6343 U-003-307 .36

GEODETIC AND PHOTO CONTROL SURVEY REPORT - FERNALD ENVIRONMENTAL MANAGEMENT PROJECT #7663 - SUBCONTRACT #7663S0015 - APRIL 27, 1993 - (USED AS A REFERENCE IN OU1 RI)

04/27/93

PROJ #7663 PHASE III
PARSONS DOE-FN
150
REPORT

Effective Solutions

6343 - 4 Phase III

GEODETIC AND PHOTO CONTROL SURVEY REPORT

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT #7663, SUBCONTRACT #7663S0015

The Ralph M. Parsons Company

Fairfield, Ohio

April 27, 1993

WOOLPERT

000001

CRU 3

PARSONS

6343

6120 South Gilmore Road
Fairfield Executive Center
Fairfield, OH 45014
(513) 870-0300
Fax (513) 870-0444

May 5, 1993
PARSONS ID#: 06:034:206:0170-93

Mr. James E. King
CERCLA/RCRA Unit 3 Director
Fernald Environmental Restoration
Management Corporation
P.O. Box 398704
Cincinnati, OH 45239-8704

Subject: Issue Phase III
Project Order 34
Photogrammetric Mapping - Revision 2
FERMCO Subcontract No.: 2-21487
PARSONS Environmental Remedial Action Project

Dear Mr. King:

Attached are the following deliverables per the Project Order Proposal Section 2.3.2, Phase III, for your use and information:

- 44 Grid Maps
- 23 Grid Maps (Phase II, Rev. 1)
- 1 Index Map (Rev. 1)
- 1 Photo Control Survey Report
  Fully Analytic Triangulation Report (Revised)
- 1 - 8mm tape containing 74 digital files in Intergraph Microstation Format

This submittal of the deliverables completes the Phase III activities.

If you have any questions, please call me at 870-8274 or Tom Pickering at 870-8273.

Very truly yours
PARSONS

S. K. Talukder

Sukomal K. Talukder
Project Manager, SSP

SKT:nlt
Attachments

Distribution:

FERMCO: B. Copsey (w/o att.)
C. L. North (w/o att.)
D. C. Wright (w/o att.)
F. Jebens (w/o att.)
D. J. Carr (w/o att.)

PARSONS: T. Pickering
SSP Project Files
Distribution Code 7

ERAFS1\vol1:user\frd206\wpdata\letters\0170-93

TABLE OF CONTENTS

Section 1 Geodetic Control

- Geodetic Control Diagrams
- GPS Station (Monumentation) Visibility Diagrams
- GPS Station (Monumentation) Log/Recovery Sheets
- Field Book Notes
- Final X-Y-Z Coordinates

Section 2 Photo Control

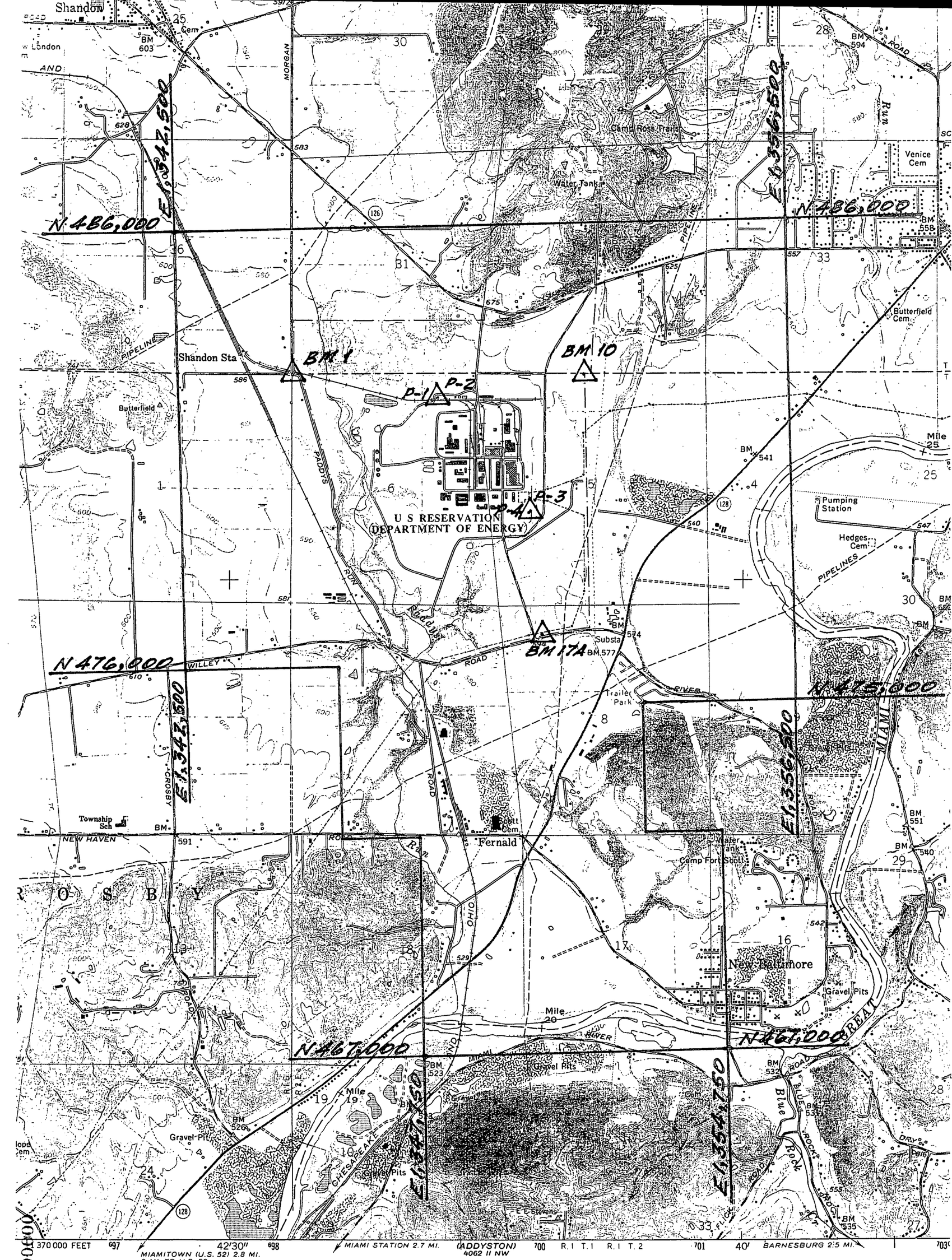
- Flight Plan/Photo Control Layout
- Traverse Survey Field Notes
- Coordinate Listing
- Origin of FEMP Coordinate System
- State Plane/UTM—Geodetic Coordinate Computations NAD 83
- Field Book Notes

TABLE OF CONTENTS

Section 1 Geodetic Control

- **Geodetic Control Diagrams**
- **GPS Station (Monumentation) Visibility Diagrams**
- **GPS Station (Monumentation) Log/Recovery Sheets**
- **Field Book Notes**
- **Final X-Y-Z Coordinates**

GEODETIC CONTROL DIAGRAMS



SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MN GN
2½° 44 MILS
1°28' 26 MILS

UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

WOOLPERT

409 East Monument Avenue
Dayton, Ohio
45402-1261

PARSONS FEMP-PO 34
GEODETIC CONTROL DIAGRAM
△ = HORIZ./VERT. ACSM CLASS II PT.

OHIO

QUADRANGLE LOCATION
SHANDON, OH.

Revisions shown in purple and woodland compiled in cooper with State of Ohio agencies from aerial photographs taken 1 and other sources. This information not field checked. M

6343

6343

GPS STATION (MONUMENTATION) VISIBILITY DIAGRAMS

PROJECT FERNALD
ORDER#

STATION NAME BM 1
LOCATION SW CORNER OF PADDY'S RUN

COMMENTS RECOVERY SKETCH BOUNDARY MONUMENT BM 1

WOOLPERT CONSULTANTS GPS STATION VISIBILITY DIAGRAM and REFERENCE SKETCH

DATE 4-23-93

MAP SHEET _____ SCALE _____

OBSERVER _____ HGT. ____ FT. ____ IN.

USGS QUAD _____
LAT. _____ LONG. _____

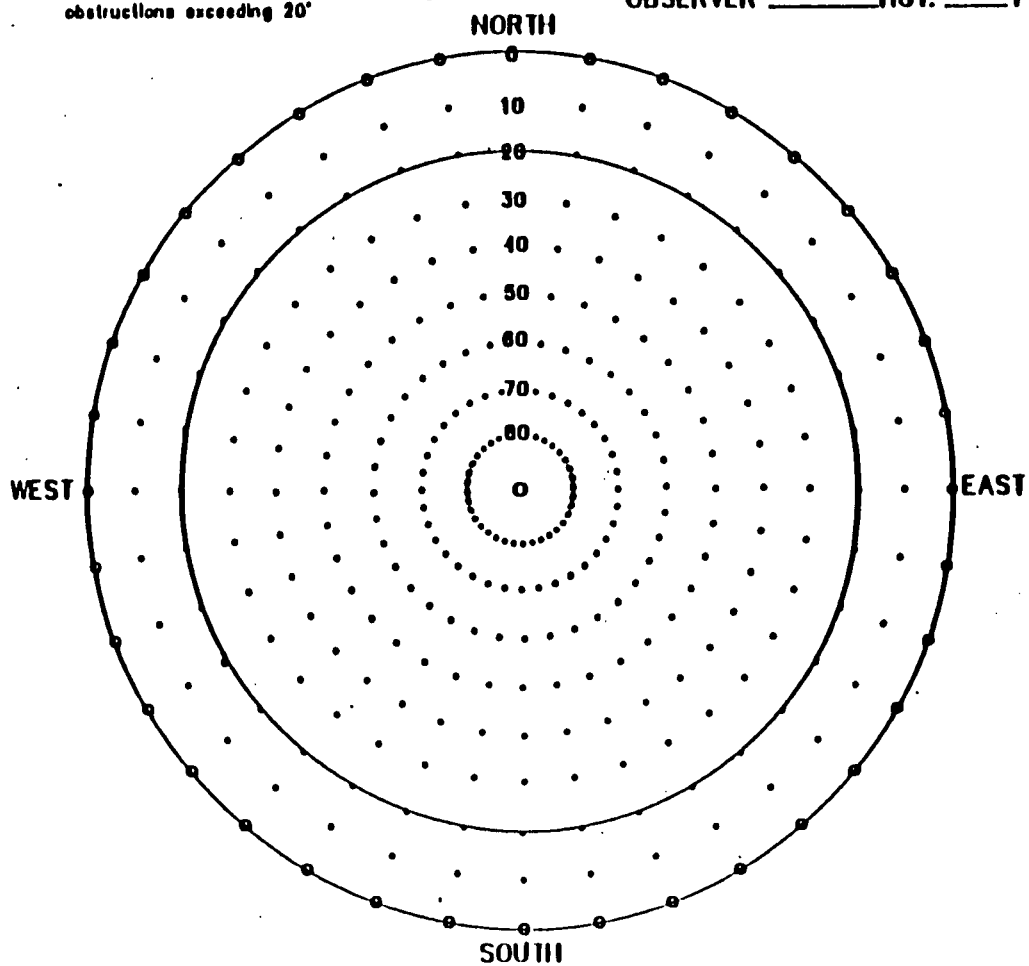
STATE OHIO SPCS ZONE 3402

X(27) _____
Y(27) _____

X(83) 1345109.041
Y(83) 482813.982

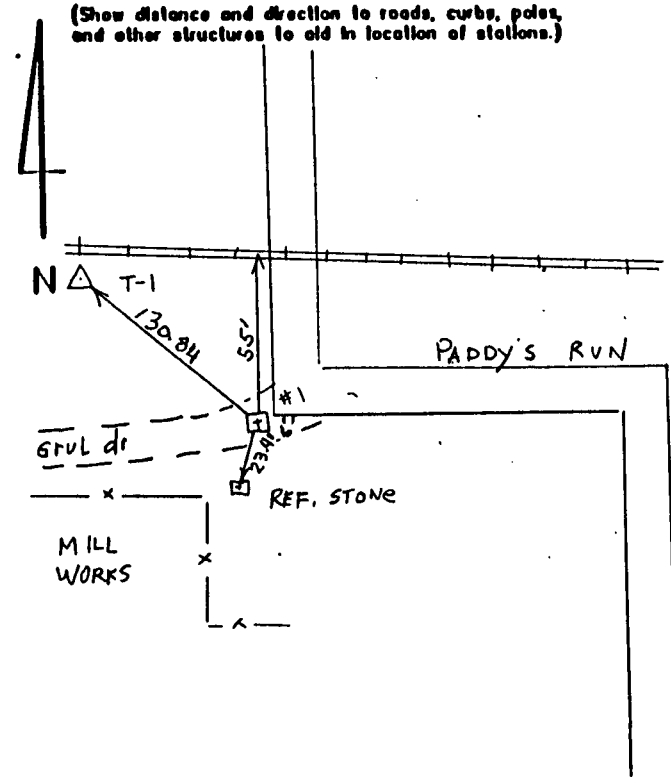
ELEV. 579.83

NOTE: Show the distance to the nearest edge of all obstructions exceeding 20°



STATION REFERENCE SKETCH

(Show distance and direction to roads, curbs, poles, and other structures to aid in location of stations.)



000009

6343

PROJECT FERMCO
ORDER# 30-31-05/848-03

STATION NAME 10
LOCATION

COMMENTS

NOTE: Show the distance to the nearest edge of all obstructions exceeding 20°

WOOLPERT CONSULTANTS GPS STATION VISIBILITY DIAGRAM and REFERENCE SKETCH

DATE 1-18-93

MAP SHEET _____ SCALE _____

OBSERVER RF HOT. 5 FT. 11 IN.

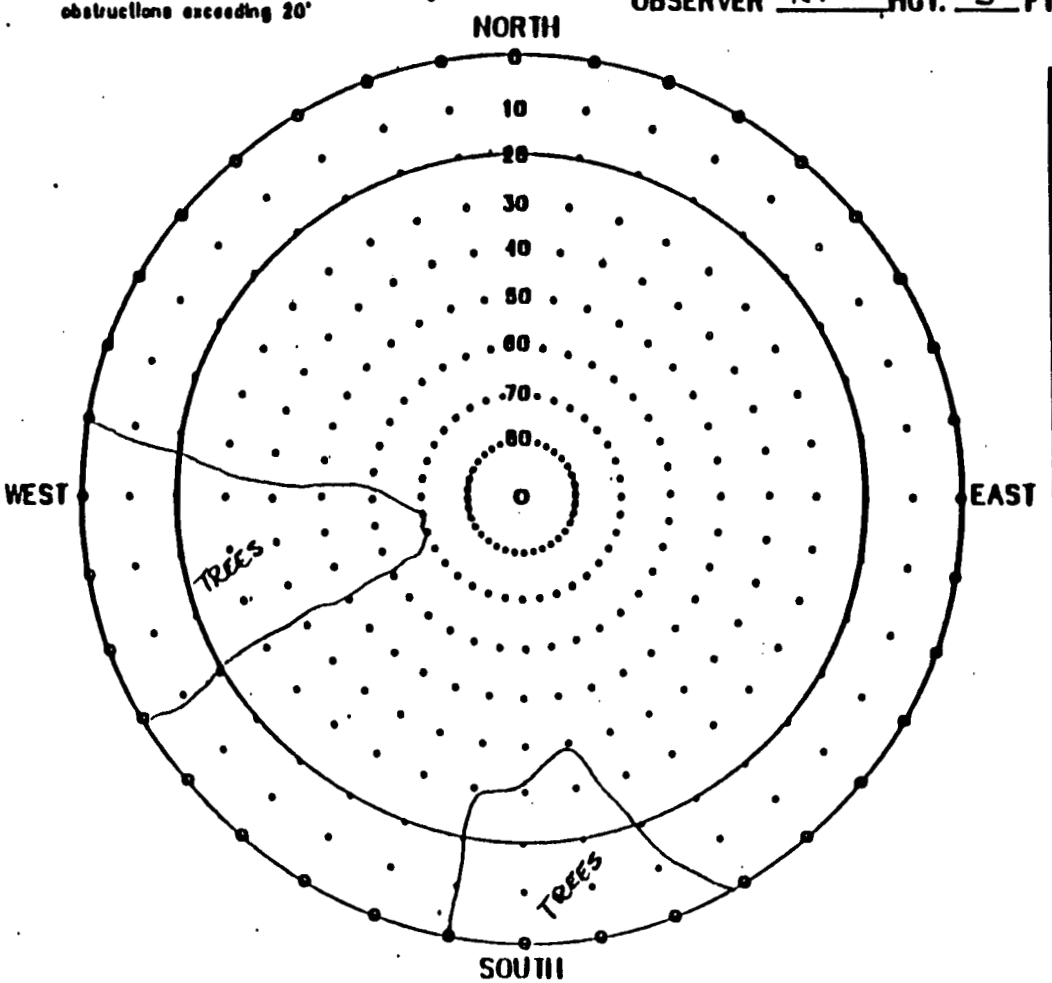
USGS QUAD _____
LAT. _____ LONG. _____

STATE _____ SPCS ZONE _____

X(27) _____
Y(27) _____

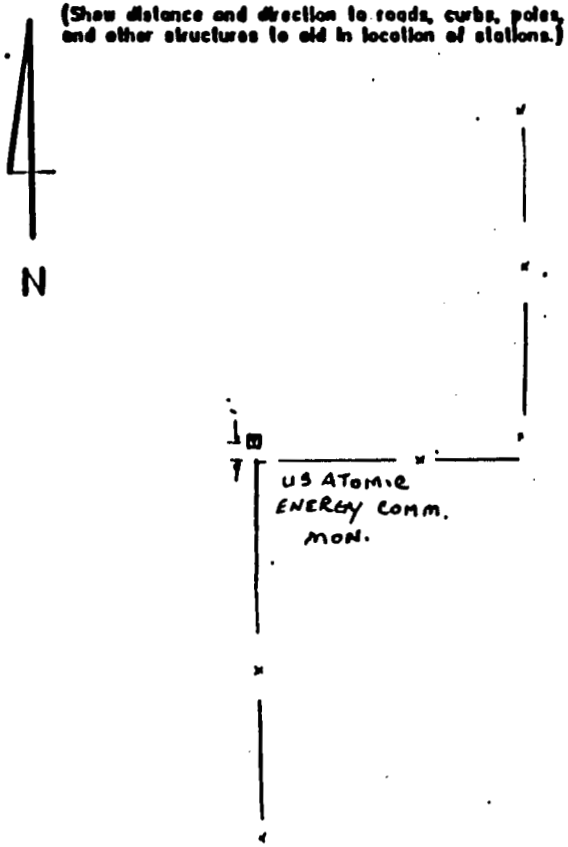
X(83) _____
Y(83) _____

ELEV. _____



STATION REFERENCE SKETCH

(Show distance and direction to roads, curbs, poles, and other structures to aid in location of stations.)



000010

PROJECT FERMCO
ORDER# 30-31-051848-03

STATION NAME ALT 17
LOCATION

COMMENTS DOE WEMCO Trav & Bin

WOOLPERT CONSULTANTS
GPS STATION
VISIBILITY DIAGRAM
and
REFERENCE SKETCH

DATE 1-19-93

MAP SHEET _____ SCALE _____

OBSERVER RF HGT. 5 FT. 11 IN.

USGS QUAD _____
LAT. _____ LONG. _____

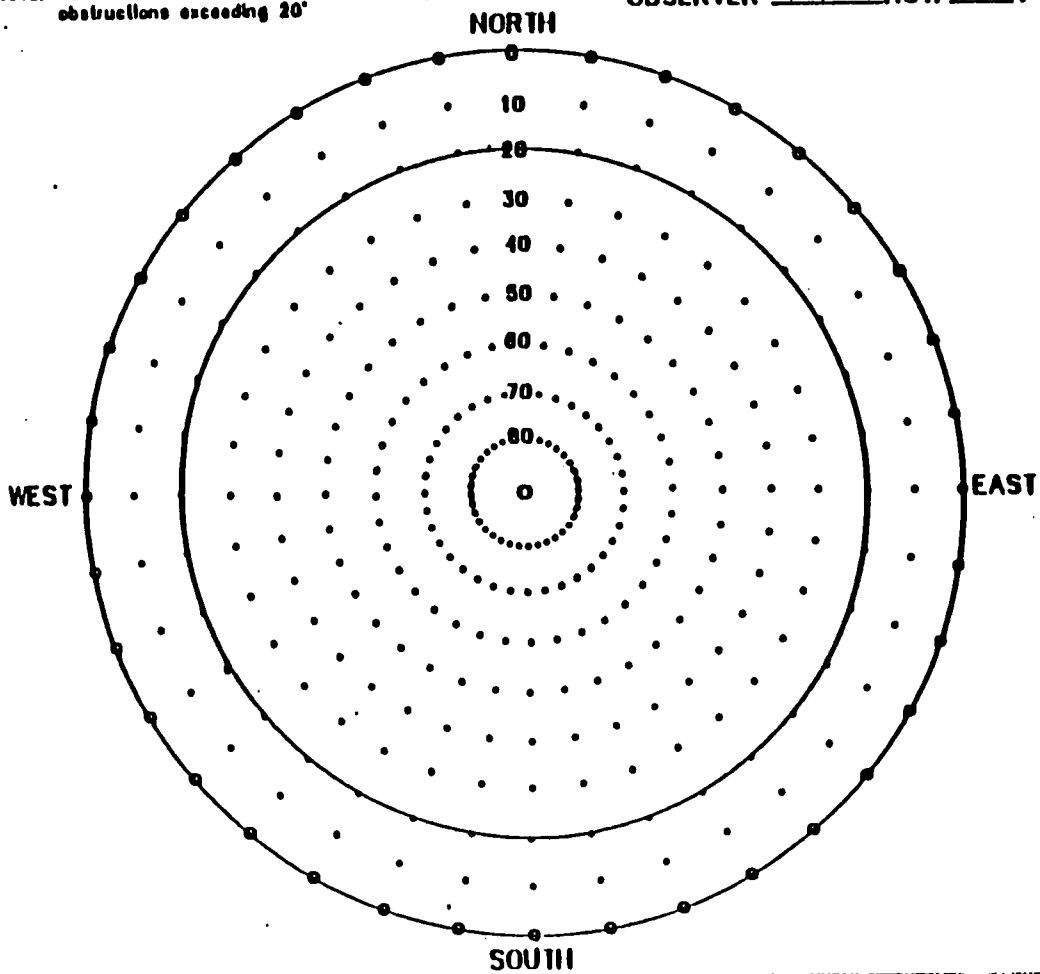
STATE _____ SPCS ZONE _____

X(27) _____
Y(27) _____

X(83) _____
Y(83) _____

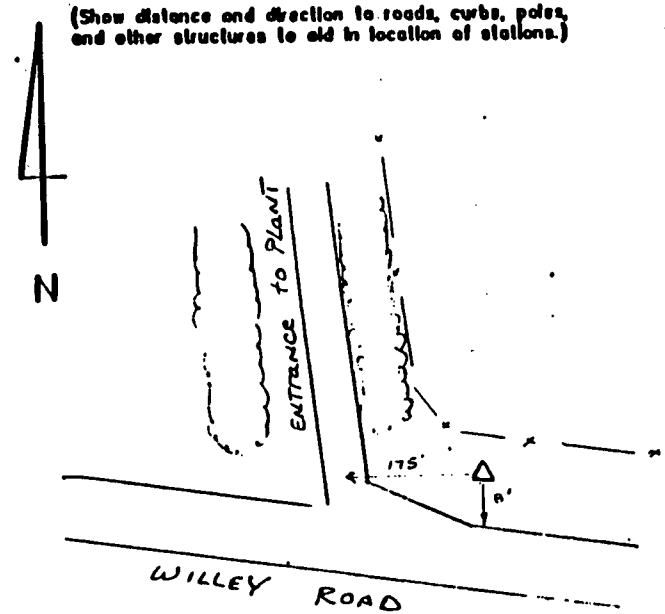
ELEV. _____

NOTE: Show the distance to the nearest edge of all obstructions exceeding 20°



STATION REFERENCE SKETCH

(Show distance and direction to roads, curbs, poles, and other structures to aid in location of stations.)



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6343

GPS STATION (MONUMENTATION) LOG/RECOVERY SHEETS

WOOLPERT

GPS STATION LOG

6343

tation Name: P-1
eceiver No: 4
ay of Year: 095
ession No. 4

Project Name: FEMP CONTROL
Job Number:
Local Date: APRIL 5, 1993
Operator: TOM BAUGHMAN

/A CODE POSITION
at: 39 ° 13 ' 12.02 " N
ong: 84 ° 41 ' 29.97 " W
llip. Height: 179.4 M

Trimble: 4000 SSE
Antenna: DUAL EXT KIN SSE
Battery No.: INT
Tribrach No.: WILD
Cable Length: 10'

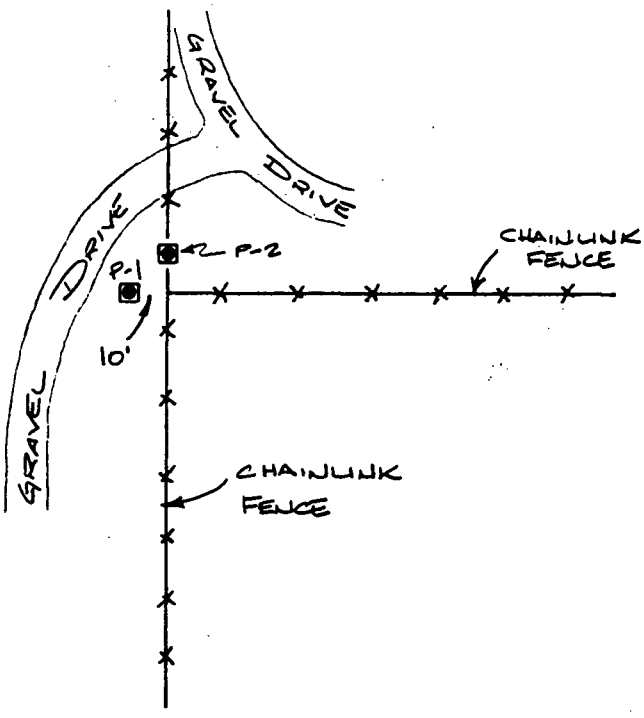
ntenna H.I. ==> Before: 1.6340 M 5.3608 Ft
After: 1.6340 M 5.3608 Ft
ype of Survey: FAST STATIC 15 MIN

Actual ==> Start ___:___ Stop ___:___ UTC
Start ___:___ Stop ___:___ Local
Local-UTC Time Offset: -4:00

V's Used: 18-14-22-25-29

Weather: CLOUDY & DRIZZLE

ketch:



Description:

STATION IS LOCATED @ THE N.W. COR OF THE FACILITY 10' WEST OF A CHAINLINK FENCE INTERSECTION.

ype of Mark: CONC MON w/ BRASS
tamping: –
gency:

Indicate North

Remarks:

6343

WOOLPERT

GPS STATION LOG

Station Name: P3
Receiver No: 1
Day of Year: 095
Session No. 4

Project Name: FEMP
Job Number:
Local Date: APRIL 5, 1993
Operator: TOM MOCHTY & BARRY D.

C/A CODE POSITION
Lat: 39 ° 17 ' 45.59 " N
Long: 84 ° 41 ' 01.68 " W
Ellip. Height: 162.0 M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT.
Tribrach No.:
Cable Length: 10'

Antenna H.I. ==> Before: 1.6840 M 5.5249 Ft
After: 1.6840 M 5.5249 Ft
Type of Survey: FAST STATIC

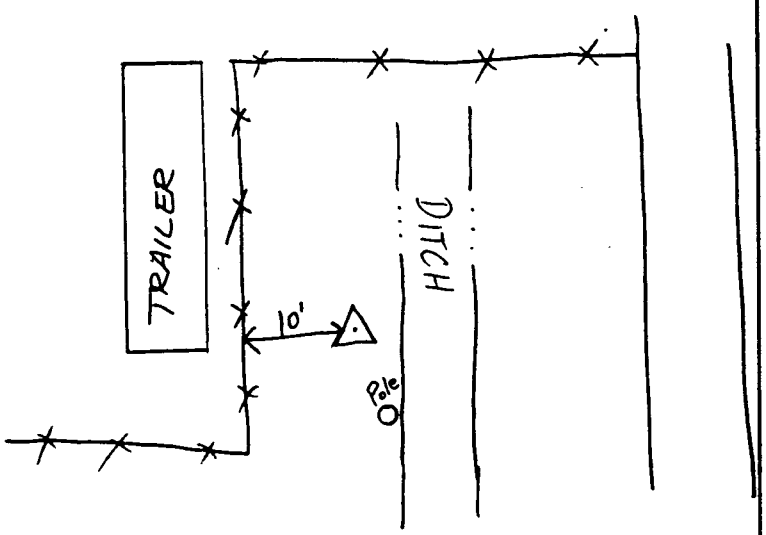
Actual ==> Start : Stop : UTC
Start 1:36 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 18 14 22 25 29

Weather: CLOUDY - DRIZZLE

Sketch:

TIM 11-22-29



Description:

EXPERIENCED CYCLE-SLIPS @ DIFFERENT INTERVALS THROUGHOUT THE SURVEY

Type of Mark: U.S. DOE DISK
Stamping:
Agency:

Indicate North

Remarks:

WOOLPERT

409 East Monument Avenue
Dayton, Ohio
45402-1261

GPS STATION LOG

Station Name: P-4
Receiver No: 3
Day of Year: 095
Session No. 1

Project Name: FEMP CONTROL
Job Number:
Local Date: 05-APRIL-1993
Operator: TIM RYAN

C/A CODE POSITION
Lat: 39 ° 17 ' 44.87 " N
Long: 84 ° 41 ' 02.30 " W
Ellip. Height: +129.1 M

Trimble: 4000 SSE
Antenna: DUAL KIN. EXT. SSE
Battery No.: INT
Tribrach No.: WILD
Cable Length: 10'

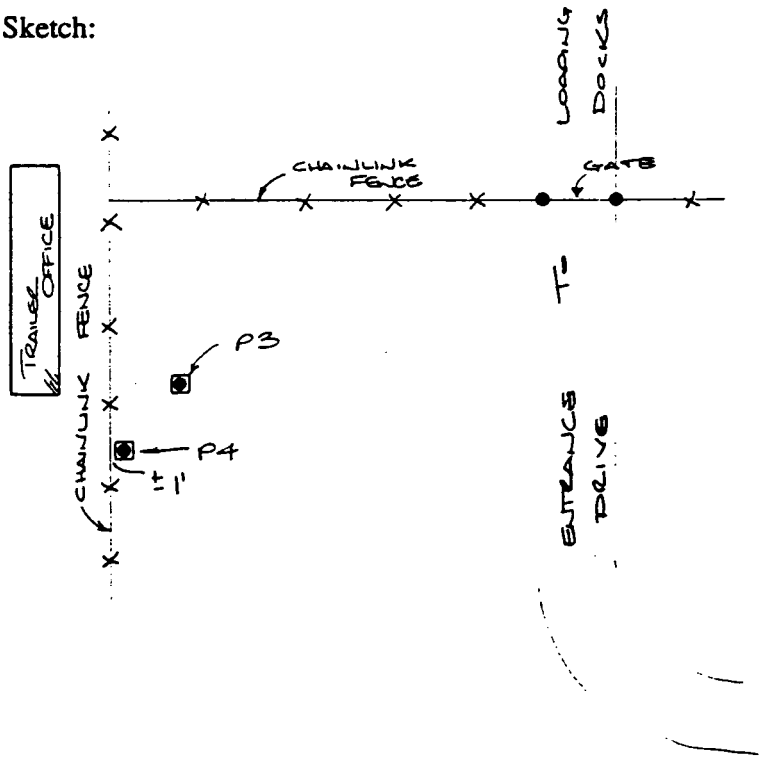
Antenna H.I. ==> Before: 3.8770 M 12.7198 Ft
After: 3.8770 M 12.7198 Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 12 : 30 Stop : UTC
Start 8 : 30 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 12-15-20-21-23-25

Weather: COOL & CLOUDY

Sketch:



Description:

STATION IS LOCATED @ THE S.E. COR. OF THE FACILITY JUST NORTH OF THE EAST PARKING LOTS @ WEST OF THE ENTRANCE TO THE LOADING DOCKS.

Type of Mark: CONC. MON W/BRASS DISK
Stamping: -
Agency: U.S. DEPT OF ENERGY

Indicate North

Remarks:

6343

GPS STATION LOG

WOOLPERT

Station Name: P-4
Receiver No: 3
Day of Year: 095
Session No. 6

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05-APRIL-1993
Operator: TIM RYAN

C/A CODE POSITION
Lat: 39 ° 17 ' 46.26 " N
Long: 84 ° 41 ' 00.99 " W
Ellip. Height: + 119.8 M

Trimble: 4000 SSE
Antenna: L1/L2
Battery No.:
Tribrach No.: WILD #3
Cable Length: 10'

Antenna H.I. ==> Before: 1.586 M _____ Ft
After: _____ M _____ Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 8:54 ~~P.M.~~ Stop ___:___ UTC
Start 4:54 ~~P.M.~~ Stop ___:___ Local
Local-UTC Time Offset: -4.00

SV's Used: 19-18-11-27-02-15

Weather: COOL / CLOUDY

Sketch: SEE SESSION #1 FOR SKETCH

Description:

H.I. = 1.586 M
= 5.2034'
= 62.4409"

Type of Mark: CON/MON W/BRASS DISC.
Stamping:
Agency:

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: BM 10 → FEMP #10
Receiver No: 1
Day of Year: 095
Session No. 3

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05 · APRIL · 1993
Operator: T. MOCHTY

C/A CODE POSITION
Lat: 39 ° 18 ' 18.06 " N
Long: 84 ° 40 ' 44.12 " W
Ellip. Height: +140.2 M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT
Tribrach No.: WILD #1
Cable Length: 10'

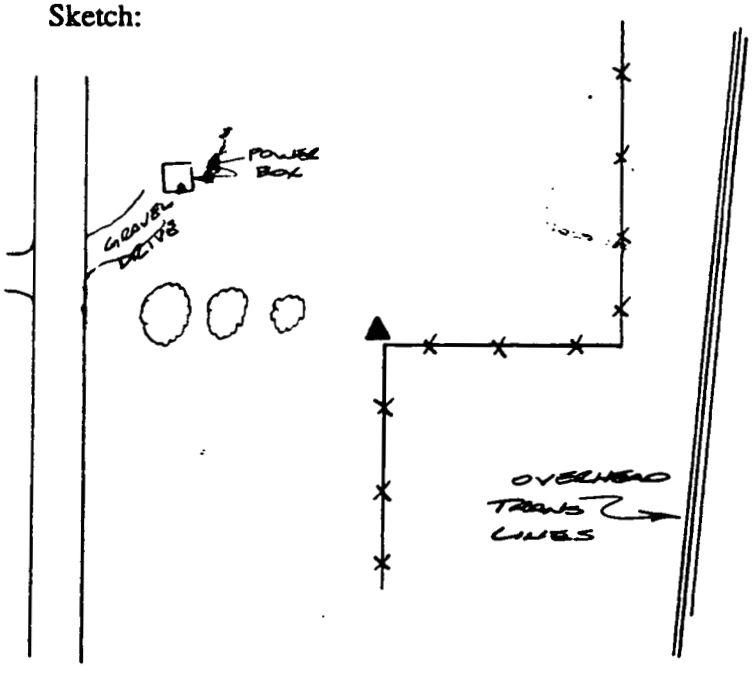
Antenna H.I. ==> Before: 1.1910 M 3.9075 Ft
After: 1.1910 M 3.9075 Ft
Type of Survey: FAST STATIC 20 MIN

Actual ==> Start 16 : 20 Stop : UTC
Start 12 : 20 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 14 · 22 · 25 · 29

Weather: CLOUDY & COLD @ 40°

Sketch:



Description:

Type of Mark: CONC MON w/BRASS DISK
Stamping: –
Agency: U.S. ATOMIC ENERGY COMMISSION

Indicate North

Remarks: MARK PROJECTS

6343

WOOLPERT

GPS STATION LOG

Station Name: 17A
Receiver No: 2
Day of Year: 095
Session No. 1

Project Name: FEMP
Job Number:
Local Date: APRIL 5, 1993
Operator: BARRY DALRYMPLE

C/A CODE POSITION
Lat: 39 ° 17 ' 17.29 " N
Long: 84 ° 40 ' 58.44 " W
Ellip. Height: 136.4 M

Trimble: 4000 SSE
Antenna: L1/L2 EXT.
Battery No.: INT.
Tribrach No.: #3
Cable Length: 10'

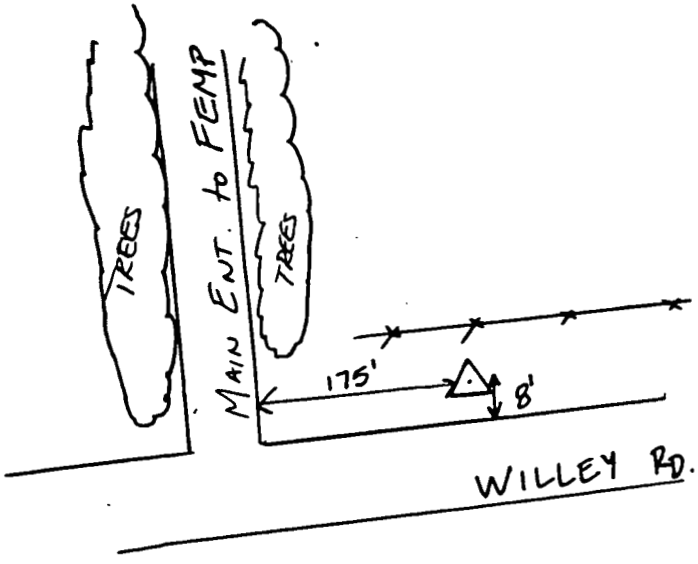
Antenna H.I. ==> Before: 1.44 M 4.7244 Ft
After: 1.44 M 4.7244 Ft
Type of Survey: FAST STATIC

Actual ==> Start : Stop : UTC
Start 8:27 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 01 12 15 20 21 23 25

Weather: OVERCAST - DRIZZLE 37°

Sketch:



Description:
MONV. set in CONC. 8' N. of N. Edge of WILLEY RD. & APPROX. 175' E of ℄ MAIN ENT. Rd. to FEMP.

Type of Mark: BRASS DISK IN CONC
Stamping: BENCH MARK - TRAV.
Agency: USDOE - WMCO

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: 17 A
Receiver No: 7
Day of Year: 095
Session No. 6

Project Name: FEMP
Job Number:
Local Date: APRIL 5, 1993
Operator: BARRY DALRYMPLE

C/A CODE POSITION
Lat: 39 ° 17 ' 16.76 " N
Long: 84 ° 40 ' 59.27 " W
Ellip. Height: 163.6 M

55 15/16" = 55.9375" → 55.9449"

Trimble: 4000 SSE
Antenna: L1/L2 EXT.
Battery No.: INT.
Tribrach No.: #3
Cable Length: 10'

Antenna H.I. ==> Before: 1.421 M 4.6621 Ft
After: M Ft
Type of Survey: FAST STATIC

Actual ==> Start : Stop : UTC
Start 4:57 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 19 11 27 18 02 15

Weather: OVERCAST - DRIZZLE

Sketch:

SEE DAY 095
SESSION 1

Description:

SEE DAY 095
SESSION 1

Type of Mark:
Stamping:
Agency:

Indicate North

Remarks:

000019

6343

WOOLPERT

GPS STATION LOG

Station Name: 1003 = BUTLER CO T-1
Receiver No: 3
Day of Year: 095
Session No. 5

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05 · APRIL · 1993
Operator: TIM RYAN

C/A CODE POSITION
Lat: 39 ° 18 · 17.92 " N
Long: 84 ° 42 · 11.15 " W
Ellip. Height: + 246.8 M

Trimble: 4000 SSE
Antenna: L1/L2 #3
Battery No.:
Tribrach No.: WILD #3
Cable Length: 10'

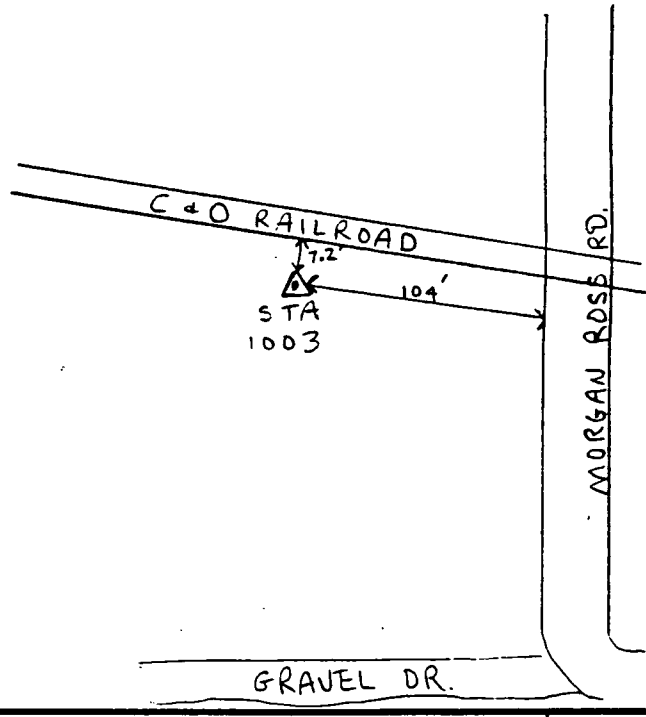
Antenna H.I. ==> Before: 1.501 M 4.9245 Ft
After: M Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 7:00 Stop : UTC
Start 3:00 p.m. Stop : Local
Local-UTC Time Offset:

SV's Used: 19 - 18 · 11 - 22 - 29

Weather: COOL / CLOUDY

Sketch:



Description:

H.I. = 1.501

Type of Mark: CON 'MON W/ BRASS DISC
Stamping: 1003 - 1990
Agency: BUTLER CO. ENG

Indicate North

Remarks:

000020

GPS STATION LOG

WOOLPERT

Station Name: 1024 (IM 1024)
Receiver No: 2
Day of Year: 095
Session No. 2

Project Name: FEMP
Job Number:
Local Date: APRIL 5, 1993
Operator: BARRY DALRYMPLE

C/A CODE POSITION
Lat: 39 ° 18 ' 16.38 " N
Long: 84 ° 39 ' 33.75 " W
Ellip. Height: 124.4 M

Trimble: 4000 SSE
Antenna: 4/L2 EXT.
Battery No.: INT.
Tribrach No.: #3
Cable Length: 10'

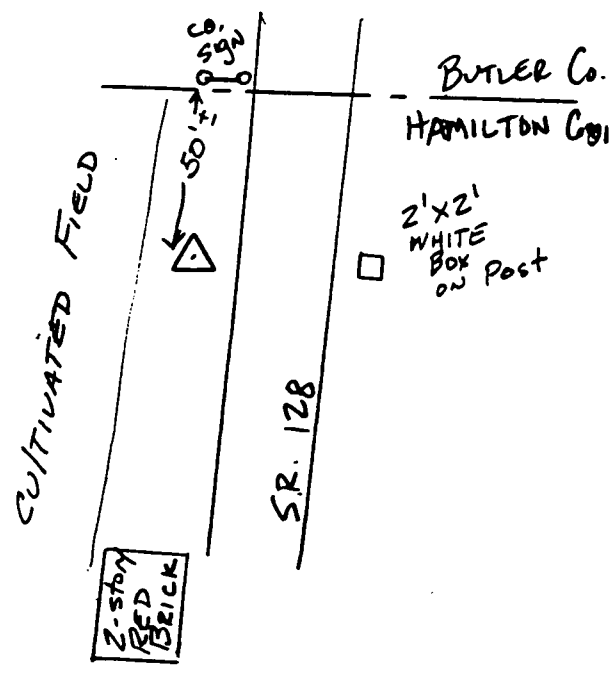
Antenna H.I. ==> Before: 1.773 M 5.8169 Ft
After: M Ft
Type of Survey: FAST STATIC

Actual ==> Start : Stop : UTC
Start 9 : 36 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 01 15 20 21 25 14 22

Weather: OVERCAST & COLD 37°

Sketch:



Description:
50'± S. OF CO. LINE ON W. SIDE OF S.R. 128
1' West of Edge Pvmt.

Type of Mark: DISK & CONC
Stamping: BUTLER CO. REF MARK
Agency: BUTLER CO.

Indicate North

Remarks:

6343

WOOLPERT

GPS STATION LOG

Station Name: 1024 (IM 1024)
Receiver No: 2
Day of Year: 095
Session No. 3

Project Name: FEMP
Job Number:
Local Date: APRIL 5, 1993
Operator: BARRY DALRYMPLE

C/A CODE POSITION
Lat: 39 ° 18 ' 16.38 " N
Long: 84 ° 39 ' 33.75 " W
Ellip. Height: 124.4 M

Trimble: 4000 SSE
Antenna: L1/L2 EXT.
Battery No.: INT.
Tribrach No.: 3
Cable Length: 10'

Antenna H.I. ==> Before: 1.774 M 5.8202 Ft
After: M Ft
Type of Survey: FAST STATIC

Actual ==> Start : Stop : UTC
Start 12:00 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 01 14 22 25 29 03 18 28

Weather: OVERCAST

Sketch:

SEE DAY 095
SESSION 2

Description:

SEE DAY 095
SESSION 2

Type of Mark:
Stamping:
Agency:

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: 8011 = 8011 CALIS MON
Receiver No: 1
Day of Year: 095
Session No. 1

Project Name: FERALD CONTROL
Job Number: 30-31-051731-04
Local Date: 05-APRIL-1993
Operator: T. MOCHTY

C/A CODE POSITION
Lat: 39 ° 17 ' 05.60 " N
Long: 84 ° 40 ' 40.76 " W
Ellip. Height: 155.5 MSL M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT.
Tribrach No.: WILD #1
Cable Length: 10'

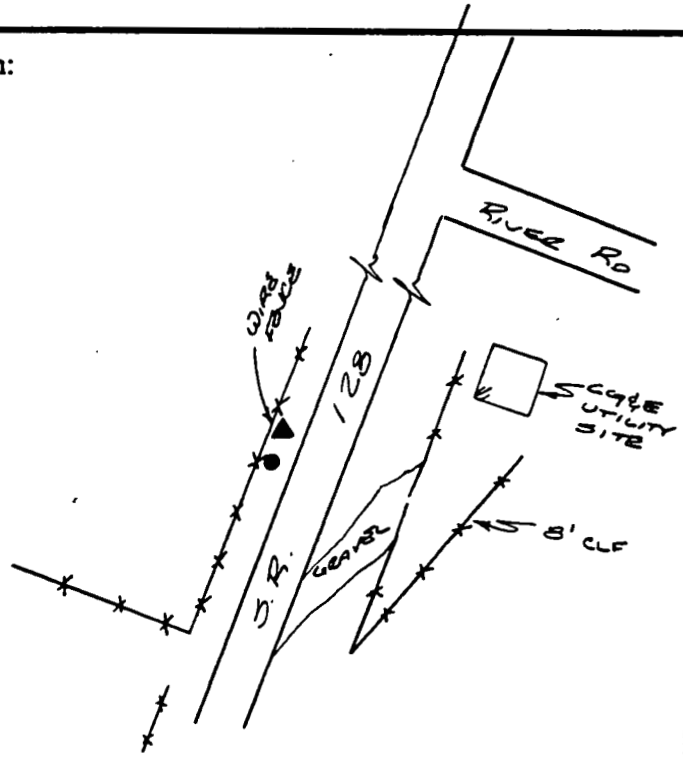
Antenna H.I. ==> Before: 1.4670 M 4.8125 Ft
After: 1.4690 M 4.8175 Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 12 : 53 Stop : UTC
Start 8 : 53 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 01-15-20-21-23-25

Weather: CLOUDY & COLD @ 38°

Sketch:



Description:

STATION WAS LOCATED AS DESCRIBED, IN GOOD CONDITION.

Type of Mark: CONC MON W/ALUM DISK
Stamping: 8011 - 1990
Agency: HAM. CO. ENG.

Indicate North

Remarks:

000073

6343

GPS STATION LOG

WOOLPERT

Station Name: 8011 CAGIS MON
Receiver No: 1
Day of Year: 095
Session No. 2

Project Name: FERNALD CONTROL
Job Number: 30-31-051731-04
Local Date: 05 APRIL 1993
Operator: T. MOCHTY

C/A CODE POSITION
Lat: 39 ° 17 ' 05.60 " N
Long: 84 ° 40 ' 40.76 " W
Ellip. Height: +155.5 M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT.
Tribrach No.: WILD #1
Cable Length: 10'

Antenna H.I. ==> Before: 1.4690 M 4.8195 Ft
After: 1.4690 M 4.8195 Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 13 : 40 Stop : UTC
Start 9 : 40 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used:

Weather: CLOUDY & COLD @ 38°

Sketch:

FOR A SKETCH & DESCRIPTION, SEE SESSION 1, DAY 095

Description:

Type of Mark: CONC MON W/ ALUM DISC
Stamping: 8011-1990
Agency: HAM. CO. ENG

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: 8012 → C. of C. 1814 (8012) CAGIS
Receiver No: 1
Day of Year: 095
Session No. 5

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05. APRIL. 1993
Operator: T. MOCHTY

C/A CODE POSITION
Lat: 39 ° 17 ' 12.28 " N
Long: 84 ° 42 ' 35.72 " W
Ellip. Height: +173.3 MSL M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT
Tribrach No.: WILD #1
Cable Length: 10'

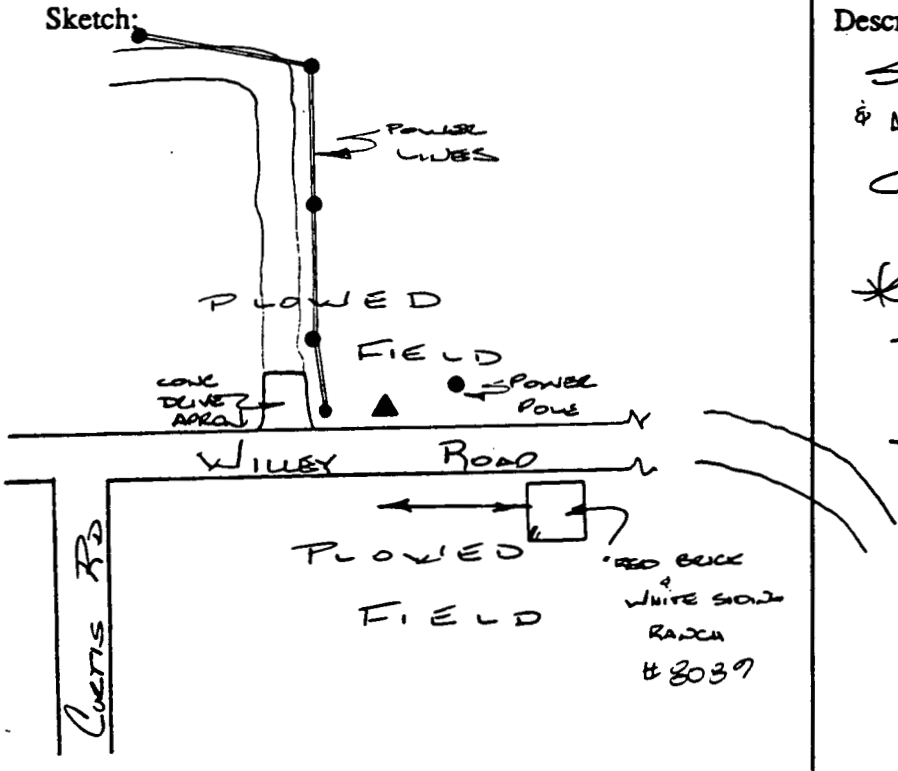
Antenna H.I. ==> Before: 1.5700 M 5.1509 Ft
After: 1.5700 M 5.1509 Ft
Type of Survey: FAST STATIC 20 MIN

Actual ==> Start 18 : 45 Stop : UTC
Start 14 : 45 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 19-18-11-27-22-29

Weather: CLOUDY & COLD @ 40°

Sketch:



Description:

STATION IS RECOVERED & AS DESCRIBED IN GOOD CONDITION.

* D.O.D SEEMS TO BE RUNNING TESTS AS SV'S APPEAR TO BE BEING TURNED ON & OFF @ RANDOM.

Type of Mark: CONC. MON W/BRASS DISK
Stamping: 1814 C. of C.
Agency: C. of C. ENG DEPT

Indicate North

Remarks:

6343

GPS STATION LOG

WOOLPERT

Station Name: 8012 — 1814 C of C (8012 CAGIS)
Receiver No: 1
Day of Year: 095
Session No. 6

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05 APRIL 1993
Operator: T. MOUNTY

C/A CODE POSITION
Lat: 39 ° 17 ' 12.28 " N
Long: 84 ° 42 ' 35.72 " W
Ellip. Height: +173.3 msl M

Trimble: 4000 SSE
Antenna: GEODETIC #1
Battery No.: INT.
Tribrach No.: WILD #1
Cable Length: 10'

Antenna H.I. ==> Before: 1.5700 M 5.1509 Ft
After: 1.5700 M 5.1509 Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 20 : 50 Stop : UTC
Start 16 : 50 Stop : Local
Local-UTC Time Offset: -4:00

SV's Used: 19-18-11-27-02-15

Weather: CLOUDY & COLD @ 40°

Sketch:
SEE SESSION 5, DAY 095, FOR A COMPLETE SKETCH & DESCRIPTION.

Description:

Type of Mark: CONC. MON w/BRASS DISK
Stamping: 1814 C. of C.
Agency: C. of C. ENG. DEPT

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: 9001
Receiver No: 3
Day of Year: 095
Session No. 2

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05-APRIL-1993
Operator: Tim RYAN

C/A CODE POSITION
Lat: 39 ° 18 ' 16.19 " N
Long: 84 ° 41 ' 01.62 " W
Ellip. Height: + 174.2 M

Trimble: 4000 SSE
Antenna: L1/L2 #3
Battery No.:
Tribrach No.: WILD #3
Cable Length: 10'

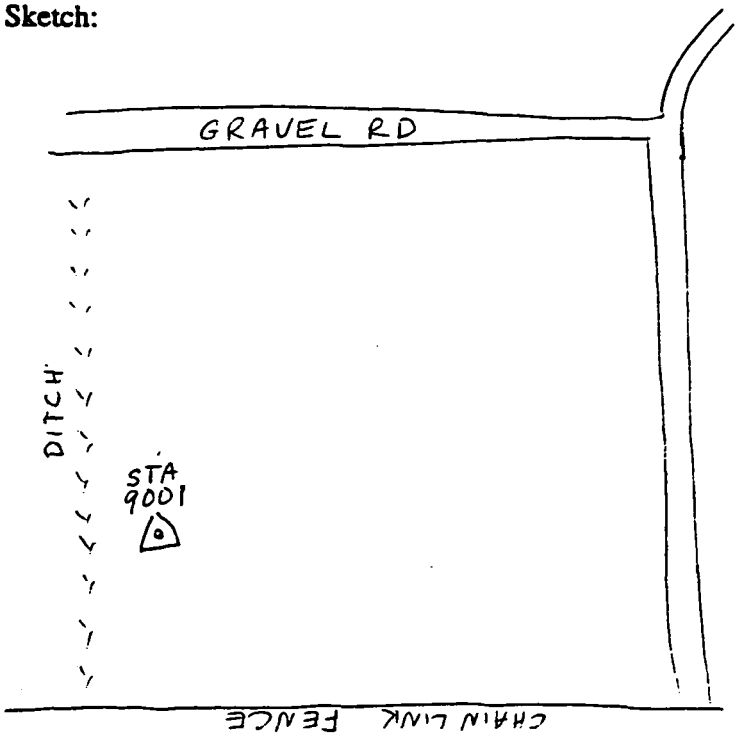
Antenna H.I. ==> Before: 1.3716 M _____ Ft
After: _____ M _____ Ft
Type of Survey: FAST STATIC 15 MIN.

Actual ==> Start 2:50 Stop ___:___ UTC
Start 10:50AM Stop ___:___ Local
Local-UTC Time Offset: -4:00

SV's Used: 1-14-29-20-22-25

Weather: COOL/CLOUDY

Sketch:



Description:

H.I. = 1.3716 M
= 54"

Type of Mark: CON/MON W/ BRASS DISC
Stamping:
Agency:

Indicate North

Remarks:

WOOLPERT

GPS STATION LOG

Station Name: 9001
Receiver No: 3
Day of Year: 095
Session No. 3

Project Name: FERNALD CONTROL
Job Number:
Local Date: 05-APRIL-1993
Operator: JIM RYAN

C/A CODE POSITION
Lat: 39° 18 ' 16.12 " N
Long: 84° 41 ' 00.23 " W
Ellip. Height: +110.2 M

Trimble: 4000 SSE
Antenna: L1/L2 #3
Battery No.:
Tribrach No.: WILD #3
Cable Length: 10'

Antenna H.I. ==> Before: 1.3716 M _____ Ft
After: _____ M _____ Ft
Type of Survey: FAST STATIC 15 MIN

Actual ==> Start 4 : 10 Stop ___ : ___ UTC
Start 12 : 10 PM Stop ___ : ___ Local
Local-UTC Time Offset: -4:00

SV's Used: 14-22-25-29-03-18

Weather: COOL / CLOUDY

Sketch: SEE SESSION #2 FOR SKETCH AND DESCRIPTION

Description:

H.I.=1.3716
=54"

Type of Mark: CON/MON W/ BRASS DISC.
Stamping:
Agency:

Indicate North

Remarks:

GPS STATION LOG

WOOLPERT

Station Name: 9001
Receiver No: 3
Day of Year: 095
Session No. 4

Project Name: FERNALD CONTROL
Job Number: 30-31-0-51
Local Date: 05-APRIL-1993
Operator: TIM RYAN

C/A CODE POSITION
Lat: 39 ° 18 ' 15.62 " N
Long: 84 ° 41 ' 01.15 " W
Ellip. Height: +159.7 M

Trimble: 4000 SSE
Antenna: L1/L2 #3
Battery No.:
Tribrach No.: WILD #3
Cable Length: 10'

Antenna H.I. ==> Before: 1.3716 M _____ Ft
After: _____ M _____ Ft
Type of Survey: FAST STATIC 15 MIN.

Actual ==> Start 17:38 Stop ___:___ UTC
MILITARY TIME → Start 13:38 Stop ___:___ Local
Local-UTC Time Offset: -4:00

SV's Used: 19-18-14-22-25-29

Weather: COOL/CLOUDY

Sketch: SEE SESSION #2 FOR SKETCH AND DESCRIPTION

Description:

H.I. = 1.3716 M
= 54"

Type of Mark: CON/MON W/ BRASS DISC.
Stamping:
Agency:

Indicate North

Remarks:

6343

FIELD BOOK NOTES

6343

FIELD BOOK NOTES

Rainy 40°

(20)

WEST VERTICAL LOOP			
			596.512
1.55			
		15.43	
4.97			
		12.84	
0.56			
		0.28	
10.21			
		15.14	
0.07			
		19.59	
0.52			
		12.46	538.65
3.47			
		4.19	
6.99			
		3.83	541.10
14.49			
		0.03	
17.51			
		0.60	
4.25			
		7.55	
6.05			
		2.18	573.05

1-22-93

BM ALT 17 = US DOE-WMCO MON.
(SEE Page 15 this book)

TBM SET N.E. COR HEADWALL BRIDGE @
WILLEY & PADDYS RUN CHIS "D"

COC TRAV. MON. @ N.E. COR WILLEY & PADDYS RUN
STAMPED 1815-2

TBM NAIL P.POLE E side PADDYS RUN 600'-
N. OF WILLEY RD @ SUB STA. = 1118

752
2.57

WEST	VERTICAL	LOOP	
7.62			
		0.43	
16.09			
		20.65	
3.19			
		1.98	
17.11			
		6.97	
5.73			
		2.03	S90.74
2.30			
		18.59	
6.26			
		2.66	
6.86			
		4.90	
5.65			
		5.13	
4.08			
		4.97	
0.14			
		0.19	
4.71			
		4.67	
5.78			

TBM NAIL IN STUB POLE E. Side PADDYS RUN
40' S. OF WARNING SPEAKER POLE

WEST VERTICAL LOOP

	1.67	583.23
5.66		
	12.85	
0.61		
	2.98	
10.46		
	4.50	
5.98		
	4.37	
5.06		
	7.34	
7.13		
	4.51	
5.44		
	4.19	583.35
7.14		
	4.73	
2.51		
	8.29	
7.00		
	4.00	
6.69		
	1.09	
7.49		
	0.99	595.09

(GO TO PAGE 25)

CLEAR 45°

(22)

1-27-93

TBM NAIL IN P. POLE W. SIDE PADDYS RUN #1433 .3MI N. OF R.R.

TBM SET IN P. POLE #1448 NAIL @ S.W. COR PADDYS RUN & S.R. 126

EAST VERTICAL LOOP

		622 600.58
9.23		
	1.85	
8.49		
	0.66	615.83
3.19		
	6.60	
4.38		
	8.36	
0.34		
	6.53	
3.27		
	4.96	600.58
0.21		
	7.65	
5.58		
	6.53	
5.48		
	7.22	
6.79		
	1.49	593.76
11.73		
	0.61	604.88
1.93		
	13.05	

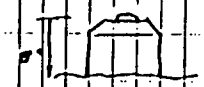
CLEAR 45°

(23)

1-28-93

CONTROL PT. 9001 Pg 17

USAEC MON #10



8"x8" square

TBM Nail in Elec. Pole @ air monitor Near ALT 11

TBM Nail set in East most 12" tree of 3 Trees 100'± W. of fcn 500'± N. of ALT 13

000035

1-28-95

EAST VERTICAL LOOP

3.96					
		10.15			
1.00					
		8.45			
2.37			+.04		
		5.76	-.06 74 578.68	578.74	BM #31 Chis "D" W. con. L. Pole Base
+67.95		-89.87			(SEE Page 16 this book)
	21.92				

21.92 MEAS
21.88 ADJ
04

WEST VERTICAL LOOP

CONTINUED From Page 22

12.67			596.09
		1.49	
10.40			
		0.36	
15.11			
		2.56	
7.33			
		0.62	
13.92			
		0.10	
11.19			
		0.19	
15.46			
		0.41	675.45
1.48			
		19.89	
0.96			
		8.98	649.03
0.39			
		17.22	
0.72			
		17.24	
0.28			
		17.08	
0.99			

1-28-93

TP PK Nail IN & drive to FERMCO 16' S of ℄ 126

TBM Nail IN Elec pole 90' N of AIR MONITOR W side of ROAD near ALT 3

WEST VERTICAL LOOP

		8.10	
8.02			
		5.80	~~593.59~~ ~~593.97~~ 593.992
+326.25		-328.94	
	2.59		

CONTROL PT #9002

000038

6343

✓ NorTH VERTICAL LOOP

			622.68
8.36			
		3.06	
9.20			
		2.97	
5.10			
		5.31	
5.40			
		0.69	
8.60			
		3.07	622.18
2.12			
		11.07	
3.86			
		4.80	
4.87			
		6.01	
1.78			
		8.53	
4.80			
		8.59	600.61	600.62
+54.09		-54.10		

CLEAR 50°

1-28-93

BM CONTROL PH # 9001

TBM NAIL IN L.POLE @ NORTH ENTRANCE TO FERMCO E. side Road 40' N. OF ALT 8

BM # 9001

LEVEL LOOP TO N.E. MON. ✓				
			~~590.05~~	590.07
6.34				
		6.07	590.34	
6.14				
		6.41	590.07	
LEVEL LOOP TO N.W. MON. ✓				
			~~590.05~~	590.07
4.26				
		3.81		
3.45				
		4.54		
5.58				
		5.91	589.10	
5.89				
		5.56		
4.68				
		3.39		
3.45				
		4.11	590.06	590.07
+27.31		-27.32		

cloudy 30°

78

1-29-93

TBM #40 PK IN L POLE 60' W. OF GATE # N38 PG 17

N. MOST WITNESS MON @ N.E. COR PROCESS

TBM #40

TBM #40 PG 17

N MOST WITNESS MON @ N.W. COR PROCESS PG 2

TBM #40

000040

6343

1-29-93

TBM #31 Chis "□" L/Pole Base PG 16

S. MOST MON @ S.E. COR. PROCESS P4

E. MOST MON @ S.E. COR. PROCESS P3

TBM #31

BM N. MON @ N.W. COR. PROCESS PG 28 P2

W. MOST MON @ N.W. COR. PROCESS P1

N. MON @ N.W. COR. PROCESS

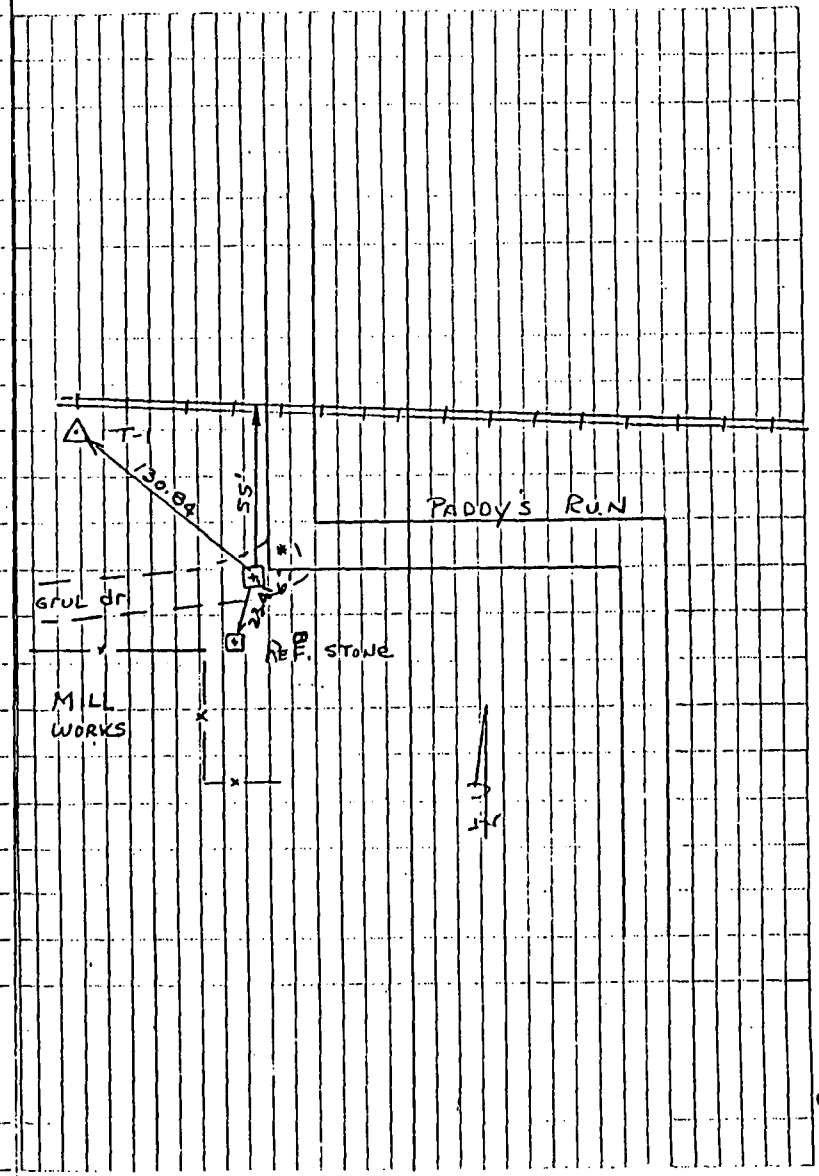
Level Loop to S.E. MON'S

			578.751
6.12			
		4.32	
7.86			
		10.77	577.66
10.74			
		11.26	577.12
11.24			
		7.84	
4.36			
		6.13	578.75
+ 40.32		- 40.32	

Level Loop to N.W. MON'S

			589.10
4.60			
		4.92	588.78
4.89			
		4.57	589.10

RECOVERY SKETCH MON #1



[+]

6343

SET COORDINATE ON
MON. #1 WEMCO

CLEAR 70°

R. FUGATE
J. BARNHART

4-23-93

TC (T-1/1003) BS @ "T" (P-8)

1)	0-00-00	GRD	2341.790	713.777	GRD 2341.567	CF = 0.999908
R)	180-00-11		2341.775	713.774	REC 2341.581	
					0.014	
	AVG = 214-48-20"					
4)	214-48-23		130.84	39.881	GRD 130.828	
4)	34-48-29		130.84	39.881		

T-1 → P-8 S 89-37-24 W 2341.581

T-1 → MON 1 S 55-34-16 E 130.828
N 482813.982 #1
E 1345109.041

MON #1 CHIS "X" TOP OF STONE SET IN MON. BOX

VERICAL CONTROL

MON #1

		583.74
0.43		
	4.21	
3.66		
	3.79	579.83
3.75		
	4.10	
5.07		
	0.82	583.73
		583.74
5.25		
	5.27	583.72
5.26		
	5.24	583.74

TBM Nail IN P. POLE W. side PADDY'S RUN 3 N. of R.R. #1433 POLE #

MON #1 SET ON CH.3 '+' ON STONE IN BOX

583.74

MON #1 583.74

(T-11003) MON

MON #1 583.74

3.75		4.10	
5.07		0.82	583.73
			583.74
5.25		5.27	583.72
5.26		5.24	583.74

583.74 :

MON #1 583.74

CT-11003 MON

MON #1 583.74

000045

6343

			583.14
5.25		5.27	583.72
5.26		5.24	583.74

(T-1/1003) MON

MON #1 583.74

6343

000046

FINAL X-Y-Z COORDINATES

FERNALD BOUNDARY IN NAD 83 COORDINATES

PT#/STATION	BEARING	DISTANCE	NORTHING	EASTING
1 -			482813.982	1345109.041
	N 01-27-42.5 E	1207.333		
2 -			484020.922	1345139.841
	S 88-25-17.2 E	4357.770		
3 -			483900.876	1349495.957
	N 07-25-39.7 E	329.998		
4 -			484228.105	1349538.617
	S 73-24-18.3 E	672.494		
5 -			484036.039	1350183.101
	N 80-35-41.6 E	751.802		
6 -			484158.894	1350924.797
	N 68-18-45.2 E	499.999		
7 -			484343.665	1351389.402
	N 67-38-41.6 E	831.299		
8 -			484659.846	1352158.225
	S 04-11-15.8 W	2030.845		
9 -			482634.423	1352009.923
	N 88-38-51.4 W	152.001		
10 -			482638.011	1351857.965
	S 00-31-26.4 W	2018.002		
11 -			480620.093	1351839.509
	S 01-02-28.1 W	806.005		
12 -			479814.221	1351824.864
	S 00-47-45.0 W	1621.471		
13 -			478192.906	1351802.342
	S 00-09-00.2 E	217.799		
14 -			477975.108	1351802.913
	S 04-24-00.6 E	1204.502		
15 -			476774.156	1351895.325
	S 81-47-38.6 W	231.254		
16 -			476741.149	1351666.438
	S 81-19-42.9 W	1146.152		
17 -			476568.347	1350533.388
	S 76-59-41.8 W	532.899		
18 -			476448.425	1350014.157
	S 74-57-43.7 W	200.096		
19 -			476396.508	1349820.914
	S 74-12-43.1 W	1438.400		
20 -			476005.149	1348436.778
	N 77-13-19.0 W	580.974		
21 -			476133.646	1347870.192
	N 66-49-14.8 W	356.690		
22 -			476274.043	1347542.295
	N 60-00-15.5 W	380.805		
23 -			476464.420	1347212.493
	N 05-05-03.5 W	271.403		
24 -			476734.755	1347188.441
	N 23-16-23.0 W	773.408		
25 -			477445.233	1346882.857
	N 33-22-17.0 W	1464.998		
26 -			478668.686	1346077.015
	N 09-52-11.4 W	172.053		
27 -			478838.193	1346047.523
	N 02-17-41.7 E	501.499		
28 -			479339.289	1346067.605
	N 17-37-19.8 W	267.606		

PT#/STATION	BEARING	DISTANCE	NORTHING	EASTING
29 -			479594.338	1345986.590
	N 02-05-16.9 W	505.705		
30 -			480099.707	1345968.165
	N 14-53-18.2 W	780.597		
31 -			480854.098	1345767.601
	N 13-41-16.8 W	2012.001		
32 -			482808.955	1345291.492
	N 88-25-17.2 W	182.520		
1 -			482813.983	1345109.041

****

AREA 45560368.489 SQ. FT. 1045.9221 ACRES
PERIMETER 28500.380

CLOSURE N = -0.001 CLOSURE E = 0.000
CLOSING BEARING = S 7-24-42.6 E
CLOSING DISTANCE = 0.001
CLOSURE = ONE PART IN 22029102.

Station Name: 17A

Latitude (dms)	*N 39 17 17.26313*
Longitude (dms)	*W 84 40 58.47887*
Orthometric Height in meters	*181.833*
Orthometric Height in US survey ft	*596.564*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*411701.761*
Northing(Y) in meters	*145275.271*
Easting (X) in US survey ft	*1350724.861*
Northing(Y) in US survey ft	*476623.952*
Easting (X) in international ft	*1350727.562*
Northing(Y) in international ft	*476624.905*
Scale	*.99993730*
Convergence (dms)	*-1 23 6.358375*
Geoid Undulation in meters	*-34.08*

Station Name: P-3

Latitude (dms)	*N 39 17 45.28658*
Longitude (dms)	*W 84 41 1.83559*
Orthometric Height in meters	*175.925*
Orthometric Height in US survey ft	*577.181*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*411642.244*
Northing(Y) in meters	*146141.129*
Easting (X) in US survey ft	*1350529.596*
Northing(Y) in US survey ft	*479464.687*
Easting (X) in international ft	*1350532.297*
Northing(Y) in international ft	*479465.646*
Scale	*.99993710*
Convergence (dms)	*-1 23 8.488279*
Geoid Undulation in meters	*-34.06*

Station Name: P-1

Latitude (dms)	*N 39 18 12.03706*
Longitude (dms)	*W 84 41 29.97079*
Orthometric Height in meters	*179.481*
Orthometric Height in US survey ft	*588.847*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*410988.319*
Northing(Y) in meters	*146982.130*
Easting (X) in US survey ft	*1348384.177*
Northing(Y) in US survey ft	*482223.872*
Easting (X) in international ft	*1348386.873*
Northing(Y) in international ft	*482224.836*
Scale	*.99993690*
Convergence (dms)	*-1 23 26.340613*
Geoid Undulation in meters	*-34.04*

Station Name: CAGIS 8011

Latitude (dms)	*N 39 17 5.23547*
Longitude (dms)	*W 84 40 41.01461*
Orthometric Height in meters	*187.207*
Orthometric Height in US survey ft	*614.195*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*412111.199*
Northing(Y) in meters	*144894.374*
Easting (X) in US survey ft	*1352068.159*
Northing(Y) in US survey ft	*475374.292*
Easting (X) in international ft	*1352070.863*
Northing(Y) in international ft	*475375.243*
Scale	*.99993740*
Convergence (dms)	*-1 22 55.276958*
Geoid Undulation in meters	*-34.09*

Station Name: CAGIS 8012

Latitude (dms)	N 39 17 12.21049
Longitude (dms)	W 84 42 35.64368
Orthometric Height in meters	184.888
Orthometric Height in US survey ft	606.587
State Plane Zone:	OHS3402
Easting (X) in meters	409370.230
Northing(Y) in meters	145176.139
Easting (X) in US survey ft	1343075.496
Northing(Y) in US survey ft	476298.716
Easting (X) in international ft	1343078.182
Northing(Y) in international ft	476299.669
Scale	.99993740
Convergence (dms)	-1 24 8.011343
Geoid Undulation in meters	-34.09

Station Name: 9001

Latitude (dms)	N 39 18 15.68950
Longitude (dms)	W 84 41 1.33821
Orthometric Height in meters	183.081
Orthometric Height in US survey ft	600.658
State Plane Zone:	OHS3402
Easting (X) in meters	411676.829
Northing(Y) in meters	147078.110
Easting (X) in US survey ft	1350643.063
Northing(Y) in US survey ft	482538.766
Easting (X) in international ft	1350645.764
Northing(Y) in international ft	482539.731
Scale	.99993690
Convergence (dms)	-1 23 8.172680
Geoid Undulation in meters	-34.04

Station Name: 9004

Latitude (dms)	*N 39 18 11.03094*
Longitude (dms)	*W 84 41 29.69721*
Orthometric Height in meters	*179.782*
Orthometric Height in US survey ft	*589.835*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*410994.118*
Northing(Y) in meters	*146950.953*
Easting (X) in US survey ft	*1348403.202*
Northing(Y) in US survey ft	*482121.585*
Easting (X) in international ft	*1348405.899*
Northing(Y) in international ft	*482122.549*
Scale	*.99993690*
Convergence (dms)	*-1 23 26.167020*
Geoid Undulation in meters	*-34.04*

Station Name: 9010

Latitude (dms)	*N 39 17 50.40323*
Longitude (dms)	*W 84 41 18.48426*
Orthometric Height in meters	*176.585*
Orthometric Height in US survey ft	*579.346*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*411247.269*
Northing(Y) in meters	*146308.523*
Easting (X) in US survey ft	*1349233.748*
Northing(Y) in US survey ft	*480013.879*
Easting (X) in international ft	*1349236.447*
Northing(Y) in international ft	*480014.839*
Scale	*.99993710*
Convergence (dms)	*-1 23 19.052182*
Geoid Undulation in meters	*-34.06*

FERNALD EMP GPS PROJECT
NAD 83 STATE PLANE COORDINATES
NGVD 29 ELEVATIONS
OHIO SOUTH ZONE (3402)
APRIL 1993

Station Name: P-4

Latitude (dms)	*N 39 17 45.18701*
Longitude (dms)	*W 84 41 1.96328*
Orthometric Height in meters	*176.095*
Orthometric Height in US survey ft	*577.738*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*411639.111*
Northing(Y) in meters	*146138.133*
Easting (X) in US survey ft	*1350519.317*
Northing(Y) in US survey ft	*479454.858*
Easting (X) in international ft	*1350522.018*
Northing(Y) in international ft	*479455.817*
Scale	*.99993710*
Convergence (dms)	*-1 23 8.569301*
Geoid Undulation in meters	*-34.06*

Station Name: 10

Latitude (dms)	*N 39 18 16.95957*
Longitude (dms)	*W 84 40 45.92681*
Orthometric Height in meters	*187.719*
Orthometric Height in US survey ft	*615.875*
State Plane Zone:	*OHS3402*
Easting (X) in meters	*412046.892*
Northing(Y) in meters	*147108.344*
Easting (X) in US survey ft	*1351857.178*
Northing(Y) in US survey ft	*482637.959*
Easting (X) in international ft	*1351859.882*
Northing(Y) in international ft	*482638.924*
Scale	*.99993690*
Convergence (dms)	*-1 22 58.393842*
Geoid Undulation in meters	*-34.04*

Station Name: BUTLER CO. T1 = 1003

Latitude (dms)	N 39 18 17.78539
Longitude (dms)	W 84 42 13.20281
Orthometric Height in meters	176.763
Orthometric Height in US survey ft	579.930
State Plane Zone:	OHS3402
Easting (X) in meters	409957.186
Northing(Y) in meters	147184.546
Easting (X) in US survey ft	1345001.201
Northing(Y) in US survey ft	482887.965
Easting (X) in international ft	1345003.891
Northing(Y) in international ft	482888.930
Scale	.99993690
Convergence (dms)	-1 23 53.772174
Geoid Undulation in meters	-34.04

Station Name: IM 1023

Latitude (dms)	N 39 18 17.18558
Longitude (dms)	W 84 39 33.79520
Orthometric Height in meters	165.398
Orthometric Height in US survey ft	542.643
State Plane Zone:	OHS3402
Easting (X) in meters	413774.676
Northing(Y) in meters	147073.798
Easting (X) in US survey ft	1357525.750
Northing(Y) in US survey ft	482524.619
Easting (X) in international ft	1357528.465
Northing(Y) in international ft	482525.584
Scale	.99993690
Convergence (dms)	-1 22 12.624931
Geoid Undulation in meters	-34.04

6343

2

2

THE ORIGIN OF THE FEMP COORDINATE SYSTEM (N 0,000; E 0,000) IS AT STATE OF OHIO NAD 83 COORDINATE POINT N 482, 814.047, E 1,345,109.597 AND STATE OF OHIO NAD 27 COORDINATE POINT N 482,784.678, E 1,376,578.563

0,0 pt.
BM #1 1,345,109.041
CPT #1 482,813.982

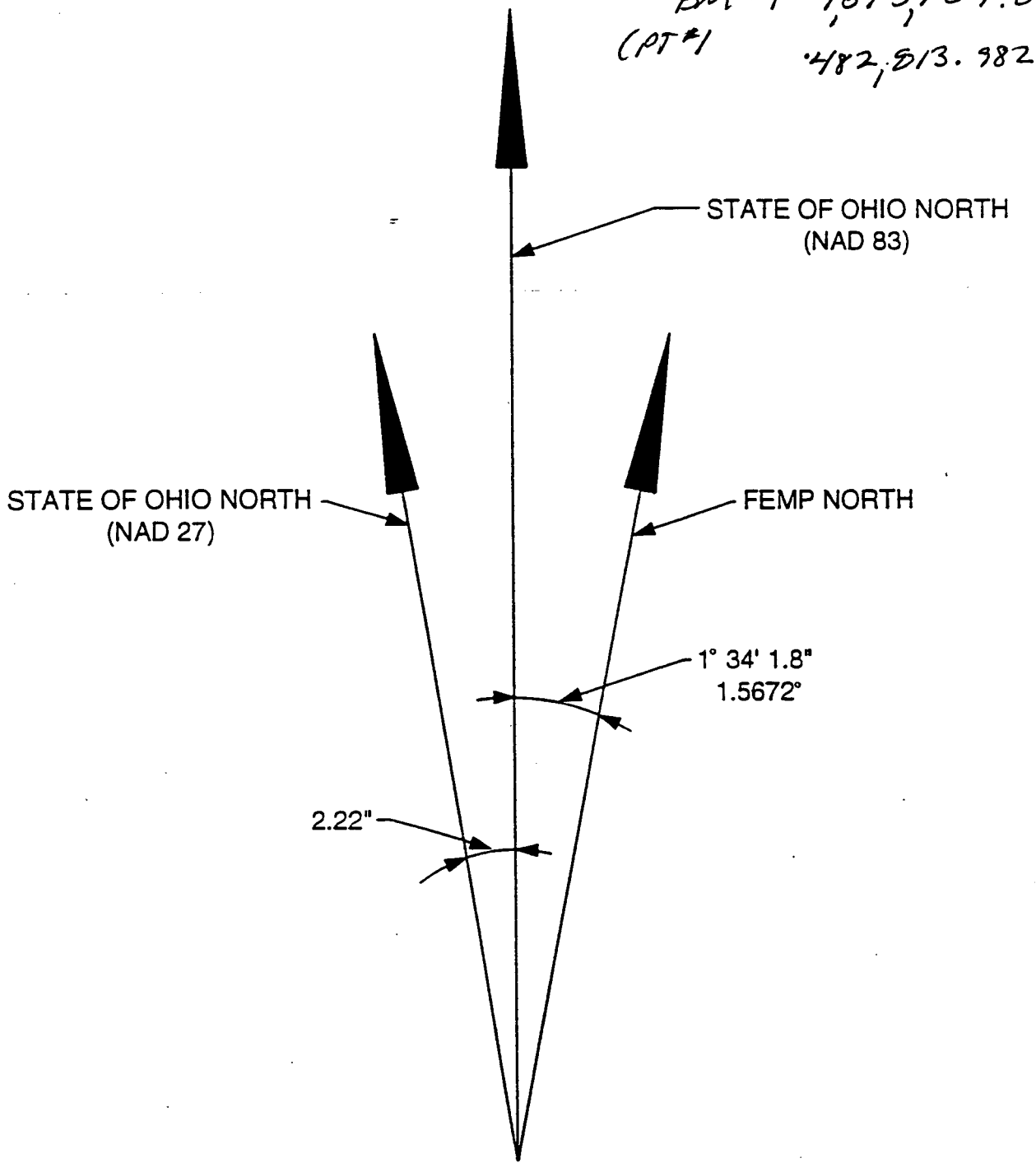
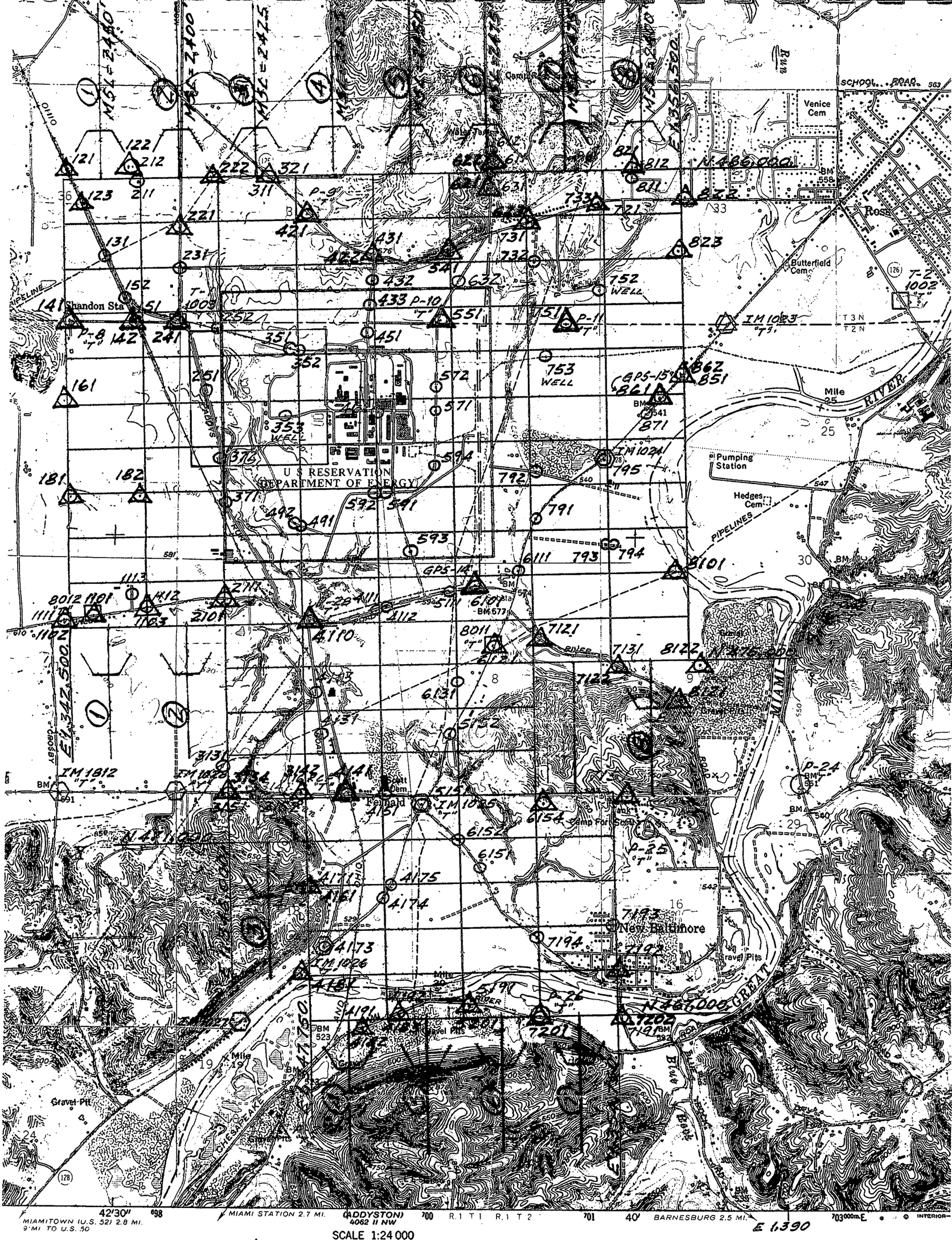


TABLE OF CONTENTS

Section 2 Photo Control

- **Flight Plan/Photo Control Layout**
- **Traverse Survey Field Notes**
- **Coordinate Listing**
- **Origin of FEMP Coordinate System**
- **State Plane/UTM—Geodetic Coordinate Computations NAD 83**
- **Field Book Notes**

FLIGHT PLAN/PHOTO CONTROL LAYOUT



MN GN
2½° MILS
1°28' 26 MILS

ND 1981 MAGNETIC NORT
ON AT CENTER OF SHEET

000059

#30-31-051731-01>04

PARSONS-FERNALD EMP

FLT. ①-② @ 1"=300', 60% F.L.=B+W

□ = COLOR SPOT @ 1"=1,000'

□ = COLOR SPOT @ 1"=500'

FLT. PLAN + PHOTO CONTROL LAYOUT

△ = HORIZ. PHOTO CONT. PT.; ⊙ = VERT. PHOTO CONT. PT.

OHIO

QUADRANGLE LOCATION = SHANDON, OH

Heavy-duty___
Medium-duty___

6343

rple and woodland compiled in cooperation
ncies from aerial photographs taken 1979
his information not field checked. Map edited 1981

6343

TRAVERSE SURVEY FIELD NOTES

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV2A.OBS
Traverse Survey

project: FERNALD job no: 7 date: 1992.0805
crew id: 1 angles: 2 s/n : 69506

Station No.: 8012 Inst. Height: 5.38

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012 AZ	100 B/S STA		258.3706		
2	1-10-2	199 PHOTO CONTROL PT	5.00	256.2502	89.1933	710.731
3	WC51	101 TRAV STA	5.08	78.3858	90.5353	1841.104

Station No.: WC51 Inst. Height: 5.2

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012	100 B/S STA		242.2517		
2	1-10-3	199 PHOTO CONTROL PT	5.00	239.4117	89.4026	669.094
3	WC52	101 TRAV STA	5.34	63.5558	89.4301	656.981

Station No.: WC52 Inst. Height: 5.24

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC51	100 B/S STA		352.1932		
2	2-10-1	199 PHOTO CONTROL PT	8.50	182.5556	90.0349	374.811
3	8012	101 TRAV STA	5.26	351.1232	89.2509	2497.850

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: 8012 Inst. Height: 5.38

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distanc
1	WC52	100 B/S STA		79.0335		
2	8012 AZ	102 AZ STA		258.3806		

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 8012	476298.715	1343075.495	606.587	
Beg Back Stn 8012 AZ	476157.540	1342085.510	617.264	
End Inst Stn 8012	476298.715	1343075.495	606.587	
End Refr Stn 8012 AZ	476157.540	1342085.510	617.264	

No. of Inst. Stations ....: 4
No. of Observations .....: 11

Azimuth Closure .....: 4.0 seconds
Adjustment per Station ...: -1.0 sec/sta

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV2A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 7 date: 1992.0805
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8012		476298.715	1343075.495	606.587	Instrument Station
	S81 53 03W				
8012 AZ	261 53 03				Backsight Station
	S79 40 58W	710.731	710.620	8.753	0.99991332
1-10-2	259 40 58	476171.444	1342376.365	615.340	PHOTO CONTROL PT
	N81 54 54E	1841.104	1840.722	-28.487	0.99991419
WC51	81 54 54	476557.598	1344897.921	578.100	TRAV STA

---------- Next Station ----------

WC51		476557.598	1344897.921	578.100	Instrument Station
	S81 54 54W				
8012	261 54 54				Backsight Station
	S79 10 53W	669.094	669.026	4.017	0.99991477
1-10-3	259 10 53	476432.022	1344240.786	582.118	PHOTO CONTROL PT
	N83 25 34E	656.981	656.917	3.114	0.99991478
WC52	83 25 34	476632.805	1345550.519	581.215	TRAV STA

---------- Next Station ----------

WC52		476632.805	1345550.519	581.215	Instrument Station
	S83 25 34W				
WC51	263 25 34				Backsight Station
	S85 58 03E	374.811	374.779	-3.673	0.99991479
2-10-1	94 01 57	476606.450	1345924.370	577.541	PHOTO CONTROL PT
	S82 18 33W	2497.850	2497.504	25.429	0.99991411

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8012	262 18 33	476298.570	1343075.481	606.644	TRAV STA
		Next Station			
8012		476298.570	1343075.481	606.644	Instrument Station
WC52	N82 18 33E 82 18 33				Backsight Station
8012 AZ	N00 00 00E 261 53 03				AZ STA

Traverse Misclosure

Northing .....: -0.145
Easting .....: -0.014
Elevation .....: 0.057

Linear Misclosure..: 0.147

Total Distance ....: 4995.143

Error Ratio .....: At Least 1 Part in 34000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV2A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

---

project: FERNALD job no: 7 date: 1992.0805
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402
Angular Adjustment/Station of -1.00 sec applied
Adjusted for Linear Traverse Misclosure

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012 AZ	100 B/S STA	476157.540	1342085.510	617.264
1-10-2	199 PHOTO CONTROL PT	476171.444	1342376.365	615.340
WC51	101 TRAV STA	476557.652	1344897.927	578.079
1-10-3	199 PHOTO CONTROL PT	476432.075	1344240.792	582.097
WC52	101 TRAV STA	476632.878	1345550.526	581.186
2-10-1	199 PHOTO CONTROL PT	476606.522	1345924.377	577.513
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012 AZ	102 AZ STA	476157.540	1342085.510	617.264

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV3A.OBS
Traverse Survey

project: FERNALD job no: date: 1992.0805
crew id: 1 angles: 2 s/n : 69506

Station No.: 8012 Inst. Height: 4.99

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012 AZ	100 B/S STA		350.4038		
2	WC53	101 TRAV STA	4.93	235.2402	89.5242	4964.505

Station No.: WC53 Inst. Height: 5.05

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012	100 B/S STA		252.1612		
2	3-14-1	199 PHOTO CONTROL PT	5.00	5.2008	89.3534	165.596
3	WC54	101 TRAV STA	5.07	17.0504	89.5240	394.285

Station No.: WC54 Inst. Height: 5.19

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC53	100 B/S STA		180.1248		
2	WC55	101 TRAV STA	5.12	0.2348	92.2312	2112.604

Station No.: WC55 Inst. Height: 5.24

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC54	100 B/S STA		192.1154		

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
2	3-14-2	199 PHOTO CONTROL PT	5.00	195.1708	90.5704	540.720
3	T16 RCF	199 PHOTO CONTROL PT	5.00	4.1618	90.1530	383.318
4	WC56	101 TRAV STA	4.81	11.1930	90.0902	1780.919

Station No.: WC56 Inst. Height: 4.93

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC55	100 B/S STA		333.5146		
2	IM1025	199 PHOTO CONTROL PT	8.50	188.2348	90.1120	364.328
3	WC57	101 TRAV STA	4.98	194.5759	89.4839	733.547

Station No.: WC57 Inst. Height: 5.1

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC56	100 B/S STA		8.2259		
2	WC58	101 TRAV STA	5.03	68.0909	87.3441	1728.341

Station No.: WC58 Inst. Height: 5.14

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC57	100 B/S STA		10.2008		
2	WC59	101 TRAV STA	5.09	208.5054	89.4500	1597.543

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC59 Inst. Height: 5.21

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC58	100 B/S STA		85.2858		
2	8011	101 TRAV STA	4.93	256.2950	89.4348	779.849

Station No.: 8011 Inst. Height: 5.04

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC59	100 B/S STA		223.5010		
2	8011 AZ	102 AZ STA		51.4110		

Control Coordinates as read from File TRAV2A.XYZ

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 8012	476298.715	1343075.495	606.587	
Beg Back Stn 8012 AZ	476157.540	1342085.510	617.264	
End Inst Stn 8011	475374.290	1352068.160	614.200	
End Refr Stn 8011 AZ	476169.589	1352508.417	577.319	

No. of Inst. Stations ....: 9
No. of Observations .....: 22

Azimuth Closure .....: 52.0 seconds
Adjustment per Station ...: -5.8 sec/sta

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV3A.OBS
Coordinate File .....: TRAV2A.XYZ
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: date: 1992.0805
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8012		476298.715	1343075.495	606.587	Instrument Station
	S81 53 03W				
8012 AZ	261 53 03				Backsight Station
	S33 23 39E	4964.505	4964.062	11.108	0.99991342
WC53	146 36 21	472154.198	1345807.689	617.695	TRAV STA

---------- Next Station ----------

WC53		472154.198	1345807.689	617.695	Instrument Station
	N33 23 39W				
8012	326 36 21				Backsight Station
	N79 40 11E	165.596	165.577	1.228	0.99991331
3-14-1	79 40 11	472183.889	1345970.583	618.922	PHOTO CONTROL PT
	S88 34 53E	394.285	394.250	0.824	0.99991332
WC54	91 25 07	472144.437	1346201.818	618.519	TRAV STA

---------- Next Station ----------

WC54		472144.437	1346201.818	618.519	Instrument Station
	N88 34 53W				
WC53	271 25 07				Backsight Station
	S88 23 58E	2112.604	2110.601	-87.814	0.99991540
WC55	91 36 02	472085.488	1348311.596	530.705	TRAV STA

---------- Next Station ----------

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC55		472085.488	1348311.596	530.705	Instrument Station
	N88 23 58W				
WC54	271 36 02				Backsight Station
	N85 18 50W	540.720	540.601	-8.730	0.99991771
3-14-2	274 41 10	472129.653	1347772.802	521.975	PHOTO CONTROL PT
	N83 40 20E	383.318	383.283	-1.485	0.99991753
T16 RCF	83 40 20	472127.732	1348692.544	529.220	PHOTO CONTROL PT
	S89 16 28E	1780.919	1780.766	-4.185	0.99991760
WC56	90 43 32	472062.939	1350092.220	526.520	TRAV STA

---------- Next Station ----------

WC56		472062.939	1350092.220	526.520	Instrument Station
	N89 16 28W				
WC55	270 43 32				Backsight Station
	S54 44 32E	364.328	364.296	-4.768	0.99991782
IM1025	125 15 28	471852.647	1350389.691	521.752	PHOTO CONTROL PT
	S48 10 21E	733.547	733.483	2.383	0.99991766
WC57	131 49 39	471573.787	1350638.778	528.903	TRAV STA

---------- Next Station ----------

WC57		471573.787	1350638.778	528.903	Instrument Station
	N48 10 21W				
WC56	311 49 39				Backsight Station
	N11 35 43E	1728.341	1726.646	73.168	0.99991580
WC58	11 35 43	473265.194	1350985.832	602.071	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
		Next Station			
WC58		473265.194	1350985.832	602.071	Instrument Station
	S11 35 43W				
WC57	191 35 43				Backsight Station
	N30 06 24E	1597.543	1597.390	7.073	0.99991374
WC59	30 06 24	474647.087	1351787.098	609.144	TRAV STA
		Next Station			
WC59		474647.087	1351787.098	609.144	Instrument Station
	S30 06 24W				
WC58	210 06 24				Backsight Station
	N21 07 10E	779.849	779.773	3.967	0.99991339
8011	21 07 10	475374.483	1352068.060	613.112	TRAV STA
		Next Station			
8011		475374.483	1352068.060	613.112	Instrument Station
	S21 07 10W				
WC59	201 07 10				Backsight Station
	N00 00 00E				
8011 AZ	28 58 04				AZ STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description

Traverse Misclosure

Northing .....:	0.193
Easting .....:	-0.100
Elevation .....:	-1.088
Linear Misclosure..:	0.218
Total Distance ....:	14086.970

Error Ratio .....: At Least 1 Part in 64600

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV3A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

---

project: FERNALD job no: date: 1992.0805
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402
Angular Adjustment/Station of -5.77 sec applied
Adjusted for Linear Traverse Misclosure

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012 AZ	100 B/S STA	476157.540	1342085.510	617.264
WC53	101 TRAV STA	472154.130	1345807.725	618.078
3-14-1	199 PHOTO CONTROL PT	472183.821	1345970.618	619.306
WC54	101 TRAV STA	472144.363	1346201.856	618.933
WC55	101 TRAV STA	472085.386	1348311.649	531.282
3-14-2	199 PHOTO CONTROL PT	472129.551	1347772.855	522.553
T16 RCF	199 PHOTO CONTROL PT	472127.630	1348692.596	529.797
WC56	101 TRAV STA	472062.812	1350092.285	527.235
IM1025	199 PHOTO CONTROL PT	471852.520	1350389.756	522.467
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC58	101 TRAV STA	473265.034	1350985.915	602.976
WC59	101 TRAV STA	474646.904	1351787.193	610.172
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011 AZ	102 AZ STA	476169.589	1352508.417	577.319

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV4A.OBS
Traverse Survey

project: FERNALD job no: 10 date: 1992.0806
crew id: 1 angles: 2 s/n : 69506

Station No.: 8011 Inst. Height: 5.03

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8011 AZ	100 B/S STA		287.5051		
2	WC60	101 TRAV STA	5.05	286.5318	91.3615	1566.540

Station No.: WC60 Inst. Height: 5.17

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8011	100 B/S STA		168.3940		
2	2091	711 WELL CASING	5.00	329.4213	91.4354	1114.462
3	WC61	101 TRAV STA	5.04	350.5932	90.3510	2917.029

Station No.: WC61 Inst. Height: 5.16

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC60	100 B/S STA		185.3209		
2	IM1024	199 PHOTO CONTROL PT	5.00	30.3942	89.5125	502.971
3	WC62	101 TRAV STA	5.18	22.0806	90.0102	2378.333

Station No.: WC62 Inst. Height: 5.3

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distanc
1	WC61	100 B/S STA		177.0432		
2	GPS15	199 PHOTO CONTROL PT	5.00	225.4917	90.0350	60.39
3	WC63	101 TRAV STA	4.91	353.0114	89.5640	2283.2

Station No.: WC63 Inst. Height: 5.03

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distan
1	WC62	100 B/S STA		17.4232		
2	WC64	101 TRAV STA	4.86	135.5405	89.4138	2951.

Station No.: WC64 Inst. Height: 4.82

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slop Dista
1	WC63	100 B/S STA		251.1437		
2	B-2-2	199 PHOTO CONTROL PT	5.00	178.3529	92.0700	48.
3	WC65	101 TRAV STA	5.08	359.2053	86.2313	957

Station No.: WC65 Inst. Height: 5.2

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slc Dist
1	WC64	100 B/S STA		355.2444		
2	B-2-1	199 PHOTO CONTROL PT	5.00	252.3532	89.5806	77
3	WC66	101 TRAV STA	4.89	175.3612	88.4737	50

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC66 Inst. Height: 5.01

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC65	100 B/S STA		180.5806		
2	7-2-1	199 PHOTO CONTROL PT	5.00	354.3144	91.0433	443.966
3	WC67	101 TRAV STA	5.38	351.4016	90.1010	1262.120

Station No.: WC67 Inst. Height: 5.49

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC66	100 B/S STA		219.3158		
2	6-2-3	199 PHOTO CONTROL PT	5.00	35.5034	90.2519	748.622
3	WC68	101 TRAV STA	4.81	34.4714	90.1416	1765.177

Station No.: WC68 Inst. Height: 4.93

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC67	100 B/S STA		184.1422		
2	5-4-1	199 PHOTO CONTROL PT	25.10	355.0140	86.3217	1089.004
3	WC69	101 TRAV STA	5.15	317.5106	90.0018	1792.239

Station No.: WC69 Inst. Height: 5.14

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC68	100 B/S STA		208.1637		

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
2	P10	199 PHOTO CONTROL PT	5.00	40.0216	91.3537	501.635
3	WC70	101 TRAV STA	5.07	7.3859	90.2720	3962.949

Station No.: WC70 Inst. Height: 5.19

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC69	100 B/S STA		220.3940		
2	WC71	101 TRAV STA	5.01	9.3031	89.3000	2563.935

Station No.: WC71 Inst. Height: 5.13

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC70	100 B/S STA		205.1053		
2	8-10-1	199 PHOTO CONTROL PT	4.40	132.2127	90.2504	120.654
3	8011	101 TRAV STA	7.00	35.3735	89.4646	1487.200

Station No.: 8011 Inst. Height: 5.22

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC71	100 B/S STA		251.5152		
2	8011AZ	102 AZ STA		293.1240		

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 8011	475374.290	1352068.160	614.200	
Beg Back Stn 8011 AZ	476169.589	1352508.417	577.319	
End Inst Stn 8011	475374.290	1352068.160	614.200	
End Refr Stn 8011AZ	476169.589	1352508.417	577.319	

No. of Inst. Stations ....: 14
No. of Observations .....: 38

Azimuth Closure .....: -52.0 seconds
Adjustment per Station ...: 3.7 sec/sta

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV4A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 10 date: 1992.0806
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8011		475374.290	1352068.160	614.200	Instrument Station
	N28 58 04E				
8011 AZ	28 58 04				Backsight Station
	N28 00 35E	1566.540	1565.795	-43.824	0.99991420
WC60	28 00 35	476756.681	1352803.489	570.376	TRAV STA

---------- Next Station ----------

WC60		476756.681	1352803.489	570.376	Instrument Station
	S28 00 35W				
8011	208 00 35				Backsight Station
	N09 03 11E	1114.462	1113.861	-33.482	0.99991595
2091	9 03 11	477856.666	1352978.756	536.894	WELL CASING
	N30 20 30E	2917.029	2916.635	-29.535	0.99991580
WC61	30 20 30	479273.816	1354276.848	540.841	TRAV STA

---------- Next Station ----------

WC61		479273.816	1354276.848	540.841	Instrument Station
	S30 20 30W				
WC60	210 20 30				Backsight Station
	N55 28 07E	502.971	502.927	1.421	0.99991637
IM1024	55 28 07	479558.904	1354691.167	542.262	PHOTO CONTROL PT
	N46 56 31E	2378.333	2378.134	-0.619	0.99991637
WC62	46 56 31	480897.460	1356014.462	540.222	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
---------- Next Station ----------					
WC62		480897.460	1356014.462	540.222	Instrument Station
	S46 56 31W				
WC61	226 56 31				Backsight Station
	N84 18 40W	60.391	60.386	0.233	0.99991632
GPS15	275 41 20	480903.446	1355954.373	540.455	PHOTO CONTROL PT
	N42 53 17E	2283.260	2283.067	2.711	0.99991620
WC63	42 53 17	482570.230	1357568.244	542.933	TRAV STA
---------- Next Station ----------					
WC63		482570.230	1357568.244	542.933	Instrument Station
	S42 53 17W				
WC62	222 53 17				Backsight Station
	N18 55 06W	2951.675	2951.382	16.118	0.99991560
WC64	341 04 54	485362.181	1356611.340	559.052	TRAV STA
---------- Next Station ----------					
WC64		485362.181	1356611.340	559.052	Instrument Station
	S18 55 06E				
WC63	161 04 54				Backsight Station
	N88 25 49E	48.724	48.687	-1.980	0.99991518
8-2-2	88 25 49	485363.515	1356660.009	557.072	PHOTO CONTROL PT
	S89 11 13W	957.945	955.956	60.126	0.99991369
WC65	269 11 13	485348.617	1355655.481	619.178	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
		Next Station			
WC65		485348.617	1355655.481	619.178	Instrument Station
	N89 11 13E				
WC64	89 11 13				Backsight Station
	N13 37 55W	775.730	775.662	0.641	0.99991222
8-2-1	346 22 05	486102.428	1355472.669	619.819	PHOTO CONTROL PT
	S89 22 45W	509.550	509.392	11.043	0.99991199
WC66	269 22 45	485343.098	1355146.119	630.222	TRAV STA
		Next Station			
WC66		485343.098	1355146.119	630.222	Instrument Station
	N89 22 45E				
WC65	89 22 45				Backsight Station
	S82 56 27W	443.966	443.849	-8.322	0.99991193
7-2-1	262 56 27	485288.551	1354705.634	621.900	PHOTO CONTROL PT
	S80 04 59W	1262.120	1262.003	-4.070	0.99991183
WC67	260 04 59	485125.753	1353902.972	626.152	TRAV STA
		Next Station			
WC67		485125.753	1353902.972	626.152	Instrument Station
	N80 04 59E				
WC66	80 04 59				Backsight Station
	S76 23 38W	748.622	748.536	-5.012	0.99991206
6-2-3	256 23 38	484949.665	1353175.442	621.140	PHOTO CONTROL PT

GEODIMETER SURVEYING SOFTWAR
TRAVERSE SURVEY COMPL

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dis Eastin
	S75 20 18W	1765.177	1765.0(
WC68	255 20 18	484679.014	1352195.4:
----------			Next Statior
WC68		484679.014	1352195.(
	N75 20 18E		
WC67	75 20 18		
	S66 07 40W	1089.004	1086.
5-4-1	246 07 40	484239.141	1351201
	S28 57 06W	1792.239	1792
WC69	208 57 06	483110.892	1351327
----------			Next Stat
WC69		483110.892	135132
	N28 57 06E		
WC68	28 57 06		
	S40 42 49W	501.635	5
P10	220 42 49	482730.843	1351(
	S08 19 32W	3962.949	3(
WC70	188 19 32	479190.165	1350
----------			Next St
WC70		479190.165	135
	N08 19 32E		
WC69	8 19 32		

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S22 49 33E	2563.935	2563.614	22.689	0.99991371
WC71	157 10 27	476827.315	1351748.696	610.832	TRAV STA
---------- Next Station ----------					
WC71		476827.315	1351748.696	610.832	Instrument Station
	N22 49 33W				
WC70	337 10 27				Backsight Station
	S84 21 04W	120.654	120.640	-0.149	0.99991326
8-10-1	264 21 04	476815.440	1351628.642	610.683	PHOTO CONTROL PT
	S12 22 48E	1487.200	1487.060	3.900	0.99991322
8011	167 37 12	475374.833	1352067.512	614.732	TRAV STA
---------- Next Station ----------					
8011		475374.833	1352067.512	614.732	Instrument Station
	N12 22 48W				
WC71	347 37 12				Backsight Station
	N00 00 00E				
8011AZ	28 58 04				AZ STA

Station Point	Be N.Az

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GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV4A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project:	FERNALD	job no:	10	date:	1992.0806
crew id:	1	angles:	2	s/n:	69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402
Angular Adjustment/Station of 3.71 sec applied
Adjusted for Linear Traverse Misclosure

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011 AZ	100 B/S STA	476169.589	1352508.417	577.319
WC60	101 TRAV STA	476756.649	1352803.527	570.344
2091	711 WELL CASING	477856.634	1352978.795	536.862
WC61	101 TRAV STA	479273.724	1354276.958	540.751
IM1024	199 PHOTO CONTROL PT	479558.812	1354691.278	542.172
WC62	101 TRAV STA	480897.319	1356014.630	540.084
GPS15	199 PHOTO CONTROL PT	480903.305	1355954.542	540.317
WC63	101 TRAV STA	482570.042	1357568.468	542.749
WC64	101 TRAV STA	485361.932	1356611.637	558.808
8-2-2	199 PHOTO CONTROL PT	485363.266	1356660.306	556.828
WC65	101 TRAV STA	485348.349	1355655.801	618.915
8-2-1	199 PHOTO CONTROL PT	486102.160	1355472.990	619.556
WC66	101 TRAV STA	485342.819	1355146.452	629.948
7-2-1	199 PHOTO CONTROL PT	485288.271	1354705.967	621.626
WC67	101 TRAV STA	485125.448	1353903.336	625.853
6-2-3	199 PHOTO CONTROL PT	484949.359	1353175.806	620.841

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC68	101 TRAV STA	484678.673	1352195.844	619.236
5-4-1	199 PHOTO CONTROL PT	484238.800	1351201.913	664.850
WC69	101 TRAV STA	483110.514	1351328.392	618.889
P10	199 PHOTO CONTROL PT	482730.464	1351001.341	605.083
WC70	101 TRAV STA	479189.705	1350754.734	587.692
WC71	101 TRAV STA	476826.802	1351749.308	610.330
8-10-1	199 PHOTO CONTROL PT	476814.927	1351629.253	610.180
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011AZ	102 AZ STA	476169.589	1352508.417	577.319

Coordinates Saved to File PRINT.XYZ

6343

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV5A.OBS
Traverse Survey

project: FERNALD job no: 11 date: 1992.081
crew id: 1 angles: 2 s/n : 69506

Station No.: WC69 Inst. Height: 5.14

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC68	100 B/S STA		180.4050		
2	WC72	101 TRAV STA	4.98	11.5954	91.2515	656.209

Station No.: WC72 Inst. Height: 5.1

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC69	100 B/S STA		250.5516		
2	WC73	101 TRAV STA	5.23	124.5042	90.2346	1548.721

Station No.: WC73 Inst. Height: 5.35

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC72	100 B/S STA		194.5204		
2	WC74	101 TRAV STA	5.24	108.3006	86.4007	1399.034

Station No.: WC74 Inst. Height: 5.37

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC73	100 B/S STA		260.4254		
2	4-2-2	199 PHOTO CONTROL PT	5.00	35.4957	90.1140	142.515

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distanc
3	WC75	101 TRAV STA	4.91	8.0003	91.4619	713.44

Station No.: WC75 Inst. Height: 5.03

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distanc
1	WC74	100 B/S STA		294.1830		
2	WC76	101 TRAV STA	4.95	130.3717	91.4635	1161.07

Station No.: WC76 Inst. Height: 5.07

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC75	100 B/S STA		166.0300		
2	3-2-1	199 PHOTO CONTROL PT	5.50	350.0707	91.1208	1226.33

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC69	483110.514	1351328.392	618.889	
Beg Back Stn WC68	484678.673	1352195.844	619.236	
End Inst Stn WC76				
End Refr Stn				

No. of Inst. Stations ....: 6
No. of Observations .....: 13

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV5A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 11 date: 1992.081
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC69		483110.514	1351328.392	618.889	Instrument Station
	N28 57 00E				
WC68	28 57 00				Backsight Station
	S40 16 04W	656.209	655.951	-16.102	0.99991282
WC72	220 16 04	482610.002	1350904.412	602.787	TRAV STA
---------- Next Station ----------					
WC72		482610.002	1350904.412	602.787	Instrument Station
	N40 16 04E				
WC69	40 16 04				Backsight Station
	N85 48 30W	1548.721	1548.551	-10.788	0.99991348
WC73	274 11 30	482723.187	1349360.004	591.999	TRAV STA
---------- Next Station ----------					
WC73		482723.187	1349360.004	591.999	Instrument Station
	S85 48 30E				
WC72	94 11 30				Backsight Station
	N07 49 32E	1399.034	1396.541	81.449	0.99991174
WC74	7 49 32	484106.723	1349550.150	673.448	TRAV STA
---------- Next Station ----------					
WC74		484106.723	1349550.150	673.448	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S07 49 32W				
WC73	187 49 32				Backsight Station
	N37 03 25W	142.515	142.501	-0.113	0.99990975
4-2-2	322 56 35	484220.444	1349464.277	673.335	PHOTO CONTROL PT
	N64 53 19W	713.443	713.039	-21.590	0.99991025
WC75	295 06 41	484409.320	1348904.504	651.858	TRAV STA
---------- Next Station ----------					
WC75		484409.320	1348904.504	651.858	Instrument Station
	S64 53 19E				
WC74	115 06 41				Backsight Station
	N48 34 32W	1161.075	1160.416	-35.884	0.99991160
WC76	311 25 28	485177.087	1348034.389	615.974	TRAV STA
---------- Next Station ----------					
WC76		485177.087	1348034.389	615.974	Instrument Station
	S48 34 32E				
WC75	131 25 28				Backsight Station
	N44 30 25W	1226.331	1225.956	-26.129	0.99991303
3-2-1	315 29 35	486051.394	1347174.997	589.845	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV5A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

---

project: FERNALD job no: 11 date: 1992.081
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC69	101 TRAV STA	483110.514	1351328.392	618.889
WC68	100 B/S STA	484678.673	1352195.844	619.236
WC72	101 TRAV STA	482610.002	1350904.412	602.787
WC73	101 TRAV STA	482723.187	1349360.004	591.999
WC74	101 TRAV STA	484106.723	1349550.150	673.448
4-2-2	199 PHOTO CONTROL PT	484220.444	1349464.277	673.335
WC75	101 TRAV STA	484409.320	1348904.504	651.858
WC76	101 TRAV STA	485177.087	1348034.389	615.974
3-2-1	199 PHOTO CONTROL PT	486051.394	1347174.997	589.845

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV6A.OBS
Traverse Survey

project: FERNALD job no: 12 date: 1992.081
crew id: 1 angles: 2 s/n : 69506

Station No.: WC68 Inst. Height: 5.03

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC67	100 B/S STA		180.1018		
2	WC77	101 TRAV STA	5.00	100.0529	87.4003	182.663

Station No.: WC77 Inst. Height: 5.17

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC68	100 B/S STA		251.3014		
2	WC78	101 TRAV STA	5.00	79.2817	89.0552	479.816

Station No.: WC78 Inst. Height: 5.2

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC77	100 B/S STA		108.4444		
2	WC79	101 TRAV STA	5.00	292.1202	84.2900	260.301

Station No.: WC79 Inst. Height: 5.24

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC78	100 B/S STA		12.0314		
2	6-2-1	199 PHOTO CONTROL PT	14.00	182.3721	83.5521	176.113

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
3	WC80	101 TRAV STA	5.00	186.3449	86.0244	434.775

Station No.: WC80 Inst. Height: 5.15

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC79	100 B/S STA		190.4141		
2	WC81	101 TRAV STA	5.00	23.4142	80.4144	342.689

Station No.: WC81 Inst. Height: 5.03

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC80	100 B/S STA		126.4155		
2	6-2-2	199 PHOTO CONTROL PT	5.00	228.4942	72.3410	29.489

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC68	484678.673	1352195.844	619.236	
Beg Back Stn WC67	485125.448	1353903.336	625.853	
End Inst Stn WC81				
End Refr Stn				

No. of Inst. Stations ....: 6
No. of Observations .....: 13

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV6A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 12 date: 1992.081
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC68		484678.673	1352195.844	619.236	Instrument Station
	N75 20 13E				
WC67	75 20 13				Backsight Station
	N04 44 36W	182.663	182.496	7.465	0.99991212
WC77	355 15 24	484860.544	1352180.753	626.701	TRAV STA
---------- Next Station ----------					
WC77		484860.544	1352180.753	626.701	Instrument Station
	S04 44 36E				
WC68	175 15 24				Backsight Station
	N03 13 27E	479.816	479.714	7.730	0.99991173
WC78	3 13 27	485339.498	1352207.734	634.431	TRAV STA
---------- Next Station ----------					
WC78		485339.498	1352207.734	634.431	Instrument Station
	S03 13 27W				
WC77	183 13 27				Backsight Station
	N06 40 45E	260.301	259.072	25.225	0.99991092
WC79	6 40 45	485596.812	1352237.866	659.656	TRAV STA
---------- Next Station ----------					
WC79		485596.812	1352237.866	659.656	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S06 40 45W				
WC78	186 40 45				Backsight Station
	N02 45 08W	176.113	175.107	9.886	0.99991007
6-2-1	357 14 52	485771.717	1352229.458	669.543	PHOTO CONTROL PT
	N01 12 20E	434.775	433.700	30.227	0.99990957
WC80	1 12 20	486030.416	1352246.991	689.884	TRAV STA

---------- Next Station ----------

WC80		486030.416	1352246.991	689.884	Instrument Station
	S01 12 20W				
WC79	181 12 20				Backsight Station
	N14 12 21E	342.689	338.148	55.558	0.99990750
WC81	14 12 21	486358.224	1352329.975	745.442	TRAV STA

---------- Next Station ----------

WC81		486358.224	1352329.975	745.442	Instrument Station
	S14 12 21W				
WC80	194 12 21				Backsight Station
	N63 39 52W	29.489	28.132	8.863	0.99990595
6-2-2	296 20 08	486370.704	1352304.762	754.305	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV6A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 12 date: 1992.081
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC68	101 TRAV STA	484678.673	1352195.844	619.236
WC67	100 B/S STA	485125.448	1353903.336	625.853
WC77	101 TRAV STA	484860.544	1352180.753	626.701
WC78	101 TRAV STA	485339.498	1352207.734	634.431
WC79	101 TRAV STA	485596.812	1352237.866	659.656
6-2-1	199 PHOTO CONTROL PT	485771.717	1352229.458	669.543
WC80	101 TRAV STA	486030.416	1352246.991	689.884
WC81	101 TRAV STA	486358.224	1352329.975	745.442
6-2-2	199 PHOTO CONTROL PT	486370.704	1352304.762	754.305

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAVZA.OBS
Traverse Survey

project: FERNALD job no: 13 date: 1992.0811
crew id: 1 angles: 2 s/n : 69506

Station No.: 8011AZ Inst. Height: 4.57

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8011	100 B/S STA		302.0918		
2	WC82	101 TRAV STA	5.00	221.3529	90.4630	330.836

Station No.: WC82 Inst. Height: 5.16

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8011AZ	100 B/S STA		323.3014		
2	WC83	101 TRAV STA	5.00	150.4340	90.2317	578.686

Station No.: WC83 Inst. Height: 4.93

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC82	100 B/S STA		221.1357		
2	7-12-1	199 PHOTO CONTROL PT	5.00	270.4626	89.0210	15.920
3	WC84	101 TRAV STA	5.00	30.1043	90.3543	530.935

Station No.: WC84 Inst. Height: 5.1

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC83	100 B/S STA		231.1137		

GEODIMETER

Line No.	Point No.
2	WC85

Station N

Line No.	Point No.
1	WC84
2	7-12-2
3	WC86

Station

Line No.	Point No.
1	WC85
2	WC87

Station

Line No.	Point No.
1	WC86
2	WC88

Statio

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC87	100 B/S STA		57.0705		
2	WC89	101 TRAV STA	5.00	215.2648	91.5402	319.962

Station No.: WC89 Inst. Height: 4.95

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC88	100 B/S STA		237.3931		
2	8-12-1	199 PHOTO CONTROL PT	5.00	81.2745	90.4902	255.640
3	8-11-1	199 PHOTO CONTROL PT	5.00	84.5833	90.4446	254.742

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 8011AZ	476169.589	1352508.417	577.319	
Beg Back Stn 8011	475374.290	1352068.160	614.200	
End Inst Stn WC89				
End Refr Stn				

No. of Inst. Stations ....: 9
No. of Observations .....: 21

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV7A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 13 date: 1992.0811
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8011AZ		476169.589	1352508.417	577.319	Instrument Station
	S28 58 04W				
8011	208 58 04				Backsight Station
	S51 35 45E	330.836	330.778	-4.903	0.99991504
WC82	128 24 15	475964.108	1352767.630	572.416	TRAV STA

---------- Next Station ----------

WC82		475964.108	1352767.630	572.416	Instrument Station
	N51 35 45W				
8011AZ	308 24 15				Backsight Station
	S44 22 19E	578.686	578.624	-3.752	0.99991527
WC83	135 37 41	475550.499	1353172.270	568.664	TRAV STA

---------- Next Station ----------

WC83		475550.499	1353172.270	568.664	Instrument Station
	N44 22 19W				
WC82	315 37 41				Backsight Station
	N05 10 10E	15.920	15.916	0.198	0.99991537
7-12-1	5 10 10	475566.351	1353173.704	568.862	PHOTO CONTROL PT
	S55 25 33E	530.935	530.862	-5.580	0.99991552
WC84	124 34 27	475249.250	1353609.377	563.084	TRAV STA

---------- Next Station ----------

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC84		475249.250	1353609.377	563.084	Instrument Station
	N55 25 33W				
WC83	304 34 27				Backsight Station
	S82 12 50E	943.032	942.936	4.641	0.99991556
WC85	97 47 10	475121.505	1354543.620	567.725	TRAV STA

---------- Next Station ----------

WC85		475121.505	1354543.620	567.725	Instrument Station
	N82 12 50W				
WC84	277 47 10				Backsight Station
	S55 43 21E	472.296	472.180	-8.473	0.99991566
7-12-2	124 16 39	474855.572	1354933.791	559.252	PHOTO CONTROL PT
	S57 45 27E	553.515	553.398	-8.850	0.99991567
WC86	122 14 33	474826.265	1355011.682	558.875	TRAV STA

---------- Next Station ----------

WC86		474826.265	1355011.682	558.875	Instrument Station
	N57 45 27W				
WC85	302 14 33				Backsight Station
	S66 52 28E	750.716	750.652	1.407	0.99991588
WC87	113 07 32	474531.449	1355702.016	560.282	TRAV STA

---------- Next Station ----------

WC87		474531.449	1355702.016	560.282	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	N66 52 28W				
WC86	293 07 32				Backsight Station
	S43 09 12E	168.823	168.769	3.935	0.99991577
WC88	136 50 48	474408.328	1355817.446	564.217	TRAV STA

---------- Next Station ----------

WC88		474408.328	1355817.446	564.217	Instrument Station
	N43 09 12W				
WC87	316 50 48				Backsight Station
	S64 49 29E	319.962	319.759	-10.419	0.99991593
WC89	115 10 31	474272.305	1356106.832	553.798	TRAV STA

---------- Next Station ----------

WC89		474272.305	1356106.832	553.798	Instrument Station
	N64 49 29W				
WC88	295 10 31				Backsight Station
	S41 01 15E	255.640	255.593	-3.695	0.99991628
8-12-1	138 58 45	474079.468	1356274.586	550.103	PHOTO CONTROL PT
	S37 30 27E	254.742	254.699	-3.366	0.99991627
8-11-1	142 29 33	474070.259	1356261.909	550.432	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV7A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 13 date: 1992.0811
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
8011AZ	101 TRAV STA	476169.589	1352508.417	577.319
8011	100 B/S STA	475374.290	1352068.160	614.200
WC82	101 TRAV STA	475964.108	1352767.630	572.416
WC83	101 TRAV STA	475550.499	1353172.270	568.664
7-12-1	199 PHOTO CONTROL PT	475566.351	1353173.704	568.862
WC84	101 TRAV STA	475249.250	1353609.377	563.084
WC85	101 TRAV STA	475121.505	1354543.620	567.725
7-12-2	199 PHOTO CONTROL PT	474855.572	1354933.791	559.252
WC86	101 TRAV STA	474826.265	1355011.682	558.875
WC87	101 TRAV STA	474531.449	1355702.016	560.282
WC88	101 TRAV STA	474408.328	1355817.446	564.217
WC89	101 TRAV STA	474272.305	1356106.832	553.798
8-12-1	199 PHOTO CONTROL PT	474079.468	1356274.586	550.103
8-11-1	199 PHOTO CONTROL PT	474070.259	1356261.909	550.432

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV8A.OBS
Traverse Survey

project: FERNALD job no: 14 date: 1992.0811
crew id: 1 angles: 2 s/n : 69506

Station No.: 1003 Inst. Height: 4.9

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC2	100 B/S STA		142.1519		
2	WC90	101 TRAV STA	5.00	238.2751	89.4556	1574.871

Station No.: WC90 Inst. Height: 5.08

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	1003	100 B/S STA		292.2914		
2	2-2-1	199 PHOTO CONTROL PT	5.00	106.4528	91.4940	427.660
3	WC91	101 TRAV STA	5.00	108.0554	90.1041	1644.056

Station No.: WC91 Inst. Height: 4.98

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC90	100 B/S STA		336.2533		
2	2-2-2	199 PHOTO CONTROL PT	5.00	249.3857	90.4434	756.454
3	2-1-1	199 PHOTO CONTROL PT	8.00	55.4558	89.3048	983.059
4	2-1-2	199 PHOTO CONTROL PT	8.00	79.4021	89.2625	1170.942
5	1-2-2	199 PHOTO CONTROL PT	8.00	79.3910	89.2333	1204.504

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 1003	482887.950	1345001.130	579.930	
Beg Back Stn WC2	482881.885	1344077.701	586.431	
End Inst Stn WC91				
End Refr Stn				

No. of Inst. Stations ....: 3
No. of Observations .....: 10

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV8A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 14 date: 1992.0811
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
1003		482887.950	1345001.130	579.930	Instrument Station
	S89 37 25W				
WC2	269 37 25				Backsight Station
	N05 49 57E	1574.871	1574.722	6.395	0.99991410
WC90	5 49 57	484454.520	1345161.156	586.325	TRAV STA

---------- Next Station ----------

WC90		484454.520	1345161.156	586.325	Instrument Station
	S05 49 57W				
1003	185 49 57				Backsight Station
	N00 06 11E	427.660	427.406	-13.557	0.99991421
2-2-1	0 06 11	484881.925	1345161.926	572.768	PHOTO CONTROL PT
	N01 26 37E	1644.056	1643.907	-4.974	0.99991397
WC91	1 26 37	486097.905	1345202.574	581.351	TRAV STA

---------- Next Station ----------

WC91		486097.905	1345202.574	581.351	Instrument Station
	S01 26 37W				
WC90	181 26 37				Backsight Station
	S85 19 59E	756.454	756.326	-9.815	0.99991427
2-2-2	94 40 01	486036.367	1345956.392	571.537	PHOTO CONTROL PT
	S80 47 02W	983.059	982.939	5.350	0.99991391
2-1-1	260 47 02	485940.480	1344232.324	586.701	PHOTO CONTROL PT
	N75 18 35W	1170.942	1170.785	8.447	0.99991383

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
2-1-2	284 41 25	486394.810	1344070.062	589.798	PHOTO CONTROL PT
	N75 19 46W	1204.504	1204.332	9.781	0.99991379
1-2-2	284 40 14	486402.917	1344037.506	591.132	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV8A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 14 date: 1992.0811
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
1003	101 TRAV STA	482887.950	1345001.130	579.930
WC2	100 B/S STA	482881.885	1344077.701	586.431
WC90	101 TRAV STA	484454.520	1345161.156	586.325
2-2-1	199 PHOTO CONTROL PT	484881.925	1345161.926	572.768
WC91	101 TRAV STA	486097.905	1345202.574	581.351
2-2-2	199 PHOTO CONTROL PT	486036.367	1345956.392	571.537
2-1-1	199 PHOTO CONTROL PT	485940.480	1344232.324	586.701
2-1-2	199 PHOTO CONTROL PT	486394.810	1344070.062	589.798
1-2-2	199 PHOTO CONTROL PT	486402.917	1344037.506	591.132

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV9A.OBS
Traverse Survey

project: FERNALD job no: 15 date: 1992.0812
crew id: 1 angles: 2 s/n : 69506

Station No.: WC57 Inst. Height: 5.34

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC56	100 B/S STA		357.1505		
2	WC7	101 TRAV STA	4.98	180.2536	89.5008	1156.364

Station No.: WC7 Inst. Height: 5.1

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC57	100 B/S STA		311.1022		
2	6-15-2	199 PHOTO CONTROL PT	5.00	313.3437	90.3702	433.740
3	6-15-1	199 PHOTO CONTROL PT	5.00	142.3037	89.4420	390.866
4	WC8	101 TRAV STA	4.96	145.5720	89.4401	811.570

Station No.: WC8 Inst. Height: 5.09

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC7	100 B/S STA		223.3514		
2	WC9	101 TRAV STA	5.10	45.0450	90.0247	959.904

Station No.: WC9 Inst. Height: 5.22

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC8	100 B/S STA		188.4734		
2	WC10	101 TRAV STA	5.07	343.3042	87.5752	832.471

Station No.: WC10 Inst. Height: 5.19

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC9	100 B/S STA		278.5506		
2	WC11	101 TRAV STA	4.87	107.1916	90.0045	434.393

Station No.: WC11 Inst. Height: 4.99

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC10	100 B/S STA		207.4958		
2	WC12	101 TRAV STA	5.09	344.5308	90.1554	1559.742

Station No.: WC12 Inst. Height: 5.21

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC11	100 B/S STA		7.0858		
2	WC13	101 TRAV STA	5.00	275.4304	89.0521	326.721

Station No.: WC13 Inst. Height: 5.32

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC12	100 B/S STA		61.5011		
2	7-19-2	199 PHOTO CONTROL PT	5.00	309.3511	90.1649	89.105
3	WC14	101 TRAV STA	4.92	245.4201	91.2313	1016.510

Station No.: WC14 Inst. Height: 5.04

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC13	100 B/S STA		329.0934		
2	7-20-2	199 PHOTO CONTROL PT	5.00	108.0304	91.3118	116.145
3	WC15	101 TRAV STA	5.15	121.4732	90.2938	676.643

Station No.: WC15 Inst. Height: 5.26

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC14	100 B/S STA		230.5107		
2	WC16	101 TRAV STA	5.00	37.3228	89.5937	302.675

Station No.: WC16 Inst. Height: 5.18

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC15	100 B/S STA		291.1532		
2	WC17	101 TRAV STA	4.98	239.5144	89.4016	651.453

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC17 Inst. Height: 5.1

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC16	100 B/S STA		308.3002		
2	WC18	101 TRAV STA	5.00	166.3411	89.4715	667.828

Station No.: WC18 Inst. Height: 5.13

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC17	100 B/S STA		181.5525		
2	WC19	101 TRAV STA	5.19	350.2205	90.2647	566.180

Station No.: WC19 Inst. Height: 5.31

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC18	100 B/S STA		117.0754		
2	7-20-1	199 PHOTO CONTROL PT	5.00	278.2226	90.4445	583.811
3	WC20	101 TRAV STA	5.02	277.1953	90.3440	994.021

Station No.: WC20 Inst. Height: 5.14

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC19	100 B/S STA		201.2256		
2	WC21	101 TRAV STA	5.00	30.3040	90.1634	867.110

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC21 Inst. Height: 5.11

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC20	100 B/S STA		265.0126		
2	5-20-1	199 PHOTO CONTROL PT	8.00	68.1948	88.1354	389.076
3	WC22	101 TRAV STA	4.94	72.1842	88.2017	765.580

Station No.: WC22 Inst. Height: 5.06

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC21	100 B/S STA		191.4815		
2	WC23	101 TRAV STA	5.08	9.3538	90.0225	616.508

Station No.: WC23 Inst. Height: 5.2

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC22	100 B/S STA		109.4808		
2	4-18-3	199 PHOTO CONTROL PT	5.00	265.2651	90.1052	701.497
3	WC24	101 TRAV STA	5.05	265.4455	90.0157	792.490

Station No.: WC24 Inst. Height: 5.17

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC23	100 B/S STA		197.2744		
2	WC25	101 TRAV STA	5.10	20.1740	89.4917	885.236

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC25 Inst. Height: 5.22

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC24	100 B/S STA		191.0826		
2	4-18-2	199 PHOTO CONTROL PT	5.00	238.4256	88.4107	31.060
3	4-19-1	199 PHOTO CONTROL PT	5.20	221.2750	88.0241	24.371
4	WC26	101 TRAV STA	5.00	5.4446	93.4206	381.288

Station No.: WC26 Inst. Height: 5.26

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC25	100 B/S STA		324.4634		
2	WC27	101 TRAV STA	4.88	274.2440	90.2140	790.867

Station No.: WC27 Inst. Height: 5

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC26	100 B/S STA		223.5216		
2	WC28	101 TRAV STA	5.09	343.2544	89.3119	1278.535

Station No.: WC28 Inst. Height: 5.21

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC27	100 B/S STA		313.5049		
2	4-18-1	199 PHOTO CONTROL PT	5.20	44.1802	89.5855	384.571

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
3	WC29	101 TRAV STA	5.13	230.3022	90.0545	1926.765

Station No.: WC29 Inst. Height: 5.25

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC28	100 B/S STA		50.1935		
2	WC57	101 TRAV STA	4.94	211.2821	89.5706	2436.067

Station No.: WC57 Inst. Height: 5.06

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC29	100 B/S STA		3.2634		
2	WC56	102 AZ STA		102.1013		

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC57	471573.650	1350638.849	529.675	
Beg Back Stn WC56	472062.812	1350092.285	527.235	
End Inst Stn WC57	471573.650	1350638.849	529.675	
End Refr Stn WC56	472062.812	1350092.285	527.235	

No. of Inst. Stations ....: 25
No. of Observations .....: 60

Azimuth Closure .....: 46.0 seconds
Adjustment per Station ...: -1.8 sec/sta

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV9A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 15 date: 1992.0812
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC57		471573.650	1350638.849	529.675	Instrument Station
	N48 10 20W				
WC56	311 49 40				Backsight Station
	S44 59 51E	1156.364	1156.264	3.706	0.99991754
WC7	135 00 09	470756.011	1351456.414	533.381	TRAV STA

---------- Next Station ----------

WC7		470756.011	1351456.414	533.381	Instrument Station
	N44 59 51W				
WC57	315 00 09				Backsight Station
	N42 35 38W	433.740	433.679	-4.569	0.99991758
6-15-2	317 24 22	471075.273	1351162.902	528.813	PHOTO CONTROL PT
	S33 39 38E	390.866	390.830	1.884	0.99991746
6-15-1	146 20 22	470430.710	1351673.039	535.266	PHOTO CONTROL PT
	S30 12 55E	811.570	811.494	3.927	0.99991742
WC8	149 47 05	470054.766	1351864.798	537.308	TRAV STA

---------- Next Station ----------

WC8		470054.766	1351864.798	537.308	Instrument Station
	N30 12 55W				
WC7	329 47 05				Backsight Station
	S28 43 20E	959.904	959.824	-0.768	0.99991742
WC9	151 16 40	469213.039	1352326.056	536.540	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
		Next Station			
WC9		469213.039	1352326.056	536.540	Instrument Station
	N28 43 20W				
WC8	331 16 40				Backsight Station
	S54 00 14E	832.471	831.875	29.733	0.99991679
WC10	125 59 46	468724.122	1352999.091	566.273	TRAV STA
		Next Station			
WC10		468724.122	1352999.091	566.273	Instrument Station
	N54 00 14W				
WC9	305 59 46				Backsight Station
	S45 36 06E	434.393	434.357	0.229	0.99991611
WC11	134 23 54	468420.228	1353309.436	566.502	TRAV STA
		Next Station			
WC11		468420.228	1353309.436	566.502	Instrument Station
	N45 36 06W				
WC10	314 23 54				Backsight Station
	S88 32 58E	1559.742	1559.595	-7.264	0.99991630
WC12	91 27 02	468380.747	1354868.532	559.238	TRAV STA
		Next Station			
WC12		468380.747	1354868.532	559.238	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	N88 32 58W				
WC11	271 27 02				Backsight Station
	S00 01 06W	326.721	326.652	5.406	0.99991636
WC13	180 01 06	468054.095	1354868.427	564.644	TRAV STA
---------- Next Station ----------					
WC13		468054.095	1354868.427	564.644	Instrument Station
	N00 01 06E				
WC12	0 01 06				Backsight Station
	S67 46 04W	89.105	89.096	-0.116	0.99991625
7-19-2	247 46 04	468020.384	1354785.954	564.528	PHOTO CONTROL PT
	S03 52 54W	1016.510	1016.129	-24.183	0.99991687
WC14	183 52 54	467040.297	1354799.637	540.461	TRAV STA
---------- Next Station ----------					
WC14		467040.297	1354799.637	540.461	Instrument Station
	N03 52 54E				
WC13	3 52 54				Backsight Station
	S37 13 37E	116.145	116.094	-3.044	0.99991758
7-20-2	142 46 23	466947.858	1354869.872	537.417	PHOTO CONTROL PT
	S23 29 09E	676.643	676.562	-5.933	0.99991768
WC15	156 30 51	466419.783	1355069.264	534.528	TRAV STA
---------- Next Station ----------					
WC15		466419.783	1355069.264	534.528	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	N23 29 09W				
WC14	336 30 51				Backsight Station
	S36 47 50E	302.675	302.650	0.296	0.99991785
WC16	143 12 10	466177.433	1355250.547	534.824	TRAV STA
---------- Next Station ----------					
WC16		466177.433	1355250.547	534.824	Instrument Station
	N36 47 50W				
WC15	323 12 10				Backsight Station
	N88 11 40W	651.453	651.389	3.948	0.99991776
WC17	271 48 20	466197.956	1354599.482	538.772	TRAV STA
---------- Next Station ----------					
WC17		466197.956	1354599.482	538.772	Instrument Station
	S88 11 40E				
WC16	91 48 20				Backsight Station
	N50 07 33W	667.828	667.768	2.586	0.99991759
WC18	309 52 27	466626.065	1354087.000	541.358	TRAV STA
---------- Next Station ----------					
WC18		466626.065	1354087.000	541.358	Instrument Station
	S50 07 33E				
WC17	129 52 27				Backsight Station
	N61 40 55W	566.180	566.116	-4.464	0.99991760
WC19	298 19 05	466894.611	1353588.633	536.893	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
		Next Station			
WC19		466894.611	1353588.633	536.893	Instrument Station
	S61 40 55E				
WC18	118 19 05				Backsight Station
	N80 26 25W	583.811	583.714	-7.282	0.99991786
7-20-1	279 33 35	466991.553	1353013.025	529.611	PHOTO CONTROL PT
	N81 28 58W	994.021	993.889	-9.713	0.99991792
WC20	278 31 02	467041.815	1352605.705	527.180	TRAV STA
		Next Station			
WC20		467041.815	1352605.705	527.180	Instrument Station
	S81 28 58E				
WC19	98 31 02				Backsight Station
	N72 21 16W	867.110	867.029	-4.023	0.99991823
WC21	287 38 44	467304.637	1351779.470	523.157	TRAV STA
		Next Station			
WC21		467304.637	1351779.470	523.157	Instrument Station
	S72 21 16E				
WC20	107 38 44				Backsight Station
	N89 02 55W	389.076	388.859	9.119	0.99991809
5-20-1	270 57 05	467311.093	1351390.665	532.276	PHOTO CONTROL PT
	N85 04 01W	765.580	765.194	22.386	0.99991777
WC22	274 55 59	467370.436	1351017.110	545.542	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
---------- Next Station ----------					
WC22		467370.436	1351017.110	545.542	Instrument Station
	S85 04 01E				
WC21	94 55 59				Backsight Station
	N87 16 40W	616.508	616.457	-0.446	0.99991725
WC23	272 43 20	467399.713	1350401.349	545.097	TRAV STA
---------- Next Station ----------					
WC23		467399.713	1350401.349	545.097	Instrument Station
	S87 16 40E				
WC22	92 43 20				Backsight Station
	S68 22 01W	701.497	701.436	-2.007	0.99991732
4-18-3	248 22 01	467141.121	1349749.319	543.090	PHOTO CONTROL PT
	S68 40 05W	792.490	792.424	-0.287	0.99991728
WC24	248 40 05	467111.452	1349663.214	544.810	TRAV STA
---------- Next Station ----------					
WC24		467111.452	1349663.214	544.810	Instrument Station
	N68 40 05E				
WC23	68 40 05				Backsight Station
	S71 29 59W	885.236	885.158	2.846	0.99991725
WC25	251 29 59	466830.584	1348823.799	547.656	TRAV STA
---------- Next Station ----------					

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC25		466830.584	1348823.799	547.656	Instrument Station
	N71 29 59E				
WC24	71 29 59				Backsight Station
	S60 55 33E	31.060	31.049	0.933	0.99991717
4-18-2	119 04 27	466815.496	1348850.936	548.589	PHOTO CONTROL PT
	S78 10 39E	24.371	24.355	0.852	0.99991717
4-19-1	101 49 21	466825.594	1348847.637	548.507	PHOTO CONTROL PT
	S66 06 17W	381.288	380.462	-24.393	0.99991779
WC26	246 06 17	466676.472	1348475.948	523.262	TRAV STA

---------- Next Station ----------

WC26		466676.472	1348475.948	523.262	Instrument Station
	N66 06 17E				
WC25	66 06 17				Backsight Station
	N15 44 21E	790.867	790.787	-4.592	0.99991845
WC27	15 44 21	467437.609	1348690.457	518.671	TRAV STA

---------- Next Station ----------

WC27		467437.609	1348690.457	518.671	Instrument Station
	S15 44 21W				
WC26	195 44 21				Backsight Station
	N44 42 12W	1278.535	1278.385	10.611	0.99991822
WC28	315 17 48	468346.231	1347791.193	529.282	TRAV STA

---------- Next Station ----------

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC28		468346.231	1347791.193	529.282	Instrument Station
	S44 42 12E				
WC27	135 17 48				Backsight Station
	S45 44 59W	384.571	384.539	0.134	0.99991793
4-18-1	225 44 59	468077.901	1347515.748	529.416	PHOTO CONTROL PT
	N51 57 19E	1926.765	1926.604	-3.067	0.99991794
WC29	51 57 19	469533.554	1349308.450	526.215	TRAV STA

---------- Next Station ----------

WC29		469533.554	1349308.450	526.215	Instrument Station
	S51 57 19W				
WC28	231 57 19				Backsight Station
	N33 06 03E	2436.067	2435.866	2.487	0.99991779
WC57	33 06 03	471574.105	1350638.710	528.702	TRAV STA

---------- Next Station ----------

WC57		471574.105	1350638.710	528.702	Instrument Station
	S33 06 03W				
WC29	213 06 03				Backsight Station
	N00 00 00E				
WC56	311 49 40				AZ STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description

Traverse Misclosure

Northing .....: 0.455
Easting .....: -0.139
Elevation .....: -0.973

Linear Misclosure..: 0.476

Total Distance ....: 21692.933

Error Ratio .....: At Least 1 Part in 45500

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV9A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project:	FERNALD	job no:	15	date:	1992.0812
crew id:	1	angles:	2	s/n:	69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402
Angular Adjustment/Station of -1.84 sec applied
Adjusted for Linear Traverse Misclosure

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC56	100 B/S STA	472062.812	1350092.285	527.235
WC7	101 TRAV STA	470755.987	1351456.422	533.433
6-15-2	199 PHOTO CONTROL PT	471075.249	1351162.909	528.865
6-15-1	199 PHOTO CONTROL PT	470430.685	1351673.047	535.318
WC8	101 TRAV STA	470054.724	1351864.810	537.396
WC9	101 TRAV STA	469212.978	1352326.075	536.671
WC10	101 TRAV STA	468724.043	1352999.115	566.442
WC11	101 TRAV STA	468420.140	1353309.463	566.690
WC12	101 TRAV STA	468380.627	1354868.569	559.496
WC13	101 TRAV STA	468053.967	1354868.466	564.917
7-19-2	199 PHOTO CONTROL PT	468020.257	1354785.993	564.801
WC14	101 TRAV STA	467040.148	1354799.683	540.780
7-20-2	199 PHOTO CONTROL PT	466947.709	1354869.917	537.736
WC15	101 TRAV STA	466419.620	1355069.314	534.877
WC16	101 TRAV STA	466177.264	1355250.599	535.186
WC17	101 TRAV STA	466197.773	1354599.538	539.163

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC18	101 TRAV STA	466625.868	1354087.061	541.779
WC19	101 TRAV STA	466894.402	1353588.696	537.340
7-20-1	199 PHOTO CONTROL PT	466991.344	1353013.089	530.058
WC20	101 TRAV STA	467041.585	1352605.775	527.671
WC21	101 TRAV STA	467304.389	1351779.546	523.687
5-20-1	199 PHOTO CONTROL PT	467310.845	1351390.741	532.806
WC22	101 TRAV STA	467370.172	1351017.191	546.107
WC23	101 TRAV STA	467399.436	1350401.433	545.689
4-18-3	199 PHOTO CONTROL PT	467140.844	1349749.404	543.682
WC24	101 TRAV STA	467111.159	1349663.304	545.438
WC25	101 TRAV STA	466830.272	1348823.894	548.323
4-18-2	199 PHOTO CONTROL PT	466815.184	1348851.031	549.256
4-19-1	199 PHOTO CONTROL PT	466825.282	1348847.733	549.175
WC26	101 TRAV STA	466676.152	1348476.045	523.947
WC27	101 TRAV STA	467437.273	1348690.560	519.391
WC28	101 TRAV STA	468345.867	1347791.304	530.059
4-18-1	199 PHOTO CONTROL PT	468077.538	1347515.859	530.193
WC29	101 TRAV STA	469533.150	1349308.574	527.079
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC56	102 AZ STA	472062.812	1350092.285	527.235

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z

Coordinates Saved to File PRINT.XYZ

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV10A.OBS
Traverse Survey

project: FERNALD job no: 4 date: 1992.0416
crew id: 1 angles: 2 s/n : 69506

Station No.: 8012 Inst. Height: 5.28

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012AZ	100 B/S STA		248.2946		
2	1-8-2	101 TRAV STA	4.78	9.2145	90.3018	2830.856

Station No.: 1-8-2 Inst. Height: 4.93

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8012	100 B/S STA		327.1106		
2	WC3	101 TRAV STA	4.99	335.1154	89.5620	766.670

Station No.: WC3 Inst. Height: 5.15

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	1-8-2	100 B/S STA		321.0528		
2	WC4	101 TRAV STA	5.00	222.1533	89.1255	1106.335

Station No.: WC4 Inst. Height: 5.23

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC3	100 B/S STA		254.1100		
2	1-8-1	199 PHOTO CONTROL PT	5.00	119.5500	90.1854	406.982

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
3	8012	101 TRAV STA	5.13	314.2724	89.5005	2386.930

Station No.: 8012 Inst. Height: 5.28

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC4	100 B/S STA		338.4614		
2	8012AZ	102 AZ STA		248.2643		

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 8012	476298.715	1343075.495	606.587	
Beg Back Stn 8012AZ	476157.540	1342085.510	617.264	
End Inst Stn 8012	476298.715	1343075.495	606.587	
End Refr Stn 8012AZ	476157.540	1342085.510	617.264	

No. of Inst. Stations ....: 5
No. of Observations .....: 11

Azimuth Closure .....: -15.0 seconds
Adjustment per Station ...: 3.0 sec/sta

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV10A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 4 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
8012		476298.715	1343075.495	606.587	Instrument Station
	S81 53 03W				
8012AZ	261 53 03				Backsight Station
	N22 45 05E	2830.856	2830.506	-24.286	0.99991399
1-8-2	22 45 05	478908.984	1344170.145	582.301	TRAV STA
---------- Next Station ----------					
1-8-2		478908.984	1344170.145	582.301	Instrument Station
	S22 45 05W				
8012	202 45 05				Backsight Station
	S30 45 56W	766.670	766.604	0.770	0.99991448
WC3	210 45 56	478250.266	1343778.007	583.071	TRAV STA
---------- Next Station ----------					
WC3		478250.266	1343778.007	583.071	Instrument Station
	N30 45 56E				
1-8-2	30 45 56				Backsight Station
	N68 03 56W	1106.335	1106.135	15.327	0.99991411
WC4	291 56 04	478663.458	1342751.943	598.398	TRAV STA
---------- Next Station ----------					
WC4		478663.458	1342751.943	598.398	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S68 03 56E				
WC3	111 56 04				Backsight Station
	N22 19 53W	406.982	406.941	-2.004	0.99991376
1-8-1	337 40 07	479039.878	1342597.321	596.394	PHOTO CONTROL PT
	S07 47 29E	2386.930	2386.713	7.102	0.99991365
8012	172 12 31	476298.778	1343075.502	605.500	TRAV STA

---------- Next Station ----------

8012		476298.778	1343075.502	605.500	Instrument Station
	N07 47 29W				
WC4	352 12 31				Backsight Station
	N00 00 00E				
8012AZ	261 53 03				AZ STA

Traverse Misclosure

Northing .....: 0.063
Easting .....: 0.007
Elevation .....: -1.087

Linear Misclosure..: 0.064

Total Distance ....: 7089.958

Error Ratio .....: At Least 1 Part in 111000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV10A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 4 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402
Angular Adjustment/Station of 3.00 sec applied
Adjusted for Linear Traverse Misclosure

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012AZ	100 B/S STA	476157.540	1342085.510	617.264
1-8-2	101 TRAV STA	478908.959	1344170.143	582.735
WC3	101 TRAV STA	478250.234	1343778.004	583.622
WC4	101 TRAV STA	478663.416	1342751.938	599.119
1-8-1	199 PHOTO CONTROL PT	479039.837	1342597.316	597.115
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012AZ	102 AZ STA -	476157.540	1342085.510	617.264

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV11A.OBS
Traverse Survey

project: FERNALD job no: 2 date: 1992.0416
crew id: 1 angles: 2 s/n : 69506

Station No.: IM1023 Inst. Height: 5.42

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	GPS15	100 B/S STA		8.3106		
2	WC1	101 TRAV STA	5.00	186.5113	89.5131	554.912

Station No.: WC1 Inst. Height: 5.06

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	IM1023	100 B/S STA		310.4054		
2	8-2-3	199 PHOTO CONTROL PT	5.00	38.3852	89.4417	1799.509

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn IM1023	482524.580	1357525.690	542.643	
Beg Back Stn GPS15	480903.459	1355954.122	540.317	
End Inst Stn WC1				
End Refr Stn				

No. of Inst. Stations ....: 2
No. of Observations .....: 4

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV11A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 2 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
IM1023		482524.580	1357525.690	542.643	Instrument Station
	S44 06 39W				
GPS15	224 06 39				Backsight Station
	N42 26 46E	554.912	554.864	1.796	0.99991604
WC1	42 26 46	482934.021	1357900.165	544.439	TRAV STA

Next Station

WC1		482934.021	1357900.165	544.439	Instrument Station
	S42 26 46W				
IM1023	222 26 46				Backsight Station
	N49 35 16W	1799.509	1799.338	8.353	0.99991574
8-2-3	310 24 44	484100.499	1356530.149	552.792	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV11A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

---

project: FERNALD job no: 2 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
IM1023	101 TRAV STA	482524.580	1357525.690	542.643
GPS15	100 B/S STA	480903.459	1355954.122	540.317
WC1	101 TRAV STA	482934.021	1357900.165	544.439
8-2-3	199 PHOTO CONTROL PT	484100.499	1356530.149	552.792

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV12A.OBS
Traverse Survey

project: FERNALD job no: 3 date: 1992.0416
crew id: 1 angles: 2 s/n : 69506

Station No.: 1003 Inst. Height: 5.09

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	P8	100 B/S STA		189.0454		
2	WC2	101 TRAV STA	5.00	189.0455	89.3612	923.551

Station No.: WC2 Inst. Height: 5.16

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	1003	100 B/S STA		218.2522		
2	1-6-1	199 PHOTO CONTROL PT	5.00	350.3602	89.3517	2329.849
3	1-4-2	199 PHOTO CONTROL PT	5.00	319.2722	93.4358	40.245
4	1-5-2	199 PHOTO CONTROL PT	5.00	106.0200	89.4054	649.220
5	WC6	101 TRAV STA	5.00	106.1304	89.4734	1620.450

Station No.: WC6 Inst. Height: 5.14

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC2	100 B/S STA		79.2916		
2	1-2-3	199 PHOTO CONTROL PT	5.00	257.1846	89.4412	1183.886
3	1-2-1	199 PHOTO CONTROL PT	4.94	258.2010	89.4144	2108.420

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn 1003	482887.950	1345001.130	579.930	
Beg Back Stn P8	482872.560	1342659.600	612.120	
End Inst Stn WC6				
End Refr Stn				

No. of Inst. Stations ....: 3
No. of Observations .....: 10

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV12A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 3 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
1003		482887.950	1345001.130	579.930	Instrument Station
	S89 37 24W				
P8	269 37 24				Backsight Station
	S89 37 25W	923.551	923.449	6.501	0.99991415
WC2	269 37 25	482881.885	1344077.701	586.431	TRAV STA

---------- Next Station ----------

WC2		482881.885	1344077.701	586.431	Instrument Station
	N89 37 25E				
1003	89 37 25				Backsight Station
	S41 48 05W	2329.849	2329.586	17.022	0.99991365
1-6-1	221 48 05	481145.275	1342524.911	603.454	PHOTO CONTROL PT
	S10 39 25W	40.245	40.156	-2.460	0.99991406
1-4-2	190 39 25	482842.422	1344070.275	583.971	PHOTO CONTROL PT
	N22 45 57W	649.220	649.154	3.776	0.99991389
1-5-2	337 14 03	483480.467	1343826.501	590.207	PHOTO CONTROL PT
	N22 34 53W	1620.450	1620.299	6.075	0.99991380
WC6	337 25 07	484377.965	1343455.515	592.506	TRAV STA

---------- Next Station ----------

WC6		484377.965	1343455.515	592.506	Instrument Station
	S22 34 53E				
WC2	157 25 07				Backsight Station
	N24 45 23W	1183.886	1183.771	5.610	0.99991344

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
1-2-3	335 14 37	485452.944	1342959.800	598.116	PHOTO CONTROL PT
	N23 43 59W	2108.420	2108.206	11.494	0.99991328
1-2-1	336 16 01	486307.883	1342607.016	604.000	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV12A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 3 date: 1992.0416
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
1003	101 TRAV STA	482887.950	1345001.130	579.930
P8	100 B/S STA	482872.560	1342659.600	612.120
WC2	101 TRAV STA	482881.885	1344077.701	586.431
1-6-1	199 PHOTO CONTROL PT	481145.275	1342524.911	603.454
1-4-2	199 PHOTO CONTROL PT	482842.422	1344070.275	583.971
1-5-2	199 PHOTO CONTROL PT	483480.467	1343826.501	590.207
WC6	101 TRAV STA	484377.965	1343455.515	592.506
1-2-3	199 PHOTO CONTROL PT	485452.944	1342959.800	598.116
1-2-1	199 PHOTO CONTROL PT	486307.883	1342607.016	604.000

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV13A.OBS
Traverse Survey

project: FERNALD job no: 16 date: 1992.0814
crew id: 1 angles: 2 s/n : 69506

Station No.: WC10 Inst. Height: 5.25

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC9	100 B/S STA		214.4328		
2	WC30	101 TRAV STA	5.06	193.2200	90.1045	5190.343

Station No.: WC30 Inst. Height: 5.31

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC10	100 B/S STA		200.0632		
2	4-16-1	199 PHOTO CONTROL PT	5.00	2.5343	81.5047	146.661

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC10	468724.043	1352999.115	566.442	
Beg Back Stn WC9	469212.978	1352326.075	536.671	
End Inst Stn WC30				
End Refr Stn				

No. of Inst. Stations ....: 2
No. of Observations .....: 4

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV13A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 16 date: 1992.0814
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC10		468724.043	1352999.115	566.442	Instrument Station
	N54 00 11W				
WC9	305 59 49				Backsight Station
	N75 21 39W	5190.343	5189.887	-15.488	0.99991641
WC30	284 38 21	470035.676	1347977.706	550.954	TRAV STA

Next Station

WC30		470035.676	1347977.706	550.954	Instrument Station
	S75 21 39E				
WC10	104 38 21				Backsight Station
	S87 25 32W	146.661	145.166	21.111	0.99991622
4-16-1	267 25 32	470029.155	1347832.686	572.065	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV13A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 16 date: 1992.0814
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC10	101 TRAV STA	468724.043	1352999.115	566.442
WC9	100 B/S STA	469212.978	1352326.075	536.671
WC30	101 TRAV STA	470035.676	1347977.706	550.954
4-16-1	199 PHOTO CONTROL PT	470029.155	1347832.686	572.065

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV14A.OBS
Traverse Survey

project: FERNALD job no: 9 date: 1992.0806
crew id: 1 angles: 2 s/n : 69506

Station No.: WC62 Inst. Height: 5.07

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC61	100 B/S STA		178.5228		
2	8-6-2	199 PHOTO CONTROL PT	12.50	351.5842	89.1821	803.281

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC62	480897.319	1356014.630	540.084	
Beg Back Stn WC61	479273.724	1354276.958	540.751	
End Inst Stn WC62	480897.319	1356014.630	540.084	
End Refr Stn				

No. of Inst. Stations ....: 1
No. of Observations .....: 2

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV14A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 9 date: 1992.0806
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC62		480897.319	1356014.630	540.084	Instrument Station
	S46 56 38W				
WC61	226 56 38				Backsight Station
	N40 02 52E	803.281	803.154	2.315	0.99991625
8-6-2	40 02 52	481512.141	1356531.400	542.399	PHOTO CONTROL PT

Traverse Misclosure

Northing .....: 0.000
Easting .....: 0.000
Elevation .....: 5.070

Linear Misclosure..: 0.001

Total Distance ....: 0.000

Error Ratio .....: At Least 1 Part in 0

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV14A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 9 date: 1992.0806
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC62	101 TRAV STA	480897.319	1356014.630	540.084
WC61	100 B/S STA	479273.724	1354276.958	540.751
8-6-2	199 PHOTO CONTROL PT	481512.141	1356531.400	542.399
	102 AZ STA	0.000	0.000	540.084

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAVISA.OBS
Traverse Survey

project: FERNALD job no: 17 date: 1992.0824
crew id: 1 angles: 2 s/n : 69506

Station No.: WC60 Inst. Height: 5.11

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	8011	100 B/S STA		272.5400		
2	8-10-1	199 PHOTO CONTROL PT	15.43	150.3400	90.2658	3433.425
3	8-12-2	199 PHOTO CONTROL PT	20.27	179.4357	90.2120	4383.265

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC60	476756.649	1352803.527	570.344	
Beg Back Stn 8011	475374.290	1352068.160	614.200	
End Inst Stn WC60	476756.649	1352803.527	570.344	
End Refr Stn				

No. of Inst. Stations ....: 1
No. of Observations .....: 3

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV15A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 17 date: 1992.0824
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC60		476756.649	1352803.527	570.344	Instrument Station
	S28 00 41W				
8011	208 00 41				Backsight Station
	N85 40 41E	3433.425	3433.035	-37.011	0.99991607
8-10-1	85 40 41	477015.362	1356226.800	533.333	PHOTO CONTROL PT
	S65 09 22E	4383.265	4382.819	-41.966	0.99991627
8-12-2	114 50 38	474915.217	1356780.741	528.378	PHOTO CONTROL PT

Traverse Misclosure

Northing .....: 0.000
Easting .....: 0.000
Elevation .....: 5.110

Linear Misclosure..: 0.001

Total Distance ....: 0.000

Error Ratio .....: At Least 1 Part in 0

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV15A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project:	FERNALD	job no:	17	date:	1992.0824
crew id:	1	angles:	2	s/n:	69506

Traverse Coordinate Listing

Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC60	101 TRAV STA	476756.649	1352803.527	570.344
8011	100 B/S STA	475374.290	1352068.160	614.200
8-10-1	199 PHOTO CONTROL PT	477015.362	1356226.800	533.333
8-12-2	199 PHOTO CONTROL PT	474915.217	1356780.741	528.378
	102 AZ STA	0.000	0.000	570.344

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAVI6A.OBS
Traverse Survey

project: FERNALD job no: 18 date: 1992.0825
crew id: 1 angles: 2 s/n : 69506

Station No.: WC8 Inst. Height: 5.13

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC7	100 B/S STA		263.1044		
2	WC40	101 TRAV STA	5.00	331.0446	89.1749	754.579

Station No.: WC40 Inst. Height: 5.27

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC8	100 B/S STA		49.0714		
2	WC41	101 TRAV STA	5.00	204.1052	81.3843	297.035

Station No.: WC41 Inst. Height: 5.01

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC40	100 B/S STA		351.2218		
2	WC42	101 TRAV STA	5.00	228.2923	90.4231	132.614

Station No.: WC42 Inst. Height: 7.42

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC41	100 B/S STA		72.5407		
2	6-15-4	199 PHOTO CONTROL PT	28.50	222.4526	86.4825	1045.543

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC8	470054.724	1351864.810	537.396	
Beg Back Stn WC7	470755.987	1351456.422	533.433	
End Inst Stn WC42				
End Refr Stn				

No. of Inst. Stations ....: 4
No. of Observations .....: 8

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV16A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 18 date: 1992.0825
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC8		470054.724	1351864.810	537.396	Instrument Station
	N30 12 53W				
WC7	329 47 07				Backsight Station
	N37 41 09E	754.579	754.459	9.401	0.99991711
WC40	37 41 09	470651.785	1352326.033	546.797	TRAV STA
---------- Next Station ----------					
WC40		470651.785	1352326.033	546.797	Instrument Station
	S37 41 09W				
WC8	217 41 09				Backsight Station
	N12 44 47E	297.035	293.857	43.431	0.99991580
WC41	12 44 47	470938.401	1352390.868	590.228	TRAV STA
---------- Next Station ----------					
WC41		470938.401	1352390.868	590.228	Instrument Station
	S12 44 47W				
WC40	192 44 47				Backsight Station
	N69 51 52E	132.614	132.593	-1.630	0.99991479
WC42	69 51 52	470984.045	1352515.357	588.598	TRAV STA
---------- Next Station ----------					
WC42		470984.045	1352515.357	588.598	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S69 51 52W				
WC41	249 51 52				Backsight Station
	N39 43 11E	1045.543	1043.827	37.180	0.99991389
6-15-4	39 43 11	471786.937	1353182.395	625.778	PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV16A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project:	FERNALD	job no:	18	date:	1992.0825
crew id:	1	angles:	2	s/n:	69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC8	101 TRAV STA	470054.724	1351864.810	537.396
WC7	100 B/S STA	470755.987	1351456.422	533.433
WC40	101 TRAV STA	470651.785	1352326.033	546.797
WC41	101 TRAV STA	470938.401	1352390.868	590.228
WC42	101 TRAV STA	470984.045	1352515.357	588.598
6-15-4	199 PHOTO CONTROL PT	471786.937	1353182.395	625.778

Coordinates Saved to File PRINT.XYZ

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

OBSERVATION File TRAV17A.OBS
Traverse Survey

project: FERNALD job no: 19 date: 1992.0826
crew id: 1 angles: 2 s/n : 69506

Station No.: WC13 Inst. Height: 5.35

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC12	100 B/S STA		253.5925		
2	WC31	101 TRAV STA	5.00	349.0612	91.0124	1282.450

Station No.: WC31 Inst. Height: 5.02

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC13	100 B/S STA		354.2029		
2	WC32	101 TRAV STA	5.10	142.2714	89.5158	530.326

Station No.: WC32 Inst. Height: 5.08

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC31	100 B/S STA		288.1634		
2	1843	101 TRAV STA	5.05	94.3420	90.0915	627.851

Station No.: 1843 Inst. Height: 4.79

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC32	100 B/S STA		136.5442		
2	WC33	101 TRAV STA	5.15	268.3458	89.5023	616.898

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Station No.: WC33 Inst. Height: 5.11

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	1843	100 B/S STA		218.0947		
2	WC34	101 TRAV STA	4.90	357.5133	87.2843	1671.681

Station No.: WC34 Inst. Height: 5.26

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC33	100 B/S STA		197.2034		
2	WC35	101 TRAV STA	5.00	33.5337	85.5742	307.450

Station No.: WC35 Inst. Height: 5.19

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC34	100 B/S STA		23.2838		
2	WC36	101 TRAV STA	5.15	189.5644	87.4659	991.190

Station No.: WC36 Inst. Height: 5.19

Line No.	Point No.	Point Code	Signal Height	Horz. Angle	Vert. Angle	Slope Distance
1	WC35	100 B/S STA		253.4410		
2	7-15-1	199 PHOTO CONTROL PT	8.00	63.3112	89.1121	436.014

GEODIMETER SURVEYING SOFTWARE - V4.30d
SURVEY FIELD NOTES

Control Coordinates as read from File

Control Station	Northing (Y)	Easting (X)	Elevation	Direction
Beg Inst Stn WC13	468053.967	1354868.466	564.917	
Beg Back Stn WC12	468380.627	1354868.569	559.496	
End Inst Stn WC36				
End Refr Stn				

No. of Inst. Stations ....: 8
No. of Observations .....: 16

Project Scale Factor: 1.000000000

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV17A.OBS
Coordinate File .....:
On the disk labeled

unadjusted Coordinates
Length and coordinate units: US survey feet, zone: OHIO 3402

project: FERNALD job no: 19 date: 1992.0826
crew id: 1 angles: 2 s/n: 69506

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
WC13		468053.967	1354868.466	564.917	Instrument Station
	N00 01 05E				
WC12	0 01 05				Backsight Station
	S84 52 08E	1282.450	1282.140	-22.520	0.99991677
WC31	95 07 52	467939.298	1356145.468	542.397	TRAV STA
---------- Next Station ----------					
WC31		467939.298	1356145.468	542.397	Instrument Station
	N84 52 08W				
WC13	275 07 52				Backsight Station
	N63 14 37E	530.326	530.281	1.165	0.99991728
WC32	63 14 37	468178.030	1356618.971	543.562	TRAV STA
---------- Next Station ----------					
WC32		468178.030	1356618.971	543.562	Instrument Station
	S63 14 37W				
WC31	243 14 37				Backsight Station
	N49 32 23E	627.851	627.797	-1.651	0.99991725
1843	49 32 23	468585.420	1357096.634	541.910	TRAV STA
---------- Next Station ----------					
1843		468585.420	1357096.634	541.910	Instrument Station

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
	S49 32 23W				
WC32	229 32 23				Backsight Station
	N01 12 39E	616.898	616.844	1.374	0.99991721
WC33	1 12 39	469202.127	1357109.669	543.284	TRAV STA
---------- Next Station ----------					
WC33		469202.127	1357109.669	543.284	Instrument Station
	S01 12 39W				
1843	181 12 39				Backsight Station
	N39 05 35W	1671.681	1669.916	73.808	0.99991532
WC34	320 54 25	470498.187	1356056.651	617.092	TRAV STA
---------- Next Station ----------					
WC34		470498.187	1356056.651	617.092	Instrument Station
	S39 05 35E				
WC33	140 54 25				Backsight Station
	N22 32 32W	307.450	306.660	21.914	0.99991296
WC35	337 27 28	470781.417	1355939.089	639.006	TRAV STA
---------- Next Station ----------					
WC35		470781.417	1355939.089	639.006	Instrument Station
	S22 32 32E				
WC34	157 27 28				Backsight Station
	N36 04 26W	991.190	990.359	38.403	0.99991147
WC36	323 55 34	471581.882	1355355.938	677.409	TRAV STA

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Station Point	Bearing N.Azimuth	Slope Dist Northing	Grid Dist Easting	Elev Diff Elevation	Comb Fact Description
		Next Station			
WC36		471581.882	1355355.938	677.409	Instrument Station
WC35	S36 04 26E 143 55 34				Backsight Station
7-15-1	N46 17 24W 313 42 36	436.014 471883.115	435.931 1355040.826	3.364 680.773	0.99991042 PHOTO CONTROL PT

Open Traverse

GEODIMETER SURVEYING SOFTWARE - V4.30d
TRAVERSE SURVEY COMPUTATION

Observational File .....: TRAV17A.OBS
Coordinate File .....: PRINT.XYZ
On the disk labeled

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project: FERNALD job no: 19 date: 1992.0826
crew id: 1 angles: 2 s/n: 69506

Traverse Coordinate Listing

Computed as an open traverse
Reduced to NAD 1983 State Plane grid, zone = 3402

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC13	101 TRAV STA	468053.967	1354868.466	564.917
WC12	100 B/S STA	468380.627	1354868.569	559.496
WC31	101 TRAV STA	467939.298	1356145.468	542.397
WC32	101 TRAV STA	468178.030	1356618.971	543.562
1843	101 TRAV STA	468585.420	1357096.634	541.910
WC33	101 TRAV STA	469202.127	1357109.669	543.284
WC34	101 TRAV STA	470498.187	1356056.651	617.092
WC35	101 TRAV STA	470781.417	1355939.089	639.006
WC36	101 TRAV STA	471581.882	1355355.938	677.409
7-15-1	199 PHOTO CONTROL PT	471883.115	1355040.826	680.773

Coordinates Saved to File PRINT.XYZ

COORDINATE LISTING

Date: 09-01-1992
Page: 1

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Coordinates from the file PRINT.XYZ

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
	102 AZ STA	0.000	0.000	540.084
	102 AZ STA	0.000	0.000	570.344
1003	101 TRAV STA	482887.950	1345001.130	579.930
1003	101 TRAV STA	482887.950	1345001.130	579.930
1843	101 TRAV STA	468585.420	1357096.634	541.910
2091	711 WELL CASING	477856.634	1352978.795	536.862
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011	101 TRAV STA	475374.290	1352068.160	614.200
8011	100 B/S STA	475374.290	1352068.160	614.200
8011	100 B/S STA	475374.290	1352068.160	614.200
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012	101 TRAV STA	476298.715	1343075.495	606.587
8012	101 TRAV STA	476298.715	1343075.495	606.587
1-10-2	199 PHOTO CONTROL PT	476171.444	1342376.365	615.340
1-10-3	199 PHOTO CONTROL PT	476432.075	1344240.792	582.097
1-2-1	199 PHOTO CONTROL PT	486307.883	1342607.016	604.000
1-2-2	199 PHOTO CONTROL PT	486402.917	1344037.506	591.132
1-2-3	199 PHOTO CONTROL PT	485452.944	1342959.800	598.116
1-4-2	199 PHOTO CONTROL PT	482842.422	1344070.275	583.971
1-5-2	199 PHOTO CONTROL PT	483480.467	1343826.501	590.207

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
1-6-1	199 PHOTO CONTROL PT	481145.275	1342524.911	603.454
1-8-1	199 PHOTO CONTROL PT	479039.837	1342597.316	597.115
1-8-2	101 TRAV STA	478908.959	1344170.143	582.735
2-1-1	199 PHOTO CONTROL PT	485940.480	1344232.324	586.701
2-1-2	199 PHOTO CONTROL PT	486394.810	1344070.062	589.798
2-10-1	199 PHOTO CONTROL PT	476606.522	1345924.377	577.513
2-2-1	199 PHOTO CONTROL PT	484881.925	1345161.926	572.768
2-2-2	199 PHOTO CONTROL PT	486036.367	1345956.392	571.537
3-14-1	199 PHOTO CONTROL PT	472183.821	1345970.618	619.306
3-14-2	199 PHOTO CONTROL PT	472129.551	1347772.855	522.553
3-2-1	199 PHOTO CONTROL PT	486051.394	1347174.997	589.845
4-16-1	199 PHOTO CONTROL PT	470029.155	1347832.686	572.065
4-18-1	199 PHOTO CONTROL PT	468077.538	1347515.859	530.193
4-18-2	199 PHOTO CONTROL PT	466815.184	1348851.031	549.256
4-18-3	199 PHOTO CONTROL PT	467140.844	1349749.404	543.682
4-19-1	199 PHOTO CONTROL PT	466825.282	1348847.733	549.175
4-2-2	199 PHOTO CONTROL PT	484220.444	1349464.277	673.335
5-20-1	199 PHOTO CONTROL PT	467310.845	1351390.741	532.806
5-4-1	199 PHOTO CONTROL PT	484238.800	1351201.913	664.850
6-15-1	199 PHOTO CONTROL PT	470430.685	1351673.047	535.318
6-15-2	199 PHOTO CONTROL PT	471075.249	1351162.909	528.865
6-15-4	199 PHOTO CONTROL PT	471786.937	1353182.395	625.778
6-2-1	199 PHOTO CONTROL PT	485771.717	1352229.458	669.543
6-2-2	199 PHOTO CONTROL PT	486370.704	1352304.762	754.305
6-2-3	199 PHOTO CONTROL PT	484949.359	1353175.806	620.841

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
7-12-1	199 PHOTO CONTROL PT	475566.351	1353173.704	568.862
7-12-2	199 PHOTO CONTROL PT	474855.572	1354933.791	559.252
7-15-1	199 PHOTO CONTROL PT	471883.115	1355040.826	680.773
7-19-2	199 PHOTO CONTROL PT	468020.257	1354785.993	564.801
7-2-1	199 PHOTO CONTROL PT	485288.271	1354705.967	621.626
7-20-1	199 PHOTO CONTROL PT	466991.344	1353013.089	530.058
7-20-2	199 PHOTO CONTROL PT	466947.709	1354869.917	537.736
8-10-1	199 PHOTO CONTROL PT	476814.927	1351629.253	610.180
8-10-1	199 PHOTO CONTROL PT	477015.362	1356226.800	533.333
8-11-1	199 PHOTO CONTROL PT	474070.259	1356261.909	550.432
8-12-1	199 PHOTO CONTROL PT	474079.468	1356274.586	550.103
8-12-2	199 PHOTO CONTROL PT	474915.217	1356780.741	528.378
8-2-1	199 PHOTO CONTROL PT	486102.160	1355472.990	619.556
8-2-2	199 PHOTO CONTROL PT	485363.266	1356660.306	556.828
8-2-3	199 PHOTO CONTROL PT	484100.499	1356530.149	552.792
8-6-2	199 PHOTO CONTROL PT	481512.141	1356531.400	542.399
8011 AZ	102 AZ STA	476169.589	1352508.417	577.319
8011 AZ	100 B/S STA	476169.589	1352508.417	577.319
8011AZ	102 AZ STA	476169.589	1352508.417	577.319
8011AZ	101 TRAV STA	476169.589	1352508.417	577.319
8012 AZ	100 B/S STA	476157.540	1342085.510	617.264
8012 AZ	102 AZ STA	476157.540	1342085.510	617.264
8012 AZ	100 B/S STA	476157.540	1342085.510	617.264
8012AZ	100 B/S STA	476157.540	1342085.510	617.264
8012AZ	102 AZ STA	476157.540	1342085.510	617.264

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
GPS15	199 PHOTO CONTROL PT	480903.305	1355954.542	540.317
GPS15	100 B/S STA	480903.459	1355954.122	540.317
IM1023	101 TRAV STA	482524.580	1357525.690	542.643
IM1024	199 PHOTO CONTROL PT	479558.812	1354691.278	542.172
IM1025	199 PHOTO CONTROL PT	471852.520	1350389.756	522.467
P10	199 PHOTO CONTROL PT	482730.464	1351001.341	605.083
P8	100 B/S STA	482872.560	1342659.600	612.120
T16 RCF	199 PHOTO CONTROL PT	472127.630	1348692.596	529.797
WC1	101 TRAV STA	482934.021	1357900.165	544.439
WC10	101 TRAV STA	468724.043	1352999.115	566.442
WC10	101 TRAV STA	468724.043	1352999.115	566.442
WC11	101 TRAV STA	468420.140	1353309.463	566.690
WC12	101 TRAV STA	468380.627	1354868.569	559.496
WC12	100 B/S STA	468380.627	1354868.569	559.496
WC13	101 TRAV STA	468053.967	1354868.466	564.917
WC13	101 TRAV STA	468053.967	1354868.466	564.917
WC14	101 TRAV STA	467040.148	1354799.683	540.780
WC15	101 TRAV STA	466419.620	1355069.314	534.877
WC16	101 TRAV STA	466177.264	1355250.599	535.186
WC17	101 TRAV STA	466197.773	1354599.538	539.163
WC18	101 TRAV STA	466625.868	1354087.061	541.779
WC19	101 TRAV STA	466894.402	1353588.696	537.340
WC2	100 B/S STA	482881.885	1344077.701	586.431
WC2	101 TRAV STA	482881.885	1344077.701	586.431
WC20	101 TRAV STA	467041.585	1352605.775	527.671

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC21	101 TRAV STA	467304.389	1351779.546	523.687
WC22	101 TRAV STA	467370.172	1351017.191	546.107
WC23	101 TRAV STA	467399.436	1350401.433	545.689
WC24	101 TRAV STA	467111.159	1349663.304	545.438
WC25	101 TRAV STA	466830.272	1348823.894	548.323
WC26	101 TRAV STA	466676.152	1348476.045	523.947
WC27	101 TRAV STA	467437.273	1348690.560	519.391
WC28	101 TRAV STA	468345.867	1347791.304	530.059
WC29	101 TRAV STA	469533.150	1349308.574	527.079
WC3	101 TRAV STA	478250.234	1343778.004	583.622
WC30	101 TRAV STA	470035.676	1347977.706	550.954
WC31	101 TRAV STA	467939.298	1356145.468	542.397
WC32	101 TRAV STA	468178.030	1356618.971	543.562
WC33	101 TRAV STA	469202.127	1357109.669	543.284
WC34	101 TRAV STA	470498.187	1356056.651	617.092
WC35	101 TRAV STA	470781.417	1355939.089	639.006
WC36	101 TRAV STA	471581.882	1355355.938	677.409
WC4	101 TRAV STA	478663.416	1342751.938	599.119
WC40	101 TRAV STA	470651.785	1352326.033	546.797
WC41	101 TRAV STA	470938.401	1352390.868	590.228
WC42	101 TRAV STA	470984.045	1352515.357	588.598
WC51	101 TRAV STA	476557.652	1344897.927	578.079
WC52	101 TRAV STA	476632.878	1345550.526	581.186
WC53	101 TRAV STA	472154.130	1345807.725	618.078
WC54	101 TRAV STA	472144.363	1346201.856	618.933

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC55	101 TRAV STA	472085.386	1348311.649	531.282
WC56	101 TRAV STA	472062.812	1350092.285	527.235
WC56	100 B/S STA	472062.812	1350092.285	527.235
WC56	102 AZ STA	472062.812	1350092.285	527.235
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC57	101 TRAV STA	471573.650	1350638.849	529.675
WC58	101 TRAV STA	473265.034	1350985.915	602.976
WC59	101 TRAV STA	474646.904	1351787.193	610.172
WC6	101 TRAV STA	484377.965	1343455.515	592.506
WC60	101 TRAV STA	476756.649	1352803.527	570.344
WC60	101 TRAV STA	476756.649	1352803.527	570.344
WC61	101 TRAV STA	479273.724	1354276.958	540.751
WC61	100 B/S STA	479273.724	1354276.958	540.751
WC62	101 TRAV STA	480897.319	1356014.630	540.084
WC62	101 TRAV STA	480897.319	1356014.630	540.084
WC63	101 TRAV STA	482570.042	1357568.468	542.749
WC64	101 TRAV STA	485361.932	1356611.637	558.808
WC65	101 TRAV STA	485348.349	1355655.801	618.915
WC66	101 TRAV STA	485342.819	1355146.452	629.948
WC67	101 TRAV STA	485125.448	1353903.336	625.853
WC67	100 B/S STA	485125.448	1353903.336	625.853
WC68	101 TRAV STA	484678.673	1352195.844	619.236
WC68	100 B/S STA	484678.673	1352195.844	619.236
WC68	101 TRAV STA	484678.673	1352195.844	619.236

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

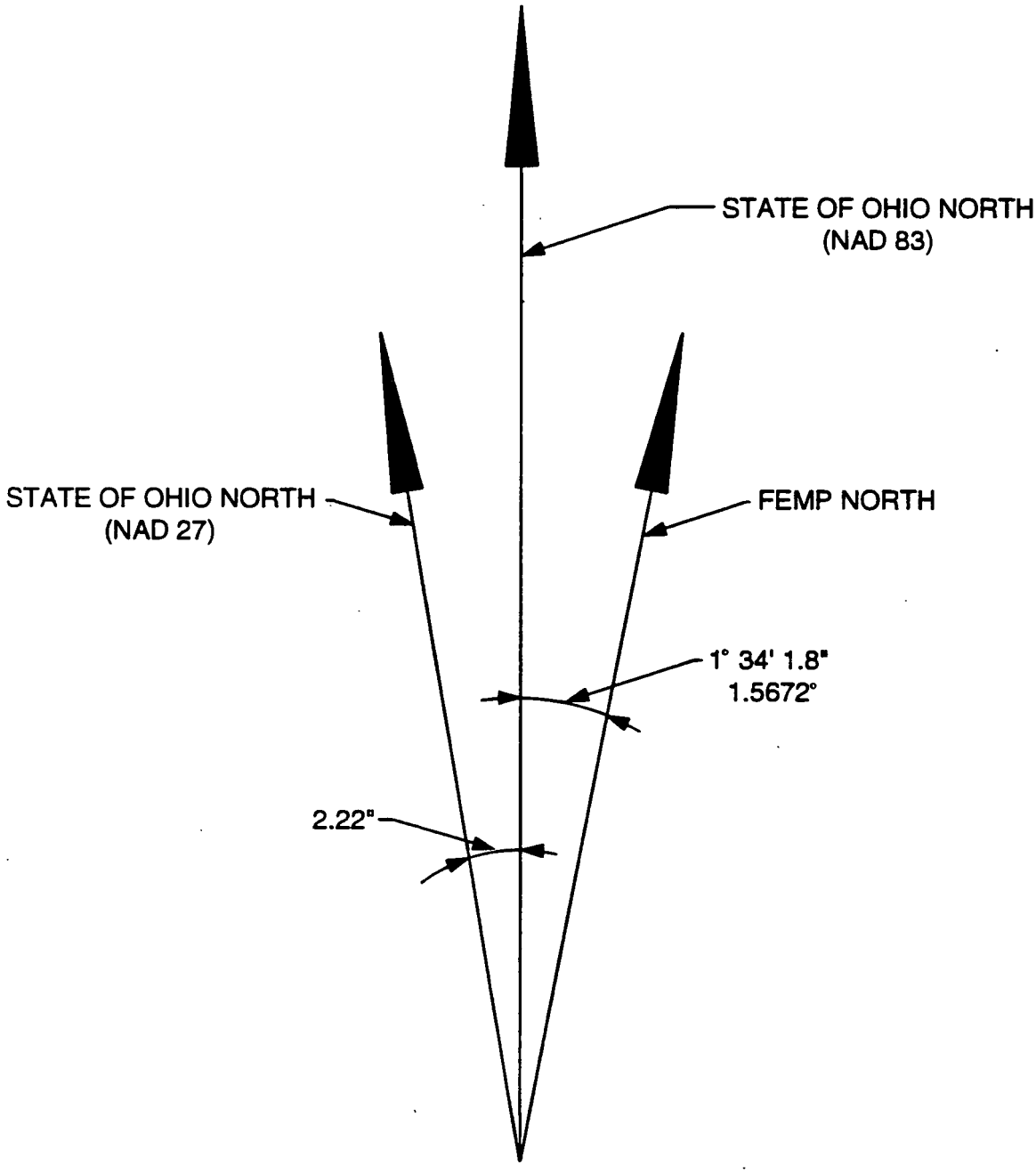
Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC69	101 TRAV STA	483110.514	1351328.392	618.889
WC69	101 TRAV STA	483110.514	1351328.392	618.889
WC7	101 TRAV STA	470755.987	1351456.422	533.433
WC7	100 B/S STA	470755.987	1351456.422	533.433
WC70	101 TRAV STA	479189.705	1350754.734	587.692
WC71	101 TRAV STA	476826.802	1351749.308	610.330
WC72	101 TRAV STA	482610.002	1350904.412	602.787
WC73	101 TRAV STA	482723.187	1349360.004	591.999
WC74	101 TRAV STA	484106.723	1349550.150	673.448
WC75	101 TRAV STA	484409.320	1348904.504	651.858
WC76	101 TRAV STA	485177.087	1348034.389	615.974
WC77	101 TRAV STA	484860.544	1352180.753	626.701
WC78	101 TRAV STA	485339.498	1352207.734	634.431
WC79	101 TRAV STA	485596.812	1352237.866	659.656
WC8	101 TRAV STA	470054.724	1351864.810	537.396
WC8	101 TRAV STA	470054.724	1351864.810	537.396
WC80	101 TRAV STA	486030.416	1352246.991	689.884
WC81	101 TRAV STA	486358.224	1352329.975	745.442
WC82	101 TRAV STA	475964.108	1352767.630	572.416
WC83	101 TRAV STA	475550.499	1353172.270	568.664
WC84	101 TRAV STA	475249.250	1353609.377	563.084
WC85	101 TRAV STA	475121.505	1354543.620	567.725
WC86	101 TRAV STA	474826.265	1355011.682	558.875
WC87	101 TRAV STA	474531.449	1355702.016	560.282
WC88	101 TRAV STA	474408.328	1355817.446	564.217

GEODIMETER SURVEYING SOFTWARE - V4.30d
COORDINATE LISTING

Stn./Point	Pt. Code	Northing/Y	Easting/X	Elev./Z
WC89	101 TRAV STA	474272.305	1356106.832	553.798
WC9	101 TRAV STA	469212.978	1352326.075	536.671
WC9	100 B/S STA	469212.978	1352326.075	536.671
WC90	101 TRAV STA	484454.520	1345161.156	586.325
WC91	101 TRAV STA	486097.905	1345202.574	581.351

ORIGIN OF FEMP COORDINATE SYSTEM

THE ORIGIN OF THE FEMP COORDINATE SYSTEM (N 0,000; E 0,000) IS AT STATE OF OHIO NAD 83 COORDINATE POINT N 482, 814.047, E 1,345,109.597 AND STATE OF OHIO NAD 27 COORDINATE POINT N 482,784.678, E 1,376,578.563



STATE PLANE/UTM
GEODETIC COORDINATE COMPUTATIONS NAD 83

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	STATE PLANE Easting		Geodetic Latitude	Geodetic Longitude	Grid Angle	Grid Factor
US Survey feet			dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point:		Elev:	540.084	AZ STA		
0.000	0.000		37 47 45.30621	89 19 00.02517	-4 19 31.1	1.00031586
Point:		Elev:	570.344	AZ STA		
0.000	0.000		37 47 45.30621	89 19 00.02517	-4 19 31.1	1.00031586
Point: 1003		Elev:	579.930	TRAV STA		
482887.950	1345001.130		39 18 17.78524	84 42 13.20370	-1 23 53.8	0.99993686
Point: 1003		Elev:	579.930	TRAV STA		
482887.950	1345001.130		39 18 17.78524	84 42 13.20370	-1 23 53.8	0.99993686
Point: 1843		Elev:	541.910	TRAV STA		
468585.420	1357096.634		39 15 59.34600	84 39 35.01186	-1 22 13.4	0.99993801
Point: 2091		Elev:	536.862	WELL CASING		
477856.634	1352978.795		39 17 29.98119	84 40 30.19621	-1 22 48.4	0.99993721
Point: 8011		Elev:	614.200	TRAV STA		
475374.290	1352068.160		39 17 05.23545	84 40 41.01457	-1 22 55.3	0.99993741
Point: 8011		Elev:	614.200	TRAV STA		
475374.290	1352068.160		39 17 05.23545	84 40 41.01457	-1 22 55.3	0.99993741
Point: 8011		Elev:	614.200	TRAV STA		
475374.290	1352068.160		39 17 05.23545	84 40 41.01457	-1 22 55.3	0.99993741
Point: 8011		Elev:	614.200	B/S STA		
475374.290	1352068.160		39 17 05.23545	84 40 41.01457	-1 22 55.3	0.99993741
Point: 8011		Elev:	614.200	B/S STA		
475374.290	1352068.160		39 17 05.23545	84 40 41.01457	-1 22 55.3	0.99993741
Point: 8012		Elev:	606.587	TRAV STA		
476298.715	1343075.495		39 17 12.21049	84 42 35.64368	-1 24 08.0	0.99993735
Point: 8012		Elev:	606.587	TRAV STA		
476298.715	1343075.495		39 17 12.21049	84 42 35.64368	-1 24 08.0	0.99993735
Point: 8012		Elev:	606.587	TRAV STA		
476298.715	1343075.495		39 17 12.21049	84 42 35.64368	-1 24 08.0	0.99993735
Point: 8012		Elev:	606.587	TRAV STA		
476298.715	1343075.495		39 17 12.21049	84 42 35.64368	-1 24 08.0	0.99993735
Point: 8012		Elev:	606.587	TRAV STA		
476298.715	1343075.495		39 17 12.21049	84 42 35.64368	-1 24 08.0	0.99993735

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	STATE PLANE Easting	Geodetic Latitude	Geodetic Longitude	Grid Angle	Grid Factor
US Survey feet		dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point: 1-10-2	Elev: 615.340	PHOTO CONTROL PT			
476171.444	1342376.365	39 17 10.78371	84 42 44.49367	-1 24 13.6	0.99993736
Point: 1-10-3	Elev: 582.097	PHOTO CONTROL PT			
476432.075	1344240.792	39 17 13.80985	84 42 20.86798	-1 23 58.6	0.99993734
Point: 1-2-1	Elev: 604.000	PHOTO CONTROL PT			
486307.883	1342607.016	39 18 50.99966	84 42 44.71943	-1 24 13.8	0.99993665
Point: 1-2-2	Elev: 591.132	PHOTO CONTROL PT			
486402.917	1344037.506	39 18 52.28470	84 42 26.55273	-1 24 02.2	0.99993665
Point: 1-2-3	Elev: 598.116	PHOTO CONTROL PT			
485452.944	1342959.800	39 18 42.63726	84 42 39.96557	-1 24 10.8	0.99993671
Point: 1-4-2	Elev: 583.971	PHOTO CONTROL PT			
482842.422	1344070.275	39 18 17.11068	84 42 25.02874	-1 24 01.3	0.99993687
Point: 1-5-2	Elev: 590.207	PHOTO CONTROL PT			
483480.467	1343826.501	39 18 23.35643	84 42 28.32766	-1 24 03.4	0.99993683
Point: 1-6-1	Elev: 603.454	PHOTO CONTROL PT			
481145.275	1342524.911	39 17 59.96711	84 42 44.15462	-1 24 13.4	0.99993699
Point: 1-8-1	Elev: 597.115	PHOTO CONTROL PT			
479039.837	1342597.316	39 17 39.18038	84 42 42.57779	-1 24 12.4	0.99993714
Point: 1-8-2	Elev: 582.735	TRAV STA			
478908.959	1344170.143	39 17 38.26743	84 42 22.53597	-1 23 59.7	0.99993715
Point: 2-1-1	Elev: 586.701	PHOTO CONTROL PT			
485940.480	1344232.324	39 18 47.76234	84 42 23.93081	-1 24 00.6	0.99993667
Point: 2-1-2	Elev: 589.798	PHOTO CONTROL PT			
486394.810	1344070.062	39 18 52.21247	84 42 26.13609	-1 24 02.0	0.99993665
Point: 2-10-1	Elev: 577.513	PHOTO CONTROL PT			
476606.522	1345924.377	39 17 15.93952	84 41 59.51452	-1 23 45.1	0.99993732
Point: 2-2-1	Elev: 572.768	PHOTO CONTROL PT			
484881.925	1345161.926	39 18 37.52690	84 42 11.77752	-1 23 52.9	0.99993674
Point: 2-2-2	Elev: 571.537	PHOTO CONTROL PT			
486036.367	1345956.392	39 18 49.12564	84 42 02.03012	-1 23 46.7	0.99993667
Point: 3-14-1	Elev: 619.306	PHOTO CONTROL PT			
472183.821	1345970.618	39 16 32.24882	84 41 57.55655	-1 23 43.8	0.99[illegible]3770

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing US Survey feet	Easting	Geodetic Latitude dd mm ss.sssss	Longitude ddd mm ss.sssss	Grid Angle dd mm ss.s	Grid Factor
Point: 3-14-2	Elev: 522.553	PHOTO CONTROL PT			
472129.551	1347772.855	39 16 32.14577	84 41 34.62731	-1 23 29.3	0.99993770
Point: 3-2-1	Elev: 589.845	PHOTO CONTROL PT			
486051.394	1347174.997	39 18 49.56734	84 41 46.53382	-1 23 36.9	0.99993666
Point: 4-16-1	Elev: 572.065	PHOTO CONTROL PT			
470029.155	1347832.686	39 16 11.40552	84 41 33.21814	-1 23 28.4	0.99993790
Point: 4-18-1	Elev: 530.193	PHOTO CONTROL PT			
468077.538	1347515.859	39 15 52.04498	84 41 36.64295	-1 23 30.6	0.99993809
Point: 4-18-2	Elev: 549.256	PHOTO CONTROL PT			
466815.184	1348851.031	39 15 39.89148	84 41 19.28209	-1 23 19.6	0.99993821
Point: 4-18-3	Elev: 543.682	PHOTO CONTROL PT			
467140.844	1349749.404	39 15 43.32449	84 41 07.96331	-1 23 12.4	0.99993818
Point: 4-19-1	Elev: 549.175	PHOTO CONTROL PT			
466825.282	1348847.733	39 15 39.99047	84 41 19.32713	-1 23 19.6	0.99993821
Point: 4-2-2	Elev: 673.335	PHOTO CONTROL PT			
484220.444	1349464.277	39 18 32.02457	84 41 16.84906	-1 23 18.0	0.99993677
Point: 5-20-1	Elev: 532.806	PHOTO CONTROL PT			
467310.845	1351390.741	39 15 45.39642	84 40 47.15255	-1 22 59.2	0.99993815
Point: 5-4-1	Elev: 664.850	PHOTO CONTROL PT			
484238.800	1351201.913	39 18 32.62150	84 40 54.75298	-1 23 04.0	0.99993677
Point: 6-15-1	Elev: 535.318	PHOTO CONTROL PT			
470430.685	1351673.047	39 16 16.29193	84 40 44.52130	-1 22 57.5	0.99993785
Point: 6-15-2	Elev: 528.865	PHOTO CONTROL PT			
471075.249	1351162.909	39 16 22.53935	84 40 51.20441	-1 23 01.7	0.99993779
Point: 6-15-4	Elev: 625.778	PHOTO CONTROL PT			
471786.937	1353182.395	39 16 30.05304	84 40 25.74868	-1 22 45.6	0.99993772
Point: 6-2-1	Elev: 669.543	PHOTO CONTROL PT			
485771.717	1352229.458	39 18 48.01384	84 40 42.15361	-1 22 56.0	0.99993667
Point: 6-2-2	Elev: 754.305	PHOTO CONTROL PT			
486370.704	1352304.762	39 18 53.95054	84 40 41.37955	-1 22 55.5	0.99993664
Point: 6-2-3	Elev: 620.841	PHOTO CONTROL PT			
484949.359	1353175.806	39 18 40.11336	84 40 29.86381	-1 22 48.2	0.99993672

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting (US Survey feet)	Geodetic Latitude (dd mm ss.sssss)	Longitude (ddd mm ss.sssss)	Grid Angle (dd mm ss.s)	Grid Factor
Point: 7-12-1	Elev: 568.862	PHOTO CONTROL PT			
475566.351	1353173.704	39 17 07.39658	84 40 27.01630	-1 22 46.4	0.99993739
Point: 7-12-2	Elev: 559.252	PHOTO CONTROL PT			
474855.572	1354933.791	39 17 00.79138	84 40 04.41940	-1 22 32.1	0.99993745
Point: 7-15-1	Elev: 680.773	PHOTO CONTROL PT			
471883.115	1355040.826	39 16 31.44491	84 40 02.15117	-1 22 30.6	0.99993771
Point: 7-19-2	Elev: 564.801	PHOTO CONTROL PT			
468020.257	1354785.993	39 15 53.21419	84 40 04.21173	-1 22 31.9	0.99993808
Point: 7-2-1	Elev: 621.626	PHOTO CONTROL PT			
485288.271	1354705.967	39 18 43.82605	84 40 10.50395	-1 22 35.9	0.99993670
Point: 7-20-1	Elev: 530.058	PHOTO CONTROL PT			
466991.344	1353013.089	39 15 42.62587	84 40 26.43298	-1 22 46.0	0.99993818
Point: 7-20-2	Elev: 537.736	PHOTO CONTROL PT			
466947.709	1354869.917	39 15 42.63586	84 40 02.81761	-1 22 31.0	0.99993818
Point: 8-10-1	Elev: 610.180	PHOTO CONTROL PT			
476814.927	1351629.253	39 17 19.36615	84 40 47.03756	-1 22 59.1	0.99993729
Point: 8-10-1	Elev: 533.333	PHOTO CONTROL PT			
477015.362	1356226.800	39 17 22.43949	84 39 48.63702	-1 22 22.0	0.99993727
Point: 8-11-1	Elev: 550.432	PHOTO CONTROL PT			
474070.259	1356261.909	39 16 53.34623	84 39 47.29327	-1 22 21.2	0.99993751
Point: 8-12-1	Elev: 550.103	PHOTO CONTROL PT			
474079.468	1356274.586	39 16 53.44022	84 39 47.13490	-1 22 21.1	0.99993751
Point: 8-12-2	Elev: 528.378	PHOTO CONTROL PT			
474915.217	1356780.741	39 17 01.81833	84 39 40.95377	-1 22 17.2	0.99993744
Point: 8-2-1	Elev: 619.556	PHOTO CONTROL PT			
486102.160	1355472.990	39 18 52.05035	84 40 00.99586	-1 22 29.9	0.99993665
Point: 8-2-2	Elev: 556.828	PHOTO CONTROL PT			
485363.266	1356660.306	39 18 45.03044	84 39 45.66745	-1 22 20.2	0.99993669
Point: 8-2-3	Elev: 552.792	PHOTO CONTROL PT			
484100.499	1356530.149	39 18 32.52184	84 39 46.93823	-1 22 21.0	0.99993677
Point: 8-6-2	Elev: 542.399	PHOTO CONTROL PT			
481512.141	1356531.400	39 18 06.94576	84 39 46.13360	-1 22 20.5	0.99993694

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting	Geodetic Latitude	Longitude	Grid Angle	Grid Factor
US Survey feet		dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point: 8011 AZ	Elev: 577.319	AZ STA			
476169.589	1352508.417	39 17 13.19896	84 40 35.66047	-1 22 51.9	0.99993734
Point: 8011 AZ	Elev: 577.319	B/S STA			
476169.589	1352508.417	39 17 13.19896	84 40 35.66047	-1 22 51.9	0.99993734
Point: 8011AZ	Elev: 577.319	AZ STA			
476169.589	1352508.417	39 17 13.19896	84 40 35.66047	-1 22 51.9	0.99993734
Point: 8011AZ	Elev: 577.319	TRAV STA			
476169.589	1352508.417	39 17 13.19896	84 40 35.66047	-1 22 51.9	0.99993734
Point: 8012 AZ	Elev: 617.264	B/S STA			
476157.540	1342085.510	39 17 10.57587	84 42 48.18762	-1 24 16.0	0.99993737
Point: 8012 AZ	Elev: 617.264	AZ STA			
476157.540	1342085.510	39 17 10.57587	84 42 48.18762	-1 24 16.0	0.99993737
Point: 8012 AZ	Elev: 617.264	B/S STA			
476157.540	1342085.510	39 17 10.57587	84 42 48.18762	-1 24 16.0	0.99993737
Point: 8012AZ	Elev: 617.264	B/S STA			
476157.540	1342085.510	39 17 10.57587	84 42 48.18762	-1 24 16.0	0.99993737
Point: 8012AZ	Elev: 617.264	AZ STA			
476157.540	1342085.510	39 17 10.57587	84 42 48.18762	-1 24 16.0	0.99993737
Point: GPS15	Elev: 540.317	PHOTO CONTROL PT			
480903.305	1355954.542	39 18 00.79303	84 39 53.28453	-1 22 25.0	0.99993698
Point: GPS15	Elev: 540.317	B/S STA			
480903.459	1355954.122	39 18 00.79446	84 39 53.28992	-1 22 25.0	0.99993698
Point: IM1023	Elev: 542.643	TRAV STA			
482524.580	1357525.690	39 18 17.18518	84 39 33.79596	-1 22 12.6	0.99993687
Point: IM1024	Elev: 542.172	PHOTO CONTROL PT			
479558.812	1354691.278	39 17 47.20806	84 40 08.93976	-1 22 34.9	0.99993708
Point: IM1025	Elev: 522.467	PHOTO CONTROL PT			
471852.520	1350389.756	39 16 30.03513	84 41 01.27245	-1 23 08.1	0.99993772
Point: P10	Elev: 605.083	PHOTO CONTROL PT			
482730.464	1351001.341	39 18 17.66933	84 40 56.84035	-1 23 05.3	0.99993686
Point: P8	Elev: 612.120	B/S STA			
482872.560	1342659.600	39 18 17.06735	84 42 42.97990	-1 24 12.7	0.99993687

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting (US Survey feet)	Geodetic Latitude (dd mm ss.sssss)	Longitude (ddd mm ss.sssss)	Grid Angle (dd mm ss.s)	Grid Factor
Point: T16 RCF	Elev: 529.797	PHOTO-CONTROL PT			
472127.630	1348692.596	39 16 32.34738	84 41 22.93370	-1 23 21.9	0.99993770
Point: WC1	Elev: 544.439	TRAV STA			
482934.021	1357900.165	39 18 21.31948	84 39 29.15758	-1 22 09.7	0.99993684
Point: WC10	Elev: 566.442	TRAV STA			
468724.043	1352999.115	39 15 59.74394	84 40 27.14099	-1 22 46.5	0.99993801
Point: WC10	Elev: 566.442	TRAV STA			
468724.043	1352999.115	39 15 59.74394	84 40 27.14100	-1 22 46.5	0.99993801
Point: WC11	Elev: 566.690	TRAV STA			
468420.140	1353309.463	39 15 56.81481	84 40 23.10293	-1 22 43.9	0.99993804
Point: WC12	Elev: 559.496	TRAV STA			
468380.627	1354868.569	39 15 56.79472	84 40 03.27205	-1 22 31.3	0.99993804
Point: WC12	Elev: 559.496	B/S STA			
468380.627	1354868.569	39 15 56.79473	84 40 03.27205	-1 22 31.3	0.99993804
Point: WC13	Elev: 564.917	TRAV STA			
468053.967	1354868.466	39 15 53.56686	84 40 03.17366	-1 22 31.3	0.99993807
Point: WC13	Elev: 564.917	TRAV STA			
468053.967	1354868.466	39 15 53.56686	84 40 03.17366	-1 22 31.3	0.99993807
Point: WC14	Elev: 540.780	TRAV STA			
467040.148	1354799.683	39 15 43.53263	84 40 03.73857	-1 22 31.6	0.99993817
Point: WC15	Elev: 534.877	TRAV STA			
466419.620	1355069.314	39 15 37.46492	84 40 00.12199	-1 22 29.3	0.99993824
Point: WC16	Elev: 535.186	TRAV STA			
466177.264	1355250.599	39 15 35.11309	84 39 57.74382	-1 22 27.8	0.99993826
Point: WC17	Elev: 539.163	TRAV STA			
466197.773	1354599.538	39 15 35.16132	84 40 06.02544	-1 22 33.1	0.99993826
Point: WC18	Elev: 541.779	TRAV STA			
466625.868	1354087.061	39 15 39.26980	84 40 12.67012	-1 22 37.3	0.99993822
Point: WC19	Elev: 537.340	TRAV STA			
466894.402	1353588.696	39 15 41.80486	84 40 19.08682	-1 22 41.4	0.99993819
Point: WC2	Elev: 586.431	B/S STA			
482881.885	1344077.701	39 18 17.50242	84 42 24.94656	-1 24 01.2	0.99993687

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting US Survey feet	Geodetic Latitude dd mm ss.sssss	Longitude ddd mm ss.sssss	Grid Angle dd mm ss.s	Grid Factor
Point: WC2	Elev: 586.431	TRAV STA			
482881.885	1344077.701	39 18 17.50242	84 42 24.94656	-1 24 01.2	0.99993687
Point: WC20	Elev: 527.671	TRAV STA			
467041.585	1352605.775	39 15 43.02537	84 40 31.62570	-1 22 49.3	0.99993818
Point: WC21	Elev: 523.687	TRAV STA			
467304.389	1351779.546	39 15 45.42536	84 40 42.20845	-1 22 56.0	0.99993815
Point: WC22	Elev: 546.107	TRAV STA			
467370.172	1351017.191	39 15 45.89351	84 40 51.91898	-1 23 02.2	0.99993815
Point: WC23	Elev: 545.689	TRAV STA			
467399.436	1350401.433	39 15 46.03561	84 40 59.75490	-1 23 07.2	0.99993815
Point: WC24	Elev: 545.438	TRAV STA			
467111.159	1349663.304	39 15 43.01056	84 41 09.04858	-1 23 13.1	0.99993818
Point: WC25	Elev: 548.323	TRAV STA			
466830.272	1348823.894	39 15 40.03407	84 41 19.63167	-1 23 19.8	0.99993821
Point: WC26	Elev: 523.947	TRAV STA			
466676.152	1348476.045	39 15 38.42781	84 41 24.00557	-1 23 22.6	0.99993823
Point: WC27	Elev: 519.391	TRAV STA			
467437.273	1348690.560	39 15 46.00008	84 41 21.51355	-1 23 21.0	0.99993815
Point: WC28	Elev: 530.059	TRAV STA			
468345.867	1347791.304	39 15 54.76254	84 41 33.22451	-1 23 28.4	0.99993806
Point: WC29	Elev: 527.079	TRAV STA			
469533.150	1349308.574	39 16 06.85810	84 41 14.30340	-1 23 16.4	0.99993794
Point: WC3	Elev: 583.622	TRAV STA			
478250.234	1343778.004	39 17 31.66371	84 42 27.31783	-1 24 02.7	0.99993720
Point: WC30	Elev: 550.954	TRAV STA			
470035.676	1347977.706	39 16 11.50476	84 41 31.37661	-1 23 27.2	0.99993790
Point: WC31	Elev: 542.397	TRAV STA			
467939.298	1356145.468	39 15 52.73642	84 39 46.90611	-1 22 20.9	0.99993808
Point: WC32	Elev: 543.562	TRAV STA			
468178.030	1356618.971	39 15 55.20747	84 39 40.95984	-1 22 17.2	0.99993806
Point: WC33	Elev: 543.284	TRAV STA			
469202.127	1357109.669	39 16 05.44299	84 39 35.03370	-1 22 13.4	0.99993795

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting	Geodetic Latitude	Longitude	Grid Angle	Grid Factor
US Survey feet		dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point: WC34	Elev: 617.092 TRAV STA				
470498.187	1356056.651	39 16 18.00070	84 39 48.81462	-1 22 22.2	0.99993783
Point: WC35	Elev: 639.006 TRAV STA				
470781.417	1355939.089	39 16 20.77156	84 39 50.39546	-1 22 23.2	0.99993781
Point: WC36	Elev: 677.409 TRAV STA				
471581.882	1355355.938	39 16 28.54306	84 39 58.05314	-1 22 28.0	0.99993773
Point: WC4	Elev: 599.119 TRAV STA				
478663.416	1342751.938	39 17 35.49832	84 42 40.49426	-1 24 11.1	0.99993717
Point: WC40	Elev: 546.797 TRAV STA				
470651.785	1352326.033	39 16 18.63234	84 40 36.28790	-1 22 52.3	0.99993783
Point: WC41	Elev: 590.228 TRAV STA				
470938.401	1352390.868	39 16 21.47993	84 40 35.55152	-1 22 51.8	0.99993780
Point: WC42	Elev: 588.598 TRAV STA				
470984.045	1352515.357	39 16 21.96061	84 40 33.98290	-1 22 50.8	0.99993780
Point: WC51	Elev: 578.079 TRAV STA				
476557.652	1344897.927	39 17 15.20927	84 42 12.55121	-1 23 53.4	0.99993733
Point: WC52	Elev: 581.186 TRAV STA				
476632.878	1345550.526	39 17 16.10990	84 42 04.27641	-1 23 48.1	0.99993732
Point: WC53	Elev: 618.078 TRAV STA				
472154.130	1345807.725	39 16 31.91622	84 41 59.61827	-1 23 45.2	0.99993770
Point: WC54	Elev: 618.933 TRAV STA				
472144.363	1346201.856	39 16 31.91458	84 41 54.60452	-1 23 42.0	0.99993770
Point: WC55	Elev: 531.282 TRAV STA				
472085.386	1348311.649	39 16 31.83863	84 41 27.76380	-1 23 24.9	0.99993770
Point: WC56	Elev: 527.235 TRAV STA				
472062.812	1350092.285	39 16 32.04198	84 41 05.11897	-1 23 10.6	0.99993770
Point: WC56	Elev: 527.235 B/S STA				
472062.812	1350092.285	39 16 32.04198	84 41 05.11897	-1 23 10.6	0.99993770
Point: WC56	Elev: 527.235 AZ STA				
472062.812	1350092.285	39 16 32.04198	84 41 05.11897	-1 23 10.6	0.99993770
Point: WC57	Elev: 529.675 TRAV STA				
471573.650	1350638.849	39 16 27.33905	84 40 58.01994	-1 23 06.1	0.99993775

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting (US Survey feet)	Geodetic Latitude (dd mm ss.sssss)	Longitude (ddd mm ss.sssss)	Grid Angle (dd mm ss.s)	Grid Factor
Point: WC57	Elev: 529.675 TRAV STA				
471573.650	1350638.849	39 16 27.33906	84 40 58.01994	-1 23 06.1	0.99993775
Point: WC57	Elev: 529.675 TRAV STA				
471573.650	1350638.849	39 16 27.33906	84 40 58.01994	-1 23 06.1	0.99993775
Point: WC58	Elev: 602.976 TRAV STA				
473265.034	1350985.915	39 16 44.13503	84 40 54.12727	-1 23 03.6	0.99993759
Point: WC59	Elev: 610.172 TRAV STA				
474646.904	1351787.193	39 16 57.98093	84 40 44.36387	-1 22 57.4	0.99993747
Point: WC6	Elev: 592.506 TRAV STA				
484377.965	1343455.515	39 18 32.13511	84 42 33.32553	-1 24 06.5	0.99993677
Point: WC60	Elev: 570.344 TRAV STA				
476756.649	1352803.527	39 17 19.07017	84 40 32.08789	-1 22 49.6	0.99993730
Point: WC60	Elev: 570.344 TRAV STA				
476756.649	1352803.527	39 17 19.07017	84 40 32.08789	-1 22 49.6	0.99993730
Point: WC61	Elev: 540.751 TRAV STA				
479273.724	1354276.958	39 17 44.29261	84 40 14.12158	-1 22 38.2	0.99993710
Point: WC61	Elev: 540.751 B/S STA				
479273.724	1354276.958	39 17 44.29261	84 40 14.12158	-1 22 38.2	0.99993710
Point: WC62	Elev: 540.084 TRAV STA				
480897.319	1356014.630	39 18 00.74812	84 39 52.51850	-1 22 24.5	0.99993698
Point: WC62	Elev: 540.084 TRAV STA				
480897.319	1356014.630	39 18 00.74812	84 39 52.51851	-1 22 24.5	0.99993698
Point: WC63	Elev: 542.749 TRAV STA				
482570.042	1357568.468	39 18 17.64451	84 39 33.26571	-1 22 12.3	0.99993686
Point: WC64	Elev: 558.808 TRAV STA				
485361.932	1356611.637	39 18 45.00574	84 39 46.28611	-1 22 20.6	0.99993669
Point: WC65	Elev: 618.915 TRAV STA				
485348.349	1355655.801	39 18 44.64507	84 39 58.44033	-1 22 28.3	0.99993669
Point: WC66	Elev: 629.948 TRAV STA				
485342.819	1355146.452	39 18 44.46961	84 40 04.91762	-1 22 32.4	0.99993669
Point: WC67	Elev: 625.853 TRAV STA				
485125.448	1353903.336	39 18 42.02643	84 40 20.66363	-1 22 42.4	0.99993671

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting US Survey feet	Geodetic Latitude dd mm ss.sssss	Longitude ddd mm ss.sssss	Grid Angle dd mm ss.s	Grid Factor
Point: WC67	Elev: 625.853	B/S STA			
485125.448	1353903.336	39 18 42.02643	84 40 20.66363	-1 22 42.4	0.99993671
Point: WC68	Elev: 619.236	TRAV STA			
484678.673	1352195.844	39 18 37.20517	84 40 42.24570	-1 22 56.1	0.99993674
Point: WC68	Elev: 619.236	B/S STA			
484678.673	1352195.844	39 18 37.20517	84 40 42.24570	-1 22 56.1	0.99993674
Point: WC68	Elev: 619.236	TRAV STA			
484678.673	1352195.844	39 18 37.20517	84 40 42.24570	-1 22 56.1	0.99993674
Point: WC69	Elev: 618.889	TRAV STA			
483110.514	1351328.392	39 18 21.50281	84 40 52.79748	-1 23 02.8	0.99993684
Point: WC69	Elev: 618.889	TRAV STA			
483110.514	1351328.392	39 18 21.50281	84 40 52.79748	-1 23 02.8	0.99993684
Point: WC7	Elev: 533.433	TRAV STA			
470755.987	1351456.422	39 16 19.45467	84 40 47.37502	-1 22 59.3	0.99993782
Point: WC7	Elev: 533.433	B/S STA			
470755.987	1351456.422	39 16 19.45466	84 40 47.37501	-1 22 59.3	0.99993782
Point: WC70	Elev: 587.692	TRAV STA			
479189.705	1350754.734	39 17 42.62322	84 40 58.88793	-1 23 06.6	0.99993711
Point: WC71	Elev: 610.330	TRAV STA			
476826.802	1351749.308	39 17 19.51213	84 40 45.51462	-1 22 58.1	0.99993729
Point: WC72	Elev: 602.787	TRAV STA			
482610.002	1350904.412	39 18 16.45586	84 40 58.03611	-1 23 06.1	0.99993687
Point: WC73	Elev: 591.999	TRAV STA			
482723.187	1349360.004	39 18 17.20483	84 41 17.71375	-1 23 18.6	0.99993687
Point: WC74	Elev: 673.448	TRAV STA			
484106.723	1349550.150	39 18 30.92143	84 41 15.72176	-1 23 17.3	0.99993678
Point: WC75	Elev: 651.858	TRAV STA			
484409.320	1348904.504	39 18 33.75679	84 41 24.02731	-1 23 22.6	0.99993676
Point: WC76	Elev: 615.974	TRAV STA			
485177.087	1348034.389	39 18 41.13456	84 41 35.33196	-1 23 29.7	0.99993671
Point: WC77	Elev: 626.701	TRAV STA			
484860.544	1352180.753	39 18 38.99868	84 40 42.49347	-1 22 56.2	0.99993673

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting	Geodetic Latitude	Longitude	Grid Angle	Grid Factor
US Survey feet		dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point: WC78	Elev: 634.431 TRAV STA				
485339.498	1352207.734	39 18 43.73780	84 40 42.29729	-1 22 56.1	0.99993670
Point: WC79	Elev: 659.656 TRAV STA				
485596.812	1352237.866	39 18 46.28756	84 40 41.99297	-1 22 55.9	0.99993668
Point: WC8	Elev: 537.396 TRAV STA				
470054.724	1351864.810	39 16 12.62266	84 40 41.96817	-1 22 55.9	0.99993788
Point: WC8	Elev: 537.396 TRAV STA				
470054.724	1351864.810	39 16 12.62266	84 40 41.96817	-1 22 55.9	0.99993788
Point: WC80	Elev: 689.884 TRAV STA				
486030.416	1352246.991	39 18 50.57430	84 40 42.00999	-1 22 55.9	0.99993666
Point: WC81	Elev: 745.442 TRAV STA				
486358.224	1352329.975	39 18 53.83323	84 40 41.05500	-1 22 55.3	0.99993664
Point: WC82	Elev: 572.416 TRAV STA				
475964.108	1352767.630	39 17 11.23028	84 40 32.30148	-1 22 49.7	0.99993736
Point: WC83	Elev: 568.664 TRAV STA				
475550.499	1353172.270	39 17 07.23960	84 40 27.02969	-1 22 46.4	0.99993739
Point: WC84	Elev: 563.084 TRAV STA				
475249.250	1353609.377	39 17 04.36684	84 40 21.37960	-1 22 42.8	0.99993742
Point: WC85	Elev: 567.725 TRAV STA				
475121.505	1354543.620	39 17 03.32654	84 40 09.46163	-1 22 35.3	0.99993743
Point: WC86	Elev: 558.875 TRAV STA				
474826.265	1355011.682	39 17 00.52027	84 40 03.42008	-1 22 31.4	0.99993745
Point: WC87	Elev: 560.282 TRAV STA				
474531.449	1355702.016	39 16 57.77078	84 39 54.55267	-1 22 25.8	0.99993747
Point: WC88	Elev: 564.217 TRAV STA				
474408.328	1355817.446	39 16 56.58153	84 39 53.04747	-1 22 24.8	0.99993748
Point: WC89	Elev: 553.798 TRAV STA				
474272.305	1356106.832	39 16 55.30599	84 39 49.32657	-1 22 22.5	0.99993750
Point: WC9	Elev: 536.671 TRAV STA				
469212.978	1352326.075	39 16 04.41502	84 40 35.84638	-1 22 52.0	0.99993796
Point: WC9	Elev: 536.671 B/S STA				
469212.978	1352326.075	39 16 04.41502	84 40 35.84638	-1 22 52.0	0.99993796

GEODIMETER SURVEYING SOFTWARE - V4.30d
STATE PLANE/UTM - GEODETIC COORDINATE COMPUTATIONS
NAD 1983, OHIO, ZONE 3402

STATE PLANE Northing	Easting	Geodetic Latitude	Longitude	Grid Angle	Grid Factor
US Survey feet		dd mm ss.sssss	ddd mm ss.sssss	dd mm ss.s	
Point: WC90	Elev: 586.325 TRAV STA				
484454.520	1345161.156	39 18 33.30343	84 42 11.65463	-1 23 52.8	0.99993676
Point: WC91	Elev: 581.351 TRAV STA				
486097.905	1345202.574	39 18 49.55204	84 42 11.63795	-1 23 52.8	0.99993666

6343

FIELD BOOK NOTES

STA	+	DIFF ELEV	-	ELEV.
IM1020	7.41			521.998
	6.10		0.43	
4-18.1	13.51	+8.19	4.89	530.19
			5.32	
	CHECK LEVELS			
IM 1020	7.41			
	5.81		0.14	
4181	13.22	+8.19	4.89	530.19
			5.03	
	END			

28 JULY 1992
D TREAS
S TREAS

30-31-051731-02
FERNALD GMP2.

CLEAR

CAG 9 | IM POINT

CENTER OF WALK @ N. END

1837

000187

6343

STA	+	DIFF ELEV	-	ELEV	
IM1026	7.33			521.998	CAGIS IM POINT
	3.51		7.85		
	19.77		1.63		
	15.40		1.02		
	14.06		0.78		
4-17-1	60.05	+46.39	2.38	568.39	OPP P.P NORTH ℄ RD. BARN NAIL
			13.66		
	3.62				
	2.45		14.36		
4-17-2	6.07	-16.19	7.90	552.20	℄ RD. NORTH OF P.P BARN NAIL
			22.26		
	P 4 FOR CHCK LEVEL				

000188

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
IM 1026	7.33			521.998
	3.60		7.94	
	19.47		1.33	
	15.20		0.82	
	13.79		0.52	
4-17-1	59.39	+46.40	2.38	563.40
			12.99	
	3.62			
	2.67		14.58	
4-17-2	6.29	-16.19	7.90	552.21
			22.48	
		END		

000189

6343

STA	+	DIFF ELEV	−	ELEV	
I11026	8.64			521.998	CAGIS TM Pt. DT
	5.19		1.97		
4-17-4	13.83	+3.01	8.85	525.01	EDGE RD. SOUTH OF P.P. CONC NAIL
			10.82		
	4.93				
4-17-5		-1.56	6.49	523.45	EDGE RD OPP POLE EAST CONC NAIL
	CHECK LEVELS				
I11026	8.64				
	5.45		2.23		
4-17-4	14.09	+3.01	8.85	526.01	
			11.08		
	4.93				
4-17-5		-1.56	6.49	523.45	
	END				

000190

STA.	1	DIFF ELEV	-	ELEV		
TIG RCF 4-15-1	1.35			529.798		USGS MON CAP:
		+0.71	4.64	530.51		E 40 OPP. P.P. SOUTH CONC. NAIL
		CHECK	LEVELS			
	1.41					
TIG RCF		-0.71	5.12	529.80	529.798	
		END				
TIG RCF 3-15-2	1.16			529.798		USGS MON CAP
		-5.62	9.78	524.18		E 80 OPP. P.P. NORTH CONC. NAIL
		CHECK	LEVELS			
	1.48					
TIG RCF		+5.62	3.86	529.80	529.798	
		END				

000191

6343

STA	+	DIFF ELEV	-	ELEV	
IM 1028	4.80			620.655	
3-13-1		-5.19	9.99	615.47	
	9.87				
3-15-1		+4.85	5.02	620.32	
	4.72				
IM 1028		+0.34	4.38	620.66	
	END				
8012 AZ	4.95			617.264	
1-11-1		-0.80	5.75	616.46	
		CHECK LEVELS			
	5.65				
8012 AZ		+ .80	4.85	617.26	617.26
		END			

CAGS IM POINT CONC. MON WITH CROSS
M.O POINT BETWEEN E. TWO TOWER LEGS (BARN NAIL)

4.10 (CONC. NAIL)

CITY OF CINCINNATI MON # 1813 CAGS
E RD OPP. P.P. SOUTH CONC. NAIL

000132

STA	+	DIFF ELEV	-	ELEV
T16 REF	4.97			529.798
	2.80		3.59	
4-13-1	7.77	+1.75	2.43	531.55
			6.02	
	3.69			
	4.42		5.45	
4-11-3	8.11	-1.77	4.43	529.78
			9.88	
	CHECK	LEVELS		
T16 REF	4.97			529.798
	3.21		4.00	
4-13-1	8.18	+1.75	2.43	531.55
			6.43	
	3.69			
	4.18		5.20	
4-11-3	7.87	-1.76	4.43	529.78
			9.63	
	END			

USCS MON CAP

E. EDGE PAV. OPP E. DITCH (CONC. NAIL)

E. CO. OPP. PP. EAST (CONC. NAIL)

STA	+	DIFF ELEV	−	ELEV	
8012	3.06			606.587	
	1.10		13.06		
	4.50		8.84		
1-11-3	8.66	-19.81	6.57	586.78	586.79
			28.47		
	6.35				
1-11-2		-3.75	10.10	583.03	583.02
	0.55				
	3.57		2.39		
2-11-1	4.12	-3.91	5.64	579.12	579.13
			8.03		
	4.19				
	1.88		9.48		
	1.72		17.77		
TP#1	7.79	-27.91	8.45	551.21	551.23
			35.70		

CAGIS CITY OF CINCINNATI IRON # 1814

℄ RD OVER ℄ DRAIN (BOLT NAIL)

℄ RD OPP P.P. SOUTH (CONC NAIL)

S. EDGE PAV. OPP P.P. SOUTH (CONC NAIL)

CONC NAIL SET S EDGE PAV. ℄ DRIVE TO #TAGS

000134

CITY OF CINCINNATI PROJ #1819- CAGIS

CHECK LEVEIC

STA	+	DIFF ELEV	−	ELEV.
8012	3.06			606.587
	1.34		13.30	
	4.80		9.14	
3 1-11-3	9.20	-19.81	6.57	586.78
			29.01	
	6.35			
4 1-11-2		-3.75	10.10	583.03
	0.55			
	3.50		2.31	
6 2-11-1	4.05	-3.90	5.64	579.13
			7.95	
	4.19			
	2.04		9.64	
	1.97		18.02	
9 TP#1	8.20	-27.91	8.45	551.22
			36.11	

6343

000195

STA	+	DIFF ELEV	–	ELEV	
TP #1	3.03			551.21	551.23
	6.96		15.29		
1815-2	9.99	-10.04	4.74	541.17	541.19
			20.03		
	2.40				
	4.61		5.77		
P 28 4-11-0	7.01	-5.53	6.77	535.64	535.66
			12.54		

P 2 CHECK LEVELS

P#9 THIS BOOK

CITY OF CINCINNATI MON N.E. COR.
PADDYS RUN RD & WILLEY RD.

CAGIS P 28 | CAGIS P 28 CITY OF CIN. MON 1816.2
535.90
535.66
.24 ERROR TO CAGIS ELEV

001196

CHECK LEVELS

STA	+	DIFF ELEV	-	ELEV
TP#1	3.03			551.22
	7.17		15.50	
1815-2	10.20	-10.04	4.74	541.18
			20.24	
	2.40			
	4.81		5.97	
4-11-0	7.21	-5.53	6.77	535.65
			12.74	

12.

GAG. IS P28 C OF C 1816-2

1837

6343

000197

STA	+	DIFF ELEV	−	ELEV	ADJ.	
1816-2	15.21			535.64	535.66	CAGS P28 CITY OF CINN MON PIL THIS BK
	17.75		0.88			
	17.07		0.61			
4-11-1	50.03	+38.69	9.85	574.33	574.36	S. EDGE PAV. @ WHITE STAGE (CONC NAIL)
			11.34			
	9.49					
4-11-2		+6.60	2.89	580.93	580.96	SOUTH EDGE PAV. OPP. E. DRIVE S. (CONC NAIL)
	14.20					
	6.56		0.08			
5-11-1	20.76	+17.56	3.12	598.49	598.53	N. EDGE PAV. OPP. PP1 NORTH (CONC NAIL)
			3.20			
	7.35					
	0.40		16.39			
1808 8011 A2	7.75	-21.21	12.57	577.28	577.319	CITY OF CINN. MON D.SN. LEVELS CAGS.
			28.96			H. OK ERROR TIE FROM 8012 TO
	P12	CHECK	LEVELS			8011 A2 CAGS
	TIE					

000138

CHECK LEVELS

STA	+	DIFF ELEV	-	ELEV	
1816-2	15.21			535.65	
	17.55		0.69		
	16.97		0.51		
4-11-1	49.73	+38.68	9.85	574.33	
			11.05		
	9.49				
4-11-2		+6.60	2.89	580.93	
	14.20				
	6.86		0.39		
5-11-1	21.06	+17.55	3.12	598.48	
			3.51		
	7.35				
	0.70		16.68		
1808 8011 A2	8.05	-21.20	12.57	577.28	577.39
			29.25		

END

000199

6343

STA	+	OFF ELEV	−	ELEV
5-11-1	15.23			598.53
8-16-1				
GPS 14		+11.69	3.54	610.22
		CHECK	LEVELS	
	3.41			
5-11-1		-11.69	15.10	598.53
		END		

D TREAS
P TREAS

30-31-051731-02
FERNALD EMP

15.

29 July 1992

PC & HOT

P 13 THIS BOOK

EP SET IN CONC. GPS BY WOOLPERT

002600

STA	+	DIFF ELEV	−	ELEV		
1815-2	13.99				541.A	CITY OF CINNAMON P.11 THIS BOOK
	17.51		0.60			
	10.09		1.23			
	7.31		10.88			
	19.56		1.95			
3-7-1	68.46	+49.39	4.41	590.58		℄ RD. OPP. P.P. WEST (CONC. WALL)
			19.07			
	1.93					
	0.32		9.72			
	18.69		6.79			
3-7-3	20.94	-1.78	6.21	588.80		℄ RD. OPP. P.P. WEST (CONC. WALL)
			22.72			
	5.90					
2-5-1		-8.99	14.89	579.81		℄ RD. OPP. P.P. WEST (CONC. WALL)
	6.50					
1003		+0.09	6.41	579.90	579.93	T1 BUTLER CO GPS MON

000201

6343

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
1815-2	13.99			591.19
	17.39		0.47	
	10.30		1.44	
	7.31		10.88	
	19.68		2.07	
3-7-1	68.67	+49.40	4.41	590.59
			19.27	
	1.93			
	0.56		9.96	
	18.59		6.68	
3-7-3	21.08	−1.77	6.21	588.82
			22.85	
	5.90			
2-5-1		−8.99	14.89	579.83
	6.50			
1003		+0.09	6.41	579.92
		END		

000202

STA	+	DIFF ELEV	—	ELEV	
1003	5.02			579.93	BUYER CO-MON GPS
	7.95		1.96		
1-5-1	12.97	+8.29	2.72	588.22	℄ WEST TRACK & ℄ ROAD (PK NAIL)
			4.68		
	5.21				
1-5-2		+2.08	3.13	590.30	℄ WEST TRACKS OPP. N. FOUNDATION LINE (COTC NAIL)
	6.32				
1-3-1		+4.37	1.95	594.67	℄ WEST TRACKS & ℄ ROAD (BACK NAIL)
	P 19 CK LEVEL				

000203

6343

STA	+	CHECK DIFF ELEV	LEVELS -	ELEV
1003	5.02			
	7.97		1.98	
1-5-1	12.99	+8.29	2.72	588.22
			4.70	
	5.21			
1-5-2		+2.08	3.13	590.30
	6.32			
1-3-1		+4.37	1.95	594.67
		END		

000204

STA	+	DIFF ELEV	−	ELEV		
1003	4.35			579.93		BUTLER CO GPS MON
2-3-1		-.12	4.47	579.81		@ RQ OPP FENCE LOK EAST (CALC. NAIL)
	10.01					
2-2-1		-7.14	17.15	572.67		@ STRIPE @ RAD. CHANGE (PK NAIL)
	17.04					
1003		+7.26	9.78	579.93	579.93	BUTLER CO. MON.
	CHECK LEVELS					
1003	4.35			579.93		
2-3-1		-0.12	4.47	579.81		
	10.01					
2-2-1		-7.14	17.15	572.67		
	17.04					
1003		+7.26	9.78	579.93		
		END				

000205

6343

STA	+	DIFF ELEV	−	ELEV	
5-11-1	1.12			598.53	
5-9-3		-14.32	15.44	584.21	
	0.98				
	4.75		7.52		
5-9-1	5.73	-7.10	5.31	577.11	
			12.83		
	4.83				
5-9-2		-1.02	5.85	576.09	
	7.34				
	7.69		2.35		
5-9-4	15.03	+7.89	4.79	583.98	
			7.14		
	5.98				
5-7-1		+3.63	2.35	587.61	
	CONTD. ON P23				

D. TREAS
P TREAS
30 July 1992 PC 1 HOT

21.

P13 THIS BK

WEST ED. PAV. OPP POLE WEST (CONC NAIL)

℄ RD OPP WALK WAY NORTH (CONC NAIL)

℄ RD. OPP WALKWAY NORTH (CONC NAIL)

℄ RD. OPP. FENCE COR. WEST (CONC NAIL)

℄ RD. ON EXTENDED S. LINE OF BLDG WEST CONC NAIL

1837

000206

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
5-11-1	1.12			598.53
5-9-3		-14.32	15.44	584.21
	0.98			
	4.75		7.52	
5-9-1	5.73	-7.10	5.31	577.11
			12.83	
	4.83			
5-9-2		-1.02	5.85	576.09
	7.34			
	7.97		2.63	
5-9-4	15.31	+7.89	4.79	583.98
			7.42	
	5.98			
5-7-1		+3.63	2.35	587.61
	CONTD ON		P 24	

6343

000207

STA	+	DIFF ELEV	-	ELEV	
5-7-1	6.58			587.61	
	11.05		0.39		
	4.66		0.80		
P 10	22.29	+17.47	3.63	605.08	605.09
			4.82		

END

P 21 THIS BK

NO LEAP CAGS GPS POINT

605.09
605.08
.01 ERROR.

002008

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV	
5-7-1	6.58				
	10.98		0.31		
	4.70		0.85		
P 10	22.26	+17.47	3.63	605.08	605.09
			4.79		

END

CONTD FROM P 22 FIELD BK

000209

6343

STA	+	OFF ELEV	-	ELEV	
P10	3.12			605.09	
	0.46		7.72		
4-5-1	3.58	-15.31	11.17	589.78	E RD @ GATE (COND. NAIL)
			18.89		
	4.05				
	1.96		8.69		
3.5-2	6.01	-10.55	7.87	579.23	E RD. OPP. E DRAIN (COND. NAIL)
			16.56		
	8.97				
3-5-1		+0.84	8.13	590.07	E RD. OPP. N. SIDE CLUMP BUSH SAKEDS COND. NAIL

END
P26 CK LEVELS

000210

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
P.10	3.12			
	0.48		7.74	
4-5-1	3.60	-15.31	11.17	589.78
			18.91	
	4.05			
	1.91		8.64	
3-5-2	5.96	-10.55	7.87	579.23
			16.51	
	8.97			
3-5-1		+0.84	8.13	580.07
		END		

000211

6343

STA	+	DIFF ELEV	−	ELEV	
4-5-1	7.31			589.78	P 25 THIS BK
	6.09		2.49		
4-3-3	13.40	+7.89	3.02	597.67	℄ RD OPP FIRE LANE EAST (CONC. NAIL)
			5.51		
	18.78				
	19.77		0.56		
4-3-2	38.55	+36.93	1.06	634.60	℄ RD OPP FIRE LANE EAST (CONC. NAIL)
			1.62		
	19.54				
	19.71		1.44		
	7.73		0.85		
4-3-1	46.98	+39.93	4.76	674.53	℄ RD. OPP P.P. SOUTH
			7.05		
	P 28 CK LEVELS				

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
4-5-1	7.31			589.78
	6.17		2.57	
4-3-3	13.48	+7.89	3.02	597.67
			5.59	
	18.78			
	19.56		0.35	
4-3-2	38.34	+36.93	1.06	634.60
			1.41	
	19.54			
	19.52		1.24	
	7.45		0.57	
4-3-1	46.51	+39.94	4.76	674.54
			6.57	
		END		

000213

6343

STA	+	OFF ELEV	−	ELEV
5-9-2	6.33			576.09
	5.53		5.35	
4-9-1	11.86	-3.39	9.90	572.70
			15.25	
	1.04			
4-9-2		-4.63	5.67	568.07
	CHECK LEVELS			
5-9-2	6.33			576.09
	5.98		5.80	
4-9-1	12.31	-3.39	9.90	572.70
			15.70	
	1.02			
4-9-2		-4.63	5.67	568.07
	END			

P. 21 THIS BOOK

℄ RD OPP. LONE TREE SOUTH (CONC NAIL)

E RD OPP. LONE TREE SOUTH (CONC NAIL)

000214

STA	+	DIFF ELEV	−	ELEV	
P10	7.61			605.09	
	14.40		0.43		
TP#2	22.01	+16.49	5.09	621.58	
			5.52		
	14.85				
	18.03		1.94		
	19.19		7.12		
	10.09		0.84		
S-3-1	62.16	+9.62	2.64	671.20	
			12.54		
	P31 FOR CHECK LEVELS				
1003	3.48			579.93	
2-5-2		-7.49	10.97	572.44	
		CHECK LEVELS			
	9.60				
1003		+7.49	2.11	579.93	579.93
		END			

CAGS GPS POINT NAIL & CAP

BASE OF E. GATE POST OF N. ENT. TO FGRMLD GATE ON HWY 128

E. RD. OPP. PP. SOUTH (CONC. NAIL)

BUTLER CO. GPS 1100

E. RR. EAST END BRIDGE

000215

6343

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
P10	7.61			605.09
	14.65		0.67	
TP #2	22.26	+16.50	5.09	
			5.76	
	14.85			
	17.87		1.79	
	19.19		7.12	
	9.97		0.73	
5-3-1	61.88	+49.60	2.64	
			12.28	
		END		

CAGS POINT

000216

STA	+	DIFF ELEV	-	ELEV	
TP 2	2.13			621.58	
6-3-2		-9.28	11.41	612.30	
		CHECK	LEVELS		
	11.30				
TP 2		+9.28	2.02	621.58	621.58
		END			

0 TREES
2 TREES

80-31-051731-02

3 AUG. 1992 PC 9M.10 PARSONS-FEIRNOLD EMP

P 30 TELS BK
OPP.
E RD. OF TEL BOX EAST

1837

000217

6343

STA	+	DIFF ELEV	−	ELEV
TP 2	6.87			621.58
	19.50		2.13	
	17.67		0.96	
	6.89		2.12	
6-3-1	50.93	+43.86	1.86	665.44
			7.07	
	19.05			
	15.69		0.51	
	19.45		0.52	
	18.31		0.48	
	14.23		0.91	
6-1-1	86.73	+82.11	2.20	747.55
			4.62	
	9.72			
	17.80		1.54	
6-1-2	27.52	+22.32	3.66	769.87
			5.20	

P 35 CHECK LEVEL

P 30 TH.S BK

℄ GRAVEL RD OPP. P.P. WEST

℄ RD. OPP. P.P. WEST

℄ CULVERT GROUND LEVEL

000218

STA	+	CHECK DIFF ELEV	LEVELS −	ELEV
TP 2	6.87			621.58
	19.62		2.25	
	17.45		0.74	
	6.77		2.00	
6-3-1	50.71	+43.86	1.86	665.44
			6.85	
	19.05			
	15.29		0.12	
	20.00		1.07	
	18.59		0.76	
	13.84		0.52	
6-1-1	86.77	+82.10	2.20	747.54
			4.67	
	9.72			
	17.57		1.30	
6-1-2	27.29	+22.33	3.66	769.87
			4.96	
		END		

000219

6343

STA	+	DIFF ELEV	-	ELEV		
IM 1023	6.23			542.643		CAC.'s POINT BUTLER CO. REF. MON @ CO. LINE
8-5-1		+0.17	6.06	542.81		@ RD OPP. P. POLE NORTH
	2.30					
GPS 15 8-6-1		-2.49	4.79	540.32		MON WITH IP GPS 15 BY WOOLBERT
	5.80					
8-7-1		+0.69	5.11	541.01		N. EDGERD. OPP. POLE NORTH
	4.95					
IM 1024		+1.14	3.81	542.15	542.169	CAC.'s POINT
						542.17
						542.15
						.02
	P 35 CHECK LEVELS					

000220

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV	
IM1023	6.23			542.643	
8-5-1		+0.17	6.06	542.81	
	2.30				
8-6-1		-2.09	4.79	540.32	
	5.80				
8-7-1		+0.69	5.11	541.01	
	4.95				
IM1024		+1.14	3.81	542.15	542.169
		≈0			

CAGS POINT

000221

6343

STA	+	OFF ELEV	-	ELEV	
IM 1024	3.26			542.169	
7-9-2		-3.64	6.90	538.53	
	6.98				
7-9-1		+0.44	6.54	538.97	
	4.79				
TP 3		-1.98	6.77	536.99	
	8.59				
	11.93		0.68		
6-11-1	20.52	+16.69	3.15	553.68	
			3.83		
	16.43				
	12.67		0.63		
8011 AE	29.10	+23.64	4.83	577.32	577.31
			5.46		
	P37 FOR OK LEVELS				

CAGS PO. WT.
℄ GRAVEL RD OPP PP WEST

N. EDGE RD OPP PP NORTH

TOP OF OBS. WELL 2091 WEST WELL OF 3

EDGE PVT. OPP END GUARD RAIL WEST

LEVELS BY CAGS C.O.F.C 1100 ⊞ 808

000222

STA	CHECK LEVELS +	DIFF ELEV	−	ELEV	
I171024	3.26			542.169	
7-9-2		−3.64	6.90	538.53	
	6.98				
7-9-1		+0.44	6.54	538.97	
	4.79				
TP 3		−1.98	6.77	536.99	
	8.59				
	11.79		0.54		
6-11-1	20.38	+16.69	3.15	553.68	
			3.69		
	16.43				
	12.54		0.50		
8011 AZ	28.97	+23.64	4.83	577.32	577.319
			5.33		
		END			

CAG.S POINT

000223

6343

STA	+	DIFF ELEV	-	ELEV
8011	3.92			614.195
	2.26		9.78	
6-13-1	6.18	-10.58	6.98	603.62
			16.76	
	7.43			
5-15-2		+0.65	6.78	604.27
	CHECK LEVELS			
8011	3.92			
	2.45		9.97	
6-13-1	6.37	-10.58	6.98	603.62
			16.95	
	7.43			
5-15-2		+0.65	6.78	604.27
	END			

CAGIS MONT

℄ RD. OPP. P. POLE SOUTH

℄ RD. OPP. P.P. WEST

002224

STA	+	DIFF ELEV	–	ELEV	
8011 A2	2.83			577.319	CAG.S ELEV. C OF C MON CAP #1808
7-12-1		-8.41	11.24	568.91	PK SET @ END OF DOUBLE ℄ STRIPE
	0.39				
	5.98		2.40		
7-13-1	6.37	-10.08	14.05	558.83	℄ RD. OPP. P.POLE SOUTH
			16.45		
	4.96				
	7.89		3.48		
	1.04		10.00		
8-11-1	13.89	-8.24	8.65	550.59	℄ RD. OPP. P.P NORTH
			22.13		
	SEE P 40	FOR CK. LEVELS			

000225

6343

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
8011 AZ	2.88			
7-12-1		-8.41	11.24	568.91
	0.39			
	5.90		2.32	
7-13-1	6.29	-10.08	14.05	558.83
			16.37	
	4.96			
	7.86		3.45	
	1.12		10.08	
8-11-1	13.94	-8.24	8.65	550.59
			22.18	
		END		

000226

Y. IKEAS
4 AUG. 1992 CLEAR FIELD

CAGES POINT NAIL SCAP

N. EDGE RD. OPP. P.P. NORTH

STA	L	DIFF ELEV	—	ELEV
P9	1.89			616.07
	1.19		17.66	
3-1-1	3.08	-25.21	10.63	590.86
			28.29	

CHECK LEVELS

P9	1.89			616.07
	1.27		17.75	
3-1-1	3.16	-25.22	10.63	590.85
			28.38	

— END —

000227

6343

STA	+	O.P.C. ELEV	−	ELEV	
TP 2	7.48			621.58	P 30 THIS BK
7-3-1		+0.18	7.30	621.76	N. EDGE PVT. OPP. P.A. - NORTH
	9.87				
7-3-3		+0.65	9.22	622.41	℄ RD. OPP. A.P. SOUTH
	13.56				
	4.57		8.63		
8-1-1	18.13	+1.69	7.81	620.10	℄ RD OPP. P.P. EAST
			16.44		
	2.90				
8-1-2		-2.57	5.47	621.53	℄ RD OPP. P.P. EAST
		P 43	CK LEVELS		

000228

TP 2	7.48			621.58
7-3-1		+0.18	7.30	621.76
	9.87			
7-3-3		+0.65	9.22	622.41
	13.56			
	4.97		9.03	
8-1-1	18.53	+1.69	7.81	624.10
			16.84	
	2.90			
8-1-2		-2.57	5.47	621.53

END

000229

6343

STA	+	ELEV	−	ELEV	
IM 1025	13.13			522.365	CAG.S CHISELED LT ON CATCH BASIN
6-15-2		+6.41	6.72	528.78	@ POINT OF V TARGET N. EQ. PVT
	8.69				
6-15-1		+6.46	2.23	535.24	@ POINT OF V. TARGET N. EQ. PVT
	6.55				
	16.11		3.81		
	13.02		1.07		
7-19-4	35.68	+29.13	2.07	564.37	N. EQ. PVT. OPP. P.P. NORTH
			6.55		
	9.15				
	1.58		11.26		
	9.63		0.45		
7-19-3	20.36	+7.51	1.14	571.88	℄ RQ. OPP. P.P. EAST
			12.85		
	0.85				
	11.09		13.39		
17-19-2	11.94	-7.02	5.57	564.86	P.C. SET @ POINT V TARGET
			18.96		

000230

STA	+	DIFF ELEV	−	ELEV
IM 1025	13.13			522.365
6-15-2		+6.41	6.72	528.78
	8.69			
6-15-1		+6.46	2.23	535.24
	6.55			
	16.05		3.36	
	12.91		0.96	
17-19-4	35.51	+29.12	2.07	564.36
			6.39	
	9.15			
	1.61		11.29	
	9.59		0.41	
7-19-3	20.35	+7.51	1.14	571.87
			12.84	
	0.85			
	11.12		13.42	
7-19-2	11.97	−7.02	5.57	564.85
			18.99	

6343

STA	+	ELEV	—	ELEV	
7-19-2	2.84			564.86	
	1.90		19.52		
	1.89		7.72		
7-19-1	6.63	-26.07	5.46	538.79	
			32.70		
	1.94				
	9.50		4.92		
	0.20		2.68		
7-20-1	11.64	-8.66	12.70	530.13	530.60
			20.30		
		P 45	CHECK	LEVELS	
7-3-1	7.19			621.76	
7-3-2		-15.20	22.39	606.56	
		CHECK	LEVELS		
	19.33				
7-3-1		+15.20	4.13	621.76	621.76
		END			

CONTD FROM P 44 THIS BK

N. EDGE PVT. OPP P.P. NORTH

P 26 GAGE T TARGET

P 42 THIS BK
E GRAVEL RD. OPP. P.P. EAST

002232

CK LEVELS

STA	+	O, RR ELEV	−	ELEV	
7-19-2	2.84			514.85	
	1.98		19.61		
	1.97		7.80		
7-19-1	6.79	-26.08	5.46	538.77	
			32.87		
	1.94				
	9.55		4.97		
	0.22		2.70		
7-20-1	11.71	-8.66	12.70	530.11	530.40
			20.37		

CONTD. FROM P 45 THIS BK

P 26 CAGIS "T" TARGET

000233

6343

STA	+	OFF ELEV	−	ELEV
7-20-1	2.24			530.13
	11.09		4.52	
5-19-1	13.33	+2.43	6.38	532.56
			10.90	
	16.00			
	2.80		2.90	
4-19-2	18.80	+11.42	4.28	543.98
			7.38	
	9.16			
4-19-1		+5.17	3.99	549.15

SEE P 49 FOR CK COURSE

48.

P 26 CAGIS "T" TARGET

E. RD. PVT. OPP. P.P. EAST

E RD. OPP. P.P. EAST

E RD. OPP. P.P. EAST

CHECK LEVELS

STA	+	DIFF ELEV	−	ELEV
7-20-1	2.25			
	11.20		4.68	
5-19-1	13.45	+2.44	6.38	532.57
			11.01	
	16.00			
	2.76		2.86	
4-19-2	18.76	+1.42	4.48	543.99
			7.34	
	9.16			
4-19-1		+5.17	3.99	549.16
	END			

P 26 CAGS "T" TARGET

000235

6343

STA	+	DIFF ELEV	-	ELEV
TP3	3.81			536.99
7-9-3		-1.02	4.83	535.97
	5.97			
7-9-4		+0.77	5.20	536.74
	5.42			
	4.96		9.25	
	3.57		0.65	
8-10-1	13.95	-3.31	7.36	533.43
			17.26	
	CHECK LEVELS			
TP3	3.81			536.99
7-9-3		-1.02	4.83	535.97
	5.97			
7-9-4		+0.77	5.20	536.74
	5.42			
	3.98		8.27	
	3.07		0.15	
8-10-1	12.47	-3.31	7.36	533.43
			15.78	
	END			

P36 T.P.'s BOOK
℄ TRAC OPP CROP LINE NORTH

℄ TRAIL OPP. CROP LINE SOUTH

IP WITH CAP 5' CROSS TARGET

000236

FEANALD
Wed.
TRAVERSE

JOB 7
TRAV. 2

D. TREAS
P. TREAS

5 AUG. 1992

		MUSSH
	⊼ @ 8012	5.38
BS	8012 AZ	
FS	1-10-2	5.00
FS	WC 51	5.08
	⊼ @ WC 5	5.20
BS	8012	
FS	1-10-3	5.00
FS	WC 52	5.34
	⊼ @ WC52	5.24
BS	WC 51	
FS	2-10-1	8.5
FS	8012	5.26
	⊼ @ 8012	5.38
BS	WC52	
FS	8012 - AZ	

0002237

6343

Wed	TRAV 3		JOB 8
	TRAVERSE		
	⊼ @ 8012		4.99
BS	8012 AZ		
FS	WC 53		4.93
	⊼ @ WC 53		5.05
BS	8012		
FS	3-14-1		5.00
FS	WC 54		5.07
	⊼ @ WC 54		
BS	WC 53		5.19
FS	WC 55		5.12
	⊼ @ WC 55		5.24
BS	WC 54		
FS	3-14-2		5.00
FS	T 16 RCF		5.00
FS	WC 56		4.81
	⊼ @ WC 56		4.93
BS	WC 55		
FS	IM 1025		8.50
FS	WC 57		4.98

000238

		⊼ @ WC 57		5.10
BS	WC 56			
FS	WC 58			5.03
		⊼ @ WC 58		5.14
BS	WC 57			
FS	WC 59			5.09
		⊼ @ WC 59		5.21
BS	WC 58			
FS	8011			4.93
		⊼ @ 8011		5.04
BS	WC 59			
FS	8011	AZ		

000239

6343

	TRAV 4		JOB 10
		⊼ @ 8011	5.03
BS	8011 A2		909.170
FS	WC 60		5.05
		⊼ @ WC 60	5.17
BS	8011		
FS	2091		5.00
FS	WC 61		5.09
		⊼ @ WC61	5.16
BS	WC 60		
FS	IM1024		5.00
FS	WC 62		5.18
		⊼ @ WC62	5.30
BS	WC 61		
FS	GPS15 = 8-6-1		5.00
FS	WC 63		4.91
		⊼ @ WC63	5.03
BS	WC62		
FS	WC 64		4.86
		⊼ @ WC64	4.82
BS	WC 63		
FS	8-2-2		5.00
FS	WC 65		5.08

54.

1837

000240

TRAV 14 JOB 9

TO WC 67 5.07

BS WC 61

FS B-6-2 12.5

55.

SKIPPED A PAGE

1837

6343

000241

		⊼ @ WC 65		5.20	
BS	WC 64				
FS	8-2-1			5.00	
FS	WC 66			4.89	
		⊼ @ WC 66		5.01	
BS	WC 65				
FS	7-2-1			5.06	
FS	WC 67			5.38	
		⊼ @ WC 67		5.49	
BS	WC 66				
FS	6-2-3			5.00	
FS	WC 68			4.81	
		⊼ @ WC 68		4.93	
BS	WC 67				
FS	5-4-1			25.10	
FS	WC 69			5.15	
		⊼ @ WC 69		5.141	
BS	WC 68				
199 FS	P.10				
FS	WC 70			5.07	

00022

		⊼ @ WC70		5.19
BS	WC69			
FS	WC71			5.01
		⊼ @ WC71		5.13
BS	WC70			
199FS	8-10-1			
FS	8011			7.00
		⊼ @ 8011		5.22
BS	WC71			
FS	8011 A2			

000243

6343

TRAV 5 Monday JOB 11

		⊼ @ WC 69		5.14
BS	WC 68			
FS	WC 72			4.98
		⊼ @ WC 72		5.10
BS	WC 69			
FS	WC 73			5.23
		⊼ @ WC 73		5.35
BS	WC 72			
FS	WC 74			5.24
		⊼ @ WC 74		5.37
BS	WC 73			
FS	4-2-2			5.00
FS	WC 75			4.91
		⊼ @ WC 75		5.03
BS	WC 74			
FS	WC 76			4.95
		⊼ @ WC 76		5.07
BS	WC 75			
FS	3-2-1			5.5

WC 76 - 99

000214

8/	TRAV		JOB 12
		⊼ @ WC68	5.03
BS	WC67		
FS	WC77		5.00
		⊼ WC77	5.17
BS	WC68		
FS	WC78		5.00
		⊼ @ WC78	5.20
BS	WC77		
FS	WC79		5.00
		⊼ @ WC79	5.24
BS	WC78		
FS	6-2-1		14.00
FS	WC80		5.00
		⊼ @ WC80	5.15
BS	WC79		
FS	WC81		5.00
		⊼ @ WC81	5.03
BS	WC80		
FS	6-2-2		

000345

6343

TRAV 7 JOB 13

		⊼ @ 8011 AZ		4.57
BS	8011			
FS	WC 82			5.00
		⊼ @ WC 82	5.14	
BS	8011 AZ			
FS	WC 83		5.00	
		⊼ WC 83	4.93	
BS	WC 82			
FS	7-12-1		5.00	
FS	WC 84		5.00	
		⊼ @ WC 84	5.10	
BS	WC 83			
FS	WC 85		6.00	
		⊼ @ WC 85	5.01	
BS	WC 84			
FS	7-12-2			
FS	WC 86			
		⊼ @ WC 86	5.02	
BS	WC 85			
FS	WC 87		5.11	

8-12-7

00276

ПО					
		⊼ @ wc 87		5.27	
BS	wc 86				
FS	wc 88				
		⊼ @ wc 88		5.19	
BS	wc 87				
FS	wc 89				
		⊼ @ wc 89		4.95	
BS	wc 88				
FS	8-,12-1			5.00	
FS	8-11-1			5.00	

000247

6343

	TRAV 8			JOB 14
				4.90
		⊼ @	1003	- BUTLER CO
BS	WC 2			- CAGIS
FS	WC 90			5.00
		⊼ @	WC 90	5.08
BS	1003			
FS	2-2-1			5.00
FS	WC 91			5.00
		⊼ @	WC 91	4.95
BS	WC 90			
FS	2-2-2			5.00
FS	2-1-1			8.00
FS	2-1-2			8.00
FS	1-2-2			8.00

	JRAV ~~#2~~		JOB 3
		⊼ @ 1/2 WC 2	5.20
BS	1003		
FS	1-4-2		5.00
FS	1-5-2		5.00
FS	WC 6		5.00
		⊼ @ WC 6	5.14
BS	WC 2		
FS	1-2-3		5.00
FS	1-2-1		4.94

000249

6343

	TRAV 9		JOB 10
		⊼ @ WC 57	5.34
BS	WC 56		
FS	WC 7		4.98
		⊼ @ WC 7	5.10
BS	WC 57		
FS	6-15-2		
FS	6-15-1		
FS	WC 8		4.96
		⊼ @ WC 8	5.09
BS	WC 7		
FS	WC 9		5.10
		⊼ @ WC 9	5.22
BS	WC 8		
FS	WC 10		5.07
		⊼ @ WC 10	5.19
BS	WC 9		
FS	WC 11		4.87
		⊼ @ WC 11	4.99
BS	WC 10		
FS	WC 12		5.09

002250

	@ WC 12		5.21
BS	WC 11		
FS	WC 13		5.00
	@ WC 13		5.32
BS	WC 12		
FS	7-19-2		5.00
FS	WC 14		4.92
	@ WC 14		5.04
BS	WC 13		
FS	7-20-2		5.00
FS	WC 15		5.15
	@ WC 15		5.26
BS	WC 14		
FS	WC 16		5.00
	@ WC 16		5.18
BS	WC 15		
FS	WC 17		4.98
	@ WC 17		5.10
BS	WC 16		
FS	WC 18		5.00

ALREADY used
TRAV 11-12

65.

BS
14 to 13
7-20-2

1837

000251

6343

		⊼ @ WC18	5.13
BS	WC17		
FS	WC19		5.19
		⊼ @ WC19	5.31
BS	WC 18		
FS	7-20-1 = P26		
FS	WC20		5.02
		⊼ @ WC 20	5.14
BS	WC19		
FS	WC 21		5.00
		⊼ @ WC 21	5.11
BS	WC 20		
FS	5-20-1		8.00
FS	WC 22		4.94
		⊼ @ WC 22	5.06
BS	WC WC 21		
FS	WC WC 23		5.08
		⊼ @ WC 23	5.20
BS	WC 22		
FS	4-18-3		5.00
FS	WC 24		5.05

000252

		⊼ @ WC24	5.17
BS	WC23		
FS	WC25		5.10
		⊼ @ WC25	5.22
BS	WC24		
FS	4-18-2		5.00
FS	4-19-1		5.20
FS	WC26		5.00
		⊼ @ WC26	5.26
BS	WC25		
FS	WC27		4.88
		⊼ @ WC27	5.00
BS	WC26		
FS	WC28		5.09
		⊼ @ WC28	5.21
BS	BS27		
FS	4-18-1		5.20
FS	WC29		5.13
		⊼ @ WC29	5.25
BS	WC28		
FS	WC57		4.94

000253

348-14

68.

		↑@ WC 57		5.06	
BS	WC 29				
102 FS	WC 56				

1837

002254

		TRAV 13		JOB 16	
		* @ WC 10		5.25	
BS	WC 9				
FS	WC 30			5.06	
		* @ WC 30		5.31	
BS	WC 10				
FS	4-16-1			5.00	

002255

6343

	TRAV. 15			JOB 17	
		π@	WC 60	5.11	
BS	8011				
FS	8-10-1			15.43	
FS	8-12-2			20.27	

70

4337.345

4383.295

TRAV. 16 JOB 18

71.

		⊼ @ WC 8	5.13
BS	WC 7		
FS	WC 40		5.0
		⊼ @ WC 40	5.27
BS	WC 8		
FS	WC 4		5.00
		⊼ @ WC 41	5.01
BS	WC 40		
FS	WC 42		5.00
		⊼ @ WC 42	7.42
BS	WC 41		
FS	6-15-4		28.50

1837

000257

6343

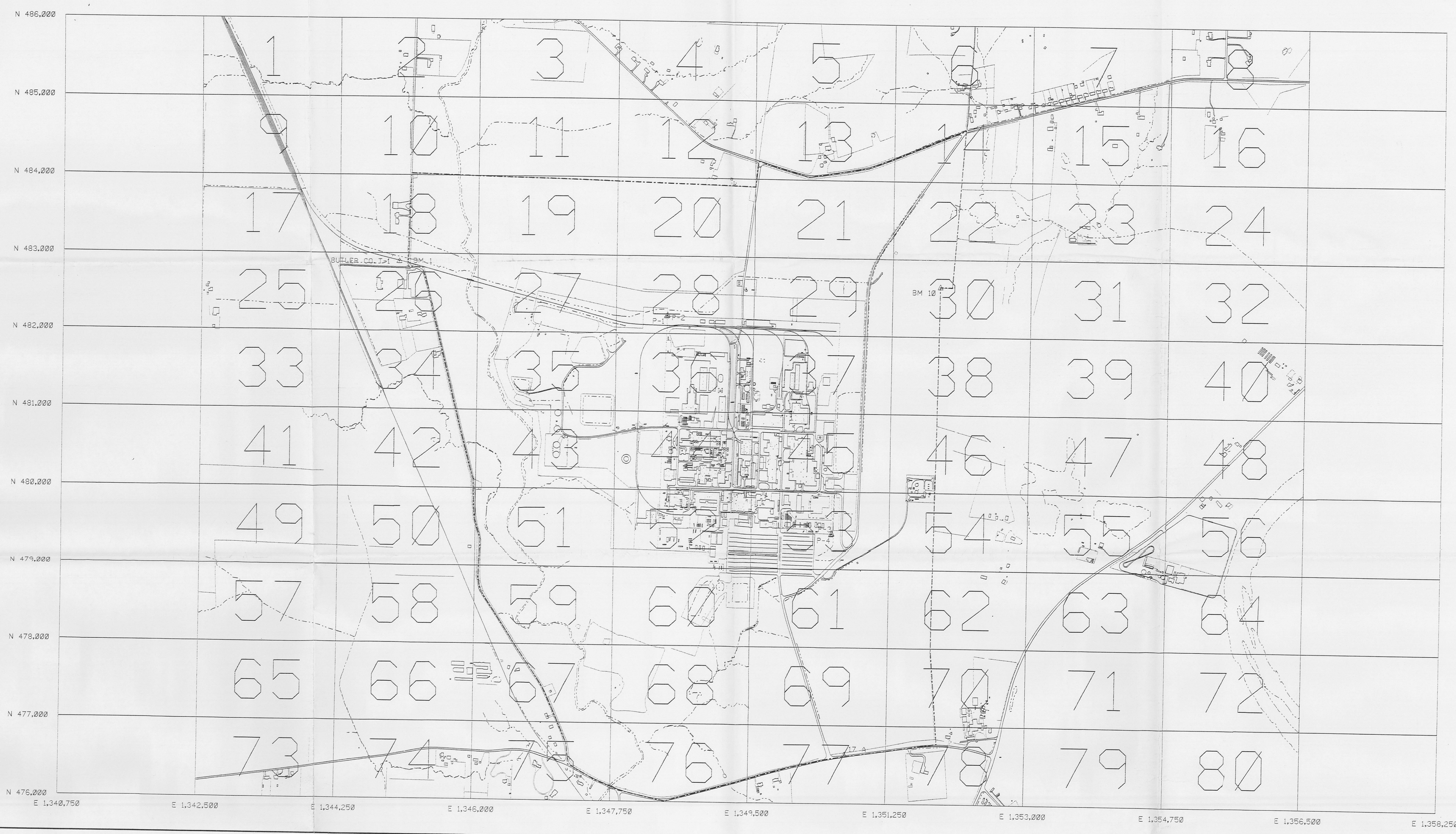
	TRAV	17		JOB 19
		⊼ @ WC13		5.35
BS	WC12			
FS	WC31			5.0
		⊼ @ WC31		5.02
BS	WC13			
FS	WC32			5.10
		⊼ @ WC32		5.08
BS	WC31			
FS	1843	(195-13 MON		5.05
		⊼ @ 1843		4.79
BS	WC32			
FS	WC33			5.15
		⊼ @ WC33		5.11
BS	1843			
FS	WC34			4.90
		⊼ @ WC34		5.26
BS	WC33			
FS	WC35			5.0

852000

		π @ WC35		5.19	
BS	WC34				
FS	WC36			5.15	
		π @ WC36		5.19	
BS	WC35				
FS	7-15-1			8.00	

000259

6343



STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

SHEET INDEX

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
		81	82	83	84	85	86
		87	88	89	90		
		91	92	93	94		
		95	96	97	98		
		99	100	101	102	103	
			104	105	106	107	
			108	109	110	111	
			112	113	114	115	
			116	117	118	119	

PREPARED BY:
WOOLPERT CONSULTANTS
WOOLPERT
4454 EAST MONUMENT AVENUE
DAYTON, OHIO 45402-1328
(513) 461-5660

LEGEND

	HYDRANT		UNKNOWN UTILITY	—X—	FENCE
	MANHOLE		VALVE BOX		RAILROAD
	CATCH BASIN		BUILDING		TREE LINE
	AIR MONITOR STATION (AMS)		HEADWALL		SHRUB LINE
2134	MONITORING WELL		SURVEY CONTROL POINT		GUARD RAIL
	TRANSMISSION TOWER		GATE		RETAINING WALL
	ELECTRICALTRANSFORMER		GRID TICK		RIVER, STREAM
	POST INDICATOR VALVE		PROPANE TANK	580	MAJOR CONTOUR
	POWER POLE		SWAMP		MINOR CONTOUR
	LIGHT POLE	RIPRAP	RIPRAP AREA	580	MAJOR DEP CONTOUR
	SIGN	PILE	PILE OUTLINE		MINOR DEP CONTOUR
	POST	X 578.1	SPOT ELEVATION		PAVED ROADWAY
	DECIDUOUS TREE	W.E. X 567.7	WATER ELEVATION		UNPAVED ROADWAY
	CONIFEROUS TREE	575.8, 575.8	ROOF STACK OR VENT		ABOVEGROUND PIPE
	SHRUB				FEMP BOUNDARY

500 0 500 1000 1500

SCALE IN FEET
2 FOOT CONTOUR INTERVAL

DIGITAL MAPPING BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 04/09/92.

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	OPERATOR	DOE
		INITIALS AND DATE		

INDEX CODE: PL&AR | ORIG | CL | SEQ NO

CAD FILE NAME

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - CHAS. T. MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
PHOTOGRAMMETRIC MAPPING
OU3/P034

DRAWING TITLE
CIVIL
EXISTING SITE PLAN
GEODETIC CONTROL DIAGRAM

DRAWN BY	DATE	DESIGNED, CHECKED BY	DATE	CHECKED BY	DATE
PLANT/BLDG. NO.		FLOOR		SCALE 1"=500'	CLASS
SUBMITTED FOR APPROVAL		APPROVAL RECOMMENDED		DRAWING APPROVED	
A-E	DATE	OPERATING CONTRACTOR	DATE	DOE	DATE
DOE PROJECT NO.	OPER. CONTR. PROJ. NO.	DRAWING NO.		SHEET NO.	REV. NO.
	WBS 1.1.1.1.3.1.1 00-90701	000607			

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