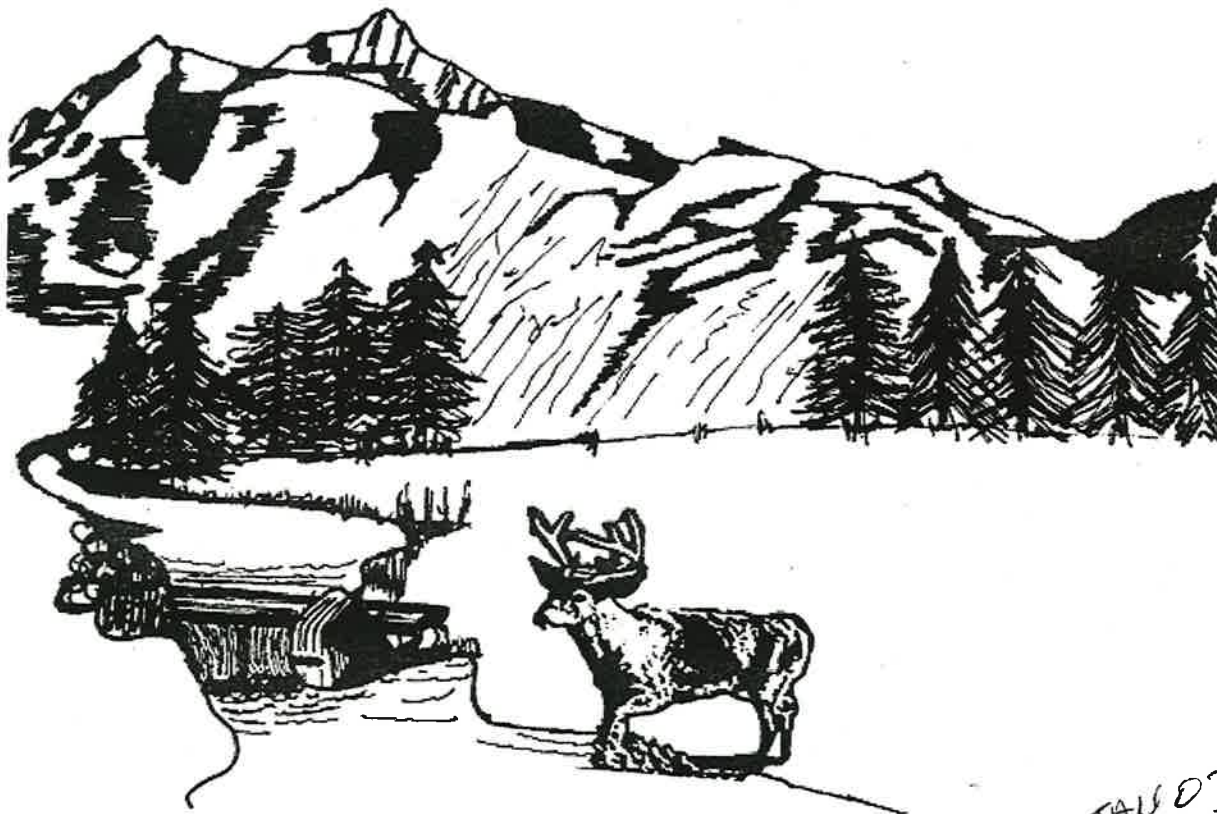

Drainage Report For:

Tip Top Homes- File Number - MN-03-002 SP

January 21, 2003



RECEIVED
JAN 23 2003
CITY OF ARLINGTON

MN-03-002-SP
Tip Top Homes

22 JAN 03
KELLEY E. WRIGG
STATE OF WASHINGTON
35715
REGISTERED ENGINEER
EXPIRES: 01/01/04

Prepared by:

Cascade Surveying & Eng., Inc

Job #14857

Project Summary

1

**Erosion Control Risk
Assessment**

2

**Upstream &
Downstream
Analysis**

3

**Stream Bank Erosion
Control & Water
Quality BMP's**

4

Appendix

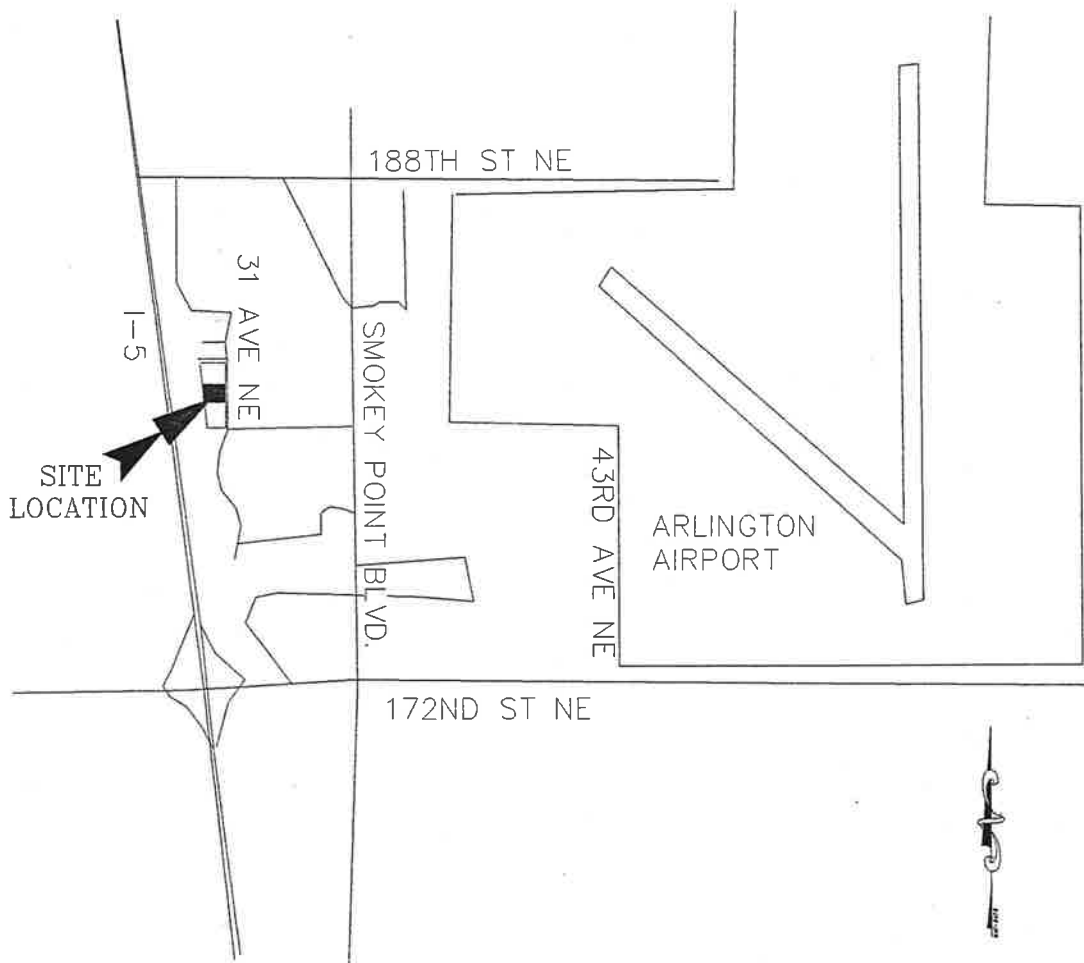
- BASIN MAP
- DRAINAGE MODEL CALCULATIONS
- DRAINAGE FACILITY MAINTENANCE
- SOIL LOGS

5

PROJECT SUMMARY

PROPERTY DESCRIPTION

The site of proposed development is located in the SW ¼ of the NE ¼ of Section 20, Township 31 N, Range 5E, W.M. The property is 1.64 acres in size and is identified as Lots 5 and 6 of the Fur Acres Plat (See Vicinity Map below).



VICINITY MAP N.T.S.

EXISTING CONDITIONS

The developed property consists of an approximate 2,160 sq. ft. house located near the center of the site. In the SW portion of the property is an approximate 1,225 sq. ft. garage. Cutting across the site is an approximate 9,360 sq. ft. gravel driveway that begins at 31st Ave NE and runs west, past the house, ending at the garage. The property gradually slopes at approximately 3% from the south to the north and is generally covered with lawn and landscape as well as young second growth trees. An Onsite soil investigation revealed brown, tan and gray loamy sand throughout from 0-10-ft.. Mottled soils were discovered as high as 6-ft from the surface, and water was encountered as high as 7.5-ft from the surface to 9.5-ft (See Soil Logs for more detail, pp. 42-43). Currently, site stormwater leaves the site via infiltration to groundwater.

PROPOSED DEVELOPMENT

The proposed development for the site is to subdivide the site into 6-Lots, a drainage tract and a public road. Each lot will have its own infiltration trench for rooftop, driveway and yard runoff. All runoff generated by the 184th Place NE road, sidewalk, landscape and the drainage tract will be collected and directed to an infiltration pond located in Tract 999 (See drainage plan). The north portion of the frontage along 31st Ave NE will also be directed to the infiltration pond; however, the south portion of the frontage will be directed to an infiltration trench located at the SE corner of the site.

The pond will be located between soil logs #2 & #4 (See Soil Logs Map pg. 43). Since Mottled soils were found 8-ft. down (elv=114.00') at SL-2 and 6-ft. down (elv=114.00') at SL-4, the pond bottom will be located at an elevation of 117.00' (3-ft from the high winter water table mark).

RISK ASSESSMENT ANALYSIS AND EROSION CONTROL

Slope: Site slopes are 0-3 %, risk is slight.

Critical Areas: None.

Soils: Soils consist of Loamy Sand

Ground Movement Potential: None.

Source of Water Erosion: Rainfall.

Measures Proposed to Prevent/Minimize Erosion:

During Construction: Temporary construction BMP's (see T.E.S.C. construction plan)

After Construction: Seeding and planting of exposed soils

Nearest Downstream body of water other than road ditches: Portage Creek (2-mi.)

Nearest fish bearing water: Portage Creek (2-mi.)

Conclusion: Potential for significant erosion/siltation impact onsite is **Slight** because of the following reason:

1. Site slopes are generally flat.
2. Site soils have a moderate infiltration rate.

UPSTREAM & DOWNSTREAM ANALYSIS

UPSTREAM ANALYSIS

Since area soils are loamy sands (type A soil) and the general topography is flat to slightly sloped there is no upstream runoff entering the site.

DOWNSTREAM ANALYSIS

Since infiltration is being proposed for this site there is no downstream receiving water. Therefore, a downstream analysis is not necessary.

STREAMBANK EROSION CONTROL & WATER QUALITY BEST MANAGEMENT PLANS

STREAMBANK EROSION CONTROL BMP

The streambank erosion control BMP specified for this site is infiltration. Each lot will have its own individual infiltration trench. Each trench is sized to store the runoff generated by the 100-yr. storm event. The design infiltration rate used is 1.205 in/hr which is ½ of the D.O.E. rate for Loamy Sand. All infiltration trenches will be 5-ft wide x 3-ft deep with a 6-inch perf. pipe and back filled with drain rock. The void space used in the model is 31%, based on 30% void space for the drain rock and 100% void space for the perf. pipe. For design purpose, it was assumed that each lot would be covered with the maximum 35% impervious allowed by the zoning code.

An infiltration trench will also be used to control the runoff generated by the south portion of the frontage along 31st Ave NE.

The remainder of the site, including the north portion of the 31st Ave NE frontage, will be directed to an infiltration pond. Due to the limited available area to construct a pond, the pond will be cut with vertical slopes that will be retained with ecology blocks. The pond will be 4-ft deep including 1-ft of freeboard. The pond bottom will be 917 sq. ft. The design infiltration rate used is 1.205 in/hr which is ½ of the D.O.E. rate for Loamy Sand. An overflow pipe will be provided at the west end of the pond for emergency overflow situations. Any pond overflow will be discharged into the drainage ditch parallel to the northbound lanes of Interstate 5.

WATER QUALITY BMP

The water quality BMP proposed for this site is infiltration. All site infiltration systems will be infiltrating through the native Loamy Sand. Since Loamy Sand has a cation exchange capacity of 5 milliequivalents / 100 grams, each infiltration system will be capable of providing water quality treatment.

DRAINAGE MODEL SUMMARY

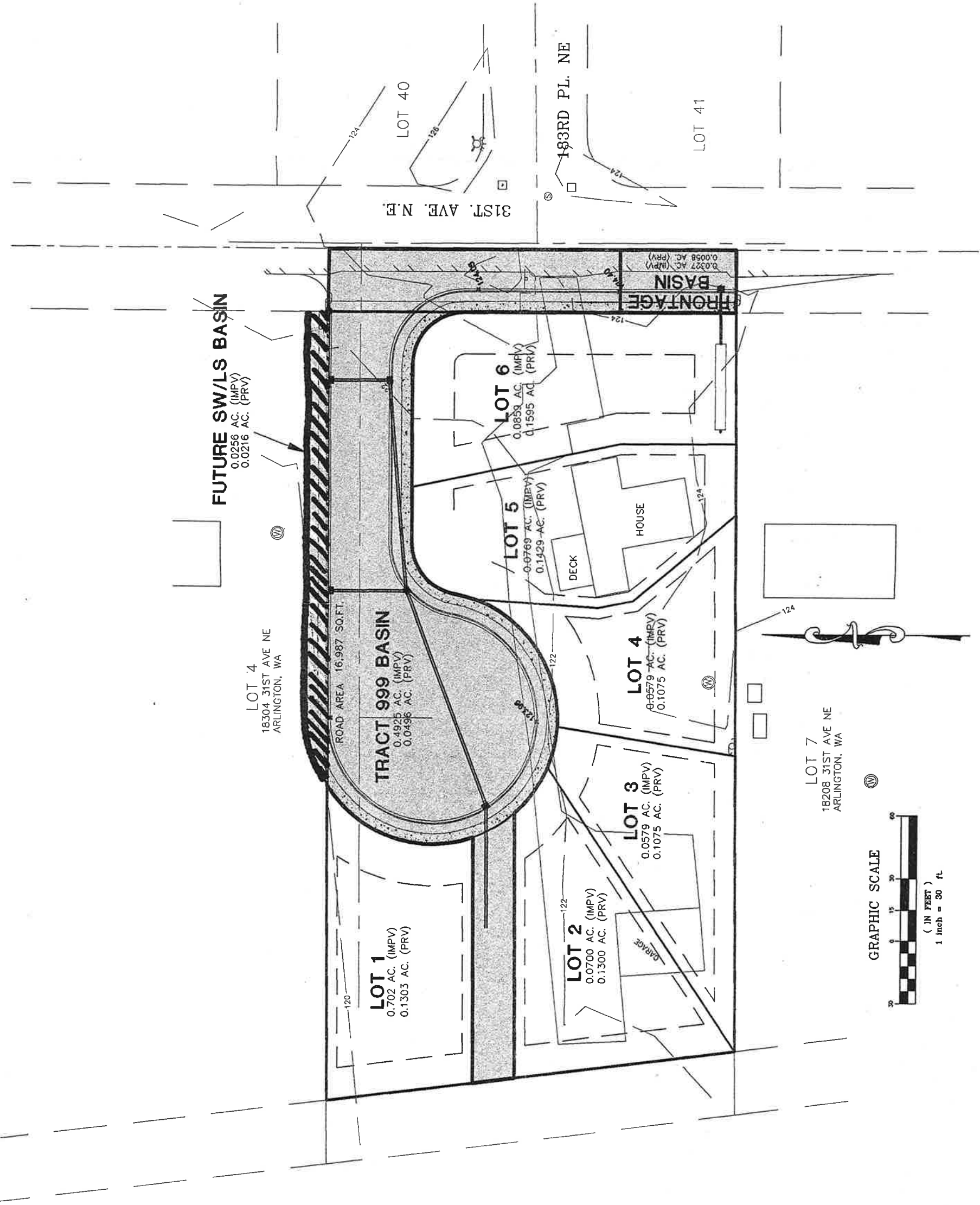
The storm drainage modeling software used is StormSHED Rel. 6.1.6.3. The following table summarizes the results of the drainage model.

INFILTRATION SYSTEM	100-YR VOLUME	TRENCH LENGTH	100-YR STAGE
	cf	ft	ft
Lot 1 Trench	281.06	61	122.97
Lot 2 Trench	279.93	61	122.96
Lot 3 Trench	231.02	50	122.98

Lot 4 Trench	231.02	50	122.98
Lot 5 Trench	308.45	67	122.97
Lot 6 Trench	345.03	75	122.97
Frontage Trench	97.97	22	122.87
Tract 999 Pond	3118.23	N/A	119.97

Table 1: Calculations Summary. Refer to drainage model calculations (pp. 10-36) for more detail.

APPENDIX



FUTURE SW/LS BASIN
 0.0256 AC. (IMPV)
 0.0216 AC. (PRV)

LOT 4
 18304 31ST AVE NE
 ARLINGTON, WA

TRACT 999 BASIN
 0.4925 AC. (IMPV)
 0.0496 AC. (PRV)

LOT 1
 0.702 AC. (IMPV)
 0.1303 AC. (PRV)

LOT 2
 0.0700 AC. (IMPV)
 0.1300 AC. (PRV)

LOT 3
 0.0579 AC. (IMPV)
 0.1075 AC. (PRV)

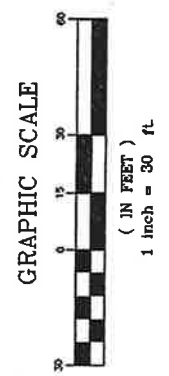
LOT 4
 0.0579 AC. (IMPV)
 0.1075 AC. (PRV)

LOT 5
 0.0769 AC. (IMPV)
 0.1429 AC. (PRV)

LOT 6
 0.0858 AC. (IMPV)
 0.1595 AC. (PRV)

FRONTAGE BASIN
 0.0327 AC. (IMPV)
 0.0058 AC. (PRV)

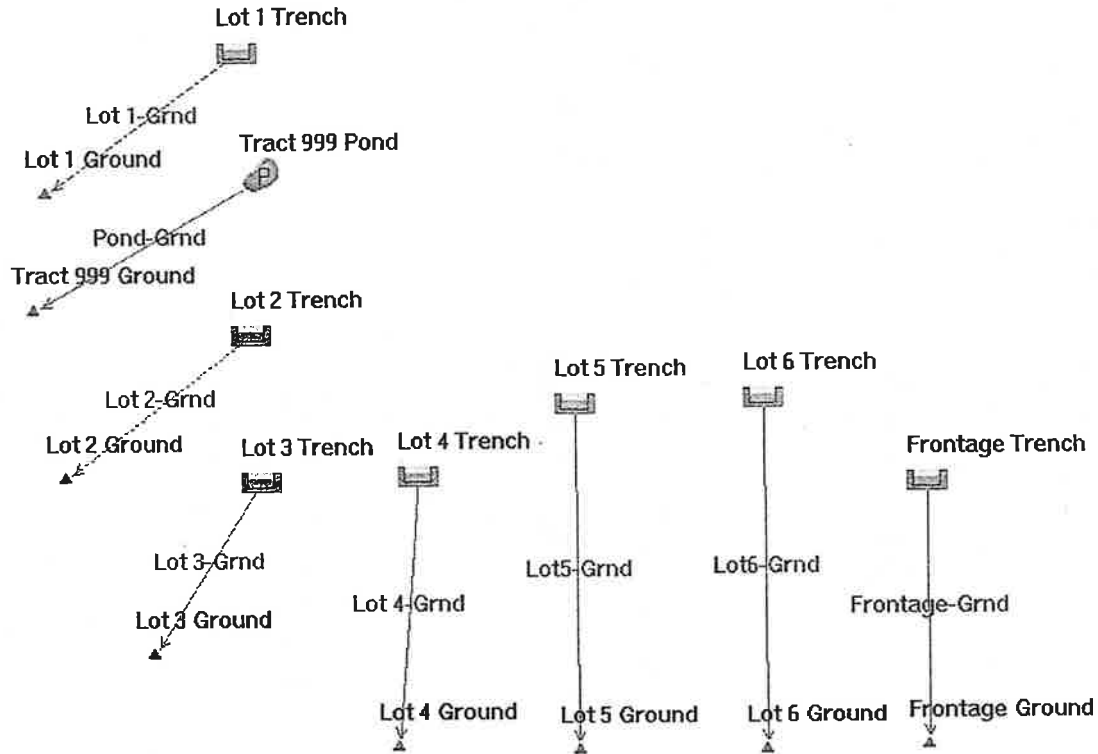
LOT 7
 18208 31ST AVE NE
 ARLINGTON, WA



POND STAGE DISCHARGE CALCULATIONS

ELEV	BOTTOM AREA	INFILTRATION RATE	DEPTH OF WATER	BASE RATE	REVISED RELEASE RATE
<i>ft.^2</i>	<i>ft.^2</i>	<i>in/hr</i>	<i>ft.</i>	<i>c.f.s.</i>	<i>c.f.s.</i>
117.00	0.00	1.205	0.00	0.00000	0.00000
117.01	916.42	1.205	0.01	0.02556	0.02565
118.00	1007.70	1.205	1.00	0.02811	0.03748
119.00	1102.43	1.205	2.00	0.03075	0.05125
120.00	1200.60	1.205	3.00	0.03349	0.05399
121.00	1302.22	1.205	4.00	0.03632	0.05682
BASE RATE = INFILTRATING AREA x 1.205 / 43200					
REVISED RELEASE RATE = BASE RATE x (WATER DEPTH + 3.0)/3.0					

DRAINAGE MODEL REPORT



Project Precips

[6 mo]	1.16 in
[2 yr]	1.80 in
[10 yr]	2.75 in
[100 yr]	3.75 in

Reach Records

Reach ID: Frontage-Grnd

Section Properties:

Shape:	Circular	Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By
48" Diam	Smooth CDEP	0.0120	Mannings Formula
Length	Slope	Entrance Loss	
0.0010 ft	100.00 %	Groove End Projecting	

Diam

4.0000 ft

Up Node	Dn Node	Up Invert	Dn Invert
Frontage Trench	Frontage Ground	120.0000 ft	119.9990 ft

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
-----------	------	----------	----------	--------------

0.0385 ac	0.0074 cf	1560.3243 cf	4.0203 ft/s	0.0078 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.050195 ft	0.250977 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot 1-Grnd

Section Properties:

Shape:	Circular		Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By	
48" Diam	Smooth CDEP	0.0120	Mannings Formula	
Length	Slope	Entrance Loss		
0.0010 ft	100.00 %	Groove End Projecting		

Diam				
4.0000 ft				
Up Node	Dn Node	Up Invert	Dn Invert	
Lot 1 Trench	Lot 1 Ground	120.0000 ft	119.9990 ft	

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.2005 ac	0.0195 cf	1560.3243 cf	5.1046 ft/s	0.0127 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.080921 ft	0.404607 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot 2-Grnd

Section Properties:

Shape:	Circular		Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By	
48" Diam	Smooth CDEP	0.0120	Mannings Formula	
Length	Slope	Entrance Loss		
0.0010 ft	100.00 %	Groove End Projecting		

Diam				
4.0000 ft				
Up Node	Dn Node	Up Invert	Dn Invert	
Lot 2 Trench	Lot 2 Ground	120.0000 ft	119.9990 ft	

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.2000 ac	0.0194 cf	1560.3243 cf	5.0933 ft/s	0.0127 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.080563 ft	0.402814 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot 3-Grnd

Section Properties:

Shape:	Circular		Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By	
48" Diam	Smooth CDEP	0.0120	Mannings Formula	
Length	Slope	Entrance Loss		
0.0010 ft	100.00 %	Groove End Projecting		

Diam

4.0000 ft

Up Node	Dn Node	Up Invert	Dn Invert
Lot 3 Trench	Lot 3 Ground	120.0000 ft	119.9990 ft

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.1654 ac	0.0161 cf	1560.3243 cf	4.7724 ft/s	0.0117 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.070731 ft	0.353657 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot 4-Grnd

Section Properties:

Shape:	Circular	Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By
48" Diam	Smooth CDEP	0.0120	Mannings Formula
Length	Slope	Entrance Loss	
0.0010 ft	100.00 %	Groove End Projecting	

Diam

4.0000 ft

Up Node	Dn Node	Up Invert	Dn Invert
Lot 4 Trench	Lot 4 Ground	120.0000 ft	119.9990 ft

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.1654 ac	0.0161 cf	1560.3243 cf	4.7724 ft/s	0.0117 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.070731 ft	0.353657 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot5-Grnd

Section Properties:

Shape:	Circular	Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By
48" Diam	Smooth CDEP	0.0120	Mannings Formula
Length	Slope	Entrance Loss	
0.0010 ft	100.00 %	Groove End Projecting	

Diam

4.0000 ft

Up Node	Dn Node	Up Invert	Dn Invert
Lot 5 Trench	Lot 5 Ground	120.0000 ft	119.9990 ft

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
-----------	------	----------	----------	--------------

0.2198 ac	0.0213 cf	1560.3243 cf	5.2742 ft/s	0.0132 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.086388 ft	0.431938 ft	0.000000 ft	120.0303 ft	

Reach ID: Lot6-Grnd

Section Properties:

Shape:	Circular		Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By	
48" Diam	Smooth CDEP	0.0120	Mannings Formula	
Length	Slope	Entrance Loss		
0.0010 ft	100.00 %	Groove End Projecting		

Diam				
4.0000 ft				
Up Node	Dn Node	Up Invert	Dn Invert	
Lot 6 Trench	Lot 6 Ground	120.0000 ft	119.9990 ft	

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.2454 ac	0.0237 cf	1560.3243 cf	5.5675 ft/s	0.0137 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.096263 ft	0.481314 ft	0.000000 ft	120.0459 ft	

Reach ID: Pond-Grnd

Section Properties:

Shape:	Circular		Routing Method:	Travel Time Translation
Size	Material	Mannings n	Hyd params By	
48" Diam	Smooth CDEP	0.0120	Mannings Formula	
Length	Slope	Entrance Loss		
0.0010 ft	100.00 %	Groove End Projecting		

Diam				
4.0000 ft				
Up Node	Dn Node	Up Invert	Dn Invert	
Tract 999 Pond	Tract 999 Ground		117.0000 ft	116.9990 ft

Conduit Constraints:

Min Vel	Max Vel	Min Cov	Min Slope	Max Slope	Min drop
2.0000 ft	15.0000 ft	3.0000 ft	0.5000 ft	2.0000 ft	0.0000 ft
In/Exfil	Hold Up	Hold Dn	Match Inv	Allow Smaller	
0.0000 in/hr	NO	NO	YES	NO	

Conduit Summary:

Trib Area	Flow	Capacity	Velocity	Normal Depth
0.5893 ac	0.0539 cf	1560.3243 cf	7.0155 ft/s	0.0203 ft
Ent Loss	Exit Loss	Frict Loss	Start TW	
0.152847 ft	0.764233 ft	0.000000 ft	117.0654 ft	

Node Records

Node ID: Frontage Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Frontage Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	31st frontage	Contrib Hyd:	
Hgl Elev:	122.8677 ft		
Storage Id:	Frontage Storage	Discharge Id:	Frontage Loamy Sand

Node ID: Frontage Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	22.0000 ft	5.0000 ft	31.00

Control Structure ID: Frontage Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 1 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Lot 1 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 1	Contrib Hyd:	
Hgl Elev:	122.9726 ft		
Storage Id:	Lot 1 Storage	Discharge Id:	Lot 1 Loamy Sand

Node ID: Lot 1 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	61.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 1 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 2 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Lot 2 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 2	Contrib Hyd:	
Hgl Elev:	122.9606 ft		
Storage Id:	Lot 2 Storage	Discharge Id:	Lot 2 Loamy Sand

Node ID: Lot 2 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	61.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 2 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 3 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Lot 3 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 3	Contrib Hyd:	
Hgl Elev:	122.9809 ft		
Storage Id:	Lot 3 Storage	Discharge Id:	Lot 3 Loamy Sand

Node ID: Lot 3 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	50.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 3 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 4 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Lot 4 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 4	Contrib Hyd:	
Hgl Elev:	122.9809 ft		
Storage Id:	Lot 4 Storage	Discharge Id:	Lot 4 Loamy Sand

Node ID: Lot 4 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	

Length	Width	Void Ratio
50.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 4 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 5 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0303 ft		

Node ID: Lot 5 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 5	Contrib Hyd:	
Hgl Elev:	122.9702 ft		
Storage Id:	Lot 5 Storage	Discharge Id:	Lot 5 Loamy Sand

Node ID: Lot 5 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	67.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 5 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Lot 6 Ground

Start El:	119.9990 ft	Max El:	124.0000 ft
Contrib Basin:		Contrib Hyd:	
Hgl Elev:	120.0459 ft		

Node ID: Lot 6 Trench

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:	Lot 6	Contrib Hyd:	
Hgl Elev:	122.9680 ft		
Storage Id:	Lot 6 Storage	Discharge Id:	Lot 6 Loamy Sand

Node ID: Lot 6 Storage

Start El:	120.0000 ft	Max El:	123.0000 ft
Contrib Basin:		Contrib Hyd:	
	Length	Width	Void Ratio
	75.0000 ft	5.0000 ft	31.00

Control Structure ID: Lot 6 Loamy Sand - Infiltration control structure

Start El	Max El	Increment		
120.0000 ft	121.0000 ft	0.10		
Infil:	1.21 in/hr		Multiplier:	1.00

Node ID: Tract 999 Ground

Start El: 116.9990 ft
Contrib Basin:
Hgl Elev: 117.0654 ft

Max El: 122.0000 ft
Contrib Hyd:

Node ID: Tract 999 Pond

Start El: 117.0000 ft
Contrib Basin: 184th + Tract 999
Hgl Elev: 119.9606 ft
Storage Id: Tract 999 Storage

Max El: 122.0000 ft
Contrib Hyd:
Discharge Id: Pond Loamy Sand

Node ID: Tract 999 Storage

Start El: 117.0000 ft
Contrib Basin:

Max El: 121.0000 ft
Contrib Hyd:

Stage	Area	Volume	Volume
117.00	0.00	0.00 cf	0.0000 acft
117.01	916.42	4.58 cf	0.0001 acft
118.00	1007.70	957.02 cf	0.0220 acft
119.00	1102.43	2012.09 cf	0.0462 acft
120.00	1200.60	3163.60 cf	0.0726 acft
121.00	1302.22	4415.01 cf	0.1014 acft

Control Structure ID: Pond Loamy Sand - Stage Discharge rating curve

Start El	Max El	Increment
117.0000 ft	121.0000 ft	0.10
Stage	Discharge	
117.0000 ft	0.0000 cfs	
117.0100 ft	0.0256 cfs	
118.0000 ft	0.0375 cfs	
119.0000 ft	0.0512 cfs	
120.0000 ft	0.0540 cfs	
121.0000 ft	0.0568 cfs	

Contributing Drainage Areas

Drainage Area: 184th + Tract 999

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.0712 ac	68.00	0.13 hrs
Impervious	0.5181 ac	98.00	0.09 hrs
Total	0.5893 ac		

Supporting Data:

Pervious CN Data:

landscape/ pond area	68.00	0.0496 ac
future N landscape along 184th	68.00	0.0216 ac

Impervious CN Data:

road/sidewalk	98.00	0.4925 ac
future sidewalk along N 184th	98.00	0.0256 ac

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	9.00 ft	0.50%	0.1500	3.31 min
Shallow	gutter	133.00 ft	0.50%	27.0000	1.54 min
Channel	pipe	267.00 ft	0.50%	21.0000	3.00 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	road	25.00 ft	0.50%	0.0110	0.93 min
Shallow	gutter	125.00 ft	0.50%	27.0000	1.45 min
Channel	pipe	267.00 ft	0.50%	21.0000	3.00 min

Drainage Area: 31st frontage

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.0058 ac	68.00	0.07 hrs
Impervious	0.0327 ac	98.00	0.05 hrs
Total	0.0385 ac		

Supporting Data:

Pervious CN Data:

landscape	68.00	0.0058 ac
-----------	-------	-----------

Impervious CN Data:

road/sidewalk	98.00	0.0327 ac
---------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	8.00 ft	0.50%	0.1500	3.02 min
Shallow	gutter	90.00 ft	0.50%	27.0000	1.04 min
Channel	pipe	20.00 ft	0.50%	21.0000	0.22 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	road	107.00 ft	0.50%	0.0110	2.97 min
Channel	pipe	20.00 ft	0.50%	21.0000	0.22 min

Drainage Area: Lot 1

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC

Pervious	0.1303 ac	68.00	0.10 hrs
Impervious	0.0702 ac	98.00	0.02 hrs
Total	0.2005 ac		

Supporting Data:

Pervious CN Data:

landscape	68.00	0.1303 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0702 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Drainage Area: Lot 2

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.1300 ac	68.00	0.10 hrs
Impervious	0.0700 ac	98.00	0.02 hrs
Total	0.2000 ac		

Supporting Data:

Pervious CN Data:

landscape	68.00	0.1300 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0700 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Drainage Area: Lot 3

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.1075 ac	68.00	0.10 hrs
Impervious	0.0579 ac	98.00	0.02 hrs
Total	0.1654 ac		

Supporting Data:

Pervious CN Data:

landscape	68.00	0.1075 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0579 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Drainage Area: Lot 4

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.1075 ac	68.00	0.10 hrs
Impervious	0.0579 ac	98.00	0.02 hrs
Total	0.1654 ac		

Supporting Data:**Pervious CN Data:**

landscape	68.00	0.1075 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0579 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Drainage Area: Lot 5

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC
Pervious	0.1429 ac	68.00	0.10 hrs
Impervious	0.0769 ac	98.00	0.02 hrs
Total	0.2198 ac		

Supporting Data:**Pervious CN Data:**

landscape	68.00	0.1429 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0769 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Drainage Area: Lot 6

Hyd Method:	SBUH Hyd	Loss Method:	SCS CN Number
Peak Factor:	484.00	SCS Abs:	0.20
Storm Dur:	24.00 hrs	Intv:	10.00 min
	Area	CN	TC

Pervious	0.1595 ac	68.00	0.10 hrs
Impervious	0.0859 ac	98.00	0.02 hrs
Total	0.2454 ac		

Supporting Data:

Pervious CN Data:

landscape	68.00	0.1595 ac
-----------	-------	-----------

Impervious CN Data:

house/driveway	98.00	0.0859 ac
----------------	-------	-----------

Pervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	across landscape	20.00 ft	0.50%	0.1500	6.28 min

Impervious TC Data:

Flow type:	Description:	Length:	Slope:	Coeff:	Travel Time
Sheet	roof	15.00 ft	0.50%	0.0110	0.62 min
Channel	gutter	50.00 ft	0.50%	21.0000	0.56 min
Channel	pipe	15.00 ft	2.00%	21.0000	0.08 min

Layout Hydrographs

Hydrograph ID: Tract 999 Ground - 6 mo

Area:	0.5893 ac	Hyd Int:	10.00 min	Base Flow:	
Pending translation:	0.00 min				
Peak Flow:	0.0295 cfs	Peak Time:	10.00 hrs	Hyd Vol:	0.0409 acft
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
1.83	0.0013	9.50	0.0295	17.00	0.0272
2.00	0.0013	9.67	0.0295	17.17	0.0272
2.17	0.0025	9.83	0.0295	17.33	0.0271
2.33	0.0038	10.00	0.0295	17.50	0.0270
2.50	0.0050	10.17	0.0295	17.67	0.0269
2.67	0.0050	10.33	0.0295	17.83	0.0268
2.83	0.0063	10.50	0.0295	18.00	0.0268
3.00	0.0063	10.67	0.0295	18.17	0.0267
3.17	0.0075	10.83	0.0295	18.33	0.0266
3.33	0.0075	11.00	0.0294	18.50	0.0265
3.50	0.0075	11.17	0.0294	18.67	0.0264
3.67	0.0100	11.33	0.0294	18.83	0.0264
3.83	0.0088	11.50	0.0293	19.00	0.0263
4.00	0.0113	11.67	0.0293	19.17	0.0262
4.17	0.0100	11.83	0.0292	19.33	0.0261
4.33	0.0138	12.00	0.0292	19.50	0.0260
4.50	0.0125	12.17	0.0291	19.67	0.0259
4.67	0.0138	12.33	0.0291	19.83	0.0258
4.83	0.0150	12.50	0.0290	20.00	0.0258
5.00	0.0163	12.67	0.0290	20.17	0.0257
5.17	0.0163	12.83	0.0289	20.33	0.0138
5.33	0.0188	13.00	0.0289	20.50	0.0138
5.50	0.0188	13.17	0.0288	20.67	0.0138
5.67	0.0200	13.33	0.0287	20.83	0.0150
5.83	0.0213	13.50	0.0287	21.00	0.0138
6.00	0.0213	13.67	0.0286	21.17	0.0150
6.17	0.0238	13.83	0.0286	21.33	0.0138
6.33	0.0250	14.00	0.0285	21.50	0.0138
6.50	0.0257	14.17	0.0284	21.67	0.0150
6.67	0.0257	14.33	0.0284	21.83	0.0138
6.83	0.0257	14.50	0.0283	22.00	0.0150
7.00	0.0258	14.67	0.0282	22.17	0.0138
7.17	0.0259	14.83	0.0282	22.33	0.0125
7.33	0.0260	15.00	0.0281	22.50	0.0138
7.50	0.0261	15.17	0.0280	22.67	0.0125
7.67	0.0263	15.33	0.0280	22.83	0.0138
7.83	0.0269	15.50	0.0279	23.00	0.0125
8.00	0.0276	15.67	0.0278	23.17	0.0138
8.17	0.0282	15.83	0.0277	23.33	0.0125
8.33	0.0286	16.00	0.0277	23.50	0.0138
8.50	0.0288	16.17	0.0276	23.67	0.0125
8.67	0.0290	16.33	0.0275	23.83	0.0138
8.83	0.0292	16.50	0.0274	24.00	0.0125
9.00	0.0293	16.67	0.0274	24.17	0.0100
9.17	0.0294	16.83	0.0273	24.33	0.0013
9.33	0.0294	17.00	0.0272	24.50	0.0000

Hydrograph ID: Tract 999 Ground - 100 yr

Area: 0.5893 ac Hyd Int: 10.00 min Base Flow:
 Pending translation: 0.00 min

Peak Flow: 0.0539 cfs Peak Time: 19.00 hrs Hyd Vol: 0.1580 acft

Time hr	Flow cfs	Time hr	Flow cfs	Time hr	Flow cfs
0.83	0.0038	15.67	0.0537	30.17	0.0498
1.00	0.0075	15.83	0.0537	30.33	0.0495
1.17	0.0150	16.00	0.0537	30.50	0.0491
1.33	0.0188	16.17	0.0538	30.67	0.0487
1.50	0.0250	16.33	0.0538	30.83	0.0483
1.67	0.0257	16.50	0.0538	31.00	0.0479
1.83	0.0257	16.67	0.0538	31.17	0.0476
2.00	0.0258	16.83	0.0538	31.33	0.0472
2.17	0.0259	17.00	0.0538	31.50	0.0468
2.33	0.0260	17.17	0.0538	31.67	0.0464
2.50	0.0261	17.33	0.0538	31.83	0.0461
2.67	0.0263	17.50	0.0538	32.00	0.0457
2.83	0.0265	17.67	0.0539	32.17	0.0454
3.00	0.0266	17.83	0.0539	32.33	0.0450
3.17	0.0268	18.00	0.0539	32.50	0.0447
3.33	0.0270	18.17	0.0539	32.67	0.0443
3.50	0.0272	18.33	0.0539	32.83	0.0440
3.67	0.0274	18.50	0.0539	33.00	0.0436
3.83	0.0276	18.67	0.0539	33.17	0.0433
4.00	0.0278	18.83	0.0539	33.33	0.0430
4.17	0.0281	19.00	0.0539	33.50	0.0426
4.33	0.0283	19.17	0.0539	33.67	0.0423
4.50	0.0286	19.33	0.0539	33.83	0.0420
4.67	0.0289	19.50	0.0539	34.00	0.0416
4.83	0.0292	19.67	0.0539	34.17	0.0413
5.00	0.0296	19.83	0.0539	34.33	0.0410
5.17	0.0299	20.00	0.0539	34.50	0.0407
5.33	0.0303	20.17	0.0539	34.67	0.0403
5.50	0.0307	20.33	0.0538	34.83	0.0400
5.67	0.0311	20.50	0.0538	35.00	0.0397
5.83	0.0316	20.67	0.0538	35.17	0.0394
6.00	0.0320	20.83	0.0538	35.33	0.0391
6.17	0.0325	21.00	0.0538	35.50	0.0388
6.33	0.0330	21.17	0.0538	35.67	0.0385
6.50	0.0336	21.33	0.0538	35.83	0.0382
6.67	0.0342	21.50	0.0538	36.00	0.0379
6.83	0.0349	21.67	0.0538	36.17	0.0376
7.00	0.0356	21.83	0.0538	36.33	0.0373
7.17	0.0364	22.00	0.0538	36.50	0.0370
7.33	0.0372	22.17	0.0538	36.67	0.0368
7.50	0.0382	22.33	0.0538	36.83	0.0365
7.67	0.0397	22.50	0.0538	37.00	0.0362
7.83	0.0423	22.67	0.0538	37.17	0.0360
8.00	0.0455	22.83	0.0538	37.33	0.0357
8.17	0.0482	23.00	0.0537	37.50	0.0354
8.33	0.0500	23.17	0.0537	37.67	0.0352
8.50	0.0513	23.33	0.0537	37.83	0.0349
8.67	0.0515	23.50	0.0537	38.00	0.0346
8.83	0.0517	23.67	0.0537	38.17	0.0344
9.00	0.0518	23.83	0.0537	38.33	0.0341
9.17	0.0520	24.00	0.0537	38.50	0.0339
9.33	0.0521	24.17	0.0537	38.67	0.0336
9.50	0.0522	24.33	0.0536	38.83	0.0334
9.67	0.0523	24.50	0.0535	39.00	0.0331
9.83	0.0524	24.67	0.0535	39.17	0.0329
10.00	0.0525	24.83	0.0534	39.33	0.0326
10.17	0.0525	25.00	0.0533	39.50	0.0324
10.33	0.0526	25.17	0.0532	39.67	0.0321
10.50	0.0527	25.33	0.0531	39.83	0.0319
10.67	0.0527	25.50	0.0531	40.00	0.0317
10.83	0.0528	25.67	0.0530	40.17	0.0314
11.00	0.0528	25.83	0.0529	40.33	0.0312

11.17	0.0529	26.00	0.0528	40.50	0.0310
11.33	0.0529	26.17	0.0528	40.67	0.0307
11.50	0.0530	26.33	0.0527	40.83	0.0305
11.67	0.0530	26.50	0.0526	41.00	0.0303
11.83	0.0531	26.67	0.0525	41.17	0.0301
12.00	0.0531	26.83	0.0525	41.33	0.0298
12.17	0.0532	27.00	0.0524	41.50	0.0296
12.33	0.0532	27.17	0.0523	41.67	0.0294
12.50	0.0532	27.33	0.0522	41.83	0.0292
12.67	0.0533	27.50	0.0522	42.00	0.0290
12.83	0.0533	27.67	0.0521	42.17	0.0288
13.00	0.0533	27.83	0.0520	42.33	0.0285
13.17	0.0534	28.00	0.0519	42.50	0.0283
13.33	0.0534	28.17	0.0519	42.67	0.0281
13.50	0.0534	28.33	0.0518	42.83	0.0279
13.67	0.0535	28.50	0.0517	43.00	0.0277
13.83	0.0535	28.67	0.0517	43.17	0.0275
14.00	0.0535	28.83	0.0516	43.33	0.0273
14.17	0.0535	29.00	0.0515	43.50	0.0271
14.33	0.0536	29.17	0.0514	43.67	0.0269
14.50	0.0536	29.33	0.0514	43.83	0.0267
14.67	0.0536	29.50	0.0513	44.00	0.0265
14.83	0.0536	29.67	0.0510	44.17	0.0263
15.00	0.0536	29.83	0.0506	44.33	0.0261
15.17	0.0537	30.00	0.0502	44.50	0.0259
15.33	0.0537	30.17	0.0498	44.67	0.0257
15.50	0.0537	30.33	0.0495	44.83	0.0025

Hydrograph ID: Lot 1 Ground - 100 yr

Area: 0.2005 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0195 cfs		Peak Time: 11.50 hrs	
Hyd Vol: 0.0313 acft		Time		Flow	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0011	9.67	0.0189	18.33	0.0175
1.00	0.0014	9.83	0.0190	18.50	0.0174
1.17	0.0027	10.00	0.0192	18.67	0.0173
1.33	0.0030	10.17	0.0192	18.83	0.0172
1.50	0.0039	10.33	0.0193	19.00	0.0171
1.67	0.0041	10.50	0.0194	19.17	0.0171
1.83	0.0050	10.67	0.0194	19.33	0.0170
2.00	0.0049	10.83	0.0194	19.50	0.0169
2.17	0.0059	11.00	0.0194	19.67	0.0168
2.33	0.0059	11.17	0.0194	19.83	0.0167
2.50	0.0065	11.33	0.0194	20.00	0.0166
2.67	0.0063	11.50	0.0195	20.17	0.0165
2.83	0.0069	11.67	0.0195	20.33	0.0165
3.00	0.0066	11.83	0.0194	20.50	0.0164
3.17	0.0072	12.00	0.0194	20.67	0.0163
3.33	0.0069	12.17	0.0194	20.83	0.0162
3.50	0.0074	12.33	0.0194	21.00	0.0162
3.67	0.0074	12.50	0.0194	21.17	0.0161
3.83	0.0081	12.67	0.0193	21.33	0.0160
4.00	0.0077	12.83	0.0193	21.50	0.0160
4.17	0.0085	13.00	0.0193	21.67	0.0159
4.33	0.0085	13.17	0.0192	21.83	0.0158
4.50	0.0085	13.33	0.0192	22.00	0.0158
4.67	0.0086	13.50	0.0192	22.17	0.0157
4.83	0.0086	13.67	0.0191	22.33	0.0156
5.00	0.0086	13.83	0.0191	22.50	0.0156
5.17	0.0087	14.00	0.0190	22.67	0.0155
5.33	0.0087	14.17	0.0190	22.83	0.0154
5.50	0.0088	14.33	0.0189	23.00	0.0153
5.67	0.0089	14.50	0.0189	23.17	0.0153
5.83	0.0090	14.67	0.0188	23.33	0.0152
6.00	0.0091	14.83	0.0188	23.50	0.0151
6.17	0.0091	15.00	0.0187	23.67	0.0151
6.33	0.0093	15.17	0.0187	23.83	0.0150
6.50	0.0094	15.33	0.0186	24.00	0.0150
6.67	0.0095	15.50	0.0185	24.17	0.0148
6.83	0.0097	15.67	0.0185	24.33	0.0145
7.00	0.0099	15.83	0.0184	24.50	0.0142
7.17	0.0102	16.00	0.0184	24.67	0.0139
7.33	0.0105	16.17	0.0183	24.83	0.0135
7.50	0.0108	16.33	0.0182	25.00	0.0132
7.67	0.0115	16.50	0.0182	25.17	0.0129
7.83	0.0128	16.67	0.0181	25.33	0.0126
8.00	0.0143	16.83	0.0181	25.50	0.0123
8.17	0.0156	17.00	0.0180	25.67	0.0120
8.33	0.0163	17.17	0.0179	25.83	0.0118
8.50	0.0169	17.33	0.0179	26.00	0.0115
8.67	0.0174	17.50	0.0178	26.17	0.0112
8.83	0.0178	17.67	0.0177	26.33	0.0110
9.00	0.0181	17.83	0.0177	26.50	0.0107
9.17	0.0184	18.00	0.0176	26.67	0.0105
9.33	0.0186	18.17	0.0175	26.83	0.0102
9.50	0.0188	18.33	0.0175	27.00	0.0100

Hydrograph ID: Lot 2 Ground - 100 yr

Area: 0.2000 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0194 cfs		Peak Time: 11.17 hrs	
Peak Flow: 0.0194 cfs		Peak Time: 11.17 hrs		Hyd Vol: 0.0311 acft	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0011	9.67	0.0189	18.33	0.0174
1.00	0.0014	9.83	0.0190	18.50	0.0173
1.17	0.0027	10.00	0.0191	18.67	0.0173
1.33	0.0030	10.17	0.0192	18.83	0.0172
1.50	0.0039	10.33	0.0193	19.00	0.0171
1.67	0.0041	10.50	0.0193	19.17	0.0170
1.83	0.0050	10.67	0.0194	19.33	0.0169
2.00	0.0049	10.83	0.0194	19.50	0.0168
2.17	0.0059	11.00	0.0194	19.67	0.0167
2.33	0.0059	11.17	0.0194	19.83	0.0167
2.50	0.0065	11.33	0.0194	20.00	0.0166
2.67	0.0063	11.50	0.0194	20.17	0.0165
2.83	0.0069	11.67	0.0194	20.33	0.0164
3.00	0.0066	11.83	0.0194	20.50	0.0163
3.17	0.0072	12.00	0.0194	20.67	0.0163
3.33	0.0069	12.17	0.0194	20.83	0.0162
3.50	0.0074	12.33	0.0194	21.00	0.0161
3.67	0.0074	12.50	0.0193	21.17	0.0160
3.83	0.0081	12.67	0.0193	21.33	0.0160
4.00	0.0077	12.83	0.0192	21.50	0.0159
4.17	0.0085	13.00	0.0192	21.67	0.0159
4.33	0.0085	13.17	0.0192	21.83	0.0158
4.50	0.0085	13.33	0.0191	22.00	0.0157
4.67	0.0086	13.50	0.0191	22.17	0.0157
4.83	0.0086	13.67	0.0191	22.33	0.0156
5.00	0.0086	13.83	0.0190	22.50	0.0155
5.17	0.0087	14.00	0.0190	22.67	0.0154
5.33	0.0087	14.17	0.0189	22.83	0.0154
5.50	0.0088	14.33	0.0189	23.00	0.0153
5.67	0.0089	14.50	0.0188	23.17	0.0152
5.83	0.0090	14.67	0.0188	23.33	0.0152
6.00	0.0090	14.83	0.0187	23.50	0.0151
6.17	0.0091	15.00	0.0187	23.67	0.0150
6.33	0.0093	15.17	0.0186	23.83	0.0150
6.50	0.0094	15.33	0.0186	24.00	0.0149
6.67	0.0095	15.50	0.0185	24.17	0.0148
6.83	0.0097	15.67	0.0185	24.33	0.0145
7.00	0.0099	15.83	0.0184	24.50	0.0141
7.17	0.0101	16.00	0.0183	24.67	0.0138
7.33	0.0104	16.17	0.0183	24.83	0.0135
7.50	0.0108	16.33	0.0182	25.00	0.0132
7.67	0.0115	16.50	0.0181	25.17	0.0129
7.83	0.0128	16.67	0.0181	25.33	0.0126
8.00	0.0143	16.83	0.0180	25.50	0.0123
8.17	0.0155	17.00	0.0180	25.67	0.0120
8.33	0.0162	17.17	0.0179	25.83	0.0117
8.50	0.0168	17.33	0.0178	26.00	0.0115
8.67	0.0174	17.50	0.0178	26.17	0.0112
8.83	0.0177	17.67	0.0177	26.33	0.0110
9.00	0.0181	17.83	0.0176	26.50	0.0107
9.17	0.0184	18.00	0.0176	26.67	0.0104
9.33	0.0186	18.17	0.0175	26.83	0.0102
9.50	0.0187	18.33	0.0174	27.00	0.0100

Hydrograph ID: Lot 3 Ground - 100 yr

Area: 0.1654 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0161 cfs		Peak Time: 11.50 hrs	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0000	9.17	0.0153	17.33	0.0148
1.00	0.0030	9.33	0.0154	17.50	0.0147
1.17	0.0000	9.50	0.0156	17.67	0.0146
1.33	0.0051	9.67	0.0157	17.83	0.0146
1.50	0.0000	9.83	0.0158	18.00	0.0145
1.67	0.0070	10.00	0.0159	18.17	0.0145
1.83	0.0000	10.17	0.0160	18.33	0.0144
2.00	0.0070	10.33	0.0160	18.50	0.0143
2.17	0.0040	10.50	0.0160	18.67	0.0143
2.33	0.0058	10.67	0.0161	18.83	0.0142
2.50	0.0044	10.83	0.0161	19.00	0.0141
2.67	0.0061	11.00	0.0161	19.17	0.0141
2.83	0.0048	11.17	0.0161	19.33	0.0140
3.00	0.0064	11.33	0.0161	19.50	0.0139
3.17	0.0050	11.50	0.0161	19.67	0.0139
3.33	0.0066	11.67	0.0161	19.83	0.0138
3.50	0.0052	11.83	0.0161	20.00	0.0137
3.67	0.0070	12.00	0.0161	20.17	0.0136
3.83	0.0059	12.17	0.0161	20.33	0.0136
4.00	0.0070	12.33	0.0161	20.50	0.0135
4.17	0.0069	12.50	0.0160	20.67	0.0134
4.33	0.0070	12.67	0.0160	20.83	0.0134
4.50	0.0070	12.83	0.0160	21.00	0.0133
4.67	0.0070	13.00	0.0159	21.17	0.0133
4.83	0.0070	13.17	0.0159	21.33	0.0132
5.00	0.0071	13.33	0.0159	21.50	0.0132
5.17	0.0071	13.50	0.0158	21.67	0.0131
5.33	0.0072	13.67	0.0158	21.83	0.0131
5.50	0.0072	13.83	0.0158	22.00	0.0130
5.67	0.0073	14.00	0.0157	22.17	0.0129
5.83	0.0074	14.17	0.0157	22.33	0.0129
6.00	0.0074	14.33	0.0157	22.50	0.0128
6.17	0.0075	14.50	0.0156	22.67	0.0128
6.33	0.0076	14.67	0.0156	22.83	0.0127
6.50	0.0077	14.83	0.0155	23.00	0.0126
6.67	0.0079	15.00	0.0155	23.17	0.0126
6.83	0.0080	15.17	0.0154	23.33	0.0125
7.00	0.0082	15.33	0.0154	23.50	0.0125
7.17	0.0084	15.50	0.0153	23.67	0.0124
7.33	0.0086	15.67	0.0153	23.83	0.0124
7.50	0.0089	15.83	0.0152	24.00	0.0123
7.67	0.0095	16.00	0.0152	24.17	0.0122
7.83	0.0106	16.17	0.0151	24.33	0.0120
8.00	0.0119	16.33	0.0151	24.50	0.0117
8.17	0.0129	16.50	0.0150	24.67	0.0114
8.33	0.0135	16.67	0.0150	24.83	0.0111
8.50	0.0140	16.83	0.0149	25.00	0.0109
8.67	0.0144	17.00	0.0149	25.17	0.0106
8.83	0.0147	17.17	0.0148	25.33	0.0104
9.00	0.0151	17.33	0.0148	25.50	0.0101

Hydrograph ID: Lot 4 Ground - 100 yr

Area: 0.1654 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0161 cfs		Peak Time: 11.50 hrs	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0000	9.17	0.0153	17.33	0.0148
1.00	0.0030	9.33	0.0154	17.50	0.0147
1.17	0.0000	9.50	0.0156	17.67	0.0146
1.33	0.0051	9.67	0.0157	17.83	0.0146
1.50	0.0000	9.83	0.0158	18.00	0.0145
1.67	0.0070	10.00	0.0159	18.17	0.0145
1.83	0.0000	10.17	0.0160	18.33	0.0144
2.00	0.0070	10.33	0.0160	18.50	0.0143
2.17	0.0040	10.50	0.0160	18.67	0.0143
2.33	0.0058	10.67	0.0161	18.83	0.0142
2.50	0.0044	10.83	0.0161	19.00	0.0141
2.67	0.0061	11.00	0.0161	19.17	0.0141
2.83	0.0048	11.17	0.0161	19.33	0.0140
3.00	0.0064	11.33	0.0161	19.50	0.0139
3.17	0.0050	11.50	0.0161	19.67	0.0139
3.33	0.0066	11.67	0.0161	19.83	0.0138
3.50	0.0052	11.83	0.0161	20.00	0.0137
3.67	0.0070	12.00	0.0161	20.17	0.0136
3.83	0.0059	12.17	0.0161	20.33	0.0136
4.00	0.0070	12.33	0.0161	20.50	0.0135
4.17	0.0069	12.50	0.0160	20.67	0.0134
4.33	0.0070	12.67	0.0160	20.83	0.0134
4.50	0.0070	12.83	0.0160	21.00	0.0133
4.67	0.0070	13.00	0.0159	21.17	0.0133
4.83	0.0070	13.17	0.0159	21.33	0.0132
5.00	0.0071	13.33	0.0159	21.50	0.0132
5.17	0.0071	13.50	0.0158	21.67	0.0131
5.33	0.0072	13.67	0.0158	21.83	0.0131
5.50	0.0072	13.83	0.0158	22.00	0.0130
5.67	0.0073	14.00	0.0157	22.17	0.0129
5.83	0.0074	14.17	0.0157	22.33	0.0129
6.00	0.0074	14.33	0.0157	22.50	0.0128
6.17	0.0075	14.50	0.0156	22.67	0.0128
6.33	0.0076	14.67	0.0156	22.83	0.0127
6.50	0.0077	14.83	0.0155	23.00	0.0126
6.67	0.0079	15.00	0.0155	23.17	0.0126
6.83	0.0080	15.17	0.0154	23.33	0.0125
7.00	0.0082	15.33	0.0154	23.50	0.0125
7.17	0.0084	15.50	0.0153	23.67	0.0124
7.33	0.0086	15.67	0.0153	23.83	0.0124
7.50	0.0089	15.83	0.0152	24.00	0.0123
7.67	0.0095	16.00	0.0152	24.17	0.0122
7.83	0.0106	16.17	0.0151	24.33	0.0120
8.00	0.0119	16.33	0.0151	24.50	0.0117
8.17	0.0129	16.50	0.0150	24.67	0.0114
8.33	0.0135	16.67	0.0150	24.83	0.0111
8.50	0.0140	16.83	0.0149	25.00	0.0109
8.67	0.0144	17.00	0.0149	25.17	0.0106
8.83	0.0147	17.17	0.0148	25.33	0.0104
9.00	0.0151	17.33	0.0148	25.50	0.0101

Hydrograph ID: Frontage Ground - 100 yr

Area: 0.0385 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0074 cfs		Peak Time: 9.67 hrs	
Hyd Vol: 0.0097 acft		Time		Flow	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
1.00	0.0011	8.83	0.0072	16.50	0.0057
1.17	0.0000	9.00	0.0073	16.67	0.0056
1.33	0.0031	9.17	0.0074	16.83	0.0056
1.50	0.0000	9.33	0.0074	17.00	0.0055
1.67	0.0031	9.50	0.0074	17.17	0.0055
1.83	0.0018	9.67	0.0074	17.33	0.0055
2.00	0.0027	9.83	0.0074	17.50	0.0054
2.17	0.0022	10.00	0.0074	17.67	0.0054
2.33	0.0031	10.17	0.0074	17.83	0.0053
2.50	0.0028	10.33	0.0073	18.00	0.0053
2.67	0.0031	10.50	0.0073	18.17	0.0053
2.83	0.0031	10.67	0.0073	18.33	0.0052
3.00	0.0031	10.83	0.0072	18.50	0.0052
3.17	0.0031	11.00	0.0072	18.67	0.0051
3.33	0.0031	11.17	0.0072	18.83	0.0051
3.50	0.0031	11.33	0.0071	19.00	0.0050
3.67	0.0031	11.50	0.0071	19.17	0.0050
3.83	0.0031	11.67	0.0070	19.33	0.0050
4.00	0.0031	11.83	0.0070	19.50	0.0049
4.17	0.0031	12.00	0.0070	19.67	0.0049
4.33	0.0032	12.17	0.0069	19.83	0.0048
4.50	0.0032	12.33	0.0069	20.00	0.0048
4.67	0.0032	12.50	0.0068	20.17	0.0047
4.83	0.0033	12.67	0.0068	20.33	0.0047
5.00	0.0033	12.83	0.0067	20.50	0.0047
5.17	0.0034	13.00	0.0066	20.67	0.0046
5.33	0.0034	13.17	0.0066	20.83	0.0046
5.50	0.0034	13.33	0.0066	21.00	0.0046
5.67	0.0035	13.50	0.0065	21.17	0.0045
5.83	0.0036	13.67	0.0065	21.33	0.0045
6.00	0.0036	13.83	0.0064	21.50	0.0045
6.17	0.0037	14.00	0.0064	21.67	0.0044
6.33	0.0038	14.17	0.0063	21.83	0.0044
6.50	0.0038	14.33	0.0063	22.00	0.0044
6.67	0.0039	14.50	0.0062	22.17	0.0043
6.83	0.0041	14.67	0.0062	22.33	0.0043
7.00	0.0042	14.83	0.0061	22.50	0.0043
7.17	0.0043	15.00	0.0061	22.67	0.0042
7.33	0.0044	15.17	0.0060	22.83	0.0042
7.50	0.0046	15.33	0.0060	23.00	0.0042
7.67	0.0049	15.50	0.0059	23.17	0.0042
7.83	0.0054	15.67	0.0059	23.33	0.0041
8.00	0.0060	15.83	0.0058	23.50	0.0041
8.17	0.0065	16.00	0.0058	23.67	0.0041
8.33	0.0068	16.17	0.0058	23.83	0.0040
8.50	0.0070	16.33	0.0057	24.00	0.0040
8.67	0.0071	16.50	0.0057	24.17	0.0040

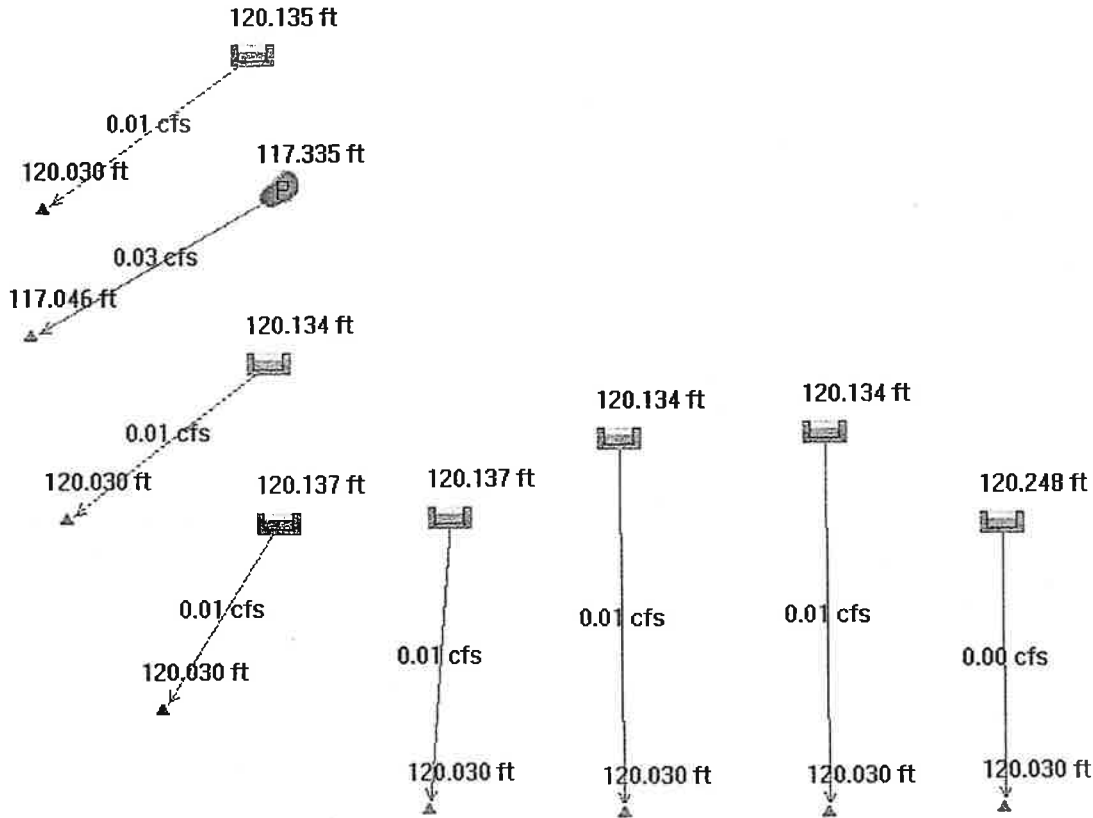
Hydrograph ID: Lot 5 Ground - 100 yr

Area: 0.2198 ac		Hyd Int: 10.00 min		Base Flow:	
Pending tt translation: 0.00 min		Peak Flow: 0.0213 cfs		Peak Time: 11.17 hrs	
Peak Flow: 0.0213 cfs		Hyd Vol: 0.0348 acft		Time Flow	
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0012	10.00	0.0209	18.83	0.0189
1.00	0.0016	10.17	0.0210	19.00	0.0188
1.17	0.0030	10.33	0.0211	19.17	0.0187
1.33	0.0033	10.50	0.0212	19.33	0.0186
1.50	0.0042	10.67	0.0212	19.50	0.0185
1.67	0.0045	10.83	0.0212	19.67	0.0184
1.83	0.0055	11.00	0.0212	19.83	0.0183
2.00	0.0054	11.17	0.0213	20.00	0.0182
2.17	0.0065	11.33	0.0213	20.17	0.0181
2.33	0.0065	11.50	0.0213	20.33	0.0180
2.50	0.0071	11.67	0.0213	20.50	0.0180
2.67	0.0069	11.83	0.0213	20.67	0.0179
2.83	0.0075	12.00	0.0213	20.83	0.0178
3.00	0.0073	12.17	0.0212	21.00	0.0177
3.17	0.0079	12.33	0.0212	21.17	0.0176
3.33	0.0075	12.50	0.0212	21.33	0.0176
3.50	0.0081	12.67	0.0211	21.50	0.0175
3.67	0.0082	12.83	0.0211	21.67	0.0174
3.83	0.0089	13.00	0.0211	21.83	0.0174
4.00	0.0084	13.17	0.0210	22.00	0.0173
4.17	0.0094	13.33	0.0210	22.17	0.0172
4.33	0.0094	13.50	0.0210	22.33	0.0172
4.50	0.0094	13.67	0.0209	22.50	0.0171
4.67	0.0094	13.83	0.0209	22.67	0.0170
4.83	0.0094	14.00	0.0208	22.83	0.0169
5.00	0.0095	14.17	0.0208	23.00	0.0168
5.17	0.0095	14.33	0.0207	23.17	0.0168
5.33	0.0096	14.50	0.0207	23.33	0.0167
5.50	0.0097	14.67	0.0206	23.50	0.0166
5.67	0.0097	14.83	0.0205	23.67	0.0165
5.83	0.0098	15.00	0.0205	23.83	0.0165
6.00	0.0099	15.17	0.0204	24.00	0.0164
6.17	0.0100	15.33	0.0204	24.17	0.0162
6.33	0.0102	15.50	0.0203	24.33	0.0159
6.50	0.0103	15.67	0.0203	24.50	0.0156
6.67	0.0105	15.83	0.0202	24.67	0.0152
6.83	0.0107	16.00	0.0201	24.83	0.0149
7.00	0.0109	16.17	0.0200	25.00	0.0145
7.17	0.0111	16.33	0.0200	25.17	0.0142
7.33	0.0115	16.50	0.0199	25.33	0.0139
7.50	0.0118	16.67	0.0198	25.50	0.0135
7.67	0.0126	16.83	0.0198	25.67	0.0132
7.83	0.0141	17.00	0.0197	25.83	0.0129
8.00	0.0157	17.17	0.0197	26.00	0.0126
8.17	0.0170	17.33	0.0196	26.17	0.0123
8.33	0.0178	17.50	0.0195	26.33	0.0121
8.50	0.0184	17.67	0.0194	26.50	0.0118
8.67	0.0190	17.83	0.0194	26.67	0.0115
8.83	0.0194	18.00	0.0193	26.83	0.0113
9.00	0.0198	18.17	0.0192	27.00	0.0110
9.17	0.0201	18.33	0.0191	27.17	0.0107
9.33	0.0203	18.50	0.0190	27.33	0.0105
9.50	0.0205	18.67	0.0189	27.50	0.0103
9.67	0.0207	18.83	0.0189	27.67	0.0100
9.83	0.0208	19.00	0.0188	27.83	0.0098

Hydrograph ID: Lot 6 Ground - 100 yr

Area:	0.2454 ac	Hyd Int:	10.00 min	Base Flow:	
Pending tt translation:	0.00 min				
Peak Flow:	0.0237 cfs	Peak Time:	11.33 hrs	Hyd Vol:	0.0392 acft
Time	Flow	Time	Flow	Time	Flow
hr	cfs	hr	cfs	hr	cfs
0.83	0.0014	10.17	0.0234	19.17	0.0209
1.00	0.0017	10.33	0.0235	19.33	0.0208
1.17	0.0033	10.50	0.0236	19.50	0.0207
1.33	0.0037	10.67	0.0236	19.67	0.0205
1.50	0.0047	10.83	0.0236	19.83	0.0204
1.67	0.0051	11.00	0.0237	20.00	0.0203
1.83	0.0062	11.17	0.0237	20.17	0.0202
2.00	0.0060	11.33	0.0237	20.33	0.0202
2.17	0.0073	11.50	0.0237	20.50	0.0200
2.33	0.0072	11.67	0.0237	20.67	0.0200
2.50	0.0079	11.83	0.0237	20.83	0.0199
2.67	0.0077	12.00	0.0237	21.00	0.0198
2.83	0.0084	12.17	0.0237	21.17	0.0197
3.00	0.0081	12.33	0.0236	21.33	0.0196
3.17	0.0088	12.50	0.0236	21.50	0.0195
3.33	0.0084	12.67	0.0236	21.67	0.0195
3.50	0.0091	12.83	0.0235	21.83	0.0194
3.67	0.0091	13.00	0.0235	22.00	0.0193
3.83	0.0099	13.17	0.0234	22.17	0.0192
4.00	0.0094	13.33	0.0234	22.33	0.0192
4.17	0.0105	13.50	0.0234	22.50	0.0191
4.33	0.0105	13.67	0.0233	22.67	0.0190
4.50	0.0105	13.83	0.0233	22.83	0.0189
4.67	0.0105	14.00	0.0232	23.00	0.0188
4.83	0.0106	14.17	0.0232	23.17	0.0187
5.00	0.0106	14.33	0.0231	23.33	0.0186
5.17	0.0107	14.50	0.0230	23.50	0.0185
5.33	0.0107	14.67	0.0230	23.67	0.0185
5.50	0.0108	14.83	0.0229	23.83	0.0184
5.67	0.0109	15.00	0.0229	24.00	0.0183
5.83	0.0110	15.17	0.0228	24.17	0.0181
6.00	0.0111	15.33	0.0227	24.33	0.0178
6.17	0.0112	15.50	0.0227	24.50	0.0174
6.33	0.0114	15.67	0.0226	24.67	0.0170
6.50	0.0115	15.83	0.0225	24.83	0.0166
6.67	0.0117	16.00	0.0224	25.00	0.0162
6.83	0.0119	16.17	0.0223	25.17	0.0159
7.00	0.0122	16.33	0.0223	25.33	0.0155
7.17	0.0124	16.50	0.0222	25.50	0.0151
7.33	0.0128	16.67	0.0221	25.67	0.0148
7.50	0.0132	16.83	0.0221	25.83	0.0145
7.67	0.0141	17.00	0.0220	26.00	0.0141
7.83	0.0157	17.17	0.0219	26.17	0.0138
8.00	0.0175	17.33	0.0219	26.33	0.0135
8.17	0.0190	17.50	0.0218	26.50	0.0132
8.33	0.0198	17.67	0.0217	26.67	0.0129
8.50	0.0205	17.83	0.0216	26.83	0.0126
8.67	0.0212	18.00	0.0215	27.00	0.0123
8.83	0.0217	18.17	0.0214	27.17	0.0120
9.00	0.0221	18.33	0.0213	27.33	0.0118
9.17	0.0224	18.50	0.0213	27.50	0.0115
9.33	0.0227	18.67	0.0212	27.67	0.0112
9.50	0.0229	18.83	0.0211	27.83	0.0110
9.67	0.0230	19.00	0.0210	28.00	0.0107
9.83	0.0232	19.17	0.0209	28.17	0.0105
10.00	0.0233	19.33	0.0208	28.33	0.0000

DEVELOPED 6-MO

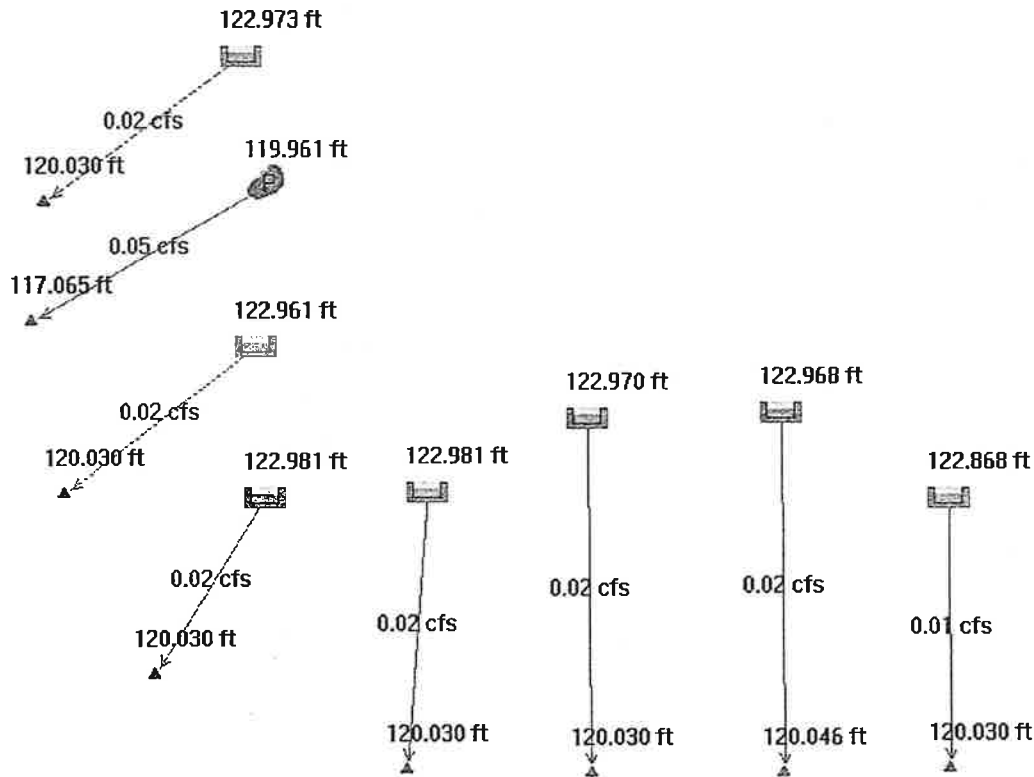


ROUTEHYD [] THRU [Tip Top Drainage System] USING TYPE1A AND [6 mo] NOTZERO RELATIVE

Reach	Area ac	Flow cfs	Full Q cfs	% Full ratio	nDepth ft	Size ---	nVel ft/s	fVel ft/s	CBasin / Hyd -----
Routing thru RLPool Node Tract 999 Pond; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0295 cfs - Peak Stg: 117.33 ft - Active Vol: 316.89 cf								
Pond-Gmd	0.5893	0.0295	1560.32	0.00	0.0151	48" Diam	5.9525	124.1667	184th + Tract 999
Routing thru RLPool Node Lot 1 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0090 cfs - Peak Stg: 120.14 ft - Active Vol: 12.79 cf								
Lot 1-Gmd	0.2005	0.0090	1560.32	0.00	0.0088	48" Diam	4.0971	124.1667	Lot 1
Routing thru RLPool Node Lot 2 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0090 cfs - Peak Stg: 120.13 ft - Active Vol: 12.68 cf								
Lot 2-Gmd	0.2000	0.0090	1560.32	0.00	0.0088	48" Diam	4.0971	124.1667	Lot 2
Routing thru RLPool Node Lot 3 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0074 cfs - Peak Stg: 120.14 ft - Active Vol: 10.65 cf								
Lot 3-Gmd	0.1654	0.0074	1560.32	0.00	0.0078	48" Diam	4.0236	124.1667	Lot 3
Routing thru RLPool Node Lot 4 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0074 cfs - Peak Stg: 120.14 ft - Active Vol: 10.65 cf								
Lot 4-Gmd	0.1654	0.0074	1560.32	0.00	0.0078	48" Diam	4.0236	124.1667	Lot 4
Routing thru RLPool Node Frontage Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0034 cfs - Peak Stg: 120.25 ft - Active Vol: 8.47 cf								
Frontage-Gmd	0.0385	0.0034	1560.32	0.00	0.0059	48" Diam	2.8815	124.1667	31st frontage
Routing thru RLPool Node Lot 5 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0099 cfs - Peak Stg: 120.13 ft - Active Vol: 13.94 cf								
Lot5-Gmd	0.2198	0.0099	1560.32	0.00	0.0088	48" Diam	4.4985	124.1667	Lot 5
Routing thru RLPool Node Lot 6 Trench; 6 mo event									
6 mo	Match Q: 0.0000 cfs Peak Out Q: 0.0111 cfs - Peak Stg: 120.13 ft - Active Vol: 15.53 cf								
Lot6-Gmd	0.2454	0.0111	1560.32	0.00	0.0098	48" Diam	4.2981	124.1667	Lot 6

From Node	To Node	Rch Loss ft	App Head ft	Bend Loss ft	Junct Loss ft	HW Elev ft	Max El/ Rim El ft
Tract 999 Pond	Tract 999 Ground	115.0655	--na--	--na--	--na--	117.0459	122.0000
Lot 1 Trench	Lot 1 Ground	118.0371	--na--	--na--	--na--	120.1352	123.0000
Lot 2 Trench	Lot 2 Ground	118.0371	--na--	--na--	--na--	120.1341	123.0000
Lot 3 Trench	Lot 3 Ground	118.0352	--na--	--na--	--na--	120.1374	123.0000
Lot 4 Trench	Lot 4 Ground	118.0352	--na--	--na--	--na--	120.1374	123.0000
Frontage Trench	Frontage Ground	118.0321	--na--	--na--	--na--	120.2485	123.0000
Lot 5 Trench	Lot 5 Ground	118.0383	--na--	--na--	--na--	120.1342	123.0000
Lot 6 Trench	Lot 6 Ground	118.0400	--na--	--na--	--na--	120.1336	123.0000

DEVELOPED 100-YR.



ROUTEHYD [] THRU [Tip Top Drainage System] USING TYPE1A AND [100 yr] NOTZERO RELATIVE

Reach	Area ac	Flow cfs	Full Q cfs	% Full ratio	nDepth ft	Size ---	nVel ft/s	fVel ft/s	CBasin / Hyd -----
-------	------------	-------------	---------------	-----------------	--------------	-------------	--------------	--------------	-----------------------

Routing thru RLPool Node Tract 999 Pond; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0539 cfs - Peak Stg: 119.96 ft - Active Vol: 3118.23 cf
 Pond-Grnd 0.5893 0.0539 1560.32 0.00 0.0203 48" Diam 7.0155 124.1667 184th + Tract 999

Routing thru RLPool Node Lot 1 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0195 cfs - Peak Stg: 122.97 ft - Active Vol: 281.06 cf
 Lot 1-Grnd 0.2005 0.0195 1560.32 0.00 0.0127 48" Diam 5.1046 124.1667 Lot 1

Routing thru RLPool Node Lot 2 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0194 cfs - Peak Stg: 122.96 ft - Active Vol: 279.93 cf
 Lot 2-Grnd 0.2000 0.0194 1560.32 0.00 0.0127 48" Diam 5.0933 124.1667 Lot 2

Routing thru RLPool Node Lot 3 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0161 cfs - Peak Stg: 122.98 ft - Active Vol: 231.02 cf
 Lot 3-Grnd 0.1654 0.0161 1560.32 0.00 0.0117 48" Diam 4.7724 124.1667 Lot 3

Routing thru RLPool Node Lot 4 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0161 cfs - Peak Stg: 122.98 ft - Active Vol: 231.02 cf
 Lot 4-Grnd 0.1654 0.0161 1560.32 0.00 0.0117 48" Diam 4.7724 124.1667 Lot 4

Routing thru RLPool Node Frontage Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0074 cfs - Peak Stg: 122.87 ft - Active Vol: 97.79 cf
 Frontage-Grnd 0.0385 0.0074 1560.32 0.00 0.0078 48" Diam 4.0203 124.1667 31st frontage

Routing thru RLPool Node Lot 5 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0213 cfs - Peak Stg: 122.97 ft - Active Vol: 308.45 cf
 Lot5-Grnd 0.2198 0.0213 1560.32 0.00 0.0132 48" Diam 5.2742 124.1667 Lot 5

Routing thru RLPool Node Lot 6 Trench; 100 yr event

100 yr Match Q: 0.0000 cfs Peak Out Q: 0.0237 cfs - Peak Stg: 122.97 ft - Active Vol: 345.03 cf
 Lot6-Grnd 0.2454 0.0237 1560.32 0.00 0.0137 48" Diam 5.5675 124.1667 Lot 6

From Node	To Node	Rch Loss ft	App Head ft	Bend Loss ft	Junct Loss ft	HW Elev ft	Max El/ Rim El ft
Tract 999 Pond	Tract 999 Ground	115.0883	--na--	--na--	--na--	117.0654	122.0000
Lot 1 Trench	Lot 1 Ground	118.0585	--na--	--na--	--na--	122.9726	123.0000
Lot 2 Trench	Lot 2 Ground	118.0583	--na--	--na--	--na--	122.9606	123.0000
Lot 3 Trench	Lot 3 Ground	118.0500	--na--	--na--	--na--	122.9809	123.0000
Lot 4 Trench	Lot 4 Ground	118.0500	--na--	--na--	--na--	122.9809	123.0000
Frontage Trench	Frontage Ground	118.0352	--na--	--na--	--na--	122.8677	123.0000
Lot 5 Trench	Lot 5 Ground	118.0638	--na--	--na--	--na--	122.9702	123.0000
Lot 6 Trench	Lot 6 Ground	118.0589	--na--	--na--	--na--	122.9680	123.0000

MAINTENANCE REQUIREMENTS FOR PRIVATELY MAINTAINED DRAINAGE FACILITIES

Infiltration Trench/Pond Inspection Schedule:

The drainage system should be monitored periodically. For the first year after completion of construction, the system should be monitored after every large storm event (> 1-in in 24-hrs), and, during the period Oct. 1- Mar. 31 inspections should be conducted monthly. From April 1-Sept. 30, the facility should be monitored on a quarterly basis. Once the performance characteristics of the facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicate that a more frequent schedule is required.

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
PONDS			
GENERAL	TRASH & DEBRIS	ANY TRASH AND DEBRIS WHICH EXCEED 1 CUBIC FOOT PER 1,000 SQUARE FEET (THIS IS ABOUT EQUAL TO THE AMOUNT OF TRASH IT WOULD TAKE TO FILL UP ONE STANDARD SIZE OFFICE GARBAGE CAN). IN GENERAL, THERE SHOULD BE NO VISUAL EVIDENCE OF DUMPING.	TRASH AND DEBRIS CLEARED FROM SITE.
	POISONOUS VEGETATION	ANY POISONOUS VEGETATION WHICH MAY CONSTITUTE A HAZARD TO COUNTY PERSONNEL OR THE PUBLIC. EXAMPLES OF POISONOUS VEGETATION INCLUDE: TANSY RAGWORT, POISON OAK, STINGING NETTLES, DEVILS CLUB.	NO DANGER OF POISONOUS VEGETATION WHERE COUNTY PERSONNEL OR THE PUBLIC MIGHT NORMALLY BE. (COORDINATION WITH HEALTH DEPARTMENT).
	POLLUTION	OIL, GASOLINE, OR OTHER CONTAMINANTS OF ONE GALLON OR MORE OR ANY AMOUNT FOUND THAT COULD: 1) CAUSE DAMAGE TO PLANT, ANIMAL, OR MARINE LIFE; 2) CONSTITUTE A FIRE HAZARD; OR 3) BE FLUSHED DOWNSTREAM DURING RAIN STORMS.:	NO CONTAMINANTS PRESENT OTHER THAN A SURFACE FILM. (COORDINATION WITH HEALTH DEPARTMENT).
	UNMOWED GRASS/GROUND COVER	IF FACILITY IS LOCATED IN PRIVATE RESIDENTIAL AREA, MOWING IS NEEDED WHEN GRASS EXCEEDS 18 INCHES IN HEIGHT. IN OTHER AREAS, THE GENERAL POLICY IS TO MAKE THE POND SITE MATCH ADJACENT GROUND COVER AND TERRAIN AS LONG AS THERE IS NO INTERFERENCE WITH THE FUNCTION OF THE FACILITY.	WHEN MOWING IS NEEDED, GRASS/GROUND COVER SHOULD BE MOWED TO 2 INCHES HEIGHT.
	RODENT HOLES	ANY EVIDENCE OF RODENT HOLES IF FACILITY IS ACTING AS A DAM OR BERM, OR ANY EVIDENCE OF WATER PIPING THROUGH DAM OR BERM VIA RODENT HOLES.	RODENTS DESTROYED AND DAM OR BERM REPAIRED. (COORDINATION WITH HEALTH DEPARTMENT)
	INSECTS	WHEN INSECTS SUCH AS WASPS AND HORNETS INTERFERE WITH MAINTENANCE ACTIVITIES.	INSECTS DESTROYED OR REMOVED FROM SITE.

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
	TREE GROWTH	TREE GROWTH DOES NOT ALLOW MAINTENANCE ACCESS OR INTERFERES WITH MAINTENANCE ACTIVITY (I.E., SLOPE MOVING, SILT REMOVAL, VACTORING, OR EQUIPMENT MOVEMENTS). IF TREES ARE NOT INTERFERING WITH ACCESS, LEAVE TREES ALONE.	TREES DO NOT HINDER MAINTENANCE ACTIVITIES. SELECTIVELY CULTIVATE TREES SUCH AS ALDERS FOR FIREWOOD.
SIDE SLOPES OF POND	EROSION	ERODED DAMAGE OVER 2 INCHES DEEP WHERE CAUSE OF DAMAGE IS STILL PRESENT OR WHERE THERE IS POTENTIAL FOR CONTINUE EROSION.	SLOPES SHOULD BE STABILIZED BY USING APPROPRIATE EROSION CONTROL MEASURE(S); E.G., ROCK REINFORCEMENT, PLANTING OF GRASS, COMPACTION.
STORAGE AREA	SEDIMENT	ACCUMULATED SEDIMENT THAT EXCEEDS 10% OF THE DESIGNED POND DEPTH.	SEDIMENT CLEANED OUT TO DESIGNED POND SHAPE AND DEPTH; POND RESEDED IF NECESSARY TO CONTROL EROSION.
POND DIKES	SETTLEMENTS	ANY PART OF DIKE WHICH HAS SETTLED 4 INCHES LOWER THAN THE DESIGN ELEVATION.	DIKE SHOULD BE BUILT BACK TO THE DESING ELEVATION.
EMERGENCY OVERFLOW/ SPILLWAY	ROCK MISSING	ONLY ONE LAYER OR ROCK EXISTS ABOVE NATIVE SOIL IN ARE FIVE SQUARE FEET OR LARGER, OR ANY EXPOSURE OF NATIVE SOIL.	REPLACE ROCKS TO DESIGN STANDARDS.

CATCH BASINS

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
GENERAL	TRASH & DEBRIS (INCLUDES SEDIMENT)	TRASH OR DEBRIS OF MORE THAN 1/2 CUBIC FOOT WHICH IS LOCATED IMMEDIATELY IN FRONT OF THE CATCH BASIN OPENING OR IS BLOCKING CAPACITY OF BASIN BY MORE THAN 10%.	NO TRASH OR DEBRIS LOCATED IMMEDIATELY IN FRONT OF CATCH BASIN OPENING.
		TRASH OR DEBRIS (IN THE BASIN) THAT EXCEEDS 1/3 THE DEPTH FROM THE BOTTOM OF BASIN TO INVERT T OF THE LOWEST PIPE INTO OR OUT OF THE BASIN.	NO TRASH OR DEBRIS IN THE CATCH BASIN.
		TRASH OR DEBRIS IN ANY INLET OR OUTLET PIPE BLOCKING MORE THAN 1/3 OF ITS HEIGHT.	INLET AND OUTLET PIPES FREE OF TRASH OR DEBRIS.
		DEAD ANIMALS OR VEGETATION THAT COULD GENERATE ODORS THAT WOULD	NO DEAD ANIMALS OR VEGETATION PRESENT WITHIN

		CAUSE COMPLAINTS OR DANGEROUS GASES (E.G., METHANE).	THE CATCH BASIN.
		DEPOSITS OF GARBAGE EXCEEDING 1 CUBIC FOOT IN VOLUME.	NO CONDITION PRESENT WHICH WOULD ATTRACT OR SUPPORT THE BREEDING OF INSECTS OR RODENTS.
STRUCTURAL DAMAGE TO FRAME AND/OR TOP SLAB		CORNER OF FRAME EXTENDS MORE THAN 3/4 INCH PAST CURB FACE INTO THE STREET (IF APPLICABLE).	FRAME IS EVEN WITH CURB.
		TOP SLAB HAS HOLES LARGER THAN 2 SQUARE INCHES OR CRACKS WIDER THAN 1/4 INCH (INTENT IS TO MAKE SURE ALL MATERIAL IS RUNNING INTO THE BASIN).	TOP SLAB IS FREE OF HOLES AND CRACKS.
		FRAME NOT SITTING FLUSH ON TOP SLAB, I. E., SEPARATION OF MORE THAN 3/4 INCH OF THE FRAME FROM THE TOP SLAB.	FRAME IS SITTING FLUSH ON TOP SLAB.
CRACKS IN BASIN WALLS/BOTTOM		CRACKS WIDER THAN 1/2 INCH AND LONGER THAN 3 FEET, ANY EVIDENCE OF SOIL PARTICLES ENTERING CATCH BASIN THROUGH CRACKS, OR MAINTENANCE PERSON JUDGES THAT STRUCTURE IS UNSOUND.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS.
		CRACKS WIDER THAN 1/2 INCH AND LONGER THAN 1 FOOT AT THE JOINT OF ANY INLET/OUTLET PIPE OR ANY EVIDENCE OF SOIL PARTICLES ENTERING CATCH BASIN THROUGH CRACKS.	NO CRACKS MORE THAN 1/4 INCH WIDE AT THE JOINT OF INLET/OUTLET PIPE.
SETTLEMENT/ MISALIGNMENT		BASIN HAS SETTLED MORE THAN 1 INCH OR HAS ROTATED MORE THAN 2 INCHES OUT OF ALIGNMENT.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS.
FIRE HAZARD		PRESENCE OF CHEMICALS SUCH AS NATURAL GAS. OIL, GASOLINE.	NO FLAMMABLE CHEMICALS PRESENT.
VEGETATION		VEGETATION GROWING ACROSS AND BLOCKING MORE THAN 10% OF THE BASIN OPENING.	NO VEGETATION BLOCKING OPENING TO BASIN.
		VEGETATION GROWING IN INLET/OUTLET PIPE JOINTS THAT IS MORE THAN SIX INCHES TALL AND LESS THAN SIX INCHES APART.	NO VEGETATION OR ROOT GROWTH PRESENT.
POLLUTION		NONFLAMMABLE CHEMICALS OF MORE THAN 1/2 CUBIC FOOT PER THREE FEET OF BASIN LENGTH.	NO POLLUTION PRESENT OTHER THAN SURFACE FILM.
CATCH BASIN COVER	COVER NOT IN PLACE	COVER IS MISSING OR ONLY PARTIALLY IN PLACE. ANY OPEN CATCH BASIN REQUIRED MAINTENANCE.	CATCH BASIN COVER IS CLOSED.

	LOCKING MECHANISM NOT WORKING	MECHANISM CANNOT BE OPENED BY ONE MAINTENANCE PERSON WITH PROPER TOOLS. BOLTS INTO FRAME HAVE LESS THAN 1/2 INCH OF THREAD.	MECHANISM OPENS WITH PROPER TOOLS.
	COVER DIFFICULT TO REMOVE	ONE MAINTENANCE PERSON CANNOT REMOVE LID AFTER APPLYING 80 LBS. OF LIFT; INTENT IS KEEP COVER FROM SEALING OFF ACCESS TO MAINTENANCE.	COVER CAN BE REMOVED BY ONE MAINTENANCE PERSON.
LADDER	LADDER RUNGS UNSAFE	LADDER IS UNSAFE DUE TO MISSING RUNGS, MISALIGNMENT, RUST, CRACKS, OR SHARP EDGES.	LADDER MEETS DESIGN STANDARDS AND ALLOWS MAINTENANCE PERSON SAFE ACCESS.
METAL GRATE (IF APPLICABLE)		GRATE OPENING WIDER THAN 7/8 INCH.	GRATE OPENINGS MEET DESIGN STANDARDS.
	TRASH AND DEBRIS	TRASH AND DEBRIS THAT IS BLOCKING MORE THAN 20% OF GRATE SURFACE.	GRATE FREE OF TRASH AND DEBRIS.
	DAMAGED OR MISSING	GRATE MISSING OR BROKEN MEMBER(S) OF THE GRATE.	GRATE IS IN PLACE AND MEETS DESIGN STANDARDS.

CONVEYANCE SYSTEMS (PIPES AND DITCHES)

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
PIPES	SEDIMENT & DEBRIS	ACCUMULATED SEDIMENT THAT EXCEEDS 20% OF THE DIAMETER OF THE PIPE.	PIPE CLEANED OF ALL SEDIMENT AND DEBRIS.
	VEGETATION	VEGETATION THAT REDUCES FREE MOVEMENT OF WATER THROUGH PIPES.	ALL VEGETATION REMOVED SO WATER FLOWS FREELY THROUGH PIPES.
	DAMAGED	PROTECTIVE COATING IS DAMAGED; RUST IS CAUSING MORE THAN 50% DETERIORATION TO ANY PART OF PIPE.	PIPE REPAIRED OR REPLACED.
		ANY DENT THAT DECREASES THE CROSS SECTION AREA OF PIPE BY MORE THAN 20%.	PIPE REPAIRED OR REPLACED.
	TRASH & DEBRIS	TRASH AND DEBRIS EXCEEDS 1 CUBIC FOOT PER 1,000 SQUARE FEET OF DITCH AND SLOPES.	TRASH AND DEBRIS CLEARED FROM DITCHES.
OPEN DITCHES	SEDIMENT	ACCUMULATED SEDIMENT THAT EXCEEDS 20% OF THE DESIGN DEPTH.	DITCH CLEANED/ FLUSHED OF ALL SEDIMENT AND DEBRIS SO THAT IT MATCHES DESIGN.
	VEGETATION	VEGETATION THAT REDUCES FREE MOVEMENT OF WATER THROUGH	WATER FLOWS FREELY THROUGH DITCHES.

DITCHES.

EROSION DAMAGE TO SLOPES	SEE "PONDS" STANDARD NO. 1	SEE "PONDS" STANDARD NO. 1
ROCK LINING OUT OF PLACE OR MISSING (IF APPLICABLE)	MAINTENANCE PERSON CAN SEE NATIVE SOIL BENEATH THE ROCK LINING.	REPLACE ROCKS TO DESIGN STANDARD.
CATCH BASINS	SEE "CATCH BASINS" STANDARD NO. 5	SEE "CATCH BASINS" STANDARD NO. 5
DEBRIS BARRIER E.G. TRASH RACK	SEE "DEBRIS BARRIERS" STANDARD NO. 6	SEE "DEBRIS BARRIERS" STANDARD NO. 6

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
INFILTRATION TRENCH	SEDIMENT	A PERCOLATION TEST PIT OR TEST OF FACILITY INDICATES FACILITY IS ONLY WORKING AT 90% OF ITS DESIGNED CAPABILITIES. IF TWO INCHES OR MORE SEDIMENT IS PRESENT, REMOVE.	SEDIMENT IS REMOVED AND/OR FACILITY IS CLEANED SO THAT INFILTRATION SYSTEM WORKS ACCORDING TO DESIGN.

SOIL LOGS

SOIL LOG 1.	0-02'	Brown loamy sand
	02-05'	Tan loamy sand
	05-09'	Gray loamy sand
	09-10'	Mottled loamy sand
		Water at 9.5'
		Roots at 5'

SOIL LOG 2.	0-02'	Brown loamy sand
	02-05'	Tan loamy sand
	05-08'	Gray loamy sand
	08-9.5'	Mottled loamy sand
		Water at 9.5'
		Roots at 5.5'

SOIL LOG 3.	0-01'	Brown loamy sand
	01-06'	Tan loamy sand
	06-08'	Gray loamy sand
	08-09'	Mottled
		Water at 8.5'
		Roots at 6'

SOIL LOG 4.	0-01'	Brown loamy sand
	01-04'	Tan loamy sand
	04-06'	Gray loamy sand
	06-08'	Mottled
		Water at 7.5'
		Roots at 6'

DATE OF LOGS:	August 29, 2002
---------------	-----------------

SOIL LOGS MAP

