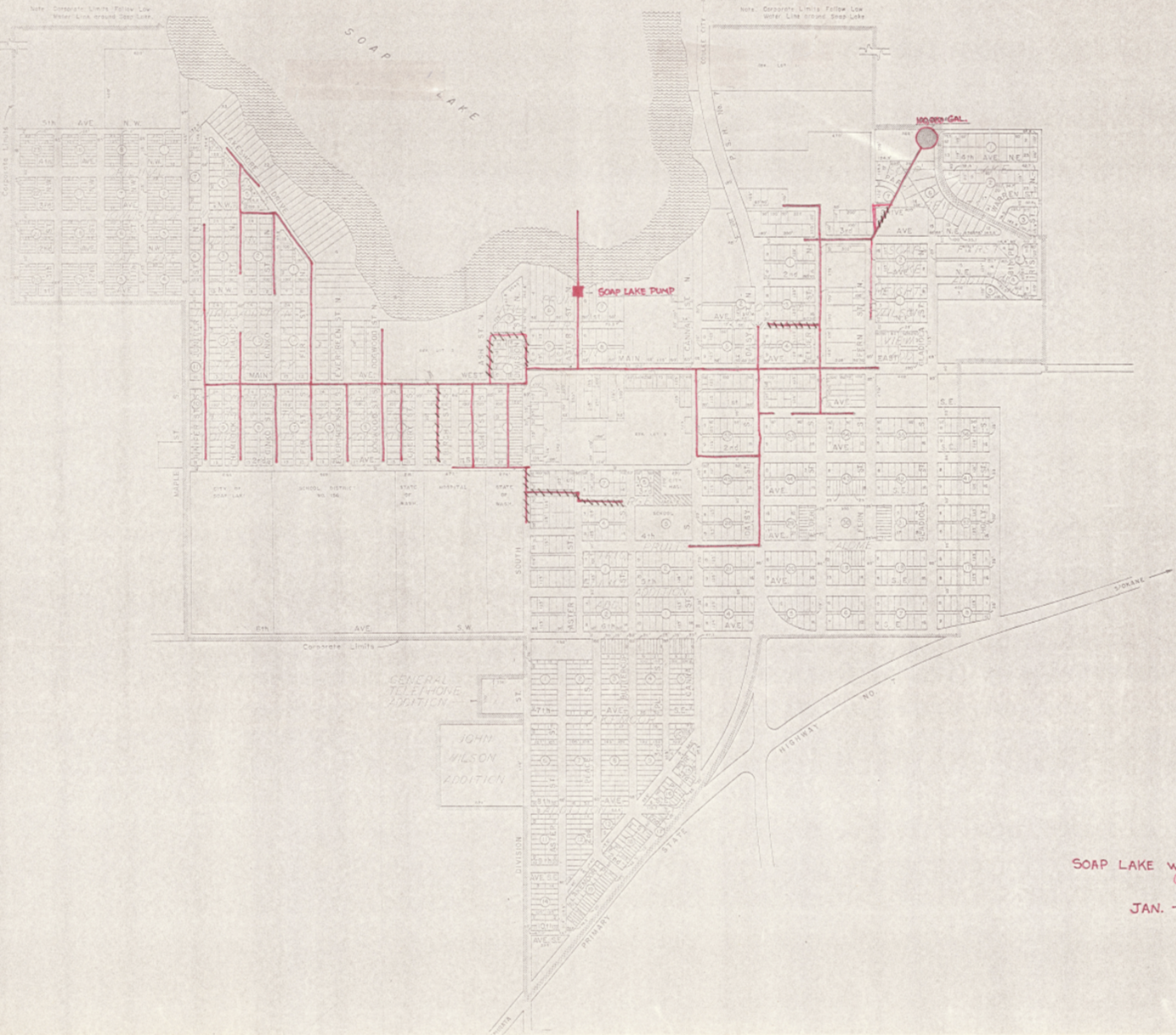
APPENDIX B

HISTORICAL MINERAL WATER SYSTEM INFORMATION



CITY OF SOAP LAKE
SOAP LAKE, WASHINGTON

Street and Lot Layout

Prepared by

HD Horton Dennis and Associates, Incorporated

SOAP LAKE WATER SYSTEM
(MINERAL)

JAN. - 1987

1. MAIN AVE. WEST & DIVISION STREET
2. MAIN AVE. WEST & ALLEY WEST OF DIVISION
3. MAIN AVE. WEST & ASH ST. N. & S.
4. MAIN AVE. WEST & ALLEY BETWEEN ASH & BIRCH
5. MAIN AVE. WEST & BIRCH STREET SOUTH
6. MAIN AVE. WEST & ALLEY BETWEEN BIRCH & CHERRY
7. MAIN AVE. WEST & CHERRY STREET SOUTH
8. MAIN AVE. WEST & ALLEY BETWEEN CHERRY & DOGWOOD
9. MAIN AVE. WEST & DOGWOOD STREET SOUTH & NORTH
10. MAIN AVE. WEST & DOGWOOD STREET NORTH
11. MAIN AVE. WEST & EVERGREEN STREET NORTH
12. MAIN AVE. WEST & FIR STREET NORTH & SOUTH
13. MAIN AVE. WEST & GINKO STREET NORTH & SOUTH
14. MAIN AVE. WEST & HEMLOCK STREET
15. MAIN AVE. WEST & JUNIPER STREET NORTH & SOUTH
16. MAIN AVE. WEST & MAPLE STREET NORTH & SOUTH
17. 1ST. AVE. NW. & ASH STREET NORTH
18. 1ST. AVE. NW. & FIR STREET NORTH
19. 1ST. AVE. NW. & GINKGO STREET NORTH
20. 1ST. AVE. NW. & HEMLOCK STREET NORTH
21. 1ST. AVE. NW. & JUNIPER STREET NORTH
22. L.S. DRIVE & ALLEY BETWEEN FIR & GINKGO STREET NORTH
23. L.S. DRIVE & 3RD. AVE. NW. & GINKGO STREET NORTH
24. 3RD. AVE. NW. & HEMLOCK STREET NORTH
25. 3RD. AVE. NW. & JUNIPER STREET NORTH
26. L.S. DRIVE & HEMLOCK STREET NORTH
27. L.S. DRIVE & JUNIPER STREET NORTH

28. 2ND. AVE. & DIVISION STREET
29. 2ND. AVE. SW. & ALLEY BETWEEN DIVISION & ASH S.
30. 2ND. AVE. SW. & ASH STREET SOUTH
31. 2ND. AVE. SW. ALLEY BETWEEN ASH & BIRCH SOUTH
32. 2ND. AVE. SW. & BIRCH STREET SOUTH
33. 2ND. AVE. SW. & CHERRY STREET SOUTH
34. 2ND. AVE. SW. & DOGWOOD STREET SOUTH
35. 2ND. AVE. SW. & EVERGREEN STREET SOUTH
36. 2ND. AVE. SW. & FIR STREET SOUTH
37. 2ND. AVE. SW. & GINKGO STREET SOUTH
38. 2ND. AVE. SW. & HEMLOCK STREET SOUTH
39. 2ND. AVE. SW. & JUNIPER STREET SOUTH
40. 2ND. AVE. SW. & MAPLE STREET SOUTH
41. MAIN AVE EAST & DIVISION NORTH
42. MAIN AVE. EAST & ASTER STREET NORTH
43. MAIN AVE. EAST & WHERE BUTTERCUP SHOULD BE.
44. MAIN AVE. EAST & CANNA & DAISY STREET NORTH & SOUTH
45. MAIN AVE. EAST & CANNA NORTH & SOUTH
46. MAIN AVE. EAST & DAISY STREET NORTH & SOUTH
47. MAIN AVE. EAST & ELDER STREET NORTH & SOUTH
48. MAIN AVE. EAST & FERN STREET NORTH & SOUTH
49. MAIN AVE. EAST & GLADIOLA NORTH & WEST HAVEN
50. 1ST AVE. NE. & CANNA STREET NORTH
51. 1ST AVE NE. & ALLEY THROUGH PARK BEHIND B&B

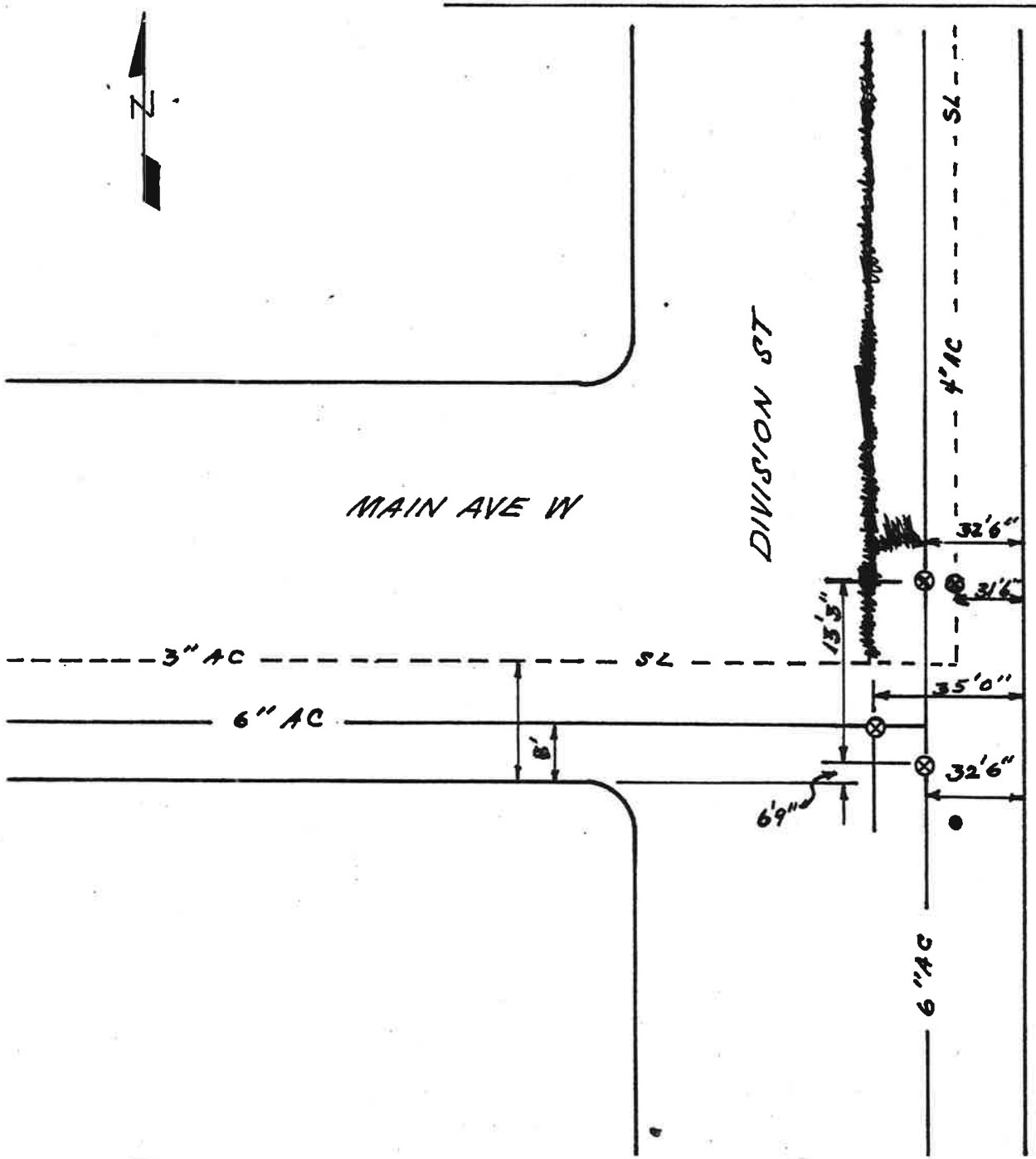
52. 1ST AVE. NE. & DAISY STREET NORTH
53. 1ST AVE. NE. & ELDER STREET NORTH
54. 1ST AVE. NE. & FERN STREET NORTH
55. 1ST AVE. NE. & GLADIOLA STREET NORTH
56. 2ND AVE. NE. & DAISY NORTH
57. 2ND AVE. NE. & ELDER STREET NORTH
58. 2ND AVE. NE. & FERN STREET NORTH
59. 2ND AVE. NE. & GLADIOLA STREET NORTH
60. 2ND AVE. NE. & GLADIOLA & HOLLY STREET NORTH
61. 2ND AVE. NE. & IRIS STREET NORTH
62. 3RD AVE. NE. & DAISY STREET NORTH
63. 3RD AVE. NE. & ELDER NORTH
64. 3RD AVE. NE. & FERN STREET NORTH
65. 3RD AVE. NE. & GLADIOLA STREET NORTH
66. 3RD AVE. NE. GLADIOLA NORTH # 2 LOTS 5,6
67. 3RD AVE. NE. & IRIS STREET NORTH
68. 4TH AVE. NE. & DAISY NORTH
69. 4TH AVE. NE. & ELDER STREET NORTH
70. 4TH AVE. NE. & FERN & PARK DRIVE
71. DAISY & SMOKIAM ENTRANCE
72. 1ST AVE SE. & FERN STREET SOUTH
73. 1ST AVE. SE. & CANNA STREET SOUTH
74. 1ST AVE. SE. & DAISY STREET SOUTH
75. 1ST AVE. SE. & ELDER STREET SOUTH

76. 2ND AVE. SE. & ASTER STREET SOUTH
77. 2ND AVE. SE. & BUTTERCUP SOUTH
78. 2ND AVE. SE. & IN FRONT OF COMMUNITY CENTER
79. 2ND AVE. SE. & CANNA STREET SOUTH
80. 2ND AVE. SE. & DAISY STREET SOUTH
81. 2ND AVE. SE. & ELDER (FUTURE MAP)
82. 2ND AVE. SE. & FERN STREET SOUTH
83. 3RD AVE. SE. & DIVISION STREET SOUTH
84. 3RD AVE. SE. & ASTER STREET SOUTH
85. 3RD AVE. SE. & BUTTERCUP STREET SOUTH
86. 3RD AVE. SE. & CANNA STREET SOUTH
87. 3RD AVE. SE. & DAISY STREET SOUTH
88. 3RD AVE. SE. & ELDER STREET SOUTH
89. 3RD AVE. SE. & FERN STREET SOUTH
90. 4TH AVE. SE. & DIVISION STREET SOUTH
91. 4TH PLACE & 4TH SE. & ASTER STREET SOUTH
92. 4TH PLACE & 4TH SE. & BUTTERCUP STREET SOUTH
93. 4TH AVE. SE. & CANNA STREET SOUTH
94. 4TH AVE. SE. & DAISY STREET SOUTH
95. 4TH AVE. SE. & ELDER STREET SOUTH
96. 4TH AVE. SE & FERN STREET SOUTH
97. 5TH AVE. SE. & DIVISION STREET SOUTH
98. 5TH AVE. SE. & ASTER STREET SOUTH
99. 5TH AVE. SE. & BUTTERCUP STREET SOUTH

100. 5TH AVE. SE. & CANNA STREET SOUTH
101. 5TH AVE. SE. & DAISY STREET SOUTH
102. 5TH AVE. SE. & ELDER STREET SOUTH
103. 5TH AVE. SE. & DIVISION STREET SOUTH
104. 6TH AVE. SE. & DIVISION STREET SOUTH
105. 6TH AVE. SE. & ASTER STREET SOUTH
106. 6TH AVE. SE. & 3RD PLACE
107. 6TH AVE. SE. & BUTTERCUP SOUTH
108. 6TH AVE. SE. & 2ND PLACE
109. 6TH AVE. SE. & CANNA STREET SOUTH
110. 6TH AVE. SE. & DAISY STREET SOUTH
111. 6TH AVE. SE. & ELDER STREET SOUTH
112. 7TH AVE. SW. & DIVISION STREET SOUTH
113. 7TH AVE. SE. & ASTER STREET SOUTH
114. 7TH AVE. SE. & 3RD PLACE
115. 7TH AVE. SE. & BUTTERCUP STREET SOUTH
116. 7TH AVE. SE. & 2ND PLACE
118. 8TH AVE. SE. & ASTER STREET SOUTH
119. DIVISION STREET & 1ST NE. & NW.
120. CITY SHOP & DOGPOUND AREA
121. 8TH AVE. & 2ND PLACE (HIRAM KNOTT WATER EXT. EAST FROM ASTER TO 2ND PLACE SE. THEN SOUTH APPROX. 130' TO 160' OR JUST PAST EXISTING METER BOXES)

MAIN AVE W / DIVISION ST

1

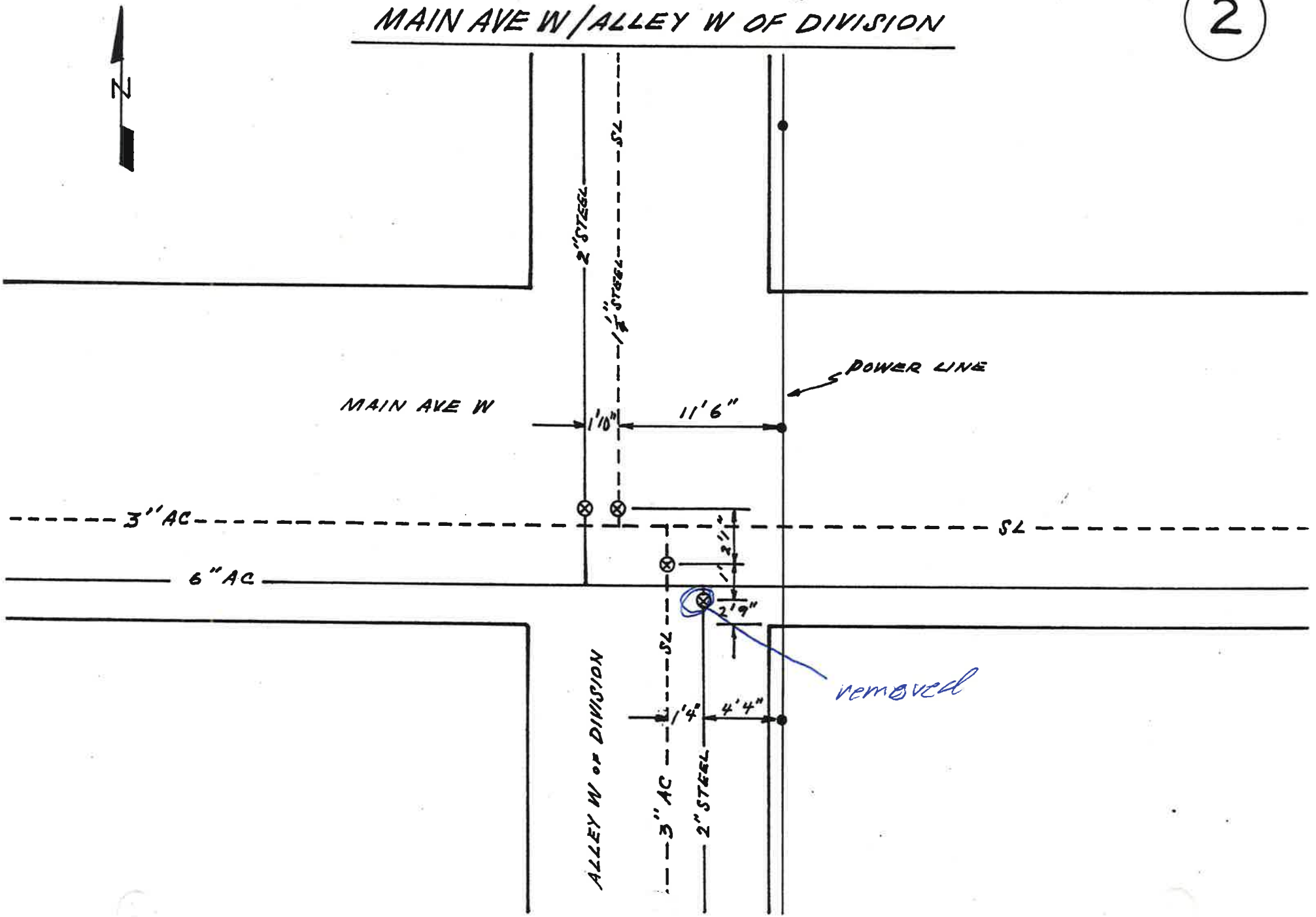


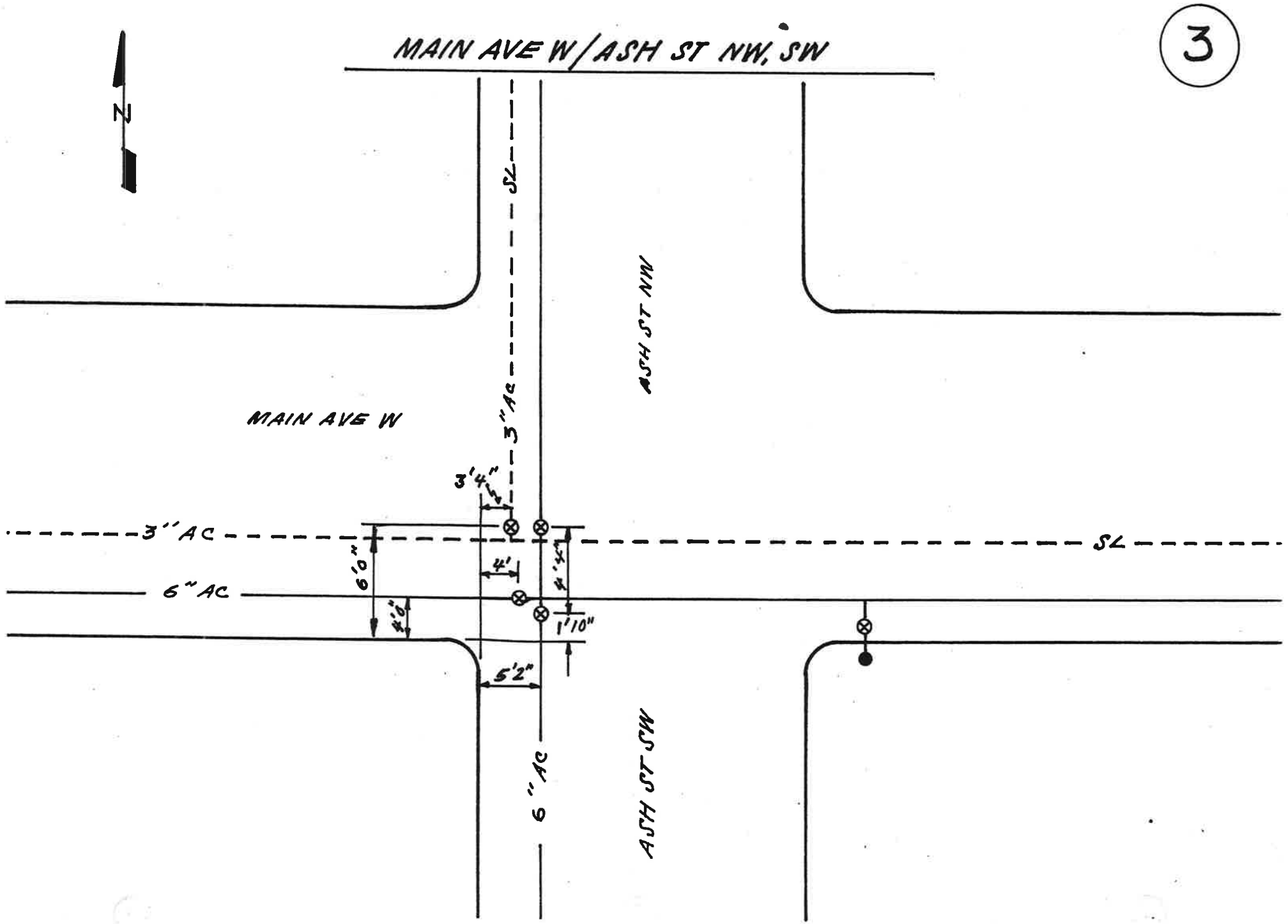
Make one

Corrected map

MAIN AVE W / ALLEY W OF DIVISION

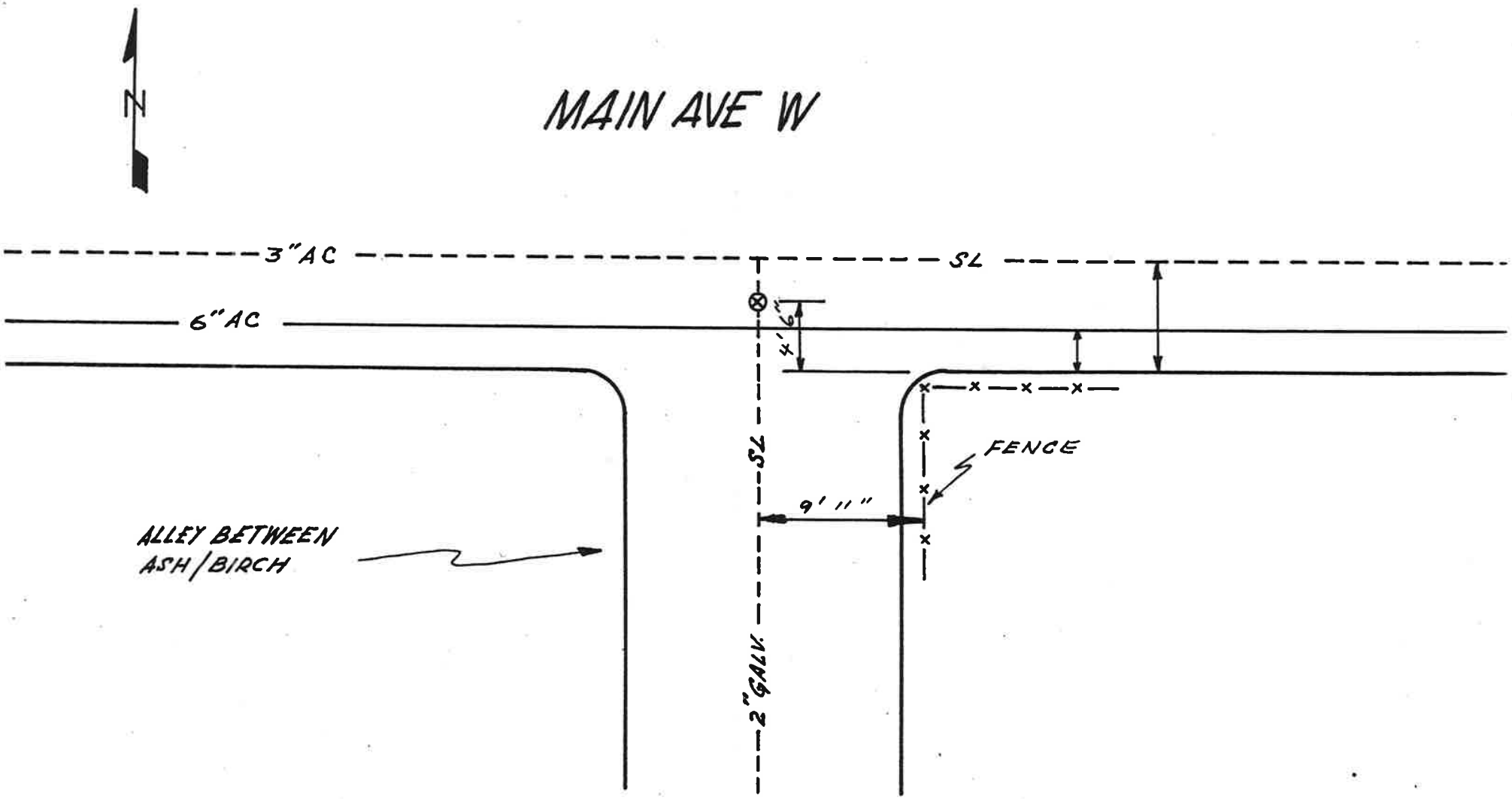
2




3
MAIN AVE W/ASH ST NW, SW
N
SL
ASH ST NW
MAIN AVE W
3"AC
3'4"
3"AC
SL
6'0"
4'
4'4"
6"AC
4'0"
1'10"
5'2"
6"AC
ASH ST SW

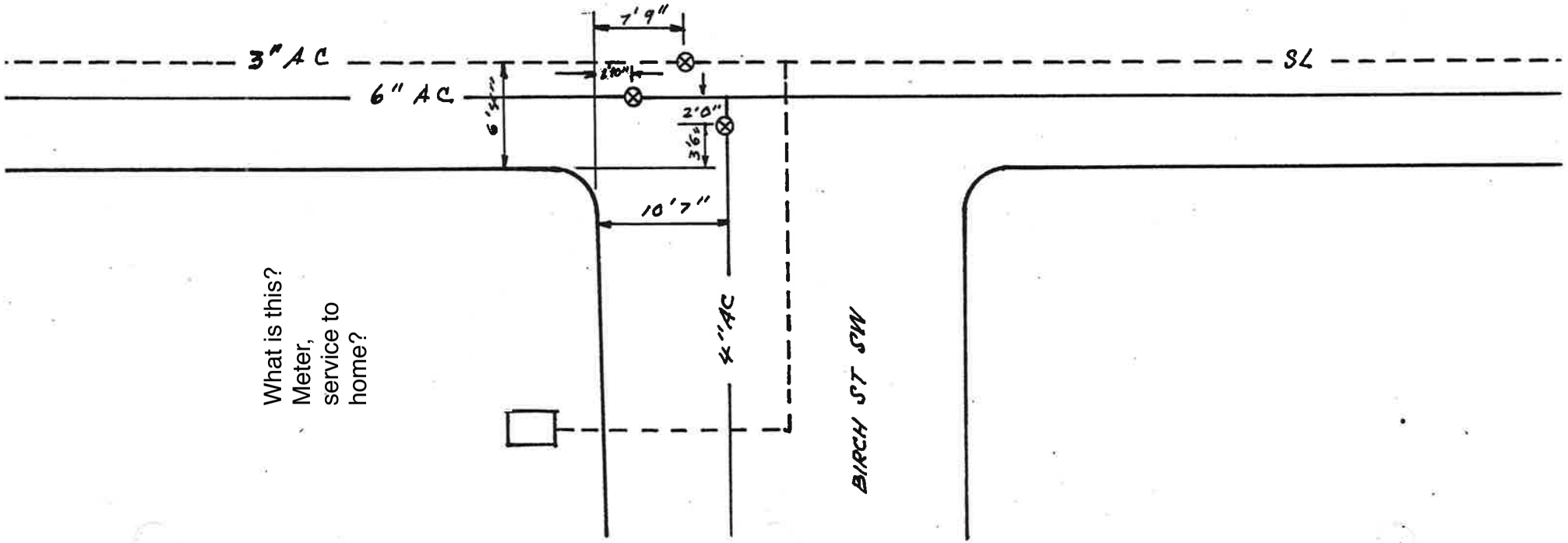
MAIN AVE W/ALLEY BETWEEN ASH/BIRCH

4



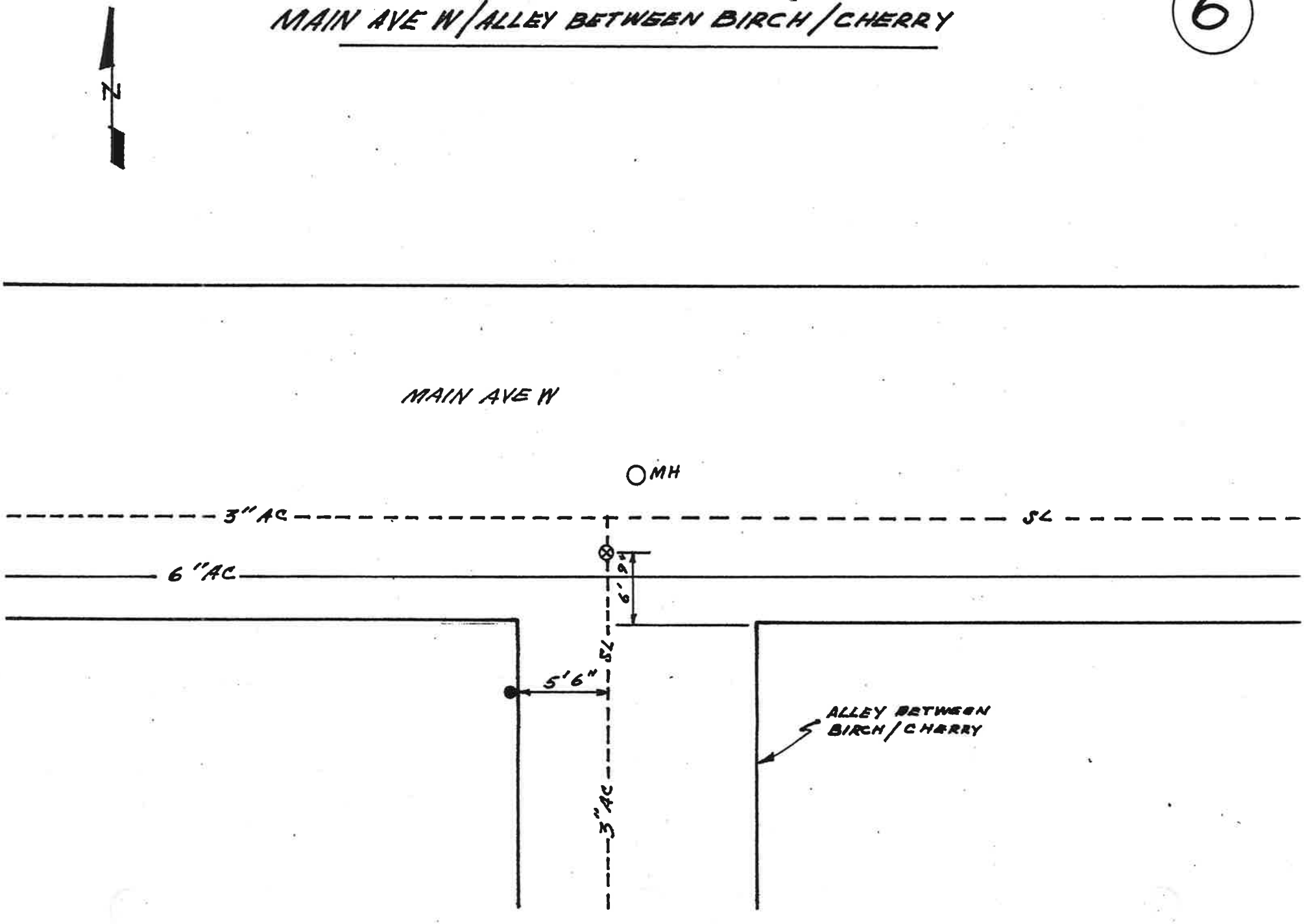
MAIN AVE W / BIRCH ST SW

5



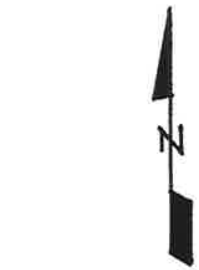
MAIN AVE W/ALLEY BETWEEN BIRCH/CHERRY

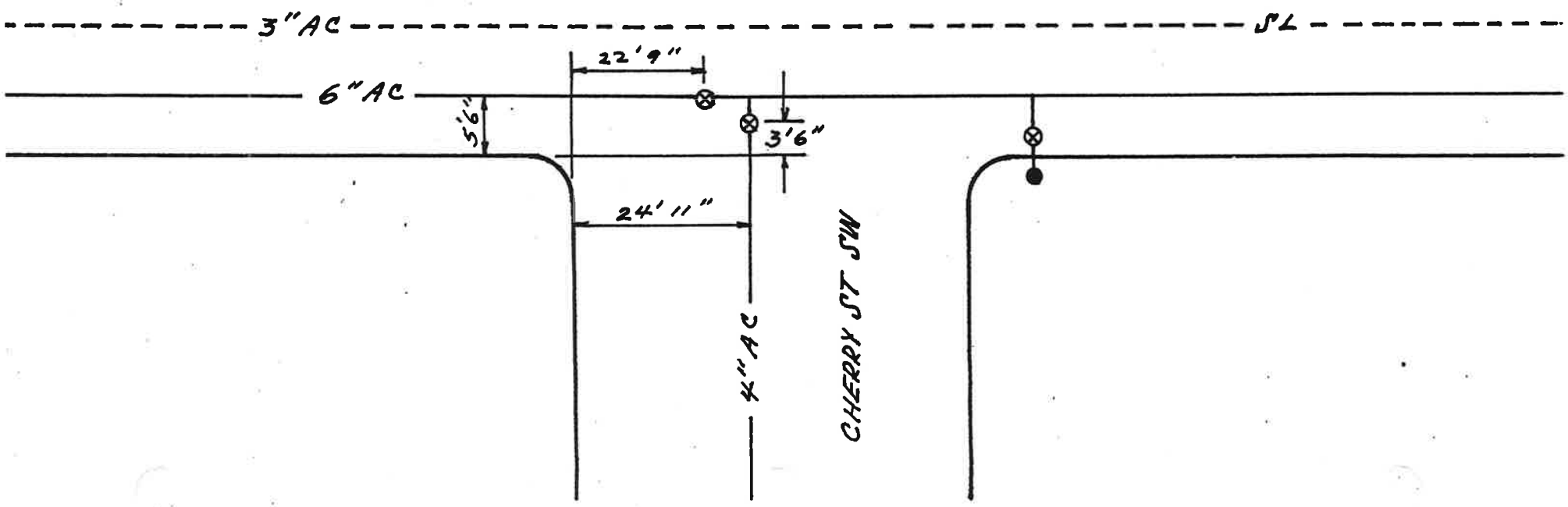
6



MAIN AVE W / CHERRY ST SW

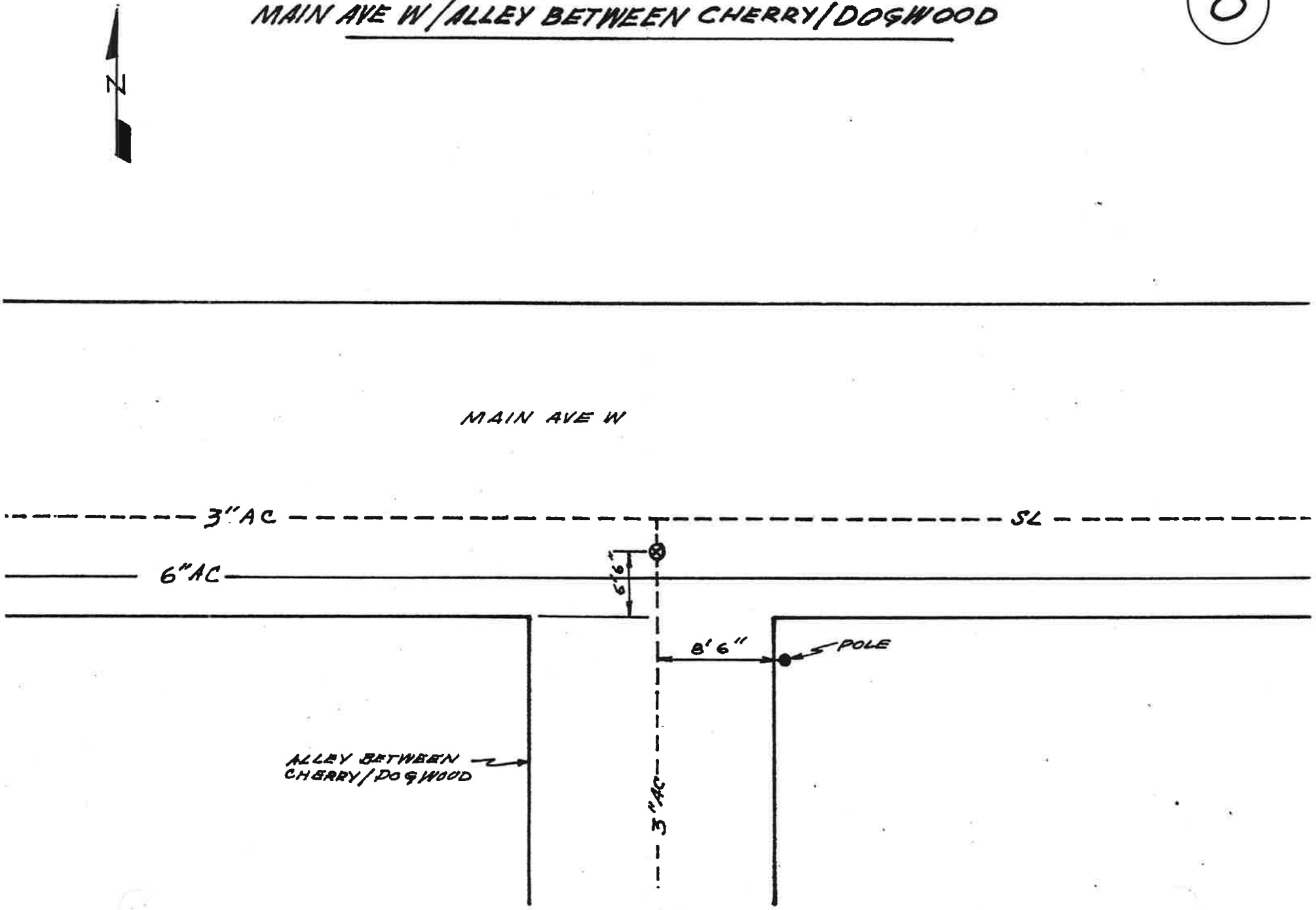
7





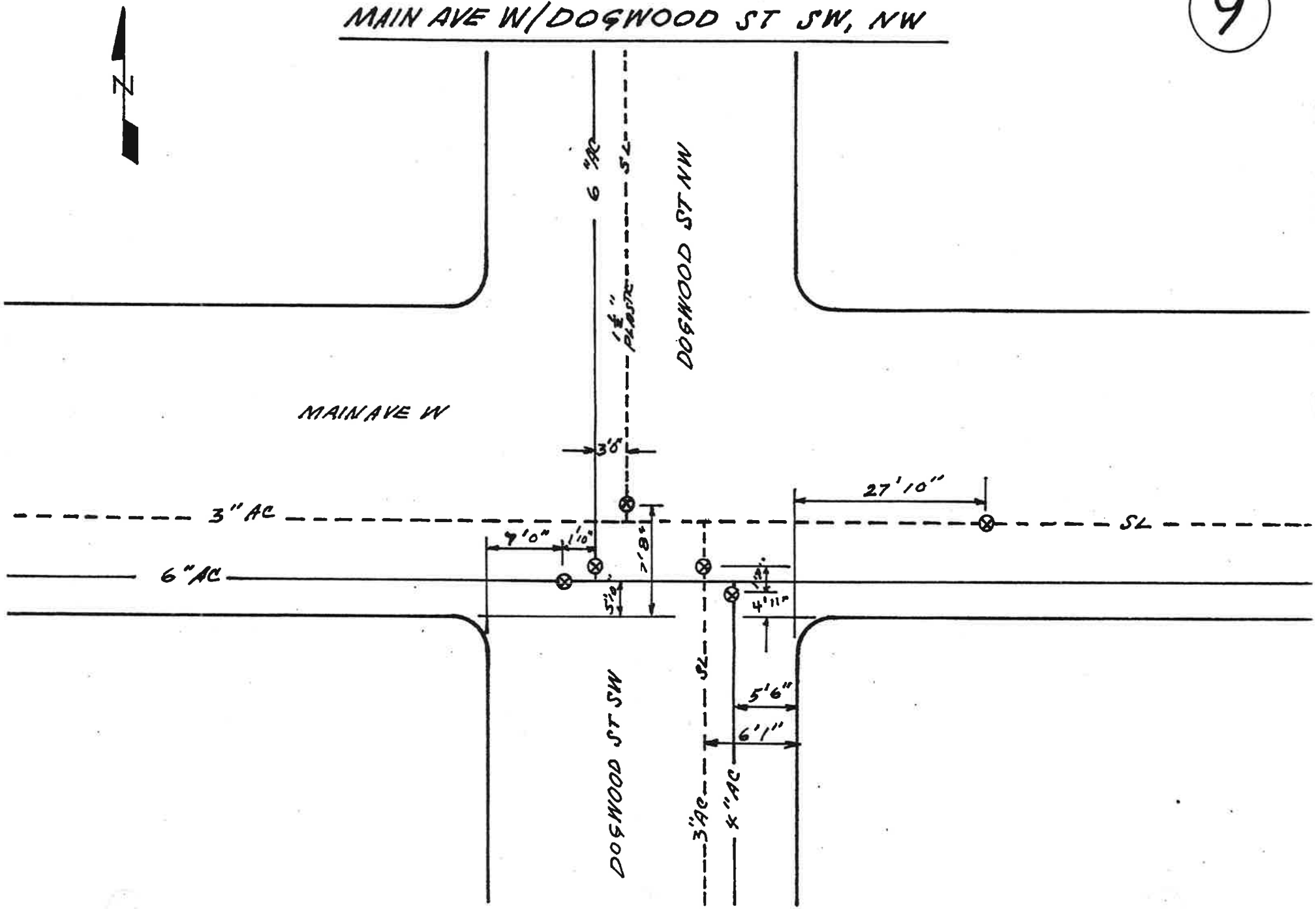
MAIN AVE W / ALLEY BETWEEN CHERRY / DOGWOOD

8

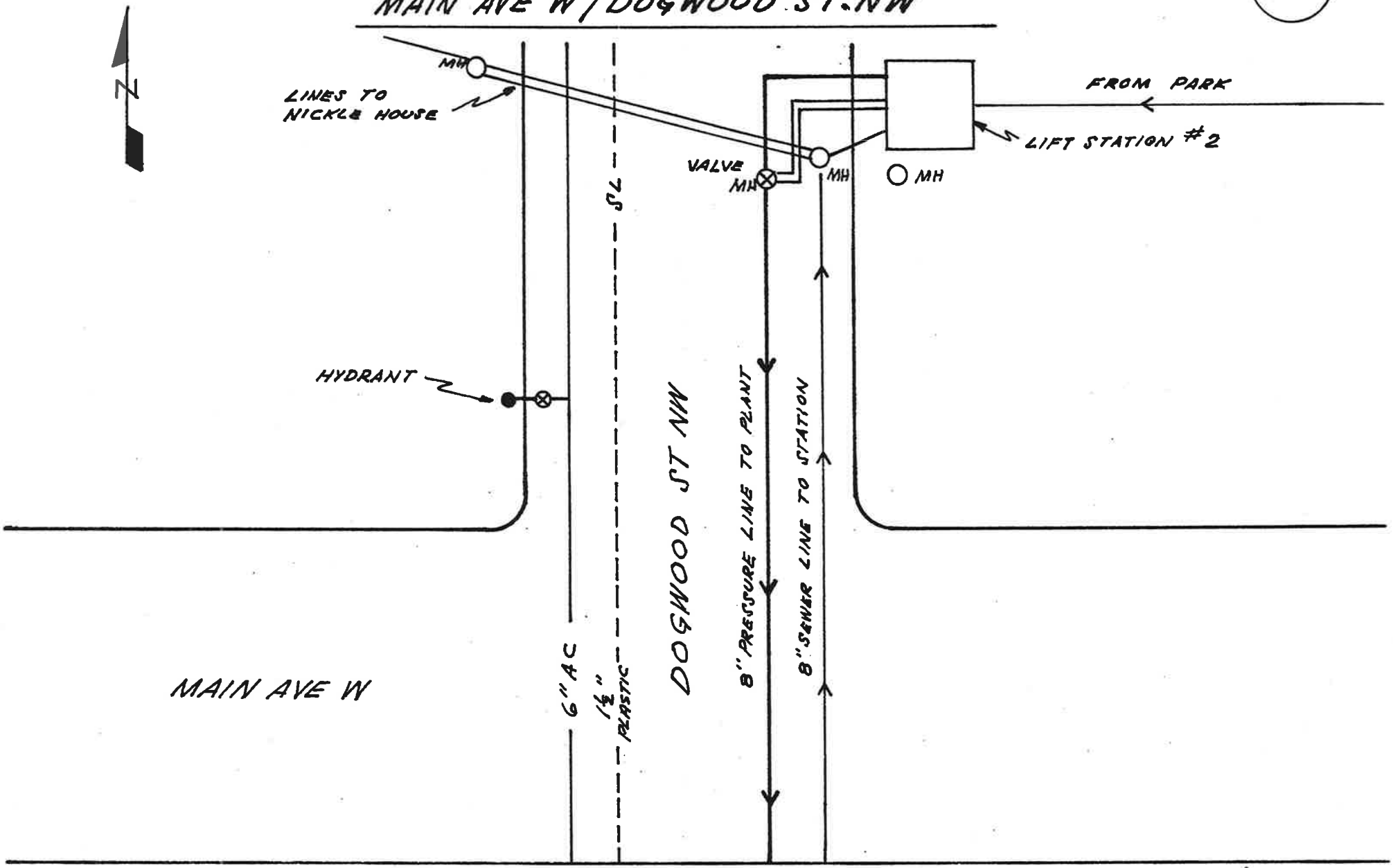


MAIN AVE W/DOGWOOD ST SW, NW

9

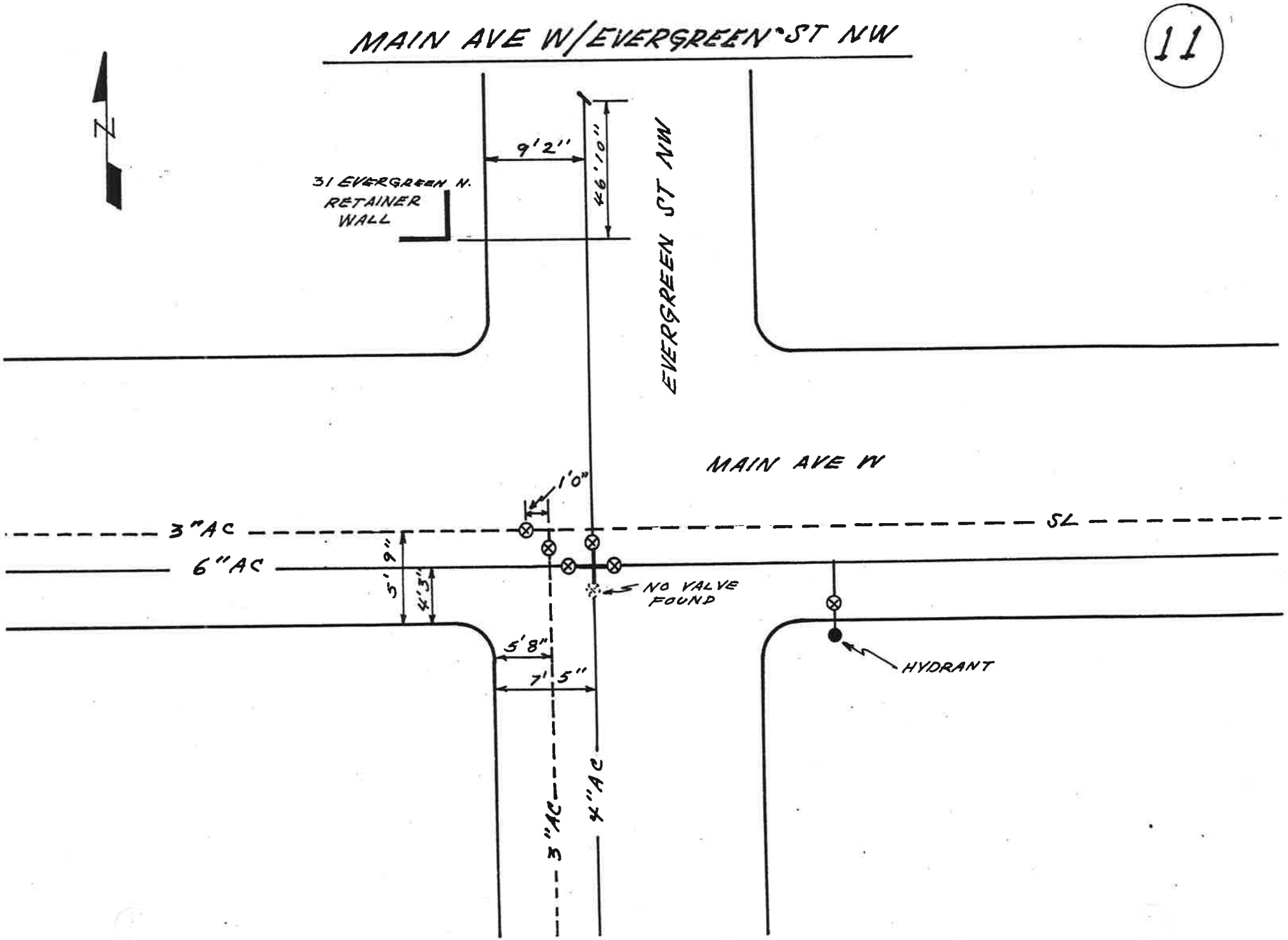


MAIN AVE W / DOGWOOD ST. NW

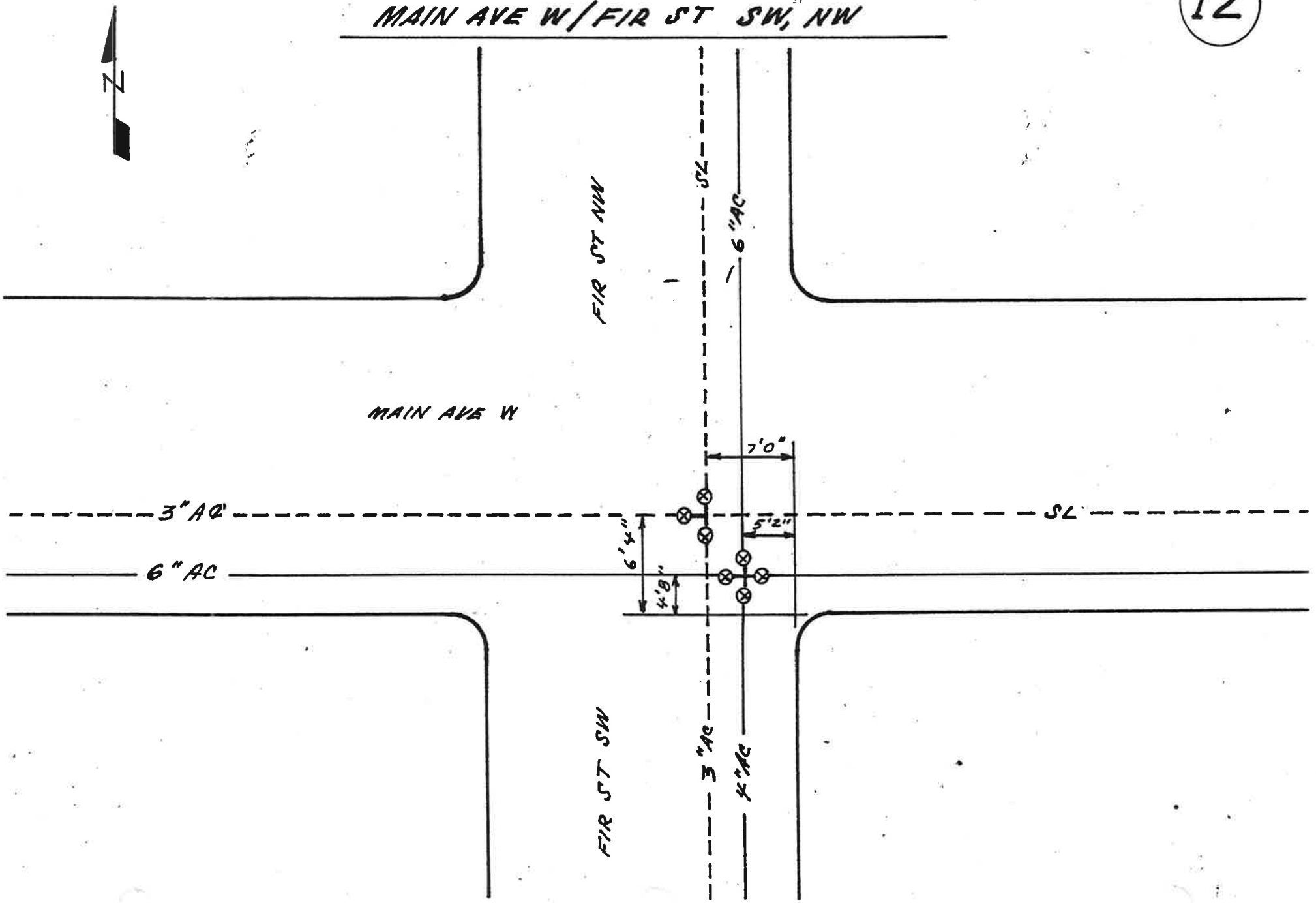


MAIN AVE W/EVERGREEN ST NW

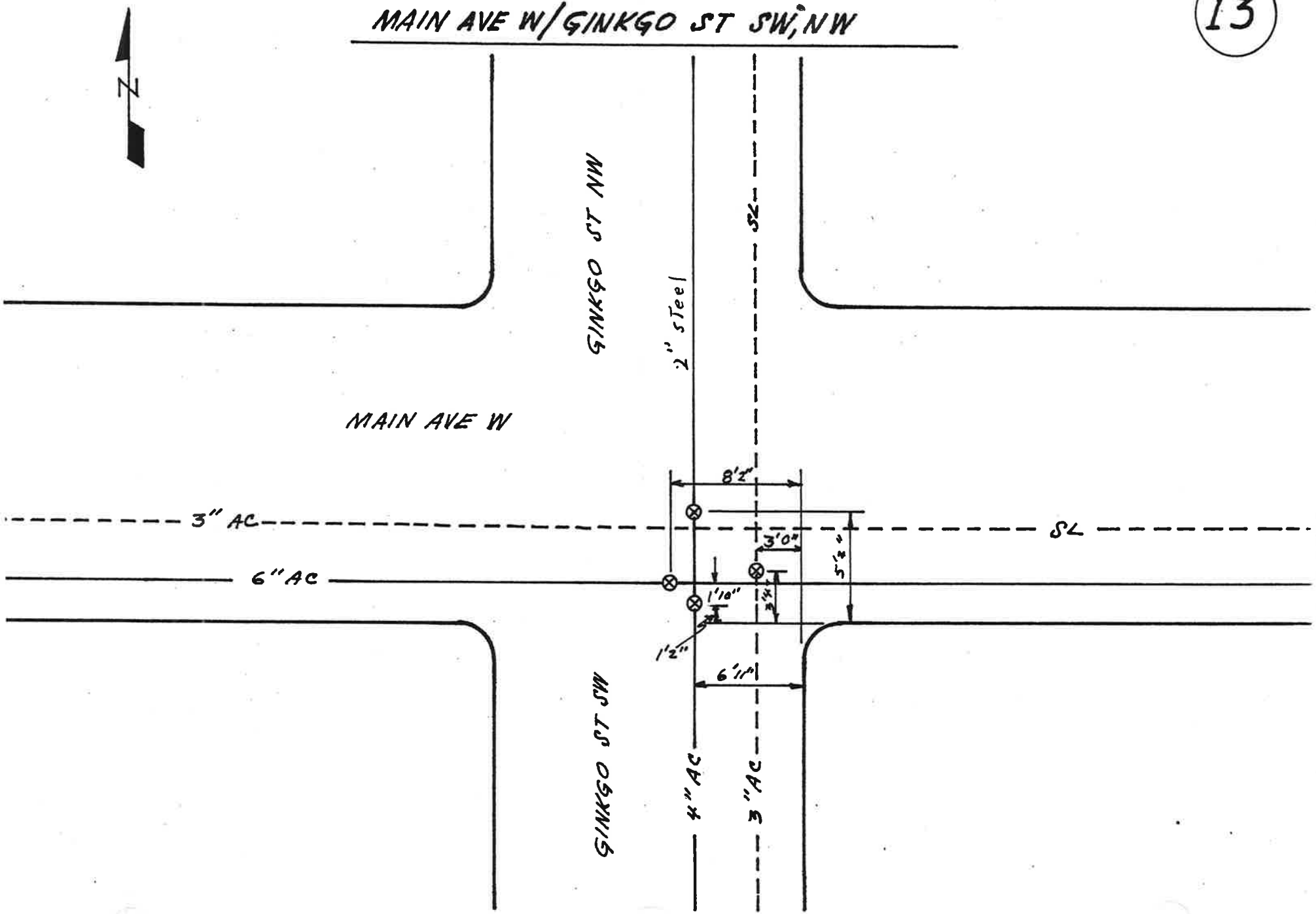
11

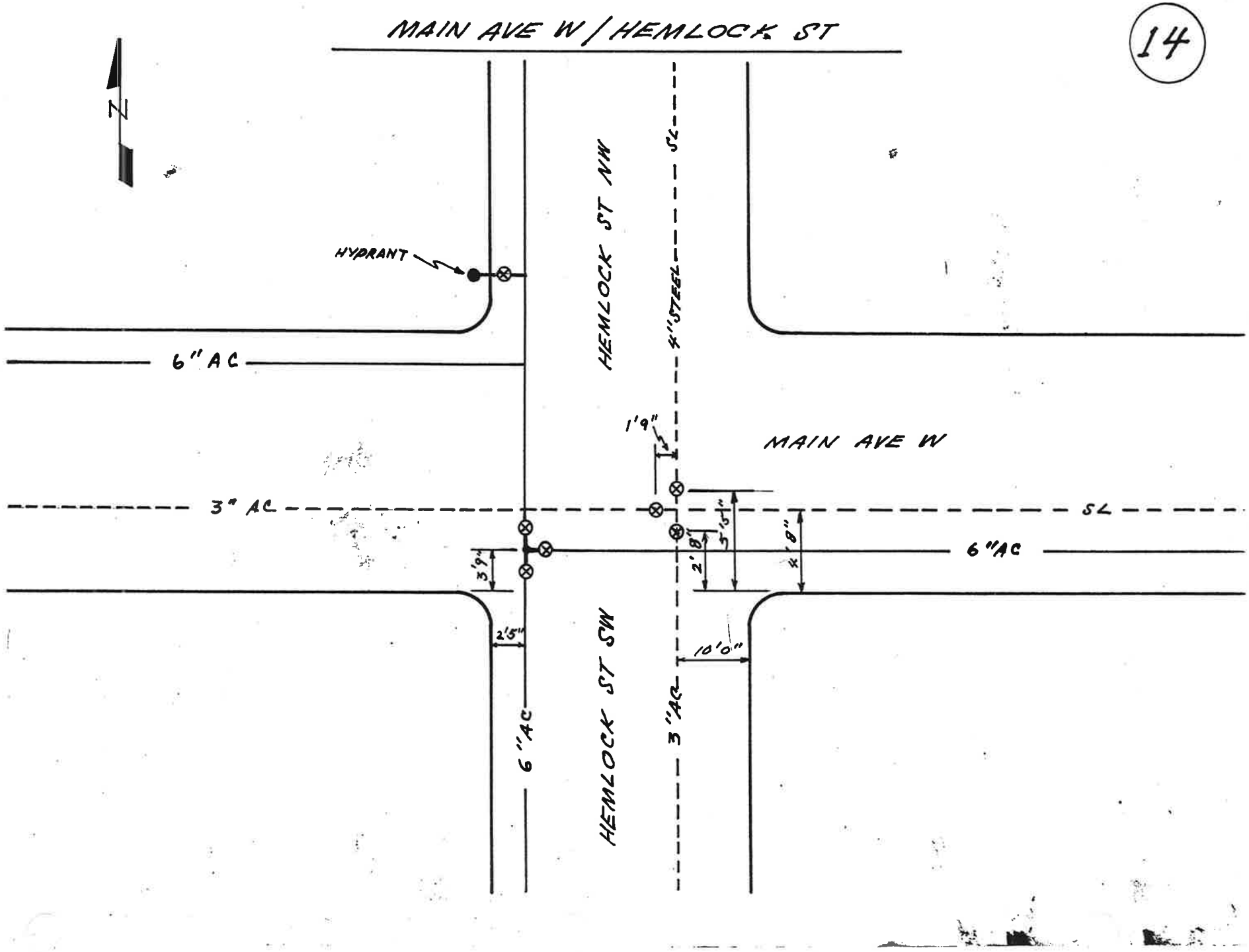


MAIN AVE W / FIR ST SW, NW



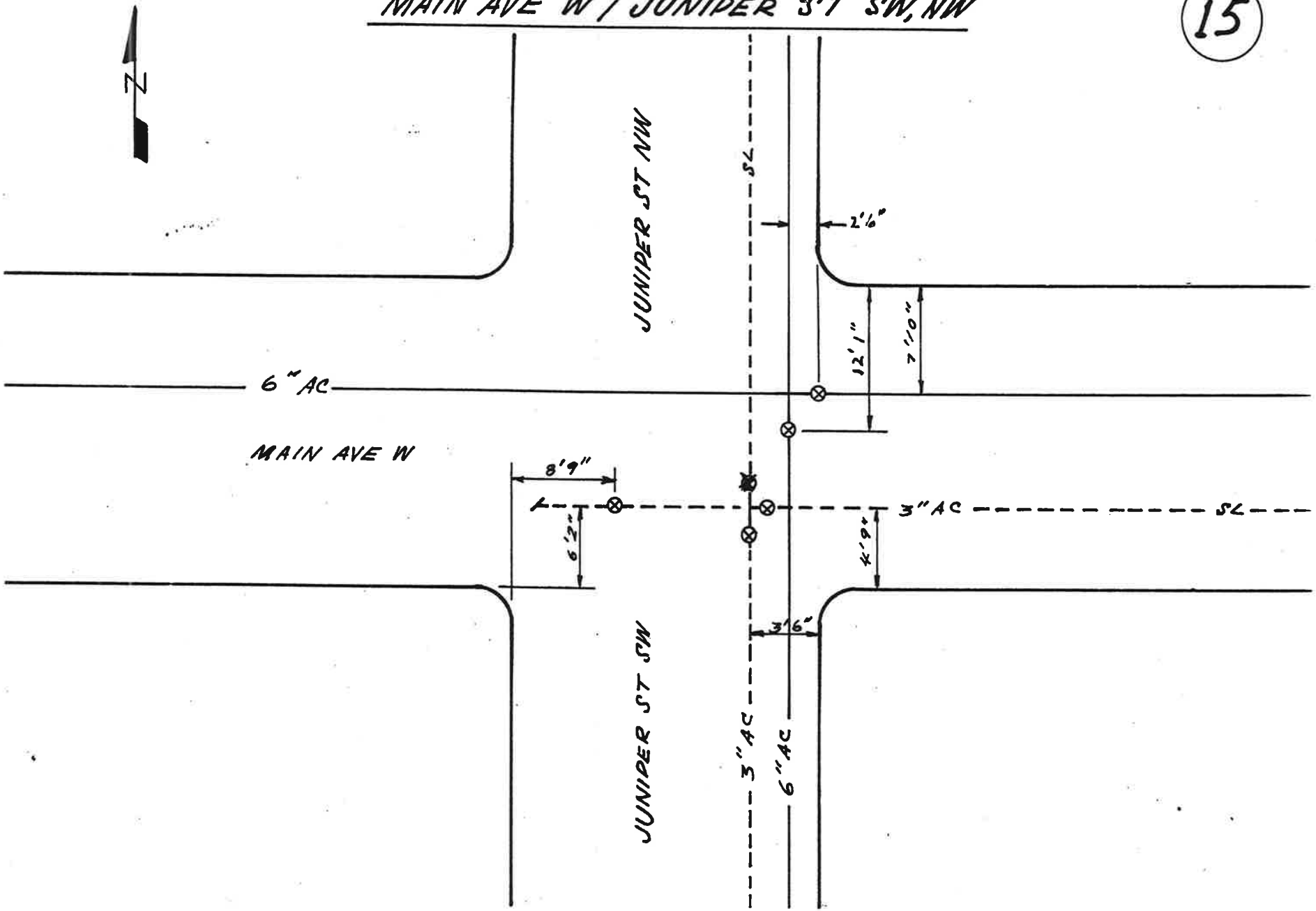
MAIN AVE W/GINKGO ST SW, NW




MAIN AVE W / HEMLOCK ST
N
HYDRANT
6" AC
HEMLOCK ST NW
4" STEEL
℄
1'9"
MAIN AVE W
3" AC
℄
6" AC
3'9"
2'8"
3'-1"
4'8"
2'5"
10'0"
6" AC
HEMLOCK ST SW
3" AC

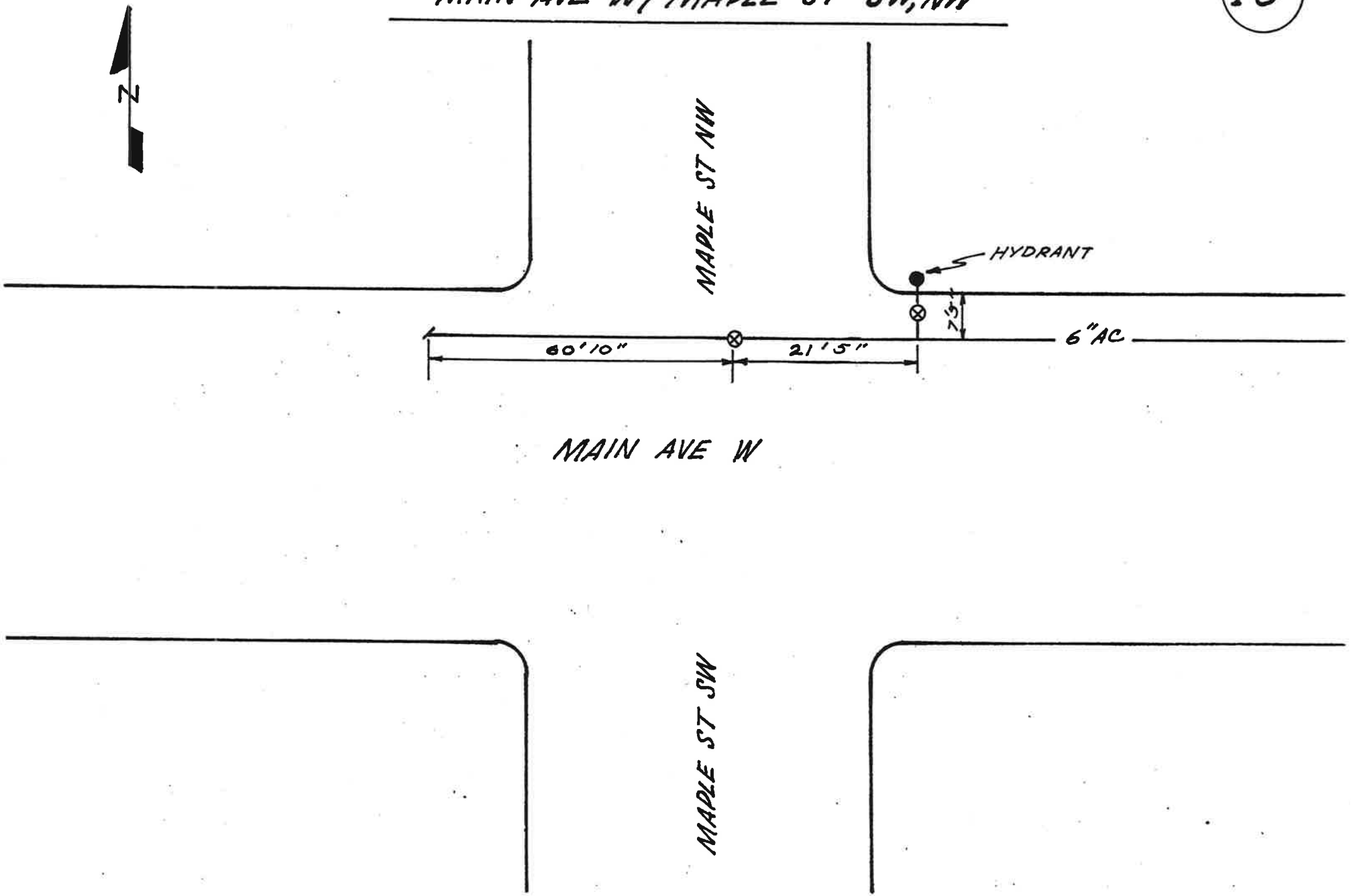
MAIN AVE W / JUNIPER ST SW, NW

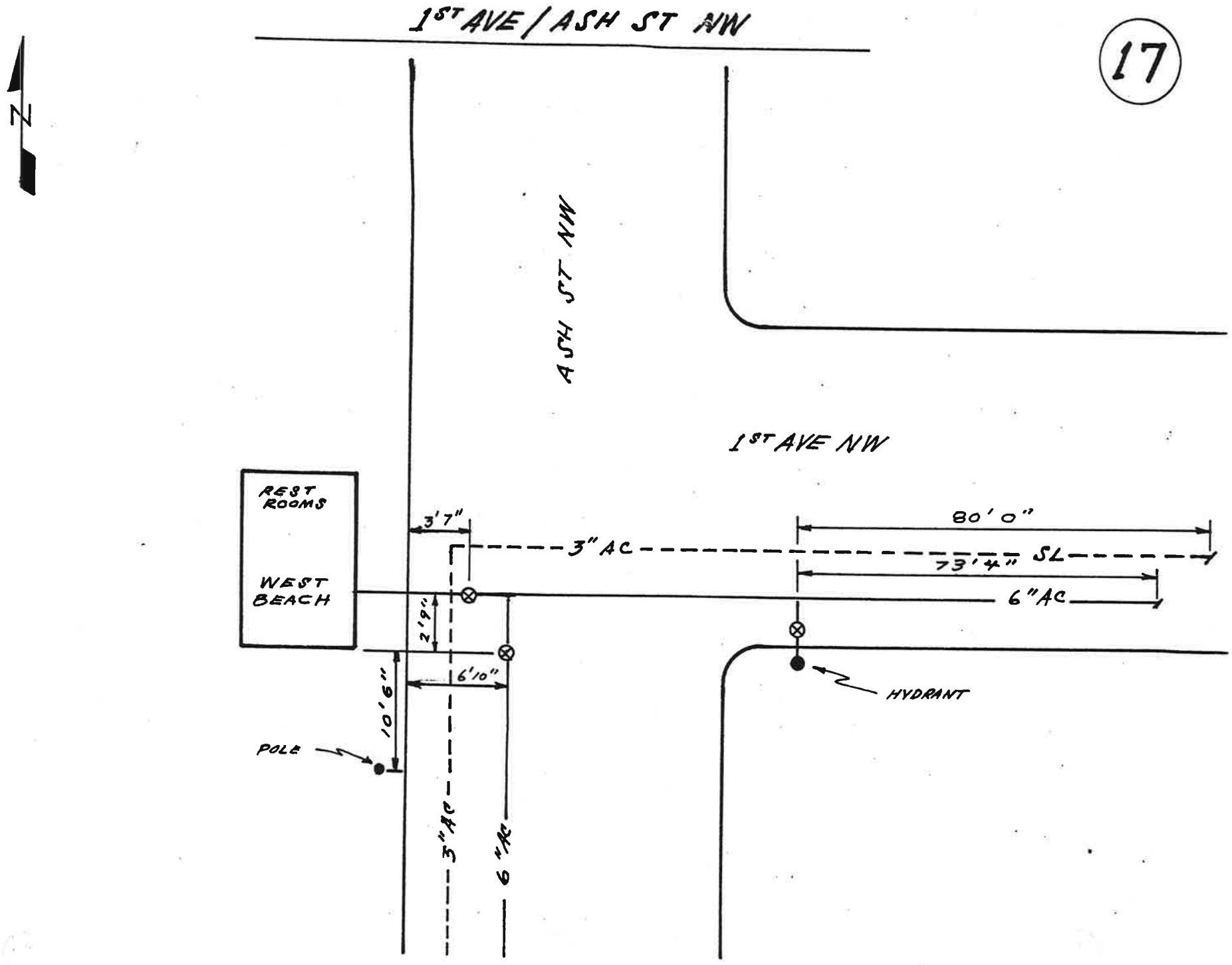
15

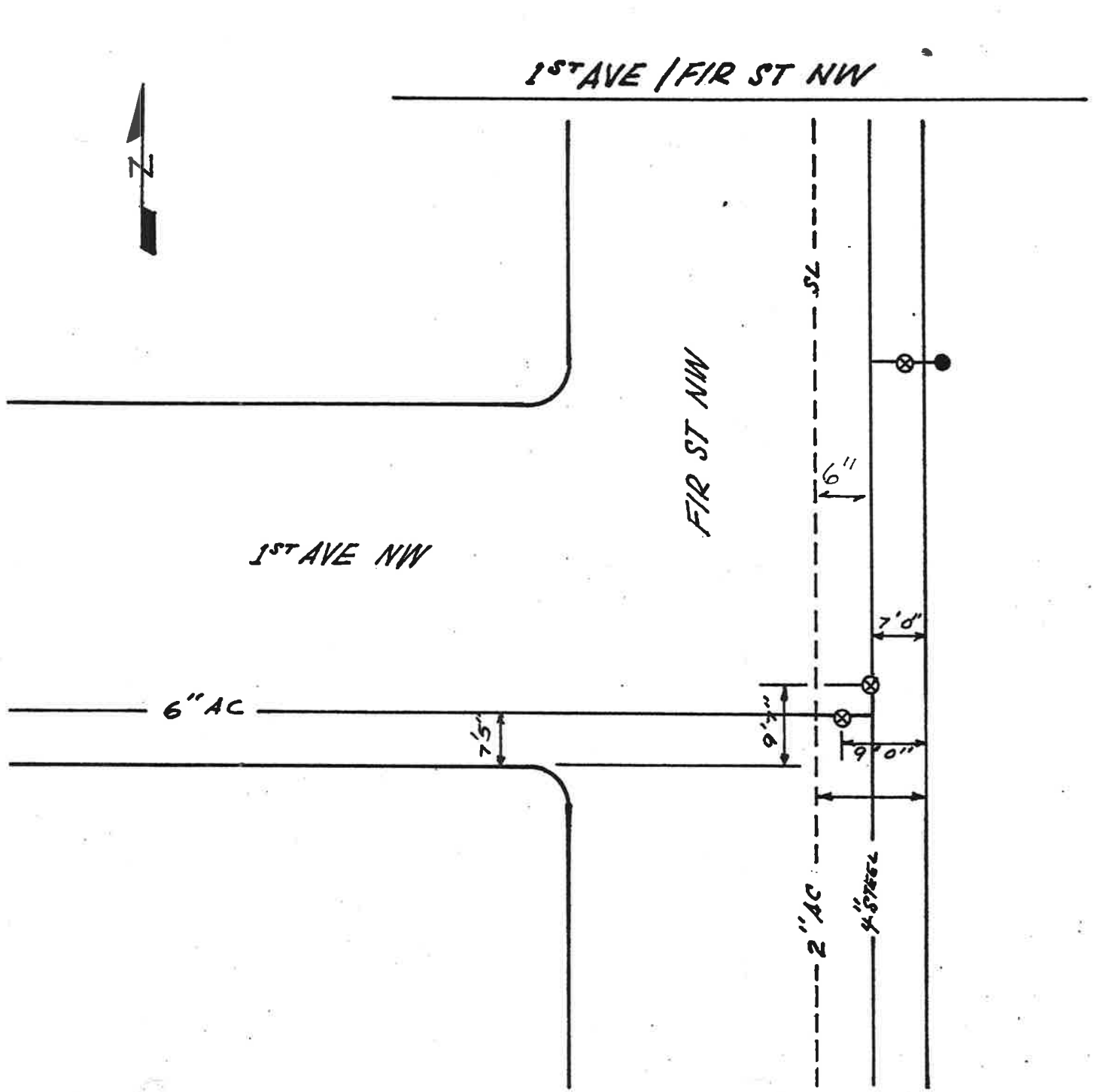


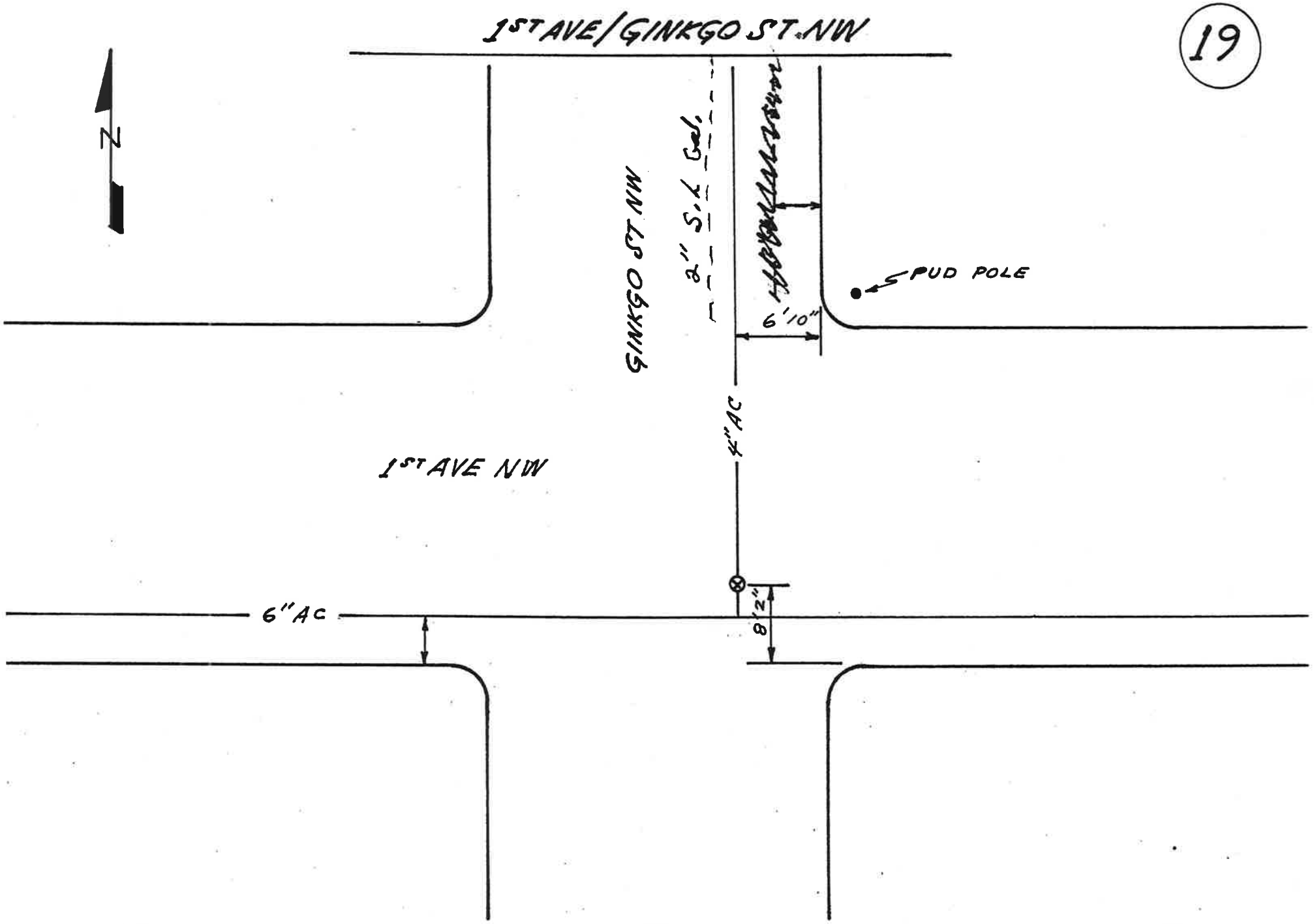
MAIN AVE W / MAPLE ST SW, NW

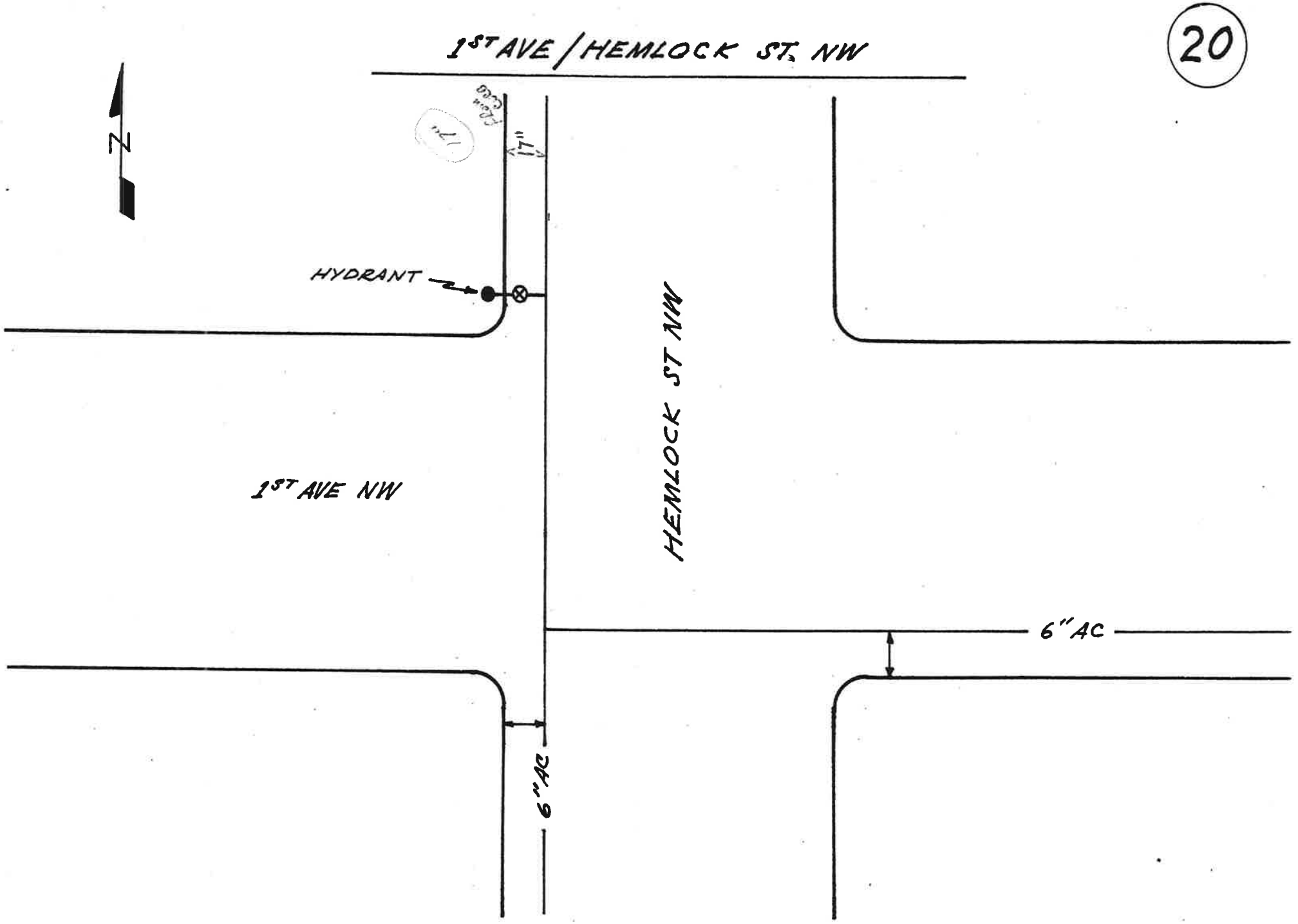
16

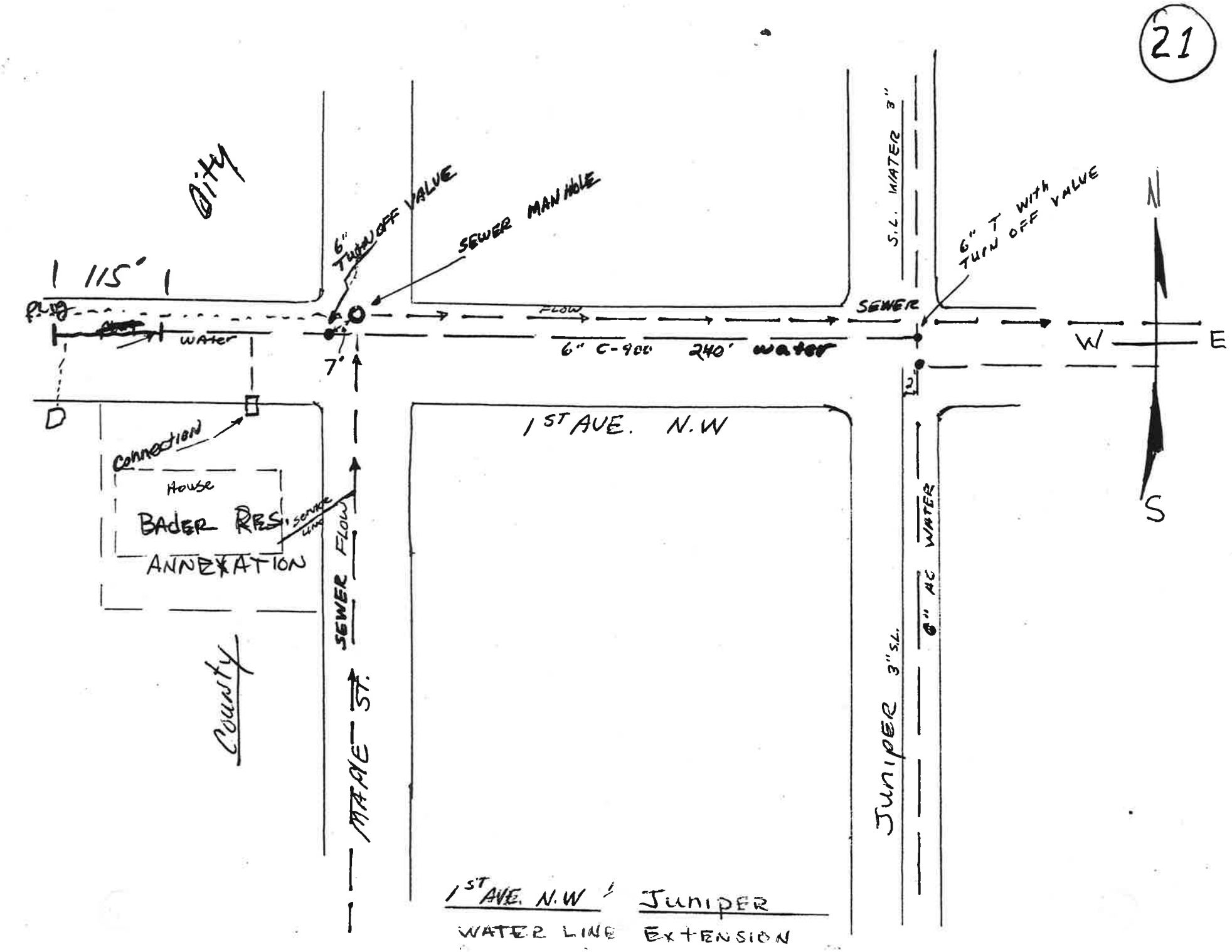


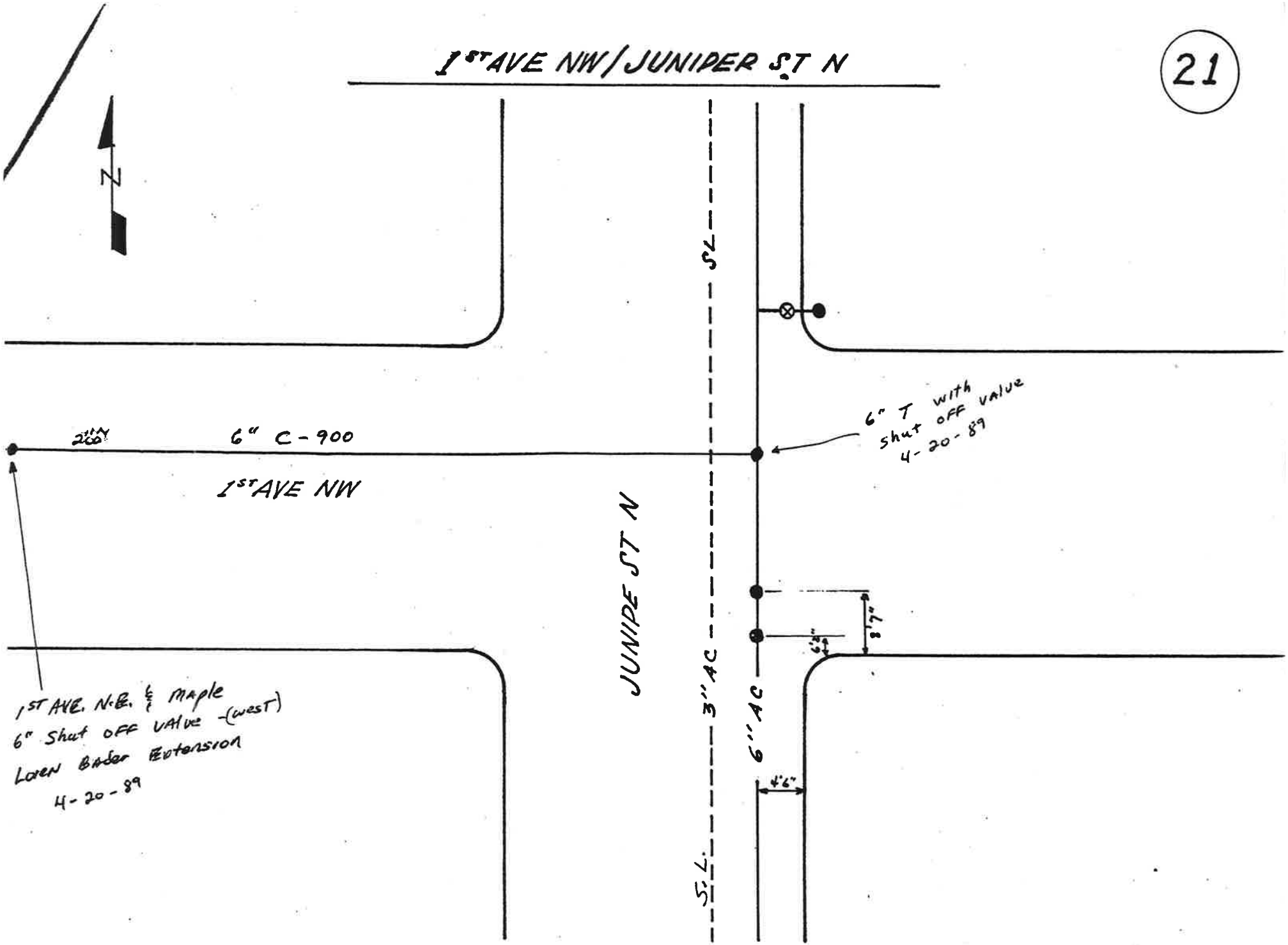

1ST AVE / ASH ST NW
17
N
ASH ST NW
1ST AVE NW
REST ROOMS
WEST BEACH
3'7"
3" AC
80'0"
73'4" SL
6" AC
2'9"
6'10"
10'6"
POLE
HYDRANT
3" AC
6" AC


1ST AVE / FIR ST NW
N
FIR ST NW
SL
6"
1ST AVE NW
7'0"
6"AC
7'5"
9'4"
9'0"
2"AC
4"STEEL

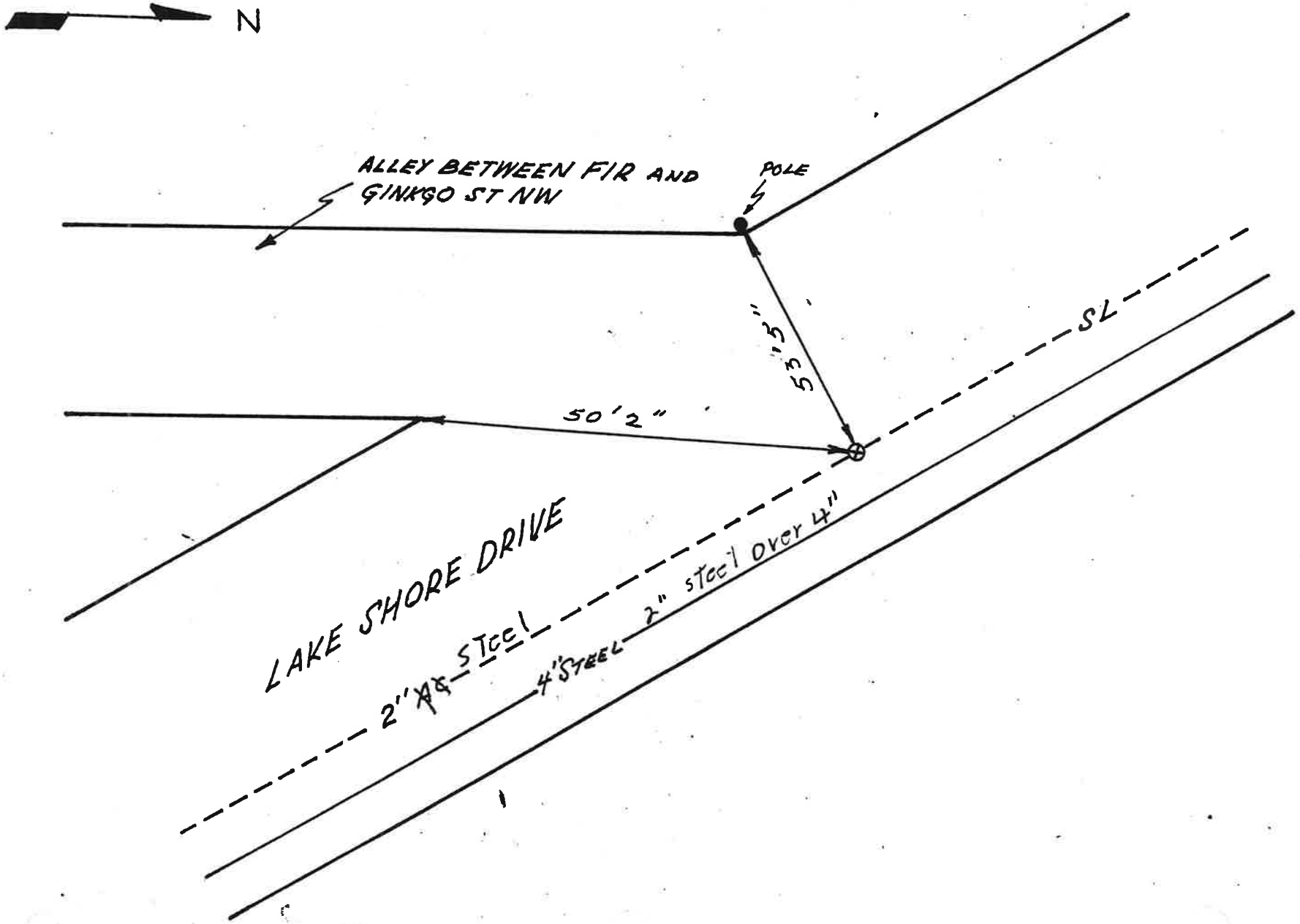

1ST AVE/GINKGO ST. NW
N
GINKGO ST NW
2" S.T.C. Cond.
SPUD POLE
6'10"
4"AC
1ST AVE NW
6"AC
8'2"


1ST AVE / HEMLOCK ST. NW
N
17"
HYDRANT
HEMLOCK ST NW
1ST AVE NW
6" AC
6" AC

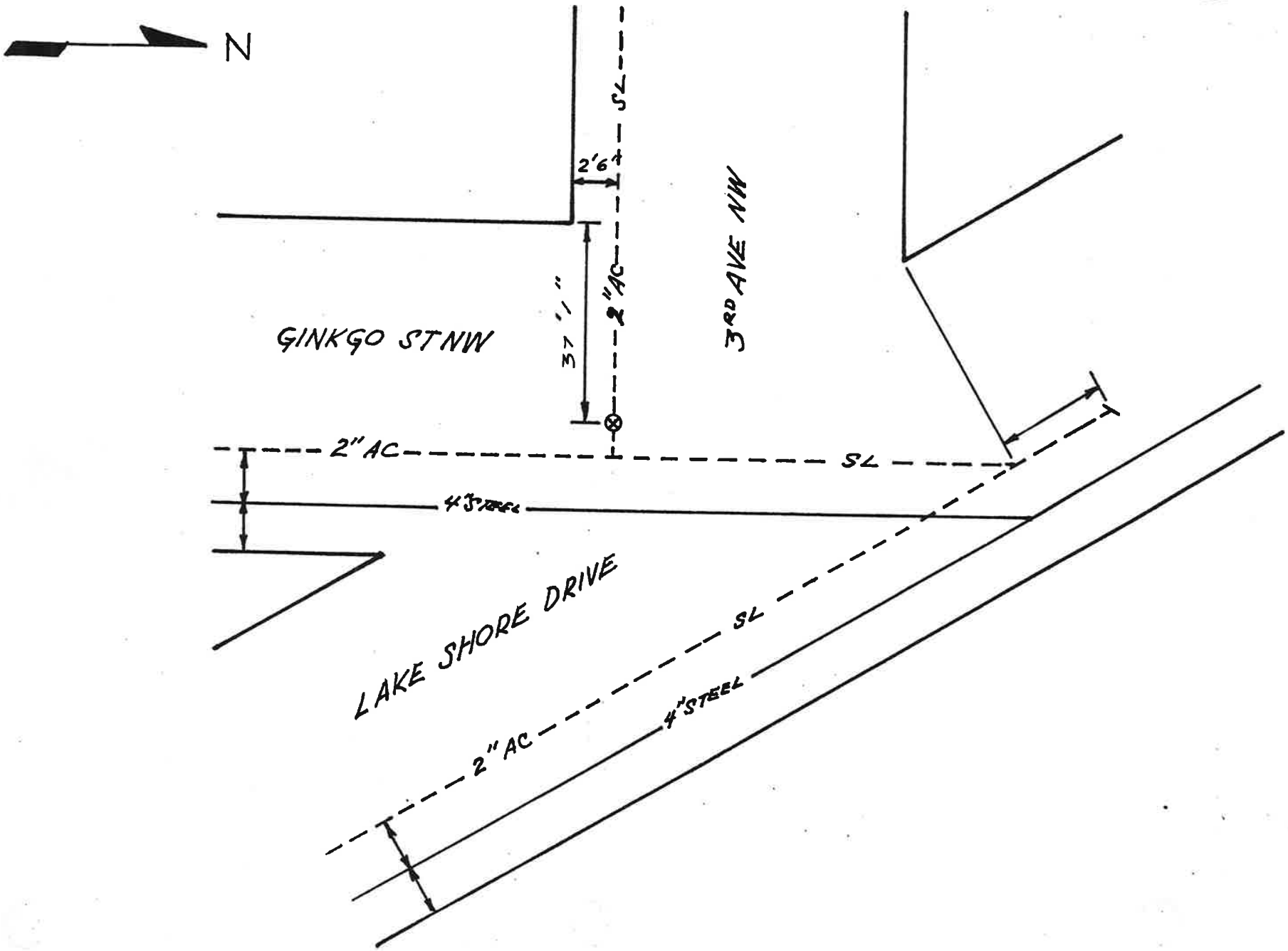

City
1 115' 1
6" TURN OFF VALVE
SEWER MANHOLE
S.L. WATER 3"
6" T WITH TURN OFF VALVE
N
W
E
S
FLOW
SEWER
WATER
6" C-900 240' water
7'
1ST AVE. N.W
Connection
House
BADER RES.
ANNEXATION
SERVICE LINE
SEWER FLOW
MAPLE ST.
County
JUNIPER
3" S.L.
6" AC WATER
1ST AVE. N.W / JUNIPER
WATER LINE EXTENSION

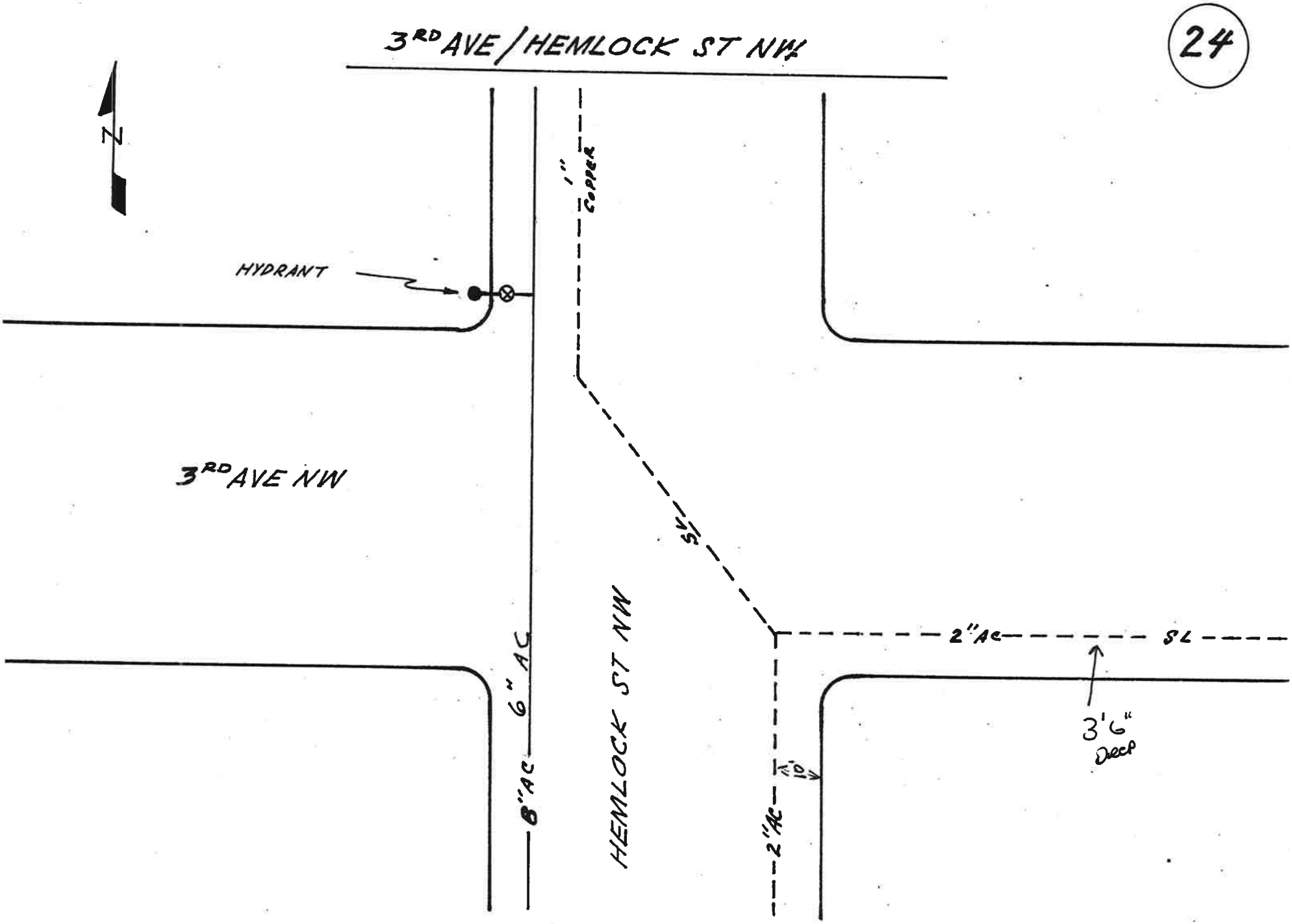

1ST AVE NW / JUNIPER ST N
N
SL
2'6"N
6" C-900
1ST AVE NW
6" T with shut off value 4-20-89
JUNIPE ST N
3" AC
6" AC
S.L.
3'7"
6'2"
4'6"
1ST AVE. N.E. & Maple
6" Shut off VAlve -(west)
Loren Baker Extension
4-20-89

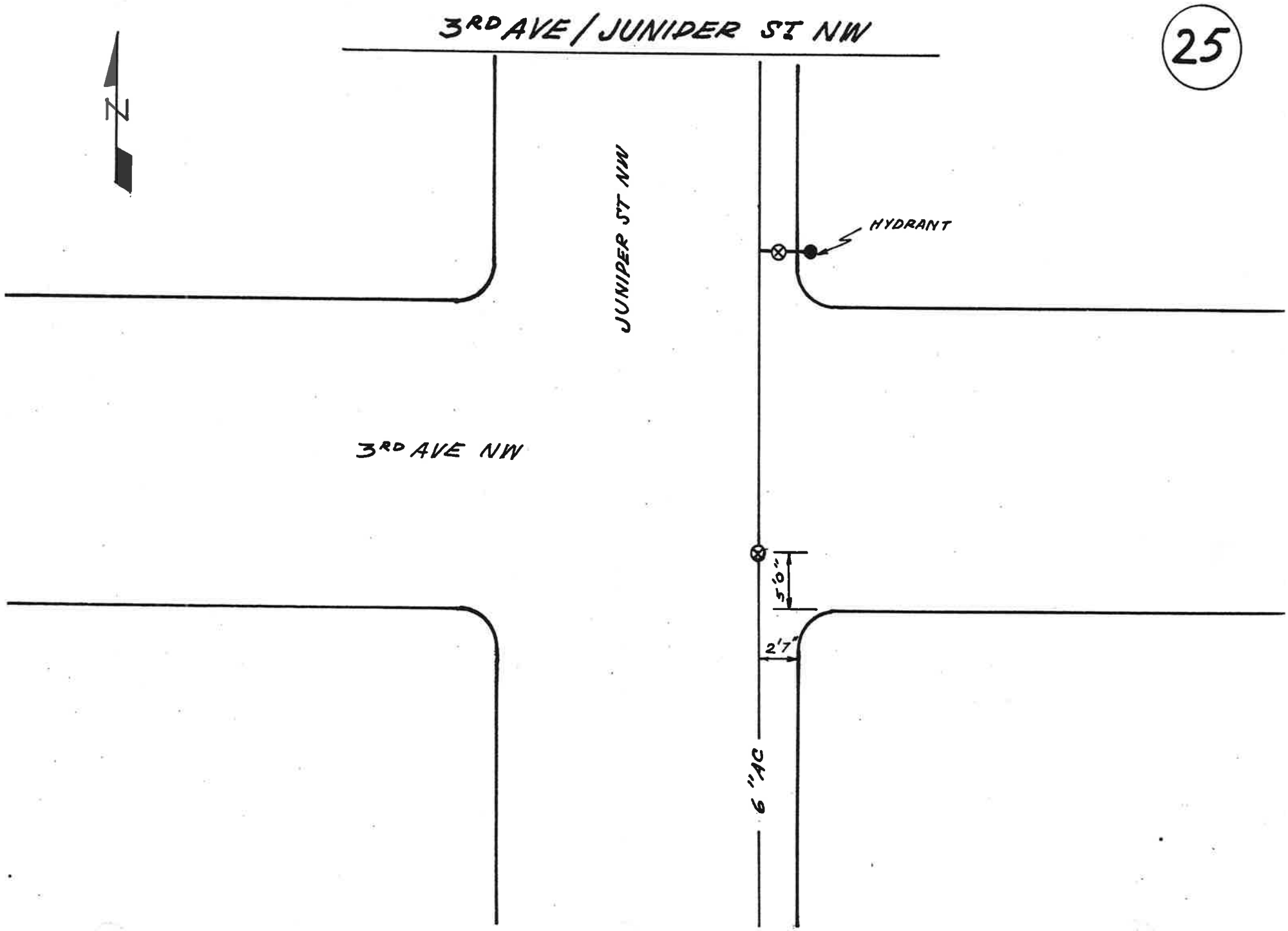
LAKE SHORE DRIVE / ALLEY BETWEEN FIR & GINKGO ST NW



LAKE SHORE DRIVE/3RD AVE/GINKGO ST NW

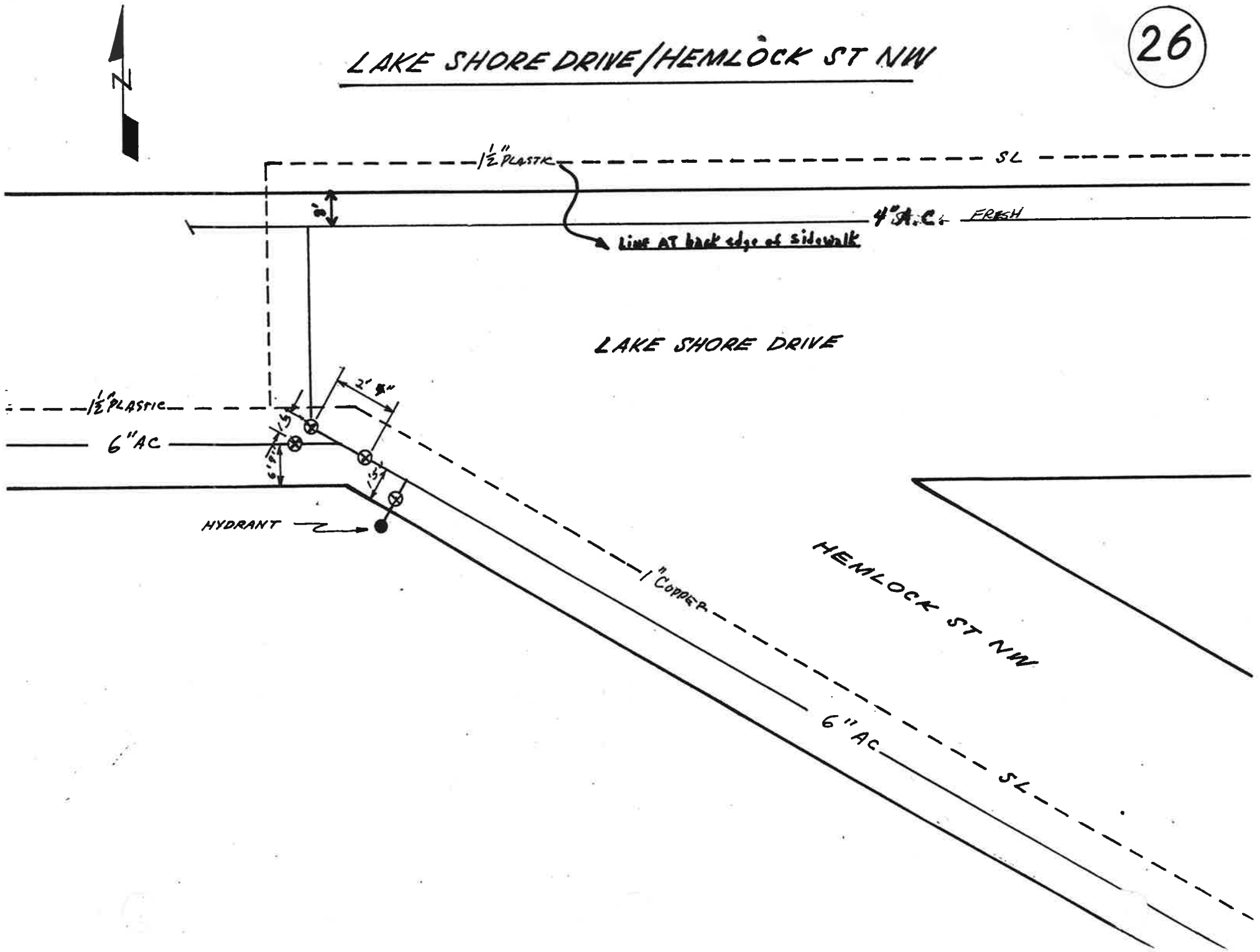


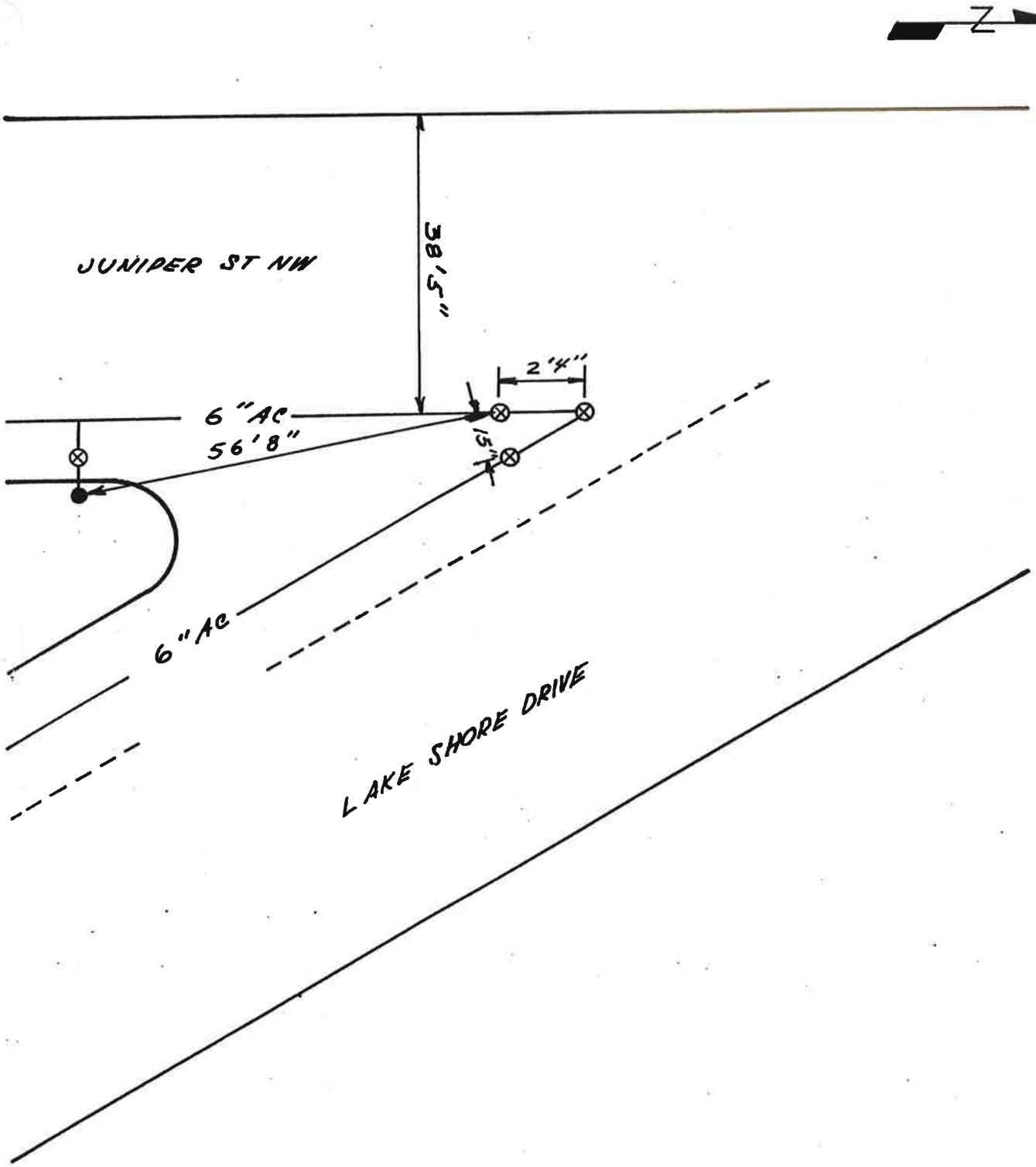

3RD AVE / HEMLOCK ST NW
N
HYDRANT
1" COPPER
3RD AVE NW
5'
2" AC
SL
6" AC
8" AC
HEMLOCK ST NW
2" AC
1'10"
3'6" Deep


3RD AVE / JUNIDER ST NW
25
N
JUNIPER ST NW
HYDRANT
3RD AVE NW
5'0"
2'7"
6 "AC

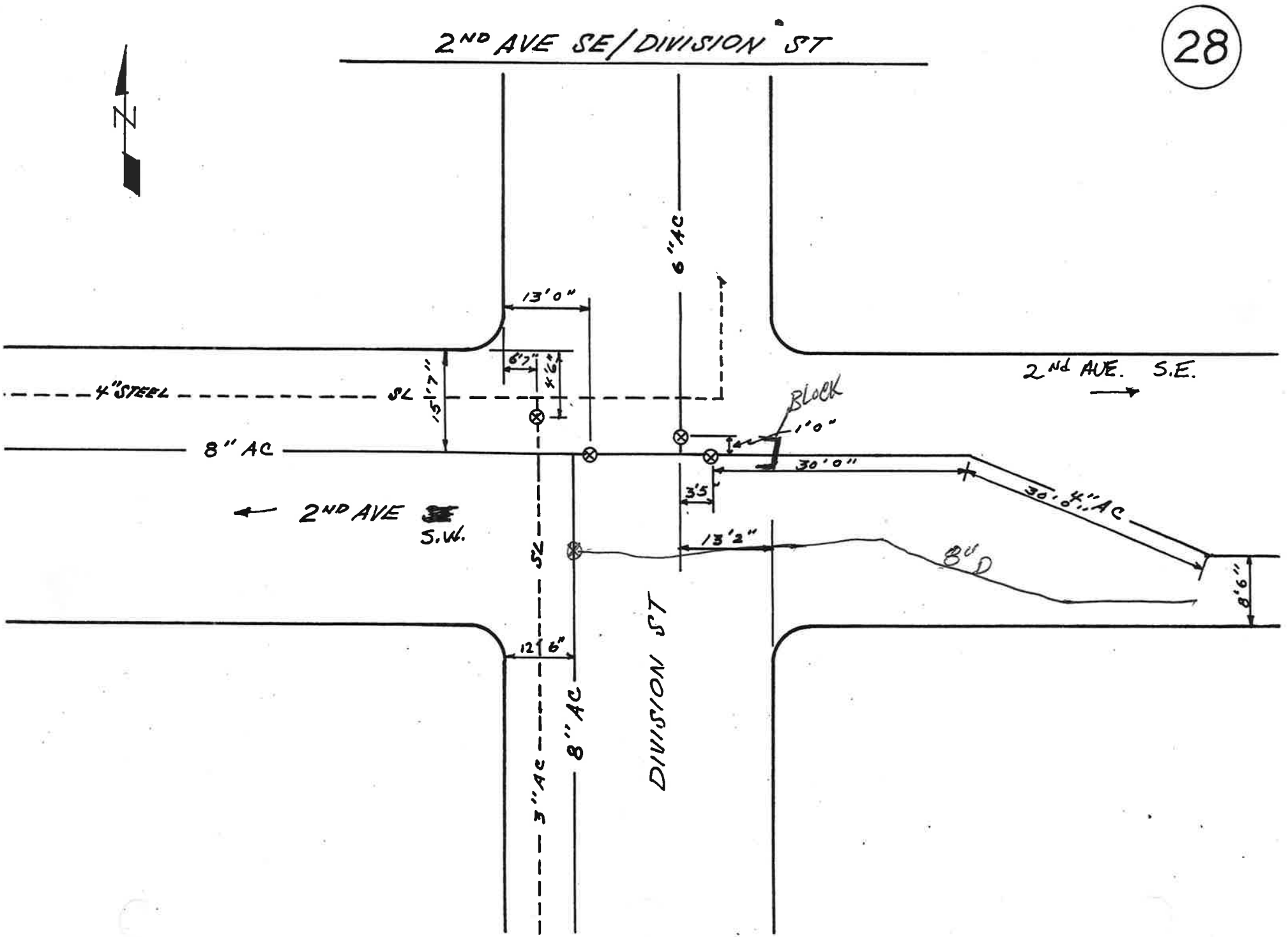
LAKE SHORE DRIVE/HEMLOCK ST NW

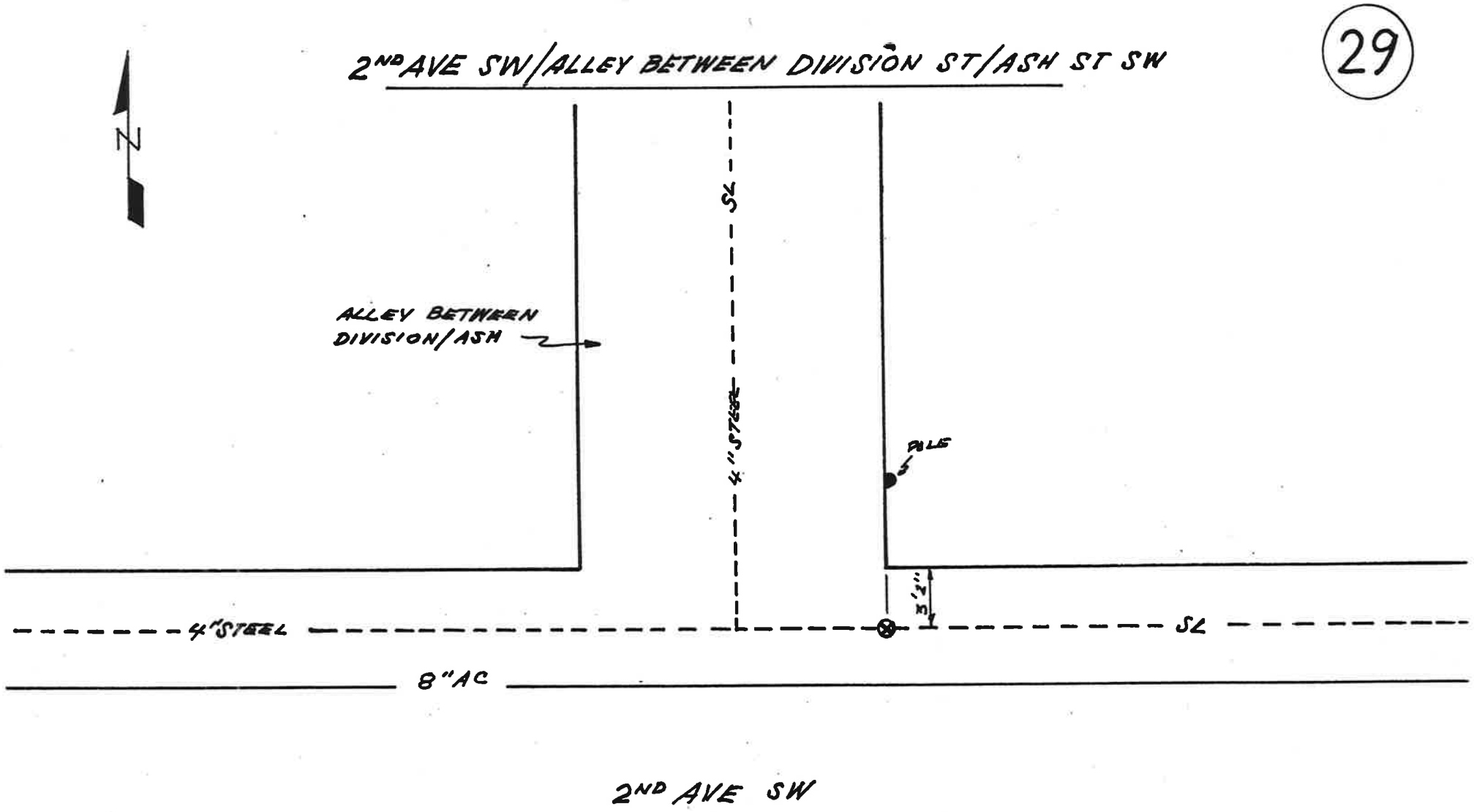
26

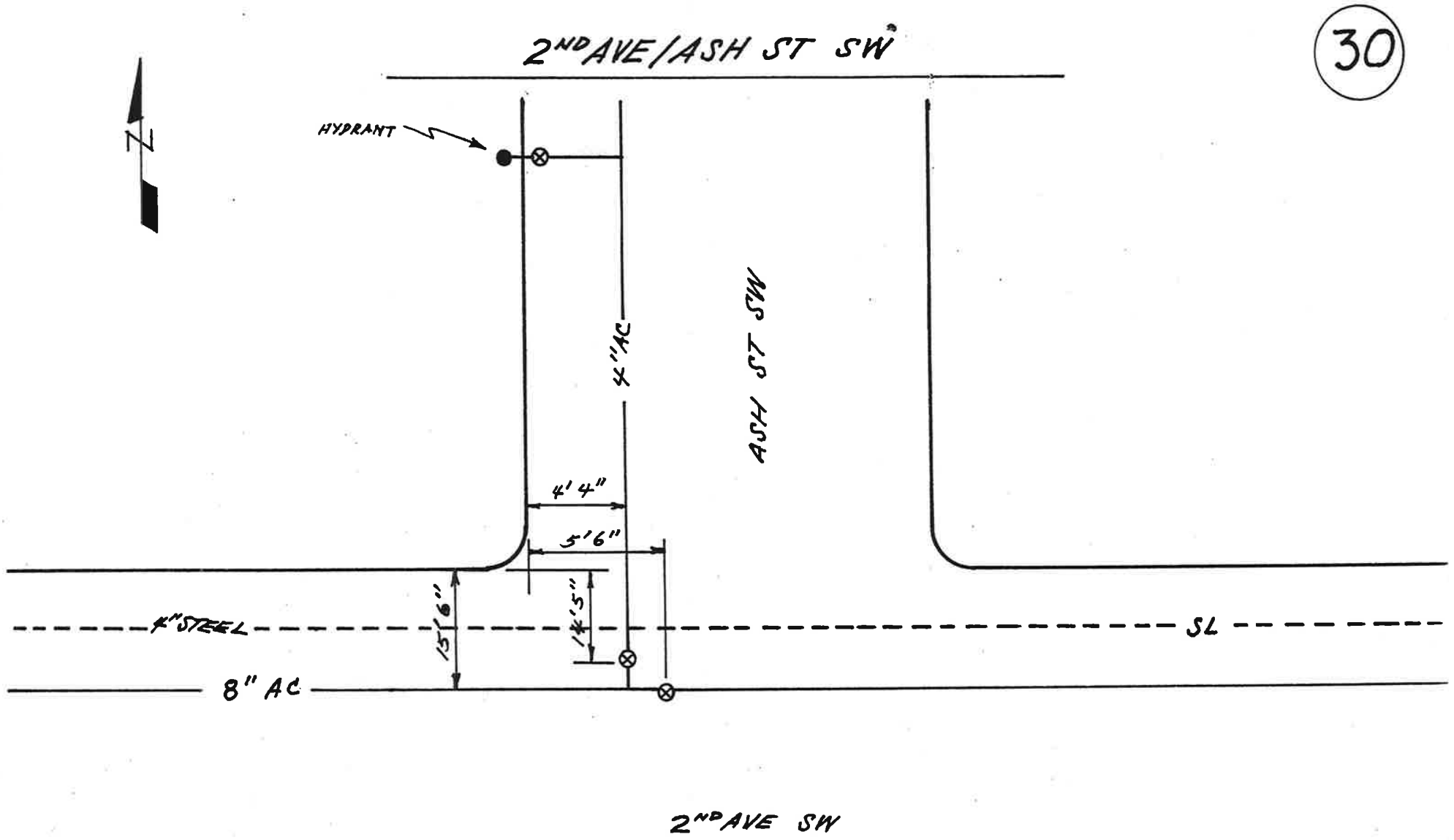


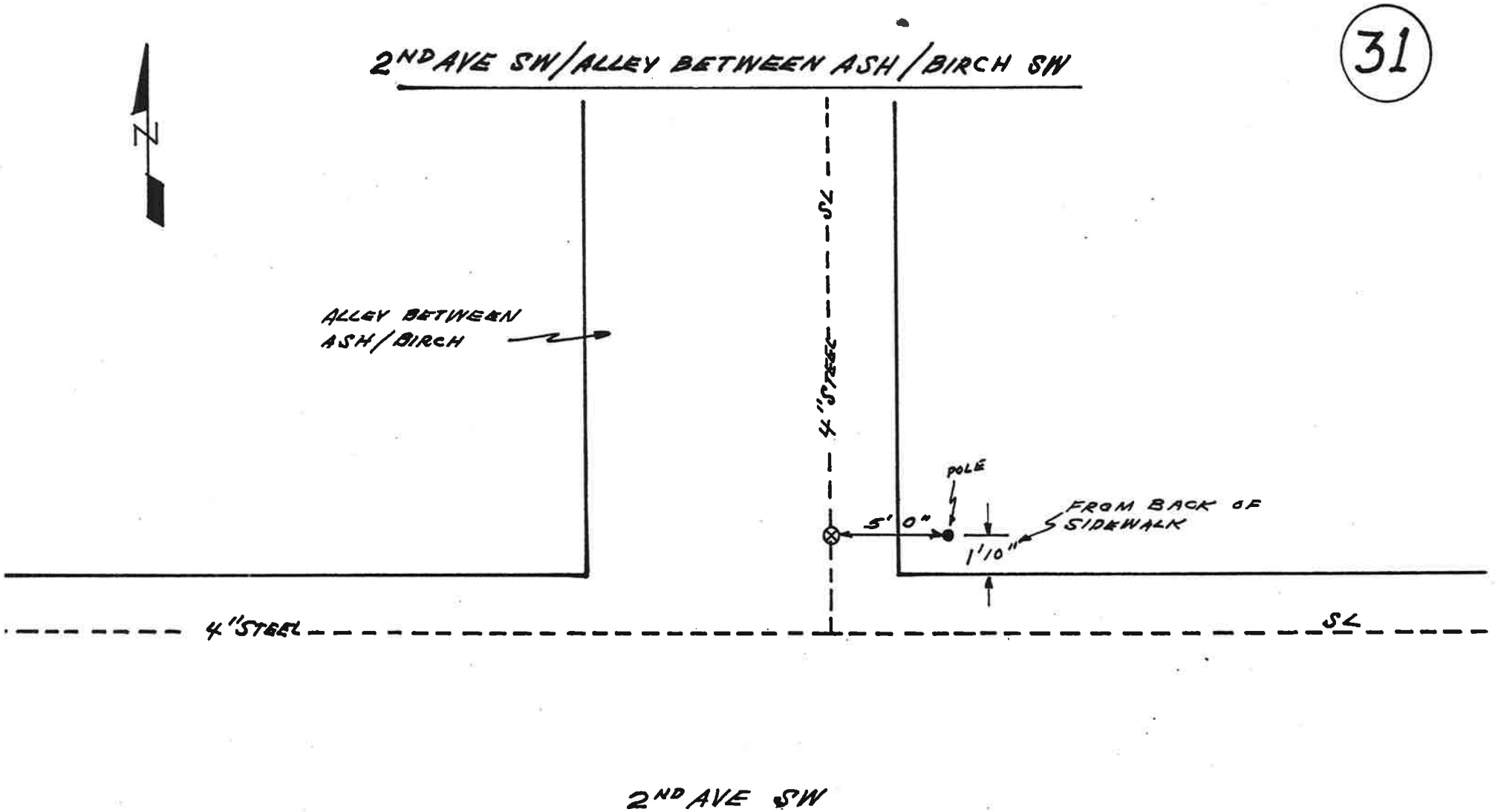


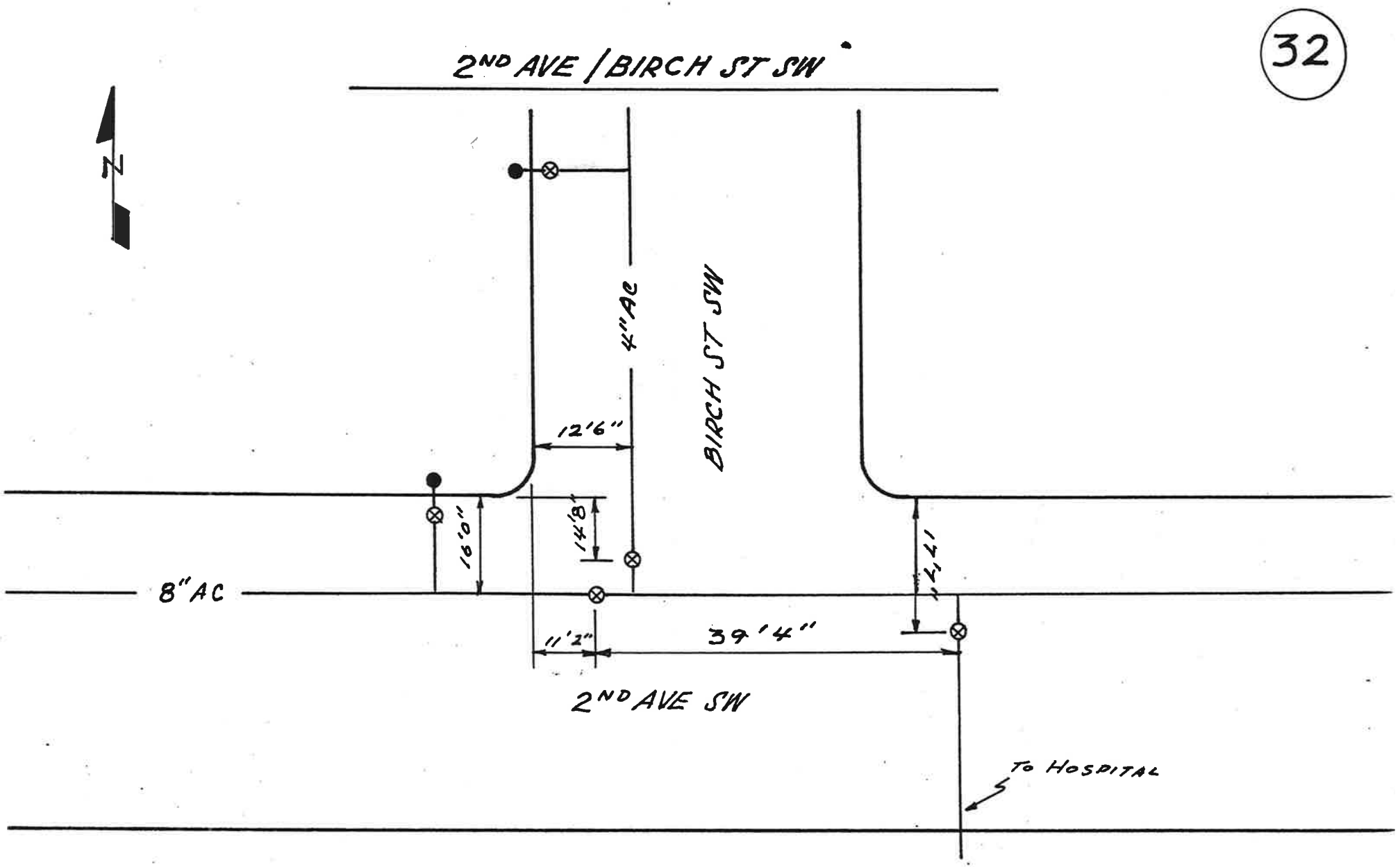
LAKE SHORE DRIVE/JUNIPER ST NW


2ND AVE SE/DIVISION ST
N
6"AC
13'0"
6'7"
4'6"
15'7"
4"STEEL
SL
8" AC
2ND AVE
S.W.
2ND AVE. S.E.
BLOCK
1'0"
30'0"
3'5"
30'0 4" AC
13'2"
8"D
8'6"
SL
12'6"
3" AC
8" AC
DIVISION ST

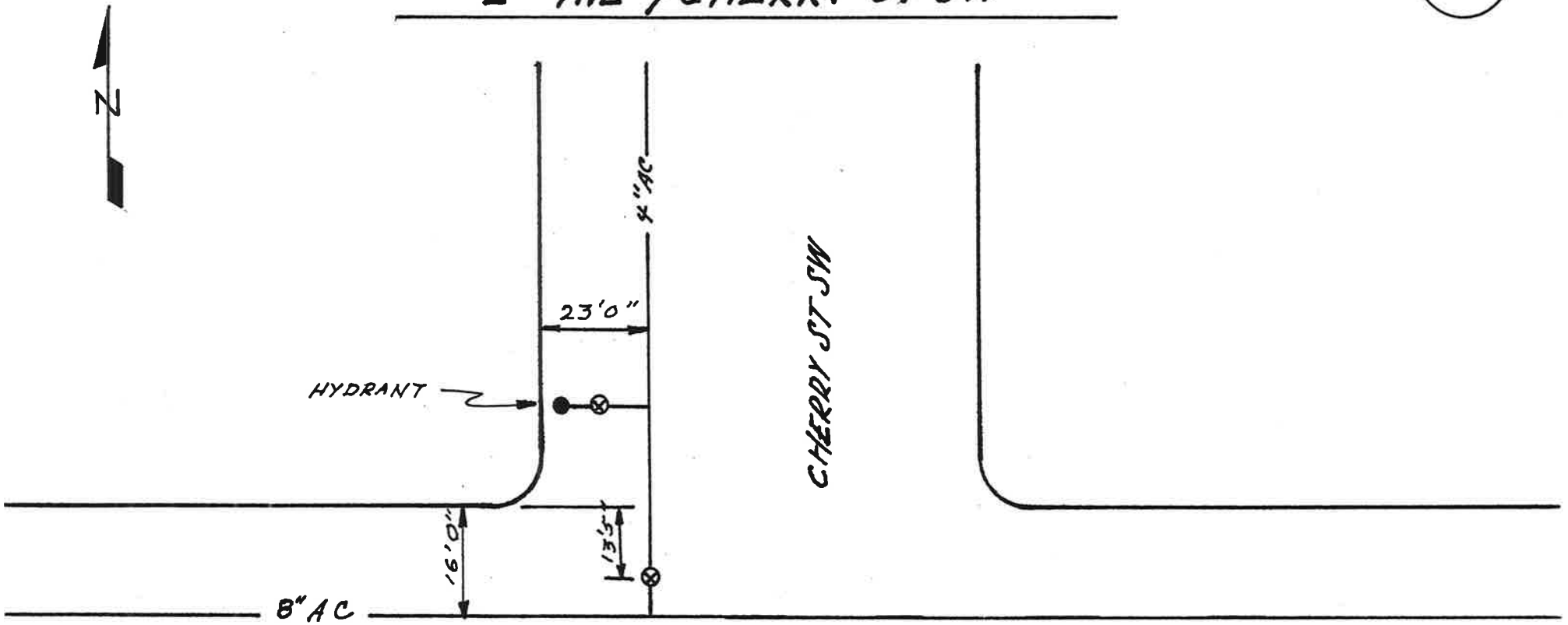

2ND AVE SW/ALLEY BETWEEN DIVISION ST/ASH ST SW
N
ALLEY BETWEEN
DIVISION/ASH
SL
4" STEEL
PILE
3'2"
4" STEEL
SL
8" AC
2ND AVE SW


2ND AVE/ASH ST SW
N
HYDRANT
4"AC
ASH ST SW
4' 4"
5'6"
15'6"
14'5"
4"STEEL
SL
8" AC
2ND AVE SW


2ND AVE SW/ALLEY BETWEEN ASH/BIRCH SW
N
ALLEY BETWEEN ASH/BIRCH
4" STEEL
℄
POLE
5' 0"
1'10"
FROM BACK OF SIDEWALK
4" STEEL
℄
2ND AVE SW

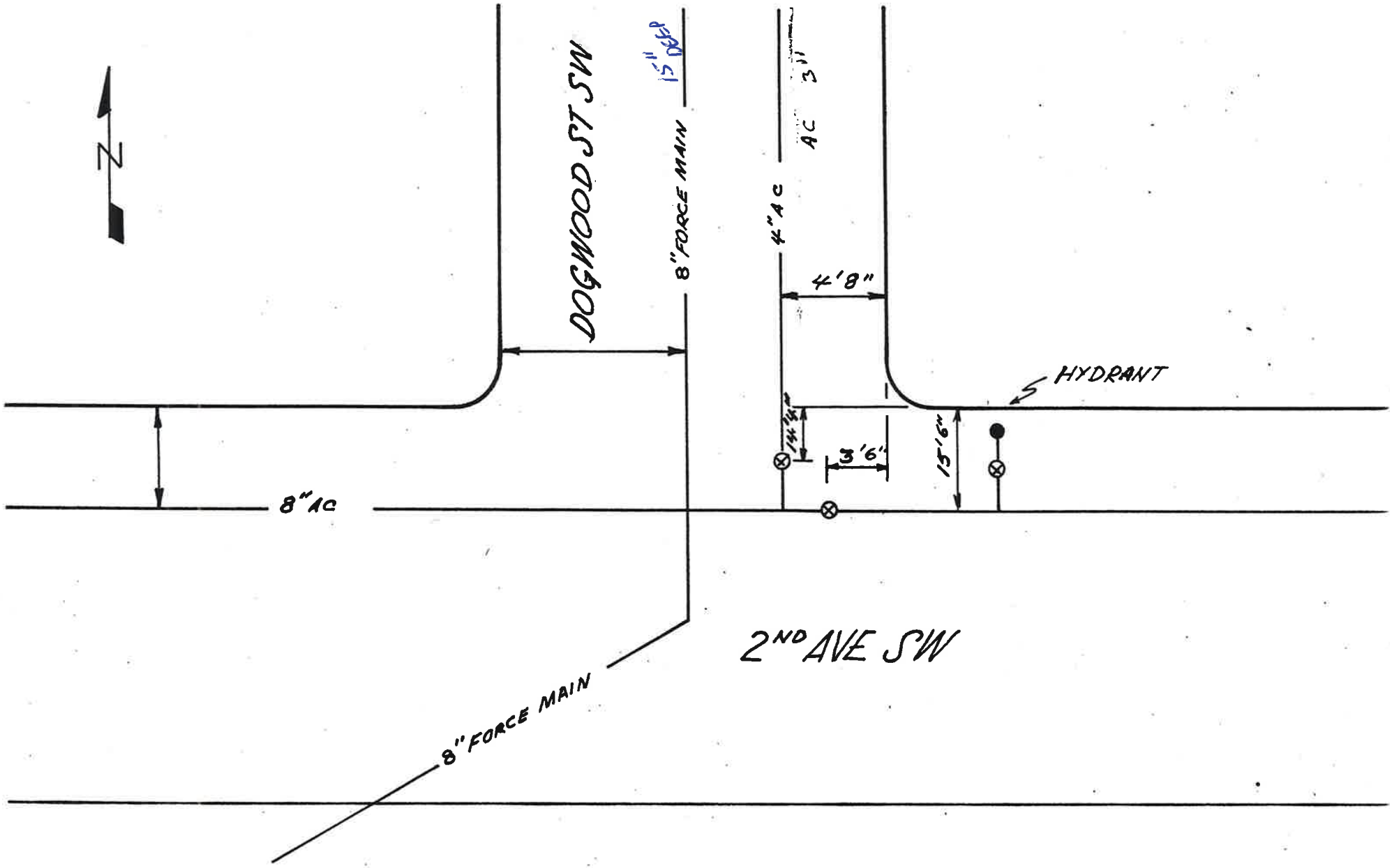

2ND AVE / BIRCH ST SW
N
4"AC
BIRCH ST SW
12'6"
16'0"
14'8"
11'4"
8"AC
11'2"
39'4"
2ND AVE SW
TO HOSPITAL

2ND AVE / CHERRY ST SW

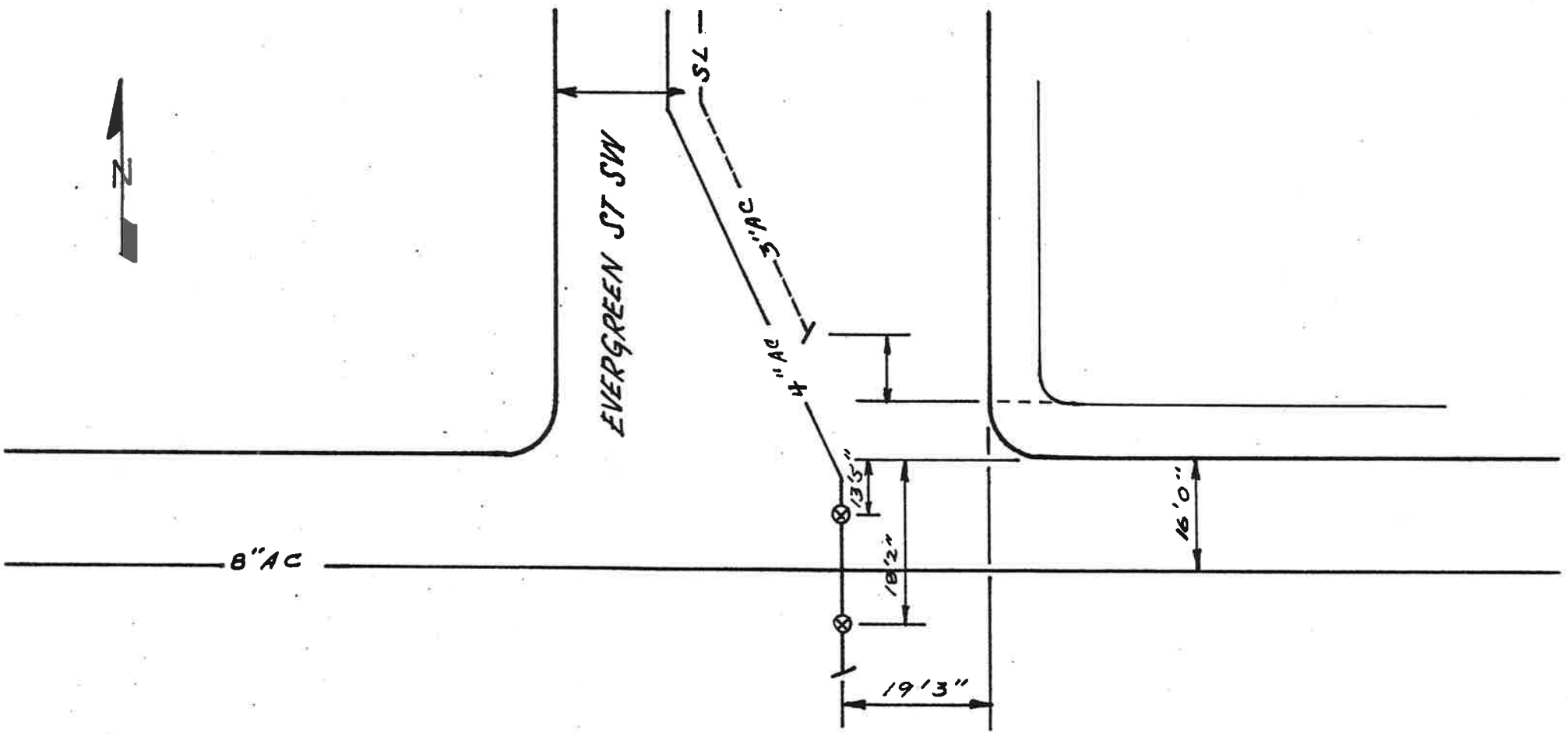


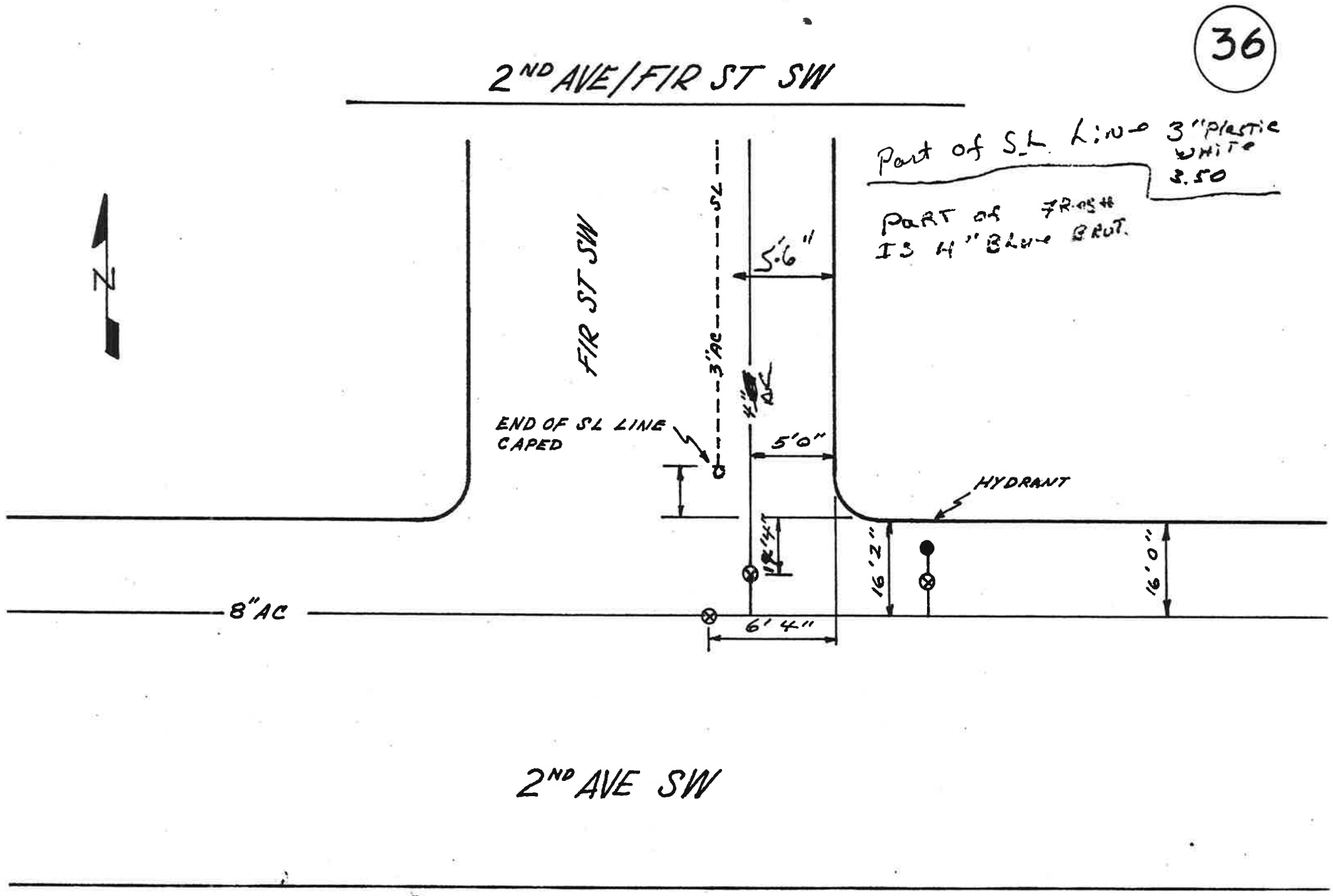
2ND AVE SW

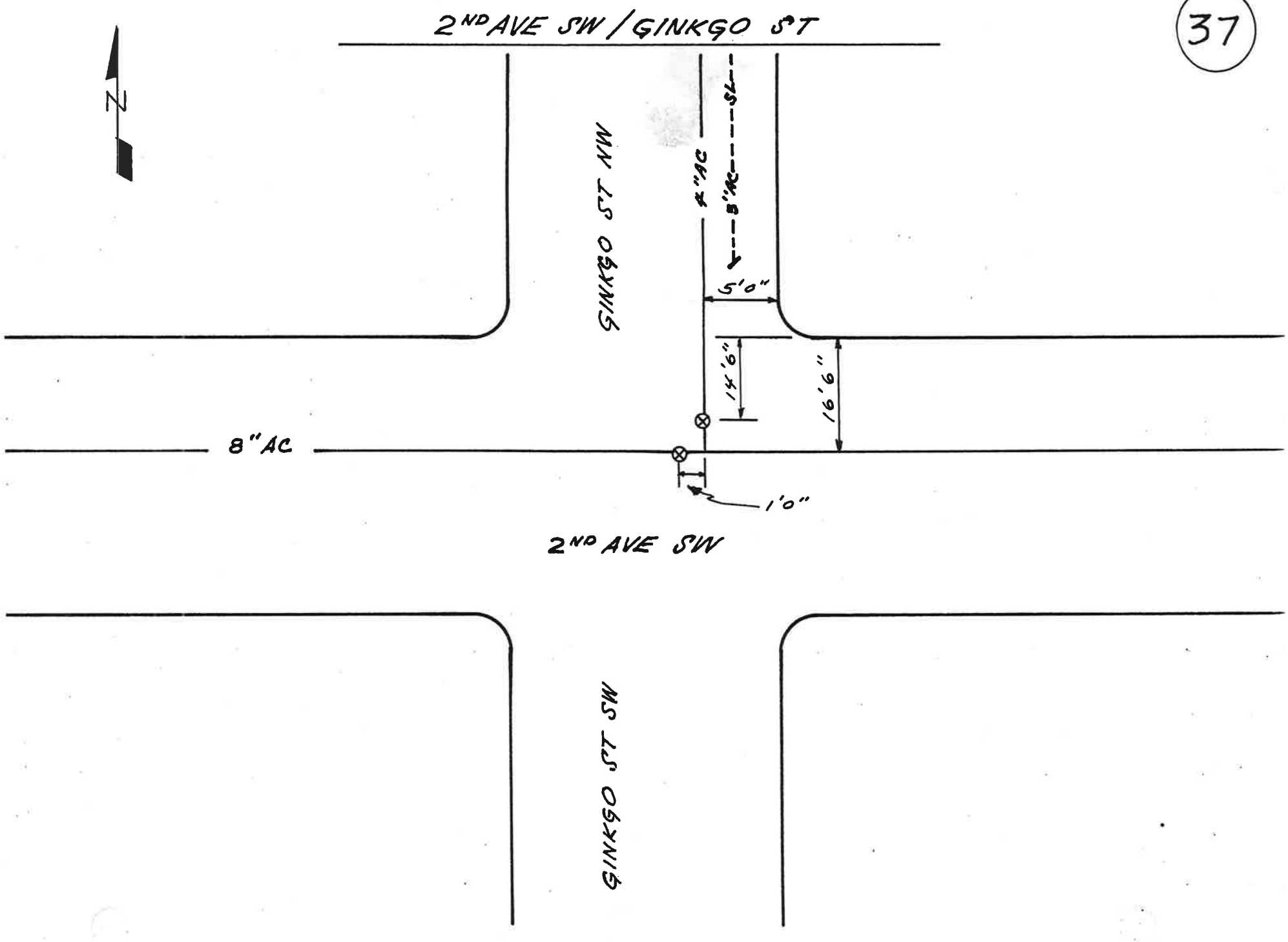
2ND AVE / DOGWOOD ST SW



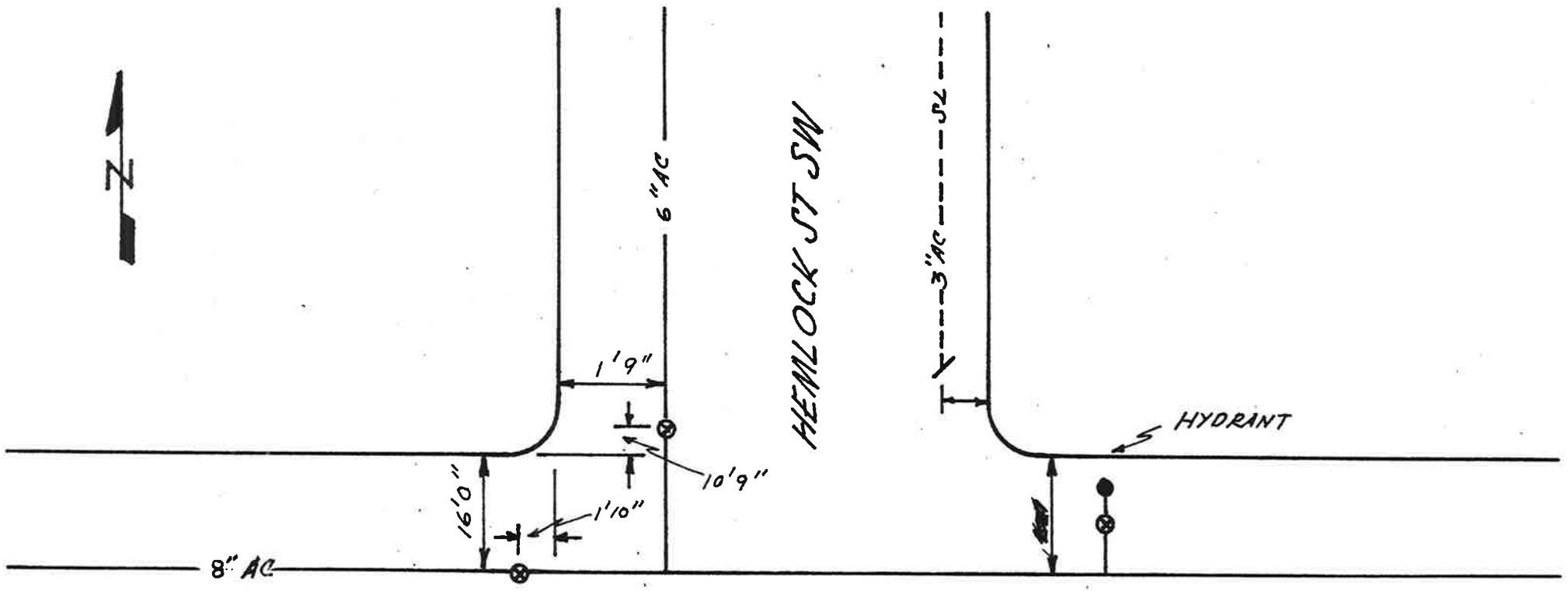
2ND AVE / EVERGREEN ST SW



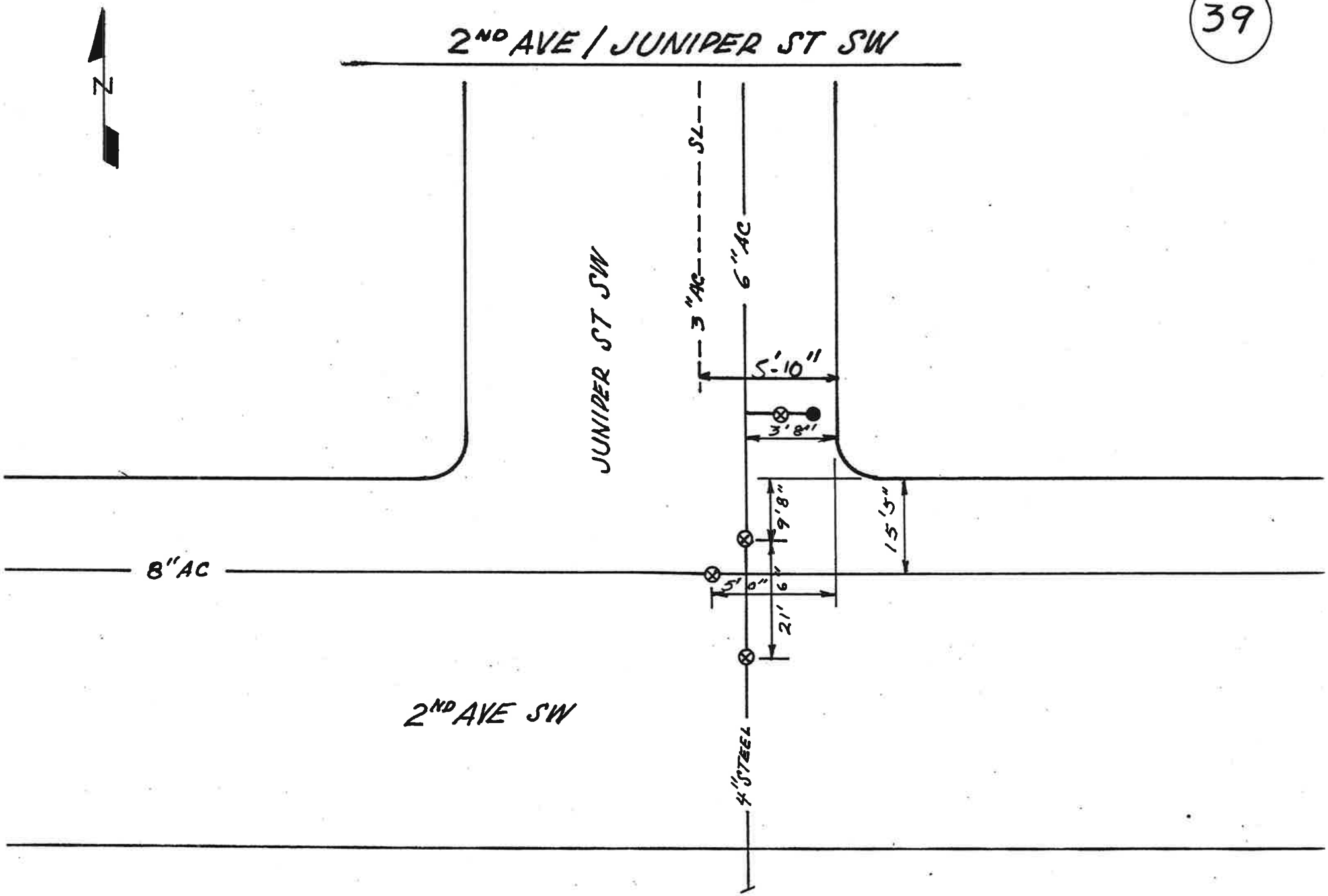

2ND AVE/FIR ST SW
Part of S_L Line 3" plastic white 3.50
Part of FROST IS 4" BLUE BUT.
FIR ST SW
3'AC
SL
5'6"
4" AC
END OF SL LINE CAPED
5'0"
HYDRANT
16'2"
16'0"
8"AC
6'4"
2ND AVE SW


2ND AVE SW / GINKGO ST
N
GINKGO ST NW
4"AC
8"AC
SL
5'0"
14'6"
16'6"
8"AC
1'0"
2ND AVE SW
GINKGO ST SW

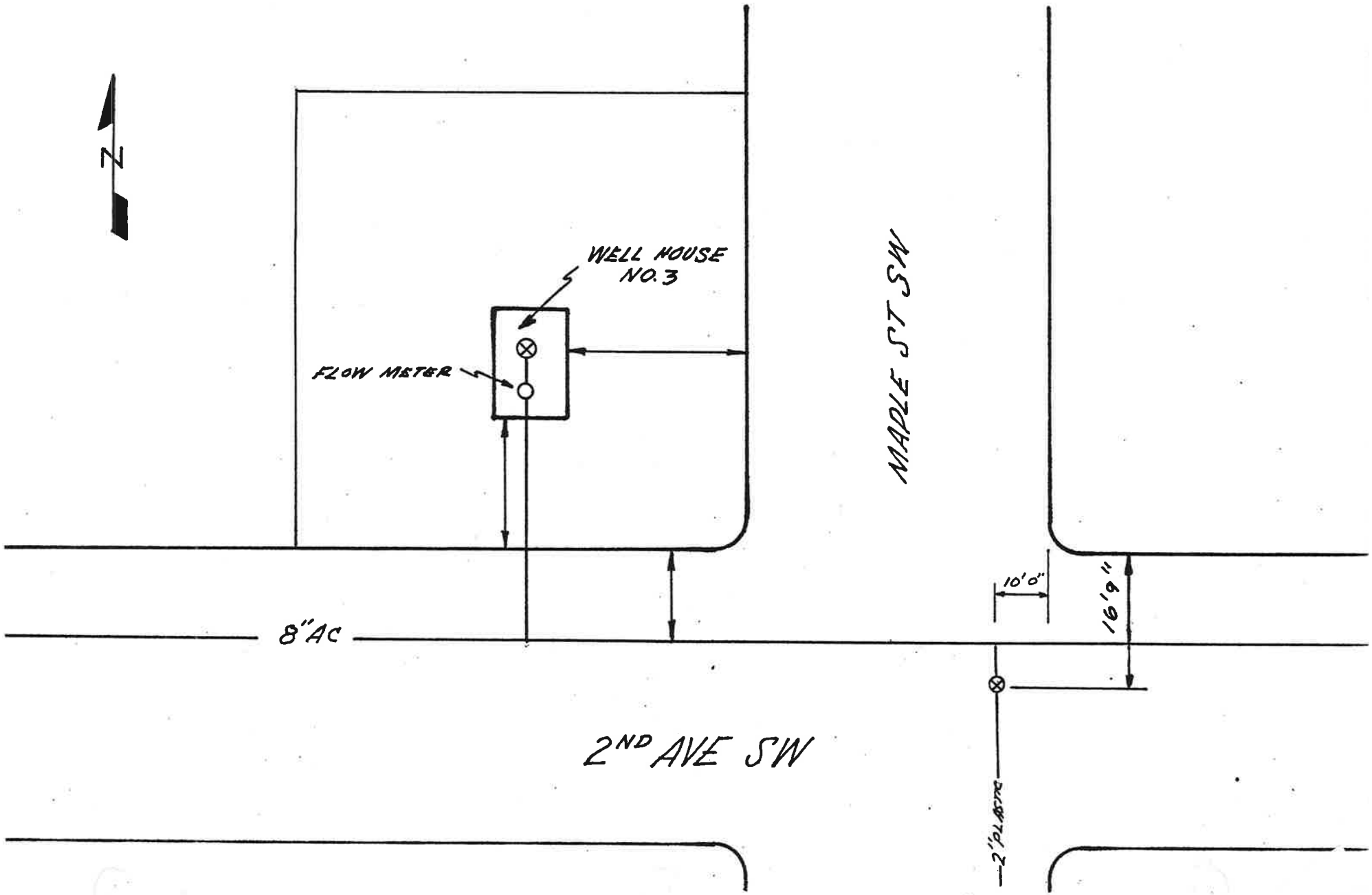
2ND AVE/HEMLOCK ST SW



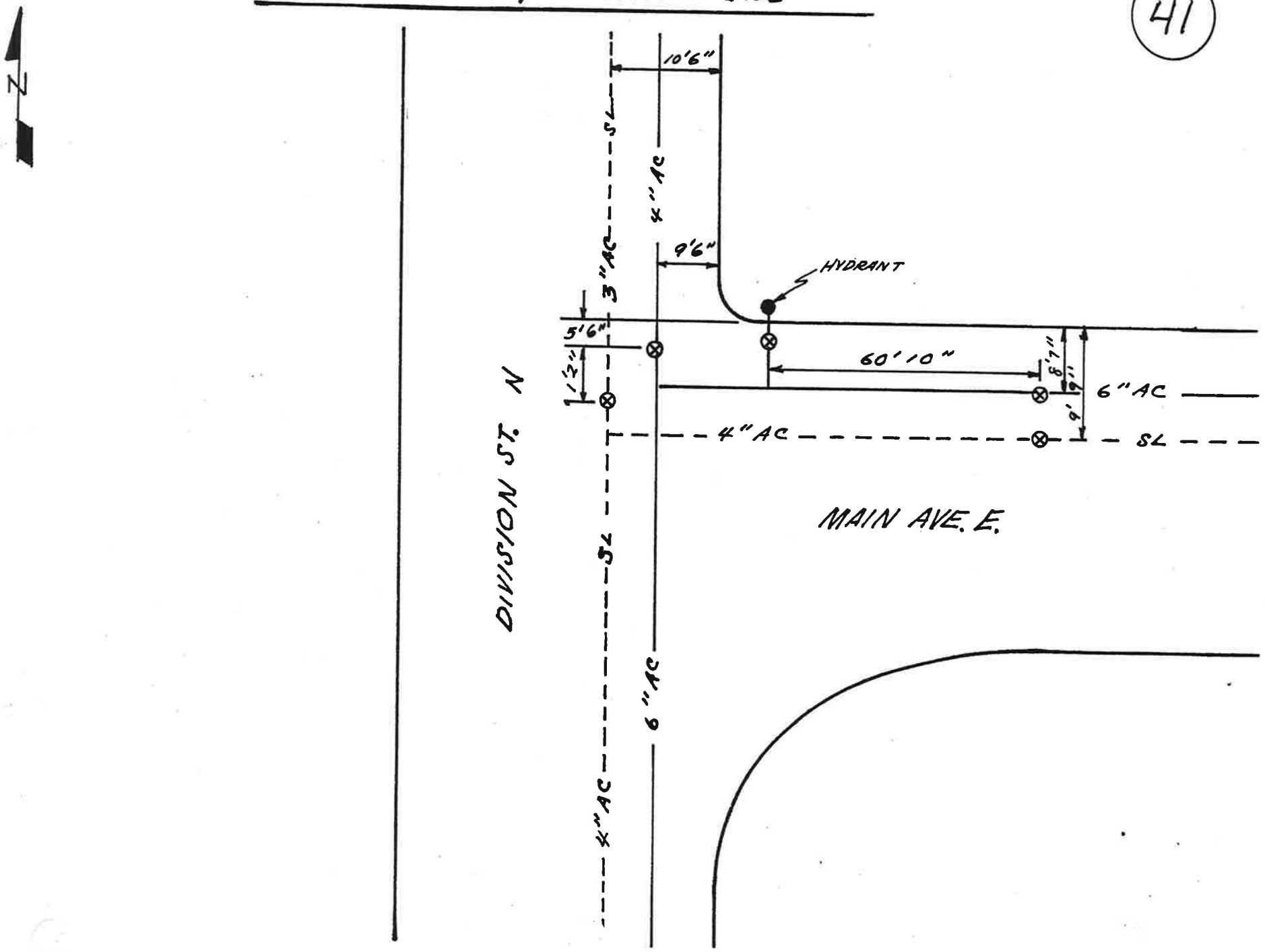
2ND AVE SW

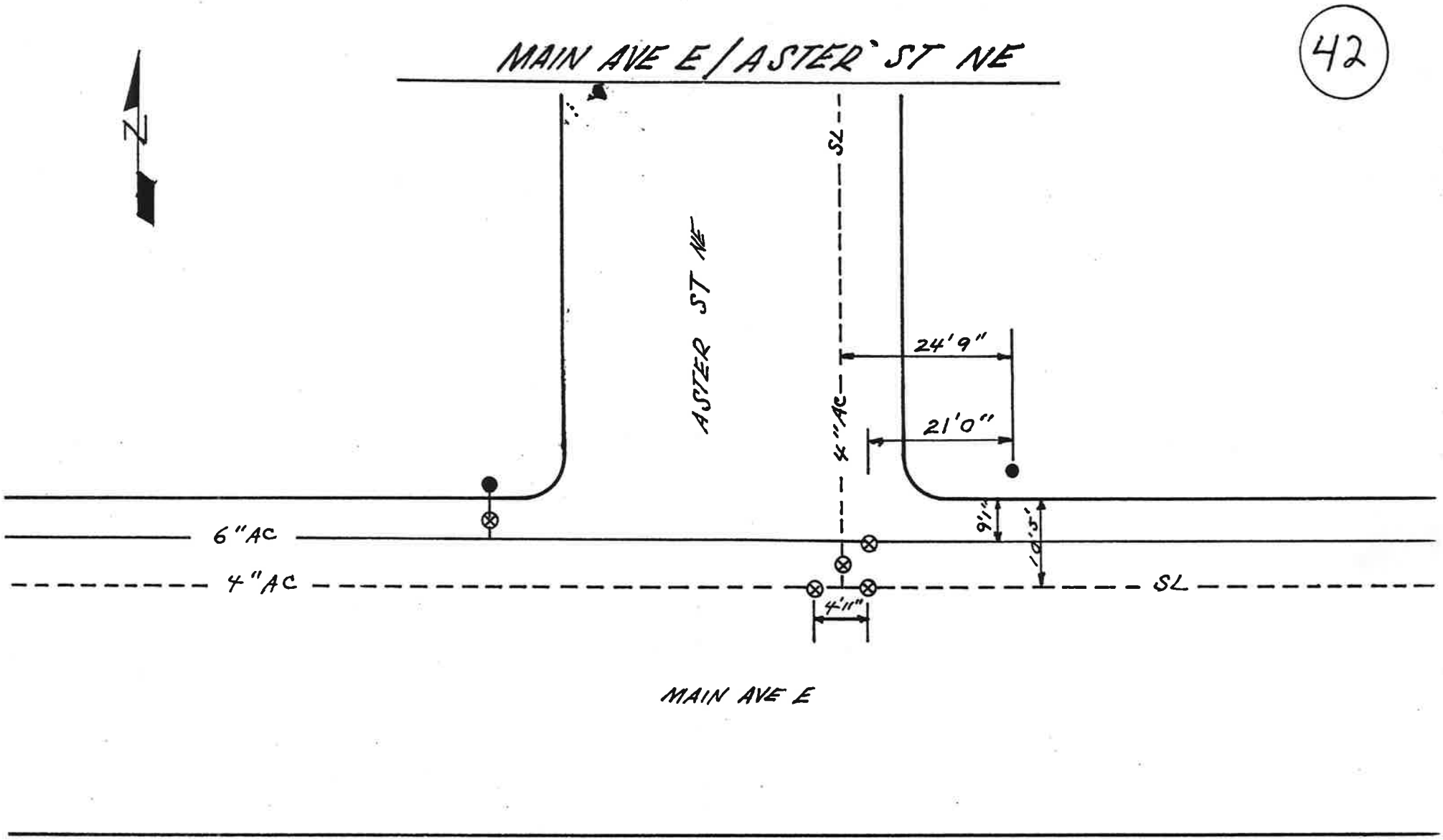

2ND AVE / JUNIPER ST SW
N
JUNIPER ST SW
3"AC
SL
6"AC
5'-10"
3'-8"
9'-8"
15'-3"
8"AC
5'-0"
6"
21"
2ND AVE SW
4"STEEL

2ND AVE/MAPLE ST SW

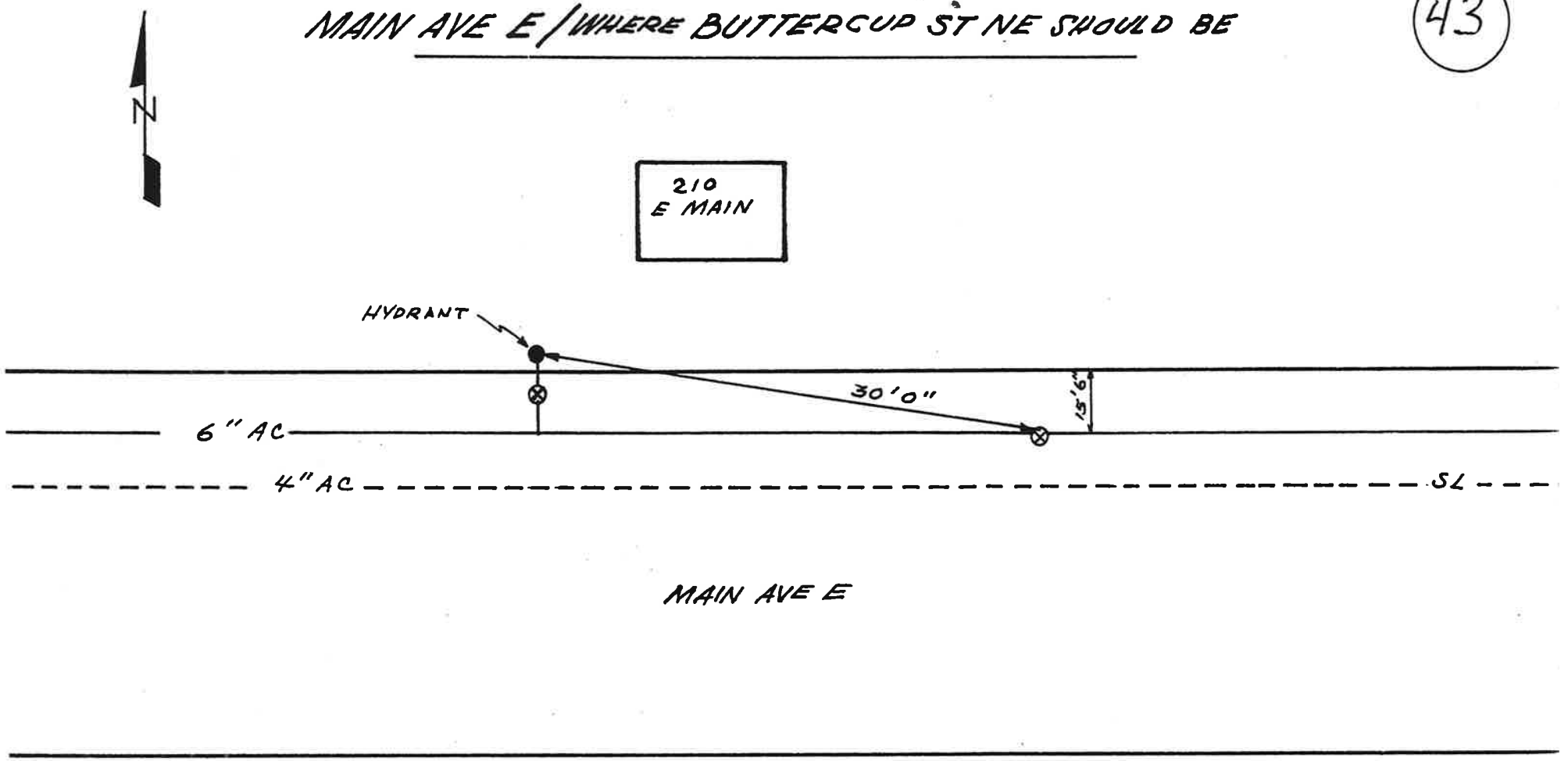


MAIN AVE E/DIVISION ST. NW NE

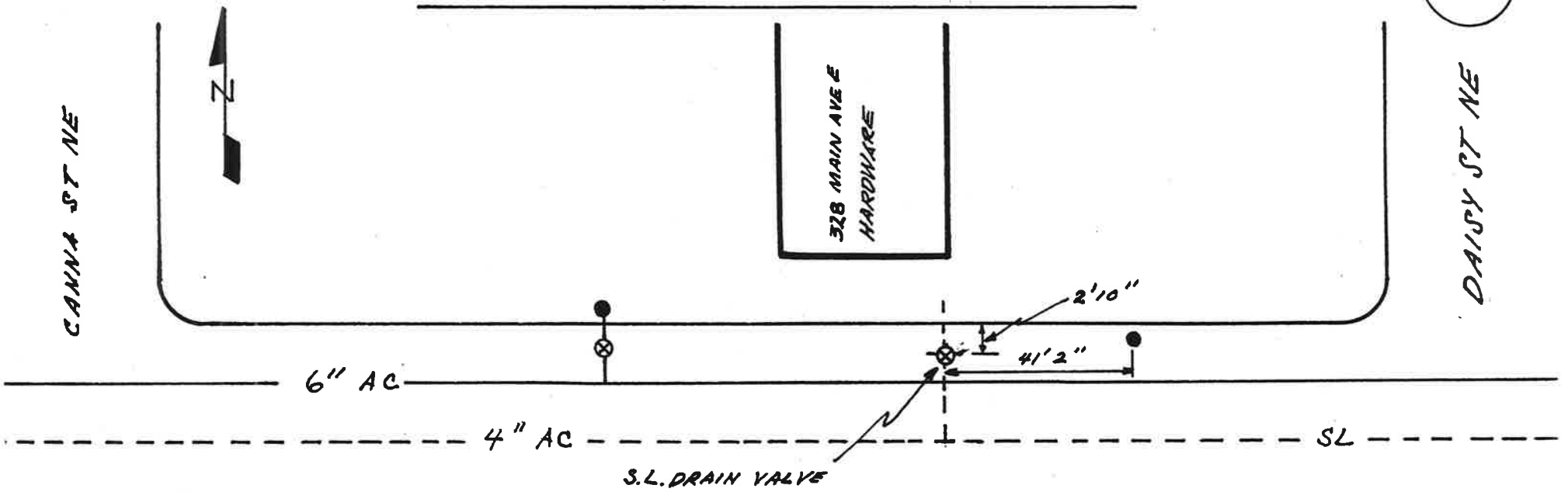



MAIN AVE E / ASTER ST NE
N
SL
ASTER ST NE
24'9"
21'0"
4"AC
9'1"
10'3"
6"AC
4"AC
SL
4'11"
MAIN AVE E

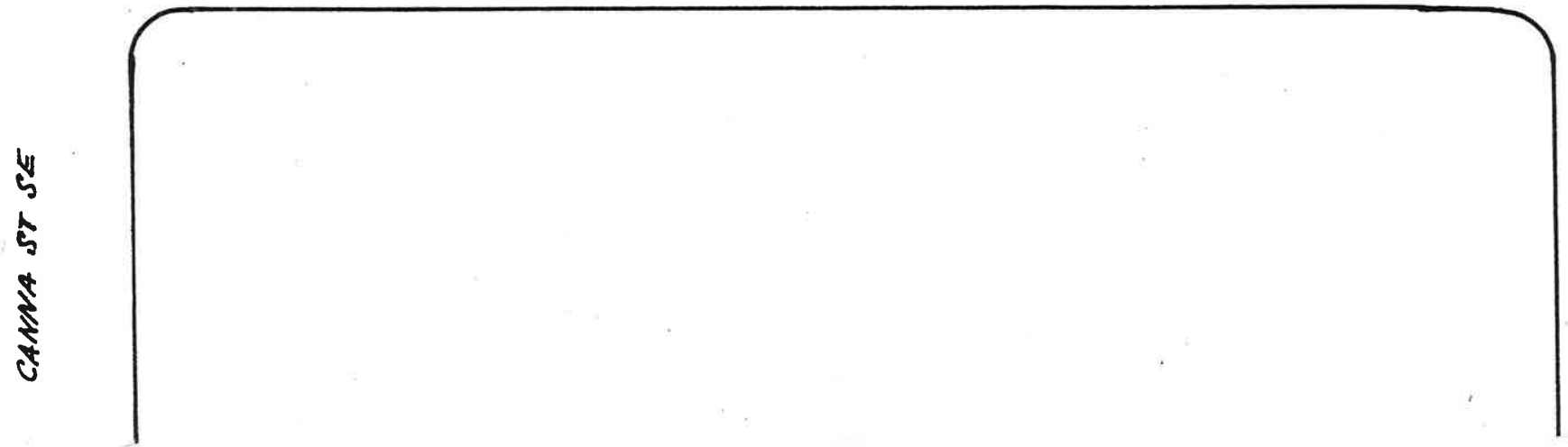
MAIN AVE E / WHERE BUTTERCUP ST NE SHOULD BE

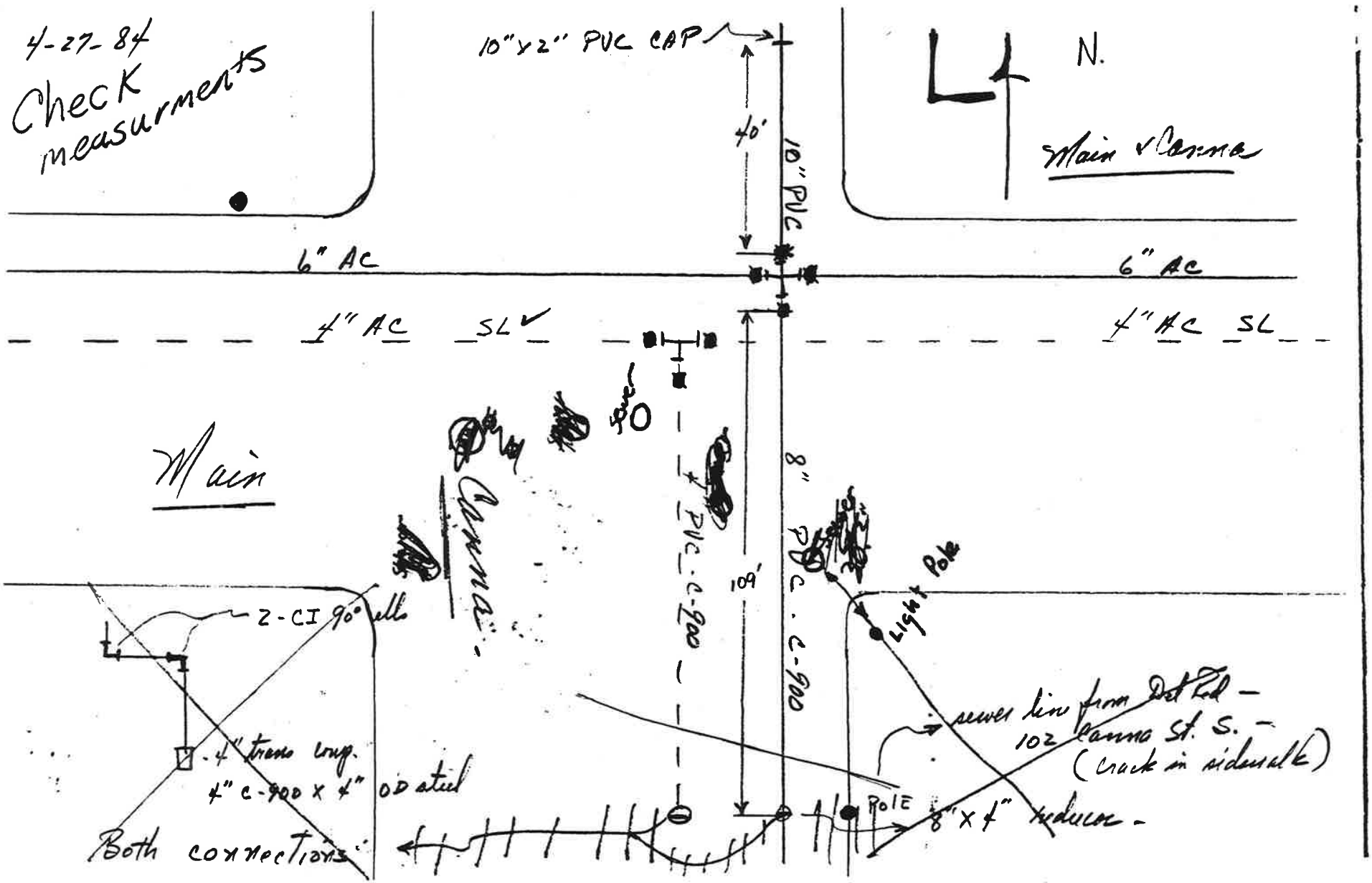


MAIN AVE E/CANNA ST, DAISY ST

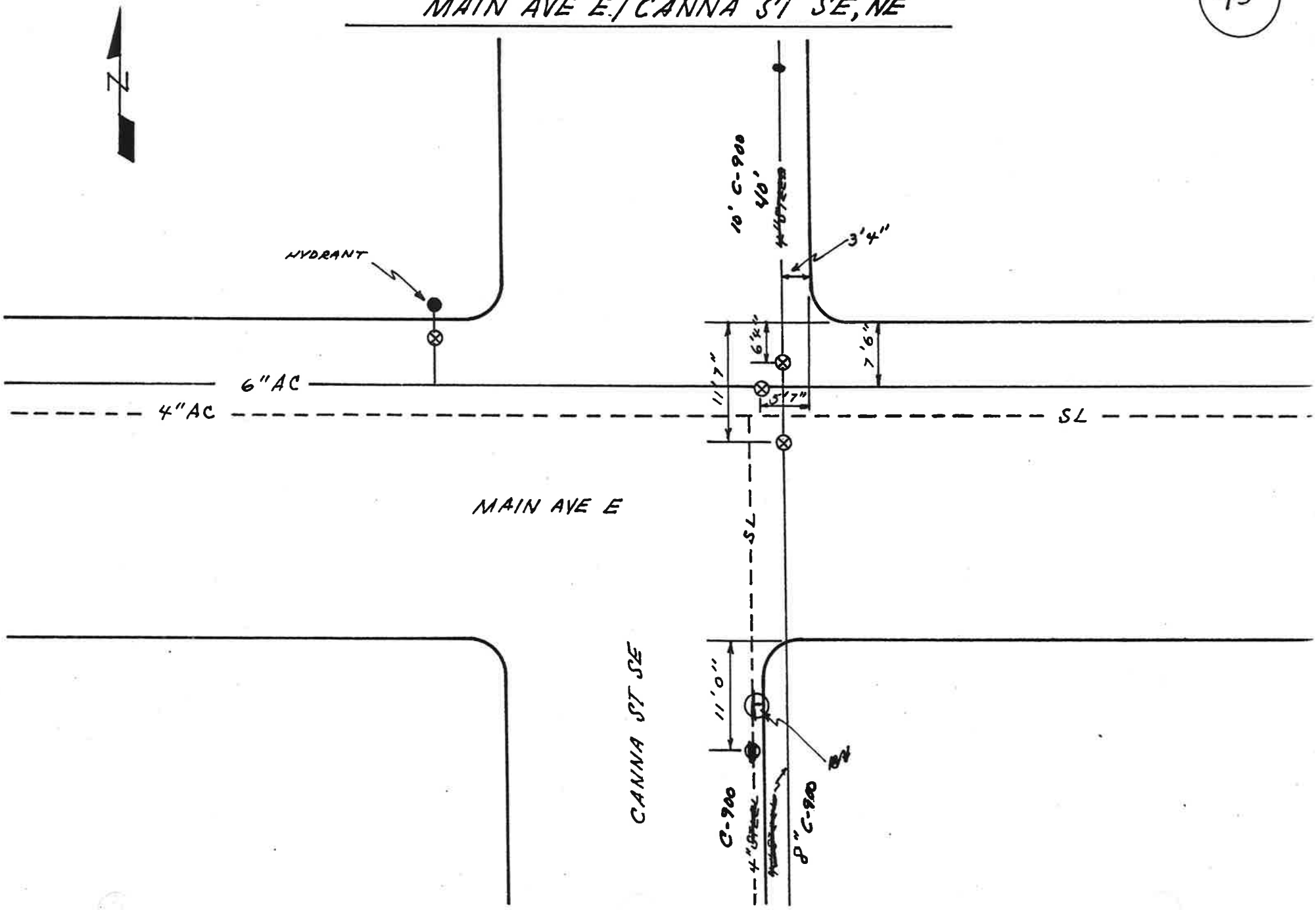


MAIN AVE E

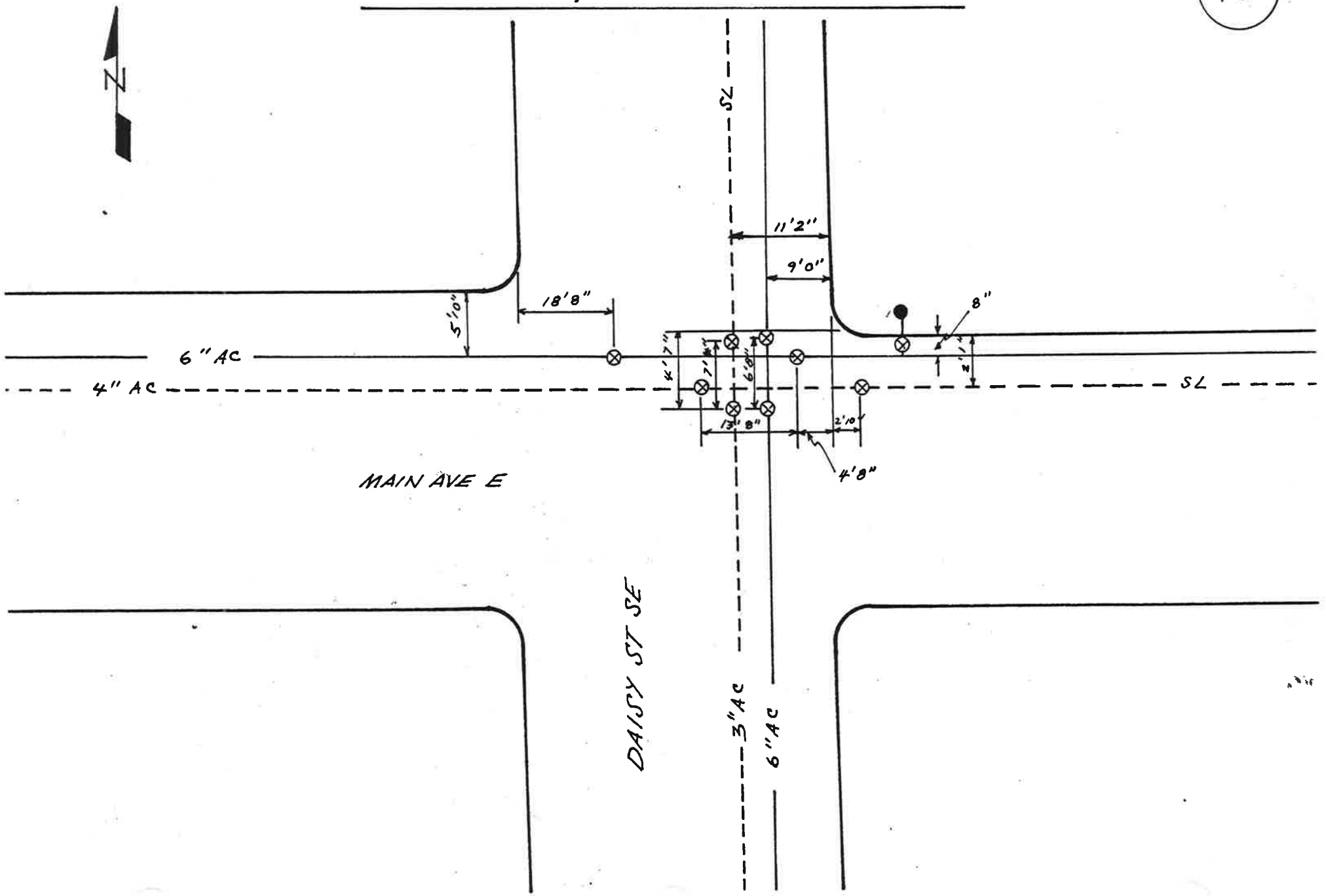


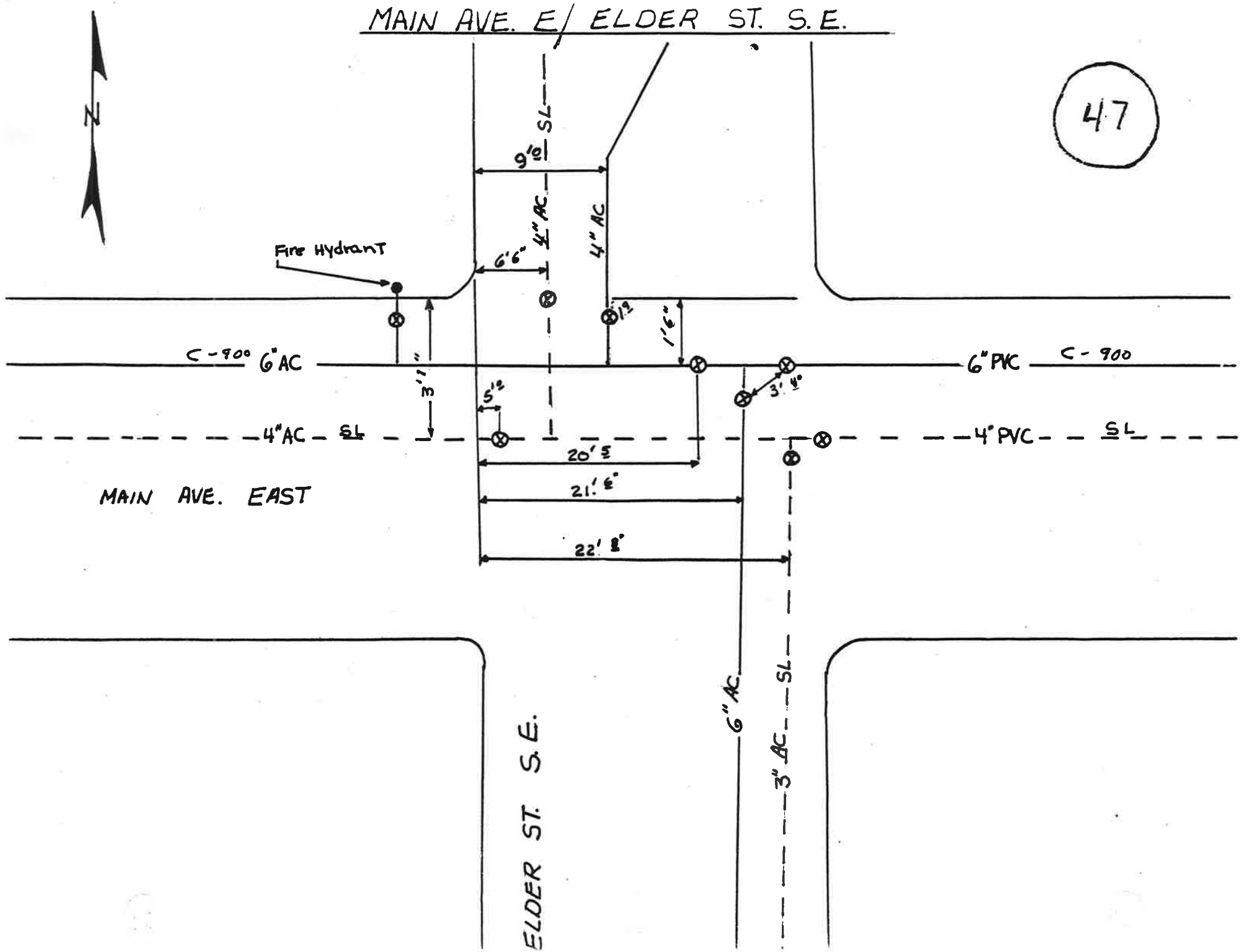

4-27-84
Check measurments
10"x2" PVC CAP
40'
10" PVC
N.
Main & Canna
6" AC
6" AC
4" AC SL
4" AC SL
Main
Canna
90°
4" PVC C-900
109'
8" PVC C-900
Light Pole
2-CI 90° ells
4" trans coup.
4" C-900 x 4" OD steel
Both connections
sewer line from Dist Ctr -
102 Canna St. S. -
(crack in sidewalk)
Pole
8" x 4" reducer -

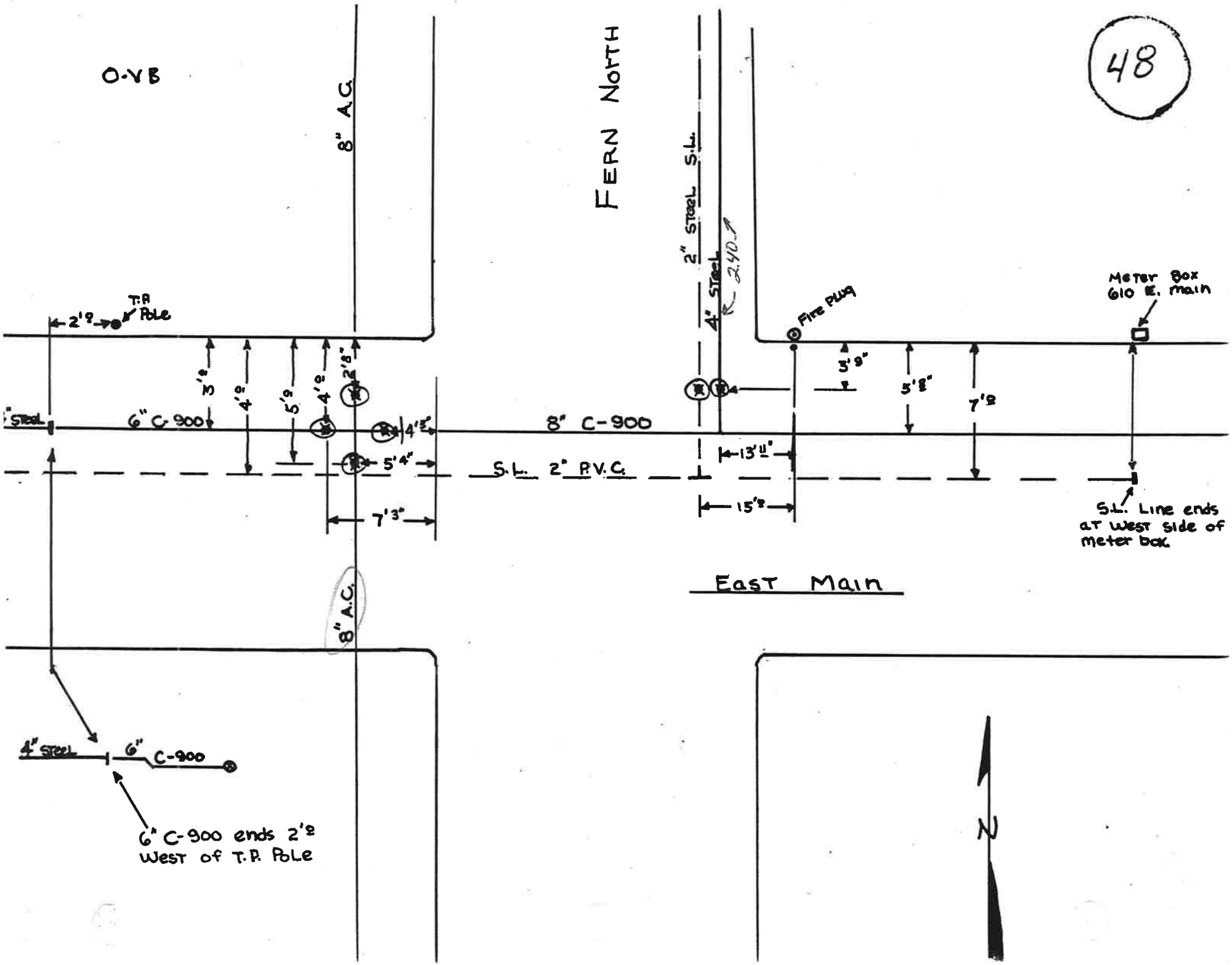
MAIN AVE E./CANNA ST SE, NE

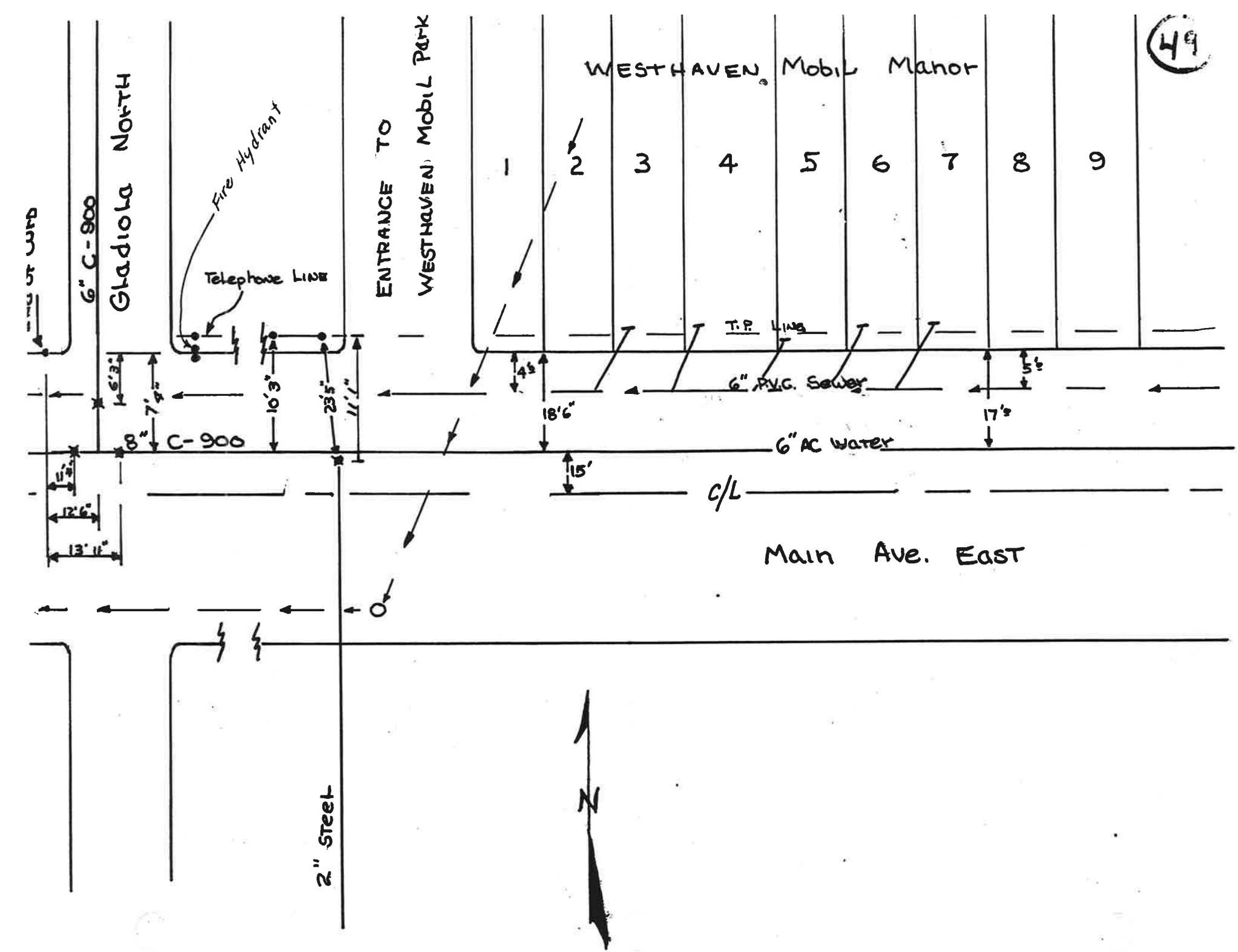


MAIN AVE E / DAISY ST SE, NE

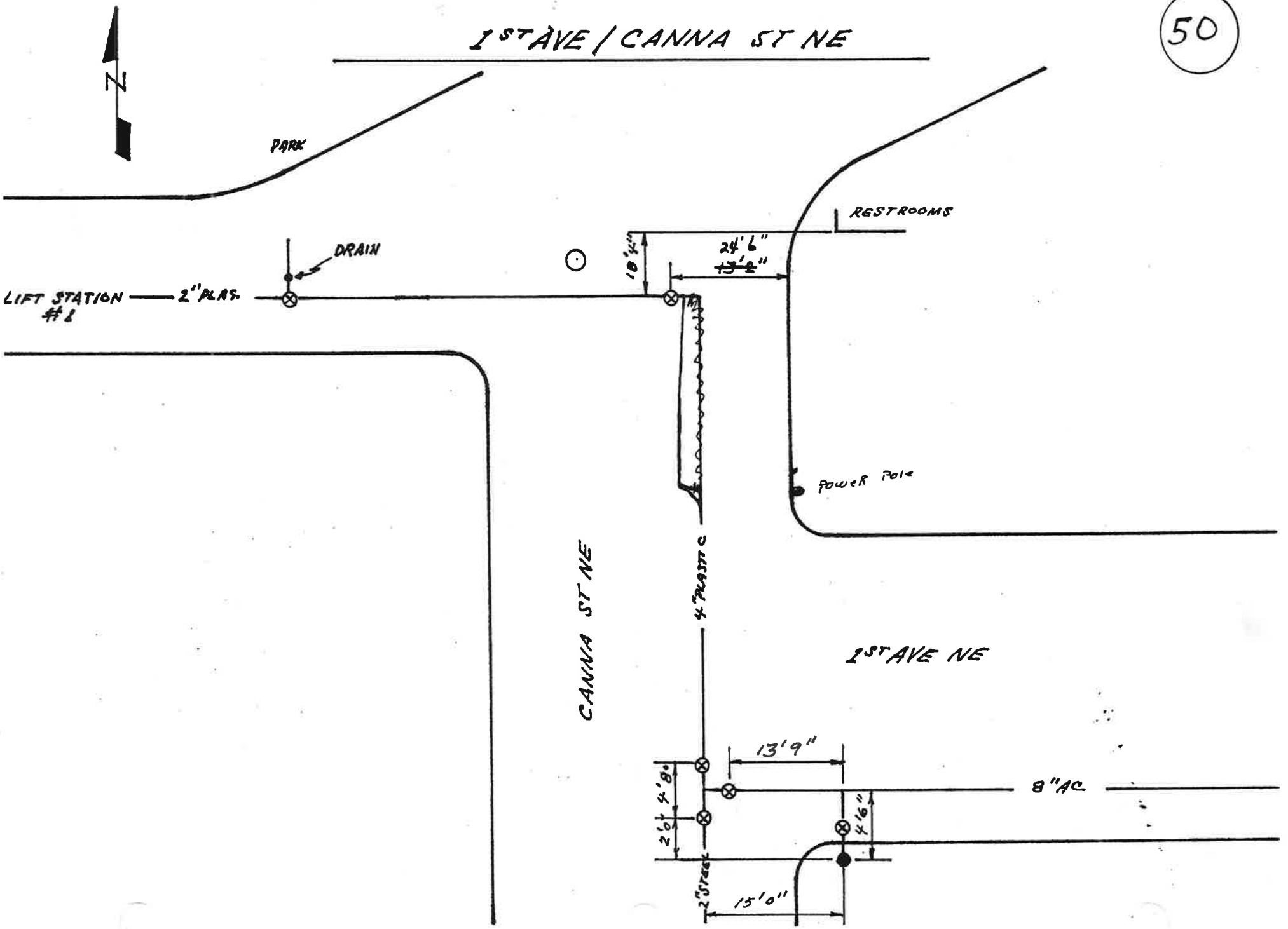



MAIN AVE. E/ ELDER ST. S.E.
47
N
9' 10" SL
4" AC
4" AC
Fire HydranT
6' 6"
1.9
1' 6"
C-900 6" AC
6" PVC C-900
3' 1"
5' 2"
3' 4"
4" AC SL
4" PVC SL
20' 5"
21' 6"
22' 8"
MAIN AVE. EAST
6" AC
3" AC SL
ELDER ST. S.E.

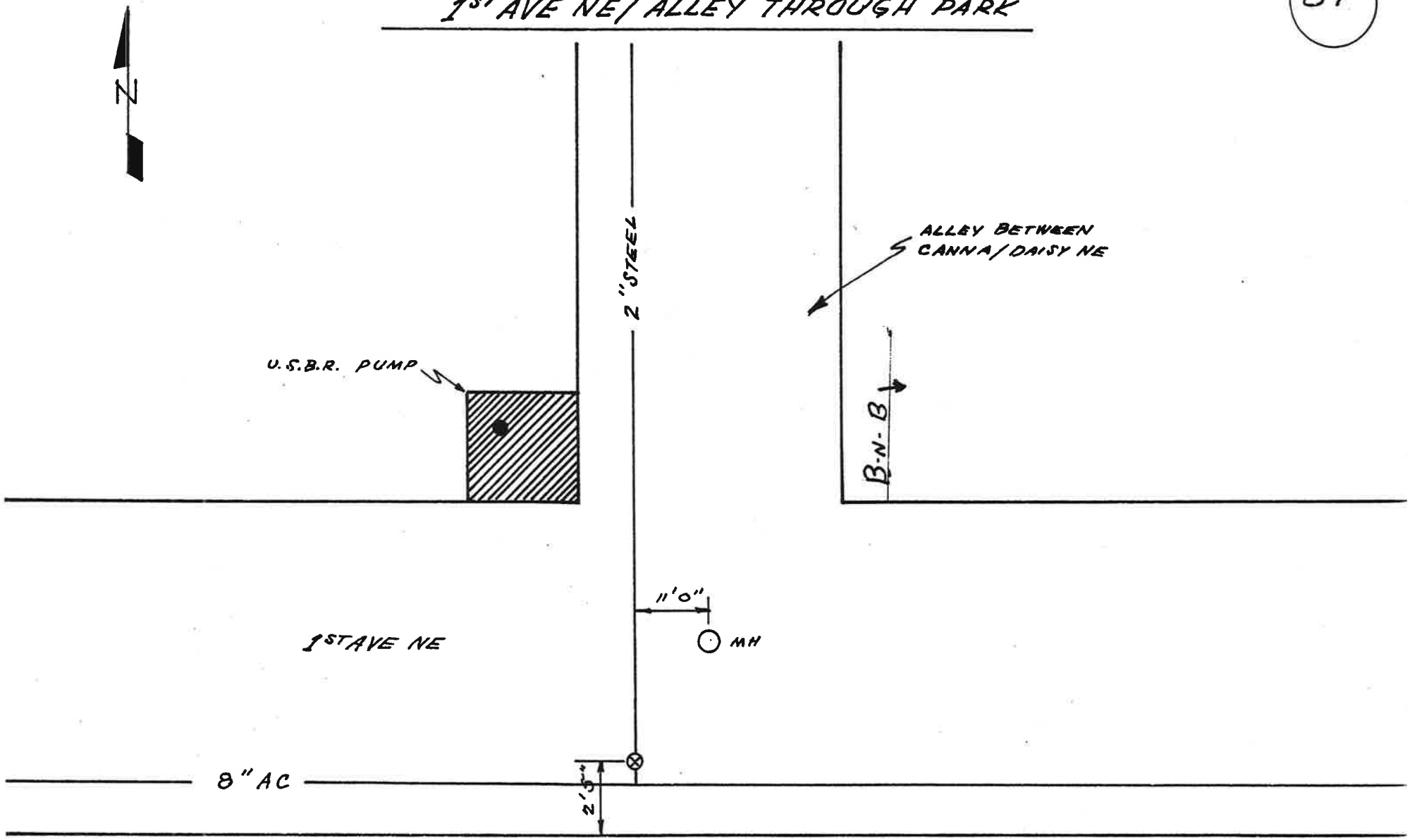

48
O-V B
8" A.C.
FERN NORTH
2" STEEL S.L.
4" STEEL
2.40
T.P. Pole
2'9
3'9
4'9
5'9
4'9
2'8"
FIRE PLUG
3'9"
5'8"
7'9
METER BOX
610 E. main
STEEL
6" C-900
4'8"
8" C-900
5'4"
S.L. 2" P.V.C.
13'11"
15'9
7'3"
S.L. Line ends at West side of meter box
East Main
8" A.C.
4" STEEL
6" C-900
6" C-900 ends 2'9 West of T.P. Pole
N

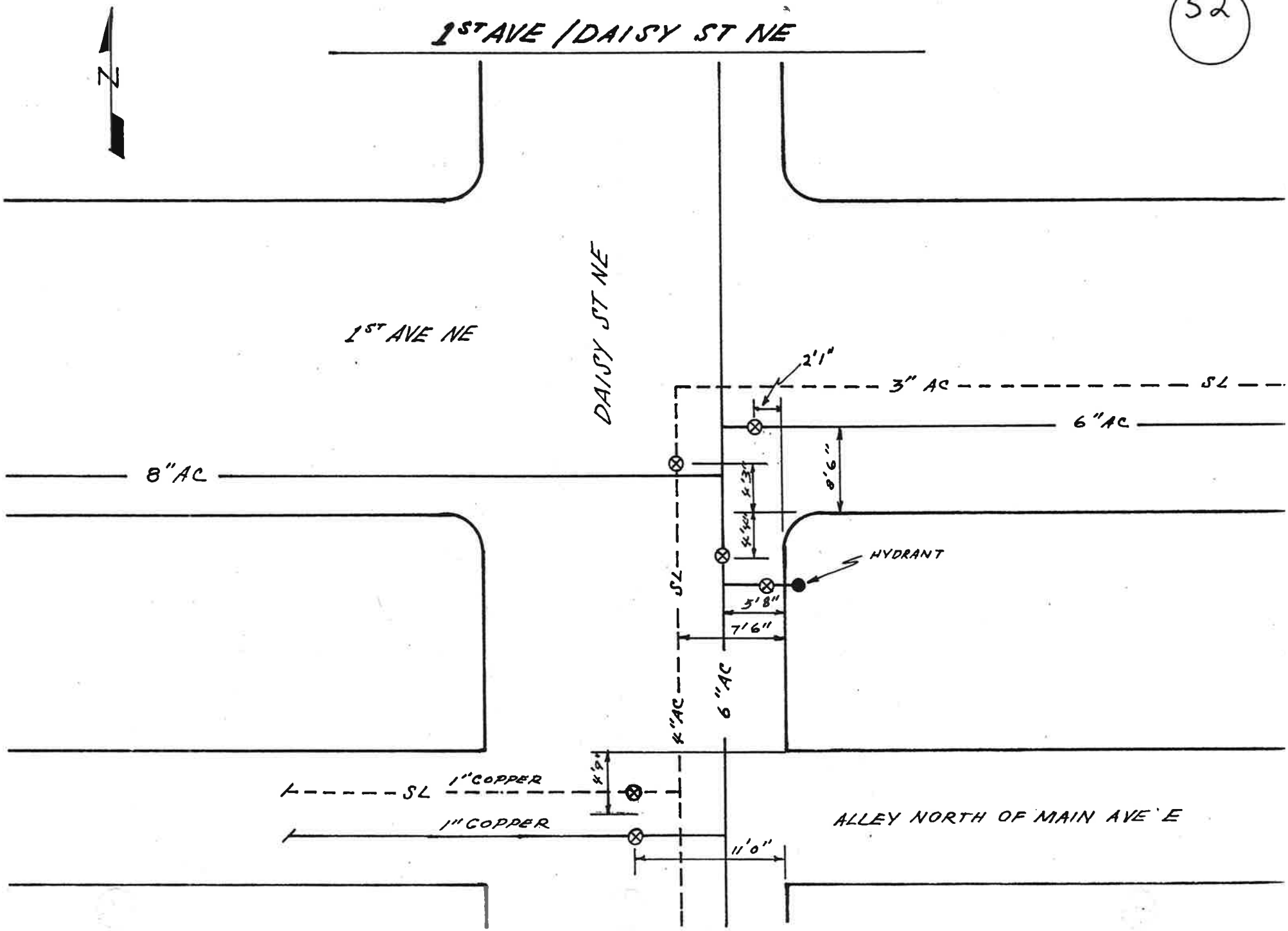

WESTHAVEN Mobil Manor
1
2
3
4
5
6
7
8
9
Gladiola North
6" C-900
Fire Hydrant
Telephone Line
ENTRANCE TO WESTHAVEN Mobil Park
T.P. Line
6" P.V.C. Sewer
6" AC Water
8" C-900
2" Steel
C/L
Main Ave. East
N

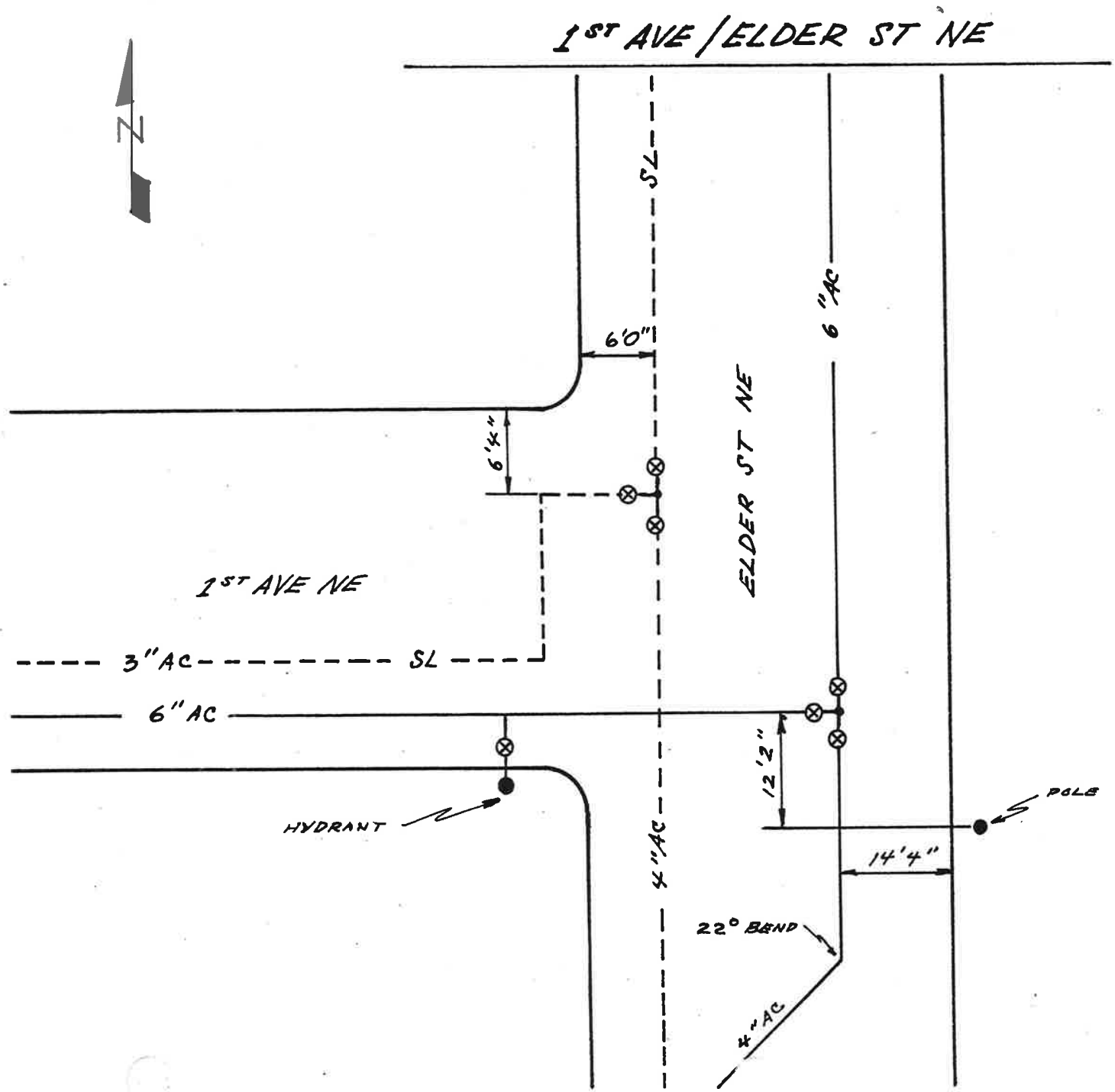
1ST AVE / CANNA ST NE

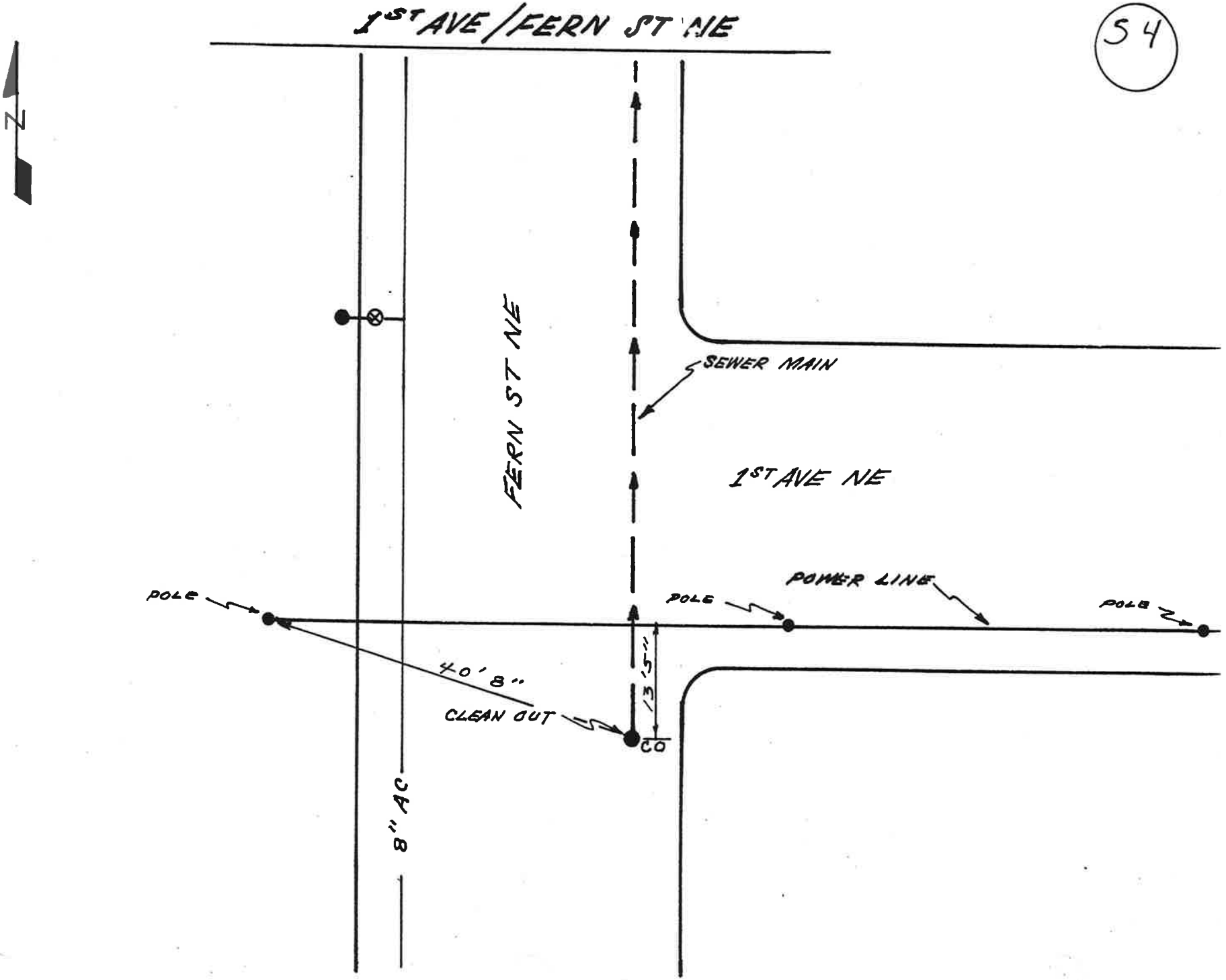


1ST AVE NE / ALLEY THROUGH PARK

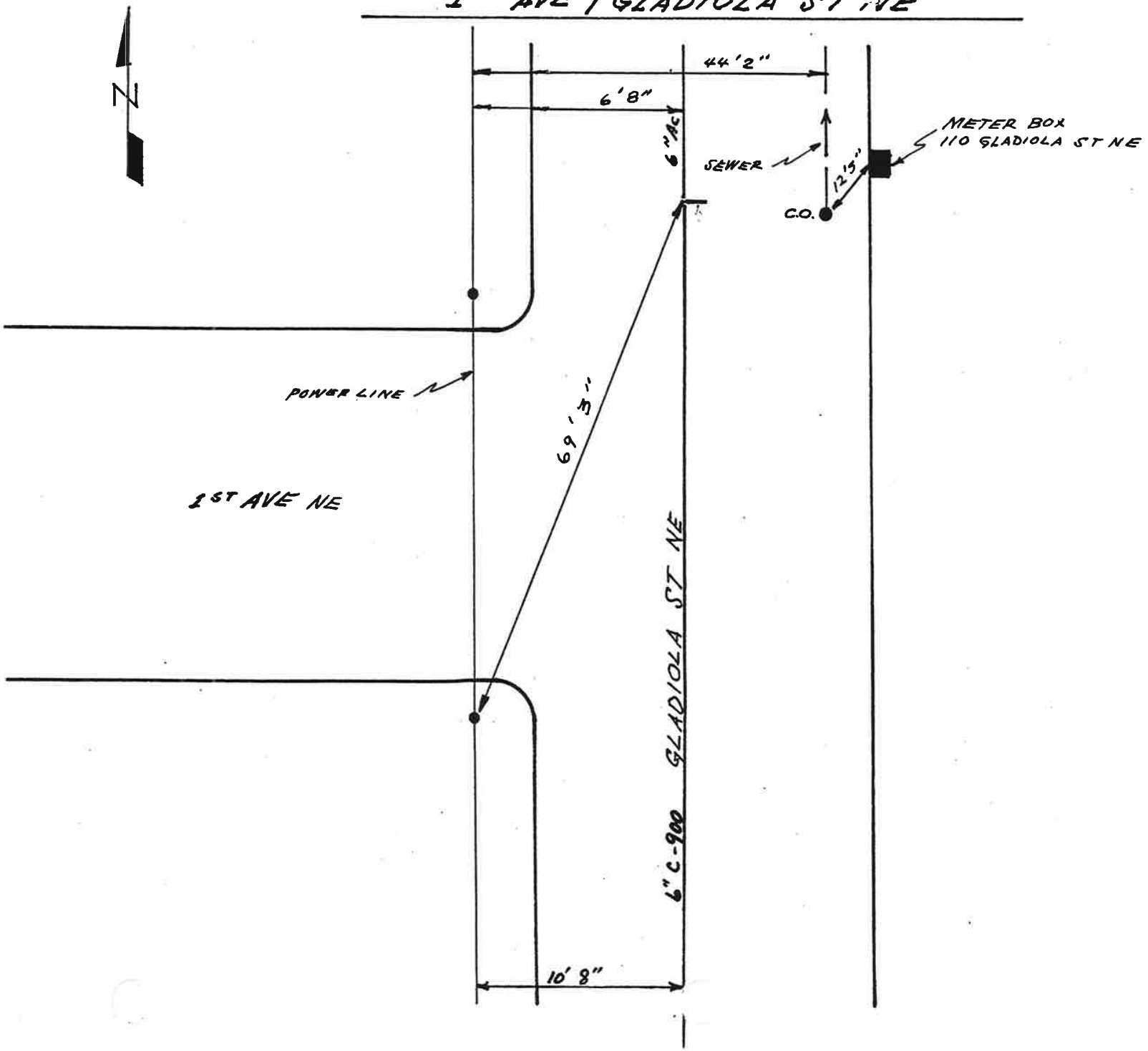


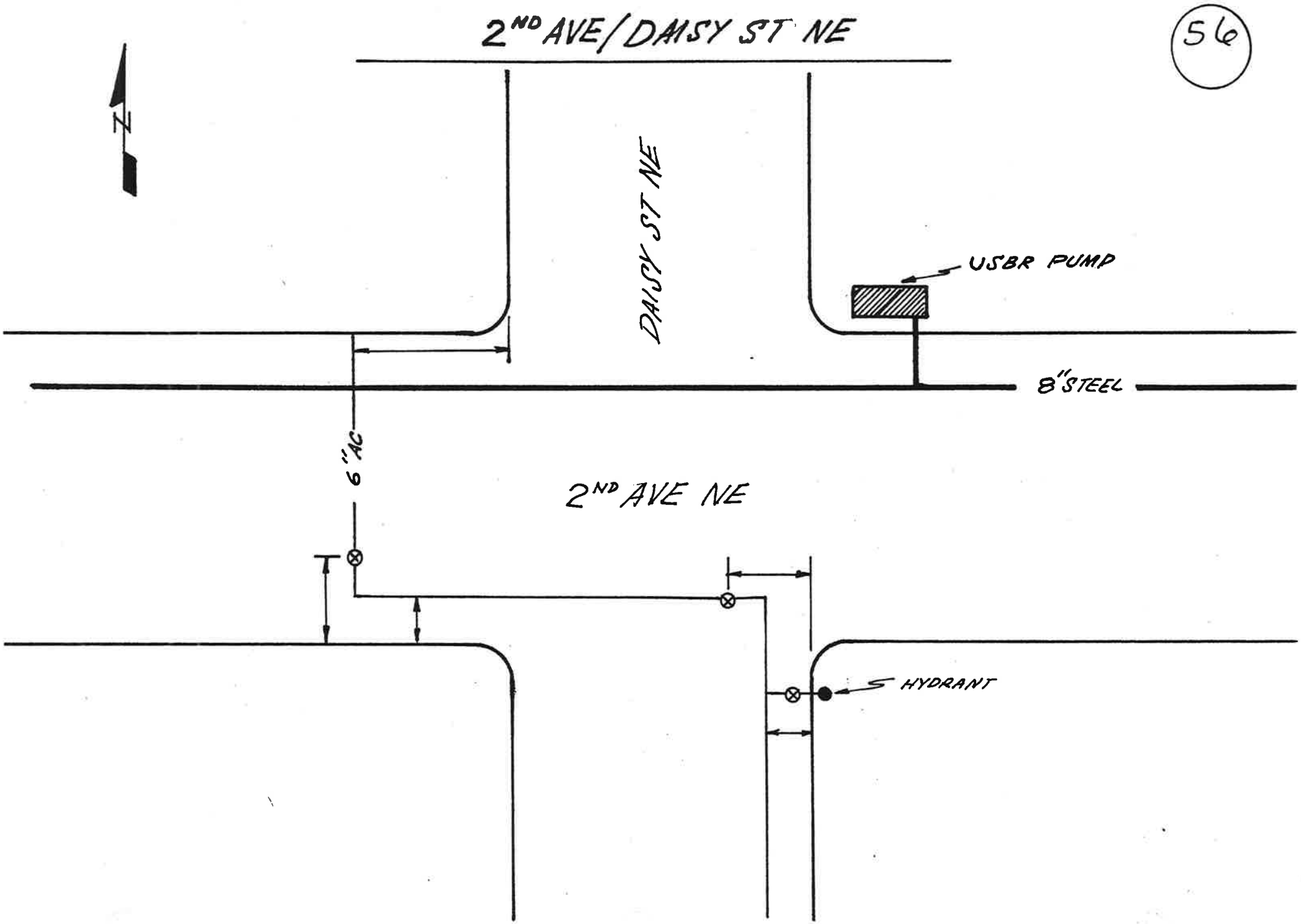

1ST AVE / DAISY ST NE
N
1ST AVE NE
DAISY ST NE
2'1"
3" AC
SL
6" AC
8" AC
8'6"
4'3"
4'3"
HYDRANT
SL
3'8"
7'6"
4" AC
6" AC
4'2"
SL
1" COPPER
1" COPPER
ALLEY NORTH OF MAIN AVE E
11'0"

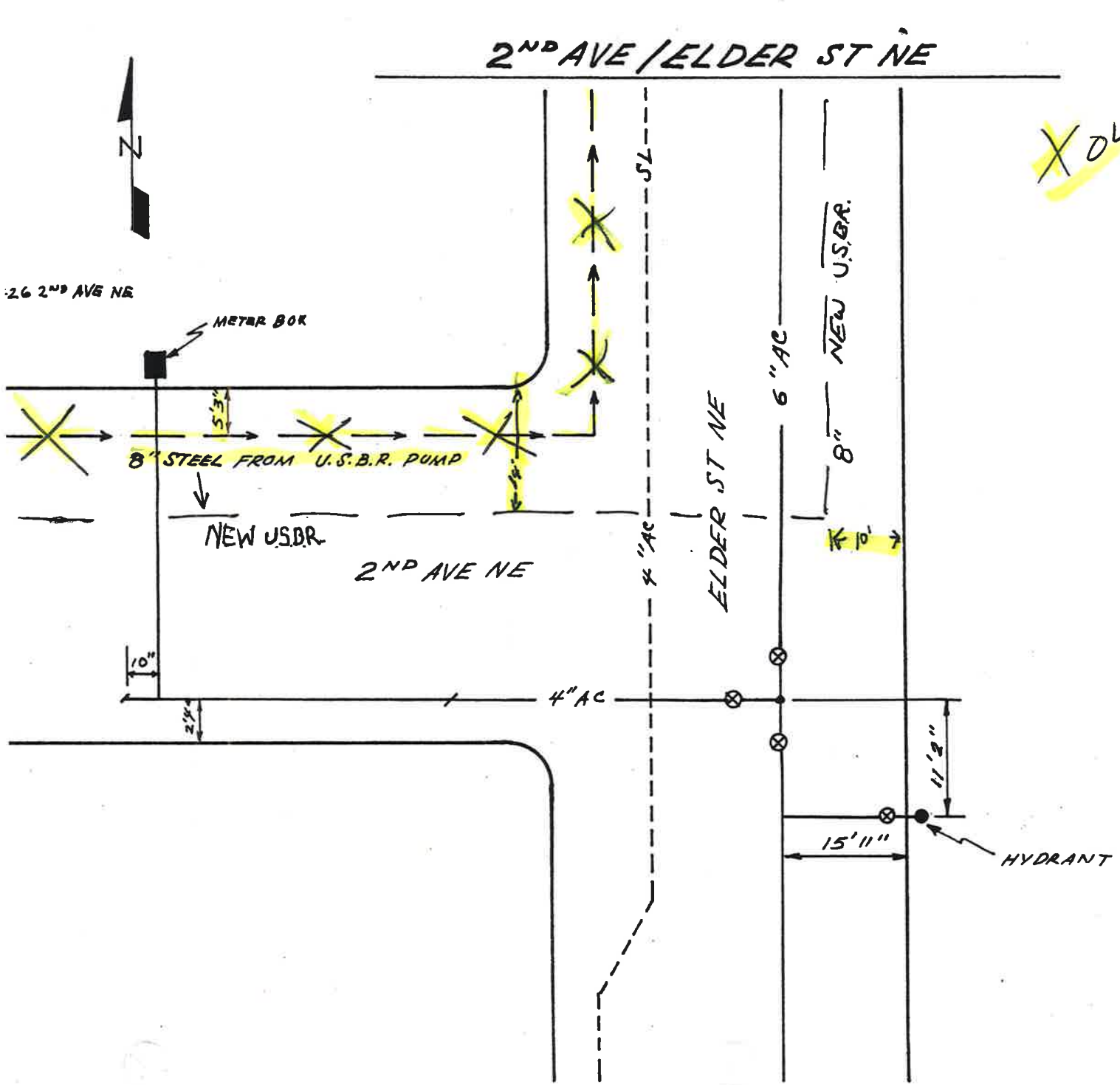

1ST AVE / ELDER ST NE
N
SL
6"AC
6'0"
6'4"
ELDER ST NE
1ST AVE NE
3"AC
SL
6"AC
12'2"
POLE
HYDRANT
4"AC
14'4"
22° BEND
4"AC


1ST AVE/FERN ST NE
N
FERN ST NE
SEWER MAIN
1ST AVE NE
POLE
POLE
POWER LINE
POLE
40'8"
CLEAN OUT
13'5"
CO
8" AC

1ST AVE / GLADIOLA ST NE

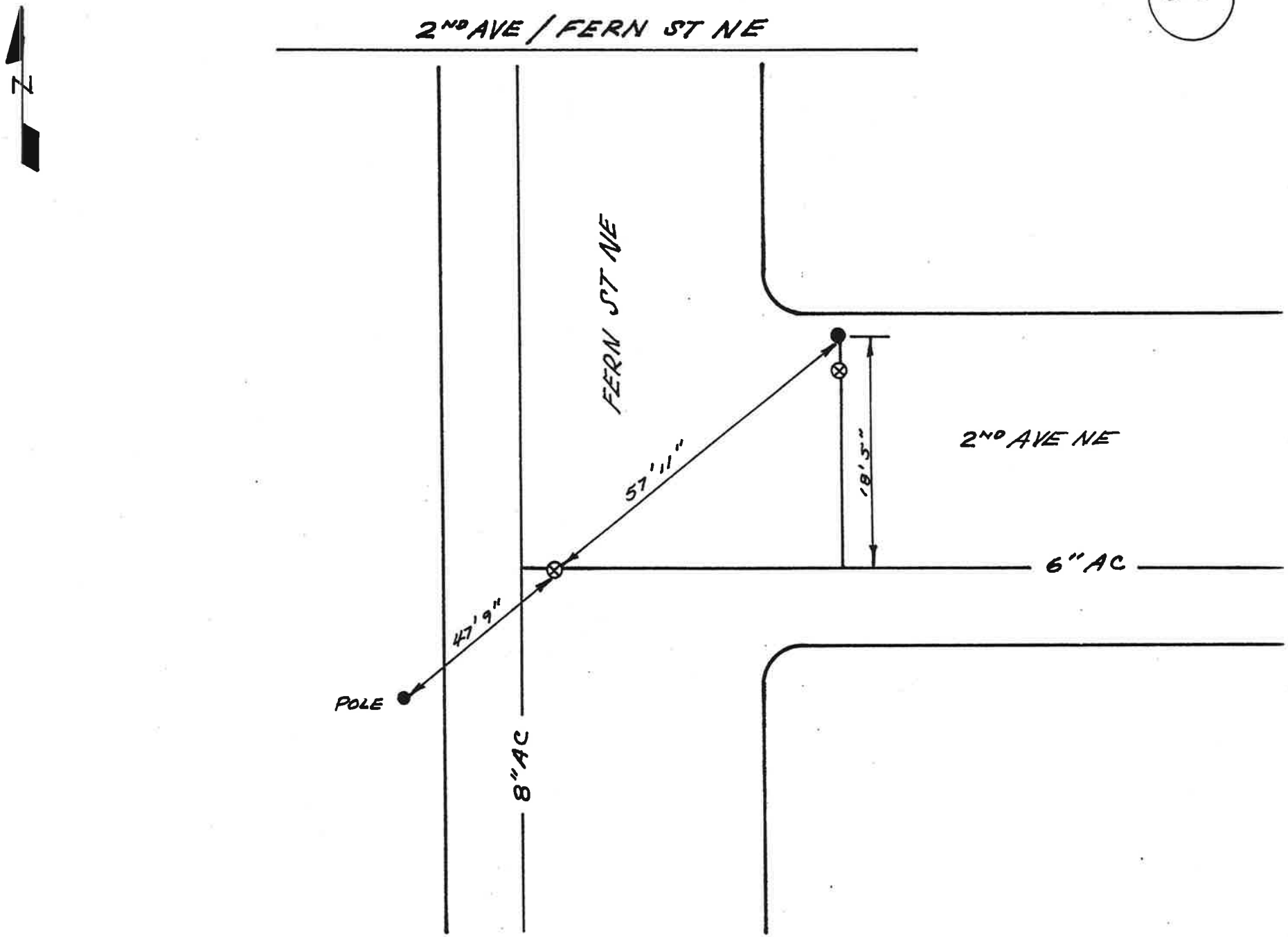


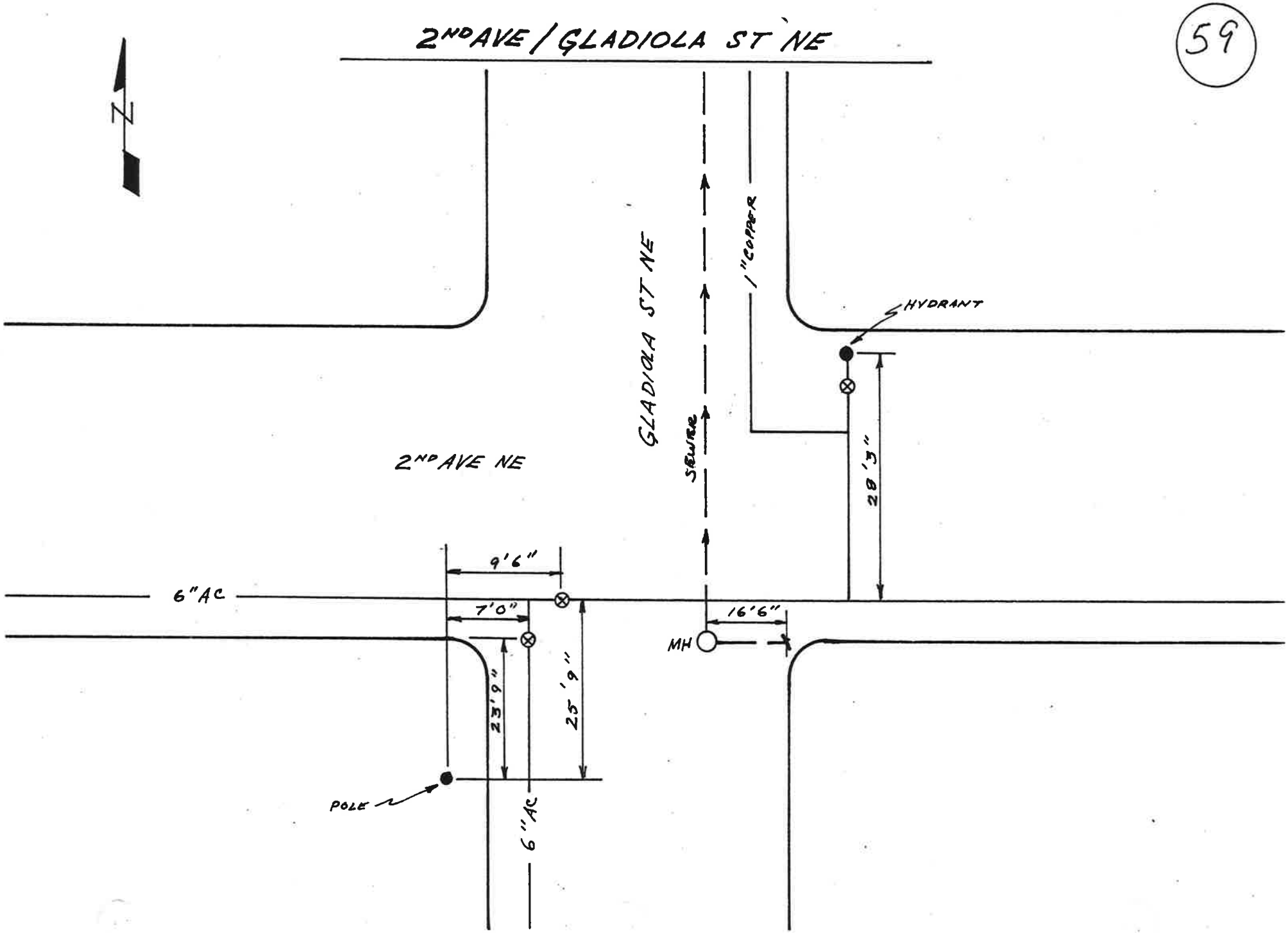

2ND AVE/DAISY ST NE
N
DAISY ST NE
USBR PUMP
8"STEEL
6"AC
2ND AVE NE
HYDRANT



CARLIE
WILLIMS
754 0260
398-4124

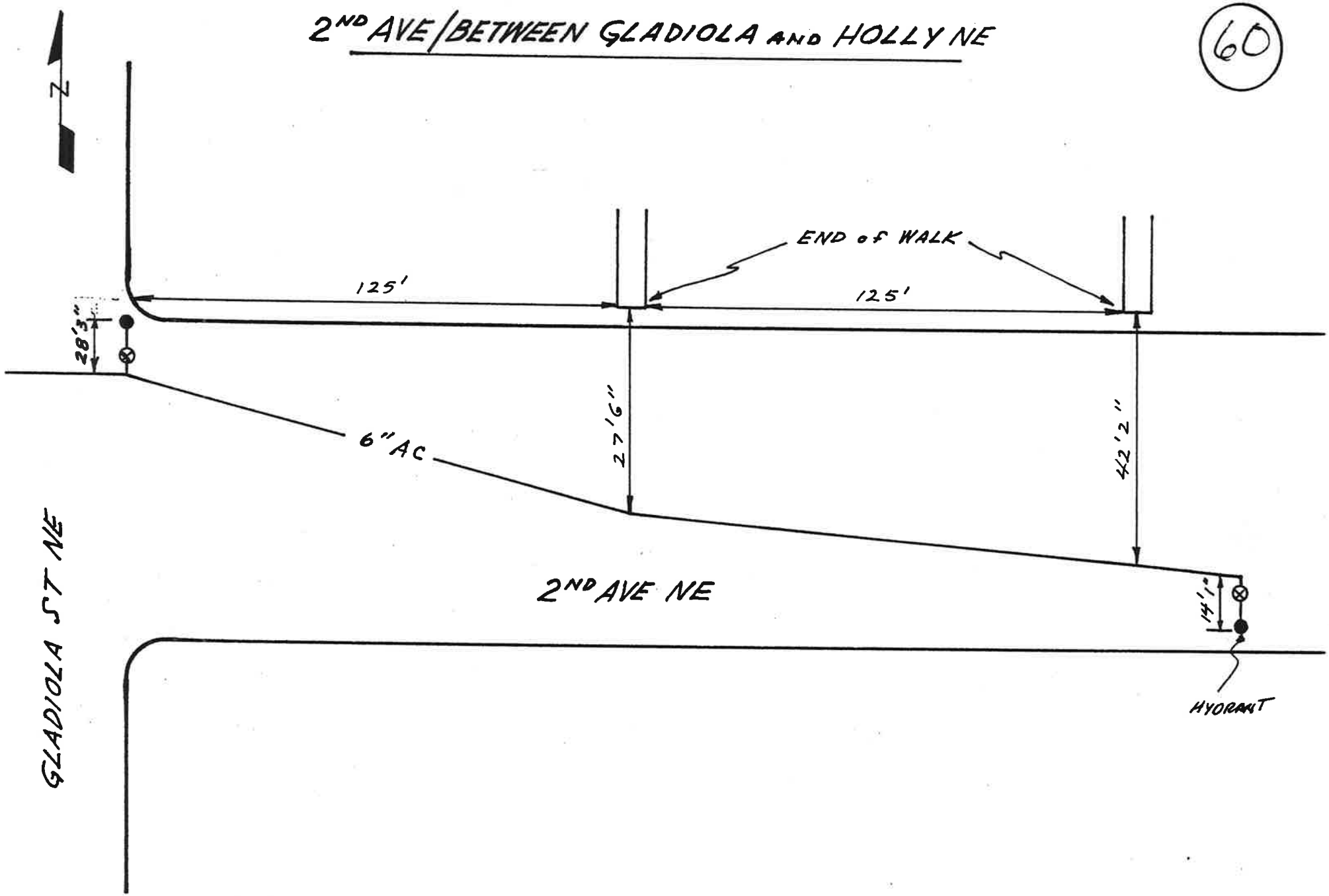
U.S BUREAU OF RECLAMATION

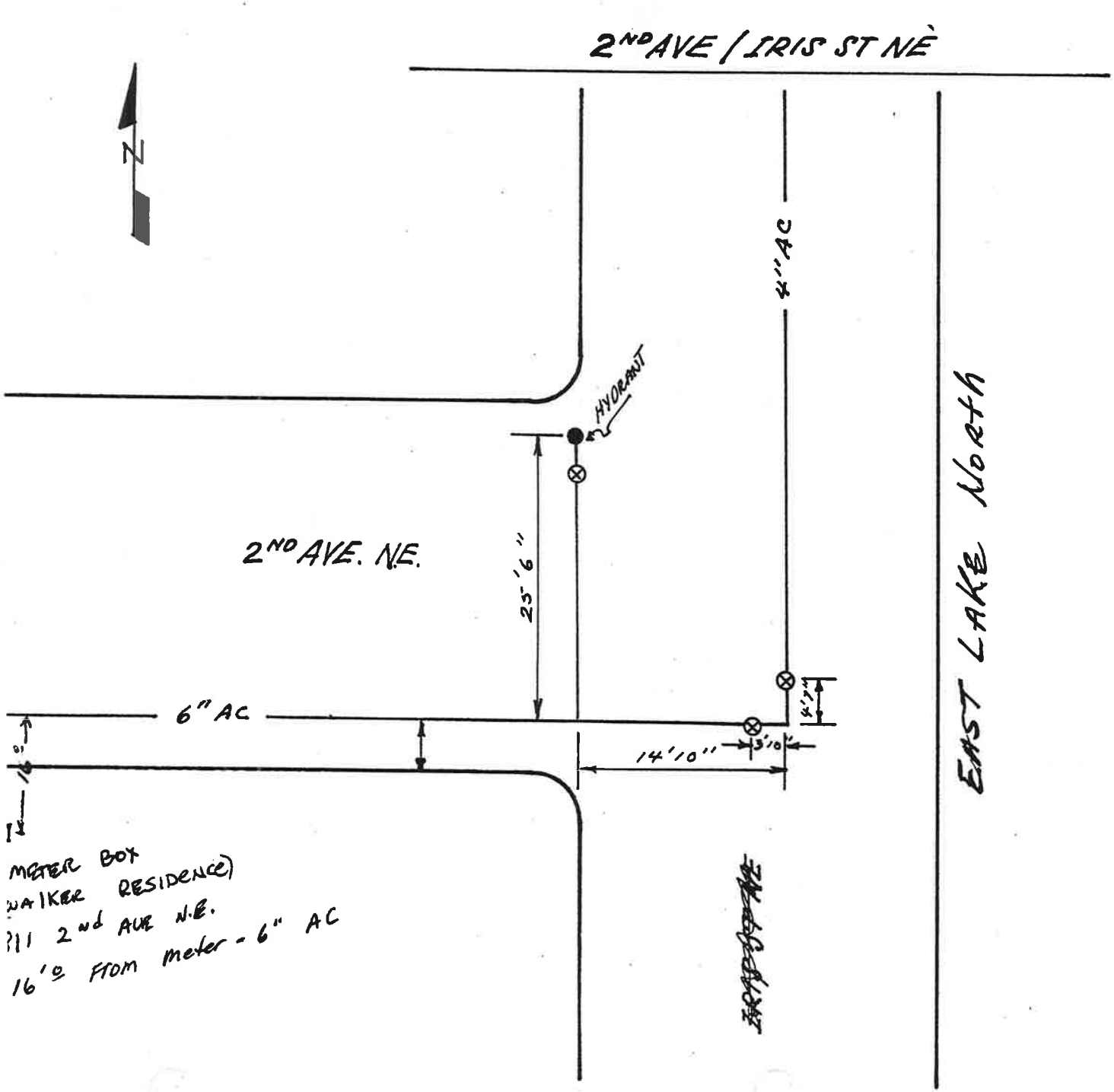

N
2ND AVE / FERN ST NE
FERN ST NE
2ND AVE NE
57'11"
18'3"
6" AC
47'9"
POLE
8" AC

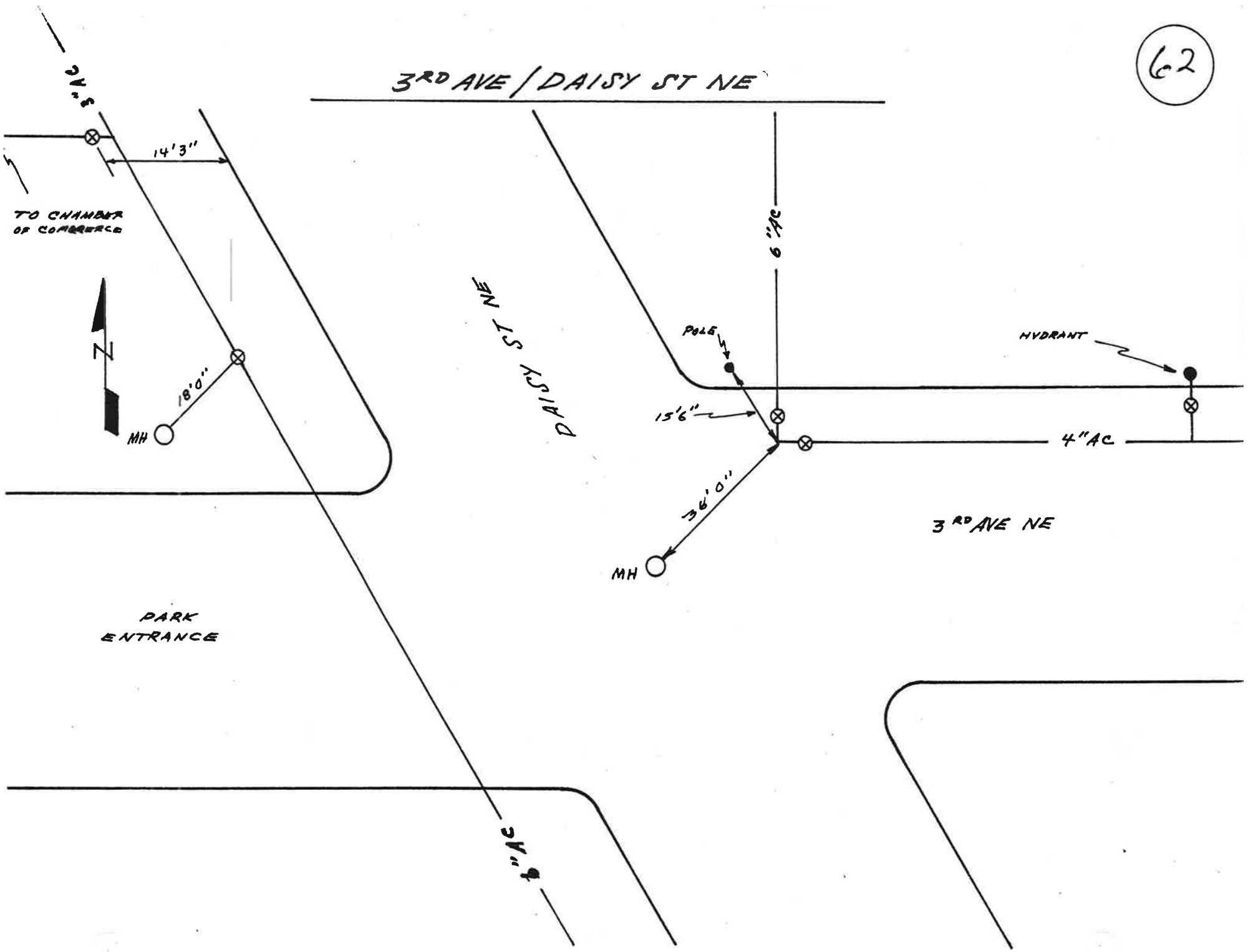

2ND AVE / GLADIOLA ST NE
N
GLADIOLA ST NE
1" COPPER
HYDRANT
2ND AVE NE
SEWER
29'3"
9'6"
6"AC
7'0"
16'6"
MH
23'9"
25'9"
POLE
6" AC

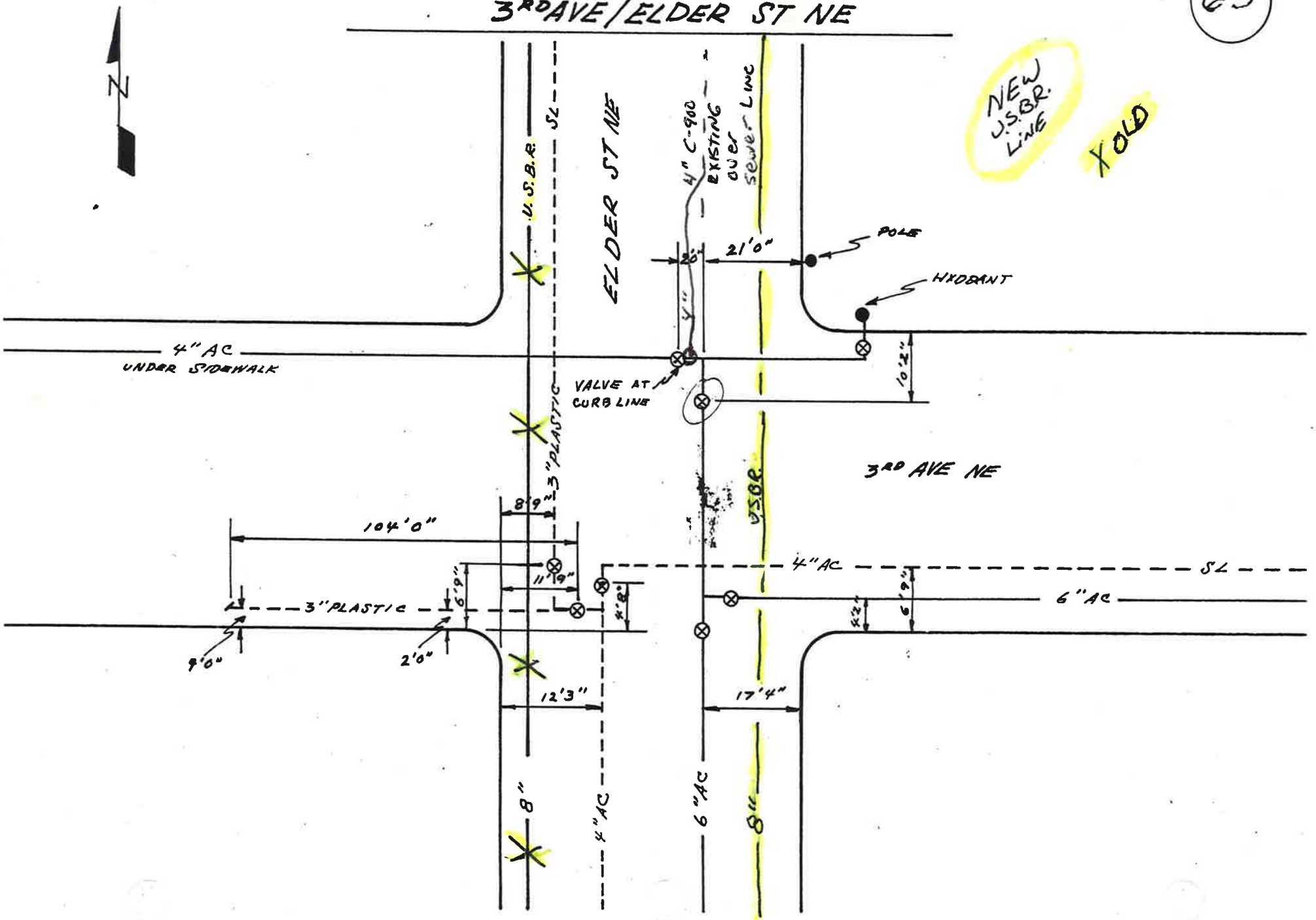
2ND AVE/BETWEEN GLADIOLA AND HOLLY NE

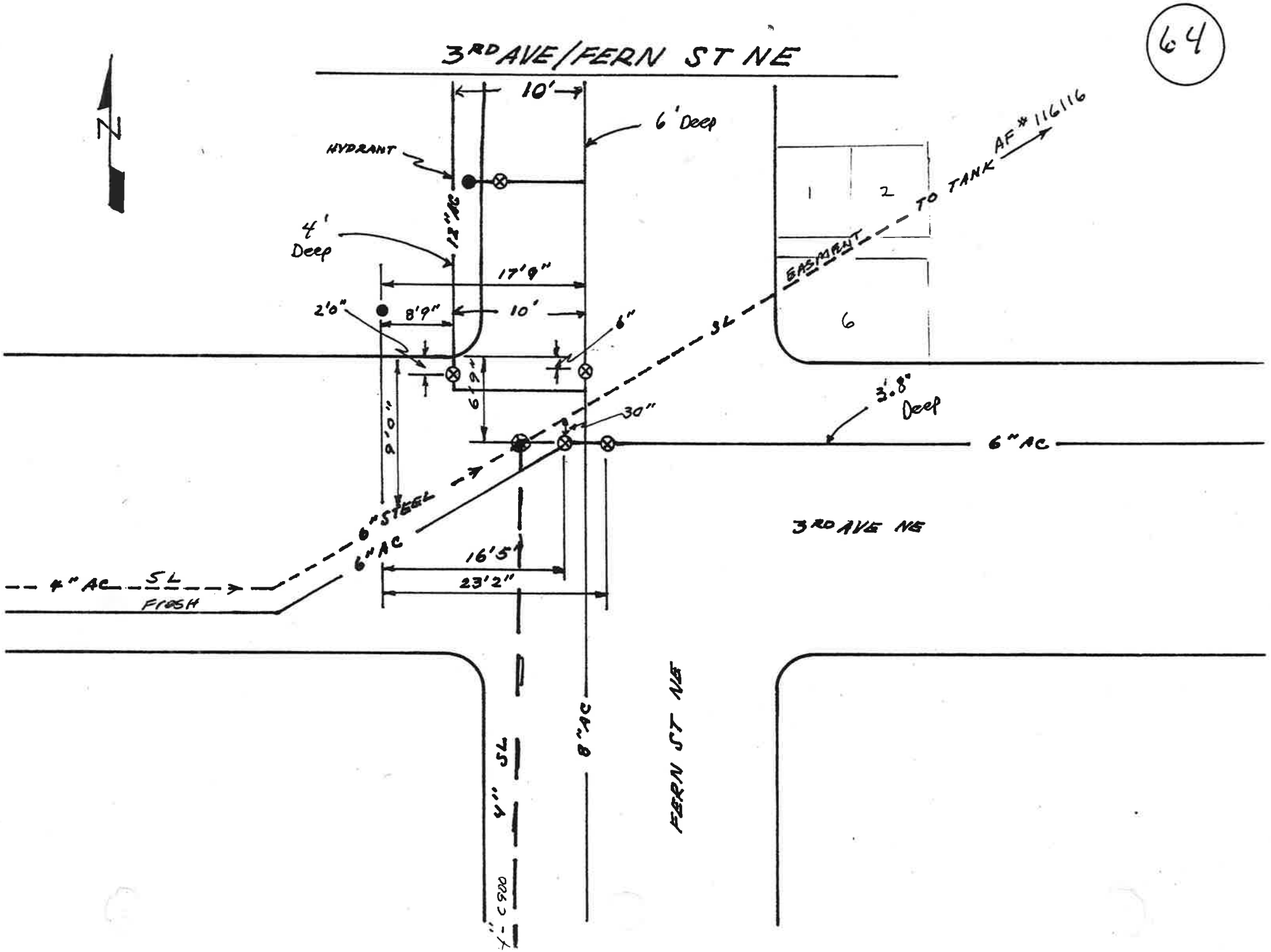
60

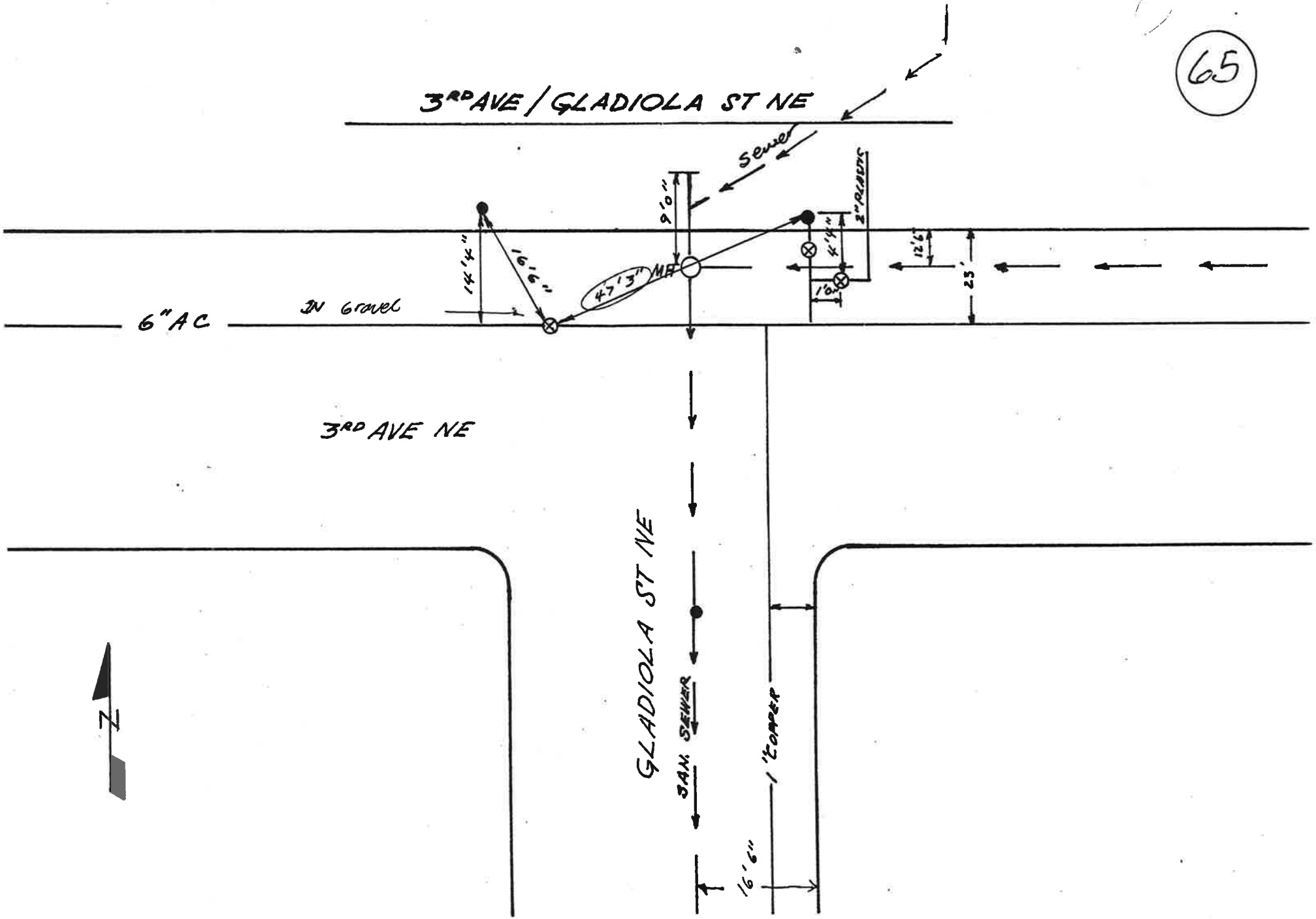



2ND AVE / IRIS ST NE
N
4" AC
HYDRANT
2ND AVE. N.E.
25'6"
6" AC
4'7"
3'0
14'10"
EAST LAKE NORTH
METER BOX
WALKER RESIDENCE)
211 2nd AVE N.E.
16'0 FROM meter - 6" AC

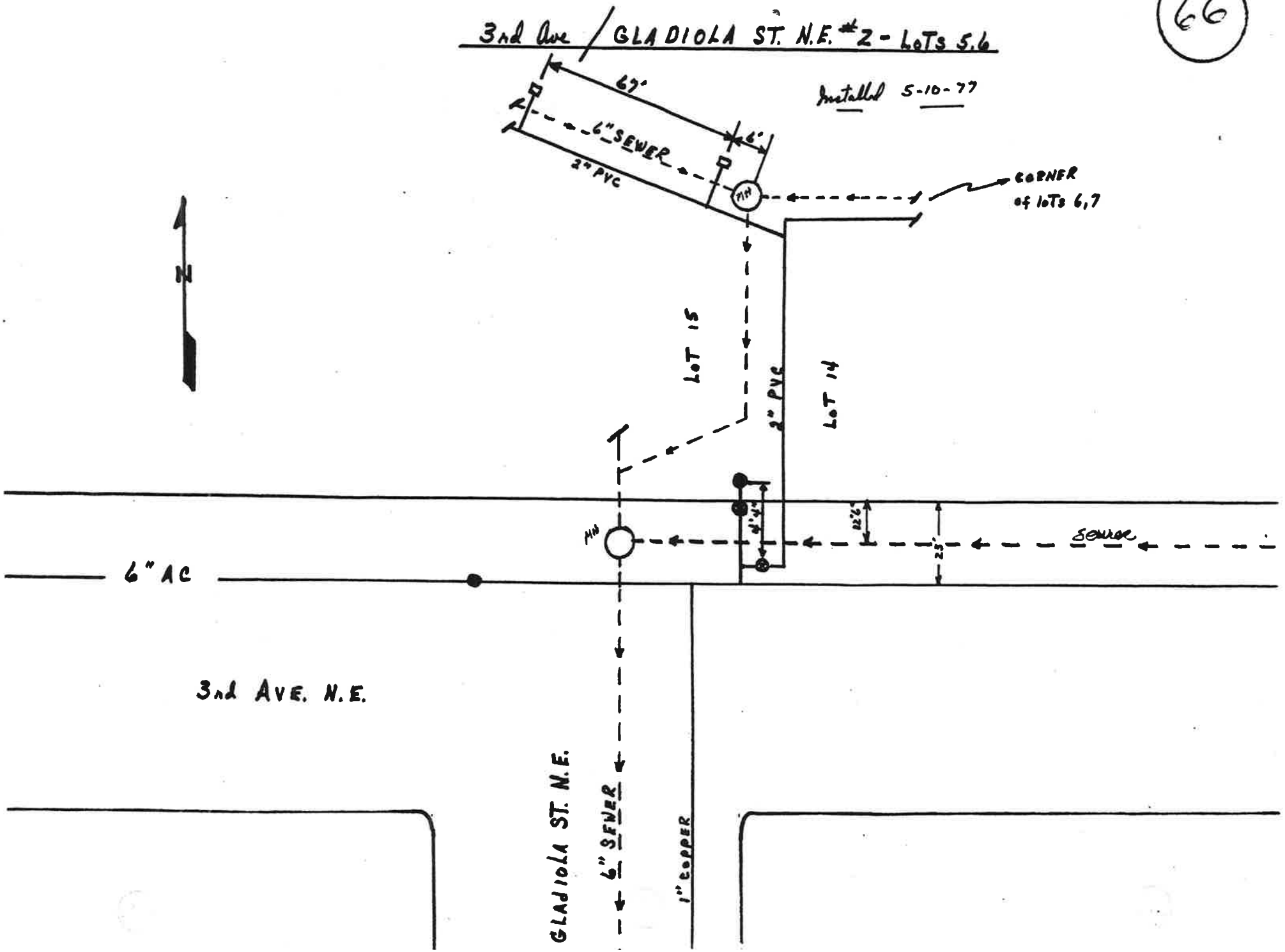

3RD AVE / DAISY ST NE
2" S
14'3"
TO CHAMBER OF COMMERCE
N
18'0"
MH
PARK ENTRANCE
4" AC
DAISY ST NE
6" AC
POLE
HYDRANT
15'6"
4" AC
36'0"
MH
3RD AVE NE

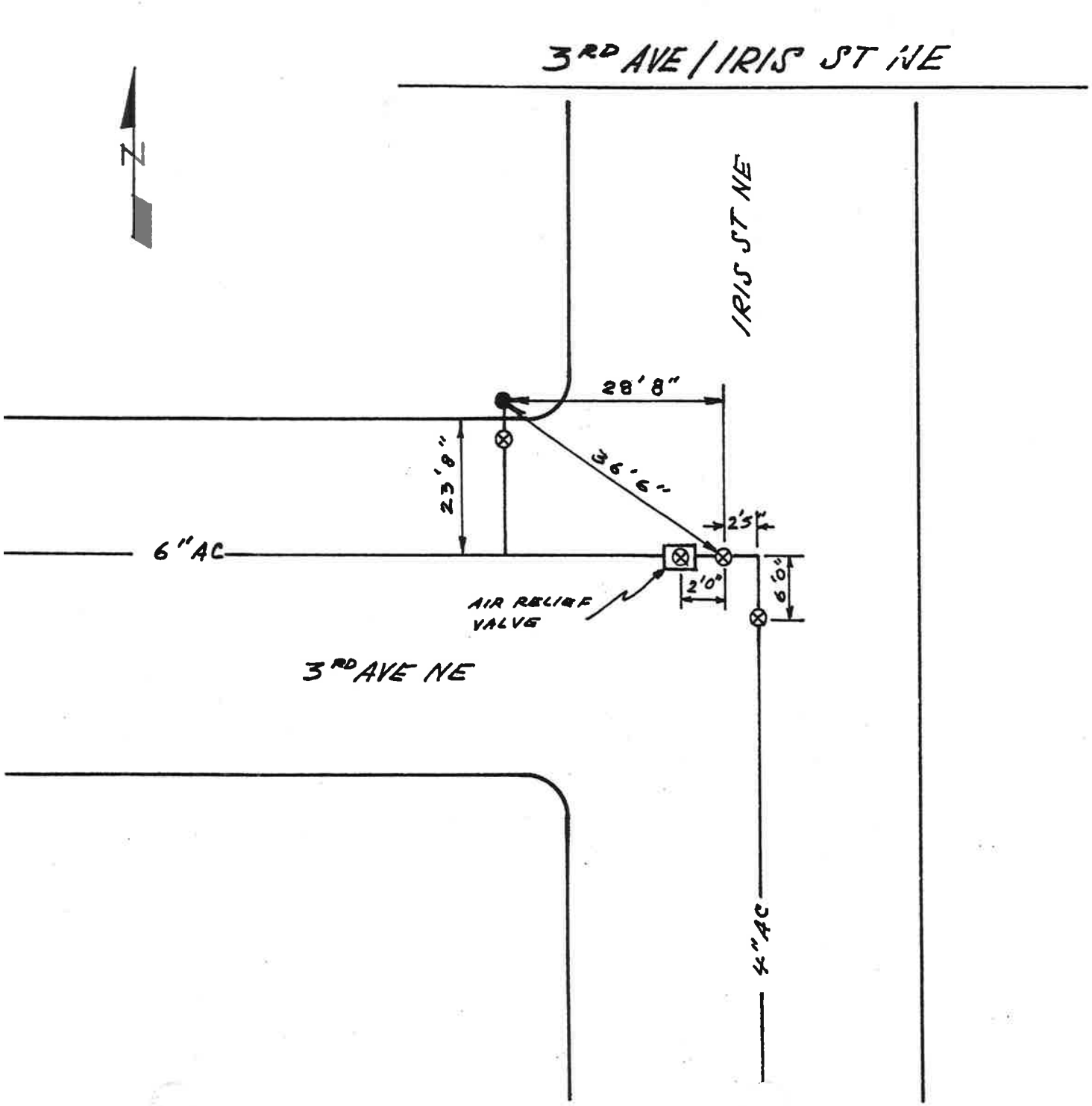

3RD AVE/ELDER ST NE
N
ELDER ST NE
U.S.B.R.
SL
4" C-900 EXISTING OVER SEWER LINE
NEW U.S.B.R. LINE
OLD
POLE
HYDRANT
21'0"
4"
4" AC UNDER SIDEWALK
VALVE AT CURB LINE
10'2"
3" PLASTIC
3RD AVE NE
USBR
8'9"
104'0"
4" AC
SL
11'9"
6'9"
3" PLASTIC
4'8"
6" AC
9'0"
2'0"
12'3"
17'4"
8"
4" AC
6" AC
8"


3RD AVE/FERN ST NE
N
10'
6' Deep
HYDRANT
12" AC
4' Deep
17'9"
2'0"
8'9"
10'
6"
6'9"
9'0"
30"
3'8" Deep
6" AC
SL
TO TANK AF # 116116
EASEMENT
1
2
6
6" STEEL
6" AC
4" AC SL
FRESH
16'5"
23'2"
3RD AVE NE
FERN ST NE
4" SL
8" AC
1" = 20'0"

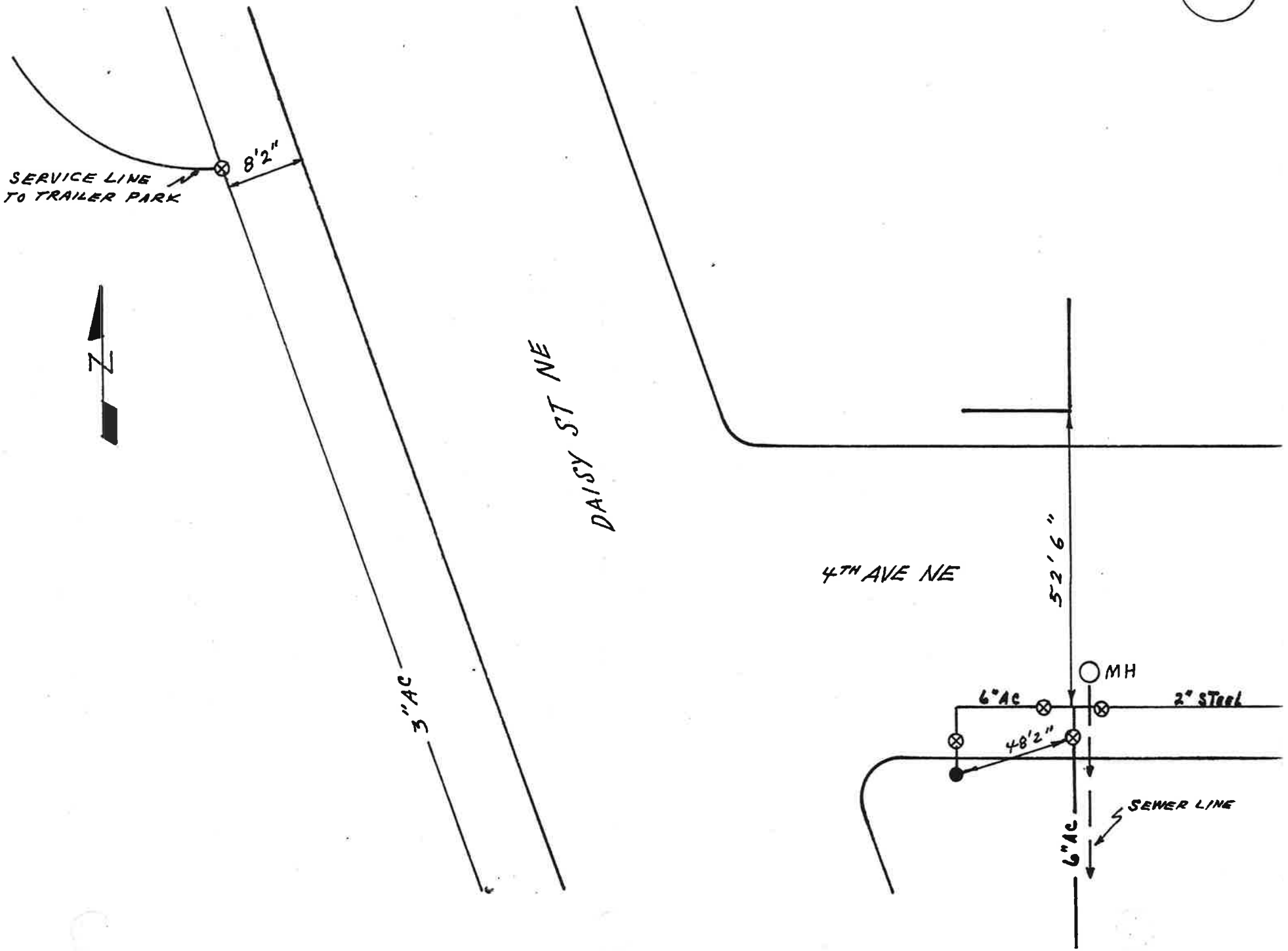

3RD AVE / GLADIOLA ST NE
sewer
9'0"
2" risers
4'4"
12'6"
23'
14'4"
16'6"
47'3" MH
1'8"
6" AC
IN Gravel
3RD AVE NE
GLADIOLA ST NE
SAN. SEWER
1" COPPER
16'6"
N

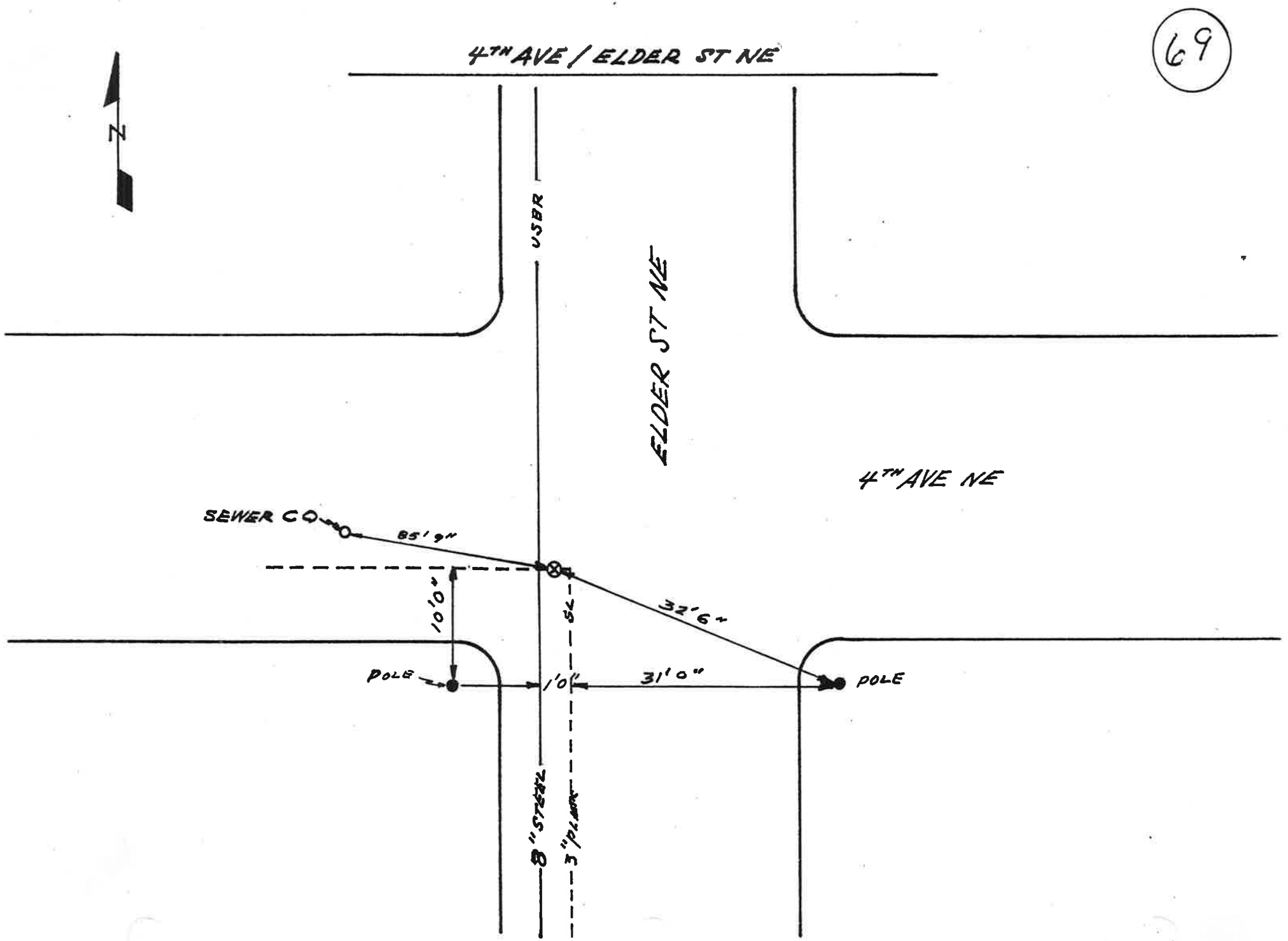
3rd Ave / GLADIOLA ST. N.E. #2 - LOTS 5,6

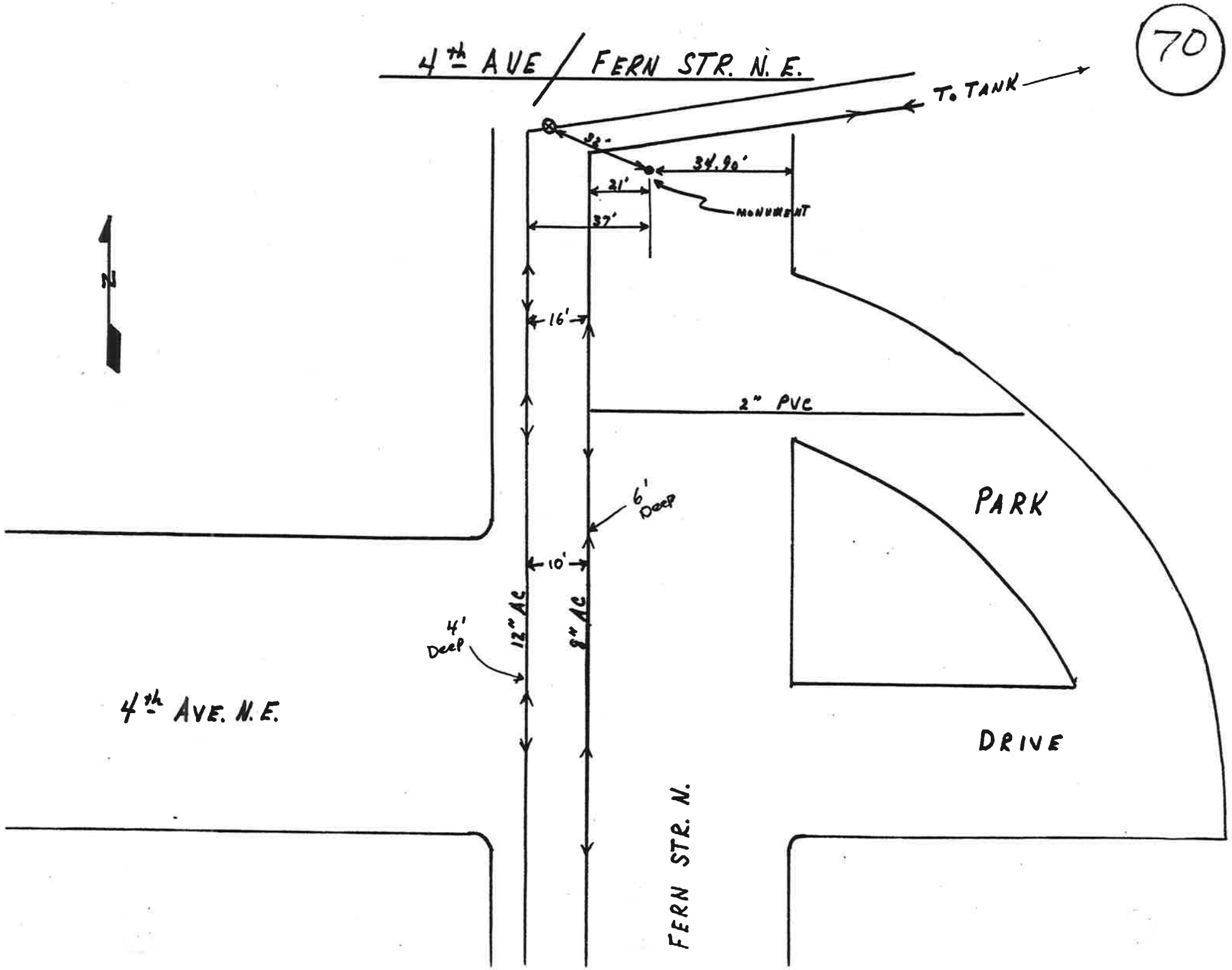



3RD AVE / IRIS ST NE
N
IRIS ST NE
28'8"
23'8"
36'6"
2'5"
6"AC
2'10"
6'10"
AIR RELIEF VALVE
3RD AVE NE
4"AC

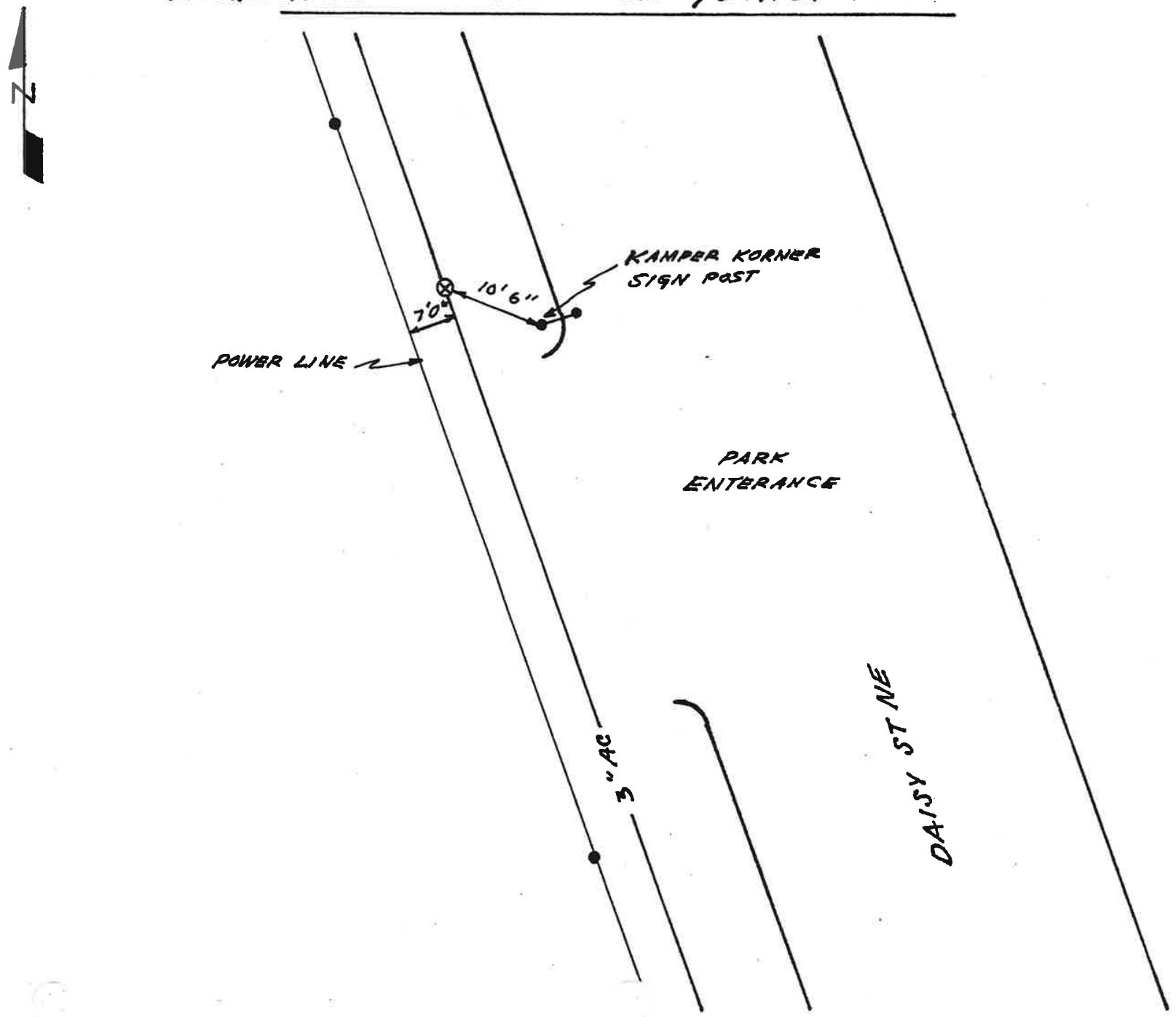
4TH AVE / DAISY ST NE

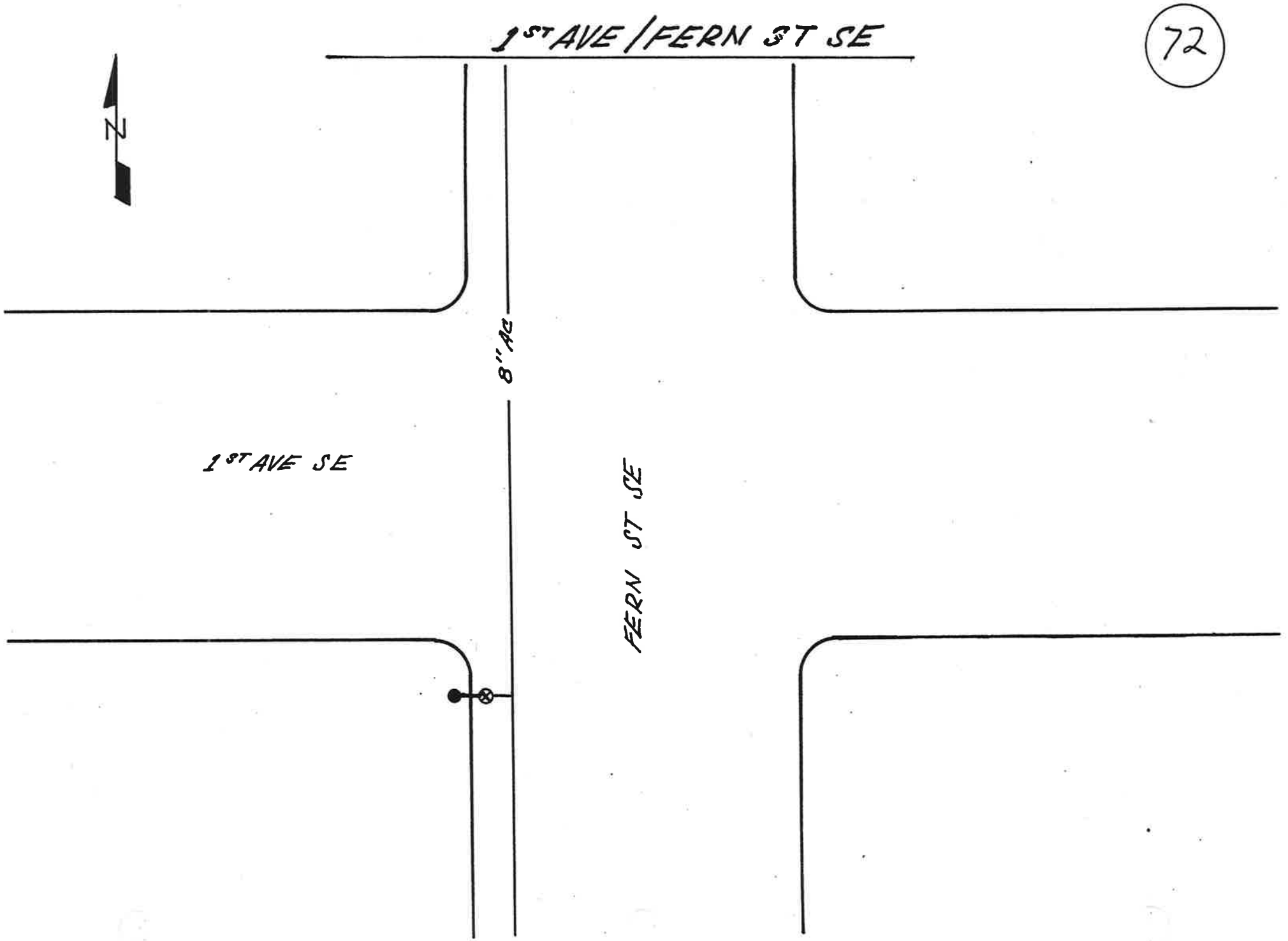


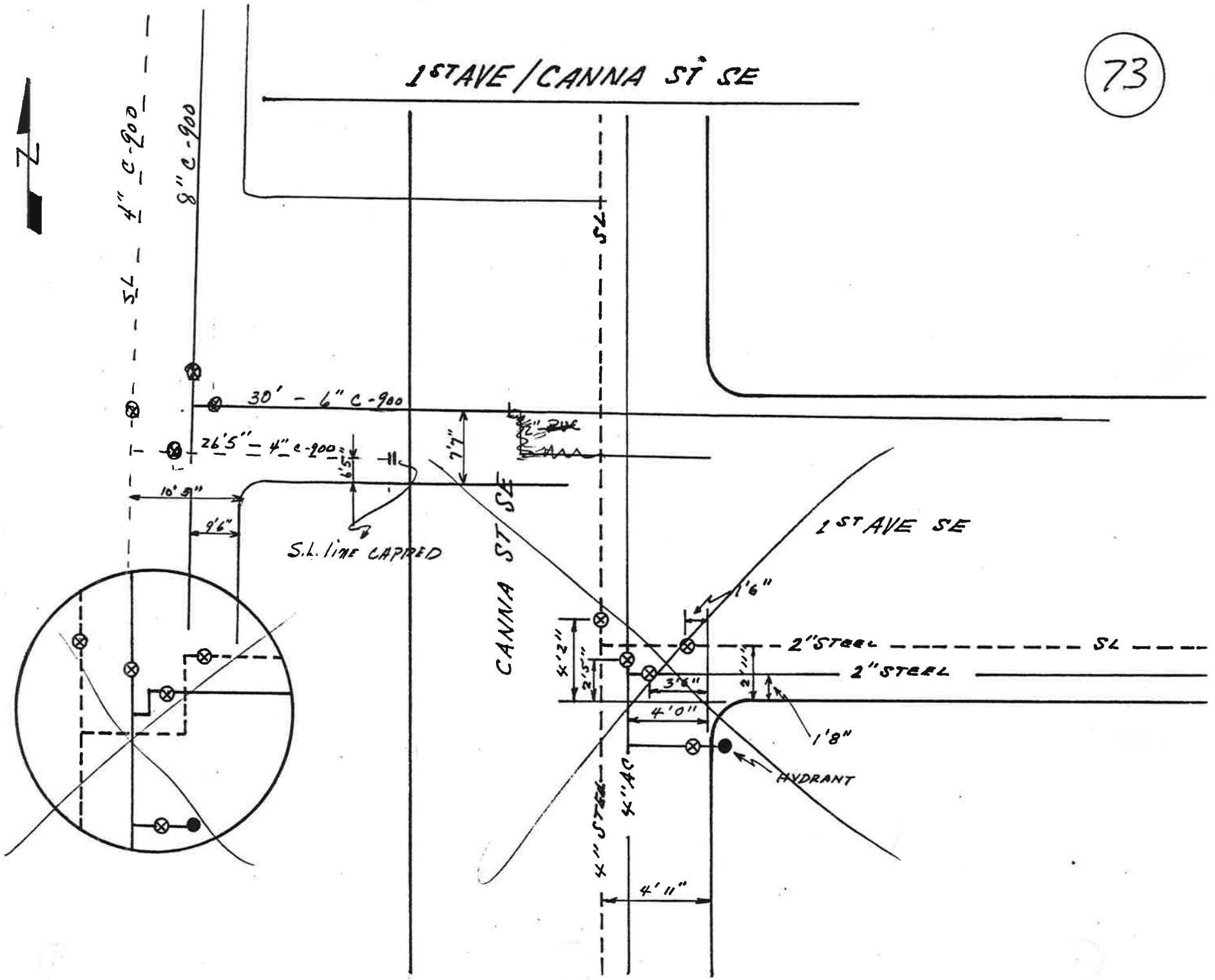

4TH AVE / ELDER ST NE
N
USBR
ELDER ST NE
4TH AVE NE
SEWER CO
85'9"
10'0"
32'6"
POLE
1'0"
31'0"
POLE
8" STEEL
3" PLUMB

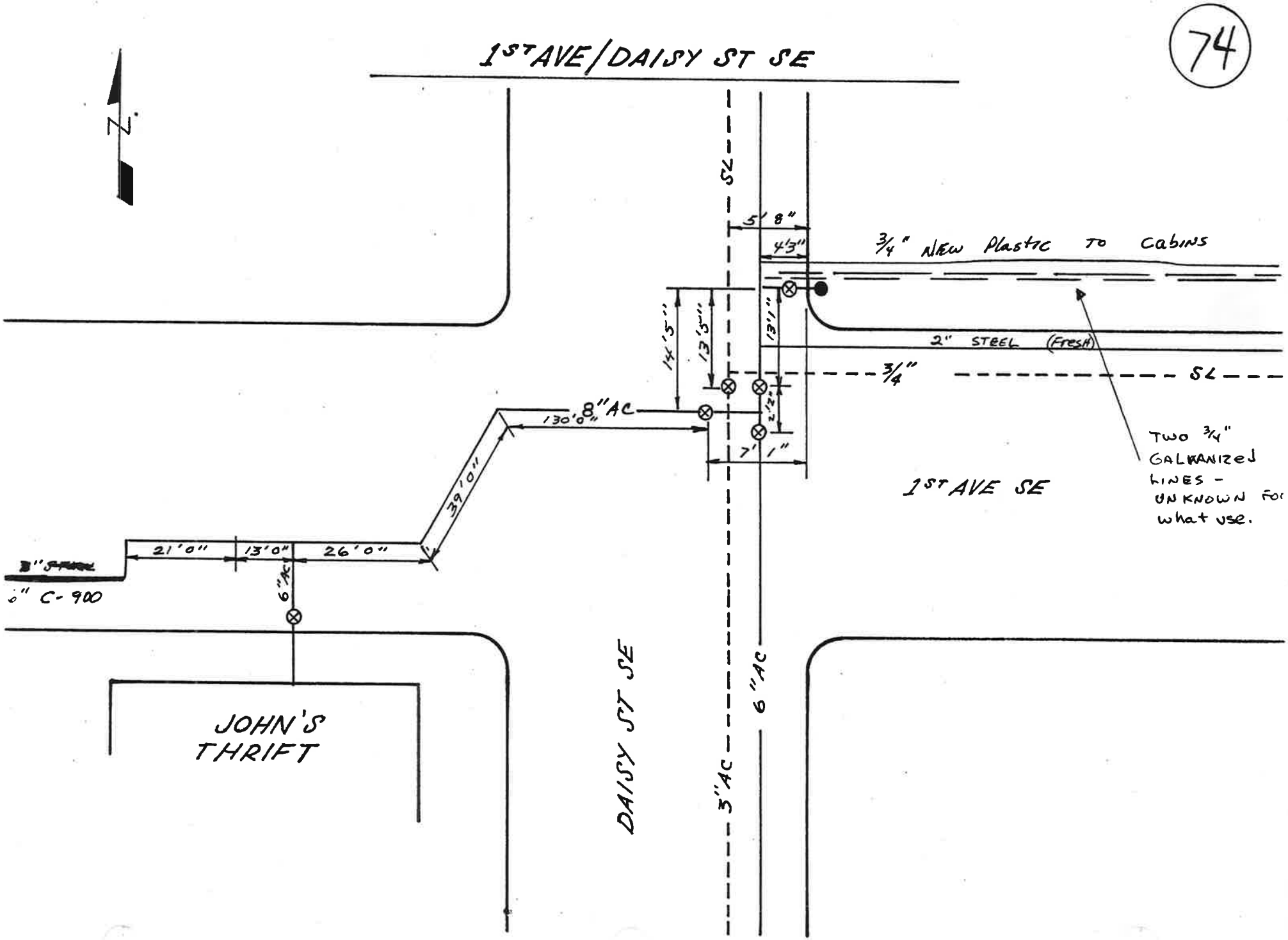

4th AVE / FERN STR. N. E.
TO TANK
52°
34.90'
21'
37'
MONUMENT
N
16'
2" PVC
6' Deep
10'
12" AC
8" AC
4' Deep
PARK
4th AVE. N. E.
DRIVE
FERN STR. N.

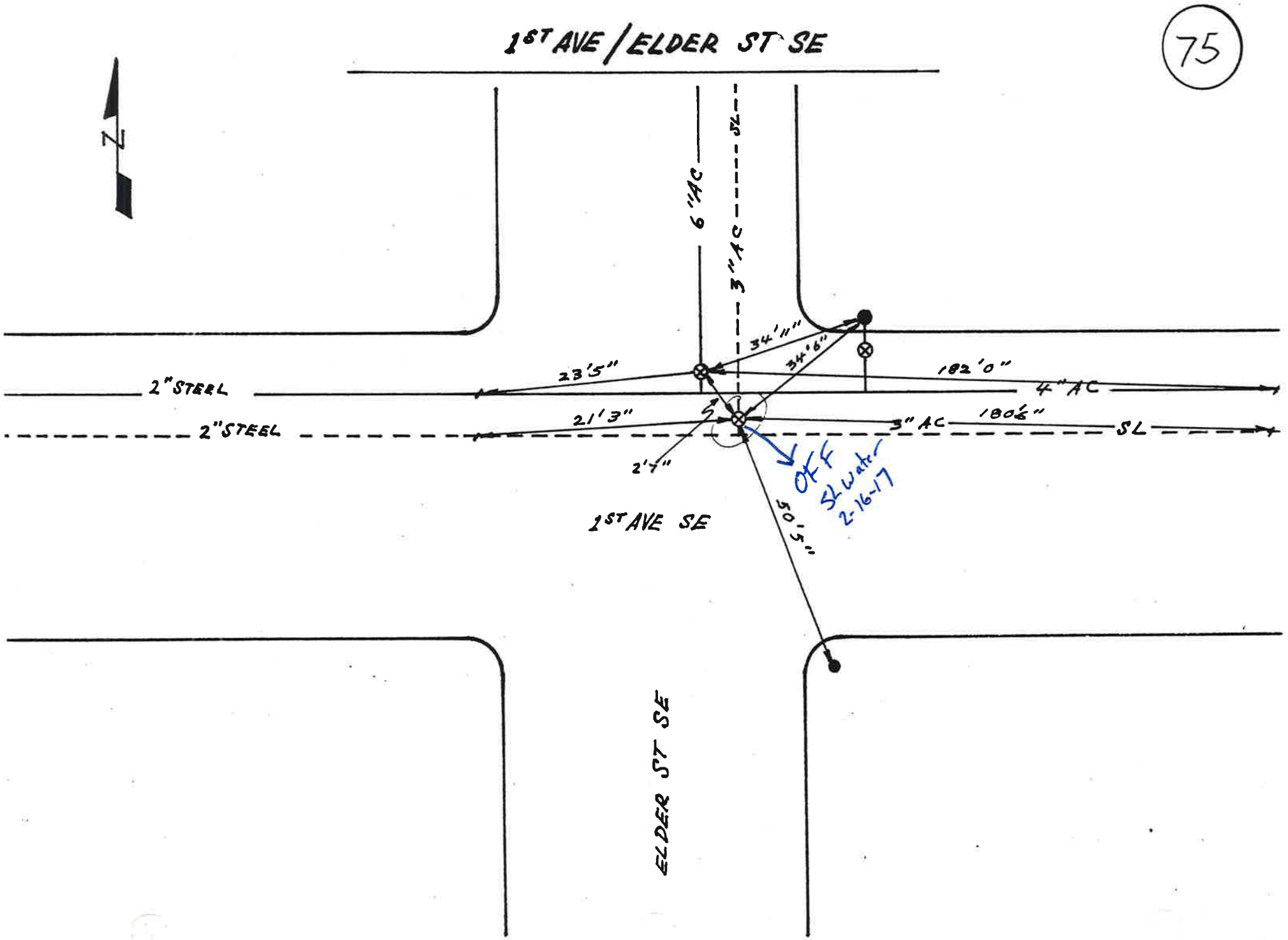
ENTERANCE TO TRAILER PARK / DAISY ST NE




1ST AVE / FERN ST SE
N
8" AC
1ST AVE SE
FERN ST SE

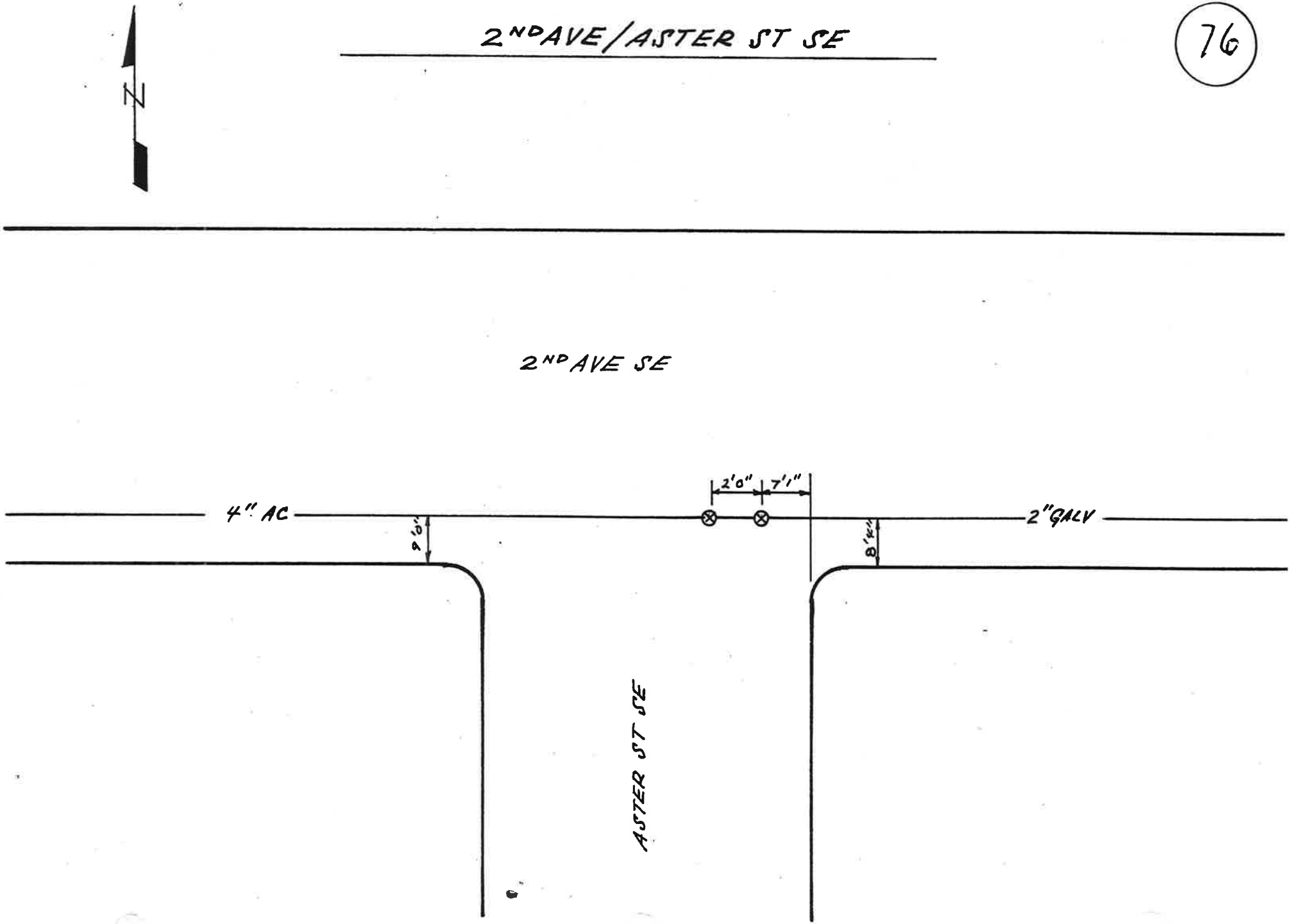

1ST AVE / CANNA ST SE
N
8" C-900
4" C-900
SL
30' - 6" C-900
26'5" - 4" C-900
6'5"
7'7"
10'9"
9'6"
S.L. line CAPPED
CANNA ST SE
1ST AVE SE
1'6"
2" STEEL
SL
2" STEEL
4'2"
2'5"
3'8"
2'11"
4'0"
1'8"
HYDRANT
4" STEEL
4" AC
4'11"


1ST AVE/DAISY ST SE
N
SL
5' 8"
4'3"
3/4" NEW Plastic TO Cabins
14'5"
13'5"
13'1"
2" STEEL (FRESH)
3/4"
SL
8"AC
130'0"
2'2"
7' 1"
TWO 3/4" GALVANIZED LINES - UNKNOWN FOR what use.
1ST AVE SE
39'0"
21'0"
13'0"
26'0"
3" [illegible]
6" C-900
6"AC
JOHN'S THRIFT
DAISY ST SE
3"AC
6"AC


1ST AVE / ELDER ST SE
N
6" AC
3" AC
SL
34'11"
34'6"
23'5"
182'0"
2" STEEL
4" AC
21'3"
3" AC
180'6"
2" STEEL
SL
2'7"
OFF
SL water
2-16-17
1ST AVE SE
50'5"
ELDER ST SE

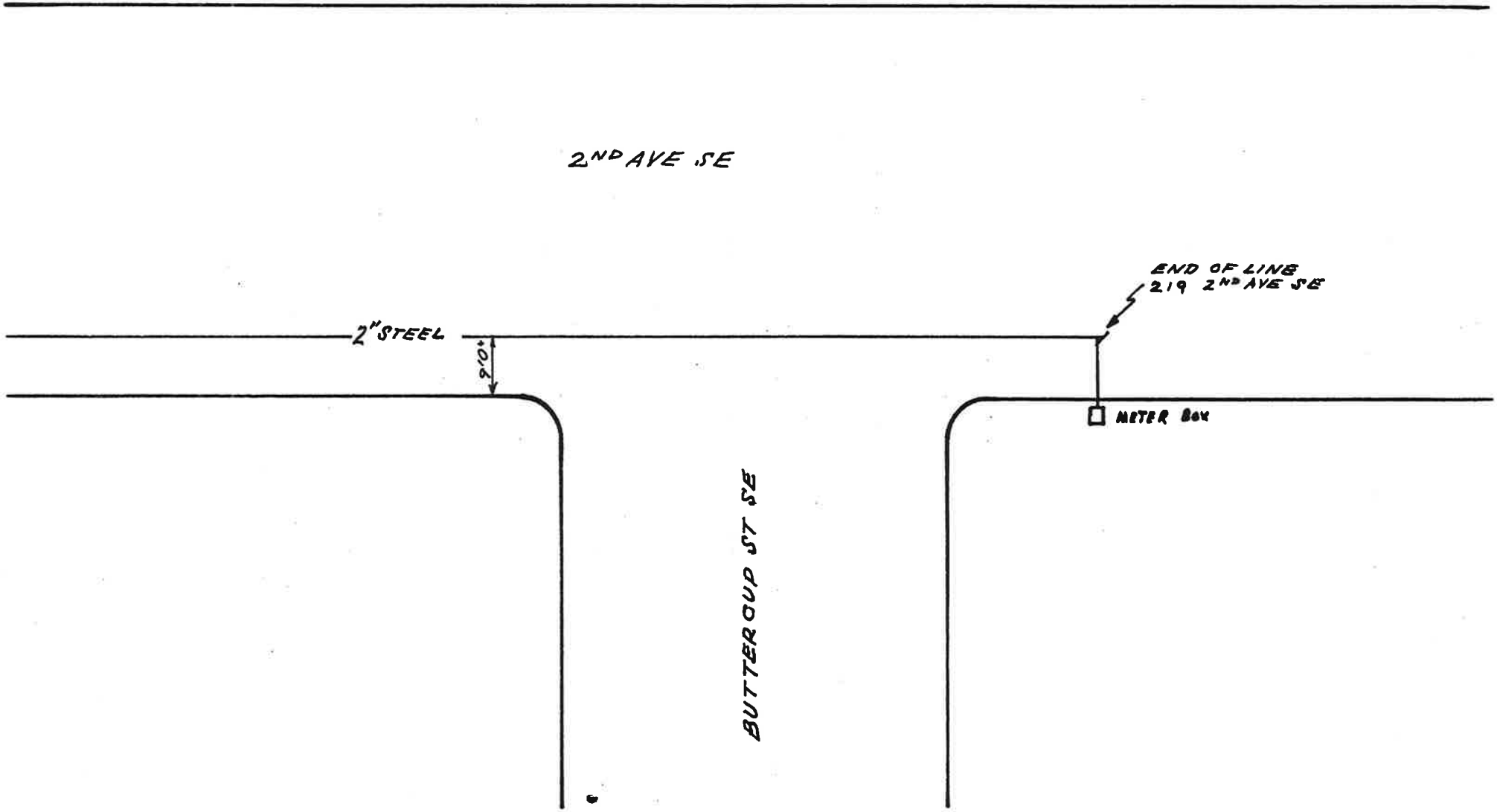
2ND AVE/ASTER ST SE

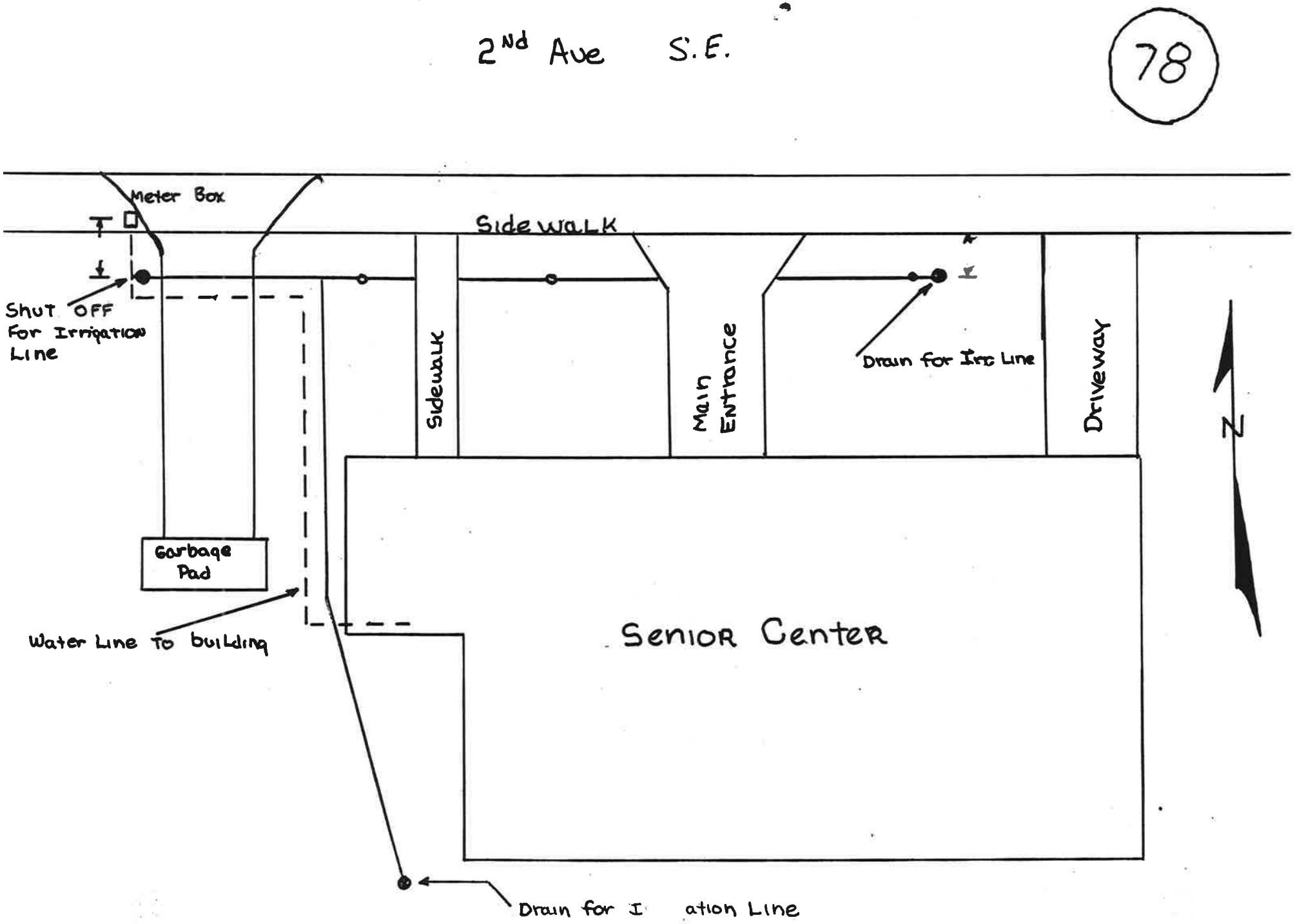
76

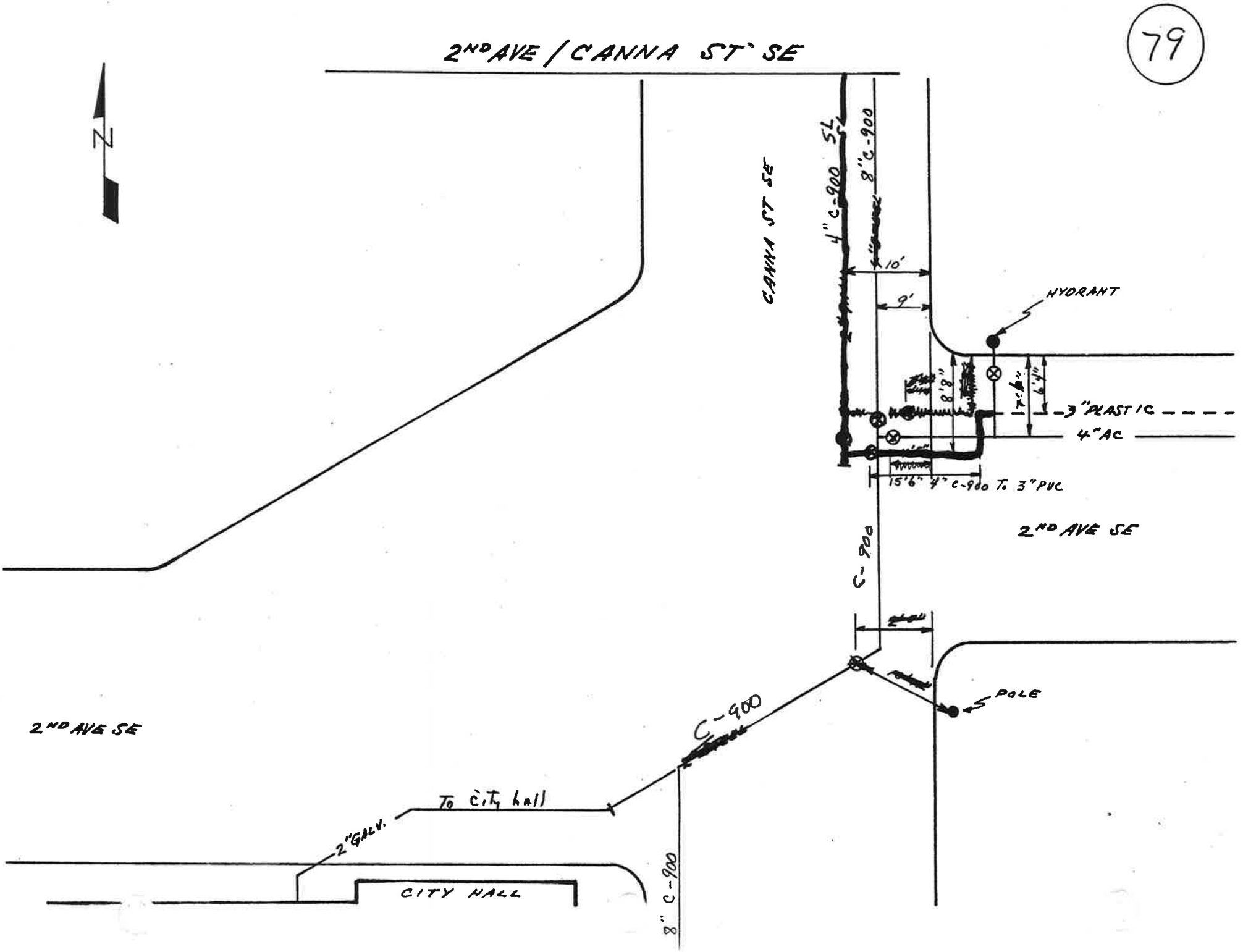


2ND AVE/BUTTERCUP ST SE

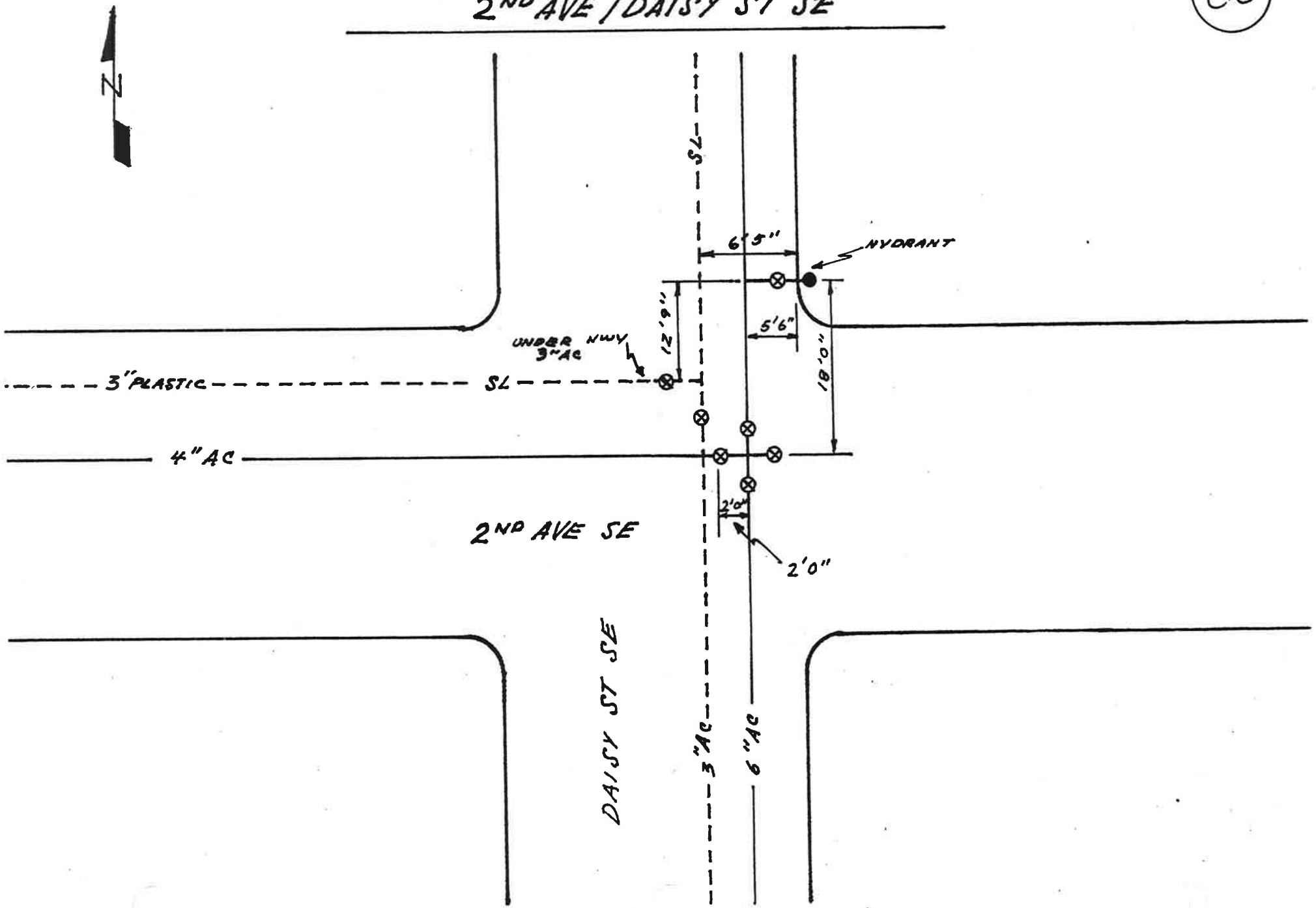
77

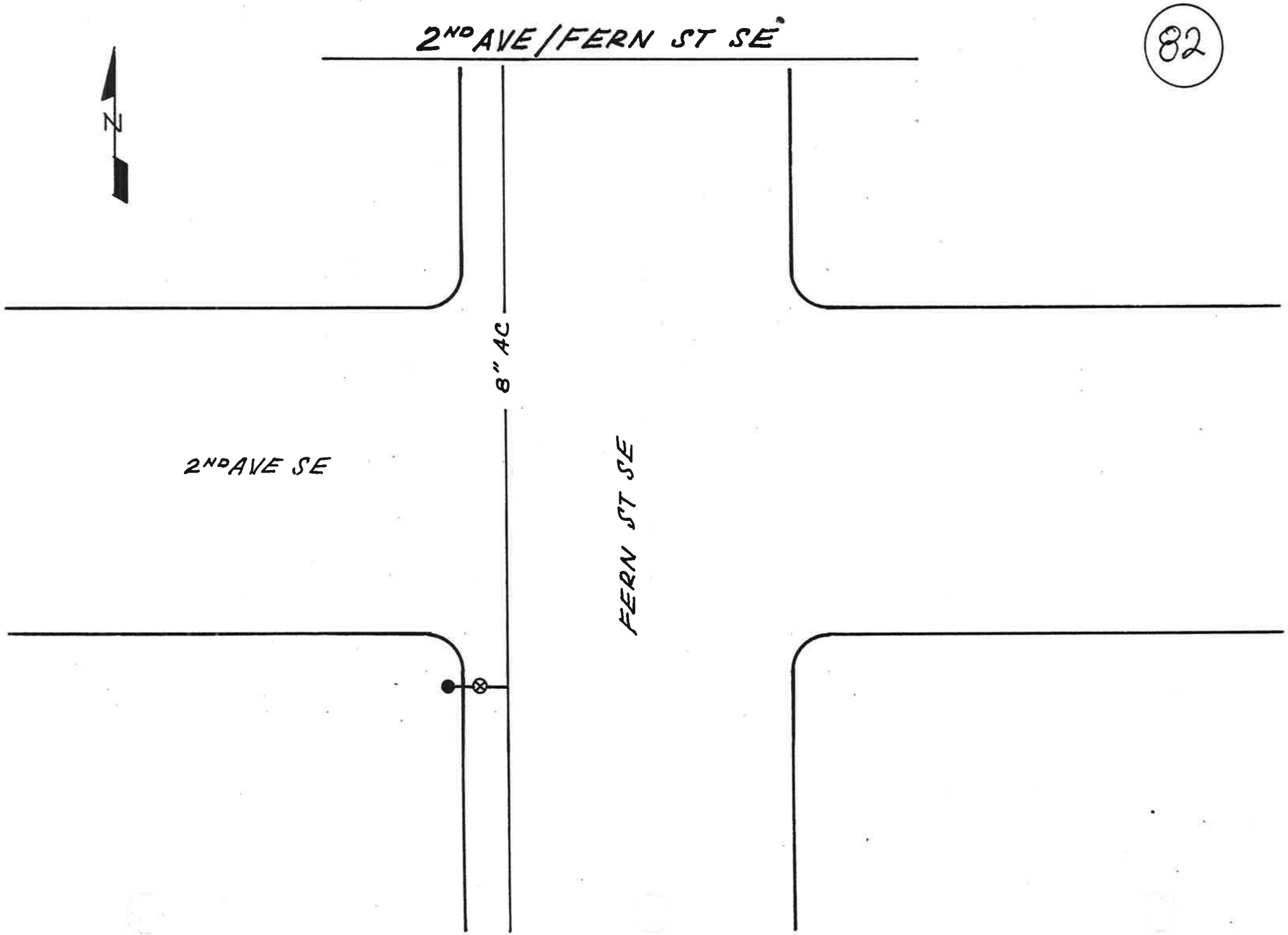


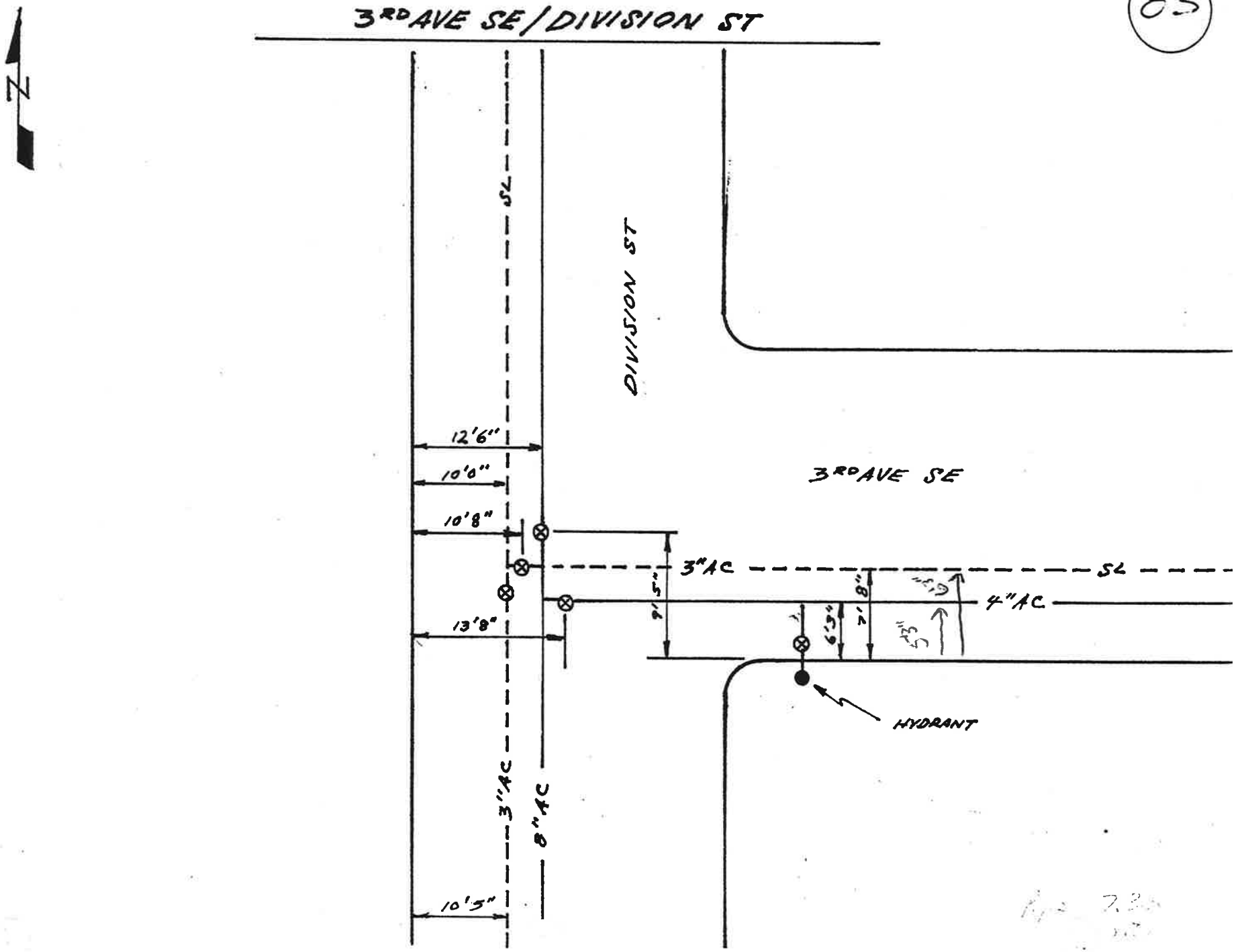

2nd Ave S.E.
Meter Box
Sidewalk
Shut OFF For Irrigation Line
Sidewalk
Main Entrance
Drain for Irr Line
Driveway
N
Garbage Pad
Water Line To building
Senior Center
Drain for I ation Line

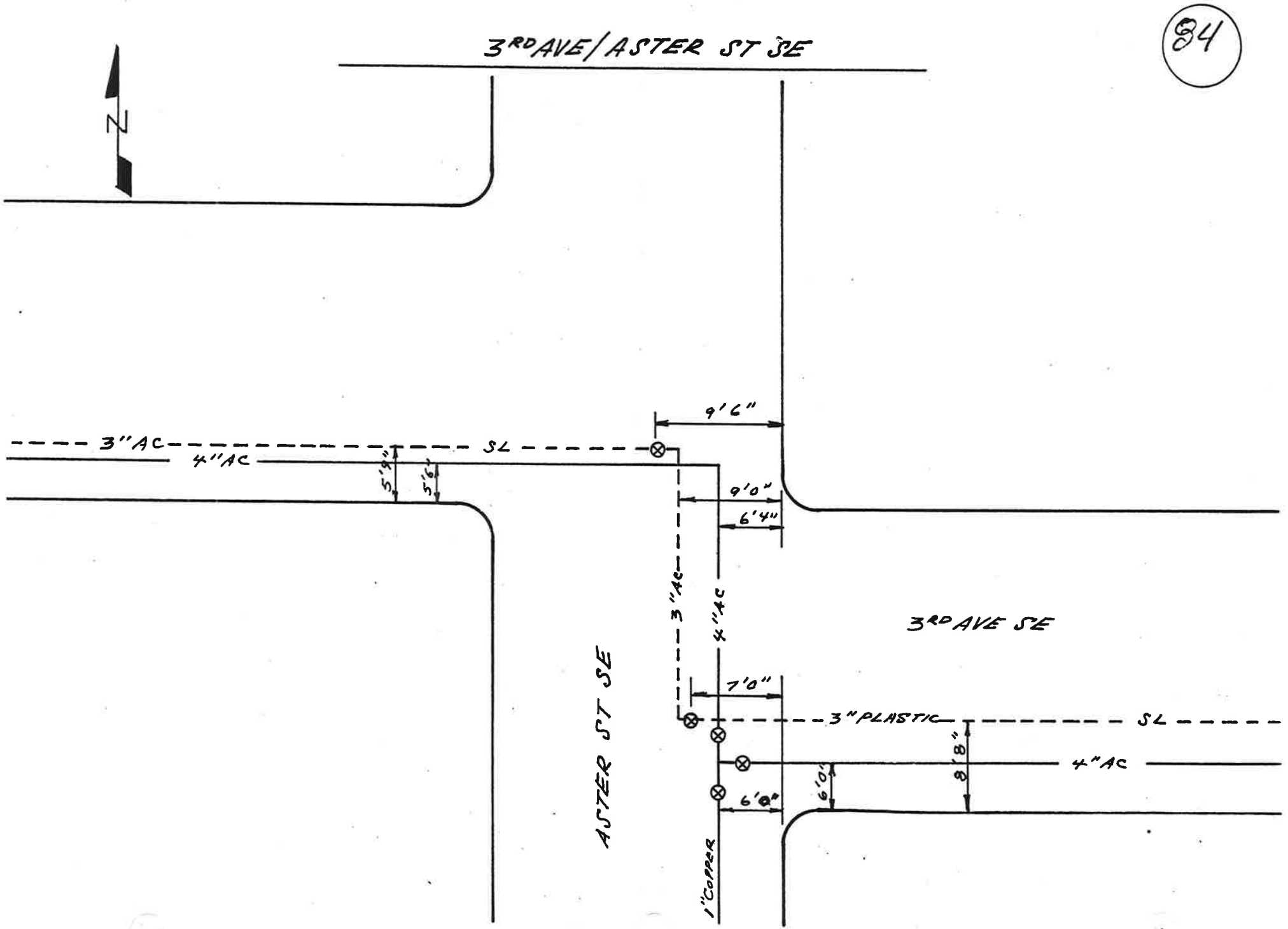

2ND AVE / CANNA ST SE
N
CANNA ST SE
4" C-900 SL
8" C-900
10'
9'
HYDRANT
8'9"
4'4"
3" PLASTIC
4" AC
15'6"
4" C-900 To 3" PVC
2ND AVE SE
C-900
POLE
2ND AVE SE
C-900
To City hall
2" GALV.
CITY HALL
8" C-900

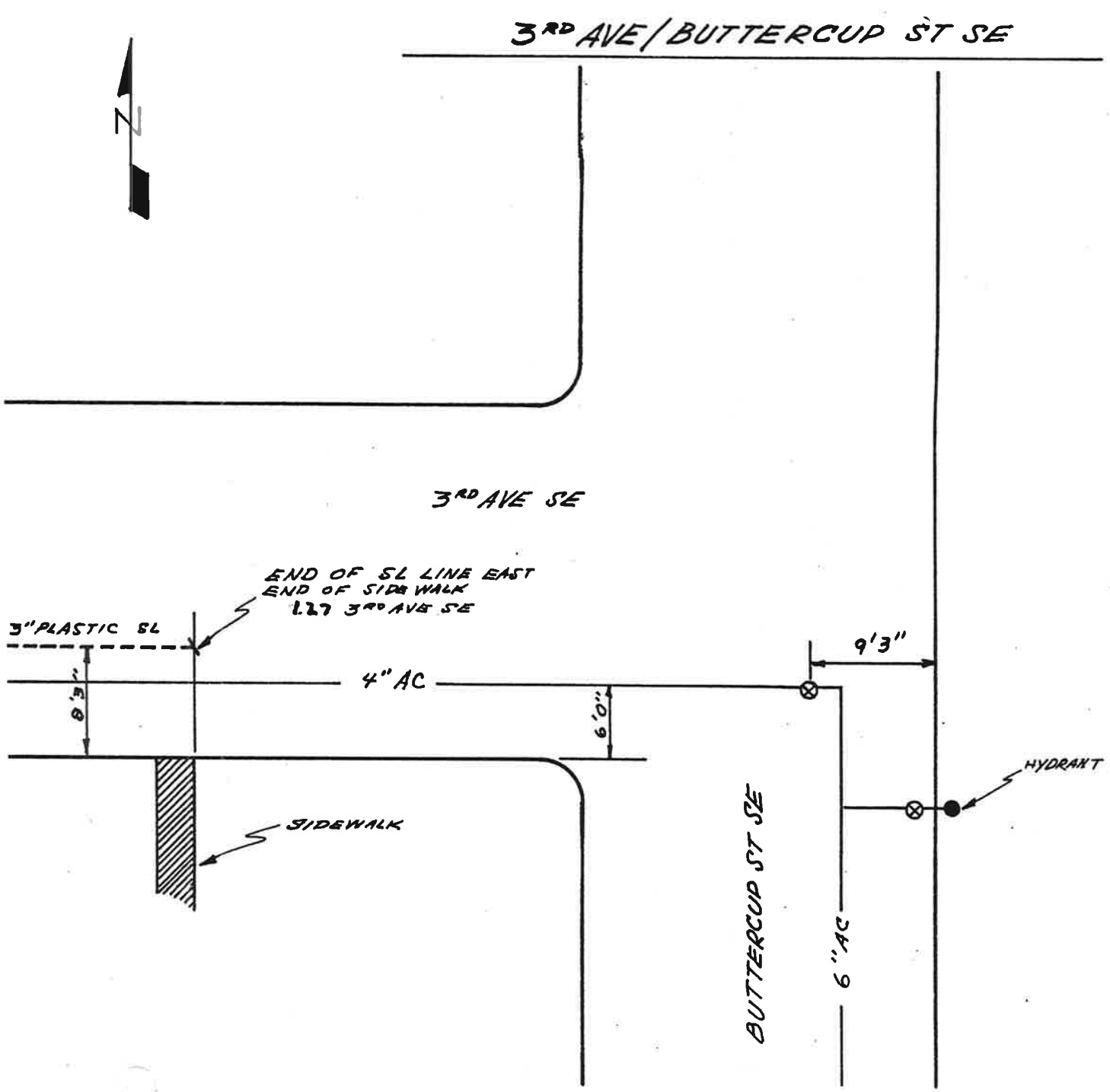
2ND AVE / DAISY ST SE

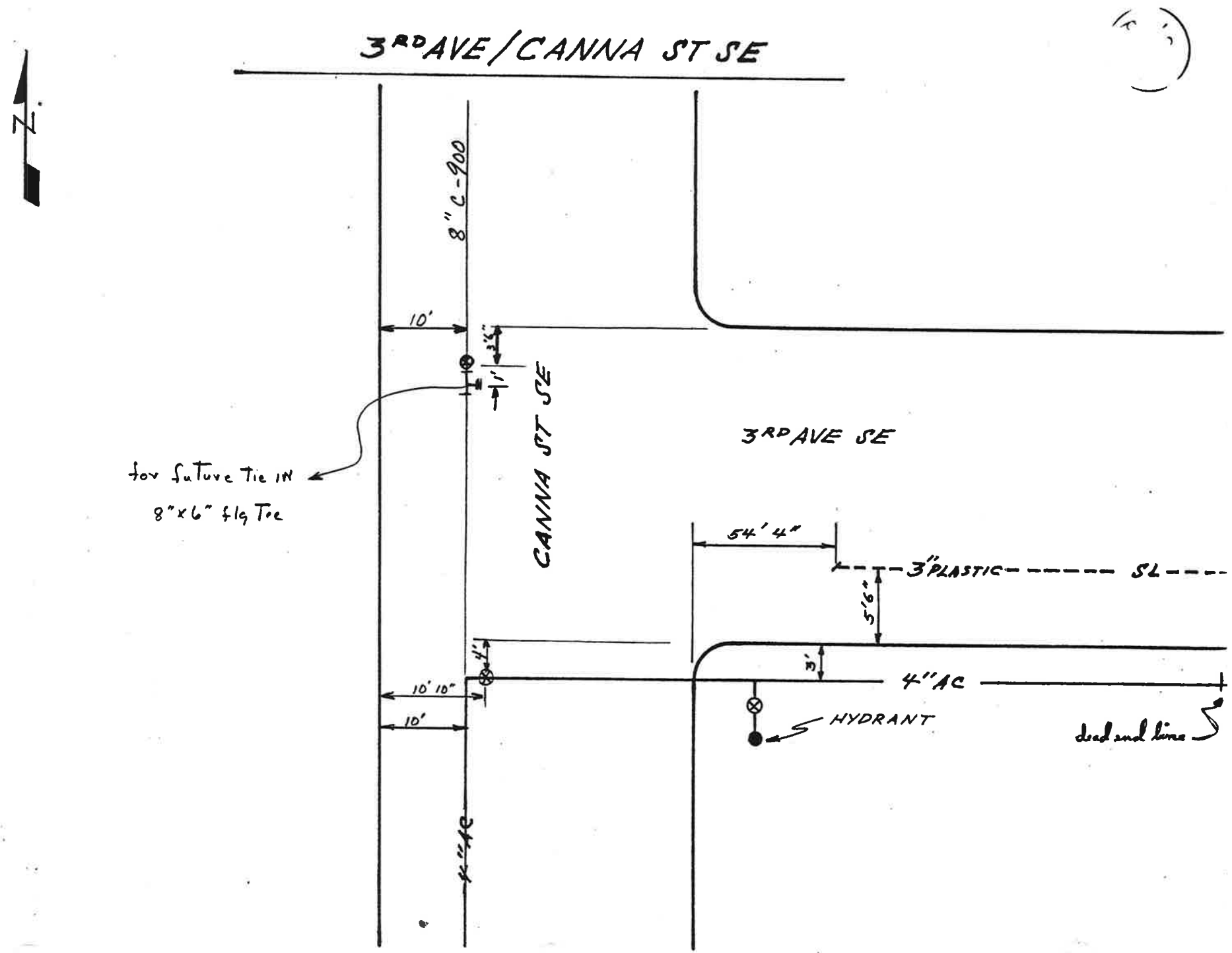


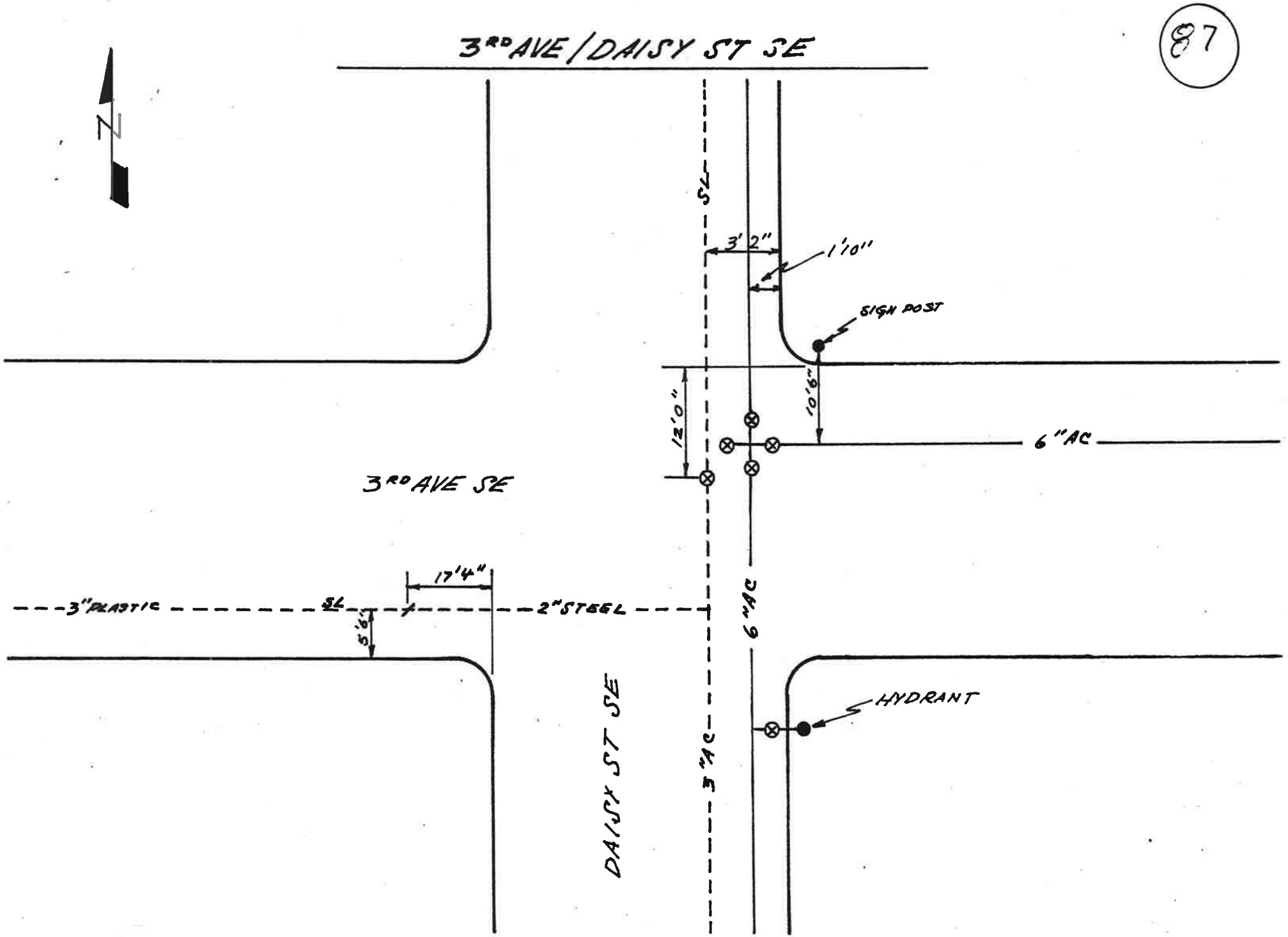

2ND AVE / FERN ST SE
82
N
8" AC
2ND AVE SE
FERN ST SE

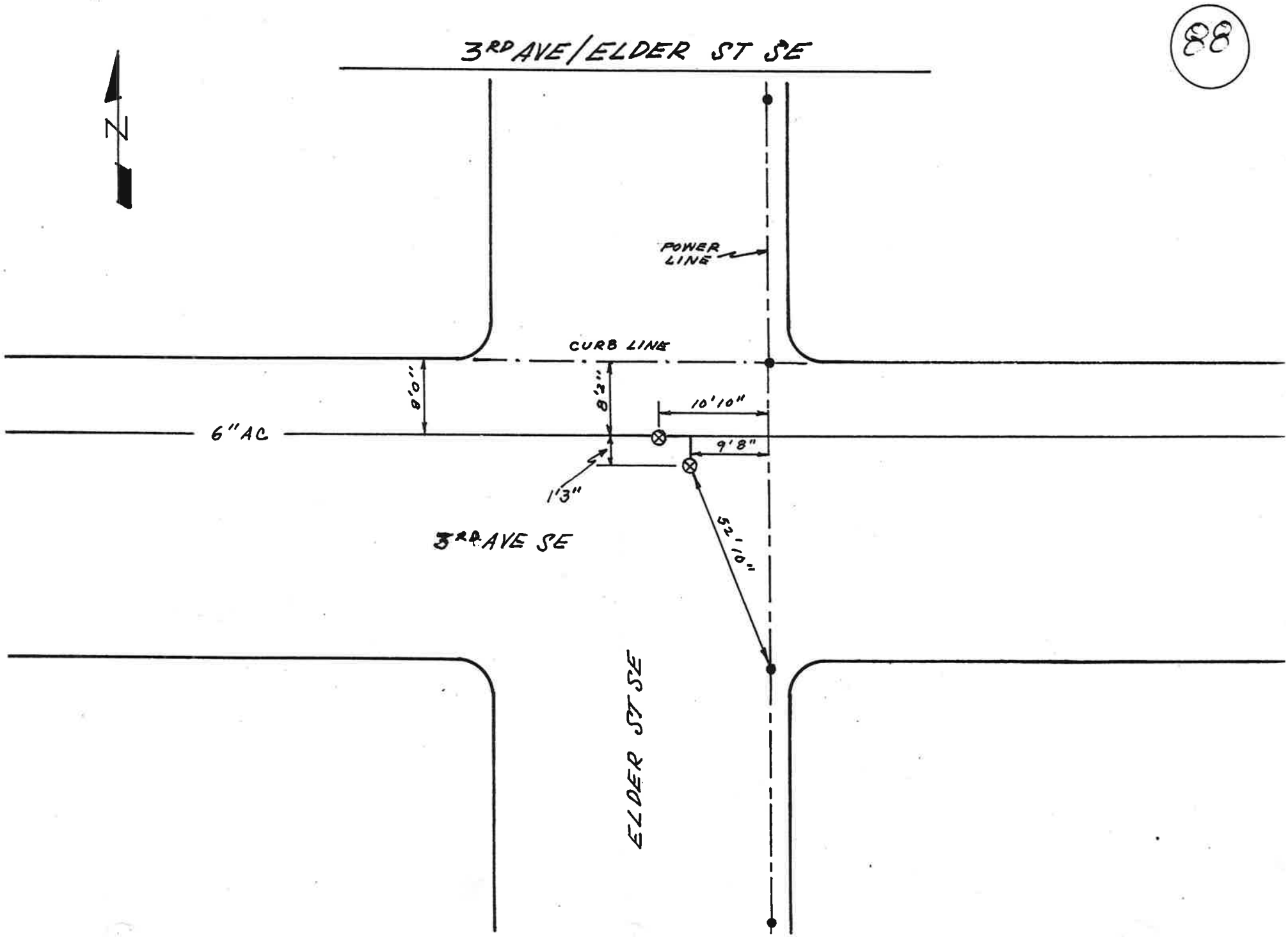

3RD AVE SE/DIVISION ST
N
SL
DIVISION ST
3RD AVE SE
12'6"
10'0"
10'8"
13'8"
10'3"
3"AC
4"AC
SL
9'5"
6'3"
7'8"
HYDRANT
3"AC
8"AC

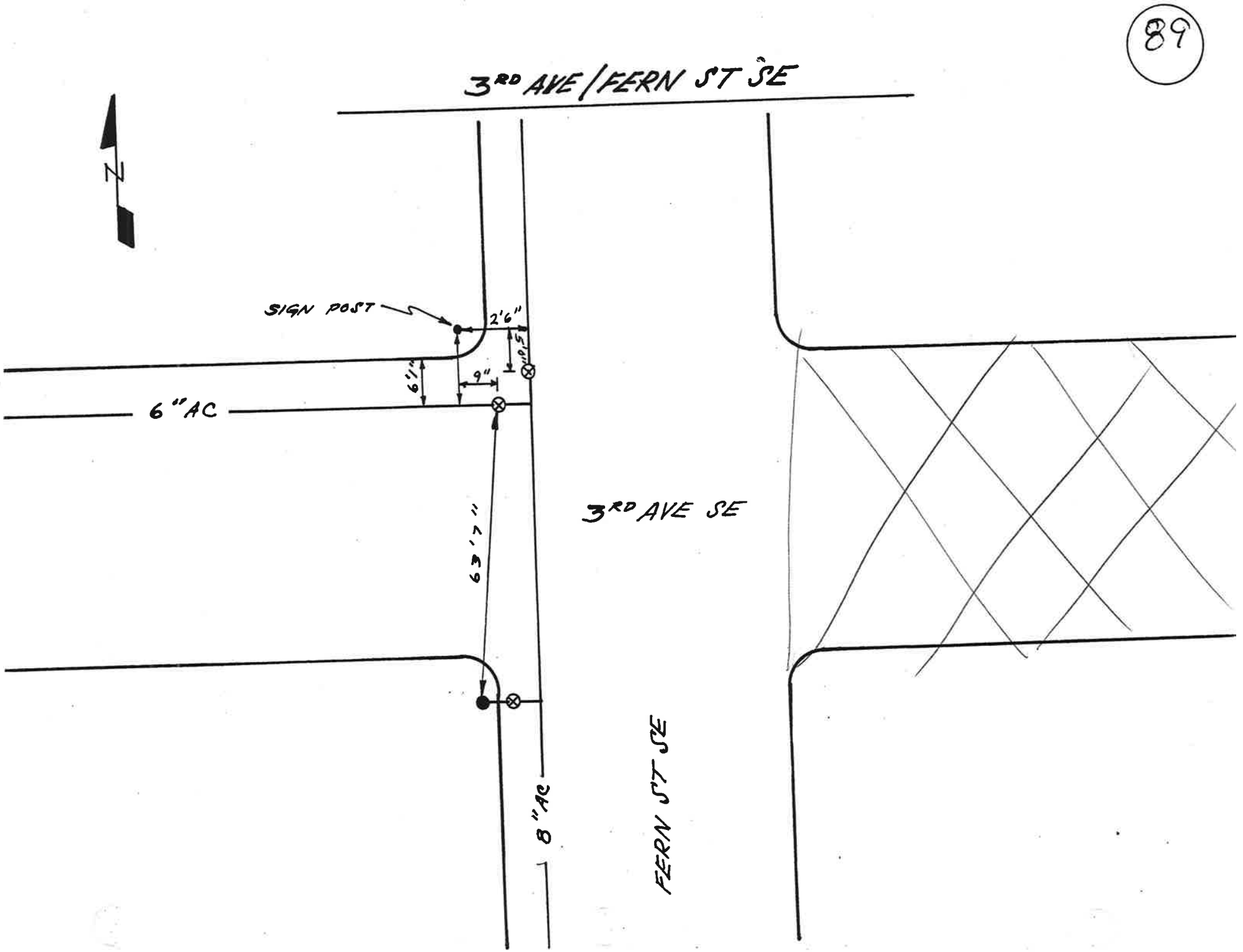

3RD AVE/ASTER ST SE
N
9'6"
3"AC
SL
4"AC
3'9"
5'6"
9'0"
6'4"
3"AC
4"AC
3RD AVE SE
ASTER ST SE
7'0"
3"PLASTIC
SL
4"AC
8'8"
6'0"
6'0"
1"COPPER

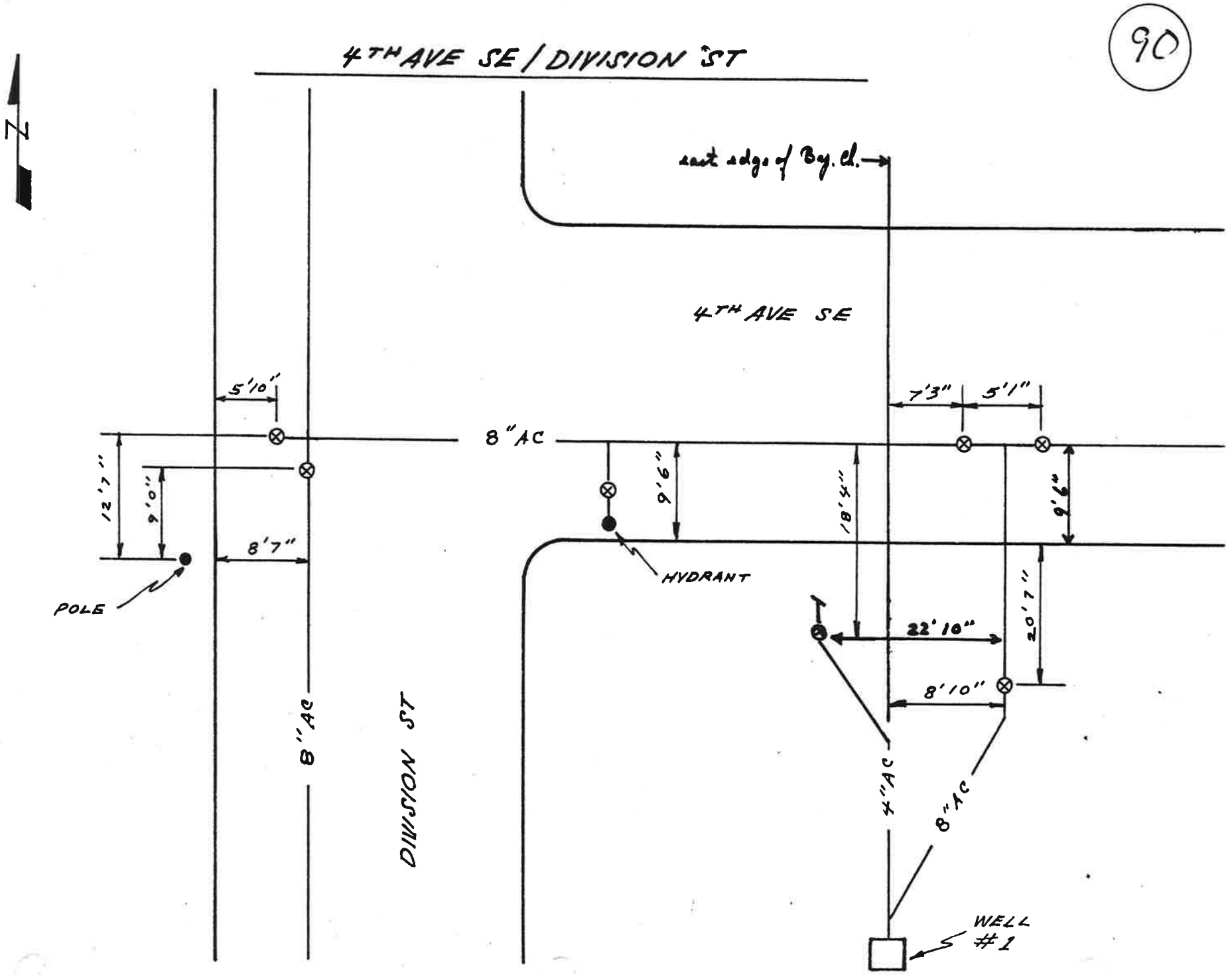

3RD AVE/BUTTERCUP ST SE
N
3RD AVE SE
END OF SL LINE EAST
END OF SIDEWALK
1.27 3RD AVE SE
3"PLASTIC SL
8'3"
4" AC
6'0"
9'3"
HYDRANT
SIDEWALK
BUTTERCUP ST SE
6" AC


3RD AVE / CANNA ST SE
N
8" C-900
10'
3'6"
1'
for future Tie IN
8"x6" flg Tee
CANNA ST SE
3RD AVE SE
54'4"
3" PLASTIC
SL
5'6"
4'
3'
4" AC
10' 10"
10'
HYDRANT
dead end line
4" AC

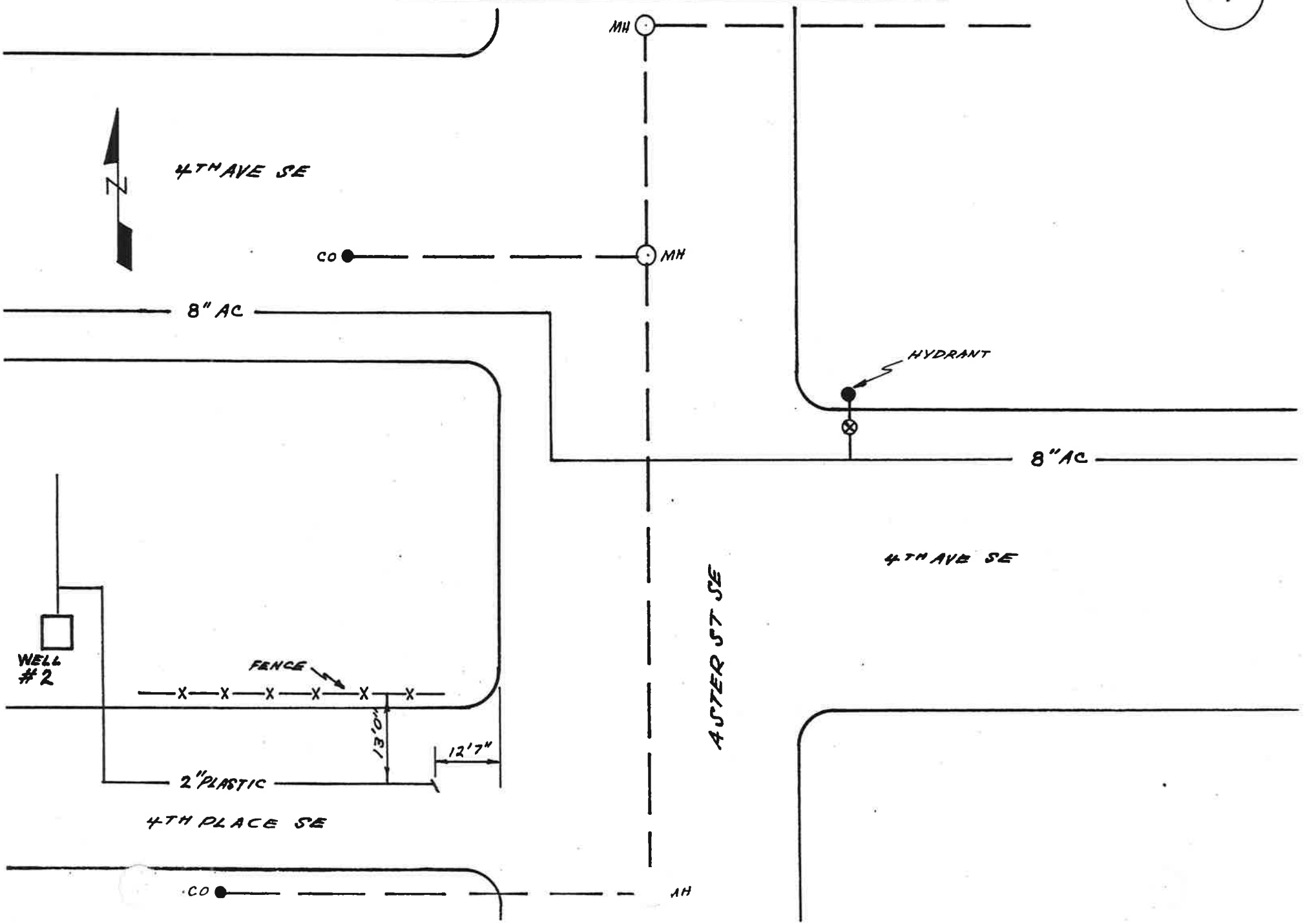

3RD AVE / DAISY ST SE
N
SL
3' 2"
1'10"
SIGN POST
10'6"
12'0"
6" AC
3RD AVE SE
17'4"
3" PLASTIC
SL
2" STEEL
5'6"
6" AC
DAISY ST SE
3" AC
HYDRANT

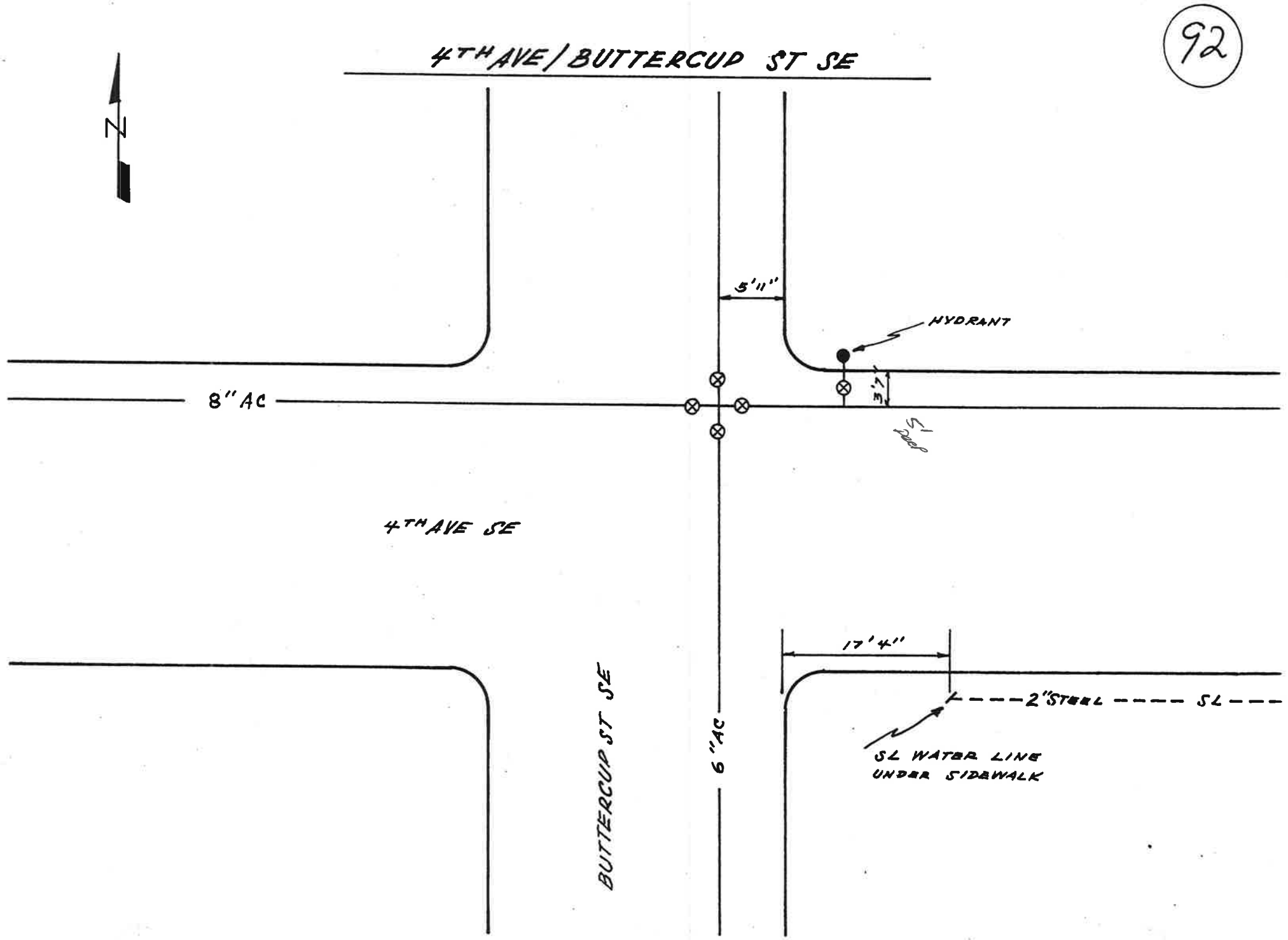

3RD AVE/ELDER ST SE
N
POWER LINE
CURB LINE
8'0"
8'2"
10'10"
6"AC
9'8"
1'3"
52'10"
3RD AVE SE
ELDER ST SE

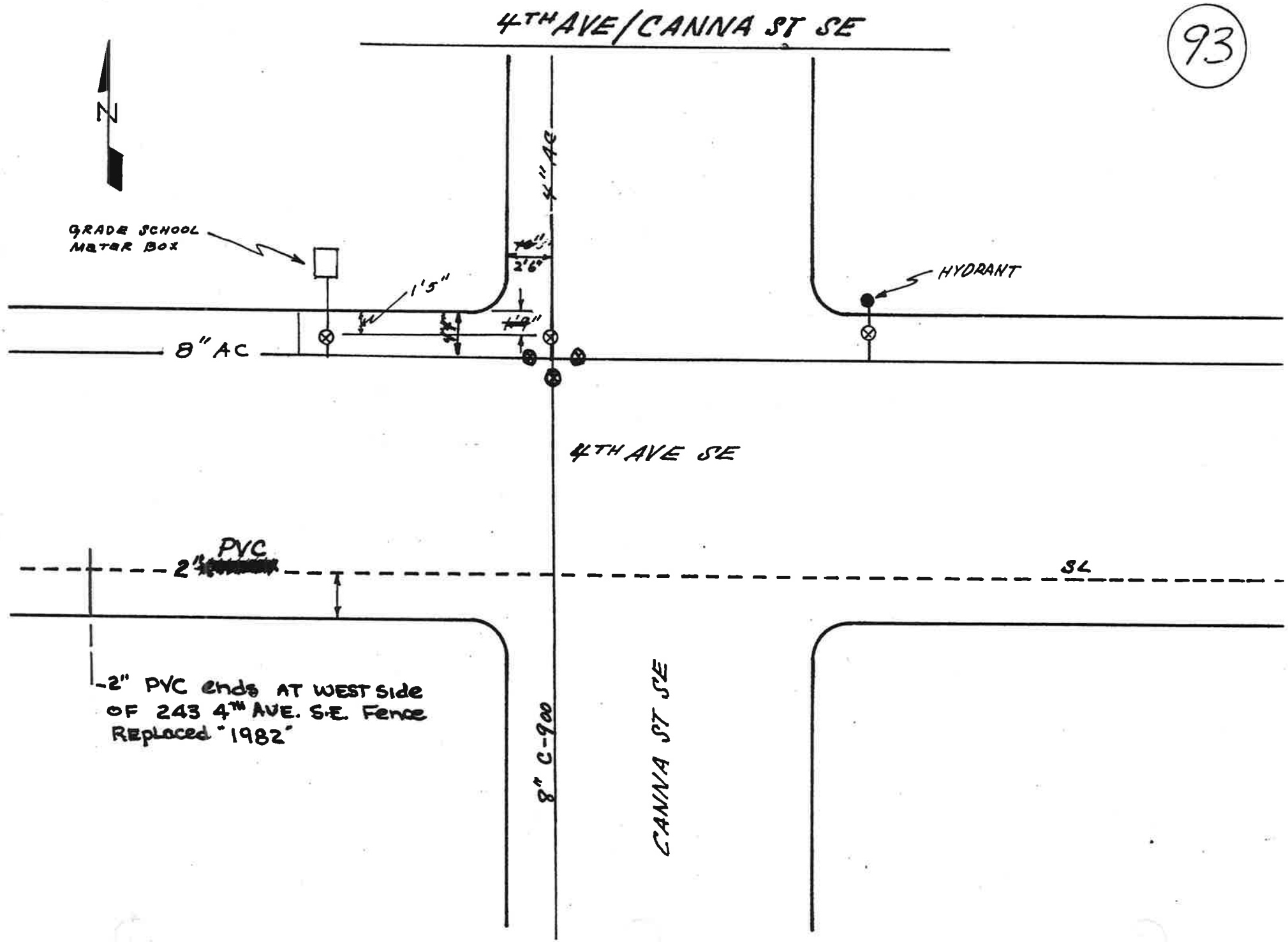

3RD AVE / FERN ST SE
N
SIGN POST
2'6"
5'0"
6'1"
9"
6" AC
63'7"
3RD AVE SE
8" AC
FERN ST SE

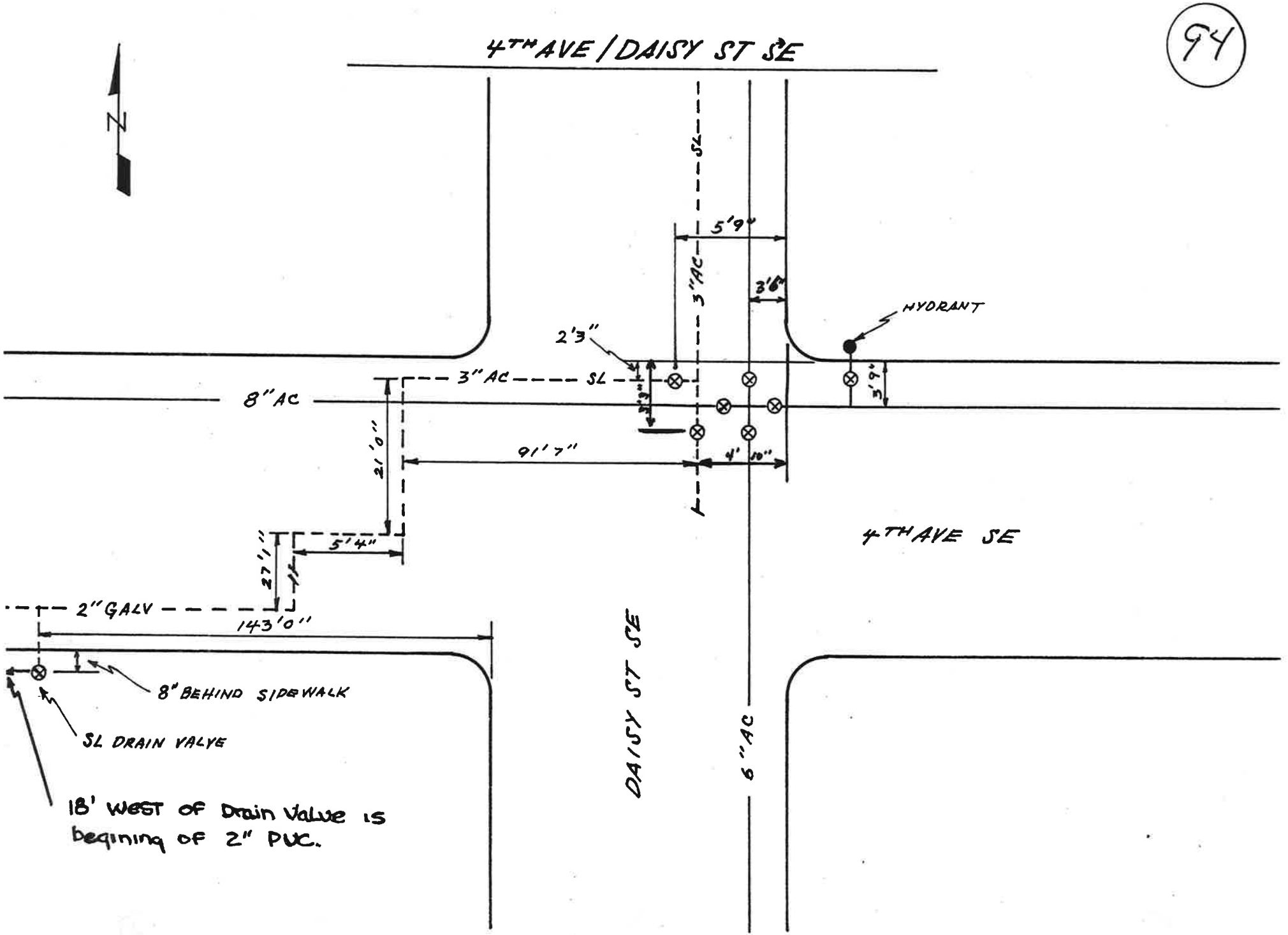

4TH AVE SE / DIVISION ST
N
east edge of By. Cl.
4TH AVE SE
5'10"
12'7"
9'0"
8'7"
POLE
8" AC
DIVISION ST
8" AC
7'3"
5'1"
9'6"
18'4"
9'6"
HYDRANT
22'10"
20'7"
8'10"
4" AC
8" AC
WELL #1

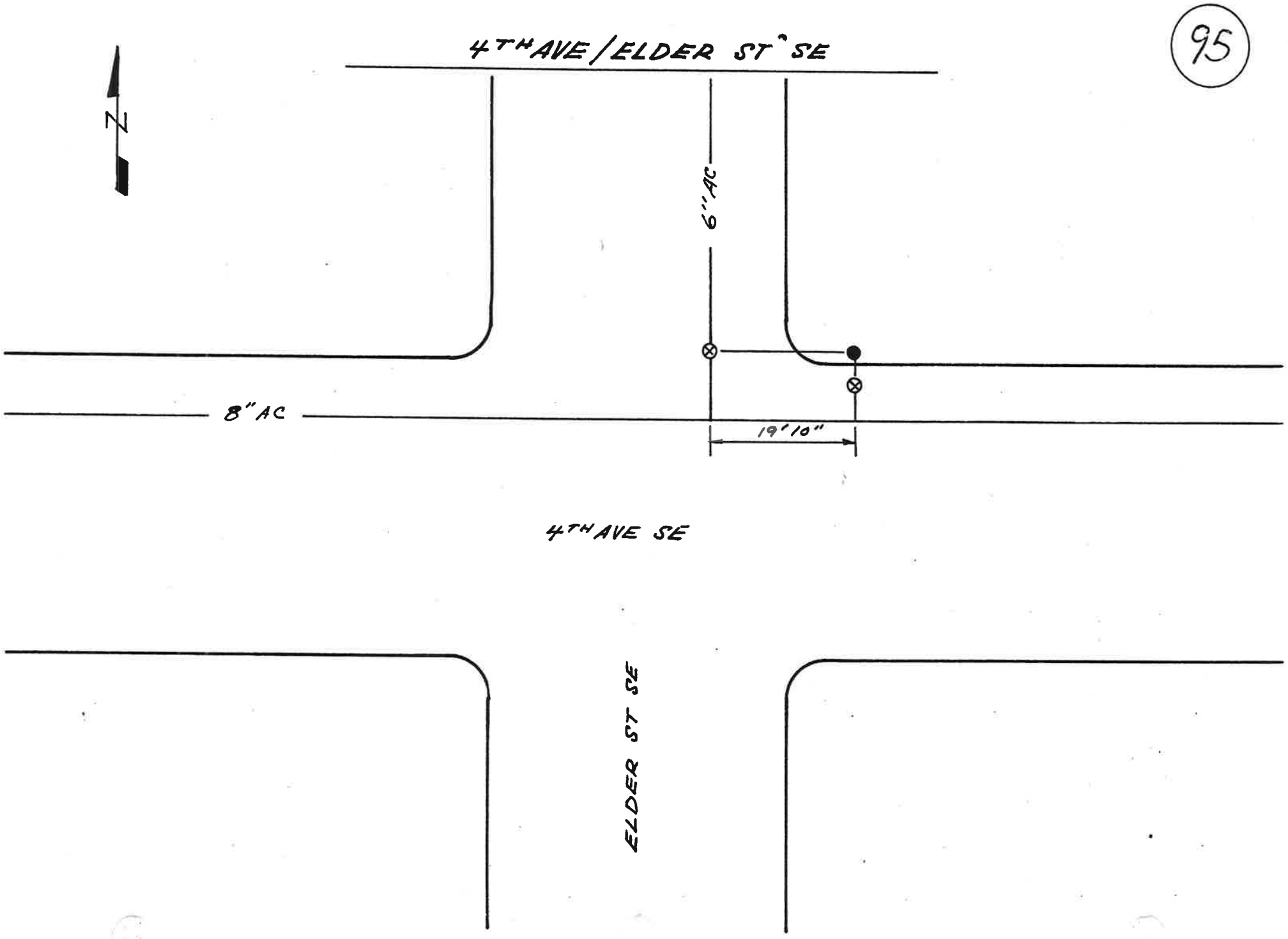
4TH PLACE / 4TH AVE / ASTER ST SE

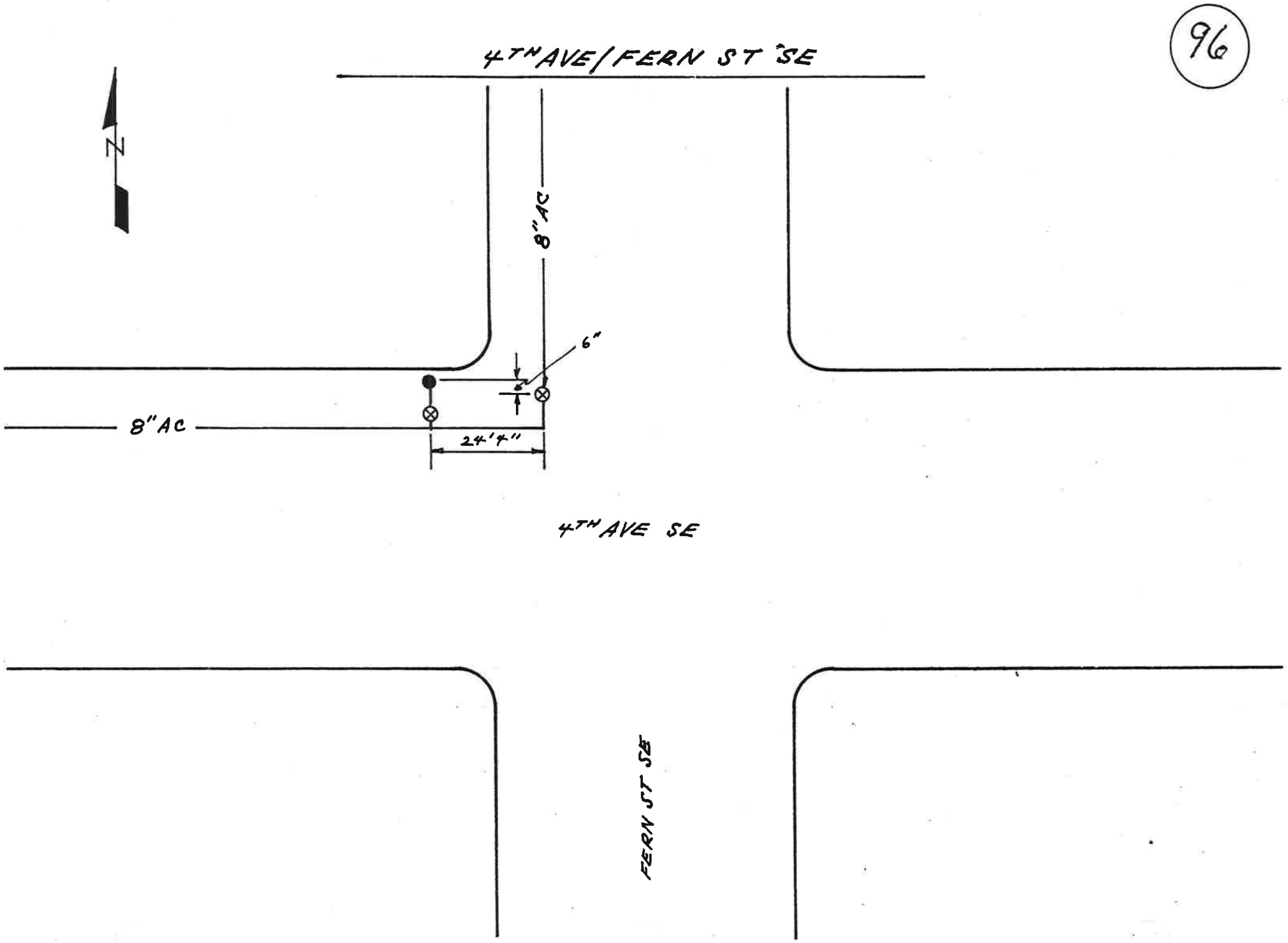


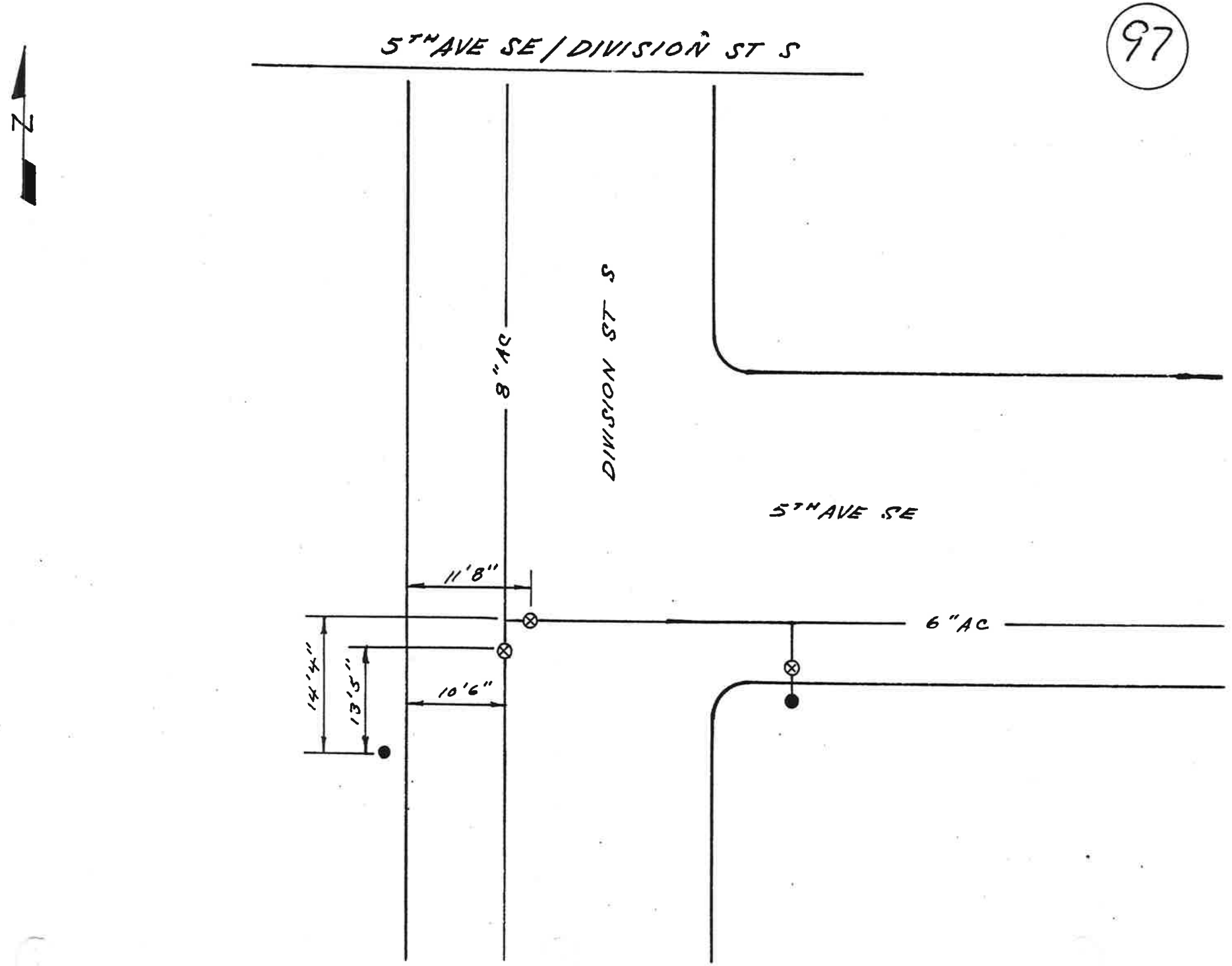

4TH AVE / BUTTERCUP ST SE
N
5'11"
HYDRANT
8" AC
3'7"
SL
4TH AVE SE
17'4"
2" STEEL ---- SL
SL WATER LINE
UNDER SIDEWALK
BUTTERCUP ST SE
6" AC

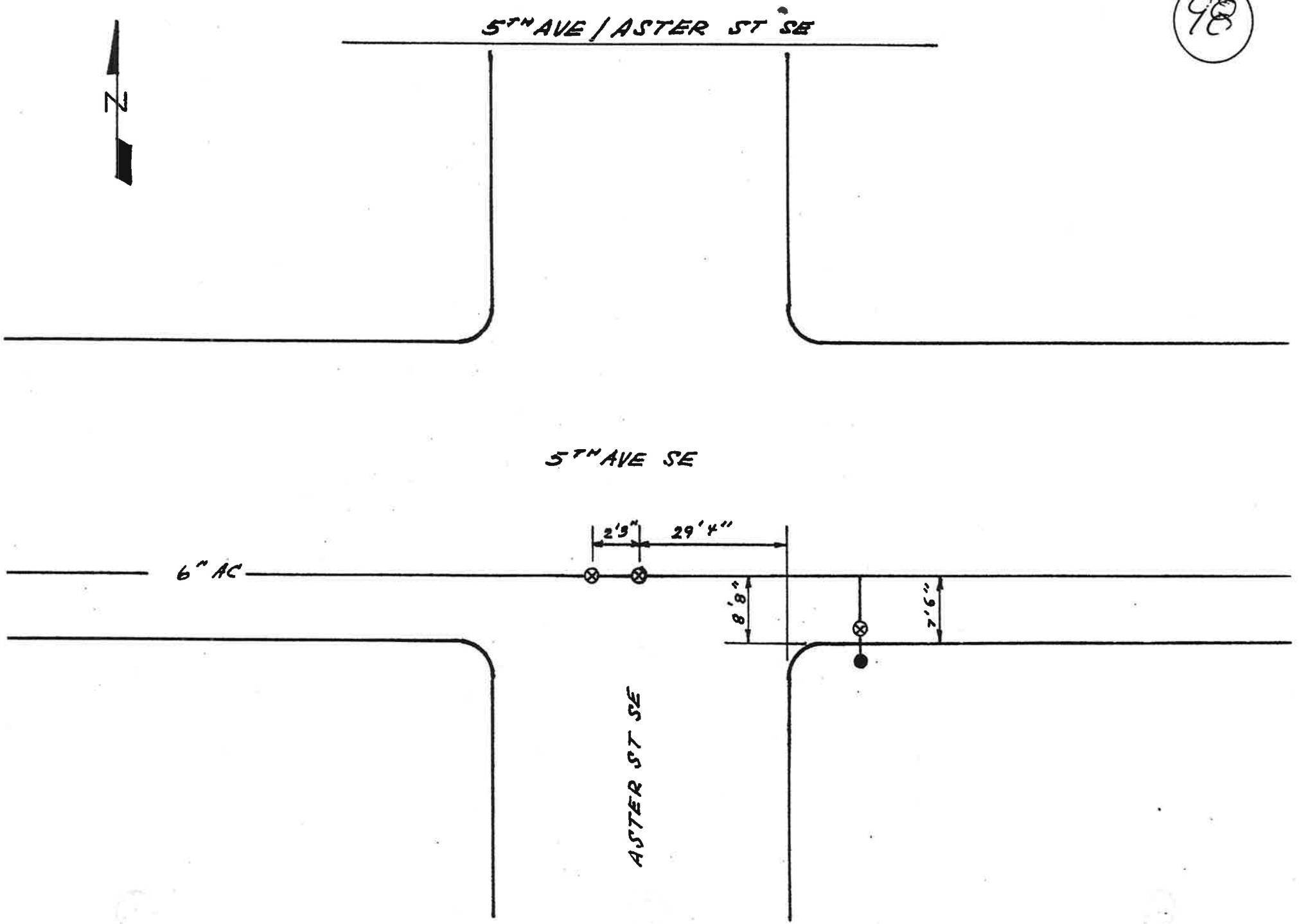

4TH AVE/CANNA ST SE
N
GRADE SCHOOL METER BOX
4" AC
2'6"
1'5"
HYDRANT
8" AC
4TH AVE SE
2" PVC
SL
2" PVC ends AT WEST side OF 243 4TH AVE. S.E. Fence Replaced "1982"
8" C-900
CANNA ST SE

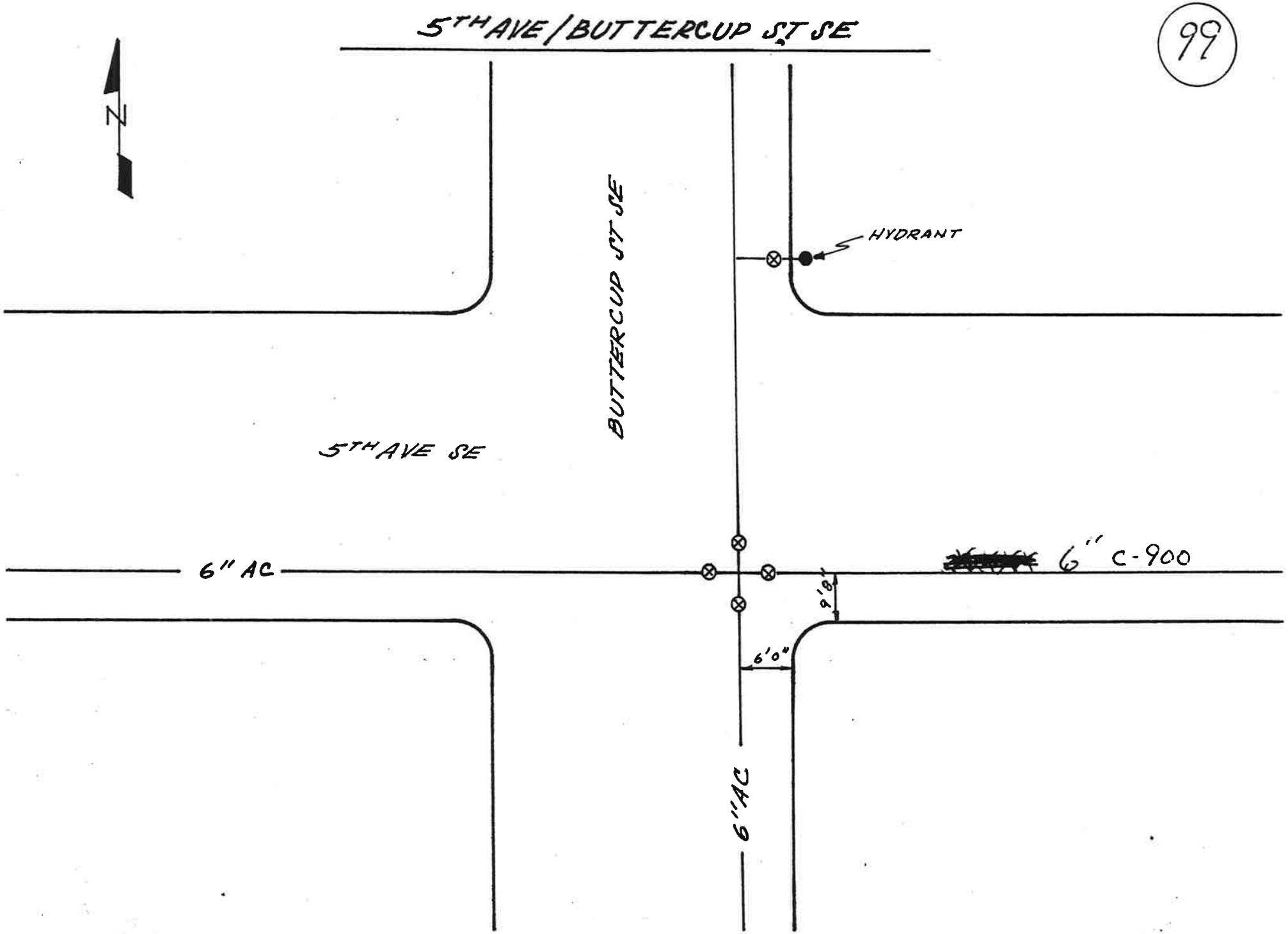

4TH AVE / DAISY ST SE
N
SL
5'9"
3"AC
3'6"
HYDRANT
2'3"
3"AC
SL
8"AC
3'9"
3'9"
21'0"
91'7"
4' 10"
5'4"
27'1"
4TH AVE SE
2"GALV
143'0"
8" BEHIND SIDEWALK
SL DRAIN VALVE
18' WEST OF Drain Valve is beginning of 2" PVC.
DAISY ST SE
6"AC

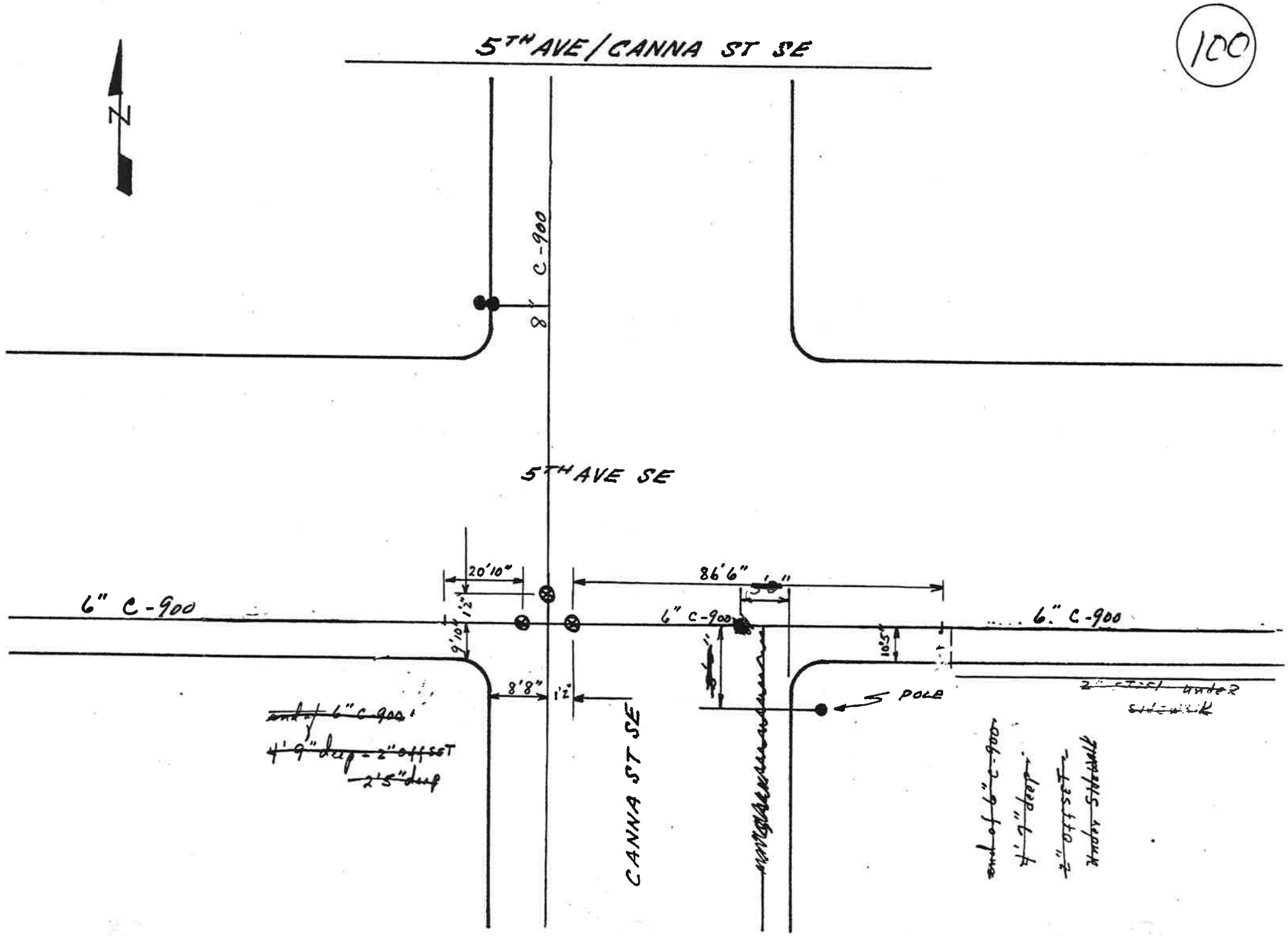

4TH AVE / ELDER ST SE
N
6" AC
8" AC
19'10"
4TH AVE SE
ELDER ST SE

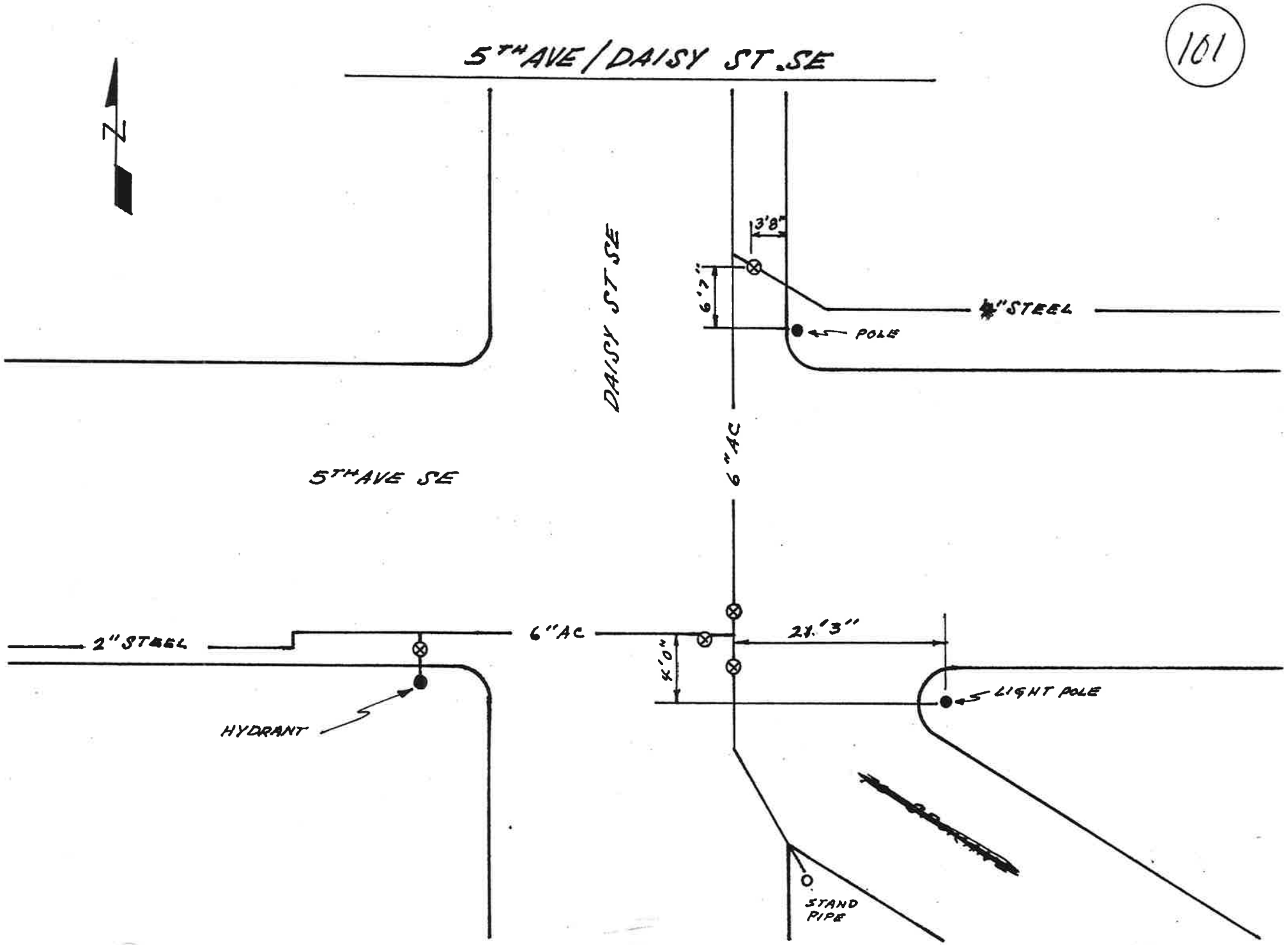

4TH AVE/FERN ST SE
N
8"AC
6"
8"AC
24'4"
4TH AVE SE
FERN ST SE

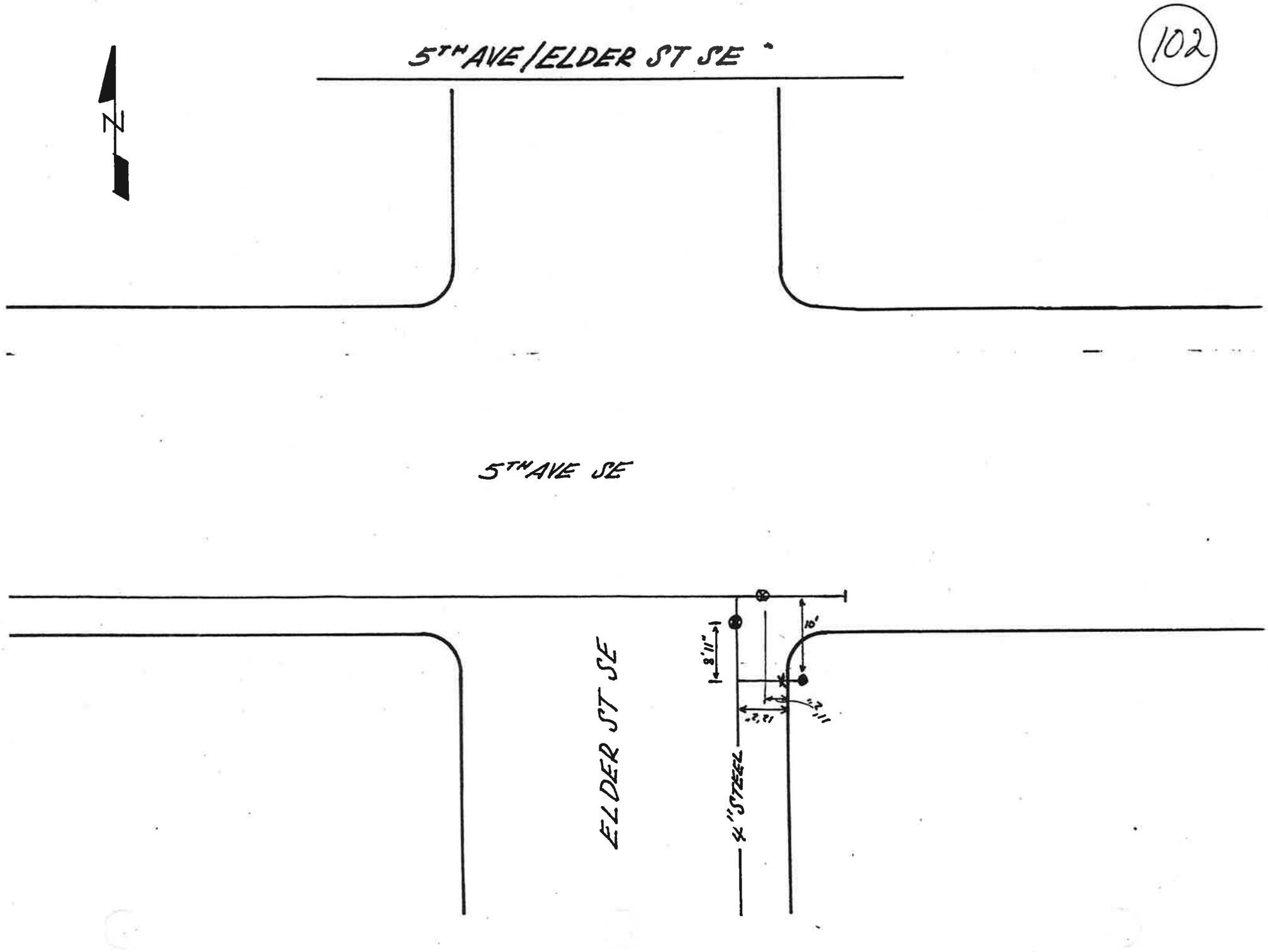

5TH AVE SE / DIVISION ST S
N
8" AC
DIVISION ST S
5TH AVE SE
11'8"
6" AC
14'4"
13'5"
10'6"

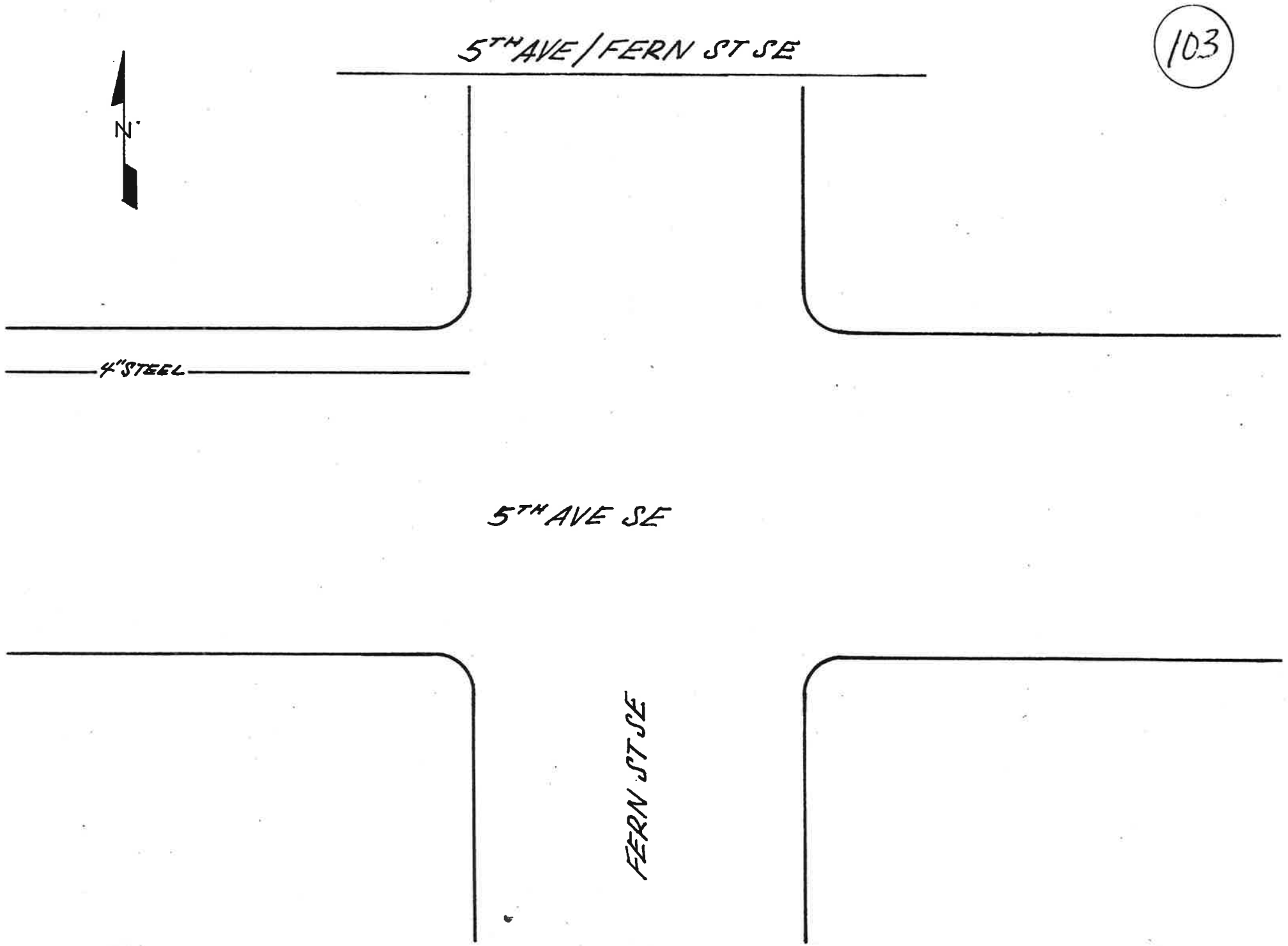

5TH AVE / ASTER ST SE
N
5TH AVE SE
2'3"
29'4"
6" AC
8'8"
7'6"
ASTER ST SE

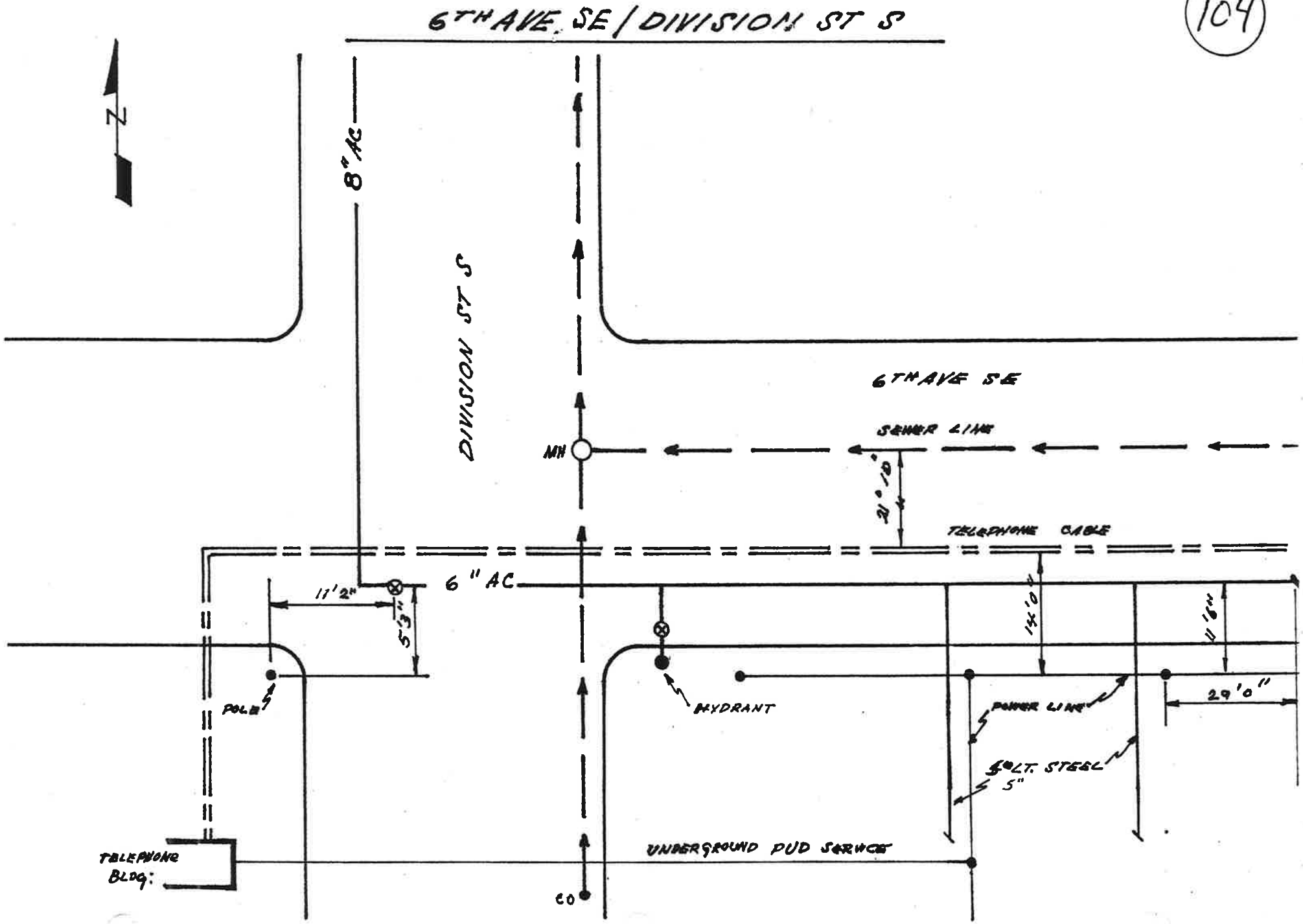

5TH AVE / BUTTERCUP ST SE
N
BUTTERCUP ST SE
HYDRANT
5TH AVE SE
6" AC
6" C-900
9'8"
6'0"
6" AC

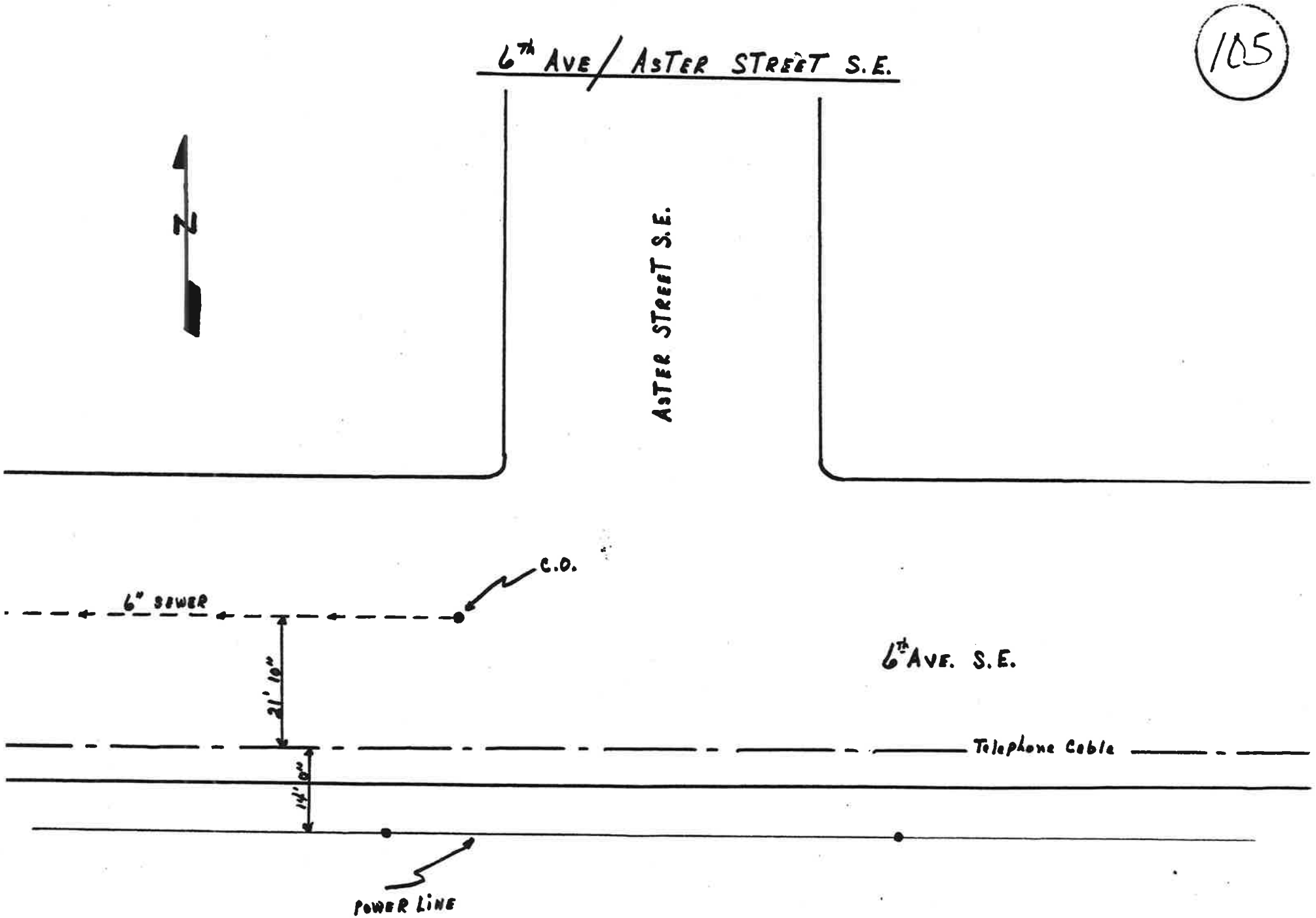

5TH AVE/CANNA ST SE
N
8'
C-900
5TH AVE SE
20'10"
1'2"
9'10"
86'6"
3'1"
6" C-900
6" C-900
6" C-900
10'5"
8'8"
1'2"
CANNA ST SE
POLE
end of 6" C-900
4'9" deep - 2" offset
2'5" deep
2" C.I.C.I. under sidewalk
4'7" deep
end of 2" force main
2" force main


5TH AVE / DAISY ST. SE
N
DAISY ST SE
3'8"
6'7"
4" STEEL
POLE
6" AC
5TH AVE SE
2" STEEL
6" AC
21'3"
4'0"
LIGHT POLE
HYDRANT
STAND PIPE

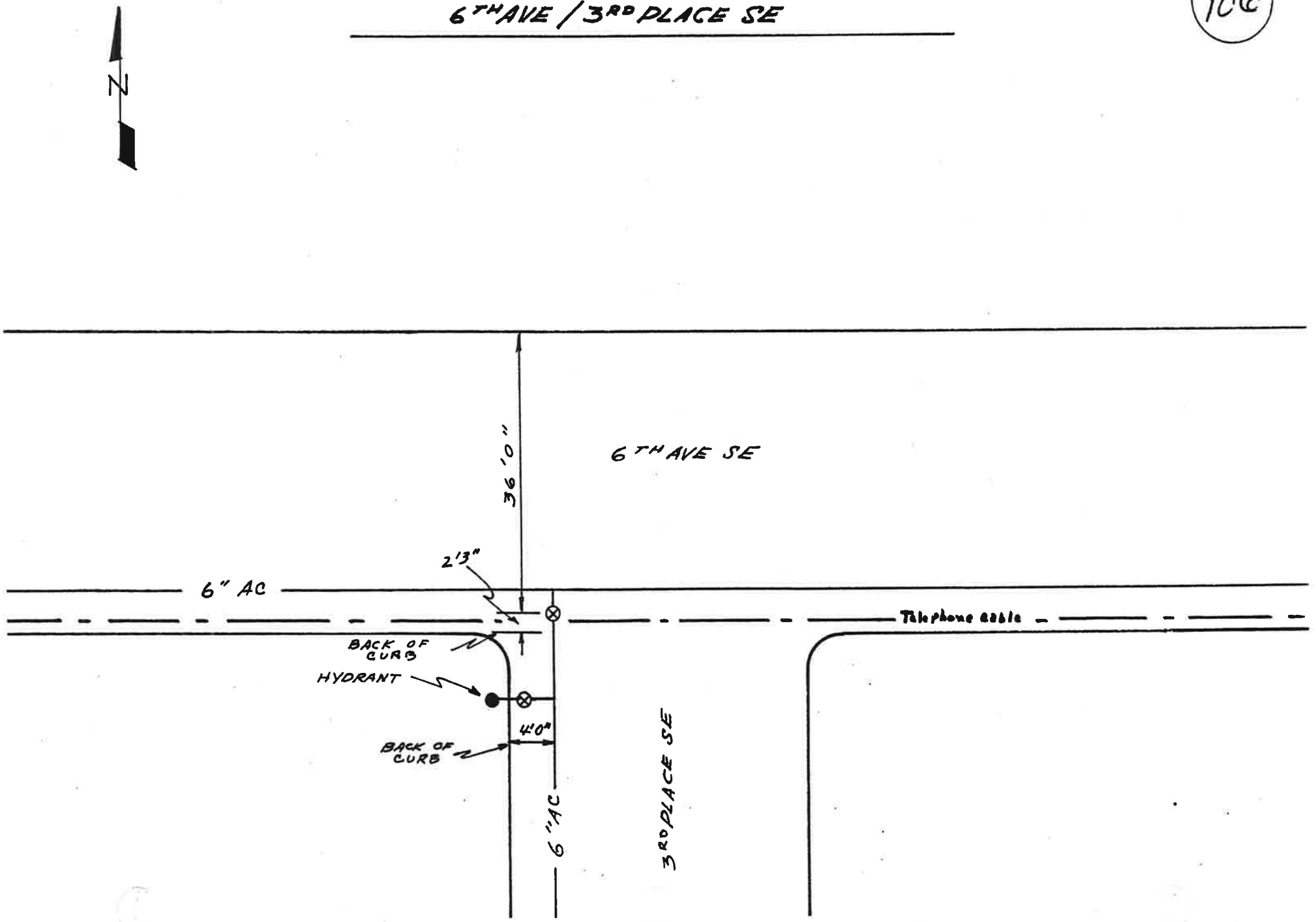

5TH AVE/ELDER ST SE
N
5TH AVE SE
ELDER ST SE
8'11"
10'
4" STEEL

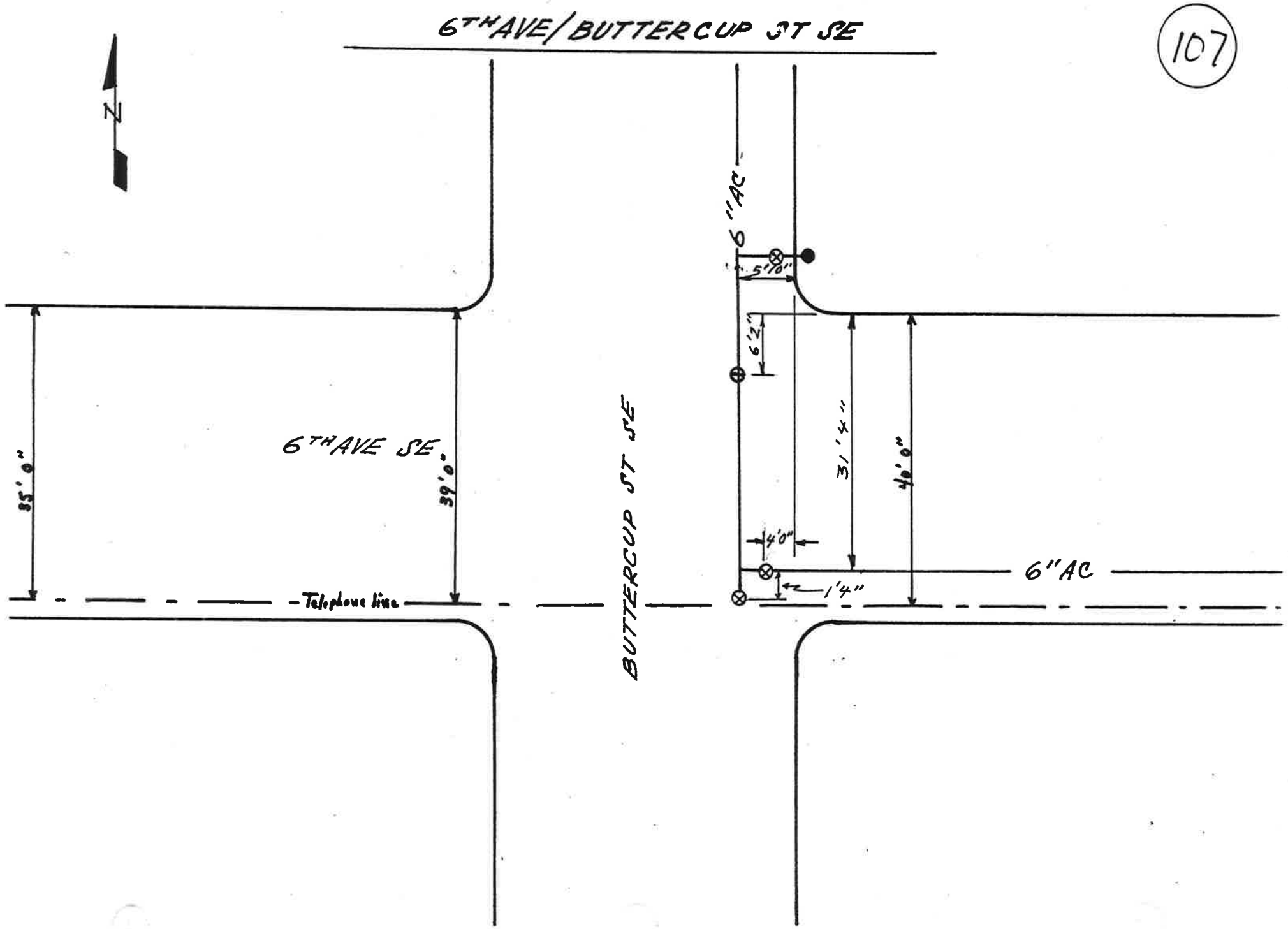

5TH AVE / FERN ST SE
N
4" STEEL
5TH AVE SE
FERN ST SE


6TH AVE SE / DIVISION ST S
N
8" AC
DIVISION ST S
6TH AVE SE
SEWER LINE
MH
21'10"
TELEPHONE CABLE
6" AC
11'2"
5'3"
13'0"
11'6"
POLE
HYDRANT
POWER LINE
29'0"
4 LT. STEEL
5"
UNDERGROUND PUD SERVICE
TELEPHONE BLDG.
CO


6th AVE / ASTER STREET S.E.
N
ASTER STREET S.E.
C.O.
6" SEWER
21' 10"
6th AVE. S.E.
Telephone Cable
14' 0"
POWER LINE

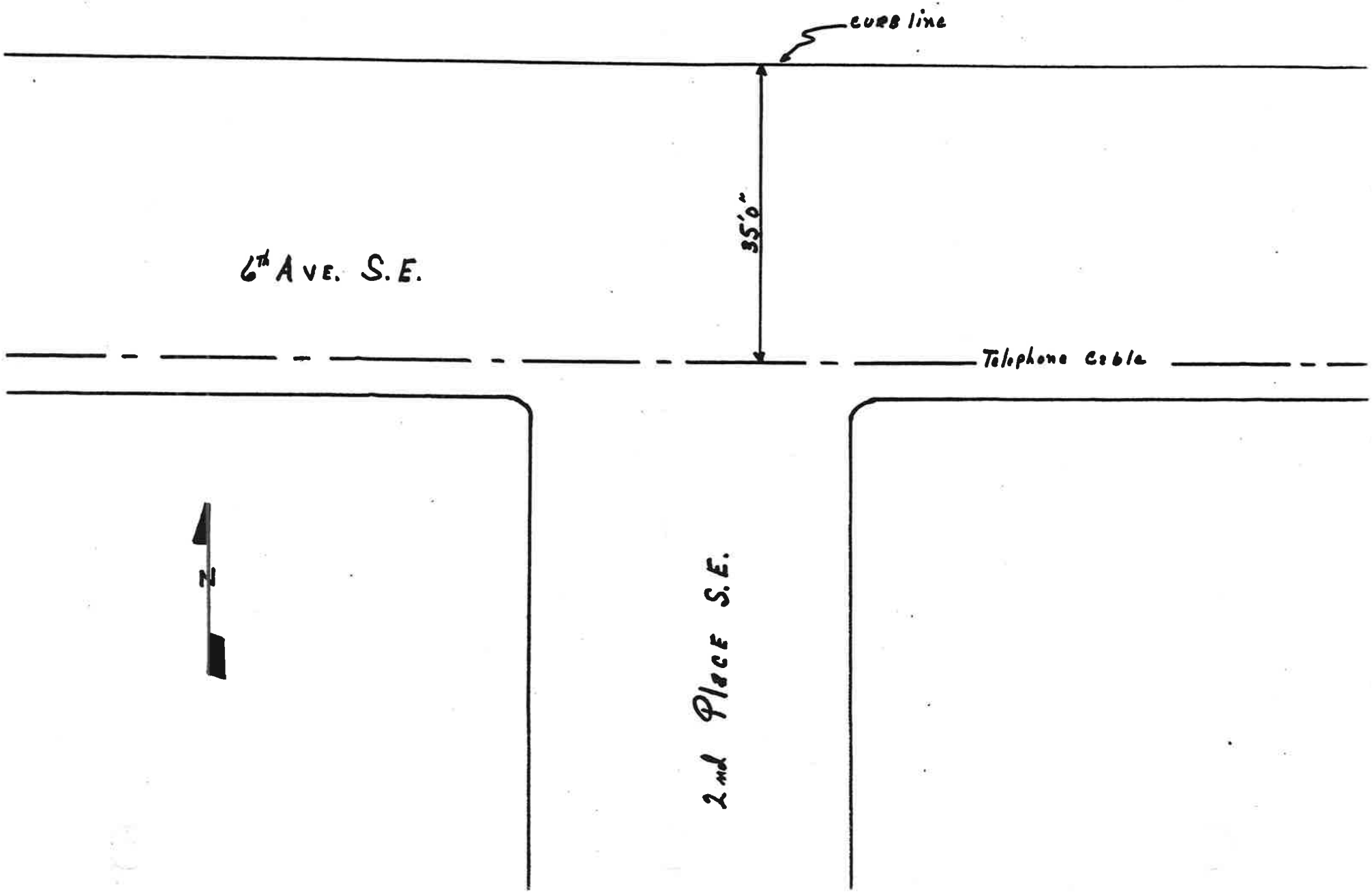
6TH AVE / 3RD PLACE SE

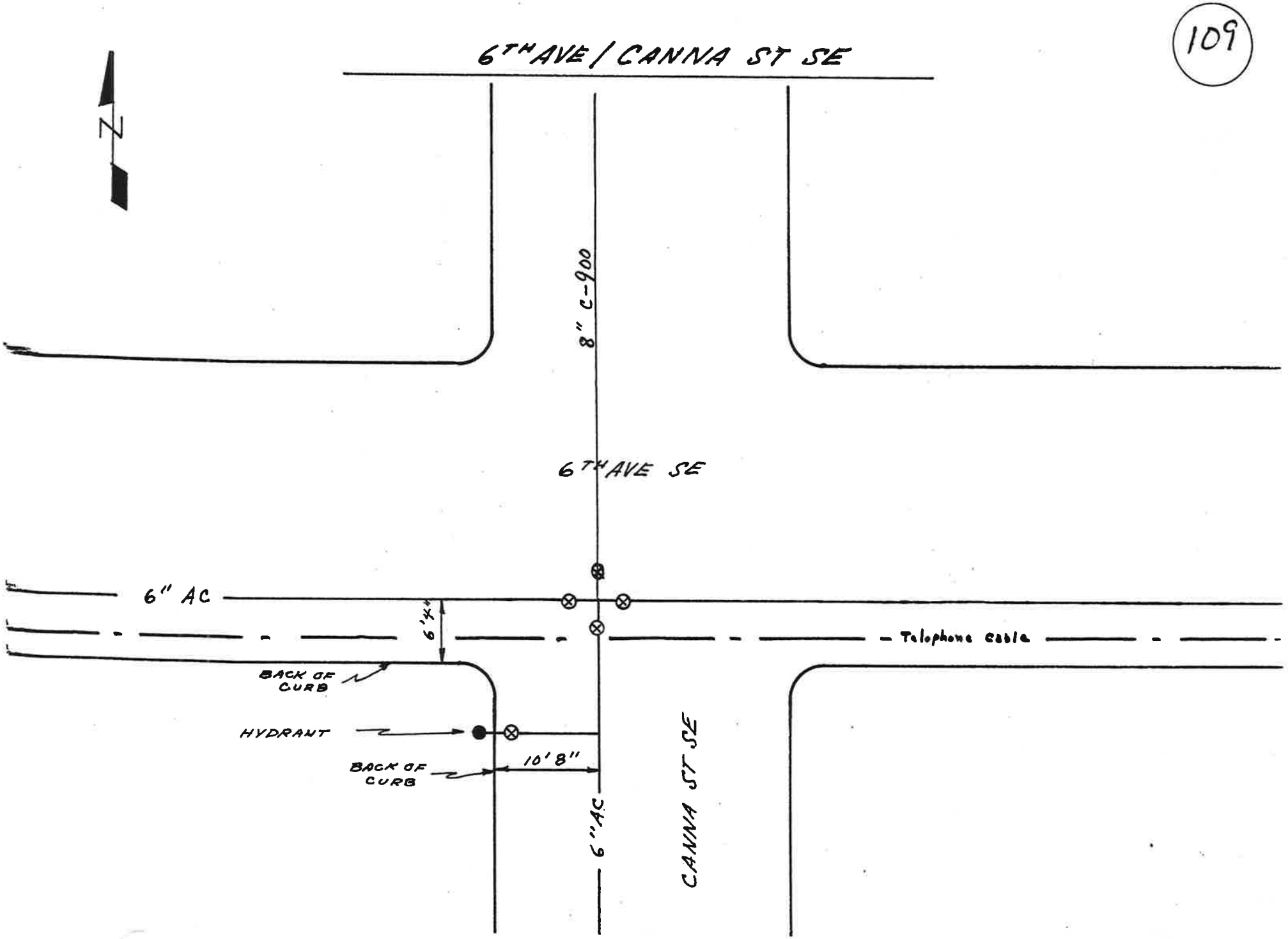



6TH AVE/BUTTERCUP ST SE
N
6"AC
5'10"
6'2"
31'4"
40'0"
4'0"
1'4"
6"AC
6TH AVE SE.
35'0"
39'0"
Telephone line
BUTTERCUP ST SE

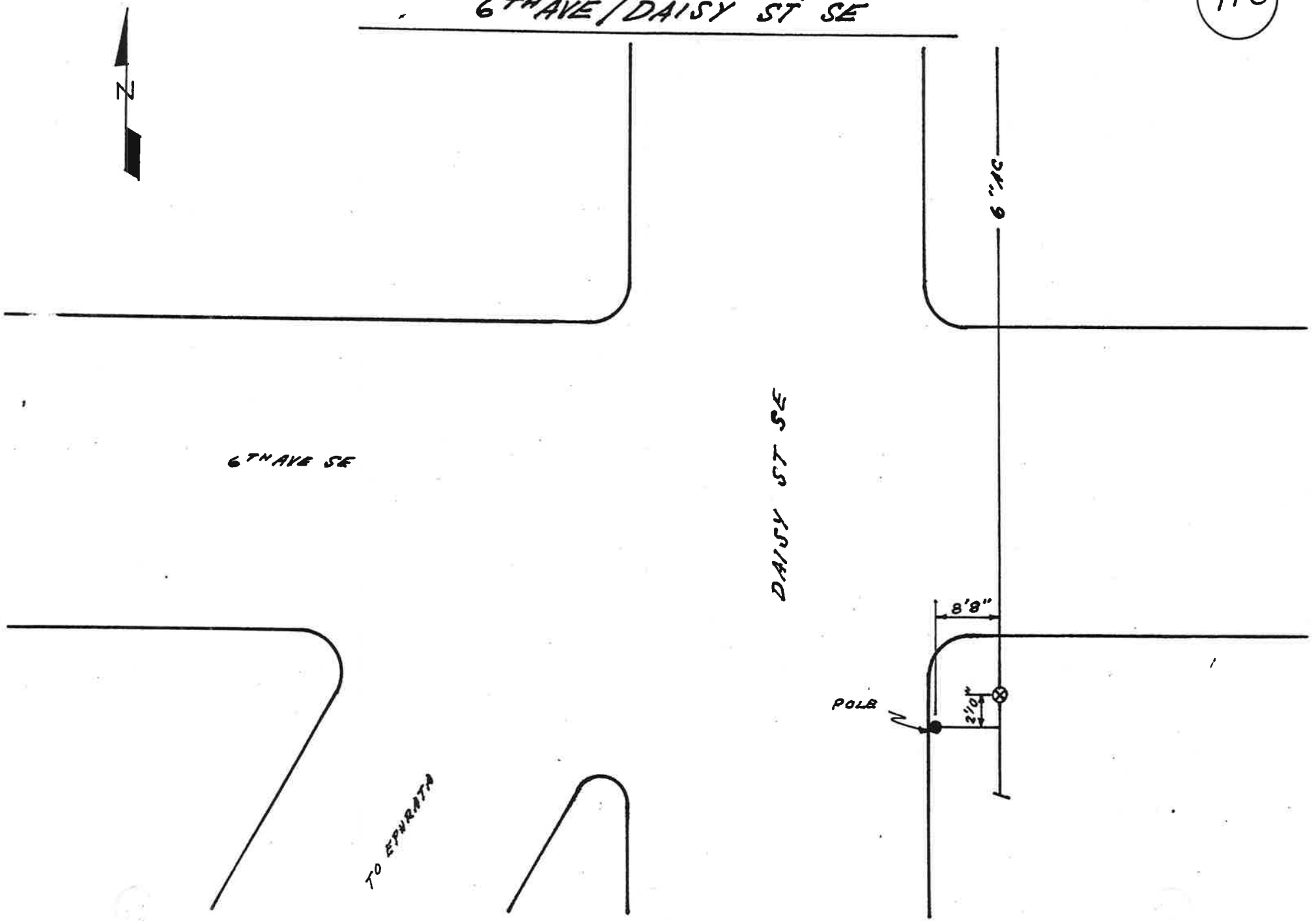
6th Ave / 2nd Place SE

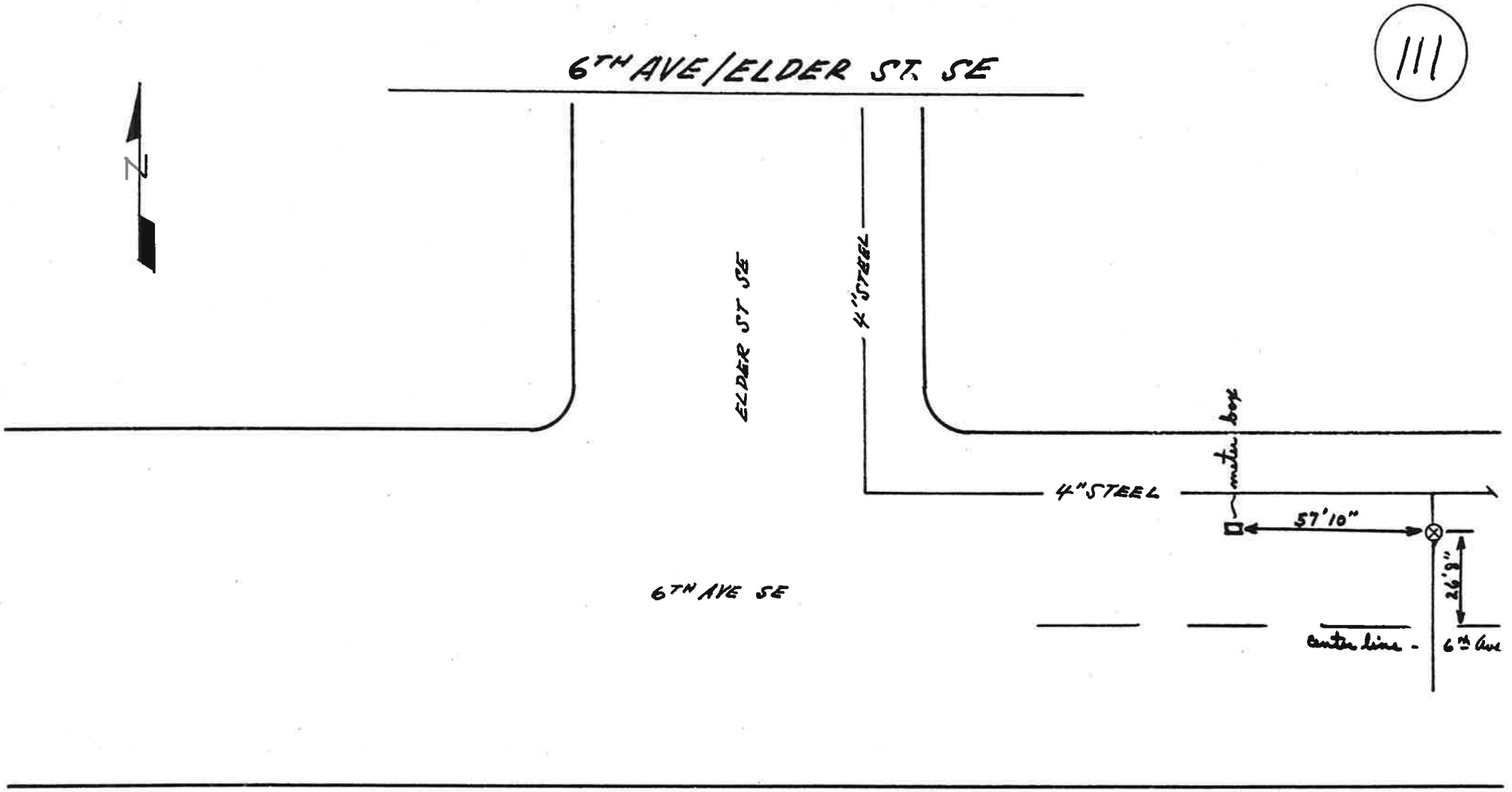
108

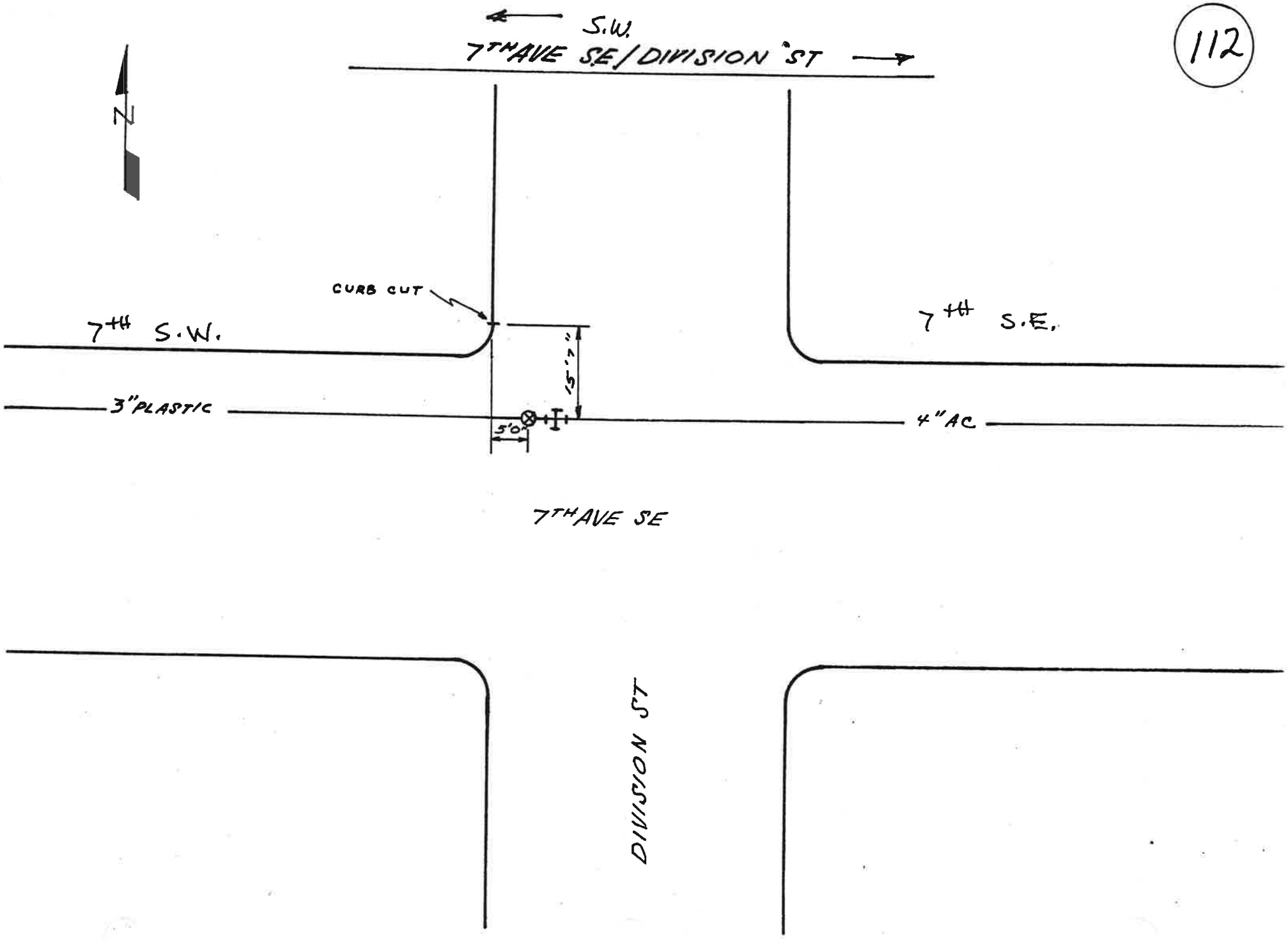


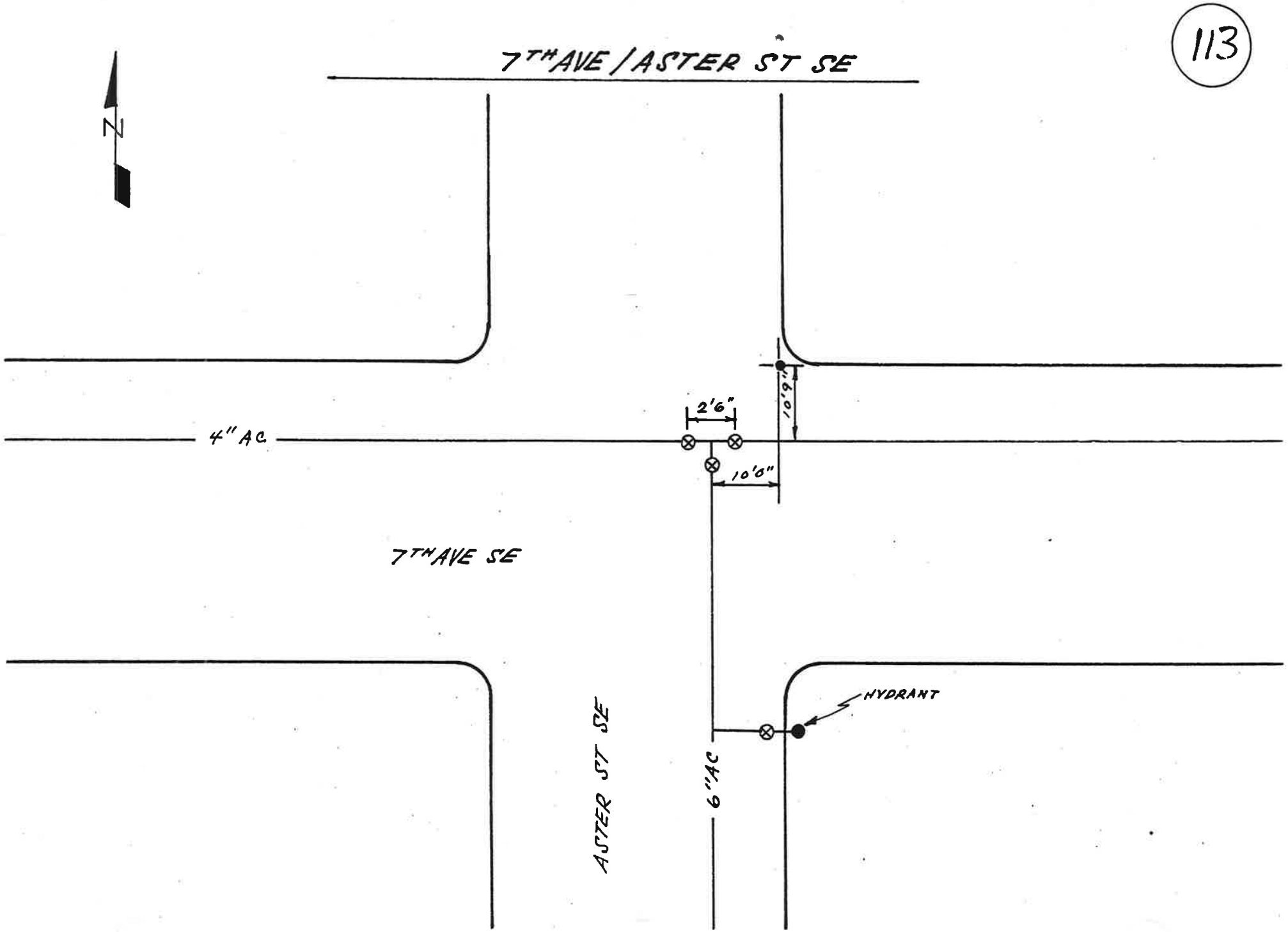

6TH AVE / CANNA ST SE
N
8" C-900
6TH AVE SE
6" AC
6'4"
Telephone cable
BACK OF CURB
HYDRANT
10'8"
BACK OF CURB
6" AC
CANNA ST SE

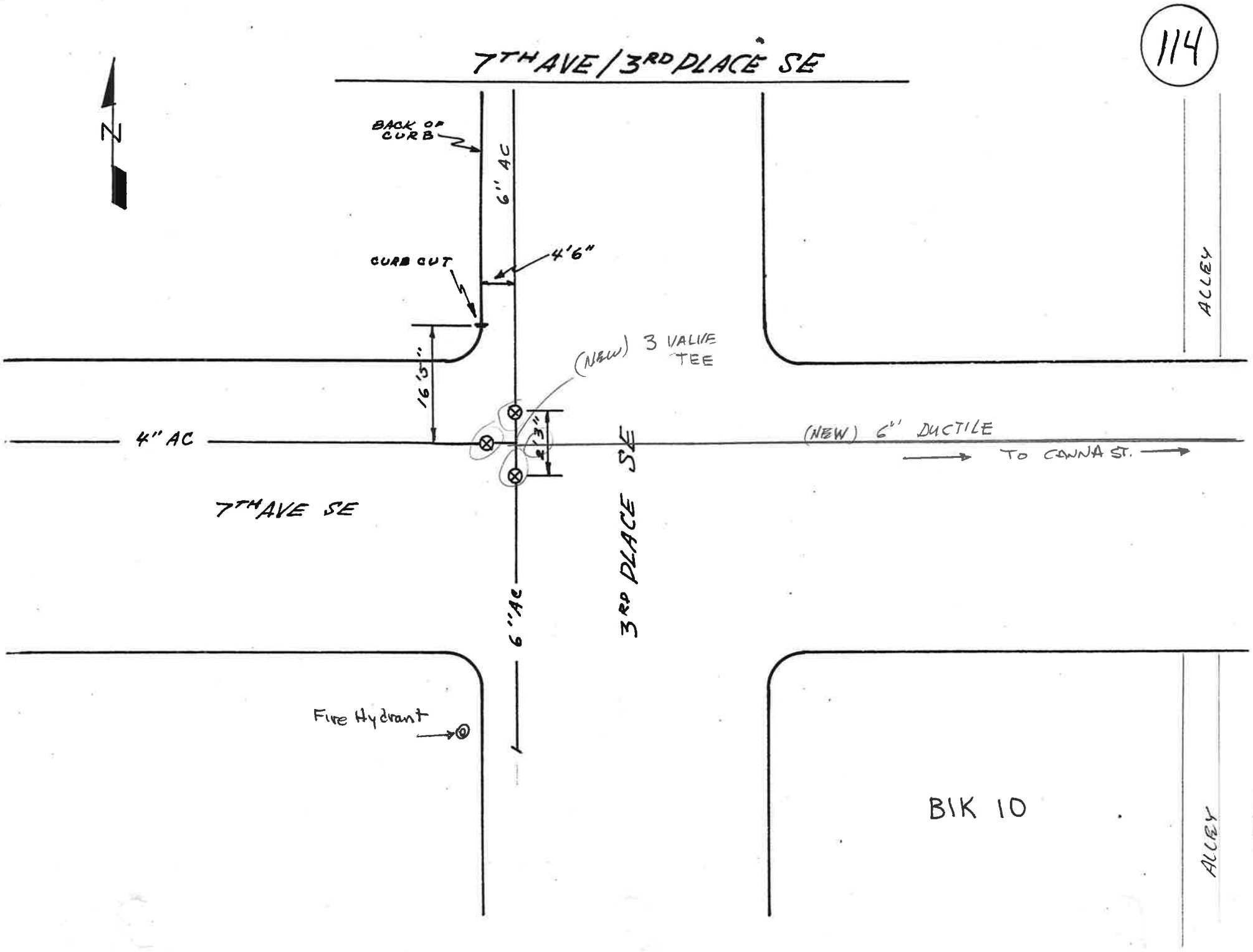
6TH AVE / DAISY ST SE

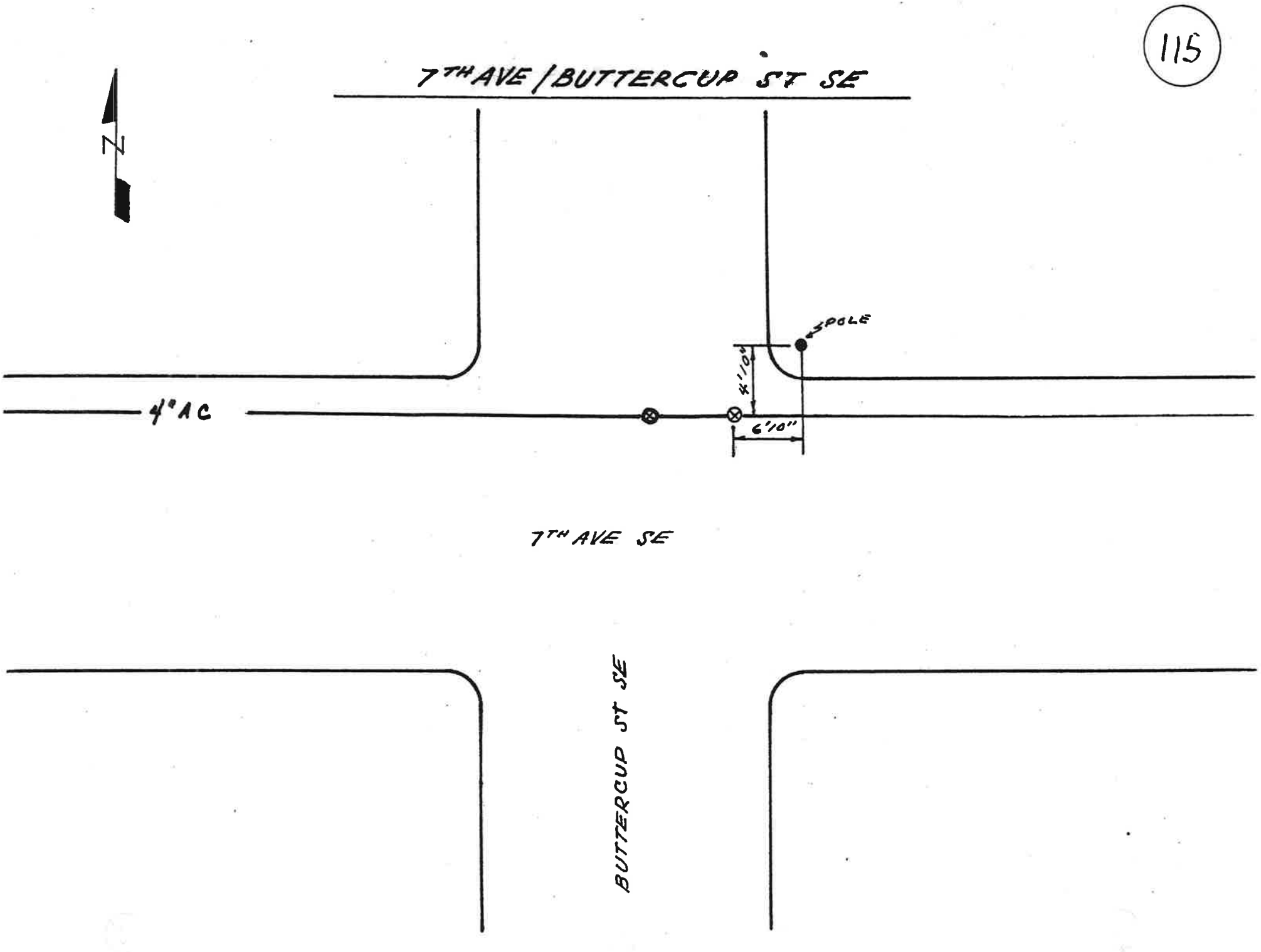


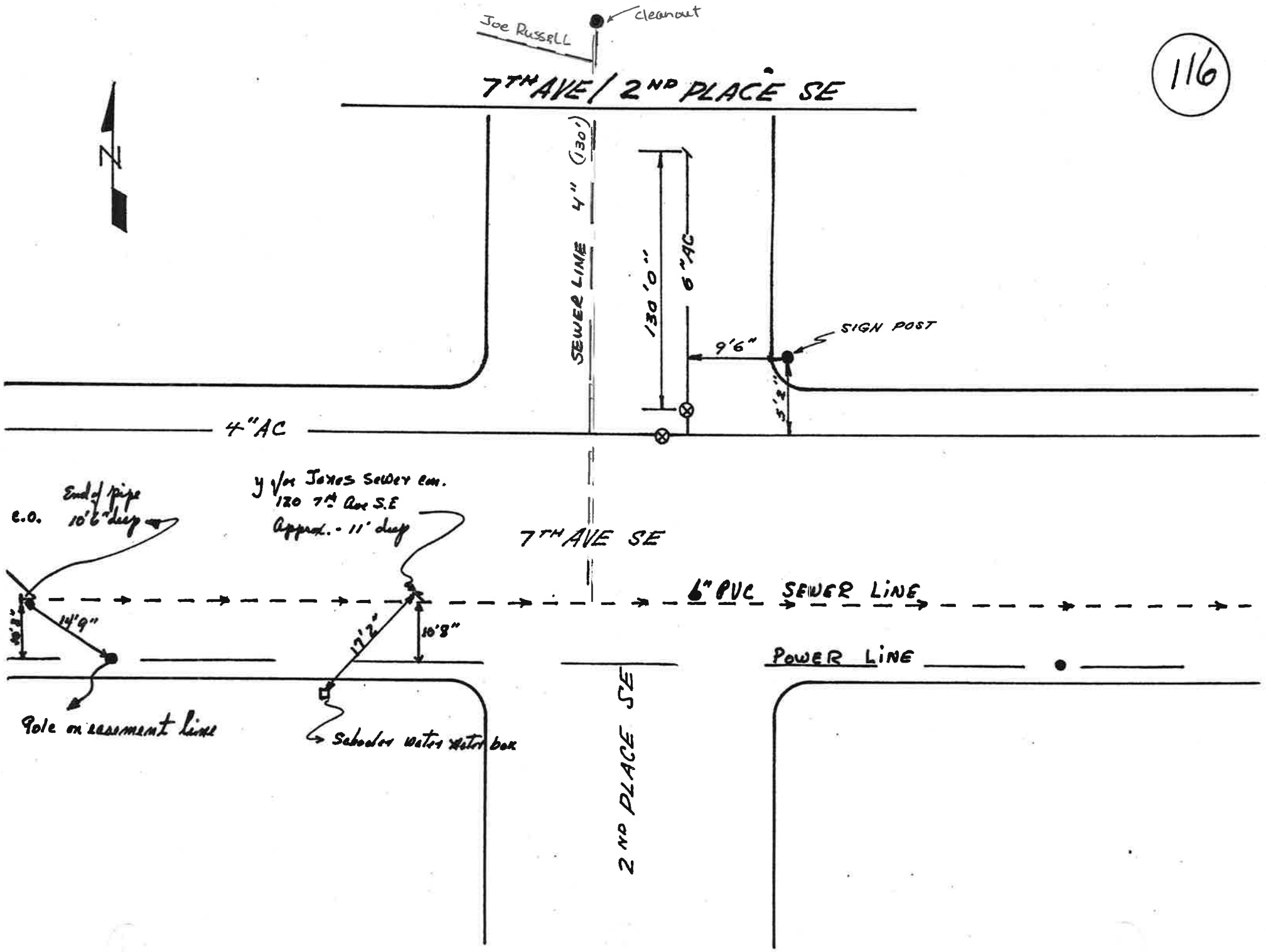

6TH AVE/ELDER ST. SE
N
ELDER ST SE
4" STEEL
4" STEEL
meter box
57'10"
26'9"
6TH AVE SE
center line - 6th Ave

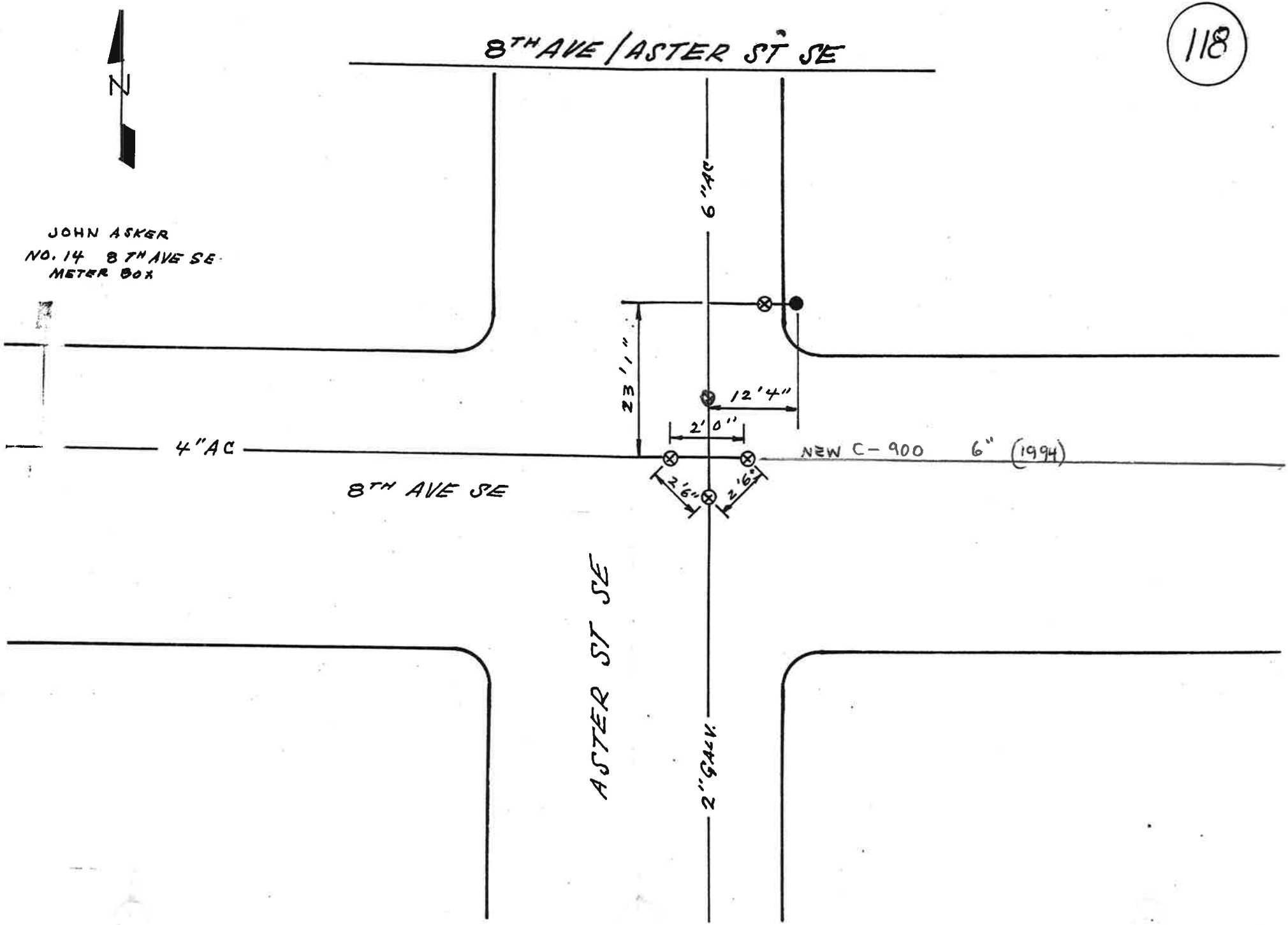

S.W.
7TH AVE SE/DIVISION ST
N
CURB CUT
7th S.W.
7th S.E.
15'-1"
3" PLASTIC
4" AC
5'0"
7TH AVE SE
DIVISION ST


7TH AVE / ASTER ST SE
N
4" AC
2'6"
10'9"
10'0"
7TH AVE SE
ASTER ST SE
6" AC
HYDRANT

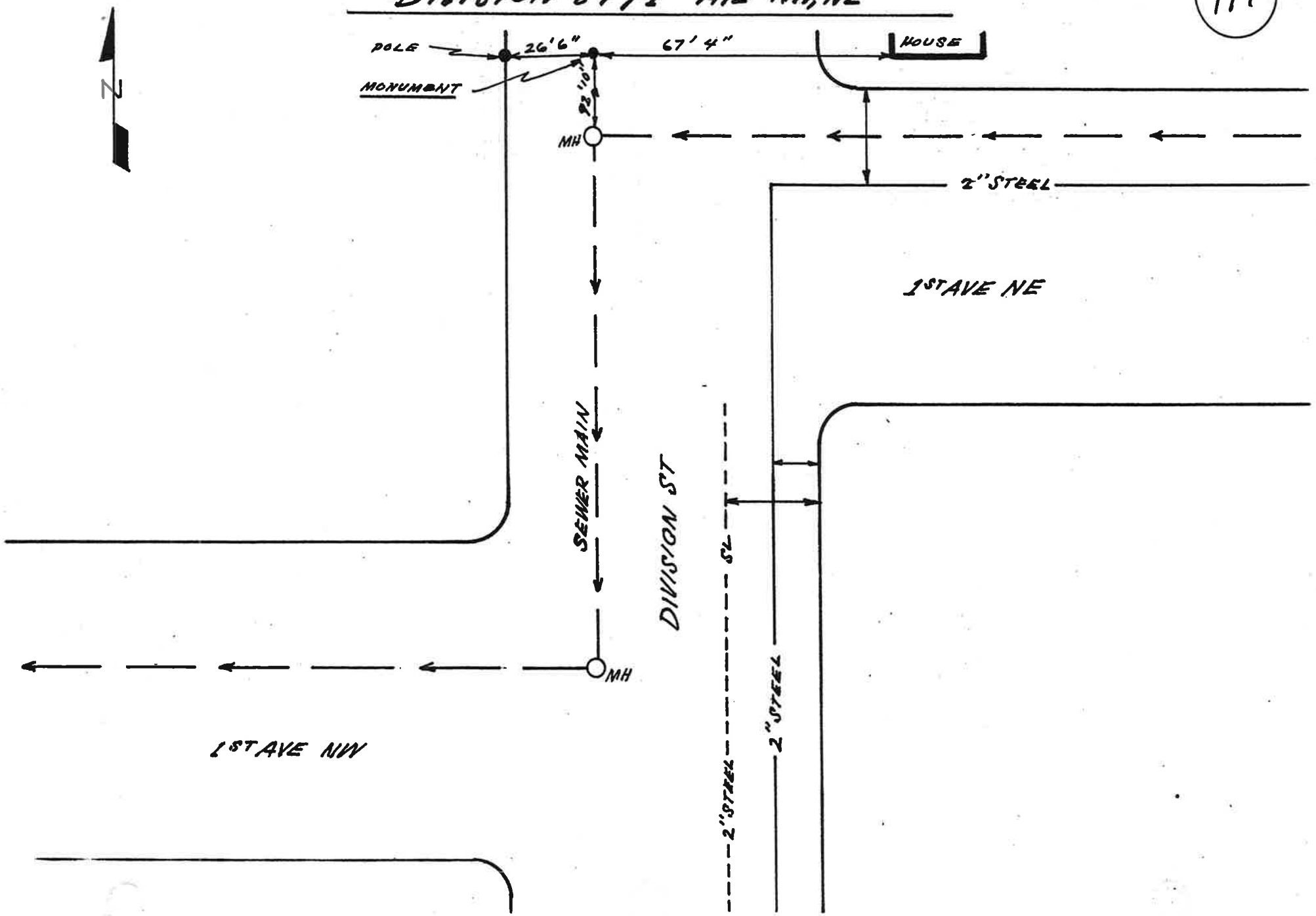

7TH AVE / 3RD PLACE SE
N
BACK OF CURB
6" AC
CURB CUT
4'6"
16'5"
(NEW) 3 VALVE TEE
4" AC
2'3"
(NEW) 6" DUCTILE
TO CANNA ST.
ALLEY
7TH AVE SE
3RD PLACE SE
6" AC
Fire Hydrant
BLK 10
ALLEY

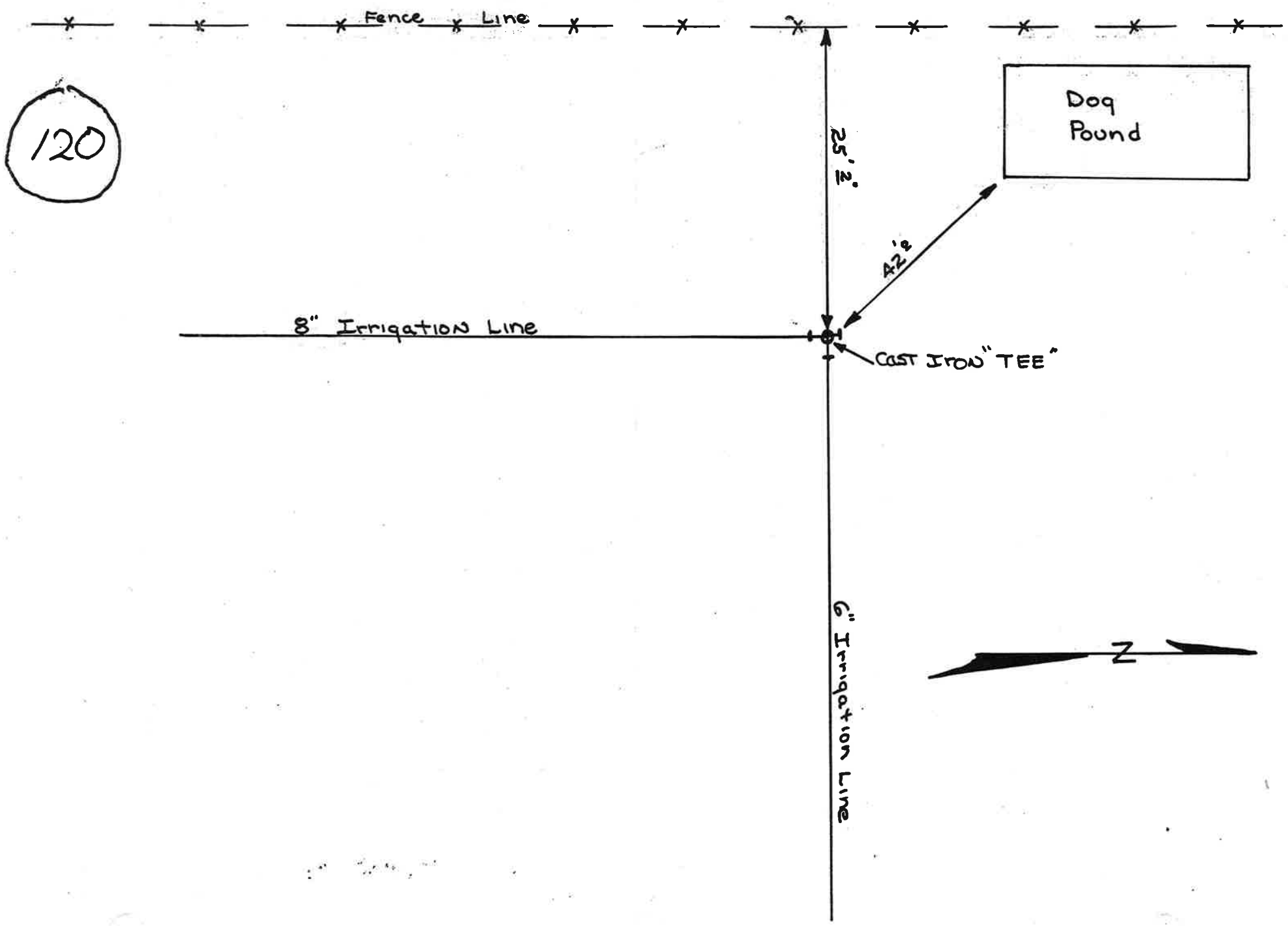

7TH AVE / BUTTERCUP ST SE
N
SPOLE
4'1"
6'10"
4" AC
7TH AVE SE
BUTTERCUP ST SE


Joe Russell
cleanout
7TH AVE / 2ND PLACE SE
N
SEWER LINE 4" (130')
130'10"
6" AC
9'6"
SIGN POST
3'2"
4" AC
End of pipe
10'6" deep
e.o.
y √ox Jones Sewer ens.
120 7th Ave S.E
Approx. - 11' deep
7TH AVE SE
6" PVC SEWER LINE
14'9"
12'2"
10'8"
POWER LINE
Pole on easement line
Schneider water meter box
2ND PLACE SE


8TH AVE / ASTER ST SE
N
JOHN ASKER
NO. 14 8TH AVE SE
METER BOX
6" AC
23'1"
12'4"
2'0"
4" AC
NEW C-900 6" (1994)
2'6"
2'6"
8TH AVE SE
ASTER ST SE
2" GALV.

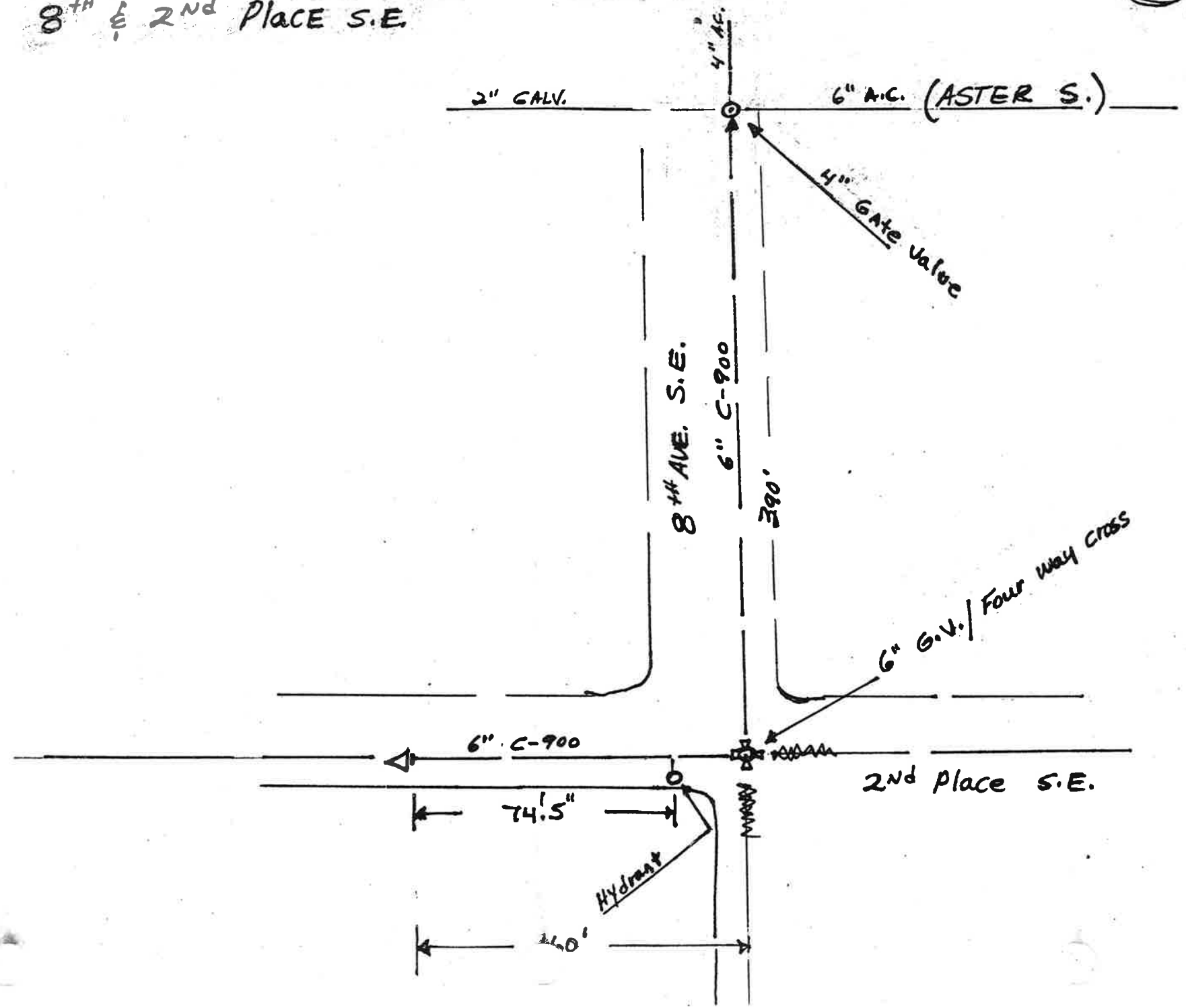
DIVISION ST / 1ST AVE NW, NE

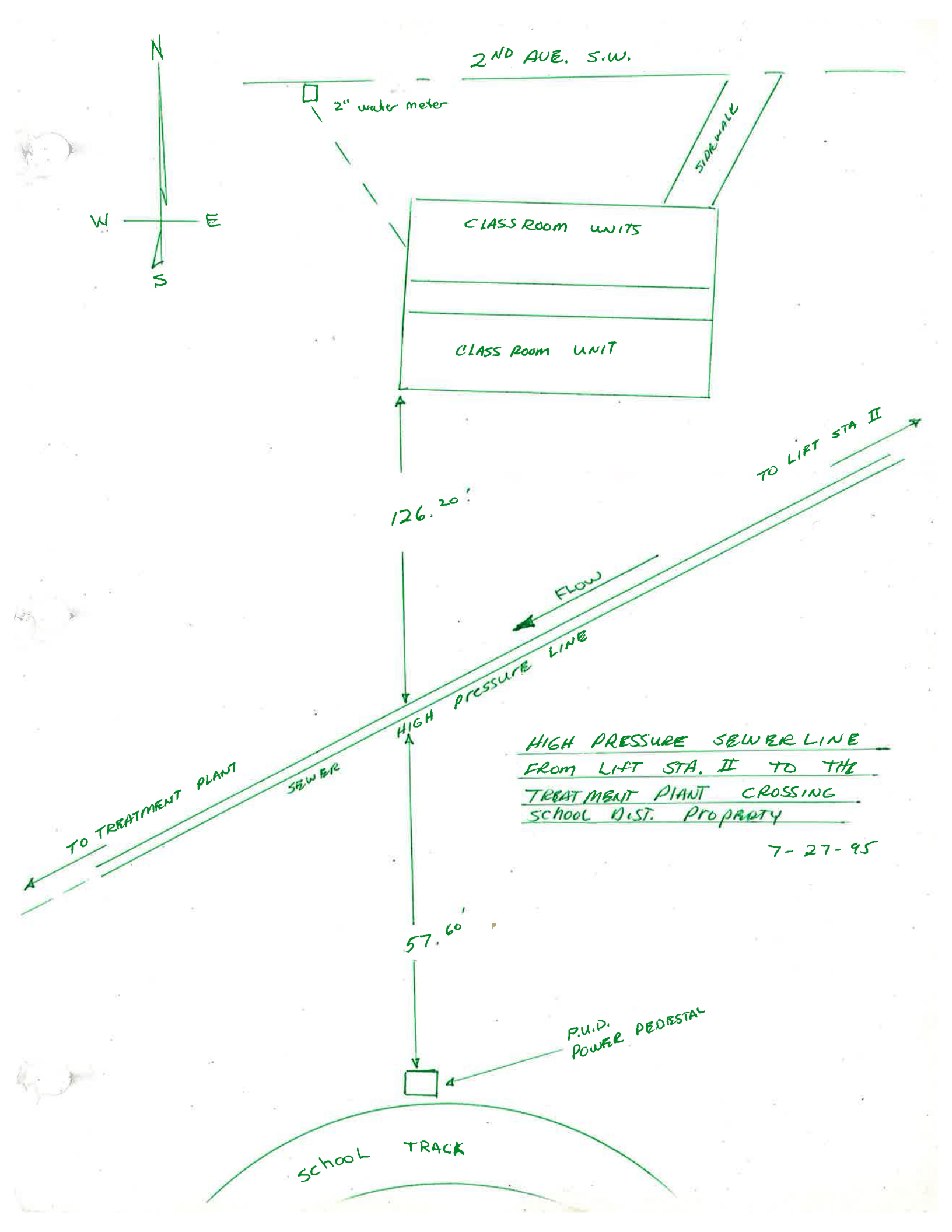



Fence Line
120
Dog Pound
25'2"
42'2"
8" Irrigation Line
Cast Iron "TEE"
6" Irrigation Line
N

HIRAM KNOTT WATER EXTENSION

8TH & 2ND PLACE S.E.





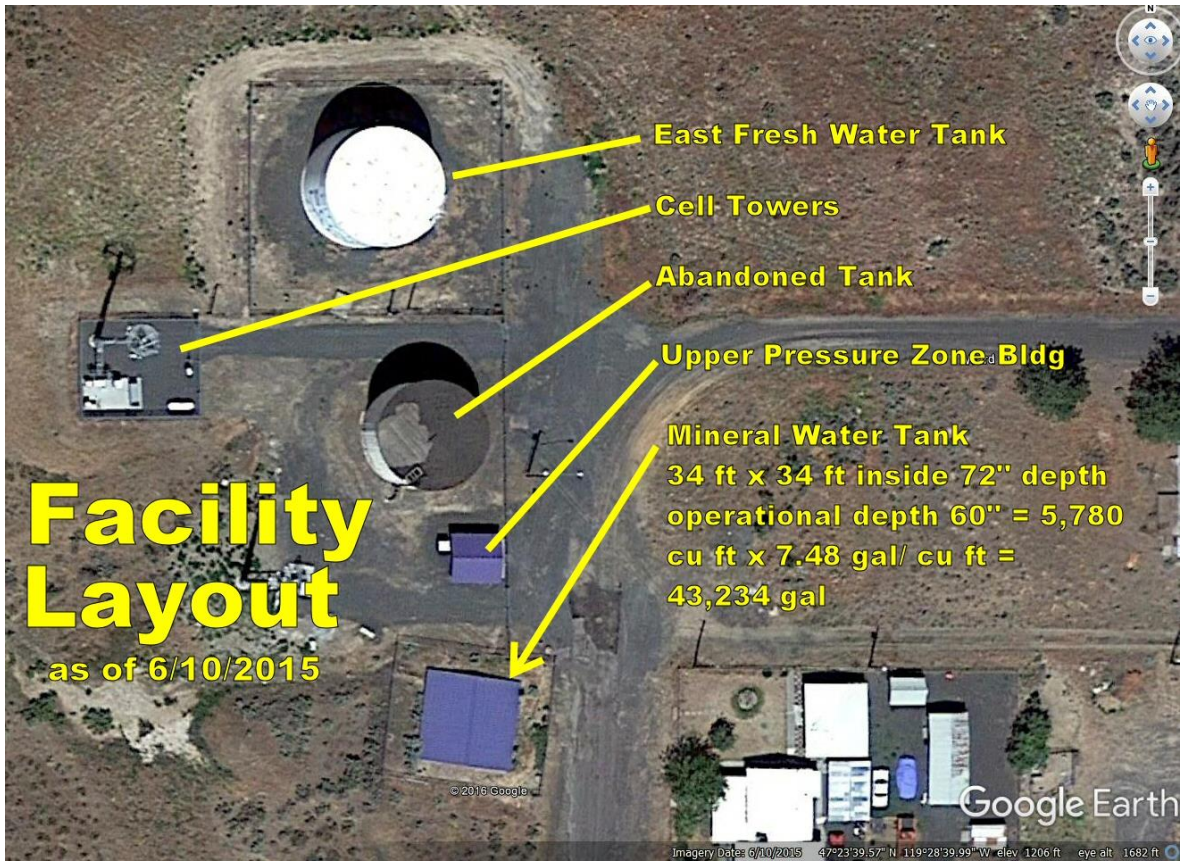
HIGH PRESSURE SEWER LINE FROM LIFT STA. II TO THE TREATMENT PLANT CROSSING SCHOOL DIST. PROPERTY

7-27-95

Soap Lake Mineral Water System Failure Report

By John Glassco & Steve Wellein for the City of Soap Lake

January 26, 2017



Contents

Cover: This image is an aerial photo taken on June 10, 2015 showing the City's facilities on the east side of town on Scenic Drive at Ward Street. This image shows the mineral water tank. North in this image is at the top.

1. History and timing of the system failure:

On December 29, 2016 at 3:50 PM, Glassco was called by Sherry Xio and alerted to the loss of mineral water service at several of her buildings. Other mineral water customers had noticed the break in service. Due to the extreme cold weather, some customers believed that their pipes had frozen.

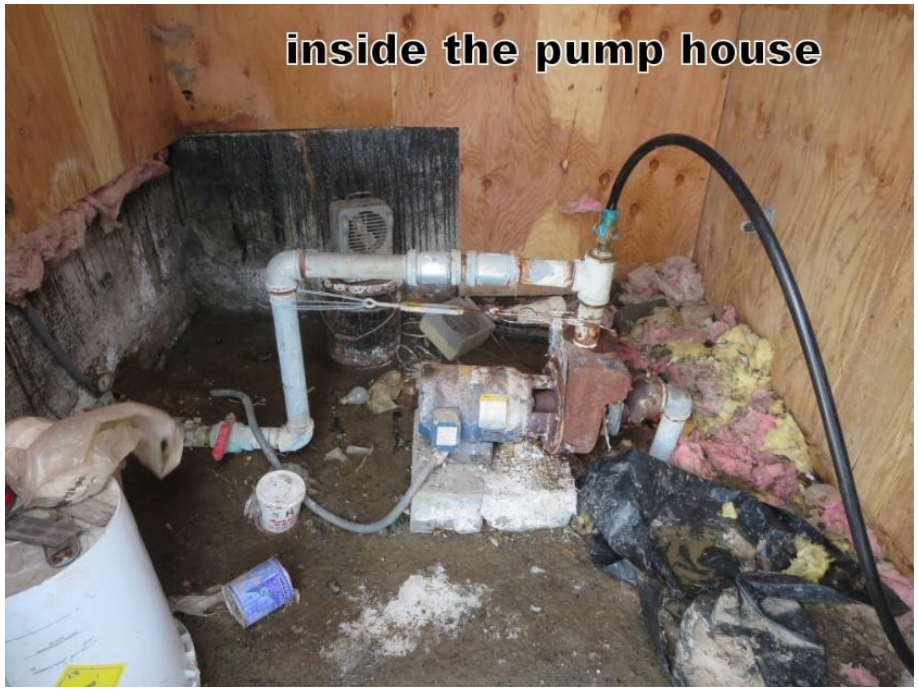
Glassco called the Mayor and was told that the mineral water tank was found to be unexpectedly empty. Further, the mineral water pump house located near the old flag pole behind the library had been without adequate heat. As a result of the cold weather, the pump and various lines had frozen, and restoring service to the mineral water customers would be a challenge.

Public works was struggling with emergency snow removal during the severe cold snap and intermittent heavy snows and other equipment breakdown including the road sander. Glassco and Wellein who both have some experience with pumping systems, agreed to monitor the situation on behalf of the City to oversee the restoration of the mineral water service.

Public works had been unable to locate a 220 volt heater for the pump house claiming a shortage in the area. A local citizen donated a heater which public works installed for temporary use to attempt to thaw out the pump and pipes.

On January 5, 2017, Glassco called Kirk Youngers, a commercial pump and control expert who was recently hired by the City to restore and repair the Upper Pressure Zone which supplies fresh water to the homes in the northeast corner of town. By chance, Youngers was performing a final inspection of his successful repair to the Upper Pressure Zone (see cover air photo,) a pumping system which had never operated properly almost since its original construction over 12 years ago.

Youngers when finished with his inspection was solicited by Glassco and Wellein to inspect the mineral water pumping system and to consult specifically on the condition of the 5 horsepower pump which suctions lake water out of the lake at the flag pole and delivers it through a two inch diameter line to the approximately 50,000 gallon concrete mineral water tank on Scenic Drive, a pipeline distance of approximately a mile from the pump with a lift of over 150 feet.



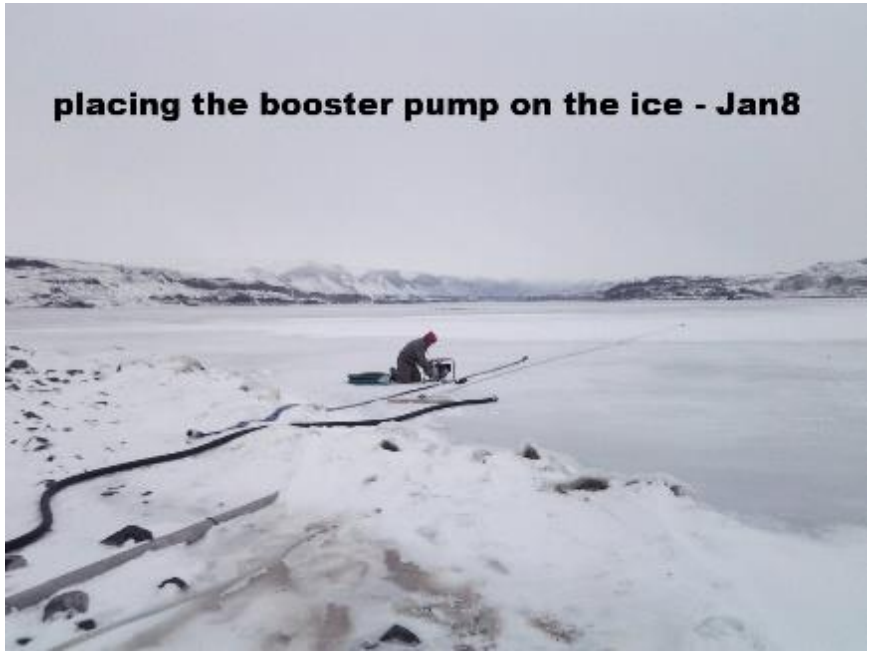
During Youngers' inspection of the Upper Pressure Zone, Glassco observed public works nearby, introducing fresh water into the mineral water tank from the nearby hydrant. This practice was intended to "stir up" the mineral deposits in the bottom of the tank.

The pumping and transport system had frozen up in the past, and fresh water had been introduced into the tank with the goal of delivering a facsimile of mineral water to the downstream distribution system. In reality, the product of this practice delivers essentially fresh water to the bathtubs on the system. The introduction of fresh water into the distribution system has resulted in customers of the mineral water questioning the strength of the system. The fresh water can linger in the distribution system long after it is introduced. This can dilute the strength of the water at the individual tap long after the operation of the system is restored.

2. Fix #1 and Fix #2, January 7 – January 10:

With the help and advice of pump expert Youngers, Wellein and Glassco decided that there was a chance that the system could be repaired. If the mile-long line between the pump house and the tank was not frozen anywhere along its length, and the pump body was undamaged, it might be possible to replace the frozen suction line, fill the tank with mineral water and restore the system to operation. This was our chosen course of action.

On January 6th, the suction line was rebuilt out onto the surface of the lake with an inlet stubbed through a hole cut in the ice. The pump and pump house had thawed by this time and the like was sucking air when removed from the lake water.



That night the pump ran continuously, and the temperature dropped several degrees below zero. In the morning an inspection of the fresh water level in the tank showed no change. Returning to the pump house we discovered that the entire suction line had frozen solid and shattered. Apparently the old pump was too weak to move the water fast enough to prevent freezing.

On January 7th, materials were purchased to rebuild the suction line with the additional purchase of a portable 5 horsepower gasoline powered booster pump to be placed out on the ice to supply sufficient force to supplement the weak centrifugal electric pump.

In the image to the left, the booster pump is being placed on the ice and set up with a new suction line out to a new hole in the ice that now is around 5 inches thick. You can see at the bottom left of

the image, next to our shattered line and our new line under construction, at least two of several former suction lines into the lake. One of these lines is a three inch diameter transite pipe similar to the water lines throughout the town that were replaced in the 1950s for both the fresh and mineral water systems.

This portable temporary setup pictured on the previous page is standing by for use when the lake is frozen, and when the temperature is too cold to operate the permanent suction line. By nightfall on January 8th, this system was still not able to deliver water into the pump house.

On January 9th, a kerosene turbine heater was purchased to direct a hot air blast to the base of the pump house. This setup was shrouded to keep out the cold air, and the base of the building was thawed completely. Chunks of ice exited the line onto the ice confirming that this was the location of a blockage in the suction line that probably was a major part of the problem to that point. The ball valve in the pump house was opened that afternoon to drain all of the fresh water out of the tank on the hill, through the transport line between the tank and the pump, and through the stationary pump and the suction line out onto the ice over the next 5 or so hours.

That night of the 9th, the system was primed, and both pumps were turned on. The night was again bitter cold and below zero, but the booster pump ran flawlessly through the night supplementing the stationary pump in the pump house. Although the booster pump with its small gas tank required fuel every two hours, by early morning, the elevation of mineral water in the tank reached its maximum level.

Inspection of the water level in the tank is measured from the bottom of the roof trusses to the surface elevation of the mineral water in the tank.

On January 10th at 9 AM, the elevation of water had reached to within 10 inches of the bottom cord of the trusses, the pumps were shut off, and the temporary setup was removed from the lake.

Twenty four hours later, the elevation in the tank was still holding at 10 inches, and the officials of the Natural Spa and Resort were told to purge their lines of fresh water and to expect that the mineral water would return to the expected strength.

Later that day, the Secretary of the Soap lake Conservancy, Gene Wing, visited a room at the Lodge and using equipment for this purpose, tested the water strength at a tub faucet to compare it with the with readings from the lake where the water was extracted. The concentration of minerals at the tub approximately matched those of the lake, verifying that the conditions had returned to normal, and that the crisis was over.

3. What was Learned from this Experience?:

The most important finding from this whole experience in our estimation was:

1. The mineral water pumping system is obsolete. You can see from the picture of the inside of the pump house that even the concrete base of the pump is cracked placing the pump and the pump motor out of alignment stressing the bearings. The entire pumping setup needs replacement with a more robust and perhaps more powerful pump plus redundant equipment to ensure consistent and reliable operation.
2. The transport line between the tank and the pump did not freeze, even during the coldest night with no circulation in the system due to the frozen pump. This means that the line is buried at sufficient depth to be serviceable except for the line condition. The line is likely of transite construction placed along with the complete re-piping of the town during the 1950s. It should likely be considered due for replacement along with the entire fresh water and mineral water delivery systems. The fresh water system is slated for eventual replacement, and the public discussion concerning the scope of and eventual replacement of components for the mineral water system is overdue.
3. The concrete holding tank, and the transport line discussed in point 2 do not leak. When the pump was shut off, and the valve in the pump house was closed on January 10th, the elevation of the reservoir did not lose even a half inch of elevation in the tank over 24 hours. This is indeed good news.
4. The several hundred foot long suction line into the lake from the pump house needs to be reengineered and made more robust, along with the repairs to the pump house. The temporary fix is just that – temporary.
5. The elevation in the mineral water tank needs a float and signaling system. The cost of providing this is nominal, and I am surprised that this was not included by our engineers during the installation of telemetry for the fresh water system. Requiring that someone visually inspect the level of water in the tank is primitive and inefficient of people's time, and makes no sense.
6. If the city takes its municipal responsibility seriously, it should ensure a reliable supply of mineral water to its customers without interruption – the failure of the system was unnecessary, and counter to our comprehensive plan

which encourages year-round use of our public and private commercial facilities consistent with our other plans for economic development.

4. Our Plan for Moving Forward:

We need a public discussion to determine the current and future value of the mineral water delivery system. This is a true municipal system unique in the country. Our lake is unique in all the world, and a resource that we must protect.

Working out the steps necessary to perfect the mineral water system in conjunction with plans to protect the lake, and our economic developments plans, current and future, will have to take place. If the City decides to divest their interest in any part of the system, or the only remaining certified water right to the mineral water is a decision too important to be left to a handful of people no matter how qualified.

In the short term, the replacement of the pump house and the suction line is necessary to ensure the reliable delivery of mineral water. This is an urgent problem requiring immediate attention. The estimate from a qualified practitioner, Kirk Youngers is included in the addendum. This estimate is for $64,191.19. Given the neglect of the system, to us this seems reasonable and better than expected.

We also need to provide telemetry to constantly monitor high and low water events at the tank. This cost is not included in the estimate but should be around $1000, depending on whether we can tie it into our new municipal system.

These changes are what is needed for the next 5 years.

In the longer term, we need a plan for replacing the delivery system. At this time we know that the transport system and the tank are not leaking. However, these facilities will eventually have to be replaced along with the entire delivery system. We do not know it the delivery piping is leaking, but along with the fresh water delivery system, all of the transite pipes in town will have to be replaced in less than twenty years.

The cost of replacing piping systems is mostly in the trenching, and the repair and repaving of surface improvements. Adding a second pipe in the trench for the mineral water delivery system is nominal, and could be accomplished, if well planned, without adding much to the cost of re-piping the town.

Questions of how extensive the mineral water system extends is a great question for debate. We need to restore service to McKay Hospital District who is discussing a wellness facility. We know that at least 300 service connections at one time served the residents of the town. This shows that a mere 60 years ago there was great investment in the system, regardless of recent neglect of the system.

It is unknown how many of our current residents would be interested in being included in a refurbished system to bring water to the homes. We are truly unable to estimate how many future residents might be interested in connecting to the system, or what they might be willing to pay monthly for the service.

There are other issues involving say returning waste bath water back into the lake, either from the commercial facilities or from single family residents. I can certainly imagine holding tanks at the residences for eventual collection by tanker for return to the lake. This discussion also necessitates considering plumbing, health, and legal issues that would have to be worked out.

Who can pay for the repairs, and should the public be required to support a system that currently only serves a handful of commercial customers? This is not a discussion for only a few. After all a school or hospital system does not serve everyone, but it is considered necessary to fund for the public good. When we examine communities with a unique asset, it is possible to boost the economy of an entire city, if the resource is handled thoughtfully and with appropriate input and design.

Traditionally the mineral water system was maintained in concert with the fresh system and using the same fund. When these funds were separated, the water systems held over $300,000 in reserves, yet none of these reserves were transferred to the mineral water fund at the time for maintenance.

The system was told to sink or swim on your own. They were told to maintain an ancient and ailing system with whatever they could garner from a handful of active services. Obviously this was an impossible task following years of neglect. The results are indicative of what would be expected. The public was not involved in this transfer expect during public comment.

It is time to examine all of these issues in an open and wide public forum.

John Glassco – Steve Wellein, January 26, 2017

5. Addendum, Costs of the immediate fix, and Estimate from Wire 2 Water for necessary repairs to the pumping and suction systems:

Receipts and invoices for the Fix of the Soap Lake Mineral Water System

December 27, 2016 - January 10, 2017

January 6 – Ace - $27.83
January 7 – Home Depot - $273.41
January 7 –Home Depot - $9.69
Total Steve & John $310.93
January 14- Kirk 1 – Fees & Travel - $935.80 – Parts - $1,743.25 – Total - $2,679.05
January 14 – Kirk 2 – Fees & Travel - $718.50 – Parts - $402.04 – Total - $1,120.54
Total Kirk - $3,799.59
Billed to City account - $54.79

Total Fix – Parts - $2,511.01 – Total Fees & Travel - $1,654.30 – **Total Fix - $4,165.31**
John Glassco – Steve Wellein - January 26, 2017

Telephone 509 246-1211
Fax 509 246-1213

PO Box 1270
239 2nd Ave SE
Soap Lake WA 98851

August 15, 2018

Gray & Osborne

Re: Soap Lake Mineral Water Accounts

Listed below are the active Soap Lake Mineral Water Accounts:

633	Gustaveson, Linda PO Box 709 Soap Lake, WA 98851 (509) 246-0703	311 1st Ave SE	Residential	1 unit
637	Gustaveson, Linda	22 S Canna	Multi Family	4 units
840	Slough, Lesley PO Box 1417 Ephrata, WA 98823 (509) 764-4200	318 E Main Ave	Commercial	2 units
2614	Soap Lake Natural Spa & Resort – Inn PO Box 1527 Soap Lake, WA 98851 (509) 246-1132	226 E Main Ave	Commercial	9 units
2642	Soap Lake Natural Spa & Resort – Lodge	236 E Main Ave	Commercial	20 units

I have contacted each customer by phone and let them know you will be contacting them to talk about Soap Lake Mineral Water.

Let me know if I can be of further assistance.

Anita Richardson
Deputy Clerk

Kaleb Smith

From: Sean Comstock <[redacted]>
Sent: Wednesday, November 07, 2018 1:39 PM
To: 'Kaleb Smith'; 'Adam Miller'
Subject: FW: Update on Mineral Water System

Sean Comstock P.E. *| 509.853.2460 p |541.420.4797 c*
Gray & Osborne, Inc. *| 11 Spokane St., Suite 207, Wenatchee, WA, 98801*

From: Nancy Wetch <[redacted]>
Sent: Wednesday, November 07, 2018 1:39 PM
To: 'Sean Comstock' <[redacted]>
Subject: FW: Update on Mineral Water System

FYI

Nancy Wetch, P.E. | Gray & Osborne, Inc.
Project Engineer | Yakima, WA
(509) 453-4833 Office | (509) 945- 9894 Cell
www.g-o.com | 180 Iron Horse Court

From: John Glassco [[redacted]]
Sent: Wednesday, November 07, 2018 12:21 PM
To: Kirk Youngers <[redacted]>; Mau, Russell E (DOH) <[redacted]>
Cc: Raymond Gravelle <[redacted]>; Dave Tweedy <[redacted]>; Steve Wellein <[redacted]>; Karen Hand <[redacted]>; Robert Brown <[redacted]>; Kandis Lair <[redacted]>; Katherine Kenison <[redacted]>; Nancy Wetch <[redacted]>; Mike Meskimen <[redacted]>; Judith Gorman <[redacted]>; Darryl Piercy <[redacted]>; Fronsman Darrin <[redacted]>
Subject: Re: Update on Mineral Water System

Russell, Thank you for your comments concerning the mineral water system. As we move forward, public health and safety are our first concerns. After all, the healing properties of the lake water are what inspired the building and incorporation of the town a hundred years ago. Insuring the survival of our unique healing water delivery system is a fitting tribute as part of the city's centennial celebration.

After all, the lake is the original reason for the town being here. The mineral water system provides year-round public access for the enjoyment of bathing in the mineral water. A city sponsored spa development plan from a few years ago emphasized this point. Besides being a bedroom community, preserving the mineral water is a necessary component of any future economic development for our traditional tourist town.

Further to your explanation, I now understand the reason for the check valve on the fresh water system. Probably such a check valve makes sense for any home with or without mineral water service. The reason I say that is because I don't believe that a cross connection from the mineral water system would be a health risk.

Holly Pinkart of CWU with her team conducted the baseline microbiological study of Soap Lake that was published in 2005 by the National Science Foundation. During her study of the lake, Dr. Pinkart experimented with many of the properties of the water. One experiment exposed common species of bacteria to Soap Lake mineral water. Apparently, staph (Staphylococcus) bacteria was able to survive for only a fraction of a second in the water. Rather than a health hazard, Soap Lake mineral water has all natural antibiotic properties. There is no evidence that ingesting mineral water has or has ever had any negative health effects. Over the years many people claim that regular sips of the water has only helped their digestion and this is considered to be a healthy practice, although due to the sulfur qualities of the water, an acquired taste.

I guess I am making a plea that the mineral water not be officially classified by the state as possibly hazardous similar to irrigation water or waste water. Especially at our Centennial, the town is attempting to promote the historic and traditional therapeutic properties of taking the waters. If our ordinance must have the bath houses, hotels, and home tubs bear a sign at the faucet warning of the dangers of the water, it seems contrary to our main message about the water's therapeutic qualities.

The city is currently revising our mineral water ordinance, confirming the city's mineral water right with Ecology, and updating the mineral water system's engineering and equipment. It is time also to make sure that we satisfy the concerns and requirements of state health. Our city engineers, our Mayor and city staff will be working with you and your staff over the next few months to go over these issues face-to-face. Thanks again for your help with this important work on updating this unique feature of our special place. John

On Tuesday, November 6, 2018, 10:36:55 AM PST, Mau, Russell E (DOH) <[redacted]> wrote:

All:

Thanks for the updated information regarding the Mineral Water System.

I wanted to clarify that DOH requirement for “installation of check valves on mineral water service connections” – this means that check valves are installed on the drinking water service line serving the property, so that if the property, within its property, cross-connects between the mineral water piping and the drinking water piping, then this cross-connected water is prevented from flowing back into the drinking water distribution system and could then enter other homes or businesses.

Thanks,

Russell E. Mau, PhD, PE

Regional Engineer

Office of Drinking Water

Environmental Public Health

Washington State Department of Health

[redacted]

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From: John Glassco [redacted]
Sent: Monday, October 8, 2018 11:26 AM
To: Kirk Youngers <redacted>
Cc: Raymond Gravelle <redacted>; Dave Tweedy <redacted>; Steve Wellein <redacted>; Karen Hand <redacted>; Robert Brown <redacted>; Kandis Lair <redacted>; Katherine Kenison <redacted>; Nancy Wetch <redacted>; Mike Meskimen <redacted>; Judith Gorman <redacted>; Mau, Russell E (DOH) <redacted>; Darryl Piercy <redacted>; Fronsman Darrin <redacted>
Subject: Update on Mineral Water System

Kirk, Further to the last Council meeting, the Mayor and Council have decided to move forward on certain improvements to the mineral water distribution system at this time.

First, the Mineral Water Ordinance is being reviewed by the city attorney based on certain updates. One of the changes will enable meters to be installed by the city for our 5 or 6 existing mineral water customers. You may recall that over two years ago the state department of health required the installation of check valves on mineral water service connections as part of their review of our system standards and their cross-connection control requirements for having "non-potable" water delivered to a residential or commercial property. Since that time, check valves have been installed on the handful of known connections, and inside the buildings as I understand. Having meters on the services will allow the city to compare the volume of water taken from the lake with point of use metering. This will help us determine if we have customers using the mineral water who are not signed-up with the city if the numbers do not match.

Further, we are now working with Nancy, and Mike of Gray & Osborne, our municipal engineers, to assist in the mapping and planning of the withdrawal, storage, and delivery components of the mineral water system. They are currently preparing plans and documents that we will use going forward when we meet with state and federal officials to apply for the second phase of our plan, which is to recycle the mineral water back into the lake. This plan will apply to future customers through the use of holding tanks, and other means to ensure a sustainable use of this limited resource so vital to our city's future development plans.

Please contact Anita for help getting access to the 5 properties so that it can be determined how much effort, and what size meter is needed for each property. I suspect that the former Notaras Lodge, and the former Inn may each require a separate meter. Each property will have to be inspected. The purpose of the inspection is ***to develop a bid spec*** to have the meters installed. The city is planning to use the expedited small-works roster process so we must have three bids because the cost exceeds the threshold requiring a bid spec. We would like to have you provide the bid specs for the entire job of installing meters on all of the city's signed-up customers connected to the mineral water system. Please use your standard rates to bill us for this work.

Mater Type and Cost: When we talked on the phone about this last Tuesday, we discussed various types of meters and their costs. We would request that you exercise your professional judgement while developing our metering program by keeping the following points in mind:

- We would prefer the cheapest reliable meter that will give reasonable accuracy of say within 2 or 3% with an ability to withstand the somewhat alkaline and corrosive substance being metered. It is understood that no single type of meter may work for all of the service connections, depending on space available, pipe diameters, prospective volumes, etc.
- Consider the addition of radio metering that allows the city staff to read the meter without requiring entry of the building. This could either be included now or later depending on a further decision.
- Anita was here when the city required the check valves be installed on mineral water services. She can help plan how to gain access into the building's service connections and work with the existing owners for the performance of the work.
- Nancy and Mike at Gray & Osborne are available if you need anything from them in preparing these specs. However, we are confident that we will use the simplest process available to perfect this important addition to our mineral water system..