BECHTEL NATIONAL INC.

CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-92-D-4670 **Document Control No.:** CTO-0142/0089

File Code: 0308

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 57CS1.RS
Building 127, Room 112
1220 Pacific Highway
San Diego, CA 92132-5187

DATE: October 3, 1997
CTO #: 142
LOCATION: MCAS El Toro

FROM: D. J. Tedaldi, Ph.D., P.E., Project Manager

DESCRIPTION: Capture Zone Modeling and Geologic Cross Sections - DTD October 3, 1997

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CLEAN II Program
Bechtel Job No. 22214
Contract No. N68711-92-D-4670
File Code: 0308
IN REPLY REFERENCE: CTO-0142/0089

October 3, 1997

Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 57CS1.RS
Building 127, Room 112
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: G. Steinway, Code 56MC.GS

Subject: Capture Zone Modeling and Geologic Cross Sections

Dear Mr. Selby:

As requested during the October 1, 1997 Site 24 Pilot Test Update conference call, CLEAN II is providing the attached material for review to assist in the location of extraction well 24EX4. Geologic cross-sections are provided that display the horizontal and vertical distribution of TCE in groundwater within the proposed drilling location. Also included are two computer simulated groundwater capture zones using U.S. EPA Wellhead Protection software. Two cases representing transmissivity values of approximately 2.3 ft^2/min and 0.7 ft^2/min were simulated for a period of one year. A review of the capture zone simulations and geologic cross-sections suggests that extraction well 24EX4 would capture high concentrations of TCE if placed inside Building 296. These data are consistent with high soil gas readings obtained from samples collected in this area during the Remedial Investigation and soil vapor extraction (SVE) pilot tests. These high soil gas measurements represent the vadose zone source. It is anticipated that by overlapping the capture zones of wells 24EX3 and 24EX4, contaminated aquifer dewatering will be enhanced, thereby exposing the dewatered aquifer to SVE. Based on a review of the pilot test data, CLEAN II recommends placing the extraction well inside of Building 296 rather than adjacent to the west side of Building 296 as originally proposed

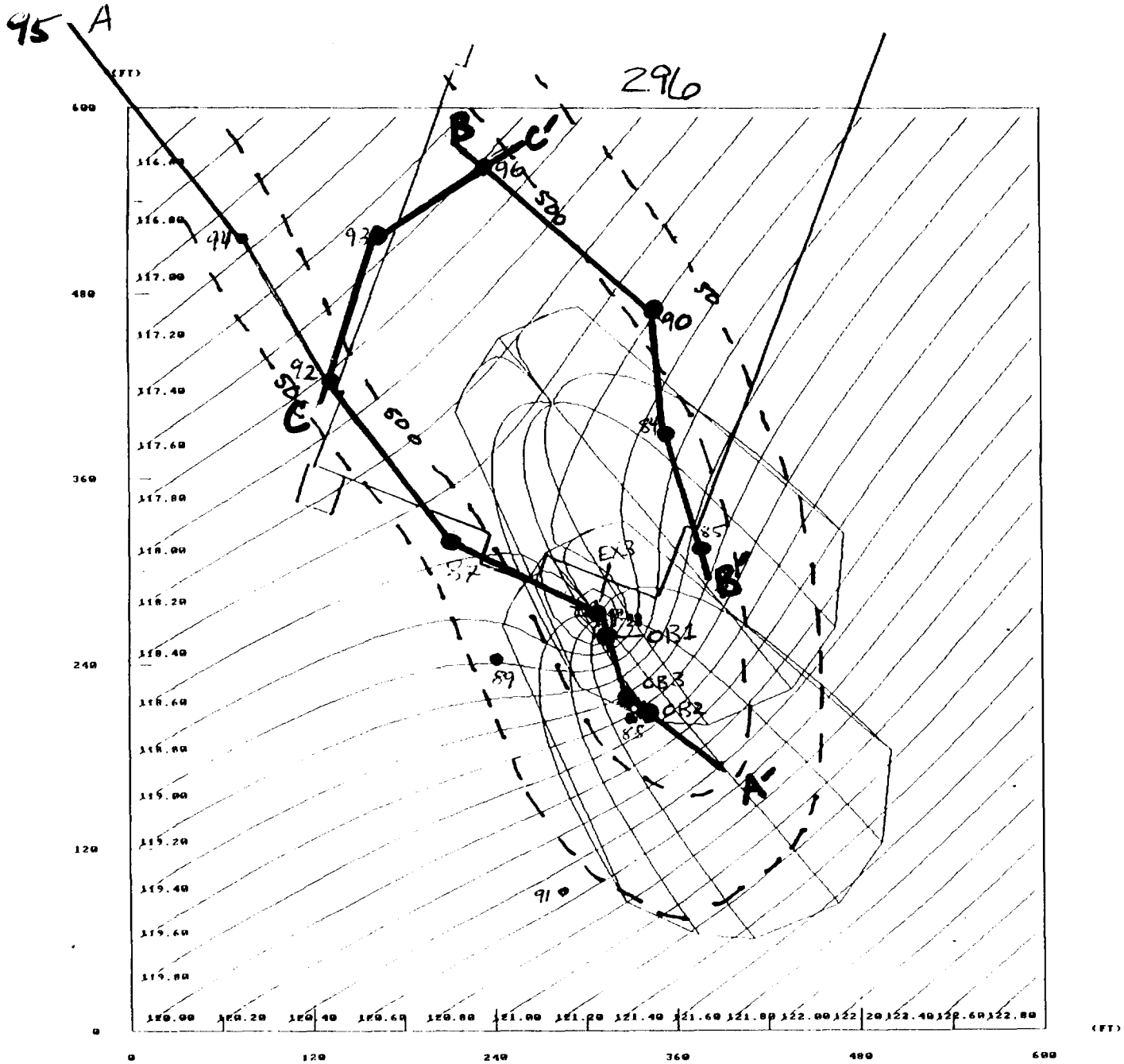
If you have any questions or would like to discuss these data further, please contact Pat Brooks at (619) 687-8851, or myself at (619) 687-8780.

Very truly yours,

Dante J. Tedaldi, Ph.D., P.E.
Project Manager

DJT/sp

Enclosures: Capture Zone Modeling and Geologic Cross Sections



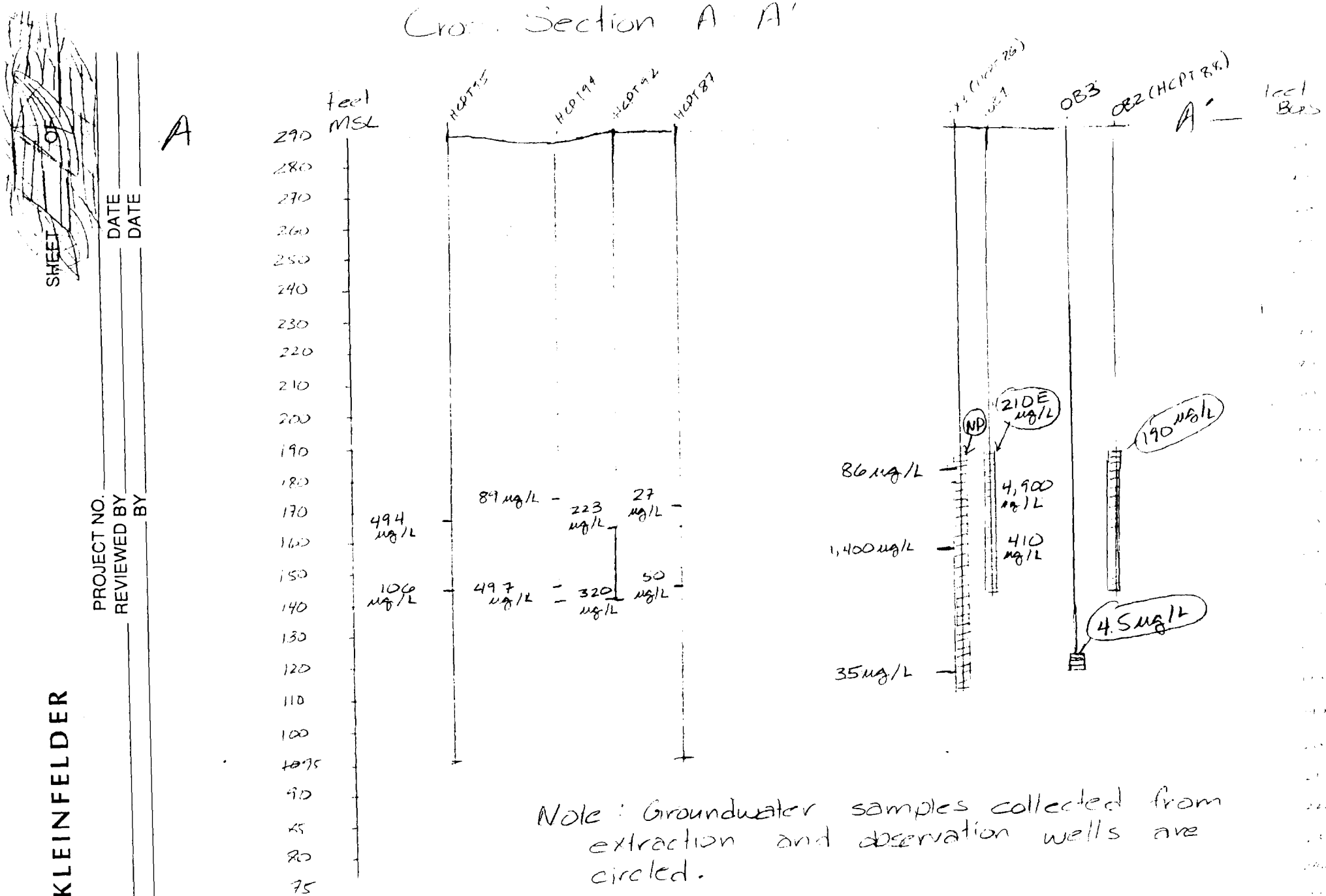
T = 0.71 ft²/min

Q = 15 gpm

time = 1 year

Scale 1" = 100 ft

Cross Section A - A'



Note: Groundwater samples collected from extraction and observation wells are circled.

Horizontal scale 1" = 80'

SHEET ___ OF ___

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M-4A

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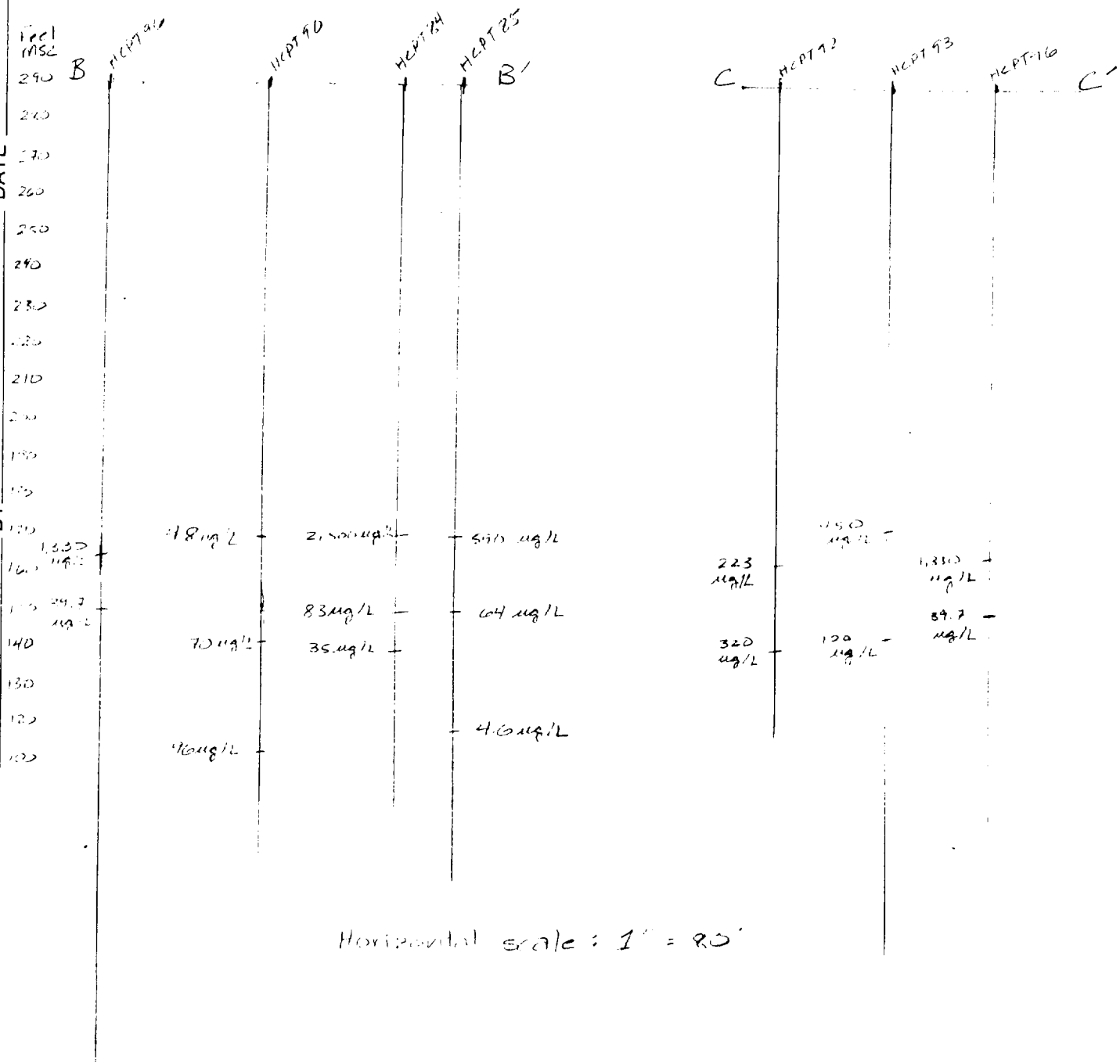
BY ____ DATE ____

PROJECT ____

SUBJECT ____

Cross Section: B-B and C-C'



Horizontal scale: 1" = 80'

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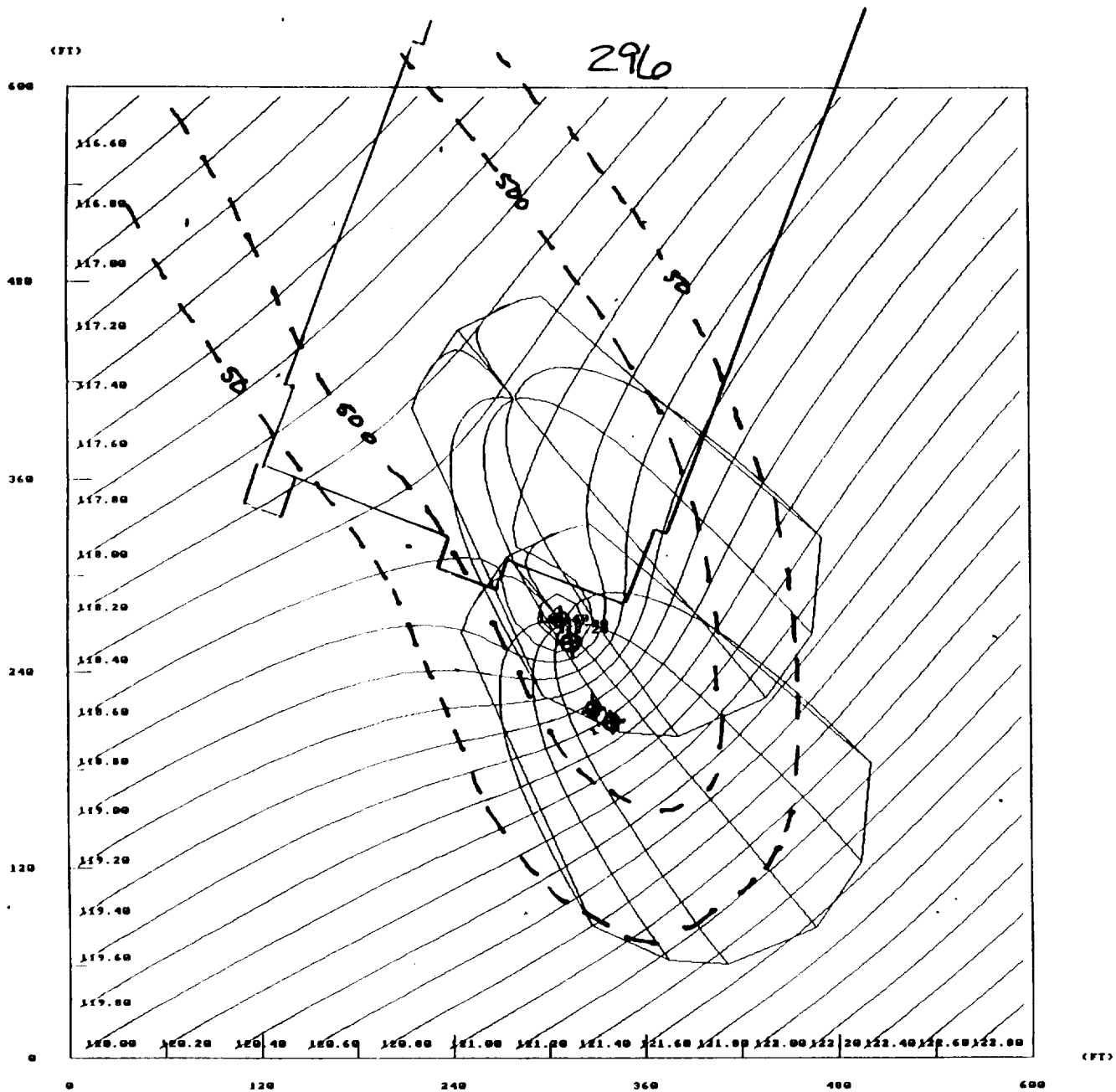
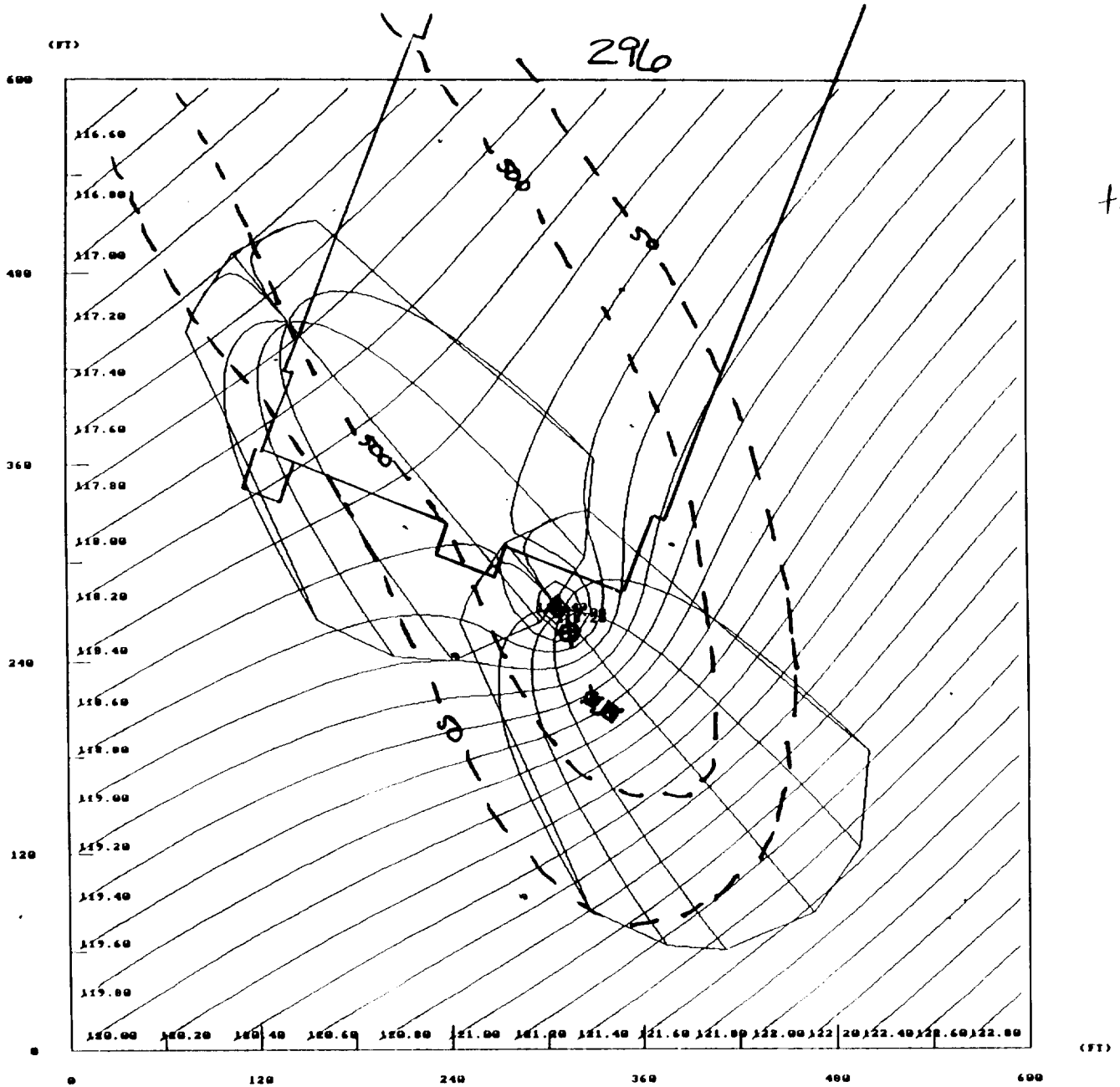


$T = 0.71\ ft^2/min$

$Q = 15\ gpm$

time = 1 year

Scale 1" = 100 ft



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Q = 15 gpm

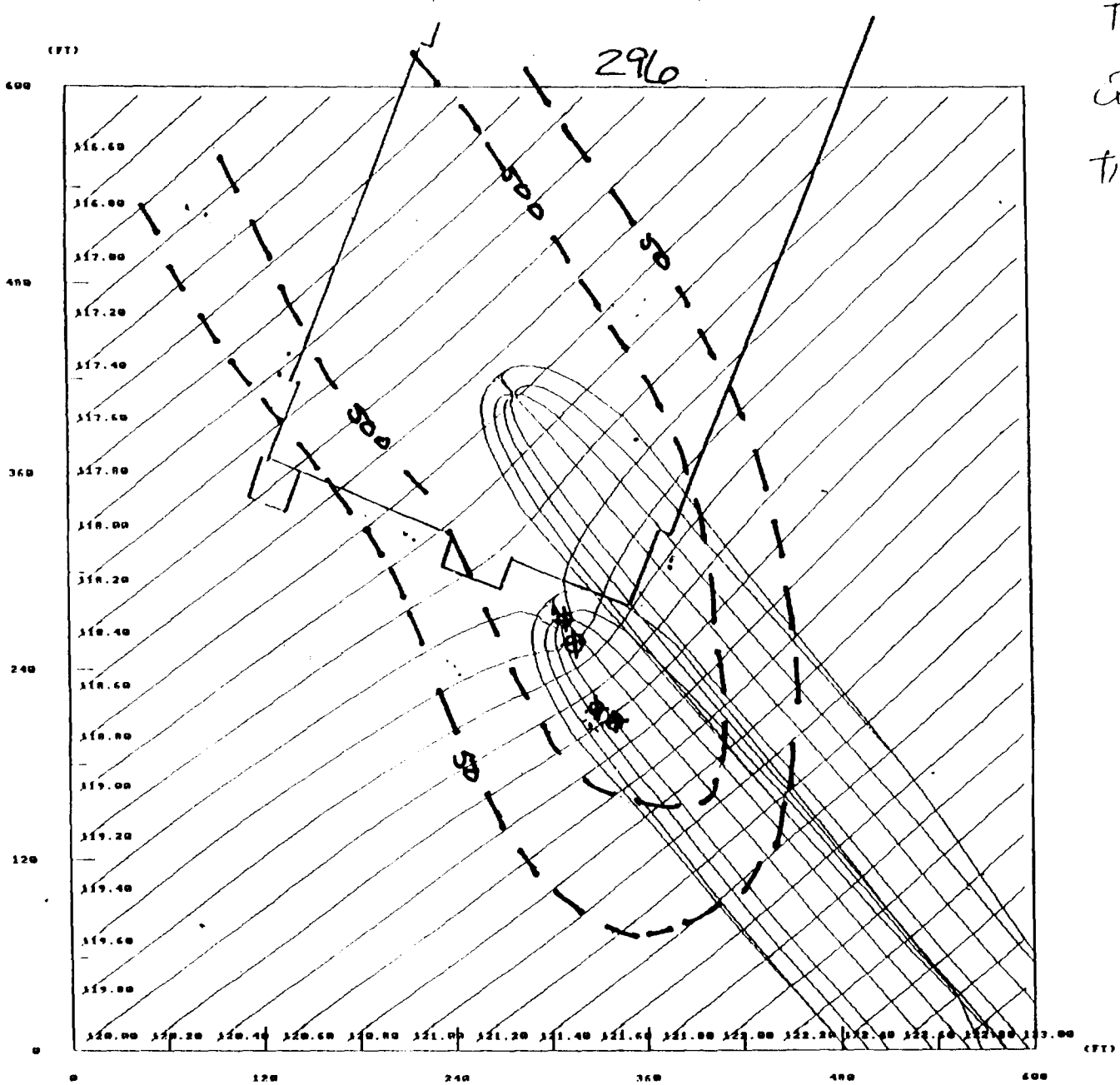
time = 1 yr

Scale 1" = 100 ft

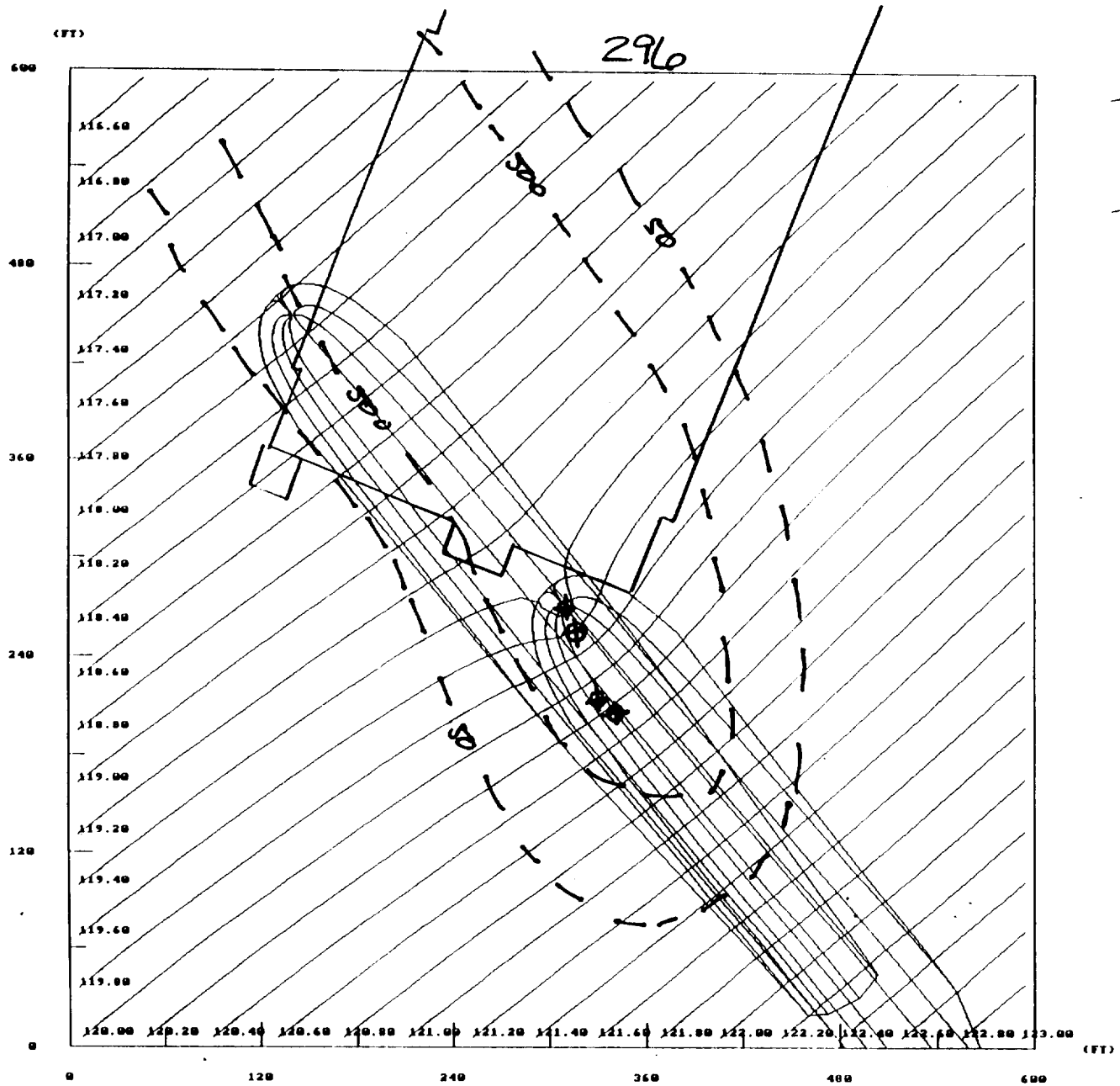
T = 2.32 ft²/min

Q = 15 gpm

time = 1 year



Scale 1" = 100'



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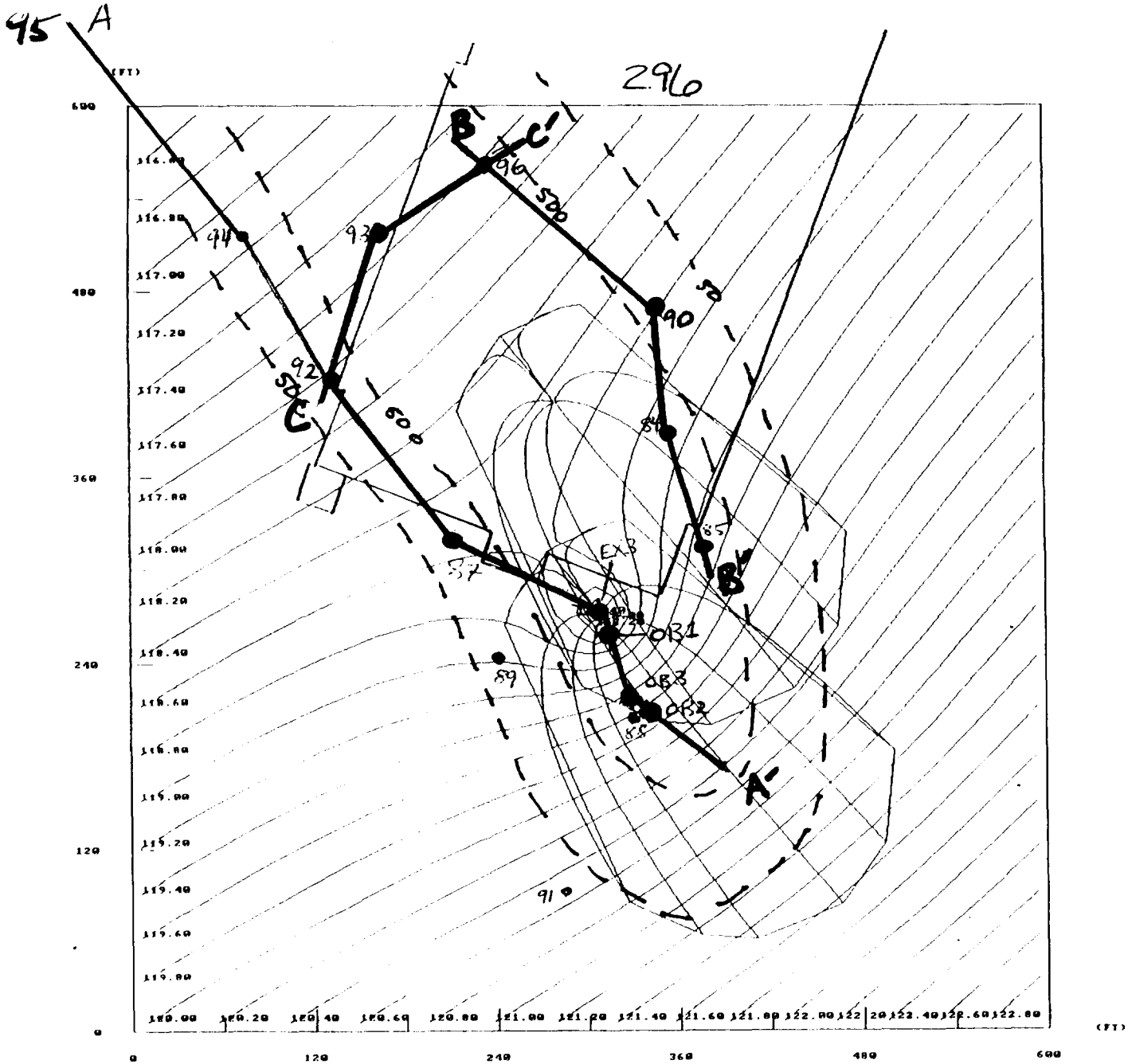
Time = 1 year

Scale 1" = 100'



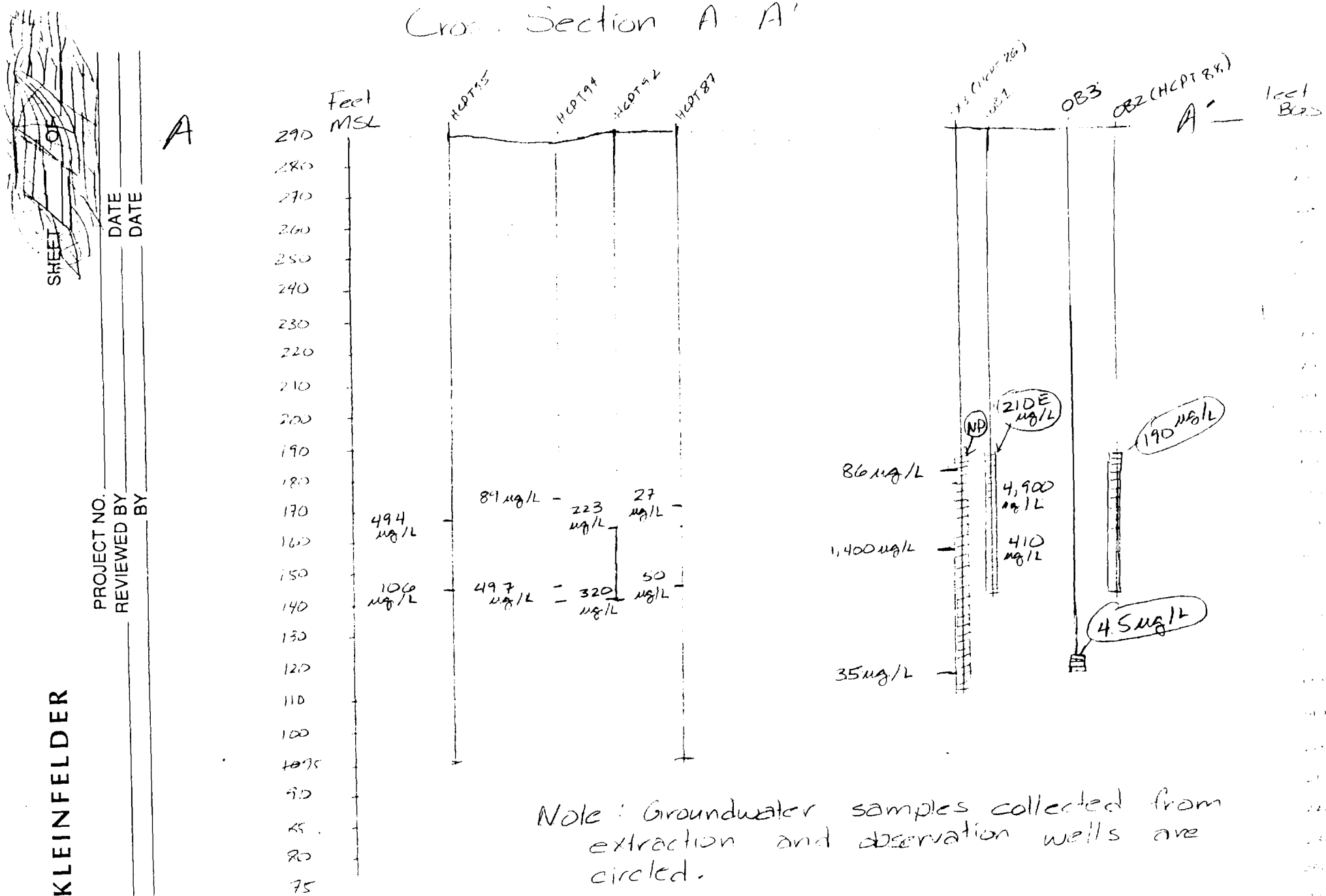
T = 0.71 ft²/min

Q = 15 gpm

time = 1 year

Scale 1" = 100 ft

Cross Section A - A'



Note: Groundwater samples collected from extraction and observation wells are circled.

Horizontal scale 1" = 80'

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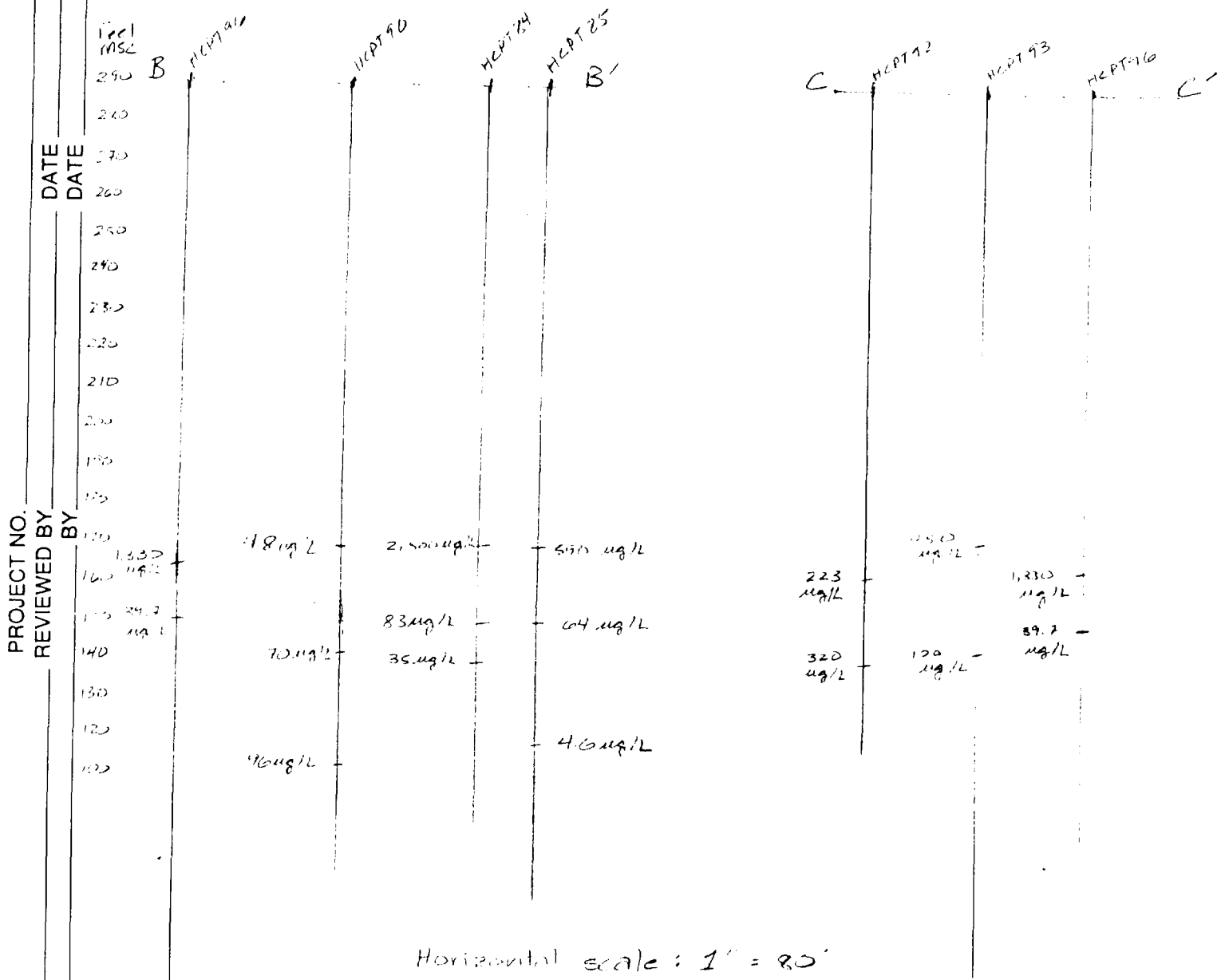
Cross Sections B-B and C-C'



Horizontal scale: 1" = 80'

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M-4A

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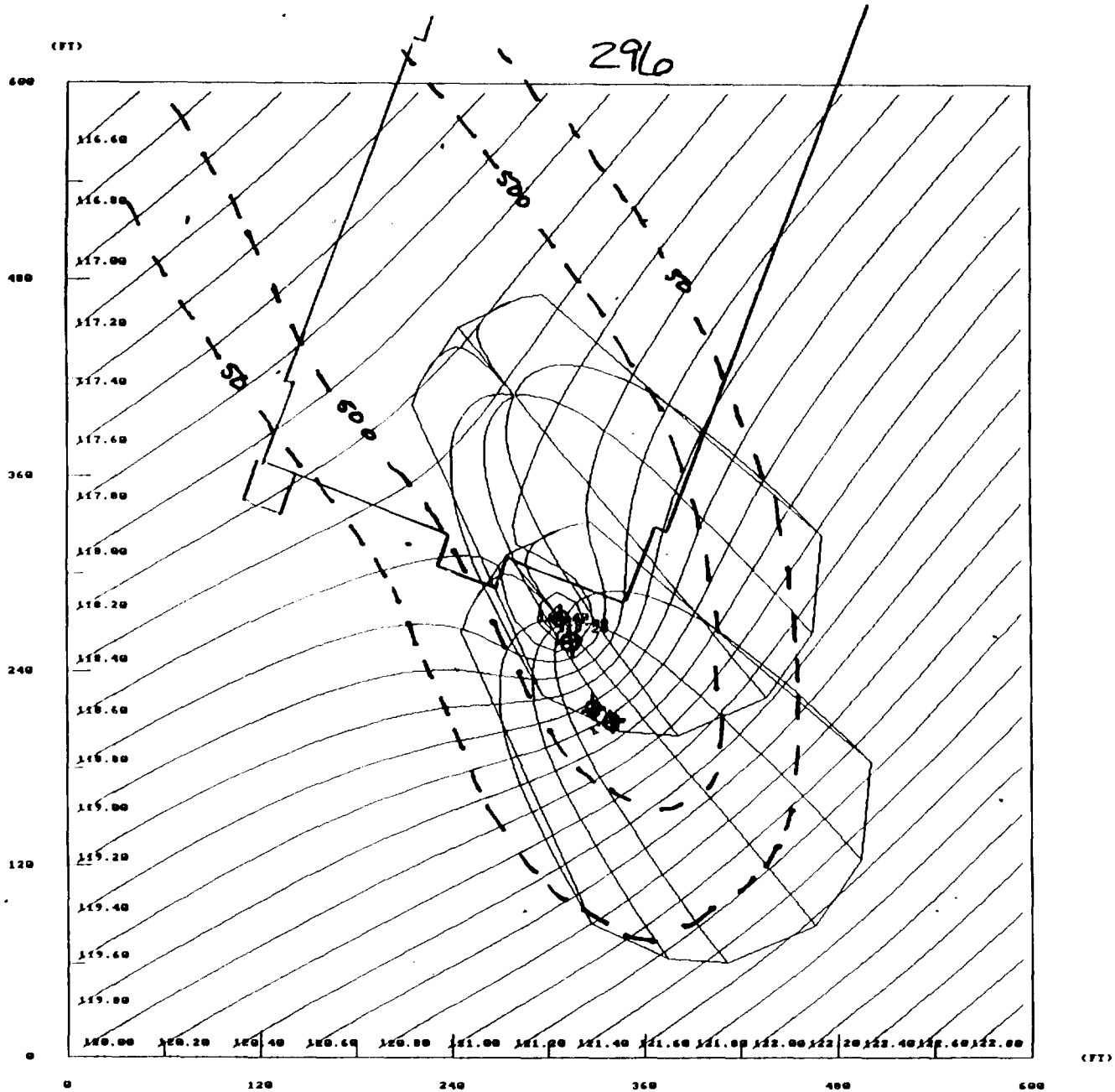
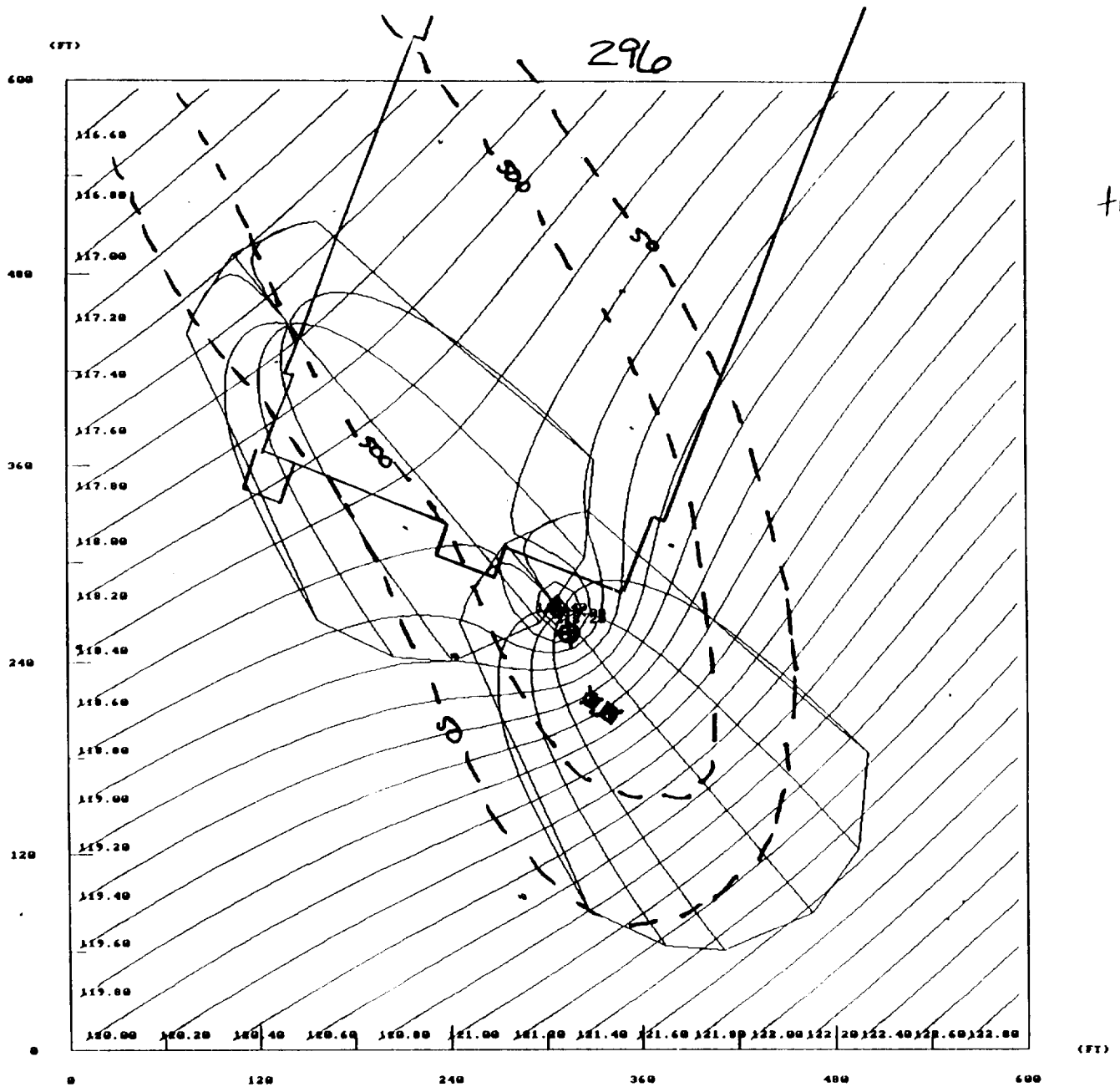


T = 0.71 ft²/min

Q = 15 gpm

time = 1 year

Scale 1" = 100 ft



T = 0.71 ft²/min

Q = 15 gpm

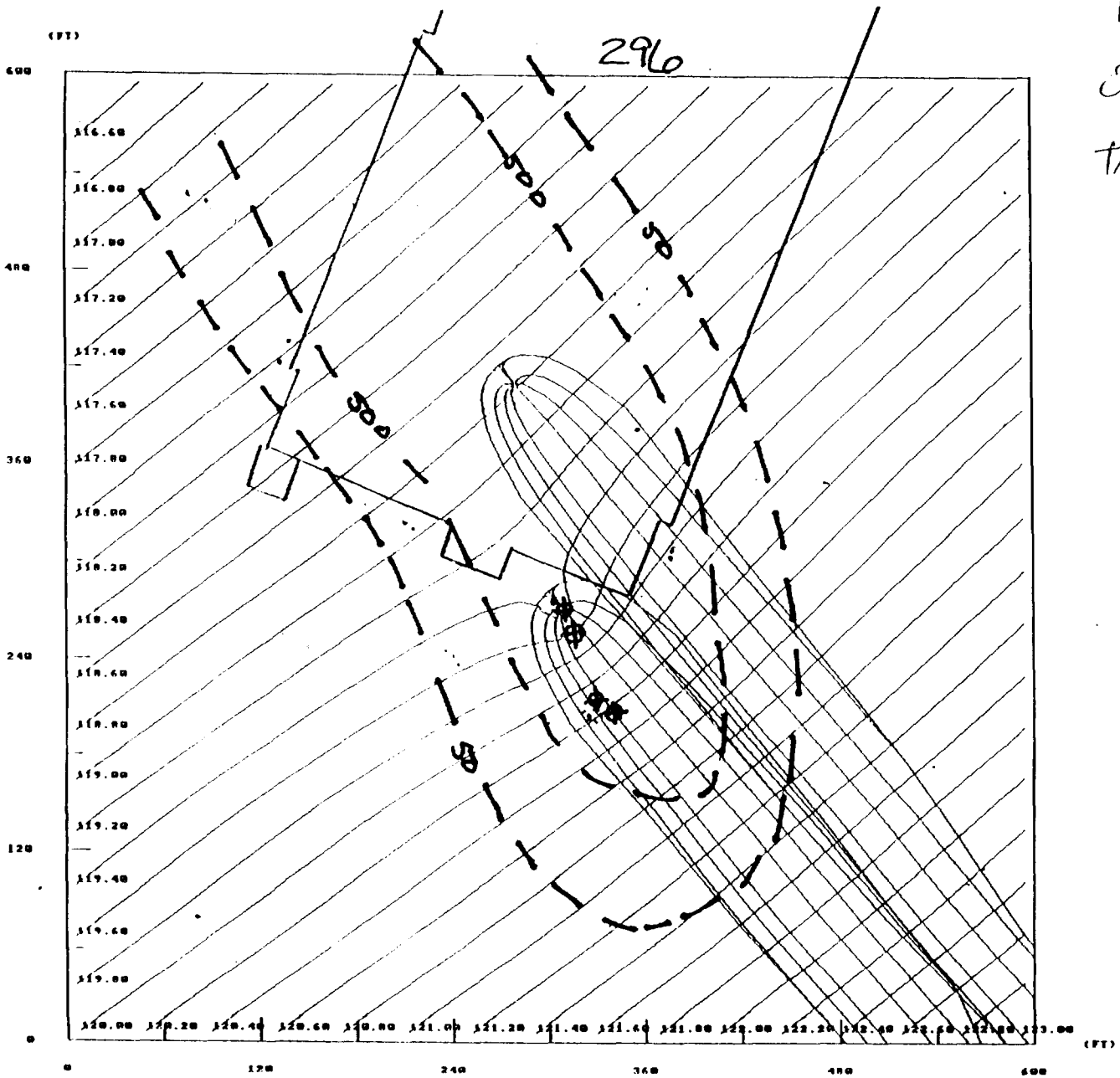
time = 1 yr

Scale 1" = 100 ft

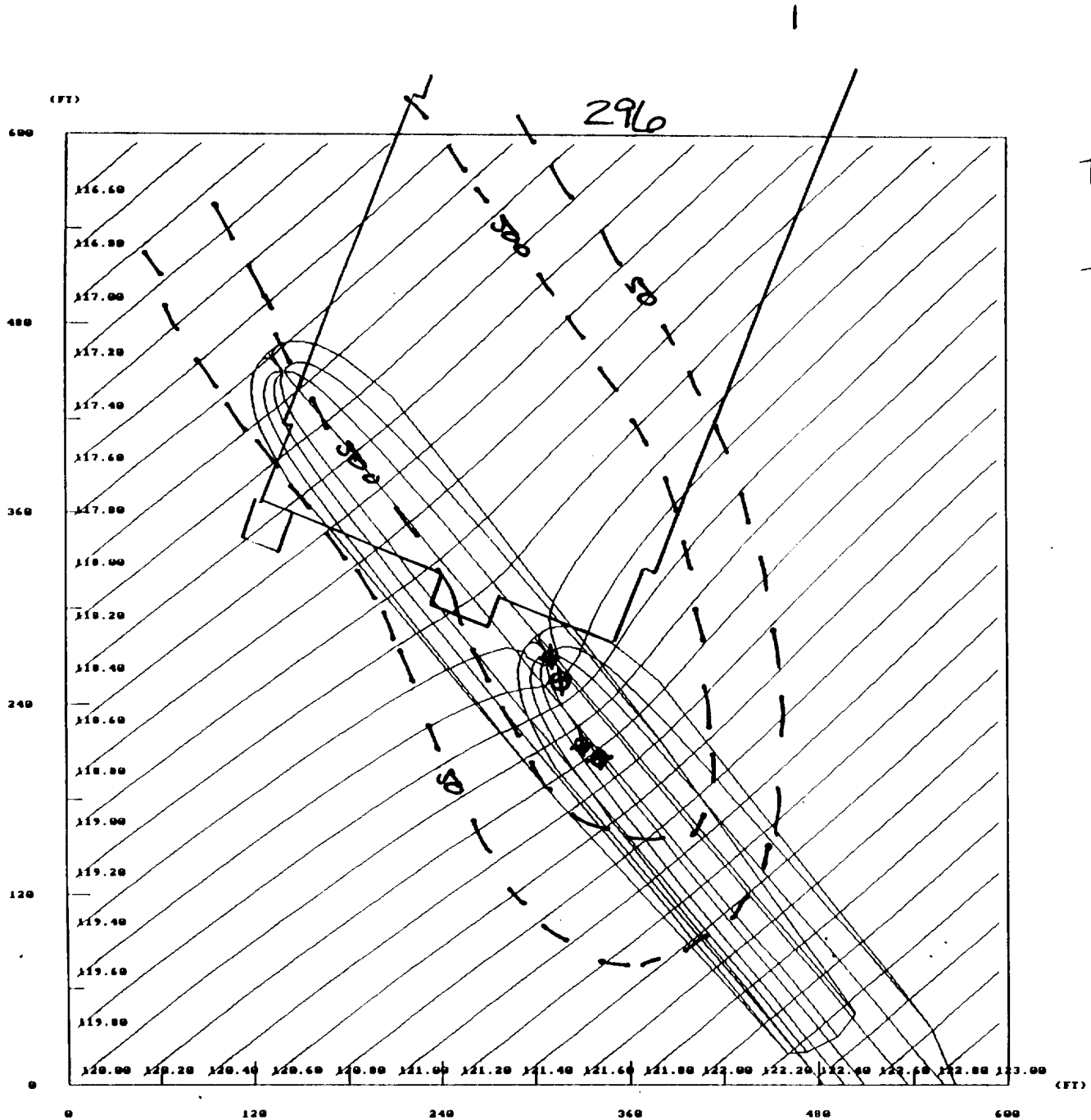
T = 2.32 ft²/min

Q = 15 gpm

time = 1 year



Scale 1" = 100'



T = 2.32 ft²/min

Q = 15 gpm

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