UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

REVISED DESCRIPTION OF INDEX OF FLORIDA WATER DATA COLLECTION ACTIVE STATIONS AND A USER'S GUIDE FOR STATION OR SITE INFORMATION RETRIEVAL COMPUTER PROGRAM FINDEX H578

By Linda H. Geiger

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REVISED DESCRIPTION OF INDEX OF FLORIDA WATER DATA COLLECTION ACTIVE STATIONS AND A USER'S GUIDE FOR STATION OR SITE INFORMATION RETRIEVAL COMPUTER PROGRAM FINDEX H578

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ABSTRACT

To serve a vital need in managing the many and diverse water data collection activities, a computerized system of such activities and retrieval software necessary to generate publication lists of this information was developed for Florida and is released in this report.

A file of computer card images has been established containing information for all active water data collection sites in Florida. The file includes information such as identification number, station name, location, type of site, county, information about data collection, funding, and other pertinent details for each site. The program FINDEX selectively retrieves and lists sites in a format suitable for publication.

INTRODUCTION

This report describes the FINDEX system which includes an update program FNDXUP, two retrieval programs FNDXST and FINDEX, a data base consisting of data files for each Florida subdistrict, and a file of cooperator names. This report should serve as a user's guide to the FINDEX system.

Information contained in U.S. Geological Survey Open-File Report 77-703 "A Description of the Index of Active Water Data Collection Stations and a User's Guide for Station or Site Retrieval Computer Program FINDEX H578," by Michael L. Merritt, released in 1977, is included in the report. Since 1977, there have been several changes to the system and data base. Critical changes to the system and documentation of new programing appear as supplements in this report. Other changes involving new codes, updates to existing codes, changes to job control language, or changes in the status of the data files have been incorporated into the text and tables.

An automated system was developed at the Florida District office of the U.S. Geological Survey to meet the need of readily accessible information on water data collection activities for use in program and project planning. A computer file of card images has been established which contains entries for all active water data collection sites in Florida. Information in site entries includes the identification number, site name, location, type of site, county, type and frequency of data collected, the funding agency, Water Management District code, and U.S. Geological Survey office codes. This file is dynamic; revisions and updates are made periodically.

The data base has five separate site files, one for each subdistrict office responsible for each site. These files are maintained on an online disk located in the U.S. Geological Survey Computer Center in Reston, Va. Responsibility for updating each file rests with the appropriate subdistrict office. Updates are usually made using remote job entry terminals at offices in Jacksonville, Miami, Orlando, Tallahassee, and Tampa.

A single master site file for all offices is maintained on magnetic tape at the Florida District office in Tallahassee. This is a formatted tape suitable for use with the report writer EASYTRIEVE. The record format for this file is shown in figure 1.

The computer program FINDEX selectively retrieves entries from the files and lists them in a format suitable for publication. There is considerable flexibility in the types of selection which may be made. For example, selection on a specified group of county codes, site type codes, Water Management District codes, office codes, or any combination of such groups of codes may be made. Selection may also be made on a particular type of data being collected, or a group of such data types, or on particular types of data. Another option permits the selection of sites by latitude and longitude. Maxima and minima of latitude and longitude may be specified and FINDEX will list sites falling within the specified rectangle. Input to the program are run-control cards and the card image files.

The program can produce two lists, one of data type and frequency and another of "administrative" data, including location and local Water Management District code. Supplement C shows a sample of a publication listing. Punch card images corresponding to the sites retrieved can also be produced. An enhancement to FINDEX, program FNDXST allows the user to sort retrieved data before printing. See Supplement B for instructions on using FNDXST.

Another option permits the user to obtain CALCOMP plots of site locations as symbols with identifying numbers. The program produces a STATPAC matrix of identifying symbols and coordinates which may then be processed by STATPAC program A651 to produce a tape for the CALCOMP plotter. Also produced is a special listing relating the identifying numbers to individual site names.

Previously, the system utility IEBUPDTE was used to update each subdistrict's site file. A new program FNDXUP, written by Linda H. Geiger, is now used. See Supplement A for instructions to FNDXUP.

Source listings of the programs FINDEX, FNDXST, and FNDXUP are included in this report as Supplements D, E, and F.

FINDEX MAGNETIC TAPE FILE FORMAT

Byte position		Data item	Format
1		"N"	1A
2-16		SITE NO	15A
17-48		NAME	32A
49		SEQ NO	1A
50-54		RESERVED	
55-63		LOCAL USE	9A
64-66		COUNTY	3A
67-68		SITE TYPE	2A
69-74		LATITUDE	
	69-70	DEG.	2A
	71-72	MIN.	2A
	73-74	SEC.	2A
75-80		LONGITUDE	
	75-76	DEG.	2A
	77-78	MIN.	2A
	79-80	SEC.	2A
81-83		COOP.	3A
84-134		MEASUREMENT FREQ.	
	84-86	K&T	3A
	87-89	DO	3A
	90-92	pH	3A
	93-95	MC	3A
	96-98	N&P	3A
	99-101	MET	3A
	102-104	BOD	3A
	105-107	TOC	3A
	108-110	PES	3A
	111-113	PKT	3A
	114-116	SED	3A
	117-119	CL	3A
	120-122	TRB	3A
	123-125	RCM	3A
	126-128	BCT	3A
	129-131	FLO	3A
	132-134	WL	3A
135		OFFICE CODE	1A
136		SEQ NO	1A
137-139		WM DIST	3A
140-142		NETWK/PROJ	3A
143-144		OTHER DATA	2A

Figure 1.--Record format for master site file on magnetic tape.

DESCRIPTION OF SITE DATA CARD FORMAT

A data-collection site will have two data cards for each cooperating, or funding, agency. The first card is a name card and the second card is a data card. The formats of the cards are as follows:

Card 1

Column	Description
1	Code the letter "N."
2-16	Site ID number, right adjusted, with no decimal point. Eight digit site numbers are coded in columns 9-16. Fifteen digit site numbers are coded in columns 2-16.
17-48	Name of site, alphanumeric characters.
49	Record sequence number. Usually will be "1." Allows for as many as nine funding agencies. Must be the same as the sequence number in column 72 of the corresponding "D" card in order to uniquely identify a site in the data file.
50-54	Reserved--do not use.
55-63	Reserved for local use.
64-66	County code (3 digits, include leading zeros).
67-68	Site type code SW, Streams and canals LK, Lakes ES, Estuaries SP, Springs GW, Ground water SS, Specific source ME, Meteorological
69-74	Latitude
69-70	Degrees
71-72	Minutes latitude
73-74	Seconds
75-80	Longitude
75-76	Degrees
77-78	Minutes longitude
79-80	Seconds

Card 2

Column	Description
1	Code the letter "D."
2-16	Site ID number, as on "N" card.
17-19	Cooperator or funding agency code.
20-70	Frequency of measurement of:
20-22	specific conductance and temperature (K&T).
23-25	dissolved oxygen (DO).
26-28	field pH (PH).
29-31	major chemical constituents (MC).
32-34	nitrogen and phosphorus species (N&P).
35-37	metals (MET).
38-40	biochemical oxygen demand (BOD).
41-43	total organic carbon (TOC).
44-46	pesticides (PES).
47-49	phytoplankton (PKT).
50-52	suspended sediment (SED).
53-55	chloride (CL).
56-58	turbidity (TRB).
59-61	radiochemical analysis (RCM).
62-64	bacteriological forms (BCT).
65-67	streamflow or discharge (FLO).
68-70	water level or stage (WL).
71	Office identification code 1 - Jacksonville 2 - Miami 3 - Tallahassee 4 - Tampa 5 - Orlando
72	Record sequence number. Must be coded the same as in column 49 of the "N" card in order to uniquely identify the site in the data file.
73-75	Water Management District code SFM - South Florida Water Management District NWM - Northwest Florida Water Management District SJM - St. Johns River Water Management District SRM - Suwannee River Water Management District SWM - Southwest Florida Water Management District
76-78	Network or project code. CBR network site - NET. Individual project sites--first three digits of project number, that is, "109" for 10900.

Card 2--Continued

Column	Description
79-80	Other types of data collection code; R, rainfall; E, evaporation; PY, periphyton; CA, chemical analyses of bottom sediment; PW, partial chemical analysis--weekly frequency (orthophosphorus and fluoride); P, partial chemical analysis--includes the following schedules: monthly-annual (hardness and dissolved solids); BI, benthic invertebrates; BN, bed material; CH, chlorophyll.

All entries on the "D" card are read as alphanumeric information, including frequency values. All numeric frequency codes should be right justified in the field and without leading zeros. A complete list of allowable codes (abbreviations) and their meanings is given in tables 1, 2, and 3. These listings are printed each time a retrieval is processed. A format sheet for entries is shown in figure 2.

For a particular site, these two cards will be repeated for each cooperator (each two-card set containing the appropriate cooperator code) and, for each type of measurement, the number of measurements per year funded by that agency.

COOPERATOR NAME FILE

A special file has been created which contains a formatted series of card images, each of which relates a three letter code to the name of a cooperator with the Florida District office. This file is comprised of organizations with current cooperative agreements. The file is on an online disk located in the U.S. Geological Survey Computer Center in Reston, Va. It is regenerated whenever necessary by a standard application of system utility program IEBGENER. The Florida District office is charged with the sole responsibility for maintaining this file. Figure 3 shows a partial computer job setup for this task. There are more cooperator names than are shown in figure 3. Figure 4 shows a form for coding new entries for the cooperator name file. This form should be completed and sent to the Florida District office for processing a new code or changing an existing one.

COMPUTER PROGRAM FINDEX

Job Deck Setup

The job deck setup shown in figure 5 is for the execution of the program FINDEX. The data cards in this setup specify that both a frequency data list and an administrative data list of all sites which are the responsibility of the Orlando and Jacksonville subdistrict offices will be made. The data definition (DD) statement STEPLIB is the file of Findex system programs. The DD statement FT11 is the cooperator name file. The DD statements for TPFINDEX (FT16-Tampa stations), MIFINDEX (FT17-Miami stations), and TAFINDEX (FT18-Tallahassee stations) could have been omitted in figure 5 since FINDEX will only read the two files ORFINDEX (FT10-Orlando stations) and JXFINDEX (FT19-Jacksonville stations). The select cards restrict the listing to entries from those two data files. This would not result in any cost savings since those files are ignored.

Table 1.--List of cooperator codes

U. S. GEOLOGICAL SURVEY - W. R. D., FLORIDA DISTRICT OFFICE, 325 JOHN KNOX RD., TALLAHASSEE

I N D E X T O A C T I V E W A T E R D A T A C O L L E C T I O N S T A T I O N S I N F L O R I D A

THIS INDEX CONTAINS A LIST OF ACTIVE STATIONS IN FLORIDA OPERATED BY THE U. S. GEOLOGICAL SURVEY IN COOPERATION WITH STATE, LOCAL, AND FEDERAL AGENCIES LISTED BELOW. THE INDEX SHOWS THE COOPERATOR(S) SUPPORTING THE DATA COLLECTION ACTIVITIES, THE TYPE AND FREQUENCY OF DATA COLLECTION AND THE U. S. GEOLOGICAL SURVEY OFFICE RESPONSIBLE FOR COLLECTING AND PROCESSING THE DATA.

EXPLANATION OF ABBREVIATIONS USED IN THIS INDEX

ABBREVIATION	COOPERATOR
BCU	BROWARD COUNTY UTILITY DISTRICT
BOC	CITY OF BOCA RATON
BOG	FLORIDA DEPARTMENT OF NATURAL RESOURCES - BUREAU OF GEOLOGY
BOY	CITY OF BOYNTON BEACH
BRA	BROWARD CO. AIR AND WATER POLLUTION AUTHORITY
BRD	CITY OF BRADENTON
BRE	BREVARD COUNTY
BRO	BROWARD COUNTY
CEJ	U. S. CORPS OF ENGINEERS - JACKSONVILLE
CEM	U. S. CORPS OF ENGINEERS - MOBILE
CES	U. S. CORPS OF ENGINEERS - SAVANNAH
CHA	CHARLOTTE COUNTY
CLE	CITY OF CLEARWATER
COC	CITY OF COCOA
COL	COLLIER COUNTY
CCP	CITY OF CORAL SPRINGS
CSP	CITY OF ST. PETERSBURG
CW1	COLLIER COUNTY WATER DISTRICT NO. 1
CW7	COLLIER COUNTY WATER DISTRICT NO. 7
DAD	DADE COUNTY
DAN	CITY OF DANIA
DER	FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
DET	FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION - TRUST FUNDS
DFB	CITY OF DEERFIELD BEACH
DOT	FLORIDA DEPARTMENT OF TRANSPORTATION
DPL	FLORIDA STATE DIVISION OF PLANNING
DPR	FLORIDA DIVISION OF PARKS AND RECREATION
DUN	CITY OF DUNEDIN
DWS	MIAMI - DADE WATER AND SEWER AUTHORITY AND CITY OF MIAMI BEACH
ECE	EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL
EPA	U. S. ENVIRONMENTAL PROTECTION AGENCY
ESC	ESCAMBIA COUNTY
EWD	ENGLEWOOD WATER DISTRICT
FAC	FLORIDA KEYS AQUEDUCT COMMISSION
FFG	FLORIDA GAME AND FRESH WATER FISH COMM.
FTL	CITY OF FORT LAUDERDALE
FTM	CITY OF FORT MYERS
FWB	CITY OF FORT WALTON BEACH
GAD	GADSDEN COUNTY
GAI	CITY OF GAINESVILLE
GCS	CITY OF GREEN COVE SPRING
HAL	CITY OF HALLANDALE
HEN	HENDRY COUNTY
HIB	TOWN OF HIGHLAND BEACH
HIG	HIGHLANDS COUNTY
HIL	HILLSBOROUGH COUNTY
HOL	CITY OF HOLLYWOOD
HRD	HOLLYWOOD RECLAMATION DISTRICT
IIF	INTERNAL IMPROVEMENT FUND(OBSOLETE)
IND	INDIAN RIVER COUNTY
JAP	CITY OF JACKSONVILLE AREA PLANNING BOARD
JAR	CITY OF JACKSONVILLE DIV OF PARKS AND RECREATION
JAX	CITY OF JACKSONVILLE
JUN	CITY OF JUNO BEACH
KRV	COORDINATING COUNCIL ON THE RESTORATION OF THE KISSIMMEE RIVER VALLEY AND TAYLOR CREEK - NUBBIN SLOUGH BASIN
LAK	LAKE COUNTY
LAW	CITY OF LAKE WORTH
LCP	LAKE COUNTY BOARD OF COMMISSIONERS, DEPARTMENT OF POLLUTION CONTROL
LDD	LAKE WORTH DRAINAGE DISTRICT
LEE	LEE COUNTY
LEO	LEON COUNTY
LOX	LOXAHATCHEE ENVIRONMENTAL CONTROL DISTRICT
MAN	MANATEE COUNTY
MAR	MARION COUNTY
MAT	MARTIN COUNTY
MBB	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - MANASOTA BASIN BOARD
MHD	MANATEE COUNTY HEALTH DEPARTMENT
MON	MONROE COUNTY
MUL	MULTIPLE COOPERATORS
NAP	CITY OF NAPLES
NAS	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NPS	NATIONAL PARK SERVICE
NWR	NOAA-NATIONAL WEATHER SERVICE
NWM	NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
OBA	OKLAWAHA BASIN RECREATION AND WATER CONSERVATION AND CONTROL AUTHORITY
OKA	OKALOOSA COUNTY

Table 1.--List of cooperator codes--Continued

EXPLANATION OF ABBREVIATIONS USED IN THIS INDEX

ABBREVIATION	COOPERATOR
OPD	OLD PLANTATION DRAINAGE DISTRICT
ORA	ORANGE COUNTY
OSC	OSCEOLA COUNTY
PAL	PALM BEACH COUNTY
PAS	PASCO COUNTY
PEN	CITY OF PENSACOLA
PER	CITY OF PERRY
PIN	PINELLAS COUNTY
POL	POLK COUNTY
POM	CITY OF POMPANO BEACH
POT	DADE COUNTY PORT AUTHORITY
QUI	CITY OF QUINCY
RCI	REEDY CREEK IMPROVEMENT DISTRICT
RIB	CITY OF RIVIERA BEACH
RWM	RIDGE AND LOWER COAST WATER MANAGEMENT DISTRICT
SAR	CITY OF SARASOTA
SCR	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - COASTAL RIVERS BASIN BOARD
SCU	SARASOTA COUNTY
SDD	SUNSHINE DRAINAGE DISTRICT
SEM	SEMINOLE COUNTY
SFM	SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SGS	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - GREEN SWAMP BASIN BOARD
SJM	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SNH	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - N. W. HILLSBOROUGH BASIN BOARD
SPA	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - PINELLAS/ANCLOTE BASIN BOARD
SPE	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - PEACE BASIN BOARD
SRA	SUWANNEE RIVER AUTHORITY
SRM	SUWANNEE RIVER WATER MANAGEMENT DISTRICT
SRT	SUWANNEE RIVER AUTHORITY-TRUST FUND
STL	ST. LUCIE COUNTY
STU	CITY OF STUART
SUM	SUMTER COUNTY RECREATION AND WATER CONSERVATION AND CONTROL AUTHORITY
SWA	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - ALAFIA BASIN BOARD
SWH	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - HILLSBOROUGH BASIN BOARD
SWI	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - WITHLACOOCHEE BASIN BOARD
SWM	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
SWO	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - OKLAWAHA BASIN BOARD
SWW	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT - WACASASSA BASIN BOARD
TAL	CITY OF TALLAHASSEE
TAM	CITY OF TAMPA
TBC	TAMPA BAY REGIONAL PLANNING COUNCIL
TEM	CITY OF TEMPLE TERRACE
TEQ	VILLAGE OF TEQUESTA
TPA	TAMPA PORT AUTHORITY
UMI	UNIVERSITY OF MIAMI
USF	U. S. AIR FORCE
USG	U. S. GEOLOGICAL SURVEY - FEDERAL PROGRAM
USN	U. S. NAVY
VEN	CITY OF VENICE
VOL	VOLUSIA COUNTY
WAL	WALTON COUNTY
WCI	WEST COAST INLAND NAVIGATION DISTRICT
WCR	WEST COAST REGIONAL WATER SUPPLY AUTHORITY
WHL	WINTER HAVEN LAKE REGION BOAT COURSE DISTRICT
WOW	WEST ORANGE COUNTY WATER CONSERVATION DISTRICT
WPB	CITY OF WEST PALM BEACH
WWN	WINDERMERE WATER AND NAVIGATIONAL CONTROL DIST.

Table 2.--Summary of county codes

CODE	COUNTY	CODE	COUNTY
067	LAFAYETTE	001	ALACHUA
069	LAKE	003	BAKER
071	LEE	005	BAY
073	LEON	007	BRADFORD
075	LEVY	009	BREVARD
077	LIBERTY	011	BROWARD
079	MADISON	013	CALHOUN
081	MANATEE	015	CHARLOTTE
083	MARION	017	CITRUS
085	MARTIN	019	CLAY
087	MONROE	021	COLLIER
089	NASSAU	023	COLUMBIA
091	OKALOOSA	025	DADE
093	OKEECHOBEE	027	DE SOTO
095	ORANGE	029	DIXIE
097	OSCEOLA	031	DUVAL
099	PALM BEACH	033	ESCAMBIA
101	PASCO	035	FLAGLER
103	PINELLAS	037	FRANKLIN
105	POLK	039	GADSDEN
107	PUTNAM	041	GILCHRIST
109	ST. JOHNS	043	GLADES
111	ST. LUCIE	045	GULF
113	SANTA ROSA	047	HAMILTON
115	SARASOTA	049	HARDEE
117	SEMINOLE	051	HENDRY
119	SUMTER	053	HERNANDO
121	SUWANNEE	055	HIGHLANDS
123	TAYLOR	057	HILLSBOROUGH
125	UNION	059	HOLMES
127	VOLUSIA	061	INDIAN RIVER
129	WAKULLA	063	JACKSON
131	WALTON	065	JEFFERSON
133	WASHINGTON		

Table 3.--List of other identifying codes

ABBREVIATION	TYPE OF DATA
K&T	SPECIFIC CONDUCTANCE AND TEMPERATURE
DO	DISSOLVED OXYGEN
PH	FIELD PH MEASUREMENT
MC	MAJOR CHEMICAL CONSTITUENTS (INCLUDES CA, MG, NA, K, HCO3, CL, SO4, SIO2, FL, HARDNESS, ALKALINITY, AND DISSOLVED SOLIDS)
N&P	NITROGEN AND PHOSPHORUS SPECIES
MET	METALS(INCLUDES PART OR ALL OF THE FOLLOWING: AL, AS, CD, CR, CO, CU, FE, PB, MN, HG, NI, SE, ZN)
BOD	5-DAY BIOCHEMICAL OXYGEN DEMAND
TOC	TOTAL ORGANIC CARBON
PES	PESTICIDES
PKT	PHYTOPLANKTON
SED	SUSPENDED SEDIMENT
CL	CHLORIDE
TRB	TURBIDITY
RCM	RADIOCHEMICAL ANALYSIS
BCT	BACTERIOLOGICAL(INCLUDES ONE OR MORE OF THE FOLLOWING: (FECAL COLIFORM, TOTAL COLIFORM, FECAL STREPTOCOCCI)
FLO	STREAM FLOW
WL	WATER LEVEL -- STREAM, LAKE, OR WELL
OTH	OTHER TYPES OF DATA: R = RAINFALL E = EVAPORATION PY = PERIPHYTON CA = CHEMICAL ANALYSIS OF BOTTOM SEDIMENT PW = PARTIAL CHEMICAL ANALYSIS - WEEKLY FREQUENCY(ORTHO PHOSPHOROUS AND FLUORIDE) P = PARTIAL CHEMICAL ANALYSIS - INCLUDES THE FOLLOWING SCHEDULES: MONTHLY-ANNUAL(HARDNESS AND DISSOLVED SOLIDS) BI = BENTHIC INVERTEBRATES BN = BED MATERIAL NUTRIENTS CH = CHLOROPHYLL

ABBREVIATION	OFFICE
MI	MIAMI
TA	TALLAHASSEE
TP	TAMPA
OR	ORLANDO
JX	JACKSONVILLE

ABBREVIATION	FREQUENCY
1 - 365	SAMPLES PER YEAR, I. E., 1 = 1 SAMPLE PER YEAR 365 = 365 SAMPLES PER YEAR OR 1 SAMPLE PER DAY
CON	CONTINUOUS - GRAPHIC OR DIGITAL RECORDER
CSI	CREST STAGE INDICATOR
P	PEAK FLOW
CNX,CSX,PX	CONT., CSI, OR PEAK FLOW,RESP., WHEN SHARED BY MULTIPLE COOPERATORS. 1/X IS THE COOPERATORS SHARE.
RG	REGULATORY WELL
FLH	FLOOD HYDROGRAPH
LFP	LOW-FLOW PARTIAL RECORD

ABBREVIATION	SITE TYPE
SW	STREAMS AND CANALS
LK	LAKES
ES	ESTUARIES
SP	SPRINGS
GW	GROUND WATER
SS	SPECIFIC SOURCE
ME	METEOROLOGY

INDEX TO WATER DATA COLLECTION STATIONS IN FLORIDA

CARD FORMAT SHEET — revised Jan 1979

DATE __/__/__ PREPARED BY _____

Revision Codes--A/ addition, D/ deletion, R/ replacement

CARD ONE __/

N (1) SITE NUMBER (2–16)

STATION NAME (17–48)

SEQ (49) RESERVED (50–54) LOCAL USE (55–63)

COUNTY CODE (64–66) SITE TYPE CODE (67 68)

	DEG	LAT. MIN	SEC	DEG	LONG. MIN	SEC
	69 70	71 72	73 74	75 76	77 78	79 80

CARD TWO __/

D (1) SITE NUMBER (2–16)

COOPERATOR (17 19)

MEASUREMENT FREQUENCIES

K&T	DO	PH	MC	N & P	MET
20 22	23 25	26 28	29 31	32 34	35 37

BOD	TOC	PES	PKT	SED
38 40	41 43	44 46	47 49	50 52

CL	TRB	RCM	BCT	FLO	WL
53 55	56 58	59 61	62 64	65 67	68 70

OFF. (71) SEQ (72) WATER MANAG. DIST. (73 75) NETWORK OR PROJECT (76 78)

OTHER DATA TYPE (79 80)

CHECKED BY_____ PUNCHED BY_____ VERIFIED BY_____

Figure 2.--File of water data collection sites in Florida--card format sheet.

```
//       JOB
//  EXEC  PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT2  DD DSN=AG4B17G.CPRTINDX.DATA,UNIT=ONLINE,DISP=OLD,
//  SPACE=(TRK,(05,1),RLSE),DCB=(RECFM=FB,LRECL=80,BLKSIZE=7200)
//SYSUT1 DD *
BCUBROWARD COUNTY UTILITY DISTRICT
BOCCITY OF BOCA RATON
BOGFLORIDA DEPARTMENT OF NATURAL RESOURCES -
     BUREAU OF GEOLOGY
BOYCITY OF BOYNTON BEACH
BRABROWARD CO. AIR AND WATER POLLUTION AUTHORITY
BRDCITY OF BRADENTON
BREBREVARD COUNTY
BROBROWARD COUNTY
CEJU. S. CORPS OF ENGINEERS - JACKSONVILLE
CEMU. S. CORPS OF ENGINEERS - MOBILE
CESU. S. CORPS OF ENGINEERS - SAVANNAH
CHACHARLOTTE COUNTY
CLECITY OF CLEARWATER
COCCITY OF COCOA
COLCOLLIER COUNTY
CCPCITY OF CORAL SPRINGS
/*
//
```

Figure 3.--Job deck setup for cooperator file.

INDEX TO WATER DATA COLLECTION STATIONS IN FLORIDA
COOPERATOR INDEX ENTRIES
CARD FORMAT SHEET — SEPTEMBER 1981

DATE __/__/__ SUBMITTED BY _____

BASIC CARD

3-CHARACTER COOPERATOR ABBREVIATION [ ][ ][ ]
1 3

NAME OR DEFINITION [ ]
4 27
28 51

CONTINUATION CARDS

(IF NEEDED - NO LIMIT)

FIRST 5 COLUMNS ARE BLANKS

CONTINUATION OF NAME OR DEFINITION [ ]
6 28
29 51

CHECK ONE:

☐ **NEW CODE**

☐ **CHANGE EXISTING CODE**

CHECKED BY_____ PUNCHED BY_____ VERIFIED BY_____

Figure 4.--Card format sheet for cooperator file entries.

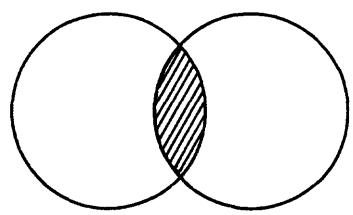
```
//     JOB CARD        JOB CARD          JOB CARD
//  EXEC PGM=FINDEX,REGION=100K,TIME=3
//STEPLIB DD DSN=AG4B17G.FNDPROG.FORT,DISP=SHR
//    DD DISP=SHR,DSN=SYS1.PLIX.TRANSLIB
//    DD DSN=SYS1.SYNC.LINKLIB,DISP=SHR
//SORTLIB  DD DSN=SYS1.SYNC.SORTLIB,DISP=SHR
//FT05F001   DD DDNAME=SYSIN
//FT06F001   DD SYSOUT=A
//FT10F001   DD DSN=AG4B17G.ORFINDEX,DISP=OLD,UNIT=ONLINE
//FT11F001   DD DSN=AG4B17G.CPRTINDX.DATA,DISP=OLD,UNIT=ONLINE
//FT12F001   DD SYSOUT=B,DCB=(RECFM=F,BLKSIZE=80,LRECL=80)
//FT13F001   DD DSN=&&CALCMP,UNIT=SYSDK,DISP=(,PASS),
//    DCB=(RECFM=VBS,LRECL=504,BLKSIZE=7294),SPACE=(TRK,(10,5))
//FT14F001   DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT15F001   DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT16F001   DD DSN=AG4B17G.TPFINDEX,DISP=OLD,UNIT=ONLINE
//FT17F001   DD DSN=AG4B17G.MIFINDEX,DISP=OLD,UNIT=ONLINE
//FT18F001   DD DSN=AG4B17G.TAFINDEX,DISP=OLD,UNIT=ONLINE
//FT19F001   DD DSN=AG4B17G.JXFINDEX,DISP=OLD,UNIT=ONLINE
//SYSIN DD *
 0 0
SITLK
PJTNET
WL CON

/*
//
```

Figure 5.--Job deck setup for retrieving publication lists.

Job Deck Definitions

Data cards needed to run the program consist of header cards and select cards. The format and use of these cards are described in the following sections. The terms "inclusive select" and "exclusive select" are defined as follows. Suppose that two select cards are present in the setup and a site satisfies the criteria of one select card but not that of the other. In an inclusive select, the site would be listed; in an exclusive select, the site would not be listed and could only be listed if it satisfied the criteria of both select cards. This may be illustrated in the following Venn diagram. Suppose all sites satisfying one select criterion are in circle A, and all sites satisfying the other criterion are in circle B:



In an inclusive select, all sites in either circle A or circle B will be listed. In an exclusive select, only sites in the shaded area, the intersection of the circles containing sites that satisfy both criteria are listed.

Definitions are also needed for the terms "frequency data listing" and "administrative listing." These are alternate printout formats. The first includes all frequency data codes and the second replaces the frequency data with the county code, site type code, Water Management District code, network or project code, and latitude and longitude. Further description of both formats is included in the section, "Description of Output."

Data Deck Organization

For a given retrieval, the data cards required are arranged in the following sequence:

1. Header Card (required)

2. Coordinate Selection Card (optional, only if coordinate selection option is requested)

3. Select Cards (optional, as many as necessary)

4. Last Card (blank) (required)

Multiple retrievals may be made by stacking individual retrieval setups, consisting of one header card, a coordinate card (optional), a set of select cards (optional), and one last (blank) card.

A request form for publication lists to be produced by the Findex system has been prepared. This form is illustrated in figure 6.

A data card coding form has been prepared. This form is illustrated in figure 7.

A detailed description of the data cards is given in the following four sections.

Header Card

Nine options defining the type of retrieval and output requirements are specified on the header card. All options are right justified integers with blanks read as zeros. Therefore, default options are those options specified with zeros.

Following is a listing of the header card options, with definitions of all allowable options.

Column	Header card description
1-2	Type of selection option, I
	0 Options on select cards restrict the retrieval.
	-1 All entries which have at least one nonblank (nonzero) frequency value, and which qualify a site using other select options as restrictors, are listed.
	-2 Same as above, but for all sites with at least one nonblank (nonzero) frequency for a water quality measurement (not WL or FLO).
	3 If type of select II is zero, this is an inclusive retrieval/select listing using all select cards. If type of select II is a positive integer n, only the first n select cards are used inclusively, and remaining select cards are used exclusively.
3-4	Output format option.
	0 Two separate lists will be made, one a frequency data list, and the other an administrative data list.
	1 Frequency data list only.
	2 Administrative data list only.

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FINDEX

REQUEST FOR SELECTION AND RETRIEVAL:

TERMINAL.--

One-part paper _____ Two-part paper _____

Standard spacing _____ Double spacing _____

LISTS.--

Frequency data _____ Administrative data _____

Network _____ Project (or No.) _____

SELECTION (singly or combined as noted).--

WRD District _____

Office (WRD Subdistrict) _____

Water Management District _____

County _____

Cooperator 1/ _____

Basin board _____

Site type _____

Type of data _____

Measurement frequency _____

1/ Selection to include all other cooperators for each given station; this applies only to cooperator selection.

OTHER.--_____

_____

DATES.--

Request _____ Loaded _____

Priority _____ Retrieved _____

By.--

_____ _____

Figure 6.--Publication list request form.

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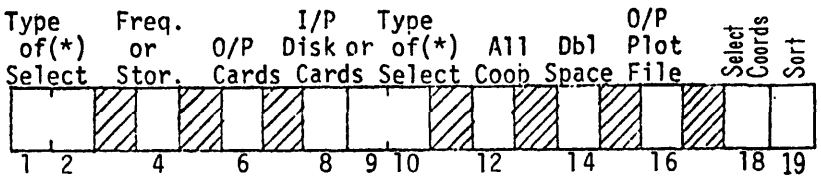
F I N D E X

Data Card Formatting Sheet for Retrieval/Select - July 1981

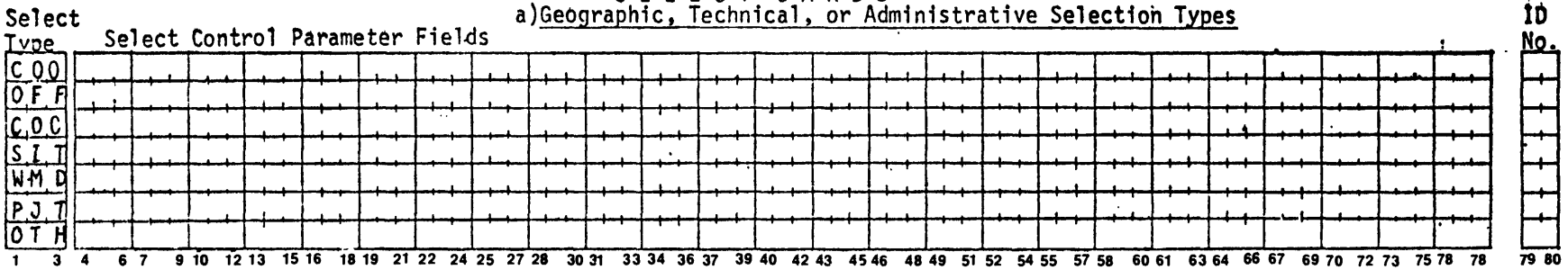
A complete set of data cards for one retrieval/select run includes the cards formatted below. Only the first and last cards are required.

H E A D E R C A R D



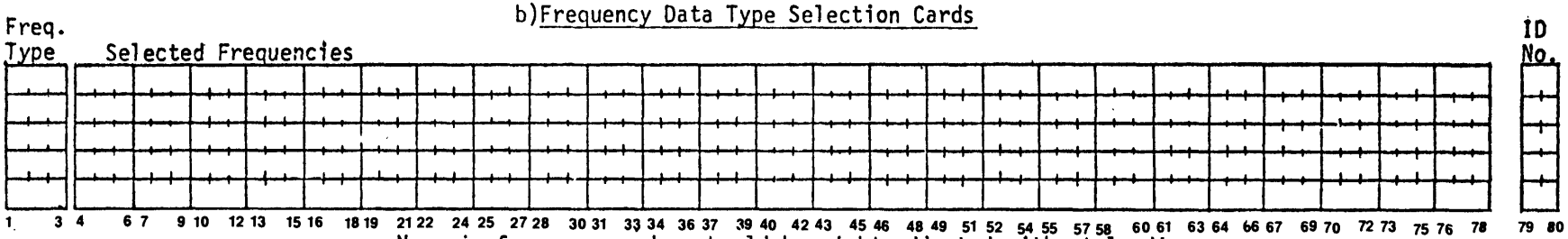
S E L E C T C A R D S

a) Geographic, Technical, or Administrative Selection Types



Alpha parameter fields must be left adjusted, county and project codes must be three digits with leading zeros.

b) Frequency Data Type Selection Cards



Numeric frequency codes should be right adjusted without leading zeros.

L A S T C A R D

The last card is a blank card, and follows all of the select cards used for one retrieval/select.

Figure 7.--Publication list data card coding form.

Column	Header card description--Continued
5-6	Output cards option.
	0 (or blank) No cards will be punched.
	1 Cards corresponding to the entries selected for listing will be punched in the FINDEX file format. The DD statement FT12 is used for this output.
7-8	Input cards option.
	0 Usual case. The five data files ORFINDEX, TPFINDEX, MIFINDEX, JXFINDEX, and TAFINDEX are used as the input site file.
	1 A rarely used option to specify card input for the data file. The data cards would follow in the job stream.
9-10	Type of select option II.
	n n denotes some positive integer value. Used only if type of select option is -3. The first n select cards are used inclusively, and the remaining cards are used exclusively.
11-12	All cooperator option.
	Nonzero (numeric). Retrieves all entries for a site which have satisfied the selection criterion. Is normally used in cooperator selection retrievals to retrieve all cooperators at a site. A cooperator select must be coded to use this option.
	0 (or blank) No effect.
13-14	Double space option.
	0 (or blank) Listings are single spaced with a break in the listing after each group of ten entries.
	Nonzero. Listings are double spaced for consistency.

Column	Header card description--Continued
15-16	CALCOMP plot file option.

Nonzero. Sites selected for listing are listed with decimal coordinates and reference numbers in STATPAC format in the file specified by the unit 13 DD card. This file may be processed by STATPAC A651 to produce a plot tape for the CALCOMP plotter. The plot will be an X-Y plot of site coordinates with reference numbers. A list of reference numbers and corresponding sites is also printed.

0 (or blank) No plot file created.

17-18 Coordinate selection option.

Nonzero. Sites are selected based on a rectangle of latitude and longitude. The coordinates for a selection rectangle are input on a card, the Coordinate Selection card, immediately following the Header card. If this option is not used, the Coordinate Selection card is omitted.

0 (or blank) No coordinate selection. No Coordinate Selection card.

Coordinate Selection Card

The Coordinate Selection card specifies a rectangle, using maximum and minimum latitude and longitude; only sites within this rectangle, and satisfying the other select options, are listed. The format of the card is:

Columns		Description
1-2	Degrees	Minimum latitude
3-4	Minutes	
5-6	Seconds	
7-8	Degrees	Minimum longitude
9-10	Minutes	
11-12	Seconds	
13-14	Degrees	Maximum latitude
15-16	Minutes	
17-18	Seconds	
19-20	Degrees	Maximum longitude
21-22	Minutes	
23-24	Seconds	

Select Cards

If Select cards are omitted, a complete listing of the 5 data files will be made if type of selection is 0 or positive. If Select cards are used, the following paragraphs apply.

Each of these cards contains one select option and up to a maximum of 25 select control codes. A list of allowable select options and select control codes follows this discussion. A select option is used to choose an item of data for a site in the data file, and the select control codes are used to specify what the item will be compared to as a selection criterion. Example: If the select option is OFF (office) and the select control codes are TA and JX (Tallahassee and Jacksonville), then all sites in the data files assigned to the Tallahassee and Jacksonville Subdistrict offices will be retrieved. If the select option SIT (site type) and select control codes LK (lake) and ES (estuary) are specified, then a list of all sites which are lakes or estuaries will be retrieved. If this card is used in the same run as the previous example (of OFF = TA or JX), and type of selection = 0, then only estuary and lake sites assigned to the Tallahassee or Jacksonville offices will be listed. Up to 24 select cards may be used consecutively in a single program execution.

If the select option is one of the frequency data type codes, the select control values may be used in two ways. If every select control values field is blank, then every site with a nonzero frequency of collection of that type of data will be listed. If it is desired to select on a particular frequency of collection, that frequency is entered as a select control value. This frequency may be expressed as numeric (for example, "12") or as alpha characters (for example, "CϕN"). In either case, it must be right justified in the select control value field, and should omit leading zeros.

At least one select control code, other than a frequency code, must be submitted or no sites will be retrieved.

If the select option is PJT to select on network or project codes, the user has three options: (1) selecting network sites by specifying "NET" as a select control code; (2) selecting all project sites by using "PJT" as the select control value code; or (3) choosing particular projects by specifying the three digits of the project numbers as select control codes.

It should be noted that there may be more than one entry for a site because of multiple funding agencies. In this case, each entry is treated as a separate entity in the selection process, that is, one entry may satisfy the selection criteria and be listed, while another may not. See the description of the all cooperator option on the Header card for an exception to the rule. The format of the Select card is as follows:

Column	Description
1-3	Select option (left justified)
4-6, 7-9, 10-12, 13-15, 16-18 19-21, 22-24, 25-27, 28-30, 31-33, 34-36, 37-39, 40-42, 43-45, 46-48, 49-51, 52-54, 55-57, 58-60, 61-63, 64-66, 67-69, 70-72, 73-75, 76-78.	Select control code fields (right justified)

Frequency data types: Allowable select options

- K&T - specific conductance and temperature
- DO - dissolved oxygen
- PH - field pH measurement
- MC - major chemical constituents
- N&P - nitrogen and phosphorus species
- MET - metals
- BOD - biochemical oxygen demand
- TOC - organic carbon
- PES - pesticides
- PKT - phytoplankton
- SED - suspended sediment
- CL - chloride
- TRB - turbidity
- RCM - radiochemical analysis
- BCT - bacteriological forms
- FLO - flow or discharge
- WL - water level or stage

Allowable select control codes for frequency data types are right-justified numbers representing frequencies, or alpha codes such as "CϕN"--continuous recording, or "CSI"--crest stage indicator.

Nonfrequency data types:

- COO - cooperator or funding agency
- OFF - office
- COC - county code
- SIT - site type
- WMD - Water Management District
- PJT - project (network NET or project code)
- OTH - other data types
  - PY - periphyton
  - R - rainfall
  - E - evaporation
  - CA - chemical analysis of bottom sediment, etc.
  - PW - partial chemical analysis-weekly frequency (orthophosphorous and fluoride)
  - P - partial chemical analysis-includes the following schedules: monthly-annual (hardness and dissolved solids)
  - BI - benthic invertebrates
  - BN - bed material nutrients
  - CH - chlorophyll

Last Card

A blank card indicates the end of select cards for a retrieval. This must be included even if no Select cards are used.

Sample Retrievals

A sample retrieval is shown in the top part of figure 8. Lines 4 and 9 are "last cards" and are therefore blank. This setup would produce four printouts. The first two would be frequency and administrative lists of all sites assigned to either the Tallahassee or Jacksonville offices which are either of the lake or estuary site types. The second two would be frequency and administrative lists of all sites assigned to the SFM Water Management District for which there are 12 specific conductance and temperature measurements per year and continuous (CϕN) flow records.

A second retrieval setup is illustrated in the bottom part of figure 8. Lines 2 and 5 are "last cards." This setup would produce three printouts. The first two would be complete frequency and administrative listings of all sites in the site file. The third would be an administrative listing (county, site type, Water Management District, network or project codes, and latitude-longitude) for all sites assigned to the Miami office.

Description of Output

The first page of printout is a utility page, listing the values of the nine options and the coordinates selection, if any. Also listed are the select options and associated select codes.

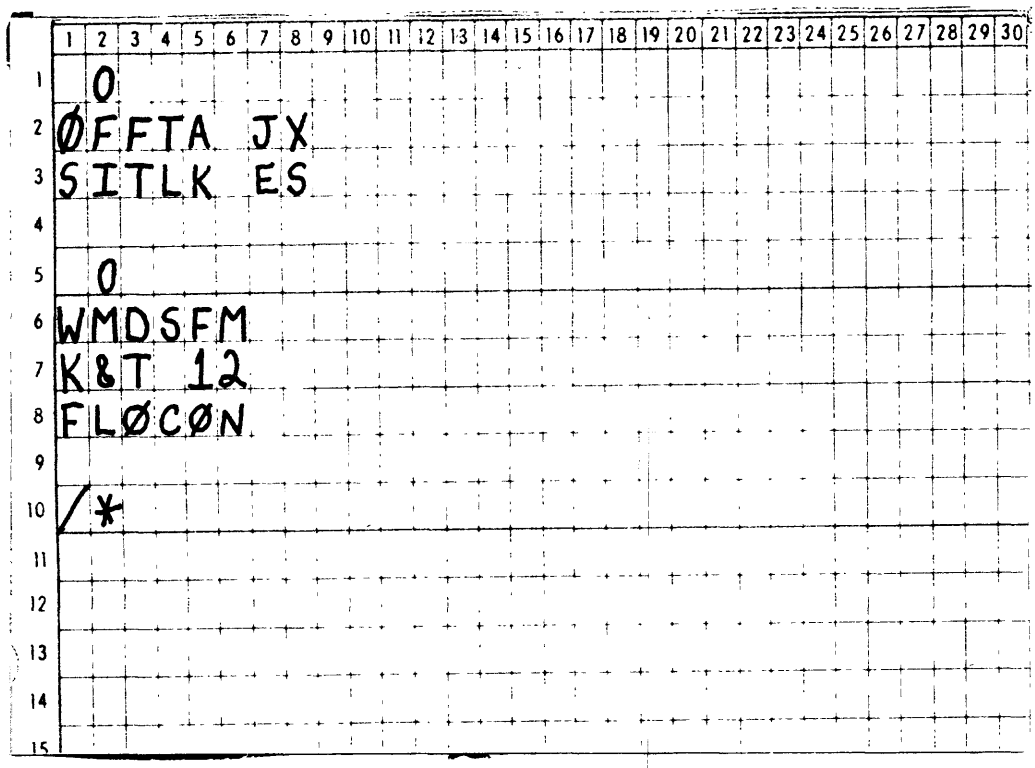
Four header pages list codes used to identify cooperators, types of data, offices, counties, and frequencies of collection.

Each frequency or administrative listing has at the top a line identifying the columns of the list. There are no more than 55 lines of data listed per page, each set of 10 lines is separated by a blank line, unless double spacing has been specified. If multiple entries for a site (multiple cooperators) are listed, the site number and name are printed only with the first entry.

The data items listed in each line of the frequency listing are site number, site name, cooperator code, codes identifying the frequency of each type of measurement, and the office responsible. In the administrative listing, the frequency data is replaced by the county code, site type code, Water Management District code, network or project code, and latitude and longitude of the site. All other data items are the same as in the frequency listing.

The final page contains one line of print listing the number of sites retrieved.

See Supplement C for sample printouts.



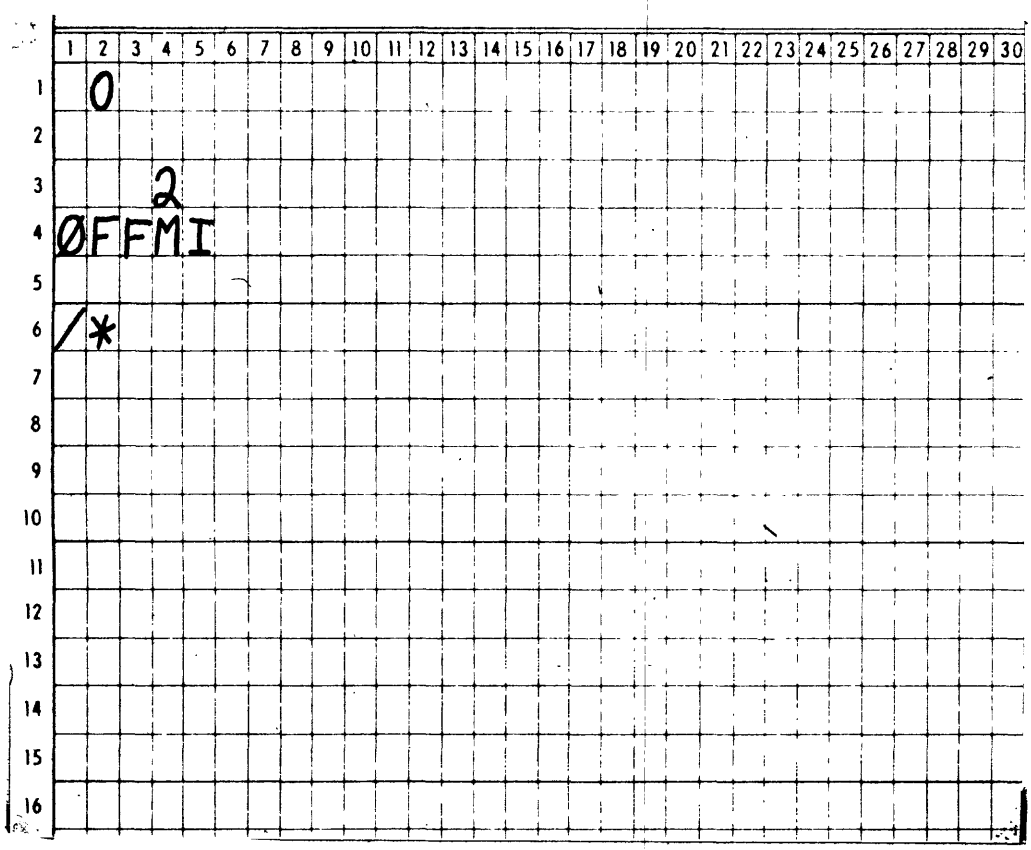


Figure 8.--Sample retrievals.

Job Deck Setup for CALCOMP X-Y Plot of Sites

Producing CALCOMP X-Y plots of station coordinates from the Findex system is illustrated in figure 9. This job will write plot instructions on a magnetic tape in the U.S. Geological Survey Computer Center. If it is desired to generate a tape at a remote terminal, a revised data definition (DD) card for unit 13 can be used.

This job uses the coordinate selection option and CALCOMP plot file option. Since both options are specified, the header card is followed by a card specifying the minimum and maximum latitudes and longitudes. The selection is also restricted to network sites by the PJT select card and to certain types of sites (no ground-water sites) by the SIT select card.

The first two option cards for program A651 prepare the CALCOMP plot tape and are fixed. The third option card contains the minimum, scale, and maximum for longitude, the minimum, scale, and maximum for latitude, and the lettering size for the site identification codes. The longitude coordinates must be entered as 88° -X, where X is the true latitude.

The use of the CALCOMP plot file option also produces a printout of plot numbers and corresponding site names and numbers. A sample of this printout is shown in figure 10.

```
//     JOB CARD        JOB CARD        JOB CARD
//  EXEC PGM=FINDEX,REGION=100K,TIME=3
//STEPLIB DD DSN=AG4B17G.FNDPROG.FORT,DISP=SHR
//    DD DISP=SHR,DSN=SYS1.PLIX.TRANSLIB
//    DD DSN=SYS1.SYNC.LINKLIB,DISP=SHR
//SORTLIB  DD DSN=SYS1.SYNC.SORTLIB,DISP=SHR
//FT05F001  DD DDNAME=SYSIN
//FT06F001  DD SYSOUT=A
//FT10F001  DD DSN=AG4B17G.ORFINDEX,DISP=OLD,UNIT=ONLINE
//FT11F001  DD DSN=AG4B17G.CPRTINDX.DATA,DISP=OLD,UNIT=ONLINE
//FT12F001  DD SYSOUT=B,DCB=(RECFM=F,BLKSIZE=80,LRECL=80)
//FT13F001  DD DSN=&&CALCMP,UNIT=SYSDK,DISP=(,PASS),
//    DCB=(RECFM=VBS,LRECL=504,BLKSIZE=7294),SPACE=(TRK,(10,5))
//FT14F001  DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT15F001  DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT16F001  DD DSN=AG4B17G.TPFINDEX,DISP=OLD,UNIT=ONLINE
//FT17F001  DD DSN=AG4B17G.MIFINDEX,DISP=OLD,UNIT=ONLINE
//FT18F001  DD DSN=AG4B17G.TAFINDEX,DISP=OLD,UNIT=ONLINE
//FT19F001  DD DSN=AG4B17G.JXFINDEX,DISP=OLD,UNIT=ONLINE
//SYSIN DD *
                1 1
27000080000028000082000O
SITSW LK ES SS ME SP
PJTNET

/*
//  EXEC PGM=A651,REGION=260K,TIME=3
//FT06F001  DD SYSOUT=A
//FT10F001  DD DSN=&&CALCMP,DISP=(OLD,PASS)
//PLOTTAPE  DD UNIT=TAPE62,LABEL=(1,SL),
//    DCB=DEN=4,VOL=SER=XXXXXX,DSN=CALPLT
//FT05F001  DD *
CALCOMP PLOTS OF STATIONS      XXXXXXXX 1000  3
  2  1  3
6.0        0.063492  8.0        27.0       0.056604  28.0       0.14       -1
/*
//
```

Figure 9.--Job deck setup for CALCOMP X-Y plot of site coordinates.

U.S. GEOLOGICAL SURVEY - W.R.D., FLORIDA DISTRICT OFFICE, 325 JOHN KNOX RD., TALLAHASSEE

INDEX TO ACTIVE WATER DATA COLLECTION STATIONS IN FLORIDA

THIS INDEX CONTAINS A LIST OF ACTIVE STATIONS IN FLORIDA OPERATED BY THE U.S. GEOLOGICAL SURVEY IN COOPERATION WITH STATE, LOCAL, AND FEDERAL AGENCIES LISTED BELOW. THE INDEX SHOWS THE COOPERATOR(S) SUPPORTING THE DATA COLLECTION ACTIVITIES, THE TYPE AND FREQUENCY OF DATA COLLECTION AND THE U.S. GEOLOGICAL SURVEY OFFICE RESPONSIBLE FOR COLLECTING AND PROCESSING THE DATA.

SITE TYPE
* * * * * * * *

STREAMS AND CANALS

LAKES

ESTUARIES

SPRINGS

SPECIFIC SOURCE

METEOROLOGY

	SITE NUMBER	SITE NUMBER AND LOCATION
1.	02231342	FORT DRUM CR AT SUNSHINE ST PRWY
2.	02231350	ST. JOHNS HEADWATERS NEAR VERO BEACH, FLA.
3.	02231450	ST. JOHNS HEADWATERS NR KENANSVIL
4.	02231460	ST. JOHNS R CSG NO 1 NR MICCO
5.	02251800	INDIAN RIVER AT WABASSO, FLA.
6.	02252500	NORTH CANAL NEAR VERO BEACH, FLA.
7.	02253000	MAIN CANAL AT VERO BEACH, FLA.
8.	02253500	SOUTH CANAL NR VERO BEACH, FLA.
9.	02257800	HARNEY POND CANAL AT S-71 NEAR LAKEPORT, FLA.
10.	02259200	INDIAN PRAIRIE CANAL AT S-72 NR OKEECHOBEE, FLA.
11.	02266900	LAKE PIERCE NEAR WAVERLY, FLA.
12.	02267000	CATFISH CREEK NR LAKE WALES, FLA.
13.	02267400	LAKE HATCHINEHA NEAR LAKE WALES
14.	02268400	LAKE WEOHYAKAPKA AT INDIAN LK EST FLA.
15.	02268600	LAKE ROSALIE NEAR LAKE WALES, FLA.
16.	02268800	LAKE MARIAN NR KENANSVILLE, FLA.
17.	02268900	LAKE KISSIMMEE NEAR LAKE WALES, FLA.
18.	02268904	KISSIMMEE RIVER BELOW S-65 NEAR LAKE WALES, FLA.
19.	02269600	ARBUCKLE LAKE NEAR AVON PARK, FLA.
20.	02270491	ARBUCKLE C -CA- NR LORIDA
21.	02270500	ARBUCKLE CREEK NEAR DESOTO CITY, FLA.
22.	02270700	LAKE ANNIE NR LAKE PLACID, FLA.
23.	02270750	LAKE PLACID NEAR LAKE PLACID, FLA.
24.	02270950	LAKE JUNE-IN-WINTER NR L PLACID, FLA.

Figure 10.--Computer listing identifying numerical codes used on X-Y plots.

SUPPLEMENT A

Updating the Data Files--Program FNDXUP

Introduction

Previously, the system utility SYSUPDTE was used to update each subdistrict data file. The update program FNDXUP was designed to replace SYSUPDTE and make updating the data files easier.

Input to the procedure consists of cards to change the existing file, by adding, deleting, or modifying a current entry. The program relies on a combination of site number and entry sequence numbers to uniquely identify each entry in the file. The program will read the update cards and search the data file to find an entry with a matching site number and sequence code. When a match is found, the program will replace the existing entry with the update card; if not found, it will add that card to the file as a new entry. The entry and multiple entry delete option searches the file in the same manner and deletes an entry (an "N" and "D" card) or the multiple entry (more than one "N" "D" card set) when a match is found. If the match is not found, the program continues processing the next input card.

The program includes an option to list all entries for sites having multiple entries. This printout is helpful in maintaining the proper file organization.

The program FNDXUP was written in PL1 for the IBM 360 and 370 computer series by Linda H. Geiger, U.S. Geological Survey, Tallahassee, Fla.

Coding FINDEX Data

Several changes have been made in the format of the data cards. Sequence numbers have been included with each entry. "N" cards and "D" cards must appear in sets in a data file and the sequence number on an "N" card must match the sequence number on the corresponding "D" card. This sequence number is used only for update and file maintenance purposes.

Columns 50-54 on the "N" card are reserved and should not be used.

Columns 55-63 on the "N" card may be used by the subdistrict offices for local codes. This field should NOT be used to enter data that logically belongs in other fields of the entry.

Coding the Update

Care must be taken to properly code the update because few program error messages are given. The program FNDXUP requires that a data file be in perfect "N" "D" ascending order (multiple entries together in ascending sequence number). If not, a data file will not be updated properly. To guard against this possibility, the entire file can be listed periodically using a system utility program IEBGENER.

Options for updating a data file are:

1. Make a change to or add an "N" card.
2. Make a change to or add a "D" card.
3. Delete a record ("N" and "D" card set) from a site.
4. Delete an entire site (more than one set of "N" and "D" cards).

Update Cards

There are five types of input cards for an update:

1. "O" card - Mandatory
2. "N" card - Optional (as needed)
3. "D" card - Optional (as needed)
4. "X" card - Optional (as needed)
5. "DELETE" card - Optional (as needed)

Not more than 200 cards in any combination and order may be used in a single update. See figure 11 for a complete job deck setup using program FNDXUP.

"ϕ" Card

The "ϕ" or option card is mandatory and must be the first input card in the update.

The "ϕ" (option) card is used to invoke the option of listing all sites in a data file that has multiple entries. Only one "ϕ" card is allowed in a single update. To obtain a listing without updating the file, code only the "ϕ" card.

Column	Entry
1	Code the letter "O"
2	Code the number "1" to retrieve a listing, otherwise leave blank
3-80	Blank

"N" Card

The "N" card is used to change an existing "N" card, or to add a new "N" card to the file. The entire "N" card must be coded (including the change) even though only one field may require updating.

When adding a new site entry during update, a corresponding "D" card must be included with the "N" card.

"D" Card

The "D" card is used to change an existing "D" card or to add a new "D" card to the file. The entire "D" card must be coded (including the change) even though only one field may require updating.

When adding a new site entry during update, a corresponding "N" card must also be included with the "D" card.

"X" Card

The "X" card is used to delete a single entry in a data file. One "N" and "D" card set will be deleted.

Column	Entry
1	Code an "X"
2-16	Code the site identification number (right justified)
17-48	Blank
49	Code the sequence number of the record to be deleted. This column must be coded.
50-80	Blank

"Delete" Card

The delete card is used to delete ALL the entries for a site. THIS OPTION SHOULD NOT BE USED IN AN ATTEMPT TO DELETE A SINGLE ENTRY FOR A SITE WITH MULTIPLE RECORDS.

Column	Entry
1	Blank
2-16	Site identification number (right justified)
17-22	Code the word "DELETE"
23-80	Blank

Figures 11 to 14, respectively, show a job setup for updating a data file, a partial printout from the update procedure, a partial listing of multiple site entries, and a job setup to list the entire Orlando Subdistrict office data file.

```
//     JOB CARD        JOB CARD         JOB CARD
//  EXEC PGM=FNDXUP,REGION=350K,TIME=3
//STEPLIB DD DSN=AG4B17G.FNDPROG.FORT,DISP=SHR
//    DD DISP=SHR,DSN=SYS1.PLIX.TRANSLIB
//    DD DSN=SYS1.SYNC.LINKLIB,DISP=SHR
//SORTLIB  DD DSN=SYS1.SYNC.SORTLIB,DISP=SHR
//FILEOUT  DD  DSN=&&SORTFL,UNIT=SYSDK,SPACE=(TRK,(150,10),RLSE),
//    DCB=(RECFM=FB,LRECL=81,BLKSIZE=6399),DISP=(NEW,PASS)
//SORTIN  DD DSN=*.FILEOUT,VOL=REF=*.FILEOUT,DISP=(OLD,DELETE)
//SORTOUT  DD DSN=XXXXXXXXXXXXXXXX,UNIT=ONLINE,DISP=OLD
//SORTWK01 DD  UNIT=SYSDK,SPACE=(CYL,2,,CONTIG)
//SORTWK02 DD  UNIT=(SYSDK,SEP=SORTWK01),
//    SPACE=(CYL,2,,CONTIG)
//SORTWK03  DD  UNIT=(SYSDK,SEP=(SORTWK01,SORTWK02)),
//    SPACE=(CYL,2,,CONTIG)
//DISKIN    DD DSN=XXXXXXXXXXXXXXXX,UNIT=ONLINE,DISP=OLD
//SYSPRINT DD SYSOUT=A
//SORTMSG  DD SYSOUT=A
//PLIDUMP  DD DUMMY
//CARDIN DD *
01
        02376500DELETE
D       02376000                                                    1
X       02370500                                  1
N       02369000                                  2
N       02369000                                  3
D       02369000                                                    2
D       02369000                                                    3
D       02368001                                                    1
N       02368001                                  1
/*
//
```

XXXXXXXXXXXXXXXX - FILE NAME FOR SUBDISTRICT DATA
AG4B17G.JXFINDEX - FILE NAME FOR JACKSONVILLE SUBDISTRICT OFFICE
AG4B17G.MIFINDEX - FILE NAME FOR MIAMI SUBDISTRICT OFFICE
AG4B17G.ORFINDEX - FILE NAME FOR ORLANDO SUBDISTRICT OFFICE
AG4B17G.TAFINDEX - FILE NAME FOR TALLAHASSEE SUBDISTRICT OFFICE
AG4B17G.TPFINDEX - FILE NAME FOR TAMPA SUBDISTRICT OFFICE

Figure 11.--Job deck setup using program FNDXUP.

```
CARDS TO BE UPDATED

N303021086351603FIELD 4 DEEP WELL                    1          091GW303021863516

N303021086351601FIELD 4 UPPER FLRD WELL              2          091GW303021863516

D303021086351603USG                                             CON31NWM154

D302419086362601NWM                                              631NWMNET



N       02307537S FK BISHOP CR NR OLDSMAR FL     1          103SW280056824142
D       02307537SPA                                           4  441SWM329
N       02307676ALLIGATOR CR NR SAFETY HARBOR FL1           103SW275843824232
D       02307676SPA                                           4  441SWM329
N       02307688ALLGTR CR TRB AT SAFETY HARBR FL1           103SW275856824247
D       02307688SPA                                           4  441SWM329
N       02307696ALLIGATOR LK AT SAFETY HARBOR,FL1     TAR 103LK275845824145
D       02307696SPA  6  6  6                 2                 CON41SWMNET
N       02307731ALLEN CREEK NR LARGO             1    TAR 103SW275630824500
D       02307731DOT                                       PCSI41SWMNET R
N       02308000SAWGRASS LAKE NR PINELLAS PARK   1    TAR 103LK275033823949
D       02308000SPA  6  6  6                 2                 CON41SWMNET R
N       02308888SEMINOLE LAKE NR LARGO, FLA      1    TAR 103LK275020824650
D       02308888SPA                                       CON41SWMNET
N       02309421CURLEW CR NR OZONA FL            1          103SW280224824451
D       02309421SPA                                           4  441SWM329
N       02309494WALL SPRINGS NR TRPN SPGS        1    INS 103SW280601824444
D       02309494PIN  4     4     4  4  4                     4     441SWMNET
N       02309584LAKE THOMAS AT DREXEL,FLA.       1    CYP 101LK281414822808
D       02309584SPA                                       CON41SWMNET
N       02309648ANCLOTE R NR FIVAY JCT FL        1          101SW281523823158
D       02309648SPA                                           4  441SWM329
N       02309765LAKE LINDA AT DENHAM, FLA        1    CIT 101LK281114822852
D       02309765SPA                                            5241SWMNET
N       02310688SE FORK HOMOSASSA SGS AT HOMOSAS1     BRO 017SP284751823523
D       02310688SCR                                           2  241SWMNET
N       02310750CRYSTAL RIVER NR CRYSTAL RIVER   1    BRO 017SW285417823813
D       02310750SCR                                       CON41SWMNET
N       02310787WITHLACOOCHEE R NR POYNER FL     1          105SW281821814736
D       02310787SWI                                           4  441SWM329
N       02310912PONY CREEK NR POYNER, FL         1          105SW281839815331
D       02310912SWI                                           4  441SWI329
N       02310931WITHLACOOCHEE R NR ROCK RIDGE FL1           105SW281932815556
D       02310931SWI                                           4  441SWM329
N       02310944WITH R AT CED FD NR CUMPRESCO FL1           101SW281920820024
D       02310944SWI                                           4  441SWM329
N       02310995GATOR CR NR RICHLAND FL          1          101SW281808820322
D       02310995SWI                                           4  441SWM329
```

Figure 12.--Partial computer printout produced by program FNDXUP.

```
N       02311890GATOR HOLE SLOUGH NR LACOOCHE,FL1                    101SW282712820508
D       02311890SWI                                                    4  441SWI329
N       02312145MILL CR NR CARTERS ISLAND FL    1                    069SW282940815435
D       02312145SWI                                                    4  441SWM329
N       02312667SHADY BROOK NR SUMTERVILLE FL   1                    119SW284610820400
D       02312667SWI                                                    4  441SWM329
N26513808200220 1PUNTA GORDA HTS WELL NR PUNTA GO1                ARC 015GW265138820022
D26513808200220 1SPE                                                  CON41FCDNET
N26564608155450 1SR74 D. WELL NR PUNTA GORDA, FLA1                ARC 015GW265646815545
D26564608155450 1SPE                                                  641SWMNET
N26564608155450 2SR74 S. WELL NR PUNTA GORDA, FLA1                ARC 015GW265646815545
D26564608155450 2SPE                                                  641SWMNET
N26565908220570 1EWD P 4A                       1                 SAR 115GW265659822057
D26565908220570 1EWD                2                              2       41SWMNET
N26565908221030 1EWD P 24                       1                 SAR 115GW265659822103
D26565908221030 1EWD                2                              2       41SWMNET
N26565908221100 1EWD P 1A                       1                 SAR 115GW265659822110
D26565908221100 1EWD                2                              2       41SWMNET
N26570608221080 1EWD P 2A                       1                 SAR 115GW265706822108
D26570608221080 1EWD                2                              2       41SWMNET
N26570708220570 1EWD P 5A                       1                 SAR 115GW265707822057
D26570708220570 1EWD                2                              2       41SWMNET
N26570908221030 1EWD P 25                       1                 SAR 115GW265709822103
D26570908221030 1EWD                2                              2       41SWMNET
N26571208220570 1ENGLEWOOD WD WELL R2 AT ENGLEWO1                 SAR 115GW265712822057
D26571208220570 1EWD                                                  CON41SWMNET
N26571208220570 2ENGLEWOOD WP SH WELL AT ENGLEWO1                 SAR 115GW265712822057
D26571208220570 2EWD                                                  CON41SWNNET
N26571308220570 1EWD P 11                       1                 SAR 115GW265713822057
D26571308220570 1EWD                2                              2       41SWMNET
N26571308221030 1EWD P 26                       1                 SAR 115GW265713822103
D26571308221030 1EWD                2                              2       41SWMNET
N26571308221080 1EWD P 3A                       1                 SAR 115GW265713822108
D26571308221080 1EWD                2                              2       41SWMNET
N       02309814CAMP LAKE NR DENHAM, FLA        1                 CIT 101LK281103822926
D       02309814SPA                                                    10441SWMNET
N       02309848SOUTH BRANCH ANCLOTE RIVER NR OD1                 CIT 101SW281108823313
D       02309848SPA  6  6  6              2                            CONCON41SWMNET
N       02309872PARKER LAKE NR ODESSA,FLA.      1                 CIT 101LK281040823446
D       02309872SPA                                                    5241SWMNET
N       02309900ANCLOTE RIVER NR ODESSA         1                 CIT 101SW281317823805
D       02309900SPA                                                    PCSI41SWMNET
N       02309900S BR ANCLOTE R AT ODESSA FL     2                      101SW281215823542
D       02309900SPA                                                    4  442SWM329
N       02310000ANCLOTE RIVER NR ELFERS, FLA    1                 TAR 101SW281250824000
D       02310000SPA 52  6  6  1  6  1    2                            CONCON41SWMNET
```

Figure 12.--Partial computer printout produced by program FNDXUP--Continued.

```
N       02310100LAKE DAN NR ODESSA, FLA                 1       TAR 057LK281000823855
D       02310100PIN  6                                                  36541SWMNET
N       02310147HOLLIN CR NR TARPON SPRINGS, FL 1               103SW280944824238
D       02310147SWM                                                     PCON41SWM353
N       02310224SPARKMAN L OTLT NR MASARYKTWN FL1               053SW282723822214
D       02310224SWH                                                     4  441SWM329
N       02310230LAKE IOLA NR SAN ANTONIO, FLA   1       CYP 101LK282328821754
D       02310230SWH                                                     5241SWMNET
N       02310238PASCO LAKE AT LOYCE, FLA                1       BRO 101LK282305822917
D       02310238WCR  6                                                  CON41SWMNET
N       02310240JUMPING GULLY AT LOYCE, FLA     1       BRO 101SW282306822922
D       02310240SCR  6  6  6                 2                  CONCON41SWMNET
N       02310260CREWS LAKE (SOUTH) NR LOYCE     1       BRO 101LK282223823150
D       02310260SCR                                                     CON41SWMNET
N       02310280PITHLACHASCOTTEE R. NR FIVAY JCT3       BRO 101SW281944823213
D       02310280SCR  6  6  6                 2                          6  643SWMNET
N       02310280PITHLACHASCOTTEE R. NR FIVAY JCT4       BRO 101SW281944823213
D       02310280SCR                                                     4  444SWM329
N       02310285FIVE MILE CREEK NR FIVAY JCT    1               101SW281720823150
D       02310285SCR                                                     4  441SWM329
N       02310290MOON LAKE NR NEW PORT RICHEY,FLA1       BRO 101LK281715823649
D       02310290SCR                                                     5241SWMNET
N       02310291PITHLACHASCOTEE R AT CROCK R FL 2               101SW281632823540
D       02310291SCR                                                     4  442SWM329
N       02310300PITHLACHASCOTEE RIVER NR NEW POR1       BRO 101SW281519823937
D       02310300SCR  6  6  6  1  6  1     2                          CONCON41SWMNET
N       02310352BEAR CR AT PLAZA DR NR HUDSON FL1               101SW281938823959
D       02310352SCR                                                     4  441SWM329
N       02310400HUNTERS LAKE NR ARIPEKA         1       BRO 053SW282640823740
D       02310400SCR                                                     36541SWMNET
N       02310500WEEKI WACHEE SGS NR BROOKSVILLE 1       BRO 053SP283100823425
D       02310500SCR  6  6  6  1  6  1     2                          636541SWMNET
N       02310600GULF OF MEXICO NR BAYPORT,FL    1       BRO 053ES283200823901
D       02310600SCR                                                     CON41SWMNET
N       02310650CHASSAHOWITZKA RIVER NR HOMOSA  1       BRO 017SP284254823438
D       02310650SCR                                                     2  241SWMNET
N       02310678HOMOSASSA SPRINGS AT HOMOSASSA S1       BRO 017SP284758823520
D       02310678SCR                                                     2  241SWMNET
```

Figure 12.--Partial computer printout produced by program FNDXUP--Continued.

```
N       02296750PEACE RIVER AT ARCADIA, FLA      1          ARC 027SW271319815234
D       02296750SPE  6  6  6  6  6  4     2                      41SWMNET
N       02296750PEACE RIVER AT ARCADIA, FLA      2          ARC 027SW271319815234
D       02296750USG  6  6  6  6  6  4        4     6            6CONCON42SWMNET

N       02297251HORSE CR AT SR 665 NR LIMESTONE  1          ARC 049SW272158815825
D       02297251SPE                                            PCSI41SWMNET
N       02297251HORSE CR NR LIMESTONE FL         2               049SW272158815825
D       02297251SPE                                               4  442SWM329

N       02298830MYAKKA RIVER NEAR SARASOTA, FLA  1          SAR 115SW271425821850
D       02298830MBB  6  6  6  6  6  4     2                    CONCON41SWMNET
N       02298830MYAKKA RIVER NEAR SARASOTA, FLA  2          SAR 115SW271425821850
D       02298830USG  6  6  6  6  6  4                 6          6       42SWMNET

N       02300200S.FORK LITTLE MANATEE R.NR DUETT1          SAR 081SW273525821057
D       02300200DOT                                            PCSI41SWMNET
N       02300200S FORK LITTLE MANATEE RIVER NR D3          SAR 081SW273525821057
D       02300200MBB  6  6  6     6        2                        43SWMNET

N       02301500ALAFIA RIVER AT LITHIA, FLA      1          LIT 057SW275219821241
D       02301500SWA  6  6  6  6  6  4     2                    CONCON41SWMNET
N       02301500ALAFIA RIVER AT LITHIA, FLA      2          LIT 057SW275219821241
D       02301500USG  6  6  6  6  6  4                 6          6       42SWMNET

N       02301802TAMPA BYPASS C AT S-160 AT TAMPA2          TBC 057SW275721822215
D       02301802CEJ  2  2  2  2  2  2  2  2  1  2                  242SWMNETBI
N       02301802TAMPA BYPASS C AT S-160 AT TAMPA3          TBC 057SW275721822215
D       02301802SWH  4  4  4     4                          CONCON43SWMNET

N       02302500BLACKWATER CREEK NR KNIGHTS, FLA1          ZEP 057SW280825820900
D       02302500SWH                                              15641SWMNET
N       02302500BLACKWATER CREEK NR KNIGHTS, FLA2          ZEP 057SW280825820900
D       02302500SWH  6  6  6  1  6  1     2                    CONCON42SWMNET

N       02303000HILLSBOROUGH RIVER NR ZEPHYRHILL1          ZEP 057SW280859821357
D       02303000SWH  6  6  6  6  6  4     2                    CONCON41SWMNET
N       02303000HILLSBOROUGH RIVER NR ZEPHYRHILL2          ZEP 057SW280859821357
D       02303000USG  6  6  6  6  6  4        4     6            6       42SWMNET

N       02303200PEMBERTON C NR DOVER FLA         1          ZEP 057SW280134821412
D       02303200DOT                                            PCSI41SWMNET
N       02303200PEMBERTON C NR DOVER             2          ZEP 057SW280134821412
D       02303200SWH  6  6  6     6        2                        42SWMNET
N       02303200PEMBERTON CR NR DOVER            3               057SW280134821412
D       02303200SWH                                               4  443SWM329

N       02303358CYPRESS CREEK NR DARBY, FL       1          CYP 101SW282232821947
D       02303358DOT                                            PCSI41SWMNET
N       02303358CYPRESS CR NR DARBY FL           2               101SW282232821947
D       02303358SWH                                               4  442SWM329

N       02304000HILLSBOROUGH R AT FOWLER AV,NR T1          ZEP 057SW280315822150
D       02304000SWH  6  6  6  1  6  1     2                        41SWMNET
N       02304000HILLSBOROUGH R AT FOWLER AV,NR T2          ZEP 057SW280315822150
D       02304000TAM                                              6CON42SWMNET
```

Figure 13.--Partial listing of multiple site entries.

```
//     JOB CARD        JOB CARD         JOB CARD
// EXEC PGM=IEBGENER
//SYSPRINT  DD SYSOUT=A
//SYSIN  DD DUMMY
//SYSUT1  DD DSN=AG4B17G.ORFINDEX,UNIT=ONLINE,DISP=OLD
//SYSUT2  DD SYSOUT=A,DCB=BLKSIZE=80
/*
//
```

THIS DECK WILL LIST THE ENTIRE FILE FOR ORLANDO.
A LIST FOR ANY OTHER SUBDISTRICT OFFICE CAN BE MADE BY SUBSTITUTING THE PROPER DATA SET NAME(DSN).

Figure 14.--Job deck setup to list the Orlando Subdistrict office site file.

SUPPLEMENT B

Retrieval with Sort Option--Program FNDXST

Introduction

The retrieval with sort option (program FNDXST) is designed to allow data retrieved using the FINDEX program to be sorted before it is printed. There are no basic changes to the FINDEX program. All output and select options remain the same.

The FNDXST program requires:

1. Column 19 on the Header card to request the sort option.

2. New input card for sort specifications.

3. Additional JCL needed for the sort option.

FINDEX program H578 was modified to include the program FNDXST for the IBM 360 and 370 computer series by Linda H. Geiger, U.S. Geological Survey, Tallahassee, Fla.

Coding the Retrieval

Care must be taken to properly code the retrieval because few program error messages are given. Also, if a sort is requested, the Sort Specifications card must immediately follow the Header card. Again, no provisions have been made to list an error message in the event these cards are misplaced in the deck.

The Header Card

Column 19 is used to specify a sort request. Code a nonblank character in column 19 of the Header card to designate a sort. If this column is left blank, the retrieved data will not be sorted.

The Sort Specifications Card

This card is omitted and column 19 of the Header card is left blank if the user does not want the data sorted. See "Data Deck Organization," pages 15 to 16. The Sort Specifications card is coded as follows:

Column	
1	Must be blank
2-13	Code the words "SORT FIELDS="
14	Major-to-minor specifications--must be enclosed in parentheses

Each sort specification contains four fields and each field must be coded. The four fields are described below:

Sort fields = (aaa,bbb,cc,d)

aaa - This field describes the beginning position (in the entry) of the sort item.

bbb - This field describes the length (in the entry) of the item to be sorted.

cc - This field describes the type of sort preferred. This field will always contain the letters "CH" for a character sort.

d - This field describes whether the sort will be in ascending or descending order. Code an "A" for ascending and a "D" for descending order.

The choices for the sorting option are shown below in table format:

Sort Option	Sort Specification
Site number	002,015,CH,A
Cooperator	097,003,CH,A
Office	151,002,CH,A
County code	064,003,CH,A
Site type	067,002,CH,A
Water management district	153,003,CH,A
Project/network	156,003,CH,A

A maximum of five sort options may be selected for any single retrieval.

To sort by more than one sort option, the options are coded continuously on the Sort Specifications card as shown in the example below:

Column 2

```
SORT FIELDS=(064,003,CH,A,002,015,CH,A)
```

The Sort Specifications card shown above will sort by site number within the county and list in ascending order.

The sample deck setup that follows will retrieve any entry having site type "SP" within the jurisdiction of the Orlando Subdistrict office. It presents the data entries sorted by station identification number within a county code. See figures 15 and 16 for a job deck setup and a partial computer printout using program FNDXST.

```
//JOB CARD         JOB CARD       JOB CARD
// EXEC PGM=FNDXST,REGION=150K,TIME=5
//STEPLIB DD DSN=AG4B17G.FNDPROG.FORT,DISP=(OLD,KEEP,KEEP),UNIT=ONLINE
//            DD DISP=SHR,DSN=SYS1.SYNC.LINKLIB
//            DD DISP=SHR,DSN=SYS1.FORTX.LINKLIB
//FT05F001  DD  DDNAME=SYSIN
//FT06F001  DD  SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT09F001  DD DSN=&&GEIGER,UNIT=SYSDK,SPACE=(TRK,(70,5)),
//    DCB=(RECFM=FB,LRECL=160,BLKSIZE=4800),DISP=(NEW,PASS,DELETE)
//FT10F001  DD DSN=AG4B17G.ORFINDEX,DISP=OLD,UNIT=ONLINE
//FT11F001  DD  DSN=AG4B17G.CPRTINDX.DATA,DISP=OLD,UNIT=ONLINE
//FT12F001 DD SYSOUT=B,DCB=(RECFM=F,BLKSIZE=80,LRECL=80)
//FT13F001     DD  DSN=&&CALCMP,UNIT=SYSDK,DISP=(,PASS),
//    DCB=(RECFM=VBS,LRECL=504,BLKSIZE=7294),SPACE=(TRK,(10,5))
//FT14F001     DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT15F001     DD SYSOUT=A,DCB=(RECFM=UA,BLKSIZE=133)
//FT16F001  DD DSN=AG4B17G.TPFINDEX,DISP=OLD,UNIT=ONLINE
//FT17F001  DD DSN=AG4B17G.MIFINDEX,DISP=OLD,UNIT=ONLINE
//FT18F001  DD DSN=AG4B17G.TAFINDEX,DISP=OLD,UNIT=ONLINE
//FT19F001  DD DSN=AG4B17G.JXFINDEX,DISP=OLD,UNIT=ONLINE
//SORTLIB  DD DISP=SHR,DSN=SYS1.SYNC.SORTLIB
//SORTMSG  DD SYSOUT=A
//SORTWK01 DD UNIT=SYSDK,SPACE=(CYL,5,,CONTIG)
//SORTWK02 DD UNIT=(SYSDK,SEP=SORTWK01),
//       SPACE=(CYL,5,,CONTIG)
//SORTWK03 DD UNIT=(SYSDK,SEP=(SORTWK01,SORTWK02)),
//       SPACE=(CYL,5,,CONTIG)
//SORTIN    DD DSN=*.FT09F001,VOL=REF=*.FT09F001,DISP=(OLD,DELETE)
//SORTOUT   DD DSN=*.FT09F001,VOL=REF=*.FT09F001,DISP=(OLD,DELETE)
//SYSIN DD *
 0 0                1
 SORT FIELDS=(064,003,CH,A,002,015,CH,A)
OFFOR
SITSP

/*
//
```

Figure 15.--Job deck setup using program FNDXST.

RETRIEVAL DATE 4/20/ 81

SITE NUMBER	SITE NAME AND LOCATION	COOPERATORS	COUNTY	SITE TYPE	WATER MGMT DIST	NETWORK OR PROJ	LAT DEG	LAT MIN	LAT SEC	LONG DEG	LONG MIN	LONG SEC	OFFICE
02236130	JUNIPER SPRINGS NR OCALA	USG	083	SP	SJM	311	29	11	01	81	42	46	OR
02236132	FERN HAMMOCK SPRINGS NR OCALA	USG	083	SP	SJR	311	29	11	00	81	42	10	OR
02236160	SILVER GLEN SPRINGS NR ASTOR	SJM	083	SP	SJM	NET	29	14	43	81	38	37	OR
02236205	SALT SPRINGS NR EUREKA	SJM	083	SP	SJM	NET	29	21	00	81	43	58	OR
02239500	SILVER SPRINGS NEAR OCALA, FLA.	SJO	083	SP	SJM	NET	29	12	44	82	03	15	OR
02313100	RAINBOW SPRINGS NEAR DUNNELLON,	SWI	083	SP	SWM	NET	29	06	08	82	26	16	OR
291307081393601	SWEETWATER SPRINGS NR ASTOR	USG	083	SP	SJR	311	29	13	07	81	39	36	OR
02234600	WEKIVA SPRINGS NR APOPKA FLA	SJM	095	SP	SJM	NET	28	42	43	81	27	36	OR
02234610	ROCK SPRINGS NEAR APOPKA FLA	SJM	095	SP	SJM	NET	28	45	20	81	29	58	OR
02234650	MIAMI SPRINGS NR LONGWOOD FLA	SJM	117	SP	SJM	NET	28	42	36	81	26	34	OR
02234991	SANLANDO SGS NR LONGWOOD	SJM	117	SP	SJM	NET	28	41	19	81	23	45	OR
02234996	PALM SPRINGS NEAR LONGWOOD FLA	SJM	117	SP	SJM	NET	28	41	27	81	23	34	OR
02234997	STARBUCK SG NR LONGWOOD	SJM	117	SP	SJM	NET	28	41	48	81	23	28	OR
02235500	BLUE SPRINGS NR ORANGE CITY FLA	SJM	127	SP	SJM	NET	28	56	38	81	20	24	OR
02236110	PONCE DE LEON SPRINGS NR DE LAND	SJM	127	SP	SJM	NET	29	08	02	81	21	47	OR

RETRIEVAL DATE 4/20/ 81

SITE NUMBER	SITE NAME AND LOCATION	COOPERATORS	TYPE OF DATA (FREQUENCY---SAMPLES PER YEAR) K&T	DO	PH	MC	N&P	MET	BOD	TOC	PES	PKT	SED	CL	TRB	RCM	BCT	FLO	WL	OTH	OFFICE
02236130	JUNIPER SPRINGS NR OCALA	USG	2	2	2													2	2		OR
02236132	FERN HAMMOCK SPRINGS NR OCALA	USG	2	2	2													2	2		OR
02236160	SILVER GLEN SPRINGS NR ASTOR	SJM																	2		OR
02236205	SALT SPRINGS NR EUREKA	SJM																	2		OR
02239500	SILVER SPRINGS NEAR OCALA, FLA.	SJO	1	1	1	1	1	1		1					1			CON	CON		OR
02313100	RAINBOW SPRINGS NEAR DUNNELLON,	SWI	2	2	2	2	2	2	2	2					2			CON	CON		OR
291307081393601	SWEETWATER SPRINGS NR ASTOR	USG	2	2	2													2	2		OR
02234600	WEKIVA SPRINGS NR APOPKA FLA	SJM																2	2		OR
02234610	ROCK SPRINGS NEAR APOPKA FLA	SJM																2	2		OR
02234650	MIAMI SPRINGS NR LONGWOOD FLA	SJM																2	2		OR
02234991	SANLANDO SGS NR LONGWOOD	SJM																2	2		OR
02234996	PALM SPRINGS NEAR LONGWOOD FLA	SJM																2	2		OR
02234997	STARBUCK SG NR LONGWOOD	SJM																2	2		OR
02235500	BLUE SPRINGS NR ORANGE CITY FLA	SJM	2	1	1	1	1	1		1				2	1			2	2		OR
02236110	PONCE DE LEON SPRINGS NR DE LAND	SJM	2											2				2	2		OR

Figure 16.--Partial computer printout produced by program FNDXST.

SUPPLEMENT C

Sample FINDEX Publication Lists

SUPPLEMENT C

Sample FINDEX Publication Lists

The following pages are a sample of the printouts, including a utility page and one page each from frequency and administrative lists, from a single FINDEX job. In this job, the listing was restricted by site type (LK), project (Network sites), and water level (continuous measurement).

Several header pages, identical to tables 1, 2, and 3, would ordinarily appear after the utility page, but have been excluded as unnecessary from the sample output.

TYPE OF SELECT OPTION 0 TYPE OF LIST: FREQ. 1 STOR. 1
O/P CARDS OPTION 0 INPUT CARDS 0 OR DISK 1 ALL COOPERATORS OPTION 0 DOUBLE SPACE OPTION 0
CALCOMP PLOT OPTION 0

SELECT OPTION	SELECT COMPARE PARAMETERS
SIT	LK
PJT	NET
WL	CON

DATE OF THIS RETRIEVAL 4/14/ 81

RETRIEVAL DATE 4/14/ 81

SITE NUMBER	SITE NAME AND LOCATION	COOPERATORS	COUNTY	SITE TYPE	WATER MGMT DIST	NETWORK OR PROJ	LAT DEG	LAT MIN	LAT SEC	LONG DEG	LONG MIN	LONG SEC	OFFICE
02232100	LAKE WASHINGTON NEAR EAU GALLIE,	CEJ	009	LK	SJM	NET	28	09	09	80	44	21	OR
02232300	LK POINSETT NR COCOA	SJM	009	LK	SJM	NET	28	21	01	80	48	56	OR
02234160	LK WINNEMISSETT NR DE LAND	SJM	127	LK	SJM	NET	29	01	10	81	15	06	OR
02234499	LK MONROE NR SANFORD	CEJ	117	LK	SJM	NET	28	50	13	81	19	28	OR
02234814	LAKE WEKIVA NEAR MAITLAND FLA	SJM	095	LK	SJM	NET	28	36	10	81	25	38	OR
02236200	LAKE KERR NEAR EUREKA, FLA.	SJM	083	LK	SJM	NET	29	20	10	81	46	00	OR
02236210	LAKE GEORGE NEAR SALT SPRINGS, F	SJM	083	LK	SJM	NET	29	17	44	81	39	06	OR
02236840	LAKE MINNEHAHA NEAR CLERMONT, FL	SJO	069	LK	SJM	NET	28	32	38	81	47	02	OR
02236880	CHERRY LAKE NR GROVELAND	SJO	069	LK	SJM	NET	28	35	33	81	49	21	OR
02237600	LAKE APOPKA AT WINTER GARDEN FLA	SJO	095	LK	SJM	NET	28	34	36	81	35	13	OR
02238200	LAKE YALE AT GRAND ISLAND, FLA.	SJO	069	LK	SJM	NET	28	52	52	81	42	21	OR
02238800	LAKE WEIR AT OKLAWAHA, FLA	SJO	083	LK	SJM	NET	29	02	23	81	55	44	OR
02242450	ORANGE LAKE AT ORANGE LAKE FLA	SJM	001	LK	SJM	NET	29	25	37	82	12	26	OR
02243958	LAKE OCKLAWAHA NEAR ORANGE SPRIN	CEJ	107	LK	SJM	NET	29	30	30	81	48	15	OR
02244350	LK WINONA NR DE LAND	SJM	127	LK	SJM	NET	29	10	50	81	20	06	OR
02261900	LAKE MARY JANE NEAR NARCOOSSEE,	SFM	095	LK	SFM	NET	28	22	46	81	11	15	OR
02264900	LAKE TOHOPEKALIGA AT KISSIMMEE,	SFM	097	LK	SFM	NET	28	17	20	81	24	20	OR
02266600	CYPRESS LAKE NEAR ST. CLOUD, FLA	SFM	097	LK	SFM	NET	28	03	40	81	19	58	OR
02268900	LAKE KISSIMMEE NEAR LAKE WALES F	SFM	097	LK	SFM	NET	27	48	09	81	11	50	OR
02269600	ARBUCKLE LAKE NEAR AVON PARK, FL	SFM	105	LK	SFM	NET	27	39	50	81	22	41	OR
02271700	LAKE ISTOKPOGA NEAR DE SOTO CITY	SFM	055	LK	SFM	NET	27	26	09	81	17	05	OR
02276400	LK OKEECHOBEE	CEJ	093	LK	SFM	NET	26	57	00	80	50	00	OR
02310950	LAKE DEESON NEAR LAKELAND, FLA.	SGS	105	LK	SWM	NET	28	06	37	81	55	51	OR
02312698	LK PANASOFFKEE NR LK PANASOFKEE	SWI	119	LK	SWM	NET	28	48	27	82	08	16	OR
02313229	LK ROUSSEAU NR DUNNELLON	CEJ	075	LK	SWM	NET	29	00	36	82	37	00	OR
02270950	LAKE JUNE-IN-WINTER NR LK PLACID	SPE	055	LK	SWM	NET	27	19	19	81	25	08	TP
02293518	LAKE FANNIE NR FLORENCE VILLA, F	SPE	105	LK	SWM	NET	28	02	50	81	41	15	TP
02293670	LAKE OTIS AT WINTER HAVEN, FLA	SPE	105	LK	SWM	NET	28	01	10	81	42	35	TP
02294036	LAKE HOWARD AT WINTER HAVEN, FLA	SPE	105	LK	SWM	NET	28	01	20	81	44	16	TP
02294259	LAKE PARKER AT LAKELAND, FLA	SPE	105	LK	SWM	NET	28	02	59	81	55	22	TP
02294462	LAKE HANCOCK NR HIGHLAND CITY,FL	SPE	105	LK	SWM	NET	27	57	48	81	51	29	TP
02301368	EDWARD MEDARD RESERVOIR AT PL GR	SWA	057	LK	SWM	NET	27	54	37	82	10	08	TP
02303290	LAKE THONOTOSASSA NR THONOTOSASS	SWH	057	LK	SWM	NET	28	04	04	82	16	04	TP
02303440	LAKE PADGETT NR LUTZ,FLA.	SWH	101	LK	SWM	NET	28	12	12	82	27	43	TP
02306704	LAKE HARVEY NR LUTZ, FLA.	SNH	057	LK	SWM	NET	28	09	43	82	29	12	TP
02306723	TURKEY FORD LAKE NEAR LUTZ	SNH	057	LK	SWM	NET	28	08	08	82	32	24	TP
02306800	STARVATION LAKE NR LUTZ,FLA.	SNH	057	LK	SWM	NET	28	07	22	82	30	13	TP
02307242	KEYSTONE LAKE NEAR ODESSA	SNH	057	LK	SWM	NET	28	08	50	82	35	40	TP
02307479	LAKE TARPON NR TARPON SPRINGS,FL	SPA	103	LK	SWM	NET	28	05	35	82	43	20	TP
02307696	ALLIGATOR LK AT SAFETY HARBOR,FL	SPA	103	LK	SWM	NET	27	58	45	82	41	45	TP
02308000	SAWGRASS LAKE NR PINELLAS PARK	SPA	103	LK	SWM	NET	27	50	33	82	39	49	TP
02308888	SEMINOLE LAKE NR LARGO, FLA	SPA	103	LK	SWM	NET	27	50	20	82	46	50	TP
02309584	LAKE THOMAS AT DREXEL,FLA.	SPA	101	LK	SWM	NET	28	14	14	82	28	08	TP
02310230	LAKE IOLA NR SAN ANTONIO, FLA	SWH	101	LK	SWM	NET	28	23	28	82	17	54	TP
02310238	PASCO LAKE AT LOYCE, FLA	WCR	101	LK	SWM	NET	28	23	05	82	29	17	TP
02310260	CREWS LAKE (SOUTH) NR LOYCE	SWP	101	LK	SWM	NET	28	22	23	82	31	50	TP
02278501	CON AREA NO1 BL S5 COMP NR LOX	SFM	099	LK	SFM	NET	26	41	00	80	22	10	MI
02291200	LAKE TRAFFORD NR IMMOKALEE	SFM	021	LK	SFM	NET	26	26	08	81	29	25	MI
02329200	LAKE JACKSON NEAR TALLAHASSEE FL	NWM	073	LK	NWM	NET	30	31	43	84	21	30	TA

RETRIEVAL DATE 4/14/ 81

SITE NUMBER	SITE NAME AND LOCATION	COOPERATORS	TYPE OF DATA (FREQUENCY---SAMPLES PER YEAR) K&T	DO	PH	MC	N&P	MET	BOD	TOC	PES	PKT	SED	CL	TRB	RCM	BCT	FLO	WL	OTH	OFF ICE
02232100	LAKE WASHINGTON NEAR EAU GALLIE,	CEJ																	CON		OR
02232300	LK POINSETT NR COCOA	SJM																	CON		OR
02234160	LK WINNEMISSETT NR DE LAND	SJM	1		1	1													CON		OR
02234499	LK MONROE NR SANFORD	CEJ																	CON		OR
02234814	LAKE WEKIVA NEAR MAITLAND FLA	SJM																	CON		OR
02236200	LAKE KERR NEAR EUREKA, FLA.	SJM	3	3	3	2	3	2	3	3		3	2		3				CON		OR
02236210	LAKE GEORGE NEAR SALT SPRINGS, F	SJM																	CON		OR
02236840	LAKE MINNEHAHA NEAR CLERMONT, FL	SJO																	CON	R	OR
02236880	CHERRY LAKE NR GROVELAND	SJO																	CON		OR
02237600	LAKE APOPKA AT WINTER GARDEN FLA	SJO	3	3	3	2	3	2	3	3		3	2		3				CON		OR
02238200	LAKE YALE AT GRAND ISLAND, FLA.	SJO	3	3	3	2	3	2	3	3		3	2		3				CON		OR
02238800	LAKE WEIR AT OKLAWAHA, FLA	SJO	3	3	3	2	3	2	3	3		3	2		3				CON		OR
02242450	ORANGE LAKE AT ORANGE LAKE FLA	SJM	3	3	3	2	3	2	3	3		3	2		3				CON		OR
02243958	LAKE OCKLAWAHA NEAR ORANGE SPRIN	CEJ																	CON		OR
02244350	LK WINONA NR DE LAND	SJM	1		1	1													CON		OR
02261900	LAKE MARY JANE NEAR NARCOOSSEE,	SFM	6																CON		OR
02264900	LAKE TOHOPEKALIGA AT KISSIMMEE,	SFM	6																CON		OR
02266600	CYPRESS LAKE NEAR ST. CLOUD, FLA	SFM	6	3	3	1	3			3		3			3				CON	BN	OR
02268900	LAKE KISSIMMEE NEAR LAKE WALES F	SFM																	CON		OR
02269600	ARBUCKLE LAKE NEAR AVON PARK, FL	SFM	6																CON		OR
02271700	LAKE ISTOKPOGA NEAR DE SOTO CITY	SFM																	CON		OR
02276400	LK OKEECHOBEE	CEJ																	CON		OR
02310950	LAKE DEESON NEAR LAKELAND, FLA.	SGS																	CON		OR
02312698	LK PANASOFFKEE NR LK PANASOFKEE	SWI	6																CON		OR
02313229	LK ROUSSEAU NR DUNNELLON	CEJ																	CON		OR
02270950	LAKE JUNE-IN-WINTER NR LK PLACID	SPE	6	2	2	1	2			2		2			2				CON		TP
02293518	LAKE FANNIE NR FLORENCE VILLA, F	SPE	6																CON		TP
02293670	LAKE OTIS AT WINTER HAVEN, FLA	SPE	6																CON		TP
02294036	LAKE HOWARD AT WINTER HAVEN, FLA	SPE	6																CON		TP
02294259	LAKE PARKER AT LAKELAND, FLA	SPE	6																CON		TP
02294462	LAKE HANCOCK NR HIGHLAND CITY,FL	SPE	6																CON		TP
02301368	EDWARD MEDARD RESERVOIR AT PL GR	SWA	6	2	2		2		2	2									CON		TP
02303290	LAKE THONOTOSASSA NR THONOTOSASS	SWH																	CON		TP
02303440	LAKE PADGETT NR LUTZ,FLA.	SWH	6																CON		TP
02306704	LAKE HARVEY NR LUTZ, FLA.	SNH																	CON		TP
02306723	TURKEY FORD LAKE NEAR LUTZ	SNH	6																CON		TP
02306800	STARVATION LAKE NR LUTZ,FLA.	SNH	6																CON		TP
02307242	KEYSTONE LAKE NEAR ODESSA	SNH	6																CON		TP
02307479	LAKE TARPON NR TARPON SPRINGS,FL	SPA	52	6	6	1	6	1	2	2				6					CON		TP
02307696	ALLIGATOR LK AT SAFETY HARBOR,FL	SPA	6	6	6				2	2									CON		TP
02308000	SAWGRASS LAKE NR PINELLAS PARK	SPA	6	6	6				2	2									CON	R	TP
02308888	SEMINOLE LAKE NR LARGO, FLA	SPA	6																CON		TP
02309584	LAKE THOMAS AT DREXEL,FLA.	SPA																	CON		TP
02310230	LAKE IOLA NR SAN ANTONIO, FLA	SWH	6																CON		TP
02310238	PASCO LAKE AT LOYCE, FLA	WCR	6																CON		TP
02310260	CREWS LAKE (SOUTH) NR LOYCE	SWP																	CON		TP
0227a501	CON AREA NO1 BL S5 COMP NR LOX	SFM																	CON		MI
02291200	LAKE TRAFFORD NR IMMOKALEE	SFM																	CON		MI
02329200	LAKE JACKSON NEAR TALLAHASSEE FL	NWM																	CON		TA

SUPPLEMENT D

Fortran Source Listing of Procedure FINDEX

REQUESTED OPTIONS:

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(1) LINECOUNT(54) SIZE(MAX) AUTODBL(NONE)
SOURCE EBCDIC NOLIST NODECK OBJECT MAP NOFORMAT GOSTMT NOXREF NOALC NOANSF NOTERM IBM FLAG(I)

```
                C
                C
                C        PROCEDURE FINDEX.  IS A VERSION OF THE FINDEX PROGRAM
                C        THAT HAS NO SORT-FOR USE WITH THE NEW FORMAT WHICH HAS
                C        SEQUENCE NUMBERS FOR IDENTIFICATION
                C
                C
ISN 0002              DIMENSION ID(2,4), NAME(12), NCFREQ(17), NSEL(24), LSEL(24),
                     1  NDAT(25), NSECOM(25,25), KSECOM(25), IDL(4), NCODE(250),
                     2  NDESCR(250,12), IDLAST(4), LAT(3), LNG(3), ALAT(3), ALNG(3),
                     3  BUFF(4), NLAB1(2,3), XATLNG(12), XLLTNS(4), KFILES(5), KOFFS(5),
                     4  NFL(5),TABLE(5)
ISN 0003              INTEGER PLN(2),ZZ
ISN 0004              DATA NSEL/3HCOO,3HK&T,2HDO,2HPH,2HMC,3HN&P,3HMET,3HBOD,3HTOC,
                     1  3HPES,3HPKT,3HSED,2HCL,3HTRB,3HRCM,3HBCT,3HFLO,2HWL ,3HOFF,3HCOC
                     2 ,3HSIT,3HWMD,3HPJT,3HOTH/
ISN 0005              DATA NBLNK/3H   /, NET/3HNET/, NZER4/4H    /,NGW/2HGW/
ISN 0006              DATA NLAB, NB, NBL/4HXXXX,1HB,1H /, NLAB1/4HLAT ,4H    ,4HLONG,
                     1  4H    ,4HSTA ,4HID  /
ISN 0007              DATA PLN/'PLN','PRO'/
ISN 0008              DATA KOFFS/2HOR,2HJX,2HTP,2HMI,2HTA/, KFILES/5*1/, NFL/10,19,16,
                     1  17,18/
ISN 0009              DATA IBK/' '/
ISN 0010              DATA TABLE/'JX','MI','TA','TP','OR'/
ISN 0011              INTEGER TABLE
ISN 0012              IN = 5
ISN 0013              NOUT = 6
ISN 0014              NTEMFL = 11
ISN 0015              NCDS = 12
ISN 0016              NPLT = 13
ISN 0017              NALTOP = 14
ISN 0018              NPLREC = 15
ISN 0019              NPLPTS = 0
ISN 0020              PLPTS = 0.0
ISN 0021              NZERO = 0
ISN 0022              NONE = 1
ISN 0023              ZERO = 0.0
ISN 0024              ONE = 1.0
ISN 0025              NOSEL = 24
ISN 0026              NCPR = 0
ISN 0027              NCPRT1 = 0
ISN 0028              KFR = 0
ISN 0029              KDI = 0
ISN 0030              IDK = 0
ISN 0031              IOFF = IBK
ISN 0032              IDL(1) = NSEL(1)
ISN 0033              IDLAST(1) = NSEL(1)
```

```
ISN 0034          1  READ(IN,2,END=100) NOP, NFRQST, KCDS, LCDSK, K1T, NALL, NDBLSP,
                   1  NPLOT, NCOORD
ISN 0035          2  FORMAT(9I2)
ISN 0036             IF(NOP.EQ.99) GO TO 100
                C
                C    INPUT OF SELECT CODES AND SELECT COMPARE PARAMETERS
                C
ISN 0038             IF(NCOORD.EQ.0) GO TO 353
ISN 0040             READ(IN,251) XATLNG
ISN 0041        251  FORMAT(12F2.0)
ISN 0042             DO 253 KK=1,4
ISN 0043             KK4 = 3*(KK-1) + 1
ISN 0044        253  XLLTNS(KK) = XATLNG(KK4) + XATLNG(KK4+1)/60.0 +
                   1  XATLNG(KK4+2)/3600.0
ISN 0045        353  IF(K1T.NE.0.AND.NOP.LT.-2) GO TO 238
ISN 0047             K1T = 0
ISN 0048             IF(NOP.LT.0) K1T = 100
ISN 0050        238  KENTRY = 0
ISN 0051             KSTAT = 0
ISN 0052             IF(NPLPTS.NE.0) NPLOT = 0
ISN 0054             N3 = 3
ISN 0055             N1000 = 1000
ISN 0056             IF(NPLOT.NE.0) WRITE(NPLT) NLAB, NLAB, N1000, N3,
                   1  ((NLAB1(I,J),I=1,2),J=1,3)
ISN 0058             DO 231 I=1,25
ISN 0059             DO 231 J=1,25
ISN 0060        231  NSECOM(I,J) = NBLNK
ISN 0061             IF(NOP.NE.-1) GO TO 242
ISN 0063             DO 233 I=1,17
ISN 0064             KSECOM(I) = 0
ISN 0065        233  LSEL(I) = NSEL(I+1)
ISN 0066             K1 = 17
ISN 0067             K1T = 17
ISN 0068             GO TO 31
ISN 0069        242  IF(NOP.NE.-2) GO TO 232
ISN 0071             DO 243 I=1,15
ISN 0072             KSECOM(I) = 0
ISN 0073        243  LSEL(I) = NSEL(I+1)
ISN 0074             K1 = 15
ISN 0075             K1T = 15
ISN 0076             GO TO 31
ISN 0077        232  K1 = 0
ISN 0078         31  K1 = K1 + 1
ISN 0079             READ(IN,32,END=100) LSEL(K1), NDAT
ISN 0080         32  FORMAT(26A3)
ISN 0081             IF(LSEL(K1).NE.NBLNK) GO TO 33
ISN 0083             K1 = K1 - 1
ISN 0084             GO TO 9
ISN 0085         33  K2 = 0
ISN 0086             DO 533 K=1,NOSEL
ISN 0087             IF(LSEL(K1).EQ.NSEL(K)) GO TO 535
ISN 0089        533  CONTINUE
```

```
ISN 0090            WRITE(NOUT,46) LSEL(K1)
ISN 0091            K1 = K1 - 1
ISN 0092            GO TO 31
ISN 0093        535 KTEST = K
ISN 0094            DO 35 K=1,25
ISN 0095            IF(NDAT(K).EQ.NBLNK) GO TO 35
ISN 0097            K2 = K2 + 1
ISN 0098            NSECOM(K1,K2) = NDAT(K)
ISN 0099         35 CONTINUE
ISN 0100            KSECOM(K1) = K2
ISN 0101            IF(KTEST.NE.19) GO TO 31
ISN 0103            DO 536 KM=1,5
ISN 0104        536 KFILES(KM) = 0
ISN 0105            DO 538 JM = 1,K2
ISN 0106            DO 537 JM1=1,5
ISN 0107            IF(NSECOM(K1,JM).EQ.KOFFS(JM1)) KFILES(JM1) = 1
ISN 0109        537 CONTINUE
ISN 0110        538 CONTINUE
ISN 0111            GO TO 31
ISN 0112          9 LCDSK1 = 1
ISN 0113            IF(LCDSK.NE.0) LCDSK1 = 0
ISN 0115            LFR = 1
ISN 0116            LSTO = 1
ISN 0117            IF(NFRQST.EQ.2) LFR = 0
ISN 0119            IF(NFRQST.EQ.1) LSTO = 0
ISN 0121            DO 3134 JJ=1,2
ISN 0122            IF(NFRQST.EQ.JJ) GO TO 3134
ISN 0124            IF(JJ.EQ.1) NOPE = NALTOP
ISN 0126            IF(JJ.EQ.2) NOPE = NOUT
ISN 0128            WRITE(NOPE,3)
ISN 0129            WRITE(NOPE,13) NOP, LFR, LSTO, KCDS, LCDSK, LCDSK1, NALL, NDBLSP,
                   1  NPLOT
ISN 0130         13 FORMAT(1X,'TYPE OF SELECT OPTION',I5,5X,'TYPE OF LIST:  FREQ. ',
                    3  I2,'  STOR. ',I2/1X,'O/P CARDS OPTION  ',I2,2X,
                    1  'INPUT CARDS ',I2,2X,'OR DISK  ',I2,5X,'ALL COOPERATORS OPTION'
                    2 ,I3,5X,'DOUBLE SPACE OPTION',I3/70X,'CALCOMP PLOT OPTION  ',I2)
ISN 0131            IF(NCOORD.NE.0) WRITE(NOPE,213) XATLNG, XLLTNS
ISN 0133        213 FORMAT(1X,'SELECT ON MIN-MAX COORDINATES',4(3X,3F4.0)/30X,
                   1  4(3X,F12.4))
ISN 0134            IF(K1.EQ.0) GO TO 111
ISN 0136            WRITE(NOPE,8)
ISN 0137          8 FORMAT(1X,'SELECT OPTION',5X,'SELECT COMPARE PARAMETERS')
ISN 0138            DO 7 K=1,K1
ISN 0139            KS = KSECOM(K)
ISN 0140          7 WRITE(NOPE,11) LSEL(K), (NSECOM(K,L), L=1,KS)
ISN 0141         11 FORMAT(7X,A3,12X,25A3)
ISN 0142        111 CALL JULDAT(JY,JM,JD)
ISN 0143            WRITE(NOPE,12) JM, JD, JY
ISN 0144         12 FORMAT(//1X,'DATE OF THIS RETRIEVAL  ',I2,'/',I2,'/',I4)
                C
                C   WRITE TITLE PAGE
                C
```

```
ISN 0145            WRITE(NOPE,3)
ISN 0146            WRITE(NOPE,19)
ISN 0147         19 FORMAT(20X,'U. S. GEOLOGICAL SURVEY - W. R. D., FLORIDA DISTRICT
                   1OFFICE, 325 JOHN KNOX RD., TALLAHASSEE'//12X,'I N D E X  T O  A C
                   2T I V E  W A T E R  D A T A  C O L L E C T I O N  S T A T I O N S
                   3 I N  F L O R I D A'//16X,'THIS INDEX CONTAINS A LIST OF ACTIVE ST
                   4ATIONS IN FLORIDA OPERATED BY THE U. S. GEOLOGICAL SURVEY'/16X,
                   5  'IN COOPERATION WITH STATE, LOCAL, AND FEDERAL AGENCIES LISTED B
                   6ELOW.  THE INDEX SHOWS THE'/16X,'COOPERATOR(S) SUPPORTING THE DATA
                   7 COLLECTION ACTIVITIES, THE TYPE AND FREQUENCY OF DATA COLLECTION'
                   8  /16X,'AND THE U. S. GEOLOGICAL SURVEY OFFICE RESPONSIBLE FOR COL
                   9LECTING AND PROCESSING THE DATA.'///)
ISN 0148            IF(JJ.EQ.2) GO TO 220
ISN 0150            IF(NPLOT.EQ.0) GO TO 220
ISN 0152            WRITE(NPLREC,19)
ISN 0153            WRITE(NPLREC,219)
ISN 0154        219 FORMAT(34X,'SITE TYPE'/33X,'**********'///)
ISN 0155            K22 = 0
ISN 0156            DO 218 JI=1,K1
ISN 0157            IF(LSEL(JI).EQ.NSEL(21)) GO TO 217
ISN 0159        218 CONTINUE
ISN 0160            GO TO 215
ISN 0161        217 IF(NSECOM(JI,1).EQ.NGW) K22 = 1
ISN 0163            IF(K22.EQ.1.AND.KSECOM(JI).GT.1) K22 = 0
ISN 0165            IF(K22.EQ.0.AND.KSECOM(JI).GT.1) K22 = 2
ISN 0167        215 IF(K22.EQ.0.OR.K22.EQ.2) WRITE(NPLREC,216)
ISN 0169        216 FORMAT(31X,'STREAMS AND CANALS'//31X,'LAKES'//31X,'ESTUARIES'//
                   1  31X,'SPRINGS'//31X,'SPECIFIC SOURCE'//31X,'METEOROLOGY'//)
ISN 0170            IF(K22.EQ.0.OR.K22.EQ.1) WRITE(NPLREC,214)
ISN 0172        214 FORMAT(31X,'GROUND WATER'//)
ISN 0173            WRITE(NPLREC,212)
ISN 0174        212 FORMAT(////19X,'SITE',11X,'SITE NUMBER AND LOCATION'/18X,'NUMBER'
                   1 /)
ISN 0175        220 WRITE(NOPE,20)
ISN 0176         20 FORMAT(42X,'EXPLANATION OF ABBREVIATIONS USED IN THIS INDEX'//
                   1 7X,'ABBREVIATION',6X,'COOPERATOR',36X,'ABBREVIATION',4X,'COOPERAT
                   2OR'/5X,' ************** ',2X,' ************ ',33X,'**************'
                   3 ,2X,'**************'//)
ISN 0177            IF(NCPRT1.GT.0) GO TO 424
ISN 0179            REWIND NTEMFL
ISN 0180            NCPR = 0
ISN 0181        122 READ(NTEMFL,21,END=424) NCODE(NCPRT1+1),
                   1  (NDESCR(NCPRT1+1,I),I=1,12)
ISN 0182         21 FORMAT(A3,12A4)
ISN 0183            NCPRT1 = NCPRT1 + 1
ISN 0184            GO TO 122
ISN 0185        424 NCPRT = NCPRT1
ISN 0186            NRT = 0
ISN 0187         24 IF(NCPRT.LE.84) GO TO 119
ISN 0189            NCPR = 1
ISN 0190            NCP2 = 42
ISN 0191            N11 = NRT + 1
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ISN 0192            N12 = NRT + 42
ISN 0193            N2 = 0
ISN 0194            GO TO 422
ISN 0195        119 NCP2 = NCPRT/2
ISN 0196            N11 = NRT + 1
ISN 0197            N12 = NRT + NCP2
ISN 0198            N2 = NCPRT - NCP2*2
ISN 0199        422 DO 120 I=N11,N12
ISN 0200        120 WRITE(NOPE,121) NCODE(I), (NDESCR(I,J),J=1,12),
                   1  NCODE(I+NCP2+N2), (NDESCR(I+NCP2+N2,J),J=1,12)
ISN 0201        121 FORMAT(12X,A3,6X,12A4,5X,A3,6X,12A4)
ISN 0202            IF(N2.NE.0) WRITE(NOPE,121) NCODE(N2+N12),
                   1  (NDESCR(N2+N12,J),J=1,12)
ISN 0204            IF(NCPR.EQ.0) GO TO 423
ISN 0206            NCPRT = NCPRT - 84
ISN 0207            NRT = NRT + 84
ISN 0208            NCPR = 0
ISN 0209            WRITE(NOPE,3)
ISN 0210            WRITE(NOPE,20)
ISN 0211            GO TO 24
ISN 0212        423 WRITE(NOPE,3)
ISN 0213            WRITE(NOPE,123)
ISN 0214        123 FORMAT(7X,'ABBREVIATION',6X,'TYPE OF DATA',34X,'ABBREVIATION',
                   1 10X,'OFFICE'/6X,'**************',4X,'**************',32X,'*******
                   2*******',8X,'********'//12X,3HK&T,6X,'SPECIFIC CONDUCTANCE AND TEM
                   3PERATURE',17X,2HMI,17X,'MIAMI'//12X,2HDO,7X,'DISSOLVED OXYGEN',
                   4  37X,2HTA,17X,'TALLAHASSEE'//12X,2HPH,7X,'FIELD PH MEASUREMENT',
                   5  33X,2HTP,17X,'TAMPA'//12X,2HMC,7X,'MAJOR CHEMICAL CONSTITUENTS',
                   6  26X,2HOR,17X,'ORLANDO     '/ 21X,'(INCLUDES CA, MG, NA, K, HCO3,
                   7CL, SO4,'/22X,'SIO2, FL, HARDNESS, ALKALINITY, AND',17X,2HJX,17X,
                   #  'JACKSONVILLE'/                                  22X,'DISSOLVED SOL
                   8IDS)'//12X,3HN&P,6X,'NITROGEN AND PHOSPHORUS SPECIES'//
                   9  12X,3HMET,6X,'METALS(INCLUDES PART OR ALL OF THE',16X,
                   *  'ABBREVIATION',7X,'FREQUENCY'/21X,'FOLLOWING:  AL, AS, CD, CR, C
                   $O, CU, FE,',10X,'**************',5X,'*************')
ISN 0215            WRITE(NOPE,124)
ISN 0216        124 FORMAT(21X,'PB, MN, HG, NI, SE, ZN)'/73X,'1 - 365',7X,'SAMPLES PE
                   1R YEAR, I. E.,'/12X,3HBOD,6X,'5-DAY BIOCHEMICAL OXYGEN DEMAND',
                   2  37X,'1 = 1 SAMPLE PER YEAR'/87X,'365 = 365 SAMPLES PER YEAR'/
                   5  12X,3HTOC,6X,'TOTAL ORGANIC CARBON',52X,'OR 1 SAMPLE PER DAY'//
                   6  12X,3HPES,6X,'PESTICIDES',43X,3HCON,10X,'CONTINUOUS - GRAPHIC OR
                   7 DIGITAL RECORDER'//12X,3HPKT,6X,'PHYTOPLANKTON',40X,3HCSI,10X,
                   3  'CREST STAGE INDICATOR'//12X,3HSED,6X,'SUSPENDED SEDIMENT',37X,
                   8  1HP,10X,'PEAK FLOW' //12X,2HCL,7X,'CHLORIDE',45X,'CNX,CSX,PX   C
                   *ONT., CSI, OR PEAK FLOW,RESP., WHEN'/87X,'SHARED BY MULTIPLE COOPE
                   <RATORS.'/12X,3HTRB,6X,'TURBIDITY',57X,'1/X IS THE COOPERATORS SHAR
                   9E.'   //12X,3HRCM,6X,'RADIOCHEMICAL ANALYSIS',31X,3HFLH,10X,
                   @'FLOOD HYDROGRAPH',//12X,3HBCT,6X,
                   #                                                  'BACTE
                   3RIOLOGICAL(INCLUDES ONE OR MORE OF',11X,'ABBREVIATION',7X,'SITE TY
                   $PE'/21X,'THE FOLLOWING: (FECAL COLIFORM, TOTAL',12X,'**************
                   #*',5X,'*************'/21X,'COLIFORM, FECAL STREPTOCOCCI)'/74X,
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                @  'SW',11X,'STREAMS AND CANALS'/12X,'FLO',6X,'STREAM FLOW')
ISN 0217          WRITE(NOPE,125)
ISN 0218      125 FORMAT(74X,'LK',11X,'LAKES'/12X,'WL',7X,'WATER LEVEL -- STREAM, L
                 1AKE, OR WELL'/74X,'ES',11X,'ESTUARIES'/12X,'OTH',6X,'OTHER TYPES O
                 2F DATA:'/26X,'R = RAINFALL',36X,'SP',11X,'SPRINGS'/26X,'E = EVAPOR
                 3ATION'/26X,'PY = PERIPHYTON',33X,'GW',11X,'GROUND WATER'/26X,
                 4  'CA = CHEMICAL ANALYSIS OF'/31X,'BOTTOM SEDIMENT',28X,'SS',11X,
                 5  'SPECIFIC SOURCE'/26X,'PW = PARTIAL CHEMICAL ANALYSIS -'/31X,
                 6  'WEEKLY FREQUENCY(ORTHO',21X,'ME',11X,'METEOROLOGY'/31X,
                 7  'PHOSPHOROUS AND FLUORIDE)'/27X,  'P = PARTIAL CHEMICAL ANALYSIS
                 8 -'/31X,'INCLUDES THE FOLLOWING SCHEDULES:'/31X,'MONTHLY-ANNUAL(HA
                 9RDNESS AND DISSOLVED SOLIDS)',/26X,'BI = BENTHIC INVERTEBRATES',/2
                 A6X,'BN = BED MATERIAL NUTRIENTS',/26X,'CH = CHLOROPHYLL')
ISN 0219          WRITE(NOPE,127)
ISN 0220      127 FORMAT(1H1/////39X'SUMMARY OF COUNTY CODES'////11X,'CODE',6X,
                 1  'COUNTY',46X,'CODE',6X,'COUNTY'/10X,'******',4X,'********',44X,
                 2  '******',4X,'********'//
                 3  12X,'001',6X,'ALACHUA      ',41X,'067',6X,'LAFAYETTE '/
                 4  12X,'003',6X,'BAKER       ',41X,'069',6X,'LAKE      '/
                 5  12X,'005',6X,'BAY         ',41X,'071',6X,'LEE       '/
                 6  12X,'007',6X,'BRADFORD    ',41X,'073',6X,'LEON      '/
                 7  12X,'009',6X,'BREVARD     ',41X,'075',6X,'LEVY      '/
                 8  12X,'011',6X,'BROWARD     ',41X,'077',6X,'LIBERTY   '/
                 9  12X,'013',6X,'CALHOUN     ',41X,'079',6X,'MADISON   ')
ISN 0221          WRITE(NOPE,128)
ISN 0222      128 FORMAT(12X,'015',6X,'CHARLOTTE',44X,'081',6X,'MANATEE'/
                 1  12X,'017',6X,'CITRUS      ',41X,'083',6X,'MARION    '/
                 2  12X,'019',6X,'CLAY        ',41X,'085',6X,'MARTIN    '/
                 3  12X,'021',6X,'COLLIER     ',41X,'087',6X,'MONROE    '/
                 4  12X,'023',6X,'COLUMBIA    ',41X,'089',6X,'NASSAU    '/
                 5  12X,'025',6X,'DADE        ',41X,'091',6X,'OKALOOSA  '/
                 6  12X,'027',6X,'DE SOTO     ',41X,'093',6X,'OKEECHOBEE'/
                 7  12X,'029',6X,'DIXIE       ',41X,'095',6X,'ORANGE    '/
                 8  12X,'031',6X,'DUVAL       ',41X,'097',6X,'OSCEOLA   '/
                 9  12X,'033',6X,'ESCAMBIA    ',41X,'099',6X,'PALM BEACH')
ISN 0223          WRITE(NOPE,1127)
ISN 0224     1127 FORMAT(
                 1  12X,'035',6X,'FLAGLER     ',41X,'101',6X,'PASCO     '/
                 2  12X,'037',6X,'FRANKLIN    ',41X,'103',6X,'PINELLAS  '/
                 3  12X,'039',6X,'GADSDEN     ',41X,'105',6X,'POLK      '/
                 4  12X,'041',6X,'GILCHRIST   ',41X,'107',6X,'PUTNAM    '/
                 5  12X,'043',6X,'GLADES      ',41X,'109',6X,'ST. JOHNS '/
                 6  12X,'045',6X,'GULF        ',41X,'111',6X,'ST. LUCIE '/
                 7  12X,'047',6X,'HAMILTON    ',41X,'113',6X,'SANTA ROSA'/
                 8  12X,'049',6X,'HARDEE      ',41X,'115',6X,'SARASOTA  '/
                 9  12X,'05 ',6X,'HENDRY      ',41X,'117',6X,'SEMINOLE  ')
ISN 0225          WRITE(NOPE,1128)
ISN 0226     1128 FORMAT(
                 1  12X,'053',6X,'HERNANDO    ',41X,'119',6X,'SUMTER    '/
                 2  12X,'055',6X,'HIGHLANDS   ',41X,'121',6X,'SUWANNEE  '/
                 3  12X,'057',6X,'HILLSBOROUGH',41X,'123',6X,'TAYLOR    '/
                 4  12X,'059',6X,'HOLMES      ',41X,'125',6X,'UNION     '/
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                5  12X,'061',6X,'INDIAN RIVER',41X,'127',6X,'VOLUSIA   '/
                6  12X,'063',6X,'JACKSON     ',41X,'129',6X,'WAKULLA   '/
                7  12X,'065',6X,'JEFFERSON   ',41X,'131',6X,'WALTON    '/
                8  12X,'   ',6X,'            ',41X,'133',6X,'WASHINGTON')
ISN 0227          WRITE(NOPE,3)
ISN 0228        3 FORMAT(1H1)
ISN 0229          WRITE(NOPE,112) JM, JD, JY
ISN 0230      112 FORMAT(104X,'RETRIEVAL DATE  ',I2,1H/,I2,1H/,I4)
ISN 0231     3134 CONTINUE
ISN 0232          IF(LSTO.NE.0) WRITE(NALTOP,304)
ISN 0234      304 FORMAT(9X,'SITE',7X,'SITE NAME AND LOCATION',8X,'COOPER',3X,'COUN
                 1TY   SITE    WATER   NETWORK',8X,3HLAT,13X,4HLONG,11X,
                 2  'OFF'/8X,'NUMBER',36X,'ATORS',13X,'TYPE  MGMT DIST OR PROJ    DE
                 3G MIN SEC',5X,'DEG MIN SEC',8X,'ICE'//)
ISN 0235          IF(LFR.NE.0) WRITE(NOUT,4)
ISN 0237        4 FORMAT(9X,'SITE', 7X,'SITE NAME AND LOCATION',8X,'COOPER',28X,'TY
                 1PE OF DATA',33X, 'OFF'/8X,'NUMBER',36X,'ATORS  K&T  DO  PH  MC N&P
                 2 MET BOD TOC PES PKT SED  CL TRB RCM BCT FLO  WL OTH ICE'/75X,
                 3  '(FREQUENCY---SAMPLES PER YEAR)'/)
ISN 0238          KREC = 0
ISN 0239          IF(LCDSK.EQ.0) GO TO 557
ISN 0241          INPT = IN
ISN 0242          GO TO 1499
ISN 0243      557 KLINPT = 0
ISN 0244      558 KLINPT = KLINPT + 1
ISN 0245          IF(KLINPT.GT.5) GO TO 95
ISN 0247          IF(KFILES(KLINPT).EQ.0) GO TO 558
ISN 0249          INPT = NFL(KLINPT)
ISN 0250          REWIND INPT
ISN 0251     1499 DO 1500 II=1,4
ISN 0252     1500 IDL(II) = NZER4
ISN 0253          CALL CORE(BUFF,8)
ISN 0254          WRITE(99,2112) JY, JM, JD
ISN 0255     2112 FORMAT(2H19,3I2)
ISN 0256          CALL CORE(BUFF,8)
ISN 0257          READ(99,2113) IRID1, IRID2
ISN 0258     2113 FORMAT(2A4)
ISN 0259        5 BACKSPACE INPT
ISN 0260        6 READ(INPT,10,END=558)(ID(1,I),I=1,4),(NAME(I),I=1,12), NCC, NST,
                 2  LAT, LNG,
                 1  (ID(2,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD,JPT,NOTH
ISN 0261       10 FORMAT(1X,3A4,A3,11A4,2A3,A2,6A2/1X,3A4,19A3,2I1,2A3,A2)
ISN 0262          DO 15 I=1,4
ISN 0263          IF(ID(1,I).NE.ID(2,I)) GO TO 5
ISN 0265       15 CONTINUE
ISN 0266          IF(NALL.EQ.0) GO TO 654
ISN 0268          DO 634 I=1,3
ISN 0269          IF(ID(1,I).NE.NZER4) GO TO 644
ISN 0271      634 CONTINUE
ISN 0272          IF(ID(1,4).NE.NBLNK) GO TO 644
ISN 0274          GO TO 654
ISN 0275      644 DO 649 I=1,4
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ISN 0276            IF(ID(1,I).NE.IDLAST(I)) GO TO 651
ISN 0278        649 CONTINUE
ISN 0279            IDK = IDK + 1
ISN 0280            GO TO 654
ISN 0281        651 IDK = 1
ISN 0282            DO 652 I=1,4
ISN 0283        652 IDLAST(I) = ID(1,I)
                C
                C   SELECT OPTIONS
                C
ISN 0284        654 K10T = 0
ISN 0285            KNOP = NOP
ISN 0286            K1TP = K1T + 1
ISN 0287            DO 80 I=1,K1
ISN 0288            IF(I.EQ.K1TP) KNOP = 0
ISN 0290            IF(LSEL(I).EQ.NBLNK) GO TO 80
ISN 0292            DO 45 J=1,NOSEL
ISN 0293            IF(LSEL(I).EQ.NSEL(J)) GO TO 48
ISN 0295         45 CONTINUE
ISN 0296            WRITE(NOUT,46) LSEL(I)
ISN 0297         46 FORMAT(1X,'ERROR - NO SUCH SELECT OPTION AS  ',A3)
ISN 0298            GO TO 80
ISN 0299         48 IF(J.GE.2.AND.J.LE.18) GO TO 55
ISN 0301            IF(J.EQ.23) GO TO 65
ISN 0303            IF(J.EQ.1) JTEST = NCOOPR
ISN 0305            IF(J.EQ.19) JTEST = TABLE(IOFF)
ISN 0307            IF(J.EQ.20) JTEST = NCC
ISN 0309            IF(J.EQ.21) JTEST = NST
ISN 0311            IF(J.EQ.22) JTEST = MWD
ISN 0313            IF(J.EQ.24) JTEST = NOTH
ISN 0315         49 KS = KSECOM(I)
ISN 0316            DO 50 K3=1,KS
ISN 0317            IF(JTEST.EQ.NSECOM(I,K3).AND.KNOP.GE.-2) GO TO 80
ISN 0319            IF(JTEST.EQ.NSECOM(I,K3).AND.KNOP.LE.-3) K10T = 1
ISN 0321         50 CONTINUE
ISN 0322            IF(KNOP.LE.-3) GO TO 80
ISN 0324            GO TO 6
ISN 0325         55 JTEST = NCFREQ(J-1)
ISN 0326            IF(KSECOM(I).NE.0) GO TO 49
ISN 0328            IF(KNOP.GE.0) GO TO 57
ISN 0330            IF(JTEST.NE.NBLNK) K10T = 1
ISN 0332            GO TO 80
ISN 0333         57 IF(JTEST.EQ.NBLNK) GO TO 6
ISN 0335            GO TO 80
ISN 0336         65 JTEST = JPT
ISN 0337            KS = KSECOM(I)
ISN 0338            DO 66 K3=1,KS
ISN 0339            IF(NSECOM(I,K3).EQ.NSEL(23)) GO TO 70
ISN 0341         66 CONTINUE
ISN 0342            GO TO 49
ISN 0343         70 DO 75 ZZ =1,2
ISN 0344         75 IF(JTEST.EQ.PLN(ZZ)) GO TO 6
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ISN 0346            IF(JTEST.NE.NBLNK.AND.JTEST.NE.NET) GO TO 80
ISN 0348            GO TO 6
ISN 0349         80 CONTINUE
ISN 0350            IF(NOP.LT.0.AND.K10T.EQ.0) GO TO 6
ISN 0352            IF(NCOORD.EQ.0.AND.NPLOT.EQ.0) GO TO 85
ISN 0354            CALL CORE(BUFF,12)
ISN 0355            WRITE(99,2142) LAT, LNG
ISN 0356       2142 FORMAT(6A2)
ISN 0357            CALL CORE(BUFF,12)
ISN 0358            READ(99,2143) ALAT, ALNG
ISN 0359       2143 FORMAT(6F2.0)
ISN 0360            DATA1 = ALAT(1) + ALAT(2)/60.0 + ALAT(3)/3600.0
ISN 0361            DATA2 = ALNG(1) + ALNG(2)/60.0 + ALNG(3)/3600.0
ISN 0362            IF(NCOORD.EQ.0) GO TO 85
ISN 0364            IF(XLLTNS(1).GT.DATA1.OR.XLLTNS(2).GT.DATA2.OR.XLLTNS(3).LT.DATA1
                   1  .OR.XLLTNS(4).LT.DATA2) GO TO 6
                  C
                  C   CHECK LINE COUNT
                  C
ISN 0366          85 KREC = KREC + 1
ISN 0367            IF(KREC-1) 25,25,22
ISN 0368          22 IF(KREC-51) 23,27,27
ISN 0369          23 KREC1 = ((KREC-1)/10)*10
ISN 0370            IF((KREC-KREC1).NE.1) GO TO 25
ISN 0372          17 FORMAT(120X)
ISN 0373            IF(LFR.EQ.1) WRITE(NOUT,17)
ISN 0375            IF(LSTO.EQ.1) WRITE(NALTOP,17)
ISN 0377            GO TO 25
ISN 0378          27 KREC = 1
ISN 0379            IF(NFRQST.EQ.2) GO TO 527
ISN 0381            WRITE(NOUT,3)
ISN 0382            WRITE(NOUT,112) JM, JD, JY
ISN 0383            WRITE(NOUT,4)
ISN 0384         527 IF(NFRQST.EQ.1) GO TO 25
ISN 0386            WRITE(NALTOP,3)
ISN 0387            WRITE(NALTOP,112) JM, JD, JY
ISN 0388            WRITE(NALTOP,304)
                  C
                  C   WRITE DATA RECORD
                  C
ISN 0389          25 KENTRY = KENTRY + 1
ISN 0390            NOFF = TABLE(IOFF)
ISN 0391            KREPT = 0
ISN 0392            DO 126 I=1,4
ISN 0393            IF(ID(1,I).NE.IDL(I)) GO TO 26
ISN 0395         126 CONTINUE
ISN 0396            KREPT = 1
ISN 0397            DO 326 I=1,3
ISN 0398            IF(ID(1,I).NE.NZER4) GO TO 329
ISN 0400         326 CONTINUE
ISN 0401            IF(ID(1,4).NE.NBLNK) GO TO 329
ISN 0403            GO TO 26
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ISN 0404       329  IF(NFRQST.EQ.1) GO TO 1329
ISN 0406            WRITE(NALTOP,2329) NCOOPR, NCC, NST, MWD, JPT, LAT, LNG, NOFF
ISN 0407      2329  FORMAT(51X,A3,6X,A3,6X,A2,6X,A3,6X,A3,7X,3(A2,2X),4X,3(A2,2X),6X,
                   1  A2)
ISN 0408            IF(NDBLSP.NE.0) WRITE(NALTOP,17)
ISN 0410      1329  IF(NFRQST.EQ.2) GO TO 29
ISN 0412            WRITE(NOUT,129) NCOOPR, NCFREQ, NOTH, NOFF
ISN 0413       129  FORMAT(51X,A3,2X,17(1X,A3),2X,A2,1X,A2)
ISN 0414            IF(NDBLSP.NE.0) WRITE(NOUT,17)
ISN 0416            GO TO 29
ISN 0417        26  IF(NFRQST.EQ.1) GO TO 327
ISN 0419            WRITE(NALTOP,37) (ID(1,I),I=1,4), (NAME(I),I=1,8), NCOOPR, NCC,
                   2  NST, MWD, JPT, LAT, LNG, NOFF
ISN 0420        37  FORMAT(1X,3A4,A3,2X,8A4,1X,A3,6X,A3,6X,A2,6X,A3,6X,A3,7X,3(A2,2X)
                   1  ,4X,3(A2,2X),6X,A2)
ISN 0421            IF(NDBLSP.NE.0) WRITE(NALTOP,17)
ISN 0423       327  IF(NFRQST.EQ.2) GO TO 529
ISN 0425            WRITE(NOUT,30) (ID(1,I),I=1,4), (NAME(I),I=1,8), NCOOPR, NCFREQ,
                   1  NOTH, NOFF
ISN 0426        30  FORMAT(1X,3A4,A3,2X,8A4,1X,A3,2X,17(1X,A3),2X,A2,1X,A2)
ISN 0427            IF(NDBLSP.NE.0) WRITE(NOUT,17)
ISN 0429       529  KSTAT = KSTAT + 1
ISN 0430        29  IF(KCDS.NE.0) WRITE(NCDS,28) (ID(1,I),I=1,4), (NAME(I),I=1,12),
                   2  NCC, NST, LAT, LNG,
                   1     (ID(1,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD, JPT, NOTH
ISN 0432        28  FORMAT('N',3A4,A3,11A4,2A3,7A2  /'D',3A4,19A3,2I1,2A3,A2)
ISN 0433            IF(NPLOT.EQ.0.OR.KREPT.NE.0) GO TO 2136
ISN 0435            IF(DATA1.EQ.0.OR.DATA2.EQ.0) GO TO 2136
ISN 0437            PLPTS = PLPTS + 1
ISN 0438            DATA3 = PLPTS
ISN 0439            WRITE(NPLREC,2151) PLPTS, (ID(1,I),I=1,4), (NAME(I),I=1,12)
ISN 0440      2151  FORMAT(1X,F4.0,5X,3A4,A3,5X,12A4)
ISN 0441            DATA2 = 88.0 - DATA2
ISN 0442            NPLPTS = NPLPTS + 1
ISN 0443            IF(NPLPTS.LE.1000) GO TO 2144
ISN 0445            WRITE(NOUT,2145)
ISN 0446      2145  FORMAT(///5X,'MAYDAY - MORE THAN 1000 STATIONS TO PLOT'///)
ISN 0447            NPLOT = 0
ISN 0448            GO TO 2136
ISN 0449      2144  WRITE(NPLT) NPLPTS, ONE, IRID1, IRID2, NZERO, DATA1, DATA2,
                   1  DATA3, NBL, NBL, NBL
ISN 0450      2136  DO 136 I=1,4
ISN 0451       136  IDL(I) = ID(1,I)
ISN 0452            IF(NALL.EQ.0) GO TO 6
ISN 0454            IF(KDI.GT.0) GO TO 660
ISN 0456            KDI = 1
ISN 0457            IF(IDK.LE.1) GO TO 660
ISN 0459            IDK2 = 2*IDK
ISN 0460            DO 659 I=1,IDK2
ISN 0461       659  BACKSPACE INPT
ISN 0462            KDI = 0
ISN 0463       660  KDI = KDI + 1
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ISN 0464            READ(INPT,10,END=558)(ID(1,I),I=1,4),(NAME(I),I=1,12),NCC,NST,
                   2 LAT, LNG,
                   1 (ID(2,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD,JPT,NOTH
ISN 0465            IF(KDI-IDK) 85,660,661
ISN 0466         661 DO 663 I=1,4
ISN 0467            IF(ID(1,I).NE.IDL(I)) GO TO 669
ISN 0469         663 CONTINUE
ISN 0470            GO TO 85
ISN 0471         669 KDI = 0
ISN 0472            DO 670 I=1,2
ISN 0473         670 BACKSPACE INPT
ISN 0474            GO TO 6
                 C
                 C    END OF RUN
                 C
ISN 0475          95 IF(NFRQST.EQ.2) GO TO 397
ISN 0477            WRITE(NOUT,3)
ISN 0478            WRITE(NOUT,112) JM, JD, JY
ISN 0479            WRITE(NOUT,97) KENTRY, KSTAT
ISN 0480          97 FORMAT(///5X,'LISTED ',I5,' ENTRIES',10X,'AND ',I5,' STATIONS')
ISN 0481         397 IF(NFRQST.EQ.1) GO TO 396
ISN 0483            WRITE(NALTOP,3)
ISN 0484            WRITE(NALTOP,112) JM, JD, JY
ISN 0485            WRITE(NALTOP,97) KENTRY, KSTAT
ISN 0486         396 IF(NPLOT.EQ.0) GO TO 398
ISN 0488            KPLPTS = 1000 - NPLPTS
ISN 0489            IF(KPLPTS.EQ.0) GO TO 398
ISN 0491            DO 2097 I=1,KPLPTS
ISN 0492            KI = NPLPTS + I
ISN 0493        2097 WRITE(NPLT) KI, ZERO, IRID1, IRID2, NONE, ZERO, ZERO, ZERO, NB,
                   1 NB, NB
ISN 0494         398 IF(LCDSK.NE.0) GO TO 100
ISN 0496            GO TO 1
ISN 0497         100 STOP
ISN 0498            END
```

/ MAIN / SIZE OF PROGRAM 007474 HEXADECIMAL BYTES

NAME	TAG	TYPE	ADD.	NAME	TAG	TYPE	ADD.	NAME	TAG	TYPE	ADD.	NAME	TAG	TYPE	ADD.
I	SF	I*4	001900	J	SF	I*4	001904	K	SF	I*4	001908	L	F	I*4	00190C
ID	SF	I*4	001A84	II	SF	I*4	001910	IN	SF	I*4	001914	JD	SFA	I*4	001918
JI	SF	I*4	00191C	JJ	SF	I*4	001920	JM	SFA	I*4	001924	JY	SFA	I*4	001928
KI	SF	I*4	00192C	KK	SF	I*4	001930	KM	SF	I*4	001934	KS	SF	I*4	001938
K1	SF	I*4	00193C	K2	SF	I*4	001940	K3	SF	I*4	001944	NB	F	I*4	001948
N2	SF	I*4	00194C	N3	SF	I*4	001950	ZZ	SF	I*4	001954	IBK	F	I*4	001958
IDK	SF	I*4	00195C	IDL	S	I*4	001AA4	JM1	SF	I*4	001960	JPT	SF	I*4	001964
KDI	SF	I*4	001968	KFR	S	I*4	00196C	KK4	SF	I*4	001970	K1T	SF	I*4	001974
K22	S	I*4	001978	LAT	SF	I*4	001AB4	LFR	SF	I*4	00197C	LNG	SF	I*4	001AC0
MWD	SF	I*4	001980	NBL	F	I*4	001984	NCC	SF	I*4	001988	NET		I*4	00198C
NFL	F	I*4	001ACC	NGW		I*4	001990	NOP	SF	I*4	001994	NRT	SF	I*4	001998
NST	SF	I*4	00199C	N11	SF	I*4	0019A0	N12	SF	I*4	0019A4	ONE	SF	R*4	0019A8

SUPPLEMENT E

Fortran Source Listing of Procedure FNDXST

REQUESTED OPTIONS:

OPTIONS IN EFFECT: NAME(MAIN) OPTIMIZE(1) LINECOUNT(54) SIZE(MAX) AUTODBL(NONE)
SOURCE EBCDIC NOLIST NODECK OBJECT MAP NOFORMAT GOSTMT NOXREF NOALC NOANSF NOTERM IBM FLAG(I)

```
                C
                C
                C        PROCEDURE FNDXST   IS A VERSION OF THE FINDEX PROGRAM THAT
                C        INCLUDES A SORT-FOR USE WITH THE NEW FORMAT WHICH HAS
                C        SEQUENCE NUMBERS FOR IDENTIFICATION
                C
                C
   ISN 0002              DIMENSION ID(2,4), NAME(12), NCFREQ(17), NSEL(24), LSEL(24),
                        1  NDAT(25), NSECOM(25,25), KSECOM(25), IDL(4), NCODE(250),
                        2  NDESCR(250,12),            LAT(3), LNG(3), ALAT(3), ALNG(3),
                        3  BUFF(4), NLAB1(2,3), XATLNG(12), XLLTNS(4), KFILES(5), KOFFS(5),
                        4  NFL(5),ISORT(20),TABLE(5)
   ISN 0003              INTEGER PLN(2),ZZ
   ISN 0004              DATA NSEL/3HCOO,3HK&T,2HDO,2HPH,2HMC,3HN&P,3HMET,3HBOD,3HTOC,
                        1  3HPES,3HPKT,3HSED,2HCL,3HTRB,3HRCM,3HBCT,3HFLO,2HWL ,3HOFF,3HCOC
                        2 ,3HSIT,3HWMD,3HPJT,3HOTH/
   ISN 0005              DATA NBLNK/3H    /, NET/3HNET/, NZER4/4H    /,NGW/2HGW/
   ISN 0006              DATA NLAB, NB, NBL/4HXXXX,1HB,1H /, NLAB1/4HLAT ,4H    ,4HLONG,
                        1  4H    ,4HSTA ,4HID  /
   ISN 0007              DATA PLN/'PLN','PRO'/
   ISN 0008              DATA KOFFS/2HOR,2HJX,2HTP,2HMI,2HTA/, KFILES/5*1/, NFL/10,19,16,
                        1  17,18/
   ISN 0009              DATA IBK/' '/
   ISN 0010              DATA TABLE/'JX','MI','TA','TP','OR'/
   ISN 0011              INTEGER TABLE
   ISN 0012              IN = 5
   ISN 0013              NOUT = 6
   ISN 0014              NTEMFL = 11
   ISN 0015              NCDS = 12
   ISN 0016              NPLT = 13
   ISN 0017              NALTOP = 14
   ISN 0018              NPLREC = 15
   ISN 0019              NPLPTS = 0
   ISN 0020              PLPTS = 0.0
   ISN 0021              NZERO = 0
   ISN 0022              NONE = 1
   ISN 0023              ZERO = 0.0
   ISN 0024              ONE = 1.0
   ISN 0025              NOSEL = 24
   ISN 0026              NCPR = 0
   ISN 0027              NCPRT1 = 0
   ISN 0028              KFR = 0
   ISN 0029              KDI = 0
   ISN 0030              IDK = 0
   ISN 0031              IDL(1) = NSEL(1)
   ISN 0032             1  READ(IN,2,END=100) NOP, NFRQST, KCDS, LCDSK, K1T, NALL, NDBLSP,
                         1  NPLOT, NCOORD,IST
```

```
ISN 0033          2  FORMAT(9I2,A1)
ISN 0034             IF(NOP.EQ.99) GO TO 100
ISN 0036             IF(IST.EQ.IBK) GO TO 14
ISN 0038            READ(IN,41) ISORT
ISN 0039         41  FORMAT(20A4)
                 C
                 C   INPUT OF SELECT CODES AND SELECT COMPARE PARAMETERS
                 C
ISN 0040         14   IF(NCOORD.EQ.0) GO TO 353
ISN 0042              READ(IN,251) XATLNG
ISN 0043         251  FORMAT(12F2.0)
ISN 0044              DO 253 KK=1,4
ISN 0045              KK4 = 3*(KK-1) + 1
ISN 0046         253  XLLTNS(KK) = XATLNG(KK4) + XATLNG(KK4+1)/60.0 +
                    1  XATLNG(KK4+2)/3600.0
ISN 0047         353  IF(K1T.NE.0.AND.NOP.LT.-2) GO TO 238
ISN 0049              K1T = 0
ISN 0050              IF(NOP.LT.0) K1T = 100
ISN 0052         238  KENTRY = 0
ISN 0053              KSTAT = 0
ISN 0054              IF(NPLPTS.NE.0) NPLOT = 0
ISN 0056              N3 = 3
ISN 0057              N1000 = 1000
ISN 0058              IF(NPLOT.NE.0) WRITE(NPLT) NLAB, NLAB, N1000, N3,
                    1  ((NLAB1(I,J),I=1,2),J=1,3)
ISN 0060              DO 231 I=1,25
ISN 0061              DO 231 J=1,25
ISN 0062         231  NSECOM(I,J) = NBLNK
ISN 0063              IF(NOP.NE.-1) GO TO 242
ISN 0065              DO 233 I=1,17
ISN 0066              KSECOM(I) = 0
ISN 0067         233  LSEL(I) = NSEL(I+1)
ISN 0068              K1 = 17
ISN 0069              K1T = 17
ISN 0070              GO TO 31
ISN 0071         242  IF(NOP.NE.-2) GO TO 232
ISN 0073              DO 243 I=1,15
ISN 0074              KSECOM(I) = 0
ISN 0075         243  LSEL(I) = NSEL(I+1)
ISN 0076              K1 = 15
ISN 0077              K1T = 15
ISN 0078              GO TO 31
ISN 0079         232  K1 = 0
ISN 0080          31  K1 = K1 + 1
ISN 0081              READ(IN,32,END=100) LSEL(K1), NDAT
ISN 0082          32  FORMAT(26A3)
ISN 0083              IF(LSEL(K1).NE.NBLNK) GO TO 33
ISN 0085              K1 = K1 - 1
ISN 0086              GO TO 9
ISN 0087          33  K2 = 0
ISN 0088              DO 533 K=1,NOSEL
ISN 0089              IF(LSEL(K1).EQ.NSEL(K)) GO TO 535
```

```
ISN 0091        533  CONTINUE
ISN 0092             WRITE(NOUT,46) LSEL(K1)
ISN 0093             K1 = K1 - 1
ISN 0094             GO TO 31
ISN 0095        535  KTEST = K
ISN 0096             DO 35 K=1,25
ISN 0097             IF(NDAT(K).EQ.NBLNK) GO TO 35
ISN 0099             K2 = K2 + 1
ISN 0100             NSECOM(K1,K2) = NDAT(K)
ISN 0101         35  CONTINUE
ISN 0102             KSECOM(K1) = K2
ISN 0103             IF(KTEST.NE.19) GO TO 31
ISN 0105             DO 536 KM=1,5
ISN 0106        536  KFILES(KM) = 0
ISN 0107             DO 538 JM = 1,K2
ISN 0108             DO 537 JM1=1,5
ISN 0109             IF(NSECOM(K1,JM).EQ.KOFFS(JM1)) KFILES(JM1) = 1
ISN 0111        537  CONTINUE
ISN 0112        538  CONTINUE
ISN 0113             GO TO 31
ISN 0114          9  LCDSK1 = 1
ISN 0115             IF(LCDSK.NE.0) LCDSK1 = 0
ISN 0117             LFR = 1
ISN 0118             LSTO = 1
ISN 0119             IF(NFRQST.EQ.2) LFR = 0
ISN 0121             IF(NFRQST.EQ.1) LSTO = 0
ISN 0123             DO 3134 JJ=1,2
ISN 0124             IF(NFRQST.EQ.JJ) GO TO 3134
ISN 0126             IF(JJ.EQ.1) NOPE = NALTOP
ISN 0128             IF(JJ.EQ.2) NOPE = NOUT
ISN 0130             WRITE(NOPE,3)
ISN 0131             WRITE(NOPE,13) NOP, LFR, LSTO, KCDS, LCDSK, LCDSK1, NALL, NDBLSP,
                    1  NPLOT
ISN 0132         13  FORMAT(1X,'TYPE OF SELECT OPTION',I5,5X,'TYPE OF LIST:  FREQ. ',
                    3  I2,'  STOR. ',I2/1X,'O/P CARDS OPTION  ',I2,2X,
                    1  'INPUT CARDS  ',I2,2X,'OR DISK  ',I2,5X,'ALL COOPERATORS OPTION'
                    2 ,I3,5X,'DOUBLE SPACE OPTION',I3/70X,'CALCOMP PLOT OPTION  ',I2)
ISN 0133             IF(NCOORD.NE.0) WRITE(NOPE,213) XATLNG, XLLTNS
ISN 0135        213  FORMAT(1X,'SELECT ON MIN-MAX COORDINATES',4(3X,3F4.0)/30X,
                    1  4(3X,F12.4))
ISN 0136             IF(K1.EQ.0) GO TO 111
ISN 0138             WRITE(NOPE,8)
ISN 0139          8  FORMAT(1X,'SELECT OPTION',5X,'SELECT COMPARE PARAMETERS')
ISN 0140             DO 7 K=1,K1
ISN 0141             KS = KSECOM(K)
ISN 0142          7  WRITE(NOPE,11) LSEL(K), (NSECOM(K,L), L=1,KS)
ISN 0143         11  FORMAT(7X,A3,12X,25A3)
ISN 0144        111  CALL JULDAT(JY,JM,JD)
ISN 0145             WRITE(NOPE,12) JM, JD, JY
ISN 0146         12  FORMAT(//1X,'DATE OF THIS RETRIEVAL  ',I2,'/',I2,'/',I4)
                C
                C   WRITE TITLE PAGE
```

```
                C
ISN 0147              WRITE(NOPE,3)
ISN 0148              WRITE(NOPE,19)
ISN 0149           19 FORMAT(20X,'U. S. GEOLOGICAL SURVEY - W. R. D., FLORIDA DISTRICT
                     1OFFICE, 325 JOHN KNOX RD., TALLAHASSEE'//12X,'I N D E X  T O  A C
                     2T I V E  W A T E R  D A T A  C O L L E C T I O N  S T A T I O N S
                     3 I N  F L O R I D A'//16X,'THIS INDEX CONTAINS A LIST OF ACTIVE ST
                     4ATIONS IN FLORIDA OPERATED BY THE U. S. GEOLOGICAL SURVEY'/16X,
                     5  'IN COOPERATION WITH STATE, LOCAL, AND FEDERAL AGENCIES LISTED B
                     6ELOW.  THE INDEX SHOWS THE'/16X,'COOPERATOR(S) SUPPORTING THE DATA
                     7 COLLECTION ACTIVITIES, THE TYPE AND FREQUENCY OF DATA COLLECTION'
                     8  /16X,'AND THE U. S. GEOLOGICAL SURVEY OFFICE RESPONSIBLE FOR COL
                     9LECTING AND PROCESSING THE DATA.'///)
ISN 0150              IF(JJ.EQ.2) GO TO 220
ISN 0152              IF(NPLOT.EQ.0) GO TO 220
ISN 0154              WRITE(NPLREC,19)
ISN 0155              WRITE(NPLREC,219)
ISN 0156          219 FORMAT(34X,'SITE TYPE'/33X,'***********'///)
ISN 0157              K22 = 0
ISN 0158              DO 218 JI=1,K1
ISN 0159              IF(LSEL(JI).EQ.NSEL(21)) GO TO 217
ISN 0161          218 CONTINUE
ISN 0162              GO TO 215
ISN 0163          217 IF(NSECOM(JI,1).EQ.NGW) K22 = 1
ISN 0165              IF(K22.EQ.1.AND.KSECOM(JI).GT.1) K22 = 0
ISN 0167              IF(K22.EQ.0.AND.KSECOM(JI).GT.1) K22 = 2
ISN 0169          215 IF(K22.EQ.0.OR.K22.EQ.2) WRITE(NPLREC,216)
ISN 0171          216 FORMAT(31X,'STREAMS AND CANALS'//31X,'LAKES'//31X,'ESTUARIES'//
                     1  31X,'SPRINGS'//31X,'SPECIFIC SOURCE'//31X,'METEOROLOGY'//)
ISN 0172              IF(K22.EQ.0.OR.K22.EQ.1) WRITE(NPLREC,214)
ISN 0174          214 FORMAT(31X,'GROUND WATER'//)
ISN 0175              WRITE(NPLREC,212)
ISN 0176          212 FORMAT(////19X,'SITE',11X,'SITE NUMBER AND LOCATION'/18X,'NUMBER'
                     1 /)
ISN 0177          220 WRITE(NOPE,20)
ISN 0178           20 FORMAT(42X,'EXPLANATION OF ABBREVIATIONS USED IN THIS INDEX'//
                     1 7X,'ABBREVIATION',6X,'COOPERATOR',36X,'ABBREVIATION',4X,'COOPERAT
                     2OR'/5X,' ************** ',2X,' ************ ',33X,'**************'
                     3 ,2X,'**************'//)
ISN 0179              IF(NCPRT1.GT.0) GO TO 424
ISN 0181              REWIND NTEMFL
ISN 0182              NCPR = 0
ISN 0183          122 READ(NTEMFL,21,END=424) NCODE(NCPRT1+1),
                     1  (NDESCR(NCPRT1+1,I),I=1,12)
ISN 0184           21 FORMAT(A3,12A4)
ISN 0185              NCPRT1 = NCPRT1 + 1
ISN 0186              GO TO 122
ISN 0187          424 NCPRT = NCPRT1
ISN 0188              NRT = 0
ISN 0189           24 IF(NCPRT.LE.84) GO TO 119
ISN 0191              NCPR = 1
ISN 0192              NCP2 = 42
```

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ISN 0193            N11 = NRT + 1
ISN 0194            N12 = NRT + 42
ISN 0195            N2 = 0
ISN 0196            GO TO 422
ISN 0197        119 NCP2 = NCPRT/2
ISN 0198            N11 = NRT + 1
ISN 0199            N12 = NRT + NCP2
ISN 0200            N2 = NCPRT - NCP2*2
ISN 0201        422 DO 120 I=N11,N12
ISN 0202        120 WRITE(NOPE,121) NCODE(I), (NDESCR(I,J),J=1,12),
                   1  NCODE(I+NCP2+N2), (NDESCR(I+NCP2+N2,J),J=1,12)
ISN 0203        121 FORMAT(12X,A3,6X,12A4,5X,A3,6X,12A4)
ISN 0204            IF(N2.NE.0) WRITE(NOPE,121) NCODE(N2+N12),
                   1  (NDESCR(N2+N12,J),J=1,12)
ISN 0206            IF(NCPR.EQ.0) GO TO 423
ISN 0208            NCPRT = NCPRT - 84
ISN 0209            NRT = NRT + 84
ISN 0210            NCPR = 0
ISN 0211            WRITE(NOPE,3)
ISN 0212            WRITE(NOPE,20)
ISN 0213            GO TO 24
ISN 0214        423 WRITE(NOPE,3)
ISN 0215            WRITE(NOPE,123)
ISN 0216        123 FORMAT(7X,'ABBREVIATION',6X,'TYPE OF DATA',34X,'ABBREVIATION',
                   1 10X,'OFFICE'/6X,'***************',4X,'***************',32X,'*******
                   2*******',8X,'********'//12X,3HK&T,6X,'SPECIFIC CONDUCTANCE AND TEM
                   3PERATURE',17X,2HMI,17X,'MIAMI'//12X,2HDO,7X,'DISSOLVED OXYGEN',
                   4  37X,2HTA,17X,'TALLAHASSEE'//12X,2HPH,7X,'FIELD PH MEASUREMENT',
                   5  33X,2HTP,17X,'TAMPA'//12X,2HMC,7X,'MAJOR CHEMICAL CONSTITUENTS',
                   6  26X,2HOR,17X,'ORLANDO    '/ 21X,'(INCLUDES CA, MG, NA, K, HCO3,
                   7CL, SO4,'/22X,'SIO2, FL, HARDNESS, ALKALINITY, AND',17X,2HJX,17X,
                   #  'JACKSONVILLE'/                                  22X,'DISSOLVED SOL
                   8IDS)'//12X,3HN&P,6X,'NITROGEN AND PHOSPHORUS SPECIES'//
                   9  12X,3HMET,6X,'METALS(INCLUDES PART OR ALL OF THE',16X,
                   *  'ABBREVIATION',7X,'FREQUENCY'/21X,'FOLLOWING:  AL, AS, CD, CR, C
                   $O, CU, FE,',10X,'***************',5X,'*************')
ISN 0217            WRITE(NOPE,124)
ISN 0218        124 FORMAT(21X,'PB, MN, HG, NI, SE, ZN)'/73X,'1 - 365',7X,'SAMPLES PE
                   1R YEAR, I. E.,'/12X,3HBOD,6X,'5-DAY BIOCHEMICAL OXYGEN DEMAND',
                   2  37X,'1 = 1 SAMPLE PER YEAR'/87X,'365 = 365 SAMPLES PER YEAR'/
                   5  12X,3HTOC,6X,'TOTAL ORGANIC CARBON',52X,'OR 1 SAMPLE PER DAY'//
                   6  12X,3HPES,6X,'PESTICIDES',43X,3HCON,10X,'CONTINUOUS - GRAPHIC OR
                   7 DIGITAL RECORDER'//12X,3HPKT,6X,'PHYTOPLANKTON',40X,3HCSI,10X,
                   3  'CREST STAGE INDICATOR'//12X,3HSED,6X,'SUSPENDED SEDIMENT',37X,
                   8  1HP,10X,'PEAK FLOW' //12X,2HCL,7X,'CHLORIDE',45X,'CNX,CSX,PX   C
                   *ONT., CSI, OR PEAK FLOW,RESP., WHEN'/87X,'SHARED BY MULTIPLE COOPE
                   <RATORS.'/12X,3HTRB,6X,'TURBIDITY',57X,'1/X IS THE COOPERATORS SHAR
                   9E.'   //12X,3HRCM,6X,'RADIOCHEMICAL ANALYSIS',31X,3HFLH,10X,
                   @'FLOOD HYDROGRAPH',//12X,3HBCT,6X,
                   #                                                  'BACTE
                   3RIOLOGICAL(INCLUDES ONE OR MORE OF',11X,'ABBREVIATION',7X,'SITE TY
                   $PE'/21X,'THE FOLLOWING: (FECAL COLIFORM, TOTAL',12X,'**************
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```
     #*',5X,'************'/21X,'COLIFORM, FECAL STREPTOCOCCI)'/74X,
     @  'SW',11X,'STREAMS AND CANALS'/12X,'FLO',6X,'STREAM FLOW')
ISN 0219            WRITE(NOPE,125)
ISN 0220      125   FORMAT(74X,'LK',11X,'LAKES'/12X,'WL',7X,'WATER LEVEL -- STREAM, L
     1AKE, OR WELL'/74X,'ES',11X,'ESTUARIES'/12X,'OTH',6X,'OTHER TYPES O
     2F DATA:'/26X,'R = RAINFALL',36X,'SP',11X,'SPRINGS'/26X,'E = EVAPOR
     3ATION'/26X,'PY = PERIPHYTON',33X,'GW',11X,'GROUND WATER'/26X,
     4  'CA = CHEMICAL ANALYSIS OF'/31X,'BOTTOM SEDIMENT',28X,'SS',11X,
     5  'SPECIFIC SOURCE'/26X,'PW = PARTIAL CHEMICAL ANALYSIS -'/31X,
     6  'WEEKLY FREQUENCY(ORTHO',21X,'ME',11X,'METEOROLOGY'/31X,
     7  'PHOSPHOROUS AND FLUORIDE)'/27X,  'P = PARTIAL CHEMICAL ANALYSIS
     8 -'/31X,'INCLUDES THE FOLLOWING SCHEDULES:'/31X,'MONTHLY-ANNUAL(HA
     9RDNESS AND DISSOLVED SOLIDS)',/26X,'BI = BENTHIC INVERTEBRATES',/2
     A6X,'BN = BED MATERIAL NUTRIENTS',/26X,'CH = CHLOROPHYLL')
ISN 0221            WRITE(NOPE,127)
ISN 0222      127   FORMAT(1H1/////39X'SUMMARY OF COUNTY CODES'////11X,'CODE',6X,
     1  'COUNTY',46X,'CODE',6X,'COUNTY'/10X,'******',4X,'********',44X,
     2  '******',4X,'********'//
     3  12X,'001',6X,'ALACHUA      ',41X,'067',6X,'LAFAYETTE '/
     4  12X,'003',6X,'BAKER        ',41X,'069',6X,'LAKE      '/
     5  12X,'005',6X,'BAY          ',41X,'071',6X,'LEE       '/
     6  12X,'007',6X,'BRADFORD     ',41X,'073',6X,'LEON      '/
     7  12X,'009',6X,'BREVARD      ',41X,'075',6X,'LEVY      '/
     8  12X,'011',6X,'BROWARD      ',41X,'077',6X,'LIBERTY   '/
     9  12X,'013',6X,'CALHOUN      ',41X,'079',6X,'MADISON   ')
ISN 0223            WRITE(NOPE,128)
ISN 0224      128   FORMAT(12X,'015',6X,'CHARLOTTE',44X,'081',6X,'MANATEE'/
     1  12X,'017',6X,'CITRUS       ',41X,'083',6X,'MARION    '/
     2  12X,'019',6X,'CLAY         ',41X,'085',6X,'MARTIN    '/
     3  12X,'021',6X,'COLLIER      ',41X,'087',6X,'MONROE    '/
     4  12X,'023',6X,'COLUMBIA     ',41X,'089',6X,'NASSAU    '/
     5  12X,'025',6X,'DADE         ',41X,'091',6X,'OKALOOSA  '/
     6  12X,'027',6X,'DE SOTO      ',41X,'093',6X,'OKEECHOBEE'/
     7  12X,'029',6X,'DIXIE        ',41X,'095',6X,'ORANGE    '/
     8  12X,'031',6X,'DUVAL        ',41X,'097',6X,'OSCEOLA   '/
     9  12X,'033',6X,'ESCAMBIA     ',41X,'099',6X,'PALM BEACH')
ISN 0225            WRITE(NOPE,1127)
ISN 0226     1127   FORMAT(
     1  12X,'035',6X,'FLAGLER      ',41X,'101',6X,'PASCO     '/
     2  12X,'037',6X,'FRANKLIN     ',41X,'103',6X,'PINELLAS  '/
     3  12X,'039',6X,'GADSDEN      ',41X,'105',6X,'POLK      '/
     4  12X,'041',6X,'GILCHRIST    ',41X,'107',6X,'PUTNAM    '/
     5  12X,'043',6X,'GLADES       ',41X,'109',6X,'ST. JOHNS '/
     6  12X,'045',6X,'GULF         ',41X,'111',6X,'ST. LUCIE '/
     7  12X,'047',6X,'HAMILTON     ',41X,'113',6X,'SANTA ROSA'/
     8  12X,'049',6X,'HARDEE       ',41X,'115',6X,'SARASOTA  '/
     9  12X,'051',6X,'HENDRY       ',41X,'117',6X,'SEMINOLE  ')
ISN 0227            WRITE(NOPE,1128)
ISN 0228     1128   FORMAT(
     1  12X,'053',6X,'HERNANDO     ',41X,'119',6X,'SUMTER    '/
     2  12X,'055',6X,'HIGHLANDS    ',41X,'121',6X,'SUWANNEE  '/
     3  12X,'057',6X,'HILLSBOROUGH',41X,'123',6X,'TAYLOR    '/
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                4  12X,'059',6X,'HOLMES      ',41X,'125',6X,'UNION     '/
                5  12X,'061',6X,'INDIAN RIVER',41X,'127',6X,'VOLUSIA   '/
                6  12X,'063',6X,'JACKSON     ',41X,'129',6X,'WAKULLA   '/
                7  12X,'065',6X,'JEFFERSON   ',41X,'131',6X,'WALTON    '/
                8  12X,'   ',6X,'            ',41X,'133',6X,'WASHINGTON')
ISN 0229          WRITE(NOPE,3)
ISN 0230        3 FORMAT(1H1)
ISN 0231          WRITE(NOPE,112) JM, JD, JY
ISN 0232      112 FORMAT(104X,'RETRIEVAL DATE  ',I2,1H/,I2,1H/,I4)
ISN 0233     3134 CONTINUE
ISN 0234          IF(LSTO.NE.0) WRITE(NALTOP,304)
ISN 0236      304 FORMAT(9X,'SITE',7X,'SITE NAME AND LOCATION',8X,'COOPER',3X,'COUN
                  1TY   SITE    WATER   NETWORK',8X,3HLAT,13X,4HLONG,11X,
                  2  'OFF'/8X,'NUMBER',36X,'ATORS',13X,'TYPE  MGMT DIST OR PROJ    DE
                  3G MIN SEC',5X,'DEG MIN SEC',8X,'ICE'//)
ISN 0237          IF(LFR.NE.0) WRITE(NOUT,4)
ISN 0239        4 FORMAT(9X,'SITE', 7X,'SITE NAME AND LOCATION',8X,'COOPER',28X,'TY
                  1PE OF DATA',33X, 'OFF'/8X,'NUMBER',36X,'ATORS  K&T  DO  PH  MC N&P
                  2 MET BOD TOC PES PKT SED  CL TRB RCM BCT FLO  WL OTH ICE'/75X,
                  3  '(FREQUENCY---SAMPLES PER YEAR)'/)
ISN 0240          KREC = 0
ISN 0241          IF(LCDSK.EQ.0) GO TO 557
ISN 0243          INPT = IN
ISN 0244          GO TO 1499
ISN 0245      557 KLINPT = 0
ISN 0246      558 KLINPT = KLINPT + 1
ISN 0247          IF(KLINPT.GT.5) GO TO 87
ISN 0249          IF(KFILES(KLINPT).EQ.0) GO TO 558
ISN 0251          INPT = NFL(KLINPT)
ISN 0252          REWIND INPT
ISN 0253     1499 DO 1500 II=1,4
ISN 0254     1500 IDL(II) = NZER4
ISN 0255          CALL CORE(BUFF,8)
ISN 0256          WRITE(99,2112) JY, JM, JD
ISN 0257     2112 FORMAT(2H19,3I2)
ISN 0258          CALL CORE(BUFF,8)
ISN 0259          READ(99,2113) IRID1, IRID2
ISN 0260     2113 FORMAT(2A4)
ISN 0261        5 BACKSPACE INPT
ISN 0262        6 READ(INPT,10,END=558)(ID(1,I),I=1,4),(NAME(I),I=1,12), NCC, NST,
                  2  LAT, LNG,
                  1  (ID(2,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD, JPT, NOTH
ISN 0263       10 FORMAT(1X,3A4,A3,11A4,2A3,A2,6A2/1X,3A4,19A3,2I1,2A3,A2)
ISN 0264          DO 15 I=1,4
ISN 0265          IF(ID(1,I).NE.ID(2,I)) GO TO 5
ISN 0267       15 CONTINUE
ISN 0268          IF(NALL.EQ.0) GO TO 654
ISN 0270          DO 634 I=1,3
ISN 0271          IF(ID(1,I).NE.NZER4) GO TO 644
ISN 0273      634 CONTINUE
ISN 0274          IF(ID(1,4).NE.NBLNK) GO TO 644
ISN 0276          GO TO 654
```

```
ISN 0277        644  DO 649 I=1,4
ISN 0278             IF(ID(1,I).NE.IDL(I))    GO TO 651
ISN 0280        649  CONTINUE
ISN 0281             IDK = IDK + 1
ISN 0282             GO TO 654
ISN 0283        651  IDK = 1
ISN 0284            KDI=0
ISN 0285             DO 652 I=1,4
ISN 0286        652     IDL(I) = ID(1,I)
                C
                C   SELECT OPTIONS
                C
ISN 0287        654  IF(NALL.NE.0.AND.KDI.GT.0) GO TO 79
ISN 0289             K10T = 0
ISN 0290             KNOP = NOP
ISN 0291             K1TP = K1T + 1
ISN 0292             DO 80 I=1,K1
ISN 0293             IF(I.EQ.K1TP) KNOP = 0
ISN 0295             IF(LSEL(I).EQ.NBLNK) GO TO 80
ISN 0297             DO 45 J=1,NOSEL
ISN 0298             IF(LSEL(I).EQ.NSEL(J)) GO TO 48
ISN 0300         45  CONTINUE
ISN 0301             WRITE(NOUT,46) LSEL(I)
ISN 0302         46  FORMAT(1X,'ERROR - NO SUCH SELECT OPTION AS  ',A3)
ISN 0303             GO TO 80
ISN 0304         48  IF(J.GE.2.AND.J.LE.18) GO TO 55
ISN 0306             IF(J.EQ.23) GO TO 65
ISN 0308             IF(J.EQ.1) JTEST = NCOOPR
ISN 0310             IF(J.EQ.19) JTEST = TABLE(IOFF)
ISN 0312             IF(J.EQ.20) JTEST = NCC
ISN 0314             IF(J.EQ.21) JTEST = NST
ISN 0316             IF(J.EQ.22) JTEST = MWD
ISN 0318             IF(J.EQ.24) JTEST = NOTH
ISN 0320         49  KS = KSECOM(I)
ISN 0321             DO 50 K3=1,KS
ISN 0322             IF(JTEST.EQ.NSECOM(I,K3).AND.KNOP.GE.-2) GO TO 80
ISN 0324             IF(JTEST.EQ.NSECOM(I,K3).AND.KNOP.LE.-3) K10T = 1
ISN 0326         50  CONTINUE
ISN 0327             IF(KNOP.LE.-3) GO TO 80
ISN 0329             GO TO 6
ISN 0330         55  JTEST = NCFREQ(J-1)
ISN 0331             IF(KSECOM(I).NE.0) GO TO 49
ISN 0333             IF(KNOP.GE.0) GO TO 57
ISN 0335             IF(JTEST.NE.NBLNK) K10T = 1
ISN 0337             GO TO 80
ISN 0338         57  IF(JTEST.EQ.NBLNK) GO TO 6
ISN 0340             GO TO 80
ISN 0341         65  JTEST = JPT
ISN 0342             KS = KSECOM(I)
ISN 0343             DO 66 K3=1,KS
ISN 0344             IF(NSECOM(I,K3).EQ.NSEL(23)) GO TO 70
ISN 0346         66  CONTINUE
```

```
ISN 0347            GO TO 49
ISN 0348         70 DO 75 ZZ =1,2
ISN 0349         75 IF(JTEST.EQ.PLN(ZZ)) GO TO 6
ISN 0351            IF(JTEST.NE.NBLNK.AND.JTEST.NE.NET) GO TO 80
ISN 0353            GO TO 6
ISN 0354         80 CONTINUE
ISN 0355            IF(NOP.LT.0.AND.K10T.EQ.0) GO TO 6
ISN 0357            IF(NCOORD.EQ.0.AND.NPLOT.EQ.0) GO TO 81
ISN 0359            CALL CORE(BUFF,12)
ISN 0360            WRITE(99,2142) LAT, LNG
ISN 0361       2142 FORMAT(6A2)
ISN 0362            CALL CORE(BUFF,12)
ISN 0363            READ(99,2143) ALAT, ALNG
ISN 0364       2143 FORMAT(6F2.0)
ISN 0365            DATA1 = ALAT(1) + ALAT(2)/60.0 + ALAT(3)/3600.0
ISN 0366            DATA2 = ALNG(1) + ALNG(2)/60.0 + ALNG(3)/3600.0
ISN 0367            IF(NCOORD.EQ.0) GO TO 81
ISN 0369            IF(XLLTNS(1).GT.DATA1.OR.XLLTNS(2).GT.DATA2.OR.XLLTNS(3).LT.DATA1
                   1  .OR.XLLTNS(4).LT.DATA2) GO TO 6
                  C
                  C   CHECK LINE COUNT
                  C
ISN 0371         79 IF(IDK.GT.1) GO TO 84
ISN 0373         81 CONTINUE
ISN 0374            IF(NALL.EQ.0) GO TO 85
ISN 0376            IF(KDI.GT.0) GO TO 660
ISN 0378            IF(IDK.LE.1) GO TO 660
ISN 0380            IDK2 = 2*IDK
ISN 0381            DO 659 I=1,IDK2
ISN 0382        659 BACKSPACE INPT
ISN 0383            KDI = 0
ISN 0384        660 KDI = KDI + 1
ISN 0385            IF(IDK.EQ.1) GO TO 85
ISN 0387            READ(INPT,10,END=558)(ID(1,I),I=1,4),(NAME(I),I=1,12),NCC,NST,
                   2  LAT, LNG,
                   1  (ID(2,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD, JPT, NOTH
ISN 0388            IF(KDI-IDK) 85,85,661
ISN 0389        661 DO 663 I=1,4
ISN 0390            IF(ID(1,I).NE.IDL(I)) GO TO 669
ISN 0392        663 CONTINUE
ISN 0393            GO TO 85
ISN 0394        669 DO 670 I=1,2
ISN 0395        670 BACKSPACE INPT
ISN 0396            GO TO 6
ISN 0397         85 NOFF=TABLE(IOFF)
ISN 0398         84 KDI=KDI+1
ISN 0399            WRITE(9,1010)          (ID(1,I),I=1,4),(NAME(I),I=1,12), NCC, NST,
                   2  LAT, LNG,
                   1  (ID(2,I),I=1,4), NCOOPR, NCFREQ, NOFF, MWD, JPT, NOTH
ISN 0400       1010 FORMAT(1X,3A4,A3,11A4,2A3,A2,6A2,1X,3A4,19A3,A2,2A3,A2)
ISN 0401            IF(NALL.NE.0.AND.IDK.GT.1) GO TO 660
ISN 0403            GO TO 6
```

```
ISN 0404       87  REWIND 9
ISN 0405           DO 36 J=1,4
ISN 0406        36 IDL(J)=NBLNK
ISN 0407           IF(IST.EQ.IBK) GO TO 89
ISN 0409           CALL FTSORT(ISORT, 28H RECORD TYPE=F,LENGTH=(160) )
ISN 0410           DO 18 I=1,4
ISN 0411       18  IDL(I) = IBK
ISN 0412       89  READ(9,1010,END=95)   (ID(1,I),I=1,4),(NAME(I),I=1,12), NCC, NST,
                  2  LAT, LNG,
                  1  (ID(2,I),I=1,4), NCOOPR, NCFREQ, NOFF, MWD, JPT, NOTH
ISN 0413        86  KREC = KREC + 1
ISN 0414           IF(KREC-1) 25,25,22
ISN 0415        22  IF(KREC-51) 23,27,27
ISN 0416        23  KREC1 = ((KREC-1)/10)*10
ISN 0417           IF((KREC-KREC1).NE.1) GO TO 25
ISN 0419        17  FORMAT(120X)
ISN 0420           IF(LFR.EQ.1) WRITE(NOUT,17)
ISN 0422           IF(LSTO.EQ.1) WRITE(NALTOP,17)
ISN 0424           GO TO 25
ISN 0425        27  KREC = 1
ISN 0426           IF(NFRQST.EQ.2) GO TO 527
ISN 0428           WRITE(NOUT,3)
ISN 0429           WRITE(NOUT,112) JM, JD, JY
ISN 0430           WRITE(NOUT,4)
ISN 0431       527 IF(NFRQST.EQ.1) GO TO 25
ISN 0433           WRITE(NALTOP,3)
ISN 0434           WRITE(NALTOP,112) JM, JD, JY
ISN 0435           WRITE(NALTOP,304)
                C
                C   WRITE DATA RECORD
                C
ISN 0436        25  KENTRY = KENTRY + 1
ISN 0437           KREPT = 0
ISN 0438           DO 126 I=1,4
ISN 0439           IF(ID(1,I).NE.IDL(I)) GO TO 26
ISN 0441       126 CONTINUE
ISN 0442           KREPT = 1
ISN 0443           DO 326 I=1,3
ISN 0444           IF(ID(1,I).NE.NZER4) GO TO 329
ISN 0446       326 CONTINUE
ISN 0447           IF(ID(1,4).NE.NBLNK) GO TO 329
ISN 0449           GO TO 26
ISN 0450       329 IF(NFRQST.EQ.1) GO TO 1329
ISN 0452           WRITE(NALTOP,2329) NCOOPR, NCC, NST, MWD, JPT, LAT, LNG, NOFF
ISN 0453      2329 FORMAT(51X,A3,6X,A3,6X,A2,6X,A3,6X,A3,7X,3(A2,2X),4X,3(A2,2X),6X,
                 1  A2)
ISN 0454           IF(NDBLSP.NE.0) WRITE(NALTOP,17)
ISN 0456      1329 IF(NFRQST.EQ.2) GO TO 29
ISN 0458           WRITE(NOUT,129) NCOOPR, NCFREQ, NOTH, NOFF
ISN 0459       129 FORMAT(51X,A3,2X,17(1X,A3),2X,A2,1X,A2)
ISN 0460           IF(NDBLSP.NE.0) WRITE(NOUT,17)
ISN 0462           GO TO 29
```

```
ISN 0463        26  IF(NFRQST.EQ.1) GO TO 327
ISN 0465            WRITE(NALTOP,37) (ID(1,I),I=1,4), (NAME(I),I=1,8), NCOOPR, NCC,
                   2  NST, MWD, JPT, LAT, LNG, NOFF
ISN 0466        37  FORMAT(1X,3A4,A3,2X,8A4,1X,A3,6X,A3,6X,A2,6X,A3,6X,A3,7X,3(A2,2X)
                   1  ,4X,3(A2,2X),6X,A2)
ISN 0467            IF(NDBLSP.NE.0) WRITE(NALTOP,17)
ISN 0469       327  IF(NFRQST.EQ.2) GO TO 529
ISN 0471            WRITE(NOUT,30) (ID(1,I),I=1,4), (NAME(I),I=1,8), NCOOPR, NCFREQ,
                   1  NOTH, NOFF
ISN 0472        30  FORMAT(1X,3A4,A3,2X,8A4,1X,A3,2X,17(1X,A3),2X,A2,1X,A2)
ISN 0473            IF(NDBLSP.NE.0) WRITE(NOUT,17)
ISN 0475       529  KSTAT = KSTAT + 1
ISN 0476        29  IF(KCDS.NE.0) WRITE(NCDS,28) (ID(1,I),I=1,4), (NAME(I),I=1,12),
                   2  NCC, NST, LAT, LNG,
                   1     (ID(1,I),I=1,4), NCOOPR, NCFREQ, IOFF,ISEQ,MWD, JPT, NOTH
ISN 0478        28  FORMAT('N',3A4,A3,11A4,2A3,7A2  /'D',3A4,19A3,2I1,2A3,A2)
ISN 0479            IF(NPLOT.EQ.0.OR.KREPT.NE.0) GO TO 2136
ISN 0481            IF(DATA1.EQ.0.0.OR.DATA2.EQ.0) GO TO 2136
ISN 0483            PLPTS = PLPTS + 1
ISN 0484            DATA3 = PLPTS
ISN 0485            WRITE(NPLREC,2151) PLPTS, (ID(1,I),I=1,4), (NAME(I),I=1,12)
ISN 0486      2151  FORMAT(1X,F4.0,5X,3A4,A3,5X,12A4)
ISN 0487            DATA2 = 88.0 - DATA2
ISN 0488            NPLPTS = NPLPTS + 1
ISN 0489            IF(NPLPTS.LE.1000) GO TO 2144
ISN 0491            WRITE(NOUT,2145)
ISN 0492      2145  FORMAT(///5X,'MAYDAY - MORE THAN 1000 STATIONS TO PLOT'///)
ISN 0493            NPLOT = 0
ISN 0494            GO TO 2136
ISN 0495      2144  WRITE(NPLT) NPLPTS, ONE, IRID1, IRID2, NZERO, DATA1, DATA2,
                   1  DATA3, NBL, NBL, NBL
ISN 0496      2136  DO 136 I=1,4
ISN 0497       136  IDL(I) = ID(1,I)
ISN 0498           GO TO 89
                C
                C    END OF RUN
                C
ISN 0499        95  IF(NFRQST.EQ.2) GO TO 397
ISN 0501            WRITE(NOUT,3)
ISN 0502            WRITE(NOUT,112) JM, JD, JY
ISN 0503            WRITE(NOUT,97) KENTRY, KSTAT
ISN 0504        97  FORMAT(///5X,'LISTED ',I5,' ENTRIES',10X,'AND ',I5,' STATIONS')
ISN 0505       397  IF(NFRQST.EQ.1) GO TO 396
ISN 0507            WRITE(NALTOP,3)
ISN 0508            WRITE(NALTOP,112) JM, JD, JY
ISN 0509            WRITE(NALTOP,97) KENTRY, KSTAT
ISN 0510       396  IF(NPLOT.EQ.0) GO TO 398
ISN 0512            KPLPTS = 1000 - NPLPTS
ISN 0513            IF(KPLPTS.EQ.0) GO TO 398
ISN 0515            DO 2097 I=1,KPLPTS
ISN 0516            KI = NPLPTS + I
ISN 0517      2097  WRITE(NPLT) KI, ZERO, IRID1, IRID2, NONE, ZERO, ZERO, ZERO, NB,
```

SUPPLEMENT F

PL1 Source Listing of Procedure FNDXUP

PL/I OPTIMIZING COMPILER FXFINDX: PROC OPTIONS(MAIN);

SOURCE LISTING

```
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   1       0  FXFINDX:  PROC OPTIONS(MAIN);
   2    1  0  |     DCL CARDIN     FILE RECORD INPUT;
   3    1  0  |     DCL DISKIN     FILE RECORD INPUT;
   4    1  0  |     DCL FILEOUT    FILE RECORD OUTPUT;
   5    1  0  |     DCL ARRAY(200)      CHAR(81); /*ARRAY OF UPD READ FROM CARDS */
   6    1  0  |     DCL 01 HOLDN,
              |            02 TYPE      CHAR(1),
              |            02 IDN       CHAR(15),
              |            02 SKIP1     CHAR(64);
   7    1  0  |     DCL 01 HOLDD,
              |            02 TYPE      CHAR(1),
              |            02 IDD       CHAR(15),
              |            02 SKIP2     CHAR(64);
   8    1  0  |     DCL 01 STRUCN,
              |            02 TYPE      CHAR(1),
              |            02 STAIDN    CHAR(15),
              |            02 SKIP3     CHAR(64);
   9    1  0  |     DCL 01 STRUCD,
              |            02 TYPE      CHAR(1),
              |            02 STAIDD    CHAR(15),
              |            02 SKIP4     CHAR(64);
  10    1  0  |     DCL 01 CARD,
              |            02 TYP       CHAR(1),
              |            02 ID        CHAR(15),
              |            02 IGNORE    CHAR(32),
              |            02 SEQN      CHAR(1),
              |            02 SKIP      CHAR(22),
              |            02 SEQD      CHAR(1),
              |            02 BLANK     CHAR(8);
  11    1  0  |     DCL 01 CARDST,
              |            02 TYPST     CHAR(1),
              |            02 IDST      CHAR(15),
              |            02 IGNORST   CHAR(32),
              |            02 SEQNST    CHAR(1),
              |            02 SKIPST    CHAR(22),
              |            02 SEQDST    CHAR(1),
              |            02 BLANKST   CHAR(8),
              |            02 ST        CHAR(1);
  12    1  0  |     DCL (C,I,K,CT)      FIXED BIN(31) INIT(0B);
  13    1  0  |     DCL COUNT      FIXED BIN(31) INIT(0B);
  14    1  0  |     DCL CNTR       FIXED BIN(31) INIT(0B);
  15    1  0  |     DCL IDLAST     CHAR(15);
  16    1  0  |     DCL OPTIONS    CHAR(80) INIT(' ');
  17    1  0  |     DCL RETC       FIXED BIN(31);
  18    1  0  |     DCL SUBSTR          BUILTIN;
```

```
PL/I OPTIMIZING COMPILER          FXFINDX:     PROC OPTIONS(MAIN);

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      19   1   0  |         DCL SWITCH           FIXED BIN(15) INIT(0B);                    |
      20   1   0  |         ON ENDFILE(DISKIN) GO TO UPD;                                   |
      21   1   0  |         ON ENDFILE(CARDIN) GO TO RITE;                                  |
      22   1   0  |         ON ENDFILE(SORTOUT) GO TO EOJ;                                  |
      23   1   0  |         ARRAY = '';                                                     |
      24   1   0  |         CARD = ' ';                                                     |
      25   1   0  |         CARDST = ' ';                                                   |
      26   1   0  |         HOLDN = ' ';                                                    |
      27   1   0  |         HOLDD = ' ';                                                    |
      28   1   0  |         STRUCN = ' ';                                                   |
      29   1   0  |         STRUCD = ' ';                                                   |
      30   1   0  |         READ FILE(CARDIN) INTO(OPTIONS);                                |
      31   1   0  |         IF SUBSTR(OPTIONS,1,1) = '0'                                    |
                  |              THEN DO;                                                   |
      32   1   1  |                   IF SUBSTR(OPTIONS,2,1) = ' ' THEN SWITCH=0B;          |
      33   1   1  |                   ELSE SWITCH = 1B;                                     |
      34   1   1  |              END;                                                       |
      35   1   0  |              ELSE DO;                                                   |
      36   1   1  |                   PUT FILE(SYSPRINT) EDIT('ERROR-NO OPTION CARD',       |
                  |                        'ABNORMAL TERMINATION')  (A,SKIP(2),A);         |
      37   1   1  |                   GO TO LAST;                                           |
      38   1   1  |              END;                                                       |
      39   1   0  |NEST:    READ FILE(CARDIN) INTO (OPTIONS); /* SET UP UPD ARRAY */       |
      40   1   0  |         COUNT = COUNT + 1B;                                             |
      41   1   0  |         ARRAY(COUNT) = OPTIONS;                                         |
      42   1   0  |         GO TO NEST;                                                     |
      43   1   0  |RITE:    PUT FILE(SYSPRINT) EDIT('CARDS TO BE UPDATED') (PAGE,A);        |
      44   1   0  |         DO C = 1 TO COUNT;                                              |
      45   1   1  |              PUT FILE(SYSPRINT) EDIT(ARRAY(C)) (SKIP(2),A);             |
      46   1   1  |         END;                                                            |
      47   1   0  |LOOP:    READ FILE(DISKIN) INTO (CARD);                                  |
      48   1   0  |LOOP1:   DO I = 1 TO COUNT;                                              |
      49   1   1  |              IF SUBSTR(ARRAY(I),2,15) = ID                              |
                  |                   THEN DO;       /* DELETE AN ENTIRE STATION */      |
      50   1   2  |                        IF SUBSTR(ARRAY(I),17,6) = 'DELETE'              |
                  |                             THEN DO;                                    |
      51   1   3  |                                  CT = CT + 1B;                          |
      52   1   3  |                                  DO WHILE(SUBSTR(ARRAY(I),2,15) = ID);  |
      53   1   4  |                                     READ FILE(DISKIN) INTO(CARD);       |
      54   1   4  |                                  END;                                   |
      55   1   3  |                                  IF CT > COUNT THEN GO TO LOOP2;        |
      56   1   3  |                                  GO TO LOOP1;                           |
      57   1   3  |                             END;                                        |
      58   1   2  |                        IF SUBSTR(ARRAY(I),1,1) = 'X' &                  |
                  |                           SEQN = SUBSTR(ARRAY(I),49,1)                |
                  |                             THEN DO;       /* DELETE A LISTING */     |
      59   1   3  |                                  CT = CT + 1B;                          |
      60   1   3  |                                  READ FILE(DISKIN) INTO(CARD);          |
```

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PL/I OPTIMIZING COMPILER          FXFINDX:     PROC OPTIONS(MAIN);

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      61    1  3  |                                   IF CT > COUNT THEN GO TO LOOP2;        |
      62    1  3  |                                   GO TO LOOP;                            |
      63    1  3  |                              END;                                        |
      64    1  2  |                         IF SUBSTR(ARRAY(I),1,1) = 'N' & TYP = 'N'        |
                  |                              THEN DO;    /* UPDATE A CARD */           |
      65    1  3  |                                   IF SUBSTR(ARRAY(I),49,1) = SEQN        |
                  |                                        THEN DO;                          |
      66    1  4  |                                           CT = CT + 1B;                  |
      67    1  4  |                                           IF CT>COUNT THEN GO TO LOOP2;  |
      68    1  4  |                                           GO TO LOOP;                    |
      69    1  4  |                                        END;                              |
      70    1  3  |                              END;                                        |
      71    1  2  |                         IF SUBSTR(ARRAY(I),1,1) = 'D' & TYP= 'D'         |
                  |                              THEN DO;                                    |
      72    1  3  |                                   IF SUBSTR(ARRAY(I),72,1) = SEQD        |
                  |                                        THEN DO;                          |
      73    1  4  |                                           CT = CT + 1B;                  |
      74    1  4  |                                           IF CT>COUNT THEN GO TO LOOP2;  |
      75    1  4  |                                           GO TO LOOP;                    |
      76    1  4  |                                        END;                              |
      77    1  3  |                              END;                                        |
      78    1  2  |                    END;                                                  |
      79    1  1  |          END;                                                            |
                  |                         /* IF NO MATCH WRITE DISK CARD TO TEMP FILE */  |
      80    1  0  |          IF TYP = 'N' THEN ST = SEQN;                                    |
      81    1  0  |          IF TYP = 'D' THEN ST = SEQD;                                    |
      82    1  0  |          TYPST=TYP; IDST=ID; IGNORST=IGNORE; SEQNST=SEQN; SKIPST=SKIP;  |
      87    1  0  |          SEQDST=SEQD; BLANKST=BLANK;                                     |
      89    1  0  |          WRITE FILE(FILEOUT) FROM (CARDST);                              |
      90    1  0  |          CNTR = CNTR + 1B;                                               |
      91    1  0  |          GO TO LOOP;                                                     |
                  |                         /* WRITE REST OF DISK TO TEMP FILE */          |
      92    1  0  |LOOP2:    READ FILE(DISKIN) INTO(CARD);                                   |
      93    1  0  |          IF TYP = 'N' THEN ST = SEQN;                                    |
      94    1  0  |          IF TYP = 'D' THEN ST = SEQD;                                    |
      95    1  0  |          TYPST=TYP; IDST=ID; IGNORST=IGNORE; SEQNST=SEQN; SKIPST=SKIP;  |
     100    1  0  |          SEQDST=SEQD; BLANKST=BLANK;                                     |
     102    1  0  |          WRITE FILE(FILEOUT) FROM (CARDST);                              |
     103    1  0  |          CNTR = CNTR + 1B;                                               |
     104    1  0  |          GO TO LOOP2;                                                    |
     105    1  0  |UPD:      DO K = 1 TO COUNT;  /* WRITE UPDATES TO END OF DISK */          |
     106    1  1  |               IF SUBSTR(ARRAY(K),1,1) = 'X' |                           |
                  |                  SUBSTR(ARRAY(K),17,6) = 'DELETE' THEN;                |
     107    1  1  |               ELSE DO;                                                   |
     108    1  2  |                    IF SUBSTR(ARRAY(K),1,1) = 'N' THEN                    |
                  |                       SUBSTR(ARRAY(K),81,1) =SUBSTR(ARRAY(K),49,1);      |
     109    1  2  |                    IF SUBSTR(ARRAY(K),1,1) = 'D' THEN                    |
                  |                       SUBSTR(ARRAY(K),81,1) =SUBSTR(ARRAY(K),72,1);      |
```

```
PL/I OPTIMIZING COMPILER          FXFINDX:     PROC OPTIONS(MAIN);

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     110    1   2  |                    WRITE FILE(FILEOUT) FROM(ARRAY(K));                    |
     111    1   2  |                    CNTR = CNTR + 18;                                      |
     112    1   2  |               END;                                                        |
     113    1   1  |          END;                                                             |
     114    1   0  |          CLOSE FILE(FILEOUT);                                            |
     115    1   0  |          CALL PLISRTA(' SORT FIELDS=(2,15,CH,A,81,1,CH,A,1,1,CH,D) ',    |
                   |                       ' RECORD TYPE=F,LENGTH=(81) ', 60000,RETC);      |
     116    1   0  |          IF RETC¬=0 THEN                                                  |
                   |             PUT EDIT('ERROR-SORT FAILED') (SKIP(2),A(17));               |
     117    1   0  |          IF SWITCH = 18 THEN DO;                                          |
     118    1   1  |HEADR:    PUT FILE(SYSPRINT) EDIT('LISTING OF MULTIPLE FINDEX RECORDS')    |
                   |                             (PAGE,COL(43),A);                           |
     119    1   1  |          PUT SKIP(2);                                                     |
     120    1   1  |LOOP3:    READ FILE(SORTOUT) INTO(HOLDN);                                  |
     121    1   1  |          READ FILE(SORTOUT) INTO(HOLDD);                                  |
     122    1   1  |LOOP4:    READ FILE(SORTOUT) INTO(STRUCN);                                 |
     123    1   1  |          READ FILE(SORTOUT) INTO(STRUCD);                                 |
     124    1   1  |          IF IDN = STAIDN                                                  |
                   |               THEN DO;                                                    |
     125    1   2  |                  PUT SKIP(2);                                             |
     126    1   2  |                  DO WHILE(STAIDN=IDN);                                    |
     127    1   3  |                    PUT EDIT(HOLDN) (COLUMN(1),A(1),A(15),A(64));          |
     128    1   3  |                    PUT EDIT(HOLDD) (COLUMN(1),A(1),A(15),A(64));          |
     129    1   3  |                    HOLDN= STRUCN;                                         |
     130    1   3  |                    HOLDD= STRUCD;                                         |
     131    1   3  |                    IDLAST = STAIDN;                                       |
     132    1   3  |                    READ FILE(SORTOUT) INTO(STRUCN);                       |
     133    1   3  |                    READ FILE(SORTOUT) INTO(STRUCD);                       |
     134    1   3  |                  END;                                                     |
     135    1   2  |                  PUT EDIT(HOLDN) (COLUMN(1),A(1),A(15),A(64));            |
     136    1   2  |                  PUT EDIT(HOLDD) (COLUMN(1),A(1),A(15),A(64));            |
     137    1   2  |                  HOLDN = STRUCN;                                          |
     138    1   2  |                  HOLDD = STRUCD;                                          |
     139    1   2  |                  GO TO LOOP4;                                             |
     140    1   2  |               END;                                                        |
     141    1   1  |               ELSE DO;                                                    |
     142    1   2  |                  HOLDN = STRUCN;                                          |
     143    1   2  |                  HOLDD = STRUCD;                                          |
     144    1   2  |                  GO TO LOOP4;                                             |
     145    1   2  |               END;                                                        |
     146    1   1  |          END;                                                             |
     147    1   0  |EOJ:      IF IDLAST = IDN THEN DO;                                         |
     148    1   1  |               PUT EDIT(HOLDN) (COLUMN(1),A(1),A(15),A(64));              |
     149    1   1  |               PUT EDIT(HOLDD) (COLUMN(1),A(1),A(15),A(64));              |
     150    1   1  |          END;                                                             |
     151    1   0  |          CLOSE FILE(SORTOUT);                                            |
     152    1   0  |          PUT EDIT('UPDATE HAS BEEN SUCCESSFUL', 'PROCESSING COMPLETED-')|
                   |               (PAGE,A,SKIP(2),A);                                        |
```

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PL/I OPTIMIZING COMPILER          FXFINDX:      PROC OPTIONS(MAIN);

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     153    1   0   |          PUT EDIT('NUMBER OF RECORDS IN THE FINDEX FILE = ',CNTR)
                    |               (A,F(5));
     154    1   0   |LAST:     END FXFINDX;
```