Hydrology Report

for

Arbor Oaks Subdivision

Job #01-087

Issue Date: March 11, 2002

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Prepared for:

Gramling Brothers Real Estate & Development
P.O. Box 389
Gramling, SC 29348
(864) 472-2157

Prepared by:

4425 Belle Oaks Drive – North Charleston, South Carolina – 29405
Phone: (843) 740-7700 – Fax: (843) 740-7707
Email: Tricoengr@Charleston.Net
www.tricoengineering.com

Executive Summary

Trico Engineering Consultants, Inc. has prepared this hydrological analysis for Arbor Oaks Subdivision, in order to effectively manage storm water runoff from the proposed development. The tables below provide a brief summary of the findings of the study:

Analysis Point Sawmill Branch			
Pre-developed & Developed Peak Stormwater Discharge (cfs)			
Frequency (years)	**2**	**10**	**25**
Pre-developed	49.3	95.7	114.5
Developed[1]	37.6	72.7	86.0

1. Developed storm water is routed through storm water management facility.

Water Quality Analysis Pond 1	
	Total Basin
Contributing Drainage Area (ac)	6.00
1/2-inch Runoff Volume (ac-ft)	0.250
Stage at 1/2"-Runoff Volume (ft, msl)	21.1
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	77

Water Quality Analysis Pond 2	
	Total Basin
Contributing Drainage Area (ac)	4.40
1/2-inch Runoff Volume (ac-ft)	0.183
Stage at 1/2"-Runoff Volume (ft, msl)	19.6
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	78

Water Quality Analysis Pond 7	
	Total Basin
Contributing Drainage Area (ac)	3.42
1/2-inch Runoff Volume (ac-ft)	0.143
Stage at 1/2"-Runoff Volume (ft, msl)	19.7
Drain Time (hrs)	30
Sediment Removal Efficiency (%)	85

Water Quality Analysis Pond 8	
	Total Basin
Contributing Drainage Area (ac)	12.5
1/2-inch Runoff Volume (ac-ft)	0.521
Stage at 1/2"-Runoff Volume (ft, msl)	22.4
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	82

Maximum Discharge Velocities	
Pond Name	**Velocity (fps)**
Pond 1	2.38
Pond 2	2.37
Pond 7	2.26
Pond 8	3.63

Please refer to the body of the report for a more detailed discussion of the study background, purpose, procedures, findings, conclusions and recommendations.

Background

This hydrological analysis is prepared for Arbor Oaks Subdivision, located on Holly Street in the Town of Summerville, Dorchester County, SC (please refer to the Site Location Map in the Appendix). The 56.923-acre (41.795 acres disturbed) site currently consists of woods in good condition. Topographic relief across the entire site is on the order of 10-ft. Existing drainage patterns consist of sheet flow and shallow concentrated flow, which drains to Sawmill Branch and ultimately discharges into the Ashley River drainage system. The proposed development consists of a 114-lot single-family subdivision and nine multi-family townhomes to accommodate residential housing and associated roadways and infrastructure.

Purpose

The purpose of this analysis is to control developed stormwater discharges from the proposed Arbor Oaks Subdivision, and recommend a stormwater plan in order to manage developed peak storm water discharges. Specifically, developed peak flow rates are to be mitigated to pre-developed rates for the 2 and 10 year frequency storm events, the first 1/2-inch of stormwater runoff, generated from the site basin is to be stored and released over a 24-hour period, while allowing larger runoff volumes to be safely routed down stream. In addition, the stormwater management facilities are to target the removal of 80% of the incoming sediment load.

Procedures

Developed storm water discharges were estimated by modeling the response of the project drainage basin to typical design storm events. The watershed area was digitized from field prepared topographic surveys and the USGS Stallsville SC Topographic Quadrangle Map dated 1979. Pre-developed land use was based on field surveys, and Developed land usage was based on the proposed site development. Hydrological soil groups were obtained from the USDA Soil Survey for Dorchester County dated 1979 with the antecedent moisture condition assumed to be II. The methodology or the analysis followed the Soil Conservation Service (SCS) Technical Release Number 55 (TR-55) and generally accepted engineering practices. Computer modeling was performed using Haestad Methods PondPack version 7 software program. Design storm events were based on the Type III SCS rainfall distribution. Rainfall depths corresponding to the 2, 10 & 25-year frequency were interpolated from National Weather Service Technical Paper 40 (TP-40). Tailwater conditions downstream of the outlet control structures in the developed basins were modeled by using circular, rectangular, or trapezoidal channels to mimic the actual elevation-flow conditions, and verified from the FEMA Dorchester County flood insurance study revised April 15, 1994. Level pool modeling method was utilized for modeling engineered ponds and reservoirs. Procedures for estimating sediment removal rates were based on Engineering Aids and Design Guidelines for Control of Sediment in South Carolina, prepared by John C. Hayes and Associates dated July 18, 1995.

Findings

The following tables summarize the findings of the hydrological analysis. Please refer to the appendices for developed basin delineation maps (including study points and stormwater management facility locations), rainfall depth and distribution as well as other hydrological & hydraulic parameters used to estimate time of concentration, runoff curve numbers and rating curves for hydrograph modeling.

Analysis Point Sawmill Branch			
Pre-developed & Developed Peak Stormwater Discharge (cfs)			
Frequency (years)	**2**	**10**	**25**
Pre-developed	49.3	95.7	114.5
Developed			

2. Developed storm water is routed through storm water management facilities.

Stormwater Management Facility (Pond 1)			
Stage-Storage-Discharge			
Frequency (years)	**2**	**10**	**25**
Stage (ft, msl)	21.40	21.65	21.74
Storage (ac-ft)	1.502	2.594	3.030
Discharge (cfs)	8.76	15.90	18.50

Stormwater Management Facility (Pond 2)			
Stage-Storage-Discharge			
Frequency (years)	**2**	**10**	**25**
Stage (ft, msl)	20.28	20.60	20.70
Storage (ac-ft)	1.655	2.933	3.452
Discharge (cfs)	4.66	10.41	12.47

Stormwater Management Facility (Pond 7)			
Stage-Storage-Discharge			
Frequency (years)	**2**	**10**	**25**
Stage (ft, msl)	20.11	20.47	20.57
Storage (ac-ft)	1.242	2.162	2.529
Discharge (cfs)	1.59	2.67	3.96

Stormwater Management Facility (Pond 8)			
Stage-Storage-Discharge			
Frequency (years)	**2**	**10**	**25**
Stage (ft, msl)	22.90	23.36	23.50
Storage (ac-ft)	2.201	3.801	4.439
Discharge (cfs)	5.51	13.01	16.34

Arbor Oaks Subdivision
Pond 1

Soil Type:	Elloree	
D_{15} (mm) =	0.0445	(6"-23" depth)
Settling Velocity[1] (V_{15}, ft/s) =	3.50E-03	
	Pond 1	
Pond Surface Area (A, ac) =	0.51	
10-year Storm Peak Outflow (cfs) =	15.0	
q_{po}/AV_{15} =	9.7.E+03	
Settling Efficiency[2] (%) =	77	

Pond 2

Soil Type:	Grifton	
D_{15} (mm) =	0.0157	(0"-15" depth)
Settling Velocity[1] (V_{15}, ft/s) =	3.30E-04	
	Pond 2	
Pond Surface Area (A, ac) =	0.38	
10-year Storm Peak Outflow (cfs) =	10.1	
q_{po}/AV_{15} =	8.4.E+03	
Settling Efficiency[2] (%) =	78	

Pond 7

Soil Type:	Grifton	
D_{15} (mm) =	0.0157	(0"-15" depth)
Settling Velocity[1] (V_{15}, ft/s) =	3.30E-04	
	Pond 7	
Pond Surface Area (A, ac) =	1.11	
10-year Storm Peak Outflow (cfs) =	4.0	
q_{po}/AV_{15} =	1.0.E+03	
Settling Efficiency[2] (%) =	85	

Pond 8

Soil Type:	Grifton	
D_{15} (mm) =	0.0157	(0"-15" depth)
Settling Velocity[1] (V_{15}, ft/s) =	3.30E-04	
	Pond 8	
Pond Surface Area (A, ac) =	1.19	
10-year Storm Peak Outflow (cfs) =	13.0	
q_{po}/AV_{15} =	3.4.E+03	
Settling Efficiency[2] (%) =	82	

Notes:1. Engineering Aids and Design Guidelines for Control of Sediment in South Carolina, prepared by John C. Hayes and Associates dated July 18, 1995, Figure No. 1

2. Engineering Aids and Design Guidelines for Control of Sediment in South Carolina, prepared by John C. Hayes and Associates dated July 18, 1995, Figure No. 2b

Water Quality Analysis Pond 1	
	Total Basin
Contributing Drainage Area (ac)	5.55
1/2-inch Runoff Volume (ac-ft)	0.231
Stage at 1/2"-Runoff Volume (ft, msl)	21.0
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	77

Water Quality Analysis Pond 2	
	Total Basin
Contributing Drainage Area (ac)	4.1
1/2-inch Runoff Volume (ac-ft)	0.171
Stage at 1/2"-Runoff Volume (ft, msl)	19.6
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	78

Water Quality Analysis Pond 7	
	Total Basin
Contributing Drainage Area (ac)	3.42
1/2-inch Runoff Volume (ac-ft)	0.143
Stage at 1/2"-Runoff Volume (ft, msl)	19.7
Drain Time (hrs)	30
Sediment Removal Efficiency (%)	85

Water Quality Analysis Pond 8	
	Total Basin
Contributing Drainage Area (ac)	12.5
1/2-inch Runoff Volume (ac-ft)	0.521
Stage at 1/2"-Runoff Volume (ft, msl)	22.6
Drain Time (hrs)	24
Sediment Removal Efficiency (%)	82

Conclusions

Developed storm water discharges can be managed using storm water management facilities as modeled in this study.

Recommendations

Trico Engineering Consultants, Inc. recommends that the proposed development utilize storm water management facilities as outlined in this study in order to mitigate developed peak storm water discharges. In addition, due to the impaired waterway status of Sawmill Branch the ponds discharging into the wetlands shall have fountains to enhance aeration and increase the dissolved oxygen content in the discharge water. Routine maintenance will need to be performed in order for the storm water management facilities to operate as designed. Routine maintenance consists of removal of any debris accumulated at the outlet structure following each rain event, maintaining the berms in grassed condition and periodic sediment removal from the pond bottoms. The Storm water Maintenance Plan shown on the next page should be placed in effect upon commencement of land disturbing activities:

Storm Water Maintenance Plan

I. Prior to Construction

1. DHEC-OCRM Storm water permit placards are to be placed in a conspicuous location on the construction site prior to initiation of land disturbance.

II. During Construction

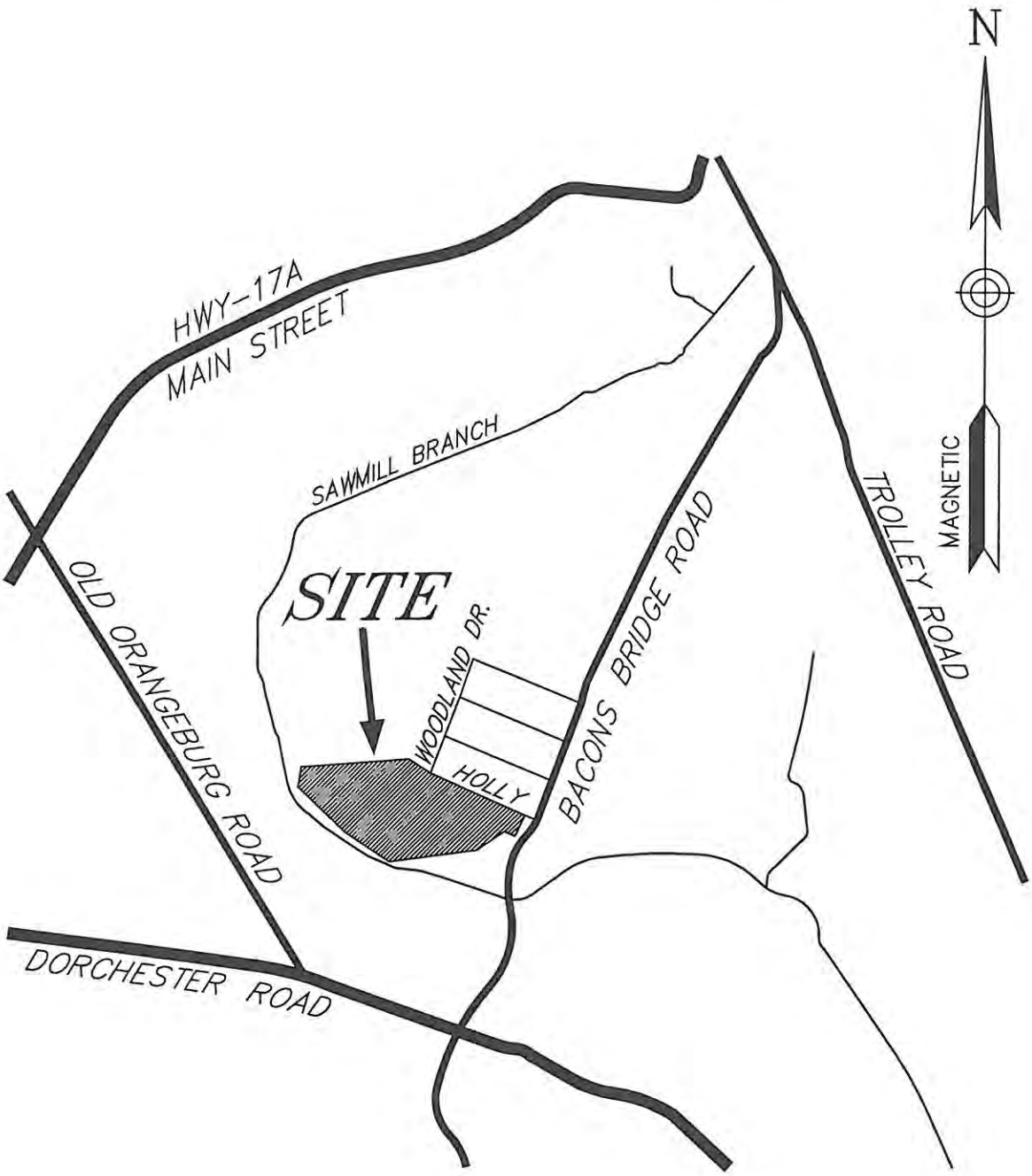
1. The owner will provide for the initial installation of the storm water management erosion control structures and protection barriers prior to having construction activity begin in the area. The engineer will inspect the items at the time of erection and condition noted in all subsequent inspection reports.
2. All erosion protection items and construction in progress will be inspected immediately after each significant rainfall (½-inch or more within a 24-hour period). Adjustments to the storm water management plan will be made to correct any unforeseen problems that occur.
3. Any debris accumulated at the storm water management facility outlet structures shall be removed following each rain event.
4. Pond berm, shoulders, slopes, and maintenance shelves shall be maintained in a grassed condition.
5. Sediment shall be removed from the pond bottoms prior to reaching the low-level outlet. The sediment shall be placed and stabilized in such a manner that it will not erode from the site. Sediment shall not be deposited downstream from the pond, adjacent to a stream, flood plain or critical area.
6. Violations of the approved plan will be reported to the owner, the County of Dorchester, and the Department of Health and Environmental Control.

III. Immediately at the End of Construction

1. All disturbed areas shall be stabilized with established grass; other approved established vegetation or through the use of approved structural erosion control devices (sediment barriers, erosion control blankets, etc.) if additional land disturbing activities are anticipated in the near future.
2. An inspection of all systems will be made and each part observed for defects and repairs ordered.
3. All portions of the storm water system will be cleaned of debris and sediment and flushed so as to allow unimpeded flow through all outlets.
4. All items requiring continued maintenance or considered unusual will be reported to the County of Dorchester for review and recommendations.
5. The owner will have the condition of the storm water system monitored throughout build out period and will provide maintenance until the responsibility is permanently transferred to the County of Dorchester.

Other Conditions

1. There are no structures designed for this project that should offer unusual maintenance efforts.
2. Erosion control structures and devices are an item that the contractor is held immediately responsible for and lack of performance will affect prompt payment of progress estimates if this requirement is ignored. The owner will be responsible for having the work done by third parties if necessary.
3. A written statement of maintenance responsibility for all permanent ponds is required to be provided to DHEC-OCRM along with a copy of this plan as a prerequisite for issuance of a storm water permit.



DESIGNED :	MEL
DRAWN :	MEL
CHECKED :	TFB
APPROVED :	TFB
SCALE :	N.T.S.
DATE :	03/07/2002
PROJECT NO. :	01-087
SHEET	1 OF 1

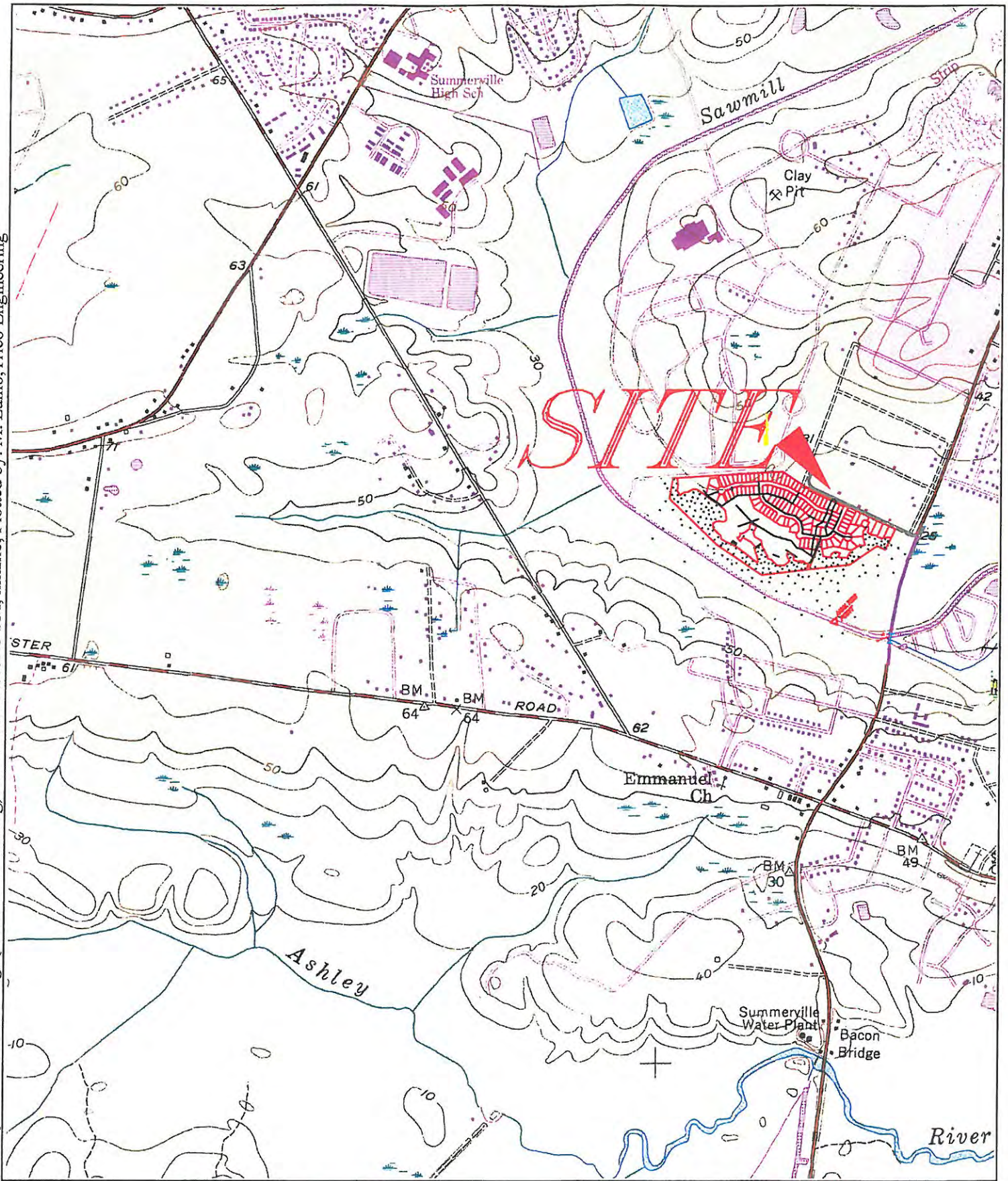
TRICO
ENGINEERING CONSULTANTS, INC.

4425 Belle Oaks Drive
North Charleston, S.C. 29405
Phone: 843.740.7700
Fax: 843.740.7707
Email: tricoengr@charleston.net
www.info@tricoengineering.com

Civil Engineering – Surveying – Landscape Architecture – Land Planning – Wetland Consultation – Structural Engineering

TITLE

LOCATION MAP FOR ARBOR OAKS SUBD. IN THE TOWN OF SUMMERVILLE DORCHESTER COUNTY SOUTH CAROLINA



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CHECKED :	TFB
APPROVED :	TFB
SCALE :	1:20000
DATE :	03/07/2002
PROJECT NO. :	01-087
SHEET	1 OF 1

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www.info@tricoengineering.com

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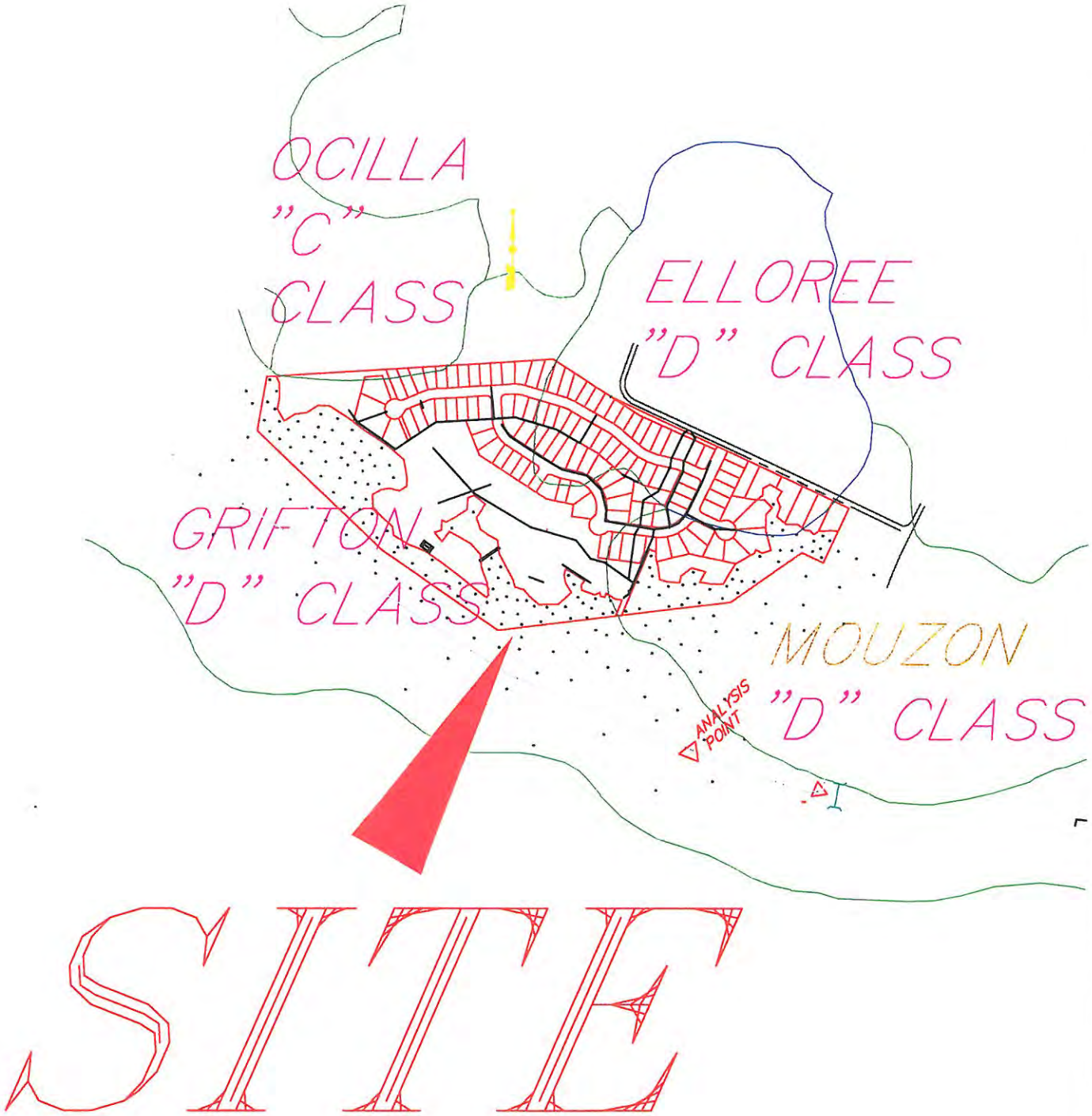
TITLE

QUAD MAP FOR ARBOR OAKS SUBD. IN THE TOWN OF SUMMERVILLE DORCHESTER COUNTY SOUTH CAROLINA



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www.info@tricoengineering.com

Civil Engineering – Surveying – Landscape Architecture – Land Planning – Wetland Consultation – Structural Engineering

TITLE

SOILS MAP FOR ARBOR OAKS SUBD. IN THE TOWN OF SUMMERVILLE DORCHESTER COUNTY SOUTH CAROLINA

DESIGNED :	MEL
DRAWN :	MEL
CHECKED :	TFB
APPROVED :	TFB
SCALE :	1"=200'
DATE :	03/07/2002
PROJECT NO. :	01-087
SHEET	1 OF 1

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ENGINEERING CONSULTANTS, INC.

4425 Belle Oaks Drive
North Charleston, S.C. 29405
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Fax: 843.740.7707
Email: tricoengr@charleston.net
www.info@tricoengineering.com

Civil Engineering – Surveying – Landscape Architecture – Land Planning – Wetland Consultation – Structural Engineering

TITLE

POST-DEVELOPED DRAINAGE BASIN FOR ARBOR OAKS IN THE TOWN OF SUMMERVILLE DORCHESTER COUNTY SOUTH CAROLINA

DESIGNED :	MEL
DRAWN :	MEL
CHECKED :	TFB
APPROVED :	TFB
SCALE :	1"=200'
DATE :	03/07/2002
PROJECT NO. :	01-087
SHEET	1 OF 1

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4425 Belle Oaks Drive
North Charleston, S.C. 29405
Phone: 843.740.7700
Fax: 843.740.7707
Email: tricoengr@charleston.net
www.info@tricoengineering.com

Civil Engineering – Surveying – Landscape Architecture – Land Planning – Wetland Consultation – Structural Engineering

TITLE

PRE-DEVELOPED DRAINAGE BASIN FOR ARBOR OAKS IN THE TOWN OF SUMMERVILLE DORCHESTER COUNTY SOUTH CAROLINA

Appendix

Site Location Map
USGS Quad Map
Soils Map
Proposed Site Development Plan (see Construction Plans)
Pre-developed Basin Delineation Map
Developed Basin Delineation Map
Storm water Management Facility Details
Pre-developed Model
Developed Model
Water Quality Curves

PRE-DEVELOPED MODEL


Arbor Oaks
RUNOFF TO CREEK
Sawmill Br Creek

==========
JOB TITLE
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Pre-developed Hydrology report for Arbor Oaks Subdivision

Table of Contents

Table of Contents (continued)

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID TRICO.RNQ Dorchester-South

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
..2	4.4000	Synthetic Curve	SCSTYPES	TypeIII 24hr
.10	6.7000	Synthetic Curve	SCSTYPES	TypeIII 24hr
.25	7.6000	Synthetic Curve	SCSTYPES	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(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
ARBOR OAKS	AREA	2	10.102		12.8000	49.26		
ARBOR OAKS	AREA	10	19.434		12.8000	95.72		
ARBOR OAKS	AREA	25	23.283		12.8000	114.52		
*SAWMILL BR CREEK JCT		2	10.102		12.8000	49.26		
*SAWMILL BR CREEK JCT		10	19.434		12.8000	95.72		
*SAWMILL BR CREEK JCT		25	23.283		12.8000	114.52		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = ..2

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
ARBOR OAKS	AREA	10.102		12.8000	49.26	
Outfall SAWMILL BR CREEK	JCT	10.102		12.8000	49.26	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = .10

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 6.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
ARBOR OAKS	AREA	19.434		12.8000	95.72	
Outfall SAWMILL BR CREEK	JCT	19.434		12.8000	95.72	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = .25

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 7.6000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
ARBOR OAKS	AREA	23.283		12.8000	114.52	
Outfall SAWMILL BR CREEK	JCT	23.283		12.8000	114.52	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data	Apply to Node	Receiving Link
SCS UH Arbor Oaks	Subarea ARBOR OAKS	Add Hyd ARBOR OAKS

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node	DNstream Node
Add Hyd RUNOFF TO CREEK	Subarea ARBOR OAKS	Jct SAWMILL BR CREEK

Title... Pre-developed Hydrology report for Arbor Oaks
Subdivision

DESIGN STORMS SUMMARY

Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = ..2

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = .10

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 6.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = .25

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 7.6000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = ..2

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = .10

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 6.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = .25

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 7.6000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	3568.00 ft
Slope	.005000 ft/ft
Unpaved	
Avg.Velocity	1.14 ft/sec

Segment #1 Time: .8687 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	50.00 ft
2yr, 24hr P	4.4000 in
Slope	.004100 ft/ft
Avg.Velocity	.04 ft/sec

Segment #2 Time: .3304 hrs

==========
Total Tc: 1.1992 hrs
==========

Title... Sawmill Branch Subdivision Pre-development

RUNOFF CURVE NUMBER DATA

Sawmill Branch Subdivision Pre-development

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
"D" Class soils	77	56.920			77.00
COMPOSITE AREA & WEIGHTED CN --->		56.920			77.00 (77)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG File - ID = - ARBOR OAKS ..2
Tc = 1.1992 hrs
Drainage Area = 56.920 acres Runoff CN= 77

==========
Computational Time Increment = .15989 hrs
Computed Peak Time = 12.7910 hrs
Computed Peak Flow = 49.32 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.8000 hrs
Peak Flow, Interpolated Output = 49.26 cfs
==========

DRAINAGE AREA

ID:SAWMILL BRANCH
CN = 77
Area = 56.920 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

2.1297 in
10.102 ac-ft

HYG Volume... 10.102 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.19916 hrs (ID: SAWMILL BRANCH)
Computational Incr, Tm = .15989 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 53.78 cfs
Unit peak time Tp = .79944 hrs
Unit receding limb, Tr = 3.19775 hrs
Total unit time, Tb = 3.99719 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG File - ID = - ARBOR OAKS .10
Tc = 1.1992 hrs
Drainage Area = 56.920 acres Runoff CN= 77

==========
Computational Time Increment = .15989 hrs
Computed Peak Time = 12.7910 hrs
Computed Peak Flow = 95.92 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.8000 hrs
Peak Flow, Interpolated Output = 95.72 cfs
==========

DRAINAGE AREA

ID:SAWMILL BRANCH
CN = 77
Area = 56.920 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

4.0972 in
19.434 ac-ft

HYG Volume... 19.434 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.19916 hrs (ID: SAWMILL BRANCH)
Computational Incr, Tm = .15989 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 53.78 cfs
Unit peak time Tp = .79944 hrs
Unit receding limb, Tr = 3.19775 hrs
Total unit time, Tb = 3.99719 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG File - ID = - ARBOR OAKS .25
Tc = 1.1992 hrs
Drainage Area = 56.920 acres Runoff CN= 77

==========
Computational Time Increment = .15989 hrs
Computed Peak Time = 12.7910 hrs
Computed Peak Flow = 114.78 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.8000 hrs
Peak Flow, Interpolated Output = 114.52 cfs
==========

DRAINAGE AREA

ID:SAWMILL BRANCH
CN = 77
Area = 56.920 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

4.9087 in
23.284 ac-ft

HYG Volume... 23.283 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.19916 hrs (ID: SAWMILL BRANCH)
Computational Incr, Tm = .15989 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 53.78 cfs
Unit peak time Tp = .79944 hrs
Unit receding limb, Tr = 3.19775 hrs
Total unit time, Tb = 3.99719 hrs

SUMMARY FOR HYDROGRAPH ADDITION
at Node: SAWMILL BR CREEK

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
RUNOFF TO CREEK	ARBOR OAKS		ARBOR OAKS	..2

INFLOWS TO: SAWMILL BR CREEK

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	ARBOR OAKS	..2	10.102	12.8000	49.26

TOTAL FLOW INTO: SAWMILL BR CREEK

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SAWMILL BR CREEK	..2	10.102	12.8000	49.26

TOTAL NODE INFLOW...
HYG file =
HYG ID = SAWMILL BR CREEK
HYG Tag = ..2

Peak Discharge = 49.26 cfs
Time to Peak = 12.8000 hrs
HYG Volume = 10.102 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8000	.00	.00	.00	.00	.01
9.0500	.01	.01	.02	.03	.03
9.3000	.05	.06	.08	.09	.12
9.5500	.14	.17	.20	.23	.27
9.8000	.31	.35	.39	.44	.49
10.0500	.54	.59	.65	.71	.77
10.3000	.84	.91	.97	1.05	1.13
10.5500	1.20	1.29	1.38	1.47	1.56
10.8000	1.67	1.77	1.88	1.99	2.11
11.0500	2.23	2.36	2.49	2.63	2.78
11.3000	2.94	3.10	3.29	3.49	3.69
11.5500	3.95	4.24	4.53	4.94	5.45
11.8000	5.95	6.67	7.75	8.83	10.08
12.0500	12.14	14.21	16.28	19.34	22.44
12.3000	25.53	28.92	32.39	35.87	38.86
12.5500	41.49	44.13	46.19	47.30	48.41
12.8000	49.26	48.90	48.54	48.18	46.76
13.0500	45.31	43.86	42.02	40.07	38.12
13.3000	36.22	34.37	32.52	30.80	29.28
13.5500	27.77	26.32	25.13	23.94	22.76
13.8000	21.82	20.88	19.94	19.16	18.42
14.0500	17.68	17.03	16.44	15.85	15.30
14.3000	14.82	14.34	13.88	13.49	13.10
14.5500	12.71	12.39	12.07	11.75	11.48
14.8000	11.21	10.95	10.71	10.49	10.26
15.0500	10.06	9.87	9.68	9.50	9.33
15.3000	9.17	9.00	8.85	8.70	8.55
15.5500	8.41	8.27	8.12	7.98	7.85
15.8000	7.71	7.58	7.45	7.33	7.20
16.0500	7.08	6.97	6.85	6.74	6.63
16.3000	6.52	6.42	6.31	6.21	6.11
16.5500	6.01	5.92	5.83	5.74	5.65
16.8000	5.57	5.49	5.41	5.34	5.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.0500	5.20	5.13	5.07	5.00	4.94
17.3000	4.88	4.82	4.76	4.71	4.65
17.5500	4.59	4.54	4.49	4.43	4.38
17.8000	4.33	4.28	4.22	4.17	4.12
18.0500	4.07	4.02	3.97	3.92	3.87
18.3000	3.83	3.78	3.73	3.69	3.65
18.5500	3.60	3.56	3.52	3.48	3.45
18.8000	3.42	3.38	3.35	3.32	3.29
19.0500	3.27	3.24	3.22	3.19	3.17
19.3000	3.15	3.13	3.11	3.09	3.07
19.5500	3.05	3.03	3.01	3.00	2.98
19.8000	2.96	2.95	2.93	2.91	2.90
20.0500	2.88	2.87	2.85	2.84	2.82
20.3000	2.81	2.79	2.78	2.76	2.75
20.5500	2.73	2.72	2.71	2.69	2.68
20.8000	2.67	2.65	2.64	2.63	2.61
21.0500	2.60	2.59	2.58	2.57	2.55
21.3000	2.54	2.53	2.52	2.51	2.50
21.5500	2.49	2.47	2.46	2.45	2.44
21.8000	2.43	2.42	2.41	2.40	2.39
22.0500	2.37	2.36	2.35	2.34	2.33
22.3000	2.32	2.31	2.30	2.29	2.28
22.5500	2.26	2.25	2.24	2.23	2.22
22.8000	2.21	2.20	2.19	2.18	2.17
23.0500	2.15	2.14	2.13	2.12	2.11
23.3000	2.10	2.09	2.08	2.07	2.05
23.5500	2.04	2.03	2.02	2.01	2.00
23.8000	1.99	1.98	1.97	1.95	1.94
24.0500	1.92	1.90	1.88	1.85	1.82
24.3000	1.78	1.72	1.66	1.60	1.53
24.5500	1.44	1.36	1.28	1.19	1.10
24.8000	1.02	.93	.85	.77	.70
25.0500	.63	.57	.51	.46	.41
25.3000	.38	.34	.31	.28	.25
25.5500	.22	.20	.18	.17	.15
25.8000	.13	.12	.11	.10	.09
26.0500	.08	.07	.06	.06	.05
26.3000	.05	.04	.04	.03	.03
26.5500	.03	.02	.02	.02	.02
26.8000	.02	.01	.01	.01	.01
27.0500	.01	.01	.01	.01	.00
27.3000	.00	.00	.00	.00	.00
27.5500	.00	.00	.00		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: SAWMILL BR CREEK

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
RUNOFF TO CREEK	ARBOR OAKS		ARBOR OAKS	.10

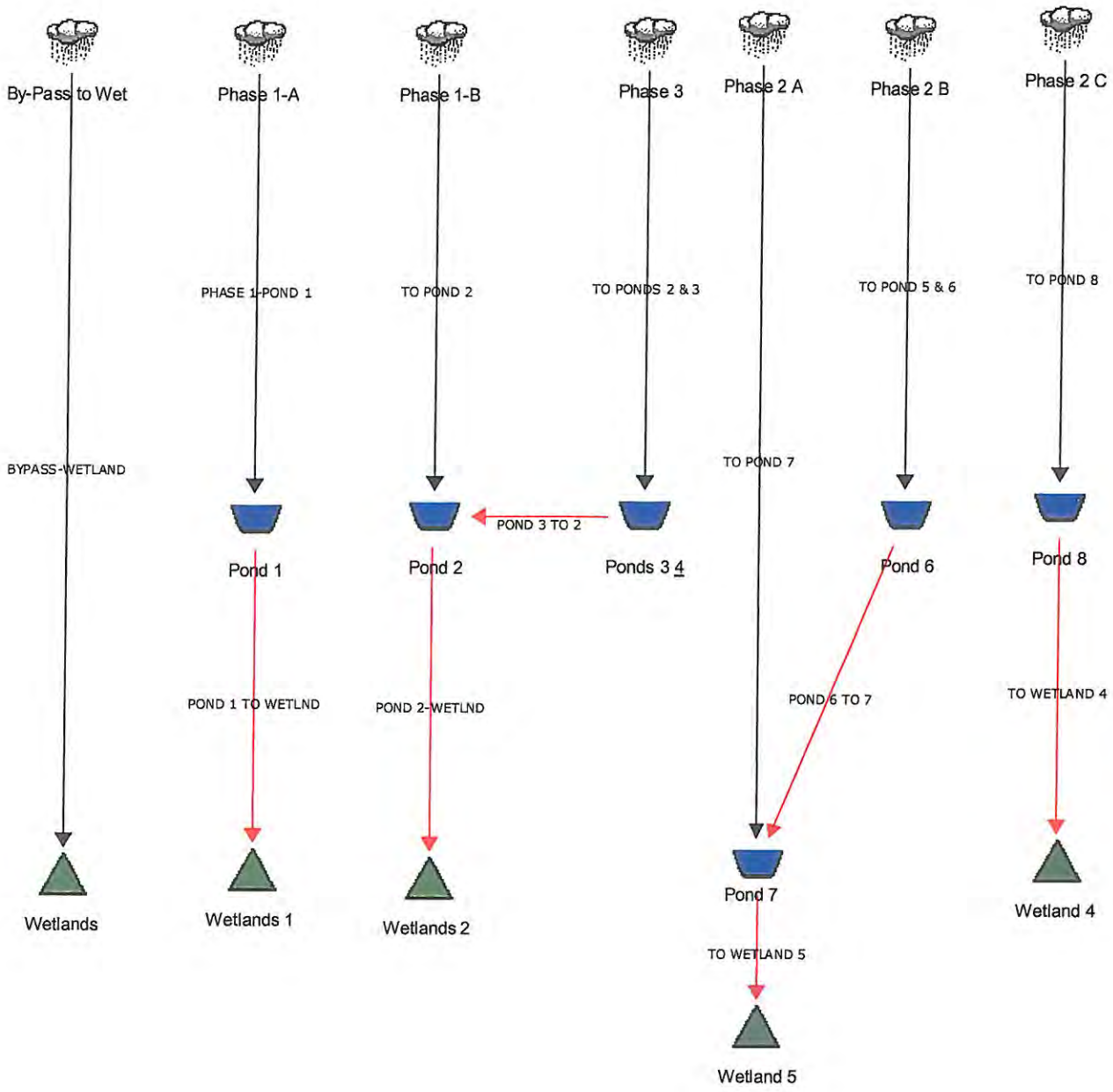
INFLOWS TO: SAWMILL BR CREEK

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	ARBOR OAKS	.10	19.434	12.8000	95.72

TOTAL FLOW INTO: SAWMILL BR CREEK

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SAWMILL BR CREEK	.10	19.434	12.8000	95.72

DEVELOPED MODEL


By-Pass to Wet
Phase 1-A
Phase 1-B
Phase 3
Phase 2 A
Phase 2 B
Phase 2 C
PHASE 1-POND 1
TO POND 2
TO PONDS 2 & 3
TO POND 7
TO POND 5 & 6
TO POND 8
BYPASS-WETLAND
POND 3 TO 2
Pond 1
Pond 2
Ponds 3 4
Pond 6
Pond 8
POND 1 TO WETLND
POND 2-WETLND
POND 6 TO 7
TO WETLAND 4
Wetlands
Wetlands 1
Wetlands 2
Pond 7
Wetland 4
TO WETLAND 5
Wetland 5

==========
JOB TITLE
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Post Development Hydrology report for Arbor Oaks Subdivision

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MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID TRICO.RNQ Dorchester-South

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
..2	4.4000	Synthetic Curve	SCSTYPES	TypeIII 24hr
.10	6.7000	Synthetic Curve	SCSTYPES	TypeIII 24hr
.25	7.6000	Synthetic Curve	SCSTYPES	TypeIII 24hr

ICPM CALCULATION TOLERANCES

Target Convergence= .000 cfs +/-
Max. Iterations = 35 loops
ICPM Time Step = .1000 hrs
Output Time Step = .1000 hrs
ICPM Ending Time = 35.0000 hrs

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(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
BY-PASS TO WET	AREA	2	2.854		12.9000	12.77		
BY-PASS TO WET	AREA	10	4.878		12.9000	21.44		
BY-PASS TO WET	AREA	25	5.683		12.9000	24.81		
PHASE 1-A	AREA	2	1.503		12.4000	10.95		
PHASE 1-A	AREA	10	2.595		12.4000	18.51		
PHASE 1-A	AREA	25	3.031		12.4000	21.46		
PHASE 1-B	AREA	2	1.102		12.4000	8.33		
PHASE 1-B	AREA	10	1.903		12.3000	14.06		
PHASE 1-B	AREA	25	2.222		12.3000	16.31		
PHASE 2 A	AREA	2	.912		12.3000	7.58		
PHASE 2 A	AREA	10	1.543		12.3000	12.50		
PHASE 2 A	AREA	25	1.793		12.3000	14.41		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(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
PHASE 2 B	AREA	2	.433		12.3000	3.68		
PHASE 2 B	AREA	10	.748		12.3000	6.20		
PHASE 2 B	AREA	25	.874		12.3000	7.18		
PHASE 2 C	AREA	2	3.130		12.5000	20.94		
PHASE 2 C	AREA	10	5.405		12.5000	35.35		
PHASE 2 C	AREA	25	6.312		12.5000	40.96		
PHASE 3	AREA	2	.746		12.3000	6.47		
PHASE 3	AREA	10	1.288		12.3000	10.87		
PHASE 3	AREA	25	1.504		12.2000	12.59		
POND 1	IN POND	2	1.503		12.4000	10.95		
POND 1	IN POND	10	2.595		12.4000	18.51		
POND 1	IN POND	25	3.031		12.4000	21.46		
POND 1	OUT POND	2	1.502		12.6000	8.76	21.40	.396
POND 1	OUT POND	10	2.594		12.6000	15.90	21.65	.516
POND 1	OUT POND	25	3.030		12.6000	18.50	21.74	.559
POND 2	POND	2	1.719		12.4000	8.33		
POND 2	POND	10	3.019		12.3000	14.06		
POND 2	POND	25	3.543		12.3000	16.31		
POND 2	OUT POND	2	1.655		12.7000	4.66	20.28	.357
POND 2	OUT POND	10	2.933		12.6000	10.41	20.60	.454
POND 2	OUT POND	25	3.452		12.6000	12.47	20.70	.485
POND 6	POND	2	.433		12.3000	3.68		
POND 6	POND	10	.748		12.3000	6.20		
POND 6	POND	25	.874		12.3000	7.18		
POND 6	OUT POND	2	.427		12.8000	.81	20.78	.186
POND 6	OUT POND	10	.739		13.2000	1.08	21.66	.342

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(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
POND 6	OUT POND	25	.863		13.1000	1.22	22.00	.406
POND 7	POND	2	1.339		12.3000	8.26		
POND 7	POND	10	2.282		12.3000	13.39		
POND 7	POND	25	2.657		12.3000	15.37		
POND 7	OUT POND	2	1.278		13.3000	1.94	20.06	.516
POND 7	OUT POND	10	2.209		12.9000	4.07	20.35	.799
POND 7	OUT POND	25	2.579		12.9000	4.99	20.46	.902
POND 8	IN POND	2	3.130		12.5000	20.94		
POND 8	IN POND	10	5.405		12.5000	35.35		
POND 8	IN POND	25	6.312		12.5000	40.96		
POND 8	OUT POND	2	3.130		13.0000	9.46	23.18	1.200
POND 8	OUT POND	10	5.404		12.9000	20.87	23.72	1.776
POND 8	OUT POND	25	6.311		12.8000	25.21	23.90	1.980
PONDS 3 &4	POND	2	.746		12.3000	6.47		
PONDS 3 &4	POND	10	1.288		12.3000	10.87		
PONDS 3 &4	POND	25	1.504		12.2000	12.59		
PONDS 3 &4	OUT POND	2	.617		17.3000	.61	19.97	.574
PONDS 3 &4	OUT POND	10	1.116		15.1000	1.09	20.47	.901
PONDS 3 &4	OUT POND	25	1.321		13.6000	1.68	20.61	1.000
*WETLAND 4	JCT	2	3.130		13.0000	9.46		
*WETLAND 4	JCT	10	5.404		12.9000	20.87		
*WETLAND 4	JCT	25	6.311		12.8000	25.21		
*WETLAND 5	JCT	2	1.278		13.3000	1.94		
*WETLAND 5	JCT	10	2.209		12.9000	4.07		
*WETLAND 5	JCT	25	2.579		12.9000	4.99		
*WETLANDS	JCT	2	2.854		12.9000	12.77		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(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
*WETLANDS	JCT	10	4.878		12.9000	21.44		
*WETLANDS	JCT	25	5.683		12.9000	24.81		
*WETLANDS 1	JCT	2	1.502		12.6000	8.76		
*WETLANDS 1	JCT	10	2.594		12.6000	15.90		
*WETLANDS 1	JCT	25	3.030		12.6000	18.50		
*WETLANDS 2	JCT	2	1.655		12.7000	4.66		
*WETLANDS 2	JCT	10	2.933		12.6000	10.41		
*WETLANDS 2	JCT	25	3.452		12.6000	12.47		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = ..2

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

ICPM CALCULATION TOLERANCES

Target Convergence= .000 cfs +/-
Max. Iterations = 35 loops
ICPM Time Step = .1000 hrs
Output Time Step = .1000 hrs
ICPM Ending Time = 35.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BY-PASS TO WET		AREA	2.854		12.9000	12.77	
PHASE 1-A		AREA	1.503		12.4000	10.95	
PHASE 1-B		AREA	1.102		12.4000	8.33	
PHASE 2 A		AREA	.912		12.3000	7.58	
PHASE 2 B		AREA	.433		12.3000	3.68	
PHASE 2 C		AREA	3.130		12.5000	20.94	
PHASE 3		AREA	.746		12.3000	6.47	
POND 1	IN	POND	1.503		12.4000	10.95	
POND 1	OUT	POND	1.502		12.6000	8.76	21.40
POND 2		POND	1.719		12.4000	8.33	
POND 2	OUT	POND	1.655		12.7000	4.66	20.28
POND 6		POND	.433		12.3000	3.68	
POND 6	OUT	POND	.427		12.8000	.81	20.78
POND 7		POND	1.339		12.3000	8.26	
POND 7	OUT	POND	1.278		13.3000	1.94	20.06
POND 8	IN	POND	3.130		12.5000	20.94	
POND 8	OUT	POND	3.130		13.0000	9.46	23.18
PONDS 3 &4		POND	.746		12.3000	6.47	
PONDS 3 &4	OUT	POND	.617		17.3000	.61	19.97
Outfall WETLAND 4		JCT	3.130		13.0000	9.46	
Outfall WETLAND 5		JCT	1.278		13.3000	1.94	
Outfall WETLANDS		JCT	2.854		12.9000	12.77	
Outfall WETLANDS 1		JCT	1.502		12.6000	8.76	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall WETLANDS 2	JCT	1.655		12.7000	4.66	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = .10

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 6.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

ICPM CALCULATION TOLERANCES

Target Convergence= .000 cfs +/-
Max. Iterations = 35 loops
ICPM Time Step = .1000 hrs
Output Time Step = .1000 hrs
ICPM Ending Time = 35.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BY-PASS TO WET		AREA	4.878		12.9000	21.44	
PHASE 1-A		AREA	2.595		12.4000	18.51	
PHASE 1-B		AREA	1.903		12.3000	14.06	
PHASE 2 A		AREA	1.543		12.3000	12.50	
PHASE 2 B		AREA	.748		12.3000	6.20	
PHASE 2 C		AREA	5.405		12.5000	35.35	
PHASE 3		AREA	1.288		12.3000	10.87	
POND 1	IN	POND	2.595		12.4000	18.51	
POND 1	OUT	POND	2.594		12.6000	15.90	21.65
POND 2		POND	3.019		12.3000	14.06	
POND 2	OUT	POND	2.933		12.6000	10.41	20.60
POND 6		POND	.748		12.3000	6.20	
POND 6	OUT	POND	.739		13.2000	1.08	21.66
POND 7		POND	2.282		12.3000	13.39	
POND 7	OUT	POND	2.209		12.9000	4.07	20.35
POND 8	IN	POND	5.405		12.5000	35.35	
POND 8	OUT	POND	5.404		12.9000	20.87	23.72
PONDS 3 &4		POND	1.288		12.3000	10.87	
PONDS 3 &4	OUT	POND	1.116		15.1000	1.09	20.47
Outfall WETLAND 4		JCT	5.404		12.9000	20.87	
Outfall WETLAND 5		JCT	2.209		12.9000	4.07	
Outfall WETLANDS		JCT	4.878		12.9000	21.44	
Outfall WETLANDS 1		JCT	2.594		12.6000	15.90	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall WETLANDS 2	JCT	2.933		12.6000	10.41	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = TRICO.RNQ Dorchester-South

Storm Tag Name = .25

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 7.6000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

ICPM CALCULATION TOLERANCES

Target Convergence= .000 cfs +/-
Max. Iterations = 35 loops
ICPM Time Step = .1000 hrs
Output Time Step = .1000 hrs
ICPM Ending Time = 35.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BY-PASS TO WET		AREA	5.683		12.9000	24.81	
PHASE 1-A		AREA	3.031		12.4000	21.46	
PHASE 1-B		AREA	2.222		12.3000	16.31	
PHASE 2 A		AREA	1.793		12.3000	14.41	
PHASE 2 B		AREA	.874		12.3000	7.18	
PHASE 2 C		AREA	6.312		12.5000	40.96	
PHASE 3		AREA	1.504		12.2000	12.59	
POND 1	IN	POND	3.031		12.4000	21.46	
POND 1	OUT	POND	3.030		12.6000	18.50	21.74
POND 2		POND	3.543		12.3000	16.31	
POND 2	OUT	POND	3.452		12.6000	12.47	20.70
POND 6		POND	.874		12.3000	7.18	
POND 6	OUT	POND	.863		13.1000	1.22	22.00
POND 7		POND	2.657		12.3000	15.37	
POND 7	OUT	POND	2.579		12.9000	4.99	20.46
POND 8	IN	POND	6.312		12.5000	40.96	
POND 8	OUT	POND	6.311		12.8000	25.21	23.90
PONDS 3 &4		POND	1.504		12.2000	12.59	
PONDS 3 &4	OUT	POND	1.321		13.6000	1.68	20.61
Outfall WETLAND 4		JCT	6.311		12.8000	25.21	
Outfall WETLAND 5		JCT	2.579		12.9000	4.99	
Outfall WETLANDS		JCT	5.683		12.9000	24.81	
Outfall WETLANDS 1		JCT	3.030		12.6000	18.50	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall WETLANDS 2	JCT	3.452		12.6000	12.47	

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	3900.00 ft
Slope	.004000 ft/ft
Unpaved	
Avg.Velocity	1.02 ft/sec

Segment #1 Time: 1.0616 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	50.00 ft
2yr, 24hr P	4.4000 in
Slope	.005000 ft/ft
Avg.Velocity	.05 ft/sec

Segment #2 Time: .3052 hrs

Total Tc: 1.3669 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Shallow

Hydraulic Length 1110.00 ft
Slope .005000 ft/ft
Unpaved

Avg.Velocity 1.14 ft/sec

Segment #1 Time: .2703 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n .4000
Hydraulic Length 50.00 ft
2yr, 24hr P 4.4000 in
Slope .005000 ft/ft

Avg.Velocity .05 ft/sec

Segment #2 Time: .3052 hrs

Total Tc: .5755 hrs

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	860.00 ft
Slope	.005000 ft/ft
Unpaved	
Avg.Velocity	1.14 ft/sec

Segment #1 Time: .2094 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	50.00 ft
2yr, 24hr P	4.4000 in
Slope	.005000 ft/ft
Avg.Velocity	.05 ft/sec

Segment #2 Time: .3052 hrs

==========
Total Tc: .5146 hrs
==========

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	1525.00	ft
Slope	.005000	ft/ft
Unpaved		
Avg.Velocity	1.14	ft/sec

Segment #1 Time: .3713 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000	
Hydraulic Length	50.00	ft
2yr, 24hr P	4.4000	in
Slope	.005000	ft/ft
Avg.Velocity	.05	ft/sec

Segment #2 Time: .3052 hrs

Total Tc: .6765 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	450.00	ft
Slope	.005000	ft/ft
Unpaved		
Avg.Velocity	1.14	ft/sec

Segment #1 Time: .1096 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000	
Hydraulic Length	50.00	ft
2yr, 24hr P	4.4000	in
Slope	.005000	ft/ft
Avg.Velocity	.05	ft/sec

Segment #2 Time: .3052 hrs

==========
Total Tc: .4148 hrs
==========

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	400.00	ft
Slope	.005000	ft/ft
Unpaved		
Avg.Velocity	1.14	ft/sec

Segment #1 Time: .0974 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000	
Hydraulic Length	50.00	ft
2yr, 24hr P	4.4000	in
Slope	.005000	ft/ft
Avg.Velocity	.05	ft/sec

Segment #2 Time: .3052 hrs

==========
Total Tc: .4026 hrs
==========

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Shallow

Hydraulic Length	330.00 ft
Slope	.005000 ft/ft
Paved	
Avg.Velocity	1.44 ft/sec

Segment #1 Time: .0638 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	50.00 ft
2yr, 24hr P	4.4000 in
Slope	.005000 ft/ft
Avg.Velocity	.05 ft/sec

Segment #2 Time: .3052 hrs

Total Tc: .3690 hrs

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
"D" Class soils Front lots	87	3.777			87.00
"D" Class soils lower middle	87	5.093	20.00		89.20
"D" CLASS INTERNAL LOTS	87	2.170			87.00
COMPOSITE AREA & WEIGHTED CN --->		11.040			88.01 (88)

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RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
"D" class soils	87	5.652			87.00
COMPOSITE AREA & WEIGHTED CN --->		5.652			87.00 (87)

File.... \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\ARBOR OAKS POST-DEV-2.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
"D" Class soils	87	4.096			87.00
COMPOSITE AREA & WEIGHTED CN --->		4.096			87.00 (87)

File.... \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\ARBOR OAKS POST-DEV-2.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
"D" class soils Phase 2	87	12.510			87.00
COMPOSITE AREA & WEIGHTED CN --->		12.510			87.00 (87)

File.... \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\ARBOR OAKS POST-DEV-2.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
Class "D" soils Phase 3	87	3.420	20.00		89.20
COMPOSITE AREA & WEIGHTED CN --->		3.420			89.20 (89)

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RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
"D" class soils lots in Ph 2	87	1.593			87.00
COMPOSITE AREA & WEIGHTED CN --->		1.593			87.00 (87)

SCS UNIT HYDROGRAPH METHOD
(Computational Notes)

DEFINITION OF TERMS: ----------

At = Total area (acres): At = Ai+Ap
Ai = Impervious area (acres)
Ap = Pervious area (acres)
CNi = Runoff curve number for impervious area
CNp = Runoff curve number for pervious area
fLoss = f loss constant infiltration (depth/time)
dt = Computational increment (duration of unit excess rainfall)
Default dt is smallest value of 0.1333Tc, rtm, and th
(Smallest dt is then adjusted to match up with Tp)
UDdt = User specified override computational main time increment
(only used if UDdt is => .1333Tc)
D(t) = Point on distribution curve (fraction of P) for time step t

K = 2 / (1 + (Tr/Tp)): default K = 0.75: (for Tr/Tp = 1.67)
Ks = Hydrograph shape factor
= Unit Conversions * K:
= ((1hr/3600sec) * (1ft/12in) * ((5280ft)**2/sq.mi)) * K
Default Ks = 645.333 * 0.75 = 484

Lag = Lag time from center of excess runoff (dt) to Tp: Lag = 0.6Tc
P = Total precipitation depth, inches
Pa(t) = Accumulated rainfall at time step t
Pi(t) = Incremental rainfall at time step t
qp = Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi.
= (Ks * A * Q) / Tp (where Q = 1in. runoff, A=sq.mi.)
Qu(t) = Unit hydrograph ordinate (cfs) at time step t
Q(t) = Final hydrograph ordinate (cfs) at time step t
Rai(t)= Accumulated runoff (inches) at time step t for impervious area
Rap(t)= Accumulated runoff (inches) at time step t for pervious area
Rii(t)= Incremental runoff (inches) at time step t for impervious area
Rip(t)= Incremental runoff (inches) at time step t for pervious area
R(t) = Incremental weighted total runoff (inches)
Rtm = Time increment for rainfall table (.RNF file)
Si = S for impervious area: Si = (1000/CNi) - 10
Sp = S for pervious area: Sp = (1000/CNp) - 10
t = Time step (row) number
Tc = Time of concentration
Tb = Time (hrs) of entire unit hydrograph: Tb = Tp + Tr
Tp = Time (hrs) to peak of a unit hydrograph: Tp = (dt/2) + Lag
Tr = Time (hrs) of receding limb of unit hydrograph: Tr = ratio of Tp

SCS UNIT HYDROGRAPH METHOD
(Computational Notes)

PRECIPITATION: ----------
Column (1): Time for time step t
Column (2): D(t) = Point on distribution curve for time step t
Column (3): Pi(t) = Pa(t) - Pa(t-1): Col.(4) - Preceding Col.(4)
Column (4): Pa(t) = D(t) x P: Col.(2) x P

PERVIOUS AREA RUNOFF (using SCS Runoff CN Method) ----------
Column (5): Rap(t) = Accumulated pervious runoff for time step t
If (Pa(t) is <= 0.2Sp) then use: Rap(t) = 0.0
If (Pa(t) is > 0.2Sp) then use:

Rap(t) = (Col.(4)-0.2Sp)**2 / (Col.(4)+0.8Sp)

Column (6): Rip(t) = Incremental pervious runoff for time step t
Rip(t) = Rap(t) - Rap(t-1)
Rip(t) = Col.(5) for current row - Col.(5) for preceding row.

IMPERVIOUS AREA RUNOFF ----------
Column (7 & 8)... Did not specify to use impervious areas.

INCREMENTAL WEIGHTED RUNOFF: ----------
Column (9): R(t) = (Ap/At) x Rip(t) + (Ai/At) x Rii(t)
R(t) = (Ap/At) x Col.(6) + (Ai/At) x Col.(8)

SCS UNIT HYDROGRAPH METHOD: ----------
Column (10): Q(t) is computed with the SCS unit hydrograph method
using R() and Qu().

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - BY-PASS TO WET ..2
Tc = 1.3669 hrs
Drainage Area = 11.040 acres Runoff CN= 88

==========
Computational Time Increment = .18225 hrs
Computed Peak Time = 12.9396 hrs
Computed Peak Flow = 12.84 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.9000 hrs
Peak Flow, Interpolated Output = 12.77 cfs
==========

DRAINAGE AREA

ID:BY-PASS TO WET
CN = 88
Area = 11.040 acres
S = 1.3636 in
0.2S = .2727 in

Cumulative Runoff

3.1023 in
2.854 ac-ft

HYG Volume... 2.854 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.36686 hrs (ID: BY-PASS TO WET)
Computational Incr, Tm = .18225 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.15 cfs
Unit peak time Tp = .91124 hrs
Unit receding limb, Tr = 3.64495 hrs
Total unit time, Tb = 4.55618 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - BY-PASS TO WET .10
Tc = 1.3669 hrs
Drainage Area = 11.040 acres Runoff CN= 88

==========
Computational Time Increment = .18225 hrs
Computed Peak Time = 12.9396 hrs
Computed Peak Flow = 21.51 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.9000 hrs
Peak Flow, Interpolated Output = 21.44 cfs
==========

DRAINAGE AREA

ID:BY-PASS TO WET
CN = 88
Area = 11.040 acres
S = 1.3636 in
0.2S = .2727 in

Cumulative Runoff

5.3023 in
4.878 ac-ft

HYG Volume... 4.878 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.36686 hrs (ID: BY-PASS TO WET)
Computational Incr, Tm = .18225 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.15 cfs
Unit peak time Tp = .91124 hrs
Unit receding limb, Tr = 3.64495 hrs
Total unit time, Tb = 4.55618 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - BY-PASS TO WET .25
Tc = 1.3669 hrs
Drainage Area = 11.040 acres Runoff CN= 88

==========
Computational Time Increment = .18225 hrs
Computed Peak Time = 12.9396 hrs
Computed Peak Flow = 24.89 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.9000 hrs
Peak Flow, Interpolated Output = 24.81 cfs
==========

DRAINAGE AREA

ID:BY-PASS TO WET
CN = 88
Area = 11.040 acres
S = 1.3636 in
0.2S = .2727 in

Cumulative Runoff

6.1776 in
5.683 ac-ft

HYG Volume... 5.683 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = 1.36686 hrs (ID: BY-PASS TO WET)
Computational Incr, Tm = .18225 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.15 cfs
Unit peak time Tp = .91124 hrs
Unit receding limb, Tr = 3.64495 hrs
Total unit time, Tb = 4.55618 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-A ..2
Tc = .5755 hrs
Drainage Area = 6.000 acres Runoff CN= 87

==========
Computational Time Increment = .07673 hrs
Computed Peak Time = 12.4303 hrs
Computed Peak Flow = 10.96 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.4000 hrs
Peak Flow, Interpolated Output = 10.95 cfs
==========

DRAINAGE AREA

ID:PHASE 1-A
CN = 87
Area = 6.000 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

3.0059 in
1.503 ac-ft

HYG Volume... 1.503 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .57548 hrs (ID: PHASE 1-A)
Computational Incr, Tm = .07673 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 11.81 cfs
Unit peak time Tp = .38365 hrs
Unit receding limb, Tr = 1.53460 hrs
Total unit time, Tb = 1.91825 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-A .10
Tc = .5755 hrs
Drainage Area = 6.000 acres Runoff CN= 87

==========

Computational Time Increment	=	.07673 hrs
Computed Peak Time	=	12.3535 hrs
Computed Peak Flow	=	18.55 cfs
Time Increment for HYG File	=	.1000 hrs
Peak Time, Interpolated Output	=	12.4000 hrs
Peak Flow, Interpolated Output	=	18.51 cfs

==========

DRAINAGE AREA

ID:PHASE 1-A
CN = 87
Area = 6.000 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

5.1897 in
2.595 ac-ft

HYG Volume... 2.595 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .57548 hrs (ID: PHASE 1-A)
Computational Incr, Tm = .07673 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak,	qp =	11.81 cfs
Unit peak time	Tp =	.38365 hrs
Unit receding limb,	Tr =	1.53460 hrs
Total unit time,	Tb =	1.91825 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-A .25
Tc = .5755 hrs
Drainage Area = 6.000 acres Runoff CN= 87

==========
Computational Time Increment = .07673 hrs
Computed Peak Time = 12.3535 hrs
Computed Peak Flow = 21.53 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.4000 hrs
Peak Flow, Interpolated Output = 21.46 cfs
==========

DRAINAGE AREA

ID:PHASE 1-A
CN = 87
Area = 6.000 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

6.0608 in
3.030 ac-ft

HYG Volume... 3.031 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .57548 hrs (ID: PHASE 1-A)
Computational Incr, Tm = .07673 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 11.81 cfs
Unit peak time Tp = .38365 hrs
Unit receding limb, Tr = 1.53460 hrs
Total unit time, Tb = 1.91825 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-B ..2
Tc = .5146 hrs
Drainage Area = 4.400 acres Runoff CN= 87

==========
Computational Time Increment = .06861 hrs
Computed Peak Time = 12.3506 hrs
Computed Peak Flow = 8.49 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.4000 hrs
Peak Flow, Interpolated Output = 8.33 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:PHASE 1-B
CN = 87
Area = 4.400 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

3.0059 in
1.102 ac-ft

HYG Volume... 1.102 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .51461 hrs (ID: PHASE 1-B)
Computational Incr, Tm = .06861 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.69 cfs
Unit peak time Tp = .34307 hrs
Unit receding limb, Tr = 1.37228 hrs
Total unit time, Tb = 1.71535 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-B .10
Tc = .5146 hrs
Drainage Area = 4.400 acres Runoff CN= 87

==========
Computational Time Increment = .06861 hrs
Computed Peak Time = 12.3506 hrs
Computed Peak Flow = 14.36 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 14.06 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:PHASE 1-B
CN = 87
Area = 4.400 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

5.1897 in
1.903 ac-ft

HYG Volume... 1.903 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .51461 hrs (ID: PHASE 1-B)
Computational Incr, Tm = .06861 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.69 cfs
Unit peak time Tp = .34307 hrs
Unit receding limb, Tr = 1.37228 hrs
Total unit time, Tb = 1.71535 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 1-B .25
Tc = .5146 hrs
Drainage Area = 4.400 acres Runoff CN= 87

==========
Computational Time Increment = .06861 hrs
Computed Peak Time = 12.3506 hrs
Computed Peak Flow = 16.65 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 16.31 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:PHASE 1-B
CN = 87
Area = 4.400 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

6.0608 in
2.222 ac-ft

HYG Volume... 2.222 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .51461 hrs (ID: PHASE 1-B)
Computational Incr, Tm = .06861 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.69 cfs
Unit peak time Tp = .34307 hrs
Unit receding limb, Tr = 1.37228 hrs
Total unit time, Tb = 1.71535 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 A ..2
Tc = .4148 hrs
Drainage Area = 3.420 acres Runoff CN= 89

==========
Computational Time Increment = .05530 hrs
Computed Peak Time = 12.2775 hrs
Computed Peak Flow = 7.65 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 7.58 cfs
==========

DRAINAGE AREA

ID:PHASE 2 A
CN = 89
Area = 3.420 acres
S = 1.2360 in
0.2S = .2472 in

Cumulative Runoff

3.2003 in
.912 ac-ft

HYG Volume... .912 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41478 hrs (ID: PHASE 2 A)
Computational Incr, Tm = .05530 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.34 cfs
Unit peak time Tp = .27652 hrs
Unit receding limb, Tr = 1.10608 hrs
Total unit time, Tb = 1.38260 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 A .10
Tc = .4148 hrs
Drainage Area = 3.420 acres Runoff CN= 89

==========
Computational Time Increment = .05530 hrs
Computed Peak Time = 12.2775 hrs
Computed Peak Flow = 12.64 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 12.50 cfs
==========

DRAINAGE AREA

ID:PHASE 2 A
CN = 89
Area = 3.420 acres
S = 1.2360 in
0.2S = .2472 in

Cumulative Runoff

5.4155 in
1.543 ac-ft

HYG Volume... 1.543 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41478 hrs (ID: PHASE 2 A)
Computational Incr, Tm = .05530 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.34 cfs
Unit peak time Tp = .27652 hrs
Unit receding limb, Tr = 1.10608 hrs
Total unit time, Tb = 1.38260 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 A .25
Tc = .4148 hrs
Drainage Area = 3.420 acres Runoff CN= 89

==========
Computational Time Increment = .05530 hrs
Computed Peak Time = 12.2775 hrs
Computed Peak Flow = 14.58 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 14.41 cfs
==========

DRAINAGE AREA

ID:PHASE 2 A
CN = 89
Area = 3.420 acres
S = 1.2360 in
0.2S = .2472 in

Cumulative Runoff

6.2947 in
1.794 ac-ft

HYG Volume... 1.793 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41478 hrs (ID: PHASE 2 A)
Computational Incr, Tm = .05530 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.34 cfs
Unit peak time Tp = .27652 hrs
Unit receding limb, Tr = 1.10608 hrs
Total unit time, Tb = 1.38260 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 B ..2
Tc = .4026 hrs
Drainage Area = 1.730 acres Runoff CN= 87

==========
Computational Time Increment = .05368 hrs
Computed Peak Time = 12.2929 hrs
Computed Peak Flow = 3.70 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 3.68 cfs
==========

DRAINAGE AREA

ID:PHASE 2 B
CN = 87
Area = 1.730 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

3.0059 in
.433 ac-ft

HYG Volume... .433 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .40261 hrs (ID: PHASE 2 B)
Computational Incr, Tm = .05368 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 4.87 cfs
Unit peak time Tp = .26840 hrs
Unit receding limb, Tr = 1.07362 hrs
Total unit time, Tb = 1.34202 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 B .10
Tc = .4026 hrs
Drainage Area = 1.730 acres Runoff CN= 87

==========
Computational Time Increment = .05368 hrs
Computed Peak Time = 12.2929 hrs
Computed Peak Flow = 6.24 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 6.20 cfs
==========

DRAINAGE AREA

ID:PHASE 2 B
CN = 87
Area = 1.730 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

5.1897 in
.748 ac-ft

HYG Volume... .748 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .40261 hrs (ID: PHASE 2 B)
Computational Incr, Tm = .05368 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 4.87 cfs
Unit peak time Tp = .26840 hrs
Unit receding limb, Tr = 1.07362 hrs
Total unit time, Tb = 1.34202 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 B .25
Tc = .4026 hrs
Drainage Area = 1.730 acres Runoff CN= 87

==========
Computational Time Increment = .05368 hrs
Computed Peak Time = 12.2929 hrs
Computed Peak Flow = 7.22 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 7.18 cfs
==========

DRAINAGE AREA

ID:PHASE 2 B
CN = 87
Area = 1.730 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

6.0608 in
.874 ac-ft

HYG Volume... .874 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .40261 hrs (ID: PHASE 2 B)
Computational Incr, Tm = .05368 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 4.87 cfs
Unit peak time Tp = .26840 hrs
Unit receding limb, Tr = 1.07362 hrs
Total unit time, Tb = 1.34202 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 C ..2
Tc = .6765 hrs
Drainage Area = 12.510 acres Runoff CN= 87

==========
Computational Time Increment = .09020 hrs
Computed Peak Time = 12.4479 hrs
Computed Peak Flow = 21.24 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.5000 hrs
Peak Flow, Interpolated Output = 20.94 cfs
==========

DRAINAGE AREA

ID:PHASE 2
CN = 87
Area = 12.510 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

3.0059 in
3.134 ac-ft

HYG Volume... 3.130 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .67652 hrs (ID: PHASE 2)
Computational Incr, Tm = .09020 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 20.95 cfs
Unit peak time Tp = .45101 hrs
Unit receding limb, Tr = 1.80405 hrs
Total unit time, Tb = 2.25506 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 C .10
Tc = .6765 hrs
Drainage Area = 12.510 acres Runoff CN= 87

==========
Computational Time Increment = .09020 hrs
Computed Peak Time = 12.4479 hrs
Computed Peak Flow = 35.98 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.5000 hrs
Peak Flow, Interpolated Output = 35.35 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:PHASE 2
CN = 87
Area = 12.510 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

5.1897 in
5.410 ac-ft

HYG Volume... 5.405 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .67652 hrs (ID: PHASE 2)
Computational Incr, Tm = .09020 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 20.95 cfs
Unit peak time Tp = .45101 hrs
Unit receding limb, Tr = 1.80405 hrs
Total unit time, Tb = 2.25506 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 2 C .25
Tc = .6765 hrs
Drainage Area = 12.510 acres Runoff CN= 87

==========
Computational Time Increment = .09020 hrs
Computed Peak Time = 12.4479 hrs
Computed Peak Flow = 41.72 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.5000 hrs
Peak Flow, Interpolated Output = 40.96 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:PHASE 2
CN = 87
Area = 12.510 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

6.0608 in
6.318 ac-ft

HYG Volume... 6.312 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .67652 hrs (ID: PHASE 2)
Computational Incr, Tm = .09020 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 20.95 cfs
Unit peak time Tp = .45101 hrs
Unit receding limb, Tr = 1.80405 hrs
Total unit time, Tb = 2.25506 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 4.4000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 3 ..2
Tc = .3690 hrs
Drainage Area = 2.976 acres Runoff CN= 87

==========
Computational Time Increment = .04920 hrs
Computed Peak Time = 12.2504 hrs
Computed Peak Flow = 6.62 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 6.47 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:None Selected
CN = 87
Area = 2.976 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

3.0059 in
.745 ac-ft

HYG Volume... .746 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .36899 hrs (ID: PHASE 3)
Computational Incr, Tm = .04920 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.14 cfs
Unit peak time Tp = .24599 hrs
Unit receding limb, Tr = .98397 hrs
Total unit time, Tb = 1.22996 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 6.7000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 3 .10
Tc = .3690 hrs
Drainage Area = 2.976 acres Runoff CN= 87

==========
Computational Time Increment = .04920 hrs
Computed Peak Time = 12.2504 hrs
Computed Peak Flow = 11.19 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = 10.87 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:None Selected
CN = 87
Area = 2.976 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

5.1897 in
1.287 ac-ft

HYG Volume... 1.288 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .36899 hrs (ID: PHASE 3)
Computational Incr, Tm = .04920 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.14 cfs
Unit peak time Tp = .24599 hrs
Unit receding limb, Tr = .98397 hrs
Total unit time, Tb = 1.22996 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 7.6000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
HYG File - ID = SAWMILL .HYG - PHASE 3 .25
Tc = .3690 hrs
Drainage Area = 2.976 acres Runoff CN= 87

==========
Computational Time Increment = .04920 hrs
Computed Peak Time = 12.2504 hrs
Computed Peak Flow = 12.97 cfs

Time Increment for HYG File = .1000 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 12.59 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:None Selected
CN = 87
Area = 2.976 acres
S = 1.4943 in
0.2S = .2989 in

Cumulative Runoff

6.0608 in
1.503 ac-ft

HYG Volume... 1.504 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .36899 hrs (ID: PHASE 3)
Computational Incr, Tm = .04920 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 9.14 cfs
Unit peak time Tp = .24599 hrs
Unit receding limb, Tr = .98397 hrs
Total unit time, Tb = 1.22996 hrs

SUMMARY FOR HYDROGRAPH ADDITION
at Node: WETLAND 4

HYG Directory: \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
TO WETLAND 4	POND 8	IN	SAWMILL .HYG	TO WETLAND 4 ..2

INFLOWS TO: WETLAND 4

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	TO WETLAND 4	..2	3.130	13.0000	9.46

TOTAL FLOW INTO: WETLAND 4

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	WETLAND 4	..2	3.130	13.0000	9.46

TOTAL NODE INFLOW...
HYG file = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\SAWMILL .HYG
HYG ID = WETLAND 4
HYG Tag = ..2

Peak Discharge =	9.46 cfs
Time to Peak =	13.0000 hrs
HYG Volume =	3.130 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
6.4000	.00	.00	.00	.00	.00
6.9000	.01	.01	.01	.01	.01
7.4000	.02	.02	.02	.03	.03
7.9000	.03	.04	.04	.05	.06
8.4000	.06	.07	.08	.08	.09
8.9000	.10	.11	.12	.13	.15
9.4000	.16	.17	.19	.20	.22
9.9000	.24	.25	.27	.29	.31
10.4000	.34	.36	.39	.41	.44
10.9000	.47	.50	.54	.57	.61
11.4000	.66	.70	.76	.83	.97
11.9000	1.15	1.40	1.77	2.30	3.16
12.4000	4.14	5.29	6.33	7.73	8.71
12.9000	9.25	9.46	9.42	9.21	8.89
13.4000	8.50	8.08	7.64	7.21	6.80
13.9000	6.41	6.19	5.98	5.78	5.57
14.4000	5.38	5.19	5.00	4.82	4.65
14.9000	4.49	4.34	4.19	4.06	3.94
15.4000	3.82	3.71	3.60	3.50	3.39
15.9000	3.29	3.19	3.10	3.01	2.91
16.4000	2.83	2.74	2.66	2.58	2.50
16.9000	2.43	2.35	2.28	2.23	2.18
17.4000	2.13	2.08	2.03	1.98	1.94
17.9000	1.89	1.85	1.80	1.76	1.72
18.4000	1.68	1.64	1.60	1.57	1.53
18.9000	1.50	1.46	1.43	1.40	1.37
19.4000	1.34	1.31	1.28	1.26	1.23
19.9000	1.21	1.18	1.16	1.14	1.12
20.4000	1.10	1.08	1.06	1.04	1.02
20.9000	1.00	.99	.97	.95	.94
21.4000	.92	.91	.89	.88	.87
21.9000	.85	.84	.83	.82	.81
22.4000	.80	.79	.78	.78	.77

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.9000	.76	.76	.75	.75	.74
23.4000	.73	.73	.72	.71	.71
23.9000	.70	.70	.69	.68	.68
24.4000	.67	.65	.64	.63	.61
24.9000	.60	.58	.57	.55	.54
25.4000	.53	.51	.50	.49	.47
25.9000	.46	.45	.44	.42	.41
26.4000	.40	.39	.38	.37	.36
26.9000	.35	.34	.33	.32	.31
27.4000	.31	.30	.29	.28	.27
27.9000	.27	.26	.25	.25	.24
28.4000	.23	.23	.22	.22	.21
28.9000	.20	.20	.19	.19	.18
29.4000	.18	.17	.17	.16	.16
29.9000	.16	.15	.15	.14	.14
30.4000	.14	.13	.13	.13	.12
30.9000	.12	.12	.11	.11	.11
31.4000	.10	.10	.10	.10	.09
31.9000	.09	.09	.09	.08	.08
32.4000	.08	.08	.07	.07	.07
32.9000	.07	.07	.07	.06	.06
33.4000	.06	.06	.06	.06	.05
33.9000	.05	.05	.05	.05	.05
34.4000	.05	.04	.04	.04	.04
34.9000	.04	.04	.04	.04	.04
35.4000	.03	.03	.03	.03	.03
35.9000	.03	.03	.03	.03	.03
36.4000	.03	.03	.03	.02	.02
36.9000	.02	.02	.02	.02	.02
37.4000	.02	.02	.02	.02	.02
37.9000	.02	.02	.02	.02	.02
38.4000	.02	.02	.01	.01	.01
38.9000	.01	.01	.01	.01	.01
39.4000	.01	.01	.01	.01	.01
39.9000	.01	.01	.01	.01	.01
40.4000	.01	.01	.01	.01	.01
40.9000	.01	.01	.01	.01	.01
41.4000	.01	.01	.01	.01	.01
41.9000	.01	.01	.01	.01	.01
42.4000	.01	.01	.00	.00	.00
42.9000	.00	.00	.00	.00	.00
43.4000	.00	.00	.00	.00	.00
43.9000	.00	.00	.00	.00	.00
44.4000	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: WETLAND 5

HYG Directory: \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
TO WETLAND 5	POND 7	SAWMILL .HYG	TO WETLAND 5	..2

INFLOWS TO: WETLAND 5

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	TO WETLAND 5	..2	1.278	13.3000	1.94

TOTAL FLOW INTO: WETLAND 5

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	WETLAND 5	..2	1.278	13.3000	1.94

TOTAL NODE INFLOW...
HYG file = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\SAWMILL .HYG
HYG ID = WETLAND 5
HYG Tag = ..2

Peak Discharge = 1.94 cfs
Time to Peak = 13.3000 hrs
HYG Volume = 1.278 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
6.0000	.00	.00	.00	.00	.00
6.5000	.00	.00	.00	.00	.00
7.0000	.01	.01	.01	.01	.01
7.5000	.01	.01	.01	.01	.01
8.0000	.02	.02	.02	.02	.02
8.5000	.02	.03	.03	.03	.03
9.0000	.03	.04	.04	.04	.05
9.5000	.05	.05	.06	.06	.07
10.0000	.07	.08	.08	.09	.09
10.5000	.10	.10	.11	.12	.12
11.0000	.13	.14	.15	.16	.17
11.5000	.18	.19	.21	.23	.26
12.0000	.31	.37	.56	.85	1.12
12.5000	1.34	1.51	1.68	1.79	1.86
13.0000	1.90	1.93	1.94	1.94	1.94
13.5000	1.93	1.92	1.91	1.89	1.88
14.0000	1.86	1.84	1.82	1.80	1.78
14.5000	1.76	1.74	1.71	1.69	1.67
15.0000	1.65	1.62	1.60	1.57	1.55
15.5000	1.53	1.51	1.49	1.47	1.45
16.0000	1.43	1.42	1.40	1.38	1.36
16.5000	1.34	1.32	1.30	1.27	1.25
17.0000	1.23	1.21	1.19	1.17	1.15
17.5000	1.13	1.11	1.09	1.07	1.05
18.0000	1.03	1.01	.99	.98	.96
18.5000	.94	.92	.91	.89	.87
19.0000	.86	.84	.83	.81	.80
19.5000	.79	.77	.76	.75	.73
20.0000	.72	.71	.70	.68	.67
20.5000	.66	.65	.64	.63	.62
21.0000	.60	.59	.58	.57	.56
21.5000	.55	.54	.53	.52	.52
22.0000	.51	.50	.49	.48	.47

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.5000	.46	.46	.45	.44	.43
23.0000	.43	.42	.41	.40	.40
23.5000	.40	.40	.40	.39	.39
24.0000	.39	.39	.38	.38	.38
24.5000	.37	.37	.36	.36	.35
25.0000	.35	.35	.34	.34	.33
25.5000	.33	.32	.32	.31	.31
26.0000	.31	.30	.30	.29	.29
26.5000	.29	.28	.28	.28	.27
27.0000	.27	.27	.26	.26	.26
27.5000	.25	.25	.25	.24	.24
28.0000	.24	.24	.23	.23	.23
28.5000	.23	.22	.22	.22	.21
29.0000	.21	.21	.21	.21	.20
29.5000	.20	.20	.20	.19	.19
30.0000	.19	.19	.18	.18	.18
30.5000	.18	.18	.17	.17	.17
31.0000	.17	.17	.17	.16	.16
31.5000	.16	.16	.16	.15	.15
32.0000	.15	.15	.15	.15	.14
32.5000	.14	.14	.14	.14	.14
33.0000	.13	.13	.13	.13	.13
33.5000	.13	.13	.12	.12	.12
34.0000	.12	.12	.12	.12	.11
34.5000	.11	.11	.11	.11	.11
35.0000	.11				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: WETLANDS

HYG Directory: \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
BYPASS-WETLAND	BY-PASS TO WET	SAWMILL .HYG	BY-PASS TO WET	..2

INFLOWS TO: WETLANDS

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	BY-PASS TO WET	..2	2.854	12.9000	12.77

TOTAL FLOW INTO: WETLANDS

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	WETLANDS	..2	2.854	12.9000	12.77

TOTAL NODE INFLOW...
HYG file = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\SAWMILL .HYG
HYG ID = WETLANDS
HYG Tag = ..2

Peak Discharge =	12.77 cfs
Time to Peak =	12.9000 hrs
HYG Volume =	2.854 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
5.7000	.00	.00	.00	.00	.01
6.2000	.01	.01	.02	.02	.03
6.7000	.03	.04	.05	.05	.06
7.2000	.07	.08	.09	.10	.11
7.7000	.13	.14	.15	.16	.18
8.2000	.19	.21	.23	.24	.26
8.7000	.28	.31	.33	.35	.38
9.2000	.41	.44	.47	.50	.54
9.7000	.57	.61	.65	.69	.73
10.2000	.78	.82	.87	.92	.98
10.7000	1.03	1.10	1.16	1.23	1.31
11.2000	1.39	1.48	1.59	1.70	1.86
11.7000	2.06	2.33	2.78	3.38	4.31
12.2000	5.38	6.82	8.31	9.77	11.10
12.7000	12.01	12.60	12.77	12.56	12.12
13.2000	11.36	10.51	9.56	8.63	7.81
13.7000	7.05	6.41	5.84	5.35	4.92
14.2000	4.53	4.21	3.90	3.65	3.41
14.7000	3.21	3.03	2.87	2.73	2.60
15.2000	2.48	2.37	2.28	2.19	2.11
15.7000	2.03	1.95	1.88	1.81	1.75
16.2000	1.68	1.62	1.56	1.50	1.45
16.7000	1.40	1.36	1.32	1.28	1.24
17.2000	1.21	1.18	1.15	1.12	1.09
17.7000	1.06	1.04	1.01	.99	.96
18.2000	.94	.91	.89	.87	.85
18.7000	.83	.81	.79	.78	.77
19.2000	.75	.74	.73	.72	.71
19.7000	.70	.69	.68	.67	.67
20.2000	.66	.65	.64	.64	.63
20.7000	.62	.62	.61	.60	.60
21.2000	.59	.59	.58	.58	.57
21.7000	.56	.56	.55	.55	.54

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.2000	.54	.53	.53	.52	.52
22.7000	.51	.51	.50	.50	.49
23.2000	.49	.48	.48	.47	.47
23.7000	.46	.46	.45	.44	.44
24.2000	.43	.41	.39	.37	.34
24.7000	.30	.27	.24	.20	.17
25.2000	.14	.12	.10	.08	.07
25.7000	.06	.05	.04	.03	.03
26.2000	.02	.02	.02	.01	.01
26.7000	.01	.01	.01	.01	.00
27.2000	.00	.00	.00	.00	.00
27.7000	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: WETLANDS 1

HYG Directory: \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
POND 1 TO WETLND	POND 1	IN	SAWMILL .HYG	POND 1 TO WETLND ..2

INFLOWS TO: WETLANDS 1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	POND 1 TO WETLND	..2	1.502	12.6000	8.76

TOTAL FLOW INTO: WETLANDS 1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	WETLANDS 1	..2	1.502	12.6000	8.76

TOTAL NODE INFLOW...
HYG file = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\SAWMILL .HYG
HYG ID = WETLANDS 1
HYG Tag = ..2

Peak Discharge =	8.76 cfs
Time to Peak =	12.6000 hrs
HYG Volume =	1.502 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
6.5000	.00	.00	.00	.00	.00
7.0000	.00	.00	.01	.01	.01
7.5000	.01	.01	.01	.01	.02
8.0000	.02	.02	.02	.03	.03
8.5000	.03	.03	.04	.04	.05
9.0000	.05	.06	.06	.07	.07
9.5000	.08	.09	.09	.10	.11
10.0000	.12	.12	.13	.14	.15
10.5000	.16	.17	.19	.20	.21
11.0000	.23	.24	.26	.28	.30
11.5000	.33	.38	.43	.49	.57
12.0000	.70	1.10	2.66	4.35	6.59
12.5000	8.16	8.76	8.57	7.89	6.97
13.0000	6.01	5.12	4.47	4.02	3.61
13.5000	3.23	2.91	2.63	2.39	2.19
14.0000	2.01	1.87	1.74	1.63	1.54
14.5000	1.46	1.39	1.32	1.27	1.22
15.0000	1.18	1.14	1.10	1.07	1.04
15.5000	1.00	.97	.94	.92	.89
16.0000	.86	.84	.84	.83	.82
16.5000	.82	.81	.80	.79	.79
17.0000	.78	.77	.76	.75	.74
17.5000	.73	.72	.71	.70	.69
18.0000	.68	.67	.66	.65	.64
18.5000	.63	.62	.62	.61	.60
19.0000	.59	.58	.57	.56	.55
19.5000	.55	.54	.53	.52	.52
20.0000	.51	.50	.49	.49	.48
20.5000	.47	.47	.46	.46	.45
21.0000	.44	.44	.43	.43	.42
21.5000	.42	.41	.41	.40	.40
22.0000	.39	.39	.38	.38	.37
22.5000	.37	.36	.36	.36	.35

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
23.0000	.35	.34	.34	.34	.33
23.5000	.33	.32	.32	.32	.31
24.0000	.31	.31	.30	.30	.29
24.5000	.29	.28	.28	.27	.27
25.0000	.26	.25	.25	.24	.24
25.5000	.23	.23	.22	.22	.21
26.0000	.21	.20	.20	.19	.19
26.5000	.18	.18	.17	.17	.17
27.0000	.16	.16	.16	.15	.15
27.5000	.14	.14	.14	.13	.13
28.0000	.13	.13	.12	.12	.12
28.5000	.11	.11	.11	.11	.10
29.0000	.10	.10	.10	.09	.09
29.5000	.09	.09	.09	.08	.08
30.0000	.08	.08	.08	.07	.07
30.5000	.07	.07	.07	.07	.06
31.0000	.06	.06	.06	.06	.06
31.5000	.06	.06	.05	.05	.05
32.0000	.05	.05	.05	.05	.05
32.5000	.04	.04	.04	.04	.04
33.0000	.04	.04	.04	.04	.04
33.5000	.04	.03	.03	.03	.03
34.0000	.03	.03	.03	.03	.03
34.5000	.03	.03	.03	.03	.03
35.0000	.02	.02	.02	.02	.02
35.5000	.02	.02	.02	.02	.02
36.0000	.02	.02	.02	.02	.02
36.5000	.02	.02	.02	.02	.02
37.0000	.02	.02	.01	.01	.01
37.5000	.01	.01	.01	.01	.01
38.0000	.01	.01	.01	.01	.01
38.5000	.01	.01	.01	.01	.01
39.0000	.01	.01	.01	.01	.01
39.5000	.01	.01	.01	.01	.01
40.0000	.01	.01	.01	.01	.01
40.5000	.01	.01	.01	.01	.01
41.0000	.01	.01	.01	.01	.01
41.5000	.01	.01	.01	.00	.00
42.0000	.00	.00	.00	.00	.00
42.5000	.00	.00	.00	.00	.00
43.0000	.00	.00	.00	.00	.00
43.5000	.00	.00	.00	.00	.00
44.0000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: WETLANDS 2

HYG Directory: \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
POND 2-WETLND	POND 2	SAWMILL .HYG	POND 2-WETLND	..2

INFLOWS TO: WETLANDS 2

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	POND 2-WETLND	..2	1.655	12.7000	4.66

TOTAL FLOW INTO: WETLANDS 2

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
SAWMILL .HYG	WETLANDS 2	..2	1.655	12.7000	4.66

TOTAL NODE INFLOW...
HYG file = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\SAWMILL .HYG
HYG ID = WETLANDS 2
HYG Tag = ..2

Peak Discharge =	4.66 cfs
Time to Peak =	12.7000 hrs
HYG Volume =	1.655 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
6.6000	.00	.00	.00	.00	.00
7.1000	.00	.00	.01	.01	.01
7.6000	.01	.01	.01	.01	.01
8.1000	.02	.02	.02	.02	.02
8.6000	.03	.03	.03	.04	.04
9.1000	.04	.05	.05	.06	.06
9.6000	.07	.07	.08	.08	.09
10.1000	.10	.10	.11	.12	.13
10.6000	.13	.14	.15	.16	.18
11.1000	.19	.20	.22	.25	.27
11.6000	.30	.34	.39	.45	.56
12.1000	.77	1.07	1.46	2.56	3.58
12.6000	4.28	4.66	4.63	4.36	3.99
13.1000	3.69	3.38	3.07	2.79	2.53
13.6000	2.30	2.09	1.92	1.76	1.63
14.1000	1.55	1.51	1.48	1.44	1.41
14.6000	1.39	1.37	1.35	1.34	1.33
15.1000	1.31	1.30	1.29	1.28	1.27
15.6000	1.26	1.25	1.24	1.23	1.22
16.1000	1.21	1.20	1.19	1.19	1.18
16.6000	1.17	1.16	1.15	1.14	1.14
17.1000	1.13	1.12	1.12	1.11	1.10
17.6000	1.09	1.09	1.08	1.07	1.06
18.1000	1.05	1.04	1.03	1.02	1.01
18.6000	1.00	1.00	.99	.98	.97
19.1000	.96	.95	.94	.94	.93
19.6000	.92	.91	.90	.89	.88
20.1000	.87	.86	.85	.83	.82
20.6000	.82	.81	.80	.79	.78
21.1000	.78	.77	.77	.76	.76
21.6000	.75	.75	.75	.74	.74
22.1000	.74	.73	.73	.73	.72
22.6000	.72	.72	.71	.71	.71

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
23.1000	.70	.70	.69	.69	.69
23.6000	.68	.68	.68	.67	.67
24.1000	.66	.66	.65	.64	.63
24.6000	.61	.60	.59	.57	.56
25.1000	.54	.53	.52	.51	.50
25.6000	.49	.49	.48	.47	.46
26.1000	.45	.45	.44	.43	.43
26.6000	.42	.42	.41	.41	.41
27.1000	.40	.40	.40	.40	.39
27.6000	.39	.39	.39	.38	.38
28.1000	.38	.38	.38	.37	.37
28.6000	.37	.37	.36	.36	.36
29.1000	.36	.36	.35	.35	.35
29.6000	.35	.34	.34	.34	.34
30.1000	.34	.33	.33	.33	.33
30.6000	.33	.32	.32	.31	.31
31.1000	.31	.30	.30	.29	.29
31.6000	.29	.28	.28	.28	.27
32.1000	.27	.27	.26	.26	.26
32.6000	.25	.25	.25	.25	.25
33.1000	.24	.24	.24	.24	.24
33.6000	.24	.23	.23	.23	.22
34.1000	.22	.22	.21	.21	.20
34.6000	.20	.20	.19	.19	.19

LEVEL POOL ROUTING DATA

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 1 IN ..2
Outflow HYG file = SAWMILL .HYG - POND 1 OUT ..2

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = POND 1 TO WETLND

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	20.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
20.50	.00	.000	.4120	.00	.00	.00
20.75	.30	.105	.4269	.00	.30	25.67
21.00	.84	.213	.4420	.00	.84	52.50
21.25	4.69	.326	.4571	.00	4.69	83.54
21.50	11.38	.442	.4725	.00	11.38	118.35
21.75	18.69	.562	.4881	.00	18.69	154.72
22.00	28.04	.686	.5040	.00	28.04	194.09

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 1 IN ..2
Outflow HYG file = SAWMILL .HYG - POND 1 OUT ..2

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = POND 1 TO WETLND

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	20.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	10.95 cfs	at	12.4000 hrs
Peak Outflow	=	8.76 cfs	at	12.6000 hrs
Peak Elevation	=	21.40 ft		
Peak Storage	=	.396 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	1.503
- Infiltration	=	.000
- HYG Vol OUT	=	1.502
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 1 IN .10
Outflow HYG file = SAWMILL .HYG - POND 1 OUT .10

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = POND 1 TO WETLND

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	20.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	18.51 cfs	at	12.4000 hrs
Peak Outflow	=	15.90 cfs	at	12.6000 hrs
Peak Elevation	=	21.65 ft		
Peak Storage	=	.516 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	2.595
- Infiltration	=	.000
- HYG Vol OUT	=	2.594
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 1 IN .25
Outflow HYG file = SAWMILL .HYG - POND 1 OUT .25

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = POND 1 TO WETLND

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	20.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	21.46 cfs	at	12.4000 hrs
Peak Outflow	=	18.50 cfs	at	12.6000 hrs
Peak Elevation	=	21.74 ft		
Peak Storage	=	.559 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	3.031
- Infiltration	=	.000
- HYG Vol OUT	=	3.030
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.001% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 2 IN ..2
Outflow HYG file = POND 2 OUT ..2

Pond Node Data = POND 2
Pond Volume Data = POND 2
Pond Outlet Data = POND 2-WETLND

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
12.7000	20.28	.357

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.4000	8.33	.0000	.00
Pond Outflow....	12.7000	4.66	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	1.719	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	1.655	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	1.719
-	Total Vol OUT...	1.655
-	Ending Pond Vol.	.063 <-- (At 35.0000 hrs Elev.= 19.23 ft)
	Difference.....	.001 ac-ft (.087% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 2 IN .10
Outflow HYG file = POND 2 OUT .10

Pond Node Data = POND 2
Pond Volume Data = POND 2
Pond Outlet Data = POND 2-WETLND

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
12.6000	20.60	.454

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	14.06	.0000	.00
Pond Outflow....	12.6000	10.41	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	3.019	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	2.933	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	3.019
-	Total Vol OUT...	2.933
-	Ending Pond Vol.	.084 <-- (At 35.0000 hrs Elev.= 19.31 ft)
	Difference.....	.002 ac-ft (.077% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 2 IN .25
Outflow HYG file = POND 2 OUT .25

Pond Node Data = POND 2
Pond Volume Data = POND 2
Pond Outlet Data = POND 2-WETLND

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
12.6000	20.70	.485

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	16.31	.0000	.00
Pond Outflow....	12.6000	12.47	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	3.543	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	3.452	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	3.543
-	Total Vol OUT...	3.452
-	Ending Pond Vol.	.088 <-- (At 35.0000 hrs Elev.= 19.33 ft)
	Difference.....	.003 ac-ft (.071% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 7 IN ..2
Outflow HYG file = POND 7 OUT ..2

Pond Node Data = POND 7
Pond Volume Data = POND 7
Pond Outlet Data = TO WETLAND 5

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.50 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.3000	20.06	.516

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	8.26	.0000	.00
Pond Outflow....	13.3000	1.94	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	1.339	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	1.278	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	1.339
-	Total Vol OUT...	1.278
-	Ending Pond Vol.	.060 <-- (At 35.0000 hrs Elev.= 19.57 ft)
	Difference.....	.001 ac-ft (.062% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 7 IN .10
Outflow HYG file = POND 7 OUT .10

Pond Node Data = POND 7
Pond Volume Data = POND 7
Pond Outlet Data = TO WETLAND 5

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.50 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.0000	20.35	.799

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	13.39	.0000	.00
Pond Outflow....	12.9000	4.07	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	2.282	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	2.209	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	2.282
-	Total Vol OUT...	2.209
-	Ending Pond Vol.	.072 <-- (At 35.0000 hrs Elev.= 19.58 ft)
	Difference.....	.001 ac-ft (.044% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = POND 7 IN .25
Outflow HYG file = POND 7 OUT .25

Pond Node Data = POND 7
Pond Volume Data = POND 7
Pond Outlet Data = TO WETLAND 5

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.50 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
12.9000	20.46	.902

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	15.37	.0000	.00
Pond Outflow....	12.9000	4.99	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	2.657	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	2.579	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	2.657
-	Total Vol OUT...	2.579
-	Ending Pond Vol.	.076 <-- (At 35.0000 hrs Elev.= 19.58 ft)
	Difference.....	.001 ac-ft (.040% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 8 IN ..2
Outflow HYG file = SAWMILL .HYG - POND 8 OUT ..2

Pond Node Data = POND 8
Pond Volume Data = POND 8
Pond Outlet Data = TO WETLAND 4

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	22.00 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	20.94 cfs	at	12.5000 hrs
Peak Outflow	=	9.46 cfs	at	13.0000 hrs
Peak Elevation	=	23.18 ft		
Peak Storage	=	1.200 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	3.130
- Infiltration	=	.000
- HYG Vol OUT	=	3.130
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 8 IN .10
Outflow HYG file = SAWMILL .HYG - POND 8 OUT .10

Pond Node Data = POND 8
Pond Volume Data = POND 8
Pond Outlet Data = TO WETLAND 4

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	22.00 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	35.35 cfs	at	12.5000 hrs
Peak Outflow	=	20.87 cfs	at	12.9000 hrs
Peak Elevation	=	23.72 ft		
Peak Storage	=	1.776 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	5.405
- Infiltration	=	.000
- HYG Vol OUT	=	5.404
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = SAWMILL .HYG - POND 8 IN .25
Outflow HYG file = SAWMILL .HYG - POND 8 OUT .25

Pond Node Data = POND 8
Pond Volume Data = POND 8
Pond Outlet Data = TO WETLAND 4

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	22.00 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.1000 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	40.96 cfs	at	12.5000 hrs
Peak Outflow	=	25.21 cfs	at	12.8000 hrs
Peak Elevation	=	23.90 ft		
Peak Storage	=	1.980 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	6.312
- Infiltration	=	.000
- HYG Vol OUT	=	6.311
- Retained Vol	=	.001
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = PONDS 3 &4 IN ..2
Outflow HYG file = PONDS 3 &4 OUT ..2

Pond Node Data = PONDS 3 &4
Pond Volume Data = PONDS 3 &4
Pond Outlet Data = POND 3 TO 2

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
15.3000	19.97	.574

	FORWARD FLOW PEAKS Tp, hrs	Qp, cfs	REVERSE FLOW PEAKS Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	6.47	.0000	.00
Pond Outflow....	17.3000	.61	.0000	.00

	TOTAL VOLUME IN Vol, ac-ft	Direction	TOTAL VOLUME OUT Vol, ac-ft	Direction
Pond Inflow.....	.746	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	.617	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	.746
-	Total Vol OUT...	.617
-	Ending Pond Vol.	.152 <-- (At 35.0000 hrs Elev.= 19.26 ft)
	Difference.....	-.024 ac-ft (3.164% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = PONDS 3 &4 IN .10
Outflow HYG file = PONDS 3 &4 OUT .10

Pond Node Data = PONDS 3 &4
Pond Volume Data = PONDS 3 &4
Pond Outlet Data = POND 3 TO 2

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
14.1000	20.47	.901

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	12.3000	10.87	.0000	.00
Pond Outflow....	15.1000	1.09	.0000	.00

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	1.288	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	1.116	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	1.288
-	Total Vol OUT...	1.116
-	Ending Pond Vol.	.186 <-- (At 35.0000 hrs Elev.= 19.32 ft)
	Difference.....	-.015 ac-ft (1.166% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

ICPM POND ROUTING SUMMARY

HYG Dir = \\PROJECTDATA\TRICO\LAND PROJECTS R2\01-087\HD\
Inflow HYG file = PONDS 3 &4 IN .25
Outflow HYG file = PONDS 3 &4 OUT .25

Pond Node Data = PONDS 3 &4
Pond Volume Data = PONDS 3 &4
Pond Outlet Data = POND 3 TO 2

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	19.00 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.1000 hrs
		Output Time Step =	.1000 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.3000	20.61	1.000

	FORWARD FLOW PEAKS Tp, hrs	Qp, cfs	REVERSE FLOW PEAKS Tp, hrs	Qp, cfs
Pond Inflow.....	12.2000	12.59	.0000	.00
Pond Outflow....	13.6000	1.68	.0000	.00

	TOTAL VOLUME IN Vol, ac-ft	Direction	TOTAL VOLUME OUT Vol, ac-ft	Direction
Pond Inflow.....	1.504	Forward	.000	Reverse
Pond Outflow....	.000	Reverse	1.321	Forward

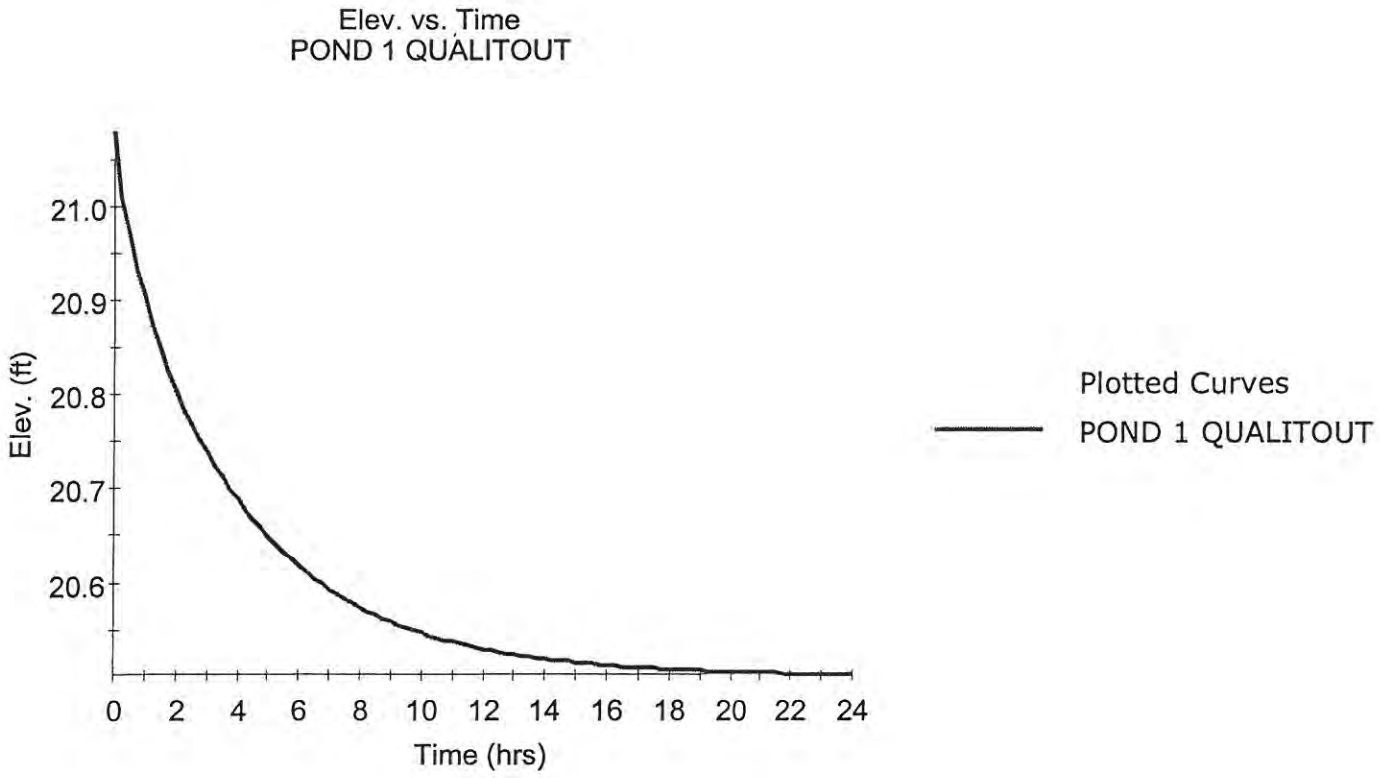
MASS BALANCE (ac-ft)

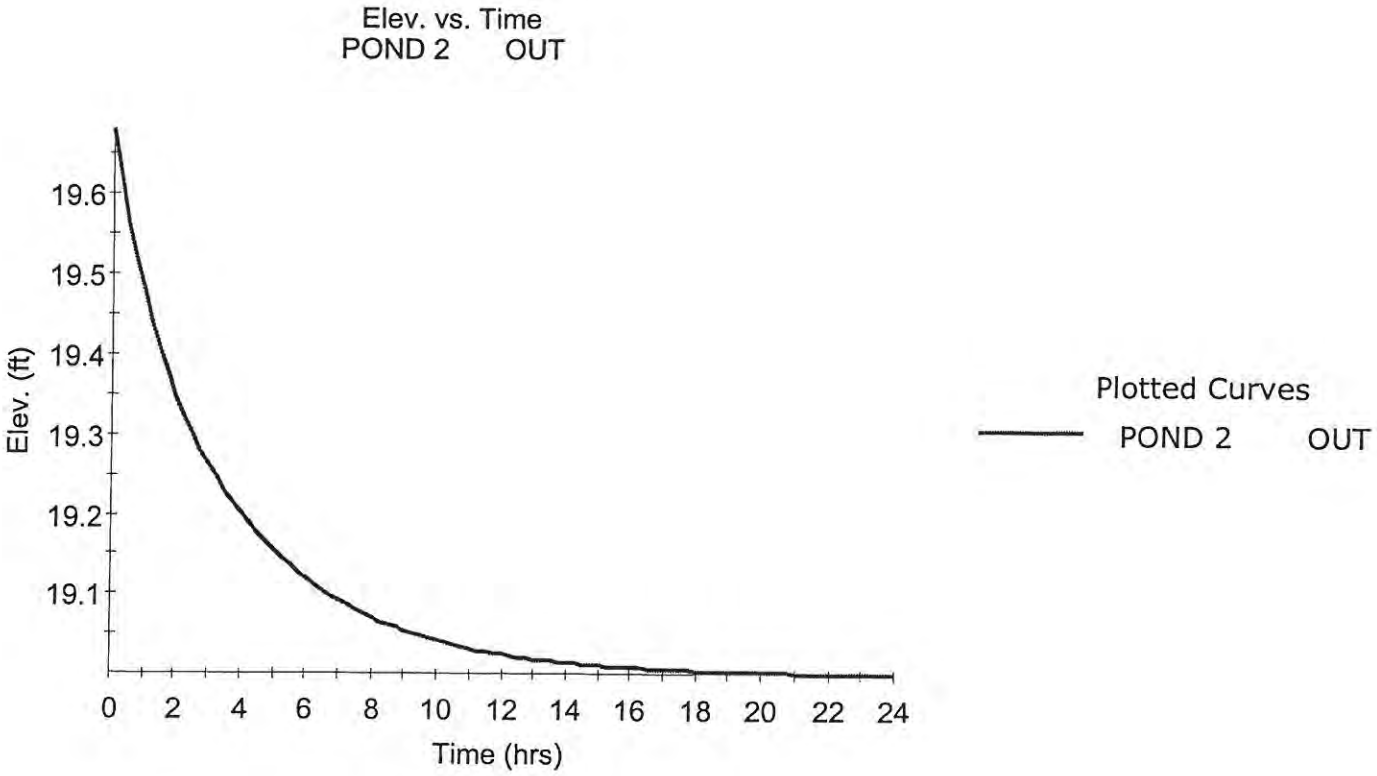
+	Initial Vol.....	.000
+	Total Vol IN....	1.504
-	Total Vol OUT...	1.321
-	Ending Pond Vol.	.197 <-- (At 35.0000 hrs Elev.= 19.33 ft)
	Difference.....	-.015 ac-ft (.977% of Inflow Volume)

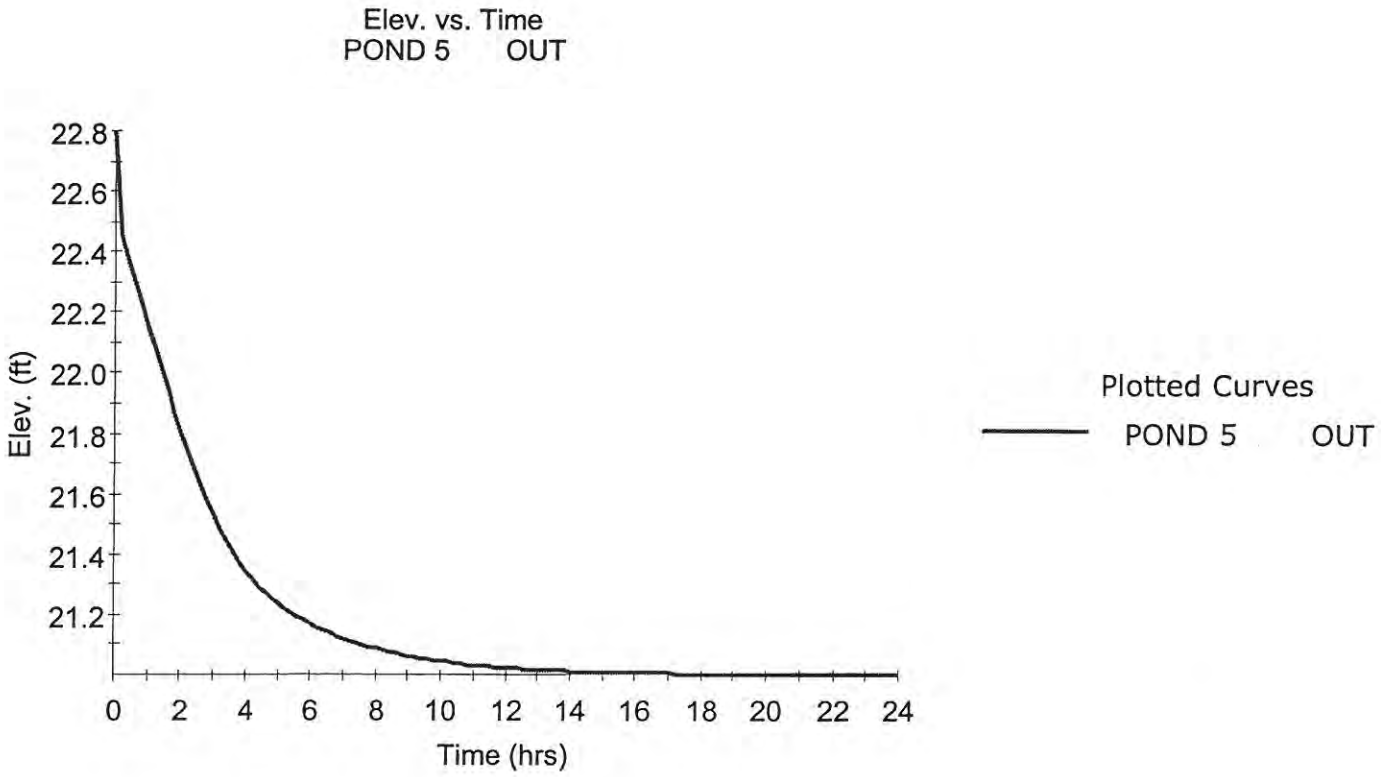
WARNING: Mass balance for routing volumes vary by more than .5%

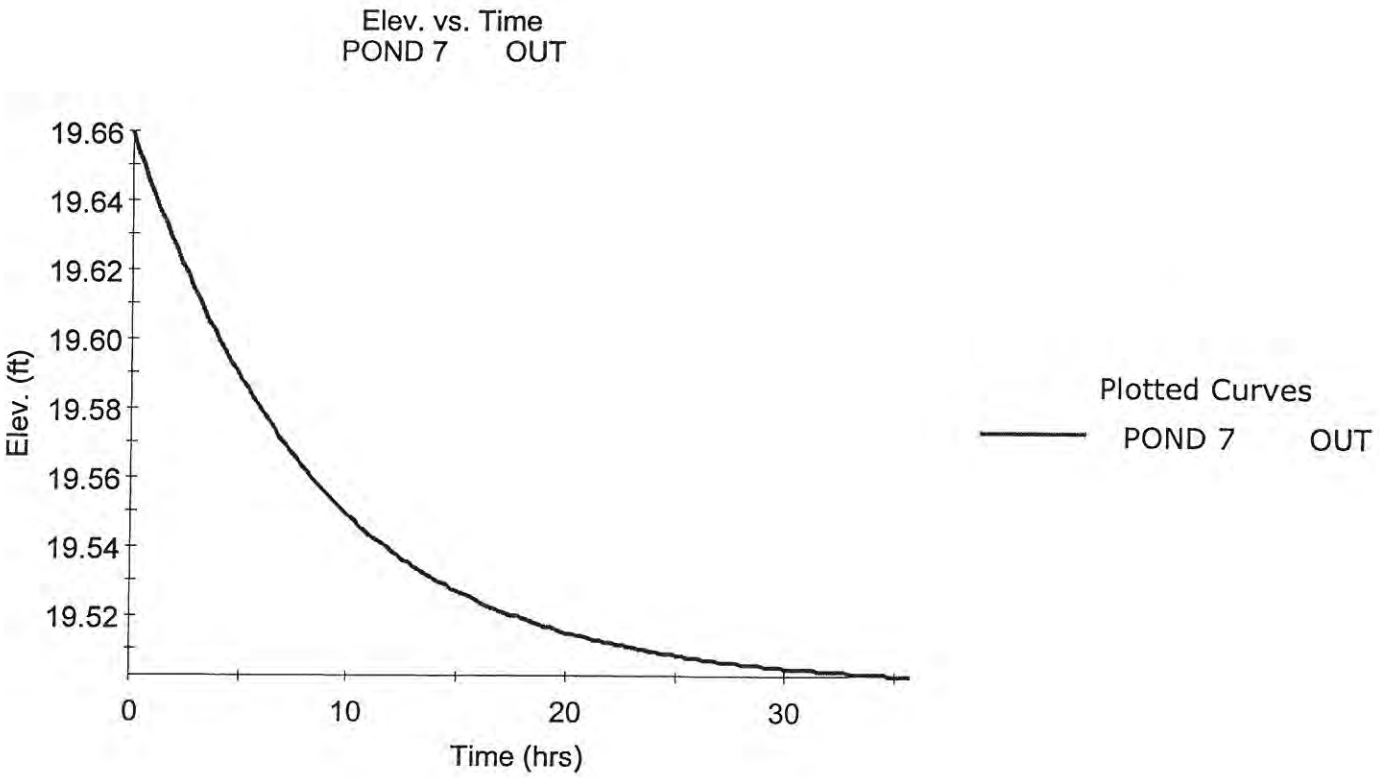
Index of Starting Page Numbers for ID Names

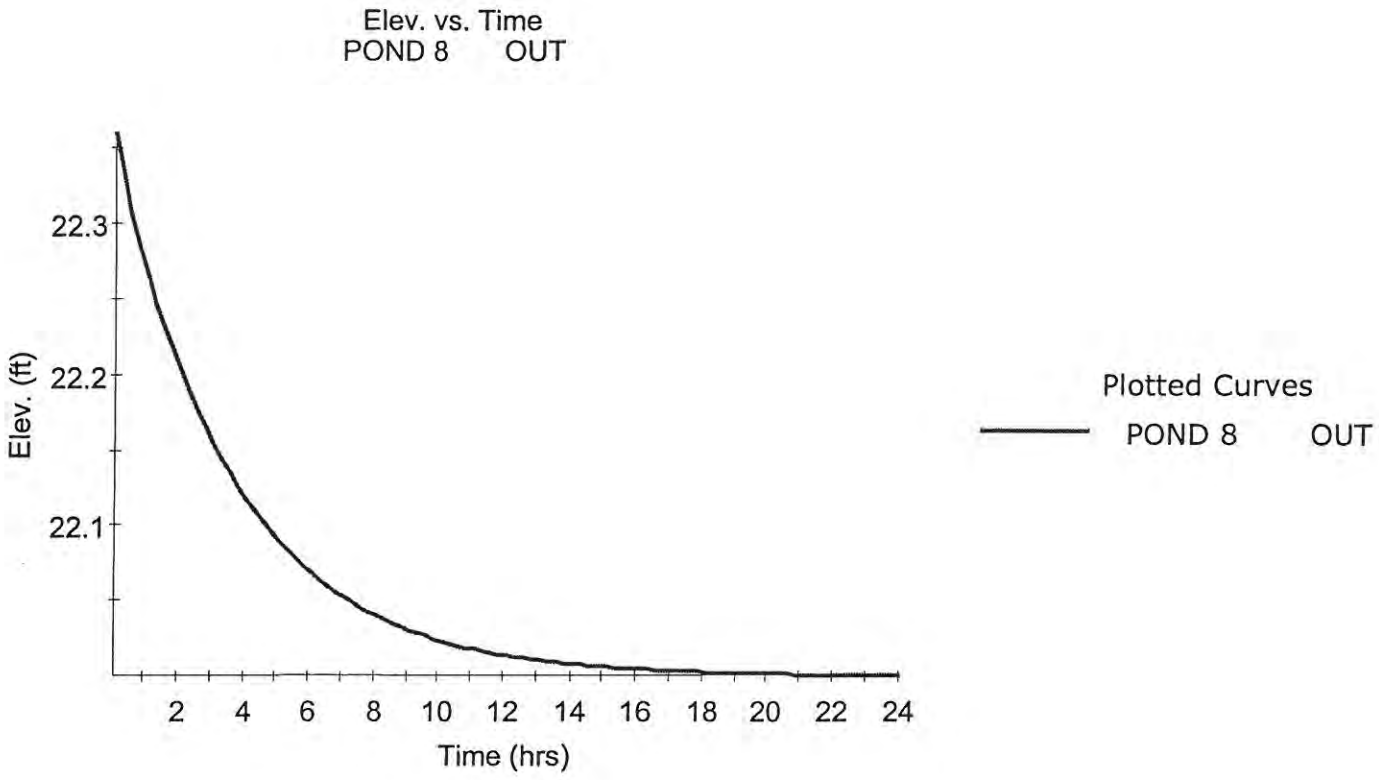
WATER QUALITY CURVES


Elev. vs. Time
POND 1 QUALITOUT
21.0
20.9
20.8
20.7
20.6
Elev. (ft)
0
2
4
6
8
10
12
14
16
18
20
22
24
Time (hrs)
Plotted Curves
POND 1 QUALITOUT


Elev. vs. Time
POND 2 OUT
Elev. (ft)
19.6
19.5
19.4
19.3
19.2
19.1
0 2 4 6 8 10 12 14 16 18 20 22 24
Time (hrs)
Plotted Curves
POND 2 OUT


Elev. vs. Time
POND 5 OUT
22.8
22.6
22.4
22.2
22.0
21.8
21.6
21.4
21.2
Elev. (ft)
0 2 4 6 8 10 12 14 16 18 20 22 24
Time (hrs)
Plotted Curves
POND 5 OUT


Elev. vs. Time
POND 7 OUT
19.66
19.64
19.62
19.60
19.58
19.56
19.54
19.52
Elev. (ft)
0
10
20
30
Time (hrs)
Plotted Curves
POND 7 OUT


Elev. vs. Time
POND 8 OUT
22.3
22.2
22.1
Elev. (ft)
2 4 6 8 10 12 14 16 18 20 22 24
Time (hrs)
Plotted Curves
POND 8 OUT