

Figure 21. Observed water level, mouth of Illinois Waterway Backwater Channel, Boat 2, UNET Section 0.00

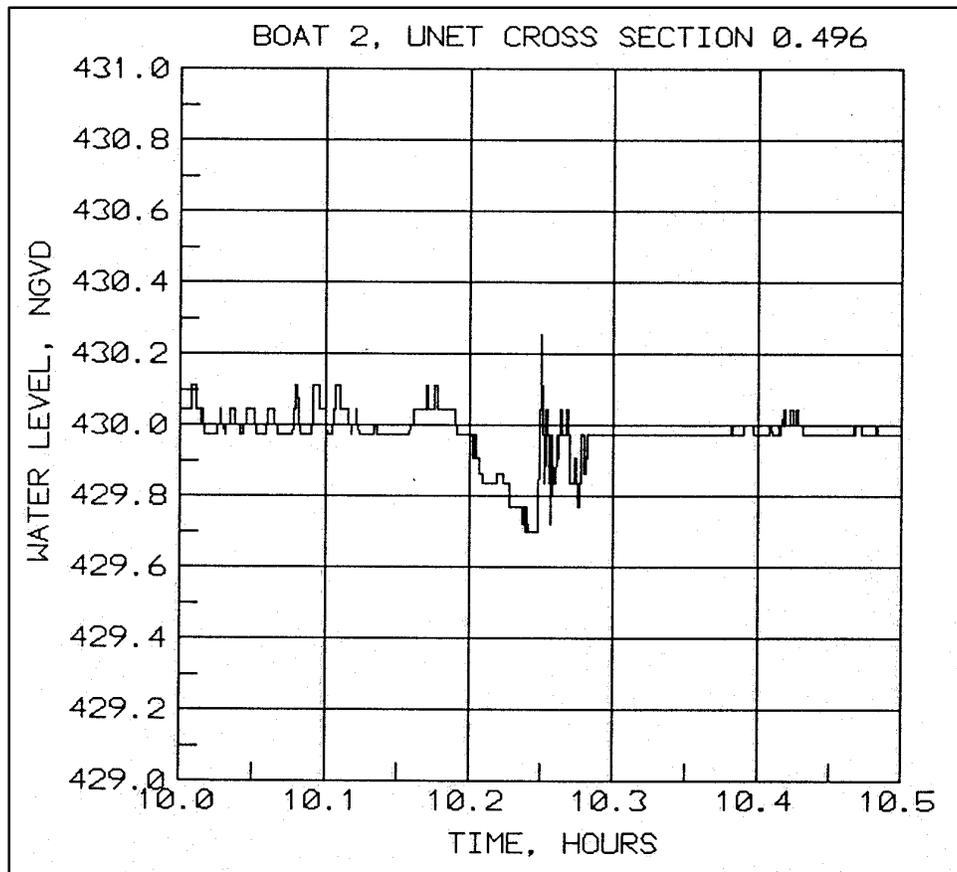


Figure 22. Observed water level, Illinois Waterway Backwater Channel, Boat 2, UNET Section 0.496

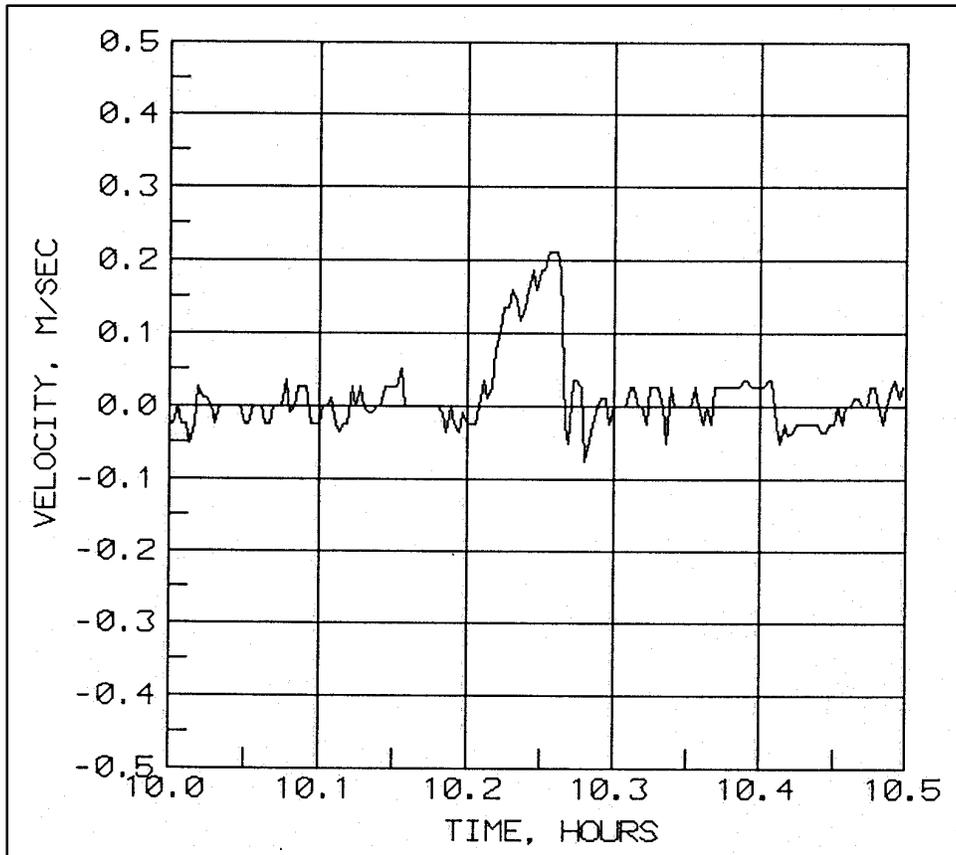


Figure 23. Observed velocity, Illinois Waterway Backwater Channel, Boat 2, UNET Section 0.496

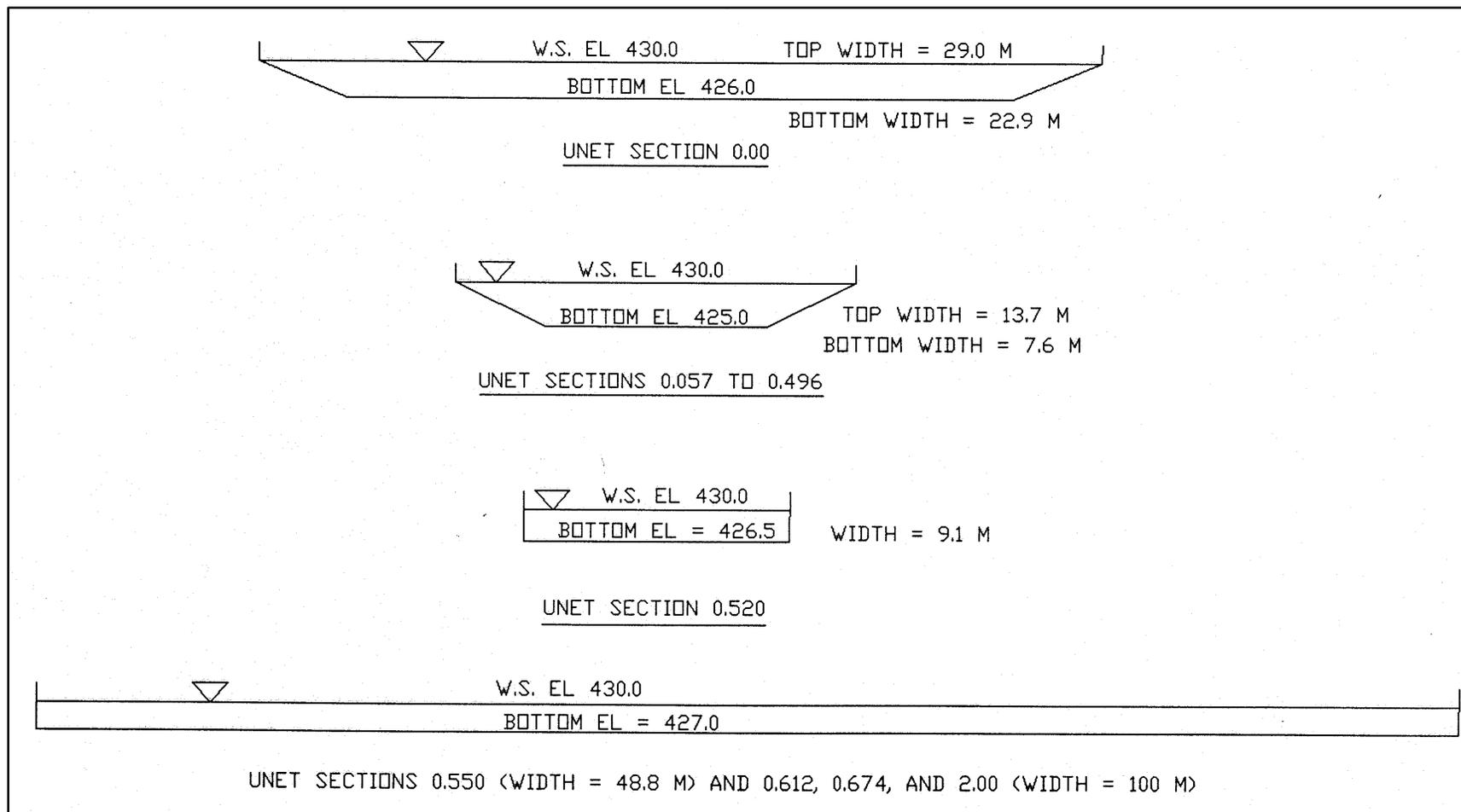


Figure 24. Cross sections used in UNET for Illinois Waterway

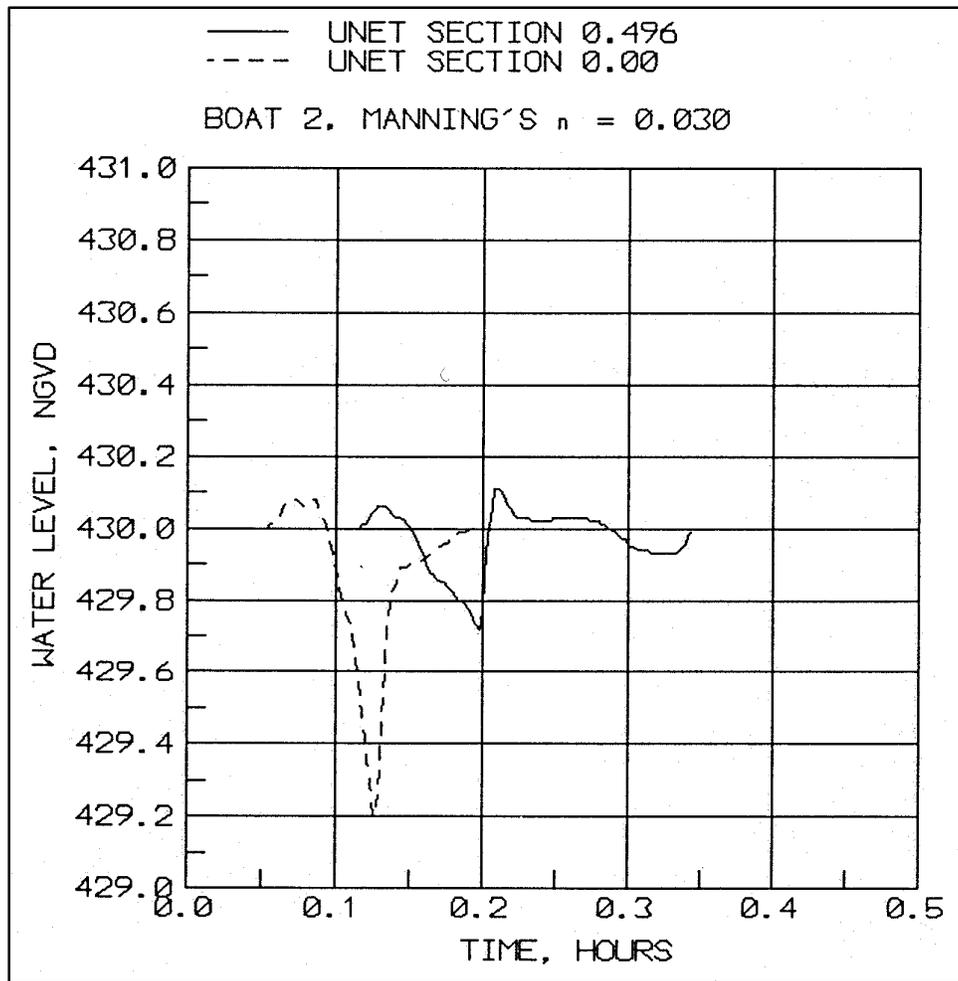


Figure 25. Computed water level, UNET model, Illinois Waterway Backwater Channel, dashed line is input downstream stage hydrograph

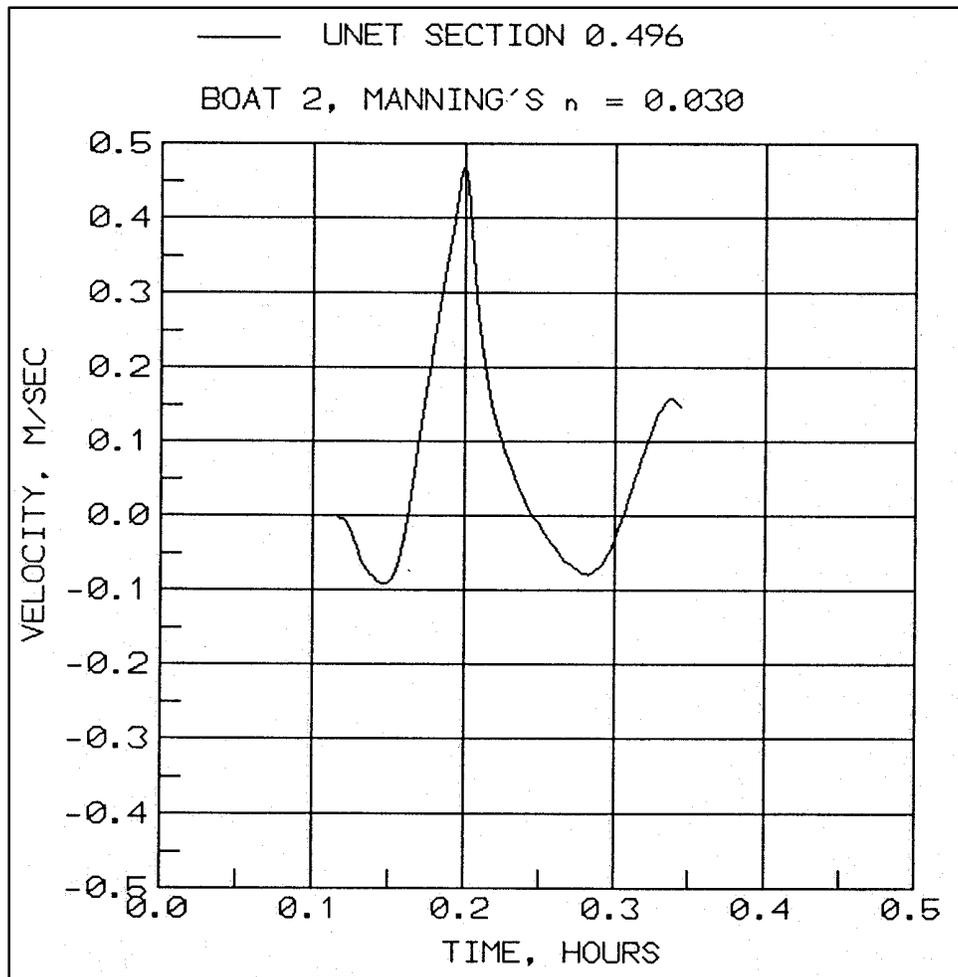


Figure 26. Computed velocity, UNET model, Illinois Waterway Backwater Channel

```

PR ON
T1 BACKWATER Experiment
T2 WORKSHOP
T3 HEC
*
XK 4.0 25 0.25 0.02
*
UB
*
NC .10 .10 .03
*
* CROSS-SECTION 2.000
*
X1 2.000 6 9.99 338.1 7001 7001 7001
HY 2.000
GR 432. 0.0 432. 9.99 427.00 10. 427.00 338. 432.0 338.10
GR 432.0 400.0
*
* CROSS-SECTION 0.674
*
X1 0.674 6 9.99 338.1 328 328 328
GR 432. 0.0 432. 9.99 427.00 10. 427.00 338. 432.0 338.10
GR 432.0 400.0
*
*
*
* CROSS-SECTION 0.612
*
X1 0.612 0 9.99 338.1 328 328 328
*
* CROSS-SECTION 0.550
*
X1 0.550 6 9.99 170.1 160 160 160
GR 432. 0.0 432. 9.99 427.00 10. 427.00 170. 432.0 170.10
GR 432.0 400.0
*
* CROSS-SECTION 0.520 SHEET PILE STRUCTURE SECTION
*
X1 0.520 6 9.99 40.1 125 125 125
GR 432. 0.0 432. 9.99 426.50 10. 426.50 40. 432.0 40.10
GR 432.0 400.0

```

Figure 27. UNET Cross Section Input File for Illinois Waterway Backwater
(Continued)

```

*
* CROSS-SECTION 0.496 PROTOTYPE MEASUREMENT LOCATION
*
X1 0.496   8  9.99  55.1  400  400  400
HY 0.496
GR 432.   0.0  432.  9.99  430.00  10. 425.00  20. 425.0  45.0
GR 430.0  55.0  432.  55.1  432.00  100.

*
* CROSS-SECTION 0.420
*
X1 0.420   0  9.99  55.1  745.  745.  745.
*
* CROSS-SECTION 0.279
*
X1 0.279   0  9.99  55.1  475.  475.  475.
*
* CROSS-SECTION 0.189
*
X1 0.189   0  9.99  55.1  700.  700.  700.
*
* CROSS-SECTION 0.0568
*
X1 0.057   0  9.99  55.1  300.  300.  300.
*
* CROSS-SECTION 0.0
*
X1 0.00    8  9.99  105.1  0.  0.  0.
HY 0.0
GR 432.   0.0  432.  9.99  430.00  10. 426.00  20. 426.0  95.0
GR 430.0  105.0  432.  105.1  432.00  200.
*
DB
*
EJ

```

Figure 27. (Concluded)

DOWNSTREAM STAGE HYDROGRAPH

I 21

430

430

430.02

430.09

430.06

430.08

430.0

429.83

429.72

429.45

429.16

429.8

429.89

429.90

429.92

429.95

429.97

429.99

430.0

430.0

430.0

*

*

* Set maximum number of iterations for Newton Raphson iteration scheme

*

MXITER = 100

*

* Set stage tolerance to 0.00001 ft, for convergence criteria

*

ZTOL=0.00001

*

*

EJ

Figure 28. (Concluded)

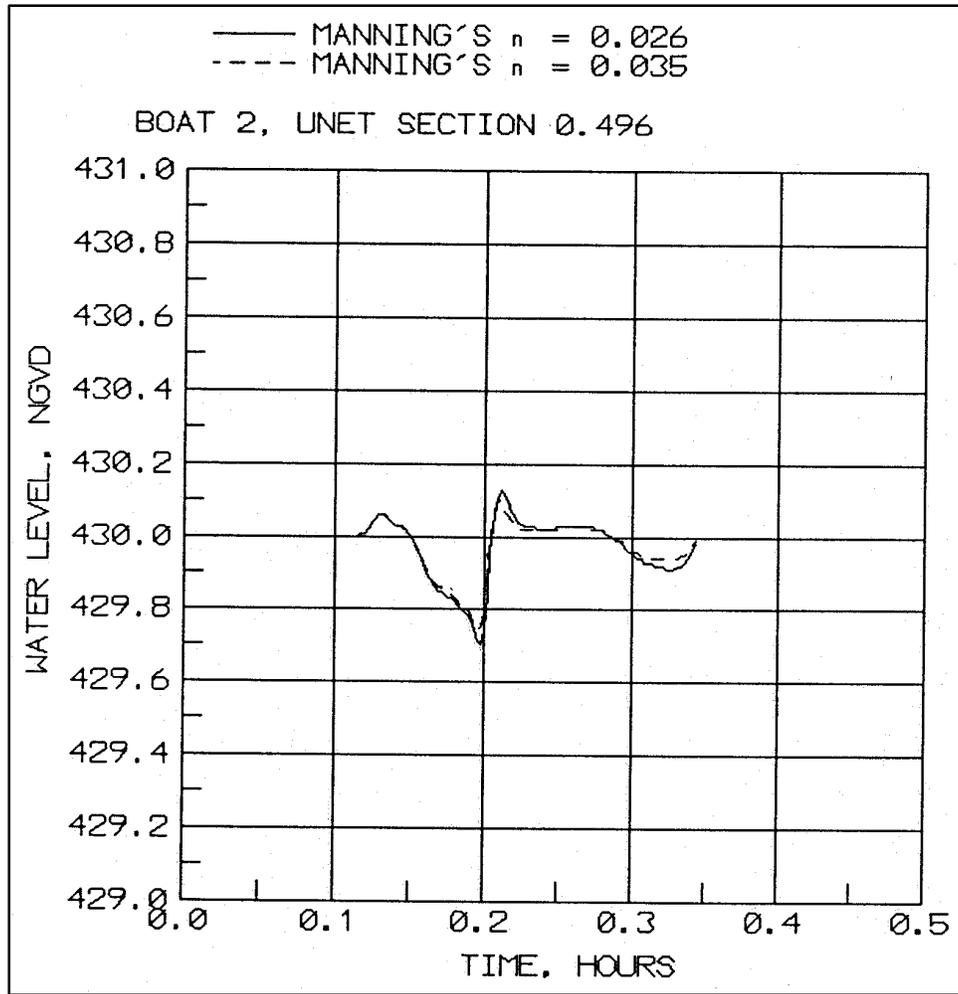


Figure 29. Computed water level, UNET model, Illinois Waterway Backwater Channel, Manning's $n = 0.026$ and 0.035

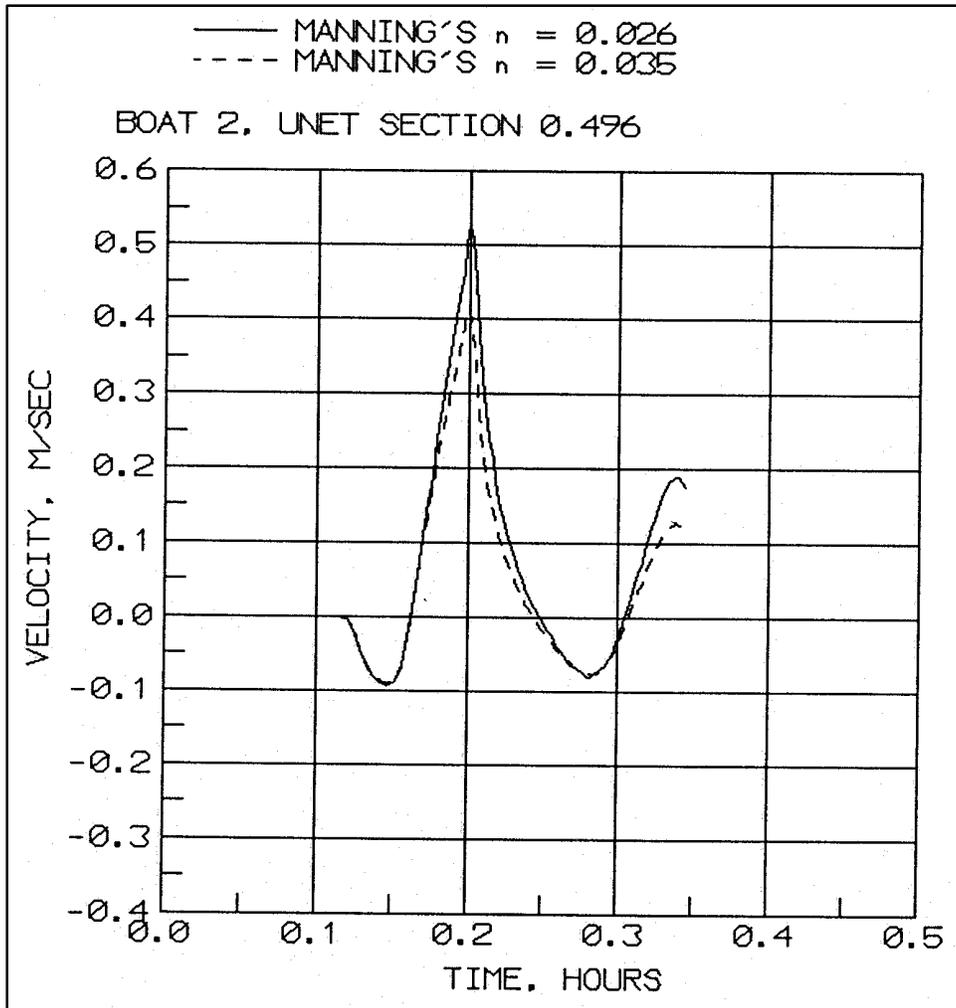


Figure 30. Computed velocity, UNET model, Illinois Waterway Backwater Channel, Manning's $n = 0.026$ and 0.035