

ARROWOOD SUBDIVISION

The site is located approximately 700 feet east of the intersection of Bergdolt Road and Oak Hill Road.

The 20.02 acre site is located on rolling ground which has been cultivated for row crops. The entire site along with 9 +/- acres off-site runs directly into an existing 48" culvert located at the northeast corner of the proposed subdivision. The existing 48" culvert running through Bergdolt Road drains directly into an existing unnamed tributary, which then drains into Licking Creek.

The majority of the stormwater, except for the roadside ditch runoff, will be conveyed through the proposed drainage system which will drain directly into a proposed basin at the northeast corner of the site. The basin has been designated to handle the required storage of both the 25 year (37,324 cubic feet) and 100 year (55,486 cubic feet) storm events.

The storage capacity available in the proposed basin is 69,322 cubic feet which is 86% in excess of the amount required to be stored for the 25 year storm event and 25% in excess of the 100 year storm event. The proposed basin has an allowable discharge rate of 28.86 cfs. The outflow rate on the 30" discharge pipe is 24 cfs. The difference between the allowable discharge rate of 28.86 cfs and the discharge pipe of 24 cfs is 4.86 cfs. The additional storage required for the 4.86 cfs has been taken into consideration on the Form 800 for both the 25 and 100 year storm events.

Based on the most recent soil survey of Vanderburgh County, the 20 acre site contains the following soils:

Hosmer Silt Loam, 6 to 12 percent slopes, eroded (HoC3);
Hosmer Silt Loam, 2 to 6 percent slopes, eroded (HoB2);
And Birds Silt Loam (Bd).

No portion of the site is within the designated 100 year flood zone according to the FIRM Panel Number 180256 0025C, dated August 5, 1991.



Site Location

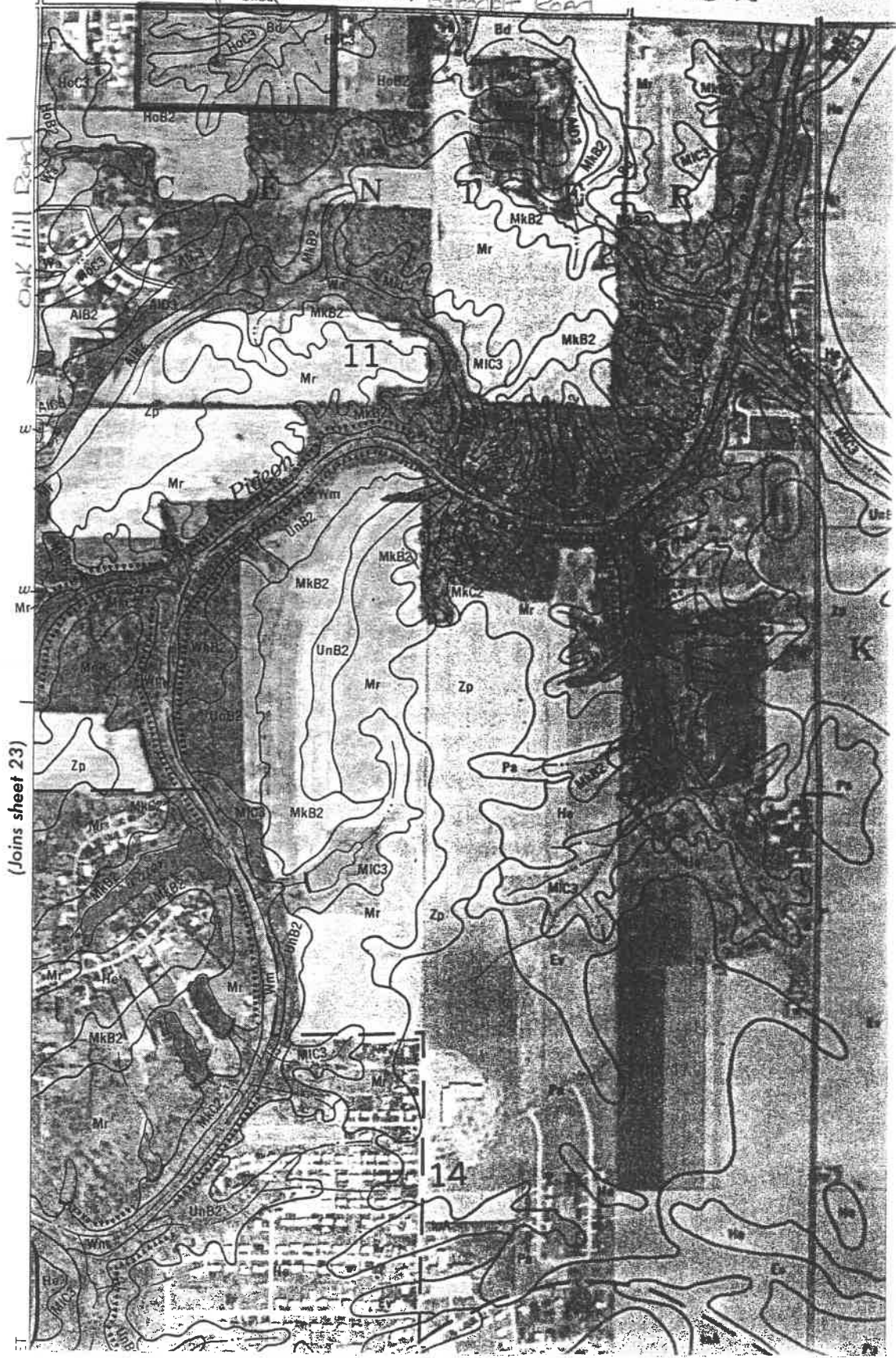
HoB2 UnB2 (Joins sheet 20)

Berrill Road

Scale 1" = 1000'

1 Mile
5000 Feet

0 0 1000 2000 3000
Scale 1:15840
(Joins sheet 23)



SOIL SURVEY OF

Vanderburgh County, Indiana



**United States Department of Agriculture
Soil Conservation Service**

In cooperation with

**Purdue University Agricultural
Experiment Station**

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads	
Divided	
Good motor	
Poor motor	
Trail	
Highway markers	
National Interstate	
U. S.	
State or county	
Railroads	
Single track	
Multiple track	
Abandoned	
Bridges and crossings	
Road	
Trail	
Railroad	
Ferry	
Ford	
Grade	
R. R. over	
R. R. under	
Buildings	
School	
Church	
Mine and quarry	
Gravel pit	
Power line	
Pipeline	
Cemetery	
Dams	
Levee	
Tanks	
Well, oil or gas	
Forest fire or lookout station ...	
Indian mound	
Located object	

BOUNDARIES

National or state	
County	
Minor civil division	
Reservation	
Limit of soil survey	
Small park, cemetery, airport ...	
Land survey division corners ...	

DRAINAGE

Streams, double-line	
Perennial	
Intermittent	
Streams, single-line	
Perennial	
Intermittent	
Crossable with tillage implements	
Not crossable with tillage implements	
Unclassified	
Canals and ditches	
Lakes and ponds	
Perennial	
Intermittent	
Spring	
Marsh or swamp	
Wet spot	
Drainage end or alluvial fan ...	

SOIL SU

Soil boundary	.....
and symbol .....	.....
Gravel .....	.....
Stoniness { Stony .....	.....
{ Very stony .....	.....
Rock outcrops .....	.....
Chert fragments .....	.....
Clay spot .....	.....
Sand spot .....	.....
Gumbo or scabby spot ....	.....
Made land .....	.....
Severely eroded spot .....	.....
Blowout, wind erosion .....	.....
Gully .....	.....
Saline spot .....	.....

RELIEF

Escarments	
Bedrock	
Other	
Short steep slope	
Prominent peak	
Depressions	
Crossable with tillage implements	
Not crossable with tillage implements	
Contains water most of the time	

DATA



SOIL LEGEND

The first capital letter is the initial one of the soil name. The lowercase letter that follows separates mapping units having names that begin with the same letter except that it does not separate sloping or eroded phases. The second capital letter indicates the class of slope. Symbols without a slope letter are for soils with a slope range of 0 to 2 percent or they are for land types with a considerable range of slope. A final number, 2 or 3, in the symbol indicates that the soil is eroded or severely eroded.

SYMBOL	NAME
AIB2	Alford silt loam, 2 to 6 percent slopes, eroded
AIC2	Alford silt loam, 6 to 12 percent slopes, eroded
AIC3	Alford silt loam, 6 to 12 percent slopes, severely eroded
AID3	Alford silt loam, 12 to 18 percent slopes, severely eroded
Ba	Bartle silt loam
Bd	Birds silt loam
Bo	Bonnie silt loam
Br	Borrow pits
Ev	Evansville silt loam
Gn	Ginat silt loam
Gu	Gullied land
He	Henshaw silt loam
HoA	Hosmer silt loam, 0 to 2 percent slopes
HoB2	Hosmer silt loam, 2 to 6 percent slopes, eroded
HoB3	Hosmer silt loam, 2 to 6 percent slopes, severely eroded
HoC2	Hosmer silt loam, 6 to 12 percent slopes, eroded
HoC3	Hosmer silt loam, 6 to 12 percent slopes, severely eroded
HoD3	Hosmer silt loam, 12 to 18 percent slopes, severely eroded
Ht	Huntington silty clay loam
Hu	Huntington fine sandy loam, sandy variant
IoA	Iona silt loam, 0 to 2 percent slopes
IoB2	Iona silt loam, 2 to 6 percent slopes, eroded
Iv	Iva silt loam
Ln	Lindside silty clay loam
Ma	Made land
MkB2	Markland silt loam, 2 to 6 percent slopes, eroded
MkC2	Markland silt loam, 6 to 18 percent slopes, eroded
MIC3	Markland silty clay loam, 6 to 18 percent slopes, severely eroded
Mr	McGary silt loam
MuA	Muren silt loam, 0 to 2 percent slopes
MuB2	Muren silt loam, 2 to 6 percent slopes, eroded
Nw	Newark silty clay loam
Pa	Patton silty clay loam
PrB	Princeton fine sandy loam, 2 to 6 percent slopes
Ra	Ragsdale silt loam
Rh	Rahm silty clay loam
Rs	Reesville silt loam
ScA	Sciotoville silt loam, 0 to 2 percent slopes
ScB2	Sciotoville silt loam, 2 to 6 percent slopes, eroded
St	Stendal silt loam
UnB2	Uniontown silt loam, 2 to 6 percent slopes, eroded
Wa	Wakeland silt loam
Wb	Weinbach silt loam
WeD2	Wellston silt loam, 12 to 18 percent slopes, eroded
WeD3	Wellston silt loam, 12 to 18 percent slopes, severely eroded
WeE2	Wellston silt loam, 18 to 25 percent slopes, eroded
WeF	Wellston silt loam, 25 to 50 percent slopes
WhA	Wheeling loam, 0 to 2 percent slopes
WhB2	Wheeling loam, 2 to 6 percent slopes, eroded
Wm	Wilbur silt loam
Wo	Woodmere silty clay loam
ZaC2	Zanesville silt loam, 6 to 12 percent slopes, eroded
ZaC3	Zanesville silt loam, 6 to 12 percent slopes, severely eroded
ZaD2	Zanesville silt loam, 12 to 18 percent slopes, eroded
ZaD3	Zanesville silt loam, 12 to 18 percent slopes, severely eroded
Zp	Zipp silty clay

TABLE 807

RAINFALL INTENSITY-DURATION-FREQUENCY TABLE FOR EVANSVILLE

		INTENSITY IN INCHES PER HOUR				
STORM DURATION		STORM RETURN PERIOD IN YEARS				
		5	10	25	50	100
5	MIN	6.063	6.625	7.208	7.936	8.469
10	MIN	4.863	5.380	5.925	6.616	7.126
15	MIN	4.029	4.515	5.033	5.697	6.194
30	MIN	2.837	3.226	3.646	4.194	4.608
60	MIN	1.549	1.819	2.078	2.412	2.663
2.0	HRS	1.053	1.230	1.400	1.620	1.785
3.0	HRS	0.774	0.899	1.019	1.175	1.291
4.0	HRS	0.632	0.736	0.836	0.965	1.062
5.0	HRS	0.524	0.606	0.684	0.785	0.861
6.0	HRS	0.453	0.522	0.589	0.676	0.741
7.0	HRS	0.399	0.459	0.516	0.591	0.647
8.0	HRS	0.358	0.412	0.463	0.530	0.581
9.0	HRS	0.323	0.370	0.415	0.472	0.516
10	HRS	0.297	0.339	0.379	0.431	0.470
11	HRS	0.276	0.314	0.351	0.399	0.435
12	HRS	0.259	0.296	0.331	0.376	0.410
13	HRS	0.245	0.280	0.314	0.357	0.390
14	HRS	0.233	0.267	0.299	0.341	0.372
15	HRS	0.220	0.252	0.281	0.320	0.349
16	HRS	0.209	0.238	0.266	0.302	0.329
17	HRS	0.198	0.225	0.251	0.284	0.310

TABLE 803

UNDEVELOPED RUNOFF COEFFICIENTS (C_u)

SURFACE TYPE:

WOODLAND, TURFED MEADOWS
ROUGH PASTURE, FALLOW BRUSH:

SLOPE:

Less than 2%	C = 0.12
2% to 5%	C = 0.24
5+% to 10%	C = 0.36
Over 10%	C = 0.48

CULTIVATED FIELDS:

Less than 2%	C = 0.20
2% to 5%	C = 0.35
5+% to 10%	C = 0.50
Over 10%	C = 0.65

TABLE 804

DEVELOPED RUNOFF COEFFICIENTS (C_d)

SURFACE TYPE:

PAVEMENT, ROOFTOP
OTHER IMPERVIOUS SURFACES:

Less than 2%	C = 0.92
2% to 5%	C = 0.94
5+% to 10%	C = 0.96
Over 10%	C = 0.98

LAWNS WITH TURF:

Less than 2%	C = 0.15
2% to 5%	C = 0.25
5+% to 10%	C = 0.40
Over 10%	C = 0.55

ALL WATER SURFACES
BASINS, PONDS & LAKES:

$C = 1.00$

Table 3.2.4 (cont'd)

Kerby (1959)

$$t_c = K (L N s^{-0.5})^{0.467}$$

where K is equal to 0.83 (US Customary units) or 1.44 (Metric units), \bar{L} is the length of flow in ft (m), s is the average slope of overland flow, ft/ft (m/m), and N is the retardance roughness coefficient given in Table 3.2.5.

The length used in the equation is the straight-line distance from the most distant point of the watershed to the outlet, measured parallel to the slope of the land until a well-defined channel is reached. Watersheds of less than 10 acres were used to calibrate the model; slopes were less than 1%; N values were 0.8 and less and surface flow dominated (McCuen, 1989).

Izzard (1946)

$$t_c = \frac{K(Bi + c') L^{\frac{1}{3}}}{s^{\frac{1}{3}} i^{\frac{2}{3}}}$$

where K is equal to 41.025 for U.S. customary units (113.391 for metric), B is equal to 0.0007 for U.S customary units (0.00027 for metric), c' is the retardance coefficient given in Table 3.2.7, i is the rainfall intensity, in/hr (cm/hr), L is the length of flow path in ft (m), and s is the slope of overland flow path, ft/ft (m/m).

The product of i and L must be less than 500 in-ft/hr (390 cm-m/hr) to consider using this formula. In addition, well defined channels should not be present. This method was developed in laboratory experiments for the overland flow on roadway and turf surfaces.

Table 3.2.5
Values of N for Kerby's Formula (Kerby, 1959)

<u>Type of Surface</u>	<u>N</u>
Smooth impervious surface	0.02
Smooth bare packed soil	0.10
Poor grass, cultivated row crops or moderately rough bare surface	0.20
Deciduous timberland	0.60
Pasture or Overage grass	0.40
Conifer timberland, deciduous timberland with deep forest litter or dense grass	0.80

On-Site Undeveloped

<u>Surface</u>	<u>Area</u>	<u>c</u>	<u>N</u>
Cultivated Field (2-5%)	20 Ac.	.35	.20

Time of Concentration

$$t_c = .827 \left[\frac{1380(.20)}{\sqrt{.0225}} \right]^{.467} = 27.68 \text{ min.}$$

$$S = \frac{416 - 585}{1380} = 2.25$$

$$i_{10} = 3.441 \text{ in/hr}$$

$$Q = (.35)(3.441)(20) = 24.09 \text{ cfs}$$

BASIN

$$\text{Overall Undeveloped Runoff} - \left[\begin{array}{l} \text{Developed Basins \#1-\#5} \\ \text{Direct Runoff} \end{array} \right]$$

$$= 24.09 - [0.44 + 3.07 + 0.42 + 0.84 + 0.88]$$

$$= 18.44 \text{ cfs} \rightarrow \text{Allowable outflow rate}$$

$$\text{Required Storage}_{25} = 37,324 \text{ cubic feet}$$

$$\text{Required Storage}_{100} = 55,486 \text{ cubic feet}$$

$$\text{Storage Available} = 69,322 \text{ cubic feet}$$

Discharge

$$\text{Allowable Outflow Rate} + \left[\#OS-2 + \#OS-3 + \#OS-4 + \#OS-5 \right]$$

$$= 18.44 + [2.04 + 1.86 + 2.61 + 3.91]$$

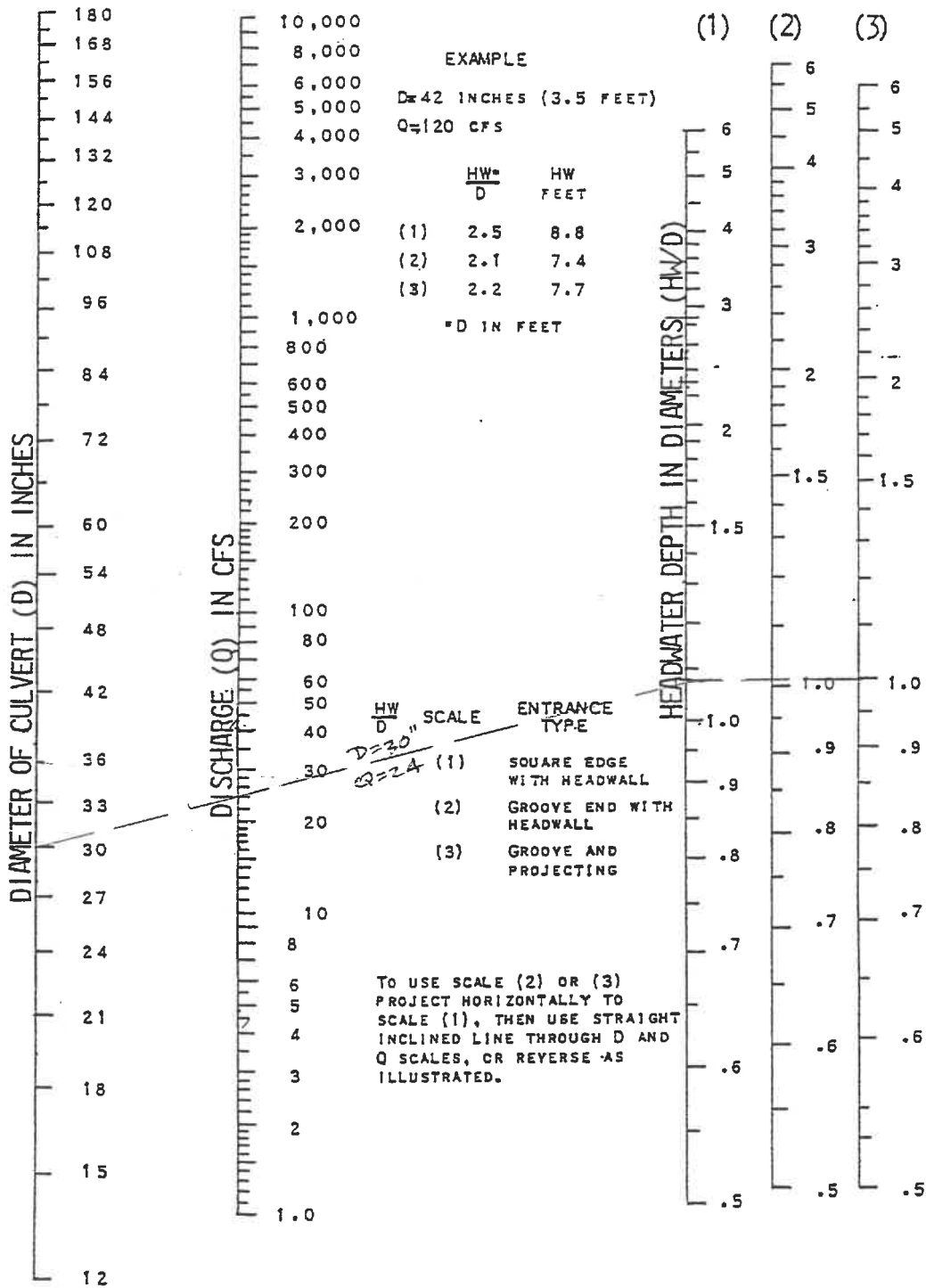
$$= 28.86 \text{ cfs}$$

Design Discharge - Discharge Pipe Release Rate

$$= 28.86 \text{ cfs} - 24 \text{ cfs} = 4.86 \text{ cfs}$$

Allowable Outflow Rate - 4.86 cfs

$$= 18.44 \text{ cfs} - 4.86 \text{ cfs} = 13.58 \text{ cfs} \rightarrow \text{Form 800}$$



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

FIG. 7-430.01 F

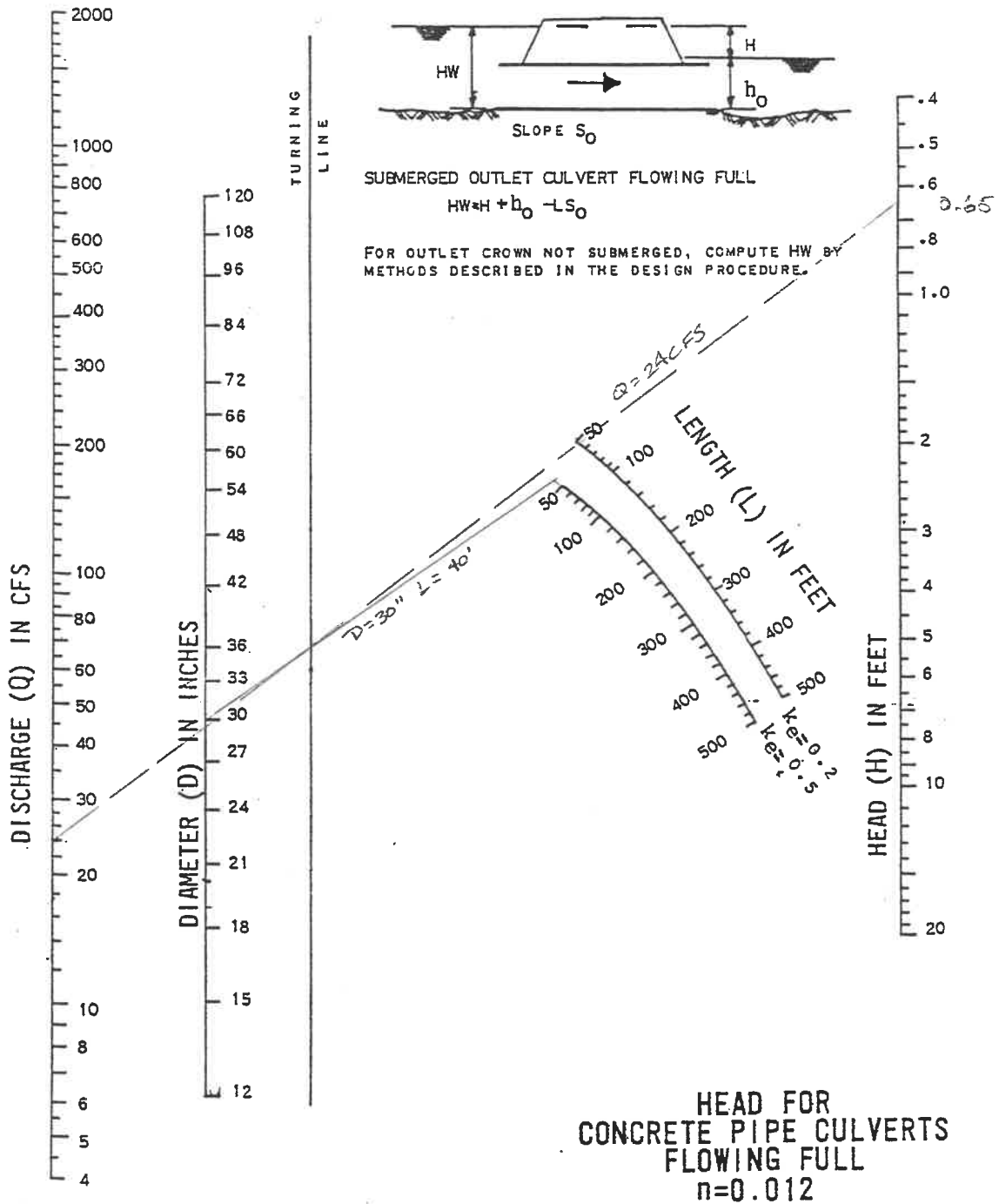
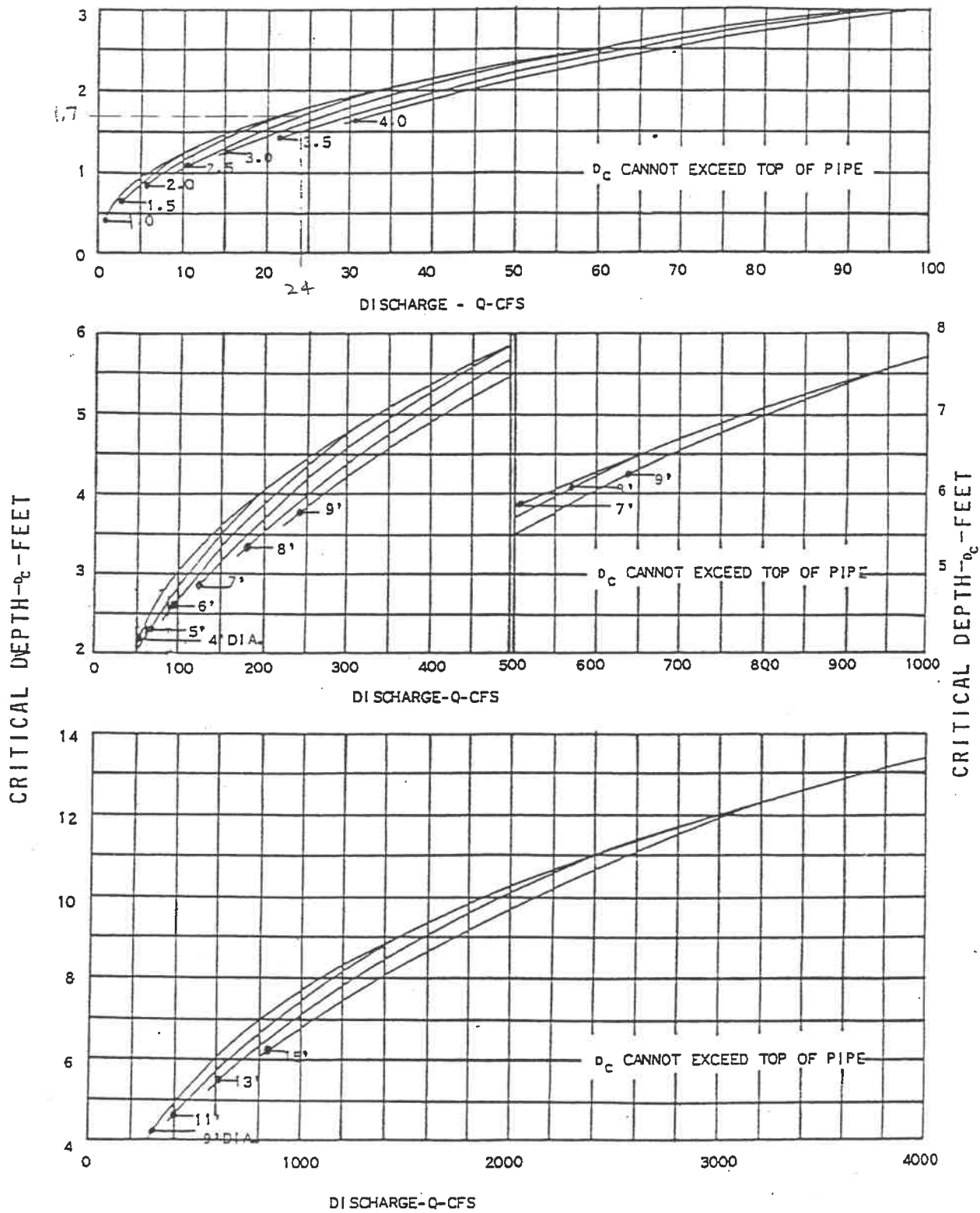


FIG. 7-430.01 W



CRITICAL DEPTH
CIRCULAR PIPE

FIG. 7-430.01 L

Developed Drainage Sub-Basins								
Sub-basin No.: os-1		Total Area = 33,541 S.F. = 0.77 Ac.						
Surface							C	N
Structures	0 Total	0 S.F.	=	4,000	S.F.	=	0.09 Ac.	0.92 0.02
Drives	0 Total	0 S.F.	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Pavement	0 L.F.	0.0 Width	=	3,000	S.F.	=	0.07 Ac.	0.92 0.02
Patios	0 Total	0 S.F.	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Sidewalks	0 L.F.	0 Width	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Lawn (0-2%)		S.F.	=		S.F.	=	0.00 Ac.	0.15 0.40
Lawn (2-5%)	26,541	S.F.	=		S.F.	=	0.61 Ac.	0.25 0.40
Lawn (5-10%)		S.F.	=		S.F.	=	0.00 Ac.	0.40 0.40
Lawn (>10%)		S.F.	=		S.F.	=	0.00 Ac.	0.55 0.40
Water		S.F.	=		S.F.	=	0.00 Ac.	1.00 0.00
Misc.		S.F.	=		S.F.	=	0.00 Ac.	0.92 0.02

Weighted c =	0.390
Weighted N =	0.321
L =	200 Ft.
H =	9.3 Ft.
S =	0.0465 Ft./Ft.
tc =	11.82 Minutes
I(25) =	5.600 In./Hr.
Q(25) =	1.68 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins								
Sub-basin No.: os-2		Total Area = 50,530 S.F. = 1.16 Ac.						
Surface							C	N
Structures	0 Total	0 S.F.	=	4,000	S.F.	=	0.09 Ac.	0.92 0.02
Drives	0 Total	0 S.F.	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Pavement	0 L.F.	0.0 Width	=	3,000	S.F.	=	0.07 Ac.	0.92 0.02
Patios	0 Total	0 S.F.	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Sidewalks	0 L.F.	0 Width	=	0	S.F.	=	0.00 Ac.	0.92 0.02
Lawn (0-2%)		S.F.	=		S.F.	=	0.00 Ac.	0.15 0.40
Lawn (2-5%)	43,530	S.F.	=		S.F.	=	1.00 Ac.	0.25 0.40
Lawn (5-10%)		S.F.	=		S.F.	=	0.00 Ac.	0.40 0.40
Lawn (>10%)		S.F.	=		S.F.	=	0.00 Ac.	0.55 0.40
Water		S.F.	=		S.F.	=	0.00 Ac.	1.00 0.00
Misc.		S.F.	=		S.F.	=	0.00 Ac.	0.92 0.02

Weighted c =	0.343
Weighted N =	0.347
L =	270 Ft.
H =	11.3 Ft.
S =	0.0419 Ft./Ft.
tc =	14.47 Minutes
I(25) =	5.128 In./Hr.
Q(25) =	2.04 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins									
Sub-basin No.: os-3		Total Area = 43,996 S.F. = 1.01 Ac.							
Surface						C		N	
Structures	0 Total	0 S.F.	=	5,000 S.F.	=	0.11 Ac.	0.92	0.02	
Drives	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02	
Pavement	0 L.F.	0.0 Width	=	2,000 S.F.	=	0.05 Ac.	0.92	0.02	
Patios	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02	
Sidewalks	0 L.F.	0 Width	=	0 S.F.	=	0.00 Ac.	0.92	0.02	
Lawn (0-2%)		S.F.	=		=	0.00 Ac.	0.15	0.40	
Lawn (2-5%)	36,996	S.F.	=		=	0.85 Ac.	0.25	0.40	
Lawn (5-10%)		S.F.	=		=	0.00 Ac.	0.40	0.40	
Lawn (>10%)		S.F.	=		=	0.00 Ac.	0.55	0.40	
Water		S.F.	=		=	0.00 Ac.	1.00	0.00	
Misc.		S.F.	=		=	0.00 Ac.	0.92	0.02	

Weighted c =	0.357
Weighted N =	0.340
L =	280 Ft.
H =	13.0 Ft.
S =	0.0464 Ft./Ft.
tc =	14.21 Minutes
I(25) =	5.174 In./Hr.
Q(25) =	1.86 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins									
Sub-basin No.: os-4		Total Area = 71,874 S.F. = 1.65 Ac.							
Surface						C		N	
Structures	0 Total	0 S.F.	=	5,000 S.F.	=	0.11 Ac.	0.92	0.02	
Drives	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02	
Pavement	0 L.F.	0.0 Width	=	2,000 S.F.	=	0.05 Ac.	0.92	0.02	
Patios	0 Total	0 S.F.	=	S.F.	=	0.00 Ac.	0.92	0.02	
Sidewalks	0 L.F.	0 Width	=	0 S.F.	=	0.00 Ac.	0.92	0.02	
Lawn (0-2%)		S.F.	=		=	0.00 Ac.	0.15	0.40	
Lawn (2-5%)	64,874	S.F.	=		=	1.49 Ac.	0.25	0.40	
Lawn (5-10%)		S.F.	=		=	0.00 Ac.	0.40	0.40	
Lawn (>10%)		S.F.	=		=	0.00 Ac.	0.55	0.40	
Water		S.F.	=		=	0.00 Ac.	1.00	0.00	
Misc.		S.F.	=		=	0.00 Ac.	0.92	0.02	

Weighted c =	0.315
Weighted N =	0.363
L =	270 Ft.
H =	10.0 Ft.
S =	0.0370 Ft./Ft.
tc =	15.19 Minutes
I(25) =	5.016 In./Hr.
Q(25) =	2.61 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: os-5		Total Area = 100,624 S.F. = 2.31 Ac.								
Surface										
Structures	0 Total	0 S.F.	=	2,000 S.F.	=	0.05 Ac.	C	0.92	N	0.02
Drives	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02		
Pavement	0 L.F.	0.0 Width	=	2,000 S.F.	=	0.05 Ac.	0.92	0.02		
Patios	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02		
Sidewalks	0 L.F.	0 Width	=	0 S.F.	=	0.00 Ac.	0.92	0.02		
Lawn (0-2%)		S.F.	=		=	0.00 Ac.	0.15	0.40		
Lawn (2-5%)		85,624 S.F.	=		=	1.97 Ac.	0.25	0.40		
Lawn (5-10%)		S.F.	=		=	0.00 Ac.	0.40	0.40		
Lawn (>10%)		S.F.	=		=	0.00 Ac.	0.55	0.40		
Water		11,000 S.F.	=		=	0.25 Ac.	1.00	0.00		
Misc.		S.F.	=		=	0.00 Ac.	0.92	0.02		

Weighted c =	0.359
Weighted N =	0.341
L =	500 Ft.
H =	25.0 Ft.
S =	0.0500 Ft./Ft.
tc =	18.35 Minutes
I(25) =	4.723 In./Hr.
Q(25) =	3.91 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: os-6		Total Area = 95,396 S.F. = 2.19 Ac.								
Surface										
Structures	0 Total	0 S.F.	=	2,000 S.F.	=	0.05 Ac.	C	0.92	N	0.02
Drives	0 Total	0 S.F.	=	0 S.F.	=	0.00 Ac.	0.92	0.02		
Pavement	0 L.F.	0.0 Width	=	3,000 S.F.	=	0.07 Ac.	0.92	0.02		
Patios	0 Total	0 S.F.	=	S.F.	=	0.00 Ac.	0.92	0.02		
Sidewalks	0 L.F.	0 Width	=	0 S.F.	=	0.00 Ac.	0.92	0.02		
Lawn (0-2%)		S.F.	=		=	0.00 Ac.	0.15	0.40		
Lawn (2-5%)		90,396 S.F.	=		=	2.08 Ac.	0.25	0.40		
Lawn (5-10%)		S.F.	=		=	0.00 Ac.	0.40	0.40		
Lawn (>10%)		S.F.	=		=	0.00 Ac.	0.55	0.40		
Water		S.F.	=		=	0.00 Ac.	1.00	0.00		
Misc.		S.F.	=		=	0.00 Ac.	0.92	0.02		

Weighted c =	0.285
Weighted N =	0.380
L =	520 Ft.
H =	25.0 Ft.
S =	0.0481 Ft./Ft.
tc =	19.84 Minutes
I(25) =	4.586 In./Hr.
Q(25) =	2.86 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		1	Total Area = 10,019 S.F. = 0.23 Ac.							
Surface										
Structures	0.25	Total	1,500	S.F. =	375	S.F. =	0.01	Ac.	C	N
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Pavement	110	L.F.	14.5	Width =	1,595	S.F. =	0.04	Ac.	0.92	0.02
Patios	0.25	Total	150	S.F. =	38	S.F. =	0.00	Ac.	0.92	0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			8,012	S.F. =			0.18	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.384
Weighted N =	0.324
L =	310 Ft.
H =	10.0 Ft.
S =	0.0323 Ft./Ft.
tc =	15.87 Minutes
I(25) =	4.953 In./Hr.
Q(25) =	0.44 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		2	Total Area = 64,469 S.F. = 1.48 Ac.							
Surface										
Structures	6	Total	1,500	S.F. =	9,000	S.F. =	0.21	Ac.	C	N
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Pavement	780	L.F.	14.5	Width =	11,310	S.F. =	0.26	Ac.	0.92	0.02
Patios	12	Total	150	S.F. =	1,800	S.F. =	0.04	Ac.	0.92	0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			42,359	S.F. =			0.97	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.480
Weighted N =	0.270
L =	750 Ft.
H =	21.5 Ft.
S =	0.0287 Ft./Ft.
tc =	22.62 Minutes
I(25) =	4.328 In./Hr.
Q(25) =	3.07 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		3		Total Area = 4,792 S.F. = 0.11 Ac.							
Surface											
Structures	0.25	Total	1,500	S.F. =	375	S.F. =	0.01	Ac.	C	N	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	130	L.F.	14.5	Width =	1,885	S.F. =	0.04	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	130	L.F.	4	Width =	520	S.F. =	0.01	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			2,012	S.F. =			0.05	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.639
Weighted N =	0.180
L =	110 Ft.
H =	1.0 Ft.
S =	0.0091 Ft./Ft.
tc =	9.98 Minutes
I(25) =	5.930 In./Hr.
Q(25) =	0.42 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		4		Total Area = 11,326 S.F. = 0.26 Ac.							
Surface											
Structures	1	Total	1,500	S.F. =	1,500	S.F. =	0.03	Ac.	C	N	
Drives	2	Total	500	S.F. =	1,000	S.F. =	0.02	Ac.	0.92	0.02	
Pavement	170	L.F.	14.5	Width =	2,465	S.F. =	0.06	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	170	L.F.	4	Width =	680	S.F. =	0.02	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			5,681	S.F. =			0.13	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.584
Weighted N =	0.211
L =	150 Ft.
H =	1.5 Ft.
S =	0.0100 Ft./Ft.
tc =	12.16 Minutes
I(25) =	5.540 In./Hr.
Q(25) =	0.84 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		5		Total Area = 16,553 S.F. = 0.38 Ac.							
Surface											
Structures	0.25	Total	1,500	S.F. =	375	S.F. =	0.01	Ac.	C	N	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	310	L.F.	14.5	Width =	4,495	S.F. =	0.10	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			11,683	S.F. =			0.27	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.447
Weighted N =	0.288
L =	230 Ft.
H =	5.5 Ft.
S =	0.0239 Ft./Ft.
tc =	14.02 Minutes
I(25) =	5.208 In./Hr.
Q(25) =	0.88 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		6		Total Area = 31,363 S.F. = 0.72 Ac.							
Surface											
Structures	4	Total	1,500	S.F. =	6,000	S.F. =	0.14	Ac.	C	N	
Drives	4	Total	500	S.F. =	2,000	S.F. =	0.05	Ac.	0.92	0.02	
Pavement	300	L.F.	14.5	Width =	4,350	S.F. =	0.10	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	300	L.F.	4	Width =	1,200	S.F. =	0.03	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			17,813	S.F. =			0.41	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.539
Weighted N =	0.236
L =	150 Ft.
H =	1.8 Ft.
S =	0.0122 Ft./Ft.
tc =	12.23 Minutes
I(25) =	5.527 In./Hr.
Q(25) =	2.15 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		7		Total Area = 7,405 S.F. = 0.17 Ac.							
Surface											
Structures	0.25	Total	1,500	S.F. =	375	S.F. =	0.01	Ac.	C	N	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	200	L.F.	14.5	Width =	2,900	S.F. =	0.07	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	200	L.F.	4	Width =	800	S.F. =	0.02	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			3,330	S.F. =			0.08	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.619
Weighted N =	0.191
L =	180 Ft.
H =	2.0 Ft.
S =	0.0111 Ft./Ft.
tc =	12.34 Minutes
I(25) =	5.508 In./Hr.
Q(25) =	0.58 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		8		Total Area = 10,019 S.F. = 0.23 Ac.							
Surface											
Structures	1	Total	1,500	S.F. =	1,500	S.F. =	0.03	Ac.	C	N	
Drives	2	Total	500	S.F. =	1,000	S.F. =	0.02	Ac.	0.92	0.02	
Pavement	160	L.F.	14.5	Width =	2,320	S.F. =	0.05	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	160	L.F.	4	Width =	640	S.F. =	0.01	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			4,559	S.F. =			0.10	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.615
Weighted N =	0.193
L =	150 Ft.
H =	5.0 Ft.
S =	0.0333 Ft./Ft.
tc =	8.81 Minutes
I(25) =	6.230 In./Hr.
Q(25) =	0.88 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		9		Total Area = 43,560 S.F. = 1.00 Ac.							
Surface											
Structures	5	Total	1,500	S.F. =	7,500	S.F. =	0.17	Ac.	C	N	
Drives	6	Total	500	S.F. =	3,000	S.F. =	0.07	Ac.	0.92	0.02	
Pavement	360	L.F.	14.5	Width =	5,220	S.F. =	0.12	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	360	L.F.	4	Width =	1,440	S.F. =	0.03	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15	0.40	
Lawn (2-5%)			26,400	S.F. =		S.F. =	0.61	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55	0.40	
Water				S.F. =		S.F. =	0.00	Ac.	1.00	0.00	
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92	0.02	

Weighted c =	0.514
Weighted N =	0.250
L =	180 Ft.
H =	5.5 Ft.
S =	0.0306 Ft./Ft.
tc =	11.05 Minutes
I(25) =	5.738 In./Hr.
Q(25) =	2.95 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		10		Total Area = 112,820 S.F. = 2.59 Ac.							
Surface											
Structures	2	Total	1,500	S.F. =	3,000	S.F. =	0.07	Ac.	C	N	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Patios	4	Total	150	S.F. =	600	S.F. =	0.01	Ac.	0.92	0.02	
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15	0.40	
Lawn (2-5%)			109,220	S.F. =		S.F. =	2.51	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55	0.40	
Water				S.F. =		S.F. =	0.00	Ac.	1.00	0.00	
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92	0.02	

Weighted c =	0.271
Weighted N =	0.388
L =	630 Ft.
H =	19.0 Ft.
S =	0.0302 Ft./Ft.
tc =	24.42 Minutes
I(25) =	4.162 In./Hr.
Q(25) =	2.93 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		11		Total Area =		5,662 S.F. =		0.13 Ac.		
Surface										
Structures	0.5	Total	1,500	S.F. =	750	S.F. =	0.02	Ac.	C	N
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Patios	1	Total	150	S.F. =	150	S.F. =	0.00	Ac.	0.92	0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15	0.40
Lawn (2-5%)			4,762	S.F. =		S.F. =	0.11	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55	0.40
Water				S.F. =		S.F. =	0.00	Ac.	1.00	0.00
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92	0.02

Weighted c =	0.356
Weighted N =	0.340
L =	90 Ft.
H =	3.0 Ft.
S =	0.0333 Ft./Ft.
tc =	9.04 Minutes
I(25) =	6.171 In./Hr.
Q(25) =	0.29 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		12		Total Area =		46,609 S.F. =		1.07 Ac.		
Surface										
Structures	5	Total	1,500	S.F. =	7,500	S.F. =	0.17	Ac.	C	N
Drives	5	Total	500	S.F. =	2,500	S.F. =	0.06	Ac.	0.92	0.02
Pavement	520	L.F.	14.5	Width =	7,540	S.F. =	0.17	Ac.	0.92	0.02
Patios	5	Total	150	S.F. =	750	S.F. =	0.02	Ac.	0.92	0.02
Sidewalks	520	L.F.	4	Width =	2,080	S.F. =	0.05	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15	0.40
Lawn (2-5%)			26,239	S.F. =		S.F. =	0.60	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55	0.40
Water				S.F. =		S.F. =	0.00	Ac.	1.00	0.00
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92	0.02

Weighted c =	0.543
Weighted N =	0.234
L =	290 Ft.
H =	3.8 Ft.
S =	0.0131 Ft./Ft.
tc =	16.31 Minutes
I(25) =	4.912 In./Hr.
Q(25) =	2.85 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: 13			Total Area = 31,363 S.F. = 0.72 Ac.							
Surface										
Structures	2.5	Total	1,500	S.F. =	3,750	S.F. =	0.09	Ac.	C	N
Drives	5	Total	500	S.F. =	2,500	S.F. =	0.06	Ac.	0.92	0.02
Pavement	310	L.F.	14.5	Width =	4,495	S.F. =	0.10	Ac.	0.92	0.02
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Sidewalks	310	L.F.	4	Width =	1,240	S.F. =	0.03	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			19,378	S.F. =			0.44	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.506
Weighted N =	0.255
L =	310 Ft.
H =	3.5 Ft.
S =	0.0113 Ft./Ft.
tc =	18.13 Minutes
I(25) =	4.743 In./Hr.
Q(25) =	1.73 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: 14			Total Area = 58,370 S.F. = 1.34 Ac.							
Surface										
Structures	2.5	Total	1,500	S.F. =	3,750	S.F. =	0.09	Ac.	C	N
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Patios	5	Total	150	S.F. =	750	S.F. =	0.02	Ac.	0.92	0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			53,870	S.F. =			1.24	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.302
Weighted N =	0.371
L =	400 Ft.
H =	10.0 Ft.
S =	0.0250 Ft./Ft.
tc =	20.21 Minutes
I(25) =	4.551 In./Hr.
Q(25) =	1.84 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: 15		Total Area = 41,818 S.F. = 0.96 Ac.								
Surface							C	N		
Structures	4	Total	1,500	S.F. =	6,000	S.F. =	0.14	Ac.	0.92	0.02
Drives	8	Total	500	S.F. =	4,000	S.F. =	0.09	Ac.	0.92	0.02
Pavement	500	L.F.	14.5	Width =	7,250	S.F. =	0.17	Ac.	0.92	0.02
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Sidewalks	500	L.F.	4	Width =	2,000	S.F. =	0.05	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			22,568	S.F. =			0.52	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.558
Weighted N =	0.225
L =	500 Ft.
H =	15.3 Ft.
S =	0.0306 Ft./Ft.
tc =	16.95 Minutes
I(25) =	4.853 In./Hr.
Q(25) =	2.60 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.: 16		Total Area = 46,609 S.F. = 1.07 Ac.								
Surface							C	N		
Structures	5	Total	1,500	S.F. =	7,500	S.F. =	0.17	Ac.	0.92	0.02
Drives	5	Total	500	S.F. =	2,500	S.F. =	0.06	Ac.	0.92	0.02
Pavement	530	L.F.	14.5	Width =	7,685	S.F. =	0.18	Ac.	0.92	0.02
Patios	5	Total	150	S.F. =	750	S.F. =	0.02	Ac.	0.92	0.02
Sidewalks	530	L.F.	4	Width =	2,120	S.F. =	0.05	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			26,054	S.F. =			0.60	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.545
Weighted N =	0.232
L =	290 Ft.
H =	2.7 Ft.
S =	0.0093 Ft./Ft.
tc =	17.61 Minutes
I(25) =	4.792 In./Hr.
Q(25) =	2.80 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		17	Total Area = 26,572 S.F. = 0.61 AC.							
Surface								C	N	
Structures	3	Total	1,500	S.F. =	4,500	S.F. =	0.10	AC.	0.92	0.02
Drives	5	Total	500	S.F. =	2,500	S.F. =	0.06	AC.	0.92	0.02
Pavement	310	L.F.	14.5	Width =	4,495	S.F. =	0.10	AC.	0.92	0.02
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	AC.	0.92	0.02
Sidewalks	310	L.F.	4	Width =	1,240	S.F. =	0.03	AC.	0.92	0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	AC.	0.15	0.40
Lawn (2-5%)			13,837	S.F. =		S.F. =	0.32	AC.	0.25	0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	AC.	0.40	0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	AC.	0.55	0.40
Water				S.F. =		S.F. =	0.00	AC.	1.00	0.00
Misc.				S.F. =		S.F. =	0.00	AC.	0.92	0.02

Weighted c =	0.571
Weighted N =	0.218
L =	290 Ft.
H =	2.7 Ft.
S =	0.0093 Ft./Ft.
tc =	17.09 Minutes
I(25) =	4.840 In./Hr.
Q(25) =	1.69 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		18	Total Area = 36,590 S.F. = 0.84 AC.							
Surface								C	N	
Structures	0	Total	1,500	S.F. =	0	S.F. =	0.00	AC.	0.92	0.02
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	AC.	0.92	0.02
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	AC.	0.92	0.02
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	AC.	0.92	0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	AC.	0.92	0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	AC.	0.15	0.40
Lawn (2-5%)			36,590	S.F. =		S.F. =	0.84	AC.	0.25	0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	AC.	0.40	0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	AC.	0.55	0.40
Water				S.F. =		S.F. =	0.00	AC.	1.00	0.00
Misc.				S.F. =		S.F. =	0.00	AC.	0.92	0.02

Weighted c =	0.250
Weighted N =	0.400
L =	240 Ft.
H =	9.0 Ft.
S =	0.0375 Ft./Ft.
tc =	15.00 Minutes
I(25) =	5.033 In./Hr.
Q(25) =	1.06 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		19		Total Area = 82,764 S.F. = 1.90 Ac.							
Surface											
								C	N		
Structures	0	Total	1,500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			82,764	S.F. =			1.90	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.250
Weighted N =	0.400
L =	500 Ft.
H =	19.0 Ft.
S =	0.0380 Ft./Ft.
tc =	21.07 Minutes
I(25) =	4.472 In./Hr.
Q(25) =	2.12 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins											
Sub-basin No.:		20		Total Area = 33,106 S.F. = 0.76 Ac.							
Surface											
								C	N		
Structures	4.5	Total	1,500	S.F. =	6,750	S.F. =	0.15	Ac.	0.92	0.02	
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02	
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Patios	9	Total	150	S.F. =	1,350	S.F. =	0.03	Ac.	0.92	0.02	
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92	0.02	
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40	
Lawn (2-5%)			25,006	S.F. =			0.57	Ac.	0.25	0.40	
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40	
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40	
Water				S.F. =			0.00	Ac.	1.00	0.00	
Misc.				S.F. =			0.00	Ac.	0.92	0.02	

Weighted c =	0.414
Weighted N =	0.307
L =	220 Ft.
H =	10.0 Ft.
S =	0.0455 Ft./Ft.
tc =	12.17 Minutes
I(25) =	5.538 In./Hr.
Q(25) =	1.74 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		21		Total Area =		68,825 S.F. =		1.58 Ac.		
Surface										
Structures	7	Total	1,500	S.F. =	10,500	S.F. =	0.24	Ac.	0.92	0.02
Drives	9	Total	500	S.F. =	4,500	S.F. =	0.10	Ac.	0.92	0.02
Pavement	770	L.F.	14.5	Width =	11,165	S.F. =	0.26	Ac.	0.92	0.02
Patios	5	Total	150	S.F. =	750	S.F. =	0.02	Ac.	0.92	0.02
Sidewalks	770	L.F.	4	Width =	3,080	S.F. =	0.07	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			38,830	S.F. =			0.89	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.542
Weighted N =	0.234
L =	550 Ft.
H =	13.3 Ft.
S =	0.0242 Ft./Ft.
tc =	19.08 Minutes
I(25) =	4.655 In./Hr.
Q(25) =	3.99 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins										
Sub-basin No.:		22		Total Area =		23,522 S.F. =		0.54 Ac.		
Surface										
Structures	2	Total	1,500	S.F. =	3,000	S.F. =	0.07	Ac.	0.92	0.02
Drives	4	Total	500	S.F. =	2,000	S.F. =	0.05	Ac.	0.92	0.02
Pavement	340	L.F.	14.5	Width =	4,930	S.F. =	0.11	Ac.	0.92	0.02
Patios	0	Total	150	S.F. =	0	S.F. =	0.00	Ac.	0.92	0.02
Sidewalks	340	L.F.	4	Width =	1,360	S.F. =	0.03	Ac.	0.92	0.02
Lawn (0-2%)				S.F. =			0.00	Ac.	0.15	0.40
Lawn (2-5%)			12,232	S.F. =			0.28	Ac.	0.25	0.40
Lawn (5-10%)				S.F. =			0.00	Ac.	0.40	0.40
Lawn (>10%)				S.F. =			0.00	Ac.	0.55	0.40
Water				S.F. =			0.00	Ac.	1.00	0.00
Misc.				S.F. =			0.00	Ac.	0.92	0.02

Weighted c =	0.572
Weighted N =	0.218
L =	300 Ft.
H =	3.6 Ft.
S =	0.0120 Ft./Ft.
tc =	16.35 Minutes
I(25) =	4.908 In./Hr.
Q(25) =	1.51 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins									
Sub-basin No.:		23		Total Area =		42,689 S.F. =		0.98 Ac.	
Surface									
Structures	3.5	Total	1,500	S.F. =	5,250	S.F. =	0.12	Ac.	0.92 0.02
Drives	6	Total	500	S.F. =	3,000	S.F. =	0.07	Ac.	0.92 0.02
Pavement	500	L.F.	14.5	Width =	7,250	S.F. =	0.17	Ac.	0.92 0.02
Patios	1	Total	150	S.F. =	150	S.F. =	0.00	Ac.	0.92 0.02
Sidewalks	500	L.F.	4	Width =	2,000	S.F. =	0.05	Ac.	0.92 0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15 0.40
Lawn (2-5%)			25,039	S.F. =		S.F. =	0.57	Ac.	0.25 0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40 0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55 0.40
Water				S.F. =		S.F. =	0.00	Ac.	1.00 0.00
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92 0.02

Weighted c =	0.527
Weighted N =	0.243
L =	500 Ft.
H =	13.0 Ft.
S =	0.0260 Ft./Ft.
tc =	18.24 Minutes
I(25) =	4.733 In./Hr.
Q(25) =	2.44 CFS

(Min. 5 minutes)

Developed Drainage Sub-Basins									
Sub-basin No.:		24		Total Area =		64,469 S.F. =		1.48 Ac.	
Surface									
Structures	3.5	Total	1,500	S.F. =	5,250	S.F. =	0.12	Ac.	0.92 0.02
Drives	0	Total	500	S.F. =	0	S.F. =	0.00	Ac.	0.92 0.02
Pavement	0	L.F.	14.5	Width =	0	S.F. =	0.00	Ac.	0.92 0.02
Patios	7	Total	150	S.F. =	1,050	S.F. =	0.02	Ac.	0.92 0.02
Sidewalks	0	L.F.	4	Width =	0	S.F. =	0.00	Ac.	0.92 0.02
Lawn (0-2%)				S.F. =		S.F. =	0.00	Ac.	0.15 0.40
Lawn (2-5%)			58,169	S.F. =		S.F. =	1.34	Ac.	0.25 0.40
Lawn (5-10%)				S.F. =		S.F. =	0.00	Ac.	0.40 0.40
Lawn (>10%)				S.F. =		S.F. =	0.00	Ac.	0.55 0.40
Water			22,400	S.F. =		S.F. =	0.51	Ac.	1.00 0.00
Misc.				S.F. =		S.F. =	0.00	Ac.	0.92 0.02

Weighted c =	0.663
Weighted N =	0.363
L =	150 Ft.
H =	4.0 Ft.
S =	0.0267 Ft./Ft.
tc =	12.46 Minutes
I(25) =	5.486 In./Hr.
Q(25) =	5.38 CFS

(Min. 5 minutes)

MORLEY AND ASSOCIATES INC.
 STORM DESIGN SHEET - RATIONAL METHOD

PROJECT: Arrowood Subdivision
 OUR PROJECT # 3909-1
 MANNINGS n 0.011

DATE 7/13/98
 DESIGN PERIOD 25 YEARS

LINE NO.	UPSTREAM MANHOLE	DOWNSTREAM MANHOLE	LENGTH (ft)	Cj	Aj (ac.)	CjAj	SUM CjAj	Tj (min)	Tcum (min)	I (in/hr)	Q (cfs)	PIPE DIA. (in)	PIPE SLOPE (ft/ft)	PIPE CAP. (cfs)	VELOCITY (ft/sec)	TRAVEL TIME (min)
1	601	607	75	0.390	1.00	0.390	0.390	15.87	15.87	4.953	1.93	12	0.0197	5.91	7.53	0.17
2	608	610	35	0.480	1.48	0.710	1.100	22.62	22.62	4.328	4.76	15	0.0114	8.15	6.64	0.09
3	610	612	65	0.639	0.11	0.070	1.171	9.98	22.71	4.318	5.06	15	0.0114	8.15	6.64	0.16
4	612	614	35	0.584	0.26	0.152	1.323	12.16	22.87	4.239	5.69	15	0.0114	8.15	6.64	0.09
5	615	617	40	0.514	1.00	0.514	0.514	11.05	11.05	5.738	2.95	12	0.0050	2.98	3.79	0.16
6	618	620	52	0.539	0.72	0.388	0.388	12.23	12.23	5.527	2.14	12	0.0050	2.98	3.79	0.23
7	620	622	27	0.619	0.17	0.105	0.493	12.34	12.46	5.486	2.71	12	0.0048	2.92	3.71	0.12
8	622	626	100	0.615	0.23	0.141	0.635	8.81	12.58	5.465	3.47	12	0.0300	7.29	9.29	0.18
9	624	626	236	0.293	3.75	1.099	1.613	24.42	24.42	4.162	6.71	15	0.0100	7.63	6.22	0.63
10	626	628	120	0.356	0.13	0.046	2.294	9.04	25.05	4.104	9.41	18	0.0100	12.41	7.03	0.28
11	628	630	36	0.543	1.07	0.581	2.875	16.31	25.34	4.077	11.72	18	0.0381	24.22	13.71	0.04
12	630	634	124	0.506	0.72	0.364	3.239	18.13	25.38	4.073	13.19	18	0.0131	14.20	8.04	0.26
13	632	634	212	0.326	2.35	0.766	0.766	20.21	20.21	4.551	3.49	15	0.0097	7.52	6.13	0.58
14	634	638	120	-	-	-	4.005	-	25.64	4.049	16.22	24	0.0040	16.90	5.38	0.37
15	636	638	32	0.556	0.96	0.536	0.536	16.95	16.95	4.853	2.60	12	0.0100	4.21	5.36	0.10
16	638	640	36	0.545	1.07	0.583	5.124	17.61	26.01	4.015	20.57	24	0.0060	20.70	6.59	0.09
17	640	650	124	0.571	0.61	0.348	5.472	17.09	26.10	4.007	21.93	24	0.0168	34.64	11.03	0.19

