The WLB Group Inc.

Engineering • Planning
Surveying • Urban Design
Landscape Architecture

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TECHNICAL DATA NOTEBOOK

AGUA FRIA RIVER REACH 4

Levee Monitoring

for

Bank Stabilization
FCD Contract 98-20

Assignment #1

February 1999

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
15883
ROBERT K.
LANDIS
Date Signed 3/5/99
ARIZONA, U.S.A.

Engineering • Planning • Surveying • Urban Design • Landscape Architecture
Offices located in Tucson, Phoenix, Las Vegas, and Victor Valley, CA
333 East Osborn, Suite 380 • Phoenix, AZ 85012 • Tel (602) 279-1016 • Fax (602) 279-7810

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- Field Notes
- Survey coordinate listing
- Descriptor explanation
- Plots of cross section points

W:\298016\3-3-99rpt.wpd

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Technical Data Notebook

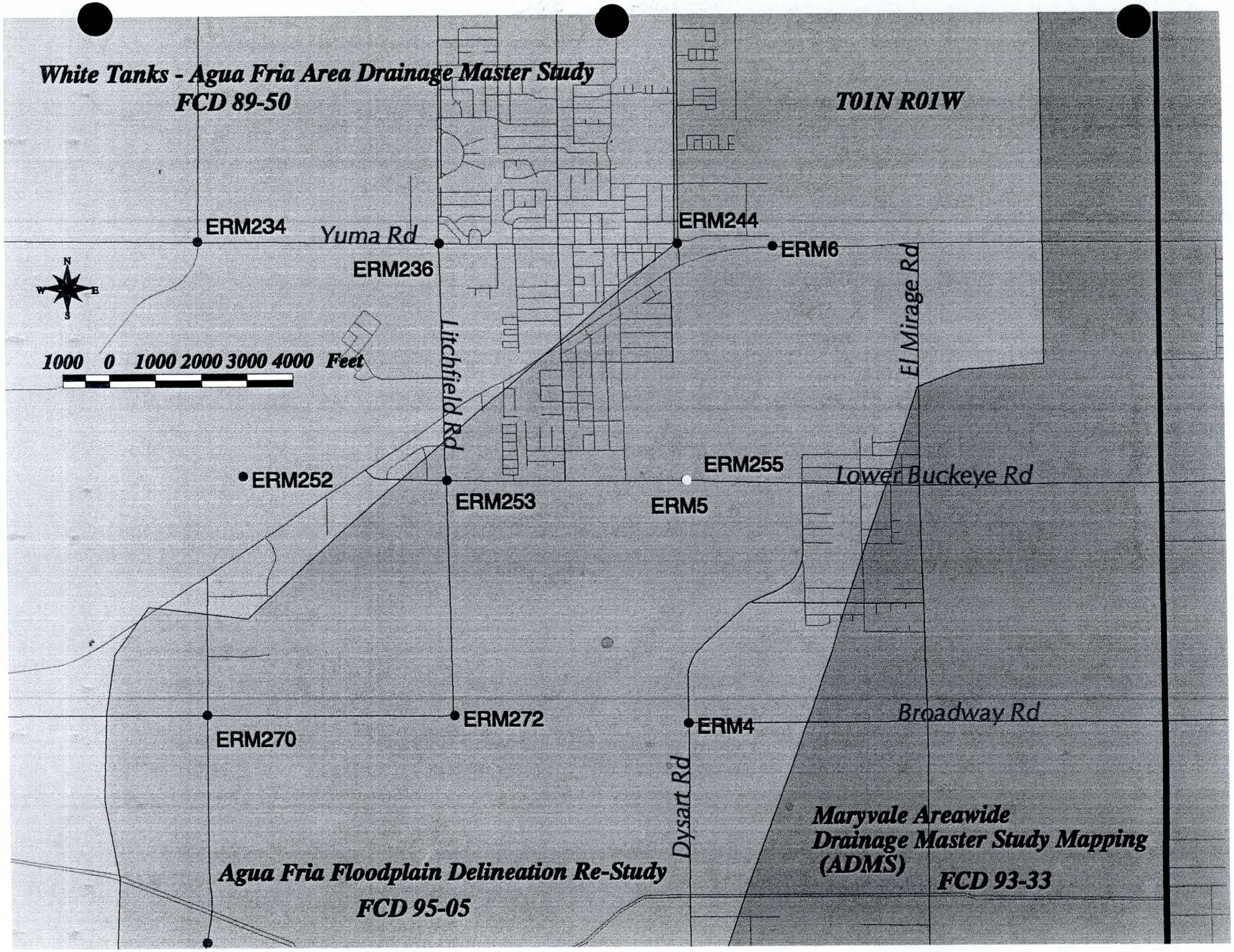
Agua Fria Reach 4

Field Survey was conducted using Sokkia/Ashtech RTK GPS equipment with a TDS Husky F S 3 data collector.

State Plane coordinates and NGVD29 elevations for several control points were provided by the Flood Control District. These data were input into the data collector. Monuments were then located in the field and occupied to initialize the control network. Twelve tablets and rods were found within Reach 4 and coordinates and elevations recorded.

Spirit levels were taken on the tablets and rods to determine the elevation difference between the GPS readings and differential levels. The as-built plans prepared by the Army Corps of Engineers were used to assist in locating the tablets.

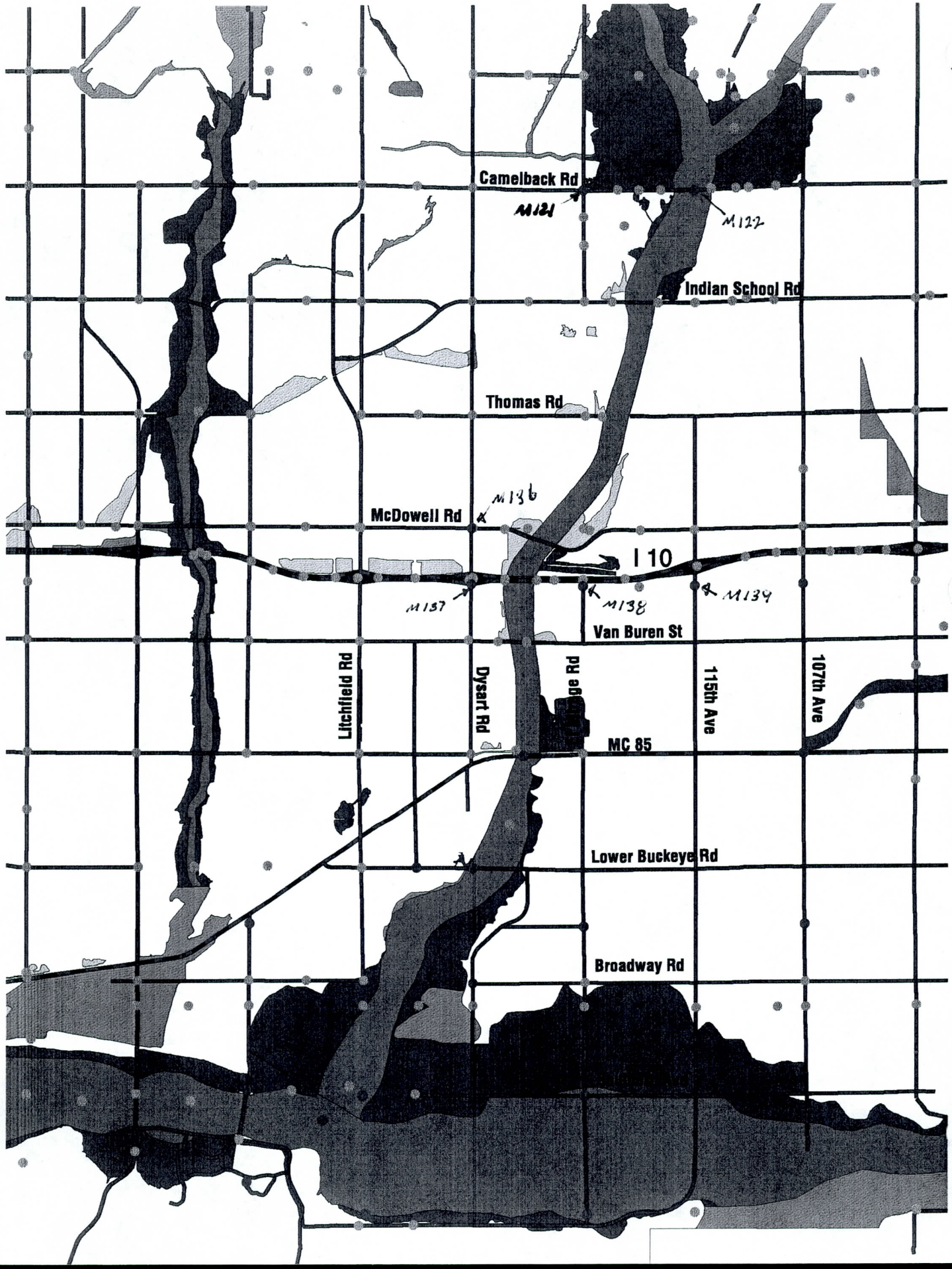
Cross sections were taken into the river channel at each tablet/rod location in accordance with FCD instructions.


White Tanks - Agua Fria Area Drainage Master Study
FCD 89-50
T01N R01W
ERM234
Yuma Rd
ERM236
ERM244
ERM6
N
W
E
S
1000 0 1000 2000 3000 4000 Feet
Litchfield Rd
El Mirage Rd
ERM252
ERM253
ERM255
ERM5
Lower Buckeye Rd
ERM270
ERM272
ERM4
Broadway Rd
Dysart Rd
Maryvale Areawide
Drainage Master Study Mapping
(ADMS)
FCD 93-33
Agua Fria Floodplain Delineation Re-Study
FCD 95-05

POINT_ID	XNAD27	YNAD27	XNAD83	YNAD83	NGVD29	DESCRIPTIO
ERM234	360209.620	886219.970	555993.531	886264.677	977.190	Rod in concrete in hand hole- Bullard Ave. and Yuma Rd.
ERM236	365502.270	886160.830	565286.260	886205.547	963.390	Brass cap flush with pavement- Litchfield Rd. and Yuma Rd.
ERM244	370753.680	886136.350	570537.749	886181.077	965.700	Nail in concrete in hand hole- Dysart Rd. and Western Ave.
ERM252	361165.300	880986.810	560949.245	881031.459	945.620	Rebar in headwall 90' + or - northwest of intersection of Bullard Ave. and Lower Buckey
ERM253	365618.480	880878.610	565402.492	880923.268	964.310	Maricopa County Highway Department brass cap in hand hole- Litchfield Rd. and Lowe
ERM255	370887.310	880857.500	570671.401	880902.169	952.460	Maricopa County Highway Department brass cap flush with pavement- Dysart Rd. and L
ERM270	360308.500	875694.410	560092.452	875738.997	922.000	Maricopa County Highway Department brass cap in hand hole- Bullard Ave. and Broadw
ERM272	365725.580	875664.500	565509.613	875709.099	931.730	Concrete nail in southwest corner- headwall at northeast corner- intersection Litchfield R
ERM4	0.000	0.000	570659.852	875529.215	933.580	Brass cap in hand hole at the intersection of Broadway Rd. and Dysart Rd.
ERM5	0.000	0.000	570672.561	880901.963	944.240	Cotton spindle flush with pavement at the intersection of Lower Buckeye and Dysart Ro
ERM6	0.000	0.000	572634.745	886108.447	973.580	Brass cap West end of Buckeye Rd. bridge over Agua Fria River

POINT_ID	HORIZ_ORDE	MONUMENT	FCD_NUMBER
ERM234	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Rebar (set in concrete)	FCD 89-50
ERM236	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Brass Cap	FCD 89-50
ERM244	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Nail in concrete	FCD 89-50
ERM252	No Horizontal Accuracy, Locate by Description	Rebar (set in concrete)	FCD 89-50
ERM253	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Brass Cap in well monument	FCD 89-50
ERM255	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Brass Cap	FCD 89-50
ERM270	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in 10,000	Brass Cap in well monument	FCD 89-50
ERM272	No Horizontal Accuracy, Locate by Description	Nail in concrete	FCD 89-50
ERM4	Blank/Unknown/Uncertain	Brass Cap	FCD 95-05
ERM5	Blank/Unknown/Uncertain	Cotton picker spindle	FCD 95-05
ERM6	Blank/Unknown/Uncertain	Brass Cap	FCD 95-05

POINT_ID	PRJ_NAME	PRJ_SCALE	TOPO_DT
ERM234	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM236	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM244	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM252	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM253	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM255	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM270	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM272	White Tanks - Agua Fria Area Drainage Master Study	400	2/10/90
ERM4	Agua Fria Floodplain Delineation Re-Study	400	7/22/87
ERM5	Agua Fria Floodplain Delineation Re-Study	400	7/22/87
ERM6	Agua Fria Floodplain Delineation Re-Study	400	7/22/87


Camelback Rd
M121
M122
Indian School Rd
Thomas Rd
M136
McDowell Rd
I 10
M137
M138
M134
Van Buren St
Litchfield Rd
Dysart Rd
115th Ave
107th Ave
MC 85
Lower Buckeye Rd
Broadway Rd

Point	Xnad27	Ynad27	Xnad83	Ynad83	Ngvd29
M121	376077.728	912377.188	0.000	0.000	1026.710
M122	381318.629	912348.717	0.000	0.000	1038.120
M136	370824.543	896667.845	0.000	0.000	994.150
M137	370792.925	894060.746	0.000	0.000	987.900
M138	376036.332	893948.599	0.000	0.000	979.140
M139	381299.852	893938.429	0.000	0.000	994.250
M146	376038.723	886123.089	0.000	0.000	968.770
M152	368246.156	880870.463	0.000	0.000	951.180
M153	370886.223	880858.155	0.000	0.000	952.080
M162	365690.449	870343.083	0.000	0.000	916.000
M163	363797.815	869263.480	0.000	0.000	908.470
~~501~~	~~376110.400~~	~~879270.400~~	~~0.000~~	~~0.000~~	~~1233.[illegible]~~
506	381299.900	893938.400	0.000	0.000	1172.800
512	376036.300	893948.600	0.000	0.000	1171.830
807	363797.800	869263.500	0.000	0.000	1216.430
818	370883.300	875490.400	0.000	0.000	1203.920
820	368246.200	880870.500	0.000	0.000	1200.280
~~823~~	~~373270.500~~	~~886048.800~~	~~0.000~~	~~0.000~~	~~1189.780~~
104	0.000	0.000	560123.790	878382.639	942.350
102	0.000	0.000	575859.908	878168.055	950.560
181	0.000	0.000	560040.558	870677.268	923.160
180	0.000	0.000	560003.145	866455.428	933.920
	383812.400	912463.000	0.000	0.000	1032.600
	381318.800	912348.800	0.000	0.000	1038.140
	386422.400	912585.300	0.000	0.000	1034.120
M147	386414.321	886137.419	0.000	0.000	993.910
M164	365839.574	864919.226	0.000	0.000	921.620
~~601~~	~~386396.200~~	~~894027.600~~	~~0.000~~	~~0.000~~	~~1144.050~~
~~615~~	~~386422.200~~	~~912584.800~~	~~0.000~~	~~0.000~~	~~1140.200~~

Point	Description
M121	FOUND BRASS CAP IN HANDHOLE CITY OF PHOENIX (0.38 BELOW RIM) @ CAMELBACK & EL MIRAGE
M122	FOUND BRASS CAP FLUSH M.C.H.D. @ CAMELBACK RD ON BRIDGE OVER AGUA FRIA RIVER
M136	FOUND MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN HANDHOLE (+0.45 TO LID) AT THE INTERSECTION OF DYSART ROAD AND MCDOWELL
M137	FOUND U.S. ARMY CORP OF ENGINEERS COPPER WELD +0.06 ABOVE THE CONC. AT THE NORTH END OF THE BULLNOSE SOUTH OF THE I10 & DYSART OVERPASS BRIDGE
M138	POUND 5/8 INCH REBAR IN POTHOLE (0.17 FT BELOW PAVEMENT) CENTERLINE OF EL MIRAGE ROAD +/- 1/2 MILE NORTH OF VAN BUREN STREET, +/- 500 FT SOUTH OF INTERSTATE 10
M139	FOUND MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN HANDHOLE (0.60 FT DOWN) CENTERLINE OF 115TH AVENUE, +/- 1/2 MILE NORTH OF VAN BUREN STREET
M146	FOUND ADOT HWY DIV. ALMN CAP IN HANDHOLE (+0.64 TO LID) AT THE INTERSECTION OF BUCKEYE RD. (ALSO CALLED MAIN STREET) AND EL MIRAGE
M152	FOUND MARICOPA COUNTY BRASS CAP IN HANDHOLE (+0.52 TO LID) AT INTERSECTION LOWER BUCKEYE ROAD AND SOUTH CENTRAL AVENUE
M153	FOUND MARICOPA COUNTY HWY DEPT BRASS CAP CENTERLINE LOWER BUCKEYE ROAD
M162	FOUND 2 INCH PIPE 0.26 FEET ABOVE GROUND, +/- 1 MILE WEST OF DYSART ROAD ON CENTERLINE SOUTHERN AVENUE EXTENDED; (ALSO FOUND CORPS OF ENGINEERS BRASS CAP +/- 45 TO SOUTHWEST - MARKED - AF 83-40 -)
M163	SET 1/2 INCH REBAR +/- 1000 FT WEST OF WEST EDGE OF AGUA FRIA RIVER AND +/- 35 FT NORTH OF NORTH BANK OF GILA RIVER; POINT 163 ID +/- 2000 FT WEST AND +/- 900 FT SOUTH OF POINT 162
501	BRASS CAP NO. RIM H.H. 59TH AVE. & THUNDERBIRD PAGE 37 BK 4
506	N. RIM BCHH 59TH AVE. & OLIVE
512	PANEL 43RD AND GLENDALE B.C. IN H.H.
807	PK NAIL CENTERLINE OF DUNLAP
818	PK CENTERLINE OF NORTHERN +/- 300 FT. W. OF 31ST DR.
820	PANEL NO. 820 24TH AVE. & NORTHERN
823	COTTON SPINDLE 29TH AVE. & ORANGEWOOD
104	G-2 p.12 B/C in HH @ Jct. El Sol & Bullard
102	G-1 p.3 B/C in HH Intersection El Mirage & Elwood
181	G-4 p.25 B/C Flush +/- 175 feet N of Bridge CL Bullard
180	G-1 p.31 Set PK Nail +/- 225 feet S of Casey Abbot & West
	N 1/4 Corner, BCHH
	Random, BCFlush
	NE Corner, BCHH
M147	FOUND ADOT HWY DIV ALMN. CAP IN HANDHOLE (+0.67 TO LID) AT THE INTERSECTION OF BUCKEYE ROAD AND 107TH AVENUE
M164	SET 1/2 INCH REBAR +/- 2.0 MILES WEST OF EL MIRAGE ROAD; +/- 600 FT NORTH OF INDIAN SPRINGS ROAD (BASELINE ROAD) ON SMALL MOUND OF DIRT
601	PK DRIVE AT TRAILER PARK
615	PK E. END PARKING LOT 5355 N. 51ST AVE.

Point	Horizontal Order	
M121	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M122	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M136	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M137	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M138	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M139	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M146	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M152	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M153	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M162	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M163	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
501	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
506	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
512	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
807	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
818	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
820	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
823	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
104	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
102	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
181	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
180	Horizontal, Third-Order, Class I, (FGCC 1984), relative accuracy of 1 part in	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
	Blank/Unknown/Uncertain	Vertical, Second-Order, Class II, (FGCC 1984), relative accuracy of 1.3mm x square root of distance in kilometers between points
	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M147	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
M164	Horizontal, Second-Order, Class II, (FGCC 1984), relative accuracy of 1 part	Blank/Unknown/Uncertain
601	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points
615	Blank/Unknown/Uncertain	Vertical, Third-Order, Class II, (FGCC 1984), relative accuracy of 2.0mm x square root of distance in kilometers between points

FB 110

PHOENIX
AGUA PRIA WASH

'AGUA'

☐ – GPS LOCALIZATION

V-ONLY – VERTICAL LOCALIZATION ONLY

DISC	PEG		(TYP) LEVEL DIFF	DISC	PEG		
			2.86				9.13
232	233	EAST SIDE 18+00	2.86	216	366	75+00	9.09
			7.01				8.85
229	252	EAST SIDE 12+00	6.92	213	381	85+00	8.87
			3.66				8.14
228	268	WEST (TYP) 15+00	3.63	212	397	95+00	8.17
			7.21				9.30
225	284	25+00	7.26	209	414	105+00	9.38
			6.78				
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			5.28				
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			4.73				
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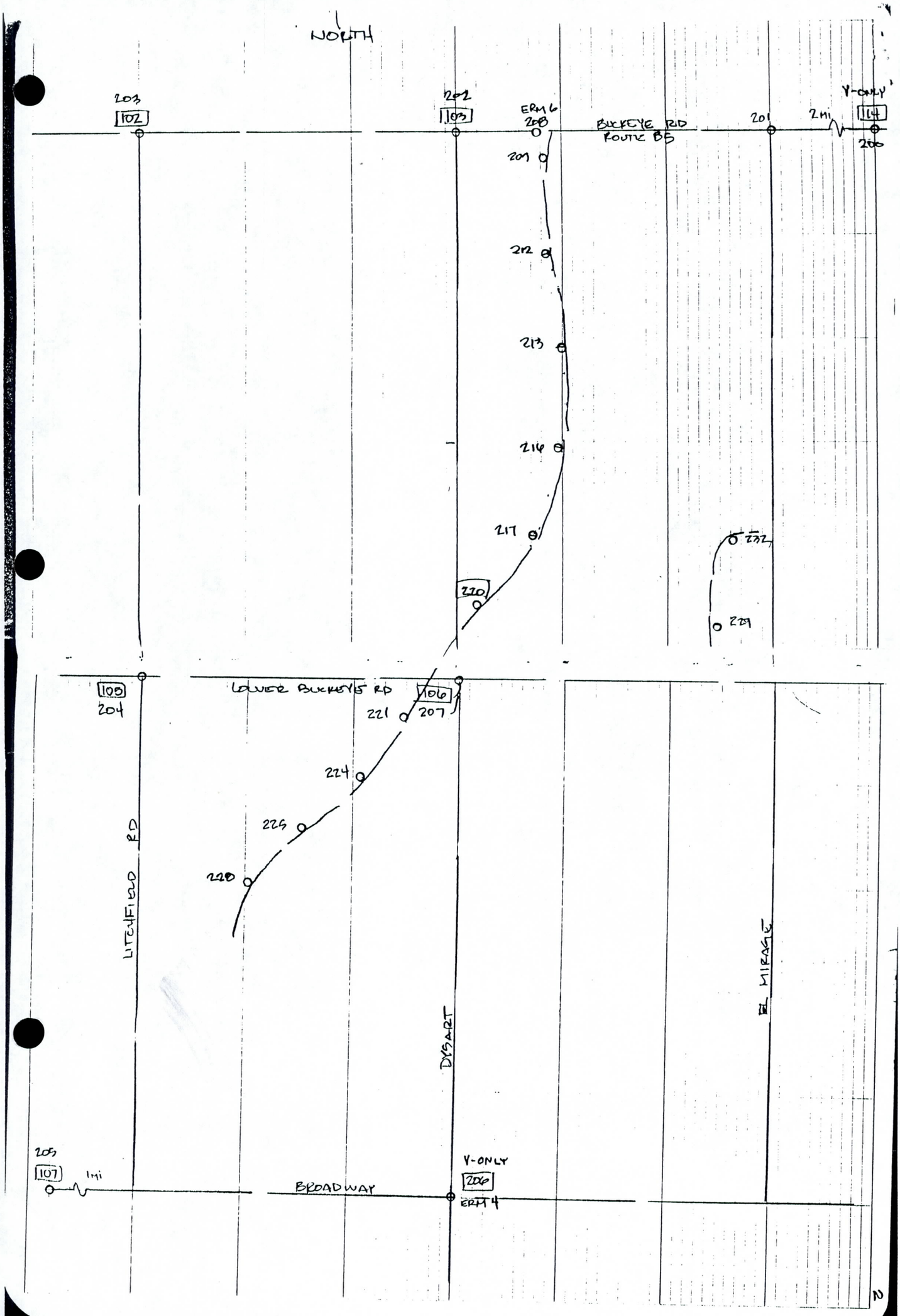
NORTH
203
102
202
103
ERM 6
208
BUCKEYE RD
ROUTE 85
201
2mi
Y-ONLY
114
200
209
212
213
216
217
232
220
229
100
204
LOWER BUCKEYE RD
106
207
221
224
225
220
LITCHFIELD RD
DYSART
EL MIRAGE
205
107
1mi
BROADWAY
Y-ONLY
206
ERM 4

Agua Fria River
Reach 4

Survey Crew

Agua

Data Collector

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83 coord's

Field Control

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ERM4 & 6 do not check well

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ROAD

R1	BC IN HH
R2	BC FLUSH
RA	APRON
RB	BC/TC
RC	CENTER LINE
RD	DRIVEWAY
RE	EDGE OF PAVING
RF	FLOW LINE
RG	SIGN
RH	AC @ FACE OF CURB
RI	EDGE OF ROAD (WHAT TYPE)
RJ	DEPRESSED CURB
RK	PK NAIL
RL	LIP OF GUTTER
RM	MONUMENT LINE
RN	BULL NOSE
RO	CURB OPENING
RP	PAVING
RR	RETURN
RS	SHOULDER
RT	TOE
RU	TOP
RV	VALLEY GUTTER
RW	WALK
RX	EXTRUDED CURB
RY	MEDIAN
RZ	MISCELLANEOUS

SEWER

SC	CLEANOUT
SL	SEWER LINE
SM	SEWER MANHOLE
SY	TAP
SZ	MISCELLANEOUS

WATER

WF	FIRE HYDRANT
WL	WATER LINE
WM	WATER METER
WP	WATER PIPE
WT	TAIL WATER
WV	WATER VALVE
WZ	MISCELLANEOUS

STORM DRAIN

HB	SCUPPER
HC	CATCH BASIN
HD	DRY WELL
HM	MANHOLE
HP	PIPE
HS	STORM DRAIN
HZ	MISCELLANEOUS

IRRIGATION

IB	ANTI-SIPHON VALVE
IC	CONCRETE TOE
ID	TAIL WATER
IE	CONCRETE SHOULDER
IF	FLOW LINE
IG	GROUND
IH	HEADWALL
II	IRRIGATION BOX
IP	STAND PIPE
IS	SHOULDER
IT	TOE
IV	IRRIGATION VALVE
IW	WING WALL
IZ	MISCELLANEOUS

STRUCTURES

BA	AIR CONDITIONING
BB	BUILDING SIGN
BC	BUILDING CORNER
BD	EDGE OF SWIMMING POOL
BE	EDGE OF WALK
BF	FINISHED FLOOR
BG	GENERATOR
BH	PUMP (WHAT KIND)
BI	PATIO - CONCRETE PAD
BJ	CURB STOPS
BK	PARKING
BL	RAILS
BN	ANGLE POINT
BO	OVERHANG
BP	EDGE OF PLANTER
BR	RAMP
BS	STAIRS
BT	CONDUIT
BU	COLUMN
BV	MAILBOX
BY	YARD
BZ	MISCELLANEOUS

TELEPHONE

TM	TELEPHONE MANHOLE
TR	TELEPHONE RISER

MISCELLANEOUS

PT	PALM TREE
TC	CACTUS
TT	TREE
TV	CABLE TV

ELECTRIC

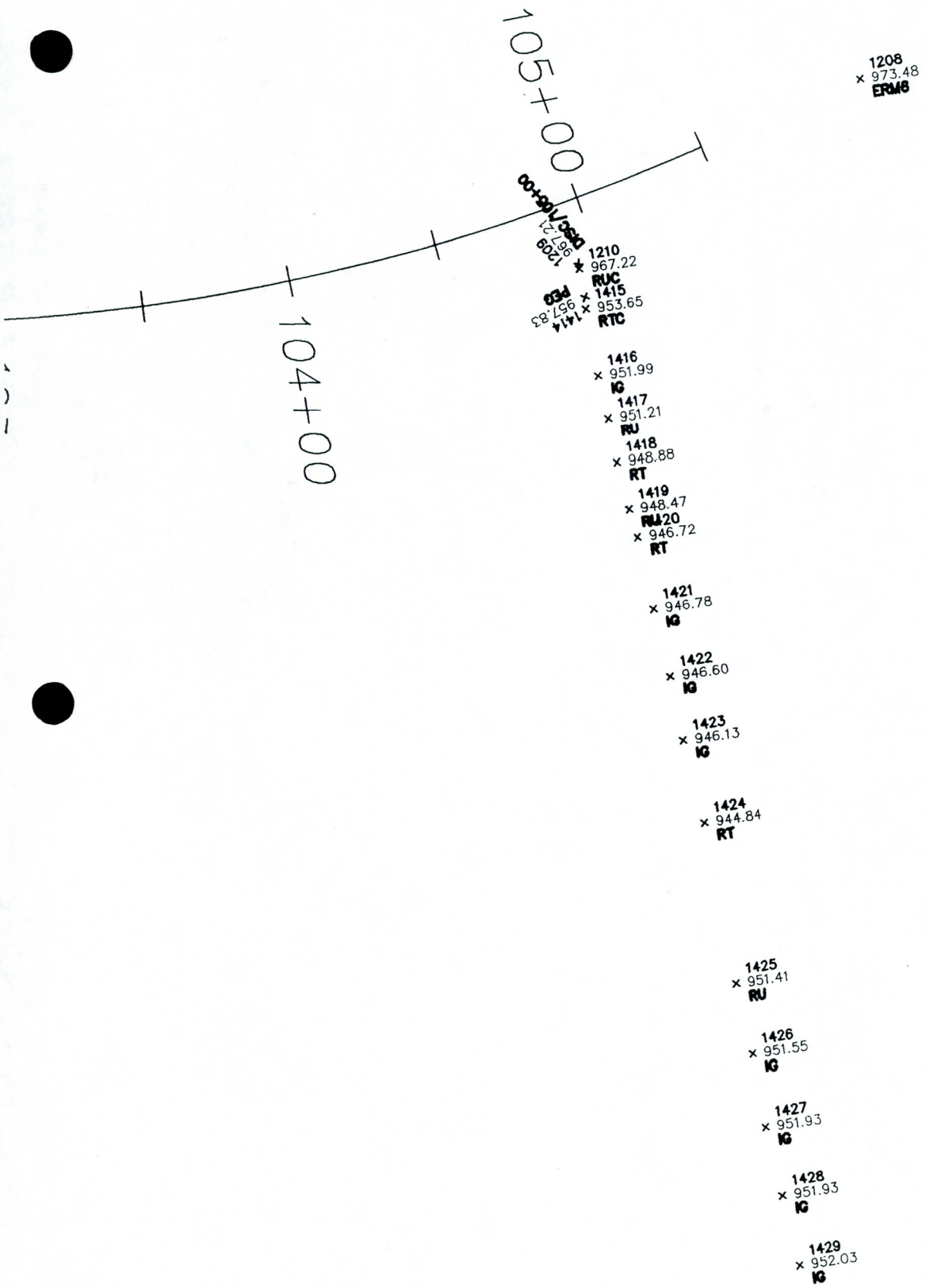
EA	SWITCHING & FUSING
EB	ELECTRIC BOX
EE	ELECTRIC METER
EF	TRANSFORMER (PAD)
EG	GUY WIRE
EI	PEDESTRIAN LIGHT
EL	TRAFFIC LIGHT
EM	ELECTRIC MANHOLE
EN	ELECTRIC LINE
EP	POWER POLE
ER	RISER (WHAT KIND)
ES	STREET LIGHT
ET	TRAFFIC CONTROL BOX
EU	UTILITY POLE
EV	SERVICE POLE
EZ	MISCELLANEOUS

GAS

GB	BLUE LINE
GH	GAS MANHOLE
GL	GAS LINE
GM	GAS METER
GV	GAS VALVE
GZ	MISCELLANEOUS

WALLS OR FENCES

FA	ANGLE POINT
FB	BACK WALL
FC	FENCE CORNER
FE	END WALL OR FENCE
FF	FACE WALL
FL	FENCE LINE
FT	TOP WALL
FZ	MISCELLANEOUS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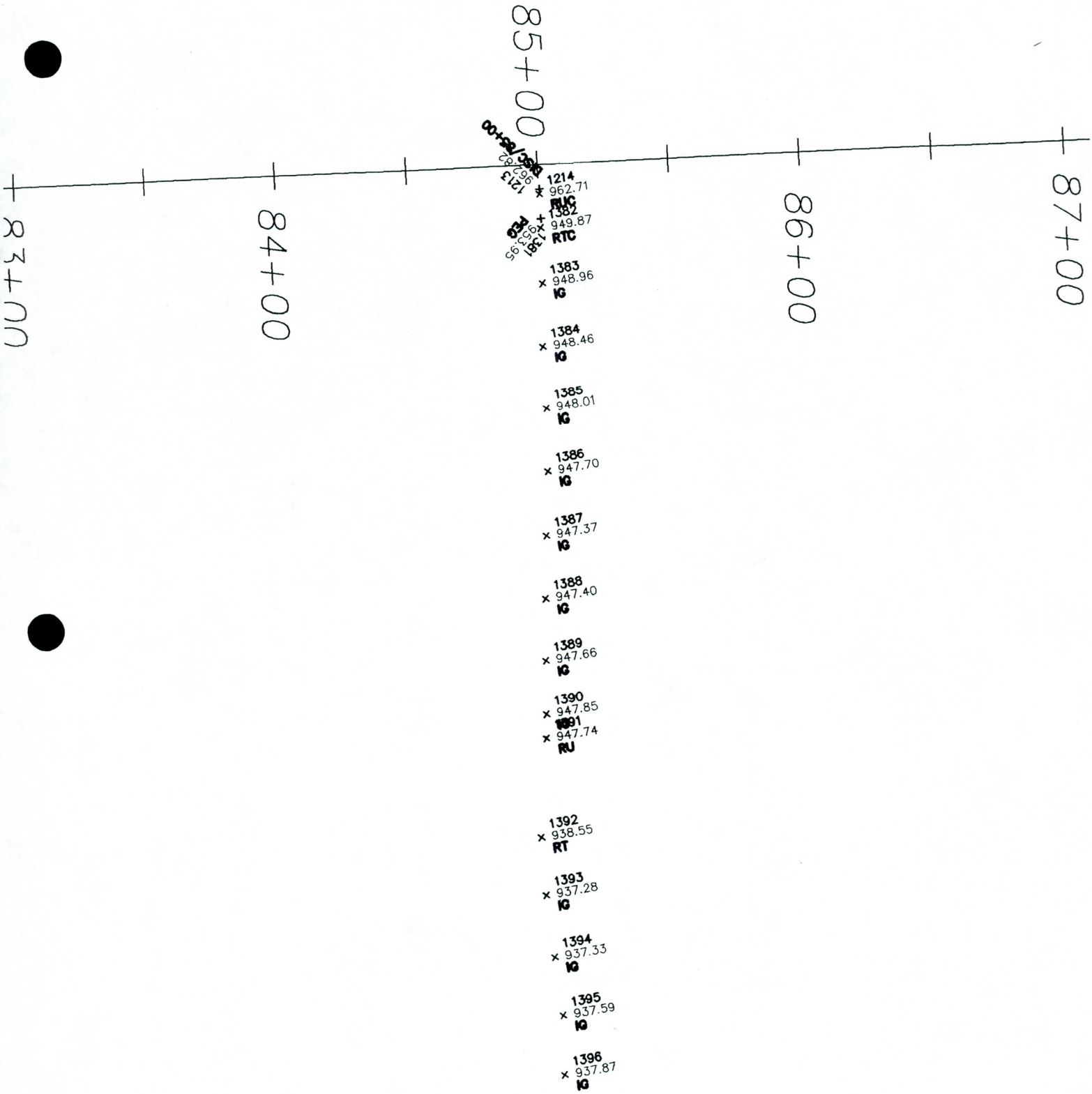

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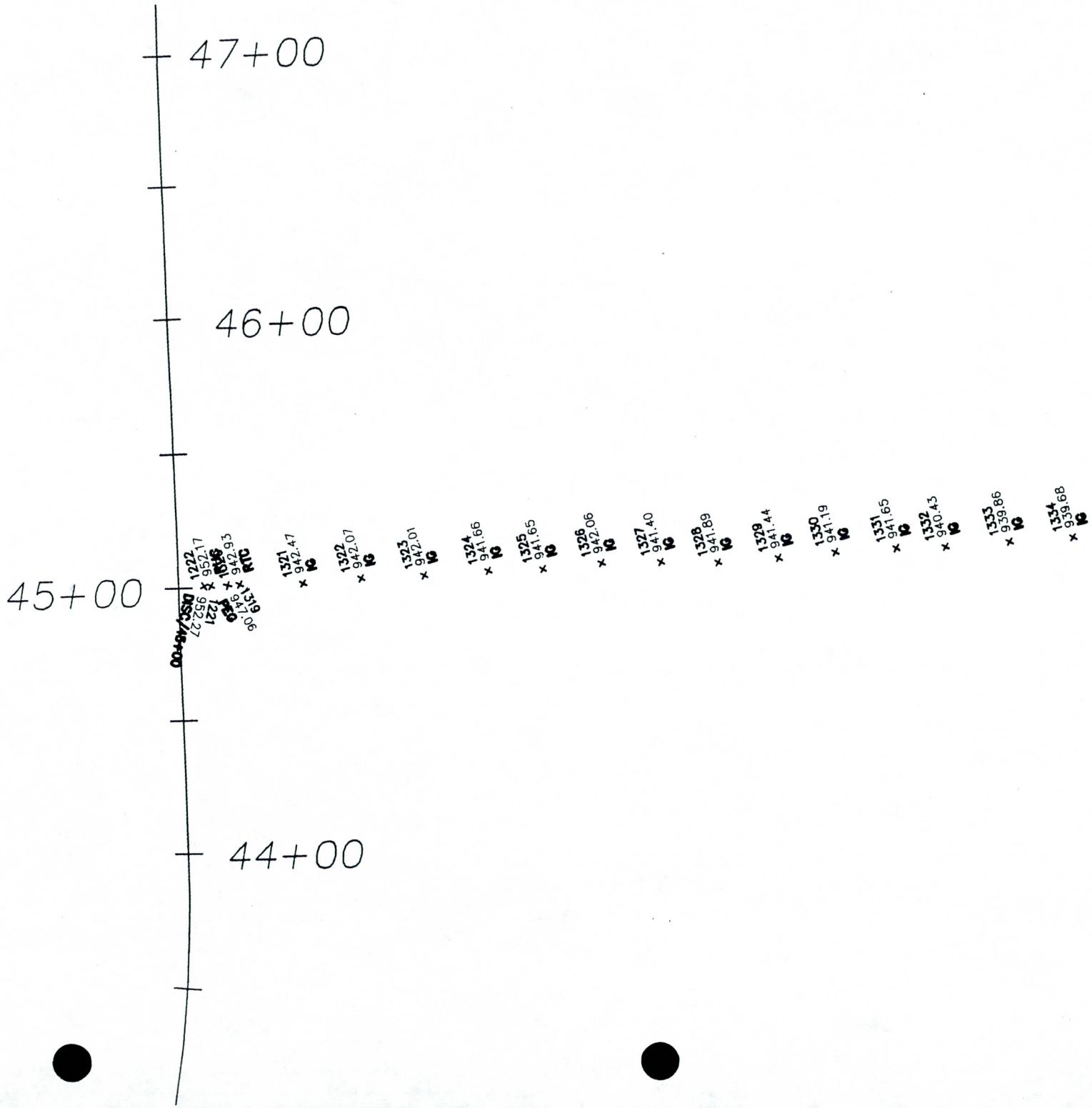
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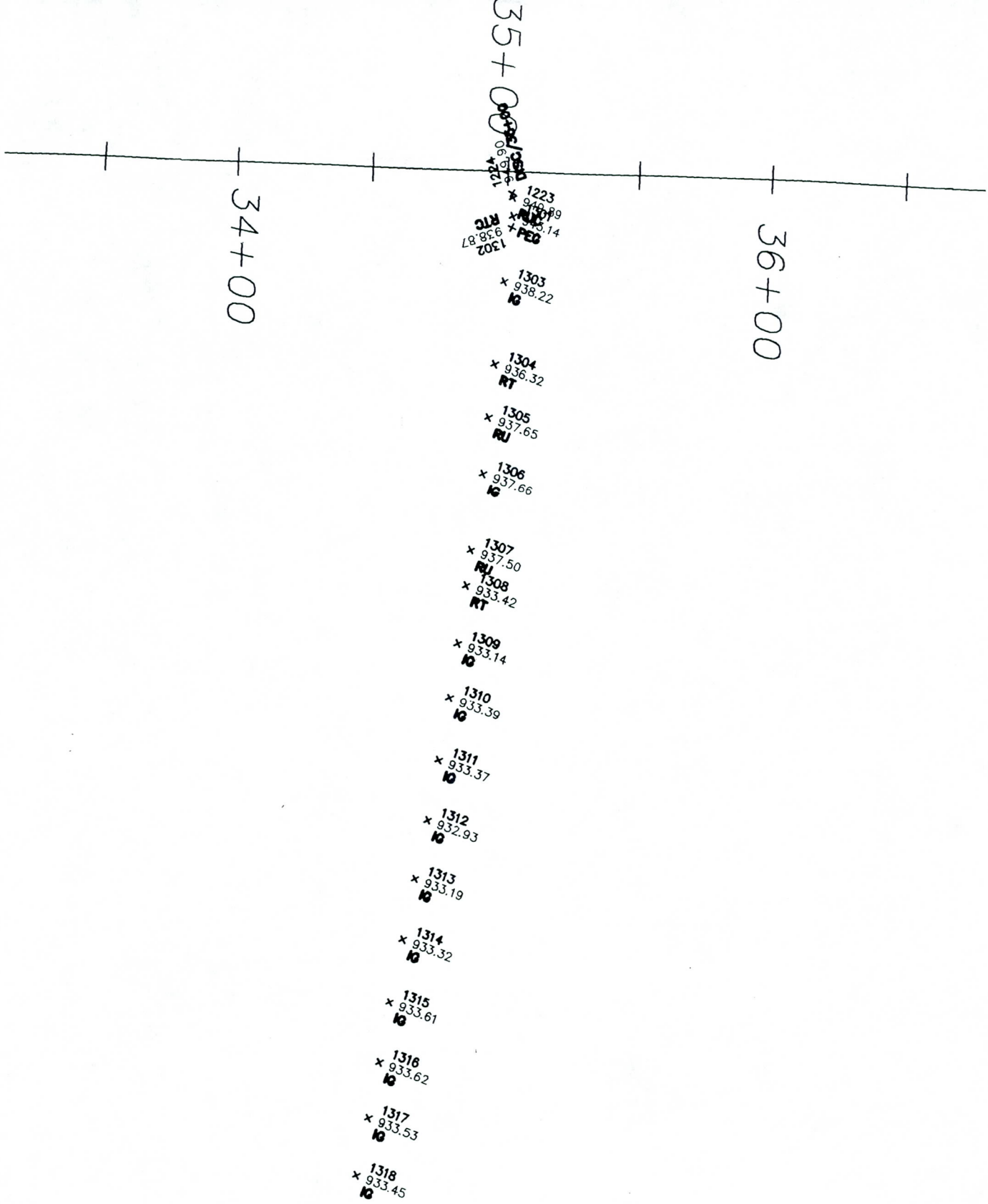

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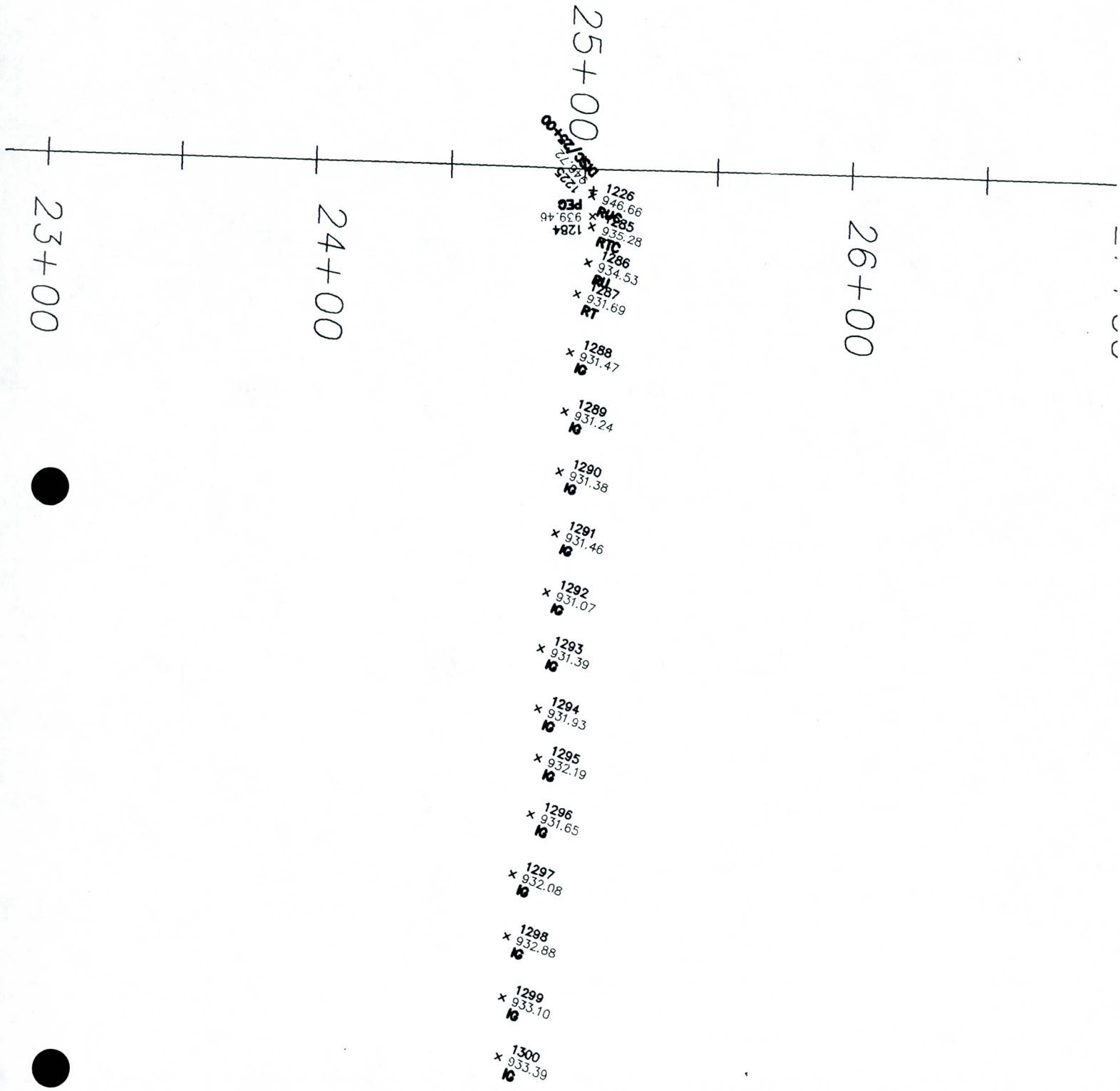

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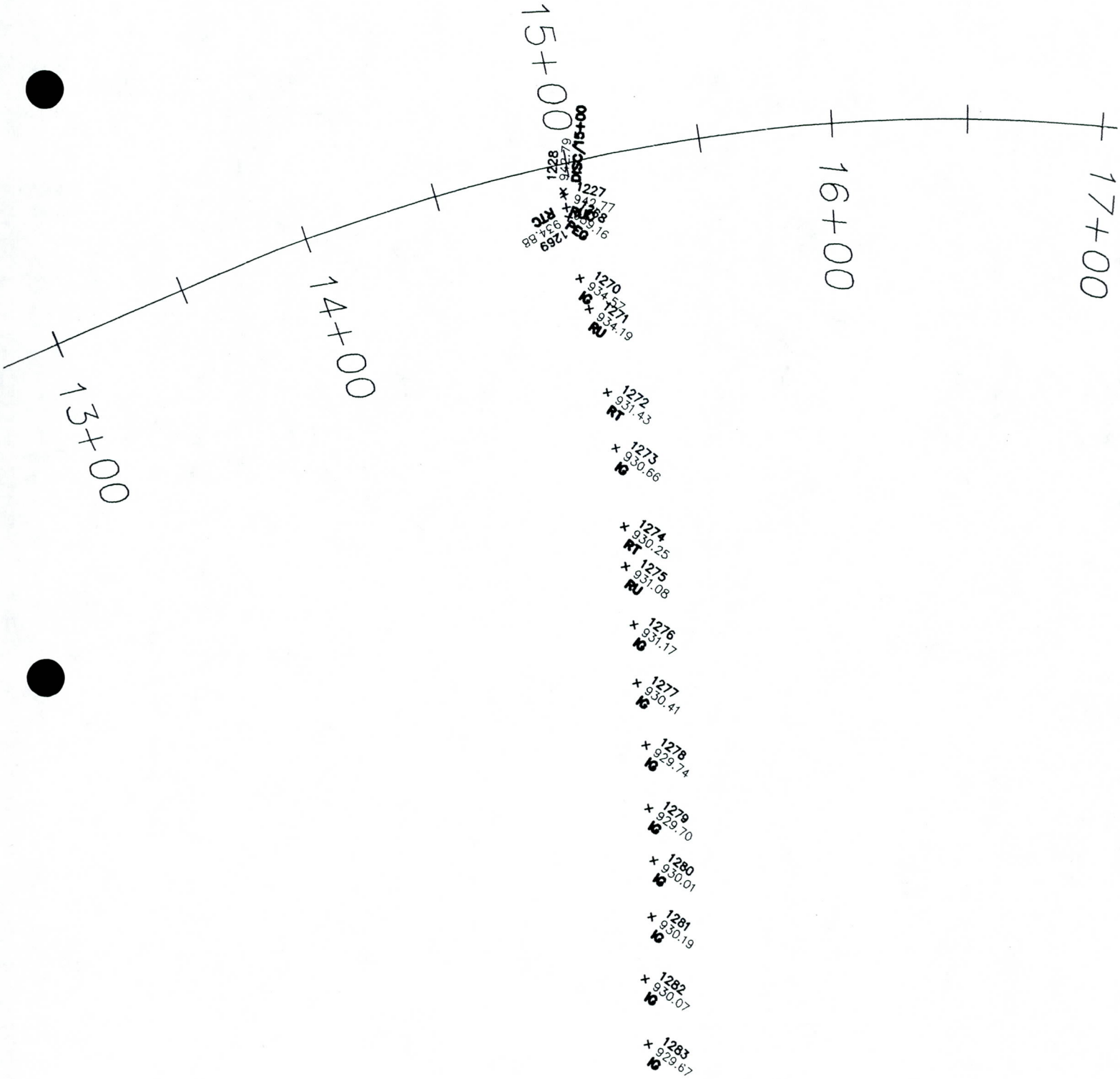

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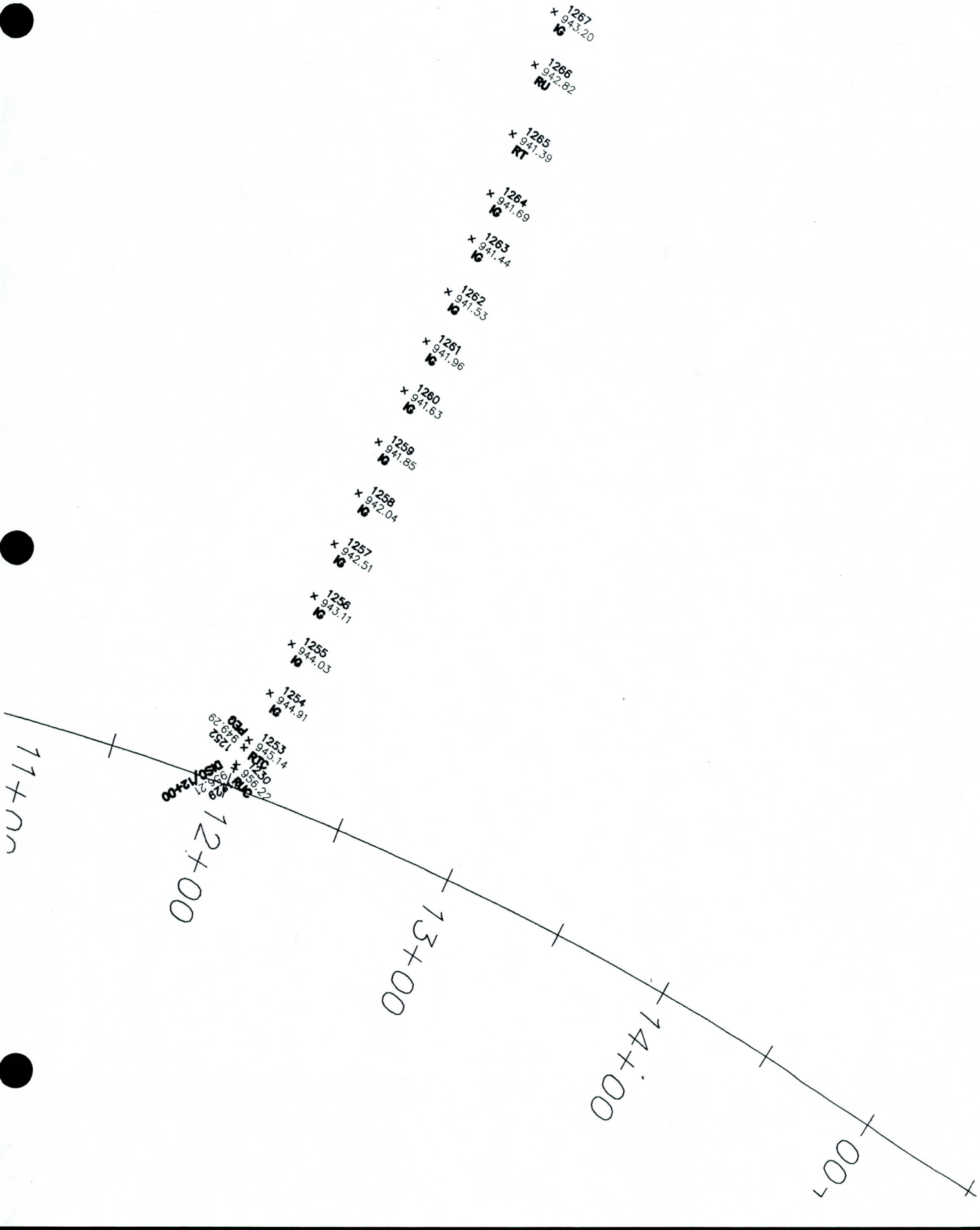
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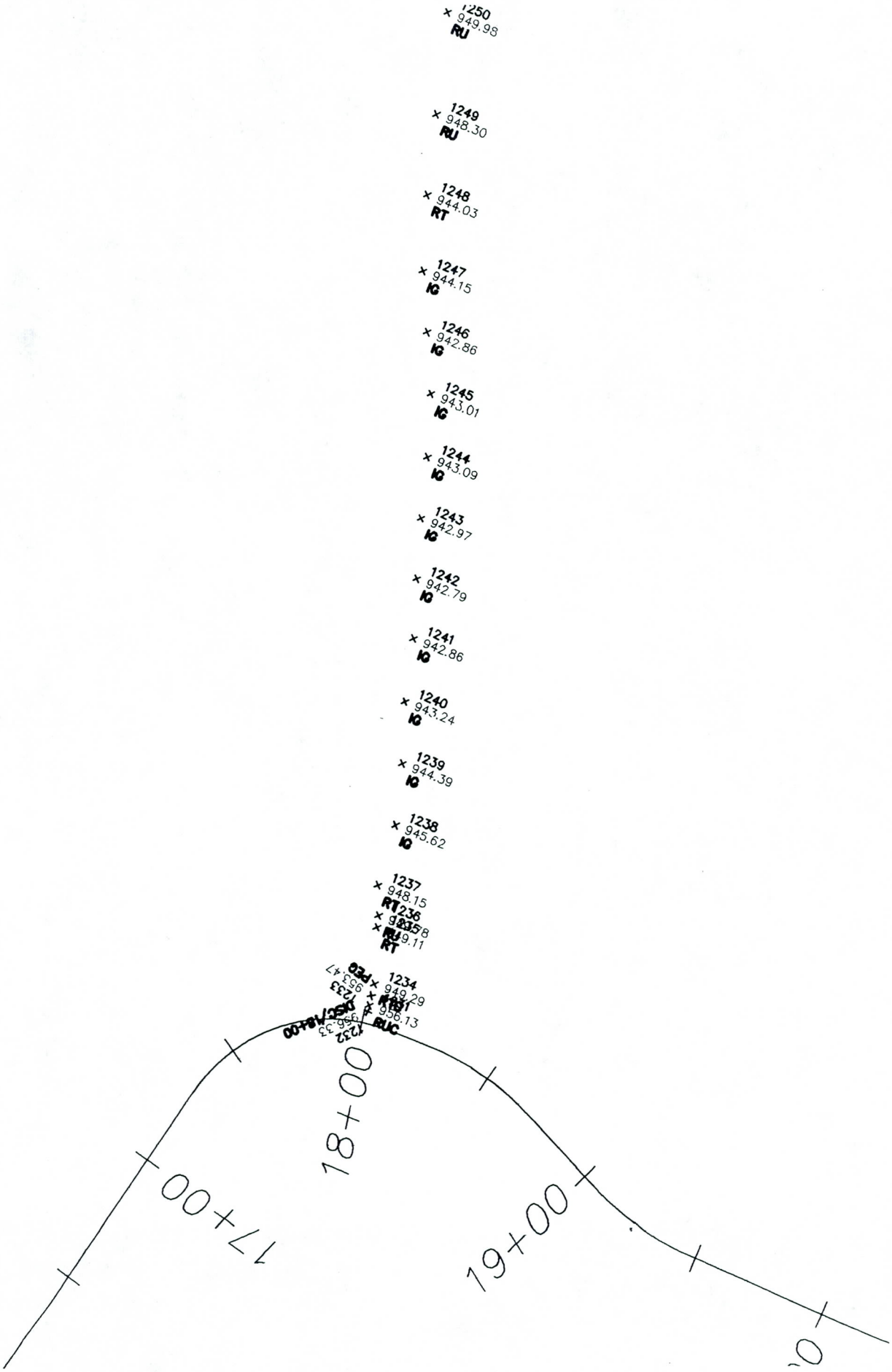
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