

**PRELIMINARY KANE COUNTY STORMWATER MANAGEMENT
FOR
PRAIRIE RIDGE NORTH
VILLAGE OF HAMPSHIRE, ILLINOIS**

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**PRELIMINARY KANE COUNTY STORMWATER MANAGEMENT
FOR
PRAIRIE RIDGE NORTH
VILLAGE OF HAMPSHIRE, ILLINOIS**

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**PRELIMINARY KANE COUNTY STORMWATER MANAGEMENT
FOR
PRAIRIE RIDGE NORTH
VILLAGE OF HAMPSHIRE, ILLINOIS**

I. PROJECT DESCRIPTION

The proposed Prairie Ridge North subdivision is located along the north of Kelley Road, south of Big Timber and Melms Road, west of Widmayer Road, and east of Walker Road straddling Harmony Road in the Village of Hampshire, Kane County, Illinois. The development totals approximately 945 Ac. and proposes to create 1,346 Single Family Lots and 641 Townhome Units. The proposed improvements will include the construction of sanitary sewers, watermains, stormwater drainage and conveyance facilities, and stormwater management facilities, which will be vegetatively stabilized for stormwater discharge control.

II. SPECIAL MANAGEMENT AREAS

During the Planning phase, the subject site was evaluated for the presence of Special Management Areas defined as regulatory floodplain, wetlands and riparian habitats. This evaluation consisted of an on-site inventory, wetland delineation and survey, and a detailed review of available Topographic, Wetland, and FEMA Maps. The following is a summary of the sources and procedures employed and findings from the Special Management Areas Review.

- **Floodplain** - According to the FEMA FIRM Panels No. 17089C 0107 J, No. 17089C 0020 J, and 17089C C0106J with an effective date of June 2, 2015 (see Tab 1E), there is Zone A floodplain running through the development via Hampshire Creek. CEMCON, Ltd. previously studied the Creek, and an updated drainage study has been provided with this report.

- **Wetlands and Riparian Habitats** – Hey and Associates, Inc. prepared a due diligence assessment of the site. Refer to the Wetland Report Under Separate Cover.

III. **EXISTING "WITHOUT-PROJECT" CONDITIONS**

A. **General**

To develop rainfall vs. runoff relationships for the development, the PondPack Program was utilized and employed the following methodology and procedures in determining the respective hydrologic and hydraulic parameters.

- **Runoff Curve Numbers** – The TR-55 Tables 2-2a (*urban areas*) and 2-2c (*agr. lands*), USDS NRCS Soil Map, and watershed land use data were utilized to calculate runoff curve numbers (*CN*) for input to the PondPack model. The soil hydrologic group is generally Class B. A $CN = 98$ was used for all impervious surfaces, and 61 was used for the open space. The *CN* documentation for the proposed Project site is provided in Tabs 2D.
- **Time of Concentration** - The time of concentration (T_c) was calculated using SCS TR-55 methodology. The T_c calculations were performed for flow paths representing the travel from the hydraulically most distant point of the watershed to the point of interest. Note that conservative estimates of the time of concentration were used for the preliminary proposed condition as final time of concentration calculations cannot be performed until final grading has been completed. The time of concentration documentation for the proposed Project site is provided in Tabs 2D.
- **Precipitation Data / Rainfall Distribution** - The new Illinois State Water Survey Bulletin 75 was used along with the appropriate Huff rainfall distribution to determine peak runoff rates for the watershed. The Northeast Illinois Region average rainfall depths were utilized for the watershed. Storage volumes were evaluated based on the 100-Year frequency 24-Hour duration event measuring 8.57 inches of precipitation.

- **Stage vs. Storage and Stage vs. Discharge Relationships** - Stage vs. storage relationships for the stormwater management facility were measured in AutoCAD at regular intervals corresponding to the level of potential inundation, and the volume was calculated by the method of average area times the incremental interval. Stage vs. discharge relationships were computed in PondPack inlet/outlet control equations with all possible headwater and tailwater combinations. Supporting documentation is provided in Tabs 2D.

B. Hydrologic Analysis

The subject site of 945± Ac. is primarily used for straight-row crop farming in the existing conditions, with several wooded areas - primarily around existing channels. In the south-westernmost parcel lies several dozen acres of wetlands. The entire site is tributary to the North Branch and the Central Branch of Hampshire Creek with the majority of the development tributary to the North Branch. There is a total of 871 acres of onsite area tributary to the proposed development plus another 1,815 acres of upstream offsite tributary area which totals 2,686 acres draining through the site to the North Branch of Hampshire Creek. There is another 74.37 acres of onsite area upstream of the Central Branch of Hampshire Creek. The majority of the of the North Tributary upstream offsite watershed is row crops with a few spartan farm structures and with one light industrial structure and its associated stormwater management at the very upstream end of the development. The overall development was evaluated for containing depression storage with the best available information (ground topography for some limited areas and aerial topography for the majority of the development). With the information available, there does not appear to be any depression areas that will be filled in as part of the development and thereby would require mitigation in accordance with the Kane County Stormwater Ordinance. Refer to Tab 2A for the Existing Conditions Watershed Exhibit and to the proposed conditions section for a summary of peak flows with a comparison to the proposed conditions.

C. Hydraulic Analysis

The majority of Hampshire Creek was previously modeled and mapped however the proposed development will include a significant amount of development area within the North Branch; therefore, revised hydraulics of the North Branch with updated peak flows

developed using the latest Bulletin 75 rainfall data has been included with this report. The HEC-RAS effective model was used to update the floodplain water surface elevations (see Tab 3C for the Existing Conditions Model). Generally, only the flows were updated in the model. The current FIS Water Surface Elevations (WSEs) were used as the downstream boundary condition. Refer to Tab 3A for the Floodplain Exhibit, Tab 3B for the FIS Data and Tab 3C for the complete HEC-RAS Model. Table 1 provides a summary of the 10-Year and 100-Year Water Surface Elevations.

TABLE 1
NORTH BRANCH OF HAMPSHIRE CREEK WSEL SUMMARY

Section	FIS ID	10-Year WSE	100-Year WSE
311+45	A	836.8	838.6
317+75	B	838.7	839.3
327+75	C	840.5	841.1
331+15	D	840.8	841.5
337+90	E	843.4	844.0
347+90	F	845.2	846.0
351+10	G	845.9	846.5
361+60	H	847.5	848.2
364+80	I	847.7	848.5
368+50	J	848.5	849.3
374+55	K	850.4	851.1
382+84	L	855.5	856.9
385+00	M	856.3	857.9
390+85	N	860.0	860.8
393+65	O	860.8	861.4
396+65	P	862.3	863.0
398+85	Q	863.0	863.7
402+80	R	864.1	864.7
406+60	S	866.7	867.4
412+60	T	867.3	868.8
417+00	U	870.5	871.3
423+10	V	871.2	872.1
429+30	W	873.9	874.5
432+40	X	875.9	877.0

IV. PROPOSED CONDITIONS AND STORMWATER MANAGEMENT SYSTEMS

A. General

The Ordinance states that "sufficient storage shall be provided such that the probability of the post development release rate exceeding 0.1 cfs/acre of development shall be less than one percent (1.0%) per year. Design runoff volumes shall be calculated using continuous simulation or event hydrograph methods".

To develop rainfall vs. runoff relationships for the development, the PondPack Program was utilized and employed the following methodology and procedures in determining the respective hydrologic and hydraulic parameters similarly to the existing conditions. Refer to Tab 2H for the proposed conditions parameters.

B. Proposed Conditions Hydrologic Analysis

As shown in the Proposed Condition Watershed Exhibit in Tab 2E, the proposed development will provide full stormwater management via stormwater sewer, retention ponds, and overland flood routes. There are a total of seventeen (17) new stormwater management facilities proposed as well as two (2) additional facilities previously constructed (SWMF 15 and 17) that will be updated as part of this development. Many of the facilities are designed to function together and will need to be constructed concurrently. The following Table 2 is a summary of each stormwater facility groups, Table 3 summarizes allowable release calculations for each group and Table 4 provides a peak flow comparison between existing and proposed conditions.

TABLE 2
SUMMARY OF STORMWATER MANAGEMENT FACILITIES

Facility Group	Location	Onsite Area (Ac.)	By-Pass Area (Ac.)
SWMF 1	North-West Park	54.71	0.0
SWMF 2 & 3	NW Single Family North of North Br.	55.22	0.0
SWMF 4, 5 & 6	NW Single Family S of North Br.	106.00	3.98
SWMF 7	NW Single Family S of North Br.	46.00	0.0
SWMF 8	NE Single Family S of Big Timber	43.26	156.40
SWMF 9, 10 & 11	E Central Single and Multi-Family	114.92	203.41
SWMF 12, 13 & 14	SW Single and Multi-Family	216.1	102.15*
SWMF 15 & 16	SE Single Family	80.50	21.65
17	SE Single Family	32.78	0.0
18	E Central Multi-Family	8.90	0.0
19	E Central Multi-Family	6.30	0.0

* Includes onsite areas for SWMF 15 and 16 as they will be constructed separately from SWMF 12-14.

**TABLE 3
ALLOWABLE RELEASE CALCULATIONS**

SWMF 1							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	54.71	54.71	54.71	54.71	54.71	54.71	54.71
Onsite Allow. Release (cfs):	5.47	5.47	5.47	5.47	5.47	5.47	5.47
Proposed Release (cfs):	2.27	2.88	3.16	3.60	4.00	4.25	4.37
SWMF 2 and 3							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	55.22	55.22	55.22	55.22	55.22	55.22	55.22
Onsite Allow. Release (cfs):	5.52	5.52	5.52	5.52	5.52	5.52	5.52
Proposed Release (cfs):	2.74	3.34	3.63	4.03	4.40	4.63	4.71
SWMF 4, 5 and 6							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	106.00	106.00	106.00	106.00	106.00	106.00	106.00
Onsite Allow. Release (cfs):	10.6	10.6	10.6	10.6	10.6	10.6	10.6
By-Pass Flow Total (cfs):	6.27	6.48	5.82	4.23	3.10	2.70	2.22
Allow. Plus By-Pass (cfs):	16.87	17.08	16.42	14.83	13.70	13.30	12.82
Proposed Release (cfs):	6.59	7.84	8.42	9.28	10.08	10.55	10.78
SWMF 7							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	46.00	46.00	46.00	46.00	46.00	46.00	46.00
Onsite Allow. Release (cfs):	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Proposed Release (cfs):	0.09	0.10	0.11	0.12	0.13	0.13	0.14
SWMF 8							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	43.26	43.26	43.26	43.26	43.26	43.26	43.26
Onsite Allow. Release (cfs):	4.33	4.33	4.33	4.33	4.33	4.33	4.33
By-Pass Flow Total (cfs):	245.89	254.33	243.40	204.73	150.48	124.17	101.43
Allow. Plus By-Pass (cfs):	250.22	258.66	247.73	209.06	154.81	128.50	105.76
Proposed Release (cfs):	87.97	109.18	118.72	111.74	127.86	124.83	104.93
SWMF 9, 10 and 11							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	114.92	114.92	114.92	114.92	114.92	114.92	114.92
Onsite Allow. Release (cfs):	11.49	11.49	11.49	11.49	11.49	11.49	11.49
By-Pass Flow Total (cfs):	363.49	374.10	353.66	289.38	211.91	175.40	143.36
Allow. Plus By-Pass (cfs):	374.98	385.59	365.15	300.87	223.40	186.89	154.85
Proposed Release (cfs):	54.11	99.09	116.88	129.44	144.66	152.58	145.84

SWMF 12, 13 and 14							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Onsite Allow. Release (cfs):	216.1	216.1	216.1	216.1	216.1	216.1	216.1
By-Pass Flow Total (cfs):	7.0	9.3	10.3	12.0	13.6	14.4	14.9
Allow. Plus By-Pass (cfs):	28.60	30.92	31.91	33.61	35.19	36.03	36.55
Proposed Release (cfs):	10.61	16.43	19.31	22.89	26.17	28.16	29.61
SWMF 15 and 16							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	80.50	80.50	80.50	80.50	80.50	80.50	80.50
Onsite Allow. Release (cfs):	8.05	8.05	8.05	8.05	8.05	8.05	8.05
By-Pass Flow Total (cfs):	40.33	40.33	37.91	29.49	20.79	17.09	13.94
Allow. Plus By-Pass (cfs):	48.38	48.38	45.96	37.54	28.84	25.14	21.99
Proposed Release (cfs):	6.99	9.31	10.31	12.00	13.58	14.42	14.94
SWMF 17							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	32.78	32.78	32.78	32.78	32.78	32.78	32.78
Onsite Allow. Release (cfs):	3.28	3.28	3.28	3.28	3.28	3.28	3.28
Proposed Release (cfs):	1.95	2.34	2.52	2.78	3.02	3.16	3.22
SWMF 18							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Development Area (Ac.):	8.90	8.90	8.90	8.90	8.90	8.90	8.90
Onsite Allow. Release (cfs):	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Proposed Release (cfs):	0.57	0.66	0.69	0.75	0.81	0.83	0.84
SWMF 19							
100YR Storm:	1	2	3	6	12	18	24
Allow. Release Rate (cfs/Ac.):	0.10	0.10	0.10	0.10	0.10	0.10	0.10
By-Pass Flow Total (cfs):	6.30	6.30	6.30	6.30	6.30	6.30	6.30
Onsite Allow. Release (cfs):	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Proposed Release (cfs):	0.39	0.45	0.48	0.52	0.56	0.58	0.59

**TABLE 4
EXISTING VS PROPOSED PEAK FLOWS**

Central Branch (PondPack Node "Central Branch")							
100YR Storm:	1	2	3	6	12	18	24
Exist Peak Flow (cfs):	111.76	112.82	106.82	85.03	62.09	53.13	43.65
Prop Peak Flow (cfs):	1.95	2.34	2.52	2.78	3.02	3.16	3.22
North Branch Upstream of Harmony Road (PondPack Node "31 (OUT)")							
100YR Storm:	1	2	3	6	12	18	24
Exist Peak Flow (cfs):	806.24	1,054.19	1,080.33	1,044.05	1,058.69	967.94	835.64
Prop Peak Flow (cfs):	581.01	759.00	778.55	690.34	760.65	870.81	680.83
North Branch Downstream End (PondPack Node "North Branch")							
100YR Storm:	1	2	3	6	12	18	24
Exist Peak Flow (cfs):	1,675.78	1,805.92	1,809.89	1,773.65	1,741.94	1,695.66	1,592.61
Prop Peak Flow (cfs):	1,050.38	1,332.23	1,377.67	1,255.68	1,293.04	1,275.11	1,110.70

V. CONCLUSIONS

The Preliminary Engineering Plans and this Stormwater Management Report demonstrate that the proposed overall Prairie Ridge North meets or exceeds the Village of Hampshire and Kane County Stormwater Management Ordinances. Additionally, since flows through the site would be attenuated once improvements are constructed, the total site release rate will be significantly reduced. This reduces current impacts on downstream systems, thus improving upon the current "without project" condition.

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TAB 1

PROJECT OVERVIEW

TAB 1A

**STORMWATER PERMIT APPLICATION
(TO BE SUBMITTED WITH FINAL REPORT)**

TAB 1B

RELEVANT PERMITS

(TO BE SUBMITTED WITH FINAL REPORT)

TAB 1C


PROJECT LOCATION MAP

TAB 1D

KANE COUNTY SOILS MAP

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils





 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features





-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kane County, Illinois
 Survey Area Data: Version 16, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 3, 2011—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	7.7	0.2%
59B	Lisbon silt loam, 2 to 4 percent slopes	11.3	0.3%
62A	Herbert silt loam, 0 to 2 percent slopes	18.3	0.5%
67A	Harpster silty clay loam, 0 to 2 percent slopes	87.6	2.3%
103A	Houghton muck, 0 to 2 percent slopes	117.8	3.1%
149A	Brenton silt loam, 0 to 2 percent slopes	48.0	1.3%
152A	Drummer silty clay loam, 0 to 2 percent slopes	352.9	9.2%
193A	Mayville silt loam, 0 to 2 percent slopes	1.7	0.0%
193B	Mayville silt loam, 2 to 5 percent slopes	0.7	0.0%
198A	Elburn silt loam, 0 to 2 percent slopes	199.2	5.2%
210A	Lena muck, 0 to 2 percent slopes	165.9	4.3%
290A	Warsaw loam, 0 to 2 percent slopes	162.6	4.3%
290B	Warsaw loam, 2 to 4 percent slopes	114.4	3.0%
318A	Lorenzo loam, 0 to 2 percent slopes	95.4	2.5%
318B	Lorenzo loam, 2 to 4 percent slopes	161.1	4.2%
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded	27.8	0.7%
323C2	Casco loam, 4 to 6 percent slopes, eroded	29.6	0.8%
325B	Dresden silt loam, 2 to 4 percent slopes	27.9	0.7%
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded	66.4	1.7%
327B	Fox silt loam, 2 to 4 percent slopes	20.4	0.5%
329A	Will loam, 0 to 2 percent slopes	199.2	5.2%
330A	Peotone silty clay loam, 0 to 2 percent slopes	4.4	0.1%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
343A	Kane silt loam, 0 to 2 percent slopes	150.4	3.9%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	5.3	0.1%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	77.4	2.0%
369A	Waupecan silt loam, 0 to 2 percent slopes	163.1	4.3%
369B	Waupecan silt loam, 2 to 4 percent slopes	55.9	1.5%
488A	Hooppole loam, 0 to 2 percent slopes	377.0	9.9%
512B	Danabrook silt loam, 2 to 5 percent slopes	12.8	0.3%
523A	Dunham silty clay loam, 0 to 2 percent slopes	116.2	3.0%
527B	Kidami silt loam, 2 to 4 percent slopes	100.5	2.6%
527C2	Kidami loam, 4 to 6 percent slopes, eroded	187.0	4.9%
527D2	Kidami loam, 6 to 12 percent slopes, eroded	4.3	0.1%
527D3	Kidami clay loam, 6 to 12 percent slopes, severely eroded	4.7	0.1%
570B	Martinsville silt loam, 2 to 4 percent slopes	280.2	7.3%
570C2	Martinsville silt loam, 4 to 6 percent slopes, eroded	2.2	0.1%
656B	Octagon silt loam, 2 to 4 percent slopes	65.5	1.7%
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded	62.1	1.6%
662B	Barony silt loam, 2 to 5 percent slopes	1.6	0.0%
663A	Clare silt loam, 0 to 2 percent slopes	12.4	0.3%
663B	Clare silt loam, 2 to 5 percent slopes	14.9	0.4%
679A	Blackberry silt loam, 0 to 2 percent slopes	126.5	3.3%
679B	Blackberry silt loam, 2 to 5 percent slopes	41.3	1.1%
802B	Orthents, loamy, 1 to 6 percent slopes	4.1	0.1%
865	Pits, gravel	29.0	0.8%
W	Water	5.4	0.1%
Totals for Area of Interest		3,820.5	100.0%

TAB 1E

FLOOD INSURANCE RATE MAP PANELS

FIRM
FLOOD INSURANCE RATE MAP
KANE COUNTY,
ILLINOIS
AND INCORPORATED AREAS

PANEL 20 OF 410
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

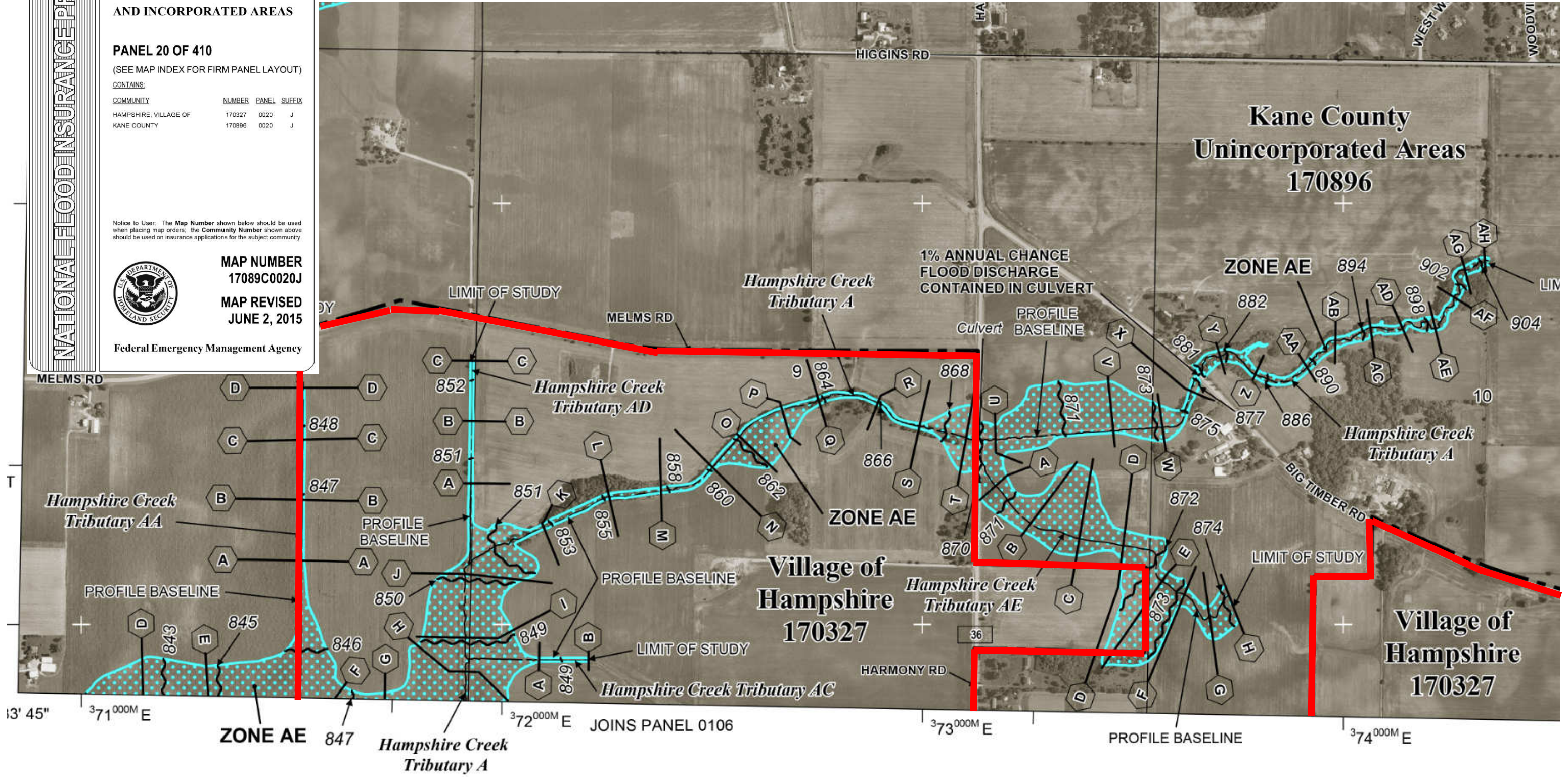
COMMUNITY	NUMBER	PANEL	SUFFIX
HAMPSHIRE, VILLAGE OF	170327	0020	J
KANE COUNTY	170896	0020	J

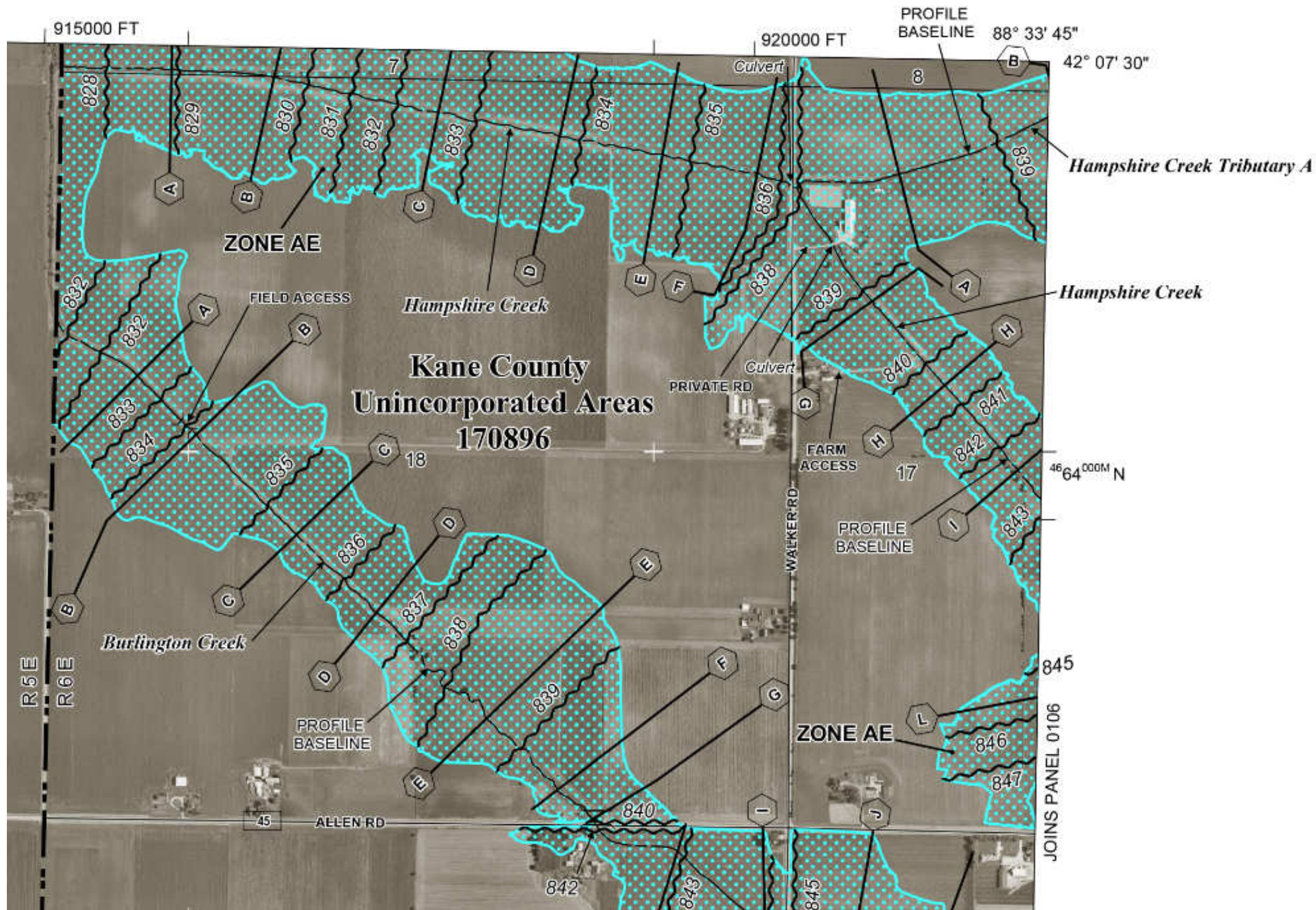
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
 17089C0020J
MAP REVISED
 JUNE 2, 2015

Federal Emergency Management Agency





NFIP

PANEL 0105J

FIRM
FLOOD INSURANCE RATE MAP
KANE COUNTY,
ILLINOIS
AND INCORPORATED AREAS

PANEL 105 OF 410

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BURLINGTON, VILLAGE OF	171077	0105	J
KANE COUNTY	170896	0105	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

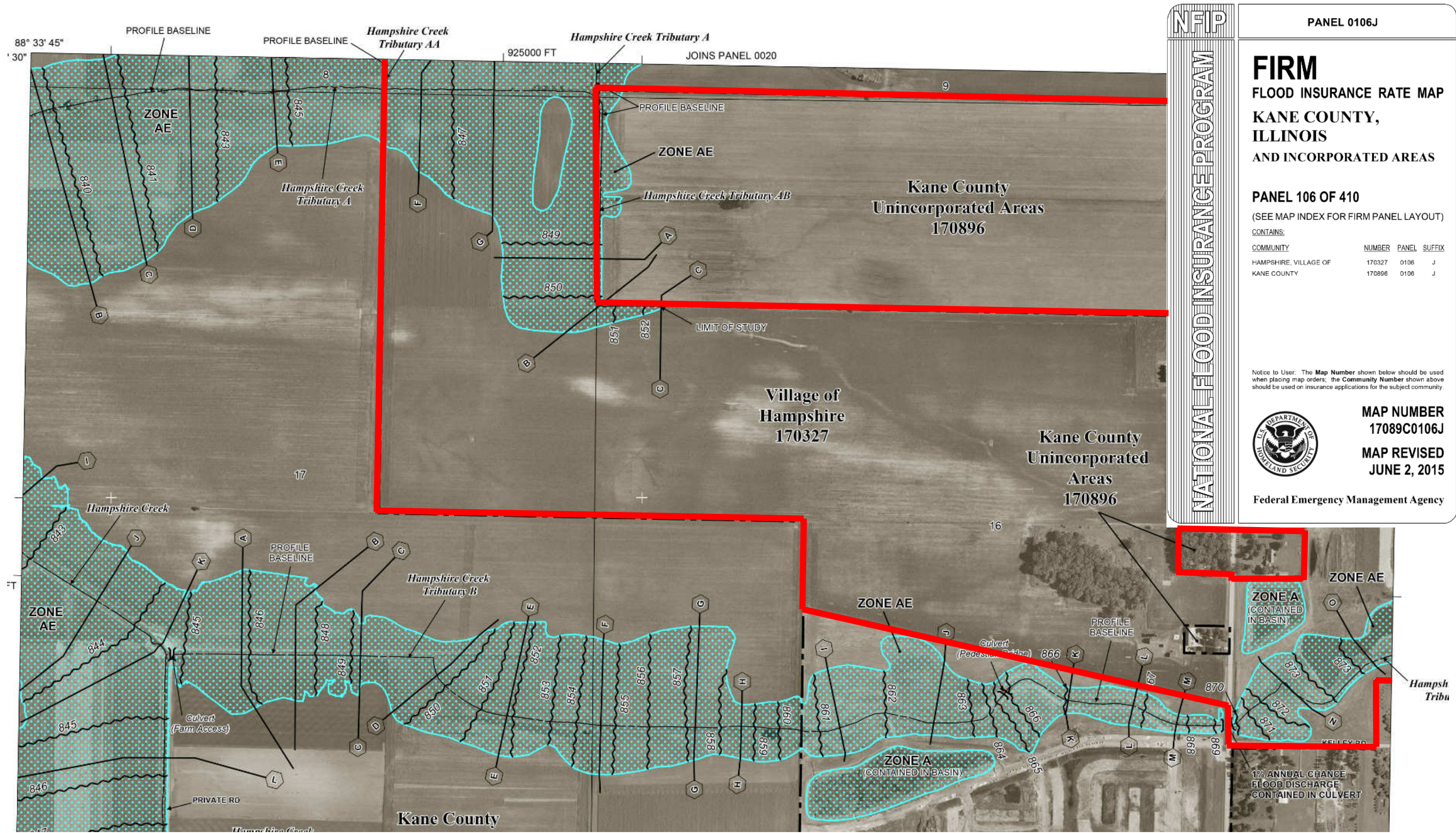


MAP NUMBER
17089C0105J

MAP REVISED
JUNE 2, 2015

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM



PANEL 0106J


FIRM
FLOOD INSURANCE RATE MAP
KANE COUNTY,
ILLINOIS
AND INCORPORATED AREAS

PANEL 106 OF 410
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAMPSHIRE, VILLAGE OF	170327	0106	J
KANE COUNTY	170896	0106	J

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



FEDERAL EMERGENCY MANAGEMENT AGENCY

MAP NUMBER
17089C0106J

MAP REVISED
JUNE 2, 2015

NATIONAL FLOOD INSURANCE PROGRAM

88° 31' 52.5"
42° 07' 30"

JOINS PANEL 0020 935000 FT

NFIP

PANEL 0107J

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP
KANE COUNTY,
ILLINOIS
AND INCORPORATED AREAS

PANEL 107 OF 410

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAMPSHIRE, VILLAGE OF	170327	0107	J
KANE COUNTY	170896	0107	J

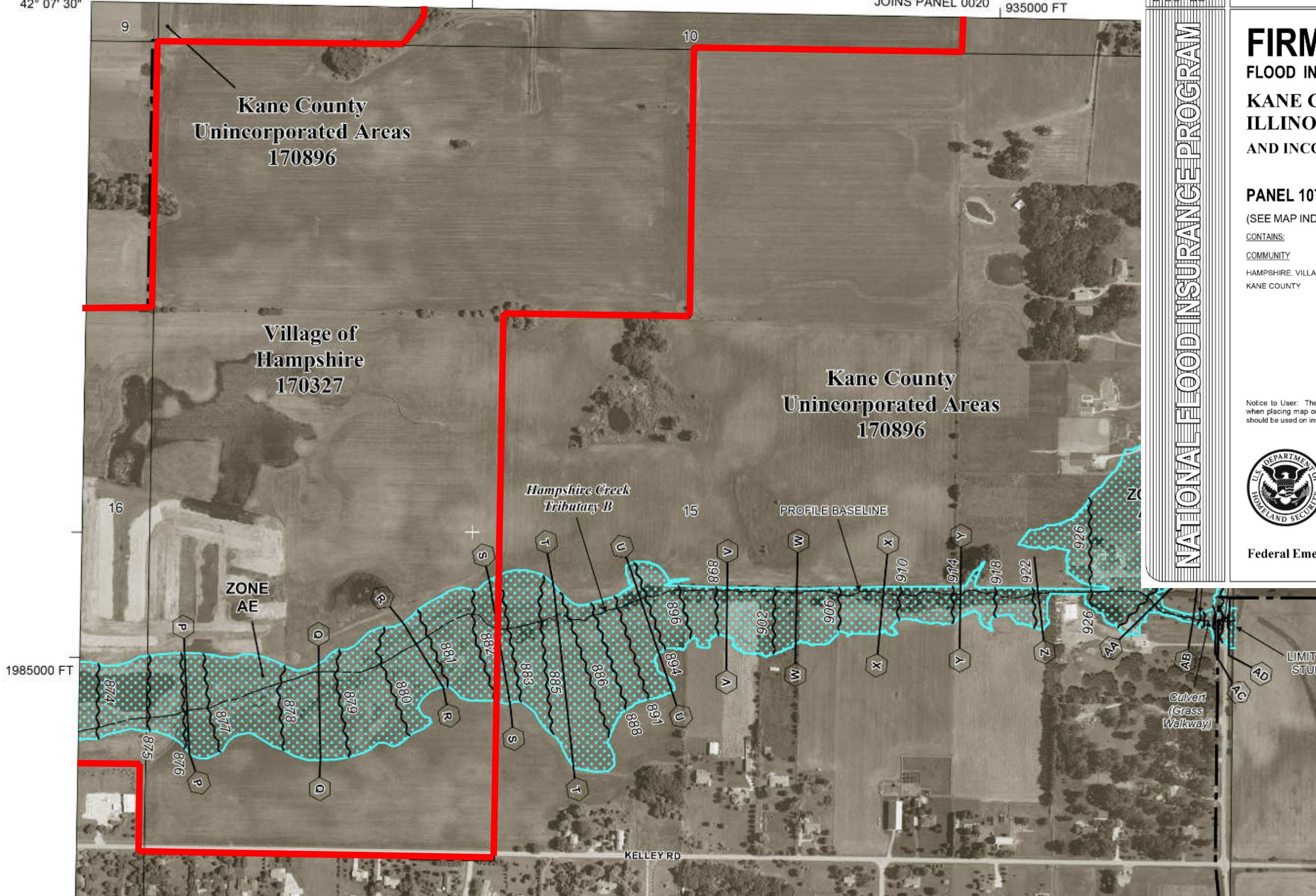
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MAP NUMBER
17089C0107J

MAP REVISED
JUNE 2, 2015

Federal Emergency Management Agency



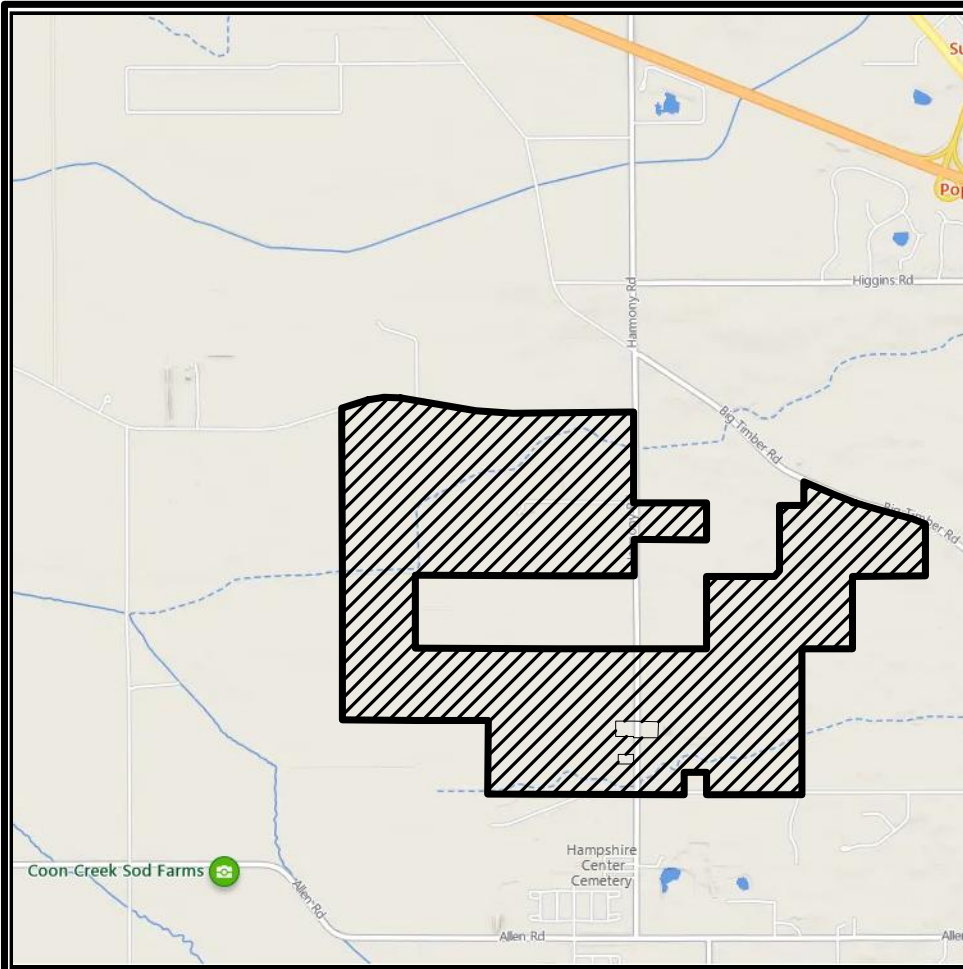
TAB 2

STORMWATER SUBMITTAL

TAB 2A

**EXISTING CONDITIONS
WATERSHED EXHIBIT**

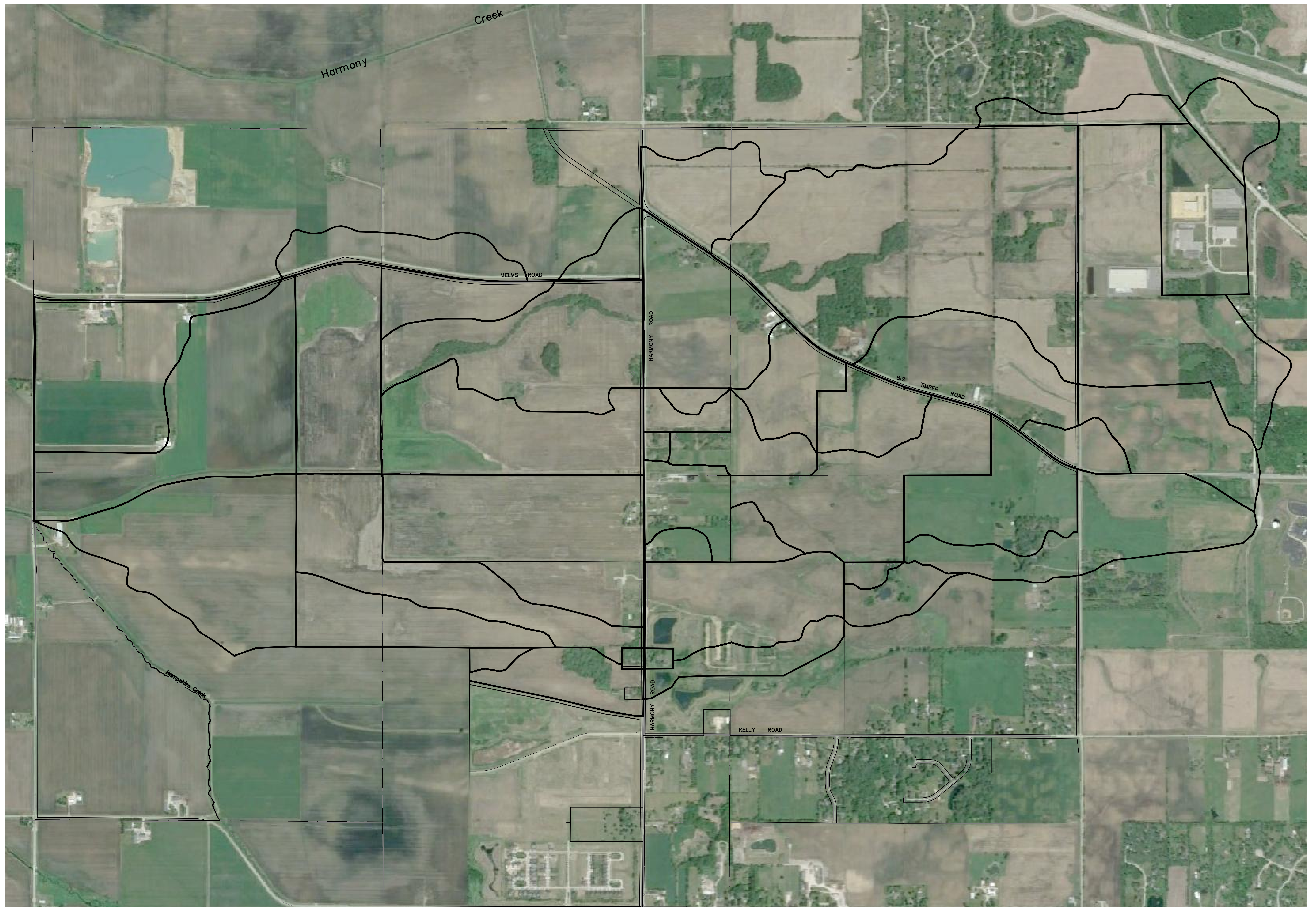
EXISTING WATERSHED EXHIBIT
FOR
PRAIRIE RIDGE NORTH



LOCATION MAP



600 300 0 600
SCALE: 1 INCH = 600 FEET



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1751 A WEST DIEHL ROAD
NAPERVILLE, ILLINOIS 60563
(630) 851-5490

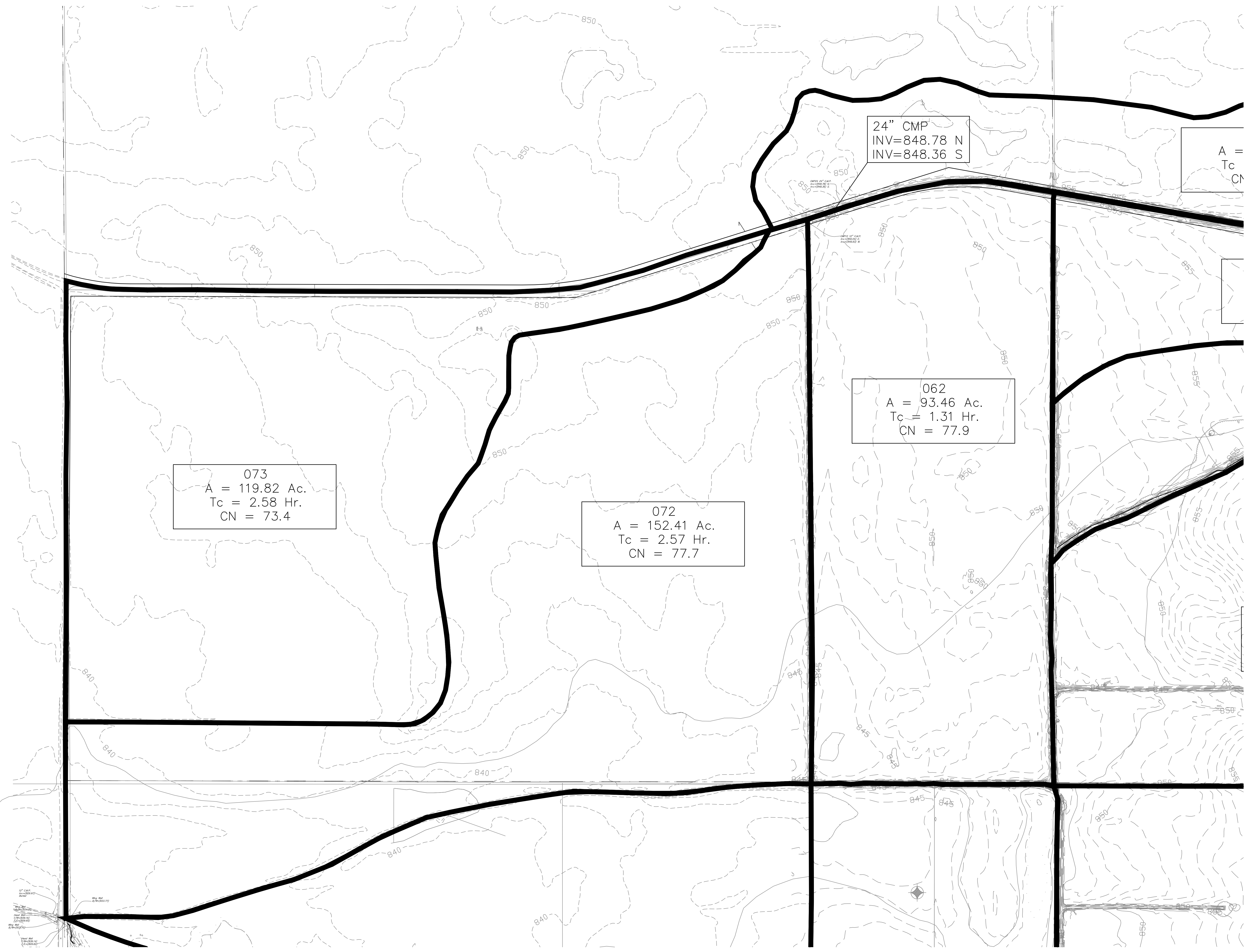
PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 456275 FILE NAME: PREENG
DRAWN BY: KMS FLD. BK. / PG. NO.: -----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF : PROJECT MANAGER : MAM

PLOT FILE CREATED: 12/14/2022 BY: MISTY STRENEL



200 100 0 200
SCALE: 1 INCH = 200 FEET



24" CMP
INV=848.78 N
INV=848.36 S


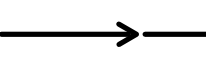

A =
T_c
CN

062
A = 93.46 Ac.
T_c = 1.31 Hr.
CN = 77.9

073
A = 119.82 Ac.
T_c = 2.58 Hr.
CN = 73.4

072
A = 152.41 Ac.
T_c = 2.57 Hr.
CN = 77.7

LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

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1751 A WEST DIEHL ROAD
NAPERVILLE, ILLINOIS 60563
(630) 851-5490

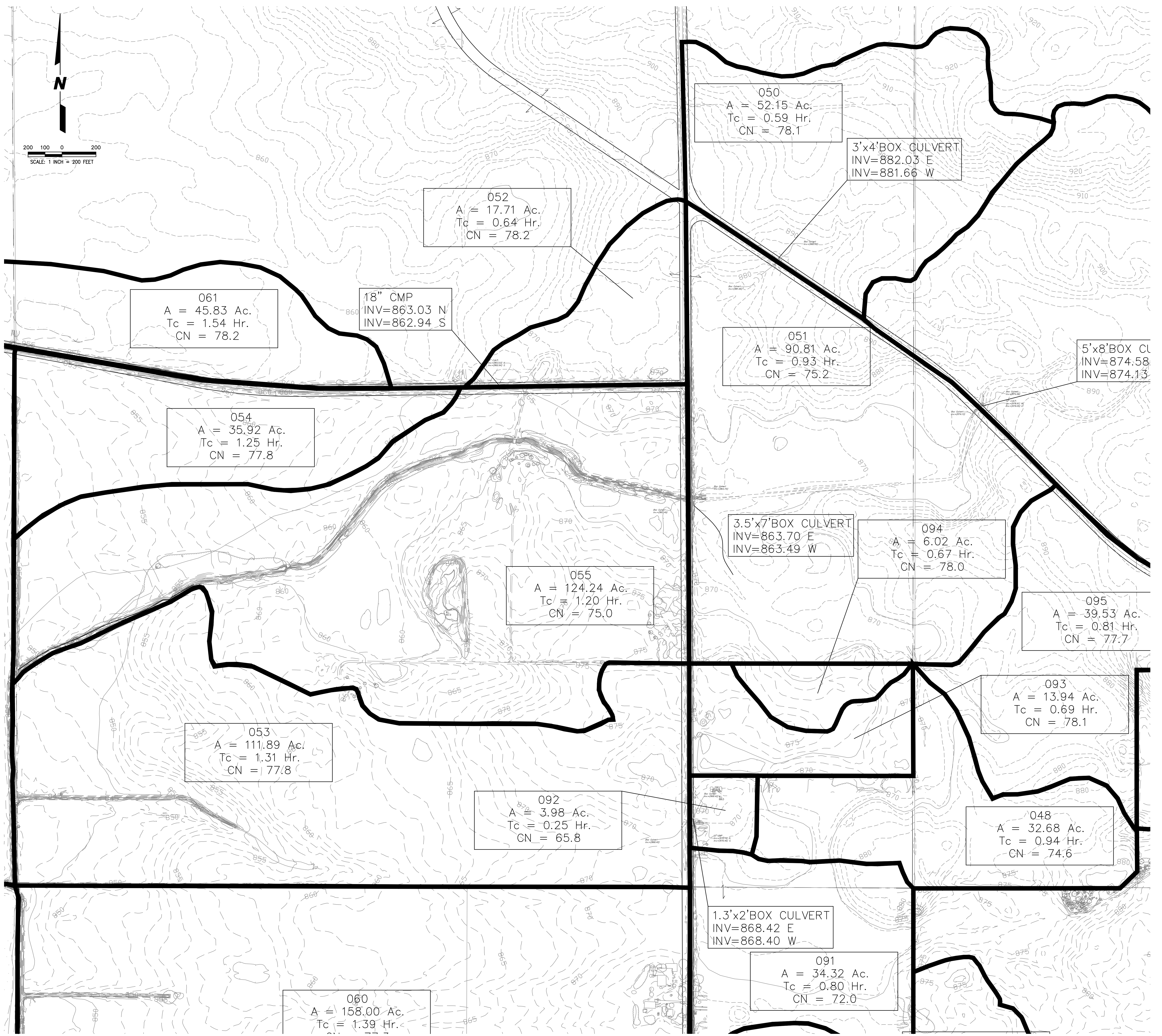
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Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 456275 FILE NAME: WATERSHED
DRAWN BY: KMS FLD. BK. / PG. NO.: -----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF : PROJECT MANAGER : MAM

PLOT FILE CREATED: 12/17/2022 BY: KIRSTIN STANGEL DRAWING PATH: P:\2022\DWG\DRAWINGS\DWG\WATERSHED.DWG



200 100 0 200
SCALE: 1 INCH = 200 FEET



061
A = 45.83 Ac.
Tc = 1.54 Hr.
CN = 78.2

052
A = 17.71 Ac.
Tc = 0.64 Hr.
CN = 78.2

050
A = 52.15 Ac.
Tc = 0.59 Hr.
CN = 78.1

3'x4' BOX CULVERT
INV=882.03 E
INV=881.66 W

18" CMP
INV=863.03 N
INV=862.94 S

051
A = 90.81 Ac.
Tc = 0.93 Hr.
CN = 75.2

5'x8' BOX CL
INV=874.58
INV=874.13

054
A = 35.92 Ac.
Tc = 1.25 Hr.
CN = 77.8

3.5'x7' BOX CULVERT
INV=863.70 E
INV=863.49 W

094
A = 6.02 Ac.
Tc = 0.67 Hr.
CN = 78.0

055
A = 124.24 Ac.
Tc = 1.20 Hr.
CN = 75.0

095
A = 39.53 Ac.
Tc = 0.81 Hr.
CN = 77.7

053
A = 111.89 Ac.
Tc = 1.31 Hr.
CN = 77.8

093
A = 13.94 Ac.
Tc = 0.69 Hr.
CN = 78.1

092
A = 3.98 Ac.
Tc = 0.25 Hr.
CN = 65.8

048
A = 32.68 Ac.
Tc = 0.94 Hr.
CN = 74.6

060
A = 158.00 Ac.
Tc = 1.39 Hr.

1.3'x2' BOX CULVERT
INV=868.42 E
INV=868.40 W

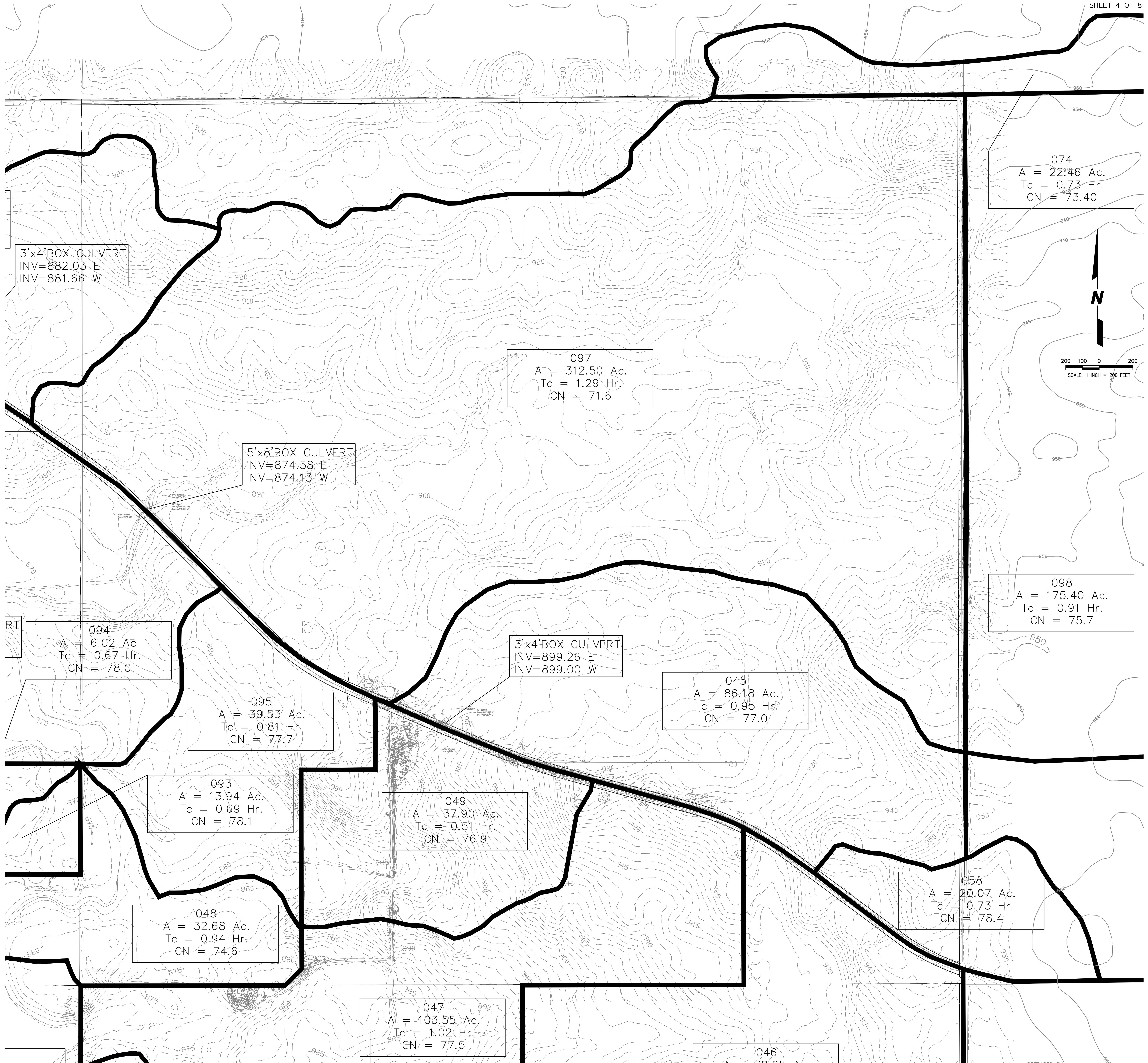
091
A = 34.32 Ac.
Tc = 0.80 Hr.
CN = 72.0

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- OVERLAND DRAINAGE ARROW

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1751 A WEST DIEHL ROAD
NAPERVILLE, ILLINOIS 60563
(630) 851-5490

PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
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Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com
DISC NO.: 456275 FILE NAME: WATERSHED
DRAWN BY: KMS FLD. BK. / PG. NO.: ----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF: PROJECT MANAGER : MAM



3'x4' BOX CULVERT
 INV=882.03 E
 INV=881.66 W

097
 A = 312.50 Ac.
 T_c = 1.29 Hr.
 CN = 71.6

5'x8' BOX CULVERT
 INV=874.58 E
 INV=874.13 W

074
 A = 22.46 Ac.
 T_c = 0.73 Hr.
 CN = 73.40

098
 A = 175.40 Ac.
 T_c = 0.91 Hr.
 CN = 75.7

094
 A = 6.02 Ac.
 T_c = 0.67 Hr.
 CN = 78.0

3'x4' BOX CULVERT
 INV=899.26 E
 INV=899.00 W

045
 A = 86.18 Ac.
 T_c = 0.95 Hr.
 CN = 77.0

095
 A = 39.53 Ac.
 T_c = 0.81 Hr.
 CN = 77.7

093
 A = 13.94 Ac.
 T_c = 0.69 Hr.
 CN = 78.1

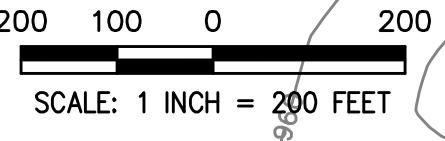
049
 A = 37.90 Ac.
 T_c = 0.51 Hr.
 CN = 76.9

058
 A = 20.07 Ac.
 T_c = 1.073 Hr.
 CN = 78.4

048
 A = 32.68 Ac.
 T_c = 0.94 Hr.
 CN = 74.6

047
 A = 103.55 Ac.
 T_c = 1.02 Hr.
 CN = 77.5

046
 A = 70.00 Ac.
 T_c = 0.85 Hr.
 CN = 77.0



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- OVERLAND DRAINAGE ARROW

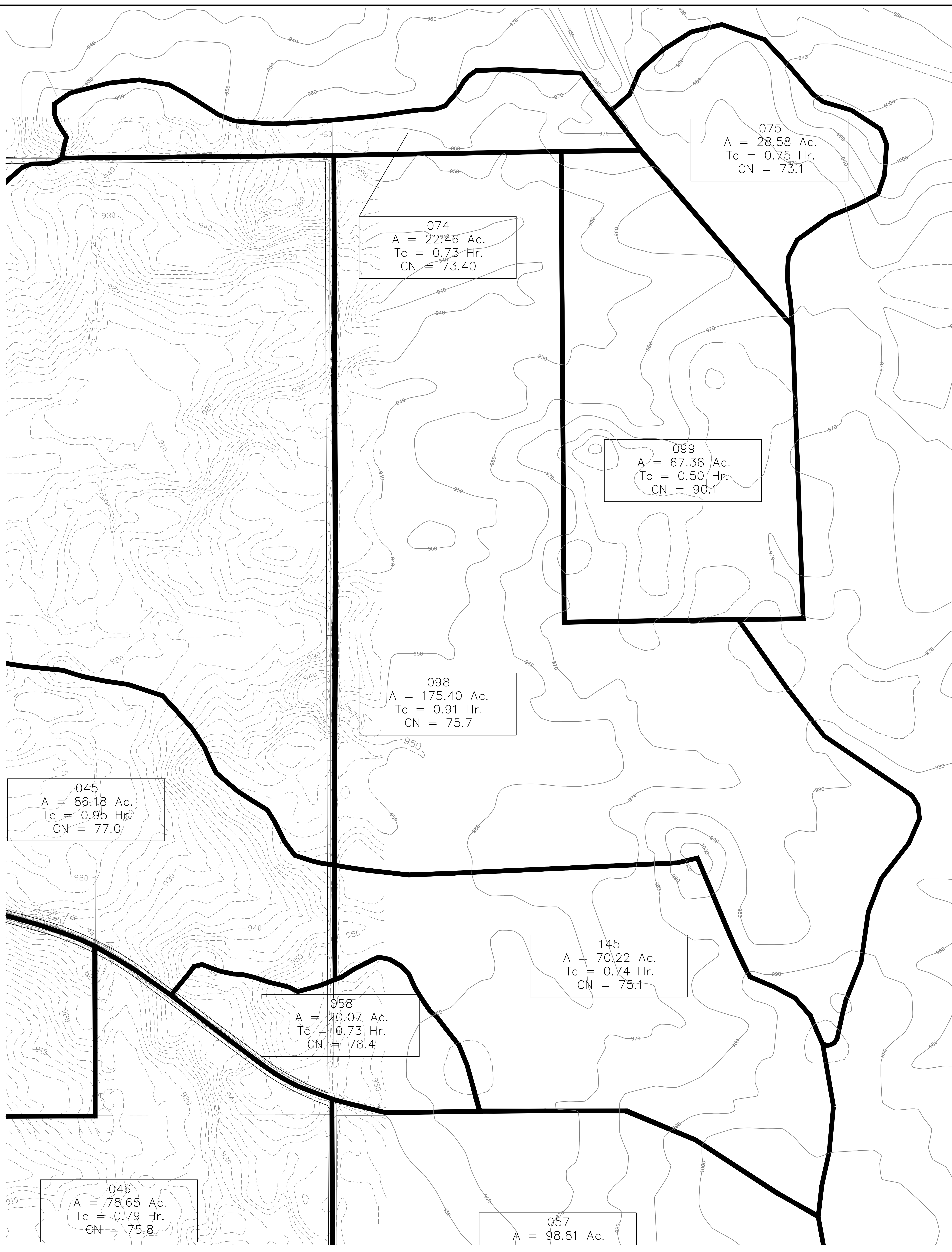
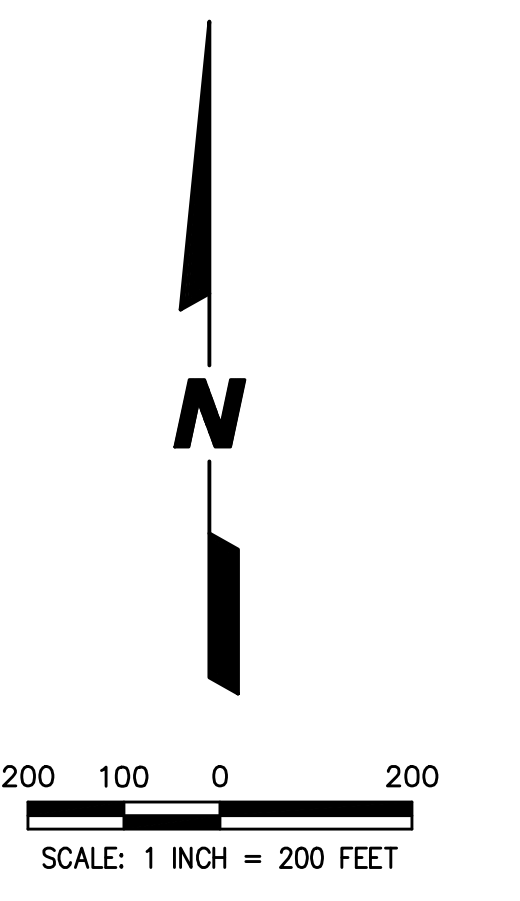
PREPARED FOR:
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 (630) 851-5490

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DISC NO.: 456275 FILE NAME: WATERSHED
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 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF: PROJECT MANAGER : MAM

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PLOT FILE CREATED: 12/17/2022 BY: KIRSTIN STANGEL



075
 A = 28.58 Ac.
 Tc = 0.75 Hr.
 CN = 73.1

074
 A = 22.46 Ac.
 Tc = 0.73 Hr.
 CN = 73.40

099
 A = 67.38 Ac.
 Tc = 0.50 Hr.
 CN = 90.1

098
 A = 175.40 Ac.
 Tc = 0.91 Hr.
 CN = 75.7

045
 A = 86.18 Ac.
 Tc = 0.95 Hr.
 CN = 77.0


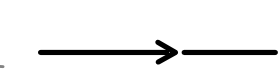
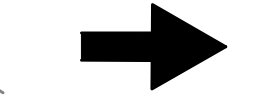
145
 A = 70.22 Ac.
 Tc = 0.74 Hr.
 CN = 75.1

058
 A = 20.07 Ac.
 Tc = 0.73 Hr.
 CN = 78.4

046
 A = 78.65 Ac.
 Tc = 0.79 Hr.
 CN = 75.8

057
 A = 98.81 Ac.

LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

PREPARED FOR:
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 NAPERVILLE, ILLINOIS 60563
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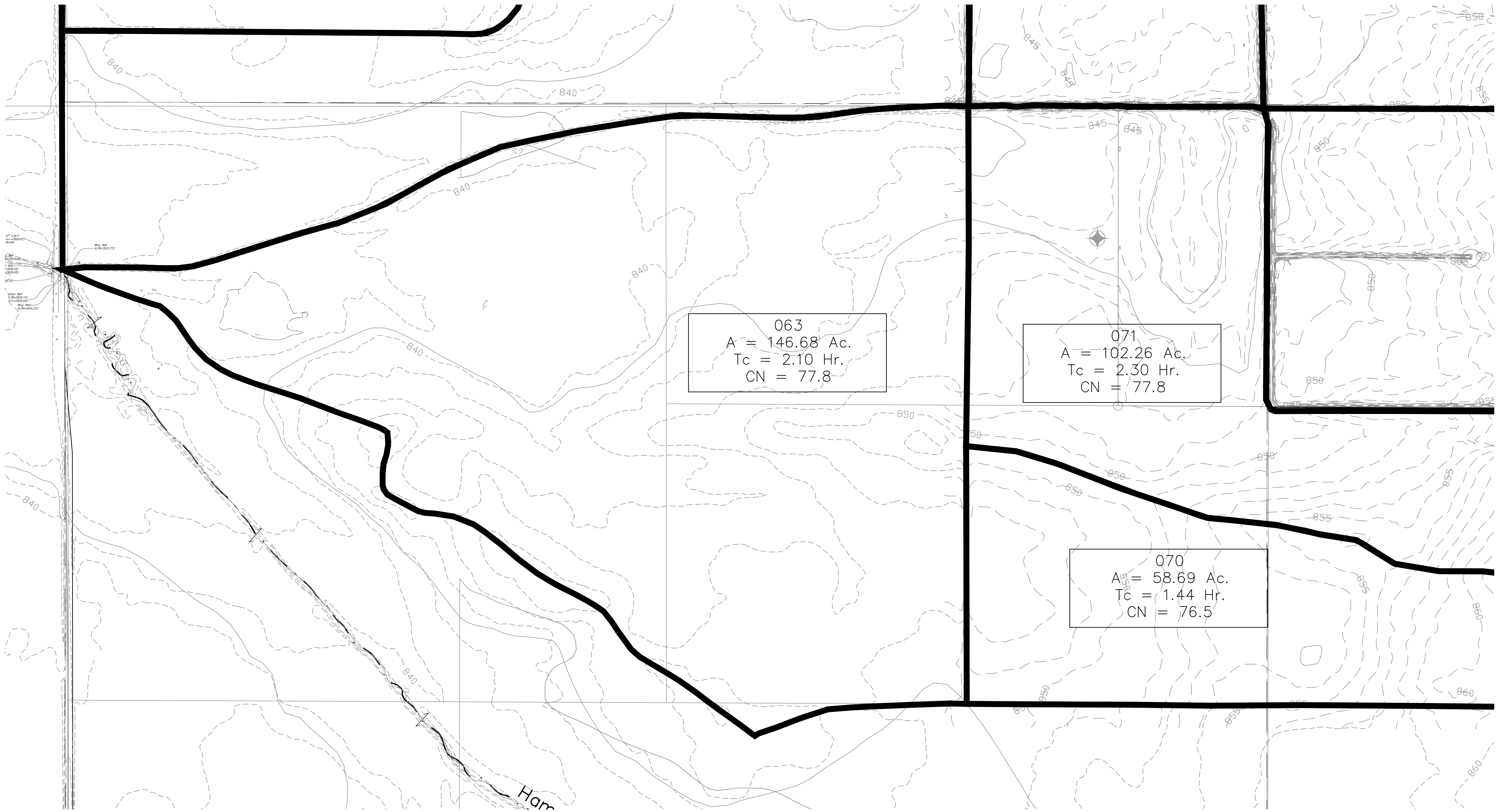
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 DRAWN BY: KMS FLD. BK. / PG. NO.: -----
 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF: PROJECT MANAGER: MAM




PLOT FILE CREATED: 12/17/2022 BY: KRISTIN STANGEL DRAWING PATH: E:\456275\DWG\DRAWINGS\WATERSHED.DWG



200 100 0 200
SCALE: 1 INCH = 200 FEET



LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

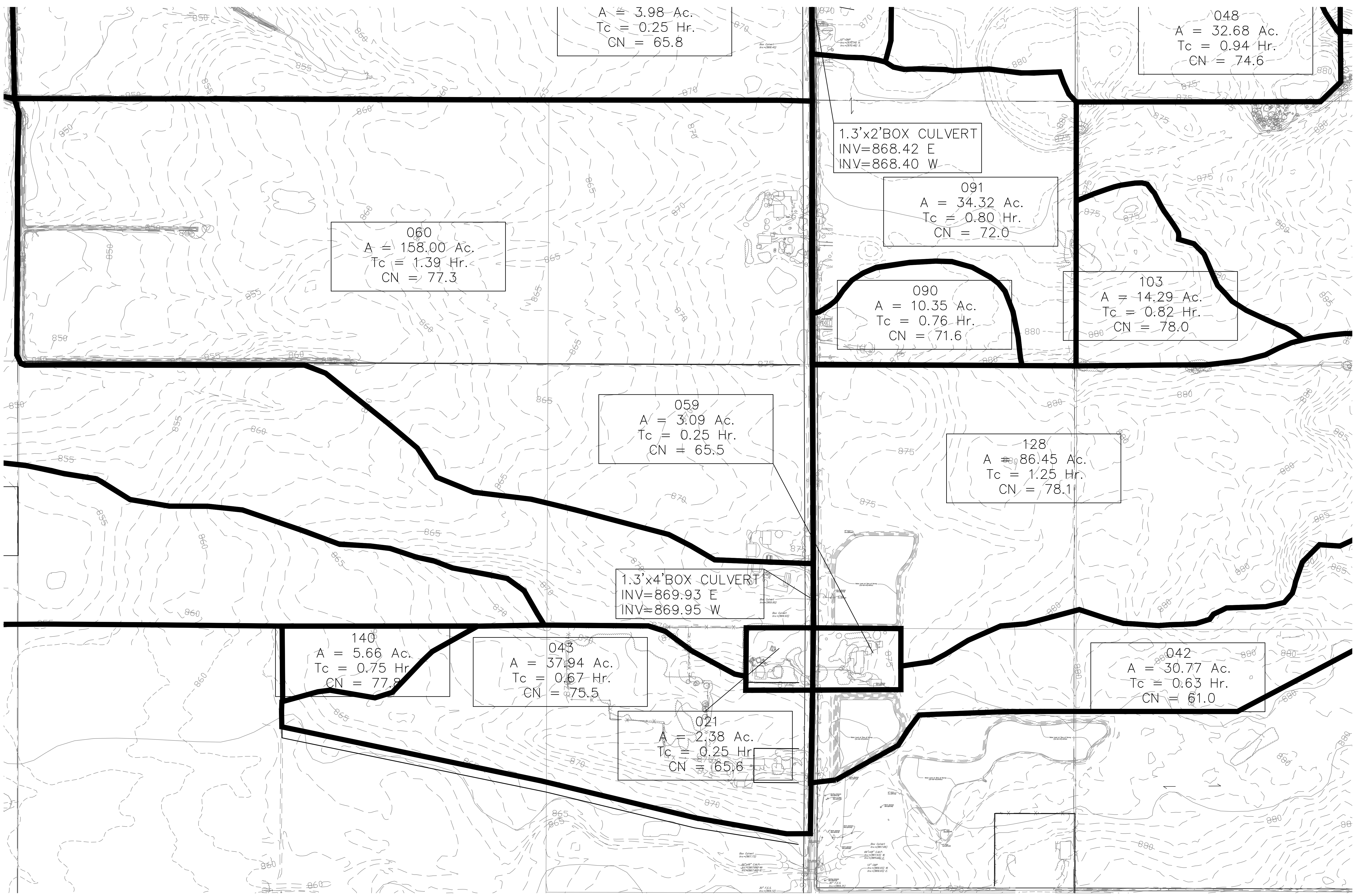
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DISC NO.: 456275 FILE NAME: WATERSHED
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 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF : PROJECT MANAGER : MAM



200 100 0 200
SCALE: 1 INCH = 200 FEET



060
A = 3.98 Ac.
Tc = 0.25 Hr.
CN = 65.8

048
A = 32.68 Ac.
Tc = 0.94 Hr.
CN = 74.6

060
A = 158.00 Ac.
Tc = 1.39 Hr.
CN = 77.3

1.3'x2' BOX CULVERT
INV=868.42 E
INV=868.40 W

091
A = 34.32 Ac.
Tc = 0.80 Hr.
CN = 72.0

090
A = 10.35 Ac.
Tc = 0.76 Hr.
CN = 71.6

103
A = 14.29 Ac.
Tc = 0.82 Hr.
CN = 78.0

059
A = 3.09 Ac.
Tc = 0.25 Hr.
CN = 65.5

128
A = 86.45 Ac.
Tc = 1.25 Hr.
CN = 78.1

1.3'x4' BOX CULVERT
INV=869.93 E
INV=869.95 W


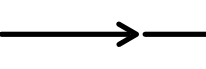

140
A = 5.66 Ac.
Tc = 0.75 Hr.
CN = 77.8

043
A = 37.94 Ac.
Tc = 0.67 Hr.
CN = 75.5

042
A = 30.77 Ac.
Tc = 0.63 Hr.
CN = 61.0

021
A = 2.38 Ac.
Tc = 0.25 Hr.
CN = 65.6

LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

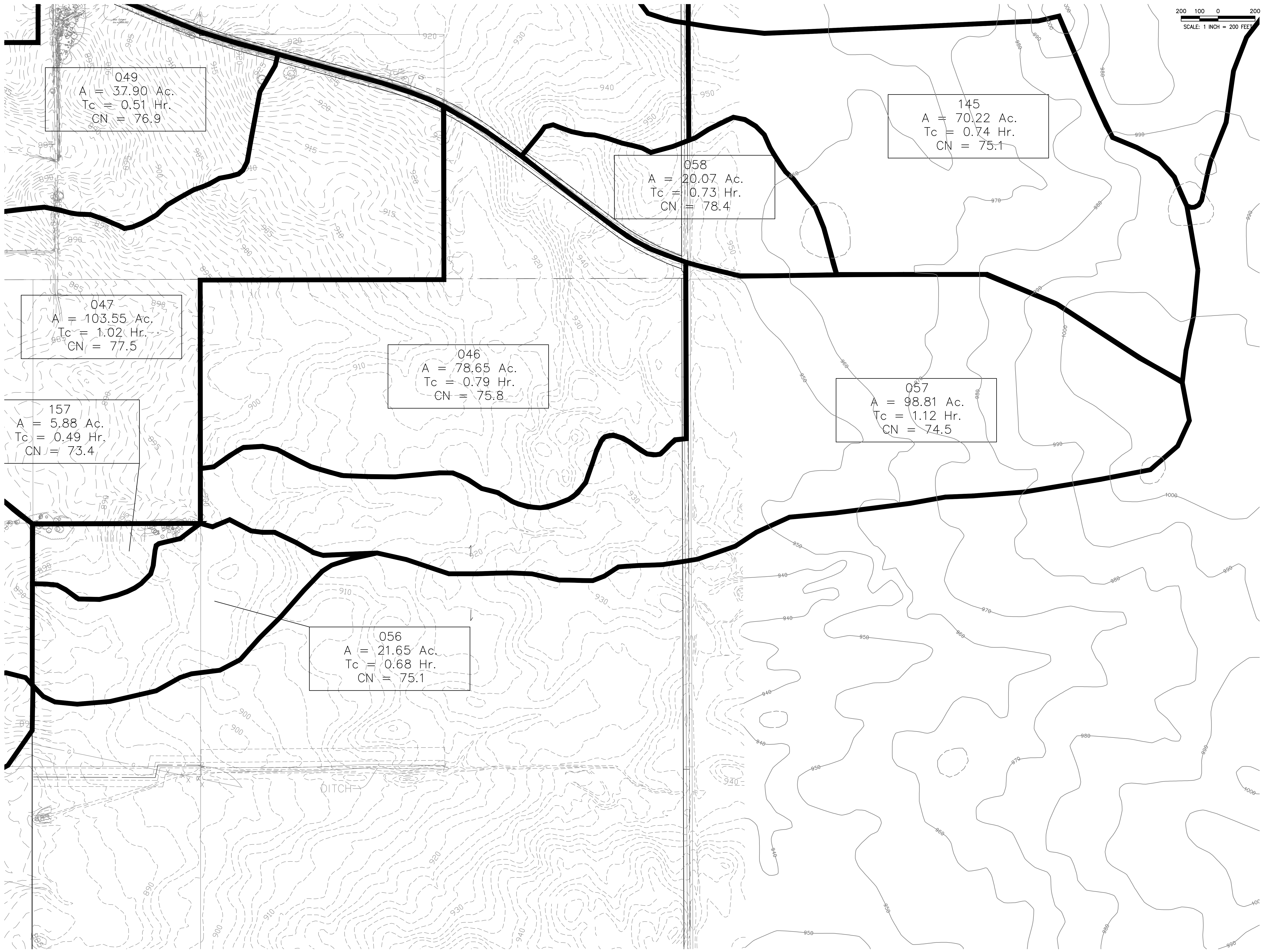
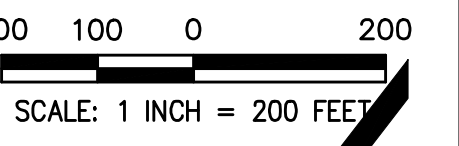
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DISC NO.: 456275 FILE NAME: WATERSHED
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COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF: PROJECT MANAGER: MAM

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049
A = 37.90 Ac.
T_c = 0.51 Hr.
CN = 76.9

145
A = 70.22 Ac.
T_c = 0.74 Hr.
CN = 75.1

058
A = 20.07 Ac.
T_c = 0.73 Hr.
CN = 78.4

047
A = 103.55 Ac.
T_c = 1.02 Hr.
CN = 77.5


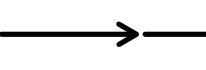

046
A = 78.65 Ac.
T_c = 0.79 Hr.
CN = 75.8

057
A = 98.81 Ac.
T_c = 1.12 Hr.
CN = 74.5

157
A = 5.88 Ac.
T_c = 0.49 Hr.
CN = 73.4

056
A = 21.65 Ac.
T_c = 0.68 Hr.
CN = 75.1

LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

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NAPERVILLE, ILLINOIS 60563
(630) 851-5490

PREPARED BY:
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DISC NO.: 456275 FILE NAME: WATERSHED
DRAWN BY: KMS FLD. BK. / PG. NO.: ----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF : PROJECT MANAGER : MAM

PLOT FILE CREATED: 12/17/2022 BY: KRISTIN STANGEL DRAWING PATH: P:\456275\DWG\DRAWINGS\SUBSETS\WATERSHED.DWG

TAB 2B

**EXISTING CONDITIONS
PONDPACK MODEL RESULTS**

Scenario Calculation Summary

Scenario Summary

ID	25
Label	100Yr 3Hr
Notes	
Active Topology	<I> Base Active Topology
Hydrology	<I> Base Hydrology
Rainfall Runoff	100Yr 3Hr RR
Physical	<I> Base Physical
Initial Condition	<I> Base Initial Condition
Boundary Condition	<I> Base Boundary Condition
Infiltration and Inflow	<I> Base Infiltration and Inflow
Output	<I> Base Output
User Data Extensions	<I> Base User Data Extensions
PondPack Engine Calculation Options	24 hour simulation

Output Summary

Output Increment	0.050 hours	Duration	24.000 hours
------------------	-------------	----------	--------------

Rainfall Summary

Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	5.5 in	Storm Event	100YR- 3HR

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
021	100Yr 3Hr	100	None	0.404	0.900	3.55	(N/A)	(N/A)
042	100Yr 3Hr	100	None	4.288	1.500	25.47	(N/A)	(N/A)
043	100Yr 3Hr	100	None	9.163	1.250	61.97	(N/A)	(N/A)
045	100Yr 3Hr	100	None	21.799	1.350	142.41	(N/A)	(N/A)
046	100Yr 3Hr	100	None	19.175	1.200	134.51	(N/A)	(N/A)
047	100Yr 3Hr	100	None	26.621	1.350	168.72	(N/A)	(N/A)
048	100Yr 3Hr	100	None	7.668	1.350	49.83	(N/A)	(N/A)
049	100Yr 3Hr	100	None	9.565	1.000	78.65	(N/A)	(N/A)
050	100Yr 3Hr	100	None	13.655	1.050	107.58	(N/A)	(N/A)
051	100Yr 3Hr	100	None	21.723	1.300	142.41	(N/A)	(N/A)
052	100Yr 3Hr	100	None	4.651	1.100	35.85	(N/A)	(N/A)
053	100Yr 3Hr	100	None	29.029	1.550	163.75	(N/A)	(N/A)
054	100Yr 3Hr	100	None	9.319	1.600	53.64	(N/A)	(N/A)
055	100Yr 3Hr	100	None	29.533	1.550	172.04	(N/A)	(N/A)
056	100Yr 3Hr	100	None	5.255	1.150	39.21	(N/A)	(N/A)
057	100Yr 3Hr	100	None	23.107	1.450	138.01	(N/A)	(N/A)
058	100Yr 3Hr	100	None	5.303	1.150	39.07	(N/A)	(N/A)
059	100Yr 3Hr	100	None	0.522	0.900	4.59	(N/A)	(N/A)
060	100Yr 3Hr	100	None	40.371	1.650	220.99	(N/A)	(N/A)
061	100Yr 3Hr	100	None	12.035	1.800	62.81	(N/A)	(N/A)
062	100Yr 3Hr	100	None	24.322	1.550	136.90	(N/A)	(N/A)
063	100Yr 3Hr	100	None	38.055	2.200	168.42	(N/A)	(N/A)
070	100Yr 3Hr	100	None	14.629	1.700	78.50	(N/A)	(N/A)
071	100Yr 3Hr	100	None	26.531	2.400	112.12	(N/A)	(N/A)
072	100Yr 3Hr	100	None	39.422	2.700	155.79	(N/A)	(N/A)
073	100Yr 3Hr	100	None	27.027	2.700	106.68	(N/A)	(N/A)
074	100Yr 3Hr	100	None	5.067	1.150	36.06	(N/A)	(N/A)
075	100Yr 3Hr	100	None	6.381	1.200	45.10	(N/A)	(N/A)
090	100Yr 3Hr	100	None	2.196	1.200	15.37	(N/A)	(N/A)
091	100Yr 3Hr	100	None	7.383	1.250	50.77	(N/A)	(N/A)

Scenario Calculation Summary

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
092	100Yr 3Hr	100	None	0.681	0.900	6.00	(N/A)	(N/A)
093	100Yr 3Hr	100	None	3.650	1.150	27.37	(N/A)	(N/A)
094	100Yr 3Hr	100	None	1.571	1.100	12.00	(N/A)	(N/A)
095	100Yr 3Hr	100	None	10.226	1.200	71.68	(N/A)	(N/A)
097	100Yr 3Hr	100	None	66.310	1.700	365.93	(N/A)	(N/A)
098	100Yr 3Hr	100	None	42.633	1.300	282.47	(N/A)	(N/A)
099	100Yr 3Hr	100	None	24.488	0.900	212.98	(N/A)	(N/A)
103	100Yr 3Hr	100	None	3.731	1.200	26.20	(N/A)	(N/A)
128	100Yr 3Hr	100	None	22.634	1.500	130.01	(N/A)	(N/A)
140	100Yr 3Hr	100	None	1.469	1.150	10.76	(N/A)	(N/A)
145	100Yr 3Hr	100	None	16.747	1.150	120.63	(N/A)	(N/A)
157	100Yr 3Hr	100	None	1.322	1.000	10.84	(N/A)	(N/A)
30 (IN)	100Yr 3Hr	100	None	115.999	1.650	645.62	(N/A)	(N/A)
30 (OUT)	100Yr 3Hr	100	None	115.999	1.650	645.52	881.91	2.056
31 (IN)	100Yr 3Hr	100	None	315.213	1.550	1,346.94	(N/A)	(N/A)
31 (OUT)	100Yr 3Hr	100	None	315.211	2.550	1,081.37	871.14	65.699
32 (IN)	100Yr 3Hr	100	None	0.681	0.900	6.00	(N/A)	(N/A)
32 (OUT)	100Yr 3Hr	100	None	0.681	1.100	5.09	869.04	0.086
33 (IN)	100Yr 3Hr	100	None	28.412	1.500	166.54	(N/A)	(N/A)
33 (OUT)	100Yr 3Hr	100	None	28.412	2.850	82.64	874.16	8.647
34 (IN)	100Yr 3Hr	100	None	4.651	1.100	35.85	(N/A)	(N/A)
34 (OUT)	100Yr 3Hr	100	None	4.651	1.000	36.27	865.54	0.687
35 (IN)	100Yr 3Hr	100	None	12.035	1.800	62.81	(N/A)	(N/A)
35 (OUT)	100Yr 3Hr	100	None	11.835	4.350	8.91	852.45	9.457
36 (IN)	100Yr 3Hr	100	None	13.655	1.050	107.58	(N/A)	(N/A)
36 (OUT)	100Yr 3Hr	100	None	13.655	1.200	102.75	886.67	0.453
37 (IN)	100Yr 3Hr	100	None	38.545	1.400	244.14	(N/A)	(N/A)
37 (OUT)	100Yr 3Hr	100	None	38.540	1.400	244.04	905.20	1.668
38 (IN)	100Yr 3Hr	100	None	4.288	1.500	25.47	(N/A)	(N/A)
38 (OUT)	100Yr 3Hr	100	None	4.288	1.500	25.46	868.24	0.029
99 (IN)	100Yr 3Hr	100	None	30.869	0.950	248.12	(N/A)	(N/A)
99 (OUT)	100Yr 3Hr	100	None	2.015	3.650	8.30	949.20	30.395
CENTRAL BRANCH	100Yr 3Hr	100	None	14.920	1.350	95.62	(N/A)	(N/A)
J-10	100Yr 3Hr	100	None	16.747	1.150	120.63	(N/A)	(N/A)
J-12	100Yr 3Hr	100	None	160.114	1.350	795.04	(N/A)	(N/A)
J-16	100Yr 3Hr	100	None	13.655	1.200	102.75	(N/A)	(N/A)
J-22	100Yr 3Hr	100	None	115.999	1.650	645.52	(N/A)	(N/A)
J-26	100Yr 3Hr	100	None	48.907	1.350	306.97	(N/A)	(N/A)
J-27	100Yr 3Hr	100	None	79.257	1.450	481.48	(N/A)	(N/A)
J-28	100Yr 3Hr	100	None	88.562	1.300	463.76	(N/A)	(N/A)
J-3	100Yr 3Hr	100	None	44.648	1.300	282.47	(N/A)	(N/A)
J-31	100Yr 3Hr	100	None	536.115	2.700	1,439.20	(N/A)	(N/A)
J-32	100Yr 3Hr	100	None	463.855	2.200	1,444.59	(N/A)	(N/A)
J-33	100Yr 3Hr	100	None	363.005	2.250	1,033.37	(N/A)	(N/A)
J-45	100Yr 3Hr	100	None	11.835	4.350	8.91	(N/A)	(N/A)
J-48	100Yr 3Hr	100	None	2.196	1.200	15.37	(N/A)	(N/A)
J-53	100Yr 3Hr	100	None	5.255	1.150	39.21	(N/A)	(N/A)
J-54	100Yr 3Hr	100	None	319.862	2.550	1,093.65	(N/A)	(N/A)
J-55	100Yr 3Hr	100	None	5.303	1.150	39.07	(N/A)	(N/A)
J-58	100Yr 3Hr	100	None	0.681	1.100	5.09	(N/A)	(N/A)
J-59	100Yr 3Hr	100	None	14.629	1.700	78.50	(N/A)	(N/A)
J-66	100Yr 3Hr	100	None	28.816	2.850	83.51	(N/A)	(N/A)
J-7	100Yr 3Hr	100	None	5.067	1.150	36.06	(N/A)	(N/A)

Scenario Calculation Summary

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
NORTH BRANCH OUFALL	100Yr 3Hr	100	None	660.761	2.500	1,812.88	(N/A)	(N/A)

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
1190'	Channel	Upstream	363.005	2.250	1,033.37	J-33	
1190'	Channel	Link	367.259	2.250	1,003.26		
1190'	Channel	Downstream	463.855	2.200	1,444.59	J-32	
1300'	Channel	Upstream	463.855	2.200	1,444.59	J-32	
1300'	Channel	Link	469.243	1.700	1,249.76		
1300'	Channel	Downstream	536.115	2.700	1,439.20	J-31	
1609'	Channel	Upstream	13.655	1.200	102.75	J-16	
1609'	Channel	Link	13.655	1.300	99.44		
1609'	Channel	Downstream	315.213	1.550	1,346.94	31	
1810'	Channel	Upstream	160.114	1.350	795.04	J-12	
1810'	Channel	Link	160.107	1.600	752.62		
1810'	Channel	Downstream	315.213	1.550	1,346.94	31	
1832'	Channel	Upstream	88.562	1.300	463.76	J-28	
1832'	Channel	Link	90.465	1.350	350.15		
1832'	Channel	Downstream	160.114	1.350	795.04	J-12	
1980'	Channel	Upstream	115.999	1.650	645.52	J-22	
1980'	Channel	Link	118.157	1.250	364.66		
1980'	Channel	Downstream	315.213	1.550	1,346.94	31	
2729'	Channel	Upstream	5.303	1.150	39.07	J-55	
2729'	Channel	Link	5.303	1.400	34.67		
2729'	Channel	Downstream	48.907	1.350	306.97	J-26	
2820'	Channel	Upstream	48.907	1.350	306.97	J-26	
2820'	Channel	Link	48.905	1.550	293.09		
2820'	Channel	Downstream	79.257	1.450	481.48	J-27	
30 OUTLET	Pond Outlet	Upstream	115.999	1.650	645.62	30	Pond Inflow
30 OUTLET	Pond Outlet	Outflow	115.999	1.650	645.52	30	Pond Outflow
30 OUTLET	Pond Outlet	Link	115.999	1.650	645.52		
30 OUTLET	Pond Outlet	Downstream	115.999	1.650	645.52	J-22	
3143'	Channel	Upstream	11.835	4.350	8.91	J-45	
3143'	Channel	Link	11.543	6.450	8.67		
3143'	Channel	Downstream	536.115	2.700	1,439.20	J-31	
3185'	Channel	Upstream	5.255	1.150	39.21	J-53	
3185'	Channel	Link	5.255	1.300	36.97		
3185'	Channel	Downstream	28.412	1.500	166.54	33	
32 OUTLET	Pond Outlet	Upstream	0.681	0.900	6.00	32	Pond Inflow
32 OUTLET	Pond Outlet	Outflow	0.681	1.100	5.09	32	Pond Outflow
32 OUTLET	Pond Outlet	Link	0.681	1.100	5.09		
32 OUTLET	Pond Outlet	Downstream	0.681	1.100	5.09	J-58	
33 OUTLET	Pond Outlet	Upstream	28.412	1.500	166.54	33	Pond Inflow
33 OUTLET	Pond Outlet	Outflow	28.412	2.850	82.64	33	Pond Outflow
33 OUTLET	Pond Outlet	Link	28.412	2.850	82.64		
33 OUTLET	Pond Outlet	Downstream	28.816	2.850	83.51	J-66	
34 OUTLET	Pond Outlet	Upstream	4.651	1.100	35.85	34	Pond Inflow
34 OUTLET	Pond Outlet	Outflow	4.651	1.000	36.27	34	Pond Outflow
34 OUTLET	Pond Outlet	Link	4.651	1.000	36.27		
34 OUTLET	Pond Outlet	Downstream	319.862	2.550	1,093.65	J-54	

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
35 OUTLET	Pond Outlet	Upstream	12.035	1.800	62.81	35	Pond Inflow
35 OUTLET	Pond Outlet	Outflow	11.835	4.350	8.91	35	Pond Outflow
35 OUTLET	Pond Outlet	Link	11.835	4.350	8.91		
35 OUTLET	Pond Outlet	Downstream	11.835	4.350	8.91	J-45	
3582'	Channel	Upstream	16.747	1.150	120.63	J-10	
3582'	Channel	Link	16.746	1.450	104.06		
3582'	Channel	Downstream	38.545	1.400	244.14	37	
36 OUTLET	Pond Outlet	Upstream	13.655	1.050	107.58	36	Pond Inflow
36 OUTLET	Pond Outlet	Outflow	13.655	1.200	102.75	36	Pond Outflow
36 OUTLET	Pond Outlet	Link	13.655	1.200	102.75		
36 OUTLET	Pond Outlet	Downstream	13.655	1.200	102.75	J-16	
37 OUTLET	Pond Outlet	Upstream	38.545	1.400	244.14	37	Pond Inflow
37 OUTLET	Pond Outlet	Outflow	38.540	1.400	244.04	37	Pond Outflow
37 OUTLET	Pond Outlet	Link	38.540	1.400	244.04		
37 OUTLET	Pond Outlet	Downstream	160.114	1.350	795.04	J-12	
38 OUTLET	Pond Outlet	Upstream	4.288	1.500	25.47	38	Pond Inflow
38 OUTLET	Pond Outlet	Outflow	4.288	1.500	25.46	38	Pond Outflow
38 OUTLET	Pond Outlet	Link	4.288	1.500	25.46		
38 OUTLET	Pond Outlet	Downstream	14.920	1.350	95.62	CENTRAL BRANCH	
4094'	Channel	Upstream	536.115	2.700	1,439.20	J-31	
4094'	Channel	Link	541.643	1.900	1,339.51		
4094'	Channel	Downstream	660.761	2.500	1,812.88	NORTH BRANCH OUFALL	
4518'	Channel	Upstream	319.862	2.550	1,093.65	J-54	
4518'	Channel	Link	324.153	2.250	861.04		
4518'	Channel	Downstream	363.005	2.250	1,033.37	J-33	
4610'	Channel	Upstream	0.681	1.100	5.09	J-58	
4610'	Channel	Link	0.677	2.250	2.50		
4610'	Channel	Downstream	463.855	2.200	1,444.59	J-32	
4630'	Channel	Upstream	14.629	1.700	78.50	J-59	
4630'	Channel	Link	14.613	2.750	52.60		
4630'	Channel	Downstream	660.761	2.500	1,812.88	NORTH BRANCH OUFALL	
5069'	Channel	Upstream	2.196	1.200	15.37	J-48	
5069'	Channel	Link	2.196	1.650	12.22		
5069'	Channel	Downstream	463.855	2.200	1,444.59	J-32	
5459'	Channel	Upstream	5.067	1.150	36.06	J-7	
5459'	Channel	Link	5.063	1.650	27.45		
5459'	Channel	Downstream	115.999	1.650	645.62	30	
5619'	Channel	Upstream	44.648	1.300	282.47	J-3	
5619'	Channel	Link	44.627	1.600	255.08		
5619'	Channel	Downstream	115.999	1.650	645.62	30	
657'	Channel	Upstream	79.257	1.450	481.48	J-27	
657'	Channel	Link	81.179	1.300	413.45		
657'	Channel	Downstream	88.562	1.300	463.76	J-28	
6619'	Channel	Upstream	28.816	2.850	83.51	J-66	
6619'	Channel	Link	28.798	3.600	80.71		
6619'	Channel	Downstream	536.115	2.700	1,439.20	J-31	
99 OUTLET	Pond Outlet	Upstream	30.869	0.950	248.12	99	Pond Inflow
99 OUTLET	Pond Outlet	Outflow	2.015	3.650	8.30	99	Pond Outflow
99 OUTLET	Pond Outlet	Link	2.015	3.650	8.30		
99 OUTLET	Pond Outlet	Downstream	44.648	1.300	282.47	J-3	
HARMONY RD	Pond Outlet	Upstream	315.213	1.550	1,346.94	31	Pond Inflow
HARMONY RD	Pond Outlet	Outflow	315.211	2.550	1,081.37	31	Pond Outflow
HARMONY RD	Pond Outlet	Link	315.211	2.550	1,081.37		

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
HARMONY RD	Pond Outlet	Downstream	319.862	2.550	1,093.65	J-54	

Messages

Message Id	67
Scenario	100Yr 3Hr
Element Type	Composite Outlet Structure
Element Id	370
Label	30 OUTLET STRUCUTRE
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure 30 OUTLET STRUCUTRE. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning
Message Id	15
Scenario	100Yr 3Hr
Element Type	Composite Outlet Structure
Element Id	378
Label	38 OUTLET STRUCTURE
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning
Message Id	2
Scenario	100Yr 3Hr
Element Type	Junction
Element Id	174
Label	J-3
Time	(N/A)
Message	Junction node J-3 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning
Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	221
Label	657'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 471.79 ft ³ /s, Outflow > 413.45 ft ³ /s.
Source	Warning
Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	221
Label	657'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning
Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	221
Label	657'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Scenario Calculation Summary

Messages

Message Id	2
Scenario	100Yr 3Hr
Element Type	Junction
Element Id	190
Label	J-12
Time	(N/A)
Message	Junction node J-12 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	224
Label	1832'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 461.88 ft ³ /s, Outflow > 350.15 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	224
Label	1832'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	224
Label	1832'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	264
Label	1980'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 537.35 ft ³ /s, Outflow > 364.66 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	264
Label	1980'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	264
Label	1980'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Scenario Calculation Summary

Messages

Message Id	2
Scenario	100Yr 3Hr
Element Type	Junction
Element Id	300
Label	J-54
Time	(N/A)
Message	Junction node J-54 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	301
Label	4518'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 1,056.91 ft ³ /s, Outflow > 861.04 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	301
Label	4518'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	301
Label	4518'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Message Id	2
Scenario	100Yr 3Hr
Element Type	Junction
Element Id	350
Label	J-66
Time	(N/A)
Message	Junction node J-66 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	235
Label	1190'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 1,028.93 ft ³ /s, Outflow > 1,003.26 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	235
Label	1190'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Scenario Calculation Summary

Messages

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	235
Label	1190'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	233
Label	1300'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 1,315.68 ft ³ /s, Outflow > 1,249.76 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	233
Label	1300'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	233
Label	1300'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Message Id	56
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	231
Label	4094'
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 1,413.24 ft ³ /s, Outflow > 1,339.51 ft ³ /s.
Source	Warning

Message Id	59
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	231
Label	4094'
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning

Message Id	44
Scenario	100Yr 3Hr
Element Type	Conduit
Element Id	231
Label	4094'
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

TAB 2C

**EXISTING CONDITIONS
PONDPACK MODEL**

Scenario: 100Yr 3Hr

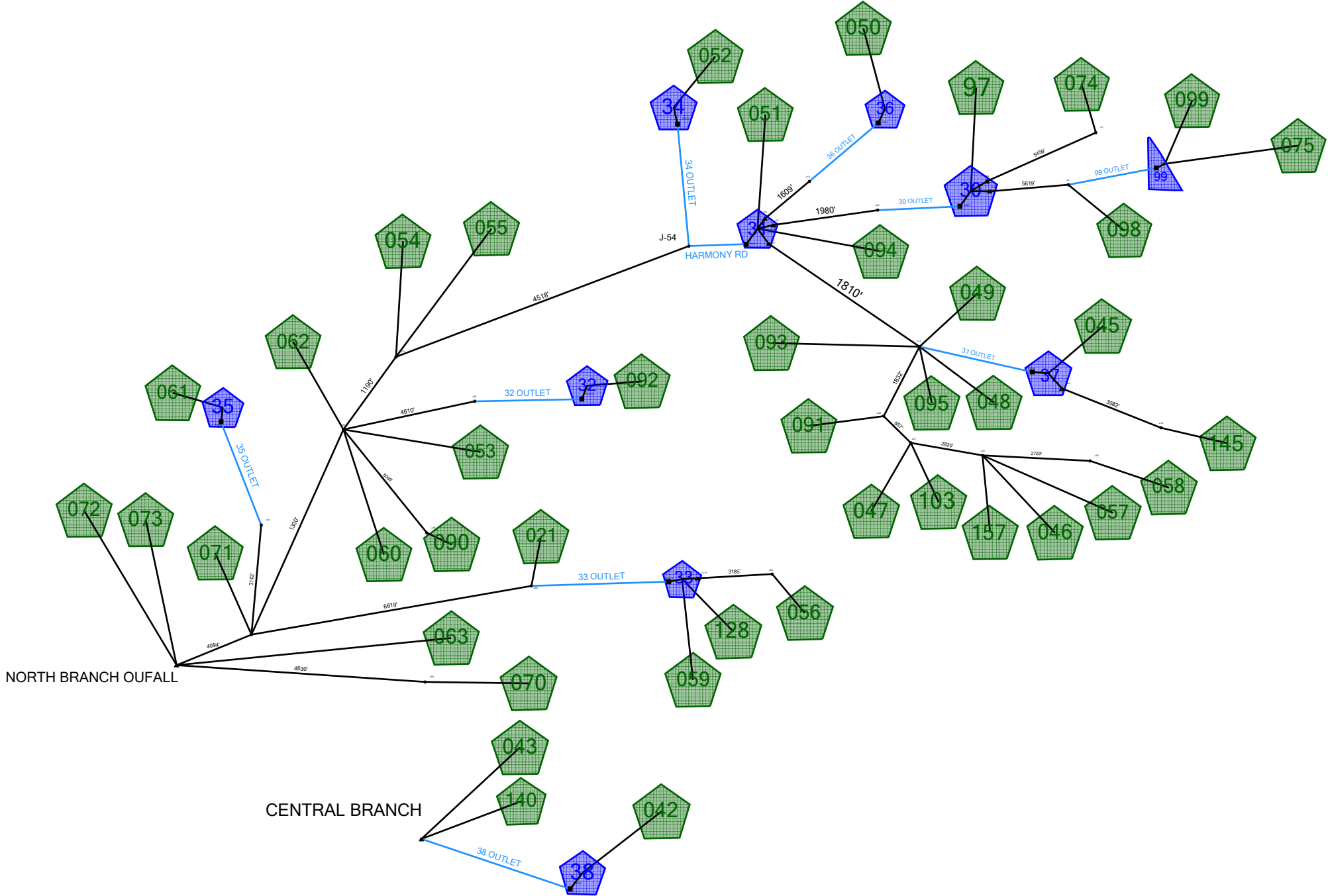


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Time-Depth Curve: 100YR- 3HR

Label	100YR- 3HR
Start Time	0.000 hours
Increment	0.125 hours
End Time	3.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.125 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.5	1.0	1.5	2.1
0.625	2.6	3.0	3.4	3.7	3.9
1.250	4.1	4.2	4.4	4.5	4.7
1.875	4.8	4.9	5.0	5.1	5.2
2.500	5.2	5.3	5.4	5.4	5.5

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	2.380 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	0.900 hours
Flow (Peak, Computed)	3.55 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.900 hours
Flow (Peak Interpolated Output)	3.55 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	65.600
Area (User Defined)	2.380 acres
Maximum Retention (Pervious)	5.2 in
Maximum Retention (Pervious, 20 percent)	1.0 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	0.404 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.404 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	10.79 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.920 hours
Area (User Defined)	30.770 acres
<hr/>	
Computational Time Increment	0.123 hours
Time to Peak (Computed)	1.472 hours
Flow (Peak, Computed)	25.56 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.500 hours
Flow (Peak Interpolated Output)	25.47 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	30.770 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	4.288 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.288 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.920 hours
Computational Time Increment	0.123 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	37.90 ft ³ /s
Unit peak time, Tp	0.613 hours
Unit receding limb, Tr	2.453 hours
Total unit time, Tb	3.067 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.850 hours
Area (User Defined)	37.940 acres
<hr/>	
Computational Time Increment	0.113 hours
Time to Peak (Computed)	1.247 hours
Flow (Peak, Computed)	61.99 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.250 hours
Flow (Peak Interpolated Output)	61.97 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.500
Area (User Defined)	37.940 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	9.163 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.163 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.850 hours
Computational Time Increment	0.113 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	50.57 ft ³ /s
Unit peak time, Tp	0.567 hours
Unit receding limb, Tr	2.267 hours
Total unit time, Tb	2.833 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.770 hours
Area (User Defined)	78.650 acres
<hr/>	
Computational Time Increment	0.103 hours
Time to Peak (Computed)	1.232 hours
Flow (Peak, Computed)	135.09 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.200 hours
Flow (Peak Interpolated Output)	134.51 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.800
Area (User Defined)	78.650 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	19.177 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.175 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.770 hours
Computational Time Increment	0.103 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	115.73 ft ³ /s
Unit peak time, Tp	0.513 hours
Unit receding limb, Tr	2.053 hours
Total unit time, Tb	2.567 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.000 hours
Area (User Defined)	103.550 acres
<hr/>	
Computational Time Increment	0.133 hours
Time to Peak (Computed)	1.333 hours
Flow (Peak, Computed)	168.97 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.350 hours
Flow (Peak Interpolated Output)	168.72 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.500
Area (User Defined)	103.550 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	26.621 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	26.621 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.000 hours
Computational Time Increment	0.133 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	117.33 ft ³ /s
Unit peak time, Tp	0.667 hours
Unit receding limb, Tr	2.667 hours
Total unit time, Tb	3.333 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.920 hours
Area (User Defined)	32.680 acres
<hr/>	
Computational Time Increment	0.123 hours
Time to Peak (Computed)	1.349 hours
Flow (Peak, Computed)	49.84 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.350 hours
Flow (Peak Interpolated Output)	49.83 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.600
Area (User Defined)	32.680 acres
Maximum Retention (Pervious)	3.4 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	7.668 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.668 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.920 hours
Computational Time Increment	0.123 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	40.25 ft ³ /s
Unit peak time, Tp	0.613 hours
Unit receding limb, Tr	2.453 hours
Total unit time, Tb	3.067 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	37.900 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	1.000 hours
Flow (Peak, Computed)	78.65 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.000 hours
Flow (Peak Interpolated Output)	78.65 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	76.900
Area (User Defined)	37.900 acres
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	9.565 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.565 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	85.88 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.580 hours
Area (User Defined)	52.150 acres
<hr/>	
Computational Time Increment	0.077 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	107.77 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	107.58 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.100
Area (User Defined)	52.150 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	13.654 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13.655 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.580 hours
Computational Time Increment	0.077 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	101.88 ft ³ /s
Unit peak time, Tp	0.387 hours
Unit receding limb, Tr	1.547 hours
Total unit time, Tb	1.933 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.900 hours
Area (User Defined)	90.810 acres
<hr/>	
Computational Time Increment	0.120 hours
Time to Peak (Computed)	1.320 hours
Flow (Peak, Computed)	143.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.300 hours
Flow (Peak Interpolated Output)	142.41 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.200
Area (User Defined)	90.810 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	21.723 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	21.723 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.900 hours
Computational Time Increment	0.120 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	114.32 ft ³ /s
Unit peak time, Tp	0.600 hours
Unit receding limb, Tr	2.400 hours
Total unit time, Tb	3.000 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.620 hours
Area (User Defined)	17.710 acres
<hr/>	
Computational Time Increment	0.083 hours
Time to Peak (Computed)	1.075 hours
Flow (Peak, Computed)	36.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	35.85 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.200
Area (User Defined)	17.710 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	4.651 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.651 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.620 hours
Computational Time Increment	0.083 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	32.36 ft ³ /s
Unit peak time, Tp	0.413 hours
Unit receding limb, Tr	1.653 hours
Total unit time, Tb	2.067 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.280 hours
Area (User Defined)	111.890 acres
<hr/>	
Computational Time Increment	0.171 hours
Time to Peak (Computed)	1.536 hours
Flow (Peak, Computed)	163.86 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.550 hours
Flow (Peak Interpolated Output)	163.75 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	111.890 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	29.030 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	29.029 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.280 hours
Computational Time Increment	0.171 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	99.04 ft ³ /s
Unit peak time, Tp	0.853 hours
Unit receding limb, Tr	3.413 hours
Total unit time, Tb	4.267 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.220 hours
Area (User Defined)	35.920 acres
<hr/>	
Computational Time Increment	0.163 hours
Time to Peak (Computed)	1.627 hours
Flow (Peak, Computed)	53.64 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.600 hours
Flow (Peak Interpolated Output)	53.64 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	35.920 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	9.319 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.319 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.220 hours
Computational Time Increment	0.163 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	33.36 ft ³ /s
Unit peak time, Tp	0.813 hours
Unit receding limb, Tr	3.253 hours
Total unit time, Tb	4.067 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.170 hours
Area (User Defined)	124.240 acres
<hr/>	
Computational Time Increment	0.156 hours
Time to Peak (Computed)	1.560 hours
Flow (Peak, Computed)	172.28 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.550 hours
Flow (Peak Interpolated Output)	172.04 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.000
Area (User Defined)	124.240 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	29.530 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	29.533 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.170 hours
Computational Time Increment	0.156 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	120.32 ft ³ /s
Unit peak time, Tp	0.780 hours
Unit receding limb, Tr	3.120 hours
Total unit time, Tb	3.900 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.660 hours
Area (User Defined)	21.690 acres
<hr/>	
Computational Time Increment	0.088 hours
Time to Peak (Computed)	1.144 hours
Flow (Peak, Computed)	39.28 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	39.21 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.600
Area (User Defined)	21.690 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	5.255 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.255 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.660 hours
Computational Time Increment	0.088 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	37.24 ft ³ /s
Unit peak time, Tp	0.440 hours
Unit receding limb, Tr	1.760 hours
Total unit time, Tb	2.200 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.100 hours
Area (User Defined)	98.810 acres
<hr/>	
Computational Time Increment	0.147 hours
Time to Peak (Computed)	1.467 hours
Flow (Peak, Computed)	138.60 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.450 hours
Flow (Peak Interpolated Output)	138.01 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.500
Area (User Defined)	98.810 acres
Maximum Retention (Pervious)	3.4 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	23.109 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	23.107 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.100 hours
Computational Time Increment	0.147 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	101.78 ft ³ /s
Unit peak time, Tp	0.733 hours
Unit receding limb, Tr	2.933 hours
Total unit time, Tb	3.667 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.710 hours
Area (User Defined)	20.070 acres
<hr/>	
Computational Time Increment	0.095 hours
Time to Peak (Computed)	1.136 hours
Flow (Peak, Computed)	39.17 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	39.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.400
Area (User Defined)	20.070 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	5.303 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.303 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.710 hours
Computational Time Increment	0.095 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	32.03 ft ³ /s
Unit peak time, Tp	0.473 hours
Unit receding limb, Tr	1.893 hours
Total unit time, Tb	2.367 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	3.090 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	0.900 hours
Flow (Peak, Computed)	4.59 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.900 hours
Flow (Peak Interpolated Output)	4.59 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	65.500
Area (User Defined)	3.090 acres
Maximum Retention (Pervious)	5.3 in
Maximum Retention (Pervious, 20 percent)	1.1 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	0.522 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.522 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.00 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.360 hours
Area (User Defined)	158.000 acres
<hr/>	
Computational Time Increment	0.181 hours
Time to Peak (Computed)	1.632 hours
Flow (Peak, Computed)	221.34 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.650 hours
Flow (Peak Interpolated Output)	220.99 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.300
Area (User Defined)	158.000 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	40.371 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	40.371 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.360 hours
Computational Time Increment	0.181 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	131.63 ft ³ /s
Unit peak time, Tp	0.907 hours
Unit receding limb, Tr	3.627 hours
Total unit time, Tb	4.533 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.510 hours
Area (User Defined)	45.830 acres
<hr/>	
Computational Time Increment	0.201 hours
Time to Peak (Computed)	1.812 hours
Flow (Peak, Computed)	62.91 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.800 hours
Flow (Peak Interpolated Output)	62.81 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.200
Area (User Defined)	45.830 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	12.036 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	12.035 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.510 hours
Computational Time Increment	0.201 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	34.39 ft ³ /s
Unit peak time, Tp	1.007 hours
Unit receding limb, Tr	4.027 hours
Total unit time, Tb	5.033 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.290 hours
Area (User Defined)	93.460 acres
<hr/>	
Computational Time Increment	0.172 hours
Time to Peak (Computed)	1.548 hours
Flow (Peak, Computed)	136.92 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.550 hours
Flow (Peak Interpolated Output)	136.90 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.900
Area (User Defined)	93.460 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	24.322 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	24.322 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.290 hours
Computational Time Increment	0.172 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	82.09 ft ³ /s
Unit peak time, Tp	0.860 hours
Unit receding limb, Tr	3.440 hours
Total unit time, Tb	4.300 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	2.070 hours
Area (User Defined)	146.680 acres
<hr/>	
Computational Time Increment	0.276 hours
Time to Peak (Computed)	2.208 hours
Flow (Peak, Computed)	168.71 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	2.200 hours
Flow (Peak Interpolated Output)	168.42 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	146.680 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	38.056 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	38.055 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.070 hours
Computational Time Increment	0.276 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	80.29 ft ³ /s
Unit peak time, Tp	1.380 hours
Unit receding limb, Tr	5.520 hours
Total unit time, Tb	6.900 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.410 hours
Area (User Defined)	58.690 acres
<hr/>	
Computational Time Increment	0.188 hours
Time to Peak (Computed)	1.692 hours
Flow (Peak, Computed)	78.56 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.700 hours
Flow (Peak Interpolated Output)	78.50 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	76.500
Area (User Defined)	58.690 acres
Maximum Retention (Pervious)	3.1 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	14.629 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	14.629 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.410 hours
Computational Time Increment	0.188 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	47.16 ft ³ /s
Unit peak time, Tp	0.940 hours
Unit receding limb, Tr	3.760 hours
Total unit time, Tb	4.700 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	2.260 hours
Area (User Defined)	102.260 acres
<hr/>	
Computational Time Increment	0.301 hours
Time to Peak (Computed)	2.411 hours
Flow (Peak, Computed)	112.30 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	2.400 hours
Flow (Peak Interpolated Output)	112.12 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	102.260 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	26.531 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	26.531 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.260 hours
Computational Time Increment	0.301 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	51.27 ft ³ /s
Unit peak time, Tp	1.507 hours
Unit receding limb, Tr	6.027 hours
Total unit time, Tb	7.533 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	2.540 hours
Area (User Defined)	152.410 acres
<hr/>	
Computational Time Increment	0.339 hours
Time to Peak (Computed)	2.709 hours
Flow (Peak, Computed)	155.91 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	2.700 hours
Flow (Peak Interpolated Output)	155.79 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.700
Area (User Defined)	152.410 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	39.422 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	39.422 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.540 hours
Computational Time Increment	0.339 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	67.99 ft ³ /s
Unit peak time, Tp	1.693 hours
Unit receding limb, Tr	6.773 hours
Total unit time, Tb	8.467 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	2.540 hours
Area (User Defined)	119.820 acres
<hr/>	
Computational Time Increment	0.339 hours
Time to Peak (Computed)	2.709 hours
Flow (Peak, Computed)	106.80 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	2.700 hours
Flow (Peak Interpolated Output)	106.68 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	119.820 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	27.027 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	27.027 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.540 hours
Computational Time Increment	0.339 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	53.45 ft ³ /s
Unit peak time, Tp	1.693 hours
Unit receding limb, Tr	6.773 hours
Total unit time, Tb	8.467 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.720 hours
Area (User Defined)	22.460 acres
<hr/>	
Computational Time Increment	0.096 hours
Time to Peak (Computed)	1.152 hours
Flow (Peak, Computed)	36.09 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	36.06 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	22.460 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	5.066 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.067 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.720 hours
Computational Time Increment	0.096 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	35.34 ft ³ /s
Unit peak time, Tp	0.480 hours
Unit receding limb, Tr	1.920 hours
Total unit time, Tb	2.400 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.730 hours
Area (User Defined)	28.580 acres
<hr/>	
Computational Time Increment	0.097 hours
Time to Peak (Computed)	1.168 hours
Flow (Peak, Computed)	45.24 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.200 hours
Flow (Peak Interpolated Output)	45.10 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.100
Area (User Defined)	28.580 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	6.382 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	6.381 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.730 hours
Computational Time Increment	0.097 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	44.36 ft ³ /s
Unit peak time, Tp	0.487 hours
Unit receding limb, Tr	1.947 hours
Total unit time, Tb	2.433 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.730 hours
Area (User Defined)	10.350 acres
<hr/>	
Computational Time Increment	0.097 hours
Time to Peak (Computed)	1.168 hours
Flow (Peak, Computed)	15.39 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.200 hours
Flow (Peak Interpolated Output)	15.37 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	71.600
Area (User Defined)	10.350 acres
Maximum Retention (Pervious)	4.0 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	2.196 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.196 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.730 hours
Computational Time Increment	0.097 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	16.06 ft ³ /s
Unit peak time, Tp	0.487 hours
Unit receding limb, Tr	1.947 hours
Total unit time, Tb	2.433 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.770 hours
Area (User Defined)	34.320 acres
<hr/>	
Computational Time Increment	0.103 hours
Time to Peak (Computed)	1.232 hours
Flow (Peak, Computed)	50.93 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.250 hours
Flow (Peak Interpolated Output)	50.77 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	72.000
Area (User Defined)	34.320 acres
Maximum Retention (Pervious)	3.9 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.6 in
Runoff Volume (Pervious)	7.384 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.383 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.770 hours
Computational Time Increment	0.103 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	50.50 ft ³ /s
Unit peak time, Tp	0.513 hours
Unit receding limb, Tr	2.053 hours
Total unit time, Tb	2.567 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	3.980 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	0.900 hours
Flow (Peak, Computed)	6.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.900 hours
Flow (Peak Interpolated Output)	6.00 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	65.800
Area (User Defined)	3.980 acres
Maximum Retention (Pervious)	5.2 in
Maximum Retention (Pervious, 20 percent)	1.0 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.1 in
Runoff Volume (Pervious)	0.681 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.681 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.04 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.670 hours
Area (User Defined)	13.940 acres
<hr/>	
Computational Time Increment	0.089 hours
Time to Peak (Computed)	1.161 hours
Flow (Peak, Computed)	27.37 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	27.37 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.100
Area (User Defined)	13.940 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	3.650 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.650 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.670 hours
Computational Time Increment	0.089 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	23.57 ft ³ /s
Unit peak time, Tp	0.447 hours
Unit receding limb, Tr	1.787 hours
Total unit time, Tb	2.233 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.640 hours
Area (User Defined)	6.020 acres
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Computational Time Increment	0.085 hours
Time to Peak (Computed)	1.109 hours
Flow (Peak, Computed)	12.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	12.00 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	6.020 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	1.571 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.571 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.640 hours
Computational Time Increment	0.085 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	10.66 ft ³ /s
Unit peak time, Tp	0.427 hours
Unit receding limb, Tr	1.707 hours
Total unit time, Tb	2.133 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.790 hours
Area (User Defined)	39.530 acres
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Computational Time Increment	0.105 hours
Time to Peak (Computed)	1.159 hours
Flow (Peak, Computed)	71.73 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.200 hours
Flow (Peak Interpolated Output)	71.68 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.700
Area (User Defined)	39.530 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	10.225 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	10.226 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.790 hours
Computational Time Increment	0.105 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	56.70 ft ³ /s
Unit peak time, Tp	0.527 hours
Unit receding limb, Tr	2.107 hours
Total unit time, Tb	2.633 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.270 hours
Area (User Defined)	312.500 acres
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Computational Time Increment	0.169 hours
Time to Peak (Computed)	1.693 hours
Flow (Peak, Computed)	366.37 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.700 hours
Flow (Peak Interpolated Output)	365.93 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	71.600
Area (User Defined)	312.500 acres
Maximum Retention (Pervious)	4.0 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	66.310 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	66.310 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.270 hours
Computational Time Increment	0.169 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	278.80 ft ³ /s
Unit peak time, Tp	0.847 hours
Unit receding limb, Tr	3.387 hours
Total unit time, Tb	4.233 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.890 hours
Area (User Defined)	175.400 acres
<hr/>	
Computational Time Increment	0.119 hours
Time to Peak (Computed)	1.305 hours
Flow (Peak, Computed)	282.81 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.300 hours
Flow (Peak Interpolated Output)	282.47 ft ³ /s
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Drainage Area	
SCS CN (Composite)	75.700
Area (User Defined)	175.400 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	42.633 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	42.633 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.890 hours
Computational Time Increment	0.119 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	223.30 ft ³ /s
Unit peak time, Tp	0.593 hours
Unit receding limb, Tr	2.373 hours
Total unit time, Tb	2.967 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.490 hours
Area (User Defined)	67.380 acres
<hr/>	
Computational Time Increment	0.065 hours
Time to Peak (Computed)	0.915 hours
Flow (Peak, Computed)	213.10 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.900 hours
Flow (Peak Interpolated Output)	212.98 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	90.100
Area (User Defined)	67.380 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.4 in
Runoff Volume (Pervious)	24.487 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	24.488 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.490 hours
Computational Time Increment	0.065 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	155.80 ft ³ /s
Unit peak time, Tp	0.327 hours
Unit receding limb, Tr	1.307 hours
Total unit time, Tb	1.633 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.790 hours
Area (User Defined)	14.290 acres
<hr/>	
Computational Time Increment	0.105 hours
Time to Peak (Computed)	1.159 hours
Flow (Peak, Computed)	26.23 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.200 hours
Flow (Peak Interpolated Output)	26.20 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	14.290 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	3.730 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.731 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.790 hours
Computational Time Increment	0.105 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	20.50 ft ³ /s
Unit peak time, Tp	0.527 hours
Unit receding limb, Tr	2.107 hours
Total unit time, Tb	2.633 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	1.230 hours
Area (User Defined)	86.450 acres
<hr/>	
Computational Time Increment	0.164 hours
Time to Peak (Computed)	1.476 hours
Flow (Peak, Computed)	130.05 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.500 hours
Flow (Peak Interpolated Output)	130.01 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.100
Area (User Defined)	86.450 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	22.634 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	22.634 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.230 hours
Computational Time Increment	0.164 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	79.64 ft ³ /s
Unit peak time, Tp	0.820 hours
Unit receding limb, Tr	3.280 hours
Total unit time, Tb	4.100 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.720 hours
Area (User Defined)	5.660 acres
<hr/>	
Computational Time Increment	0.096 hours
Time to Peak (Computed)	1.152 hours
Flow (Peak, Computed)	10.76 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	10.76 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	5.660 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	1.468 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.469 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.720 hours
Computational Time Increment	0.096 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	8.91 ft ³ /s
Unit peak time, Tp	0.480 hours
Unit receding limb, Tr	1.920 hours
Total unit time, Tb	2.400 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.720 hours
Area (User Defined)	70.220 acres
<hr/>	
Computational Time Increment	0.096 hours
Time to Peak (Computed)	1.152 hours
Flow (Peak, Computed)	120.72 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	120.63 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.100
Area (User Defined)	70.220 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	16.744 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	16.747 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.720 hours
Computational Time Increment	0.096 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	110.50 ft ³ /s
Unit peak time, Tp	0.480 hours
Unit receding limb, Tr	1.920 hours
Total unit time, Tb	2.400 hours

Storm Event	100YR- 3HR
Return Event	100 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.470 hours
Area (User Defined)	5.860 acres
<hr/>	
Computational Time Increment	0.063 hours
Time to Peak (Computed)	1.003 hours
Flow (Peak, Computed)	10.85 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.000 hours
Flow (Peak Interpolated Output)	10.84 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	5.860 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	1.322 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.322 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.470 hours
Computational Time Increment	0.063 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.13 ft ³ /s
Unit peak time, Tp	0.313 hours
Unit receding limb, Tr	1.253 hours
Total unit time, Tb	1.567 hours

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
874.58	0.000
875.00	0.005
876.00	0.056
877.00	0.163
878.00	0.326
879.00	0.545
880.00	0.819
881.00	1.300
881.55	1.717
882.00	2.138
884.00	5.427

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
863.70	0.000
864.00	0.009
866.00	0.502
867.20	1.164
868.00	1.756
870.00	25.941
870.37	35.846
871.00	58.511
872.00	109.485

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
868.42	0.000
869.00	0.067
870.00	0.498
871.00	1.816
872.00	4.510
873.00	8.582
873.56	11.463
874.00	14.029
875.00	20.675

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
869.95	0.000
870.00	0.001
872.00	0.100
874.00	7.126
875.00	16.356
875.03	16.703
875.20	18.709
875.30	19.922

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
863.03	0.000
864.00	0.102
865.00	0.422
865.50	0.663
866.00	0.959
867.00	1.731

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
848.78	0.000
849.00	0.009
850.00	0.289
851.00	1.750
852.00	5.184
852.80	12.720
852.90	14.225
853.00	15.854

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
882.03	0.000
883.00	0.013
884.00	0.052
885.00	0.118
886.00	0.210
887.00	0.573
887.40	0.863
888.00	1.452
889.00	4.795

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
899.26	0.000
900.00	0.008
901.00	0.041
902.00	0.103
903.00	0.300
904.00	0.743
905.00	1.430
906.00	2.605
907.00	4.709

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
867.63	0.000
868.00	0.006
869.31	0.128
870.00	0.255
871.20	1.116
871.30	1.242
871.60	1.671
871.70	1.831
871.90	2.176
872.00	2.361
873.64	9.073
873.70	10.133
873.80	10.874

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
945.00	0.000
946.00	6.805
947.00	13.824
948.00	21.172
949.00	28.852
949.50	32.777
950.00	36.759

Requested Pond Water Surface Elevations

Minimum (Headwater)	874.58 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	884.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 30	Forward	TW	0.00	884.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 30
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
874.58	0.00
875.00	17.22
877.00	84.00
878.00	136.80
879.00	204.00
880.00	278.40
881.00	352.00
881.55	396.00
882.00	705.79
884.00	6,296.28

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	863.70 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	872.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 31	Forward	TW	0.00	872.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 31
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
863.70	0.00
864.20	0.50
865.00	29.76
866.00	100.86
867.00	191.38
868.00	291.86
869.00	413.33
870.00	474.53
871.00	750.00
872.00	3,100.00

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	868.42 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	875.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 32	Forward	TW	0.00	875.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 32
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
868.42	0.00
869.00	4.23
870.00	24.16
871.00	29.97
872.00	33.00
873.00	40.00
873.56	42.00
874.00	354.08
875.00	2,129.60

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	869.95 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	875.30 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 33	Forward	TW	0.00	875.30
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 33
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
869.95	0.00
870.00	0.13
872.00	73.22
874.00	80.00
875.00	96.00
875.03	100.00
875.20	207.04
875.30	364.85

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	863.03 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	867.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 34	Forward	TW	0.00	867.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 34
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
863.03	0.00
864.00	3.00
865.00	5.50
865.50	7.00
866.00	368.62
867.00	1,993.89

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	848.78 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	853.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 35	Forward	TW	0.00	853.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 35
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
848.78	0.00
849.00	0.01
850.00	1.46
851.00	5.50
852.00	8.00
852.80	9.60
852.90	57.43
853.00	278.83

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	882.03 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	889.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 36	Forward	TW	0.00	889.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 36
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
882.03	0.00
883.00	15.47
884.00	55.68
885.00	58.00
886.00	84.00
887.00	112.00
887.40	120.00
888.00	410.85
889.00	5,895.17

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	899.26 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	907.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 37	Forward	TW	0.00	907.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 37
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
899.26	0.00
900.00	0.01
901.00	49.87
902.00	51.20
903.00	78.00
904.00	100.00
905.00	120.00
906.00	732.00
907.00	4,009.29

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	867.63 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	873.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	38 CULVERT 2	Forward	TW	867.63	873.80
Culvert-Box	38 CULVERT	Forward	TW	867.66	873.80
Culvert-Circular	38 CULVERT 3	Forward	TW	869.31	873.80
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: 38 CULVERT	
Structure Type: Culvert-Box	
Number of Barrels	3
Width	8.00 ft
Height	4.00 ft
Length	34.00 ft
Length (Computed Barrel)	34.00 ft
Slope (Computed)	-0.002 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.003
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.143
T2 ratio (HW/D)	1.198
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	872.23 ft	T1 Flow	224.00 ft ³ /s
T2 Elevation	872.45 ft	T2 Flow	256.00 ft ³ /s

Structure ID: 38 CULVERT 2	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	60.0 in
Length	36.00 ft
Length (Computed Barrel)	36.00 ft
Slope (Computed)	0.001 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.004
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.095
T2 ratio (HW/D)	1.197
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	873.10 ft	T1 Flow	153.67 ft ³ /s
T2 Elevation	873.61 ft	T2 Flow	175.62 ft ³ /s

Structure ID: 38 CULVERT 3	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	30.0 in
Length	20.50 ft
Length (Computed Barrel)	20.50 ft
Slope (Computed)	0.009 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.009
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.091
T2 ratio (HW/D)	1.193
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	872.04 ft	T1 Flow	27.16 ft ³ /s
T2 Elevation	872.29 ft	T2 Flow	31.05 ft ³ /s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	945.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	950.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	99 Weir Tailwater	Forward	TW	949.00 (N/A)	950.00 (N/A)

Structure ID: 99 Weir
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	950.00
5.00	949.00
36.00	949.00
40.00	950.00

Lowest Elevation 949.00 ft
 Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

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TAB 2D

**EXISTING CONDITIONS
SUPPORTING DOCUMENTATION**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #021 - 2.38 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Rural Residential, 2+ Acres, Good Condition	65			2.34	152.1
	Impervious Pavement (Harmony Road)	98			0.04	3.92
Totals =					2.38	156.020

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{156.020}{2.380} = \underline{65.555}$$

Use CN = 65.6

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall	in													
Runoff, Q	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

** See soils legend for soil types*

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #042 - 30.77 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres ____ mi ² ____ %	
"B"	Open Space, Parks (Good Condition)	61			30.77	1876.97
Totals =					30.77	1876.970

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1876.970}{30.770} = \underline{61.000}$$

Use CN = 61.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #043 - 37.94 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Open Space, Good Condition	61			5.65	344.65
	Straight Row Crops, Good Condition	78			32.29	2518.62
Totals =					37.94	2863.270

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2863.270}{37.940} = 75.468$$

Use CN = 75.5

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr></table>	Storm #1	Storm #2	Storm #3	
Storm #1	Storm #2	Storm #3				
Rainfall	in					
Runoff, Q	in					

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #045 - 86.18 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			72.87	5683.86
	Farmstead, Good Condition	74			7.52	556.48
	Open Space, Grass, Brush, Some Trees, Good Condition	61			4.72	287.92
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			1.07	104.86
Totals =					86.18	6633.120

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{6633.120}{86.180} = 76.968$$

Use CN = 77.0

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><th>Storm #1</th><th>Storm #2</th><th>Storm #3</th></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3			
Storm #1	Storm #2	Storm #3						
Rainfall	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						
Runoff, Q	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #046 - 78.65 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			56.60	4414.8
	Farmstead, Good Condition	74			2.26	167.24
	Rural Residential, 2+ Acres, Good Condition	65			13.23	859.95
	Open Space, Grass, Brush, Some Trees, Good Condition	61			3.32	202.52
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			3.24	317.52
Totals =					78.65	5962.030

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{5962.030}{78.650} = 75.805$$

Use CN = 75.8

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #047 - 103.55 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			98.99	7721.22
	Open Space, Grass, Brush, Some Trees, Good Condition	61			3.83	233.63
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			0.73	71.54
Totals =					103.55	8026.390

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{8026.390}{103.550} = 77.512$$

Use CN = 77.5

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #048 - 32.68 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			26.06	2032.68
	Open Space, Grass, Brush, Some Trees, Good Condition	61			6.62	403.82
Totals =					32.68	2436.500

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2436.500}{32.680} = 74.556$$

Use CN = 74.6

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall	in													
Runoff, Q	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #049 - 37.90 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			34.65	2702.7
	Open Space, Grass, Brush, Some Trees, Good Condition	61			2.93	178.73
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			0.32	31.36
Totals =					37.90	2912.790

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2912.790}{37.900} = 76.855$$

Use CN = 76.9

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #050 - 52.15 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			51.06	3982.68
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.51	31.11
	Impervious Pavement (Harmony and Big Timber Roads)	98			0.58	56.84
Totals =					52.15	4070.630

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{4070.630}{52.150} = 78.056$$

Use CN = 78.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #051 - 90.81 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			69.10	5389.8
	Farmstead, Good Condition	74			3.25	240.5
	Rural Residential, 2+ Acres, Good Condition	65			4.44	288.6
	Open Space, Grass, Brush, Some Trees, Good Condition	61			12.59	767.99
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			1.43	140.14
Totals =					90.81	6827.030

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{6827.030}{90.810} = 75.179$$

Use CN = 75.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #052 - 17.71 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			15.14	1180.92
	Farmstead, Good Condition	74			2.02	149.48
	Impervious Pavement (Melms and Harmony Roads)	98			0.55	53.9
Totals =					17.71	1384.300

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1384.300}{17.710} = 78.165$$

Use CN = 78.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #053 - 111.89 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			109.27	8523.06
	Farmstead, Good Condition	74			0.83	61.42
	Open Space, Grass, Brush, Some Trees, Good Condition	61			1.46	89.06
	Impervious Pavement (Harmony Road)	98			0.33	32.34
Totals =					111.89	8705.880

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{8705.880}{111.890} = 77.807$$

Use CN = 77.8

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><th>Storm #1</th><th>Storm #2</th><th>Storm #3</th></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3			
Storm #1	Storm #2	Storm #3						
Rainfall	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						
Runoff, Q	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #054 - 35.92 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			30.81	2403.18
	Farmstead, Good Condition	74			4.01	296.74
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.36	21.96
	Impervious Pavement (Melms Road)	98			0.74	72.52
Totals =					35.92	2794.400

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2794.400}{35.920} = 77.795$$

Use CN = 77.8

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #055 - 124.24 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			94.71	7387.38
	Farmstead, Good Condition	74			6.57	486.18
	Rural Residential, 2+ Acres, Good Condition	65			5.33	346.45
	Open Space, Grass, Brush, Some Trees, Good Condition	61			16.89	1030.29
	Impervious Pavement (Melms and Harmony Roads)	98			0.74	72.52
Totals =					124.24	9322.820

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{9322.820}{124.240} = 75.039$$

Use CN = 75.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #056 - 21.65 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area <u>X</u> acres ____ mi ² ____ %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
"B"	Straight Row Crops, Good Condition	78			18.01	1404.78
	Open Space, Grass, Brush, Some Trees, Good Condition	61			3.64	222.04
Totals =					21.65	1626.820

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1626.820}{21.650} = \underline{75.142}$$

Use CN = 75.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #057 - 98.81 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			70.95	5534.1
	Rural Residential, 2+ Acres, Good Condition	65			27.26	1771.9
	Impervious Pavement (Widemeyer Road)	98			0.60	58.8
Totals =					98.81	7364.800

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{7364.800}{98.810} = \underline{74.535}$$

Use CN = 74.5

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #058 - 20.07 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			17.72	1382.16
	Farmstead, Good Condition	74			0.92	68.08
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.47	28.67
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			0.96	94.08
		Totals =			20.07	1572.990

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1572.990}{20.070} = 78.375$$

Use CN = 78.4

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #059 - 3.09 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area <u>X</u> acres mi ² %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
"B"	Rural Residential, 2+ Acres, Good Condition	65			3.04	197.6
	Impervious Pavement (Harmony Road)	98			0.05	4.9
Totals =					3.09	202.500

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{202.500}{3.090} = \underline{65.534}$$

Use CN = 65.5

2. Runoff

Frequency	yr			
Rainfall	in			
Runoff, Q	in			

Storm #1	Storm #2	Storm #3

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #060 - 158.00 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			146.55	11430.9
	Farmstead, Good Condition	74			2.72	201.28
	Rural Residential, 2+ Acres, Good Condition	65			6.94	451.1
	Open Space, Grass, Brush, Some Trees, Good Condition	61			1.16	70.76
	Impervious Pavement (Harmony Road)	98			0.63	61.74
Totals =					158.00	12215.780

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{12215.780}{158.000} = 77.315$$

Use CN = 77.3

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #061 - 45.83 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			43.68	3407.04
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.97	59.17
	Impervious Pavement (Melms Road)	98			1.18	115.64
Totals =					45.83	3581.850

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3581.850}{45.830} = 78.155$$

Use CN = 78.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #062 - 93.46 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			92.08	7182.24
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.97	59.17
	Impervious Pavement (Melms Road)	98			0.41	40.18
Totals =					93.46	7281.590

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{7281.590}{93.460} = 77.911$$

Use CN = 77.9

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #063 - 146.68 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			143.70	11208.6
	Farmstead, Good Condition	74			1.17	86.58
	Open Space, Grass, Brush, Some Trees, Good Condition	61			1.81	110.41
	Impervious Pavement (Melms and Walker Roads)	98				
Totals =					146.68	11405.590

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{11405.590}{146.680} = 77.758$$

Use CN = 77.8

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><th>Storm #1</th><th>Storm #2</th><th>Storm #3</th></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3			
Storm #1	Storm #2	Storm #3						
Rainfall	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						
Runoff, Q	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #070 - 58.69 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			53.61	4181.58
	Open Space, Grass, Brush, Some Trees, Good Condition	61			5.08	309.88
Totals =					58.69	4491.460

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{4491.460}{58.690} = 76.529$$

Use CN = 76.5

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #071 - 102.26 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			99.52	7762.56
	Farmstead, Good Condition	74			1.60	118.4
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.96	58.56
	Impervious Pavement (Harmony Road)	98			0.18	17.64
Totals =					102.26	7957.160

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{7957.160}{102.260} = 77.813$$

Use CN = 77.8

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall	in													
Runoff, Q	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #072 - 152.41 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			147.30	11489.4
	Farmstead, Good Condition	74			2.56	189.44
	Open Space, Grass, Brush, Some Trees, Good Condition	61			2.22	135.42
	Impervious Pavement (Melms and Walker Roads)	98			0.33	32.34
Totals =					152.41	11846.600

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{11846.600}{152.410} = 77.728$$

Use CN = 77.7

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall	in													
Runoff, Q	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #073 - 119.82 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			71.57	5582.46
	Farmstead, Good Condition	74			3.63	268.62
	Rural Commercial, Nursery w/ grassy stock fields	65			40.50	2632.5
	Open Space, Grass, Brush, Some Trees, Good Condition	61			2.47	150.67
	Impervious Pavement (Melms and Walker Roads)	98			1.65	161.7
Totals =					119.82	8795.950

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{8795.950}{119.820} = 73.410$$

Use CN = 73.4

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #074 - 22.46 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			11.01	858.78
	Open Space, Grass, Brush, Some Trees, Good Condition	61			2.11	128.71
	Rural Residential, 1/2 Acre, Good Condition	70			9.12	638.4
	Impervious Pavement (Route 20 Road)	98			0.22	21.56
Totals =					22.46	1647.450

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1647.450}{22.460} = 73.350$$

Use CN = 73.4

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><th>Storm #1</th><th>Storm #2</th><th>Storm #3</th></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3			
Storm #1	Storm #2	Storm #3						
Rainfall	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						
Runoff, Q	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #075 - 28.58 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			19.93	1554.54
	Open Space, Grass, Brush, Some Trees, Good Condition	61			8.49	517.89
	Impervious Pavement (Route 20 Road)	98			0.16	15.68
Totals =					28.58	2088.110

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2088.110}{28.580} = 73.062$$

Use CN = 73.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #090 - 10.35 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			5.09	397.02
	Rural Residential, 2+ Acres, Good Condition	65			5.19	337.35
	Impervious Pavement (Harmony Road)	98			0.07	6.86
Totals =					10.35	741.230

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{741.230}{10.350} = 71.616$$

Use CN = 71.6

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #091 - 34.32 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			17.49	1364.22
	Rural Residential, 2+ Acres, Good Condition	65			16.43	1067.95
	Impervious Pavement (Harmony Road)	98			0.40	39.2
Totals =					34.32	2471.370

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2471.370}{34.320} = 72.010$$

Use CN = 72.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #092 - 3.98 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area <u>X</u> acres mi ² %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
	Rural Residential, 2+ Acres, Good Condition	65			3.88	252.2
	Impervious Pavement (Harmony Road)	98			0.10	9.8
Totals =					3.98	262.000

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{262.000}{3.980} = \underline{65.829}$$

Use CN = 65.8

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr></table>	Storm #1	Storm #2	Storm #3	
Storm #1	Storm #2	Storm #3				
Rainfall	in					
Runoff, Q	in					

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #093 - 13.94 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			13.89	1083.42
	Impervious Pavement (Harmony Road)	98			0.05	4.9
Totals =					13.94	1088.320

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{1088.320}{13.940} = \underline{78.072}$$

Use CN = 78.1

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr></table>	Storm #1	Storm #2	Storm #3	
Storm #1	Storm #2	Storm #3				
Rainfall	in					
Runoff, Q	in					

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #094 - 6.02 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres ____ mi ² ____ %	
"B"	Straight Row Crops, Good Condition	78			6.02	469.56
Totals =					6.02	469.560

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{469.560}{6.020} = \underline{78.000}$$

Use CN = 78.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #095 - 39.53 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			36.69	2861.82
	Farmstead, Good Condition	74			1.85	136.9
	Open Space, Grass, Brush, Trees, Good Condition	61			0.66	40.26
	Impervious Pavement (Big Timber Road)	98			0.33	32.34
Totals =					39.53	3071.320

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3071.320}{39.530} = 77.696$$

Use CN = 77.7

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall	in													
Runoff, Q	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #097 - 312.50 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			181.00	14118
	Farmstead, Good Condition	74			10.45	773.3
	Rural Residential, 2+ Acres, Good Condition	65			2.38	154.7
	Open Space, Grass, Brush, Trees, Good Condition	61			116.49	7105.89
	Impervious Pavement (Widemeyer, Higgins and Big Timber Roads)	98			2.18	213.64
Totals =					312.50	22365.530

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{22365.530}{312.500} = 71.570$$

Use CN = 71.6

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #098 - 175.40 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			143.97	11229.66
	Farmstead, Good Condition	74			4.75	351.5
	Open Space, Grass, Brush, Some Trees, Good Condition	61			24.67	1504.87
	Impervious Pavement (Widemeyer, Gast and Higgins Roads)	98			2.01	196.98
Totals =					175.40	13283.010

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{13283.010}{175.400} = 75.730$$

Use CN = 75.7

2. Runoff

Frequency	yr	<table border="1" style="width: 100%;"><tr><th>Storm #1</th><th>Storm #2</th><th>Storm #3</th></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3			
Storm #1	Storm #2	Storm #3						
Rainfall	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						
Runoff, Q	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>						

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #099 - 67.38 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Business Park, Commercial and Industrial	90			66.45	5980.5
	Impervious Pavement (Gast, Higgins and Route 20 Roads)	98			0.93	91.14
Totals =					67.38	6071.640

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{6071.640}{67.380} = 90.110$$

Use CN = 90.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #103 - 14.29 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres ____ mi ² ____ %	
"B"	Straight Row Crops, Good Condition	78			14.29	1114.62
Totals =					14.29	1114.620

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{1114.620}{14.290} = \underline{78.000}$$

Use CN = 78.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #128 - 86.45 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	<u>X</u> acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			85.49	6668.22
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.31	18.91
	Impervious Pavement (Harmony Road)	98			0.65	63.7
Totals =					86.45	6750.830

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{6750.830}{86.450} = 78.089$$

Use CN = 78.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #140 - 5.66 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area <u>X</u> acres ____ mi ² ____ %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
"B"	Straight Row Crops, Good Condition	78			5.58	435.24
	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.08	4.88
Totals =					5.66	440.120

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{440.120}{5.660} = \underline{77.760}$$

Use CN = 77.8

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

*** See soils legend for soil types**

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #145 - 70.22 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			53.13	4144.14
	Farmstead, Good Condition	74			1.91	141.34
	Rural Residential, 2+ Acres, Good Condition	65			6.00	390
	Open Space, Grass, Brush, Some Trees, Good Condition	61			8.22	501.42
	Impervious Pavement (Widemeyer and Big Timber Roads)	98			0.96	94.08
Totals =					70.22	5270.980

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{5270.980}{70.220} = 75.064$$

Use CN = 75.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

* See soils legend for soil types

Worksheet 2: Runoff Curve Number and Runoff

Project Prairie Ridge - Hampshire Creek and Tributaries FS By AJH Date 4/16/2009
 Location Hampshire, Kane County, Illinois Checked CMZ Date 11/8/2022

Circle one: Present Developed

Runoff Area #157 - 5.88 Acres

1. Runoff curve number (CN)

Soil Name* and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X acres mi ² %	
"B"	Straight Row Crops, Good Condition	78			4.28	333.84
	Open Space, Grass, Brush, Some Trees, Good Condition	61			1.60	97.6
Totals =					5.88	431.440

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{431.440}{5.880} = \underline{73.374}$$

Use CN = 73.4

2. Runoff

Frequency	yr			
Rainfall	in			
Runoff, Q	in			

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

* See soils legend for soil types

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #021

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

- Surface Description (Table 3-1)
- Manning's roughness coeff., n (Table 3-1)
- Flow length, L (total L ≤ 300 ft)
- Two-yr 24-hr rainfall, P₂
- Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Short Grass	
	0.150	
ft	100	
in	3.34	
ft/ft	0.0550	
hr	0.11	+ = 0.11

Shallow Concentrated Flow

- Surface description (paved or unpaved)
- Flow length, L
- Watercourse slope, s
- Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	950.0'	
	0.0132	
	1.87	
hr	0.14	+ = 0.14

Channel Flow

- Cross sectional flow area, a
- Wetted perimeter, pw
- Hydraulic radius, r = a/pw compute r
- Channel Slope, s
- Manning's roughness coeff., n
- V = 1.49 r^{2/3} s^{1/2} / n
- Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.25 Minimum

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #042

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0300	
hr	0.36	+ = 0.36

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	318.0	
	0.0101	
	1.63	
hr	0.05	+ = 0.05

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²	12	
ft	17	
ft	0.70	
ft/ft	0.0040	
	0.04	
ft/s	1.84	
ft	3315	
hr	0.50	+ = 0.499

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.92

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #043

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0103	
hr	0.55	+ = 0.55

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	Unpaved	
	285.0	
	0.0225	
	2.44	
hr	0.03	+ = 0.03

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²	68	
ft	34	
ft	2.00	
ft/ft	0.0023	
	0.04	
ft/s	2.81	
ft	2616	
hr	0.26	+ = 0.259

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.85

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #045

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0200	
hr	0.43	+ = 0.43

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3614.0'	
	0.0149	
	1.99	
hr	0.50	+ = 0.50

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.93

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #046

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0223	
hr	0.41	+ = 0.41

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2535.0'	
	0.0141	
	1.93	
hr	0.36	+ = 0.36

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.77

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #047

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0267	
hr	0.38	+ = 0.38

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3971.0'	
	0.0118	
	1.77	
hr	0.62	+ = 0.62

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.00

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #048

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0167	
hr	0.46	+ = 0.46

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1630.0'	
	0.0037	
	0.98	
hr	0.46	+ = 0.46

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.92

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #049

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0367	
hr	0.33	+ = 0.33

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1469.5'	
	0.0238	
	2.52	
hr	0.16	+ = 0.16

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.50

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #050

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0283	
hr	0.37	+ = 0.37

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1753.0'	
	0.0211	
	2.37	
hr	0.21	+ = 0.21

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.58

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #051

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0133	
hr	0.50	+ = 0.50

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2300.0'	
	0.0096	
	1.59	
hr	0.40	+ = 0.40

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.90

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #052

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0307	
hr	0.36	+ = 0.36

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1597.0'	
	0.0109	
	1.70	
hr	0.26	+ = 0.26

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	ft ²	
	ft	
	ft	
	ft/ft	
	ft/s	
	ft	
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.62

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #053

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3413.0'	
	0.0088	
	1.52	
hr	0.62	+ = 0.62

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.28

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #054

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0083	
hr	0.60	+ = 0.60

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2775.0'	
	0.0059	
	1.25	
hr	0.62	+ = 0.62

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.22

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #055

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	695.0	
	0.0137	
	1.90	
hr	0.10	+ = 0.10

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²	38	
ft	22	
ft	1.76	
ft/ft	0.0039	
	0.045	
ft/s	3.03	
ft	4450	
hr	0.41	+ = 0.409

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **1.17**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #056

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0167	
hr	0.46	+ = 0.46

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1538.0'	
	0.0166	
	2.10	
hr	0.20	+ = 0.20

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.66

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #057

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0233	
hr	0.40	+ = 0.40

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	5632.0'	
	0.0186	
	2.22	
hr	0.70	+ = 0.70

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.10

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #058

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0133	
hr	0.50	+ = 0.50

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1374.0'	
	0.0131	
	1.86	
hr	0.20	+ = 0.20

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.71

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #059

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	100	
in	3.34	
ft/ft	0.0400	
hr	0.13	+ = 0.13

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	950.0'	
	0.0189	
	2.24	
hr	0.12	+ = 0.12

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.25

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #060

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3680.0'	
	0.0082	
	1.47	
hr	0.70	+ = 0.70

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.36

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #061

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0087	
hr	0.59	+ = 0.59

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3195.0'	
	0.0036	
	0.97	
hr	0.92	+ = 0.92

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	ft ²	
	ft	
	ft	
	ft/ft	
	ft/s	
	ft	
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.51

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #062

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0167	
hr	0.46	+ = 0.46

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1089.0	
	0.0018	
	0.69	
hr	0.44	+ = 0.44

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²	18	
ft	17	
ft	1.03	
ft/ft	0.0028	
	0.045	
ft/s	1.77	
ft	2536	
hr	0.40	+ = 0.397

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **1.29**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #063

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	4440.0'	
	0.0029	
	0.88	
hr	1.41	+ = 1.41

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	ft ²	
	ft	
	ft	
	ft/ft	
	ft/s	
	ft	
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **2.07**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #070

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0100	
hr	0.56	+ = 0.56

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3720.0'	
	0.0056	
	1.22	
hr	0.85	+ = 0.85

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.41

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #071

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	5405.0	
	0.0056	
	1.21	
hr	1.24	+ = 1.24

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²	48	
ft	32	
ft	1.52	
ft/ft	0.0020	
	0.045	
ft/s	1.94	
ft	2540	
hr	0.36	+ = 0.363

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **2.26**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #072

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0067	
hr	0.66	+ = 0.66

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	5770.0'	
	0.0028	
	0.85	
hr	1.88	+ = 1.88

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 2.54

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #073

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0033	
hr	0.87	+ = 0.87

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	4700.0'	
	0.0023	
	0.78	
hr	1.67	+ = 1.67

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 2.54

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #074

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0433	
hr	0.31	+ = 0.31

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2200.0'	
	0.0086	
	1.51	
hr	0.40	+ = 0.40

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.72

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #075

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0667	
hr	0.26	+ = 0.26

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1560.0'	
	0.0032	
	0.92	
hr	0.47	+ = 0.47

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **0.73**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #090

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0100	
hr	0.56	+ = 0.56

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	890.0'	
	0.0079	
	1.44	
hr	0.17	+ = 0.17

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.73

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #091

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0133	
hr	0.50	+ = 0.50

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1270.0'	
	0.0063	
	1.29	
hr	0.27	+ = 0.27

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.77

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #092

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	100	
in	3.34	
ft/ft	0.0350	
hr	0.14	+ = 0.14

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	525.0'	
	0.0067	
	1.33	
hr	0.11	+ = 0.11

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **0.25**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #093

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0117	
hr	0.53	+ = 0.53

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	610.0'	
	0.0057	
	1.23	
hr	0.14	+ = 0.14

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.67

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #094

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0100	
hr	0.56	+ = 0.56

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	390.0'	
	0.0064	
	1.30	
hr	0.08	+ = 0.08

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.64

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #095

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0167	
hr	0.46	+ = 0.46

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2240.0'	
	0.0134	
	1.88	
hr	0.33	+ = 0.33

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.79

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #097

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0467	
hr	0.30	+ = 0.30

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	6240.0'	
	0.0120	
	1.78	
hr	0.97	+ = 0.97

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.27

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #098

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0400	
hr	0.32	+ = 0.32

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3660.0'	
	0.0120	
	1.78	
hr	0.57	+ = 0.57

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.89

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #099

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s
6.
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Short Grass	Asphalt
	0.150	0.011
ft	200	100
in	3.34	3.34
ft/ft	0.0200	0.02
hr	0.28	0.02
	+	= 0.30

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11.
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	Paved	
	1400.0	
	0.0100	
	2.07	
hr	0.19	0.19
	+	= 0.19

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r = a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19.
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		
	+	=

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr **0.49**

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #103

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0073	
hr	0.64	+ = 0.64

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	879.0'	
	0.0100	
	1.63	
hr	0.15	+ = 0.15

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.79

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #128

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s
6.
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0167	
hr	0.46	+ = 0.46

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11.
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	3230.0'	
	0.0051	
	1.16	
hr	0.77	+ = 0.77

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19.
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 1.23

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #140

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0100	
hr	0.56	+ = 0.56

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	640.0'	
	0.0047	
	1.11	
hr	0.16	+ = 0.16

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.72

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #145

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0300	
hr	0.36	+ = 0.36

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	2660.0'	
	0.0158	
	2.05	
hr	0.36	+ = 0.36

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.72

Worksheet 3: Time of Concentration (Tc)

Project Prairie Ridge - Hampshire Creek and Tributaries - Flood Study
 Location Hampshire, Kane County, Illinois

By AJH Date 4/17/2009
 Checked CMZ Date 11/8/2022

Check one: Present Developed
 Check one: Tc Tt

Runoff Area #157

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P₂
5. Land slope, s

$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Cultivated Soils, RC>20%	
	0.170	
ft	300	
in	3.34	
ft/ft	0.0267	
hr	0.38	+ = 0.38

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)

$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	533.0'	
	0.0099	
	1.62	
hr	0.09	+ = 0.09

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17. V= 1.49 r^{2/3} s^{1/2} / n
18. Flow length, L

$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft ²		
ft		
ft		
ft/ft		
ft/s		
ft		
hr		+ =

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr 0.47

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 30 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
874.58	0	0.000	0.000	0.000
875.00	1020	0.023	0.005	0.005
876.00	3450	0.079	0.051	0.056
877.00	5879	0.135	0.107	0.163
878.00	8309	0.191	0.163	0.326
879.00	10738	0.247	0.219	0.545
880.00	13168	0.302	0.274	0.819
881.00	28719	0.659	0.481	1.300
881.55	37271	0.856	0.417	1.717
882.00	44269	1.016	0.421	2.138
884.00	99009	2.273	3.289	5.427

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 31 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
863.70	0	0.000	0.000	0.000
864.00	2482	0.057	0.009	0.009
866.00	19032	0.437	0.494	0.502
867.20	28962	0.665	0.661	1.164
868.00	35582	0.817	0.593	1.756
870.00	1017890	23.368	24.184	25.941
870.37	1314524	30.177	9.906	35.846
871.00	1819604	41.772	22.664	58.511
872.00	2621317	60.177	50.975	109.485

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 32 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
868.42	0	0.000	0.000	0.000
869.00	10072	0.231	0.067	0.067
870.00	27437	0.630	0.431	0.498
871.00	87399	2.006	1.318	1.816
872.00	147360	3.383	2.695	4.510
873.00	207322	4.759	4.071	8.582
873.56	240900	5.530	2.881	11.463
874.00	267283	6.136	2.567	14.029
875.00	311695	7.156	6.646	20.675

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 33 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
869.95	0	0.000	0.000	0.000
870.00	103	0.002	0.000	0.000
872.00	4240	0.097	0.100	0.100
874.00	301838	6.929	7.027	7.126
875.00	502224	11.529	9.229	16.356
875.03	505349	11.601	0.347	16.703
875.20	523057	12.008	2.007	18.709
875.30	533474	12.247	1.213	19.922

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
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SWMF 34 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
863.03	0	0.000	0.000	0.000
864.00	9188	0.211	0.102	0.102
865.00	18661	0.428	0.320	0.422
865.50	23397	0.537	0.241	0.663
866.00	28133	0.646	0.296	0.959
867.00	39104	0.898	0.772	1.731

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 35 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
848.78	0	0.000	0.000	0.000
849.00	3722	0.085	0.009	0.009
850.00	20640	0.474	0.280	0.289
851.00	106622	2.448	1.461	1.750
852.00	192604	4.422	3.435	5.184
852.80	628062	14.418	7.536	12.720
852.90	682494	15.668	1.504	14.225
853.00	736926	16.917	1.629	15.854

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
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By: CMZ

SWMF 36 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
882.03	0	0.000	0.000	0.000
883.00	1126	0.026	0.013	0.013
884.00	2288	0.053	0.039	0.052
885.00	3449	0.079	0.066	0.118
886.00	4610	0.106	0.093	0.210
887.00	27042	0.621	0.363	0.573
887.40	36014	0.827	0.290	0.863
888.00	49473	1.136	0.589	1.452
890.00	96148	2.207	3.343	4.795

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
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By: CMZ

SWMF 37 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
899.26	0	0.000	0.000	0.000
900.00	884	0.020	0.008	0.008
901.00	2078	0.048	0.034	0.041
902.00	3272	0.075	0.061	0.103
903.00	13941	0.320	0.198	0.300
904.00	24610	0.565	0.443	0.743
905.00	35279	0.810	0.687	1.430
906.00	67034	1.539	1.174	2.605
907.00	116260	2.669	2.104	4.709

Job #: 456.275
Project: Prairie Ridge

Date: November 10, 2022
Revised:
By: CMZ

SWMF 38 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
867.63	0	0.000	0.000	0.000
867.73	395	0.009	0.000	0.000
868.00	1462	0.034	0.006	0.006
869.31	6638	0.152	0.122	0.128
870.00	9364	0.215	0.127	0.255
871.20	53168	1.221	0.861	1.116
871.30	56818	1.304	0.126	1.242
871.60	67769	1.556	0.429	1.671
871.70	71419	1.640	0.160	1.831
871.90	78720	1.807	0.345	2.176
872.00	82370	1.891	0.185	2.361
873.64	307687	7.064	7.343	9.703
873.70	315930	7.253	0.429	10.133
873.80	329669	7.568	0.741	10.874

Job #: 456.275
Project: Prairie Ridge

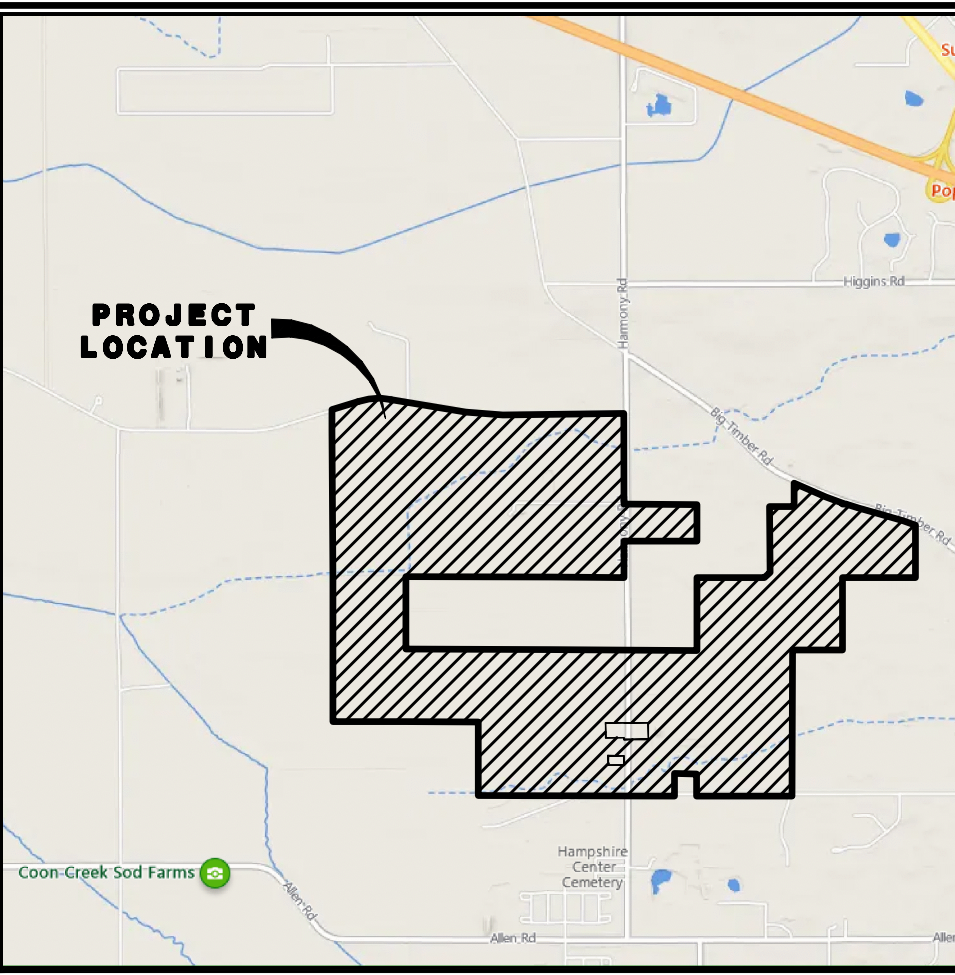
Date: June 8, 2022
Revised: November 10, 2022
By: CMZ

SWMF 99 STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
945.00	291776	6.698	0.000	0.000
946.00	301056	6.911	6.805	6.805
947.00	310464	7.127	7.019	13.824
948.00	329664	7.568	7.348	21.172
949.00	339456	7.793	7.680	28.852
949.50	344416	7.907	3.925	32.777
950.00	349376	8.021	3.982	36.759

TAB 2E

**PROPOSED CONDITIONS
WATERSHED EXHIBIT**

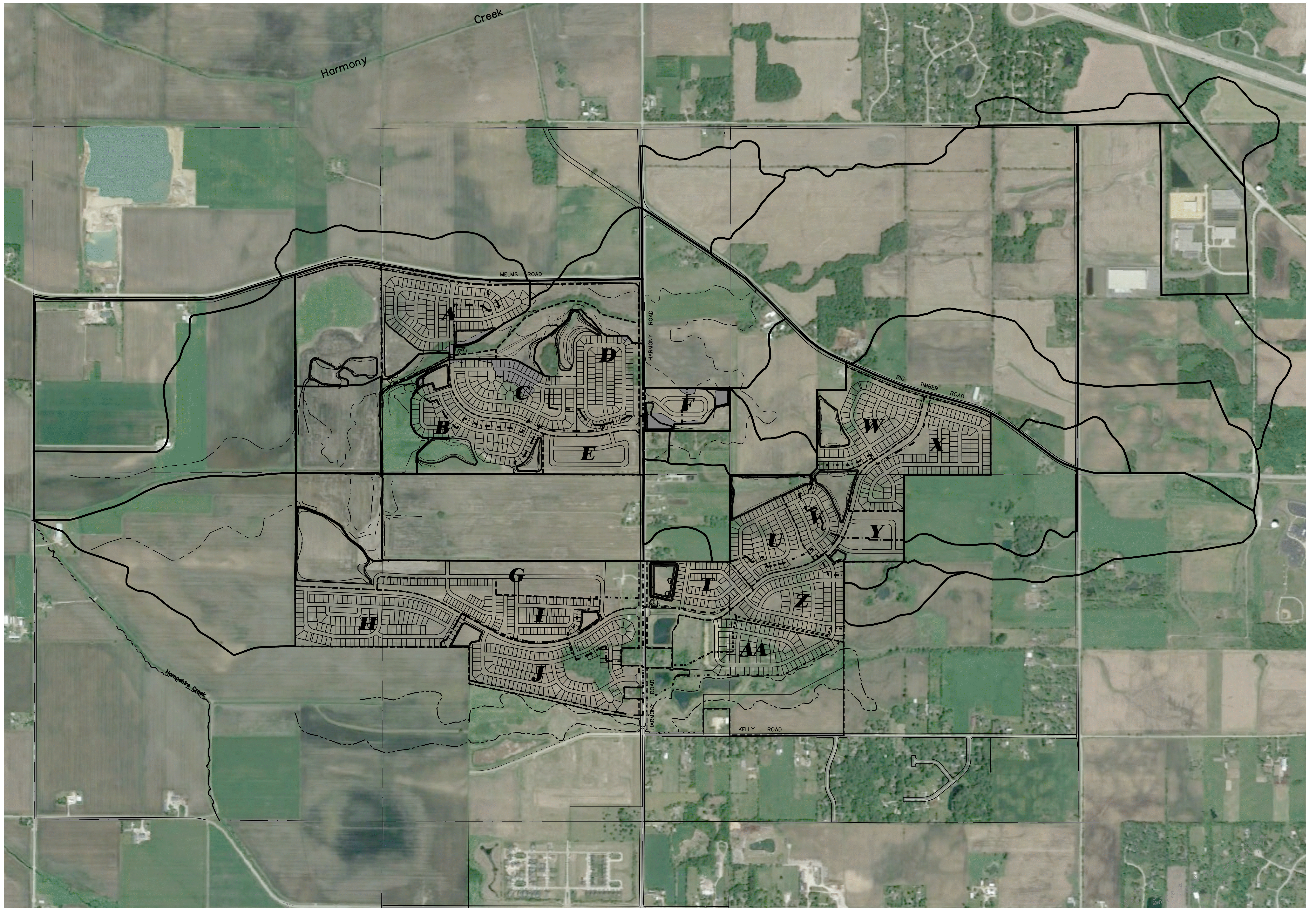
PROPOSED WATERSHED EXHIBIT
FOR
PRAIRIE RIDGE NORTH



LOCATION MAP



600 300 0 600
SCALE: 1 INCH = 600 FEET



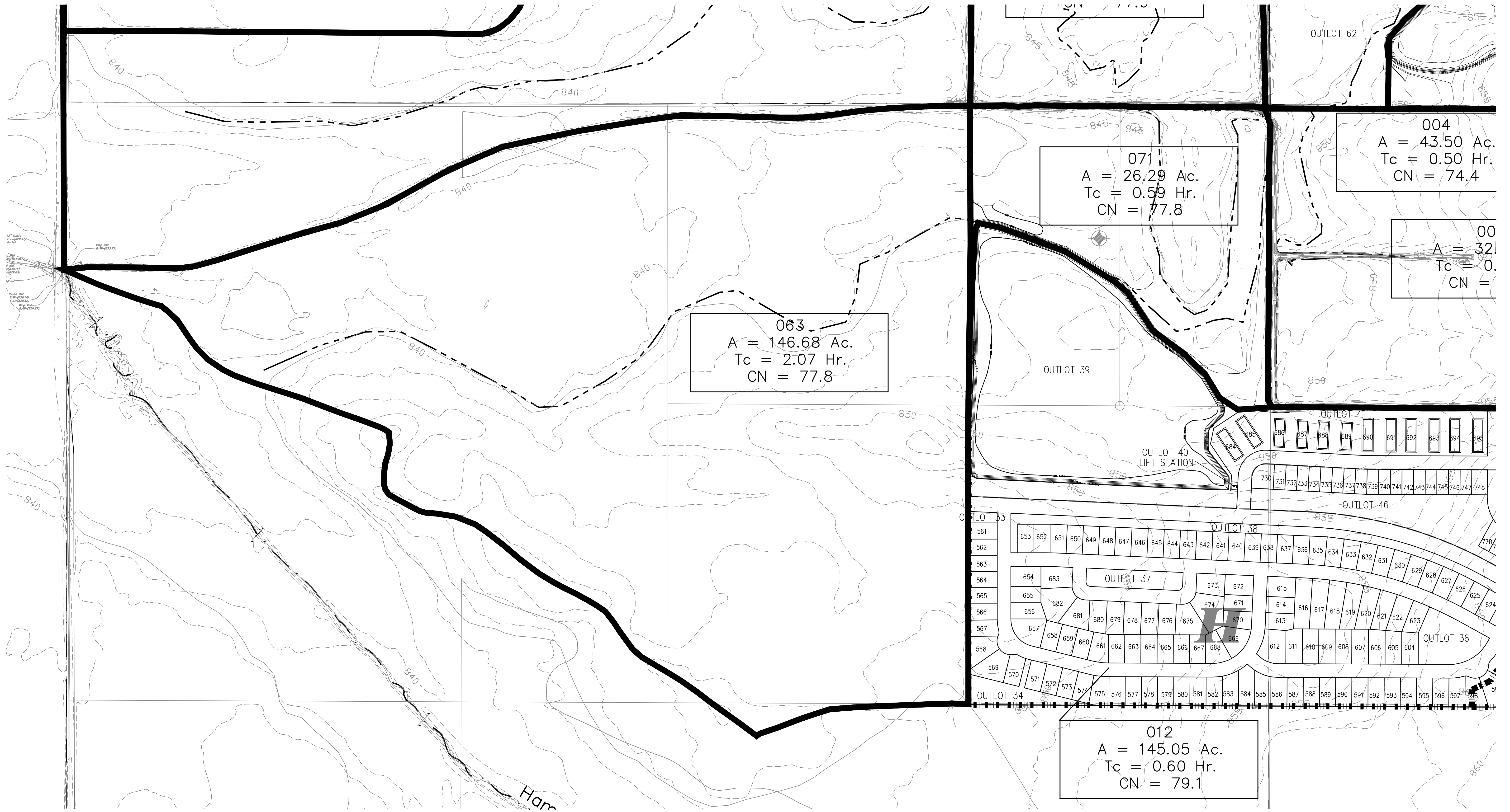
PREPARED FOR:
HAMPshire WEST LLC
1751 A WEST DIEHL ROAD
NAPERVILLE, ILLINOIS 60563
(630) 851-5490

PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com



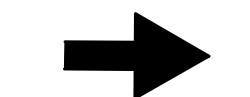
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DRAWN BY: KMS FLD. BK. / PG. NO.: ----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF : PROJECT MANAGER : MAM



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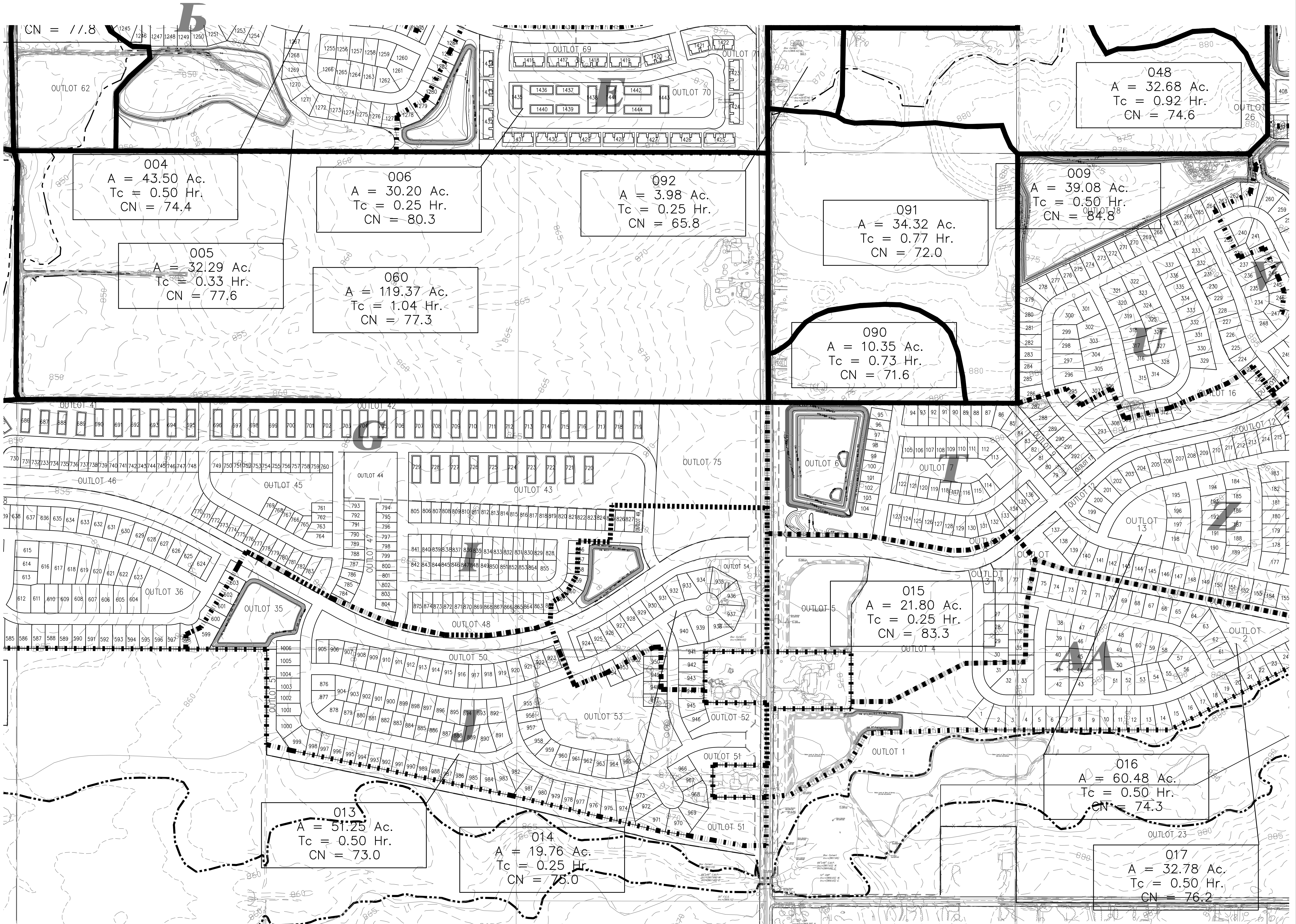
LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**


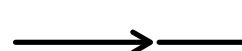

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DISC NO.: 456275 FILE NAME: WATERSHED
 DRAWN BY: KMS FLD. BK. / PG. NO.: -----
 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF: PROJECT MANAGER: MAM



LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

PREPARED FOR:
HAMPSHIRE WEST LLC
 1751 A WEST DIEHL ROAD
 NAPERVILLE, ILLINOIS 60563
 (630) 851-5490

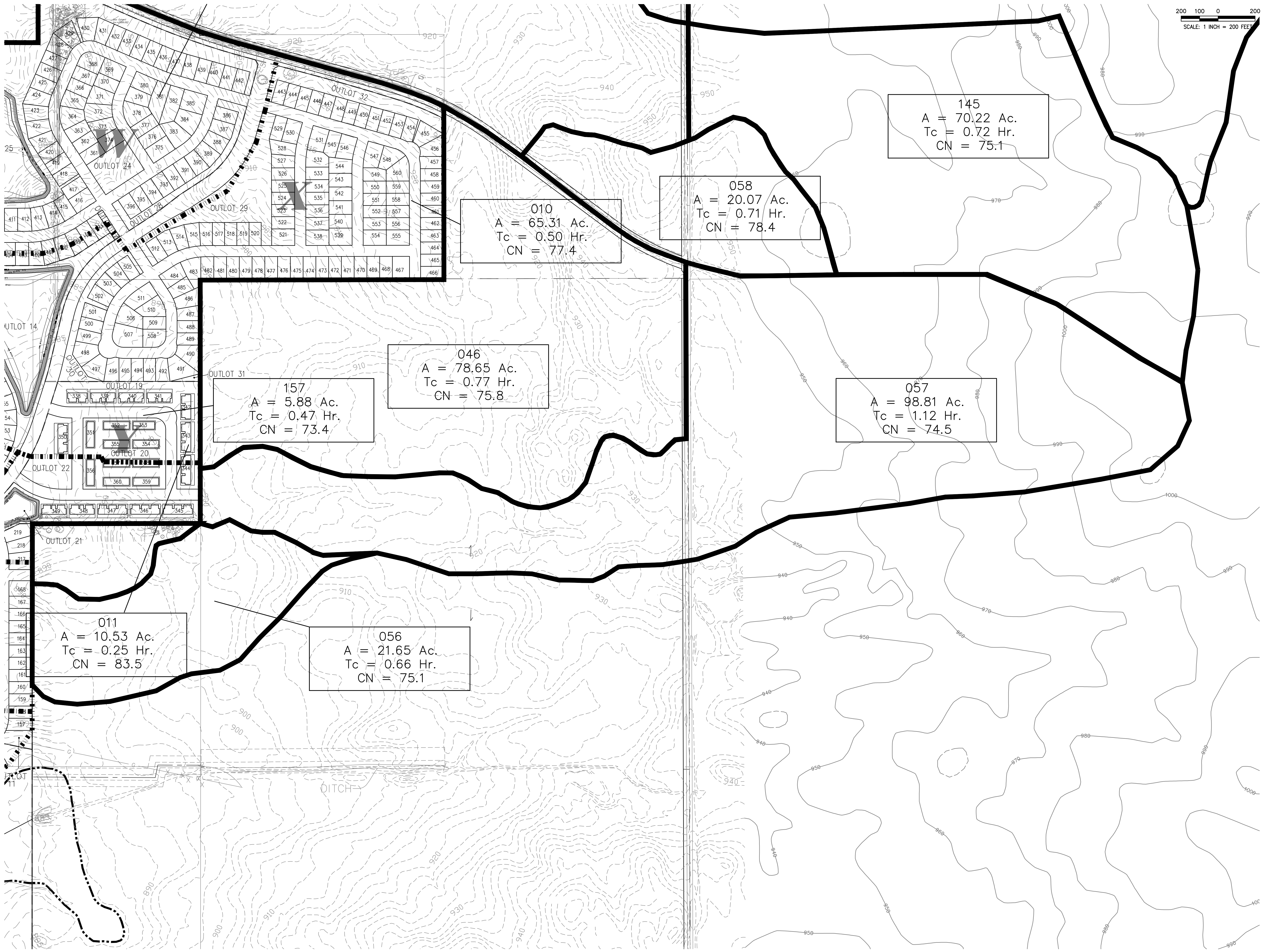
PREPARED BY:
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DISC NO.: 456275 FILE NAME: WATERSHED
 DRAWN BY: KMS FLD. BK. / PG. NO.:
 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF: PROJECT MANAGER: MAM

PLOT FILE CREATED: 2/7/2023 BY: LESLIE LUNDBERG



200 100 0 200
SCALE: 1 INCH = 200 FEET



145
A = 70.22 Ac.
T_c = 0.72 Hr.
CN = 75.1

058
A = 20.07 Ac.
T_c = 0.71 Hr.
CN = 78.4

010
A = 65.31 Ac.
T_c = 0.50 Hr.
CN = 77.4

046
A = 78.65 Ac.
T_c = 0.77 Hr.
CN = 75.8


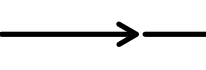

057
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T_c = 1.12 Hr.
CN = 74.5

157
A = 5.88 Ac.
T_c = 0.47 Hr.
CN = 73.4

011
A = 10.53 Ac.
T_c = 0.25 Hr.
CN = 83.5

056
A = 21.65 Ac.
T_c = 0.66 Hr.
CN = 75.1

LEGEND

-  **WATERSHED BOUNDARY**
-  **TIME OF CONCENTRATION FLOW PATH**
-  **OVERLAND DRAINAGE ARROW**

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DISC NO.: 456275 FILE NAME: WATERSHED
 DRAWN BY: KMS FLD. BK. / PG. NO.: -----
 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF: PROJECT MANAGER: MAM

TAB 2F

**PROPOSED CONDITIONS
PONDPACK MODEL RESULTS**

Scenario Calculation Summary

Scenario Summary

ID	1
Label	100Yr 24Hr
Notes	
Active Topology	Base Active Topology
Hydrology	Base Hydrology
Rainfall Runoff	100Yr 24Hr RR
Physical	Base Physical
Initial Condition	Base Initial Condition
Boundary Condition	Base Boundary Condition
Infiltration and Inflow	Base Infiltration and Inflow
Output	Base Output
User Data Extensions	Base User Data Extensions
PondPack Engine Calculation Options	72 hour simulation

Output Summary

Output Increment	0.050 hours	Duration	144.000 hours
------------------	-------------	----------	---------------

Rainfall Summary

Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	8.6 in	Storm Event	100YR-24HR

ICPM Output Summary

Target Convergence	0.00 ft ³ /s	ICPM Time Step	0.050 hours
Maximum Iterations	35		

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
01	100Yr 24Hr	100	None	20.309	16.100	30.37	(N/A)	(N/A)
01 (IN)	100Yr 24Hr	100	None	20.309	16.100	30.37	(N/A)	(N/A)
01 (OUT)	100Yr 24Hr	100	None	20.108	24.250	4.37	847.98	16.538
02	100Yr 24Hr	100	None	19.106	16.000	26.46	(N/A)	(N/A)
02 (IN)	100Yr 24Hr	100	None	19.106	16.000	26.46	(N/A)	(N/A)
02 (OUT)	100Yr 24Hr	100	None	18.916	24.050	4.50	849.65	15.000
03	100Yr 24Hr	100	None	6.949	16.000	9.74	(N/A)	(N/A)
03 (IN)	100Yr 24Hr	100	None	6.949	16.000	9.74	(N/A)	(N/A)
03 (OUT)	100Yr 24Hr	100	None	2.132	24.300	0.21	856.81	6.735
04	100Yr 24Hr	100	None	19.889	16.050	27.86	(N/A)	(N/A)
04 (IN)	100Yr 24Hr	100	None	19.889	16.050	27.86	(N/A)	(N/A)
04 (OUT)	100Yr 24Hr	100	None	19.866	22.150	5.76	855.21	14.479
045	100Yr 24Hr	100	None	41.651	16.200	56.58	(N/A)	(N/A)
046	100Yr 24Hr	100	None	37.064	16.200	51.01	(N/A)	(N/A)
048	100Yr 24Hr	100	None	15.007	16.250	20.77	(N/A)	(N/A)
05 (IN)	100Yr 24Hr	100	None	32.880	16.050	26.69	(N/A)	(N/A)
05 (OUT)	100Yr 24Hr	100	None	32.516	31.600	5.03	849.55	17.865
05	100Yr 24Hr	100	None	15.806	16.000	21.63	(N/A)	(N/A)
050	100Yr 24Hr	100	None	25.781	16.050	34.96	(N/A)	(N/A)
051	100Yr 24Hr	100	None	42.249	16.250	58.25	(N/A)	(N/A)
052	100Yr 24Hr	100	None	8.773	16.100	11.88	(N/A)	(N/A)
053	100Yr 24Hr	100	None	8.581	16.050	11.72	(N/A)	(N/A)
054	100Yr 24Hr	100	None	0.757	16.000	1.02	(N/A)	(N/A)
055	100Yr 24Hr	100	None	21.212	16.200	29.39	(N/A)	(N/A)
056	100Yr 24Hr	100	None	10.051	16.150	13.94	(N/A)	(N/A)

Scenario Calculation Summary

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
057	100Yr 24Hr	100	None	45.276	16.300	62.42	(N/A)	(N/A)
058	100Yr 24Hr	100	None	9.982	16.150	13.47	(N/A)	(N/A)
06 (IN)	100Yr 24Hr	100	None	17.075	16.000	23.08	(N/A)	(N/A)
06 (OUT)	100Yr 24Hr	100	None	17.075	21.100	5.87	859.93	10.939
06	100Yr 24Hr	100	None	15.597	16.000	20.88	(N/A)	(N/A)
060	100Yr 24Hr	100	None	58.891	16.250	79.21	(N/A)	(N/A)
061	100Yr 24Hr	100	None	22.702	16.600	30.12	(N/A)	(N/A)
062	100Yr 24Hr	100	None	19.369	16.050	26.38	(N/A)	(N/A)
063	100Yr 24Hr	100	None	72.070	17.050	94.47	(N/A)	(N/A)
07	100Yr 24Hr	100	None	22.807	16.000	31.05	(N/A)	(N/A)
07 (IN)	100Yr 24Hr	100	None	22.807	16.000	31.05	(N/A)	(N/A)
07 (OUT)	100Yr 24Hr	100	None	1.486	24.650	0.14	864.21	22.652
071	100Yr 24Hr	100	None	12.917	16.050	17.56	(N/A)	(N/A)
072	100Yr 24Hr	100	None	74.732	17.450	96.47	(N/A)	(N/A)
073	100Yr 24Hr	100	None	53.583	17.550	71.32	(N/A)	(N/A)
074	100Yr 24Hr	100	None	10.044	16.150	14.10	(N/A)	(N/A)
075	100Yr 24Hr	100	None	12.695	16.200	17.86	(N/A)	(N/A)
08	100Yr 24Hr	100	None	20.387	16.050	28.23	(N/A)	(N/A)
08 (IN)	100Yr 24Hr	100	None	94.637	16.200	128.26	(N/A)	(N/A)
08 (OUT)	100Yr 24Hr	100	None	94.529	18.300	105.02	884.21	25.282
09	100Yr 24Hr	100	None	21.951	16.000	28.09	(N/A)	(N/A)
09 (IN)	100Yr 24Hr	100	None	149.870	16.200	200.54	(N/A)	(N/A)
09 (OUT)	100Yr 24Hr	100	None	149.236	19.450	136.28	877.05	47.128
090	100Yr 24Hr	100	None	4.442	16.200	6.32	(N/A)	(N/A)
091	100Yr 24Hr	100	None	14.866	16.200	21.06	(N/A)	(N/A)
092	100Yr 24Hr	100	None	1.478	16.050	2.23	(N/A)	(N/A)
093	100Yr 24Hr	100	None	2.348	16.000	3.21	(N/A)	(N/A)
095	100Yr 24Hr	100	None	19.383	16.200	26.27	(N/A)	(N/A)
097	100Yr 24Hr	100	None	134.114	16.500	188.05	(N/A)	(N/A)
098	100Yr 24Hr	100	None	82.483	16.250	113.31	(N/A)	(N/A)
099	100Yr 24Hr	100	None	41.434	16.000	50.26	(N/A)	(N/A)
10	100Yr 24Hr	100	None	31.827	16.050	43.50	(N/A)	(N/A)
10 (IN)	100Yr 24Hr	100	None	132.557	16.150	180.65	(N/A)	(N/A)
10 (OUT)	100Yr 24Hr	100	None	127.919	17.200	173.86	878.96	31.498
11	100Yr 24Hr	100	None	5.777	16.000	7.51	(N/A)	(N/A)
11 (IN)	100Yr 24Hr	100	None	53.683	16.100	73.30	(N/A)	(N/A)
11 (OUT)	100Yr 24Hr	100	None	53.683	16.400	72.99	882.77	2.782
12 (IN)	100Yr 24Hr	100	None	152.849	16.100	125.44	(N/A)	(N/A)
12 (OUT)	100Yr 24Hr	100	None	144.232	24.650	29.45	848.95	79.821
12	100Yr 24Hr	100	None	73.163	16.100	98.39	(N/A)	(N/A)
13	100Yr 24Hr	100	None	22.713	16.100	32.17	(N/A)	(N/A)
13 (IN)	100Yr 24Hr	100	None	79.881	16.100	45.78	(N/A)	(N/A)
13 (OUT)	100Yr 24Hr	100	None	79.686	18.350	27.57	858.51	9.645
14	100Yr 24Hr	100	None	9.154	16.000	12.83	(N/A)	(N/A)
14 (IN)	100Yr 24Hr	100	None	57.289	17.000	23.99	(N/A)	(N/A)
14 (OUT)	100Yr 24Hr	100	None	57.167	33.550	16.35	868.34	6.111
145	100Yr 24Hr	100	None	32.599	16.150	45.16	(N/A)	(N/A)
15	100Yr 24Hr	100	None	11.916	16.000	15.51	(N/A)	(N/A)
15 (IN)	100Yr 24Hr	100	None	48.874	17.000	30.50	(N/A)	(N/A)
15 (OUT)	100Yr 24Hr	100	None	48.136	24.200	14.94	874.12	14.988
157	100Yr 24Hr	100	None	2.629	16.050	3.72	(N/A)	(N/A)
16	100Yr 24Hr	100	None	27.592	16.050	38.67	(N/A)	(N/A)
16 (IN)	100Yr 24Hr	100	None	37.643	16.100	52.61	(N/A)	(N/A)

Scenario Calculation Summary

Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
16 (OUT)	100Yr 24Hr	100	None	36.958	18.750	16.62	875.77	23.769
17	100Yr 24Hr	100	None	15.580	16.050	21.51	(N/A)	(N/A)
17 (IN)	100Yr 24Hr	100	None	15.580	16.050	21.51	(N/A)	(N/A)
17 (OUT)	100Yr 24Hr	100	None	15.404	24.200	3.22	875.39	12.522
18	100Yr 24Hr	100	None	4.959	16.000	6.41	(N/A)	(N/A)
18 (IN)	100Yr 24Hr	100	None	4.959	16.000	6.41	(N/A)	(N/A)
18 (OUT)	100Yr 24Hr	100	None	4.915	24.100	0.84	874.25	4.072
19	100Yr 24Hr	100	None	3.551	16.000	4.55	(N/A)	(N/A)
19 (IN)	100Yr 24Hr	100	None	3.551	16.000	4.55	(N/A)	(N/A)
19 (OUT)	100Yr 24Hr	100	None	3.506	24.100	0.59	873.57	2.938
30 (IN)	100Yr 24Hr	100	None	251.919	17.250	360.13	(N/A)	(N/A)
30 (OUT)	100Yr 24Hr	100	None	251.919	17.350	359.50	881.09	1.368
31 (IN)	100Yr 24Hr	100	None	623.691	17.350	735.84	(N/A)	(N/A)
31 (OUT)	100Yr 24Hr	100	None	623.684	18.450	680.83	870.71	48.157
32 (IN)	100Yr 24Hr	100	None	1.478	16.050	2.23	(N/A)	(N/A)
32 (OUT)	100Yr 24Hr	100	None	1.478	16.100	2.21	868.72	0.035
34 (IN)	100Yr 24Hr	100	None	8.773	16.100	11.88	(N/A)	(N/A)
34 (OUT)	100Yr 24Hr	100	None	8.773	16.200	11.86	865.17	0.502
35 (IN)	100Yr 24Hr	100	None	22.702	16.600	30.12	(N/A)	(N/A)
35 (OUT)	100Yr 24Hr	100	None	22.702	20.450	13.97	852.78	12.566
36 (IN)	100Yr 24Hr	100	None	25.781	16.050	34.96	(N/A)	(N/A)
36 (OUT)	100Yr 24Hr	100	None	25.781	16.100	34.96	883.48	0.032
37 (IN)	100Yr 24Hr	100	None	74.250	16.250	101.43	(N/A)	(N/A)
37 (OUT)	100Yr 24Hr	100	None	74.250	16.550	100.75	904.05	0.776
99 (IN)	100Yr 24Hr	100	None	54.129	16.050	68.05	(N/A)	(N/A)
99 (OUT)	100Yr 24Hr	100	None	25.277	17.500	56.33	949.66	34.052
CENTRAL BRANCH	100Yr 24Hr	100	None	15.404	24.200	3.22	(N/A)	(N/A)
J-10	100Yr 24Hr	100	None	107.761	17.250	163.90	(N/A)	(N/A)
J-11	100Yr 24Hr	100	None	10.044	16.150	14.10	(N/A)	(N/A)
J-13	100Yr 24Hr	100	None	25.781	16.100	34.96	(N/A)	(N/A)
J-14	100Yr 24Hr	100	None	632.457	18.400	689.60	(N/A)	(N/A)
J-19	100Yr 24Hr	100	None	658.021	18.450	710.18	(N/A)	(N/A)
J-20	100Yr 24Hr	100	None	820.548	18.350	812.46	(N/A)	(N/A)
J-21	100Yr 24Hr	100	None	169.018	18.350	150.18	(N/A)	(N/A)
J-22	100Yr 24Hr	100	None	303.755	18.150	293.50	(N/A)	(N/A)
J-24	100Yr 24Hr	100	None	32.599	16.150	45.16	(N/A)	(N/A)
J-26	100Yr 24Hr	100	None	94.529	18.300	105.02	(N/A)	(N/A)
J-28	100Yr 24Hr	100	None	4.442	16.200	6.32	(N/A)	(N/A)
J-30	100Yr 24Hr	100	None	1,020.465	18.300	863.50	(N/A)	(N/A)
J-31	100Yr 24Hr	100	None	42.810	20.450	18.23	(N/A)	(N/A)
NORTH BRANCH OUTFALL	100Yr 24Hr	100	None	1,220.543	18.150	1,110.70	(N/A)	(N/A)

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
01 OUTFLET	Pond Outlet	Upstream	20.309	16.100	30.37	01	Pond Inflow
01 OUTFLET	Pond Outlet	Outflow	20.108	24.250	4.37	01	Pond Outflow
01 OUTFLET	Pond Outlet	Link	20.108	24.250	4.37		

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
01 OUTLET	Pond Outlet	Downstream	42.810	20.450	18.23	J-31	
02 OUTLET	Pond Outlet	Upstream	19.106	16.000	26.46	02	Pond Inflow
02 OUTLET	Pond Outlet	Outflow	18.916	24.050	4.50	02	Pond Outflow
02 OUTLET	Pond Outlet	Link	18.916	24.050	4.50		
02 OUTLET	Pond Outlet	Downstream	820.548	18.350	812.46	J-20	
03 OUTLET	Pond Outlet	Upstream	6.949	16.000	9.74	03	Pond Inflow
03 OUTLET	Pond Outlet	Outflow	2.132	24.300	0.21	03	Pond Outflow
03 OUTLET	Pond Outlet	Link	2.132	24.300	0.21		
03 OUTLET	Pond Outlet	Downstream	658.021	18.450	710.18	J-19	
04 OUTLET	Pond Outlet	Upstream	19.889	16.050	27.86	04	Pond Inflow
04 OUTLET	Pond Outlet	Outflow	19.866	22.150	5.76	04	Pond Outflow
04 OUTLET	Pond Outlet	Link	19.866	22.150	5.76		
04 OUTLET	Pond Outlet	Downstream	820.548	18.350	812.46	J-20	
05 OUTLET	Pond Outlet	Upstream	32.880	16.050	26.69	05	Pond Inflow
05 OUTLET	Pond Outlet	Outflow	32.516	31.600	5.03	05	Pond Outflow
05 OUTLET	Pond Outlet	Link	32.516	31.600	5.03		
05 OUTLET	Pond Outlet	Downstream	820.548	18.350	812.46	J-20	
06 OUTLET	Pond Outlet	Upstream	17.075	16.000	23.08	06	Pond Inflow
06 OUTLET	Pond Outlet	Outflow	17.075	21.100	5.87	06	Pond Outflow
06 OUTLET	Pond Outlet	Link	17.075	21.100	5.87		
06 OUTLET	Pond Outlet	Downstream	32.880	16.050	26.69	05	
07 OUTLET	Pond Outlet	Upstream	22.807	16.000	31.05	07	Pond Inflow
07 OUTLET	Pond Outlet	Outflow	1.486	24.650	0.14	07	Pond Outflow
07 OUTLET	Pond Outlet	Link	1.486	24.650	0.14		
07 OUTLET	Pond Outlet	Downstream	658.021	18.450	710.18	J-19	
08 OUTLET	Pond Outlet	Upstream	94.637	16.200	128.26	08	Pond Inflow
08 OUTLET	Pond Outlet	Outflow	94.529	18.300	105.02	08	Pond Outflow
08 OUTLET	Pond Outlet	Link	94.529	18.300	105.02		
08 OUTLET	Pond Outlet	Downstream	94.529	18.300	105.02	J-26	
09 OUTLET	Pond Outlet	Upstream	149.870	16.200	200.54	09	Pond Inflow
09 OUTLET	Pond Outlet	Outflow	149.236	19.450	136.28	09	Pond Outflow
09 OUTLET	Pond Outlet	Link	149.236	19.450	136.28		
09 OUTLET	Pond Outlet	Downstream	169.018	18.350	150.18	J-21	
10 OUTLET	Pond Outlet	Upstream	132.557	16.150	180.65	10	Pond Inflow
10 OUTLET	Pond Outlet	Outflow	127.919	17.200	173.86	10	Pond Outflow
10 OUTLET	Pond Outlet	Link	127.919	17.200	173.86		
10 OUTLET	Pond Outlet	Downstream	149.870	16.200	200.54	09	
11 OUTLET	Pond Outlet	Upstream	53.683	16.100	73.30	11	Pond Inflow
11 OUTLET	Pond Outlet	Outflow	53.683	16.400	72.99	11	Pond Outflow
11 OUTLET	Pond Outlet	Link	53.682	16.400	72.99		
11 OUTLET	Pond Outlet	Downstream	132.557	16.150	180.65	10	
12 OUTLET	Pond Outlet	Upstream	152.849	16.100	125.44	12	Pond Inflow
12 OUTLET	Pond Outlet	Outflow	144.232	24.650	29.45	12	Pond Outflow
12 OUTLET	Pond Outlet	Link	144.232	24.650	29.45		
12 OUTLET	Pond Outlet	Downstream	1,020.465	18.300	863.50	J-30	
13 OUTLET	Pond Outlet	Upstream	79.881	16.100	45.78	13	Pond Inflow

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
13 OUTLET	Pond Outlet	Outflow	79.686	18.350	27.57	13	Pond Outflow
13 OUTLET	Pond Outlet	Link	79.686	18.350	27.57		
13 OUTLET	Pond Outlet	Downstream	152.849	16.100	125.44	12	
1300'	Channel	Upstream	820.548	18.350	812.46	J-20	
1300'	Channel	Link	820.519	18.400	812.41		
1300'	Channel	Downstream	1,020.465	18.300	863.50	J-30	
1350'	Channel	Upstream	42.810	20.450	18.23	J-31	
1350'	Channel	Link	42.797	20.750	17.47		
1350'	Channel	Downstream	1,020.465	18.300	863.50	J-30	
14 OUTLET	Pond Outlet	Upstream	57.289	17.000	23.99	14	Pond Inflow
14 OUTLET	Pond Outlet	Outflow	57.167	33.550	16.35	14	Pond Outflow
14 OUTLET	Pond Outlet	Link	57.167	33.550	16.35		
14 OUTLET	Pond Outlet	Downstream	79.881	16.100	45.78	13	
15 OUTLET	Pond Outlet	Upstream	48.874	17.000	30.50	15	Pond Inflow
15 OUTLET	Pond Outlet	Outflow	48.136	24.200	14.94	15	Pond Outflow
15 OUTLET	Pond Outlet	Link	48.136	24.200	14.94		
15 OUTLET	Pond Outlet	Downstream	57.289	17.000	23.99	14	
16 OUTLET	Pond Outlet	Upstream	37.643	16.100	52.61	16	Pond Inflow
16 OUTLET	Pond Outlet	Outflow	36.958	18.750	16.62	16	Pond Outflow
16 OUTLET	Pond Outlet	Link	36.958	18.750	16.62		
16 OUTLET	Pond Outlet	Downstream	48.874	17.000	30.50	15	
1600'	Channel	Upstream	94.529	18.300	105.02	J-26	
1600'	Channel	Link	94.524	18.400	104.98		
1600'	Channel	Downstream	303.755	18.150	293.50	J-22	
1609'	Channel	Upstream	25.781	16.100	34.96	J-13	
1609'	Channel	Link	25.781	16.200	34.89		
1609'	Channel	Downstream	623.691	17.350	735.84	31	
17 OUTLET	Pond Outlet	Upstream	15.580	16.050	21.51	17	Pond Inflow
17 OUTLET	Pond Outlet	Outflow	15.404	24.200	3.22	17	Pond Outflow
17 OUTLET	Pond Outlet	Link	15.404	24.200	3.22		
17 OUTLET	Pond Outlet	Downstream	15.404	24.200	3.22	CENTRAL BRANCH	
18 OUTLET	Pond Outlet	Upstream	4.959	16.000	6.41	18	Pond Inflow
18 OUTLET	Pond Outlet	Outflow	4.915	24.100	0.84	18	Pond Outflow
18 OUTLET	Pond Outlet	Link	4.915	24.100	0.84		
18 OUTLET	Pond Outlet	Downstream	169.018	18.350	150.18	J-21	
1810'	Channel	Upstream	303.755	18.150	293.50	J-22	
1810'	Channel	Link	303.743	18.200	293.37		
1810'	Channel	Downstream	623.691	17.350	735.84	31	
1832'	Channel	Upstream	169.018	18.350	150.18	J-21	
1832'	Channel	Link	168.986	18.700	149.73		
1832'	Channel	Downstream	303.755	18.150	293.50	J-22	
19 OUTLET	Pond Outlet	Upstream	3.551	16.000	4.55	19	Pond Inflow
19 OUTLET	Pond Outlet	Outflow	3.506	24.100	0.59	19	Pond Outflow
19 OUTLET	Pond Outlet	Link	3.506	24.100	0.59		
19 OUTLET	Pond Outlet	Downstream	303.755	18.150	293.50	J-22	
2485'	Channel	Upstream	658.021	18.450	710.18	J-19	
2485'	Channel	Link	657.967	18.550	709.17		
2485'	Channel	Downstream	820.548	18.350	812.46	J-20	

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
30 OUTLET	Pond Outlet	Upstream	251.919	17.250	360.13	30	Pond Inflow
30 OUTLET	Pond Outlet	Outflow	251.919	17.350	359.50	30	Pond Outflow
30 OUTLET	Pond Outlet	Link	251.918	17.350	359.50		
30 OUTLET	Pond Outlet	Downstream	623.691	17.350	735.84	31	
32 OUTLET	Pond Outlet	Upstream	1.478	16.050	2.23	32	Pond Inflow
32 OUTLET	Pond Outlet	Outflow	1.478	16.100	2.21	32	Pond Outflow
32 OUTLET	Pond Outlet	Link	1.478	16.100	2.21		
32 OUTLET	Pond Outlet	Downstream	17.075	16.000	23.08	06	
3206'	Channel	Upstream	632.457	18.400	689.60	J-14	
3206'	Channel	Link	632.434	18.500	688.45		
3206'	Channel	Downstream	658.021	18.450	710.18	J-19	
34 OUTLET	Pond Outlet	Upstream	8.773	16.100	11.88	34	Pond Inflow
34 OUTLET	Pond Outlet	Outflow	8.773	16.200	11.86	34	Pond Outflow
34 OUTLET	Pond Outlet	Link	8.773	16.200	11.86		
34 OUTLET	Pond Outlet	Downstream	632.457	18.400	689.60	J-14	
35 OUTLET	Pond Outlet	Upstream	22.702	16.600	30.12	35	Pond Inflow
35 OUTLET	Pond Outlet	Outflow	22.702	20.450	13.97	35	Pond Outflow
35 OUTLET	Pond Outlet	Link	22.702	20.450	13.97		
35 OUTLET	Pond Outlet	Downstream	42.810	20.450	18.23	J-31	
3582'	Channel	Upstream	32.599	16.150	45.16	J-24	
3582'	Channel	Link	32.599	16.350	44.90		
3582'	Channel	Downstream	74.250	16.250	101.43	37	
36 OUTLET	Pond Outlet	Upstream	25.781	16.050	34.96	36	Pond Inflow
36 OUTLET	Pond Outlet	Outflow	25.781	16.100	34.96	36	Pond Outflow
36 OUTLET	Pond Outlet	Link	25.781	16.100	34.96		
36 OUTLET	Pond Outlet	Downstream	25.781	16.100	34.96	J-13	
37 OUTLET	Pond Outlet	Upstream	74.250	16.250	101.43	37	Pond Inflow
37 OUTLET	Pond Outlet	Outflow	74.250	16.550	100.75	37	Pond Outflow
37 OUTLET	Pond Outlet	Link	74.249	16.550	100.75		
37 OUTLET	Pond Outlet	Downstream	94.637	16.200	128.26	08	
4094'	Channel	Upstream	1,020.465	18.300	863.50	J-30	
4094'	Channel	Link	1,020.159	18.500	862.47		
4094'	Channel	Downstream	1,220.543	18.150	1,110.70	NORTH BRANCH OUTFALL	
5069'	Channel	Upstream	4.442	16.200	6.32	J-28	
5069'	Channel	Link	4.442	17.200	6.09		
5069'	Channel	Downstream	820.548	18.350	812.46	J-20	
5459'	Channel	Upstream	10.044	16.150	14.10	J-11	
5459'	Channel	Link	10.044	16.450	13.94		
5459'	Channel	Downstream	251.919	17.250	360.13	30	
5619'	Channel	Upstream	107.761	17.250	163.90	J-10	
5619'	Channel	Link	107.761	17.400	162.21		
5619'	Channel	Downstream	251.919	17.250	360.13	30	
99 OUTLET	Pond Outlet	Upstream	54.129	16.050	68.05	99	Pond Inflow
99 OUTLET	Pond Outlet	Outflow	25.277	17.500	56.33	99	Pond Outflow
99 OUTLET	Pond Outlet	Link	25.277	17.500	56.33		
99 OUTLET	Pond Outlet	Downstream	107.761	17.250	163.90	J-10	

Scenario Calculation Summary

Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft ³ /s)	End Point	Node Flow Direction
HARMONY RD	Pond Outlet	Upstream	623.691	17.350	735.84	31	Pond Inflow
HARMONY RD	Pond Outlet	Outflow	623.684	18.450	680.83	31	Pond Outflow
HARMONY RD	Pond Outlet	Link	623.684	18.450	680.83		
HARMONY RD	Pond Outlet	Downstream	632.457	18.400	689.60	J-14	

Messages

Message Id 67
Scenario 100Yr 24Hr
Element Type Composite Outlet Structure
Element Id 213
Label 01
Time (N/A)
Message Flow direction set to reverse for one ore more structures in composite outlet structure 01. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source Warning

Message Id 15
Scenario 100Yr 24Hr
Element Type Composite Outlet Structure
Element Id 220
Label 08
Time (N/A)
Message Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source Warning

Message Id 15
Scenario 100Yr 24Hr
Element Type Composite Outlet Structure
Element Id 221
Label 09
Time (N/A)
Message Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source Warning

Message Id 15
Scenario 100Yr 24Hr
Element Type Composite Outlet Structure
Element Id 222
Label 10
Time (N/A)
Message Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source Warning

Scenario Calculation Summary

Messages

Message Id	19
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	222
Label	10
Time	(N/A)
Message	Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option.
Source	Warning

Message Id	39
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	222
Label	10
Time	(N/A)
Message	Reverse flow conditions encountered for one or more headwater elevations. Calculated reverse flows may be approximate.
Source	Warning

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	223
Label	11
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning

Message Id	20
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	223
Label	11
Time	(N/A)
Message	Relaxed headwater convergence for conditions below. Headwater Elevation= 881.70 ft. Tailwater elevation= 876.50 ft. Flow= 58.85 ft ³ /s. HW +/- Convergence 0.00 ft TW +/- Convergence 0.11 ft
Source	Warning

Message Id	39
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	223
Label	11
Time	(N/A)
Message	Reverse flow conditions encountered for one or more headwater elevations. Calculated reverse flows may be approximate.
Source	Warning

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	224
Label	12
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning

Scenario Calculation Summary

Messages

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	225
Label	13
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke=0.200 .
Source	Warning

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	226
Label	14
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke=0.200 .
Source	Warning

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	227
Label	15
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke=0.200 .
Source	Warning

Message Id	15
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	228
Label	16
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke=0.200 .
Source	Warning

Message Id	39
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	228
Label	16
Time	(N/A)
Message	Reverse flow conditions encountered for one or more headwater elevations. Calculated reverse flows may be approximate.
Source	Warning

Message Id	-1
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	458
Label	30
Time	(N/A)
Message	A user defined rating table is being used with a non-free outfall tailwater setting. For user defined rating tables it is suggested to use only free outfall tailwater as tailwater effects are not handled.
Source	Precalculation

Scenario Calculation Summary

Messages

Message Id	-1
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	460
Label	32
Time	(N/A)
Message	A user defined rating table is being used with a non-free outfall tailwater setting. For user defined rating tables it is suggested to use only free outfall tailwater as tailwater effects are not handled.
Source	Precalculation

Message Id	-1
Scenario	100Yr 24Hr
Element Type	Composite Outlet Structure
Element Id	465
Label	37
Time	(N/A)
Message	A user defined rating table is being used with a non-free outfall tailwater setting. For user defined rating tables it is suggested to use only free outfall tailwater as tailwater effects are not handled.
Source	Precalculation

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	402
Label	J-21
Time	(N/A)
Message	Junction node J-21 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	345
Label	J-10
Time	(N/A)
Message	Junction node J-10 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	403
Label	J-22
Time	(N/A)
Message	Junction node J-22 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	365
Label	J-14
Time	(N/A)
Message	Junction node J-14 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Scenario Calculation Summary

Messages

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	387
Label	J-19
Time	(N/A)
Message	Junction node J-19 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	390
Label	J-20
Time	(N/A)
Message	Junction node J-20 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	438
Label	J-31
Time	(N/A)
Message	Junction node J-31 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

Message Id	2
Scenario	100Yr 24Hr
Element Type	Junction
Element Id	434
Label	J-30
Time	(N/A)
Message	Junction node J-30 is a confluence node. For possible alternatives, see help topic 'Network Configuration for Tailwater Analyses'.
Source	Warning

TAB 2G

PROPOSED CONDITIONS
PONDPACK MODEL

Scenario: 100Yr 24Hr

NORTH BRANCH OUTFALL

CENTRAL BRANCH

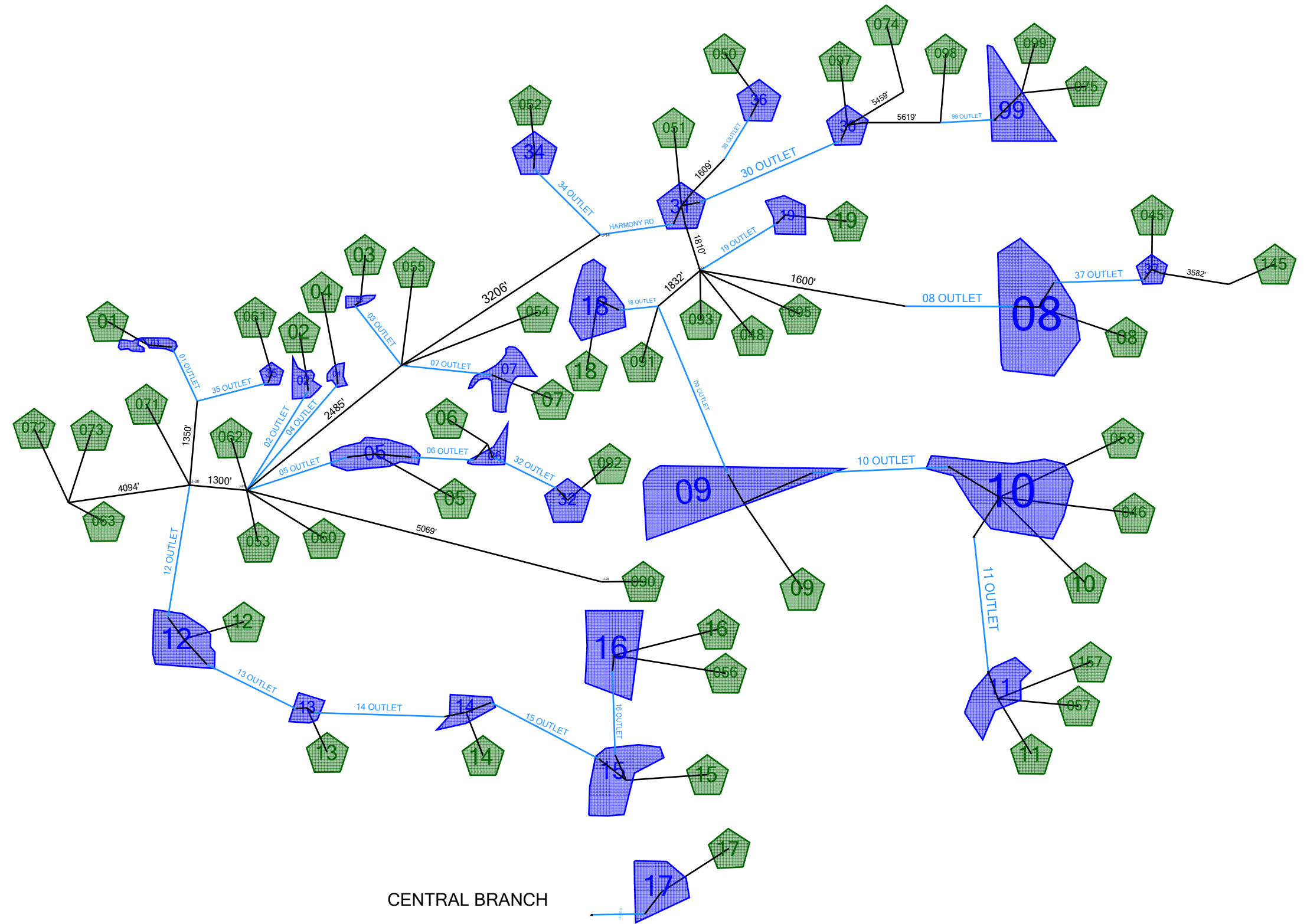


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Time-Depth Curve: 100YR-24HR

Label	100YR-24HR
Start Time	0.000 hours
Increment	1.000 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 1.000 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.2	0.4	0.6	0.8
5.000	1.0	1.2	1.4	1.7	2.0
10.000	2.3	2.7	3.1	3.8	4.5
15.000	5.2	6.0	6.7	7.3	7.7
20.000	8.0	8.2	8.3	8.4	8.6

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	54.700 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.133 hours
Flow (Peak, Computed)	30.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.100 hours
Flow (Peak Interpolated Output)	30.37 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	65.800
Area (User Defined)	54.700 acres
Maximum Retention (Pervious)	5.2 in
Maximum Retention (Pervious, 20 percent)	1.0 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.5 in
Runoff Volume (Pervious)	20.309 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	20.309 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	123.95 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.333 hours
Area (User Defined)	40.200 acres
<hr/>	
Computational Time Increment	0.044 hours
Time to Peak (Computed)	16.028 hours
Flow (Peak, Computed)	26.47 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	26.46 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	76.200
Area (User Defined)	40.200 acres
Maximum Retention (Pervious)	3.1 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7 in
Runoff Volume (Pervious)	19.106 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.106 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.333 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	136.78 ft ³ /s
Unit peak time, Tp	0.222 hours
Unit receding limb, Tr	0.888 hours
Total unit time, Tb	1.110 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	15.000 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.033 hours
Flow (Peak, Computed)	9.74 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	9.74 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.000
Area (User Defined)	15.000 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	6.949 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	6.949 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	67.98 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	43.500 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	27.86 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	27.86 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.400
Area (User Defined)	43.500 acres
Maximum Retention (Pervious)	3.4 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	19.889 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.889 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	98.57 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.950 hours
Area (User Defined)	86.180 acres
<hr/>	
Computational Time Increment	0.127 hours
Time to Peak (Computed)	16.213 hours
Flow (Peak, Computed)	56.59 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	56.58 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	86.180 acres
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.8 in
Runoff Volume (Pervious)	41.651 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	41.651 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.950 hours
Computational Time Increment	0.127 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	102.78 ft ³ /s
Unit peak time, Tp	0.633 hours
Unit receding limb, Tr	2.533 hours
Total unit time, Tb	3.167 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.790 hours
Area (User Defined)	78.650 acres
<hr/>	
Computational Time Increment	0.105 hours
Time to Peak (Computed)	16.221 hours
Flow (Peak, Computed)	51.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	51.01 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.800
Area (User Defined)	78.650 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7 in
Runoff Volume (Pervious)	37.065 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	37.064 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.790 hours
Computational Time Increment	0.105 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	112.80 ft ³ /s
Unit peak time, Tp	0.527 hours
Unit receding limb, Tr	2.107 hours
Total unit time, Tb	2.633 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.940 hours
Area (User Defined)	32.680 acres
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Computational Time Increment	0.125 hours
Time to Peak (Computed)	16.293 hours
Flow (Peak, Computed)	20.77 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.250 hours
Flow (Peak Interpolated Output)	20.77 ft ³ /s
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Drainage Area	
SCS CN (Composite)	74.600
Area (User Defined)	32.680 acres
Maximum Retention (Pervious)	3.4 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	15.007 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	15.007 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.940 hours
Computational Time Increment	0.125 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	39.39 ft ³ /s
Unit peak time, Tp	0.627 hours
Unit receding limb, Tr	2.507 hours
Total unit time, Tb	3.133 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.333 hours
Area (User Defined)	32.300 acres
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Computational Time Increment	0.044 hours
Time to Peak (Computed)	16.028 hours
Flow (Peak, Computed)	21.64 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	21.63 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.600
Area (User Defined)	32.300 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	15.805 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	15.806 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.333 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	109.90 ft ³ /s
Unit peak time, Tp	0.222 hours
Unit receding limb, Tr	0.888 hours
Total unit time, Tb	1.110 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.590 hours
Area (User Defined)	52.150 acres
<hr/>	
Computational Time Increment	0.079 hours
Time to Peak (Computed)	16.048 hours
Flow (Peak, Computed)	34.96 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	34.96 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.100
Area (User Defined)	52.150 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	25.781 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	25.781 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.590 hours
Computational Time Increment	0.079 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	100.15 ft ³ /s
Unit peak time, Tp	0.393 hours
Unit receding limb, Tr	1.573 hours
Total unit time, Tb	1.967 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.930 hours
Area (User Defined)	90.810 acres
<hr/>	
Computational Time Increment	0.124 hours
Time to Peak (Computed)	16.244 hours
Flow (Peak, Computed)	58.25 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.250 hours
Flow (Peak Interpolated Output)	58.25 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.200
Area (User Defined)	90.810 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	42.249 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	42.249 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.930 hours
Computational Time Increment	0.124 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	110.64 ft ³ /s
Unit peak time, Tp	0.620 hours
Unit receding limb, Tr	2.480 hours
Total unit time, Tb	3.100 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.640 hours
Area (User Defined)	17.710 acres
<hr/>	
Computational Time Increment	0.085 hours
Time to Peak (Computed)	16.128 hours
Flow (Peak, Computed)	11.88 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.100 hours
Flow (Peak Interpolated Output)	11.88 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.200
Area (User Defined)	17.710 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	8.773 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	8.773 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.640 hours
Computational Time Increment	0.085 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	31.35 ft ³ /s
Unit peak time, Tp	0.427 hours
Unit receding limb, Tr	1.707 hours
Total unit time, Tb	2.133 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.410 hours
Area (User Defined)	17.500 acres
<hr/>	
Computational Time Increment	0.055 hours
Time to Peak (Computed)	16.017 hours
Flow (Peak, Computed)	11.72 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	11.72 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.700
Area (User Defined)	17.500 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	8.581 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	8.581 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.410 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.36 ft ³ /s
Unit peak time, Tp	0.273 hours
Unit receding limb, Tr	1.093 hours
Total unit time, Tb	1.367 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.260 hours
Area (User Defined)	1.500 acres
<hr/>	
Computational Time Increment	0.035 hours
Time to Peak (Computed)	16.016 hours
Flow (Peak, Computed)	1.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	1.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	79.100
Area (User Defined)	1.500 acres
Maximum Retention (Pervious)	2.6 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.1 in
Runoff Volume (Pervious)	0.757 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.757 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.260 hours
Computational Time Increment	0.035 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.54 ft ³ /s
Unit peak time, Tp	0.173 hours
Unit receding limb, Tr	0.693 hours
Total unit time, Tb	0.867 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.760 hours
Area (User Defined)	45.790 acres
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Computational Time Increment	0.101 hours
Time to Peak (Computed)	16.213 hours
Flow (Peak, Computed)	29.39 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	29.39 ft ³ /s
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Drainage Area	
SCS CN (Composite)	75.000
Area (User Defined)	45.790 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	21.212 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	21.212 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.760 hours
Computational Time Increment	0.101 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	68.27 ft ³ /s
Unit peak time, Tp	0.507 hours
Unit receding limb, Tr	2.027 hours
Total unit time, Tb	2.533 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.680 hours
Area (User Defined)	21.650 acres
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Computational Time Increment	0.091 hours
Time to Peak (Computed)	16.139 hours
Flow (Peak, Computed)	13.94 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.150 hours
Flow (Peak Interpolated Output)	13.94 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.100
Area (User Defined)	21.650 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	10.051 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	10.051 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.680 hours
Computational Time Increment	0.091 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	36.07 ft ³ /s
Unit peak time, Tp	0.453 hours
Unit receding limb, Tr	1.813 hours
Total unit time, Tb	2.267 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	1.120 hours
Area (User Defined)	98.810 acres
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Computational Time Increment	0.149 hours
Time to Peak (Computed)	16.277 hours
Flow (Peak, Computed)	62.43 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.300 hours
Flow (Peak Interpolated Output)	62.42 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.500
Area (User Defined)	98.810 acres
Maximum Retention (Pervious)	3.4 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	45.277 ac-ft
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Hydrograph Volume (Area under Hydrograph curve)	
Volume	45.276 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.120 hours
Computational Time Increment	0.149 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	99.96 ft ³ /s
Unit peak time, Tp	0.747 hours
Unit receding limb, Tr	2.987 hours
Total unit time, Tb	3.733 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.730 hours
Area (User Defined)	20.070 acres
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Computational Time Increment	0.097 hours
Time to Peak (Computed)	16.157 hours
Flow (Peak, Computed)	13.47 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.150 hours
Flow (Peak Interpolated Output)	13.47 ft ³ /s
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Drainage Area	
SCS CN (Composite)	78.400
Area (User Defined)	20.070 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	9.982 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.982 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.730 hours
Computational Time Increment	0.097 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	31.15 ft ³ /s
Unit peak time, Tp	0.487 hours
Unit receding limb, Tr	1.947 hours
Total unit time, Tb	2.433 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	30.200 acres
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Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	20.88 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	20.88 ft ³ /s
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Drainage Area	
SCS CN (Composite)	80.300
Area (User Defined)	30.200 acres
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.2 in
Runoff Volume (Pervious)	15.597 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	15.597 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	136.87 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	1.040 hours
Area (User Defined)	119.370 acres
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Computational Time Increment	0.139 hours
Time to Peak (Computed)	16.224 hours
Flow (Peak, Computed)	79.22 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.250 hours
Flow (Peak Interpolated Output)	79.21 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	119.370 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	58.891 ac-ft
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Hydrograph Volume (Area under Hydrograph curve)	
Volume	58.891 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.040 hours
Computational Time Increment	0.139 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	130.05 ft ³ /s
Unit peak time, Tp	0.693 hours
Unit receding limb, Tr	2.773 hours
Total unit time, Tb	3.467 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	1.540 hours
Area (User Defined)	45.830 acres
<hr/>	
Computational Time Increment	0.205 hours
Time to Peak (Computed)	16.632 hours
Flow (Peak, Computed)	30.12 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.600 hours
Flow (Peak Interpolated Output)	30.12 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.200
Area (User Defined)	45.830 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	22.702 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	22.702 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.540 hours
Computational Time Increment	0.205 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	33.72 ft ³ /s
Unit peak time, Tp	1.027 hours
Unit receding limb, Tr	4.107 hours
Total unit time, Tb	5.133 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.450 hours
Area (User Defined)	39.340 acres
<hr/>	
Computational Time Increment	0.060 hours
Time to Peak (Computed)	16.020 hours
Flow (Peak, Computed)	26.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	26.38 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.900
Area (User Defined)	39.340 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	19.369 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.369 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.450 hours
Computational Time Increment	0.060 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	99.05 ft ³ /s
Unit peak time, Tp	0.300 hours
Unit receding limb, Tr	1.200 hours
Total unit time, Tb	1.500 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	2.100 hours
Area (User Defined)	146.680 acres
<hr/>	
Computational Time Increment	0.280 hours
Time to Peak (Computed)	17.080 hours
Flow (Peak, Computed)	94.50 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	17.050 hours
Flow (Peak Interpolated Output)	94.47 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	146.680 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	72.070 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	72.070 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.100 hours
Computational Time Increment	0.280 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	79.14 ft ³ /s
Unit peak time, Tp	1.400 hours
Unit receding limb, Tr	5.600 hours
Total unit time, Tb	7.000 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.333 hours
Area (User Defined)	46.040 acres
<hr/>	
Computational Time Increment	0.044 hours
Time to Peak (Computed)	16.028 hours
Flow (Peak, Computed)	31.06 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	31.05 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.200
Area (User Defined)	46.040 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	22.806 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	22.807 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.333 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	156.65 ft ³ /s
Unit peak time, Tp	0.222 hours
Unit receding limb, Tr	0.888 hours
Total unit time, Tb	1.110 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.590 hours
Area (User Defined)	26.290 acres
<hr/>	
Computational Time Increment	0.079 hours
Time to Peak (Computed)	16.048 hours
Flow (Peak, Computed)	17.56 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	17.56 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.800
Area (User Defined)	26.290 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	12.917 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	12.917 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.590 hours
Computational Time Increment	0.079 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	50.49 ft ³ /s
Unit peak time, Tp	0.393 hours
Unit receding limb, Tr	1.573 hours
Total unit time, Tb	1.967 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	2.570 hours
Area (User Defined)	152.410 acres
<hr/>	
Computational Time Increment	0.343 hours
Time to Peak (Computed)	17.476 hours
Flow (Peak, Computed)	96.48 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	17.450 hours
Flow (Peak Interpolated Output)	96.47 ft ³ /s
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Drainage Area	
SCS CN (Composite)	77.700
Area (User Defined)	152.410 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	74.732 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	74.732 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.570 hours
Computational Time Increment	0.343 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	67.19 ft ³ /s
Unit peak time, Tp	1.713 hours
Unit receding limb, Tr	6.853 hours
Total unit time, Tb	8.567 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	2.580 hours
Area (User Defined)	119.820 acres
Computational Time Increment	0.344 hours
Time to Peak (Computed)	17.544 hours
Flow (Peak, Computed)	71.33 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	17.550 hours
Flow (Peak Interpolated Output)	71.32 ft ³ /s
Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	119.820 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	53.583 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	53.583 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	2.580 hours
Computational Time Increment	0.344 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	52.62 ft ³ /s
Unit peak time, Tp	1.720 hours
Unit receding limb, Tr	6.880 hours
Total unit time, Tb	8.600 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.730 hours
Area (User Defined)	22.460 acres
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Computational Time Increment	0.097 hours
Time to Peak (Computed)	16.157 hours
Flow (Peak, Computed)	14.10 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.150 hours
Flow (Peak Interpolated Output)	14.10 ft ³ /s
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Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	22.460 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	10.044 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	10.044 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.730 hours
Computational Time Increment	0.097 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	34.86 ft ³ /s
Unit peak time, Tp	0.487 hours
Unit receding limb, Tr	1.947 hours
Total unit time, Tb	2.433 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.750 hours
Area (User Defined)	28.580 acres
Computational Time Increment	0.100 hours
Time to Peak (Computed)	16.200 hours
Flow (Peak, Computed)	17.86 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	17.86 ft ³ /s
Drainage Area	
SCS CN (Composite)	73.100
Area (User Defined)	28.580 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3 in
Runoff Volume (Pervious)	12.695 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	12.695 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.750 hours
Computational Time Increment	0.100 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.18 ft ³ /s
Unit peak time, Tp	0.500 hours
Unit receding limb, Tr	2.000 hours
Total unit time, Tb	2.500 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	43.260 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	28.24 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	28.23 ft ³ /s
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Drainage Area	
SCS CN (Composite)	75.800
Area (User Defined)	43.260 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7 in
Runoff Volume (Pervious)	20.387 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	20.387 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	98.03 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	39.080 acres
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Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	28.09 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	28.09 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	84.800
Area (User Defined)	39.080 acres
Maximum Retention (Pervious)	1.8 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.7 in
Runoff Volume (Pervious)	21.951 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	21.951 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	88.56 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.760 hours
Area (User Defined)	10.350 acres
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Computational Time Increment	0.101 hours
Time to Peak (Computed)	16.213 hours
Flow (Peak, Computed)	6.32 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	6.32 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	71.600
Area (User Defined)	10.350 acres
Maximum Retention (Pervious)	4.0 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	4.442 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.442 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.760 hours
Computational Time Increment	0.101 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.43 ft ³ /s
Unit peak time, Tp	0.507 hours
Unit receding limb, Tr	2.027 hours
Total unit time, Tb	2.533 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.800 hours
Area (User Defined)	34.320 acres
<hr/>	
Computational Time Increment	0.107 hours
Time to Peak (Computed)	16.213 hours
Flow (Peak, Computed)	21.07 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	21.06 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	72.000
Area (User Defined)	34.320 acres
Maximum Retention (Pervious)	3.9 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.2 in
Runoff Volume (Pervious)	14.866 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	14.866 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.800 hours
Computational Time Increment	0.107 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.61 ft ³ /s
Unit peak time, Tp	0.533 hours
Unit receding limb, Tr	2.133 hours
Total unit time, Tb	2.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	3.980 acres
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Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.033 hours
Flow (Peak, Computed)	2.23 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	2.23 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	65.800
Area (User Defined)	3.980 acres
Maximum Retention (Pervious)	5.2 in
Maximum Retention (Pervious, 20 percent)	1.0 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.5 in
Runoff Volume (Pervious)	1.478 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.478 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.04 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	4.760 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	3.21 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	3.21 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	4.760 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	2.348 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.348 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.57 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.810 hours
Area (User Defined)	39.530 acres
Computational Time Increment	0.108 hours
Time to Peak (Computed)	16.200 hours
Flow (Peak, Computed)	26.27 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.200 hours
Flow (Peak Interpolated Output)	26.27 ft ³ /s
Drainage Area	
SCS CN (Composite)	77.700
Area (User Defined)	39.530 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	19.383 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.383 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.810 hours
Computational Time Increment	0.108 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	55.30 ft ³ /s
Unit peak time, Tp	0.540 hours
Unit receding limb, Tr	2.160 hours
Total unit time, Tb	2.700 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	1.290 hours
Area (User Defined)	312.500 acres
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Computational Time Increment	0.172 hours
Time to Peak (Computed)	16.512 hours
Flow (Peak, Computed)	188.07 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.500 hours
Flow (Peak Interpolated Output)	188.05 ft ³ /s
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Drainage Area	
SCS CN (Composite)	71.600
Area (User Defined)	312.500 acres
Maximum Retention (Pervious)	4.0 in
Maximum Retention (Pervious, 20 percent)	0.8 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	134.114 ac-ft
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Hydrograph Volume (Area under Hydrograph curve)	
Volume	134.114 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.290 hours
Computational Time Increment	0.172 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	274.48 ft ³ /s
Unit peak time, Tp	0.860 hours
Unit receding limb, Tr	3.440 hours
Total unit time, Tb	4.300 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.910 hours
Area (User Defined)	175.400 acres
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Computational Time Increment	0.121 hours
Time to Peak (Computed)	16.259 hours
Flow (Peak, Computed)	113.31 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.250 hours
Flow (Peak Interpolated Output)	113.31 ft ³ /s
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Drainage Area	
SCS CN (Composite)	75.700
Area (User Defined)	175.400 acres
Maximum Retention (Pervious)	3.2 in
Maximum Retention (Pervious, 20 percent)	0.6 in
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Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	82.483 ac-ft
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Hydrograph Volume (Area under Hydrograph curve)	
Volume	82.483 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.910 hours
Computational Time Increment	0.121 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	218.39 ft ³ /s
Unit peak time, Tp	0.607 hours
Unit receding limb, Tr	2.427 hours
Total unit time, Tb	3.033 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	67.380 acres
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Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	50.26 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	50.26 ft ³ /s
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Drainage Area	
SCS CN (Composite)	90.100
Area (User Defined)	67.380 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in
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Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.4 in
Runoff Volume (Pervious)	41.434 ac-ft
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Hydrograph Volume (Area under Hydrograph curve)	
Volume	41.434 ac-ft
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SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	152.69 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	65.310 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	43.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	43.50 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.400
Area (User Defined)	65.310 acres
Maximum Retention (Pervious)	2.9 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.8 in
Runoff Volume (Pervious)	31.827 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	31.827 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	148.00 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	10.530 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	7.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	7.51 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.500
Area (User Defined)	10.530 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.6 in
Runoff Volume (Pervious)	5.777 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.777 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	47.72 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.600 hours
Area (User Defined)	145.050 acres
<hr/>	
Computational Time Increment	0.080 hours
Time to Peak (Computed)	16.080 hours
Flow (Peak, Computed)	98.42 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.100 hours
Flow (Peak Interpolated Output)	98.39 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	79.100
Area (User Defined)	145.050 acres
Maximum Retention (Pervious)	2.6 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.1 in
Runoff Volume (Pervious)	73.163 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	73.163 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.600 hours
Computational Time Increment	0.080 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	273.91 ft ³ /s
Unit peak time, Tp	0.400 hours
Unit receding limb, Tr	1.600 hours
Total unit time, Tb	2.000 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	51.250 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	32.18 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.100 hours
Flow (Peak Interpolated Output)	32.17 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	51.250 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3 in
Runoff Volume (Pervious)	22.713 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	22.713 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	116.14 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	19.760 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.033 hours
Flow (Peak, Computed)	12.83 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	12.83 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.000
Area (User Defined)	19.760 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	9.154 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.154 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	89.56 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.740 hours
Area (User Defined)	70.220 acres
<hr/>	
Computational Time Increment	0.099 hours
Time to Peak (Computed)	16.181 hours
Flow (Peak, Computed)	45.17 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.150 hours
Flow (Peak Interpolated Output)	45.16 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.100
Area (User Defined)	70.220 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	32.599 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	32.599 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.740 hours
Computational Time Increment	0.099 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	107.52 ft ³ /s
Unit peak time, Tp	0.493 hours
Unit receding limb, Tr	1.973 hours
Total unit time, Tb	2.467 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	21.800 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	15.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	15.51 ft ³ /s
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Drainage Area	
SCS CN (Composite)	83.300
Area (User Defined)	21.800 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.6 in
Runoff Volume (Pervious)	11.916 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	11.916 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	98.80 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.400 hours
Area (User Defined)	5.880 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	16.053 hours
Flow (Peak, Computed)	3.72 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	3.72 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.400
Area (User Defined)	5.880 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	2.629 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.629 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.400 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	16.66 ft ³ /s
Unit peak time, Tp	0.267 hours
Unit receding limb, Tr	1.067 hours
Total unit time, Tb	1.333 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	60.480 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	38.69 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	38.67 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.300
Area (User Defined)	60.480 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	27.592 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	27.592 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	137.05 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.500 hours
Area (User Defined)	32.780 acres
<hr/>	
Computational Time Increment	0.067 hours
Time to Peak (Computed)	16.067 hours
Flow (Peak, Computed)	21.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.050 hours
Flow (Peak Interpolated Output)	21.51 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	76.200
Area (User Defined)	32.780 acres
Maximum Retention (Pervious)	3.1 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7 in
Runoff Volume (Pervious)	15.580 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	15.580 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.500 hours
Computational Time Increment	0.067 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	74.28 ft ³ /s
Unit peak time, Tp	0.333 hours
Unit receding limb, Tr	1.333 hours
Total unit time, Tb	1.667 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	8.940 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	6.41 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	6.41 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	84.100
Area (User Defined)	8.940 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.7 in
Runoff Volume (Pervious)	4.959 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.959 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	40.52 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	144.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	6.300 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	4.55 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	4.55 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	85.000
Area (User Defined)	6.300 acres
Maximum Retention (Pervious)	1.8 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.8 in
Runoff Volume (Pervious)	3.551 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.551 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	28.55 ft ³ /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
845.00	0.000
846.00	4.918
847.00	10.629
848.00	16.629
849.00	22.918
850.00	29.501

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
847.00	0.000
848.00	5.459
849.00	11.132
850.00	17.051
850.50	20.111
851.00	26.393

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
853.00	0.000
854.00	1.581
855.00	3.293
856.00	5.137
857.00	7.117
858.00	9.235
859.00	11.530

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
849.00	0.000
850.00	1.993
851.00	4.112
852.00	6.361
853.00	8.741
854.00	11.254
855.00	13.904
855.50	15.281
856.00	16.692

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
846.00	0.000
847.00	4.191
848.00	9.197
849.00	14.702
850.00	20.485
851.00	26.480
852.00	32.690

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
854.00	0.000
855.00	1.225
856.00	2.754
857.00	4.572
858.00	6.607
859.00	8.780
860.00	11.092
861.00	13.546

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
859.00	0.000
860.00	2.564
861.00	6.159
862.00	10.664
863.00	15.861
864.00	21.430
865.00	27.243
866.00	33.303

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
879.00	0.000
880.00	4.161
881.00	8.837
882.00	13.773
883.00	18.903
884.00	24.230
884.50	26.696
885.00	29.212

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
872.00	0.000
873.00	8.522
874.00	17.614
875.00	26.998
876.00	36.677
877.00	46.663
877.50	51.772
878.00	56.958

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
873.00	0.000
874.00	4.239
875.00	9.170
876.00	14.494
877.00	20.032
878.00	25.787
879.00	31.760
880.00	37.955
881.00	44.694

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
878.00	0.000
879.00	0.467
880.00	0.995
881.00	1.584
882.00	2.234
883.00	2.948
883.50	3.329
884.00	3.726

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
845.00	0.000
846.00	19.053
847.00	39.313
848.00	59.943
849.00	80.944
849.50	91.584
850.00	102.318

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
854.00	0.000
855.00	1.932
856.00	3.976
857.00	6.136
858.00	8.414
859.00	10.812
860.00	13.333

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
863.00	0.000
864.00	0.952
865.00	1.989
866.00	3.113
867.00	4.326
868.00	5.631
869.00	7.029
870.00	8.542

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
870.00	0.000
871.00	3.414
872.00	6.972
873.00	10.678
874.00	14.534
874.20	15.323
875.00	18.542

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
870.50	0.000
871.00	2.062
872.00	6.304
873.00	10.703
874.00	15.263
875.00	19.985
876.00	24.874
877.00	29.933

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
871.00	0.000
872.00	2.580
873.00	5.348
874.00	8.215
875.00	11.274
875.90	14.173
876.00	14.506

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
871.00	0.000
872.00	1.103
873.00	2.336
874.00	3.700
875.00	5.200
876.00	6.837

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
871.00	0.000
872.00	1.065
873.00	2.223
874.00	3.476
875.00	4.828

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
874.58	0.000
875.00	0.005
876.00	0.056
877.00	0.163
878.00	0.326
879.00	0.545
880.00	0.819
881.00	1.300
881.55	1.717
882.00	2.138
884.00	5.427

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
863.70	0.000
864.00	0.009
866.00	0.502
867.20	1.164
868.00	1.756
870.00	25.941
870.37	35.846
871.00	58.511
872.00	109.485

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
868.42	0.000
869.00	0.067
870.00	0.498
871.00	1.816
872.00	4.510
873.00	8.582
873.56	11.463
874.00	14.029
875.00	20.675

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
863.03	0.000
864.00	0.102
865.00	0.422
865.50	0.663
866.00	0.959
867.00	1.731

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
848.78	0.000
849.00	0.009
850.00	0.289
851.00	1.750
852.00	5.184
852.80	12.720
852.90	14.225
853.00	15.854

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
882.03	0.000
883.00	0.013
884.00	0.052
885.00	0.118
886.00	0.210
887.00	0.573
887.40	0.863
888.00	1.452
889.00	4.795

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
899.26	0.000
900.00	0.008
901.00	0.041
902.00	0.103
903.00	0.300
904.00	0.743
905.00	1.430
906.00	2.605
907.00	4.709

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
945.00	0.000
946.00	6.805
947.00	13.824
948.00	21.172
949.00	28.852
949.50	32.777
950.00	36.759

Requested Pond Water Surface Elevations	
Minimum (Headwater)	845.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	850.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 01	Forward	TW	845.01	850.00
Rectangular Weir	Weir - 01	Forward	TW	849.00	850.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 01	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	849.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 01	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	844.80 ft
Orifice Diameter	10.000 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	847.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	851.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 02	Forward	TW	847.01	851.00
Rectangular Weir	Weir - 02	Forward	TW	850.50	851.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 02	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	850.50 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 02	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	846.80 ft
Orifice Diameter	10.500 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	853.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	859.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 03	Forward	TW	853.01	859.00
Rectangular Weir	Weir - 03	Forward	TW	858.00	859.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 03	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	858.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 03	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	852.80 ft
Orifice Diameter	2.000 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	849.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	856.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 04	Forward	TW	849.01	856.00
Rectangular Weir	Weir - 04	Forward	TW	855.50	856.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 04	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	855.50 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 04	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	848.90 ft
Orifice Diameter	9.500 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	846.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	852.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 05	Forward	TW	846.01	852.00
Rectangular Weir	Weir - 05	Forward	TW	851.00	852.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 05	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	851.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 05	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	845.80 ft
Orifice Diameter	10.250 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	854.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	861.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 06	Forward + Reverse	TW	854.01	861.00
Rectangular Weir	Weir - 06	Forward + Reverse	TW	860.00	861.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 06	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	860.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 06	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	853.40 ft
Orifice Diameter	9.500 in
Orifice Coefficient	0.600

Requested Pond Water Surface Elevations

Minimum (Headwater)	859.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	866.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 07	Forward	TW	859.01	866.00
Rectangular Weir	Weir - 07	Forward	TW	865.00	866.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 07	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	865.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 07	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	858.80 ft
Orifice Diameter	1.500 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	879.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	885.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 2	Forward	TW	879.00	885.00
Culvert-Circular	Culvert - 1	Forward	TW	879.00	885.00
Rectangular Weir	Weir - 08	Forward	TW	884.50	885.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 08	
Structure Type: Rectangular Weir	
<hr/>	
Number of Openings	1
Elevation	884.50 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	36.000 in
Length	50.00 ft
Length (Computed Barrel)	50.00 ft
Slope (Computed)	0.004 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.007
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	882.28 ft	T1 Flow	42.85 ft ³ /s
T2 Elevation	882.59 ft	T2 Flow	48.97 ft ³ /s

Structure ID: Culvert - 2	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.000 in
Length	50.00 ft
Length (Computed Barrel)	50.00 ft
Slope (Computed)	0.004 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	881.19 ft	T1 Flow	15.55 ft ³ /s
T2 Elevation	881.39 ft	T2 Flow	17.77 ft ³ /s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	872.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	878.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 09 - #2	Forward	TW	872.00	878.00
Culvert-Circular	Culvert - 09 - #1	Forward	TW	872.00	878.00
Rectangular Weir	Weir - 09	Forward	TW	877.50	878.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 09	
Structure Type: Rectangular Weir	
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Number of Openings	1
Elevation	877.50 ft
Weir Length	40.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 09 - #1	
Structure Type: Culvert-Circular	
Number of Barrels	2
Diameter	27.000 in
Length	46.00 ft
Length (Computed Barrel)	46.00 ft
Slope (Computed)	0.004 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.011
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	874.46 ft	T1 Flow	20.87 ft ³ /s
T2 Elevation	874.69 ft	T2 Flow	23.86 ft ³ /s

Structure ID: Culvert - 09 - #2	
Structure Type: Culvert-Circular	
Number of Barrels	2
Diameter	21.000 in
Length	46.00 ft
Length (Computed Barrel)	46.00 ft
Slope (Computed)	0.004 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.015
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	873.91 ft	T1 Flow	11.14 ft ³ /s
T2 Elevation	874.09 ft	T2 Flow	12.73 ft ³ /s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	873.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	881.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward + Reverse	TW	874.00	881.00
Inlet Box	Riser - 1	Forward + Reverse	TW	877.80	879.00
Culvert-Circular	Culvert - 2	Forward + Reverse	TW	879.00	881.00
Rectangular Weir	Weir - 10	Forward + Reverse	TW	880.00	881.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 10	
Structure Type: Rectangular Weir	
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Number of Openings	1
Elevation	880.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	42.000 in
Length	112.00 ft
Length (Computed Barrel)	112.02 ft
Slope (Computed)	0.018 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.006
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.086
T2 ratio (HW/D)	1.188
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	877.80 ft	T1 Flow	63.00 ft ³ /s
T2 Elevation	878.16 ft	T2 Flow	72.00 ft ³ /s

Structure ID: Culvert - 2	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	42.000 in
Length	112.00 ft
Length (Computed Barrel)	112.02 ft
Slope (Computed)	0.018 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.006
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.086
T2 ratio (HW/D)	1.188
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	877.80 ft	T1 Flow	63.00 ft ³ /s
T2 Elevation	878.16 ft	T2 Flow	72.00 ft ³ /s

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	877.80 ft
Orifice Area	50.2 ft ²
Orifice Coefficient	0.600
Weir Length	25.12 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Ke, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Requested Pond Water Surface Elevations

Minimum (Headwater)	878.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	884.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward + Reverse	TW	878.00	884.00
Inlet Box	Riser - 1	Forward + Reverse	TW	882.50	883.20
Culvert-Circular	Culvert - 2	Forward + Reverse	TW	883.20	884.00
Rectangular Weir	Weir - 11	Forward + Reverse	TW	883.50	884.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 11	
Structure Type: Rectangular Weir	
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Number of Openings	1
Elevation	883.50 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	42.000 in
Length	796.00 ft
Length (Computed Barrel)	796.01 ft
Slope (Computed)	0.005 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.006
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	881.82 ft	T1 Flow	63.00 ft ³ /s
T2 Elevation	882.18 ft	T2 Flow	72.00 ft ³ /s

Structure ID: Culvert - 2	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	42.000 in
Length	550.00 ft
Length (Computed Barrel)	550.01 ft
Slope (Computed)	0.007 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.006
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.092
T2 ratio (HW/D)	1.194
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	881.82 ft	T1 Flow	63.00 ft ³ /s
T2 Elevation	882.18 ft	T2 Flow	72.00 ft ³ /s

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	882.50 ft
Orifice Area	50.2 ft ²
Orifice Coefficient	0.600
Weir Length	25.12 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Ke, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Requested Pond Water Surface Elevations

Minimum (Headwater)	845.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	850.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 12	Forward	TW	845.01	850.00
Rectangular Weir Tailwater Settings	Weir - 12 Tailwater	Forward	TW	849.00 (N/A)	850.00 (N/A)

Structure ID: Weir - 12	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	849.00 ft
Weir Length	849.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 12	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.000 in
Length	15.00 ft
Length (Computed Barrel)	15.00 ft
Slope (Computed)	0.020 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.085
T2 ratio (HW/D)	1.187
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	846.97 ft	T1 Flow	15.55 ft ³ /s
T2 Elevation	847.17 ft	T2 Flow	17.77 ft ³ /s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	854.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	860.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 13	Forward + Reverse	TW	854.00	860.00
Rectangular Weir	Weir - 13	Forward + Reverse	TW	859.00	860.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 13	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	859.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
Structure ID: Culvert - 13	
Structure Type: Culvert-Circular	
Number of Barrels	6
Diameter	15.000 in
Length	1,940.00 ft
Length (Computed Barrel)	1,940.02 ft
Slope (Computed)	0.005 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	855.37 ft	T1 Flow	4.80 ft ³ /s
T2 Elevation	855.49 ft	T2 Flow	5.49 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	863.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	870.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 14	Forward + Reverse	TW	863.01	870.00
Rectangular Weir	Weir - 14	Forward + Reverse	TW	869.00	870.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 14	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	869.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
Structure ID: Culvert - 14	
Structure Type: Culvert-Circular	
Number of Barrels	3
Diameter	15.000 in
Length	1,670.00 ft
Length (Computed Barrel)	1,670.02 ft
Slope (Computed)	0.005 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	864.37 ft	T1 Flow	4.80 ft ³ /s
T2 Elevation	864.49 ft	T2 Flow	5.49 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	870.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	875.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 15	Forward + Reverse	TW	870.00	875.00
Rectangular Weir	Weir - 15	Forward + Reverse	TW	874.20	875.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 15	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	874.20 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 15	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	18.000 in
Length	75.00 ft
Length (Computed Barrel)	75.00 ft
Slope (Computed)	0.003 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.018
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.094
T2 ratio (HW/D)	1.196
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	871.64 ft	T1 Flow	7.58 ft ³ /s
T2 Elevation	871.79 ft	T2 Flow	8.66 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	870.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	877.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 16	Forward + Reverse	TW	870.50	877.00
Rectangular Weir	Weir - 16	Forward + Reverse	TW	876.00	877.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 16	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	876.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Culvert - 16	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.000 in
Length	280.00 ft
Length (Computed Barrel)	280.00 ft
Slope (Computed)	0.001 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.095
T2 ratio (HW/D)	1.197
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	872.69 ft	T1 Flow	15.55 ft ³ /s
T2 Elevation	872.89 ft	T2 Flow	17.77 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	871.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	876.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 17	Forward	TW	871.01	876.00
Rectangular Weir	Weir - 17	Forward	TW	875.90	876.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 17	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	875.90 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 17	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	870.90 ft
Orifice Diameter	7.750 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	871.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	876.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 18	Forward	TW	871.01	876.00
Rectangular Weir	Weir - 18	Forward	TW	875.00	876.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 18	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	875.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 18	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	870.90 ft
Orifice Diameter	4.250 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	871.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	875.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 19	Forward	TW	871.01	875.00
Rectangular Weir	Weir - 19	Forward	TW	874.00	875.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 19	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	874.00 ft
Weir Length	20.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: Orifice - 19	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	870.90 ft
Orifice Diameter	3.750 in
Orifice Coefficient	0.600

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	874.58 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	884.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 30	Forward + Reverse	TW	0.00	884.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 30
Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
874.58	0.00
875.00	17.22
877.00	84.00
878.00	136.80
879.00	204.00
880.00	278.40
881.00	352.00
881.55	396.00
882.00	705.79
884.00	6,296.28

Requested Pond Water Surface Elevations

Minimum (Headwater)	863.70 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	872.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 31	Forward	TW	0.00	872.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 31
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
863.70	0.00
864.20	0.50
865.00	29.76
866.00	100.86
867.00	191.38
868.00	291.86
869.00	413.33
870.00	474.53
871.00	750.00
872.00	3,100.00

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	868.42 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	875.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 32	Forward + Reverse	TW	0.00	875.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 32
Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
868.42	0.00
869.00	4.23
870.00	24.16
871.00	29.97
872.00	33.00
873.00	40.00
873.56	42.00
874.00	354.08
875.00	2,129.60

Requested Pond Water Surface Elevations

Minimum (Headwater)	863.03 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	867.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 34	Forward	TW	0.00	867.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 34
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
863.03	0.00
864.00	3.00
865.00	5.50
865.50	7.00
866.00	368.62
867.00	1,993.89

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	848.78 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	853.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 35	Forward	TW	0.00	853.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 35
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
848.78	0.00
849.00	0.01
850.00	1.46
851.00	5.50
852.00	8.00
852.80	9.60
852.90	57.43
853.00	278.83

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	882.03 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	889.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 36	Forward	TW	0.00	889.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 36
 Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
882.03	0.00
883.00	15.47
884.00	55.68
885.00	58.00
886.00	84.00
887.00	112.00
887.40	120.00
888.00	410.85
889.00	5,895.17

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type: Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Requested Pond Water Surface Elevations

Minimum (Headwater)	899.26 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	907.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 37	Forward + Reverse	TW	0.00	907.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 37
Structure Type: User Defined Table

Elevation (ft)	Flow (ft ³ /s)
899.26	0.00
900.00	0.01
901.00	49.87
902.00	51.20
903.00	78.00
904.00	100.00
905.00	120.00
906.00	732.00
907.00	4,009.29

Requested Pond Water Surface Elevations

Minimum (Headwater)	945.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	950.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	99 Weir Tailwater	Forward	TW	949.00 (N/A)	950.00 (N/A)

Structure ID: 99 Weir
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	950.00
5.00	949.00
36.00	949.00
40.00	950.00

Lowest Elevation 949.00 ft
 Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

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UPDATED 100YR 12HR-48HR (Time-Depth Curve, 100 years)...1

TAB 2H

**PROPOSED CONDITIONS
SUPPORTING CALCULATIONS**

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 002

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			7.28	444.38
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			25.97	1947.63
B	SWMF NWL	98			5.32	521.51
B	SWMF Side Slopes	85			0.84	71.78
B	Roadway Impevious Area	98			0.78	76.49
Totals =					40.20	3061.803

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3061.803}{40.200} = 76.164$$

Use CN = 76.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 003

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			3.51	214.11
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			8.98	673.50
B	SWMF NWL	98			1.58	154.89
B	SWMF Side Slopes	85			0.68	57.41
B	Roadway Impevious Area	98			0.28	27.00
Totals =					15.02	1126.913

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{1126.913}{15.021} = \underline{75.020}$$

Use CN = 75.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 006

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			6.50	396.37
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			1.33	99.94
B	Impervious Space - Roadway	98			0.41	40.50
B	Townhouses	85			19.34	1643.69
B	SWMF NWL	98			1.78	174.80
B	SWMF Side Slopes	85			0.84	70.98
Totals =					30.20	2426.286

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2426.286}{30.200} = 80.341$$

Use CN = 80.3

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 007

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			3.81	232.60
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			32.39	2429.25
B	Impervious Space - Roadway	98			0.51	49.49
B	SWMF NWL	98			7.29	714.23
B	SWMF Side Slopes	85			2.05	173.89
Totals =					46.04	3599.459

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3599.459}{46.042} = 78.178$$

Use CN = 78.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 010

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			5.50	335.66
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			44.59	3344.25
B	Townhouses	85			7.10	603.33
B	SWMF NWL	98			5.95	583.17
B	SWMF Side Slopes	85			1.71	145.1517447
B	Impervious Space - Roadway	98			0.46	44.99540863
Totals =					65.31	5056.558

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{5056.558}{65.308} = 77.426$$

Use CN = 77.4

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 011

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			0.93	56.53
B	Townhouses	85			8.76	744.60
B	SWMF NWL	98			0.53	52.34
B	SWMF Side Slopes	85			0.31	26.42
Totals =					10.53	879.898

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{879.898}{10.532} = 83.547$$

Use CN = 83.5

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 012

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			15.73	959.79
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			73.09	5481.75
B	Townhouses	85			26.83	2280.22
C	SWMF NWL	98			19.34	1895.42
B	SWMF Side Slopes	85			1.79	152.05
B	Impervious Space - Roadway	98			0.26	25.20
B	Municipal	85			7.01	595.8624885
Totals =					144.05	11390.279

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{11390.279}{144.047} = 79.073$$

Use CN = 79.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 013

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			11.49	701.16
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			36.84	2763.00
C	SWMF NWL	98			1.88	183.94
B	SWMF Side Slopes	85			0.58	49.46
B	Impervious Space - Roadway	98			0.46	45.00
Totals =					51.25	3742.556

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3742.556}{51.252} = 73.022$$

Use CN = 73.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 014

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			2.52	153.42
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			15.32	1149.00
C	SWMF NWL	98			0.92	89.90
B	SWMF Side Slopes	85			0.65	55.64
B	Impervious Space - Roadway	98			0.35	34.19651056
Totals =					19.76	1482.160

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1482.160}{19.756} = 75.023$$

Use CN = 75.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 015

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			8.47	635.08
B	SWMF NWL	98			3.34	327.48
B	SWMF Side Slopes	85			0.59	50.11
B	Impervious Space - Roadway	98			0.30	29.25
B	School Site	85			9.10	773.73
Totals =					21.80	1815.643

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1815.643}{21.800} = 83.286$$

Use CN = 83.3

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 016

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			10.78	657.51
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			44.32	3324.00
B	SWMF NWL	98			4.09	400.39
B	SWMF Side Slopes	85			0.97	82.59
B	Impervious Space - Roadway	98			0.32	31.50
Totals =					60.48	4495.991

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{4495.991}{60.478} = 74.341$$

Use CN = 74.3

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 017

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			3.51	214.02
B	Residential Districts, 1/4 Ac. Lots (38% impervious)	75			23.87	1790.25
B	SWMF NWL	98			2.37	232.26
B	SWMF Side Slopes	85			0.72	61.20
B	Impervious Space - Roadway	98			0.23	22.50
B	School Site	85			2.08	177.1301653
Totals =					32.78	2497.355

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2497.355}{32.782} = 76.181$$

Use CN = 76.2

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev MAM

Date 9/13/2022
 Date 11/15/2022

Circle one: Present Developed

Subarea 018

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Open Space (Good Condition)	61			1.45	88.65
B	Townhouses	85			4.88	414.80
B	Impervious Space - Roadway	98			0.30	29.25
B	SWMF NWL	98			1.78	174.39
B	SWMF Side Slopes	85			0.53	44.73
Totals =					8.94	751.816

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{751.816}{8.937} = 84.120$$

Use CN = 84.1

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev _____

Date 11/23/2022
 Date _____

Circle one: Present Developed

Subarea 055

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Straight Row Crops, Good Condition	78			34.91	2722.98
B	Farmstead, Good Condition	74			2.42	179.08
B	Rural Residential, 2+ Acres, Good Condition	65			1.96	127.40
B	Open Space, Grass, Brush, Some Trees, Good Condition	61			6.22	379.42
B	Impervious Pavement (Melms and Harmony Roads)	98			0.28	27.44
Totals =					45.79	3436.320

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3436.320}{45.790} = 75.045$$

Use CN = 75.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev _____

Date 11/23/2022
 Date _____

Circle one: Present Developed

Subarea 060

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Straight Row Crops, Good Condition	78			117.60	9172.80
B	Farmstead, Good Condition	74			0.21	15.54
B	Rural Residential, 2+ Acres, Good Condition	65			0.78	50.70
B	Open Space, Grass, Brush, Some Trees, Good Condition	61			0.15	9.15
B	Impervious Pavement (Harmony Road)	98			0.63	61.74
Totals =					119.37	9309.930

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{9309.930}{119.370} = 77.992$$

Use CN = 78.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Worksheet 2: Runoff Curve Number and Runoff

Project Hampshire
 Location Hampshire, IL

By CMZ
 Rev _____

Date 11/23/2022
 Date _____

Circle one: Present Developed

Subarea 093

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN ^{1/}			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
B	Straight Row Crops, Good Condition	78			4.75	370.50
B	Impervious Pavement (Harmony Road)	98			0.01	0.98
Totals =					4.76	371.480

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{371.480}{4.760} = \underline{78.042}$$

Use CN = 78.0

2. Runoff

Frequency yr
 Rainfall in
 Runoff, Q in
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 01				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
845.0	185870	4.267	0.000	0.000
846.0	242560	5.568	4.918	4.918
847.0	255040	5.855	5.712	10.629
848.0	267630	6.144	5.999	16.629
849.0	280320	6.435	6.290	22.918
850.0	293120	6.729	6.582	29.501

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 02				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
847.0	233260	5.355	0.000	0.000
848.0	242310	5.563	5.459	5.459
849.0	251950	5.784	5.673	11.132
850.0	263740	6.055	5.919	17.051
850.5	269340	6.183	3.059	20.111
851.0	283590	6.510	6.282	26.393

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
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By: MAM

STORMWATER MANAGEMENT FACILITY NO. 03				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
853.0	66070	1.517	0.000	0.000
854.0	71700	1.646	1.581	1.581
855.0	77420	1.777	1.712	3.293
856.0	83260	1.911	1.844	5.137
857.0	89210	2.048	1.980	7.117
858.0	95260	2.187	2.117	9.235
859.0	104730	2.404	2.296	11.530

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
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STORMWATER MANAGEMENT FACILITY NO. 04				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
849.0	84100	1.931	0.000	0.000
850.0	89530	2.055	1.993	1.993
851.0	95090	2.183	2.119	4.112
852.0	100790	2.314	2.248	6.361
853.0	106560	2.446	2.380	8.741
854.0	112440	2.581	2.514	11.254
855.0	118420	2.719	2.650	13.904
855.5	121440	2.788	1.377	15.281
856.0	124500	2.858	1.412	16.692

HWL

Job #: 456.216
Project: Prairie Ridge

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STORMWATER MANAGEMENT FACILITY NO. 05				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
846.0	161360	3.704	0.000	0.000
847.0	203800	4.679	4.191	4.191
848.0	232310	5.333	5.006	9.197
849.0	247290	5.677	5.505	14.702
850.0	256490	5.888	5.783	20.485
851.0	265800	6.102	5.995	26.480
852.0	275220	6.318	6.210	32.690

HWL

Job #: 456.216
Project: Prairie Ridge

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STORMWATER MANAGEMENT FACILITY NO. 06				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
854.0	46240	1.062	0.000	0.000
855.0	60500	1.389	1.225	1.225
856.0	72680	1.669	1.529	2.754
857.0	85700	1.967	1.818	4.572
858.0	91620	2.103	2.035	6.607
859.0	97650	2.242	2.173	8.780
860.0	103790	2.383	2.312	11.092
861.0	110030	2.526	2.454	13.546

HWL

Job #: 456.216
Project: Prairie Ridge

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STORMWATER MANAGEMENT FACILITY NO. 07				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
859.0	87010	1.997	0.000	0.000
860.0	136340	3.130	2.564	2.564
861.0	176920	4.062	3.596	6.159
862.0	215530	4.948	4.505	10.664
863.0	237260	5.447	5.197	15.861
864.0	247860	5.690	5.568	21.430
865.0	258560	5.936	5.813	27.243
866.0	269370	6.184	6.060	33.303

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
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STORMWATER MANAGEMENT FACILITY NO. 08				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
879.0	166010	3.811	0.000	0.000
880.0	196510	4.511	4.161	4.161
881.0	210820	4.840	4.676	8.837
882.0	219230	5.033	4.936	13.773
883.0	227720	5.228	5.130	18.903
884.0	236330	5.425	5.327	24.230
884.5	193410	4.440	2.466	26.696
885.0	245030	5.625	2.516	29.212

HWL

Job #: 456.216
Project: Prairie Ridge

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By: MAM

STORMWATER MANAGEMENT FACILITY NO. 09				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
872.0	352880	8.101	0.000	0.000
873.0	389580	8.944	8.522	8.522
874.0	402520	9.241	9.092	17.614
875.0	415010	9.527	9.384	26.998
876.0	428230	9.831	9.679	36.677
877.0	441710	10.140	9.986	46.663
877.5	448430	10.295	5.109	51.772
878.0	455180	10.449	5.186	56.958

HWL

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Project: Prairie Ridge

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STORMWATER MANAGEMENT FACILITY NO. 10				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
873.0	167020	3.834	0.000	0.000
874.0	202310	4.644	4.239	4.239
875.0	227270	5.217	4.931	9.170
876.0	236540	5.430	5.324	14.494
877.0	245935	5.646	5.538	20.032
878.0	255405	5.863	5.755	25.787
879.0	264975	6.083	5.973	31.760
880.0	274715	6.307	6.195	37.955
881.0	312415	7.172	6.739	44.694

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 11				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
878.0	19080	0.438	0.000	0.000
879.0	21620	0.496	0.467	0.467
880.0	24380	0.560	0.528	0.995
881.0	26960	0.619	0.589	1.584
882.0	29660	0.681	0.650	2.234
883.0	32470	0.745	0.713	2.948
883.5	33910	0.778	0.381	3.329
884.0	35375	0.812	0.398	3.726

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 12 ALT				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
845.0	785310	18.028	0.000	0.000
846.0	874550	20.077	19.053	19.053
847.0	890570	20.445	20.261	39.313
848.0	906690	20.815	20.630	59.943
849.0	922910	21.187	21.001	80.944
849.5	931060	21.374	10.640	91.584
850.0	939240	21.562	10.734	102.318

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 13				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
854.0	81760	1.877	0.000	0.000
855.0	86560	1.987	1.932	1.932
856.0	91540	2.101	2.044	3.976
857.0	96620	2.218	2.160	6.136
858.0	101820	2.337	2.278	8.414
859.0	107100	2.459	2.398	10.812
860.0	112500	2.583	2.521	13.333

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 14				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
863.0	39670	0.911	0.000	0.000
864.0	43290	0.994	0.952	0.952
865.0	47020	1.079	1.037	1.989
866.0	50900	1.169	1.124	3.113
867.0	54810	1.258	1.213	4.326
868.0	58850	1.351	1.305	5.631
869.0	62990	1.446	1.399	7.029
870.0	68830	1.580	1.513	8.542

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 15				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
870.0	145560	3.342	0.000	0.000
871.0	151830	3.486	3.414	3.414
872.0	158200	3.632	3.559	6.972
873.0	164670	3.780	3.706	10.678
874.0	171240	3.931	3.856	14.534
874.2	172570	3.962	0.789	15.323
875.0	177920	4.084	3.218	18.542

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 16				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
870.5	177970	4.086	0.000	0.000
871.0	181360	4.163	2.062	2.062
872.0	188160	4.320	4.242	6.304
873.0	195100	4.479	4.399	10.703
874.0	202140	4.640	4.560	15.263
875.0	209310	4.805	4.723	19.985
876.0	216620	4.973	4.889	24.874
877.0	224040	5.143	5.058	29.933

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 17				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
871.0	108990	2.502	0.000	0.000
872.0	115800	2.658	2.580	2.580
873.0	122680	2.816	2.737	5.318
874.0	129700	2.978	2.897	8.215
875.0	136850	3.142	3.060	11.274
875.9	143810	3.301	2.899	14.173
876.0	145720	3.345	0.332	14.506

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 18				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
871.0	45250	1.039	0.000	0.000
872.0	50840	1.167	1.103	1.103
873.0	56540	1.298	1.233	2.336
874.0	62340	1.431	1.365	3.700
875.0	68310	1.568	1.500	5.200
876.0	74340	1.707	1.637	6.837

HWL

Job #: 456.216
Project: Prairie Ridge

Date: November 15, 2022
Revised:
By: MAM

STORMWATER MANAGEMENT FACILITY NO. 19				
BASIN STAGE/ STORAGE RELATIONSHIP				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
871.0	44450	1.020	0.000	0.000
872.0	48370	1.110	1.065	1.065
873.0	52450	1.204	1.157	2.223
874.0	56700	1.302	1.253	3.476
875.0	61100	1.403	1.352	4.828

HWL

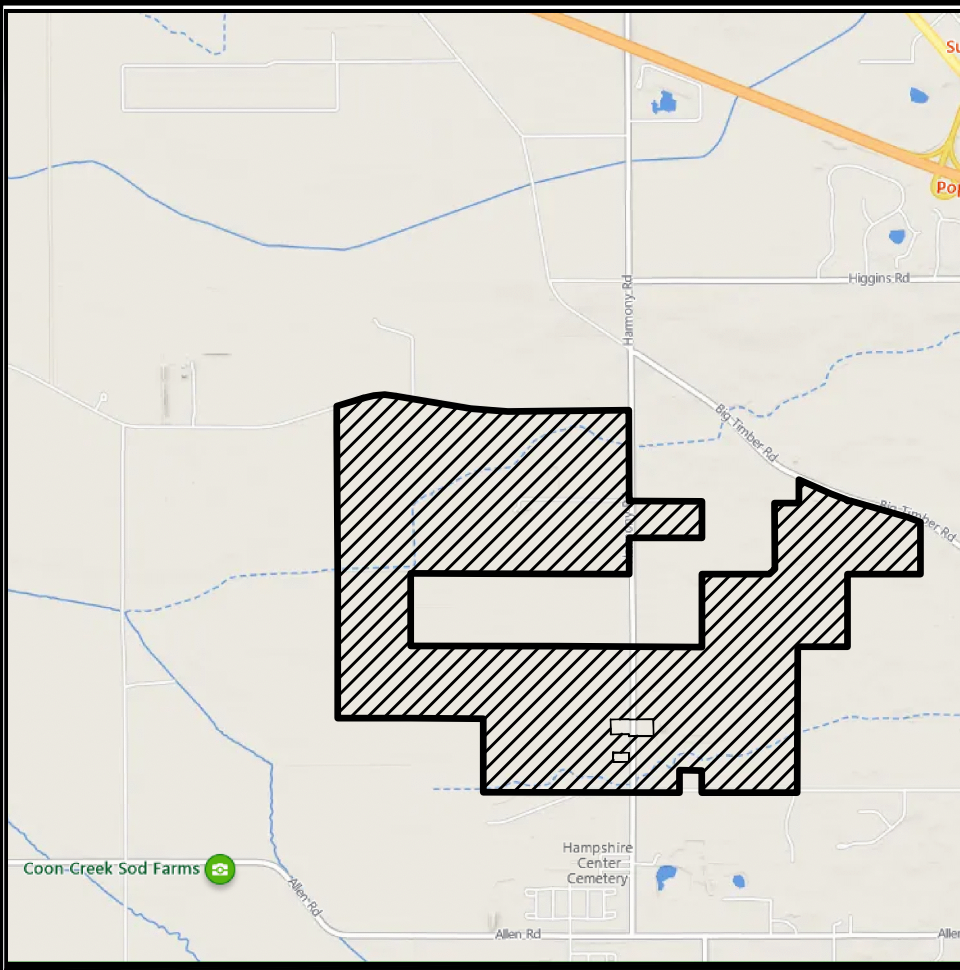
TAB 3

FLOODPLAIN SUBMITTAL

TAB 3A

FLOODPLAIN EXHIBIT

FOR PRAIRIE RIDGE NORTH



LOCATION MAP



600 300 0 600
SCALE: 1 INCH = 600 FEET

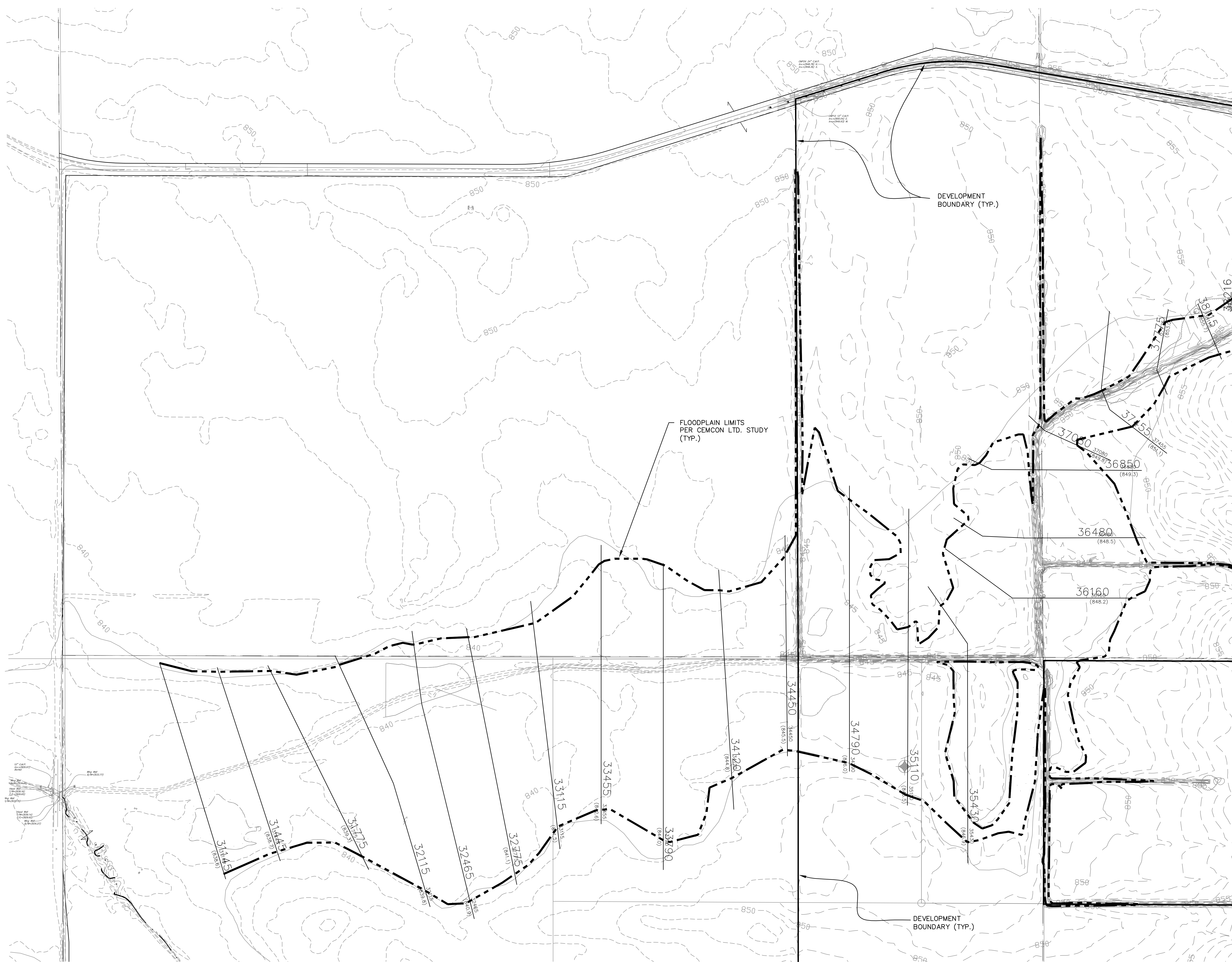
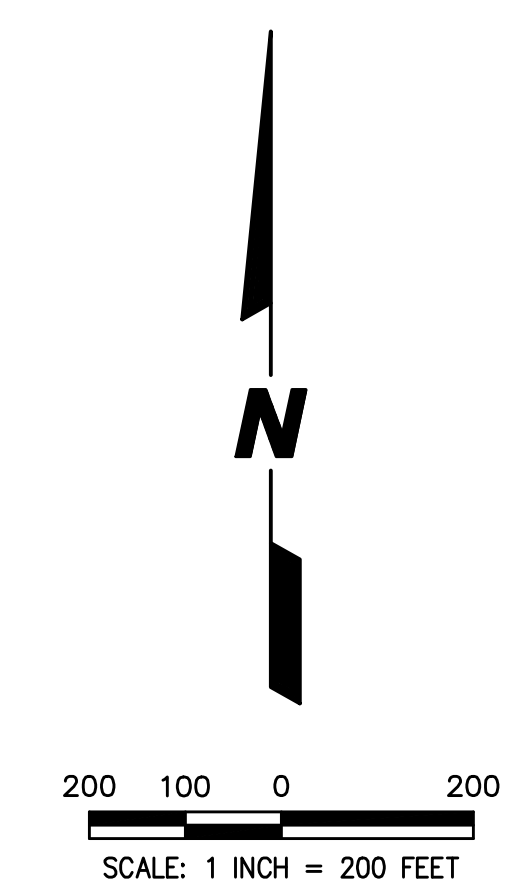


PREPARED FOR:
HAMPSHIRE WEST LLC
1751 A WEST DIEHL ROAD
NAPERVILLE, ILLINOIS 60563
(630) 851-5490

PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
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PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 456275 FILE NAME: FLOODPLN
DRAWN BY: LAL FLD. BK. / PG. NO.: ----
COMPLETION DATE: 12-15-22 JOB NO.: 456.275
XREF : PROJECT MANAGER : MAM

PLT FILE CREATED: 12/15/2022 BY: LESLIE LUNDBERG DRAWING PATH: P:\182270\DWG\DWG\DRAWINGS\0500\DWG



LEGEND

- - FLOODPLAIN LIMITS PER CEMCON LTD. STUDY
- - DEVELOPMENT BOUNDARY

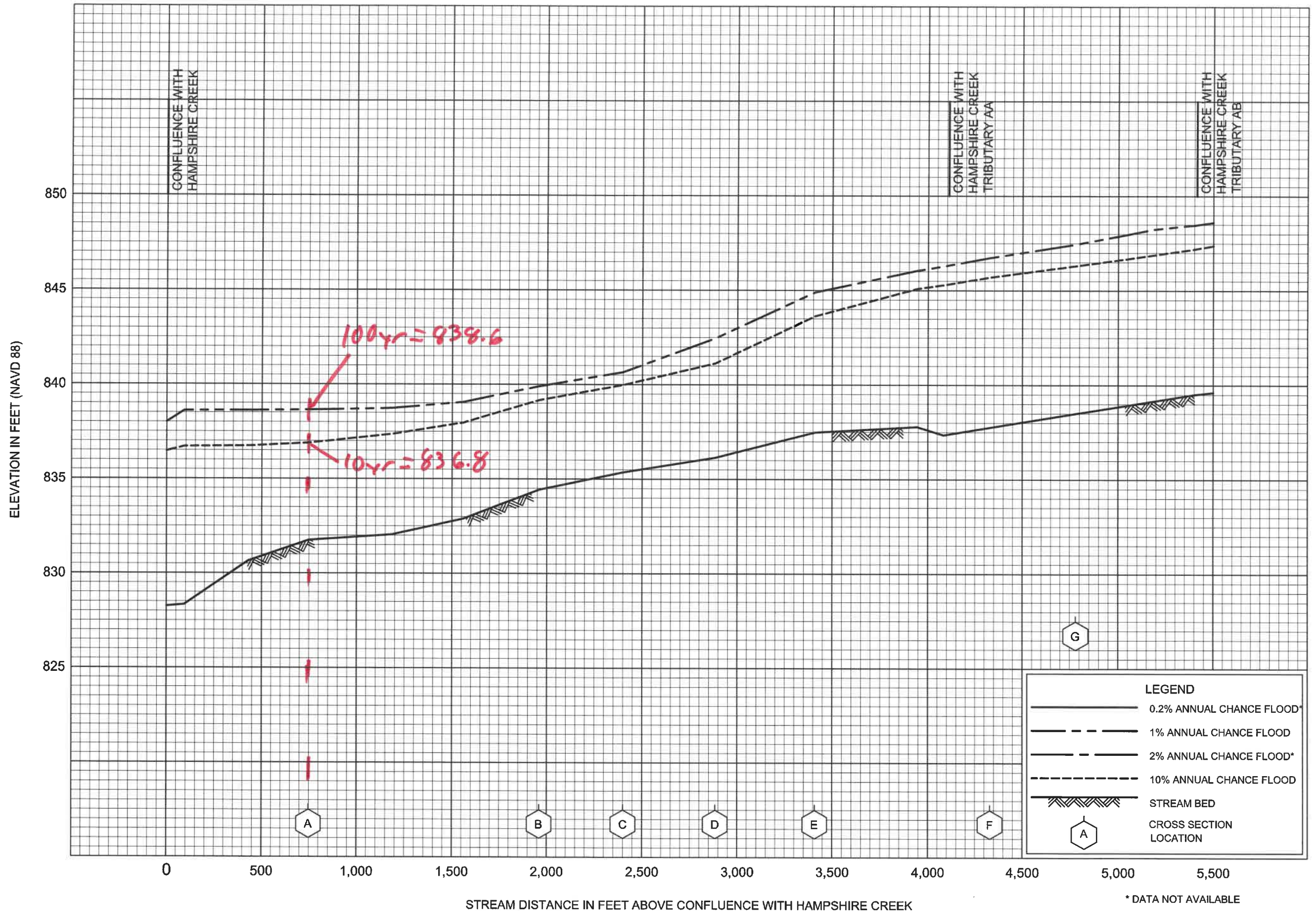
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DISC NO.: 456275 FILE NAME: FLOODPLN
 DRAWN BY: LAL FLD. BK. / PG. NO.: -----
 COMPLETION DATE: 12-15-22 JOB NO.: 456.275
 XREF : PROJECT MANAGER : MAM

TAB 3B

FIS DATA



FLOOD PROFILES
HAMPSHIRE CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY
KANE COUNTY, IL
 AND INCORPORATED AREAS

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE (FEET)
Hampshire Creek Tributary A								
A	748	*	*	*	838.6	*	*	*
B	1,959	*	*	*	839.9	*	*	*
C	2,400	*	*	*	840.7	*	*	*
D	2,883	*	*	*	842.5	*	*	*
E	3,408	*	*	*	844.9	*	*	*
F	4,329	*	*	*	846.7	*	*	*
G	4,781	*	*	*	847.5	*	*	*
H	5,841	*	*	*	848.8	*	*	*
I	6,186	*	*	*	849.1	*	*	*
J	6,695	*	*	*	850.1	*	*	*
K	7,472	*	*	*	852.5	*	*	*
L	8,043	*	*	*	855.8	*	*	*
M	8,453	*	*	*	857.7	*	*	*
N	8,923	*	*	*	860.2	*	*	*
O	9,243	*	*	*	862.3	*	*	*
P	9,644	*	*	*	863.4	*	*	*
Q	9,941	*	*	*	863.9	*	*	*
R	10,443	*	*	*	865.7	*	*	*
S	10,843	*	*	*	867.6	*	*	*
T	11,229	*	*	*	868.5	*	*	*

¹Feet above confluence with Hampshire Creek

*Data not available

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KANE COUNTY, IL
AND INCORPORATED AREAS**

FLOODWAY DATA

HAMPSHIRE CREEK TRIBUTARY A

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE (FEET)
Hampshire Creek Tributary A (continued)								
U	11,472 ¹	*	*	*	870.6	*	*	*
V	12,424 ¹	*	*	*	871.5	*	*	*
W	12,816 ¹	*	*	*	873.2	*	*	*
X	13,245 ¹	*	*	*	876.3	*	*	*
Y	13,657 ¹	*	*	*	881.7	*	*	*
Z	14,020 ¹	*	*	*	884.8	*	*	*
AA	14,490 ¹	*	*	*	889.6	*	*	*
AB	14,843 ¹	*	*	*	892.1	*	*	*
AC	15,161 ¹	*	*	*	894.7	*	*	*
AD	15,417 ¹	*	*	*	896.0	*	*	*
AE	15,790 ¹	*	*	*	898.3	*	*	*
AF	16,131 ¹	*	*	*	901.0	*	*	*
AG	16,444 ¹	*	*	*	902.9	*	*	*
AH	16,631 ¹	*	*	*	904.0	*	*	*
Hampshire Creek Tributary AA								
A	1,253 ²	*	*	*	846.6	*	*	*
B	1,726 ²	*	*	*	846.9	*	*	*
C	2,196 ²	*	*	*	847.8	*	*	*
D	2,604 ²	*	*	*	848.8	*	*	*

¹Feet above confluence with Hampshire Creek

²Feet above confluence with Hampshire Creek Tributary A

*Data not available

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KANE COUNTY, IL
AND INCORPORATED AREAS**

FLOODWAY DATA

**HAMPSHIRE CREEK TRIBUTARY A
HAMPSHIRE CREEK TRIBUTARY AA**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE (FEET)
Hampshire Creek Tributary A								
A	748	*	*	*	838.6	*	*	*
B	1,959	*	*	*	839.9	*	*	*
C	2,400	*	*	*	840.7	*	*	*
D	2,883	*	*	*	842.5	*	*	*
E	3,408	*	*	*	844.9	*	*	*
F	4,329	*	*	*	846.7	*	*	*
G	4,781	*	*	*	847.5	*	*	*
H	5,841	*	*	*	848.8	*	*	*
I	6,186	*	*	*	849.1	*	*	*
J	6,695	*	*	*	850.1	*	*	*
K	7,472	*	*	*	852.5	*	*	*
L	8,043	*	*	*	855.8	*	*	*
M	8,453	*	*	*	857.7	*	*	*
N	8,923	*	*	*	860.2	*	*	*
O	9,243	*	*	*	862.3	*	*	*
P	9,644	*	*	*	863.4	*	*	*
Q	9,941	*	*	*	863.9	*	*	*
R	10,443	*	*	*	865.7	*	*	*
S	10,843	*	*	*	867.6	*	*	*
T	11,229	*	*	*	868.5	*	*	*

¹Feet above confluence with Hampshire Creek

*Data not available

**TABLE
12**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KANE COUNTY, IL
AND INCORPORATED AREAS**

FLOODWAY DATA

HAMPSHIRE CREEK TRIBUTARY A

TAB 3C

EXISTING HEC-RAS MODEL

HEC-RAS Plan: EXISTING

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
North Trib.	43240	10 Yr	633.00	870.90	875.93	875.24	876.71	0.009123	7.08	90.49	805.66	0.72
North Trib.	43240	100 Yr	1344.00	870.90	877.00	877.00	877.01	0.000238	1.34	2283.15	865.64	0.12
North Trib.	42930	10 Yr	633.00	870.80	873.92		874.06	0.006796	4.51	344.81	387.87	0.59
North Trib.	42930	100 Yr	1344.00	870.80	874.46		874.66	0.007896	5.78	573.54	455.75	0.66
North Trib.	42620	10 Yr	633.00	869.00	872.32		872.42	0.004474	4.02	437.02	489.20	0.49
North Trib.	42620	100 Yr	1344.00	869.00	873.09		873.17	0.003282	4.23	838.55	558.02	0.44
North Trib.	42310	10 Yr	633.00	867.40	871.17		871.23	0.003242	3.17	423.88	308.96	0.40
North Trib.	42310	100 Yr	1344.00	867.40	872.06		872.13	0.003398	3.74	735.05	393.55	0.42
North Trib.	42000	10 Yr	633.00	866.00	870.59		870.62	0.001313	2.33	637.82	471.66	0.27
North Trib.	42000	100 Yr	1344.00	866.00	871.44		871.48	0.001398	2.73	1078.31	549.57	0.28
North Trib.	41700	10 Yr	633.00	864.60	870.45		870.46	0.000264	1.53	1425.74	1109.34	0.13
North Trib.	41700	100 Yr	1344.00	864.60	871.30		871.31	0.000282	1.79	2403.69	1193.43	0.14
North Trib. - NE	4140	10 Yr	332.00	871.60	873.04		873.15	0.004484	2.87	143.25	158.46	0.45
North Trib. - NE	4140	100 Yr	790.00	871.60	873.75		873.96	0.004753	4.00	274.34	209.00	0.50
North Trib. - NE	3700	10 Yr	332.00	870.55	872.29		872.32	0.000918	1.61	442.79	568.24	0.22
North Trib. - NE	3700	100 Yr	790.00	870.55	873.37		873.39	0.000459	1.58	1141.43	725.46	0.17
North Trib. - NE	3470	10 Yr	332.00	870.36	872.24		872.24	0.000116	0.59	1159.43	938.68	0.08
North Trib. - NE	3470	100 Yr	790.00	870.36	873.33		873.34	0.000089	0.71	2207.58	972.71	0.07
North Trib. - NE	3125	10 Yr	332.00	869.93	872.05		872.12	0.002323	2.13	159.96	136.83	0.33
North Trib. - NE	3125	100 Yr	790.00	869.93	873.14		873.24	0.001623	2.67	331.82	180.47	0.30
North Trib. - NE	2890	10 Yr	332.00	868.80	872.07		872.07	0.000046	0.47	796.25	383.71	0.05
North Trib. - NE	2890	100 Yr	790.00	868.80	873.16		873.17	0.000075	0.76	1247.48	443.70	0.07
North Trib. - NE	2650	10 Yr	332.00	869.45	871.99		872.04	0.001226	2.13	265.58	208.90	0.26
North Trib. - NE	2650	100 Yr	790.00	869.45	873.03		873.11	0.001347	2.92	577.94	400.46	0.29
North Trib. - NE	2420	10 Yr	332.00	868.28	871.99		871.99	0.000050	0.60	1291.62	608.24	0.06
North Trib. - NE	2420	100 Yr	790.00	868.28	873.03		873.04	0.000087	0.95	1978.61	702.80	0.08
North Trib. - NE	2080	10 Yr	332.00	868.92	871.96		871.97	0.000137	0.87	778.69	397.71	0.09
North Trib. - NE	2080	100 Yr	790.00	868.92	872.99		873.00	0.000242	1.43	1283.16	577.64	0.13
North Trib. - NE	1780	10 Yr	332.00	868.48	871.20	871.20	871.77	0.015692	6.16	64.16	91.78	0.87
North Trib. - NE	1780	100 Yr	790.00	868.48	872.28	872.28	872.74	0.008320	6.38	268.03	326.16	0.70
North Trib. - NE	1690	10 Yr	332.00	868.73	871.19		871.22	0.000794	1.72	321.90	252.83	0.21
North Trib. - NE	1690	100 Yr	790.00	868.73	872.16		872.22	0.000988	2.47	632.84	454.41	0.25
North Trib. - NE	1420	10 Yr	332.00	868.65	870.95		870.98	0.001019	2.04	311.22	189.94	0.24
North Trib. - NE	1420	100 Yr	790.00	868.65	871.81		871.89	0.001661	3.22	488.80	223.86	0.32
North Trib. - NE	1080	10 Yr	332.00	868.53	870.78		870.79	0.000350	1.06	738.87	767.25	0.14
North Trib. - NE	1080	100 Yr	790.00	868.53	871.66		871.67	0.000291	1.25	1475.72	906.23	0.13
North Trib. - NE	780	10 Yr	332.00	868.34	870.68		870.69	0.000337	1.05	678.46	675.36	0.13
North Trib. - NE	780	100 Yr	790.00	868.34	871.58		871.59	0.000301	1.28	1302.22	719.26	0.13
North Trib. - NE	500	10 Yr	332.00	867.98	870.54		870.57	0.000606	1.64	357.75	276.33	0.19
North Trib. - NE	500	100 Yr	790.00	867.98	871.40		871.46	0.000918	2.47	642.69	390.09	0.24
North Trib. - NE	200	10 Yr	332.00	867.23	870.44		870.46	0.000280	1.20	583.11	745.16	0.13
North Trib. - NE	200	100 Yr	790.00	867.23	871.29		871.31	0.000302	1.50	1245.52	813.17	0.14
North Trib. EAST	41500	10 Yr	461.00	864.00	870.43		870.43	0.000074	0.73	1683.33	871.09	0.07
North Trib. EAST	41500	100 Yr	1080.00	864.00	871.26		871.27	0.000142	1.16	2464.99	1000.56	0.10
North Trib. EAST	41414	10 Yr	461.00	864.20	870.41	867.28	870.41	0.000062	0.77	1702.42	867.80	0.06
North Trib. EAST	41414	100 Yr	1080.00	864.20	871.22	869.65	871.23	0.000131	1.24	2459.88	993.92	0.09
North Trib. EAST	41397		Culvert									
North Trib. EAST	41380	10 Yr	516.00	863.99	867.31	867.31	868.98	0.015698	10.36	49.81	530.54	1.00
North Trib. EAST	41380	100 Yr	1035.00	863.99	868.75	868.73	868.77	0.000486	1.85	1420.11	771.28	0.17
North Trib. EAST	41260	10 Yr	516.00	862.80	867.69		867.72	0.000791	2.10	660.89	637.16	0.21
North Trib. EAST	41260	100 Yr	1035.00	862.80	868.69		868.71	0.000500	1.95	1383.53	767.80	0.18
North Trib. EAST	40660	10 Yr	516.00	860.70	866.69		866.96	0.002352	4.13	125.49	47.29	0.37
North Trib. EAST	40660	100 Yr	1035.00	860.70	867.44	865.90	867.96	0.004325	6.11	316.54	429.30	0.52
North Trib. EAST	40300	10 Yr	516.00	859.50	863.68	863.68	864.99	0.019443	9.17	56.25	21.91	1.01

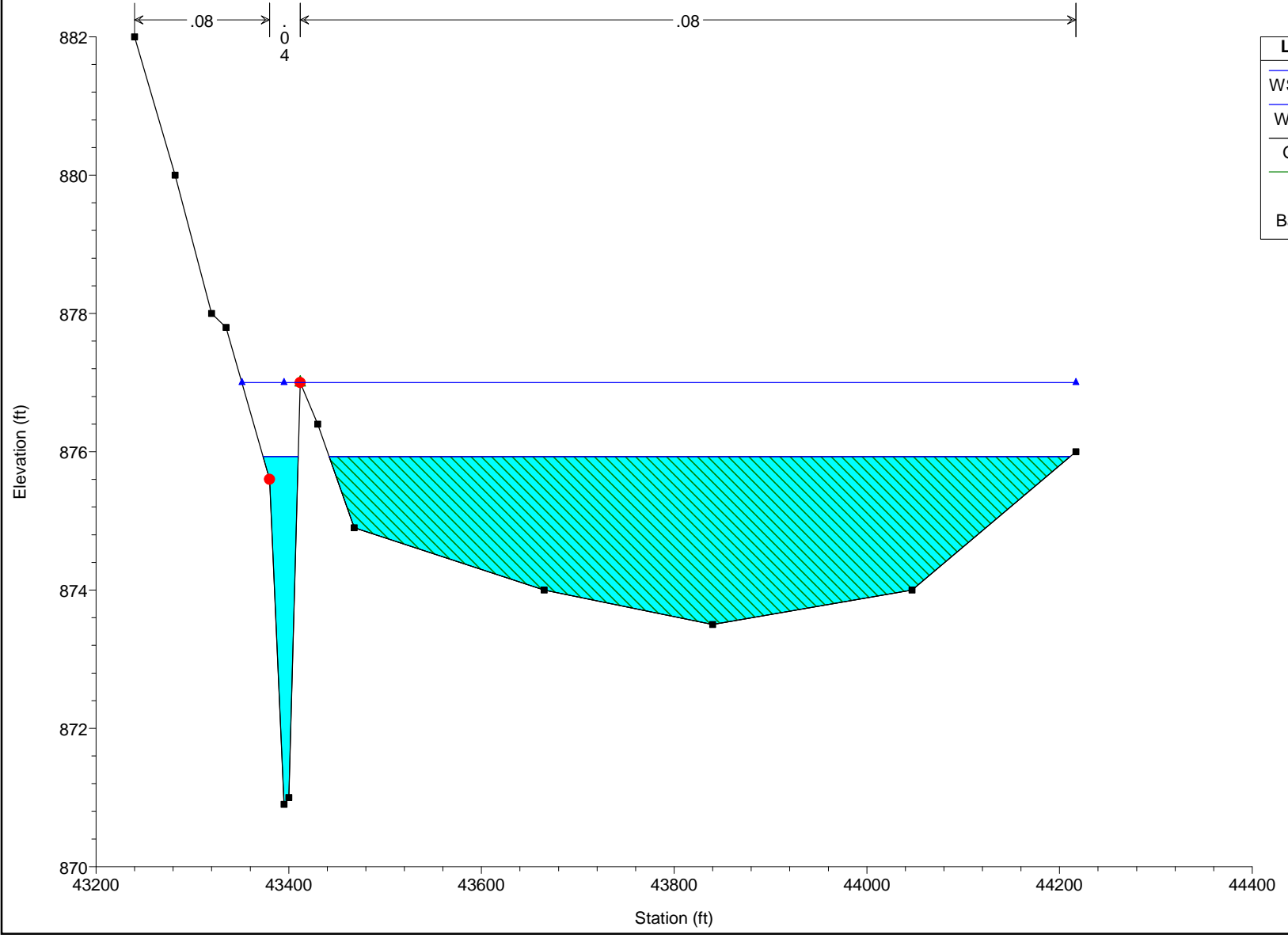
HEC-RAS Plan: EXISTING (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
North Trib. EAST	40300	100 Yr	1035.00	859.50	865.46	865.46	865.98	0.006357	7.01	366.45	365.41	0.62
North Trib. EAST	40280	10 Yr	516.00	859.30	864.13		864.28	0.002841	3.89	360.28	516.98	0.40
North Trib. EAST	40280	100 Yr	1035.00	859.30	864.72		864.85	0.002779	4.23	710.37	729.56	0.40
North Trib. EAST	39885	10 Yr	516.00	857.80	863.03		863.21	0.002644	4.02	344.81	506.79	0.39
North Trib. EAST	39885	100 Yr	1035.00	857.80	863.70		863.83	0.002377	4.17	743.52	645.11	0.38
North Trib. EAST	39665	10 Yr	516.00	857.40	862.30	861.28	862.38	0.002427	2.51	314.49	306.21	0.35
North Trib. EAST	39665	100 Yr	1035.00	857.40	862.95	862.01	863.06	0.002497	3.15	556.97	398.32	0.37
North Trib. EAST	39365	10 Yr	516.00	857.00	860.84	860.84	861.26	0.006698	5.82	188.26	281.32	0.61
North Trib. EAST	39365	100 Yr	1035.00	857.00	861.41	861.41	861.87	0.007984	7.02	368.86	341.09	0.68
North Trib. EAST	39085	10 Yr	516.00	855.60	860.00		860.03	0.000420	1.43	702.71	852.69	0.16
North Trib. EAST	39085	100 Yr	1035.00	855.60	860.81		860.83	0.000374	1.62	1480.61	1079.41	0.15
North Trib. EAST	38825	10 Yr	516.00	854.30	858.32	858.32	859.55	0.019354	8.91	57.92	24.02	1.01
North Trib. EAST	38825	100 Yr	1035.00	854.30	860.07	860.07	860.52	0.005549	6.63	436.06	523.71	0.59
North Trib. EAST	38500	10 Yr	516.00	851.60	856.27		856.66	0.004155	5.03	102.64	34.47	0.49
North Trib. EAST	38500	100 Yr	1035.00	851.60	857.89		858.31	0.003446	5.61	325.59	249.15	0.47
North Trib. EAST	38399	10 Yr	516.00	851.22	856.20		856.33	0.001670	2.93	175.99	64.73	0.31
North Trib. EAST	38399	100 Yr	1035.00	851.22	857.87		858.03	0.001262	3.32	430.45	358.52	0.29
North Trib. EAST	38284	10 Yr	684.00	850.60	855.50		855.95	0.005621	5.38	127.16	45.92	0.57
North Trib. EAST	38284	100 Yr	1442.00	850.60	856.94	855.89	857.67	0.005894	6.99	264.13	190.74	0.62
North Trib. EAST	38216	10 Yr	684.00	850.31	855.32		855.60	0.003491	4.27	160.05	57.92	0.45
North Trib. EAST	38216	100 Yr	1442.00	850.31	856.85	855.21	857.28	0.003378	5.34	365.19	332.36	0.47
North Trib. EAST	38115	10 Yr	684.00	849.80	854.12	853.50	854.98	0.010220	7.43	92.65	41.13	0.75
North Trib. EAST	38115	100 Yr	1442.00	849.80	855.69	855.69	856.69	0.009286	8.64	266.54	171.38	0.75
North Trib. EAST	37775	10 Yr	684.00	848.10	852.38	851.31	852.69	0.004223	4.69	237.23	315.55	0.49
North Trib. EAST	37775	100 Yr	1442.00	848.10	853.04	852.85	853.50	0.006071	6.38	481.88	430.57	0.61
North Trib. EAST	37455	10 Yr	684.00	845.50	850.41	850.41	850.89	0.007667	6.23	225.07	333.35	0.66
North Trib. EAST	37455	100 Yr	1442.00	845.50	851.11	851.11	851.42	0.006639	6.28	739.51	938.34	0.62
North Trib. EAST	37170	10 Yr	684.00	843.70	849.15		849.33	0.001458	3.51	328.33	333.34	0.30
North Trib. EAST	37170	100 Yr	1442.00	843.70	849.82		850.14	0.002834	5.21	559.08	356.04	0.42
North Trib. EAST	37080	10 Yr	684.00	843.90	849.01		849.17	0.002917	3.90	438.36	588.02	0.41
North Trib. EAST	37080	100 Yr	1442.00	843.90	849.79		849.90	0.002365	4.03	968.18	773.75	0.38
North Trib. EAST	36850	10 Yr	684.00	842.30	848.49		848.64	0.002010	3.70	458.94	564.18	0.35
North Trib. EAST	36850	100 Yr	1442.00	842.30	849.27		849.40	0.002131	4.25	987.31	784.33	0.37
North Trib. EAST	36480	10 Yr	684.00	841.50	847.69		847.87	0.002115	3.87	411.67	605.56	0.36
North Trib. EAST	36480	100 Yr	1442.00	841.50	848.50		848.63	0.002039	4.15	1123.02	1161.70	0.36
North Trib. EAST	36160	10 Yr	684.00	840.40	847.47		847.52	0.000572	2.30	925.50	1032.09	0.19
North Trib. EAST	36160	100 Yr	1442.00	840.40	848.21		848.26	0.000674	2.76	1872.36	1520.99	0.21
North Trib. EAST	35430	10 Yr	783.00	839.40	846.17	844.80	846.60	0.004597	5.81	268.78	297.97	0.51
North Trib. EAST	35430	100 Yr	1438.00	839.40	846.87	846.66	847.34	0.005498	6.83	534.17	447.18	0.57
North Trib. EAST	35110	10 Yr	783.00	838.70	845.89		845.96	0.000853	2.85	789.07	750.99	0.23
North Trib. EAST	35110	100 Yr	1438.00	838.70	846.45		846.54	0.001129	3.49	1302.56	1035.66	0.27
North Trib. EAST	34790	10 Yr	783.00	838.70	845.24	843.10	845.51	0.002549	4.60	430.15	898.38	0.39
North Trib. EAST	34790	100 Yr	1438.00	838.70	846.03		846.14	0.001454	3.77	1360.34	1341.39	0.30
North Trib. EAST	34450	10 Yr	968.00	837.60	844.78		844.92	0.001193	3.62	776.47	829.71	0.28
North Trib. EAST	34450	100 Yr	1810.00	837.60	845.50		845.64	0.001420	4.30	1546.23	1403.46	0.31
North Trib. EAST	34120	10 Yr	968.00	836.50	844.20	841.41	844.45	0.001637	4.36	525.72	888.63	0.33
North Trib. EAST	34120	100 Yr	1810.00	836.50	844.84		845.09	0.001956	5.13	1160.98	1094.57	0.37
North Trib. EAST	33790	10 Yr	968.00	836.30	843.40	841.36	843.73	0.003015	5.11	480.21	860.96	0.42
North Trib. EAST	33790	100 Yr	1810.00	836.30	843.96	843.79	844.25	0.003404	5.73	1123.47	1396.74	0.45
North Trib. EAST	33455	10 Yr	968.00	835.20	842.05	840.12	842.57	0.003826	5.98	290.92	1076.25	0.49
North Trib. EAST	33455	100 Yr	1810.00	835.20	842.63	842.63	843.02	0.003886	6.38	997.70	1352.43	0.50
North Trib. EAST	33115	10 Yr	968.00	834.90	840.79	840.77	841.13	0.004442	5.68	516.71	838.06	0.51
North Trib. EAST	33115	100 Yr	1810.00	834.90	841.47		841.64	0.003005	5.17	1252.36	1228.71	0.43
North Trib. EAST	32775	10 Yr	968.00	834.50	840.48		840.51	0.000821	2.39	1317.21	1236.37	0.22

HEC-RAS Plan: EXISTING (Continued)

Reach	River Sta	Profile	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)	
North Trib. EAST	32775	100 Yr	1810.00	834.50	841.14		841.17	0.000759	2.51	2165.05	1326.32	0.22
North Trib. EAST	32465	10 Yr	968.00	834.30	840.20		840.24	0.000907	2.60	1210.62	1142.79	0.24
North Trib. EAST	32465	100 Yr	1810.00	834.30	840.87		840.91	0.000869	2.79	2087.04	1391.32	0.24
North Trib. EAST	32115	10 Yr	968.00	833.40	839.10	838.79	839.54	0.007135	5.80	273.28	313.57	0.63
North Trib. EAST	32115	100 Yr	1810.00	833.40	839.77	839.73	840.23	0.007240	6.67	660.05	841.29	0.66
North Trib. EAST	31775	10 Yr	968.00	832.50	838.72		838.79	0.000874	2.76	1048.92	1031.54	0.24
North Trib. EAST	31775	100 Yr	1810.00	832.50	839.31		839.38	0.001042	3.30	1676.82	1102.16	0.27
North Trib. EAST	31445	10 Yr	968.00	832.20	837.78	837.56	838.21	0.004773	5.92	363.03	523.03	0.54
North Trib. EAST	31445	100 Yr	1810.00	832.20	838.74		838.90	0.002354	4.78	1203.19	977.86	0.39
North Trib. EAST	31145	10 Yr	968.00	831.30	836.80	836.58	837.01	0.003072	4.68	640.97	893.47	0.43
North Trib. EAST	31145	100 Yr	1810.00	831.30	838.60	837.01	838.62	0.000391	2.17	2561.62	1199.50	0.16

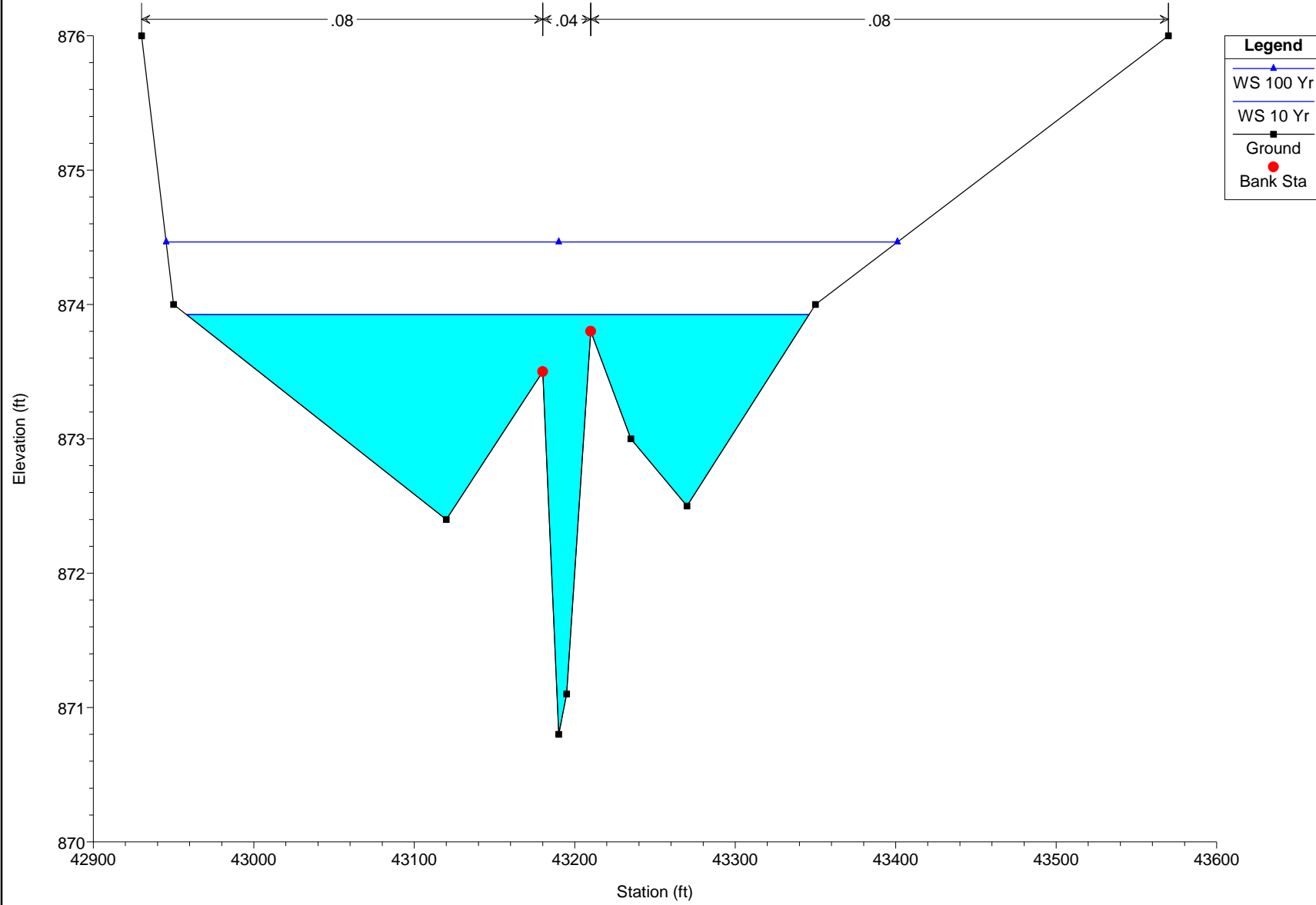
Hampshire Creek Plan: EXIST 12/15/2022
43+240



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Ineff
- Bank Sta

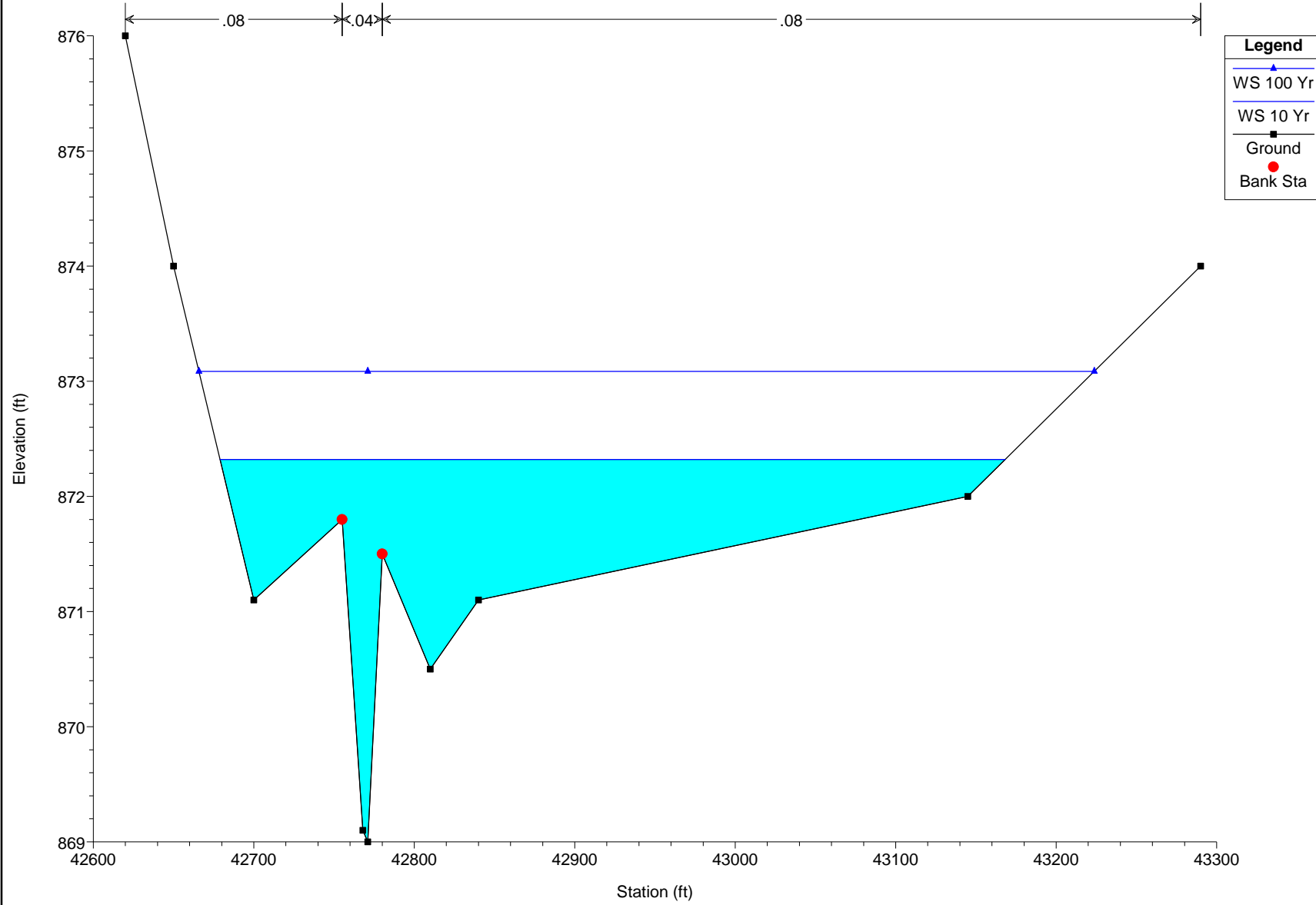
Hampshire Creek Plan: EXIST 12/15/2022
429+30



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

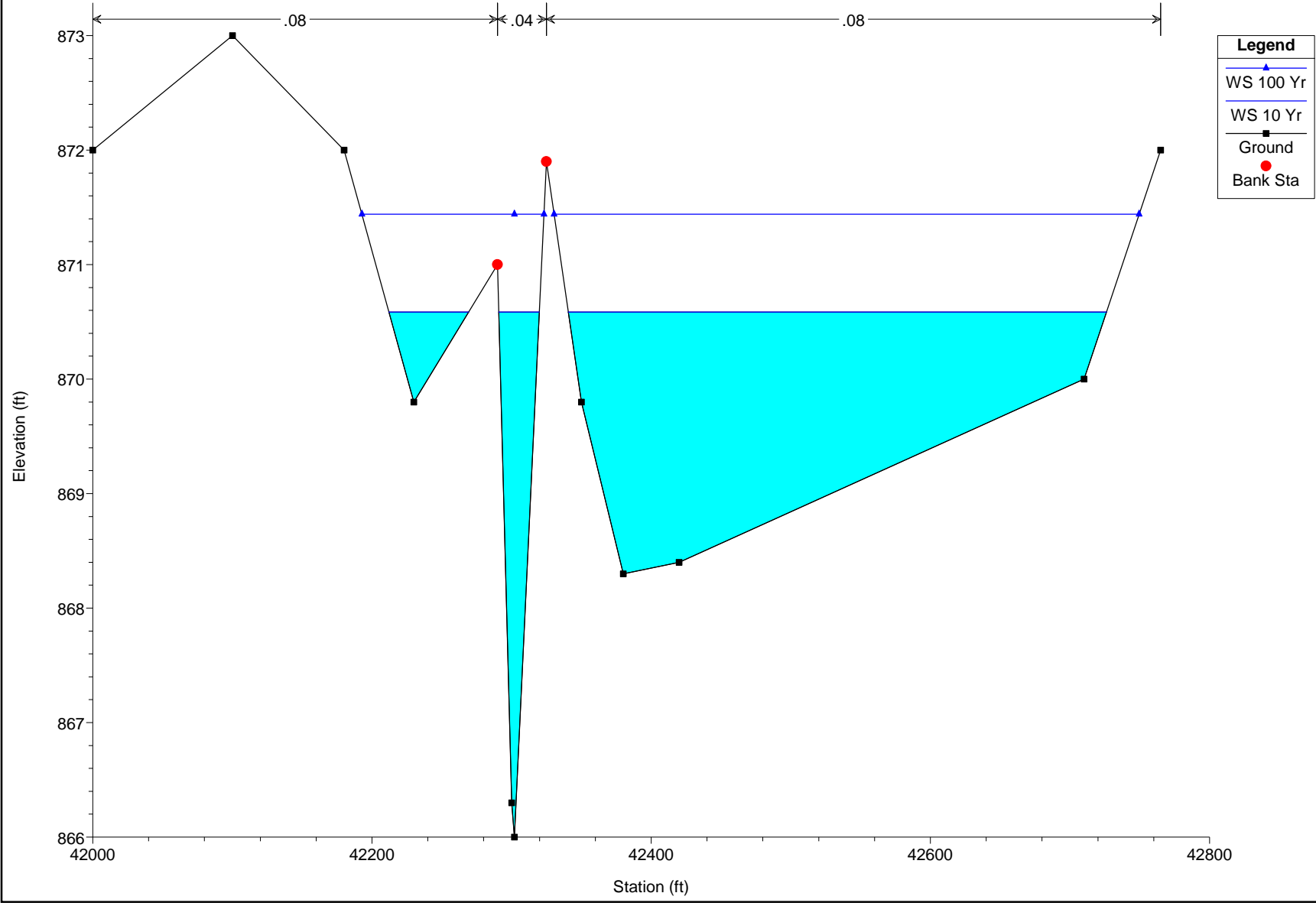
Hampshire Creek Plan: EXIST 12/15/2022
426+20



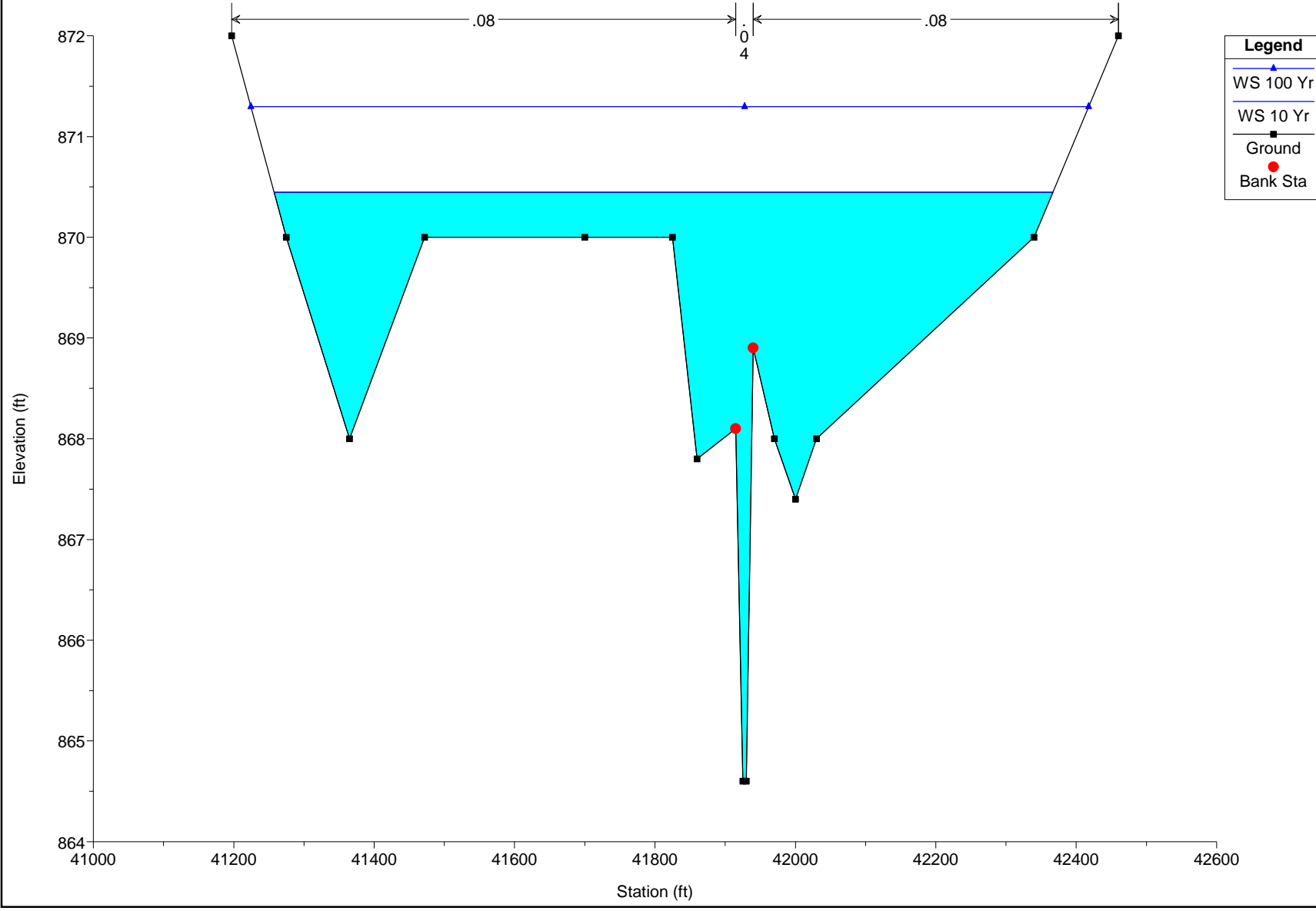
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
420+00



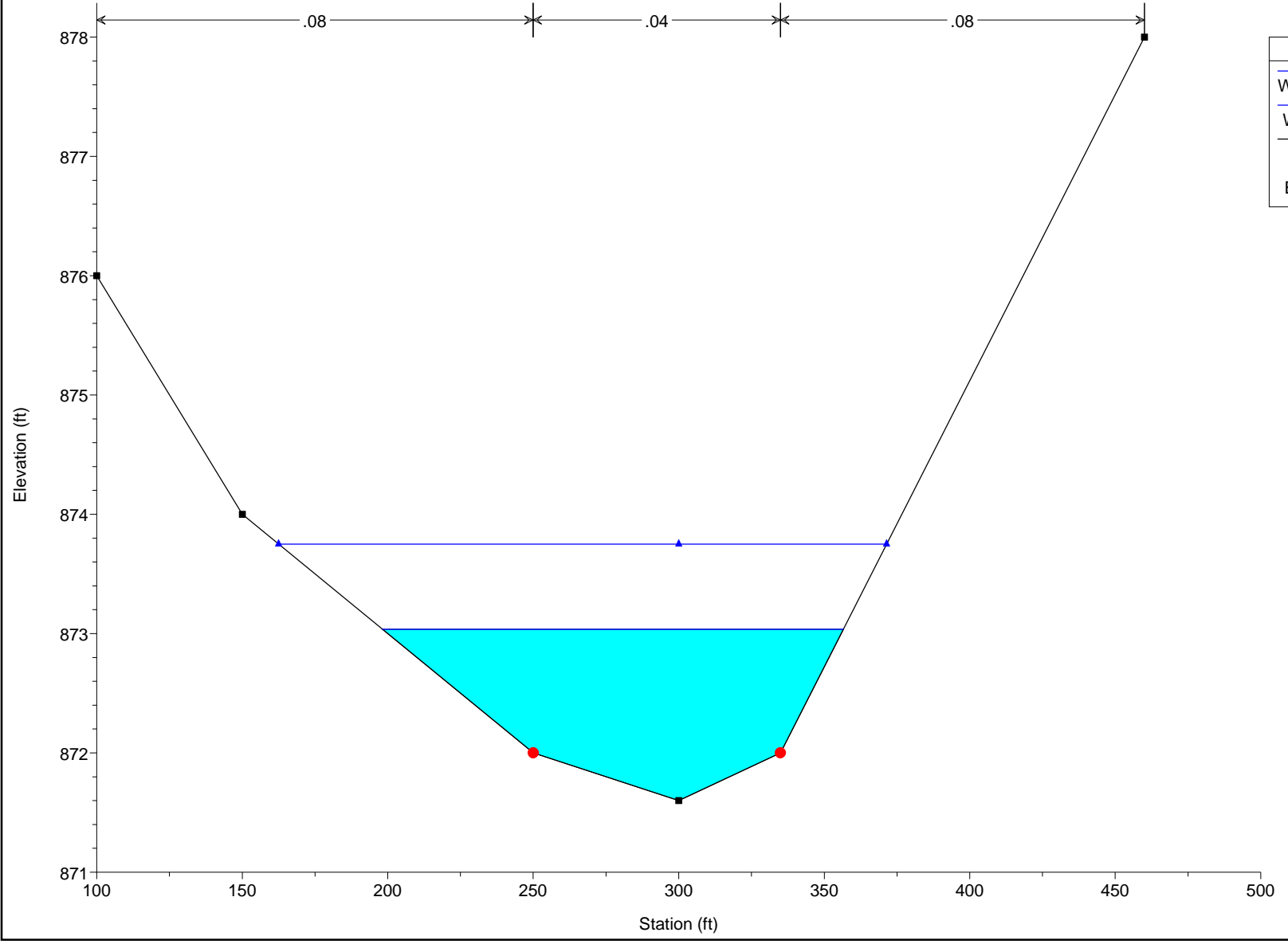
Hampshire Creek Plan: EXIST 12/15/2022
 41+700



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

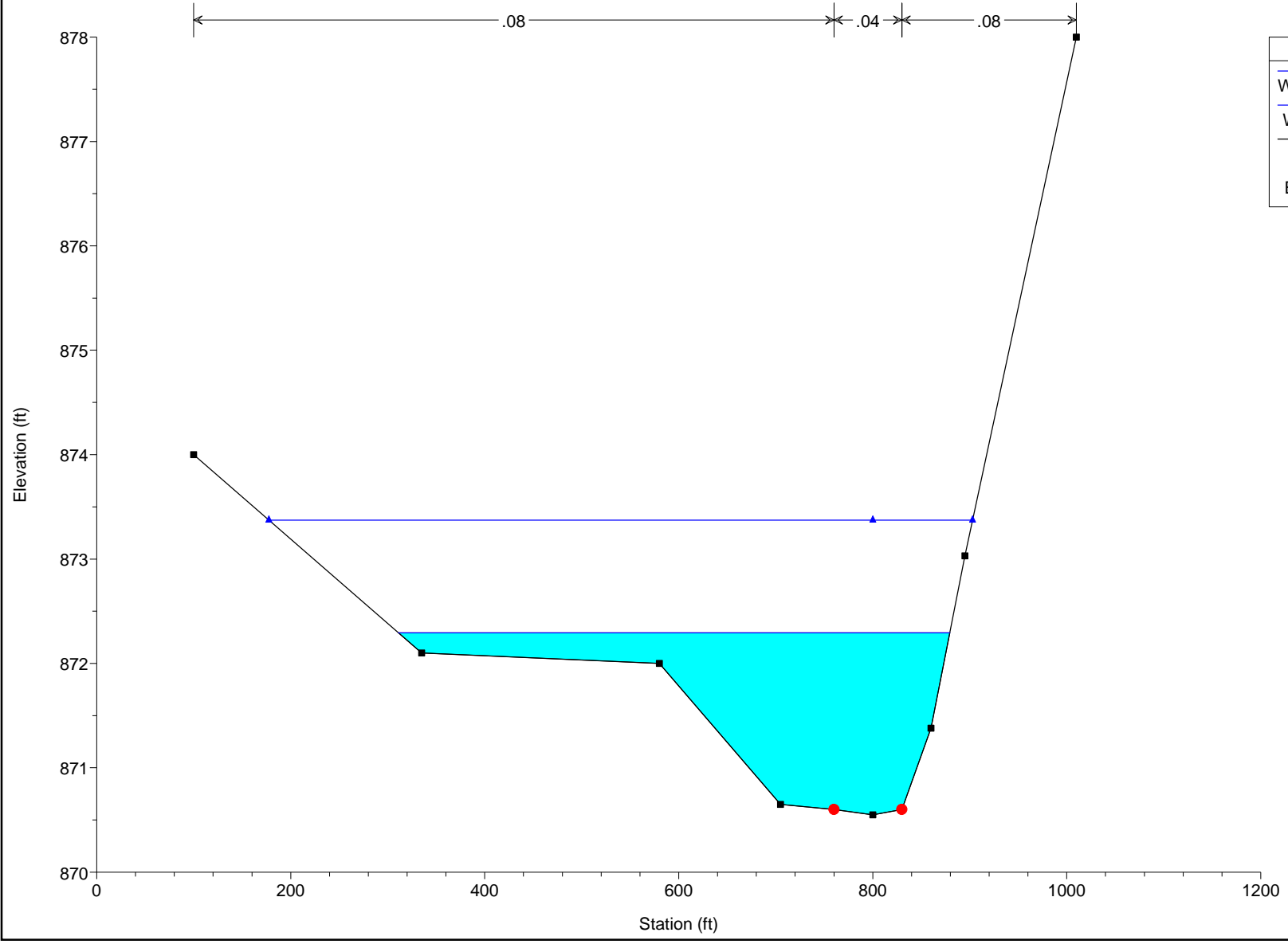
Hampshire Creek Plan: EXIST 12/15/2022
41+40



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

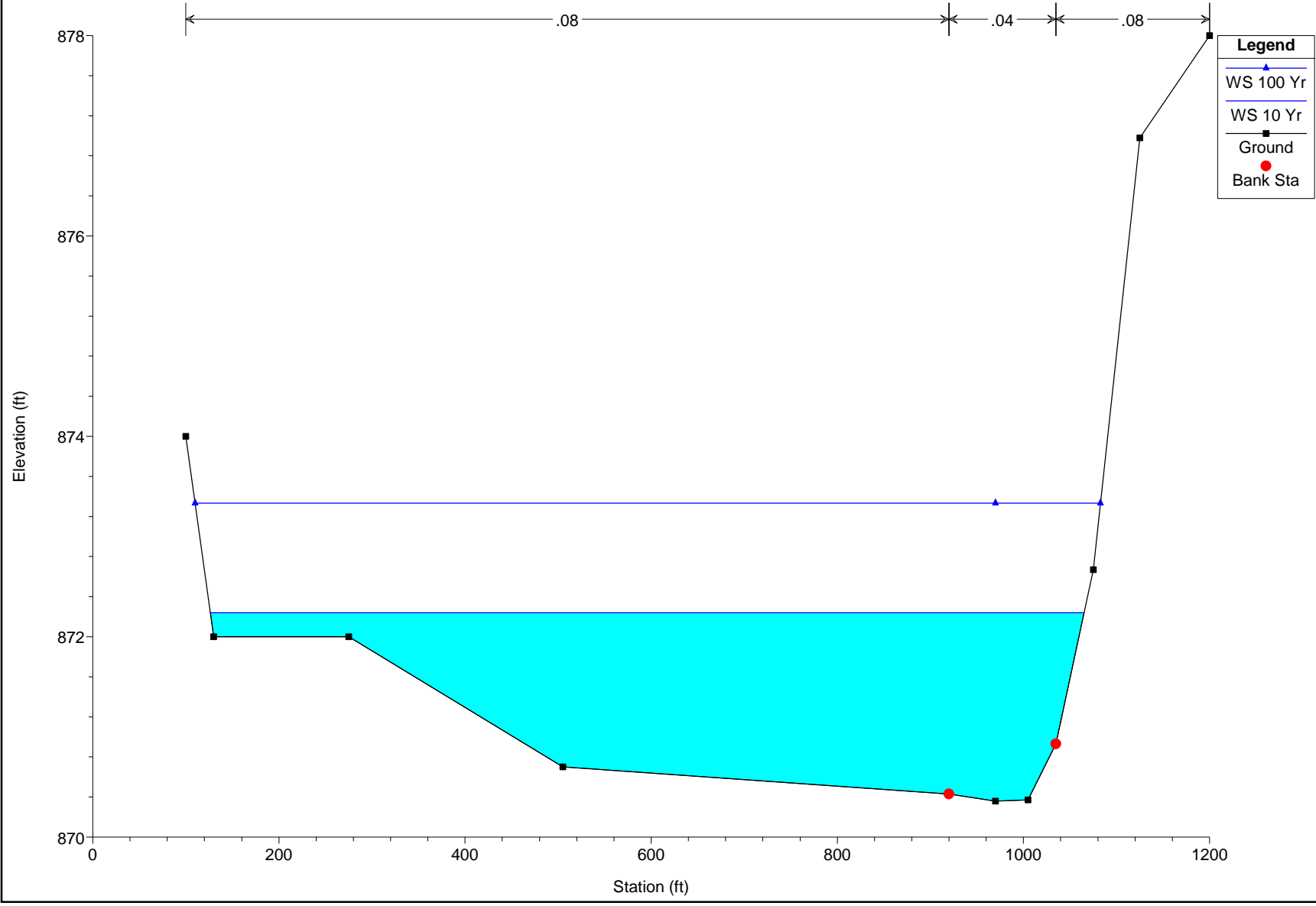
Hampshire Creek Plan: EXIST 12/15/2022
37+00



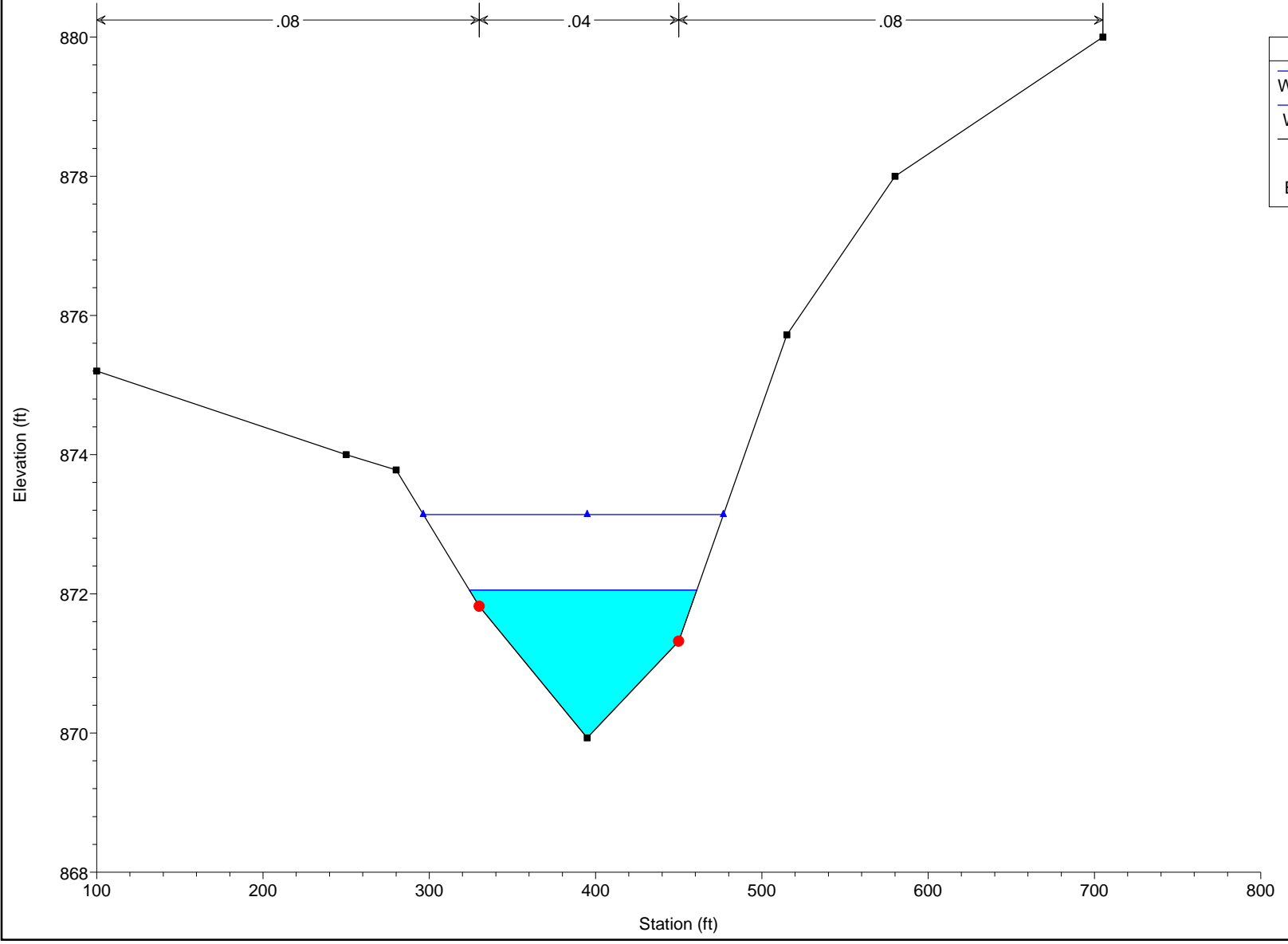
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
34+70



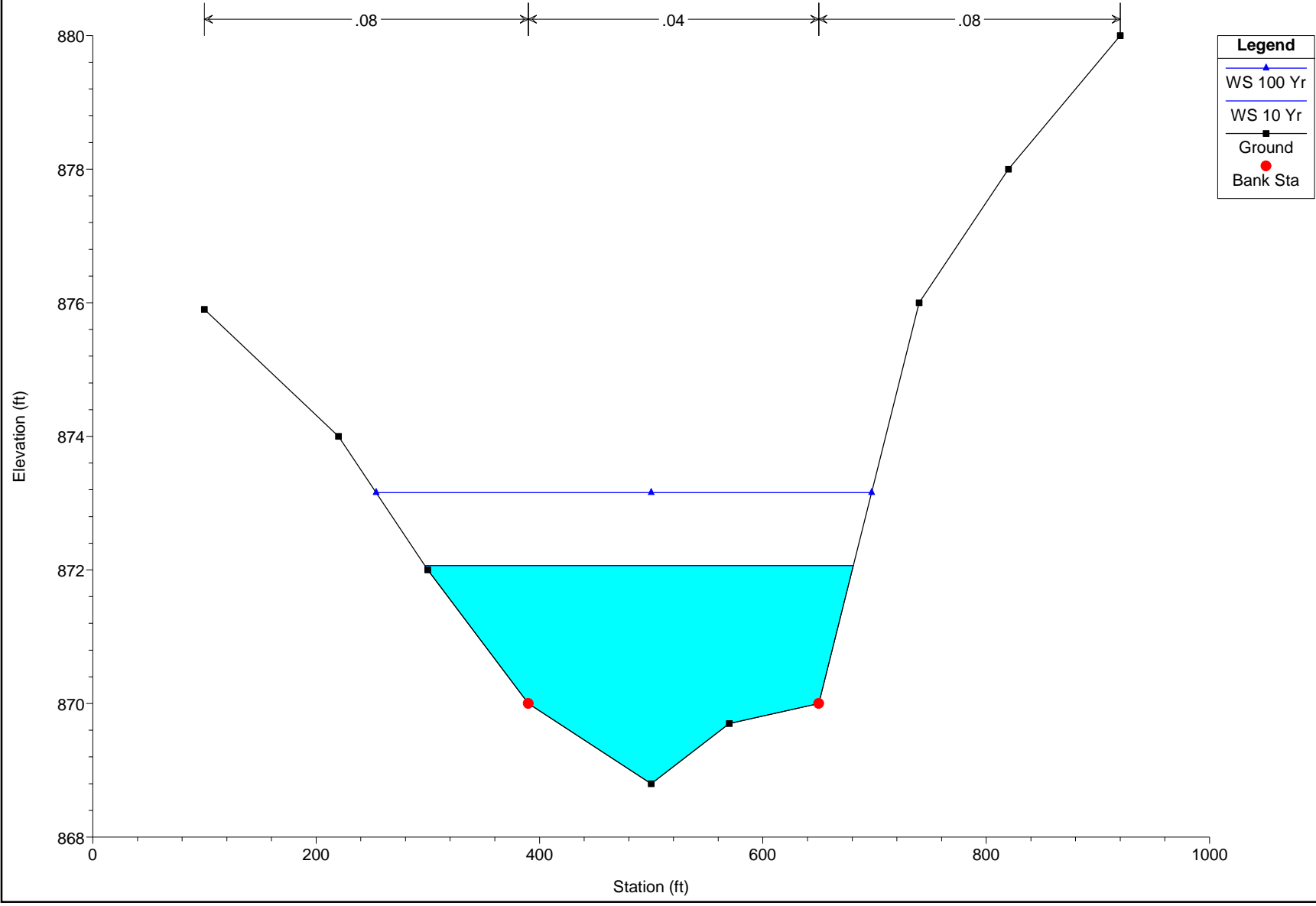
Hampshire Creek Plan: EXIST 12/15/2022
31+25



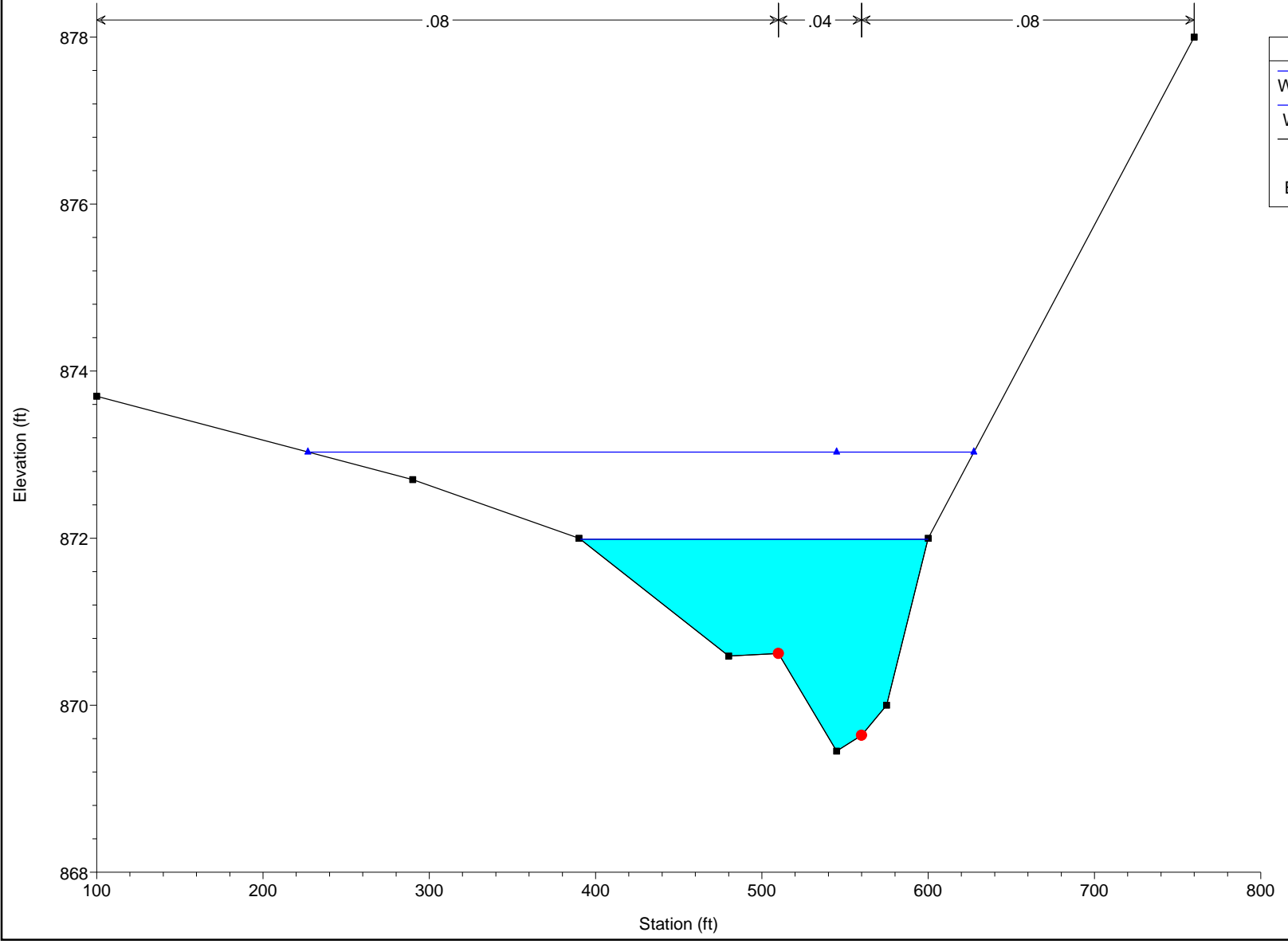
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
28+90



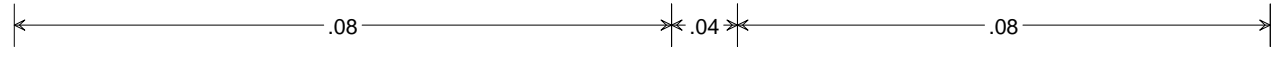
Hampshire Creek Plan: EXIST 12/15/2022
26+50



Legend

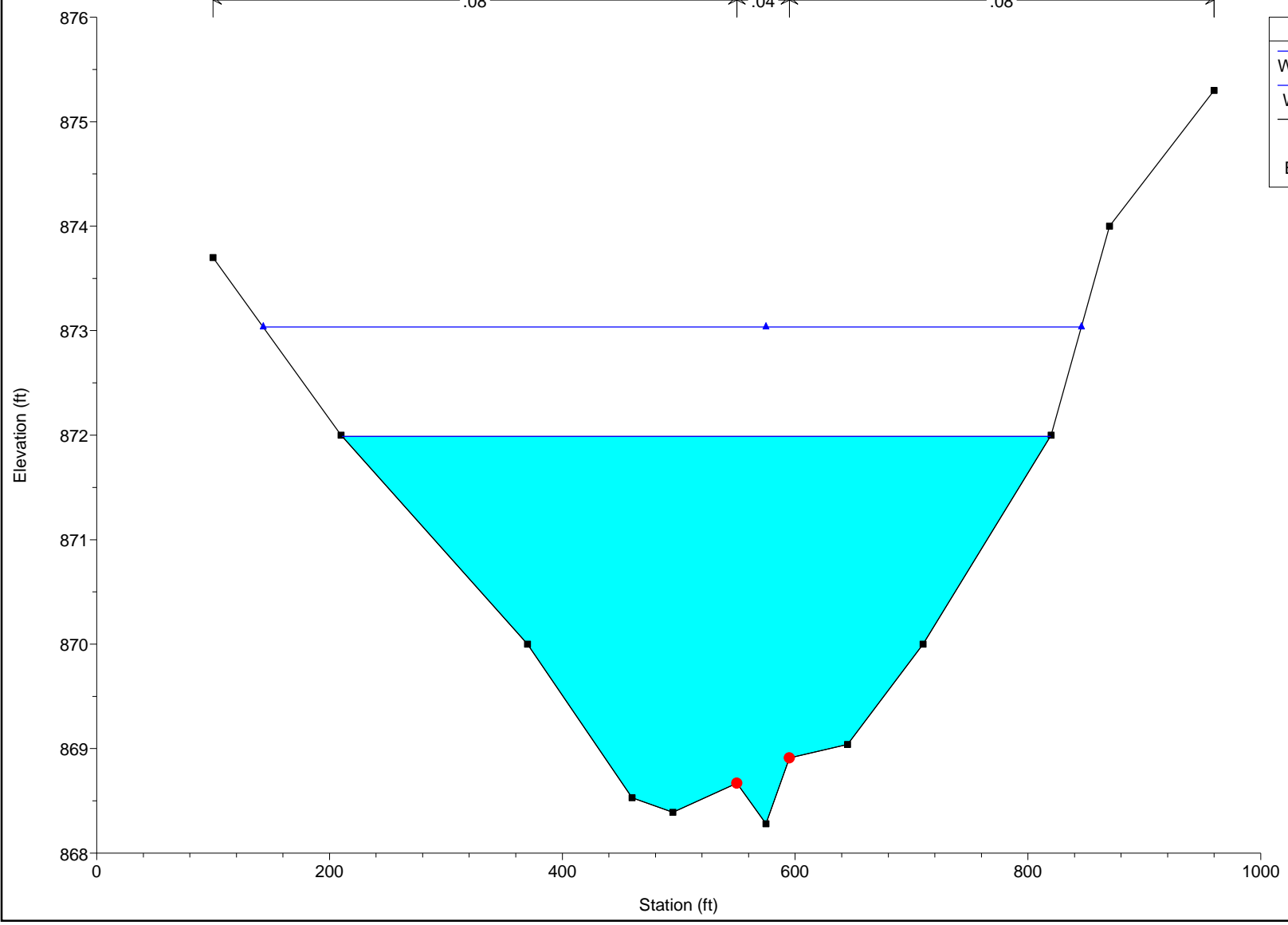
- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
24+20



Legend

- WS 100 Yr (Blue line with triangle marker)
- WS 10 Yr (Purple line with square marker)
- Ground (Black line with square marker)
- Bank Sta (Red line with circle marker)

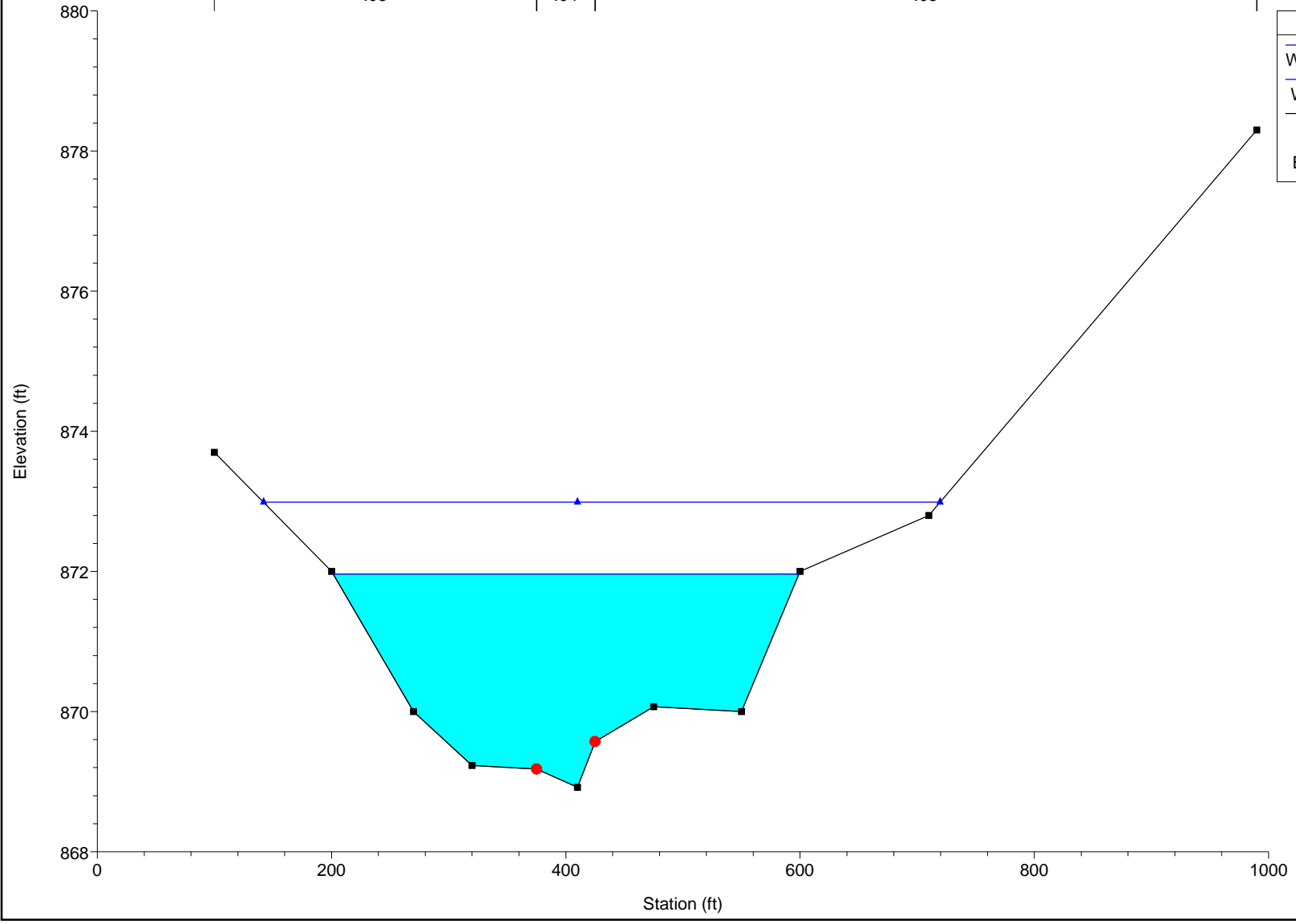


Hampshire Creek Plan: EXIST 12/15/2022
20+80



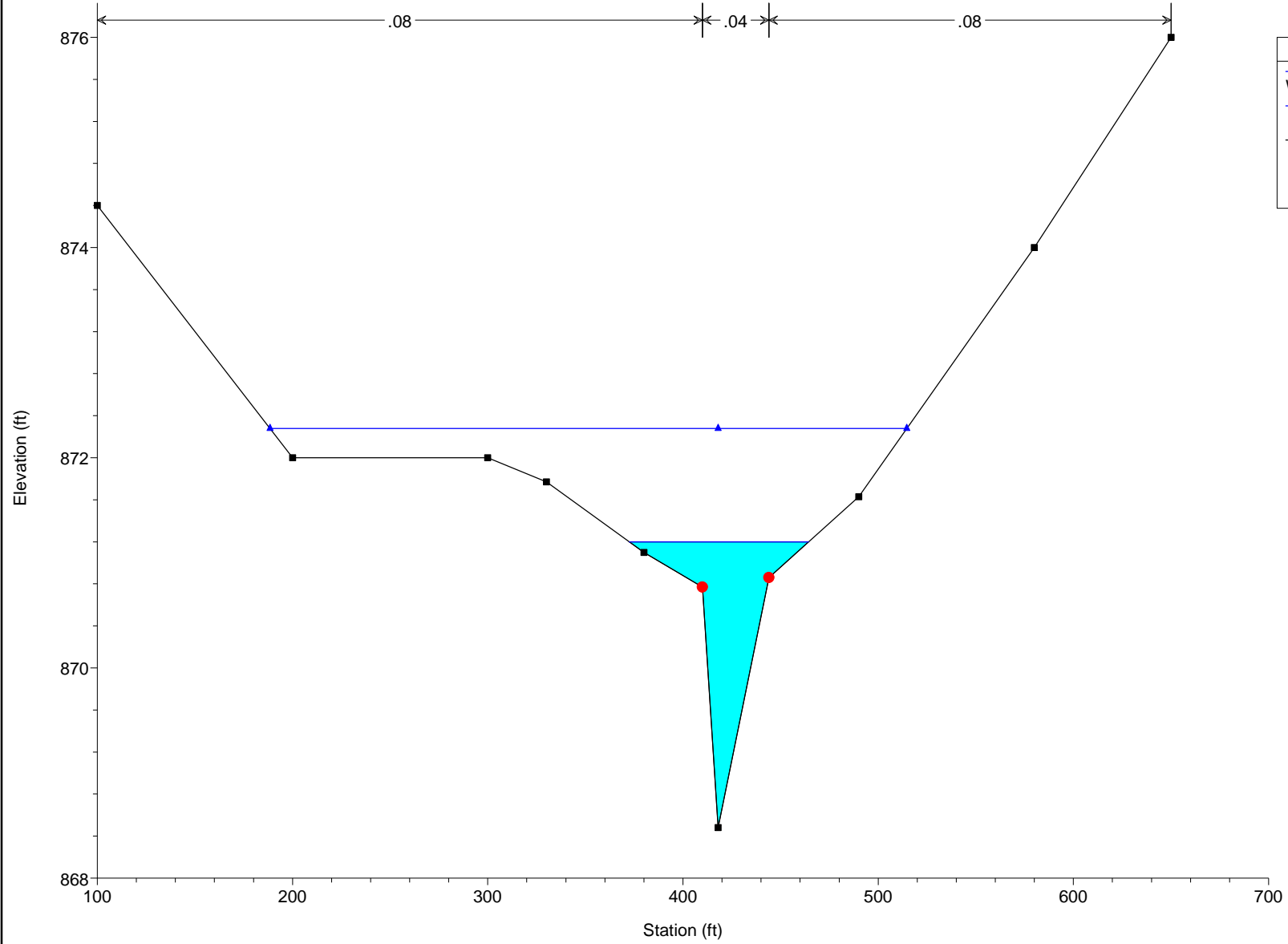
Legend

- WS 100 Yr (Blue line with triangle)
- WS 10 Yr (Black line with square)
- Ground (Black line)
- Bank Sta (Red dot)



Hampshire Creek Plan: EXIST 12/15/2022

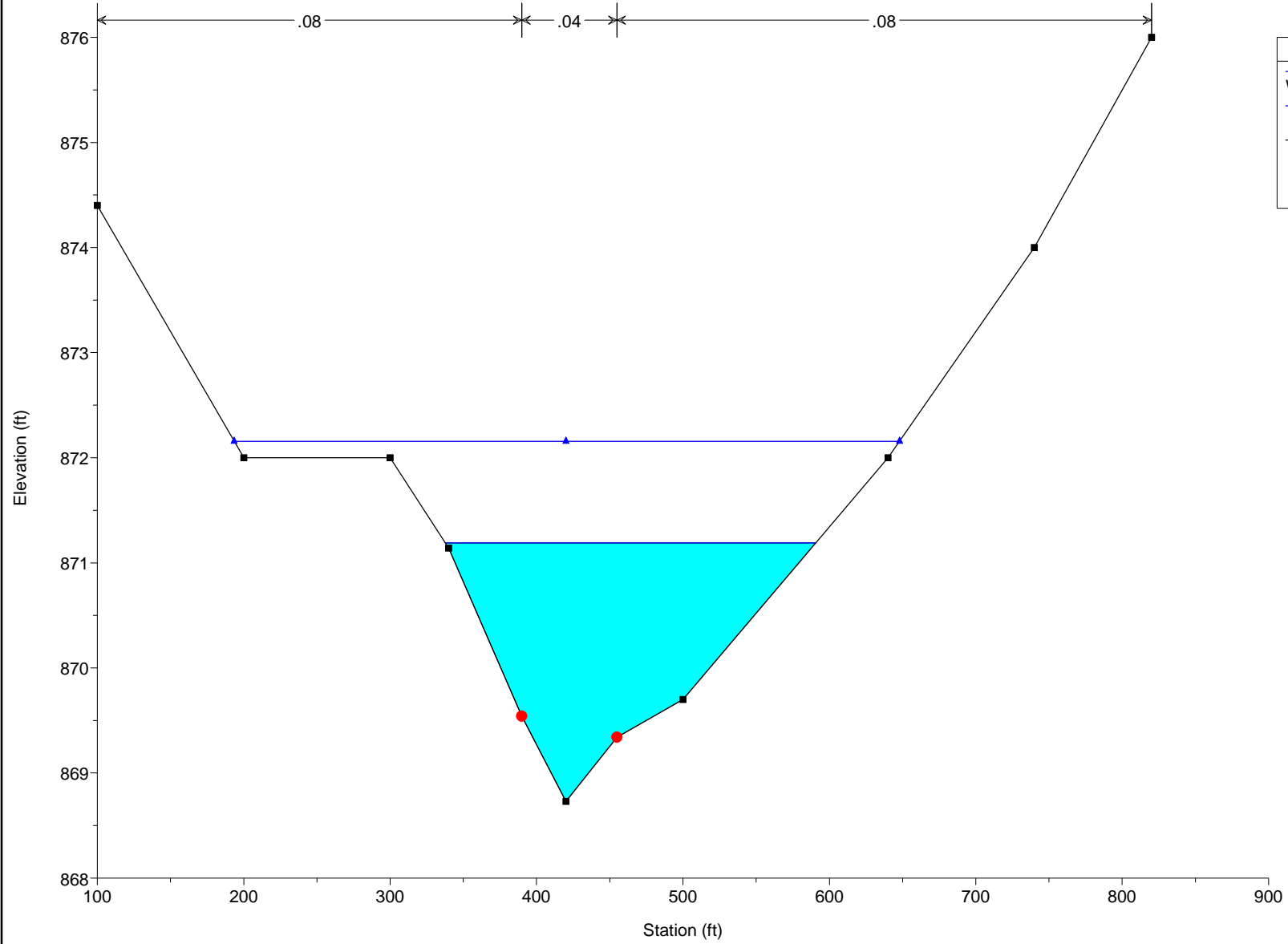
17+80



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

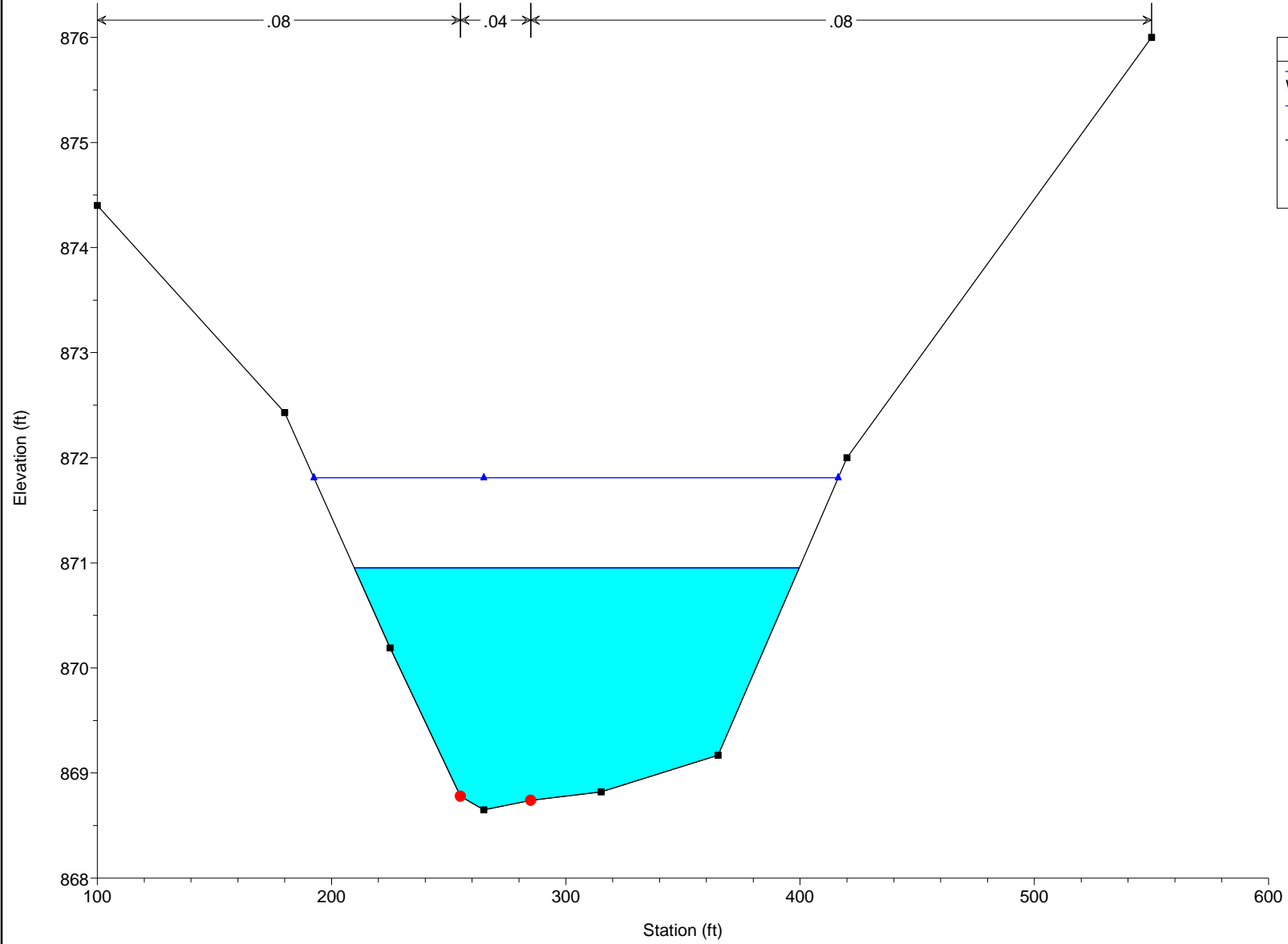
Hampshire Creek Plan: EXIST 12/15/2022
16+90



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

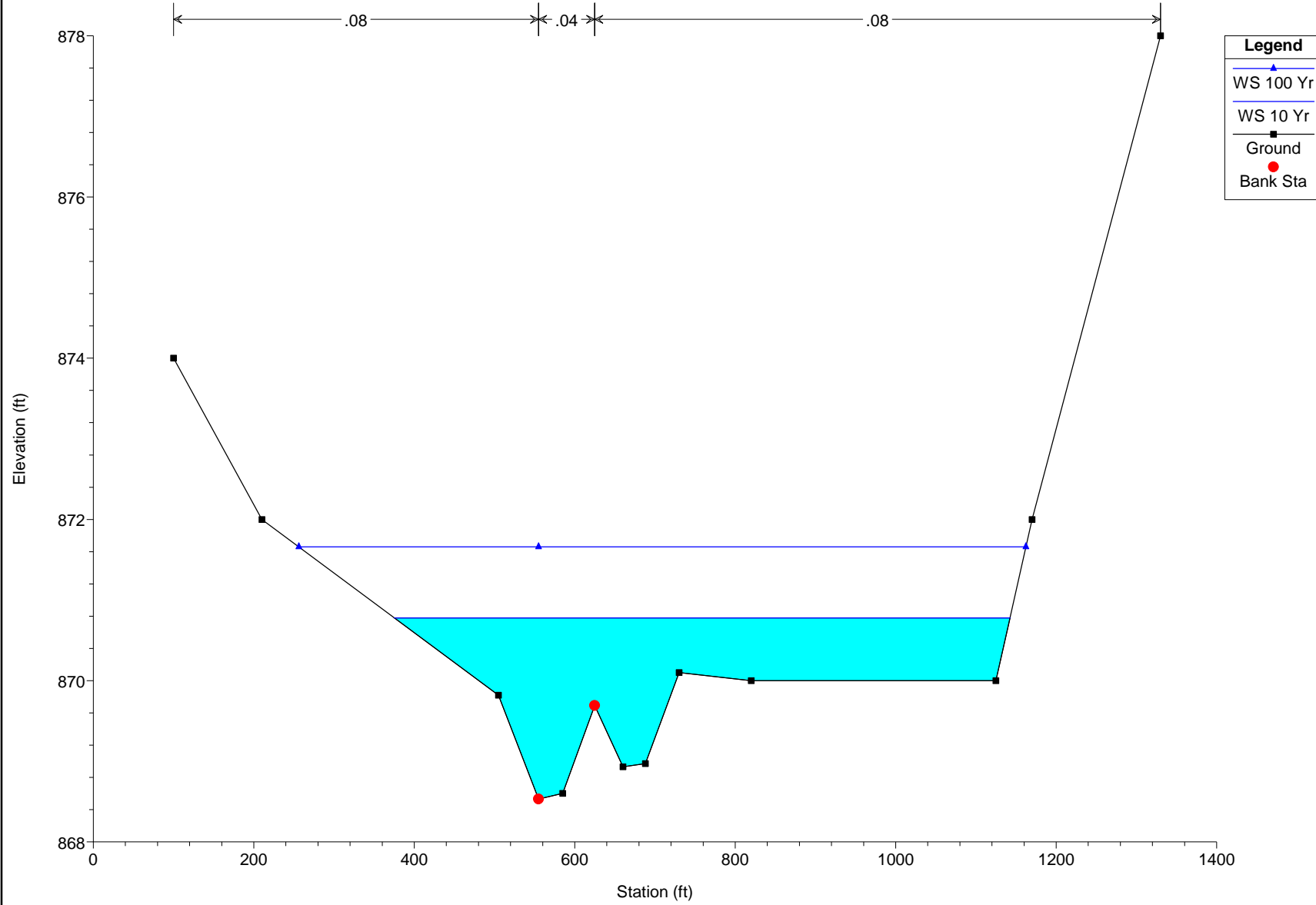
Hampshire Creek Plan: EXIST 12/15/2022
14+20



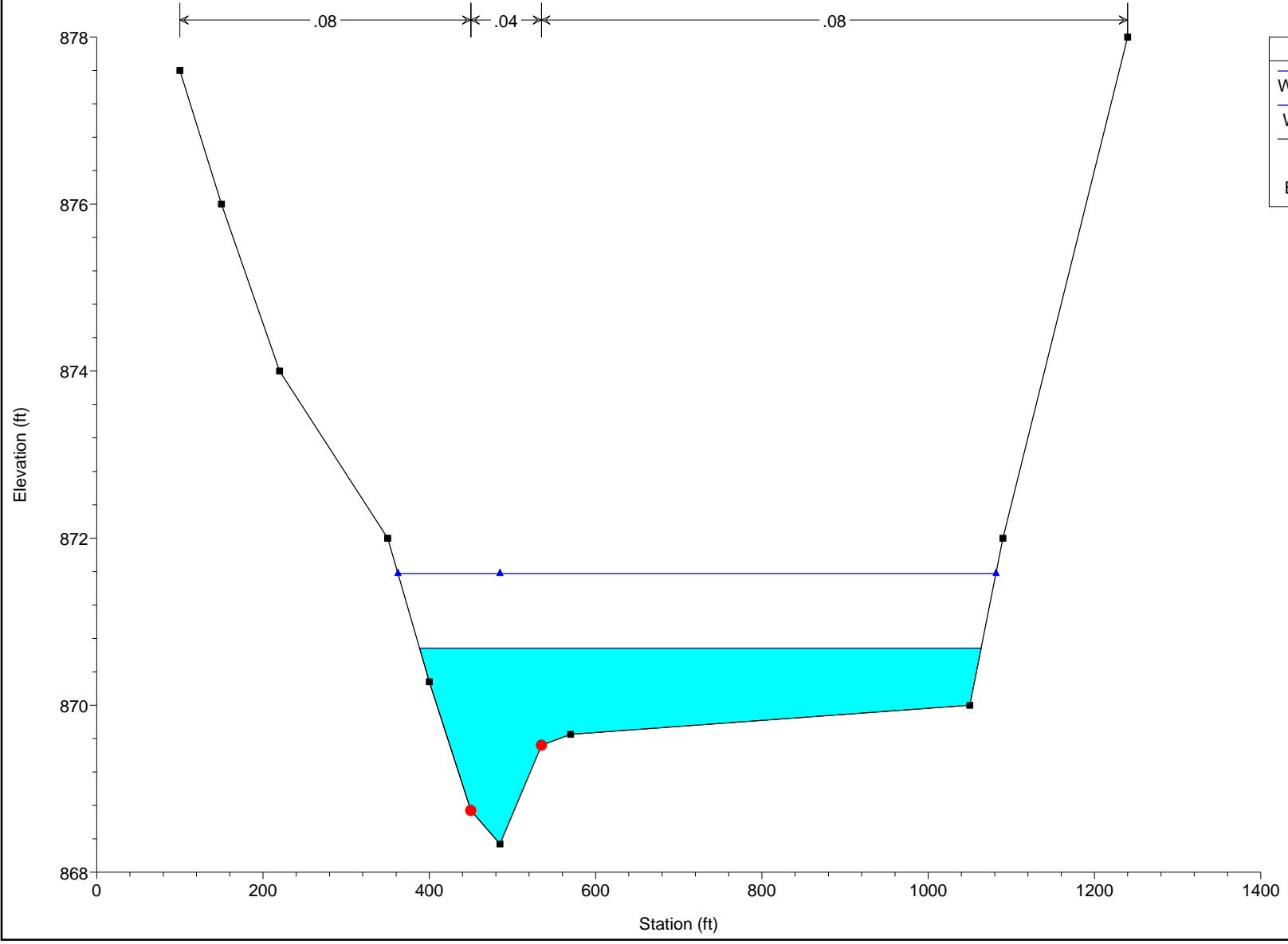
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
10+80



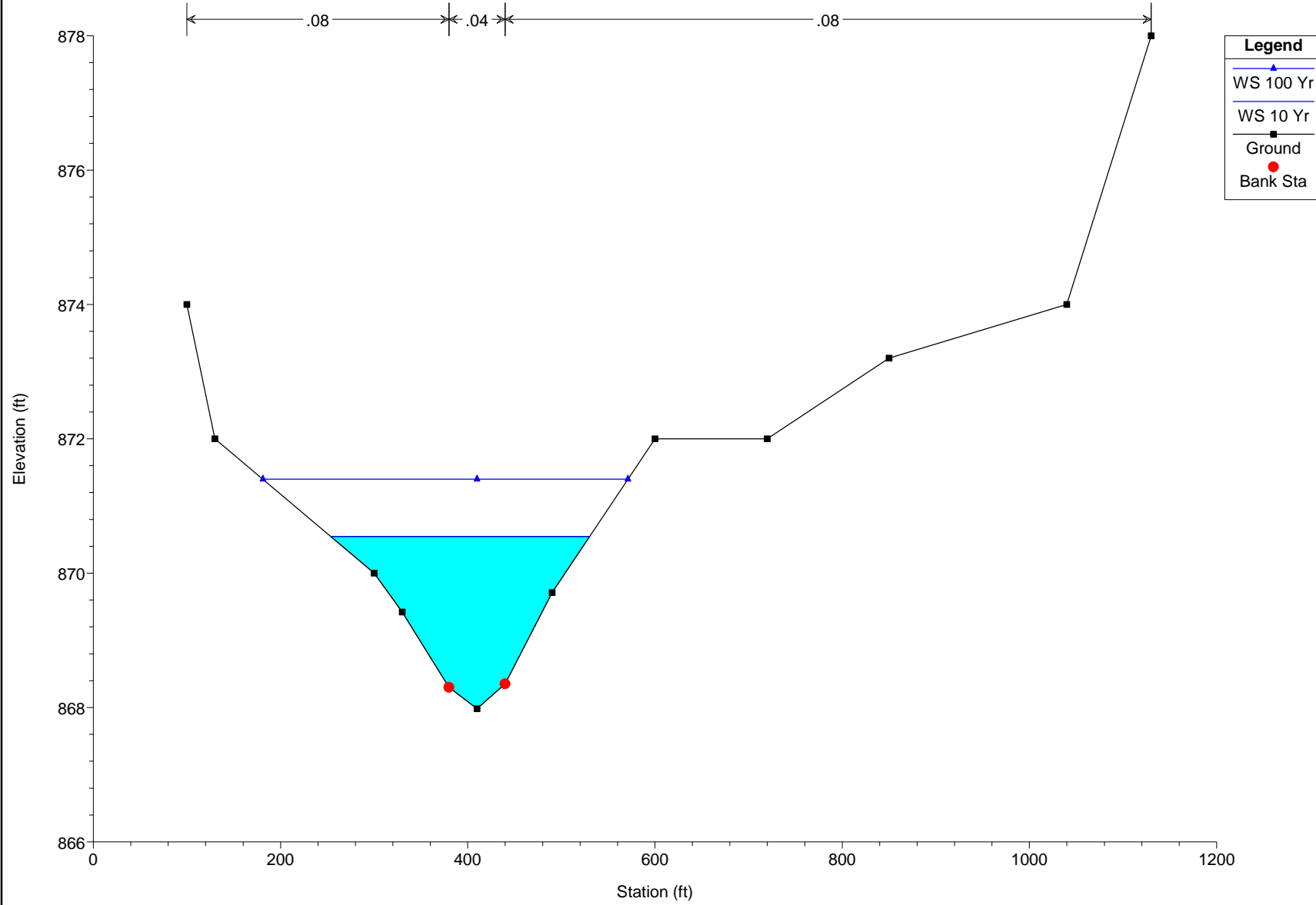
Hampshire Creek Plan: EXIST 12/15/2022
7+80



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

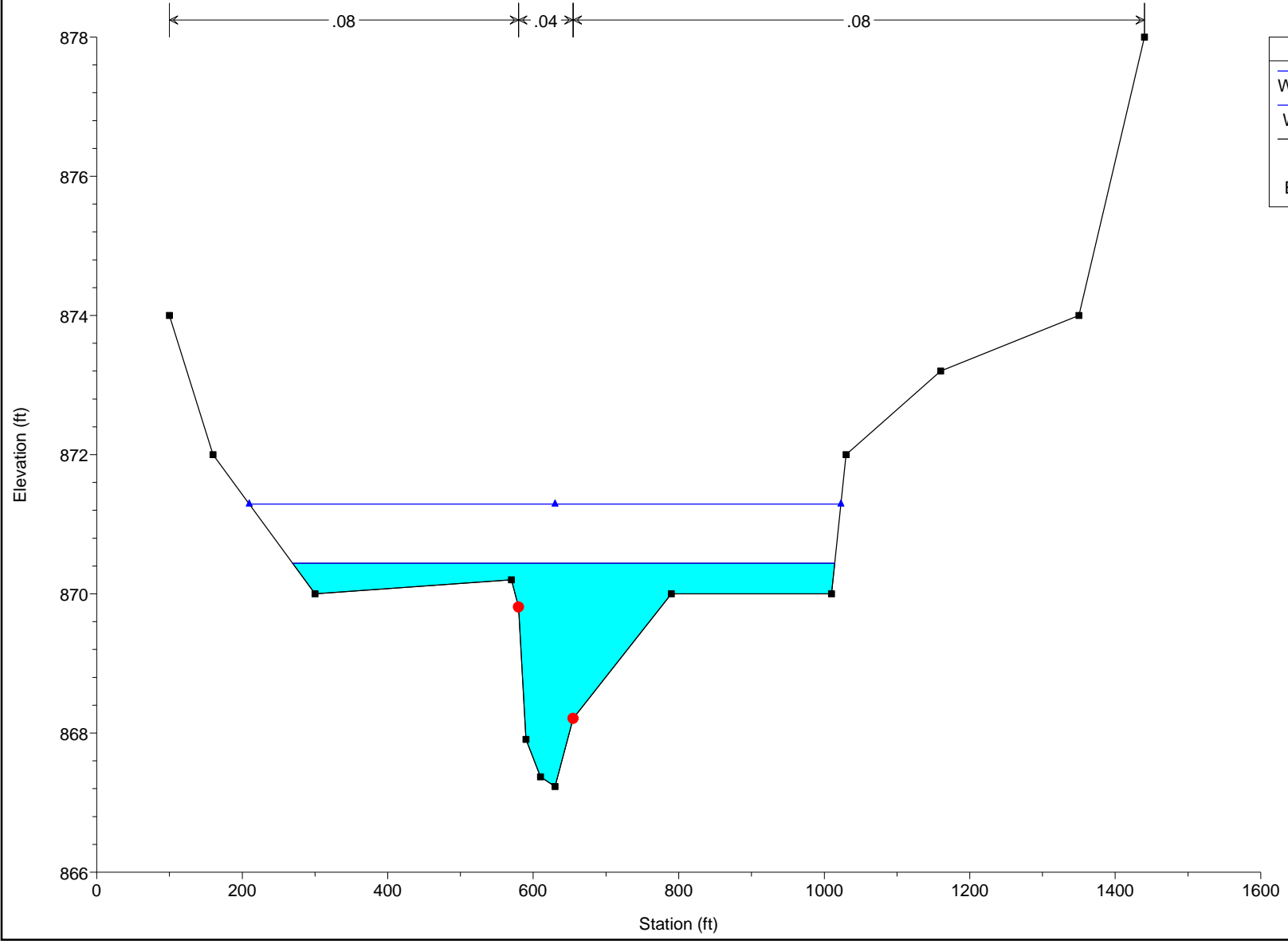
Hampshire Creek Plan: EXIST 12/15/2022
5+00



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

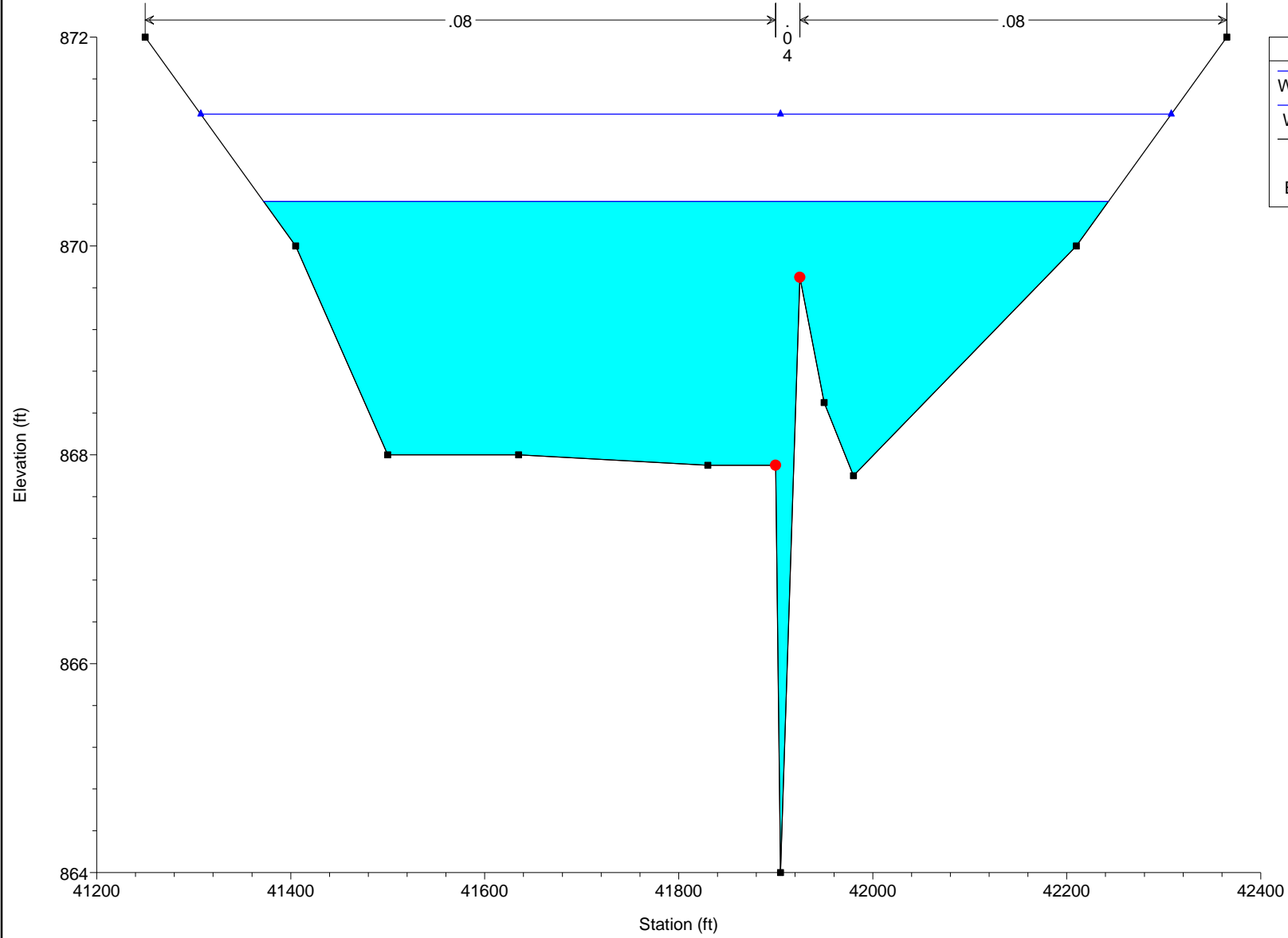
Hampshire Creek Plan: EXIST 12/15/2022
2+00



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

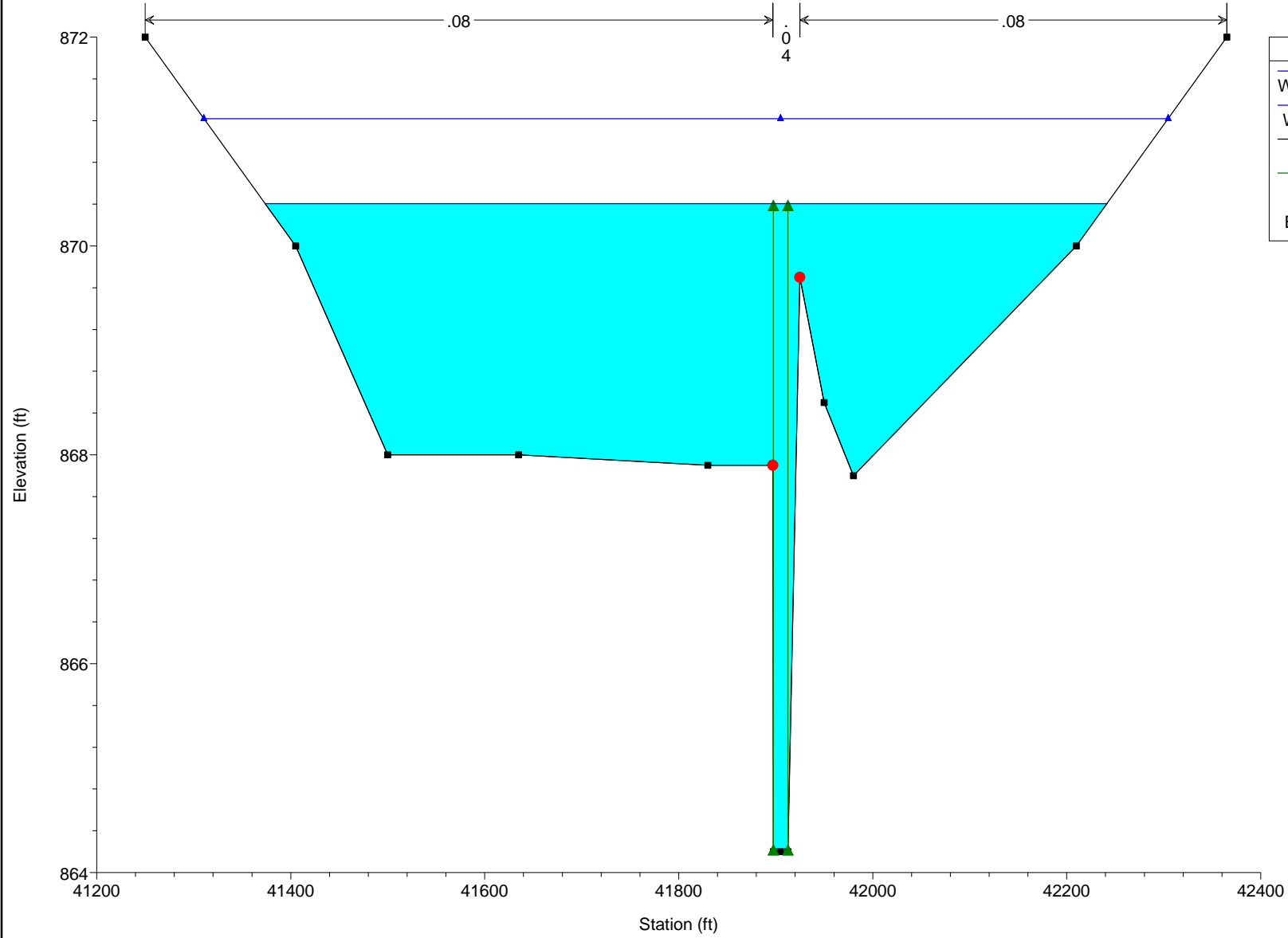
Hampshire Creek Plan: EXIST 12/15/2022
415+00



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

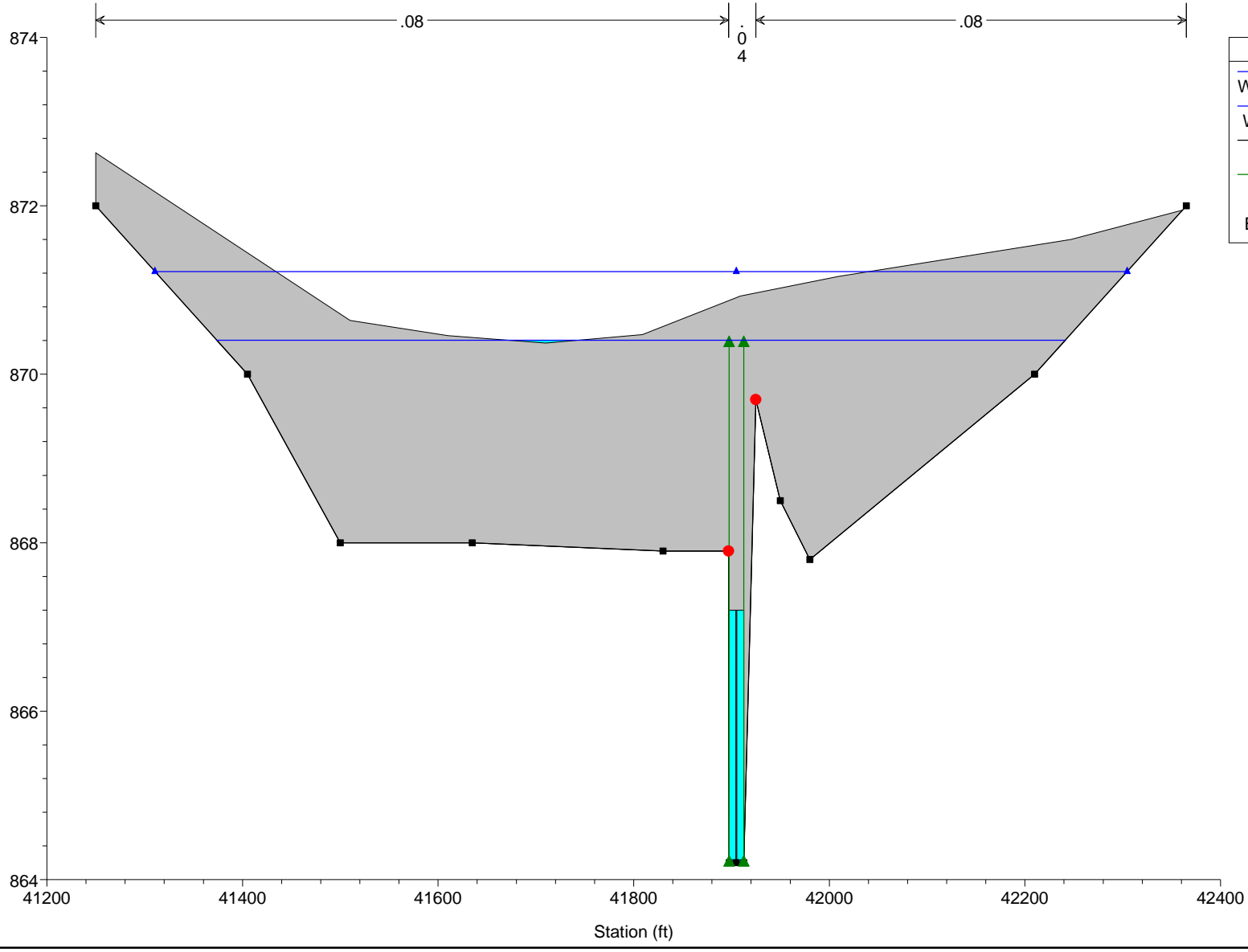
Hampshire Creek Plan: EXIST 12/15/2022
414+14



Legend

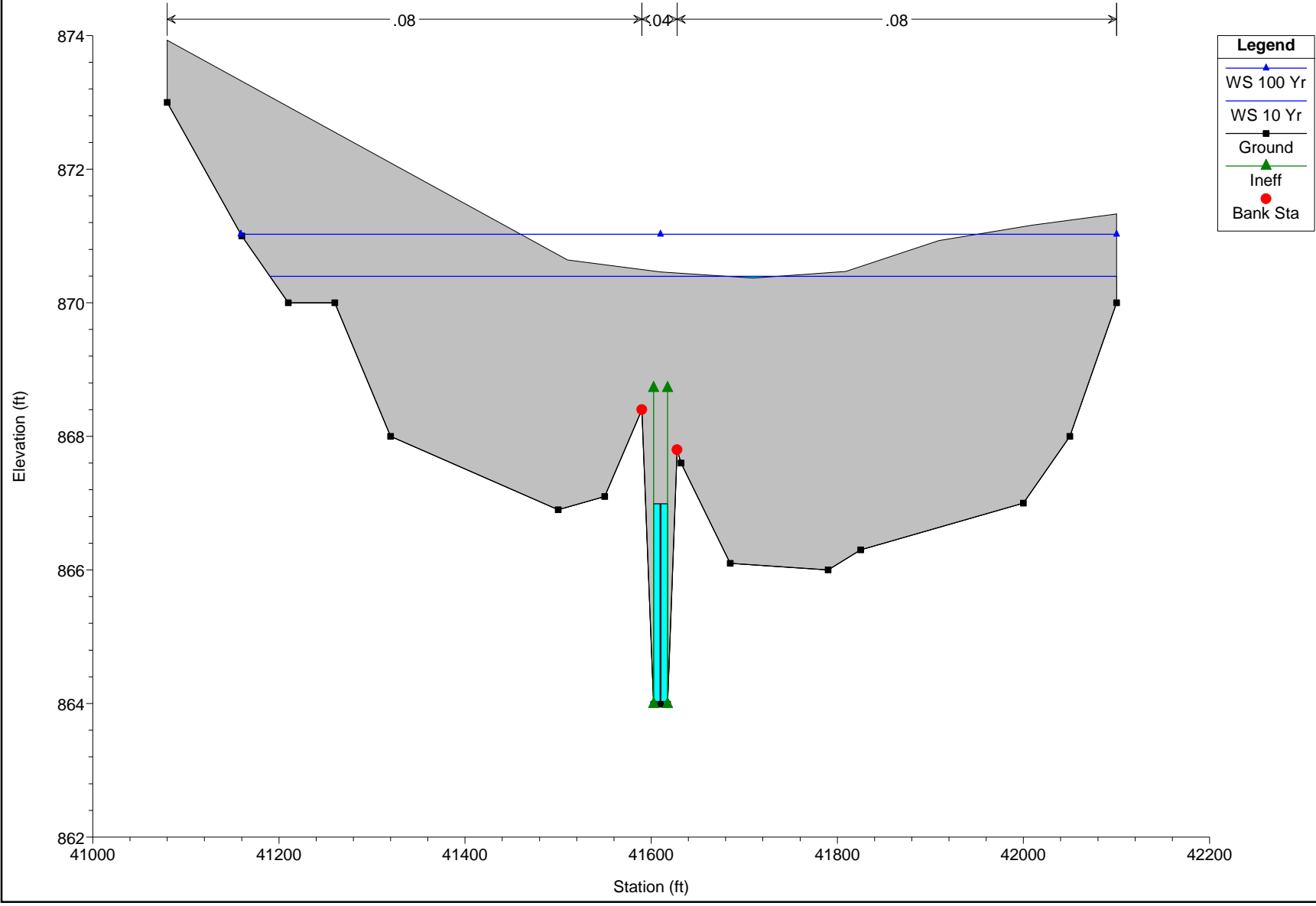
- WS 100 Yr
- WS 10 Yr
- Ground
- Ineff
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
Harmony Road - North Culvert



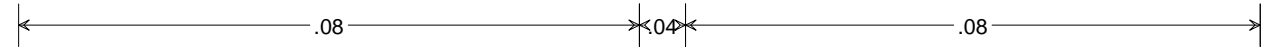
- Legend**
- WS 100 Yr
 - WS 10 Yr
 - Ground
 - Ineff
 - Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
Harmony Road - North Culvert



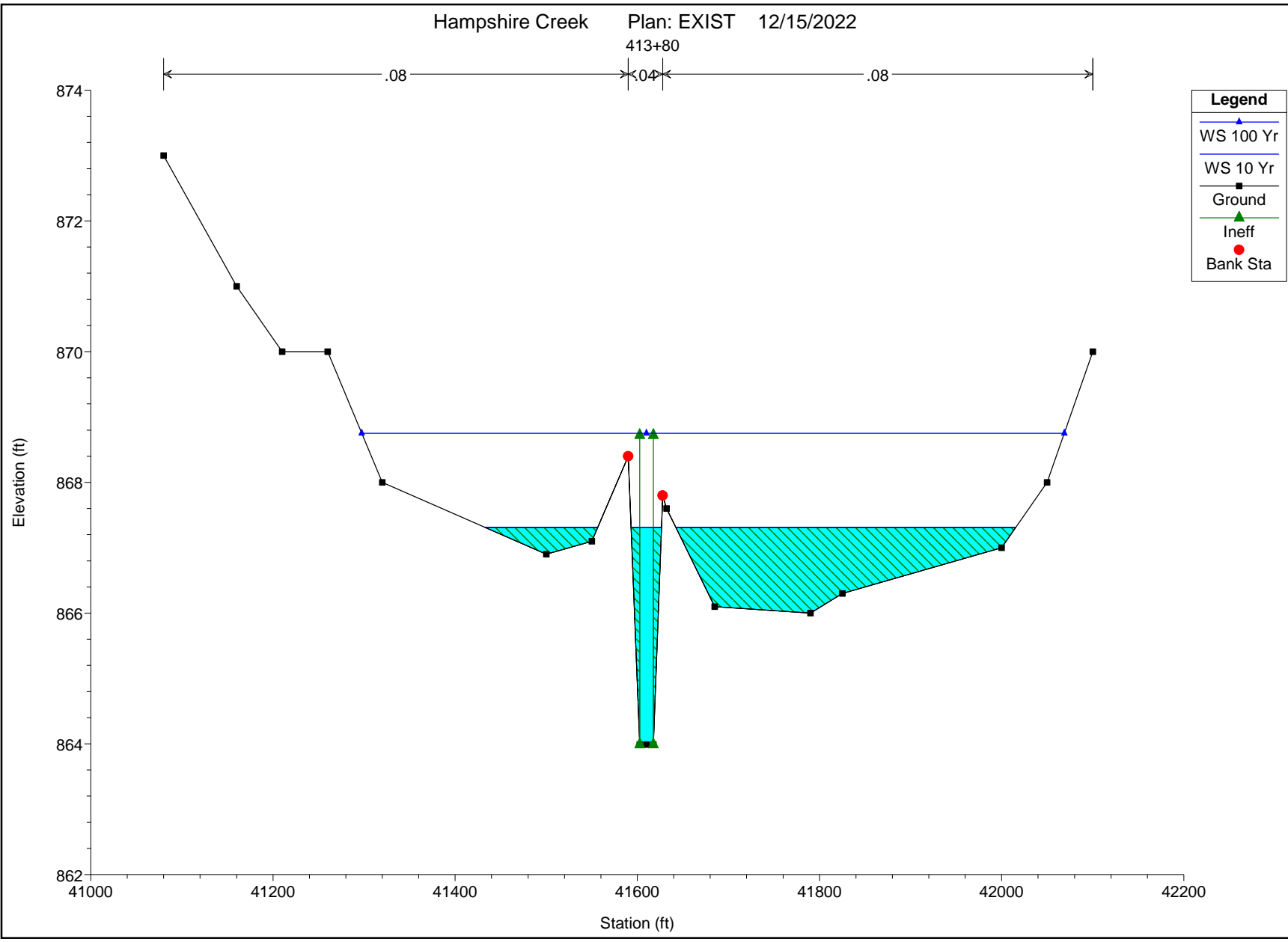
Hampshire Creek Plan: EXIST 12/15/2022

413+80



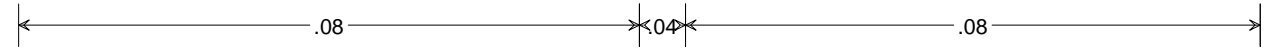
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Ineff
- Bank Sta



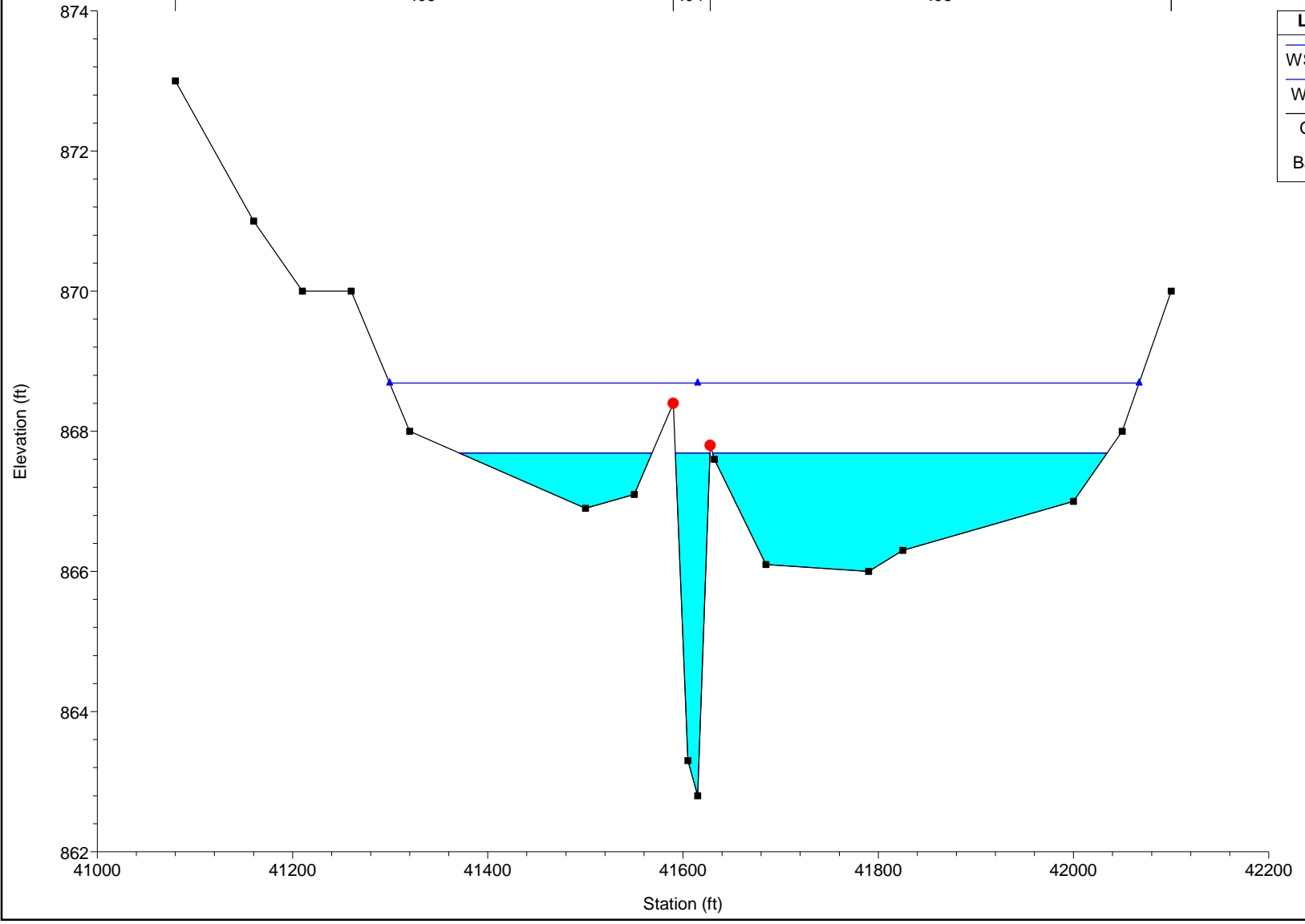
Hampshire Creek Plan: EXIST 12/15/2022

412+60



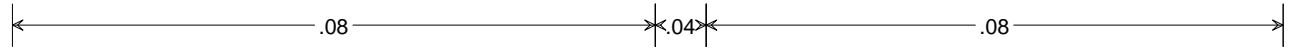
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta



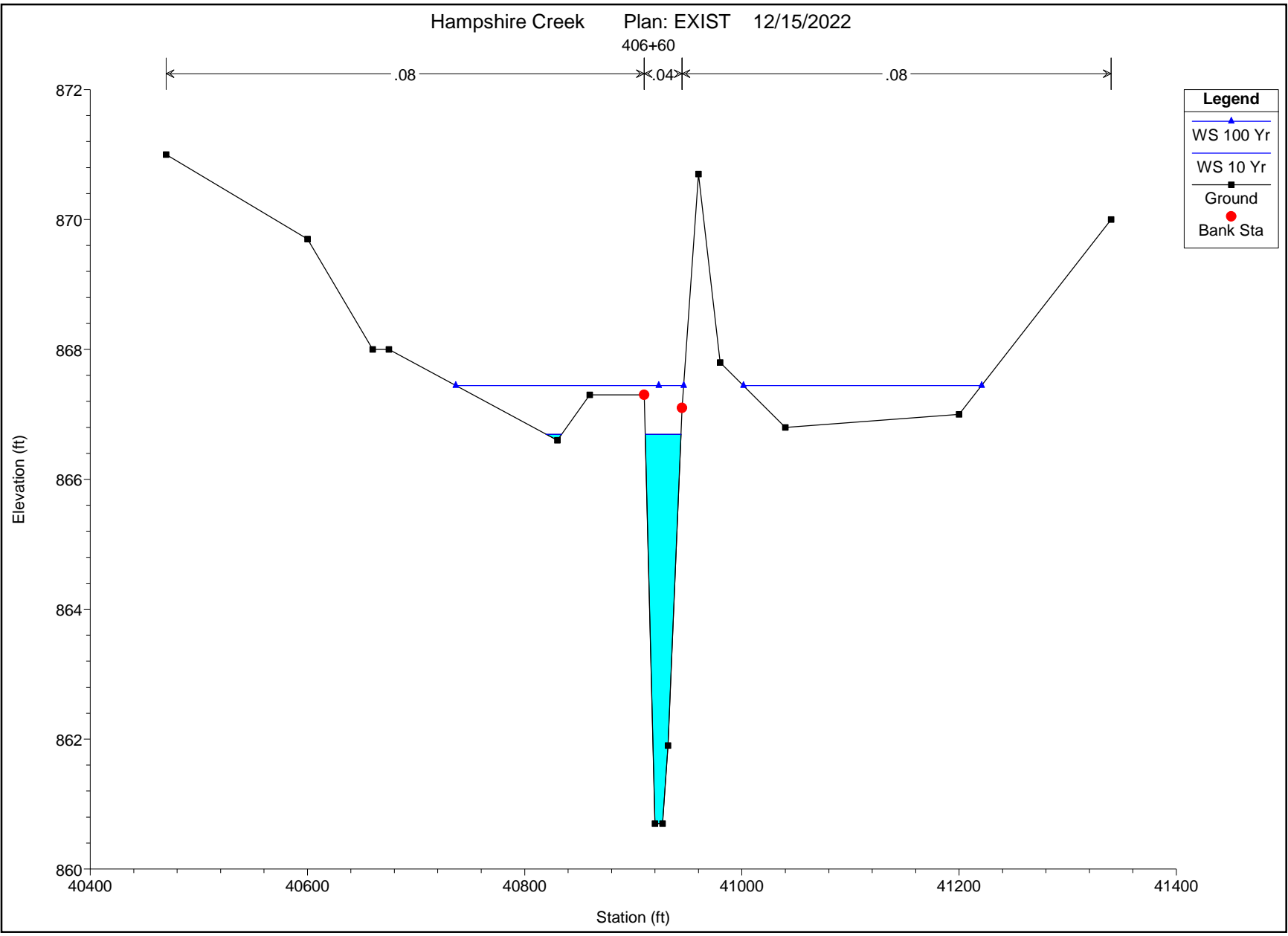
Hampshire Creek Plan: EXIST 12/15/2022

406+60



Legend

- WS 100 Yr (Blue line with triangle)
- WS 10 Yr (Blue line with triangle)
- Ground (Black line with square)
- Bank Sta (Red circle)

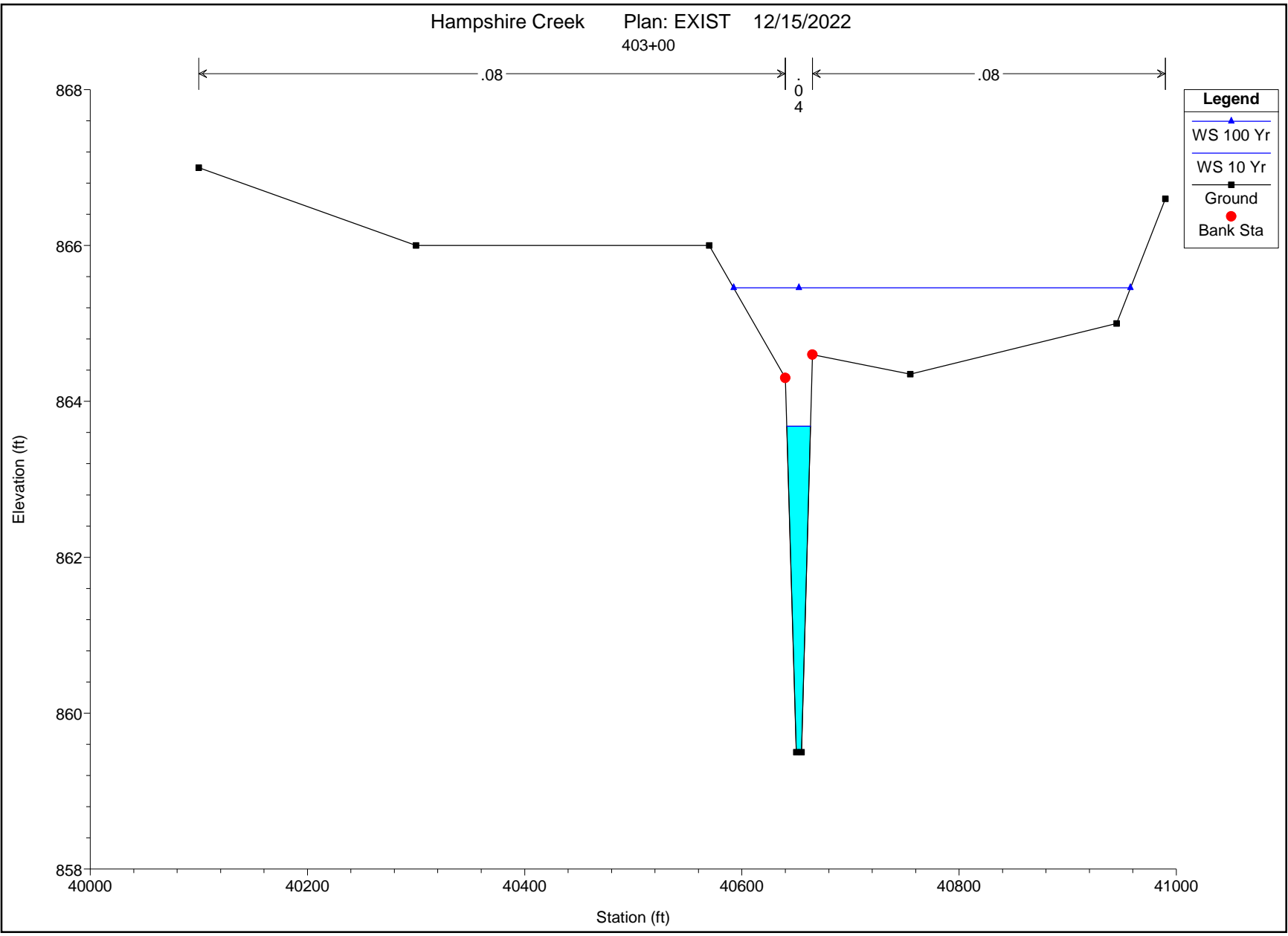


Hampshire Creek Plan: EXIST 12/15/2022
403+00

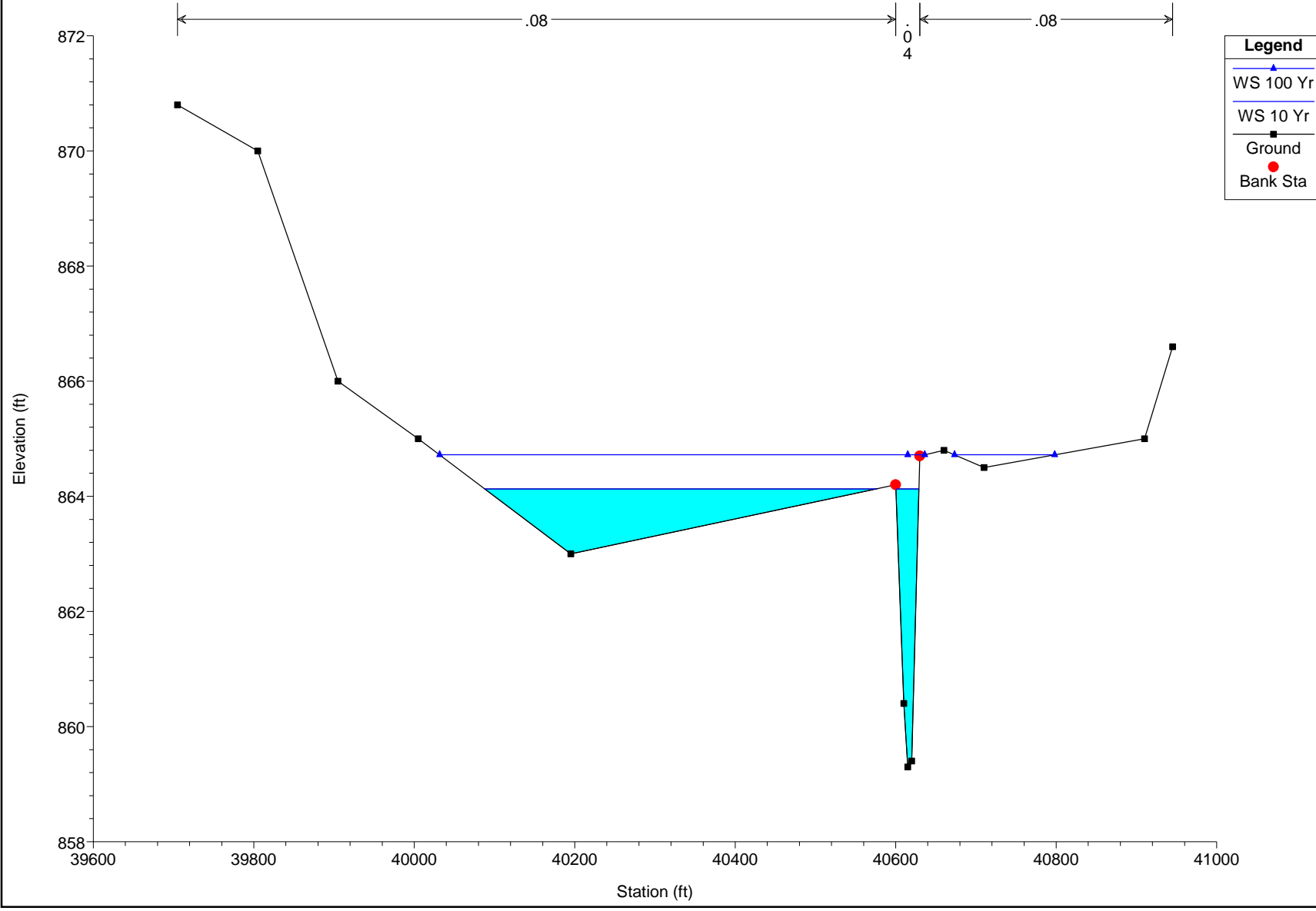


Legend

- WS 100 Yr (Blue line with triangle)
- WS 10 Yr (Black line with square)
- Ground (Black line with square)
- Bank Sta (Red line with circle)



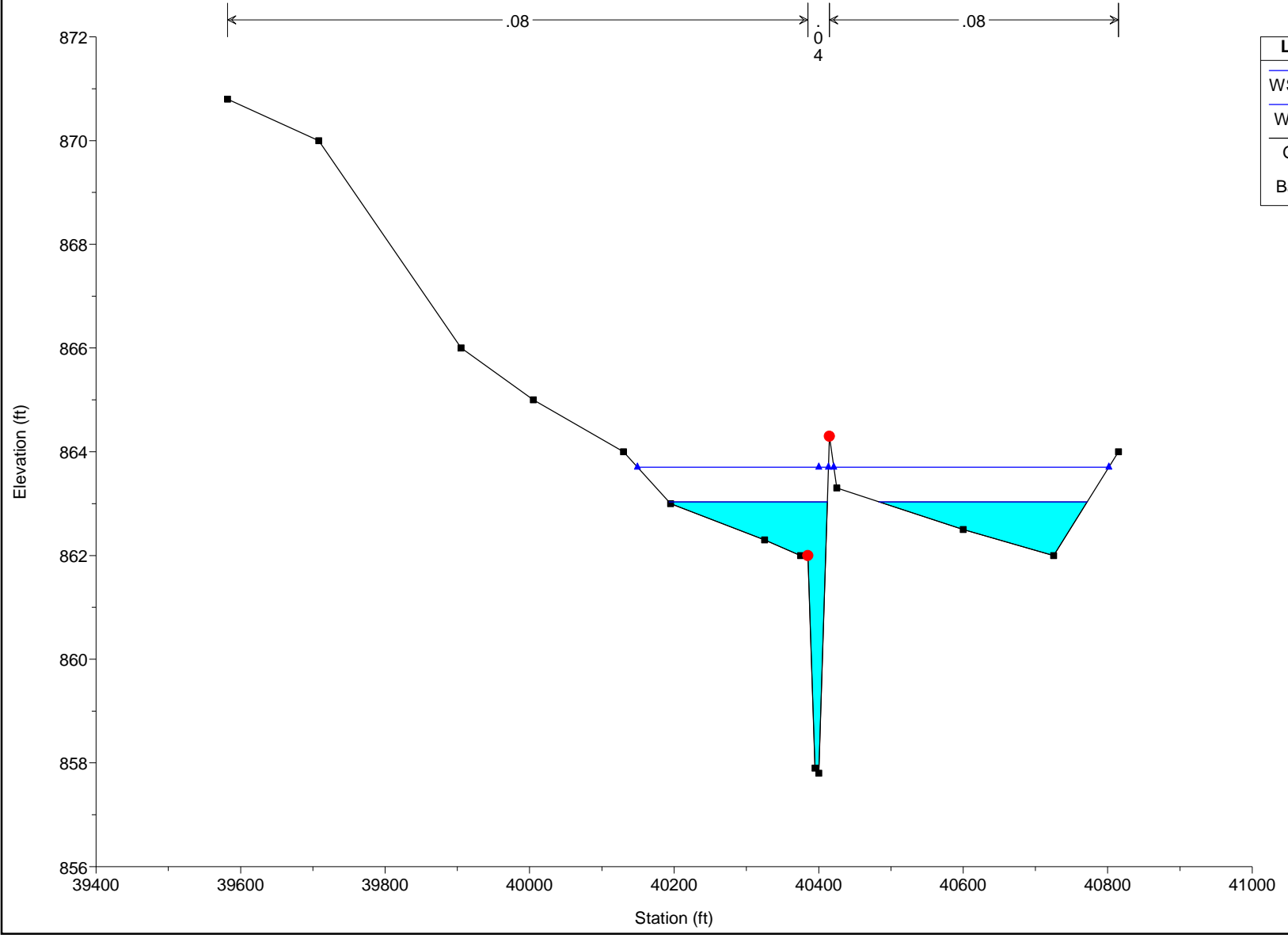
Hampshire Creek Plan: EXIST 12/15/2022
402+80



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
398+85

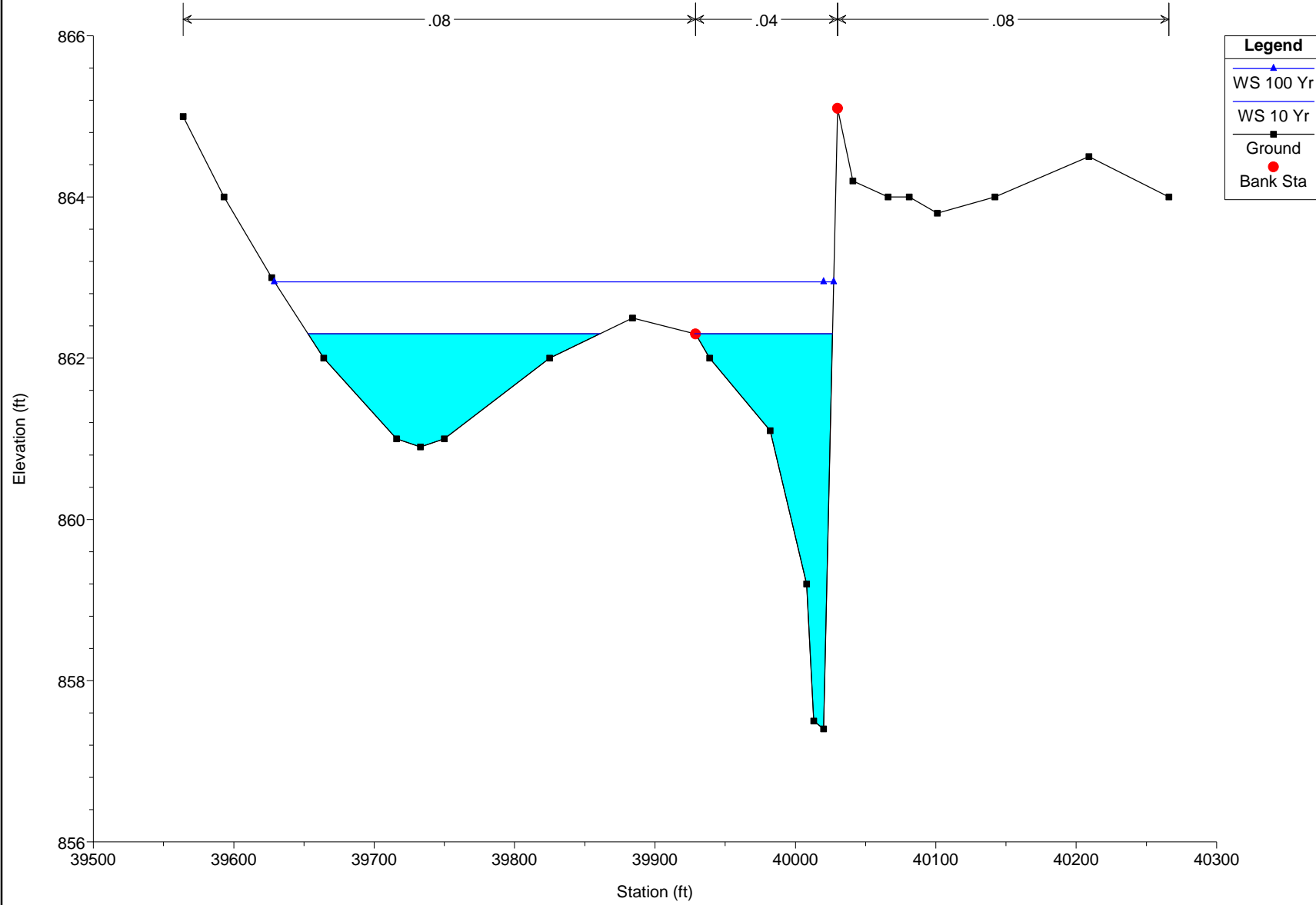


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022

396+65



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

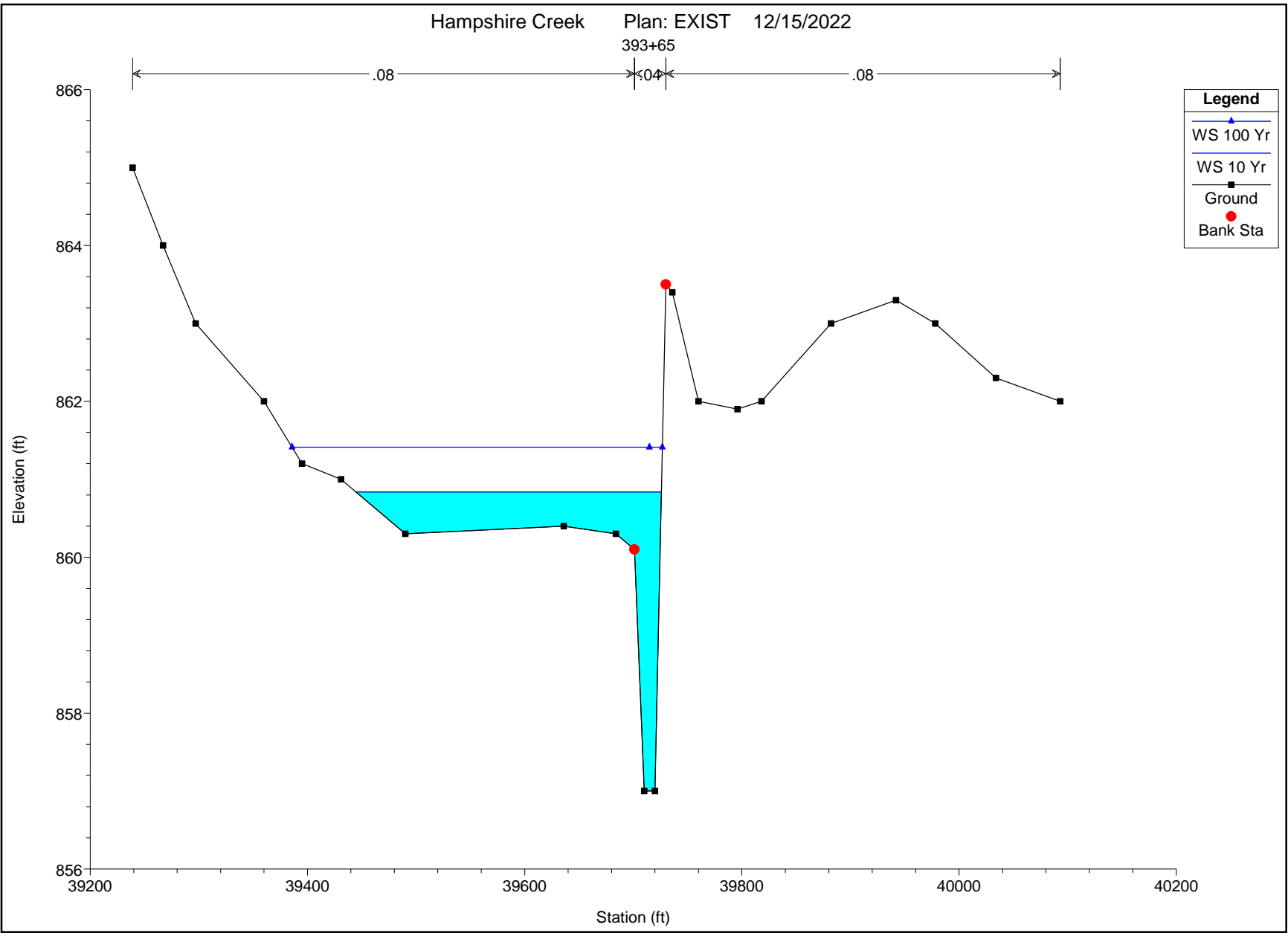
Hampshire Creek Plan: EXIST 12/15/2022

393+65

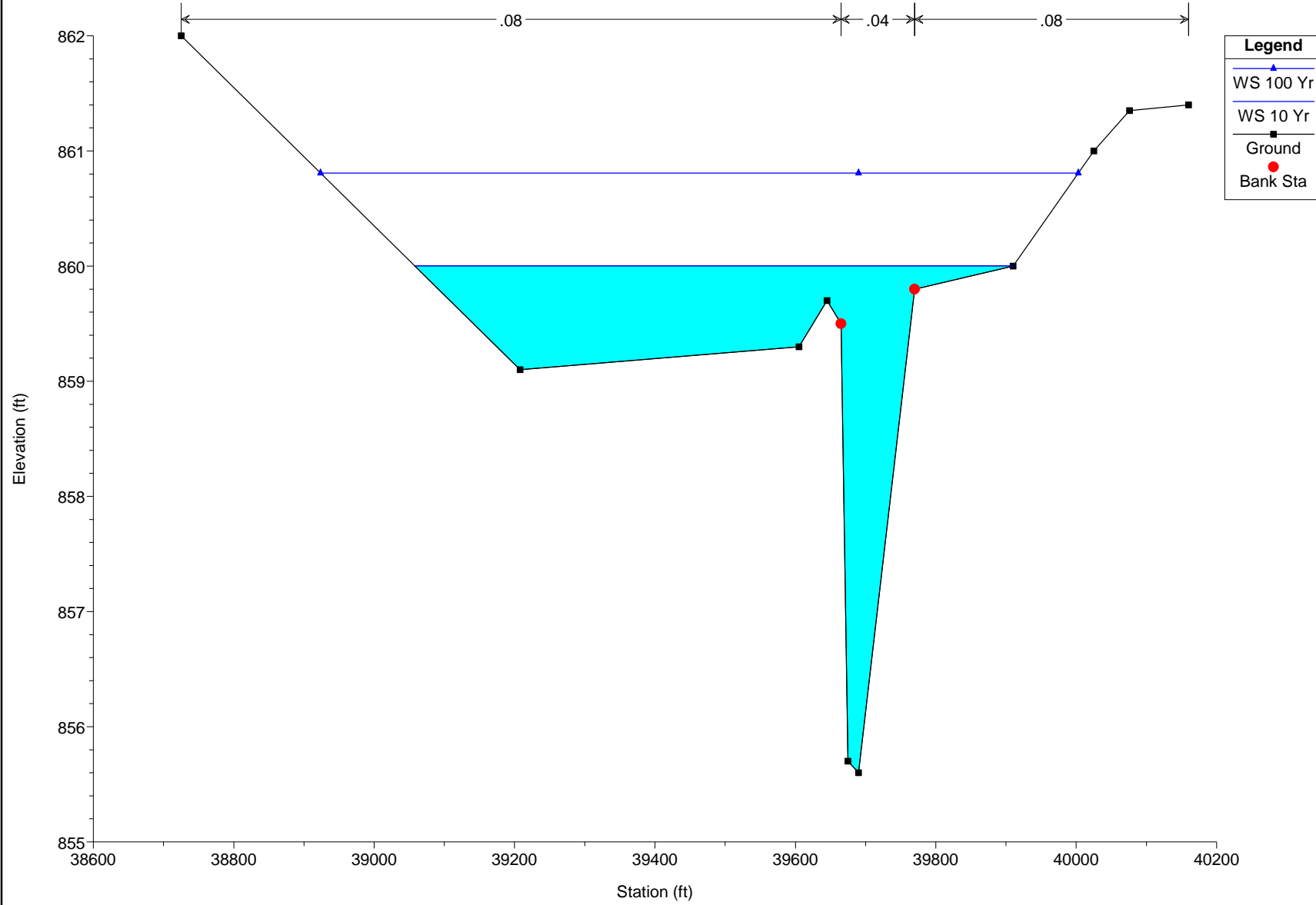


Legend

- WS 100 Yr (Blue line with triangle)
- WS 10 Yr (Black line with square)
- Ground (Black line with square)
- Bank Sta (Red dot)

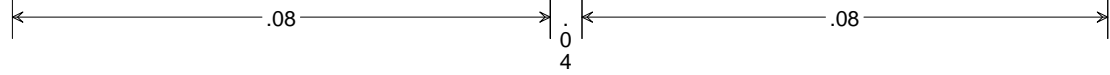


Hampshire Creek Plan: EXIST 12/15/2022
390+85



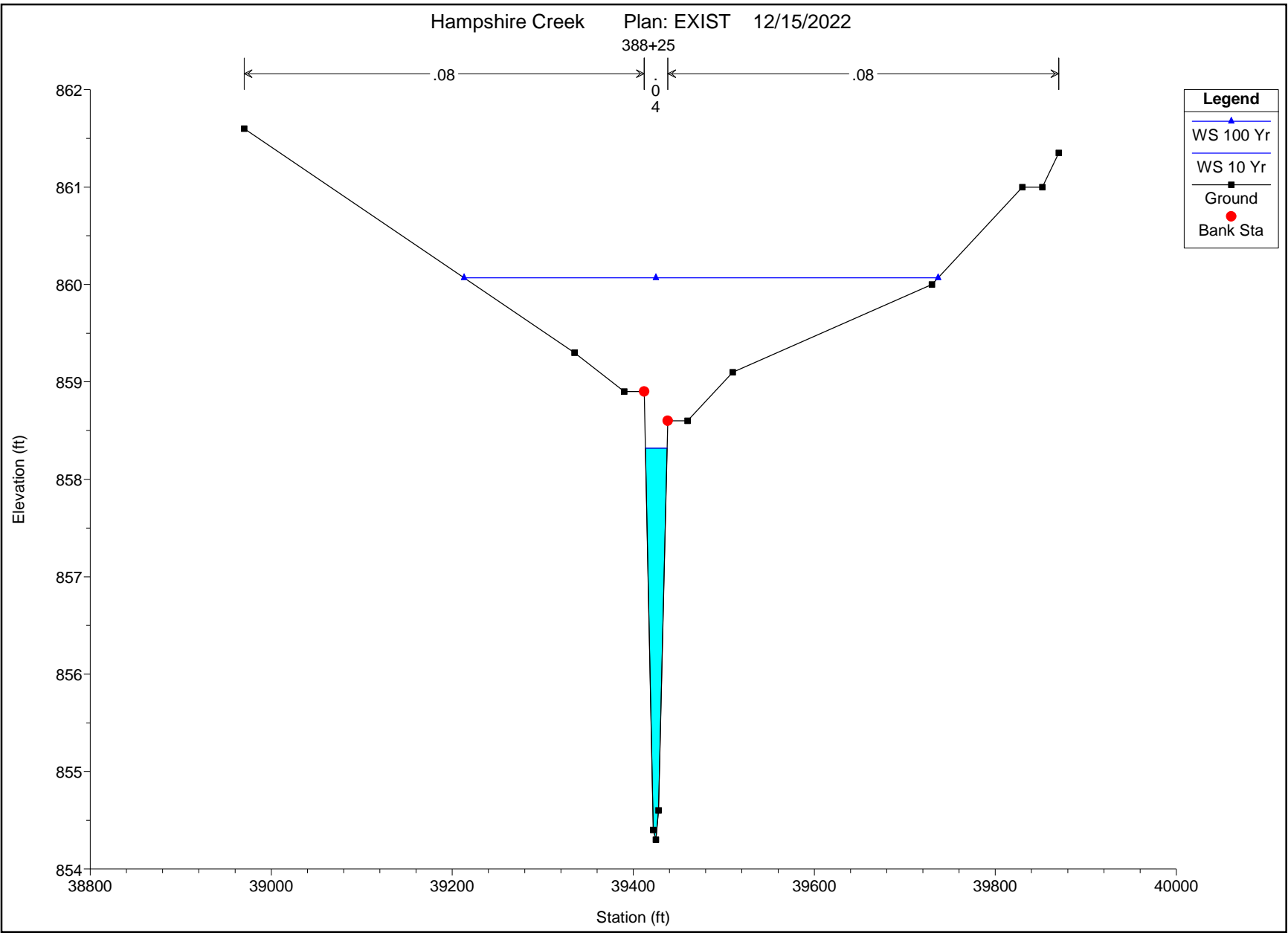
Hampshire Creek Plan: EXIST 12/15/2022

388+25



Legend

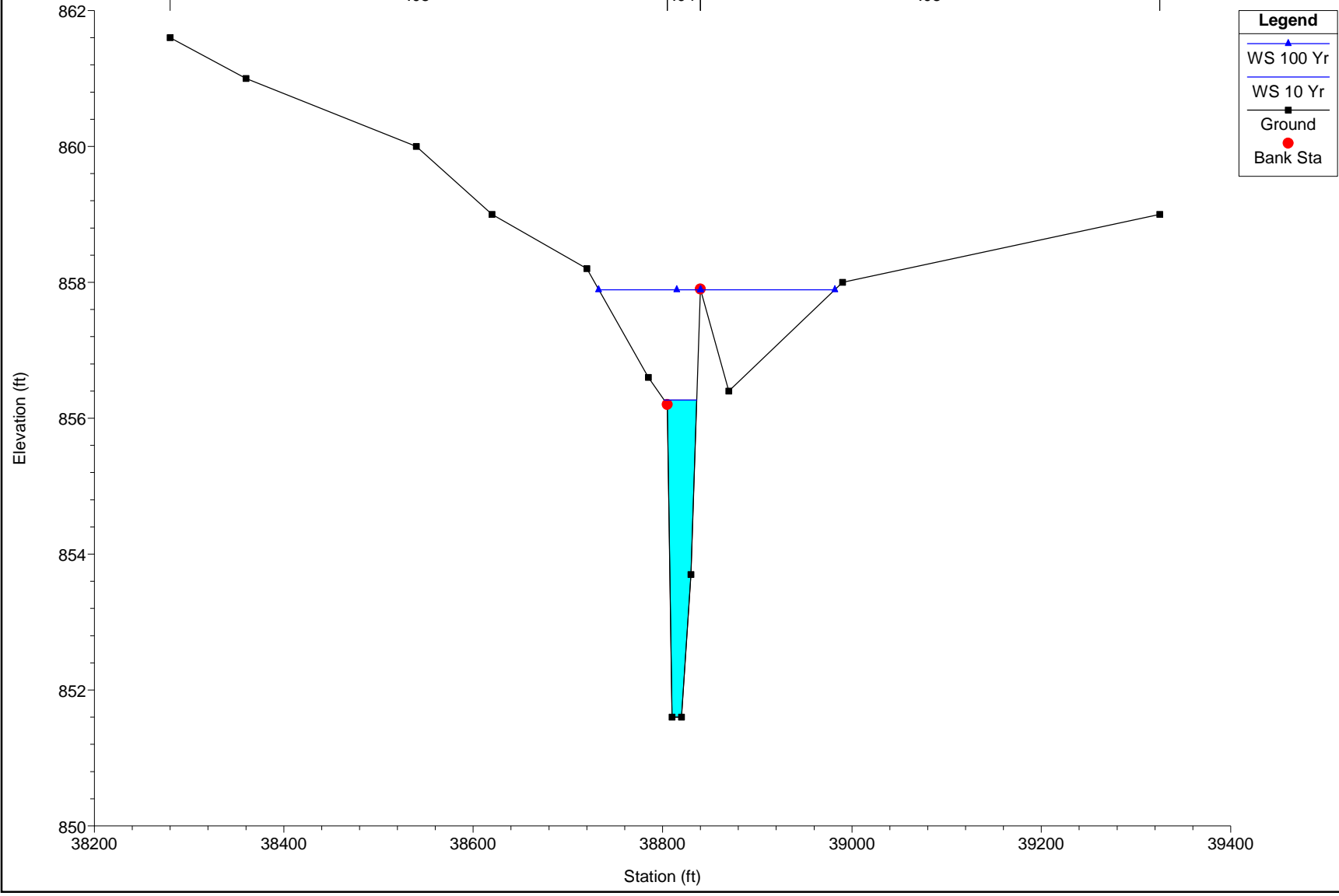
- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta



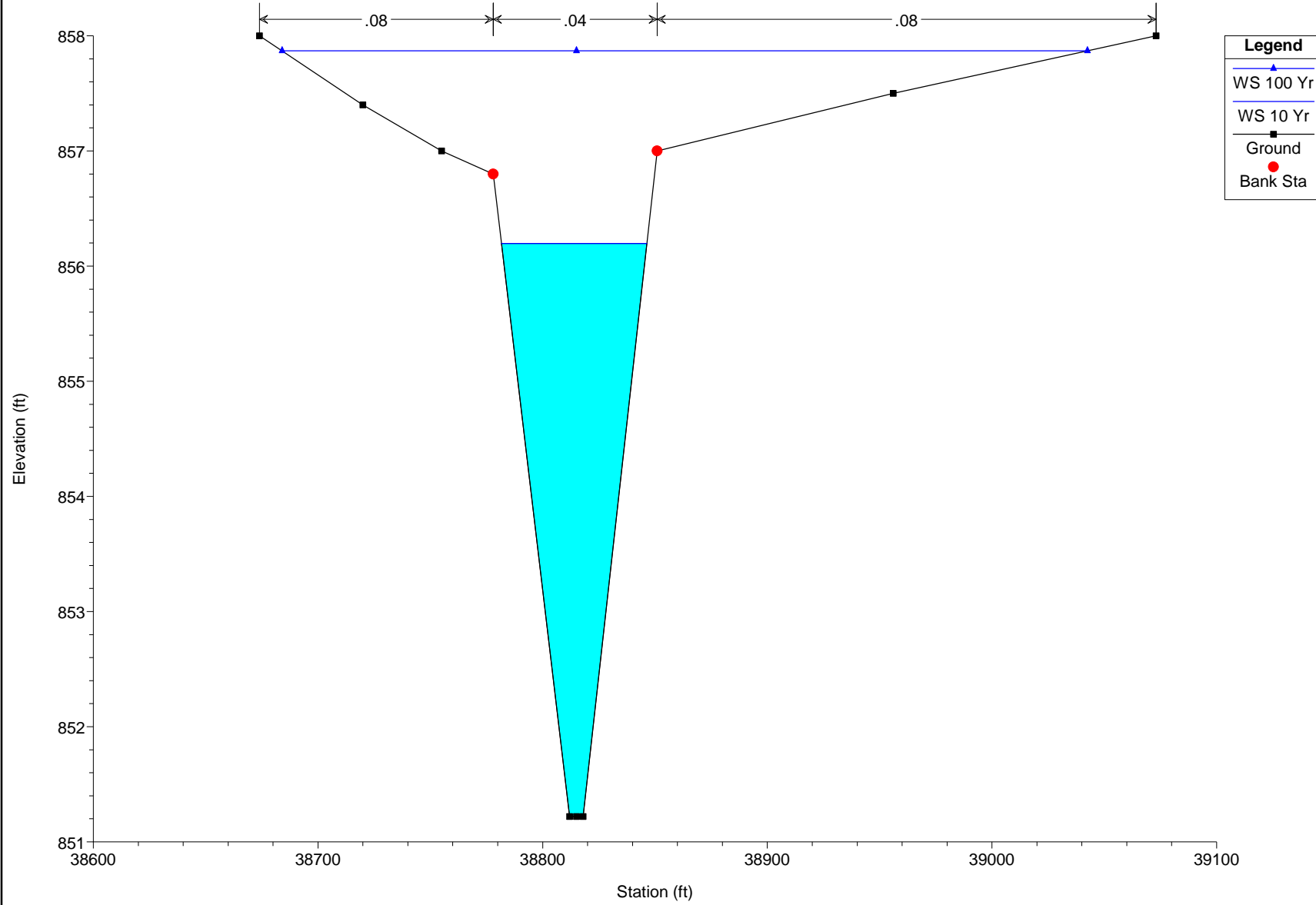
Hampshire Creek Plan: EXIST 12/15/2022

385+00

← .08 |< .04 |> .08 →



Hampshire Creek Plan: EXIST 12/15/2022
383+99

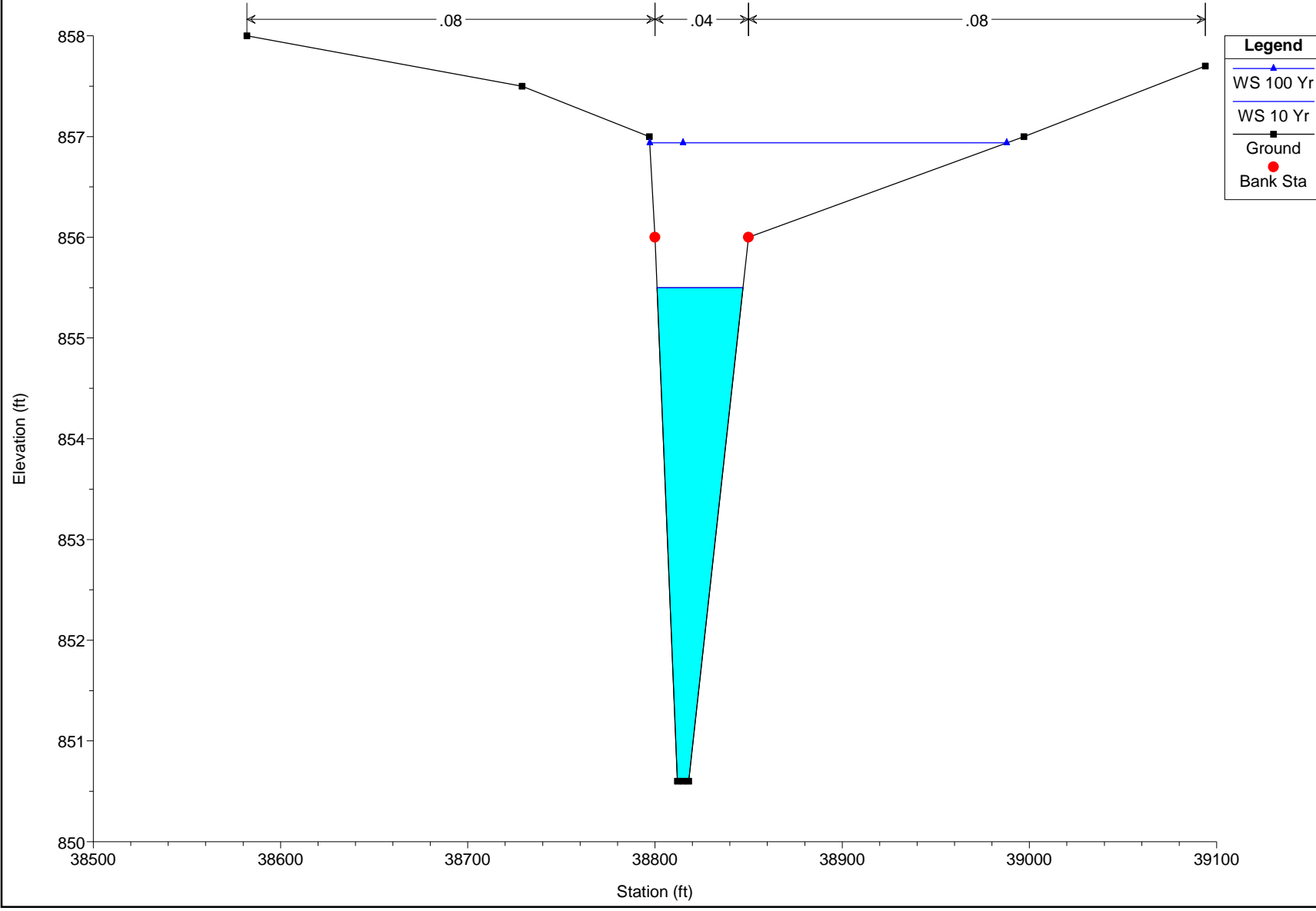


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022

382+84

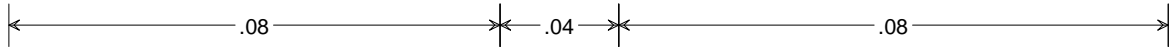


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

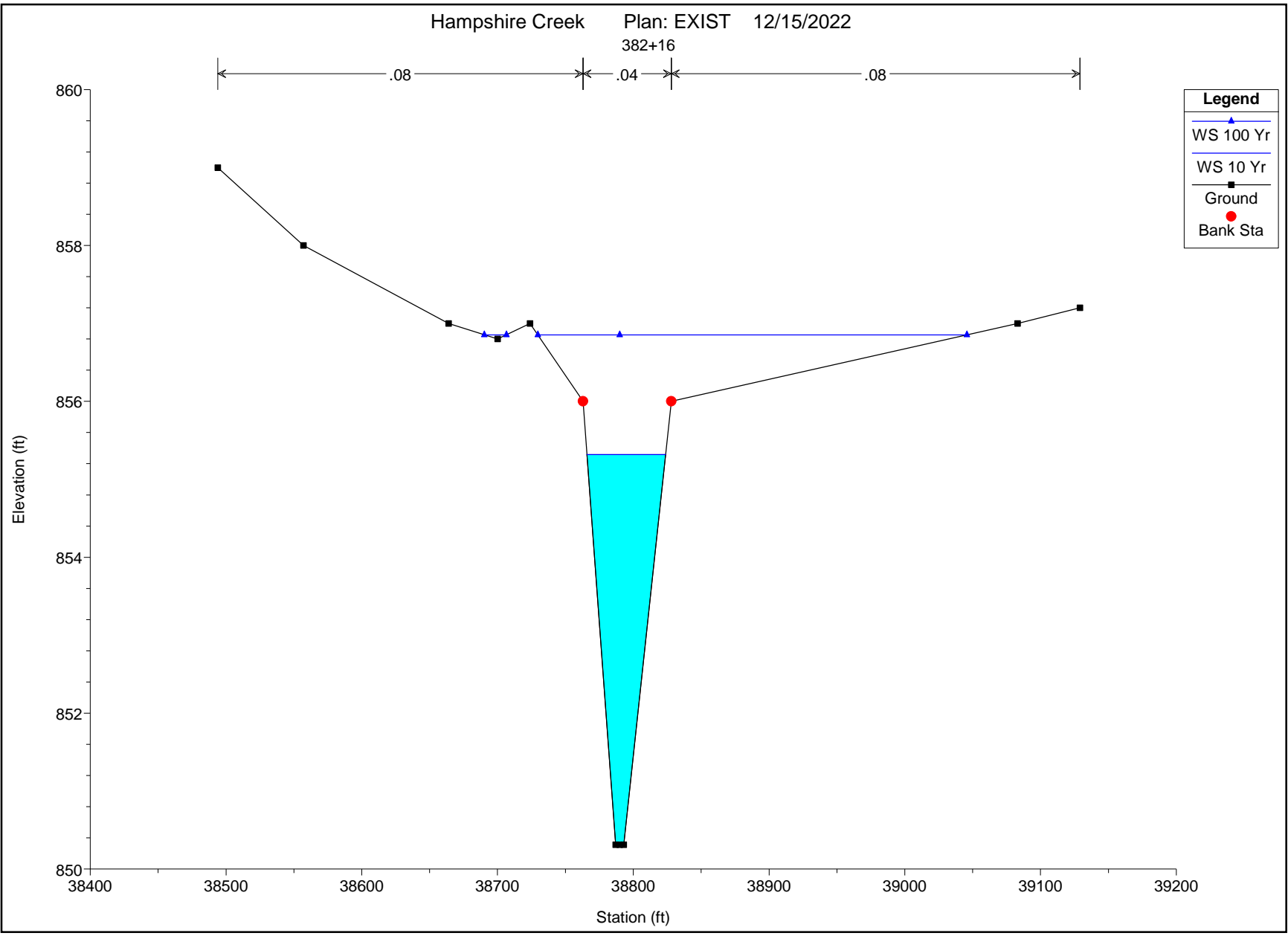
Hampshire Creek Plan: EXIST 12/15/2022

382+16



Legend

- WS 100 Yr (Blue line with triangle)
- WS 10 Yr (Blue line with triangle)
- Ground (Black line with square)
- Bank Sta (Red line with circle)

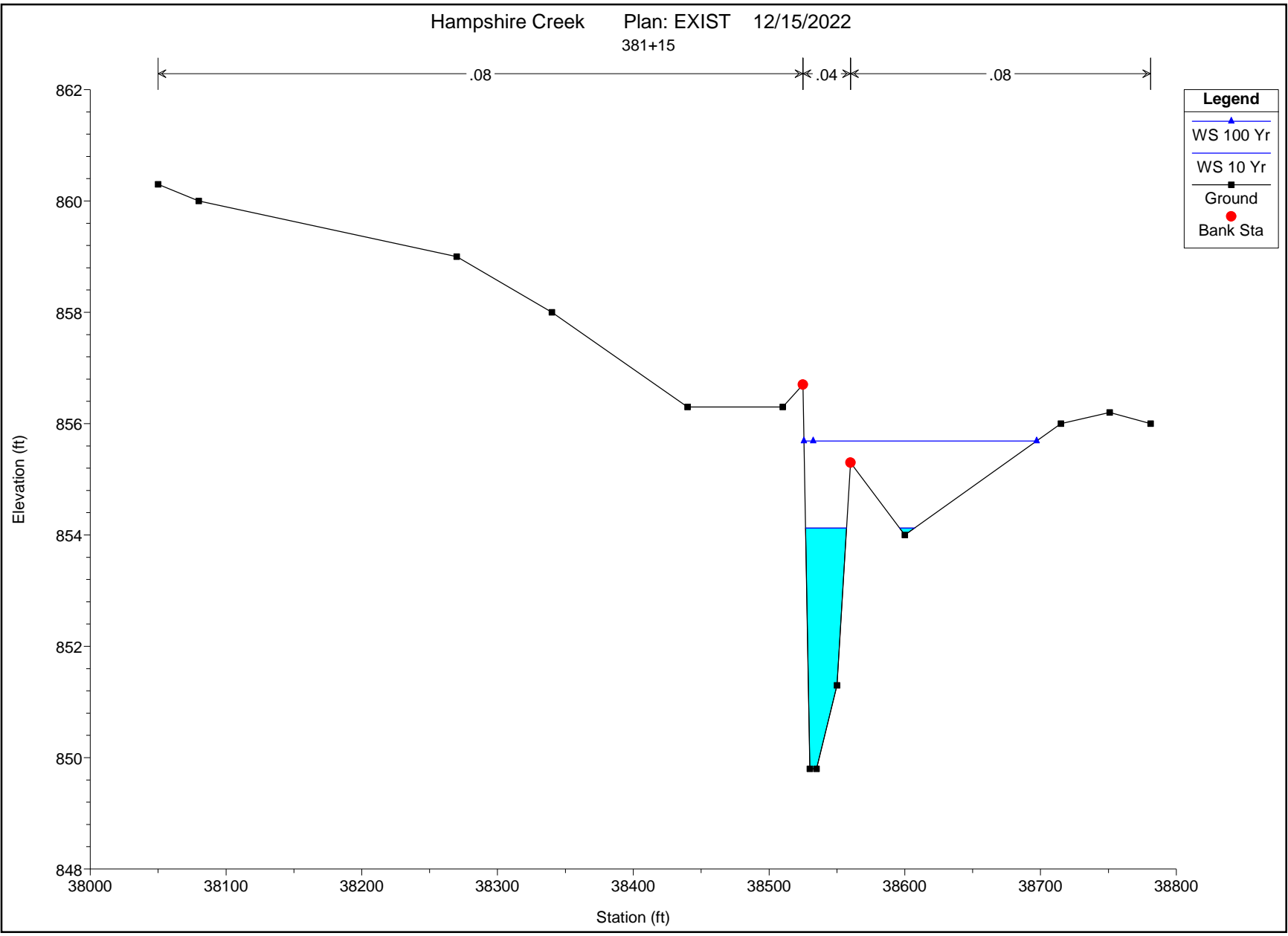


Hampshire Creek Plan: EXIST 12/15/2022
381+15

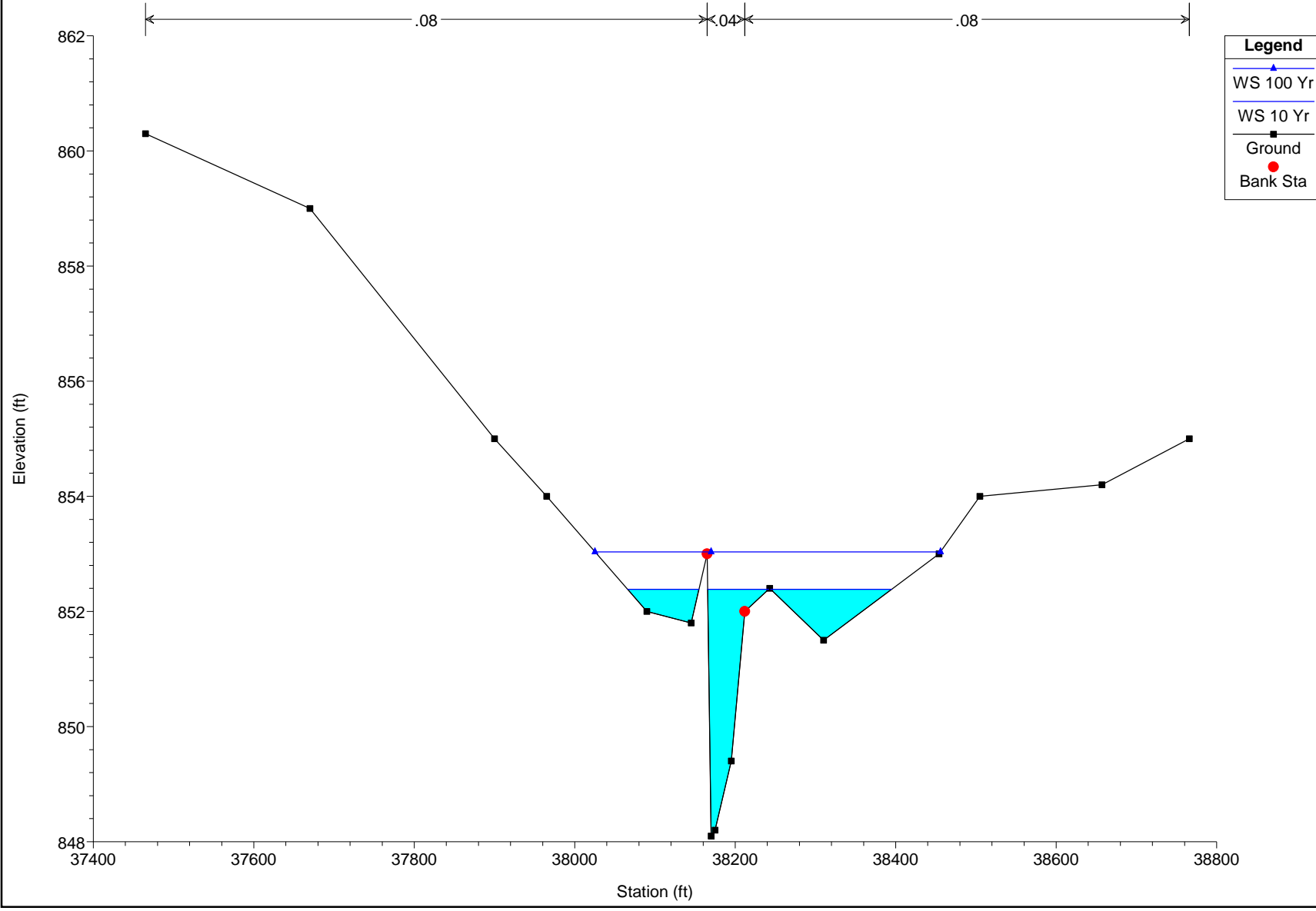
← .08 .04 .08 →

Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

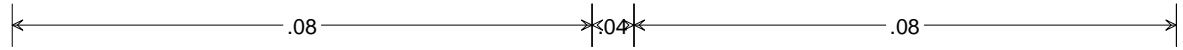


Hampshire Creek Plan: EXIST 12/15/2022
377+75



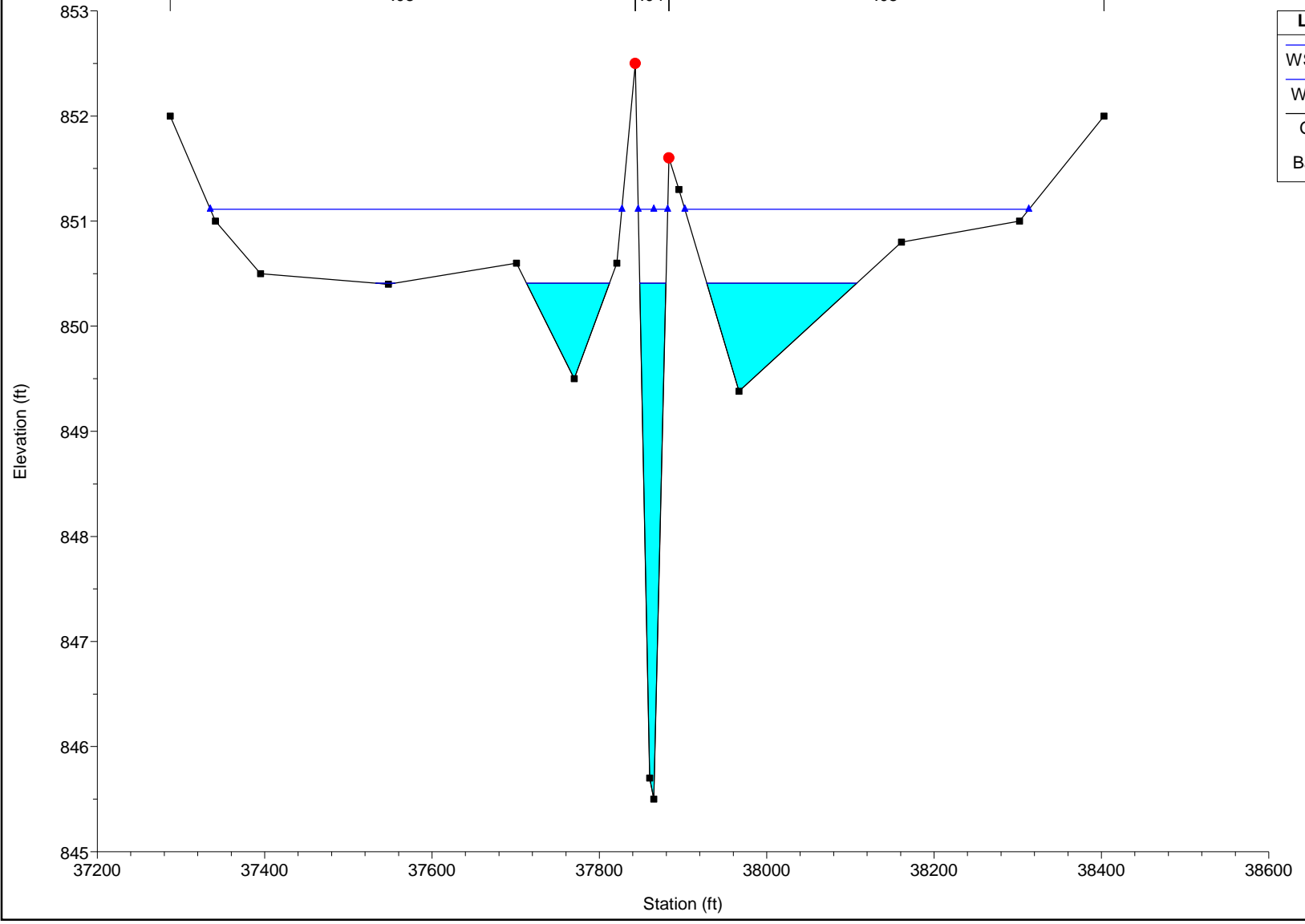
Hampshire Creek Plan: EXIST 12/15/2022

374+55

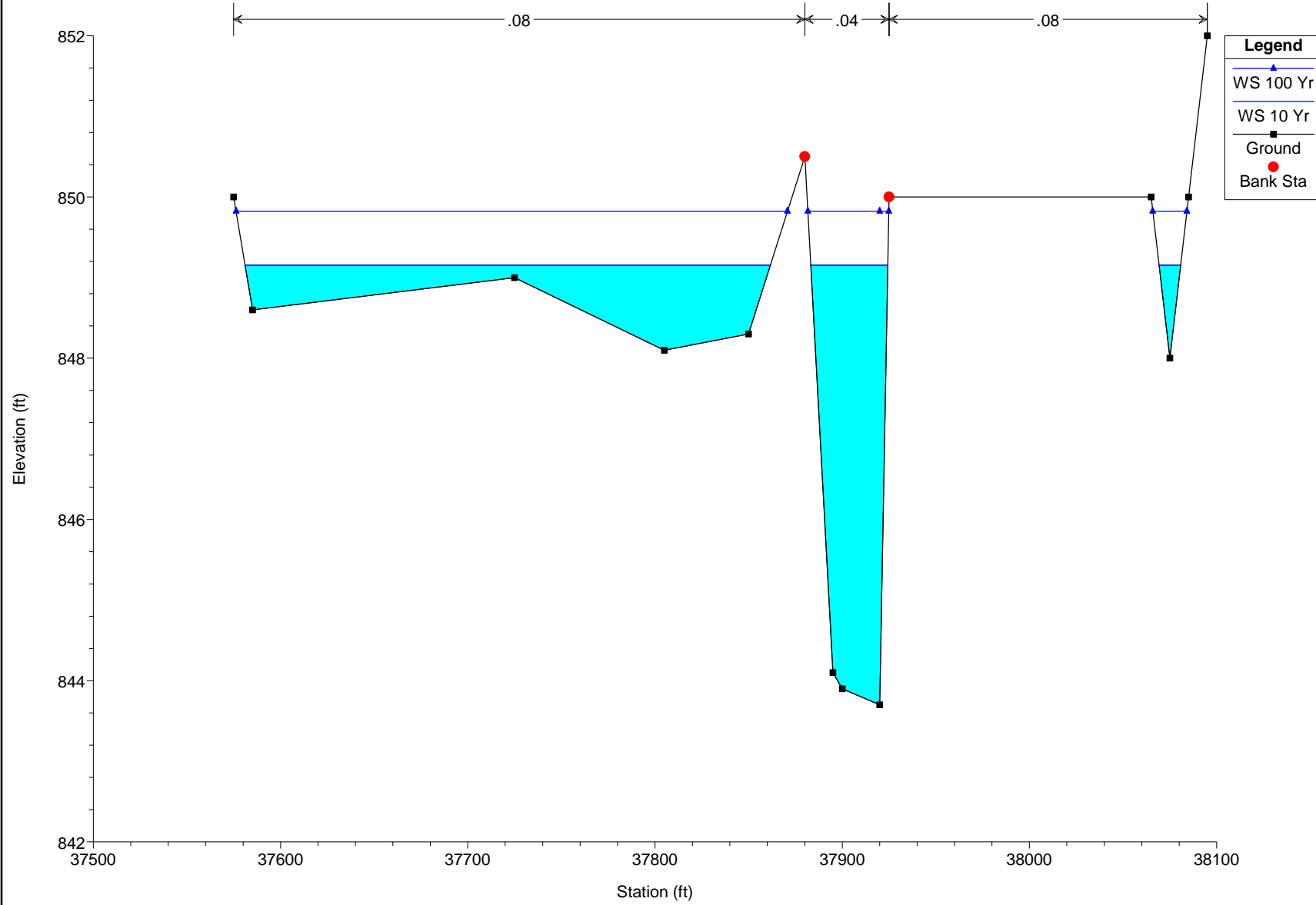


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta



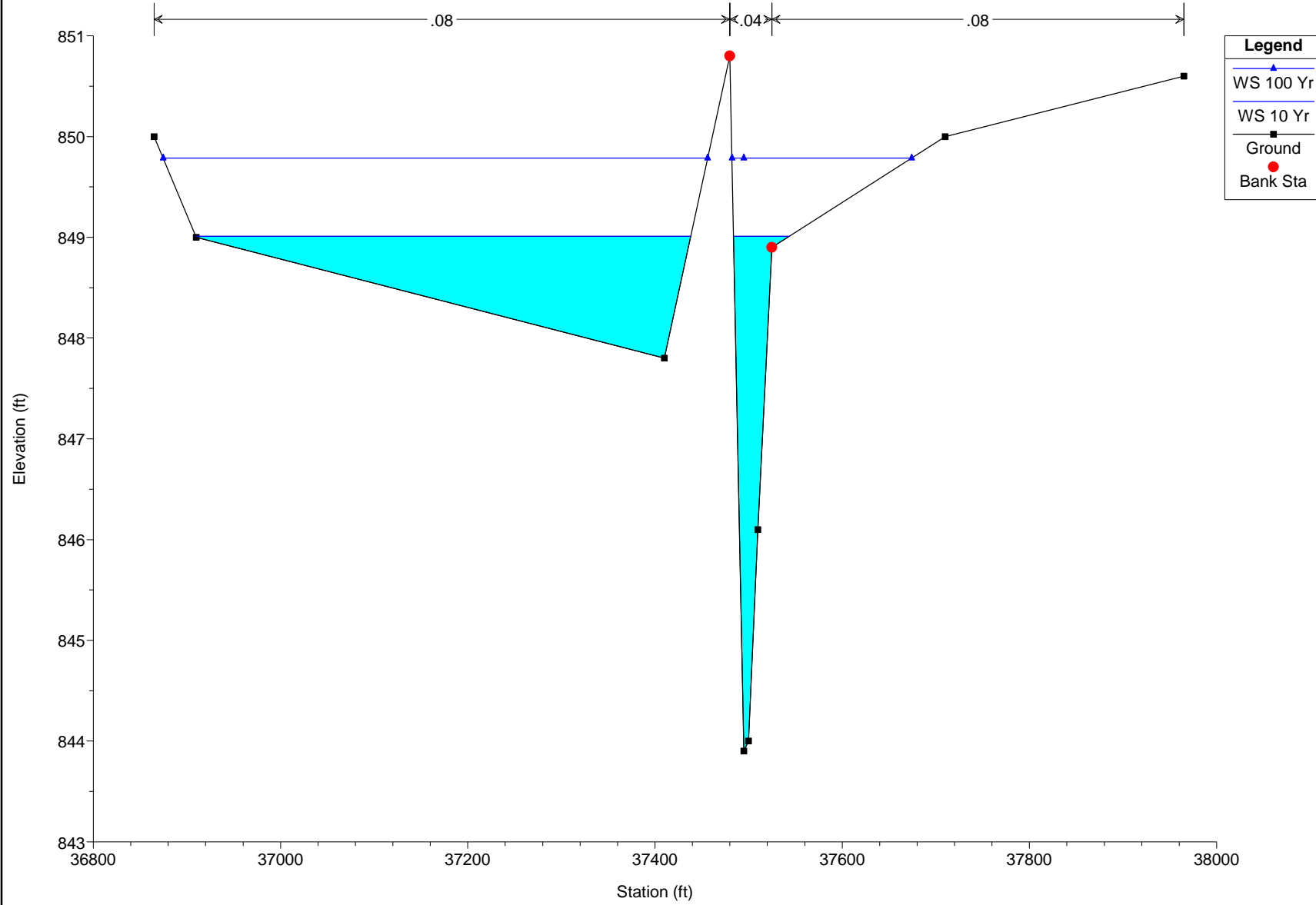
Hampshire Creek Plan: EXIST 12/15/2022
371+70



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

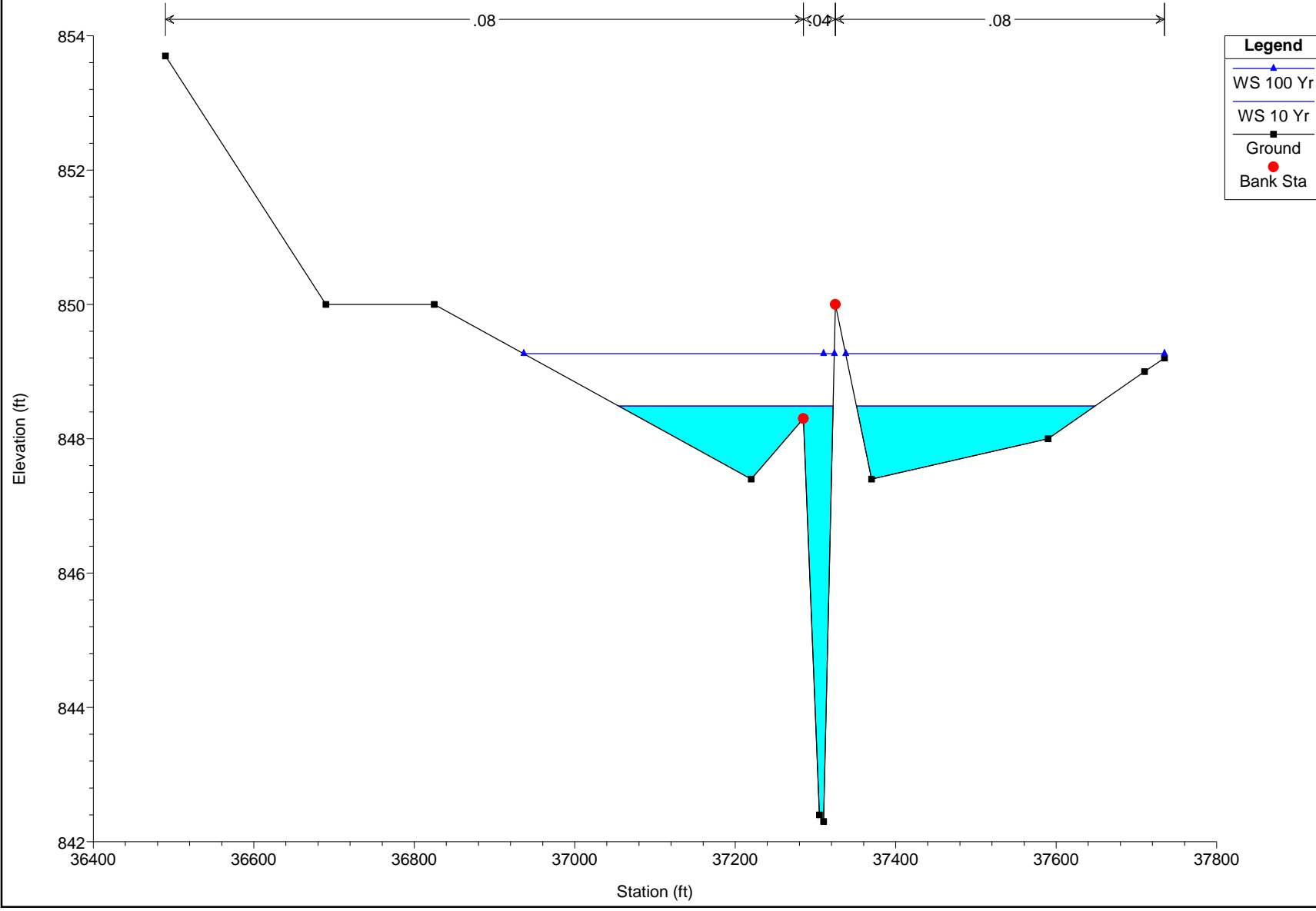
Hampshire Creek Plan: EXIST 12/15/2022
370+80



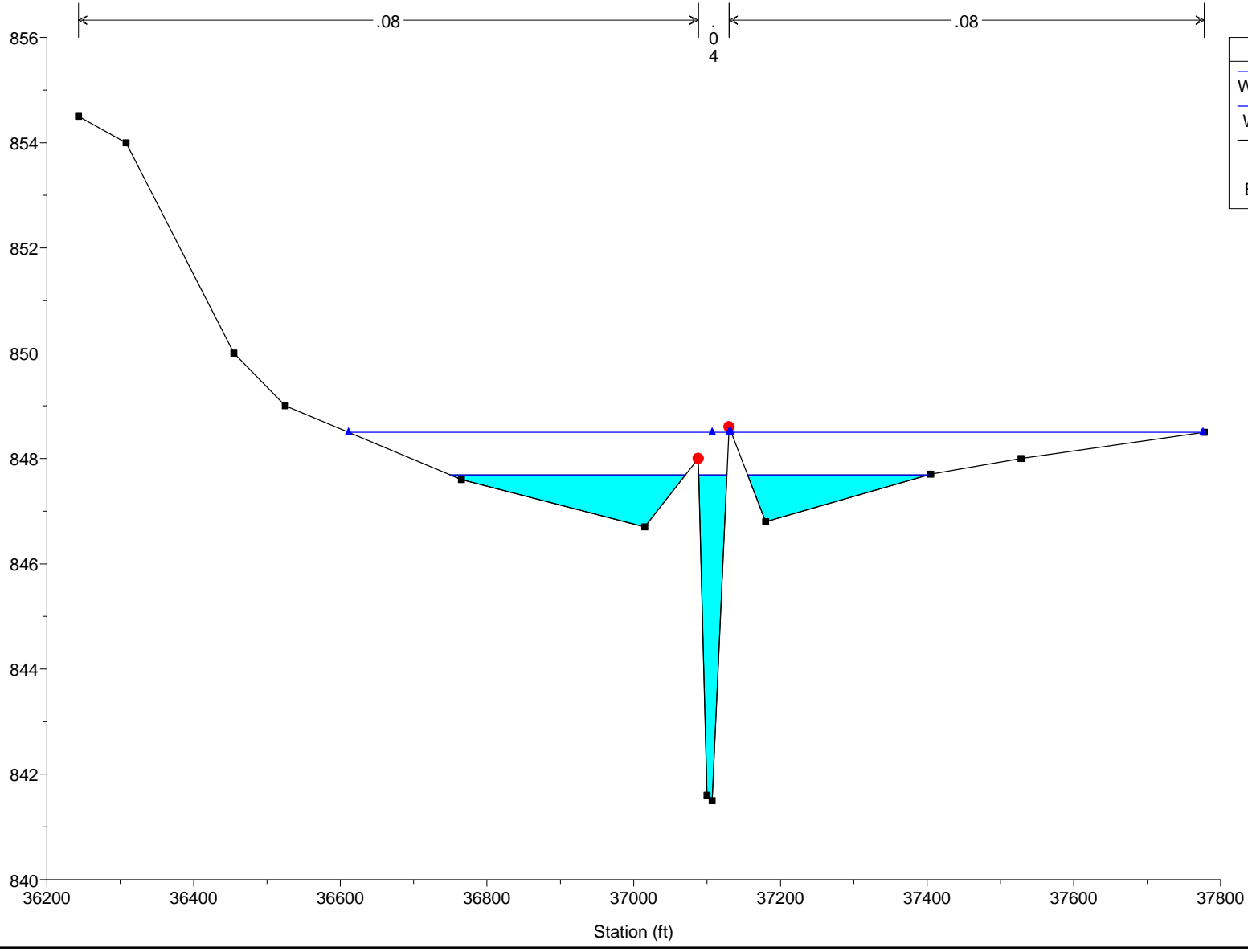
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

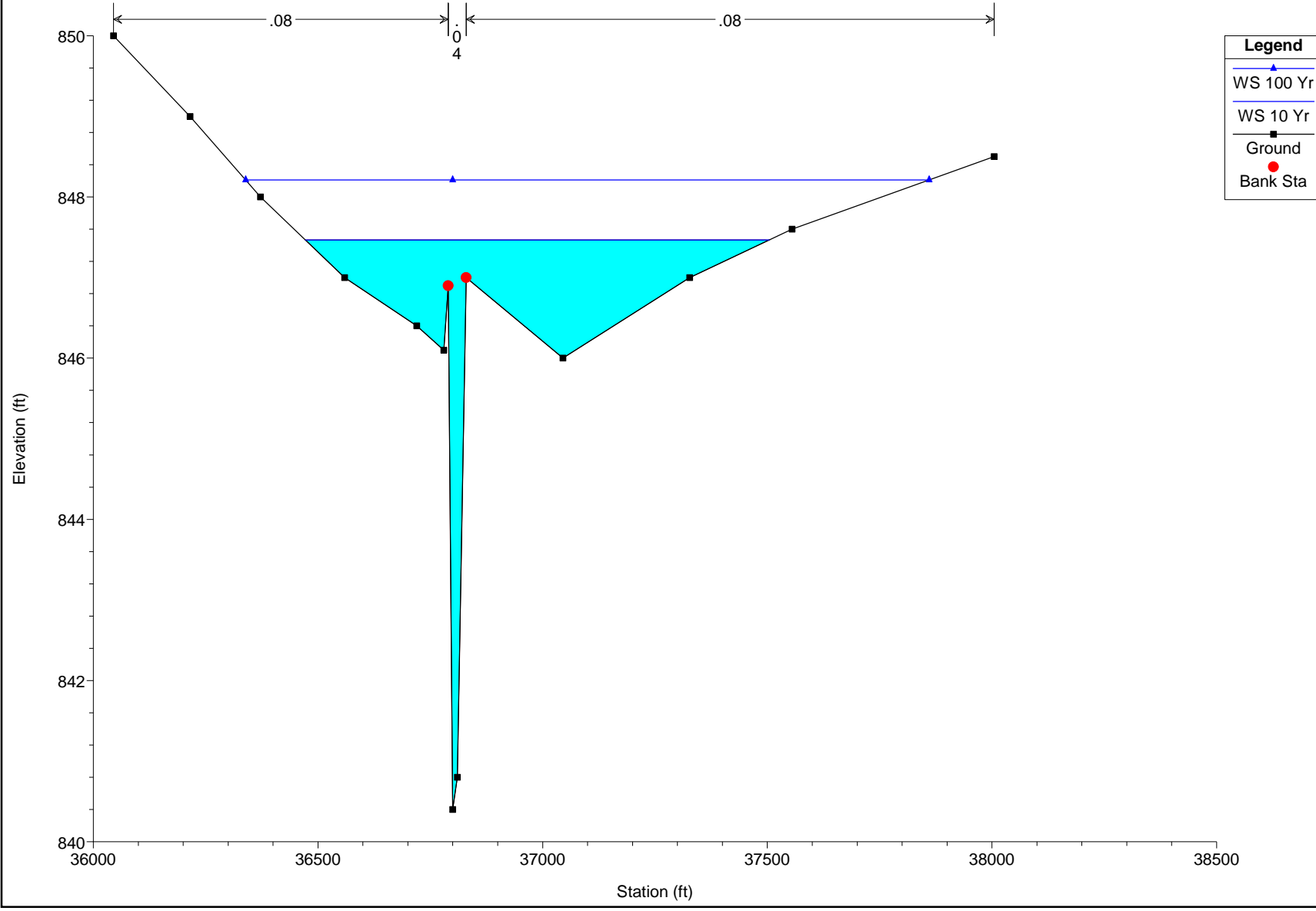
Hampshire Creek Plan: EXIST 12/15/2022
368+50



Hampshire Creek Plan: EXIST 12/15/2022
364+480



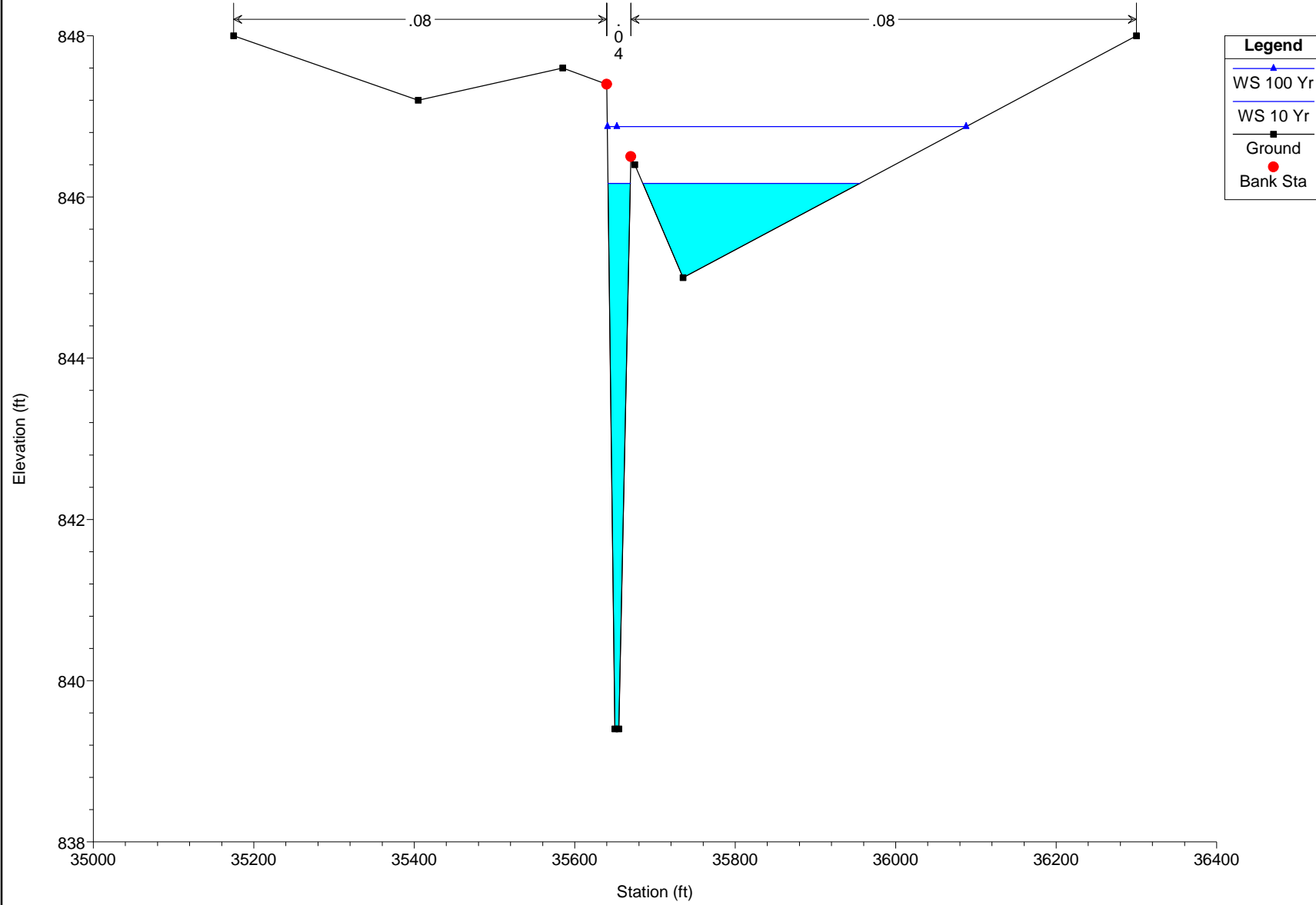
Hampshire Creek Plan: EXIST 12/15/2022
361+60



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

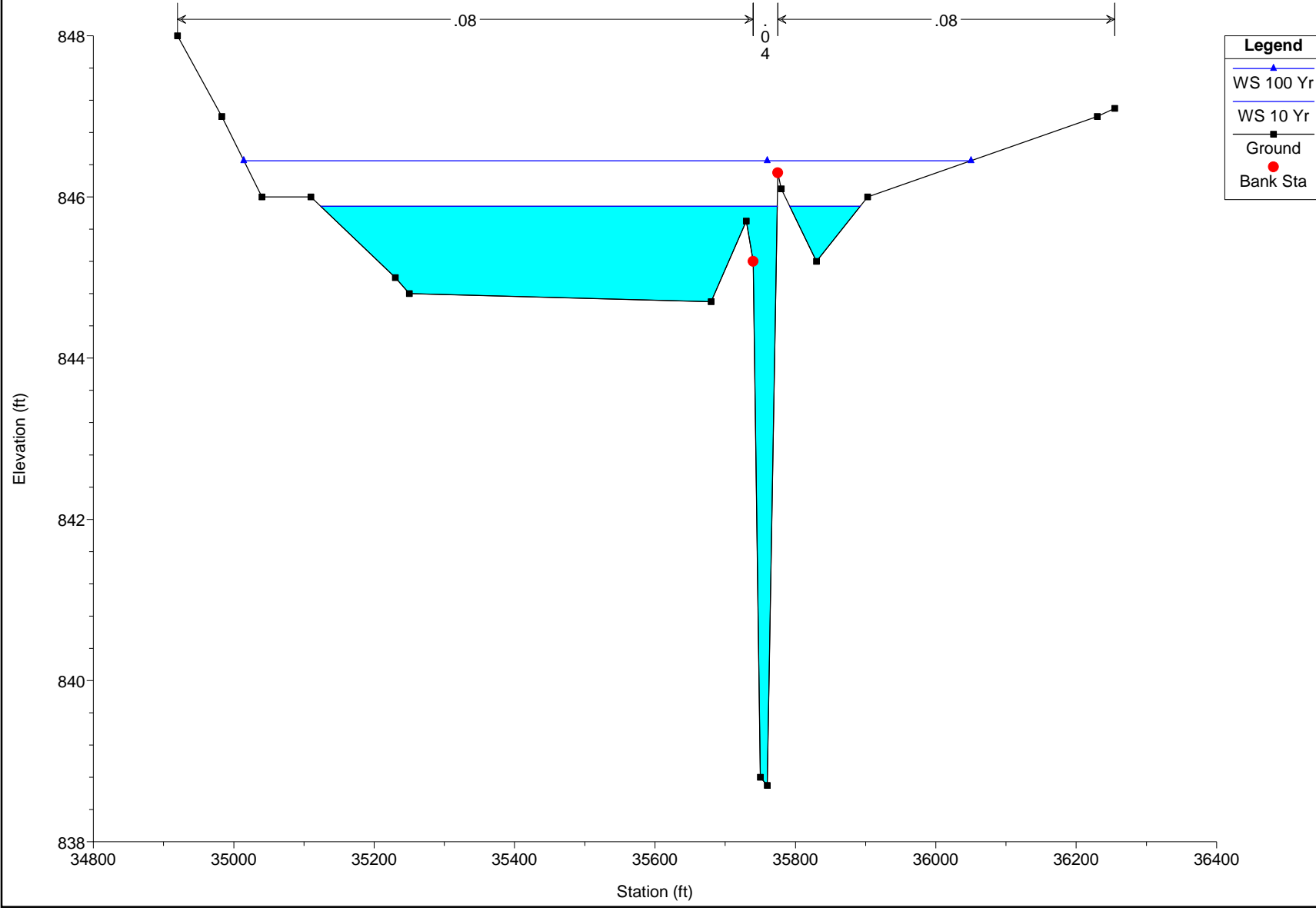
Hampshire Creek Plan: EXIST 12/15/2022
354+30



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

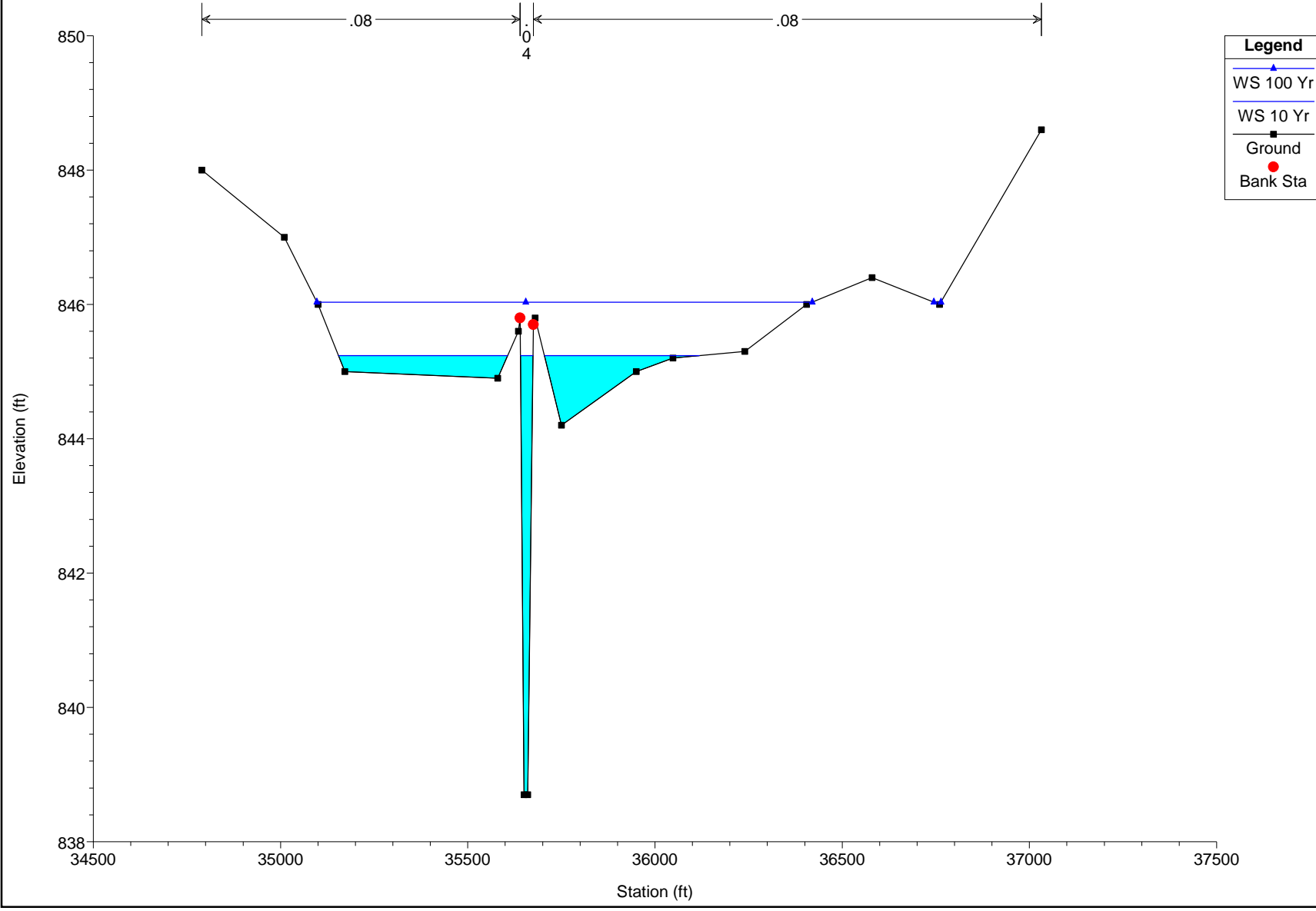
Hampshire Creek Plan: EXIST 12/15/2022
351+10



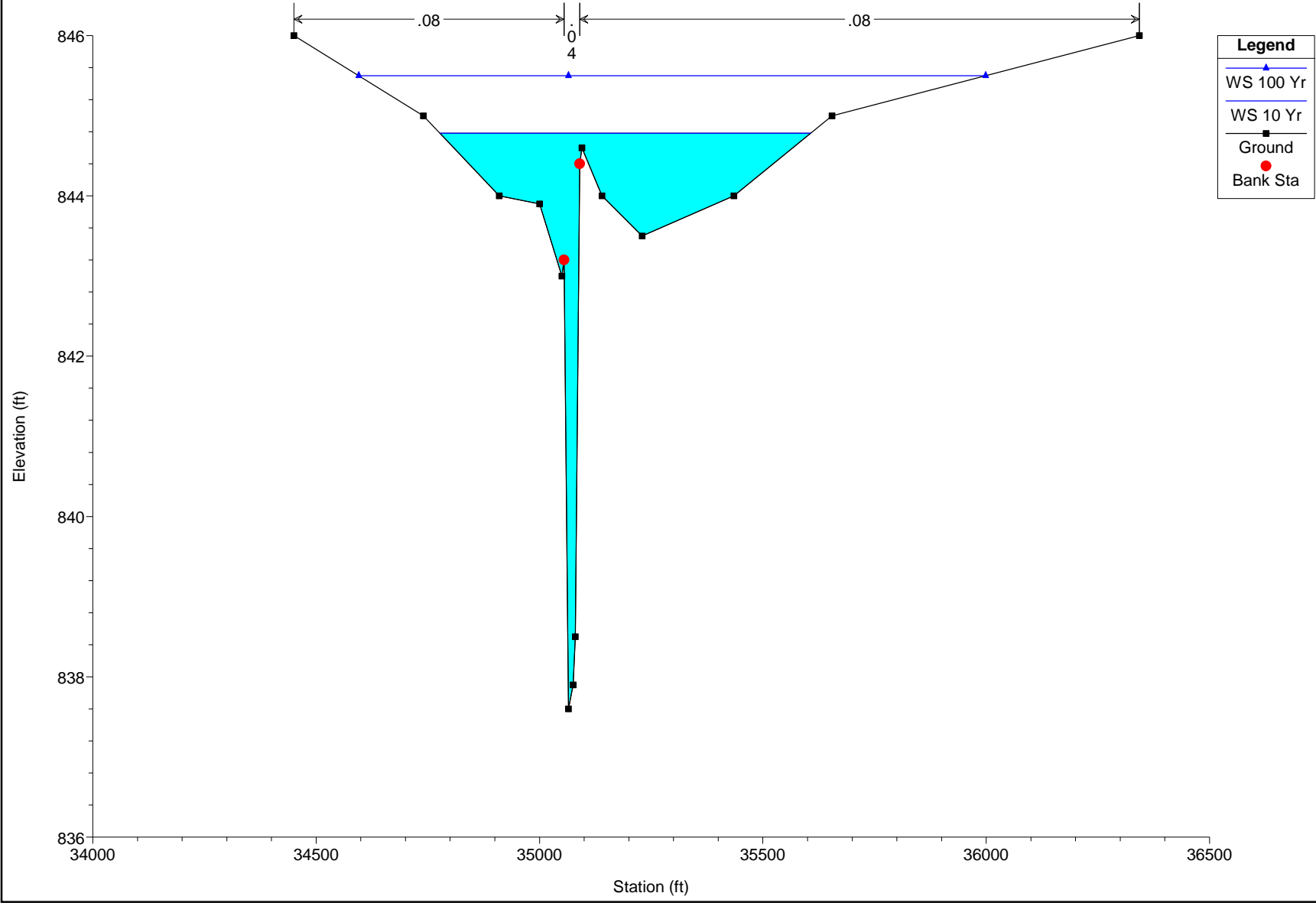
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

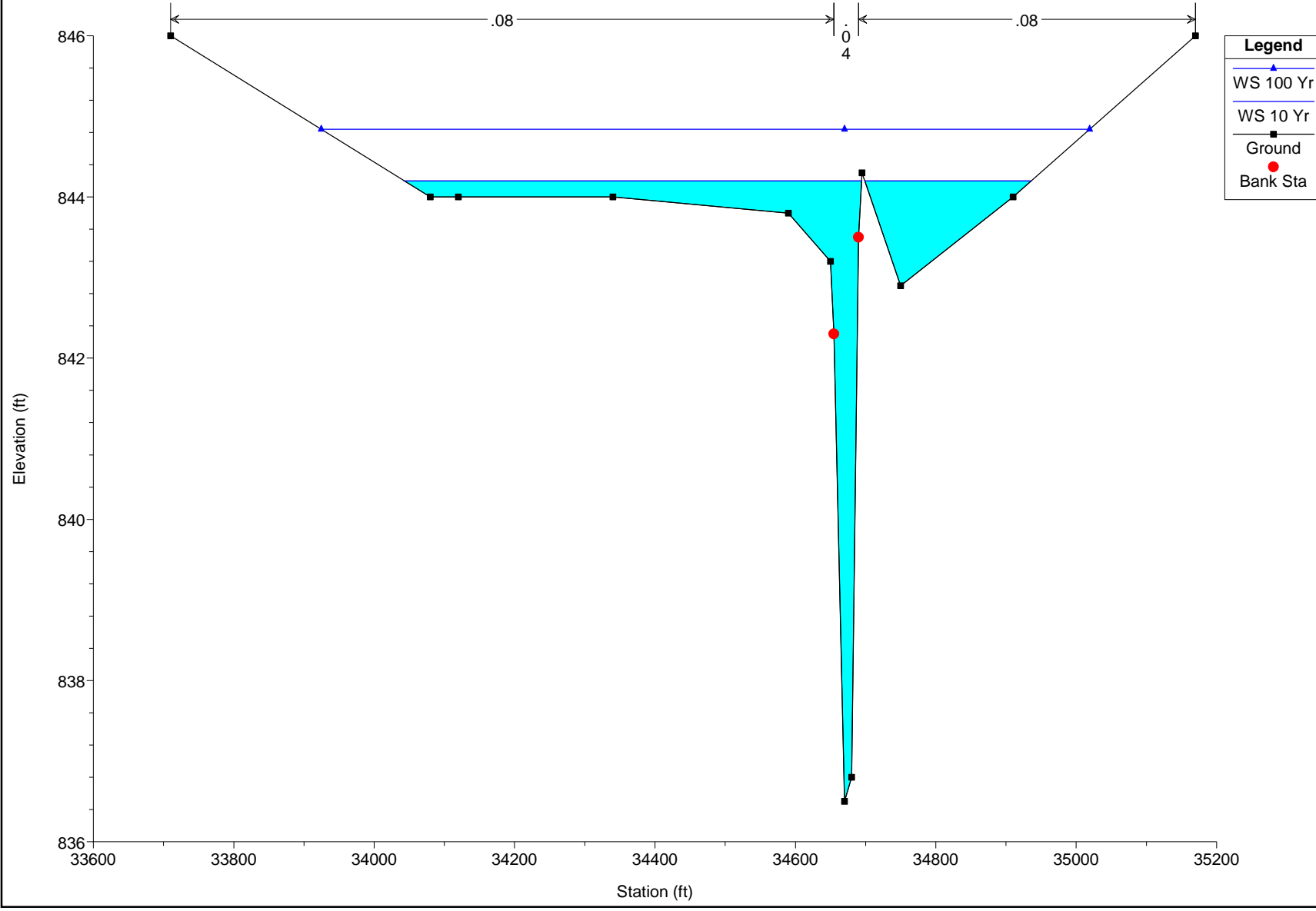
Hampshire Creek Plan: EXIST 12/15/2022
347+90



Hampshire Creek Plan: EXIST 12/15/2022
344+50



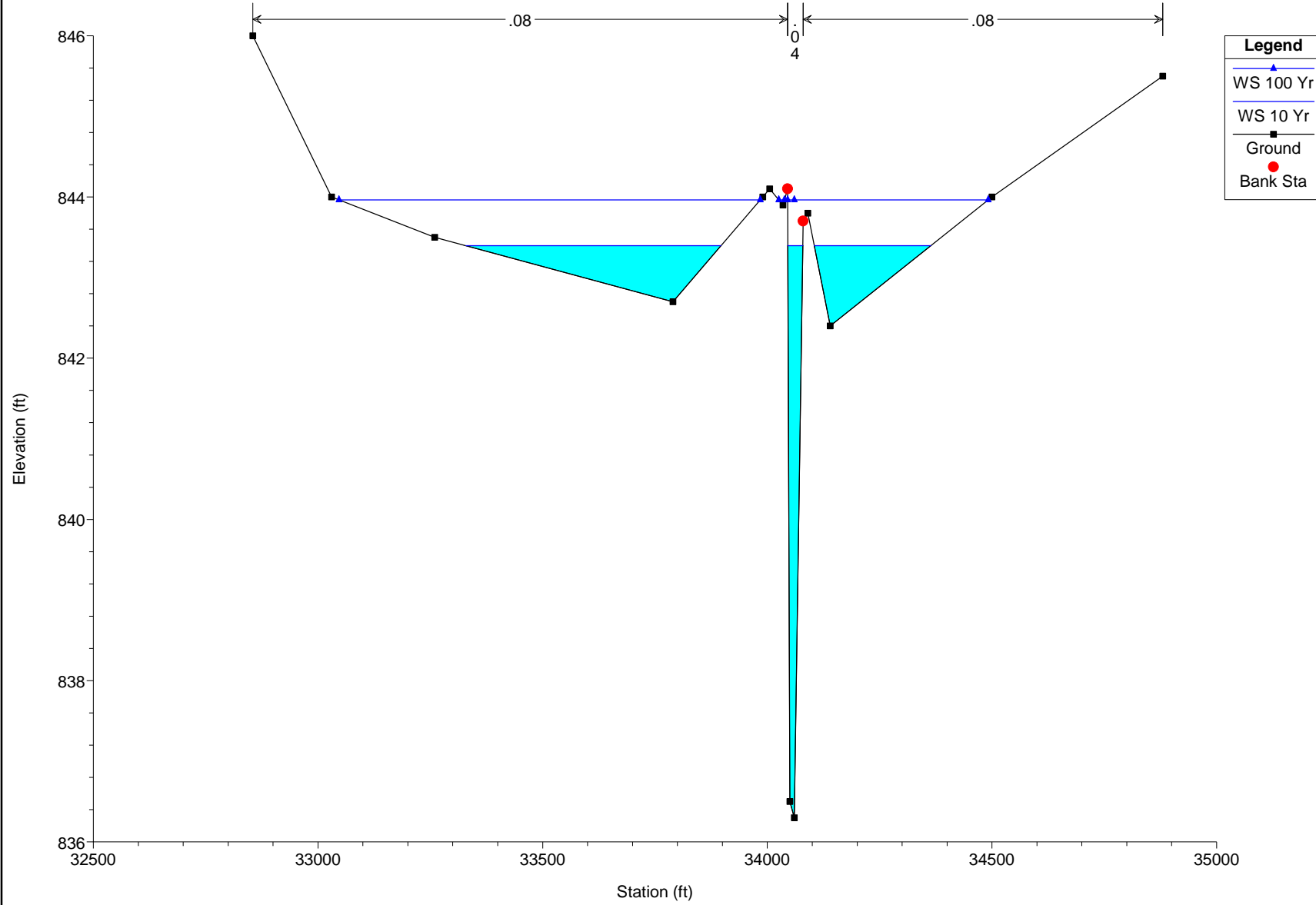
Hampshire Creek Plan: EXIST 12/15/2022
341+20



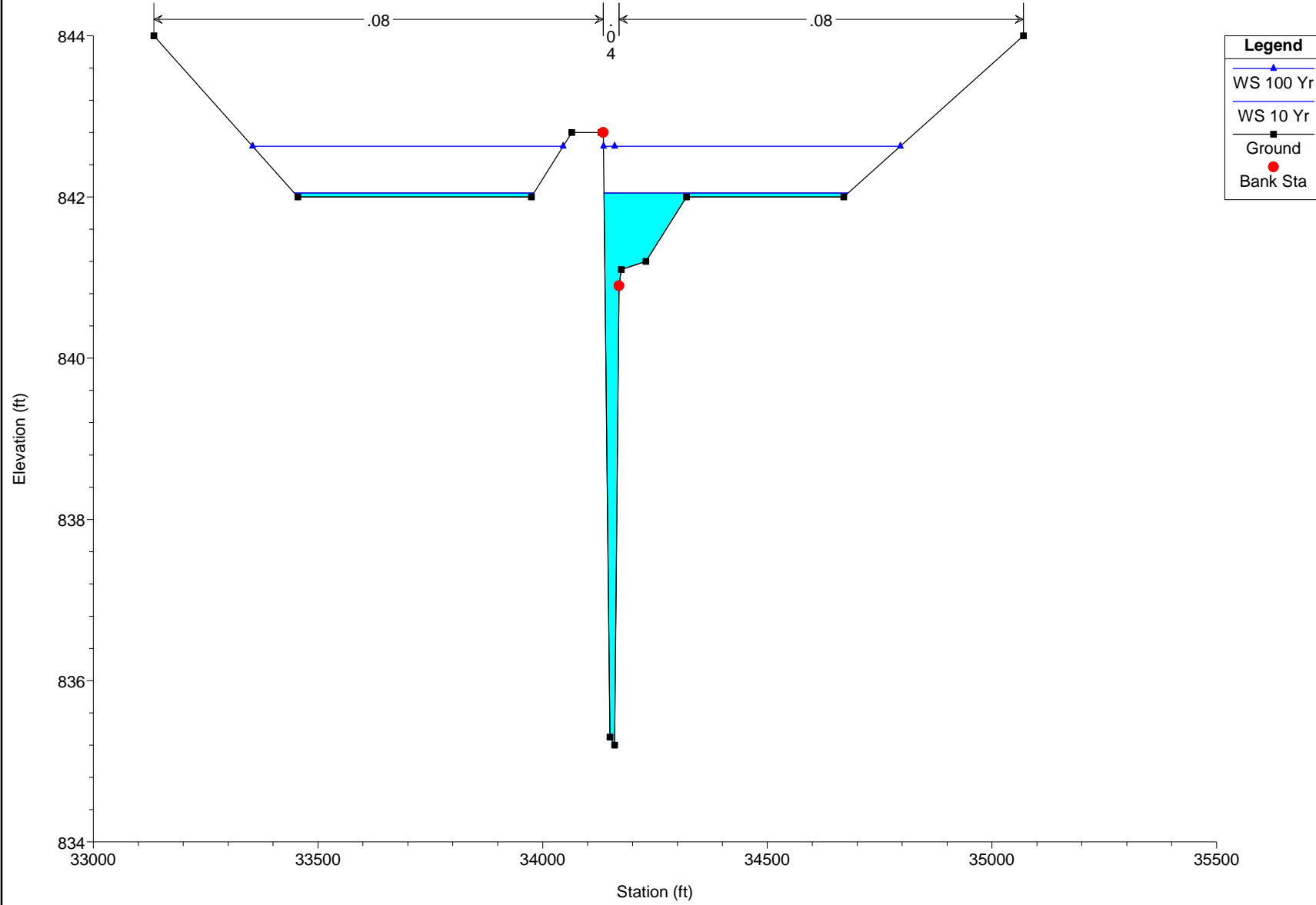
Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
337+90



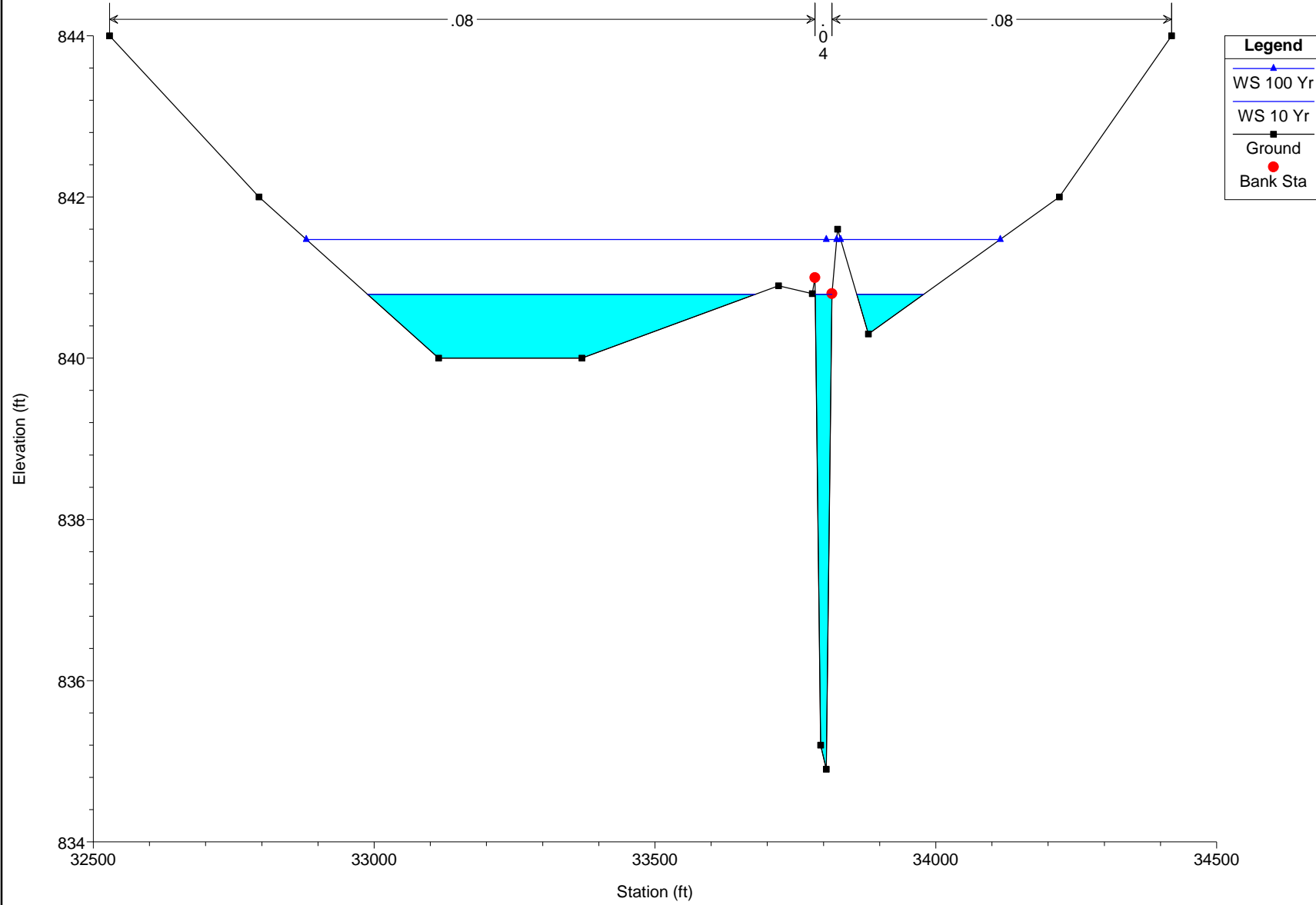
Hampshire Creek Plan: EXIST 12/15/2022
334+55



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
331+15

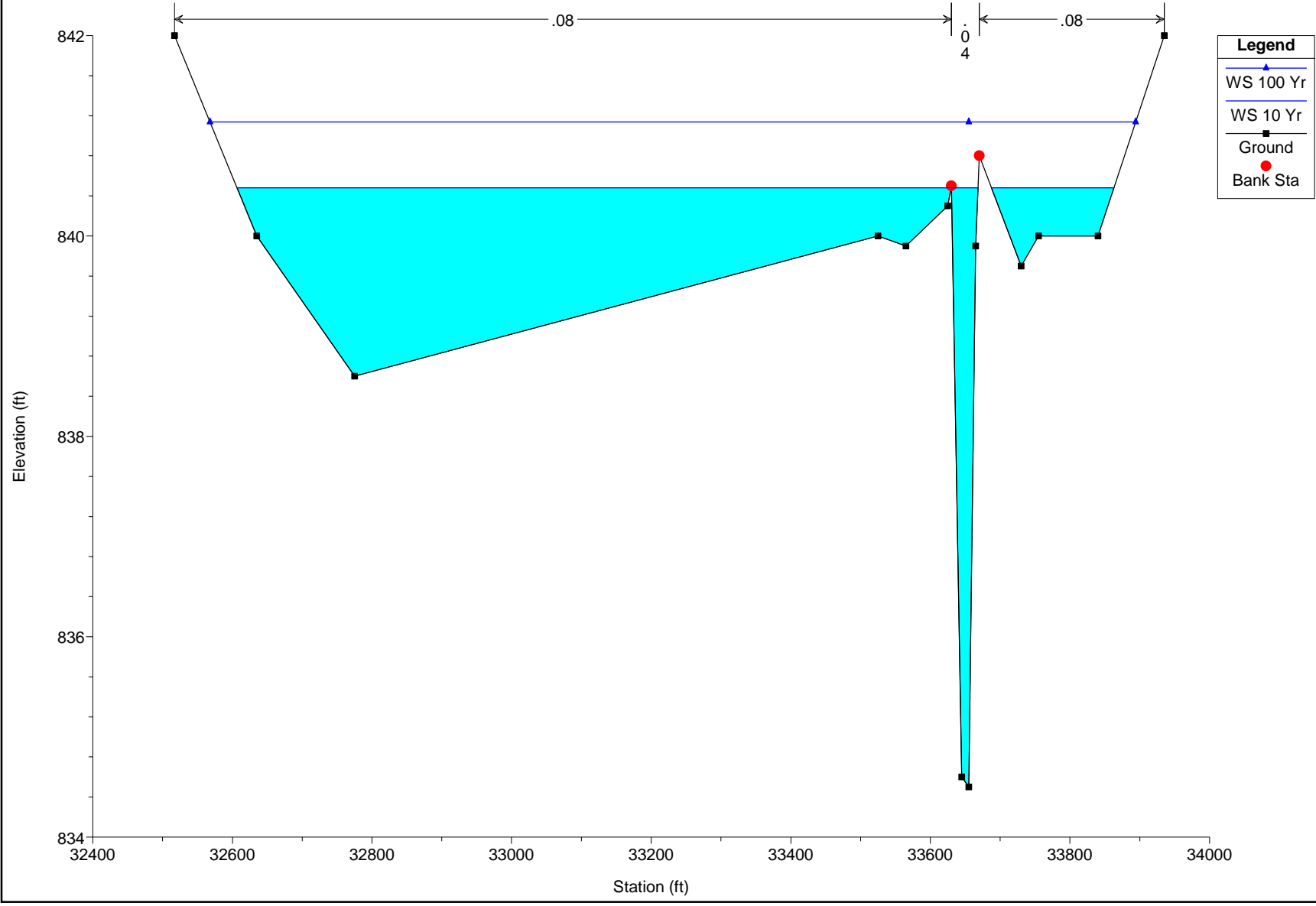


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

.08 | .08 | .04

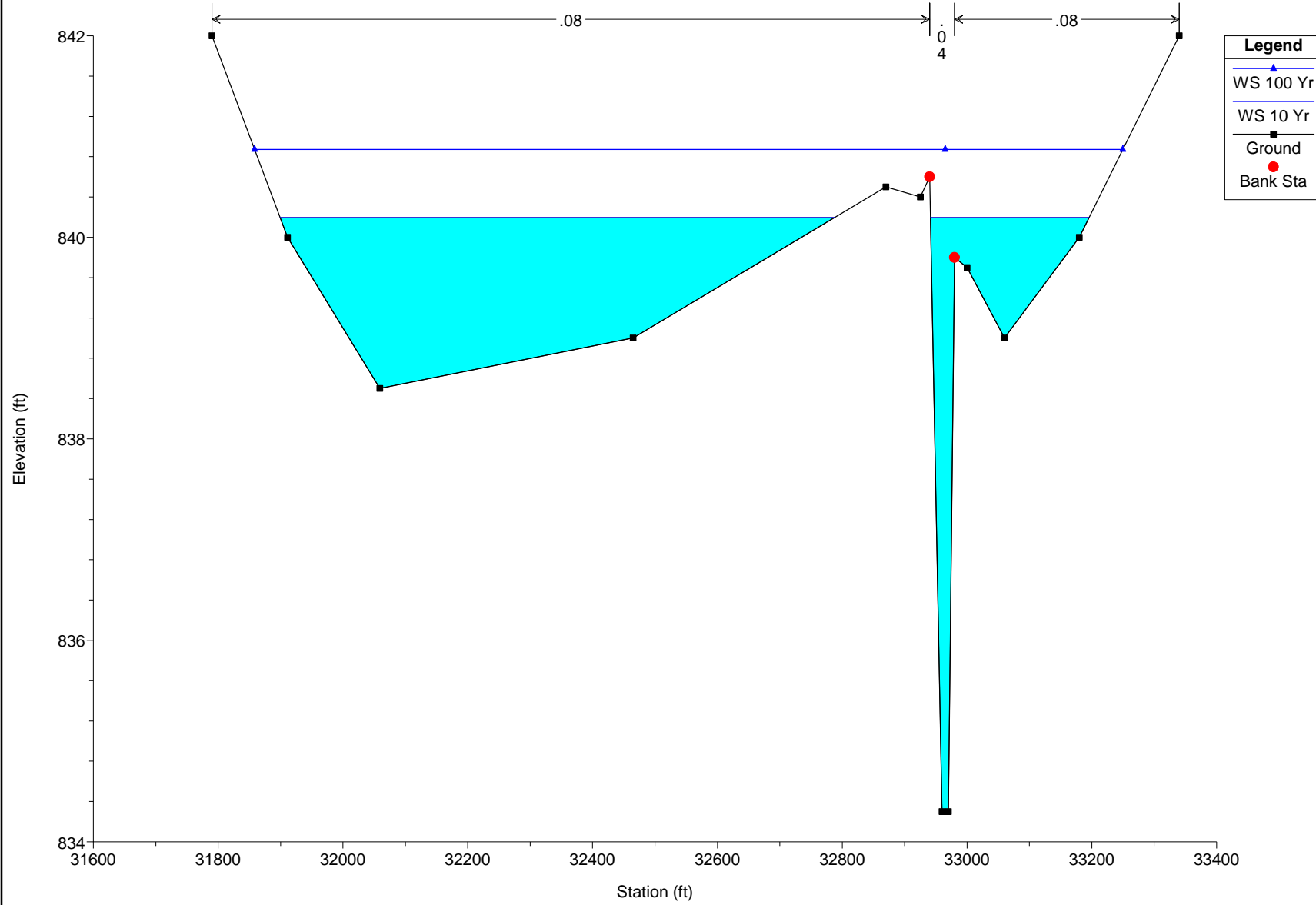
Hampshire Creek Plan: EXIST 12/15/2022
327+75



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

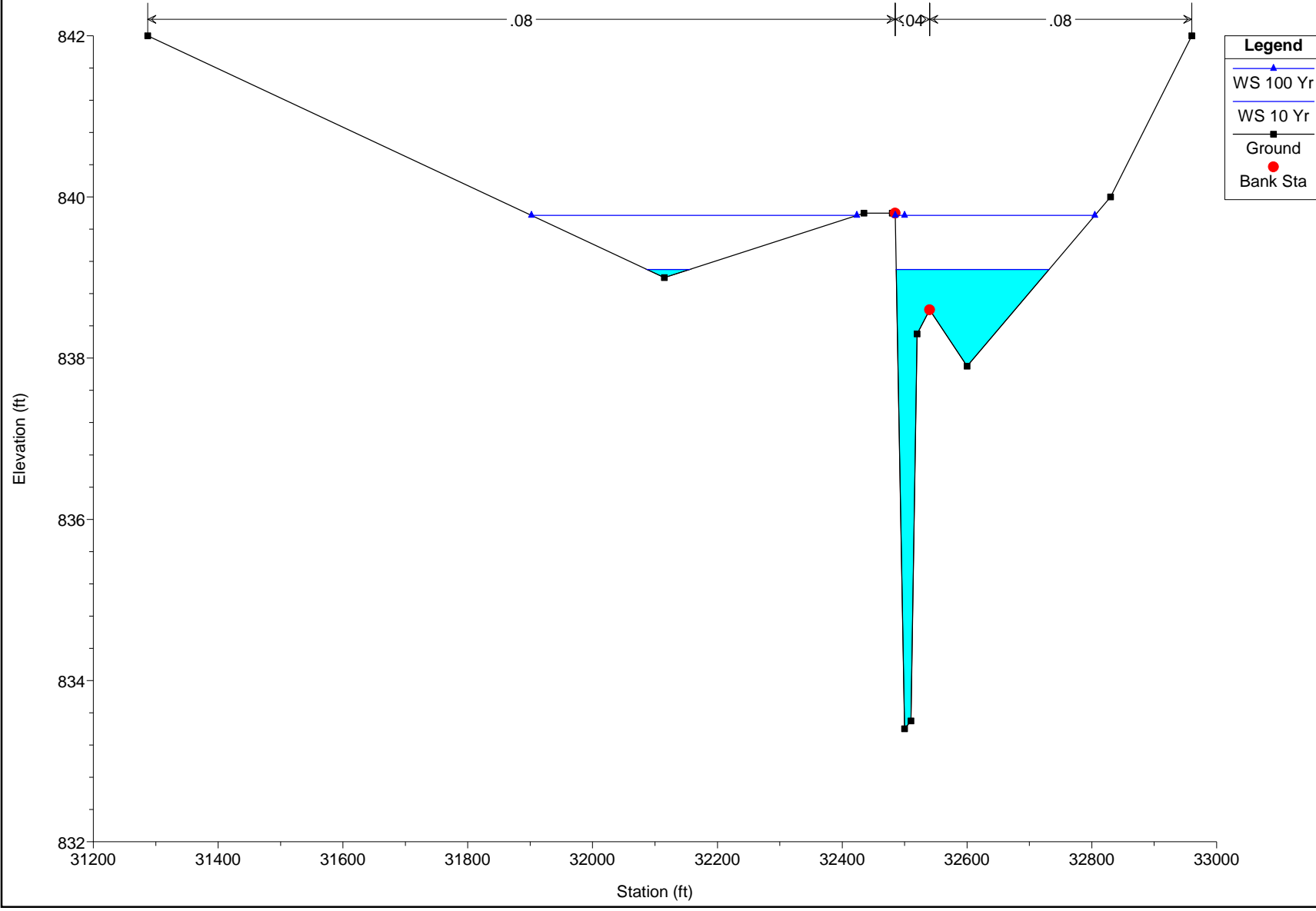
Hampshire Creek Plan: EXIST 12/15/2022
324+65



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

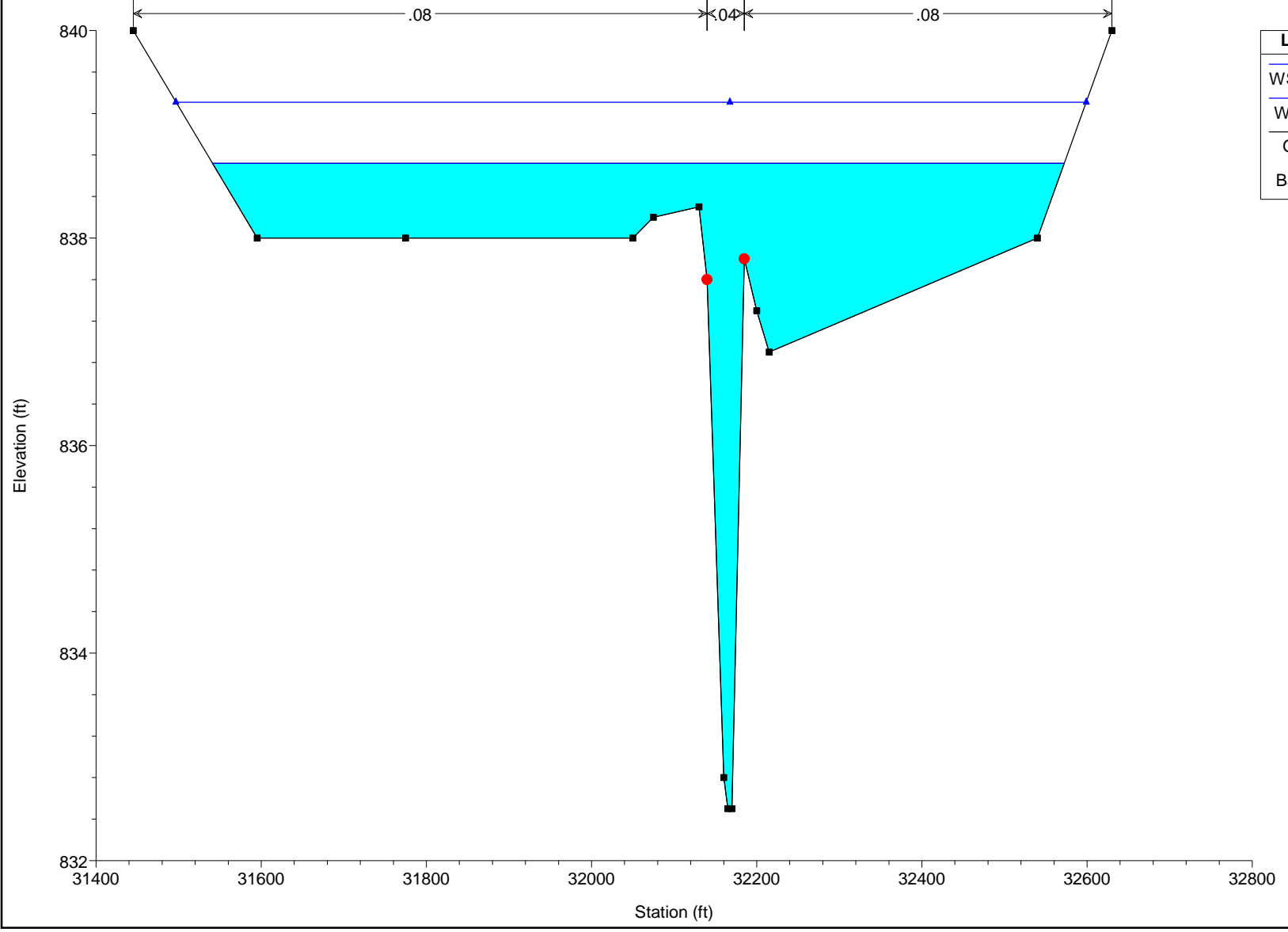
Hampshire Creek Plan: EXIST 12/15/2022
321+15



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
317+75

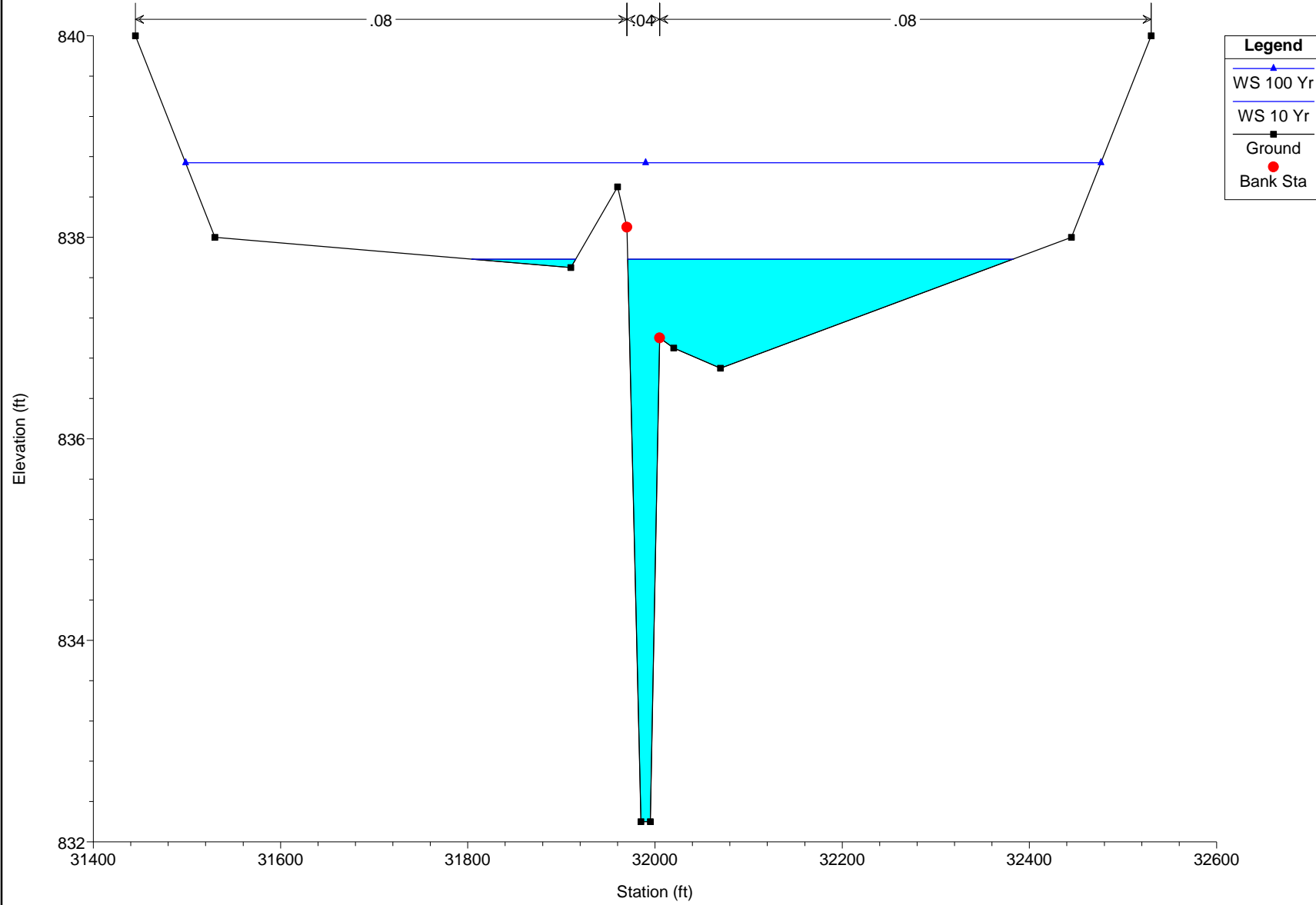


Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022

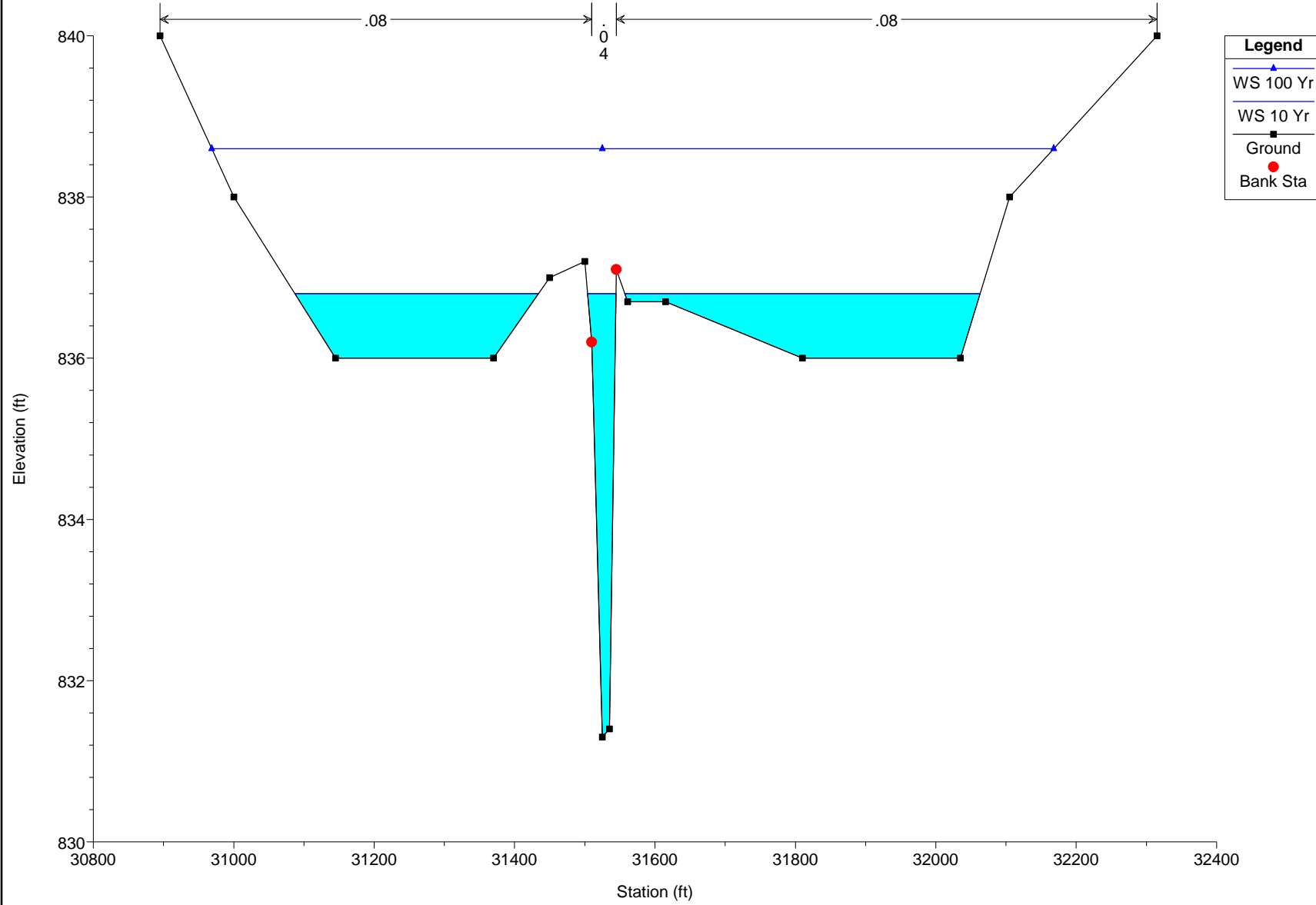
314+45



Legend

- WS 100 Yr
- WS 10 Yr
- Ground
- Bank Sta

Hampshire Creek Plan: EXIST 12/15/2022
311+45



HampCkNorth.rep

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```

X      X  XXXXXX   XXXX      XXXX      XX      XXXX
X      X  X       X   X      X   X      X   X      X
X      X  X       X   X      X   X      X   X      X
XXXXXXXX XXXX     X       XXX  XXXX     XXXXXX     XXXX
X      X  X       X   X      X   X      X   X      X
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```

PROJECT DATA

Project Title: Hampshire Creek
Project File : HampCkNorth.prj
Run Date and Time: 12/15/2022 11:53:32 AM

Project in English units

PLAN DATA

Plan Title: EXIST
Plan File : I:\456275\HYDRO\HECRAS\HampCkNorth.p01

Geometry Title: NORTH TRIB - EXIST
Geometry File : I:\456275\HYDRO\HECRAS\HampCkNorth.g02

Flow Title : EXISTING
Flow File : I:\456275\HYDRO\HECRAS\HampCkNorth.f03

Plan Summary Information:

Number of:	Cross Sections =	59	Multiple Openings =	0
	Culverts =	1	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: EXISTING
Flow File : I:\456275\HYDRO\HECRAS\HampCkNorth.f03

Flow Data (cfs)

River	Reach	RS	10 Yr	100 Yr
Hampshire Creek	North Trib.	43240	633	1344
Hampshire Creek	North Trib. - NE4140		332	790

HampCkNorth.rep

Hampshire Creek North Trib. EAST41500	461	1080
Hampshire Creek North Trib. EAST41414	461	1080
Hampshire Creek North Trib. EAST41380	516	1035
Hampshire Creek North Trib. EAST38284	684	1442
Hampshire Creek North Trib. EAST35430	783	1438
Hampshire Creek North Trib. EAST34450	968	1810

Boundary Conditions

River Downstream Reach Profile Upstream

Hampshire Creek North Trib. EAST10 Yr
 Known WS = 836.8
 Hampshire Creek North Trib. EAST100 Yr
 Known WS = 838.6

GEOMETRY DATA

Geometry Title: NORTH TRIB - EXIST
 Geometry File: I:\456275\HYDRO\HECRAS\HampCkNorth.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Hampshire Creek	North Trib.		EAST
Hampshire Creek	North Trib. - NE		EAST
Hampshire Creek	North Trib. EAST	EAST	

JUNCTION INFORMATION

Name: EAST
 Description:
 Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
Hampshire Creek North Trib.		to Hampshire Creek North Trib.	EAST	200	
Hampshire Creek North Trib. - NE		to Hampshire Creek North Trib.	EAST	200	

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 43240

INPUT

Description: 43+240432+40

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
43240	882	43282	880	43320	878	43335	877.8	43380	875.6
43395	870.9	43400	871	43412	877	43430	876.4	43468	874.9
43665	874	43840	873.5	44047	874	44217	876		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
43240	.08	43380	.04	43412	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	43380	43412		420	310	150	.1
Ineffective Flow			num=	1			.3

Sta L	Sta R	Elev	Permanent
43412	44217	877	F

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	876.71				
OB Vel Head (ft)	0.78	wt. n-Val.	0.080	0.040	
W.S. Elev (ft)	875.93	Reach Len. (ft)	420.00	310.00	
150.00 Crit w.s. (ft)	875.24	Flow Area (sq ft)	1.11	89.38	
E.G. Slope (ft/ft)	0.009123	Area (sq ft)	1.11	89.38	
1295.54 Q Total (cfs)	633.00	Flow (cfs)	0.59	632.41	
Top width (ft)	805.66	Top width (ft)	6.74	29.86	
769.07 Vel Total (ft/s)	6.99	Avg. Vel. (ft/s)	0.53	7.08	
Max Chl Dpth (ft)	5.03	Hydr. Depth (ft)	0.16	2.99	
Conv. Total (cfs)	6627.4	Conv. (cfs)	6.2	6621.2	
Length wtd. (ft)	313.23	wetted Per. (ft)	6.75	31.74	
Min Ch El (ft)	870.90	Shear (lb/sq ft)	0.09	1.60	
Alpha	1.02	Stream Power (lb/ft s)	44217.00	0.00	
0.00 Frctn Loss (ft)	2.45	Cum Volume (acre-ft)	8.35	2.74	
16.50 C & E Loss (ft)	0.19	Cum SA (acres)	5.06	0.96	
10.93					

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	877.01				
OB Vel Head (ft)	0.01	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	877.00	Reach Len. (ft)	420.00	310.00	
150.00 Crit w.s. (ft)	877.00	Flow Area (sq ft)	20.05	122.50	
2140.60 E.G. Slope (ft/ft)	0.000238	Area (sq ft)	20.05	122.50	
2140.60 Q Total (cfs)	1344.00	Flow (cfs)	4.52	164.39	
1175.09 Top width (ft)	865.64	Top width (ft)	28.64	32.00	
805.00 Vel Total (ft/s)	0.59	Avg. Vel. (ft/s)	0.23	1.34	
0.55 Max Chl Dpth (ft)	6.10	Hydr. Depth (ft)	0.70	3.83	
2.66 Conv. Total (cfs)	87206.5	Conv. (cfs)	293.4	10666.6	

76246.5				
Length wtd. (ft)	245.51	Wetted Per. (ft)	28.67	34.14
806.05				
Min Ch El (ft)	870.90	Shear (lb/sq ft)	0.01	0.05
0.04				
Alpha	1.40	Stream Power (lb/ft s)	44217.00	0.00
0.00				
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	14.77	3.64
27.96				
C & E Loss (ft)	0.02	Cum SA (acres)	5.76	1.04
12.64				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: The cross-section end points had to be extended vertically for the computed water surface.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 42930

INPUT

Description: 429+30

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42930	876	42950	874	43120	872.4	43180	873.5	43190	870.8
43195	871.1	43210	873.8	43235	873	43270	872.5	43350	874
43570	876								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
42930	.08	43180	.04	43210	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

43180	43210	300	300	300	.1	.3
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CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	874.06	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.14	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	873.92	Reach Len. (ft)	300.00	300.00	
300.00					
Crit w.s. (ft)		Flow Area (sq ft)	181.83	54.72	
108.27					
E.G. slope (ft/ft)	0.006796	Area (sq ft)	181.83	54.72	
108.27					
Q Total (cfs)	633.00	Flow (cfs)	243.75	246.84	
142.41					
Top width (ft)	387.87	Top width (ft)	221.93	30.00	
135.95					
Vel Total (ft/s)	1.84	Avg. Vel. (ft/s)	1.34	4.51	

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1.32				
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	0.82	1.82
0.80				
Conv. Total (cfs)	7678.8	Conv. (cfs)	2956.9	2994.3
1727.5				
Length wtd. (ft)	300.00	wetted Per. (ft)	221.94	30.61
135.98				
Min Ch El (ft)	870.80	Shear (lb/sq ft)	0.35	0.76
0.34				
Alpha	2.68	Stream Power (lb/ft s)	43570.00	0.00
0.00				
Frctn Loss (ft)	1.64	Cum Volume (acre-ft)	7.47	2.23
14.08				
C & E Loss (ft)	0.01	Cum SA (acres)	3.96	0.75
9.37				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.20	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	874.46	Reach Len. (ft)	300.00	300.00	
300.00					
Crit w.s. (ft)		Flow Area (sq ft)	306.93	70.94	
195.67					
E.G. slope (ft/ft)	0.007896	Area (sq ft)	306.93	70.94	
195.67					
Q Total (cfs)	1344.00	Flow (cfs)	605.86	410.11	
328.03					
Top width (ft)	455.75	Top width (ft)	234.64	30.00	
191.11					
Vel Total (ft/s)	2.34	Avg. vel. (ft/s)	1.97	5.78	
1.68					
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)	1.31	2.36	
1.02					
Conv. Total (cfs)	15124.6	Conv. (cfs)	6818.0	4615.1	
3691.5					
Length wtd. (ft)	300.00	wetted Per. (ft)	234.69	30.61	
191.14					
Min Ch El (ft)	870.80	Shear (lb/sq ft)	0.64	1.14	
0.50					
Alpha	2.30	Stream Power (lb/ft s)	43570.00	0.00	
0.00					
Frctn Loss (ft)	1.46	Cum volume (acre-ft)	13.20	2.95	
23.94					
C & E Loss (ft)	0.03	Cum SA (acres)	4.49	0.82	
10.93					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib.

RS: 42620

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INPUT

Description: 426+20

Station Elevation Data		num= 11							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42620	876	42650	874	42700	871.1	42755	871.8	42768	869.1
42771	869	42780	871.5	42810	870.5	42840	871.1	43145	872
43290	874								

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
42620	.08	42755	.04	42780	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	42755	42780		310	310	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	872.42					
Vel Head (ft)	0.10		wt. n-Val.	0.080	0.040	
0.080						
W.S. Elev (ft)	872.32		Reach Len. (ft)	310.00	310.00	
310.00						
Crit w.s. (ft)			Flow Area (sq ft)	60.66	52.74	
323.63						
E.G. slope (ft/ft)	0.004474		Area (sq ft)	60.66	52.74	
323.63						
Q Total (cfs)	633.00		Flow (cfs)	64.80	212.07	
356.13						
Top width (ft)	489.20		Top width (ft)	76.03	25.00	
388.18						
Vel Total (ft/s)	1.45		Avg. vel. (ft/s)	1.07	4.02	
1.10						
Max chl Dpth (ft)	3.32		Hydr. Depth (ft)	0.80	2.11	
0.83						
Conv. Total (cfs)	9463.8		Conv. (cfs)	968.8	3170.6	
5324.5						
Length wtd. (ft)	310.00		wetted Per. (ft)	76.07	25.62	
388.20						
Min Ch El (ft)	869.00		Shear (lb/sq ft)	0.22	0.57	
0.23						
Alpha	2.96		Stream Power (lb/ft s)	43290.00	0.00	
0.00						
Frctn Loss (ft)	1.17		Cum volume (acre-ft)	6.63	1.86	
12.59						
C & E Loss (ft)	0.01		Cum SA (acres)	2.93	0.56	
7.57						

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	873.17					
Vel Head (ft)	0.09		wt. n-Val.	0.080	0.040	
0.080						
W.S. Elev (ft)	873.09		Reach Len. (ft)	310.00	310.00	
310.00						
Crit w.s. (ft)			Flow Area (sq ft)	124.03	71.91	
642.61						
E.G. slope (ft/ft)	0.003282		Area (sq ft)	124.03	71.91	
642.61						
Q Total (cfs)	1344.00		Flow (cfs)	164.27	304.53	

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875.19				
Top width (ft)	558.02	Top width (ft)	89.25	25.00
443.77				
Vel Total (ft/s)	1.60	Avg. vel. (ft/s)	1.32	4.23
1.36				
Max chl Dpth (ft)	4.09	Hydr. Depth (ft)	1.39	2.88
1.45				
Conv. Total (cfs)	23459.8	Conv. (cfs)	2867.4	5315.7
15276.7				
Length wtd. (ft)	310.00	wetted Per. (ft)	89.31	25.62
443.80				
Min Ch El (ft)	869.00	Shear (lb/sq ft)	0.28	0.58
0.30				
Alpha	2.14	Stream Power (lb/ft s)	43290.00	0.00
0.00				
Frctn Loss (ft)	1.04	Cum volume (acre-ft)	11.71	2.46
21.05				
C & E Loss (ft)	0.00	Cum SA (acres)	3.38	0.63
8.74				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 42310

INPUT

Description: 423+10

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42310	876	42340	878	42385	880	42475	878	42490	877.1
42545	875.6	42555	867.4	42557	867.6	42580	872	42605	870
42640	868.8	42780	870	42940	872	43040	874	43090	876
44020	878	44045	880						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
42310	.08	42545	.04	42580	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
42545	42580	310	310	310	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	871.23	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.06	wt. n-Val.		0.040	
0.080					
w.S. Elev (ft)	871.17	Reach Len. (ft)	310.00	310.00	
310.00					
Crit w.S. (ft)		Flow Area (sq ft)		49.44	
374.44					
E.G. slope (ft/ft)	0.003242	Area (sq ft)		49.44	
374.44					
Q Total (cfs)	633.00	Flow (cfs)		156.57	
476.43					
Top width (ft)	308.96	Top width (ft)		25.29	
283.68					
Vel Total (ft/s)	1.49	Avg. vel. (ft/s)		3.17	
1.27					
Max chl Dpth (ft)	3.77	Hydr. Depth (ft)		1.96	
1.32					
Conv. Total (cfs)	11117.0	Conv. (cfs)		2749.8	

8367.3				
Length wtd. (ft)	310.00	Wetted Per. (ft)		26.99
283.76				
Min Ch El (ft)	867.40	Shear (lb/sq ft)		0.37
0.27				
Alpha	1.66	Stream Power (lb/ft s)	44045.00	0.00
0.00				
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	6.42	1.49
10.11				
C & E Loss (ft)	0.01	Cum SA (acres)	2.66	0.38
5.18				

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.08	wt. n-Val.		0.040	
0.080					
W.S. Elev (ft)	872.06	Reach Len. (ft)	310.00	310.00	
310.00					
Crit w.s. (ft)		Flow Area (sq ft)		74.26	
660.78					
E.G. slope (ft/ft)	0.003398	Area (sq ft)		74.26	
660.78					
Q Total (cfs)	1344.00	Flow (cfs)		277.43	
1066.57					
Top width (ft)	393.55	Top width (ft)		30.68	
362.88					
Vel Total (ft/s)	1.83	Avg. vel. (ft/s)		3.74	
1.61					
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)		2.42	
1.82					
Conv. Total (cfs)	23057.6	Conv. (cfs)		4759.6	
18298.0					
Length wtd. (ft)	310.00	Wetted Per. (ft)		32.77	
362.99					
Min Ch El (ft)	867.40	Shear (lb/sq ft)		0.48	
0.39					
Alpha	1.48	Stream Power (lb/ft s)	44045.00	0.00	
0.00					
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	11.27	1.94	
16.41					
C & E Loss (ft)	0.01	Cum SA (acres)	3.06	0.43	
5.87					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 42000

INPUT

Description: 420+00

Station	Elevation	Sta	Elev	num=	13	Sta	Elev	Sta	Elev	Sta	Elev
42000	872	42100	873	42180	872	42230	869.8	42290	871		

42300 866.3 42302 866 42325 871.9 42350 869.8 42380 868.3
 42420 868.4 42710 870 42765 872

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 42000 .08 42290 .04 42325 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 42290 42325 300 300 300 .1 .3

CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)		Element	Left OB	Channel	Right
	870.62					
0.080	Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
300.00	W.S. Elev (ft)	870.59	Reach Len. (ft)	300.00	300.00	
545.93	Crit w.s. (ft)		Flow Area (sq ft)	22.48	69.42	
545.93	E.G. slope (ft/ft)	0.001313	Area (sq ft)	22.48	69.42	
463.39	Q Total (cfs)	633.00	Flow (cfs)	8.12	161.50	
385.48	Top width (ft)	471.66	Top width (ft)	57.18	29.00	
0.85	Vel Total (ft/s)	0.99	Avg. vel. (ft/s)	0.36	2.33	
1.42	Max Chl Dpth (ft)	4.59	Hydr. Depth (ft)	0.39	2.39	
12785.8	Conv. Total (cfs)	17465.8	Conv. (cfs)	224.0	4456.1	
385.57	Length wtd. (ft)	300.00	wetted Per. (ft)	57.20	30.56	
0.12	Min Ch El (ft)	866.00	Shear (lb/sq ft)	0.03	0.19	
0.00	Alpha	1.94	Stream Power (lb/ft s)	42765.00	0.00	
6.84	Frctn Loss (ft)	0.15	Cum volume (acre-ft)	6.34	1.07	
2.80	C & E Loss (ft)	0.01	Cum SA (acres)	2.46	0.19	

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

OB	E.G. Elev (ft)		Element	Left OB	Channel	Right
	871.48					
0.080	Vel Head (ft)	0.04	wt. n-Val.	0.080	0.040	
300.00	W.S. Elev (ft)	871.44	Reach Len. (ft)	300.00	300.00	
889.24	Crit w.s. (ft)		Flow Area (sq ft)	92.92	96.15	
889.24	E.G. slope (ft/ft)	0.001398	Area (sq ft)	92.92	96.15	
1019.33	Q Total (cfs)	1344.00	Flow (cfs)	62.57	262.10	
419.11	Top width (ft)	549.57	Top width (ft)	97.26	33.20	
1.15	Vel Total (ft/s)	1.25	Avg. vel. (ft/s)	0.67	2.73	

Max Chl Dpth (ft)	5.44	HampCkNorth.rep Hydr. Depth (ft)	0.96	2.90
2.12 Conv. Total (cfs)	35950.8	Conv. (cfs)	1673.7	7011.0
27266.2 Length wtd. (ft)	300.00	wetted Per. (ft)	97.31	34.96
419.25 Min Ch El (ft)	866.00	Shear (lb/sq ft)	0.08	0.24
0.19 Alpha	1.59	Stream Power (lb/ft s)	42765.00	0.00
0.00 Frctn Loss (ft)	0.16	Cum volume (acre-ft)	10.94	1.33
10.90 C & E Loss (ft)	0.01	Cum SA (acres)	2.71	0.20
3.09				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. RS: 41700

INPUT

Description: 41+700

Station Elevation Data		num=	16						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41197	872	41275	870	41365	868	41472	870	41700	870
41825	870	41860	867.8	41915	868.1	41925	864.6	41930	864.6
41940	868.9	41970	868	42000	867.4	42030	868	42340	870
42460	872								

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
41197	.08	41915	.04	41940	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
41915	41940	0	0	0	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	870.46	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.01	wt. n-Val.	0.080	0.040	
0.080 w.s. Elev (ft)	870.45	Reach Len. (ft)	200.00	200.00	
200.00 Crit w.s. (ft)		Flow Area (sq ft)	638.84	107.20	
679.69 E.G. Slope (ft/ft)	0.000264	Area (sq ft)	638.84	107.20	
679.69 Q Total (cfs)	633.00	Flow (cfs)	189.07	164.31	
279.62 Top width (ft)	1109.34	Top width (ft)	657.47	25.00	
426.88 Vel Total (ft/s)	0.44	Avg. Vel. (ft/s)	0.30	1.53	
0.41 Max Chl Dpth (ft)	5.85	Hydr. Depth (ft)	0.97	4.29	
1.59 Conv. Total (cfs)	38967.9	Conv. (cfs)	11639.3	10115.1	
17213.5 Length wtd. (ft)	200.00	wetted Per. (ft)	657.59	26.48	
426.91 Min Ch El (ft)	864.60	Shear (lb/sq ft)	0.02	0.07	

0.03	Alpha	3.61	Stream Power (lb/ft s)	42460.00	0.00
0.00	Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	4.06	0.46
2.62	C & E Loss (ft)	0.00	Cum SA (acres)		

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	871.31	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.01	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	871.30	Reach Len. (ft)	200.00	200.00	
200.00					
Crit w.s. (ft)		Flow Area (sq ft)	1211.34	128.43	
1063.91					
E.G. slope (ft/ft)	0.000282	Area (sq ft)	1211.34	128.43	
1063.91					
Q Total (cfs)	1344.00	Flow (cfs)	549.13	229.43	
565.45					
Top width (ft)	1193.43	Top width (ft)	690.59	25.00	
477.84					
Vel Total (ft/s)	0.56	Avg. vel. (ft/s)	0.45	1.79	
0.53					
Max Chl Dpth (ft)	6.70	Hydr. Depth (ft)	1.75	5.14	
2.23					
Conv. Total (cfs)	80083.0	Conv. (cfs)	32720.1	13670.4	
33692.5					
Length wtd. (ft)	200.00	wetted Per. (ft)	690.72	26.48	
477.88					
Min Ch El (ft)	864.60	Shear (lb/sq ft)	0.03	0.09	
0.04					
Alpha	2.39	Stream Power (lb/ft s)	42460.00	0.00	
0.00					
Frctn Loss (ft)	0.04	Cum volume (acre-ft)	6.45	0.56	
4.17					
C & E Loss (ft)	0.00	Cum SA (acres)			

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 4140

INPUT

Description: 41+40

Station Elevation Data		num=	6						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	876	150	874	250	872	300	871.6	335	872
460	878								

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
100	.08	250	.04	335	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
250	335	580	440	360	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	873.15	Element	Left OB	Channel	Right
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OB				
0.080	Vel Head (ft)	0.12	wt. n-val.	0.080 0.040
360.00	W.S. Elev (ft)	873.04	Reach Len. (ft)	580.00 440.00
11.20	Crit w.s. (ft)		Flow Area (sq ft)	26.89 105.16
11.20	E.G. Slope (ft/ft)	0.004484	Area (sq ft)	26.89 105.16
8.99	Q Total (cfs)	332.00	Flow (cfs)	21.58 301.43
21.61	Top width (ft)	158.46	Top width (ft)	51.86 85.00
0.80	Vel Total (ft/s)	2.32	Avg. Vel. (ft/s)	0.80 2.87
0.52	Max chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.52 1.24
134.2	Conv. Total (cfs)	4958.1	Conv. (cfs)	322.3 4501.5
21.63	Length wtd. (ft)	463.76	wetted Per. (ft)	51.87 85.00
0.14	Min ch El (ft)	871.60	Shear (lb/sq ft)	0.15 0.35
0.00	Alpha	1.40	Stream Power (lb/ft s)	460.00 0.00
16.99	Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	22.55 15.78
13.04	C & E Loss (ft)	0.03	Cum SA (acres)	19.80 7.24

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB						
0.080	Vel Head (ft)	0.21	wt. n-val.	0.080	0.040	
360.00	W.S. Elev (ft)	873.75	Reach Len. (ft)	580.00	440.00	
31.92	Crit w.s. (ft)		Flow Area (sq ft)	76.62	165.80	
31.92	E.G. Slope (ft/ft)	0.004753	Area (sq ft)	76.62	165.80	
37.38	Q Total (cfs)	790.00	Flow (cfs)	89.76	662.87	
36.47	Top width (ft)	209.00	Top width (ft)	87.53	85.00	
1.17	Vel Total (ft/s)	2.88	Avg. Vel. (ft/s)	1.17	4.00	
0.88	Max chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.88	1.95	
542.1	Conv. Total (cfs)	11459.4	Conv. (cfs)	1302.0	9615.3	
36.51	Length wtd. (ft)	480.16	wetted Per. (ft)	87.55	85.00	
0.26	Min ch El (ft)	871.60	Shear (lb/sq ft)	0.26	0.58	
0.00	Alpha	1.64	Stream Power (lb/ft s)	460.00	0.00	
32.21	Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	47.74	23.19	
16.08	C & E Loss (ft)	0.06	Cum SA (acres)	26.71	7.24	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 3700

INPUT

Description: 37+00

Station Elevation Data		num= 10		Sta		Elev		Sta		Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	335	872.1	580	872	705	870.65	760	870.6		
800	870.55	830	870.6	860	871.38	895	873.03	1010	878		

Manning's n Values		num= 3		Sta		n Val	
Sta	n Val	Sta	n Val	Sta	n Val		
100	.08	760	.04	830	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	760	830		330 230	200	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	872.32	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	872.29	Reach Len. (ft)	330.00	230.00	
200.00					
Crit w.s. (ft)		Flow Area (sq ft)	274.59	120.26	
47.93					
E.G. Slope (ft/ft)	0.000918	Area (sq ft)	274.59	120.26	
47.93					
Q Total (cfs)	332.00	Flow (cfs)	111.37	194.19	
26.44					
Top width (ft)	568.24	Top width (ft)	448.88	70.00	
49.37					
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.41	1.61	
0.55					
Max chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.61	1.72	
0.97					
Conv. Total (cfs)	10956.5	Conv. (cfs)	3675.4	6408.5	
872.6					
Length wtd. (ft)	276.79	wetted Per. (ft)	448.89	70.00	
49.40					
Min ch El (ft)	870.55	Shear (lb/sq ft)	0.04	0.10	
0.06					
Alpha	2.85	Stream Power (lb/ft s)	1010.00	0.00	
0.00					
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	20.54	14.64	
16.74					
C & E Loss (ft)	0.01	Cum SA (acres)	16.47	6.46	
12.75					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	873.39	Element	Left OB	Channel	Right
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OB				
0.080	Vel Head (ft)	0.02	wt. n-val.	0.080 0.040
200.00	W.S. Elev (ft)	873.37	Reach Len. (ft)	330.00 230.00
113.77	Crit w.s. (ft)		Flow Area (sq ft)	831.77 195.89
113.77	E.G. slope (ft/ft)	0.000459	Area (sq ft)	831.77 195.89
60.84	Q Total (cfs)	790.00	Flow (cfs)	419.62 309.54
72.95	Top width (ft)	725.46	Top width (ft)	582.51 70.00
0.53	Vel Total (ft/s)	0.69	Avg. vel. (ft/s)	0.50 1.58
1.56	Max chl Dpth (ft)	2.82	Hydr. Depth (ft)	1.43 2.80
2840.3	Conv. Total (cfs)	36881.7	Conv. (cfs)	19590.1 14451.3
73.00	Length wtd. (ft)	289.44	wetted Per. (ft)	582.52 70.00
0.04	Min ch El (ft)	870.55	shear (lb/sq ft)	0.04 0.08
0.00	Alpha	2.37	Stream Power (lb/ft s)	1010.00 0.00
31.60	Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	41.70 21.37
15.63	C & E Loss (ft)	0.00	Cum SA (acres)	22.25 6.46

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 3470

INPUT

Description: 34+70

Station Elevation Data		num=	11						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	130	872	275	872	505	870.7	920	870.43
970	870.36	1005	870.37	1035	870.93	1075	872.67	1125	876.98
1200	878								

Manning's n Values		num=	3				
Sta	n Val	Sta	n Val	Sta	n Val		
100	.08	920	.04	1035	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	920	1035		380 345	280	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)	872.24	Element	Left OB	Channel	Right
0.080	Vel Head (ft)	0.00	wt. n-val.	0.080	0.040	
280.00	W.S. Elev (ft)	872.24	Reach Len. (ft)	380.00	345.00	
19.70	Crit w.s. (ft)		Flow Area (sq ft)	934.27	205.46	
19.70	E.G. slope (ft/ft)	0.000116	Area (sq ft)	934.27	205.46	

Q Total (cfs)	332.00	HampCkNorth.rep Flow (cfs)	208.14	120.89
2.96 Top width (ft)	938.68	Top width (ft)	793.59	115.00
30.09 Vel Total (ft/s)	0.29	Avg. vel. (ft/s)	0.22	0.59
0.15 Max chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.18	1.79
0.65 Conv. Total (cfs)	30860.9	Conv. (cfs)	19347.6	11237.7
275.6 Length wtd. (ft)	355.51	wetted Per. (ft)	793.60	115.01
30.12 Min ch El (ft)	870.36	Shear (lb/sq ft)	0.01	0.01
0.00 Alpha	1.92	Stream Power (lb/ft s)	1200.00	0.00
0.00 Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	15.96	13.78
16.59 C & E Loss (ft)	0.01	Cum SA (acres)	11.76	5.97
12.56				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB Vel Head (ft)	873.34	wt. n-val.	0.080	0.040	
0.080 w.s. Elev (ft)	873.33	Reach Len. (ft)	380.00	345.00	
280.00 Crit w.s. (ft)		Flow Area (sq ft)	1812.27	331.39	
63.92 E.G. Slope (ft/ft)	0.000089	Area (sq ft)	1812.27	331.39	
63.92 Q Total (cfs)	790.00	Flow (cfs)	541.85	234.59	
13.57 Top width (ft)	972.71	Top width (ft)	810.01	115.00	
47.70 Vel Total (ft/s)	0.36	Avg. vel. (ft/s)	0.30	0.71	
0.21 Max chl Dpth (ft)	2.97	Hydr. Depth (ft)	2.24	2.88	
1.34 Conv. Total (cfs)	83948.9	Conv. (cfs)	57579.0	24928.3	
1441.7 Length wtd. (ft)	356.02	wetted Per. (ft)	810.06	115.01	
47.77 Min ch El (ft)	870.36	Shear (lb/sq ft)	0.01	0.02	
0.01 Alpha	1.65	Stream Power (lb/ft s)	1200.00	0.00	
0.00 Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	31.68	19.98	
31.20 C & E Loss (ft)	0.01	Cum SA (acres)	16.97	5.97	
15.35					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 3125

INPUT

Description: 31+25

Station Elevation Data		num= 9	
Sta	Elev	Sta	Elev
100	875.2	250	874
450	871.32	515	875.72
280	873.78	330	871.82
580	878	705	880
395	869.93		

Manning's n Values		num= 3	
Sta	n Val	Sta	n Val
100	.08	330	.04
450	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	330	450		370	235	150	.1
							.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	872.12					
Vel Head (ft)	0.07	wt. n-Val.		0.080	0.040	
0.080		Reach Len. (ft)		370.00	235.00	
W.S. Elev (ft)	872.05	Flow Area (sq ft)		0.70	155.28	
150.00		Area (sq ft)		0.70	155.28	
Crit w.s. (ft)		Flow (cfs)		0.15	330.02	
3.98		Top width (ft)		5.98	120.00	
E.G. Slope (ft/ft)	0.002323	Avg. Vel. (ft/s)		0.21	2.13	
3.98		Hydr. Depth (ft)		0.12	1.29	
Q Total (cfs)	332.00	Conv. (cfs)		3.1	6847.7	
1.83		wetted Per. (ft)		5.98	120.05	
Top width (ft)	136.83	Shear (lb/sq ft)		0.02	0.19	
10.85		Stream Power (lb/ft s)		705.00	0.00	
Vel Total (ft/s)	2.08	Cum Volume (acre-ft)		11.88	12.35	
0.46		Cum SA (acres)		8.28	5.04	
Max chl Dpth (ft)	2.12					
0.37						
Conv. Total (cfs)	6888.7					
37.9						
Length wtd. (ft)	236.79					
10.87						
Min Ch El (ft)	869.93					
0.05						
Alpha	1.04					
0.00						
Frctn Loss (ft)	0.03					
16.51						
C & E Loss (ft)	0.02					
12.43						

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	873.24					
Vel Head (ft)	0.11	wt. n-Val.		0.080	0.040	
0.080		Reach Len. (ft)		370.00	235.00	
W.S. Elev (ft)	873.14	Flow Area (sq ft)		22.15	285.27	
150.00		Area (sq ft)		22.15	285.27	
Crit w.s. (ft)						
24.40						
E.G. slope (ft/ft)	0.001623					
24.40						

Q Total (cfs)	790.00	HampCkNorth.rep Flow (cfs)	12.54	760.35
17.11 Top width (ft)	180.47	Top width (ft)	33.61	120.00
26.85 Vel Total (ft/s)	2.38	Avg. Vel. (ft/s)	0.57	2.67
0.70 Max chl Dpth (ft)	3.21	Hydr. Depth (ft)	0.66	2.38
0.91 Conv. Total (cfs)	19607.5	Conv. (cfs)	311.3	18871.6
424.7 Length wtd. (ft)	238.46	wetted Per. (ft)	33.64	120.05
26.91 Min ch El (ft)	869.93	Shear (lb/sq ft)	0.07	0.24
0.09 Alpha	1.21	Stream Power (lb/ft s)	705.00	0.00
0.00 Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	23.68	17.53
30.91 C & E Loss (ft)	0.03	Cum SA (acres)	13.29	5.04
15.11				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2890

INPUT

Description: 28+90

Station Elevation Data	num=	10							
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev									
100 875.9 220 874 300 872 390 870 500 868.8									
570 869.7 650 870 740 876 820 878 920 880									

Manning's n Values	num=	3			
Sta n Val Sta n Val Sta n Val					
100 .08 390 .04 650 .08					

Bank Sta: Left Right	Lengths: Left Channel Right	Coeff Contr.	Expan.
390 650	240 240 200	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	872.07	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.00	wt. n-Val.	0.080	0.040	
0.080 w.s. Elev (ft)	872.07	Reach Len. (ft)	240.00	240.00	
200.00 Crit w.s. (ft)		Flow Area (sq ft)	96.16	668.04	
32.06 E.G. Slope (ft/ft)	0.000046	Area (sq ft)	96.16	668.04	
32.06 Q Total (cfs)	332.00	Flow (cfs)	12.40	315.48	
4.12 Top width (ft)	383.71	Top width (ft)	92.70	260.00	
31.01 Vel Total (ft/s)	0.42	Avg. Vel. (ft/s)	0.13	0.47	
0.13 Max chl Dpth (ft)	3.27	Hydr. Depth (ft)	1.04	2.57	
1.03 Conv. Total (cfs)	48989.8	conv. (cfs)	1830.0	46552.0	
607.8					

Length wtd. (ft)	236.91	HampCkNorth.rep Wetted Per. (ft)	92.72	260.01
31.08 Min Ch El (ft)	868.80	Shear (lb/sq ft)	0.00	0.01
0.00 Alpha	1.22	Stream Power (lb/ft s)	920.00	0.00
0.00 Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	11.47	10.13
16.45 C & E Loss (ft)	0.00	Cum SA (acres)	7.86	4.02
12.36				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	873.17	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.01	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	873.16	Reach Len. (ft)	240.00	240.00	
200.00 Crit w.s. (ft)		Flow Area (sq ft)	221.06	951.62	
74.80 E.G. Slope (ft/ft)	0.000075	Area (sq ft)	221.06	951.62	
74.80 Q Total (cfs)	790.00	Flow (cfs)	48.92	724.84	
16.24 Top width (ft)	443.70	Top width (ft)	136.33	260.00	
47.37 Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.22	0.76	
0.22 Max chl Dpth (ft)	4.36	Hydr. Depth (ft)	1.62	3.66	
1.58 Conv. Total (cfs)	91501.6	Conv. (cfs)	5666.1	83954.2	
1881.3 Length wtd. (ft)	236.84	wetted Per. (ft)	136.36	260.01	
47.48 Min Ch El (ft)	868.80	Shear (lb/sq ft)	0.01	0.02	
0.01 Alpha	1.34	Stream Power (lb/ft s)	920.00	0.00	
0.00 Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	22.65	14.20	
30.74 C & E Loss (ft)	0.01	Cum SA (acres)	12.57	4.02	
14.98					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2650

INPUT

Description: 26+50

Station	Elevation	Data	num=	10						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
100	873.7	290	872.7	390	872	480	870.59	510	870.62	
545	869.45	560	869.64	575	870	600	872	760	878	

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 100 .08 510 .04 560 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 510 560 175 230 320 .1 .3

CROSS SECTION OUTPUT Profile #10 Yr

	872.04	Element	Left OB	Channel	Right
E.G. Elev (ft)	872.04	Element			
OB Vel Head (ft)	0.05	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	871.99	Reach Len. (ft)	175.00	230.00	
320.00 Crit w.s. (ft)		Flow Area (sq ft)	103.58	104.88	
57.13 E.G. slope (ft/ft)	0.001226	Area (sq ft)	103.58	104.88	
57.13 Q Total (cfs)	332.00	Flow (cfs)	61.37	223.45	
47.18 Top width (ft)	208.90	Top width (ft)	119.08	50.00	
39.82 Vel Total (ft/s)	1.25	Avg. vel. (ft/s)	0.59	2.13	
0.83 Max chl Dpth (ft)	2.54	Hydr. Depth (ft)	0.87	2.10	
1.43 Conv. Total (cfs)	9483.1	Conv. (cfs)	1752.9	6382.4	
1347.7 Length wtd. (ft)	229.81	wetted Per. (ft)	119.09	50.02	
39.90 Min ch El (ft)	869.45	Shear (lb/sq ft)	0.07	0.16	
0.11 Alpha	2.06	Stream Power (lb/ft s)	760.00	0.00	
0.00 Frctn Loss (ft)	0.03	Cum volume (acre-ft)	10.92	8.00	
16.25 C & E Loss (ft)	0.01	Cum SA (acres)	7.27	3.16	
12.20					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	873.11	Element	Left OB	Channel	Right
E.G. Elev (ft)	873.11	Element			
OB Vel Head (ft)	0.08	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	873.03	Reach Len. (ft)	175.00	230.00	
320.00 Crit w.s. (ft)		Flow Area (sq ft)	307.63	157.17	
113.14 E.G. slope (ft/ft)	0.001347	Area (sq ft)	307.63	157.17	
113.14 Q Total (cfs)	790.00	Flow (cfs)	221.69	459.62	
108.70 Top width (ft)	400.46	Top width (ft)	282.96	50.00	
67.50 Vel Total (ft/s)	1.37	Avg. vel. (ft/s)	0.72	2.92	
0.96 Max chl Dpth (ft)	3.58	Hydr. Depth (ft)	1.09	3.14	
1.68 Conv. Total (cfs)	21528.2	conv. (cfs)	6041.2	12525.0	
2962.0					

Length wtd. (ft)	228.14	HampCkNorth.rep Wetted Per. (ft)	282.97	50.02
67.61 Min Ch El (ft)	869.45	Shear (lb/sq ft)	0.09	0.26
0.14 Alpha	2.81	Stream Power (lb/ft s)	760.00	0.00
0.00 Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	21.19	11.14
30.31 C & E Loss (ft)	0.02	Cum SA (acres)	11.42	3.16
14.72				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2420

INPUT

Description: 24+20

Station Elevation Data		num=	13								
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	873.7	210	872	370	870	460	868.53	495	868.39		
550	868.67	575	868.28	595	868.91	645	869.04	710	870		
820	872	870	874	960	875.3						

Manning's n Values		num=	3				
Sta	n Val	Sta	n Val	Sta	n Val		
100	.08	550	.04	595	.08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
550	595	140	340	400	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	871.99	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.00	wt. n-Val.	0.080	0.040	
0.080 w.s. Elev (ft)	871.99	Reach Len. (ft)	140.00	340.00	
400.00 Crit w.s. (ft)		Flow Area (sq ft)	716.46	155.64	
419.52 E.G. Slope (ft/ft)	0.000050	Area (sq ft)	716.46	155.64	
419.52 Q Total (cfs)	332.00	Flow (cfs)	154.93	93.45	
83.62 Top width (ft)	608.24	Top width (ft)	338.96	45.00	
224.28 Vel Total (ft/s)	0.26	Avg. Vel. (ft/s)	0.22	0.60	
0.20 Max chl Dpth (ft)	3.71	Hydr. Depth (ft)	2.11	3.46	
1.87 Conv. Total (cfs)	46965.4	Conv. (cfs)	21916.9	13220.0	
11828.4 Length wtd. (ft)	275.13	wetted Per. (ft)	338.98	45.01	
224.31 Min Ch El (ft)	868.28	Shear (lb/sq ft)	0.01	0.01	
0.01 Alpha	2.02	Stream Power (lb/ft s)	960.00	0.00	
0.00 Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	9.27	7.31	
14.50 C & E Loss (ft)	0.00	Cum SA (acres)	6.35	2.91	

11.23

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	873.04				
OB					
Vel Head (ft)	0.00	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	873.03	Reach Len. (ft)	140.00	340.00	
400.00					
Crit w.s. (ft)		Flow Area (sq ft)	1107.25	202.78	
668.59					
E.G. Slope (ft/ft)	0.000087	Area (sq ft)	1107.25	202.78	
668.59					
Q Total (cfs)	790.00	Flow (cfs)	374.74	192.10	
223.16					
Top width (ft)	702.80	Top width (ft)	406.94	45.00	
250.86					
Vel Total (ft/s)	0.40	Avg. vel. (ft/s)	0.34	0.95	
0.33					
Max chl Dpth (ft)	4.75	Hydr. Depth (ft)	2.72	4.51	
2.67					
Conv. Total (cfs)	84496.0	Conv. (cfs)	40080.8	20546.6	
23868.6					
Length wtd. (ft)	275.01	wetted Per. (ft)	406.97	45.01	
250.91					
Min Ch El (ft)	868.28	Shear (lb/sq ft)	0.01	0.02	
0.01					
Alpha	1.91	Stream Power (lb/ft s)	960.00	0.00	
0.00					
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	18.35	10.19	
27.44					
C & E Loss (ft)	0.00	Cum SA (acres)	10.03	2.91	
13.55					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 2080

INPUT

Description: 20+80

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	873.7	200	872	270	870	320	869.23	375	869.18
410	868.92	425	869.57	475	870.07	550	870	600	872
710	872.8	990	878.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	375	.04	425	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	375	425		300	300	320		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	871.97				
OB					
Vel Head (ft)	0.01	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	871.96	Reach Len. (ft)	300.00	300.00	
320.00					
Crit w.s. (ft)		Flow Area (sq ft)	336.32	142.67	
299.71					
E.G. slope (ft/ft)	0.000137	Area (sq ft)	336.32	142.67	
299.71					
Q Total (cfs)	332.00	Flow (cfs)	113.60	124.79	
93.61					
Top width (ft)	397.71	Top width (ft)	173.66	50.00	
174.04					
Vel Total (ft/s)	0.43	Avg. vel. (ft/s)	0.34	0.87	
0.31					
Max chl Dpth (ft)	3.04	Hydr. Depth (ft)	1.94	2.85	
1.72					
Conv. Total (cfs)	28359.7	Conv. (cfs)	9704.1	10659.4	
7996.3					
Length wtd. (ft)	302.89	wetted Per. (ft)	173.70	50.02	
174.09					
Min ch El (ft)	868.92	Shear (lb/sq ft)	0.02	0.02	
0.01					
Alpha	1.95	Stream Power (lb/ft s)	990.00	0.00	
0.00					
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	7.58	6.15	
11.19					
C & E Loss (ft)	0.06	Cum SA (acres)	5.53	2.54	
9.40					

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	873.00				
OB					
Vel Head (ft)	0.01	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	872.99	Reach Len. (ft)	300.00	300.00	
320.00					
Crit w.s. (ft)		Flow Area (sq ft)	544.48	193.95	
544.72					
E.G. slope (ft/ft)	0.000242	Area (sq ft)	544.48	193.95	
544.72					
Q Total (cfs)	790.00	Flow (cfs)	276.69	276.41	
236.90					
Top width (ft)	577.64	Top width (ft)	233.09	50.00	
294.55					
Vel Total (ft/s)	0.62	Avg. vel. (ft/s)	0.51	1.43	
0.43					
Max chl Dpth (ft)	4.07	Hydr. Depth (ft)	2.34	3.88	
1.85					
Conv. Total (cfs)	50828.3	Conv. (cfs)	17802.2	17784.0	
15242.1					
Length wtd. (ft)	304.01	wetted Per. (ft)	233.13	50.02	
294.60					
Min ch El (ft)	868.92	Shear (lb/sq ft)	0.04	0.06	
0.03					
Alpha	2.26	Stream Power (lb/ft s)	990.00	0.00	
0.00					

Frctn Loss (ft)	0.21	HampCkNorth.rep	Cum Volume (acre-ft)	15.69	8.64
21.87					
C & E Loss (ft)	0.04	Cum SA (acres)	9.00	2.54	
11.04					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1780

INPUT

Description: 17+80

Station Elevation Data	num=	11							
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
100 874.4	200 872	300 872	330 871.77	380 871.1					
410 870.77	418 868.48	444 870.86	490 871.63	580 874					
650 876									

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
100 .08	410 .04	444 .08			

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
410	444	30	90	250	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	871.77	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.57	wt. n-Val.	0.080	0.040	
0.080					
w.s. Elev (ft)	871.20	Reach Len. (ft)	30.00	90.00	
250.00					
Crit w.s. (ft)	871.20	Flow Area (sq ft)	8.32	52.38	
3.45					
E.G. Slope (ft/ft)	0.015692	Area (sq ft)	8.32	52.38	
3.45					
Q Total (cfs)	332.00	Flow (cfs)	7.10	322.43	
2.47					
Top width (ft)	91.78	Top width (ft)	37.46	34.00	
20.31					
Vel Total (ft/s)	5.17	Avg. vel. (ft/s)	0.85	6.16	
0.71					
Max chl Dpth (ft)	2.72	Hydr. Depth (ft)	0.22	1.54	
0.17					
Conv. Total (cfs)	2650.3	Conv. (cfs)	56.7	2573.9	
19.7					
Length wtd. (ft)	106.77	wetted Per. (ft)	37.47	34.43	
20.32					
Min ch El (ft)	868.48	Shear (lb/sq ft)	0.22	1.49	
0.17					
Alpha	1.37	Stream Power (lb/ft s)	650.00	0.00	
0.00					
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	6.39	5.48	
10.08					
C & E Loss (ft)	0.16	Cum SA (acres)	4.80	2.25	
8.68					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100 Yr

			Left OB	Channel	Right
E.G. Elev (ft)	872.74	Element			
OB					
Vel Head (ft)	0.46	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	872.28	Reach Len. (ft)	30.00	90.00	
250.00					
Crit w.s. (ft)	872.28	Flow Area (sq ft)	123.55	89.02	
55.46					
E.G. Slope (ft/ft)	0.008320	Area (sq ft)	123.55	89.02	
55.46					
Q Total (cfs)	790.00	Flow (cfs)	141.80	568.20	
79.99					
Top width (ft)	326.16	Top width (ft)	221.57	34.00	
70.59					
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	1.15	6.38	
1.44					
Max Chl Dpth (ft)	3.80	Hydr. Depth (ft)	0.56	2.62	
0.79					
Conv. Total (cfs)	8661.0	Conv. (cfs)	1554.6	6229.4	
877.0					
Length wtd. (ft)	114.63	wetted Per. (ft)	221.58	34.43	
70.61					
Min Ch El (ft)	868.48	Shear (lb/sq ft)	0.29	1.34	
0.41					
Alpha	3.42	Stream Power (lb/ft s)	650.00	0.00	
0.00					
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	13.39	7.67	
19.66					
C & E Loss (ft)	0.12	Cum SA (acres)	7.44	2.25	
9.70					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1690

INPUT

Description: 16+90
 Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

100	874.4	200	872	HampCkNorth.rep			340	871.14	390	869.54
420	868.73	455	869.34	300	872	640	872	740	874	
820	876			500	869.7					

Manning's n	values	num=	3
Sta	n Val	Sta	n Val
100	.08	390	.04
		455	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	390	455		200 270	270		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	871.22	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	871.19	Reach Len. (ft)	200.00	270.00	
270.00					
Crit w.s. (ft)		Flow Area (sq ft)	42.47	136.96	
142.48					
E.G. Slope (ft/ft)	0.000794	Area (sq ft)	42.47	136.96	
142.48					
Q Total (cfs)	332.00	Flow (cfs)	19.35	235.58	
77.07					
Top width (ft)	252.83	Top width (ft)	52.24	65.00	
135.59					
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)	0.46	1.72	
0.54					
Max chl Dpth (ft)	2.46	Hydr. Depth (ft)	0.81	2.11	
1.05					
Conv. Total (cfs)	11782.6	Conv. (cfs)	686.8	8360.8	
2735.1					
Length wtd. (ft)	264.64	wetted Per. (ft)	52.27	65.02	
135.60					
Min ch El (ft)	868.73	Shear (lb/sq ft)	0.04	0.10	
0.05					
Alpha	2.05	Stream Power (lb/ft s)	820.00	0.00	
0.00					
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	6.38	5.28	
9.66					
C & E Loss (ft)	0.00	Cum SA (acres)	4.77	2.15	
8.24					

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	872.22	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.06	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	872.16	Reach Len. (ft)	200.00	270.00	
270.00					
Crit w.s. (ft)		Flow Area (sq ft)	130.59	199.95	
302.30					
E.G. Slope (ft/ft)	0.000988	Area (sq ft)	130.59	199.95	
302.30					
Q Total (cfs)	790.00	Flow (cfs)	58.05	493.78	
238.17					
Top width (ft)	454.41	Top width (ft)	196.55	65.00	
192.86					
Vel Total (ft/s)	1.25	Avg. Vel. (ft/s)	0.44	2.47	
0.79					
Max chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.66	3.08	
1.57					
Conv. Total (cfs)	25130.2	conv. (cfs)	1846.6	15707.5	
7576.1					

Length wtd. (ft)	263.14	HampCkNorth.rep		
192.88		Wetted Per. (ft)	196.59	65.02
Min Ch El (ft)	868.73	Shear (lb/sq ft)	0.04	0.19
0.10				
Alpha	2.58	Stream Power (lb/ft s)	820.00	0.00
0.00				
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	13.31	7.37
18.64				
C & E Loss (ft)	0.00	Cum SA (acres)	7.29	2.15
8.95				

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1420

INPUT

Description: 14+20

Station Elevation Data		num=	10						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874.4	180	872.43	225	870.19	255	868.78	265	868.65
285	868.74	315	868.82	365	869.17	420	872	550	876

Manning's n Values		num=	3				
Sta	n Val	Sta	n Val	Sta	n Val		
100	.08	255	.04	285	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	255	285		320 340	350	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	870.98	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
0.080					
w.S. Elev (ft)	870.95	Reach Len. (ft)	320.00	340.00	
350.00					
Crit w.S. (ft)		Flow Area (sq ft)	49.84	67.51	
193.87					
E.G. Slope (ft/ft)	0.001019	Area (sq ft)	49.84	67.51	
193.87					
Q Total (cfs)	332.00	Flow (cfs)	31.46	137.44	
163.09					
Top width (ft)	189.94	Top width (ft)	45.31	30.00	
114.63					
Vel Total (ft/s)	1.07	Avg. vel. (ft/s)	0.63	2.04	
0.84					
Max Chl Dpth (ft)	2.30	Hydr. Depth (ft)	1.10	2.25	
1.69					
Conv. Total (cfs)	10402.5	Conv. (cfs)	985.8	4306.5	
5110.2					
Length wtd. (ft)	342.50	wetted Per. (ft)	45.36	30.00	
114.68					
Min Ch El (ft)	868.65	Shear (lb/sq ft)	0.07	0.14	
0.11					
Alpha	1.85	Stream Power (lb/ft s)	550.00	0.00	
0.00					
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	6.16	4.65	
8.62					
C & E Loss (ft)	0.01	Cum SA (acres)	4.55	1.85	
7.46					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is

less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

OB	E.G. Elev (ft)		Element	Left OB	Channel	Right
0.080	871.89		wt. n-Val.	0.080	0.040	
350.00	0.08		Reach Len. (ft)	320.00	340.00	
299.42	871.81		Flow Area (sq ft)	96.13	93.26	
299.42			Area (sq ft)	96.13	93.26	
392.48	0.001661		Flow (cfs)	96.82	300.70	
131.31	790.00		Top width (ft)	62.55	30.00	
1.31	223.86		Avg. Vel. (ft/s)	1.01	3.22	
2.28	1.62		Hydr. Depth (ft)	1.54	3.11	
9631.0	3.16		Conv. (cfs)	2376.0	7378.9	
131.38	19385.9		wetted Per. (ft)	62.62	30.00	
0.24	342.36		Shear (lb/sq ft)	0.16	0.32	
0.00	868.65		Stream Power (lb/ft s)	550.00	0.00	
16.77	1.89		Cum Volume (acre-ft)	12.79	6.46	
7.94	0.20		Cum SA (acres)	6.70	1.85	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1080

INPUT

Description: 10+80

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	210	872	505	869.82	555	868.53	585	868.6
625	869.69	660	868.93	688	868.97	730	870.1	820	870
1125	870	1170	872	1330	878				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	555	.04	625	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

555	625	450	300	210	.1	.3
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CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)		Element	Left OB	Channel	Right
	870.79		wt. n-Val.	0.080	0.040	

HampCkNorth.rep

0.080				
W.S. Elev (ft)	870.78	Reach Len. (ft)	450.00	300.00
210.00				
Crit w.s. (ft)		Flow Area (sq ft)	142.37	131.76
464.75				
E.G. Slope (ft/ft)	0.000350	Area (sq ft)	142.37	131.76
464.75				
Q Total (cfs)	332.00	Flow (cfs)	42.32	139.48
150.21				
Top width (ft)	767.25	Top width (ft)	179.73	70.00
517.52				
Vel Total (ft/s)	0.45	Avg. Vel. (ft/s)	0.30	1.06
0.32				
Max chl Dpth (ft)	2.25	Hydr. Depth (ft)	0.79	1.88
0.90				
Conv. Total (cfs)	17758.8	Conv. (cfs)	2263.7	7460.6
8034.5				
Length wtd. (ft)	274.84	wetted Per. (ft)	179.75	70.01
517.56				
Min ch El (ft)	868.53	Shear (lb/sq ft)	0.02	0.04
0.02				
Alpha	2.62	Stream Power (lb/ft s)	1330.00	0.00
0.00				
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	5.46	3.87
5.97				
C & E Loss (ft)	0.00	Cum SA (acres)	3.72	1.46
4.92				

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.01	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	871.66	Reach Len. (ft)	450.00	300.00	
210.00					
Crit w.s. (ft)		Flow Area (sq ft)	353.11	193.40	
929.21					
E.G. Slope (ft/ft)	0.000291	Area (sq ft)	353.11	193.40	
929.21					
Q Total (cfs)	790.00	Flow (cfs)	124.96	241.14	
423.90					
Top width (ft)	906.23	Top width (ft)	298.90	70.00	
537.33					
Vel Total (ft/s)	0.54	Avg. Vel. (ft/s)	0.35	1.25	
0.46					
Max chl Dpth (ft)	3.13	Hydr. Depth (ft)	1.18	2.76	
1.73					
Conv. Total (cfs)	46336.9	Conv. (cfs)	7329.2	14144.1	
24863.6					
Length wtd. (ft)	268.18	wetted Per. (ft)	298.92	70.01	
537.39					
Min ch El (ft)	868.53	Shear (lb/sq ft)	0.02	0.05	
0.03					
Alpha	2.11	Stream Power (lb/ft s)	1330.00	0.00	
0.00					
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	11.14	5.34	
11.84					
C & E Loss (ft)	0.00	Cum SA (acres)	5.37	1.46	
5.26					

CROSS SECTION

RIVER: Hampshire Creek

REACH: North Trib. - NE RS: 780

INPUT

Description: 7+80

Station Elevation Data		num= 12		Sta Elev		Sta Elev		Sta Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	877.6	150	876	220	874	350	872	400	870.28
450	868.74	485	868.34	535	869.52	570	869.65	1050	870
1090	872	1240	878						

Manning's n Values		num= 3		Sta n Val	
Sta	n Val	Sta	n Val	Sta	n Val
100	.08	450	.04	535	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	450	535		310 280	200	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	870.69				
Vel Head (ft)	0.01	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	870.68	Reach Len. (ft)	310.00	280.00	
200.00					
Crit w.s. (ft)		Flow Area (sq ft)	61.00	162.64	
454.82					
E.G. Slope (ft/ft)	0.000337	Area (sq ft)	61.00	162.64	
454.82					
Q Total (cfs)	332.00	Flow (cfs)	20.64	171.00	
140.35					
Top width (ft)	675.36	Top width (ft)	61.71	85.00	
528.66					
Vel Total (ft/s)	0.49	Avg. Vel. (ft/s)	0.34	1.05	
0.31					
Max chl Dpth (ft)	2.34	Hydr. Depth (ft)	0.99	1.91	
0.86					
Conv. Total (cfs)	18075.8	Conv. (cfs)	1123.9	9310.3	
7641.6					
Length wtd. (ft)	261.30	wetted Per. (ft)	61.74	85.02	
528.67					
Min Ch El (ft)	868.34	Shear (lb/sq ft)	0.02	0.04	
0.02					
Alpha	2.58	Stream Power (lb/ft s)	1240.00	0.00	
0.00					
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	4.41	2.86	
3.76					
C & E Loss (ft)	0.00	Cum SA (acres)	2.47	0.93	
2.40					

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	871.59				
Vel Head (ft)	0.01	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	871.58	Reach Len. (ft)	310.00	280.00	
200.00					
Crit w.s. (ft)		Flow Area (sq ft)	127.83	238.67	
935.72					
E.G. Slope (ft/ft)	0.000301	Area (sq ft)	127.83	238.67	
935.72					
Q Total (cfs)	790.00	Flow (cfs)	52.89	305.90	
431.21					
Top width (ft)	719.26	Top width (ft)	87.71	85.00	
546.55					

Vel Total (ft/s)	0.61	HampCkNorth.rep		
0.46		Avg. Vel. (ft/s)	0.41	1.28
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)	1.46	2.81
1.71				
Conv. Total (cfs)	45567.2	Conv. (cfs)	3050.9	17644.2
24872.1				
Length wtd. (ft)	255.76	wetted Per. (ft)	87.76	85.02
546.59				
Min Ch El (ft)	868.34	Shear (lb/sq ft)	0.03	0.05
0.03				
Alpha	2.07	Stream Power (lb/ft s)	1240.00	0.00
0.00				
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	8.65	3.86
7.34				
C & E Loss (ft)	0.00	Cum SA (acres)	3.37	0.93
2.64				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 500

INPUT

Description: 5+00

Station Elevation Data	num=	13							
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
100 874	130 872	300 870	330 869.42	380 868.3					
410 867.98	440 868.35	490 869.71	600 872	720 872					
850 873.2	1040 874	1130 878							

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
100 .08	380 .04	440 .08			

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
380	440	360	300	190	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	870.57	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
0.080					
w.s. Elev (ft)	870.54	Reach Len. (ft)	360.00	300.00	
190.00					
Crit w.s. (ft)		Flow Area (sq ft)	121.82	143.50	
92.42					
E.G. Slope (ft/ft)	0.000606	Area (sq ft)	121.82	143.50	
92.42					
Q Total (cfs)	332.00	Flow (cfs)	54.38	234.65	
42.98					
Top width (ft)	276.33	Top width (ft)	126.26	60.00	
90.07					
Vel Total (ft/s)	0.93	Avg. Vel. (ft/s)	0.45	1.64	
0.46					
Max Chl Dpth (ft)	2.56	Hydr. Depth (ft)	0.96	2.39	
1.03					
Conv. Total (cfs)	13488.6	Conv. (cfs)	2209.2	9533.4	
1746.1					
Length wtd. (ft)	287.12	wetted Per. (ft)	126.28	60.00	
90.10					
Min Ch El (ft)	867.98	Shear (lb/sq ft)	0.04	0.09	

HampCkNorth.rep

0.04	Alpha	2.26	Stream Power (lb/ft s)	1130.00	0.00
0.00	Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	3.76	1.87
2.50	C & E Loss (ft)	0.00	Cum SA (acres)	1.81	0.46
0.98					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	871.46					
	Vel Head (ft)	0.06	wt. n-Val.	0.080	0.040	
0.080	W.S. Elev (ft)	871.40	Reach Len. (ft)	360.00	300.00	
190.00	Crit w.s. (ft)		Flow Area (sq ft)	260.87	194.81	
187.01	E.G. Slope (ft/ft)	0.000918	Area (sq ft)	260.87	194.81	
187.01	Q Total (cfs)	790.00	Flow (cfs)	175.88	480.80	
133.32	Top width (ft)	390.09	Top width (ft)	198.95	60.00	
131.15	Vel Total (ft/s)	1.23	Avg. Vel. (ft/s)	0.67	2.47	
0.71	Max chl Dpth (ft)	3.42	Hydr. Depth (ft)	1.31	3.25	
1.43	Conv. Total (cfs)	26071.7	Conv. (cfs)	5804.4	15867.5	
4399.8	Length wtd. (ft)	284.38	wetted Per. (ft)	198.97	60.00	
131.18	Min Ch El (ft)	867.98	Shear (lb/sq ft)	0.08	0.19	
0.08	Alpha	2.58	Stream Power (lb/ft s)	1130.00	0.00	
0.00	Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	7.27	2.46	
4.76	C & E Loss (ft)	0.01	Cum SA (acres)	2.35	0.46	
1.09						

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 200

INPUT

Description: 2+00

Station Elevation Data		num= 15							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	160	872	300	870	570	870.2	580	869.81
590	867.91	610	867.37	630	867.23	655	868.21	790	870
1010	870	1030	872	1160	873.2	1350	874	1440	878

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val

100 .08 580 .04
 Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 580 655 0 0 0 .1 .3

CROSS SECTION OUTPUT Profile #10 Yr

			Left OB	Channel	Right
E.G. Elev (ft)	870.46	Element			
OB Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	870.44	Reach Len. (ft)	200.00	200.00	
200.00 Crit w.s. (ft)		Flow Area (sq ft)	102.75	202.56	
277.80 E.G. Slope (ft/ft)	0.000280	Area (sq ft)	102.75	202.56	
277.80 Q Total (cfs)	332.00	Flow (cfs)	15.28	243.94	
72.77 Top width (ft)	745.16	Top width (ft)	310.76	75.00	
359.39 Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.15	1.20	
0.26 Max chl Dpth (ft)	3.21	Hydr. Depth (ft)	0.33	2.70	
0.77 Conv. Total (cfs)	19824.6	Conv. (cfs)	912.6	14566.5	
4345.5 Length wtd. (ft)	200.00	wetted Per. (ft)	310.77	75.21	
359.43 Min Ch El (ft)	867.23	Shear (lb/sq ft)	0.01	0.05	
0.01 Alpha	3.34	Stream Power (lb/ft s)	1440.00	0.00	
0.00 Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	2.83	0.68	
1.69 C & E Loss (ft)	0.00	Cum SA (acres)			

CROSS SECTION OUTPUT Profile #100 Yr

			Left OB	Channel	Right
E.G. Elev (ft)	871.31	Element			
OB Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	871.29	Reach Len. (ft)	200.00	200.00	
200.00 Crit w.s. (ft)		Flow Area (sq ft)	392.25	266.32	
586.95 E.G. Slope (ft/ft)	0.000302	Area (sq ft)	392.25	266.32	
586.95 Q Total (cfs)	790.00	Flow (cfs)	131.63	399.61	
258.76 Top width (ft)	813.17	Top width (ft)	370.27	75.00	
367.90 Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.34	1.50	
0.44 Max chl Dpth (ft)	4.06	Hydr. Depth (ft)	1.06	3.55	
1.60 Conv. Total (cfs)	45439.1	Conv. (cfs)	7570.9	22985.0	
14883.3 Length wtd. (ft)	200.00	wetted Per. (ft)	370.29	75.21	
367.97 Min Ch El (ft)	867.23	Shear (lb/sq ft)	0.02	0.07	
0.03 Alpha	3.04	Stream Power (lb/ft s)	1440.00	0.00	
0.00					

Frctn Loss (ft)	0.04	HampCkNorth.rep		
3.07		Cum Volume (acre-ft)	4.57	0.87
C & E Loss (ft)	0.00	Cum SA (acres)		

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41500

INPUT

Description: 415+00

Station Elevation Data		num=	12						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9
41900	867.9	41905	864	41925	869.7	41950	868.5	41980	867.8
42210	870	42365	872						

Manning's n Values		num=	3				
Sta	n Val	Sta	n Val	Sta	n Val		
41250	.08	41900	.04	41925	.08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
41900	41925	300	300	300	.3	.5

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	870.43	Element	Left OB	Channel	Right
OB					
vel Head (ft)	0.00	wt. n-val.	0.080	0.040	
0.080					
w.s. Elev (ft)	870.43	Reach Len. (ft)	300.00	300.00	
300.00					
Crit w.s. (ft)		Flow Area (sq ft)	1129.86	93.91	
459.57					
E.G. slope (ft/ft)	0.000074	Area (sq ft)	1129.86	93.91	
459.57					
Q Total (cfs)	461.00	Flow (cfs)	298.94	68.47	
93.59					
Top width (ft)	871.09	Top width (ft)	528.05	25.00	
318.05					
vel Total (ft/s)	0.27	Avg. vel. (ft/s)	0.26	0.73	
0.20					
Max chl Dpth (ft)	6.43	Hydr. Depth (ft)	2.14	3.76	
1.44					
Conv. Total (cfs)	53735.8	Conv. (cfs)	34845.6	7981.3	
10908.9					
Length wtd. (ft)	300.00	wetted Per. (ft)	528.07	27.14	
318.10					
Min ch El (ft)	864.00	Shear (lb/sq ft)	0.01	0.02	
0.01					
Alpha	1.77	Stream Power (lb/ft s)	42365.00	0.00	
0.00					
Frctn Loss (ft)	0.02	Cum volume (acre-ft)	53.93	32.65	
33.20					
C & E Loss (ft)	0.00	Cum SA (acres)	78.54	9.44	
51.71					

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	871.27	Element	Left OB	Channel	Right
OB					
vel Head (ft)	0.00	wt. n-val.	0.080	0.040	

HampCkNorth.rep

0.080				
W.S. Elev (ft)	871.26	Reach Len. (ft)	300.00	300.00
300.00				
Crit w.s. (ft)		Flow Area (sq ft)	1597.95	114.79
752.25				
E.G. Slope (ft/ft)	0.000142	Area (sq ft)	1597.95	114.79
752.25				
Q Total (cfs)	1080.00	Flow (cfs)	685.57	133.01
261.41				
Top width (ft)	1000.56	Top width (ft)	592.78	25.00
382.78				
Vel Total (ft/s)	0.44	Avg. Vel. (ft/s)	0.43	1.16
0.35				
Max chl Dpth (ft)	7.26	Hydr. Depth (ft)	2.70	4.59
1.97				
Conv. Total (cfs)	90560.0	Conv. (cfs)	57486.7	11153.3
21920.0				
Length wtd. (ft)	300.00	wetted Per. (ft)	592.81	27.14
382.83				
Min ch El (ft)	864.00	Shear (lb/sq ft)	0.02	0.04
0.02				
Alpha	1.62	Stream Power (lb/ft s)	42365.00	0.00
0.00				
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	124.73	40.86
88.05				
C & E Loss (ft)	0.00	Cum SA (acres)	111.99	9.81
87.49				

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41414

INPUT

Description: 414+14

Station Elevation Data										num=	14
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9		
41897	867.9	41897.5	864.2	41905	864.2	41912.5	864.2	41925	869.7		
41950	868.5	41980	867.8	42210	870	42365	872				

Manning's n Values						num=	3
Sta	n Val	Sta	n Val	Sta	n Val		
41250	.08	41897	.04	41925	.08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
41897	41925	34	34	34	.3	.5	

Ineffective Flow				num=	2
Sta L	Sta R	Elev	Permanent		
41250	41897.5	870.37	F		
41912.5	42365	870.37	F		

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	870.41	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.00	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	870.41	Reach Len. (ft)	34.00	34.00	
34.00					
Crit w.s. (ft)	867.28	Flow Area (sq ft)	1111.14	138.44	
452.83					
E.G. Slope (ft/ft)	0.000062	Area (sq ft)	1111.14	138.44	
452.83					
Q Total (cfs)	461.00	Flow (cfs)	269.49	107.08	
84.43					

Top width (ft)	867.80	HampCkNorth.rep Top width (ft)	523.40	28.00
316.40 Vel Total (ft/s)	0.27	Avg. Vel. (ft/s)	0.24	0.77
0.19 Max Chl Dpth (ft)	6.21	Hydr. Depth (ft)	2.12	4.94
1.43 Conv. Total (cfs)	58315.1	Conv. (cfs)	34089.4	13545.1
10680.6 Length wtd. (ft)	34.00	wetted Per. (ft)	523.42	32.39
316.45 Min Ch El (ft)	864.20	Shear (lb/sq ft)	0.01	0.02
0.01 Alpha	2.45	Stream Power (lb/ft s)	42365.00	0.00
0.00 Frctn Loss (ft)		Cum Volume (acre-ft)	46.21	31.85
30.06 C & E Loss (ft)		Cum SA (acres)	74.91	9.25
49.52				

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB Vel Head (ft)	871.23	wt. n-Val.	0.080	0.040	
0.080 w.s. Elev (ft)	871.22	Reach Len. (ft)	34.00	34.00	
34.00 Crit w.s. (ft)	869.65	Flow Area (sq ft)	1562.70	161.23	
735.95 E.G. Slope (ft/ft)	0.000131	Area (sq ft)	1562.70	161.23	
735.95 Q Total (cfs)	1080.00	Flow (cfs)	637.53	199.54	
242.93 Top width (ft)	993.92	Top width (ft)	586.46	28.00	
379.46 Vel Total (ft/s)	0.44	Avg. Vel. (ft/s)	0.41	1.24	
0.33 Max Chl Dpth (ft)	7.02	Hydr. Depth (ft)	2.66	5.76	
1.94 Conv. Total (cfs)	94503.2	Conv. (cfs)	55785.8	17460.7	
21256.7 Length wtd. (ft)	34.00	wetted Per. (ft)	586.49	32.39	
379.52 Min Ch El (ft)	864.20	Shear (lb/sq ft)	0.02	0.04	
0.02 Alpha	2.11	Stream Power (lb/ft s)	42365.00	0.00	
0.00 Frctn Loss (ft)		Cum Volume (acre-ft)	113.85	39.91	
82.92 C & E Loss (ft)		Cum SA (acres)	107.93	9.63	
84.87					

Warning: The cross section had to be extended vertically during the critical depth calculations.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CULVERT

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 41397

INPUT

Description: Harmony Road - North Culvert

Distance from Upstream XS = 6
 Deck/Roadway Width = 22
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 9											
Sta	Hi Cord	Lo Cord		Sta	Hi Cord	Lo Cord		Sta	Hi Cord	Lo Cord	
40888	875.4			41510	870.64			41610	870.46		
41710	870.37			41809	870.47			41909	870.93		
42009	871.16			42247	871.6			42476	872.3		

Upstream Bridge Cross Section Data

Station Elevation Data num= 14									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9
41897	867.9	41897.5	864.2	41905	864.2	41912.5	864.2	41925	869.7
41950	868.5	41980	867.8	42210	870	42365	872		

Manning's n Values

num= 3					
Sta	n Val	Sta	n Val	Sta	n Val
41250	.08	41897	.04	41925	.08

Bank Sta: Left Right Coeff Contr. Expan.
 41897 41925 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 41250 41897.5 870.37 F
 41912.5 42365 870.37 F

Downstream Deck/Roadway Coordinates

num= 9											
Sta	Hi Cord	Lo Cord		Sta	Hi Cord	Lo Cord		Sta	Hi Cord	Lo Cord	
40888	875.4			41510	870.64			41610	870.46		
41710	870.37			41809	870.47			41909	870.93		
42009	871.16			42247	871.6			42476	872.3		

Downstream Bridge Cross Section Data

Station Elevation Data num= 19									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41080	873	41160	871	41210	870	41260	870	41320	868
41500	866.9	41550	867.1	41590	868.4	41602.5	863.99	41610	863.99
41617.5	863.99	41628	867.8	41632	867.6	41685	866.1	41790	866
41825	866.3	42000	867	42050	868	42100	870		

Manning's n Values

num= 3					
Sta	n Val	Sta	n Val	Sta	n Val
41080	.08	41590	.04	41628	.08

Bank Sta: Left Right Coeff Contr. Expan.
 41590 41628 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 41080 41602.5 868.72 F
 41617.5 42100 868.72 F

Upstream Embankment side slope = 3 horiz. to 1.0 vertical
 Downstream Embankment side slope = 3 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .95
 Elevation at which weir flow begins = 870.37
 Energy head used in spillway design =
 Spillway height used in design =
 weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
 HARMONY-N Box 3 7
 FHWA Chart # 8 - flared wingwalls

FHWA Scale # 1 - wingwall flared 30 to 75 deg.

Solution Criteria = Highest U.S. EG

Culvert Loss Coef	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit
1	0	34	.013	.013	0	.5	

Number of Barrels = 2
 Upstream Elevation = 864.2
 Centerline Stations
 Sta. Sta.
 41901 41909
 Downstream Elevation = 863.99
 Centerline Stations
 Sta. Sta.
 41606 41614

CULVERT OUTPUT Profile #10 Yr Culv Group: HARMONY-N

Q Culv Group (cfs)	460.62	Culv Full Len (ft)	34.00
# Barrels	2	Culv Vel US (ft/s)	10.97
Q Barrel (cfs)	230.31	Culv Vel DS (ft/s)	10.97
E.G. US. (ft)	870.41	Culv Inv El Up (ft)	864.20
W.S. US. (ft)	870.41	Culv Inv El Dn (ft)	863.99
E.G. DS (ft)	868.98	Culv Frctn Ls (ft)	0.29
W.S. DS (ft)	867.31	Culv Exit Loss (ft)	0.20
Delta EG (ft)	1.43	Culv Entr Loss (ft)	0.93
Delta WS (ft)	3.09	Q Weir (cfs)	0.38
E.G. IC (ft)	870.46	Weir Sta Lft (ft)	41673.59
E.G. OC (ft)	870.41	Weir Sta Rgt (ft)	41742.46
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	867.20	Weir Max Depth (ft)	0.03
Culv WS Outlet (ft)	866.99	Weir Avg Depth (ft)	0.02
Culv Nml Depth (ft)	2.75	Weir Flow Area (sq ft)	1.13
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	870.38

Warning: During the culvert inlet control computations, the program could not balance the culvert/weir flow. The reported inlet energy grade answer may not be valid.

Note: Culvert critical depth exceeds the height of the culvert.

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100 Yr Culv Group: HARMONY-N

Q Culv Group (cfs)	411.65	Culv Full Len (ft)	34.00
# Barrels	2	Culv Vel US (ft/s)	9.80
Q Barrel (cfs)	205.83	Culv Vel DS (ft/s)	9.80
E.G. US. (ft)	871.22	Culv Inv El Up (ft)	864.20
W.S. US. (ft)	871.22	Culv Inv El Dn (ft)	863.99
E.G. DS (ft)	868.77	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	868.75	Culv Exit Loss (ft)	1.47
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.75
Delta WS (ft)	2.47	Q Weir (cfs)	668.35
E.G. IC (ft)	871.19	Weir Sta Lft (ft)	41433.72
E.G. OC (ft)	871.22	Weir Sta Rgt (ft)	42043.50
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	867.20	Weir Max Depth (ft)	0.85
Culv WS Outlet (ft)	866.99	Weir Avg Depth (ft)	0.53
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	321.44
Culv Crt Depth (ft)	2.99	Min El Weir Flow (ft)	870.38

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41380

INPUT

Description: 413+80

Station Elevation Data		num= 19		Sta Elev		Sta Elev		Sta Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41080	873	41160	871	41210	870	41260	870	41320	868
41500	866.9	41550	867.1	41590	868.4	41602.5	863.99	41610	863.99
41617.5	863.99	41628	867.8	41632	867.6	41685	866.1	41790	866
41825	866.3	42000	867	42050	868	42100	870		

Manning's n Values		num= 3		Sta n Val	
Sta	n Val	Sta	n Val	Sta	n Val
41080	.08	41590	.04	41628	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	41590	41628		120	120		.3	.5

Ineffective Flow		num= 2		Sta L Sta R Elev Permanent	
41080	41602.5	868.72	F		
41617.5	42100	868.72	F		

CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)	868.98	Element	Left OB	Channel	Right
	Vel Head (ft)	1.67	wt. n-Val.		0.040	
120.00	w.s. Elev (ft)	867.31	Reach Len. (ft)	120.00	120.00	
	Crit w.s. (ft)	867.31	Flow Area (sq ft)		49.81	
316.90	E.G. Slope (ft/ft)	0.015698	Area (sq ft)	30.01	80.63	
	Q Total (cfs)	516.00	Flow (cfs)		516.00	
373.31	Top width (ft)	530.54	Top width (ft)	123.67	33.56	
	Vel Total (ft/s)	10.36	Avg. Vel. (ft/s)		10.36	
	Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)		3.32	
	Conv. Total (cfs)	4118.4	Conv. (cfs)		4118.4	
	Length wtd. (ft)	120.00	wetted Per. (ft)		15.00	
	Min Ch El (ft)	863.99	Shear (lb/sq ft)		3.25	
0.00	Alpha	1.00	Stream Power (lb/ft s)	42100.00	0.00	
30.06	Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	46.21	31.83	
49.25	C & E Loss (ft)	0.82	Cum SA (acres)	74.66	9.23	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
 Warning: Divided flow computed for this cross-section.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the

need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
 Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	868.77	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	868.75	Reach Len. (ft)	120.00	120.00	
120.00					
Crit w.s. (ft)	868.73	Flow Area (sq ft)	370.10	133.34	
916.68					
E.G. Slope (ft/ft)	0.000486	Area (sq ft)	370.10	133.34	
916.68					
Q Total (cfs)	1035.00	Flow (cfs)	177.29	246.07	
611.63					
Top width (ft)	771.28	Top width (ft)	292.52	38.00	
440.77					
Vel Total (ft/s)	0.73	Avg. Vel. (ft/s)	0.48	1.85	
0.67					
Max Chl Dpth (ft)	4.76	Hydr. Depth (ft)	1.27	3.51	
2.08					
Conv. Total (cfs)	46939.8	Conv. (cfs)	8040.7	11160.1	
27739.1					
Length wtd. (ft)	120.00	wetted Per. (ft)	292.55	39.43	
440.82					
Min Ch El (ft)	863.99	Shear (lb/sq ft)	0.04	0.10	
0.06					
Alpha	2.09	Stream Power (lb/ft s)	42100.00	0.00	
0.00					
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	113.85	39.64	
82.92					
C & E Loss (ft)	0.00	Cum SA (acres)	107.58	9.60	
84.55					

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41260

INPUT

Description: 412+60

Station Elevation Data		num=	18
Sta	Elev	Sta	Elev
41080	873	41160	871
41500	866.9	41550	867.1
41628	867.8	41632	867.6
42000	867	42050	868
		42100	870
		41210	870
		41260	870
		41320	868
		41605	863.3
		41615	862.8
		41790	866
		41825	866.3

Manning's n Values		num=	3
Sta	n Val	Sta	n Val
41080	.08	41590	.04
		41628	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
41590	41628	720	600	380	.3	.5	

CROSS SECTION OUTPUT Profile #10 Yr

		HampCkNorth.rep Element	Left OB	Channel	Right
E.G. Elev (ft)	867.72				
OB					
Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	867.69	Reach Len. (ft)	720.00	600.00	
380.00					
Crit w.s. (ft)		Flow Area (sq ft)	90.77	105.80	
464.31					
E.G. Slope (ft/ft)	0.000791	Area (sq ft)	90.77	105.80	
464.31					
Q Total (cfs)	516.00	Flow (cfs)	28.27	221.68	
266.06					
Top width (ft)	637.16	Top width (ft)	197.29	35.62	
404.25					
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.31	2.10	
0.57					
Max chl Dpth (ft)	4.89	Hydr. Depth (ft)	0.46	2.97	
1.15					
Conv. Total (cfs)	18343.2	Conv. (cfs)	1004.8	7880.4	
9458.0					
Length wtd. (ft)	546.58	wetted Per. (ft)	197.30	37.27	
404.28					
Min Ch El (ft)	862.80	Shear (lb/sq ft)	0.02	0.14	
0.06					
Alpha	3.38	Stream Power (lb/ft s)	42100.00	0.00	
0.00					
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	46.05	31.58	
28.98					
C & E Loss (ft)	0.07	Cum SA (acres)	74.22	9.14	
48.18					

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	868.71				
OB					
Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	868.69	Reach Len. (ft)	720.00	600.00	
380.00					
Crit w.s. (ft)		Flow Area (sq ft)	351.68	142.97	
888.88					
E.G. Slope (ft/ft)	0.000500	Area (sq ft)	351.68	142.97	
888.88					
Q Total (cfs)	1035.00	Flow (cfs)	165.83	278.59	
590.58					
Top width (ft)	767.80	Top width (ft)	290.62	38.00	
439.18					
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.47	1.95	
0.66					
Max chl Dpth (ft)	5.89	Hydr. Depth (ft)	1.21	3.76	
2.02					
Conv. Total (cfs)	46292.4	Conv. (cfs)	7416.9	12460.6	
26414.8					
Length wtd. (ft)	540.79	wetted Per. (ft)	290.66	39.78	
439.24					
Min Ch El (ft)	862.80	Shear (lb/sq ft)	0.04	0.11	
0.06					
Alpha	2.34	Stream Power (lb/ft s)	42100.00	0.00	
0.00					
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	112.85	39.26	
80.44					
C & E Loss (ft)	0.15	Cum SA (acres)	106.78	9.50	

83.33

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 40660

INPUT

Description: 406+60

Station Elevation Data		num= 16		Sta		Elev		Sta		Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40470	871	40600	869.7	40660	868	40675	868	40830	866.6		
40860	867.3	40910	867.3	40920	860.7	40927	860.7	40932	861.9		
40945	867.1	40960	870.7	40980	867.8	41040	866.8	41200	867		
41340	870										

Manning's n Values		num= 3		Sta		n Val	
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
40470	.08	40910	.04	40945	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	40910	40945		220	360		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		866.96	Element	Left OB	Channel	Right
OB	Vel Head (ft)		0.27	wt. n-val.	0.080	0.040	
	w.s. Elev (ft)		866.69	Reach Len. (ft)	220.00	360.00	
500.00	Crit w.s. (ft)			Flow Area (sq ft)	0.66	124.83	
	E.G. Slope (ft/ft)	0.002352		Area (sq ft)	0.66	124.83	
	Q Total (cfs)	516.00		Flow (cfs)	0.08	515.92	
	Top width (ft)	47.29		Top width (ft)	14.23	33.06	
	Vel Total (ft/s)	4.11		Avg. Vel. (ft/s)	0.12	4.13	
	Max Chl Dpth (ft)	5.99		Hydr. Depth (ft)	0.05	3.78	
	Conv. Total (cfs)	10640.2		Conv. (cfs)	1.6	10638.6	
	Length wtd. (ft)	359.99		wetted Per. (ft)	14.23	35.92	
	Min Ch El (ft)	860.70		Shear (lb/sq ft)	0.01	0.51	
	Alpha	1.01		Stream Power (lb/ft s)	41340.00	0.00	
0.00	Frctn Loss (ft)	1.86		Cum Volume (acre-ft)	45.29	29.99	
26.96	C & E Loss (ft)	0.10		Cum SA (acres)	72.47	8.66	
46.42							

Warning: Divided flow computed for this cross-section.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is

less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	867.96				
OB					
Vel Head (ft)	0.52	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	867.44	Reach Len. (ft)	220.00	360.00	
500.00					
Crit w.s. (ft)	865.90	Flow Area (sq ft)	61.50	150.65	
104.39					
E.G. Slope (ft/ft)	0.004325	Area (sq ft)	61.50	150.65	
104.39					
Q Total (cfs)	1035.00	Flow (cfs)	37.63	919.87	
77.50					
Top width (ft)	429.30	Top width (ft)	173.47	35.00	
220.82					
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)	0.61	6.11	
0.74					
Max chl Dpth (ft)	6.74	Hydr. Depth (ft)	0.35	4.30	
0.47					
Conv. Total (cfs)	15738.2	Conv. (cfs)	572.2	13987.5	
1178.4					
Length wtd. (ft)	381.77	wetted Per. (ft)	173.48	38.13	
220.88					
Min Ch El (ft)	860.70	Shear (lb/sq ft)	0.10	1.07	
0.13					
Alpha	3.10	Stream Power (lb/ft s)	41340.00	0.00	
0.00					
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	109.44	37.24	
76.10					
C & E Loss (ft)	0.00	Cum SA (acres)	102.94	8.99	
80.46					

Warning: Divided flow computed for this cross-section.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 40300

INPUT

Description: 403+00

Station Elevation Data		num= 10							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40100	867	40300	866	40570	866	40640	864.3	40650	859.5
40655	859.5	40665	864.6	40755	864.35	40945	865	40990	866.6

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
40100	.08	40640	.04	40665	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	40640	40665		20	20	20		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		HampCkNorth.rep Element	Left OB	Channel	Right
E.G. Elev (ft)	864.99				
OB Vel Head (ft)	1.31	wt. n-Val.		0.040	
W.S. Elev (ft)	863.68	Reach Len. (ft)	20.00	20.00	
20.00 Crit w.s. (ft)	863.68	Flow Area (sq ft)		56.25	
E.G. Slope (ft/ft)	0.019443	Area (sq ft)		56.25	
Q Total (cfs)	516.00	Flow (cfs)		516.00	
Top width (ft)	21.91	Top width (ft)		21.91	
Vel Total (ft/s)	9.17	Avg. Vel. (ft/s)		9.17	
Max Chl Dpth (ft)	4.18	Hydr. Depth (ft)		2.57	
Conv. Total (cfs)	3700.5	Conv. (cfs)		3700.5	
Length wtd. (ft)	20.00	wetted Per. (ft)		23.87	
Min Ch El (ft)	859.50	Shear (lb/sq ft)		2.86	
Alpha	1.00	Stream Power (lb/ft s)	40990.00	0.00	
0.00 Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	45.29	29.24	
26.96 C & E Loss (ft)	0.35	Cum SA (acres)	72.44	8.43	
46.42					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	865.98				
OB Vel Head (ft)	0.52	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	865.46	Reach Len. (ft)	20.00	20.00	
20.00 Crit w.s. (ft)	865.46	Flow Area (sq ft)	27.50	99.40	
239.55 E.G. Slope (ft/ft)	0.006357	Area (sq ft)	27.50	99.40	
239.55 Q Total (cfs)	1035.00	Flow (cfs)	28.26	696.43	
310.31 Top width (ft)	365.41	Top width (ft)	47.59	25.00	
292.82 Vel Total (ft/s)	2.82	Avg. Vel. (ft/s)	1.03	7.01	
1.30 Max Chl Dpth (ft)	5.96	Hydr. Depth (ft)	0.58	3.98	
0.82 Conv. Total (cfs)	12981.0	Conv. (cfs)	354.4	8734.7	
3891.9					

Length wtd. (ft)	20.00	HampCkNorth.rep	47.61	27.32
292.83 Min Ch El (ft)	859.50	Wetted Per. (ft)		
0.32 Alpha	4.21	Shear (lb/sq ft)	0.23	1.44
0.00 Frctn Loss (ft)	0.08	Stream Power (lb/ft s)	40990.00	0.00
74.13 C & E Loss (ft)	0.12	Cum Volume (acre-ft)	109.21	36.20
77.51		Cum SA (acres)	102.39	8.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the

need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program

defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 40280

INPUT

Description: 402+80

Station Elevation Data		num= 14									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
39705	870.8	39805	870	39905	866	40005	865	40195	863		
40600	864.2	40610	860.4	40615	859.3	40620	859.4	40630	864.7		
40660	864.8	40710	864.5	40910	865	40945	866.6				

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
39705	.08	40600	.04	40630	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	40600	40630		350	390		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	864.28	Element	Left OB	Channel	Right
OB vel Head (ft)	0.15	wt. n-val.	0.080	0.040	
w.s. Elev (ft)	864.13	Reach Len. (ft)	350.00	390.00	
520.00 Crit w.s. (ft)		Flow Area (sq ft)	275.59	84.68	
E.G. Slope (ft/ft)	0.002841	Area (sq ft)	275.59	84.68	
Q Total (cfs)	516.00	Flow (cfs)	186.34	329.66	
Top width (ft)	516.98	Top width (ft)	488.25	28.73	
vel Total (ft/s)	1.43	Avg. vel. (ft/s)	0.68	3.89	
Max chl Dpth (ft)	4.83	Hydr. Depth (ft)	0.56	2.95	

Conv. Total (cfs)	9681.2	HampCkNorth.rep Conv. (cfs)	3496.1	6185.1
Length wtd. (ft)	392.24	wetted Per. (ft)	488.26	30.72
Min Ch El (ft)	859.30	Shear (lb/sq ft)	0.10	0.49
Alpha	4.80	Stream Power (lb/ft s)	40945.00	0.00
0.00 Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	45.23	29.21
26.96 C & E Loss (ft)	0.00	Cum SA (acres)	72.32	8.42
46.42				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	864.85				
Vel Head (ft)	0.13	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	864.72	Reach Len. (ft)	350.00	390.00	
520.00 Crit w.s. (ft)		Flow Area (sq ft)	594.42	102.12	
13.84 E.G. Slope (ft/ft)	0.002779	Area (sq ft)	594.42	102.12	
13.84 Q Total (cfs)	1035.00	Flow (cfs)	599.65	432.25	
3.11 Top width (ft)	729.56	Top width (ft)	568.45	30.00	
131.11 Vel Total (ft/s)	1.46	Avg. Vel. (ft/s)	1.01	4.23	
0.22 Max Chl Dpth (ft)	5.42	Hydr. Depth (ft)	1.05	3.40	
0.11 Conv. Total (cfs)	19632.1	Conv. (cfs)	11374.3	8199.0	
58.9 Length wtd. (ft)	396.53	wetted Per. (ft)	568.46	32.14	
131.11 Min Ch El (ft)	859.30	Shear (lb/sq ft)	0.18	0.55	
0.02 Alpha	3.80	Stream Power (lb/ft s)	40945.00	0.00	
0.00 Frctn Loss (ft)	1.02	Cum Volume (acre-ft)	109.07	36.16	
74.07 C & E Loss (ft)	0.00	Cum SA (acres)	102.24	8.73	
77.41					

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 39885

INPUT
Description: 398+85
Station Elevation Data num= 16

HampCkNorth.rep

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
39582	870.8	39708	870	39905	866	40005	865	40130	864
40195	863	40325	862.3	40375	862	40385	862	40395	857.9
40400	857.8	40415	864.3	40425	863.3	40600	862.5	40725	862
40815	864								

Manning's n Values

Sta	n Val	Sta	n Val	num=
39582	.08	40385	.04	3
		40415	.08	

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	40385	40415		300	315	.1	.3
					335		

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)		863.21	Element	Left OB	Channel	Right
OB	Vel Head (ft)	0.17	wt. n-val.	0.080	0.040	
0.080	W.S. Elev (ft)	863.03	Reach Len. (ft)	300.00	315.00	
335.00	Crit w.s. (ft)		Flow Area (sq ft)	104.01	88.30	
152.51	E.G. slope (ft/ft)	0.002644	Area (sq ft)	104.01	88.30	
152.51	Q Total (cfs)	516.00	Flow (cfs)	66.00	354.59	
95.41	Top width (ft)	506.79	Top width (ft)	192.04	27.07	
287.67	Vel Total (ft/s)	1.50	Avg. vel. (ft/s)	0.63	4.02	
0.63	Max chl Dpth (ft)	5.23	Hydr. Depth (ft)	0.54	3.26	
0.53	Conv. Total (cfs)	10034.8	Conv. (cfs)	1283.5	6895.9	
1855.4	Length wtd. (ft)	314.19	wetted Per. (ft)	192.05	28.97	
287.68	Min Ch El (ft)	857.80	Shear (lb/sq ft)	0.09	0.50	
0.09	Alpha	5.00	Stream Power (lb/ft s)	40815.00	0.00	
0.00	Frctn Loss (ft)	0.80	Cum volume (acre-ft)	43.70	28.43	
26.05	C & E Loss (ft)	0.03	Cum SA (acres)	69.59	8.17	
44.70						

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		863.83	Element	Left OB	Channel	Right
OB	Vel Head (ft)	0.12	wt. n-val.	0.080	0.040	
0.080	W.S. Elev (ft)	863.70	Reach Len. (ft)	300.00	315.00	
335.00	Crit w.s. (ft)		Flow Area (sq ft)	247.88	107.03	
388.61	E.G. slope (ft/ft)	0.002377	Area (sq ft)	247.88	107.03	
388.61	Q Total (cfs)	1035.00	Flow (cfs)	232.11	446.13	
356.76	Top width (ft)	645.11	Top width (ft)	235.76	28.63	
380.72	Vel Total (ft/s)	1.39	Avg. vel. (ft/s)	0.94	4.17	
0.92						

Max Chl Dpth (ft)	5.90	HampCkNorth.rep Hydr. Depth (ft)	1.05	3.74
1.02 Conv. Total (cfs)	21227.3	Conv. (cfs)	4760.4	9150.0
7316.9 Length wtd. (ft)	314.35	wetted Per. (ft)	235.77	30.66
380.76 Min Ch El (ft)	857.80	Shear (lb/sq ft)	0.16	0.52
0.15 Alpha	4.12	Stream Power (lb/ft s)	40815.00	0.00
0.00 Frctn Loss (ft)	0.77	Cum volume (acre-ft)	105.68	35.22
71.67 C & E Loss (ft)	0.00	Cum SA (acres)	99.01	8.47
74.36				

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39665

INPUT

Description: 396+65

Station Elevation Data		num=	23						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
39564	865	39593	864	39627	863	39664	862	39716	861
39733	860.9	39750	861	39825	862	39884	862.5	39929	862.3
39939	862	39982	861.1	40008	859.2	40013	857.5	40020	857.4
40030	865.1	40041	864.2	40066	864	40081	864	40101	863.8
40142	864	40209	864.5	40266	864				

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
39564	.08	39929	.04	40030	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
39929	40030	250	300	60	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	862.38	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.08	wt. n-Val.	0.080	0.040	
w.S. Elev (ft)	862.30	Reach Len. (ft)	250.00	300.00	
60.00 Crit w.s. (ft)	861.28	Flow Area (sq ft)	155.21	159.28	
E.G. Slope (ft/ft)	0.002427	Area (sq ft)	155.21	159.28	
Q Total (cfs)	516.00	Flow (cfs)	116.81	399.19	
Top width (ft)	306.21	Top width (ft)	208.84	97.37	
Vel Total (ft/s)	1.64	Avg. vel. (ft/s)	0.75	2.51	
Max Chl Dpth (ft)	4.90	Hydr. Depth (ft)	0.74	1.64	
Conv. Total (cfs)	10473.9	Conv. (cfs)	2371.1	8102.7	
Length wtd. (ft)	289.16	wetted Per. (ft)	208.87	99.40	
Min Ch El (ft)	857.40	Shear (lb/sq ft)	0.11	0.24	
Alpha	1.85	Stream Power (lb/ft s)	40266.00	0.00	

0.00				
Frctn Loss (ft)	1.09	Cum volume (acre-ft)	42.81	27.54
25.46				
C & E Loss (ft)	0.03	Cum SA (acres)	68.21	7.72
43.60				

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	863.06	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.11	wt. n-val.	0.080	0.040	
W.S. Elev (ft)	862.95	Reach Len. (ft)	250.00	300.00	
60.00					
Crit w.s. (ft)	862.01	Flow Area (sq ft)	334.57	222.40	
E.G. slope (ft/ft)	0.002497	Area (sq ft)	334.57	222.40	
Q Total (cfs)	1035.00	Flow (cfs)	333.82	701.18	
Top width (ft)	398.32	Top width (ft)	300.11	98.21	
Vel Total (ft/s)	1.86	Avg. vel. (ft/s)	1.00	3.15	
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	1.11	2.26	
Conv. Total (cfs)	20713.7	Conv. (cfs)	6680.9	14032.9	
Length wtd. (ft)	281.32	wetted Per. (ft)	300.14	100.46	
Min Ch El (ft)	857.40	Shear (lb/sq ft)	0.17	0.35	
Alpha	2.04	Stream Power (lb/ft s)	40266.00	0.00	
0.00					
Frctn Loss (ft)	1.16	Cum volume (acre-ft)	103.68	34.03	
70.18					
C & E Loss (ft)	0.03	Cum SA (acres)	97.17	8.01	
72.89					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39365

INPUT

Description: 393+65

Station	Elevation	Data	num=	22					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
39239	865	39267	864	39297	863	39360	862	39395	861.2

HampCkNorth.rep

39431	861	39490	860.3	39636	860.4	39684	860.3	39701	860.1
39710	857	39720	857	39730	863.5	39736	863.4	39760	862
39796	861.9	39818	862	39882	863	39942	863.3	39978	863
40034	862.3	40093	862						

Manning's n	Values	num=	3
Sta	n Val	Sta	n Val
39239	.08	39701	.04
		39730	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	39701	39730		280	280	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	861.26	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.42	wt. n-Val.	0.080	0.040	
W.S. Elev (ft)	860.84	Reach Len. (ft)	280.00	280.00	
280.00 Crit w.s. (ft)	860.84	Flow Area (sq ft)	117.94	70.32	
E.G. Slope (ft/ft)	0.006698	Area (sq ft)	117.94	70.32	
Q Total (cfs)	516.00	Flow (cfs)	106.82	409.18	
Top width (ft)	281.32	Top width (ft)	256.42	24.91	
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	0.91	5.82	
Max Chl Dpth (ft)	3.84	Hydr. Depth (ft)	0.46	2.82	
Conv. Total (cfs)	6304.7	Conv. (cfs)	1305.2	4999.5	
Length wtd. (ft)	280.00	wetted Per. (ft)	256.42	26.56	
Min Ch El (ft)	857.00	Shear (lb/sq ft)	0.19	1.11	
Alpha	3.60	Stream Power (lb/ft s)	40093.00	0.00	
0.00 Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	42.02	26.75	
25.46 C & E Loss (ft)	0.12	Cum SA (acres)	66.88	7.30	
43.60					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	861.87	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.46	wt. n-Val.	0.080	0.040	

W.S. Elev (ft)	861.41	HampCkNorth.rep	280.00	280.00
280.00		Reach Len. (ft)		
Crit w.s. (ft)	861.41	Flow Area (sq ft)	283.99	84.87
E.G. Slope (ft/ft)	0.007984	Area (sq ft)	283.99	84.87
Q Total (cfs)	1035.00	Flow (cfs)	439.57	595.43
Top width (ft)	341.09	Top width (ft)	315.30	25.79
Vel Total (ft/s)	2.81	Avg. Vel. (ft/s)	1.55	7.02
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)	0.90	3.29
Conv. Total (cfs)	11583.4	Conv. (cfs)	4919.6	6663.9
Length wtd. (ft)	280.00	wetted Per. (ft)	315.31	27.62
Min ch El (ft)	857.00	Shear (lb/sq ft)	0.45	1.53
Alpha	3.73	Stream Power (lb/ft s)	40093.00	0.00
0.00		Cum Volume (acre-ft)	101.90	32.97
Frctn Loss (ft)	0.28	Cum SA (acres)	95.40	7.58
70.18				
C & E Loss (ft)	0.13			
72.89				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39085

INPUT

Description: 390+85

Station Elevation Data				num=	12				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38725	862	39208	859.1	39605	859.3	39645	859.7	39665	859.5
39675	855.7	39690	855.6	39770	859.8	39910	860	40025	861
40076	861.35	40160	861.4						

Manning's n Values				num=	3				
Sta	n Val	Sta	n Val	Sta	n Val				
38725	.08	39665	.04	39770	.08				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
39665	39770	360	270	160	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	860.03	Element	Left OB	Channel	Right
OB					

Vel Head (ft)	0.02	HampCkNorth.rep wt. n-Val.	0.080	0.040
0.080 W.S. Elev (ft)	860.00	Reach Len. (ft)	360.00	270.00
160.00 Crit w.s. (ft)		Flow Area (sq ft)	414.77	273.55
14.39 E.G. slope (ft/ft)	0.000420	Area (sq ft)	414.77	273.55
14.39 Q Total (cfs)	516.00	Flow (cfs)	122.45	392.35
1.20 Top width (ft)	852.69	Top width (ft)	607.37	105.00
140.32 Vel Total (ft/s)	0.73	Avg. vel. (ft/s)	0.30	1.43
0.08 Max chl Dpth (ft)	4.40	Hydr. Depth (ft)	0.68	2.61
0.10 Conv. Total (cfs)	25174.2	Conv. (cfs)	5974.2	19141.4
58.6 Length wtd. (ft)	280.55	wetted Per. (ft)	607.37	105.81
140.32 Min ch El (ft)	855.60	Shear (lb/sq ft)	0.02	0.07
0.00 Alpha	2.94	Stream Power (lb/ft s)	40160.00	0.00
0.00 Frctn Loss (ft)	0.36	Cum volume (acre-ft)	40.31	25.64
25.41 C & E Loss (ft)	0.12	Cum SA (acres)	64.10	6.88
43.15				

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	860.83	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	860.81	Reach Len. (ft)	360.00	270.00	
160.00 Crit w.s. (ft)		Flow Area (sq ft)	957.84	358.10	
164.67 E.G. slope (ft/ft)	0.000374	Area (sq ft)	957.84	358.10	
164.67 Q Total (cfs)	1035.00	Flow (cfs)	408.12	579.94	
46.94 Top width (ft)	1079.41	Top width (ft)	741.48	105.00	
232.93 Vel Total (ft/s)	0.70	Avg. vel. (ft/s)	0.43	1.62	
0.29 Max chl Dpth (ft)	5.21	Hydr. Depth (ft)	1.29	3.41	
0.71 Conv. Total (cfs)	53515.5	Conv. (cfs)	21102.0	29986.2	
2427.3 Length wtd. (ft)	278.87	wetted Per. (ft)	741.49	105.81	
232.93 Min ch El (ft)	855.60	Shear (lb/sq ft)	0.03	0.08	
0.02 Alpha	3.16	Stream Power (lb/ft s)	40160.00	0.00	
0.00 Frctn Loss (ft)	0.26	Cum volume (acre-ft)	97.91	31.55	
69.65 C & E Loss (ft)	0.04	Cum SA (acres)	92.01	7.16	
72.14					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38825

INPUT

Description: 388+25

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38970	861.6	39335	859.3	39390	858.9	39412	858.9	39422	854.4
39425	854.3	39428	854.6	39438	858.6	39460	858.6	39510	859.1
39730	860	39830	861	39852	861	39870	861.35		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
38970	.08	39412	.04	39438	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	39412	39438		300	320	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	859.55					
	Vel Head (ft)	1.23	wt. n-Val.		0.040	
	W.S. Elev (ft)	858.32	Reach Len. (ft)	300.00	320.00	
320.00	Crit w.s. (ft)	858.32	Flow Area (sq ft)		57.92	
	E.G. Slope (ft/ft)	0.019354	Area (sq ft)		57.92	
	Q Total (cfs)	516.00	Flow (cfs)		516.00	
	Top width (ft)	24.02	Top width (ft)		24.02	
	Vel Total (ft/s)	8.91	Avg. vel. (ft/s)		8.91	
	Max Chl Dpth (ft)	4.02	Hydr. Depth (ft)		2.41	
	Conv. Total (cfs)	3709.1	Conv. (cfs)		3709.1	
	Length Wtd. (ft)	320.00	Wetted Per. (ft)		25.59	
	Min Ch El (ft)	854.30	Shear (lb/sq ft)		2.73	
	Alpha	1.00	Stream Power (lb/ft s)	39870.00	0.00	
0.00	Frctn Loss (ft)	2.48	Cum volume (acre-ft)	38.60	24.62	
25.39	C & E Loss (ft)	0.25	Cum SA (acres)	61.59	6.49	
42.89						

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is

less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)	860.52	Element	Left OB	Channel	Right
OB	Vel Head (ft)	0.46	wt. n-val.	0.080	0.040	
0.080	W.S. Elev (ft)	860.07	Reach Len. (ft)	300.00	320.00	
320.00	Crit w.s. (ft)	860.07	Flow Area (sq ft)	125.76	102.87	
207.43	E.G. Slope (ft/ft)	0.005549	Area (sq ft)	125.76	102.87	
207.43	Q Total (cfs)	1035.00	Flow (cfs)	128.18	681.81	
225.00	Top width (ft)	523.71	Top width (ft)	198.90	26.00	
298.81	Vel Total (ft/s)	2.37	Avg. vel. (ft/s)	1.02	6.63	
1.08	Max chl Dpth (ft)	5.77	Hydr. Depth (ft)	0.63	3.96	
0.69	Conv. Total (cfs)	13894.0	Conv. (cfs)	1720.8	9152.8	
3020.5	Length wtd. (ft)	318.15	wetted Per. (ft)	198.90	27.75	
298.82	Min Ch El (ft)	854.30	Shear (lb/sq ft)	0.22	1.28	
0.24	Alpha	5.20	Stream Power (lb/ft s)	39870.00	0.00	
0.00	Frctn Loss (ft)	1.37	Cum Volume (acre-ft)	93.44	30.12	
68.96	C & E Loss (ft)	0.01	Cum SA (acres)	88.12	6.76	
71.17						

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38500

INPUT

Description: 385+00

Station	Elevation	Data	num=	14	Station	Elevation	Station	Elevation	Station	Elevation
38280	861.6	38360	861	38540	860	38620	859	38720	858.2	

HampCkNorth.rep

38785 856.6 38805 856.2 38810 851.6 38820 851.6 38830 853.7
 38840 857.9 38870 856.4 38990 858 39325 859

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 38280 .08 38805 .04 38840 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 38805 38840 101 101 101 .1 .3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	856.66	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.39	wt. n-Val.	0.080	0.040	
W.S. Elev (ft)	856.27	Reach Len. (ft)	101.00	101.00	
101.00 Crit w.s. (ft)		Flow Area (sq ft)	0.11	102.52	
E.G. slope (ft/ft)	0.004155	Area (sq ft)	0.11	102.52	
Q Total (cfs)	516.00	Flow (cfs)	0.01	515.99	
Top width (ft)	34.47	Top width (ft)	3.36	31.11	
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	0.12	5.03	
Max Chl Dpth (ft)	4.67	Hydr. Depth (ft)	0.03	3.30	
Conv. Total (cfs)	8005.4	Conv. (cfs)	0.2	8005.2	
Length wtd. (ft)	101.00	wetted Per. (ft)	3.36	33.64	
Min Ch El (ft)	851.60	Shear (lb/sq ft)	0.01	0.79	
Alpha	1.00	Stream Power (lb/ft s)	39325.00	0.00	
0.00 Frctn Loss (ft)	0.25	Cum volume (acre-ft)	38.60	24.03	
25.39 C & E Loss (ft)	0.08	Cum SA (acres)	61.58	6.28	
42.89					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	858.31	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.42	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	857.89	Reach Len. (ft)	101.00	101.00	
101.00 Crit w.s. (ft)		Flow Area (sq ft)	63.71	156.20	
105.67 E.G. slope (ft/ft)	0.003446	Area (sq ft)	63.71	156.20	
105.67 Q Total (cfs)	1035.00	Flow (cfs)	63.74	876.53	
94.73 Top width (ft)	249.15	Top width (ft)	72.47	34.98	
141.70 Vel Total (ft/s)	3.18	Avg. Vel. (ft/s)	1.00	5.61	
0.90 Max Chl Dpth (ft)	6.29	Hydr. Depth (ft)	0.88	4.47	

HampCkNorth.rep

0.75				
Conv. Total (cfs)	17632.5	Conv. (cfs)	1085.9	14932.8
1613.8				
Length wtd. (ft)	101.00	wetted Per. (ft)	72.49	37.84
141.75				
Min Ch El (ft)	851.60	Shear (lb/sq ft)	0.19	0.89
0.16				
Alpha	2.65	Stream Power (lb/ft s)	39325.00	0.00
0.00				
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	92.78	29.17
67.81				
C & E Loss (ft)	0.08	Cum SA (acres)	87.19	6.53
69.55				

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38399

INPUT

Description: 383+99

Station Elevation Data	num=	10							
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev									
38674 858 38720 857.4 38755 857 38778 856.8 38812 851.22									
38815 851.22 38818 851.22 38851 857 38956 857.5 39073 858									

Manning's n Values	num=	3
Sta n Val Sta n Val Sta n Val		
38674 .08 38778 .04 38851 .08		

Bank Sta: Left Right	Lengths: Left Channel Right	Coeff Contr.	Expan.
38778 38851	115 115 115	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	856.33	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.13	wt. n-Val.		0.040	
w.s. Elev (ft)	856.20	Reach Len. (ft)	115.00	115.00	
115.00 Crit w.s. (ft)		Flow Area (sq ft)		175.99	
E.G. Slope (ft/ft)	0.001670	Area (sq ft)		175.99	
Q Total (cfs)	516.00	Flow (cfs)		516.00	
Top width (ft)	64.73	Top width (ft)		64.73	
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)		2.93	
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)		2.72	
Conv. Total (cfs)	12626.6	Conv. (cfs)		12626.6	
Length wtd. (ft)	115.00	wetted Per. (ft)		65.57	
Min Ch El (ft)	851.22	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)	39073.00	0.00	
0.00					

Frctn Loss (ft)	0.35	HampCkNorth.rep	Cum Volume (acre-ft)	38.60	23.70
25.39					
C & E Loss (ft)	0.03	Cum SA (acres)	61.57	6.17	
42.89					

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	858.03	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.16	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	857.87	Reach Len. (ft)	115.00	115.00	
115.00					
Crit w.s. (ft)		Flow Area (sq ft)	54.20	295.20	
81.06					
E.G. slope (ft/ft)	0.001262	Area (sq ft)	54.20	295.20	
81.06					
Q Total (cfs)	1035.00	Flow (cfs)	24.77	980.09	
30.15					
Top width (ft)	358.52	Top width (ft)	94.01	73.00	
191.51					
Vel Total (ft/s)	2.40	Avg. vel. (ft/s)	0.46	3.32	
0.37					
Max Chl Dpth (ft)	6.65	Hydr. Depth (ft)	0.58	4.04	
0.42					
Conv. Total (cfs)	29139.4	Conv. (cfs)	697.3	27593.4	
848.7					
Length wtd. (ft)	115.00	wetted Per. (ft)	94.01	73.96	
191.51					
Min Ch El (ft)	851.22	Shear (lb/sq ft)	0.05	0.31	
0.03					
Alpha	1.81	Stream Power (lb/ft s)	39073.00	0.00	
0.00					
Frctn Loss (ft)	0.31	Cum volume (acre-ft)	92.65	28.65	
67.60					
C & E Loss (ft)	0.06	Cum SA (acres)	86.99	6.41	
69.16					

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38284

INPUT

Description: 382+84

Station Elevation Data	num=	10							
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev									
38582 858 38729 857.5 38797 857 38800 856 38812 850.6									
38815 850.6 38818 850.6 38850 856 38997 857 39094 857.7									

Manning's n Values	num=	3			
Sta n Val Sta n Val Sta n Val					
38582 .08 38800 .04 38850 .08					

Bank Sta: Left Right	Lengths: Left Channel Right	Coeff Contr.	Expan.
38800 38850	68 68 68	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

HampCkNorth.rep

		Element	Left OB	Channel	Right
OB	E.G. Elev (ft)	855.95			
	Vel Head (ft)	0.45		0.040	
68.00	W.S. Elev (ft)	855.50	68.00	68.00	
	Crit w.s. (ft)			127.16	
	E.G. slope (ft/ft)	0.005621		127.16	
	Q Total (cfs)	684.00		684.00	
	Top width (ft)	45.92		45.92	
	Vel Total (ft/s)	5.38		5.38	
	Max chl Dpth (ft)	4.90		2.77	
	Conv. Total (cfs)	9122.9		9122.9	
	Length wtd. (ft)	68.00		47.38	
	Min ch El (ft)	850.60		0.94	
0.00	Alpha	1.00	39094.00	0.00	
25.39	Frctn Loss (ft)	0.30	38.60	23.30	
42.89	C & E Loss (ft)	0.05	61.57	6.03	

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
OB	E.G. Elev (ft)	857.67			
0.080	Vel Head (ft)	0.73	0.080	0.040	
68.00	W.S. Elev (ft)	856.94	68.00	68.00	
64.70	Crit w.s. (ft)	855.89	1.32	198.11	
64.70	E.G. slope (ft/ft)	0.005894	1.32	198.11	
55.70	Q Total (cfs)	1442.00	1.10	1385.20	
137.92	Top width (ft)	190.74	2.82	50.00	
0.86	Vel Total (ft/s)	5.46	0.83	6.99	
0.47	Max chl Dpth (ft)	6.34	0.47	3.96	
725.5	Conv. Total (cfs)	18782.1	14.3	18042.2	
137.93	Length wtd. (ft)	68.00	2.97	51.61	
0.17	Min ch El (ft)	850.60	0.16	1.41	
0.00	Alpha	1.58	39094.00	0.00	
67.40	Frctn Loss (ft)	0.30	92.57	27.99	
68.73	C & E Loss (ft)	0.09	86.86	6.25	

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38216

INPUT

Description: 382+16

Station Elevation Data		num= 12		Sta		Elev		Sta		Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38494	859	38557	858	38664	857	38700	856.8	38724	857		
38763	856	38787	850.31	38790	850.31	38793	850.31	38828	856		
39083	857	39129	857.2								

Manning's n Values		num= 3		Sta		n Val	
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
38494	.08	38763	.04	38828	.08		

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	38763	38828		101	101	101		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)	855.60	Element	Left OB	Channel	Right
	Vel Head (ft)	0.28	wt. n-Val.		0.040	
101.00	W.S. Elev (ft)	855.32	Reach Len. (ft)	101.00	101.00	
	Crit w.s. (ft)		Flow Area (sq ft)		160.05	
	E.G. slope (ft/ft)	0.003491	Area (sq ft)		160.05	
	Q Total (cfs)	684.00	Flow (cfs)		684.00	
	Top width (ft)	57.92	Top width (ft)		57.92	
	Vel Total (ft/s)	4.27	Avg. vel. (ft/s)		4.27	
	Max Chl Dpth (ft)	5.01	Hydr. Depth (ft)		2.76	
	Conv. Total (cfs)	11576.2	Conv. (cfs)		11576.2	
	Length Wtd. (ft)	101.00	wetted Per. (ft)		58.91	
	Min Ch El (ft)	850.31	Shear (lb/sq ft)		0.59	
0.00	Alpha	1.00	Stream Power (lb/ft s)	39129.00	0.00	
25.39	Frctn Loss (ft)	0.56	Cum volume (acre-ft)	38.60	23.08	
42.89	C & E Loss (ft)	0.06	Cum SA (acres)	61.57	5.94	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

OB	E.G. Elev (ft)	857.28	Element	Left OB	Channel	Right
	Vel Head (ft)	0.42	wt. n-Val.	0.080	0.040	

HampCkNorth.rep

0.080	W.S. Elev (ft)	856.85	Reach Len. (ft)	101.00	101.00
101.00	Crit w.s. (ft)	855.21	Flow Area (sq ft)	14.67	257.51
93.01	E.G. Slope (ft/ft)	0.003378	Area (sq ft)	14.67	257.51
93.01	Q Total (cfs)	1442.00	Flow (cfs)	8.75	1376.30
56.95	Top width (ft)	332.36	Top width (ft)	49.55	65.00
217.80	Vel Total (ft/s)	3.95	Avg. Vel. (ft/s)	0.60	5.34
0.61	Max chl Dpth (ft)	6.54	Hydr. Depth (ft)	0.30	3.96
0.43	Conv. Total (cfs)	24809.0	Conv. (cfs)	150.6	23678.7
979.8	Length wtd. (ft)	101.00	wetted Per. (ft)	49.57	66.12
217.80	Min Ch El (ft)	850.31	Shear (lb/sq ft)	0.06	0.82
0.09	Alpha	1.75	Stream Power (lb/ft s)	39129.00	0.00
0.00	Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	92.56	27.64
67.28	C & E Loss (ft)	0.06	Cum SA (acres)	86.82	6.16
68.45					

Warning: Divided flow computed for this cross-section.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38115

INPUT

Description: 381+15

Station Elevation Data		num=	15
Sta	Elev	Sta	Elev
38050	860.3	38080	860
38510	856.3	38525	856.7
38560	855.3	38600	854

Manning's n values		num=	3
Sta	n Val	Sta	n Val
38050	.08	38525	.04
		38560	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
38525	38560	340	340	340	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	854.98	Element	Left OB	Channel	Right
OB	Vel Head (ft)	0.86	wt. n-Val.	0.040	
0.080	W.S. Elev (ft)	854.12	Reach Len. (ft)	340.00	340.00
340.00	Crit w.s. (ft)	853.50	Flow Area (sq ft)	91.97	
0.68	E.G. Slope (ft/ft)	0.010220	Area (sq ft)	91.97	

HampCkNorth.rep

0.68	Q Total (cfs)	684.00	Flow (cfs)	683.80
0.20	Top width (ft)	41.13	Top width (ft)	30.19
10.94	Vel Total (ft/s)	7.38	Avg. Vel. (ft/s)	7.43
0.29	Max chl Dpth (ft)	4.32	Hydr. Depth (ft)	3.05
0.06	Conv. Total (cfs)	6766.1	Conv. (cfs)	6764.1
2.0	Length wtd. (ft)	340.00	wetted Per. (ft)	33.02
10.94	Min ch El (ft)	849.80	Shear (lb/sq ft)	1.78
0.04	Alpha	1.01	Stream Power (lb/ft s)	38781.00
0.00	Frctn Loss (ft)	2.13	Cum Volume (acre-ft)	38.60
25.39	C & E Loss (ft)	0.17	Cum SA (acres)	61.57
42.88				5.84

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB		856.69				
	Vel Head (ft)	1.00	wt. n-val.		0.040	
0.080	W.S. Elev (ft)	855.69	Reach Len. (ft)	340.00	340.00	
340.00	Crit w.s. (ft)	855.69	Flow Area (sq ft)		142.98	
123.56	E.G. slope (ft/ft)	0.009286	Area (sq ft)		142.98	
123.56	Q Total (cfs)	1442.00	Flow (cfs)		1235.71	
206.29	Top width (ft)	171.38	Top width (ft)		34.27	
137.11	Vel Total (ft/s)	5.41	Avg. vel. (ft/s)		8.64	
1.67	Max chl Dpth (ft)	5.89	Hydr. Depth (ft)		4.17	
0.90	Conv. Total (cfs)	14964.0	Conv. (cfs)		12823.3	
2140.7	Length wtd. (ft)	340.00	wetted Per. (ft)		38.11	
137.15	Min ch El (ft)	849.80	Shear (lb/sq ft)		2.17	
0.52	Alpha	2.20	Stream Power (lb/ft s)	38781.00	0.00	
0.00	Frctn Loss (ft)	2.52	Cum volume (acre-ft)	92.54	27.17	
67.03	C & E Loss (ft)	0.16	Cum SA (acres)	86.77	6.04	
68.04						

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37775

INPUT

Description: 377+75

Station Elevation Data		num= 17									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
37465	860.3	37670	859	37900	855	37965	854	38090	852		
38145	851.8	38165	853	38170	848.1	38175	848.2	38195	849.4		
38212	852	38243	852.4	38310	851.5	38454	853	38505	854		
38657	854.2	38766	855								

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
37465	.08	38165	.04	38212	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	38165	38212		320	320		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	852.69					
Vel Head (ft)	0.31		wt. n-Val.	0.080	0.040	
0.080						
w.s. Elev (ft)	852.38		Reach Len. (ft)	320.00	320.00	
320.00						
Crit w.s. (ft)	851.31		Flow Area (sq ft)	34.07	130.84	
72.32						
E.G. Slope (ft/ft)	0.004223		Area (sq ft)	34.07	130.84	
72.32						
Q Total (cfs)	684.00		Flow (cfs)	21.72	613.34	
48.94						
Top width (ft)	315.55		Top width (ft)	88.74	46.37	
180.44						
Vel Total (ft/s)	2.88		Avg. vel. (ft/s)	0.64	4.69	
0.68						
Max chl Dpth (ft)	4.28		Hydr. Depth (ft)	0.38	2.82	
0.40						
Conv. Total (cfs)	10525.6		Conv. (cfs)	334.3	9438.2	
753.1						
Length wtd. (ft)	320.00		wetted Per. (ft)	88.76	48.35	
180.45						
Min Ch El (ft)	848.10		Shear (lb/sq ft)	0.10	0.71	
0.11						
Alpha	2.38		Stream Power (lb/ft s)	38766.00	0.00	
0.00						
Frctn Loss (ft)	1.78		Cum volume (acre-ft)	38.47	21.92	
25.10						
C & E Loss (ft)	0.02		Cum SA (acres)	61.23	5.54	
42.13						

Warning: Divided flow computed for this cross-section.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	853.50					
Vel Head (ft)	0.46		wt. n-val.	0.080	0.040	
0.080						
W.S. Elev (ft)	853.04		Reach Len. (ft)	320.00	320.00	
320.00						
Crit w.s. (ft)	852.85		Flow Area (sq ft)	108.73	161.29	
211.87						
E.G. slope (ft/ft)	0.006071		Area (sq ft)	108.73	161.29	
211.87						
Q Total (cfs)	1442.00		Flow (cfs)	133.08	1029.73	
279.19						
Top width (ft)	430.57		Top width (ft)	139.74	47.00	
243.83						
Vel Total (ft/s)	2.99		Avg. vel. (ft/s)	1.22	6.38	
1.32						
Max Chl Dpth (ft)	4.94		Hydr. Depth (ft)	0.78	3.43	
0.87						
Conv. Total (cfs)	18506.5		Conv. (cfs)	1708.0	13215.4	
3583.1						
Length wtd. (ft)	320.00		wetted Per. (ft)	139.79	49.24	
243.85						
Min Ch El (ft)	848.10		Shear (lb/sq ft)	0.29	1.24	
0.33						
Alpha	3.30		Stream Power (lb/ft s)	38766.00	0.00	
0.00						
Frctn Loss (ft)	2.03		Cum volume (acre-ft)	92.12	25.99	
65.72						
C & E Loss (ft)	0.05		Cum SA (acres)	86.22	5.72	
66.55						

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37455

INPUT

Description: 374+55

Station Elevation Data		num= 16							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
37287	852	37341	851	37395	850.5	37548	850.4	37701	850.6
37770	849.5	37821	850.6	37843	852.5	37860	845.7	37865	845.5
37883	851.6	37895	851.3	37967	849.38	38161	850.8	38302	851
38403	852								

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
37287	.08	37843	.04	37883	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	37843	37883		280	280	280		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	850.89				
OB					
Vel Head (ft)	0.48	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	850.41	Reach Len. (ft)	280.00	280.00	
280.00					
Crit w.s. (ft)	850.41	Flow Area (sq ft)	45.31	87.36	
92.40					
E.G. slope (ft/ft)	0.007667	Area (sq ft)	45.31	87.36	
92.40					
Q Total (cfs)	684.00	Flow (cfs)	43.49	543.95	
96.56					
Top width (ft)	333.35	Top width (ft)	122.70	31.27	
179.38					
Vel Total (ft/s)	3.04	Avg. vel. (ft/s)	0.96	6.23	
1.05					
Max chl Dpth (ft)	4.91	Hydr. Depth (ft)	0.37	2.79	
0.52					
Conv. Total (cfs)	7811.6	Conv. (cfs)	496.7	6212.1	
1102.8					
Length wtd. (ft)	280.00	wetted Per. (ft)	122.72	32.99	
179.40					
Min ch El (ft)	845.50	Shear (lb/sq ft)	0.18	1.27	
0.25					
Alpha	3.36	Stream Power (lb/ft s)	38403.00	0.00	
0.00					
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	38.17	21.12	
24.50					
C & E Loss (ft)	0.09	Cum SA (acres)	60.45	5.26	
40.81					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the

need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	851.42				
OB					
Vel Head (ft)	0.31	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	851.11	Reach Len. (ft)	280.00	280.00	
280.00					
Crit w.s. (ft)	851.11	Flow Area (sq ft)	343.80	110.64	
285.07					
E.G. slope (ft/ft)	0.006639	Area (sq ft)	343.80	110.64	
285.07					
Q Total (cfs)	1442.00	Flow (cfs)	409.71	694.40	
337.89					
Top width (ft)	938.34	Top width (ft)	491.98	35.09	
411.27					
Vel Total (ft/s)	1.95	Avg. vel. (ft/s)	1.19	6.28	
1.19					

Max Chl Dpth (ft)	5.61	HampCkNorth.rep		
0.69		Hydr. Depth (ft)	0.70	3.15
Conv. Total (cfs)	17697.0	Conv. (cfs)	5028.2	8522.0
4146.8				
Length wtd. (ft)	280.00	Wetted Per. (ft)	492.03	37.06
411.30				
Min Ch El (ft)	845.50	Shear (lb/sq ft)	0.29	1.24
0.29				
Alpha	5.18	Stream Power (lb/ft s)	38403.00	0.00
0.00				
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	90.46	24.99
63.90				
C & E Loss (ft)	0.00	Cum SA (acres)	83.90	5.42
64.15				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the

need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37170

INPUT

Description: 371+70

Station Elevation Data		num=	14						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
37575	850	37585	848.6	37725	849	37805	848.1	37850	848.3
37880	850.5	37895	844.1	37900	843.9	37920	843.7	37925	850
38065	850	38075	848	38085	850	38095	852		

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
37575	.08	37880	.04	37925	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
37880	37925	30	90	250	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	849.33	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.17	wt. n-Val.	0.080	0.040	
0.080					
w.S. Elev (ft)	849.15	Reach Len. (ft)	30.00	90.00	
250.00					
Crit w.S. (ft)		Flow Area (sq ft)	147.05	174.61	
6.67					
E.G. slope (ft/ft)	0.001458	Area (sq ft)	147.05	174.61	
6.67					
Q Total (cfs)	684.00	Flow (cfs)	67.78	612.99	
3.24					
Top width (ft)	333.34	Top width (ft)	280.61	41.18	

HampCkNorth.rep

11.55	Vel Total (ft/s)	2.08	Avg. Vel. (ft/s)	0.46	3.51
0.49	Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)	0.52	4.24
0.58	Conv. Total (cfs)	17913.3	Conv. (cfs)	1775.0	16053.6
84.7	Length Wtd. (ft)	77.27	Wetted Per. (ft)	280.69	44.85
11.78	Min ch El (ft)	843.70	Shear (lb/sq ft)	0.05	0.35
0.05	Alpha	2.55	Stream Power (lb/ft s)	38095.00	0.00
0.00	Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	37.56	20.27
24.18	C & E Loss (ft)	0.00	Cum SA (acres)	59.16	5.03
40.19					

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)	850.14	Element	Left OB	Channel	Right
OB	Vel Head (ft)	0.31	wt. n-val.	0.080	0.040	
0.080	W.S. Elev (ft)	849.82	Reach Len. (ft)	30.00	90.00	
250.00	Crit w.s. (ft)		Flow Area (sq ft)	339.56	202.88	
16.64	E.G. slope (ft/ft)	0.002834	Area (sq ft)	339.56	202.88	
16.64	Q Total (cfs)	1442.00	Flow (cfs)	369.07	1057.66	
15.27	Top width (ft)	356.04	Top width (ft)	294.52	43.27	
18.24	Vel Total (ft/s)	2.58	Avg. Vel. (ft/s)	1.09	5.21	
0.92	Max Chl Dpth (ft)	6.12	Hydr. Depth (ft)	1.15	4.69	
0.91	Conv. Total (cfs)	27085.1	Conv. (cfs)	6932.3	19866.0	
286.8	Length Wtd. (ft)	68.27	Wetted Per. (ft)	294.67	47.41	
18.60	Min ch El (ft)	843.70	Shear (lb/sq ft)	0.20	0.76	
0.16	Alpha	3.04	Stream Power (lb/ft s)	38095.00	0.00	
0.00	Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	88.26	23.98	
62.93	C & E Loss (ft)	0.06	Cum SA (acres)	81.37	5.17	
62.76						

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37080

INPUT

HampCkNorth.rep

Description: 370+80

Station Elevation Data		num= 10		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
36865	850	36910	849	37410	847.8	37480	850.8	37495	843.9		
37500	844	37510	846.1	37525	848.9	37710	850	37965	850.6		

Manning's n Values		num= 3		Sta	n Val	Sta	n Val
36865	.08	37480	.04	37525	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	37480	37525		120	220	450	.1
							.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	849.17	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.16	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	849.01	Reach Len. (ft)	120.00	220.00	
450.00					
Crit w.s. (ft)		Flow Area (sq ft)	321.48	115.89	
1.00					
E.G. slope (ft/ft)	0.002917	Area (sq ft)	321.48	115.89	
1.00					
Q Total (cfs)	684.00	Flow (cfs)	231.49	452.37	
0.14					
Top width (ft)	588.02	Top width (ft)	528.61	41.11	
18.30					
Vel Total (ft/s)	1.56	Avg. vel. (ft/s)	0.72	3.90	
0.14					
Max chl Dpth (ft)	5.11	Hydr. Depth (ft)	0.61	2.82	
0.05					
Conv. Total (cfs)	12664.3	Conv. (cfs)	4286.0	8375.6	
2.7					
Length wtd. (ft)	218.65	wetted Per. (ft)	528.63	42.70	
18.31					
Min ch El (ft)	843.90	Shear (lb/sq ft)	0.11	0.49	
0.01					
Alpha	4.21	Stream Power (lb/ft s)	37965.00	0.00	
0.00					
Frctn Loss (ft)	0.52	Cum volume (acre-ft)	37.39	19.97	
24.16					
C & E Loss (ft)	0.00	Cum SA (acres)	58.88	4.94	
40.11					

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	849.90	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.11	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	849.79	Reach Len. (ft)	120.00	220.00	
450.00					
Crit w.s. (ft)		Flow Area (sq ft)	753.49	148.53	
66.16					
E.G. slope (ft/ft)	0.002365	Area (sq ft)	753.49	148.53	
66.16					
Q Total (cfs)	1442.00	Flow (cfs)	808.58	598.67	
34.75					
Top width (ft)	773.75	Top width (ft)	581.78	42.80	
149.18					
Vel Total (ft/s)	1.49	Avg. vel. (ft/s)	1.07	4.03	
0.53					

Max Chl Dpth (ft)	5.89	HampCkNorth.rep Hydr. Depth (ft)	1.30	3.47
0.44 Conv. Total (cfs)	29653.8	Conv. (cfs)	16628.0	12311.2
714.6 Length wtd. (ft)	220.00	wetted Per. (ft)	581.83	44.56
149.18 Min Ch El (ft)	843.90	Shear (lb/sq ft)	0.19	0.49
0.07 Alpha	3.33	Stream Power (lb/ft s)	37965.00	0.00
0.00 Frctn Loss (ft)	0.49	Cum volume (acre-ft)	87.88	23.62
62.69 C & E Loss (ft)	0.00	Cum SA (acres)	81.07	5.08
62.28				

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 36850

INPUT

Description: 368+50

Station Elevation Data		num=	12						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
36490	853.7	36690	850	36825	850	37220	847.4	37285	848.3
37305	842.4	37310	842.3	37325	850	37370	847.4	37590	848
37710	849	37735	849.2						

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
36490	.08	37285	.04	37325	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
37285	37325	370	370	370	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	848.64	Element	Left OB	Channel	Right
OB vel Head (ft)	0.15	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	848.49	Reach Len. (ft)	370.00	370.00	
370.00 Crit w.s. (ft)		Flow Area (sq ft)	130.95	130.68	
197.32 E.G. slope (ft/ft)	0.002010	Area (sq ft)	130.95	130.68	
197.32 Q Total (cfs)	684.00	Flow (cfs)	74.90	484.03	
125.06 Top width (ft)	564.18	Top width (ft)	230.00	37.05	
297.13 vel Total (ft/s)	1.49	Avg. vel. (ft/s)	0.57	3.70	
0.63 Max chl Dpth (ft)	6.19	Hydr. Depth (ft)	0.57	3.53	
0.66 Conv. Total (cfs)	15256.4	Conv. (cfs)	1670.7	10796.2	
2789.5 Length wtd. (ft)	370.00	wetted Per. (ft)	230.01	39.40	
297.16 Min Ch El (ft)	842.30	Shear (lb/sq ft)	0.07	0.42	
0.08 Alpha	4.42	Stream Power (lb/ft s)	37735.00	0.00	
0.00 Frctn Loss (ft)	0.76	Cum volume (acre-ft)	36.77	19.35	

23.13
 C & E Loss (ft) 0.00 Cum SA (acres) 57.83 4.74
 38.48

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	849.40				
OB					
Vel Head (ft)	0.14	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	849.27	Reach Len. (ft)	370.00	370.00	
370.00					
Crit w.s. (ft)		Flow Area (sq ft)	356.49	160.16	
470.67					
E.G. Slope (ft/ft)	0.002131	Area (sq ft)	356.49	160.16	
470.67					
Q Total (cfs)	1442.00	Flow (cfs)	310.30	679.99	
451.71					
Top width (ft)	784.33	Top width (ft)	348.47	38.57	
397.29					
Vel Total (ft/s)	1.46	Avg. vel. (ft/s)	0.87	4.25	
0.96					
Max chl Dpth (ft)	6.97	Hydr. Depth (ft)	1.02	4.15	
1.18					
Conv. Total (cfs)	31239.6	Conv. (cfs)	6722.4	14731.5	
9785.8					
Length wtd. (ft)	370.00	wetted Per. (ft)	348.48	41.11	
397.42					
Min ch El (ft)	842.30	Shear (lb/sq ft)	0.14	0.52	
0.16					
Alpha	4.20	Stream Power (lb/ft s)	37735.00	0.00	
0.00					
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	86.36	22.84	
59.92					
C & E Loss (ft)	0.00	Cum SA (acres)	79.79	4.88	
59.46					

Warning: Divided flow computed for this cross-section.

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 36480

INPUT

Description: 364+480

Station Elevation Data		num= 14									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
36243	854.5	36308	854	36455	850	36525	849	36765	847.6		
37015	846.7	37088	848	37100	841.6	37107	841.5	37130	848.6		
37180	846.8	37405	847.7	37528	848	37778	848.5				

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
36243	.08	37088	.04	37130	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	37088	37130		320	320	320	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

HampCkNorth.rep

		Element	Left OB	Channel	Right
E.G. Elev (ft)	847.87				
OB					
Vel Head (ft)	0.19	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	847.69	Reach Len. (ft)	320.00	320.00	
320.00					
Crit w.s. (ft)		Flow Area (sq ft)	162.49	139.73	
109.46					
E.G. slope (ft/ft)	0.002115	Area (sq ft)	162.49	139.73	
109.46					
Q Total (cfs)	684.00	Flow (cfs)	88.25	541.35	
54.40					
Top width (ft)	605.56	Top width (ft)	320.51	38.46	
246.59					
Vel Total (ft/s)	1.66	Avg. vel. (ft/s)	0.54	3.87	
0.50					
Max chl Dpth (ft)	6.19	Hydr. Depth (ft)	0.51	3.63	
0.44					
Conv. Total (cfs)	14873.0	Conv. (cfs)	1918.9	11771.2	
1183.0					
Length wtd. (ft)	320.00	wetted Per. (ft)	320.52	40.91	
246.61					
Min ch El (ft)	841.50	Shear (lb/sq ft)	0.07	0.45	
0.06					
Alpha	4.32	Stream Power (lb/ft s)	37778.00	0.00	
0.00					
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	35.52	18.20	
21.83					
C & E Loss (ft)	0.04	Cum SA (acres)	55.49	4.42	
36.17					

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	848.63				
OB					
Vel Head (ft)	0.14	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	848.50	Reach Len. (ft)	320.00	320.00	
320.00					
Crit w.s. (ft)		Flow Area (sq ft)	489.19	172.27	
461.56					
E.G. slope (ft/ft)	0.002039	Area (sq ft)	489.19	172.27	
461.56					
Q Total (cfs)	1442.00	Flow (cfs)	417.43	714.36	
310.22					
Top width (ft)	1161.70	Top width (ft)	476.68	41.66	
643.36					
Vel Total (ft/s)	1.28	Avg. vel. (ft/s)	0.85	4.15	
0.67					
Max chl Dpth (ft)	7.00	Hydr. Depth (ft)	1.03	4.13	
0.72					
Conv. Total (cfs)	31934.9	Conv. (cfs)	9244.4	15820.3	
6870.2					
Length wtd. (ft)	320.00	wetted Per. (ft)	476.70	44.32	
643.39					
Min ch El (ft)	841.50	Shear (lb/sq ft)	0.13	0.49	
0.09					
Alpha	5.35	Stream Power (lb/ft s)	37778.00	0.00	
0.00					
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	82.76	21.43	

55.96
 C & E Loss (ft) 0.03 Cum SA (acres) 76.29 4.54
 55.04

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 36160

INPUT

Description: 361+60

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
36045	850	36215	849	36372	848	36559	847	36720	846.4
36780	846.1	36790	846.9	36800	840.4	36810	840.8	36830	847
37045	846	37327	847	37555	847.6	38005	848.5		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
36045	.08	36790	.04	36830	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	36790	36830		1200	730	300	.1 .3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	847.52				
OB Vel Head (ft)	0.05	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	847.47	Reach Len. (ft)	1200.00	730.00	
300.00 Crit w.s. (ft)		Flow Area (sq ft)	226.17	178.13	
521.20 E.G. Slope (ft/ft)	0.000572	Area (sq ft)	226.17	178.13	
521.20 Q Total (cfs)	684.00	Flow (cfs)	80.02	408.95	
195.03 Top width (ft)	1032.09	Top width (ft)	318.10	40.00	
674.00 Vel Total (ft/s)	0.74	Avg. vel. (ft/s)	0.35	2.30	
0.37 Max chl Dpth (ft)	7.07	Hydr. Depth (ft)	0.71	4.45	
0.77 Conv. Total (cfs)	28603.8	Conv. (cfs)	3346.3	17101.6	
8155.9 Length wtd. (ft)	657.73	wetted Per. (ft)	318.13	42.87	
674.00 Min ch El (ft)	840.40	Shear (lb/sq ft)	0.03	0.15	
0.03 Alpha	5.87	Stream Power (lb/ft s)	38005.00	0.00	
0.00 Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	34.10	17.04	
19.51 C & E Loss (ft)	0.04	Cum SA (acres)	53.15	4.13	
32.79					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	848.26				
OB					
Vel Head (ft)	0.05	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	848.21	Reach Len. (ft)	1200.00	730.00	
300.00					
Crit w.s. (ft)		Flow Area (sq ft)	514.05	207.90	
1150.41					
E.G. slope (ft/ft)	0.000674	Area (sq ft)	514.05	207.90	
1150.41					
Q Total (cfs)	1442.00	Flow (cfs)	270.46	574.40	
597.14					
Top width (ft)	1520.99	Top width (ft)	450.97	40.00	
1030.02					
Vel Total (ft/s)	0.77	Avg. vel. (ft/s)	0.53	2.76	
0.52					
Max chl Dpth (ft)	7.81	Hydr. Depth (ft)	1.14	5.20	
1.12					
Conv. Total (cfs)	55545.7	Conv. (cfs)	10418.1	22125.9	
23001.7					
Length wtd. (ft)	604.07	wetted Per. (ft)	451.01	42.87	
1030.02					
Min Ch El (ft)	840.40	Shear (lb/sq ft)	0.05	0.20	
0.05					
Alpha	5.40	Stream Power (lb/ft s)	38005.00	0.00	
0.00					
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	79.08	20.03	
50.04					
C & E Loss (ft)	0.04	Cum SA (acres)	72.88	4.24	
48.90					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 35430

INPUT

Description: 354+30

Station Elevation Data		num= 10							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
35175	848	35405	847.2	35585	847.6	35640	847.4	35650	839.4
35655	839.4	35670	846.5	35675	846.4	35735	845	36300	848

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
35175	.08	35640	.04	35670	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	35640	35670		320	320	320		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	846.60				
OB					
Vel Head (ft)	0.43	wt. n-Val.		0.040	
0.080					
W.S. Elev (ft)	846.17	Reach Len. (ft)	320.00	320.00	

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320.00				
Crit w.s. (ft)	844.80	Flow Area (sq ft)		110.88
157.90				
E.G. Slope (ft/ft)	0.004597	Area (sq ft)		110.88
157.90				
Q Total (cfs)	783.00	Flow (cfs)		644.02
138.98				
Top width (ft)	297.97	Top width (ft)		27.76
270.21				
Vel Total (ft/s)	2.91	Avg. vel. (ft/s)		5.81
0.88				
Max Chl Dpth (ft)	6.77	Hydr. Depth (ft)		3.99
0.58				
Conv. Total (cfs)	11549.0	Conv. (cfs)		9499.1
2050.0				
Length wtd. (ft)	320.00	wetted Per. (ft)		31.66
270.22				
Min Ch El (ft)	839.40	Shear (lb/sq ft)		1.01
0.17				
Alpha	3.29	Stream Power (lb/ft s)	36300.00	0.00
0.00				
Frctn Loss (ft)	0.53	Cum volume (acre-ft)	30.98	14.61
17.17				
C & E Loss (ft)	0.11	Cum SA (acres)	48.77	3.57
29.54				

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.46	wt. n-val.		0.040	
0.080					
w.s. Elev (ft)	846.87	Reach Len. (ft)	320.00	320.00	
320.00					
Crit w.s. (ft)	846.66	Flow Area (sq ft)		131.13	
403.04					
E.G. Slope (ft/ft)	0.005498	Area (sq ft)		131.13	
403.04					
Q Total (cfs)	1438.00	Flow (cfs)		896.11	
541.89					
Top width (ft)	447.18	Top width (ft)		29.34	
417.84					
Vel Total (ft/s)	2.69	Avg. vel. (ft/s)		6.83	
1.34					
Max Chl Dpth (ft)	7.47	Hydr. Depth (ft)		4.47	
0.96					
Conv. Total (cfs)	19392.9	Conv. (cfs)		12084.9	
7308.0					
Length wtd. (ft)	320.00	wetted Per. (ft)		33.56	
417.86					
Min Ch El (ft)	839.40	Shear (lb/sq ft)		1.34	
0.33					
Alpha	4.11	Stream Power (lb/ft s)	36300.00	0.00	
0.00					
Frctn Loss (ft)	0.68	Cum volume (acre-ft)	72.00	17.19	
44.69					
C & E Loss (ft)	0.11	Cum SA (acres)	66.67	3.66	
43.91					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is
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less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 35110

INPUT

Description: 351+10

Station Elevation Data		num= 17		Sta Elev		Sta Elev		Sta Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
34920	848	34983	847	35040	846	35110	846	35230	845
35250	844.8	35680	844.7	35730	845.7	35740	845.2	35750	838.8
35760	838.7	35775	846.3	35780	846.1	35830	845.2	35903	846
36230	847	36255	847.1						

Manning's n Values		num= 3		Sta n Val	
Sta	n Val	Sta	n Val	Sta	n Val
34920	.08	35740	.04	35775	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	35740	35775		315	315	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)		845.96	Element	Left OB	Channel	Right
OB	vel Head (ft)	0.08	wt. n-val.	0.080	0.040	
0.080	W.S. Elev (ft)	845.89	Reach Len. (ft)	315.00	315.00	
315.00	Crit w.s. (ft)		Flow Area (sq ft)	593.46	161.15	
34.46	E.G. slope (ft/ft)	0.000853	Area (sq ft)	593.46	161.15	
34.46	Q Total (cfs)	783.00	Flow (cfs)	313.93	459.92	
9.15	Top width (ft)	750.99	Top width (ft)	616.22	34.18	
100.59	vel Total (ft/s)	0.99	Avg. vel. (ft/s)	0.53	2.85	
0.27	Max chl Dpth (ft)	7.19	Hydr. Depth (ft)	0.96	4.71	
0.34	Conv. Total (cfs)	26811.3	Conv. (cfs)	10749.5	15748.4	
313.4	Length wtd. (ft)	315.00	wetted Per. (ft)	616.25	37.77	
100.60	Min ch El (ft)	838.70	Shear (lb/sq ft)	0.05	0.23	
0.02	Alpha	4.97	Stream Power (lb/ft s)	36255.00	0.00	
0.00	Frctn Loss (ft)	0.43	Cum volume (acre-ft)	28.80	13.62	
16.47	C & E Loss (ft)	0.02	Cum SA (acres)	46.50	3.34	
28.17						

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		846.54	Element	Left OB	Channel	Right
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HampCkNorth.rep

OB				
0.080	Vel Head (ft)	0.09	wt. n-val.	0.080 0.040
315.00	W.S. Elev (ft)	846.45	Reach Len. (ft)	315.00 315.00
136.31	Crit w.s. (ft)		Flow Area (sq ft)	985.51 180.74
136.31	E.G. slope (ft/ft)	0.001129	Area (sq ft)	985.51 180.74
53.28	Q Total (cfs)	1438.00	Flow (cfs)	754.29 630.44
275.04	Top width (ft)	1035.66	Top width (ft)	725.63 35.00
0.39	Vel Total (ft/s)	1.10	Avg. vel. (ft/s)	0.77 3.49
0.50	Max chl Dpth (ft)	7.75	Hydr. Depth (ft)	1.36 5.16
1585.6	Conv. Total (cfs)	42796.7	Conv. (cfs)	22448.5 18762.6
275.05	Length wtd. (ft)	315.00	wetted Per. (ft)	725.66 38.69
0.03	Min ch El (ft)	838.70	shear (lb/sq ft)	0.10 0.33
0.00	Alpha	4.63	Stream Power (lb/ft s)	36255.00 0.00
42.71	Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	68.38 16.04
41.36	C & E Loss (ft)	0.00	Cum SA (acres)	64.00 3.42

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34790

INPUT

Description: 347+90

Station Elevation Data		num=	19						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
34790	848	35010	847	35100	846	35172	845	35580	844.9
35635	845.6	35640	845.8	35650	838.7	35660	838.7	35675	845.7
35680	845.8	35750	844.2	35950	845	36048	845.2	36240	845.3
36405	846	36580	846.4	36760	846	37032	848.6		

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
34790	.08	35640	.04	35675	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	35640	35675		340	340		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

OB	E.G. Elev (ft)	845.51	Element	Left OB	Channel	Right
0.080	Vel Head (ft)	0.27	wt. n-val.	0.080	0.040	
340.00	W.S. Elev (ft)	845.24	Reach Len. (ft)	340.00	340.00	
165.51	Crit w.s. (ft)	843.10	Flow Area (sq ft)	123.41	141.24	
165.51	E.G. slope (ft/ft)	0.002549	Area (sq ft)	123.41	141.24	
84.28	Q Total (cfs)	783.00	Flow (cfs)	48.75	649.98	
	Top width (ft)	898.38	Top width (ft)	451.49	33.21	

HampCkNorth.rep

413.68	Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	0.39	4.60
0.51	Max Chl Dpth (ft)	6.54	Hydr. Depth (ft)	0.27	4.25
0.40	Conv. Total (cfs)	15507.6	Conv. (cfs)	965.4	12873.1
1669.1	Length wtd. (ft)	340.00	wetted Per. (ft)	451.49	36.75
413.69	Min Ch El (ft)	838.70	Shear (lb/sq ft)	0.04	0.61
0.06	Alpha	5.32	Stream Power (lb/ft s)	37032.00	0.00
0.00	Frctn Loss (ft)	0.55	Cum volume (acre-ft)	26.21	12.52
15.74	C & E Loss (ft)	0.04	Cum SA (acres)	42.64	3.10
26.32					

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	846.14	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.10	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	846.03	Reach Len. (ft)	340.00	340.00	
340.00					
Crit w.s. (ft)		Flow Area (sq ft)	525.36	168.68	
666.31					
E.G. slope (ft/ft)	0.001454	Area (sq ft)	525.36	168.68	
666.31					
Q Total (cfs)	1438.00	Flow (cfs)	363.95	636.22	
437.83					
Top width (ft)	1341.39	Top width (ft)	543.03	35.00	
763.36					
Vel Total (ft/s)	1.06	Avg. Vel. (ft/s)	0.69	3.77	
0.66					
Max Chl Dpth (ft)	7.33	Hydr. Depth (ft)	0.97	4.82	
0.87					
Conv. Total (cfs)	37713.2	Conv. (cfs)	9544.9	16685.7	
11482.6					
Length wtd. (ft)	340.00	wetted Per. (ft)	543.04	38.82	
763.39					
Min Ch El (ft)	838.70	Shear (lb/sq ft)	0.09	0.39	
0.08					
Alpha	5.86	Stream Power (lb/ft s)	37032.00	0.00	
0.00					
Frctn Loss (ft)	0.49	Cum volume (acre-ft)	62.92	14.78	
39.80					
C & E Loss (ft)	0.00	Cum SA (acres)	59.41	3.17	
37.61					

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34450

INPUT

HampCkNorth.rep

Description: 344+50

Station Elevation Data		num= 16							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
34450	846	34740	845	34910	844	35000	843.9	35050	843
35055	843.2	35065	837.6	35075	837.9	35080	838.5	35090	844.4
35095	844.6	35140	844	35230	843.5	35435	844	35655	845
36343	846								

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
34450	.08	35055	.04	35090	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	35055	35090		330	330	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	844.92					
Vel Head (ft)	0.14	wt. n-Val.		0.080	0.040	
0.080						
w.s. Elev (ft)	844.78	Reach Len. (ft)		330.00	330.00	
330.00						
Crit w.s. (ft)		Flow Area (sq ft)		201.68	180.35	
394.45						
E.G. slope (ft/ft)	0.001193	Area (sq ft)		201.68	180.35	
394.45						
Q Total (cfs)	968.00	Flow (cfs)		104.50	652.19	
211.31						
Top width (ft)	829.71	Top width (ft)		277.82	35.00	
516.89						
Vel Total (ft/s)	1.25	Avg. vel. (ft/s)		0.52	3.62	
0.54						
Max chl Dpth (ft)	7.18	Hydr. Depth (ft)		0.73	5.15	
0.76						
Conv. Total (cfs)	28026.6	Conv. (cfs)		3025.5	18882.9	
6118.2						
Length wtd. (ft)	330.00	wetted Per. (ft)		277.84	38.11	
516.90						
Min ch El (ft)	837.60	Shear (lb/sq ft)		0.05	0.35	
0.06						
Alpha	5.73	Stream Power (lb/ft s)		36343.00	0.00	
0.00						
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)		24.94	11.27	
13.56						
C & E Loss (ft)	0.01	Cum SA (acres)		39.80	2.83	
22.68						

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	845.64					
Vel Head (ft)	0.14	wt. n-Val.		0.080	0.040	
0.080						
w.s. Elev (ft)	845.50	Reach Len. (ft)		330.00	330.00	
330.00						
Crit w.s. (ft)		Flow Area (sq ft)		460.00	205.48	
880.75						
E.G. slope (ft/ft)	0.001420	Area (sq ft)		460.00	205.48	
880.75						
Q Total (cfs)	1810.00	Flow (cfs)		321.99	884.30	
603.71						
Top width (ft)	1403.46	Top width (ft)		459.84	35.00	
908.62						
Vel Total (ft/s)	1.17	Avg. vel. (ft/s)		0.70	4.30	
0.69						

Max Chl Dpth (ft)	7.90	HampCkNorth.rep		
0.97		Hydr. Depth (ft)	1.00	5.87
Conv. Total (cfs)	48038.1	Conv. (cfs)	8545.7	23469.8
16022.7				
Length wtd. (ft)	330.00	wetted Per. (ft)	459.86	38.11
908.63				
Min Ch El (ft)	837.60	Shear (lb/sq ft)	0.09	0.48
0.09				
Alpha	6.78	Stream Power (lb/ft s)	36343.00	0.00
0.00				
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	59.07	13.32
33.77				
C & E Loss (ft)	0.01	Cum SA (acres)	55.50	2.89
31.09				

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34120

INPUT

Description: 341+20

Station Elevation Data	num=	14							
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev									
33710 846 34080 844 34120 844 34340 844 34590 843.8									
34650 843.2 34655 842.3 34670 836.5 34680 836.8 34690 843.5									
34695 844.3 34750 842.9 34910 844 35170 846									

Manning's n Values	num=	3
Sta n Val Sta n Val Sta n Val		
33710 .08 34655 .04 34690 .08		

Bank Sta: Left Right	Lengths: Left Channel Right	Coeff Contr.	Expan.
34655 34690	330 330 330	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	844.45	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.25	wt. n-Val.	0.080	0.040	
0.080					
w.s. Elev (ft)	844.20	Reach Len. (ft)	330.00	330.00	
330.00					
Crit w.s. (ft)	841.41	Flow Area (sq ft)	180.26	188.02	
157.45					
E.G. Slope (ft/ft)	0.001637	Area (sq ft)	180.26	188.02	
157.45					
Q Total (cfs)	968.00	Flow (cfs)	59.96	818.87	
89.16					
Top width (ft)	888.63	Top width (ft)	612.09	35.00	
241.54					
Vel Total (ft/s)	1.84	Avg. Vel. (ft/s)	0.33	4.36	
0.57					
Max chl Dpth (ft)	7.70	Hydr. Depth (ft)	0.29	5.37	
0.65					
Conv. Total (cfs)	23921.8	Conv. (cfs)	1481.9	20236.5	
2203.5					
Length wtd. (ft)	330.00	wetted Per. (ft)	612.18	38.12	
241.61					
Min Ch El (ft)	836.50	Shear (lb/sq ft)	0.03	0.50	
0.07					
Alpha	4.74	Stream Power (lb/ft s)	35170.00	0.00	
0.00					
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	23.49	9.87	
11.47					
C & E Loss (ft)	0.01	Cum SA (acres)	36.43	2.56	

19.81

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	845.09				
OB					
Vel Head (ft)	0.25	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	844.84	Reach Len. (ft)	330.00	330.00	
330.00					
Crit w.s. (ft)		Flow Area (sq ft)	609.45	210.40	
341.13					
E.G. Slope (ft/ft)	0.001956	Area (sq ft)	609.45	210.40	
341.13					
Q Total (cfs)	1810.00	Flow (cfs)	443.67	1079.43	
286.90					
Top width (ft)	1094.57	Top width (ft)	730.38	35.00	
329.19					
Vel Total (ft/s)	1.56	Avg. Vel. (ft/s)	0.73	5.13	
0.84					
Max Chl Dpth (ft)	8.34	Hydr. Depth (ft)	0.83	6.01	
1.04					
Conv. Total (cfs)	40927.9	Conv. (cfs)	10032.3	24408.2	
6487.3					
Length wtd. (ft)	330.00	wetted Per. (ft)	730.47	38.12	
329.28					
Min Ch El (ft)	836.50	Shear (lb/sq ft)	0.10	0.67	
0.13					
Alpha	6.56	Stream Power (lb/ft s)	35170.00	0.00	
0.00					
Frctn Loss (ft)	0.84	Cum Volume (acre-ft)	55.02	11.74	
29.14					
C & E Loss (ft)	0.00	Cum SA (acres)	50.99	2.63	
26.40					

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 33790

INPUT

Description: 337+90

Station Elevation Data		num= 15							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
32855	846	33030	844	33260	843.5	33790	842.7	33990	844
34005	844.1	34035	843.9	34045	844.1	34050	836.5	34060	836.3
34080	843.7	34090	843.8	34140	842.4	34500	844	34880	845.5

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
32855	.08	34045	.04	34080	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	34045	34080		335	335	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	843.73				
OB					
Vel Head (ft)	0.33	wt. n-Val.	0.080	0.040	
0.080					

W.S. Elev (ft)	843.40	HampCkNorth.rep		
335.00		Reach Len. (ft)	335.00	335.00
Crit w.s. (ft)	841.36	Flow Area (sq ft)	197.41	153.63
129.17				
E.G. slope (ft/ft)	0.003015	Area (sq ft)	197.41	153.63
129.17				
Q Total (cfs)	968.00	Flow (cfs)	99.56	785.70
82.74				
Top width (ft)	860.96	Top width (ft)	567.73	33.71
259.52				
Vel Total (ft/s)	2.02	Avg. vel. (ft/s)	0.50	5.11
0.64				
Max chl Dpth (ft)	7.10	Hydr. Depth (ft)	0.35	4.56
0.50				
Conv. Total (cfs)	17628.0	Conv. (cfs)	1813.1	14308.2
1506.7				
Length wtd. (ft)	335.00	wetted Per. (ft)	567.73	38.70
259.54				
Min ch El (ft)	836.30	Shear (lb/sq ft)	0.07	0.75
0.09				
Alpha	5.24	Stream Power (lb/ft s)	34880.00	0.00
0.00				
Frctn Loss (ft)	1.13	Cum volume (acre-ft)	22.06	8.58
10.38				
C & E Loss (ft)	0.02	Cum SA (acres)	31.96	2.30
17.91				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)		Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.29	wt. n-val.	0.080	0.040	
0.080					
W.S. Elev (ft)	843.96	Reach Len. (ft)	335.00	335.00	
335.00					
Crit w.s. (ft)	843.79	Flow Area (sq ft)	630.04	173.22	
320.22					
E.G. slope (ft/ft)	0.003404	Area (sq ft)	630.04	173.22	
320.22					
Q Total (cfs)	1810.00	Flow (cfs)	523.36	993.17	
293.47					
Top width (ft)	1396.74	Top width (ft)	950.10	34.91	
411.73					
Vel Total (ft/s)	1.61	Avg. vel. (ft/s)	0.83	5.73	
0.92					
Max chl Dpth (ft)	7.66	Hydr. Depth (ft)	0.66	4.96	
0.78					
Conv. Total (cfs)	31021.9	Conv. (cfs)	8970.0	17022.1	
5029.8					
Length wtd. (ft)	335.00	wetted Per. (ft)	950.10	40.26	
411.76					
Min ch El (ft)	836.30	Shear (lb/sq ft)	0.14	0.91	
0.17					
Alpha	7.08	Stream Power (lb/ft s)	34880.00	0.00	
0.00					
Frctn Loss (ft)	1.22	Cum volume (acre-ft)	50.32	10.29	
26.63					
C & E Loss (ft)	0.01	Cum SA (acres)	44.63	2.36	
23.59					

Warning: Divided flow computed for this cross-section.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 33455

INPUT

Description: 334+55

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
33135	844	33455	842	33975	842	34065	842.8	34130	842.8
34135	842.8	34150	835.3	34160	835.2	34170	840.9	34175	841.1
34230	841.2	34320	842	34670	842	35070	844		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
33135	.08	34135	.04	34170	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	34135	34170		310 340	380	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	842.57	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.53	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	842.05	Reach Len. (ft)	310.00	340.00	
380.00 Crit w.s. (ft)	840.12	Flow Area (sq ft)	25.36	153.50	
112.06 E.G. Slope (ft/ft)	0.003826	Area (sq ft)	25.36	153.50	
112.06 Q Total (cfs)	968.00	Flow (cfs)	3.82	917.27	
46.90 Top width (ft)	1076.25	Top width (ft)	533.12	33.50	
509.63 Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)	0.15	5.98	
0.42 Max Chl Dpth (ft)	6.85	Hydr. Depth (ft)	0.05	4.58	
0.22 Conv. Total (cfs)	15649.8	Conv. (cfs)	61.8	14829.7	
758.3 Length wtd. (ft)	336.44	wetted Per. (ft)	533.12	36.60	
509.64 Min Ch El (ft)	835.20	Shear (lb/sq ft)	0.01	1.00	
0.05 Alpha	3.06	Stream Power (lb/ft s)	35070.00	0.00	
0.00 Frctn Loss (ft)	1.38	Cum Volume (acre-ft)	21.21	7.40	
9.45 C & E Loss (ft)	0.06	Cum SA (acres)	27.72	2.05	
14.96					

Warning: Divided flow computed for this cross-section.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		HampCkNorth.rep Element	Left OB	Channel	Right
E.G. Elev (ft)	843.02				
OB					
Vel Head (ft)	0.39	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	842.63	Reach Len. (ft)	310.00	340.00	
380.00					
Crit w.s. (ft)	842.63	Flow Area (sq ft)	381.81	173.34	
442.56					
E.G. Slope (ft/ft)	0.003886	Area (sq ft)	381.81	173.34	
442.56					
Q Total (cfs)	1810.00	Flow (cfs)	297.46	1105.91	
406.63					
Top width (ft)	1352.43	Top width (ft)	691.73	34.66	
626.04					
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)	0.78	6.38	
0.92					
Max Chl Dpth (ft)	7.43	Hydr. Depth (ft)	0.55	5.00	
0.71					
Conv. Total (cfs)	29035.8	Conv. (cfs)	4771.9	17740.9	
6523.0					
Length wtd. (ft)	335.11	wetted Per. (ft)	691.73	37.90	
626.05					
Min Ch El (ft)	835.20	Shear (lb/sq ft)	0.13	1.11	
0.17					
Alpha	7.64	Stream Power (lb/ft s)	35070.00	0.00	
0.00					
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	46.43	8.96	
23.70					
C & E Loss (ft)	0.07	Cum SA (acres)	38.31	2.10	
19.60					

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 33115

INPUT

Description: 331+15

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
32529	844	32795	842	33115	840	33370	840	33720	840.9
33780	840.8	33785	841	33795	835.2	33805	834.9	33815	840.8
33825	841.6	33880	840.3	34220	842	34420	844		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
32529	.08	33785	.04	33815	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	33785	33815		310	340	360		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		HampCkNorth.rep Element	Left OB	Channel	Right
E.G. Elev (ft)	841.13				
OB					
Vel Head (ft)	0.34	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	840.79	Reach Len. (ft)	310.00	340.00	
360.00					
Crit w.s. (ft)	840.77	Flow Area (sq ft)	373.68	113.78	
29.25					
E.G. Slope (ft/ft)	0.004442	Area (sq ft)	373.68	113.78	
29.25					
Q Total (cfs)	968.00	Flow (cfs)	307.52	646.27	
14.21					
Top width (ft)	838.06	Top width (ft)	689.37	29.63	
119.07					
Vel Total (ft/s)	1.87	Avg. Vel. (ft/s)	0.82	5.68	
0.49					
Max chl Dpth (ft)	5.89	Hydr. Depth (ft)	0.54	3.84	
0.25					
Conv. Total (cfs)	14524.4	Conv. (cfs)	4614.2	9697.1	
213.1					
Length wtd. (ft)	326.09	wetted Per. (ft)	689.37	32.74	
119.07					
Min Ch El (ft)	834.90	Shear (lb/sq ft)	0.15	0.96	
0.07					
Alpha	6.20	Stream Power (lb/ft s)	34420.00	0.00	
0.00					
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	19.79	6.35	
8.84					
C & E Loss (ft)	0.09	Cum SA (acres)	23.37	1.80	
12.21					

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	841.64				
OB					
Vel Head (ft)	0.17	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	841.47	Reach Len. (ft)	310.00	340.00	
360.00					
Crit w.s. (ft)		Flow Area (sq ft)	948.33	134.22	
169.81					
E.G. Slope (ft/ft)	0.003005	Area (sq ft)	948.33	134.22	
169.81					
Q Total (cfs)	1810.00	Flow (cfs)	995.51	693.92	
120.57					
Top width (ft)	1228.71	Top width (ft)	905.83	30.00	
292.88					
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	1.05	5.17	
0.71					
Max chl Dpth (ft)	6.57	Hydr. Depth (ft)	1.05	4.47	
0.58					
Conv. Total (cfs)	33019.7	Conv. (cfs)	18161.0	12659.2	
2199.5					
Length wtd. (ft)	322.26	wetted Per. (ft)	905.84	33.18	
292.93					
Min Ch El (ft)	834.90	Shear (lb/sq ft)	0.20	0.76	
0.11					
Alpha	5.21	Stream Power (lb/ft s)	34420.00	0.00	
0.00					
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	41.70	7.76	
21.03					
C & E Loss (ft)	0.04	Cum SA (acres)	32.63	1.84	

15.59

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 32775

INPUT

Description: 327+75

Station Elevation Data				num=	15				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
32517	842	32635	840	32775	838.6	33525	840	33565	839.9
33625	840.3	33630	840.5	33645	834.6	33655	834.5	33665	839.9
33670	840.8	33730	839.7	33755	840	33840	840	33935	842

Manning's n Values				num=	3		
Sta	n Val	Sta	n Val	Sta	n Val		
32517	.08	33630	.04	33670	.08		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	33630	33670		330	300	270	.1
							.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	840.51					
Vel Head (ft)	0.03	wt. n-val.		0.080	0.040	
0.080						
w.s. Elev (ft)	840.48	Reach Len. (ft)		330.00	300.00	
270.00						
Crit w.s. (ft)		Flow Area (sq ft)		1101.58	136.99	
78.64						
E.G. Slope (ft/ft)	0.000821	Area (sq ft)		1101.58	136.99	
78.64						
Q Total (cfs)	968.00	Flow (cfs)		616.00	327.48	
24.52						
Top width (ft)	1236.37	Top width (ft)		1022.83	38.17	
175.36						
Vel Total (ft/s)	0.73	Avg. vel. (ft/s)		0.56	2.39	
0.31						
Max chl Dpth (ft)	5.98	Hydr. Depth (ft)		1.08	3.59	
0.45						
Conv. Total (cfs)	33782.1	Conv. (cfs)		21497.6	11428.8	
855.8						
Length wtd. (ft)	316.38	wetted Per. (ft)		1022.85	40.70	
175.38						
Min ch El (ft)	834.50	Shear (lb/sq ft)		0.06	0.17	
0.02						
Alpha	3.95	Stream Power (lb/ft s)		33935.00	0.00	
0.00						
Frctn Loss (ft)	0.27	Cum volume (acre-ft)		14.54	5.37	
8.39						
C & E Loss (ft)	0.00	Cum SA (acres)		17.28	1.53	
11.00						

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

HampCkNorth.rep

		Element	Left OB	Channel	Right
E.G. Elev (ft)	841.17				
OB					
Vel Head (ft)	0.03	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	841.14	Reach Len. (ft)	330.00	300.00	
270.00					
Crit w.s. (ft)		Flow Area (sq ft)	1788.76	163.07	
213.23					
E.G. slope (ft/ft)	0.000759	Area (sq ft)	1788.76	163.07	
213.23					
Q Total (cfs)	1810.00	Flow (cfs)	1295.78	408.66	
105.56					
Top width (ft)	1326.32	Top width (ft)	1062.21	40.00	
224.11					
Vel Total (ft/s)	0.84	Avg. vel. (ft/s)	0.72	2.51	
0.50					
Max Chl Dpth (ft)	6.64	Hydr. Depth (ft)	1.68	4.08	
0.95					
Conv. Total (cfs)	65688.8	Conv. (cfs)	47026.6	14831.3	
3830.9					
Length wtd. (ft)	317.82	wetted Per. (ft)	1062.23	42.56	
224.13					
Min Ch El (ft)	834.50	Shear (lb/sq ft)	0.08	0.18	
0.05					
Alpha	2.59	Stream Power (lb/ft s)	33935.00	0.00	
0.00					
Frctn Loss (ft)	0.26	Cum volume (acre-ft)	31.96	6.60	
19.45					
C & E Loss (ft)	0.00	Cum SA (acres)	25.63	1.57	
13.45					

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 32465

INPUT

Description: 324+65

Station Elevation Data		num=	14						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31790	842	31911	840	32059	838.5	32465	839	32870	840.5
32925	840.4	32940	840.6	32960	834.3	32970	834.3	32980	839.8
33000	839.7	33060	839	33180	840	33340	842		

Manning's n values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
31790	.08	32940	.04	32980	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	32940	32980		275	340	440		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	840.24				
OB					
Vel Head (ft)	0.04	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	840.20	Reach Len. (ft)	275.00	340.00	
440.00					
Crit w.s. (ft)		Flow Area (sq ft)	920.52	145.56	
144.54					
E.G. slope (ft/ft)	0.000907	Area (sq ft)	920.52	145.56	
144.54					
Q Total (cfs)	968.00	Flow (cfs)	527.26	378.81	
61.93					

		HampCkNorth.rep		
Top width (ft)	1142.79	Top width (ft)	888.47	38.71
215.61 Vel Total (ft/s)	0.80	Avg. Vel. (ft/s)	0.57	2.60
0.43 Max Chl Dpth (ft)	5.90	Hydr. Depth (ft)	1.04	3.76
0.67 Conv. Total (cfs)	32140.3	Conv. (cfs)	17506.5	12577.6
2056.3 Length wtd. (ft)	333.62	wetted Per. (ft)	888.48	41.03
215.62 Min Ch El (ft)	834.30	Shear (lb/sq ft)	0.06	0.20
0.04 Alpha	4.44	Stream Power (lb/ft s)	33340.00	0.00
0.00 Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	6.88	4.40
7.70 C & E Loss (ft)	0.04	Cum SA (acres)	10.04	1.27
9.78				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

		Element	Left OB	Channel	Right
E.G. Elev (ft)	840.91				
OB Vel Head (ft)	0.04	wt. n-Val.	0.080	0.040	
0.080 W.S. Elev (ft)	840.87	Reach Len. (ft)	275.00	340.00	
440.00 Crit w.s. (ft)		Flow Area (sq ft)	1606.28	172.32	
308.44 E.G. Slope (ft/ft)	0.000869	Area (sq ft)	1606.28	172.32	
308.44 Q Total (cfs)	1810.00	Flow (cfs)	1144.63	480.68	
184.69 Top width (ft)	1391.32	Top width (ft)	1081.67	40.00	
269.65 Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)	0.71	2.79	
0.60 Max Chl Dpth (ft)	6.57	Hydr. Depth (ft)	1.48	4.31	
1.14 Conv. Total (cfs)	61407.0	Conv. (cfs)	38833.4	16307.9	
6265.8 Length wtd. (ft)	334.44	wetted Per. (ft)	1081.69	42.38	
269.66 Min Ch El (ft)	834.30	Shear (lb/sq ft)	0.08	0.22	
0.06 Alpha	3.22	Stream Power (lb/ft s)	33340.00	0.00	
0.00 Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	19.10	5.44	
17.83 C & E Loss (ft)	0.04	Cum SA (acres)	17.50	1.29	
11.92					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek

REACH: North Trib. EAST RS: 32115

INPUT

Description: 321+15

Station Elevation Data		num= 12							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31287	842	32115	839	32435	839.8	32480	839.8	32485	839.8
32500	833.4	32510	833.5	32520	838.3	32540	838.6	32600	837.9
32830	840	32960	842						

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
31287	.08	32485	.04	32540	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	32485	32540		335	335	.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB		839.54				
	Vel Head (ft)	0.44	wt. n-Val.	0.080	0.040	
0.080						
	W.S. Elev (ft)	839.10	Reach Len. (ft)	335.00	335.00	
335.00						
	Crit w.s. (ft)	838.79	Flow Area (sq ft)	3.48	139.66	
130.14						
	E.G. Slope (ft/ft)	0.007135	Area (sq ft)	3.48	139.66	
130.14						
	Q Total (cfs)	968.00	Flow (cfs)	0.75	809.48	
157.77						
	Top width (ft)	313.57	Top width (ft)	68.62	53.36	
191.59						
	Vel Total (ft/s)	3.54	Avg. Vel. (ft/s)	0.22	5.80	
1.21						
	Max chl Dpth (ft)	5.70	Hydr. Depth (ft)	0.05	2.62	
0.68						
	Conv. Total (cfs)	11460.2	Conv. (cfs)	8.9	9583.5	
1867.8						
	Length wtd. (ft)	335.00	wetted Per. (ft)	68.62	55.62	
191.60						
	Min Ch El (ft)	833.40	Shear (lb/sq ft)	0.02	1.12	
0.30						
	Alpha	2.26	Stream Power (lb/ft s)	32960.00	0.00	
0.00						
	Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	3.96	3.29	
6.31						
	C & E Loss (ft)	0.11	Cum SA (acres)	7.02	0.91	
7.73						

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB		840.23				
	Vel Head (ft)	0.46	wt. n-Val.	0.080	0.040	
0.080						
	W.S. Elev (ft)	839.77	Reach Len. (ft)	335.00	335.00	
335.00						
	Crit w.s. (ft)	839.73	Flow Area (sq ft)	201.08	175.93	
283.04						
	E.G. Slope (ft/ft)	0.007240	Area (sq ft)	201.08	175.93	

HampCkNorth.rep

283.04	Q Total (cfs)	1810.00	Flow (cfs)	168.37	1174.21
467.43	Top width (ft)	841.29	Top width (ft)	521.40	54.93
264.95	Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	0.84	6.67
1.65	Max chl Dpth (ft)	6.37	Hydr. Depth (ft)	0.39	3.20
1.07	Conv. Total (cfs)	21272.8	Conv. (cfs)	1978.8	13800.3
5493.6	Length wtd. (ft)	335.00	wetted Per. (ft)	521.41	57.33
264.97	Min ch El (ft)	833.40	Shear (lb/sq ft)	0.17	1.39
0.48	Alpha	3.95	Stream Power (lb/ft s)	32960.00	0.00
0.00	Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	13.40	4.08
14.84	C & E Loss (ft)	0.12	Cum SA (acres)	12.44	0.92
9.22					

Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31775

INPUT

Description: 317+75

Station Elevation Data		num=	15						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31445	840	31595	838	31775	838	32050	838	32075	838.2
32130	838.3	32140	837.6	32160	832.8	32165	832.5	32170	832.5
32185	837.8	32200	837.3	32215	836.9	32540	838	32630	840

Manning's n Values		num=	3		
Sta	n Val	Sta	n Val	Sta	n Val
31445	.08	32140	.04	32185	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	32140	32185		350	325	280		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	838.79	Element	Left OB	Channel	Right
OB Vel Head (ft)	0.06	wt. n-Val.	0.080	0.040	
0.080 w.s. Elev (ft)	838.72	Reach Len. (ft)	350.00	325.00	
280.00 Crit w.s. (ft)		Flow Area (sq ft)	396.77	185.45	
466.70 E.G. Slope (ft/ft)	0.000874	Area (sq ft)	396.77	185.45	
466.70 Q Total (cfs)	968.00	Flow (cfs)	165.54	512.33	
290.12 Top width (ft)	1031.54	Top width (ft)	599.08	45.00	
387.45 Vel Total (ft/s)	0.92	Avg. Vel. (ft/s)	0.42	2.76	
0.62 Max chl Dpth (ft)	6.22	Hydr. Depth (ft)	0.66	4.12	

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1.20	Conv. Total (cfs)	32741.2	Conv. (cfs)	5599.2	17329.0
9813.0	Length wtd. (ft)	315.44	wetted Per. (ft)	599.11	46.49
387.47	Min Ch El (ft)	832.50	Shear (lb/sq ft)	0.04	0.22
0.07	Alpha	4.91	Stream Power (lb/ft s)	32630.00	0.00
0.00	Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	2.42	2.04
4.02	C & E Loss (ft)	0.04	Cum SA (acres)	4.45	0.53
5.50					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

	E.G. Elev (ft)		Element	Left OB	Channel	Right
OB	839.38					
Vel Head (ft)	0.07		wt. n-val.	0.080	0.040	
0.080						
W.S. Elev (ft)	839.31		Reach Len. (ft)	350.00	325.00	
280.00						
Crit w.s. (ft)			Flow Area (sq ft)	762.36	211.94	
702.53						
E.G. Slope (ft/ft)	0.001042		Area (sq ft)	762.36	211.94	
702.53						
Q Total (cfs)	1810.00		Flow (cfs)	511.90	698.79	
599.31						
Top width (ft)	1102.16		Top width (ft)	643.23	45.00	
413.94						
Vel Total (ft/s)	1.08		Avg. Vel. (ft/s)	0.67	3.30	
0.85						
Max Chl Dpth (ft)	6.81		Hydr. Depth (ft)	1.19	4.71	
1.70						
Conv. Total (cfs)	56070.3		Conv. (cfs)	15857.8	21647.1	
18565.4						
Length wtd. (ft)	314.02		wetted Per. (ft)	643.26	46.49	
413.97						
Min Ch El (ft)	832.50		Shear (lb/sq ft)	0.08	0.30	
0.11						
Alpha	3.92		Stream Power (lb/ft s)	32630.00	0.00	
0.00						
Frctn Loss (ft)	0.47		Cum Volume (acre-ft)	9.69	2.59	
11.05						
C & E Loss (ft)	0.01		Cum SA (acres)	7.97	0.54	
6.61						

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31445

INPUT

Description: 314+45

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

HampCkNorth.rep

31445	840	31530	838	31910	837.7	31960	838.5	31970	838.1
31985	832.2	31995	832.2	32005	837	32020	836.9	32070	836.7
32445	838	32530	840						

Manning's n	values	num=	3
Sta	n Val	Sta	n Val
31445	.08	31970	.04
		32005	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	31970	32005		300	300		.1	.3

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	838.21	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.43	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	837.78	Reach Len. (ft)	300.00	300.00	
300.00					
Crit w.s. (ft)	837.56	Flow Area (sq ft)	4.65	127.31	
231.07					
E.G. slope (ft/ft)	0.004773	Area (sq ft)	4.65	127.31	
231.07					
Q Total (cfs)	968.00	Flow (cfs)	0.72	753.56	
213.72					
Top width (ft)	523.03	Top width (ft)	111.23	34.20	
377.60					
Vel Total (ft/s)	2.67	Avg. vel. (ft/s)	0.15	5.92	
0.92					
Max chl Dpth (ft)	5.58	Hydr. Depth (ft)	0.04	3.72	
0.61					
Conv. Total (cfs)	14011.1	Conv. (cfs)	10.4	10907.2	
3093.5					
Length wtd. (ft)	300.00	wetted Per. (ft)	111.23	36.35	
377.61					
Min Ch El (ft)	832.20	Shear (lb/sq ft)	0.01	1.04	
0.18					
Alpha	3.86	Stream Power (lb/ft s)	32530.00	0.00	
0.00					
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	0.81	0.87	
1.78					
C & E Loss (ft)	0.06	Cum SA (acres)	1.60	0.24	
3.04					

Warning: Divided flow computed for this cross-section.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	838.90	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.16	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	838.74	Reach Len. (ft)	300.00	300.00	
300.00					
Crit w.s. (ft)		Flow Area (sq ft)	386.03	160.63	
656.53					
E.G. slope (ft/ft)	0.002354	Area (sq ft)	386.03	160.63	
656.53					
Q Total (cfs)	1810.00	Flow (cfs)	304.50	767.64	
737.87					
Top width (ft)	977.86	Top width (ft)	471.43	35.00	
471.43					
Vel Total (ft/s)	1.50	Avg. vel. (ft/s)	0.79	4.78	

HampCkNorth.rep

1.12				
Max Chl Dpth (ft)	6.54	Hydr. Depth (ft)	0.82	4.59
1.39				
Conv. Total (cfs)	37302.8	Conv. (cfs)	6275.4	15820.5
15206.9				
Length wtd. (ft)	300.00	wetted Per. (ft)	471.45	37.21
471.44				
Min Ch El (ft)	832.20	Shear (lb/sq ft)	0.12	0.63
0.20				
Alpha	4.55	Stream Power (lb/ft s)	32530.00	0.00
0.00				
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	5.08	1.20
6.68				
C & E Loss (ft)	0.04	Cum SA (acres)	3.49	0.24
3.77				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31145

INPUT

Description: 311+45

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
30895	840	31000	838	31145	836	31370	836	31450	837
31500	837.2	31510	836.2	31525	831.3	31535	831.4	31545	837.1
31561	836.7	31615	836.7	31810	836	32035	836	32105	838
32315	840								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
30895	.08	31510	.04	31545	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
31510	31545	0	0	0	.1	.3	

CROSS SECTION OUTPUT Profile #10 Yr

E.G. Elev (ft)	837.01	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.21	wt. n-Val.	0.080	0.040	
0.080					
w.s. Elev (ft)	836.80	Reach Len. (ft)			
Crit w.s. (ft)	836.58	Flow Area (sq ft)	230.60	125.83	
284.54					
E.G. Slope (ft/ft)	0.003072	Area (sq ft)	230.60	125.83	
284.54					
Q Total (cfs)	968.00	Flow (cfs)	179.25	589.19	
199.56					
Top width (ft)	893.47	Top width (ft)	353.00	34.47	
506.00					
Vel Total (ft/s)	1.51	Avg. Vel. (ft/s)	0.78	4.68	
0.70					
Max Chl Dpth (ft)	5.50	Hydr. Depth (ft)	0.65	3.65	
0.56					
Conv. Total (cfs)	17465.6	Conv. (cfs)	3234.2	10630.8	
3600.6					
Length wtd. (ft)		wetted Per. (ft)	353.04	36.69	
506.01					
Min Ch El (ft)	831.30	Shear (lb/sq ft)	0.13	0.66	

0.11				
Alpha	5.94	Stream Power (lb/ft s)	32315.00	0.00
0.00				
Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #100 Yr

E.G. Elev (ft)	838.62	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	wt. n-Val.	0.080	0.040	
0.080					
W.S. Elev (ft)	838.60	Reach Len. (ft)			
Crit w.s. (ft)	837.01	Flow Area (sq ft)	1088.44	188.75	
1284.43					
E.G. Slope (ft/ft)	0.000391	Area (sq ft)	1088.44	188.75	
1284.43					
Q Total (cfs)	1810.00	Flow (cfs)	636.82	408.84	
764.35					
Top width (ft)	1199.50	Top width (ft)	541.50	35.00	
623.00					
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.59	2.17	
0.60					
Max chl Dpth (ft)	7.30	Hydr. Depth (ft)	2.01	5.39	
2.06					
Conv. Total (cfs)	91510.3	Conv. (cfs)	32196.2	20670.0	
38644.0					
Length wtd. (ft)		wetted Per. (ft)	541.57	37.29	
623.04					
Min Ch El (ft)	831.30	Shear (lb/sq ft)	0.05	0.12	
0.05					
Alpha	2.66	Stream Power (lb/ft s)	32315.00	0.00	
0.00					
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Hampshire Creek

Reach	River Sta.	n1	n2	n3
North Trib.	43240	.08	.04	.08
North Trib.	42930	.08	.04	.08
North Trib.	42620	.08	.04	.08
North Trib.	42310	.08	.04	.08
North Trib.	42000	.08	.04	.08
North Trib.	41700	.08	.04	.08
North Trib. - NE	4140	.08	.04	.08
North Trib. - NE	3700	.08	.04	.08
North Trib. - NE	3470	.08	.04	.08
North Trib. - NE	3125	.08	.04	.08
North Trib. - NE	2890	.08	.04	.08
North Trib. - NE	2650	.08	.04	.08
North Trib. - NE	2420	.08	.04	.08
North Trib. - NE	2080	.08	.04	.08

		HampCkNorth.rep		
North Trib. - NE	1780	.08	.04	.08
North Trib. - NE	1690	.08	.04	.08
North Trib. - NE	1420	.08	.04	.08
North Trib. - NE	1080	.08	.04	.08
North Trib. - NE	780	.08	.04	.08
North Trib. - NE	500	.08	.04	.08
North Trib. - NE	200	.08	.04	.08
North Trib. EAST	41500	.08	.04	.08
North Trib. EAST	41414	.08	.04	.08
North Trib. EAST	41397	culvert		
North Trib. EAST	41380	.08	.04	.08
North Trib. EAST	41260	.08	.04	.08
North Trib. EAST	40660	.08	.04	.08
North Trib. EAST	40300	.08	.04	.08
North Trib. EAST	40280	.08	.04	.08
North Trib. EAST	39885	.08	.04	.08
North Trib. EAST	39665	.08	.04	.08
North Trib. EAST	39365	.08	.04	.08
North Trib. EAST	39085	.08	.04	.08
North Trib. EAST	38825	.08	.04	.08
North Trib. EAST	38500	.08	.04	.08
North Trib. EAST	38399	.08	.04	.08
North Trib. EAST	38284	.08	.04	.08
North Trib. EAST	38216	.08	.04	.08
North Trib. EAST	38115	.08	.04	.08
North Trib. EAST	37775	.08	.04	.08
North Trib. EAST	37455	.08	.04	.08
North Trib. EAST	37170	.08	.04	.08
North Trib. EAST	37080	.08	.04	.08
North Trib. EAST	36850	.08	.04	.08
North Trib. EAST	36480	.08	.04	.08
North Trib. EAST	36160	.08	.04	.08
North Trib. EAST	35430	.08	.04	.08
North Trib. EAST	35110	.08	.04	.08
North Trib. EAST	34790	.08	.04	.08
North Trib. EAST	34450	.08	.04	.08
North Trib. EAST	34120	.08	.04	.08
North Trib. EAST	33790	.08	.04	.08
North Trib. EAST	33455	.08	.04	.08
North Trib. EAST	33115	.08	.04	.08
North Trib. EAST	32775	.08	.04	.08
North Trib. EAST	32465	.08	.04	.08
North Trib. EAST	32115	.08	.04	.08
North Trib. EAST	31775	.08	.04	.08
North Trib. EAST	31445	.08	.04	.08
North Trib. EAST	31145	.08	.04	.08

SUMMARY OF REACH LENGTHS

River: Hampshire Creek

Reach	River Sta.	Left	Channel	Right
North Trib.	43240	420	310	150
North Trib.	42930	300	300	300
North Trib.	42620	310	310	310
North Trib.	42310	310	310	310
North Trib.	42000	300	300	300
North Trib.	41700	0	0	0
North Trib. - NE	4140	580	440	360
North Trib. - NE	3700	330	230	200
North Trib. - NE	3470	380	345	280
North Trib. - NE	3125	370	235	150
North Trib. - NE	2890	240	240	200
North Trib. - NE	2650	175	230	320
North Trib. - NE	2420	140	340	400
North Trib. - NE	2080	300	300	320

		HampCkNorth.rep		
North Trib. - NE	1780	30	90	250
North Trib. - NE	1690	200	270	270
North Trib. - NE	1420	320	340	350
North Trib. - NE	1080	450	300	210
North Trib. - NE	780	310	280	200
North Trib. - NE	500	360	300	190
North Trib. - NE	200	0	0	0
North Trib. EAST	41500	300	300	300
North Trib. EAST	41414	34	34	34
North Trib. EAST	41397	culvert		
North Trib. EAST	41380	120	120	120
North Trib. EAST	41260	720	600	380
North Trib. EAST	40660	220	360	500
North Trib. EAST	40300	20	20	20
North Trib. EAST	40280	350	390	520
North Trib. EAST	39885	300	315	335
North Trib. EAST	39665	250	300	60
North Trib. EAST	39365	280	280	280
North Trib. EAST	39085	360	270	160
North Trib. EAST	38825	300	320	320
North Trib. EAST	38500	101	101	101
North Trib. EAST	38399	115	115	115
North Trib. EAST	38284	68	68	68
North Trib. EAST	38216	101	101	101
North Trib. EAST	38115	340	340	340
North Trib. EAST	37775	320	320	320
North Trib. EAST	37455	280	280	280
North Trib. EAST	37170	30	90	250
North Trib. EAST	37080	120	220	450
North Trib. EAST	36850	370	370	370
North Trib. EAST	36480	320	320	320
North Trib. EAST	36160	1200	730	300
North Trib. EAST	35430	320	320	320
North Trib. EAST	35110	315	315	315
North Trib. EAST	34790	340	340	340
North Trib. EAST	34450	330	330	330
North Trib. EAST	34120	330	330	330
North Trib. EAST	33790	335	335	335
North Trib. EAST	33455	310	340	380
North Trib. EAST	33115	310	340	360
North Trib. EAST	32775	330	300	270
North Trib. EAST	32465	275	340	440
North Trib. EAST	32115	335	335	335
North Trib. EAST	31775	350	325	280
North Trib. EAST	31445	300	300	300
North Trib. EAST	31145	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Hampshire Creek

Reach	River Sta.	Contr.	Expan.
North Trib.	43240	.1	.3
North Trib.	42930	.1	.3
North Trib.	42620	.1	.3
North Trib.	42310	.1	.3
North Trib.	42000	.1	.3
North Trib.	41700	.1	.3
North Trib. - NE	4140	.1	.3
North Trib. - NE	3700	.1	.3
North Trib. - NE	3470	.1	.3
North Trib. - NE	3125	.1	.3
North Trib. - NE	2890	.1	.3
North Trib. - NE	2650	.1	.3
North Trib. - NE	2420	.1	.3
North Trib. - NE	2080	.1	.3

			HampCkNorth.rep	
North Trib. - NE	1780		.1	.3
North Trib. - NE	1690		.1	.3
North Trib. - NE	1420		.1	.3
North Trib. - NE	1080		.1	.3
North Trib. - NE	780		.1	.3
North Trib. - NE	500		.1	.3
North Trib. - NE	200		.1	.3
North Trib. EAST	41500		.3	.5
North Trib. EAST	41414		.3	.5
North Trib. EAST	41397	culvert		
North Trib. EAST	41380		.3	.5
North Trib. EAST	41260		.3	.5
North Trib. EAST	40660		.1	.3
North Trib. EAST	40300		.1	.3
North Trib. EAST	40280		.1	.3
North Trib. EAST	39885		.1	.3
North Trib. EAST	39665		.1	.3
North Trib. EAST	39365		.1	.3
North Trib. EAST	39085		.1	.3
North Trib. EAST	38825		.1	.3
North Trib. EAST	38500		.1	.3
North Trib. EAST	38399		.1	.3
North Trib. EAST	38284		.1	.3
North Trib. EAST	38216		.1	.3
North Trib. EAST	38115		.1	.3
North Trib. EAST	37775		.1	.3
North Trib. EAST	37455		.1	.3
North Trib. EAST	37170		.1	.3
North Trib. EAST	37080		.1	.3
North Trib. EAST	36850		.1	.3
North Trib. EAST	36480		.1	.3
North Trib. EAST	36160		.1	.3
North Trib. EAST	35430		.1	.3
North Trib. EAST	35110		.1	.3
North Trib. EAST	34790		.1	.3
North Trib. EAST	34450		.1	.3
North Trib. EAST	34120		.1	.3
North Trib. EAST	33790		.1	.3
North Trib. EAST	33455		.1	.3
North Trib. EAST	33115		.1	.3
North Trib. EAST	32775		.1	.3
North Trib. EAST	32465		.1	.3
North Trib. EAST	32115		.1	.3
North Trib. EAST	31775		.1	.3
North Trib. EAST	31445		.1	.3
North Trib. EAST	31145		.1	.3

TAB 3D

**PROPOSED HEC-RAS MODEL
(CULVERT SIZING)**

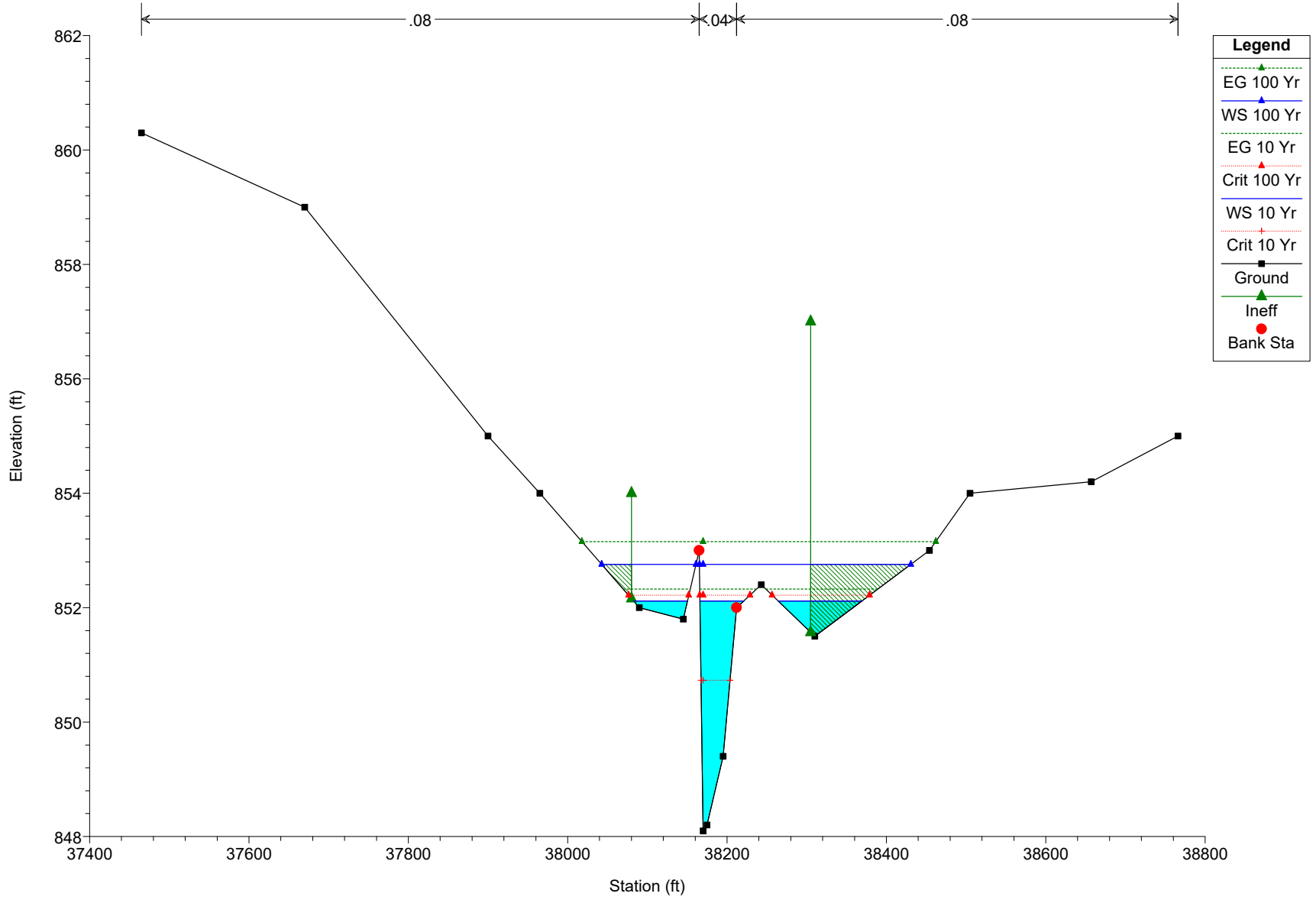
HEC-RAS Plan: PRELIM River: Hampshire Creek Reach: North Trib. EAST

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
North Trib. EAST	41500	10 Yr	391.00	864.00	869.22		869.24	0.000478	1.51	750.31	675.54	0.16
North Trib. EAST	41500	100 Yr	1069.00	864.00	871.15		871.16	0.000158	1.20	2356.07	983.54	0.10
North Trib. EAST	41414	10 Yr	341.00	864.20	868.36	866.73	868.82	0.003241	5.47	62.36	521.12	0.47
North Trib. EAST	41414	100 Yr	779.00	864.20	871.12	868.57	871.12	0.000076	0.93	2361.52	978.47	0.07
North Trib. EAST	41397		Culvert									
North Trib. EAST	41380	10 Yr	348.00	863.99	866.99	866.55	867.92	0.009968	7.72	45.07	415.99	0.79
North Trib. EAST	41380	100 Yr	791.00	863.99	868.42	868.42	870.62	0.014149	11.91	66.40	752.91	1.00
North Trib. EAST	41260	10 Yr	348.00	862.80	866.98		867.07	0.001815	2.90	282.87	408.35	0.32
North Trib. EAST	41260	100 Yr	791.00	862.80	868.30		868.32	0.000558	1.93	1091.16	743.22	0.18
North Trib. EAST	40660	10 Yr	348.00	860.70	865.62		865.85	0.002464	3.79	91.75	28.76	0.37
North Trib. EAST	40660	100 Yr	791.00	860.70	867.04	865.23	867.53	0.004187	5.69	175.41	278.13	0.50
North Trib. EAST	40300	10 Yr	348.00	859.50	863.52		864.19	0.010527	6.60	52.71	21.24	0.74
North Trib. EAST	40300	100 Yr	791.00	859.50	865.24	865.24	865.72	0.005645	6.36	288.58	350.33	0.58
North Trib. EAST	40280	10 Yr	348.00	859.30	863.76		863.94	0.002921	3.77	200.87	357.69	0.40
North Trib. EAST	40280	100 Yr	791.00	859.30	864.48		864.61	0.002798	4.09	554.81	575.09	0.40
North Trib. EAST	39885	10 Yr	348.00	857.80	862.65		862.85	0.002709	3.83	182.58	337.71	0.39
North Trib. EAST	39885	100 Yr	791.00	857.80	863.43		863.58	0.002474	4.11	574.35	612.19	0.38
North Trib. EAST	39665	10 Yr	348.00	857.40	862.04	860.50	862.10	0.001880	2.11	241.74	256.44	0.30
North Trib. EAST	39665	100 Yr	791.00	857.40	862.70	861.80	862.79	0.002427	2.88	457.94	388.68	0.36
North Trib. EAST	39365	10 Yr	348.00	857.00	859.71	859.71	860.71	0.020297	8.02	43.41	22.04	1.01
North Trib. EAST	39365	100 Yr	791.00	857.00	861.18	861.18	861.63	0.007625	6.60	290.41	327.63	0.66
North Trib. EAST	39085	10 Yr	348.00	855.60	859.29		859.34	0.000778	1.70	241.93	511.47	0.21
North Trib. EAST	39085	100 Yr	791.00	855.60	860.55		860.57	0.000341	1.47	1207.81	1005.73	0.15
North Trib. EAST	38825	10 Yr	348.00	854.30	857.86	857.64	858.70	0.015122	7.35	47.37	21.84	0.88
North Trib. EAST	38825	100 Yr	791.00	854.30	859.72	859.72	860.26	0.006362	6.67	273.37	391.45	0.62
North Trib. EAST	38500	10 Yr	348.00	851.60	854.96		855.41	0.006999	5.38	64.72	26.65	0.61
North Trib. EAST	38500	100 Yr	791.00	851.60	856.44	855.58	857.27	0.008332	7.32	109.61	47.81	0.70
North Trib. EAST	38399	10 Yr	348.00	851.22	854.31		854.64	0.007504	4.66	74.75	42.43	0.62
North Trib. EAST	38399	100 Yr	791.00	851.22	856.29		856.59	0.003573	4.34	182.29	65.87	0.46
North Trib. EAST	38284	10 Yr	362.00	850.60	854.28	851.96	854.37	0.000774	2.46	147.06	54.57	0.23
North Trib. EAST	38284	100 Yr	815.00	850.60	856.16	852.95	856.37	0.000990	3.67	222.29	82.73	0.27
North Trib. EAST	38250		Culvert									
North Trib. EAST	38216	10 Yr	446.00	850.30	854.18	851.87	854.31	0.000983	2.87	155.15	58.29	0.26
North Trib. EAST	38216	100 Yr	942.00	850.30	855.94	852.89	856.22	0.001255	4.17	225.80	64.80	0.31
North Trib. EAST	38115	10 Yr	446.00	849.80	853.45	852.78	854.04	0.008677	6.17	72.29	28.01	0.68
North Trib. EAST	38115	100 Yr	942.00	849.80	854.70	854.20	855.84	0.011716	8.57	109.89	93.71	0.82
North Trib. EAST	37775	10 Yr	446.00	848.10	852.12	850.73	852.32	0.002947	3.68	143.47	227.90	0.41
North Trib. EAST	37775	100 Yr	942.00	848.10	852.76	852.22	853.16	0.004914	5.45	274.90	383.63	0.54
North Trib. EAST	37455	10 Yr	446.00	845.50	849.19	849.19	850.28	0.019467	8.38	53.22	24.60	1.00
North Trib. EAST	37455	100 Yr	942.00	845.50	850.73	850.73	851.19	0.007878	6.55	316.73	719.13	0.67
North Trib. EAST	37170	10 Yr	446.00	843.70	848.77	845.92	848.88	0.000938	2.70	209.08	219.37	0.24
North Trib. EAST	37170	100 Yr	942.00	843.70	849.53	847.16	849.76	0.001922	4.18	380.70	346.08	0.35
North Trib. EAST	37080	10 Yr	446.00	843.90	848.53	847.32	848.73	0.003334	3.90	197.35	360.99	0.43
North Trib. EAST	37080	100 Yr	942.00	843.90	849.35	848.80	849.56	0.003471	4.54	419.46	670.08	0.45
North Trib. EAST	36850	10 Yr	446.00	842.30	847.94	845.98	848.14	0.002302	3.71	200.97	365.43	0.37
North Trib. EAST	36850	100 Yr	942.00	842.30	848.83	848.27	848.97	0.001986	3.87	668.01	663.36	0.35
North Trib. EAST	36480	10 Yr	446.00	841.50	847.15		847.35	0.002022	3.60	171.20	284.50	0.35
North Trib. EAST	36480	100 Yr	942.00	841.50	848.02		848.19	0.002211	4.08	645.34	823.68	0.37
North Trib. EAST	36160	10 Yr	446.00	840.40	846.86		846.93	0.000772	2.44	403.63	656.63	0.22
North Trib. EAST	36160	100 Yr	942.00	840.40	847.76		847.81	0.000634	2.52	1251.05	1215.75	0.20
North Trib. EAST	35430	10 Yr	465.00	839.40	845.57	843.57	845.90	0.003368	4.72	132.38	157.47	0.43
North Trib. EAST	35430	100 Yr	980.00	839.40	846.45	846.19	846.88	0.004887	6.13	360.41	363.32	0.53
North Trib. EAST	35110	10 Yr	465.00	838.70	845.16		845.28	0.001075	2.96	323.88	524.45	0.26
North Trib. EAST	35110	100 Yr	980.00	838.70	846.10		846.18	0.000976	3.12	961.54	894.57	0.25

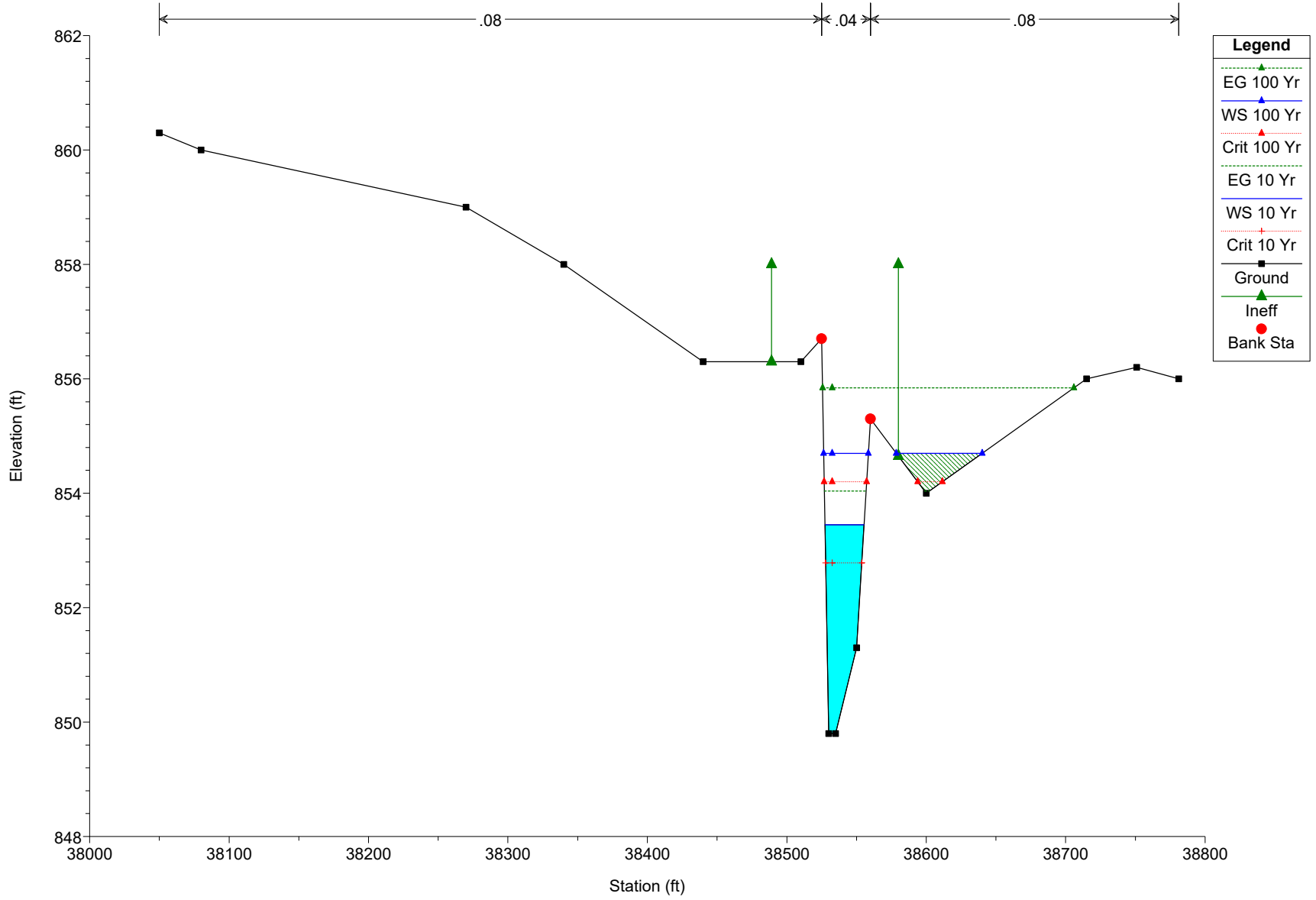
HEC-RAS Plan: PRELIM River: Hampshire Creek Reach: North Trib. EAST (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
North Trib. EAST	34790	10 Yr	465.00	838.70	844.60		844.82	0.001930	3.79	144.72	149.28	0.34
North Trib. EAST	34790	100 Yr	980.00	838.70	845.68		845.80	0.001501	3.66	910.92	1191.82	0.30
North Trib. EAST	34450	10 Yr	634.00	837.60	843.96	841.25	844.20	0.001761	3.98	247.60	421.78	0.33
North Trib. EAST	34450	100 Yr	1378.00	837.60	845.19		845.33	0.001307	3.98	1155.53	1097.96	0.30
North Trib. EAST	34120	10 Yr	634.00	836.50	843.41		843.64	0.001612	3.90	190.05	155.39	0.32
North Trib. EAST	34120	100 Yr	1378.00	836.50	844.59		844.83	0.001724	4.68	897.92	1016.05	0.34
North Trib. EAST	33790	10 Yr	634.00	836.30	842.46		842.87	0.003534	5.13	124.02	46.12	0.45
North Trib. EAST	33790	100 Yr	1378.00	836.30	843.67	843.59	844.02	0.003615	5.72	757.38	1125.51	0.46
North Trib. EAST	33455	10 Yr	634.00	835.20	841.55		841.86	0.002449	4.53	168.80	131.96	0.39
North Trib. EAST	33455	100 Yr	1378.00	835.20	842.44	842.44	842.83	0.003460	5.91	748.45	1261.95	0.47
North Trib. EAST	33115	10 Yr	634.00	834.90	840.42	839.00	840.80	0.004125	5.28	262.75	546.59	0.49
North Trib. EAST	33115	100 Yr	1378.00	834.90	841.17		841.40	0.003524	5.35	903.23	1104.58	0.46
North Trib. EAST	32775	10 Yr	634.00	834.50	840.06		840.12	0.000981	2.56	822.73	1126.01	0.24
North Trib. EAST	32775	100 Yr	1378.00	834.50	840.86		840.89	0.000733	2.35	1804.94	1297.08	0.21
North Trib. EAST	32465	10 Yr	634.00	834.30	839.73		839.79	0.001076	2.67	728.38	916.04	0.25
North Trib. EAST	32465	100 Yr	1378.00	834.30	840.60		840.64	0.000854	2.65	1717.97	1353.54	0.23
North Trib. EAST	32115	10 Yr	634.00	833.40	838.77		839.08	0.005451	4.69	195.67	208.37	0.54
North Trib. EAST	32115	100 Yr	1378.00	833.40	839.44	839.37	839.95	0.007898	6.55	424.35	579.98	0.68
North Trib. EAST	31775	10 Yr	634.00	832.50	838.24		838.33	0.001069	2.81	567.22	939.73	0.26
North Trib. EAST	31775	100 Yr	1378.00	832.50	839.08		839.15	0.000885	2.94	1431.90	1075.17	0.24
North Trib. EAST	31445	10 Yr	634.00	832.20	837.24	835.94	837.67	0.004721	5.46	176.55	252.49	0.53
North Trib. EAST	31445	100 Yr	1378.00	832.20	838.68		838.78	0.001541	3.83	1141.47	972.48	0.32
North Trib. EAST	31145	10 Yr	634.00	831.30	836.80	835.04	836.89	0.001318	3.07	640.97	893.47	0.28
North Trib. EAST	31145	100 Yr	1378.00	831.30	838.60	836.84	838.61	0.000227	1.65	2561.62	1199.50	0.13

Hampshire Creek Plan: PRELIM 1/16/2023
377+75

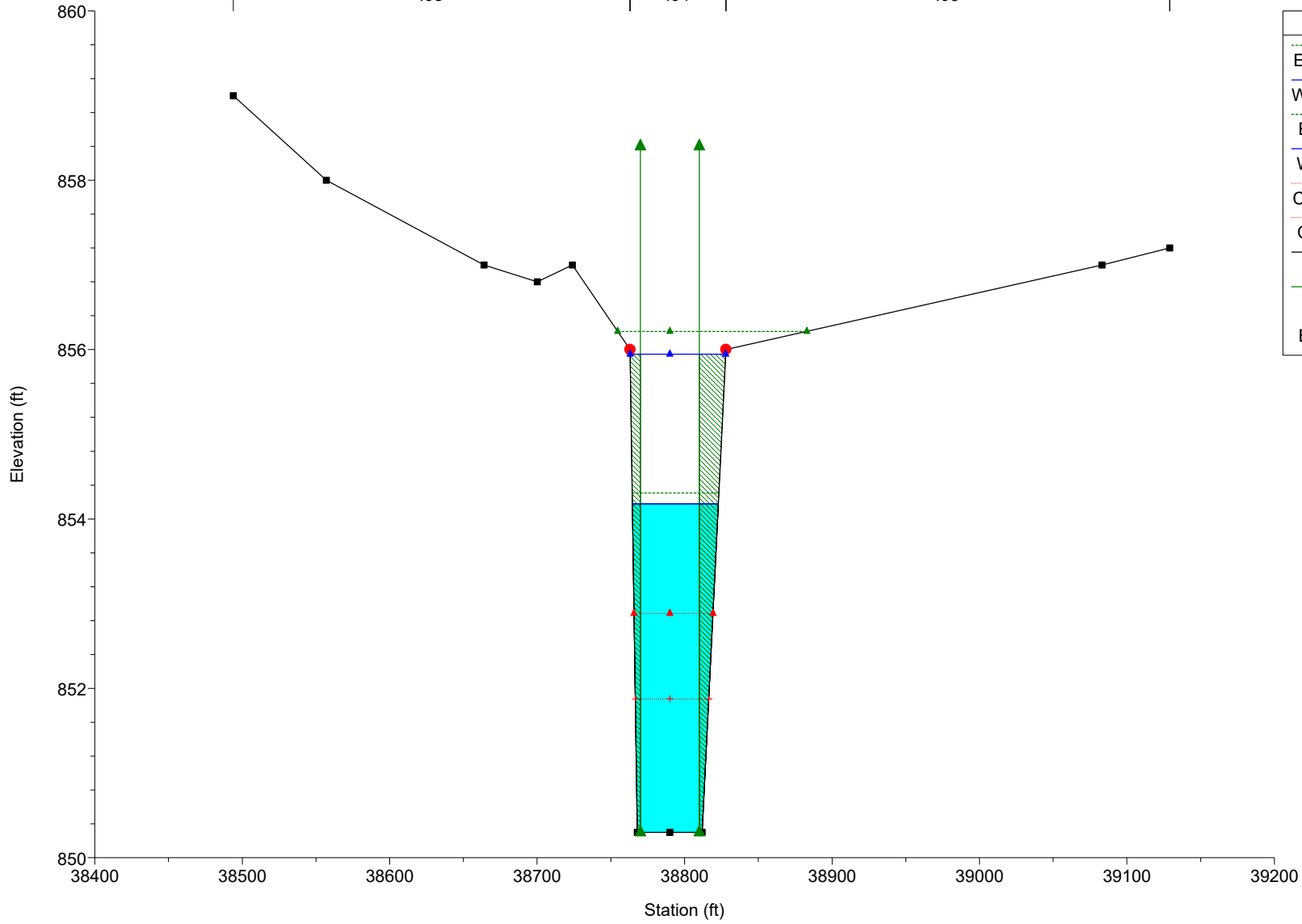
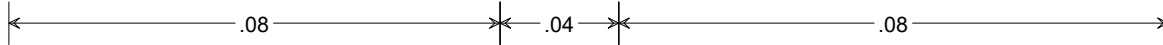


Hampshire Creek Plan: PRELIM 1/16/2023
381+15

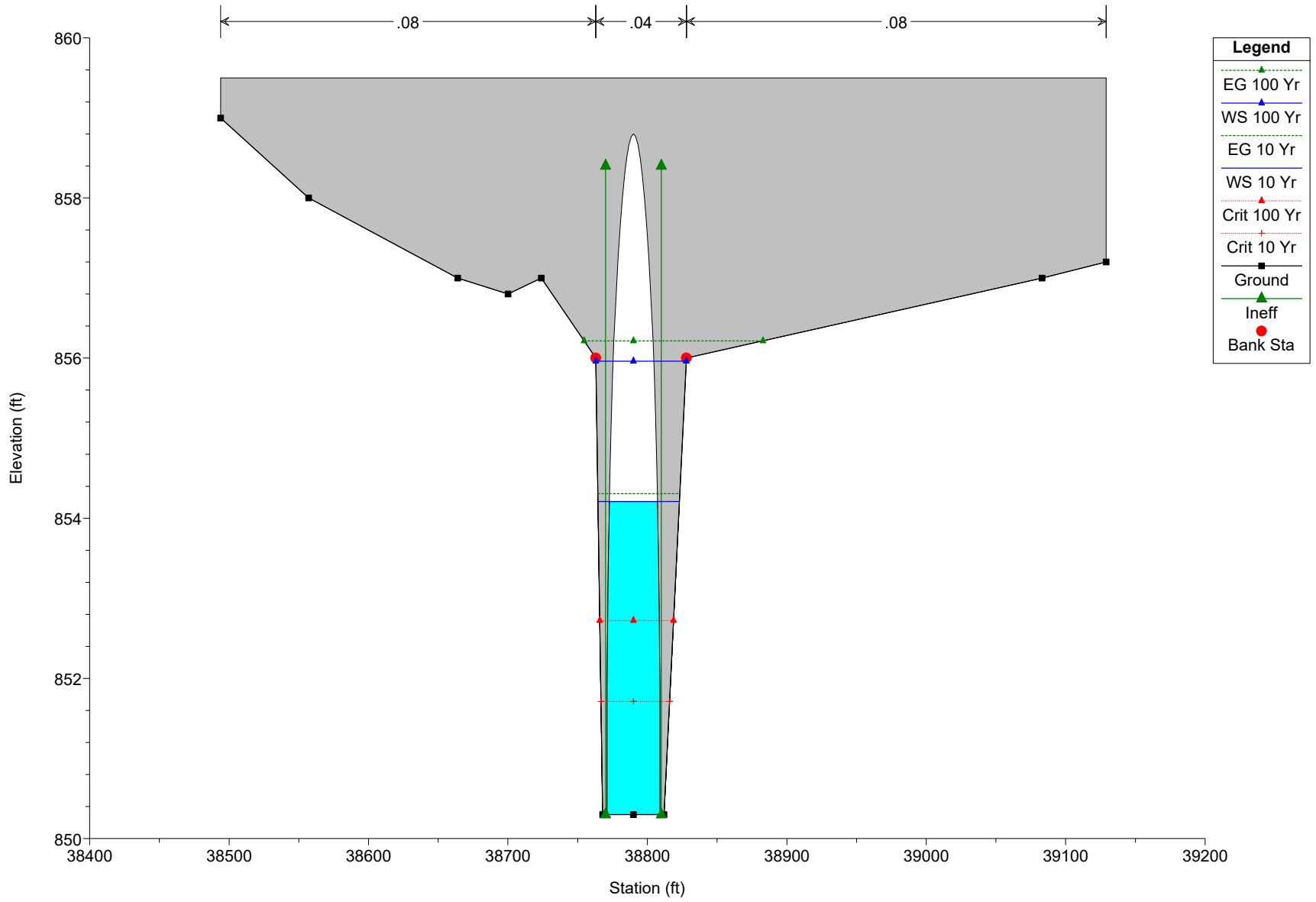


Hampshire Creek Plan: PRELIM 1/16/2023

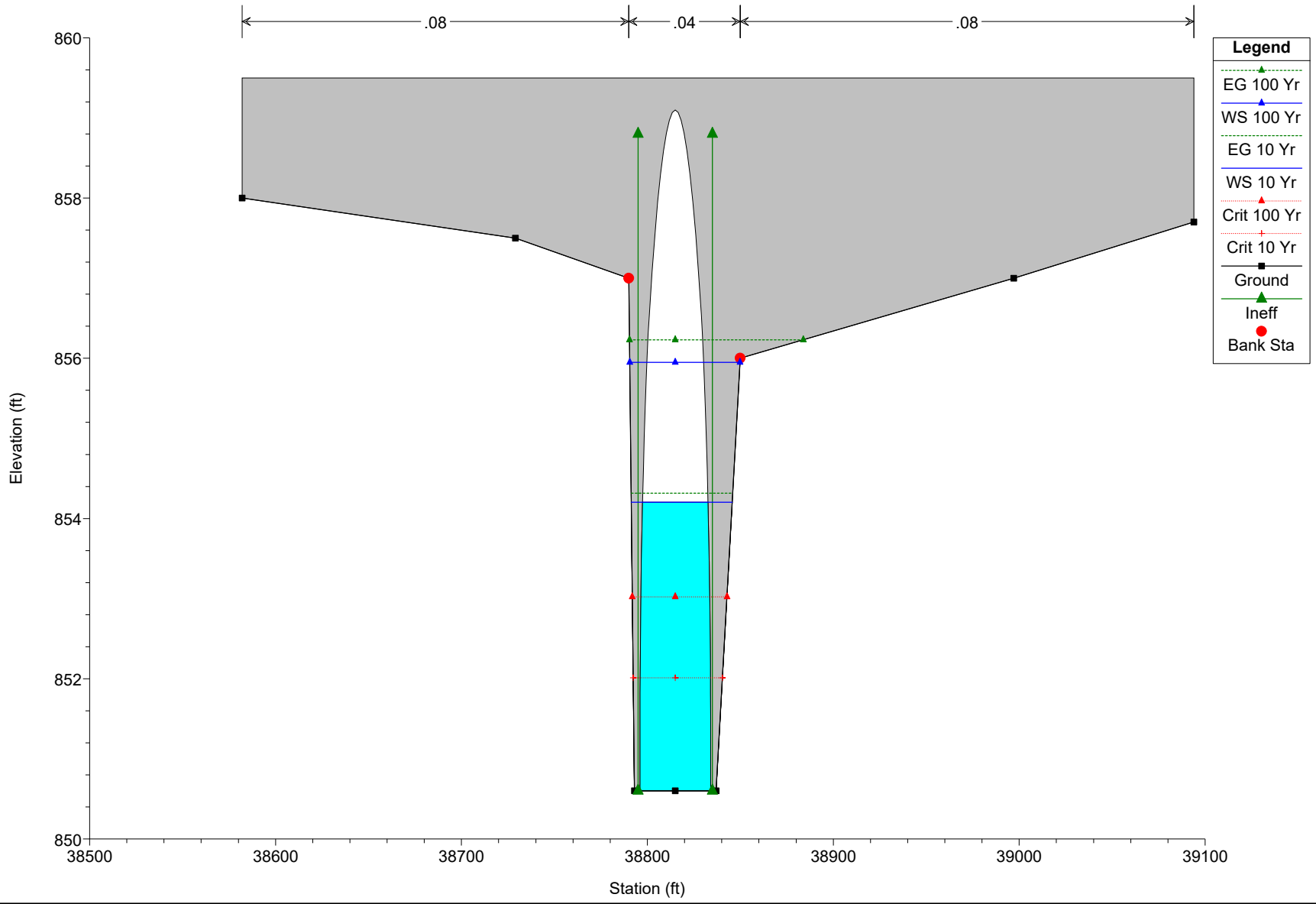
382+16



Hampshire Creek Plan: PRELIM 1/16/2023

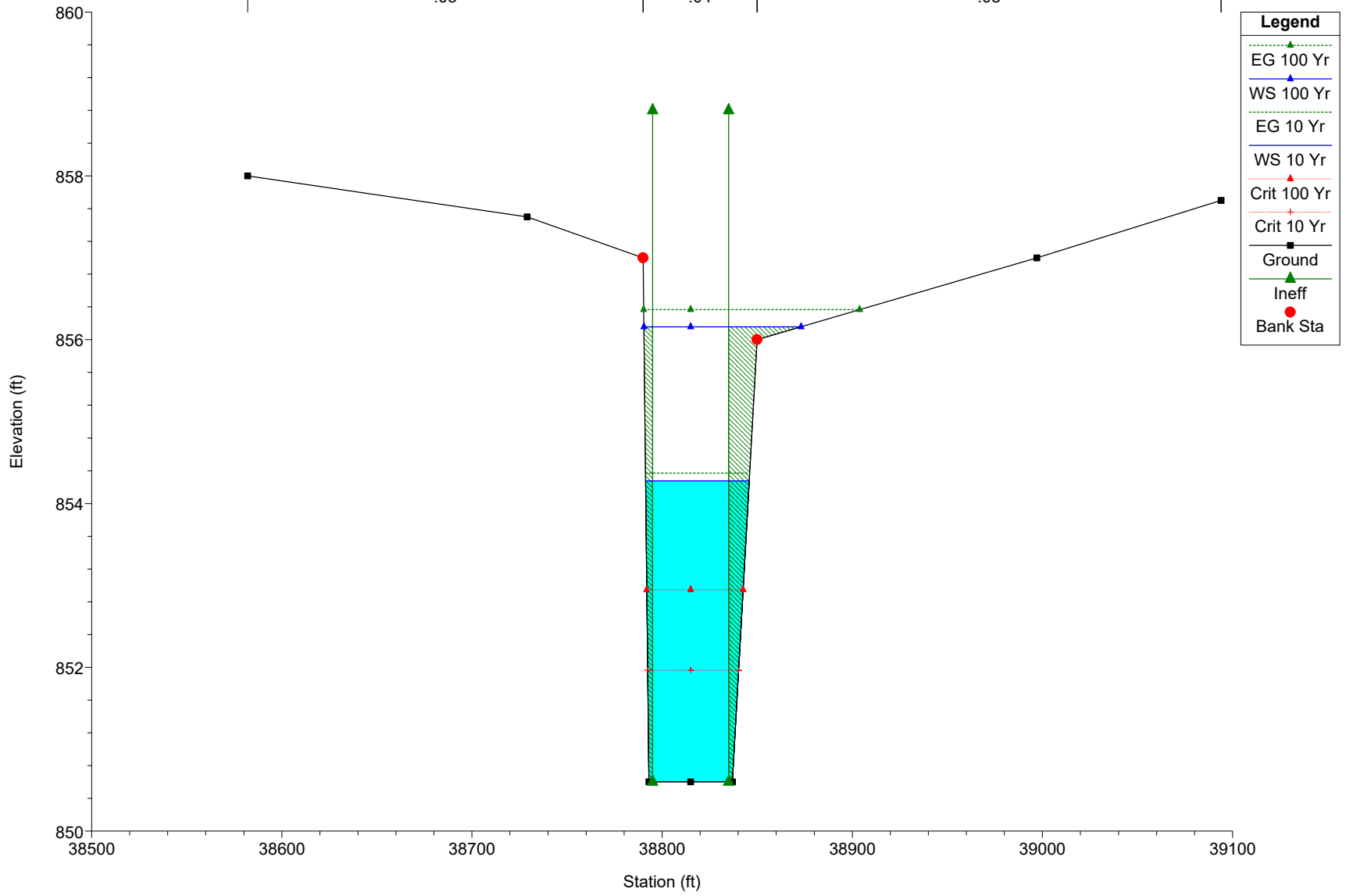


Hampshire Creek Plan: PRELIM 1/16/2023



Hampshire Creek Plan: PRELIM 1/16/2023

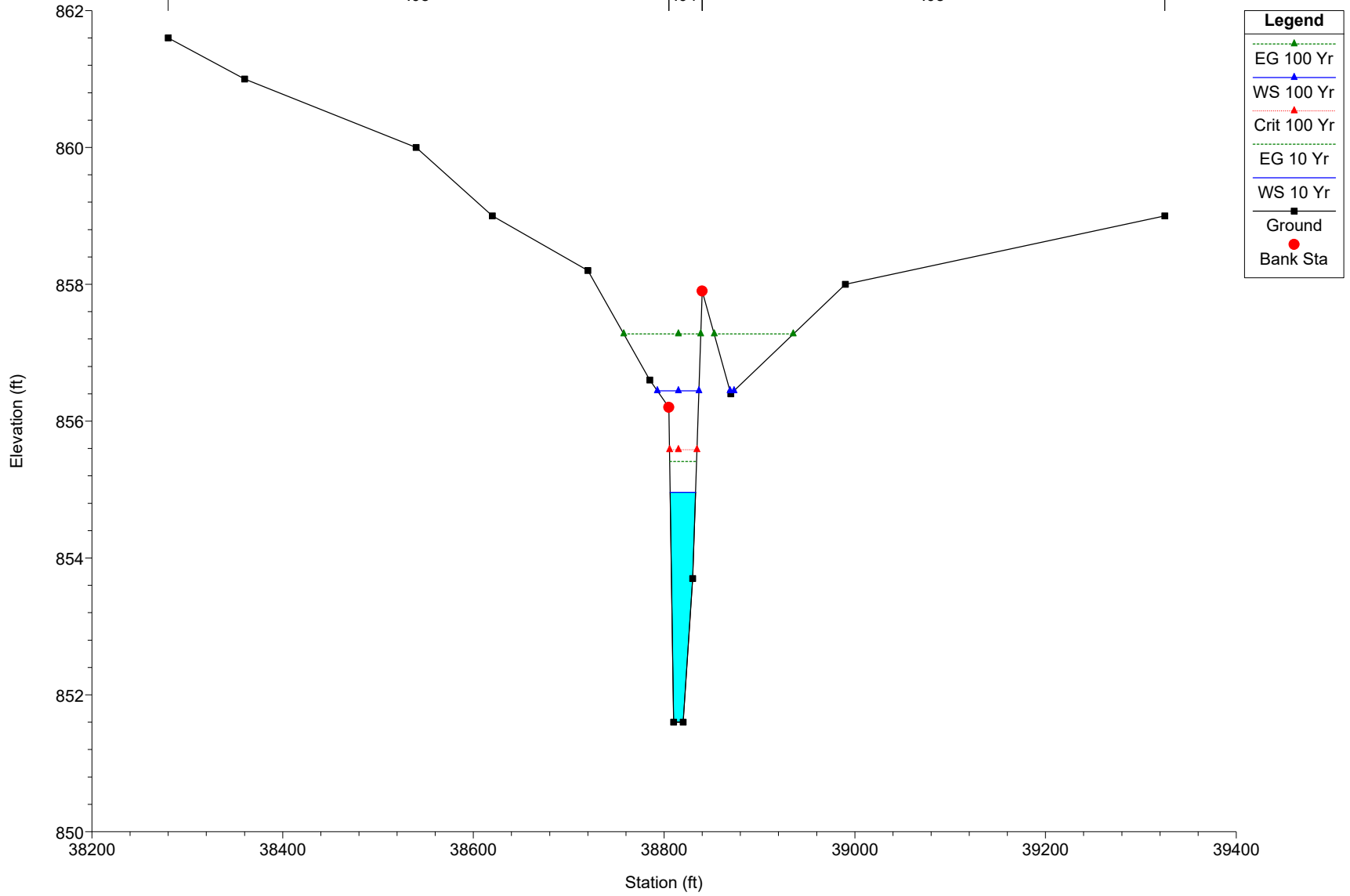
382+84



Hampshire Creek Plan: PRELIM 1/16/2023

385+00

← .08 |< .04 |> .08 →



HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X      X  XXXXXX   XXXX       XXXX       XX       XXXX
X      X X        X  X       X  X       X  X       X
X      X X        X          X  X       X  X       X
XXXXXXXX XXXX     X          XXX XXXX     XXXXXX     XXXX
X      X X        X          X  X       X  X       X
X      X X        X  X       X  X       X  X       X
X      X  XXXXXX   XXXX       X  X       X  X       XXXXX
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PROJECT DATA

Project Title: Hampshire Creek
Project File : HampCkNorth.prj
Run Date and Time: 1/16/2023 3:03:03 PM

Project in English units

PLAN DATA

Plan Title: PRELIM
Plan File : 1:\456275\HYDRO\HECRAS\HampCkNorth.p04

Geometry Title: NORTH TRIB - PRELIM
Geometry File : 1:\456275\HYDRO\HECRAS\HampCkNorth.g03

Flow Title : PRELIM
Flow File : 1:\456275\HYDRO\HECRAS\HampCkNorth.f01

Plan Summary Information:

Number of:	Cross Sections =	59	Multiple Openings =	0
	Culverts =	2	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: PRELIM
Flow File : l:\456275\HYDRO\HECRAS\HampCkNorth.f01

Flow Data (cfs)

River	Reach	RS	10 Yr	100 Yr
Hampshire Creek	North Trib.	43240	238	644
Hampshire Creek	North Trib. - NE4140		90	258
Hampshire Creek	North Trib. EAST41500		391	1069
Hampshire Creek	North Trib. EAST41414		341	779
Hampshire Creek	North Trib. EAST41380		348	791
Hampshire Creek	North Trib. EAST38284		362	815
Hampshire Creek	North Trib. EAST38216		446	942
Hampshire Creek	North Trib. EAST35430		465	980
Hampshire Creek	North Trib. EAST34450		634	1378

Boundary Conditions

River	Reach	Profile	Upstream
	Downstream		
Hampshire Creek	North Trib. EAST10 Yr		
Known WS = 836.8			
Hampshire Creek	North Trib. EAST100 Yr		
Known WS = 838.6			

GEOMETRY DATA

Geometry Title: NORTH TRIB - PRELIM
Geometry File : l:\456275\HYDRO\HECRAS\HampCkNorth.g03

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Hampshire Creek	North Trib.		EAST
Hampshire Creek	North Trib. - NE		EAST
Hampshire Creek	North Trib. EAST	EAST	

JUNCTION INFORMATION

Name: EAST
 Description:
 Energy computation Method

Length across Junction		Tributary		Length	Angle
River	Reach	River	Reach		
Hampshire Creek	North Trib.	to Hampshire Creek	North Trib. EAST	200	
Hampshire Creek	North Trib. - NE	to Hampshire Creek	North Trib. EAST	200	

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 43240

INPUT

Description: 43+240

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
43240	882	43282	880	43320	878	43335	877.8	43380	875.6
43395	870.9	43400	871	43412	877	43430	876.4	43468	874.9
43665	874	43840	873.5	44047	874	44217	876		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
43240	.08	43380	.04	43412	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

43380	43412	420	310	150	.1	.3
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Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
43412	44217	877	F

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 42930

INPUT

Description: 429+30

Station Elevation Data				num=	11				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42930	876	42950	874	43120	872.4	43180	873.5	43190	870.8
43195	871.1	43210	873.8	43235	873	43270	872.5	43350	874
43570	876								

Manning's n Values			num=	3		
Sta	n Val	Sta	n Val	Sta	n Val	
42930	.08	43180	.04	43210	.08	

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	43180	43210		300	300		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. RS: 42620

INPUT

Description: 426+20

Station Elevation Data				num=	11				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42620	876	42650	874	42700	871.1	42755	871.8	42768	869.1
42771	869	42780	871.5	42810	870.5	42840	871.1	43145	872
43290	874								

Manning's n Values			num=	3		
Sta	n Val	Sta	n Val	Sta	n Val	
42620	.08	42755	.04	42780	.08	

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	42755	42780		310	310		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. RS: 42310

INPUT

Description: 423+10

Station Elevation Data				num=	17				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
42310	876	42340	878	42385	880	42475	878	42490	877.1
42545	875.6	42555	867.4	42557	867.6	42580	872	42605	870
42640	868.8	42780	870	42940	872	43040	874	43090	876
44020	878	44045	880						

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 42310 .08 42545 .04 42580 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 42545 42580 310 310 310 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 42000

INPUT

Description: 420+00

Station Elevation Data num= 13
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 42000 872 42100 873 42180 872 42230 869.8 42290 871
 42300 866.3 42302 866 42325 871.9 42350 869.8 42380 868.3
 42420 868.4 42710 870 42765 872

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 42000 .08 42290 .04 42325 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 42290 42325 300 300 300 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. RS: 41700

INPUT

Description: 41+700

Station Elevation Data num= 16
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 41197 872 41275 870 41365 868 41472 870 41700 870
 41825 870 41860 867.8 41915 868.1 41925 864.6 41930 864.6
 41940 868.9 41970 868 42000 867.4 42030 868 42340 870
 42460 872

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 41197 .08 41915 .04 41940 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 41915 41940 0 0 0 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 4140

INPUT

Description: 41+40

Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	876	150	874	250	872	300	871.6	335	872
460	878								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	250	.04	335	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
250 335 580 440 360 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 3700

INPUT

Description: 37+00

Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	335	872.1	580	872	705	870.65	760	870.6
800	870.55	830	870.6	860	871.38	895	873.03	1010	878

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	760	.04	830	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
760 830 330 230 200 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 3470

INPUT

Description: 34+70

Station Elevation Data num= 11

390 650 240 240 200 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2650

INPUT

Description: 26+50

Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	873.7	290	872.7	390	872	480	870.59	510	870.62
545	869.45	560	869.64	575	870	600	872	760	878

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	510	.04	560	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
510 560 175 230 320 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2420

INPUT

Description: 24+20

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	873.7	210	872	370	870	460	868.53	495	868.39
550	868.67	575	868.28	595	868.91	645	869.04	710	870
820	872	870	874	960	875.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	550	.04	595	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
550 595 140 340 400 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 2080

INPUT

Description: 20+80

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	873.7	200	872	270	870	320	869.23	375	869.18
410	868.92	425	869.57	475	870.07	550	870	600	872
710	872.8	990	878.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	375	.04	425	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

375	425	300	300	320		.1	.3
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CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 1780

INPUT

Description: 17+80

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874.4	200	872	300	872	330	871.77	380	871.1
410	870.77	418	868.48	444	870.86	490	871.63	580	874
650	876								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	410	.04	444	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

410	444	30	90	250		.1	.3
-----	-----	----	----	-----	--	----	----

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 1690

INPUT

Description: 16+90

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874.4	200	872	300	872	340	871.14	390	869.54
420	868.73	455	869.34	500	869.7	640	872	740	874
820	876								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	390	.04	455	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	390	455		200 270	270		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1420

INPUT

Description: 14+20

Station Elevation Data		num=	10						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874.4	180	872.43	225	870.19	255	868.78	265	868.65
285	868.74	315	868.82	365	869.17	420	872	550	876

Manning's n Values		num=	3						
Sta	n Val	Sta	n Val	Sta	n Val				
100	.08	255	.04	285	.08				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	255	285		320 340	350		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. - NE RS: 1080

INPUT

Description: 10+80

Station Elevation Data		num=	13						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	210	872	505	869.82	555	868.53	585	868.6
625	869.69	660	868.93	688	868.97	730	870.1	820	870
1125	870	1170	872	1330	878				

Manning's n Values		num=	3						
Sta	n Val	Sta	n Val	Sta	n Val				
100	.08	555	.04	625	.08				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	555	625		450 300	210		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 780

INPUT

Description: 7+80

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	877.6	150	876	220	874	350	872	400	870.28
450	868.74	485	868.34	535	869.52	570	869.65	1050	870
1090	872	1240	878						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	450	.04	535	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
450 535 310 280 200 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 500

INPUT

Description: 5+00

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	130	872	300	870	330	869.42	380	868.3
410	867.98	440	868.35	490	869.71	600	872	720	872
850	873.2	1040	874	1130	878				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.08	380	.04	440	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
380 440 360 300 190 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. - NE RS: 200

INPUT

Description: 2+00

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	874	160	872	300	870	570	870.2	580	869.81

590	867.91	610	867.37	630	867.23	655	868.21	790	870
1010	870	1030	872	1160	873.2	1350	874	1440	878

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 100 .08 580 .04 655 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 580 655 0 0 0 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41500

INPUT

Description: 415+00

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9
41900	867.9	41905	864	41925	869.7	41950	868.5	41980	867.8
42210	870	42365	872						

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 41250 .08 41900 .04 41925 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 41900 41925 300 300 300 .3 .5

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41414

INPUT

Description: 414+14

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9
41897	867.9	41897.5	864.2	41905	864.2	41912.5	864.2	41925	869.7
41950	868.5	41980	867.8	42210	870	42365	872		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 41250 .08 41897 .04 41925 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

41897	41925		34	34	34	.3	.5
Ineffective Flow		num=	2				
Sta L	Sta R	Elev	Permanent				
41250	41897.5	870.37	F				
41912.5	42365	870.37	F				

CULVERT

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41397

INPUT

Description: Harmony Road - North Culvert
 Distance from Upstream XS = 6
 Deck/Roadway Width = 22
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates

num=	9								
Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
40888	875.4				41510	870.64			
41710	870.37				41809	870.47			
42009	871.16				42247	871.6			
					41610	870.46			
					41909	870.93			
					42476	872.3			

Upstream Bridge Cross Section Data

Station Elevation Data	num=	14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41250	872	41405	870	41500	868	41635	868	41830	867.9
41897	867.9	41897.5	864.2	41905	864.2	41912.5	864.2	41925	869.7
41950	868.5	41980	867.8	42210	870	42365	872		

Manning's n Values

num=	3		
Sta	n Val	Sta	n Val
41250	.08	41897	.04
		41925	.08

Bank Sta:	Left	Right	Coeff	Contr.	Expan.
	41897	41925	.3	.5	

Ineffective Flow		num=	2	
Sta L	Sta R	Elev	Permanent	
41250	41897.5	870.37	F	
41912.5	42365	870.37	F	

Downstream Deck/Roadway Coordinates

num=	9								
Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
40888	875.4				41510	870.64			
41710	870.37				41809	870.47			
42009	871.16				42247	871.6			
					41610	870.46			
					41909	870.93			
					42476	872.3			

Downstream Bridge Cross Section Data

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41080	873	41160	871	41210	870	41260	870	41320	868
41500	866.9	41550	867.1	41590	868.4	41602.5	863.99	41610	863.99
41617.5	863.99	41628	867.8	41632	867.6	41685	866.1	41790	866
41825	866.3	42000	867	42050	868	42100	870		

Manning's n Values					
Sta	n Val	Sta	n Val	Sta	n Val
41080	.08	41590	.04	41628	.08

Bank Sta:	Left	Right	Coeff	Contr.	Expan.
	41590	41628		.3	.5

Ineffective Flow				
Sta L	Sta R	Elev	Permanent	num=
41080	41602.5	868.72	F	2
41617.5	42100	868.72	F	

Upstream Embankment side slope = 3 horiz. to 1.0 vertical
Downstream Embankment side slope = 3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 870.37
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span	Exit Loss Coef
HARMONY-N	Box	3	7	
FHWA Chart # 8 - flared wingwalls				
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.				
Solution Criteria = Highest U.S. EG				
Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked
	0	34	.013	.013
				0
				.5

1

Number of Barrels = 2

Upstream Elevation = 864.2

Centerline Stations

Sta. Sta.

41901 41909

Downstream Elevation = 863.99

Centerline Stations

Sta. Sta.

41606 41614

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41380

INPUT

Description: 413+80

Station Elevation Data		num= 19							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41080	873	41160	871	41210	870	41260	870	41320	868
41500	866.9	41550	867.1	41590	868.4	41602.5	863.99	41610	863.99
41617.5	863.99	41628	867.8	41632	867.6	41685	866.1	41790	866
41825	866.3	42000	867	42050	868	42100	870		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
41080	.08	41590	.04	41628	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	41590	41628		120	120		.3	.5

Ineffective Flow		num= 2	
Sta L	Sta R	Elev	Permanent
41080	41602.5	868.72	F
41617.5	42100	868.72	F

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 41260

INPUT

Description: 412+60

Station Elevation Data		num= 18							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41080	873	41160	871	41210	870	41260	870	41320	868
41500	866.9	41550	867.1	41590	868.4	41605	863.3	41615	862.8
41628	867.8	41632	867.6	41685	866.1	41790	866	41825	866.3
42000	867	42050	868	42100	870				

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
41080	.08	41590	.04	41628	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	41590	41628		720	600		.3	.5

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 40660

INPUT

Description: 406+60

Station Elevation Data		num= 16							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40470	871	40600	869.7	40660	868	40675	868	40830	866.6
40860	867.3	40910	867.3	40920	860.7	40927	860.7	40932	861.9
40945	867.1	40960	870.7	40980	867.8	41040	866.8	41200	867
41340	870								

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
40470	.08	40910	.04	40945	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	40910	40945		220	360	500		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 40300

INPUT

Description: 403+00

Station Elevation Data		num= 10							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40100	867	40300	866	40570	866	40640	864.3	40650	859.5
40655	859.5	40665	864.6	40755	864.35	40945	865	40990	866.6

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
40100	.08	40640	.04	40665	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	40640	40665		20	20	20		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 40280

INPUT

Description: 402+80

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
39705	870.8	39805	870	39905	866	40005	865	40195	863
40600	864.2	40610	860.4	40615	859.3	40620	859.4	40630	864.7
40660	864.8	40710	864.5	40910	865	40945	866.6		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 39705 .08 40600 .04 40630 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 40600 40630 350 390 520 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39885

INPUT

Description: 398+85

Station Elevation Data num= 16
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 39582 870.8 39708 870 39905 866 40005 865 40130 864
 40195 863 40325 862.3 40375 862 40385 862 40395 857.9
 40400 857.8 40415 864.3 40425 863.3 40600 862.5 40725 862
 40815 864

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 39582 .08 40385 .04 40415 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 40385 40415 300 315 335 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39665

INPUT

Description: 396+65

Station Elevation Data num= 23
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 39564 865 39593 864 39627 863 39664 862 39716 861
 39733 860.9 39750 861 39825 862 39884 862.5 39929 862.3
 39939 862 39982 861.1 40008 859.2 40013 857.5 40020 857.4
 40030 865.1 40041 864.2 40066 864 40081 864 40101 863.8
 40142 864 40209 864.5 40266 864

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 39564 .08 39929 .04 40030 .08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
39929	40030	250	300	60		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39365

INPUT

Description: 393+65

Station Elevation Data	num=	22
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev		
39239 865 39267 864 39297 863 39360 862 39395 861.2		
39431 861 39490 860.3 39636 860.4 39684 860.3 39701 860.1		
39710 857 39720 857 39730 863.5 39736 863.4 39760 862		
39796 861.9 39818 862 39882 863 39942 863.3 39978 863		
40034 862.3 40093 862		

Manning's n Values	num=	3
Sta n Val Sta n Val Sta n Val		
39239 .08 39701 .04 39730 .08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
39701	39730	280	280	280		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 39085

INPUT

Description: 390+85

Station Elevation Data	num=	12
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev		
38725 862 39208 859.1 39605 859.3 39645 859.7 39665 859.5		
39675 855.7 39690 855.6 39770 859.8 39910 860 40025 861		
40076 861.35 40160 861.4		

Manning's n Values	num=	3
Sta n Val Sta n Val Sta n Val		
38725 .08 39665 .04 39770 .08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
39665	39770	360	270	160		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 38825

INPUT

Description: 388+25

Station Elevation Data		num=		14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38970	861.6	39335	859.3	39390	858.9	39412	858.9	39422	854.4
39425	854.3	39428	854.6	39438	858.6	39460	858.6	39510	859.1
39730	860	39830	861	39852	861	39870	861.35		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
38970	.08	39412	.04	39438	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	39412	39438		300	320		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 38500

INPUT

Description: 385+00

Station Elevation Data		num=		14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38280	861.6	38360	861	38540	860	38620	859	38720	858.2
38785	856.6	38805	856.2	38810	851.6	38820	851.6	38830	853.7
38840	857.9	38870	856.4	38990	858	39325	859		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
38280	.08	38805	.04	38840	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	38805	38840		101	101		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 38399

INPUT

Description: 383+99

Station Elevation Data		num=		10					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38674	858	38720	857.4	38755	857	38778	856.8	38812	851.22

38815 851.22 38818 851.22 38851 857 38956 857.5 39073 858

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
38674 .08 38778 .04 38851 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
38778 38851 115 115 115 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 38284

INPUT

Description: 382+84

Station Elevation Data num= 9
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
38582 858 38729 857.5 38790 857 38793 850.6 38815 850.6
38837 850.6 38850 856 38997 857 39094 857.7

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
38582 .08 38790 .04 38850 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
38790 38850 68 68 68 .1 .3

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
38582 38795 858.8 F
38835 39094 858.8 F

CULVERT

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 38250

INPUT

Description:

Distance from Upstream XS = 1
Deck/Roadway Width = 66
Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
38450 859.5 39150 859.5

Upstream Bridge Cross Section Data

Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38582	858	38729	857.5	38790	857	38793	850.6	38815	850.6
38837	850.6	38850	856	38997	857	39094	857.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
38582	.08	38790	.04	38850	.08

Bank Sta: Left Right Coeff Contr. Expan.

38790	38850		.1	.3
-------	-------	--	----	----

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
38582	38795	858.8	F
38835	39094	858.8	F

Downstream Deck/Roadway Coordinates num= 2

Sta Hi	Cord Lo Cord	Sta Hi	Cord Lo Cord
38450	859.5	39150	859.5

Downstream Bridge Cross Section Data

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38494	859	38557	858	38664	857	38700	856.8	38724	857
38763	856	38768	850.3	38790	850.3	38812	850.3	38828	856
39083	857	39129	857.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
38494	.08	38763	.04	38828	.08

Bank Sta: Left Right Coeff Contr. Expan.

38763	38828		.1	.3
-------	-------	--	----	----

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
38494	38770	858.4	F
38810	39129	858.4	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span

Culvert #1 Conspan Arch 8.5 38
 FHWA Chart # 60- Span/Rise ratio approximate 2:1
 FHWA Scale # 1 - 0 degree wing wall angle
 Solution Criteria = Highest U.S. EG
 Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef
 Exit Loss Coef
 1 66 .013 .013 0 .5
 1
 Upstream Elevation = 850.6
 Centerline Station = 38815
 Downstream Elevation = 850.3
 Centerline Station = 38790

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38216

INPUT

Description: 382+16

Station Elevation Data		num= 12							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38494	859	38557	858	38664	857	38700	856.8	38724	857
38763	856	38768	850.3	38790	850.3	38812	850.3	38828	856
39083	857	39129	857.2						

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
38494	.08	38763	.04	38828	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	38763	38828		101	101		.1	.3

Ineffective Flow		num= 2	
Sta L	Sta R	Elev	Permanent
38494	38770	858.4	F
38810	39129	858.4	F

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 38115

INPUT

Description: 381+15

Station Elevation Data		num= 15							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
38050	860.3	38080	860	38270	859	38340	858	38440	856.3
38510	856.3	38525	856.7	38530	849.8	38535	849.8	38550	851.3

38560 855.3 38600 854 38715 856 38751 856.2 38781 856

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
38050 .08 38525 .04 38560 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
38525 38560 340 340 340 .1 .3
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
38050 38489 858 F
38580 38781 858 F

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 37775

INPUT

Description: 377+75

Station Elevation Data num= 17
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
37465 860.3 37670 859 37900 855 37965 854 38090 852
38145 851.8 38165 853 38170 848.1 38175 848.2 38195 849.4
38212 852 38243 852.4 38310 851.5 38454 853 38505 854
38657 854.2 38766 855

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
37465 .08 38165 .04 38212 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
38165 38212 320 320 320 .1 .3
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
37465 38080 854 F
38305 38766 857 F

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 37455

INPUT

Description: 374+55

Station Elevation Data num= 16
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
37287 852 37341 851 37395 850.5 37548 850.4 37701 850.6

37770	849.5	37821	850.6	37843	852.5	37860	845.7	37865	845.5
37883	851.6	37895	851.3	37967	849.38	38161	850.8	38302	851
38403	852								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
37287	.08	37843	.04	37883	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	37843	37883		280	280		.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
37287	37690	852	F
38075	38403	855	F

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37170

INPUT

Description: 371+70

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
37575	850	37585	848.6	37725	849	37805	848.1	37850	848.3
37880	850.5	37895	844.1	37900	843.9	37920	843.7	37925	850
38065	850	38075	848	38085	850	38095	852		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
37575	.08	37880	.04	37925	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	37880	37925		30	90		.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
37575	37675	851	F

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 37080

INPUT

Description: 370+80

Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
36865	850	36910	849	37410	847.8	37480	850.8	37495	843.9

37500 844 37510 846.1 37525 848.9 37710 850 37965 850.6

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
36865 .08 37480 .04 37525 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
37480 37525 120 220 450 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
36865 37227 850.5 F

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 36850

INPUT

Description: 368+50

Station Elevation Data num= 12
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
36490 853.7 36690 850 36825 850 37220 847.4 37285 848.3
37305 842.4 37310 842.3 37325 850 37370 847.4 37590 848
37710 849 37735 849.2

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
36490 .08 37285 .04 37325 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
37285 37325 370 370 370 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
36490 36987 850 F

CROSS SECTION

RIVER: Hampshire Creek
REACH: North Trib. EAST RS: 36480

INPUT

Description: 364+480

Station Elevation Data num= 14
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
36243 854.5 36308 854 36455 850 36525 849 36765 847.6
37015 846.7 37088 848 37100 841.6 37107 841.5 37130 848.6
37180 846.8 37405 847.7 37528 848 37778 848.5

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 36243 .08 37088 .04 37130 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 37088 37130 320 320 320 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 36160

INPUT

Description: 361+60

Station Elevation Data num= 14
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 36045 850 36215 849 36372 848 36559 847 36720 846.4
 36780 846.1 36790 846.9 36800 840.4 36810 840.8 36830 847
 37045 846 37327 847 37555 847.6 38005 848.5

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 36045 .08 36790 .04 36830 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 36790 36830 1200 730 300 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 35430

INPUT

Description: 354+30

Station Elevation Data num= 10
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 35175 848 35405 847.2 35585 847.6 35640 847.4 35650 839.4
 35655 839.4 35670 846.5 35675 846.4 35735 845 36300 848

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 35175 .08 35640 .04 35670 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 35640 35670 320 320 320 .1 .3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 35110

INPUT

Description: 351+10

Station Elevation Data		num=		17					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
34920	848	34983	847	35040	846	35110	846	35230	845
35250	844.8	35680	844.7	35730	845.7	35740	845.2	35750	838.8
35760	838.7	35775	846.3	35780	846.1	35830	845.2	35903	846
36230	847	36255	847.1						

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
34920	.08	35740	.04	35775	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	35740	35775		315	315		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34790

INPUT

Description: 347+90

Station Elevation Data		num=		19					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
34790	848	35010	847	35100	846	35172	845	35580	844.9
35635	845.6	35640	845.8	35650	838.7	35660	838.7	35675	845.7
35680	845.8	35750	844.2	35950	845	36048	845.2	36240	845.3
36405	846	36580	846.4	36760	846	37032	848.6		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
34790	.08	35640	.04	35675	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	35640	35675		340	340		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34450

INPUT

Description: 344+50

Station Elevation Data				num=	16					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
34450	846	34740	845	34910	844	35000	843.9	35050	843	
35055	843.2	35065	837.6	35075	837.9	35080	838.5	35090	844.4	
35095	844.6	35140	844	35230	843.5	35435	844	35655	845	
36343	846									

Manning's n Values			num=	3		
Sta	n Val	Sta	n Val	Sta	n Val	
34450	.08	35055	.04	35090	.08	

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	35055	35090		330	330	330		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 34120

INPUT

Description: 341+20

Station Elevation Data				num=	14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
33710	846	34080	844	34120	844	34340	844	34590	843.8	
34650	843.2	34655	842.3	34670	836.5	34680	836.8	34690	843.5	
34695	844.3	34750	842.9	34910	844	35170	846			

Manning's n Values			num=	3		
Sta	n Val	Sta	n Val	Sta	n Val	
33710	.08	34655	.04	34690	.08	

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	34655	34690		330	330	330		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 33790

INPUT

Description: 337+90

Station Elevation Data				num=	15					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
32855	846	33030	844	33260	843.5	33790	842.7	33990	844	
34005	844.1	34035	843.9	34045	844.1	34050	836.5	34060	836.3	
34080	843.7	34090	843.8	34140	842.4	34500	844	34880	845.5	

Manning's n Values			num=	3		
--------------------	--	--	------	---	--	--

Sta	n Val	Sta	n Val	Sta	n Val
32855	.08	34045	.04	34080	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	34045	34080		335	335		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 33455

INPUT

Description: 334+55

Station Elevation Data				num=	14				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
33135	844	33455	842	33975	842	34065	842.8	34130	842.8
34135	842.8	34150	835.3	34160	835.2	34170	840.9	34175	841.1
34230	841.2	34320	842	34670	842	35070	844		

Manning's n Values				num=	3				
Sta	n Val	Sta	n Val	Sta	n Val				
33135	.08	34135	.04	34170	.08				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	34135	34170		310	340		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 33115

INPUT

Description: 331+15

Station Elevation Data				num=	14				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
32529	844	32795	842	33115	840	33370	840	33720	840.9
33780	840.8	33785	841	33795	835.2	33805	834.9	33815	840.8
33825	841.6	33880	840.3	34220	842	34420	844		

Manning's n Values				num=	3				
Sta	n Val	Sta	n Val	Sta	n Val				
32529	.08	33785	.04	33815	.08				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	33785	33815		310	340		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 32775

INPUT

Description: 327+75

Station Elevation Data		num= 15							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
32517	842	32635	840	32775	838.6	33525	840	33565	839.9
33625	840.3	33630	840.5	33645	834.6	33655	834.5	33665	839.9
33670	840.8	33730	839.7	33755	840	33840	840	33935	842

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
32517	.08	33630	.04	33670	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	33630	33670		330	300		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 32465

INPUT

Description: 324+65

Station Elevation Data		num= 14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31790	842	31911	840	32059	838.5	32465	839	32870	840.5
32925	840.4	32940	840.6	32960	834.3	32970	834.3	32980	839.8
33000	839.7	33060	839	33180	840	33340	842		

Manning's n Values		num= 3			
Sta	n Val	Sta	n Val	Sta	n Val
31790	.08	32940	.04	32980	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	32940	32980		275	340		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 32115

INPUT

Description: 321+15

Station Elevation Data		num= 12							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

31287	842	32115	839	32435	839.8	32480	839.8	32485	839.8
32500	833.4	32510	833.5	32520	838.3	32540	838.6	32600	837.9
32830	840	32960	842						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
31287	.08	32485	.04	32540	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	32485	32540		335	335	335		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31775

INPUT

Description: 317+75

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31445	840	31595	838	31775	838	32050	838	32075	838.2
32130	838.3	32140	837.6	32160	832.8	32165	832.5	32170	832.5
32185	837.8	32200	837.3	32215	836.9	32540	838	32630	840

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
31445	.08	32140	.04	32185	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	32140	32185		350	325	280		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31445

INPUT

Description: 314+45

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
31445	840	31530	838	31910	837.7	31960	838.5	31970	838.1
31985	832.2	31995	832.2	32005	837	32020	836.9	32070	836.7
32445	838	32530	840						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
31445	.08	31970	.04	32005	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
31970	32005	300	300	300		.1	.3

CROSS SECTION

RIVER: Hampshire Creek
 REACH: North Trib. EAST RS: 31145

INPUT

Description: 311+45

Station Elevation Data	num=	16
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev		
30895 840 31000 838 31145 836 31370 836 31450 837		
31500 837.2 31510 836.2 31525 831.3 31535 831.4 31545 837.1		
31561 836.7 31615 836.7 31810 836 32035 836 32105 838		
32315 840		

Manning's n Values	num=	3
Sta n Val Sta n Val Sta n Val		
30895 .08 31510 .04 31545 .08		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
31510	31545	0	0	0		.1	.3

SUMMARY OF MANNING'S N VALUES

River:Hampshire Creek

Reach	River Sta.	n1	n2	n3
North Trib.	43240	.08	.04	.08
North Trib.	42930	.08	.04	.08
North Trib.	42620	.08	.04	.08
North Trib.	42310	.08	.04	.08
North Trib.	42000	.08	.04	.08
North Trib.	41700	.08	.04	.08
North Trib. - NE	4140	.08	.04	.08
North Trib. - NE	3700	.08	.04	.08
North Trib. - NE	3470	.08	.04	.08
North Trib. - NE	3125	.08	.04	.08
North Trib. - NE	2890	.08	.04	.08
North Trib. - NE	2650	.08	.04	.08
North Trib. - NE	2420	.08	.04	.08
North Trib. - NE	2080	.08	.04	.08
North Trib. - NE	1780	.08	.04	.08
North Trib. - NE	1690	.08	.04	.08
North Trib. - NE	1420	.08	.04	.08

North Trib. - NE	1080	.08	.04	.08
North Trib. - NE	780	.08	.04	.08
North Trib. - NE	500	.08	.04	.08
North Trib. - NE	200	.08	.04	.08
North Trib. EAST	41500	.08	.04	.08
North Trib. EAST	41414	.08	.04	.08
North Trib. EAST	41397			
		Culvert		
North Trib. EAST	41380	.08	.04	.08
North Trib. EAST	41260	.08	.04	.08
North Trib. EAST	40660	.08	.04	.08
North Trib. EAST	40300	.08	.04	.08
North Trib. EAST	40280	.08	.04	.08
North Trib. EAST	39885	.08	.04	.08
North Trib. EAST	39665	.08	.04	.08
North Trib. EAST	39365	.08	.04	.08
North Trib. EAST	39085	.08	.04	.08
North Trib. EAST	38825	.08	.04	.08
North Trib. EAST	38500	.08	.04	.08
North Trib. EAST	38399	.08	.04	.08
North Trib. EAST	38284	.08	.04	.08
North Trib. EAST	38250			
		Culvert		
North Trib. EAST	38216	.08	.04	.08
North Trib. EAST	38115	.08	.04	.08
North Trib. EAST	37775	.08	.04	.08
North Trib. EAST	37455	.08	.04	.08
North Trib. EAST	37170	.08	.04	.08
North Trib. EAST	37080	.08	.04	.08
North Trib. EAST	36850	.08	.04	.08
North Trib. EAST	36480	.08	.04	.08
North Trib. EAST	36160	.08	.04	.08
North Trib. EAST	35430	.08	.04	.08
North Trib. EAST	35110	.08	.04	.08
North Trib. EAST	34790	.08	.04	.08
North Trib. EAST	34450	.08	.04	.08
North Trib. EAST	34120	.08	.04	.08
North Trib. EAST	33790	.08	.04	.08
North Trib. EAST	33455	.08	.04	.08
North Trib. EAST	33115	.08	.04	.08
North Trib. EAST	32775	.08	.04	.08
North Trib. EAST	32465	.08	.04	.08
North Trib. EAST	32115	.08	.04	.08
North Trib. EAST	31775	.08	.04	.08
North Trib. EAST	31445	.08	.04	.08
North Trib. EAST	31145	.08	.04	.08

SUMMARY OF REACH LENGTHS

River: Hampshire Creek

Reach	River Sta.	Left	Channel	Right
North Trib.	43240	420	310	150
North Trib.	42930	300	300	300
North Trib.	42620	310	310	310
North Trib.	42310	310	310	310
North Trib.	42000	300	300	300
North Trib.	41700	0	0	0
North Trib. - NE	4140	580	440	360
North Trib. - NE	3700	330	230	200
North Trib. - NE	3470	380	345	280
North Trib. - NE	3125	370	235	150
North Trib. - NE	2890	240	240	200
North Trib. - NE	2650	175	230	320
North Trib. - NE	2420	140	340	400
North Trib. - NE	2080	300	300	320
North Trib. - NE	1780	30	90	250
North Trib. - NE	1690	200	270	270
North Trib. - NE	1420	320	340	350
North Trib. - NE	1080	450	300	210
North Trib. - NE	780	310	280	200
North Trib. - NE	500	360	300	190
North Trib. - NE	200	0	0	0
North Trib. EAST	41500	300	300	300
North Trib. EAST	41414	34	34	34
North Trib. EAST	41397	Culvert		
North Trib. EAST	41380	120	120	120
North Trib. EAST	41260	720	600	380
North Trib. EAST	40660	220	360	500
North Trib. EAST	40300	20	20	20
North Trib. EAST	40280	350	390	520
North Trib. EAST	39885	300	315	335
North Trib. EAST	39665	250	300	60
North Trib. EAST	39365	280	280	280
North Trib. EAST	39085	360	270	160
North Trib. EAST	38825	300	320	320
North Trib. EAST	38500	101	101	101
North Trib. EAST	38399	115	115	115
North Trib. EAST	38284	68	68	68
North Trib. EAST	38250	Culvert		
North Trib. EAST	38216	101	101	101
North Trib. EAST	38115	340	340	340
North Trib. EAST	37775	320	320	320
North Trib. EAST	37455	280	280	280
North Trib. EAST	37170	30	90	250
North Trib. EAST	37080	120	220	450
North Trib. EAST	36850	370	370	370
North Trib. EAST	36480	320	320	320

North Trib. EAST	36160	1200	730	300
North Trib. EAST	35430	320	320	320
North Trib. EAST	35110	315	315	315
North Trib. EAST	34790	340	340	340
North Trib. EAST	34450	330	330	330
North Trib. EAST	34120	330	330	330
North Trib. EAST	33790	335	335	335
North Trib. EAST	33455	310	340	380
North Trib. EAST	33115	310	340	360
North Trib. EAST	32775	330	300	270
North Trib. EAST	32465	275	340	440
North Trib. EAST	32115	335	335	335
North Trib. EAST	31775	350	325	280
North Trib. EAST	31445	300	300	300
North Trib. EAST	31145	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Hampshire Creek

Reach	River Sta.	Contr.	Expan.
North Trib.	43240	.1	.3
North Trib.	42930	.1	.3
North Trib.	42620	.1	.3
North Trib.	42310	.1	.3
North Trib.	42000	.1	.3
North Trib.	41700	.1	.3
North Trib. - NE	4140	.1	.3
North Trib. - NE	3700	.1	.3
North Trib. - NE	3470	.1	.3
North Trib. - NE	3125	.1	.3
North Trib. - NE	2890	.1	.3
North Trib. - NE	2650	.1	.3
North Trib. - NE	2420	.1	.3
North Trib. - NE	2080	.1	.3
North Trib. - NE	1780	.1	.3
North Trib. - NE	1690	.1	.3
North Trib. - NE	1420	.1	.3
North Trib. - NE	1080	.1	.3
North Trib. - NE	780	.1	.3
North Trib. - NE	500	.1	.3
North Trib. - NE	200	.1	.3
North Trib. EAST	41500	.3	.5
North Trib. EAST	41414	.3	.5
North Trib. EAST	41397	Culvert	
North Trib. EAST	41380	.3	.5

North Trib. EAST	41260	.3	.5
North Trib. EAST	40660	.1	.3
North Trib. EAST	40300	.1	.3
North Trib. EAST	40280	.1	.3
North Trib. EAST	39885	.1	.3
North Trib. EAST	39665	.1	.3
North Trib. EAST	39365	.1	.3
North Trib. EAST	39085	.1	.3
North Trib. EAST	38825	.1	.3
North Trib. EAST	38500	.1	.3
North Trib. EAST	38399	.1	.3
North Trib. EAST	38284	.1	.3
North Trib. EAST	38250	Culvert	
North Trib. EAST	38216	.1	.3
North Trib. EAST	38115	.1	.3
North Trib. EAST	37775	.1	.3
North Trib. EAST	37455	.1	.3
North Trib. EAST	37170	.1	.3
North Trib. EAST	37080	.1	.3
North Trib. EAST	36850	.1	.3
North Trib. EAST	36480	.1	.3
North Trib. EAST	36160	.1	.3
North Trib. EAST	35430	.1	.3
North Trib. EAST	35110	.1	.3
North Trib. EAST	34790	.1	.3
North Trib. EAST	34450	.1	.3
North Trib. EAST	34120	.1	.3
North Trib. EAST	33790	.1	.3
North Trib. EAST	33455	.1	.3
North Trib. EAST	33115	.1	.3
North Trib. EAST	32775	.1	.3
North Trib. EAST	32465	.1	.3
North Trib. EAST	32115	.1	.3
North Trib. EAST	31775	.1	.3
North Trib. EAST	31445	.1	.3
North Trib. EAST	31145	.1	.3

TAB 4

WETLANDS SUBMITTAL

TAB 4A

**REPORT PREPARED BY
HEY AND ASSOCIATES
(UNDER SEPARATE COVER)**

TAB 5

PLAN SET

TAB 5A

(UNDER SEPARATE COVER)

TAB 5B

**CD CONTAINING PONDPACK AND
HEC-RAS MODELS**