REPORT

FA Project #151021.09
March 2017

SURVEY
CONTROL REPORT

NEW YORK STATE THRUWAY AUTHORITY
I-90 BRIDGE OVER MOHAWK STREET (NYS ROUTE 28)
BIN 1020079
MP 219.91
THE MOKAWK SECTION
COUNTY OF HERKIMER
D214386
ASSIGNMENT #9

Prepared for:

NEW YORK STATE THRUWAY AUTHORITY

Surveyed By:
M. Eltz, L.S.....Project Manager
C. Pascuzzo, L.S.....Project Surveyor
M. Miller.....CADD
S. Michaloski.....Crew Chief
J. Scuderi.....Instrument Person

FISHER ASSOCIATES

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New York State
Thruway Authority

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Project Narrative

The survey described herein was performed for the following purposes:

Providing detailed boundary and topographic survey and mapping services for the design of replacing the mainline bridge over Mohawk Street, (BIN 1020079). The survey limits of the project were as follows;

- 1000 feet beyond each abutment of the bridge along the mainline,
  - Bandwidth along the mainline is the full width from ROW to ROW.
- And, 300 feet north and south from the mainline bridge fascia along Mohawk Street.
  - Bandwidth along Mohawk Street is ROW to ROW plus 20-feet on each side.

The project is located at MP 219.91 along I-90 in the Town of Herkimer, Herkimer County.

Fisher Associates provided conventional base mapping and topography (DTM) in Microstation V8i and InRoads as per NYSDOT CADD Standards and Procedures.

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Horizontal and Vertical Narrative

For this section of I-90, the mainline consists of two eastbound and two westbound travel lanes with a guide rail in the median and paved shoulders outside the travel lanes; guide rails at the edge of the paved shoulders, and then the banks drop off from the guide rails. For safety purposes, the primary baseline was established along Mohawk Street north and south of I-90.

Primary control points CP 10, CP 20 were established by Fisher Associates using Static GPS methods using the NYSDOT CORS Network. All horizontal values are English units in US Survey Feet and refer to the New York State Plane Coordinate System, East Zone, NAD 83 (2011) Epoch 2010.00. CP 10 and CP 20 are located north and south of I-90 (NYS Thruway) along Mohawk Street (NYS Route 28).

Conventional traversing was run utilizing a Leica TCRP 1203 Robotic Total Station, which measures angles to 3 seconds of arc. Fisher Associates set on CP 10 and CP 20 for distance checks and then established secondary control points throughout the project limits from which the topographic and boundary survey was completed. Checks were made between primary and secondary control points where possible.

The entire control network including primary and secondary control was adjusted using the Star-Net Least Squares adjustment program.

Elevations are referenced to the North American Vertical Datum of 1988 (Geoid 12A) utilizing Static GPS elevations from the NYSDOT CORS Network.

Primary vertical benchmarks BM 1 and BM 2 were established by Fisher Associates. Holding the GPS static elevation for CP 10, differential levels were run through the horizontal control point CP 20, BM 1 and BM 2 and closed on the GPS static elevation of CP 10. The differential level run closed on CP 10 with 0.01 feet of misclosure. No elevation adjustments were made.

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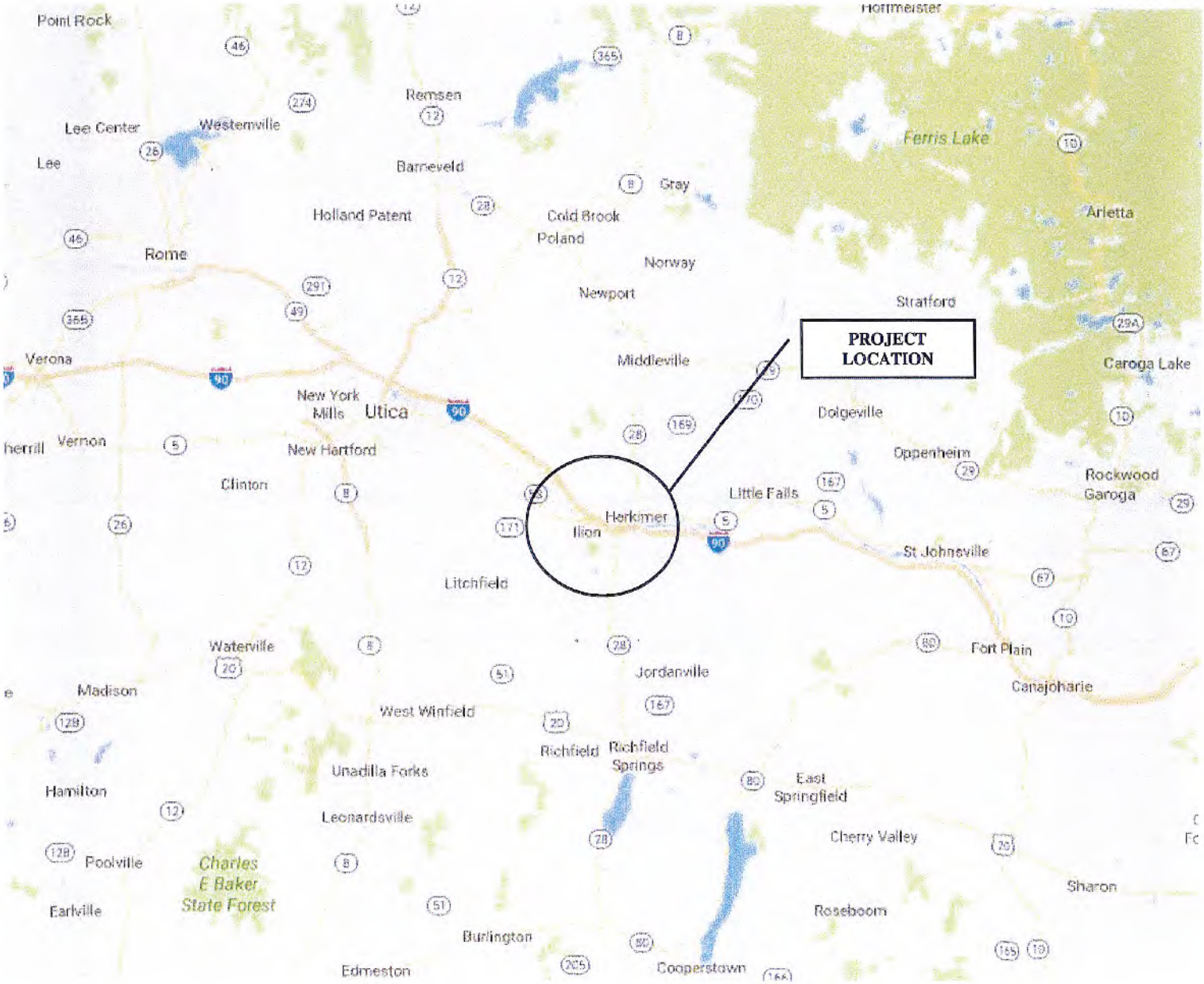
GENERAL LOCATION MAP

Not to scale



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Boundary Procedures

Highway boundaries shown in the mapping for this project were plotted based on existing Acquisition maps for the New York State Thruway - The Mohawk Section, County of Herkimer, Subdivision No. 10b, District No. 2, Transfer of Jurisdiction maps for the Herkimer Village-Mohawk Street, S.H. No. 5060 and the New York State Department of Transportation Transfer of Jurisdiction maps for the Resident Engineers Headquarters, Herkimer County Residency. Fisher Associates located existing monumentation along Interstate 90 and N.Y. Route 28 (S.H. 5060) to establish the highway boundaries.

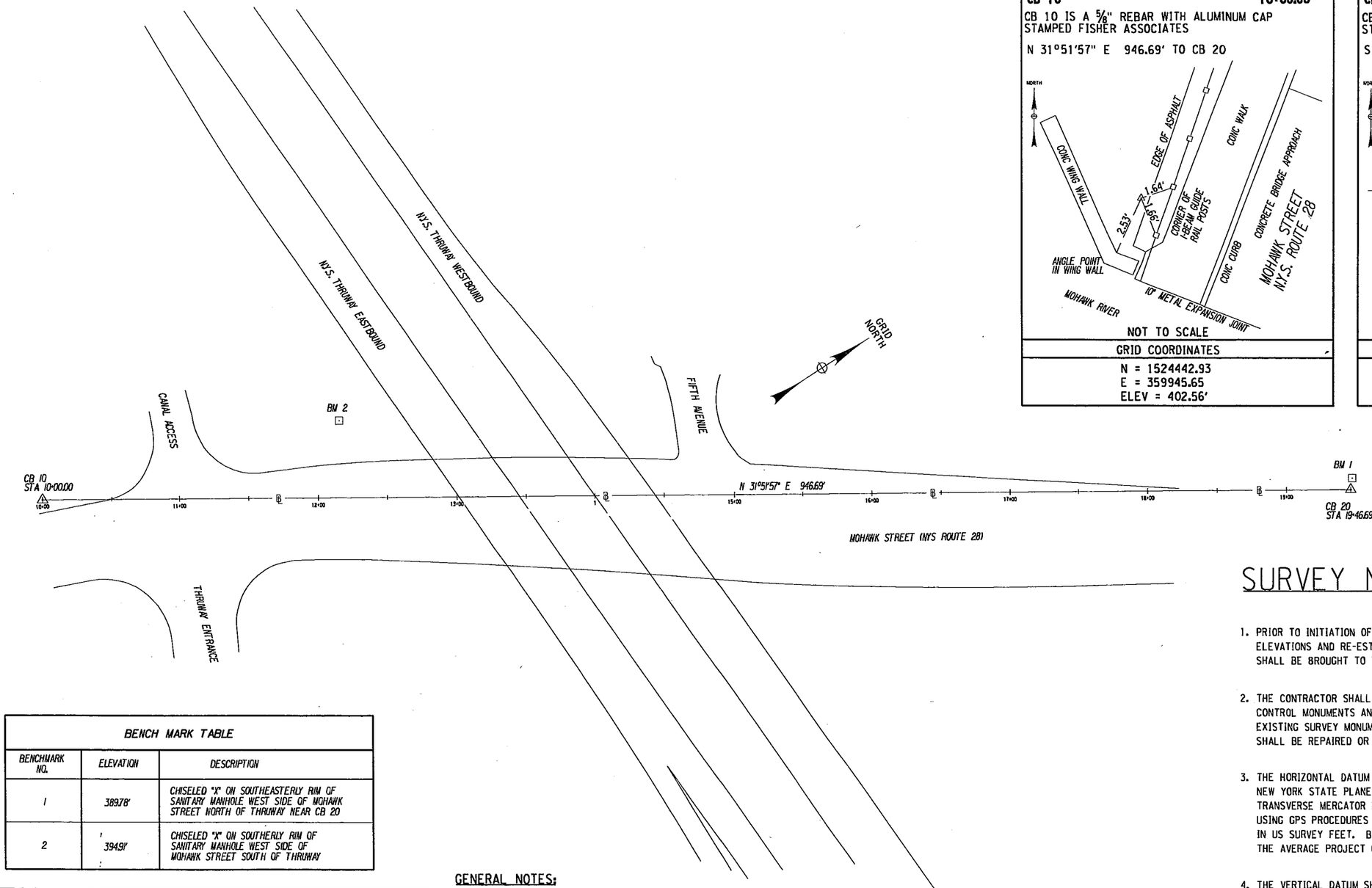
The highway boundaries were determined through the analysis of record mapping and existing monumentation. While numerous monuments were located throughout the limits of the project and beyond, it was discovered that a large number of monuments located did not fit well with the record mapping. After an exhaustive analysis, it was determined to hold the geometry of the computed acquisition maps and place the highway boundaries by holding the monument located at the Northeast corner of Parcel 259, Map 378, at station N6+87, 153 feet left and rotating the highway boundary geometry to the monument located at the Southeast part of Parcel 148, Map 350, at station 2755+85, 220 feet right.

File

DRAFTED BY: MM CHECKED BY: ME

DESIGNED BY: TA CHECKED BY: TA

DESIGN SUPERVISOR: TA



CB 10 **10+00.00**

CB 10 IS A 5/8" REBAR WITH ALUMINUM CAP STAMPED FISHER ASSOCIATES

N 31°51'57" E 946.69' TO CB 20

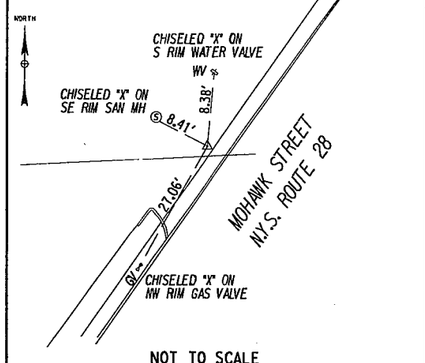
NOT TO SCALE

GRID COORDINATES
N = 1524442.93
E = 359945.65
ELEV = 402.56'

CB 20 **19+46.69**

CB 20 IS A 5/8" REBAR WITH ALUMINUM CAP STAMPED FISHER ASSOCIATES

S 31°51'57" W 946.69' TO CB 10



NOT TO SCALE

GRID COORDINATES
N = 1525246.95
E = 360445.44
ELEV = 390.11'

BENCH MARK TABLE

BENCHMARK NO.	ELEVATION	DESCRIPTION
1	389.78'	CHISELED "X" ON SOUTHEASTERLY RIM OF SANITARY MANHOLE WEST SIDE OF MOHAWK STREET NORTH OF THRUWAY NEAR CB 20
2	394.91'	CHISELED "X" ON SOUTHERLY RIM OF SANITARY MANHOLE WEST SIDE OF MOHAWK STREET SOUTH OF THRUWAY

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

GENERAL NOTES:

1. BASELINE DATA FOR CB 10 AND CB 20 ON THIS SHEET.
2. BENCHMARK DESCRIPTIONS ARE SHOWN ON ON THIS SHEET.

ABBREVIATIONS

MH MANHOLE
GV GAS VALVE
WV WATER VALVE

SURVEY NOTES:

1. PRIOR TO INITIATION OF THE PROJECT, THE CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS AND RE-ESTABLISH THE SURVEY CONTROL BASELINE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE E.I.C.

2. THE CONTRACTOR SHALL LOCATE, MARK, SAFEGUARD AND PRESERVE ALL SURVEY CONTROL MONUMENTS AND R.O.W. MONUMENTS IN THE AREA OF CONSTRUCTION. EXISTING SURVEY MONUMENTS DISTURBED OR DESTROYED BY THE CONTRACTOR SHALL BE REPAIRED OR RESTORED AT THE CONTRACTOR'S EXPENSE.

3. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, TRANSVERSE MERCATOR PROJECTION, NAD 83 (2011) EPOCH 2010.00 USING GPS PROCEDURES AND THE NEW YORK STATE DOT CORS NETWORK, IN US SURVEY FEET. BEARINGS AND DISTANCES SHOWN HEREON ARE GRID. THE AVERAGE PROJECT COMBINED GRID AND ELEVATION FACTOR IS 0.99990584.

4. THE VERTICAL DATUM SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 12A) IN US SURVEY FEET, USING GPS PROCEDURES.

5. THE HORIZONTAL CONTROL FOR THIS PROJECT CONSISTS OF ONE PRIMARY CONTROL NETWORK FROM SOUTH TO NORTH ALONG MOHAWK STREET, (NYS ROUTE 28). THE PRIMARY CONTROL BEGINS ON FISHER CONTROL POINT 10 SOUTH OF THE THRUWAY AND CLOSES ON FISHER CONTROL POINT 20 NORTH OF THE THRUWAY. UNDER THIS CONTRACT D214386, THE PROJECT LIMITS ARE WITHIN THE LIMITS OF THE PRIMARY CONTROL.

REVISIONS

DATE	DESCRIPTION	BY	SYM.

NEW YORK STATE OF OPPORTUNITY. Thruway Authority | Canal Corporation

TITLE OF PROJECT: I-90 BRIDGE OVER MOHAWK STREET (ROUTE 28)

LOCATION OF PROJECT: M.P. 219.91 SYRACUSE DIVISION

TITLE OF DRAWING: SURVEY CONTROL BASELINE CONTROL POINT TIES

CONTRACT NUMBER: D214386

DATE: 3/17/17

DRAWING NUMBER: SCP-1

STAR*NET-PRO Version 6.0.32

Licensed for Use by Fisher Associates PC
Run Date: Thu Mar 16 2017 09:32:47

Summary of Files Used and Option Settings

Project Folder and Data Files

Project Name NYSTA REPLACEMENT 8 BRIDGES
Project Folder H:\PROJECTS\...\SUR\STARNET\HERKIMER
Data File List 1. 20161114 edit.dat

Project Option Settings

STAR*NET Run Mode	: Adjust with Error Propagation
Type of Adjustment	: 3D
Project Units	: FeetUS; DMS
Coordinate System	: Mercator NAD83; NY East 3101
Geoid Height Model	: H:\PROJECTS\...\NYGEOID12A.GHT
Longitude Sign Convention	: Positive West
Input/Output Coordinate Order	: North-East
Angle Data Station Order	: At-From-To
Distance/Vertical Data Type	: Slope/Zenith
Convergence Limit; Max Iterations	: 0.001000; 10
Default Coefficient of Refraction	: 0.070000
Create Coordinate File	: Yes
Create Geodetic Position File	: No
Create Ground Scale Coordinate File	: No
Create Dump File	: No

Instrument Standard Error Settings

Project Default Instrument

Distances (Constant)	:	0.030000 FeetUS
Distances (PPM)	:	0.000000
Angles	:	4.000000 Seconds
Directions	:	3.000000 Seconds
Azimuths & Bearings	:	4.000000 Seconds
Zeniths	:	10.000000 Seconds
Elevation Differences (Constant)	:	0.050000 FeetUS
Elevation Differences (PPM)	:	0.000000
Differential Levels	:	0.010000 FeetUS / Mile
Centering Error Instrument	:	0.000000 FeetUS
Centering Error Target	:	0.000000 FeetUS
Centering Error Vertical	:	0.000000 FeetUS

Company Library Instrument LeicaTCRP1203
Note: New 12/04 3" robotic total station

Distances (Constant)	:	0.006562 FeetUS
Distances (PPM)	:	2.000000
Angles	:	4.000000 Seconds
Directions	:	2.000000 Seconds
Azimuths & Bearings	:	4.000000 Seconds
Zeniths	:	10.000000 Seconds
Elevation Differences (Constant)	:	0.004921 FeetUS
Elevation Differences (PPM)	:	2.000000
Differential Levels	:	0.010000 FeetUS / Mile
Centering Error Instrument	:	0.006562 FeetUS
Centering Error Target	:	0.005577 FeetUS
Centering Error Vertical	:	0.005577 FeetUS

Listing of Input Data
==========

```
[File: H:\Projects\151021-09-Rplcmt_8_Bridges\Sur\Starnet\Herkimer\20161114 edit.dat]
# STAR*CARLSON Version 1.0.3
# Copyright 2005 Starplus Software, Inc.

# Input Field File : H:\Projects\151021-09-Rplcmt_8_Bridges\Sur\Field\Herkimer Site - MP219.91\R
# Date Processed   : 12-07-2016 08:15:50

.Units  FeetUS
.Units  DMS
.Order  AtFromTo
.Sep    -
.3D

# These coordinates are from gps in the field
#C  10       1524442.94000    359945.70000   402.71000  ! ! !  'CB 10
#C  20       1525247.03250    360445.52770   390.26000  ! ! !  'CB 20
# C  2564             1524939.95110  361089.34970   387.00000 'LELB16

#These coordinates are from static gps
C  10       1524442.93300    359945.64700   402.56000  ! ! !  'CB 10
C  20       1525246.94700    360445.43500   390.11000  * ! !  'CB 20

.instrument LeicaTCRP1203


# Job  : 20161114
# Date : 11-11-2016
# Time : 06:04:58

.Delta  Off
DV 10-20                          946.8642  90-44-45.00   5.160/5.230 'CB
SS 10-20-100          0-00-0.00   946.8630  90-45-17.00   5.160/5.230 'CHK@BS
DV 10-20                          946.8620  90-44-58.50   5.160/5.230 'CB
M  10-20-11        254-47-43.00   742.5426  89-58-14.50   5.160/5.170 'CB 11
DV 10-20                          946.8624  90-45-00.50   5.160/5.230 'CB
M  10-20-12        296-01-43.50   270.6028  88-52-16.00   5.160/5.210 'CB 12
DV 10-20                          946.8620  90-45-00.50   5.160/5.230 'CB
M  10-20-13         30-48-36.00   545.3025  89-21-38.00   5.160/5.180 'CB 13
SS 10-20-243       359-59-43.00   946.8624  90-45-15.00   5.160/5.230 'CHK@BS

DV 10-20                          946.8637  90-44-18.00   4.840/5.190 'CB
SS 10-20-244          0-00-01.00  946.8666  90-44-09.00   4.840/5.230 'CHK@BS
SS 10-20-245          0-00-01.00  946.8663  90-44-16.00   4.840/5.190 'CHK@BM
SS 10-20-246       345-38-42.00   222.6586  91-55-22.00   4.840/5.020 'CPBM
SS 10-20-498          0-00-0.00   946.8604  90-44-17.00   4.840/5.190 'CHK@BS
DV 10-20                          946.8611  90-44-02.00   4.840/5.190 'CB
M  10-20-14         10-06-47.50   294.0883  92-01-04.00   4.840/5.170 'CB 14

DV 14-10                          294.1040  87-54-43.00   5.080/5.140 'CB
SS 14-10-501       359-59-59.00   294.1037  87-54-43.00   5.080/5.140 'CHK
M  14-10-502       165-23-51.00   659.4688  90-08-57.00   5.080/5.140 'CHK@20
SS 14-10-503        45-15-20.00   129.8266  88-40-54.00   5.080/5.020 'CHK@BM
SS 14-10-825          0-00-02.00  294.1031  87-54-42.00   5.080/5.140 'CHK@BS
DV 14-10                          294.1024  87-54-26.00   5.080/5.140 'CB
M  14-10-15        150-20-19.00   234.8716  89-45-00.00   5.080/5.250 'CB 15

DV 12-10                          270.6020  91-06-06.00   5.090/5.140 'CB
SS 12-10-826          0-00-0.00   270.6033  91-06-06.00   5.090/5.140 'CHK@BS
SS 12-10-904       359-59-50.00   270.6013  91-06-08.00   5.090/5.140 'CHK@BS

DV 10-14                          294.1001  92-04-40.00   5.010/5.020 'CB
SS 10-14-905          0-00-01.00  294.0975  92-04-41.00   5.010/5.020 'CHK@BS
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DV 11-10                          742.5421  90-02-47.00   5.130/4.960 'CB
SS 11-10-938          0-00-01.00  742.5409  90-02-45.00   5.130/4.960 'CHK@BS
M 11-10-12          341-41-57.00  567.8244  89-31-27.00   5.130/5.020 'CHK@12
SS 11-10-1144         0-00-11.00  742.5406  90-02-39.00   5.130/4.960 'CHK@BS
M  11-10-1145       146-13-57.00  176.0735  94-29-04.00   5.130/5.020 'CBS 1145

DV 1145-11                        176.0928  85-32-29.00   4.990/5.020 'CB
SS 1145-11-1146     359-59-38.00  176.0639  85-32-26.00   4.990/5.020 'CHK@BS
SS 1145-11-1172     359-59-29.00  176.0508  85-32-26.00   4.990/5.020 'CHK@BS

DV 15-14                          234.8804  90-15-14.00   5.210/5.020 'CB
SS 15-14-1173         0-00-05.00  234.8798  90-15-12.00   5.210/5.020 'CHK@BS
M 15-14-10           16-31-28.00  511.4711  88-55-53.00   5.210/4.960 'CHK@10
DV 15-14                          234.8758  90-17-05.00   5.210/4.920 'CB
SS 15-14-1686       359-59-51.00  234.8725  90-16-59.00   5.210/4.920 'CHK@BS
DV 15-14                          234.8753  90-16-42.50   5.210/4.920 'CB
M  15-14-16          73-48-18.00  908.9337  90-18-59.00   5.210/5.020 'CBS 16
DV 15-14                          234.8753  90-16-42.00   5.210/4.920 'CB
M  15-14-17          73-42-13.00  520.3377  90-30-32.50   5.210/5.020 'CBS 17
DV 15-14                          234.8763  90-16-42.00   5.210/4.920 'CB
M  15-14-18          70-13-59.50  228.7572  90-29-27.00   5.210/5.020 'MPMM

#DV 20-10                         946.8607  89-15-46.00   5.160/5.000 'CB
SS 20-10-1687       359-59-58.00  946.8633  89-15-47.00   5.160/5.000 'CHK@BS
SS 20-10-1688        97-42-07.00    8.3233  93-10-13.00   5.160/5.020 'CPBM
DV 20-10                          946.8625  89-15-28.50   5.160/5.000 'CB
M  20-10-21         328-45-40.50  401.2008  87-12-28.00   5.160/4.870 'CB 21
DV 20-10                          946.8645  89-15-30.50   5.160/5.000 'CB
M  20-10-22          13-49-35.50  611.8448  88-17-32.50   5.160/4.980 'CB 22
M 20-10-15            3-32-31.00  436.9286  89-40-34.00   5.160/5.020 'CHK@15

DV 22-20                          611.8443  91-44-37.50   5.070/4.900 'CB
SS 22-20-1765         0-00-0.00   611.8440  91-44-37.00   5.070/4.900 'CHK@BS
DV 22-20                          611.8433  91-44-20.50   5.070/4.900 'CB
M  22-20-23         220-39-58.50  516.7434  90-16-05.00   5.070/5.310 'CB 23
M 22-20-15           23-15-09.00  198.3206  94-34-45.00   5.070/5.020 'CHK@15

#DV 16-15                         520.3498  89-30-47.00   5.020/5.020 'CB
DV 17-15                          520.3505  89-30-48.00   5.020/5.020 'CB
SS 17-15-1856         0-00-0.00   520.3515  89-30-47.00   5.020/5.020 'CHK@BS
M 17-15-16          180-14-09.00  388.5958  90-03-39.00   5.020/5.020 'CHK@16

DV 16-15                          908.9450  89-41-36.00   4.910/5.020 'CB
SS 16-15-1909         0-00-0.00   908.9463  89-41-35.00   4.910/5.020 'CHK@BS
M 16-15-17            0-08-08.00  388.5932  89-55-46.00   4.910/5.020 'CHK@17
M 16-15-23           15-28-01.00  211.7744  85-01-25.00   4.910/5.310 'CHK@23

DV 21-20                          401.2200  92-51-51.00   5.110/4.900 'CB
SS 21-20-1959         0-00-03.00  401.2202  92-51-49.00   5.110/4.900 'CHK@BS
DV 21-20                          401.2213  92-51-36.00   5.110/4.900 'CB
M  21-20-24          86-38-01.00  619.3118  90-09-29.00   5.110/5.290 'CB 24
SS 21-20-2089       359-59-27.00  401.2202  92-51-53.00   5.110/4.900 'CHK@BS
M  21-20-2090        74-54-03.00  356.0326  93-10-05.00   5.110/5.020 'CBS 2090
M 21-20-15          279-31-44.00  253.3153  93-55-05.00   5.110/5.020 'CHK@15

DV 13-10                          545.3134  90-40-37.00   5.370/5.040 'CB
SS 13-10-2092         0-00-07.00  545.3905  90-40-34.00   5.370/5.040 'CHK@BS
DV 13-10                          545.3139  90-40-22.00   5.370/5.040 'CB
M  13-10-19         211-47-32.00  296.4250  90-23-16.50   5.370/4.750 'CB 19
M 13-10-21          121-25-58.00  153.5133  89-38-06.00   5.370/5.020 'CHK@21

DV 19-13                          296.4222  89-47-20.00   5.280/4.990 'CB
SS 19-13-2224       359-59-57.00  296.4235  89-47-16.00   5.280/4.990 'CHK@BS
M 19-13-10          339-17-48.00  812.3840  90-21-04.00   5.280/5.020 'CHK@10
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DV 2090-21                              356.0632  86-46-56.00   4.580/5.030 'CB
SS 2090-21-2428          0-00-02.00     356.0632  86-46-55.00   4.580/5.030 'CHK@BS
SS 2090-21-2429        199-23-39.00     159.9694  89-55-22.00   4.580/6.000 'MPM
SS 2090-21-2471          0-00-07.00     356.0592  86-46-55.00   4.580/5.030 'CHK@BS

#DV 24-21                               783.1013  89-32-28.00   4.940/5.000 'CB
SS 24-21-2481          359-59-55.00     619.3261  89-49-38.00   4.940/5.000 'CHK@BS
#SS 24-21-2561           75-35-32.00     416.8061  92-17-06.00   4.940/5.020 'CHK
SS 24-21-2562            75-35-34.00     416.8569  92-17-08.00   4.940/5.020 'CHK
SS 24-21-2563            0-00-10.00      619.3238  89-49-33.00   4.940/4.940 'CHK@BS

DV 20-10                                946.8738  89-15-21.00   5.080/5.020 'CB
SS 20-10-2565            0-00-0.00      946.8729  89-15-19.00   5.080/5.020 'CHK@BS
SS 20-10-2566          203-43-03.00     210.8334  90-42-19.00   5.080/5.020 'MPM
M  20-10-15              3-32-27.00     436.9598  89-40-05.00   5.080/5.020 'CHK@15
```

Summary of Unadjusted Input Observations

Number of Entered Stations (FeetUS) = 2

Fixed Stations	N	E	Elev	Description
10	1524442.9330	359945.6470	402.5600	CB 10

Partially Fixed	N	E	Elev	Description
	StdErr	StdErr	StdErr	
20	1525246.9470	360445.4350	390.1100	CB 20
	FREE	FIXED	FIXED	

Number of Measured Angle Observations (DMS) = 27

At	From	To	Angle	StdErr	t-T
10	20	11	254-47-43.00	5.16	-0.02
10	20	12	296-01-43.50	7.51	-0.02
10	20	13	30-48-36.00	4.90	-0.02
10	20	14	10-06-47.50	6.56	-0.02
14	10	502	165-23-51.00	8.84	0.02
14	10	15	150-20-19.00	12.48	0.01
11	10	12	341-41-57.00	4.82	0.01
11	10	1145	146-13-57.00	12.15	0.01
15	14	10	16-31-28.00	7.48	-0.01
15	14	16	73-48-18.00	8.50	0.01
15	14	17	73-42-13.00	8.74	0.01
15	14	18	70-13-59.50	10.51	0.01
20	10	21	328-45-40.50	5.56	0.01
20	10	22	13-49-35.50	4.67	0.01
20	10	15	3-32-31.00	5.22	0.01
22	20	23	220-39-58.50	6.71	-0.01
22	20	15	23-15-09.00	8.79	-0.01
17	15	16	180-14-09.00	8.17	-0.00
16	15	17	0-08-08.00	5.51	-0.00
16	15	23	15-28-01.00	8.50	-0.00
21	20	24	86-38-01.00	6.56	-0.01
21	20	2090	74-54-03.00	7.34	-0.01
21	20	15	279-31-44.00	8.89	-0.01
13	10	19	211-47-32.00	9.04	0.01
13	10	21	121-25-58.00	13.54	0.01
19	13	10	339-17-48.00	6.52	-0.01
20	10	15	3-32-27.00	5.22	0.01

Number of Measured Distance Observations (FeetUS) = 57

From	To	Distance	StdErr	HI	HT	Comb Grid	Type
10	20	946.8642	0.0121	5.160	5.230	0.9999059	S
10	20	946.8620	0.0121	5.160	5.230	0.9999059	S
10	11	742.5426	0.0118	5.160	5.170	0.9999058	S
10	20	946.8624	0.0121	5.160	5.230	0.9999059	S
10	12	270.6028	0.0112	5.160	5.210	0.9999056	S
10	20	946.8620	0.0121	5.160	5.230	0.9999059	S
10	13	545.3025	0.0115	5.160	5.180	0.9999055	S
10	20	946.8637	0.0121	4.840	5.190	0.9999059	S
10	20	946.8611	0.0121	4.840	5.190	0.9999059	S
10	14	294.0883	0.0112	4.840	5.170	0.9999059	S
14	10	294.1040	0.0112	5.080	5.140	0.9999059	S
14	502	659.4688	0.0117	5.080	5.140	0.9999061	S
14	10	294.1024	0.0112	5.080	5.140	0.9999059	S
14	15	234.8716	0.0111	5.080	5.250	0.9999061	S
12	10	270.6020	0.0112	5.090	5.140	0.9999056	S
10	14	294.1001	0.0112	5.010	5.020	0.9999059	S
11	10	742.5421	0.0118	5.130	4.960	0.9999058	S
11	12	567.8244	0.0116	5.130	5.020	0.9999057	S

11	1145	176.0735	0.0110	5.130	5.020	0.9999062	S
1145	11	176.0928	0.0110	4.990	5.020	0.9999062	S
15	14	234.8804	0.0111	5.210	5.020	0.9999061	S
15	10	511.4711	0.0115	5.210	4.960	0.9999059	S
15	14	234.8758	0.0111	5.210	4.920	0.9999061	S
15	14	234.8753	0.0111	5.210	4.920	0.9999061	S
15	16	908.9337	0.0120	5.210	5.020	0.9999063	S
15	14	234.8753	0.0111	5.210	4.920	0.9999061	S
15	17	520.3377	0.0115	5.210	5.020	0.9999063	S
15	14	234.8763	0.0111	5.210	4.920	0.9999061	S
15	18	228.7572	0.0111	5.210	5.020	0.9999062	S
20	10	946.8625	0.0121	5.160	5.000	0.9999059	S
20	21	401.2008	0.0113	5.160	4.870	0.9999056	S
20	10	946.8645	0.0121	5.160	5.000	0.9999059	S
20	22	611.8448	0.0116	5.160	4.980	0.9999057	S
20	15	436.9286	0.0114	5.160	5.020	0.9999061	S
22	20	611.8443	0.0116	5.070	4.900	0.9999057	S
22	20	611.8433	0.0116	5.070	4.900	0.9999057	S
22	23	516.7434	0.0115	5.070	5.310	0.9999055	S
22	15	198.3206	0.0111	5.070	5.020	0.9999057	S
17	15	520.3505	0.0115	5.020	5.020	0.9999063	S
17	16	388.5958	0.0113	5.020	5.020	0.9999065	S
16	15	908.9450	0.0120	4.910	5.020	0.9999063	S
16	17	388.5932	0.0113	4.910	5.020	0.9999065	S
16	23	211.7744	0.0111	4.910	5.310	0.9999061	S
21	20	401.2200	0.0113	5.110	4.900	0.9999056	S
21	20	401.2213	0.0113	5.110	4.900	0.9999056	S
21	24	619.3118	0.0116	5.110	5.290	0.9999052	S
21	2090	356.0326	0.0113	5.110	5.020	0.9999056	S
21	15	253.3153	0.0111	5.110	5.020	0.9999056	S
13	10	545.3134	0.0115	5.370	5.040	0.9999055	S
13	10	545.3139	0.0115	5.370	5.040	0.9999055	S
13	19	296.4250	0.0112	5.370	4.750	0.9999053	S
13	21	153.5133	0.0110	5.370	5.020	0.9999052	S
19	13	296.4222	0.0112	5.280	4.990	0.9999053	S
19	10	812.3840	0.0119	5.280	5.020	0.9999055	S
2090	21	356.0632	0.0113	4.580	5.030	0.9999056	S
20	10	946.8738	0.0121	5.080	5.020	0.9999059	S
20	15	436.9598	0.0114	5.080	5.020	0.9999061	S

Number of Zenith Observations (DMS) = 57

From	To	Zenith	StdErr	HI	HT
10	20	90-44-45.00	10.15	5.160	5.230
10	20	90-44-58.50	10.15	5.160	5.230
10	11	89-58-14.50	10.24	5.160	5.170
10	20	90-45-00.50	10.15	5.160	5.230
10	12	88-52-16.00	11.67	5.160	5.210
10	20	90-45-00.50	10.15	5.160	5.230
10	13	89-21-38.00	10.44	5.160	5.180
10	20	90-44-18.00	10.15	4.840	5.190
10	20	90-44-02.00	10.15	4.840	5.190
10	14	92-01-04.00	11.43	4.840	5.170
14	10	87-54-43.00	11.43	5.080	5.140
14	502	90-08-57.00	10.30	5.080	5.140
14	10	87-54-26.00	11.43	5.080	5.140
14	15	89-45--0.00	12.16	5.080	5.250
12	10	91-06-06.00	11.67	5.090	5.140
10	14	92-04-40.00	11.43	5.010	5.020
11	10	90-02-47.00	10.24	5.130	4.960
11	12	89-31-27.00	10.40	5.130	5.020
11	1145	94-29-04.00	13.62	5.130	5.020
1145	11	85-32-29.00	13.62	4.990	5.020
15	14	90-15-14.00	12.16	5.210	5.020
15	10	88-55-53.00	10.49	5.210	4.960
15	14	90-17-05.00	12.16	5.210	4.920

15	14	90-16-42.50	12.16	5.210	4.920
15	16	90-18-59.00	10.16	5.210	5.020
15	14	90-16-42.00	12.16	5.210	4.920
15	17	90-30-32.50	10.48	5.210	5.020
15	14	90-16-42.00	12.16	5.210	4.920
15	18	90-29-27.00	12.27	5.210	5.020
20	10	89-15-28.50	10.15	5.160	5.000
20	21	87-12-28.00	10.79	5.160	4.870
20	10	89-15-30.50	10.15	5.160	5.000
20	22	88-17-32.50	10.35	5.160	4.980
20	15	89-40-34.00	10.67	5.160	5.020
22	20	91-44-37.50	10.35	5.070	4.900
22	20	91-44-20.50	10.35	5.070	4.900
22	23	90-16-05.00	10.48	5.070	5.310
22	15	94-34-45.00	12.94	5.070	5.020
17	15	89-30-48.00	10.48	5.020	5.020
17	16	90-03-39.00	10.84	5.020	5.020
16	15	89-41-36.00	10.16	4.910	5.020
16	17	89-55-46.00	10.84	4.910	5.020
16	23	85-01-25.00	12.61	4.910	5.310
21	20	92-51-51.00	10.79	5.110	4.900
21	20	92-51-36.00	10.79	5.110	4.900
21	24	90-09-29.00	10.34	5.110	5.290
21	2090	93-10-05.00	11.00	5.110	5.020
21	15	93-55-05.00	11.89	5.110	5.020
13	10	90-40-37.00	10.44	5.370	5.040
13	10	90-40-22.00	10.44	5.370	5.040
13	19	90-23-16.50	11.41	5.370	4.750
13	21	89-38-06.00	14.57	5.370	5.020
19	13	89-47-20.00	11.41	5.280	4.990
19	10	90-21-04.00	10.20	5.280	5.020
2090	21	86-46-56.00	11.00	4.580	5.030
20	10	89-15-21.00	10.15	5.080	5.020
20	15	89-40-05.00	10.67	5.080	5.020

Number of Measured Sideshots (DMS, FeetUS) = 35

At	From To	Angle	Distance	Vertical	HI	HT
10	20					
	100	0-00--0.00	946.8630	90-45-17.00	5.160	5.230
	243	359-59-43.00	946.8624	90-45-15.00	5.160	5.230
	244	0-00-01.00	946.8666	90-44-09.00	4.840	5.230
	245	0-00-01.00	946.8663	90-44-16.00	4.840	5.190
	246	345-38-42.00	222.6586	91-55-22.00	4.840	5.020
	498	0-00--0.00	946.8604	90-44-17.00	4.840	5.190
14	10					
	501	359-59-59.00	294.1037	87-54-43.00	5.080	5.140
	503	45-15-20.00	129.8266	88-40-54.00	5.080	5.020
	825	0-00-02.00	294.1031	87-54-42.00	5.080	5.140
12	10					
	826	0-00--0.00	270.6033	91-06-06.00	5.090	5.140
	904	359-59-50.00	270.6013	91-06-08.00	5.090	5.140
10	14					
	905	0-00-01.00	294.0975	92-04-41.00	5.010	5.020
11	10					
	938	0-00-01.00	742.5409	90-02-45.00	5.130	4.960
	1144	0-00-11.00	742.5406	90-02-39.00	5.130	4.960
1145	11					
	1146	359-59-38.00	176.0639	85-32-26.00	4.990	5.020
	1172	359-59-29.00	176.0508	85-32-26.00	4.990	5.020
15	14					
	1173	0-00-05.00	234.8798	90-15-12.00	5.210	5.020
	1686	359-59-51.00	234.8725	90-16-59.00	5.210	4.920
20	10					
	1687	359-59-58.00	946.8633	89-15-47.00	5.160	5.000

	1688	97-42-07.00	8.3233	93-10-13.00	5.160	5.020
22	20					
	1765	0-00--0.00	611.8440	91-44-37.00	5.070	4.900
17	15					
	1856	0-00--0.00	520.3515	89-30-47.00	5.020	5.020
16	15					
	1909	0-00--0.00	908.9463	89-41-35.00	4.910	5.020
21	20					
	1959	0-00-03.00	401.2202	92-51-49.00	5.110	4.900
	2089	359-59-27.00	401.2202	92-51-53.00	5.110	4.900
13	10					
	2092	0-00-07.00	545.3905	90-40-34.00	5.370	5.040
19	13					
	2224	359-59-57.00	296.4235	89-47-16.00	5.280	4.990
2090	21					
	2428	0-00-02.00	356.0632	86-46-55.00	4.580	5.030
	2429	199-23-39.00	159.9694	89-55-22.00	4.580	6.000
	2471	0-00-07.00	356.0592	86-46-55.00	4.580	5.030
24	21					
	2481	359-59-55.00	619.3261	89-49-38.00	4.940	5.000
	2562	75-35-34.00	416.8569	92-17-08.00	4.940	5.020
	2563	0-00-10.00	619.3238	89-49-33.00	4.940	4.940
20	10					
	2565	0-00--0.00	946.8729	89-15-19.00	5.080	5.020
	2566	203-43-03.00	210.8334	90-42-19.00	5.080	5.020

Adjustment Statistical Summary

Iterations = 2

Number of Stations = 18

Number of Observations = 141
Number of Unknowns = 49
Number of Redundant Obs = 92

Observation	Count	Sum Squares of StdRes	Error Factor
Angles	27	16.356	0.964
Distances	57	14.583	0.626
Zeniths	57	31.337	0.918
Total	141	62.276	0.823

Warning: The Chi-Square Test at 5.00% Level Exceeded Lower Bound
Lower/Upper Bounds (0.856/1.144)

Adjusted Station Information

Coordinate Changes from Entered Provisionals (FeetUS)

Station	dN	dE	dZ
10	-0.0000	-0.0000	-0.0000
20	0.0028	-0.0000	-0.0000

Adjusted Coordinates (FeetUS)

Station	N	E	Elev	Description
10	1524442.9330	359945.6470	402.5600	CB 10
20	1525246.9498	360445.4350	390.1100	CB 20
11	1524655.8146	359234.3458	402.9911	CB 11
12	1524672.0778	359801.8652	407.8294	CB 12
13	1524693.1928	360430.0395	408.6220	CB 13
14	1524661.4001	360142.2084	391.8818	CB 14
502	1525246.9557	360445.4227	390.1120	CHK@20
15	1524890.8447	360192.3073	392.7367	CB 15
1145	1524604.1843	359066.5801	389.3359	CBS 1145
16	1524829.3869	359285.5481	387.9386	CBS 16
17	1524854.7466	359673.2815	388.3213	CBS 17
18	1524861.1890	359965.5106	390.9725	MPMM
21	1524846.2900	360441.0468	409.9447	CB 21
22	1524819.8171	360007.8372	408.5284	CB 22
23	1524787.0072	359492.1975	405.9019	CB 23
24	1524875.8804	361059.5900	408.0518	CB 24
2090	1524935.1202	360785.2300	390.3773	CBS 2090
19	1524670.1158	360725.5296	407.2328	CB 19

Adjusted Positions and Ellipsoid Heights (FeetUS)

Station	Latitude	Longitude	Ellip Ht	Geoid Ht
10	43-01-00.300601	74-59-39.373614	298.8465	-103.7135
20	43-01-08.271489	74-59-32.709266	286.4006	-103.7094
11	43-01-02.361931	74-59-48.965622	299.2614	-103.7297
12	43-01-02.555675	74-59-41.327282	304.1111	-103.7183
13	43-01-02.800717	74-59-32.872804	304.9164	-103.7056
14	43-01-02.469985	74-59-36.744921	288.1706	-103.7113
502	43-01-08.271547	74-59-32.709433	286.4026	-103.7094
15	43-01-04.739292	74-59-36.088661	289.0246	-103.7120
1145	43-01-01.842128	74-59-51.219872	285.6033	-103.7326
16	43-01-04.079429	74-59-48.290186	284.2087	-103.7299
17	43-01-04.352547	74-59-43.072708	284.5990	-103.7223
18	43-01-04.433189	74-59-39.139356	287.2561	-103.7164
21	43-01-04.313612	74-59-32.736714	306.2381	-103.7066
22	43-01-04.026987	74-59-38.566297	304.8132	-103.7152
23	43-01-03.672877	74-59-45.504997	302.1765	-103.7254
24	43-01-04.641640	74-59-24.412475	304.3575	-103.6943
2090	43-01-05.210964	74-59-28.110461	286.6769	-103.7004
19	43-01-02.589864	74-59-28.893252	303.5333	-103.6995
			Average:	-103.7140

Convergence Angles (DMS) and Grid Factors at Stations
(Grid Azimuth = Geodetic Azimuth - Convergence)
(Elevation Factor Includes a Geoid Height Correction at Each Station))

Station	Convergence Angle	------- Factors ------- Scale	x Elevation	= Combined
10	-0-20-13.93	0.99991996	0.99998572	0.99990568
20	-0-20-09.43	0.99991981	0.99998631	0.99990612
11	-0-20-20.48	0.99992018	0.99998570	0.99990587
12	-0-20-15.27	0.99992000	0.99998546	0.99990547
13	-0-20-09.51	0.99991982	0.99998543	0.99990524

14	-0-20-12.15	0.99991990	0.99998623	0.99990613
502	-0-20-09.43	0.99991981	0.99998631	0.99990612
15	-0-20-11.71	0.99991989	0.99998618	0.99990607
1145	-0-20-22.02	0.99992023	0.99998635	0.99990658
16	-0-20-20.03	0.99992016	0.99998642	0.99990658
17	-0-20-16.48	0.99992004	0.99998640	0.99990644
18	-0-20-13.79	0.99991996	0.99998627	0.99990623
21	-0-20-09.42	0.99991981	0.99998536	0.99990518
22	-0-20-13.40	0.99991994	0.99998543	0.99990537
23	-0-20-18.13	0.99992010	0.99998556	0.99990566
24	-0-20-03.75	0.99991963	0.99998545	0.99990508
2090	-0-20-06.27	0.99991971	0.99998630	0.99990601
19	-0-20-06.79	0.99991973	0.99998549	0.99990522
Project Averages:	-0-20-12.89	0.99991993	0.99998591	0.99990584

Adjusted Observations and Residuals

Adjusted Measured Angle Observations (DMS)

At	From	To	Angle	Residual	StdErr	StdRes
10	20	11	254-47-45.55	0-00-02.55	5.16	0.5
10	20	12	296-01-38.09	-0-00-05.41	7.51	0.7
10	20	13	30-48-40.88	0-00-04.88	4.90	1.0
10	20	14	10-06-46.84	-0-00-00.66	6.56	0.1
14	10	502	165-23-51.00	-0-00-00.00	8.84	0.0
14	10	15	150-20-18.50	-0-00-00.50	12.48	0.0
11	10	12	341-41-48.85	-0-00-08.15	4.82	1.7
11	10	1145	146-13-57.00	-0-00-00.00	12.15	0.0
15	14	10	16-31-26.33	-0-00-01.67	7.48	0.2
15	14	16	73-48-19.55	0-00-01.55	8.50	0.2
15	14	17	73-42-15.70	0-00-02.70	8.74	0.3
15	14	18	70-13-59.50	-0-00-00.00	10.51	0.0
20	10	21	328-45-42.65	0-00-02.15	5.56	0.4
20	10	22	13-49-39.73	0-00-04.23	4.67	0.9
20	10	15	3-32-25.55	-0-00-05.45	5.22	1.0
22	20	23	220-39-57.08	-0-00-01.42	6.71	0.2
22	20	15	23-14-53.30	-0-00-15.70	8.79	1.8
17	15	16	180-14-11.02	0-00-02.02	8.17	0.2
16	15	17	0-08-07.18	-0-00-00.82	5.51	0.1
16	15	23	15-28-01.04	0-00-00.04	8.50	0.0
21	20	24	86-38-01.00	0-00-00.00	6.56	0.0
21	20	2090	74-54-03.00	-0-00-00.00	7.34	0.0
21	20	15	279-31-39.86	-0-00-04.14	8.89	0.5
13	10	19	211-47-18.88	-0-00-13.12	9.04	1.5
13	10	21	121-26-07.15	0-00-09.15	13.54	0.7
19	13	10	339-17-36.13	-0-00-11.87	6.52	1.8
20	10	15	3-32-25.55	-0-00-01.45	5.22	0.3

Adjusted Measured Distance Observations (FeetUS)

From	To	Distance	Residual	StdErr	StdRes
10	20	946.8650	0.0008	0.0121	0.1
10	20	946.8650	0.0030	0.0121	0.3
10	11	742.5444	0.0018	0.0118	0.2
10	20	946.8650	0.0026	0.0121	0.2
10	12	270.5968	-0.0060	0.0112	0.5
10	20	946.8650	0.0030	0.0121	0.3
10	13	545.3068	0.0043	0.0115	0.4
10	20	946.8614	-0.0023	0.0121	0.2
10	20	946.8614	0.0003	0.0121	0.0
10	14	294.0877	-0.0006	0.0112	0.1
14	10	294.1017	-0.0023	0.0112	0.2
14	502	659.4688	-0.0000	0.0117	0.0
14	10	294.1017	-0.0007	0.0112	0.1
14	15	234.8748	0.0032	0.0111	0.3
12	10	270.5949	-0.0071	0.0112	0.6
10	14	294.0991	-0.0010	0.0112	0.1
11	10	742.5445	0.0024	0.0118	0.2
11	12	567.8258	0.0014	0.0116	0.1
11	1145	176.0863	0.0128	0.0110	1.2
1145	11	176.0800	-0.0128	0.0110	1.2
15	14	234.8749	-0.0055	0.0111	0.5
15	10	511.4755	0.0044	0.0115	0.4
15	14	234.8753	-0.0005	0.0111	0.0
15	14	234.8753	0.0000	0.0111	0.0
15	16	908.9386	0.0049	0.0120	0.4
15	14	234.8753	0.0000	0.0111	0.0
15	17	520.3490	0.0113	0.0115	1.0
15	14	234.8753	-0.0010	0.0111	0.1

15	18	228.7572	-0.0000	0.0111	0.0
20	10	946.8639	0.0014	0.0121	0.1
20	21	401.1983	-0.0025	0.0113	0.2
20	10	946.8639	-0.0006	0.0121	0.1
20	22	611.8311	-0.0137	0.0116	1.2
20	15	436.9515	0.0229	0.0114	2.0
22	20	611.8416	-0.0027	0.0116	0.2
22	20	611.8416	-0.0017	0.0116	0.1
22	23	516.7371	-0.0063	0.0115	0.6
22	15	198.3239	0.0033	0.0111	0.3
17	15	520.3473	-0.0032	0.0115	0.3
17	16	388.5984	0.0026	0.0113	0.2
16	15	908.9382	-0.0068	0.0120	0.6
16	17	388.5985	0.0053	0.0113	0.5
16	23	211.7681	-0.0063	0.0111	0.6
21	20	401.2230	0.0030	0.0113	0.3
21	20	401.2230	0.0017	0.0113	0.1
21	24	619.3118	-0.0000	0.0116	0.0
21	2090	356.0379	0.0053	0.0113	0.5
21	15	253.3139	-0.0014	0.0111	0.1
13	10	545.3104	-0.0030	0.0115	0.3
13	10	545.3104	-0.0035	0.0115	0.3
13	19	296.4248	-0.0002	0.0112	0.0
13	21	153.5100	-0.0033	0.0110	0.3
19	13	296.4200	-0.0022	0.0112	0.2
19	10	812.3906	0.0066	0.0119	0.6
2090	21	356.0579	-0.0053	0.0113	0.5
20	10	946.8652	-0.0086	0.0121	0.7
20	15	436.9520	-0.0078	0.0114	0.7

Adjusted Zenith Observations (DMS)

From	To	Zenith	Residual	StdErr	StdRes
10	20	90-45-00.04	0-00-15.04	10.15	1.5
10	20	90-45-00.04	0-00-01.54	10.15	0.2
10	11	89-58-05.10	-0-00-09.40	10.24	0.9
10	20	90-45-00.04	-0-00-00.46	10.15	0.0
10	12	88-52-29.76	0-00-13.76	11.67	1.2
10	20	90-45-00.04	-0-00-00.46	10.15	0.0
10	13	89-21-38.71	0-00-00.71	10.44	0.1
10	20	90-43-59.05	-0-00-18.95	10.15	1.9
10	20	90-43-59.05	-0-00-02.95	10.15	0.3
10	14	92-00-59.07	-0-00-04.93	11.43	0.4
14	10	87-54-30.07	-0-00-12.93	11.43	1.1
14	502	90-08-57.00	-0-00-00.00	10.30	0.0
14	10	87-54-30.07	0-00-04.07	11.43	0.4
14	15	89-45-01.65	0-00-01.65	12.16	0.1
12	10	91-06-16.32	0-00-10.32	11.67	0.9
10	14	92-04-43.36	0-00-03.36	11.43	0.3
11	10	90-02-45.63	-0-00-01.37	10.24	0.1
11	12	89-31-20.68	-0-00-06.32	10.40	0.6
11	1145	94-29-04.95	0-00-00.95	13.62	0.1
1145	11	85-32-29.96	0-00-00.96	13.62	0.1
15	14	90-15-17.91	0-00-03.91	12.16	0.3
15	10	88-55-41.88	-0-00-11.12	10.49	1.1
15	14	90-16-45.73	-0-00-19.27	12.16	1.6
15	14	90-16-45.73	0-00-03.23	12.16	0.3
15	16	90-18-59.84	0-00-00.84	10.16	0.1
15	14	90-16-45.73	0-00-03.73	12.16	0.3
15	17	90-30-31.85	-0-00-00.65	10.48	0.1
15	14	90-16-45.73	0-00-03.73	12.16	0.3
15	18	90-29-27.00	-0-00-00.00	12.27	0.0
20	10	89-15-27.60	-0-00-00.90	10.15	0.1
20	21	87-12-27.96	-0-00-00.04	10.79	0.0
20	10	89-15-27.60	-0-00-02.90	10.15	0.3
20	22	88-17-35.00	0-00-02.50	10.35	0.2

20	15	89-40-29.26	-0-00-04.74	10.67	0.4
22	20	91-44-28.12	-0-00-09.38	10.35	0.9
22	20	91-44-28.12	0-00-07.62	10.35	0.7
22	23	90-15-58.87	-0-00-06.13	10.48	0.6
22	15	94-34-51.09	0-00-06.09	12.94	0.5
17	15	89-30-47.86	-0-00-00.14	10.48	0.0
17	16	90-03-28.80	-0-00-10.20	10.84	0.9
16	15	89-41-26.00	-0-00-10.00	10.16	1.0
16	17	89-55-36.10	-0-00-09.90	10.84	0.9
16	23	85-01-27.96	0-00-02.96	12.61	0.2
21	20	92-51-52.19	0-00-01.19	10.79	0.1
21	20	92-51-52.19	0-00-16.19	10.79	1.5
21	24	90-09-29.00	-0-00-00.00	10.34	0.0
21	2090	93-09-51.89	-0-00-13.11	11.00	1.2
21	15	93-55-01.63	-0-00-03.37	11.89	0.3
13	10	90-40-23.16	-0-00-13.84	10.44	1.3
13	10	90-40-23.16	0-00-01.16	10.44	0.1
13	19	90-23-15.11	-0-00-01.39	11.41	0.1
13	21	89-38-15.07	0-00-09.07	14.57	0.6
19	13	89-47-20.62	0-00-00.62	11.41	0.1
19	10	90-20-59.45	-0-00-04.55	10.20	0.4
2090	21	86-46-42.88	-0-00-13.12	11.00	1.2
20	10	89-15-05.82	-0-00-15.18	10.15	1.5
20	15	89-39-51.49	-0-00-13.51	10.67	1.3

Adjusted Bearings (DMS) and Horizontal Distances (FeetUS)

(Relative Confidence of Bearing is in Seconds)

From	To	Grid Bearing	Grid Dist Grnd Dist	95% RelConfidence Brg	 Dist	 PPM
10	11	N73-20-18.11W	742.4742 742.5441	11.74	0.0179	24.1090
10	12	N32-06-25.57W	270.5190 270.5446	15.35	0.0169	62.5145
10	13	N62-40-37.23E	545.2211 545.2727	7.73	0.0135	24.7371
10	14	N41-58-43.19E	293.8779 293.9056	9.32	0.0111	37.6499
10	15	N28-50-28.02E	511.3376 511.3858	5.43	0.0112	21.9702
10	19	N73-45-32.24E	812.2986 812.3753	9.84	0.0186	22.9347
10	20	N31-51-56.37E	946.6948 946.7839	1.18	0.0087	9.1693
11	12	N88-21-30.75E	567.7523 567.8058	15.23	0.0215	37.9137
11	1145	S72-53-38.90W	175.5307 175.5471	31.96	0.0191	108.9125
13	19	S85-32-03.88E	296.3899 296.4180	17.80	0.0171	57.8035
13	21	N04-06-44.39E	153.4923 153.5069	23.26	0.0201	131.0619
14	15	N12-19-01.70E	234.8504 234.8725	10.87	0.0098	41.7763
14	502	N27-22-34.21E	659.4045 659.4664	23.55	0.0286	43.3380
15	16	S86-07-21.25W	908.8395 908.9246	12.80	0.0156	17.1099
15	17	S86-01-17.41W	520.2796 520.3284	13.65	0.0160	30.8158
15	18	S82-33-01.20W	228.7273 228.7488	27.93	0.0272	118.9097
15	20	N35-24-21.92E	436.9033 436.9444	6.35	0.0111	25.4308
15	21	S79-50-41.12E	252.6984 252.7222	13.23	0.0179	70.8014
15	22	S68-56-29.39W	197.6717 197.6904	20.61	0.0164	82.8537
16	17	N86-15-28.43E	388.5618 388.5981	16.09	0.0159	40.9632
16	23	S78-24-37.72E	210.9502 210.9700	26.68	0.0225	106.6303
20	21	S00-37-39.03W	400.6839 400.7217	8.63	0.0133	33.2799
20	22	S45-41-36.11W	611.5016 611.5592	7.33	0.0139	22.7509
21	24	N87-15-40.02E	619.2506 619.3093	18.23	0.0284	45.9344
22	23	S86-21-33.17W	516.6826 516.7314	14.61	0.0223	43.1363
2090	21	S75-31-42.02W	355.4615 355.4951	19.94	0.0196	55.0428

Sideshot Coordinates Computed After Adjustment

Station	N	E	Elev	Description
100	1525246.9472	360445.4334	390.0364	CHK@BS
243	1525246.9880	360445.3669	390.0455	CHK@BS
244	1525246.9513	360445.4413	390.0284	CHK@BS
245	1525246.9507	360445.4410	390.0363	CHK@BM
246	1524655.1343	360012.5972	394.9103	CPBM
498	1525246.9481	360445.4339	390.0318	CHK@BS
501	1524442.9300	359945.6463	402.5394	CHK
503	1524655.1378	360012.5795	394.9291	CHK@BM
825	1524442.9334	359945.6435	402.5408	CHK@BS
826	1524442.9256	359945.6516	402.5781	CHK@BS
904	1524442.9344	359945.6616	402.5756	CHK@BS
905	1524661.3980	360142.2084	391.8875	CHK@BS
938	1524442.9306	359945.6425	402.5784	CHK@BS
1144	1524442.8962	359945.6319	402.6000	CHK@BS
1146	1524655.8276	359234.3247	402.9961	CHK@BS
1172	1524655.8311	359234.3100	402.9951	CHK@BS
1173	1524661.3964	360142.2018	391.8893	CHK@BS
1686	1524661.4007	360142.2190	391.8675	CHK@BS
1687	1524442.9277	359945.6545	402.4668	CHK@BS
1688	1525252.2430	360439.0292	389.7897	CPBM
1765	1525246.9509	360445.4361	390.0895	CHK@BS
1856	1524890.8450	360192.3114	392.7491	CHK@BS
1909	1524890.8452	360192.3156	392.7149	CHK@BS
1959	1525246.9473	360445.4408	390.1136	CHK@BS
2089	1525246.9477	360445.3709	390.1058	CHK@BS
2092	1524442.9128	359945.5676	402.5225	CHK@BS
2224	1524693.1888	360430.0358	408.6225	CHK@BS
2428	1524846.2917	360441.0397	409.9179	CHK@BS
2429	1524921.3948	360944.5942	389.1735	MPM
2471	1524846.3010	360441.0414	409.9177	CHK@BS
2481	1524846.2743	360441.0337	409.8673	CHK@BS
2562	1525273.8561	360936.8060	391.3511	CHK
2563	1524846.3194	360441.0339	409.9423	CHK@BS
2565	1524442.9258	359945.6425	402.4954	CHK@BS
2566	1525366.0946	360619.3319	387.5757	MPM

Error Propagation

Station Coordinate Standard Deviations (FeetUS)

Station	N	E	Elev
10	0.000000	0.000000	0.000000
20	0.004176	0.000000	0.000000
11	0.016945	0.008016	0.019843
12	0.007235	0.007939	0.010423
13	0.008030	0.005959	0.010413
14	0.005021	0.004966	0.006580
502	0.019354	0.029747	0.033581
15	0.005022	0.005110	0.006907
1145	0.023160	0.011002	0.021478
16	0.023174	0.007914	0.017336
17	0.014563	0.008132	0.016596
18	0.013280	0.012121	0.015262
21	0.006301	0.006855	0.008607
22	0.007888	0.007326	0.010885
23	0.017801	0.010337	0.018766
24	0.023413	0.013264	0.032215
2090	0.015289	0.009919	0.015932
19	0.015558	0.008145	0.014712

Station Coordinate Error Ellipses (FeetUS)
Confidence Region = 95%

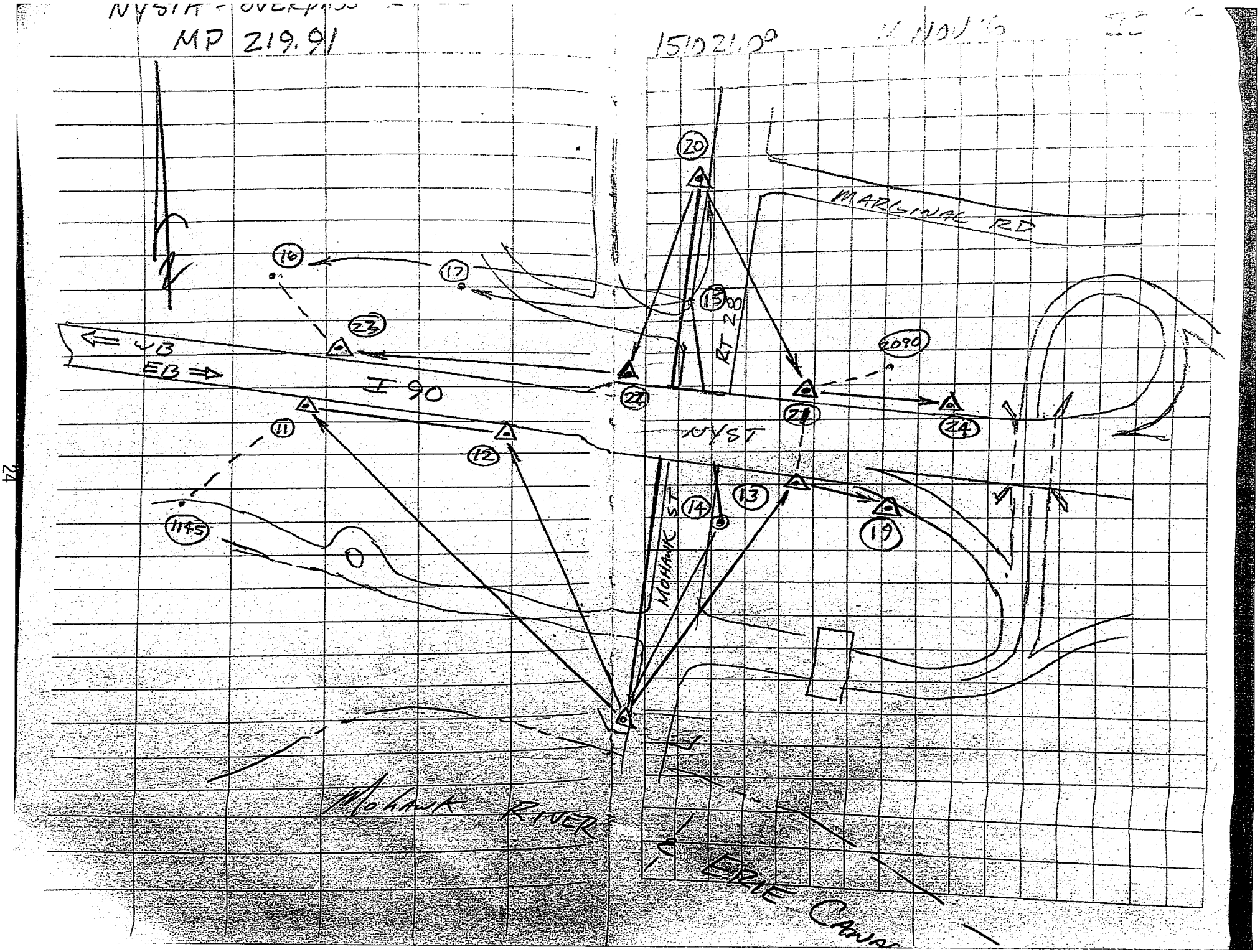
Station	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Elev
10	0.000000	0.000000	0-00	0.000000
20	0.010221	0.000000	180-00	0.000000
11	0.042332	0.017703	12-43	0.038892
12	0.020140	0.016900	61-07	0.020429
13	0.020481	0.013405	158-12	0.020409
14	0.013295	0.011048	136-43	0.012896
502	0.081265	0.030690	118-39	0.065818
15	0.013595	0.011079	132-31	0.013538
1145	0.056810	0.026675	4-14	0.042095
16	0.056796	0.019162	176-58	0.033978
17	0.035665	0.019874	177-52	0.032527
18	0.032537	0.029634	6-10	0.029912
21	0.017012	0.015167	68-41	0.016870
22	0.021711	0.014933	140-57	0.021334
23	0.044273	0.024053	167-48	0.036780
24	0.057771	0.031636	8-41	0.063140
2090	0.037491	0.024173	4-32	0.031226
19	0.038800	0.018502	167-25	0.028834

Relative Error Ellipses (FeetUS)
Confidence Region = 95%

Stations From	To	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Vertical
10	11	0.042332	0.017703	12-43	0.038892
10	12	0.020140	0.016900	61-07	0.020429
10	13	0.020481	0.013405	158-12	0.020409
10	14	0.013295	0.011048	136-43	0.012896
10	15	0.013595	0.011079	132-31	0.013538
10	19	0.038800	0.018502	167-25	0.028834
10	20	0.010221	0.000000	180-00	0.000000
11	12	0.042363	0.020615	8-00	0.039392
11	1145	0.027200	0.019117	162-54	0.016108
13	19	0.025895	0.016656	172-47	0.021885
13	21	0.020117	0.017307	4-53	0.018148

14	15	0.012408	0.009777	108-25	0.010113
14	502	0.075297	0.028577	117-23	0.064543
15	16	0.056396	0.015540	175-32	0.031687
15	17	0.034430	0.016030	175-28	0.029921
15	18	0.030970	0.027198	172-33	0.026674
15	20	0.013476	0.011087	130-52	0.013538
15	21	0.018354	0.015679	74-44	0.018674
15	22	0.020792	0.015033	132-02	0.019580
16	17	0.030316	0.015915	175-41	0.025338
16	23	0.027515	0.022214	179-01	0.023699
20	21	0.016846	0.013237	81-44	0.016870
20	22	0.021731	0.013904	137-18	0.021334
21	24	0.054722	0.028445	177-16	0.060845
22	23	0.036606	0.022272	177-59	0.035631
2090	21	0.034363	0.019566	165-32	0.026277

Elapsed Time = 00:00:00


NYSTA - OVERPASS
MP 219.91
15021.0°
MARGINAL RD
20
16
17
15
23
WB
EB
I 90
6090
RT 2
22
21
24
NYST
11
12
13
14
19
1145
MOHAWK ST
MOHAWK RIVER
ERIE CANAL

[illegible] ELEV. RUN

	+	HI	−	ELEV	HOLD	
CP 9	0.62	403.18 ~~[illegible]~~			~~402.71~~ 402.56 (STATIC)	HELD RTK (NAVD '88) DERIVED ELEVATION
TP1	1.91	397.17 ~~397.32~~	7.92	395.26 ~~395.41~~		COR SWLK FLAG
TP2	5.12	398.03 ~~398.18~~	4.26	392.91 ~~393.06~~		COR SWLK FLAG
CP 20	5.47	395.58 ~~395.73~~	7.92	390.26	390.11 ~~390.26~~	5/8" REROD W/ PLASTIC FA CAP (RTK 390.28) ✓
TBM ~~A~~ 1	7.62	397.40 ~~397.55~~	5.80	389.93	389.78 ~~389.93~~	TBM A SH'D 'X' SE'LY RIM SAN MH, IN LAWN AREA, NE'LY COR PARKING LOT @ TRACTOR SUPPLY & 15' NW'LY OF W'LY EP RT 28
TP 5	4.44	396.36 ~~397.51~~	4.48	392.92 ~~393.07~~		COR SWLK FLAG
TP 6	5.20	398.65 ~~398.80~~	3.91	393.45 ~~393.60~~		COR SWLK FLAG
TBM ~~B~~ 2	4.90	399.81 ~~399.96~~	3.74	395.06	394.91 ~~395.05~~	TBM 'B' CH'D 'X' SE'LY RIM SAN MH, 30'+/- NW'LY OF W'LY EP RT 28 & 30'+/- S'LY OF SABOT NYST OVERPASS T/CURB
TP 6	7.21	403.57 ~~403.72~~	3.45	396.36 ~~396.51~~		
CP 10			1.00	402.57 ~~402.72~~ 401.01	402.56	

[illegible] 11/6/15 [illegible] 50' [illegible] [illegible]

NYSTA - HERKIMER

JS

15102109 14 Nov 16

- HELD RTK COORDS @ CP (10)
- HELD "LEVEL" ELEV @ CP (20) (P-3)
- HELD INV RTK AZ (10) → (20)
  INV Az = 31° 51' 55"
- HELD MEAS'D N & E @ CP (20)

TO (10) FROM (20) W/ 0°

HI= 5.16 ✓ HT= 5.33 ✓

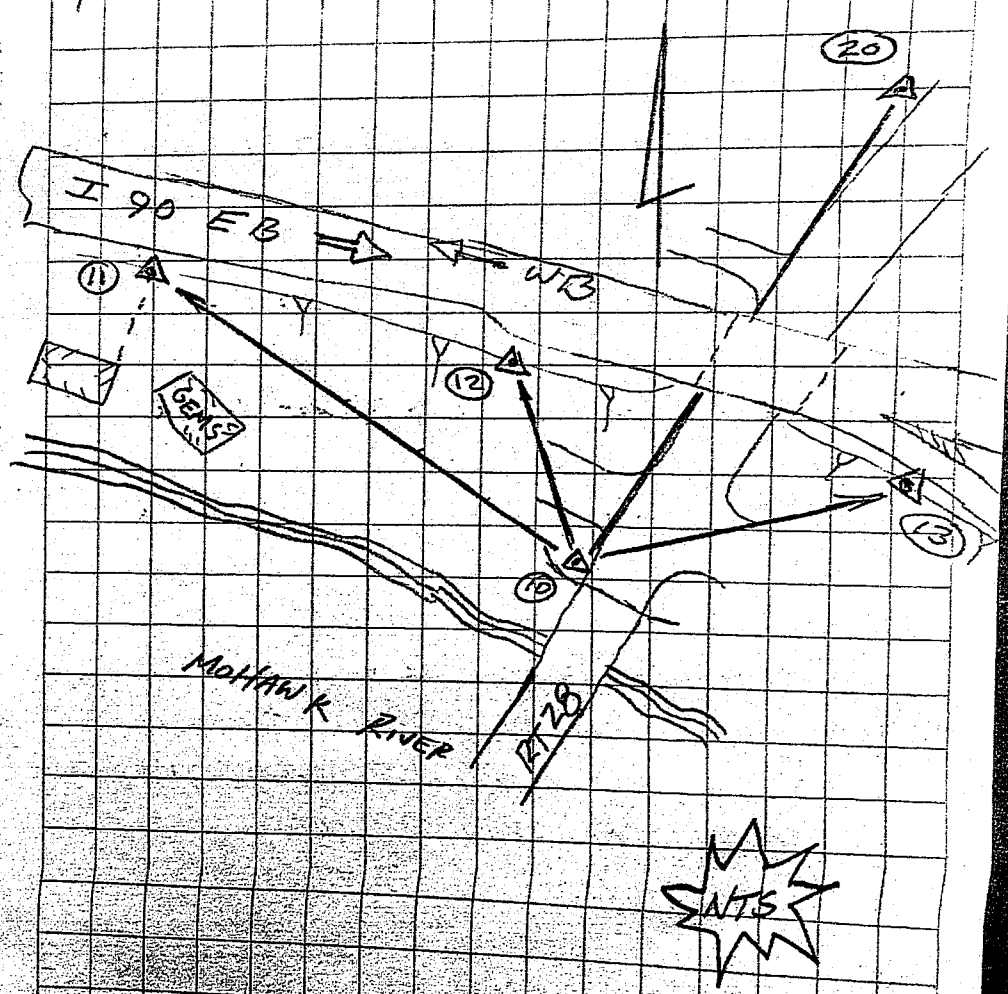
HD= 946.78 ✓ HOR= 0.0 VER= -0.09

100 ✓ (20)

(11) SET 10" GALV SPIKE BACK SIDE OF GUARDRAIL, EB OPPO E R GRAY 1 STY FR, JUST W OF "GEMS ON THE MOHAWK" HI=5.17 ✓

(12) SET 10" GALV SPIKE BACKSIDE OF GUARDRAIL EB, OPPO END TRANSITION OF OFF RAMP TO EXIT 30 HI=5.21 ✓

(13) SET 10" GALV SPIKE BACKSIDE OF GUARD RAIL EB, 50' +/- E'ly OF PAINT GORE PT @ OFF RAMP HT=5.18



NYSTA - HEADWORKS

14 NOV 16

151021.09

101-103 WIRE ELEV & POLE (CROSS MEMBER)

104 WIRE & TOWER LOWEST (FROM 103)

105 "

106 " HIGHEST (FROM 101)

107 & 10" METAL EXPAN. JOINT (TYP)

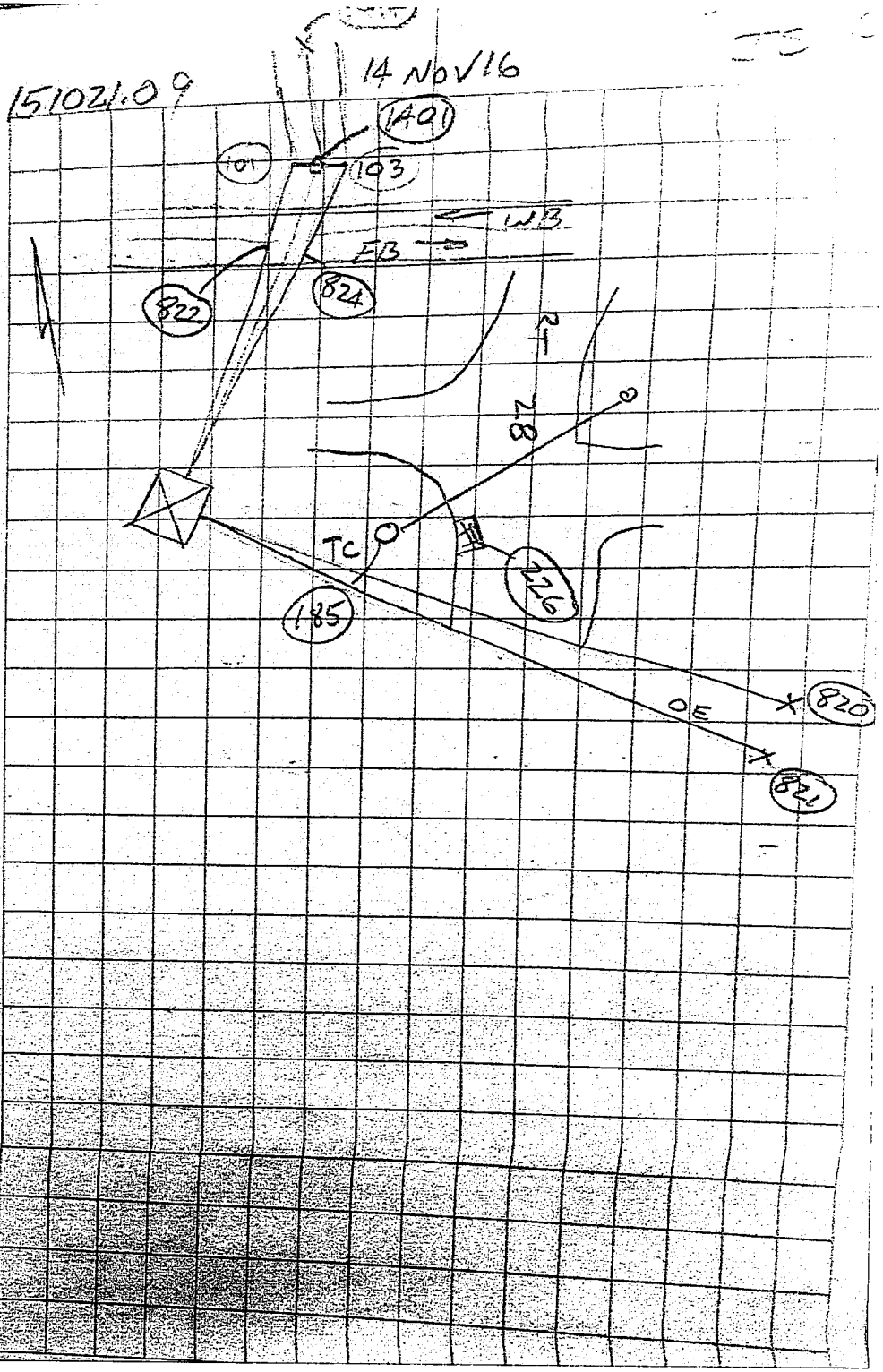
115 TOP CONC W WALL

226 & DI

234 END ASPH / BEG CONC APPROACH

236 END CONC / BEG GRAN

243 ✓ (20)



NY STA - HERKIMER

15102109 15 NOV 15

Te (10) BS (20) w/ 0°

HI = 4.84 ✓ HI = 5.19 ✓

HD = 946.79 VERT = +0.01 VERT = -0.10 ✓

244 VOID ✓

245 ✓ (20)

246 BM (TBM 'B' p-3) 395.05

MEAS → 395.06 ✓

247 SAN MH

257 30" Ø MH

271 END GRAN BEG CONC ✓

273 END CONC BEG ASPH ✓

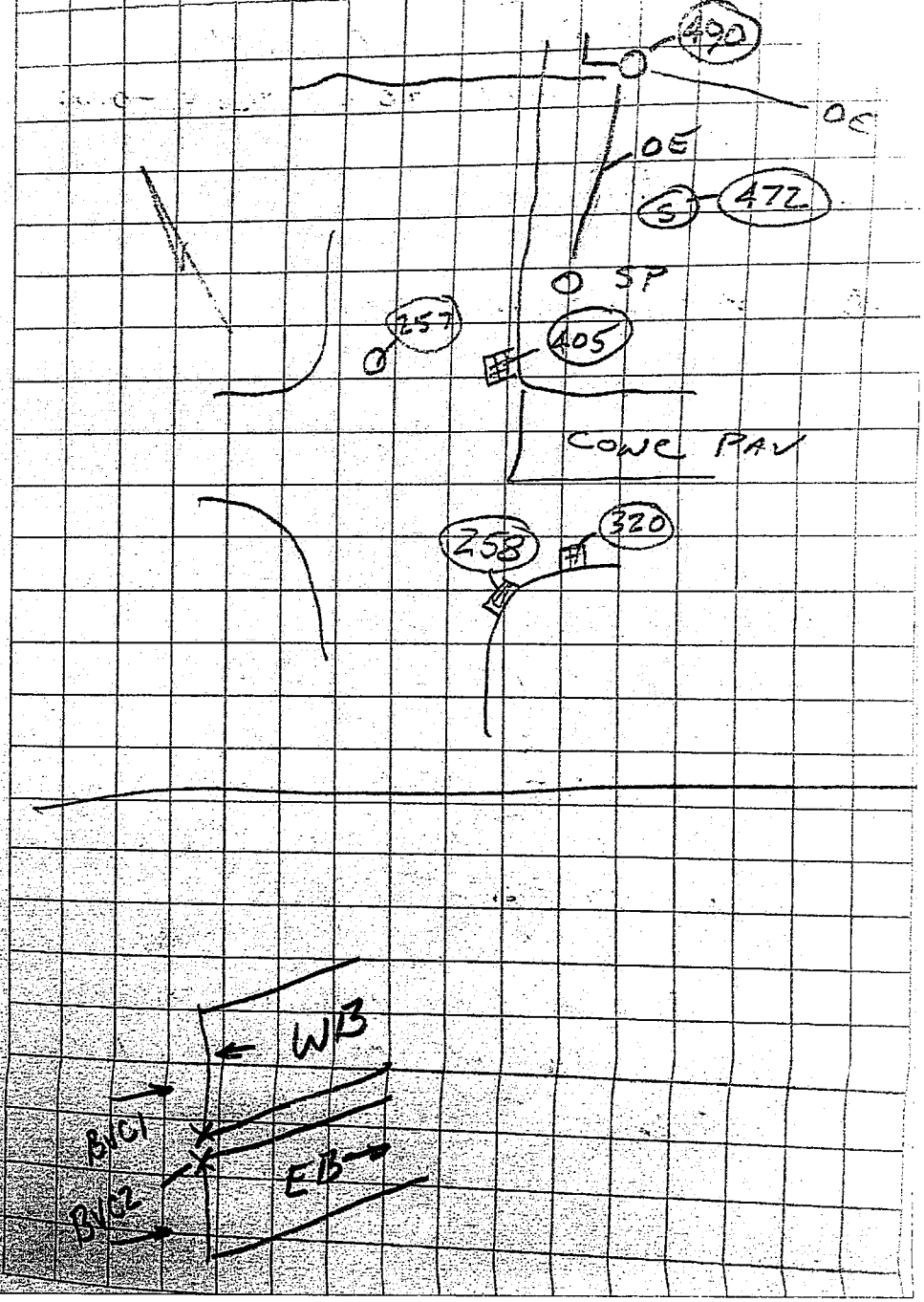
354 6"x6" TIM POST W/ UE W+E FACE, UEM E FACE UE TO DAM/CREST GATES

355 TYP POST UE W+E FACE, UEM E FACE, UE STREETLIGHT

419 SIG POLE W/ TC BOX NE FACE

498 ✓ (20) ✓

(14) SET GD E SIDE RT28, S SIDE NYSTA BRIDGE



NYSTA - [illegible]

Tc (14) 35 (10) W [illegible]

UC = 5.28 ✓ LC = 5.14 ✓

HD = 293.91 UER = 0.00 VER = -0.03

501 ✓ (10)

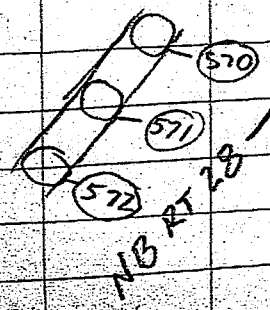
502 ✓ (20)

↳

503 ✓ BM 246 ✓

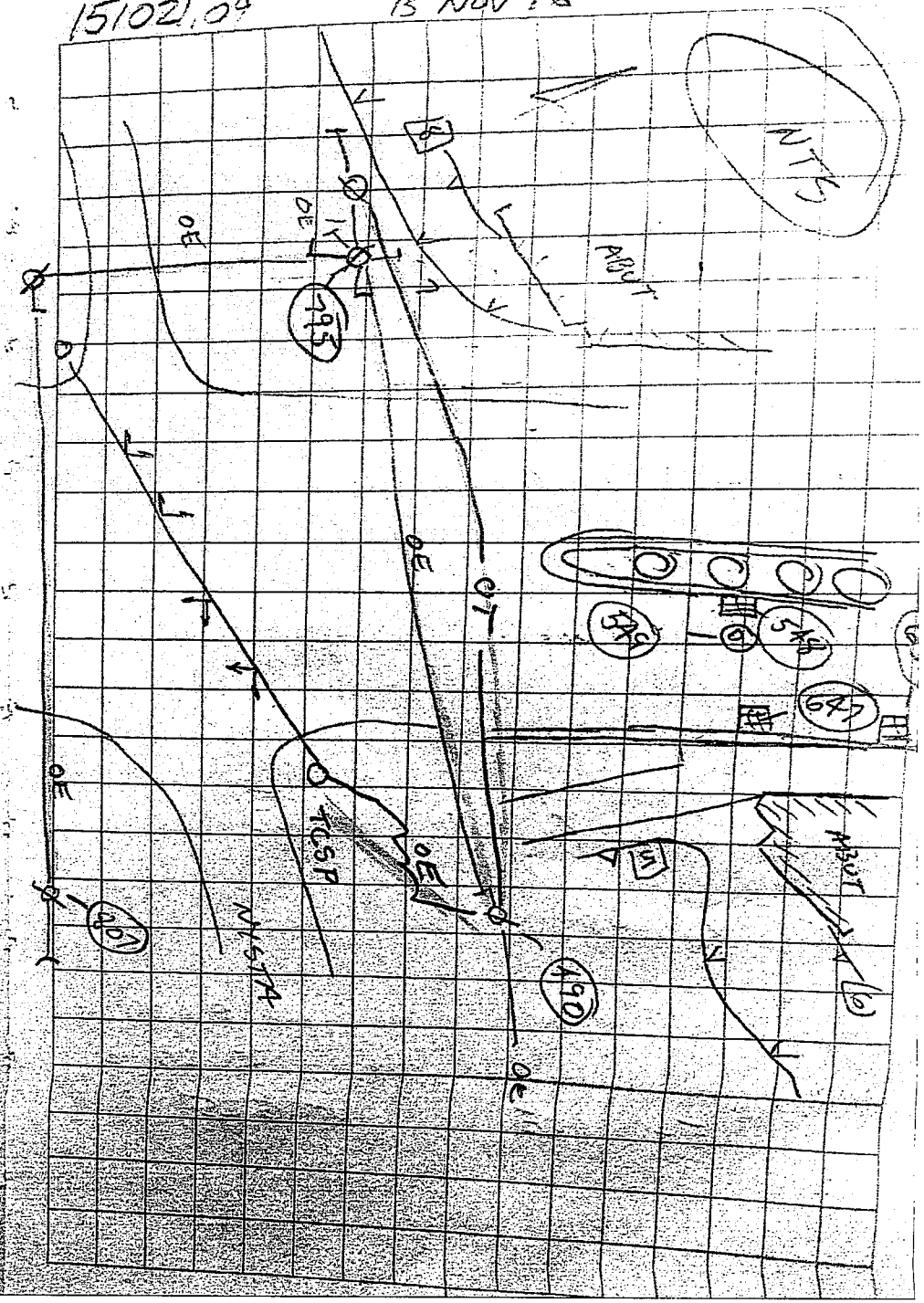
523 CONC TO S, PAVERS TO N

70-580 E NB FACE (12+28) OF 3.5' Ø CONC PIERS



JS

151021.09 15 NOV 16



Tc (14)

581-587 B. √ C. (EACH SIDE) DO NOT HAVE STRESS DUE TO INTERIOR GIRDER VARIES TO ONE 1" PLATES → NOT LOCD

598 ∠ IRON ℄ C. LINK SIGN

*808 HT = 5.02 ✓

820, 821 OE JOIN TO ℄ 4 LEGGED TOWER

822 OE ELEV JOIN TO (101)
823 " " " " (102)
824 " " " " (103)

825 ✓ (10) ✓

(15) SET SCRATCH IN CONC SWLK ℄ NW'LY COR XION RT 28 ℄ 5th AVE HT = 5.25

151021.00 ELEV

NYSTA - HERKIMER

TC (12) 135 (10) W/ 0°

HI = 5.09 ✓ HT = 5.14 ✓

HD = 270.55 HER = 0.00 VER = +0.03

826 ✓ (10) ✓

829 UFO marker POST

ATTESTA 888-637-2344

877 N'LY INV 14" CMP

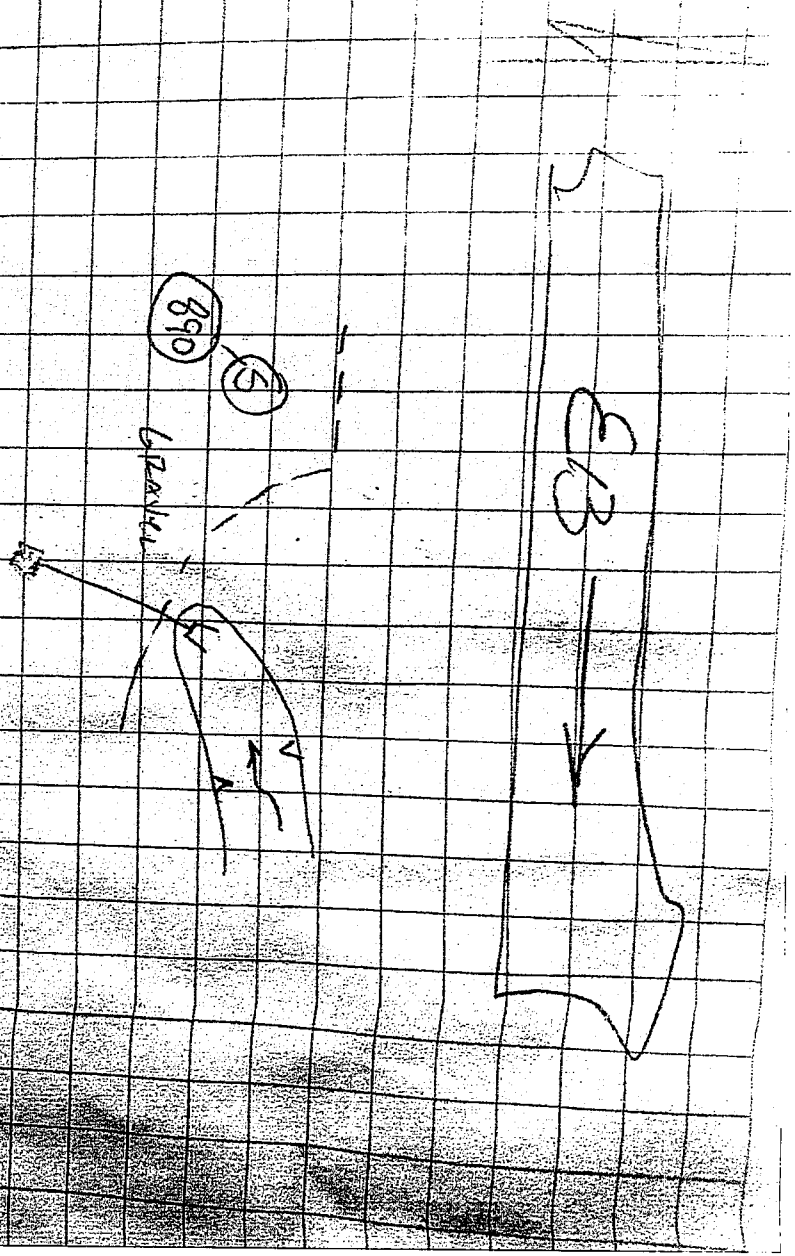
878 DS -3.0 18" CMP From NE 386.19

-3.1 " " To SW 386.09

879 DIR 18" CMP

904 CHK (10)

15102.09



HERB-MER

TC (10) BS (14) w/ 0°

UT = 5.01 ✓   UT= 5.02 ✓

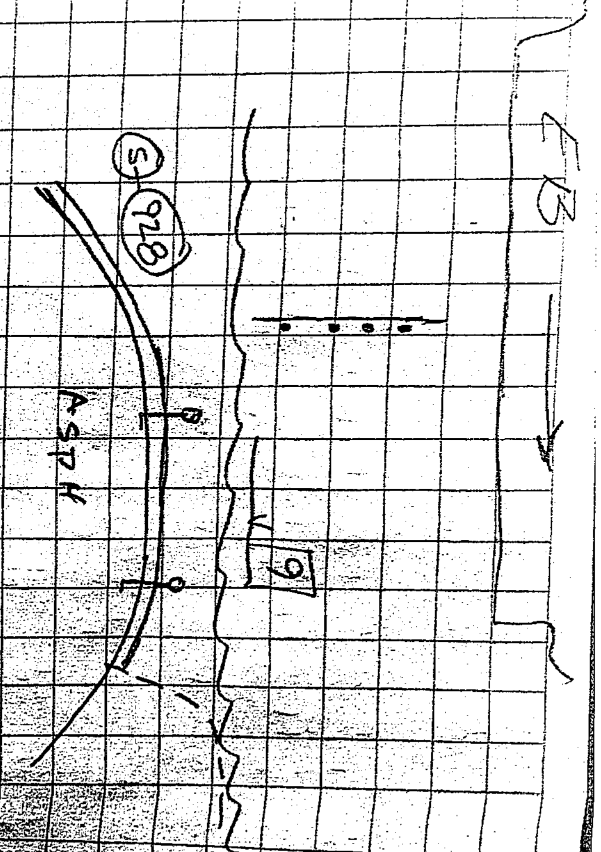
UT= 203.91 HER= 0.00 VER= ±0.01

905 ✓ (14)

924 SAW MH

937
✓BS ✓ BS 0-00-01"

1510Z 2° 15 Nov 16 SEM TS 40° ☁ 10



T = (11) BS (14) W/ 0°

HI = 5.13 ✓ HT = 4.96 ✓

HD = 342.54 HER = 0.0 VER = −0.06

938 ✓(14) –

939 ✓(12) –

↳

945 CABLE ANCHOR FOR G. RAIL

1070 1071 30" ℄ MHs

1072 ℄ DI 391.54

−1.95 8" CPP TO W 389.59

1092 ℄ DI 391.55

−1.95 8" CPP FROM E 389.60

−2.05 8" CPP TO W 389.50

−1.85 6" CPP FROM S 389.70

1093 ℄ DI 1'x1' TG 391.86

−1.45 6" PVC TO W 390.41

1118 ℄ DI 1'x1' TG 391.13

−1.45 6" PVC TO W 389.68

1120 ℄ DI 391.72

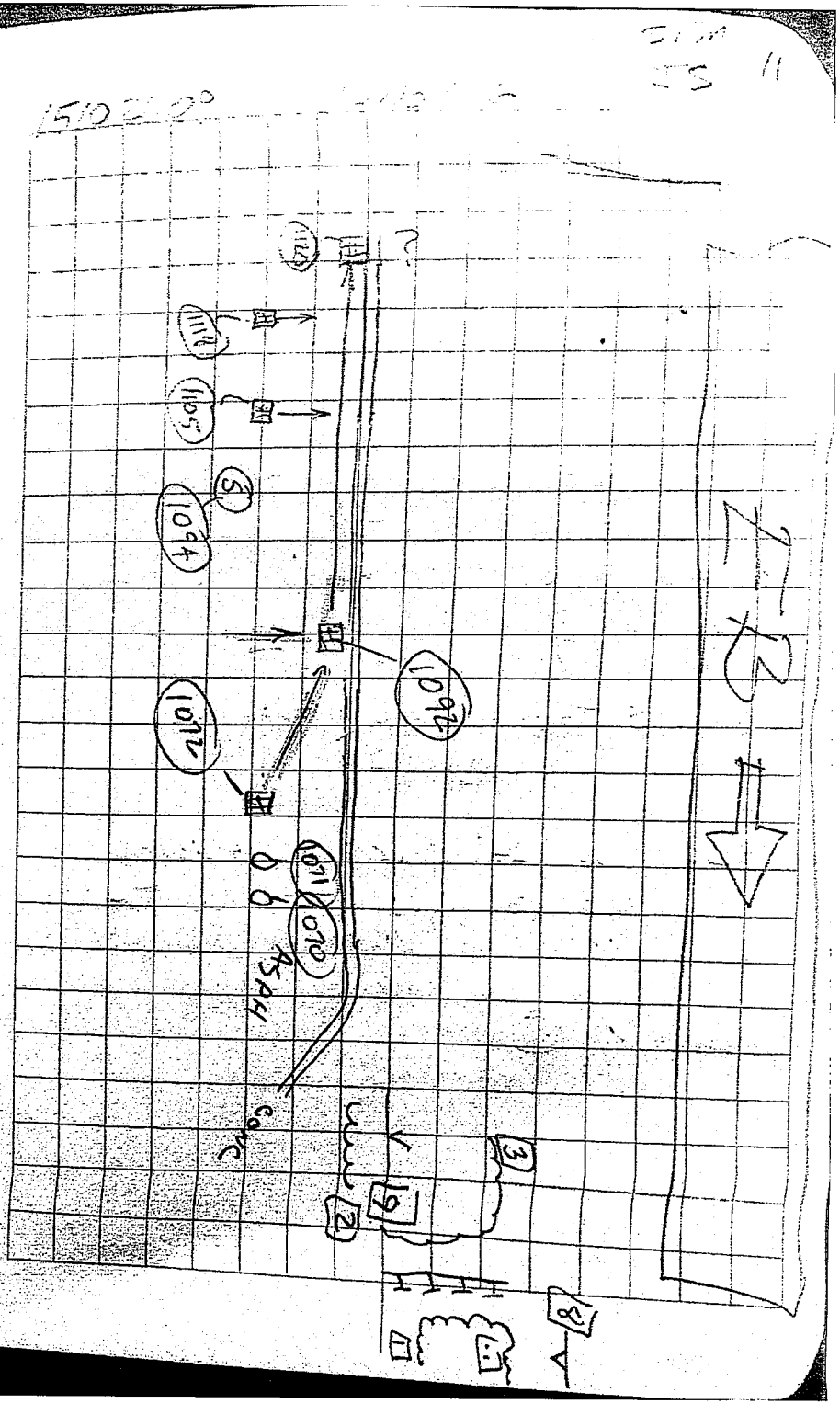
−4.4 8" CPP FROM E 387.32

−4.55 8" CPP TO W 387.17

1135 ℄ DI 391.25

−4.15 8" CPP FROM E 387.10

−4.35 8" CPP TO S 386.90



NYSTA HERKIMER

1144 ✓ (10) ✓

(1145) SET SMALL TEMP NAIL

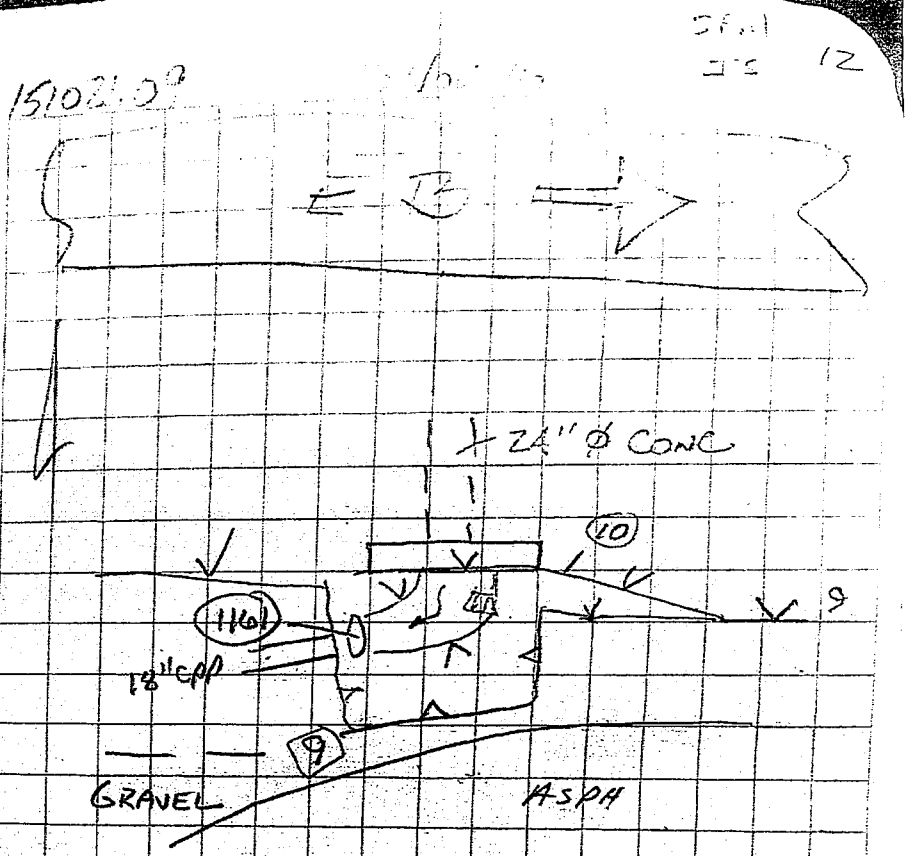
TC (1145) BS (11) W/ 0°
HI = 4.99 ✓ HT = 5.02 ✓
HD = 175.5% HER = +.00Z VER = 0.00

1146 ✓ (11) ✓

1156 S TOP HOWARD (TOP COMPLETELY BURIED)

1156 INV 24" CONC IN HOWARD
1161 INV 18" CPP TO W +/-

1172 ✓ (11) ✓



HERKIMER

Te (15) BS (12) w/ 0°

HT = 5.21 ✓ HT = 5.02 ✓

HD = 234.99 HER = +0.01 VER = +0.00

1173 v (12) ✓

1174 v (10) –

1235 – 249 22" SQ METAL FR/COV ✓
FLOOD CONTROL ANCHORS ✓

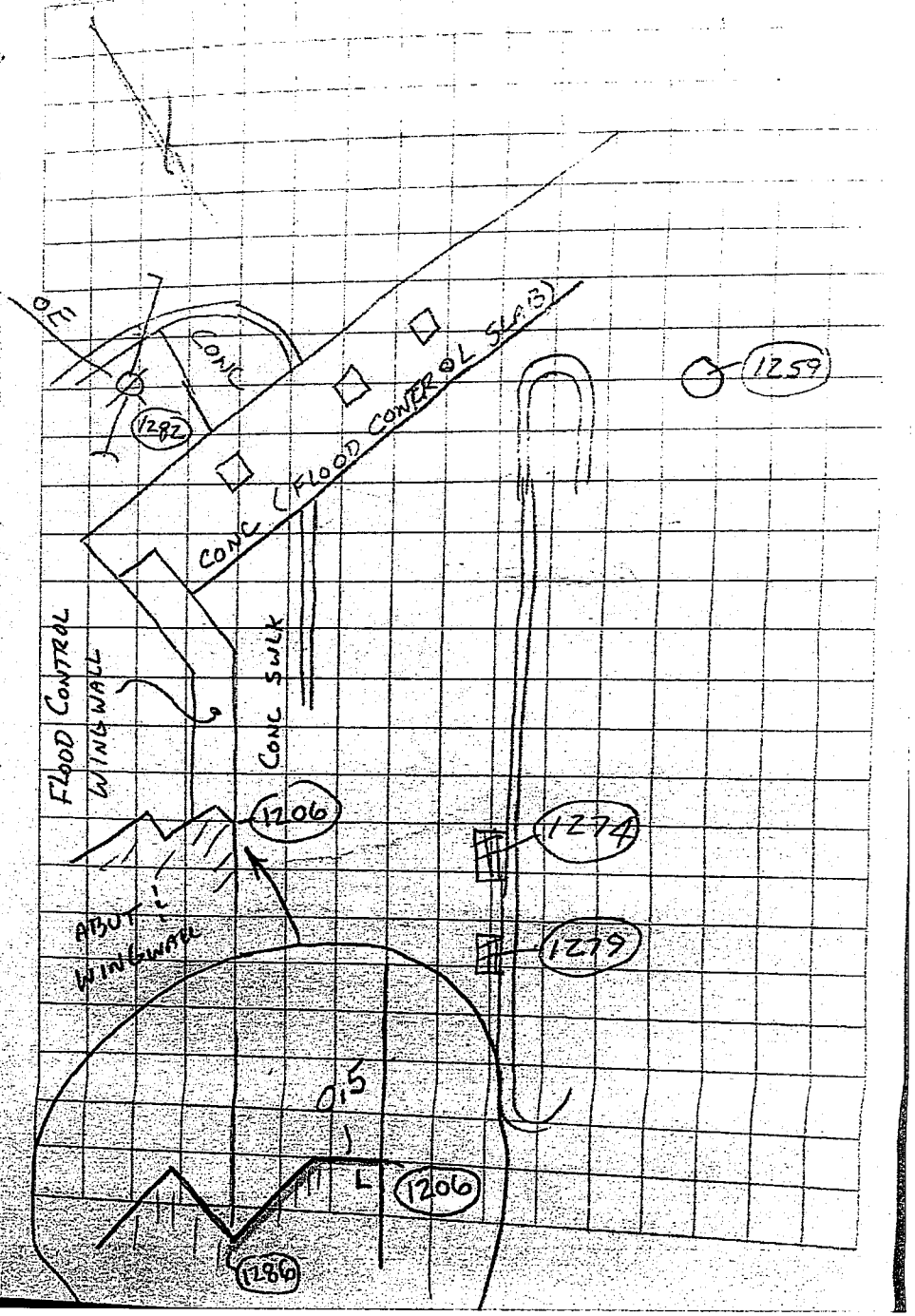
1259 30" Ø MH

1274 ℄ DI

1279 ℄ DI

1282 No # ✓

1286 ELEVATION TOP OF FLOOD ✓
CONTROL WING WALL



NYSTA – HERKIMER

14

TAC (15)

1360 CONC HDWALL

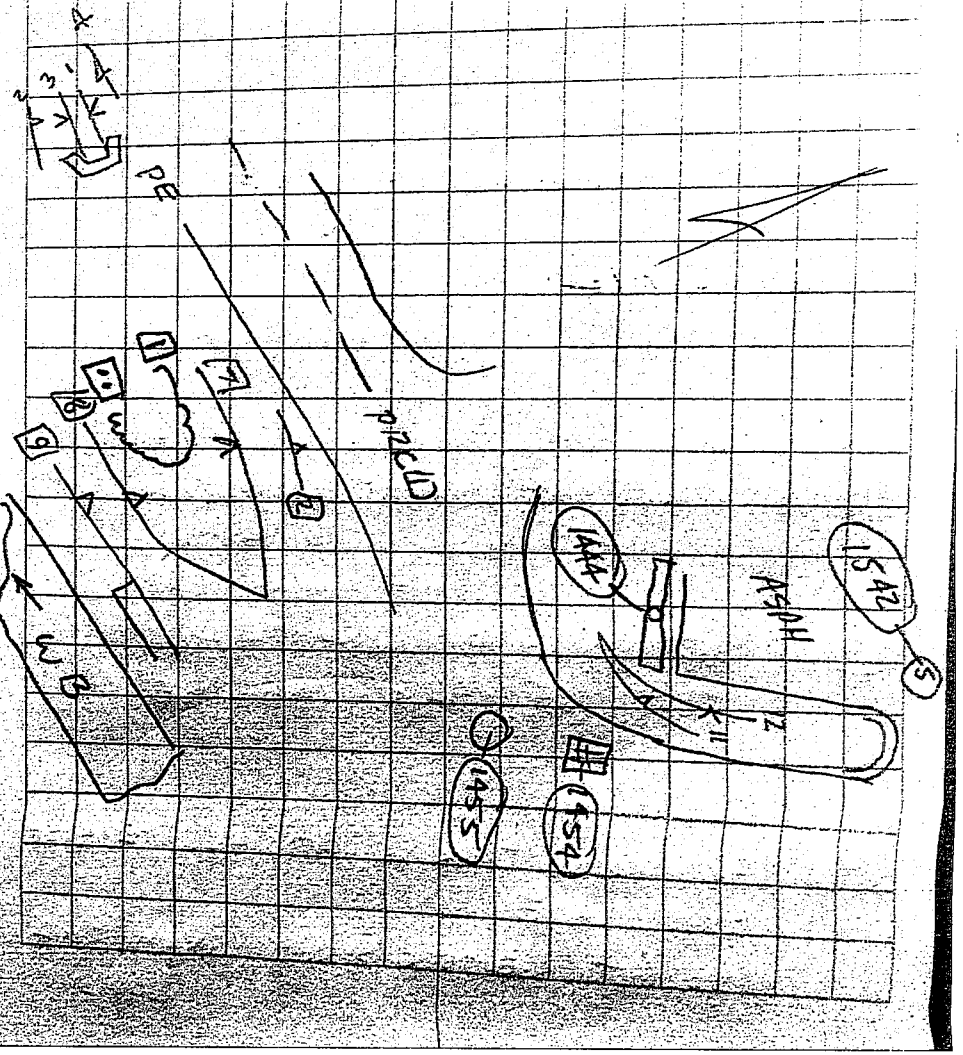
1377 W/LV INV 18" CMP IN CONC HDWALL 1/2 SILTED

1414 @ 3 WIRES FROM POLE (1401)

1444 12" Ø STEEL POST COM. SIGN – TSC – 1'X19' SIGN ABOVE

15102.0°

4.9Z



36

NYSTA - HERKIMER

TC (15)

1606 ELEV TOP FLOOR CONTROL
WING WALL

1607 1 E STY BLOCK BLDG
" FLOOR CONTROL

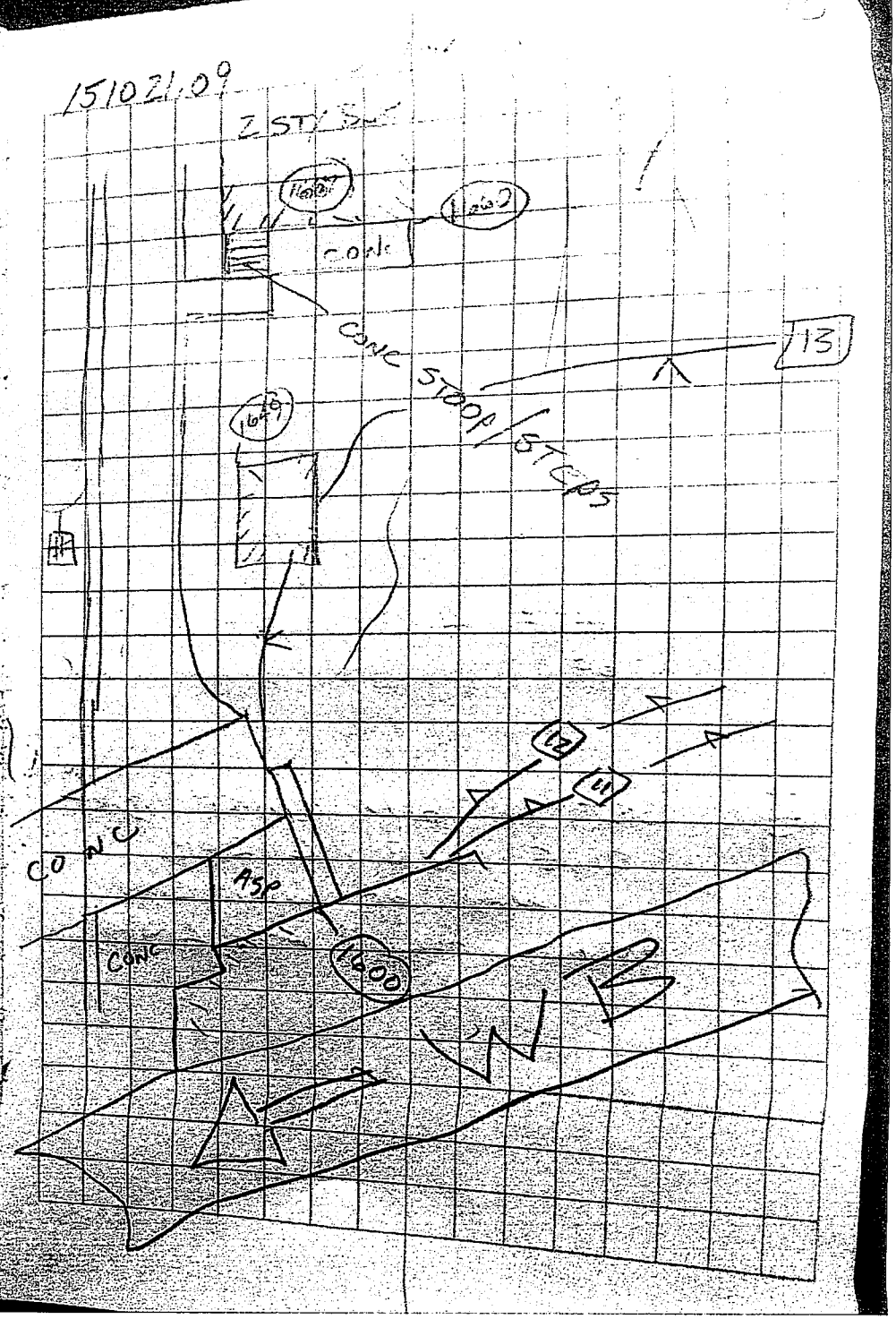
1667 CONC STOOP (DO NOT CONTOUR INTERIOR OF LBF)

1686 ✓ (14)

(16) SET 60d TO WEST ALONG TOE OF SLOPE MAINLINE

(17) SET 60d TO WEST ALONG TOE OF SLOPE MAINLINE

(18) END ALUM DISK IN HDWALL S SIDE FIFTH AVE
NYS DOT GEODETIC SURVEY NYHM RM4 2006



NYSTA - HERKIMER

151021.09

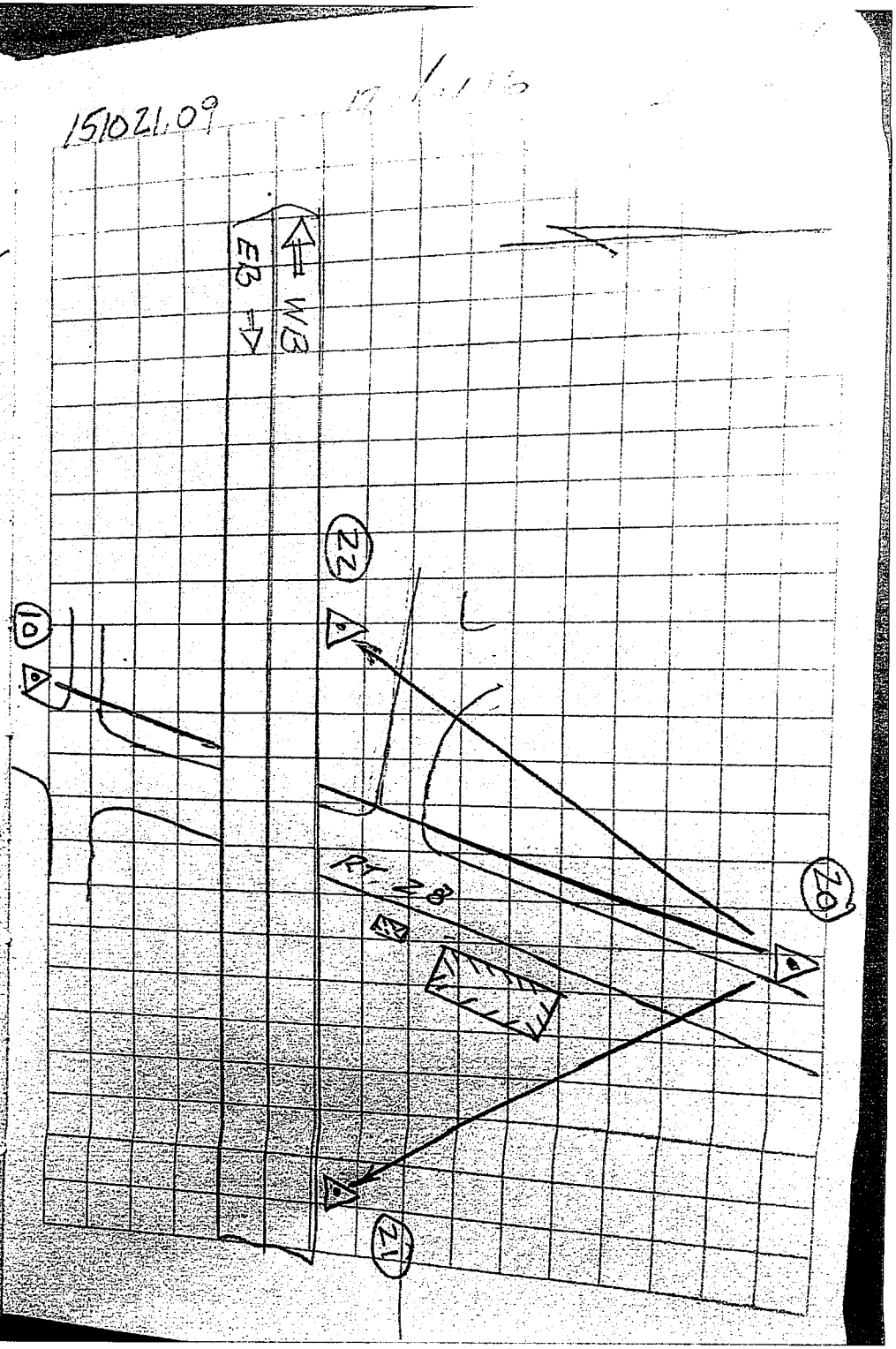
Fe (20) BS (10) w/ 0°
HI = 5.16 ✓ HT = 5.00 ✓
HD = 946.78 HER = 0.00 VER = -0.11 ✓

1687 ✓ (10)

1688 TBM 'A' 389.93 P-3
⟵ MEAS ⟶

(21) SET 10" GALV SPIKE BACK SIDE G RAIL WB
HT = 4.87 ✓ JUST E'LY OF "DENNYS" SIGN ℄ DEL

(22) SET 10" GALV SPIKE BACK SIDE WB G. RAIL, W'LY of W'LY END WING WALL HT = 4.98 ✓



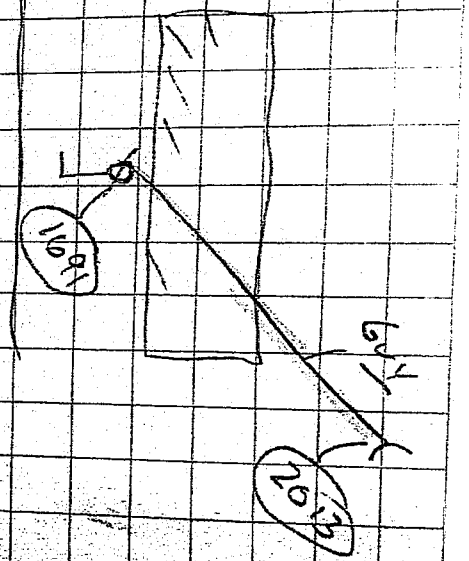
1689 SAN

1754 CONE ~~SIGN~~ SIGN BASE ✓
w/ 10" x 10' SIGN FBV

1764 ✓ (15)

151021.09

(1689) (20)
(5)



TC (22) BS (20) w/ 0°

HI = 5.07 ✓ HT = 4.90 ✓

HD = 41.56 HERR = -0.01 VERR = -0.03

1765 ✓ (20) ✓

(23) SET 10" GAIN SPIKE
BACK SIDE L. RAIL WB
@ DEL OPPO DOT BLDG
HT = 5.31 ✓

~~BAR~~ ROW

1855 ✓ (15)

SFM
IS 18

BRUSH/TREES

8

9

WB

(17)

$\overline{\wedge}$ C (16) BS (15) W/ 0°

HI = 5.02 ✓ HT = 5.02 ✓

HD = 520.33 HER = +0.02 VER = -0.01

1856 ✓ (15) ✓

1876 TOE SLOPE @ APPARENT N EDGE OF BURIED HD WALL

1908 ✓ (16) ✓

$\overline{\wedge}$ C (16) BS (15) W/ 0°

HI = 4.91 ✓ HT = 5.02 ✓

HD = 908.93 HER = +0.01 VER = -0.07

1909 ✓ (15) ✓

1910 ✓ (17) ✓

	1	3
~~1914 6~~	1923	~~1924~~
~~1942 LEDGE +1949~~	~~1929~~	1930

1958 ✓ (23)

Fe (21) BS (20) w/ 0°

HI = 5.11 ✓ HT = 4.00 ✓

HD = 400.72 H'dif = 0.00 V'dif = 0.00 ✓

1959 ✓ (20)

(24) SET 10" GRN SPIKE BACK SIDE
WB GRADE = 40' ± E of CAMERA
HT = 5.12 ?

1960

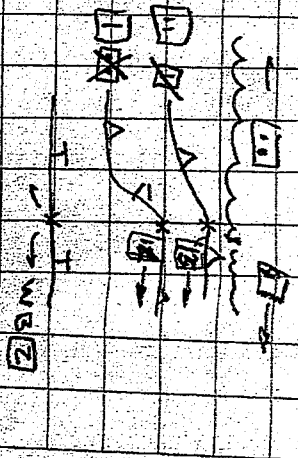
* ~~1963~~ ~~1964~~ 1964 HT = 7.0 ✓

~~2046 VOID~~ ~~2059~~ ~~2088~~ G

2089 ✓ (20) ✓

(2090) SET 60d — IN LAWN AREA
OF MOTEL

2091 ✓ (15) ✓



42

T.C (13) BK (10) 4/ 00

HI = 5.37 ✓ HT = 5.04 ✓

HD = 545.37 4/HD = .007 V/HD = .046

2092 ✓ (10) ✓

(19) SET 10" GALV SPIKE
BACK SIDE OF FAIL FB ✓
HT = 4.75

2217 UFO SIGN MFS 888-MFS-2DIG

2218 LP ON 30" Ø CONC BASE

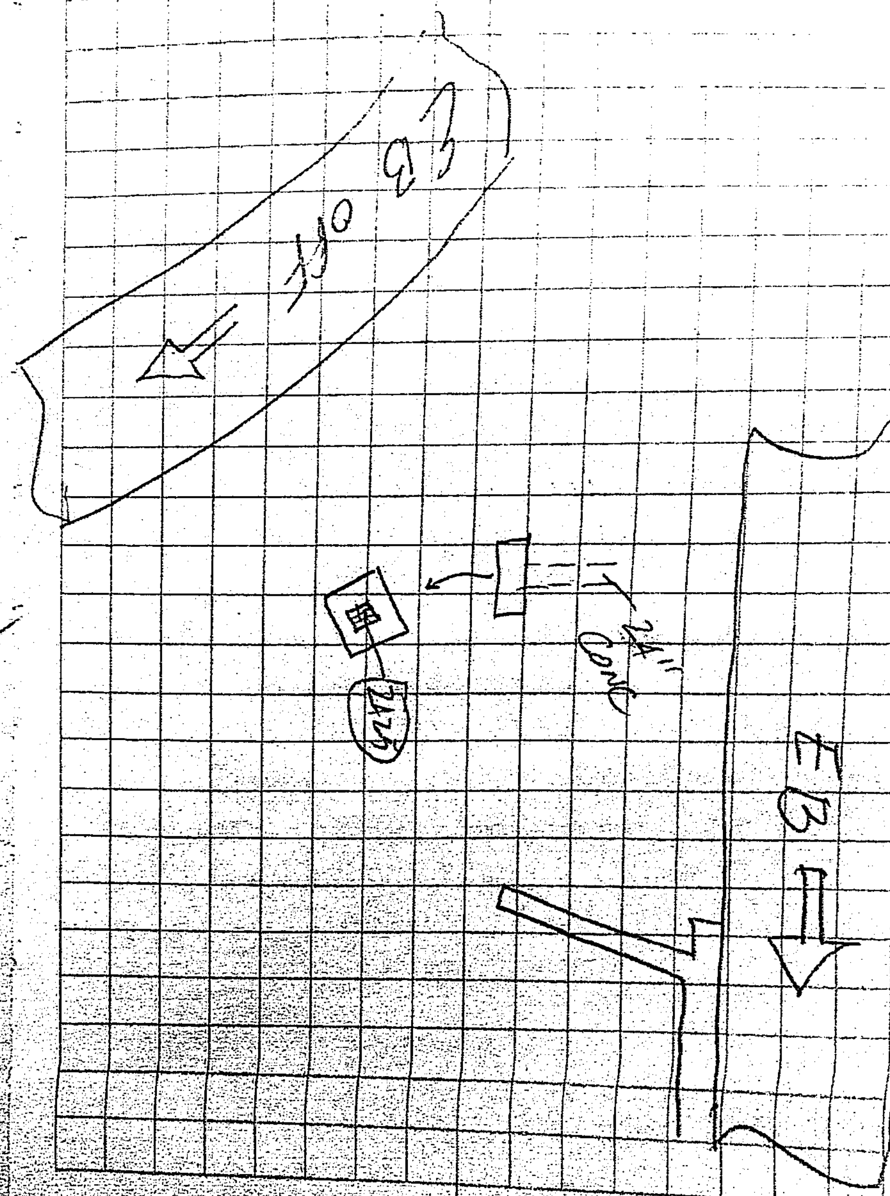
2223 ✓ (21) ✓

NY STA - HERKIMER

16102103

‾‾

I @ (19)	BS (13) w/ 0°
	HI = 5.28 ✓ UT = 4.90 ✓
HZ = 296.42	HZ = 0.00 VERT = 0.00
2224	✓ (13) ✓
2229	LP ON 30" Ø CONC BASE ✓
2337	CAN'T COVERED ALUM POLE/ARM W/ TRAFFIC SENSOR ✓
2378	EVIDENCE OF UE UFO TRENCH ✓
*2379	HT = 10.0 ✓
2425	℄ DI
2426	℄ INV 24" CONC ✓
2427	✓ ~~(13)~~ (10)



HERKIMER

Te (2090) 135 (21) w/ 0°

HI = 4.58 ✓ HT = 5.03 ✓

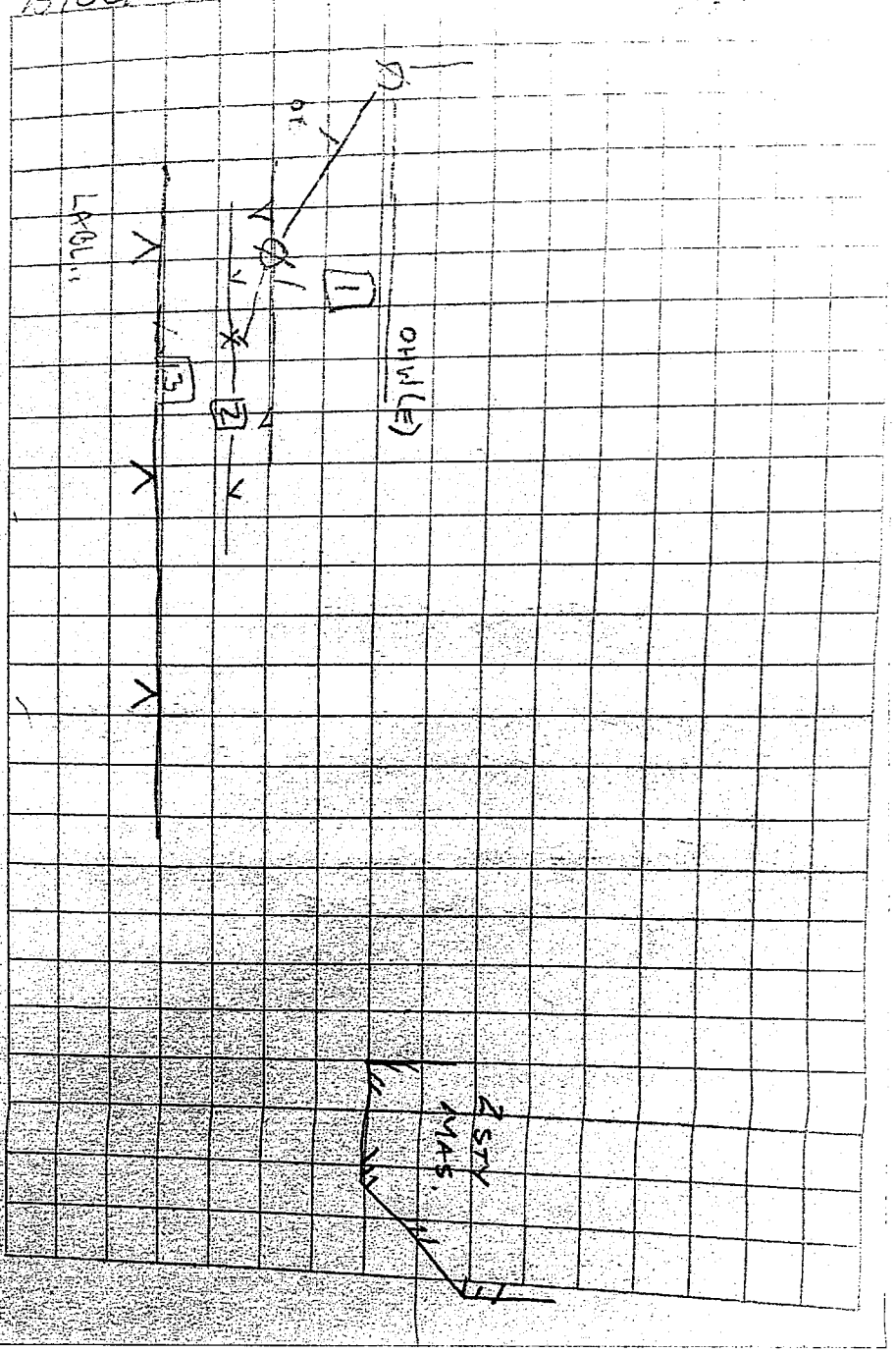
HD = 355.50 Her = +0.01 Ver = -0.05

2428 ✓ (21) ✓

2429 FND TRI Δ CONC MON, 2' HIGH, TILTED, LEANS W'LY, HEAD BEST GUESS @ BASE

2461 CONC SLAB W/ TRANS ✓

2471 ✓ (21) ✓



NYSTA - HERKIMER

LEICA SR UNIT D NAD 83/11 NYSPCE

2472 FND PK & ℄ STA 12+66.52
M 425 / P 482 HERKIMER Co

2473 FND 3½' HIGH TRI Δ CON MON W/PIN
GOOD COND.

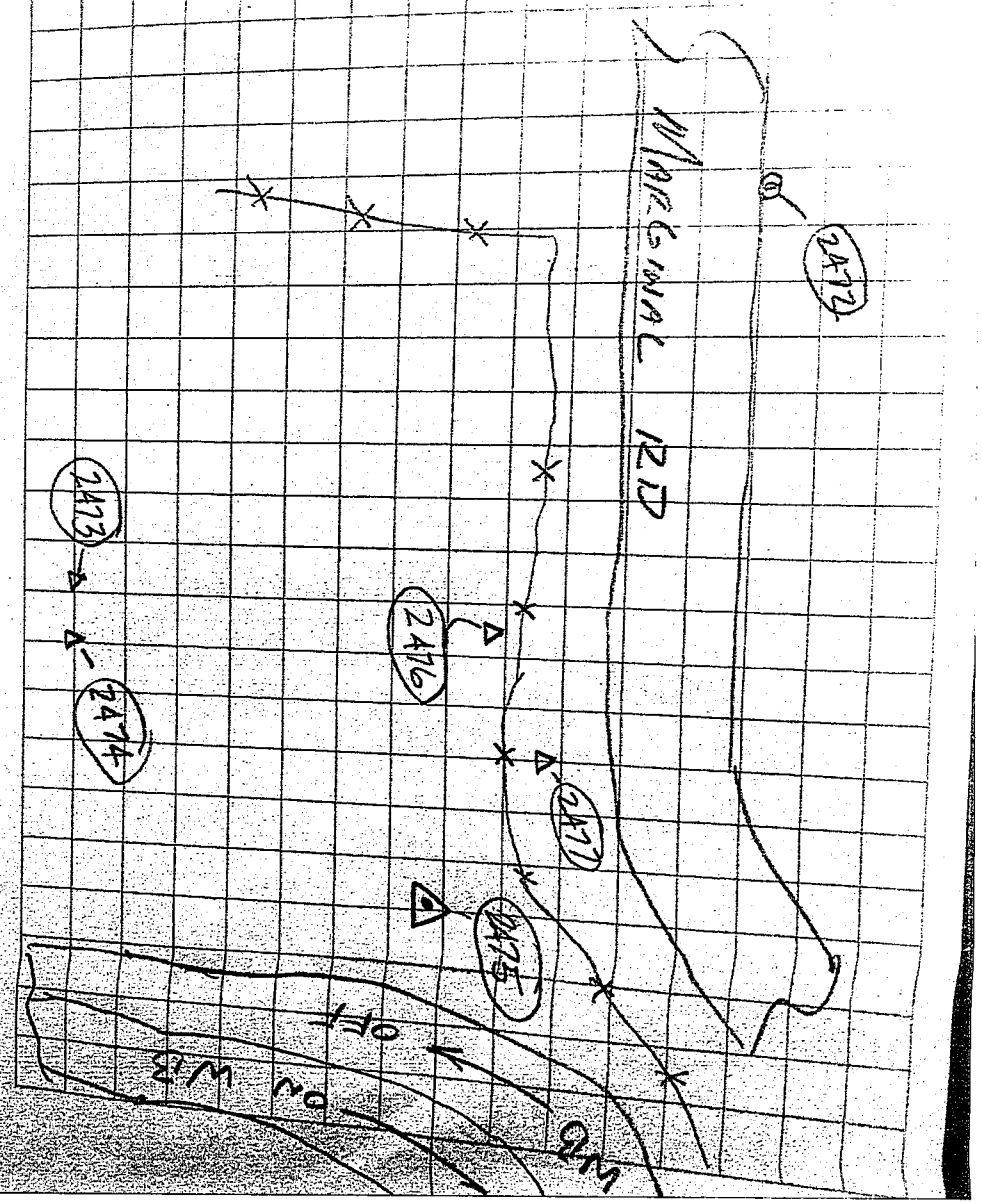
2474 FND 3½' HIGH TRI Δ CON MON W/PIN
GOOD COND.

2475 FND REROD 7 ℄ STA 10+00
M 425 / P 482

2476 FND 4' high CONC MON W/PIN LEANING
SE'ly held & BASE

2477 FND 3½' HIGH CONC MON W/PIN LEANS
E'ly HELD & BASE

151021.09
FILE: 20161122



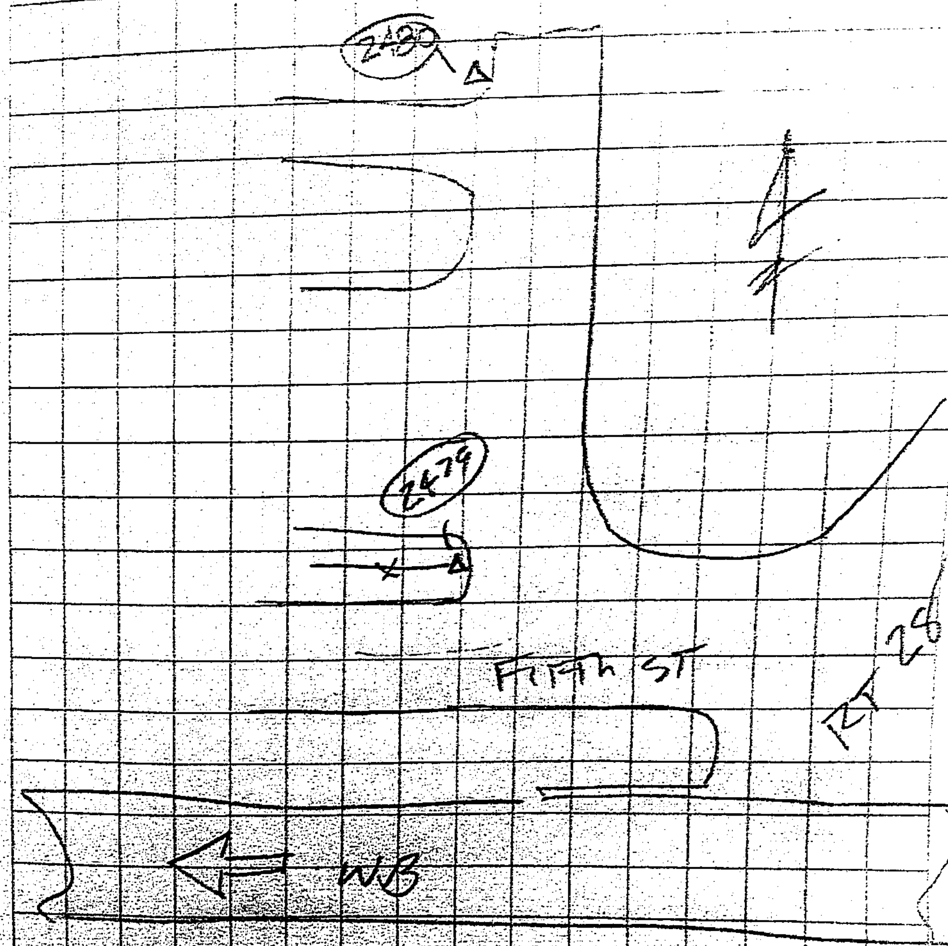
NYSTA HERKIMER

2474 CHK CP (20)

2479 FND CONC MON - NO PIN - BROKEN & LEANING SW'LY BEST GUESS ⊈ BASE

2440 FND CONC MON - NO PIN - 1.5' HIGH PLUMB +/-

15102.00 22 Nov 16



NYSTA – HERKIMER

151021.09

To (24) BS (21) w/ 0°

HI = 4.94 ✓ HT = 5.00 ✓

HI = 619.32 HI ERR = -0.02 VERT ERR = -0.07

2481 ✓ (21)

2490 12" Ø FIBERGLASS HH ✓

2491 T. POLE w/ SENSOR ON 24" Ø CONC BASE ✓

2492 I BEAM POST w/ TC BOXES ✓

2497 TIM POST w/ TC, JUNCT BOXES ✓

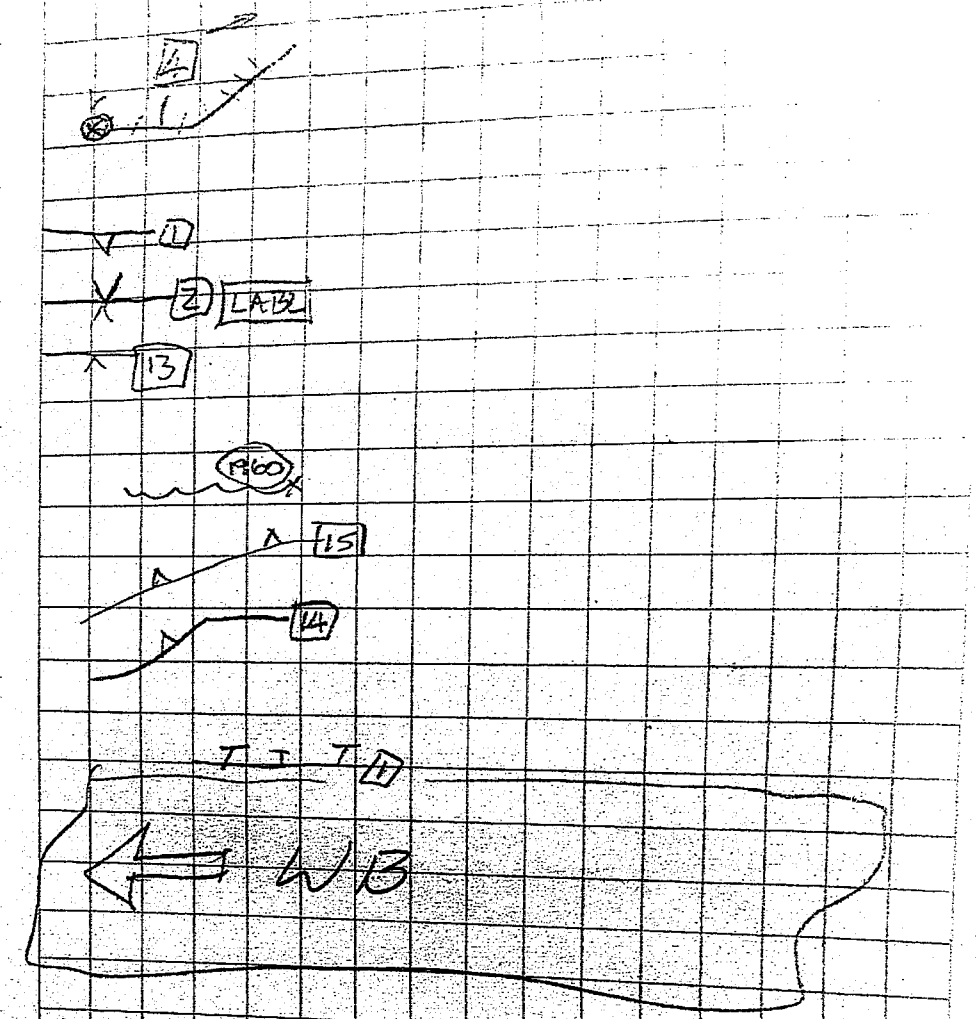
*2496 & 2497 HT = 9.02 ✓

2499 12" Ø FIBERGLASS HH & CAMERA POLE ON 48" Ø CONC BASE, TC BOX W FACE

2562 ✓ RTK (2472) FND PK

2563 ✓ (21)

2564 COMPUTE TOE SLOPE, TAPE, LOCK LEVEL



NYSTA - HERRIMER

TC (20) BS (10) W/ 0°

HI = 5.08 VT = 5.02

HD = 946.79 HER = +0.01 VER = -0.09

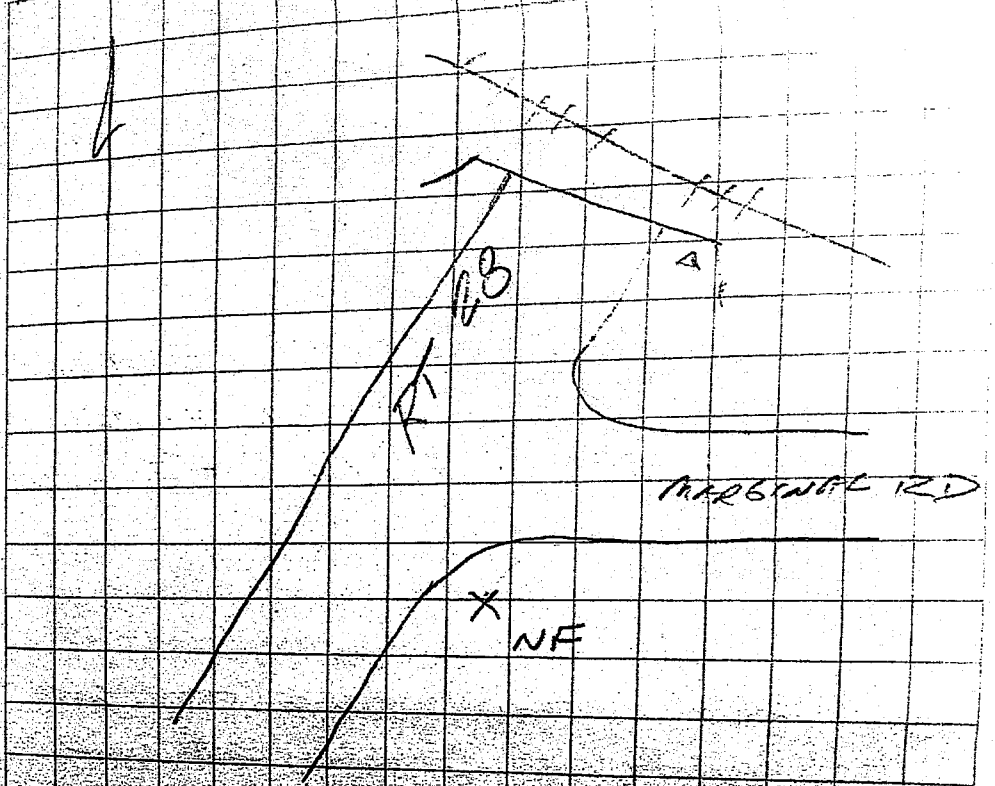
2565 ✓ (10)

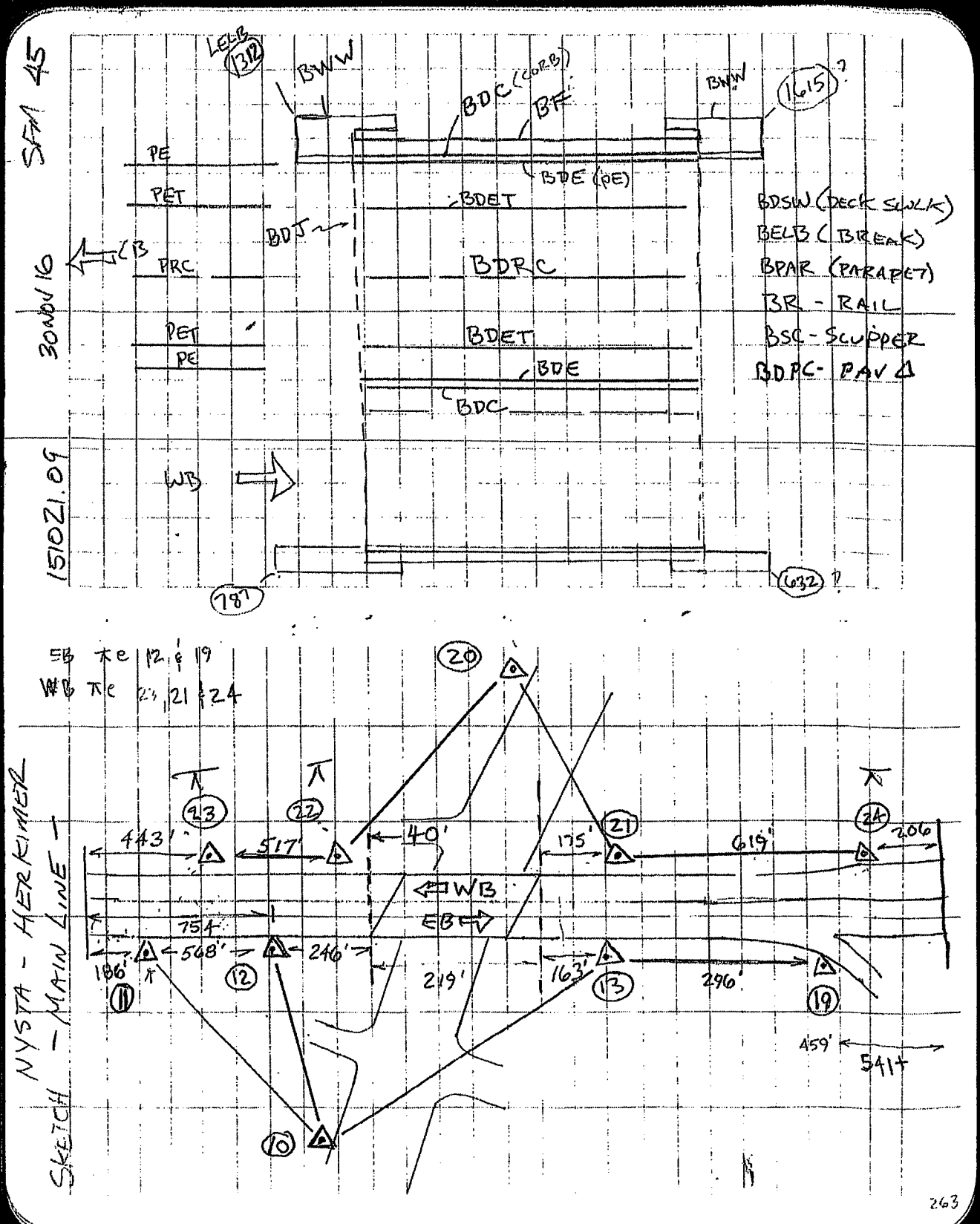
2566 FND TRI CONC MON W/ PIN -
1' +/- HIGH TILTED SE'LY, HZD
& BASE, BEST GUESS

2567 ✓ (15)

151021.09

29-1/21




SFN 45
30NBU 16
151021.09
LELB
(312)
BWW
BDC (CORB)
BF
BWW
(1615)?
PE
PET
BDET
BDJ
CB
PRC
BDRC
PET
PE
BDET
BDE
BDC
BDSW (DECK SWLK)
BELB (BREAK)
BPAR (PARAPET)
BR - RAIL
BSC - SCUPPER
BDPC - PAV'T
WB
(787)
(632)?
SB Tie 12 & 19
WB Tie 23, 21 & 24
NYSTA - HERKIMER
SKETCH - MAIN LINE -
20
23
22
21
24
443'
517'
40'
175'
619'
206
WB
EB
754'
186'
568'
246'
219'
163'
296'
459'
541+
11
12
13
19
10
263

NYSTA - HERKIMER

151021.09 01 DEC 16 SFM JS 46

Te (11) BS (12) W/ 0°
HI= 4.96 HT= 4.95
HD= 567.80 HER= -0.01 VER= -0.10

2568
* NOTE: 16" WIDE "RUMBLE STRIP" is Typically 0.5' O/S PET

2620 ✓ (12)

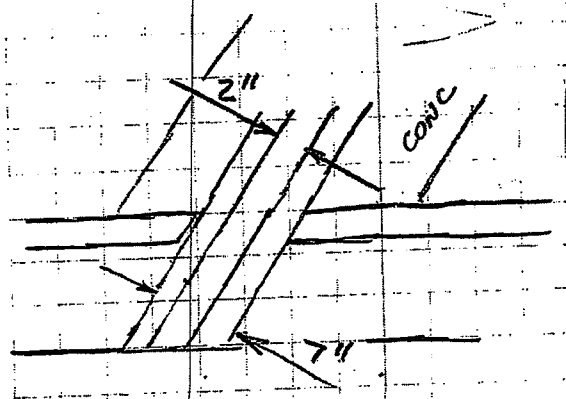
Te (12) BS (11) W/ 0°
HI= 5.18 HT= 4.75
HD= 567.81 HER= 0.00 VER= +0.02

2621 ✓ (11)

2662 GLOW, POOR COND

2700 ℄ 7" BRIDGE JOINT

2737 ✓ (13)
ΔN -0.05 ΔE +0.02 ΔZ +0.03



NYSTA - HERKIMER

151021.09 01 DEC 16 SFM JS 47

TC (13) BS (19) W/ 0°
HI= 5.23 / HT= 4.89 /
HD= 296.41 HER= -0.01 VER= 0.00

2738 ✓ (19) /

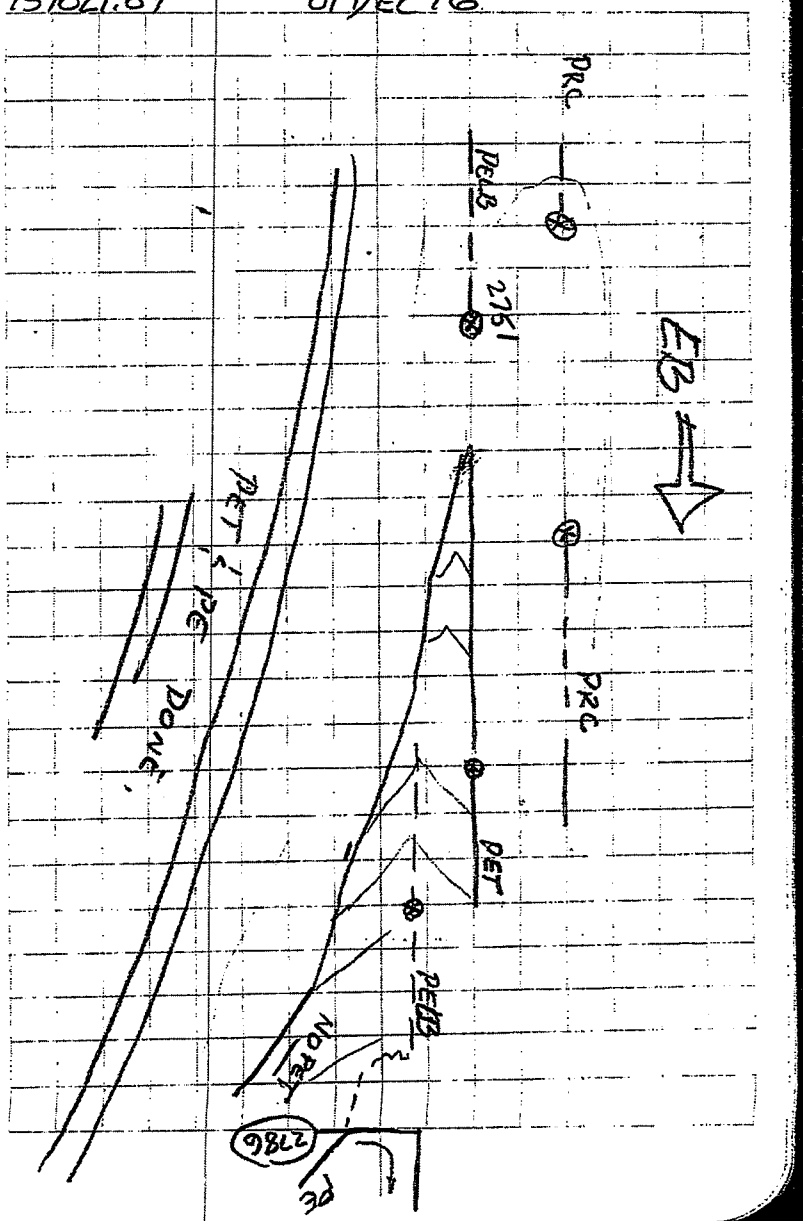
* 2739 – 2753 HT= 6.02 /

2774 ✓ (19) /

TC (19) BS (13) W/ 0°
HI= 5.24 / HT= 5.04 /
HD= 296.42 HER= 0.00 VER= -0.02

2775 ✓ (13) /

2837 PBL @ APPROX BJ /
2839 PE @ BEG CONC CURB /
2842 PE @ END " " /
2844 PRC @ APPROX BJ /
2847 //



NY STA - HERKIMER

15\021.09

01 DEC 16

SFM
JS

48

RGWM

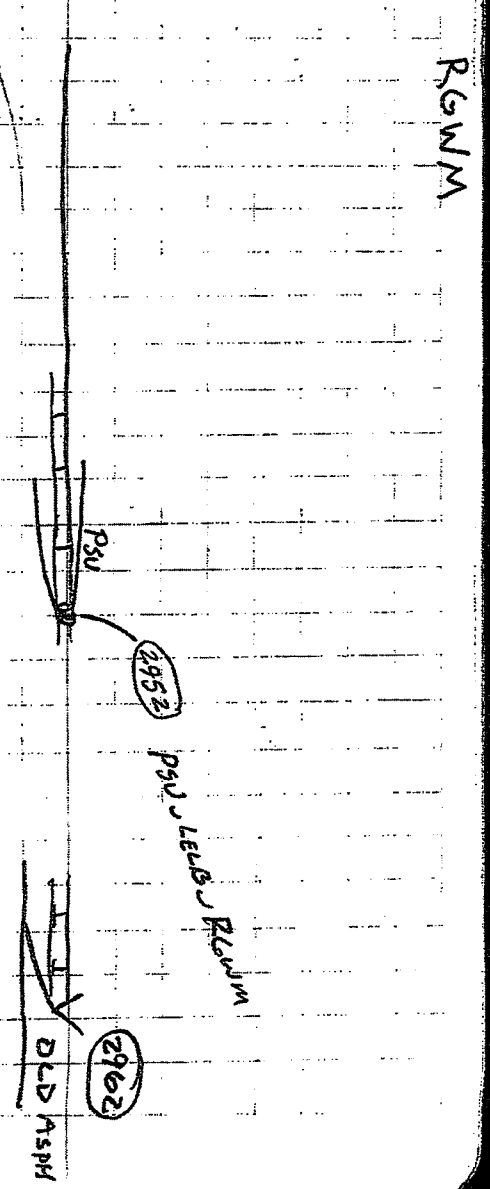
Occ (11) Bs (12) w/ 0°
HI = 5.21 ✓ HT = 5.13 ✓
HD = 567.81 HER = 0.00 VER = -0.09
2848 ✓ (12) ✓

2901 //

VBs +02"

Occ (12) Bs (11) w/ 0°
HI = 5.13 ✓ HT = 4.92 ✓
HD = 567.81 HER = 0.00 VER = +0.07
2902 ✓ (11) ✓

2921 MFS UFO SIGN ✓
2961 BEG OLD ASPH / UNDER RGWM, ALL ASPH B. DECKS
DRAW PE / BDE ALONG NEW ASPH LINE
DID NOT START PE, All PAV B/N E & W BOUND TO E FOR 40' +/-
2982 //



NYSTA - HERKIMER

151021.09 01 DEC 16

SFM JS 49

TC (13) BS (19) W/ 0°

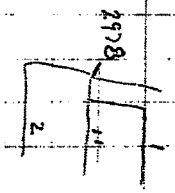
HI = 5.25 ✓ HT = 5.12 ✓

HD = 296.42 HER = 0.00 VER = -0.02

2983 ✓ (19) ✓

3029 //

2978



TC (19) BS (13) W/ 0°

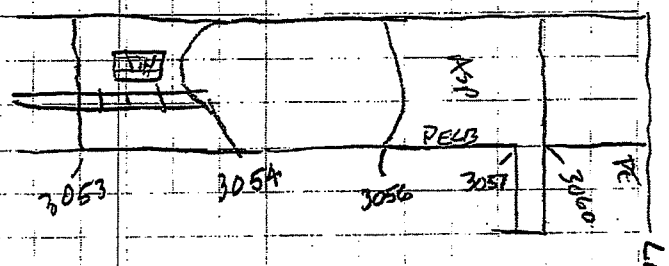
HI = 5.03 ✓ HT = 5.01 ✓

HD = 296.41 HER = ~~-0.01~~ 0.00 VER = 0.00

3032 ✓

PE @ BJ +/-

3073 ✓ (13) ✓



NY STA - HERKIMER

MAINLINE

151021.09

06 DEC 16

SFM
JS
56

TC (24) BS (21) W/ 0°

HI= 5.03 HT= 5.24

HD= HER= VER=

- WEST BOUND CALLED OFF @ 7137a DUE TO THICK FOG, AFTER SETTING UP

06 DEC 16

55

NYSTA - HERKIMER

151021.09

06 DEC 16

57

T (19) BS (13) WJ/0°

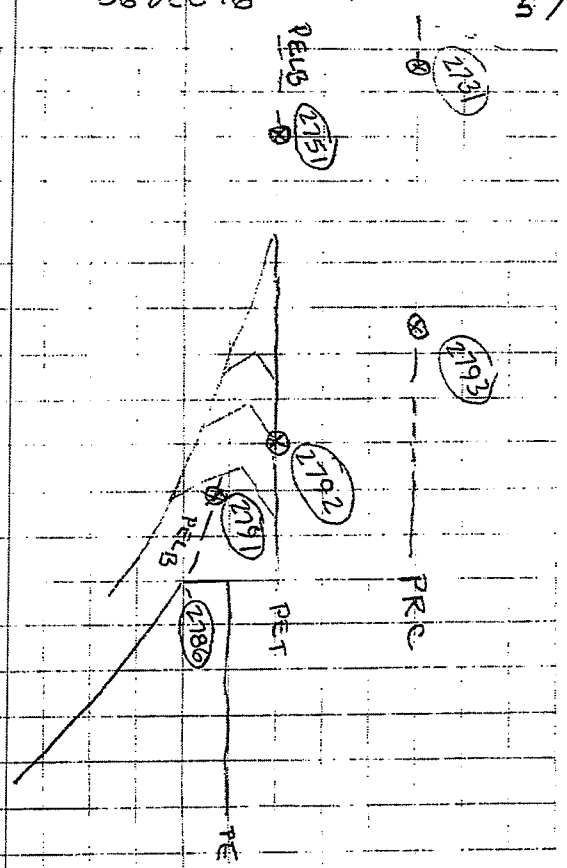
HI = HT =

HD = HER = VER =

307A ✓ (13)

— CANCELLED DUE TO FOG

LOW LID NOT LIFT — 06DEC16



HERKIMER

392.27

AINSA

(1454) DI -2.3 18" CMP TO SSW 389.99

(1455) STM MH -2.75 12" CMP FROM E 389.51

392.26 -4.2 18" RCP TO SE 388.06

390.11 -2.5 18" CMP FROM NNE 389.76

(1279) DI -5.4 12" RCP TO 385.59

-5.2 18" RCP FROM NNE 385.79

(1274) 391.28 DI -4.9 18" RCP TO WSW 386.38

(548) 391.39 DI -3.0 BOT CB SPILLS INTO 388.39

CHAMBER ON MH (547) +/- TO BOT -8.7 +/- 382.69

(647) 391.39 DI -6.3 18" RCP FROM NNE 384.90

-6.7 18" RCP WSW 384.50

(652) 391.29 DI -5.8 18" RCP TO SSW 385.49

(549) STM MH COULD NOT OPEN

(1259) STM MH 4'X5' +/- CHAMBER

392.18 -5.4 12" CONC FROM NNE 386.78

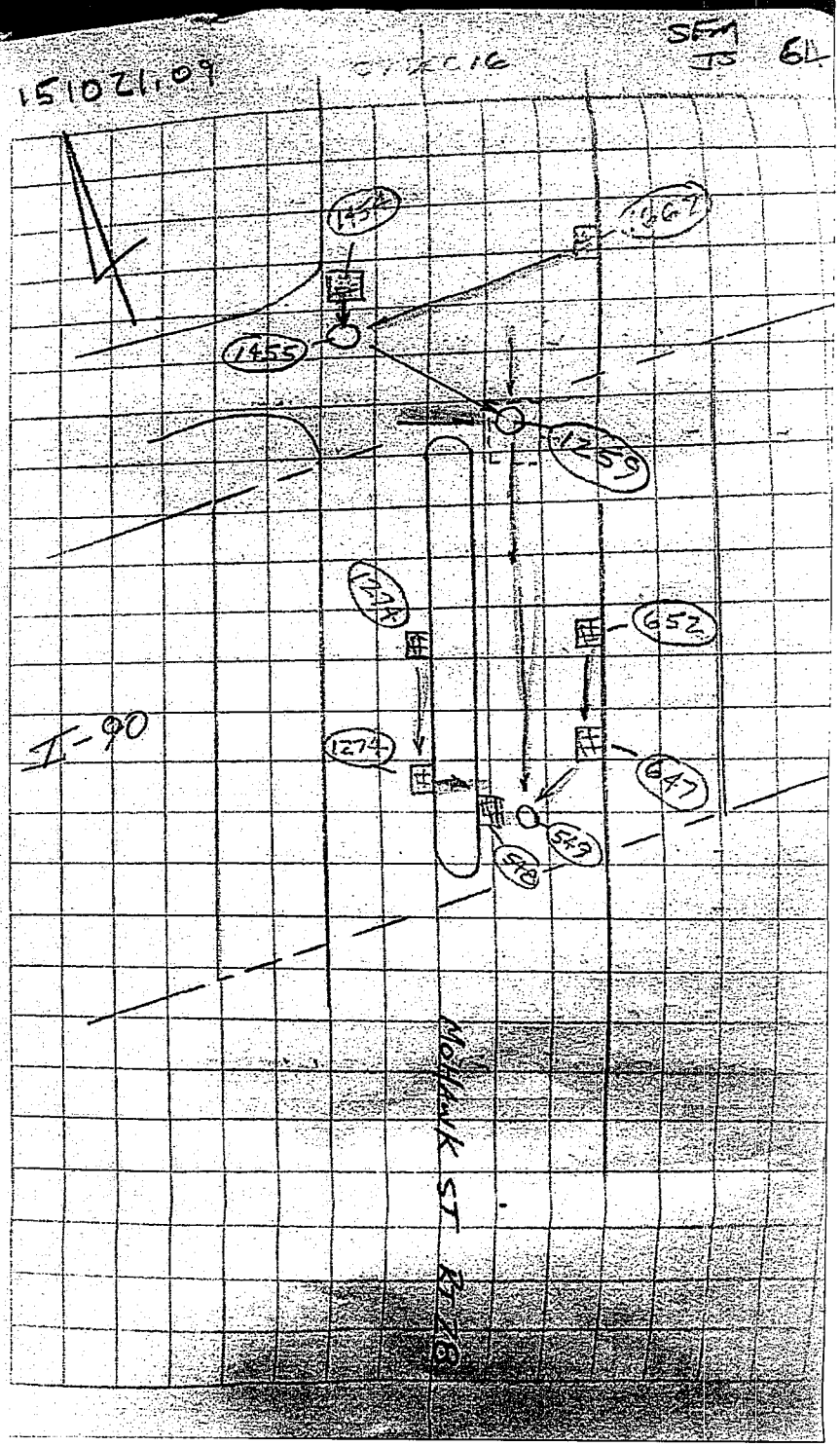
-7.3 18" RCP FROM NW 384.88

-9.7 24" RCP FRO WNW, ½ SILT 382.48

-9.9 30" RCP TO SSW ½ SILT 382.28

(1667) DI -2.2 12" CMP TO W 390.13

392.33



392.17 [illegible]

(222) SAN MH -3.4 [illegible] TO SSE 388.77

-3.3 [illegible] 388.87

(2?) SAN MH -2.3 6" PVC FROM [illegible] 388.27

390.57 -2.4 [illegible] TO SSE 388.17

(2?) SAN MH -7.4 6" [illegible] TO SE 387.58

394.98 -4.3 6" PVC [illegible] TO SE 390.68

(2?) [illegible] - [illegible] TO [illegible] [illegible]

395.14 [illegible] 24" [illegible] TO 392.64

[illegible] FROM [illegible] TO SE

[illegible]

(226) DI -5.0 [illegible] NO PIPES VISIBLE 393.85

393.35

(258) DI -6.1 24" RCP TO NE 392.86

398.96 -6.6 24" RCP FROM WNW 392.96

(320) DI -7.3 24" RCP FROM SW 388.02

395.32 -8.1 24" RCP FROM N 387.22

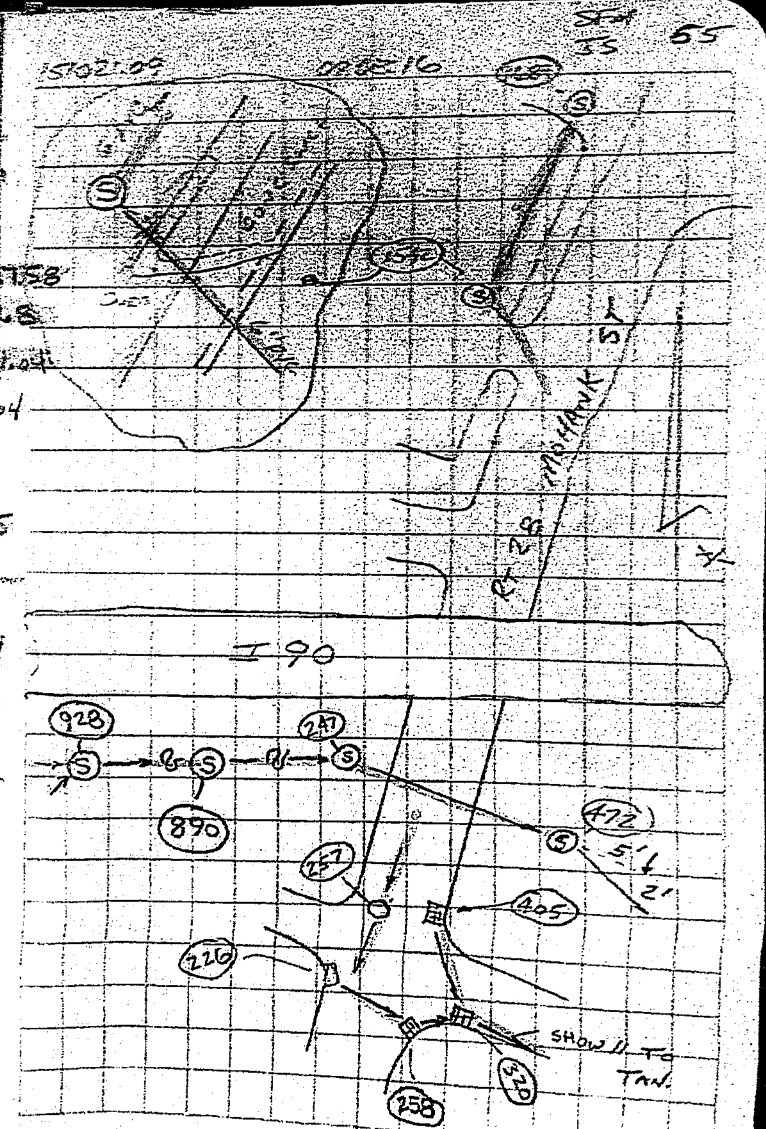
-8.2 24" RCP TO SE 387.12

(405) DI -5.8 24" RCP TO S 387.[illegible]

(1689) SAN MH -8.3 6" PVC FROM SW 391.49

(1542) SAN MH -6.4 6" PVC FROM SSE 385.90

-6.5 6" PVC TO NE 385.80



NYSTA HERKIMER

STATIC GPS

FILE: 20161208H

CP (10) HI = 6.56 (2m ROD)

START: 9:00AM

STOP: 10:00AM

CP (20) HI = 6.56

START: 10:05

STOP: 11:07

1502.01 08 DEC 16

*NOTE: LOCAL DISPLAYED TIME IN THE HEAD OF ACTIVE TIME CONTROLLER TIME SETTING FROM GREENWICH IS SET @ -5:00

TIME LISTED IN THESE NOTES REFLECT REAL TIME.

CHANGING DOES NOT UPDATE DISPLAYED TIME ??

IT ACTUALLY UPDATED EXTERNAL DISPLAY AFTER SHUTTING DOWN & RE-BOOTING

NYSTA HERKIMER
MAINLINE

⊼@ (24) BS (21) W/ 0°
HI = 5.26 HT = 5.10
HD = 619.33 HER = +0.02 VER = 0.00
3074 ✓ (21)

3161 ✓ (21)

⊼@ (22) BS (23) W/0°
HI = 5.03 HT = 5.13
HD = 516.75 HER = +0.01 VER +0.01
3162 ✓ (23)

*3279 ✓ (21)
↳ ΔN -0.05 ΔE -0.01 ΔZ +0.01

⊼@ (23) BS (22) W/0°
HI = 5.05 HT = 5.02
HD = 516.75 HER = +0.01 VER = +0.01
3280

3317 DNB-1 (PAINT ONLY NOT BORED)

3318 ✓ 22

151021.09 09 JAN 17 5° ☁

✓ 2967

3075 - 3147 HT = 6.02
3148 - 3157 HT = 8.02
3158 - 3160 HT = 6.02

3163 ✓ BM
3164 ✓ BWN

3228 BR

~~3254, 3255 VOID~~

3275 - VOID [illegible]

HERKIMER
ROW

LEICA SR UNIT D NYSPC EAST NAD '83/11
FILE: 20170117 SEM

SET MON IN CEM. DR.
1526510.64 355718.56
SET MON IN CEM. DR.
1526266.23 355987.16

IC (3319) BS (3320) w/o
HD = 296.84 HER -0.08

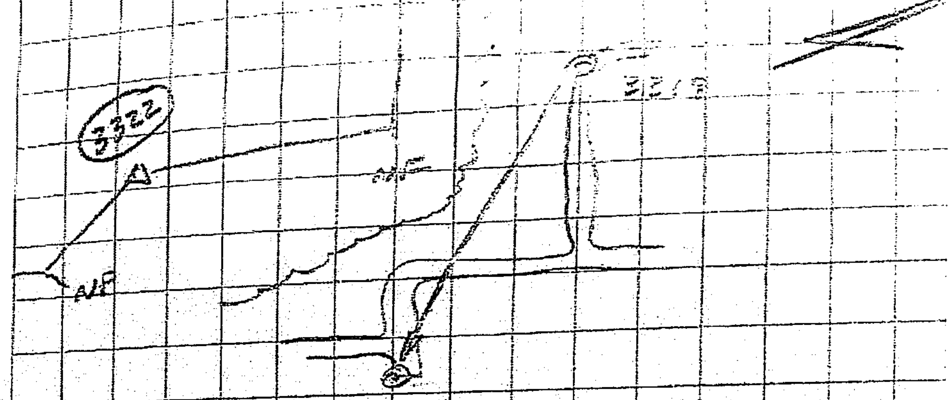
3321 ✓ 3320

3322 FND TRI △ CON MON ✓ IN WOODS
0.7' HIGH GOOD COND, HELD
TOP ℄ BRASS PIN

3323 FND TYP MON ✓ LOCATED ON O/S.
TREE ON LINE

3324 ✓ (3320)

15102109-2



CONV FILE: 20170117ROW

NYSTA - HERKIMER

— ROW —

RTK FIX 20110175FM

3325 FND BRASS IN CAP / CANT READ
NEAREST 0.1

3326 SET MAG IN ASPH PLOT

3327 SET MAG IN ASPH SHLDR RT 5

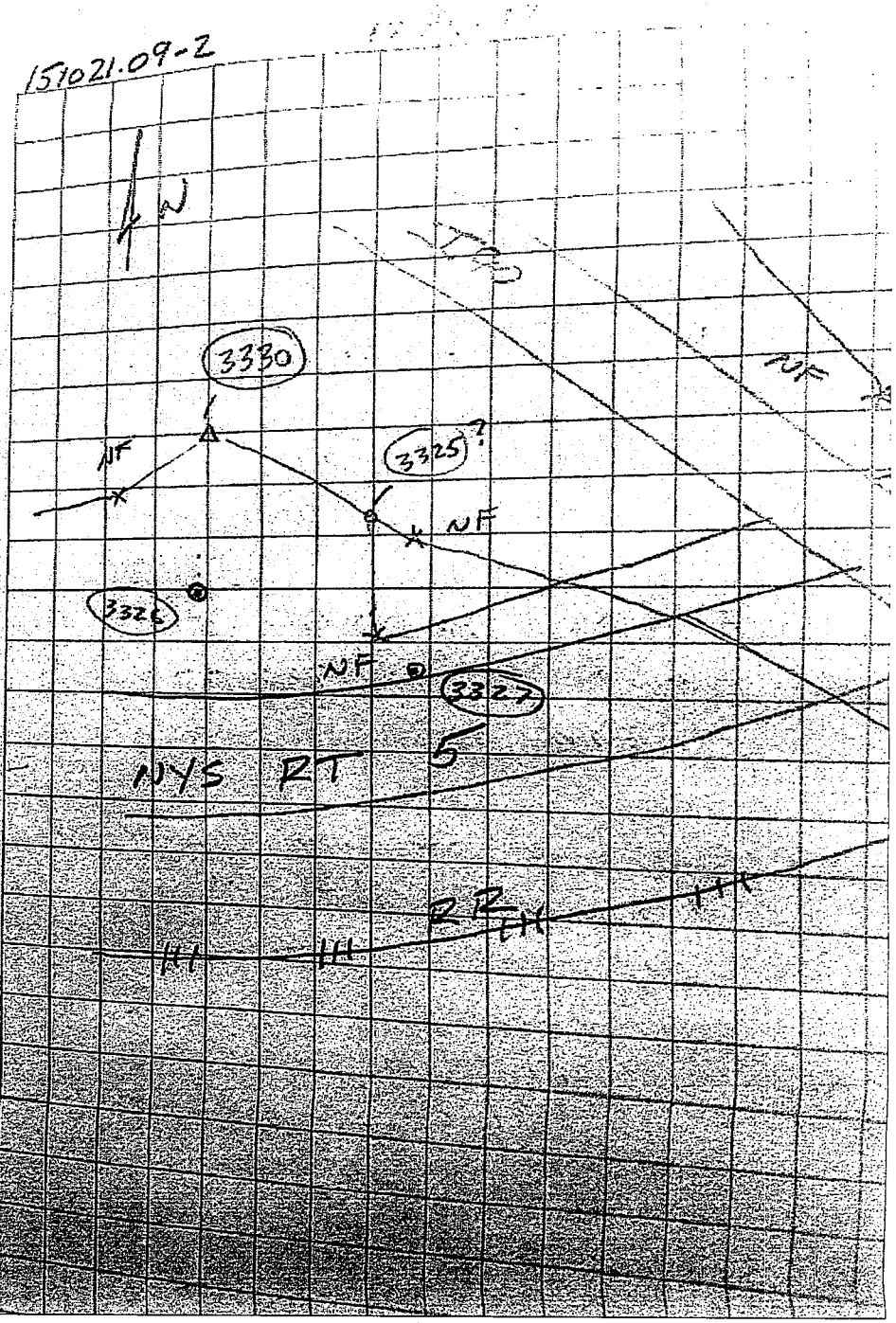
TP (3326) BS (3327) W/ 0°
HD= 248.06 HER= +0.02

3328 ✓ (3327)

3329 FND TRI CONC MON / 0.5' HIGH,
GOOD COND, HELD TOP &
BRASS PIN

3330 ✓ (3327)

151021.09-Z



NYSTA - HERKIMER
ROW

3331 FND TRI CONC MON ✓ 2.5 HIGH GOOD COND, HELD TOP BRASS PIN, MON NEAR S N TOP BANK CANAL W'LY OF RT 28 (NW COR RT 28 & RT 5S

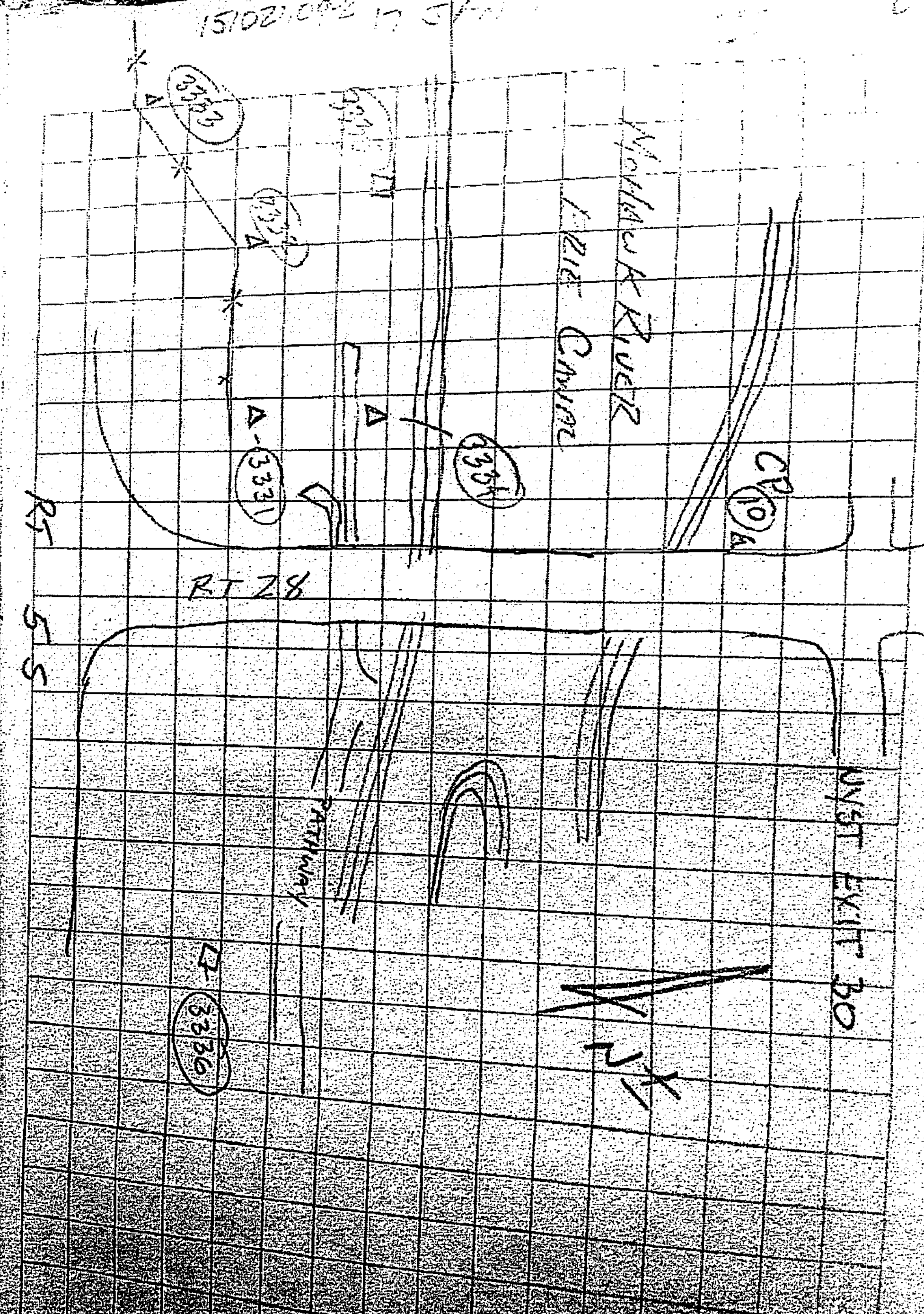
3332 FND TYP MON ✓ @ ⅌ PT ROW ℄ TO W OF 3331

3333 FND TYP MON ✓ @ ⅌ PT ℄

3334 FND " " ✓ @ TOP BANK S SHORE CANAL, NORTH OF 3331

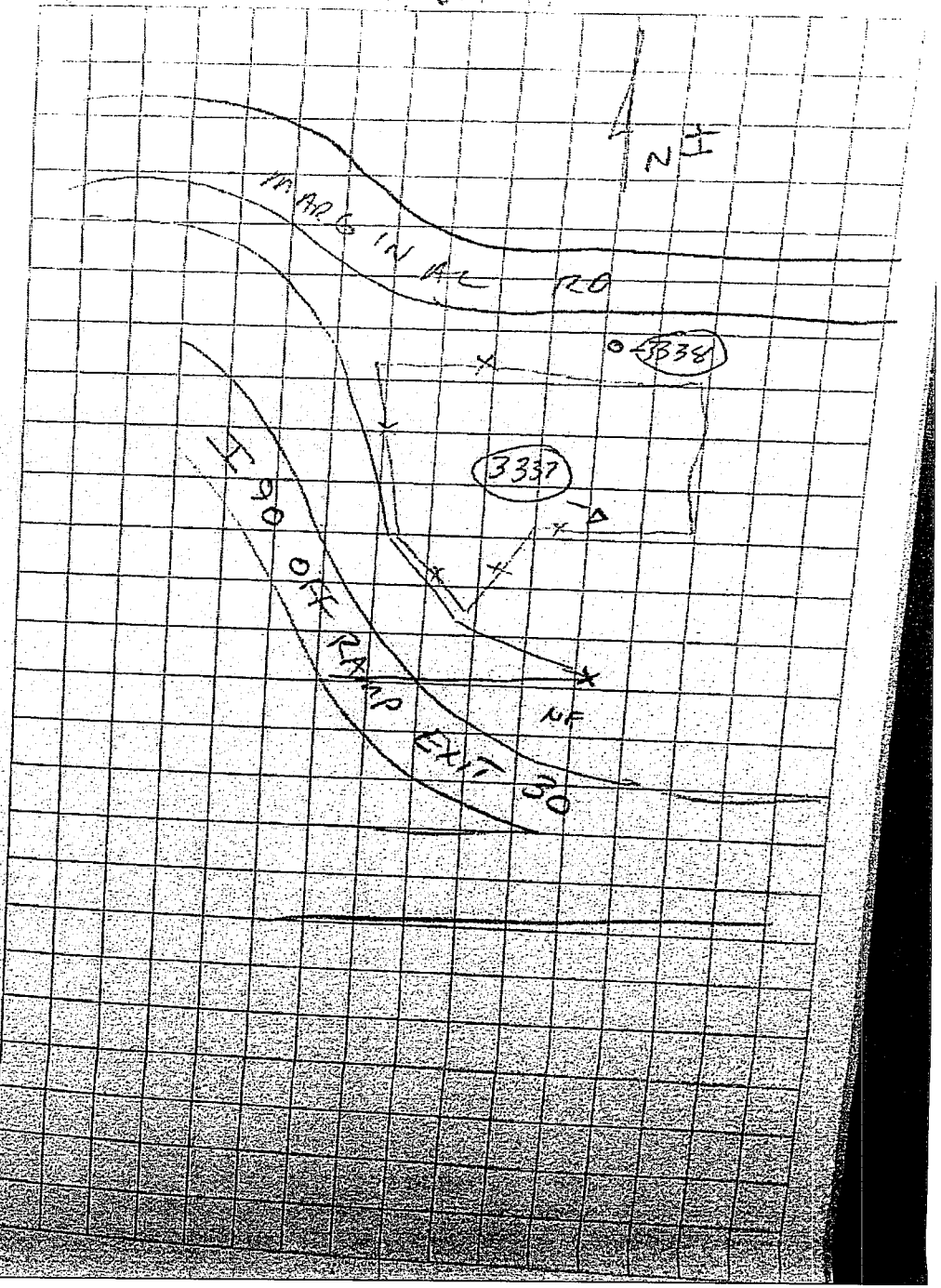
3335 FND OLD SQ CONC POST ✓ MONUMENT, 3' HIGH @ TOP BANK HELD & BASE LEANS NW'LY

3336 FND OLD 8"x8" CONC MON ✓ W/ CH'D 'M' ON TOP & CH'D 20 ON E FACE, LEANS NW. HELD BASE S SIDE OF CANAL E OF RT 28 Village MON?



SFM
JS 49

3337 D.N/Alum Cap "DC Flood"
0.2' 136 w/ Flood Cont. Carbonite



NYSTA - HERKIMER

WB MAINLINE PASSING

SFM JS 17

15102109 25 JAN 17

TC (24) BS (21) W/O

HI = 5.20 ✓ HT = 5.34 ✓

HD = 619.31 HER = 0.00 VER = -0.01

3319 ✓ (21) ✓

3343 DS BURIED ✓

3396 4

✓ BS 0° ✓

TC (22) BS (23) W/O

HI = 5.22 ✓ HT = 5.30 ✓

HD = 516.74 HER = 0.00 VER = +0.01

3397 ✓ (23) ✓

3407 DS

3423 DS

*3490 - 3493 HT = 6.02 ✓

3505 DS

3516 11

✓ BS -6" ✓

TC (23) BS (22) W/O

HI = 5.18 ✓ HT = 5.18 ✓

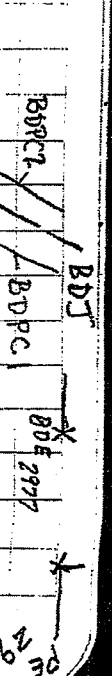
HD = 516.74 HER = 0.00 VER = -0.01

3517 ✓ (22) ✓

3555 DS

3563 ✓ (22) ✓

* NOTE: MEDIAN AREA HAS 1-2' OF HARD, ICY SNOW PACK, DI's ARE COVERED & MOSTLY FULL



NYSTA - HERKIMER
EB OFF RAMP MAINLINE

15102109

25 JAN 17

SFM
JS
25°

78

TC (13) 35 (19) w/ 0°
HI= 5.03 ✓ HT= ~~5.02~~ 4.90 ✓
HD= 296.42 HER= 0.00 VER= -0.01
3564 ✓ (19)

3605 GDH
3606 GDH

✓ BS

NYSTA - WHITESBORO (ORISKANY BLVD)

TC (16) BS (20) w/ 0°
HI= 4.97 HT= 5.02
HD= 245.52 HER= +0.01 VER= +0.05

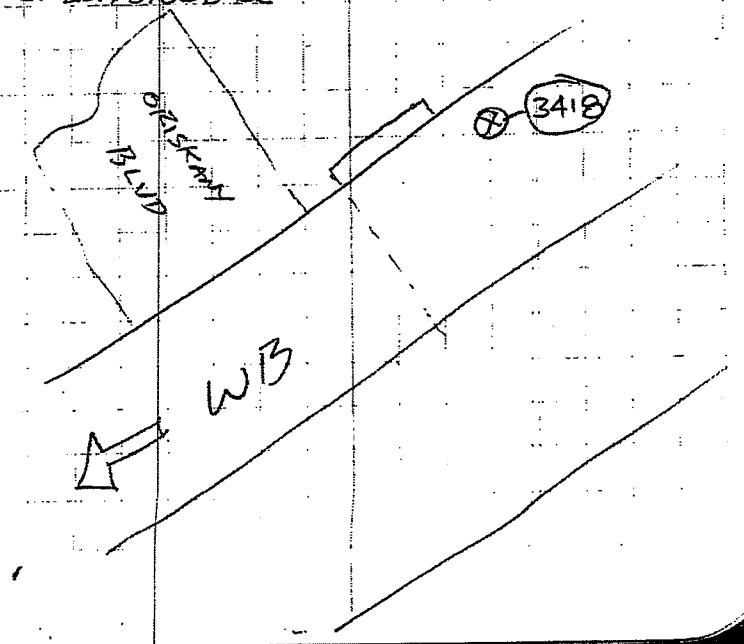
3417 ✓ (20)

3418 GDH

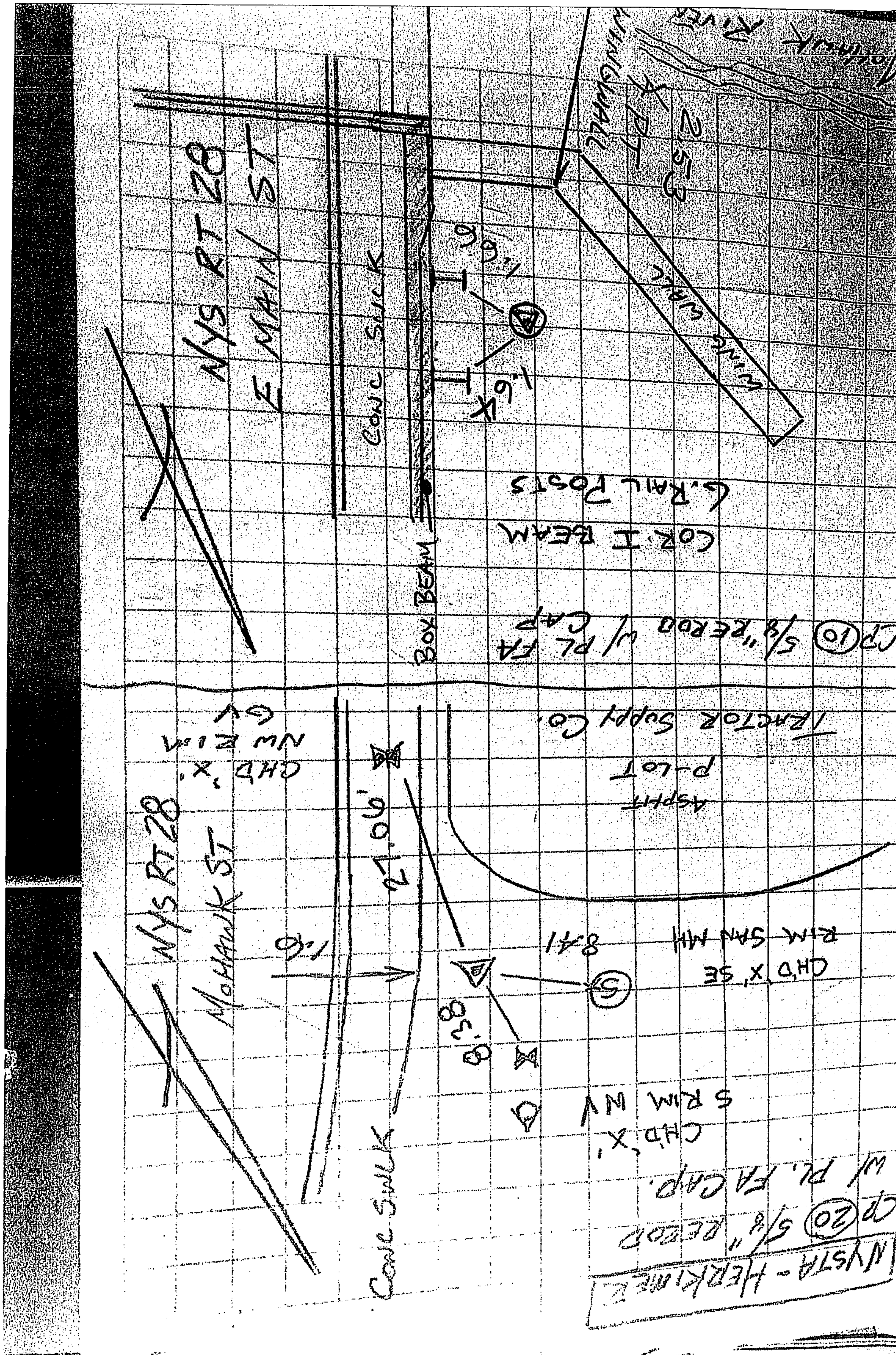
3419 ✓ (14)
↳ ΔN -0.01 ΔE -0.07 ΔZ +0.02

3420 TC pull box, previously missed

FILE: 20170130BORE



99


NYS RT 28
E MAIN ST
CONC S/WLK
BOX BEAM
WING WALL
Mohawk River
COR. I BEAM
G. RAIL POSTS
CP (10) 5/8" REROD W/ PL FA CAP
TRACTOR SUPPLY CO.
ASPHT P-LOT
CHD 'X' NW RIM GV
NYS RT 28
MOHAWK ST
21.06'
RIM SAN MH 8.41
CHD 'X' SE
CHD 'X' S RIM WV
CP (20) 5/8" REROD W/ PL. FA CAP.
CONC S/WLK
NYSTA - HERKIMER