# CO SPRINGS INDUSTRIAL
# DETENTION REPORT

Rev. 3-2-99

$Q_{1.5}$ to Basin = 85.16 c.f.s.
$Q_{25}$ = 105.06 c.f.s.
$Q_{100}$ = 134.51 c.f.s. FROM KINGS CROSSING AND SITE (DEVELOPED)
$Q_5$ = 64.73 c.f.s.
$Q_2$ = 52.80 c.f.s.

TOTAL AREA OF SITE = 19.08 AC

## DIFFERENTIAL RUNOFF Δ

DIFFERENCE BETWEEN EXISTING AND DEVELOPED

2 YR. - (2.39 - 1.15)(19.08) = 23.66 c.f.s.
5 YR. - (2.93 - 1.41)(19.08) = 29.00 c.f.s.
15 YR. - (3.85 - 1.87)(19.08) = 37.78 c.f.s.
25 YR - (4.75 - 2.31)(19.08) = 46.56 c.f.s.
100 YR (6.08 - 2.95)(19.08) = 59.72 cfs

## ALLOWABLE DISCHARGE

2 YR - 52.80 23.66 = 29.14 c.f.s.
5 YR - 64.73 29.00 = 35.73 c.f.s.
15 YR - 85.16 - 37.78 = 47.38 c.f.s.
25 YR - 105.06 - 46.56 = 58.50 c.f.s.
100 YR - 134.51 - 59.72 = 74.79 cfs

STATE OF MISSOURI
RICHARD SCOTT MUSLER NUMBER E-18838
REGISTERED PROFESSIONAL ENGINEER

Richard S. Musler

3-3-99

Attached are the routings for the 2, 5 15, 25 & 100 year storms.

The 15, 25 & 100 year storms were routed thru the basin using the 100 year high water in the creek. The 2 & 5 year storms assumed no tail water. The two different basins are identified as "RESERVOIR NO. 1" (Storage beginning at 472.75 - 100 yr. H.W. in creek) and "RESERVOIR NO. 2".

The overflow structure used for these calculations is a double inlet base with a 12" circular opening at 466.00, two horizontal slots (1.) 9" high x 56" wide (2.) 10" high x 56" wide at 472.75 and a top of 474.60

The results were as follows:

| | | PEAK |
|---|---|---|
| 2 yr. | HYD. NO. 6 & HYD. NO. 9 | 6.90 c.f.s. @ 469.83 |
| 5 yr. | HYD. NO. 5 & HYD. NO. 10 | 7.49 c.f.s. @ 470.42 |
| 15 yr. | HYD. NO. 7 & HYD. NO. 13 | 40.30 c.f.s. @ 474.43 |
| 25 yr. | HYD. NO. 3 & HYD. NO. 4 | 54.98 c.f.s. @ 474.87 |
| 100 yr. | HYD. NO. 1 & HYD. NO. 2 | 87.92 c.f.s. @ 475.33 |

The peak discharge in all storms is less than the Allowable Discharge.

# Hydrograph Summary Report



| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to peak (min) | Volume (cuft) | Return period (yrs) | Inflow hyd(s) | Maximum elevation (ft) | Maximum storage (cuft) | Hydrograph description |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Manual | 134.51 | 2 | 12 | 161,413 | 100 | ---- | ------ | ------ | 100 YEAR |
| 2 | Manual | 105.06 | 2 | 12 | 126,072 | 25 | ---- | ------ | ------ | 25 YR |
| 3 | Manual | 64.73 | 2 | 12 | 77,677 | 5 | ---- | ------ | ------ | 5 YR |
| 4 | Manual | 85.16 | 2 | 12 | 102,192 | 10 | ---- | ------ | ------ | 15 YR |
| 5 | Manual | 52.80 | 2 | 12 | 63,360 | 2 | ---- | ------ | ------ | 2 YR |
| 6 | Reservoir | 87.92 | 2 | 24 | 161,413 | 100 | 1 | 475.33 | 92,594 | |
| 7 | Reservoir | 54.98 | 2 | 26 | 126,072 | 25 | 2 | 474.87 | 77,780 | |
| 8 | Reservoir | 7.49 | 2 | 30 | 77,677 | 5 | 3 | 470.42 | 68,558 | |
| 9 | Reservoir | 40.30 | 2 | 26 | 102,192 | 10 | 4 | 474.43 | 63,608 | |
| 10 | Reservoir | 6.90 | 2 | 30 | 63,360 | 2 | 5 | 469.83 | 55,133 | |
| 11 | Reservoir | 8.36 | 2 | 30 | 102,192 | 10 | 4 | 471.39 | 91,746 | |

Proj. file: Cpind2.gpw | IDF file: Sample.idf | Run date: 03-02-1999

# Reservoir Report



English

## Reservoir No. 1 - CPIND REV1/13

### Pond Data

Pond storage is based on known contour areas

### Stage / Storage Table

| Stage ft | Elevation ft | Contour area sqft | Incr. Storage cuft | Total storage cuft |
|---|---|---|---|---|
| 0.00 | 472.75 | 27,358 | 0 | 0 |
| 1.25 | 474.00 | 29,985 | 49,728 | 49,728 |
| 3.25 | 476.00 | 34,457 | 64,442 | 114,170 |

### Culvert / Orifice Structures

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| **Rise in** | = 48.0 | 9.0 | 10.0 | 0.0 |
| **Span in** | = 48.0 | 56.0 | 56.0 | 0.0 |
| **No. Barrels** | = 1 | 1 | 1 | 0 |
| **Invert El. ft** | = 465.00 | 472.75 | 472.75 | 0.00 |
| **Length ft** | = 100.0 | 0.0 | 0.0 | 0.0 |
| **Slope %** | = 2.00 | 0.00 | 0.00 | 0.00 |
| **N-Value** | = .013 | .013 | .013 | .000 |
| **Orif. Coeff.** | = 0.60 | 0.60 | 0.60 | 0.00 |
| **Multi-Stage** | = ----- | Yes | Yes | No |

### Weir Structures

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| **Crest Len ft** | = 18.8 | 0.0 | 0.0 | 0.0 |
| **Crest El. ft** | = 474.60 | 0.00 | 0.00 | 0.00 |
| **Weir Coeff.** | = 3.00 | 0.00 | 0.00 | 0.00 |
| **Eqn. Exp.** | = 1.50 | 0.00 | 0.00 | 0.00 |
| **Multi-Stage** | = Yes | No | No | No |

**Tailwater Elevation** = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

### Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Discharge cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0 | 472.75 | 145.07 | 0.00 | 0.00 | --- | 0.00 | --- | --- | --- | 0.00 |
| 1.25 | 49,728 | 474.00 | 160.07 | 15.76 | 17.09 | --- | 0.00 | --- | --- | --- | 32.86 |
| 3.25 | 114,170 | 476.00 | 181.50 | 28.57 | 31.52 | --- | 93.23 | --- | --- | --- | 153.32 |

# Hydrograph Report



English

## Hyd. No. 6

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 1
Max. Elevation = 475.33 ft

Peak discharge = 87.92 cfs
Time interval = 2 min
Reservoir name = CPIND REV1/13
Max. Storage = 92,594 cuft

Storage Indication method used

Total Volume = 161,413 cuft

### Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.07 | 44.84 | 472.88 | 146.72 | 0.77 | 0.77 | ----- | ----- | ----- | ----- | ----- | 1.54 |
| 0.10 | 67.26 | 473.04 | 148.69 | 2.53 | 2.53 | ----- | ----- | ----- | ----- | ----- | 5.06 |
| 0.13 | 89.67 | 473.25 | 151.28 | 5.67 | 5.67 | ----- | ----- | ----- | ----- | ----- | 11.34 |
| 0.17 | 112.09 | 473.51 | 154.34 | 10.43 | 10.48 | ----- | ----- | ----- | ----- | ----- | 20.91 |
| 0.20 | 134.51 << | 473.81 | 157.82 | 13.89 | 14.95 | ----- | ----- | ----- | ----- | ----- | 28.83 |
| 0.23 | 134.51 << | 474.14 | 161.67 | 16.97 | 18.46 | ----- | ----- | ----- | ----- | ----- | 35.43 |
| 0.27 | 134.51 << | 474.50 | 165.67 | 19.74 | 21.60 | ----- | 0.00 | ----- | ----- | ----- | 41.34 |
| 0.30 | 134.51 << | 474.83 | 169.24 | 21.97 | 24.11 | ----- | 6.21 | ----- | ----- | ----- | 52.30 |
| 0.33 | 134.51 << | 475.10 | 172.17 | 23.67 | 26.02 | ----- | 20.15 | ----- | ----- | ----- | 69.84 |
| 0.37 | 112.09 | 475.27 | 174.01 | 24.70 | 27.17 | ----- | 31.34 | ----- | ----- | ----- | 83.20 |
| 0.40 | 89.67 | 475.33 | 174.61 | 25.02 | 27.54 | ----- | 35.36 | ----- | ----- | ----- | 87.92 << |
| 0.43 | 67.26 | 475.30 | 174.29 | 24.85 | 27.34 | ----- | 33.21 | ----- | ----- | ----- | 85.40 |
| 0.47 | 44.84 | 475.21 | 173.30 | 24.31 | 26.73 | ----- | 26.52 | ----- | ----- | ----- | 77.56 |
| 0.50 | 22.42 | 475.06 | 171.77 | 23.44 | 25.77 | ----- | 17.88 | ----- | ----- | ----- | 67.09 |
| 0.53 | 0.00 | 474.88 | 169.77 | 22.29 | 24.46 | ----- | 8.49 | ----- | ----- | ----- | 55.24 |
| 0.57 | 0.00 | 474.69 | 167.72 | 21.04 | 23.07 | ----- | 2.16 | ----- | ----- | ----- | 46.28 |
| 0.60 | 0.00 | 474.52 | 165.93 | 19.91 | 21.79 | ----- | 0.00 | ----- | ----- | ----- | 41.69 |
| 0.63 | 0.00 | 474.37 | 164.25 | 18.81 | 20.54 | ----- | ----- | ----- | ----- | ----- | 39.35 |
| 0.67 | 0.00 | 474.23 | 162.66 | 17.70 | 19.29 | ----- | ----- | ----- | ----- | ----- | 36.99 |
| 0.70 | 0.00 | 474.10 | 161.15 | 16.58 | 18.02 | ----- | ----- | ----- | ----- | ----- | 34.61 |
| 0.73 | 0.00 | 473.98 | 159.80 | 15.54 | 16.84 | ----- | ----- | ----- | ----- | ----- | 32.39 |
| 0.77 | 0.00 | 473.88 | 158.71 | 14.66 | 15.83 | ----- | ----- | ----- | ----- | ----- | 30.49 |
| 0.80 | 0.00 | 473.79 | 157.68 | 13.76 | 14.80 | ----- | ----- | ----- | ----- | ----- | 28.56 |
| 0.83 | 0.00 | 473.71 | 156.71 | 12.87 | 13.77 | ----- | ----- | ----- | ----- | ----- | 26.64 |
| 0.87 | 0.00 | 473.63 | 155.80 | 11.99 | 12.77 | ----- | ----- | ----- | ----- | ----- | 24.76 |
| 0.90 | 0.00 | 473.56 | 154.96 | 11.09 | 11.46 | ----- | ----- | ----- | ----- | ----- | 22.55 |
| 0.93 | 0.00 | 473.50 | 154.19 | 10.23 | 10.23 | ----- | ----- | ----- | ----- | ----- | 20.47 |
| 0.97 | 0.00 | 473.44 | 153.50 | 9.08 | 9.08 | ----- | ----- | ----- | ----- | ----- | 18.17 |
| 1.00 | 0.00 | 473.39 | 152.88 | 8.06 | 8.06 | ----- | ----- | ----- | ----- | ----- | 16.12 |
| 1.03 | 0.00 | 473.34 | 152.33 | 7.22 | 7.22 | ----- | ----- | ----- | ----- | ----- | 14.44 |
| 1.07 | 0.00 | 473.30 | 151.83 | 6.48 | 6.48 | ----- | ----- | ----- | ----- | ----- | 12.96 |
| 1.10 | 0.00 | 473.26 | 151.38 | 5.82 | 5.82 | ----- | ----- | ----- | ----- | ----- | 11.63 |
| 1.13 | 0.00 | 473.23 | 150.98 | 5.27 | 5.27 | ----- | ----- | ----- | ----- | ----- | 10.53 |
| 1.17 | 0.00 | 473.20 | 150.61 | 4.79 | 4.79 | ----- | ----- | ----- | ----- | ----- | 9.58 |
| 1.20 | 0.00 | 473.17 | 150.27 | 4.35 | 4.35 | ----- | ----- | ----- | ----- | ----- | 8.71 |
| 1.23 | 0.00 | 473.14 | 149.97 | 3.96 | 3.96 | ----- | ----- | ----- | ----- | ----- | 7.92 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.27 | 0.00 | 473.12 | 149.69 | 3.61 | 3.61 | ----- | ----- | ----- | ----- | ----- | 7.22 |
| 1.30 | 0.00 | 473.10 | 149.43 | 3.33 | 3.33 | ----- | ----- | ----- | ----- | ----- | 6.66 |
| 1.33 | 0.00 | 473.08 | 149.20 | 3.07 | 3.07 | ----- | ----- | ----- | ----- | ----- | 6.14 |
| 1.37 | 0.00 | 473.06 | 148.98 | 2.84 | 2.84 | ----- | ----- | ----- | ----- | ----- | 5.67 |
| 1.40 | 0.00 | 473.05 | 148.77 | 2.62 | 2.62 | ----- | ----- | ----- | ----- | ----- | 5.23 |
| 1.43 | 0.00 | 473.03 | 148.59 | 2.41 | 2.41 | ----- | ----- | ----- | ----- | ----- | 4.83 |
| 1.47 | 0.00 | 473.02 | 148.42 | 2.23 | 2.23 | ----- | ----- | ----- | ----- | ----- | 4.46 |
| 1.50 | 0.00 | 473.01 | 148.26 | 2.06 | 2.06 | ----- | ----- | ----- | ----- | ----- | 4.11 |
| 1.53 | 0.00 | 472.99 | 148.11 | 1.92 | 1.92 | ----- | ----- | ----- | ----- | ----- | 3.83 |
| 1.57 | 0.00 | 472.98 | 147.97 | 1.80 | 1.80 | ----- | ----- | ----- | ----- | ----- | 3.60 |
| 1.60 | 0.00 | 472.97 | 147.84 | 1.69 | 1.69 | ----- | ----- | ----- | ----- | ----- | 3.39 |
| 1.63 | 0.00 | 472.96 | 147.72 | 1.59 | 1.59 | ----- | ----- | ----- | ----- | ----- | 3.18 |
| 1.67 | 0.00 | 472.95 | 147.60 | 1.50 | 1.50 | ----- | ----- | ----- | ----- | ----- | 2.99 |
| 1.70 | 0.00 | 472.94 | 147.49 | 1.41 | 1.41 | ----- | ----- | ----- | ----- | ----- | 2.81 |
| 1.73 | 0.00 | 472.94 | 147.39 | 1.32 | 1.32 | ----- | ----- | ----- | ----- | ----- | 2.64 |
| 1.77 | 0.00 | 472.93 | 147.29 | 1.24 | 1.24 | ----- | ----- | ----- | ----- | ----- | 2.48 |
| 1.80 | 0.00 | 472.92 | 147.20 | 1.17 | 1.17 | ----- | ----- | ----- | ----- | ----- | 2.34 |
| 1.83 | 0.00 | 472.91 | 147.12 | 1.10 | 1.10 | ----- | ----- | ----- | ----- | ----- | 2.20 |
| 1.87 | 0.00 | 472.91 | 147.04 | 1.03 | 1.03 | ----- | ----- | ----- | ----- | ----- | 2.06 |
| 1.90 | 0.00 | 472.90 | 146.96 | 0.97 | 0.97 | ----- | ----- | ----- | ----- | ----- | 1.94 |
| 1.93 | 0.00 | 472.90 | 146.89 | 0.91 | 0.91 | ----- | ----- | ----- | ----- | ----- | 1.82 |
| 1.97 | 0.00 | 472.89 | 146.83 | 0.86 | 0.86 | ----- | ----- | ----- | ----- | ----- | 1.71 |
| 2.00 | 0.00 | 472.89 | 146.76 | 0.80 | 0.80 | ----- | ----- | ----- | ----- | ----- | 1.61 |
| 2.03 | 0.00 | 472.88 | 146.71 | 0.76 | 0.76 | ----- | ----- | ----- | ----- | ----- | 1.51 |
| 2.07 | 0.00 | 472.88 | 146.65 | 0.71 | 0.71 | ----- | ----- | ----- | ----- | ----- | 1.42 |
| 2.10 | 0.00 | 472.87 | 146.60 | 0.68 | 0.68 | ----- | ----- | ----- | ----- | ----- | 1.37 |
| 2.13 | 0.00 | 472.87 | 146.55 | 0.66 | 0.66 | ----- | ----- | ----- | ----- | ----- | 1.32 |
| 2.17 | 0.00 | 472.86 | 146.50 | 0.64 | 0.64 | ----- | ----- | ----- | ----- | ----- | 1.28 |
| 2.20 | 0.00 | 472.86 | 146.45 | 0.62 | 0.62 | ----- | ----- | ----- | ----- | ----- | 1.23 |
| 2.23 | 0.00 | 472.86 | 146.41 | 0.60 | 0.60 | ----- | ----- | ----- | ----- | ----- | 1.19 |
| 2.27 | 0.00 | 472.85 | 146.36 | 0.58 | 0.58 | ----- | ----- | ----- | ----- | ----- | 1.15 |
| 2.30 | 0.00 | 472.85 | 146.32 | 0.56 | 0.56 | ----- | ----- | ----- | ----- | ----- | 1.12 |
| 2.33 | 0.00 | 472.85 | 146.28 | 0.54 | 0.54 | ----- | ----- | ----- | ----- | ----- | 1.08 |
| 2.37 | 0.00 | 472.84 | 146.24 | 0.52 | 0.52 | ----- | ----- | ----- | ----- | ----- | 1.04 |
| 2.40 | 0.00 | 472.84 | 146.20 | 0.50 | 0.50 | ----- | ----- | ----- | ----- | ----- | 1.01 |
| 2.43 | 0.00 | 472.84 | 146.16 | 0.49 | 0.49 | ----- | ----- | ----- | ----- | ----- | 0.97 |
| 2.47 | 0.00 | 472.83 | 146.12 | 0.47 | 0.47 | ----- | ----- | ----- | ----- | ----- | 0.94 |
| 2.50 | 0.00 | 472.83 | 146.09 | 0.46 | 0.46 | ----- | ----- | ----- | ----- | ----- | 0.91 |
| 2.53 | 0.00 | 472.83 | 146.05 | 0.44 | 0.44 | ----- | ----- | ----- | ----- | ----- | 0.88 |

*...End*

# Hydrograph Report



English

## Hyd. No. 7

Hydrograph type = Reservoir
Storm frequency = 25 yrs
Inflow hyd. No. = 2
Max. Elevation = 474.87 ft

Peak discharge = 54.98 cfs
Time interval = 2 min
Reservoir name = CPIND REV1/13
Max. Storage = 77,780 cuft

Storage Indication method used.

Total Volume = 126,072 cuft

### Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.07 | 35.02 | 472.85 | 146.36 | 0.58 | 0.58 | ----- | ----- | ----- | ----- | ----- | 1.16 |
| 0.10 | 52.53 | 472.98 | 147.92 | 1.76 | 1.76 | ----- | ----- | ----- | ----- | ----- | 3.52 |
| 0.13 | 70.04 | 473.15 | 149.98 | 3.97 | 3.97 | ----- | ----- | ----- | ----- | ----- | 7.95 |
| 0.17 | 87.55 | 473.35 | 152.44 | 7.39 | 7.39 | ----- | ----- | ----- | ----- | ----- | 14.77 |
| 0.20 | 105.06 << | 473.58 | 155.21 | 11.37 | 11.87 | ----- | ----- | ----- | ----- | ----- | 23.24 |
| 0.23 | 105.06 << | 473.82 | 157.99 | 14.04 | 15.12 | ----- | ----- | ----- | ----- | ----- | 29.15 |
| 0.27 | 105.06 << | 474.05 | 160.65 | 16.21 | 17.60 | ----- | ----- | ----- | ----- | ----- | 33.80 |
| 0.30 | 105.06 << | 474.31 | 163.55 | 18.32 | 19.99 | ----- | ----- | ----- | ----- | ----- | 38.31 |
| 0.33 | 105.06 << | 474.55 | 166.24 | 20.11 | 22.01 | ----- | 0.00 | ----- | ----- | ----- | 42.13 |
| 0.37 | 87.55 | 474.74 | 168.32 | 21.41 | 23.48 | ----- | 3.53 | ----- | ----- | ----- | 48.42 |
| 0.40 | 70.04 | 474.84 | 169.44 | 22.09 | 24.25 | ----- | 7.07 | ----- | ----- | ----- | 53.41 |
| 0.43 | 52.53 | 474.87 | 169.73 | 22.26 | 24.43 | ----- | 8.29 | ----- | ----- | ----- | 54.98 << |
| 0.47 | 35.02 | 474.83 | 169.32 | 22.02 | 24.17 | ----- | 6.56 | ----- | ----- | ----- | 52.74 |
| 0.50 | 17.51 | 474.74 | 168.34 | 21.42 | 23.49 | ----- | 3.58 | ----- | ----- | ----- | 48.50 |
| 0.53 | 0.00 | 474.60 | 166.83 | 20.50 | 22.45 | ----- | 0.11 | ----- | ----- | ----- | 43.06 |
| 0.57 | 0.00 | 474.45 | 165.11 | 19.38 | 21.19 | ----- | 0.00 | ----- | ----- | ----- | 40.57 |
| 0.60 | 0.00 | 474.30 | 163.48 | 18.27 | 19.93 | ----- | ----- | ----- | ----- | ----- | 38.20 |
| 0.63 | 0.00 | 474.16 | 161.93 | 17.17 | 18.69 | ----- | ----- | ----- | ----- | ----- | 35.85 |
| 0.67 | 0.00 | 474.04 | 160.46 | 16.06 | 17.43 | ----- | ----- | ----- | ----- | ----- | 33.50 |
| 0.70 | 0.00 | 473.93 | 159.27 | 15.11 | 16.35 | ----- | ----- | ----- | ----- | ----- | 31.46 |
| 0.73 | 0.00 | 473.84 | 158.21 | 14.22 | 15.33 | ----- | ----- | ----- | ----- | ----- | 29.55 |
| 0.77 | 0.00 | 473.75 | 157.21 | 13.34 | 14.33 | ----- | ----- | ----- | ----- | ----- | 27.67 |
| 0.80 | 0.00 | 473.67 | 156.26 | 12.44 | 13.28 | ----- | ----- | ----- | ----- | ----- | 25.72 |
| 0.83 | 0.00 | 473.60 | 155.39 | 11.56 | 12.15 | ----- | ----- | ----- | ----- | ----- | 23.71 |
| 0.87 | 0.00 | 473.53 | 154.58 | 10.69 | 10.86 | ----- | ----- | ----- | ----- | ----- | 21.55 |
| 0.90 | 0.00 | 473.47 | 153.85 | 9.67 | 9.67 | ----- | ----- | ----- | ----- | ----- | 19.34 |
| 0.93 | 0.00 | 473.41 | 153.19 | 8.58 | 8.58 | ----- | ----- | ----- | ----- | ----- | 17.16 |
| 0 97 | 0.00 | 473.36 | 152.61 | 7.64 | 7.64 | ----- | ----- | ----- | ----- | ----- | 15.28 |
| 1.00 | 0.00 | 473.32 | 152.08 | 6.86 | 6.86 | ----- | ----- | ----- | ----- | ----- | 13.71 |
| 1.03 | 0.00 | 473.28 | 151.61 | 6.16 | 6.16 | ----- | ----- | ----- | ----- | ----- | 12.31 |
| 1.07 | 0.00 | 473.24 | 151.19 | 5.54 | 5.54 | ----- | ----- | ----- | ----- | ----- | 11.07 |
| 1.10 | 0.00 | 473.21 | 150.80 | 5.03 | 5.03 | ----- | ----- | ----- | ----- | ----- | 10.07 |
| 1.13 | 0.00 | 473.18 | 150.44 | 4.58 | 4.58 | ----- | ----- | ----- | ----- | ----- | 9.15 |
| 1.17 | 0.00 | 473.16 | 150.12 | 4.16 | 4.16 | ----- | ----- | ----- | ----- | ----- | 8.32 |
| 1.20 | 0.00 | 473.13 | 149.83 | 3.78 | 3.78 | ----- | ----- | ----- | ----- | ----- | 7.57 |
| 1.23 | 0.00 | 473.11 | 149.57 | 3.47 | 3.47 | ----- | ----- | ----- | ----- | ----- | 6.94 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.27 | 0.00 | 473.09 | 149.32 | 3.20 | 3.20 | ----- | ----- | ----- | ----- | ----- | 6.41 |
| 1.30 | 0.00 | 473.07 | 149.09 | 2.96 | 2.96 | ----- | ----- | ----- | ----- | ----- | 5.91 |
| 1.33 | 0.00 | 473.06 | 148.88 | 2.73 | 2.73 | ----- | ----- | ----- | ----- | ----- | 5.46 |
| 1.37 | 0.00 | 473.04 | 148.68 | 2.52 | 2.52 | ----- | ----- | ----- | ----- | ----- | 5.04 |
| 1.40 | 0.00 | 473.03 | 148.50 | 2.32 | 2.32 | ----- | ----- | ----- | ----- | ----- | 4.65 |
| 1.43 | 0.00 | 473.01 | 148.34 | 2.14 | 2.14 | ----- | ----- | ----- | ----- | ----- | 4.29 |
| 1.47 | 0.00 | 473.00 | 148.19 | 1.98 | 1.98 | ----- | ----- | ----- | ----- | ----- | 3.96 |
| 1.50 | 0.00 | 472.99 | 148.04 | 1.86 | 1.86 | ----- | ----- | ----- | ----- | ----- | 3.72 |
| 1.53 | 0.00 | 472.98 | 147.91 | 1.75 | 1.75 | ----- | ----- | ----- | ----- | ----- | 3.50 |
| 1.57 | 0.00 | 472.97 | 147.78 | 1.64 | 1.64 | ----- | ----- | ----- | ----- | ----- | 3.29 |
| 1.60 | 0.00 | 472.96 | 147.66 | 1.55 | 1.55 | ----- | ----- | ----- | ----- | ----- | 3.09 |
| 1.63 | 0.00 | 472.95 | 147.55 | 1.45 | 1.45 | ----- | ----- | ----- | ----- | ----- | 2.91 |
| 1.67 | 0.00 | 472.94 | 147.44 | 1.37 | 1.37 | ----- | ----- | ----- | ----- | ----- | 2.73 |
| 1.70 | 0.00 | 472.93 | 147.34 | 1.28 | 1.28 | ----- | ----- | ----- | ----- | ----- | 2.57 |
| 1.73 | 0.00 | 472.92 | 147.25 | 1.21 | 1.21 | ----- | ----- | ----- | ----- | ----- | 2.41 |
| 1.77 | 0.00 | 472.92 | 147.16 | 1.13 | 1.13 | ----- | ----- | ----- | ----- | ----- | 2.27 |
| 1.80 | 0.00 | 472.91 | 147.08 | 1.07 | 1.07 | ----- | ----- | ----- | ----- | ----- | 2.13 |
| 1.83 | 0.00 | 472.90 | 147.00 | 1.00 | 1.00 | ----- | ----- | ----- | ----- | ----- | 2.00 |
| 1.87 | 0.00 | 472.90 | 146.93 | 0.94 | 0.94 | ----- | ----- | ----- | ----- | ----- | 1.88 |
| 1.90 | 0.00 | 472.89 | 146.86 | 0.88 | 0.88 | ----- | ----- | ----- | ----- | ----- | 1.77 |
| 1.93 | 0.00 | 472.89 | 146.80 | 0.83 | 0.83 | ----- | ----- | ----- | ----- | ----- | 1.66 |
| 1.97 | 0.00 | 472.88 | 146.74 | 0.78 | 0.78 | ----- | ----- | ----- | ----- | ----- | 1.56 |
| 2.00 | 0.00 | 472.88 | 146.68 | 0.73 | 0.73 | ----- | ----- | ----- | ----- | ----- | 1.47 |
| 2.03 | 0.00 | 472.87 | 146.63 | 0.70 | 0.70 | ----- | ----- | ----- | ----- | ----- | 1.39 |
| 2.07 | 0.00 | 472.87 | 146.57 | 0.67 | 0.67 | ----- | ----- | ----- | ----- | ----- | 1.35 |
| 2.10 | 0.00 | 472.87 | 146.52 | 0.65 | 0.65 | ----- | ----- | ----- | ----- | ----- | 1.30 |
| 2.13 | 0.00 | 472.86 | 146.48 | 0.63 | 0.63 | ----- | ----- | ----- | ----- | ----- | 1.26 |
| 2.17 | 0.00 | 472.86 | 146.43 | 0.61 | 0.61 | ----- | ----- | ----- | ----- | ----- | 1.22 |
| 2.20 | 0.00 | 472.85 | 146.38 | 0.59 | 0.59 | ----- | ----- | ----- | ----- | ----- | 1.17 |
| 2.23 | 0.00 | 472.85 | 146.34 | 0.57 | 0.57 | ----- | ----- | ----- | ----- | ----- | 1.14 |
| 2.27 | 0.00 | 472.85 | 146.30 | 0.55 | 0.55 | ----- | ----- | ----- | ----- | ----- | 1.10 |
| 2.30 | 0.00 | 472.84 | 146.26 | 0.53 | 0.53 | ----- | ----- | ----- | ----- | ----- | 1.06 |
| 2.33 | 0.00 | 472.84 | 146.22 | 0.51 | 0.51 | ----- | ----- | ----- | ----- | ----- | 1.03 |
| 2.37 | 0.00 | 472.84 | 146.18 | 0.50 | 0.50 | ----- | ----- | ----- | ----- | ----- | 0.99 |
| 2.40 | 0.00 | 472.84 | 146.14 | 0.48 | 0.48 | ----- | ----- | ----- | ----- | ----- | 0.96 |
| 2.43 | 0.00 | 472.83 | 146.11 | 0.46 | 0.46 | ----- | ----- | ----- | ----- | ----- | 0.93 |
| 2.47 | 0.00 | 472.83 | 146.07 | 0.45 | 0.45 | ----- | ----- | ----- | ----- | ----- | 0.90 |
| 2.50 | 0.00 | 472.83 | 146.04 | 0.43 | 0.43 | ----- | ----- | ----- | ----- | ----- | 0.87 |
| 2.53 | 0.00 | 472.82 | 146.01 | 0.42 | 0.42 | ----- | ----- | ----- | ----- | ----- | 0.84 |
| 2.57 | 0.00 | 472.82 | 145.98 | 0.40 | 0.40 | ----- | ----- | ----- | ----- | ----- | 0.81 |
| 2.60 | 0.00 | 472.82 | 145.95 | 0.39 | 0.39 | ----- | ----- | ----- | ----- | ----- | 0.78 |
| 2.63 | 0.00 | 472.82 | 145.92 | 0.38 | 0.38 | ----- | ----- | ----- | ----- | ----- | 0.76 |
| 2.67 | 0.00 | 472.82 | 145.89 | 0.37 | 0.37 | ----- | ----- | ----- | ----- | ----- | 0.73 |
| 2.70 | 0.00 | 472.81 | 145.86 | 0.35 | 0.35 | ----- | ----- | ----- | ----- | ----- | 0.71 |
| 2.73 | 0.00 | 472.81 | 145.83 | 0.34 | 0.34 | ----- | ----- | ----- | ----- | ----- | 0.68 |
| 2.77 | 0.00 | 472.81 | 145.81 | 0.33 | 0.33 | ----- | ----- | ----- | ----- | ----- | 0.66 |
| 2.80 | 0.00 | 472.81 | 145.78 | 0.32 | 0.32 | ----- | ----- | ----- | ----- | ----- | 0.64 |
| 2.83 | 0.00 | 472.80 | 145.76 | 0.31 | 0.31 | ----- | ----- | ----- | ----- | ----- | 0.62 |
| 2.87 | 0.00 | 472.80 | 145.74 | 0.30 | 0.30 | ----- | ----- | ----- | ----- | ----- | 0.60 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.90 | 0.00 | 472.80 | 145.72 | 0.29 | 0.29 | ----- | ----- | ----- | ----- | ----- | 0.58 |
| 2.93 | 0.00 | 472.80 | 145.69 | 0.28 | 0.28 | ----- | ----- | ----- | ----- | ----- | 0.56 |

*...End*

# Hydrograph Report



English

## Hyd. No. 9

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 4
Max. Elevation = 474.43 ft

Peak discharge = 40.30 cfs
Time interval = 2 min
Reservoir name = CPIND REV1/13
Max. Storage = 63,608 cuft

Storage Indication method used.

Total Volume = 102,192 cuft

### Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.07 | 28.39 | 472.83 | 146.12 | 0.47 | 0.47 | ----- | ----- | ----- | ----- | ----- | 0.94 |
| 0.10 | 42.58 | 472.94 | 147.39 | 1.32 | 1.32 | ----- | ----- | ----- | ----- | ----- | 2.64 |
| 0.13 | 56.77 | 473.07 | 149.08 | 2.95 | 2.95 | ----- | ----- | ----- | ----- | ----- | 5.89 |
| 0.17 | 70.97 | 473.24 | 151.12 | 5.45 | 5.45 | ----- | ----- | ----- | ----- | ----- | 10.90 |
| 0.20 | 85.16 << | 473.43 | 153.43 | 8.97 | 8.97 | ----- | ----- | ----- | ----- | ----- | 17.93 |
| 0.23 | 85.16 << | 473.62 | 155.71 | 11.91 | 12.66 | ----- | ----- | ----- | ----- | ----- | 24.57 |
| 0.27 | 85.16 << | 473.80 | 157.77 | 13.84 | 14.89 | ----- | ----- | ----- | ----- | ----- | 28.73 |
| 0.30 | 85.16 << | 473.97 | 159.67 | 15.44 | 16.73 | ----- | ----- | ----- | ----- | ----- | 32.17 |
| 0.33 | 85.16 << | 474.15 | 161.75 | 17.03 | 18.54 | ----- | ----- | ----- | ----- | ----- | 35.57 |
| 0.37 | 70.97 | 474.30 | 163.48 | 18.27 | 19.93 | ----- | ----- | ----- | ----- | ----- | 38.20 |
| 0.40 | 56.77 | 474.39 | 164.52 | 18.99 | 20.75 | ----- | ----- | ----- | ----- | ----- | 39.74 |
| 0.43 | 42.58 | 474.43 << | 164.92 | 19.25 | 21.04 | ----- | 0.00 | ----- | ----- | ----- | 40.30 << |
| 0.47 | 28.39 | 474.41 | 164.72 | 19.13 | 20.90 | ----- | 0.00 | ----- | ----- | ----- | 40.03 |
| 0.50 | 14.19 | 474.35 | 163.97 | 18.61 | 20.32 | ----- | ----- | ----- | ----- | ----- | 38.92 |
| 0.53 | 0.00 | 474.23 | 162.68 | 17.71 | 19.30 | ----- | ----- | ----- | ----- | ----- | 37.02 |
| 0.57 | 0.00 | 474.10 | 161.17 | 16.59 | 18.04 | ----- | ----- | ----- | ----- | ----- | 34.63 |
| 0.60 | 0.00 | 473.98 | 159.81 | 15.55 | 16.85 | ----- | ----- | ----- | ----- | ----- | 32.41 |
| 0.63 | 0.00 | 473.88 | 158.72 | 14.67 | 15.84 | ----- | ----- | ----- | ----- | ----- | 30.51 |
| 0.67 | 0.00 | 473.79 | 157.69 | 13.77 | 14.81 | ----- | ----- | ----- | ----- | ----- | 28.58 |
| 0.70 | 0.00 | 473.71 | 156.72 | 12.88 | 13.79 | ----- | ----- | ----- | ----- | ----- | 26.66 |
| 0.73 | 0.00 | 473.63 | 155.81 | 12.00 | 12.78 | ----- | ----- | ----- | ----- | ----- | 24.78 |
| 0.77 | 0.00 | 473.56 | 154.97 | 11.10 | 11.48 | ----- | ----- | ----- | ----- | ----- | 22.58 |
| 0.80 | 0.00 | 473.50 | 154.20 | 10.25 | 10.25 | ----- | ----- | ----- | ----- | ----- | 20.50 |
| 0.83 | 0.00 | 473.44 | 153.50 | 9.09 | 9.09 | ----- | ----- | ----- | ----- | ----- | 18.19 |
| 0.87 | 0.00 | 473.39 | 152.89 | 8.07 | 8.07 | ----- | ----- | ----- | ----- | ----- | 16.14 |
| 0.90 | 0.00 | 473.34 | 152.33 | 7.23 | 7.23 | ----- | ----- | ----- | ----- | ----- | 14.45 |
| 0.93 | 0.00 | 473.30 | 151.83 | 6.49 | 6.49 | ----- | ----- | ----- | ----- | ----- | 12.97 |
| 0.97 | 0.00 | 473.26 | 151.39 | 5.82 | 5.82 | ----- | ----- | ----- | ----- | ----- | 11.65 |
| 1.00 | 0.00 | 473.23 | 150.98 | 5.27 | 5.27 | ----- | ----- | ----- | ----- | ----- | 10.54 |
| 1.03 | 0.00 | 473.20 | 150.61 | 4.79 | 4.79 | ----- | ----- | ----- | ----- | ----- | 9.59 |
| 1.07 | 0.00 | 473.17 | 150.28 | 4.36 | 4.36 | ----- | ----- | ----- | ----- | ----- | 8.72 |
| 1.10 | 0.00 | 473.15 | 149.97 | 3.96 | 3.96 | ----- | ----- | ----- | ----- | ----- | 7.93 |
| 1.13 | 0.00 | 473.12 | 149.69 | 3.61 | 3.61 | ----- | ----- | ----- | ----- | ----- | 7.22 |
| 1.17 | 0.00 | 473.10 | 149.44 | 3.33 | 3.33 | ----- | ----- | ----- | ----- | ----- | 6.66 |
| 1.20 | 0.00 | 473.08 | 149.20 | 3.08 | 3.08 | ----- | ----- | ----- | ----- | ----- | 6.15 |
| 1.23 | 0.00 | 473.06 | 148.98 | 2.84 | 2.84 | ----- | ----- | ----- | ----- | ----- | 5.68 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.27 | 0.00 | 473.05 | 148.78 | 2.62 | 2.62 | ----- | ----- | ----- | ----- | ----- | 5.24 |
| 1.30 | 0.00 | 473.03 | 148.59 | 2.42 | 2.42 | ----- | ----- | ----- | ----- | ----- | 4.83 |
| 1.33 | 0.00 | 473.02 | 148.42 | 2.23 | 2.23 | ----- | ----- | ----- | ----- | ----- | 4.46 |
| 1.37 | 0.00 | 473.01 | 148.26 | 2.06 | 2.06 | ----- | ----- | ----- | ----- | ----- | 4.12 |
| 1.40 | 0.00 | 472.99 | 148.11 | 1.92 | 1.92 | ----- | ----- | ----- | ----- | ----- | 3.84 |
| 1.43 | 0.00 | 472.98 | 147.97 | 1.80 | 1.80 | ----- | ----- | ----- | ----- | ----- | 3.61 |
| 1.47 | 0.00 | 472.97 | 147.84 | 1.70 | 1.70 | ----- | ----- | ----- | ----- | ----- | 3.39 |
| 1.50 | 0.00 | 472.96 | 147.72 | 1.59 | 1.59 | ----- | ----- | ----- | ----- | ----- | 3.19 |
| 1.53 | 0.00 | 472.95 | 147.60 | 1.50 | 1.50 | ----- | ----- | ----- | ----- | ----- | 2.99 |
| 1.57 | 0.00 | 472.94 | 147.49 | 1.41 | 1.41 | ----- | ----- | ----- | ----- | ----- | 2.81 |
| 1.60 | 0.00 | 472.94 | 147.39 | 1.32 | 1.32 | ----- | ----- | ----- | ----- | ----- | 2.65 |
| 1.63 | 0.00 | 472.93 | 147.29 | 1.24 | 1.24 | ----- | ----- | ----- | ----- | ----- | 2.49 |
| 1.67 | 0.00 | 472.92 | 147.20 | 1.17 | 1.17 | ----- | ----- | ----- | ----- | ----- | 2.34 |
| 1.70 | 0.00 | 472.91 | 147.12 | 1.10 | 1.10 | ----- | ----- | ----- | ----- | ----- | 2.20 |
| 1.73 | 0.00 | 472.91 | 147.04 | 1.03 | 1.03 | ----- | ----- | ----- | ----- | ----- | 2.06 |
| 1.77 | 0.00 | 472.90 | 146.96 | 0.97 | 0.97 | ----- | ----- | ----- | ----- | ----- | 1.94 |
| 1.80 | 0.00 | 472.90 | 146.89 | 0.91 | 0.91 | ----- | ----- | ----- | ----- | ----- | 1.82 |
| 1.83 | 0.00 | 472.89 | 146.83 | 0.86 | 0.86 | ----- | ----- | ----- | ----- | ----- | 1.71 |
| 1.87 | 0.00 | 472.89 | 146.77 | 0.81 | 0.81 | ----- | ----- | ----- | ----- | ----- | 1.61 |
| 1.90 | 0.00 | 472.88 | 146.71 | 0.76 | 0.76 | ----- | ----- | ----- | ----- | ----- | 1.51 |
| 1.93 | 0.00 | 472.88 | 146.65 | 0.71 | 0.71 | ----- | ----- | ----- | ----- | ----- | 1.42 |
| 1.97 | 0.00 | 472.87 | 146.60 | 0.68 | 0.68 | ----- | ----- | ----- | ----- | ----- | 1.37 |
| 2.00 | 0.00 | 472.87 | 146.55 | 0.66 | 0.66 | ----- | ----- | ----- | ----- | ----- | 1.32 |
| 2.03 | 0.00 | 472.86 | 146.50 | 0.64 | 0.64 | ----- | ----- | ----- | ----- | ----- | 1.28 |
| 2.07 | 0.00 | 472.86 | 146.45 | 0.62 | 0.62 | ----- | ----- | ----- | ----- | ----- | 1.24 |
| 2.10 | 0.00 | 472.86 | 146.41 | 0.60 | 0.60 | ----- | ----- | ----- | ----- | ----- | 1.19 |
| 2.13 | 0.00 | 472.85 | 146.36 | 0.58 | 0.58 | ----- | ----- | ----- | ----- | ----- | 1.15 |
| 2.17 | 0.00 | 472.85 | 146.32 | 0.56 | 0.56 | ----- | ----- | ----- | ----- | ----- | 1.12 |
| 2.20 | 0.00 | 472.85 | 146.28 | 0.54 | 0.54 | ----- | ----- | ----- | ----- | ----- | 1.08 |
| 2.23 | 0.00 | 472.84 | 146.24 | 0.52 | 0.52 | ----- | ----- | ----- | ----- | ----- | 1.04 |
| 2.27 | 0.00 | 472.84 | 146.20 | 0.50 | 0.50 | ----- | ----- | ----- | ----- | ----- | 1.01 |
| 2.30 | 0.00 | 472.84 | 146.16 | 0.49 | 0.49 | ----- | ----- | ----- | ----- | ----- | 0.97 |
| 2.33 | 0.00 | 472.83 | 146.12 | 0.47 | 0.47 | ----- | ----- | ----- | ----- | ----- | 0.94 |
| 2.37 | 0.00 | 472.83 | 146.09 | 0.46 | 0.46 | ----- | ----- | ----- | ----- | ----- | 0.91 |
| 2.40 | 0.00 | 472.83 | 146.05 | 0.44 | 0.44 | ----- | ----- | ----- | ----- | ----- | 0.88 |
| 2.43 | 0.00 | 472.83 | 146.02 | 0.43 | 0.43 | ----- | ----- | ----- | ----- | ----- | 0.85 |
| 2.47 | 0.00 | 472.82 | 145.99 | 0.41 | 0.41 | ----- | ----- | ----- | ----- | ----- | 0.82 |
| 2.50 | 0.00 | 472.82 | 145.96 | 0.40 | 0.40 | ----- | ----- | ----- | ----- | ----- | 0.80 |
| 2.53 | 0.00 | 472.82 | 145.93 | 0.38 | 0.38 | ----- | ----- | ----- | ----- | ----- | 0.77 |
| 2.57 | 0.00 | 472.82 | 145.90 | 0.37 | 0.37 | ----- | ----- | ----- | ----- | ----- | 0.74 |
| 2.60 | 0.00 | 472.81 | 145.87 | 0.36 | 0.36 | ----- | ----- | ----- | ----- | ----- | 0.72 |
| 2.63 | 0.00 | 472.81 | 145.85 | 0.35 | 0.35 | ----- | ----- | ----- | ----- | ----- | 0.69 |
| 2.67 | 0.00 | 472.81 | 145.82 | 0.34 | 0.34 | ----- | ----- | ----- | ----- | ----- | 0.67 |
| 2.70 | 0.00 | 472.81 | 145.80 | 0.32 | 0.32 | ----- | ----- | ----- | ----- | ----- | 0.65 |
| 2.73 | 0.00 | 472.81 | 145.77 | 0.31 | 0.31 | ----- | ----- | ----- | ----- | ----- | 0.63 |
| 2.77 | 0.00 | 472.80 | 145.75 | 0.30 | 0.30 | ----- | ----- | ----- | ----- | ----- | 0.61 |
| 2.80 | 0.00 | 472.80 | 145.73 | 0.29 | 0.29 | ----- | ----- | ----- | ----- | ----- | 0.59 |
| 2.83 | 0.00 | 472.80 | 145.70 | 0.28 | 0.28 | ----- | ----- | ----- | ----- | ----- | 0.57 |
| 2.87 | 0.00 | 472.80 | 145.68 | 0.27 | 0.27 | ----- | ----- | ----- | ----- | ----- | 0.55 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.90 | 0.00 | 472.80 | 145.66 | 0.26 | 0.26 | ----- | ----- | ----- | ----- | ----- | 0.53 |
| 2.93 | 0.00 | 472.80 | 145.64 | 0.26 | 0.26 | ----- | ----- | ----- | ----- | ----- | 0.51 |
| 2.97 | 0.00 | 472.79 | 145.62 | 0.25 | 0.25 | ----- | ----- | ----- | ----- | ----- | 0.49 |
| 3.00 | 0.00 | 472.79 | 145.61 | 0.24 | 0.24 | ----- | ----- | ----- | ----- | ----- | 0.48 |
| 3.03 | 0.00 | 472.79 | 145.59 | 0.23 | 0.23 | ----- | ----- | ----- | ----- | ----- | 0.46 |
| 3.07 | 0.00 | 472.79 | 145.57 | 0.22 | 0.22 | ----- | ----- | ----- | ----- | ----- | 0.45 |
| 3.10 | 0.00 | 472.79 | 145.55 | 0.22 | 0.22 | ----- | ----- | ----- | ----- | ----- | 0.43 |
| 3.13 | 0.00 | 472.79 | 145.54 | 0.21 | 0.21 | ----- | ----- | ----- | ----- | ----- | 0.42 |
| 3.17 | 0.00 | 472.79 | 145.52 | 0.20 | 0.20 | ----- | ----- | ----- | ----- | ----- | 0.40 |

*...End*

# Reservoir Report



English

## Reservoir No. 2 - REV1/13 2 AND 5

### Pond Data

Pond storage is based on known contour areas

### Stage / Storage Table

| Stage ft | Elevation ft | Contour area sqft | Incr. Storage cuft | Total storage cuft |
|---|---|---|---|---|
| 0.00 | 466.00 | 00 | 0 | 0 |
| 2.00 | 468.00 | 18,297 | 18,297 | 18,297 |
| 4.00 | 470.00 | 21,905 | 40,202 | 58,499 |
| 6.00 | 472.00 | 25,801 | 47,706 | 106,205 |
| 8.00 | 474.00 | 29,985 | 55,786 | 161,991 |
| 10.00 | 476.00 | 34,457 | 64,442 | 226,433 |

### Culvert / Orifice Structures

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| **Rise in** | = 48.0 | 12.0 | 9.0 | 10.0 |
| **Span in** | = 48.0 | 12.0 | 56.0 | 56.0 |
| **No. Barrels** | = 1 | 1 | 1 | 1 |
| **Invert El. ft** | = 463.00 | 466.00 | 472.75 | 472.75 |
| **Length ft** | = 100.0 | 0.0 | 0.0 | 0.0 |
| **Slope %** | = 1.00 | 0.00 | 0.00 | 0.00 |
| **N-Value** | = .013 | .013 | .013 | .013 |
| **Orif. Coeff.** | = 0.60 | 0.60 | 0.60 | 0.60 |
| **Multi-Stage** | = ----- | Yes | Yes | Yes |

### Weir Structures

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| **Crest Len ft** | = 18.8 | 0.0 | 0.0 | 0.0 |
| **Crest El. ft** | = 475.00 | 0.00 | 0.00 | 0.00 |
| **Weir Coeff.** | = 3.00 | 0.00 | 0.00 | 0.00 |
| **Eqn. Exp.** | = 1.50 | 0.00 | 0.00 | 0.00 |
| **Multi-Stage** | = Yes | No | No | No |

**Tailwater Elevation** = 0.00 ft

Note All outflows have been analyzed under inlet and outlet control.

### Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Discharge cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0 | 466.00 | 60.07 | 0.00 | 0.00 | 0.00 | 0.00 | --- | --- | --- | 0.00 |
| 2.00 | 18,297 | 468.00 | 101.09 | 4.63 | 0.00 | 0.00 | 0.00 | --- | --- | --- | 4.63 |
| 4.00 | 58,499 | 470.00 | 135.28 | 7.07 | 0.00 | 0.00 | 0.00 | --- | --- | --- | 7.07 |
| 6.00 | 106,205 | 472.00 | 160.07 | 8.87 | 0.00 | 0.00 | 0.00 | --- | --- | --- | 8.87 |
| 8.00 | 161,991 | 474.00 | 181.50 | 10.36 | 15.76 | 17.09 | 0.00 | --- | --- | --- | 43.21 |
| 10.00 | 226,433 | 476.00 | 200.65 | 10.47 | 28.57 | 31.52 | 56.28 | --- | --- | --- | 126.85 |

# Hydrograph Report



English

## Hyd. No. 8

| | | | |
|---|---|---|---|
| Hydrograph type | = Reservoir | Peak discharge | = 7.49 cfs |
| Storm frequency | = 5 yrs | Time interval | = 2 min |
| Inflow hyd. No. | = 3 | Reservoir name | = REV1/13 2 AND 5 |
| Max. Elevation | = 470.42 ft | Max. Storage | = 68,558 cuft |

Storage Indication method used.

Total Volume = 77,677 cuft

### Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.07 | 21.58 | 466.28 | 65.05 | 0.36 | ----- | ----- | ----- | ----- | ----- | ----- | 0.36 |
| 0.10 | 32.37 | 466.62 | 70.01 | 1.42 | ----- | ----- | ----- | ----- | ----- | ----- | 1.42 |
| 0.13 | 43.15 | 467.09 | 74.52 | 2.89 | ----- | ----- | ----- | ----- | ----- | ----- | 2.89 |
| 0.17 | 53.94 | 467.68 | 92.61 | 4.10 | ----- | ----- | ----- | ----- | ----- | ----- | 4.10 |
| 0.20 | 64.73 << | 468.18 | 105.57 | 4.90 | ----- | ----- | ----- | ----- | ----- | ----- | 4.90 |
| 0.23 | 64.73 << | 468.54 | 113.52 | 5.40 | ----- | ----- | ----- | ----- | ----- | ----- | 5.40 |
| 0.27 | 64.73 << | 468.89 | 119.32 | 5.84 | ----- | ----- | ----- | ----- | ----- | ----- | 5.84 |
| 0.30 | 64.73 << | 469.24 | 124.58 | 6.26 | ----- | ----- | ----- | ----- | ----- | ----- | 6.26 |
| 0.33 | 64.73 << | 469.59 | 129.59 | 6.64 | ----- | ----- | ----- | ----- | ----- | ----- | 6.64 |
| 0.37 | 53.94 | 469.90 | 133.94 | 6.97 | ----- | ----- | ----- | ----- | ----- | ----- | 6.97 |
| 0.40 | 43.15 | 470.13 | 136.97 | 7.20 | ----- | ----- | ----- | ----- | ----- | ----- | 7.20 |
| 0.43 | 32.37 | 470.28 | 139.00 | 7.35 | ----- | ----- | ----- | ----- | ----- | ----- | 7.35 |
| 0.47 | 21.58 | 470.38 | 140.30 | 7.45 | ----- | ----- | ----- | ----- | ----- | ----- | 7.45 |
| 0.50 | 10.79 | 470.42 | 140.87 | 7.49 | ----- | ----- | ----- | ----- | ----- | ----- | 7.49 << |
| 0.53 | 0.00 | 470.41 | 140.73 | 7.48 | ----- | ----- | ----- | ----- | ----- | ----- | 7.48 |
| 0.57 | 0.00 | 470.37 | 140.24 | 7.44 | ----- | ----- | ----- | ----- | ----- | ----- | 7.44 |
| 0.60 | 0.00 | 470.34 | 139.75 | 7.41 | ----- | ----- | ----- | ----- | ----- | ----- | 7.41 |
| 0.63 | 0.00 | 470.30 | 139.26 | 7.37 | ----- | ----- | ----- | ----- | ----- | ----- | 7.37 |
| 0.67 | 0.00 | 470.26 | 138.78 | 7.33 | ----- | ----- | ----- | ----- | ----- | ----- | 7.33 |
| 0.70 | 0.00 | 470.23 | 138.29 | 7.30 | ----- | ----- | ----- | ----- | ----- | ----- | 7.30 |
| 0.73 | 0.00 | 470.19 | 137.81 | 7.26 | ----- | ----- | ----- | ----- | ----- | ----- | 7.26 |
| 0.77 | 0.00 | 470.15 | 137.32 | 7.23 | ----- | ----- | ----- | ----- | ----- | ----- | 7.23 |
| 0.80 | 0.00 | 470.12 | 136.83 | 7.19 | ----- | ----- | ----- | ----- | ----- | ----- | 7.19 |
| 0.83 | 0.00 | 470.08 | 136.35 | 7.15 | ----- | ----- | ----- | ----- | ----- | ----- | 7.15 |
| 0.87 | 0.00 | 470.04 | 135.87 | 7.12 | ----- | ----- | ----- | ----- | ----- | ----- | 7.12 |
| 0.90 | 0.00 | 470.01 | 135.39 | 7.08 | ----- | ----- | ----- | ----- | ----- | ----- | 7.08 |
| 0.93 | 0.00 | 469.97 | 134.84 | 7.04 | ----- | ----- | ----- | ----- | ----- | ----- | 7.04 |
| 0.97 | 0.00 | 469.93 | 134.27 | 7.00 | ----- | ----- | ----- | ----- | ----- | ----- | 7.00 |
| 1.00 | 0.00 | 469.88 | 133.70 | 6.96 | ----- | ----- | ----- | ----- | ----- | ----- | 6.96 |
| 1.03 | 0.00 | 469.84 | 133.13 | 6.91 | ----- | ----- | ----- | ----- | ----- | ----- | 6.91 |
| 1.07 | 0.00 | 469.80 | 132.57 | 6.87 | ----- | ----- | ----- | ----- | ----- | ----- | 6.87 |
| 1.10 | 0.00 | 469.76 | 132.00 | 6.83 | ----- | ----- | ----- | ----- | ----- | ----- | 6.83 |
| 1.13 | 0.00 | 469.72 | 131.43 | 6.78 | ----- | ----- | ----- | ----- | ----- | ----- | 6.78 |
| 1.17 | 0.00 | 469.68 | 130.87 | 6.74 | ----- | ----- | ----- | ----- | ----- | ----- | 6.74 |
| 1.20 | 0.00 | 469.64 | 130.31 | 6.70 | ----- | ----- | ----- | ----- | ----- | ----- | 6.70 |
| 1.23 | 0.00 | 469.60 | 129.75 | 6.66 | ----- | ----- | ----- | ----- | ----- | ----- | 6.66 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.27 | 0.00 | 469.56 | 129.19 | 6.61 | ----- | ----- | ----- | ----- | ----- | ----- | 6.61 |
| 1.30 | 0.00 | 469.52 | 128.63 | 6.57 | ----- | ----- | ----- | ----- | ----- | ----- | 6.57 |
| 1.33 | 0.00 | 469.48 | 128.07 | 6.53 | ----- | ----- | ----- | ----- | ----- | ----- | 6.53 |
| 1.37 | 0.00 | 469.44 | 127.52 | 6.49 | ----- | ----- | ----- | ----- | ----- | ----- | 6.49 |
| 1.40 | 0.00 | 469.40 | 126.97 | 6.44 | ----- | ----- | ----- | ----- | ----- | ----- | 6.44 |
| 1.43 | 0.00 | 469.37 | 126.41 | 6.40 | ----- | ----- | ----- | ----- | ----- | ----- | 6.40 |
| 1.47 | 0.00 | 469.33 | 125.85 | 6.36 | ----- | ----- | ----- | ----- | ----- | ----- | 6.36 |
| 1.50 | 0.00 | 469.29 | 125.30 | 6.31 | ----- | ----- | ----- | ----- | ----- | ----- | 6.31 |
| 1.53 | 0.00 | 469.25 | 124.75 | 6.27 | ----- | ----- | ----- | ----- | ----- | ----- | 6.27 |
| 1.57 | 0.00 | 469.22 | 124.21 | 6.23 | ----- | ----- | ----- | ----- | ----- | ----- | 6.23 |
| 1.60 | 0.00 | 469.18 | 123.66 | 6.19 | ----- | ----- | ----- | ----- | ----- | ----- | 6.19 |
| 1.63 | 0.00 | 469.14 | 123.11 | 6.14 | ----- | ----- | ----- | ----- | ----- | ----- | 6.14 |
| 1.67 | 0.00 | 469.10 | 122.56 | 6.10 | ----- | ----- | ----- | ----- | ----- | ----- | 6.10 |
| 1.70 | 0.00 | 469.07 | 122.02 | 6.06 | ----- | ----- | ----- | ----- | ----- | ----- | 6.06 |
| 1.73 | 0.00 | 469.03 | 121.48 | 6.02 | ----- | ----- | ----- | ----- | ----- | ----- | 6.02 |
| 1.77 | 0.00 | 469.00 | 120.95 | 5.97 | ----- | ----- | ----- | ----- | ----- | ----- | 5.97 |
| 1.80 | 0.00 | 468.96 | 120.40 | 5.93 | ----- | ----- | ----- | ----- | ----- | ----- | 5.93 |
| 1.83 | 0.00 | 468.93 | 119.86 | 5.89 | ----- | ----- | ----- | ----- | ----- | ----- | 5.89 |
| 1.87 | 0.00 | 468.89 | 119.32 | 5.85 | ----- | ----- | ----- | ----- | ----- | ----- | 5.85 |
| 1.90 | 0.00 | 468.86 | 118.79 | 5.80 | ----- | ----- | ----- | ----- | ----- | ----- | 5.80 |
| 1.93 | 0.00 | 468.82 | 118.26 | 5.76 | ----- | ----- | ----- | ----- | ----- | ----- | 5.76 |
| 1.97 | 0.00 | 468.79 | 117.73 | 5.72 | ----- | ----- | ----- | ----- | ----- | ----- | 5.72 |
| 2.00 | 0.00 | 468.75 | 117.20 | 5.67 | ----- | ----- | ----- | ----- | ----- | ----- | 5.67 |
| 2.03 | 0.00 | 468.72 | 116.67 | 5.63 | ----- | ----- | ----- | ----- | ----- | ----- | 5.63 |
| 2.07 | 0.00 | 468.69 | 116.14 | 5.59 | ----- | ----- | ----- | ----- | ----- | ----- | 5.59 |
| 2.10 | 0.00 | 468.65 | 115.62 | 5.55 | ----- | ----- | ----- | ----- | ----- | ----- | 5.55 |
| 2.13 | 0.00 | 468.62 | 115.10 | 5.50 | ----- | ----- | ----- | ----- | ----- | ----- | 5.50 |
| 2.17 | 0.00 | 468.59 | 114.53 | 5.46 | ----- | ----- | ----- | ----- | ----- | ----- | 5.46 |
| 2.20 | 0.00 | 468.55 | 113.87 | 5.42 | ----- | ----- | ----- | ----- | ----- | ----- | 5.42 |
| 2.23 | 0.00 | 468.52 | 113.21 | 5.38 | ----- | ----- | ----- | ----- | ----- | ----- | 5.38 |
| 2.27 | 0.00 | 468.49 | 112.57 | 5.33 | ----- | ----- | ----- | ----- | ----- | ----- | 5.33 |
| 2.30 | 0.00 | 468.46 | 111.92 | 5.29 | ----- | ----- | ----- | ----- | ----- | ----- | 5.29 |
| 2.33 | 0.00 | 468.43 | 111.29 | 5.25 | ----- | ----- | ----- | ----- | ----- | ----- | 5.25 |
| 2.37 | 0.00 | 468.40 | 110.64 | 5.21 | ----- | ----- | ----- | ----- | ----- | ----- | 5.21 |
| 2.40 | 0.00 | 468.36 | 109.91 | 5.16 | ----- | ----- | ----- | ----- | ----- | ----- | 5.16 |
| 2.43 | 0.00 | 468.33 | 109.19 | 5.12 | ----- | ----- | ----- | ----- | ----- | ----- | 5.12 |
| 2.47 | 0.00 | 468.30 | 108.47 | 5.08 | ----- | ----- | ----- | ----- | ----- | ----- | 5.08 |
| 2.50 | 0.00 | 468.27 | 107.76 | 5.03 | ----- | ----- | ----- | ----- | ----- | ----- | 5.03 |
| 2.53 | 0.00 | 468.24 | 107.05 | 4.99 | ----- | ----- | ----- | ----- | ----- | ----- | 4.99 |
| 2.57 | 0.00 | 468.21 | 106.35 | 4.95 | ----- | ----- | ----- | ----- | ----- | ----- | 4.95 |
| 2.60 | 0.00 | 468.18 | 105.64 | 4.91 | ----- | ----- | ----- | ----- | ----- | ----- | 4.91 |
| 2.63 | 0.00 | 468.16 | 104.92 | 4.86 | ----- | ----- | ----- | ----- | ----- | ----- | 4.86 |
| 2.67 | 0.00 | 468.13 | 104.21 | 4.82 | ----- | ----- | ----- | ----- | ----- | ----- | 4.82 |
| 2.70 | 0.00 | 468.10 | 103.50 | 4.78 | ----- | ----- | ----- | ----- | ----- | ----- | 4.78 |
| 2.73 | 0.00 | 468.07 | 102.80 | 4.73 | ----- | ----- | ----- | ----- | ----- | ----- | 4.73 |
| 2.77 | 0.00 | 468.04 | 102.11 | 4.69 | ----- | ----- | ----- | ----- | ----- | ----- | 4.69 |
| 2.80 | 0.00 | 468.01 | 101.42 | 4.65 | ----- | ----- | ----- | ----- | ----- | ----- | 4.65 |
| 2.83 | 0.00 | 467.97 | 100.29 | 4.58 | ----- | ----- | ----- | ----- | ----- | ----- | 4.58 |
| 2.87 | 0.00 | 467.91 | 98.75 | 4.49 | ----- | ----- | ----- | ----- | ----- | ----- | 4.49 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.90 | 0.00 | 467.85 | 97.24 | 4.39 | ----- | ----- | ----- | ----- | ----- | ----- | 4.39 |
| 2.93 | 0.00 | 467.79 | 95.75 | 4.30 | ----- | ----- | ----- | ----- | ----- | ----- | 4.30 |
| 2.97 | 0.00 | 467.74 | 94.22 | 4.21 | ----- | ----- | ----- | ----- | ----- | ----- | 4.21 |
| 3.00 | 0.00 | 467.68 | 92.72 | 4.11 | ----- | ----- | ----- | ----- | ----- | ----- | 4.11 |
| 3.03 | 0.00 | 467.63 | 91.26 | 4.02 | ----- | ----- | ----- | ----- | ----- | ----- | 4.02 |
| 3.07 | 0.00 | 467.58 | 89.79 | 3.93 | ----- | ----- | ----- | ----- | ----- | ----- | 3.93 |
| 3.10 | 0.00 | 467.53 | 88.31 | 3.83 | ----- | ----- | ----- | ----- | ----- | ----- | 3.83 |
| 3.13 | 0.00 | 467.48 | 86.86 | 3.74 | ----- | ----- | ----- | ----- | ----- | ----- | 3.74 |
| 3.17 | 0.00 | 467.43 | 85.45 | 3.64 | ----- | ----- | ----- | ----- | ----- | ----- | 3.64 |
| 3.20 | 0.00 | 467.38 | 84.03 | 3.55 | ----- | ----- | ----- | ----- | ----- | ----- | 3.55 |
| 3.23 | 0.00 | 467.34 | 82.59 | 3.45 | ----- | ----- | ----- | ----- | ----- | ----- | 3.45 |
| 3.27 | 0.00 | 467.29 | 81.19 | 3.36 | ----- | ----- | ----- | ----- | ----- | ----- | 3.36 |
| 3.30 | 0.00 | 467.25 | 79.83 | 3.27 | ----- | ----- | ----- | ----- | ----- | ----- | 3.27 |
| 3.33 | 0.00 | 467.21 | 78.50 | 3.18 | ----- | ----- | ----- | ----- | ----- | ----- | 3.18 |
| 3.37 | 0.00 | 467.17 | 77.12 | 3.08 | ----- | ----- | ----- | ----- | ----- | ----- | 3.08 |
| 3.40 | 0.00 | 467.13 | 75.76 | 2.98 | ----- | ----- | ----- | ----- | ----- | ----- | 2.98 |
| 3.43 | 0.00 | 467.09 | 74.45 | 2.89 | ----- | ----- | ----- | ----- | ----- | ----- | 2.89 |
| 3.47 | 0.00 | 467.05 | 73.18 | 2.80 | ----- | ----- | ----- | ----- | ----- | ----- | 2.80 |
| 3.50 | 0.00 | 467.01 | 71.95 | 2.71 | ----- | ----- | ----- | ----- | ----- | ----- | 2.71 |
| 3.53 | 0.00 | 466.98 | 71.51 | 2.61 | ----- | ----- | ----- | ----- | ----- | ----- | 2.61 |
| 3.57 | 0.00 | 466.95 | 71.55 | 2.51 | ----- | ----- | ----- | ----- | ----- | ----- | 2.51 |
| 3.60 | 0.00 | 466.91 | 71.59 | 2.41 | ----- | ----- | ----- | ----- | ----- | ----- | 2.41 |
| 3.63 | 0.00 | 466.88 | 71.63 | 2.32 | ----- | ----- | ----- | ----- | ----- | ----- | 2.32 |
| 3.67 | 0.00 | 466.85 | 71.67 | 2.23 | ----- | ----- | ----- | ----- | ----- | ----- | 2.23 |
| 3.70 | 0.00 | 466.82 | 71.71 | 2.14 | ----- | ----- | ----- | ----- | ----- | ----- | 2.14 |
| 3.73 | 0.00 | 466.80 | 71.70 | 2.06 | ----- | ----- | ----- | ----- | ----- | ----- | 2.06 |
| 3.77 | 0.00 | 466.77 | 71.44 | 1.96 | ----- | ----- | ----- | ----- | ----- | ----- | 1.96 |
| 3.80 | 0.00 | 466.74 | 71.20 | 1.87 | ----- | ----- | ----- | ----- | ----- | ----- | 1.87 |
| 3.83 | 0.00 | 466.72 | 70.97 | 1.78 | ----- | ----- | ----- | ----- | ----- | ----- | 1.78 |
| 3.87 | 0.00 | 466.70 | 70.74 | 1.70 | ----- | ----- | ----- | ----- | ----- | ----- | 1.70 |
| 3.90 | 0.00 | 466.68 | 70.53 | 1.62 | ----- | ----- | ----- | ----- | ----- | ----- | 1.62 |
| 3.93 | 0.00 | 466.66 | 70.33 | 1.54 | ----- | ----- | ----- | ----- | ----- | ----- | 1.54 |
| 3.97 | 0.00 | 466.64 | 70.14 | 1.47 | ----- | ----- | ----- | ----- | ----- | ----- | 1.47 |
| 4.00 | 0.00 | 466.62 | 69.96 | 1.40 | ----- | ----- | ----- | ----- | ----- | ----- | 1.40 |
| 4.03 | 0.00 | 466.60 | 69.78 | 1.34 | ----- | ----- | ----- | ----- | ----- | ----- | 1.34 |
| 4.07 | 0.00 | 466.58 | 69.53 | 1.28 | ----- | ----- | ----- | ----- | ----- | ----- | 1.28 |
| 4.10 | 0.00 | 466.57 | 69.29 | 1.22 | ----- | ----- | ----- | ----- | ----- | ----- | 1.22 |
| 4.13 | 0.00 | 466.55 | 69.06 | 1.16 | ----- | ----- | ----- | ----- | ----- | ----- | 1.16 |
| 4.17 | 0.00 | 466.53 | 68.84 | 1.11 | ----- | ----- | ----- | ----- | ----- | ----- | 1.11 |
| 4.20 | 0.00 | 466.52 | 68.63 | 1.06 | ----- | ----- | ----- | ----- | ----- | ----- | 1.06 |
| 4.23 | 0.00 | 466.51 | 68.44 | 1.01 | ----- | ----- | ----- | ----- | ----- | ----- | 1.01 |
| 4.27 | 0.00 | 466.49 | 68.25 | 0.97 | ----- | ----- | ----- | ----- | ----- | ----- | 0.97 |
| 4.30 | 0.00 | 466.48 | 68.07 | 0.92 | ----- | ----- | ----- | ----- | ----- | ----- | 0.92 |
| 4.33 | 0.00 | 466.47 | 67.89 | 0.88 | ----- | ----- | ----- | ----- | ----- | ----- | 0.88 |
| 4.37 | 0.00 | 466.46 | 67.73 | 0.84 | ----- | ----- | ----- | ----- | ----- | ----- | 0.84 |
| 4.40 | 0.00 | 466.45 | 67.57 | 0.80 | ----- | ----- | ----- | ----- | ----- | ----- | 0.80 |
| 4.43 | 0.00 | 466.44 | 67.42 | 0.77 | ----- | ----- | ----- | ----- | ----- | ----- | 0.77 |
| 4.47 | 0.00 | 466.43 | 67.28 | 0.73 | ----- | ----- | ----- | ----- | ----- | ----- | 0.73 |
| 4.50 | 0.00 | 466.42 | 67.14 | 0.70 | ----- | ----- | ----- | ----- | ----- | ----- | 0.70 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.53 | 0.00 | 466.41 | 67.01 | 0.67 | ----- | ----- | ----- | ----- | ----- | ----- | 0.67 |
| 4.57 | 0.00 | 466.40 | 66.88 | 0.64 | ----- | ----- | ----- | ----- | ----- | ----- | 0.64 |
| 4.60 | 0.00 | 466.39 | 66.76 | 0.62 | ----- | ----- | ----- | ----- | ----- | ----- | 0.62 |
| 4.63 | 0.00 | 466.38 | 66.63 | 0.60 | ----- | ----- | ----- | ----- | ----- | ----- | 0.60 |
| 4.67 | 0.00 | 466.38 | 66.52 | 0.58 | ----- | ----- | ----- | ----- | ----- | ----- | 0.58 |
| 4.70 | 0.00 | 466.37 | 66.40 | 0.57 | ----- | ----- | ----- | ----- | ----- | ----- | 0.57 |
| 4.73 | 0.00 | 466.36 | 66.29 | 0.55 | ----- | ----- | ----- | ----- | ----- | ----- | 0.55 |
| 4.77 | 0.00 | 466.35 | 66.18 | 0.53 | ----- | ----- | ----- | ----- | ----- | ----- | 0.53 |
| 4.80 | 0.00 | 466.35 | 66.08 | 0.52 | ----- | ----- | ----- | ----- | ----- | ----- | 0.52 |
| 4.83 | 0.00 | 466.34 | 65.98 | 0.50 | ----- | ----- | ----- | ----- | ----- | ----- | 0.50 |
| 4.87 | 0.00 | 466.33 | 65.88 | 0.49 | ----- | ----- | ----- | ----- | ----- | ----- | 0.49 |
| 4.90 | 0.00 | 466.33 | 65.78 | 0.47 | ----- | ----- | ----- | ----- | ----- | ----- | 0.47 |
| 4.93 | 0.00 | 466.32 | 65.69 | 0.46 | ----- | ----- | ----- | ----- | ----- | ----- | 0.46 |
| 4.97 | 0.00 | 466.32 | 65.60 | 0.44 | ----- | ----- | ----- | ----- | ----- | ----- | 0.44 |
| 5.00 | 0.00 | 466.31 | 65.51 | 0.43 | ----- | ----- | ----- | ----- | ----- | ----- | 0.43 |
| 5.03 | 0.00 | 466.30 | 65.43 | 0.42 | ----- | ----- | ----- | ----- | ----- | ----- | 0.42 |
| 5.07 | 0.00 | 466.30 | 65.34 | 0.41 | ----- | ----- | ----- | ----- | ----- | ----- | 0.41 |
| 5.10 | 0.00 | 466.29 | 65.26 | 0.39 | ----- | ----- | ----- | ----- | ----- | ----- | 0.39 |
| 5.13 | 0.00 | 466.29 | 65.19 | 0.38 | ----- | ----- | ----- | ----- | ----- | ----- | 0.38 |
| 5.17 | 0.00 | 466.28 | 65.11 | 0.37 | ----- | ----- | ----- | ----- | ----- | ----- | 0.37 |
| 5.20 | 0.00 | 466.28 | 65.04 | 0.36 | ----- | ----- | ----- | ----- | ----- | ----- | 0.36 |
| 5.23 | 0.00 | 466.27 | 64.97 | 0.35 | ----- | ----- | ----- | ----- | ----- | ----- | 0.35 |
| 5.27 | 0.00 | 466.27 | 64.90 | 0.34 | ----- | ----- | ----- | ----- | ----- | ----- | 0.34 |
| 5.30 | 0.00 | 466.27 | 64.83 | 0.33 | ----- | ----- | ----- | ----- | ----- | ----- | 0.33 |
| 5.33 | 0.00 | 466.26 | 64.77 | 0.32 | ----- | ----- | ----- | ----- | ----- | ----- | 0.32 |
| 5.37 | 0.00 | 466.26 | 64.70 | 0.31 | ----- | ----- | ----- | ----- | ----- | ----- | 0.31 |
| 5.40 | 0.00 | 466.25 | 64.64 | 0.30 | ----- | ----- | ----- | ----- | ----- | ----- | 0.30 |
| 5.43 | 0.00 | 466.25 | 64.58 | 0.29 | ----- | ----- | ----- | ----- | ----- | ----- | 0.29 |
| 5.47 | 0.00 | 466.25 | 64.53 | 0.28 | ----- | ----- | ----- | ----- | ----- | ----- | 0.28 |
| 5.50 | 0.00 | 466.24 | 64.47 | 0.27 | ----- | ----- | ----- | ----- | ----- | ----- | 0.27 |
| 5.53 | 0.00 | 466.24 | 64.42 | 0.27 | ----- | ----- | ----- | ----- | ----- | ----- | 0.27 |
| 5.57 | 0.00 | 466.24 | 64.36 | 0.26 | ----- | ----- | ----- | ----- | ----- | ----- | 0.26 |
| 5.60 | 0.00 | 466.23 | 64.31 | 0.25 | ----- | ----- | ----- | ----- | ----- | ----- | 0.25 |
| 5.63 | 0.00 | 466.23 | 64.26 | 0.24 | ----- | ----- | ----- | ----- | ----- | ----- | 0.24 |
| 5.67 | 0.00 | 466.23 | 64.22 | 0.24 | ----- | ----- | ----- | ----- | ----- | ----- | 0.24 |
| 5.70 | 0.00 | 466.22 | 64.17 | 0.23 | ----- | ----- | ----- | ----- | ----- | ----- | 0.23 |
| 5.73 | 0.00 | 466.22 | 64.13 | 0.22 | ----- | ----- | ----- | ----- | ----- | ----- | 0.22 |
| 5.77 | 0.00 | 466.22 | 64.08 | 0.22 | ----- | ----- | ----- | ----- | ----- | ----- | 0.22 |
| 5.80 | 0.00 | 466.21 | 64.04 | 0.21 | ----- | ----- | ----- | ----- | ----- | ----- | 0.21 |
| 5.83 | 0.00 | 466.21 | 64.00 | 0.20 | ----- | ----- | ----- | ----- | ----- | ----- | 0.20 |
| 5.87 | 0.00 | 466.21 | 63.96 | 0.20 | ----- | ----- | ----- | ----- | ----- | ----- | 0.20 |
| 5.90 | 0.00 | 466.21 | 63.92 | 0.19 | ----- | ----- | ----- | ----- | ----- | ----- | 0.19 |
| 5.93 | 0.00 | 466.20 | 63.88 | 0.19 | ----- | ----- | ----- | ----- | ----- | ----- | 0.19 |
| 5.97 | 0.00 | 466.20 | 63.85 | 0.18 | ----- | ----- | ----- | ----- | ----- | ----- | 0.18 |
| 6.00 | 0.00 | 466.20 | 63.80 | 0.18 | ----- | ----- | ----- | ----- | ----- | ----- | 0.18 |
| 6.03 | 0.00 | 466.20 | 63.76 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 6.07 | 0.00 | 466.19 | 63.72 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 6.10 | 0.00 | 466.19 | 63.68 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 6.13 | 0.00 | 466.19 | 63.63 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.17 | 0.00 | 466.19 | 63.59 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 6.20 | 0.00 | 466.19 | 63.55 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.23 | 0.00 | 466.18 | 63.51 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.27 | 0.00 | 466.18 | 63.47 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.30 | 0.00 | 466.18 | 63.43 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.33 | 0.00 | 466.18 | 63.39 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.37 | 0.00 | 466.17 | 63.36 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 6.40 | 0.00 | 466.17 | 63.32 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.43 | 0.00 | 466.17 | 63.28 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.47 | 0.00 | 466.17 | 63.24 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.50 | 0.00 | 466.17 | 63.21 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.53 | 0.00 | 466.16 | 63 17 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.57 | 0.00 | 466.16 | 63.13 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.60 | 0.00 | 466.16 | 63.10 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.63 | 0.00 | 466.16 | 63.06 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.67 | 0.00 | 466.16 | 63.03 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.70 | 0.00 | 466.16 | 62.99 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.73 | 0.00 | 466.15 | 62.96 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.77 | 0.00 | 466.15 | 62.93 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.80 | 0.00 | 466.15 | 62.89 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.83 | 0.00 | 466.15 | 62.86 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.87 | 0.00 | 466.15 | 62.83 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.90 | 0.00 | 466.14 | 62.80 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.93 | 0.00 | 466.14 | 62.76 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.97 | 0.00 | 466.14 | 62.73 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 7.00 | 0.00 | 466.14 | 62.70 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.03 | 0.00 | 466.14 | 62.67 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.07 | 0.00 | 466.14 | 62.64 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.10 | 0.00 | 466.14 | 62.61 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.13 | 0.00 | 466.13 | 62.58 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.17 | 0.00 | 466.13 | 62.55 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.20 | 0.00 | 466.13 | 62.52 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 7.23 | 0.00 | 466.13 | 62.50 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.27 | 0.00 | 466.13 | 62.47 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.30 | 0.00 | 466.13 | 62.44 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.33 | 0.00 | 466.12 | 62.41 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.37 | 0.00 | 466.12 | 62.39 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.40 | 0.00 | 466.12 | 62.36 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.43 | 0.00 | 466.12 | 62.33 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.47 | 0.00 | 466.12 | 62.31 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 7.50 | 0.00 | 466.12 | 62.28 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.53 | 0.00 | 466.12 | 62.25 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.57 | 0.00 | 466.11 | 62.23 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.60 | 0.00 | 466.11 | 62.20 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.63 | 0.00 | 466.11 | 62.18 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.67 | 0.00 | 466.11 | 62.16 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.70 | 0.00 | 466.11 | 62.13 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.73 | 0.00 | 466.11 | 62.11 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.77 | 0.00 | 466.11 | 62.08 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.80 | 0.00 | 466.11 | 62.06 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.83 | 0.00 | 466.10 | 62.04 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.87 | 0.00 | 466.10 | 62.01 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.90 | 0.00 | 466.10 | 61.99 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.93 | 0.00 | 466.10 | 61.97 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.97 | 0.00 | 466.10 | 61.95 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 8.00 | 0.00 | 466.10 | 61.93 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 8.03 | 0.00 | 466.10 | 61.90 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 8.07 | 0.00 | 466.10 | 61.88 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 8.10 | 0.00 | 466.10 | 61.86 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.13 | 0.00 | 466.09 | 61.84 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.17 | 0.00 | 466.09 | 61.82 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.20 | 0.00 | 466.09 | 61.80 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.23 | 0.00 | 466.09 | 61.78 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.27 | 0.00 | 466.09 | 61.76 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.30 | 0.00 | 466.09 | 61.74 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.33 | 0.00 | 466.09 | 61.72 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.37 | 0.00 | 466.09 | 61.70 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.40 | 0.00 | 466.09 | 61.68 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 8.43 | 0.00 | 466.08 | 61.66 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |

*...End*

# Hydrograph Report



English

## Hyd. No. 10

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 5
Max. Elevation = 469.83 ft

Peak discharge = 6.90 cfs
Time interval = 2 min
Reservoir name = REV1/13 2 AND 5
Max. Storage = 55,133 cuft

Storage Indication method used.

Total Volume = 63,360 cuft

### Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.07 | 17.60 | 466.23 | 64.27 | 0.24 | ----- | ----- | ----- | ----- | ----- | ----- | 0.24 |
| 0.10 | 26.40 | 466.51 | 68.47 | 1.02 | ----- | ----- | ----- | ----- | ----- | ----- | 1.02 |
| 0.13 | 35.20 | 466.89 | 71.62 | 2.35 | ----- | ----- | ----- | ----- | ----- | ----- | 2.35 |
| 0.17 | 44.00 | 467.37 | 83.69 | 3.53 | ----- | ----- | ----- | ----- | ----- | ----- | 3.53 |
| 0.20 | 52.80 << | 467.95 | 99.88 | 4.56 | ----- | ----- | ----- | ----- | ----- | ----- | 4.56 |
| 0.23 | 52.80 << | 468.27 | 107.57 | 5.02 | ----- | ----- | ----- | ----- | ----- | ----- | 5.02 |
| 0.27 | 52.80 << | 468.55 | 113.77 | 5.41 | ----- | ----- | ----- | ----- | ----- | ----- | 5.41 |
| 0.30 | 52.80 << | 468.83 | 118.42 | 5.77 | ----- | ----- | ----- | ----- | ----- | ----- | 5.77 |
| 0.33 | 52.80 << | 469.11 | 122.66 | 6.11 | ----- | ----- | ----- | ----- | ----- | ----- | 6.11 |
| 0.37 | 44.00 | 469.36 | 126.36 | 6.40 | ----- | ----- | ----- | ----- | ----- | ----- | 6.40 |
| 0.40 | 35.20 | 469.56 | 129.19 | 6 61 | ----- | ----- | ----- | ----- | ----- | ----- | 6.61 |
| 0.43 | 26.40 | 469.70 | 131.21 | 6.77 | ----- | ----- | ----- | ----- | ----- | ----- | 6.77 |
| 0.47 | 17.60 | 469.79 | 132.48 | 6.86 | ----- | ----- | ----- | ----- | ----- | ----- | 6.86 |
| 0.50 | 8.80 | 469.83 | 132.99 | 6.90 | ----- | ----- | ----- | ----- | ----- | ----- | 6.90 << |
| 0.53 | 0.00 | 469.82 | 132.79 | 6.89 | ----- | ----- | ----- | ----- | ----- | ----- | 6.89 |
| 0.57 | 0.00 | 469.78 | 132.22 | 6.84 | ----- | ----- | ----- | ----- | ----- | ----- | 6.84 |
| 0.60 | 0.00 | 469.74 | 131.65 | 6.80 | ----- | ----- | ----- | ----- | ----- | ----- | 6.80 |
| 0.63 | 0.00 | 469.70 | 131.09 | 6.76 | ----- | ----- | ----- | ----- | ----- | ----- | 6.76 |
| 0.67 | 0.00 | 469.66 | 130.53 | 6.72 | ----- | ----- | ----- | ----- | ----- | ----- | 6.72 |
| 0.70 | 0.00 | 469.62 | 129.97 | 6.67 | ----- | ----- | ----- | ----- | ----- | ----- | 6.67 |
| 0.73 | 0.00 | 469.58 | 129.41 | 6.63 | ----- | ----- | ----- | ----- | ----- | ----- | 6.63 |
| 0.77 | 0.00 | 469.54 | 128.85 | 6.59 | ----- | ----- | ----- | ----- | ----- | ----- | 6.59 |
| 0.80 | 0.00 | 469.50 | 128.29 | 6.55 | ----- | ----- | ----- | ----- | ----- | ----- | 6.55 |
| 0.83 | 0.00 | 469.46 | 127.73 | 6.50 | ----- | ----- | ----- | ----- | ----- | ----- | 6.50 |
| 0.87 | 0.00 | 469.42 | 127.18 | 6.46 | ----- | ----- | ----- | ----- | ----- | ----- | 6.46 |
| 0.90 | 0.00 | 469.38 | 126.63 | 6.42 | ----- | ----- | ----- | ----- | ----- | ----- | 6.42 |
| 0.93 | 0.00 | 469.34 | 126.07 | 6.37 | ----- | ----- | ----- | ----- | ----- | ----- | 6.37 |
| 0.97 | 0.00 | 469.30 | 125.52 | 6.33 | ----- | ----- | ----- | ----- | ----- | ----- | 6.33 |
| 1.00 | 0.00 | 469.27 | 124.97 | 6.29 | ----- | ----- | ----- | ----- | ----- | ----- | 6.29 |
| 1.03 | 0.00 | 469.23 | 124.42 | 6.25 | ----- | ----- | ----- | ----- | ----- | ----- | 6.25 |
| 1.07 | 0.00 | 469.19 | 123.87 | 6.20 | ----- | ----- | ----- | ----- | ----- | ----- | 6.20 |
| 1.10 | 0.00 | 469.16 | 123.32 | 6.16 | ----- | ----- | ----- | ----- | ----- | ----- | 6.16 |
| 1.13 | 0.00 | 469.12 | 122.78 | 6.12 | ----- | ----- | ----- | ----- | ----- | ----- | 6.12 |
| 1.17 | 0.00 | 469.08 | 122.23 | 6.08 | ----- | ----- | ----- | ----- | ----- | ----- | 6.08 |
| 1.20 | 0.00 | 469.05 | 121.69 | 6.03 | ----- | ----- | ----- | ----- | ----- | ----- | 6.03 |
| 1.23 | 0.00 | 469.01 | 121.16 | 5.99 | ----- | ----- | ----- | ----- | ----- | ----- | 5.99 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.27 | 0.00 | 468.97 | 120.61 | 5.95 | ----- | ----- | ----- | ----- | ----- | ----- | 5.95 |
| 1.30 | 0.00 | 468.94 | 120.07 | 5.90 | ----- | ----- | ----- | ----- | ----- | ----- | 5.90 |
| 1.33 | 0.00 | 468.90 | 119.53 | 5.86 | ----- | ----- | ----- | ----- | ----- | ----- | 5.86 |
| 1.37 | 0.00 | 468.87 | 119.00 | 5.82 | ----- | ----- | ----- | ----- | ----- | ----- | 5.82 |
| 1.40 | 0.00 | 468.83 | 118.47 | 5.78 | ----- | ----- | ----- | ----- | ----- | ----- | 5.78 |
| 1.43 | 0.00 | 468.80 | 117.94 | 5.74 | ----- | ----- | ----- | ----- | ----- | ----- | 5.74 |
| 1.47 | 0.00 | 468.77 | 117.41 | 5.69 | ----- | ----- | ----- | ----- | ----- | ----- | 5.69 |
| 1.50 | 0.00 | 468.73 | 116.87 | 5.65 | ----- | ----- | ----- | ----- | ----- | ----- | 5.65 |
| 1.53 | 0.00 | 468.70 | 116.35 | 5.61 | ----- | ----- | ----- | ----- | ----- | ----- | 5.61 |
| 1.57 | 0.00 | 468.67 | 115.82 | 5.56 | ----- | ----- | ----- | ----- | ----- | ----- | 5.56 |
| 1.60 | 0.00 | 468.63 | 115.30 | 5.52 | ----- | ----- | ----- | ----- | ----- | ----- | 5.52 |
| 1.63 | 0.00 | 468.60 | 114.78 | 5.48 | ----- | ----- | ----- | ----- | ----- | ----- | 5.48 |
| 1.67 | 0.00 | 468.57 | 114.12 | 5.44 | ----- | ----- | ----- | ----- | ----- | ----- | 5.44 |
| 1.70 | 0.00 | 468.53 | 113.47 | 5.39 | ----- | ----- | ----- | ----- | ----- | ----- | 5.39 |
| 1.73 | 0.00 | 468.50 | 112.82 | 5.35 | ----- | ----- | ----- | ----- | ----- | ----- | 5.35 |
| 1.77 | 0.00 | 468.47 | 112.17 | 5.31 | ----- | ----- | ----- | ----- | ----- | ----- | 5.31 |
| 1.80 | 0.00 | 468.44 | 111.54 | 5.26 | ----- | ----- | ----- | ----- | ----- | ----- | 5.26 |
| 1.83 | 0.00 | 468.41 | 110.90 | 5.22 | ----- | ----- | ----- | ----- | ----- | ----- | 5.22 |
| 1.87 | 0.00 | 468.38 | 110.20 | 5.18 | ----- | ----- | ----- | ----- | ----- | ----- | 5.18 |
| 1.90 | 0.00 | 468.35 | 109.47 | 5.14 | ----- | ----- | ----- | ----- | ----- | ----- | 5.14 |
| 1.93 | 0.00 | 468.32 | 108.75 | 5.09 | ----- | ----- | ----- | ----- | ----- | ----- | 5.09 |
| 1.97 | 0.00 | 468.29 | 108.04 | 5.05 | ----- | ----- | ----- | ----- | ----- | ----- | 5.05 |
| 2.00 | 0.00 | 468.26 | 107.33 | 5.01 | ----- | ----- | ----- | ----- | ----- | ----- | 5.01 |
| 2.03 | 0.00 | 468.23 | 106.63 | 4.97 | ----- | ----- | ----- | ----- | ----- | ----- | 4.97 |
| 2.07 | 0.00 | 468.20 | 105.93 | 4.92 | ----- | ----- | ----- | ----- | ----- | ----- | 4.92 |
| 2.10 | 0.00 | 468.17 | 105.20 | 4.88 | ----- | ----- | ----- | ----- | ----- | ----- | 4.88 |
| 2.13 | 0.00 | 468.14 | 104.49 | 4.84 | ----- | ----- | ----- | ----- | ----- | ----- | 4.84 |
| 2.17 | 0.00 | 468.11 | 103.78 | 4.79 | ----- | ----- | ----- | ----- | ----- | ----- | 4.79 |
| 2.20 | 0.00 | 468.08 | 103.08 | 4.75 | ----- | ----- | ----- | ----- | ----- | ----- | 4.75 |
| 2.23 | 0.00 | 468.05 | 102.38 | 4.71 | ----- | ----- | ----- | ----- | ----- | ----- | 4.71 |
| 2.27 | 0.00 | 468.02 | 101.69 | 4.67 | ----- | ----- | ----- | ----- | ----- | ----- | 4.67 |
| 2.30 | 0.00 | 467.99 | 100.90 | 4.62 | ----- | ----- | ----- | ----- | ----- | ----- | 4.62 |
| 2.33 | 0.00 | 467.93 | 99.34 | 4.52 | ----- | ----- | ----- | ----- | ----- | ----- | 4.52 |
| 2.37 | 0.00 | 467.87 | 97.82 | 4.43 | ----- | ----- | ----- | ----- | ----- | ----- | 4.43 |
| 2.40 | 0.00 | 467.82 | 96.33 | 4.34 | ----- | ----- | ----- | ----- | ----- | ----- | 4.34 |
| 2.43 | 0.00 | 467.76 | 94.81 | 4.24 | ----- | ----- | ----- | ----- | ----- | ----- | 4.24 |
| 2.47 | 0.00 | 467.71 | 93.30 | 4.15 | ----- | ----- | ----- | ----- | ----- | ----- | 4.15 |
| 2.50 | 0.00 | 467.65 | 91.83 | 4.05 | ----- | ----- | ----- | ----- | ----- | ----- | 4.05 |
| 2.53 | 0.00 | 467.60 | 90.38 | 3.96 | ----- | ----- | ----- | ----- | ----- | ----- | 3.96 |
| 2.57 | 0.00 | 467.55 | 88.88 | 3.87 | ----- | ----- | ----- | ----- | ----- | ----- | 3.87 |
| 2.60 | 0.00 | 467.50 | 87.42 | 3.77 | ----- | ----- | ----- | ----- | ----- | ----- | 3.77 |
| 2.63 | 0.00 | 467.45 | 85.99 | 3.68 | ----- | ----- | ----- | ----- | ----- | ----- | 3.68 |
| 2.67 | 0.00 | 467.40 | 84.60 | 3.59 | ----- | ----- | ----- | ----- | ----- | ----- | 3.59 |
| 2.70 | 0.00 | 467.35 | 83.15 | 3.49 | ----- | ----- | ----- | ----- | ----- | ----- | 3.49 |
| 2.73 | 0.00 | 467.31 | 81.73 | 3.39 | ----- | ----- | ----- | ----- | ----- | ----- | 3.39 |
| 2.77 | 0.00 | 467.27 | 80.35 | 3.30 | ----- | ----- | ----- | ----- | ----- | ----- | 3.30 |
| 2.80 | 0.00 | 467.22 | 79.01 | 3.21 | ----- | ----- | ----- | ----- | ----- | ----- | 3.21 |
| 2.83 | 0.00 | 467.18 | 77.66 | 3.12 | ----- | ----- | ----- | ----- | ----- | ----- | 3.12 |
| 2.87 | 0.00 | 467.14 | 76.28 | 3.02 | ----- | ----- | ----- | ----- | ----- | ----- | 3.02 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.90 | 0.00 | 467.10 | 74.96 | 2.92 | ----- | ----- | ----- | ----- | ----- | ----- | 2.92 |
| 2.93 | 0.00 | 467.06 | 73.67 | 2.83 | ----- | ----- | ----- | ----- | ----- | ----- | 2.83 |
| 2.97 | 0.00 | 467.03 | 72.42 | 2.74 | ----- | ----- | ----- | ----- | ----- | ----- | 2.74 |
| 3.00 | 0.00 | 466.99 | 71.49 | 2.65 | ----- | ----- | ----- | ----- | ----- | ----- | 2.65 |
| 3.03 | 0.00 | 466.96 | 71.54 | 2.55 | ----- | ----- | ----- | ----- | ----- | ----- | 2.55 |
| 3.07 | 0.00 | 466.93 | 71.58 | 2.45 | ----- | ----- | ----- | ----- | ----- | ----- | 2.45 |
| 3.10 | 0.00 | 466.89 | 71.62 | 2.36 | ----- | ----- | ----- | ----- | ----- | ----- | 2.36 |
| 3.13 | 0.00 | 466.86 | 71.66 | 2.26 | ----- | ----- | ----- | ----- | ----- | ----- | 2.26 |
| 3.17 | 0.00 | 466.83 | 71.69 | 2.18 | ----- | ----- | ----- | ----- | ----- | ----- | 2.18 |
| 3.20 | 0.00 | 466.81 | 71.73 | 2.09 | ----- | ----- | ----- | ----- | ----- | ----- | 2.09 |
| 3.23 | 0.00 | 466.78 | 71.54 | 2.00 | ----- | ----- | ----- | ----- | ----- | ----- | 2.00 |
| 3.27 | 0.00 | 466.75 | 71.29 | 1.91 | ----- | ----- | ----- | ----- | ----- | ----- | 1.91 |
| 3.30 | 0.00 | 466.73 | 71.05 | 1.82 | ----- | ----- | ----- | ----- | ----- | ----- | 1.82 |
| 3.33 | 0.00 | 466.71 | 70.83 | 1.73 | ----- | ----- | ----- | ----- | ----- | ----- | 1.73 |
| 3.37 | 0.00 | 466.68 | 70.61 | 1.65 | ----- | ----- | ----- | ----- | ----- | ----- | 1.65 |
| 3.40 | 0.00 | 466.66 | 70.41 | 1.57 | ----- | ----- | ----- | ----- | ----- | ----- | 1.57 |
| 3.43 | 0.00 | 466.64 | 70.22 | 1.50 | ----- | ----- | ----- | ----- | ----- | ----- | 1.50 |
| 3.47 | 0.00 | 466.62 | 70.03 | 1.43 | ----- | ----- | ----- | ----- | ----- | ----- | 1.43 |
| 3.50 | 0.00 | 466.61 | 69.85 | 1.36 | ----- | ----- | ----- | ----- | ----- | ----- | 1.36 |
| 3.53 | 0.00 | 466.59 | 69.62 | 1.30 | ----- | ----- | ----- | ----- | ----- | ----- | 1.30 |
| 3.57 | 0.00 | 466.57 | 69.38 | 1.24 | ----- | ----- | ----- | ----- | ----- | ----- | 1.24 |
| 3.60 | 0.00 | 466.56 | 69.15 | 1.18 | ----- | ----- | ----- | ----- | ----- | ----- | 1.18 |
| 3.63 | 0.00 | 466.54 | 68.93 | 1.13 | ----- | ----- | ----- | ----- | ----- | ----- | 1.13 |
| 3.67 | 0.00 | 466.53 | 68.71 | 1.08 | ----- | ----- | ----- | ----- | ----- | ----- | 1.08 |
| 3.70 | 0.00 | 466.51 | 68.51 | 1.03 | ----- | ----- | ----- | ----- | ----- | ----- | 1.03 |
| 3.73 | 0.00 | 466.50 | 68.32 | 0.98 | ----- | ----- | ----- | ----- | ----- | ----- | 0.98 |
| 3.77 | 0.00 | 466.49 | 68.13 | 0.94 | ----- | ----- | ----- | ----- | ----- | ----- | 0.94 |
| 3.80 | 0.00 | 466.47 | 67.96 | 0.90 | ----- | ----- | ----- | ----- | ----- | ----- | 0.90 |
| 3.83 | 0.00 | 466.46 | 67.79 | 0.86 | ----- | ----- | ----- | ----- | ----- | ----- | 0.86 |
| 3.87 | 0.00 | 466.45 | 67.63 | 0.82 | ----- | ----- | ----- | ----- | ----- | ----- | 0.82 |
| 3.90 | 0.00 | 466.44 | 67.48 | 0.78 | ----- | ----- | ----- | ----- | ----- | ----- | 0.78 |
| 3.93 | 0.00 | 466.43 | 67.33 | 0.75 | ----- | ----- | ----- | ----- | ----- | ----- | 0.75 |
| 3.97 | 0.00 | 466.42 | 67.19 | 0.71 | ----- | ----- | ----- | ----- | ----- | ----- | 0.71 |
| 4.00 | 0.00 | 466.41 | 67.06 | 0.68 | ----- | ----- | ----- | ----- | ----- | ----- | 0.68 |
| 4.03 | 0.00 | 466.40 | 66.93 | 0.65 | ----- | ----- | ----- | ----- | ----- | ----- | 0.65 |
| 4.07 | 0.00 | 466.40 | 66.80 | 0.63 | ----- | ----- | ----- | ----- | ----- | ----- | 0.63 |
| 4.10 | 0.00 | 466.39 | 66.68 | 0.61 | ----- | ----- | ----- | ----- | ----- | ----- | 0.61 |
| 4.13 | 0.00 | 466.38 | 66.56 | 0.59 | ----- | ----- | ----- | ----- | ----- | ----- | 0.59 |
| 4.17 | 0.00 | 466.37 | 66.45 | 0.57 | ----- | ----- | ----- | ----- | ----- | ----- | 0.57 |
| 4.20 | 0.00 | 466.36 | 66.33 | 0.55 | ----- | ----- | ----- | ----- | ----- | ----- | 0.55 |
| 4.23 | 0.00 | 466.36 | 66.22 | 0.54 | ----- | ----- | ----- | ----- | ----- | ----- | 0.54 |
| 4.27 | 0.00 | 466.35 | 66.12 | 0.52 | ----- | ----- | ----- | ----- | ----- | ----- | 0.52 |
| 4.30 | 0.00 | 466.34 | 66.01 | 0.51 | ----- | ----- | ----- | ----- | ----- | ----- | 0.51 |
| 4.33 | 0.00 | 466.34 | 65.91 | 0.49 | ----- | ----- | ----- | ----- | ----- | ----- | 0.49 |
| 4.37 | 0.00 | 466.33 | 65.82 | 0.48 | ----- | ----- | ----- | ----- | ----- | ----- | 0.48 |
| 4.40 | 0.00 | 466.32 | 65.72 | 0.46 | ----- | ----- | ----- | ----- | ----- | ----- | 0.46 |
| 4.43 | 0.00 | 466.32 | 65.63 | 0.45 | ----- | ----- | ----- | ----- | ----- | ----- | 0.45 |
| 4.47 | 0.00 | 466.31 | 65.54 | 0.44 | ----- | ----- | ----- | ----- | ----- | ----- | 0.44 |
| 4.50 | 0.00 | 466.31 | 65.46 | 0.42 | ----- | ----- | ----- | ----- | ----- | ----- | 0.42 |

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## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.53 | 0.00 | 466.30 | 65.38 | 0.41 | ----- | ----- | ----- | ----- | ----- | ----- | 0.41 |
| 4.57 | 0.00 | 466.30 | 65.29 | 0.40 | ----- | ----- | ----- | ----- | ----- | ----- | 0.40 |
| 4.60 | 0.00 | 466.29 | 65.22 | 0.39 | ----- | ----- | ----- | ----- | ----- | ----- | 0.39 |
| 4.63 | 0.00 | 466.29 | 65.14 | 0.38 | ----- | ----- | ----- | ----- | ----- | ----- | 0.38 |
| 4.67 | 0.00 | 466.28 | 65.07 | 0.36 | ----- | ----- | ----- | ----- | ----- | ----- | 0.36 |
| 4.70 | 0.00 | 466.28 | 64.99 | 0.35 | ----- | ----- | ----- | ----- | ----- | ----- | 0.35 |
| 4.73 | 0.00 | 466.27 | 64.93 | 0.34 | ----- | ----- | ----- | ----- | ----- | ----- | 0.34 |
| 4.77 | 0.00 | 466.27 | 64.86 | 0.33 | ----- | ----- | ----- | ----- | ----- | ----- | 0.33 |
| 4.80 | 0.00 | 466.26 | 64.79 | 0.32 | ----- | ----- | ----- | ----- | ----- | ----- | 0.32 |
| 4.83 | 0.00 | 466.26 | 64.73 | 0.31 | ----- | ----- | ----- | ----- | ----- | ----- | 0.31 |
| 4.87 | 0.00 | 466.25 | 64.67 | 0.30 | ----- | ----- | ----- | ----- | ----- | ----- | 0.30 |
| 4.90 | 0.00 | 466.25 | 64.61 | 0.29 | ----- | ----- | ----- | ----- | ----- | ----- | 0.29 |
| 4.93 | 0.00 | 466.25 | 64.55 | 0.29 | ----- | ----- | ----- | ----- | ----- | ----- | 0.29 |
| 4.97 | 0.00 | 466.24 | 64.49 | 0.28 | ----- | ----- | ----- | ----- | ----- | ----- | 0.28 |
| 5.00 | 0.00 | 466.24 | 64.44 | 0.27 | ----- | ----- | ----- | ----- | ----- | ----- | 0.27 |
| 5.03 | 0.00 | 466.24 | 64.38 | 0 26 | ----- | ----- | ----- | ----- | ----- | ----- | 0.26 |
| 5.07 | 0.00 | 466.23 | 64.33 | 0.25 | ----- | ----- | ----- | ----- | ----- | ----- | 0.25 |
| 5.10 | 0.00 | 466.23 | 64.28 | 0.25 | ----- | ----- | ----- | ----- | ----- | ----- | 0.25 |
| 5.13 | 0.00 | 466.23 | 64.24 | 0.24 | ----- | ----- | ----- | ----- | ----- | ----- | 0.24 |
| 5.17 | 0.00 | 466.22 | 64.19 | 0.23 | ----- | ----- | ----- | ----- | ----- | ----- | 0.23 |
| 5.20 | 0.00 | 466.22 | 64.14 | 0.22 | ----- | ----- | ----- | ----- | ----- | ----- | 0.22 |
| 5.23 | 0.00 | 466.22 | 64.10 | 0.22 | ----- | ----- | ----- | ----- | ----- | ----- | 0.22 |
| 5.27 | 0.00 | 466.21 | 64.06 | 0.21 | ----- | ----- | ----- | ----- | ----- | ----- | 0.21 |
| 5.30 | 0.00 | 466.21 | 64.01 | 0.21 | ----- | ----- | ----- | ----- | ----- | ----- | 0.21 |
| 5.33 | 0.00 | 466.21 | 63.97 | 0.20 | ----- | ----- | ----- | ----- | ----- | ----- | 0.20 |
| 5.37 | 0.00 | 466.21 | 63.93 | 0.19 | ----- | ----- | ----- | ----- | ----- | ----- | 0.19 |
| 5.40 | 0.00 | 466.20 | 63.90 | 0.19 | ----- | ----- | ----- | ----- | ----- | ----- | 0.19 |
| 5.43 | 0.00 | 466.20 | 63.86 | 0.18 | ----- | ----- | ----- | ----- | ----- | ----- | 0.18 |
| 5.47 | 0.00 | 466.20 | 63.82 | 0.18 | ----- | ----- | ----- | ----- | ----- | ----- | 0.18 |
| 5.50 | 0.00 | 466.20 | 63.78 | 0.18 | ----- | ----- | ----- | ----- | ----- | ----- | 0.18 |
| 5.53 | 0.00 | 466.19 | 63.74 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 5.57 | 0.00 | 466.19 | 63.69 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 5.60 | 0.00 | 466.19 | 63.65 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 5.63 | 0.00 | 466.19 | 63.61 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 5.67 | 0.00 | 466.19 | 63.57 | 0.17 | ----- | ----- | ----- | ----- | ----- | ----- | 0.17 |
| 5.70 | 0.00 | 466.18 | 63.53 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 5.73 | 0.00 | 466.18 | 63.49 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 5.77 | 0.00 | 466.18 | 63.45 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 5.80 | 0.00 | 466.18 | 63.41 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 5.83 | 0.00 | 466.18 | 63.37 | 0.16 | ----- | ----- | ----- | ----- | ----- | ----- | 0.16 |
| 5.87 | 0.00 | 466.17 | 63.33 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 5.90 | 0.00 | 466.17 | 63.29 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 5.93 | 0.00 | 466.17 | 63.26 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 5.97 | 0.00 | 466.17 | 63.22 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.00 | 0.00 | 466.17 | 63.18 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.03 | 0.00 | 466.16 | 63.15 | 0.15 | ----- | ----- | ----- | ----- | ----- | ----- | 0.15 |
| 6.07 | 0.00 | 466.16 | 63.11 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.10 | 0.00 | 466.16 | 63.08 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.13 | 0.00 | 466.16 | 63.04 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |

*Continues on next page...*

## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.17 | 0.00 | 466.16 | 63.01 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.20 | 0.00 | 466.15 | 62.97 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.23 | 0.00 | 466.15 | 62.94 | 0.14 | ----- | ----- | ----- | ----- | ----- | ----- | 0.14 |
| 6.27 | 0.00 | 466.15 | 62.91 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.30 | 0.00 | 466.15 | 62.87 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.33 | 0.00 | 466.15 | 62.84 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.37 | 0.00 | 466.15 | 62.81 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.40 | 0.00 | 466.14 | 62.78 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.43 | 0.00 | 466.14 | 62.75 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.13 |
| 6.47 | 0.00 | 466.14 | 62.71 | 0.13 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.50 | 0.00 | 466.14 | 62.68 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.53 | 0.00 | 466.14 | 62.65 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.57 | 0.00 | 466.14 | 62.62 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.60 | 0.00 | 466.13 | 62.59 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.63 | 0.00 | 466.13 | 62.56 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.67 | 0.00 | 466.13 | 62.54 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.70 | 0.00 | 466.13 | 62.51 | 0.12 | ----- | ----- | ----- | ----- | ----- | ----- | 0.12 |
| 6.73 | 0.00 | 466.13 | 62.48 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.77 | 0.00 | 466.13 | 62.45 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.80 | 0.00 | 466.13 | 62.42 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.83 | 0.00 | 466.12 | 62.40 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.87 | 0.00 | 466.12 | 62.37 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.90 | 0.00 | 466.12 | 62.34 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.93 | 0.00 | 466.12 | 62.32 | 0.11 | ----- | ----- | ----- | ----- | ----- | ----- | 0.11 |
| 6.97 | 0.00 | 466.12 | 62.29 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.00 | 0.00 | 466.12 | 62.26 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.03 | 0.00 | 466.12 | 62.24 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.07 | 0.00 | 466.11 | 62.21 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.10 | 0.00 | 466.11 | 62.19 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.13 | 0.00 | 466.11 | 62.16 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.17 | 0.00 | 466.11 | 62.14 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.20 | 0.00 | 466.11 | 62.12 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.23 | 0.00 | 466.11 | 62.09 | 0.10 | ----- | ----- | ----- | ----- | ----- | ----- | 0.10 |
| 7.27 | 0.00 | 466.11 | 62.07 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.30 | 0.00 | 466.11 | 62.05 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.33 | 0.00 | 466.10 | 62.02 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.37 | 0.00 | 466.10 | 62.00 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.40 | 0.00 | 466.10 | 61.98 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.43 | 0.00 | 466.10 | 61.96 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.47 | 0.00 | 466.10 | 61.93 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.50 | 0.00 | 466.10 | 61.91 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.53 | 0.00 | 466.10 | 61.89 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.57 | 0.00 | 466.10 | 61.87 | 0.09 | ----- | ----- | ----- | ----- | ----- | ----- | 0.09 |
| 7.60 | 0.00 | 466.09 | 61.85 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.63 | 0.00 | 466.09 | 61.83 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.67 | 0.00 | 466.09 | 61.81 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.70 | 0.00 | 466.09 | 61.79 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.73 | 0.00 | 466.09 | 61.77 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.77 | 0.00 | 466.09 | 61.75 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |

*Continues on next page...*

## Hydrograph Discharge Table

| Time (hrs) | Inflow cfs | Elevation ft | Clv A cfs | Clv B cfs | Clv C cfs | Clv D cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.80 | 0.00 | 466.09 | 61.73 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.83 | 0.00 | 466.09 | 61.71 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.87 | 0.00 | 466.09 | 61.69 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.90 | 0.00 | 466.09 | 61.67 | 0.08 | ----- | ----- | ----- | ----- | ----- | ----- | 0.08 |
| 7.93 | 0.00 | 466.08 | 61.65 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 7.97 | 0.00 | 466.08 | 61.63 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 8.00 | 0.00 | 466.08 | 61.62 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 8.03 | 0.00 | 466.08 | 61.60 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 8.07 | 0.00 | 466.08 | 61.58 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 8.10 | 0.00 | 466.08 | 61.56 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |
| 8.13 | 0.00 | 466.08 | 61.55 | 0.07 | ----- | ----- | ----- | ----- | ----- | ----- | 0.07 |

*...End*

FLOOD STUDY 3-1-99

TRIB. to BELLEAU CREEK

SUMMARY

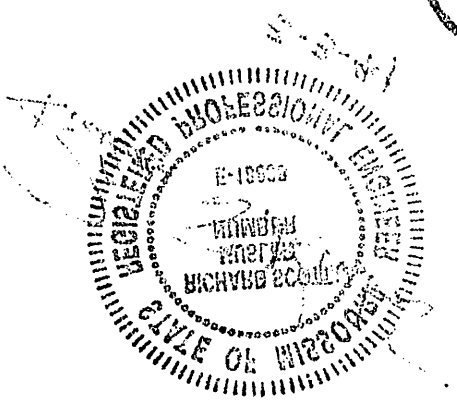
Included here in is the study for the referenced tributary. The second page in both the Existing and Proposed Flood Study shows the water surface elevations (W.S. Elev.). The water surface elevation raises 0.09' at section 7+05, 0.21' at section 8+71, 0.51' at section 11+90 and 0.52' at section 17+30.

The increase rise in this study is 0.52' which we feel is not a significant amount. The Corp of Engineers perform flood studies for F.E.M.A. using a 1.0' increase as their projected maximum when establishing floodways.

STATE OF MISSOURI
RICHARD SCOTT MUSLER
NUMBER
E-18838
REGISTERED PROFESSIONAL ENGINEER

3-3-99

4


REGISTERED PROFESSIONAL ENGINEER
STATE OF WISCONSIN
RICHARD SCOTT

REF. - GENERALIZED FLOOD-FREQUENCY ESTIMATES FOR URBAN AREAS IN MISSOURI by E. E. GANN U.S. DEPT OF INTERIOR

$Q_{2.33} = 72.3\, A^{.719}\, S^{.330}$

$A = 710.74$ $A^2 = 1.11$ sq. mi.

$S = 90'$ in $9000' = 52.8$

$Q_{2.33} = 72.3(1.11)^{.719}(52.8)^{.330}$

$= 288.53$

Impervious Percentage 33% = 90%

67% = 45%

$1.11(.33) = .3663$ sq. mi. - 90% impervious weighted no. = 60%

$.7437$ sq. mi. - 45% impervious

From Figure 2. = 3.2

$288.53(3.2) = 924$

$R_1 = 3.2$

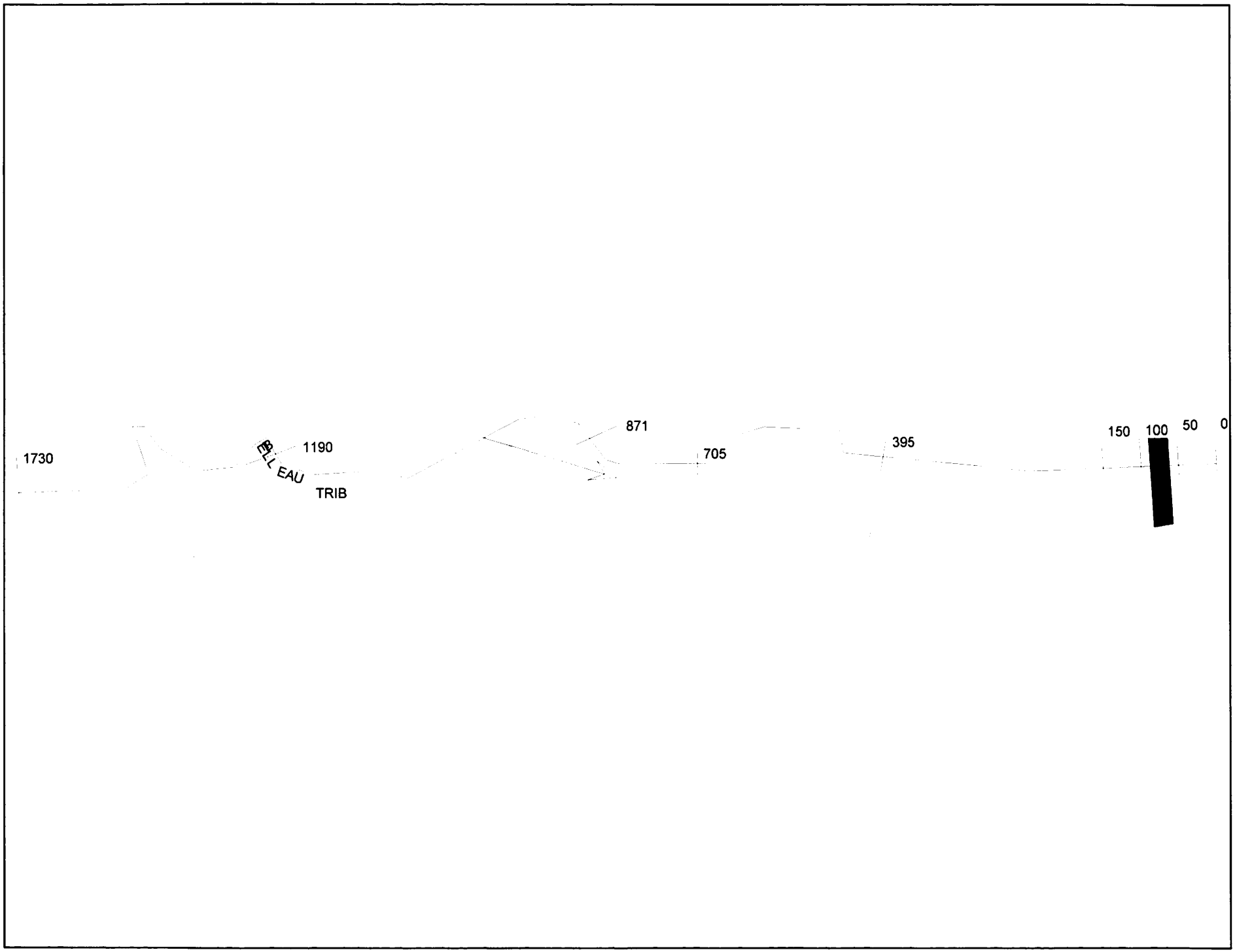
$R_2 = 2.75$

$Q_{2.33} = 288.53$

$Q_{100} = 288.53(2.75)(3.2) = 8539$ c.f.s.

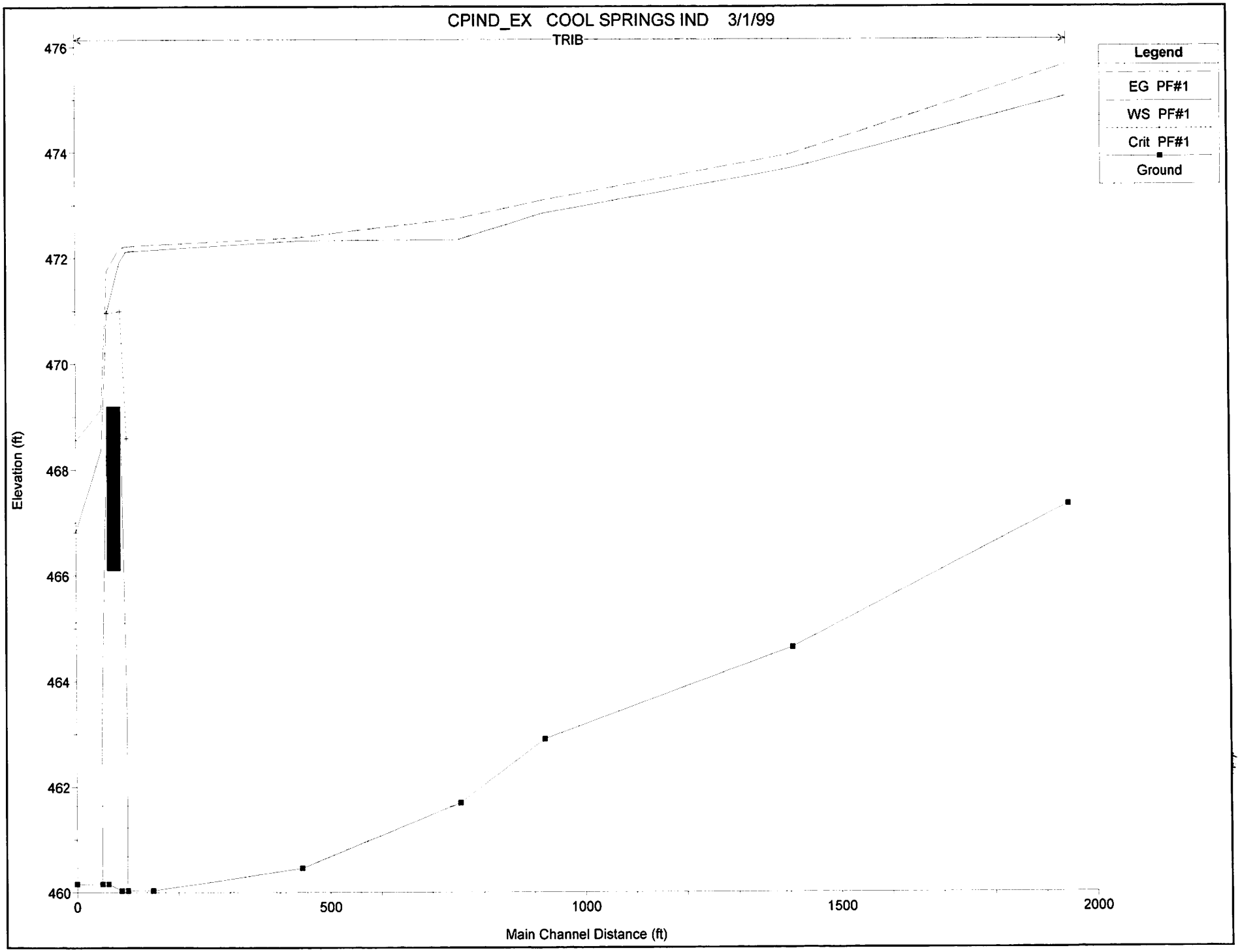
FLOOD STUDY FOR TRIBUTARY TO BELLEW CREEK

# FLOOD STUDY - EXISTING



HEC-RAS Plan: CPIND River: BELLEAU Reach: TRIB

| Reach | River Sta | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| TRIB | 1730 | 2539.00 | 467.34 | 475.05 | | 475.65 | 0.004643 | 7.70 | 509.96 | 141.54 | 0.52 |
| TRIB | 1190 | 2539.00 | 464.64 | 473.69 | | 473.96 | 0.001960 | 5.29 | 859.66 | 301.71 | 0.34 |
| TRIB | 871 | 2539.00 | 462.90 | 472.84 | | 473.09 | 0.001678 | 4.98 | 847.07 | 249.21 | 0.32 |
| TRIB | 705 | 2539.00 | 461.70 | 472.35 | | 472.74 | 0.002394 | 6.03 | 680.91 | 208.03 | 0.38 |
| TRIB | 395 | 2539.00 | 460.46 | 472.33 | | 472.39 | 0.000403 | 2.25 | 1503.90 | 383.75 | 0.16 |
| TRIB | 150 | 2539.00 | 460.03 | 472.15 | | 472.25 | 0.000567 | 3.42 | 1357.94 | 325.08 | 0.19 |
| TRIB | 100 | 2539.00 | 460.03 | 472.13 | 468.60 | 472.22 | 0.000555 | 3.38 | 1390.10 | 338.38 | 0.19 |
| TRIB | 75 | Bridge | | | | | | | | | |
| TRIB | 50 | 2539.00 | 460.16 | 468.37 | | 469.14 | 0.005782 | 7.08 | 380.18 | 107.93 | 0.56 |
| TRIB | 0 | 2539.00 | 460.16 | 466.82 | 466.82 | 468.54 | 0.020699 | 10.55 | 240.88 | 73.08 | 1.01 |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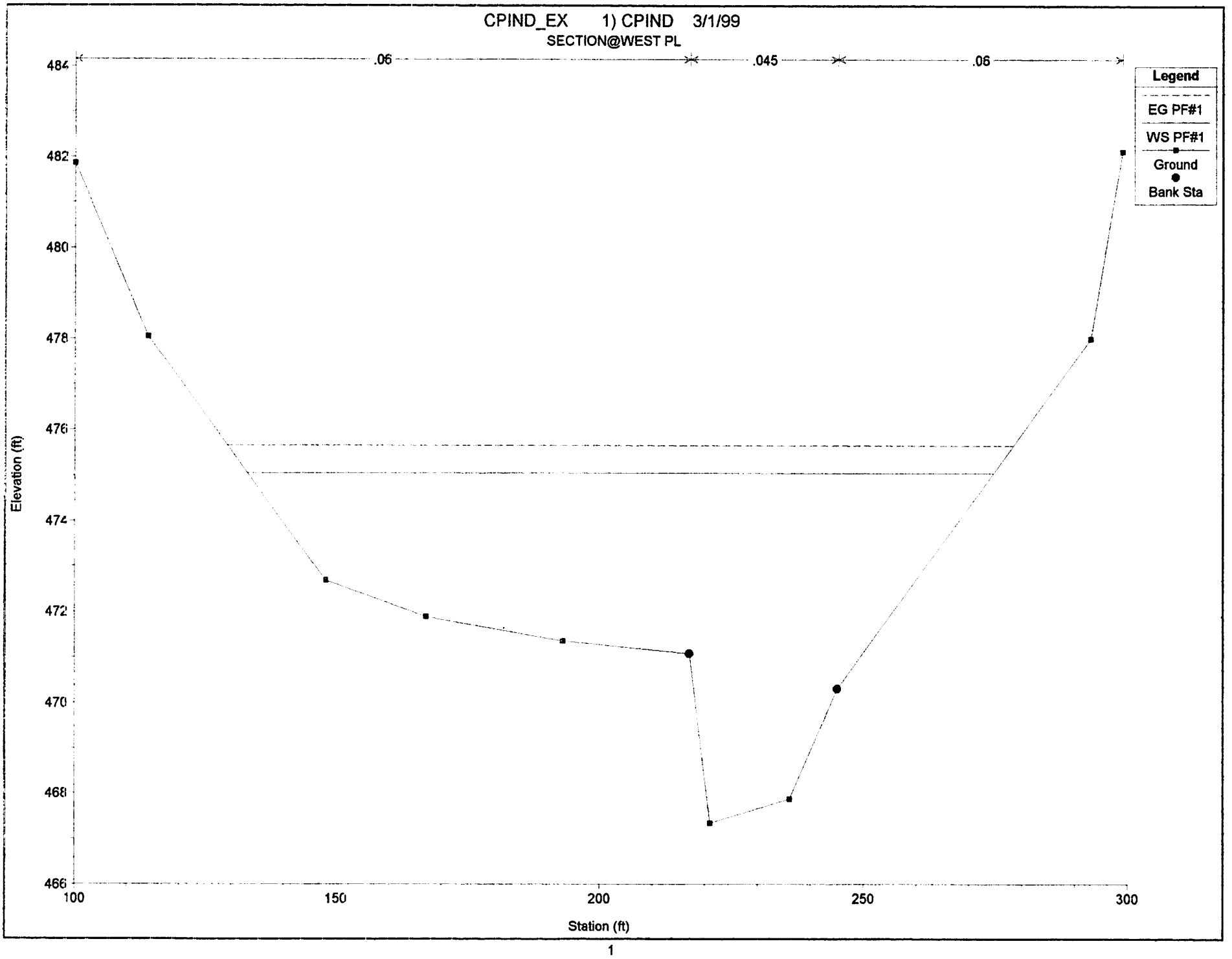
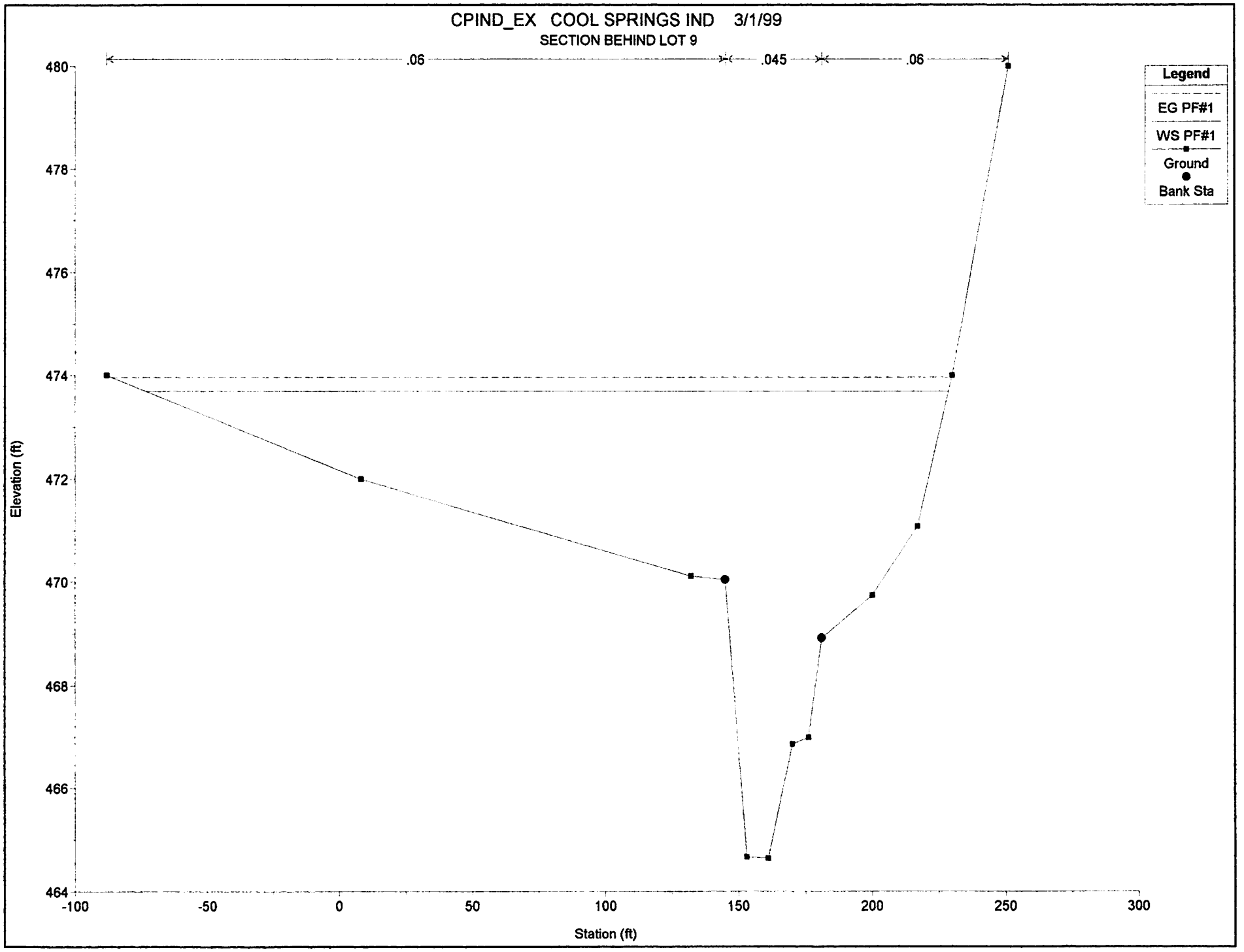
TRIB
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
476
474
472
470
468
466
464
462
460
Elevation (ft)
0
500
1000
1500
2000
Main Channel Distance (ft)


CPIND_EX 1) CPIND 3/1/99
SECTION@WEST PL
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
484
482
480
478
476
474
472
470
468
466
Elevation (ft)
100
150
200
250
300
Station (ft)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Legend
EG PF#1
WS PF#1
Ground
Bank Sta
480
478
476
474
472
470
468
466
464
Elevation (ft)
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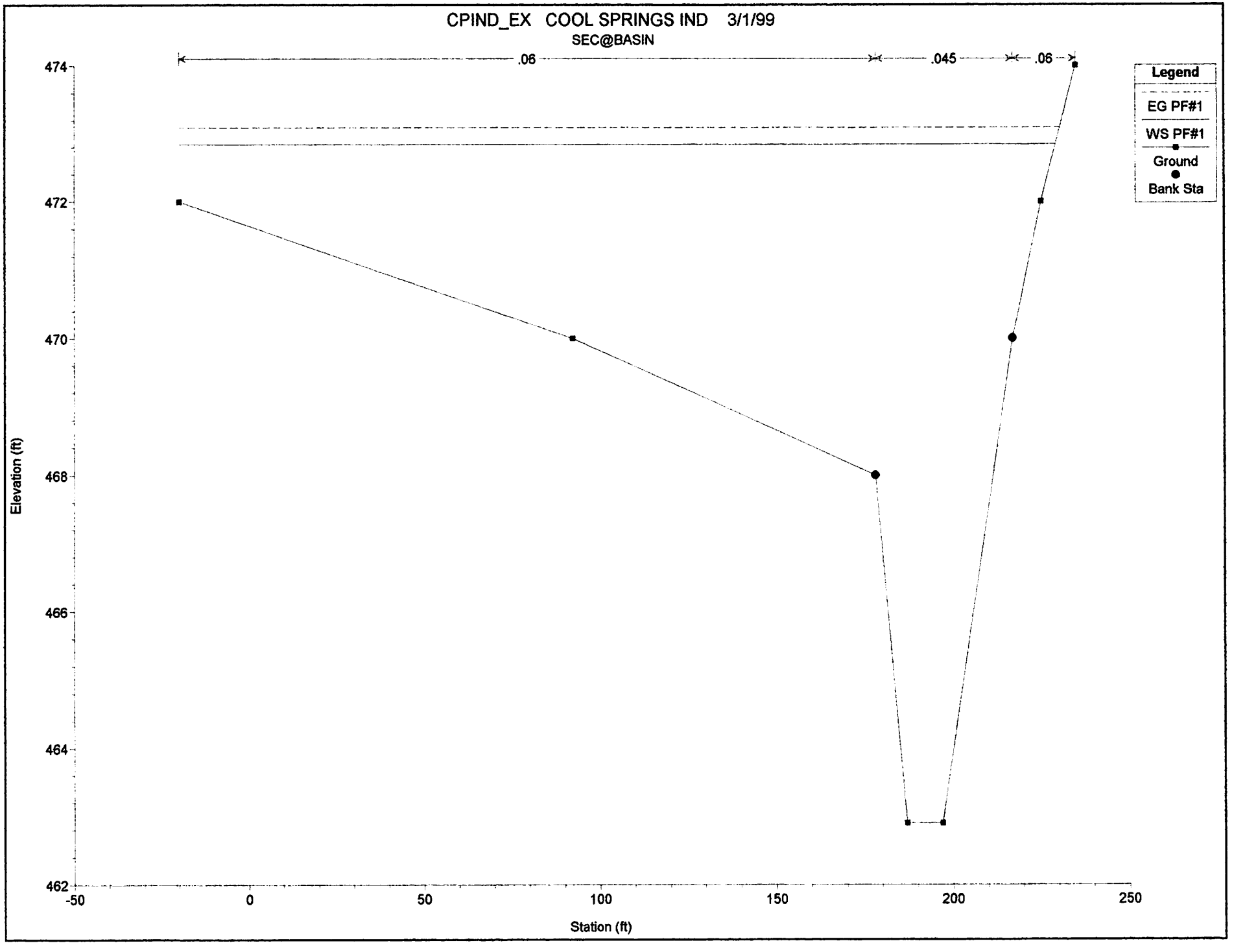
-50
0
50
100
150
200
250
300
Station (ft)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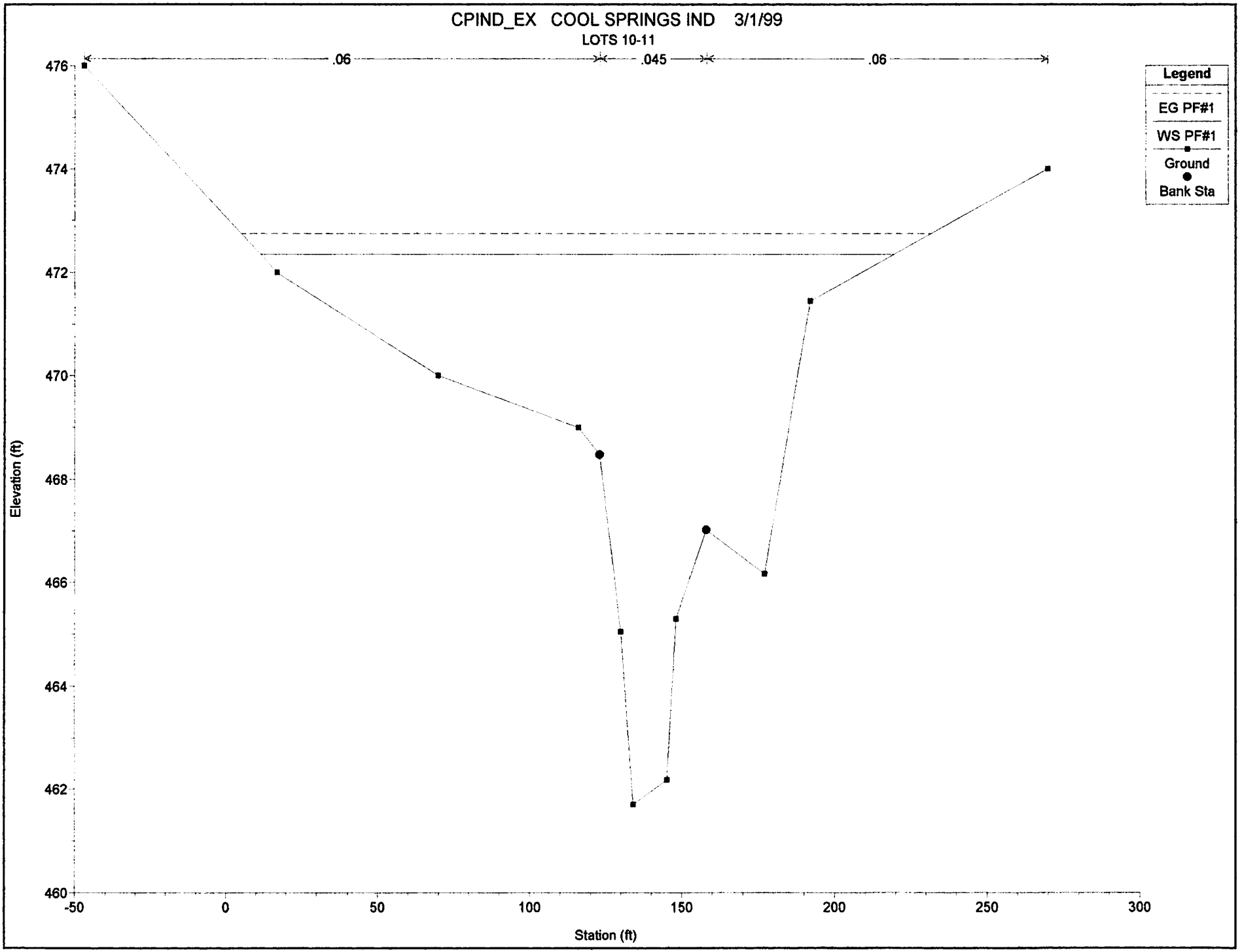
SEC@BASIN
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
474
472
470
468
466
464
462
Elevation (ft)
-50
0
50
100
150
200
250
Station (ft)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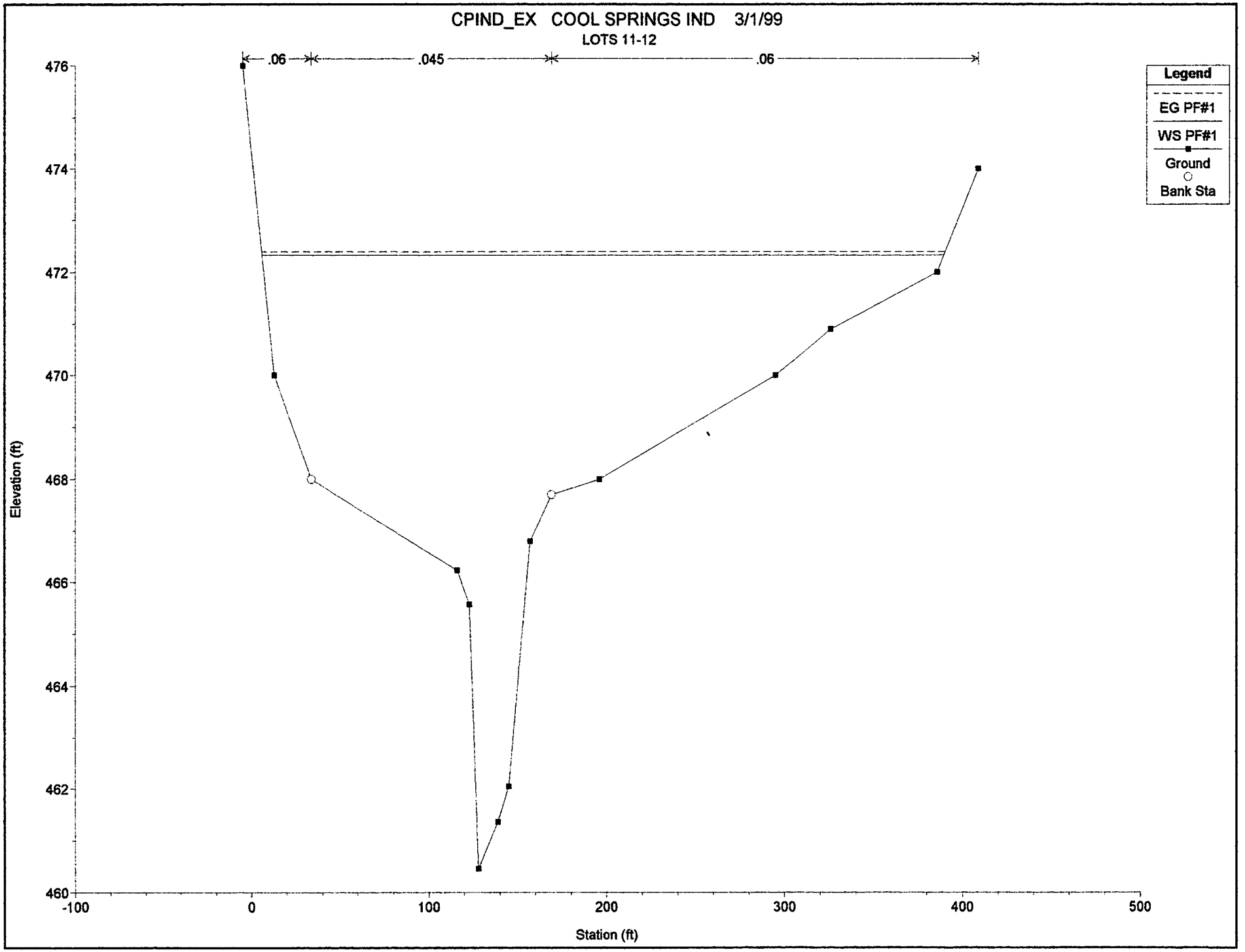
LOTS 10-11
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
476
474
472
470
468
466
464
462
460
Elevation (ft)
-50
0
50
100
150
200
250
300
Station (ft)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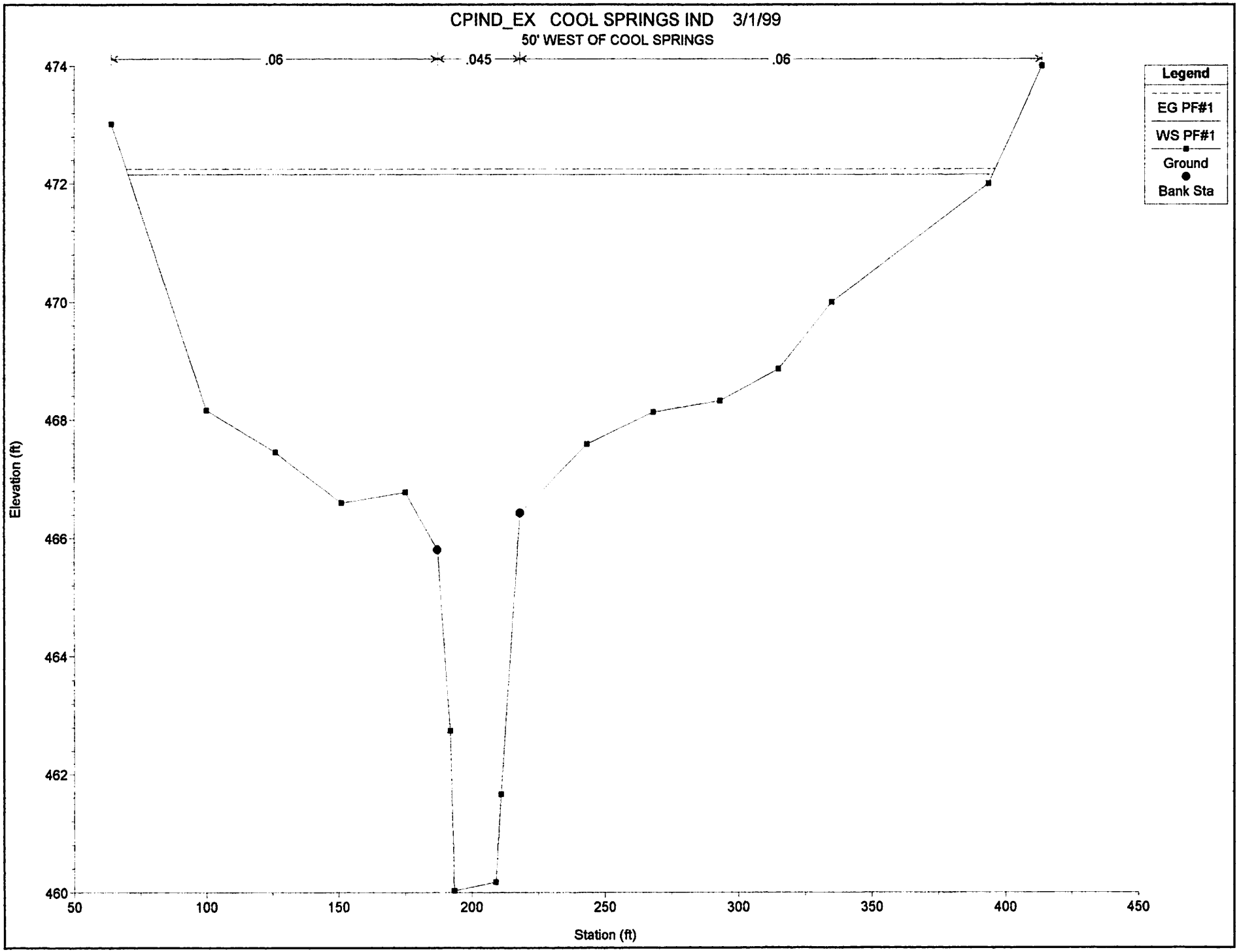
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
476
474
472
470
468
466
464
462
460
Elevation (ft)
-100
0
100
200
300
400
500
Station (ft)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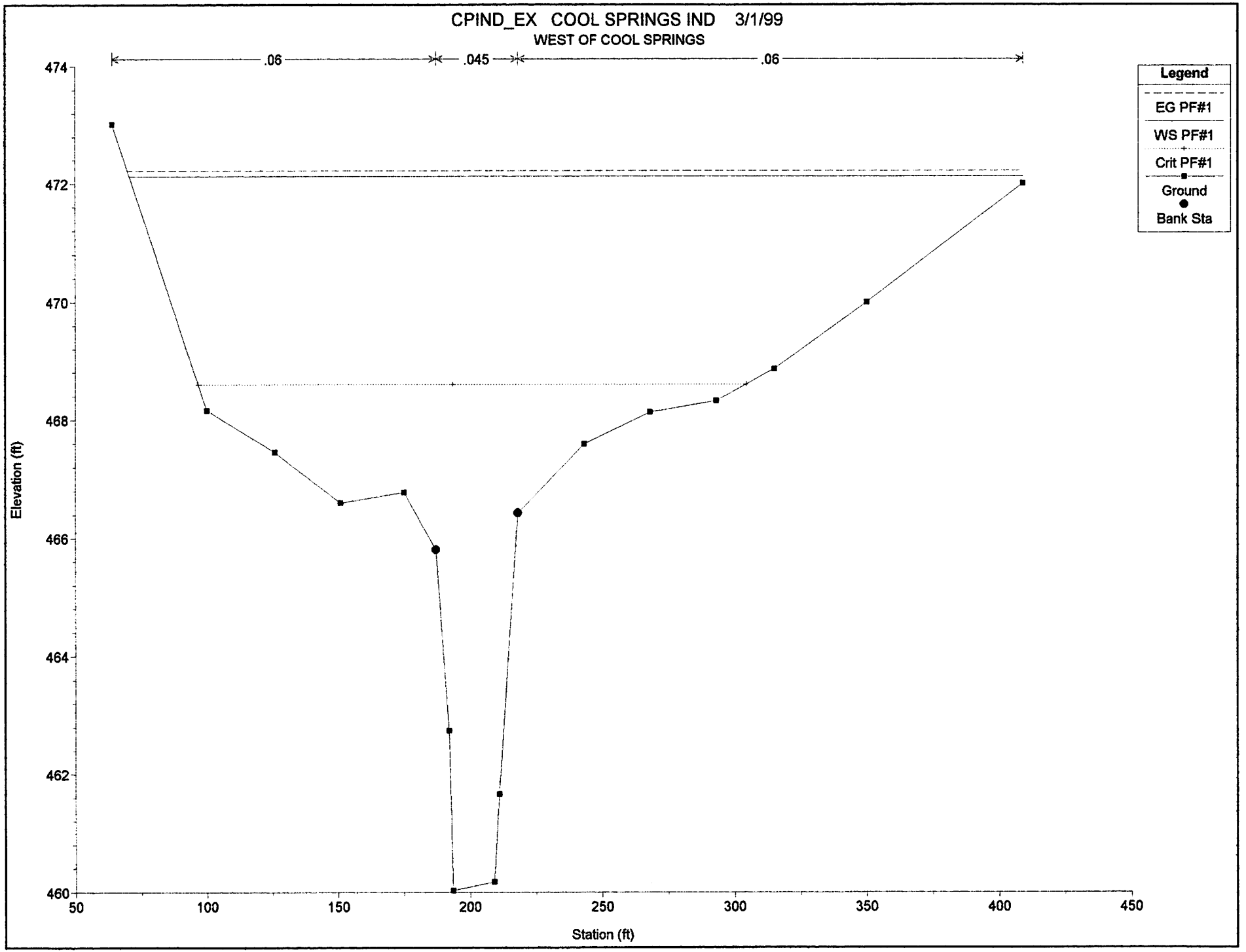
50' WEST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
Elevation (ft)
474
472
470
468
466
464
462
460
50
100
150
200
250
300
350
400
450
Station (ft)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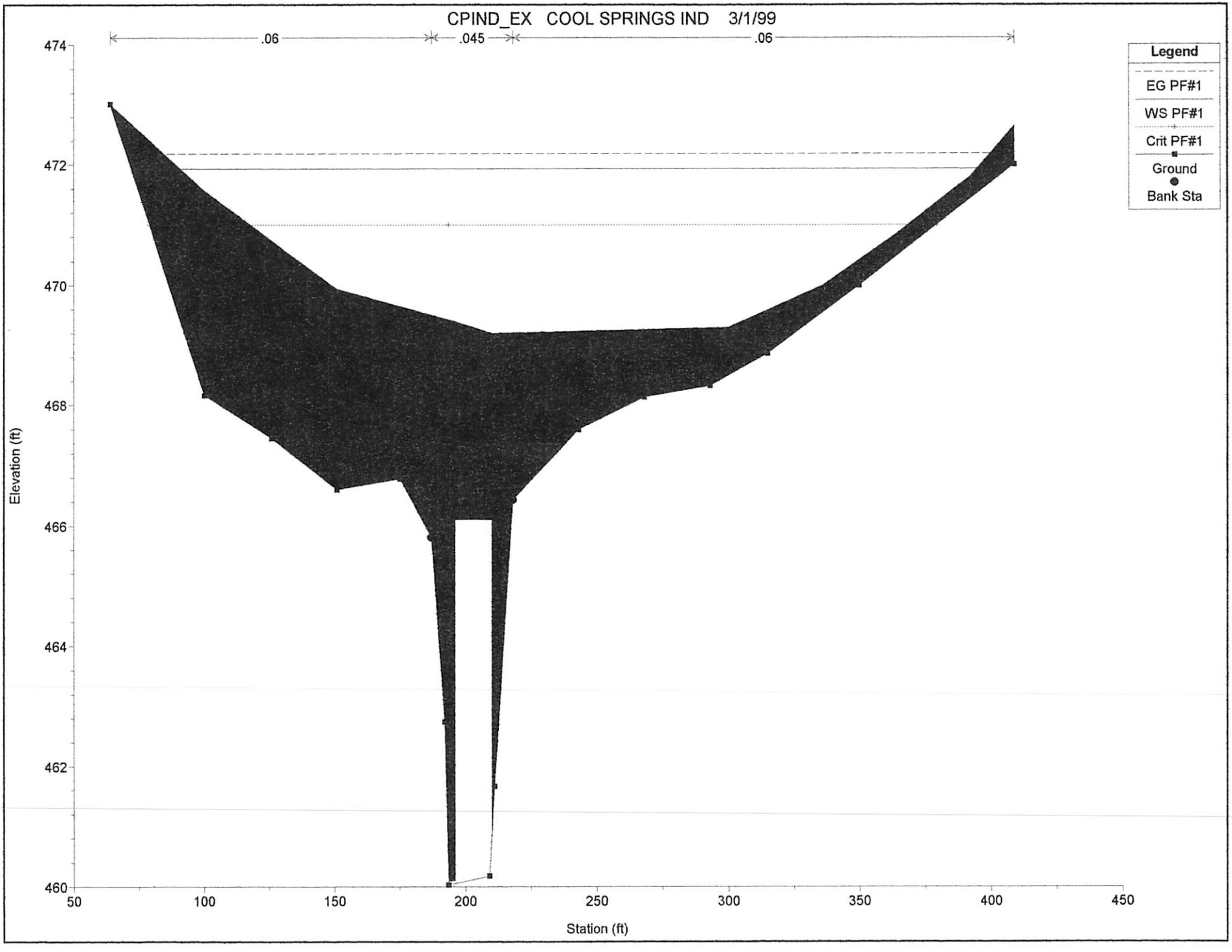
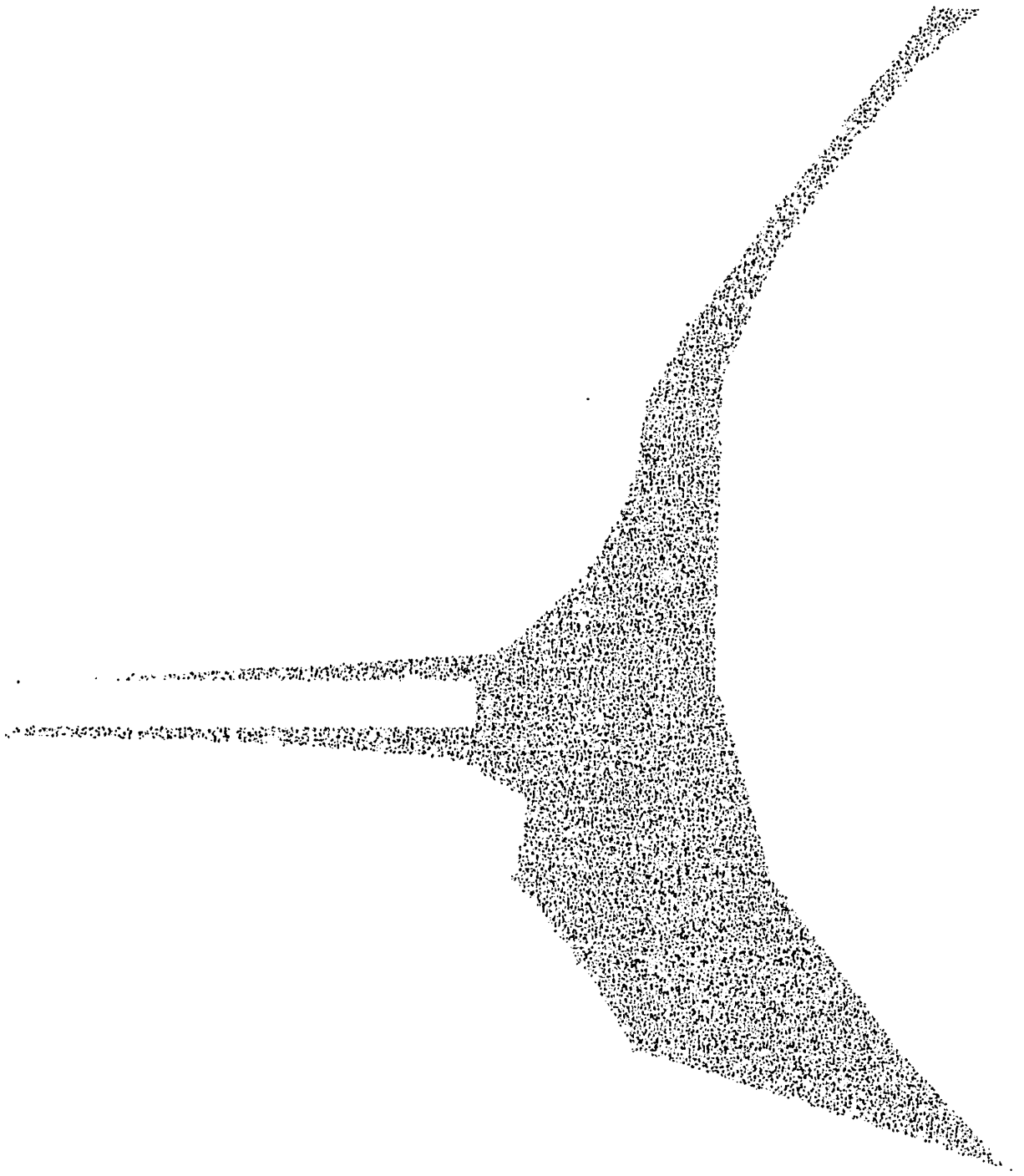
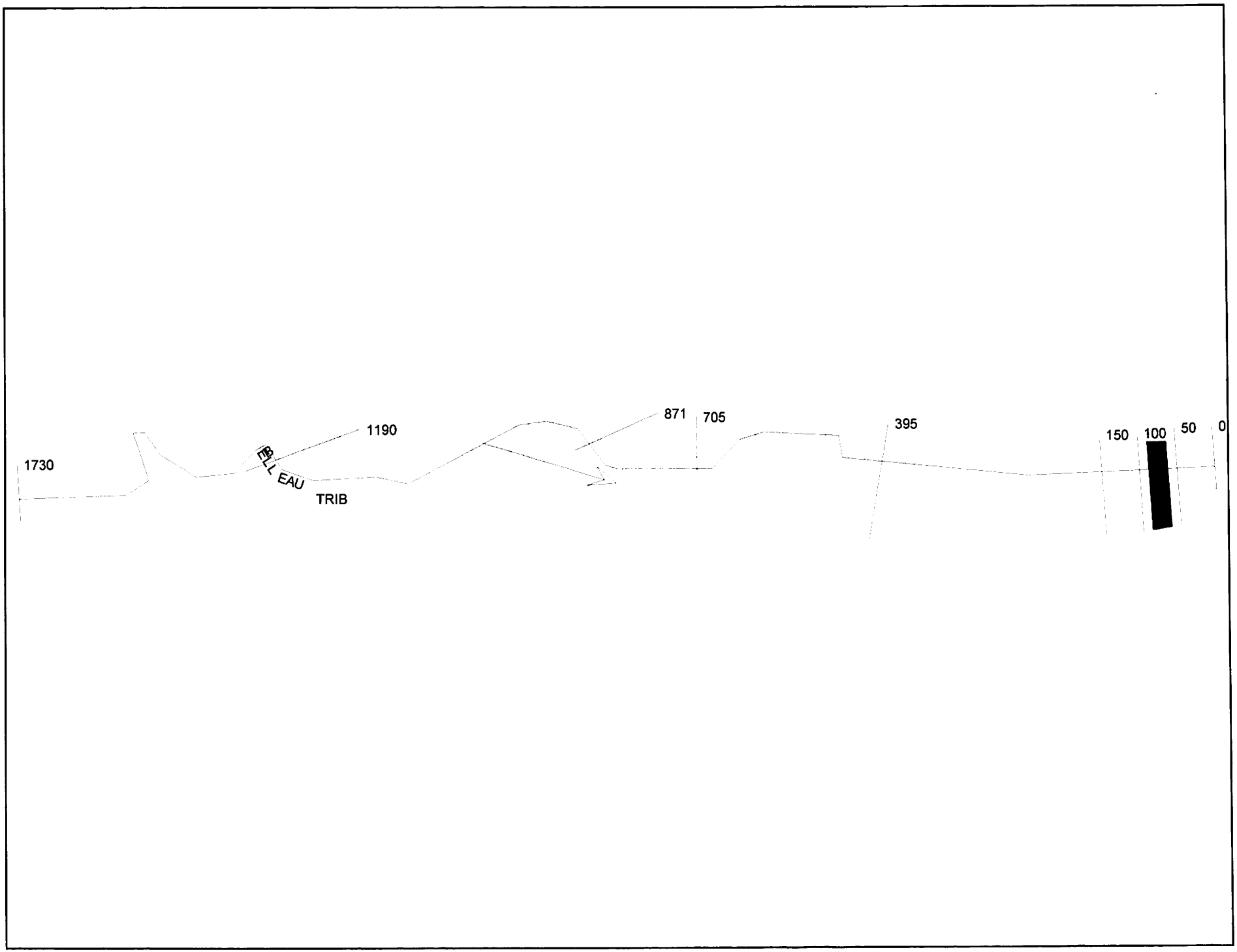
WEST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
474
472
470
468
466
464
462
460
50
100
150
200
250
300
350
400
450


CPIND_EX COOL SPRINGS IND 3/1/99
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
474
472
470
468
466
464
462
460
Elevation (ft)
50
100
150
200
250
300
350
400
450
Station (ft)

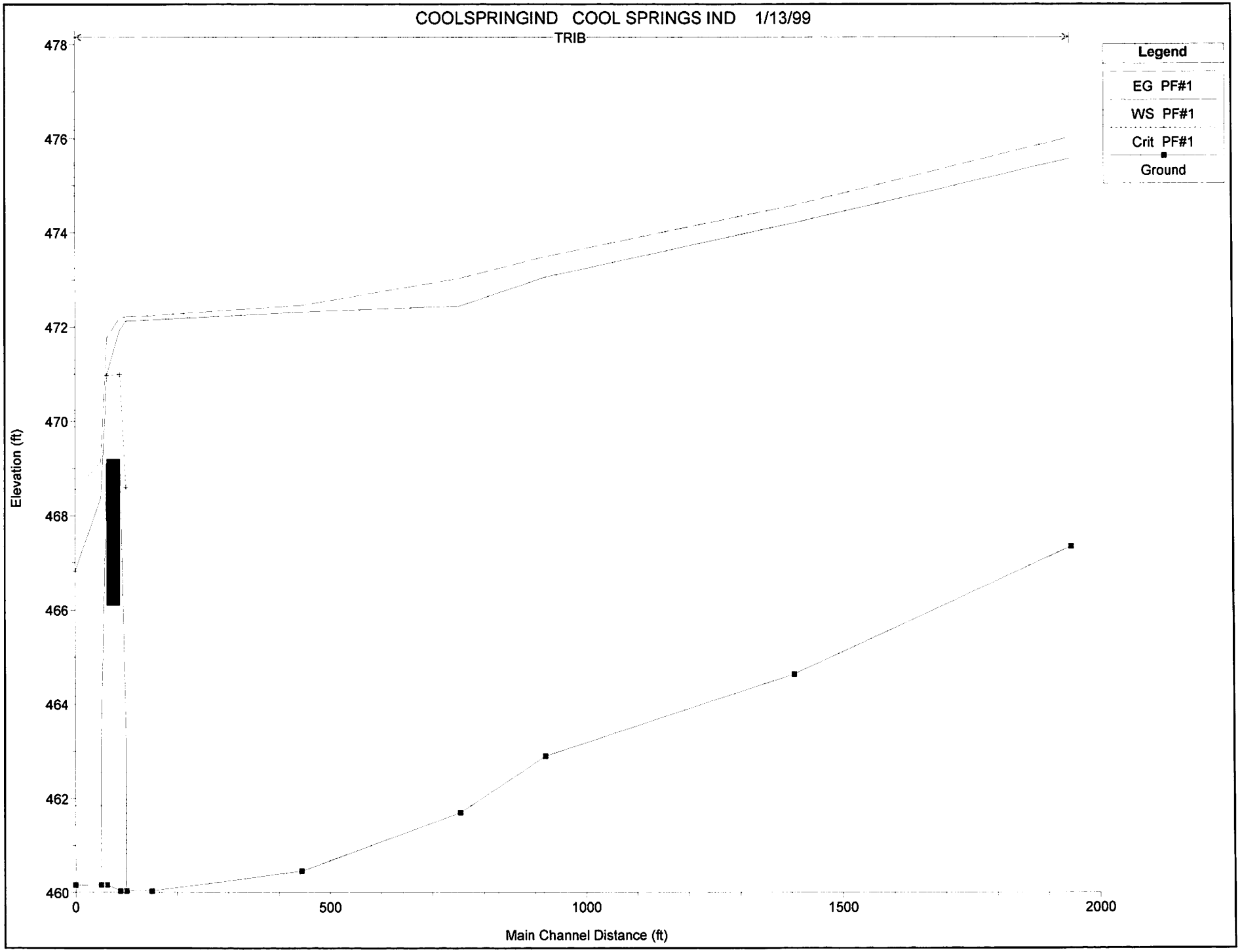


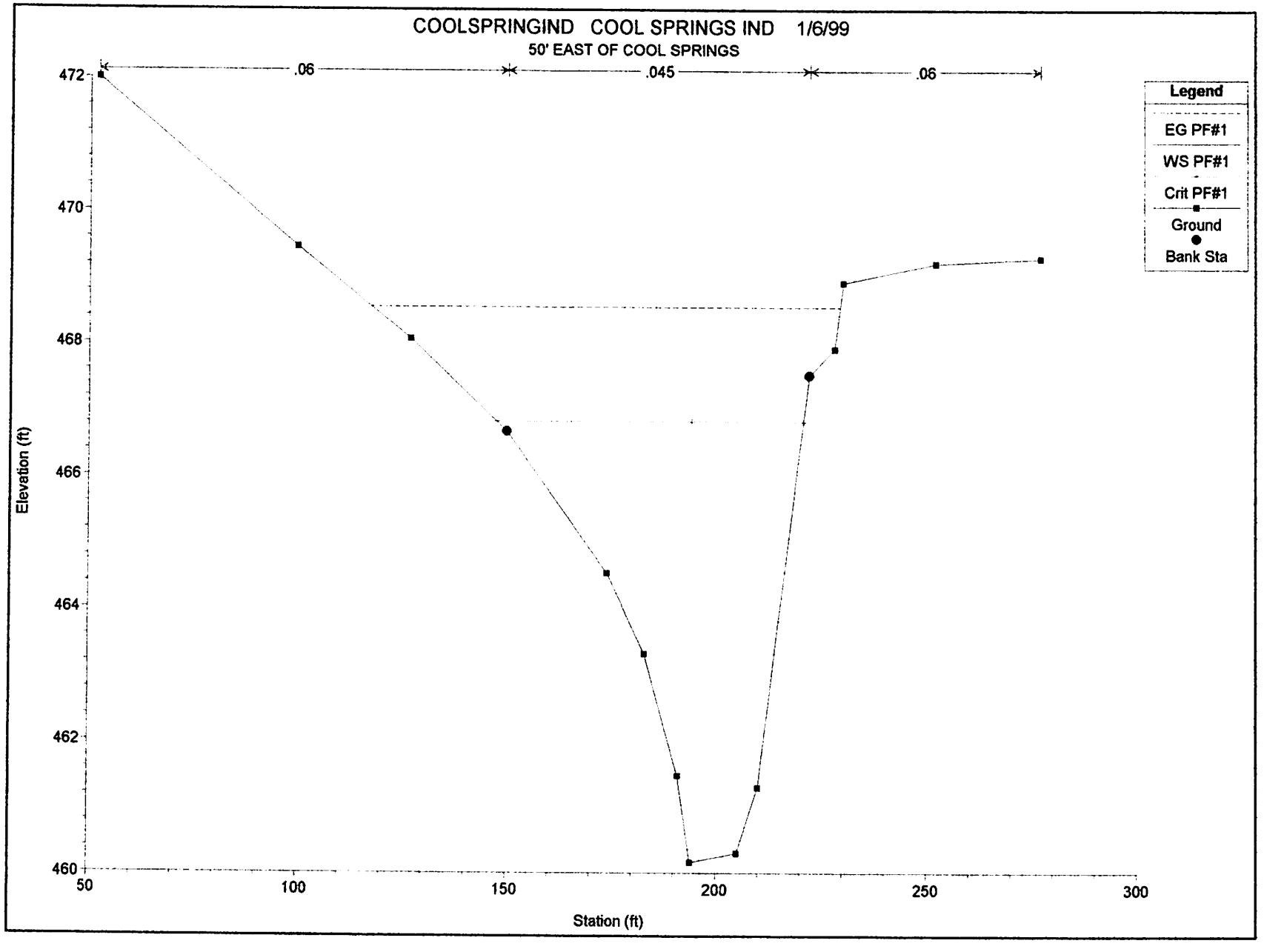
# FLOOD STUDY - PROPOSED

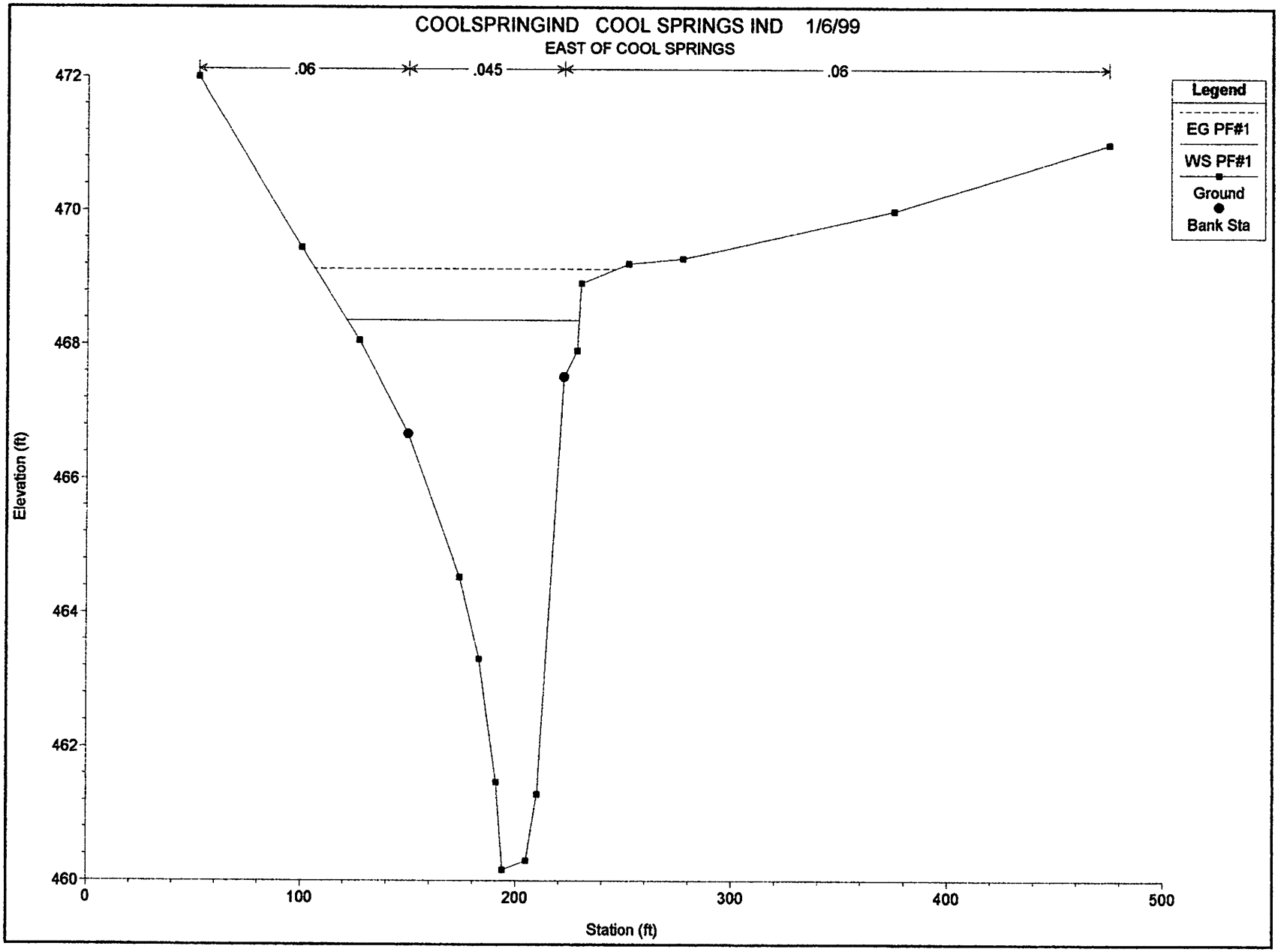


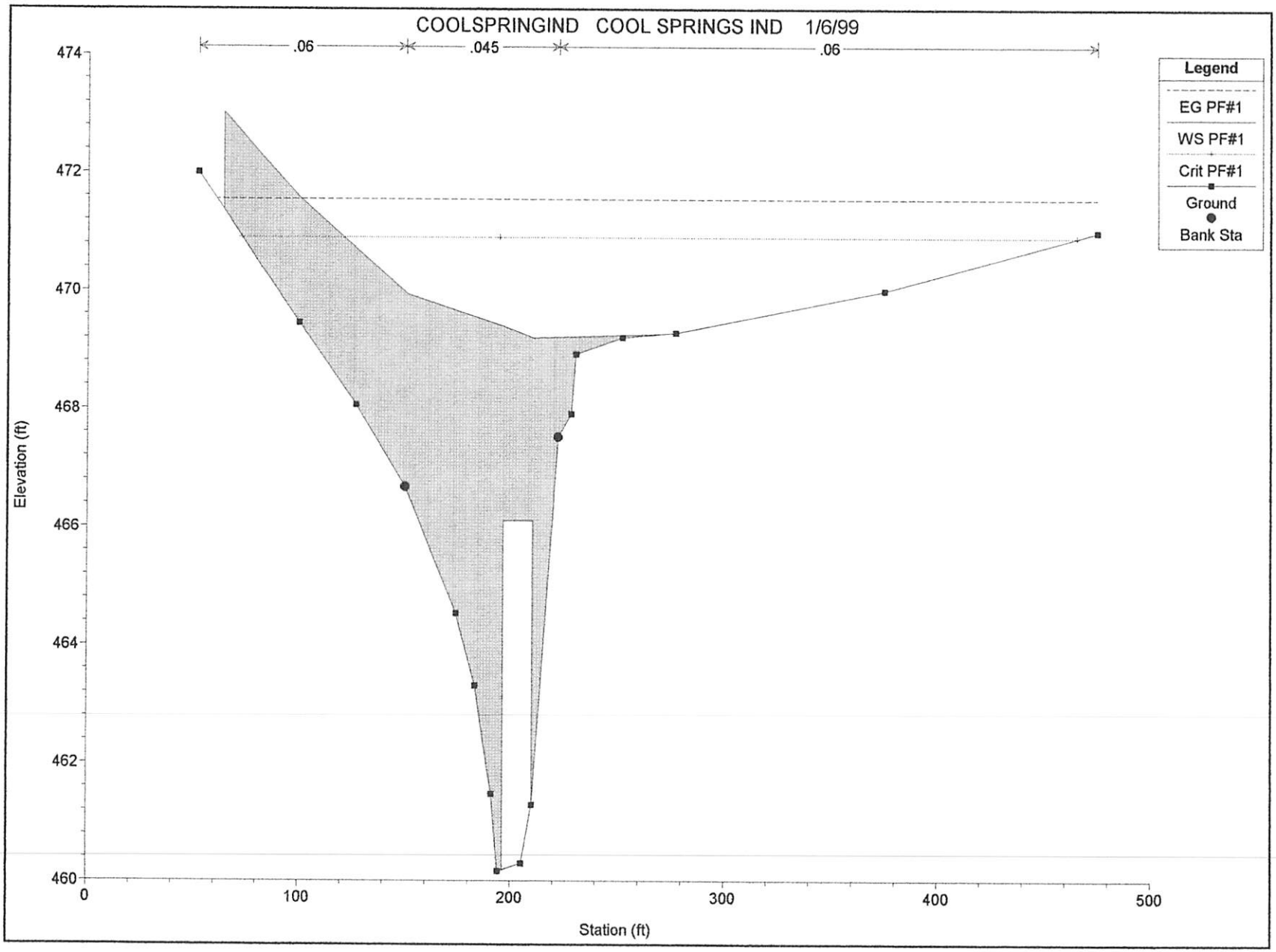
HEC-RAS Plan: CPIND River: BELLEAU Reach: TRIB

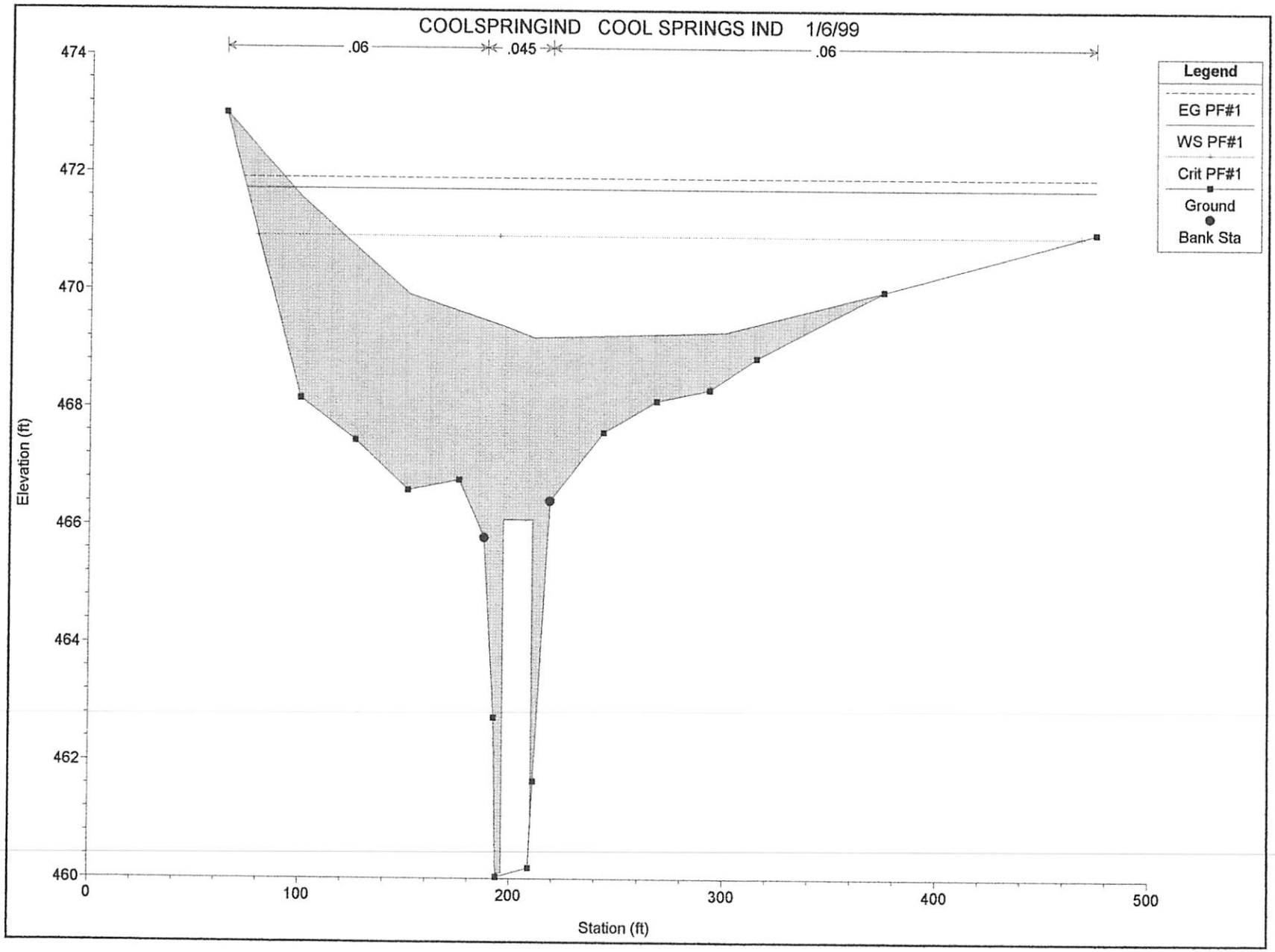
| Reach | River Sta | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| TRIB | 1730 | 2539.00 | 467.34 | 475.57 | | 476.02 | 0.003228 | 6.74 | 585.67 | 148.11 | 0.44 |
| TRIB | 1190 | 2539.00 | 464.64 | 474.20 | | 474.57 | 0.002127 | 5.77 | 624.08 | 130.71 | 0.36 |
| TRIB | 871 | 2539.00 | 462.90 | 473.05 | | 473.49 | 0.002365 | 6.02 | 565.16 | 119.45 | 0.38 |
| TRIB | 705 | 2539.00 | 461.70 | 472.44 | | 473.03 | 0.003079 | 6.89 | 507.84 | 117.65 | 0.43 |
| TRIB | 395 | 2539.00 | 460.46 | 472.32 | | 472.45 | 0.000782 | 3.44 | 1108.09 | 303.14 | 0.22 |
| TRIB | 150 | 2539.00 | 460.03 | 472.15 | | 472.25 | 0.000567 | 3.42 | 1357.94 | 325.08 | 0.19 |
| TRIB | 100 | 2539.00 | 460.03 | 472.13 | 468.60 | 472.22 | 0.000555 | 3.38 | 1390.10 | 338.38 | 0.19 |
| TRIB | 75 | Bridge | | | | | | | | | |
| TRIB | 50 | 2539.00 | 460.16 | 468.37 | | 469.14 | 0.005782 | 7.08 | 380.18 | 107.93 | 0.56 |
| TRIB | 0 | 2539.00 | 460.16 | 466.82 | 466.82 | 468.54 | 0.020699 | 10.55 | 240.88 | 73.08 | 1.01 |

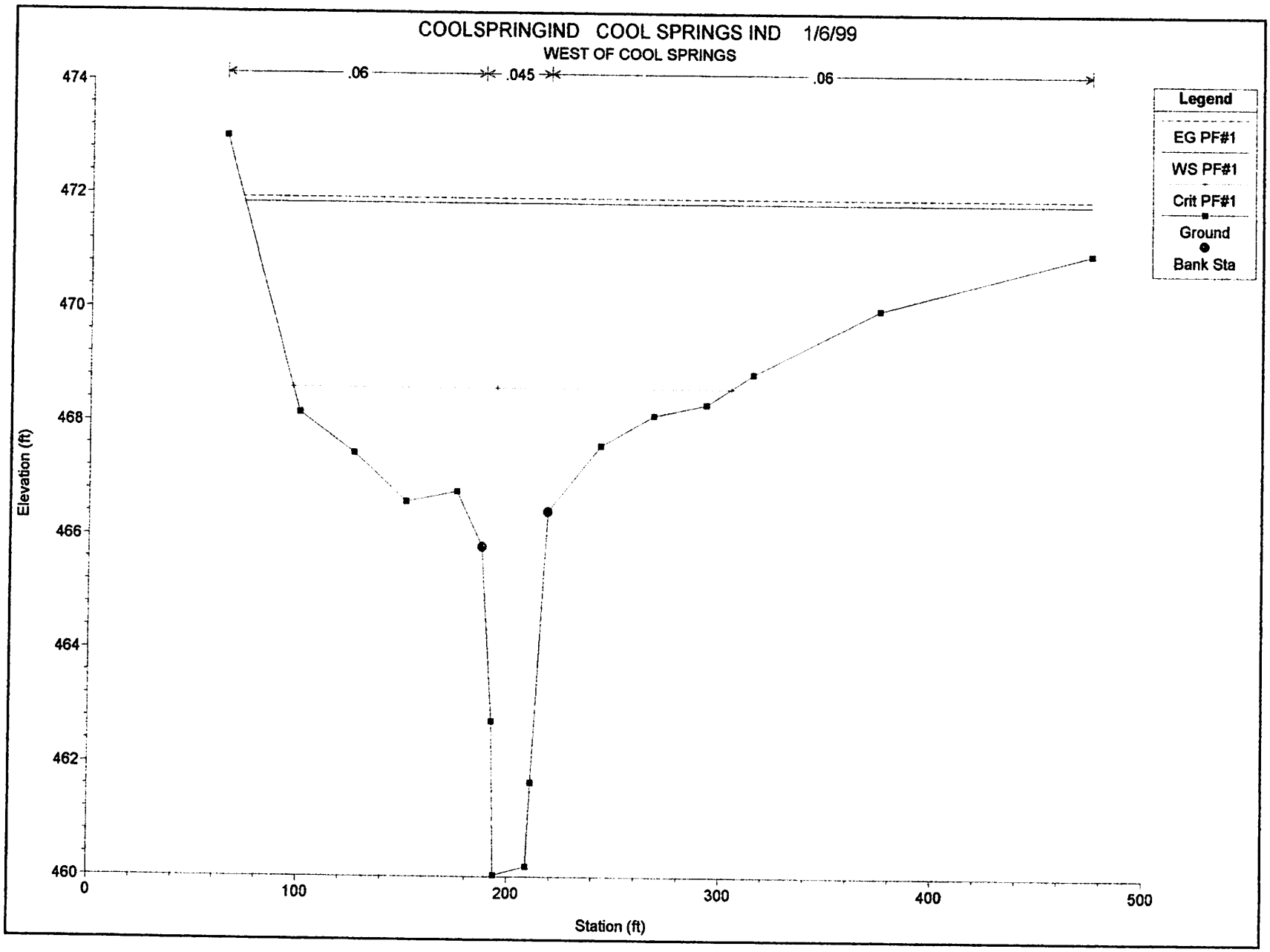

COOLSPRINGIND COOL SPRINGS IND 1/13/99
TRIB
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
478
476
474
472
470
468
466
464
462
460
Elevation (ft)
0
500
1000
1500
2000
Main Channel Distance (ft)

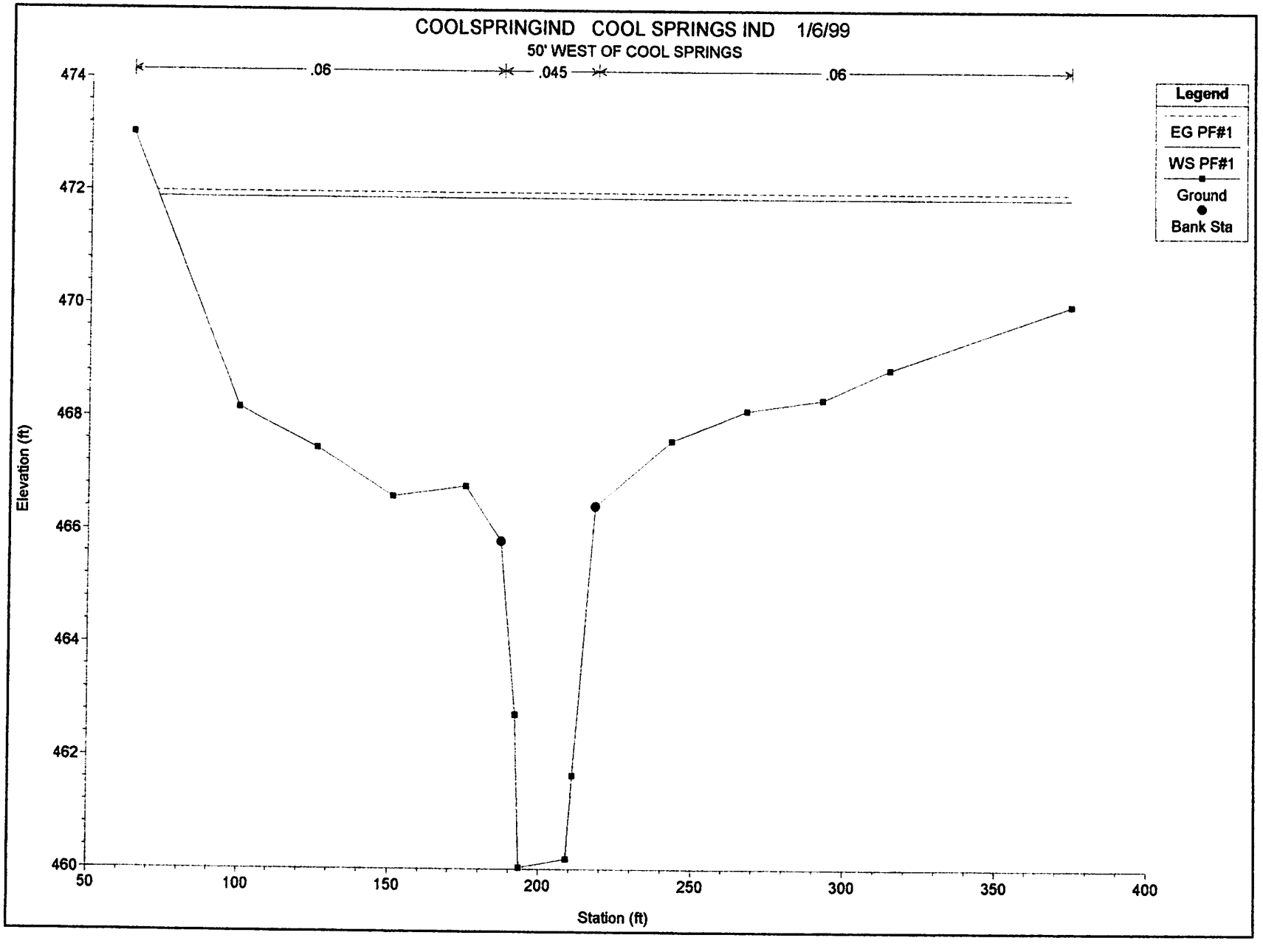

COOLSPRINGIND COOL SPRINGS IND 1/6/99
50' EAST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
Elevation (ft)
472
470
468
466
464
462
460
50
100
150
200
250
300
Station (ft)

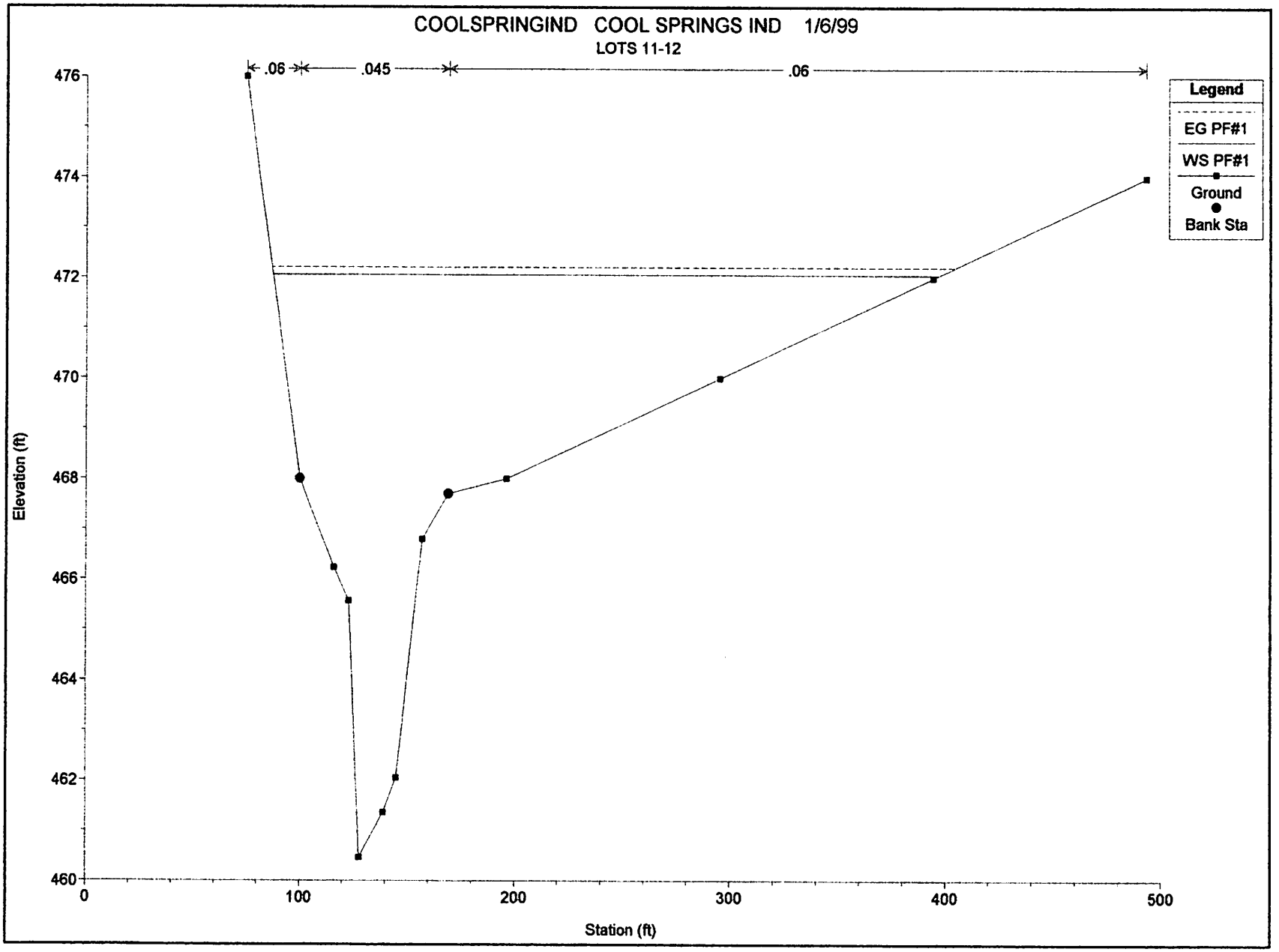

COOLSPRINGIND COOL SPRINGS IND 1/6/99
EAST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
Elevation (ft)
472
470
468
466
464
462
460
0
100
200
300
400
500
Station (ft)

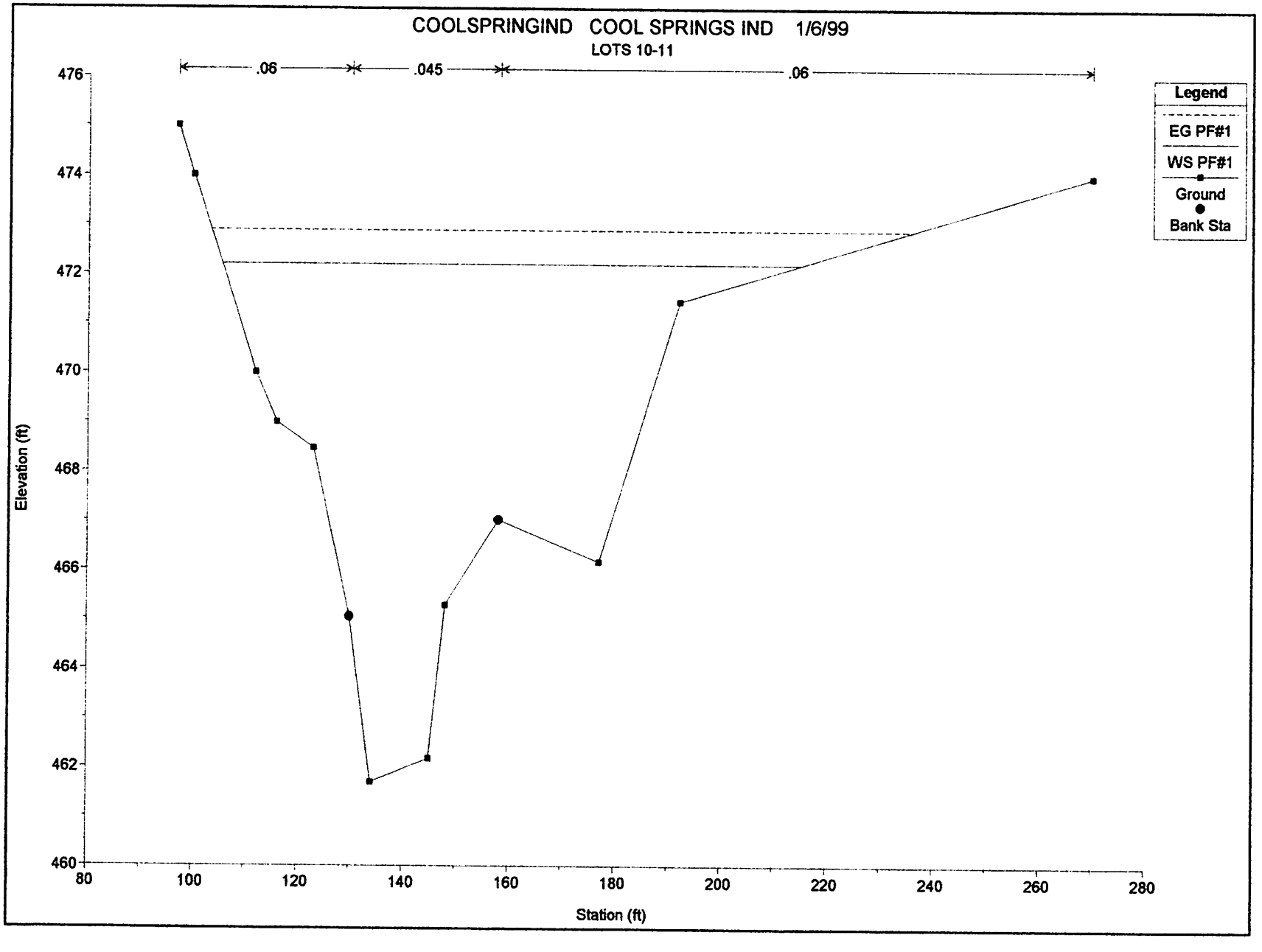

COOLSPRINGIND COOL SPRINGS IND 1/6/99
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
Elevation (ft)
474
472
470
468
466
464
462
460
0
100
200
300
400
500
Station (ft)

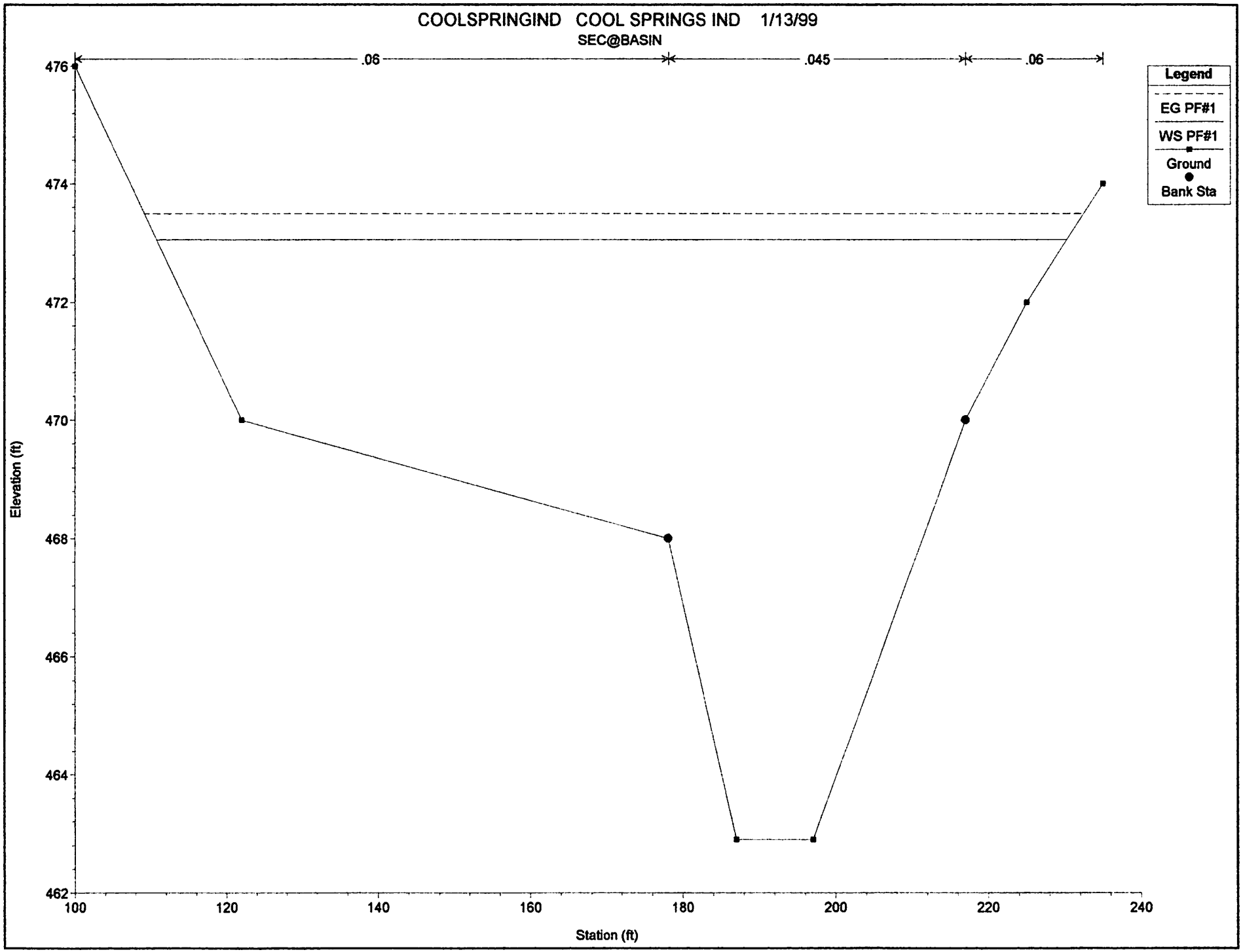

COOLSPRINGIND COOL SPRINGS IND 1/6/99
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
Elevation (ft)
474
472
470
468
466
464
462
460
0
100
200
300
400
500
Station (ft)

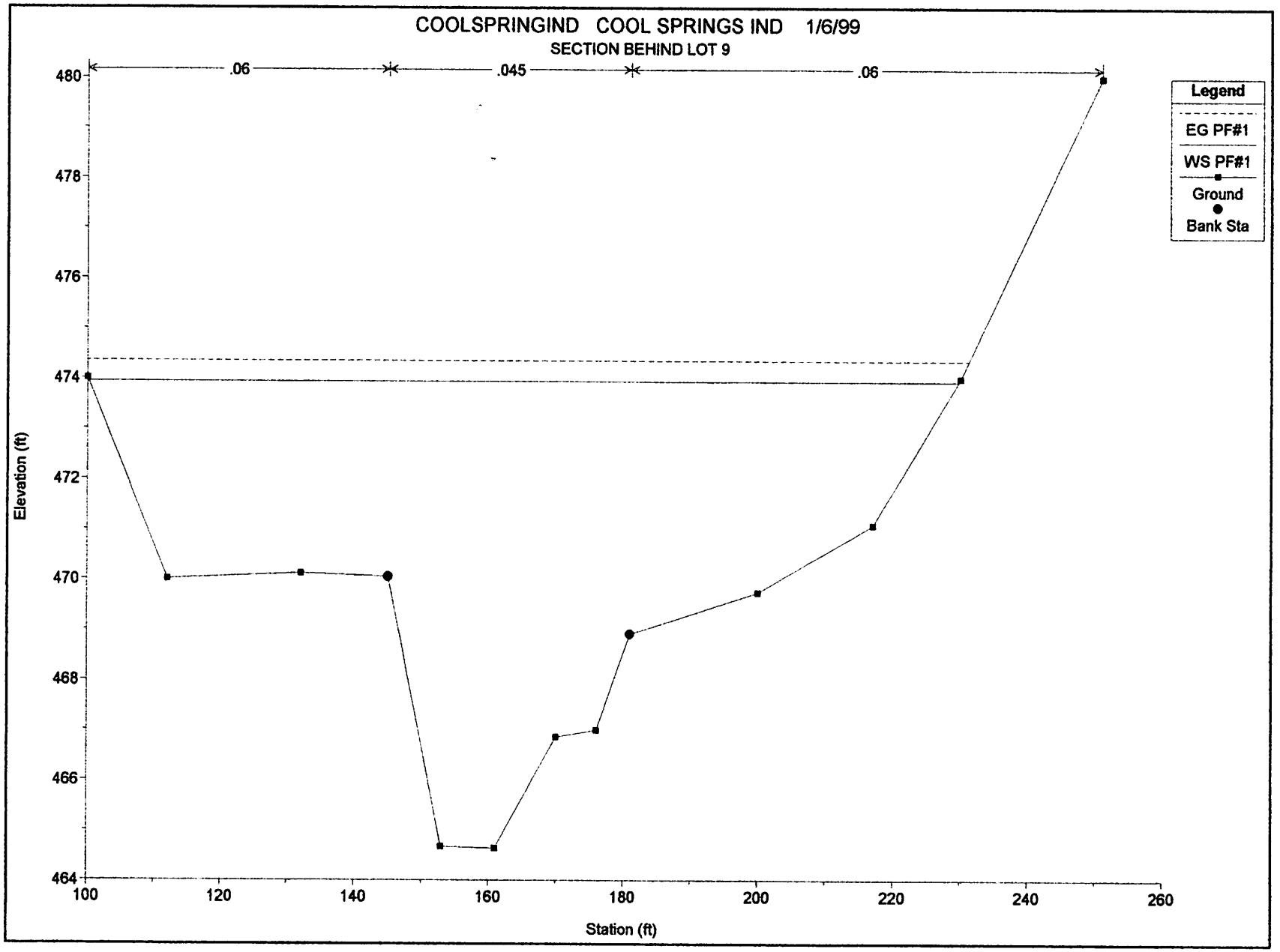

COOLSPRINGIND COOL SPRINGS IND 1/6/99
WEST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Crit PF#1
Ground
Bank Sta
Elevation (ft)
474
472
470
468
466
464
462
460
0
100
200
300
400
500
Station (ft)

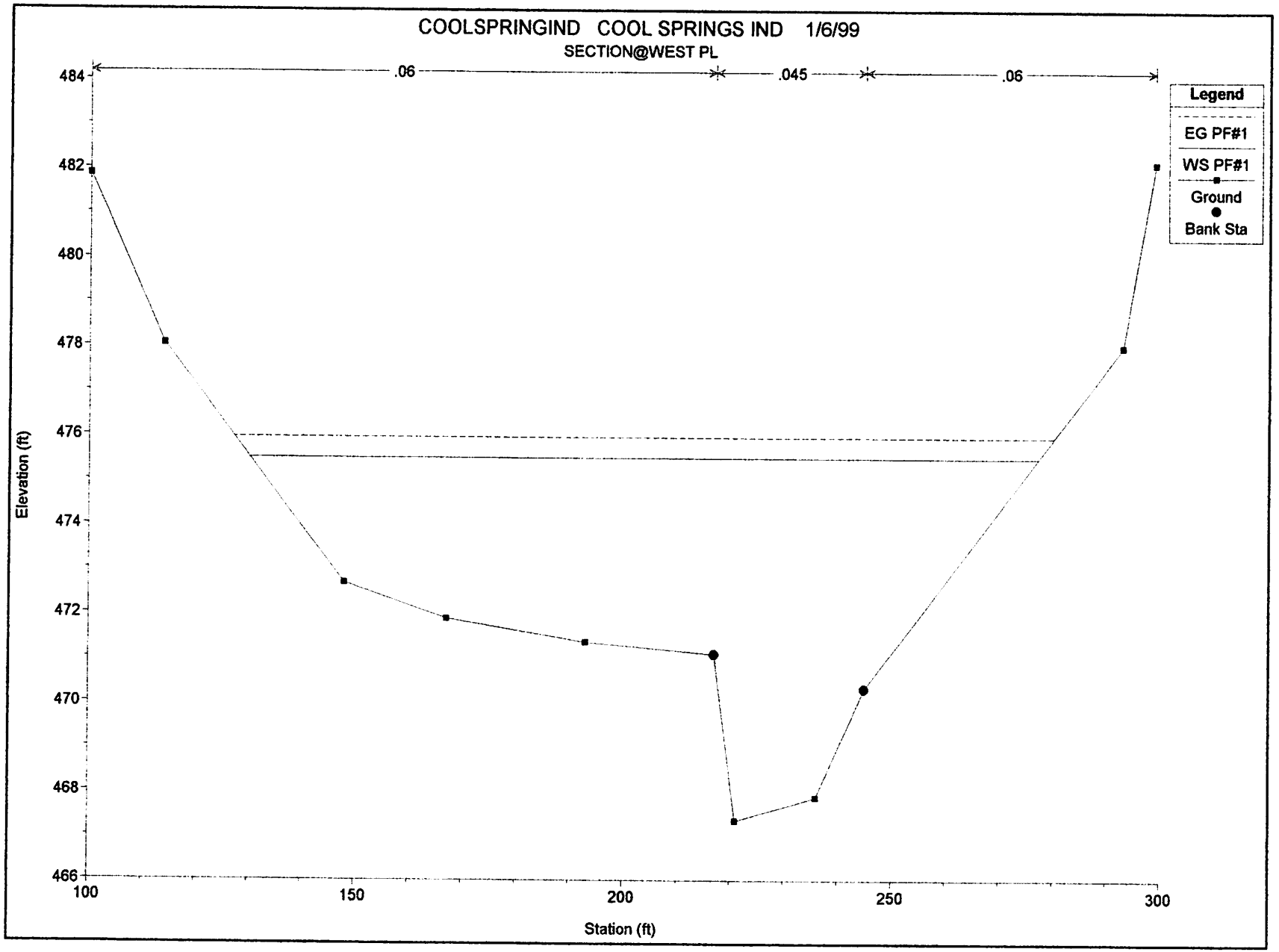

COOLSPRINGIND COOL SPRINGS IND 1/6/99
50' WEST OF COOL SPRINGS
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
Elevation (ft)
474
472
470
468
466
464
462
460
50
100
150
200
250
300
350
400
Station (ft)


COOLSPRINGIND COOL SPRINGS IND 1/6/99
LOTS 11-12
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
476
474
472
470
468
466
464
462
460
Elevation (ft)
0
100
200
300
400
500
Station (ft)


COOLSPRINGIND COOL SPRINGS IND 1/6/99
LOTS 10-11
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
Elevation (ft)
476
474
472
470
468
466
464
462
460
80
100
120
140
160
180
200
220
240
260
280
Station (ft)


COOLSPRINGIND COOL SPRINGS IND 1/13/99
SEC@BASIN
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
476
474
472
470
468
466
464
462
Elevation (ft)
100
120
140
160
180
200
220
240
Station (ft)


COOLSPRINGIND COOL SPRINGS IND 1/6/99
SECTION BEHIND LOT 9
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
Elevation (ft)
480
478
476
474
472
470
468
466
464
100
120
140
160
180
200
220
240
260
Station (ft)


COOLSPRINGIND COOL SPRINGS IND 1/6/99
SECTION@WEST PL
.06
.045
.06
Legend
EG PF#1
WS PF#1
Ground
Bank Sta
484
482
480
478
476
474
472
470
468
466
Elevation (ft)
100
150
200
250
300
Station (ft)