

Job File: F:\HYDRO\PROJECTS\ANDOVER SCHOOL\PONDPACK\POND\_PRELIM.PPW  
Rain Dir: C:\HAESTAD\PPKW\RAINFALL\

=====  
JOB TITLE  
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JOB TITLE NOT SPECIFIED  
Click Project Summary on the File Menu to enter title

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WARNING: The difference between calculated peak flow and interpolated peak flow is greater than 1.50%

Computed peak flow = 54.72 cfs

Interp. peak flow = 53.89 cfs (1.53% difference)

Check SCS UH data for: SCS Unit Hyd. DEVELOPED  
Output increment for this subarea may be too large.  
Use Options -- Output Filter to change increment for entire project,  
or if you are running a watershed network analysis,  
use the GO button to change output increment.

WARNING: The difference between calculated peak flow and interpolated peak flow is greater than 1.50%

Computed peak flow = 71.88 cfs

Interp. peak flow = 70.73 cfs (1.60% difference)

Check SCS UH data for: SCS Unit Hyd. DEVELOPED  
Output increment for this subarea may be too large.  
Use Options -- Output Filter to change increment for entire project,  
or if you are running a watershed network analysis,  
use the GO button to change output increment.

WARNING: The difference between calculated peak flow and interpolated peak flow is greater than 1.50%

Computed peak flow = 129.48 cfs

Interp. peak flow = 127.30 cfs (1.68% difference)

Check SCS UH data for: SCS Unit Hyd. DEVELOPED  
Output increment for this subarea may be too large.  
Use Options -- Output Filter to change increment for entire project,  
or if you are running a watershed network analysis,  
use the GO button to change output increment.

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RN Sedgwick24

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
2y24h	3.5000	Synthetic Curve	SCSTYPES	Type I 24hr
5y24h	4.5000	Synthetic Curve	SCSTYPES	Type I 24hr
100y24	7.9000	Synthetic Curve	SCSTYPES	Type I 24hr

MASTER NETWORK SUMMARY  
SCS Unit Hydrograph Method

(\*Node=Outfall; +Node=Diversi on; )  
(Trun= HYG Truncation; Blank=None; L=Left; R=Rt; LR=Left&Rt)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
DEVELOPED	AREA	2	3.992		12.0500	53.89		
DEVELOPED	AREA	5	5.331		12.0500	70.73		
DEVELOPED	AREA	100	9.918		12.0500	127.30		
*DEVELOPED OUT	JCT	2	3.991		12.2000	29.68		
*DEVELOPED OUT	JCT	5	5.330		12.1500	45.27		
*DEVELOPED OUT	JCT	100	9.917		12.1500	93.49		
*EXISTING OUT	JCT	2	2.630		12.0500	38.20		
*EXISTING OUT	JCT	5	3.826		12.0500	55.15		
*EXISTING OUT	JCT	100	8.149		12.0500	113.72		
EXISTING SITE	AREA	2	2.630		12.0500	38.20		
EXISTING SITE	AREA	5	3.826		12.0500	55.15		
EXISTING SITE	AREA	100	8.149		12.0500	113.72		
POND	IN POND	2	3.992		12.0500	53.89		
POND	IN POND	5	5.331		12.0500	70.73		
POND	IN POND	100	9.918		12.0500	127.30		
POND	OUT POND	2	3.991		12.2000	29.68	1329.45	1.525
POND	OUT POND	5	5.330		12.1500	45.27	1329.81	1.798
POND	OUT POND	100	9.917		12.1500	93.49	1330.72	2.552

Type... Design Storms  
Name... Sedgwick24

File... C:\HAESTAD\PPKW\RAINFALL\SEDGWICK.RNO  
Title...

JOB TITLE NOT SPECIFIED  
Click Project Summary on the File Menu to enter title

DESIGN STORMS SUMMARY

Design Storm File, ID = SEDGWICK.RNO Sedgwick24

Storm Tag Name = 2y24h

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeI 24hr  
Storm Frequency = 2 yr  
Total Rainfall Depth= 3.5000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5y24h  
Description: Sedgwick County 5-yr 24 hour Duration

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeI 24hr  
Storm Frequency = 5 yr  
Total Rainfall Depth= 4.5000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100y24  
Description: Sedgwick County 100-yr 24 hour Duration

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeI 24hr  
Storm Frequency = 100 yr  
Total Rainfall Depth= 7.9000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Type... Design Storms  
Name... Sedgwick24  
File... C:\HAESTAD\PPKW\RAI NFALL\SEDGWICK.RNQ  
Storm... Typell 24hr Tag: 2y24h

Page 3.02  
Event: 2 yr

DESIGN STORMS SUMMARY

Design Storm File, ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name = 2y24h

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF Typell 24hr  
Storm Frequency = 2 yr  
Total Rainfall Depth= 3.5000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5y24h  
Description: Sedgwick County 5-yr 24 hour Duration

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF Typell 24hr  
Storm Frequency = 5 yr  
Total Rainfall Depth= 4.5000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100y24  
Description: Sedgwick County 100-yr 24 hour Duration

-----  
Data Type, File, ID = Synthetic Storm SCSTYPES.RNF Typell 24hr  
Storm Frequency = 100 yr  
Total Rainfall Depth= 7.9000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

File. . . . F:\HYDRO\PROJECTS\ANDOVER SCHOOL\PONDPACK\POND\_PRELIM.PPW

Elevation (ft)	Planimeter (sq. in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1327.00	-----	.5000	.0000	.000	.000
1328.00	-----	.6000	1.6477	.549	.549
1329.00	-----	.7000	1.9481	.649	1.199
1330.00	-----	.8000	2.2483	.749	1.948
1331.00	-----	.9000	2.5485	.850	2.798

POND VOLUME EQUATIONS

\* Incremental volume computed by the Conic Method for Reservoir Volumes.

$$\text{Volume} = (1/3) * (\text{EL2}-\text{EL1}) * (\text{Area1} + \text{Area2} + \text{sq. rt.}(\text{Area1}*\text{Area2}))$$

where: EL1, EL2 = Lower and upper elevations of the increment  
 Area1, Area2 = Areas computed for EL1, EL2, respectively  
 Volume = Incremental volume between EL1 and EL2

REQUESTED POND WS ELEVATIONS:

Min. Elev. = 1327.00 ft  
Increment = .50 ft  
Max. Elev. = 1331.00 ft

\*\*\*\*\*  
OUTLET CONNECTIVITY  
\*\*\*\*\*

---> Forward Flow Only (UpStream to DnStream)  
<--- Reverse Flow Only (DnStream to UpStream)  
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
-----	----		-----	-----	-----
Weir-Rectangular	WR	--->	TW	1328.500	1331.000
Culvert-Circular	CV	--->	TW	1327.000	1331.000
TW SETUP, DS Channel					

Type... Outlet Input Data  
Name... PIPE

File... F:\HYDRO\PROJECTS\ANDOVER SCHOOL\PONDPACK\POND\_PRELIM.PPW

OUTLET STRUCTURE INPUT DATA

Structure ID = WR  
Structure Type = Weir-Rectangular  
-----  
# of Openings = 1  
Crest Elev. = 1328.50 ft  
Weir Length = 10.00 ft  
Weir Coeff. = 2.600000  
  
Weir TW effects (Use adjustment equation)

File... F:\HYDRO\PROJECTS\ANDOVER SCHOOL\PONDPACK\POND\_PRELIM.PPW

OUTLET STRUCTURE INPUT DATA

Structure ID = CV  
Structure Type = Culvert-Circular  
-----  
No. Barrels = 1  
Barrel Diameter = 1.0000 ft  
Upstream Invert = 1327.00 ft  
Dnstream Invert = 1325.00 ft  
Horiz. Length = 30.00 ft  
Barrel Length = 30.07 ft  
Barrel Slope = .06667 ft/ft

OUTLET CONTROL DATA...

Mannings n = .0130  
Ke = .5000 (forward entrance loss)  
Kb = .031274 (per ft of full flow)  
Kr = .5000 (reverse entrance loss)  
HW Convergence = .001 +/- ft

INLET CONTROL DATA...

Equation form = 1  
Inlet Control K = .0098  
Inlet Control M = 2.0000  
Inlet Control c = .03980  
Inlet Control Y = .6700  
T1 ratio (HW/D) = 1.126  
T2 ratio (HW/D) = 1.273  
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.  
Use submerged inlet control Form 1 equ. above T2 elev.

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

At T1 Elev = 1328.13 ft ---> Flow = 2.75 cfs  
At T2 Elev = 1328.27 ft ---> Flow = 3.14 cfs

Structure ID = TW  
Structure Type = TW SETUP, DS Channel  
-----

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations = 30  
Min. TW tolerance = .01 ft  
Max. TW tolerance = .01 ft  
Min. HW tolerance = .01 ft  
Max. HW tolerance = .01 ft  
Min. Q tolerance = .10 cfs  
Max. Q tolerance = .10 cfs

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PIPE... 5.01

POND... 4.01

----- S -----

Sedgwick24... 3.01, 3.02

----- W -----

WARNING... 1.01

Watershed... 2.01