

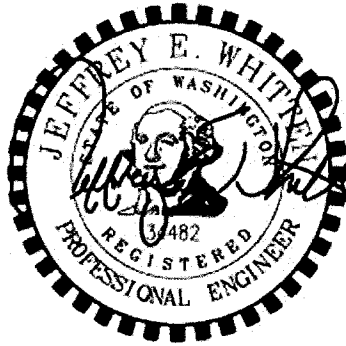
THE WOLFE GROUP, L.L.C.
Land Planning, Consulting, & Civil Engineering

2401 W. Main Street, Suite 210
Battle Ground, WA 98604
(360) 687-2699

“VALLEY VIEW”

Preliminary Technical Information Report

July 2022



7-1-22

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VICINITY MAPS

Vicinity Map

Soils Map

1968 Aerial Photo

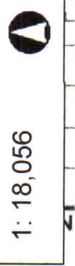
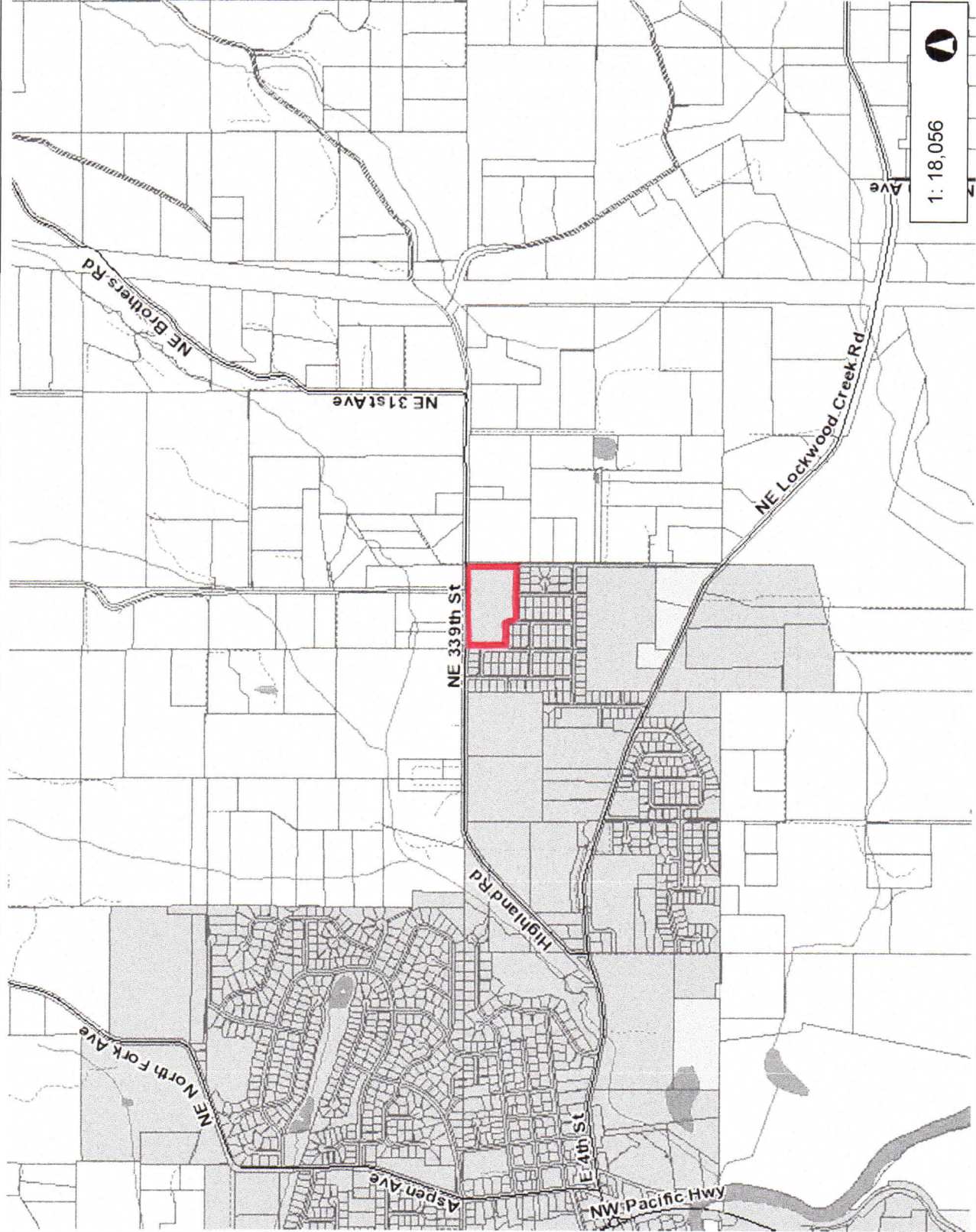
Vicinity Map



Legend

- Taxlots
- All Roads**
- Interstate
- State Route
- Arterial
- Forest Arterial
- Minor Collector
- Forest Collector
- Private or Other
- Cities Boundaries
- Urban Growth Boundaries

Notes:



This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.

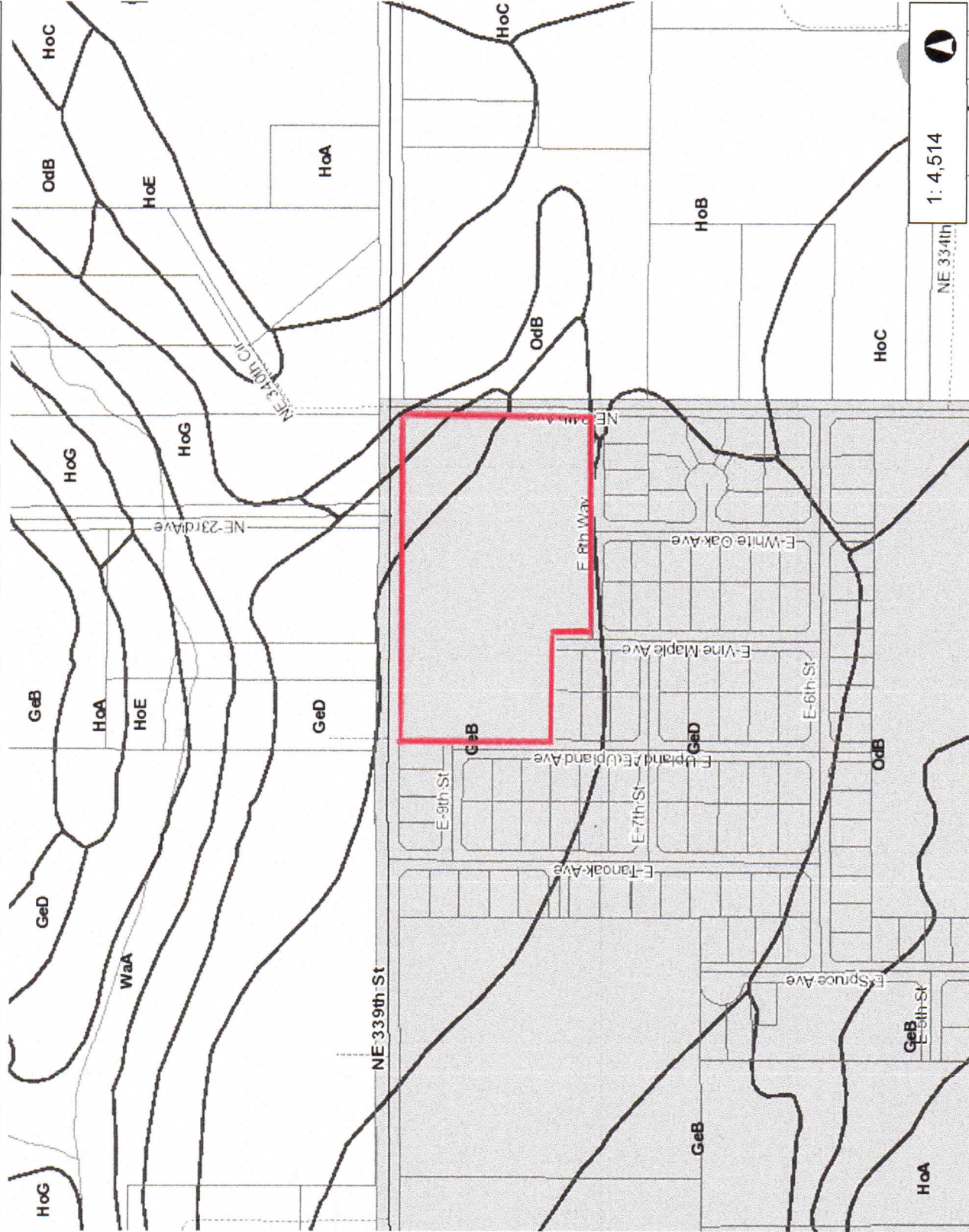


Soils Map



Legend

- Taxlots
- Soil Type
- All Roads
 - Interstate
 - State Route
 - Arterial
 - Forest Arterial
 - Minor Collector
 - Forest Collector
 - Private or Other
- Cities Boundaries
- Urban Growth Boundaries



Notes:

This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.

752.3 Feet

376.17

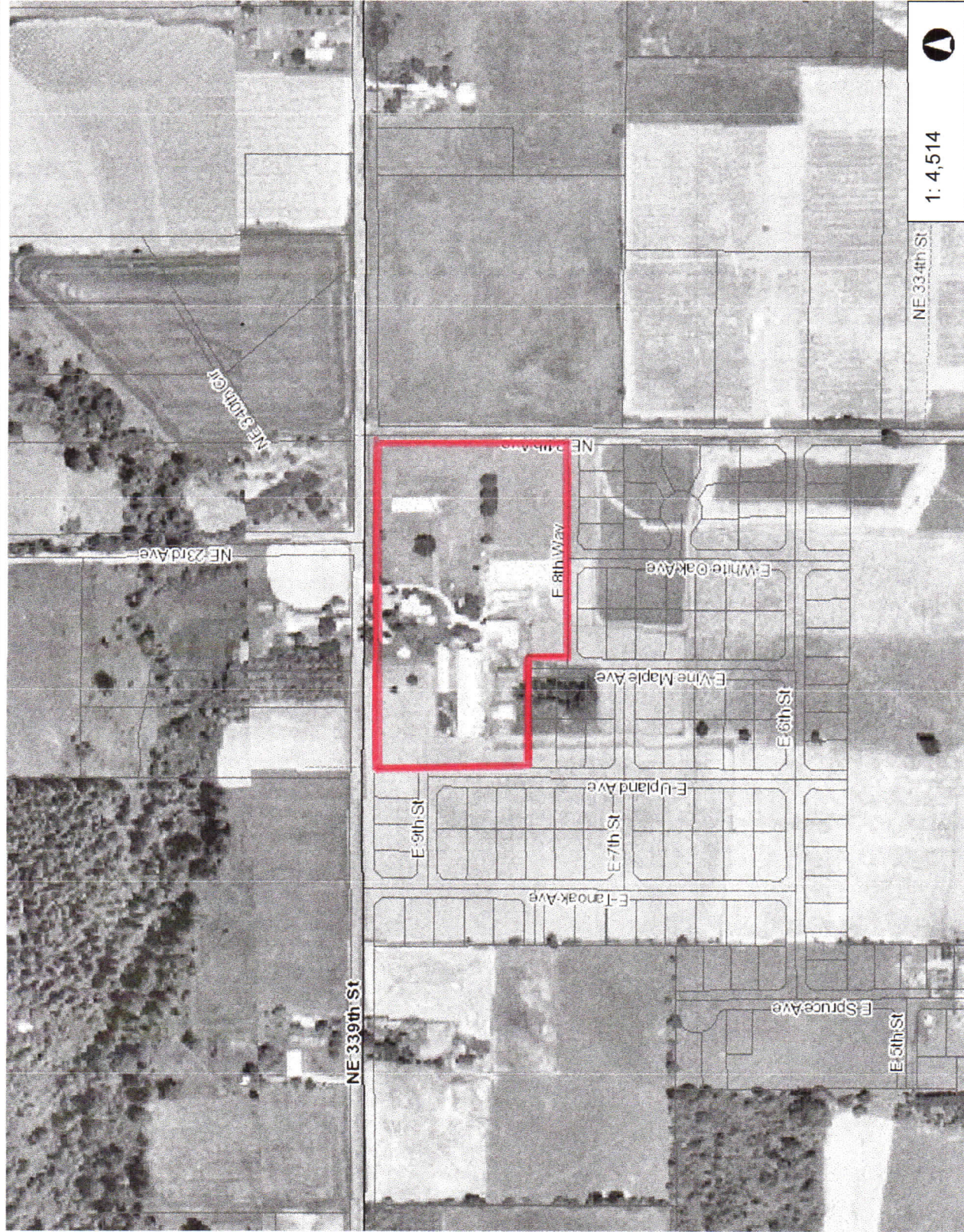
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752.3

1: 4,514



Aerial Photo (1968)



1: 4,514



This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.



Legend

- Taxlots
- All Roads
 - Interstate
 - State Route
 - Arterial
 - Forest Arterial
 - Minor Collector
 - Forest Collector
 - Private or Other
- Cities Boundaries
- Urban Growth Boundaries

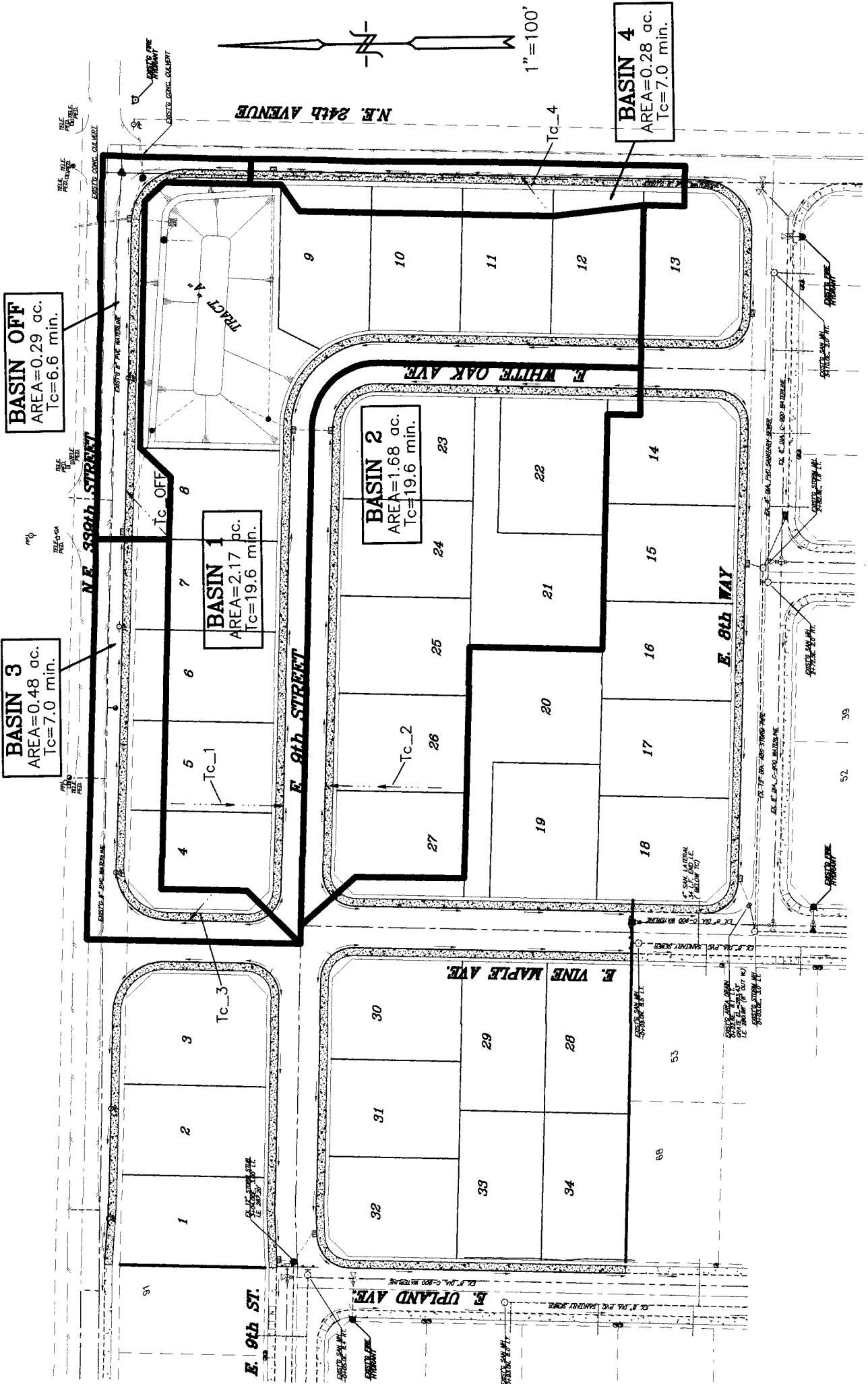
Notes:

DEVELOPMENT PLAN

Drainage Basins

Flow Routes

"VALLEY VIEW" DEVELOPED DRAINAGE BASINS



SECTION A - PROJECT OVERVIEW

The project site consists of approximately 8.64 acres and lies at the southwest corner of the intersection of N.E. 24th Avenue and N.E. 339th Street. It is bordered on the west and south by the existing “Heritage Country Estates” residential development project. The entire site is primarily in a field/pasture condition with many existing structures present. Approximately 45% of the project drains in a southwesterly manner toward “Heritage Country Estates”. The stormwater design of the “Heritage Country Estates” project anticipated this developed runoff entering the stormwater system. Therefore, the conveyance elements as well as the stormwater treatment and detention facilities have been designed to accommodate this developed runoff from the “Valley View” project. The remaining 55% of the project site drains northeasterly toward N.E. 339th Street and N.E. 24th Avenue. This stormwater runoff from the property enters roadside ditches along the south and west sides of N.E. 339th Street and N.E. 24th Avenue respectively. An existing culvert near the intersection of these two roadways conveys the flows northward across N.E. 339th Street. The flow is then directed to an existing ravine which drains north and westerly and eventually enters Brezee Creek.

An onsite wetpond and stormwater detention facility are proposed to treat and detain the stormwater runoff draining northeasterly toward N.E. 339th Street and N.E. 24th Avenue (approximately 55% of site runoff). The proposed stormwater facility is preliminarily located at the northeast corner of the proposed development. This facility will contain both a wetpond and a live detention pond. The stormwater facility has been preliminarily designed to account for the direct release of stormwater runoff from that portion of N.E. 339th Street and N.E. 24th Avenue that is too low in elevation to enter the proposed detention facility (Basin Off).

As mentioned previously, the area of the “Valley View” project draining southwesterly to the “Heritage Country Estates” project has been accounted for in the design of the stormwater facilities for that project.

SECTION B – APPROVAL CONDITIONS SUMMARY

Not applicable for this preliminary report as no conditions are issued at this time.

SECTION C – DOWNSTREAM ANALYSIS

A downstream analysis is to be prepared during the final design phase of the project.

SECTION D – QUANTITY CONTROL ANALYSIS & DESIGN

In computing the runoff volume and discharges from the site, the Santa Barbara Urban Hydrograph computer program used by the King County Public Works Dept. was utilized. In using this program, some assumptions had to be made regarding the particular runoff curve numbers to use. Because the hydrological soil group present at the site is group “C”, a pervious curve number of 85 (meadow or pasture) has been determined to exist on the site. A pervious curve number of 86 has been used to represent the lawns, landscaped areas, and other open areas. A curve number of 98 is used for the impervious surfaces which consist of the streets, sidewalks, driveways, and roofs. These curve numbers were obtained from Table III-1.3 of the Stormwater Management Manual for the Puget Sound Basin. The amounts of pervious and impervious acreage existing and predicted for the site are shown in **Tables 1 & 2.**

TABLE 1:

EXISTING AREA QUANTITIES (acres)							
Drainage Basin:	Total Area:	Streets & Sidewalks:	Driveways:	Roofs:	Contrib. Impervious Area: (Roofs incl.):	Contrib. Impervious Area: (no Roofs):	Contrib. Pervious Area:
Basin A	5.05	0.25	0.16	0.25	0.66	0.41	4.39
TOTALS:	5.05				TOTALS: 0.66	0.41	4.39

TABLE 2:

DEVELOPED AREA QUANTITIES (acres)							
Drainage Basin:	Total Area:	Streets & Sidewalks:	Driveways:	Roofs:	Contrib. Impervious Area: (Roofs incl.):	Contrib. Impervious Area: (no Roofs):	Contrib. Pervious Area:
Basin 1	2.17	0.35	0.13	0.92	1.40	0.48	0.77
Basin 2	1.68	0.33	0.15	0.57	1.05	0.48	0.63
Basin 3	0.48	0.27	0.00	0.00	0.27	0.27	0.21
Basin 4	0.28	0.13	0.00	0.00	0.13	0.13	0.15
Basin Off	0.29	0.19	0.00	0.00	0.19	0.19	0.10
TOTALS:	4.90				TOTALS: 3.04	1.55	1.86

Basin 1 Roof Area includes 0.20 ac. for pond surface (roofs=0.72 ac.)

Each Roof Area assumed to be 3,500 SF

Each Driveway Area assumed to be 600 SF

The actual computer modeled runoff calculations are presented in appendix I. In **Tables 3 & 4**, the predicted and existing peak discharges from the project are tabulated by basin. The values presented in these tables have been obtained with the Santa Barbara Urban Hydrograph computer program by inputting those values listed in **Tables 1 & 2**.

TABLE 3: Developed Runoff Volumes/Discharge

DEVELOPED RUNOFF VOLUMES/DISCHARGE										
Drainage Basin	66% 2-Yr, 24-hr. (6 month storm)		2 yr., 24 hr. Storm		10 yr., 24 hr. Storm		25 yr., 24 hr. Storm		100 yr., 24 hr. Storm	
	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):
	Basin 1	0.45	7,780	0.77	13,150	1.22	20,500	1.44	24,300	1.90
Basin 2	0.34	5,930	0.59	10,060	0.93	15,700	1.11	18,600	1.46	24,500
Basin 3	0.11	1,610	0.20	2,780	0.31	4,390	0.37	5,210	0.49	6,890
Basin 4	0.06	860	0.11	1,520	0.17	2,450	0.21	2,920	0.28	3,890
Basin Off	0.07	1,050	0.13	1,770	0.20	2,760	0.23	3,270	0.31	4,290
TOTALS:	1.03	17,230	1.80	29,280	2.83	45,800	3.36	54,300	4.44	71,470

TABLE 4: Existing Runoff Volumes/Discharge

EXISTING RUNOFF VOLUMES/DISCHARGE								
Drainage Basin	2-Yr, 24-hr. Storm		10 yr., 24 hr. Storm		25 yr., 24 hr. Storm		100 yr., 24 hr. Storm	
	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):
	Basin A	0.93	20,400	1.78	35,700	2.23	43,800	3.16
TOTALS:	0.93	20,400	1.78	35,700	2.23	43,800	3.16	60,500

The detention facility proposed for the development consists of a proposed surface pond that will “stack” live storage volume above the permanent wet pool volume. The hydrographs for the various design storms for the site have been added together and routed through the proposed facility (see Appendix II). The results are shown in **Table 5**. The values shown in **Table 5** represent our final design values after the volume correction factor has been applied. The volume correction factor is based on the sites developed impervious cover and is calculated in Appendix II for the detention facility.

TABLE 5: PROPOSED DETENTION FACILITY PERFORMANCE

<u>Storm Event:</u>	<u>Release Rate:</u>	<u>Allowable Release Rate:</u>	<u>Peak Storage:</u>	<u>Peak Stage:</u>	<u>% of allowable release rate:</u>
2 yr., 24 hr.	0.40 cfs	0.80 cfs	7,200 ft ³	289.96'	50%
10 yr., 24 hr.	0.69 cfs	1.58 cfs	12,300 ft ³	290.58'	44%
25 yr., 24 hr.	1.14 cfs	2.00 cfs	13,450 ft ³	290.71'	57%
100 yr., 24 hr.	1.83 cfs	2.85 cfs	16,500 ft ³	291.04'	64%

Beginning stage elevation=289.00'

The stormwater facility locations and elevations are readily seen on the preliminary stormwater plan. All detailed information regarding the outlet structure and construction of the facility will be presented on the final engineering drawings.

SECTION E – CONVEYANCE SYSTEMS ANALYSIS & DESIGN

The stormwater conveyance system proposed for the project consists primarily of a series of inlets and storm piping that delivers the site stormwater runoff to the stormwater management facility. Because of the natural slopes on the project site and the project layout, minimal storm piping is anticipated.

The capacity of each pipe will be analyzed during final design using Manning's Equation for pipe flow with a Manning's roughness coefficient of 0.012. Pipe sizes are expected to range from 8" to 12" in diameter.

SECTION F – WATER QUALITY DESIGN

A wetpond is proposed to treat the contributing runoff from the site. The proposed wetpond will serve drainage basins 1-4 and is located at the northeast corner of the project site. The 6-month, 24-hr. storm runoff volume that will be stored in this wetpond is approximately 16,200 cubic feet. This is the volume of developed runoff from drainage basins 1-4 during the 6-month, 24-hr storm event.

As can be seen, the treatment requirements of the City of La Center Stormwater Ordinance have been met for all runoff entering the proposed wetpond.

SECTION G- SOILS EVALUATION

The Soil Conservation Service maps the majority of soil on the site as Gee silt loam (GeB, GeD) of hydrological soil group "C". There is a very small area at the northeast corner of the property mapped as Odne silt loam (OdB) of hydrologic group "D". Due to the silty characteristics of all of the onsite soils, infiltration is not being proposed for this site. A geotechnical site investigation has been performed by True North Geotechnical Services. Their report will be provided in the final stormwater report.

SECTION H - SPECIAL REPORTS AND STUDIES

A Geotechnical Site Investigation has been performed by True North Geotechnical Services.

SECTION I - OTHER PERMITS

An NPDES Permit from the Washington State Department of Ecology is required for this project and shall be obtained prior to construction. In conjunction with the NPDES permit, a Stormwater Pollution Prevention Plan (SWPPP) will also be prepared.

SECTION J – GROUNDWATER MONITORING

Not applicable

SECTION K – MAINTENANCE & OPERATIONS MANUAL

The city of La Center shall maintain the proposed stormwater facilities. At a minimum, the following maintenance items need to be performed periodically to insure proper operation of the stormwater facilities.

- Cleaning of debris/litter that may accumulate in or around stormwater facilities.
- Inspection of outfall structure (orifice/riser) to prevent plugging or clogging.
- Inspection of fences encompassing stormwater facilities to insure effectiveness.

SECTION L - TECHNICAL APPENDIX

Appendix I

Runoff Calculations
Existing Conditions Basin Map
Developed Conditions Basin Map

Appendix II

Detention Calculations

Appendix III

Water Quality Calculations

Appendix I

Runoff Calculations

Existing Conditions Basin Map

Developed Conditions Basin Map

Developed Condition

DEVELOPED RUNOFF VOLUMES/DISCHARGE										
Drainage Basin	66% 2-Yr, 24-hr. (6 month storm)		2 yr., 24 hr. Storm		10 yr., 24 hr. Storm		25 yr., 24 hr. Storm		100 yr., 24 hr. Storm	
	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):
Basin 1	0.45	7,780	0.77	13,150	1.22	20,500	1.44	24,300	1.90	31,900
Basin 2	0.34	5,930	0.59	10,060	0.93	15,700	1.11	18,600	1.46	24,500
Basin 3	0.11	1,610	0.20	2,780	0.31	4,390	0.37	5,210	0.49	6,890
Basin 4	0.06	860	0.11	1,520	0.17	2,450	0.21	2,920	0.28	3,890
Basin Off	0.07	1,050	0.13	1,770	0.20	2,760	0.23	3,270	0.31	4,290
TOTALS:	1.03	17,230	1.80	29,280	2.83	45,800	3.36	54,300	4.44	71,470

DEVELOPED AREA QUANTITIES (acres)							
Drainage Basin:	Total Area:	Streets & Sidewalks:	Driveways:	Roofs:	Contrib. Impervious Area: (Roofs incl.):	Contrib. Impervious Area: (no Roofs):	Contrib. Pervious Area:
Basin 1	2.17	0.35	0.13	0.92	1.40	0.48	0.77
Basin 2	1.68	0.33	0.15	0.57	1.05	0.48	0.63
Basin 3	0.48	0.27	0.00	0.00	0.27	0.27	0.21
Basin 4	0.28	0.13	0.00	0.00	0.13	0.13	0.15
Basin Off	0.29	0.19	0.00	0.00	0.19	0.19	0.10
TOTALS:	4.90				TOTALS: 3.04	1.55	1.86

Perv. CN=86
Perv. CN=86
Perv. CN=86
Perv. CN=86
Perv. CN=86

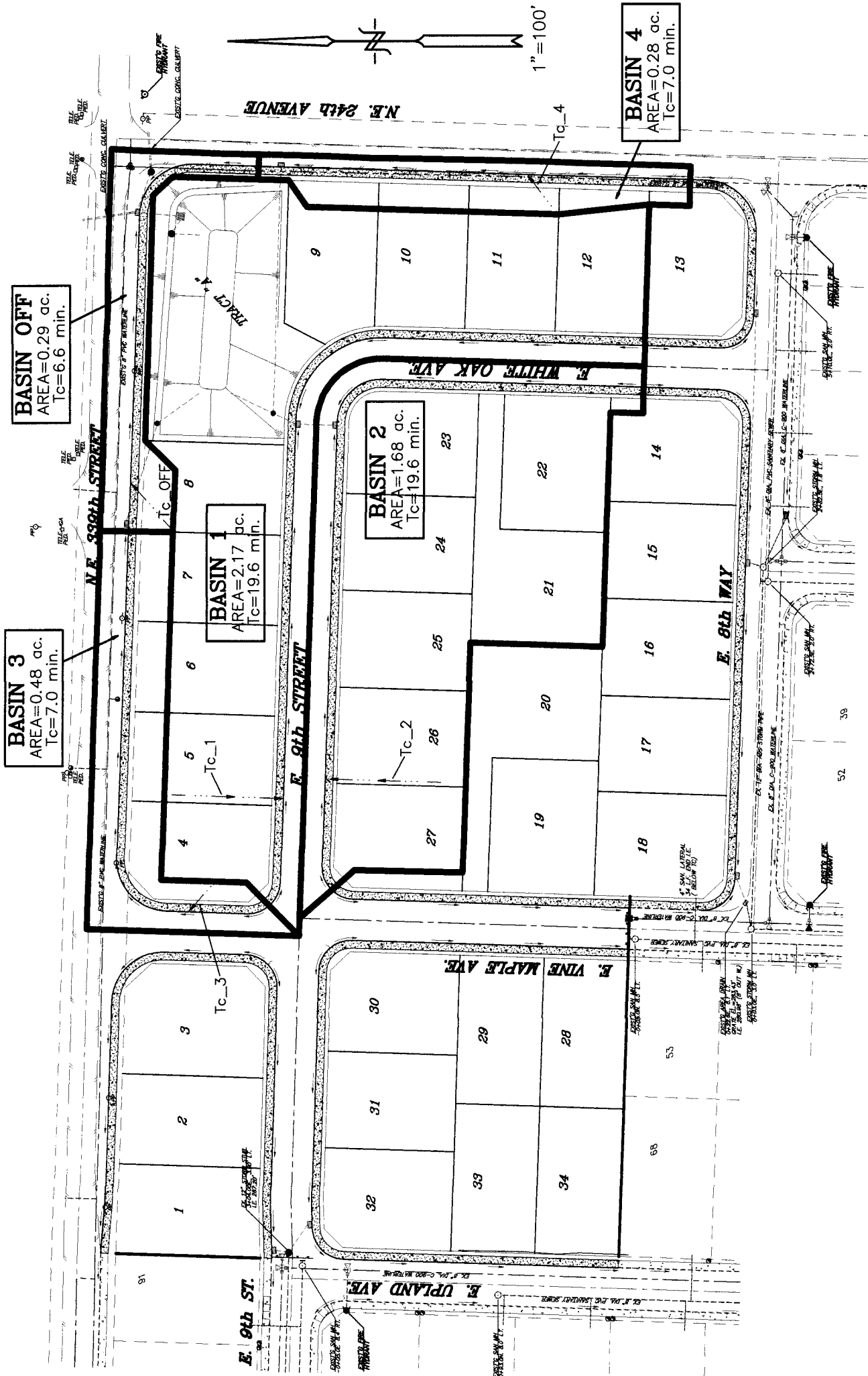
Basin 1 Roof Area includes 0.20 ac. for pond surface (roofs=0.72 ac.)

Each Roof Area assumed to be 3,500 SF

Each Driveway Area assumed to be 600 SF

DEVELOPED TIME OF CONCENTRATION CALCULATIONS									
Drainage Basin:	Sheet Flow				Gutter Flow			Total Time of Conc. (min.)	Drainage Basin:
	Flow Length (ft.):	Average Slope (ft./ft.):	Rough. Coeff. (n):	Overland Flow Time (min.):	Flow Length (ft.):	Average Slope (ft./ft.):	Shallow Conc. Flow Time (min.):		
	2 yr., 24 hr. rainfall total (inches) 2.25								
Basin 1	80	0.010	0.240	18.4	290	0.020	1.3	19.6	Basin 1
Basin 2	80	0.010	0.240	18.4	270	0.020	1.2	19.6	Basin 2
Basin 3	25	0.020	0.240	5.5	340	0.020	1.5	7.0	Basin 3
Basin 4	30	0.020	0.240	6.4	200	0.040	0.6	7.0	Basin 4
Basin Off	40	0.050	0.240	5.5	200	0.015	1.0	6.6	Basin Off

"VALLEY VIEW" DEVELOPED DRAINAGE BASINS



Basin 1 (Developed)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.77 86 1.40 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A CN	IMPERVIOUS A CN	TC(MINUTES)
2.2	.8 86.0	1.4 98.0	19.6
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.45	7.83	7784	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_1_BIO

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.77 86 1.40 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A CN	IMPERVIOUS A CN	TC(MINUTES)
2.2	.8 86.0	1.4 98.0	19.6
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.77	7.83	13146	

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***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.77 86 1.40 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A CN	IMPERVIOUS A CN	TC(MINUTES)
2.2	.8 86.0	1.4 98.0	19.6
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
1.22	7.83	20517	

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***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.77 86 1.40 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A	CN	IMPERVIOUS A	CN	TC(MINUTES)
2.2	.8	86.0	1.4	98.0	19.6
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
1.44	7.83		24276		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_1_25

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.77 86 1.40 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A	CN	IMPERVIOUS A	CN	TC(MINUTES)
2.2	.8	86.0	1.4	98.0	19.6
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
1.90	7.83		31877		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_1_100

Basin 2 (Developed)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.63 86 1.05 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
1.7	.6	1.0	19.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.34	7.83	5930	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_2_BIO

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.63 86 1.05 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
1.7	.6	1.0	19.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.59	7.83	10057	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_2_2

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.63 86 1.05 98 19.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
1.7	.6	1.0	19.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.93	7.83	15744	

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***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.63 86 1.05 98 19.6

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 1.7 .6 86.0 1.0 98.0 19.6
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 1.11 7.83 18647

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_2_25

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.63 86 1.05 98 19.6

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 1.7 .6 86.0 1.0 98.0 19.6
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 1.46 7.83 24522

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_2_100

Basin 3 (Developed)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.21 86 .27 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .2 86.0 .3 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .11 7.83 1614

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_3_BIO

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.21 86 .27 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .2 86.0 .3 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .20 7.83 2776

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_3_2

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.21 86 .27 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .2 86.0 .3 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .31 7.83 4388

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_3_10

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.21 86 .27 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .2 86.0 .3 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .37 7.83 5214

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_3_25

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.21 86 .27 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .2 86.0 .3 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .49 7.83 6888

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_3_100

Basin 4 (Developed)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.15 86 .13 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .3 .2 86.0 .1 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .06 7.83 863

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_4_BIO

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.15 86 .13 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .3 .2 86.0 .1 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .11 7.83 1521

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_4_2

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.15 86 .13 98 7

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .3 .2 86.0 .1 98.0 7.0
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .17 7.83 2446

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_4_10

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.15 86 .13 98 7

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A	CN	IMPERVIOUS A	CN	TC(MINUTES)
.3	.2	86.0	.1	98.0	7.0
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
.21	7.83		2922		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_4_25

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.15 86 .13 98 7

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A	CN	IMPERVIOUS A	CN	TC(MINUTES)
.3	.2	86.0	.1	98.0	7.0
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
.28	7.83		3890		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_4_100

Basin Off (Developed)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.10 86 .19 98 6.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
.3	.1	.2	6.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.07	7.83	1052	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_OFF_BIO

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.10 86 .19 98 6.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
.3	.1	.2	6.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.13	7.83	1773	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_OFF_2

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.10 86 .19 98 6.6

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	A	
	CN	CN	
.3	.1	.2	6.6
86.0	86.0	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.20	7.67	2762	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_OFF_10

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.10 86 .19 98 6.6

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .1 86.0 .2 98.0 6.6
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .23 7.67 3267

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_OF_25

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
.10 86 .19 98 6.6

DATA PRINT-OUT:
AREA(ACRES) PERVIOUS IMPERVIOUS TC(MINUTES)
 A CN A CN
 .1 86.0 .2 98.0 6.6
PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
 .31 7.67 4286

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:VV_OF_10

Existing Condition

EXISTING RUNOFF VOLUMES/DISCHARGE								
Drainage Basin	2-Yr, 24-hr. Storm		10 yr., 24 hr. Storm		25 yr., 24 hr. Storm		100 yr., 24 hr. Storm	
	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):	Peak Discharge (cfs):	Total Volume (ft3):
Basin A	0.93	20,400	1.78	35,700	2.23	43,800	3.16	60,500
TOTALS:	0.93	20,400	1.78	35,700	2.23	43,800	3.16	60,500

EXISTING AREA QUANTITIES (acres)							
Drainage Basin:	Total Area:	Streets & Sidewalks:	Driveways:	Roofs:	Contrib. Impervious Area: (Roofs incl.):	Contrib. Impervious Area: (no Roofs):	Contrib. Pervious Area:
Basin A	5.05	0.25	0.16	0.25	0.66	0.41	4.39
TOTALS:	5.05				TOTALS: 0.66	0.41	4.39

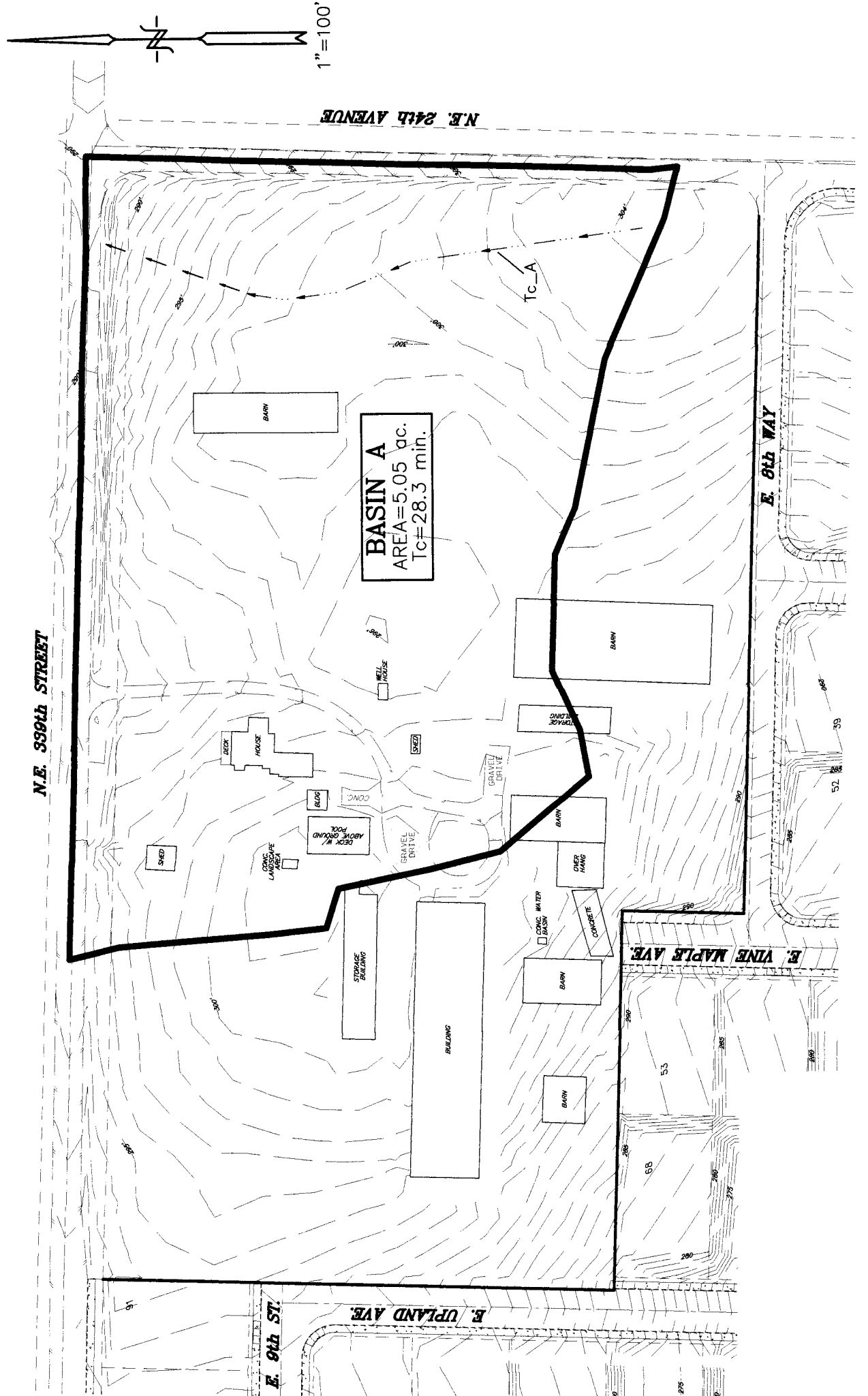
Perv. CN=85

EXISTING TIME OF CONCENTRATION CALCULATIONS									
Drainage Basin:	Sheet Flow				Shallow Conc. Flow			Total Time of Conc. (min.)	Drainage Basin:
	Flow Length (ft.):	Average Slope (ft./ft.):	Rough. Coeff. (n):	Overland Flow Time (min.):	Flow Length (ft.):	Average Slope (ft./ft.):	Shallow Conc. Flow Time (min.):		
Basin A	300	0.020	0.150	27.5	130	0.070	0.7	28.3	Basin A

2 yr., 24 hr. rainfall total (inches) 2.25

"VALLEY VIEW"

EXISTING DRAINAGE BASIN



Basin A (Existing)-actual land use

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 6-MONTH 24-HOUR STORM ***** 1.49" TOTAL PRECIP. *****

 ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
 4.39 85 .66 98 28.3

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A CN	A CN	
5.0	4.4 85.0	.7 98.0	28.3
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.39	7.83	10093	

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 2-YEAR 24-HOUR STORM ***** 2.25" TOTAL PRECIP. *****

 ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
 4.39 85 .66 98 28.3

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A CN	A CN	
5.0	4.4 85.0	.7 98.0	28.3
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.93	7.83	20379	

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 10-YEAR 24-HOUR STORM ***** 3.25" TOTAL PRECIP. *****

 ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
 4.39 85 .66 98 28.3

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A CN	A CN	
5.0	4.4 85.0	.7 98.0	28.3
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
1.78	7.83	35717	

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
4.39 85 .66 98 28.3

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	CN	
5.0	4.4	85.0	28.3
	A	CN	
	.7	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
2.23	7.83	43811	

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 4.75" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
4.39 85 .66 98 28.3

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A	CN	
5.0	4.4	85.0	28.3
	A	CN	
	.7	98.0	
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
3.16	7.83	60502	

Appendix II
Detention Calculations

DETENTION METHODOLOGY

THE DETENTION FACILITY IS DESIGNED TO LIMIT THE PEAK RELEASE RATES DURING 2-YR, 24-HR, 10-YR, 24-HR, 25-YR, 24-HR, & 100-YR, 24-HR STORM EVENTS TO THOSE THAT PRESENTLY EXIST. BASINS 1-4 DRAIN TO THE DETENTION FACILITY WHILE BASIN OFF DOES NOT CONTRIBUTE FLOW TO THE DETENTION FACILITY. THE RUNOFF FROM BASIN OFF IS CONSIDERED TO BE A "DIRECT RELEASE". THEREFORE, THE PEAK RELEASE RATES FROM BASIN OFF MUST BE SUBTRACTED FROM THE ALLOWABLE SITE RELEASE TO ARRIVE AT THE ALLOWABLE DETENTION FACILITY RELEASE RATES. THE TABULATION BELOW ILLUSTRATES THIS METHODOLOGY TO DETERMINE THE ALLOWABLE FACILITY RELEASE RATES.

	2-YR.	10-YR.	25-YR.	100-YR.
EXISTING SITE RUNOFF : (BASIN A)	0.93 CFS	1.78 CFS	2.23 CFS	3.16 CFS
BASIN OFF RUNOFF :	0.13 CFS	0.20 CFS	0.23 CFS	0.31 CFS
⇒ ALLOWABLE DETENTION FACILITY RELEASE :	0.80 CFS	1.58 CFS	2.00 CFS	2.85 CFS
* ACTUAL DETENTION FACILITY RELEASE :	0.40 CFS	0.69 CFS	1.14 CFS	1.83 CFS

* AS CAN BE SEEN, THE DETENTION FACILITY DESIGN/PERFORMANCE ACTS TO DRASTICALLY REDUCE THE PEAK DISCHARGE RATES FAR BELOW THOSE THAT ARE ALLOWED.

INITIAL DETENTION CALCULATION

SUMMARY OF INPUT ITEMS

- 1) TYPE OF FACILITY: POND (3.0:1 SIDE SLOPES)
- 2) STORAGE DEPTH(ft): 1.50
- 3) VERTICAL PERMEABILITY(min/in): .00

- 4) PRIMARY DESIGN HYDROGRAPH FILENAME: VV_2
- 5) PRIMARY RELEASE RATE(cfs): .50

- 6) NUMBER OF TEST HYDROGRAPHS: 3
 - TEST HYD 1 FILENAME: VV_10 TARGET RELEASE(cfs): 1.40
 - TEST HYD 2 FILENAME: VV_25 TARGET RELEASE(cfs): 1.60
 - TEST HYD 3 FILENAME: VV_100 TARGET RELEASE(cfs): 2.10

- 7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 1, 1.50, 8
- 8) ITERATION DISPLAY: NO

INITIAL STORAGE VALUE FOR ITERATION PURPOSES: 10041 CU-FT

SINGLE ORIFICE RESTRICTOR: DIA= 3.88"

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	1.67 (2-YR.)	.50	.50	1.50	5489
TEST HYD 1:	2.63 (10-YR.)	1.40	1.62	1.89	7220
TEST HYD 2:	3.13 (25-YR.)	1.60	1.93	2.13	8330
TEST HYD 3:	4.13 (100-YR.)	2.10	2.38	2.56	10450

AS CAN BE SEEN ABOVE, THE DESIGN & STORAGE VOLUMES SHOWN PROVIDE MORE THAN ADEQUATE PEAK RELEASE RATES.

THE DEVELOPED SITE IS TO BECOME APPROX. 62% IMPERVIOUS => A VOLUME CORRECTION FACTOR OF 36% MUST BE APPLIED TO THE STORAGE VOLUMES (FROM FIGURE III-1.1 OF THE PUGET SOUND MANUAL)

=> REQUIRED STORAGE VOLUMES =

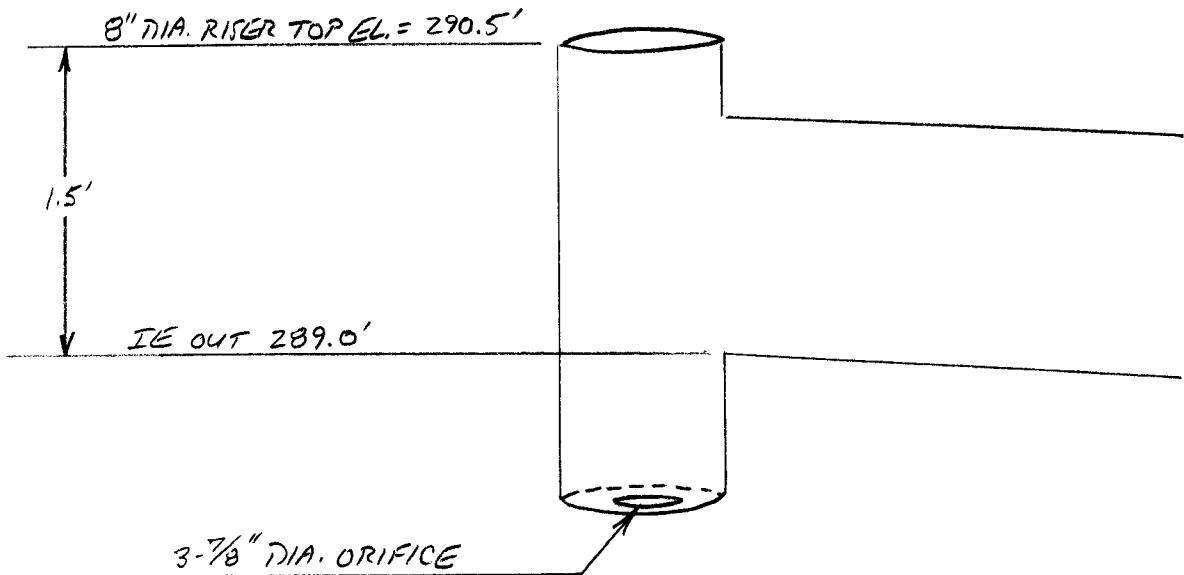
$$\begin{aligned}(5,489 \text{ FT}^3)(1.36) &= 7,465 \text{ FT}^3 \text{ @ STAGE OF } 1.5' \text{ (2-YR.)} \\(7,220 \text{ FT}^3)(1.36) &= 9,819 \text{ FT}^3 \text{ @ STAGE OF } 1.9' \text{ (10-YR.)} \\(8,330 \text{ FT}^3)(1.36) &= 11,330 \text{ FT}^3 \text{ @ STAGE OF } 2.1' \text{ (25-YR.)} \\(10,450 \text{ FT}^3)(1.36) &= 14,212 \text{ FT}^3 \text{ @ STAGE OF } 2.5' \text{ (100-YR.)}\end{aligned}$$

*AS CAN BE SEEN IN THE STORM DETENTION ROUTING DATA ON THE FOLLOWING SHEET, THESE REQUIRED STORAGE VOLUMES ARE NOT ONLY MET BUT ARE GREATLY EXCEEDED.

STORM DETENTION ROUTING DATA
(AFTER VOLUME CORRECTION FACTOR APPLIED)

N	ELEV	STAGE (FT.):	3-7/8" DIA. ORIF. ADISC (CFS):	8"DIA. RISER BDISC (CFS):	STORAGE (CU. FT.):	PERC-AREA
1	289.00	.00	.00	.00	.0	.0
2	289.10	.10	.13	.00	700.0	.0
3	289.20	.20	.19	.00	1400.0	.0
4	289.30	.30	.23	.00	2150.0	.0
5	289.40	.40	.26	.00	2880.0	.0
6	289.50	.50	.29	.00	3600.0	.0
7	289.60	.60	.32	.00	4350.0	.0
8	289.70	.70	.35	.00	5150.0	.0
9	289.80	.80	.37	.00	5900.0	.0
10	289.90	.90	.39	.00	6700.0	.0
11	290.00	1.00	.41	.00	7500.0	.0
12	290.10	1.10	.43	.00	8300.0	.0
13	290.20	1.20	.45	.00	9150.0	.0
14	290.30	1.30	.47	.00	9950.0	.0
15	290.40	1.40	.49	.00	10800.0	.0
16	290.50	1.50	.51	.00	11600.0	.0
17	290.60	1.60	.52	.21	12500.0	.0
18	290.70	1.70	.54	.58	13400.0	.0
19	290.80	1.80	.56	.92	14300.0	.0
20	290.90	1.90	.57	1.06	15200.0	.0
21	291.00	2.00	.59	1.19	16100.0	.0
22	291.10	2.10	.60	1.30	17000.0	.0
23	291.20	2.20	.61	1.41	17900.0	.0
24	291.30	2.30	.63	1.50	18800.0	.0
25	291.40	2.40	.64	1.59	19800.0	.0
26	291.50	2.50	.66	1.68	20700.0	.0
27	291.60	2.60	.67	1.76	21700.0	.0

INITIAL STAGE ELEV = 289.00
 AVERAGE PERC-RATE = .0
 FILENAME: VV_DATA



2-YR., 24-HR. STORM ROUTE THROUGH DETENTION FACILITY
(AFTER APPLICATION OF VOLUME CORRECTION FACTOR)

RESERVOIR ROUTING ROUTINE W/SPLIT-OUTFLOW

SPECIFY [d:][path]filename[.ext] OF ROUTING DATA

VV_DATA

DISPLAY ROUTING DATA (Y or N)?

N

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:

VV_2

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW(CFS)	PEAK-OUTFLOW(CFS)		OUTFLOW-VOL (CU-FT)	
	A	B	A	B
1.67	.40	.00	27329	0

INITIAL-STAGE(FT)	TIME-OF-PEAK(HRS)	PEAK-STAGE-ELEV(FT)
289.00	11.00	289.96

REQUIRED STORAGE: 7190 CU-FT

$Q_p = 0.40 \text{ CFS}$
 $ALLOWABLE = 0.80 \text{ CFS}$
 $\Rightarrow \text{O.K.}$

10-YR., 24-HR. STORM ROUTE THROUGH DETENTION FACILITY
(AFTER APPLICATION OF VOLUME CORRECTION FACTOR)

RESERVOIR ROUTING ROUTINE W/SPLIT-OUTFLOW

SPECIFY [d:][path]filename[.ext] OF ROUTING DATA

VV_DATA

DISPLAY ROUTING DATA (Y or N)?

N

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:

VV_10

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW(CFS)	PEAK-OUTFLOW(CFS)		OUTFLOW-VOL (CU-FT)	
	A	B	A	B
2.63	.52	.17	40873	2136

INITIAL-STAGE(FT)	TIME-OF-PEAK(HRS)	PEAK-STAGE-ELEV(FT)
289.00	10.67	290.58

REQUIRED STORAGE: 12330 CU-FT

$Q_p = 0.69 \text{ CFS}$
 $ALLOWABLE = 1.58 \text{ CFS}$
 $\Rightarrow \text{O.K.}$

25-YR., 24-HR. STORM ROUTE THROUGH DETENTION FACILITY
(AFTER APPLICATION OF VOLUME CORRECTION FACTOR)

RESERVOIR ROUTING ROUTINE W/SPLIT-OUTFLOW

SPECIFY [d:][path]filename[.ext] OF ROUTING DATA

VV_DATA

DISPLAY ROUTING DATA (Y or N)?

N

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:

VV_25

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW(CFS)	PEAK-OUTFLOW(CFS)		OUTFLOW-VOL(CU-FT)	
	A	B	A	B
3.13	.54	.60	44024	6927
INITIAL-STAGE(FT)	TIME-OF-PEAK(HRS)		PEAK-STAGE-ELEV(FT)	
289.00	8.83		290.71	
REQUIRED STORAGE:	13450 CU-FT			

$Q_p = 1.14 \text{ CFS}$
ALLOWABLE = 2.00 CFS
 \Rightarrow O.K.

100-YR., 24-HR. STORM ROUTE THROUGH DETENTION FACILITY
(AFTER APPLICATION OF VOLUME CORRECTION FACTOR)

RESERVOIR ROUTING ROUTINE W/SPLIT-OUTFLOW

SPECIFY [d:][path]filename[.ext] OF ROUTING DATA

VV_DATA

DISPLAY ROUTING DATA (Y or N)?

N

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:

VV_100

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW(CFS)	PEAK-OUTFLOW(CFS)		OUTFLOW-VOL(CU-FT)	
	A	B	A	B
4.13	.59	1.24	48904	18066
INITIAL-STAGE(FT)	TIME-OF-PEAK(HRS)		PEAK-STAGE-ELEV(FT)	
289.00	8.67		291.04	
REQUIRED STORAGE:	16480 CU-FT			

$Q_p = 1.83 \text{ CFS}$
ALLOWABLE = 2.85 CFS
 \Rightarrow O.K.

Appendix III
Water Quality Calculations

DEVELOPED RUNOFF VOLUMES/DISCHARGE										
Drainage Basin	66% 2-Yr, 24-hr. storm (6 month storm)		2 yr., 24 hr. storm		10 yr., 24 hr. storm		25 yr., 24 hr. storm		100 yr., 24 hr. storm	
	Peak Discharge (cfs):	Total Volume (ft ³):	Peak Discharge (cfs):	Total Volume (ft ³):	Peak Discharge (cfs):	Total Volume (ft ³):	Peak Discharge (cfs):	Total Volume (ft ³):	Peak Discharge (cfs):	Total Volume (ft ³):
Basin 1	0.45	7,780	0.77	13,150	1.22	20,500	1.44	24,300	1.90	31,900
Basin 2	0.34	5,930	0.59	10,060	0.93	15,700	1.11	18,600	1.46	24,500
Basin 3	0.11	1,610	0.20	2,780	0.31	4,390	0.37	5,210	0.49	6,890
Basin 4	0.06	860	0.11	1,520	0.17	2,450	0.21	2,920	0.28	3,890
Basin Off	0.07	1,050	0.13	1,770	0.20	2,760	0.23	3,270	0.31	4,290
TOTALS:	1.03	17,230	1.80	29,280	2.83	45,800	3.36	54,300	4.44	71,470

THE WETPOND WILL RECEIVE RUNOFF FROM DEVELOPED DRAINAGE BASINS 1-4.
 THE 6-MONTH, 24 HR. STORM VOLUME FROM BASINS 1-4 IS 16,180 FT³.
 ⇒ THIS VOLUME MUST BE PROVIDED AS "DEAD STORAGE" WITHIN THE WETPOND.