined Report	Create/change combined log
- Change Message Categories	Change Report Categories
Status Board	-none-
- View Onpost Work Plan	-none-
- - Select IP	Select IP
- - Declare Event	WATCH -> IBS Reports
- Change Onpost Work Plan	WATCH -> IBS Reports
- - Select IP	Select IP
- - Declare Event	WATCH -> IBS Reports
- Implementing Procedures	-none-
- - Select IP	Select IP
- - Change IP Notes	Change IP
- - Change IP Tasks	Change IP
- - - <uses View mode without privilege>	(name of selected Emergency Function)
- - - Add Agency or Position	Personnel Manager
- - - Resources / Actions	Change IP
- - Use IP Tasks	Use IP
- - - <uses View mode without privilege>	(name of selected Emergency Function)
- - - Add Agency or Position	Personnel Manager
- - - Resources / Actions	Change IP
- Create New IP	Create IP
- Check-Out IP	Create IP & Copy from & Modify Case Index

Appendix D: IBS Privilege Listings

These Programs and Options in the IBS	Are Controlled by These Privileges in PDMGR
- Check-In IP	Create IP & Copy to INFOMANAGER & Modify Case Index
- Archive IP Options	Archive Site
Personnel Management	-none-
- Add People	Personnel Manager
- Modify People	Personnel Manager
- Delete People	Personnel Manager
- Add Agencies	Personnel Manager
- Modify Agencies	Personnel Manager
- Delete Agencies	Personnel Manager
- Add Positions	Personnel Manager
- Modify Positions	Personnel Manager
- Delete Positions	Personnel Manager
Map Analysis	-none-
Resource Management	-none-
- Add Facilities	Resource Manager
- - Adding a new Person	Personnel Manager
- Modify Facilities	Resource Manager
- - Adding a new Person	Personnel Manager
- Delete Facilities	Resource Manager
- Define Resources	Resource Manager
- Assign Resources	Resource Manager
- Modify Resources	Resource Manager
- Move Resources	Resource Manager
- Delete Resources	Resource Manager
- Validate Resources	Resource Manager Validate IP
Show (Remove) Latest Onpost Track	-none-
Analyze Track	-none-
Change D2 Track Case	D2
Report Current D2 Description	-none-
Emergency Activities	-none-
- Hazard Analysis	-none-
- - Change Track Case	D2
- - Execute D2	D2

Appendix D: IBS Privilege Listings

These Programs and Options in the IBS	Are Controlled by These Privileges in PDMGR
- - - Create Scenario ...	-none-
- - - - Add Scenario Records	Link IP to SCENARIO TABLE
- - - - Modify Scenario Records	Link IP to SCENARIO TABLE
- - - - Delete Scenario Records	Link IP to SCENARIO TABLE
- EOC Activation	-none-
- - Generate Call List	EOC Activation
- Direction/Control	-none-
- - Specify Location	Resource Manager
- - Modify Facilities	Resource Manager
- - Add Special Population	Population Manager
- - Modify Special Population	Population Manager
- - Risk Area Analysis	-none-
- - - Pick Risk Polygon	Risk Area Manager
- - - Draw New Risk Polygon	Risk Area Manager
- - - Delete Drawn Risk Polygon	Risk Area Manager
- - - Add EP Zone (Pick)	Risk Area Manager
- - - Delete EP Zone (Pick)	Risk Area Manager
- - - Add EP Zone (Name)	Risk Area Manager
- - - Delete EP Zone (Name)	Risk Area Manager
- - - Save Current Risk Area	Risk Area Manager
- - Select IP	Select IP
- Evacuation	-none-
- - Select Model Case	IDYNEV
- - Create Evac Route Overlay	IBS -> WATCH Reports
- - Delete Evac Route Overlay	IBS -> WATCH Reports
- - Execute Evac Model	IDYNEV
- Sheltering	-none-
- - Add Location	Resource Manager
- - Add Facilities	Resource Manager
- - Modify Facilities	Resource Manager
- Search/Rescue	-none-
- - Draw Search Areas	Search/Rescue
- - Delete Search Areas	Search/Rescue
- Damage Assessment	-none-
- - Draw national Defense Area	Damage Assessment
- - Delete National Defense Area	Damage Assessment

Appendix D: IBS Privilege Listings

These Programs and Options in the IBS	Are Controlled by These Privileges in PDMGR
- - Draw Contamination Area	Damage Assessment
- - Delete Contamination Area	Damage Assessment
Setup	-none-
- Change Site	Change Case/Site ID & Planner
- - Change Operational Site	Change Case/Site ID
- Job Environment	-none-
- - Model Management	D2 or IDYNEV
- - Maintain Site Directories	D2 or IDYNEV
- - Copy Case Site	Copy from or Copy to or Copy to INFOMANAGER or Delete Site
- - - Check-Out _____	Copy from & Modify Case Index
- - - Check-In _____	Copy to INFOMANAGER & Modify Case Index
- - - Copy Topo	Copy from & Copy to & Copy to INFOMANAGER (may also need Modify Case Index)
- - - Copy Pop Set	Copy from & Copy to & Copy to INFOMANAGER (may also need Modify Case Index)
- - - General Copy Case Site	-varies- Copy to or Modify Case Index or Copy to INFOMANAGER
- - - Delete Site	Delete Site
- - Infomanager Root Maintenance	Modify Case Index
- Common Legend	Legend Manager
- Archive Site	Archive Site

Appendix D: IBS Privilege Listings

Table D.2. IBS Program Menu Options Listed by Privilege

This Privilege in PDMGR	Controls These Options in the IBS Program
D2	Change D2 Track Case Emergency Activities -> Hazard Analysis -> Change Track Case Emergency Activities -> Hazard Analysis -> Execute D2 Setup -> Model Management Setup -> Model Management -> Dispersion (D2) Setup -> Maintain Site Directories
IDYNEV	Emergency Activities -> Evacuation -> Select Model Case Emergency Activities -> Evacuation -> Execute Evac Model Setup -> Model Management Setup -> Model Management -> Evacuation (DYNEV) Setup -> Maintain Site Directories
Change Case/Site ID	Setup -> Change Site * Setup -> Change Site - Change Operational Site
Delete Site	Setup -> Job Environment -> Copy Case Site Setup -> Job Environment -> Copy Case Site -> Delete Site
Copy to INFOMANAGER	Status Board -> Check-In IP * Status Board -> Job Environment -> Copy Case Site Setup -> Job Environment -> Copy Case Site -> Check-In IP * Setup -> Job Environment -> Copy Case Site -> Check-In D2 * Setup -> Job Environment -> Copy Case Site -> Check-In Evac * Setup -> Job Environment -> Copy Case Site -> Copy Topo * Setup -> Job Environment -> Copy Case Site -> Copy Pop Set *
Copy to	Setup -> Job Environment -> Copy Case Site Setup -> Job Environment -> Copy Case Site -> Copy Topo * Setup -> Job Environment -> Copy Case Site -> Copy Pop Set * Setup -> Job Environment -> Copy Case Site -> General Copy Case Site **
Copy from	Status Board -> Check-Out IP* Setup -> Job Environment -> Copy Case Site Setup -> Job Environment -> Copy Case Site -> Check-Out IP * Setup -> Job Environment -> Copy Case Site -> Check-Out D2 * Setup -> Job Environment -> Copy Case Site -> Check-Out Evac * Setup -> Job Environment -> Copy Case Site -> Copy Topo * Setup -> Job Environment -> Copy Case Site -> Copy Pop Set *

* This option requires other privileges also.

** This option may require this privilege, depending on where you are copying from.

Appendix D: IBS Privilege Listings

This Privilege in PDMGR	Controls These Options in the IBS Program
Create/change combined log	Message Board -> Change Combined Report
Change Report Categories	Message Board -> Change Message Categories
Modify Case Index	Status Board -> Check-Out IP *
	Status Board -> Check-In IP *
	Setup -> Job Environment -> Copy Case Site -> Check-Out IP *
	Setup -> Job Environment -> Copy Case Site -> Check-Out D2 *
	Setup -> Job Environment -> Copy Case Site -> Check-Out Evac *
	Setup -> Job Environment -> Copy Case Site -> Copy Topo **
	Setup -> Job Environment -> Copy Case Site -> Copy Pop Set **
	Setup -> Job Environment -> Copy Case Site -> General Copy Case Site **
	Setup -> Job Environment -> Infomanager Root Maintenance
Archive Site	Status Board -> Archive IP Options
	Setup -> Archive Site
Create IP	Status Board -> Create New IP
	Status Board -> Check-Out IP *
	Status Board -> Check-In IP *
Select IP	Status Board -> View Onpost Work Plan -> Select IP
	Status Board -> Change Onpost Work Plan -> Select IP
	Status Board -> Implementing Procedures -> Select New IP
	Emergency Activities -> Direction/Control -> Select IP
Change IP	Status Board -> Implementing Procedures -> Change IP Notes
	Status Board -> Implementing Procedures -> Change Tasks
	Status Board -> Implementing Procedures -> Change Tasks -> Resources
	Status Board -> Implementing Procedures -> Change Tasks -> Actions
	Status Board -> Implementing Procedures -> Use IP Tasks -> Resources
	Status Board -> Implementing Procedures -> Use IP Tasks -> Actions
	NOTE: Without this privilege, the user may VIEW but not modify items with these options.
Use IP	Status Board -> Implementing Procedures -> Use Tasks
Validate IP	Resource Management -> Validate Resources *
Link IP to SCENARIO TABLE	Emergency Activities -> Hazard Analysis -> Execute D2 -> Add Scenario Records *
	Emergency Activities -> Hazard Analysis -> Execute D2 -> Modify Scenario Records *
	Emergency Activities -> Hazard Analysis -> Execute D2 -> Delete Scenario Records *

* This option requires other privileges also.

** This option may require this privilege, depending on where you are copying from.

Appendix D: IBS Privilege Listings

This Privilege in PDMGR	Controls These Options in the IBS Program
IBS --> WATCH Reports	Message Board -> Create IBS -> Onpost Report Emergency Activities -> Evacuation -> Create Evac Route Overlay Emergency Activities -> Evacuation -> Delete Evac Route Overlay
WATCH --> IBS Reports	Status Board -> View Onpost Work Plan -> Declare Event Status Board -> Change Onpost Work Plan
Personnel Manager	Status Board -> Implementing Procedures -> Change Tasks -> (Adding a new Agency/Position) Status Board -> Implementing Procedures -> Use Tasks -> (Adding a new Agency/Position) Personnel Management -> Add People Personnel Management -> Modify People Personnel Management -> Delete People Personnel Management -> Add Agencies Personnel Management -> Modify Agencies Personnel Management -> Delete Agencies Personnel Management -> Add Positions Personnel Management -> Modify Positions Personnel Management -> Delete Positions Resource Management -> Add Facilities -> (Adding a new Person) Resource Management -> Modify Facilities -> (Adding a new Person)
Population Manager	Emergency Activities -> Direction/Control -> Add Special Population Emergency Activities -> Direction/Control -> Modify Special Population
Risk Area Manager	Emergency Activities -> Direction/Control -> Risk Area Analysis -> Pick Risk Polygon Emergency Activities -> Direction/Control -> Risk Area Analysis -> Draw New Risk Polygon Emergency Activities -> Direction/Control -> Risk Area Analysis -> Delete Drawn Risk Polygon Emergency Activities -> Direction/Control -> Risk Area Analysis -> Add EP Zone (Pick) Emergency Activities -> Direction/Control -> Risk Area Analysis -> Delete EP Zone (Pick) Emergency Activities -> Direction/Control -> Risk Area Analysis -> Add EP Zone (Name) Emergency Activities -> Direction/Control -> Risk Area Analysis -> Delete EP Zone (Name) Emergency Activities -> Direction/Control -> Risk Area Analysis -> Save Current Risk Area
Resource Manager	Resource Management -> Add Facilities * Resource Management -> Modify Facilities * Resource Management -> Delete Facilities Resource Management -> Define Resources Resource Management -> Assign Resources Resource Management -> Modify Resources Resource Management -> Move Resources Resource Management -> Delete Resources

* This option requires other privileges also.

Appendix D: IBS Privilege Listings

This Privilege in PDMGR	Controls These Options in the IBS Program
	Resource Management -> Validate Resources *
	Emergency Activities -> Direction/Control -> Specify Location
	Emergency Activities -> Direction/Control -> Modify Facilities
	Sheltering -> Add Location
	Sheltering -> Add Facilities
	Sheltering -> Modify Facilities
Legend Manager	Setup -> Common Legend
EOC Activation	Emergency Activities -> Eoc Activation -> Generate Call List
Search/Rescue	Emergency Activities -> Search/Rescue -> Draw Search Areas
	Emergency Activities -> Search/Rescue -> Delete Search Areas
Damage Assessment	Emergency Activities -> Damage Assessment -> Draw National Defense Area
	Emergency Activities -> Damage Assessment -> Delete National Defense Area
	Emergency Activities -> Damage Assessment -> Draw Contamination Area
	Emergency Activities -> Damage Assessment -> Delete Contamination Area
Planner	Setup -> Change Site *
IBS User	IBS
(Emergency Function name)	Status Board -> Implementing Procedures -> Change Tasks (for the emergency function)*
	Status Board -> Implementing Procedures -> Use Tasks (for the emergency function)*
	NOTE: Without this privilege, the user may VIEW but not modify items with these options.

- * This option requires other privileges also.

Appendix D: IBS Privilege Listings

Table D.3. Other IBS Programs and Functions Listed by Privilege

This Privilege in PDMGR	Controls These Program or Program Functions
EESF	(unused)
REA	(unused)
REP Support System	REPSS from the Technological Hazards menu in IEMIS
Presentation Graphics	Presentation Graphics from IEMIS
Map Display	(unused)
Graphics Editor	(unused)
Map Utilities	Mapping functions menu in IEMIS
Weather Access	Weather functions from Natural Hazards menu in IEMIS
Training Menu	Training functions from IEMIS
TIMM	(unused)
D2	<see Table D.2>
IDYNEV	<see Table D.2>
CHEMS	Update Case Data, Change Case/Site in CHEMS model
OSPM	(unused)
MESORAD	(unused)
Create New Site	NEWSITE program, First Cut or run REA from IEMIS
Update Demographic Data	Regional Evacuation Analysis (REA) from IEMIS
Update Current Site Network	REA from IEMIS, update current site network in REA_NOGR
Update Other Features(GEDIT)	REA from IEMIS
Display Site Map From Site Files	REA from IEMIS
Execute Evac Model	REA from IEMIS, Execute IDYNEV in REA
Display Evac Results	REA from IEMIS, Display Evac results in REA_GR
Print Reports	REA from IEMIS
Change Case/Site ID	REA from IEMIS, Change site in REA, <see Table D.2>
Site file Directory Maintenance	REA from IEMIS, maintain site directories in REA
Delete Site	SITE_WIPE program, <see Table D.2>
Copy to INFOMANAGER	<see Table D.2>
Copy to	<see Table D.2>
Copy from	<see Table D.2>
Create/Change combined log	<see Table D.2>
Change Report Categories	<see Table D.2>
Modify Case Index	<see Table D.2>
Archive site	<see Table D.2>
NT Declare Event On/Off	<see Table D.2>

This Privilege in PDMGR	Controls These Program or Program Functions
Create IP	<see Table D.2>
Select IP	<see Table D.2>
Change IP	<see Table D.2>
Use IP	<see Table D.2>
Validate IP	<see Table D.2>
Link IP to SCENARIO TABLE	<see Table D.2>
IBS -> WATCH reports	<see Table D.2>
WATCH -> IBS reports (Simulator)	<see Table D.2>, Onpost Simulator
Personnel Manager	<see Table D.2>, RMMGR
Population Manager	<see Table D.2>
Locate Manager	LOCATE (doing anything beyond searching for people)
Risk Area Manager	<see Table D.2>
Resource Manager	<see Table D.2>, RMMGR
Legend Manager	<see Table D.2>
ION EOC Activation	<see Table D.2>
UE Search/Rescue	<see Table D.2>
SS Damage Assessment	<see Table D.2>
IEMIS User	(unused)
IBS User	IBS, <see Table D.2>
General User	(unused)
Planner	<see Table D.2>
Change Privileges	PDMGR
HAZARD ANALYSIS*	IP Emergency Function #1 <see Table D.2>
EOC ACTIVATION*	IP Emergency Function #2 <see Table D.2>
DIRECTION CONTROL*	IP Emergency Function #3 <see Table D.2>
ALERT NOTIFICATION*	IP Emergency Function #4 <see Table D.2>
EVACUATION*	IP Emergency Function #5 <see Table D.2>
SHELTERING*	IP Emergency Function #6 <see Table D.2>
LAW ENFORCEMENT*	IP Emergency Function #7 <see Table D.2>
HEALTH MEDICAL*	IP Emergency Function #8 <see Table D.2>
FIRE*	IP Emergency Function #9 <see Table D.2>
SEARCH RESCUE*	IP Emergency Function #10 <see Table D.2>

* These names will vary if Emergency Functions have been customized for Implementing Procedures at your site.

Appendix D: IBS Privilege Listings

This Privilege in PDMGR	Controls These Program or Program Functions
COMMUNICATIONS*	IP Emergency Function #11 <i><see Table D.2></i>
PUBLIC INFORMATION*	IP Emergency Function #12 <i><see Table D.2></i>
DAMAGE ASSESSMENT*	IP Emergency Function #13 <i><see Table D.2></i>
ALL FUNCTIONS*	IP Emergency Function #14 <i><see Table D.2></i>

---

* These names will vary if Emergency Functions have been customized for Implementing Procedures at your site.

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