



building and gravel parking



ANALYSIS POINT A:
CB in Alder St.



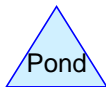
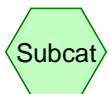
paved drive/gravel parking



salt storage area



ANALYSIS POINT B:
CB in Hanover



Routing Diagram for Bayside Bowl Pre Development
Prepared by {enter your company name here}, Printed 3/23/2015
HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Bayside Bowl Pre Development

Prepared by {enter your company name here}

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Printed 3/23/2015

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.312	96	Gravel surface, HSG B (1S, 2S)
0.958	98	Paved parking & roofs (1S, 2S, 3S)
1.269	98	TOTAL AREA

Bayside Bowl Pre Development

Prepared by {enter your company name here}

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Printed 3/23/2015

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.312	HSG B	1S, 2S
0.000	HSG C	
0.000	HSG D	
0.958	Other	1S, 2S, 3S
1.269		TOTAL AREA

Bayside Bowl Pre Development

Prepared by {enter your company name here}

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Printed 3/23/2015

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.312	0.000	0.000	0.000	0.312	Gravel surface	1S, 2S
0.000	0.000	0.000	0.000	0.958	0.958	Paved parking & roofs	1S, 2S, 3S
0.000	0.312	0.000	0.000	0.958	1.269	TOTAL AREA	

Bayside Bowl Pre Development

Type III 24-hr 1-inch Rainfall=1.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 5

Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: building and gravel Runoff Area=29,376 sf 70.73% Impervious Runoff Depth>0.66"
Flow Length=200' Tc=6.0 min CN=97 Runoff=0.55 cfs 0.037 af

Subcatchment2S: paved drive/gravel Runoff Area=10,478 sf 52.52% Impervious Runoff Depth>0.66"
Flow Length=130' Slope=0.0130 '/' Tc=6.0 min CN=97 Runoff=0.20 cfs 0.013 af

Subcatchment3S: salt storage area Runoff Area=15,433 sf 100.00% Impervious Runoff Depth>0.75"
Flow Length=267' Tc=6.0 min CN=98 Runoff=0.32 cfs 0.022 af

Reach A: ANALYSISPOINT A: CB in Alder St. Inflow=0.55 cfs 0.037 af
Outflow=0.55 cfs 0.037 af

Reach B: ANALYSISPOINT B: CB in Hanover Inflow=0.51 cfs 0.035 af
Outflow=0.51 cfs 0.035 af

Total Runoff Area = 1.269 ac Runoff Volume = 0.073 af Average Runoff Depth = 0.69"
24.55% Pervious = 0.312 ac 75.45% Impervious = 0.958 ac

Bayside Bowl Pre Development

Type III 24-hr 1-inch Rainfall=1.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 6

Summary for Subcatchment 1S: building and gravel parking

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
20,779	98	Paved parking & roofs
8,597	96	Gravel surface, HSG B
29,376	97	Weighted Average
8,597		29.27% Pervious Area
20,779		70.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0060	0.93		Sheet Flow, A-B gravel Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.0375	3.93		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.3	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: paved drive/gravel parking

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
5,503	98	Paved parking & roofs
4,975	96	Gravel surface, HSG B
10,478	97	Weighted Average
4,975		47.48% Pervious Area
5,503		52.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	130	0.0130	1.18		Sheet Flow, A-B pavement Smooth surfaces n= 0.011 P2= 3.00"
1.8	130	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: salt storage area

Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.022 af, Depth> 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Bayside Bowl Pre Development

Type III 24-hr 1-inch Rainfall=1.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 7

Area (sf)	CN	Description
15,433	98	Paved parking & roofs
15,433		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	122	0.0040	0.73		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.00"
0.8	145	0.0200	2.87		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.6	267	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A: ANALYSIS POINT A: CB in Alder St.

Inflow Area = 0.674 ac, 70.73% Impervious, Inflow Depth > 0.66" for 1-inch event
 Inflow = 0.55 cfs @ 12.09 hrs, Volume= 0.037 af
 Outflow = 0.55 cfs @ 12.09 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Summary for Reach B: ANALYSIS POINT B: CB in Hanover

Inflow Area = 0.595 ac, 80.80% Impervious, Inflow Depth > 0.71" for 1-inch event
 Inflow = 0.51 cfs @ 12.09 hrs, Volume= 0.035 af
 Outflow = 0.51 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Bayside Bowl Pre Development

Type III 24-hr 2-Year Rainfall=3.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 8

Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: building and gravel Runoff Area=29,376 sf 70.73% Impervious Runoff Depth>2.53"
Flow Length=200' Tc=6.0 min CN=97 Runoff=1.93 cfs 0.142 af

Subcatchment2S: paved drive/gravel Runoff Area=10,478 sf 52.52% Impervious Runoff Depth>2.53"
Flow Length=130' Slope=0.0130 '/' Tc=6.0 min CN=97 Runoff=0.69 cfs 0.051 af

Subcatchment3S: salt storage area Runoff Area=15,433 sf 100.00% Impervious Runoff Depth>2.64"
Flow Length=267' Tc=6.0 min CN=98 Runoff=1.03 cfs 0.078 af

Reach A: ANALYSISPOINT A: CB in Alder St. Inflow=1.93 cfs 0.142 af
Outflow=1.93 cfs 0.142 af

Reach B: ANALYSISPOINT B: CB in Hanover Inflow=1.72 cfs 0.128 af
Outflow=1.72 cfs 0.128 af

Total Runoff Area = 1.269 ac Runoff Volume = 0.270 af Average Runoff Depth = 2.56"
24.55% Pervious = 0.312 ac 75.45% Impervious = 0.958 ac

Bayside Bowl Pre Development

Type III 24-hr 2-Year Rainfall=3.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 9

Summary for Subcatchment 1S: building and gravel parking

Runoff = 1.93 cfs @ 12.08 hrs, Volume= 0.142 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
20,779	98	Paved parking & roofs
8,597	96	Gravel surface, HSG B
29,376	97	Weighted Average
8,597		29.27% Pervious Area
20,779		70.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0060	0.93		Sheet Flow, A-B gravel Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.0375	3.93		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.3	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: paved drive/gravel parking

Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.051 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
5,503	98	Paved parking & roofs
4,975	96	Gravel surface, HSG B
10,478	97	Weighted Average
4,975		47.48% Pervious Area
5,503		52.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	130	0.0130	1.18		Sheet Flow, A-B pavement Smooth surfaces n= 0.011 P2= 3.00"
1.8	130	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: salt storage area

Runoff = 1.03 cfs @ 12.08 hrs, Volume= 0.078 af, Depth> 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Bayside Bowl Pre Development

Type III 24-hr 2-Year Rainfall=3.00"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 10

Area (sf)	CN	Description
15,433	98	Paved parking & roofs
15,433		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	122	0.0040	0.73		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.00"
0.8	145	0.0200	2.87		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.6	267	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A: ANALYSIS POINT A: CB in Alder St.

Inflow Area = 0.674 ac, 70.73% Impervious, Inflow Depth > 2.53" for 2-Year event
 Inflow = 1.93 cfs @ 12.08 hrs, Volume= 0.142 af
 Outflow = 1.93 cfs @ 12.08 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Summary for Reach B: ANALYSIS POINT B: CB in Hanover

Inflow Area = 0.595 ac, 80.80% Impervious, Inflow Depth > 2.59" for 2-Year event
 Inflow = 1.72 cfs @ 12.08 hrs, Volume= 0.128 af
 Outflow = 1.72 cfs @ 12.08 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Bayside Bowl Pre Development

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 11

Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: building and gravel Runoff Area=29,376 sf 70.73% Impervious Runoff Depth>4.14"
Flow Length=200' Tc=6.0 min CN=97 Runoff=3.07 cfs 0.233 af

Subcatchment2S: paved drive/gravel Runoff Area=10,478 sf 52.52% Impervious Runoff Depth>4.14"
Flow Length=130' Slope=0.0130 '/' Tc=6.0 min CN=97 Runoff=1.10 cfs 0.083 af

Subcatchment3S: salt storage area Runoff Area=15,433 sf 100.00% Impervious Runoff Depth>4.25"
Flow Length=267' Tc=6.0 min CN=98 Runoff=1.63 cfs 0.125 af

Reach A: ANALYSISPOINT A: CB in Alder St. Inflow=3.07 cfs 0.233 af
Outflow=3.07 cfs 0.233 af

Reach B: ANALYSISPOINT B: CB in Hanover Inflow=2.72 cfs 0.208 af
Outflow=2.72 cfs 0.208 af

Total Runoff Area = 1.269 ac Runoff Volume = 0.441 af Average Runoff Depth = 4.17"
24.55% Pervious = 0.312 ac 75.45% Impervious = 0.958 ac

Bayside Bowl Pre Development

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 12

Summary for Subcatchment 1S: building and gravel parking

Runoff = 3.07 cfs @ 12.08 hrs, Volume= 0.233 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
20,779	98	Paved parking & roofs
8,597	96	Gravel surface, HSG B
29,376	97	Weighted Average
8,597		29.27% Pervious Area
20,779		70.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0060	0.93		Sheet Flow, A-B gravel Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.0375	3.93		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.3	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: paved drive/gravel parking

Runoff = 1.10 cfs @ 12.08 hrs, Volume= 0.083 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
5,503	98	Paved parking & roofs
4,975	96	Gravel surface, HSG B
10,478	97	Weighted Average
4,975		47.48% Pervious Area
5,503		52.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	130	0.0130	1.18		Sheet Flow, A-B pavement Smooth surfaces n= 0.011 P2= 3.00"
1.8	130	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: salt storage area

Runoff = 1.63 cfs @ 12.08 hrs, Volume= 0.125 af, Depth> 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Bayside Bowl Pre Development

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 13

Area (sf)	CN	Description
15,433	98	Paved parking & roofs
15,433		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	122	0.0040	0.73		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.00"
0.8	145	0.0200	2.87		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.6	267	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A: ANALYSIS POINT A: CB in Alder St.

Inflow Area = 0.674 ac, 70.73% Impervious, Inflow Depth > 4.14" for 10-Year event
 Inflow = 3.07 cfs @ 12.08 hrs, Volume= 0.233 af
 Outflow = 3.07 cfs @ 12.08 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Summary for Reach B: ANALYSIS POINT B: CB in Hanover

Inflow Area = 0.595 ac, 80.80% Impervious, Inflow Depth > 4.20" for 10-Year event
 Inflow = 2.72 cfs @ 12.08 hrs, Volume= 0.208 af
 Outflow = 2.72 cfs @ 12.08 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Bayside Bowl Pre Development

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 14

Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: building and gravel Runoff Area=29,376 sf 70.73% Impervious Runoff Depth>4.90"
Flow Length=200' Tc=6.0 min CN=97 Runoff=3.61 cfs 0.275 af

Subcatchment2S: paved drive/gravel Runoff Area=10,478 sf 52.52% Impervious Runoff Depth>4.90"
Flow Length=130' Slope=0.0130 '/' Tc=6.0 min CN=97 Runoff=1.29 cfs 0.098 af

Subcatchment3S: salt storage area Runoff Area=15,433 sf 100.00% Impervious Runoff Depth>5.00"
Flow Length=267' Tc=6.0 min CN=98 Runoff=1.91 cfs 0.148 af

Reach A: ANALYSISPOINT A: CB in Alder St. Inflow=3.61 cfs 0.275 af
Outflow=3.61 cfs 0.275 af

Reach B: ANALYSISPOINT B: CB in Hanover Inflow=3.20 cfs 0.246 af
Outflow=3.20 cfs 0.246 af

Total Runoff Area = 1.269 ac Runoff Volume = 0.521 af Average Runoff Depth = 4.93"
24.55% Pervious = 0.312 ac 75.45% Impervious = 0.958 ac

Bayside Bowl Pre Development

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 15

Summary for Subcatchment 1S: building and gravel parking

Runoff = 3.61 cfs @ 12.08 hrs, Volume= 0.275 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
20,779	98	Paved parking & roofs
8,597	96	Gravel surface, HSG B
29,376	97	Weighted Average
8,597		29.27% Pervious Area
20,779		70.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0060	0.93		Sheet Flow, A-B gravel Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.0375	3.93		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.3	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: paved drive/gravel parking

Runoff = 1.29 cfs @ 12.08 hrs, Volume= 0.098 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
5,503	98	Paved parking & roofs
4,975	96	Gravel surface, HSG B
10,478	97	Weighted Average
4,975		47.48% Pervious Area
5,503		52.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	130	0.0130	1.18		Sheet Flow, A-B pavement Smooth surfaces n= 0.011 P2= 3.00"
1.8	130	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: salt storage area

Runoff = 1.91 cfs @ 12.08 hrs, Volume= 0.148 af, Depth> 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Bayside Bowl Pre Development

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 16

Area (sf)	CN	Description
15,433	98	Paved parking & roofs
15,433		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	122	0.0040	0.73		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.00"
0.8	145	0.0200	2.87		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.6	267	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A: ANALYSIS POINT A: CB in Alder St.

Inflow Area = 0.674 ac, 70.73% Impervious, Inflow Depth > 4.90" for 25-Year event
Inflow = 3.61 cfs @ 12.08 hrs, Volume= 0.275 af
Outflow = 3.61 cfs @ 12.08 hrs, Volume= 0.275 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Summary for Reach B: ANALYSIS POINT B: CB in Hanover

Inflow Area = 0.595 ac, 80.80% Impervious, Inflow Depth > 4.96" for 25-Year event
Inflow = 3.20 cfs @ 12.08 hrs, Volume= 0.246 af
Outflow = 3.20 cfs @ 12.08 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Bayside Bowl Pre Development

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 17

Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: building and gravel Runoff Area=29,376 sf 70.73% Impervious Runoff Depth>6.04"
Flow Length=200' Tc=6.0 min CN=97 Runoff=4.41 cfs 0.339 af

Subcatchment2S: paved drive/gravel Runoff Area=10,478 sf 52.52% Impervious Runoff Depth>6.04"
Flow Length=130' Slope=0.0130 '/' Tc=6.0 min CN=97 Runoff=1.57 cfs 0.121 af

Subcatchment3S: salt storage area Runoff Area=15,433 sf 100.00% Impervious Runoff Depth>6.14"
Flow Length=267' Tc=6.0 min CN=98 Runoff=2.33 cfs 0.181 af

Reach A: ANALYSISPOINT A: CB in Alder St. Inflow=4.41 cfs 0.339 af
Outflow=4.41 cfs 0.339 af

Reach B: ANALYSISPOINT B: CB in Hanover Inflow=3.90 cfs 0.302 af
Outflow=3.90 cfs 0.302 af

Total Runoff Area = 1.269 ac Runoff Volume = 0.641 af Average Runoff Depth = 6.06"
24.55% Pervious = 0.312 ac 75.45% Impervious = 0.958 ac

Bayside Bowl Pre Development

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 18

Summary for Subcatchment 1S: building and gravel parking

Runoff = 4.41 cfs @ 12.08 hrs, Volume= 0.339 af, Depth> 6.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
20,779	98	Paved parking & roofs
8,597	96	Gravel surface, HSG B
29,376	97	Weighted Average
8,597		29.27% Pervious Area
20,779		70.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0060	0.93		Sheet Flow, A-B gravel Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.0375	3.93		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.3	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: paved drive/gravel parking

Runoff = 1.57 cfs @ 12.08 hrs, Volume= 0.121 af, Depth> 6.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
5,503	98	Paved parking & roofs
4,975	96	Gravel surface, HSG B
10,478	97	Weighted Average
4,975		47.48% Pervious Area
5,503		52.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	130	0.0130	1.18		Sheet Flow, A-B pavement Smooth surfaces n= 0.011 P2= 3.00"
1.8	130	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: salt storage area

Runoff = 2.33 cfs @ 12.08 hrs, Volume= 0.181 af, Depth> 6.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Bayside Bowl Pre Development

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 3/23/2015

HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Page 19

Area (sf)	CN	Description
15,433	98	Paved parking & roofs
15,433		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	122	0.0040	0.73		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.00"
0.8	145	0.0200	2.87		Shallow Concentrated Flow, B-C gutter Paved Kv= 20.3 fps
3.6	267	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A: ANALYSIS POINT A: CB in Alder St.

Inflow Area = 0.674 ac, 70.73% Impervious, Inflow Depth > 6.04" for 100-Year event
 Inflow = 4.41 cfs @ 12.08 hrs, Volume= 0.339 af
 Outflow = 4.41 cfs @ 12.08 hrs, Volume= 0.339 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Summary for Reach B: ANALYSIS POINT B: CB in Hanover

Inflow Area = 0.595 ac, 80.80% Impervious, Inflow Depth > 6.10" for 100-Year event
 Inflow = 3.90 cfs @ 12.08 hrs, Volume= 0.302 af
 Outflow = 3.90 cfs @ 12.08 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3