

CITRUS COUNTY

DEPARTMENT OF TECHNICAL SERVICES

1300 South Lecanto Highway • P.O. Box 440
Lecanto, Florida 34460-0440
(904) 746-2694 • FAX (904) 746-3368

Reply To:

Division Solid Waste
Management
P. O. Box 440
Lecanto, FL 34460-0440
(904) 746-5000
FAX (904) 527-1204

January 13, 1993

Robert J. Butera, P.E.
Solid Waste Manager
Division of Waste Management
Dept. of Environmental Regulation
Southwest District
3804 Coconut Palm Drive
Tampa, FL 33619-8318

39859

4009C00086

**RE: PENDING MODIFICATION OF CONDITIONS - PERMIT NO. S009-187229
CITRUS COUNTY CENTRAL LANDFILL - CITRUS COUNTY**


Dear Mr. Butera:

Following is the additional information submittal as stated in letter dated December 14, 1992.

RECIRCULATION SYSTEM

1. The recirculating and sprayfield schematic submitted shall be signed and sealed by a Florida registered professional engineer. In addition, this plan shall include at a minimum the following information:
 - a. Time, date and all other information in title block.
 - b. Header system specifications and list of materials as noted in your response letter to the Department dated September 28, 1992 in Para. 1.(d).
 - c. Pump size and specifications.
 - d. Filters and/or strainers and maintenance schedule.
 - e. Anticipated hours of operation and estimated leachate volume to be circulated and evaporated in a typical year for all winter and summer months. Calculations shall be submitted for the aforementioned as well as sizing the system.

James W. Pinkerton, P.E.
County Engineer and Director

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Recycled Paper.

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As we discussed in our December 4, 1992 meeting, a redesign of the recirculation system is needed to allow the upper cell (Phase 1A) to be graded, and capped to allow discharge of uncontaminated stormwater from this area.

Leachate will be recirculated and evaporated at the leachate recirculation reservoir. Hours of operation will be restricted to the landfill operation hours to ensure that operators will be present to prevent contamination of adjacent areas should high winds or other problems arise.

Calculations for leachate evaporation from this system and system sizing calculations are as follows:

LEACHATE EVAPORATION AND SYSTEM SIZING

20 sprinklers, 3 gpm per sprinkler
system size
 $20 \times 3 \text{ gpm} = 60 \text{ gpm}$

8 hrs. per day \times 60 min./hr. = 480 min./day
* assume 6 days per week and 4 weeks per month

$(11520 \text{ min./mo.})(60 \text{ gpm}) = 691,200 \text{ gallons per month}$

if evaporation rate is 5%:

$(691,200)(.05) = 34,560 \text{ gal./mo. evaporation}$

if evaporation rate is 4.5%:

$(691,200)(.045) = 31,104$

Total

$7(31,104) + 5(34,560) = 390,528 \text{ gallons per year}$

2. Submit permeability tests from samples to be used for cover of Phase 1-A.

The results of a soil permeability test are enclosed, as Attachment A.

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A clarification of volume/cell closure projections for Phase 1C and 1D are enclosed as Attachment B. If you have any questions, do not hesitate to call me.

Sincerely,

Michael D Moore

Michael D. Moore. P.E., Interim Director
Division of Solid Waste Management

Enclosures: Attachment A: Soil Permeability Tests
Attachment B: Clarification of Calculations
Attachment C: Monthly Averages and Nomographs
Figure 1: Location Map - Phase 1C and 1D

MDM:CJW:cms

cc: James W. Pinkerton, Dir. Dept. Technical Services
Tom Fears, P.E., Engineer III
Ron Donadio, Engineering Technician III
Cathleen J. Winter, Solid Waste Technician

CENTRAL TESTING LABORATORY

ENGINEERING AND MATERIALS TESTING

SOILS, CONCRETE, SOIL CEMENT, ASPHALT, AND SUB-SURFACE INVESTIGATIONS
WATER AND WASTEWATER ANALYSIS

1-11-93

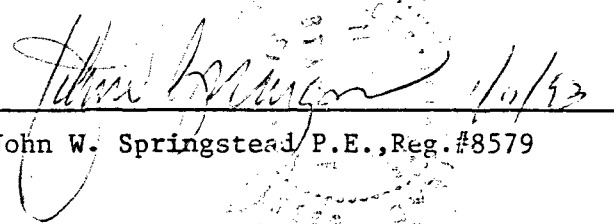
Citrus County Dept. of Technical Services
Solid Waste Dept.
P.O. Box 440
Lecanto, Fl. 34460-0440


Cathy Winter

Central Testing Lab. performed 2 falling head permeability tests on soil delivered to our Lab. by Cathy Winter. Tests were performed using a Soil Test permeameter Model 612-A with following results.

Test #	Color	soil type	percent compaction	permeability rate
1	7.5 YR 6/6	reddish yellow sand	98.5	K= 6.84 X 10 ⁻⁴ inches/Min.
2	10 YR 7/6	yellow sand	97.5	K= 2.34 X 10 ⁻³ inches/ Min.

If you have any questions please call our office.


John W. Springstead P.E., Reg. #8579


Chet Main, Director

ATTACHMENT A

P.O. BOX 883
FLORAL CITY, FLORIDA 32636
PHONE (904) 726-6447

727 S. 14TH STREET
LEESBURG, FLORIDA 34748
PHONE (904) 787-1268

J.W. SPRINGSTEAD, P.E.
FLA. REG. ENG. 8579

ATTACHMENT B

CLARIFICATION OF THE CALCULATION FOR THE VOLUME OF PHASE 1C AND 1D

Phase 1C and 1D represents the volume within Phase 1 above the 80 foot contour and below the 120 foot contour.

Bottom area of Phase 1C and 1D:

This is best represented by the plan view on Sheet 6 of 7. When 1B is complete, an area equal to or greater than that represented by a 375' x 890' rectangle is available.

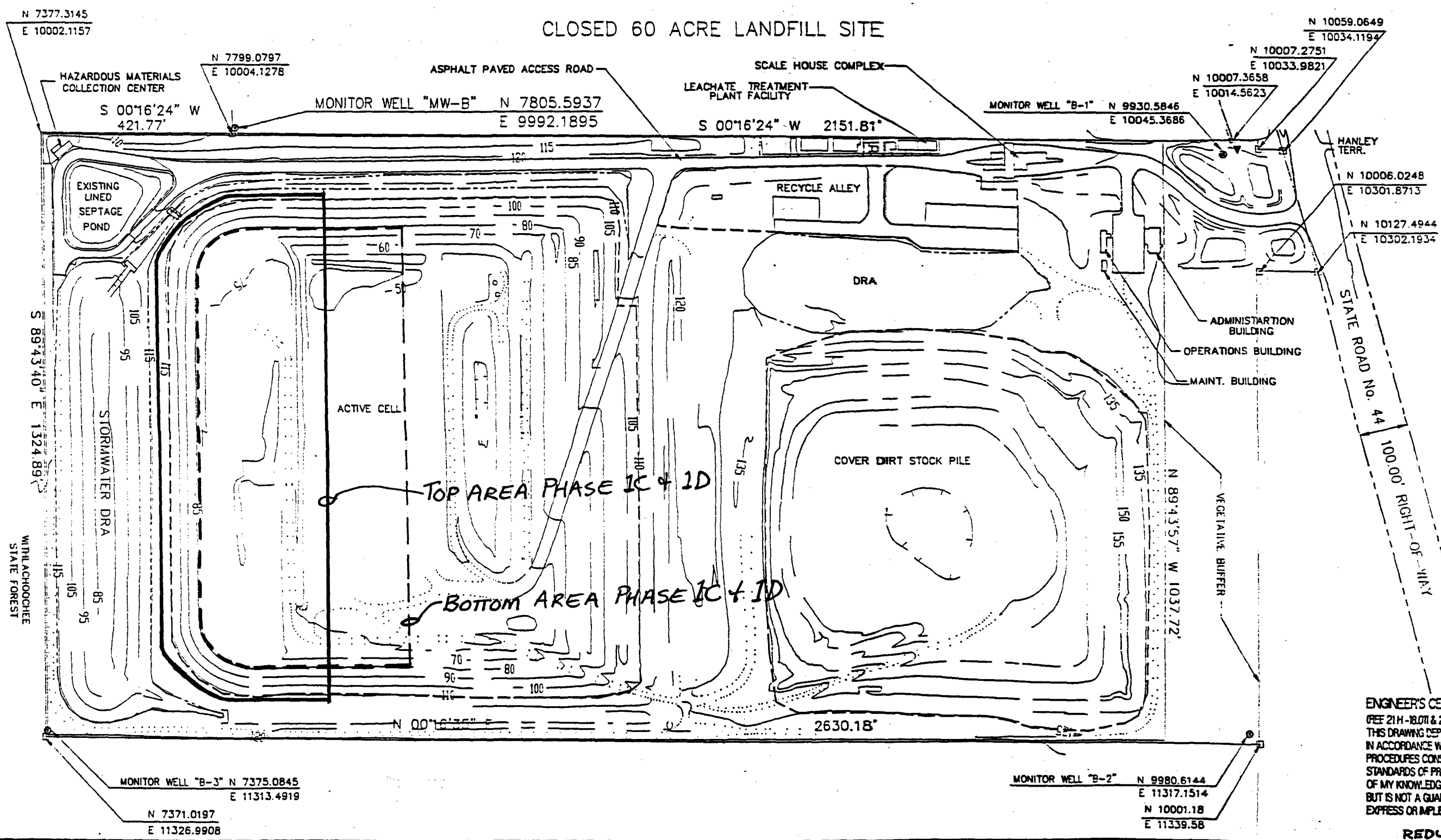
Top area of Phase 1C and 1D:

This area is bounded by the upper edge of the liner (Elevation 120), and on the north side, by the 4:1 fill slope up from the 80 foot bottom area. Refer to Figure 1 where the maximum extent of both top and bottom areas of Phase 1C and 1D are shown. An area equal to or greater than that represented by a 250' x 1035' rectangle is available.

Using these areas and a separation of 40 vertical feet, and using the average end area formula, a volume of 438,889 cubic feet can be calculated. This is conservative.



CLOSED 60 ACRE LANDFILL SITE



LEGEND

	BENCHMARK
	ABANDONED 2" MONITOR WELL
	ABANDONED 4" MONITOR WELL
	LEACHATE PUMP STATION
	MONITOR WELL
	GAS VENT
	FENCE
	ASPHALT DRIVE
	DIRT DRIVE

ENGINEER'S CERTIFICATION/CHAP 471 FS.
 (SEE 21H-18.071 & 21H-28.001 F.A.C.)
 THIS DRAWING DEPICTS AS-BUILT DATA OBTAINED
 IN ACCORDANCE WITH COMMONLY ACCEPTED
 PROCEDURES CONSISTENT WITH APPLICABLE
 STANDARDS OF PRACTICE, CORRECT TO THE BEST
 OF MY KNOWLEDGE, INFORMATION, AND BELIEF
 BUT IS NOT A GUARANTEE OR WARRANTY, EITHER
 EXPRESS OR IMPLIED.

REDUCED SCALE

<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td>BY</td> <td>DATE</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td>BY</td> <td>DATE</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		REVISIONS		BY	DATE			BY	DATE			<table border="1"> <tr> <th colspan="2">PRELIMINARY</th> <th colspan="2">DESIGN</th> </tr> <tr> <td>BY</td> <td>DATE</td> <td>BY</td> <td>DATE</td> </tr> <tr> <td>DRAWN</td> <td>10/1</td> <td> </td> <td> </td> </tr> <tr> <td>PREPARED</td> <td>10/1</td> <td> </td> <td> </td> </tr> <tr> <td>CHECKED</td> <td> </td> <td> </td> <td> </td> </tr> </table>		PRELIMINARY		DESIGN		BY	DATE	BY	DATE	DRAWN	10/1			PREPARED	10/1			CHECKED				DEPARTMENT OF TECHNICAL SERVICES CITRUS COUNTY, FLORIDA ENGINEERING DEPARTMENT		APPROVED BY: _____ DATE: 10/1		ACTIVE AND CLOSED PORTIONS MAP ACTIVE 80 ACRE LANDFILL SITE		PROJECT NUMBER 89-615		SHEET OF	
REVISIONS																																											
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SCALE: 1"=100'						SECTION: _____ TOWNSHIP: 10 RANGE: 18		FILE: L-42																																			

FIGURE 1

ATTACHMENT C

INVERNESS LIFT STATION

JANUARY 1992

Temperature Average	-	54° F
Wind Average	-	2.8683
Humidity Average	-	71.86%

FEBRUARY 1992

Temperature Average	-	60.17° F
Wind Average	-	2.69
Humidity Average	-	77.38%

MARCH 1992

Temperature Average	-	62.24° F
Wind Average	-	2.7836
Humidity Average	-	75.55%

APRIL 1992

Temperature Average	-	67.33° F
Wind Average	-	2.69
Humidity Average	-	74.32%

MAY 1992

Temperature Average	-	71.82° F
Wind Average	-	2.69
Humidity Average	-	72.23%

JUNE 1992

Temperature Average	-	79.78° F
Wind Average	-	2.11
Humidity Average	-	79.91%

JULY 1992

Temperature Average	-	82.25° F
Wind Average	-	1.86
Humidity Average	-	72.48%

AUGUST 1992

Temperature Average	-	81.23° F
Wind Average	-	1.37
Humidity Average	-	81.55%

SEPTEMBER 1992

Temperature Average	-	81.82°F
Wind Average	-	2.19
Humidity Average	-	81.58%

OCTOBER 1992

Temperature Average	-	70.29°F
Wind Average	-	2.37
Humidity Average	-	76.69%

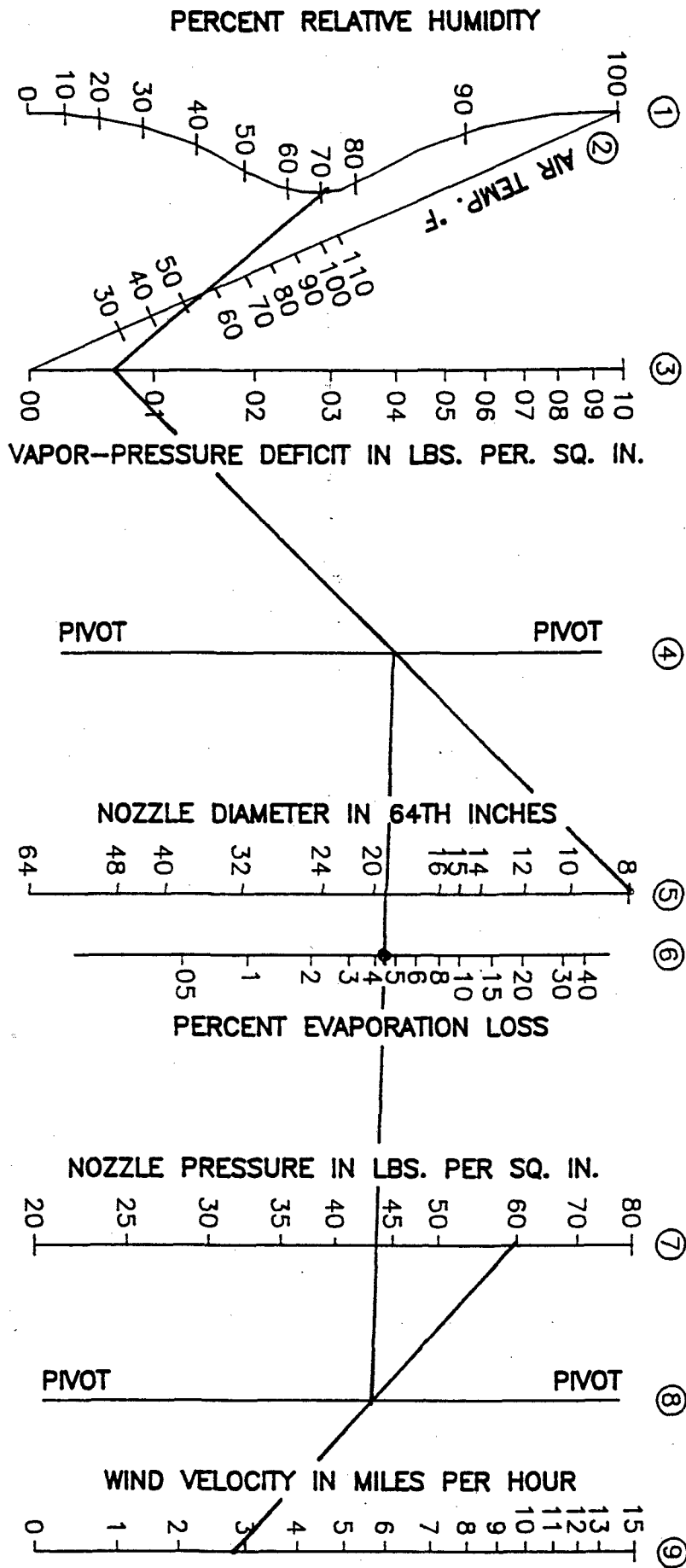
NOVEMBER 1992

Temperature Average	-	67.70°F
Wind Average	-	3.10
Humidity Average	-	77.36%

DECEMBER 1992

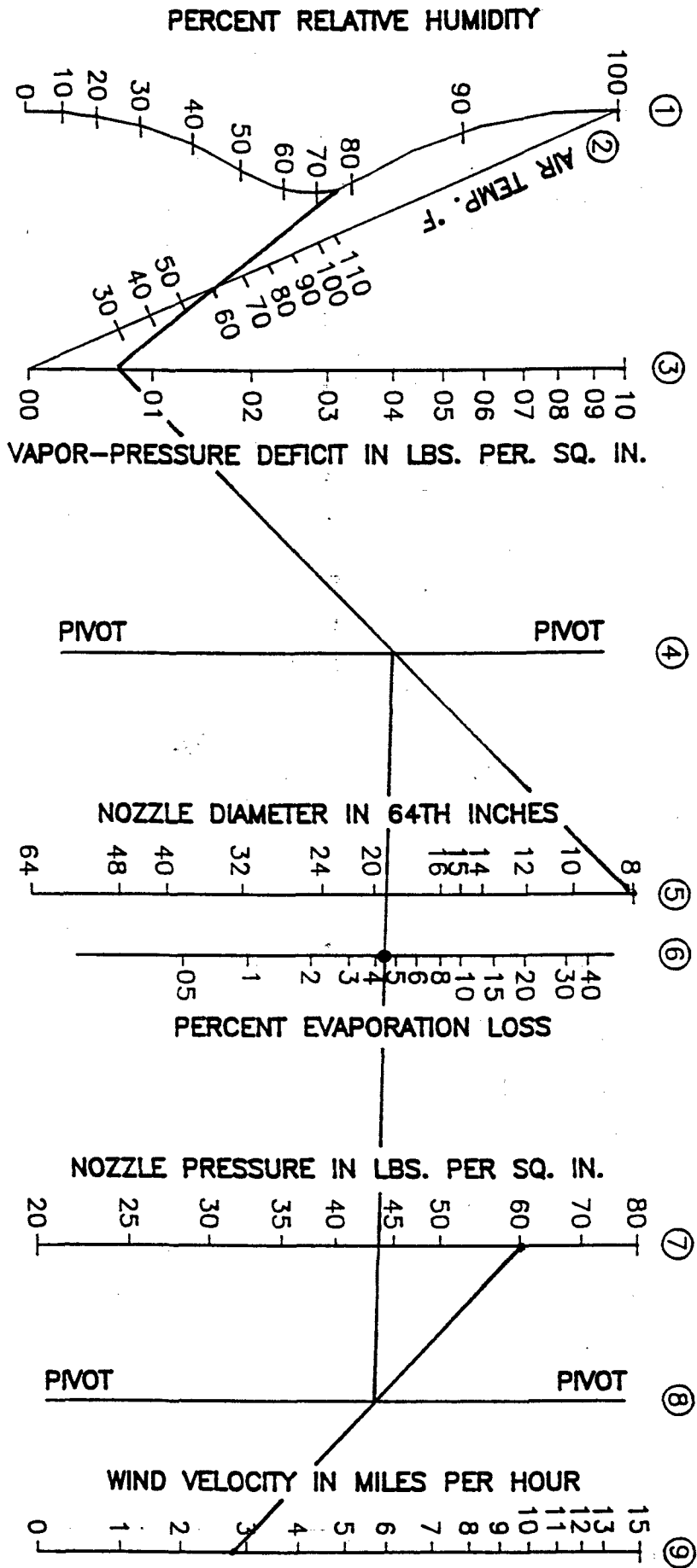
Temperature Average	-	59.76°F
Wind Average	-	2.26
Humidity Average	-	77.61%

SPRINKLER EVAPORATIVE LOSSES FOR JANUARY 1992 4.59%



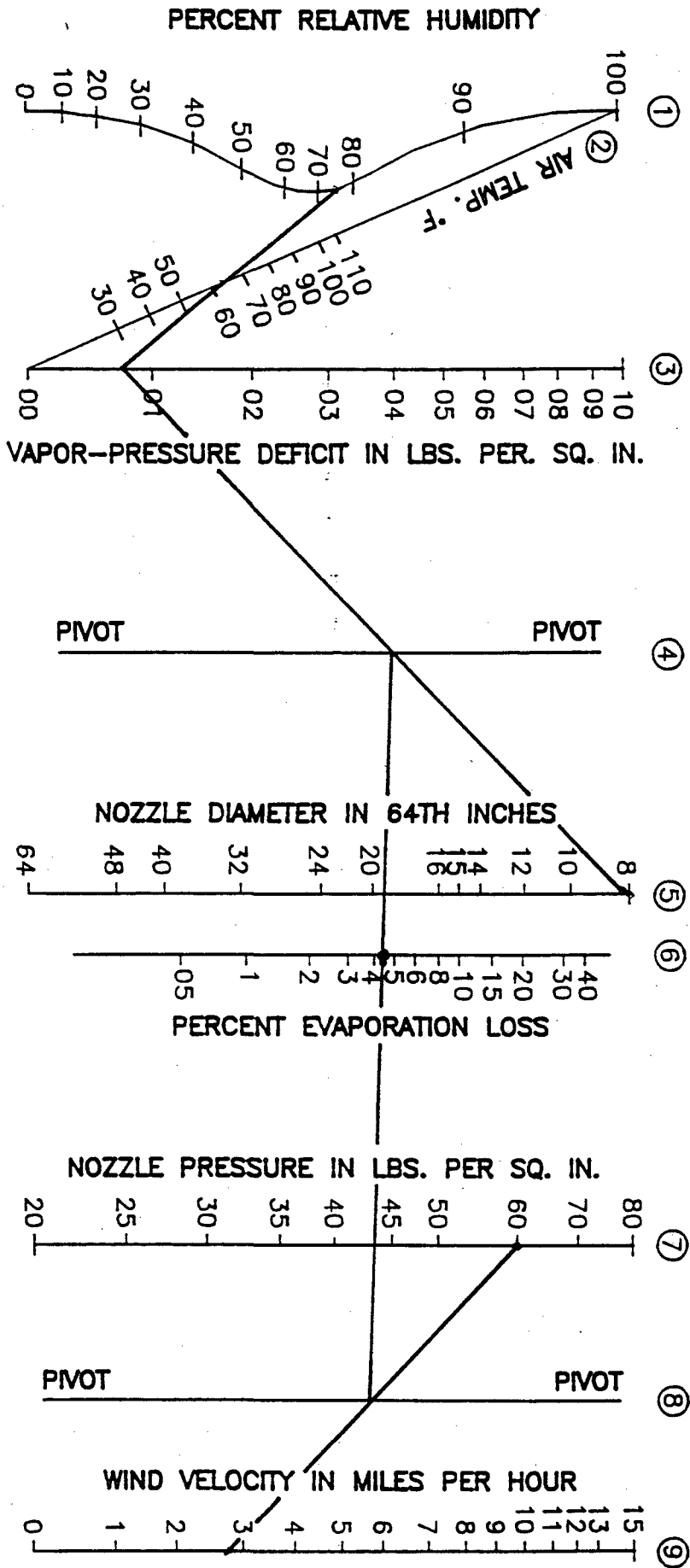
SPRINKLER EVAPORATIVE LOSSES FOR FEBRUARY 1992

4.59% †

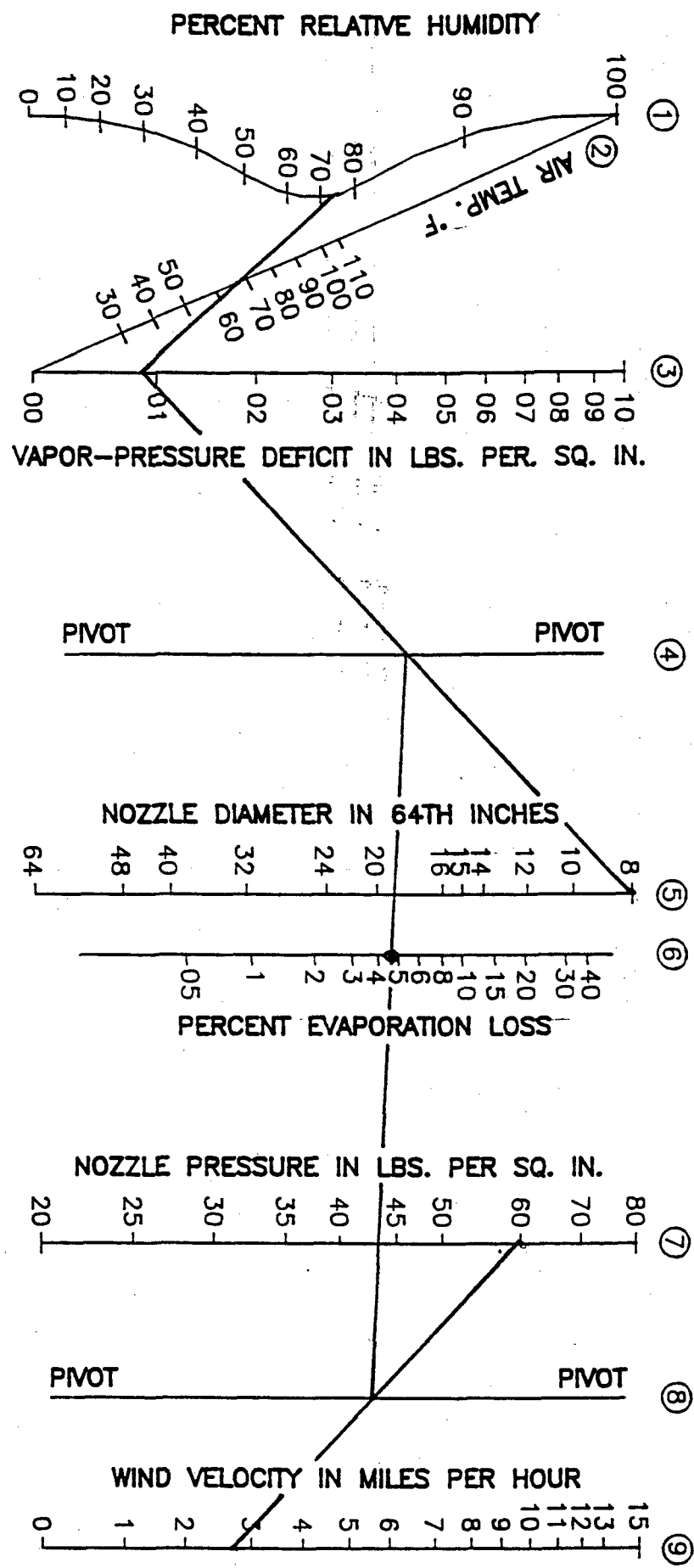


SPRINKLER EVAPORATIVE LOSSES FOR MARCH 1992

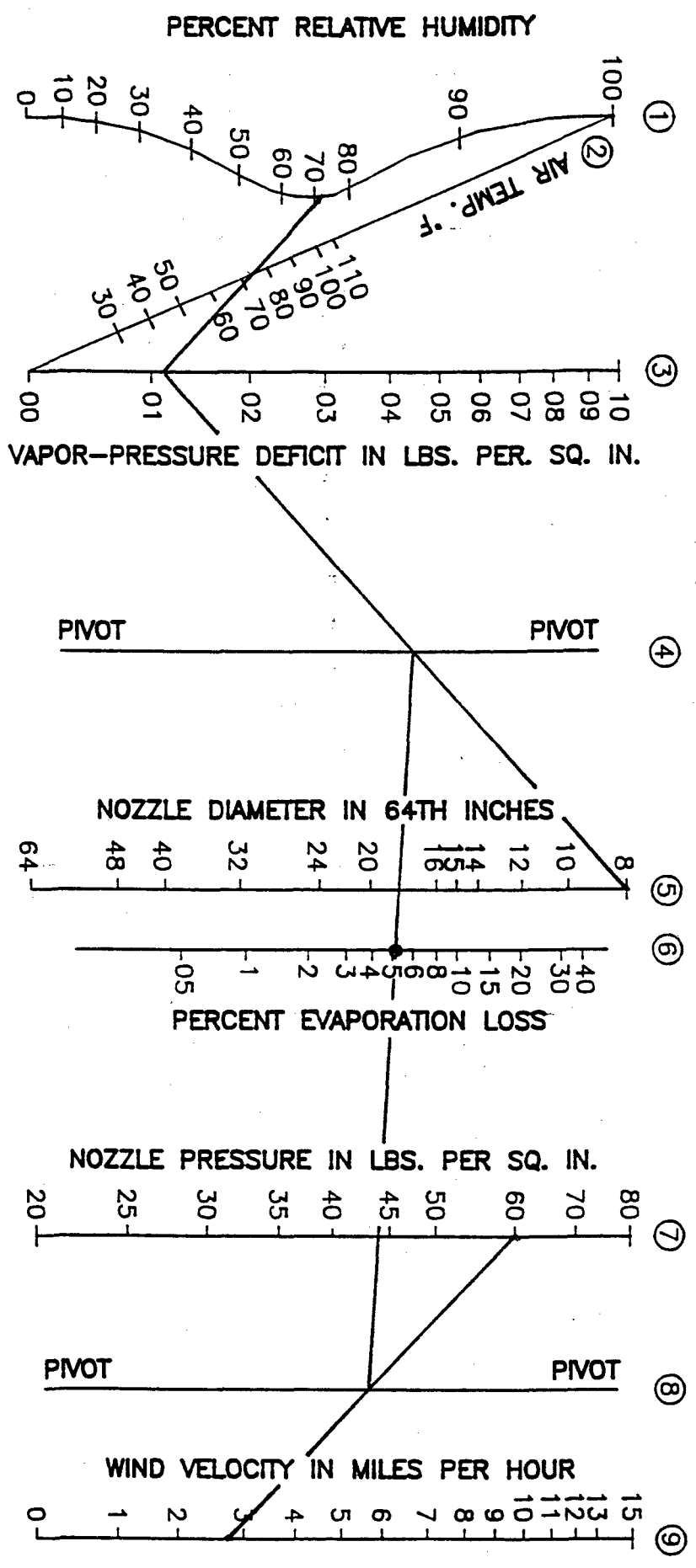
4.5 % ±



SPRINKLER EVAPORATIVE LOSSES FOR APRIL 1992 4.5% ±

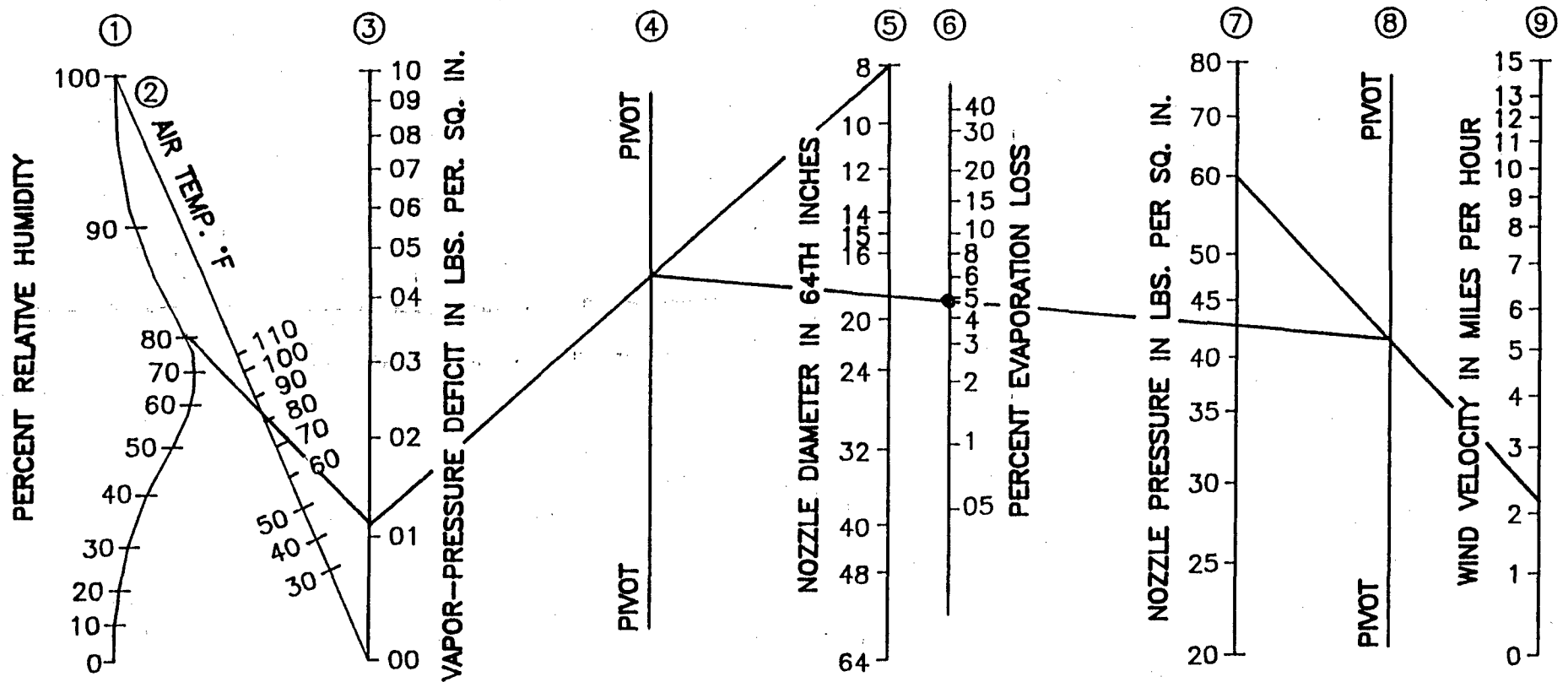


SPRINKLER EVAPORATIVE LOSSES FOR MAY 1992 5.09%



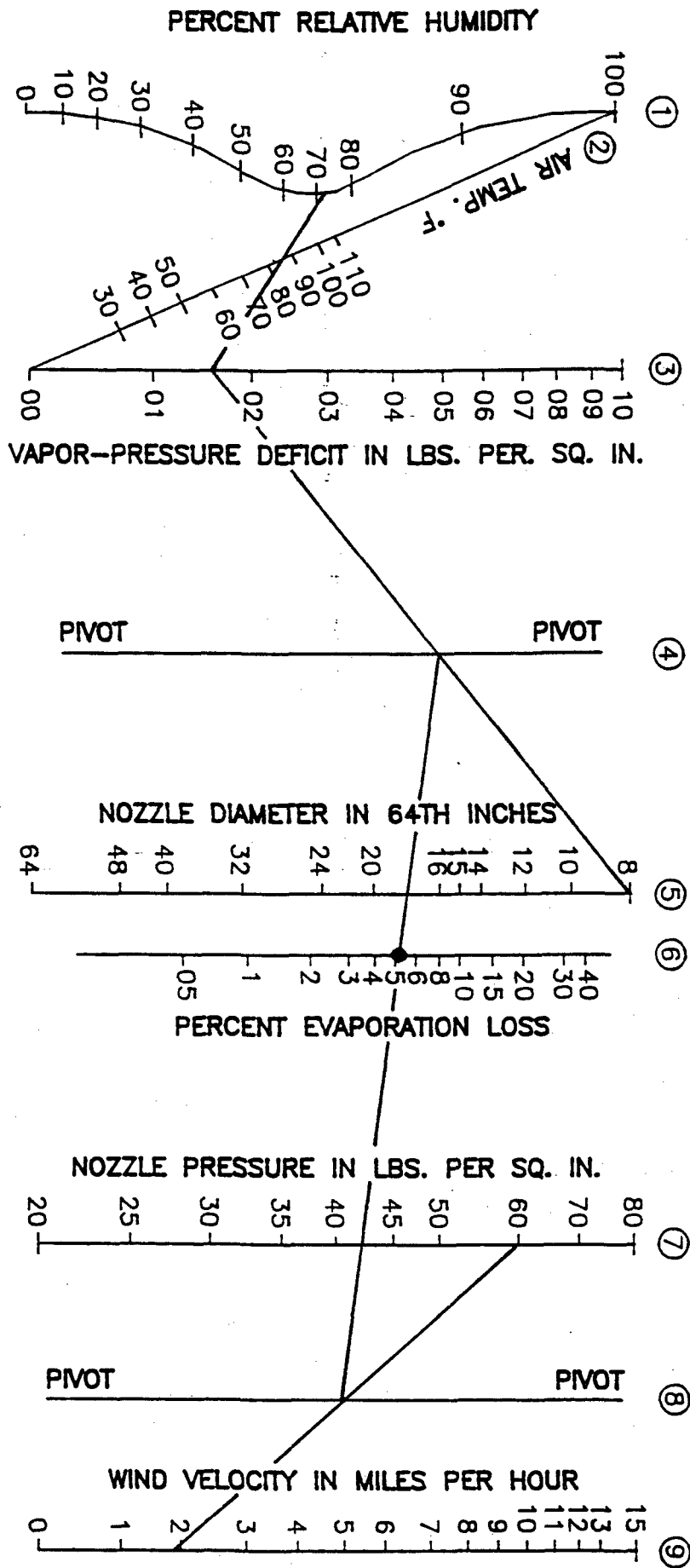
SPRINKLER EVAPORATIVE LOSSES FOR JUNE 1992

5.0% ±



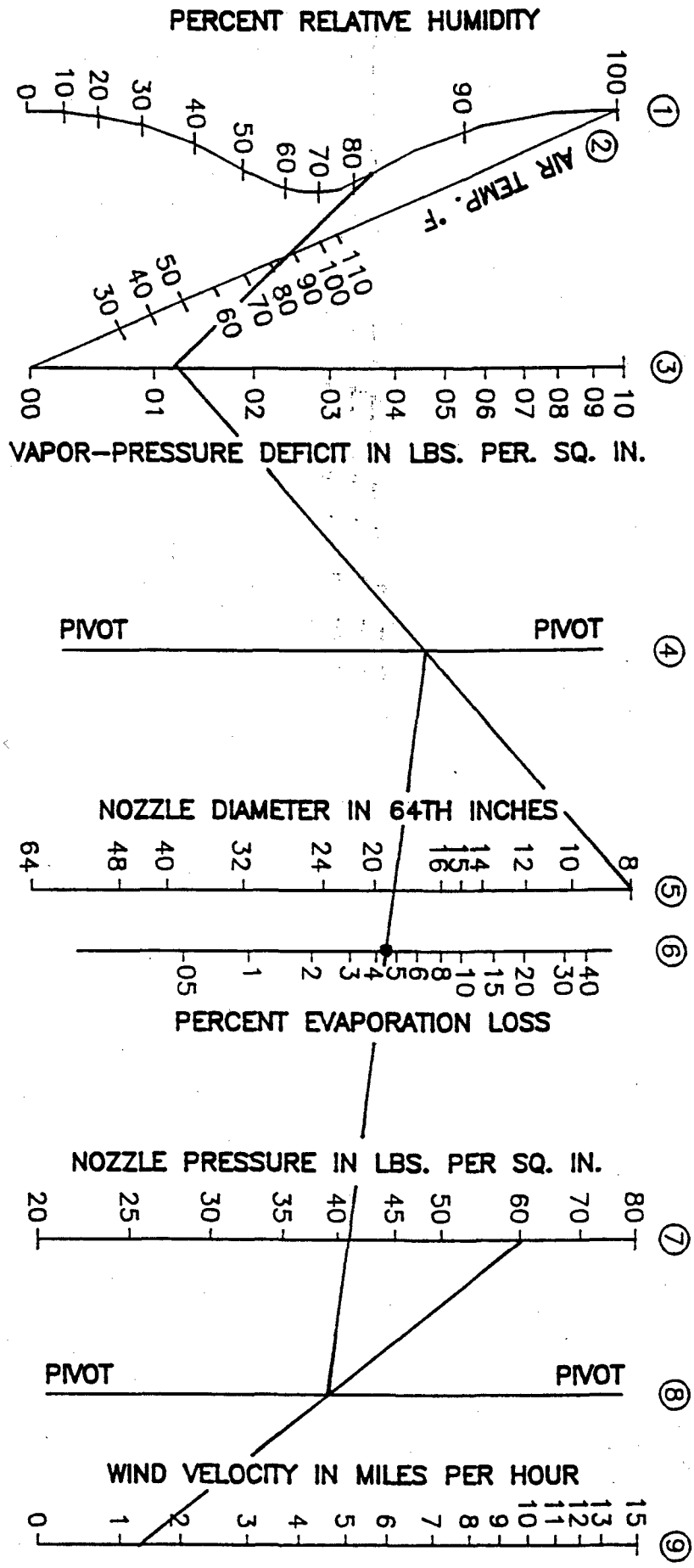
SPRINKLER EVAPORATIVE LOSSES FOR JULY 1992

5.0% ±



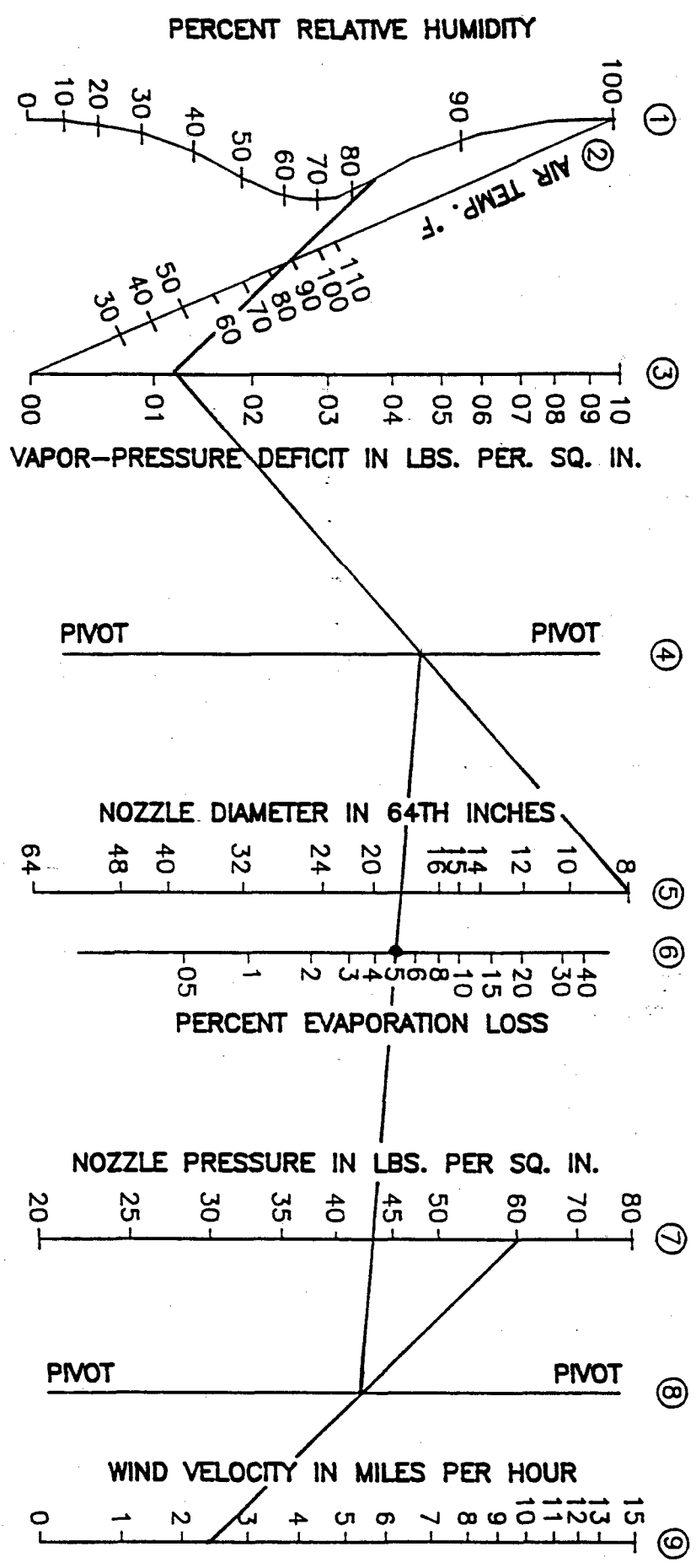
SPRINKLER EVAPORATIVE LOSSES FOR AUGUST 1992

4.5% ±



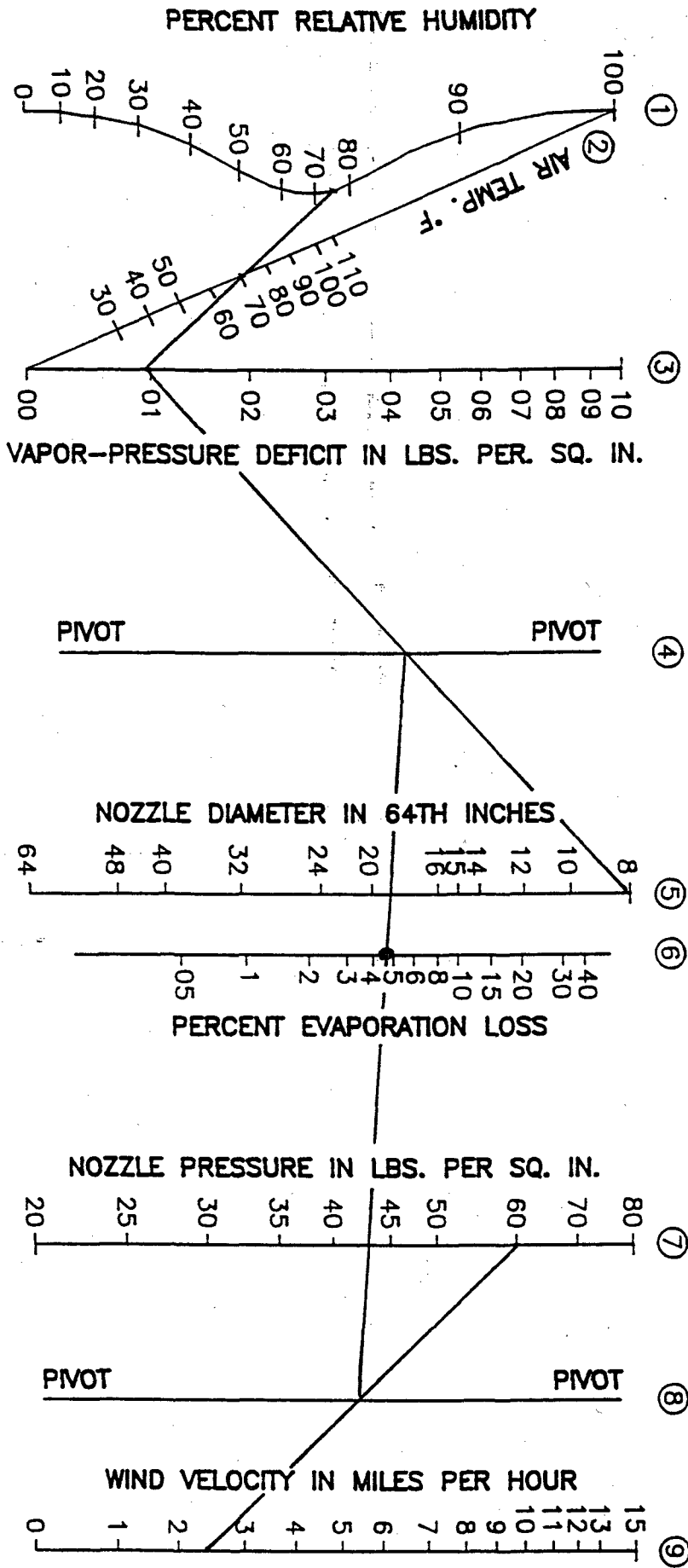
SPRINKLER EVAPORATIVE LOSSES FOR SEPTEMBER 1992

5.09 ft



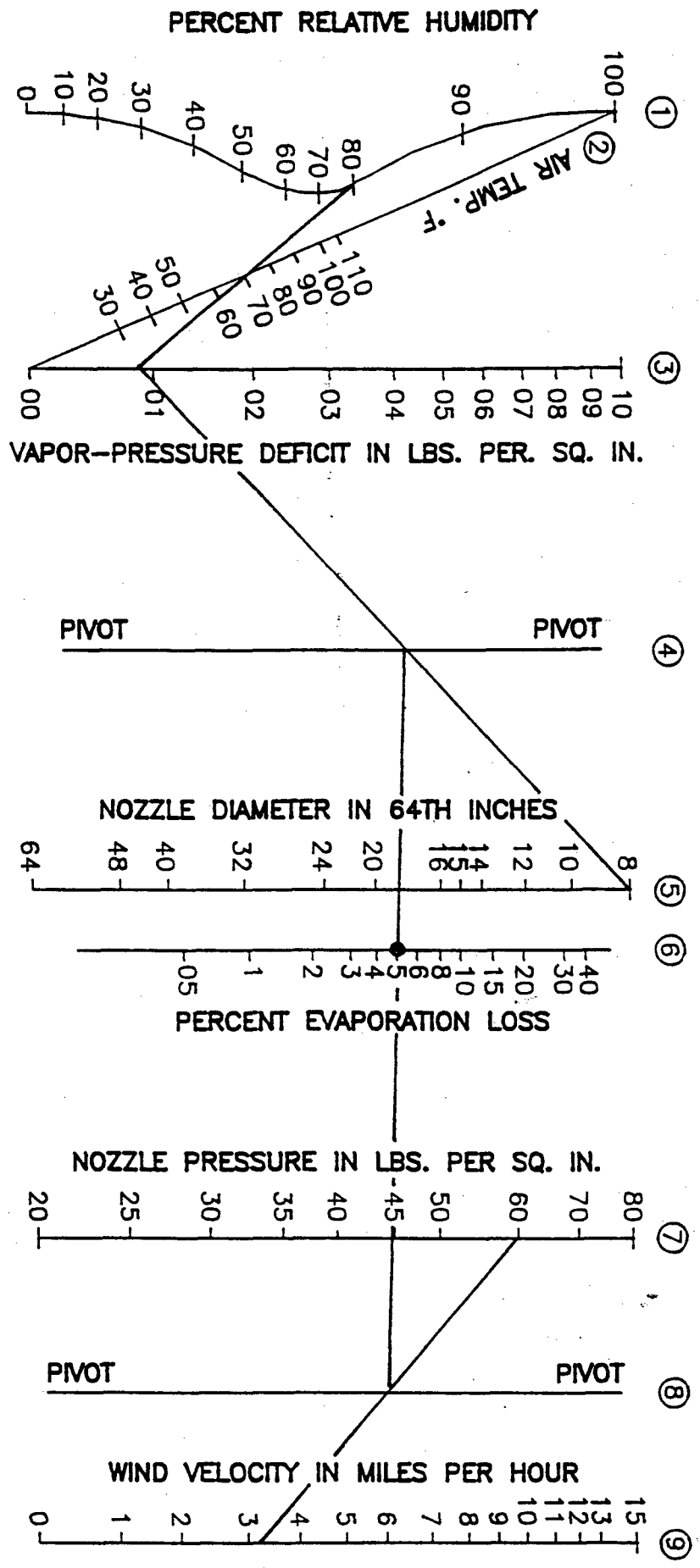
SPRINKLER EVAPORATIVE LOSSES FOR OCTOBER 1992

4.57%



SPRINKLER EVAPORATIVE LOSSES FOR NOVEMBER 1992

5.096 ±



SPRINKLER EVAPORATIVE LOSSES FOR DECEMBER 1992

4.5% ±

