ARIZONA DEPARTMENT OF TRANSPORTATION

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CONSTRUCTION OFFICE AUTOMATION VOLUME II

Final

Prepared by:
Toby Martin
Tony Kreider
Max High
Rudolf Kolaja
Arizona Department of Transportation
206 So. 17th Ave
Phx., AZ 85007

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Prepared for:
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, Arizona 85007
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16. ABSTRACT

This research project was aimed at increasing the productivity of construction, office, and laboratory functions. Application of microcomputer procedures in highway construction has replaced existing manual procedures for construction progress estimate processing and material test computations.

The project has enhanced the information flow to project engineers, area engineers, district engineers and headquarter managers in an efficient manner. It has developed a total microcomputer hardware/software configuration that enables interfacing with the mainframe computer. The existing field office personnel can operate each of the systems with less than one week training of each system.

The final report of this study is divided into three volumes:

Volume I. - Final Report
Volume II. - Construction Progress Estimate Manual
Volume III. - Construction Material Testing Manual

Volume I - Final Report describes the system hardware selection process and the development, implementation, training, conclusions, and recommendations for each of the Construction Progress Estimate and Construction Material Testing systems.

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CONSTRUCTION PROGRESS ESTIMATES
INTRODUCTION

I

THIS MANUAL OUTLINES THE PROCEDURES FOR USING THE DEPARTMENT'S CONSTRUCTION PROGRESS ESTIMATES (CPE) PROGRAM USED TO COMPILE AND CHECK THE PAYMENT OF CONTRACT ITEMS ON CONSTRUCTION PROJECTS USING A MICRO-COMPUTER WITH THE OFFICE LOGS CPE DATABASE. IT IS INTENDED TO PROVIDE A SYSTEM ANALYSIS AS WELL AS A USERS MANUAL FOR USE BY CONSTRUCTION PERSONNEL AT ALL LEVELS.

CHAPTER 1 PRESENTS A LOOK AT CONSTRUCTION PROJECT OFFICE LOGS IN GENERAL AND GIVES AN OVERVIEW OF THE CPE MICROCOMPUTER METHOD.

CHAPTER 2 DESCRIBES THE PROCEDURES OF DOWNLOADING PROJECTS FROM THE MAIN FRAME, AND DETAILS THE "BUILD" PROCESS TO ADD ELEMENTS THAT MAY NOT BE IN THE DATA DOWNLOADED FROM THE MAIN FRAME, OR TO BUILD A PROJECT THAT MAY NOT BE ABLE TO BE DOWNLOADED.

CHAPTER 3 DISCUSSES "TRANSACTIONS" OR THE CREDITING OF PAYMENT (OR TIME) TO THE PROJECT.

CHAPTER 4 PROVIDES THE MEANS TO OBTAIN "REPORTS" FOR THE VARIOUS ELEMENTS OF THE TRANSACTIONS CREDITED TO THE PROJECT.

CHAPTER 5 DESCRIBES THE "UTILITIES" THAT ARE AVAILABLE TO CHANGE OR ALTER THE DATA PREVIOUSLY ENTERED. CARE SHOULD BE EXCERCISED IN USING THESE PROCEDURES. INEXPERIENCED OPERATORS ARE CAUTIONED TO USE OTHER PROCEDURES WHENEVER POSSIBLE TO CORRECT ENTRIES IN ERROR, SUCH AS BY ENTERING NEGATIVE OR COUNTER-BALANCING ENTRIES.

CHAPTER 6 OUTLINES THE INSTALLATION OF UPDATED VERSIONS OF THE CPE PROGRAM.

CHAPTER 7 DESCRIBES THE PROCEDURES TO ENSURE THAT PREVIOUSLY STORED INFORMATION IS NOT LOST IN THE EVENT OF ELECTRICAL OR MECHANICAL FAILURES WITHIN THE SYSTEM.

CHAPTER 8 ELABORATES ON THE METHODS AND PROCEDURES FOR SENDING ESTIMATES PREPARED BY THE CPE PROGRAM TO THE MAIN FRAME COMPUTER SYSTEM.

APPENDICES A THROUGH C DISCUSS THE FOLLOWING:

+ TRAINING FOR THE CPE UTILIZATION,
+ DOCUMENTATION OF THE PROGRAMMING OF THE SYSTEM,
+ PARAMETERS SET FOR THE MODEM COMMUNICATIONS.

CONSTRUCTION PROGRESS ESTIMATES

MICROCOMPUTER METHOD

TABLE OF CONTENTS

II

CHAPTER/SECTION

1 OVERVIEW

.1 INTRODUCTION
.2 APPLICATIONS
.3 DATABASE ORGANIZATION

2 BUILD -- CREATING THE PROJECT "TREE"

.1 INTRODUCTION
.2 DOWNLOADING FROM THE MAIN FRAME
.3 BUILDING THE PROJECT RECORD
.4 BUILDING THE SECTION RECORD
.5 BUILDING THE ITEM RECORD
.6 BUILDING THE SUB-ITEM RECORD
.7 BUILDING THE STRUCTURE RECORD
.8 BUILDING THE FORCE ACCOUNT RECORD
.9 BUILDING THE CHANGE ORDER RECORD
.10 BUILDING THE FISCAL VARIANCE RECORD
.11 EDITING THE BUILD RECORDS
.12 BUILDIGN STAKED QUANTITY RECORDS

3 TRANSACTIONS -- RECORDING CONTRACT PROGRESS

.1 INTRODUCTION
.2 PROGRESS PAYMENTS
.3 PARTIAL PAYMENTS
.4 TIME RECORDING
.5 TIME EXTENSIONS
.6 FORCE ACCOUNT TRANSACTIONS

4 REPORTING

.1 INTRODUCTION
.2 ITEM REPORT
.3 SUB-ITEM REPORT
.4 STRUCTURE REPORT
.5 FORCE ACCOUNT REPORT
.6 CHANGE ORDER AND FISCAL VARIANCE REPORT
.7 MONTHLY (PROGRESS) ESTIMATE
.8 FINAL BALANCE REPORT
.9 TRANSACTION DETAIL LOG
.10 DATA ANALYSIS

5 UTILITIES

.1 Introduction
.2 Connect Sub-Items to structures
.3 Sort Files
.4 Edit Files
.1 Edit Project Records
.2 Edit Section Records
.3 Edit Item Records
.4 Edit Sub-Item Records
.5 Edit Structure Records
.6 Edit Change Order or Fiscal Variance Records
.7 Edit Force Account Records
.5 Generate Missing Sub-Items

6 Installation and Update of the Program

7 Backup and Recovery Procedures

.1 Backup
.2 Recovery

8 Transmit Estimates to the Main Frame

APPENDIX

A Training Outline

B System Documentation

.1 Directories

.2 Program Modules

.3 Files and File Format

CONSTRUCTION PROGRESS ESTIMATE

CHAPTER 1 -- SYSTEM OVERVIEW

1.1 INTRODUCTION

UNTIL RECENTLY, DOCUMENTS FOR COMPILING ESTIMATE QUANTITIES FOR WORK IN PROGRESS WERE HANDWRITTEN USING FORMS IN A VARIETY OF FORMATS. AS OF LATE, THE COMPUTER HAS BECOME A RELIABLE SOURCE FOR THESE DOCUMENTS. THE OBJECTIVE OF ALL OFFICE LOG SYSTEMS IS BASICALLY:

TO PROVIDE A REALIBLE MEANS OF DOCUMENTING PAYMENTS TO BE MADE TO THE CONTRACTOR FOR WORK THAT HE HAS COMPLETED.

THE MICROCOMPUTER METHOD OF COMPILING CONSTRUCTION PROGRESS ESTIMATES DOES NOT CHANGE THE PRINCIPLES OF GOOD PROJECT DOCUMENTATION. IT CAN EVEN REDUCE THE EFFORT IN PROCESSING PROJECT INFORMATION.

1.2 APPLICATIONS

THE CPE MICROCOMPUTER METHOD BASICALLY PRODUCES THE SAME PROJECT DOCUMENTATION FORMS THAT WERE PROVIDED BY HANDWRITTEN PROCEDURES IN THE PAST. THIS FORMAT WAS ORIGINALLY PROVIDED TO FACILITATE THE CONVERSION TO THE COMPUTERIZED PROCEDURES WHILE AT THE SAME TIME FILLING THE NEEDS ESTABLISHED BEFORE THE CPE SYSTEM EXISTED. THE FOLLOWING ARE GUIDELINES AND SOME ADVANTAGES OF THE CPE SYTEM:

+ DAILY QUANTITIES ARE ENTERED AS THEY ARE REPORTED. THESE SHOULD REFLECT THE MEASUREMENTS FROM THE MISCELLANEOUS BOOK AND ARE REPORTED ON THE COMBINED DAILY DIARY AND QUANTITY REPORT FORMS.

+ STAKED QUANTITIES FROM CROSS-SECTION BOOKS AND OTHER FIELD MEASUREMENTS SHOULD BE MAINTAINED FOR COMPARISON TO PLANS AND REPORTED QUANTITIES.

+ PARTIAL OR INVENTORY PAYMENTS ARE AUTOMATICALLY REMOVED FROM THE INVENTORY DATABASE AS THE PROGRESS PAYMENT IS REPORTED FOR THAT ITEM.

+ SUPPLEMENTAL AGREEMENTS (CHANGE ORDERS AND FORCE ACCOUNTS) AS WELL AS FISCAL VARIANCE REPORTS ARE AUTOMATICALLY RECORDED BY THE SYSTEM. THE REVISED QUANTITIES/AMOUNTS OF RELATED ITEMS ARE ADJUSTED AND CROSS-REFERENCED.

+ FORMS SUCH AS THE WEEKLY TIME REPORT ARE NOW AVAILABLE FROM THE COMPUTER.

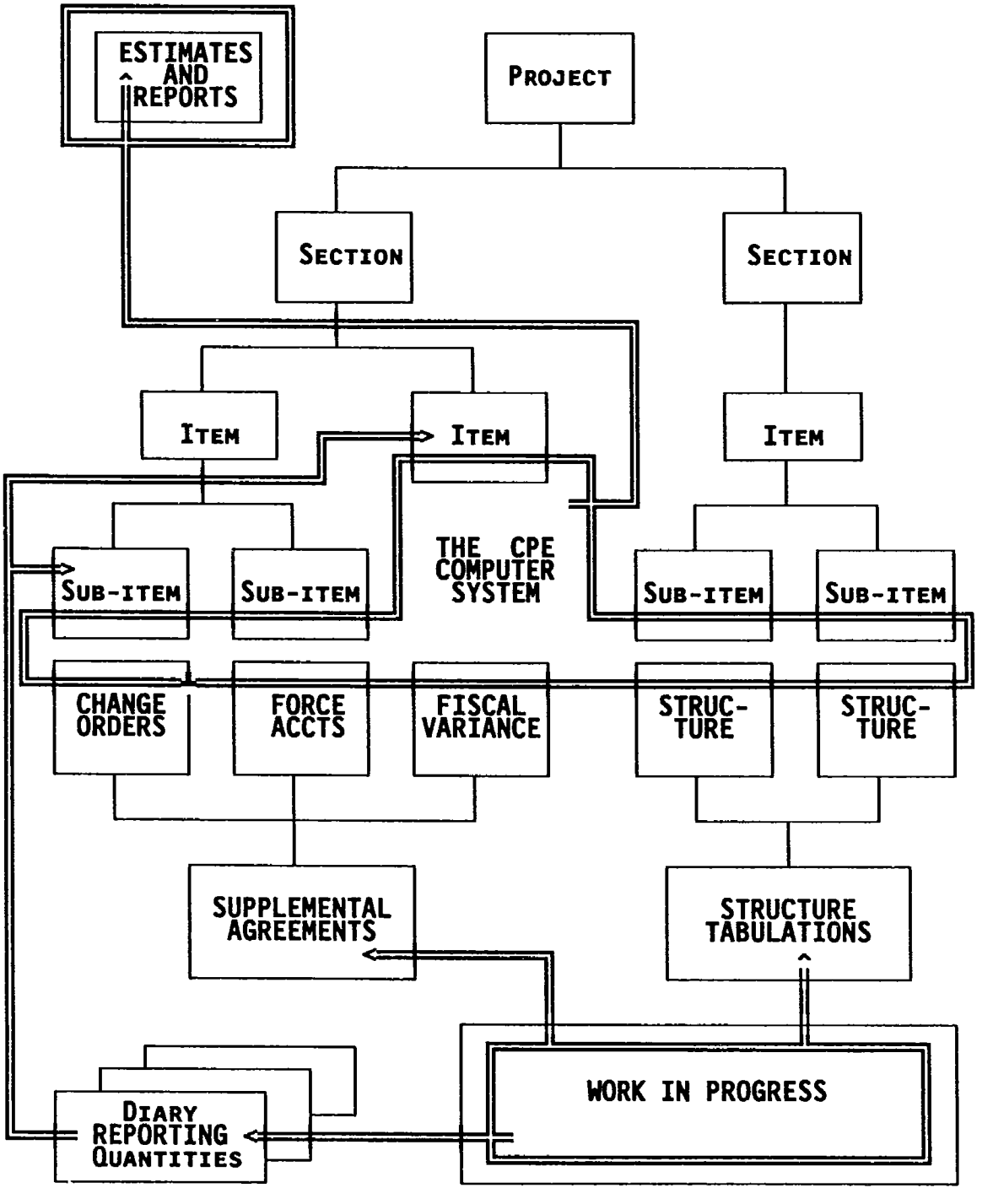
+ SUBITEMS MAY BE ESTABLISHED SUCH THAT DISCRETE ELEMENTS OF CERTAIN ITEMS CAN BE IDENTIFIED BY THE LOCATION OR DESCRIPTION THAT IS SHOWN ON THE PLANS. THE LOCATION/DESCRIPTION OF VARIOUS ELEMENTS OF THE WORK THAT ARE DETERMINED FROM THE "TAKEOFFS" OF THE ITEMS CAN SUPPLY A PRECISE DEFINITION WHICH CAN BE ENTERED IN THE SUBITEM BASE FOR TRACKING BY THE COMPUTER. IN GENERAL, HOWEVER, ONLY MAJOR ITEMS OR ITEMS WITH FEW ELEMENTS SHOULD BE BROKEN DOWN THIS WAY SINCE THIS BREAKDOWN MAY BE VERY TIME CONSUMING AND REPEAT THE EFFORT EXPENDED IN PREPARING MISCELLANEOUS BOOKS.

+ "TAKEOFFS" SHOULD BE MADE ON ALL QUANTITIES ON EACH PROJECT. THESE SHOULD BE PREPARED IN CONJUNCTION WITH THE MISCELLANEOUS BOOKS AND THE BOOKS SHOULD HAVE THE LOCATION/DESCRIPTION COMPLETED AS DETERMINED FROM THE TAKEOFFS ON ITEMS WITH DISCRETE AND WELL DEFINED ELEMENTS OF THE WORK.

1.3 DATA BASE ORGANIZATION

THE CENTRAL CORE OF THE CPE DATA BASE CONSISTS OF TRANSACTION RECORDS THAT ARE USED TO MONITOR THE CONTRACT WORK AS IT IS ACCOMPLISHED. EACH PROJECT IS BROKEN DOWN INTO ELEMENTS OF SECTIONS, ITEMS, AND FINALLY SUBITEMS WHERE NECESSARY. THE SUPPLEMENTAL AGREEMENTS ARE SET UP TO MODIFY THE ORIGINAL WORK ELEMENTS, AND THE STRUCTURE RECORDS CONNECT GROUPS OF ITEMS THAT HAVE A LOGICAL RELATIONSHIP. THE CPE SYSTEM ACCEPTS TRANSACTIONS FROM DIARY REPORTS AND OFFICE COMPUTATIONS, AND SORTS THEM ACCORDING TO THE ITEM THEY RELATE TO, AND PROVIDES A SERIES OF REPORTS FOR EACH PROJECT INCLUDING PROGRESS AND FINAL ESTIMATE REPORTS AND TIME REPORTS THAT ARE TIMELY AND ACCURATE FOR SUBMITTAL TO FIELD REPORTS. THIS IS SHOWN IN THE FOLLOWING DIAGRAM.

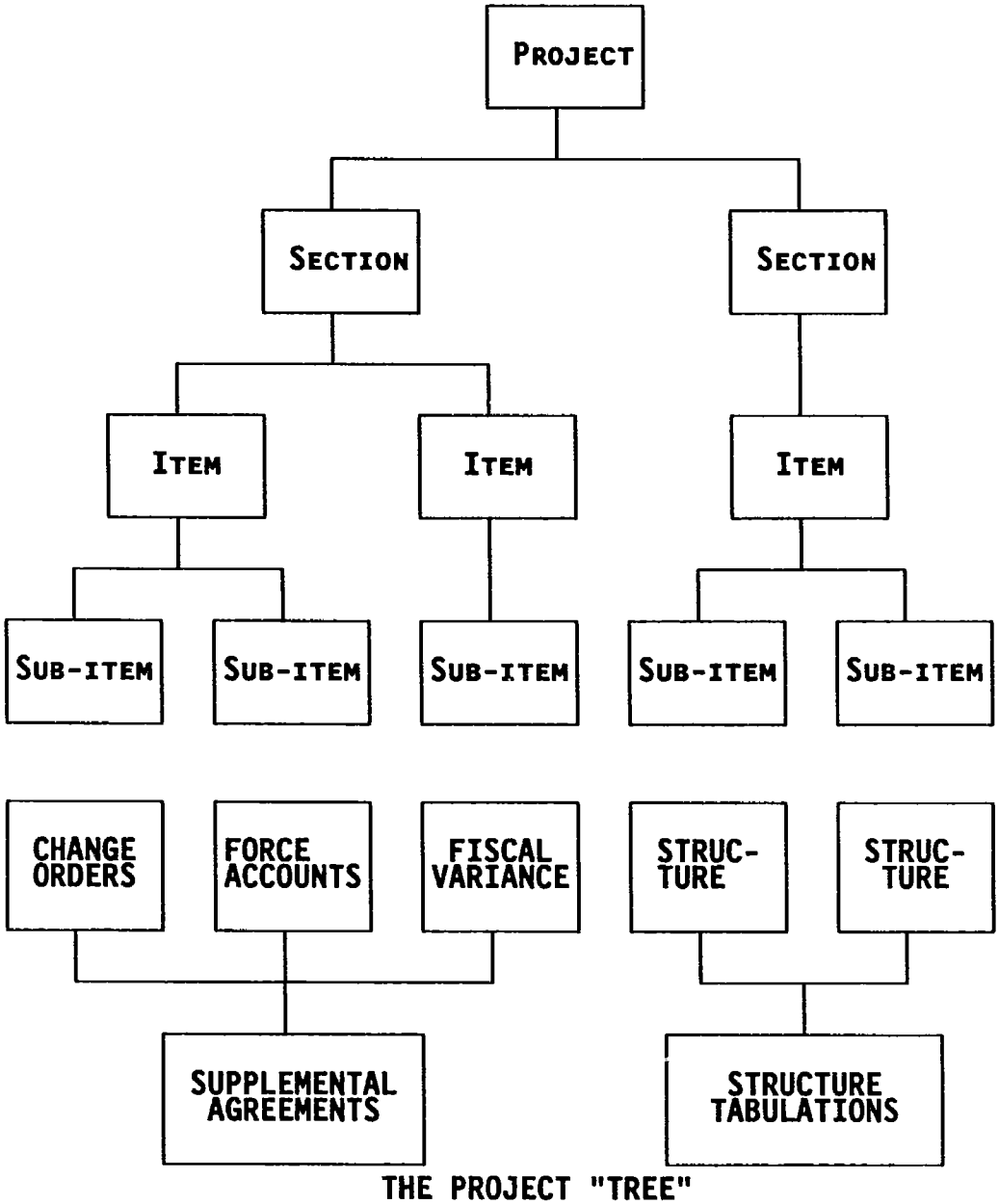
DATABASE ORGANIZATION



CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 2 -- BUILD: CREATING THE PROJECT "TREE"

CERTAIN DATA NECESSARY TO COMPLETE THE PROJECT "TREE" IS NOT TRANSMITTED FROM THE MAINFRAME, AND SOME PROJECTS MAY NEED TO BE CREATED IN THE FIELD. THIS CHAPTER DEALS WITH DOWNLOADING FROM THE MAINFRAME, AND ADDING OR "BUILDING" THOSE COMPONENTS THAT MIGHT NOT BE PROVIDED INCLUDING A COMPLETE PROJECT IF NECESSARY.



THE PROJECT "TREE"

CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 2 -- BUILD: DOWNLOADING AND CREATION

2.1 INTRODUCTION

MOST PROJECT DATA WILL BE PROVIDED BY DOWNLOADING FROM THE MAIN FRAME, AS DESCRIBED IN THE INSTRUCTIONS THAT IMMEDIATELY FOLLOW. THE REMAINDER OF THE CHAPTER WILL ADDRESS METHODS TO BUILD OR CREATE AN ENTIRE PROJECT FROM "SCRATCH" SHOULD DOWNLOADING NOT BE POSSIBLE, USING THE DOCUMENTATION FROM THE CONTRACT.

2.2 DOWNLOADING FROM THE MAINFRAME

TO RECEIVE A NEW PROJECT FROM THE MAIN COMPUTER YOU FIRST ENTER THE "OFFICE LOGS" MENU BY SELECTING THE APPROPRIATE NUMBER ON THE MAIN MENU.

```
ARIZONA DEPARTMENT OF TRANSPORTATION
                MENU

1* OFFICE LOGS      (CPE PROGRAM)
2. MATERIALS LOGS   (CMT PROGRAM)
3. CEMMS            (MANPOWER MANAGEMENT)
4. PROCOM           (COMMUNICATIONS)
5. LOTUS            (SPREAD SHEET)
6. DBASE 3+         (DATA BASE PROGRAM)
7. MULTIMATE        (WORD PROCESSING)
8. SURVEY           (SURVEY, DRAFTSMAN, CADD)
9. MENU 2 (TAPE BACKUP, ORG CHART, UTLTS.)
   *(NOS. MAY BE FUNCTION OR F-NUMBERS)

SELECT THE NUMBER OF THE OPTION YOU WANT
(OR SELECT THE FUNCTION KEY ON SOME MENUS)
>
```

SCREEN IMAGE 2.1

SCREEN IMAGE 2.1 IS THE OPERATING SYSTEM SCREEN AND THE FIRST IMAGE THAT APPEARS TO AN OPERATOR AFTER STARTING THE COMPUTER. THE OPERATOR SHOULD TYPE THE NUMBER (1) (OR USE THE APPROPRIATE FUNCTION KEY) TO ENTER THE CPE PROGRAM.

NOW GO TO THE RECEIVE PROJECT ROUTINE BY PRESSING F4 WHILE THE FOLLOWING MENU IS ON THE SCREEN.

```
DATE: 11-01-1989          ADOT OFFICE LOGS (VSN 3.13)

NO. PROJECT NUMBER        DESCRIPTION

 1  BP 037-2-505          JUNCTION U.S. 160-NORTH
 2  BRZ-984(19)P          MCCOY BRIDGE
 3  F 026-1-930           TRAFFIC SIGNALS

              ENTER PROJECT NO.? _____

F1=NEXT PAGE* F2=PREV PAGE F3=SEND ESTMTS  F4=RECEIVE  PROJ F5=QUIT
```

* SINCE THE SCREEN WILL ONLY DISPLAY 12 PROJECTS, MORE THAN 12 PROJECTS WILL BE DISPLAYED ON THE NEXT PAGE OR SCREEN, AND F1 & F2 WILL PAGE OR "SCROLL" THROUGH THEM.

THE RECEIVE PROJECT MENU IS THEN DISPLAYED:

```
06-14-1989            ADOT OFFICE LOGS          (VSN 3.13)

                  RECEIVE NEW PROJECT

                  1 = REQUEST NEW PROJECT LOG
                  2 = REQUEST NEW PROJECT
                  3 = RECEIVE DATA
                  0 = RETURN TO SELECT PROJ MENU
                ESC = ESCAPE

                  ENTER OPTION ?
```

OPTION 1 SETS UP YOUR COMPUTER TO RECEIVE THE ADOT PROJECT LOG CONTAINING ALL PROJECTS AVAILABLE THROUGHOUT THE STATE. ONCE YOU RECEIVE THESE YOU WILL SELECT THE PROJECT YOU WISH TO RECEIVE OR DOWNLOAD FROM THIS LOG.

OPTION 2 WILL ALLOW YOU TO SELECT A PARTICULAR PROJECT FROM THE "PROJECT LOG" TO DOWNLOAD FROM THE MAINFRAME.

OPTION 3 SHOULD BE USED WHEN YOU HAVE REQUESTED A PROJECT FROM THE MAINFRAME, AND IT IS NOT RECEIVED. THE DOWNLOAD IS OCCASIONALLY INTERRUPTED, AND THEREFORE THIS OPTION SHOULD BE SELECTED EVERY FEW WEEKS TO "CLEAR" THE SYSTEM. IF NOTHING IS DOWNLOADED AFTER GOING THROUGH THIS PROCEDURE, THEN THE SYSTEM WAS CLEAR. IF YOU SHOULD RECEIVE ANYTHING DURING THIS "CLEARING" PROCESS, KEEP REPEATING THIS PROCESS UNTIL NO FURTHER DATA IS RECEIVED.

AFTER SELECTING OPTION 1 ON THE PREVIOUS PAGE THE FOLLOWING INSTRUCTION SCREEN APPEARS.

*** READ THESE INSTRUCTIONS CAREFULLY-SINCE THEY WILL DISAPPEAR ***

1. MAKE SURE THE [TLK] KEY ON THE MODEM IS DEPRESSED.

2. PRESS THE [ENTER] KEY! (INSTRUCTIONS NOW DISAPPEAR)

3. CALL THE MAIN COMPUTER AT PHONE NO. 255-7852
   OR 255-7631

4. WHEN YOU GET THE TONE, QUICKLY:

   A. PRESS AND RELEASE THE [TLK] KEY

   B. HANG UP THE TELEPHONE.

IF YOU CANNOT GET LOGGED ON THEN PRESS THE F10 KEY AND YOU WILL RETURN TO THE MASTER MENU.

* {DO A PRINTSCREEN (SHIFT, PRTSC) AND POST NEARBY}

IF YOU DON'T GET THE TONE THE FIRST TIME YOU DIAL, TRY AGAIN. IF YOU GET THE TONE BUT THE REQUEST IS NOT SENT, YOU MAY TRY AGAIN, BUT FIRST TRY OPTION 3 ON THE "RECEIVE NEW PROJECT" MENU. (YOU MAY HAVE TO USE THE F-10 FUNCTION KEY TO BREAK OUT OF THE RECEIVE MODE.)

YOU WILL KNOW THAT THE REQUEST HAS BEEN SENT TO THE MAIN COMPUTER WHEN THE SCREEN DISPLAYS THE FOLLOWING. AT THE SAME TIME, THE PRINTER PRINTS OUT A THE HASP MESSAGE AS SEEN BELOW THE DISPLAY.

```
    *** RJE COMMAND PROCESSOR VERSION 3.5 ***
(C) COPYRIGHT, 1982 WILMOT SYSTEMS INC ALL RIGHTS RESERVED

T SIGNON1                        TRANSMITTING
G
T NULLFILE
E
T QUERYLOG.JCL
G
T NULLFILE
P                                WAITING/COMPLETE     *
E
T SIGNON2                        TRANSMITTING
G
T NULLFILE
P                                WAITING/COMPLETE     *
R RECEIVE.DAT                    WAITING/COMPLETE     **
E
T NULLFILE
G
T SIGNOFF                        TRANSMITTING
C TEST-FIL
```

* AT THIS POINT THE COMPUTER WILL PAUSE, AND WILL SOON RESUME BY PRINTING OUT A HASP MESSAGE SIMILAR TO:

```
8.38.49 JOB 6040 $HASP100 D4001U    ON R15.RD1  ET-000009.....
```

** AT THIS POINT THE COMPUTER WILL AGAIN PAUSE FOR 2 TO 3 MINUTES. THE SCREEN WILL THEN DISPLAY THE LINES THAT FOLLOW THE "RECEIVE.DAT" LINE ABOVE. NOW THE COMPUTER WILL SIMULTANEOUSLY RECEIVE THE PROJECT LOG REPORT INTERNALLY, AND AUTOMATICALLY PRINT THE REPORT USING A PROGRAM NAMED JOL-LOG. THIS LOG WILL SHOW ALL PROJECTS THAT ARE CURRENTLY AVAILABLE TO BE DOWNLOADED.

IF THE COMPUTER TAKES TOO MUCH TIME TO SEND THE PROJECT LOG REPORT, YOU CAN INTERRUPT THE PROGRAM BY PRESSING THE F10 KEY. SOME TIME LATER YOU MAY RECEIVE THE REPORT BY AGAIN GOING TO THE "RECEIVE PROJECT" MENU AND USING OPTION 3 "RECEIVE DATA" AS PREVIOUSLY DESCRIBED. YOU MAY NEED TO REPEAT THE "RECEIVE PROJECT LOG" STEP IF THE DATA DOES NOT DOWNLOAD.

NOW, RETURN TO THE "RECEIVE NEW PROJECT" MENU BY INPUTTING F4 ON THE PROJECT MENU AS BEFORE.

```
06-14-1989              ADOT OFFICE LOGS          (VSN 3.13)

                  RECEIVE NEW PROJECT

                    1 = REQUEST NEW PROJECT LOG
                    2 = REQUEST NEW PROJECT
                    3 = RECEIVE DATA
                    0 = RETURN TO SELECT PROJ MENU
                  ESC = ESCAPE

                      ENTER OPTION ?
```

WHEN YOU CHOOSE OPTION 2 THE LIST OF AVAILABLE PROJECTS APPEARS:

```
SELECT PROJECT TO DOWNLOAD -   TO REVIEW CURRENT LOG:

CODE      PROJECT DESCRIPTION                TIME      DATE

171153    SQUAW CREEK - BLACK CANYON         07:28:55  02/04/89
0351924    BURRO CREEK                        15:34:08  03/07/89
#171159    PHX CORDES HWY-SUNSET POINT        09:15:22  03/08/89

[^]=UP [V]=DOWN [SPACE]=TOGGLE(#) [ENTER]=COMPLETE  [ESC]=ABORT
```

USE YOUR LOG PRINTOUT TO HELP LOCATE THE PROJECT OR PROJECTS YOU NEED TO DOWNLOAD. WHEN YOU FIRST ENTER THIS MENU, THE SCREEN WILL DISPLAY THE FIRST PROJECTS ENTERED IN THE DATA BASE. IN ORDER TO FIND THE MOST RECENT PROJECTS ENTERED ON THE LOG, PRESS THE UP ARROW KEY ONCE. THE LOG IS "HOOKED" BEGINNING TO END, SO THE LAST (OR THE MOST RECENTLY ENTERED) PROJECTS ARE "ABOVE" THE OLDEST ONES (THE ONES THAT FIRST APPEAR ON THE SCREEN,) AND PRESSING THE "UP ARROW" KEY ROTATES THE LOG BACK TO THE CURRENT PROJECTS WITHOUT HAVING TO PAGE FORWARD THROUGH ALL OF THE OLD PROJECTS THAT ARE LISTED. USING THE UP/DOWN ARROW KEYS YOU CAN MOVE THE HIGHLIGHTED AREA UP AND DOWN. WHEN THE HIGHLIGHTING IS AT THE PROJECT YOU WANT TO REQUEST, SELECT IT BY PRESSING THE SPACE BAR. A (#) SIGN WILL BE DISPLAYED NEXT TO THAT PROJECT. IF YOU SELECT A PROJECT BY MISTAKE, YOU MAY "UN"-SELECT IT BY PRESSING THE SPACE BAR AGAIN.

ONCE YOU HAVE CHOSEN WHICH PROJECT YOU WANT TO REQUEST, BY "TOGGLING" OR "SELECTING" WITH THE SPACE BAR, THEN PRESS "ENTER."

THE INSTRUCTION SCREEN FOR DIALING WILL BE DISPLAYED AGAIN AS IT WAS FOR RECEIVING THE PROJECT LOG.

ONCE THE TELEPHONE DIALING INSTRUCTIONS ARE DISPLAYED, USE THE SAME DIRECTIONS THAT ARE GIVEN FOR "RECEIVING A PROJECT LOG," INCLUDING THE USE OF OPTION 3 IF NECESSARY.

JUST AS WHEN REQUESTING A "PROJECT LOG," YOU WILL KNOW THAT THE REQUEST HAS BEEN SENT TO THE MAIN COMPUTER WHEN THE SCREEN DISPLAYS THE FOLLOWING. ONCE AGAIN, THE PRINTER ALSO PRINTS OUT THE HASP MESSAGE SHOWN BELOW.*

```
    *** RJE COMMAND PROCESSOR VERSION 3.5 ***
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T SIGNON1                    TRANSMITTING
G
T NULLFILE
E
T REQPROJ.JCL***
G
T NULLFILE
P                            WAITING/COMPLETE    *
E
T SIGNON2                    TRANSMITTING
G
T NULLFILE
P                            WAITING/COMPLETE    *
R RECEIVE.DAT                WAITING/COMPLETE    **
E
T NULLFILE
G
T SIGNOFF                    TRANSMITTING
C TEST-FIL
```

* AT THIS POINT THE COMPUTER WILL PAUSE, AND WILL SOON RESUME BY PRINTING OUT A HASP MESSAGE SIMILAR TO:

```
8.38.49 JOB 6040 $HASP100 D4001U    ON R15.RD1  ET-000009.....
```

** AT THIS POINT THE COMPUTER WILL AGAIN PAUSE FOR 2 TO 3 MINUTES. THE SCREEN WILL THEN DISPLAY THE LINES THAT FOLLOW THE DOUBLE ASTERISKS ABOVE. NOW THE COMPUTER WILL SIMULTANEOUSLY RECEIVE THE PROJECT DATA INTERNALLY USING A PROGRAM NAMED "JOL-DWN," AND AUTOMATICALLY PRINT OUT A DETAIL LOG OF THE PROJECT INFORMATION. THIS LOG WILL SHOW WHAT ITEMS AND SECTIONS HAVE BEEN BUILT INTO THE DATA BASE.

*** THIS LINE IS THE ONLY DIFFERENCE BETWEEN THE "PROJECT LOG" SCREEN, AND THE "REQUEST PROJECT" SCREEN.

AS BEFORE, IF THE COMPUTER TAKES TOO MUCH TIME TO SEND THE PROJECT INFORMATION, YOU CAN INTERRUPT THE PROGRAM BY PRESSING THE F10 KEY. SOME TIME LATER YOU MAY RECEIVE THE REPORT BY AGAIN GOING TO THE "RECEIVE PROJECT" MENU AND USING OPTION 3 "RECEIVE DATA" AS PREVIOUSLY DESCRIBED.

ONCE THE PROJECT HAS BEEN SUCCESSFULLY ENTERED, THE SCREEN WILL LIST AN ASSIGNED PROJECT NUMBER.

BEFORE YOU ARE ABLE TO USE THIS NEW PROJECT, YOU NEED TO USE THE BUILD ROUTINES THAT FOLLOW TO:

1. FILL IN MISSING INFORMATION ON THE PROJECT RECORD.
2. BUILD STRUCTURE RECORDS.

PROGRAMMING

MANY OF THE SAME PROGRAMS USED FOR SENDING ESTIMATES ARE USED FOR RECEIVING NEW PROJECTS. ONLY THE PROGRAMS NOT SHOWN IN THE APPENDIX WILL BE DOCUMENTED HERE.

THE EMDAT.PRE3 FILE (OR PROGRAM) CALLS ONE OF THE FOLLOWING:

EMFIL.QRY	REQUEST PROJECT-LOG COMMAND FILE
EMFIL.PRJ	REQUEST NEW PROJECT COMMAND FILE

JCL FILES THAT ARE USED TO DIRECT MAIN COMPUTER PROCESSING ARE

QUERYLOG.JCL	REQUEST PROJECT LOG
REQPROJ.JCL	REQUEST NEW PROJECT

EMFIL.QRY LISTING

```
T SIGNON1
G
T NULLFILE
E
T QUERYLOG.JCL
G
T NULLFILE
P
E
T SIGNON2
G
T NULLFILE
P
R RECEIVE.DAT
E
T NULLFILE
G
T SIGNOFF
C TEST-FIL
```

EMFIL.PRJ LISTING

```
T SIGNON1
E
E REQPROJ.JCL
G
T NULLFILE
P
E
T SIGNON2
G
T NULLFILE
P
R RECEIVE.DAT
E
T NULLFILE
G
T SIGNOFF
C TEST-FIL
```

REQPROJ.JCL PROGRAM

```
//DD001D   JOB (1000,XXXX,38,08),'DI250860L D00D oooo',
//         MSGCLASS=A
/*ROUTE  PRINT RMTRR
//STEP1  EXEC PGM=CS250860
//STEPLIB  DD DSN=CS250.P.LOADLIB,DISP=SHR
//SYSPRINT DD SYSOUT=A
//MICRO    DD DSN=&&JOL,DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600),
//         DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(10,5))
//HOST     DD DSN=DI250.P.HPPPPPPP(0),DISP=SHR
//ITEMS    DD DSN=&&ITEMS,DISP=(,PASS),UNIT=SYSDA,SPACE=(TRK,(10,5)),
//         DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//SECTS    DD DSN=&&SECTS,DISP=(,PASS),UNIT=SYSDA,SPACE=(TRK,(10,5)),
//         DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//DESCRS   DD DSN=&&DESCR,DISP=(,PASS),UNIT=SYSDA,SPACE=(TRK,(10,5)),
//         DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//ERROR    DD SYSOUT=A,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330)
//STEP2    EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSUT1   DD *,DCB=BLKSIZE=3600
 >>>>> PLACE ACTION CODE HERE = NEWPROJ
//         DD DSN=&&JOL,DISP=(OLD,DELETE)
//         DD *,DCB=BLKSIZE=3600
 <<<<< END OF DATA
//SYSUT2   DD SYSOUT=A,DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//SYSIN    DD DUMMY
```

SYMBOLIC REFERENCES

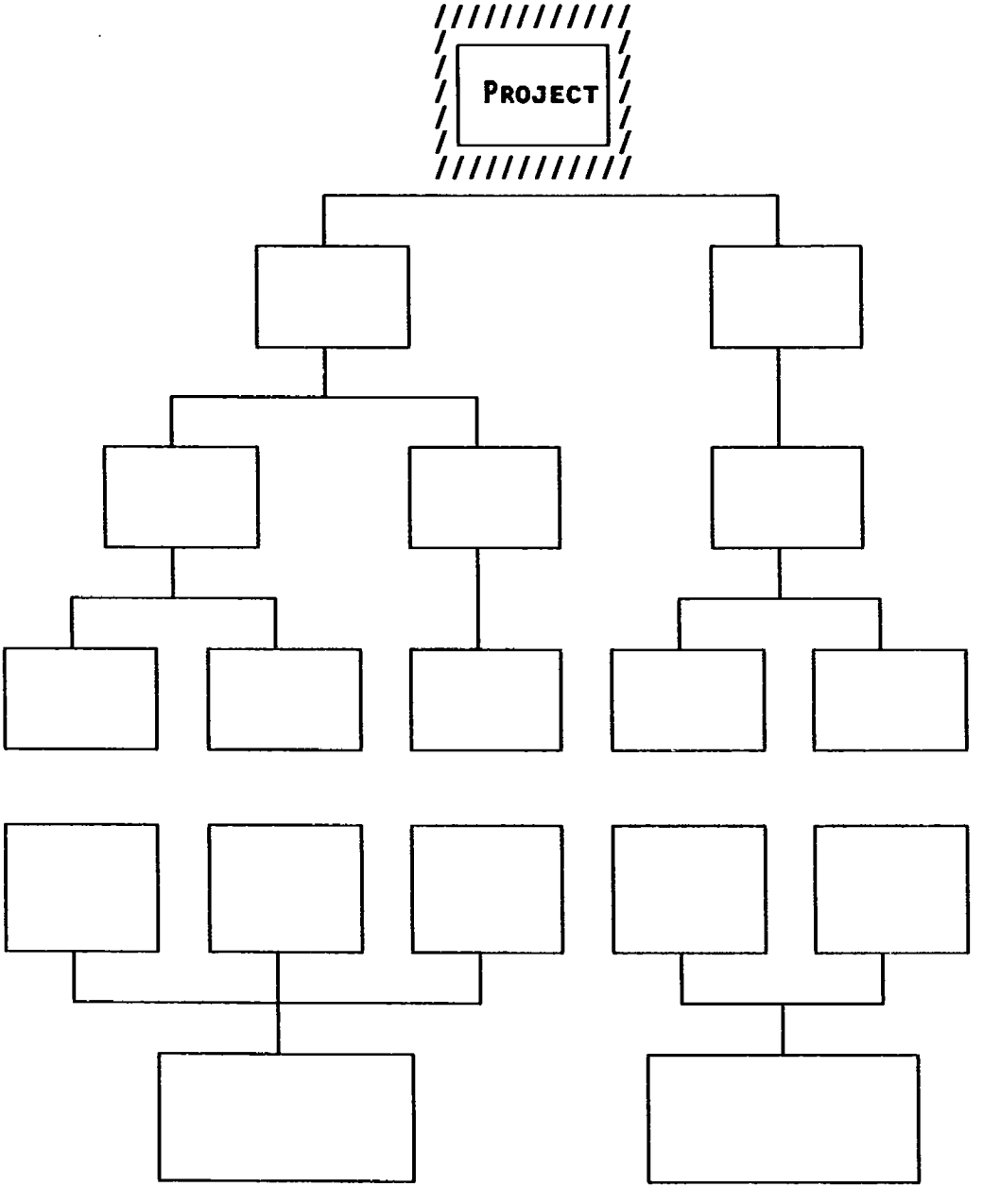
```
D       = DISTRICT NUMBER
OOOO    = ORG NUMBER
RR      = REMOTE NUMBER
PPPPPPP = PROJECT CODE
XXXX    = DISTRICT WORK ORDER
```

AFTER THE JOB-LOG OR NEW PROJECT IS RECEIVED INTO THE RECEIVE.DAT FILE, IT IS TESTED FOR ACTION CODE.

IF THE DATA IS A JOB-LOG THEN THE PROGRAM JOL-LOG IS CALLED. THIS PROGRAM PLACES THE LOG IN THE FILE JOL-LOG.DAT.

IF THE DATA IS A NEW PROJECT THEN THE PROGRAM JOL-DWN IS CALLED. THIS PROGRAM PLACES THE LOG IN THE FIRST EMPTY SLOT OF THE OFFICE LOG PROGRAM AND ALSO PRODUCES A PRINT-OUT OF THE DATA.

2.3 BUILDING THE PROJECT RECORD



THE FIRST RECORD TO BE CREATED IS THE PROJECT RECORD WHICH CONTAINS GENERAL INFORMATION ABOUT THE PROJECT.

PROJECT NUMBER
PROJECT CODE
PROJECT DESCRIPTION
ADOT FUND CODE
ADOT ORG CODE
CONTRACT DAYS
CONTRACT AMOUNT
CONTRACTOR NAME
ENGINEER-IN-CHARGE
CONTRACT START DATE

THE INFORMATION REQUIRED TO CREATE THE PROJECT RECORD IS AVAILABLE IN THE FOLLOWING DOCUMENTS AT THE PROJECT OFFICE:

CONTRACTOR'S SIGNED PROPOSAL
PRE-PRINT PROGRESS AND FINAL PAYMENT REPORT

```
ARIZONA DEPARTMENT OF TRANSPORTATION
                MENU

1* OFFICE LOGS      (CPE PROGRAM)
2. MATERIALS LOGS   (CMT PROGRAM)
3. CEMMS            (MANPOWER MANAGEMENT)
4. PROCOM           (COMMUNICATIONS)
5. LOTUS            (SPREAD SHEET)
6. DBASE 3+         (DATA BASE PROGRAM)
7. MULTIMATE        (WORD PROCESSING)
8. SURVEY           (SURVEY, DRAFTSMAN, CADD)
9. MENU 2 (TAPE BACKUP, ORG CHART, UTLTS.)
   *(NOS. MAY BE FUNCTION OR F-NUMBERS)

SELECT THE NUMBER OF THE OPTION YOU WANT
(OR SELECT THE FUNCTION KEY ON SOME MENUS)
>
```

SCREEN IMAGE 2.1

SCREEN IMAGE 2.1 IS THE OPERATING SYSTEM SCREEN AND THE FIRST IMAGE THAT APPEARS TO AN OPERATOR AFTER STARTING THE COMPUTER. THE OPERATOR SHOULD TYPE THE NUMBER (1) (OR USE THE APPROPRIATE FUNCTION KEY) TO ENTER THE CPE PROGRAM.

```
DATE: 11-01-1989          ADOT OFFICE LOGS   (VSN 3.13)

NO. PROJECT NUMBER        DESCRIPTION

 1  BP 037-2-505          JUNCTION U.S. 160-NORTH
 2  BRZ-984(19)P          MCCOY BRIDGE
 3  F 026-1-930           TRAFFIC SIGNALS

                    ENTER PROJECT NO.? ___
```

SCREEN IMAGE 2.2

SCREEN IMAGE 2.2 IS THE FIRST SCREEN WITHIN THE CPE SYSTEM. THE QUESTION ASKED OF THE OPERATOR IS "WHAT PROJECT ARE WE GOING TO WORK ON?". ENTER THE PROJECT NUMBER (1,2,3..99) ASSOCIATED WITH A LISTED PROJECT.

AFTER SELECTING THE PROJECT, THE NEXT QUESTION (SCREEN IMAGE 2.3) IS "WHICH MODULE -- BUILD, TRANSACTIONS OR REPORTS?". IN THIS CASE, WE ARE BUILDING A PROJECT RECORD AND CHOOSE OPTION (1).

```
DATE: 11-01-1989        ADOT OFFICE LOGS   (VSN 3.13)
NO: 2   PROJECT:        DESCRIPTION:

          OFFICE LOG ROUTINES

            1 = BUILD PROJECT RECORDS
            2 = TRANSACTIONS
            3 = REPORTS
            4 = UTILITY ROUTINES
            5 = SELECT ANOTHER PROJECT
            0 = QUIT
          ESC = ESCAPE

                ENTER OPTION ? 1
```

SCREEN IMAGE 2.3

NOTE THAT IN MOST OF THE SCREEN IMAGES THAT THE SPECIFIC VERSION NUMBER OCCURS IN THE UPPER RIGHT CORNER (VSN 3.13.) THIS NUMBER WILL CHANGE AS NEW VERSIONS ARE PROVIDED.

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:        DESCRIPTION:

              BUILD PROJECT ROUTINES

              1 = BUILD PROJECT RECORD
              2 = BUILD SECTION RECORD
              3 = BUILD ITEM RECORD
              4 = BUILD SUB-ITEM RECORD
              5 = BUILD STRUCTURE RECORD
              6 = BUILD FORCE ACCOUNT RECORD
              7 = BUILD CHANGE ORDER RECORD
              8 = BUILD FISCAL VARIANCE RECORD
              0 = RETURN TO MENU
            ESC = ESCAPE

              ENTER OPTION ?  __
```

SCREEN IMAGE 2.4

SCREEN IMAGE 2.4 ALLOWS THE OPERATOR TO CHOOSE WHICH RECORD IN THE FRAMEWORK WILL BE BUILT NEXT. IN OUR EXAMPLE WE WANT TO BUILD THE FIRST OR THE PROJECT RECORD: OPTION (1).

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)

                          BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                          ENTER THE FOLLOWING

PROJECT NUMBER            ..............................
PROJECT CODE              ........
DESCRIPTION OF PROJECT    ..............................
FUND CODE                 .....
ORG CODE                  ....
TOTAL CONTRACT DAYS       ....
TOTAL CONTRACT AMOUNT     .............
NAME OF CONTRACTOR        ....................
RESIDENT ENGINEER         ................
STARTING DATE             ........
COMPLETION DATE           ........

F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.5

SCREEN IMAGE 2.5 REPRESENTS THE PROJECT RECORD INPUT SCREEN. THE NEXT FEW PAGES WILL DESCRIBE HOW TO COMPLETE THIS RECORD.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
                                BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                                ENTER THE FOLLOWING
PROJECT NUMBER                  I-IG 40-3 (28)............
                                ..............
```

ENTER THE PROJECT NO. AS IT APPEARS ON THE PRE-PRINTED PROGRESS AND FINAL PAYMENT REPORT. THIRTY (30) CHARACTERS ARE ALLOWED.

```
                    ARIZONA DEPARTMENT OF TRANSPORTATION
                            DIVISION OF HIGHWAYS
                            AGREEMENT ESTIMATE &
                    PROGRESS AND FINAL PAYMENT REPORT

CONTRACTOR:  MM SUNDT CONSTRUCTION CO

PROJECT NUMBER          TERMINI                    LOCAT
I-IG  40-3( 28)         ASH FORK-FLAGSTAFF         WILLIAMS
COUNTY                  GROSS LENGTH               NET L
MOJAVE                     00.530                    00.5
```

THE PROJECT CODE IS A SPECIAL FORMAT OF THE NUMERIC VALUES IN THE PROJECT NUMBER. THIS NUMBER WILL BE PREASSIGNED FROM THE MAIN FRAME DOWNLOAD. REFER TO THE TABLE "PROJECT CODE FORMAT" TO DEFINE THE PROJECT CODE. EIGHT (8) CHARACTERS ARE ALLOWED.

```
DATE: 11-01-1989          ADOT OFFICE LOGS  (VSN 3.13)

                        BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                        ENTER THE FOLLOWING

PROJECT NUMBER            I-IG 40-3 (28)................
PROJECT CODE            ▒▒▒▒▒40 3 28▒▒▒▒▒
                          ........
```

TABLE FOR

PROJECT CODE FORMAT

Distribution Type Project Numbers	Example Coding	Format								
		R	R	R	S	S	P	P	P
Key:	I-8-1(13)P			8		1		1	3
R = Route #	I-10-2(1)N		1	0		2			1
S = Section #	F-022-1(131)P	0	2	2		1	1	3	1
P = Paren #	USG-351-415N	3	5	1			4	1	5
	HPR-1(3)P			1					3
	FLH-2(1)P			2					1
	S-900-202N	9	0	0			2	0	2
	S-SG-396(9)P	3	9	6					9
	U0-999(1)P	9	9	9					1
	HPR-1-1(001)P			1		1	0	0	1

DATE: 11-01-1989 ADOT OFFICE LOGS (VSN 3.13)

BUILD PROJECT RECORD

BUILDING PROJECT NUMBER 2

ENTER THE FOLLOWING

PROJECT NUMBER I-IG 40-3 (28).....
PROJECT CODE 40 3 28
DESCRIPTION OF PROJECT WILLIAMS FREEWAY, UNIT II...
.....

ENTER THE LOCATION/TERMINI OF THE PROJECT AS IT APPEARS ON THE PRE-PRINTED ESTIMATE FORM AS THE DESCRIPTION OF PROJECT. THIRTY (30) CHARACTERS ARE AVAILABLE (SOME ABBREVIATION MAY BE NECESSARY, AND DESCRIPTIONS THAT ARE DOWNLOADED MAY NEED TO BE FITTED TO THE SPACE.)

ARTMENT OF TRANSPORTATION

ISION OF HIGHWAYS

EEMENT ESTIMATE & DATE: 09/22/89

ND FINAL PAYMENT REPORT

LOCATION	FUND CODE	ITEM NO
(WILLIAMS INTERSTATE FREEWAY, UNIT II)	82514	0586

NET LENGTH	PREPARED BY	TYPE OF WORK
00.530	RGD	EXPAND RAMPS

DATE: 11-01-1989 ADOT OFFICE LOGS (VSN 3.13)

BUILD PROJECT RECORD

BUILDING PROJECT NUMBER 2

ENTER THE FOLLOWING

PROJECT NUMBER	I-IG 40-3 (28).....
PROJECT CODE	40 3 28
DESCRIPTION OF PROJECT	WILLIAMS FREEWAY, UNIT II.....
FUND CODE	82514
	.....

ENTER THE FUND CODE AS IT APPEARS ON THE PRE-PRINTED ESTIMATE FORM. FIVE (5) CHARACTERS ARE ALLOWED.

ARTMENT OF TRANSPORTATION

ISION OF HIGHWAYS

EEMENT ESTIMATE & DATE: 09/22/89

ND FINAL PAYMENT REPORT

LOCATION	FUND CODE	ITEM NO
(WILLIAMS INTERSTATE FREEWAY, UNIT II)	82514	0586

NET LENGTH	PREPARED BY	TYPE OF WORK
00.530	RGD	EXPAND RAMPS

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

                                 BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                               ENTER THE FOLLOWING

PROJECT NUMBER                     I-IG 40-3 (28)................
PROJECT CODE                        40 3 28
DESCRIPTION OF PROJECT             WILLIAMS FREEWAY, UNIT II....
FUND CODE                          82514
ORG CODE                          ▒▒4441▒▒
                                    ....
```

ENTER THE ORG CODE OF THE UNIT WITH PRIMARY RESPONSIBILITY FOR ADMINISTERING THE CONTRACT. FOUR (4) CHARACTERS ARE ALLOWED.

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

                                 BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                               ENTER THE FOLLOWING

PROJECT NUMBER                     I-IG 40-3 (28)................
PROJECT CODE                        40 3 28
DESCRIPTION OF PROJECT             WILLIAMS FREEWAY, UNIT II.....
FUND CODE                          82514
ORG CODE                           4441
TOTAL CONTRACT DAYS               ▒▒310▒▒
                                    ....
```

ENTER THE TOTAL CONTRACT DAYS AS IT APPEARS IN THE SIGNED CONTRACTOR'S PROPOSAL (FROM THE EXECUTED SPECIAL PROVISIONS.) THIS IS ON THE PAGE THAT THE CONTRACTOR SIGNS NEAR THE BID SCHEDULE.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

                              BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                            ENTER THE FOLLOWING

PROJECT NUMBER                  I-IG 40-3 (28)................
PROJECT CODE                     40 3 28
DESCRIPTION OF PROJECT          WILLIAMS FREEWAY, UNIT II.....
FUND CODE                       82514
ORG CODE                        4441
TOTAL CONTRACT DAYS             310.
TOTAL CONTRACT AMOUNT          ▒▒10444917.00▒▒
                                ............
```

ENTER THE TOTAL CONTRACT AMOUNT FROM THE LAST SHEET OF THE PRE-PRINTED ESTIMATE (PROJECT TOTAL.) FOURTEEN (14) CHARACTERS ARE AVAILABLE. DO NOT USE COMMAS.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

                              BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                            ENTER THE FOLLOWING

PROJECT NUMBER                  I-IG 40-3 (28)................
PROJECT CODE                     40 3 28
DESCRIPTION OF PROJECT          WILLIAMS FREEWAY, UNIT II.....
FUND CODE                       82514
ORG CODE                        4441
TOTAL CONTRACT DAYS             310.
TOTAL CONTRACT AMOUNT           10444917.00...
NAME OF CONTRACTOR             ▒▒M.M. SUNDT CONST. CO▒▒
                                ....................
```

ENTER THE NAME OF CONTRACTOR FROM THE PRE-PRINTED ESTIMATE ABOVE, (SHEET 1.) TWENTY (20) CHARACTERS ARE AVAILABLE. ABBREVIATION MAY BE NECESSARY.

```
                    PROGRESS AND FINAL PAYMENT REPORT

CONTRACTOR:▒▒MM SUNDT CONSTRUCTION CO.▒▒

PROJECT NUMBER          TERMINI                        LOCAT
 I-IG  40-3( 28)     ASH FORK-FLAGSTAFF             WILLIAMS

COUNTY                  GROSS LENGTH                   NET L

MOJAVE                     00.530                      00.5
```

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

                                 BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                              ENTER THE FOLLOWING

PROJECT NUMBER                    I-IG 40-3 (28)................
PROJECT CODE                       40 3 28
DESCRIPTION OF PROJECT            WILLIAMS FREEWAY, UNIT II.....
FUND CODE                         82514
ORG CODE                          4441
TOTAL CONTRACT DAYS               310.
TOTAL CONTRACT AMOUNT             10444917.00..
NAME OF CONTRACTOR                M.M. SUNDT CONST. CO
RESIDENT ENGINEER                 JOHN WACHTER..
                                  .......
```

ENTER THE NAME OF THE RESIDENT ENGINEER RESPONSIBLE FOR ADMINISTRATION OF THE CONTRACT AS SHOWN ABOVE.

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

                                 BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                              ENTER THE FOLLOWING

PROJECT NUMBER                    I-IG 40-3 (28)................
PROJECT CODE                       40 3 28
DESCRIPTION OF PROJECT            WILLIAMS FREEWAY, UNIT II.....
FUND CODE                         82514
ORG CODE                          4441
TOTAL CONTRACT DAYS               310.
TOTAL CONTRACT AMOUNT             10444917.00..
NAME OF CONTRACTOR                M.M. SUNDT CONST. CO
RESIDENT ENGINEER                 WACHTER........
STARTING DATE                     04/09/89
                                  ........
MM = MONTH                        MM DD YY
DD = DAY
YY = YEAR
```

ENTER THE NUMERIC VALUES FOR THE DATE THE CONTRACTOR STARTED WORK, NOT THE OFFICIAL START DATE. THE (/) CHARACTER WILL BE SUPPLIED BY THE COMPUTER DURING ENTRY.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

                              BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                             ENTER THE FOLLOWING

PROJECT NUMBER                  I-IG 40-3 (28)................
PROJECT CODE                     40 3 28
DESCRIPTION OF PROJECT          WILLIAMS FREEWAY, UNIT II.....
FUND CODE                       82514
ORG CODE                        4441
TOTAL CONTRACT DAYS             310.
TOTAL CONTRACT AMOUNT           10444917.00..
NAME OF CONTRACTOR              M.M. SUNDT CONST. CO
RESIDENT ENGINEER               WACHTER........
STARTING DATE                   04/19/84
COMPLETION DATE                 ........
```

LEAVE THE COMPLETION DATE BLANK UNTIL THE FINAL ESTIMATE. AT THAT TIME ENTER THE DATE IN THE SAME FORMAT AS THE STARTING DATE.

IT IS NOW TIME TO REVIEW THE INFORMATION DISPLAYED ON THE SCREEN. ANY ERRORS DETECTED IN ANY FIELD CAN BE CORRECTED AT THIS TIME. SIMPLY MOVE THE CURSOR WITH THE "ARROW" KEYS TO DESIRED LOCATION AND TYPE OVER AS REQUIRED. AFTER YOU ARE SATISFIED WITH THE RESULTS, THE RECORD CAN BE SAVED USING THE F1 FUNCTION KEY.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

                              BUILD PROJECT RECORD
BUILDING PROJECT NUMBER 2
                             ENTER THE FOLLOWING

PROJECT NUMBER                  I-IG 40-3 (28)................
PROJECT CODE                     40 3 28
DESCRIPTION OF PROJECT          WILLIAMS FREEWAY, UNIT II.....
FUND CODE                       82514
ORG CODE                        4441
TOTAL CONTRACT DAYS             310.
TOTAL CONTRACT AMOUNT           10444917.00..
NAME OF CONTRACTOR              M.M. SUNDT CONST. CO
RESIDENT ENGINEER               WACHTER........
STARTING DATE                   04/19/81
COMPLETION DATE                 ........


F1=SAVE  F2=DELETE  F3=MENU
```

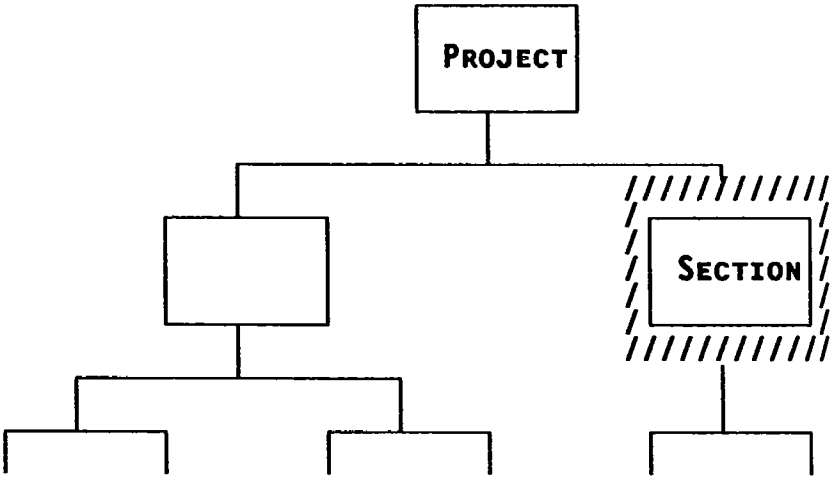
THREE FUNCTION OPTIONS ARE DEFINED AT THE BOTTOM OF THE SCREEN:

F1 = SAVE — THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.

F2 = DELETE — THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, BUT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE ENTIRE PROJECT FROM THE COMPUTER. USE WITH CAUTION.

F3 = MENU — THIS FUNCTION WILL IGNORE ENTRIES ON THE SCREEN AND RETURN THE PROGRAM TO SCREEN IMAGE 2.4.

2.4 BUILDING THE SECTION RECORD



SOME CONSTRUCTION PROJECTS ARE DIVIDED IN SECTIONS THAT CORRESPOND TO SEPARATE AND DISTINCT FUNDING SOURCES. WHEN MULTIPLE SECTIONS ARE REQUIRED, THE INDIVIDUAL SECTIONS AND RELATED ITEMS ARE SEPARATED ON THE PRE-PRINT ESTIMATE. THE INFORMATION REQUIRED TO CREATE THE SECTION RECORD IS:

SECTION NUMBER
SECTION CODE
FHWA CODE
SECTION DESCRIPTION
TOTAL SECTION AMOUNT

IN SOME CASES THE PRE-PRINTED ESTIMATE WILL INDICATE ONLY ONE SECTION. THIS MAY OCCUR IF THE COMPLETE PROJECT IS FROM ONE FUNDING SOURCE. IF THE PRE-PRINTED ESTIMATE ONLY INDICATES ONE SECTION, THEN ALL YOU MUST DO IS DETERMINE IF THE PROJECT IS A FEDERAL AID PROJECT OR A NON-FEDERAL AID PROJECT.

IF THERE IS A PARENTHESIS SOMEWHERE IN THE LAST FEW DIGITS IN THE PROJECT NUMBER, IT IS A FEDERAL AID PROJECT.

FIRST, FOLLOW THE PROCEDURES GIVEN FOR "BUILDING THE PROJECT RECORD" TO GET TO THE "BUILD PROJECT ROUTINES" MENU (IMAGE 2.4.) (ALL SECTION INFORMATION SHOULD BE DOWNLOADED WHEN RECEIVING A PROJECT FROM THE MAINFRAME.)

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:        DESCRIPTION:

              BUILD PROJECT ROUTINES

              1 = BUILD PROJECT RECORD
              2 = BUILD SECTION RECORD
              3 = BUILD ITEM RECORD
              4 = BUILD SUB-ITEM RECORD
              5 = BUILD STRUCTURE RECORD
              6 = BUILD FORCE ACCOUNT RECORD
              7 = BUILD CHANGE ORDER RECORD
              8 = BUILD FISCAL VARIANCE RECORD
              0 = RETURN TO MENU
            ESC = ESCAPE

                ENTER OPTION ?  __
```

SCREEN IMAGE 2.4

BY ENTERING THE SECTION SELECTION (2,) WE HAVE THE FOLLOWING:

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BUC

                        BUILD SECTION RECORD

                      ENTER THE FOLLOWING

SECTION NUMBER                  ..
SECTION CODE                    ...
FHWA CODE                       ....
SECTION DESCRIPTION             ..............................
TOTAL SECTION AMOUNT            .............

F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.6

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BU
                              BUILD SECTION RECORD
                           ENTER THE FOLLOWING

SECTION NUMBER                      1
                                    .
```

ENTER A SEQUENTIAL NUMBER (1,2...99) FOR EACH SECTION AS WE HAVE DONE ABOVE. FROM THE MONEY SUMMARY OF PROGRESS & FINAL PAYMENT REPORT (THE SECOND SHEET OF THE PRE-PRINT,) THE SECTIONS ON THE PROJECT WILL BE LISTED IN THE UPPER LEFT HAND CORNER AS FOLLOWS:

```
                    MONEY SUMMARY OF PROGRESS A
SECTION
****************************************
 01  =  FA     I000
 02  =  FA     Y080
 03  =  FA     X010
 04  =  NFA    X020
 05  =  NFA    X030
```

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BUC

                              BUILD SECTION RECORD

                           ENTER THE FOLLOWING

SECTION NUMBER                      1.
SECTION CODE                        FA
                                    ..
```

SINCE THERE IS A PARENTHESIS IN THE PROJECT NUMBER, WE KNOW THIS IS A FEDERAL AID PROJECT (FA). SINCE THERE ARE MORE THAN ONE SECTION, THERE MAY BE BOTH FA AND NON-FA SECTIONS, AND WE MUST DETERMINE THE CODE BASED ON THE INFORMATION FROM OUR SUMMARY SHEET AS SHOWN ABOVE. THE FIRST SECTION, AS WE CAN SEE, IS AN FA OR FEDERAL AID SECTION AS ENTERED ABOVE.

IN MOST CASES, ALL SECTION INFORMATION IS ENTERED IN THE DOWNLOAD FROM THE MAIN FRAME COMPUTER. ADDED SECTIONS, OR PROJECTS THAT MUST BE HAND ENTERED, MUST FOLLOW THE PRE-PRINT SECTION ORDER THAT WILL BE GIVEN ON THE PRE-PRINT MONEY SUMMARY SHEET SIMILAR TO WHAT IS SHOWN ABOVE.

As you can see, the FHWA CODE is also given on this sheet to the right of the SECTION CODE. Enter this number in the appropriate area as in the following example. The Pre-Print will have these codes and also a section description at the top of the various pages of each section.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BU

                          BUILD SECTION RECORD

                        ENTER THE FOLLOWING

SECTION NUMBER                  1.
SECTION CODE                    FA.
FHWA CODE                      ▒I000▒
                                ....
```

In the case of projects that are non federal aid with no SECTION identification leave the FHWA CODE blank.

If the section is <u>NON FEDERAL AID OR FEDERAL AID, AND IS FOR STRUCTURES OVER 20 FEET, THERE MUST BE AN FHWA CODE ASSIGNED THAT BEGINS WITH THE LETTER "X"</u> as seen in the previous section. So, if the project was not downloaded (downloaded projects should already have "X" numbers) then assign consecutive FHWA CODES to each structure over 20' a number such as X010, X020, X030, etc.

```
DATE: 11-01-1985                ADOT OFFICE LOGS  (VSN 2.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-B

                          BUILD SECTION RECORD
                        ENTER THE FOLLOWING

SECTION NUMBER                  1.
SECTION CODE                    FA.
FHWA CODE                       I000
SECTION DESCRIPTION             ROADWAY.......................
                                .......
```

ENTER THE SECTION DESCRIPTION LISTED NEAR THE TOP OF THE PAGES OF EACH SECTION ON THE PRE-PRINTED ESTIMATE. SHOULD THE DESCRIPTION BE TOO LONG, OR NOT BE LISTED AS IN THE CASE OF SINGLE SECTIONS, THEN USE ONE OF THE DESCRIPTIONS LISTED BELOW. THIRTY (30) CHARACTERS ARE AVAILABLE SO SOME ABBREVIATION MAY BE NECESSARY FROM THE PRE-PRINT.

THE FOLLOWING DESCRIPTIONS ARE GENERALLY SUFFICIENT TO DESCRIBE THE VAST MAJORITY OF WORK TO BE ACCOMPLISHED.:

ROADWAY	LANDSCAPE
STRUCTURES OVER 20'	EROSION CONTROL
TRAFFIC SIGNALS	IRRIGATION FACILITIES
HIGHWAY LIGHTING	

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BU

                          BUILD SECTION RECORD

                        ENTER THE FOLLOWING

SECTION NUMBER                  1.
SECTION CODE                    FA.
FHWA CODE                       I000
SECTION DESCRIPTION             ROADWAY.......................
TOTAL SECTION AMOUNT            ▒3728716.00▒.
                                ...........
```

NOW, ENTER THE TOTAL SECTION AMOUNT SHOWN AT THE END OF THE SECTION FROM THE PRE-PRINT. DO NOT USE COMMAS.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO:2   PROJECT:EACI-10-3(186)          DESCRIPTION:16TH ST.-BU

                          BUILD SECTION RECORD

                        ENTER THE FOLLOWING

SECTION NUMBER                  1.
SECTION CODE                    FA.
FHWA CODE                       I000
SECTION DESCRIPTION             ROADWAY.......................
TOTAL SECTION AMOUNT            3728716.00...



F1=SAVE  F2=DELETE  F3=MENU
```

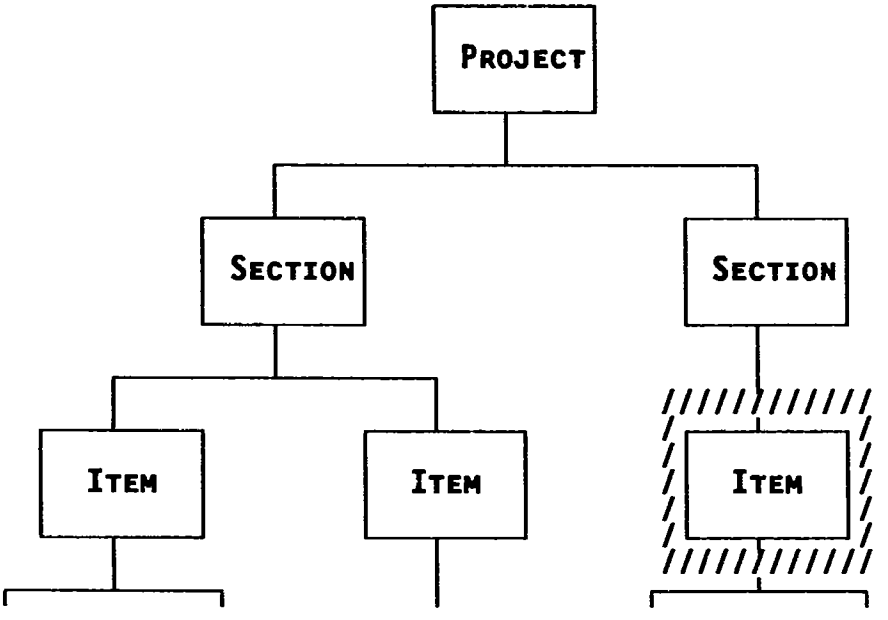
SCREEN IMAGE 2.6

IT IS NOW TIME TO REVIEW THE INFORMATION DISPLAYED ON THE SCREEN. ANY ERRORS DETECTED IN ANY FIELD CAN BE CORRECTED AT THIS TIME. SIMPLY MOVE THE CURSOR WITH THE "ARROW" KEYS TO THE DESIRED LOCATION AND TYPE OVER AS REQUIRED. AFTER CORRECTING ANY ERRORS, THE RECORD CAN BE SAVED.

THREE FUNCTION OPTIONS ARE DEFINED AT THE BOTTOM OF THE SCREEN:

F1 = SAVE	THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.
F2 = DELETE	THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, BUT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE ENTIRE SECTION FROM THE COMPUTER. USE WITH CAUTION.
F3 = MENU	THIS FUNCTION WILL IGNORE ENTRIES ON THE SCREEN AND RETURN THE PROGRAM CONTROL TO A MENU OF OPTIONS.

2.5 BUILDING THE ITEM RECORD



THE ITEM RECORD MARKS A MAJOR TRANSITION IN THE PROJECT "TREE". RECORDS ABOVE THE ITEM RECORD CONTAIN ONLY DOLLAR VALUES. RECORDS BELOW THE ITEM RECORD CONTAIN ONLY QUANTITY VALUES. AND, THE ITEM RECORD CONTAINS BOTH DOLLARS AND QUANTITIES.

THE INFORMATION REQUIRED TO CREATE AN ITEM RECORD IS

ITEM IDENTIFICATION
DESCRIPTION
UNIT OF MEASURE
PLANS QUANTITY
UNIT PRICE

THE BUILD ITEM RECORD SCREEN IS REACHED BY SELECTING OPTION 3 FROM THE BUILD PROJECT ROUTINES MENU.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:                          DESCRIPTION:

                    BUILD PROJECT ROUTINES

                    1 = BUILD PROJECT RECORD
                    2 = BUILD SECTION RECORD
                    3 = BUILD ITEM RECORD
                    4 = BUILD SUB-ITEM RECORD
                    5 = BUILD STRUCTURE RECORD
```

SCREEN IMAGE 2.4

THE FIRST SCREEN YOU WILL ENCOUNTER WILL PROVIDE THE QUESTION -

ENTER SECTION (1 TO 99) ? ___

ENTER THE SECTION NUMBER AND HIT ENTER (ANY OPTION THAT REQUIRES MORE THAN ONE DIGIT REQUIRES USING THE ENTER KEY TO ACTIVATE.)

NEXT THE FOLLOWING SCREEN WILL PROVIDE SPACE FOR THE ITEM ID NUMBER, A DESCRIPTION, THE UNIT (L.SUM, FT. ETC.,) QUANTITY, AND UNIT PRICE. THESE MAY ALL BE FILLED IN AT ONCE.

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)       15:30:23
NO:1   PROJECT:I 40-4-705       DESCRIPTION:M: 244.3 TO 250.5 (ACFC)

SECTION:  1   CODE: FA I000   DESCRIPTION: ROADWAY

                    ENTER THE FOLLOWING ITEM VALUES

ITEM ID  DESCRIPTION                UNIT    QUANTITY     UNIT PRICE



4010013. ASPHALT CEMENT (AC)(AR-4000).. TON... 347.... 91.00.......
.......  ............................   ...    ...      .....

F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.7

ENTER THE ITEM RECORD VALUES DIRECTLY FROM THE PRE-PRINTED ESTIMATE SHEETS. THE ORDER IS ARRANGED TO MATCH THE ORDER OF THE PRE-PRINT FOR EASE OF ENTRY.

FIELD NAME	DESCRIPTION
ITEM ID	ENTER THE ITEM NUMBER AS SHOWN ON THE PRE-PRINT OR THE CHANGE ORDER. CHECK CAREFULLY BEFORE SAVING. ITEM NUMBERS ARE DIFFICULT TO CORRECT.
DESCRIPTION	ENTER ITEM DESCRIPTION SHOWN ON THE ESTIMATE SHEET. THIRTY (30) CHARACTERS ARE ALLOWED SO ABBREVIATION MIGHT BE NECESSARY.
UNIT	ENTER THE UNITS SHOWN ON THE ESTIMATE SHEET. SIX CHARACTERS ARE AVAILABLE.
QUANTITY	ENTER THE QUANTIY AS SHOWN ON THE ESTIMATE SHEET. DO NOT USE COMMAS. ONLY (14) CHARACTERS ARE AVAILABLE.

UNIT PRICE — ENTER THE CONTRACT UNIT PRICE AS SHOWN ON THE ESTIMATE SHEET. DO NOT USE COMMAS OR ($). IT IS NOW TIME TO REVIEW THE INFORMATION DISPLAYED ON THE SCREEN. ANY ERRORS DETECTED IN ANY FIELD CAN BE CORRECTED AT THIS TIME. SIMPLY MOVE THE CURSOR WITH THE "ARROW" KEYS TO DESIRED LOCATION AND TYPE OVER AS REQUIRED. AFTER YOU ARE SATISFIED WITH THE RESULTS, THE RECORD CAN BE SAVED.

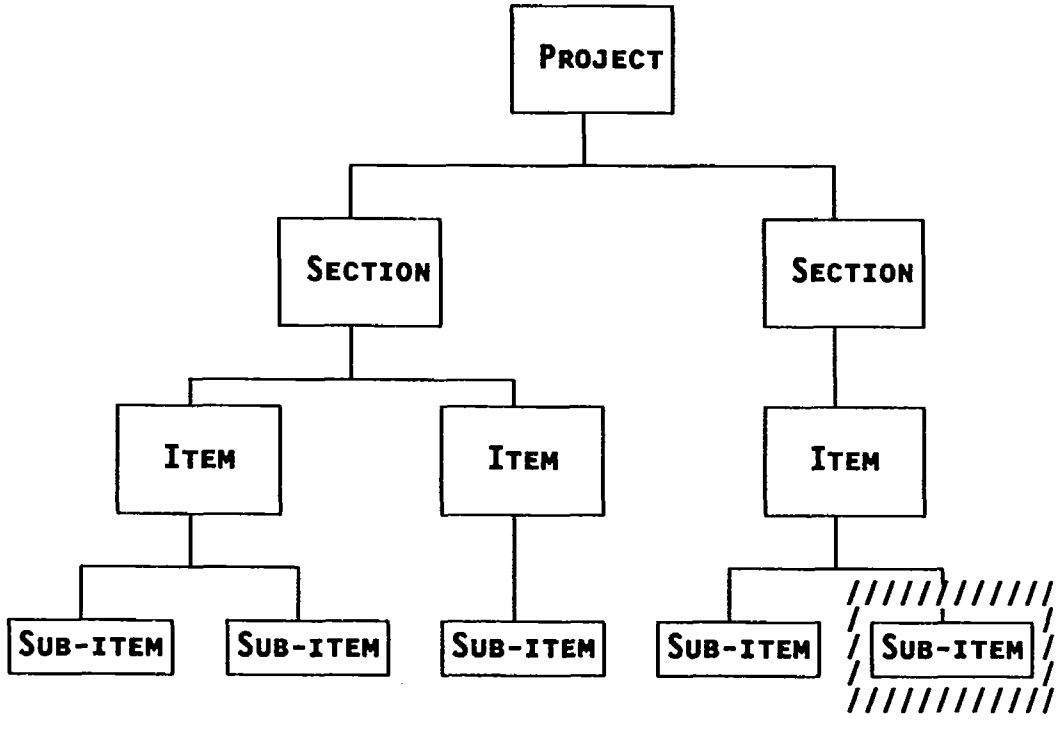
THREE FUNCTION OPTIONS ARE DEFINED AT THE BOTTOM OF THE SCREEN:

F1 = SAVE — THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.

F2 = DELETE — THIS FUNCTION DELETES A RECORD PREVIOUSLY SAVED. THE EFFECT WILL BE TO ERASE THE ENTIRE ITEM FROM THE COMPUTER. USE WITH CAUTION.

F3 = MENU — THIS FUNCTION WILL NOT SAVE CURRENT ENTRIES BUT WILL RETURN YOU TO THE PREVIOUS MENU.

2.6 BUILDING THE SUBITEM RECORD



THE SUB-ITEM RECORD IS THE LOWEST LEVEL RECORD IN THE PROJECT "TREE". THE PURPOSE OF THE SUB- ITEM RECORD IS TO IDENTIFY THE DISCRETE ELEMENTS OF AN ITEM. SOME EXAMPLES OF SUB-ITEMS WILL HELP EXPLAIN THEIR FUNCTION.

ITEM	SUB-ITEM
REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LOCATION/TYPE STA 246+/- REMOVE FENCE STA 330+/- REMOVE CATTLE GUARD ETC.
GUARD RAIL (STD. C-10)	STATION/DIRECTION/RDWY STA 1771+00 LT.W.B 50 L.FT. STA 1771+00 RT.W.B 75 L.FT.
STRUCTURE	STRUCTURE BACKFILL CONCRETE REINFORCING STEEL STRUCTURAL EXCAVATION

SOME ITEMS WILL REQUIRE SUBITEMS, AND MAY FACILITATE THE PAYMENT. THE COMPUTER AUTOMATICALLY CREATES A BALANCING SUBITEM FOR EACH ITEM WHEN IT IS DOWNLOADED, AND IF YOU CREATE AN ITEM, BY CHANGE ORDER OR BY ADDITION OF ANOTHER SORT, YOU CAN CREATE THIS BALANCING SUBITEM BY ENTERING THE "UTILITIY ROUTINES" IN THE FIRST CPE MENU (OFFICE LOGS ROUTINE) WHICH IS SCREEN IMAGE 2.3. THEN BY SELECTING "GENERATE MISSING SUBITEMS" THE MISSING BALANCING SUBITEMS ARE AUTOMATICALLY CREATED, WHICH SAVES THAT EXTRA STEP. WHEN YOU CREATE SUBITEMS, DON'T DELETE THE "0" OR BALANCING SUBITEM SINCE IT WILL AUTOMATICALLY BALANCE TO ZERO QUANTITY WHEN YOU USE THE "GENERATE MISSING SUBITEMS" FUNCTION AFTER YOU HAVE CREATED THE ITEM. THE "GENERATE MISSING SUBITEMS" ROUTINE SHOULD BE USED AFTER CREATING ANY ITEM OR SUBITEM AND AFTER CREATING A CHANGE ORDER ITEM.

```
*******************************************************
*              IF YOU PLAN ON USING THE               *
*                                                     *
*                STRUCTURE RECORD                     *
*                                                     *
*             DO SO BEFORE CREATING ANY               *
*                                                     *
*               SUBITEM RECORDS!!!!!                  *
*                                                     *
*        TURN THE PAGES TO THE NEXT SECTION:          *
*                                                     *
*     SECTION 2.7   BUILDING STRUCTURE RECORDS        *
*******************************************************
```

YOU SHOULD HAVE EITHER DEFINED AND CREATED ALL THE STRUCTURE RECORDS OR DETERMINED THAT STRUCTURE RECORDS ARE NOT REQUIRED.

THREE EXAMPLES WILL FOLLOW. THIS FIRST EXAMPLE EXPLAINS CREATING SUB-ITEM RECORDS THAT RELATE TO A STRUCTURE. THE SECOND EXAMPLE EXPLAINS CREATING SUB-ITEM RECORDS THAT ARE DISCRETE. THE THIRD EXAMPLE IS THE MORE COMMON USE WITHOUT SUBITEMS.

I-IG 40-3(28)	STRUCTURE SUMMARY (TAKE-OFF)	2 OF 5
STRUCT CODE	ITEM 5030055 STR CONC(S)(3000 PSI)	QUANTITY
L09A1	STR. 1909 ABUTMENT NO. 1	19.1
L09A2	STR. 1909 ABUTMENT NO. 2	19.1
L09AS	STR. 1909 APPROACH SLABS	46.7
L09SS	STR. 1909 SUPERSTRUCTURE	13.8
L10A1	STR. 1910 ABUTMENT NO. 1	19.1
L10A2	STR. 1910 ABUTMENT NO. 2	19.1
L10AS	STR. 1910 APPROACH SLABS	46.7
L10SS	STR. 1910 SUPERSTRUCTURE	13.8

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:                          DESCRIPTION:

                    BUILD PROJECT ROUTINES

                    1 = BUILD PROJECT RECORD
                    2 = BUILD SECTION RECORD
                    3 = BUILD ITEM RECORD
                    4 = BUILD SUB-ITEM RECORD
                    5 = BUILD STRUCTURE RECORD
                    6 = BUILD FORCE ACCOUNT RECORD
                    7 = BUILD CHANGE ORDER RECORD
                    8 = BUILD FISCAL VARIANCE RECORD
                    0 = RETURN

                    ENTER OPTION ?  _____
```

SCREEN IMAGE 2.4

THE NEXT EXAMPLE EXPLAINS CREATING SUB-ITEM RECORDS FOR ITEMS THAT ARE ALSO RELATED TO A STRUCTURE. THE FIRST STEP IS TO ADD THE STRUCTURE CODE TO A LIST OF SUB-ITEMS AS SHOWN ON THE PREVIOUS PAGE. THIS "TAKE-OFF" LIST WILL BE USED TO CREATE THE SUB-ITEMS.

THE SUB-ITEM SCREEN IS REACHED BY SELECTING OPTION 4 FROM THE BUILD PROJECT ROUTINES ABOVE.

```
DATE: 06-24-89                    ADOT OFFICE LOGS  (VSN 3.13)
NO.1    PROJECT:                          DESCRIPTION:

SECTION:   2     CODE: FA X281   DESCRIPTION: BRIDGES OVER

ENTER ITEM NUMBER ?  5030055
                     .......
```

ENTER THE ITEM NUMBER FOR STRUCTURAL CONCRETE: 5030055

```
DATE: 11-01-1989                  ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                          DESCRIPTION:

SECTION:  2   CODE: FA X281     DESCRIPTION: BRIDGES OVER 20

ITEM ID  DESCRIPTION             UNIT      QUANTITY  UNIT PRICE
5030055  STR CONC (S) (3000)     CU.YD.    841          250

                ENTER THE FOLLOWING SUB-ITEM VALUES

     ID         DESCRIPTION                          QUANTITY


    .....    ..............................    .............



F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.8

THE SUB-ITEM SCREEN THAT FOLLOWS WILL APPEAR

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                            DESCRIPTION:

SECTION:  2   CODE: FA X281     DESCRIPTION: BRIDGES OVER 20

ITEM ID  DESCRIPTION              UNIT      QUANTITY  UNIT PRICE
5030055  STR CONC (S) (3000)      CU.YD.    841          250

                 ENTER THE FOLLOWING SUB-ITEM VALUES

     ID          DESCRIPTION                          QUANTITY

  L09A1  ...............................    ..............
  .....
```

TYPE THE STRUCTURE CODE IN THE ID FIELD.

I-IG 40-3(28)	STRUCTURE SUMMARY (TAKE-OFF)		2 OF 5
STRUCT CODE	ITEM 5030055 STR CONC(S) (3000 PSI)		QUANTITY
L09A1	STR. 1909	ABUTMENT NO. 1	19.1
L09A2	STR. 1909	ABUTMENT NO. 2	19.1
L09AS	STR. 1909	APPROACH SLABS	46.7
L09SS	STR. 1909	SUPERSTRUCTURE	13.8
L10A1	STR. 1910	ABUTMENT NO. 1	19.1

MOVE THE CURSOR TO THE DESCRIPTION FIELD WITH THE <ENTER> KEY. IF THE COMPUTER FINDS A MATCH BETWEEN THE ID YOU JUST ENTERED AND A PREVIOUSLY SAVED STRUCTURE NO, THE DESCRIPTION FIELD WILL BE DISPLAYED FOR YOU. IF NO MATCH OCCURS AND YOU ARE SURE YOU HAVE THE CORRESPONDING STRUCTURE CODE SAVED, CHECK THE ID FOR SPELLING. AN (A) IS NOT THE SAME AS AN (A) AND SOME TYPISTS STILL USE AN (L) FOR A (1). LET'S NOW TYPE THE CORRECT NUMBER USING CAPS FROM THE ABOVE "TAKE-OFF".....

```
     ID          DESCRIPTION                          QUANTITY

  L09A1  ...............................    ..............
  .....
```

NOW, USING THE ENTER KEY WILL GENERATE THE DESCRIPTION, AND WE MAY ENTER THE QUANTITY FROM THE TAKEOFFS.....

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                           DESCRIPTION:

SECTION:  2   CODE: FA X281      DESCRIPTION: BRIDGES OVER 20

ITEM ID  DESCRIPTION             UNIT      QUANTITY  UNIT PRICE
5030055  STR CONC (S) (3000)     CU.YD.    841          250

                 ENTER THE FOLLOWING SUB-ITEM VALUES

     ID          DESCRIPTION                           QUANTITY


   L09A1     STA 879+ EB 1909 ABUTMENT #1..▒▒▒▒19.1▒▒▒▒.....
   .....     ............................       ....
```

TYPE IN THE QUANTITY FROM THE "TAKE-OFF" SHEETS (BELOW.)

I-IG 40-3(28)	STRUCTURE SUMMARY (TAKE-OFF)	2 OF 5
STRUCT CODE	ITEM 5030055 STR CONC(S) (3000 PSI)	QUANTITY
L09A1	STR. 1909 ABUTMENT NO. 1	▒▒19.1▒▒
L09A2	STR. 1909 ABUTMENT NO. 2	19.1
L09AS	STR. 1909 APPROACH SLABS	46.7
L09SS	STR. 1909 SUPERSTRUCTURE	13.8
L10A1	STR. 1910 ABUTMENT NO. 1	19.1

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                            DESCRIPTION:

SECTION:  2   CODE: FA X281     DESCRIPTION: BRIDGES OVER 20

ITEM ID  DESCRIPTION            UNIT      QUANTITY  UNIT PRICE
5030055  STR CONC (S) (3000)    CU.YD.    841           250

                ENTER THE FOLLOWING SUB-ITEM VALUES

     ID         DESCRIPTION                          QUANTITY


   L09A1    STA 879+ EB 1909 ABUTMENT #1..    19.1.........
   .....    ............................      ....



F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.8

IT IS NOW TIME TO REVIEW THE INFORMATION DISPLAYED ON THE SCREEN. ANY ERRORS DETECTED IN ANY FIELD CAN BE CORRECTED AT THIS TIME. SIMPLY MOVE THE CURSOR WITH THE "ARROW" KEYS TO DESIRED LOCATION AND TYPE OVER AS REQUIRED. AFTER YOU ARE SATISFIED WITH THE RESULTS, THE RECORD CAN BE SAVED.

THREE FUNCTION OPTIONS ARE DISPLAYED AT THE BOTTOM OF THE SCREEN:

F1 = SAVE	THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.
F2 = DELETE	THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, BUT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE ENTIRE SUB-ITEM FROM THE COMPUTER. USE WITH CAUTION.
F3 = MENU	THIS FUNCTION WILL IGNORE ENTRIES ON THE SCREEN AND RETURN THE PROGRAM CONTROL TO A MENU OF OPTIONS.

THE NEXT EXAMPLE EXPLAINS CREATING SUB-ITEM RECORDS FOR ITEMS THAT ARE DISCRETE BUT NOT RELATED TO A STRUCTURE. DISCRETE MEANS EACH ELEMENT CAN BE INDIVIDUALLY IDENTIFIED. THE FIRST STEP IS TO ADD THE SUB-ITEM ID TO A LIST OF THE SUB-ITEMS AS SHOWN BELOW.

THE SUB-ITEM ID CAN BE ANY CODE THAT HAS NOT ALREADY BEEN USED AS A STRUCTURE CODE AND IS UNIQUE FOR THAT ITEM. MINOR COST ITEMS AND ITEMS WITH MORE THAN A FEW DISCRETE ELEMENTS PROBABLY SHOULD BE ENTERED DIRECTLY TO THE ITEM USING THE "0" SUBITEM.

I-IG 40-3(28)	MISCELLANEOUS SUMMARY (TAKE-OFF)	12 OF 15
SUB-ITEM ID	ITEM 2020001 REMOV.STRUCT OBST.	QUANTITY
000	BALANCE	0*
001	HOUSE	0.5
002	BRIDGE	0.3
003	WALL	0.2
	TOTAL ITEM	1.0

* THIS IS BUILT FOR EACH ITEM - DO NOT DELETE, THE QUANTITY WILL BE AUTOMATICALLY REDUCED BY THE QUANTITIES OF ALL OTHER SUB-ITEMS YOU ADD WHEN YOU USE GENERATE MISSING SUBITEMS IN THE (P. 5-9)

THE SUB-ITEM SCREEN IS REACHED BY SELECTING OPTION 4 FROM THE BUILD PROJECT ROUTINES BELOW.

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO. 2   PROJECT:                          DESCRIPTION:

                    BUILD PROJECT ROUTINES

                    1 = BUILD PROJECT RECORD
                    2 = BUILD SECTION RECORD
                    3 = BUILD ITEM RECORD
                    4 = BUILD SUB-ITEM RECORD
                    5 = BUILD STRUCTURE RECORD
                    6 = BUILD FORCE ACCOUNT RECORD
                    7 = BUILD CHANGE ORDER RECORD
                    8 = BUILD FISCAL VARIANCE RECORD
                    0 = RETURN

                    ENTER OPTION ?   4
```

SCREEN IMAGE 2.4

YOU WILL NOW BE PROMPTED TO ENTER THE SECTION AS WHEN BUILDING THE ITEM RECORD, AND ENTER THE APPROPRIATE NO. (WITH AN ENTER KEY.) THEN YOU WILL BE PROMPTED FOR THE ITEM NUMBER, WHICH WILL THEN SET UP YOUR SUBITEM SCREEN.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO.1    PROJECT:                          DESCRIPTION:

SECTION:   2     CODE: FA I000   DESCRIPTION: ROADWAY

ENTER ITEM NUMBER ?▒▒▒2020001▒▒▒
                        .......
```

ENTER THE ITEM NUMBER FOR REMOVAL OF STRUCTURES AND OBSTRUCTIONS - 2020001 IN THE ABOVE, AND THEN FILL IN THE SUBITEM INFORMATION BELOW WHEN THIS SCREEN APPEARS.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                          DESCRIPTION:

SECTION:  1   CODE: FA I000     DESCRIPTION: ROADWAY

ITEM ID  DESCRIPTION            UNIT      QUANTITY  UNIT PRICE
2020001  REMOVAL STRUTURES OBST L.SUM.    1         75000

                ENTER THE FOLLOWING SUB-ITEM VALUES

     ID         DESCRIPTION                          QUANTITY

    .....    ..............................    .............

F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.8

FILL IN THE INFORMATION STARTING WITH SUBITEM NUMBER 1 (OR 01 OR USE A CODE AS IN THE STRUCTURE SECTION - PLACING THE "0" BEFORE THE NUMBER ALLOWS THE SORTING TO BE IN ORDER ON THE "WINDOW" THAT WILL BE CREATED WHEN YOU BUILD MORE THAN THE "0" SUBITEM. THE BALANCE SUBITEM WILL ALWAYS BE ZERO QUANTITY WHEN YOU HAVE CREATED ADDITIONAL SUBITEMS AND THEN USE THE GENERATE MISSING SUBITEMS ROUTINE (AS EXPLAINED ON P. 5-9)

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:                            DESCRIPTION:

SECTION:  1   CODE: FA I000     DESCRIPTION: ROADWAY

ITEM ID  DESCRIPTION            UNIT      QUANTITY  UNIT PRICE
2020001  REMOVAL OF STRUCTRS OB L.SUM       1       75000.00

                ENTER THE FOLLOWING SUB-ITEM VALUES

     ID         DESCRIPTION                          QUANTITY


    01...    HOUSE.......................    0.5..........
    ...      ......................           .


F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.8

DISCUSS THE BREAKDOWN WITH THE PROJECT SUPERVISOR, AND USE HIS TAKEOFFS TO ENTER THE LOCATION/DESCRIPTION.

FIELD NAME	DESCRIPTION
ID	ENTER THE SUB-ITEM ID AS SHOWN ON THE "TAKE-OFF" SHEET. FIVE (5) CHARACTERS ARE AVAILABLE.
DESCRIPTION	ENTER THE SUB-ITEM DESCRIPTION AS SHOWN ON THE "TAKE-OFF" LIST. THIRTY (30) CHARACTERS AVAILABLE.
QUANTITY	ENTER THE QUANTITY FOR EACH SUB-ITEM. DO NOT USE COMMAS.

IT IS NOW TIME TO REVIEW THE INFORMATION DISPLAYED ON THE SCREEN. ANY ERRORS DETECTED IN ANY FIELD CAN BE CORRECTED AT THIS TIME. SIMPLY MOVE THE CURSOR WITH THE "ARROW" KEYS TO DESIRED LOCATION AND TYPE OVER AS REQUIRED. AFTER YOU ARE SATISFIED WITH THE RESULTS, THE RECORD CAN BE SAVED.

NOW, SAVE AND CONTINUE UNTIL ALL SUB-ITEMS ARE ENTERED. NOW, GO TO THE "UTILITY ROUTINES" FROM THE MAIN MENU (IMAGE 2.3) AND "GENERATE MISSING SUBITEMS." IF YOU WISH, YOU MAY CHECK THE BALANCING BY RETURNING TO THE BUILD OR TRANSACTION ROUTINE. THE ITEM SHOWN BELOW IS FROM A PROGRESS PAYMENT SCREEN (SEE P 3-5.) INPUTTING THE "0" FOR THE SUBITEM WILL DISPLAY THE QUANTITY FOR THIS SUB-ITEM. NOW HIT THE F1 KEY AND YOU WILL RETURN TO THE MENU. NOTE THAT IF 11 SUB-ITEMS ARE INPUT WITHOUT A "0" SUCH AS 01 FOR 1, THEN THEY MAY BE OUT OF ORDER (ALTHOUGH THIS DOES NOT EFFECT THE USE.)

```
                          PROGRESS PAYMENTS
SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                        UNIT UNIT PRICE C.O.
2020001  REMOVAL STRUCT AND OBST          L.SUM  75000.00
       PLANS QTY     1.00  REV QTY          1.000 AMT 75000.00
       PP CODE 0           ACCUM            0.00 AMT     0.00=0%

ENTER SUB-ITEM NUMBER ? 0
```

```
0    BALANCE
1    WALL
10   HOUSE
11   BUILDING 435+00
2    PAD 786+00
```

NOTE: THE WINDOW WILL DISPLAY 10 ITEMS, SHOULD YOU HAVE MORE, USE PAGE-UP OR PAGE-DOWN TO GET TO THOSE NOT ON THIS SCREEN

THREE FUNCTION OPTIONS ON THE BOTTOM OF THE EDIT SCREENS ARE DEFINED ON P. 2-36.

THE NEXT EXAMPLE EXPLAINS CREATING SUB-ITEM RECORDS FOR ITEMS THAT ARE THE MORE COMMON INDISCRETE OR CONTINUOUS ITEMS. THIS ONE IS SIMPLE. AFTER CREATING THE ITEM, USE THE "GENERATE MISSING SUBITEMS" ROUTINE PREVIOUSLY DESCRIBED TO CREATE THE "0" SUBITEM. THIS CREATES A SINGLE SUBITEM, WHICH WILL ALLOW TRANSACTIONS TO BE ENTERED TO THE ITEM DIRECTLY. (THE "0" SUBITEM HAS ALREADY BEEN CREATED FOR ALL ITEMS THAT ARE DOWNLOADED FROM THE MAIN FRAME.)

ENTER THE "UTILITY ROUTINES" SCREEN AFTER ENTERING THE PROJECT ON THE MAIN CPE MENU. THE FOLLOWING SCREEN WILL APPEAR:

```
            UTILITY PROGRAMS

  1 = ATTACH SUB-ITEMS TO STRUCTURES
  2 - SORT FILES
  3 = EDIT FILES
  4 = GENERATE MISSING SUBITEMS
  0 = RETURN TO MAIN MENU
ESC = ESCAPE

        ENTER OPTION  __
```

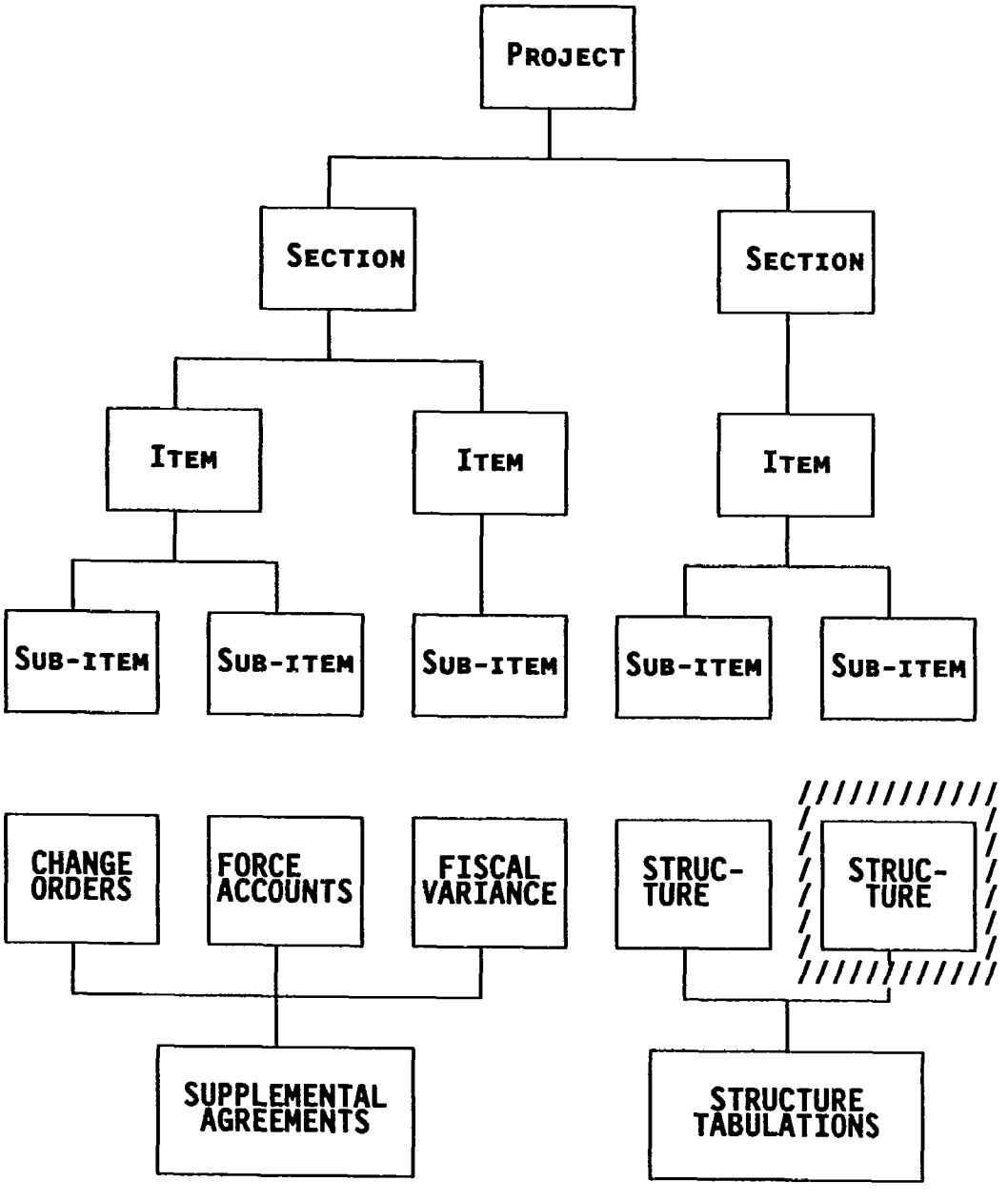
NOW, SELECTING OPTION 4 WILL AUTOMATICALLY GENERATE ALL MISSING "0" OR BALANCING SUBITEMS FOR ITEMS WITHOUT THEM, AND WILL ALSO BALANCE THE TOTAL QUANTITY OF ALL SUBITEMS TO EQUAL THE TOTAL OF THE ITEM QUANTITY BY ADDING OR SUBTRACTING THE DIFFERENCE TO OR FROM THE "0" OR BALANCING SUBITEM.

CORRECTING THE QUANTITY FOR THE "0" SUBITEM IS NOT NECESSARY WHEN BUILDING OTHER SUB-ITEMS, SINCE IT WILL SELF ADJUST DURING THE GENERATE MISSING SUB-ITEMS ROUTINE.

THREE FUNCTION OPTIONS ARE DISPLAYED AT THE BOTTOM OF MANY OF THE SCREENS WE HAVE USED:

F1 = SAVE	THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.
F2 = DELETE	THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, BUT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE ENTIRE SUB-ITEM FROM THE COMPUTER. USE WITH CAUTION.
F3 = MENU	THIS FUNCTION WILL NOT SAVE ENTRIES ON THE SCREEN AND RETURNS THE PROGRAM TO THE PREVIOUS MENU.

2.7 BUILDING THE STRUCTURES RECORD



THE PURPOSE OF DEFINING STRUCTURE RECORDS IS TO RELATE A LOGICAL GROUP OF ITEMS THAT TOGETHER, FORM A SEPARATE, IDENTIFIABLE UNIT. FAMILIAR EXAMPLES ARE THE TABULATION OF ALL STRUCTURES.

THIS FORM TIES THE STRUCTURE NUMBER, TYPE & SIZE, TO RELATED SUBITEMS FOR VARIOUS ITEMS SUCH AS.....

STRUCTURAL EXCAVATION
CONCRETE
REINFORCING STEEL
SPECIAL BACKFILL
PIPE CULVERT
CORRUGATED METAL PIPE
PLACE DOWELS, AND ETC.

IN ADDITION TO THE LARGE AND SMALL STRUCTURE SUMMARIES, OTHER UNITS CONSTRUCTED ON A HIGHWAY PROJECT SHOULD BE CONSIDERED A STRUCTURE IF THE BASIS OF PAYMENT INCLUDES MORE THAN ONE ITEM. THE COMPLEX INTERSTATE SIGNS WITH A BASIS OF PAYMENT INCLUDING....

FOUNDATION
VERTICAL SUPPORT
CANTILEVER
POST, AND
SIGN PANEL

..... WOULD QUALIFY AS STRUCTURES.

THE EXTRA WORK REQUIRED TO ESTABLISH STRUCTURE RECORDS IS OFTEN WORTH IT WHEN YOU CONSIDER THE INCREASED INTEGRITY OF THE REPORTING. STRUCTURE TABULATIONS OFTEN ALLOW YOU TO DETECT REPORTING OMISSIONS.

WHEN YOU RECEIVE A FIELD REPORT INDICATING THAT A SIGN PANEL HAS BEEN INSTALLED, COMMON SENSE WILL ALERT YOU IF THE FOUNDATION AND SUPPORTS AT THAT LOCATION HAVE NOT BEEN REPORTED ALSO. THE COMPUTER AND THE PRINTER WILL NOW MAKE IT POSSIBLE FOR INSPECTORS TO HAVE COPIES OF THE ITEMS AND STRUCTURE TABULATIONS WITH THEM IN THE FIELD. FIELD COPIES WILL HELP ELIMINATE MANY REPORTING ERRORS.

THERE ARE THREE STEPS TO ESTABLISHING STRUCTURE TABULATIONS:

1. ESTABLISH THE STRUCTURE CODE
2. CREATE THE STRUCTURE RECORD
3. USE THE STRUCTURE CODE AS THE KEY FOR EACH SUB-ITEM RECORD

ESTABLISH THE STRUCTURE CODE

THE ONLY ABSOLUTE REQUIREMENT OF A STRUCTURE CODE IS THAT IT IS UNIQUE TO EACH SECTION OF THE PROJECT AND CONTAINS ONE TO FIVE (1-5) CHARACTERS (A-Z AND 0-9). THERE ARE OTHER CONSIDERATIONS HOWEVER THAT WILL MAKE YOUR LIFE MUCH EASIER IF YOU SPEND A LITTLE CREATIVE TIME DEVELOPING REASONABLE CODES.

IN PRACTICE, IT WILL NOT BE A GOOD IDEA TO

1. USE DUPLICATE STRUCTURE CODES ON CURRENTLY ACTIVE PROJECTS. IT INVITES CONFUSION.

2. CHOOSE CHARACTERS THAT LOOK ALIKE. THE COMPUTER KNOWS THE DIFFERENCE BETWEEN THE LETTER (O) AND THE NUMBER (0) BUT PEOPLE OFTEN CONFUSE THEM. DOES A (2) LOOK LIKE (Z) TO YOU? MAYBE NOT, BUT TRY TO TELL THE DIFFERENCE IN HAND WRITTEN DOCUMENTS. YOU WILL DEVELOP SENSITIVITY TO WHAT IS PRACTICAL FROM EXPERIENCE.

THE STRUCTURE NUMBERS WILL BE SORTED ON REPORTS. SINCE YOU WILL FIND OUT SOON ENOUGH THE HARD WAY, WE MIGHT AS WELL CONSIDER THE CONSEQUENCE OF UNORGANIZED STRUCTURE NUMBERS. IF YOU CHOOSE STRICTLY NUMERIC CODES, (1-20) FOR EXAMPLE, THEY SHOULD HAVE LEADING ZEROS (00001,00002,...00020). OTHERWISE, YOUR LIST OF STRUCTURES WILL LOOK LIKE THIS:

1, 10, 11, 12, 13, 14, 15, 16, 17, 18,

19, 2, 20, 3, 4, 5, 6, 7, 8, 9.

A SIMPLE WAY OF MAKING SURE THAT THE STRUCTURE TABULATIONS ARE SORTED THE WAY YOU EXPECT IS TO ALWAYS USE FIVE (5) CHARACTERS IN THE CODE:

00001 - 99999
AAAAA - ZZZZZ
L0001 - L9999
3W-22 - 3W-99

IF YOUR PROJECT HAS SEVERAL CATEGORIES OF STRUCTURES, (LARGE STRUCTURES, SMALL STRUCTURES, SIGNS,...) CONSIDER SELECTING THE FIRST CHARACTER OF THE CODE TO REPRESENT THE CATEGORY. FOR EXAMPLE LET

L0001 - L0009 = THE LARGE STRUCTURES
S0001 - S0099 = THE SMALL STRUCTURES
SGN01 - SGN99 = THE SIGNS

LARGE STRUCTURES PRESENT OTHER POSSIBILITES HOWEVER. A LARGE STRUCTURE CAN BE DIVIDED INTO COMPONENTS. CONSIDER (STRUCTURE 1909 E.B. STA. 879+) THAT CONTAINS SEPARATE QUANTITIES FOR EACH UNIT

ABUTMENT NO. 1
PIER NO. 1
PIER NO. 2
ABUTMENT NO. 2
SUPERSTRUCTURE
APPROACH SLABS.

EACH UNIT SHOULD HAVE A SEPERATE STRUCTURE CODE BUT RELATED IN SOME WAY TO A CATEGORY AND STRUCTURE LOCATION. ANOTHER CODE "1909" HAS ALREADY BEEN ESTABLISHED FOR THIS LOCATION BUT THE COMBINATION

"L"	FOR	LARGE STRUCTURES
"1909"	FOR	THE EXISTING CODE, AND
"?"	FOR	EACH UNIT OF THE STRUCTURE

IS SIX (6) CHARACTERS. TOO MANY -- FIVE CHARACTERS IS THE MAXIMUM. IF THE EXISTING CODES FOR ALL LARGE STRUCTURES ON THIS PROJECT STARTED WITH "19", 1909 THRU 1915 FOR EXAMPLE, THEN THE FOLLOWING FORMAT WOULD WORK:

L09A1	=	ABUTMENT NO. 1
L09P1	=	PIER NO. 1
L09P2	=	PIER NO. 2
L09A2	=	ABUTMENT NO. 2
L09SS	=	SUPERSTRUCTURE
L09AS	=	APPROACH SLABS.

RECENT PROJECT PLANS HAVE BEGAN USING CODES ON VARIOUS ITEMS. IT REDUCES THE AMOUNT OF DESCRIPTIVE INFORMATION THAT HAS TO BE REPEATED ON THE PLAN SHEETS. ALWAYS TAKE ADVANTAGE OF THE PLANS CODE WHERE POSSIBLE. IT SAVES THE EFFORT OF DEVELOPING NEW CODES AND DISTRIBUTING THE INFORMATION TO EVERYONE THAT HAS TO USE THE CODE. YOUR COMPUTER DOES NOT HAVE ALL THE SYMBOLS USED ON PLAN SHEETS, BUT SIMPLE SUBSTITUTIONS ON THE LEADING CHARACTERS MAY PRESERVE THE EXISTING CODE FORMAT.

WE HAVE OFFERED SOME IDEAS ON DEVELOPING CODES, BUT YOU ARE THE ONE WHO HAS TO LIVE WITH THEM. IN THE LONG RUN -- YOU WILL BE THE EXPERT AT IT.

THE NEXT STEP IS TO CREATE THE STRUCTURE RECORD.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO. 2   PROJECT:                          DESCRIPTION:

                 BUILD PROJECT ROUTINES

                 1 = BUILD PROJECT RECORD
                 2 = BUILD SECTION RECORD
                 3 = BUILD ITEM RECORD
                 4 = BUILD SUB-ITEM RECORD
                 5 = BUILD STRUCTURE RECORD
                 6 = BUILD FORCE ACCOUNT RECORD
                 7 = BUILD CHANGE ORDER RECORD
                 8 = BUILD FISCAL VARIANCE RECORD
                 0 = RETURN

                   ENTER OPTION ?   5
```

SCREEN IMAGE 2.4

SELECT OPTION 5 FROM THE BUILD PROJECT ROUTINES MENU. YOU WILL BE ASKED TO IDENTIFY THE SECTION NUMBER AND THEN THE STRUCTURE SCREEN WILL BE DISPLAYED.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO.1   PROJECT:                          DESCRIPTION:

SECTION:   1    CODE:  FA I000   DESCRIPTION: ROADWAY

              ENTER THE FOLLOWING STRUCTURE VALUES


STRUCTURE NO L09A1 DESCRIPTION- STA 879+ EB (1909) ABUTMENT #1
             .....              ..............................

F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.9

ENTER THE STRUCTURE NUMBER ASSIGNED TO THIS UNIT IN THE ABOVE SCREEN. THEN ENTER THE DESCRIPTION OF THE UNIT. THIRTY (30) CHARACTERS ARE AVAILABLE BUT ABBREVIATION IS USUALLY NECESSARY.

AT THE BOTTOM OF THE PREVIOUS SCREEN, SELECT THE FUNCTIONS AS FOLLOWS:

F1 = SAVE	THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.
F2 = DELETE	THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, THAT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE STRUCTURE RECORD FROM THE COMPUTER. USE WITH CAUTION.
F3 = MENU	THIS FUNCTION WILL NOT SAVE ANY CHANGES MADE ON THE SCREEN. IT WILL RETURN THE PROGRAM TO THE PREVIOUS MENU.

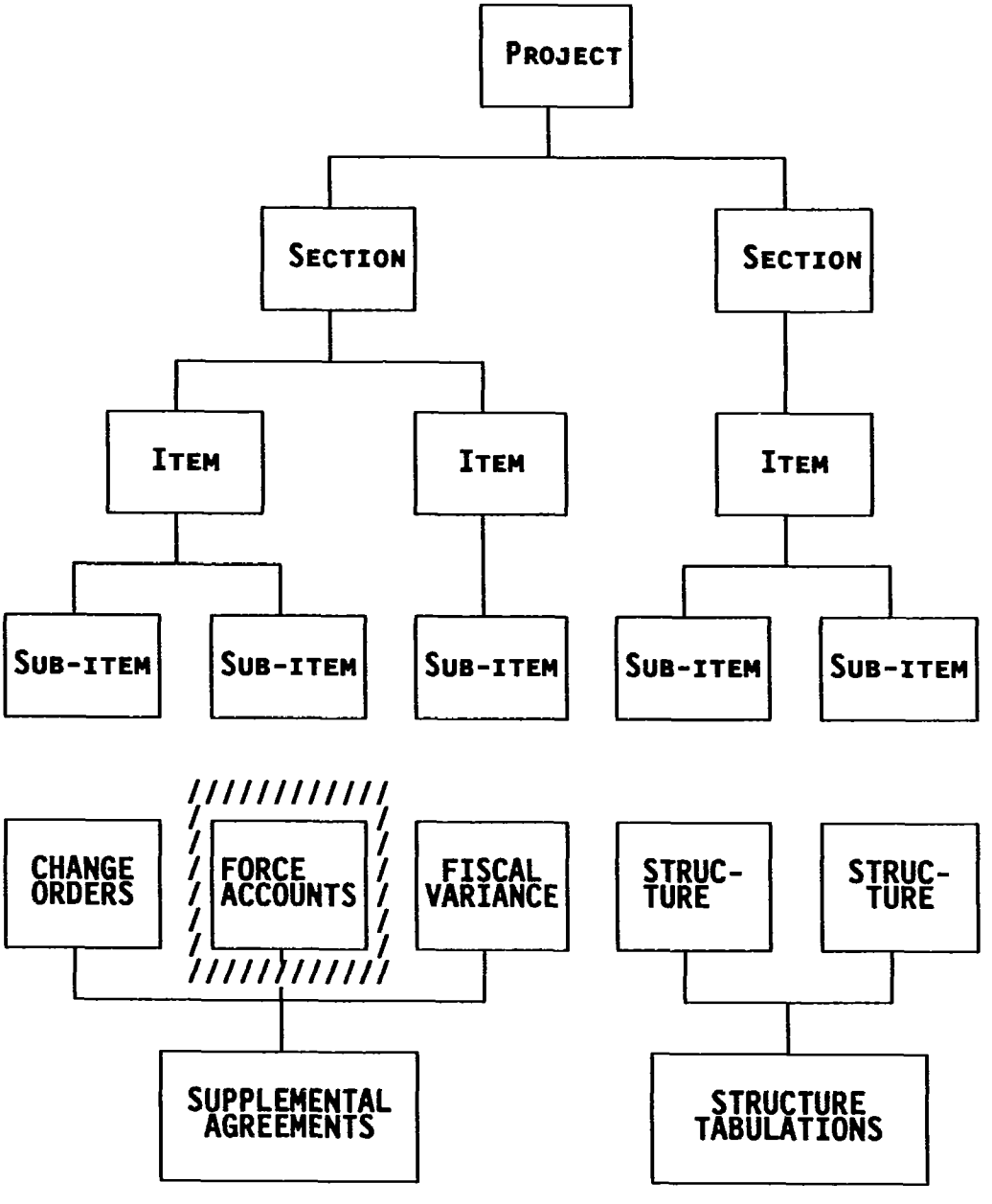
CONTINUE ENTERING THE STRUCTURE RECORDS UNTIL THEY ARE COMPLETE. A LISTING OF THE STRUCTURE RECORDS WILL BE USEFUL IN CREATING THE SUB-ITEM RECORDS BECAUSE THE SUB-ITEM CODE WILL BE THE SAME AS THE STRUCTURE NUMBER YOU INVENTED.

SELECT AND PRINT THE STRUCTURE REPORT FROM THE REPORTS MENU:

```
                                STRUCTURE SUMMARY
  06-22-89                  ADOT OFFICE LOG SYSTEM

PROJECT: 1  I-IG 40-3(28)     DESCRIPTION: WILLIAMS FREEWAY,
CONTRACTOR: M M SUNDT CONST.  RE/SUPERVISOR: WACHTER

SECTION:  2 CODE: FA X281   DESCR: STA 879+, STA 947+

STR. NO: L09A1  DESCRIPTION: STA 879+ EB 1909 ABUTMENT #1

STR. NO: L09A2  DESCRIPTION: STA 879+ EB 1909 ABUTMENT #2

STR. NO: L09AS  DESCRIPTION: STA 879+ EB 1909 APPR SLABS

STR. NO: L09SS  DESCRIPTION: STA 879+ EB 1909 SUPERSTRUCTR

STR. NO: L10A1  DESCRIPTION: STA 879+ WB 1910 ABUTMENT #1

STR. NO: L10A2  DESCRIPTION: STA 879+ WB 1910 ABUTMENT #2

STR. NO: L10AS  DESCRIPTION: STA 879+ WB 1910 APPR SLABS

STR. NO: L10SS  DESCRIPTION: STA 879+ WB 1910 SUPERSTRUCTR
```

WITH THE LIST OF STRUCTURE CODES YOU ARE READY TO RETURN TO SECTION 6 -- SUB-ITEMS TO COMPLETE THE LAST RECORDS OF THE PROJECT FRAMEWORK.

2.8 BUILDING THE FORCE ACCOUNT RECORD



THE PURPOSE OF CREATING THE FORCE ACCOUNT RECORD IS TO RECORD THE FOLLOWING INFORMATION:

FORCE ACCOUNT NUMBER
DESCRIPTION
APPROVAL DATE, AND
THE TOTAL AMOUNT.

THE BUILD FORCE ACCOUNT RECORD SCREEN IS REACHED BY SELECTING OPTION 6 FROM THE BUILD PROJECT ROUTINES MENU.

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:                          DESCRIPTION:

                  BUILD PROJECT ROUTINES

                  1 = BUILD PROJECT RECORD
                  2 = BUILD SECTION RECORD
                  3 = BUILD ITEM RECORD
                  4 = BUILD SUB-ITEM RECORD
                  5 = BUILD STRUCTURE RECORD
                  6 = BUILD FORCE ACCOUNT RECORD
                  7 = BUILD CHANGE ORDER RECORD
```

SCREEN IMAGE 2.4

AFTER ENTERING THE OPTION "6" ABOVE, THE FOLLOWING SCREEN WILL APPEAR:

```
DATE: 11-01-1989                    ADOT OFFICE LOGS  (VSN 3.13)
NO: 1  PROJECT: F 718-805             DESCRIPTION: YOCUM TOWN-KICKS

SECTION:  1   CODE: NFA    DESCRIPTION: ROADWAY
                    ENTER THE FOLLOWING


FORCE ACCOUNT NUMBER  001..
DESCRIPTION           REMOVE SLIDE STA. 2500-2800+..
APPROVAL DATE         ........
TOTAL AMOUNT          .............


F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.10

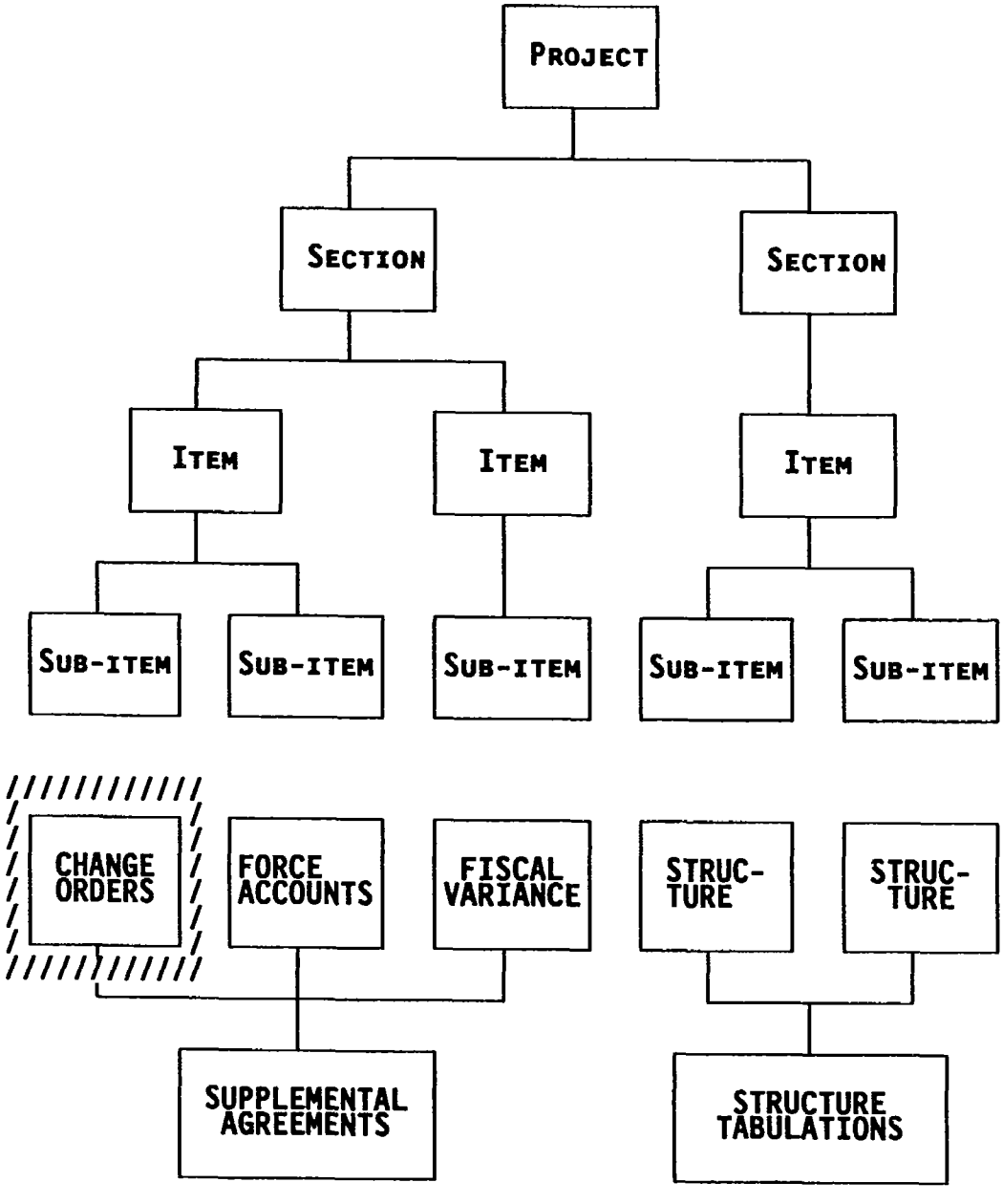
ENTER THE FORCE ACCOUNT VALUES INTO THAT SCREEN DIRECTLY FROM THE FORCE ACCOUNT WORK REQUEST FORM.

FIELD NAME	DESCRIPTION
FORCE ACCOUNT NO.	ENTER THE FORCE ACCOUNT NUMBER WITH LEADING (0) TO CREATE A THREE DIGIT CODE. THREE DIGITS WILL ACCOMMODATE NUMBERS 001-999.
DESCRIPTION	ENTER A SHORT DESCRIPTION OF THE WORK. THIRTY (30) CHARACTERS ARE AVAILABLE.
APPROVAL DATE	ENTER THE PRIOR APPROVAL DATE FROM THE CHANGE ORDER OR FORCE ACCOUNT WORK REPORT.
TOTAL AMOUNT	ENTER THE TOTAL ESTIMATED COST. DO NOT USE COMMAS.

BEFORE SAVING, IT IS A GOOD IDEA TO REVIEW THE VALUES YOU HAVE INPUT. ONCE YOU HAVE VERIFIED THEM, YOU MAY USE THE SAVE FUNCTION KEY. THE OTHER FUNCTION KEYS ALLOW YOU TO LEAVE THIS SCREEN WITHOUT SAVING OR DELETE MATERIAL YOU HAVE PREVIOUSLY ENTERED AS FOLLOWS:

F1 = SAVE	THIS FUNCTION WILL MAKE A PERMANENT RECORD OF THE INFORMATION ON THE SCREEN.
F2 = DELETE	THIS FUNCTION APPLIES TO A RECORD PREVIOUSLY SAVED, BUT IS NO LONGER REQUIRED. THE EFFECT WILL BE TO ERASE THE ENTIRE FORCE ACCOUNT FROM THE COMPUTER. USE WITH CAUTION.
F3 = MENU	THIS FUNCTION WILL IGNORE ENTRIES ON THE SCREEN AND RETURN THE PROGRAM CONTROL TO A MENU OF OPTIONS.

2.8 BUILDING THE CHANGE ORDER RECORD



THE PURPOSE OF CREATING THE CHANGE ORDER RECORD IS TO RECORD THE FOLLOWING INFORMATION:

CHANGE ORDER NUMBER
DESCRIPTION
APPROVAL DATE, AND
REVISED QUANTITIES.

THE BUILD CHANGE ORDER RECORD SCREEN IS REACHED BY SELECTING OPTION 7 FROM THE BUILD PROJECT ROUTINES MENU.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO. 2   PROJECT:                          DESCRIPTION:

                 BUILD PROJECT ROUTINES

                 1 = BUILD PROJECT RECORD
                 2 = BUILD SECTION RECORD
                 3 = BUILD ITEM RECORD
                 4 = BUILD SUB-ITEM RECORD
                 5 = BUILD STRUCTURE RECORD
                 6 = BUILD FORCE ACCOUNT RECORD
                 7 = BUILD CHANGE ORDER RECORD
                 8 = BUILD FISCAL VARIANCE RECORD
```

SCREEN IMAGE 2.4

```
DATE:  11-01-1989            ADOT OFFICE LOGS  (VSN 3.13)
 NO:1    PROJECT: F 036-1-909    DESCRIPTION:

                    BUILD CHANGE ORDER
 ENTER CHANGE ORDER NUMBER          ? 3...
 ENTER DESCRIPTION OF CHANGE ORDER ? REPLACE SEAL COAT............
 ENTER DATE APPROVED (MM/DD/YY)     ? 06/28/84

        1 = ADD/SUBTRACT QUANTITY TO ITEM
        2 = PROCEDURAL CHANGE ORDER (NO CHANGE TO ITEMS)
        3 = RETURN TO MENU

     ENTER OPTION?   __
```

SCREEN IMAGE 2.11

ENTER THE CHANGE ORDER VALUES INTO SCREEN IMAGE 2.11 DIRECTLY FROM THE APPROVED CHANGE ORDER.....

FIELD NAME	DESCRIPTION
CHANGE ORDER NO.	ENTER THE CHANGE ORDER NUMBER.
DESCRIPTION	ENTER A SHORT DESCRIPTION OF THE WORK. THIRTY (30) CHARACTERS ARE AVAILABLE.
APPROVAL DATE	ENTER THE PRIOR APPROVAL DATE FROM THE CHANGE ORDER OR FORCE ACCOUNT WORK REPORT.

AFTER ENTERING THE INFORMATION, CHOOSE THE APPROPRIATE OPTION. WHEN OPTION 1 IS CHOSEN, THE FOLLOWING SCREEN APPEARS:

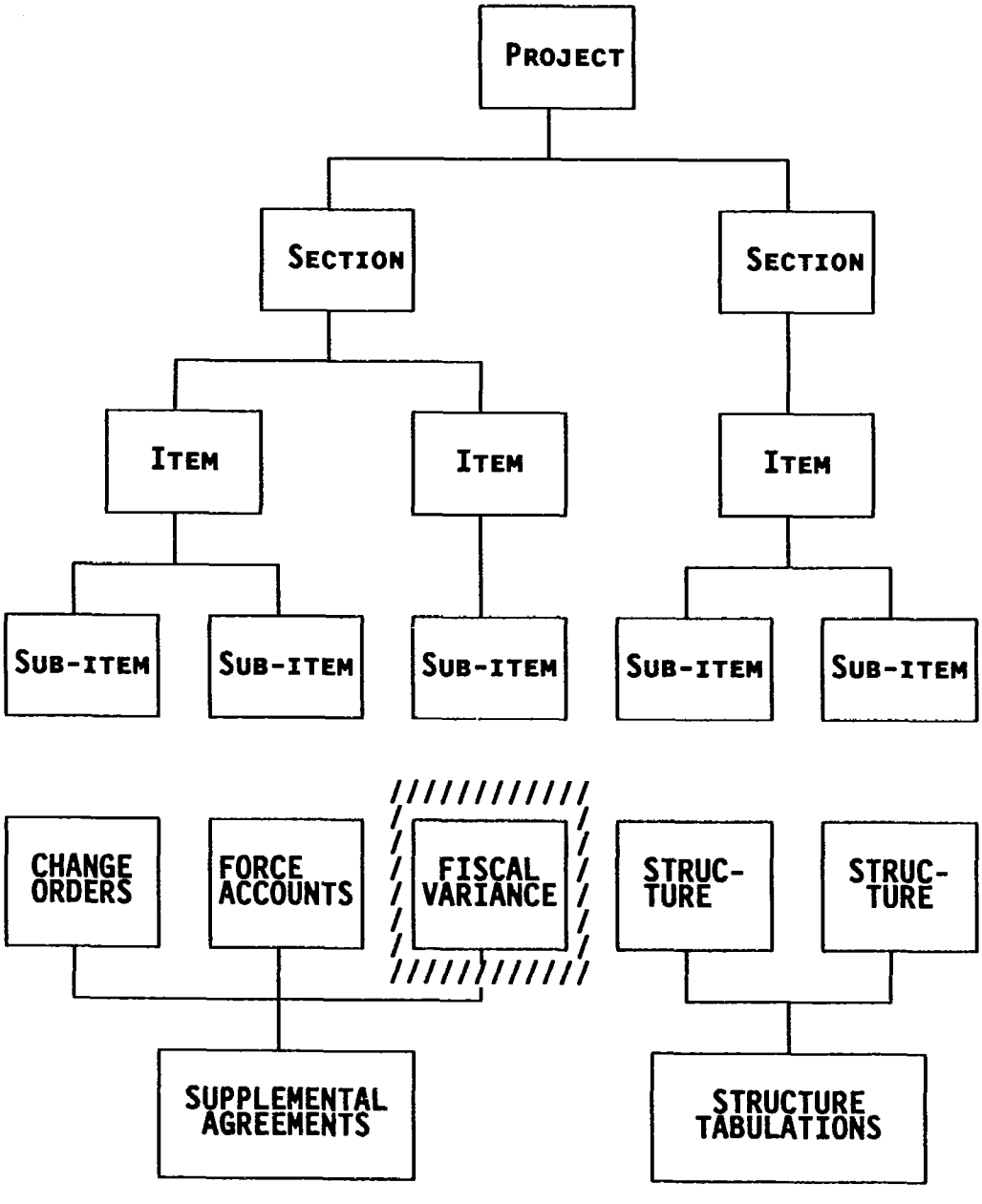
```
DATE:  11-01-1989              ADOT OFFICE LOGS  (VSN 3.13)

NO:1    PROJECT: F 036-1-909      DESCRIPTION:

                    BUILD CHANGE ORDER
ENTER CHANGE ORDER NUMBER          ? 3...
ENTER DESCRIPTION OF CHANGE ORDER ? REPLACE SEAL COAT
ENTER DATE APPROVED (MM/DD/YY)     ? 06/28/89

SECT ITEM    DESCRIPTION            UNIT   UNIT PRICE     +/- QTY
.. ........ ...................... ...... ............  ...........

F1=SAVE  F2=DELETE  F3=MENU
```

FILL IN THE BLANKS. THE COMPUTER WILL CHECK IF THE SECTION IS VALID. AFTER THE ITEM NUMBER IS ENTERED, THE COMPUTER WILL CHECK IF THIS ITEM ALREADY EXISTS. IF A MATCH OCCURS, YOU WILL NEED TO FILL IN ONLY THE +/- QTY FIELD. IF THE UNIT AND UNIT PRICE DO NOT APPEAR ONCE YOU HAVE PUT IN THE ITEM NUMBER AND THEN "ENTERED," THEN FILL IN THESE VALUES.

AFTER YOU HAVE COMPLETED THE INFORMATION, YOU MAY SAVE IT BY PRESSING THE F1 KEY. THE OTHER FUNCTIONS WORK AS PREVIOUSLY DESCRIBED FOR THE BUILD FORCE ACCOUNT RECORDS IN THE LAST SECTION.

ALTHOUGH THE CHANGE ORDER SCREENS ALLOW YOU TO REVISE THE CONTRACT QUANTITIES AND AMOUNTS FROM ITEM RECORDS AND ABOVE, YOU MUST REMEMBER THAT THE SUB-ITEM RECORDS HAVE NOT BEEN ADJUSTED. IF A CHANGE ORDER AFFECTS SUB-ITEMS, MODIFY OR CREATE THE APPROPRIATE RECORDS WITH THE SUB-ITEM SCREEN, OR USE THE "GENERATE MISSING SUBITEMS" ROUTINE FROM SCREEN IMAGE 2.4 AS EXPLAINED UNDER THE SECTION FOR BUILDING SUBITEMS.

2.10 BUILDING THE FISCAL VARIANCE RECORD



THE PURPOSE OF CREATING THE FISCAL VARIANCE RECORD IS TO RECORD THE FOLLOWING INFORMATION:

FISCAL VARIANCE NUMBER
DESCRIPTION
APPROVAL DATE, AND
REVISED QUANTITIES.

THE BUILD FISCAL VARIANCE RECORD SCREEN IS REACHED BY SELECTING OPTION 8 FROM THE BUILD PROJECT ROUTINES MENU.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)

NO. 2   PROJECT:                          DESCRIPTION:

                    BUILD PROJECT ROUTINES

                    1 = BUILD PROJECT RECORD
                    2 = BUILD SECTION RECORD
                    3 = BUILD ITEM RECORD
                    4 = BUILD SUB-ITEM RECORD
                    5 = BUILD STRUCTURE RECORD
                    6 = BUILD FORCE ACCOUNT RECORD
                    7 = BUILD CHANGE ORDER RECORD
                    8 = BUILD FISCAL VARIANCE RECORD
                    0 = RETURN
```

SCREEN IMAGE 2.4

```
DATE:  11-01-1989               ADOT OFFICE LOGS  (VSN 3.13)

NO:1    PROJECT: F 036-1-909      DESCRIPTION:

ENTER FISCAL VARIANCE NO.       ? 8...
ENTER FISCAL VARIANCE DESCRIP.  ? OVERRUN OF BORROW.............
ENTER DATE APPROVED (MM/DD/YY)  ? 03/10/83

SECT ITEM    DESCRIPTION            UNIT   UNIT PRICE   +/- QTY
.. ........ ....................... ...... ............ ...........

 F1=SAVE  F2=DELETE  F3=MENU
```

SCREEN IMAGE 2.12

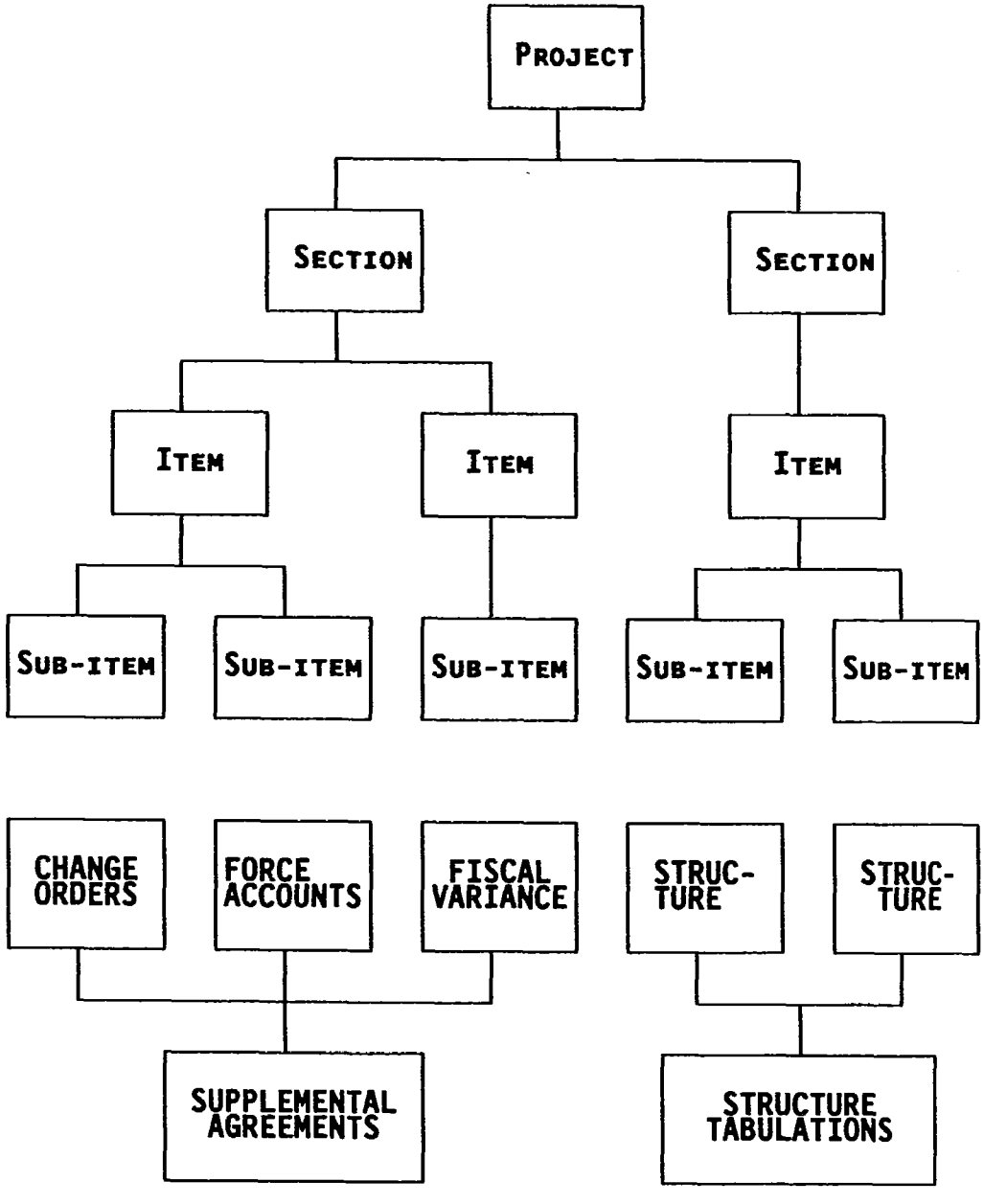
Enter the FISCAL VARIANCE values on Screen Image 2.12 directly from the FISCAL VARIANCE REPORT.

Field Name	Description
FISCAL VARIANCE NUMBER	Enter the FISCAL VARIANCE NO.
DESCRIPTION	Enter a short description of the work. Thirty (30) characters are available.
APPROVAL DATE	Enter the Approved Date from the FISCAL VARIANCE REPORT.

Next the screen prompts for the Section and Item information. Type them in. You will be advised if the section and item are not found. These should be available since a Fiscal Variance does not create items as the Change Order might. Enter the Quantity value for the item being revised. Use a leading (-) sign for negative numbers.

Although the Fiscal Variance allows you to revise the Contract quantities and amounts from Item records and above, you must remember that the SUB-ITEM records have NOT been adjusted. If a FISCAL VARIANCE affects Sub-Items, modify or create the appropriate records with the BUILD Sub-Item Screens. If only one subitem is to be (or has been) used, then use the "GENERATE MISSING SUBITEMS" utility routine as described under the Building Subitems section.

2.11 EDITING THE BUILD RECORDS



THE PURPOSE OF THE EDIT SECTION, IS TO DESCRIBE THE PROCESS OF CORRECTING INFORMATION IN BUILD RECORDS AFTER AN ERROR HAS BEEN DISCOVERED. IN GENERAL, ALL INFORMATION ON A FRAMEWORK RECORD CAN BE EASILY CORRECTED.

TO MODIFY INFORMATION ON FRAMEWORK RECORDS, USE THE SAME PROCEDURE AS YOU WOULD TO CREATE IT. AFTER ENTERING THE "KEY" TO AN EXISTING RECORD, SUCH AS THE ITEM NUMBER IN MOST CASES, IN THE BUILD ROUTINE, AND YOU HAVE USED THE "ENTER" KEY, ALL OTHER RELATED INFORMATION WILL BE DISPLAYED AND AVAILABLE FOR MODIFICATION IN THOSE EXISTING RECORDS.

THE KEY ITSELF HOWEVER, CAN NOT BE MODIFIED. IF THE RECORD KEY MUST BE CHANGED, DELETE THE EXISTING RECORD AND RE-CREATE IT. DOING THIS CAN BE A "RISKY" BUSINESS. DON'T HESITATE TO ASK YOUR EDP ANALYST TO REVIEW YOUR METHODS BEFORE ATTEMPTING THIS PROCESS. A "BACK-UP" COPY WOULD ALSO BE ADVISABLE. THERE ARE NO CONSEQUENCES IN CHANGING "KEYS" BY DELETING AND RECREATING IF THERE ARE NO OTHER "SUB" RECORDS RELATED TO THAT KEY. IF A KEY IS CHANGED ON A RECORD THAT HAS RELATED LOWER LEVEL RECORDS, THE RESULT WILL BE TO MAKE "ORPHANS" OF THE RELATED RECORDS WHICH MAY END UP IN THE "GHOST" SECTION TO HAUNT YOU. ALWAYS ELIMINATE LOWER RECORDS (PARTICULARLY SUBITEMS) BY ENTERING A NEGATIVE OF THE AMOUNT LISTED FOR THE RECORD BEFORE DELETING THE RECORD ABOVE.

2.12 BUILDING STAKED QUANTITY RECORDS

FIELD MEASUREMENTS ARE RECORDED ON THE SUB-ITEM RECORD AS THE STAKED QUANTITY. SINCE THE STAKED QUANTITY MAY VARY FROM THE PLANNED QUANTITY IT IS IMPORTANT TO KNOW THE VALUE OF RE-MEASURED QUANTITIES WHEN POSTING PROGRESS PAYMENTS.

THE SUB-ITEM SCREEN IS REACHED BY SELECTING OPTION 4 FROM THE BUILD PROJECT ROUTINES.

```
DATE: 11-01-1989                ADOT OFFICE LOGS  (VSN 3.13)
NO. 2   PROJECT:                      DESCRIPTION:

                 BUILD PROJECT ROUTINES

                 1 = BUILD PROJECT RECORD
                 2 = BUILD SECTION RECORD
                 3 = BUILD ITEM RECORD
                 4 = BUILD SUB-ITEM RECORD
                 5 = BUILD STRUCTURE RECORD
                 6 = BUILD FORCE ACCOUNT RECORD
```

SCREEN IMAGE 2.4

FOR EXAMPLE, LET'S ASSUME THAT THE STRUCTURE REPORT FOR A UNIT OF A STRUCTURE INDICATES THAT THE SPECIAL BACKFILL ITEM WILL CHANGE FROM

PLANS QUANTITY: 215 TO MEASURED QUANTITY: 182.

TO RECORD THE STRUCTURE REPORT QUANTITY, ENTER THE SECTION CODE AND ITEM NUMBER WHEN PROMPTED. ENTER THE SUB-ITEM ID AND THEN USE THE "ENTER" KEY, AND THE REMAINING SUB-ITEM VALUES WILL BE AVAILABLE FOR MODIFICATION.....

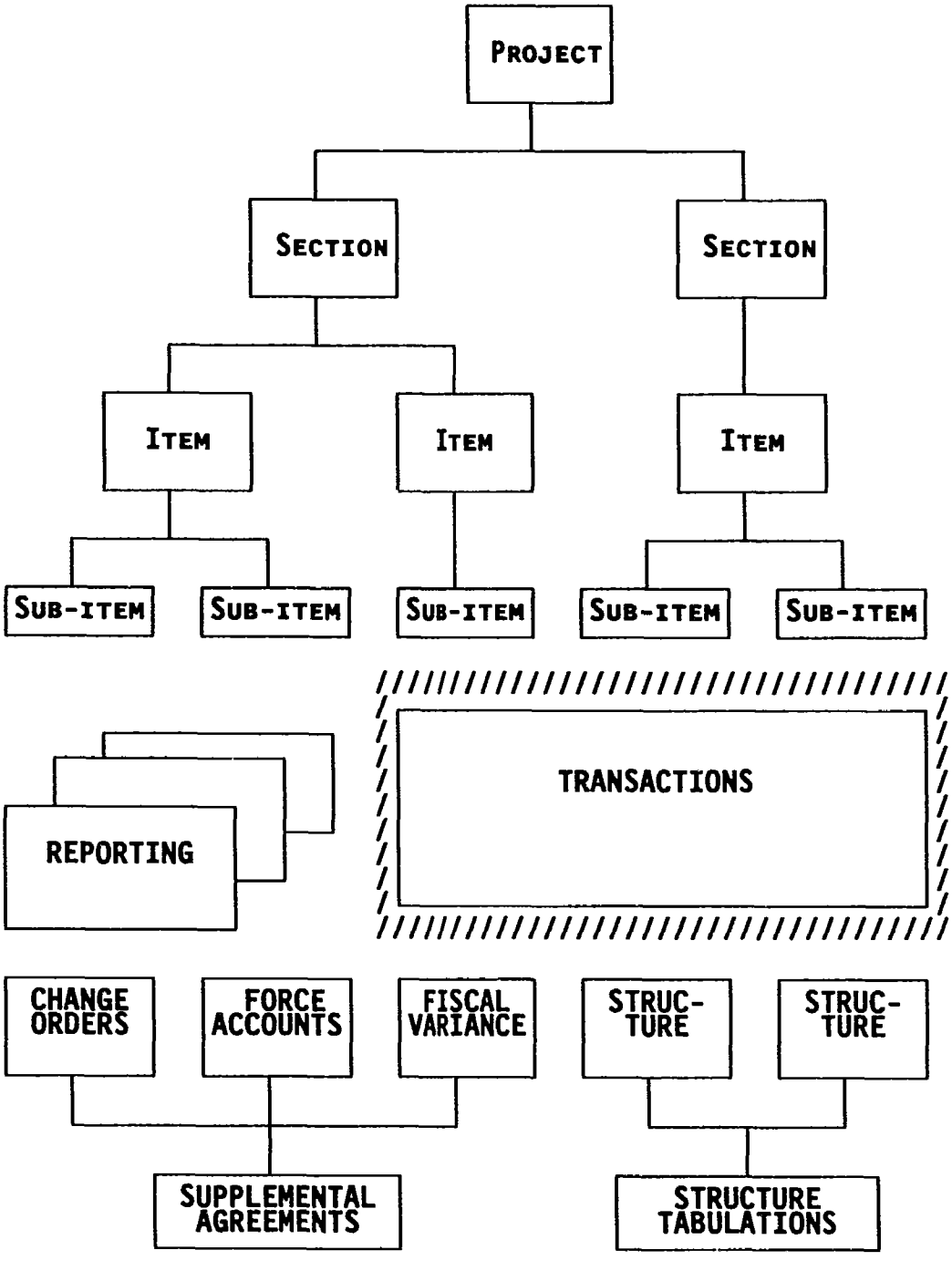
```
DATE:  11-01-1989     ADOT OFFICE LOGS  (VSN 3.13)  10:20:45
NO:1  PROJECT:I-40-3 (28) DESCRIPTION:WILLIAMS BYPASS - UNIT II

SECTION:1 CODE:FA X281 DESCRIPTION:BRIDGES @ STA 879 & STA 947

ITEM ID   DESCRIPTION          UNIT   QUANTITY     UNIT PRICE
2080201   SPECIAL BACKFILL     CU.YD. 3535            16

          ENTER THE FOLLOWING SUB-ITEM VALUES

     ID      DESCRIPTION              QUANTITY     STAKED QTY.

   L09A1     ABUTMENT #1 - 1909....   215........  215........
```

TYPE (182) OVER THE STAKED QTY. OF (215) AND SAVE THE RECORD WITH THE (F1) KEY.....

```
DATE:  11-01-1989     ADOT OFFICE LOGS  (VSN 3.13)  10:20:45
NO:1  PROJECT:I-40-3 (28) DESCRIPTION:WILLIAMS BYPASS - UNIT II

SECTION:1 CODE:FA X281 DESCRIPTION:BRIDGES @ STA 879 & STA 947

ITEM ID   DESCRIPTION          UNIT   QUANTITY     UNIT PRICE
2080201   SPECIAL BACKFILL     CU.YD. 3535            16

          ENTER THE FOLLOWING SUB-ITEM VALUES

     ID      DESCRIPTION              QUANTITY     STAKED QTY.

   L09A1     ABUTMENT #1 - 1909....   215.......182.....
```

CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 3 -- TRANSACTIONS (CONTRACT PROGRESS)



CHAPTER 3 -- TRANSACTIONS -- RECORDING CONTRACT PROGRESS

3.1 INTRODUCTION

THE CENTRAL CORE OF THE CPE DATA BASE CONSISTS OF TRANSACTION RECORDS THAT ARE USED TO MONITOR THE CONTRACT WORK ACCOMPLISHED. THE TRANSACTION RECORDS INCLUDE:

PROGRESS PAYMENTS

PARTIAL PAYMENTS

TIME RECORDING

TIME EXTENTIONS, AND

FORCE ACCOUNT PAYMENTS.

3.2 PROGRESS PAYMENTS

THE PURPOSE OF PROGRESS PAYMENT TRANSACTIONS IS TO RECORD THE CONTRACTORS ACCOMPLISHMENT IN INSTALLING THE VARIOUS ELEMENTS OF A CONSTRUCTION PROJECT. THE INFORMATION USED TO RECORD PROGRESS IS THE DOCUMENTED INSPECTOR REPORTS.

```
ARIZONA DEPARTMENT OF TRANSPORTATION
MENU

1* OFFICE LOGS      (CPE PROGRAM)
2. MATERIALS LOGS   (CMT PROGRAM)
3. CEMMS            (MANPOWER MANAGEMENT)
4. PROCOM           (COMMUNICATIONS)
5. LOTUS            (SPREAD SHEET)
6. DBASE 3+         (DATA BASE PROGRAM)
7. MULTIMATE        (WORD PROCESSING)
8. SURVEY           (SURVEY, DRAFTSMAN, CADD)
9. MENU 2 (TAPE BACKUP, ORG CHART, UTLTS.)
   *(NOS. MAY BE FUNCTION OR F-NUMBERS)

SELECT THE NUMBER OF THE OPTION YOU WANT
(OR SELECT THE FUNCTION KEY ON SOME MENUS)
>
```

SCREEN IMAGE 2.1

SCREEN IMAGE 2.1 IS THE OPERATING SYSTEM SCREEN AND THE FIRST IMAGE THAT APPEARS AFTER STARTING THE COMPUTER. THE OPERATOR SHOULD TYPE THE NUMBER (1) (OR USE THE APPROPRIATE FUNCTION KEY) TO ENTER THE CPE PROGRAM.

NOW SELECT A PROJECT BY NUMBER FROM THE FOLLOWING MENU ON THE SCREEN:

```
DATE: 11-01-1989          ADOT OFFICE LOGS (VSN 3.13)

NO. PROJECT NUMBER        DESCRIPTION

 1  BP 037-2-505          JUNCTION U.S. 160-NORTH
 2  BRZ-984(19)P          MCCOY BRIDGE
 3  F 026-1-930           TRAFFIC SIGNALS

              ENTER PROJECT NO.? _____

F1=NEXT PAGE* F2=PREV PAGE F3=SEND ESTMTS  F4=RECEIVE  PROJ F5=QUIT
```

SCREEN IMAGE 2.2

AFTER SELECTING THE PROJECT, THE NEXT QUESTION (SCREEN IMAGE 2.3) IS "WHICH MODULE -- BUILD, TRANSACTIONS OR REPORTS?". IN THIS CASE, WE ARE REPORTING A TRANSACTION RECORD AND CHOOSE OPTION (2).....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO: 2   PROJECT:      DESCRIPTION:

        OFFICE LOG ROUTINES

        1 = BUILD PROJECT RECORDS
        2 = TRANSACTIONS
        3 = REPORTS
        4 = UTILITY ROUTINES
        5 = SELECT ANOTHER PROJECT
        0 = QUIT
      ESC = ESCAPE

              ENTER OPTION ?  1
```

SCREEN IMAGE 2.3

SINCE WE ARE REPORTING PROGRESS OF THE WORK (PARTIAL PAYMENTS ARE FOR PAYMENT OF INVENTORY ON THE PROJECT PRIOR TO INSTALLATION,) OUR SELECTION IS OPTION NUMBER 1 ON THE TRANSACTIONS MENU BELOW.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                 TRANSACTIONS

              1 = PROGRESS PAYMENTS
              2 = PARTIAL PAYMENTS
              3 = TIME RECORDING
              4 = TIME EXTENSIONS
              5 = FORCE ACCOUNT PAYMENT
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? 1
```

THE FIRST EXAMPLE WILL DEMONSTRATE THE PROCESS OF POSTING A PROGRESS PAYMENT FROM THE DAILY QUANTITIES THAT ARE REPORTED FOR AN ITEM.

NOW THE PROGRAM WILL PROMPT FOR THE SECTION NUMBER (THIS IS AVAILABLE FROM THE PRE-PRINTED PROGRESS AND FINAL PAYMENT REPORT FOR THE PROJECT.) WE USE "1" IN THIS CASE.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                     PROGRESS PAYMENTS

ENTER SECTION (1 TO 99) ? 1.
```

THE COMPUTER NOW ASKS FOR THE ITEM NUMBER, WHICH SHOULD BE INDICATED ON THE QUANTITY REPORT.....WE ARE USING ITEM 2080001 FOR THIS EXAMPLE.

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U
                        PROGRESS PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ENTER ITEM NUMBER ? 2080001
```

NEXT THE COMPUTER WILL EITHER SHOW A WINDOW (IN THE CASE OF MORE THAN ONE SUBITEM) WHICH SHOWS THE SUBITEMS THAT MAKE UP THE ITEM OR IT WILL GO DIRECTLY TO THE SCREEN AT THE BOTTOM OF THIS PAGE. YOU CAN ENTER THE SUBITEM NUMBER IF THERE ARE MORE THAN ONE AS FOLLOWS:

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U

                        PROGRESS PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
2080001  STRUCTURAL EXCAVATION         CU.YD.     8.00
       PLANS QTY   500.00 REV QTY      500.00 AMT 4,000.00
       PP CODE 0          ACCUM          0.00 AMT     0.00=

ENTER SUB-ITEM NUMBER ? L10A1
```

```
L09A1  PIER
L10A1  PIER
L11A1  PIER
L12A1  PIER
L13A1  PIER
```

NOTE: THE WINDOW WILL DISPLAY 10 ITEMS, SHOULD YOU HAVE MORE, USE PAGE-UP OR PAGE-DOWN TO GET TO THOSE NOT ON THIS SCREEN

AFTER SELECTING THE SUBITEM, (OR AFTER SELECTING THE ITEM IF YOU HAVE NO OTHER SUBITEMS EXCEPT THE BALANCING "0" SUBITEM WHICH BYPASSES THE SCREEN ABOVE,) YOU WILL GET THE FOLLOWING SCREEN:

```
                        PROGRESS PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
2080001  STRUCTURAL EXCAVATION         CU.YD.     8.00
       PLANS QTY   500.00 REV QTY      500.00 AMT 4,000.00
       PP CODE 0          ACCUM          0.00 AMT     0.00=

NO    DESCRIPTION          PLANS QTY  STAKED QTY ACCUM QTY
L10A1 ABUTMENT #1 -1910       15.00       15.00       0.00

F1=MENU  F2=NEW ITEM/SUBITEM  F3=HISTORY  ENTER=CONTINUE
```

THE ABOVE FUNCTIONS DO THE FOLLOWING:

F1 TAKES YOU BACK TO THE MENU. F2 PROMPTS YOU TO START OVER (PUT IN A NEW SUBITEM NUMBER.) F3 SHOWS YOU A LIST OF ALL TRANSACTIONS REPORTED TO THE SUBITEM. ENTER LEADS YOU TO THE FOLLOWING SCREEN TO CONTINUE WITH THE TRANSACTION LOGGING:

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                        PROGRESS PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
2080001  STRUCTURAL EXCAVATION         CU.YD.     8.00
       PLANS QTY   500.00 REV QTY      500.00 AMT 4,000.00
       PP CODE 0          ACCUM          0.00 AMT     0.00=

NO    DESCRIPTION          PLANS QTY  STAKED QTY ACCUM QTY
L10A1 ABUTMENT #1 -1910       15.00       15.00       0.00

ENTER DATE (MM/DD/YY)   ? 06/29/84
ENTER QUANTITY REPORTED ?          15.00
ENTER NAME OF INSPECTOR ? JONES.........
ENTER COMMENTS ? ABUTMENT 1 IS EXCAVATED....................
```

ONE ITEM AT A TIME, THE SCREEN WILL PROMPT YOU FOR THE DATE, QUANTITY, INSPECTOR, AND COMMENTS.

AFTER FILLING IN THE COMMENTS, THE SCREEN NOW DISPLAYS THE RESULTS OF THE TRANSACTION AND ASKS "IS THIS RECORD CORRECT? WHICH YOU CAN ANSWER AND SAVE WITH A (1), RE-ENTER ALL DATA WITH A (2), DO NOT SAVE BUT GO TO THE NEXT SUBITEM WITH A (3), AND RETURN TO THE MENU WITHOUT SAVING THE DATA YOU MAY HAVE JUST ENTERED WITH A (4).

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                      PROGRESS PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
2080001  STRUCTURAL EXCAVATION         CU.YD.    8.00
       PLANS QTY   500.00 REV QTY      500.00 AMT 4,000.00
       PP CODE 0          ACCUM          0.00 AMT     0.00= 0%
       QTY ENTRD    15.00 TO DATE       15.00 AMT   120.00= 3%

NO    DESCRIPTION        PLANS QTY  STAKED QTY ACCUM QTY
L10A1 ABUTMENT #1 -1910      15.00       15.00       0.00
                  QTY ENTRD              15.00      15.00=100%

ENTER DATE (MM/DD/YY)   ? 06/29/84
ENTER QUANTITY REPORTED ?          15.00
ENTER NAME OF INSPECTOR ? JONES.........
ENTER COMMENTS ? ABUTMENT 1 IS EXCAVATED....................

IS THIS RECORD CORRECT (1=YES, 2=NO, 3=NEXT, 4=MENU) ? ____
```

3-3 PARTIAL PAYMENTS

THE PURPOSE OF PARTIAL PAYMENT TRANSACTIONS IS TO COMPENSATE THE CONTRACTOR FOR MATERIAL DELIVERED TO THE PROJECT THAT HAS NOT BEEN INSTALLED. INSPECTOR REPORTS SHOULD DOCUMENT THIS FOR ENTRY.

PARTIAL PAYMENT SCREENS ARE REACHED BY SELECTING OPTION 2 = PARTIAL PAYMENTS FROM THE TRANSACTIONS MENU.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                 TRANSACTIONS

                 1 = PROGRESS PAYMENTS
                 2 = PARTIAL PAYMENTS
                 3 = TIME RECORDING
```

THE FOLLOWING WILL ILLUSTRATE POSTING A PARTIAL PAYMENT TO THE TRANSACTIONS DATABASE. AFTER SELECTING "2" ON THE "TRANSACTIONS MENU, THE SCREEN WILL PROMPT FOR THE SECTION.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                              PARTIAL PAYMENTS

ENTER SECTION (1 TO 99) ? 1.
```

NOW, INPUT THE ITEM NUMBER FROM THE DAILY REPORT (REMEMBER ONLY CERTAIN ITEMS ARE SUBJECT TO PARTIAL PAYMENT, SO BE SURE TO CHECK THIS IN THE SPECIFICATIONS.)

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                              PARTIAL PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ENTER ITEM NUMBER ? 5060001.
```

THE NEXT SCREEN AGAIN ASKS IF YOU WISH TO SEE A DISPLAY OF ALL TRANSACTIONS FOR THIS ITEM, HAVE CHANGED YOUR MIND, OR WANT TO CONTINUE AND POST THE TRANSACTIONS.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                              PARTIAL PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
5060001  REINFORCING STEEL             LB.       0.40
       PLANS QTY 80000.00 REV QTY  80000.00 AMT 32000.00
       PP CODE 0          ACCUM     8000.00 AMT  3200.00=10%



F1=MENU   F2=NEW ITEM    F3=HISTORY    ENTER=CONTINUE
```

After entering (with the "enter" key) we can provide the Date, Quantity, Rate, Inspector, Comments, and the Level Code for the type of material delivered. The Level Code is used to distinguish between various types of material and percentage rates. One (1) to nine (9) levels are possible. Levels are usually established before transactions are made or may be established when partial payments are agreed to by by change order.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                      PARTIAL PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
5060001  REINFORCING STEEL             LB.        0.40
       PLANS QTY 80000.00 REV QTY  80000.00 AMT 32000.00
       PP CODE 0          ACCUM     8000.00 AMT  3200.00=10%


ENTER DATE (MM/DD/YY)   ?  06/29/84
ENTER QUANTITY REPORTED ?      2000.00  ENTER RATE ? .6..
ENTER NAME OF INSPECTOR ?  JONES.........
ENTER COMMENTS ? DELIVERED TO JOBSITE - LOT #10.............
ENTER LEVEL OF PARTIAL PAYMENT ? 1
```

The screen now displays the results of the Transaction and requests you to review and SAVE with a (1) or correct with a (2), or you may again change your mind with (3) or (4).

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                      PARTIAL PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
5060001  REINFORCING STEEL             LB.        0.40
       PLANS QTY 80000.00 REV QTY  80000.00 AMT 32000.00
       PP CODE 1          ACCUM     8000.00 AMT  3200.00=10%
       QTY ENTRD  6000.00 TO DATE  14000.00 AMT  5600.00=17%

ENTER DATE (MM/DD/YY)   ?  06/29/84
ENTER QUANTITY REPORTED ?     10000.00  ENTER RATE ? .6..
ENTER NAME OF INSPECTOR ?  JONES.........
ENTER COMMENTS ? DELIVERED TO JOBSITE - LOT #10.............
ENTER LEVEL OF PARTIAL PAYMENT ? 1

IS THIS RECORD CORRECT (1=YES, 2=NO, 3=NEXT, 4=MENU? 1
```

NOTICE IN OUR EXAMPLE THAT

QUANTITY REPORTED	X	PARTIAL PAYMENT RATE	=	QUANTITY ENTERED
10,000 LB.		0.60		6,000 LB.

```
DATE: 11-01-1989       ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                       PARTIAL PAYMENTS

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

ITEM NO  DESCRIPTION                    UNIT UNIT PRICE C.O.
5060001  REINFORCING STEEL              LB.       0.40
       PLANS QTY 80000.00 REV QTY  80000.00 AMT 32000.00
       PP CODE 1          ACCUM     8000.00 AMT  3200.00=10%
       QTY ENTRD  6000.00 TO DATE  14000.00 AMT  5600.00=17%

ENTER DATE (MM/DD/YY)   ?  06/29/84
ENTER QUANTITY REPORTED ?     10000.00  ENTER RATE ? .6..
ENTER NAME OF INSPECTOR ?  JONES.........
ENTER COMMENTS ? DELIVERED TO JOBSITE - LOT #10.............
ENTER LEVEL OF PARTIAL PAYMENT ? 1

IS THIS RECORD CORRECT (1=YES, 2=NO, 3=NEXT, 4=MENU)? 1
```

THIS EXAMPLE WAS SIMPLE. THE QUANTITY REPORTED WAS IN THE SAME UNITS (POUNDS) AS THE ITEM AND WE DIDN'T HAVE TO COMPUTE THE PARTIAL PAYMENT RATE (0.60). FOUR ELEMENTS OF A PARTIAL PAYMENT TRANSACTION DESERVE MORE EXPLANATION:

+ THE REPORTED QUANTITY UNITS,

+ ESTABLISHING A PARTIAL PAYMENT RATE FROM INVOICE COST,

+ THE PARTIAL PAYMENT CODE, AND

+ THE RELATIONSHIP BETWEEN THE "INVENTORY" OF DELIVERED MATERIALS AND TRANSACTIONS THAT RECORD THE INSTALLATION OF THE MATERIAL.

REPORTED QUANTITY UNITS

MOST MATERIALS WILL BE REPORTED IN THE SAME UNITS AS THE ITEM: MAN-HOLE COVERS, DELINEATORS,...ETC.). SOME, LIKE POSTS FOR GUARD RAIL, MUST BE CONVERTED TO THE ITEM QUANTITY (L.FT.) BEFORE POSTING. IF (11) POSTS WERE DELIVERED AND THE ITEM ONLY PAYS IN LINEAL FEET OF GUARD RAIL, THEN REPORT SOME QUANTITY OF L.FT. NOT (11) POSTS.

PARTIAL PAYMENT RATE

THE PARTIAL PAYMENT RATE REDUCES THE QUANTITY REPORTED TO THE PROPORTIONAL SHARE OF THE ITEM COST. SECTION 109.07, STANDARD SPECIFICATIONS, DEFINES THE RATES FOR ITEMS USED FREQUENTLY. IF INVOICES ARE THE BASIS FOR PARTIAL PAYMENTS, COMPUTE THE RATE IN TERMS OF THE ITEM UNITS AND ROUND TO THE NEAREST PERCENT.

PARTIAL PAYMENT CODE

THE PARTIAL PAYMENT CODE (PPCODE) IS USED TO DISTINGUISH BETWEEN DIFFERENT MATERIAL TYPES. THERE ARE UP TO NINE (9) DIFFERENT TYPES OF MATERIAL ALLOWED EVEN THOUGH IT WILL BE RARE TO USE MORE THAN TWO. GUARD RAIL FOR EXAMPLE MAY HAVE:

LEVEL	TYPE OF MATERIAL	RATE
1	RAIL AND BRACKETS	0.40
2	POSTS	0.20

THE CHOICE OF WHICH LEVEL CODE (OTHER THAN "0") IS USED FOR EACH TYPE OF MATERIAL SHOULD BE PREDETERMINED. ONCE THE RELATIONSHIP IS DEFINED HOWEVER, YOU MUST BE CONSISTENT.

THE LEVEL CODE ASSIGNED TO EACH TYPE OF MATERIAL FOR AN ITEM WILL NEVER CHANGE BUT THE RATE CAN VARY WITH EACH SHIPMENT IF NECESSARY. THIS MAY OCCUR WHEN USING INVOICE COST TO DETERMINE THE PARTIAL PAYMENT RATE. THE FOLLOWING EXAMPLE IS ALLOWABLE.

LEVEL	TYPE OF MATERIAL	RATE
1	WIDGETS	0.25
1	WIDGETS	0.27
1	WIDGETS	0.19

AFTER PARTIAL PAYMENT TRANSACTIONS HAVE BEEN POSTED TO AN ITEM, ANY FOLLOWING PROGRESS PAYMENT TRANSACTIONS WILL ACCUMULATE THE INSTALLED QUANTITIES AND REDUCE THE VALUE OF ASSOCIATED MATERIAL INVENTORIES ON A FIRST-IN, FIRST-OUT BASIS.

WE NEED AN EXAMPLE. ASSUME THAT THREE (3) PARTIAL PAYMENT TRANSACTIONS HAVE BEEN POSTED:

LEVEL	RATE	TYPE OF MATERIAL	REPORTED	INVENTORY	VALUE
1	0.40	RAIL AND BRACKETS	500 L.FT	500	200
2	0.20	POSTS	1000 L.FT	1000	200
1	0.40	RAIL AND BRACKETS	500 L.FT	500	200

Now assume that the inspector reports that 700 L.Ft has been installed. After posting the progress payment the partial payment records would look like this:

LEVEL	RATE	TYPE OF MATERIAL	REPORTED	INVENTORY	VALUE
1	0.40	Rail and Brackets	500 L.Ft	0	0
2	0.20	Posts	1000 L.Ft	300	60
1	0.40	Rail and Brackets	500 L.Ft	300	120

The value of the Progress Payment is 700

and the Total Accumulated Quantity is 880

3.4 TIME RECORDING

Time Recording transactions record the number of work days charged to the project. Option (3) of the TRANSACTION menu provides the screen for the procedure.

[NOTE: THE TIME REPORT IS THE ONLY REPORT THAT MUST BE GENERATED FROM THE TRANSACTION SCREEN!]

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U

                 TRANSACTIONS

                 1 = PROGRESS PAYMENTS
                 2 = PARTIAL PAYMENTS
                 3 = TIME RECORDING
                 4 = TIME EXTENSIONS
```

SELECT NUMBER 3 FOR TIME RECORDING

The time charged to each project will be recorded on this program, and you can print out the "WEEKLY TIME REPORT" from this transaction data. [REMEMBER - THIS REPORT IS PRINTED FROM THE TRANSACTION SCREEN YOU ENTER THE TIME INTO.]

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                TIME RECORDING TRANSACTION

     WEEK BEG
NO.  MM/DD/YY  S S M T W T F  TTL  COMMENTS
06   07/21/84  0 0 1 1 1 1 1   5
07   07/28/84  0 0 1 1 1 1 1   5
08   08/04/84  0 0 W 1 1 1 1   4  RAIN ON MONDAY
09   08/11/84  0 0 1 1 1 1 1   5
...  ........  . . . . . . .      ..............................

          CODES
        1 = DAY CHARGED                      CONTRACT DAYS = 110
        W = NOT CHARGED - WEATHER            REVISED DAYS  = 110
        S = NOT CHARGED - STOP WORK ORDER    ACCUM DAYS    =  19
        H = NOT CHARGED - HOLIDAY            DAYS REMAINING=  91
        0 = WEEKEND
        X = OTHER

F1=SAVE  F2=DELETE  F3=MENU       F10=PRINT TIME REPORT
```

FILL IN THE INFORMATION REQUESTED. YOU MAY EDIT A PREVIOUS ENTRY BY ENTERING THE WEEK NUMBER OF THE WEEK YOU WISH TO MODIFY, AFTER WHICH THE PREVIOUS ENTRY WILL BE DISPLAYED AND YOU MAY MODIFY IT. (IN THE SCREEN ABOVE, YOU WOULD ENTER 08 ON THE NUMBER LINE, PRESS THE ENTER KEY, AND THE WEEK OF 08/04/88 WOULD COME DOWN FROM THE PLACE ABOVE AND SHOW ALL INFORMATION YOU HAD PUT IN SO IT CAN BE MODIFIED. MAKE THE CHANGES AND SAVE, AND THE NEW INFORMATION WILL TAKE THE PLACE OF THAT WEEK.)

THE F1 KEY WILL SAVE THE NEW OR EDITED RECORD.

THE F2 KEY IS USED TO DELETE AN EXISTING RECORD YOU HAVE EDITED.

THE F3 KEY IS USED TO RETURN TO THE MENU.

THE F10 KEY IS USED TO PRINT THE WEEKLY TIME REPORT. PRESS THAT KEY, AND ANSWER ALL QUESTIONS (WEEK NO.) AND THE REPORT WILL PRINT OUT. MAKE SURE THE PRINTER IS SET FOR 6 CHARACTERS PER INCH AND 10 LINES PER INCH TO PRINT THIS REPORT (THE STANDARD SETTING.)

USE THE COPY PRINTED BY THE COMPUTER AND OBTAIN THE NUMBER OF COPIES NEEDED USING A COPY MACHINE (WHITE COPIES ARE NOW ACCEPTABLE FOR WEEKLY TIME REPORT COPIES.)

3.5 TIME EXTENSIONS

TIME EXTENSIONS ARE RECORDED FROM THE APPROVED REQUEST FOR EXTENSION OF TIME REPORT.

TIME EXTENSION SCREENS ARE REACHED BY SELECTING OPTION 4 FROM THE TRANSACTION MENU.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                 TRANSACTIONS

              1 = PROGRESS PAYMENTS
              2 = PARTIAL PAYMENTS
              3 = TIME RECORDING
              4 = TIME EXTENSIONS
              5 = FORCE ACCOUNT PAYMENT
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? 4
```

ENTER THE REQUEST NUMBER, THE NUMBER OF ADDITIONAL DAYS APPROVED, AND THE APPROVED DATE.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                 TIME EXTENSION TRANSACTION

                 ORIGINAL CONTRACT DAYS  90
                 REVISED CONTRACT DAYS   90

                 REQUEST NO.          ....
                 DATE APPROVED        ........
                 DAYS EXTENDED        ...

F1=SAVE  F2=DELETE  F3=MENU
```

ENTER THE REQUESTED INFORMATION. IF YOU ENTER THE REQUEST NUMBER OF A PREVIOUSLY ENTERED REQUEST, YOU MAY EDIT THAT RECORD OR DELETE IT WITH THE F2 KEY.

SAVE THE NEW OR EDITED INFORMATION WITH THE F1 KEY.

3-6 FORCE ACCOUNT TRANSACTIONS

FORCE ACCOUNT TRANSMITTALS ARE RECORDED FROM THE DETAIL OF FORCE ACCOUNT WORK REPORTS.

FORCE ACCOUNT PAYMENT SCREENS ARE REACHED BY SELECTING OPTION 5 FROM THE TRANSACTION MENU.

```
DATE: 11-01-1985      ADOT OFFICE LOGS  (VSN 2.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                 TRANSACTIONS

            1 = PROGRESS PAYMENTS
            2 = PARTIAL PAYMENTS
            3 = TIME RECORDING
            4 = TIME EXTENSIONS
            5 = FORCE ACCOUNT PAYMENT
            0 = RETURN
          ESC = ESCAPE

            ENTER OPTION ? 5
```

AGAIN, THE SCREEN PROMPTS FOR THE SECTION....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                 FORCE ACCOUNT TRANSACTION
ENTER SECTION (1 TO 99) ? 1.
```

NOW, INPUT THE FORCE ACCOUNT NUMBER AND HIT "ENTER"....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U
                 FORCE ACCOUNT TRANSACTION
SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94
ENTER FORCE ACCOUNT NUMBER ? 1...
```

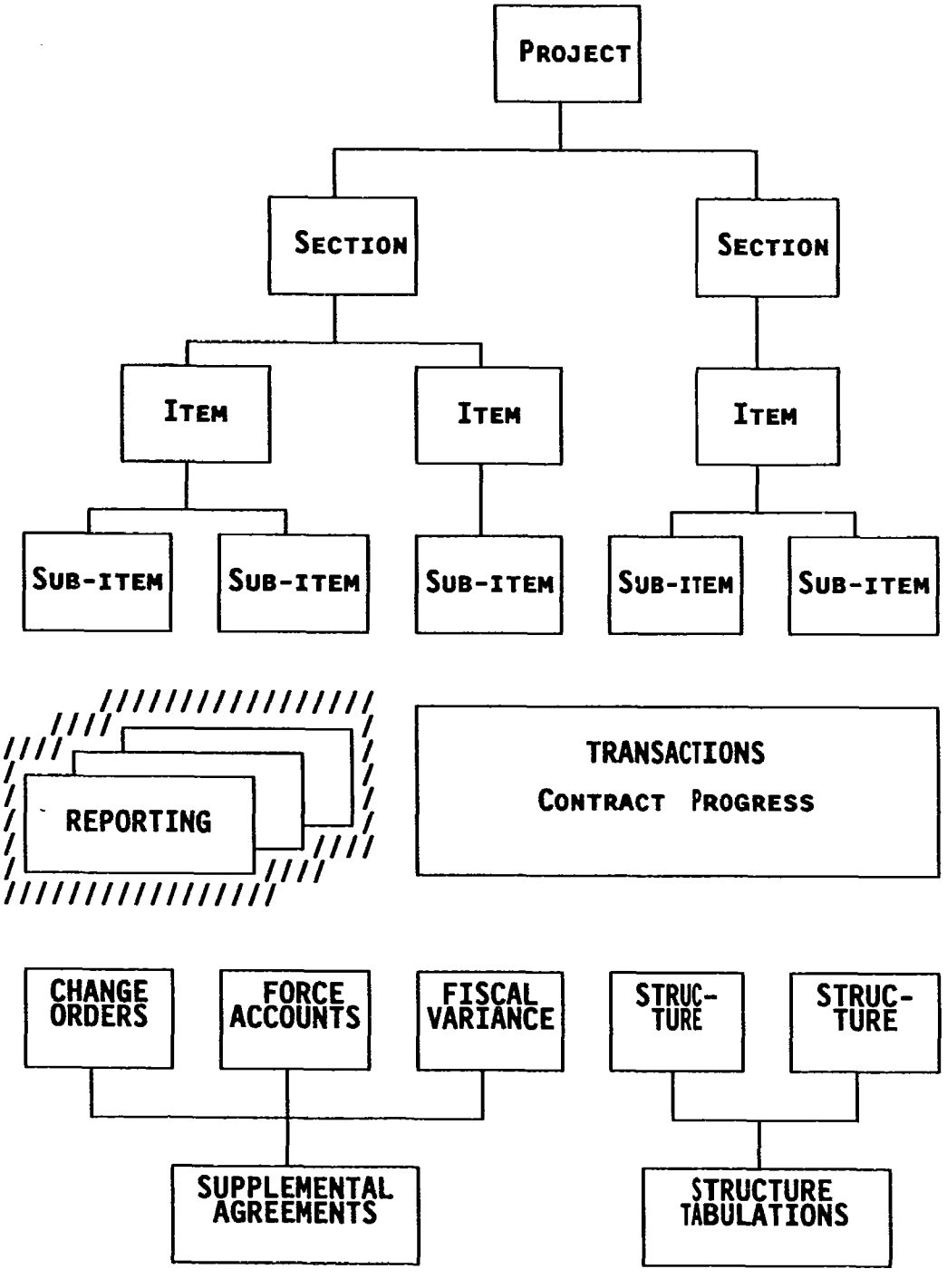
ON THE NEXT SCREEN, ENTER THE DATE, AMOUNT REPORTED, INSPECTOR, AND UP TO (59) CHARACTERS OF COMMENTS FROM THE APPROVED FORCE ACCOUNT DETAIL.

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U
                    FORCE ACCOUNT TRANSACTION

SECTION: 1 FA X281  DESCRIPTION: BRIDGES  @ STA 869 & STA 94

NO   DESCRIPTION                  AMOUNT  ACCUM AMT     %
1    REMOVE SLIDE MATERIAL   $4,000.00  $4,495.25   112%

ENTER DATE                 06/29/84
ENTER AMOUNT REPORTED      ..............
ENTER INSPECTOR'S NAME     ................
ENTER COMMENTS        ........................................

F1=SAVE  F2=DELETE  F3=MENU
```

AFTER ENTERING THE REQUESTED INFORMATION, SAVE IT WITH THE F1 KEY. THE F2 KEY IS INACTIVE HERE.

CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 4 - REPORTING



4.1 INTRODUCTION

THE DESIRED RESULT FROM THE CPE SYSTEM IS THE PRODUCTION OF COMPLETE, ACCURATE, AND TIMELY REPORTS FOR CONTRACTOR PROGRESS ESTIMATES. TO MEET THIS NEED, THE MICROCOMPUTER CPE METHOD PROVIDES A SERIES OF REPORTS FOR ANALYSING INFORMATION REPORTED FROM THE FIELD AND PROGRESS AND FINAL ESTIMATE REPORTS THAT CAN BE SUBMITTED TO FIELD REPORTS.

REPORTS

PROJECT REPORTS	HEADQUARTER REPORTS	ANALYSIS REPORTS
ITEM	MONTHLY ESTIMATE	TRANSACTION DETAIL
SUB-ITEM	FINAL BALANCE	DATA ANALYSIS
STRUCTURE		
FORCE ACCOUNT		
CHANGE ORDER		
WEEKLY TIME REPORT		

(SEE PREVIOUS CHPT FOR PRINTING TIME REPORT)

ALL REPORTS EXCEPT THE WEEKLY TIME REPORT CAN BE DISPLAYED ON THE SCREEN INSTEAD OF PRINTING A COPY. WITH PRACTICE YOU WILL SOON BE SELECTING INFORMATION FOR A VARIETY OF USES. AFTER ENTERING THE PROJECT NUMBER ON THE MAIN CPE MENU (SEE P. 3-3,) THEN SELECT REPORTS ON THE OFFICE LOG ROUTINES MENU (P. 3-3) TO GET TO THE FOLLOWING SCREEN.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

              1 = ITEM REPORT
              2 = SUB-ITEM REPORT
              3 = STRUCTURE REPORT
              4 = FORCE ACCOUNT REPORT
              5 = CHANGE ORDER REPORT
              6 = MONTHLY ESTIMATE
              7 = FINAL BALANCE REPORT
              8 = TRANSACTION DETAIL LOG
              9 = DATA ANALYSIS
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? ..
```

4.2 ITEM REPORT

By selecting option 1 above, the ITEM REPORT screen is generated. Then, the ITEM REPORT screen asks whether you want reports for one item, or several, or a section. Below we input for one item report for Item 2020001.

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
                          ITEM REPORT

                  1 = REPORT FOR ITEM (X)
                  2 = REPORT FOR ITEM (X) TO ITEM (Y)
                  3 = REPORT FOR ALL ITEMS IN SECTION
                  0 = RETURN

                  ENTER OPTION ? 1

ITEM (X) = 2020001
ENTER (1) FOR A PRINTED COPY ? 1
ENTER (1) TO INCLUDE HISTORY ? 1
```

This is the report that will be generated.....

```
                        ITEM REPORT
10-10-1989    ADOT OFFICE LOG SYSTEM                10:13:44

PROJECT: 1                DESCRIPTION: I 10/ I 17 INTERCHANGE
CONTRACTOR: KASLER        RE/SUPERVISOR: CHAPMAN

SECTION 1   FHWA CODE FA 1000   ROADWAY

ITEM NO     DESCRIPTION         UNIT     UNIT PRICE CHNG ORDR
2020001  REMOV STRTR & OBSTR    L.SUM    $7,500.00    1, 13
    PLANS QTY   1.00      REV QTY  1.00      AMT* $7,500.00
    PPCODE** 0            ACCUM*** 0.10      AMT****$750.00
```

* This amount is for the revised quantity
** Partial Payment Code - see Chapter 3
*** Quantity reported to date
**** Amount paid to date

4.3 SUBITEM REPORT

THE NEXT REPORT IS THE SUBITEM REPORT. THIS IS GENERATED BY INPUTTING "2" IN THE FOLLOWING SCREEN (SEE 4.2 ITEM REPORT ON HOW TO ARRIVE AT THIS SCREEN.)

```
DATE: 11-01-1989        ADOT OFFICE LOGS   (VSN 3.13)

NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

              1 = ITEM REPORT
              2 = SUB-ITEM REPORT
              3 = STRUCTURE REPORT
              4 = FORCE ACCOUNT REPORT
              5 = CHANGE ORDER REPORT
              6 = MONTHLY ESTIMATE
              7 = FINAL BALANCE REPORT
              8 = TRANSACTION DETAIL LOG
              9 = DATA ANALYSIS
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? 2.
```

AS IN ITEM REPORTS, THE NEXT SCREENS PROMPT FOR THE SECTION AND ITEM NUMBERS. ONLY ONE ITEM'S SUBITEMS CAN BE GENERATED PER REPORT. YOU MAY SELECT A REPORT FOR ONE SUBITEM, SEVERAL, OR ALL SUBITEMS FOR ONE ITEM.

```
DATE: 11-01-1989        ADOT OFFICE LOGS   (VSN 3.13)
                        SUB-ITEM REPORT

                  1 = REPORT FOR SUB-ITEM (X)
                  2 = REPORT FOR SUB-ITEM (X) TO SUB-ITEM (Y)
                  3 = REPORT FOR ALL SUB-ITEMS FOR ITEM
                  0 = RETURN

                  ENTER OPTION ? 3

ITEM (X) = 2020001
ENTER (1) FOR A PRINTED COPY ? 1
ENTER (1) TO INCLUDE HISTORY ? 1
```

THE FOLLOWING REPORT IS GENERATED FOR ALL SUBITEMS. THE SUBITEM REPORT FOR ONE SUBITEM IS THE SAME, BUT WITH ONLY ONE SET OF TRANSACTIONS FOR THAT ONE SUBITEM.

```
                         SUBITEM REPORT

 04-29-88          ADOT OFFICE LOG SYSTEM          08:32:32

 PROJECT:  1              DESCRIPTION: I 10/ I 17 INTERCHANGE
 CONTRACTOR: KASLER       RE/SUPERVISOR: CHAPMAN

 SECTION  1        FHWA CODE  I000   ROADWAY

ITEM NO      DESCRIPTION        UNIT   UNIT PRICE  CHNG ORDERS
2020001  REMOVAL STRTS & OBST  L.SUM  $7,500.00   1, 13
    PLANS QTY    1.00  REV QTY   1.00  AMT  $7,500.00
    PPCODE  0    ACCUM    0.10****** AMT $750.00 = 10% *

SUB-ITEM DESCRIPTION          STAKED QTY    ACCUM QTY
0     BALANCE                      0.00        0.00 **
1     WALL                         0.20        0.00 ***
2     HOUSE                        0.30        0.05 ****
          ****LIST OF TRANSACTIONS
 DATE     QUANTITY   INSPECTOR     COMMENTS
04/12/88      0.05   RGD       INSP REPORT NO.35
 TOTAL =      0.05
       ---------------------------------------------
3     GRANDVIEW BLDG                0.50        0.05*****

          *****LIST OF TRANSACTIONS
 DATE     QUANTITY   INSPECTOR     COMMENTS
04/15/88      0.03   RGD       INSP REPRT NO. 38
04/18/88      0.03   RGD       INSP REPRT NO. 41
 TOTAL =      0.04
       ---------------------------------------------
                          TOTALS    1.00        0.10******
```

* PERCENT OF THE TOTAL COMPLETE TO DATE
** BALANCE SUBITEM WILL SHOW "0" QUANTITY AFTER BALANCING ROUTINE (DESCRIBED IN CHAPTER 2 AND 3.)
*** ZERO QUANTITY SHOW NO TRANSACTIONS TO DATE
**** LIST OF TRANSACTIONS FOR THIS SUBITEM
***** DITTO
****** TOTAL OF ALL SUBITEMS = TOTAL OF ITEM QUANTITY

4.4 STRUCTURE REPORT

SELECTING THE THIRD OPTION FROM THE REPORTS MENU BELOW GIVES US THE STRUCTURE MENU.....

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

              1 = ITEM REPORT
              2 = SUB-ITEM REPORT
              3 = STRUCTURE REPORT
              4 = FORCE ACCOUNT REPORT
              5 = CHANGE ORDER REPORT
              6 = MONTHLY ESTIMATE
              7 = FINAL BALANCE REPORT
              8 = TRANSACTION DETAIL LOG
              9 = DATA ANALYSIS
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? 3.
```

THE STRUCTURE REPORT WILL BE GENERATED BY INPUTTING THE PARTICULAR NUMBER ASSIGNED TO THE STRUCTURE AS IN CHAPTER 2 FROM THE INSPECTOR'S REPORT.....

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
                        STRUCTURE REPORT

              1 = REPORT FOR STRUCTURE (X)
              2 = REPORT FOR STRUCTURE (X) TO STRUCTURE (Y)
              3 = REPORT FOR ALL STRUCTURES FOR SECTION
              0 = RETURN

                ENTER OPTION ? 1

ENTER STRUCTURE (X) ? L09A1
ENTER (1) FOR A PRINTED COPY ? 1
ENTER (1) TO INCLUDE HISTORY ? 1
```

THE FOLLOWING REPORT WILL THEN BE GENERATED.....

```
                    STRUCTURE SUMMARY

10-10-1989      ADOT OFFICE LOG SYSTEM            10:19:08

PROJECT:1   I-40-3 (28)     DESCRIPTION: WILLIAMS BYPASS UN II
CONTR.: MM SUNDT CONST CO   RE/SUPERVISOR: R. WACHTER

SECTION:  1  CODE: FA X281   DESCR: BRDGS AT STA 879 AND 947

STRUCTURE NO: L09A1  DESCRIPTION:  ABUTMENT #1 - 1909 (***)

  ITEM     SUB      DESCRIPTION            STAKED QTY  ACCUM QTY
2080001  L09A1  SPECIAL BACKFILL              215.00        0.00
5030055  L09A1  STRUCTURAL CONCRETE (3K)       19.10        0.00
5060001* L09A1  REINFORCING STEEL           4,400.00    4,400.00
            *LIST OF TRANSACTIONS
  DATE  QUANTITY   INSPECTOR          COMMENTS
06/29/88 4400.00    RGD        INSP REPRT # 26
  TOTAL =  4,400.00

5120003**L09A1  FURNISHING PILES(12X53)   256.00      123.00
           **LIST OF TRANSACTIONS
  DATE  QUANTITY   INSPECTOR          COMMENTS
06/15/88   72.00    RGD        INSP REPRT # 10
06/29/88   51.00    RGD        INSP REPRT # 26
  TOTAL =    123.00

                ETC......
```

* & ** - TRANSACTIONS ARE FOR THE ITEM IMMEDIATELY PRECEDING THEM

(***)REPORTS FOR MORE THAN ONE STRUCTURE (L09A2, ETC.)WILL REPEAT FROM THIS LINE DOWN FOR THE VARIOUS STRUCTURES THAT ARE REQUESTED.

4.5 FORCE ACCOUNT REPORT

ONCE AGAIN, WE ENTER THE REPORTS SUBMENU AFTER ENTERING THE PROJECT NUMBER FROM THE MAIN CPE MENU AND SELECTING REPORTS ON THE OFFICE LOG ROUTINES SUBMENU, AND THEN ENTER OPTION 4.....

```
REPORTS

1 = ITEM REPORT
2 = SUB-ITEM REPORT
3 = STRUCTURE REPORT
4 = FORCE ACCOUNT REPORT
```

NEXT, ANSWER THE QUESTIONS BELOW BY INPUTTING EACH VARIABLE....

```
DATE: 11-01-1989        ADOT OFFICE LOGS  (VSN 3.13)
                      FORCE ACCOUNT REPORT

ENTER FORCE ACCOUNT NUMBER OR ENTER (ALL) ?  1
ENTER (1) FOR A PRINTED COPY ? 1
ENTER (1) FOR A HISTORY OF F.A. TRANSACTIONS ?
```

AND THE FOLLOWING REPORT IS GENERATED.....

```
DATE: 11-01-1985        ADOT OFFICE LOGS  (VSN 2.13)

NO:1   PROJECT:I-40-3(28)      DESCRIPTION:WILLIAMS BYPASS -U
                      FORCE ACCOUNT REPORT

NO   DESCRIPTION                        AMOUNT  ACCUM AMT  %
1    REMOVE SLIDE MATERIAL            4,000.00   4,495.25 112%
```

4.6 CHANGE ORDERS AND FISCAL VARIANCE REPORTS

AGAIN, RETURN TO THE REPORTS MENU, AND INPUT OPTION 5.....

```
                    REPORTS

          1 = ITEM REPORT
          2 = SUB-ITEM REPORT
          3 = STRUCTURE REPORT
          4 = FORCE ACCOUNT REPORT
          5 = CHANGE ORDER REPORT
          6 = MONTHLY ESTIMATE
```

AND, AGAIN, ANSWER THE FOLLOWING QUESTIONS AS YOU ARE PROMPTED FOR THEM.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

             CHANGE ORDER/FISCAL VARIANCE REPORT

ENTER CO/FV NUMBER OR ENTER (ALL) ?  ALL
ENTER (1) FOR A PRINTED COPY ?  1
```

```
                    CHANGE ORDER/FISCAL VARIANCE REPORT
06-29-88                ADOT OFFICE LOG SYSTEM                10:08:01

PROJECT:  1    I-40-3 (28)    DESCRIPTION: WILLIAMS BYPASS UNIT II
CONTRACTOR:  MM SUNDT CONST   RE/SUPERVISOR: R. WACHTER

CHANGE ORDER NUMBER:  3   DESCRIPTION:  STR. CONCRETE PENALTY
DATE APPROVED:  06/05/88
SECT  ITEM     DESCRIPTION          QUANTITY     RATE     AMOUNT
  1  5030055  STRUCT CONC (3000)      -8.00    250.00   -2,000.00
  1  5030055A STRUCT CONC (3000)       8.00    125.00    1,000.00

                                   TOTAL AMOUNT          -1,000.00

CHANGE ORDER NUMBER:  7   DESCRIPTION:  STR. CONCRETE PENALTY
DATE APPROVED:  06/05/88
SECT  ITEM     DESCRIPTION          QUANTITY     RATE     AMOUNT
  1  5030055  STRUCT CONC (3000)     -14.00    250.00   -3,500.00
  1  5030055B STRUCT CONC (3000)      14.00    212.50    2,975.00

                                   TOTAL AMOUNT          -  525.00

                            CONTRACT AMOUNT =   $1,096,222.00
                       CHANGE ORDER AMOUNT =       -$1,525.00
                  FISCAL VARIANCE AMOUNT =              $0.00
                 REVISED CONTRACT AMOUNT =   $1,094,697.00
```

4.7 MONTHLY (PROGRESS) ESTIMATE

AGAIN, AFTER ENTERING THE REPORTS MENU BELOW (SEE PREV. SECTIONS FOR THE PATH TO GET HERE,) SELECT OPTION 6.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

            1 = ITEM REPORT
            2 = SUB-ITEM REPORT
            3 = STRUCTURE REPORT
            4 = FORCE ACCOUNT REPORT
            5 = CHANGE ORDER REPORT
            6 = MONTHLY ESTIMATE
            7 = FINAL BALANCE REPORT
```

NOW YOU WILL BE AT THE FOLLOWING SCREEN. NOTE THAT THE INFORMATION (ESTIMATE NUMBER, DATE, AND Y/N FOR PRINT OR NOT,) CAN BE CHANGED BY OVERWRITING IN THE APPROPRIATE SPACE, OR JUMPED BY USING THE "ENTER" KEY TO SELECT ONE OF THE THREE. MOST TIMES, THE INFORMATION SUPPLIED HERE WILL BE CORRECT, AND TO PRINT THE ESTIMATE, YOU THEN PRESS THE "F1" FUNCTION KEY.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                      MONTHLY ESTIMATE

                      PREVIOUS ESTIMATE
#    DATE        AMOUNT                REMARKS
1  12/25/84    $55,719.25

                ESTIMATE #  DATE     PRINT ESTIMATE (Y/N)
                     2     01/25/85          Y

   F1=CONTINUE   F2=EDIT PREVIOUS ESTIMATE   F3=QUIT
```

IF YOU HAVE ACCIDENTALLY SAVED AN ESTIMATE (ON FOLLOWING SCREENS,) YOU MAY CHANGE OR DELETE THAT BY USING THE "F2" FUNCTION KEY AT THIS TIME. USING THE "F3" FUNCTION KEY WILL RETURN YOU TO THE PREVIOUS MENU.

BY CHOOSING F2 ON THE MONTHLY ESTIMATE SCREEN, YOU ARE ABLE TO GO BACK AND EDIT THE QUANTITIES OF A PREVIOUS ESTIMATE. THE EDIT ESTIMATE SCREEN LOOKS LIKE THIS.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                    MONTHLY ESTIMATE

                 CORRECT PREVIOUS ESTIMATE
               ESTIMATE #              DATE
                  1                 12/25/84

      FEDERAL AID SECTION       NON-FEDERAL AID SECTION
 RDWY     STR OVR   F. ACCT.    RDWY      STR OVR   F.ACCT
0....... 51224... 4495.25...  0........ 0........ 0........

   F1=NEXT  F2=PREV  F3=SAVE  F4=DELETE  F5=RETURN
```

USING THE CURSOR KEYS, YOU CAN MOVE AROUND IN THIS SCREEN AND CORRECT THE PREVIOUS ESTIMATE. THIS IS NOT RECOMMENDED, SINCE THE ESTIMATE CAN USUALLY BE CORRECTED BY ENTRIES, HOWEVER SHOULD YOU FIND AN ERROR FROM SEVERAL MONTHS BACK, YOU MAY USE THE F1 AND F2 KEYS TO GO BACK TO THE QUANTITIES AND AMOUNTS THAT YOU NEED TO CHANGE.... AGAIN, THIS WILL NOT CHANGE THE ENTRIES, ONLY THE TOTALS SHOWN. THESE ENTRIES MAY NEED TO BE CORRECTED IN ADDITION TO CORRECTING THE PREVIOUS MONTHS TOTALS.

IF YOU SHOULD NEED TO DELETE AN ESTIMATE (BECAUSE YOU SAVED IT BEFORE FINSHING ALL MONTHLY ENTRIES,) OR YOU NOTICE THAT TOO MANY ESTIMATES ARE SHOWING UP ON THE LOG, USE THE F4 KEY. THIS DOES NOT DELETE ANY TRANSACTIONS OR DATA. IT ONLY DELETES THE LAST LINE IN THE COMPUTER "LOG" FOR THE ESTIMATES. AS AN EXAMPLE, IF YOU WERE TO SAVE AN ESTIMATE AFTER PRINTING IT, AND THEN NOTICED THAT YOU HAD FORGOTTEN AN ENTRY FOR THIS PAST MONTH, YOU COULD GO INTO THIS SCREEN AND DELETE THE ESTIMATE (WHICH DOES NOT DELETE THE DATA) AND THEN ADD THE QUANTITY YOU DESIRE TO ADD, AND THEN PRINT THE ESTIMATE (OR SELECT N FOR NO PRINT IF YOU DON'T NEED A COPY,) AND THEN SAVE IT AGAIN, WITH THE ADDED QUANTITY REPRESENTED IN THE NEW ESTIMATE QUANTITY FOR THIS MONTH.

IF ANY CORRECTIONS HAVE BEEN MADE ON THE PREVIOUS SCREEN, SAVE THEM WITH THE F3 KEY. THE FOLLOWING SCREEN SHOWS THE COMPUTER ESTIMATE "LOG" WHICH APPEARS AFTER YOU HAVE RUN THE ESTIMATE. THE ESTIMATE YOU HAVE JUST PRINTED WILL BE THE LAST ENTRY ON THE "LOG." REVIEWING THIS LOG MAY HELP YOU TO SPOT ANY ERRORS. YOU CAN RUN AS MANY INTERMEDIATE ESTIMATES AS YOU WANT WITHOUT THEIR BEING THE "MONTHLY" ESTIMATE, AS LONG AS YOU DON'T SAVE THEM. IF YOU SHOULD, JUST REMEMBER TO EDIT THE PREVIOUSLY SAVED ESTIMATES AS NECESSARY, AND NONE OF THIS EDITING WILL EFFECT THE TRANSACTIONS YOU HAVE ENTERED.

```
PREVIOUS ESTIMATE
NO    DATE        AMOUNT        REMARKS
1     10/25/89    $55,719.25
2     11/25/89    $101,919.25
3     12/26/89    $435,987.50   SEMI-FINAL ESTIMATE
4     01/25/90    $435,987.50   FINAL ESTIMATE

DO YOU WANT TO SAVE THIS MONTHLY ESTIMATE (1=YES,2=NO) _____
```

THE MONTHLY ESTIMATE ITSELF IS MADE UP OF TWO ELEMENTS. FIRST, THERE IS THE TRANSMITTAL SHEET. THIS CONVEYS THE RECAPITULATION OF ALL SUMS OF MONEY ACCORDING TO THE SECTION AND WHETHER OR NOT THERE IS FEDERAL PARTICIPATION IN THE PROJECT. ACCORDING TO CURRENT POLICY, THE START DATE ON THE ESTIMATE IS THE DATE THE CONTRACTOR ACTUALLY STARTED WORK, SO THE PERCENT TIME USED OR COMPLETE MAY VARY SOMEWHAT FROM THAT WHICH MIGHT BE BASED ON THE "OFFICIAL" START DATE OF THE PROJECT. OTHER INFORMATION INCLUDES GENERAL PROJECT INFORMATION THAT IS INPUT INTO THE BUILD "PROJECT RECORD." (SEE CHAPTER 3)

```
                ARIZONA DEPARTMENT OF TRANSPORTATION
                     DIVISIONS OF HIGHWAYS

ORG:        4443       TRANSMITTAL SHEET        CONTR AMT: $1,096,22
FUND CODE:  82514    (MONEY SUMM PROG & FINAL)  STARTED:        04/0
PROJ. NO:   I-40-3(28)                          COMPLETED:
DESCR:      WILLIAMS BYPASS                     % TIME USED:        4
CONTR.:     MM SUNDT CORP      ESTIMATE NO 1    % COMPLETE:         5
NO OF DAYS:90                MONTH: JUNE 1989   ENGINEER:     R. WAC

                    SUMMARY OF FEDERAL AID CONSTRUCTION

SECTION     RDWY & SM STR   STR(+20)    TOT      F.ACCT     TOTAL
1 FA I000   52,400.00         0.00   52,400.00   0.00    52,400.00....
1 FA X231        0.00    30,000.00   30,000.00   0.00    30,000.00....

ACCUM       52,400.00    30,000.00   82,400.00   0.00    82,400.00....
PREV        20,000.00    11,000.00   31,000.00   0.00    31,000.00....
CURRENT     32,400.00    19,000.00   51,400.00   0.00    51,400.00....

                  SUMMARY OF NON-FEDERAL AID CONSTRUCTION

ACCUM            0.00         0.00        0.00   0.00          0.00....
PREV             0.00         0.00        0.00   0.00          0.00....
CURRENT          0.00         0.00        0.00   0.00          0.00....

                         GRAND TOTAL CONSTRUCTION

ACCUM       52,400.00    30,000.00   82,400.00   0.00    82,400.00....
PREV        20,000.00    11,000.00   31,000.00   0.00    31,000.00....
CURRENT     32,400.00    19,000.00   51,400.00   0.00    51,400.00....
```

(CONT'D NEXT PAGE)

BELOW THE GRAND TOTAL CONSTRUCTION, IS A REMARKS COLUMN WHICH YOU ARE PROMPTED FOR AS YOU CONTINUE THE ESTIMATE. THESE REMARKS ARE ALSO THE REMARKS PRINTED AT THE RIGHT SIDE OF THE ESTIMATE "LOG" WE HAVE REFERRED TO (SUCH AS "FINAL ESTIMATE" ETC.) BELOW THAT IS THE SIGNATURE LINE.....

REMARKS: FINAL ESTIMATE.....

DATE	RESIDENT ENGINEER	DATE	FIELD REPORTS

AFTER THE TRANSMITTAL SHEET, COMES THE PROGRESS AND FINAL PAYMENT REPORT OF ALL ITEMS, WHICH IS WHAT THE TRANSMITTAL SHEET IS DERIVED FROM. ON THE LAST SHEET OF EACH SECTION IS A TOTAL FOR THE SECTION AS SHOWN BELOW.....

PROGRESS AND FINAL PAYMENT REPORT

ESTIMATE NO. 1 SHEET: 2
PROJECT I-40-3(28) SECTION 1 DATE: 07/0
CODE: FA I000
ROADWAY

ITEM NO	ITEM DESCR	UNIT	PLANS	REVISED	PRICE	ACCUM	AMOUNT	%
5150503	STR CONC	L.SUM	1.00 $50.00	1.00 $50.00	$50.00	0.00	$0.00	0%
5150504	REINF STEEL	LB.	200.00 $0.40	200.00 $0.40	$0.40	0.00	$0.00	0%
	TOTALS		$1,050.00	$1,050.00 = 100%			$525.00=50%	

ESTIMATE EDITING AND ERROR LOCATION INFORMATION IS AVAILABLE THROUGH YOUR VARIOUS EDP GROUPS.

4.8 FINAL BALANCE REPORT

THIS REPORT LISTS THE REASONS FOR ANY PROJECT OVERRUNS OR UNDERRUNS, AND ALSO BALANCES THE ITEMS SUCH THAT THESE "RUNS" ARE VISIBLE. THE FOLLOWING SCREEN WILL BE THE FIRST YOU SEE AFTER INPUTTING OPTION 7 ON THE REPORTS MENU WE HAVE BEEN USING (SEE PREV. SECTIONS) THIS SCREEN WILL ASK WHICH REPORT DO YOU WANT, AND ALLOWS YOU TO INPUT REASONS. IN MOST CASES YOU WILL WANT THE FINAL REPORT PRINTED WITH REASONS AFTER THE CONCLUSION OF THE PROJECT.

```
DATE: 10-10-1989      ADOT OFFICE LOGS  (VSN 3.13)          10:23:45
NO: 1    PROJECT: I-40-3(28)     DESCRIPTION: WILLIAMS BYPASS

                         FINAL BALANCE ROUTINE

                  1 = PRINT FINAL BALANCE (NO REASONS)
                  2 = SCREEN PRINT (WITH REASONS)
                  3 = INPUT REASONS
                  4 = PRINT FINAL BALANCE (W/REASONS)
                  0 = RETURN TO REPORT MENU
                ESC = ESCAPE

                         ENTER OPTION  _____
```

THE LAST BALANCE SHEET OF EACH SECTION ALSO HAS THE SECTION TOTALS AND LISTS THE DIFFERENCES AND LOOKS LIKE THIS.....

```
                         SECTION 1
                     SECTION CODE FA I000
                          ROADWAY

ITEM NO  CO/FVR   REASONS FOR OVERRUNS OR UNDERRUNS
........ ........ ..................................................
7370455  1, 5     CHANGE ORDERS
9080001           MORE TURNOUTS WERE ENCOUNTERED THAN ANTICIPATED
9250001  FV 2     CONTRACT SHORTENED REQUIRED LESS SURVEYING (FVR)



                                PLANS   FIELD
ITEM NO DESCRIPTION               QTY     QTY       RATE      +/-AMOUN
........ ................... ......... ......... ......... ...........
7250001 LAND MARKS                2.00     2.00     35.00         0.0
7370455 RECESSED SIGNS           32.00    34.00    100.00      +200.0
9080001 TURNOUTS                100.00   110.00     10.00      +100.0
9250001 SURVEYING                 1.00     0.90    500.00       -50.0

                                                  +          -
                    SECTION TOTALS      $430,000.00   $330,000.00
                    DIFFERENCE          $100,000.00
```

THE LAST PAGE OF THE REPORT IS THE RECAPITULATION

```
05-04-1989                    FINAL BALANCE
PROJECT I-40-3 (28)                WILLIAMS BYPASS          SHEET 4
CONTRACTOR MM SUNDT CONST        RE/SUPVR R.WACHTER       ORG 4443
```

FINAL BALANCE RECAPITULATION

SECT	CODE	DESCRIPTION	ORIG AMT	FINAL AMT	+/- AMT
1	FA I000	ROADWAY	1,166,222.00	1,175,554.00	+9,332.00
2	FA Y080	PROV ON JOB TRA	320.00	280.00	-40.00
		TOTALS	1,166,542.00	1,175,274.00	+9,292.00
		TOTAL FORCE ACCT		4,200.00	+4,200.00
		GRAND TOTALS	1,166,542.00	1,179,474.00	+13,492.00

THE REASONS FOR THE OVERRUNS OR UNDERRUNS CAN BE INPUT BY USING OPTION 3 ON THE FINAL BALANCE ROUTINES MENU WE USED IN THE LAST SECTION.....

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                 FINAL BALANCE ROUTINE

  1 = PRINT FINAL BALANCE (NO REASON)
  2 = SCREEN PRINT (W/REASONS)
  3 = INPUT REASONS
  4 = PRINT FINAL BALANCE(W/REASONS)
  0 = RETURN TO MAIN PROGRAM
ESC = ESCAPE

                 ENTER OPTION ? 3
```

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3 (28)    DESCRIPTION: WILLIAMS BYPASS

SECT  ITEM NO      REASON FOR OVER-RUN OR UNDER-RUN
 1    2080001     ........................................
                  ......................................

STRUCTURAL EXCAVATION                          CHANGE ORDERS
PLANS QTY =          500.00
REV QTY   =          500.00 =100.00%
FIELD QTY =           15.00 =  3.00%

DIFFERENCE          -485.00 =-97.00%
RATE     X             8.00
DOLLARS =        -$3,880.00

F1=NEXT F2=PREVIOUS F3=SAVE F4=DELETE F5=MENU F9=10+ F10=10-
```

THE ABOVE SCREEN ALLOWS INPUT OF REASONS FOR OVER OR UNDER RUNS. THE F1 & F2 FUNCTION KEYS LISTED ON THE BOTTOM ALLOW MOVEMENT FOREWARD OR BACKWARD IN THE FILE.

AFTER THE REASONS ARE INPUT AND CORRECT, PRESS F3 TO SAVE THEM. AFTER ALL VARIANCES ARE EXPLAINED, RETURN TO THE MENU WITH F5 AND PRINT OUT THE FINAL BALANCE REPORT AS PREVIOUSLY DESCRIBED.

4-9 TRANSACTION DETAIL LOG

BY SELECTING OPTION 8 IN THE REPORTS MENU BELOW, THE PROGRAM WILL PRINT A COPY OF THE ENTIRE PROJECT CONTENTS, INCLUSIVE OF ALL SUBITEMS AND TRANSACTIONS, AND ALL TIME ENTRIES.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

              1 = ITEM REPORT
              2 = SUB-ITEM REPORT
              3 = STRUCTURE REPORT
              4 = FORCE ACCOUNT REPORT
              5 = CHANGE ORDER REPORT
              6 = MONTHLY ESTIMATE
              7 = FINAL BALANCE REPORT
              8 = TRANSACTION DETAIL LOG
              9 = DATA ANALYSIS
              0 = RETURN
            ESC = ESCAPE

                ENTER OPTION ? _____
```

THIS REPORT WILL AUTOMATICALLY START PRINTING ON THE PRINTER WHEN YOU SELECT OPTION 8. THIS MAY BE A VERY LENGTHY REPORT, AND IS USUALLY USED TO OVERVIEW THE ENTIRE DATA BASE FOR A PROJECT. YOU MAY USE THE DATA ANALYSIS WHICH FOLLOWS THIS SECTION TO DETEMINE ERRORS WITHOUT A PRINTOUT OF THE ENTIRE PROJECT. AT THE END OF THE TRANSACTION DETAIL LOG, THE PROGRAM WILL LIST ANY ERRORS OR WARNING MESSAGES ABOUT THE PROJECT.

4-10 DATA ANALYSIS

THE DATA ANALYSIS ROUTINE IS GENERATED FROM THE REPORTS MENU...

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)
NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

                    REPORTS

              1 = ITEM REPORT
              2 = SUB-ITEM REPORT
              3 = STRUCTURE REPORT
              4 = FORCE ACCOUNT REPORT
              5 = CHANGE ORDER REPORT
              6 = MONTHLY ESTIMATE
              7 = FINAL BALANCE REPORT
              8 = TRANSACTION DETAIL LOG
              9 = DATA ANALYSIS
              0 = RETURN
            ESC = ESCAPE

              ENTER OPTION ? ___
```

THE DATA ANALYSIS IS AN EXCEPTION REPORT. THE INFORMATION IS SIMILAR TO THE TRANSACTION DETAIL LOG BUT ONLY RECORDS THAT ARE OUT OF BALANCE ARE DISPLAYED AND AVAILABLE TO PRINT. IN OTHER WORDS, THIS REPORT WILL LIST ALL BALANCING ERRORS DETECTED IN THE DATA FOR A PROJECT. THE FOLLOWING CONDITIONS WILL DISPLAY A REPORT THAT INDICATES RECORDS THAT DO NOT BALANCE:

+ SECTION VALUES DO NOT EQUAL PROJECT VALUES.

+ ITEM VALUES DO NOT EQUAL SECTION VALUES.

+ SUB-ITEM VALUES DO NOT EQUAL ITEM VALUES. (THIS SHOULD NOT OCCUR UNLESS THE GENERATE MISSING SUBITEMS ROUTINE HAS NOT BEEN USED.)

THE MAIN OBJECTIVE IS TO ALERT THE USER THAT THERE IS A BALANCING PROBLEM. THE SOLUTION TO THE PROBLEM IS DEPENDENT ON THE CAUSE. THE REPORT WILL LIST THE VALUES FOR RECORDS THAT ARE MOST LIKELY INVOLVED BUT THE USER WILL BE RESPONSIBLE FOR MAKING CORRECTIONS. AT THE END OF THE REPORT, THE COMPUTER WILL ASK IF YOU WISH TO HAVE THE PAGES PRINTED THAT IT LOCATED ERRORS ON.

THE FIRST SCREEN THAT APPEARS LISTS SOME RELATIVE PROJECT DATA, AND THEN ASKS IF YOU WISH A COMPLETE ANALYSIS. THIS ANALYSIS ELIMINATES THE NEED OF PRINTING THE ENTIRE PROJECT IN THE TRANSACTION DETAIL LOG TO LOCATE ERRORS.

```
DATE: 11-01-1989      ADOT OFFICE LOGS  (VSN 3.13)

NO:1   PROJECT:I-40-3(28)     DESCRIPTION:WILLIAMS BYPASS -U

              PROJECT STATISTICS AS OF 01-29-1989
                        PROJECT SUMMARY

                  CONTRACT AMT = 1,166,222.00
                  ACCUM AMT    =    51,224.00
                  FORCE ACCT   =     4,495.00
                  TOTAL AMOUNT =    55,179.25
                  PERCENT COMPLETE   =   4.78 %

   DO YOU WANT A COMPLETE DATA ANALYSIS ? (1=YES, 2=NO)? 1
```

AFTER INPUTTING 1 ABOVE, THE COMPUTER WILL ELECTRONICALLY PAGE THROUGH THE ENTIRE PROJECT. THIS MAY TAKE SEVERAL MINUTES.....

```
   PLEASE STAND BY WHILE DATA IS BEING ANALYZED.
```

.....WILL APPEAR ON THE SCREEN.

THEN YOU MAY HAVE THE PAGES THAT HAVE ERRORS PRINTED BY SELECTING "1" BELOW....

```
!!! WARNING -  4 ERRORS WERE DISCOVERED ON THIS PROJECT
DO YOU WANT TO PRINT THE ABOVE PAGES ? (1=YES,2=NO)? 1
```

CONSTRUCTION PROGRESS ESTIMATES
CHAPTER 5 -- UTILITIES:

5.1 INTRODUCTION

THIS CHAPTER DESCRIBES THE UTILITY PROGRAMS AVAILABLE FOR CORRECTING THE PROJECT FILES.

THE FOUR UTILITY PROGRAMS AVAILABLE ARE:

1. ATTACH SUB-ITEMS TO STRUCTURES
2. SORT FILES
3. EDIT FILES
4. GENERATE MISSING SUBITEMS

THESE PROGRAMS ARE ACCESSED BY CHOOSING OPTION NUMBER 4 FROM THIS MENU:

```
DATE: 11-01-1989                ADOT OFFICE LOGS (VSN 3.13)
NO: 2   PROJECT: IR 40-4(112)          DESCRIPTION: MINNETONKA

                 OFFICE LOG ROUTINES

              1 = BUILD PROJECT RECORDS
              2 = TRANSACTIONS
              3 = REPORTS
              4 = UTILITY ROUTINES
              5 = GO TO ANOTHER PROJECT
              0 = QUIT
            ESC = ESCAPE

                 ENTER OPTION ?  4
```

5.2 CONNECT SUB-ITEMS TO STRUCTURES

EACH STRUCTURE RECORD HAS AN INDEX SO THAT IT WON'T HAVE TO SEARCH ALL THE SUB-ITEM FILES FOR THE PROJECT TO MAKE THE STRUCTURE REPORTS. IF THE STRUCTURE RECORD IS BUILT PRIOR TO BUILDING THE RELATED SUB-ITEMS THEN THE INDEX IS AUTOMATICALLY FILLED IN.

IF THE STRUCTURE RECORD IS BUILT SUBSEQUENT TO THE SUB-ITEM RECORDS, THE INDEX IS BLANK. THIS ROUTINE IS AVAILABLE TO BUILD THIS INDEX.

IT IS ACCESSED BY NOW CHOOSING OPTION NUMBER 1 FROM THE FOLLOWING MENU:

```
11-01-1989          ADOT OFFICE LOGS
PROJ: 2  IR 40-4(112)                DESCR: MINNETONK

              UTILITY PROGRAMS

    1 = ATTACH SUB-ITEMS TO STRUCTURES
    2 = SORT FILES
    3 = EDIT FILES
    4 = GENERATE MISSING SUBITEMS
    0 = RETURN TO MAIN PROGRAM
  ESC = ESCAPE

        ENTER OPTION ?  1
```

ALL OPERATIONS ARE AUTOMATIC, AND FOR A LARGE PROJECT, MAY TAKE SEVERAL MINUTES. THE SCREEN WILL DISPLAY EACH STRUCTURE, AND IT'S INDEX AS IT SEARCHES FOR CORRESPONDING SUB-ITEMS TO ATTACH. AT THE CONCLUSION, THE PROGRAM RETURNS TO THE ABOVE MENU.

5.3 SORT FILES

IN ORDER TO FIND RECORDS QUICKLY WITHIN MOST FILES, IT IS NECESSARY TO SORT THEM AND PUT THEM IN LOGICAL ORDER.

THIS IS DONE AUTOMATICALLY IN MOST INSTANCES. THERE ARE OPPORTUNITIES FOR A FILE TO GET OUT OF ORDER WHEN CORRECTIONS ARE MADE IN THE EDIT ROUTINE OR IF THE POWER IS INTERRUPTED WHEN A SORT ROUTINE IS IN OPERATION.

FOR THESE REASONS A MANUAL SORT ROUTINE IS PROVIDED.

IT IS ACCESSED BY CHOOSING OPTION NUMBER 2 ON THE UTILITY PROGRAMS MENU PREVIOUSLY SHOWN.

AGAIN, ALL OPERATIONS ARE AUTOMATIC. THE SCREEN WILL DISPLAY THE PROGRESS OF THE SORT AND THE NAME OF EACH FILE SORTED. AT THE CONCLUSION, THE PROGRAM AGAIN RETURNS TO THE UTILITY PROGRAMS MENU.

5.4 EDIT FILES

THIS ROUTINE IS TO BE USED ONLY IF A PROJECT BECOMES UNBALANCED OR IF SPECIAL CORRECTIONS NEED TO BE MADE BUT ONLY IF COUNTERBALANCING TRANSACTIONS OR OTHER ENTRIES WILL NOT RECTIFY THE PROBLEM. IN MOST INSTANCES EDIT WILL NOT BE USED. BEFORE USING THIS ROUTINE THE USER SHOULD BE VERY FAMILIAR WITH THE PROJECT "TREE" STRUCTURE AND KNOW WHERE TO MAKE CORRECTIONS. IF YOU NEED ASSISTANCE, DON'T HESITATE TO CALL YOUR DISTRICT EDP MANAGER.

THE EDIT ROUTINE IS REACHED BY SELECTING OPTION NUMBER 3 ON THE UTILITY PROGRAMS MENU.

THE EDIT PROGRAM IS LOADED AND THIS MENU APPEARS.

```
PROJECT: 2  IR 40-4(112)                DESCRIPTION: MINNETONK

                    EDIT ROUTINES

              1 = PROJECT RECORD
              2 = SECTION RECORD
              3 = ITEM RECORD
              4 = SUB-ITEM RECORD
              5 = STRUCTURE RECORD
              6 = CHANGE ORDER/FV RECORD
              7 = FORCE ACCOUNT RECORD
              8 = TRANSACTION RECORD
              0 = RETURN TO MAIN PROGRAM
            ESC = ESCAPE

          ENTER OPTION ? ___
```

EACH OF THE ROUTINES LISTED ABOVE WILL DISPLAY A "FUNCTION" KEY TABLE AT THE BOTTOM OF EACH SCREEN. THOSE FUNCTIONS ARE BASICALLY THE SAME FOR EACH EDIT ROUTINE, AND ARE DEFINED AS FOLLOWS:

F1 - SELECTS THE NEXT RECORD IN THE FILE.

F2 - SELECTS THE PREVIOUS RECORD IN THE FILE.

F3 - SAVES THE INFORMATION SHOWN ON THE SCREEN.

F4 - DELETES THE RECORD SHOWN ON THE SCREEN. USE WITH CARE!! ONCE THE RECORD HAS BEEN DELETED, IT CAN'T BE RECOVERED. ALSO BEFORE DELETING A RECORD THAT HAS ACCUMULATED QUANTITIES, USE THE TRANSACTION ROUTINES IN THE MAIN COMPUTER PROGRAM TO RETURN THE QUANTITY TO ZERO BEFORE DELETING THE RECORD.

F5 - RETURN TO EDIT MENU SCREEN.

F9 - ADVANCES 10 RECORDS AND DISPLAYS CURRENT RECORD. THIS IS USED TO ADVANCE RAPIDLY THROUGH THE FILE.

F10- SAME AS F9 EXCEPT IN REVERSE.

5.4.1 EDIT PROJECT RECORD

THE PROJECT RECORD IS EDITED BY SELECTING OPTION NUMBER 1 ON THE PRECEDING EDIT ROUTINES MENU.

THE FOLLOWING SCREEN APPEARS:

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

RECORD NUMBER                 1...
PROJECT RECORD                A
PROJECT REFERENCE CODE        2.
PROJECT CODE                   40 4112
PROJECT NUMBER                IR 40-4(112)...................
PROJECT DESCRIPTION           MINNETONKA-EAST (WB)...........
CONTRACT TIME (DAYS)          110.
REVISED TIME (DAYS)           110.
ACCUMULATED TIME (DAYS)       0...
CONTRACT AMOUNT $             1208139......
REVISED AMOUNT $              1222539......
ACCUMULATED AMOUNT $          579135.74....
ACCUMULATED F.A. AMOUNT $     0............
FUND CODE                     82514
ORG CODE                      4445
CONTRACTOR                    W R SKOUSEN CONTR...
ENGINEER                      JOHN W HALL.........
STARTING DATE                 07/25/84
COMPLETION DATE               ........

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU    F9=10+ F10=10-
```

THE PROJECT RECORD DISPLAYED ARE ACTUALLY RECORDS NUMBER 1 AND 2 FROM THE JOL-PROJ.PC FILE. THESE TWO RECORDS CONTAIN GENERAL INFORMATION ABOUT THE PROJECT AND ALSO HAVE ACCUMULATORS.

CORRECTIONS ARE MADE TO THE PRECEDING SCREEN BY MOVING THE CURSOR (USE ARROW KEYS,BACKSPACE KEY, INSERT, DELETE OR ENTER KEY) TO THE PLACE WHERE THE CHANGE IS TO BE MADE, AND "TYPING OVER" TO MAKE THE CHANGE.

AFTER REVIEWING THE CHANGE TO INSURE IT IS CORRECT, PRESS THE F3 KEY (SAVE). THE INFORMATION SHOWN ON THE SCREEN IS SAVED IN THE FILE.

5.4.2 EDIT SECTION RECORD

THE SECTION RECORD IS EDITED BY SELECTING OPTION NUMBER 2 ON THE EDIT ROUTINES MENU SHOWN IN SECTION 5.4.

THE SECTION RECORD WILL THEN BE DISPLAYED AS FOLLOWS. THE FIRST RECORD WILL CONTAIN INFORMATION ABOUT THE FIRST SECTION WHICH WILL NORMALLY BE SECTION 1. OTHER SECTIONS CAN BE REVIEWED BY USING THE "FUNCTION" KEYS TO PAGE THROUGH TO THE DESIRED SECTION. THE PAGE THAT YOU HAVE ON THE SCREEN IS THEN AVAILABLE FOR EDITING. AFTER CORRECTIONS ARE MADE, AS IN THE PREVIOUS SECTION, PRESS F3 TO SAVE.

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

RECORD NUMBER                 6...
SECTION RECORD                B
PROJECT REFERENCE CODE        2.
SECTION REFERENCE CODE         1
SECTION & FHWA CODES          FA I000.
SECTION DESCRIPTION           ROADWAY.......................
REVISED SECTION AMOUNT        2428565.2....
FORCE ACCOUNT AMOUNT          2251.34......
SECTION AMOUNT                2299875.8....
ACCUMULATED AMOUNT $          593279.1.....

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU    F9=10+ F10=10-
```

5.4.3 EDIT ITEM RECORD

THE ITEM RECORD IS EDITED BY SELECTING OPTION NUMBER 3 ON THE EDIT ROUTINES MENU SHOWN IN SECTION 5.4.

THE FIRST ITEM IN THE FIRST SECTION WILL NOW BE DISPLAYED. YOU MAY PAGE THROUGH USING THE APPROPRIATE "FUNCTION" KEY UNTIL YOU REACH THE RECORD YOU MUST EDIT.....

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

RECORD NUMBER                 9...
ITEM RECORD                   E
PROJECT REFERENCE CODE        2.
SECTION REFERENCE CODE         1
ITEM NUMBER                   2020001.
ITEM DESCRIPTION              REMOVAL OF STRS. AND OBSTR....
PLANS QUANTITY                1..........
ACCUMULATED QUANTITY           .27........
REVISED QUANTITY              1..........
ACCUMULATED AMOUNT $          11340......
PARTIAL PAYMENT CODE          0
UNIT                          L.SUM.
UNIT PRICE                    42000......
CHANGE ORDERS (10)            ... ... ... ... ... ... ... ...

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU    F9=10+ F10=10-
```

THE ITEM RECORD DISPLAYED HERE CONTAINS INFORMATION ABOUT ITEM 2020001, AND IS AVAILABLE FOR EDITING. AFTER CORRECTIONS ARE MADE, PRESS F3.

5.4.4 EDIT SUB-ITEM RECORD

THE SUB-ITEM RECORD IS EDITED BY SELECTING OPTION NUMBER 4 ON THE EDIT ROUTINES MENU.

THIS TIME, THE SCREEN REMAINS, AND AT THE BOTTOM DISPLAYS THE FOLLOWING QUESTIONS, WHICH YOU ANSWER ONE AT A TIME. THE ITEM NUMBER GENERATES THE NEXT LINE, AND FOR THE ITEM NUMBER, INPUT ONLY THE FIRST NUMBER OF THE ITEM GROUP YOU WANT TO EDIT.

```
ENTER SECTION NUMBER (1 TO 99) ? 1
```

NOW, THE SECOND QUESTION IS ANSWERED WITH THE FIRST NUMBER OF THE ITEM (OR ITEMS) YOU WISH TO EDIT. ITEM 4040401, FOR INSTANCE, WOULD BE ACCESSED BY INPUTTING "4" WHICH IS THE FIRST NUMBER OF THE ITEM.....

```
ENTER SECTION NUMBER (1 TO 99) ? 1
ENTER ITEM NUMBER (1..... TO 9.....) ? 2
```

ONCE A SECTION NUMBER IS CHOSEN AND THE FIRST NUMBER OF THE ITEM NUMBER IS ENTERED THE FOLLOWING SCREEN APPEARS:

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

SUB-ITEM RECORD
RECORD NUMBER                 1...
ITEM NUMBER                   4040401.
SUB-ITEM NUMBER               0....
ITEM DESCRIPTION              ASPHALT CEMENT (AC-10)........
SUB-ITEM DESCRIPTION          BALANCE......................
PLANS QUANTITY                640..........
REVISED QUANTITY              640..........
ACCUMULATED QUANTITY          0............

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU    F9=10+ F10=10-
```

THE SUB-ITEM RECORD DISPLAYED HERE CONTAINS INFORMATION ABOUT ITEM 4040401, SUB-ITEM "0," AND IS AVAILABLE FOR EDITING. AFTER CORRECTIONS ARE MADE, PRESS F3.

5.4.5 EDIT STRUCTURE RECORD

THE STRUCTURE RECORD IS EDITED BY SELECTING OPTION NUMBER 5 ON THE EDIT ROUTINES MENU AS IN SECTION 5.4.

THE FOLLOWING SCREEN APPEARS:

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

STRUCTURE RECORD
RECORD NUMBER                 1...
SECTION REFERENCE CODE         i
STRUCTURE NUMBER              P01..
DESCRIPTION                   SB 2013+00 LT 30"X8' CMP.....
FILE REFERENCES                   5....

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU F9=10+ F10=10-
```

THE STRUCTURE RECORD DISPLAYED HERE CONTAINS INFORMATION ABOUT STRUCTURE P01, AND IS AVAILABLE FOR EDITING. THE FILE REFERENCES FIELD IS AN INDEX OF SUB-ITEM FILES THAT ARE ATTACHED TO THIS STRUCTURE.

5.4.6 Edit Change Order F/V Record

The change order/fiscal variance record is edited by selecting option number 6 on the EDIT ROUTINES menu as in Section 5.4.

The following screen appears:

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

RECORD NUMBER                11..
CHANGE ORDER RECORD          C
PROJECT REFERENCE CODE       2
SECTION REFERENCE CODE        1
ITEM NUMBER                  2020021.
ITEM DESCRIPTION             REMOVAL OF CONC CURB & GUTTER.
+/- QUANTITY                 208..........
UNIT PRICE                   1...........
+/- DOLLARS                  208..........
DATE APPROVED                10/12/84
CHANGE ORDER NUMBER            5
CHANGE ORDER DESCRIPTION     EXTEND PROJECT S.B.RDWY .52MI.

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU F9=10+ F10=10-
```

The Change Order Record displayed here contains information about Change Order 5, and is available for editing. Again, the first record will be displayed. The records may or may not be in numeric order. Remember that if you change the quantity or the unit price then you need to change the dollar amount also. Any changes to the quantity need to be reflected on the item and sub-item record also.

5.4.7 Edit Force Account Record

The force account record is edited by selecting option number 7 on the UTILITY ROUTINES menu as shown in Section 5.4.

THE FOLLOWING SCREEN APPEARS:

```
PROJECT: 2  IR 40-4(112)      DESCRIPTION: MINNETONK

RECORD NUMBER                 7...
FORCE ACCOUNT RECORD          D
PROJECT REFERENCE CODE        2.
SECTION REFERENCE CODE         1
FORCE ACCOUNT NUMBER          1....
F.A. DESCRIPTION              REPLACE DAMAGED GUARD RAIL....
REVISED AMOUNT                4000.........
F.A. AMOUNT                   4000.........
ACCUMULATED AMOUNT            1587.29......
DATE APPROVED                 05/23/84

F1=NEXT F2=PREV F3=SAVE F4=DELETE F5=MENU F9=10+ F10=10-
```

THE FORCE ACCOUNT RECORD IS STORED SIMILARLY TO THE CHANGE ORDER/FISCAL VARIANCE RECORD IN THE PREVIOUS SECTION. THE ABOVE RECORD CONTAINS INFORMATION ABOUT FORCE ACCOUNT 1, AND IS NOW READY FOR EDITING.

5.5 GENERATE MISSING SUBITEMS

THE GENERATE MISSING SUBITEMS ROUTINE IS NECESSARY IN THE FOLLOWING INSTANCES:

1. WHEN NEW ITEMS HAVE BEEN ADDED OR CREATED BY CHANGE ORDER, AND YOU WISH TO USE ONLY ONE DATA ENTRY SYSTEM. THIS MEANS PAYING TO THE ITEM DIRECT INSTEAD OF TO SUB SETS OR MORE FINELY DEFINED PARTS OF AN ITEM. IF THIS IS THE SITUATION, DO NOT BUILD SUB-ITEMS, THE PROGRAM WILL GENERATE A "0" OR BALANCING SUBITEM FOR ANY THAT MAY NOT HAVE THEM WHEN YOU USE THE GENERATE MISSING SUBITEMS ROUTINE.

2. WHEN DIVIDING THE ITEM INTO PARTS TO MORE FINELY DEFINE PAYMENT IN THE COMPUTER. EACH ITEM WILL ALREADY HAVE A "0" SUB-ITEM CREATED WITH THE TOTAL ITEM QUANTITY "ASSIGNED" TO IT, AND THEREFORE THE SUB-ITEM QUANTITY OF THE "0" SUB-ITEM NEEDS TO BE REDUCED (USUALLY TO ZERO QUANTITY.) THIS IS AUTOMATICALLY DONE WHEN YOU USE THE GENERATE MISSING SUBITEMS ROUTINE.

THE CPE PROGRAM IS SET UP TO PAY TO SUB-ITEMS. SOME ITEMS ARE MORE EASILY HANDLED BY PORTIONING THE ITEM BASE INTO SEVERAL SUB-ITEMS. FOR THOSE THAT ARE NOT, THE PROGRAM IS SET UP TO GENERATE A SUB-ITEM AUTOMATICALLY SO THAT YOU DO NOT NEED TO CREATE OR BUILD ONE FOR EACH ITEM. THOSE ITEMS DOWNLOADED FROM THE MAIN FRAME WILL AUTOMATICALLY HAVE THOSE "0" SUB-ITEMS FOR EACH ITEM. ANY ITEM YOU CREATE THROUGH CHANGE ORDER OR ADD BY ANY OTHER MEANS, MUST HAVE A "0" SUB-ITEM BUILT FOR IT. THIS IS AUTOMATICALLY DONE BY SELECTING THE CREATE MISSING SUBITEMS ROUTINE.

YOU WILL PROBABLY WANT TO SET THE "0" SUB-ITEM QUANTITY EQUAL TO ZERO WHEN YOU CREATE ADDITIONAL SUB-ITEMS. THE PROGRAM WILL AUTOMATICALLY SUBTRACT THE QUANTITIES OF ALL OTHER SUB-ITEMS FOR THAT ITEM FROM THE "0" SUBITEM. SO, IF YOU PROVIDE THAT ALL SUBITEMS YOU CREATE ADD UP TO THE TOTAL QUANTITY OF THE ITEM THIS WILL ENSURE THAT THE "0" SUB-ITEM QUANTITY IS ZERO ONCE YOU USE THE GENERATE MISSING SUBITEMS SELECTION. SINCE THE PROGRAM WILL NOT BE ALTERED BY A SUB-ITEM THAT IS ESTABLISHED WITH A ZERO QUANTITY, THE BALANCING SUB-ITEM IS ESTABLISHED SUCH THAT WHEN YOU HAVE CREATED OR BUILT ADDITIONAL SUB-ITEMS, THE QUANTITIES YOU CREATE OR GIVE TO THOSE OTHERS, WILL AUTOMATICALLY BE SUBTRACTED FROM THE "0" SUBITEM WHEN YOU USE THE GENERATE MISSING SUBITEMS ROUTINE.

DO NOT DELETE THE "0" SUB-ITEM WHEN YOU WISH TO CREATE ADDITIONAL SUBITEMS. THE "0" SUB-ITEM EXISTS FOR EVERY ITEM, WITH OR WITHOUT ADDITIONAL SUB-ITEMS. THOSE WITH MORE THAN ONE SUB-ITEM WILL HAVE A ZERO QUANTITY LISTED FOR THE "BALANCING" OR "0" SUBITEM AFTER YOU USE THE GENERATE MISSING SUBITEMS ROUTINE IF THE TOTAL QUANTITY OF THE OTHER SUB-ITEMS EQUALS THE TOTAL QUANTITY OF THE ITEM. SHOULD YOU FORGET TO "ADD OUT" ANY ENTRIES THAT MAY HAVE ALREADY BEEN MADE TO THE "0" SUB-ITEM BEFORE CREATING ADDITIONAL SUBITEMS, YOU MAY DO THAT AFTER CREATING THE NEW SUBITEMS AS LONG AS YOU HAVE NOT DELETED THE "0" SUB-ITEM. IF ENTRIES WERE MADE TO THE "0" SUB-ITEM AND YOU FORGOT TO ADD THESE OUT BEFORE CREATING THE OTHER SUB-ITEMS, THOSE ENTRIES WOULD BECOME UNATTACHED WHEN YOU DELETE THE "0" SUB-ITEM, AND CAUSE BALANCING ERRORS. THESE WILL NEED TO BE EDITED OUT, AND EDITING DOES NOT AUTOMATICALLY REDUCE THE ITEM, SECTION OR PROJECT TOTALS, SO EACH OF THESE WILL ALSO NEED TO BE EDITED, WHICH MAY BE A COMPLEX PROCEDURE. BESIDES, WHENEVER YOU USE THE GENERATE MISSING SUBITEMS ROUTINE, THE "0" SUB-ITEM WILL BE CREATED FOR ALL ITEMS, EVEN THOSE THAT MAY HAVE HAD THE "0" SUB-ITEM DELETED!

CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 6 -- INSTALLATION AND UPDATE OF THE PROGRAM

THE DISKETTE THAT WILL UPDATE YOUR SYSTEM HAS BEEN DESIGNED TO PERFORM THE "HOUSEKEEPING" CHORES OF REVISING THE CPE SYSTEM. THE AUTOMATIC PROCEDURE IS BASED ON THE COMPUTER EQUIPMENT CONFIGURATION DESIGNED FOR YOUR PARTICULAR CONSTRUCTION OFFICE.

COMPUTER:	IBM PC 640K MINIMUM
STORAGE:	TWO FLOPPY DRIVES TWO 10 MB FIXED DRIVES OR ONE 20 MB FIXED DRIVE WITH A TAPE BACKUP
CLOCK:	AST MEGAPLUS BOARDS
ASSUMPTON:	FIXED DISK "E" IS THE PRIMARY DRIVE. FIXED DISK "F" IS THE BACKUP DRIVE. FIXED DISK "C" IS THE PRIMARY DRIVE IF ONE FIXED DRIVE AND A TAPE BACKUP. LATEST VERSION OF DOS ON PRIMARY DRIVE UNDER ROOT

PROCEDURE:

SPECIFIC DIRECTIONS WILL ACCOMPANY EACH UPDATED VERSION OF THE SYSTEM. AGAIN, IF YOU SHOULD HAVE QUESTIONS, CONTACT YOUR DISTRICT EDP ANALYST FOR ASSISTANCE.

THE RESULT OF THE AUTOMATIC INSTALLATION PROCEDURE IS TO CREATE OR UPDATE:

+ DIRECTORY/PATH
+ BATCH FILES
+ PROGRAM FILES
+ SAMPLE DATA FILES

CONSTRUCTION PROGRESS ESTIMATES
CHAPTER 7 -- BACKUP & RECOVERY PROCEDURE

7.1 BACKUP

THE PURPOSE OF A "BACKUP" COPY OF THE CPE SYSTEM IS TO REDUCE THE EFFORT REQUIRED TO "RECONSTRUCT" THE SYSTEM IN THE EVENT AN EXTRAORDINARY OCCURRENCE "ZAPS" YOUR COMPUTERS MEMORYBANKS. POWER FAILURES, EQUIPMENT FAILURES, AND "PILOT ERROR" MAY CREATE SUCH A SITUATION.

BACKUP COPIES OF YOUR WORK ON BOTH THE FIXED DISK AND A FLOPPY DISK WILL REDUCE THE CHANCES THAT A MAJOR EFFORT WILL BE REQUIRED TO RECONSTRUCT THE CPE SYSTEM.

DEPENDING ON THE SIZE OR VOLUME OF THE PROJECT INFORMATION, THE BACKUP PERIOD MAY VARY FROM ONCE PER WEEK TO ONCE PER MONTH. THIS WOULD MEAN THAT NO MORE THAN THAT INTERIM DOCUMENTATION WOULD NEED TO BE CREATED IF SOMETHING WENT WRONG.

BACKUP COPIES BY THE FIXED DISK OR BY TAPE SHOULD BE MORE FREQUENT. MAKE A FIXED DISK OR TAPE BACKUP COPY OF YOUR WORK UNDER ANY OF THE FOLLOWING CONDITIONS.

+ BACKUP AT LEAST EVERY FRIDAY.

+ BACKUP PRIOR TO ANY PROCEDURE THAT CARRIES SIGNIFICANT "RISK".

+ BACKUP AFTER ANY LARGE AMOUNT OF DATA HAS BEEN ENTERED: AFTER RECEIVING A NEW PROJECT FOR EXAMPLE.

BEGIN THE BACKUP PROCEDURE BY SELECTING THE BACKUP OPTION FROM THE MASTER MENU. THE ORDER ON THE MENU MAY VARY, HERE IT IS "9"....

```
ARIZ DEPT OF TRANSPORATION MASTER MENU

1* OFFICE LOGS      (CPE PROGRAM)
2. MATERIALS LOGS   (CMT PROGRAM)
3. CEMMS            (MANPOWER MANAGEMENT)
4. PROCOM           (COMMUNICATIONS)
5. LOTUS            (SPREAD SHEET)
6. DBASE 3+         (DATA BASE PROGRAM)
7. MULTIMATE        (WORD PROCESSING)
8. SURVEY           (SURVEY, DRAFTSMAN, CADD)
9. MENU 2 (BACKUP, ORG CHART, UTLTS.)
   *(NOS. MAY BE FUNCTION OR F-NUMBERS)

SELECT THE NUMBER OF THE OPTION YOU WANT >_____
(OR SELECT THE FUNCTION KEY ON SOME MENUS)
```

SCREEN IMAGE 2.1

THE RESULTS OF THE RECOVERY PROCEDURE WILL BE DISPLAYED ON THE PRINTER. THIS OUTPUT CAN BE ATTACHED FOR FUTURE REFERENCE. THE FIRST STEP THEN IS TO SWITCH

PRINTER "ON" AND "SELECTED".

THE FOLLOWING INSTRUCTION SCREEN IS DISPLAYED.

```
BACKUP AND RECOVERY PROCEDURES

BACKUP     KEY WORD = BU
           TO       = HARD OR FLOPPY
           WHAT     = OFFICE OR ?
           PROJECT  = ALL OR 1-99
   EXAMPLE- BU HARD OFFICE 3

RECOVERY   KEY WORD = RE
           FROM     = HARD OR FLOPPY
           WHAT     = OFFICE OR ?
           PROJECT  = ALL OR 1=99
   EXAMPLE- RE FLOPPY OFFICE ALL

RETURN TO MENU  KEY WORD = MENU

TYPE IN APPROPRIATE COMMAND AND PRESS ENTER
```

STRUCTURE THE RECOVERY COMMAND FOR THE INTENDED PURPOSE:

RE FLOPPY OFFICE 4 (RESTORES PROJECT 4 FROM FLOPPY)
RE FLOPPY OFFICE ALL (RESTORES ALL PROJECTS FROM FLOPPY)

RE HARD OFFICE ALL (RESTORES ALL PROJECTS FROM FIXED DISK)
RE HARD OFFICE 1 (RESTORES PROJECT 1 FROM FIXED DISK)

SIMILAR INSTRUCTIONS WILL BE GIVEN FOR TAPE BACKUP.

THE RESULTS OF THE BACKUP PROCEDURES WILL BE DISPLAYED ON THE PRINTER. THIS OUTPUT CAN BE ATTACHED FOR FUTURE REFERENCE. THE FIRST STEP THEN IS TO SWITCH

PRINTER "ON" AND "SELECTED".

THE FOLLOWING INSTRUCTION SCREEN (OR SOME VERSION OF IT) IS DISPLAYED.....

```
BACKUP AND RECOVERY PROCEDURES

BACKUP     KEY WORD = BU
           TO       = HARD OR FLOPPY
           WHAT     = OFFICE OR ?
           PROJECT  = ALL OR 1-99
   EXAMPLE- BU HARD OFFICE 3

RECOVERY   KEY WORD = RE
           FROM     = HARD OR FLOPPY
           WHAT     = OFFICE OR ?
           PROJECT  = ALL OR 1=99
   EXAMPLE- RE FLOPPY OFFICE ALL

RETURN TO MENU  KEY WORD = MENU

TYPE IN APPROPRIATE COMMAND AND PRESS ENTER
```

STRUCTURE THE BACKUP COMMAND FOR THE INTENDED PURPOSE:

BU FLOPPY OFFICE 4 (CREATES FLOPPY COPY OF PROJECT 4)
BU FLOPPY OFFICE ALL (CREATES FLOPPY COPY OF ALL PROJECTS)

BU HARD OFFICE ALL (CREATES FIXED DISK COPY OF ALL PROJECTS)
BU HARD OFFICE 1 (CREATES FIXED DISK COPY OF PROJECT 1)

SIMILAR INSTRUCTIONS ARE USED FOR TAPE BACKUPS AS MAY BE NECESSARY.

7.2 RECOVERY

SELECT THE APPROPRIATE OPTION DENOTING BACKUP (AND RECOVERY) FROM THE MAIN MENU AS IN SECTION 7.1.

CONSTRUCTION PROGRESS ESTIMATES

CHAPTER 8 - TRANSMIT ESTIMATE TO MAIN FRAME

BEFORE SENDING ESTIMATES TO PHOENIX BY TELEPHONE YOU NEED TO:

1. MAKE SURE THAT EACH ESTIMATE IS COMPLETE - ALL PAYMENTS ARE MADE, AND PAYMENTS THAT WOULD NORMALLY BE COMPUTED IN THE OFFICE, SUCH AS MOBILIZATION AND SURVEYING, ARE PAID.

2. RUN MONTHLY ESTIMATE PROGRAM FOR EACH PROJECT, PRINT REPORT, AND MAKE SURE IT IS SAVED (OPTION 1 AT END OF MONTHLY ESTIMATE PROGRAM.)

WHEN ALL YOUR ESTIMATES ARE READY, GO TO THE SEND ESTIMATES ROUTINE BY PRESSING THE F3 FUNCTION KEY WHILE THE FOLLOWING MENU IS ON THE SCREEN.....

```
DATE: 11-01-1989          ADOT OFFICE LOGS (VSN 3.13)

NO. PROJECT NUMBER        DESCRIPTION

 1  BP 037-2-505          JUNCTION U.S. 160-NORTH
 2  BRZ-984(19)P          MCCOY BRIDGE
 3  F 026-1-930           TRAFFIC SIGNALS

              ENTER PROJECT NO.? ..

F1=NEXT PAGE  F2=PREV PAGE  F3=SEND EST  F4=RECEIVE PROJ  F5=QUIT
```

THE ELECTRONIC SUBMITTAL MENU IS THEN DISPLAYED. SELECT OPTION 1 TO BEGIN THE SUBMITTAL PROCESS.....

```
06-14-1989              ADOT OFFICE LOGS

                 ELECTRONIC SUBMITTAL

                   1 = SELECT ESTIMATE(S) TO SEND
                   2 = RESUBMIT ESTIMATES
                   3 = RECEIVE DATA
                   0 = RETURN TO SELECT PROJ MENU
                 ESC = ESCAPE

                 ENTER OPTION ? 1.
```

WHEN YOU CHOOSE OPTION NUMBER 1, THE FOLLOWING SCREEN, LISTING ALL PROJECTS IN THE COMPUTER, WILL APPEAR.

OPTION 2 IS PROVIDED IN CASE YOU HAVE PROBLEMS SENDING THE ESTIMATES THE FIRST TIME, YOU MAY RE-SUBMIT THEM WITHOUT HAVING TO GO THROUGH ALL THE PROCESSES OF OPTION 1 AGAIN.

```
SELECT PROJECTS TO SEND TO PHOENIX

NO. PROJECT NUMBER        DESCRIPTION

#1  BP 037-2-505          JUNCTION U.S. 160-NORTH
 2  BRZ-984(19)P          MCCOY BRIDGE
 3  F 026-1-930           TRAFFIC SIGNALS

[^]=UP [V]=DOWN [SPACE]=TOGGLE [ENTER]=COMPLETE [ESC]=ABORT
```

USING THE UP/DOWN ARROW KEYS YOU CAN MOVE THE HIGHLIGHTED AREA UP AND DOWN. WHEN YOU HAVE HIGHLIGHTED A PROJECT YOU WISH TO SEND, SELECT IT BY PRESSING THE SPACE BAR. A # SIGN WILL BE DISPLAYED NEXT TO THAT PROJECT. IF YOU SELECT A PROJECT BY MISTAKE, YOU MAY DE-SELECT IT BY PRESSING THE SPACE BAR AGAIN.

ONCE YOU HAVE CHOSEN THE PROJECT TO SEND THEN PRESS THE ENTER KEY.

THE FOLLOWING SCREEN WILL BE DISPLAYED. THE COMPUTER WILL PREPARE THE ESTIMATE INFORMATION TO BE SENT TO PHOENIX, AND WILL SHOW ITS PROGRESS.

```
PREPARING ESTIMATES TO SEND TO PHOENIX

No.    PROJECT NAME            RECORD     ERRORS
 1   JUNCTION US 160-NORTH      38          1
```

THE ERROR FIELD WILL SHOW IF ANY OUT-OF-BALANCE CONDITIONS EXIST IN ANY OF THE PROJECT ESTIMATES. IF ERRORS ARE FOUND, A MESSAGE WILL BE DISPLAYED, THE ERROR MESSAGES WILL BE PRINTED ON THE PRINTER, AND YOU WILL HAVE TO USE CORRECT/EDIT THE MONTHLY ESTIMATE BEFORE YOU CAN CONTINUE. THE PROJECT FOR THE ABOVE DISPLAY COULD NOT BE TRANSMITTED UNTIL THE "1" ERROR WAS CORRECTED, AS AN EXAMPLE.

THE NEXT SCREEN PREPARES THE TRANSMITTAL INFORMATION FOR THE ESTIMATES.

```
          PREPARING TRANSMITTAL INFORMATION
                                                          DATE
ORG CODE TOTAL AMOUNT   RESPONSIBLE PERSON  PHONE    (YYMMDD)
  ....   1112818.98..   ................... ........   850130

F1=SAVE   F2=RETURN
```

THE ESTIMATE THAT IS PREPARED TO BE SENT WILL BE PRINTED ON THE PRINTER, WITH TOTAL ESTIMATE QUANTITY. THE CORRECT INFORMATION SHOULD BE DISPLAYED. NOTE THAT THE DATE FORMAT IS DIFFERENT THAN NORMAL. IF EVERYTHING IS CORRECT THEN PRESS THE F1 KEY TO SAVE THIS INFORMATION.

THE COMPUTER WILL NOW DISPLAY THE FOLLOWING SCREEN:

```
*** READ THESE INSTRUCTIONS CAREFULLY - BECAUSE THEY WILL DISAPPEAR **

    1. MAKE SURE THE [TLK] KEY ON THE MODEM IS DEPRESSED.

    2. PRESS THE [ENTER] KEY!

    3. CALL THE MAIN COMPUTER AT PHONE NO. 255-7852
                                  OR       255-7631

    4. WHEN YOU GET THE TONE, QUICKLY:

          A: PRESS AND RELEASE THE [TLK] KEY

          B: HANG UP THE TELEPHONE.

    IF YOU CANNOT GET LOGGED ON THEN PRESS THE F10 KEY
    AND YOU WILL RETURN TO THE MASTER MENU.

STRIKE ANY KEY WHEN READY . . .
```

IF YOU DON'T GET THE TONE THE FIRST TIME YOU DIAL, YOU CAN TRY AGAI IF AFTER SEVERAL TRIES YOU STILL DON'T GET THE TONE YOU CAN BREAK OUT THIS PROGRAM BY PRESSING THE F10 FUNCTION KEY. AFTER A WHILE YOU CAN T AGAIN, HOWEVER INSTEAD OF HAVING TO CHOOSE EACH PROJECT AGAIN, CHOOSE OPTI 2, RESUBMIT ESTIMATE (SEE PAGE F-1). AFTER YOU HAVE SUCCESSFULLY SENT T ESTIMATES, YOU NEED TO CALL FIELD REPORTS SERVICES AND GIVE THEM A LIST THE ESTIMATES THAT WERE SENT.

YOU WILL KNOW THAT THE INFORMATION HAS BEEN RECEIVED BY THE MAIN COMPUTER WHEN THE SCREEN DISPLAYS THE FOLLOWING AND THE PRINTER PRINTS OUT A HASP MESSAGE AS SHOWN BELOW.

```
    *** RJE COMMAND PROCESSOR VERSION 3.5 ***
(C) COPYRIGHT, 1982 WILMOT SYSTEMS INC ALL RIGHTS RESERVED

T SIGNON1                        TRANSMITTING
F
T UPLOAD1.JCL                    TRANSMITTING
T EMTRAN.DAT                     TRANSMITTING
T EMEST.DAT                      TRANSMITTING
T UPLOAD2.JCL                    TRANSMITTING
T EMLOG.DAT                      TRANSMITTING
E
T UPLOAD3.JCL                    TRANSMITTING
G
T NULLFILE
P                                WAITING/COMPLETE     *
E
T SIGNON2                        TRANSMITTING
G
T NULLFILE
P                                WAITING/COMPLETE     *
R RECEIVE.DAT                    WAITING/COMPLETE     **
E
T NULLFILE
P                                WAITING/COMPLETE     *
G
T SIGNOFF                        TRANSMITTING
C TEST-FIL
```

* AT THIS POINT THE COMPUTER WILL PAUSE, AND WILL SOON RESUME BY PRINTING OUT A HASP MESSAGE SIMILAR TO:

```
8.38.49 JOB 6040 $HASP100 D4001U    ON R15.RD1  ET-000009.....
```

** AT THIS POINT THE COMPUTER WILL AGAIN PAUSE, AND USUALLY WITHIN 2 TO 3 MINUTES WILL START RECEIVING THE CONFIRMATION REPORT THAT SHOWS THAT THE ESTIMATES HAVE BEEN RECEIVED AND STORED IN THE CORRECT FILE BY THE MAIN COMPUTER.

IF THE COMPUTER TAKES TOO MUCH TIME TO SENT THE CONFIRMATION REPORT, YOU CAN INTERRUPT THE PROGRAM BY PRESSING THE F10 KEY. AN HOUR OR SO LATER YOU MAY RECEIVE THE REPORT BY CHOOSING EITHER OF THE FOLLOWING PROCEDURES.

A. Go to send estimate menu and choose option 3, RECEIVE DATA (see Chapter 2).
B. While at bottom of ADOT MASTER MENU, type CONFIRM and press ENTER.
C. Call Field Reports - they usually can confir receipt within a few hours.

The estimate confirmation report will list all of the orgs that have sent their estimates, in the following format:

ORG	RESPONSIBLE PERSON	PHONE	DATE	TIME
4341	GAPPINGER, E.	255-7527	850226	12:16
4445	HALL, JOHN	255-7493	850226	13:21

When you have this confirming message, you know that the estimate has been successfully sent.

DOCUMENTATION

THE SEND ESTIMATES ROUTINES ARE LOCATED ON THE OFFICE DIRECTORY. THEY CONSIST OF:

IP.EXE	INTERACTIVE TERMINAL PROGRAM
CP.EXE	BATCH TYPE TERMINAL PROGRAM
EMDAT.PRM	FILE THAT HOLDS PARAMATERS FOR CP.EXE
CONFIG.EXE	FILE TO SET PARAMATERS

THE EMDAT.PRM FILE CALLS ONE OF THE FOLLOWING:

EMFIL.UPL - SEND ESTIMATE COMMAND FILE
EMFIL.CFM - RECEIVE DATA COMMAND FILE

JCL FILES THAT ARE USED TO DIRECT MAIN COMPUTER PROCESSING:

UPLOAD1.JCL	SEND TRANSMITTAL & ESTIMATE
UPLOAD2.JCL	SEND LOG
UPLOAD3.JCL	REQUEST COPY OF LOG

INSTRUCTION FILES:

TRANSMIT.DAT -INSTRUCTION TO SEND ESTIMATE SIGNON/SIGNOFF FILES

SIGNON1 - REMOTE SIGNON FOR UPLOAD
SIGNON2 - REMOTE SIGNON FOR DOWNLOAD
SIGNOFF - SIGNS OFF MICRO

.....

EMFIL.UPL (PART 1)

```
T SIGNON1
F
T UPLOAD1.JCL
T EMTRAN.DAT
T EMEST.DAT
T UPLOAD2.JCL
T EMLOG.DAT
E
T UPLOAD3.JCL
G
T NULLFILE
P
E
T SIGNON2
```

EMFIL.UPL (PART 2)

```
G
T NULLFILE
P
R RECEIVE.DAT
E
T NULLFILE
P
G
T SIGNOFF
C TEST-FIL
```

EMFIL.CFM LISTING

```
T SIGNON2
G
T NULLFILE
P
R RECEIVE.DAT
E
T NULLFILE
G
T SIGNOFF
C TEST-FIL
```

PLOAD1.JCL LISTING

```
//DD001U JOB (1000,xxxx,09,8),'DI250000L D00D 0000'
/*ROUTE  PRINT RMTRR
//GEN      EXEC PGM=IEBGENER
//SYSPRINT DD DUMMY
//SYSUT2   DD DSNAME=DI250.UP00D.ORG0000,UNIT=3350,DISP=OLD
//SYSIN    DD DUMMY
//SYSUT1   DD *
```

UPLOAD2.JCL LISTING

```
//GEN2     EXEC PGM=IEBGENER,COND=(0,NE)
//SYSPRINT DD DUMMY
//SYSUT2   DD DSNAME=DI250.UPLOAD.STATUS,UNIT=3350,DISP=MOD
//SYSIN    DD DUMMY
//SYSUT1   DD *
```

UPLOAD3.JCL LISTING

```
//GEN3     EXEC PGM=IEBGENER,COND=(0,NE)
//SYSPRINT DD DUMMY
//SYSUT1   DD *,DCB=BLKSIZE=3600
 >>>>> PLACE ACTION CODE HERE = PRINT
//         DD DSNAME=DI250.UPLOAD.STATUS,UNIT=3350,DISP=SHR
//         DD *,DCB=BLKSIZE=3600
 <<<<< END OF DATA
//SYSUT2 DD SYSOUT=A,DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//SYSIN   DD DUMMY
```

SIGNON LISTING

```
                                                (COLUMN 73 -78)
/*SIGNON1      REMOTERR IBMPC                          PASSWD
/*SIGNON2      REMOTERR IBMPC                          PASSWD
```

SIGNOFF LISTING

```
/*SIGNOFF
```

SYMBOLIC REFERENCES

D   = DISTRICT NUMBER
0000 = ORG NUMBER
RR   = REMOTE NUMBER
XXXX = DISTRICT WORK ORDER

DOCUMENTATION

AFTER SIGNING ON WITH SIGNON1 AND SENDING INSTRUCTIONS AND DATA TO THE MAIN COMPUTER, THE PROGRAM SIGNS ON TO RECEIVE INFORMATION WITH SIGNON2.

ALL INFORMATION IS RECEIVED INTO A FILE CALLED RECEIVE.DAT.

THEN THE PROGRAM SIGNS OFF WITH SIGNOFF. NEXT A PROGRAM TO TEST THE CONTENTS OF THE RECEIVE.DAT FILE IS CALLED.

THE TEST.FIL PROGRAM GETS ITS PARAMETERS FROM THE SEQUENTIAL FILE CALLED TESTFIL.DAT.

AT THE PRESENT TIME THE TESTFIL.DAT HAS THE FOLLOWING:

```
KEY WORD , ACTION
PRINT    , PRINT
SCREEN   , SCREEN
NEWPROJ  , JOL-DWN
JOBLOG   , JOL-LOG
```

IF A KEY WORD IS NOT FOUND, THEN THE OPERATOR IS GIVEN THE OPTION OF PRINTING THE COMPLETE FILE, OR VIEWING IT ON THE SCREEN.

IF THE KEY WORD IS PRINT OR SCREEN THEN THE DATA PORTION OF THE FILE IS PRINTED OR PASSED ON THE SCREEN. IF THE KEY WORD IS NEWPROJ OR JOBLOG THEN THE CORRESPONDING PROGRAMS ARE CALLED.

CONSTRUCTION PROGRESS ESTIMATES
APPENDIX A - TRAINING OUTLINE

IN ORDER TO PROVIDE THAT THE MONTHLY PROGRESS ESTIMATES BE SUBMITTED BY THE CPE PROGRAM TO THE MAIN FRAME, TRAINING MUST BE PROVIDED IN ORDER THAT THE FOLLOWING TASKS BE ACCOMPLISHED:

PROVIDE NEW PROJECT INFORMATION TO THE EXISTING DOWNLOAD FROM THE MAIN FRAME. ENTER PROGRESS DATA AND INFORMATION DURING CONSTRUCTION OF THE PROJECT

BALANCE EACH PROJECT.

SET PARAMATERS FOR JCL FILES.

REVIEW REVISIONS TO EXISTING PROGRAM.

- USE OF FUNCTION KEYS
- SELECT PROJECT TO WORK ON
- TIME RECORDING
- CHANGE ORDERS
- STRUCTURE/SUB-ITEM REPORTS
- WEEKLY TIME REPORT
- MONTHLY ESTIMATE REPORT
- TRANSACTION DETAIL LOG

REINFORCE SUB-ITEM PLANS/STAKED QUANTITY.

REINFORCE PARTIAL/PROGRESS PAYMENTS.

REINFORCE BACKUP PROCEDURES

INTRODUCE NEW PROGRAMS.

- UTILITY ROUTINES
- FINAL BALANCE ROUTINE
- SEND ESTIMATES ROUTINE
- RECEIVE NEW PROJECT ROUTINE

EXPLAIN PROJECT CODES.

CONSTRUCTION PROGRESS ESTIMATES
APPENDIX B -- SYSTEM DOCUMENTATION

B.1 DIRECTORIES

THE CPE PROGRAM USES A DIRECTORY CALLED "OFFICE" (\OFFICE) ON THE HARD DISK.

A BATCH FILE HAS BEEN ESTABLISHED IN THE MAIN DIRECTORY NAMED 1.BAT WHICH CONTAINS THE CPE MENU. YOU WILL ENTER THE CPE PROGRAMMING BY MAKING A SELECTION FROM THE MAIN DIRECTORY NORMALLY LISTED AS THE "OFFICE LOGS." PROGRAMMING HAS BEEN ESTABLISHED TO AUTOMATICALLY ENTER THE SYSTEM BY SELECTING THIS OPTION AND ENTERING THE CODE LETTER AFTER THE PROMPT (NORMALLY THE PROMPT IS AN ARROW LIKE THIS ">")

THE COMPUTER LANGUAGE IS WRITTEN IN "COMPILED BASIC." IF YOU WOULD LIKE TO SEE THE STEPS THAT THE PROGRAM USES TO PROVIDE YOUR MENU, TYPE THE FOLLOWING AFTER THE INITIAL PROMPT (>): (NO SPACE)CD(SPACE)C(DRIVE LETTER NORMALLY FOUND JUST BEFORE THE PROMPT)(NO SPACE)(COLON)(SPACE) \OFFICE (THIS SHOULD LOOK LIKE THIS ->CD C:\OFFICE). NOW, ENTER THIS BY STRIKING THE RETURN OR "DOWN AND BACK" ARROW KEY. YOU WILL NOW SEE THAT THE PROMPT IS PRECEDED BY THE WORD "OFFICE." NOW TYPE JOL-PROJ AFTER THE PROMPT (NO SPACE) AND STRIKE THE ENTER KEY. YOU HAVE NOW PHYSICALLY PROVIDED THE INSTRUCTIONS THAT THE PROGRAM AUTOMATICALLY PROVIDES TO GIVE YOU THE MAIN CPE MENU. IF YOU NOW STRIKE THE F5 FUNCTION KEY, THE PROMPT AT THE BOTTOM OF THE SCREEN BECOMES VISIBLE, AND NOW TYPE CLS (NO SPACE AFTER THE PROMPT) AND ENTER AGAIN. NOW, TYPE IN ADOTMENU.BAT (NO SPACE AFTER THE PROMPT) AND ENTER AGAIN AND YOU WILL BE INTO THE ADOT MAIN MENU.

THIS, OF COURSE, DOES NOT SHOW YOU THE COMPLEX FORMULATION THAT THE COMMANDS GENERATE, BUT IT GIVES YOU A BETTER FEEL FOR WHAT IS HAPPENING IN THE SYSTEM WHEN YOU SELECT IN THE MENU.

B.2 PROGRAM MODULES

THE COMPILED BASIC LANGUAGE THAT PROVIDES THE CONSTRUCTION PROGRESS ESTIMATE (CPE) PROGRAMMING CONSISTS OF 10 SEPARATE PROGRAMS, OR MODULES, LINKED AND CONTROLLED BY THE MENUS IN THE PROGRAM. EACH OF THESE PROGRAMS HAS A NAME, WHICH IS LISTED IN THE COMPUTER DIRECTORY IN THE FORMAT "NAME.EXTENSION." AS WE HAVE SEEN, THESE PROGRAMS CAN BE RUN BY WRITTEN COMMANDS, BUT MENUS (WHICH ARE CONTROLLED BY "MINI-PROGRAMS") HAVE BEEN PROVIDED FOR EACH OF THESE FUNCTIONS FOR EASE OF USE. BY SELECTING FROM THE MENUS, THE PROGRAMS ARE AUTOMATICALLY INITIATED. A LIST OF THESE FILES OR PROGRAMS, AND A LIST OF THE DATA STORAGE FILES (WHICH HOLD THE INFORMATION YOU HAVE ENTERED FOR THE INDIVIDUAL PROJECT) ARE AS FOLLOWS:

JOL-PROJ.EXE THE MAIN CPE PROGRAM CONTAINING ROUTINES TO BUILD FILES, UPDATE FILES, AND PRINT REPORTS. (THIS PROGRAM IS RUN FROM THE SUBMENU - "OFFICE LOG ROUTINES" WHICH THEN PUTS YOU INTO THE MENU ONE LEVEL BELOW.) BY SELECTING FROM THIS MENU, YOU CALL UP THE REST OF THE CPE PROGRAMS:

JOL-UTIL.EXE A UTILITY PROGRAM TO SORT FILES, CONNECT SUB-ITEMS TO STRUCTURES, AND CALL AN EDIT PROGRAM. (SUBMENU - "UTILITY ROUTINES.") AT THE TERMINATION OF THIS PROGRAM, CONTROL RETURNS TO JOL-PROJ.EXE. (AND MAIN CPE MENU.)

JOL-EDIT.EXE AN EDITING PROGRAM TO REVIEW, CORRECT, AND DELETE THE CONTENTS OF CERTAIN FILES. (SUB-SUBMENU - "EDIT ROUTINES") AT TERMINATION, CONTROL RETURNS TO JOL-UTIL.EXE.

JOL-EST.EXE A PROGRAM TO PRINT OUT A MONTHLY ESTIMATE. THIS PROGRAM ALSO MAINTAINS A FILE NAMED JOL-EST.X (X=PROJECT NUMBER) THAT KEEPS TRACK OF MONTHLY ESTIMATE QUANTITIES. AT TERMINATION CONTROL RETURNS TO JOL-PROJ.EXE.

JOL-FIN.EXE A PROGRAM TO PRINT OUT FINAL BALANCE REPORTS. THIS PROGRAM ALSO MAINTAINS A FILE NAMED JOL-FIN.X (X=PROJECT NUMBER) THAT CONTAINS REASONS FOR OVER/UNDER RUNS FOR PROJECT ITEMS. AT TERMINATION, CONTROL RETURNS TO JOL-PROJ.EXE.

JOL-DA.EXE A PROGRAM TO CHECK IF A PROJECT IS BALANCED AND TO PRINT OUT THE TRANSACTION DETAIL LOG OR THE DATA ANALYSIS REPORT. AT TERMINATION CONTROL RETURNS TO JOL-PROJ.EXE.

JOL-UPL.EXE A PROGRAM TO DIRECT OPERATIONS TO SEND THE ELECTRONIC ESTIMATES AND TO REQUEST NEW PROJECTS FROM THE MAIN COMPUTER. AT TERMINATION CONTROL RETURN TO JOL-PROJ.EXE.

JOL-DWN.EXE A PROGRAM TO FORMAT A NEW PROJECT AND PLACE IT IN THE OFFICE LOG FILES.

TEST-FILE.EXE DIRECTS PROCESSING OF DOWNLOADED DATA.

JOL-LOG.EXE STORES NEW PROJECT LOG INTO FILE JOL-LOG.DAT.

B.3 FILES & FILE FORMAT

DATA IS STORED IN FILES IN THE PROGRAM WITH THE FOLLOWING FORMATS:

DATA FILES: (RANDOM ACCESS UNLESS OTHERWISE SPECIFIED)
(X = PROJECT NUMBER REFERENCE)
(N = 1ST DIGIT OF RELATED ITEM NUMBER)
(SS = SECTION REFERENCE)

JOL-INDX.DAT — CONTAINS AN INDEX TO EACH PROJECT THAT IS IN THE COMPUTER.

JOL-PROJ.X — CONTAINS THE FOLLOWING RECORDS AND CONTAINS ACCUMULATORS TO KEEP TRACK OF ACCUMULATED TRANSACTION QUANTITIES.

- PROJECT RECORD #1 AND #2
- SECTION RECORDS
- ITEM RECORDS
- CHANGE ORDER RECORDS
- FORCE ACCOUNT RECORDS

JOL-PNSS.X — CONTAINS SUB-ITEM RECORDS, WITH ACCUMULATORS TO KEEP TRACK OF ACCUMULATED TRANSACTION QUANTITIES.

JOL-STR.X — CONTAINS STRUCTURE RECORDS WHICH CONNECT LOGICAL GROUPS OF SUB-ITEM RECORDS.

JOL-TNSS.X — CONTAINS A RECORD OF EACH TRANSACTION (PAYMENT) MADE TO THE PROJECT. THIS ALLOWS A HISTORY OF EACH ITEM/SUB-ITEM TO BE DISPLAYED. ALSO PARTIAL PAYMENT ACCUMULATORS ARE KEPT IN THIS FILE. JOL-T000.X CONTAINS TIME TRANSACTIONS.

JOL-SUM.X — CONTAINS A RECORD OF EACH MONTHLY ESTIMATE THAT IS PRINTED.

JOL-FIN.X — CONTAINS REASONS FOR OVER/UNDER RUNS ON FINAL BALANCE REPORT.

EMTRAN.DAT — SEQUENTIAL FILE THAT CONTAINS TRANSMITTAL DATA TO SEND ELECTRONIC ESTIMATES.

EMEST.DAT — SEQUENTIAL FILE THAT CONTAINS ACCUMULATED ITEM QUANTITIES FOR ELECTRONIC ESTIMATES.

TEMPNNN — SEQUENTIAL TEMPORARY FILE THAT STORES DATA ANALYSIS PRINTOUT. IF AN ERROR IS FOUND THEN THE FILE IS ROUTED TO THE PRINTER.

ERROR — SEQUENTIAL TEMPORARY FILE THAT STORES ERROR MESSAGES FOR LATER PRINTING.

JOL-COM.DAT USED TO PASS INFORMATION FROM ONE MODULE TO ANOTHER.

CPF USED TO SIGNAL WHETHER DATA TRANSMISSION WAS SUCCESSFUL.

B-4

CERTAIN FILES ARE ARRANGED SUCH THAT THE INFORMATION THEY CONTAIN CAN BE IDENTIFIED BY THE NUMBER OF THE SPACE THEY OCCUPY (NUMBERING LEFT TO RIGHT.) THE PROJECT REFERENCE CODE, AS AN EXAMPLE, IS PROVIDED BY THE NUMBER THAT IS ASSIGNED TO THE PROJECT WHEN IT IS DOWNLOADED FROM THE MAIN FRAME COMPUTER. OTHER DESCRIPTIONS SHOULD BE SELF-EVIDENT.

FILE = JOL-INDX.DAT

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-2	PROJECT REFERENCE CODE	C	2	RN$	PC$
3-22	PROJECT NUMBER	C	20	PD$	
23-52	PROJECT DESCRIPTION	C	30	DE$	
53-60	PROJECT CODE	C	8	P$	
61-128	FILLER	C	68		B

FILE = JOL-PROJ.x PROJECT RECORD #1

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	RECORD TYPE "A"	C	1	RT$	"A"
2-3	PROJECT REFERENCE CODE	C	2	PN$	PC$
4-5	FILLER	C	2	RS$	B
6-13	FILLER	C	8	IN$	B
14-18	SEQUENCE "0"	C	5	SN$	"0"
19-26	PROJECT CODE	C	8	FC$	A$(3,7)
27-56	PROJECT DESCRIPTION	C	30	DS$	A$(4,7)
57-64	CONTRACT TIME (DAYS)	I	8	PQ$	A$(7,7)
65-72	ACCUM. TIME (DAYS)	I	8	QC$	0
73-80	TOTAL CONTRACT AMT.	D	8	PA$	A$(8,7)
80-88	ACCUMULATED AMOUNT	D	8	AC$	0
89-94	FUND CODE	C	6	A1$	A$(5,7)
95-98	ORG CODE	C	4	A2$	A$(6,7)
99-118	CONTRACTOR'S NAME	C	20	A3$	A$(9,7)
119-128	FILLER	C	10	A4$	B

FILE = JOL-PROJ.x PROJECT RECORD #2

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	RECORD TYPE "A"	C	1	RT$	"A"
2-3	PROJECT REFERENCE CODE	C	2	PN$	PC$
4-5	FILLER	C	2	RS$	B
6-13	FILLER	C	8	IN$	B
14-18	SEQUENCE "1"	C	5	SN$	"1"
19-26	FORCE ACCOUNT ACCUM AMT	D	8	FC$	0
27-56	PROJECT NUMBER	C	30	DS$	A$(2,7)

57-64	Starting Date	C	8	PQ$	A$(11,7)
65-72	Completion Date	C	8	QC$	B
73-80	Revised Amount	D	8	PA$	A$(8,7)
81-88	Revised Time (days)	I	8	AC$	A$(7,7)
89-94	Filler	C	6	A1$	B
95-98	Filler	C	4	A2$	B
99-118	Engineer's Name	C	20	A3$	B
119-128	Filler	C	10	A4$	B

File = JOL-PROJ.x Section Record

Position	Data Item	Form	Bytes	Var	Input
1-1	Record type "B"	C	1	RT$	"B"
2-3	Project Reference Code	C	2	PN$	PC$
4-5	Section Reference Code	C	2	RS$	A$(2,7)
6-13	Filler	C	8	IN$	"0"
14-18	Filler	C	5	SN$	B
19-26	Section & FHWA Codes	C	8	FC$	A$(3&4,7)
27-56	Section Description	C	30	DS$	A$(5,7)
57-64	Revised Section Amount	D	8	PQ$	A$(6,7)
65-72	Force Account Amount	D	8	QC$	0
73-80	Section Amount	D	8	PA$	A$(6,7)
80-88	Accumulated Amount	D	8	AC$	0
89-94	Filler	C	6	A1$	B
95-98	Filler	C	4	A2$	B
99-128	Filler	C	30	A5$	B

File = JOL-PROJ.x Item Record

Position	Data Item	Form	Bytes	Var	Input
1-1	Record type "E"	C	1	RT$	"E"
2-3	Project Reference Code	C	2	PN$	PC$
4-5	Section Reference Code	C	2	RS$	Q1$
6-13	Item Number	C	8	IN$	A$(3,7)
14-18	Filler	C	5	SN$	B
19-26	Unit Price	D	8	FC$	A$(7,7)
27-56	Item Description	C	30	DS$	A$(4,7)
57-64	Plans Quantity	D	8	PQ$	A$(6,7)
65-72	Accumulated Quantity	D	8	QC$	0
73-80	Revised Quantity	D	8	PA$	A$(6,7)
80-88	Accumulated Amount	D	8	AC$	0
89-94	Unit	C	6	A1$	A$(5,7)
95-95	Partial Payment Code	C	1	E1$	"0"
96-98	Fin Bal Reason Address	I	3	E5$	0
99-128	Change Orders (10)	C	10*3	E4$(N)	B

FILE = JOL-PROJ.x CHANGE ORDER RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	RECORD TYPE "C"	C	1	RT$	"C"
2-3	PROJECT REFERENCE CODE	C	2	PN$	PC$
4-5	SECTION REFERENCE CODE	C	2	RS$	Q1$
6-13	ITEM NUMBER	C	8	IN$	R1$
14-18	SEQUENCE 0	C	5	SN$	" 0"
19-26	DATE APPROVED	C	8	FC$	C3$
27-56	ITEM DESCRIPTION	C	30	DS$	R3$
57-64	+/- QUANTITY	D	8	PQ$	R3#
65-72	UNIT PRICE	D	8	QC$	R2#
73-80	+/- DOLLARS	D	8	PA$	R3#*R2#
80-88	FILLER	C	8	AC$	B
89-94	FILLER	C	6	A1$	B
95-98	CHANGE ORDER NUMBER	C	4	A2$	C1$
99-128	CHANGE ORDER DESCR.	C	30	A5$	C2$

FILE = JOL-PROJ.x FORCE ACCOUNT RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	RECORD TYPE "D"	C	1	RT$	"D"
2-3	PROJECT REFERENCE CODE	C	2	PN$	PC$
4-5	SECTION REFERENCE CODE	C	2	RS$	Q1$
6-13	FILLER	C	8	IN$	"0"
14-18	FORCE ACCOUNT NUMBER	C	5	SN$	A$(3,7)
19-26	DATE APPROVED	C	8	FC$	A$(4,7)
27-56	F.A. DESCRIPTION	C	30	DS$	A$(3,7)
57-64	FILLER	C	8	PQ$	B
65-72	REVISED AMOUNT	D	8	QC$	A$(5,7)
73-80	F.A. AMOUNT	D	8	PA$	A$(5,7)
81-88	ACCUMULATED AMOUNT	D	8	AC$	0
89-94	FILLER	C	6	A1$	B
95-98	FILLER	C	4	A2$	B
99-128	FILLER	C	30	A5$	B

FILE = JOL-PNSS.x SUB-ITEM RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-8	ITEM NUMBER	C	8	SI1$	SI8$
9-13	SUB-ITEM NUMBER	C	5	SI2$	
14-43	ITEM DESCRIPTION	C	30	SI3$	SIO$
44-73	SUB-ITEM DESCRIPTION	C	30	SI4$	
74-81	PLANS QUANTITY	D	8	SI5$	
82-89	REVISED QUANTITY	D	8	SI6$	
90-97	ACCUMULATED QUANTITY	D	8	SI7$	
98-128	FILLER	C	31		

FILE = JOL-STR.X STRUCTURE RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-2	SECTION REFERENCE CODE	C	2	ST1$	
3-7	STRUCTURE NUMBER	C	5	ST2$	
8-37	STRUCTURE DESCRIPTION	C	30	ST3$	ST0$
38-46	FILE REFERENCE (9)	C	9	ST4$(N)	
47-128	FILLER	C	82	ST1$	

FILE = JOL-TNSS.X PROGRESS PAYMENT RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	TRANSACTION TYPE "2"	C	1	TT$	"2"
2-3	PROJECT REFERENCE CODE	C	2	TP$	PC$
4-5	SECTION REFERENCE CODE	C	2	TS$	Q1$
6-13	ITEM NUMBER	C	8	TI$	R1$
14-18	SUB-ITEM NUMBER	C	5	TN$	V1$
19-26	DATE	C	8	TF$	DA$
27-27	FILLER	C	1	ET$	B
28-29	FILLER	C	2	EN$	B
30-37	RATE	D	8	TV$	Q7#
68-45	ORIGINAL QUANTITY	D	8	TQ$	Q6#
46-53	REVISED QUANTITY	D	8	TA$	Q5#
54-68	INSPECTOR'S NAME	C	15	NM$	NA$
69-128	COMMENTS	C	60	TC$	CM$

FILE = JOL-TNSS.X PARTIAL PAYMENT RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	TRANSACTION TYPE "1"	C	1	TT$	"1
2-3	PROJECT REFERENCE CODE	C	2	TP$	PC$
4-5	SECTION REFERENCE CODE	C	2	TS$	Q1$
6-13	ITEM NUMBER	C	8	TI$	R1$
14-18	FILLER	C	5	TN$	B
19-26	DATE	C	8	TF$	DA$
27-27	PARTIAL PAYMENT CODE	C	1	ET$	RA$
28-29	FILLER	C	2	EN$	B
30-37	RATE	D	8	TV$	Q7#
38-45	ORIGINAL QUANTITY	D	8	TQ$	Q6#
46-53	ACCUMULATED QUANTITY	D	8	TA$	Q6#
54-68	INSPECTOR'S NAME	C	15	NM$	NA$
69-128	COMMENTS	C	60	TC$	CM$

FILE = JOL-T000.x TIME RECORDING RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	TRANSACTION TYPE "3"	C	1	TT$	"3"
2-3	PROJECT REFERENCE CODE	C	2	TP$	PC$
4-5	FILLER	C	2	TS$	B
6-13	FILLER	C	8	TI$	B
14-18	FILLER	I	5	TN$	B
19-26	DATE	C	8	TF$	A$(1,7)
27-27	FILLER	C	1	ET$	B
28-29	FILLER	I	2	EN$	B
30-37	DAYS CHARGED	I	8	TV$	B
38-45	DAY CODES	C	8	TQ$	A$(2-8,7)
46-53	FILLER	C	8	TA$	B
54-68	FILLER	C	15	NM$	B
69-128	COMMENTS	C	60	TC$	A$(10,7)

FILE = JOL-T000.x TIME EXTENSION RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	TRANSACTION TYPE "4"	C	1	TT$	"4"
2-3	PROJECT REFERENCE CODE	C	2	TP$	PC$
4-5	FILLER	C	2	TS$	B
6-13	FILLER	C	8	TI$	B
14-18	REQUEST NUMBER	C	5	TN$	A$(1,7)
19-26	DATE	C	8	TF$	A$(2,7)
27-27	FILLER	C	1	ET$	B
28-29	FILLER	C	2	EN$	B
30-37	FILLER	C	8	TV$	B
38-45	DAYS EXTENDED	I	8	TQ$	A$(3,7)
46-53	FILLER	C	8	TA$	B
54-68	FILLER	C	15	NM$	B
69-128	FILLER	C	60	TC$	B

FILE = JOL-T100.x FORCE ACCOUNT PAYMENT RECORD

POSITION	DATA ITEM	FORM	BYTES	VAR	INPUT
1-1	TRANSACTION TYPE "5"	C	1	TT$	"5"
2-3	PROJECT REFERENCE CODE	C	2	TP$	PC$
4-5	SECTION REFERENCE CODE	C	2	TS$	Q1$
6-13	FILLER	C	8	TI$	B
14-18	FORCE ACCOUNT NUMBER	C	5	TN$	F1$
19-26	DATE	C	8	TF$	A$(1,7)
27-27	FILLER	C	1	ET$	B
28-29	FILLER	C	2	EN$	B
30-37	FILLER	C	8	TV$	B
38-45	AMOUNT REPORTED	D	8	TQ$	A$(2,7)
46-53	FILLER	C	8	TA$	B
54-68	INSPECTOR'S NAME	C	15	NM$	A$(3,7)
69-128	COMMENTS	C	60	TC$	A$(4,7)

CONSTRUCTION PROGRESS ESTIMATES

APPENDIX C - PARAMETER FILE FOR COMMUNICATIONS

THIS APPENDIX DEALS WITH THE PARAMETER FILE USED FOR RJE COMMUNICATIONS. IT SETS VALUES OR CODES WHICH ARE REQUIRED FOR RJE OPERATION AND MUST EXIST TO BE ABLE TO TRANSMIT ESTIMATES OR RECEIVE PROJECT DATA. IN THE EVENT THAT THE PARAMETER FILE IS ERASED OR ALTERED INCORRECTLY THE FOLLOWING LISTING CAN BE USED TO RESTORE THE FILE TO ITS ORIGINAL STATE:

```
;
; *** EM3780 PARAMETER FILE ***
;
1    ; MODE SWITCH
;
0    ; SPACE COMPRESSION
;
1    ; BLOCKING
;
256  ; BLOCK SIZE
;
1    ; TRANSLATE SWITCH
;
18   ; DISK DEVICE CODE
17   ; PRINTER DEVICE CODE
;
15
27
48
 0
;
EMFIL.UPL    ; COMMAND FILE NAME
;
2    ; INTERRUPT LINE
;
; ** END OF FILE **
```