

A mining research contract report
FEBRUARY 1983

COST-EFFECTIVENESS OF INCREASING AIRFLOW AT ANY LOCATION IN UNDERGROUND COAL MINES (VOLUME II – APPENDICES)

Contract J0100066
Engineers International, Inc.

U.S. Bureau of Mines
Twin Cities Research Center
LIBRARY

U.S. Bureau of Mines
Minneapolis, Minn.

APR 4 1984

LIBRARY

BUREAU OF MINES
UNITED STATES DEPARTMENT OF THE INTERIOR

OFR
84-23



DISCLAIMER

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies or recommendations of The Interior Department's Bureau of Mines or the U. S. Government.

Reference to specific brands, equipment, or trade names in this report is made to facilitate understanding and does not imply endorsement by the Bureau of Mines, the U. S. Government, or Engineers International, Inc.

| | | | |
|---|---|---|-------------------------------------|
| REPORT DOCUMENTATION PAGE | 1. REPORT NO. | 2. | 3. Recipient's Accession No. |
| 4. Title and Subtitle Cost-Effectiveness of Increasing Airflow in Underground Coal Mines - Volume II | | 5. Report Date February 1983 | |
| 7. Author(s) Sandip K. Mukherjee, Anthony W. Laurito, Muhammed O. Rahim and Madan M. Singh | | 8. Performing Organization Rept. No. 1054-II | |
| 9. Performing Organization Name and Address Engineers International, Inc. 98 E. Naperville Road Westmont, IL 60559 | | 10. Project/Task/Work Unit No. | |
| | | 11. Contract(C) or Grant(G) No. (C) J0100066 (G) | |
| 12. Sponsoring Organization Name and Address Bureau of Mines U. S. Department of the Interior Washington, DC 20241 | | 13. Type of Report & Period Covered | |
| | | 14. | |
| 15. Supplementary Notes | | | |
| 16. Abstract (Limit: 200 words) This report presents the results of the economic analysis of several applicable alternatives to increase airflow in four underground coal mines. Pressure-quantity surveys were conducted underground and measurements were also made at the main mine fan(s). The existing ventilation networks were modeled using the modified Penn State ventilation simulator. The applicable alternatives were simulated. Performance data obtained from these simulation runs were utilized to conduct the cost-effectiveness analysis. The costs for each of the alternatives included capital, operating and operating costs. These costs were expressed as annual ventilation costs per active section in terms of dollars per cfm taking into account the economic life associated with each of the alternatives. The benefits were expressed as increased airflow quantity in the critical sections. A section of this report also deals with comparison of simulator predicted air quantity values against air quantity values measured underground. This volume constitutes Volume II of the report and contains the outputs of the computer simulation runs. | | | |
| 17. Document Analysis a. Descriptors Underground coal mine ventilation, ventilation survey and analysis, computer modeling and simulation, economic analysis, methods of increasing airflow. | | | |
| b. Identifiers/Open-Ended Terms | | | |
| c. COSATI Field/Group | | | |
| 18. Availability Statement Unlimited | 19. Security Class (This Report) Unclassified | 21. No. of Pages 122 | |
| | 20. Security Class (This Page) Unclassified | 22. Price | |

FOREWORD

This report was prepared by Engineers International, Inc. (EI) under USBM Contract number J0100066. The contract was initiated under the Coal Mine Health and Safety Program. It was administered under the technical direction of the Pittsburgh Research Center with Mr. Jon C. Volkwein acting as Technical Project Officer. Mr. Doayne W. Teets was the contract administrator for the Bureau of Mines. This report is a summary of work recently completed as part of this contract during the period 30 July 1980 to 31 August, 1982. This report was submitted by the authors in February, 1983.

This project was under the technical supervision of Dr. Madan M. Singh with Mr. Sandip K. Mukherjee as Project Engineer, Mr. Anthony W. Laurito as Mining Engineer, and Mr. Muhammad O. Rahim as Ventilation Engineer who are the authors of this report. EI staff who also participated on portions of this project are: Messrs. Michael F. Dunn, Timothy D. Wyman, Swapan Bhattacharya, Amitabha Mukherjee, Tom Miskill, Charles Sandifer and Dan Nickell.

The authors are grateful to Professor Y. J. Wang of West Virginia University for his critical input during computer modeling of the selected mine ventilation networks. The cooperation received from the mining companies and the mine personnel involved is deeply appreciated. The authors also wish to express their sincere appreciation to Mr. John C. LaScola, USBM, Pittsburgh Research Center (who initially acted as Technical Project Officer) and Mr. Jon C. Volkwein, TPO, for their valuable help, counsel, and encouragement during a major part of this project. This volume contains the computer outputs for each simulation run as discussed in Volume 1.

TABLE OF CONTENTS

REPORT DOCUMENTATION PAGE

FOREWORD

TABLE OF CONTENTS

| | | |
|------------|---|--|
| APPENDIX A | - | Computer Output for Mine No. 1 |
| APPENDIX B | - | Computer Output for Mine No. 2 |
| Part 1 | - | Base System Modeling |
| Part 2 | - | Computer Output for Fan Replacement |
| Part 3 | - | Computer Output for Reducing Leakage |
| Part 4 | - | Computer Output for Opening Vent Drifts in 2-East |
| Part 5 | - | Computer Output for Opening Vent Drifts in 3-East |
| Part 6 | - | Computer Output for Opening Vent Drifts in 2-East and 3-East |
| APPENDIX C | - | Computer Outputs for Mine No. 3 |
| Part 1 | - | Computer Output for Increasing Blade Settings |
| Part 2 | - | Computer Output for Fan Replacement |
| Part 3 | - | Computer Output for Reducing Leakage |
| Part 4 | - | Computer Output for Reducing Airway Resistance (Clean-Up) |
| Part 5 | - | Computer Output for Addition of a New Shaft |
| Part 6 | - | Computer Output for Increased Parallel Entries |
| APPENDIX D | - | Computer Outputs for Mine No. 4 |
| Part 1 | - | Base System Modeling |
| Part 2 | - | Computer Output for Increased Blade Settings on Half-Bladed Rotor |
| Part 3 | - | Computer Output for Full-Bladed Rotor (Zero Degree Setting) |
| Part 4 | - | Computer Output for Full-Bladed Rotor (Plus Five Degrees Setting) |
| Part 5 | - | Computer Output for Full-Bladed Rotor (Plus Ten Degree Setting) |
| Part 6 | - | Computer Output for Reducing Leakage |
| Part 7 | - | Computer Output for Opening Vent Drifts in 2-East |
| Part 8 | - | Computer Output for Opening Vent Drifts in 3-East |
| Part 9 | - | Computer Output for Opening Vent Drifts in 2-East and 3-East |
| APPENDIX E | - | Computer Outputs for Mine No. 5 |
| Part 1 | - | Base System Modeling |
| Part 2 | - | Computer Output for Reducing Resistance |
| Part 3 | - | Computer Output for Utilizing Overcasts in North Mains |
| Part 4 | - | Computer Output for Moving Air Lock Doors in Western Submains |
| Part 5 | - | Computer Output for Addition of a New Shaft with Fan |
| Part 6 | - | Computer Output for Increased Blade Settings |
| Part 7 | - | Computer Output for Reducing Leakage |

APPENDIX A

Computer Output for Mine No. 1

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|
| 1 | 1 | 5 | 1 | .5828 | 138.480 | 1.118 | 0.000 | 1.118 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 2 | 1 | 10 | 1 | .2486 | 244.457 | 1.486 | 0.000 | 1.486 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 3 | 5 | 10 | 1 | .1919 | 138.480 | .368 | 1.118 | 1.486 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 4 | 10 | 20 | 1 | .0132 | 382.937 | .194 | 1.486 | 1.679 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 5 | 20 | 70 | 1 | .4345 | 204.693 | 1.821 | 1.679 | 3.500 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 6 | 20 | 30 | 1 | .2450 | 160.524 | .631 | 1.679 | 2.310 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 7 | 20 | 325 | 1 | 206.7000 | 17.721 | 6.491 | 1.679 | 8.170 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 8 | 30 | 40 | 1 | .0123 | 71.485 | .006 | 2.310 | 2.317 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 9 | 30 | 70 | 1 | 1.5000 | 89.039 | 1.189 | 2.310 | 3.500 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 10 | 40 | 50 | 1 | .7015 | 33.134 | .077 | 2.317 | 2.394 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 11 | 40 | 60 | 1 | 1.2040 | 24.470 | .072 | 2.317 | 2.389 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 12 | 40 | 230 | 1 | 12.8000 | 13.881 | .247 | 2.317 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 13 | 55 | 215 | 1 | .2500 | 12.033 | .004 | 2.392 | 2.396 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 14 | 60 | 55 | 1 | .2200 | 12.033 | .003 | 2.389 | 2.392 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 15 | 60 | 65 | 1 | .2200 | 12.437 | .003 | 2.389 | 2.392 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 16 | 65 | 215 | 1 | .2200 | 12.437 | .003 | 2.392 | 2.396 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 17 | 50 | 210 | 1 | 0.0000 | 3.624 | 0.000 | 2.394 | 2.394 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 18 | 50 | 235 | 1 | .5900 | 29.510 | .051 | 2.394 | 2.445 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 19 | 215 | 220 | 1 | .3100 | 24.470 | .019 | 2.396 | 2.414 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 20 | 70 | 80 | 1 | .0718 | 272.755 | .534 | 3.500 | 4.034 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 21 | 70 | 310 | 1 | 99.0700 | 20.976 | 4.359 | 3.500 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 22 | 80 | 85 | 1 | .1469 | 74.848 | .082 | 4.034 | 4.116 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 23 | 80 | 300 | 1 | 173.5000 | 14.670 | 3.734 | 4.034 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 24 | 80 | 100 | 1 | .1168 | 183.238 | .392 | 4.034 | 4.426 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 25 | 85 | 86 | 1 | .0126 | 64.263 | .005 | 4.116 | 4.121 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 26 | 85 | 240 | 1 | 150.6000 | 10.584 | 1.687 | 4.116 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 27 | 86 | 90 | 1 | .1600 | 53.966 | .047 | 4.121 | 4.168 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 28 | 86 | 95 | 1 | 80.7300 | 10.298 | .856 | 4.121 | 4.977 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 29 | 90 | 95 | 1 | 2.7800 | 53.966 | .810 | 4.168 | 4.977 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 30 | 95 | 240 | 1 | 2.0000 | 64.263 | .826 | 4.977 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 31 | 100 | 110 | 1 | .1012 | 58.880 | .035 | 4.426 | 4.461 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 32 | 100 | 120 | 1 | .0518 | 114.128 | .067 | 4.426 | 4.493 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 33 | 100 | 290 | 1 | 260.4000 | 10.230 | 2.725 | 4.426 | 7.151 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 34 | 110 | 250 | 1 | 8.9150 | 58.880 | 3.091 | 4.461 | 7.551 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 35 | 120 | 150 | 1 | .0316 | 65.091 | .013 | 4.493 | 4.507 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 36 | 120 | 125 | 1 | 1.6620 | 38.239 | .243 | 4.493 | 4.737 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 37 | 120 | 280 | 1 | 213.6000 | 10.798 | 2.490 | 4.493 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 38 | 125 | 126 | 1 | .2800 | 13.710 | .005 | 4.737 | 4.742 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 39 | 125 | 276 | 1 | 29.2700 | 24.529 | 1.761 | 4.737 | 6.499 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 40 | 126 | 190 | 1 | .2900 | 3.697 | .000 | 4.742 | 4.744 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 41 | 126 | 275 | 1 | 58.4500 | 10.013 | .586 | 4.742 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 42 | 156 | 140 | 1 | .1500 | 18.368 | .005 | 4.609 | 4.613 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 43 | 140 | 270 | 1 | 70.0900 | 18.368 | 2.365 | 4.613 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 44 | 150 | 160 | 1 | .5000 | 38.194 | .073 | 4.507 | 4.580 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 45 | 150 | 170 | 1 | .6400 | 26.898 | .046 | 4.507 | 4.553 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 46 | 156 | 190 | 1 | 1.0000 | 36.723 | .135 | 4.609 | 4.744 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 47 | 160 | 156 | 1 | .2500 | 33.194 | .028 | 4.580 | 4.600 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 48 | 160 | 260 | 1 | 959.0000 | 5.000 | 2.397 | 4.580 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 49 | 170 | 180 | 1 | .2516 | 26.898 | .018 | 4.553 | 4.571 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 50 | 180 | 156 | 1 | .7500 | 21.897 | .036 | 4.571 | 4.609 | | | 0.000 | 0.000 | 0.000 | 0.00 |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 5.001 | 2.406 | 4.571 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 19.684 | .561 | 4.744 | 5.304 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 20.736 | .585 | 4.744 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 14.808 | .024 | 5.304 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 4.876 | 2.717 | 5.304 | 8.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 3.624 | .020 | 2.394 | 2.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 28.094 | .149 | 2.414 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 16.208 | .118 | 2.445 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 58.183 | 5.295 | 2.563 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 13.302 | 3.358 | 2.445 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 88.149 | 1.748 | 5.803 | 7.551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 147.029 | .216 | 7.551 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 10.001 | .001 | 6.977 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 28.369 | .006 | 6.977 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 45.557 | 1.171 | 5.328 | 6.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 70.086 | .485 | 6.499 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 109.253 | .167 | 6.984 | 7.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 51.782 | .617 | 7.151 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 67.700 | .330 | 7.151 | 7.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 213.481 | .091 | 7.768 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 292.641 | .086 | 7.859 | 7.944 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 134.279 | .036 | 7.944 | 7.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 158.361 | .226 | 7.944 | 8.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 176.082 | .279 | 8.170 | 8.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 201.979 | .041 | 7.980 | 8.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 206.855 | .428 | 8.021 | 8.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 382.937 | 1.544 | 8.449 | 0.000 | | | 0.000 | 0.000 | 9.994 | 603.04 | FN10 |

APPENDIX B

Computer Outputs for Mine No. 2

PART 1

Base System Modeling

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .6169 | 97.512 | .587 | 0.000 | .587 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2632 | 172.136 | .780 | 0.000 | .780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .2031 | 97.512 | .193 | .587 | .780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0140 | 269.648 | .102 | .780 | .881 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .1655 | 150.402 | .374 | .881 | 1.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2593 | 119.246 | .369 | .881 | 1.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 30 | 40 | 1 | 1.4661 | 67.238 | .664 | 1.250 | 1.914 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 70 | 1 | .0203 | 51.957 | .003 | 1.250 | 1.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 40 | 50 | 1 | .2333 | 48.483 | .055 | 1.914 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 60 | 1 | 1.2745 | 18.805 | .045 | 1.914 | 1.959 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 50 | 210 | 1 | 0.0000 | 1.055 | 0.000 | 1.969 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 50 | 235 | 1 | .6245 | 47.428 | .140 | 1.969 | 2.109 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 60 | 220 | 1 | .3282 | 18.805 | .012 | 1.959 | 1.971 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 70 | 80 | 1 | .0760 | 189.380 | .273 | 1.256 | 1.528 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 70 | 310 | 1 | 104.8711 | 12.980 | 1.767 | 1.256 | 3.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 80 | 85 | 1 | .1555 | 58.401 | .053 | 1.528 | 1.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 80 | 300 | 1 | 183.6594 | 8.807 | 1.425 | 1.528 | 2.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 80 | 100 | 1 | .1236 | 122.171 | .185 | 1.528 | 1.713 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 85 | 86 | 1 | .0133 | 50.205 | .003 | 1.581 | 1.585 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 85 | 240 | 1 | 159.4185 | 8.197 | 1.071 | 1.581 | 2.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 86 | 90 | 1 | .0423 | 42.299 | .008 | 1.585 | 1.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 86 | 95 | 1 | 85.4572 | 7.906 | .534 | 1.585 | 2.119 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 90 | 95 | 1 | 2.9428 | 42.299 | .527 | 1.592 | 2.119 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 95 | 240 | 1 | 2.1171 | 50.205 | .534 | 2.119 | 2.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 100 | 110 | 1 | .1588 | 11.935 | .002 | 1.713 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 100 | 120 | 1 | .0548 | 110.287 | .067 | 1.713 | 1.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 110 | 250 | 1 | 75.2951 | 11.935 | 1.073 | 1.715 | 2.788 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 120 | 130 | 1 | .0769 | 70.977 | .039 | 1.779 | 1.818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 120 | 125 | 1 | .8975 | 34.790 | .000 | 1.779 | 1.827 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 120 | 280 | 1 | 226.1075 | 4.430 | .480 | 1.779 | 2.800 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 125 | 126 | 1 | .2864 | 24.100 | .017 | 1.827 | 1.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 125 | 276 | 1 | 30.9839 | 10.694 | .352 | 1.827 | 2.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 126 | 190 | 1 | .3070 | 18.740 | .011 | 1.845 | 1.856 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 126 | 275 | 1 | 61.8726 | 5.394 | .130 | 1.845 | 2.025 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 130 | 140 | 1 | 1.8144 | 12.975 | .001 | 1.818 | 1.849 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 130 | 150 | 1 | .0129 | 58.002 | .004 | 1.818 | 1.871 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 140 | 156 | 1 | .2646 | 6.178 | .001 | 1.849 | 1.875 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 140 | 270 | 1 | 74.1942 | 6.797 | .343 | 1.849 | 2.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 150 | 155 | 1 | .5293 | 30.989 | .051 | 1.822 | 1.877 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 150 | 170 | 1 | .6775 | 27.013 | .049 | 1.872 | 1.879 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 155 | 156 | 1 | 16.6723 | -3.763 | -0.4 | 1.875 | 1.879 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 155 | 160 | 1 | .2329 | 34.752 | .028 | 1.873 | 1.901 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 156 | 190 | 1 | 10.0986 | 2.414 | .006 | 1.850 | 1.856 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 160 | 260 | 1 | 1.5243 | 41.758 | .266 | 1.901 | 2.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 170 | 130 | 1 | .2663 | 27.013 | .019 | 1.872 | 1.891 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 180 | 160 | 1 | 2.0536 | 7.009 | .010 | 1.891 | 1.891 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 180 | 300 | 1 | 6.8910 | 30.008 | .276 | 1.891 | 2.167 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 190 | 170 | 1 | 15.3170 | 10.216 | .000 | 1.875 | 1.875 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 190 | 175 | 1 | 14.7074 | 10.840 | .180 | 1.850 | 1.877 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 200 | 175 | 1 | 1.1508 | 7.318 | .000 | 2.018 | 2.018 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHF | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 200 | 340 | 1 | 1209.9294 | 2.998 | 1.088 | 2.019 | 3.106 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 210 | 220 | 1 | 16.4711 | 1.055 | .002 | 1.969 | 1.971 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 220 | 230 | 1 | 2.0007 | 19.860 | .079 | 1.971 | 2.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 230 | 235 | 1 | 11.5806 | 7.183 | .060 | 2.050 | 2.109 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 230 | 310 | 1 | 60.5282 | 12.678 | .973 | 2.050 | 3.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 235 | 240 | 1 | 1.8207 | 54.611 | .543 | 2.109 | 2.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 240 | 250 | 1 | .1059 | 113.012 | .135 | 2.652 | 2.788 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 250 | 300 | 1 | .1059 | 124.947 | .165 | 2.788 | 2.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 260 | 270 | 1 | .0635 | 61.765 | .024 | 2.167 | 2.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 270 | 280 | 1 | .0847 | 68.562 | .040 | 2.191 | 2.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 275 | 276 | 1 | 2.7840 | 23.552 | .154 | 2.025 | 2.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 276 | 280 | 1 | .4446 | 34.206 | .052 | 2.179 | 2.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 280 | 290 | 1 | .1482 | 107.238 | .170 | 2.231 | 2.402 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 290 | 300 | 1 | 2.4347 | 47.577 | .551 | 2.402 | 2.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 290 | 330 | 1 | 1.9160 | 59.661 | .682 | 2.402 | 3.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 300 | 310 | 1 | .0212 | 181.331 | .070 | 2.953 | 3.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 310 | 320 | 1 | .0106 | 206.988 | .045 | 3.022 | 3.068 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 320 | 330 | 1 | .0212 | 86.814 | .016 | 3.068 | 3.343 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 320 | 350 | 1 | .1905 | 120.174 | .275 | 3.068 | 3.343 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 330 | 340 | 1 | .0106 | 146.475 | .023 | 3.084 | 3.106 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 340 | 350 | 1 | .1059 | 149.474 | .237 | 3.106 | 3.343 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 350 | 1 | 1 | .7939 | 269.648 | 5.773 | 3.343 | 0.000 | | | 0.000 | 0.000 | 9.115 | 337.20 | FAN2 |

337.20

PART 2

Computer Output for Fan Replacement

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 152.126 | 1.349 | 0.000 | 1.349 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 268.546 | 1.793 | 0.000 | 1.793 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 152.126 | .444 | 1.349 | 1.793 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 420.672 | .234 | 1.793 | 2.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 325 | 1 | 206.7000 | 15.360 | 4.877 | 2.026 | 6.903 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 70 | 1 | .1563 | 226.076 | .799 | 2.026 | 2.825 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 30 | 1 | .2450 | 179.236 | .787 | 2.026 | 2.814 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | 1.3850 | 100.888 | 1.410 | 2.814 | 4.223 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 40 | 230 | 1 | 12.8000 | 12.004 | .184 | 4.223 | 4.408 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 30 | 70 | 1 | .0192 | 78.348 | .012 | 2.814 | 2.825 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 50 | 1 | .2204 | 68.710 | .104 | 4.223 | 4.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 60 | 1 | 1.6040 | 20.174 | .065 | 4.223 | 4.288 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 50 | 210 | 1 | 0.0000 | .415 | 0.000 | 4.327 | 4.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 50 | 235 | 1 | .5900 | 68.296 | .275 | 4.327 | 4.602 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 220 | 1 | .9598 | 20.174 | .039 | 4.288 | 4.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 70 | 80 | 1 | .0718 | 285.097 | .584 | 2.825 | 3.409 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 70 | 310 | 1 | 99.0700 | 19.327 | 3.701 | 2.825 | 6.526 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 80 | 85 | 1 | .1469 | 86.699 | .110 | 3.409 | 3.519 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 80 | 300 | 1 | 173.5000 | 13.082 | 2.969 | 3.409 | 6.378 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 80 | 100 | 1 | .1168 | 185.315 | .401 | 3.409 | 3.810 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 85 | 86 | 1 | .0126 | 74.531 | .007 | 3.519 | 3.526 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 85 | 240 | 1 | 150.6000 | 12.168 | 2.230 | 3.519 | 5.749 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 86 | 90 | 1 | .0400 | 62.796 | .016 | 3.526 | 3.542 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 86 | 95 | 1 | 80.7300 | 11.736 | 1.112 | 3.526 | 4.638 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 90 | 95 | 1 | 2.7800 | 62.796 | 1.096 | 3.542 | 4.638 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 95 | 240 | 1 | 2.0000 | 74.531 | 1.111 | 4.638 | 5.749 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 100 | 110 | 1 | .1500 | 17.658 | .005 | 3.810 | 3.815 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 100 | 290 | 1 | 260.4000 | 7.227 | 1.360 | 3.810 | 5.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 100 | 120 | 1 | .0518 | 160.430 | .133 | 3.810 | 3.943 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 110 | 250 | 1 | 71.1300 | 17.658 | 2.218 | 3.815 | 6.032 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 120 | 130 | 1 | .0726 | 102.648 | .076 | 3.943 | 4.020 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 120 | 125 | 1 | .3755 | 51.340 | .099 | 3.943 | 4.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 120 | 280 | 1 | 213.6000 | 6.441 | .386 | 3.943 | 4.829 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 125 | 126 | 1 | .2800 | 36.026 | .036 | 4.042 | 4.079 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 125 | 276 | 1 | 29.2700 | 15.315 | .887 | 4.042 | 4.728 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 126 | 190 | 1 | .2900 | 28.262 | .023 | 4.079 | 4.102 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 126 | 275 | 1 | 58.4500 | 7.764 | .252 | 4.079 | 4.431 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 130 | 140 | 1 | 1.7140 | 20.867 | .075 | 4.020 | 4.094 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 130 | 150 | 1 | .0122 | 81.781 | .008 | 4.020 | 4.028 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 140 | 156 | 1 | .2500 | 11.205 | .003 | 4.094 | 4.098 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 140 | 270 | 1 | 70.0900 | 9.661 | .654 | 4.094 | 4.749 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 150 | 160 | 1 | .5000 | 53.645 | .144 | 4.028 | 4.172 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 150 | 170 | 1 | .6400 | 28.137 | .051 | 4.028 | 4.079 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 156 | 160 | 1 | 15.7500 | 6.867 | .074 | 4.098 | 4.172 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 156 | 190 | 1 | 9.5400 | 2.104 | .004 | 4.098 | 4.102 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 160 | 260 | 1 | 1.4400 | 60.511 | .527 | 4.172 | 4.699 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 170 | 180 | 1 | .2516 | 28.137 | .020 | 4.079 | 4.099 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 156 | 180 | 1 | 1.9400 | 2.235 | .001 | 4.098 | 4.099 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 180 | 260 | 1 | 6.5100 | 30.371 | .600 | 4.099 | 4.699 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 190 | 200 | 1 | 14.4700 | 14.811 | .317 | 4.102 | 4.419 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 190 | 275 | 1 | 13.6000 | 15.555 | .329 | 4.102 | 4.431 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 200 | 275 | 1 | 1.0900 | 10.336 | .012 | 4.419 | 4.431 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 200 | 340 | 1 | 1143.0000 | 4.475 | 2.289 | 4.419 | 6.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 210 | 220 | 1 | 15.5600 | .415 | .000 | 4.327 | 4.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 220 | 230 | 1 | 1.8900 | 20.588 | .080 | 4.328 | 4.408 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 230 | 235 | 1 | 10.9400 | 13.346 | .195 | 4.408 | 4.602 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 230 | 310 | 1 | 57.1800 | 19.247 | 2.118 | 4.408 | 6.526 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 240 | 1 | 1.7200 | 81.641 | 1.146 | 4.602 | 5.749 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 240 | 250 | 1 | .1000 | 168.340 | .283 | 5.749 | 6.032 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 250 | 300 | 1 | .1000 | 185.999 | .346 | 6.032 | 6.378 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 260 | 270 | 1 | .0600 | 90.883 | .050 | 4.699 | 4.749 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 270 | 280 | 1 | .0800 | 100.544 | .081 | 4.749 | 4.829 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 275 | 276 | 1 | 2.6300 | 33.654 | .298 | 4.431 | 4.728 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 276 | 280 | 1 | .4200 | 48.969 | .101 | 4.728 | 4.829 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 280 | 290 | 1 | .1400 | 155.954 | .341 | 4.829 | 5.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 290 | 300 | 1 | 2.3000 | 72.493 | 1.209 | 5.170 | 6.378 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 290 | 330 | 1 | 1.8100 | 90.689 | 1.489 | 5.170 | 6.658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 300 | 310 | 1 | .0200 | 271.574 | .148 | 6.378 | 6.526 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 310 | 320 | 1 | .0100 | 310.148 | .096 | 6.526 | 6.622 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 320 | 330 | 1 | .0200 | 134.371 | .036 | 6.622 | 6.658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 320 | 325 | 1 | .0910 | 175.777 | .281 | 6.622 | 6.903 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 325 | 350 | 1 | .0910 | 191.137 | .332 | 6.903 | 7.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 330 | 340 | 1 | .0100 | 225.060 | .051 | 6.658 | 6.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 340 | 350 | 1 | .1000 | 229.535 | .527 | 6.709 | 7.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 350 | 1 | L | .1500 | 420.672 | 2.654 | 7.236 | 0.000 | | | 0.000 | 0.000 | 9.890 | 655.58 | FN11 |

PART 3

Computer Output for Reducing Leakage

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 96.679 | .545 | 0.000 | .545 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 170.666 | .724 | 0.000 | .724 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 96.679 | .179 | .545 | .724 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 267.345 | .094 | .724 | .818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 325 | 1 | 206.7000 | 3.630 | .272 | .818 | 3.254 | | | 0.000 | 2.163 | 0.000 | 0.00 | |
| 6 | 20 | 70 | 1 | .1563 | 146.968 | .338 | .818 | 1.156 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 30 | 1 | .2450 | 116.747 | .334 | .818 | 1.152 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | 1.3850 | 73.049 | .739 | 1.152 | 1.891 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 40 | 230 | 1 | 12.8000 | .422 | .000 | 1.891 | 2.053 | | | 0.000 | .161 | 0.000 | 0.00 | |
| 10 | 30 | 70 | 1 | .0192 | 43.698 | .004 | 1.152 | 1.156 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 50 | 1 | .2204 | 54.915 | .066 | 1.891 | 1.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 60 | 1 | 1.6040 | 17.712 | .050 | 1.891 | 1.942 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 50 | 210 | 1 | 0.0000 | 2.996 | 0.000 | 1.958 | 1.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 50 | 235 | 1 | .5900 | 51.919 | .159 | 1.958 | 2.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 220 | 1 | .9598 | 17.712 | .030 | 1.942 | 1.972 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 70 | 80 | 1 | .0718 | 186.126 | .249 | 1.156 | 1.405 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 70 | 310 | 1 | 99.0700 | 4.540 | .204 | 1.156 | 3.092 | | | 0.000 | 1.732 | 0.000 | 0.00 | |
| 18 | 80 | 85 | 1 | .1469 | 55.966 | .046 | 1.405 | 1.451 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 80 | 300 | 1 | 173.5000 | 1.310 | .030 | 1.405 | 3.027 | | | 0.000 | 1.592 | 0.000 | 0.00 | |
| 20 | 80 | 100 | 1 | .1168 | 128.850 | .194 | 1.405 | 1.599 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 85 | 86 | 1 | .0126 | 53.066 | .004 | 1.451 | 1.454 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 85 | 240 | 1 | 150.6000 | 2.900 | .127 | 1.451 | 2.727 | | | 0.000 | 1.150 | 0.000 | 0.00 | |
| 23 | 86 | 90 | 1 | .0400 | 50.166 | .010 | 1.454 | 1.464 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 86 | 95 | 1 | 80.7300 | 2.900 | .068 | 1.454 | 2.164 | | | 0.000 | .642 | 0.000 | 0.00 | |
| 25 | 90 | 95 | 1 | 2.7800 | 50.166 | .700 | 1.464 | 2.164 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 95 | 240 | 1 | 2.0000 | 53.066 | .563 | 2.164 | 2.727 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 100 | 110 | 1 | .1500 | 13.306 | .003 | 1.599 | 1.601 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 100 | 290 | 1 | 260.4000 | 1.380 | .050 | 1.599 | 2.446 | | | 0.000 | .797 | 0.000 | 0.00 | |
| 29 | 100 | 120 | 1 | .0518 | 114.164 | .068 | 1.599 | 1.666 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 110 | 250 | 1 | 71.1300 | 13.306 | 1.259 | 1.601 | 2.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 120 | 130 | 1 | .0726 | 82.103 | .049 | 1.666 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 120 | 125 | 1 | .3755 | 31.601 | .037 | 1.666 | 1.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 120 | 280 | 1 | 213.6000 | .460 | .005 | 1.666 | 2.273 | | | 0.000 | .602 | 0.000 | 0.00 | |
| 34 | 125 | 126 | 1 | .2800 | 31.131 | .027 | 1.704 | 1.731 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 125 | 276 | 1 | 29.2700 | .470 | .001 | 1.704 | 2.243 | | | 0.000 | .538 | 0.000 | 0.00 | |
| 36 | 126 | 190 | 1 | .2900 | 30.661 | .027 | 1.731 | 1.758 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 126 | 275 | 1 | 58.4500 | .470 | .001 | 1.731 | 2.060 | | | 0.000 | .328 | 0.000 | 0.00 | |
| 38 | 130 | 140 | 1 | 1.7140 | 16.013 | .044 | 1.715 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 130 | 150 | 1 | .0122 | 66.090 | .005 | 1.715 | 1.720 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 140 | 156 | 1 | .2500 | 7.932 | .002 | 1.759 | 1.761 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 140 | 270 | 1 | 70.0900 | 8.081 | .458 | 1.759 | 2.217 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 150 | 160 | 1 | .5000 | 44.234 | .098 | 1.720 | 1.818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 150 | 170 | 1 | .6400 | 21.856 | .031 | 1.720 | 1.751 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 156 | 160 | 1 | 15.7500 | 6.050 | .058 | 1.761 | 1.818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 156 | 190 | 1 | 9.5400 | -1.642 | -.003 | 1.761 | 1.753 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 160 | 260 | 1 | 1.4400 | 50.284 | .364 | 1.818 | 2.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 170 | 180 | 1 | .2516 | 21.856 | .012 | 1.751 | 1.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 156 | 180 | 1 | 1.9400 | 3.524 | .002 | 1.761 | 1.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 180 | 260 | 1 | 6.5100 | 25.381 | .419 | 1.763 | 2.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 190 | 200 | 1 | 14.4700 | 14.123 | .289 | 1.758 | 2.047 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHF | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 190 | 275 | 1 | 13.6000 | 14.896 | .302 | 1.758 | 2.060 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 200 | 275 | 1 | 1.0900 | 10.994 | .013 | 2.047 | 2.060 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 200 | 340 | 1 | 1143.0000 | 3.129 | 1.119 | 2.047 | 3.166 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 210 | 220 | 1 | 15.5600 | 2.996 | .014 | 1.958 | 1.972 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 220 | 230 | 1 | 1.8900 | 20.708 | .081 | 1.972 | 2.053 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 230 | 235 | 1 | 10.9400 | 7.650 | .064 | 2.053 | 2.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 230 | 310 | 1 | 57.1800 | 13.480 | 1.039 | 2.053 | 3.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 240 | 1 | 1.7200 | 59.569 | .610 | 2.117 | 2.727 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 240 | 250 | 1 | .1000 | 115.536 | .133 | 2.727 | 2.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 250 | 300 | 1 | .1000 | 128.842 | .166 | 2.861 | 3.027 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 260 | 270 | 1 | .0600 | 75.664 | .034 | 2.182 | 2.217 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 270 | 280 | 1 | .0800 | 83.745 | .056 | 2.217 | 2.273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 275 | 276 | 1 | 2.6300 | 26.360 | .183 | 2.060 | 2.243 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 276 | 280 | 1 | .4200 | 26.830 | .030 | 2.243 | 2.273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 280 | 290 | 1 | .1400 | 111.035 | .173 | 2.273 | 2.446 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 290 | 300 | 1 | 2.3000 | 50.267 | .581 | 2.446 | 3.027 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 290 | 330 | 1 | 1.8100 | 62.148 | .699 | 2.446 | 3.145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 300 | 310 | 1 | .0200 | 180.419 | .065 | 3.027 | 3.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 310 | 320 | 1 | .0100 | 198.438 | .039 | 3.092 | 3.131 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 320 | 330 | 1 | .0200 | 82.437 | .014 | 3.131 | 3.145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 320 | 325 | 1 | .0910 | 116.002 | .122 | 3.131 | 3.254 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 325 | 350 | 1 | .0910 | 119.632 | .130 | 3.254 | 3.384 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 330 | 340 | 1 | .0100 | 144.585 | .021 | 3.145 | 3.166 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 340 | 350 | 1 | .1000 | 147.714 | .218 | 3.166 | 3.384 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 350 | 1 | 1 | .7500 | 267.345 | 5.361 | 3.384 | 0.000 | | | 0.000 | 0.000 | 8.744 | 368.37 | FAN1 |

PART 4

Computer Output for Opening Vent Drifts in 2-East

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 74.112 | .320 | 0.000 | .320 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 60 | 1 | .1113 | 71.257 | .057 | 0.000 | .057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 10 | 1 | .2486 | 130.829 | .426 | 0.000 | .426 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 5 | 10 | 1 | .1919 | 74.112 | .105 | .320 | .426 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 10 | 20 | 1 | .0132 | 204.941 | .055 | .426 | .481 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 325 | 1 | 206.7000 | 9.510 | 1.869 | .481 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 70 | 1 | .1563 | 110.403 | .191 | .481 | .671 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 20 | 30 | 1 | .2450 | 85.027 | .177 | .481 | .658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 40 | 1 | 1.3850 | 1.536 | .000 | .658 | .658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 230 | 1 | 12.8000 | 18.493 | .438 | .658 | 1.096 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 30 | 70 | 1 | .0192 | 83.492 | .013 | .658 | .671 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 50 | 1 | .2204 | 44.300 | .043 | .658 | 1.105 | | | 0.000 | .403 | 0.000 | 0.00 | |
| 13 | 40 | 60 | 1 | 1.6040 | -61.257 | -.602 | .658 | .057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 50 | 210 | 1 | 0.0000 | -3.294 | 0.000 | 1.105 | 1.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 50 | 235 | 1 | .5900 | 47.594 | .134 | 1.105 | 1.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 60 | 220 | 1 | .9598 | 10.000 | .010 | .057 | 1.088 | | | 0.000 | 1.022 | 0.000 | 0.00 | |
| 17 | 70 | 80 | 1 | .0718 | 181.531 | .237 | .671 | .908 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 70 | 310 | 1 | 99.0700 | 12.364 | 1.514 | .671 | 2.186 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 80 | 85 | 1 | .1469 | 54.610 | .044 | .908 | .952 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 80 | 300 | 1 | 173.5000 | 8.363 | 1.213 | .908 | 2.121 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 80 | 100 | 1 | .1168 | 118.558 | .164 | .908 | 1.072 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 85 | 86 | 1 | .0126 | 46.945 | .003 | .952 | .955 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 85 | 240 | 1 | 150.6000 | 7.665 | .885 | .952 | 1.837 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 86 | 90 | 1 | .0400 | 39.551 | .006 | .955 | .961 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 86 | 95 | 1 | 80.7300 | 7.394 | .441 | .955 | 1.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 90 | 95 | 1 | 2.7800 | 39.551 | .435 | .961 | 1.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 95 | 240 | 1 | 2.0000 | 46.945 | .441 | 1.396 | 1.837 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 100 | 110 | 1 | .1500 | 11.196 | .002 | 1.072 | 1.074 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 100 | 290 | 1 | 260.4000 | 4.628 | .558 | 1.072 | 1.630 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 100 | 120 | 1 | .0518 | 102.734 | .055 | 1.072 | 1.127 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 110 | 250 | 1 | 71.1300 | 11.196 | .392 | 1.074 | 1.966 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 120 | 130 | 1 | .0726 | 65.733 | .031 | 1.127 | 1.158 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 120 | 125 | 1 | .3755 | 32.876 | .041 | 1.127 | 1.167 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 120 | 280 | 1 | 213.6000 | 4.125 | .363 | 1.127 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 125 | 126 | 1 | .2800 | 23.069 | .015 | 1.167 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 125 | 276 | 1 | 29.2700 | 9.807 | .282 | 1.167 | 1.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 126 | 190 | 1 | .2900 | 18.097 | .009 | 1.182 | 1.192 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 126 | 275 | 1 | 58.4500 | 4.972 | .145 | 1.182 | 1.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 130 | 140 | 1 | 1.7140 | 13.362 | .031 | 1.158 | 1.189 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 130 | 150 | 1 | .0122 | 52.371 | .003 | 1.158 | 1.162 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 140 | 156 | 1 | .2500 | 7.176 | .001 | 1.189 | 1.190 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 140 | 270 | 1 | 70.0900 | 6.186 | .268 | 1.189 | 1.457 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 150 | 160 | 1 | .5000 | 34.352 | .059 | 1.162 | 1.221 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 170 | 1 | .6400 | 18.019 | .021 | 1.162 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 156 | 160 | 1 | 15.7500 | 4.397 | .070 | 1.190 | 1.221 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 9.5400 | 1.351 | .002 | 1.190 | 1.192 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 260 | 1 | 1.4400 | 38.749 | .216 | 1.221 | 1.437 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 170 | 180 | 1 | .2516 | 18.019 | .008 | 1.182 | 1.190 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 156 | 180 | 1 | 1.9400 | 1.427 | .000 | 1.190 | 1.190 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 260 | 1 | 6.5100 | 19.446 | .246 | 1.190 | 1.437 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | H.IA | H.IB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 190 | 200 | 1 | 14.4700 | 9.487 | .130 | 1.192 | 1.322 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 275 | 1 | 13.6000 | 9.962 | .135 | 1.192 | 1.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 200 | 275 | 1 | 1.0900 | 6.613 | .005 | 1.322 | 1.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 340 | 1 | 1143.0000 | 2.874 | .944 | 1.322 | 2.266 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 210 | 220 | 1 | 15.5600 | -3.294 | -.017 | 1.105 | 1.088 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 220 | 230 | 1 | 1.8900 | 6.706 | .008 | 1.088 | 1.096 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 230 | 235 | 1 | 10.9400 | 11.394 | .142 | 1.096 | 1.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 230 | 310 | 1 | 57.1800 | 13.805 | 1.090 | 1.096 | 2.186 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 235 | 240 | 1 | 1.7200 | 58.988 | .598 | 1.238 | 1.837 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 240 | 250 | 1 | .1000 | 113.598 | .129 | 1.837 | 1.966 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 250 | 300 | 1 | .1000 | 124.794 | .156 | 1.966 | 2.121 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 260 | 270 | 1 | .0600 | 58.195 | .020 | 1.437 | 1.457 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 270 | 280 | 1 | .0800 | 64.382 | .033 | 1.457 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 275 | 276 | 1 | 2.6300 | 21.547 | .122 | 1.327 | 1.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 276 | 280 | 1 | .4200 | 31.354 | .041 | 1.449 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 280 | 290 | 1 | .1400 | 99.860 | .140 | 1.490 | 1.630 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 290 | 300 | 1 | 2.3000 | 46.230 | .492 | 1.630 | 2.121 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 330 | 1 | 1.8100 | 58.258 | .614 | 1.630 | 2.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 300 | 310 | 1 | .0200 | 179.387 | .064 | 2.121 | 2.186 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 310 | 320 | 1 | .0100 | 205.556 | .042 | 2.186 | 2.228 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 320 | 330 | 1 | .0200 | 89.660 | .016 | 2.228 | 2.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 325 | 1 | .0910 | 115.896 | .122 | 2.228 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 325 | 350 | 1 | .0910 | 125.406 | .143 | 2.350 | 2.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 330 | 340 | 1 | .0100 | 147.919 | .022 | 2.244 | 2.266 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 340 | 350 | 1 | .1000 | 150.792 | .227 | 2.266 | 2.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 350 | 1 | 1 | .7500 | 276.198 | 5.721 | 2.493 | 0.000 | | | 0.000 | 0.000 | 8.215 | 357.52 | FAN1 |

PART 5

Computer Output for Opening Vent Drifts in 3-East

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|----------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 59.395 | .206 | 0.000 | .206 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 104.849 | .273 | 0.000 | .273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 91 | 1 | .2504 | 115.081 | .332 | 0.000 | .332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 5 | 10 | 1 | .1919 | 59.395 | .068 | .206 | .273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 10 | 20 | 1 | .0132 | 164.244 | .036 | .273 | .309 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 325 | 1 | 206.7000 | 9.099 | 1.711 | .309 | 2.020 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 70 | 1 | .1563 | 86.271 | .116 | .309 | .425 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 20 | 30 | 1 | .2450 | 68.873 | .116 | .309 | .425 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 40 | 1 | 1.3850 | 61.190 | .519 | .425 | .944 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 230 | 1 | 12.8000 | 7.343 | .069 | .944 | 1.013 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 30 | 70 | 1 | .0192 | 7.683 | .000 | .425 | .425 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 50 | 1 | .2204 | 41.597 | .038 | .944 | .982 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 40 | 60 | 1 | 1.6040 | 12.250 | .024 | .944 | .968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 50 | 210 | 1 | 0.0000 | .462 | 0.000 | .982 | .982 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 50 | 235 | 1 | .5900 | 41.135 | .100 | .982 | 1.082 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 60 | 220 | 1 | .9598 | 12.250 | .014 | .968 | .982 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 70 | 80 | 1 | .0718 | 81.954 | .043 | .425 | .473 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 70 | 310 | 1 | 99.0700 | 12.000 | 1.427 | .425 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 80 | 85 | 1 | .1469 | -49.909 | -.037 | .473 | .437 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 80 | 300 | 1 | 173.5000 | 8.695 | 1.312 | .473 | 1.785 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 80 | 100 | 1 | .1168 | 123.168 | .177 | .473 | .651 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 85 | 86 | 1 | .0126 | -58.295 | -.004 | .437 | .433 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 85 | 240 | 1 | 150.6000 | 8.386 | 1.059 | .437 | 1.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 86 | 90 | 1 | .0400 | -65.495 | -.017 | .433 | .415 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 90 | 91 | 1 | .0759 | -105.081 | -.084 | .415 | .332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 91 | 95 | 1 | 2.7870 | 10.000 | .028 | .332 | .351 | | | 0.000 | .492 | 0.000 | 0.00 | |
| 27 | 86 | 95 | 1 | 80.7300 | 7.200 | .418 | .433 | .851 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 90 | 95 | 1 | 2.7800 | 39.586 | .436 | .415 | .851 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 95 | 240 | 1 | 2.0000 | 56.786 | .645 | .851 | 1.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 100 | 110 | 1 | .1500 | 11.701 | .002 | .651 | .653 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 290 | 1 | 260.4000 | 4.805 | .601 | .651 | 1.252 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 106.663 | .059 | .651 | .710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 110 | 250 | 1 | 71.1300 | 11.701 | .974 | .653 | 1.626 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 120 | 130 | 1 | .0726 | 68.246 | .034 | .710 | .743 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 125 | 1 | .3755 | 34.134 | .044 | .710 | .753 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 280 | 1 | 213.6000 | 4.283 | .392 | .710 | 1.101 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 125 | 126 | 1 | .2800 | 23.952 | .016 | .753 | .769 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 276 | 1 | 29.2700 | 10.182 | .303 | .753 | 1.057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 126 | 190 | 1 | .2900 | 13.790 | .010 | .769 | .780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 275 | 1 | 58.4500 | 5.162 | .156 | .769 | .925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 130 | 140 | 1 | 1.7140 | 13.373 | .033 | .743 | .776 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 130 | 150 | 1 | .0122 | 54.374 | .004 | .743 | .747 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 156 | 1 | .2500 | 7.449 | .001 | .776 | .778 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 140 | 270 | 1 | 70.0900 | 6.423 | .289 | .776 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 160 | 1 | .5000 | 35.666 | .064 | .747 | .811 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 150 | 170 | 1 | .6400 | 18.708 | .022 | .747 | .769 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 156 | 160 | 1 | 15.7500 | 4.565 | .033 | .778 | .811 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 156 | 190 | 1 | 9.5400 | 1.399 | .002 | .778 | .780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 160 | 260 | 1 | 1.4400 | 40.231 | .233 | .811 | 1.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 170 | 180 | 1 | .2516 | 13.708 | .009 | .769 | .778 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 156 | 180 | 1 | 1.9400 | 1.485 | .000 | .778 | .778 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 180 | 260 | 1 | 6.5100 | 20.192 | .265 | .778 | 1.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 200 | 1 | 14.4700 | 9.848 | .140 | .780 | .920 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 190 | 275 | 1 | 13.6000 | 10.341 | .145 | .780 | .925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 275 | 1 | 1.0900 | 6.870 | .005 | .920 | .925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 200 | 340 | 1 | 1143.0000 | 2.977 | 1.013 | .920 | 1.933 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 210 | 220 | 1 | 15.5600 | .462 | .000 | .982 | .982 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 220 | 230 | 1 | 1.8900 | 12.712 | .031 | .982 | 1.013 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 235 | 1 | 10.9400 | 7.940 | .069 | 1.013 | 1.082 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 230 | 310 | 1 | 57.1800 | 12.115 | .839 | 1.013 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 235 | 240 | 1 | 1.7200 | 49.075 | .414 | 1.082 | 1.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 240 | 250 | 1 | .1000 | 114.247 | .131 | 1.496 | 1.626 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 250 | 300 | 1 | .1000 | 125.947 | .159 | 1.626 | 1.785 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 260 | 270 | 1 | .0600 | 60.424 | .022 | 1.044 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 270 | 280 | 1 | .0800 | 66.847 | .036 | 1.066 | 1.101 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 275 | 276 | 1 | 2.6300 | 22.374 | .132 | .925 | 1.057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 276 | 280 | 1 | .4200 | 32.556 | .045 | 1.057 | 1.101 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 280 | 290 | 1 | .1400 | 103.686 | .151 | 1.101 | 1.252 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 300 | 1 | 2.3000 | 48.154 | .533 | 1.252 | 1.785 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 290 | 330 | 1 | 1.8100 | 60.336 | .659 | 1.252 | 1.911 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 300 | 310 | 1 | .0200 | 182.796 | .067 | 1.785 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 310 | 320 | 1 | .0100 | 206.912 | .043 | 1.852 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 330 | 1 | .0200 | 89.390 | .016 | 1.895 | 1.911 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 320 | 325 | 1 | .0910 | 117.521 | .126 | 1.895 | 2.020 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 325 | 350 | 1 | .0910 | 126.621 | .146 | 2.020 | 2.166 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 330 | 340 | 1 | .0100 | 149.727 | .022 | 1.911 | 1.933 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 340 | 350 | 1 | .1000 | 152.704 | .233 | 1.933 | 2.166 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 350 | 1 | 1 | .7500 | 279.324 | 5.852 | 2.166 | 0.000 | | | 0.000 | 0.000 | 8.018 | 352.90 | FAN1 |

PART 6

Computer Output for Opening Vent Drifts in 2-East and 3-East

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 47.425 | .131 | 0.000 | .131 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 60 | 1 | .1113 | 51.897 | .030 | 0.000 | .030 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 10 | 1 | .2486 | 83.719 | .174 | 0.000 | .174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 1 | 91 | 1 | .2504 | 98.142 | .241 | 0.000 | .241 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 5 | 10 | 1 | .1919 | 47.425 | .043 | .131 | .174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 10 | 20 | 1 | .0132 | 131.144 | .023 | .174 | .197 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 8.864 | 1.624 | .197 | 1.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 20 | 70 | 1 | .1563 | 68.503 | .073 | .197 | .270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 20 | 30 | 1 | .2450 | 53.777 | .071 | .197 | .268 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 30 | 40 | 1 | 1.3850 | 17.768 | .044 | .268 | .312 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 230 | 1 | 12.8000 | 15.364 | .302 | .312 | .614 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 30 | 70 | 1 | .0192 | 36.009 | .002 | .268 | .270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 40 | 50 | 1 | .2204 | 44.300 | .043 | .312 | .605 | | | 0.000 | .250 | 0.000 | 0.00 | |
| 14 | 40 | 60 | 1 | 1.6040 | -41.897 | -.282 | .312 | .030 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 50 | 210 | 1 | 0.0000 | -1.636 | 0.000 | .605 | .605 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 50 | 235 | 1 | .5900 | 45.936 | .124 | .605 | .729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 60 | 220 | 1 | .9598 | 10.000 | .010 | .030 | .600 | | | 0.000 | .561 | 0.000 | 0.00 | |
| 18 | 70 | 80 | 1 | .0718 | 92.716 | .062 | .270 | .332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 70 | 310 | 1 | 99.0700 | 11.796 | 1.379 | .270 | 1.649 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 80 | 85 | 1 | .1469 | -36.043 | -.019 | .332 | .313 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 80 | 300 | 1 | 173.5000 | 8.483 | 1.248 | .332 | 1.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 80 | 100 | 1 | .1168 | 120.276 | .169 | .332 | .501 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 85 | 86 | 1 | .0126 | -44.025 | -.002 | .313 | .310 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 85 | 240 | 1 | 150.6000 | 7.982 | .960 | .313 | 1.273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 86 | 90 | 1 | .0400 | -50.852 | -.010 | .310 | .300 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 90 | 91 | 1 | .0759 | -88.142 | -.059 | .300 | .241 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 91 | 95 | 1 | 2.7870 | 10.000 | .028 | .241 | .687 | | | 0.000 | .418 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 6.827 | .376 | .310 | .687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 37.290 | .387 | .300 | .687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 54.117 | .586 | .687 | 1.273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1500 | 11.308 | .002 | .501 | .503 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 290 | 1 | 260.4000 | 4.697 | .574 | .501 | 1.076 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 120 | 1 | .0518 | 104.271 | .056 | .501 | .557 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 71.1300 | 11.308 | .910 | .503 | 1.413 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 130 | 1 | .0726 | 66.714 | .032 | .557 | .590 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | .3755 | 33.371 | .042 | .557 | .599 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | 4.186 | .374 | .557 | .932 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 23.417 | .015 | .599 | .615 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | 9.954 | .290 | .599 | .889 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 18.370 | .010 | .615 | .624 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | 5.047 | .149 | .615 | .763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 130 | 140 | 1 | 1.7140 | 13.564 | .032 | .590 | .621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 130 | 150 | 1 | .0122 | 53.149 | .003 | .590 | .593 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 140 | 156 | 1 | .2500 | 7.285 | .001 | .621 | .623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 140 | 270 | 1 | 70.0900 | 6.279 | .276 | .621 | .898 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 150 | 160 | 1 | .5000 | 34.862 | .061 | .593 | .654 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 150 | 170 | 1 | .6400 | 18.287 | .021 | .593 | .615 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 156 | 160 | 1 | 15.7500 | 4.462 | .031 | .623 | .654 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 156 | 190 | 1 | 9.5400 | 1.371 | .002 | .623 | .624 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 160 | 260 | 1 | 1.4400 | 39.325 | .223 | .654 | .877 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | H.JA | H.JB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 170 | 180 | 1 | .2516 | 18.287 | .008 | .615 | .623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 156 | 180 | 1 | 1.9400 | 1.452 | .000 | .623 | .623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 180 | 260 | 1 | 6.5100 | 19.739 | .254 | .623 | .877 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 190 | 200 | 1 | 14.4700 | 9.629 | .134 | .624 | .759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 190 | 275 | 1 | 13.6000 | 10.112 | .139 | .624 | .763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 200 | 275 | 1 | 1.0900 | 6.710 | .005 | .759 | .763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 200 | 340 | 1 | 1143.0000 | 2.919 | .974 | .759 | 1.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 210 | 220 | 1 | 15.5600 | -1.636 | -.004 | .605 | .600 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 220 | 230 | 1 | 1.8900 | 8.364 | .013 | .600 | .614 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 230 | 235 | 1 | 10.9400 | 10.273 | .115 | .614 | .729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 230 | 310 | 1 | 57.1800 | 13.455 | 1.035 | .614 | 1.649 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 235 | 240 | 1 | 1.7200 | 56.209 | .543 | .729 | 1.273 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 240 | 250 | 1 | .1000 | 118.308 | .140 | 1.273 | 1.413 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 250 | 300 | 1 | .1000 | 129.616 | .168 | 1.413 | 1.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 260 | 270 | 1 | .0600 | 59.064 | .021 | .877 | .898 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 270 | 280 | 1 | .0800 | 65.343 | .034 | .898 | .932 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 275 | 276 | 1 | 2.6300 | 21.869 | .126 | .763 | .889 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 276 | 280 | 1 | .4200 | 31.823 | .043 | .889 | .932 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 280 | 290 | 1 | .1400 | 101.352 | .144 | .932 | 1.076 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 290 | 300 | 1 | 2.3000 | 46.850 | .505 | 1.076 | 1.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 290 | 330 | 1 | 1.8100 | 59.199 | .634 | 1.076 | 1.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 300 | 310 | 1 | .0200 | 184.948 | .068 | 1.581 | 1.649 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 310 | 320 | 1 | .0100 | 210.200 | .044 | 1.649 | 1.693 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 320 | 330 | 1 | .0200 | 91.604 | .017 | 1.693 | 1.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 320 | 325 | 1 | .0910 | 118.596 | .128 | 1.693 | 1.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 325 | 350 | 1 | .0910 | 127.460 | .148 | 1.821 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 330 | 340 | 1 | .0100 | 150.803 | .023 | 1.710 | 1.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 340 | 350 | 1 | .1000 | 153.722 | .236 | 1.733 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 350 | 1 | 1 | .7500 | 281.182 | 5.930 | 1.969 | 0.000 | | | 0.000 | 0.000 | 7.898 | 349.95 | FAN1 |

APPENDIX C

Computer Outputs for Mine No. 3

PART 1

Computer Output for Increasing Blade Settings

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 1 | 100 | 1 | .2235 | 128.984 | .372 | 0.000 | .372 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 103 | 1 | .0552 | 209.650 | .243 | 0.000 | .243 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 190 | 1 | .0021 | 335.506 | .023 | 0.000 | .023 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 100 | 105 | 1 | 1.2585 | 117.572 | 1.740 | .372 | 2.110 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 100 | 106 | 1 | 491.0457 | 11.412 | 6.395 | .372 | 6.767 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 102 | 1 | 1 | .0499 | 356.008 | .632 | 9.248 | 0.000 | | | 0.000 | 0.000 | 9.884 | 554.45 | FAN6 |
| 7 | 103 | 105 | 1 | .5695 | 181.097 | 1.868 | .243 | 2.110 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 103 | 394 | 1 | 64.5671 | 28.552 | 5.264 | .243 | 5.506 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 105 | 109 | 1 | .0436 | 298.670 | .389 | 2.110 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 106 | 102 | 1 | 5.0435 | 70.142 | 2.481 | 6.767 | 9.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 108 | 102 | 1 | .2146 | 285.866 | 1.754 | 7.495 | 9.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 109 | 110 | 1 | 271.5053 | 12.401 | 4.175 | 2.500 | 6.675 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 109 | 118 | 1 | .0395 | 286.269 | .323 | 2.500 | 2.823 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 110 | 108 | 1 | .1444 | 238.240 | .820 | 6.675 | 7.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 112 | 110 | 1 | .2958 | 117.916 | .411 | 6.264 | 6.675 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 114 | 110 | 1 | .5895 | 107.923 | .687 | 5.988 | 6.675 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 118 | 114 | 1 | 466.2149 | 8.240 | 3.165 | 2.823 | 5.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 118 | 124 | 1 | .2132 | 104.786 | .234 | 2.823 | 3.057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 118 | 310 | 1 | .1296 | 173.243 | .389 | 2.823 | 3.212 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 120 | 114 | 1 | .7729 | 59.820 | .277 | 5.712 | 5.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 122 | 112 | 1 | .9343 | 115.484 | 1.246 | 5.021 | 6.264 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 124 | 122 | 1 | 189.5209 | 10.171 | 1.961 | 3.057 | 5.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 124 | 126 | 1 | 234.7414 | 9.577 | 2.153 | 3.057 | 5.217 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 124 | 134 | 1 | .3317 | 85.037 | .240 | 3.057 | 3.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 126 | 120 | 1 | 41.9873 | 10.851 | .494 | 5.217 | 5.712 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 126 | 136 | 1 | 27.1601 | -1.274 | -.004 | 5.217 | 5.219 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 128 | 112 | 1 | 2129.3511 | 2.432 | 1.259 | 5.008 | 6.264 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 128 | 122 | 1 | .0117 | 105.313 | .013 | 5.008 | 5.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 130 | 128 | 1 | .0112 | 107.745 | .013 | 4.995 | 5.008 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 130 | 140 | 1 | 1592.2332 | 4.823 | 3.712 | 4.995 | 8.706 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 134 | 140 | 1 | 459.4097 | 10.849 | 5.407 | 3.299 | 8.706 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 148 | 130 | 1 | .1206 | 112.573 | .153 | 4.842 | 4.995 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 134 | 144 | 1 | .0446 | 202.551 | .183 | 3.299 | 3.482 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 136 | 138 | 1 | .3121 | 5.334 | .001 | 5.219 | 5.220 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 138 | 178 | 1 | .4180 | 18.548 | .014 | 5.220 | 5.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 140 | 176 | 1 | .3108 | 71.483 | .159 | 8.706 | 8.865 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 142 | 140 | 1 | 11.5941 | 55.806 | 3.611 | 5.095 | 8.706 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 142 | 172 | 1 | 43.9863 | 30.129 | 3.993 | 5.095 | 9.075 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 144 | 145 | 1 | .0520 | 187.846 | .183 | 3.482 | 3.665 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 144 | 146 | 1 | 479.9210 | 5.079 | 1.238 | 3.482 | 4.720 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 144 | 148 | 1 | 146.6906 | 9.625 | 1.359 | 3.482 | 4.842 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 145 | 147 | 1 | 820.8344 | 3.095 | .786 | 3.665 | 4.452 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 145 | 149 | 1 | 675.9864 | 3.300 | .736 | 3.665 | 4.402 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 145 | 166 | 1 | .0395 | 181.451 | .120 | 3.665 | 3.795 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 146 | 142 | 1 | .4967 | 85.935 | .367 | 4.720 | 5.095 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 147 | 152 | 1 | .0721 | 49.453 | .018 | 4.452 | 4.473 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 149 | 154 | 1 | .4376 | 70.966 | .220 | 4.402 | 4.623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 150 | 146 | 1 | .3161 | 80.856 | .207 | 4.517 | 4.720 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 150 | 172 | 1 | 2787.2771 | 4.044 | 4.557 | 4.517 | 9.075 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 151 | 138 | 1 | 38.0676 | 13.215 | .665 | 4.555 | 5.220 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 152 | 150 | 1 | .0614 | 84.899 | .044 | 4.473 | 4.517 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 154 | 148 | 1 | .2067 | 102.947 | .219 | 4.623 | 4.842 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 158 | 160 | 1 | 1.0186 | 48.354 | .238 | 3.867 | 4.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 158 | 162 | 1 | .9291 | 40.657 | .154 | 3.867 | 4.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 160 | 167 | 1 | .2398 | 64.556 | .100 | 4.105 | 4.205 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 161 | 163 | 1 | 3.4765 | 30.510 | .324 | 3.986 | 4.312 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 161 | 164 | 1 | 4.5629 | 20.624 | .194 | 3.986 | 4.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 162 | 160 | 1 | 3.2331 | 16.202 | .085 | 4.021 | 4.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 162 | 164 | 1 | 2.6421 | 24.455 | .158 | 4.021 | 4.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 163 | 152 | 1 | 1.2767 | 35.446 | .160 | 4.312 | 4.473 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 164 | 168 | 1 | .2575 | 45.079 | .052 | 4.179 | 4.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 166 | 154 | 1 | 8.0959 | 31.981 | .828 | 3.795 | 4.623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 166 | 158 | 1 | .0918 | 89.011 | .073 | 3.795 | 3.867 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 166 | 161 | 1 | .7301 | 51.134 | .191 | 3.795 | 3.986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 166 | 167 | 1 | 424.9055 | 3.109 | .411 | 3.795 | 4.205 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 166 | 168 | 1 | 113.0034 | 6.215 | .437 | 3.795 | 4.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 167 | 149 | 1 | .4272 | 67.666 | .196 | 4.205 | 4.402 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 168 | 170 | 1 | .0999 | 51.294 | .026 | 4.231 | 4.257 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 170 | 147 | 1 | .9004 | 46.358 | .194 | 4.257 | 4.452 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 170 | 163 | 1 | 20.8589 | 4.936 | .051 | 4.257 | 4.312 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 172 | 174 | 1 | 3.0385 | 34.173 | .355 | 9.075 | 9.429 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 174 | 184 | 1 | .0069 | 160.075 | .018 | 9.429 | 9.447 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 175 | 134 | 1 | .8341 | 128.363 | 1.374 | 1.925 | 3.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 175 | 177 | 1 | 158.7714 | 16.952 | 4.563 | 1.925 | 6.487 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 176 | 174 | 1 | .3545 | 125.902 | .562 | 8.865 | 9.429 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 177 | 176 | 1 | 8.0463 | 54.419 | 2.383 | 6.487 | 8.865 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 178 | 177 | 1 | 8.9780 | 37.467 | 1.260 | 5.234 | 6.487 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 180 | 178 | 1 | 66.0794 | 18.918 | 2.365 | 2.869 | 5.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 180 | 183 | 1 | 3.6712 | 26.431 | .256 | 2.869 | 3.125 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 182 | 175 | 1 | .3560 | 145.316 | .752 | 1.173 | 1.925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 182 | 183 | 1 | 93.1787 | 14.476 | 1.953 | 1.173 | 3.125 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 182 | 204 | 1 | .1278 | 116.968 | .175 | 1.173 | 1.348 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 183 | 192 | 1 | 1.5166 | 40.907 | .254 | 3.125 | 3.379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 184 | 188 | 1 | .0169 | 276.553 | .129 | 9.447 | 9.576 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 186 | 182 | 1 | .0684 | 276.760 | .524 | .649 | 1.173 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 186 | 187 | 1 | 112.9860 | 17.167 | 3.330 | .649 | 3.979 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 187 | 184 | 1 | 4.0293 | 116.478 | 5.467 | 3.979 | 9.447 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 188 | 1 | 1 | .0324 | 318.132 | .328 | 9.576 | 0.000 | | | 0.000 | 0.000 | 9.886 | 495.61 | FAN9 |
| 89 | 189 | 188 | 1 | 116.3669 | 20.261 | 4.777 | 4.800 | 9.576 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 190 | 186 | 1 | .0724 | 293.927 | .625 | .023 | .649 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 190 | 188 | 1 | 210.1974 | 21.318 | 2.552 | .023 | 9.576 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 190 | 189 | 1 | 116.3669 | 20.261 | 4.777 | .023 | 4.800 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 192 | 187 | 1 | .6077 | 99.312 | .599 | 3.379 | 3.979 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 200 | 151 | 1 | 2933.2898 | 2.465 | 1.782 | 2.761 | 4.555 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 202 | 192 | 1 | .1571 | 58.404 | .054 | 3.326 | 3.379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 200 | 180 | 1 | .5244 | 45.349 | .108 | 2.761 | 2.869 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 204 | 206 | 1 | 75.8049 | 10.693 | .867 | 1.348 | 2.214 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 204 | 208 | 1 | 165.2116 | 9.233 | 1.408 | 1.348 | 2.756 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 204 | 222 | 1 | .1975 | 97.043 | .186 | 1.348 | 1.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 206 | 200 | 1 | 2.3823 | 47.814 | .545 | 2.214 | 2.761 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JR | NPA | R | Q | HL | HJA | HJR | AREA | VEL | NVP | HR | HF | AHI | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 208 | 202 | 1 | 2.6465 | 46.329 | .568 | 2.754 | 4.326 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 210 | 151 | 1 | 225.3288 | 10.750 | 2.604 | 1.942 | 4.555 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 210 | 206 | 1 | 1.9581 | 37.122 | .270 | 1.942 | 2.214 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 211 | 212 | 1 | 14.7751 | 11.490 | .195 | 1.658 | 1.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 211 | 224 | 1 | 3.2192 | 11.153 | .040 | 1.458 | 1.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 212 | 210 | 1 | .3883 | 47.871 | .089 | 1.853 | 1.942 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 214 | 202 | 1 | 64.8018 | 12.076 | .945 | 2.382 | 3.326 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 214 | 208 | 1 | 2.7395 | 37.096 | .377 | 2.382 | 2.756 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 216 | 214 | 1 | .8458 | 49.171 | .205 | 2.178 | 2.382 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 218 | 216 | 1 | 1.6270 | 40.764 | .270 | 1.906 | 2.178 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 220 | 218 | 1 | .8735 | 35.359 | .109 | 1.797 | 1.906 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 222 | 211 | 1 | 2.9672 | 20.435 | .124 | 1.534 | 1.658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 222 | 232 | 1 | 1.0021 | 23.700 | .056 | 1.534 | 1.590 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 222 | 234 | 1 | .1144 | 52.909 | .032 | 1.534 | 1.566 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 224 | 212 | 1 | 1.1655 | 36.381 | .154 | 1.698 | 1.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 225 | 211 | 1 | 73.3018 | 2.208 | .036 | 1.622 | 1.658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 225 | 226 | 1 | 1.8895 | 17.382 | .057 | 1.622 | 1.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 226 | 224 | 1 | .3198 | 25.228 | .020 | 1.677 | 1.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 228 | 220 | 1 | 4.8236 | 15.583 | .117 | 1.667 | 1.797 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 230 | 226 | 1 | 1.8278 | 7.846 | .011 | 1.667 | 1.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 230 | 228 | 1 | 0.0000 | 5.696 | 0.000 | 1.667 | 1.667 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 234 | 220 | 1 | 5.6893 | 19.776 | .222 | 1.566 | 1.797 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 234 | 230 | 1 | 5.4842 | 13.543 | .101 | 1.566 | 1.667 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 234 | 225 | 1 | 1.4566 | 19.590 | .056 | 1.566 | 1.622 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 232 | 228 | 1 | 7.8464 | 9.887 | .077 | 1.590 | 1.667 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 232 | 252 | 1 | 3.2618 | 13.813 | .062 | 1.590 | 1.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 252 | 216 | 1 | 74.3708 | 8.407 | .526 | 1.652 | 2.178 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 252 | 218 | 1 | 86.9123 | 5.405 | .254 | 1.652 | 1.906 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 300 | 120 | 1 | 3.1367 | 48.969 | .752 | 4.960 | 5.712 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 301 | 136 | 1 | 105.7375 | 6.608 | .462 | 4.748 | 5.219 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 301 | 300 | 1 | 275.1730 | 2.770 | .211 | 4.748 | 4.960 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 302 | 114 | 1 | 1.3810 | 39.863 | .219 | 5.769 | 5.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 304 | 300 | 1 | 1.2376 | 46.199 | .264 | 4.695 | 4.960 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 304 | 301 | 1 | 6.0265 | 9.378 | .053 | 4.695 | 4.748 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 308 | 370 | 1 | .1551 | 86.382 | .116 | 5.097 | 5.208 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 310 | 308 | 1 | 556.2387 | 5.822 | 1.885 | 3.212 | 5.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 310 | 316 | 1 | .2577 | 109.371 | .308 | 3.212 | 3.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 310 | 368 | 1 | 3.1923 | 58.050 | 1.076 | 3.212 | 4.288 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 312 | 390 | 1 | .0488 | 49.332 | .012 | 5.069 | 5.086 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 314 | 304 | 1 | .2067 | 55.577 | .064 | 4.636 | 4.695 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 316 | 318 | 1 | 99.0800 | 11.667 | 1.349 | 3.520 | 4.869 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 316 | 320 | 1 | 77.3519 | 11.423 | 1.009 | 3.520 | 4.530 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 316 | 356 | 1 | .8249 | 86.281 | .614 | 3.520 | 4.134 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 318 | 312 | 1 | .9143 | 47.317 | .205 | 4.869 | 5.069 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 320 | 314 | 1 | .5384 | 44.484 | .107 | 4.530 | 4.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 322 | 318 | 1 | 1.9069 | 35.649 | .242 | 4.621 | 4.869 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 322 | 372 | 1 | 73.0063 | 6.478 | .306 | 4.621 | 4.928 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 324 | 314 | 1 | 13.3150 | 11.093 | .164 | 4.473 | 4.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 324 | 320 | 1 | .5250 | 33.061 | .057 | 4.473 | 4.530 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 326 | 324 | 1 | .1342 | 44.154 | .026 | 4.446 | 4.473 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NFA | F | D | HL | HJA | HJB | AREA | VEL | NVF | HR | HF | AMP | FID |
|-----|-----|-----|-----|-----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 151 | 328 | 326 | 1 | .0916 | 38.833 | .010 | 4.436 | 4.446 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 330 | 326 | 1 | 4.3950 | 10.320 | .047 | 4.400 | 4.446 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 330 | 328 | 1 | .3797 | 30.944 | .036 | 4.400 | 4.436 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 332 | 330 | 1 | .0183 | 41.265 | .002 | 4.396 | 4.400 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 334 | 332 | 1 | .0540 | 20.538 | .001 | 4.394 | 4.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 336 | 334 | 1 | .1943 | 16.986 | .006 | 4.389 | 4.394 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 338 | 336 | 1 | 2.8751 | 7.479 | .016 | 4.373 | 4.389 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 338 | 339 | 1 | .4564 | 19.454 | .017 | 4.373 | 4.390 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 339 | 332 | 1 | .1554 | 20.726 | .007 | 4.390 | 4.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 340 | 336 | 1 | .6434 | 9.507 | .006 | 4.383 | 4.389 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 340 | 339 | 1 | 43.4561 | 1.272 | .007 | 4.383 | 4.390 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 342 | 334 | 1 | 125.5361 | 3.552 | .158 | 4.236 | 4.394 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 342 | 338 | 1 | 1.8851 | 16.933 | .137 | 4.236 | 4.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 344 | 350 | 1 | .3414 | 38.143 | .050 | 4.236 | 4.285 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 344 | 340 | 1 | 4.0810 | 10.779 | .048 | 4.335 | 4.383 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 346 | 346 | 1 | .7230 | 13.011 | .012 | 4.335 | 4.347 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 346 | 348 | 1 | .6952 | 16.577 | .019 | 4.347 | 4.366 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 347 | 346 | 1 | 19.3119 | 3.566 | .025 | 4.323 | 4.347 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 347 | 348 | 1 | 3.7555 | 10.787 | .044 | 4.323 | 4.366 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 348 | 352 | 1 | .2531 | 27.364 | .019 | 4.366 | 4.385 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 350 | 344 | 1 | .8769 | 23.790 | .050 | 4.285 | 4.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 350 | 347 | 1 | 1.8104 | 14.353 | .037 | 4.285 | 4.323 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 351 | 342 | 1 | .0952 | 68.629 | .045 | 4.191 | 4.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 351 | 352 | 1 | 13.9060 | 11.823 | .194 | 4.191 | 4.385 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 352 | 354 | 1 | .0813 | 39.187 | .012 | 4.385 | 4.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 354 | 358 | 1 | .1971 | 35.593 | .025 | 4.398 | 4.423 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 354 | 360 | 1 | 28.9679 | 3.594 | .037 | 4.398 | 4.435 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 356 | 328 | 1 | 361.5551 | 2.889 | .302 | 4.134 | 4.436 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 356 | 351 | 1 | .0876 | 80.452 | .057 | 4.134 | 4.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 356 | 358 | 1 | 333.7432 | 2.940 | .289 | 4.134 | 4.423 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 358 | 360 | 1 | .0839 | 38.533 | .012 | 4.423 | 4.435 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 360 | 380 | 1 | .4210 | 42.127 | .075 | 4.435 | 4.510 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 366 | 372 | 1 | 7.1138 | 26.822 | .512 | 4.416 | 4.928 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 366 | 390 | 1 | 6.8122 | 31.228 | .644 | 4.416 | 5.086 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 368 | 366 | 1 | .3958 | 58.050 | .133 | 4.288 | 4.416 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 370 | 302 | 1 | 5.8344 | 31.016 | .561 | 5.208 | 5.769 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 370 | 392 | 1 | .6146 | 55.366 | .188 | 5.208 | 5.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 188 | 372 | 312 | 1 | 347.6492 | 2.015 | .141 | 4.928 | 5.069 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 189 | 372 | 392 | 1 | 3824.1408 | 1.107 | .469 | 4.928 | 5.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 190 | 372 | 394 | 1 | 1.1194 | 30.177 | .102 | 4.928 | 5.030 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 191 | 374 | 106 | 1 | .4182 | 58.730 | .144 | 6.623 | 6.767 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 192 | 376 | 108 | 1 | 8.3679 | 47.627 | 1.898 | 5.597 | 7.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 193 | 376 | 302 | 1 | 22.0410 | 8.847 | .172 | 5.597 | 5.769 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 194 | 380 | 382 | 1 | .1677 | 42.127 | .030 | 4.510 | 4.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 195 | 382 | 322 | 1 | .4911 | 42.127 | .087 | 4.534 | 4.621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 196 | 390 | 308 | 1 | .0178 | 80.560 | .012 | 5.086 | 5.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 197 | 392 | 376 | 1 | .6264 | 56.473 | .200 | 5.396 | 5.597 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 198 | 394 | 374 | 1 | 451.9439 | 5.928 | 1.588 | 5.030 | 6.623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 199 | 394 | 396 | 1 | 8.1037 | 24.250 | .477 | 5.030 | 5.506 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 200 | 396 | 374 | 1 | 4.0023 | 52.802 | 1.116 | 5.506 | 6.623 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 2

Computer Output for Fan Replacement

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|--------|--------|--------|------|-----|-------|-------|--------|--------|------|
| 1 | 1 | 100 | 1 | .2235 | 141.964 | .451 | 0.000 | .451 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 103 | 1 | .0552 | 231.139 | .295 | 0.000 | .295 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 190 | 1 | .0021 | 342.119 | .024 | 0.000 | .024 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 100 | 105 | 1 | 1.2585 | 128.736 | 2.086 | .451 | 2.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 100 | 106 | 1 | 491.0457 | 13.228 | 8.592 | .451 | 9.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 102 | 1 | 1 | .0499 | 433.009 | .935 | 12.569 | 0.000 | | | 0.000 | 0.000 | 13.505 | 921.43 | FN16 |
| 7 | 103 | 105 | 1 | .5695 | 198.347 | 2.241 | .295 | 2.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 103 | 396 | 1 | 64.5671 | 32.792 | 6.943 | .295 | 7.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 105 | 109 | 1 | .0436 | 327.083 | .467 | 2.536 | 3.002 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 106 | 102 | 1 | 5.0435 | 83.623 | 3.527 | 9.042 | 12.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 108 | 102 | 1 | .2146 | 349.386 | 2.619 | 9.950 | 12.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 109 | 110 | 1 | 271.5053 | 14.509 | 5.716 | 3.002 | 8.718 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 109 | 118 | 1 | .0395 | 312.574 | .386 | 3.002 | 3.388 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 110 | 108 | 1 | .1444 | 292.057 | 1.232 | 8.718 | 9.950 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 112 | 110 | 1 | .2958 | 145.705 | .628 | 8.090 | 8.718 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 114 | 110 | 1 | .5895 | 131.843 | 1.025 | 7.693 | 8.718 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 110 | 114 | 1 | 467.2149 | 9.610 | 2.305 | 3.388 | 7.693 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 118 | 124 | 1 | .8132 | 102.344 | .226 | 3.388 | 3.614 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 118 | 310 | 1 | .1296 | 200.020 | .513 | 3.388 | 3.908 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 120 | 114 | 1 | .7729 | 76.633 | .454 | 7.239 | 7.693 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 122 | 112 | 1 | .4943 | 142.700 | 1.903 | 6.188 | 8.090 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 124 | 112 | 1 | 199.5209 | 11.652 | 2.574 | 3.614 | 6.188 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 124 | 114 | 1 | 394.7414 | 9.965 | 2.331 | 3.614 | 5.931 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 124 | 124 | 1 | .5917 | 81.326 | .219 | 3.614 | 3.834 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 126 | 126 | 1 | 41.9873 | 17.655 | 1.309 | 5.931 | 7.239 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 128 | 136 | 1 | 27.1601 | -7.689 | -1.161 | 5.931 | 5.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 138 | 112 | 1 | 2129.3511 | 3.005 | 1.923 | 6.167 | 8.090 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 128 | 122 | 1 | .0117 | 131.047 | .020 | 6.167 | 6.188 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 130 | 128 | 1 | .0112 | 134.052 | .020 | 6.147 | 6.167 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 130 | 140 | 1 | 1592.2332 | 3.406 | 1.848 | 6.147 | 7.995 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 134 | 140 | 1 | 459.4097 | 9.517 | 4.161 | 3.834 | 7.995 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 148 | 130 | 1 | .1206 | 137.458 | .228 | 5.919 | 6.147 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 134 | 144 | 1 | .0446 | 214.072 | .204 | 3.834 | 4.038 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 126 | 138 | 1 | .0121 | -7.180 | -1.002 | 5.779 | 5.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 138 | 178 | 1 | .4180 | 7.148 | .002 | 5.777 | 5.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 140 | 176 | 1 | .3108 | 60.501 | .114 | 7.995 | 8.109 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 142 | 140 | 1 | 11.5641 | 47.573 | 2.625 | 5.370 | 7.995 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 142 | 172 | 1 | 43.3873 | 39.921 | 2.351 | 3.370 | 3.344 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 144 | 125 | 1 | .0509 | 163.067 | .104 | 4.038 | 4.038 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 144 | 144 | 1 | 379.2210 | 4.037 | 2.351 | 4.038 | 5.039 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 144 | 148 | 1 | 168.6306 | 11.170 | .602 | 1.038 | 2.037 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 144 | 117 | 1 | 30.8294 | 7.148 | .204 | 4.142 | 4.038 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 144 | 144 | 1 | 75.3844 | 1.872 | .013 | 4.142 | 3.205 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 148 | 146 | 1 | .1358 | 191.171 | .221 | 4.142 | 3.106 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 148 | 142 | 1 | .0500 | 73.170 | .200 | 3.099 | 2.370 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 147 | 152 | 1 | .1711 | 34.072 | .000 | 3.099 | 4.367 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 147 | 154 | 1 | .1775 | 27.072 | .000 | 2.285 | 3.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 149 | 142 | 1 | .0111 | 134.052 | .020 | 4.038 | 5.039 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 149 | 172 | 1 | 27.1721 | 3.406 | 1.848 | 4.038 | 3.344 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 149 | 144 | 1 | 1.0876 | 11.170 | .200 | 4.038 | 5.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I. | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF |
|-----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|
| 51 | 152 | 150 | 1 | 2.0614 | 71.935 | .032 | 4.907 | 4.939 | | | 0.000 | 0.000 | 0.000 |
| 52 | 154 | 148 | 1 | .2067 | 126.133 | .329 | 5.591 | 5.919 | | | 0.000 | 0.000 | 0.000 |
| 53 | 158 | 160 | 1 | 1.0186 | 56.800 | .329 | 4.473 | 4.802 | | | 0.000 | 0.000 | 0.000 |
| 54 | 158 | 162 | 1 | .9291 | 40.736 | .154 | 4.473 | 4.628 | | | 0.000 | 0.000 | 0.000 |
| 55 | 160 | 167 | 1 | .2398 | 80.029 | .154 | 4.802 | 4.956 | | | 0.000 | 0.000 | 0.000 |
| 56 | 161 | 163 | 1 | 3.4765 | 26.776 | .249 | 4.540 | 4.789 | | | 0.000 | 0.000 | 0.000 |
| 57 | 161 | 164 | 1 | 4.5629 | 19.206 | .168 | 4.540 | 4.709 | | | 0.000 | 0.000 | 0.000 |
| 58 | 162 | 160 | 1 | 3.2331 | 23.228 | .174 | 4.628 | 4.802 | | | 0.000 | 0.000 | 0.000 |
| 59 | 162 | 164 | 1 | 2.6421 | 17.508 | .081 | 4.628 | 4.709 | | | 0.000 | 0.000 | 0.000 |
| 60 | 163 | 152 | 1 | 1.2767 | 30.469 | .119 | 4.789 | 4.907 | | | 0.000 | 0.000 | 0.000 |
| 61 | 164 | 168 | 1 | .2575 | 36.714 | .035 | 4.709 | 4.743 | | | 0.000 | 0.000 | 0.000 |
| 62 | 166 | 154 | 1 | 8.0959 | 38.571 | 1.204 | 4.386 | 5.591 | | | 0.000 | 0.000 | 0.000 |
| 63 | 166 | 158 | 1 | .0918 | 97.537 | .087 | 4.386 | 4.473 | | | 0.000 | 0.000 | 0.000 |
| 64 | 166 | 161 | 1 | .7301 | 45.981 | .154 | 4.386 | 4.540 | | | 0.000 | 0.000 | 0.000 |
| 65 | 166 | 167 | 1 | 424.9055 | 3.661 | .570 | 4.386 | 4.956 | | | 0.000 | 0.000 | 0.000 |
| 66 | 166 | 168 | 1 | 113.0034 | 5.622 | .357 | 4.386 | 4.743 | | | 0.000 | 0.000 | 0.000 |
| 67 | 167 | 149 | 1 | .4272 | 83.690 | .299 | 4.956 | 5.255 | | | 0.000 | 0.000 | 0.000 |
| 68 | 168 | 170 | 1 | .0999 | 42.336 | .018 | 4.743 | 4.761 | | | 0.000 | 0.000 | 0.000 |
| 69 | 170 | 147 | 1 | .9004 | 38.643 | .134 | 4.761 | 4.896 | | | 0.000 | 0.000 | 0.000 |
| 70 | 170 | 163 | 1 | 20.8589 | 3.693 | .028 | 4.761 | 4.789 | | | 0.000 | 0.000 | 0.000 |
| 71 | 172 | 174 | 1 | 3.0385 | 29.035 | .256 | 8.244 | 8.500 | | | 0.000 | 0.000 | 0.000 |
| 72 | 174 | 184 | 1 | .0069 | 134.265 | .012 | 8.500 | 8.513 | | | 0.000 | 0.000 | 0.000 |
| 73 | 175 | 134 | 1 | .8341 | 142.262 | 1.688 | 2.146 | 3.854 | | | 0.000 | 0.000 | 0.000 |
| 74 | 175 | 177 | 1 | 158.7714 | 16.554 | 4.351 | 2.146 | 4.497 | | | 0.000 | 0.000 | 0.000 |
| 75 | 176 | 174 | 1 | .3545 | 105.230 | .393 | 8.109 | 8.500 | | | 0.000 | 0.000 | 0.000 |
| 76 | 177 | 176 | 1 | 8.0463 | 44.729 | 1.610 | 8.497 | 8.109 | | | 0.000 | 0.000 | 0.000 |
| 77 | 178 | 177 | 1 | 8.9750 | 38.175 | .713 | 5.779 | 6.497 | | | 0.000 | 0.000 | 0.000 |
| 78 | 180 | 178 | 1 | 66.0724 | 21.027 | 2.921 | 2.858 | 5.779 | | | 0.000 | 0.000 | 1.000 |
| 79 | 180 | 188 | 1 | 3.6712 | 22.725 | .190 | 2.858 | 3.048 | | | 0.000 | 0.000 | 0.000 |
| 80 | 182 | 175 | 1 | 1.8560 | 156.816 | .398 | 1.248 | 2.146 | | | 0.000 | 0.000 | 0.000 |
| 81 | 182 | 183 | 1 | 93.1787 | 13.894 | 1.799 | 1.248 | 3.048 | | | 0.000 | 0.000 | 0.000 |
| 82 | 182 | 204 | 1 | .1278 | 113.484 | .165 | 1.248 | 1.413 | | | 0.000 | 0.000 | 0.000 |
| 83 | 183 | 192 | 1 | 1.5166 | 36.619 | .203 | 3.048 | 3.251 | | | 0.000 | 0.000 | 0.000 |
| 84 | 184 | 183 | 1 | .0169 | 242.794 | .099 | 8.513 | 8.612 | | | 0.000 | 0.000 | 0.000 |
| 85 | 186 | 182 | 1 | .0684 | 286.195 | .560 | .688 | 1.248 | | | 0.000 | 0.000 | 0.000 |
| 86 | 186 | 187 | 1 | 112.9860 | 16.505 | 3.078 | .688 | 3.766 | | | 0.000 | 0.000 | 0.000 |
| 87 | 187 | 184 | 1 | 4.0293 | 108.529 | 4.744 | 3.766 | 3.513 | | | 0.000 | 0.000 | 0.000 |
| 88 | 188 | 1 | 1 | .0324 | 282.214 | .138 | 3.612 | 0.000 | | | 0.000 | 0.000 | 0.000 |
| 89 | 189 | 138 | 1 | 116.3669 | 19.207 | 4.293 | 4.317 | 3.612 | | | 0.000 | 0.000 | 0.000 |
| 90 | 190 | 186 | 1 | .0774 | 302.700 | .663 | .024 | .688 | | | 0.000 | 0.000 | 0.000 |
| 91 | 190 | 168 | 1 | 210.1974 | 20.212 | 8.569 | .024 | 3.612 | | | 0.000 | 0.000 | 0.000 |
| 92 | 190 | 189 | 1 | 116.3669 | 19.207 | 4.293 | .024 | 3.612 | | | 0.000 | 0.000 | 0.000 |
| 93 | 192 | 187 | 1 | .6077 | 92.024 | .315 | 3.751 | 3.766 | | | 0.000 | 0.000 | 0.000 |
| 94 | 200 | 151 | 1 | 2933.2899 | .033 | .143 | 2.758 | 4.944 | | | 0.000 | 0.000 | 0.000 |
| 95 | 202 | 192 | 1 | .1571 | 55.405 | .184 | 3.203 | 3.251 | | | 0.000 | 0.000 | 0.000 |
| 96 | 200 | 180 | 1 | .5244 | 45.751 | .100 | 2.758 | 3.858 | | | 0.000 | 0.000 | 0.000 |
| 97 | 204 | 206 | 1 | 75.8047 | 10.456 | .829 | 1.413 | 2.241 | | | 0.000 | 0.000 | 0.000 |
| 98 | 204 | 208 | 1 | 165.2016 | 8.802 | 1.280 | 1.413 | 2.693 | | | 0.000 | 0.000 | 0.000 |
| 99 | 204 | 222 | 1 | .1975 | 94.256 | .175 | 1.413 | 1.558 | | | 0.000 | 0.000 | 0.000 |
| 100 | 206 | 200 | 1 | 2.3823 | 46.517 | .515 | 2.241 | 2.758 | | | 0.000 | 0.000 | 0.000 |

| I | IA | IB | NFA | R | D | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|
| 101 | 208 | 202 | 1 | 2.6465 | 43.945 | .511 | 2.693 | 3.203 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 102 | 210 | 151 | 1 | 225.3288 | 11.563 | 3.013 | 1.987 | 4.996 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 103 | 210 | 206 | 1 | 1.9581 | 36.061 | .255 | 1.987 | 2.241 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 104 | 211 | 212 | 1 | 14.7751 | 11.362 | .191 | 1.708 | 1.899 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 105 | 211 | 224 | 1 | .2192 | 10.977 | .039 | 1.708 | 1.747 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 106 | 212 | 210 | 1 | .3883 | 47.624 | .088 | 1.899 | 1.987 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 107 | 214 | 202 | 1 | 64.8018 | 11.460 | .851 | 2.348 | 3.203 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 108 | 214 | 208 | 1 | 2.7395 | 35.143 | .338 | 2.348 | 2.693 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 109 | 216 | 214 | 1 | .8458 | 46.603 | .184 | 2.164 | 2.348 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 110 | 218 | 216 | 1 | 1.6270 | 38.664 | .243 | 1.925 | 2.164 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 111 | 220 | 218 | 1 | .8735 | 33.528 | .098 | 1.827 | 1.925 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 112 | 222 | 211 | 1 | 2.9672 | 20.117 | .120 | 1.588 | 1.708 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 113 | 222 | 232 | 1 | 1.0021 | 22.762 | .052 | 1.588 | 1.640 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 114 | 222 | 234 | 1 | .1144 | 51.340 | .030 | 1.588 | 1.618 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 115 | 212 | 212 | 1 | 1.1655 | 36.261 | .153 | 1.747 | 1.899 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 116 | 225 | 211 | 1 | 73.3018 | 2.223 | .036 | 1.672 | 1.708 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 117 | 225 | 226 | 1 | 1.8895 | 17.070 | .055 | 1.672 | 1.726 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 118 | 226 | 224 | 1 | .3198 | 25.284 | .020 | 1.726 | 1.747 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 119 | 228 | 220 | 1 | 4.8736 | 14.714 | .104 | 1.714 | 1.827 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 120 | 230 | 226 | 1 | 1.8278 | 8.214 | .012 | 1.714 | 1.726 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 121 | 230 | 228 | 1 | 0.0000 | 5.020 | 0.000 | 1.714 | 1.714 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 122 | 234 | 220 | 1 | 5.6893 | 18.814 | .201 | 1.618 | 1.827 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 123 | 234 | 230 | 1 | 5.4842 | 13.234 | .096 | 1.618 | 1.714 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 124 | 234 | 225 | 1 | 1.4566 | 19.293 | .054 | 1.618 | 1.672 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 125 | 232 | 228 | 1 | 7.8464 | 9.694 | .074 | 1.640 | 1.714 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 126 | 232 | 252 | 1 | 3.2618 | 13.075 | .056 | 1.640 | 1.696 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 127 | 252 | 216 | 1 | 74.3708 | 7.939 | .469 | 1.696 | 2.164 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 128 | 252 | 218 | 1 | 86.9123 | 5.136 | .229 | 1.696 | 1.925 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 129 | 300 | 120 | 1 | 3.1367 | 58.978 | 1.091 | 6.148 | 7.239 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 130 | 301 | 136 | 1 | 105.7375 | .510 | .003 | 5.780 | 5.779 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 131 | 301 | 300 | 1 | 275.1730 | 3.658 | .368 | 5.780 | 6.148 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 132 | 302 | 114 | 1 | 1.3810 | 45.600 | .287 | 7.406 | 7.693 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 133 | 304 | 300 | 1 | 1.2376 | 55.320 | .379 | 5.769 | 6.148 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 134 | 304 | 301 | 1 | 6.0265 | 4.168 | .010 | 5.769 | 5.780 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 135 | 308 | 370 | 1 | .1551 | 101.689 | .160 | 6.493 | 6.653 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 136 | 310 | 308 | 1 | 556.2387 | 6.819 | 2.587 | 3.906 | 6.493 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 137 | 310 | 316 | 1 | .2577 | 124.743 | .401 | 3.906 | 4.307 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 138 | 310 | 368 | 1 | 3.1923 | 68.458 | 1.496 | 3.906 | 5.402 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 139 | 312 | 390 | 1 | .0488 | 58.737 | .017 | 6.460 | 6.477 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 140 | 314 | 304 | 1 | .2067 | 59.488 | .073 | 5.696 | 5.769 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 141 | 316 | 318 | 1 | 99.0800 | 13.693 | 1.858 | 4.307 | 6.165 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 142 | 316 | 320 | 1 | 77.3519 | 12.794 | 1.266 | 4.307 | 5.573 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 143 | 316 | 356 | 1 | .8249 | 98.255 | .796 | 4.307 | 5.104 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 144 | 318 | 312 | 1 | .9143 | 56.810 | .295 | 6.165 | 6.460 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 145 | 320 | 314 | 1 | .5384 | 47.663 | .122 | 5.573 | 5.696 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 146 | 322 | 318 | 1 | 1.9069 | 43.117 | .354 | 5.810 | 6.165 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 147 | 322 | 372 | 1 | 73.0063 | 8.445 | .521 | 5.810 | 6.331 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 148 | 324 | 314 | 1 | 13.3150 | 11.825 | .186 | 5.509 | 5.696 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 149 | 324 | 320 | 1 | .5250 | 34.868 | .064 | 5.509 | 5.573 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 150 | 326 | 324 | 1 | .1342 | 46.694 | .029 | 5.480 | 5.509 | | | 0.000 | 0.000 | 0.000 | 0.00 |

PART 3

Computer Output for Reducing Leakage



| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 152 | 150 | 1 | .0453 | 82.584 | .031 | 3.729 | 3.760 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 154 | 148 | 1 | .1524 | 92.101 | .129 | 3.746 | 3.875 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 158 | 160 | 1 | 1.0186 | 44.706 | .204 | 3.221 | 3.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 158 | 162 | 1 | .9291 | 40.512 | .152 | 3.221 | 3.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 160 | 167 | 1 | .1768 | 59.369 | .062 | 3.424 | 3.487 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 161 | 163 | 1 | 3.4765 | 28.070 | .274 | 3.322 | 3.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 161 | 164 | 1 | 4.5629 | 19.936 | .181 | 3.322 | 3.503 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 162 | 160 | 1 | 2.3841 | 14.664 | .051 | 3.373 | 3.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 162 | 164 | 1 | 1.9483 | 25.848 | .130 | 3.373 | 3.503 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 163 | 152 | 1 | 1.2767 | 32.062 | .131 | 3.598 | 3.729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 164 | 168 | 1 | .1899 | 45.785 | .040 | 3.503 | 3.543 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 166 | 154 | 1 | 8.0959 | 27.038 | .592 | 3.154 | 3.746 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 166 | 158 | 1 | .0918 | 85.218 | .067 | 3.154 | 3.221 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 166 | 161 | 1 | .7301 | 48.006 | .168 | 3.154 | 3.322 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 166 | 167 | 1 | 424.9055 | 2.798 | .333 | 3.154 | 3.487 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 166 | 168 | 1 | 113.0034 | 5.868 | .389 | 3.154 | 3.543 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 167 | 149 | 1 | .3150 | 62.167 | .122 | 3.487 | 3.609 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 168 | 170 | 1 | .0736 | 51.653 | .020 | 3.543 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 170 | 147 | 1 | .6640 | 47.660 | .151 | 3.563 | 3.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 170 | 163 | 1 | 20.8589 | 3.992 | .033 | 3.563 | 3.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 172 | 174 | 1 | 3.0385 | 32.610 | .323 | 7.809 | 8.132 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 174 | 184 | 1 | .0051 | 155.194 | .012 | 8.132 | 8.144 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 175 | 134 | 1 | .8341 | 115.558 | 1.114 | 1.613 | 2.727 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 175 | 177 | 1 | 158.7714 | 15.625 | 3.876 | 1.613 | 5.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 176 | 174 | 1 | .2614 | 122.584 | .393 | 7.738 | 8.132 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 177 | 176 | 1 | 8.0463 | 52.877 | 2.250 | 5.490 | 7.738 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 178 | 177 | 1 | 8.9780 | 37.252 | 1.246 | 4.249 | 5.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 180 | 178 | 1 | 66.0794 | 17.237 | 1.963 | 2.286 | 4.249 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 180 | 183 | 1 | 3.6712 | 26.002 | .248 | 2.286 | 2.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 182 | 175 | 1 | .3560 | 131.182 | .613 | 1.001 | 1.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 182 | 183 | 1 | 93.1787 | 12.828 | 1.533 | 1.001 | 2.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 182 | 204 | 1 | .1278 | 111.987 | .160 | 1.001 | 1.161 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 183 | 192 | 1 | 1.5166 | 38.830 | .229 | 2.534 | 2.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 184 | 188 | 1 | .0124 | 266.232 | .088 | 8.144 | 8.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 186 | 182 | 1 | .0684 | 255.997 | .448 | .553 | 1.001 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 186 | 187 | 1 | 112.9860 | 15.232 | 2.621 | .553 | 3.174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 187 | 184 | 1 | 4.0293 | 111.039 | 4.968 | 3.174 | 8.144 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 188 | 1 | 1 | .0324 | 304.781 | .301 | 8.232 | 0.000 | | | 0.000 | 0.000 | 8.522 | 409.27 | FAN1 |
| 89 | 189 | 188 | 1 | 116.3669 | 18.783 | 4.106 | 4.126 | 8.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 190 | 186 | 1 | .0724 | 271.229 | .533 | .020 | .553 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 190 | 188 | 1 | 210.1974 | 19.766 | 8.212 | .020 | 8.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 190 | 189 | 1 | 116.3669 | 18.783 | 4.106 | .020 | 4.126 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 192 | 187 | 1 | .4481 | 95.807 | .411 | 2.763 | 3.174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 200 | 151 | 1 | 2933.2898 | 2.252 | 1.488 | 2.214 | 3.705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 202 | 192 | 1 | .1159 | 56.976 | .038 | 2.725 | 2.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 200 | 180 | 1 | .3867 | 43.239 | .072 | 2.214 | 2.286 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 204 | 206 | 1 | 75.8049 | 9.499 | .684 | 1.161 | 1.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 204 | 208 | 1 | 165.2116 | 8.317 | 1.143 | 1.161 | 2.304 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 204 | 222 | 1 | .1975 | 94.171 | .175 | 1.161 | 1.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 206 | 200 | 1 | 1.7567 | 45.491 | .364 | 1.845 | 2.214 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 208 | 202 | 1 | 1.9515 | 46.471 | .421 | 2.304 | 2.725 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 210 | 151 | 1 | 225.3288 | 9.519 | 2.042 | 1.657 | 3.705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 210 | 206 | 1 | 1.4439 | 35.992 | .187 | 1.657 | 1.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 211 | 212 | 1 | 14.7751 | 10.054 | .149 | 1.449 | 1.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 211 | 224 | 1 | 3.2192 | 11.358 | .042 | 1.449 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 212 | 210 | 1 | .2864 | 45.511 | .059 | 1.598 | 1.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 214 | 202 | 1 | 64.8018 | 10.506 | .715 | 2.009 | 2.725 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 214 | 208 | 1 | 2.0201 | 38.154 | .294 | 2.009 | 2.304 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 216 | 214 | 1 | .6237 | 48.660 | .148 | 1.861 | 2.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 218 | 216 | 1 | 1.1997 | 41.129 | .203 | 1.659 | 1.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 220 | 218 | 1 | .6441 | 36.108 | .084 | 1.575 | 1.659 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 222 | 211 | 1 | 2.9672 | 19.462 | .112 | 1.336 | 4.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 222 | 232 | 1 | 1.0021 | 22.757 | .052 | 1.336 | 1.388 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 222 | 234 | 1 | .1144 | 51.952 | .031 | 1.336 | 1.367 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 224 | 212 | 1 | .8594 | 35.458 | .108 | 1.490 | 1.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 225 | 211 | 1 | .73.3018 | 1.949 | .028 | 1.421 | 1.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 225 | 226 | 1 | 1.8895 | 17.268 | .056 | 1.421 | 1.477 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 226 | 224 | 1 | .2358 | 24.100 | .014 | 1.477 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 228 | 220 | 1 | 3.5569 | 17.083 | .104 | 1.470 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 230 | 226 | 1 | 1.3478 | 6.831 | .006 | 1.470 | 1.477 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 230 | 228 | 1 | 0.0000 | 6.877 | 0.000 | 1.470 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 234 | 220 | 1 | 5.6893 | 19.026 | .206 | 1.367 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 234 | 230 | 1 | 5.4842 | 13.708 | .103 | 1.367 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 234 | 225 | 1 | 1.4566 | 19.218 | .054 | 1.367 | 1.421 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 232 | 228 | 1 | 7.8464 | 10.206 | .082 | 1.388 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 232 | 252 | 1 | 3.2618 | 12.551 | .051 | 1.388 | 1.440 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 252 | 216 | 1 | 74.3708 | 7.531 | .422 | 1.440 | 1.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 252 | 218 | 1 | 86.9123 | 5.021 | .219 | 1.440 | 1.659 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 300 | 120 | 1 | 2.3130 | 45.200 | .473 | 3.923 | 4.395 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 301 | 136 | 1 | 105.7375 | 6.350 | .426 | 3.797 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 301 | 300 | 1 | 275.1730 | 2.138 | .126 | 3.797 | 3.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 302 | 114 | 1 | 1.0184 | 39.682 | .160 | 4.442 | 4.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 304 | 300 | 1 | .9126 | 43.061 | .169 | 3.753 | 3.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 304 | 301 | 1 | 6.0265 | 8.488 | .043 | 3.753 | 3.797 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 308 | 370 | 1 | .1143 | 76.946 | .068 | 3.958 | 4.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 310 | 308 | 1 | 556.2387 | 4.961 | 1.369 | 2.589 | 3.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 310 | 316 | 1 | .2577 | 98.022 | .248 | 2.589 | 2.836 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 310 | 368 | 1 | 3.1923 | 48.877 | .763 | 2.589 | 3.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 312 | 390 | 1 | .0360 | 44.780 | .007 | 3.940 | 3.951 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 314 | 304 | 1 | .1524 | 51.549 | .040 | 3.714 | 3.753 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 316 | 318 | 1 | 99.0800 | 9.969 | .985 | 2.836 | 3.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 316 | 320 | 1 | 77.3519 | 10.211 | .807 | 2.836 | 3.643 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 316 | 356 | 1 | .8249 | 77.842 | .500 | 2.836 | 3.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 318 | 312 | 1 | .6742 | 42.610 | .122 | 3.821 | 3.940 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 320 | 314 | 1 | .3970 | 42.400 | .071 | 3.643 | 3.714 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 322 | 318 | 1 | 1.4061 | 32.641 | .150 | 3.668 | 3.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 322 | 372 | 1 | 73.0063 | 3.863 | .109 | 3.668 | 3.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 324 | 314 | 1 | 13.3150 | 9.149 | .111 | 3.603 | 3.714 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 324 | 320 | 1 | .3871 | 32.189 | .040 | 3.603 | 3.643 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 326 | 324 | 1 | .0990 | 41.338 | .017 | 3.586 | 3.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 151 | 328 | 326 | 1 | .0916 | 31.819 | .009 | 3.604 | 3.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 330 | 326 | 1 | 4.3952 | 9.729 | .042 | 3.572 | 3.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 330 | 328 | 1 | .3797 | 29.193 | .032 | 3.572 | 3.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 332 | 330 | 1 | .0183 | 38.922 | .003 | 3.569 | 3.572 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 334 | 332 | 1 | .0540 | 19.653 | .002 | 3.567 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 336 | 334 | 1 | .1943 | 16.390 | .005 | 3.562 | 3.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 338 | 336 | 1 | 2.8751 | 6.774 | .013 | 3.548 | 3.562 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 338 | 339 | 1 | .4564 | 17.956 | .015 | 3.548 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 339 | 332 | 1 | .1554 | 19.269 | .006 | 3.563 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 340 | 336 | 1 | .6434 | 9.616 | .006 | 3.555 | 3.562 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 340 | 339 | 1 | 43.4561 | 1.313 | .007 | 3.555 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 342 | 334 | 1 | 125.5361 | 3.263 | .134 | 3.433 | 3.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 342 | 338 | 1 | 1.8851 | 24.730 | .115 | 3.433 | 3.548 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 342 | 350 | 1 | .3414 | 32.575 | .036 | 3.433 | 3.469 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 344 | 340 | 1 | 4.0910 | 10.929 | .049 | 3.507 | 3.555 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 344 | 346 | 1 | .7230 | 9.698 | .007 | 3.507 | 3.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 346 | 348 | 1 | .6952 | 12.771 | .011 | 3.513 | 3.525 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 347 | 346 | 1 | 19.3119 | 3.073 | .018 | 3.495 | 3.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 347 | 348 | 1 | 3.7555 | 8.874 | .030 | 3.495 | 3.525 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 348 | 352 | 1 | .2531 | 21.645 | .012 | 3.525 | 3.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 350 | 344 | 1 | .8769 | 20.628 | .037 | 3.469 | 3.507 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 350 | 347 | 1 | 1.8104 | 11.947 | .026 | 3.469 | 3.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 351 | 342 | 1 | .0952 | 60.568 | .035 | 3.398 | 3.433 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 351 | 352 | 1 | 13.9060 | 9.974 | .138 | 3.398 | 3.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 352 | 354 | 1 | .0813 | 31.619 | .008 | 3.536 | 3.545 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 354 | 358 | 1 | .1971 | 28.716 | .016 | 3.545 | 3.561 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 354 | 360 | 1 | 28.9679 | 2.903 | .024 | 3.545 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 356 | 328 | 1 | 361.5551 | 2.626 | .249 | 3.355 | 3.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 356 | 351 | 1 | .0876 | 70.542 | .044 | 3.355 | 3.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 356 | 358 | 1 | 333.7432 | 2.487 | .206 | 3.355 | 3.561 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 358 | 360 | 1 | .0839 | 31.203 | .008 | 3.561 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 360 | 380 | 1 | .4210 | 34.106 | .049 | 3.569 | 3.618 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 366 | 372 | 1 | 7.1138 | 19.787 | .279 | 3.480 | 3.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 366 | 390 | 1 | 6.8122 | 28.576 | .556 | 3.480 | 4.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 368 | 366 | 1 | .3958 | 48.362 | .093 | 3.392 | 3.480 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 370 | 302 | 1 | 5.8344 | 31.192 | .568 | 4.139 | 4.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 370 | 392 | 1 | .6146 | 46.259 | .132 | 4.139 | 4.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 188 | 372 | 312 | 1 | 347.6492 | 2.784 | .269 | 3.759 | 4.028 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 189 | 372 | 392 | 1 | 3824.1408 | 1.158 | .513 | 3.759 | 4.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 190 | 372 | 394 | 1 | 1.1194 | 18.912 | .040 | 3.759 | 3.799 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 191 | 374 | 106 | 1 | .4182 | 43.097 | .078 | 4.583 | 4.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 192 | 376 | 108 | 1 | 8.3679 | 35.937 | 1.081 | 4.412 | 5.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 193 | 376 | 302 | 1 | 22.0410 | 11.480 | .290 | 4.412 | 4.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 194 | 380 | 382 | 1 | .1677 | 34.106 | .020 | 3.618 | 3.633 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 195 | 382 | 322 | 1 | .4911 | 34.106 | .057 | 3.633 | 3.690 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 196 | 390 | 308 | 1 | .0178 | 72.424 | .009 | 4.042 | 4.051 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 197 | 392 | 376 | 1 | .6264 | 47.417 | .141 | 4.271 | 4.412 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 198 | 394 | 374 | 1 | 451.9439 | 4.152 | .779 | 3.799 | 4.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 199 | 394 | 396 | 1 | 8.1037 | 14.760 | .177 | 3.799 | 3.975 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 200 | 396 | 374 | 1 | 4.0023 | 38.944 | .607 | 3.975 | 4.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 4

Computer Output for Reducing Airway Resistance (Clean-Up)

| I | JA | IB | NFA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 1 | 100 | 1 | .2235 | 115.608 | .299 | 0.000 | .299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 103 | 1 | .0552 | 187.694 | .194 | 0.000 | .194 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 190 | 1 | .0021 | 309.778 | .020 | 0.000 | .020 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 100 | 105 | 1 | 1.2585 | 105.932 | 1.412 | .299 | 1.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 100 | 106 | 1 | 491.0457 | 9.676 | 4.597 | .299 | 4.896 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 102 | 1 | 1 | .0499 | 308.298 | .474 | 6.513 | 0.000 | | | 0.000 | 0.000 | 6.987 | 339.44 | FAN2 |
| 7 | 103 | 105 | 1 | .5695 | 163.137 | 1.516 | .194 | 1.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 103 | 396 | 1 | 64.5671 | 24.557 | 3.894 | .194 | 4.088 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 105 | 109 | 1 | .0436 | 269.068 | .316 | 1.710 | 2.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 106 | 102 | 1 | 5.0435 | 56.610 | 1.616 | 4.896 | 6.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 108 | 102 | 1 | .1582 | 251.688 | 1.002 | 5.510 | 6.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 109 | 110 | 1 | 271.5053 | 10.510 | 2.999 | 2.026 | 5.025 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 109 | 118 | 1 | .0395 | 258.558 | .264 | 2.026 | 2.290 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 110 | 108 | 1 | .1065 | 213.436 | .485 | 5.025 | 5.510 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 112 | 110 | 1 | .2958 | 104.357 | .322 | 4.703 | 5.025 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 114 | 110 | 1 | .4347 | 98.569 | .422 | 4.603 | 5.025 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 118 | 114 | 1 | 466.2149 | 7.043 | 2.313 | 2.290 | 4.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 118 | 124 | 1 | .2132 | 99.654 | .212 | 2.290 | 2.502 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 118 | 310 | 1 | .1296 | 151.861 | .299 | 2.290 | 2.589 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 120 | 114 | 1 | .7729 | 51.844 | .208 | 4.395 | 4.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 122 | 112 | 1 | .6890 | 102.503 | .724 | 3.980 | 4.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 124 | 122 | 1 | 189.5209 | 8.830 | 1.478 | 2.502 | 3.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 124 | 126 | 1 | 234.7414 | 8.538 | 1.711 | 2.502 | 4.210 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 124 | 134 | 1 | .3317 | 82.286 | .225 | 2.502 | 2.727 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 126 | 120 | 1 | 41.9873 | 6.644 | .185 | 4.210 | 4.395 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 126 | 136 | 1 | 27.1601 | 1.894 | .010 | 4.210 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 128 | 112 | 1 | 2129.3511 | 1.853 | .731 | 3.972 | 4.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 128 | 122 | 1 | .0087 | 93.673 | .008 | 3.972 | 3.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 130 | 128 | 1 | .0083 | 95.527 | .009 | 3.965 | 3.972 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 130 | 140 | 1 | 1592.2332 | 4.796 | 3.662 | 3.965 | 7.627 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 134 | 140 | 1 | 459.4097 | 10.327 | 4.900 | 2.727 | 7.627 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 148 | 130 | 1 | .0890 | 100.323 | .090 | 3.875 | 3.965 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 134 | 144 | 1 | .0446 | 187.517 | .157 | 2.727 | 3.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 136 | 138 | 1 | .3121 | 8.244 | .002 | 4.230 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 138 | 178 | 1 | .4180 | 20.015 | .017 | 4.232 | 4.249 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 140 | 176 | 1 | .2292 | 69.707 | .111 | 7.627 | 7.738 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 142 | 140 | 1 | 11.5941 | 54.584 | 3.454 | 4.172 | 7.627 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 142 | 172 | 1 | 43.9863 | 28.799 | 3.648 | 4.172 | 7.809 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 144 | 145 | 1 | .0520 | 174.685 | .159 | 2.884 | 3.043 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 144 | 146 | 1 | 479.9210 | 4.610 | 1.020 | 2.884 | 3.904 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 144 | 148 | 1 | 146.6906 | 8.222 | .992 | 2.884 | 3.875 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 145 | 147 | 1 | 820.8344 | 2.762 | .672 | 3.043 | 3.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 145 | 149 | 1 | 675.9864 | 2.896 | .567 | 3.043 | 3.609 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 145 | 166 | 1 | .0395 | 168.977 | .113 | 3.043 | 3.194 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 146 | 142 | 1 | .3163 | 33.183 | .255 | 3.904 | 4.172 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 147 | 152 | 1 | .0382 | 50.522 | .014 | 3.715 | 3.729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 149 | 154 | 1 | .3227 | 65.083 | .137 | 3.609 | 3.746 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 150 | 146 | 1 | .2531 | 33.771 | .145 | 3.760 | 3.904 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 150 | 172 | 1 | 747.2771 | 3.111 | 4.049 | 3.760 | 7.809 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 151 | 188 | 1 | 81.0676 | 11.771 | .227 | 3.705 | 4.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JE | NFA | F | HL | HJA | HJB | AREA | VEL | NVF | HR | HF | ARF | FIP |
|-----|-----|-----|-----|-----------|---------|-------|-------|-------|-----|-------|-------|-------|--------|------|
| 51 | 152 | 150 | 1 | .0453 | 80.584 | .011 | 3.779 | 3.760 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 154 | 148 | 1 | .1534 | 51.101 | .029 | 3.746 | 3.671 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 158 | 160 | 1 | 1.0137 | 44.701 | .034 | 3.221 | 3.424 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 158 | 162 | 1 | .8291 | 33.511 | .112 | 3.221 | 3.373 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 160 | 167 | 1 | .1768 | 51.828 | .062 | 3.424 | 3.487 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 161 | 163 | 1 | 3.4765 | 38.475 | .274 | 3.322 | 3.598 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 161 | 164 | 1 | 4.5629 | 19.936 | .181 | 3.322 | 3.503 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 162 | 160 | 1 | 2.3841 | 14.364 | .051 | 3.373 | 3.424 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 162 | 164 | 1 | 1.8493 | 25.848 | .130 | 3.373 | 3.503 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 163 | 152 | 1 | 1.2767 | 31.062 | .181 | 3.598 | 3.729 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 164 | 163 | 1 | .1833 | 48.735 | .040 | 3.503 | 3.543 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 166 | 154 | 1 | 8.0959 | 27.033 | .532 | 3.154 | 3.746 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 166 | 158 | 1 | .0918 | 85.218 | .047 | 3.154 | 3.221 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 166 | 161 | 1 | .7301 | 49.006 | .168 | 3.154 | 3.322 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 166 | 167 | 1 | 424.9055 | 2.798 | .333 | 3.154 | 3.487 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 166 | 168 | 1 | 113.0034 | 5.868 | .389 | 3.154 | 3.543 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 167 | 149 | 1 | .3150 | 62.167 | .122 | 3.487 | 3.609 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 168 | 170 | 1 | .0736 | 51.653 | .020 | 3.543 | 3.563 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 170 | 147 | 1 | .6640 | 47.660 | .151 | 3.563 | 3.715 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 170 | 163 | 1 | 20.8589 | 3.992 | .033 | 3.563 | 3.598 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 172 | 174 | 1 | 3.0385 | 32.610 | .323 | 7.809 | 8.132 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 174 | 184 | 1 | .0051 | 155.194 | .012 | 8.132 | 8.144 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 175 | 134 | 1 | .8341 | 115.558 | 1.114 | 1.613 | 2.727 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 175 | 177 | 1 | 158.7714 | 15.625 | 3.576 | 1.613 | 5.490 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 176 | 174 | 1 | .2614 | 120.584 | .393 | 7.738 | 8.132 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 177 | 176 | 1 | 8.0463 | 52.877 | 2.250 | 5.490 | 7.738 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 178 | 177 | 1 | 8.9780 | 37.252 | 1.246 | 4.243 | 5.490 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 180 | 178 | 1 | 66.0794 | 17.237 | 1.963 | 2.286 | 4.243 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 180 | 183 | 1 | 3.6712 | 26.002 | .248 | 2.286 | 2.564 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 182 | 175 | 1 | .3560 | 131.182 | .413 | 1.001 | 1.613 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 182 | 183 | 1 | 93.1787 | 12.828 | 1.533 | 1.001 | 2.584 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 183 | 204 | 1 | .1278 | 111.987 | .160 | 1.001 | 1.161 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 183 | 192 | 1 | 1.5166 | 38.830 | .229 | 2.584 | 2.763 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 184 | 188 | 1 | .0124 | 266.232 | .088 | 8.144 | 8.232 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 186 | 182 | 1 | .0684 | 255.997 | .448 | .553 | 1.001 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 186 | 187 | 1 | 112.9860 | 15.232 | 2.621 | .553 | 3.174 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 187 | 184 | 1 | 4.0293 | 111.039 | 4.968 | 3.174 | 8.144 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 188 | 1 | 1 | .0324 | 304.781 | .301 | 8.232 | 0.000 | | 0.000 | 0.000 | 8.522 | 409.27 | F4-1 |
| 89 | 189 | 188 | 1 | 116.3669 | 18.783 | 4.106 | 4.126 | 8.232 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 190 | 186 | 1 | .0724 | 271.229 | .533 | .020 | .553 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 190 | 188 | 1 | 210.1974 | 19.766 | 8.212 | .020 | 8.232 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 190 | 189 | 1 | 116.3669 | 18.783 | 4.106 | .020 | 4.126 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 192 | 187 | 1 | .4481 | 95.807 | .411 | 2.763 | 3.174 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 200 | 151 | 1 | 2933.2898 | 2.252 | 1.488 | 2.214 | 3.705 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 202 | 192 | 1 | .1159 | 56.976 | .038 | 2.725 | 2.763 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 200 | 180 | 1 | .3867 | 43.239 | .072 | 2.214 | 2.286 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 204 | 206 | 1 | 75.8049 | 9.499 | .684 | 1.161 | 1.845 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 204 | 208 | 1 | 165.2116 | 8.317 | 1.143 | 1.161 | 2.304 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 204 | 222 | 1 | .1975 | 94.171 | .175 | 1.161 | 1.336 | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 206 | 200 | 1 | 1.7567 | 45.491 | .364 | 1.845 | 2.214 | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | O | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHF | FID |
|-----|-----|-----|-----|----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 208 | 202 | 1 | 1.9515 | 46.471 | .421 | 2.304 | 2.725 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 210 | 151 | 1 | 225.3288 | 9.519 | 2.042 | 1.657 | 3.705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 210 | 206 | 1 | 1.4439 | 35.992 | .187 | 1.657 | 1.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 211 | 212 | 1 | 14.7751 | 10.054 | .149 | 1.449 | 1.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 211 | 224 | 1 | 3.2192 | 11.358 | .042 | 1.449 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 212 | 210 | 1 | .2864 | 45.511 | .059 | 1.598 | 1.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 214 | 202 | 1 | 64.8018 | 10.506 | .715 | 2.009 | 2.725 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 214 | 208 | 1 | 2.0201 | 38.154 | .294 | 2.009 | 2.304 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 216 | 214 | 1 | .6237 | 48.660 | .148 | 1.861 | 2.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 218 | 216 | 1 | 1.1997 | 41.129 | .203 | 1.659 | 1.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 220 | 218 | 1 | .6441 | 36.108 | .084 | 1.575 | 1.659 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 222 | 211 | 1 | 2.9672 | 19.462 | .112 | 1.336 | 1.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 222 | 232 | 1 | 1.0021 | 22.757 | .052 | 1.336 | 1.388 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 222 | 234 | 1 | .1144 | 51.952 | .031 | 1.336 | 1.367 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 224 | 212 | 1 | .8594 | 35.458 | .108 | 1.490 | 1.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 225 | 211 | 1 | 73.3018 | 1.949 | .028 | 1.421 | 1.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 225 | 226 | 1 | 1.8895 | 17.268 | .056 | 1.421 | 1.477 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 226 | 224 | 1 | .2358 | 24.100 | .014 | 1.477 | 1.490 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 228 | 220 | 1 | 3.5569 | 17.083 | .104 | 1.470 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 230 | 226 | 1 | 1.3478 | 6.831 | .006 | 1.470 | 1.477 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 230 | 228 | 1 | 0.0000 | 6.877 | 0.000 | 1.470 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 234 | 220 | 1 | 5.6893 | 19.026 | .206 | 1.367 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 234 | 230 | 1 | 5.4842 | 13.708 | .103 | 1.367 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 234 | 225 | 1 | 1.4566 | 19.218 | .054 | 1.367 | 1.421 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 232 | 228 | 1 | 7.8464 | 10.206 | .082 | 1.388 | 1.470 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 232 | 252 | 1 | 3.2618 | 12.551 | .051 | 1.388 | 1.440 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 252 | 216 | 1 | 74.3708 | 7.531 | .422 | 1.440 | 1.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 252 | 218 | 1 | 86.9123 | 5.021 | .219 | 1.440 | 1.659 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 300 | 120 | 1 | 2.3130 | 45.200 | .473 | 3.923 | 4.395 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 301 | 136 | 1 | 105.7375 | 6.350 | .426 | 3.797 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 301 | 300 | 1 | 275.1730 | 2.138 | .126 | 3.797 | 3.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 302 | 114 | 1 | 1.0184 | 39.682 | .160 | 4.442 | 4.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 304 | 300 | 1 | .9126 | 43.061 | .169 | 3.753 | 3.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 304 | 301 | 1 | 6.0265 | 8.488 | .043 | 3.753 | 3.797 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 308 | 370 | 1 | .1143 | 76.946 | .068 | 3.953 | 4.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 310 | 308 | 1 | 556.2387 | 4.961 | 1.369 | 2.589 | 3.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 310 | 316 | 1 | .2577 | 98.022 | .248 | 2.589 | 2.836 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 310 | 368 | 1 | 3.1923 | 48.877 | .763 | 2.589 | 3.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 312 | 390 | 1 | .0360 | 44.780 | .007 | 3.940 | 3.951 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 314 | 304 | 1 | .1524 | 51.549 | .040 | 3.714 | 3.753 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 316 | 318 | 1 | 99.0800 | 9.969 | .985 | 2.836 | 3.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 316 | 320 | 1 | 77.3519 | 10.211 | .807 | 2.836 | 3.643 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 316 | 356 | 1 | .8249 | 77.842 | .500 | 2.836 | 3.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 318 | 312 | 1 | .6742 | 42.610 | .122 | 3.821 | 3.940 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 320 | 314 | 1 | .3970 | 42.400 | .071 | 3.643 | 3.714 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 322 | 318 | 1 | 1.4061 | 32.641 | .150 | 3.668 | 3.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 322 | 372 | 1 | 73.0063 | 3.863 | .109 | 3.668 | 3.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 324 | 314 | 1 | 13.3150 | 9.149 | .111 | 3.603 | 3.714 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 324 | 320 | 1 | .3371 | 32.189 | .040 | 3.603 | 3.643 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 326 | 304 | 1 | .0990 | 41.338 | .017 | 3.586 | 3.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | N | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|--------|---|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 151 | 328 | 326 | 1 | .0675 | 32.721 | | .007 | 3.579 | 3.586 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 330 | 326 | 1 | 4.3952 | 8.617 | | .033 | 3.553 | 3.586 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 330 | 328 | 1 | .2800 | 30.130 | | .025 | 3.553 | 3.579 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 332 | 330 | 1 | .0135 | 38.747 | | .002 | 3.551 | 3.553 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 334 | 332 | 1 | .0398 | 20.131 | | .002 | 3.550 | 3.551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 336 | 334 | 1 | .1433 | 16.908 | | .004 | 3.546 | 3.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 338 | 336 | 1 | 2.8751 | 6.899 | | .014 | 3.532 | 3.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 338 | 339 | 1 | .4564 | 17.535 | | .014 | 3.532 | 3.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 339 | 332 | 1 | .1554 | 18.616 | | .005 | 3.546 | 3.551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 340 | 336 | 1 | .4745 | 10.009 | | .005 | 3.541 | 3.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 340 | 339 | 1 | 43.4561 | 1.081 | | .005 | 3.541 | 3.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 342 | 334 | 1 | 125.5361 | 3.222 | | .130 | 3.419 | 3.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 342 | 338 | 1 | 1.8851 | 24.434 | | .113 | 3.419 | 3.532 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 342 | 350 | 1 | .3414 | 34.708 | | .041 | 3.419 | 3.461 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 344 | 340 | 1 | 3.0167 | 11.091 | | .037 | 3.504 | 3.541 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 344 | 345 | 1 | .5332 | 11.086 | | .007 | 3.504 | 3.510 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 346 | 348 | 1 | .5126 | 14.398 | | .011 | 3.510 | 3.521 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 347 | 346 | 1 | 19.3119 | 3.312 | | .021 | 3.489 | 3.510 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 347 | 348 | 1 | 3.7555 | 9.220 | | .032 | 3.489 | 3.521 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 348 | 352 | 1 | .1866 | 23.618 | | .010 | 3.521 | 3.531 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 350 | 344 | 1 | .8769 | 22.177 | | .043 | 3.461 | 3.504 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 350 | 347 | 1 | 1.8104 | 12.532 | | .028 | 3.461 | 3.489 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 351 | 341 | 1 | .0952 | 62.365 | | .037 | 3.382 | 3.419 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 351 | 352 | 1 | 13.9060 | 10.341 | | .149 | 3.382 | 3.531 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 352 | 354 | 1 | .0599 | 33.958 | | .007 | 3.531 | 3.538 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 354 | 358 | 1 | .1454 | 31.250 | | .014 | 3.538 | 3.552 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 354 | 360 | 1 | 38.9679 | 2.708 | | .021 | 3.538 | 3.559 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 356 | 328 | 1 | 361.5551 | 2.591 | | .243 | 3.336 | 3.579 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 356 | 351 | 1 | .0876 | 72.706 | | .046 | 3.336 | 3.382 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 356 | 358 | 1 | 333.7432 | 2.545 | | .216 | 3.336 | 3.552 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 358 | 360 | 1 | .0618 | 33.795 | | .007 | 3.552 | 3.559 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 360 | 380 | 1 | .3104 | 36.504 | | .041 | 3.559 | 3.601 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 366 | 372 | 1 | 7.1138 | 21.673 | | .334 | 3.443 | 3.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 366 | 390 | 1 | 6.8122 | 27.205 | | .504 | 3.443 | 3.951 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 368 | 366 | 1 | .3958 | 48.877 | | .095 | 3.351 | 3.443 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 370 | 302 | 1 | 4.3023 | 31.270 | | .421 | 4.022 | 4.442 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 370 | 392 | 1 | .6146 | 45.675 | | .128 | 4.022 | 4.150 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 188 | 372 | 312 | 1 | 347.6492 | 2.170 | | .164 | 3.777 | 3.940 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 189 | 372 | 392 | 1 | 3824.1408 | .988 | | .374 | 3.777 | 4.150 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 190 | 372 | 394 | 1 | 1.1194 | 22.377 | | .056 | 3.777 | 3.833 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 191 | 374 | 106 | 1 | .4182 | 46.934 | | .092 | 4.804 | 4.896 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 192 | 376 | 108 | 1 | 8.3679 | 38.252 | | 1.234 | 4.286 | 5.510 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 193 | 376 | 302 | 1 | 22.0410 | 8.412 | | .156 | 4.286 | 4.442 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 194 | 380 | 382 | 1 | .1677 | 36.504 | | .022 | 3.601 | 3.630 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 195 | 382 | 322 | 1 | .3622 | 36.504 | | .048 | 3.620 | 3.648 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 196 | 390 | 308 | 1 | .0131 | 71.985 | | .007 | 3.951 | 3.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 197 | 392 | 376 | 1 | .6264 | 46.664 | | .136 | 4.150 | 4.278 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 198 | 394 | 374 | 1 | 451.9439 | 4.423 | | .163 | 3.833 | 4.094 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 199 | 394 | 396 | 1 | 8.1037 | 17.749 | | .299 | 3.833 | 4.094 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 200 | 396 | 374 | 1 | 4.0023 | 43.361 | | .116 | 4.094 | 4.514 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 5

Computer Output for Addition of a New Shaft

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 1 | 100 | 1 | .2235 | 98.858 | .218 | 0.000 | .218 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 103 | 1 | .0552 | 162.224 | .145 | 0.000 | .145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 190 | 1 | .0021 | 280.693 | .016 | 0.000 | .016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 100 | 105 | 1 | 1.2585 | 88.441 | .984 | .218 | 1.203 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 100 | 106 | 1 | 491.0457 | 10.417 | 5.329 | .218 | 5.547 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 102 | 1 | 1 | .0499 | 252.589 | .318 | 7.635 | 0.000 | | | 0.000 | 0.000 | 7.952 | 316.51 | FAN2 |
| 7 | 103 | 105 | 1 | .5695 | 136.298 | 1.058 | .145 | 1.203 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 103 | 396 | 1 | 64.5671 | 25.926 | 4.340 | .145 | 4.485 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 105 | 109 | 1 | .0436 | 224.739 | .220 | 1.203 | 1.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 106 | 102 | 1 | 5.0435 | 64.340 | 2.088 | 5.547 | 7.635 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 108 | 102 | 1 | .2146 | 188.249 | .760 | 6.874 | 7.635 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 109 | 110 | 1 | 271.5053 | 13.795 | 5.167 | 1.424 | 6.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 109 | 118 | 1 | .0395 | 210.943 | .176 | 1.424 | 1.599 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 110 | 108 | 1 | .1444 | 140.095 | .284 | 6.591 | 6.874 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 112 | 110 | 1 | .2958 | -.969 | -.000 | 6.591 | 6.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 114 | 110 | 1 | .5895 | 127.269 | .955 | 5.636 | 6.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 118 | 114 | 1 | 466.2149 | 9.305 | 4.037 | 1.599 | 5.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 118 | 124 | 1 | .2132 | 11.509 | .003 | 1.599 | 1.602 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 118 | 310 | 1 | .1296 | 190.129 | .468 | 1.599 | 2.068 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 120 | 114 | 1 | .7729 | 68.009 | .357 | 5.278 | 5.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 122 | 112 | 1 | .9343 | -.925 | -.000 | 6.592 | 6.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 124 | 122 | 1 | 189.5209 | 16.224 | 4.989 | 1.602 | 6.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 124 | 126 | 1 | 234.7414 | 11.437 | 3.070 | 1.602 | 4.686 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 124 | 134 | 1 | .3317 | -16.152 | -.009 | 1.602 | 1.593 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 126 | 120 | 1 | 41.9873 | 11.876 | .592 | 4.686 | 5.278 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 126 | 136 | 1 | 27.1601 | -.440 | -.001 | 4.686 | 4.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 128 | 112 | 1 | 2129.3511 | -.045 | -.000 | 6.592 | 6.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 128 | 122 | 1 | .0117 | -17.149 | -.000 | 6.592 | 6.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 130 | 128 | 1 | .0112 | -17.194 | -.000 | 6.592 | 6.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 130 | 140 | 1 | 1592.2332 | 3.578 | 2.038 | 6.592 | 8.631 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 134 | 140 | 1 | 459.4097 | 12.377 | 7.038 | 1.593 | 8.631 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 148 | 130 | 1 | .1206 | -13.615 | -.002 | 6.594 | 6.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 134 | 144 | 1 | .0446 | 48.445 | .010 | 1.593 | 1.603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 136 | 138 | 1 | .3121 | 7.451 | .002 | 4.677 | 4.679 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 138 | 178 | 1 | .4180 | 20.418 | .017 | 4.679 | 4.696 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 140 | 176 | 1 | .3108 | 9.529 | .003 | 8.631 | 8.633 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 142 | 140 | 1 | 11.5941 | -6.426 | -.048 | 8.678 | 8.631 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 142 | 172 | 1 | 43.9863 | 4.514 | .090 | 8.678 | 8.782 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 144 | 145 | 1 | .0520 | 17.844 | .002 | 1.603 | 1.605 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 144 | 146 | 1 | 479.9210 | 12.158 | 7.094 | 1.603 | 8.697 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 144 | 148 | 1 | 146.6906 | 13.443 | 4.990 | 1.603 | 6.594 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 145 | 147 | 1 | 820.8344 | 9.302 | 7.102 | 1.605 | 8.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 145 | 149 | 1 | 675.9864 | 8.710 | 5.128 | 1.605 | 6.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 145 | 166 | 1 | .0395 | -.168 | -.000 | 1.605 | 1.605 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 146 | 142 | 1 | .4967 | -1.913 | -.000 | 3.697 | 3.678 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 147 | 152 | 1 | .0721 | -19.437 | -.003 | 8.707 | 8.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 149 | 154 | 1 | .4376 | -52.059 | -.119 | 6.733 | 6.616 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 150 | 146 | 1 | .3161 | -14.070 | -.006 | 8.708 | 8.697 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 150 | 172 | 1 | 2787.2771 | .517 | .074 | 8.708 | 3.782 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 151 | 138 | 1 | 38.0676 | 12.967 | .640 | 4.039 | 4.679 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|----------|--------|-------|--------|------|-----|-------|-------|-------|--------|------|
| 51 | 152 | 150 | 1 | .0614 | -13.554 | -.001 | 8.709 | 8.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 154 | 148 | 1 | .2067 | -32.059 | -.021 | 6.616 | 6.594 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 158 | 160 | 1 | 1.0186 | 35.000 | .125 | 1.528 | 7.015 | | | 0.000 | 5.362 | 0.000 | 0.00 | |
| 54 | 158 | 162 | 1 | .9291 | -126.543 | -1.488 | 1.528 | .040 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 160 | 167 | 1 | .2398 | -71.922 | -.124 | 7.015 | 6.891 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 161 | 163 | 1 | 3.4765 | 12.140 | .051 | 8.649 | 8.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 161 | 164 | 1 | 4.5629 | 22.860 | .238 | 8.649 | 8.887 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 160 | 400 | 1 | 3.2331 | 106.922 | 3.696 | 7.015 | 10.711 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 164 | 400 | 1 | 2.6421 | 83.078 | 1.824 | 8.887 | 10.711 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 163 | 152 | 1 | 1.2767 | 5.883 | .004 | 8.700 | 8.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 164 | 168 | 1 | .2575 | -60.217 | -.093 | 8.887 | 8.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 166 | 154 | 1 | 8.0959 | 20.000 | .324 | 1.605 | 6.616 | | | 0.000 | 4.687 | 0.000 | 0.00 | |
| 63 | 166 | 158 | 1 | .0918 | -91.543 | -.077 | 1.605 | 1.528 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 166 | 161 | 1 | .7301 | 35.000 | .089 | 1.605 | 8.649 | | | 0.000 | 6.954 | 0.000 | 0.00 | |
| 65 | 166 | 167 | 1 | 424.9055 | 11.154 | 5.286 | 1.605 | 6.891 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 166 | 168 | 1 | 113.0034 | 25.222 | 7.189 | 1.605 | 8.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 167 | 149 | 1 | .4272 | -60.769 | -.158 | 6.891 | 6.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 168 | 170 | 1 | .0999 | -34.996 | -.012 | 8.794 | 8.781 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 170 | 147 | 1 | .9004 | -28.739 | -.074 | 8.781 | 8.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 170 | 163 | 1 | 20.8589 | -6.257 | -.082 | 8.781 | 8.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 172 | 174 | 1 | 3.0385 | 5.030 | .008 | 8.782 | 8.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 174 | 184 | 1 | .0069 | 71.191 | .003 | 8.790 | 8.793 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 175 | 134 | 1 | .8341 | 76.974 | .494 | 1.099 | 1.593 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 175 | 177 | 1 | 158.7714 | 17.669 | 4.957 | 1.099 | 6.055 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 176 | 174 | 1 | .3545 | 66.160 | .155 | 8.633 | 8.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 177 | 176 | 1 | 8.0463 | 56.632 | 2.581 | 6.055 | 8.633 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 178 | 177 | 1 | 8.9780 | 38.963 | 1.363 | 4.696 | 6.055 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 180 | 173 | 1 | 66.0794 | 18.545 | 2.272 | 2.424 | 4.696 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 180 | 183 | 1 | 3.6712 | 26.136 | .251 | 2.424 | 2.674 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 182 | 175 | 1 | .3560 | 94.643 | .319 | .780 | 1.099 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 182 | 183 | 1 | 93.1787 | 14.259 | 1.895 | .780 | 2.674 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 182 | 204 | 1 | .1278 | 115.319 | .170 | .780 | .950 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 183 | 192 | 1 | 1.5166 | 40.396 | .247 | 2.674 | 2.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 184 | 188 | 1 | .0169 | 185.742 | .058 | 8.793 | 8.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 186 | 182 | 1 | .0684 | 224.221 | .344 | .436 | .780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 186 | 187 | 1 | 112.9860 | 16.485 | 3.070 | .436 | 3.506 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 187 | 184 | 1 | 4.0293 | 114.552 | 5.287 | 3.506 | 8.793 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 188 | 1 | 1 | .0324 | 225.730 | .165 | 8.852 | 0.000 | | | 0.000 | 0.000 | 9.022 | 320.90 | FAN1 |
| 89 | 189 | 188 | 1 | 116.3669 | 19.485 | 4.418 | 4.435 | 8.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 190 | 186 | 1 | .0724 | 240.706 | .419 | .016 | .436 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 190 | 188 | 1 | 210.1974 | 20.502 | 8.835 | .016 | 8.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 190 | 189 | 1 | 116.3669 | 19.485 | 4.418 | .016 | 4.435 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 192 | 187 | 1 | .6077 | 93.067 | .584 | 2.922 | 3.506 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 200 | 151 | 1 | 2933.2698 | 2.418 | 1.715 | 2.319 | 4.039 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 202 | 192 | 1 | .1571 | 57.671 | .052 | 2.370 | 2.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 200 | 180 | 1 | .5244 | 44.681 | .105 | 2.319 | 2.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 204 | 206 | 1 | 75.8049 | 10.525 | .840 | .950 | 1.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 204 | 208 | 1 | 165.2116 | 9.089 | 1.365 | .950 | 2.315 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 204 | 222 | 1 | .1975 | 95.705 | .181 | .950 | 1.131 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 206 | 200 | 1 | 2.3823 | 47.099 | .528 | 1.790 | 2.319 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | O | HL | HJA | HJB | ARFA | VEL | NVP | HR | HF | AHF | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 208 | 202 | 1 | 2.6465 | 45.747 | .554 | 2.315 | 2.870 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 210 | 151 | 1 | 225.3288 | 10.549 | 2.508 | 1.527 | 4.039 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 210 | 206 | 1 | 1.9581 | 36.574 | .262 | 1.527 | 1.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 211 | 212 | 1 | 14.7751 | 11.330 | .190 | 1.252 | 1.441 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 211 | 224 | 1 | 3.2192 | 11.059 | .039 | 1.252 | 1.291 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 212 | 210 | 1 | .3883 | 47.123 | .086 | 1.441 | 1.527 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 214 | 202 | 1 | 64.8018 | 11.924 | .921 | 1.949 | 2.870 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 214 | 208 | 1 | 2.7395 | 36.658 | .368 | 1.949 | 2.315 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 216 | 214 | 1 | .8458 | 48.582 | .290 | 1.750 | 1.949 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 218 | 216 | 1 | 1.6270 | 40.339 | .775 | 1.484 | 1.750 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 220 | 218 | 1 | .8735 | 35.092 | .108 | 1.376 | 1.484 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 222 | 211 | 1 | 7.9672 | 20.189 | .121 | 1.131 | 1.252 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 222 | 232 | 1 | 1.0071 | 28.311 | .054 | 1.131 | 1.185 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 222 | 234 | 1 | .1144 | 52.204 | .031 | 1.131 | 1.162 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 224 | 212 | 1 | 1.1655 | 35.793 | .149 | 1.291 | 1.441 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 225 | 211 | 1 | 73.3018 | 2.200 | .035 | 1.216 | 1.752 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 225 | 224 | 1 | 1.8895 | 17.058 | .055 | 1.216 | 1.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 226 | 224 | 1 | .3198 | 24.734 | .020 | 1.271 | 1.291 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 228 | 220 | 1 | 4.8234 | 15.558 | .117 | 1.261 | 1.376 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 230 | 226 | 1 | 1.8278 | 7.676 | .011 | 1.261 | 1.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 230 | 228 | 1 | 0.0000 | 5.737 | 0.000 | 1.261 | 1.261 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 234 | 220 | 1 | 5.6893 | 19.534 | .217 | 1.162 | 1.376 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 234 | 230 | 1 | 5.4842 | 13.413 | .099 | 1.162 | 1.261 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 234 | 225 | 1 | 1.4566 | 19.258 | .054 | 1.162 | 1.216 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 232 | 228 | 1 | 7.8464 | 9.822 | .076 | 1.185 | 1.261 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 237 | 252 | 1 | 3.2618 | 13.489 | .059 | 1.185 | 1.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 252 | 216 | 1 | 74.3708 | 8.243 | .505 | 1.244 | 1.750 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 252 | 218 | 1 | 86.9123 | 5.246 | .239 | 1.244 | 1.484 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 300 | 120 | 1 | 3.1367 | 56.133 | .988 | 4.290 | 5.278 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 301 | 136 | 1 | 105.7375 | 7.891 | .658 | 4.016 | 4.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 301 | 300 | 1 | 275.1730 | 3.154 | .274 | 4.016 | 4.290 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 302 | 114 | 1 | 1.3810 | 49.954 | .345 | 5.291 | 5.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 304 | 300 | 1 | 1.2376 | 52.979 | .347 | 3.943 | 4.290 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 304 | 301 | 1 | 6.0265 | 11.045 | .074 | 3.943 | 4.016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 308 | 370 | 1 | .1551 | 96.741 | .145 | 4.337 | 4.483 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 310 | 308 | 1 | 556.2387 | 6.387 | 2.269 | 2.068 | 4.337 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 310 | 316 | 1 | .2577 | 121.308 | .379 | 2.068 | 2.447 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 310 | 368 | 1 | 3.1923 | 62.434 | 1.244 | 2.068 | 3.312 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 312 | 390 | 1 | .0488 | 54.910 | .015 | 4.309 | 4.322 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 314 | 304 | 1 | .2067 | 64.023 | .085 | 3.859 | 3.943 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 316 | 318 | 1 | 99.0800 | 12.766 | 1.615 | 2.447 | 4.062 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 316 | 320 | 1 | 77.3519 | 12.816 | 1.271 | 2.447 | 3.717 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 316 | 356 | 1 | .8249 | 95.726 | .756 | 2.447 | 3.203 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 318 | 312 | 1 | .9143 | 51.863 | .246 | 4.062 | 4.309 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 320 | 314 | 1 | .5384 | 51.220 | .141 | 3.717 | 3.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 322 | 318 | 1 | 1.9069 | 39.097 | .291 | 3.772 | 4.062 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 322 | 372 | 1 | 73.0063 | 5.422 | .215 | 3.772 | 3.986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 324 | 314 | 1 | 13.3150 | 12.803 | .218 | 3.640 | 3.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 324 | 320 | 1 | .5250 | 38.404 | .077 | 3.640 | 3.717 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 326 | 324 | 1 | .1342 | 51.207 | .035 | 3.605 | 3.640 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|--------|-------|-------|-------|------|-----|-------|-------|-------|-----|-----|
| 151 | 328 | 326 | 1 | .0916 | 39.224 | .014 | 3.591 | 3.605 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 152 | 330 | 326 | 1 | 4.3952 | 11.983 | .063 | 3.542 | 3.605 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 153 | 330 | 328 | 1 | .3797 | 35.947 | .049 | 3.542 | 3.591 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 154 | 332 | 330 | 1 | .0183 | 47.930 | .004 | 3.538 | 3.542 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 155 | 334 | 332 | 1 | .0540 | 24.073 | .003 | 3.535 | 3.538 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 156 | 336 | 334 | 1 | .1943 | 20.018 | .008 | 3.527 | 3.535 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 157 | 338 | 336 | 1 | 2.8751 | 8.458 | .021 | 3.506 | 3.527 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 158 | 338 | 339 | 1 | .4564 | 22.288 | .023 | 3.506 | 3.529 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 159 | 339 | 332 | 1 | .1554 | 23.857 | .009 | 3.529 | 3.538 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 160 | 340 | 336 | 1 | .6434 | 11.560 | .009 | 3.518 | 3.527 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 161 | 340 | 339 | 1 | 43.4561 | 1.569 | .011 | 3.518 | 3.529 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 162 | 342 | 334 | 1 | 125.5361 | 4.055 | .206 | 3.328 | 3.535 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 163 | 342 | 338 | 1 | 1.8851 | 30.746 | .178 | 3.328 | 3.506 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 164 | 342 | 350 | 1 | .3414 | 41.646 | .057 | 3.328 | 3.387 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 165 | 344 | 340 | 1 | 4.0910 | 13.129 | .071 | 3.448 | 3.518 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 166 | 344 | 346 | 1 | .7230 | 13.093 | .012 | 3.448 | 3.460 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 167 | 346 | 348 | 1 | .6952 | 17.012 | .020 | 3.460 | 3.480 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 168 | 347 | 346 | 1 | 19.3119 | 3.919 | .030 | 3.430 | 3.460 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 169 | 347 | 348 | 1 | 3.7555 | 11.505 | .050 | 3.430 | 3.480 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 170 | 348 | 352 | 1 | .2531 | 28.517 | .021 | 3.480 | 3.501 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 171 | 350 | 344 | 1 | .8769 | 26.222 | .060 | 3.387 | 3.448 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 172 | 350 | 347 | 1 | 1.8104 | 15.424 | .043 | 3.387 | 3.430 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 173 | 351 | 342 | 1 | .0952 | 76.447 | .056 | 3.273 | 3.328 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 174 | 351 | 352 | 1 | 13.9060 | 12.811 | .228 | 3.273 | 3.501 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 175 | 352 | 354 | 1 | .0813 | 41.328 | .014 | 3.501 | 3.515 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 176 | 354 | 358 | 1 | .1971 | 37.535 | .028 | 3.515 | 3.542 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 177 | 354 | 360 | 1 | 28.9679 | 3.793 | .042 | 3.515 | 3.556 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 178 | 356 | 328 | 1 | 361.5551 | 3.277 | .388 | 3.203 | 3.591 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 179 | 356 | 351 | 1 | .0876 | 89.258 | .070 | 3.203 | 3.273 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 180 | 356 | 358 | 1 | 333.7432 | 3.190 | .340 | 3.203 | 3.542 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 181 | 358 | 360 | 1 | .0839 | 40.725 | .014 | 3.542 | 3.556 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 182 | 360 | 380 | 1 | .4210 | 44.518 | .083 | 3.556 | 3.640 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 183 | 366 | 372 | 1 | 7.1138 | 26.990 | .518 | 3.468 | 3.986 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 184 | 366 | 390 | 1 | 6.8122 | 35.443 | .856 | 3.468 | 4.322 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 185 | 368 | 366 | 1 | .3958 | 62.434 | .154 | 3.312 | 3.468 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 186 | 370 | 302 | 1 | 5.8344 | 37.225 | .808 | 4.483 | 5.291 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 187 | 370 | 392 | 1 | .6146 | 59.516 | .218 | 4.483 | 4.702 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 188 | 372 | 312 | 1 | 347.6492 | 3.048 | .323 | 3.986 | 4.309 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 189 | 372 | 392 | 1 | 3804.1408 | 1.368 | .715 | 3.986 | 4.702 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 190 | 372 | 394 | 1 | 1.1194 | 27.997 | .088 | 3.986 | 4.074 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 191 | 374 | 106 | 1 | .4182 | 53.923 | .122 | 5.425 | 5.547 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 192 | 376 | 108 | 1 | 3.3679 | 48.154 | 1.940 | 4.934 | 6.874 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 193 | 376 | 302 | 1 | 22.0410 | 12.729 | .357 | 4.934 | 5.291 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 194 | 380 | 382 | 1 | .1677 | 44.518 | .033 | 3.640 | 3.674 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 195 | 382 | 322 | 1 | .4911 | 44.518 | .097 | 3.674 | 3.772 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 196 | 390 | 308 | 1 | .0178 | 90.354 | .015 | 4.322 | 4.337 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 197 | 392 | 376 | 1 | .6264 | 60.883 | .232 | 4.702 | 4.934 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 198 | 394 | 374 | 1 | 451.9439 | 5.472 | 1.353 | 4.074 | 5.425 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 199 | 394 | 396 | 1 | 8.1037 | 22.525 | .411 | 4.074 | 4.485 | | | 0.000 | 0.000 | 0.000 | .00 | |
| 200 | 396 | 374 | 1 | 4.0023 | 48.450 | .940 | 4.485 | 5.425 | | | 0.000 | 0.000 | 0.000 | .00 | |

| I | JA | JB | NPA | R | C | HL | HJA | HJB | AREA | VEL | NVF | HR | HF | AHF | FID |
|-----|-----|-----|-----|--------|---------|------|--------|--------|------|-----|-------|---------|-------|--------|-----|
| 201 | 400 | 1 | 1 | .0249 | 200.000 | .100 | 10.711 | 0.000 | | | 0.000 | -10.810 | 0.000 | 340.69 | |
| 202 | 162 | 400 | 1 | 3.7198 | 10.000 | .037 | .040 | 10.711 | | | 0.000 | 10.633 | 0.000 | 0.00 | |
| 203 | 1 | 162 | 1 | .0216 | 136.543 | .040 | 0.000 | .040 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 6

Computer Output for Increased Parallel Entries

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID. |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 1 | 100 | 1 | .2235 | 116.946 | .306 | 0.000 | .306 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 103 | 1 | .0552 | 189.744 | .199 | 0.000 | .199 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 190 | 1 | .0021 | 317.173 | .021 | 0.000 | .021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 100 | 105 | 1 | 1.2585 | 107.529 | 1.455 | .306 | 1.760 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 100 | 106 | 1 | 491.0457 | 9.417 | 4.354 | .306 | 4.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 102 | 1 | 1 | .0499 | 321.328 | .515 | 6.051 | 0.000 | | | 0.000 | 0.000 | 6.568 | 332.57 | FAN2 |
| 7 | 103 | 105 | 1 | .5695 | 165.560 | 1.561 | .199 | 1.760 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 103 | 396 | 1 | 64.5671 | 24.184 | 3.776 | .199 | 3.975 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 105 | 109 | 1 | .0436 | 273.089 | .325 | 1.760 | 2.085 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 106 | 102 | 1 | 5.0435 | 52.514 | 1.391 | 4.660 | 6.051 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 108 | 102 | 1 | .0773 | 268.814 | .558 | 5.493 | 6.051 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 109 | 110 | 1 | 271.5053 | 10.730 | 3.126 | 2.085 | 5.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 109 | 118 | 1 | .0395 | 262.359 | .272 | 2.085 | 2.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 110 | 108 | 1 | .0520 | 232.878 | .282 | 5.211 | 5.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 112 | 110 | 1 | .2958 | 113.024 | .378 | 4.833 | 5.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 114 | 110 | 1 | .2122 | 109.124 | .253 | 4.958 | 5.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 118 | 114 | 1 | 466.2149 | 7.470 | 2.601 | 2.357 | 4.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 118 | 124 | 1 | .2132 | 105.620 | .238 | 2.357 | 2.595 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 118 | 310 | 1 | .1296 | 149.270 | .289 | 2.357 | 2.646 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 120 | 114 | 1 | .7729 | 58.982 | .269 | 4.689 | 4.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 122 | 112 | 1 | .3364 | 111.614 | .419 | 4.416 | 4.833 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 124 | 122 | 1 | 189.5209 | 9.798 | 1.819 | 2.595 | 4.416 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 124 | 126 | 1 | 234.7414 | 8.748 | 1.796 | 2.595 | 4.393 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 124 | 134 | 1 | .3317 | 87.074 | .251 | 2.595 | 2.848 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 126 | 120 | 1 | 15.1154 | 13.988 | .296 | 4.393 | 4.689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 126 | 136 | 1 | 9.7776 | -5.240 | -.027 | 4.393 | 4.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 128 | 112 | 1 | 2129.3511 | 1.410 | .423 | 4.412 | 4.833 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 128 | 122 | 1 | .0042 | 101.816 | .004 | 4.412 | 4.416 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 130 | 128 | 1 | .0040 | 103.226 | .004 | 4.407 | 4.412 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 130 | 140 | 1 | 1592.2332 | 4.735 | 3.570 | 4.407 | 7.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 134 | 140 | 1 | 459.4097 | 10.566 | 5.129 | 2.848 | 7.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 148 | 130 | 1 | .1206 | 107.961 | .141 | 4.267 | 4.407 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 134 | 144 | 1 | .0446 | 194.343 | .168 | 2.848 | 3.016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 136 | 138 | 1 | .3121 | 1.514 | .000 | 4.368 | 4.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 138 | 178 | 1 | .1505 | 12.999 | .003 | 4.368 | 4.370 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 140 | 176 | 1 | .1119 | 69.994 | .055 | 7.977 | 8.032 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 142 | 140 | 1 | 11.5941 | 54.693 | 3.468 | 4.509 | 7.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 142 | 172 | 1 | 43.9863 | 27.922 | 3.429 | 4.509 | 7.924 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 144 | 145 | 1 | .0520 | 180.234 | .169 | 3.016 | 3.185 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 144 | 146 | 1 | 479.9210 | 4.877 | 1.141 | 3.016 | 4.158 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 144 | 148 | 1 | 146.6906 | 9.232 | 1.250 | 3.016 | 4.267 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 145 | 147 | 1 | 820.8344 | 2.971 | .725 | 3.185 | 3.910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 145 | 149 | 1 | 675.9864 | 3.165 | .677 | 3.185 | 3.863 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 145 | 166 | 1 | .0395 | 174.098 | .120 | 3.185 | 3.303 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 146 | 142 | 1 | .4967 | 82.615 | .339 | 4.158 | 4.509 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 147 | 152 | 1 | .0721 | 47.479 | .016 | 3.910 | 3.927 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 149 | 154 | 1 | .4376 | 68.052 | .203 | 3.863 | 4.065 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 150 | 146 | 1 | .3161 | 77.738 | .191 | 3.968 | 4.158 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 150 | 172 | 1 | 2787.2771 | 3.767 | 3.956 | 3.968 | 7.924 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 151 | 138 | 1 | 38.0676 | 11.485 | .502 | 3.864 | 4.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FTD |
|-----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 152 | 150 | 1 | .0614 | 81.505 | .041 | 3.927 | 3.968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 154 | 148 | 1 | .2067 | 98.729 | .201 | 4.065 | 4.267 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 158 | 160 | 1 | 1.0186 | 48.374 | .219 | 3.370 | 3.589 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 158 | 162 | 1 | .9291 | 39.018 | .141 | 3.370 | 3.512 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 160 | 167 | 1 | .2398 | 61.904 | .092 | 3.589 | 3.681 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 161 | 163 | 1 | 3.4765 | 29.285 | .298 | 3.479 | 3.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 161 | 164 | 1 | 4.5629 | 19.794 | .179 | 3.479 | 3.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 162 | 160 | 1 | 3.2331 | 15.530 | .078 | 3.512 | 3.589 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 162 | 164 | 1 | 2.6421 | 23.488 | .146 | 3.512 | 3.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 163 | 152 | 1 | 1.2767 | 34.026 | .148 | 3.779 | 3.927 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 164 | 168 | 1 | .2575 | 43.283 | .048 | 3.657 | 3.706 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 166 | 154 | 1 | 8.0959 | 30.677 | .762 | 3.303 | 4.065 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 166 | 158 | 1 | .0918 | 85.342 | .067 | 3.303 | 3.370 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 166 | 161 | 1 | .7301 | 49.077 | .176 | 3.303 | 3.479 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 166 | 167 | 1 | 424.9055 | 2.982 | .378 | 3.303 | 3.681 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 166 | 168 | 1 | 113.0034 | 5.967 | .402 | 3.303 | 3.706 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 167 | 149 | 1 | .4272 | 64.884 | .180 | 3.681 | 3.809 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 168 | 170 | 1 | .0999 | 49.250 | .024 | 3.706 | 3.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 170 | 147 | 1 | .9004 | 44.503 | .178 | 3.730 | 3.910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 170 | 163 | 1 | 20.8541 | 7.740 | .047 | 3.730 | 3.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 172 | 174 | 1 | 3.0584 | 31.689 | .305 | 7.924 | 8.229 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 174 | 184 | 1 | .0025 | 155.756 | .006 | 8.229 | 8.229 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 175 | 134 | 1 | .8341 | 117.836 | 1.158 | 1.549 | 2.144 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 175 | 177 | 1 | 158.7714 | 15.456 | .152 | 1.690 | 3.681 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 176 | 174 | 1 | .1276 | 29.776 | .193 | 3.030 | 3.209 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 177 | 176 | 1 | 8.0000 | 54.072 | .153 | 3.681 | 3.032 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 177 | 177 | 1 | 3.9730 | 10.116 | 1.311 | 3.370 | 3.681 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 180 | 178 | 1 | 23.7986 | 25.217 | 1.519 | 2.860 | 4.370 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 180 | 180 | 1 | 1.3216 | 74.319 | .072 | 2.860 | 2.932 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 182 | 175 | 1 | .3560 | 133.622 | .636 | 1.054 | 1.690 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 182 | 183 | 1 | 93.1767 | 14.199 | 1.879 | 1.054 | 2.932 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 182 | 204 | 1 | .1278 | 110.497 | .168 | 1.054 | 1.221 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 183 | 192 | 1 | .5440 | 37.513 | .077 | 2.932 | 3.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 184 | 183 | 1 | .0001 | 263.881 | .042 | 3.235 | 3.277 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 186 | 182 | 1 | .0684 | 64.387 | .071 | .583 | 1.054 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 186 | 197 | 1 | 12.3560 | 7.134 | .040 | .583 | 3.523 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 187 | 184 | 1 | 4.0774 | 108.125 | 4.711 | 3.523 | 3.235 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 189 | 1 | 1 | .0324 | 203.535 | .097 | 3.777 | 0.000 | | | 0.000 | 0.000 | 2.541 | 408.12 | FAN1 |
| 89 | 189 | 188 | 1 | 116.3659 | 18.845 | 4.128 | 4.149 | 3.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 190 | 186 | 1 | .0724 | 272.319 | .071 | .071 | .533 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 190 | 188 | 1 | 210.1974 | 19.319 | 0.154 | 0.021 | 3.277 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 190 | 189 | 1 | 113.4077 | 15.615 | 4.128 | .021 | 4.149 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 192 | 147 | 1 | .4077 | 7.794 | .514 | 3.009 | 3.523 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 200 | 151 | 1 | 2933.0000 | 1.960 | 1.126 | 2.736 | 3.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 202 | 192 | 1 | .1571 | 54.474 | .047 | 2.962 | 3.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 200 | 180 | 1 | .5244 | 48.536 | .124 | 2.736 | 2.360 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 204 | 206 | 1 | 75.8049 | 10.938 | .907 | 1.221 | 2.128 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 204 | 208 | 1 | 165.2116 | 8.685 | 1.744 | 1.221 | 2.467 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 204 | 222 | 1 | .1975 | 24.873 | .179 | 1.221 | 1.399 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 206 | 200 | 1 | 2.3823 | 50.496 | .607 | 2.128 | 2.736 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 208 | 202 | 1 | 2.6465 | 43.217 | .494 | 2.467 | 2.962 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 210 | 151 | 1 | 225.3288 | 9.525 | 2.044 | 1.819 | 3.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 210 | 206 | 1 | 1.9581 | 39.557 | .306 | 1.819 | 2.128 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 211 | 212 | 1 | 14.7751 | 11.700 | .202 | 1.524 | 1.726 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 211 | 224 | 1 | 3.2192 | 11.085 | .040 | 1.524 | 1.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 212 | 210 | 1 | .3883 | 49.082 | .094 | 1.726 | 1.819 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 214 | 202 | 1 | 64.8018 | 11.260 | .822 | 2.141 | 2.962 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 214 | 208 | 1 | 2.7395 | 34.531 | .327 | 2.141 | 2.467 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 216 | 214 | 1 | .8458 | 45.791 | .177 | 1.963 | 2.141 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 218 | 216 | 1 | 1.6270 | 37.944 | .234 | 1.730 | 1.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 220 | 218 | 1 | .8735 | 32.864 | .094 | 1.635 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 222 | 211 | 1 | 2.9672 | 20.504 | .125 | 1.399 | 1.524 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 222 | 232 | 1 | 1.0021 | 22.761 | .052 | 1.399 | 1.451 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 222 | 234 | 1 | .1144 | 51.608 | .030 | 1.399 | 1.429 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 224 | 212 | 1 | 1.1655 | 37.383 | .163 | 1.563 | 1.726 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 225 | 211 | 1 | 73.3018 | 2.280 | .038 | 1.485 | 1.524 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 225 | 226 | 1 | 1.8895 | 17.360 | .057 | 1.485 | 1.541 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 226 | 224 | 1 | .3198 | 26.298 | .022 | 1.541 | 1.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 228 | 220 | 1 | 4.8236 | 14.219 | .098 | 1.527 | 1.635 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 230 | 226 | 1 | 1.8278 | 8.938 | .015 | 1.527 | 1.541 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 230 | 228 | 1 | 0.0000 | 4.385 | 0.000 | 1.527 | 1.527 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 234 | 220 | 1 | 5.6893 | 18.645 | .198 | 1.429 | 1.635 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 234 | 230 | 1 | 5.4842 | 13.322 | .097 | 1.429 | 1.527 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 234 | 225 | 1 | 1.4566 | 19.641 | .056 | 1.429 | 1.485 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 232 | 228 | 1 | 7.8464 | 9.835 | .076 | 1.451 | 1.527 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 232 | 252 | 1 | 3.2618 | 12.927 | .055 | 1.451 | 1.505 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 252 | 216 | 1 | 74.3708 | 7.847 | .458 | 1.505 | 1.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 252 | 218 | 1 | 86.9123 | 5.080 | .224 | 1.505 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 300 | 120 | 1 | 3.1367 | 44.994 | .635 | 4.054 | 4.689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 301 | 136 | 1 | 105.7375 | 6.754 | .482 | 3.882 | 4.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 301 | 300 | 1 | 275.1730 | 2.499 | .172 | 3.882 | 4.054 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 302 | 114 | 1 | 1.3810 | 42.673 | .251 | 4.707 | 4.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 304 | 300 | 1 | 1.2376 | 42.495 | .223 | 3.831 | 4.054 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 304 | 301 | 1 | 6.0265 | 9.253 | .052 | 3.831 | 3.882 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 308 | 370 | 1 | .1551 | 77.452 | .093 | 4.051 | 4.139 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 310 | 308 | 1 | 556.2387 | 5.027 | 1.406 | 2.646 | 4.051 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 310 | 316 | 1 | .2577 | 95.880 | .237 | 2.646 | 2.882 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 310 | 368 | 1 | 3.1923 | 48.362 | .747 | 2.646 | 3.392 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 312 | 390 | 1 | .0488 | 43.848 | .009 | 4.028 | 4.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 314 | 304 | 1 | .2067 | 51.748 | .055 | 3.779 | 3.831 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 316 | 318 | 1 | 99.0800 | 10.026 | .996 | 2.882 | 3.878 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 316 | 320 | 1 | 77.3519 | 10.199 | .805 | 2.882 | 3.687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 316 | 356 | 1 | .8249 | 75.655 | .472 | 2.882 | 3.355 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 318 | 312 | 1 | .9143 | 41.064 | .154 | 3.878 | 4.028 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 320 | 314 | 1 | .5384 | 41.379 | .092 | 3.687 | 3.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 322 | 318 | 1 | 1.9069 | 31.039 | .184 | 3.690 | 3.878 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 322 | 372 | 1 | 73.0063 | 3.067 | .069 | 3.690 | 3.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 324 | 314 | 1 | 13.3150 | 10.369 | .143 | 3.636 | 3.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 324 | 320 | 1 | .5250 | 31.180 | .051 | 3.636 | 3.687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 326 | 324 | 1 | .1342 | 41.549 | .023 | 3.613 | 3.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|-----------|--------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 151 | 328 | 326 | 1 | .0916 | 31.819 | .009 | 3.604 | 3.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 330 | 326 | 1 | 4.3952 | 9.729 | .042 | 3.572 | 3.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 330 | 328 | 1 | .3797 | 29.193 | .032 | 3.572 | 3.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 332 | 330 | 1 | .0183 | 38.922 | .003 | 3.569 | 3.572 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 334 | 332 | 1 | .0540 | 19.653 | .002 | 3.567 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 336 | 334 | 1 | .1943 | 16.390 | .005 | 3.562 | 3.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 338 | 336 | 1 | 2.8751 | 6.774 | .013 | 3.548 | 3.562 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 338 | 339 | 1 | .4564 | 17.956 | .015 | 3.548 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 339 | 332 | 1 | .1554 | 19.269 | .006 | 3.563 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 340 | 336 | 1 | .6434 | 9.616 | .006 | 3.555 | 3.562 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 340 | 339 | 1 | 43.4561 | 1.313 | .007 | 3.555 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 342 | 334 | 1 | 125.5361 | 3.263 | .134 | 3.433 | 3.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 342 | 338 | 1 | 1.8851 | 24.730 | .115 | 3.433 | 3.548 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 342 | 350 | 1 | .3414 | 32.575 | .036 | 3.433 | 3.469 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 344 | 340 | 1 | 4.0910 | 10.929 | .049 | 3.507 | 3.555 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 344 | 346 | 1 | .7230 | 9.698 | .007 | 3.507 | 3.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 346 | 348 | 1 | .6952 | 12.771 | .011 | 3.513 | 3.525 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 347 | 346 | 1 | 19.3119 | 3.073 | .018 | 3.495 | 3.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 347 | 348 | 1 | 3.7555 | 8.874 | .030 | 3.495 | 3.525 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 348 | 352 | 1 | .2531 | 21.645 | .012 | 3.525 | 3.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 350 | 344 | 1 | .8769 | 20.628 | .037 | 3.469 | 3.507 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 350 | 347 | 1 | 1.8104 | 11.947 | .026 | 3.469 | 3.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 351 | 342 | 1 | .0952 | 60.568 | .035 | 3.398 | 3.433 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 351 | 352 | 1 | 13.9060 | 9.974 | .138 | 3.398 | 3.536 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 352 | 354 | 1 | .0813 | 31.619 | .008 | 3.536 | 3.545 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 354 | 358 | 1 | .1971 | 28.716 | .016 | 3.545 | 3.561 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 354 | 360 | 1 | 28.9679 | 2.903 | .024 | 3.545 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 356 | 328 | 1 | 361.5551 | 2.626 | .249 | 3.355 | 3.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 356 | 351 | 1 | .0876 | 70.542 | .044 | 3.355 | 3.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 356 | 358 | 1 | 333.7432 | 2.487 | .206 | 3.355 | 3.561 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 358 | 360 | 1 | .0839 | 31.203 | .008 | 3.561 | 3.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 360 | 380 | 1 | .4210 | 34.106 | .049 | 3.569 | 3.618 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 366 | 372 | 1 | 7.1138 | 19.787 | .279 | 3.480 | 3.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 366 | 390 | 1 | 6.8122 | 28.576 | .556 | 3.480 | 4.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 368 | 366 | 1 | .3958 | 48.362 | .093 | 3.392 | 3.480 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 370 | 302 | 1 | 5.8344 | 31.192 | .568 | 4.139 | 4.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 370 | 392 | 1 | .6146 | 46.259 | .132 | 4.139 | 4.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 188 | 372 | 312 | 1 | 347.6492 | 2.784 | .269 | 3.759 | 4.028 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 189 | 372 | 392 | 1 | 3824.1408 | 1.158 | .513 | 3.759 | 4.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 190 | 372 | 394 | 1 | 1.1194 | 18.912 | .040 | 3.759 | 3.799 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 191 | 374 | 106 | 1 | .4182 | 43.097 | .078 | 4.583 | 4.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 192 | 376 | 108 | 1 | 8.3679 | 35.937 | 1.081 | 4.412 | 5.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 193 | 376 | 302 | 1 | 22.0410 | 11.480 | .290 | 4.412 | 4.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 194 | 380 | 382 | 1 | .1677 | 34.106 | .020 | 3.618 | 3.633 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 195 | 382 | 322 | 1 | .4911 | 34.106 | .057 | 3.633 | 3.690 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 196 | 390 | 308 | 1 | .0178 | 72.424 | .009 | 4.042 | 4.051 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 197 | 392 | 376 | 1 | .6264 | 47.417 | .141 | 4.271 | 4.412 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 198 | 394 | 374 | 1 | 451.9439 | 4.152 | .779 | 3.799 | 4.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 199 | 394 | 396 | 1 | 8.1037 | 14.760 | .177 | 3.799 | 3.975 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 200 | 396 | 374 | 1 | 4.0023 | 38.944 | .607 | 3.975 | 4.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

APPENDIX D

Computer Outputs for Mine No. 4

PART 1

Base System Modeling

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 138.480 | 1.118 | 0.000 | 1.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 244.457 | 1.486 | 0.000 | 1.486 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 138.480 | .368 | 1.118 | 1.486 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 382.937 | .194 | 1.486 | 1.679 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .4345 | 204.693 | 1.821 | 1.679 | 3.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2450 | 160.524 | .631 | 1.679 | 2.310 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 17.721 | 6.491 | 1.679 | 8.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | .0123 | 71.485 | .006 | 2.310 | 2.317 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 70 | 1 | 1.5000 | 89.039 | 1.189 | 2.310 | 3.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 50 | 1 | .7015 | 33.134 | .077 | 2.317 | 2.394 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 60 | 1 | 1.2040 | 24.470 | .072 | 2.317 | 2.389 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 230 | 1 | 12.8000 | 13.881 | .247 | 2.317 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 55 | 215 | 1 | .2500 | 12.033 | .004 | 2.392 | 2.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 60 | 55 | 1 | .2200 | 12.033 | .003 | 2.389 | 2.392 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 65 | 1 | .2200 | 12.437 | .003 | 2.389 | 2.392 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 65 | 215 | 1 | .2200 | 12.437 | .003 | 2.392 | 2.396 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 50 | 210 | 1 | 0.0000 | 3.624 | 0.000 | 2.394 | 2.394 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 50 | 235 | 1 | .5900 | 29.510 | .051 | 2.394 | 2.445 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 215 | 220 | 1 | .3100 | 24.470 | .019 | 2.396 | 2.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 70 | 80 | 1 | .0718 | 272.755 | .534 | 3.500 | 4.034 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 70 | 310 | 1 | 99.0700 | 20.976 | 4.359 | 3.500 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 80 | 85 | 1 | .1469 | 74.848 | .082 | 4.034 | 4.116 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 80 | 300 | 1 | 173.5000 | 14.670 | 3.734 | 4.034 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 80 | 100 | 1 | .1168 | 183.238 | .392 | 4.034 | 4.426 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 85 | 86 | 1 | .0126 | 64.263 | .005 | 4.116 | 4.121 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 85 | 240 | 1 | 150.6000 | 10.584 | 1.687 | 4.116 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 86 | 90 | 1 | .1600 | 53.966 | .047 | 4.121 | 4.168 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 10.298 | .856 | 4.121 | 4.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 53.966 | .810 | 4.168 | 4.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 64.263 | .826 | 4.977 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1012 | 58.880 | .035 | 4.426 | 4.461 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 114.128 | .067 | 4.426 | 4.493 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 290 | 1 | 260.4000 | 10.230 | 2.725 | 4.426 | 7.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 8.9150 | 58.880 | 3.091 | 4.461 | 7.551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 150 | 1 | .0316 | 65.091 | .013 | 4.493 | 4.507 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | 1.6620 | 38.239 | .243 | 4.493 | 4.737 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | 10.798 | 2.490 | 4.493 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 13.710 | .005 | 4.737 | 4.742 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | 24.529 | 1.761 | 4.737 | 6.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 3.697 | .000 | 4.742 | 4.744 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | 10.013 | .586 | 4.742 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 156 | 140 | 1 | .1500 | 18.368 | .005 | 4.609 | 4.613 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 270 | 1 | 70.0900 | 18.368 | 2.365 | 4.613 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 160 | 1 | .5000 | 38.194 | .073 | 4.507 | 4.580 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 170 | 1 | .6400 | 26.898 | .046 | 4.507 | 4.553 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 1.0000 | 36.723 | .135 | 4.609 | 4.744 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 156 | 1 | .2500 | 33.194 | .028 | 4.580 | 4.609 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 260 | 1 | 959.0000 | 5.000 | 2.397 | 4.580 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 170 | 180 | 1 | .2516 | 26.898 | .018 | 4.553 | 4.571 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 156 | 1 | .7500 | 21.897 | .036 | 4.571 | 4.609 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 5.001 | 2.406 | 4.571 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 19.684 | .561 | 4.744 | 5.304 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 20.736 | .585 | 4.744 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 14.808 | .024 | 5.304 | 5.328 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 4.876 | 2.717 | 5.304 | 8.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 3.624 | .020 | 2.394 | 2.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 28.094 | .149 | 2.414 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 16.208 | .118 | 2.445 | 2.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 58.183 | 5.295 | 2.563 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 13.302 | 3.358 | 2.445 | 5.803 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 88.149 | 1.748 | 5.803 | 7.551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 147.029 | .216 | 7.551 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 10.001 | .001 | 6.977 | 6.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 28.369 | .006 | 6.977 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 45.557 | 1.171 | 5.328 | 6.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 70.086 | .485 | 6.499 | 6.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 109.253 | .167 | 6.984 | 7.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 51.782 | .617 | 7.151 | 7.768 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 67.700 | .830 | 7.151 | 7.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 213.481 | .091 | 7.768 | 7.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 292.641 | .086 | 7.859 | 7.944 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 134.279 | .036 | 7.944 | 7.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 158.361 | .226 | 7.944 | 8.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 176.082 | .279 | 8.170 | 8.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 201.979 | .041 | 7.980 | 8.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 206.855 | .428 | 8.021 | 8.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 382.937 | 1.544 | 8.449 | 0.000 | | | 0.000 | 0.000 | 9.994 | 603.04 | FN10 |

PART 2

Computer Output for Increased Blade Settings on
Half-Bladed Rotor

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | FID |
|----|-----|-----|-----|----------|---------|-------|-------|--------|------|-----|-------|-------|-------|------|
| 1 | 1 | 5 | 1 | .5828 | 155.919 | 1.417 | 0.000 | 1.417 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 2 | 1 | 10 | 1 | .2486 | 275.242 | 1.883 | 0.000 | 1.883 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 3 | 5 | 10 | 1 | .1919 | 155.919 | .467 | 1.417 | 1.883 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 4 | 10 | 20 | 1 | .0132 | 431.161 | .245 | 1.883 | 2.129 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 5 | 20 | 70 | 1 | .4345 | 230.469 | 2.308 | 2.129 | 4.437 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 6 | 20 | 30 | 1 | .2450 | 180.740 | .800 | 2.129 | 2.929 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 7 | 20 | 325 | 1 | 206.7000 | 19.952 | 8.229 | 2.129 | 10.357 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 8 | 30 | 40 | 1 | .0123 | 80.488 | .008 | 2.929 | 2.937 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 9 | 30 | 70 | 1 | 1.5000 | 100.252 | 1.508 | 2.929 | 4.437 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 10 | 40 | 50 | 1 | .7015 | 37.307 | .098 | 2.937 | 3.035 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 11 | 40 | 60 | 1 | 1.2040 | 27.552 | .091 | 2.937 | 3.028 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 12 | 40 | 230 | 1 | 12.8000 | 15.629 | .313 | 2.937 | 3.250 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 13 | 55 | 215 | 1 | .2500 | 13.549 | .005 | 3.032 | 3.037 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 14 | 60 | 55 | 1 | .2200 | 13.549 | .004 | 3.028 | 3.032 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 15 | 60 | 65 | 1 | .2200 | 14.004 | .004 | 3.028 | 3.033 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 16 | 65 | 215 | 1 | .2200 | 14.004 | .004 | 3.033 | 3.037 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 17 | 50 | 210 | 1 | 0.0000 | 4.081 | 0.000 | 3.035 | 3.035 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 18 | 50 | 235 | 1 | .5900 | 33.226 | .065 | 3.035 | 3.100 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 19 | 215 | 220 | 1 | .3100 | 27.552 | .024 | 3.037 | 3.061 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 20 | 70 | 80 | 1 | .0718 | 307.104 | .677 | 4.437 | 5.114 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 21 | 70 | 310 | 1 | 99.0700 | 23.617 | 5.526 | 4.437 | 9.963 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 22 | 80 | 85 | 1 | .1469 | 84.271 | .104 | 5.114 | 5.218 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 23 | 80 | 300 | 1 | 173.5000 | 16.517 | 4.733 | 5.114 | 9.847 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 24 | 80 | 100 | 1 | .1168 | 206.316 | .497 | 5.114 | 5.611 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 25 | 85 | 86 | 1 | .0126 | 72.354 | .007 | 5.218 | 5.225 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 26 | 85 | 240 | 1 | 150.6000 | 11.917 | 2.139 | 5.218 | 7.357 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 27 | 86 | 90 | 1 | .1600 | 60.759 | .059 | 5.225 | 5.284 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 28 | 86 | 95 | 1 | 80.7300 | 11.594 | 1.085 | 5.225 | 6.310 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 29 | 90 | 95 | 1 | 2.7800 | 60.759 | 1.026 | 5.284 | 6.310 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 30 | 95 | 240 | 1 | 2.0000 | 72.354 | 1.047 | 6.310 | 7.357 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 31 | 100 | 110 | 1 | .1012 | 66.296 | .044 | 5.611 | 5.655 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 32 | 100 | 120 | 1 | .0513 | 123.503 | .086 | 5.611 | 5.697 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 33 | 100 | 290 | 1 | 260.4000 | 11.518 | 3.454 | 5.611 | 9.065 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 34 | 110 | 250 | 1 | 8.9150 | 66.296 | 3.918 | 5.655 | 9.573 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 35 | 120 | 150 | 1 | .0316 | 73.290 | .017 | 5.697 | 5.713 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 36 | 120 | 125 | 1 | 1.6620 | 43.056 | .308 | 5.697 | 6.005 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 37 | 120 | 280 | 1 | 213.6000 | 12.157 | 3.157 | 5.697 | 8.853 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 38 | 125 | 126 | 1 | .2800 | 15.437 | .007 | 6.005 | 6.012 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 39 | 125 | 276 | 1 | 29.2700 | 27.618 | 2.233 | 6.005 | 8.238 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 40 | 126 | 190 | 1 | .2900 | 4.167 | .001 | 6.012 | 6.013 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 41 | 126 | 275 | 1 | 58.4500 | 11.271 | .742 | 6.012 | 6.754 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 42 | 156 | 140 | 1 | .1500 | 20.681 | .006 | 5.842 | 5.847 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 43 | 140 | 270 | 1 | 70.0900 | 20.681 | 2.998 | 5.847 | 8.845 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 44 | 150 | 160 | 1 | .5000 | 43.005 | .092 | 5.713 | 5.806 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 45 | 150 | 170 | 1 | .6400 | 30.286 | .059 | 5.713 | 5.772 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 46 | 156 | 190 | 1 | 1.0000 | 41.351 | .171 | 5.842 | 6.013 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 47 | 160 | 156 | 1 | .2500 | 37.376 | .035 | 5.806 | 5.842 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 48 | 160 | 260 | 1 | 959.0000 | 5.629 | 3.039 | 5.806 | 8.845 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 49 | 170 | 180 | 1 | .2516 | 30.286 | .023 | 5.772 | 5.795 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 50 | 180 | 156 | 1 | .7500 | 24.656 | .046 | 5.795 | 5.842 | | | 0.000 | 0.000 | 0.000 | 0.00 |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|--------|--------|------|-----|-------|-------|--------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 5.630 | 3.049 | 5.795 | 8.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 22.164 | .711 | 6.013 | 6.724 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 23.353 | .742 | 6.013 | 6.754 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 16.675 | .030 | 6.724 | 6.754 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 5.490 | 3.445 | 6.724 | 10.169 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 4.081 | .026 | 3.035 | 3.061 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 31.633 | .189 | 3.061 | 3.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 18.250 | .150 | 3.100 | 3.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 65.511 | 6.712 | 3.250 | 9.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 14.976 | 4.257 | 3.100 | 7.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 99.247 | 2.216 | 7.357 | 9.573 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 165.543 | .274 | 9.573 | 9.847 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 11.259 | .001 | 8.845 | 8.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 31.940 | .008 | 8.845 | 8.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 51.298 | 1.484 | 6.754 | 8.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 78.916 | .615 | 8.238 | 8.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 123.013 | .212 | 8.853 | 9.065 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 58.303 | .782 | 9.065 | 9.847 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 76.228 | 1.052 | 9.065 | 10.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 240.363 | .116 | 9.847 | 9.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 329.491 | .109 | 9.963 | 10.071 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 151.187 | .046 | 10.071 | 10.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 178.304 | .286 | 10.071 | 10.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 198.257 | .354 | 10.357 | 10.711 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 227.415 | .052 | 10.117 | 10.169 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 232.905 | .542 | 10.169 | 10.711 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 431.161 | 1.958 | 10.711 | 0.000 | | | 0.000 | 0.000 | 12.669 | 860.76 | FN11 |

860.76

PART 3

Computer Output for Full-Bladed Rotor
(Zero Degree Setting)

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 146.363 | 1.248 | 0.000 | 1.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 258.373 | 1.660 | 0.000 | 1.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 146.363 | .411 | 1.248 | 1.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 404.736 | .216 | 1.660 | 1.876 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .4345 | 216.345 | 2.034 | 1.876 | 3.909 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2450 | 169.662 | .705 | 1.876 | 2.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 18.730 | 7.251 | 1.876 | 9.127 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | .0123 | 75.554 | .007 | 2.581 | 2.588 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 70 | 1 | 1.5000 | 94.108 | 1.328 | 2.581 | 3.909 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 50 | 1 | .7015 | 35.021 | .086 | 2.588 | 2.674 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 60 | 1 | 1.2040 | 25.863 | .081 | 2.588 | 2.669 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 230 | 1 | 12.8000 | 14.671 | .276 | 2.588 | 2.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 55 | 215 | 1 | .2500 | 12.718 | .004 | 2.672 | 2.676 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 60 | 55 | 1 | .2200 | 12.718 | .004 | 2.669 | 2.672 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 65 | 1 | .2200 | 13.145 | .004 | 2.669 | 2.672 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 65 | 215 | 1 | .2200 | 13.145 | .004 | 2.672 | 2.676 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 50 | 210 | 1 | 0.0000 | 3.831 | 0.000 | 2.674 | 2.674 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 50 | 235 | 1 | .5900 | 31.190 | .057 | 2.674 | 2.731 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 215 | 220 | 1 | .3100 | 25.863 | .021 | 2.676 | 2.697 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 70 | 80 | 1 | .0718 | 288.282 | .597 | 3.909 | 4.506 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 70 | 310 | 1 | 99.0700 | 22.170 | 4.869 | 3.909 | 8.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 80 | 85 | 1 | .1469 | 79.108 | .092 | 4.506 | 4.598 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 80 | 300 | 1 | 173.5000 | 15.505 | 4.171 | 4.506 | 8.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 80 | 100 | 1 | .1168 | 193.669 | .438 | 4.506 | 4.944 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 85 | 86 | 1 | .0126 | 67.921 | .006 | 4.598 | 4.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 85 | 240 | 1 | 150.6000 | 11.187 | 1.885 | 4.598 | 6.483 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 86 | 90 | 1 | .1600 | 57.037 | .052 | 4.604 | 4.656 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 10.884 | .956 | 4.604 | 5.560 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 57.037 | .904 | 4.656 | 5.560 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 67.921 | .923 | 5.560 | 6.483 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1012 | 62.231 | .039 | 4.944 | 4.983 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 120.625 | .075 | 4.944 | 5.020 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 290 | 1 | 260.4000 | 10.812 | 3.044 | 4.944 | 7.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 8.9150 | 62.231 | 3.453 | 4.983 | 8.436 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 150 | 1 | .0316 | 68.797 | .015 | 5.020 | 5.035 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | 1.6620 | 40.416 | .271 | 5.020 | 5.291 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | 11.413 | 2.782 | 5.020 | 7.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 14.490 | .006 | 5.291 | 5.298 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | 25.926 | 1.967 | 5.291 | 7.260 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 3.907 | .000 | 5.298 | 5.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | 10.583 | .655 | 5.298 | 5.952 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 156 | 140 | 1 | .1500 | 19.414 | .006 | 5.148 | 5.153 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 270 | 1 | 70.0900 | 19.414 | 2.642 | 5.153 | 7.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 160 | 1 | 1.5000 | 40.368 | .081 | 5.035 | 5.116 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 170 | 1 | .6400 | 28.429 | .052 | 5.035 | 5.086 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 1.0000 | 38.813 | .151 | 5.148 | 5.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 156 | 1 | .2500 | 35.083 | .031 | 5.116 | 5.148 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 260 | 1 | 959.0000 | 5.234 | 2.678 | 5.116 | 7.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 170 | 180 | 1 | .2516 | 28.429 | .020 | 5.086 | 5.107 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 156 | 1 | .7500 | 23.144 | .040 | 5.107 | 5.148 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|--------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 5.285 | 2.687 | 5.107 | 7.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 20.805 | .626 | 5.299 | 5.925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 21.915 | .653 | 5.299 | 5.952 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 15.652 | .027 | 5.925 | 5.952 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 5.153 | 2.035 | 5.925 | 8.961 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 3.831 | .023 | 2.674 | 2.697 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 29.693 | .167 | 2.697 | 2.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 17.131 | .132 | 2.731 | 2.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 61.496 | 5.915 | 2.864 | 8.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 14.059 | 3.751 | 2.731 | 6.483 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 93.167 | 1.953 | 6.483 | 8.436 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 155.398 | .241 | 8.436 | 8.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 10.570 | .001 | 7.794 | 7.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 29.984 | .007 | 7.794 | 7.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 48.150 | 1.308 | 5.952 | 7.260 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 74.076 | .542 | 7.260 | 7.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 115.472 | .187 | 7.802 | 7.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 54.730 | .689 | 7.988 | 8.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 71.554 | .927 | 7.988 | 8.915 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 225.633 | .102 | 8.677 | 8.779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 309.299 | .096 | 8.779 | 8.875 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 141.923 | .040 | 8.875 | 8.915 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 167.376 | .252 | 8.875 | 9.127 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 186.106 | .312 | 9.127 | 9.439 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 213.477 | .046 | 8.915 | 8.961 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 218.630 | .478 | 8.961 | 9.439 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 404.736 | 1.725 | 9.439 | 0.000 | | | 0.000 | 0.000 | 11.164 | 712.00 | FN20 |

712.00

PART 4

Computer Output for Full-Bladed Rotor
(Plus Five Degrees Setting)

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|--------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 158.196 | 1.459 | 0.000 | 1.459 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 279.262 | 1.939 | 0.000 | 1.939 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 158.196 | .480 | 1.459 | 1.939 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 437.458 | .253 | 1.939 | 2.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .4345 | 233.835 | 2.376 | 2.191 | 4.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2450 | 183.379 | .824 | 2.191 | 3.015 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 20.244 | 8.471 | 2.191 | 10.662 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | .0123 | 81.663 | .008 | 3.015 | 3.023 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 70 | 1 | 1.5000 | 101.716 | 1.552 | 3.015 | 4.567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 50 | 1 | .7015 | 37.852 | .101 | 3.023 | 3.124 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 60 | 1 | 1.2040 | 27.954 | .094 | 3.023 | 3.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 230 | 1 | 12.8000 | 15.857 | .322 | 3.023 | 3.345 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 55 | 215 | 1 | .2500 | 13.746 | .005 | 3.122 | 3.126 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 60 | 55 | 1 | .2200 | 13.746 | .004 | 3.118 | 3.122 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 65 | 1 | .2200 | 14.208 | .004 | 3.118 | 3.122 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 65 | 215 | 1 | .2200 | 14.208 | .004 | 3.122 | 3.126 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 50 | 210 | 1 | 0.0000 | 4.140 | 0.000 | 3.124 | 3.124 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 50 | 235 | 1 | .5900 | 33.712 | .067 | 3.124 | 3.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 215 | 220 | 1 | .3100 | 27.954 | .024 | 3.126 | 3.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 70 | 80 | 1 | .0718 | 311.589 | .697 | 4.567 | 5.264 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 70 | 310 | 1 | 99.0700 | 23.962 | 5.689 | 4.567 | 10.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 80 | 85 | 1 | .1469 | 85.502 | .107 | 5.264 | 5.372 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 80 | 300 | 1 | 173.5000 | 16.758 | 4.873 | 5.264 | 10.137 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 80 | 100 | 1 | .1168 | 209.328 | .512 | 5.264 | 5.776 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 85 | 86 | 1 | .0126 | 73.411 | .007 | 5.372 | 5.378 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 85 | 240 | 1 | 150.6000 | 12.091 | 2.202 | 5.372 | 7.573 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 86 | 90 | 1 | .1600 | 61.648 | .061 | 5.378 | 5.439 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 11.764 | 1.117 | 5.378 | 6.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 61.648 | 1.057 | 5.439 | 6.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 73.411 | 1.078 | 6.495 | 7.573 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1012 | 67.263 | .046 | 5.776 | 5.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 130.379 | .088 | 5.776 | 5.864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 290 | 1 | 260.4000 | 11.686 | 3.556 | 5.776 | 9.332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 8.9150 | 67.263 | 4.033 | 5.821 | 9.855 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 150 | 1 | .0316 | 74.360 | .017 | 5.864 | 5.882 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | 1.6620 | 43.684 | .317 | 5.864 | 6.181 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | 12.335 | 3.250 | 5.864 | 9.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 15.663 | .007 | 6.181 | 6.189 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | 28.022 | 2.298 | 6.181 | 8.481 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 4.226 | .001 | 6.189 | 6.190 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | 11.437 | .764 | 6.189 | 6.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 156 | 140 | 1 | .1500 | 20.983 | .007 | 6.014 | 6.019 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 270 | 1 | 70.0900 | 20.983 | 3.086 | 6.019 | 9.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 160 | 1 | .5000 | 43.632 | .095 | 5.882 | 5.977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 170 | 1 | .6400 | 30.728 | .060 | 5.882 | 5.942 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 1.0000 | 41.953 | .176 | 6.014 | 6.190 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 156 | 1 | .2500 | 37.921 | .036 | 5.977 | 6.014 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 260 | 1 | 959.0000 | 5.711 | 3.128 | 5.977 | 9.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 170 | 180 | 1 | .2516 | 30.728 | .024 | 5.942 | 5.966 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 156 | 1 | .7500 | 25.015 | .047 | 5.966 | 6.014 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|--------|--------|------|-----|-------|-------|--------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 5.713 | 3.139 | 5.966 | 9.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 22.488 | .732 | 6.190 | 6.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 23.691 | .763 | 6.190 | 6.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 16.918 | .031 | 6.922 | 6.953 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 5.570 | 3.546 | 6.922 | 10.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 4.140 | .027 | 3.124 | 3.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 32.094 | .195 | 3.151 | 3.345 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 18.516 | .154 | 3.191 | 3.345 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 66.468 | 6.910 | 3.345 | 10.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 15.195 | 4.382 | 3.191 | 7.573 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 100.698 | 2.282 | 7.573 | 9.855 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 167.961 | .282 | 9.855 | 10.137 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 11.424 | .001 | 9.105 | 9.105 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 32.407 | .008 | 9.105 | 9.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 52.046 | 1.528 | 6.953 | 8.481 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 80.067 | .633 | 8.481 | 9.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 124.809 | .218 | 9.114 | 9.332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 59.155 | .805 | 9.332 | 10.137 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 77.340 | 1.083 | 9.332 | 10.415 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 243.874 | .119 | 10.137 | 10.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 334.304 | .112 | 10.256 | 10.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 153.396 | .047 | 10.368 | 10.415 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 180.908 | .295 | 10.368 | 10.662 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 201.152 | .364 | 10.662 | 11.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 230.736 | .053 | 10.415 | 10.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 236.306 | .558 | 10.468 | 11.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 437.458 | 2.015 | 11.026 | 0.000 | | | 0.000 | 0.000 | 13.042 | 899.03 | FN21 |

PART 5

Computer Output for Full-Bladed Rotor
(Plus Ten Degree Setting)

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|--------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 168.770 | 1.660 | 0.000 | 1.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 297.929 | 2.207 | 0.000 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 168.770 | .547 | 1.660 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 466.699 | .288 | 2.207 | 2.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .4345 | 249.465 | 2.704 | 2.494 | 5.198 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2450 | 195.637 | .938 | 2.494 | 3.432 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 21.597 | 9.641 | 2.494 | 12.135 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | .0123 | 87.122 | .009 | 3.432 | 3.441 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 70 | 1 | 1.5000 | 108.515 | 1.766 | 3.432 | 5.198 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 50 | 1 | .7015 | 40.382 | .114 | 3.441 | 3.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 60 | 1 | 1.2040 | 29.823 | .107 | 3.441 | 3.548 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 230 | 1 | 12.8000 | 16.917 | .366 | 3.441 | 3.807 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 55 | 215 | 1 | .2500 | 14.665 | .005 | 3.553 | 3.558 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 60 | 55 | 1 | .2200 | 14.665 | .005 | 3.548 | 3.553 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 65 | 1 | .2200 | 15.158 | .005 | 3.548 | 3.553 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 65 | 215 | 1 | .2200 | 15.158 | .005 | 3.553 | 3.558 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 50 | 210 | 1 | 0.0000 | 4.417 | 0.000 | 3.556 | 3.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 50 | 235 | 1 | .5900 | 35.965 | .076 | 3.556 | 3.632 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 215 | 220 | 1 | .3100 | 29.823 | .028 | 3.558 | 3.586 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 70 | 80 | 1 | .0718 | 332.416 | .793 | 5.198 | 5.992 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 70 | 310 | 1 | 99.0700 | 25.564 | 6.474 | 5.198 | 11.673 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 80 | 85 | 1 | .1469 | 91.216 | .122 | 5.992 | 6.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 80 | 300 | 1 | 173.5000 | 17.878 | 5.546 | 5.992 | 11.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 80 | 100 | 1 | .1168 | 223.322 | .583 | 5.992 | 6.574 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 85 | 86 | 1 | .0126 | 78.317 | .008 | 6.114 | 6.121 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 85 | 240 | 1 | 150.6000 | 12.899 | 2.506 | 6.114 | 8.619 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 86 | 90 | 1 | .1600 | 65.767 | .069 | 6.121 | 6.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 12.550 | 1.271 | 6.121 | 7.393 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 65.767 | 1.202 | 6.191 | 7.393 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 78.317 | 1.227 | 7.393 | 8.619 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1012 | 71.759 | .052 | 6.574 | 6.625 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 139.096 | .100 | 6.574 | 6.674 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 290 | 1 | 260.4000 | 12.467 | 4.047 | 6.574 | 10.621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 8.9150 | 71.759 | 4.591 | 6.625 | 11.216 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 150 | 1 | .0316 | 79.332 | .020 | 6.674 | 6.694 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | 1.6620 | 46.605 | .361 | 6.674 | 7.035 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | 13.159 | 3.699 | 6.674 | 10.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 16.710 | .008 | 7.035 | 7.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | 29.895 | 2.616 | 7.035 | 9.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 4.512 | .001 | 7.044 | 7.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | 12.199 | .870 | 7.044 | 7.913 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 156 | 140 | 1 | .1500 | 22.385 | .008 | 6.844 | 6.851 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 270 | 1 | 70.0900 | 22.385 | 3.512 | 6.851 | 10.363 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 160 | 1 | .5000 | 46.549 | .103 | 6.694 | 6.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 170 | 1 | .6400 | 32.782 | .069 | 6.694 | 6.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 1.0000 | 44.760 | .200 | 6.844 | 7.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 156 | 1 | .2500 | 40.457 | .041 | 6.802 | 6.844 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 260 | 1 | 959.0000 | 6.093 | 3.560 | 6.802 | 10.363 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 170 | 180 | 1 | .2516 | 32.782 | .027 | 6.763 | 6.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 156 | 1 | .7500 | 26.688 | .053 | 6.790 | 6.844 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|--------|--------|------|-----|-------|-------|--------|---------|------|
| 51 | 190 | 260 | 1 | 962.0000 | 6.094 | 3.573 | 6.790 | 10.363 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 23.992 | .833 | 7.044 | 7.878 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 25.279 | .869 | 7.044 | 7.913 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 18.050 | .036 | 7.878 | 7.913 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 5.942 | 4.036 | 7.878 | 11.914 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 4.417 | .030 | 3.556 | 3.586 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 34.240 | .222 | 3.586 | 3.807 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 19.754 | .176 | 3.632 | 3.807 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 70.911 | 7.864 | 3.807 | 11.673 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 16.211 | 4.988 | 3.632 | 8.619 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 107.427 | 2.597 | 8.619 | 11.216 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 179.186 | .321 | 11.216 | 11.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 12.187 | .001 | 10.363 | 10.363 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 34.572 | .010 | 10.363 | 10.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 55.528 | 1.739 | 7.913 | 9.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9375 | 85.423 | .721 | 9.652 | 10.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 133.154 | .248 | 10.373 | 10.621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 63.109 | .916 | 10.621 | 11.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 82.511 | 1.232 | 10.621 | 11.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 260.174 | .135 | 11.537 | 11.673 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 356.649 | .127 | 11.673 | 11.890 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 163.648 | .054 | 11.800 | 11.853 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 193.001 | .335 | 11.800 | 12.135 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 214.597 | .414 | 12.135 | 12.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 246.159 | .061 | 11.853 | 11.914 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 252.102 | .636 | 11.914 | 12.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 466.699 | 2.294 | 12.550 | 0.000 | | | 0.000 | 0.000 | 14.344 | 1091.62 | EN12 |

PART 6

Computer Output for Reducing Leakage

| I | JA | JII | NPA | R | C | HL | HJA | HJE | AREA | VEL | NVP | HR | HF | AHF | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 128.533 | .963 | 0.000 | .963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 226.899 | 1.280 | 0.000 | 1.280 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 5 | 10 | 1 | .1919 | 128.533 | .317 | .963 | 1.280 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 10 | 20 | 1 | .0132 | 355.432 | .167 | 1.280 | 1.447 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 20 | 70 | 1 | .4345 | 189.484 | 1.560 | 1.447 | 3.007 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 20 | 30 | 1 | .2450 | 154.848 | .587 | 1.447 | 2.034 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 325 | 1 | 206.7000 | 11.100 | 2.547 | 1.447 | 8.429 | | | 0.000 | 4.435 | 0.000 | 0.00 | |
| 8 | 30 | 40 | 1 | .0123 | 74.324 | .007 | 2.034 | 2.041 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 30 | 70 | 1 | 1.5000 | 80.524 | .973 | 2.034 | 3.007 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 40 | 50 | 1 | .7015 | 40.760 | .117 | 2.041 | 2.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 40 | 60 | 1 | 1.2040 | 31.044 | .116 | 2.041 | 2.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 230 | 1 | 12.8000 | 2.520 | .008 | 2.041 | 2.445 | | | 0.000 | .396 | 0.000 | 0.00 | |
| 13 | 55 | 215 | 1 | .2500 | 15.267 | .006 | 2.162 | 2.168 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 60 | 55 | 1 | .2200 | 15.267 | .005 | 2.157 | 2.162 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 60 | 65 | 1 | .2200 | 15.778 | .005 | 2.157 | 2.162 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 65 | 215 | 1 | .2200 | 15.778 | .005 | 2.162 | 2.168 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 50 | 210 | 1 | 0.0000 | 5.090 | 0.000 | 2.157 | 2.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 50 | 235 | 1 | .5900 | 35.670 | .075 | 2.157 | 2.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 215 | 220 | 1 | .3100 | 31.044 | .030 | 2.168 | 2.198 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 70 | 80 | 1 | .0718 | 253.608 | .462 | 3.007 | 3.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 70 | 310 | 1 | 99.0700 | 16.400 | 2.665 | 3.007 | 8.143 | | | 0.000 | 2.471 | 0.000 | 0.00 | |
| 22 | 80 | 85 | 1 | .1469 | 77.303 | .088 | 3.468 | 3.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 80 | 300 | 1 | 173.5000 | 8.420 | 1.230 | 3.468 | 8.057 | | | 0.000 | 3.359 | 0.000 | 0.00 | |
| 24 | 80 | 100 | 1 | .4168 | 167.885 | .329 | 3.468 | 3.798 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 85 | 86 | 1 | .0126 | 71.103 | .006 | 3.556 | 3.563 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 85 | 240 | 1 | 150.6000 | 6.200 | .579 | 3.556 | 5.933 | | | 0.000 | 1.798 | 0.000 | 0.00 | |
| 27 | 86 | 90 | 1 | .1600 | 68.003 | .074 | 3.563 | 3.637 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 86 | 95 | 1 | 80.7300 | 3.100 | .078 | 3.563 | 4.922 | | | 0.000 | 1.282 | 0.000 | 0.00 | |
| 29 | 90 | 95 | 1 | 2.7800 | 68.003 | 1.286 | 3.637 | 4.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 95 | 240 | 1 | 2.0000 | 71.103 | 1.011 | 4.922 | 5.933 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 100 | 110 | 1 | .1012 | 66.688 | .045 | 3.798 | 3.843 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 120 | 1 | .0518 | 97.777 | .050 | 3.798 | 3.847 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 290 | 1 | 260.4000 | 3.420 | .305 | 3.798 | 7.689 | | | 0.000 | 3.586 | 0.000 | 0.00 | |
| 34 | 110 | 250 | 1 | 8.9150 | 66.688 | 3.965 | 3.843 | 7.807 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 120 | 150 | 1 | .0316 | 66.343 | .014 | 3.847 | 3.861 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 125 | 1 | 1.6620 | 31.283 | .163 | 3.847 | 4.010 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 280 | 1 | 213.6000 | .151 | .000 | 3.847 | 7.568 | | | 0.000 | 3.720 | 0.000 | 0.00 | |
| 38 | 125 | 126 | 1 | .2800 | 30.579 | .026 | 4.010 | 4.036 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 276 | 1 | 29.2700 | .704 | .001 | 4.010 | 7.240 | | | 0.000 | 3.229 | 0.000 | 0.00 | |
| 40 | 126 | 190 | 1 | .2900 | 29.875 | .026 | 4.036 | 4.062 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 275 | 1 | 58.4500 | .704 | .003 | 4.036 | 5.413 | | | 0.000 | 1.374 | 0.000 | 0.00 | |
| 42 | 156 | 140 | 1 | .1500 | 22.625 | .008 | 3.963 | 3.971 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 140 | 270 | 1 | 70.0900 | 22.625 | 3.588 | 3.971 | 7.558 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 150 | 160 | 1 | .5000 | 38.803 | .075 | 3.861 | 3.936 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 170 | 1 | .6400 | 27.540 | .049 | 3.861 | 3.910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 156 | 190 | 1 | 1.0000 | 31.432 | .099 | 3.963 | 4.062 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 160 | 156 | 1 | .2500 | 32.658 | .027 | 3.936 | 3.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 260 | 1 | 959.0000 | 6.145 | 3.621 | 3.936 | 7.557 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 170 | 180 | 1 | .2516 | 27.540 | .019 | 3.910 | 3.929 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 180 | 156 | 1 | .7500 | 21.399 | .034 | 3.929 | 3.963 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 180 | 260 | 1 | 962.0000 | 6.142 | 3.629 | 3.929 | 7.557 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 190 | 200 | 1 | 14.4700 | 29.789 | 1.284 | 4.062 | 5.346 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 275 | 1 | 13.6000 | 31.518 | 1.351 | 4.062 | 5.413 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 200 | 275 | 1 | 1.0900 | 24.711 | .067 | 5.346 | 5.413 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 340 | 1 | 1143.0000 | 5.078 | 2.947 | 5.346 | 8.293 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 210 | 220 | 1 | 15.5600 | 5.090 | .040 | 2.157 | 2.198 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 220 | 230 | 1 | 1.8900 | 36.134 | .247 | 2.198 | 2.445 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 235 | 230 | 1 | 4.5000 | 21.706 | .212 | 2.232 | 2.445 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 230 | 310 | 1 | 15.6400 | 60.360 | 5.698 | 2.445 | 8.143 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 240 | 1 | 189.8000 | 13.964 | 3.701 | 2.232 | 5.933 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 240 | 250 | 1 | 2.2500 | 91.267 | 1.874 | 5.933 | 7.807 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 250 | 300 | 1 | .1000 | 157.955 | .249 | 7.807 | 8.057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 260 | 270 | 1 | .0600 | 12.286 | .001 | 7.557 | 7.558 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 270 | 280 | 1 | .0800 | 34.911 | .010 | 7.558 | 7.568 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 275 | 276 | 1 | 5.6400 | 56.933 | 1.828 | 5.413 | 7.240 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 276 | 280 | 1 | .9875 | 57.637 | .328 | 7.240 | 7.568 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 280 | 290 | 1 | .1400 | 92.699 | .120 | 7.568 | 7.689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 290 | 300 | 1 | 2.3000 | 40.048 | .369 | 7.689 | 8.057 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 330 | 1 | 1.8100 | 56.071 | .569 | 7.689 | 8.258 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 300 | 310 | 1 | .0200 | 206.423 | .085 | 8.057 | 8.143 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 310 | 320 | 1 | .0100 | 283.183 | .080 | 8.143 | 8.223 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 320 | 330 | 1 | .0200 | 131.947 | .035 | 8.223 | 8.258 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 325 | 1 | .0900 | 151.236 | .206 | 8.223 | 8.429 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 325 | 350 | 1 | .0900 | 162.336 | .237 | 8.429 | 8.666 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 330 | 340 | 1 | .0100 | 188.018 | .035 | 8.258 | 8.293 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 340 | 350 | 1 | .1000 | 193.096 | .373 | 8.293 | 8.666 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 350 | 1 | 1 | .1053 | 355.432 | 1.330 | 8.666 | 0.000 | | | 0.000 | 0.000 | 9.995 | 559.81 | FN10 |

PART 7

Computer Output for Opening Vent Drifts in 2-East

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 105.603 | .650 | 0.000 | .650 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 186.422 | .864 | 0.000 | .864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 65 | 1 | .0379 | 112.086 | .048 | 0.000 | .048 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 90 | 95 | 1 | 2.7800 | 56.468 | .886 | 3.499 | 4.385 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 5 | 10 | 1 | .1919 | 105.603 | .214 | .650 | .864 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 10 | 20 | 1 | .0132 | 292.025 | .113 | .864 | .977 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 20 | 70 | 1 | .4345 | 202.867 | 1.798 | .977 | 2.764 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 20 | 30 | 1 | .2450 | 70.828 | .123 | .977 | 1.099 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 20 | 325 | 1 | 206.7000 | 18.330 | 6.945 | .977 | 7.920 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 30 | 40 | 1 | .0123 | -34.537 | -.001 | 1.099 | 1.098 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 30 | 70 | 1 | 1.5000 | 105.365 | 1.665 | 1.099 | 2.764 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 40 | 50 | 1 | .7015 | 34.623 | .084 | 1.098 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 40 | 60 | 1 | 1.2040 | -83.887 | -.847 | 1.098 | .251 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 40 | 230 | 1 | 12.8000 | 14.726 | .273 | 1.098 | 1.376 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 55 | 215 | 1 | 56.2500 | 12.196 | .837 | .333 | 1.169 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 60 | 55 | 1 | 5.5210 | 12.196 | .082 | .251 | .333 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 60 | 65 | 1 | .2200 | -96.092 | -.203 | .251 | .048 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 65 | 215 | 1 | 43.8000 | 16.004 | 1.122 | .048 | 1.169 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 50 | 210 | 1 | 0.0000 | 2.783 | 0.000 | 1.182 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 50 | 235 | 1 | .5900 | 31.840 | .060 | 1.182 | 1.242 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 215 | 220 | 1 | .3100 | 28.200 | .025 | 1.169 | 1.194 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 70 | 80 | 1 | .0718 | 286.202 | .588 | 2.764 | 3.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 70 | 310 | 1 | 99.0700 | 22.031 | 4.808 | 2.764 | 7.572 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 80 | 85 | 1 | .1469 | 78.318 | .090 | 3.352 | 3.442 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 80 | 300 | 1 | 173.5000 | 15.409 | 4.120 | 3.352 | 7.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 80 | 100 | 1 | .1168 | 192.474 | .433 | 3.352 | 3.785 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 85 | 86 | 1 | .0126 | 67.243 | .006 | 3.442 | 3.448 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 85 | 240 | 1 | 150.6000 | 11.075 | 1.847 | 3.442 | 5.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 86 | 90 | 1 | .1600 | 56.468 | .051 | 3.448 | 3.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 86 | 95 | 1 | 80.7300 | 10.775 | .937 | 3.448 | 4.385 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 95 | 240 | 1 | 2.0000 | 67.243 | .904 | 4.385 | 5.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 100 | 110 | 1 | .1012 | 61.835 | .039 | 3.785 | 3.823 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 120 | 1 | .0518 | 119.893 | .074 | 3.785 | 3.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 100 | 290 | 1 | 260.4000 | 10.747 | 3.003 | 3.785 | 6.792 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 110 | 250 | 1 | 8.9150 | 61.835 | 3.409 | 3.823 | 7.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 120 | 150 | 1 | .0316 | 68.379 | .015 | 3.859 | 3.874 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 125 | 1 | 1.6620 | 40.170 | .268 | 3.859 | 4.127 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 120 | 280 | 1 | 213.6000 | 11.344 | 2.749 | 3.859 | 6.607 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 125 | 126 | 1 | .2800 | 14.402 | .006 | 4.127 | 4.134 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 125 | 276 | 1 | 29.2700 | 25.768 | 1.944 | 4.127 | 6.072 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 126 | 190 | 1 | .2900 | 3.822 | .000 | 4.134 | 4.135 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 126 | 275 | 1 | 58.4500 | 10.520 | .647 | 4.134 | 4.780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 156 | 140 | 1 | .1500 | 19.296 | .006 | 3.986 | 3.991 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 140 | 270 | 1 | 70.0900 | 19.296 | 2.610 | 3.991 | 6.600 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 150 | 160 | 1 | .5000 | 40.122 | .080 | 3.874 | 3.954 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 150 | 170 | 1 | .6400 | 28.256 | .051 | 3.874 | 3.925 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 156 | 190 | 1 | 1.0000 | 38.576 | .147 | 3.986 | 4.135 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 160 | 156 | 1 | .2500 | 34.870 | .030 | 3.954 | 3.986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 160 | 260 | 1 | 959.0000 | 5.252 | 2.646 | 3.954 | 6.600 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 170 | 180 | 1 | .2516 | 28.256 | .020 | 3.925 | 3.945 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 180 | 156 | 1 | .7500 | 23.003 | .040 | 3.945 | 3.986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 180 | 260 | 1 | 962.0000 | 5.254 | 2.655 | 3.945 | 6.600 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 190 | 200 | 1 | 14.4700 | 20.678 | .619 | 4.135 | 4.754 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 190 | 275 | 1 | 13.6000 | 21.781 | .645 | 4.135 | 4.780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 200 | 275 | 1 | 1.0900 | 15.555 | .026 | 4.754 | 4.780 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 200 | 340 | 1 | 1143.0000 | 5.123 | 3.000 | 4.754 | 7.754 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 210 | 220 | 1 | 15.5600 | 2.783 | .012 | 1.182 | 1.194 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 220 | 230 | 1 | 1.8900 | 30.983 | .181 | 1.194 | 1.376 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 235 | 230 | 1 | 4.5000 | 17.235 | .134 | 1.242 | 1.376 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 230 | 310 | 1 | 15.6400 | 62.944 | 6.197 | 1.376 | 7.572 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 235 | 240 | 1 | 189.8000 | 14.605 | 4.048 | 1.242 | 5.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 240 | 250 | 1 | 2.2500 | 92.923 | 1.943 | 5.289 | 7.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 250 | 300 | 1 | .1000 | 154.758 | .240 | 7.232 | 7.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 260 | 270 | 1 | .0600 | 10.506 | .001 | 6.600 | 6.600 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 270 | 280 | 1 | .0800 | 29.302 | .007 | 6.600 | 6.607 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 275 | 276 | 1 | 5.6400 | 47.856 | 1.292 | 4.780 | 6.072 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 276 | 280 | 1 | .9875 | 73.624 | .535 | 6.072 | 6.607 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 280 | 290 | 1 | .1400 | 114.770 | .184 | 6.607 | 6.792 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 290 | 300 | 1 | 2.3000 | 54.356 | .680 | 6.792 | 7.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 290 | 330 | 1 | 1.8100 | 71.160 | .917 | 6.792 | 7.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 300 | 310 | 1 | .0200 | 224.523 | .101 | 7.471 | 7.572 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 310 | 320 | 1 | .0100 | 309.498 | .096 | 7.572 | 7.668 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 320 | 330 | 1 | .0200 | 142.089 | .040 | 7.668 | 7.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 320 | 325 | 1 | .0900 | 167.409 | .252 | 7.668 | 7.920 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 325 | 350 | 1 | .0900 | 185.739 | .310 | 7.920 | 8.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 330 | 340 | 1 | .0100 | 213.249 | .045 | 7.708 | 7.754 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 340 | 350 | 1 | .1000 | 218.372 | .477 | 7.754 | 8.231 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 350 | 1 | 1 | .1053 | 404.111 | 1.720 | 8.231 | 0.000 | | | 0.000 | 0.000 | 9.952 | 633.69 | FN10 |

PART 8

Computer Output for Opening Vent Drifts in 3-East

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|----------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 91.820 | .491 | 0.000 | .491 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 162.088 | .653 | 0.000 | .653 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 91 | 95 | 1 | .0285 | 10.000 | .000 | .682 | 5.800 | | | 0.000 | 5.117 | 0.000 | 0.00 | |
| 4 | 1 | 91 | 1 | .2504 | 165.048 | .682 | 0.000 | .682 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 91 | 90 | 1 | .0759 | 155.048 | .182 | .682 | .865 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 5 | 10 | 1 | .1919 | 91.820 | .162 | .491 | .653 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 10 | 20 | 1 | .0132 | 253.909 | .085 | .653 | .738 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 20 | 70 | 1 | .4345 | 116.986 | .595 | .738 | 1.333 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 20 | 30 | 1 | .2450 | 118.543 | .344 | .738 | 1.083 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 325 | 1 | 206.7000 | 18.380 | 6.983 | .738 | 7.721 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 30 | 40 | 1 | .0123 | 77.689 | .007 | 1.083 | 1.090 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 30 | 70 | 1 | 1.5000 | 40.854 | .250 | 1.083 | 1.333 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 40 | 50 | 1 | .7015 | 36.382 | .093 | 1.090 | 1.183 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 40 | 60 | 1 | 1.2040 | 26.408 | .084 | 1.090 | 1.174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 40 | 230 | 1 | 12.8000 | 14.899 | .284 | 1.090 | 1.374 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 55 | 215 | 1 | .2500 | 12.986 | .004 | 1.178 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 60 | 55 | 1 | .2200 | 12.986 | .004 | 1.174 | 1.178 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 60 | 65 | 1 | .2200 | 13.422 | .004 | 1.174 | 1.178 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 65 | 215 | 1 | .2200 | 13.422 | .004 | 1.178 | 1.182 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 50 | 210 | 1 | 0.0000 | 3.642 | 0.000 | 1.183 | 1.183 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 50 | 235 | 1 | .5900 | 32.740 | .063 | 1.183 | 1.246 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 215 | 220 | 1 | .3100 | 26.408 | .022 | 1.182 | 1.203 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 70 | 80 | 1 | .0718 | 133.192 | .127 | 1.333 | 1.460 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 70 | 310 | 1 | 99.0700 | 24.648 | 6.019 | 1.333 | 7.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 80 | 85 | 1 | .1469 | -113.534 | -.189 | 1.460 | 1.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 80 | 300 | 1 | 173.5000 | 18.268 | 5.790 | 1.460 | 7.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 80 | 100 | 1 | .1168 | 228.458 | .610 | 1.460 | 2.070 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 85 | 86 | 1 | .0126 | -131.306 | -.022 | 1.271 | 1.249 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 85 | 240 | 1 | 150.6000 | 17.772 | 4.757 | 1.271 | 6.027 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 86 | 90 | 1 | .1600 | -155.048 | -.385 | 1.249 | .865 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 86 | 95 | 1 | 80.7300 | 23.741 | 4.550 | 1.249 | 5.800 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 95 | 240 | 1 | 2.0000 | 33.741 | .228 | 5.800 | 6.027 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 100 | 110 | 1 | .1012 | 74.321 | .056 | 2.070 | 2.125 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 100 | 120 | 1 | .0518 | 141.455 | .104 | 2.070 | 2.174 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 100 | 290 | 1 | 260.4000 | 12.682 | 4.188 | 2.070 | 6.257 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 110 | 250 | 1 | 8.9150 | 74.321 | 4.924 | 2.125 | 7.049 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 120 | 150 | 1 | .0316 | 80.677 | .021 | 2.174 | 2.194 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 120 | 125 | 1 | 1.6620 | 47.391 | .373 | 2.174 | 2.547 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 120 | 280 | 1 | 213.6000 | 13.386 | 3.828 | 2.174 | 6.000 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 125 | 126 | 1 | .2800 | 16.984 | .008 | 2.547 | 2.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 125 | 276 | 1 | 29.2700 | 30.407 | 2.706 | 2.547 | 5.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 126 | 190 | 1 | .2900 | 4.579 | .001 | 2.556 | 2.557 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 126 | 275 | 1 | 58.4500 | 12.405 | .899 | 2.556 | 3.456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 156 | 140 | 1 | .1500 | 22.770 | .003 | 2.350 | 2.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 140 | 270 | 1 | 70.0900 | 22.770 | 3.634 | 2.357 | 5.991 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 150 | 160 | 1 | .5000 | 47.339 | .112 | 2.194 | 2.306 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 150 | 170 | 1 | .6400 | 33.339 | .071 | 2.194 | 2.265 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 156 | 190 | 1 | 1.0000 | 45.509 | .207 | 2.350 | 2.557 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 160 | 156 | 1 | .2500 | 41.141 | .042 | 2.306 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 160 | 260 | 1 | 959.0000 | 6.198 | 3.684 | 2.306 | 5.991 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 170 | 180 | 1 | .2516 | 33.339 | .028 | 2.265 | 2.293 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 180 | 156 | 1 | .7500 | 27.139 | .055 | 2.293 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 180 | 260 | 1 | 962.0000 | 6.200 | 3.698 | 2.293 | 5.991 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 190 | 200 | 1 | 14.4700 | 24.388 | .861 | 2.557 | 3.419 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 190 | 275 | 1 | 13.6000 | 25.700 | .898 | 2.557 | 3.456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 200 | 275 | 1 | 1.0900 | 18.386 | .037 | 3.419 | 3.456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 200 | 340 | 1 | 1143.0000 | 6.003 | 4.118 | 3.419 | 7.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 210 | 220 | 1 | 15.5600 | 3.642 | .021 | 1.183 | 1.203 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 220 | 230 | 1 | 1.8900 | 30.049 | .171 | 1.203 | 1.374 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 235 | 230 | 1 | 4.5000 | 16.868 | .128 | 1.246 | 1.374 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 230 | 310 | 1 | 15.6400 | 61.817 | 5.976 | 1.374 | 7.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 235 | 240 | 1 | 189.8000 | 15.872 | 4.782 | 1.246 | 6.027 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 240 | 250 | 1 | 2.2500 | 67.386 | 1.022 | 6.027 | 7.049 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 250 | 300 | 1 | .1000 | 141.707 | .201 | 7.049 | 7.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 260 | 270 | 1 | .0600 | 12.398 | .001 | 5.991 | 5.991 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 270 | 280 | 1 | .0800 | 35.168 | .010 | 5.991 | 6.000 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 275 | 276 | 1 | 5.6400 | 56.491 | 1.800 | 3.456 | 5.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 276 | 280 | 1 | .9875 | 86.898 | .746 | 5.255 | 6.000 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 280 | 290 | 1 | .1400 | 135.452 | .257 | 6.000 | 6.257 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 290 | 300 | 1 | 2.3000 | 65.691 | .993 | 6.257 | 7.250 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 290 | 330 | 1 | 1.8100 | 82.443 | 1.230 | 6.257 | 7.488 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 300 | 310 | 1 | .0200 | 225.666 | .102 | 7.250 | 7.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 310 | 320 | 1 | .0100 | 312.131 | .097 | 7.352 | 7.449 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 320 | 330 | 1 | .0200 | 138.575 | .038 | 7.449 | 7.488 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 320 | 325 | 1 | .0900 | 173.556 | .271 | 7.449 | 7.721 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 325 | 350 | 1 | .0900 | 191.935 | .332 | 7.721 | 8.052 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 330 | 340 | 1 | .0100 | 221.019 | .049 | 7.488 | 7.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 340 | 350 | 1 | .1000 | 227.021 | .515 | 7.537 | 8.052 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 350 | 1 | 1 | .1053 | 418.956 | 1.848 | 8.052 | 0.000 | | | 0.000 | 0.000 | 9.901 | 653.61 | FN10 |

PART 9

Computer Output for Opening Vent Drifts in
2-East and 3-East

| I | JA | JB | NPA | R | D | HL | HJA | HJB | AREA | VEL | NVP | HK | HF | AHF | FID |
|----|-----|-----|-----|----------|----------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 1 | 1 | 5 | 1 | .5828 | 69.924 | .285 | 0.000 | .285 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 2 | 1 | 10 | 1 | .2486 | 123.436 | .379 | 0.000 | .379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 65 | 1 | .0379 | 82.162 | .026 | 0.000 | .026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 91 | 95 | 1 | .0285 | 10.000 | .000 | .567 | 5.644 | | | 0.000 | 5.077 | 0.000 | 0.00 | |
| 5 | 1 | 91 | 1 | .2504 | 150.436 | .567 | 0.000 | .567 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 91 | 90 | 1 | .0759 | 140.436 | .150 | .567 | .716 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 5 | 10 | 1 | .1919 | 69.924 | .094 | .285 | .379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 10 | 20 | 1 | .0132 | 193.360 | .049 | .379 | .428 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 20 | 70 | 1 | .4345 | 117.462 | .599 | .428 | 1.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 30 | 1 | .2450 | 57.249 | .080 | .428 | .508 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 20 | 325 | 1 | 206.7000 | 18.650 | 7.189 | .428 | 7.616 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 30 | 40 | 1 | .0123 | -1.584 | -.000 | .508 | .508 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 30 | 70 | 1 | 1.5000 | 58.833 | .519 | .508 | 1.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 40 | 50 | 1 | .7015 | 38.489 | .104 | .508 | .612 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 40 | 60 | 1 | 1.2040 | -55.695 | -.373 | .508 | .135 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 40 | 230 | 1 | 12.8000 | 15.622 | .312 | .508 | .621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 55 | 215 | 1 | 16.5600 | 14.819 | .364 | .256 | .620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 60 | 55 | 1 | 5.5210 | 14.819 | .121 | .135 | .256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 60 | 65 | 1 | .2200 | -70.514 | -.109 | .135 | .026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 65 | 215 | 1 | 43.8000 | 11.648 | .594 | .026 | .620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 50 | 210 | 1 | 0.0000 | 4.332 | 0.000 | .612 | .612 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 50 | 235 | 1 | .5900 | 34.157 | .069 | .612 | .681 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 215 | 220 | 1 | .3100 | 26.467 | .022 | .620 | .642 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 70 | 80 | 1 | .0718 | 151.263 | .164 | 1.026 | 1.191 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 70 | 310 | 1 | 99.0700 | 25.032 | 6.208 | 1.026 | 7.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 80 | 85 | 1 | .1469 | -98.635 | -.143 | 1.191 | 1.048 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 80 | 300 | 1 | 173.5000 | 18.502 | 5.939 | 1.191 | 7.130 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 80 | 100 | 1 | .1168 | 231.396 | .625 | 1.191 | 1.816 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 85 | 86 | 1 | .0126 | -116.534 | -.017 | 1.048 | 1.032 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 85 | 240 | 1 | 150.6000 | 17.899 | 4.825 | 1.048 | 5.873 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 86 | 90 | 1 | .1600 | -140.436 | -.316 | 1.032 | .716 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 86 | 95 | 1 | 80.7300 | 23.901 | 4.612 | 1.032 | 5.644 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 95 | 240 | 1 | 2.0000 | 33.901 | .230 | 5.644 | 5.873 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 100 | 110 | 1 | .1012 | 75.272 | .057 | 1.816 | 1.872 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 100 | 120 | 1 | .0518 | 143.278 | .106 | 1.816 | 1.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 100 | 290 | 1 | 260.4000 | 12.846 | 4.297 | 1.816 | 6.112 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 110 | 250 | 1 | 8.9150 | 75.272 | 5.051 | 1.872 | 6.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 120 | 150 | 1 | .0316 | 81.717 | .021 | 1.922 | 1.943 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 120 | 125 | 1 | 1.6620 | 48.002 | .383 | 1.922 | 2.305 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 120 | 280 | 1 | 213.6000 | 13.559 | 3.927 | 1.922 | 5.849 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 125 | 126 | 1 | .2800 | 17.203 | .008 | 2.305 | 2.314 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 125 | 276 | 1 | 29.2700 | 30.799 | 2.777 | 2.305 | 5.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 126 | 190 | 1 | .2900 | 4.637 | .001 | 2.314 | 2.316 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 126 | 275 | 1 | 58.4500 | 12.566 | .923 | 2.314 | 3.237 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 156 | 140 | 1 | .1500 | 23.064 | .008 | 2.103 | 2.110 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 140 | 270 | 1 | 70.0900 | 23.064 | 3.728 | 2.110 | 5.839 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 150 | 160 | 1 | .5000 | 47.949 | .115 | 1.943 | 2.058 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 150 | 170 | 1 | .6400 | 33.768 | .073 | 1.943 | 2.016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 156 | 190 | 1 | 1.0000 | 46.095 | .212 | 2.103 | 2.316 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 160 | 156 | 1 | .2500 | 41.670 | .043 | 2.058 | 2.103 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | C | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|-----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 51 | 160 | 260 | 1 | 959.0000 | 6.278 | 3.780 | 2.058 | 5.839 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 170 | 180 | 1 | .2516 | 33.768 | .029 | 2.016 | 2.045 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 180 | 156 | 1 | .7500 | 27.489 | .057 | 2.045 | 2.103 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 180 | 260 | 1 | 962.0000 | 6.280 | 3.794 | 2.045 | 5.839 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 190 | 200 | 1 | 14.4700 | 24.703 | .883 | 2.316 | 3.199 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 190 | 275 | 1 | 13.6000 | 26.030 | .921 | 2.316 | 3.237 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 200 | 275 | 1 | 1.0900 | 18.622 | .038 | 3.199 | 3.237 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 200 | 340 | 1 | 1143.0000 | 6.081 | 4.226 | 3.199 | 7.426 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 210 | 220 | 1 | 15.5600 | 4.332 | .029 | .612 | .642 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 220 | 230 | 1 | 1.8900 | 30.799 | .179 | .642 | .621 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 235 | 230 | 1 | 4.5000 | 17.616 | .140 | .681 | .821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 230 | 310 | 1 | 15.6400 | 64.036 | 6.413 | .821 | 7.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 235 | 240 | 1 | 189.8000 | 16.541 | 5.193 | .681 | 5.873 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 240 | 250 | 1 | 2.2500 | 68.342 | 1.051 | 5.873 | 6.923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 250 | 300 | 1 | .1000 | 143.614 | .206 | 6.923 | 7.130 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 260 | 270 | 1 | .0600 | 12.558 | .001 | 5.839 | 5.839 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 270 | 280 | 1 | .0800 | 35.622 | .010 | 5.839 | 5.849 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 275 | 276 | 1 | 5.6400 | 57.217 | 1.846 | 3.237 | 5.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 276 | 280 | 1 | .9875 | 88.016 | .765 | 5.084 | 5.849 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 280 | 290 | 1 | .1400 | 137.197 | .264 | 5.849 | 6.112 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 290 | 300 | 1 | 2.3000 | 66.513 | 1.018 | 6.112 | 7.130 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 290 | 330 | 1 | 1.8100 | 83.530 | 1.263 | 6.112 | 7.375 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 300 | 310 | 1 | .0200 | 228.629 | .105 | 7.130 | 7.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 310 | 320 | 1 | .0100 | 317.698 | .101 | 7.234 | 7.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 320 | 330 | 1 | .0200 | 141.199 | .040 | 7.335 | 7.375 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 320 | 325 | 1 | .0900 | 176.499 | .280 | 7.335 | 7.616 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 325 | 350 | 1 | .0900 | 195.148 | .343 | 7.616 | 7.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 330 | 340 | 1 | .0100 | 224.729 | .051 | 7.375 | 7.426 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 340 | 350 | 1 | .1000 | 230.810 | .533 | 7.426 | 7.958 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 350 | 1 | 1 | .1053 | 425.958 | 1.911 | 7.958 | 0.000 | | | 0.000 | 0.000 | 9.871 | 662.52 | FN10 |

APPENDIX E

Computer Outputs for Mine No. 5

PART 1

Base System Modeling

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 535.289 | .966 | 5.244 | 0.000 | | | 0.000 | 0.000 | 6.209 | 523.71 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 244.537 | .522 | 0.000 | .522 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 548.448 | .827 | 0.000 | .827 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 15.027 | 4.417 | .827 | 5.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 244.076 | .074 | .827 | .902 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 289.346 | .199 | .827 | 1.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 177.504 | .043 | .902 | .945 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 66.571 | .125 | .902 | 1.026 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 122.839 | 3.392 | 1.852 | 5.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 11.413 | .195 | 1.657 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 5.248 | .711 | .945 | 1.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 152.425 | .016 | .945 | .960 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 19.831 | .575 | .945 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 54.665 | .522 | 1.520 | 2.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 6.165 | .226 | 1.430 | 1.657 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 34.834 | .091 | 1.430 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 27.059 | .088 | .960 | 1.048 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 11.232 | .613 | .960 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 114.133 | .010 | .960 | .971 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 111.426 | .277 | 1.575 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 49.059 | .525 | 1.048 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 69.897 | .009 | .971 | .980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 33.320 | .063 | .971 | 1.034 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 10.917 | .579 | .971 | 1.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 51.135 | .024 | 1.550 | 1.575 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 22.000 | .015 | 1.034 | 1.048 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 11.320 | .509 | 1.034 | 1.542 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 40.218 | .008 | 1.542 | 1.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 10.179 | .552 | .980 | 1.532 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | 7.896 | .168 | .980 | 1.148 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 51.822 | .006 | .980 | .986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 28.898 | .011 | 1.532 | 1.542 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 40.999 | .281 | 1.148 | 1.430 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 31.782 | .009 | .986 | .995 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 33.103 | .125 | 1.023 | 1.148 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 12.218 | .037 | .986 | 1.023 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 20.884 | .028 | .995 | 1.023 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 10.898 | .074 | .995 | 1.069 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 10.898 | .005 | 1.069 | 1.074 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 7.821 | .088 | .986 | 1.074 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 18.719 | .037 | 1.495 | 1.532 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 18.719 | .420 | 1.074 | 1.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 339.874 | .039 | 1.026 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | 16.043 | 1.015 | 1.026 | 2.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 3.1060 | 70.708 | 1.553 | 2.042 | 3.596 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 397.423 | 1.256 | 3.988 | 5.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 237.524 | .104 | 3.884 | 3.988 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 20.070 | 2.819 | 1.066 | 3.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 319.803 | .135 | 1.066 | 1.201 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 241.318 | .129 | 1.201 | 1.330 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NFA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AMP |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|
| 51 | 100 | 106 | 1 | .0110 | 78.485 | .007 | 1.201 | 1.208 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 52 | 102 | 68 | 1 | .0609 | 217.454 | .288 | 3.596 | 3.884 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 53 | 104 | 108 | 1 | .4167 | 24.114 | .024 | 1.330 | 1.354 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 54 | 104 | 110 | 1 | .0362 | 217.204 | .171 | 1.330 | 1.501 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 55 | 106 | 108 | 1 | 2.3200 | 25.149 | .147 | 1.208 | 1.354 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 56 | 106 | 200 | 1 | .0066 | 53.336 | .002 | 1.208 | 1.210 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 57 | 108 | 110 | 1 | .6039 | 49.264 | .147 | 1.354 | 1.501 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 58 | 110 | 116 | 1 | .0109 | 221.318 | .053 | 1.501 | 1.554 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 59 | 110 | 114 | 1 | 26.8300 | 25.039 | 1.682 | 1.501 | 3.183 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 60 | 110 | 112 | 1 | 27.4200 | 20.111 | 1.109 | 1.501 | 2.610 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 61 | 112 | 202 | 1 | .5420 | 112.721 | .689 | 2.610 | 3.299 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 62 | 114 | 102 | 1 | .1918 | 146.746 | .413 | 3.183 | 3.596 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 63 | 116 | 118 | 1 | 158.9000 | 8.992 | 1.285 | 1.554 | 2.639 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 64 | 116 | 120 | 1 | 111.5000 | 9.056 | .914 | 1.554 | 2.469 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 65 | 116 | 122 | 1 | .0245 | 203.271 | .101 | 1.554 | 1.656 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 66 | 118 | 196 | 1 | .1240 | 113.846 | .161 | 2.839 | 3.000 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 67 | 120 | 112 | 1 | .1648 | 92.611 | .141 | 2.469 | 2.610 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 68 | 122 | 128 | 1 | .0218 | 185.274 | .075 | 1.656 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 69 | 122 | 124 | 1 | 101.7000 | 8.930 | .811 | 1.656 | 2.467 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 70 | 122 | 126 | 1 | 83.9500 | 9.067 | .690 | 1.656 | 2.345 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 71 | 124 | 118 | 1 | .3388 | 104.854 | .372 | 2.467 | 2.839 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 72 | 126 | 192 | 1 | .0709 | 80.563 | .046 | 2.345 | 2.391 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 73 | 128 | 138 | 1 | .0047 | 167.079 | .013 | 1.730 | 1.743 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 74 | 128 | 130 | 1 | 82.7200 | 9.116 | .687 | 1.730 | 2.418 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 75 | 128 | 136 | 1 | 65.4300 | 9.078 | .539 | 1.730 | 2.269 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 76 | 130 | 134 | 1 | .0405 | 88.586 | .032 | 2.418 | 2.450 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 77 | 132 | 124 | 1 | .0040 | 95.924 | .004 | 2.463 | 2.467 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 78 | 132 | 196 | 1 | 86.8700 | 7.861 | .537 | 2.463 | 3.000 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 79 | 134 | 132 | 1 | .0124 | 103.785 | .013 | 2.450 | 2.463 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 80 | 136 | 126 | 1 | .1487 | 71.497 | .076 | 2.269 | 2.345 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 81 | 138 | 144 | 1 | 351.2000 | 4.046 | .575 | 1.743 | 2.319 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 82 | 138 | 148 | 1 | .0005 | 136.714 | .001 | 1.743 | 1.744 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 83 | 138 | 176 | 1 | .8728 | 26.319 | .060 | 1.743 | 1.804 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 84 | 140 | 136 | 1 | .0560 | 62.419 | .022 | 2.248 | 2.269 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 85 | 140 | 192 | 1 | 14.4000 | 9.992 | .144 | 2.248 | 2.391 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 86 | 142 | 140 | 1 | .0057 | 72.411 | .003 | 2.245 | 2.248 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 87 | 144 | 130 | 1 | .1570 | 79.469 | .099 | 2.319 | 2.418 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 88 | 146 | 144 | 1 | .0234 | 75.423 | .013 | 2.304 | 2.319 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 89 | 148 | 152 | 1 | .0040 | 101.143 | .004 | 1.744 | 1.749 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 90 | 148 | 150 | 1 | 286.9000 | 4.038 | .468 | 1.744 | 2.212 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 91 | 148 | 182 | 1 | .3320 | 31.534 | .033 | 1.744 | 1.778 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 92 | 150 | 142 | 1 | .0819 | 63.116 | .033 | 2.212 | 2.245 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 93 | 152 | 180 | 1 | .8778 | 30.358 | .081 | 1.749 | 1.829 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 94 | 152 | 158 | 1 | .0022 | 68.250 | .001 | 1.749 | 1.750 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 95 | 152 | 154 | 1 | 673.6000 | 2.534 | .433 | 1.749 | 2.180 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 96 | 154 | 146 | 1 | .3536 | 59.220 | .124 | 2.180 | 2.304 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 97 | 156 | 154 | 1 | .0414 | 56.686 | .013 | 2.165 | 2.180 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 98 | 158 | 164 | 1 | .0308 | 36.457 | .004 | 1.750 | 1.754 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 99 | 158 | 162 | 1 | 228.8000 | 2.524 | .146 | 1.750 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 100 | 158 | 172 | 1 | .1665 | 29.270 | .014 | 1.750 | 1.764 | | | 0.000 | 0.000 | 0.000 | 0.00 |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|
| 101 | 160 | 150 | 1 | .2980 | 59.078 | .104 | 2.108 | 2.212 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 102 | 162 | 160 | 1 | 1.5680 | 36.840 | .213 | 1.895 | 2.108 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 103 | 164 | 170 | 1 | .1035 | 26.331 | .007 | 1.754 | 1.761 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 104 | 164 | 174 | 1 | .5000 | 10.126 | .005 | 1.754 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 105 | 166 | 156 | 1 | .0400 | 31.411 | .004 | 2.164 | 2.165 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 106 | 168 | 166 | 1 | 6.1400 | 18.232 | .204 | 1.960 | 2.164 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 107 | 170 | 166 | 1 | 23.1900 | 13.178 | .403 | 1.761 | 2.164 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 108 | 170 | 168 | 1 | 11.4200 | 13.152 | .198 | 1.761 | 1.960 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 109 | 172 | 162 | 1 | 1.5340 | 29.270 | .131 | 1.764 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 110 | 174 | 162 | 1 | 53.6000 | 5.046 | .136 | 1.759 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 111 | 174 | 168 | 1 | 78.0000 | 5.080 | .201 | 1.759 | 1.960 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 112 | 176 | 178 | 1 | 3.3890 | 11.120 | .042 | 1.804 | 1.846 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 113 | 176 | 134 | 1 | 27.9500 | 15.199 | .646 | 1.804 | 2.450 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 114 | 178 | 146 | 1 | 17.4600 | 16.204 | .458 | 1.846 | 2.304 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 115 | 180 | 178 | 1 | 6.4000 | 5.083 | .017 | 1.829 | 1.846 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 116 | 180 | 156 | 1 | 5.2640 | 25.275 | .336 | 1.829 | 2.165 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 117 | 182 | 160 | 1 | 6.6730 | 22.239 | .330 | 1.778 | 2.108 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 118 | 182 | 184 | 1 | .1000 | 9.295 | .001 | 1.778 | 1.778 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 119 | 184 | 186 | 1 | 126.7000 | 4.112 | .214 | 1.778 | 1.992 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 120 | 184 | 190 | 1 | 137.6000 | 5.183 | .370 | 1.778 | 2.148 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 121 | 186 | 190 | 1 | 92.0000 | 4.112 | .156 | 1.992 | 2.148 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 122 | 190 | 142 | 1 | 11.2000 | 9.295 | .097 | 2.148 | 2.245 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 123 | 192 | 194 | 1 | .0073 | 90.555 | .006 | 2.391 | 2.397 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 124 | 194 | 120 | 1 | .1018 | 83.555 | .071 | 2.397 | 2.469 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 125 | 194 | 210 | 1 | 142.0000 | 7.001 | .696 | 2.397 | 3.093 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 126 | 196 | 114 | 1 | .1239 | 121.707 | .184 | 3.000 | 3.183 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 127 | 200 | 202 | 1 | 828.4000 | 5.022 | 2.089 | 1.210 | 3.299 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 128 | 200 | 208 | 1 | .0080 | 48.314 | .002 | 1.210 | 1.211 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 129 | 202 | 64 | 1 | .4976 | 117.743 | .690 | 3.299 | 3.988 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 130 | 204 | 64 | 1 | .7029 | 42.155 | .125 | 3.864 | 3.988 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 131 | 206 | 204 | 1 | 5.2540 | 27.093 | .386 | 3.478 | 3.864 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 132 | 208 | 206 | 1 | 899.6000 | 5.019 | 2.266 | 1.211 | 3.478 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 133 | 208 | 214 | 1 | .0889 | 43.295 | .017 | 1.211 | 1.228 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 134 | 210 | 206 | 1 | 7.8920 | 22.074 | .385 | 3.093 | 3.478 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 135 | 212 | 204 | 1 | 5.4670 | 15.062 | .124 | 3.740 | 3.864 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 136 | 214 | 218 | 1 | .0889 | 15.062 | .002 | 1.228 | 1.230 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 137 | 214 | 216 | 1 | .1333 | 28.233 | .011 | 1.228 | 1.238 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 138 | 216 | 210 | 1 | 81.6400 | 15.073 | 1.855 | 1.238 | 3.093 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 139 | 216 | 230 | 1 | 1.0220 | 13.159 | .018 | 1.238 | 1.256 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 140 | 218 | 220 | 1 | 26.6700 | 15.062 | .605 | 1.230 | 1.835 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 141 | 220 | 221 | 1 | 196.7000 | 8.033 | 1.269 | 1.835 | 3.104 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 142 | 220 | 212 | 1 | 385.5000 | 7.029 | 1.904 | 1.835 | 3.740 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 143 | 221 | 212 | 1 | 98.4400 | 8.033 | .635 | 3.104 | 3.740 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 144 | 222 | 224 | 1 | 22.7600 | 22.266 | 1.128 | .665 | 1.794 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 145 | 224 | 228 | 1 | .4158 | 22.266 | .021 | 1.794 | 1.814 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 146 | 226 | 222 | 1 | .0378 | 22.266 | .002 | .663 | .665 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 147 | 226 | 228 | 1 | 122.8000 | 9.681 | 1.151 | .663 | 1.814 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 148 | 226 | 232 | 1 | 64.0000 | 9.778 | .612 | .663 | 1.275 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 149 | 226 | 234 | 1 | .3877 | 68.480 | .182 | .663 | .845 | | | 0.000 | 0.000 | 0.000 | 0.00 |
| 150 | 228 | 238 | 1 | .1560 | 31.947 | .016 | 1.814 | 1.830 | | | 0.000 | 0.000 | 0.000 | 0.00 |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 230 | 232 | 1 | .0840 | 47.423 | .019 | 1.256 | 1.275 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 232 | 236 | 1 | .2936 | 91.417 | .245 | 1.275 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 234 | 230 | 1 | 3.5020 | 34.263 | .411 | .845 | 1.256 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 234 | 232 | 1 | 3.6730 | 34.217 | .430 | .845 | 1.275 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 236 | 240 | 1 | .4839 | 110.490 | .591 | 1.520 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 238 | 240 | 1 | 2.7550 | 31.947 | .281 | 1.830 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 240 | 246 | 1 | .1178 | 142.437 | .239 | 2.111 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 242 | 246 | 1 | 194.6000 | 9.693 | 1.828 | .522 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 242 | 244 | 1 | .0201 | 234.844 | .111 | .522 | .633 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 244 | 226 | 1 | .0250 | 110.205 | .030 | .633 | .663 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 244 | 248 | 1 | .0376 | 124.639 | .058 | .633 | .691 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 246 | 1 | 1 | .0620 | 257.696 | .412 | 2.350 | 0.000 | | | 0.000 | 0.000 | 2.762 | 112.15 | FNWS |
| 163 | 248 | 256 | 1 | .1002 | 75.383 | .057 | .691 | .748 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 260 | 1 | .4640 | 39.485 | .072 | .691 | .764 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 258 | 269 | 1 | .9180 | 36.385 | .122 | .786 | .907 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 269 | 268 | 1 | 3.0850 | 20.845 | .134 | .907 | 1.041 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 269 | 272 | 1 | .2000 | 15.540 | .005 | .907 | .912 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 248 | 252 | 1 | 61.6000 | 9.772 | .588 | .691 | 1.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 250 | 246 | 1 | .3719 | 105.567 | .414 | 1.936 | 2.350 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 252 | 236 | 1 | 6.6250 | 19.073 | .241 | 1.279 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 252 | 250 | 1 | 19.4000 | 18.393 | .656 | 1.279 | 1.936 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 254 | 250 | 1 | .2022 | 87.174 | .154 | 1.782 | 1.936 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 256 | 254 | 1 | 121.1000 | 9.240 | 1.034 | .748 | 1.782 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 256 | 258 | 1 | .0860 | 66.143 | .038 | .748 | .786 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 258 | 262 | 1 | .0889 | 11.905 | .001 | .786 | .787 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 258 | 268 | 1 | 8.0200 | 17.853 | .256 | .786 | 1.041 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 260 | 264 | 1 | .5600 | 12.482 | .009 | .764 | .772 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 260 | 266 | 1 | 5.8870 | 15.211 | .136 | .764 | .900 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 260 | 262 | 1 | 1.6890 | 11.791 | .023 | .764 | .787 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 262 | 268 | 1 | 4.5300 | 23.696 | .254 | .787 | 1.041 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 264 | 266 | 1 | 8.1820 | 12.482 | .127 | .772 | .900 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 266 | 252 | 1 | 4.9500 | 27.694 | .380 | .900 | 1.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 268 | 270 | 1 | 1.1160 | 62.394 | .434 | 1.041 | 1.476 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 270 | 254 | 1 | .7864 | 62.394 | .306 | 1.476 | 1.782 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 272 | 254 | 1 | 36.0200 | 15.540 | .870 | .912 | 1.782 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 2

Computer Output for Reducing Resistance

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 555.301 | 1.039 | 4.781 | 0.000 | | | 0.000 | 0.000 | 5.821 | 509.31 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 248.744 | .540 | 0.000 | .540 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 567.116 | .884 | 0.000 | .884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 14.114 | 3.896 | .884 | 4.781 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 258.097 | .083 | .884 | .968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 294.906 | .207 | .884 | 1.091 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 191.809 | .050 | .968 | 1.018 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 66.287 | .124 | .968 | 1.091 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 1.6577 | 130.416 | 2.819 | 1.961 | 4.781 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 11.615 | .202 | 1.759 | 1.961 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 5.359 | .741 | 1.018 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 166.192 | .019 | 1.018 | 1.037 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 20.259 | .600 | 1.018 | 1.618 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.2882 | 61.393 | .486 | 1.618 | 2.104 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 6.256 | .233 | 1.526 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .5514 | 41.134 | .093 | 1.526 | 1.618 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 28.821 | .100 | 1.037 | 1.136 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 11.919 | .690 | 1.037 | 1.729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 125.451 | .012 | 1.037 | 1.049 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .1647 | 118.801 | .233 | 1.729 | 1.961 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 52.095 | .592 | 1.136 | 1.729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 78.447 | .011 | 1.049 | 1.060 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 35.366 | .071 | 1.049 | 1.120 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 11.638 | .658 | 1.049 | 1.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0668 | 54.787 | .020 | 1.707 | 1.729 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 23.274 | .016 | 1.120 | 1.136 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 12.093 | .581 | 1.120 | 1.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0344 | 43.150 | .006 | 1.700 | 1.707 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 10.890 | .632 | 1.060 | 1.693 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | 8.336 | .188 | 1.060 | 1.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 59.221 | .008 | 1.060 | 1.069 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .0945 | 31.057 | .009 | 1.692 | 1.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.2337 | 47.390 | .277 | 1.248 | 1.526 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 36.413 | .012 | 1.069 | 1.081 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | .8406 | 39.054 | .128 | 1.120 | 1.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 14.347 | .051 | 1.069 | 1.120 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 24.707 | .039 | 1.081 | 1.120 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 11.706 | .085 | 1.081 | 1.165 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 53 | 56 | 1 | .4590 | 11.706 | .006 | 1.165 | 1.172 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 8.461 | .103 | 1.069 | 1.172 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | .7787 | 20.167 | .032 | 1.660 | 1.692 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 20.167 | .488 | 1.172 | 1.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 345.175 | .041 | 1.091 | 1.132 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | 16.019 | 1.012 | 1.091 | 2.104 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 2.2904 | 77.412 | 1.373 | 2.104 | 3.476 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0586 | 410.772 | .989 | 3.791 | 4.781 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0136 | 246.614 | .033 | 3.709 | 3.791 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 19.187 | 2.576 | 1.132 | 3.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 325.988 | .140 | 1.132 | 1.272 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 249.005 | .138 | 1.272 | 1.410 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 76.982 | .007 | 1.272 | 1.278 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 68 | 1 | .0449 | 227.427 | .232 | 3.476 | 3.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 108 | 1 | .4167 | 24.850 | .026 | 1.410 | 1.435 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0362 | 224.155 | .182 | 1.410 | 1.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | 26.002 | .157 | 1.278 | 1.435 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 50.981 | .002 | 1.278 | 1.280 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 50.852 | .156 | 1.435 | 1.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | 230.967 | .058 | 1.592 | 1.651 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | 24.151 | 1.565 | 1.592 | 3.158 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | 19.889 | 1.085 | 1.592 | 2.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .3997 | 118.218 | .559 | 2.677 | 3.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1414 | 150.015 | .318 | 3.158 | 3.476 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | 8.813 | 1.234 | 1.651 | 2.885 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | 9.033 | .910 | 1.651 | 2.560 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | 213.121 | .111 | 1.651 | 1.762 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .0914 | 118.794 | .127 | 2.385 | 3.013 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | .1215 | 98.329 | .117 | 2.560 | 2.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | 195.045 | .083 | 1.762 | 1.845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | 8.983 | .821 | 1.762 | 2.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | 9.094 | .694 | 1.762 | 2.456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .2498 | 109.981 | .302 | 2.583 | 2.885 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0523 | 86.760 | .039 | 2.456 | 2.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | 176.732 | .015 | 1.845 | 1.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | 9.187 | .698 | 1.845 | 2.543 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | 9.126 | .545 | 1.845 | 2.389 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0299 | 92.878 | .026 | 2.543 | 2.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0029 | 100.998 | .003 | 2.580 | 2.583 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 7.070 | .434 | 2.580 | 3.013 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0091 | 108.068 | .011 | 2.569 | 2.580 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1097 | 77.666 | .066 | 2.389 | 2.456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | 4.143 | .603 | 1.859 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | 145.672 | .001 | 1.859 | 1.860 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 26.917 | .063 | 1.859 | 1.922 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0413 | 68.540 | .019 | 2.370 | 2.389 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 9.310 | .125 | 2.370 | 2.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0042 | 77.850 | .003 | 2.368 | 2.370 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1158 | 83.691 | .081 | 2.462 | 2.543 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0173 | 79.548 | .011 | 2.450 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | 109.229 | .005 | 1.860 | 1.865 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | 4.087 | .479 | 1.860 | 2.339 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 148 | 182 | 1 | .3320 | 32.355 | .035 | 1.860 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0604 | 68.501 | .028 | 2.339 | 2.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 31.813 | .089 | 1.865 | 1.954 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | 74.739 | .001 | 1.865 | 1.866 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | 2.677 | .483 | 1.865 | 2.346 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .7607 | 62.957 | .103 | 2.346 | 2.450 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 156 | 154 | 1 | .0305 | 60.280 | .011 | 2.336 | 2.346 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 158 | 144 | 1 | .0308 | 39.011 | .005 | 1.866 | 1.871 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 158 | 162 | 1 | 228.8000 | 2.835 | .184 | 1.866 | 2.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 158 | 172 | 1 | .1665 | 32.893 | .018 | 1.866 | 1.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FTD |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 160 | 150 | 1 | .2197 | 64.414 | .091 | 2.248 | 2.339 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 162 | 160 | 1 | 1.1562 | 41.408 | .198 | 2.050 | 2.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 164 | 170 | 1 | .1035 | 27.953 | .008 | 1.871 | 1.879 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 164 | 174 | 1 | .5000 | 11.058 | .006 | 1.871 | 1.877 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 166 | 156 | 1 | .0295 | 33.331 | .003 | 2.333 | 2.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 168 | 166 | 1 | 6.1400 | 19.357 | .230 | 2.102 | 2.333 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 166 | 1 | 23.1900 | 13.974 | .453 | 1.879 | 2.333 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 170 | 168 | 1 | 11.4200 | 13.979 | .223 | 1.879 | 2.102 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 172 | 162 | 1 | 1.5340 | 32.893 | .166 | 1.884 | 2.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 174 | 162 | 1 | 53.6000 | 5.680 | .173 | 1.877 | 2.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 174 | 168 | 1 | 78.0000 | 5.378 | .226 | 1.877 | 2.102 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 176 | 178 | 1 | 3.3890 | 11.727 | .047 | 1.922 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 176 | 134 | 1 | 27.9500 | 15.190 | .645 | 1.922 | 2.569 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 178 | 146 | 1 | 17.4600 | 16.591 | .481 | 1.969 | 2.450 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 180 | 178 | 1 | 6.4000 | 4.865 | .015 | 1.954 | 1.969 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 180 | 156 | 1 | 5.2640 | 26.949 | .382 | 1.954 | 2.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 182 | 160 | 1 | 6.6730 | 23.006 | .353 | 1.895 | 2.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 182 | 184 | 1 | .1000 | 9.349 | .001 | 1.895 | 1.896 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 184 | 186 | 1 | 126.7000 | 4.135 | .217 | 1.896 | 2.112 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 184 | 190 | 1 | 137.6000 | 5.214 | .374 | 1.896 | 2.270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 186 | 190 | 1 | 92.0000 | 4.135 | .157 | 2.112 | 2.270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 190 | 142 | 1 | 11.2000 | 9.349 | .098 | 2.270 | 2.368 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 192 | 194 | 1 | .0054 | 96.070 | .005 | 2.495 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 194 | 120 | 1 | .0751 | 89.296 | .060 | 2.500 | 2.560 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 194 | 210 | 1 | 142.0000 | 6.774 | .652 | 2.500 | 3.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 196 | 114 | 1 | .0914 | 125.864 | .145 | 3.013 | 3.158 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 200 | 202 | 1 | 828.4000 | 4.859 | 1.955 | 1.280 | 3.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 200 | 208 | 1 | .0080 | 46.122 | .002 | 1.280 | 1.282 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 202 | 64 | 1 | .3669 | 123.077 | .556 | 3.236 | 3.791 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 204 | 64 | 1 | .5183 | 41.081 | .087 | 3.704 | 3.791 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 206 | 204 | 1 | 3.8743 | 26.688 | .276 | 3.428 | 3.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 208 | 206 | 1 | 899.6000 | 4.884 | 2.146 | 1.282 | 3.428 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 208 | 214 | 1 | .0889 | 41.238 | .015 | 1.282 | 1.297 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 210 | 206 | 1 | 5.8176 | 21.803 | .277 | 3.151 | 3.428 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 212 | 204 | 1 | 5.4670 | 14.393 | .113 | 3.591 | 3.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 214 | 218 | 1 | .0889 | 14.393 | .002 | 1.297 | 1.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 214 | 216 | 1 | .1333 | 26.844 | .010 | 1.297 | 1.307 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 216 | 210 | 1 | 81.6400 | 15.030 | 1.844 | 1.307 | 3.151 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 216 | 230 | 1 | 1.0220 | 11.815 | .014 | 1.307 | 1.321 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 218 | 220 | 1 | 26.6700 | 14.393 | .553 | 1.299 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 220 | 221 | 1 | 196.7000 | 7.676 | 1.159 | 1.852 | 3.011 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 220 | 212 | 1 | 385.5000 | 6.717 | 1.739 | 1.852 | 3.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 221 | 212 | 1 | 98.4400 | 7.676 | .580 | 3.011 | 3.591 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 222 | 224 | 1 | 22.7600 | 21.530 | 1.055 | 1.689 | 1.744 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 224 | 228 | 1 | .4158 | 21.530 | .019 | 1.744 | 1.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 226 | 222 | 1 | .0378 | 21.530 | .002 | 1.687 | 1.689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 226 | 228 | 1 | 122.8000 | 9.361 | 1.076 | 1.687 | 1.763 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 226 | 232 | 1 | 64.0000 | 10.064 | .648 | 1.687 | 1.365 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 226 | 234 | 1 | .3877 | 70.662 | .124 | 1.687 | 1.689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 228 | 238 | 1 | .1150 | 30.892 | .011 | 1.763 | 1.774 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JF | NFA | R | O | HL | HJA | HJE | AREA | VEL | NVP | RK | HF | AHF | F II |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 230 | 232 | 1 | .0619 | 47.293 | .014 | 1.321 | 1.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 232 | 236 | 1 | .2165 | 92.541 | .185 | 1.335 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 234 | 230 | 1 | 3.5020 | 35.479 | .441 | .880 | 1.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 234 | 232 | 1 | 3.6730 | 35.183 | .455 | .800 | 1.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 236 | 240 | 1 | .3568 | 111.942 | .447 | 1.520 | 1.968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 238 | 240 | 1 | 2.0315 | 30.892 | .194 | 1.774 | 1.968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 240 | 242 | 1 | .0869 | 142.853 | .177 | 1.968 | 2.145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 242 | 246 | 1 | 194.6000 | 9.081 | 1.605 | .540 | 2.145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 242 | 244 | 1 | .0201 | 239.662 | .115 | .540 | .656 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 244 | 226 | 1 | .0250 | 111.617 | .031 | .656 | .687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 244 | 248 | 1 | .0376 | 128.045 | .062 | .656 | .717 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 246 | 1 | 1 | .0620 | 260.558 | .421 | 2.145 | 0.000 | | | 0.000 | 0.000 | 2.566 | 105.25 | FNWS |
| 163 | 248 | 256 | 1 | .1002 | 77.332 | .060 | .717 | .777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 260 | 1 | .4640 | 41.236 | .079 | .717 | .796 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 258 | 269 | 1 | .9180 | 36.857 | .125 | .818 | .942 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 269 | 268 | 1 | 3.0850 | 22.363 | .154 | .942 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 269 | 272 | 1 | .2000 | 14.494 | .004 | .942 | .947 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 248 | 252 | 1 | 61.6000 | 9.477 | .553 | .717 | 1.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 250 | 246 | 1 | .2742 | 108.624 | .324 | 1.821 | 2.145 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 252 | 236 | 1 | 6.6250 | 19.421 | .250 | 1.271 | 1.520 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 252 | 250 | 1 | 14.3056 | 19.623 | .551 | 1.271 | 1.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 254 | 250 | 1 | .1491 | 89.001 | .118 | 1.703 | 1.821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 256 | 254 | 1 | 121.1000 | 8.745 | .926 | .777 | 1.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 256 | 258 | 1 | .0860 | 68.587 | .040 | .777 | .818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 258 | 262 | 1 | .0880 | 13.079 | .002 | .818 | .819 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 258 | 268 | 1 | 8.0200 | 18.651 | .279 | .818 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 260 | 264 | 1 | .5600 | 13.327 | .010 | .796 | .806 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 260 | 266 | 1 | 5.8870 | 16.240 | .155 | .796 | .951 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 260 | 262 | 1 | 1.6890 | 11.669 | .023 | .796 | .819 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 262 | 268 | 1 | 4.5300 | 24.746 | .277 | .819 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 264 | 266 | 1 | 8.1820 | 13.327 | .145 | .806 | .951 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 266 | 252 | 1 | 3.6501 | 29.567 | .319 | .951 | 1.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 268 | 270 | 1 | .8229 | 65.762 | .356 | 1.097 | 1.453 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 270 | 254 | 1 | .5799 | 65.762 | .251 | 1.453 | 1.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 272 | 254 | 1 | 36.0200 | 14.494 | .857 | .947 | 1.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 3

Computer Output for Utilizing Overcasts in North Mains

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 527.410 | .937 | 5.405 | 0.000 | | | 0.000 | 0.000 | 6.349 | 527.67 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 244.801 | .523 | 0.000 | .523 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 540.268 | .803 | 0.000 | .803 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 15.339 | 4.602 | .803 | 5.405 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 228.741 | .065 | .803 | .868 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 296.188 | .209 | .803 | 1.011 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 157.372 | .034 | .868 | .902 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 71.369 | .143 | .868 | 1.011 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 129.764 | 3.785 | 1.620 | 5.405 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 2.0240 | 30.134 | .184 | 1.443 | 1.620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 4.577 | .541 | .902 | 1.443 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 136.324 | .012 | .902 | .914 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 16.471 | .397 | .902 | 1.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 27.608 | .133 | 1.299 | 1.432 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 2.3460 | 25.556 | .153 | 1.289 | 1.443 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 11.137 | .009 | 1.289 | 1.299 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 24.193 | .070 | .914 | .985 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 10.044 | .490 | .914 | 1.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 102.087 | .008 | .914 | .923 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 99.631 | .222 | 1.398 | 1.620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 43.865 | .420 | .985 | 1.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 62.532 | .007 | .923 | .930 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 29.793 | .050 | .923 | .973 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 9.761 | .463 | .923 | 1.386 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 45.722 | .019 | 1.386 | 1.398 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 19.672 | .012 | .973 | .985 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 10.122 | .407 | .973 | 1.380 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 35.961 | .006 | 1.380 | 1.386 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 9.101 | .441 | .930 | 1.371 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | 7.068 | .135 | .930 | 1.065 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 46.363 | .005 | .930 | .935 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 25.839 | .009 | 1.371 | 1.380 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 36.693 | .225 | 1.065 | 1.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 28.439 | .007 | .935 | .942 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 29.625 | .100 | .965 | 1.065 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 10.930 | .029 | .935 | .965 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 18.695 | .022 | .942 | .965 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 9.744 | .059 | .942 | 1.001 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 9.744 | .004 | 1.001 | 1.005 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 6.994 | .070 | .935 | 1.005 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 16.738 | .030 | 1.342 | 1.371 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 16.738 | .336 | 1.005 | 1.342 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 357.230 | .043 | 1.011 | 1.055 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | 10.328 | .421 | 1.011 | 1.432 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 17.3000 | 37.935 | 2.490 | 1.432 | 3.926 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 382.307 | 1.162 | 4.243 | 5.405 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 215.651 | .086 | 4.157 | 4.243 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 21.034 | 3.096 | 1.055 | 4.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 336.196 | .149 | 1.055 | 1.202 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 254.801 | .144 | 1.202 | 1.346 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 81.395 | .007 | 1.202 | 1.209 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 68 | 1 | .0609 | 194.617 | .231 | 3.926 | 4.157 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 108 | 1 | .4167 | 25.449 | .027 | 1.346 | 1.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0362 | 229.352 | .190 | 1.346 | 1.542 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | 26.574 | .164 | 1.209 | 1.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 54.821 | .002 | 1.209 | 1.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 52.023 | .163 | 1.373 | 1.542 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | 233.738 | .060 | 1.542 | 1.602 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | 26.674 | 1.909 | 1.542 | 3.455 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | 20.962 | 1.205 | 1.542 | 2.747 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .5420 | 117.413 | .747 | 2.747 | 3.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1918 | 156.682 | .471 | 3.455 | 3.926 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | 9.598 | 1.464 | 1.602 | 3.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | 9.450 | .996 | 1.602 | 2.595 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | 214.690 | .113 | 1.602 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .1240 | 121.607 | .183 | 3.066 | 3.246 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | .1648 | 96.456 | .153 | 2.595 | 2.747 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | 195.710 | .083 | 1.715 | 1.798 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | 9.535 | .925 | 1.715 | 2.639 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | 9.445 | .749 | 1.715 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .3388 | 112.008 | .425 | 2.639 | 3.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0709 | 83.884 | .050 | 2.462 | 2.512 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | 176.551 | .015 | 1.798 | 1.813 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | 9.734 | .784 | 1.798 | 2.582 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | 9.425 | .581 | 1.798 | 2.379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0405 | 94.701 | .036 | 2.582 | 2.620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0040 | 102.474 | .004 | 2.635 | 2.639 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 8.401 | .613 | 2.635 | 3.246 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0124 | 110.875 | .015 | 2.620 | 2.635 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1487 | 74.439 | .082 | 2.379 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | 4.335 | .660 | 1.813 | 2.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | 144.118 | .001 | 1.813 | 1.811 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 28.098 | .069 | 1.813 | 1.882 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0560 | 65.013 | .024 | 2.356 | 2.379 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 10.397 | .156 | 2.356 | 2.512 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0057 | 75.410 | .003 | 2.353 | 2.356 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1570 | 84.967 | .113 | 2.462 | 2.582 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0234 | 80.631 | .015 | 2.448 | 2.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | 107.066 | .005 | 1.811 | 1.815 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | 4.203 | .507 | 1.811 | 2.217 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 148 | 182 | 1 | .3320 | 32.849 | .036 | 1.811 | 1.846 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0819 | 65.743 | .035 | 2.317 | 2.353 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 32.566 | .093 | 1.815 | 1.912 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | 71.780 | .001 | 1.815 | 1.816 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | 2.720 | .498 | 1.815 | 2.306 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .3536 | 63.403 | .142 | 2.306 | 2.448 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 156 | 154 | 1 | .0414 | 60.683 | .015 | 2.303 | 2.306 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 158 | 164 | 1 | .0308 | 38.647 | .005 | 1.816 | 1.820 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 158 | 162 | 1 | 228.8000 | 2.627 | .158 | 1.816 | 1.974 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 158 | 172 | 1 | .1665 | 30.506 | .015 | 1.816 | 1.831 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NFA | R | O | HL | HJA | HJB | AREA | VFL | NVF | HR | HF | AHF | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 230 | 232 | 1 | .0840 | 47.208 | .019 | 1.261 | 1.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 232 | 236 | 1 | .2936 | 91.299 | .245 | 1.279 | 1.524 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 234 | 230 | 1 | 3.5020 | 34.350 | .413 | .847 | 1.261 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 234 | 232 | 1 | 3.6730 | 34.291 | .430 | .847 | 1.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 236 | 240 | 1 | .4829 | 110.411 | .596 | 1.524 | 2.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 238 | 240 | 1 | 2.7550 | 31.960 | .281 | 1.833 | 2.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 240 | 246 | 1 | .1178 | 142.371 | .239 | 2.114 | 2.353 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 242 | 246 | 1 | 194.6000 | 9.696 | 1.830 | .523 | 2.353 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 242 | 244 | 1 | .0201 | 235.105 | .111 | .523 | .634 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 244 | 226 | 1 | .0250 | 110.401 | .030 | .634 | .665 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 244 | 248 | 1 | .0376 | 124.704 | .058 | .634 | .693 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 246 | 1 | 1 | .0620 | 257.659 | .412 | 2.353 | 0.000 | | | 0.000 | 0.000 | 2.764 | 112.24 | FNWS |
| 163 | 248 | 256 | 1 | .1002 | 75.414 | .057 | .693 | .750 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 260 | 1 | .4640 | 39.509 | .072 | .693 | .765 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 258 | 269 | 1 | .9180 | 36.397 | .122 | .787 | .909 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 269 | 268 | 1 | 3.0850 | 20.852 | .134 | .909 | 1.043 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 269 | 277 | 1 | .2000 | 15.545 | .005 | .909 | .914 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 248 | 252 | 1 | 61.6000 | 9.781 | .589 | .693 | 1.282 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 250 | 246 | 1 | .3719 | 105.591 | .415 | 1.938 | 2.353 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 252 | 236 | 1 | 6.6250 | 19.112 | .242 | 1.282 | 1.524 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 252 | 250 | 1 | 19.4000 | 18.389 | .656 | 1.282 | 1.938 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 254 | 250 | 1 | .2022 | 87.203 | .154 | 1.784 | 1.938 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 256 | 254 | 1 | 121.1000 | 9.243 | 1.035 | .750 | 1.784 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 256 | 258 | 1 | .0860 | 66.171 | .038 | .750 | .787 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 258 | 262 | 1 | .0889 | 11.913 | .001 | .787 | .789 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 258 | 268 | 1 | 8.0200 | 17.861 | .256 | .787 | 1.043 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 260 | 264 | 1 | .5600 | 12.495 | .009 | .765 | .774 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 260 | 266 | 1 | 5.8870 | 15.226 | .136 | .765 | .902 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 260 | 262 | 1 | 1.6890 | 11.789 | .023 | .765 | .789 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 262 | 268 | 1 | 4.5300 | 23.702 | .254 | .789 | 1.043 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 264 | 266 | 1 | 8.1820 | 12.495 | .128 | .774 | .902 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 266 | 252 | 1 | 4.9500 | 27.721 | .380 | .902 | 1.282 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 268 | 270 | 1 | 1.1160 | 62.414 | .435 | 1.043 | 1.478 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 270 | 254 | 1 | .7864 | 62.414 | .306 | 1.478 | 1.784 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 272 | 254 | 1 | 36.0200 | 15.545 | .870 | .914 | 1.784 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | O | HL | HJA | HJB | ARFA | VEL | NVP | HR | HF | AHI | FII |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 160 | 150 | 1 | .2980 | 61.540 | .113 | 2.204 | 2.317 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 162 | 160 | 1 | 1.5680 | 38.358 | .231 | 1.974 | 2.204 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 164 | 170 | 1 | .1035 | 28.017 | .008 | 1.820 | 1.829 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 164 | 174 | 1 | .5000 | 10.630 | .006 | 1.820 | 1.827 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 166 | 156 | 1 | .0400 | 33.422 | .004 | 2.287 | 2.303 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 168 | 166 | 1 | 6.1400 | 19.442 | .232 | 2.055 | 2.287 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 166 | 1 | 23.1900 | 13.980 | .453 | 1.829 | 2.287 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 170 | 168 | 1 | 11.4200 | 14.037 | .225 | 1.829 | 2.055 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 172 | 162 | 1 | 1.5340 | 30.506 | .143 | 1.831 | 1.974 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 174 | 162 | 1 | 53.6000 | 5.225 | .146 | 1.827 | 1.974 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 174 | 168 | 1 | 78.0000 | 5.405 | .228 | 1.827 | 2.055 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 176 | 178 | 1 | 3.3890 | 11.924 | .048 | 1.882 | 1.930 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 176 | 134 | 1 | 27.9500 | 16.174 | .731 | 1.882 | 2.620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 178 | 146 | 1 | 17.4600 | 17.228 | .518 | 1.930 | 2.448 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 180 | 178 | 1 | 6.4000 | 5.304 | .018 | 1.912 | 1.930 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 180 | 156 | 1 | 5.2640 | 27.262 | .391 | 1.912 | 2.303 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 182 | 160 | 1 | 6.6730 | 23.182 | .359 | 1.846 | 2.204 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 182 | 184 | 1 | .1000 | 9.668 | .001 | 1.846 | 1.848 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 184 | 186 | 1 | 126.7000 | 4.275 | .232 | 1.848 | 2.080 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 184 | 190 | 1 | 137.6000 | 5.392 | .400 | 1.848 | 2.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 186 | 190 | 1 | 92.0000 | 4.275 | .168 | 2.080 | 2.248 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 190 | 142 | 1 | 11.2000 | 9.668 | .105 | 2.248 | 2.353 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 192 | 194 | 1 | .0073 | 94.281 | .006 | 2.512 | 2.518 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 194 | 120 | 1 | .1018 | 87.006 | .077 | 2.518 | 2.595 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 194 | 210 | 1 | 142.0000 | 7.275 | .751 | 2.518 | 3.270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 196 | 114 | 1 | .1239 | 130.008 | .209 | 3.246 | 3.455 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 200 | 202 | 1 | 828.4000 | 5.250 | 2.283 | 1.211 | 3.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 200 | 208 | 1 | .0080 | 49.571 | .002 | 1.211 | 1.213 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 202 | 64 | 1 | .4976 | 122.668 | .749 | 3.494 | 4.243 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 204 | 64 | 1 | .7029 | 43.988 | .136 | 4.107 | 4.243 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 206 | 204 | 1 | 5.2540 | 28.257 | .420 | 3.687 | 4.107 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 208 | 206 | 1 | 899.6000 | 5.245 | 2.474 | 1.213 | 3.687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 208 | 214 | 1 | .0889 | 44.326 | .017 | 1.213 | 1.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 210 | 206 | 1 | 7.8920 | 23.013 | .418 | 3.270 | 3.687 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 212 | 204 | 1 | 5.4670 | 15.730 | .135 | 3.972 | 4.107 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 214 | 218 | 1 | .0889 | 15.730 | .002 | 1.230 | 1.233 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 214 | 216 | 1 | .1333 | 28.596 | .011 | 1.230 | 1.247 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 216 | 210 | 1 | 81.6400 | 15.738 | 2.022 | 1.247 | 3.270 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 216 | 230 | 1 | 1.0220 | 12.858 | .017 | 1.247 | 1.261 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 218 | 220 | 1 | 26.6700 | 15.730 | .660 | 1.233 | 1.895 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 220 | 221 | 1 | 196.7000 | 8.388 | 1.384 | 1.895 | 3.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 220 | 212 | 1 | 385.5000 | 7.342 | 2.078 | 1.895 | 3.972 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 221 | 212 | 1 | 98.4400 | 8.388 | .693 | 3.279 | 3.972 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 222 | 224 | 1 | 22.7600 | 22.275 | 1.129 | .667 | 1.796 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 224 | 228 | 1 | .4158 | 22.275 | .021 | 1.796 | 1.817 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 226 | 222 | 1 | .0378 | 22.275 | .002 | .665 | .667 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 226 | 228 | 1 | 122.8000 | 9.685 | 1.152 | .665 | 1.817 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 226 | 232 | 1 | 64.0000 | 9.799 | .615 | .665 | 1.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 226 | 234 | 1 | .3877 | 68.642 | .183 | .665 | .847 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 228 | 238 | 1 | .1560 | 31.960 | .016 | 1.817 | 1.833 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 4

Computer Output for Moving Air Lock Doors in
Western Submains

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHF | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 527.356 | .937 | 5.414 | 0.000 | | | 0.000 | 0.000 | 6.350 | 527.69 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 259.699 | .589 | 0.000 | .589 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 527.356 | .765 | 0.000 | .765 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 15.417 | 4.649 | .765 | 5.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 242.573 | .074 | .765 | .838 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 269.366 | .173 | .765 | .937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 183.237 | .046 | .638 | .884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 59.336 | .099 | .838 | .937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 126.059 | 3.572 | 1.842 | 5.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 11.609 | .202 | 1.639 | 1.842 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 5.406 | .754 | .884 | 1.639 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 157.163 | .017 | .884 | .901 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 20.667 | .624 | .884 | 1.309 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 57.178 | .571 | 1.509 | 2.080 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 6.203 | .229 | 1.410 | 1.639 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 36.511 | .100 | 1.410 | 1.509 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 27.805 | .093 | .901 | .994 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 11.538 | .647 | .901 | 1.549 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 117.820 | .011 | .901 | .912 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 114.450 | .293 | 1.549 | 1.842 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 50.395 | .554 | .994 | 1.549 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 72.389 | .009 | .912 | .921 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 34.217 | .066 | .912 | .978 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 11.213 | .611 | .912 | 1.523 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 52.517 | .025 | 1.523 | 1.549 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 22.590 | .015 | .978 | .994 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 11.628 | .537 | .978 | 1.515 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 41.304 | .008 | 1.515 | 1.523 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 10.454 | .582 | .921 | 1.504 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | 8.224 | .183 | .921 | 1.104 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 53.711 | .007 | .921 | .928 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 29.676 | .011 | 1.504 | 1.515 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 42.713 | .305 | 1.104 | 1.410 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 32.955 | .010 | .928 | .928 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 34.489 | .136 | .968 | 1.104 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 12.720 | .040 | .928 | .968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 21.769 | .010 | .968 | .968 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 11.185 | .072 | .968 | 1.016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 11.185 | .006 | 1.016 | 1.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 54 | 1 | 14.4000 | 8.036 | .093 | .968 | 1.021 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 19.221 | .039 | 1.465 | 1.504 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 19.721 | .443 | 1.021 | 1.465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 311.635 | .033 | .937 | .971 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | 17.017 | 1.147 | .937 | 2.080 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 3.1060 | 74.135 | 1.719 | 2.080 | 2.721 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 305.380 | 1.114 | 4.230 | 5.414 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 251.735 | .117 | 4.117 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 21.194 | 3.145 | .971 | 4.113 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 290.491 | .111 | .971 | 1.081 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 257.792 | .145 | 1.952 | 1.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| J | JA | JR | NFA | F | P | HL | HJA | HJR | ARE A | VEL | NVI | HR | HF | AM | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|-------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 32.699 | .001 | 1.082 | 1.082 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 108 | 1 | .0609 | 230.030 | .322 | 3.791 | 4.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 106 | 1 | .4167 | 25.466 | .027 | 1.230 | 1.257 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0367 | 232.326 | .195 | 1.230 | 1.425 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | 27.337 | .173 | 1.083 | 1.257 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 5.062 | .000 | 1.083 | 1.083 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 52.803 | .163 | 1.257 | 1.475 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | 236.938 | .061 | 1.425 | 1.486 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | 26.614 | 1.900 | 1.425 | 3.325 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | 21.577 | 1.277 | 1.425 | 2.701 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .5420 | 118.662 | .763 | 2.701 | 3.465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1918 | 155.835 | .466 | 3.325 | 3.791 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | 9.557 | 1.451 | 1.486 | 2.937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | 9.751 | 1.060 | 1.486 | 2.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | 217.630 | .116 | 1.486 | 1.602 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .1240 | 120.875 | .181 | 2.937 | 3.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | .1648 | 97.085 | .155 | 2.546 | 2.701 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | 198.347 | .086 | 1.602 | 1.688 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | 9.488 | .915 | 1.602 | 2.518 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | 9.796 | .806 | 1.602 | 2.408 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .3389 | 111.318 | .420 | 2.518 | 2.937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0709 | 87.154 | .054 | 2.408 | 2.461 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | 178.850 | .015 | 1.688 | 1.703 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | 9.678 | .775 | 1.688 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | 9.819 | .631 | 1.688 | 2.319 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0405 | 94.043 | .036 | 2.462 | 2.498 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0040 | 101.831 | .004 | 2.518 | 2.518 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 8.346 | .605 | 2.518 | 3.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0124 | 110.177 | .015 | 2.498 | 2.513 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1487 | 77.358 | .089 | 2.319 | 2.408 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | 4.295 | .648 | 1.703 | 2.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | 146.610 | .001 | 1.703 | 1.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 27.945 | .068 | 1.703 | 1.771 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0560 | 67.539 | .026 | 2.293 | 2.319 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 10.812 | .168 | 2.293 | 2.461 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0057 | 78.351 | .003 | 2.290 | 2.293 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1570 | 84.366 | .112 | 2.351 | 2.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0234 | 80.071 | .015 | 2.335 | 2.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | 108.123 | .005 | 1.704 | 1.709 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | 4.368 | .547 | 1.704 | 2.251 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 148 | 162 | 1 | .3320 | 34.120 | .039 | 1.704 | 1.743 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0819 | 68.295 | .038 | 2.251 | 2.290 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 32.229 | .091 | 1.709 | 1.800 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | 73.205 | .001 | 1.709 | 1.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | 2.689 | .487 | 1.709 | 2.195 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .3536 | 62.869 | .140 | 2.195 | 2.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 156 | 154 | 1 | .0414 | 60.179 | .015 | 2.179 | 2.195 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 158 | 164 | 1 | .0308 | 38.807 | .005 | 1.710 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 158 | 162 | 1 | 228.8000 | 2.730 | .171 | 1.710 | 1.880 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 158 | 172 | 1 | .1665 | 31.668 | .017 | 1.710 | 1.727 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|-------|-----|
| 101 | 160 | 150 | 1 | .2980 | 63.927 | .122 | 2.130 | 2.251 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 162 | 160 | 1 | 1.5680 | 39.863 | .249 | 1.880 | 2.130 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 164 | 170 | 1 | .1035 | 27.955 | .008 | 1.715 | 1.723 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 164 | 174 | 1 | .5000 | 10.852 | .006 | 1.715 | 1.720 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 166 | 156 | 1 | .0400 | 33.342 | .004 | 2.177 | 2.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 168 | 166 | 1 | 6.1400 | 19.354 | .230 | 1.947 | 2.177 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 166 | 1 | 23.1900 | 13.988 | .454 | 1.723 | 2.177 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 170 | 168 | 1 | 11.4200 | 13.766 | .223 | 1.723 | 1.947 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 172 | 162 | 1 | 1.5340 | 31.668 | .154 | 1.727 | 1.880 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 174 | 162 | 1 | 53.6000 | 5.465 | .160 | 1.720 | 1.880 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 174 | 168 | 1 | 78.0000 | 5.387 | .226 | 1.720 | 1.947 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 176 | 178 | 1 | 3.3890 | 11.811 | .047 | 1.771 | 1.818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 176 | 134 | 1 | 27.9500 | 16.133 | .728 | 1.771 | 2.498 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 178 | 146 | 1 | 17.4600 | 17.203 | .517 | 1.818 | 2.335 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 180 | 178 | 1 | 6.4000 | 5.391 | .019 | 1.800 | 1.818 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 180 | 156 | 1 | 5.2640 | 26.837 | .379 | 1.800 | 2.179 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 182 | 160 | 1 | 6.6730 | 24.064 | .386 | 1.743 | 2.130 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 182 | 184 | 1 | .1000 | 10.056 | .001 | 1.743 | 1.744 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 184 | 186 | 1 | 126.7000 | 4.448 | .251 | 1.744 | 1.994 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 184 | 190 | 1 | 137.6000 | 5.608 | .433 | 1.744 | 2.176 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 186 | 190 | 1 | 92.0000 | 4.448 | .182 | 1.994 | 2.176 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 190 | 142 | 1 | 11.2000 | 10.056 | .113 | 2.176 | 2.290 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 192 | 194 | 1 | .0073 | 97.966 | .007 | 2.461 | 2.468 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 194 | 120 | 1 | .1018 | 87.334 | .078 | 2.468 | 2.546 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 194 | 210 | 1 | 142.0000 | 10.632 | 1.605 | 2.468 | 4.074 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 196 | 114 | 1 | .1239 | 129.221 | .207 | 3.118 | 3.325 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 200 | 202 | 1 | 828.4000 | 5.362 | 2.381 | 1.833 | 3.465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 202 | 64 | 1 | .4976 | 124.023 | .765 | 3.465 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.000 | |
| 129 | 204 | 64 | 1 | .7029 | 10.632 | .008 | 4.232 | 4.230 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 206 | 204 | 1 | 5.2540 | 10.632 | .059 | 4.163 | 4.232 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 208 | 214 | 1 | .0889 | -7.518 | -.001 | .986 | .985 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 210 | 206 | 1 | 7.8920 | 10.632 | .089 | 4.074 | 4.163 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 214 | 218 | 1 | .0889 | -32.373 | -.009 | .985 | .976 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 214 | 216 | 1 | .1333 | 24.854 | .008 | .985 | .993 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 216 | 230 | 1 | 1.0220 | 25.827 | .063 | .993 | 1.061 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 218 | 220 | 1 | 26.6700 | 12.142 | .393 | .976 | 1.369 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 220 | 221 | 1 | 176.7000 | -3.491 | -.240 | 1.369 | 1.129 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 220 | 212 | 1 | 385.5000 | -3.055 | -.260 | 1.369 | 1.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 221 | 212 | 1 | 98.4400 | -3.491 | -.120 | 1.129 | 1.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 222 | 224 | 1 | 22.7600 | 16.148 | .594 | .776 | 1.369 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 224 | 228 | 1 | .4158 | 34.826 | .050 | 1.369 | 1.420 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 226 | 222 | 1 | .0378 | 60.663 | .014 | .762 | .776 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 226 | 238 | 1 | 122.8000 | 7.219 | .658 | .762 | 1.420 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 226 | 232 | 1 | 64.0000 | 7.234 | .335 | .762 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 226 | 234 | 1 | .877 | 41.400 | .147 | .762 | .908 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 228 | 238 | 1 | .1540 | 42.155 | .028 | 1.420 | 1.447 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 230 | 232 | 1 | .0940 | 64.662 | .035 | 1.061 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 232 | 236 | 1 | .2936 | 24.541 | .262 | 1.097 | 1.359 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 234 | 230 | 1 | 1.0160 | 38.835 | .153 | .908 | 1.061 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 236 | 232 | 1 | 2.6730 | 22.545 | .148 | .908 | 1.097 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | O | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 236 | 240 | 1 | 1.4839 | 109.280 | .578 | 1.359 | 1.937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 238 | 240 | 1 | 2.7550 | 42.155 | .490 | 1.447 | 1.937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 240 | 246 | 1 | .1178 | 151.435 | .270 | 1.937 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 242 | 246 | 1 | 194.6000 | 9.119 | 1.618 | .589 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 242 | 244 | 1 | .0201 | 250.580 | .126 | .589 | .715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 244 | 226 | 1 | .0250 | 136.696 | .047 | .715 | .762 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 244 | 248 | 1 | .0376 | 113.884 | .049 | .715 | .764 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 246 | 1 | 1 | .0620 | 259.699 | .418 | 2.207 | 0.000 | | | 0.000 | 0.000 | 2.625 | 107.43 | FNWS |
| 159 | 248 | 256 | 1 | .1002 | 69.633 | .049 | .764 | .812 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 248 | 260 | 1 | .4640 | 35.690 | .059 | .764 | .823 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 258 | 269 | 1 | .9180 | 33.882 | .105 | .844 | .950 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 269 | 268 | 1 | 3.0850 | 19.411 | .116 | .950 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 269 | 272 | 1 | .2000 | 14.471 | .004 | .950 | .954 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 252 | 1 | 61.6000 | 8.560 | .451 | .764 | 1.215 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 250 | 246 | 1 | .3719 | 29.144 | .366 | 1.841 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 252 | 236 | 1 | 6.6250 | 14.739 | .144 | 1.215 | 1.359 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 252 | 250 | 1 | 19.4000 | 17.969 | .626 | 1.215 | 1.841 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 254 | 250 | 1 | .2022 | 31.175 | .133 | 1.708 | 1.841 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 256 | 254 | 1 | 121.1000 | 8.601 | .896 | .812 | 1.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 256 | 258 | 1 | .0360 | 61.032 | .032 | .812 | .844 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 258 | 262 | 1 | .0889 | 10.527 | .001 | .844 | .845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 258 | 268 | 1 | 8.0200 | 16.623 | .222 | .844 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 260 | 264 | 1 | .5600 | 10.885 | .007 | .823 | .829 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 260 | 266 | 1 | 5.8870 | 13.264 | .104 | .823 | .926 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 260 | 262 | 1 | 1.6890 | 11.542 | .023 | .823 | .845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 262 | 268 | 1 | 4.5300 | 22.069 | .221 | .845 | 1.066 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 264 | 266 | 1 | 8.1820 | 10.885 | .097 | .829 | .926 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 266 | 252 | 1 | 4.9500 | 24.148 | .289 | .926 | 1.215 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 268 | 270 | 1 | 1.1160 | 58.103 | .377 | 1.066 | 1.443 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 270 | 254 | 1 | .7864 | 58.103 | .265 | 1.443 | 1.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 272 | 254 | 1 | 36.0200 | 14.471 | .754 | .954 | 1.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 220 | 224 | 1 | .0060 | 18.687 | .000 | 1.369 | 1.369 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 222 | 218 | 1 | 1.0100 | 44.515 | .200 | .776 | .976 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 401 | 212 | 1 | 5.4670 | 6.546 | .023 | .986 | 1.009 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 400 | 216 | 1 | 31.6400 | .973 | .002 | .986 | .986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 208 | 401 | 1 | .0588 | 6.546 | .000 | .986 | .986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 208 | 400 | 1 | .0588 | .973 | .000 | .986 | .986 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 5

Computer Output for Addition of a New Shaft with Fan

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FTD |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 479.006 | .773 | 6.284 | 0.000 | | | 0.000 | 0.000 | 7.058 | 532.71 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 216.693 | .410 | 0.000 | .410 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 385.382 | .408 | 0.000 | .408 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 17.331 | 5.875 | .408 | 6.284 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 213.433 | .057 | .408 | .465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 154.618 | .057 | .408 | .465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 214.685 | .063 | .465 | .529 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | -1.253 | -.000 | .465 | .465 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 141.871 | 4.525 | 1.759 | 6.284 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 12.158 | .222 | 1.537 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 6.254 | 1.009 | .529 | 1.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 182.714 | .022 | .529 | .551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 25.717 | .967 | .529 | 1.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 72.814 | .926 | 1.495 | 2.422 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 5.905 | .208 | 1.330 | 1.537 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 47.097 | .166 | 1.330 | 1.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 31.604 | .120 | .551 | .671 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 13.087 | .832 | .551 | 1.383 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 138.024 | .015 | .551 | .566 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 129.712 | .376 | 1.383 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 57.149 | .713 | .671 | 1.383 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 86.584 | .014 | .566 | .579 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 38.729 | .085 | .566 | .651 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 12.711 | .785 | .566 | 1.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 59.477 | .032 | 1.351 | 1.383 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 25.545 | .020 | .651 | .671 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 13.184 | .690 | .651 | 1.341 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 46.766 | .010 | 1.341 | 1.351 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 11.841 | .747 | .579 | 1.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9700 | 10.187 | .280 | .579 | .860 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 64.557 | .010 | .579 | .590 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 33.582 | .014 | 1.327 | 1.341 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 53.002 | .470 | .860 | 1.330 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 39.714 | .014 | .590 | .604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 42.816 | .209 | .651 | .860 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 15.714 | .061 | .590 | .651 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 27.102 | .047 | .604 | .651 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 12.613 | .099 | .604 | .702 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 12.613 | .007 | .702 | .710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 9.129 | .120 | .590 | .710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 21.741 | .050 | 1.277 | 1.327 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 21.741 | .567 | .710 | 1.277 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 131.096 | .006 | .465 | .471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4600 | 22.269 | 1.956 | .465 | 2.422 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 3.1060 | 95.083 | 2.808 | 2.422 | 5.229 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 319.804 | .813 | 5.471 | 6.284 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 194.304 | .070 | 5.401 | 5.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 26.542 | 4.929 | .471 | 5.401 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 104.554 | .014 | .471 | .485 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 10.443 | .000 | .485 | .486 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JR | NFA | R | Q | HL | HJA | HJE | AREA | VEL | NVF | HR | HF | AHF | FID |
|-----|-----|-----|-----|----------|----------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 94.112 | .010 | .485 | .495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 68 | 1 | .0609 | 167.762 | .171 | 5.229 | 5.401 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 108 | 1 | .4167 | 7.943 | .003 | .486 | .488 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0362 | 2.500 | .000 | .486 | 2.157 | | | 0.000 | 1.671 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | -5.443 | -.007 | .495 | .488 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 99.554 | .007 | .495 | .502 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 2.500 | .000 | .488 | 2.157 | | | 0.000 | 1.668 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | -60.386 | -.004 | 2.157 | 2.153 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | 33.277 | 2.971 | 2.157 | 5.129 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | 32.110 | 2.827 | 2.157 | 4.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .5420 | 64.699 | .227 | 4.984 | 5.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1918 | 72.679 | .101 | 5.129 | 5.229 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | 4.895 | .381 | 2.153 | 2.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | 11.816 | 1.537 | 2.153 | 3.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | -77.098 | -.015 | 2.153 | 2.138 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .1240 | 36.955 | .017 | 2.534 | 2.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | 12.0000 | 32.589 | 1.274 | 3.710 | 4.984 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | -96.694 | -.020 | 2.138 | 2.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | 5.954 | .361 | 2.138 | 2.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | 13.642 | 1.562 | 2.138 | 3.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .3388 | 32.060 | .035 | 2.499 | 2.534 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0709 | 24.347 | .004 | 3.700 | 3.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | -119.003 | -.007 | 2.117 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | 6.764 | .378 | 2.117 | 2.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | 15.544 | 1.581 | 2.117 | 3.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0405 | 17.369 | .001 | 2.496 | 2.497 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0040 | 26.106 | .000 | 2.498 | 2.499 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 2.447 | .052 | 2.498 | 2.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0124 | 28.553 | .001 | 2.497 | 2.498 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1487 | 10.705 | .002 | 3.698 | 3.700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | 3.304 | .383 | 2.111 | 2.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | -142.826 | -.001 | 2.111 | 2.110 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 20.520 | .037 | 2.111 | 2.148 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0560 | -4.840 | -.000 | 3.699 | 3.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 2.003 | .006 | 3.699 | 3.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0057 | -2.837 | -.000 | 3.699 | 3.699 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1570 | 10.606 | .002 | 2.494 | 2.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0234 | 7.302 | .000 | 2.494 | 2.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | -213.751 | -.018 | 2.110 | 2.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | 7.448 | 1.592 | 2.110 | 3.701 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 148 | 182 | 1 | .3320 | 63.477 | .134 | 2.110 | 2.244 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0819 | -19.238 | -.003 | 3.701 | 3.699 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 29.156 | .075 | 2.092 | 2.166 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | -245.356 | -.013 | 2.092 | 2.078 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | 2.448 | .404 | 2.092 | 2.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .3536 | -6.171 | -.001 | 2.495 | 2.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 156 | 154 | 1 | .0414 | -8.620 | -.000 | 2.496 | 2.495 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 158 | 164 | 1 | .0308 | -354.450 | -.387 | 2.078 | 1.691 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 158 | 162 | 1 | 228.8000 | 10.448 | 2.497 | 2.078 | 4.576 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 158 | 172 | 1 | .1665 | 98.646 | .162 | 2.078 | 2.240 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|--------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 160 | 150 | 1 | .2980 | -26.686 | -.021 | 3.723 | 3.701 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 162 | 160 | 1 | 1.5680 | -73.761 | -.853 | 4.576 | 3.723 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 164 | 170 | 1 | .1035 | -64.163 | .043 | 1.691 | 1.734 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 166 | 156 | 1 | .0400 | -33.639 | -.005 | 2.500 | 2.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 168 | 166 | 1 | 6.1400 | -51.817 | -1.649 | 4.149 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 170 | 166 | 1 | 23.1900 | 18.178 | .766 | 1.734 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 168 | 1 | 11.4200 | 45.985 | 2.415 | 1.734 | 4.149 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 172 | 162 | 1 | 2.4000 | 98.646 | 2.335 | 2.240 | 4.576 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 176 | 178 | 1 | 3.3890 | 9.336 | .030 | 2.148 | 2.177 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 176 | 134 | 1 | 27.9500 | 11.184 | .350 | 2.148 | 2.497 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 178 | 146 | 1 | 17.4600 | 13.473 | .317 | 2.177 | 2.494 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 180 | 178 | 1 | 6.4000 | 4.137 | .011 | 2.166 | 2.177 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 180 | 156 | 1 | 5.2640 | 25.019 | .330 | 2.166 | 2.496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 182 | 160 | 1 | 6.6730 | 47.075 | 1.479 | 2.244 | 3.723 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 182 | 184 | 1 | .1000 | 16.401 | .003 | 2.244 | 2.246 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 184 | 186 | 1 | 126.7000 | 7.255 | .667 | 2.246 | 2.913 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 184 | 190 | 1 | 137.6000 | 9.146 | 1.151 | 2.246 | 3.397 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 186 | 190 | 1 | 92.0000 | 7.255 | .484 | 2.913 | 3.397 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 190 | 142 | 1 | 11.2000 | 16.401 | .301 | 3.397 | 3.699 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 192 | 194 | 1 | .0073 | 26.350 | .001 | 3.704 | 3.705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 194 | 120 | 1 | .1018 | 20.772 | .004 | 3.705 | 3.710 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 194 | 210 | 1 | 142.0000 | 5.577 | .442 | 3.705 | 4.147 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 196 | 114 | 1 | 16.6000 | 39.402 | 2.577 | 2.550 | 5.128 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 200 | 202 | 1 | 828.4000 | 7.540 | 4.709 | .502 | 5.211 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 200 | 208 | 1 | .0080 | 92.015 | .007 | .502 | .508 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 202 | 64 | 1 | .4976 | 72.238 | .260 | 5.211 | 5.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 204 | 64 | 1 | .7029 | 53.261 | .199 | 5.271 | 5.471 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 206 | 204 | 1 | 5.2540 | 33.152 | .577 | 4.694 | 5.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 208 | 206 | 1 | 399.6000 | 6.821 | 4.185 | .508 | 4.694 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 208 | 214 | 1 | .0889 | 85.194 | .065 | .508 | .573 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 210 | 206 | 1 | 7.8920 | 26.331 | .547 | 4.147 | 4.694 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 212 | 204 | 1 | 5.4670 | 20.109 | .221 | 5.050 | 5.271 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 214 | 218 | 1 | .0889 | 20.109 | -.004 | .573 | .577 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 214 | 216 | 1 | .1333 | 65.084 | .056 | .573 | .630 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 216 | 210 | 1 | 81.6400 | 20.754 | 3.516 | .630 | 4.147 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 216 | 230 | 1 | 1.0220 | 44.331 | .201 | .630 | .831 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 218 | 220 | 1 | 26.6700 | 20.109 | 1.078 | .577 | 1.655 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 220 | 221 | 1 | 196.7000 | 10.725 | 2.263 | 1.655 | 3.918 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 220 | 212 | 1 | 385.5000 | 9.384 | 3.395 | 1.655 | 5.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 221 | 212 | 1 | 98.4400 | 10.725 | 1.132 | 3.918 | 5.050 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 222 | 224 | 1 | 22.7600 | 21.384 | 1.041 | .518 | 1.559 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 224 | 228 | 1 | .4158 | 21.384 | .019 | 1.559 | 1.578 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 226 | 222 | 1 | .0378 | 21.384 | .002 | .516 | .518 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 226 | 228 | 1 | 122.8000 | 9.297 | 1.061 | .516 | 1.578 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 226 | 232 | 1 | 64.0000 | 7.441 | .354 | .516 | .871 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 226 | 234 | 1 | .3877 | 50.979 | .101 | .516 | .617 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 228 | 239 | 1 | .1560 | 30.681 | .015 | 1.578 | 1.592 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 230 | 232 | 1 | .0840 | 49.009 | .040 | .831 | .871 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 232 | 236 | 1 | .2936 | 102.750 | .310 | .871 | 1.180 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 234 | 230 | 1 | 3.5020 | 24.698 | .214 | .617 | .831 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NFA | R | O | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHF | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 234 | 232 | 1 | 3.6730 | 26.280 | .254 | .617 | .871 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 236 | 240 | 1 | .4839 | 117.770 | .671 | 1.180 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 238 | 240 | 1 | 2.7550 | 30.681 | .259 | 1.592 | 1.852 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 240 | 246 | 1 | .1178 | 148.451 | .260 | 1.852 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 242 | 246 | 1 | 194.6000 | 9.350 | 1.701 | .410 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 242 | 244 | 1 | .0201 | 207.343 | .086 | .410 | .496 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 244 | 226 | 1 | .0250 | 89.100 | .020 | .496 | .516 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 244 | 248 | 1 | .0376 | 118.243 | .053 | .496 | .549 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 246 | 1 | 1 | .0620 | 261.024 | .422 | 2.111 | 0.000 | | | 0.000 | 0.000 | 2.534 | 104.21 | FNWS |
| 160 | 248 | 256 | 1 | .1002 | 72.381 | .052 | .549 | .601 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 248 | 260 | 1 | .4640 | 37.014 | .064 | .549 | .612 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 258 | 269 | 1 | .9180 | 35.251 | .114 | .636 | .750 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 163 | 269 | 268 | 1 | 3.0850 | 29.199 | .126 | .750 | .876 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 269 | 272 | 1 | .2000 | 15.053 | .005 | .750 | .755 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 248 | 252 | 1 | 61.6000 | 8.848 | .482 | .549 | 1.031 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 250 | 246 | 1 | .3719 | 103.223 | .396 | 1.715 | 2.111 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 252 | 236 | 1 | 6.6250 | 15.020 | .149 | 1.031 | 1.180 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 252 | 250 | 1 | 19.4000 | 18.776 | .684 | 1.031 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 254 | 250 | 1 | .2022 | 84.447 | .144 | 1.571 | 1.715 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 256 | 254 | 1 | 121.1000 | 8.947 | .969 | .601 | 1.571 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 256 | 258 | 1 | .0860 | 63.434 | .035 | .601 | .636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 258 | 262 | 1 | .0889 | 10.895 | .001 | .636 | .637 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 258 | 268 | 1 | 8.0200 | 17.289 | .240 | .636 | .876 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 260 | 264 | 1 | .5600 | 11.245 | .007 | .612 | .620 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 260 | 266 | 1 | 5.8870 | 13.703 | .111 | .612 | .723 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 260 | 262 | 1 | 1.6890 | 12.066 | .025 | .612 | .637 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 262 | 268 | 1 | 4.5300 | 22.960 | .239 | .637 | .876 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 264 | 266 | 1 | 8.1820 | 11.245 | .103 | .620 | .723 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 266 | 252 | 1 | 4.9500 | 24.948 | .308 | .723 | 1.031 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 268 | 270 | 1 | 1.1160 | 60.447 | .408 | .876 | 1.283 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 270 | 254 | 1 | .7864 | 60.447 | .287 | 1.283 | 1.571 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 272 | 254 | 1 | 36.0200 | 15.053 | .816 | .755 | 1.571 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 174 | 169 | 1 | .5000 | 5.000 | .001 | 1.604 | 4.728 | | | 0.000 | 3.122 | 0.000 | 0.00 | |
| 184 | 174 | 167 | 1 | .5000 | 5.000 | .001 | 1.604 | 4.220 | | | 0.000 | 2.614 | 0.000 | 0.00 | |
| 185 | 169 | 161 | 1 | .0530 | 107.803 | .062 | 4.728 | 4.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 186 | 162 | 161 | 1 | .0640 | 182.855 | .214 | 4.576 | 4.790 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 187 | 168 | 167 | 1 | .0740 | 97.803 | .071 | 4.149 | 4.220 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 188 | 161 | 1 | 1 | .0620 | 290.658 | .524 | 4.790 | 0.000 | | | 0.000 | 0.000 | 5.313 | 243.36 | FNES |
| 189 | 1 | 165 | 1 | .0873 | 428.613 | 1.604 | 0.000 | 1.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 190 | 165 | 164 | 1 | .0050 | 418.613 | .088 | 1.604 | 1.691 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 191 | 165 | 174 | 1 | .0620 | 10.000 | .001 | 1.604 | 1.604 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 192 | 167 | 169 | 1 | .4810 | 102.803 | .508 | 4.220 | 4.728 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 6

Computer Output for Increased Blade Settings

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|---------|------|
| 1 | 12 | 1 | 1 | .0337 | 684.007 | 1.577 | 8.373 | 0.000 | | | 0.000 | 0.000 | 9.951 | 1072.50 | FNMX |
| 2 | 1 | 242 | 1 | .0873 | 271.224 | .642 | 0.000 | .642 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 666.551 | 1.222 | 0.000 | 1.222 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 19.121 | 7.151 | 1.222 | 8.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 302.899 | .115 | 1.222 | 1.336 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 344.531 | .283 | 1.222 | 1.504 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 225.699 | .070 | 1.336 | 1.406 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 77.200 | .168 | 1.336 | 1.504 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 156.407 | 5.499 | 2.874 | 8.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 14.561 | .318 | 2.556 | 2.874 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | 6.677 | 1.150 | 1.406 | 2.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 193.864 | .025 | 1.406 | 1.431 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | 25.159 | .925 | 1.406 | 2.332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 69.293 | .839 | 2.332 | 3.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 7.884 | .370 | 2.185 | 2.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 44.134 | .146 | 2.185 | 2.332 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 34.444 | .142 | 1.431 | 1.574 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | 14.298 | .994 | 1.431 | 2.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 145.121 | .017 | 1.431 | 1.448 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 141.846 | .449 | 2.424 | 2.874 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 62.452 | .851 | 1.574 | 2.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 88.807 | .014 | 1.448 | 1.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 42.418 | .102 | 1.448 | 1.550 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | 13.897 | .939 | 1.448 | 2.387 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 65.095 | .038 | 2.387 | 2.424 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 28.008 | .024 | 1.550 | 1.574 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 14.410 | .824 | 1.550 | 2.374 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 51.199 | .012 | 2.374 | 2.387 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | 12.958 | .895 | 1.462 | 2.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | 10.019 | .271 | 1.462 | 1.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 65.830 | .010 | 1.462 | 1.473 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 36.789 | .017 | 2.357 | 2.374 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 52.018 | .453 | 1.733 | 2.185 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 40.369 | .015 | 1.473 | 1.487 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 41.999 | .201 | 1.532 | 1.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | 15.505 | .059 | 1.473 | 1.532 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 26.494 | .045 | 1.487 | 1.532 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 13.875 | .119 | 1.487 | 1.607 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 13.875 | .009 | 1.607 | 1.616 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 9.956 | .143 | 1.473 | 1.616 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 23.831 | .060 | 2.297 | 2.357 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 23.831 | .681 | 1.616 | 2.297 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 401.179 | .055 | 1.504 | 1.559 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | 20.551 | 1.666 | 1.504 | 3.170 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 3.1060 | 89.843 | 2.507 | 3.170 | 5.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 508.479 | 2.055 | 6.318 | 8.373 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 303.490 | .170 | 6.147 | 6.318 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 25.606 | 4.588 | 1.559 | 6.147 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 375.574 | .186 | 1.559 | 1.745 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 308.802 | .212 | 1.745 | 1.957 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 66.772 | .005 | 1.745 | 1.750 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 68 | 1 | .0609 | 277.885 | .470 | 5.677 | 6.147 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 108 | 1 | .4167 | 30.624 | .039 | 1.957 | 1.996 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0382 | 278.178 | .280 | 1.957 | 2.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | 32.554 | .246 | 1.750 | 1.996 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 34.217 | .001 | 1.750 | 1.751 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 63.178 | .241 | 1.996 | 2.238 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | 283.526 | .088 | 2.238 | 2.325 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | 32.078 | 2.761 | 2.238 | 4.999 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | 25.752 | 1.818 | 2.238 | 4.056 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .5420 | 144.384 | 1.130 | 4.056 | 5.186 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1918 | 188.041 | .678 | 4.999 | 5.677 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | 11.520 | 2.109 | 2.325 | 4.434 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | 11.596 | 1.499 | 2.325 | 3.824 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | 260.409 | .166 | 2.325 | 2.491 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .1240 | 145.888 | .264 | 4.434 | 4.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | .1648 | 118.632 | .232 | 3.824 | 4.056 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | 237.361 | .123 | 2.491 | 2.614 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | 11.440 | 1.331 | 2.491 | 3.822 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | 11.609 | 1.131 | 2.491 | 3.622 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .3388 | 134.368 | .612 | 3.822 | 4.434 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0709 | 103.169 | .075 | 3.622 | 3.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | 214.064 | .022 | 2.614 | 2.636 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | 11.676 | 1.128 | 2.614 | 3.742 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | 11.621 | .884 | 2.614 | 3.498 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0405 | 113.544 | .052 | 3.742 | 3.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0040 | 122.928 | .006 | 3.816 | 3.822 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 10.075 | .882 | 3.816 | 4.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0124 | 133.003 | .022 | 3.794 | 3.816 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1487 | 91.560 | .125 | 3.498 | 3.622 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | 5.184 | .944 | 2.636 | 3.579 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | 175.151 | .002 | 2.636 | 2.637 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 33.729 | .099 | 2.636 | 2.735 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0560 | 79.940 | .036 | 3.462 | 3.498 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 12.798 | .236 | 3.462 | 3.698 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0057 | 92.737 | .005 | 3.457 | 3.462 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1570 | 101.868 | .163 | 3.579 | 3.742 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0234 | 96.684 | .022 | 3.556 | 3.579 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | 129.587 | .007 | 2.637 | 2.643 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | 5.170 | .767 | 2.637 | 3.404 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 91 | 148 | 182 | 1 | .3320 | 40.395 | .054 | 2.637 | 2.691 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0819 | 80.837 | .054 | 3.404 | 3.457 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 38.940 | .133 | 2.643 | 2.777 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | 87.401 | .002 | 2.643 | 2.645 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | 3.247 | .710 | 2.643 | 3.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .3536 | 75.928 | .204 | 3.352 | 3.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 156 | 154 | 1 | .0414 | 72.682 | .022 | 3.331 | 3.352 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 158 | 164 | 1 | .0308 | 46.687 | .007 | 2.645 | 2.652 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 158 | 162 | 1 | 228.8000 | 3.231 | .239 | 2.645 | 2.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 100 | 158 | 172 | 1 | .1665 | 37.483 | .023 | 2.645 | 2.669 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 160 | 150 | 1 | .2980 | 75.667 | .171 | 3.233 | 3.404 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 102 | 162 | 160 | 1 | 1.5680 | 47.173 | .349 | 2.884 | 3.233 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 103 | 164 | 170 | 1 | .1035 | 33.735 | .012 | 2.652 | 2.664 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 164 | 174 | 1 | .5000 | 12.952 | .008 | 2.652 | 2.660 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 166 | 156 | 1 | .0400 | 40.228 | .006 | 3.324 | 3.331 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 168 | 166 | 1 | 6.1400 | 23.360 | .335 | 2.989 | 3.324 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 166 | 1 | 23.1900 | 16.868 | .660 | 2.664 | 3.324 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 170 | 168 | 1 | 11.4200 | 16.867 | .325 | 2.664 | 2.989 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 172 | 162 | 1 | 1.5340 | 37.483 | .216 | 2.669 | 2.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 174 | 162 | 1 | 53.6000 | 6.459 | .224 | 2.660 | 2.884 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 174 | 168 | 1 | 78.0000 | 6.493 | .329 | 2.660 | 2.989 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 176 | 178 | 1 | 3.3890 | 14.270 | .069 | 2.735 | 2.804 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 176 | 134 | 1 | 27.9500 | 19.459 | 1.058 | 2.735 | 3.794 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 178 | 146 | 1 | 17.4600 | 20.755 | .752 | 2.804 | 3.556 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 180 | 178 | 1 | 6.4000 | 6.486 | .027 | 2.777 | 2.804 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 180 | 156 | 1 | 5.2640 | 32.454 | .554 | 2.777 | 3.331 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 182 | 160 | 1 | 6.6730 | 28.495 | .542 | 2.691 | 3.233 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 182 | 184 | 1 | .1000 | 11.900 | .001 | 2.691 | 2.692 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 184 | 186 | 1 | 126.7000 | 5.264 | .351 | 2.692 | 3.044 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 184 | 190 | 1 | 137.6000 | 6.636 | .606 | 2.692 | 3.298 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 186 | 190 | 1 | 92.0000 | 15.264 | .255 | 3.044 | 3.298 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 190 | 142 | 1 | 11.2000 | 11.900 | .159 | 3.298 | 3.457 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 192 | 194 | 1 | .0073 | 115.967 | .010 | 3.698 | 3.708 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 194 | 120 | 1 | .1018 | 107.036 | .117 | 3.708 | 3.824 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 194 | 210 | 1 | 142.0000 | 8.931 | 1.133 | 3.708 | 4.840 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 196 | 114 | 1 | .1239 | 155.963 | .301 | 4.698 | 4.999 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 200 | 202 | 1 | 828.4000 | 6.440 | 3.435 | 1.751 | 5.186 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 200 | 208 | 1 | .0080 | 27.778 | .001 | 1.751 | 1.751 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 202 | 64 | 1 | .4976 | 150.824 | 1.132 | 5.186 | 6.318 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 204 | 64 | 1 | .7029 | 54.165 | .206 | 6.112 | 6.318 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 206 | 204 | 1 | 5.2540 | 34.801 | .636 | 5.475 | 6.112 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 208 | 206 | 1 | 899.6000 | 6.434 | 3.724 | 1.751 | 5.475 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 133 | 208 | 214 | 1 | .0889 | 21.344 | .004 | 1.751 | 1.755 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 210 | 206 | 1 | 7.8920 | 28.367 | .635 | 4.840 | 5.475 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 212 | 204 | 1 | 5.4670 | 19.364 | .205 | 5.907 | 6.112 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 214 | 212 | 1 | .0889 | 19.364 | .003 | 1.755 | 1.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 214 | 216 | 1 | .1333 | 1.980 | .000 | 1.755 | 1.756 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 216 | 210 | 1 | 81.6400 | 19.436 | 3.084 | 1.756 | 4.840 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 216 | 230 | 1 | 1.0220 | -17.456 | -.031 | 1.756 | 1.724 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 218 | 220 | 1 | 26.6700 | 19.364 | 1.000 | 1.759 | 2.759 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 220 | 221 | 1 | 196.7000 | 10.327 | 2.098 | 2.759 | 4.857 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 220 | 212 | 1 | 385.5000 | 9.036 | 3.148 | 2.759 | 5.907 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 221 | 212 | 1 | 98.4400 | 10.327 | 1.050 | 4.857 | 5.907 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 222 | 224 | 1 | 22.7600 | 23.327 | 1.238 | .823 | 2.062 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 224 | 228 | 1 | .4158 | 23.327 | .023 | 2.062 | 2.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 226 | 222 | 1 | .0378 | 23.327 | .002 | .821 | .823 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 226 | 228 | 1 | 122.8000 | 10.142 | 1.263 | .821 | 2.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 148 | 226 | 232 | 1 | 64.0000 | 11.915 | .709 | .821 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 149 | 226 | 234 | 1 | .3877 | 83.991 | .274 | .821 | 1.095 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 228 | 238 | 1 | .1560 | 33.469 | .017 | 2.084 | 2.102 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 230 | 232 | 1 | .0840 | 24.953 | .005 | 1.724 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 232 | 236 | 1 | .2936 | 78.450 | .181 | 1.730 | 1.910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 234 | 230 | 1 | 3.5020 | 42.409 | .630 | 1.095 | 1.724 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 234 | 232 | 1 | 3.6730 | 41.582 | .635 | 1.095 | 1.730 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 236 | 240 | 1 | .4839 | 101.647 | .500 | 1.910 | 2.410 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 238 | 240 | 1 | 2.7550 | 33.469 | .309 | 2.102 | 2.410 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 240 | 246 | 1 | .1178 | 135.116 | .215 | 2.410 | 2.625 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 242 | 246 | 1 | 194.6000 | 10.095 | 1.983 | .642 | 2.625 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 242 | 244 | 1 | .0201 | 261.129 | .137 | .642 | .779 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 244 | 226 | 1 | .0250 | 129.376 | .042 | .779 | .821 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 244 | 248 | 1 | .0376 | 131.753 | .065 | .779 | .845 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 246 | 1 | 1 | .0620 | 253.768 | .399 | 2.625 | 0.000 | | | 0.000 | 0.000 | 3.025 | 120.95 | FNWS |
| 163 | 248 | 256 | 1 | .1002 | 78.884 | .062 | .845 | .907 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 260 | 1 | .4640 | 42.138 | .082 | .845 | .927 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 258 | 269 | 1 | .9180 | 37.771 | .131 | .948 | 1.079 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 269 | 268 | 1 | 3.0850 | 21.640 | .144 | 1.079 | 1.224 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 269 | 272 | 1 | .2000 | 16.131 | .005 | 1.079 | 1.084 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 248 | 252 | 1 | 61.6000 | 10.731 | .709 | .845 | 1.554 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 169 | 250 | 246 | 1 | .3719 | 108.557 | .438 | 2.187 | 2.625 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 252 | 236 | 1 | 6.6250 | 23.196 | .356 | 1.554 | 1.910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 252 | 250 | 1 | 19.4000 | 18.067 | .633 | 1.554 | 2.187 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 254 | 250 | 1 | .2022 | 90.490 | .166 | 2.022 | 2.187 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 256 | 254 | 1 | 121.1000 | 9.594 | 1.115 | .907 | 2.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 174 | 256 | 258 | 1 | .0860 | 69.290 | .041 | .907 | .948 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 258 | 262 | 1 | .0889 | 12.985 | .001 | .948 | .950 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 258 | 268 | 1 | 8.0200 | 18.533 | .275 | .948 | 1.224 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 177 | 260 | 264 | 1 | .5600 | 13.762 | .011 | .927 | .938 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 260 | 266 | 1 | 5.8870 | 16.770 | .166 | .927 | 1.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 260 | 262 | 1 | 1.6890 | 11.606 | .023 | .927 | .950 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 262 | 268 | 1 | 4.5300 | 24.591 | .274 | .950 | 1.224 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 264 | 266 | 1 | 8.1820 | 13.762 | .155 | .938 | 1.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 266 | 252 | 1 | 4.9500 | 30.532 | .461 | 1.092 | 1.554 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 268 | 270 | 1 | 1.1160 | 64.765 | .468 | 1.224 | 1.692 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 270 | 254 | 1 | .7864 | 64.765 | .330 | 1.692 | 2.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 272 | 254 | 1 | 36.0200 | 16.131 | .937 | 1.084 | 2.022 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

PART 7

Computer Output for Reducing Leakage

| I | JA | JB | NFA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AH | FIT |
|----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 1 | 12 | 1 | 1 | .0337 | 498.766 | .838 | 5.962 | 0.000 | | | 0.000 | 0.000 | 0.983 | 534.48 | FNPL |
| 2 | 1 | 242 | 1 | .0873 | 228.476 | .456 | 0.000 | .456 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 3 | 1 | 14 | 1 | .0275 | 525.867 | .760 | 0.000 | .760 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 4 | 14 | 12 | 1 | 195.6000 | 16.307 | 5.201 | .760 | 5.962 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 5 | 14 | 16 | 1 | .0125 | 242.989 | .074 | .760 | .834 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 6 | 14 | 60 | 1 | .0238 | 266.572 | .169 | .760 | .930 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 7 | 16 | 22 | 1 | .0137 | 184.810 | .047 | .834 | .881 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 8 | 16 | 60 | 1 | .2816 | 58.179 | .095 | .834 | .930 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 9 | 18 | 12 | 1 | 2.2480 | 123.156 | 3.410 | 2.552 | 5.962 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 10 | 20 | 18 | 1 | 15.0000 | 4.075 | .025 | 2.527 | 2.552 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 11 | 22 | 20 | 1 | 258.0000 | .709 | .013 | .881 | 2.527 | | | 0.000 | 1.633 | 0.000 | 0.00 | |
| 12 | 22 | 28 | 1 | .0067 | 183.890 | .023 | .881 | .904 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 13 | 22 | 24 | 1 | 14.6200 | .211 | .000 | .881 | 2.742 | | | 0.000 | 1.861 | 0.000 | 0.00 | |
| 14 | 24 | 62 | 1 | 1.7470 | 61.654 | .664 | 2.742 | 3.406 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 15 | 26 | 20 | 1 | 59.6000 | 3.366 | .068 | 2.460 | 2.527 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 16 | 26 | 24 | 1 | .7477 | 61.443 | .282 | 2.460 | 2.742 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 17 | 28 | 32 | 1 | 1.1980 | 39.668 | .189 | .904 | 1.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 18 | 28 | 30 | 1 | 48.6000 | .460 | .001 | .904 | 2.235 | | | 0.000 | 1.330 | 0.000 | 0.00 | |
| 19 | 28 | 34 | 1 | .0079 | 143.762 | .016 | .904 | .920 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 20 | 30 | 18 | 1 | .2234 | 119.081 | .317 | 2.235 | 2.552 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 21 | 32 | 30 | 1 | 2.1830 | 72.384 | 1.144 | 1.092 | 2.235 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 22 | 34 | 42 | 1 | .0181 | 93.181 | .016 | .920 | .936 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 23 | 34 | 38 | 1 | .5667 | 49.713 | .140 | .920 | 1.060 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 24 | 34 | 36 | 1 | 48.6000 | .868 | .004 | .920 | 2.217 | | | 0.000 | 1.293 | 0.000 | 0.00 | |
| 25 | 36 | 30 | 1 | .0906 | 46.237 | .019 | 2.217 | 2.235 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 26 | 38 | 32 | 1 | .3000 | 32.716 | .032 | 1.060 | 1.092 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 27 | 38 | 40 | 1 | 39.7000 | 16.997 | 1.147 | 1.060 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 28 | 40 | 36 | 1 | .0467 | 45.369 | .010 | 2.207 | 2.217 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 29 | 42 | 44 | 1 | 53.2800 | .414 | .001 | .936 | 2.197 | | | 0.000 | 1.260 | 0.000 | 0.00 | |
| 30 | 42 | 46 | 1 | 26.9900 | .126 | .000 | .936 | 1.758 | | | 0.000 | .822 | 0.000 | 0.00 | |
| 31 | 42 | 48 | 1 | .0242 | 92.641 | .021 | .936 | .957 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 32 | 44 | 40 | 1 | .1282 | 28.372 | .010 | 2.197 | 2.207 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 33 | 46 | 26 | 1 | 1.6730 | 64.809 | .703 | 1.758 | 2.460 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 34 | 48 | 52 | 1 | .0892 | 80.236 | .057 | .957 | 1.014 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 35 | 47 | 46 | 1 | 1.1400 | 64.683 | .477 | 1.281 | 1.758 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 36 | 48 | 47 | 1 | 2.4690 | .055 | .000 | .957 | 1.281 | | | 0.000 | .324 | 0.000 | 0.00 | |
| 37 | 52 | 47 | 1 | .6386 | 64.628 | .267 | 1.014 | 1.281 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 38 | 52 | 58 | 1 | 6.2000 | 15.608 | .151 | 1.014 | 1.165 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 39 | 58 | 56 | 1 | .4590 | 15.608 | .011 | 1.165 | 1.176 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 40 | 48 | 56 | 1 | 14.4000 | 12.350 | .220 | .957 | 1.176 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 41 | 54 | 44 | 1 | 1.0560 | 27.958 | .083 | 2.114 | 2.197 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 42 | 56 | 54 | 1 | 12.0000 | 27.958 | .938 | 1.176 | 2.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 43 | 60 | 70 | 1 | .0034 | 323.906 | .036 | .930 | .965 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 44 | 60 | 62 | 1 | 39.4500 | .845 | .003 | .930 | 3.406 | | | 0.000 | 2.474 | 0.000 | 0.00 | |
| 45 | 62 | 102 | 1 | 3.1060 | 62.499 | 1.213 | 3.406 | 4.619 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 46 | 64 | 12 | 1 | .0795 | 359.304 | 1.026 | 4.935 | 5.962 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 47 | 68 | 64 | 1 | .0185 | 202.444 | .076 | 4.859 | 4.935 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 48 | 70 | 68 | 1 | 69.9700 | 3.750 | .098 | .965 | 4.859 | | | 0.000 | 3.796 | 0.000 | 0.00 | |
| 49 | 70 | 100 | 1 | .0132 | 320.156 | .135 | .965 | 1.101 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 50 | 100 | 104 | 1 | .0222 | 226.533 | .114 | 1.101 | 1.215 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JB | NPA | R | Q | HL | HJA | HJB | AREA | VEL | NVP | HR | HF | AHP | FID |
|-----|-----|-----|-----|----------|---------|------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 51 | 100 | 106 | 1 | .0110 | 93.623 | .010 | 1.101 | 1.110 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 52 | 102 | 68 | 1 | .0609 | 198.694 | .240 | 4.619 | 4.859 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 53 | 104 | 108 | 1 | .4167 | 22.825 | .022 | 1.215 | 1.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 54 | 104 | 110 | 1 | .0362 | 203.708 | .150 | 1.215 | 1.365 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 55 | 106 | 108 | 1 | 2.3200 | 23.304 | .126 | 1.110 | 1.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 56 | 106 | 200 | 1 | .0066 | 70.319 | .003 | 1.110 | 1.114 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 57 | 108 | 110 | 1 | .6039 | 46.129 | .129 | 1.236 | 1.365 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 58 | 110 | 116 | 1 | .0109 | 248.397 | .067 | 1.365 | 1.432 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 59 | 110 | 114 | 1 | 26.8300 | .868 | .002 | 1.365 | 4.263 | | | 0.000 | 2.896 | 0.000 | 0.00 | |
| 60 | 110 | 112 | 1 | 27.4200 | .572 | .001 | 1.365 | 3.673 | | | 0.000 | 2.307 | 0.000 | 0.00 | |
| 61 | 112 | 202 | 1 | .5420 | 107.184 | .623 | 3.673 | 4.296 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 62 | 114 | 102 | 1 | .1918 | 136.194 | .356 | 4.263 | 4.619 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 63 | 116 | 118 | 1 | 158.9000 | .898 | .013 | 1.432 | 3.839 | | | 0.000 | 2.394 | 0.000 | 0.00 | |
| 64 | 116 | 120 | 1 | 111.5000 | .639 | .005 | 1.432 | 3.486 | | | 0.000 | 2.049 | 0.000 | 0.00 | |
| 65 | 116 | 122 | 1 | .0245 | 246.860 | .149 | 1.432 | 1.581 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 66 | 118 | 196 | 1 | .1240 | 126.129 | .197 | 3.839 | 4.036 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 67 | 120 | 112 | 1 | .1648 | 106.612 | .187 | 3.486 | 3.673 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 68 | 122 | 128 | 1 | .0218 | 245.787 | .132 | 1.581 | 1.713 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 69 | 122 | 124 | 1 | 101.7000 | .580 | .003 | 1.581 | 3.308 | | | 0.000 | 1.723 | 0.000 | 0.00 | |
| 70 | 122 | 126 | 1 | 83.9500 | .493 | .002 | 1.581 | 3.293 | | | 0.000 | 1.709 | 0.000 | 0.00 | |
| 71 | 124 | 118 | 1 | .3388 | 125.231 | .531 | 3.308 | 3.839 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 72 | 126 | 192 | 1 | .0709 | 98.820 | .069 | 3.293 | 3.362 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 73 | 128 | 138 | 1 | .0047 | 244.990 | .028 | 1.713 | 1.741 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 74 | 128 | 130 | 1 | 82.7200 | .447 | .002 | 1.713 | 3.229 | | | 0.000 | 1.514 | 0.000 | 0.00 | |
| 75 | 128 | 136 | 1 | 65.4300 | .350 | .001 | 1.713 | 3.149 | | | 0.000 | 1.435 | 0.000 | 0.00 | |
| 76 | 130 | 134 | 1 | .0405 | 111.443 | .050 | 3.229 | 3.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 77 | 132 | 124 | 1 | .0040 | 124.651 | .006 | 3.302 | 3.308 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 78 | 132 | 196 | 1 | 86.8700 | 9.197 | .735 | 3.302 | 4.036 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 79 | 134 | 132 | 1 | .0124 | 133.848 | .022 | 3.279 | 3.302 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 80 | 136 | 126 | 1 | .1487 | 98.327 | .144 | 3.149 | 3.293 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 81 | 138 | 144 | 1 | 351.2000 | .384 | .005 | 1.741 | 3.036 | | | 0.000 | 1.290 | 0.000 | 0.00 | |
| 82 | 138 | 148 | 1 | .0005 | 205.302 | .002 | 1.741 | 1.743 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 83 | 138 | 176 | 1 | .8728 | 39.304 | .135 | 1.741 | 1.876 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 84 | 140 | 136 | 1 | .0560 | 97.977 | .054 | 3.095 | 3.149 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 85 | 140 | 192 | 1 | 14.4000 | 13.611 | .267 | 3.095 | 3.362 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 86 | 142 | 140 | 1 | .0057 | 111.589 | .007 | 3.088 | 3.095 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 87 | 144 | 130 | 1 | .1570 | 110.996 | .193 | 3.036 | 3.229 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 88 | 146 | 144 | 1 | .0234 | 110.612 | .029 | 3.007 | 3.036 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 89 | 148 | 152 | 1 | .0040 | 152.943 | .009 | 1.743 | 1.752 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 90 | 148 | 150 | 1 | 286.9000 | .312 | .003 | 1.743 | 3.012 | | | 0.000 | 1.266 | 0.000 | 0.00 | |
| 91 | 148 | 152 | 1 | .3320 | 52.047 | .090 | 1.743 | 1.833 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 92 | 150 | 142 | 1 | .0819 | 96.357 | .076 | 3.012 | 3.088 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 93 | 152 | 180 | 1 | .8778 | 45.864 | .135 | 1.752 | 1.937 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 94 | 152 | 158 | 1 | .0022 | 106.792 | .003 | 1.752 | 1.755 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 95 | 152 | 154 | 1 | 673.6000 | .287 | .006 | 1.752 | 2.744 | | | 0.000 | .986 | 0.000 | 0.00 | |
| 96 | 154 | 146 | 1 | .3536 | 86.274 | .263 | 1.744 | 3.007 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 97 | 152 | 154 | 1 | .0414 | 85.987 | .031 | 2.713 | 2.744 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 98 | 152 | 164 | 1 | .0308 | 56.295 | .010 | 1.755 | 1.765 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 99 | 152 | 162 | 1 | 228.8000 | .096 | .000 | 1.755 | 2.187 | | | 0.000 | .432 | 0.000 | 0.00 | |
| 100 | 152 | 172 | 1 | .1665 | 50.401 | .042 | 1.755 | 1.797 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JE | NFA | R | S | H | H.M | S.P | AREA | VEL | NVP | HR | HF | HF | ETD |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|------|-----|
| 101 | 160 | 150 | 1 | .2980 | 96.045 | .275 | 2.737 | 3.011 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 101 | 161 | 160 | 1 | 1.5680 | 59.239 | .550 | 2.187 | 2.737 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 101 | 164 | 170 | 1 | .1035 | 39.901 | .016 | 1.765 | 1.733 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 104 | 164 | 174 | 1 | .5000 | 16.382 | .013 | 1.765 | 1.718 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 105 | 166 | 156 | 1 | .0400 | 47.562 | .009 | 2.704 | 1.718 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 106 | 168 | 166 | 1 | 6.1400 | 27.611 | .468 | 2.234 | 1.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 107 | 170 | 166 | 1 | 23.1900 | 19.946 | .923 | 1.781 | 1.704 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 108 | 170 | 168 | 1 | 11.4200 | 19.958 | .455 | 1.781 | 1.234 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 109 | 172 | 162 | 1 | 1.5340 | 50.401 | .390 | 1.797 | 2.187 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 110 | 174 | 162 | 1 | 53.6000 | 8.733 | .409 | 1.778 | 2.187 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 111 | 174 | 168 | 1 | 78.0000 | 7.659 | .458 | 1.778 | 2.236 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 112 | 176 | 178 | 1 | 3.3890 | 16.899 | .097 | 1.876 | 1.973 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 113 | 176 | 134 | 1 | 27.9500 | 22.408 | 1.403 | 1.876 | 3.279 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 114 | 178 | 148 | 1 | 17.4600 | 24.338 | 1.034 | 1.973 | 3.007 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 115 | 180 | 178 | 1 | 6.4000 | 7.439 | .035 | 1.937 | 1.973 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 116 | 180 | 156 | 1 | 5.2640 | 38.425 | .777 | 1.937 | 2.713 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 117 | 182 | 160 | 1 | 6.6730 | 36.815 | .904 | 1.833 | 2.737 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 118 | 182 | 184 | 1 | .1000 | 15.232 | .002 | 1.833 | 1.835 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 119 | 184 | 186 | 1 | 126.7000 | 6.738 | .575 | 1.835 | 2.411 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 120 | 184 | 190 | 1 | 137.6000 | 8.494 | .993 | 1.835 | 2.828 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 121 | 186 | 190 | 1 | 92.0000 | 6.738 | .418 | 2.411 | 2.828 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 122 | 190 | 142 | 1 | 11.2000 | 15.232 | .260 | 2.828 | 3.088 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 123 | 192 | 194 | 1 | .0073 | 112.432 | .009 | 3.362 | 3.371 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 124 | 194 | 120 | 1 | .1018 | 105.973 | .114 | 3.371 | 3.486 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 125 | 194 | 210 | 1 | 142.0000 | 6.459 | .592 | 3.371 | 3.964 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 126 | 196 | 114 | 1 | .1239 | 135.326 | .227 | 4.036 | 4.263 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 127 | 200 | 202 | 1 | 828.4000 | 6.198 | 3.182 | 1.114 | 4.296 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 128 | 200 | 208 | 1 | .0080 | 64.121 | .003 | 1.114 | 1.117 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 129 | 202 | 64 | 1 | .4976 | 113.382 | .640 | 4.296 | 4.935 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 130 | 204 | 64 | 1 | .7029 | 43.479 | .133 | 4.802 | 4.935 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 131 | 206 | 204 | 1 | 5.2540 | 25.754 | .348 | 4.454 | 4.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 132 | 208 | 206 | 1 | 899.6000 | .830 | .062 | 1.117 | 4.454 | | | 0.000 | 3.275 | 0.000 | 0.00 | |
| 133 | 208 | 214 | 1 | .0889 | 63.291 | .036 | 1.117 | 1.152 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 134 | 210 | 206 | 1 | 7.8920 | 24.924 | .490 | 3.964 | 4.454 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 135 | 212 | 204 | 1 | 5.4670 | 17.725 | .172 | 4.631 | 4.802 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 136 | 214 | 218 | 1 | .0889 | 17.725 | .003 | 1.152 | 1.155 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 137 | 214 | 216 | 1 | .1333 | 45.566 | .028 | 1.152 | 1.180 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 138 | 216 | 210 | 1 | 81.6400 | 18.465 | 2.784 | 1.180 | 3.964 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 139 | 216 | 230 | 1 | 1.0220 | 27.101 | .075 | 1.180 | 1.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 140 | 218 | 220 | 1 | 26.6700 | 17.725 | .838 | 1.155 | 1.993 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 141 | 220 | 221 | 1 | 196.7000 | 9.453 | 1.758 | 1.993 | 3.751 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 142 | 220 | 212 | 1 | 385.5000 | 8.272 | 2.638 | 1.993 | 4.631 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 143 | 221 | 212 | 1 | 98.4400 | 9.453 | .880 | 3.751 | 4.631 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 144 | 222 | 224 | 1 | 22.7600 | 25.121 | 1.436 | .580 | 2.016 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 145 | 224 | 228 | 1 | .4158 | 25.121 | .026 | 2.016 | 2.042 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 146 | 226 | 222 | 1 | .0378 | 25.121 | .002 | .577 | .580 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 147 | 226 | 228 | 1 | 122.8000 | 1.920 | .045 | .577 | 2.042 | | | 0.000 | 1.420 | 0.000 | 0.00 | |
| 148 | 226 | 232 | 1 | 64.0000 | 1.020 | .007 | .577 | 1.289 | | | 0.000 | .705 | 0.000 | 0.00 | |
| 149 | 226 | 234 | 1 | .3877 | 73.542 | .210 | .577 | .787 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 150 | 228 | 238 | 1 | .1560 | 27.041 | .011 | 2.042 | 2.054 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

| I | JA | JIB | NPA | R | Q | HL | HJA | HJR | AREA | VEL | NVF | HR | HF | AHI | FI |
|-----|-----|-----|-----|----------|---------|-------|-------|-------|------|-----|-------|-------|-------|--------|------|
| 151 | 230 | 232 | 1 | .0840 | 63.665 | .034 | 1.255 | 1.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 152 | 232 | 236 | 1 | .2936 | 101.663 | .303 | 1.289 | 1.593 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 153 | 234 | 230 | 1 | 3.5020 | 36.564 | .468 | .787 | 1.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 154 | 234 | 232 | 1 | 3.6730 | 36.978 | .502 | .787 | 1.289 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 155 | 236 | 240 | 1 | .4839 | 117.007 | .662 | 1.593 | 2.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 156 | 238 | 240 | 1 | 2.7550 | 27.041 | .201 | 2.054 | 2.255 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 157 | 240 | 246 | 1 | .1178 | 144.048 | .244 | 2.255 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 158 | 242 | 246 | 1 | 194.6000 | 10.248 | 2.044 | .456 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 159 | 242 | 244 | 1 | .0201 | 218.228 | .096 | .456 | .551 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 160 | 244 | 226 | 1 | .0250 | 101.604 | .026 | .551 | .577 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 161 | 244 | 248 | 1 | .0376 | 116.625 | .051 | .551 | .603 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 162 | 246 | 1 | 1 | .0620 | 255.577 | .405 | 2.500 | 0.000 | | | 0.000 | 0.000 | 2.905 | 116.97 | FNWS |
| 163 | 248 | 256 | 1 | .1002 | 72.825 | .053 | .603 | .656 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 164 | 248 | 260 | 1 | .4640 | 43.063 | .086 | .603 | .689 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 165 | 258 | 269 | 1 | .9180 | 47.851 | .210 | .700 | .910 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 166 | 269 | 268 | 1 | 3.0850 | 30.660 | .290 | .910 | 1.200 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 167 | 269 | 272 | 1 | .2000 | 17.191 | .006 | .910 | .916 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 168 | 248 | 252 | 1 | 61.6000 | .737 | .003 | .603 | 1.437 | | | 0.000 | .831 | 0.000 | 0.00 | |
| 169 | 250 | 246 | 1 | .3719 | 101.281 | .381 | 2.118 | 2.500 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 170 | 252 | 236 | 1 | 6.6250 | 15.344 | .156 | 1.437 | 1.593 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 171 | 252 | 250 | 1 | 19.4000 | 18.742 | .681 | 1.437 | 2.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 172 | 254 | 250 | 1 | .2022 | 82.539 | .138 | 1.980 | 2.118 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 173 | 256 | 254 | 1 | 121.1000 | 1.300 | .020 | .656 | 1.980 | | | 0.000 | 1.304 | 0.000 | 0.00 | |
| 174 | 256 | 258 | 1 | .0860 | 71.525 | .044 | .656 | .700 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 175 | 258 | 262 | 1 | .0889 | 23.353 | .005 | .700 | .705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 176 | 258 | 268 | 1 | 8.0200 | .321 | .000 | .700 | 1.200 | | | 0.000 | .500 | 0.000 | 0.00 | |
| 177 | 260 | 264 | 1 | .5600 | 15.031 | .013 | .689 | .701 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 178 | 260 | 266 | 1 | 5.8870 | 18.317 | .198 | .689 | .886 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 179 | 260 | 262 | 1 | 1.6890 | 9.715 | .016 | .689 | .705 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 180 | 262 | 268 | 1 | 4.5300 | 33.067 | .495 | .705 | 1.200 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 181 | 264 | 266 | 1 | 8.1820 | 15.031 | .185 | .701 | .886 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 182 | 266 | 252 | 1 | 4.9500 | 33.348 | .550 | .886 | 1.437 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 183 | 268 | 270 | 1 | 1.1160 | 64.049 | .458 | 1.200 | 1.658 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 184 | 270 | 254 | 1 | .7864 | 64.049 | .323 | 1.658 | 1.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |
| 185 | 272 | 254 | 1 | 36.0200 | 17.191 | 1.064 | .916 | 1.980 | | | 0.000 | 0.000 | 0.000 | 0.00 | |

651.45