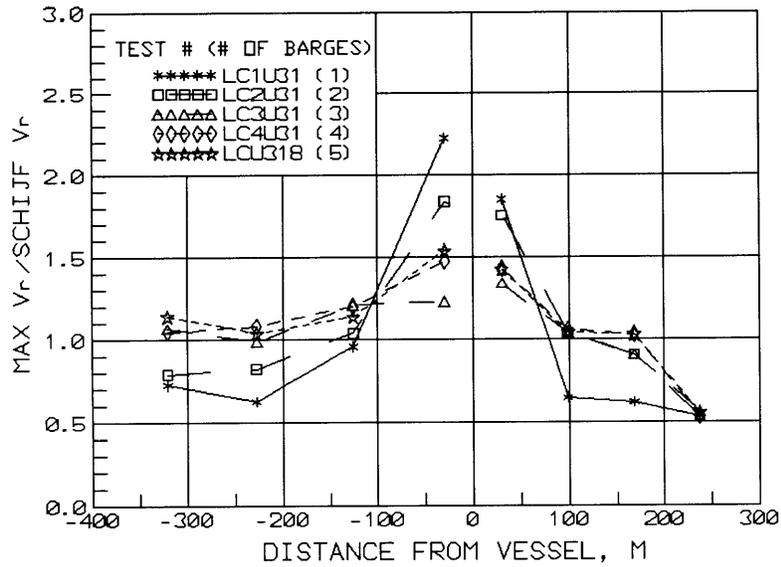
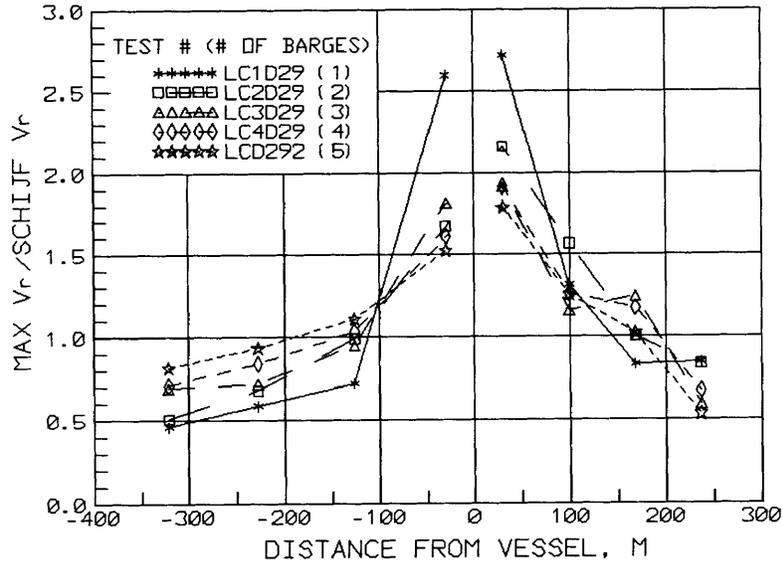


a. SPEED RELATIVE TO GROUND = 2.28 M/SEC

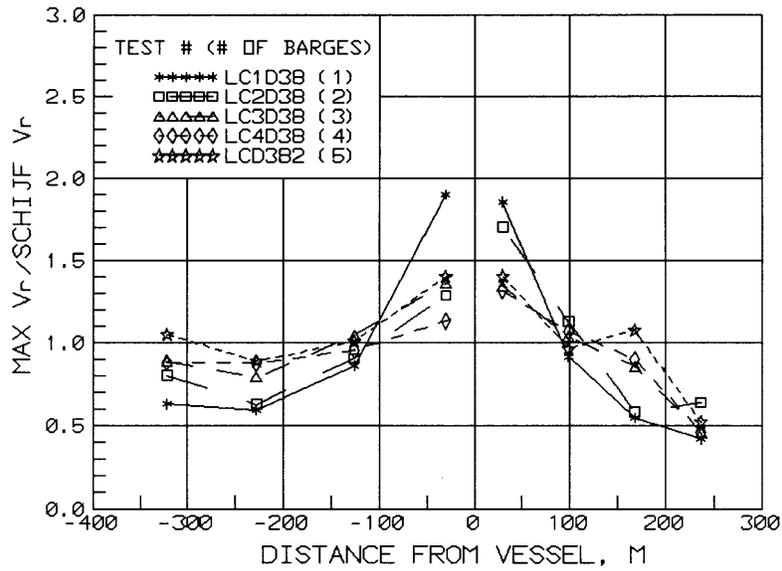


b. SPEED RELATIVE TO GROUND = 3.18 M/SEC

Figure 67. Return velocity, tow length effects, upbound tow



a. SPEED RELATIVE TO GROUND = 2.92 M/SEC



b. SPEED RELATIVE TO GROUND = 3.82 M/SEC

Figure 68. Return velocity, tow length effects, downbound tow

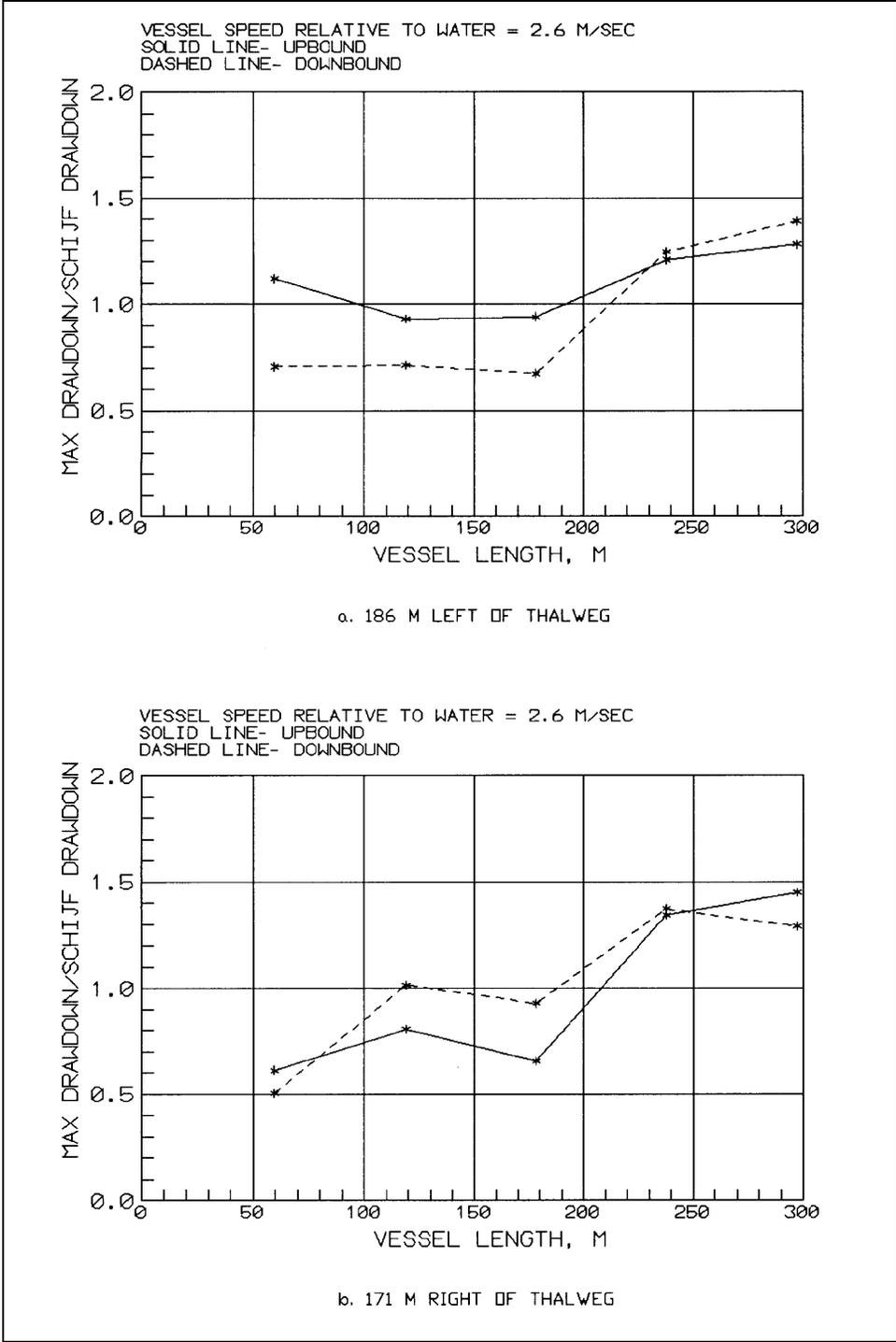


Figure 69. Drawdown versus tow length, tow speed relative to water = 2.6 m/sec

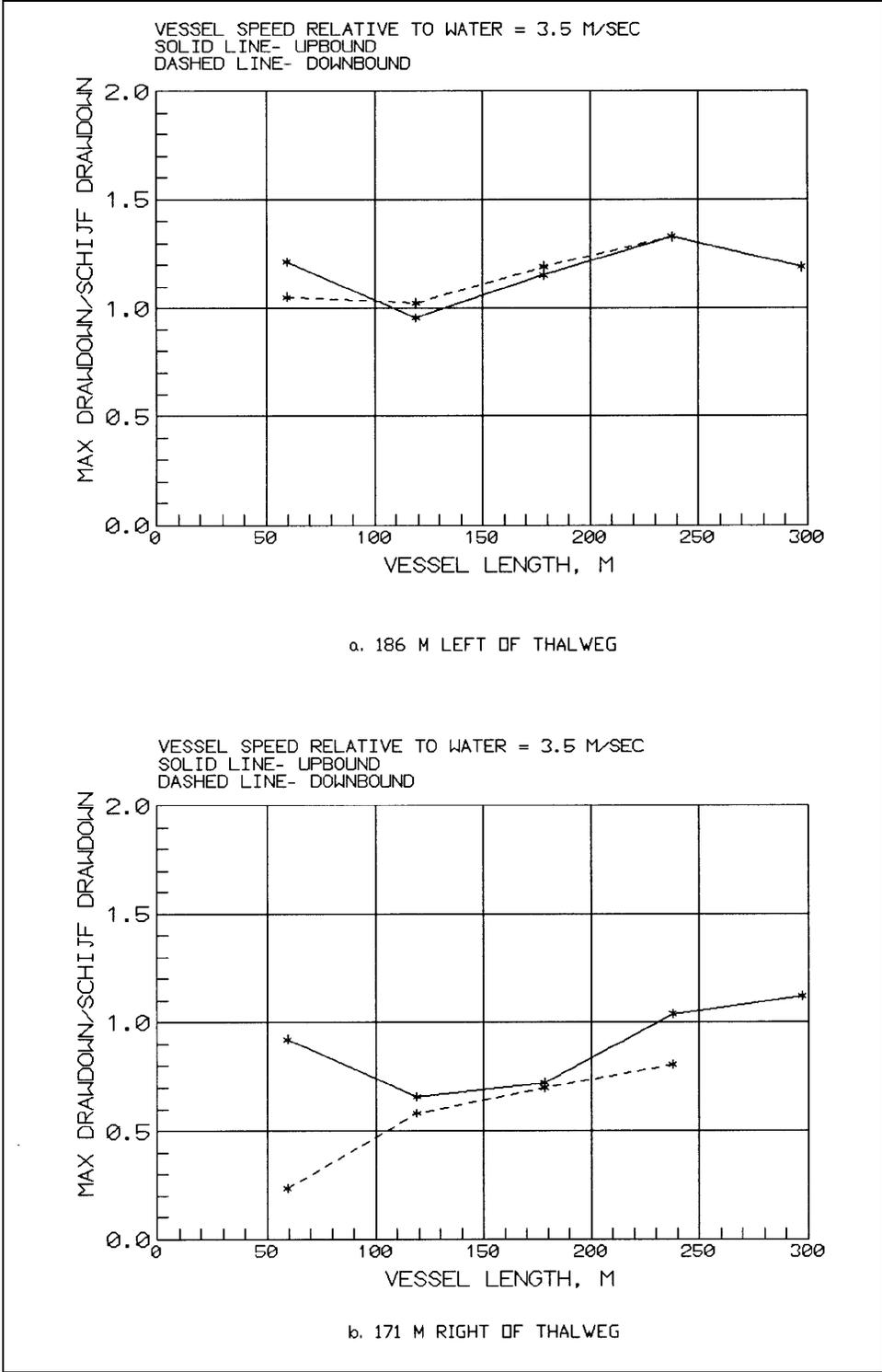
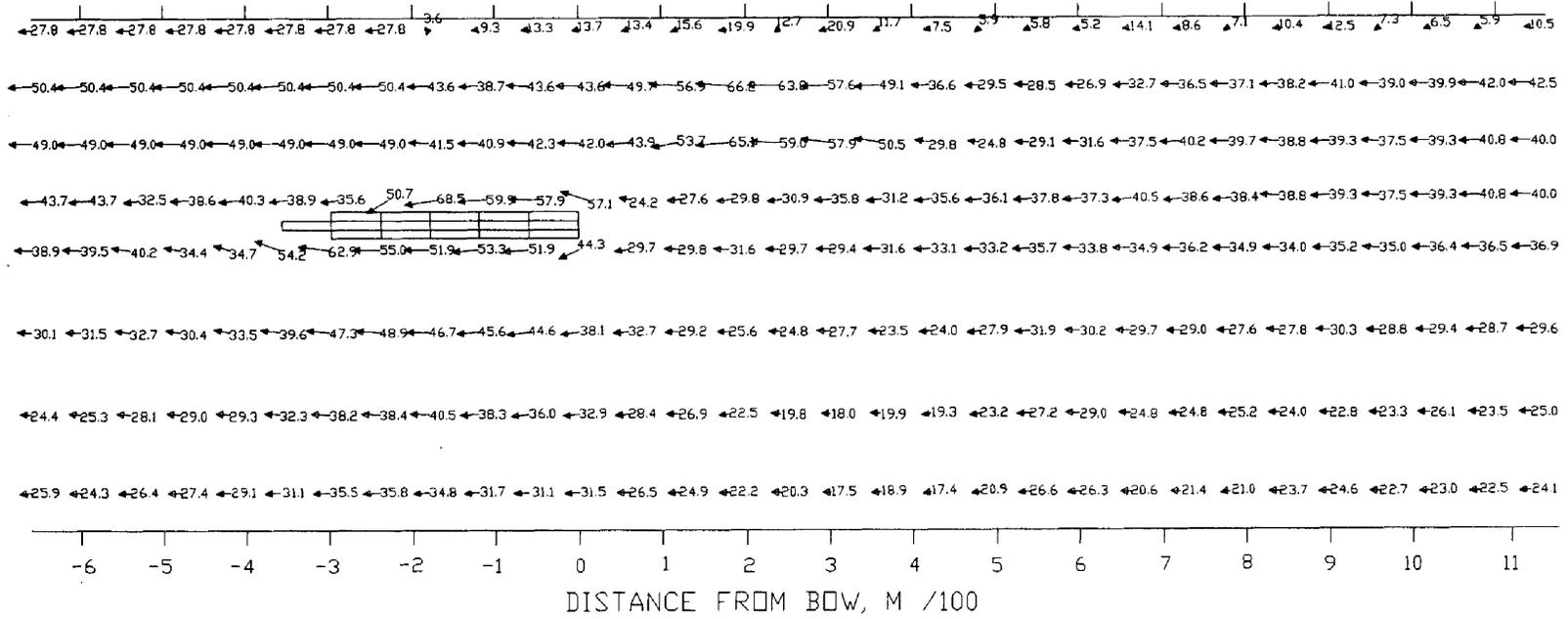


Figure 70. Drawdown versus tow length, tow speed relative to water = 3.5 m/sec

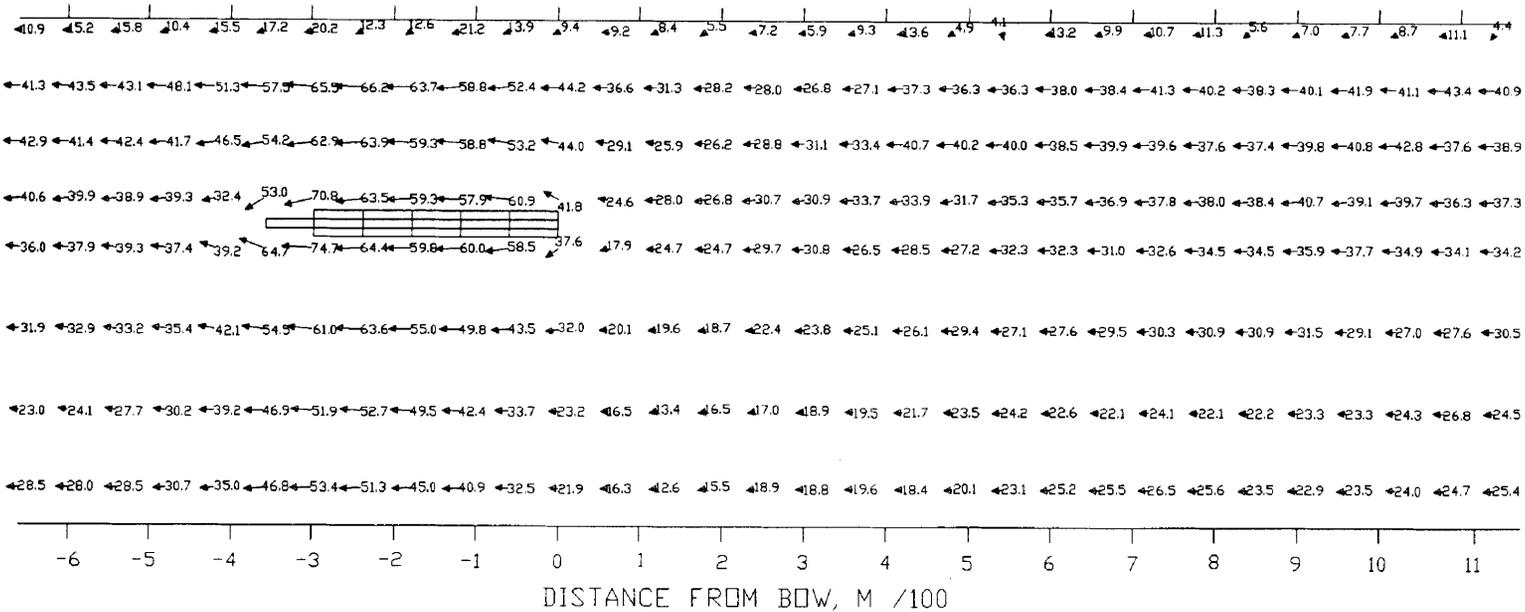
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST LCEU22C

Figure 71. Vector plot, test LCEU22C

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST LCEU31C

Figure 72. Vector plot, test LCEU31C

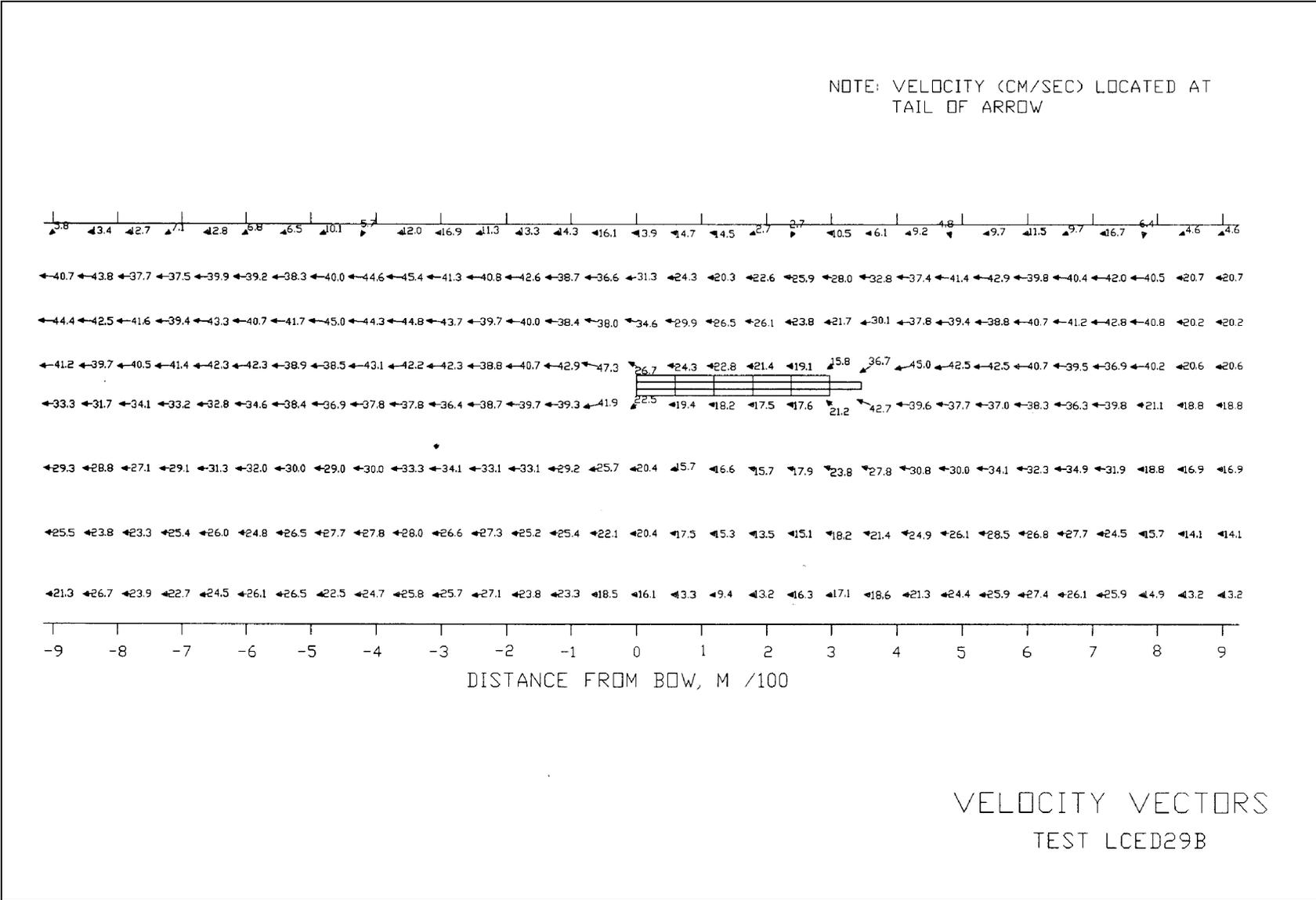
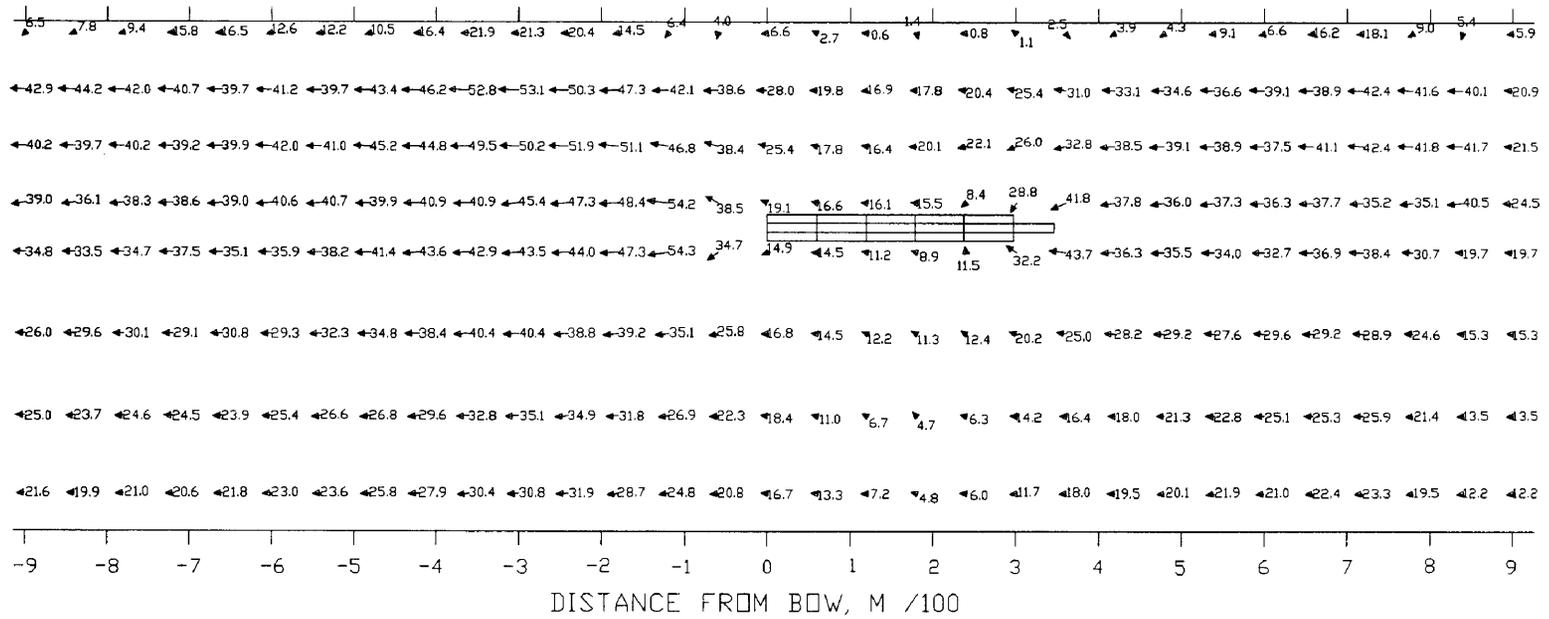


Figure 73. Vector plot, test LCED29B

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST LCED38C

Figure 74. Vector plot, test LCED38C

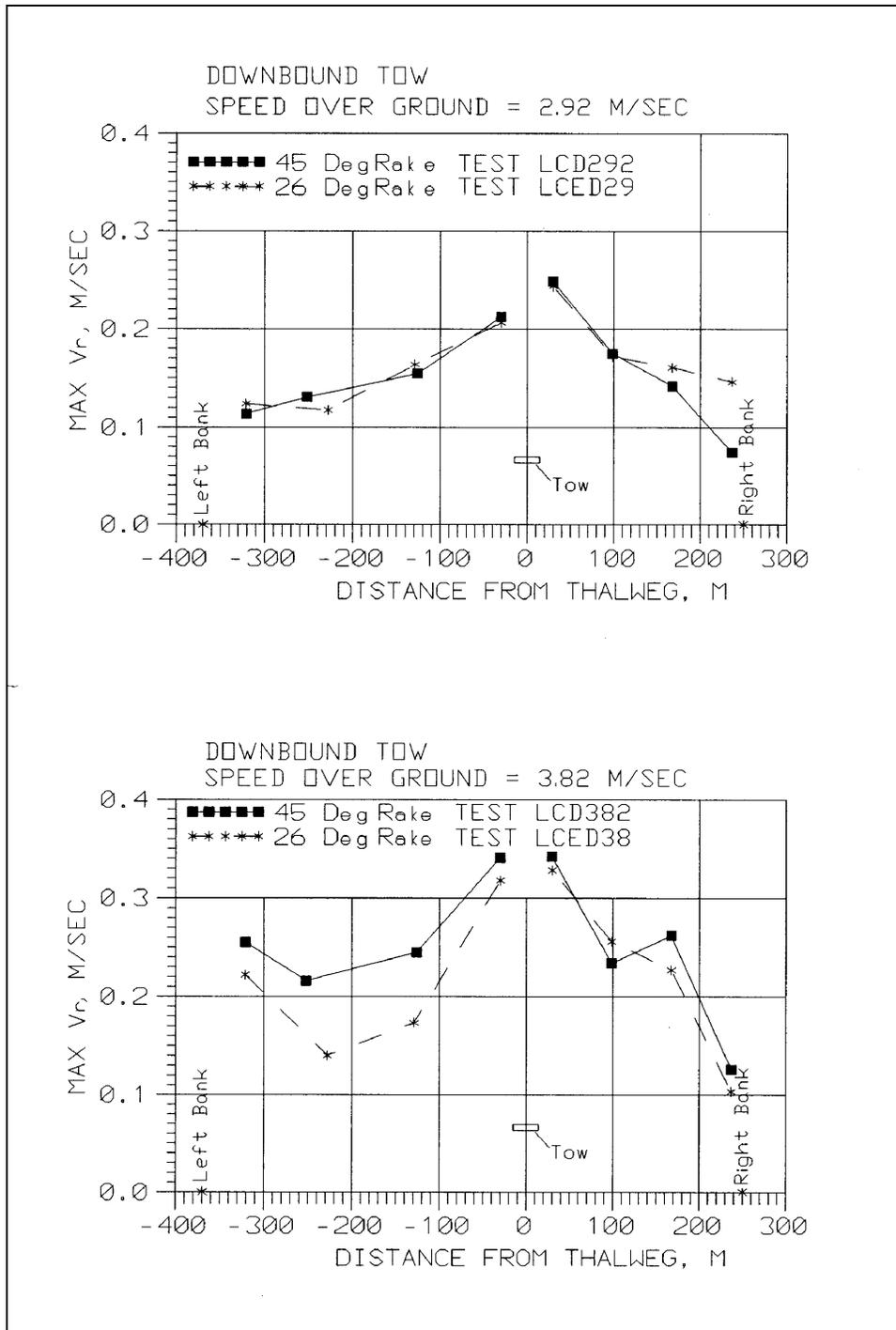


Figure 75. Return velocity, rake angle effects, downbound tow

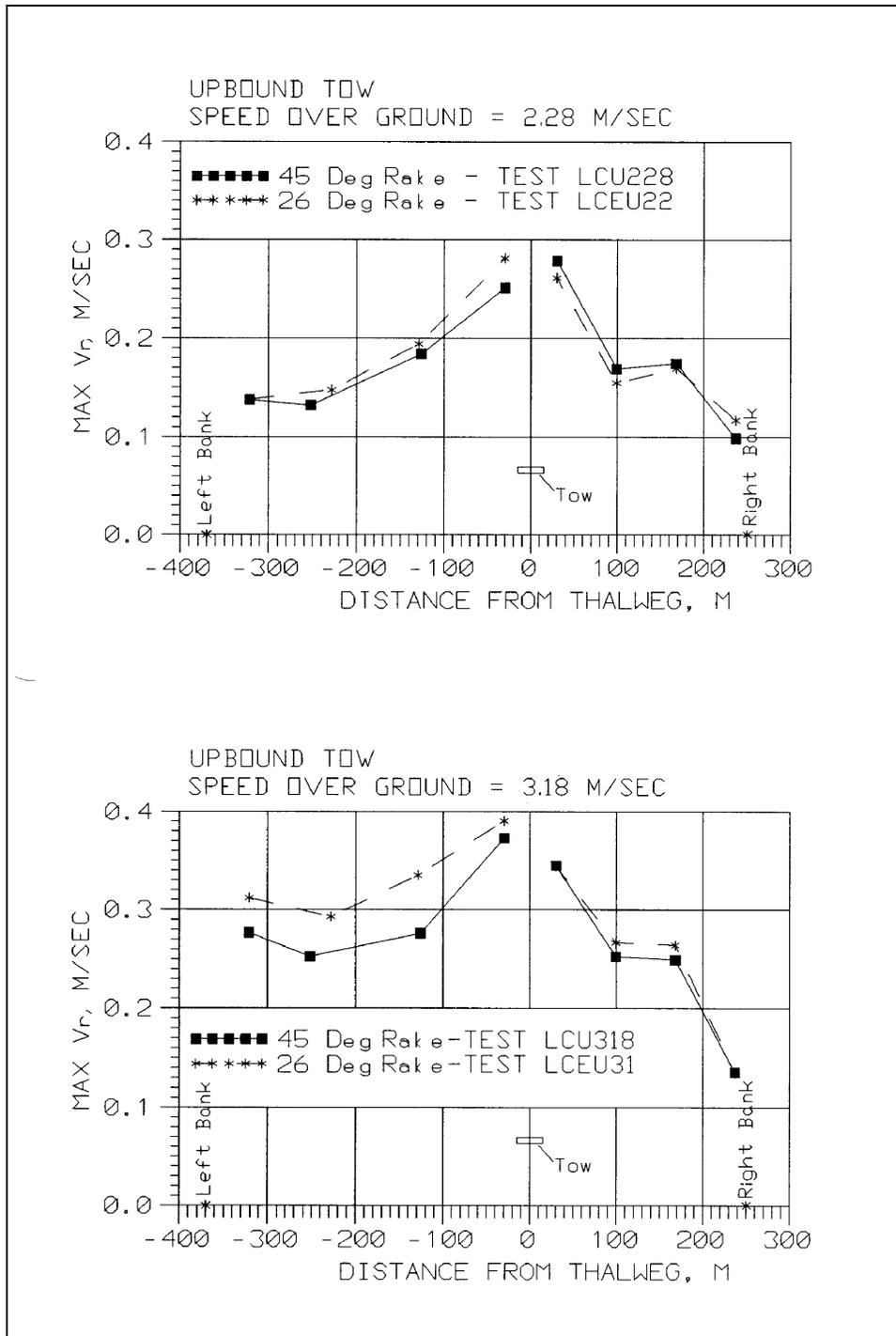


Figure 76. Return velocity, rake angle effects, upbound tow

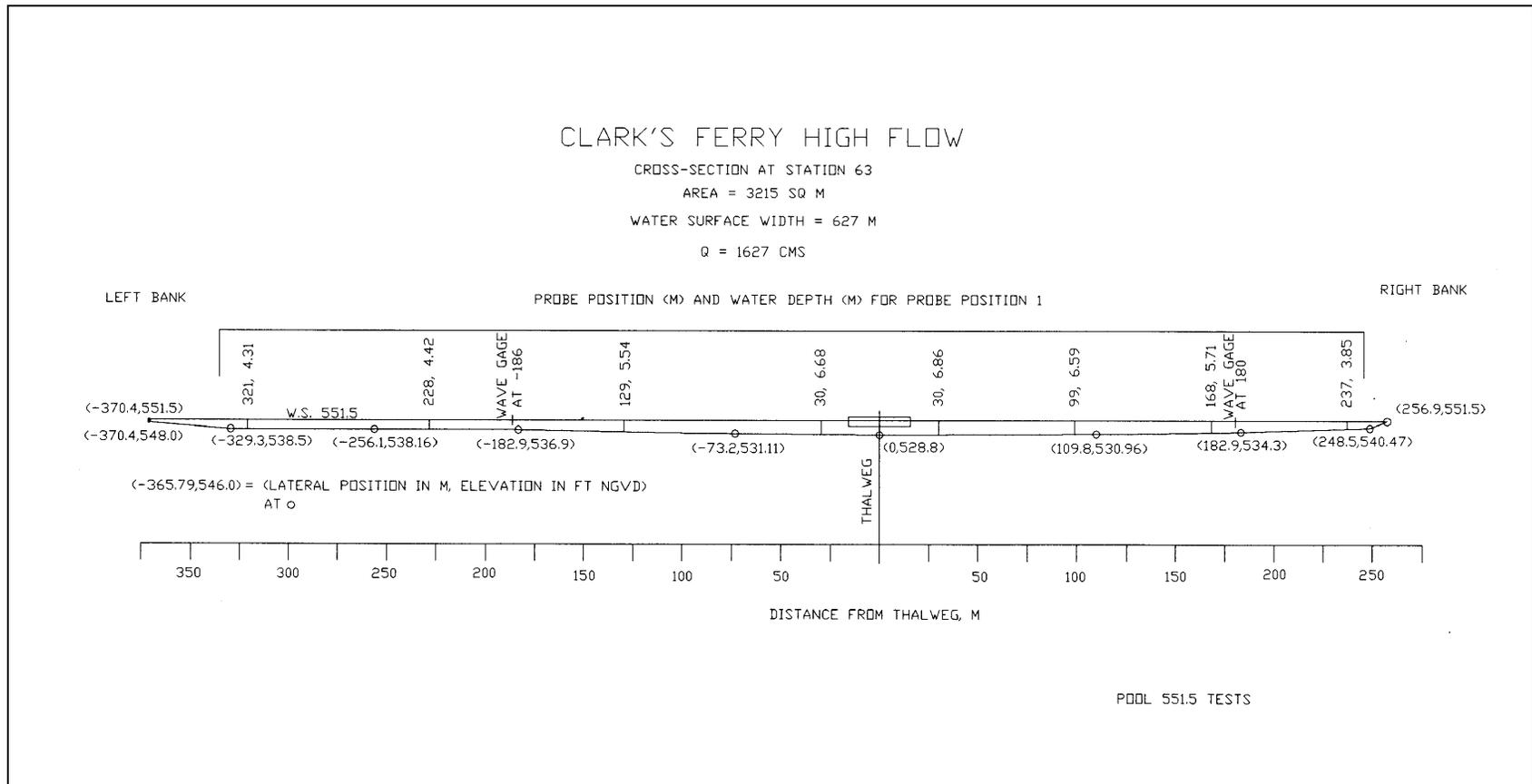


Figure 77. Cross section, experimental series 5

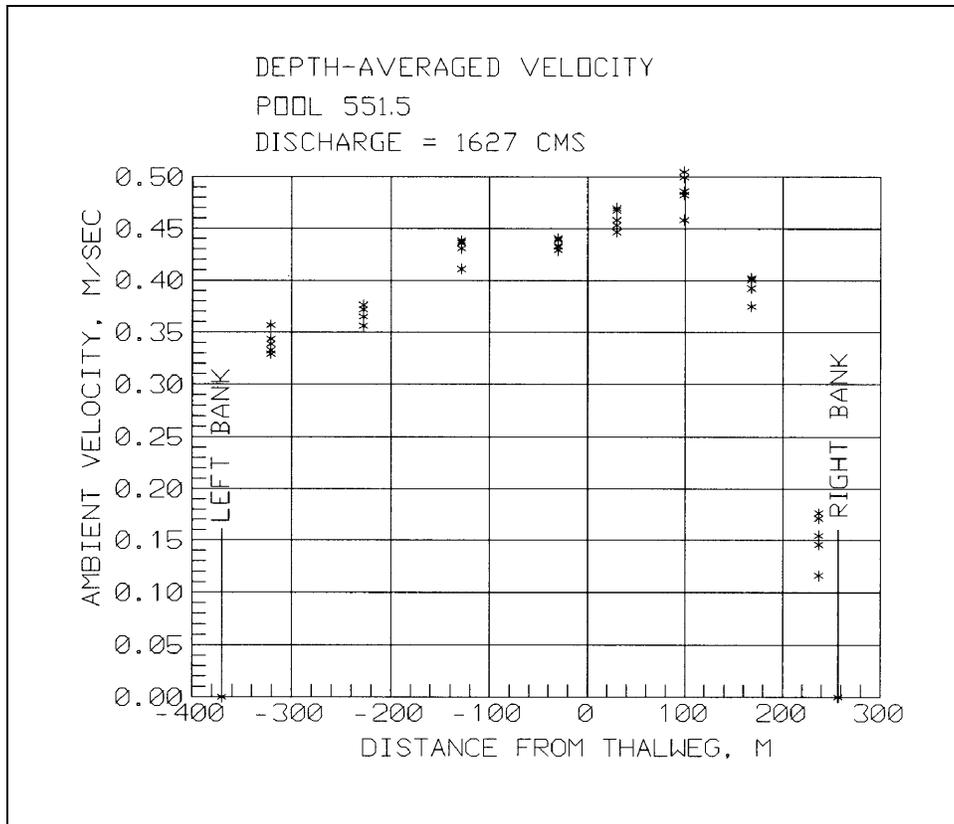
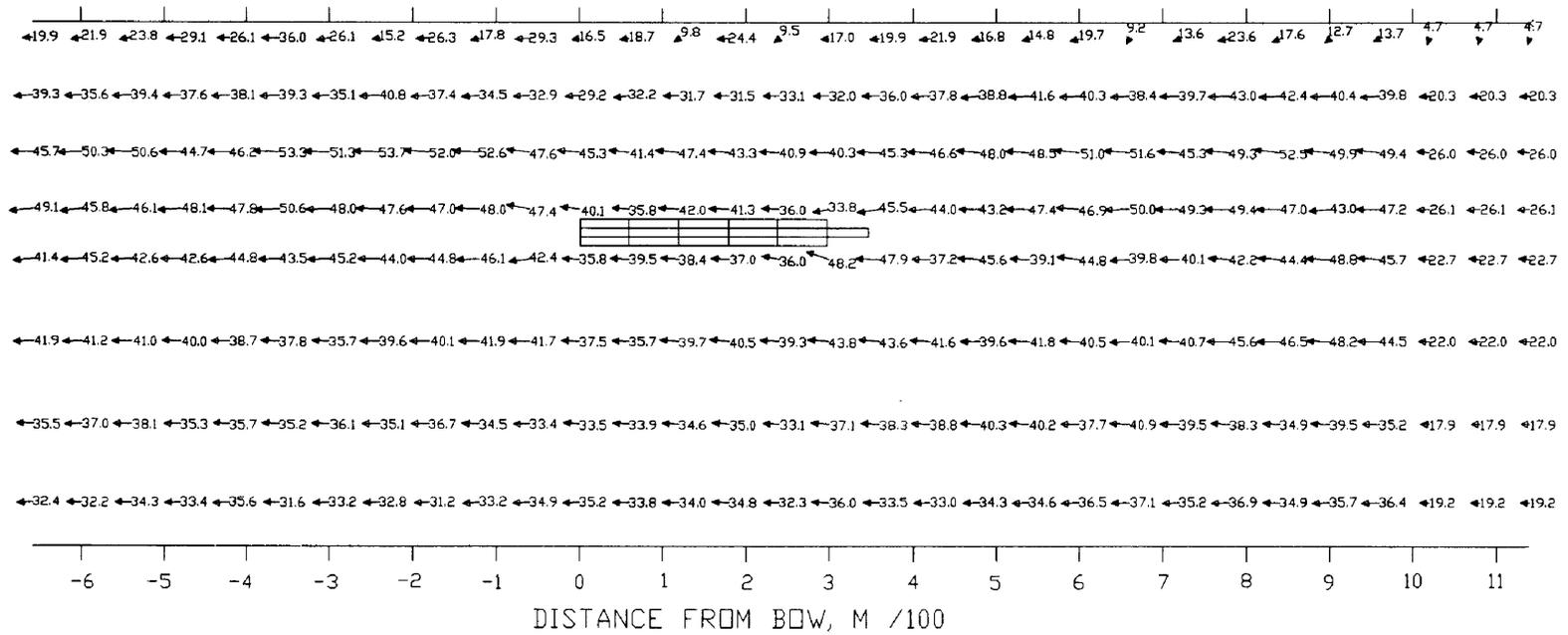


Figure 78. Ambient velocity distribution, experimental series 5

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCD202

Figure 79. Vector plot, test HCD202

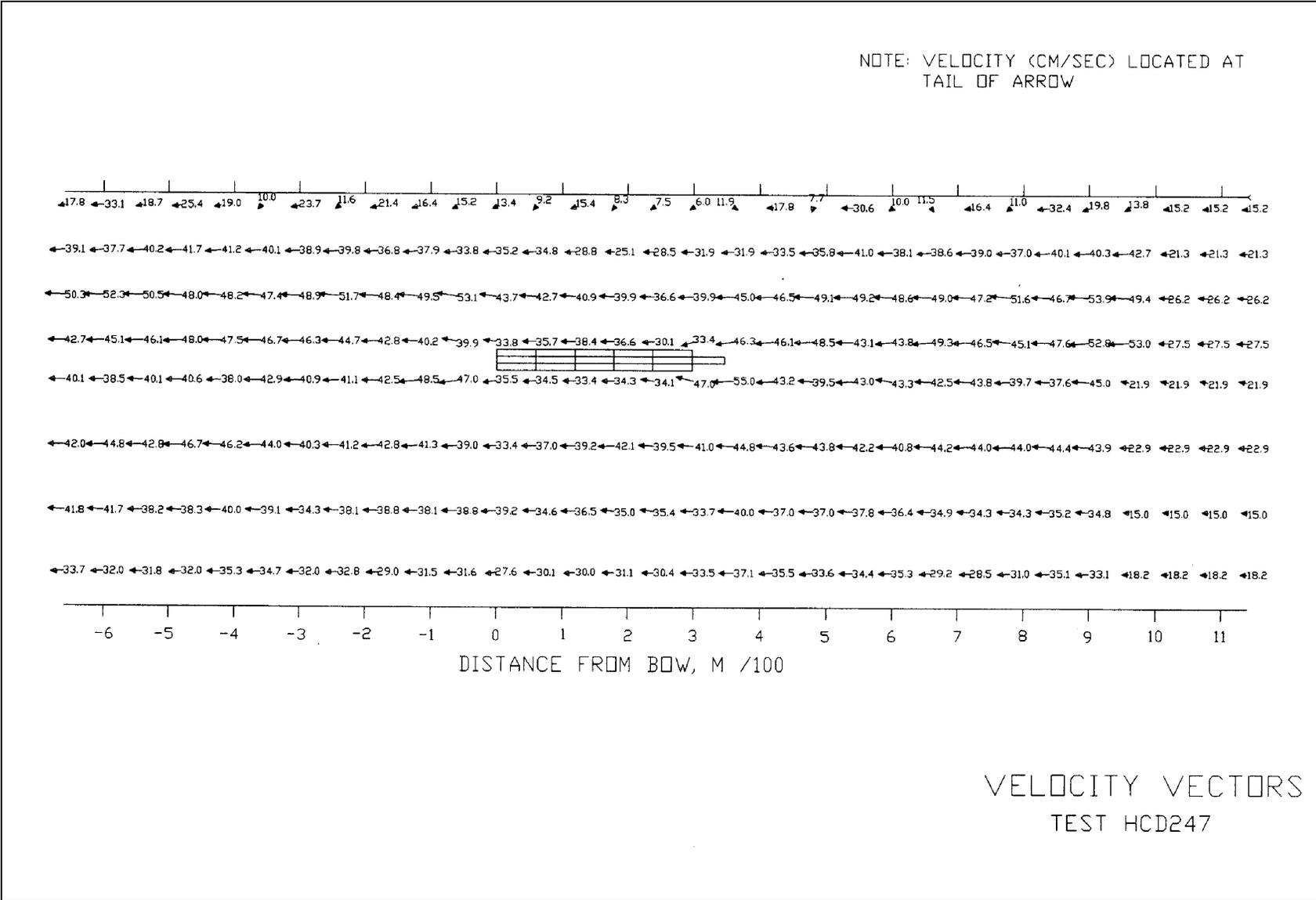


Figure 80. Vector plot, test HCD247

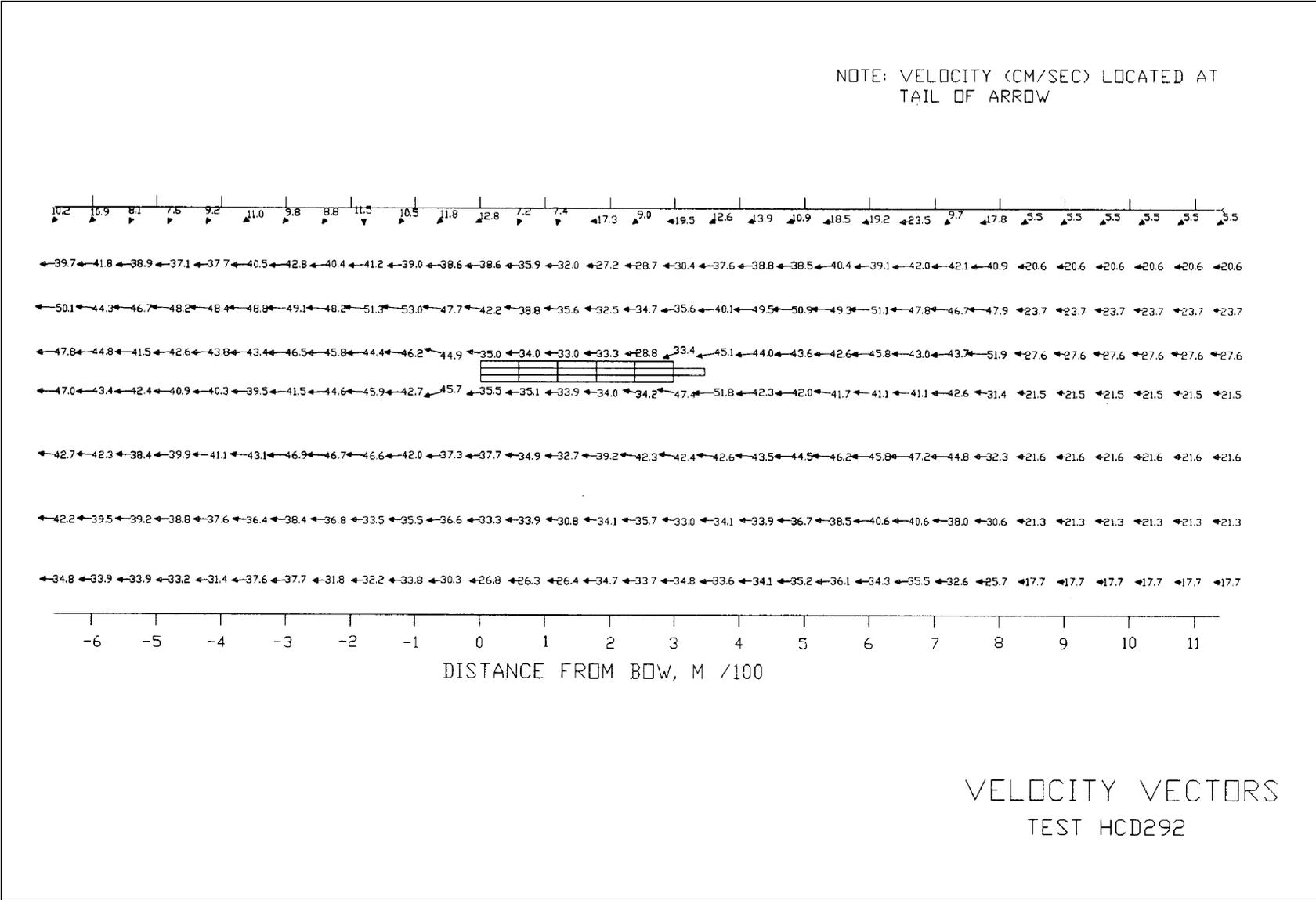


Figure 81. Vector plot, test HCD292

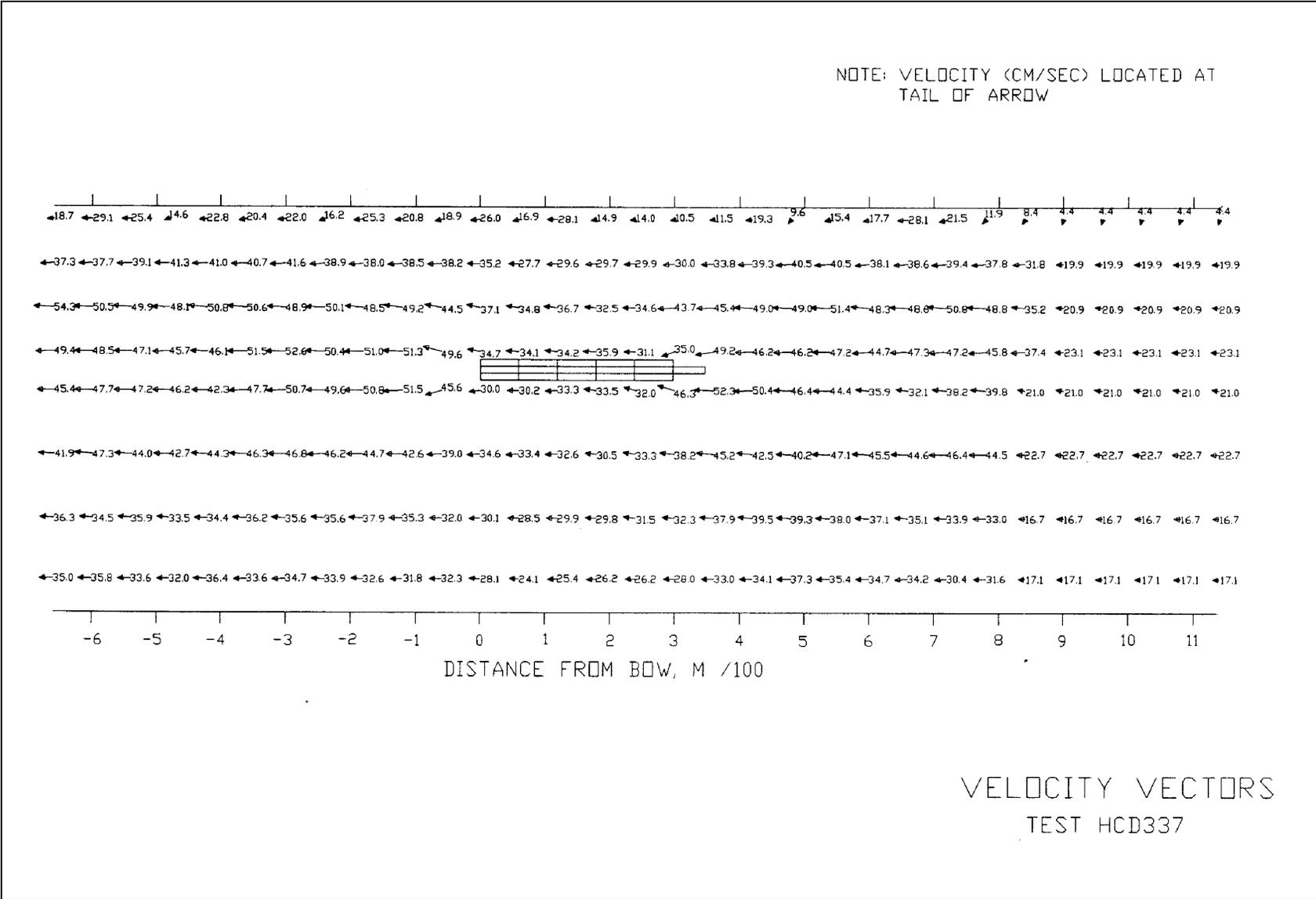


Figure 82. Vector plot, Test HCD337

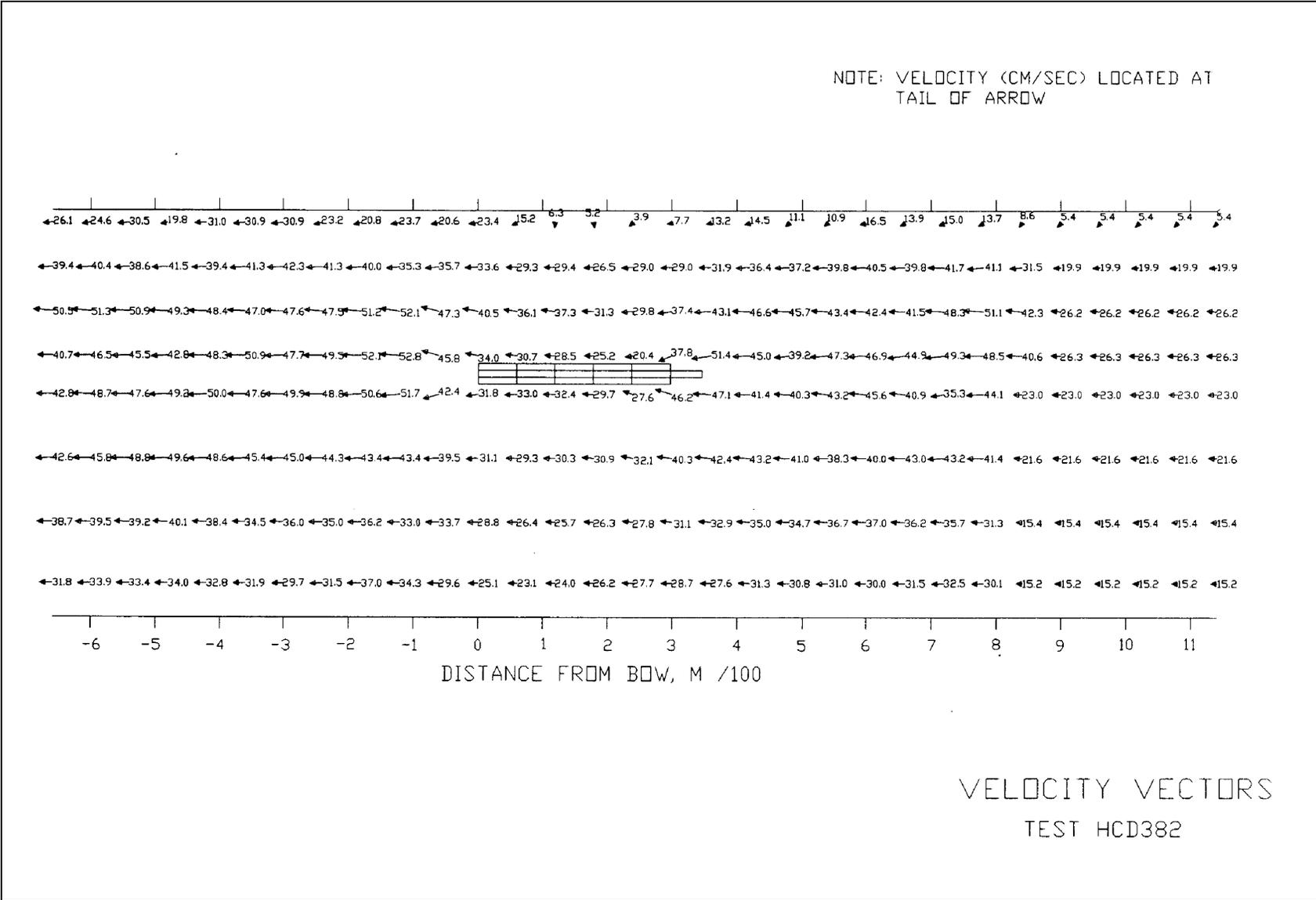
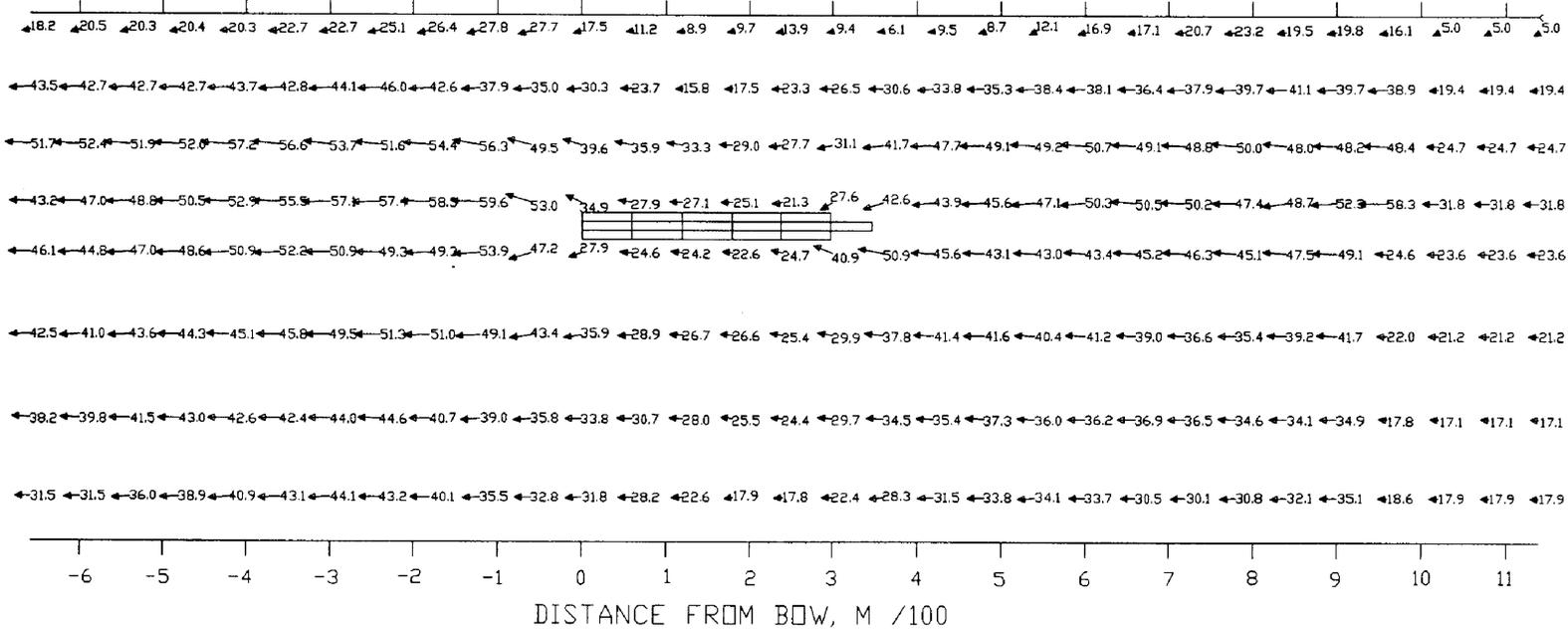


Figure 83. Vector plot, test HCD382

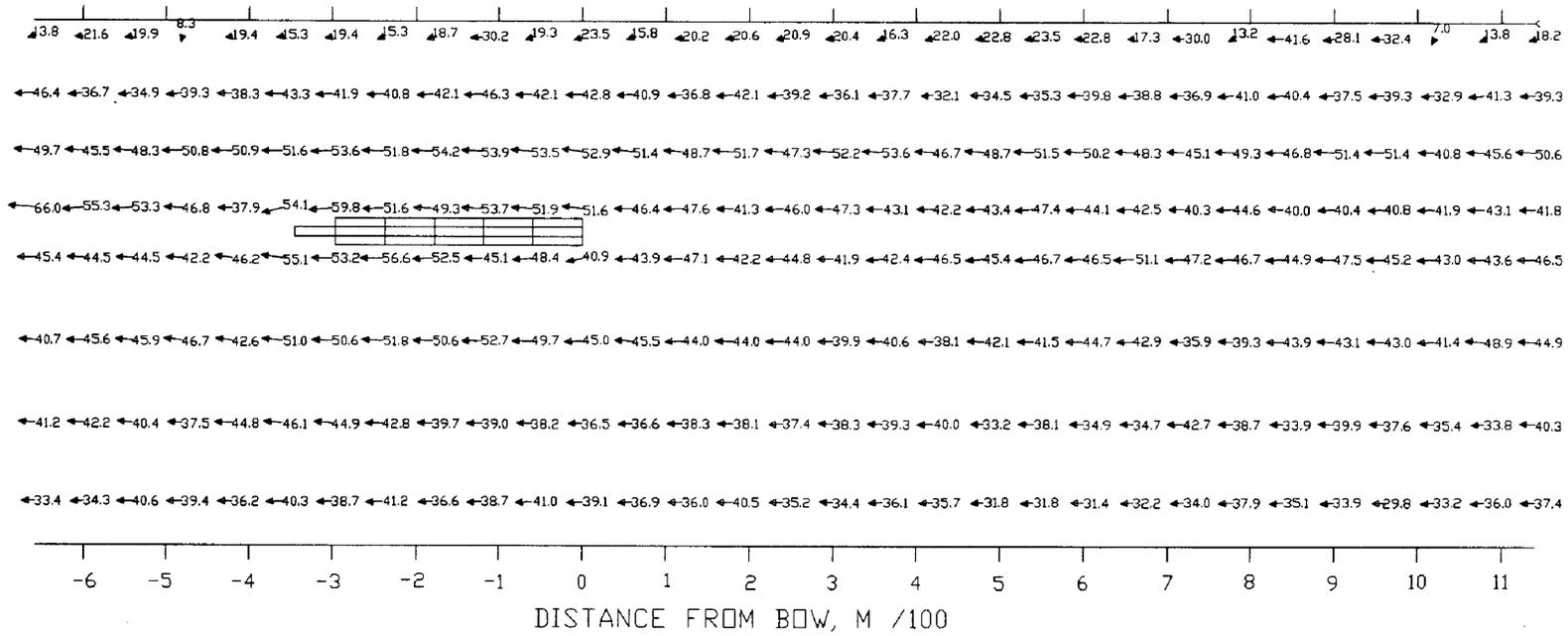
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCD477

Figure 84. Vector plot, test HCD477

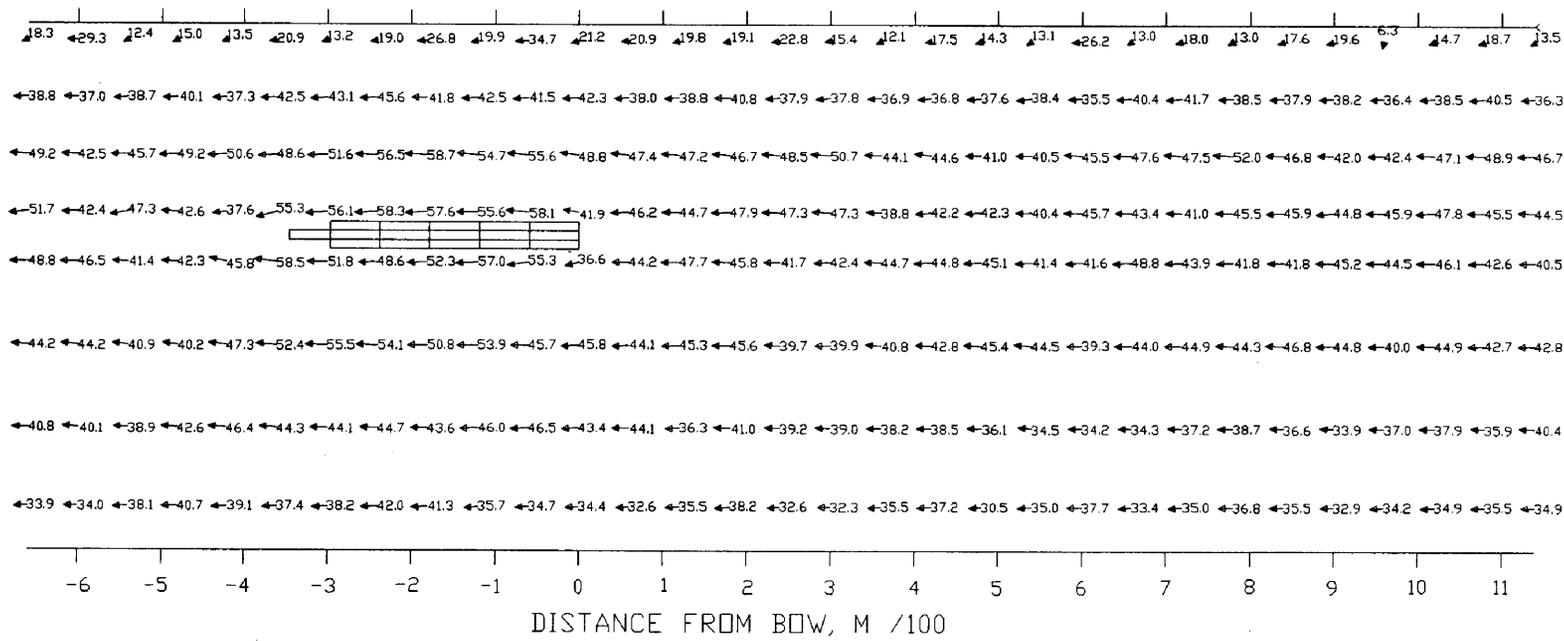
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCU138

Figure 85. Vector plot, test HCU138

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCU183

Figure 86. Vector plot, test HCU183

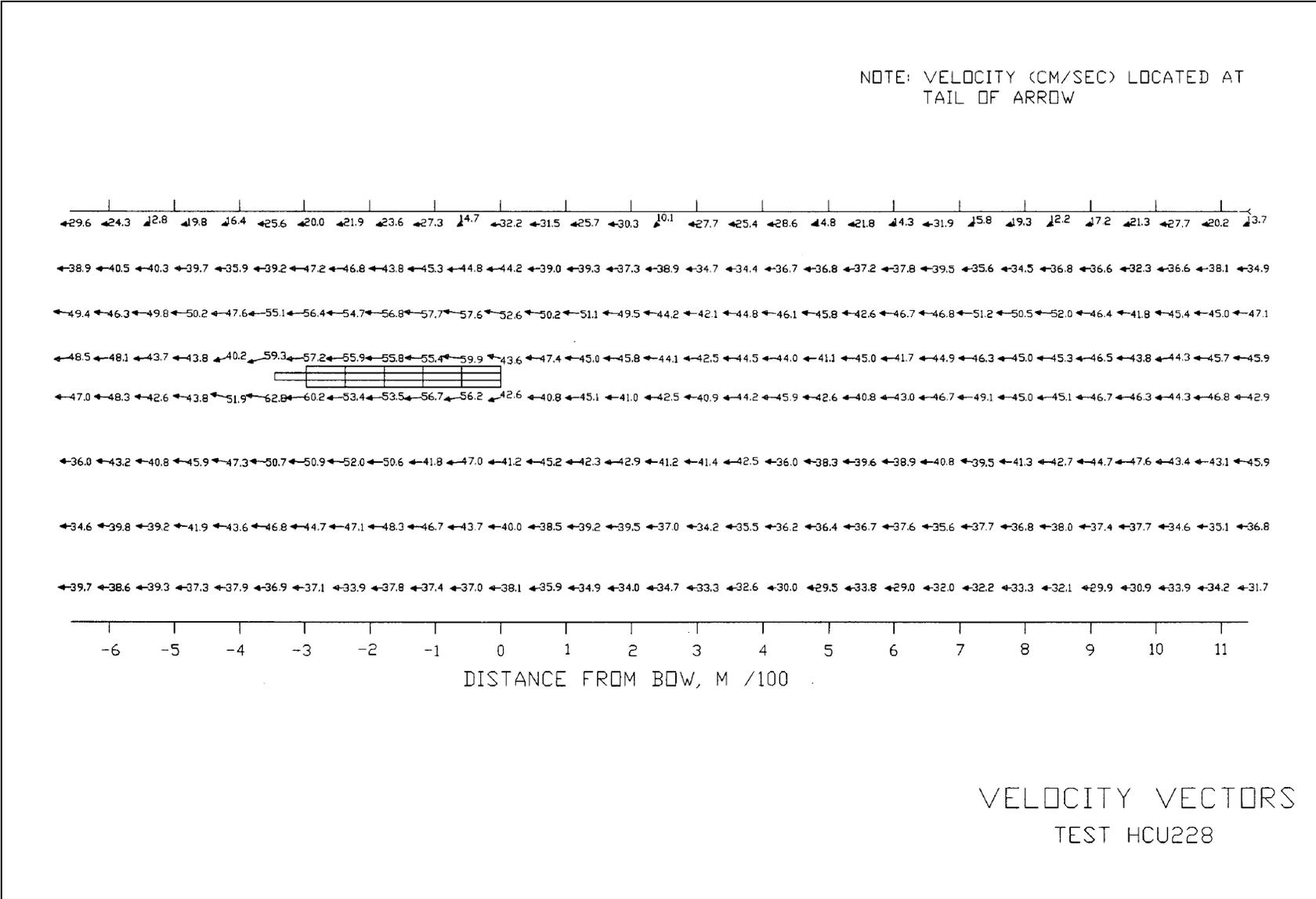
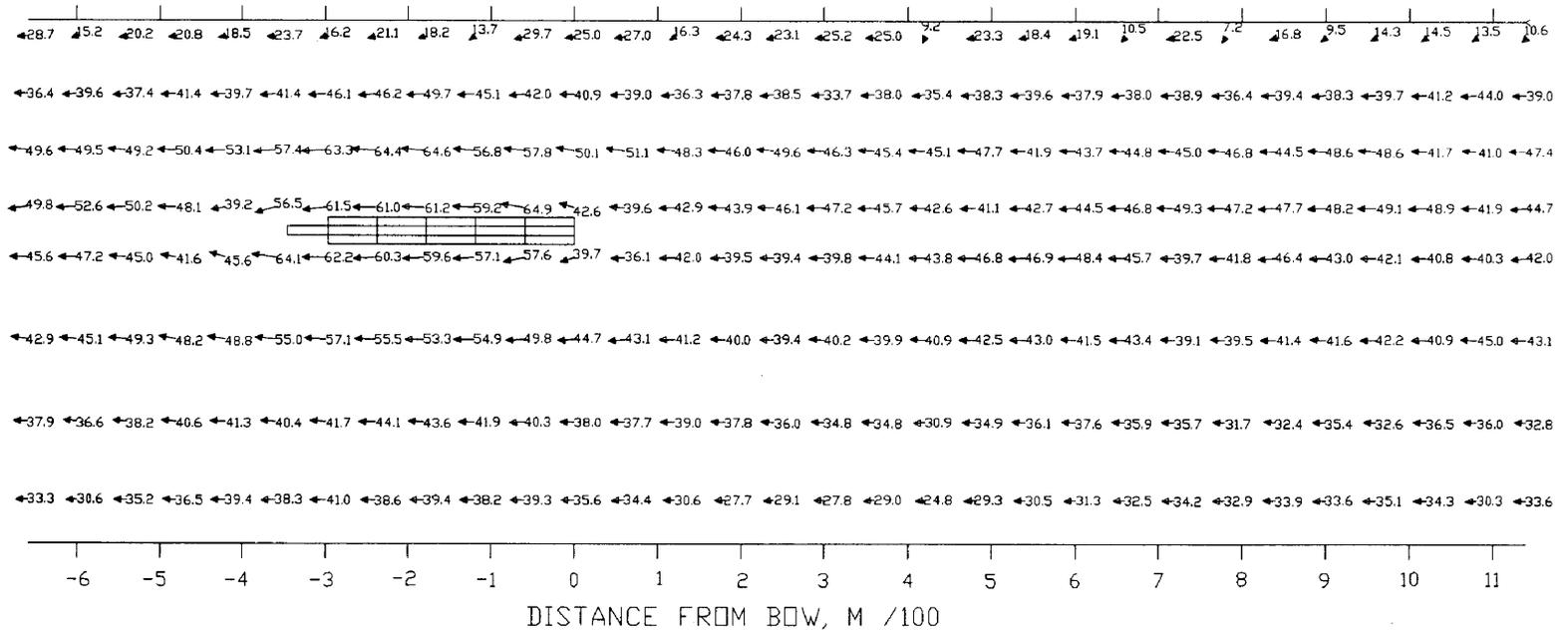


Figure 87. Vector plot, test HCU228

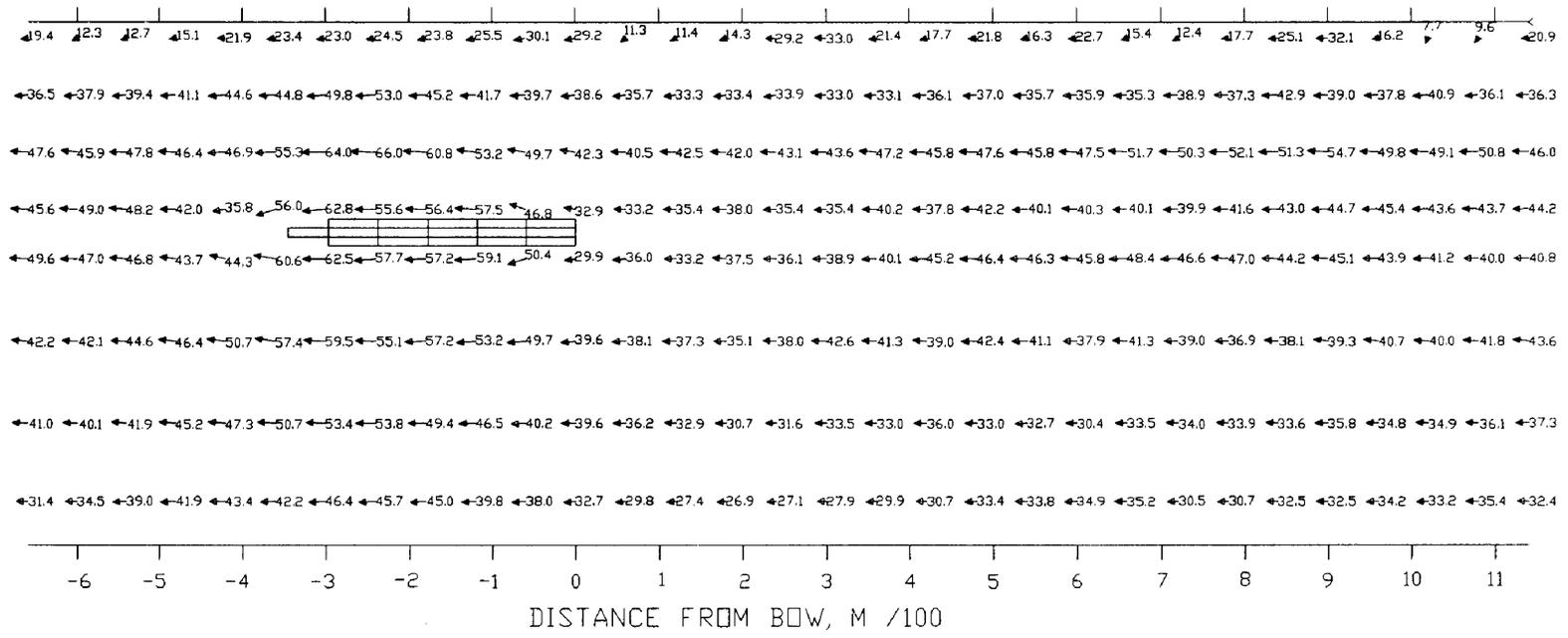
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCU273

Figure 88. Vector plot, test HCU273

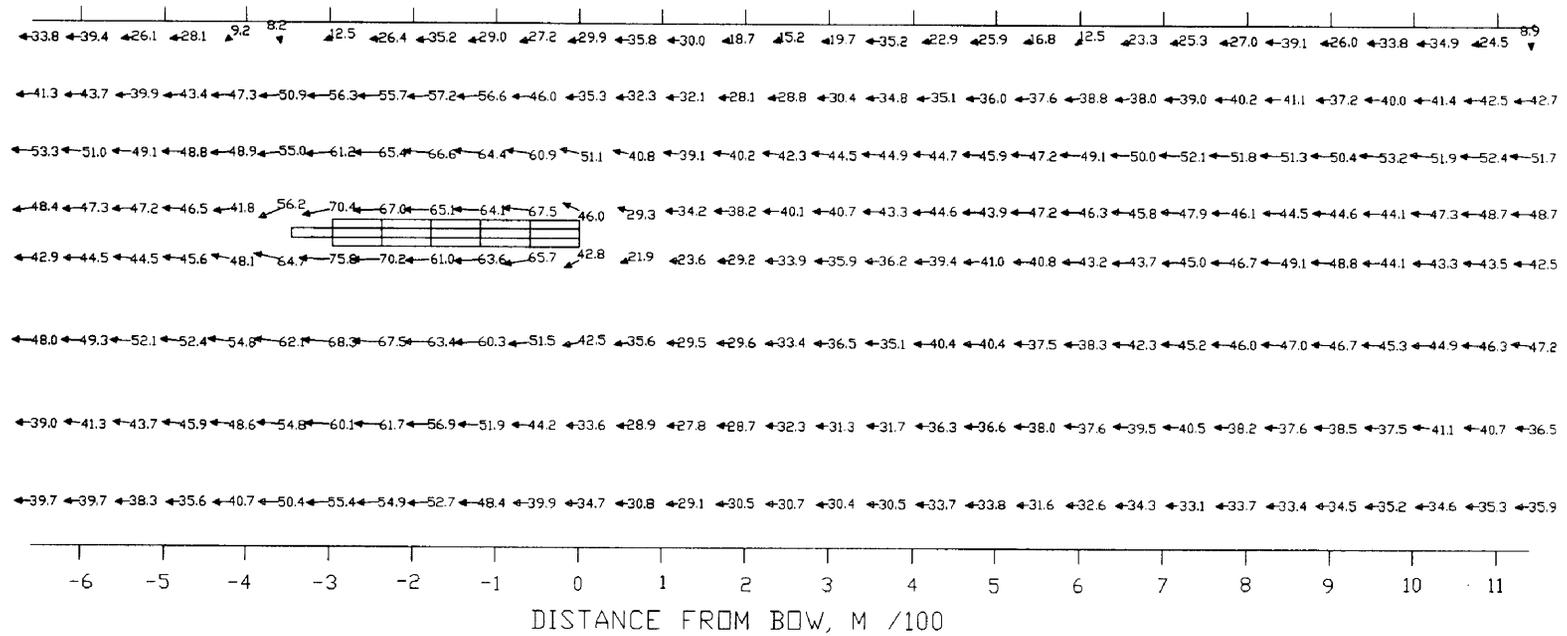
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCU318

Figure 89. Vector plot, test HCU318

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST HCU416

Figure 90. Vector plot, test HCU416

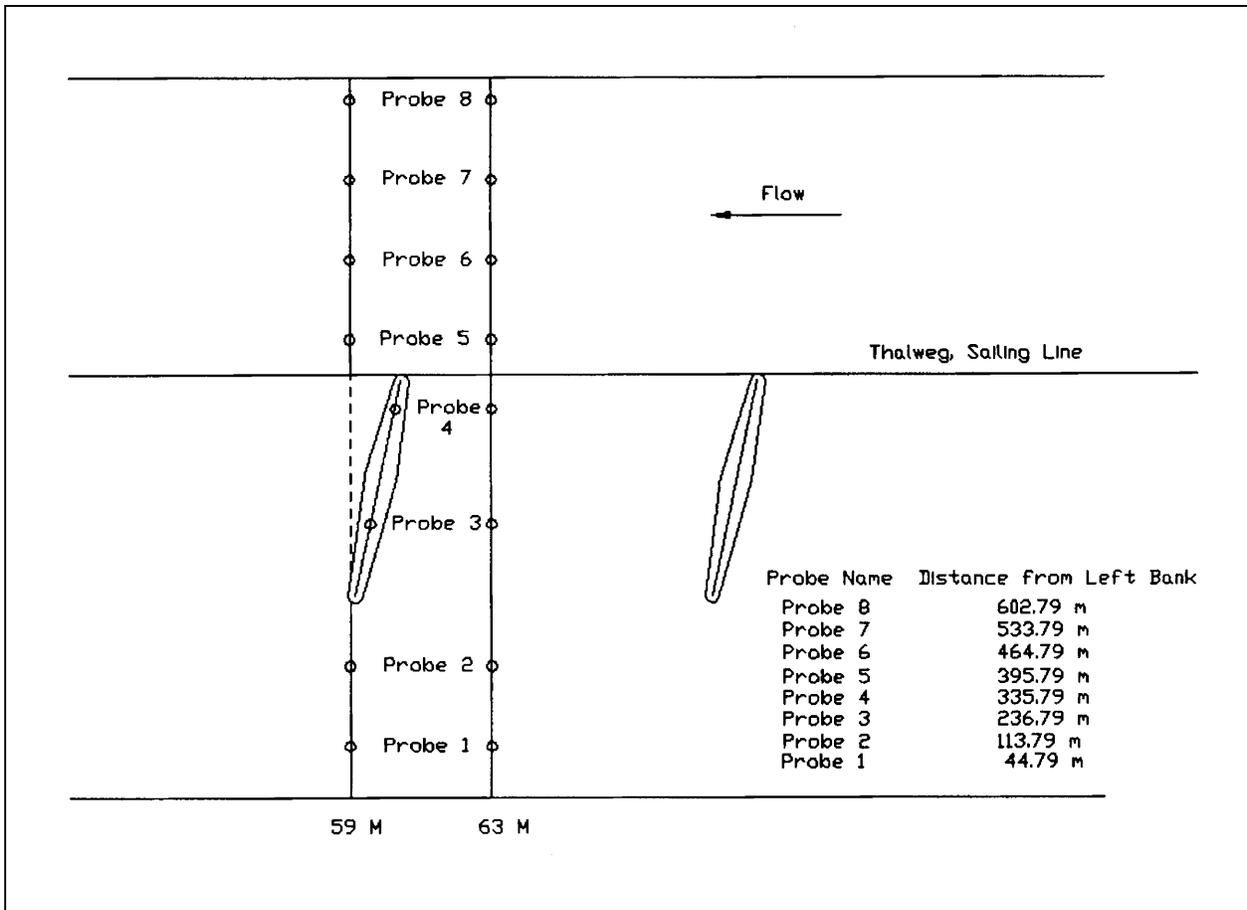


Figure 91. Plan view, experimental series 6

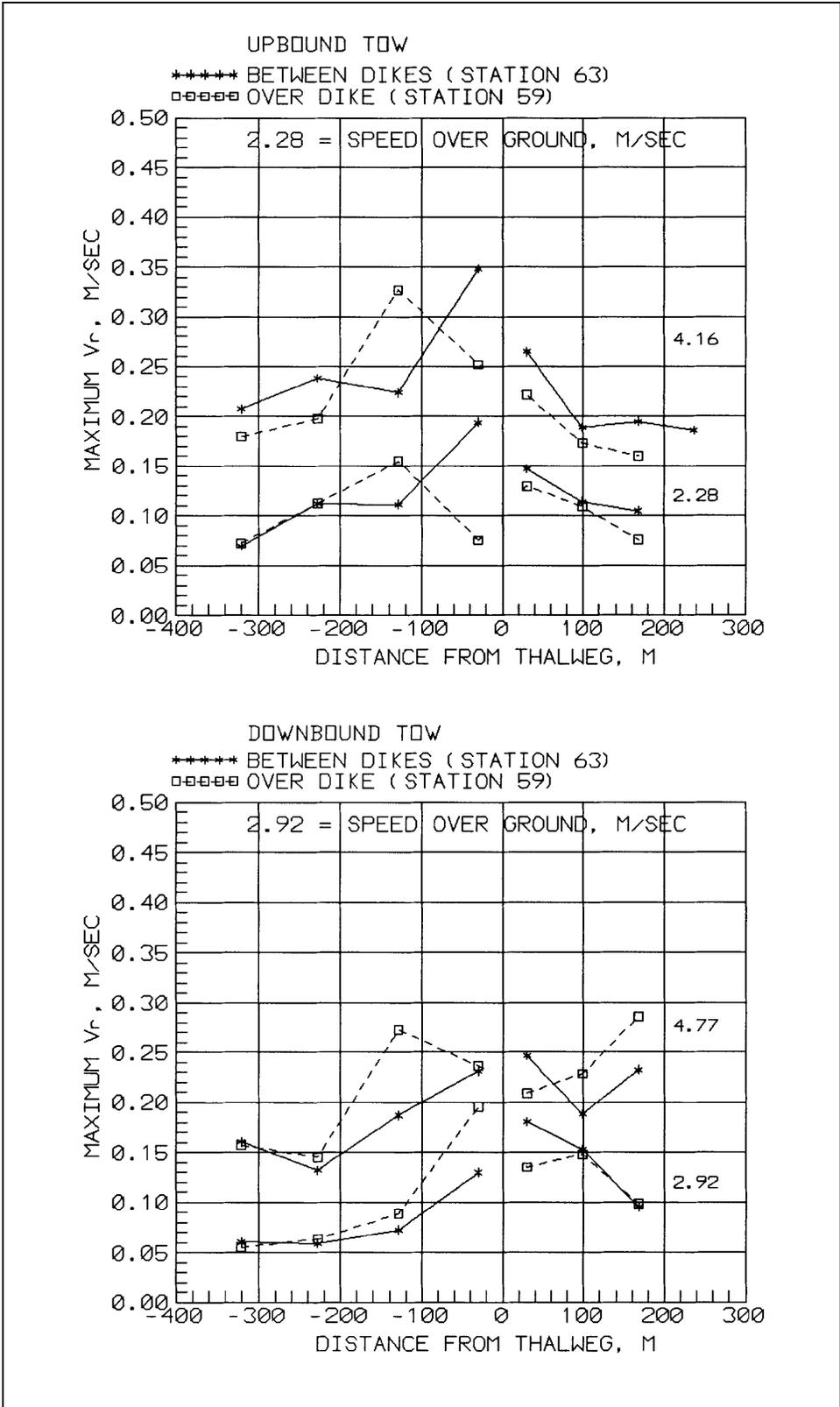


Figure 92. Comparison of experiments in experimental series 6

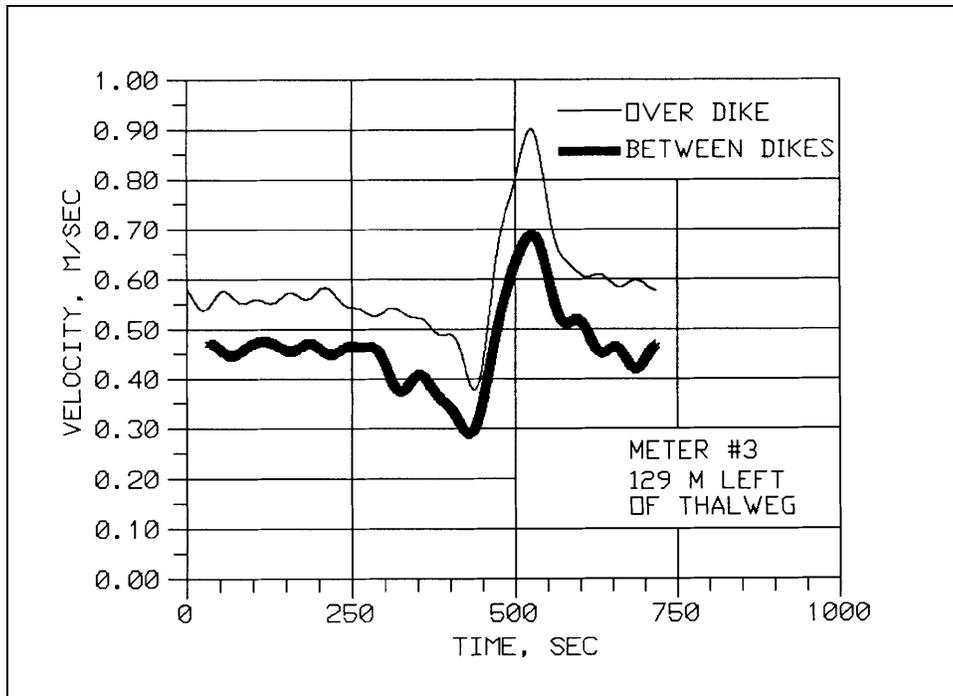


Figure 93. Velocity time history, upbound tow, meter No. 3, tow speed relative to ground = 4.16 m/sec

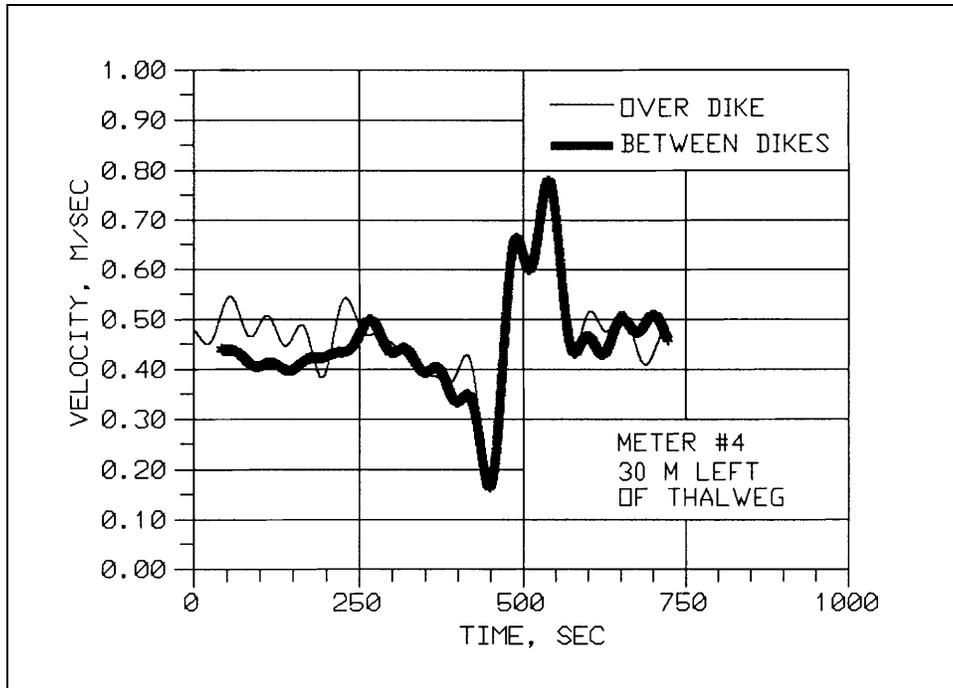


Figure 94. Velocity time history, upbound tow, meter No. 4, tow speed relative to ground = 4.16 m/sec

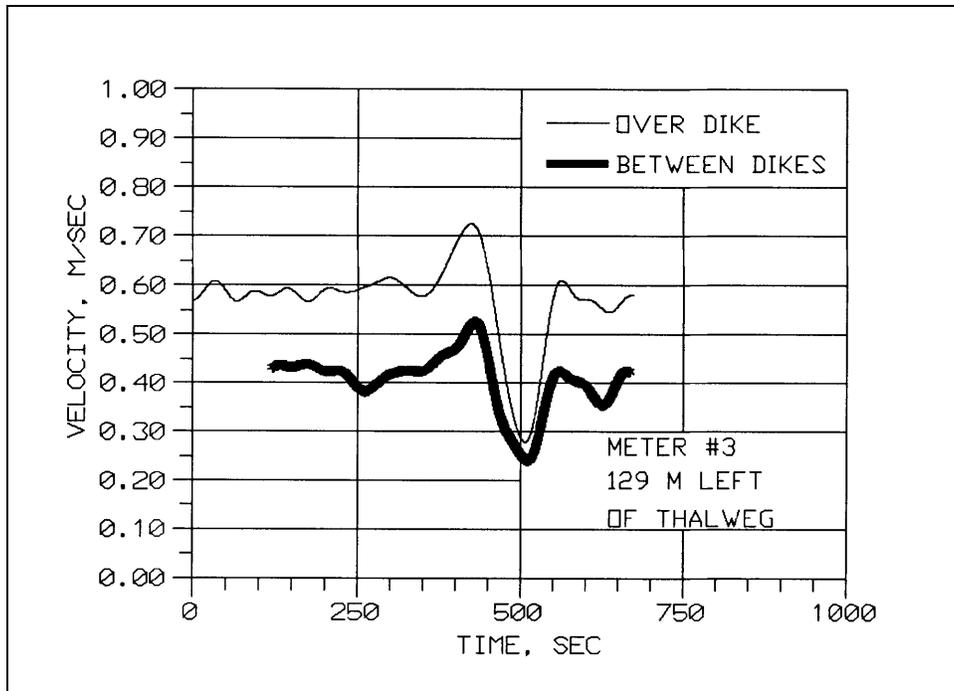


Figure 95. Velocity time history, downbound tow, meter No. 3, tow speed relative to ground = 4.77 m/sec

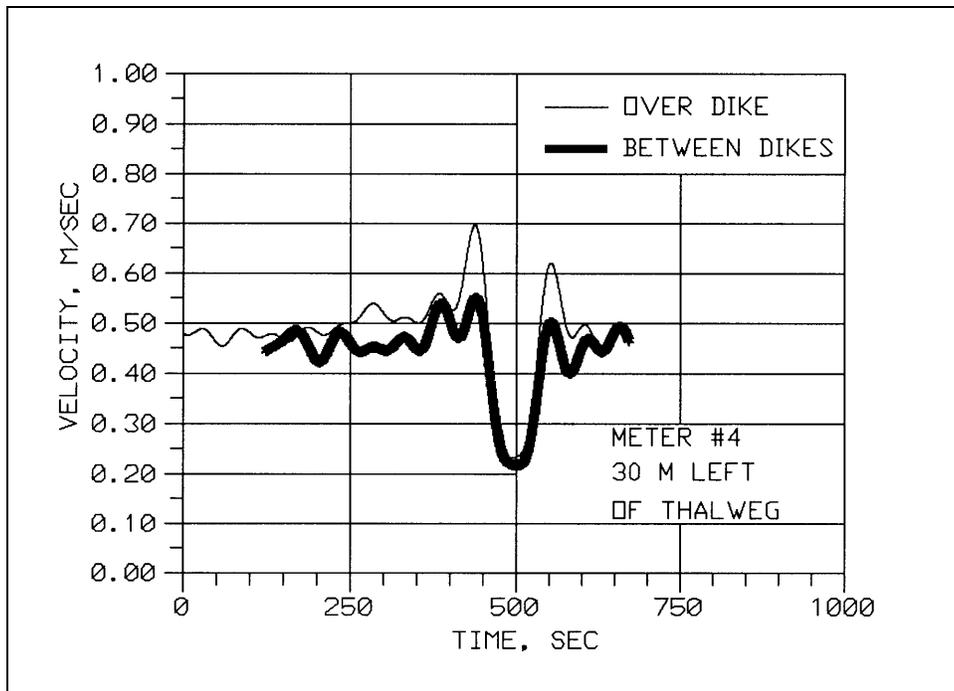


Figure 96. Velocity time history, downbound tow, meter No. 4, tow speed relative to ground = 4.77 m/sec

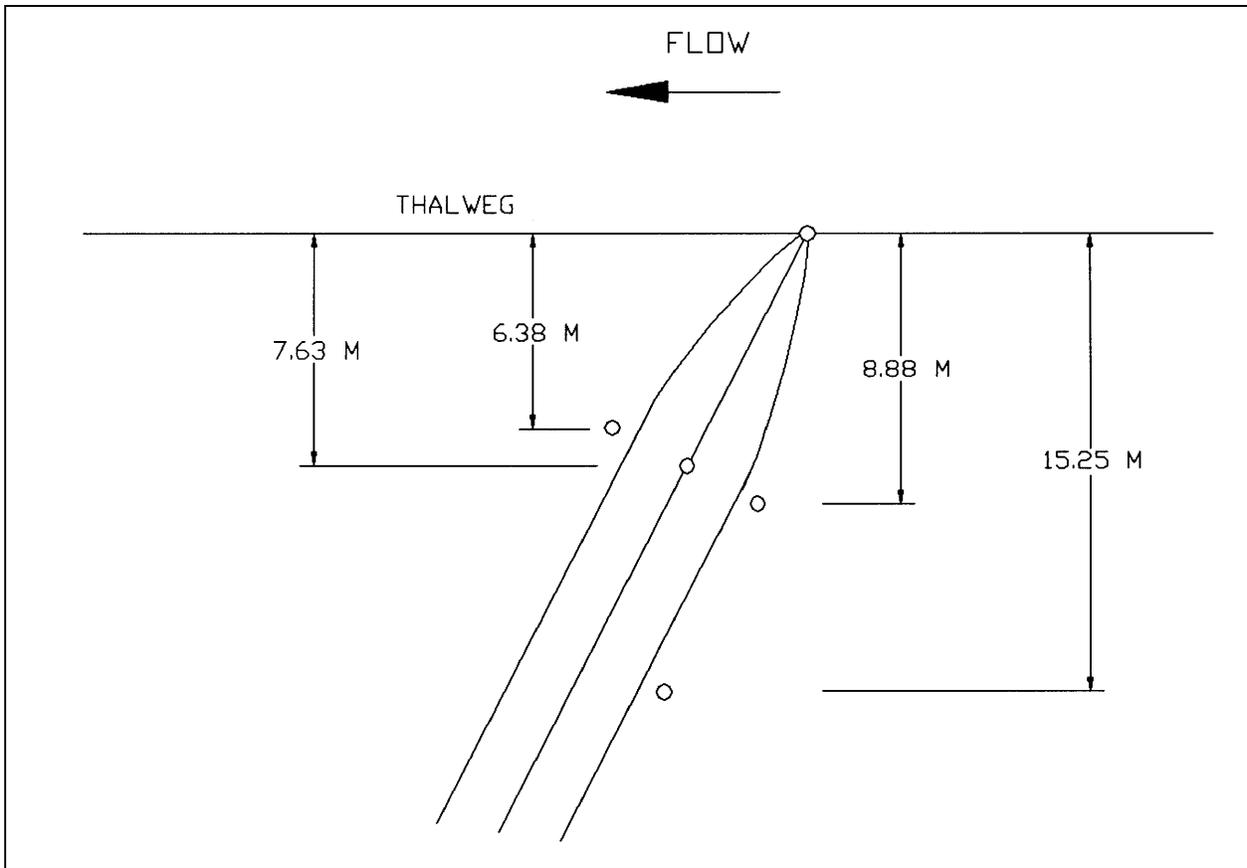


Figure 97. Location of velocity meters in dike experiments

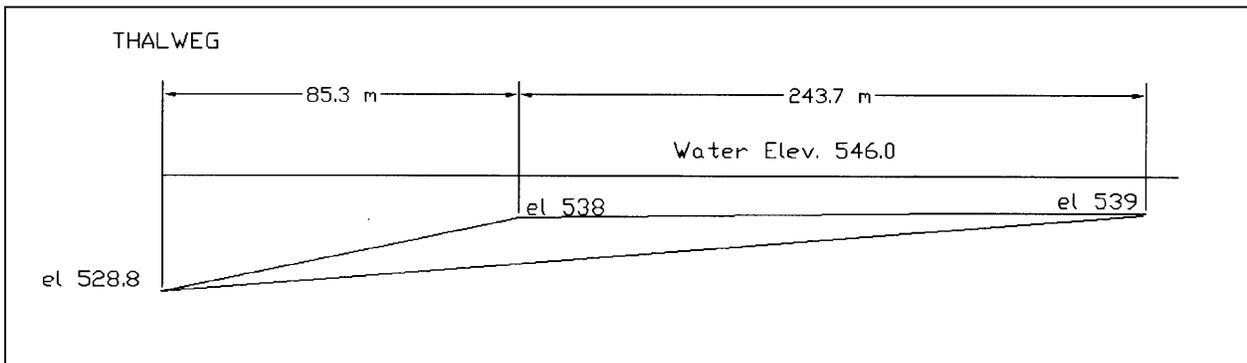


Figure 98. Profile of low dike (looking upstream)

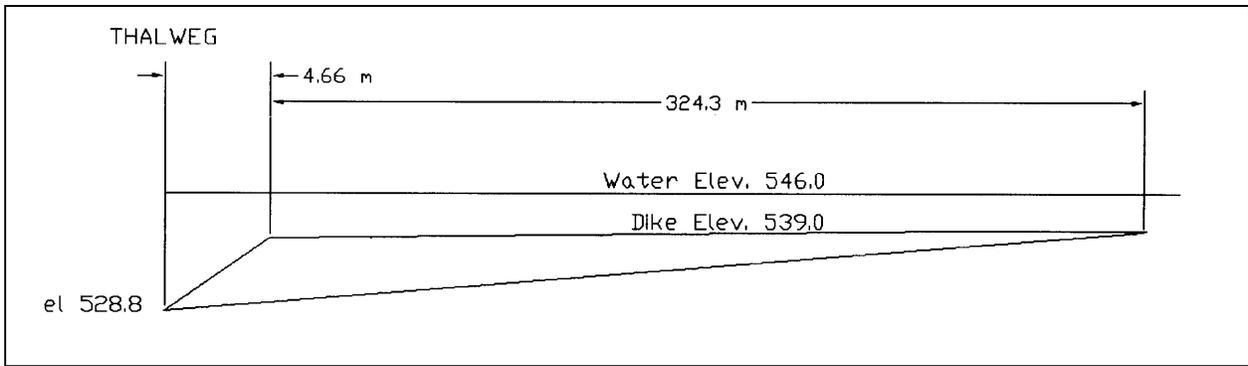


Figure 99. Profile of high (generic) dike (looking upstream)

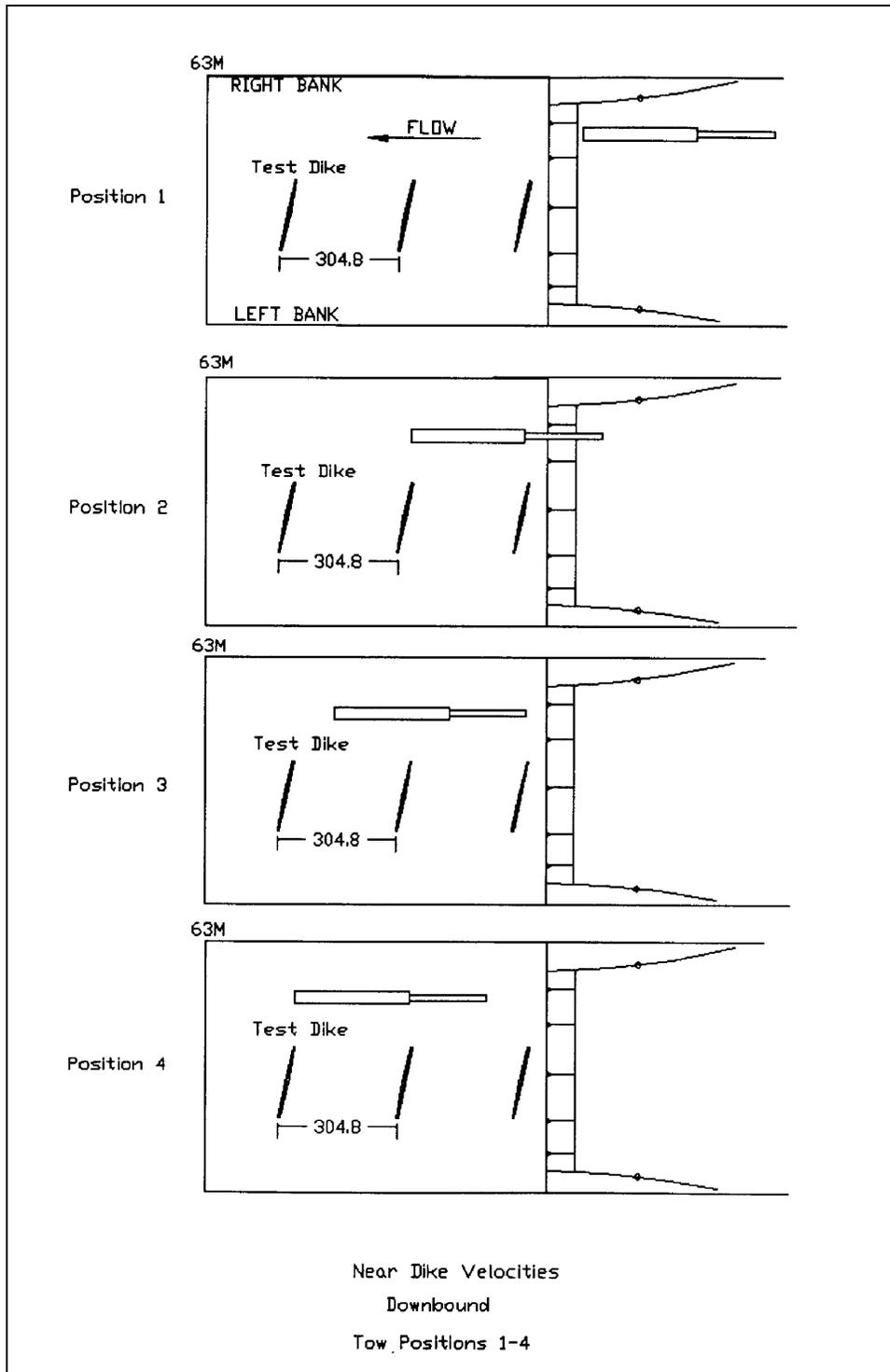


Figure 100. Experimental series 6, downbound runs (Continued)

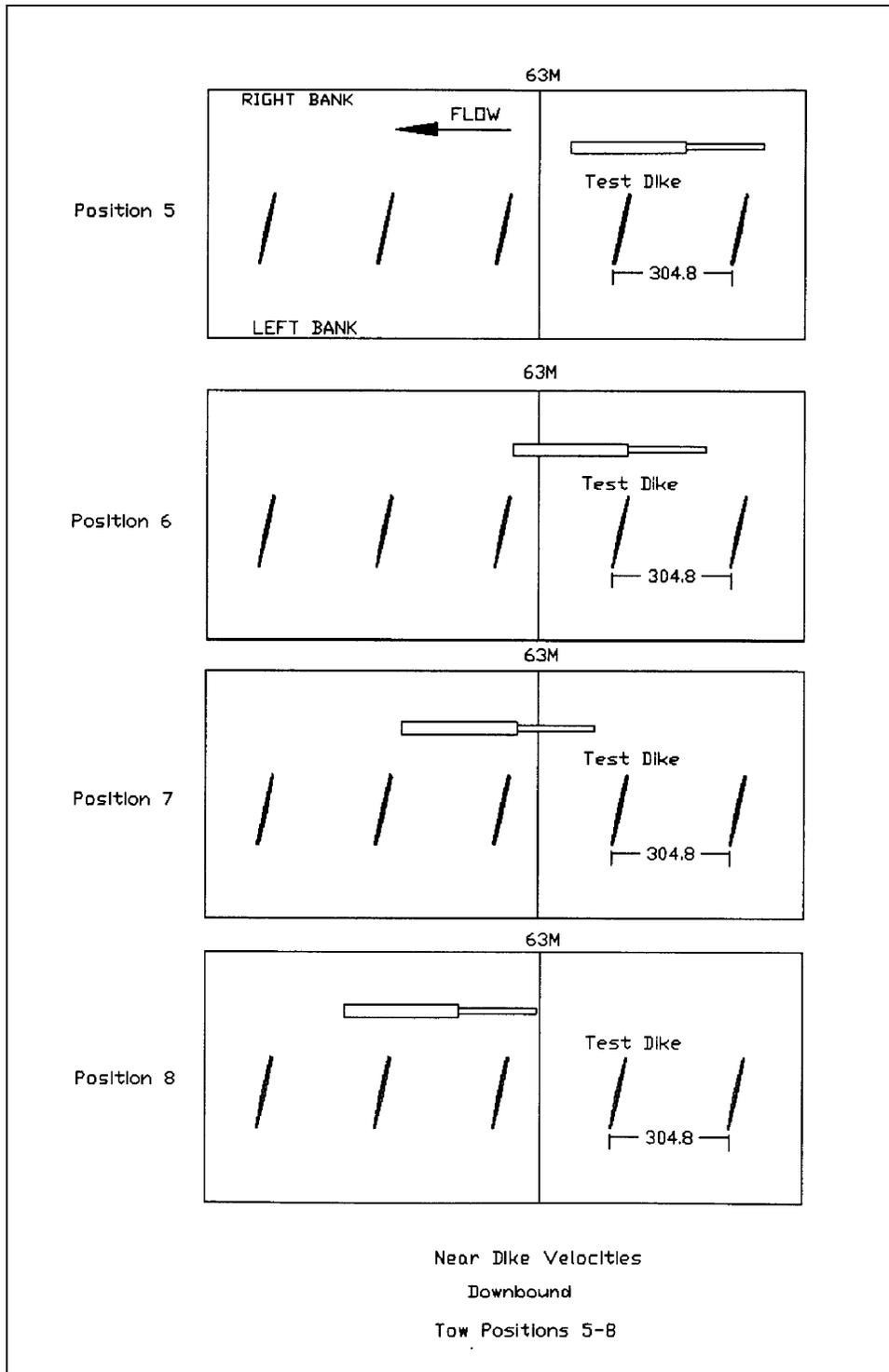


Figure 100. (Concluded)

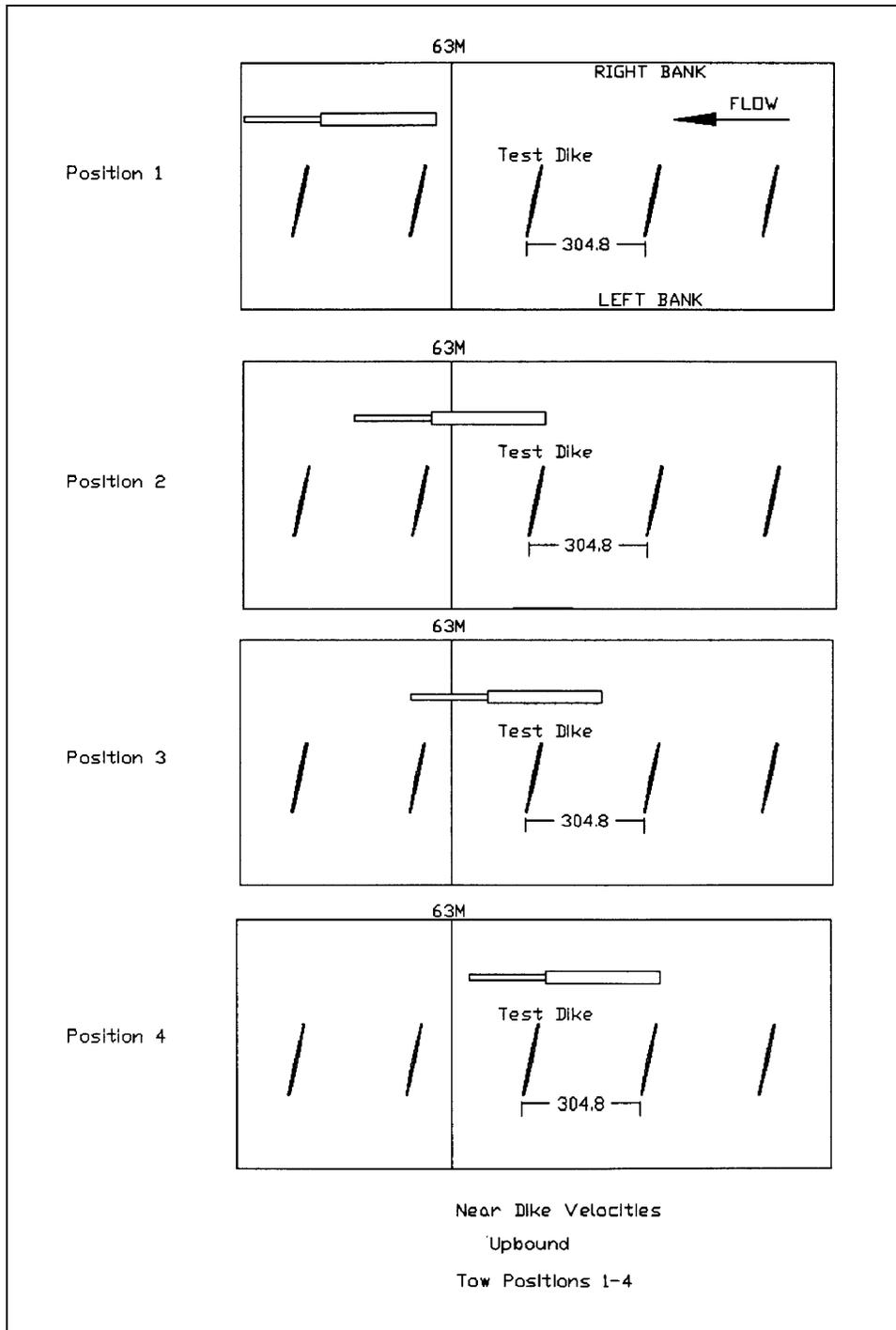


Figure 101. Experimental series 6, upbound runs (Continued)

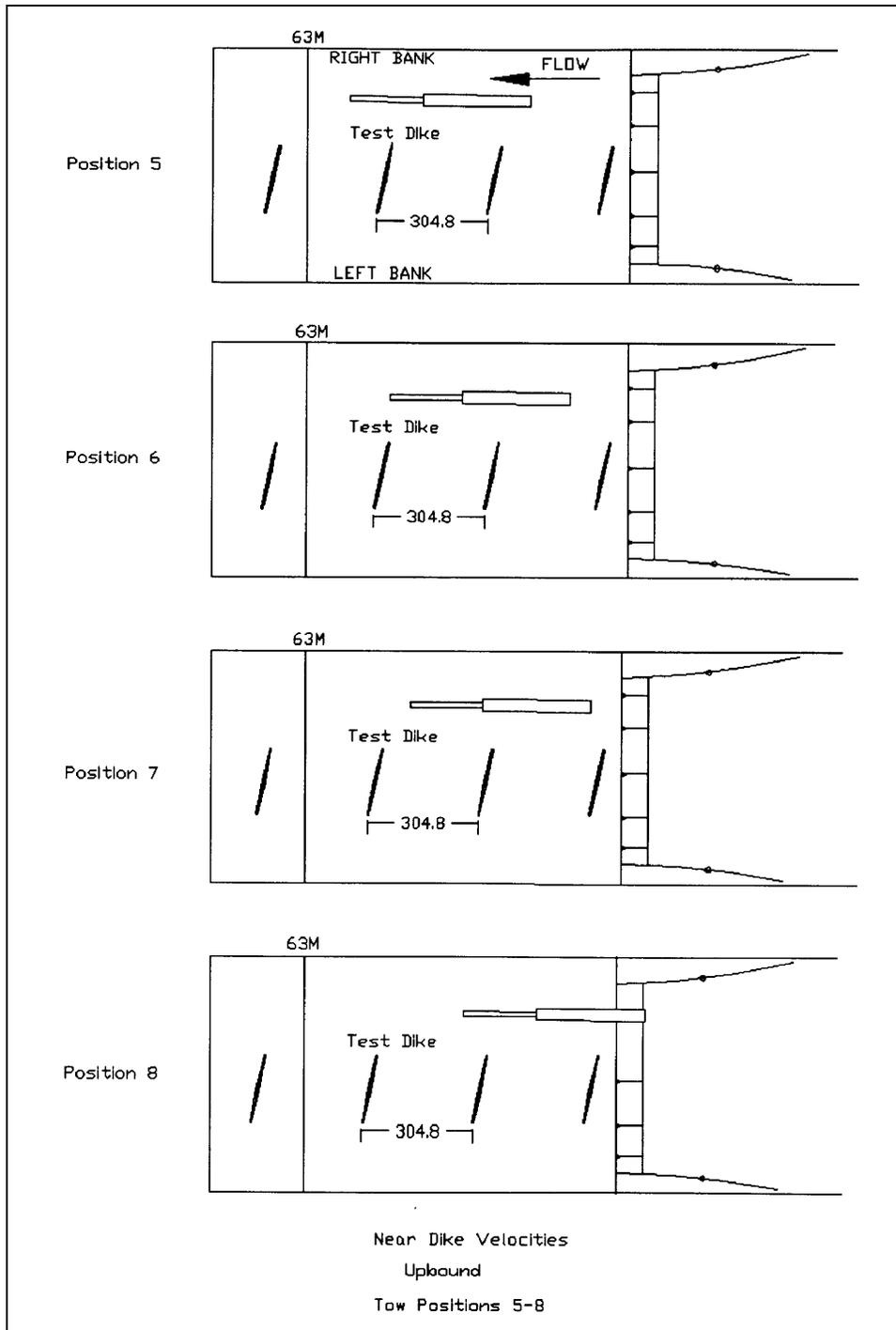
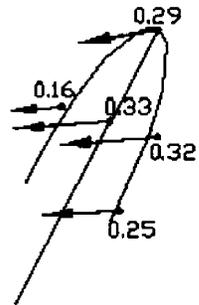
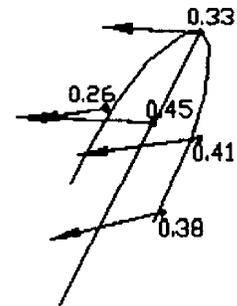


Figure 101. (Concluded)

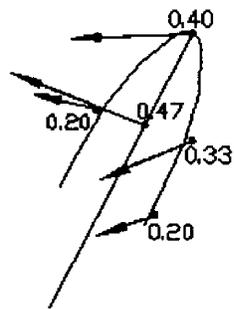
POSITION 1



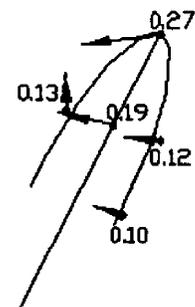
POSITION 2



POSITION 3



POSITION 4

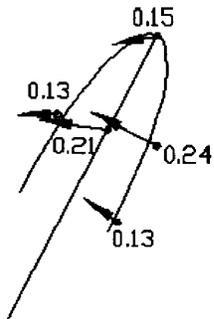


Note: Pool Elevation 546.0  
3x5 Barge Configuration  
2.74m Draft, Velocities 0.6 m off Bottom  
0.302 m/s Ambient Flow  
Salling Line 120 m right of dike

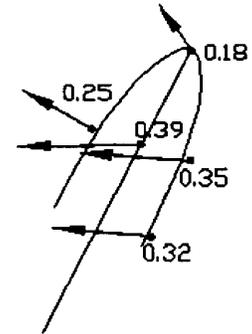
Low Dike  
Downbound Tow  
Vessel Speed 3.82 m/sec

Figure 102. Velocities during tow passage, low dike, downbound tow (Continued)

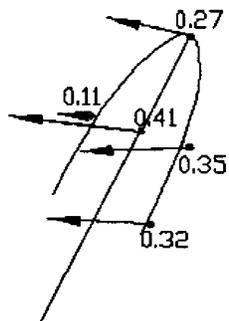
POSITION 5



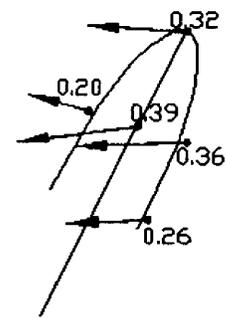
POSITION 6



POSITION 7



POSITION 8



Note: Pool Elevation 546.0  
3x5 Barge Configuration  
2.74 m Draft, Velocities 0.6 m off Bottom  
0.302 m/s Ambient Flow  
Sailing Line 120 m Right of Dike

Low Dike  
Downbound Tow  
3.82 m/sec

Figure 102. (Concluded)

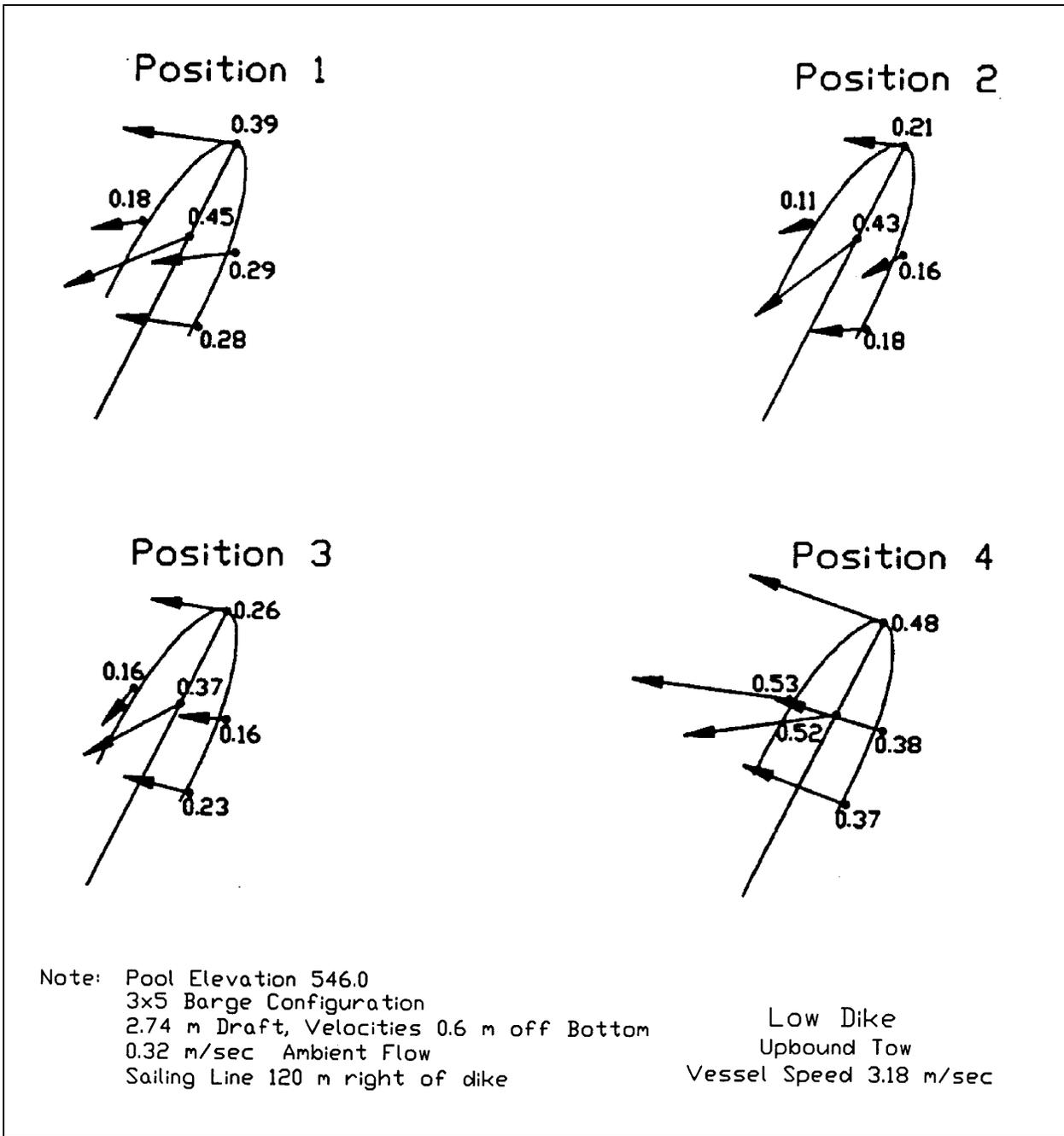


Figure 103. Velocities during tow passage, low dike, upbound tow (Continued)

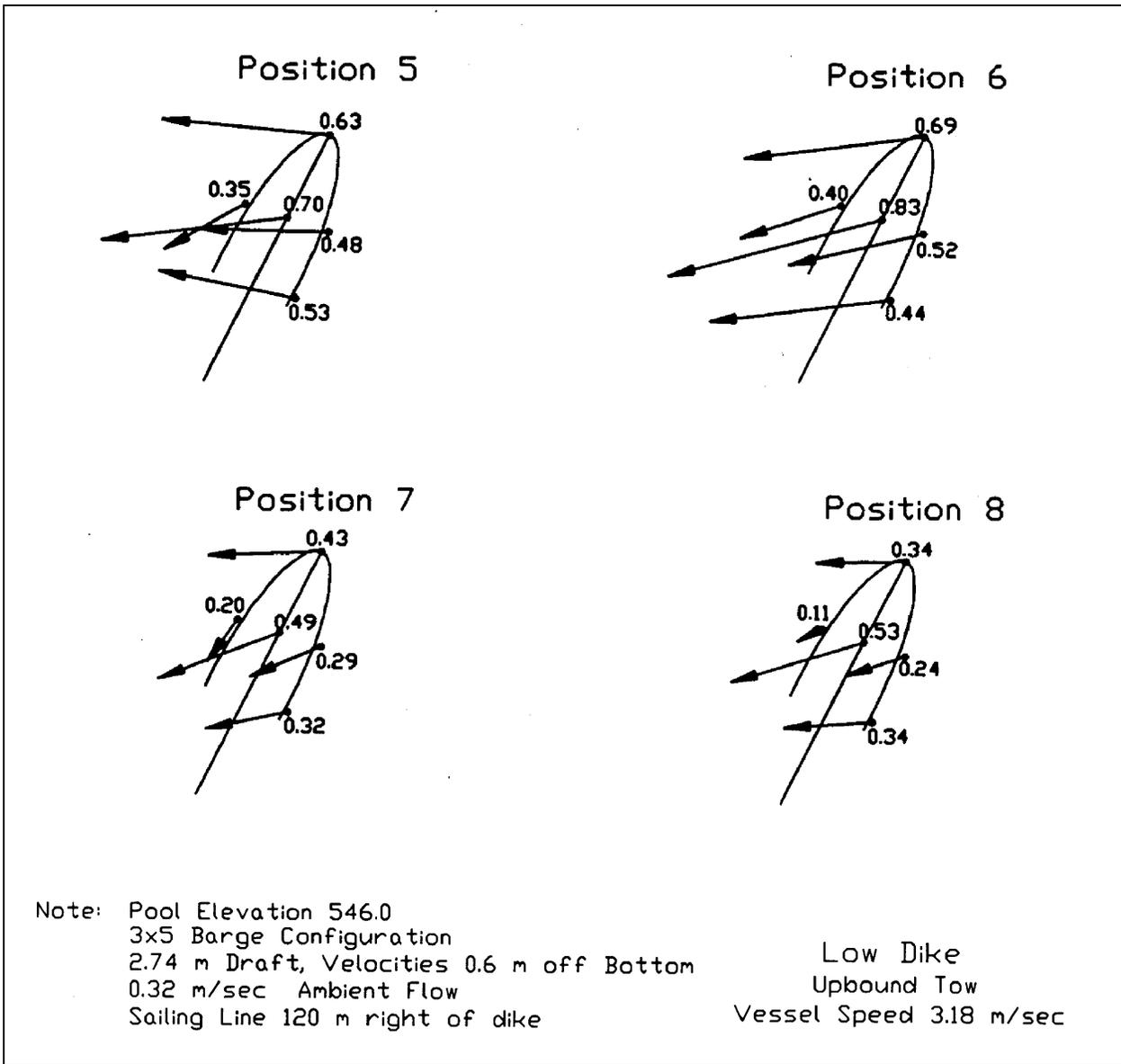


Figure 103. (Concluded)

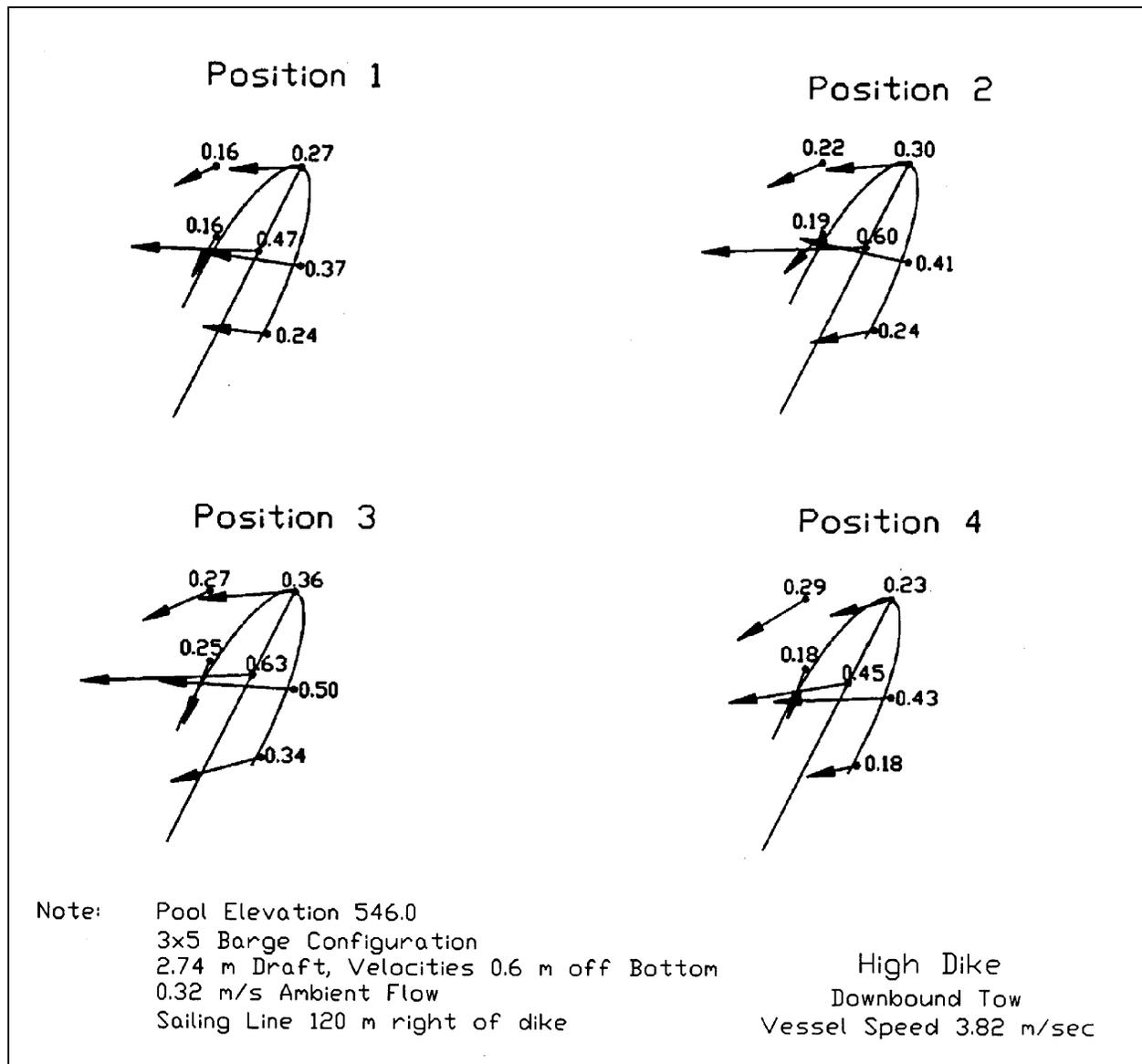
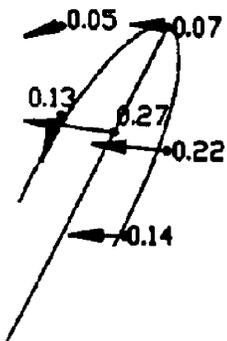
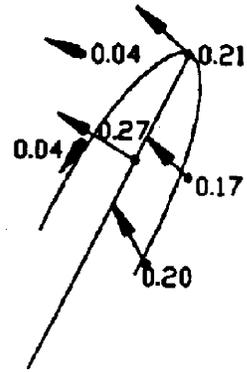


Figure 104. Velocities during tow passage, high dike, downbound tow (Continued)

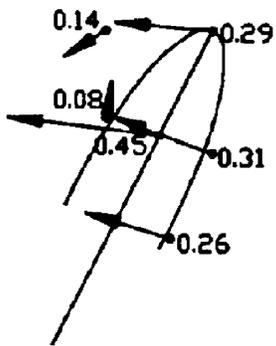
Position 5



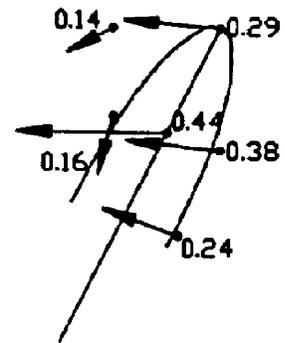
Position 6



Position 7



Position 8



Note: Pool Elevation 546.0  
3x5 Barge Configuration  
2.74 m Draft, Velocities 0.6 m off Bottom  
0.32 m/s Ambient Flow  
Sailing Line 120 m Right of Dike

High Dike  
Downbound Tow  
Vessel Speed 3.82 m/sec

Figure 104. (Concluded)

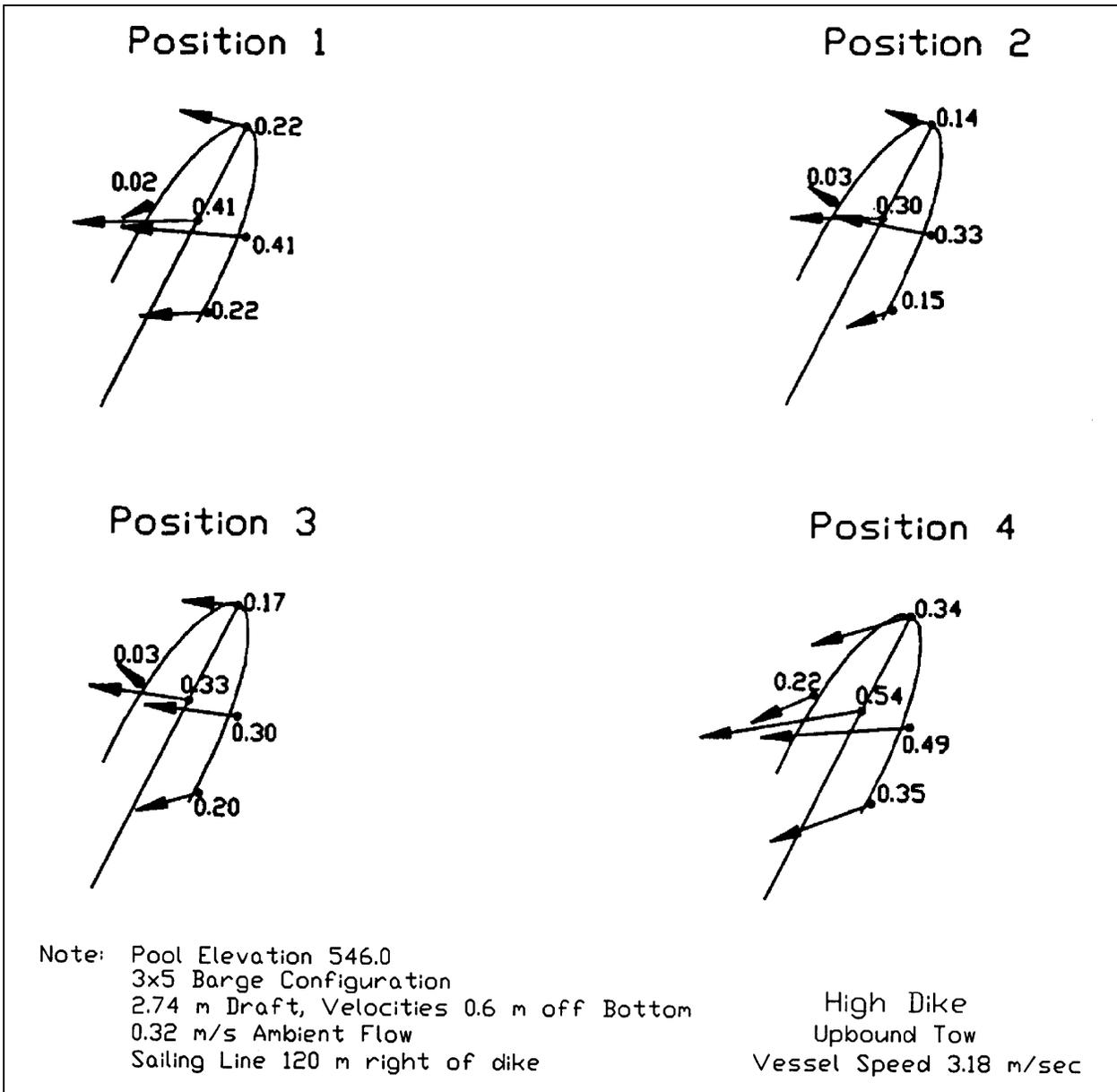


Figure 105. Velocities during tow passage, high dike, upbound tow (Continued)

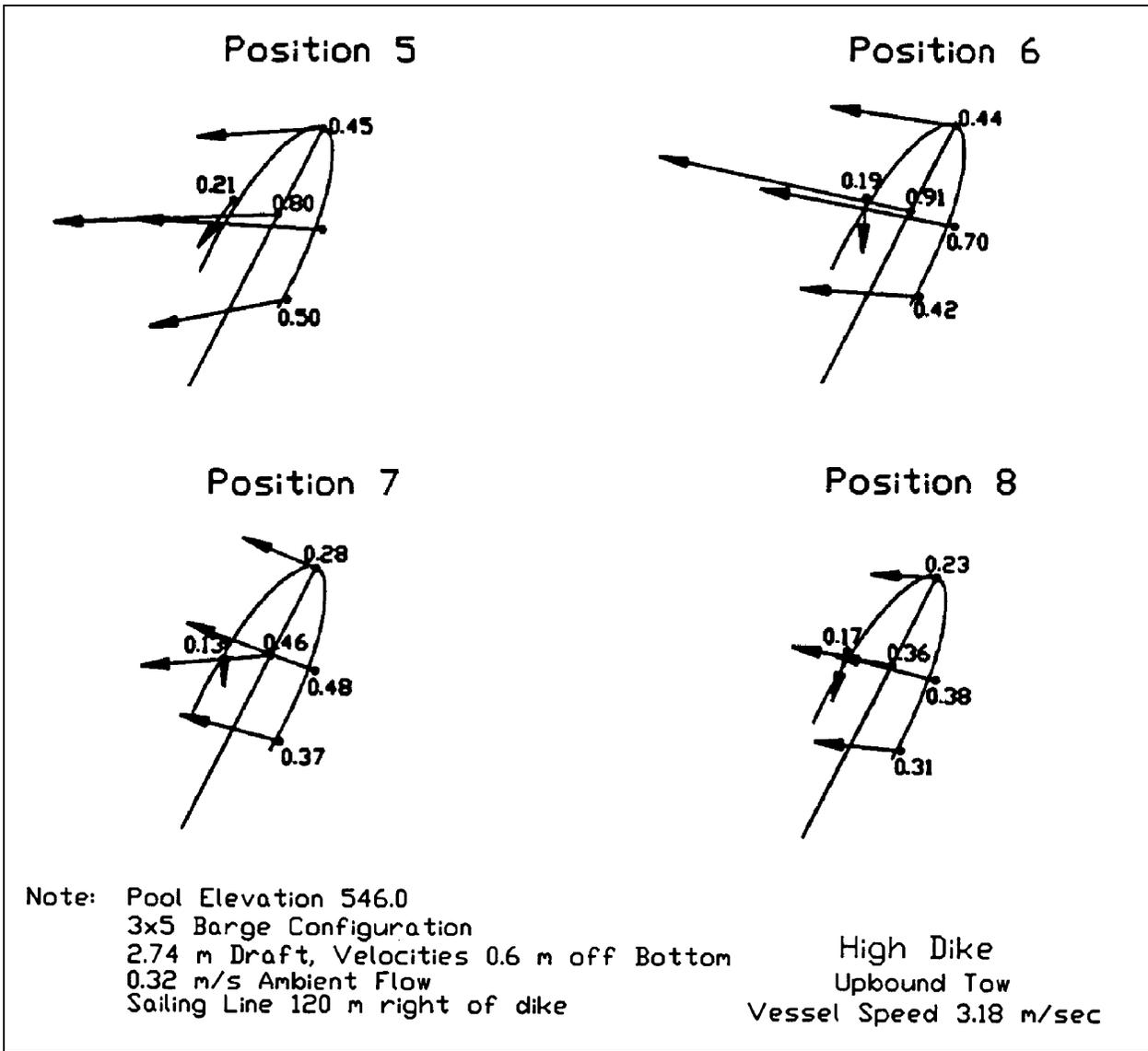


Figure 105. (Concluded)

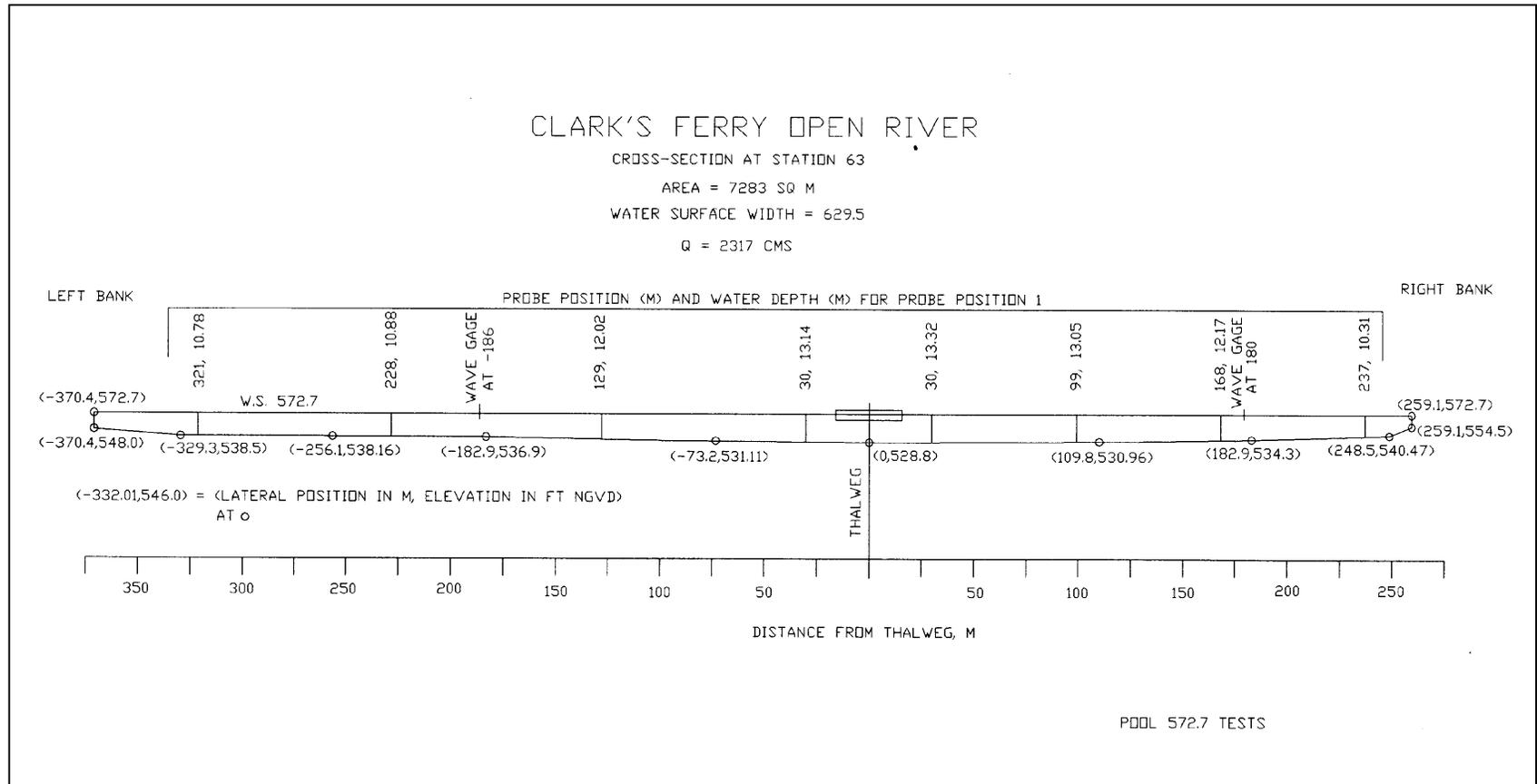
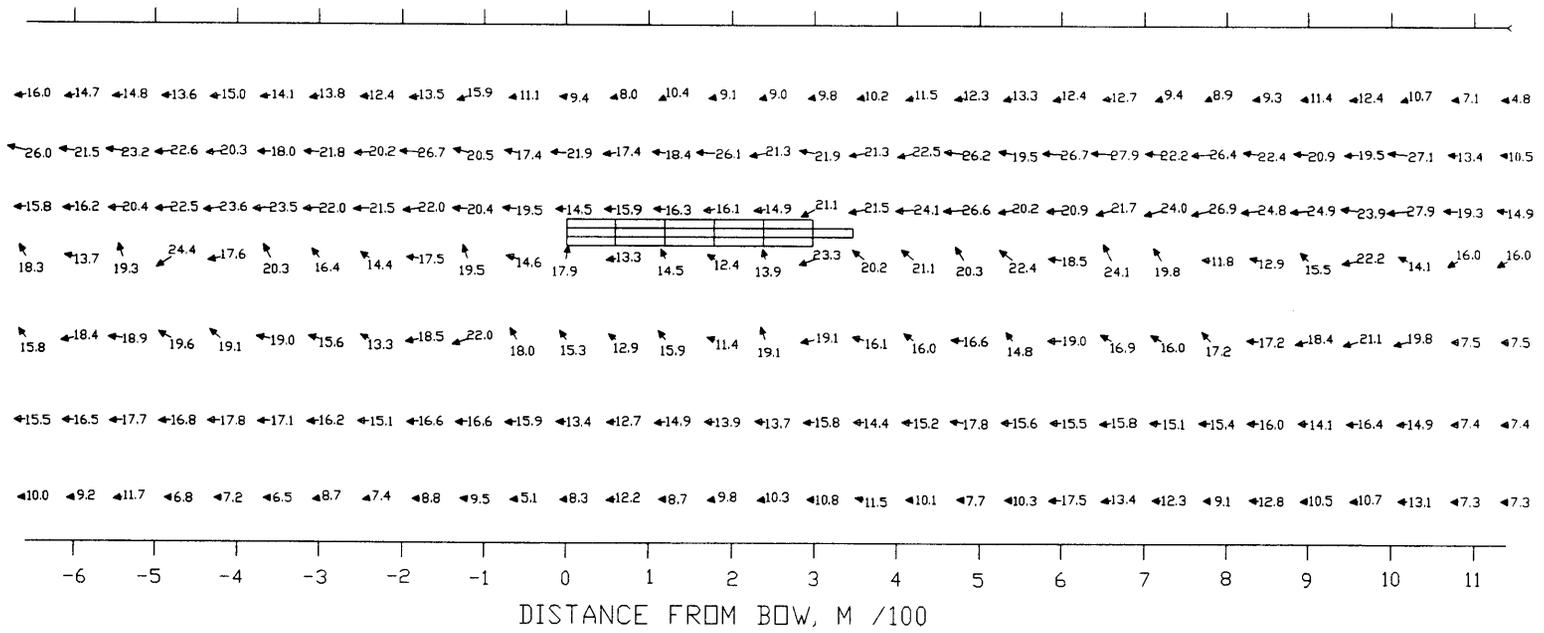


Figure 106. Cross section, experimental series 7

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST CHD292

Figure 107. Vector plot, test CHD292

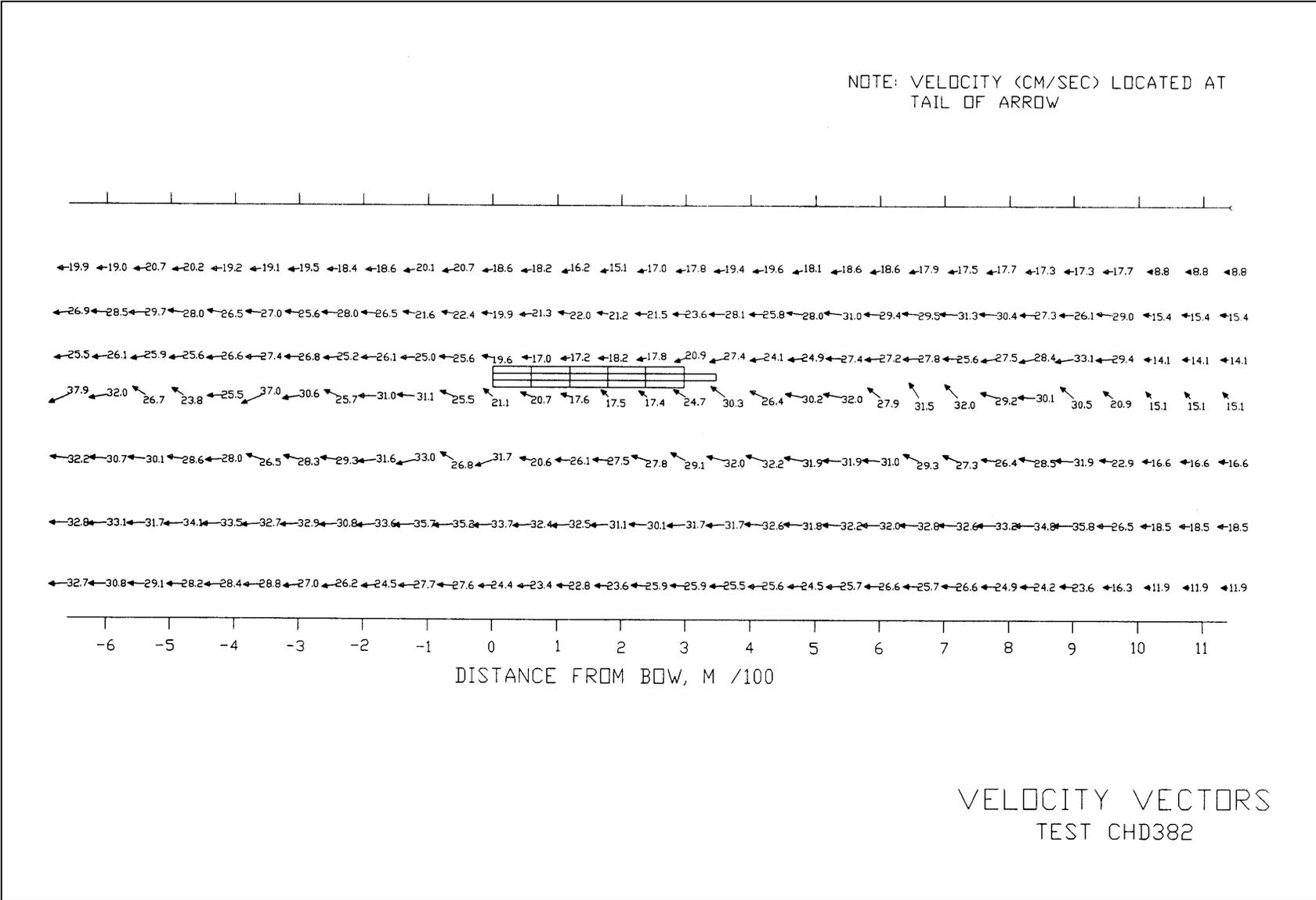


Figure 108. Vector plot, test CHD382

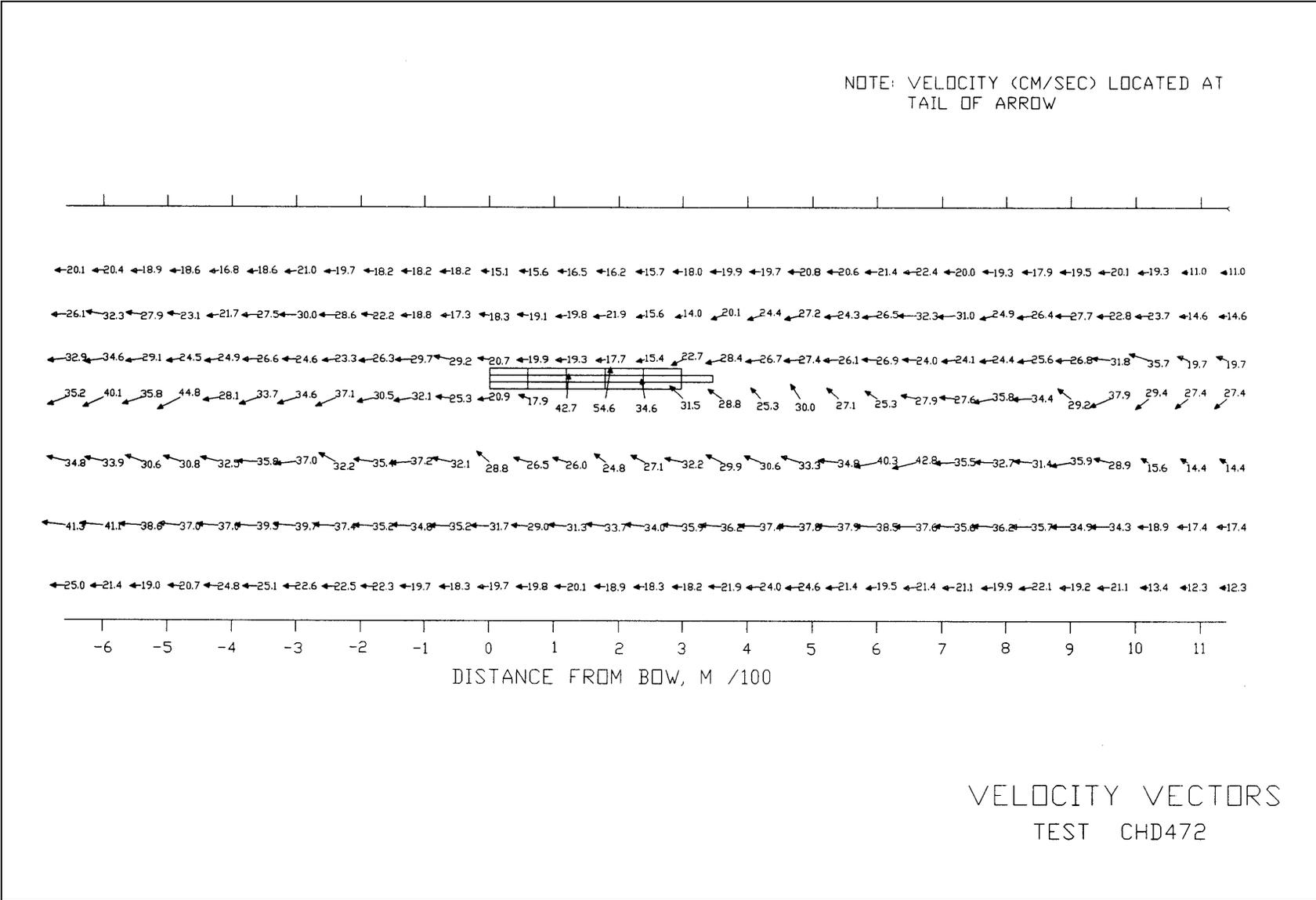


Figure 109. Vector plot, test CHE472

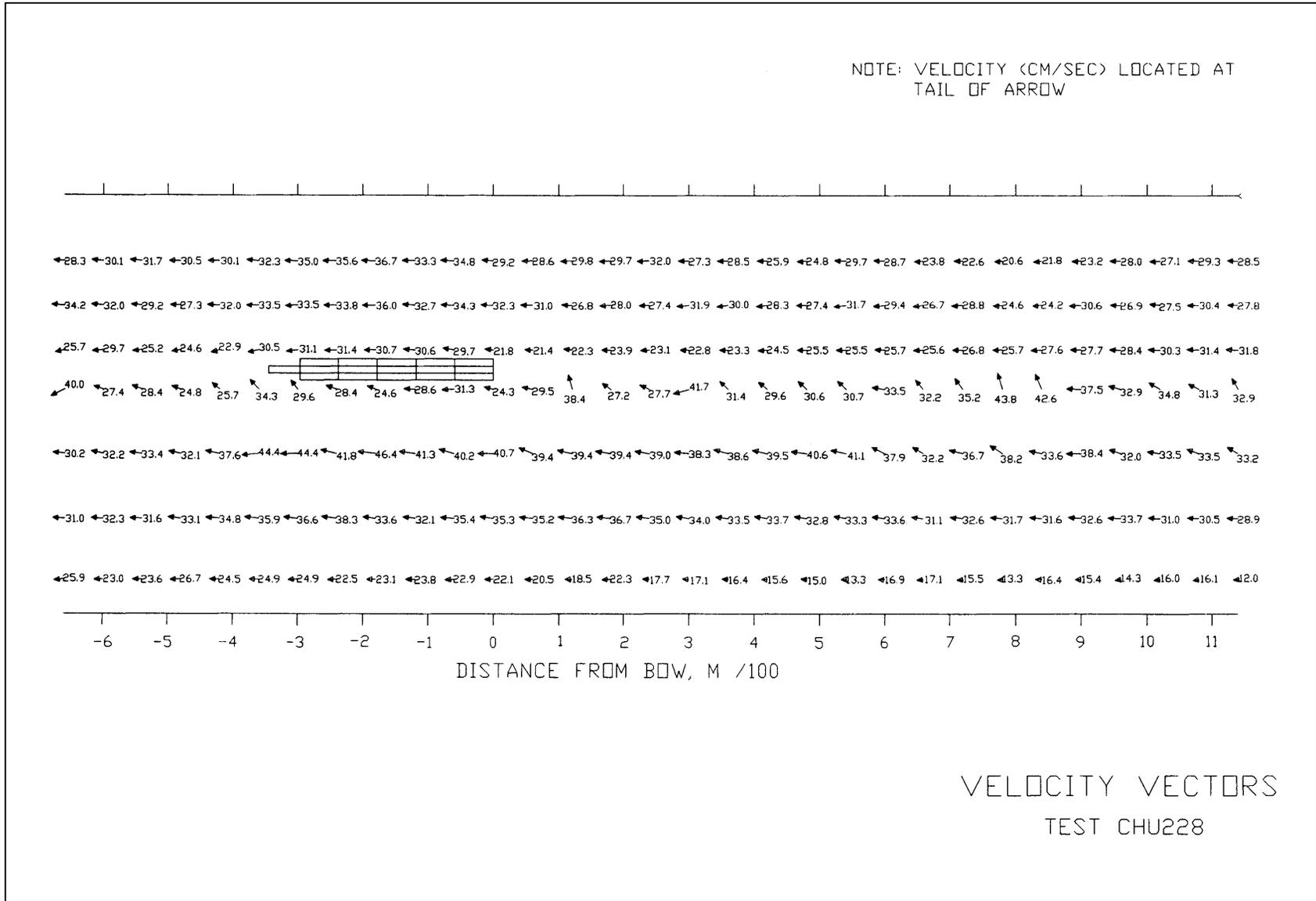
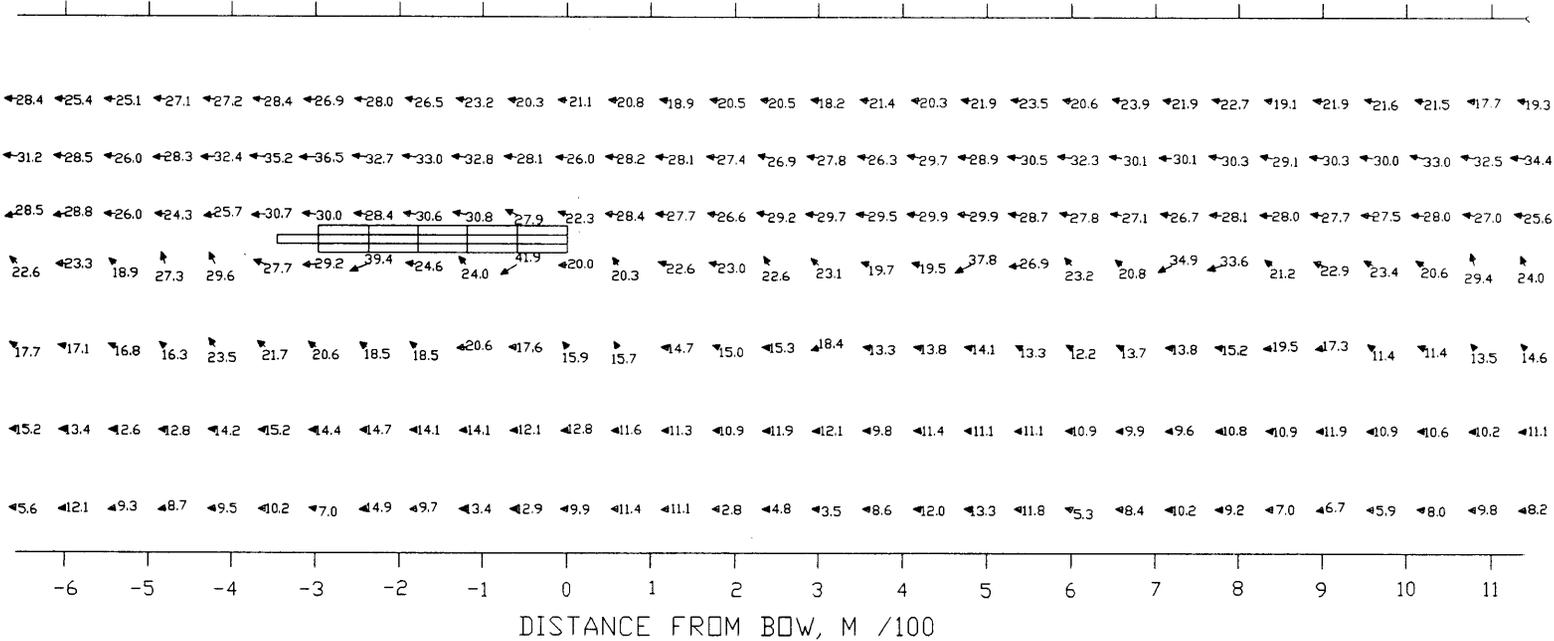


Figure 110. Vector plot, test CHU228

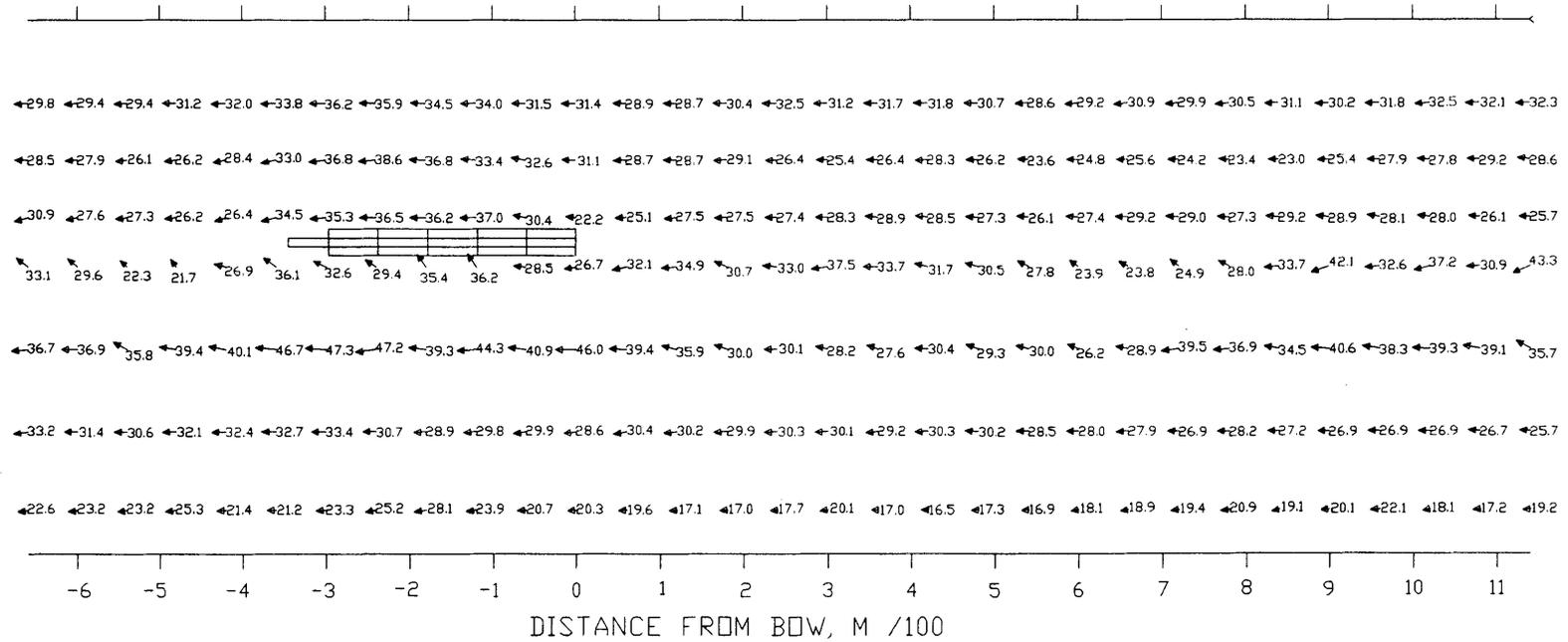
NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST CHU318

Figure 111. Vector plot, test CHU318

NOTE: VELOCITY (CM/SEC) LOCATED AT  
TAIL OF ARROW



VELOCITY VECTORS  
TEST CHU408

Figure 112. Vector plot, test CHU408