

STORMWATER SYSTEM & EROSION CONTROL CALCULATIONS

**NHRMC EMPLOYEE PARKING DECK**

2120 South 17<sup>th</sup> Street

Wilmington, North Carolina

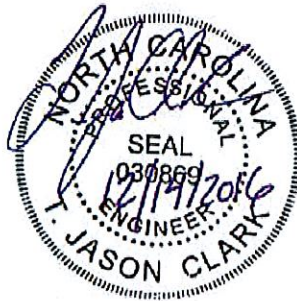
For

New Hanover Regional Medical Center

P.O. Box 9000

Wilmington, NC 28402

(910) 343-2788



Revised December 2016 (C.O.W. SW Response)

Revised December 2016 (NHC EC Response)

November 2016

Prepared by:

**NORRIS & TUNSTALL CONSULTING ENGINEERS, P.C.**

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N&T Project No. 16077

**RECEIVED**  
**DEC 20 2016**  
**ENGINEERING**

Date 11/9/16	Design JPC	<b>NORRIS &amp; TUNSTALL</b> CONSULTING ENGINEERS P.C.	Wilmington, NC	Sheet
Check	Job NHRMC / Cameron Parking Deck		Brunswick County, NC	Of
		For SW		Job No. 16077

• Existing State SW Permit = SW8070547 (Hospital Plaza Ph 1 & 2)  
 Existing COW SW Permit = 2007061R1 (Hospital Plaza)

SW8 070547 (2/20/12) Proposed (Nov 2016)

Total Allowed Imp = 199,458 SF  
 DA = 6.5 Ac.  
 283,140 SF

Total Imp = 199,458 SF  
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 = 283,140 SF

Total Imp = 199,458 SF  
 ON-SITE = 99,493 SF  
 Tract 'A' = 18,650 SF  
 Tract 'B' = 62,650 SF } 87,480 SF  
 Future = 6,180 SF  
 OFF-SITE = 12,485 SF

Total Imp = 199,458 SF  
 ON-SITE = 99,493 SF  
 Tract 'A' = 18,066 SF  
 'B' = 64,060 SF } 87,480  
 Future = 5,354 SF  
 OFF-SITE = 12,485 SF

OK

Tracts 'A' & 'B' are Allotted 70%

Date 11/14/16	Design JJC	<b>NORRIS &amp; TUNSTALL</b> CONSULTING ENGINEERS P.C.	Wilmington, NC	Sheet 1
			Brunswick County, NC	Of
Check	Job NHRMC / Cameron Parking Deck	For EC Calcs		Job No. 10077

- Existing Site is Developed & has Existing EC Permit - GP #1-12, Hospital Plaza II  
 - Last issued for 3 Ac of Disturbance.

→ NEW PARKING DECK IS BEING Constructed.  
 - New Disturbed Area Above Already Permitted = 0 Ac.  
 - Site Drains to Existing SW Pond.

- ON-SITE DISTURBANCE will include Construction of New Deck ON Tract 'B'. Tract 'A' will remain as is.

- EC Measures :
- INLET Protection @ all Inlets,
- Silt Fence will wrap the Tract B Site.

Total Disturbance = 2.0 Ac

Required Silt Fence = 400 yd / Ac  
 $\Rightarrow 400 \frac{\text{yd}}{\text{Ac}} \times 2.0 \text{ Ac} = \underline{800 \text{ yd}}$

Silt Fence Provided = 1090 yd > 800 yd

↳ Highest Concentrated Disturbed Area Flows to the North-North-West. Approx 0.85 Ac Drains in that Direction. Between Inlet 4 & 17<sup>th</sup> Street ROW.  $\Rightarrow$  Required = 340 yd

Provided SF in this Area = 368 yd OK

- Walgreens (South) is Lower. Approx 0.9 Ac Drains South

Required = 280 yd  
 Provided on Southern Property Line = 295 yd OK

Date 11/14/16	Design JAC	<b>NORRIS &amp; TUNSTALL</b> — CONSULTING ENGINEERS P.C. —	Wilmington, NC Brunswick County, NC	Sheet 2 Of
Check	Job NHRMC / Cameron Parking Deck		For EC Cakes	Job No. 1605777

• Note! DownStream is Existing Pond that would Catch any Sediment that leaves Site, if any does.

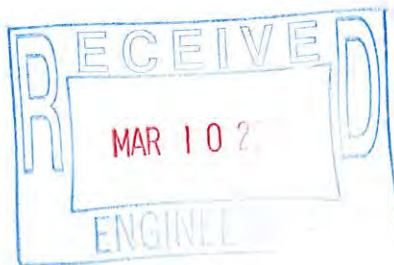
We would prefer NOT to Rely on SW Pond For EC Basin because it is Established.

\* Temporary Silt Fence shall be Doubled up in silt Areas Concentrate.  
(Double Rows)

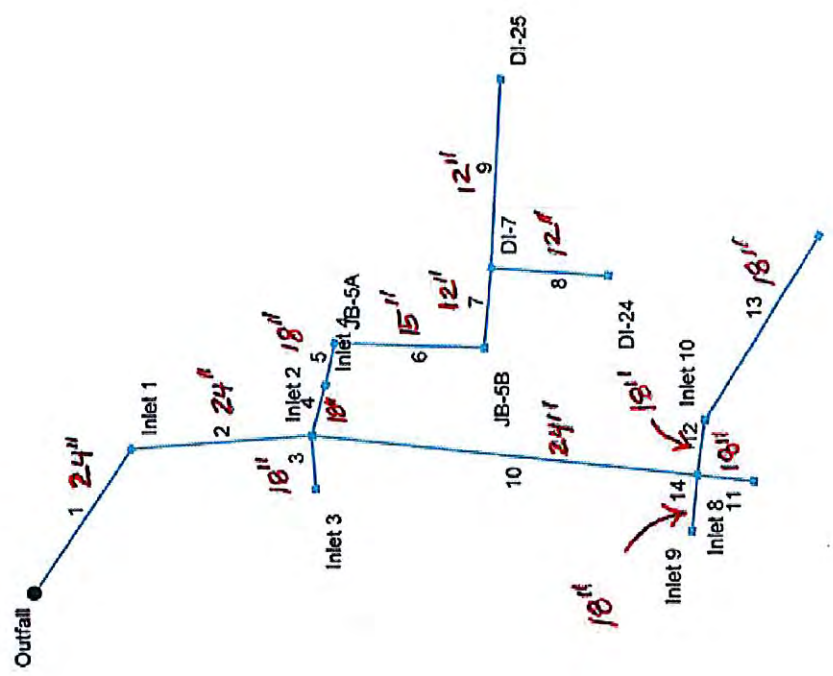
16079  
(Deck)

**Tracts A and B - NHRMC Employee Parking Deck**

Drainage Area	Total Area		Impervious Area		'C'		
	(SF)	(AC)	(SF)	(AC)			
DA-1	1333	0.03	1333	0.03	0.95	-->	Inlet 1
DA-2	5388	0.12	4400	0.10	0.82	-->	Inlet 2
DA-3	4065	0.09	4065	0.09	0.95	-->	Inlet 3
DA-4	1135	0.03	1135	0.03	0.95	-->	Inlet 4
DA-5	1800	0.04	1800	0.04	0.95	-->	Inlet 4
DA-6	7816	0.18	7816	0.18	0.95	-->	DI-6
DA-7	2900	0.07	2900	0.07	0.95	-->	DI-7
DA-8	8670	0.20	5835	0.13	0.72	-->	Inlet 8
DA-9	7777	0.18	7777	0.18	0.95	-->	Inlet 9
DA-10	7021	0.16	4620	0.11	0.71	-->	Inlet 10
DA-11	1528	0.04	1528	0.04	0.95	-->	Inlet 11
DA-12	7571	0.17	4535	0.10	0.67	-->	Inlet 12
				0.00			
DA-14	1300	0.03	1000	0.02	0.79	-->	C-15
DA-15	5545	0.13	5000	0.11	0.88	-->	C-15
DA-16	24500	0.56	24500	0.56	0.95	-->	DI-16
DA-17	3392	0.08	3392	0.08	0.95	-->	Inlet 17
DA-18	6830	0.16	5554	0.13	0.82	-->	Inlet 18
DA-19	7775	0.18	6782	0.16	0.86	-->	DI-19
DA-20	3200	0.07	2660	0.06	0.83	-->	DI-20
DA-21	745	0.02	745	0.02	0.95	-->	CI-21
DA-22	2675	0.06	145	0.00	0.29	-->	DI-22
DA-24	7900	0.18	7900	0.18	0.95	-->	DI-24
DA-25	5130	0.12	5130	0.12	0.95	-->	DI-25



# Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: SD Network 12-16.stm

Number of lines: 14

Date: 12/13/16

# Storm Sewer Tabulation

Station	Line To Line	Len (ft)	Drng Area		Rhoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	80	0.03	3.04	0.95	0.03	2.87	5.0	16.0	5.5	15.76	41.78	6.20	24	3.41	23.50	26.23	25.10	27.66	24.00	32.47	INLET 1
2	1	84	0.12	3.01	0.82	0.10	2.84	5.0	15.7	5.5	15.70	26.69	6.02	24	1.39	26.23	27.40	27.94	28.83	32.47	34.03	INLET 2
3	2	25	0.09	0.09	0.95	0.09	0.09	5.0	5.0	7.2	0.62	32.67	1.45	18	9.68	27.40	29.82	29.49	30.11	34.03	36.48	INLET 3
4	2	24	0.03	0.40	0.95	0.03	0.38	5.0	7.4	6.8	2.57	6.78	1.45	18	0.42	27.40	27.50	29.46	29.47	34.03	34.04	INLET 4
5	4	20	0.00	0.37	0.00	0.00	0.35	5.0	7.2	6.8	2.39	12.86	1.35	18	1.50	27.50	27.80	29.48	29.49	34.04	33.58	JB 5A
6	5	70	0.00	0.37	0.00	0.00	0.35	5.0	6.6	6.9	2.43	3.45	1.98	15	0.29	27.80	28.00	29.49	29.59	33.58	35.00	JB 5B
7	6	37	0.07	0.37	0.95	0.07	0.35	5.0	6.4	6.9	2.44	4.14	3.11	12	1.35	28.00	28.50	29.59	29.76	35.00	35.50	DI 7
8	7	55	0.18	0.18	0.95	0.17	0.17	5.0	5.0	7.2	1.24	7.82	2.50	12	4.82	28.50	31.15	29.87	31.62	35.50	36.00	DI 24
9	7	87	0.12	0.12	0.95	0.11	0.11	5.0	5.0	7.2	0.82	1.91	1.05	12	0.29	28.50	28.75	29.90	29.94	35.50	31.00	DI 25
10	2	181	0.20	2.40	0.95	0.19	2.28	15.0	15.0	5.6	12.79	21.92	5.12	24	0.94	27.40	29.10	29.24	30.39	34.03	34.10	INLET 8
11	10	26	0.90	0.90	0.95	0.86	0.86	5.0	5.0	7.2	6.18	15.55	4.13	18	2.19	29.10	29.67	30.75	30.70	34.10	36.07	WALG (Line II)
12	10	26	0.16	1.12	0.95	0.15	1.06	5.0	11.5	6.1	6.46	5.45	3.66	18	0.27	29.10	29.17	30.74	30.83	34.10	33.96	INLET 10
13	12	100	0.96	0.96	0.95	0.91	0.91	11.0	11.0	6.2	5.61	9.57	3.58	18	0.83	29.17	30.00	30.89	31.12	33.96	37.00	WALG (Line 13)
14	10	26	0.18	0.18	0.95	0.17	0.17	5.0	5.0	7.2	1.24	15.55	0.74	18	2.19	29.10	29.67	30.92	30.93	34.10	36.07	Inlet 9

Project File: SD Network 12-16.stm

Number of lines: 14

Run Date: 12/13/16

NOTES: Intensity = 121.80 / (Inlet time + 23.50) ^ 0.84; Return period = Yrs. 10 ; c = cir e = ellip b = box

# Storm Sewer Tabulation

Station	Line	Len (ft)	Dmg Area		Rnoff coeff (C)	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Inlet (min)	Syst (min)	Incr	Total					Inlet (min)	Syst (min)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	80	0.03	3.04	0.95	0.03	2.87	5.0	15.9	6.3	18.10	41.78	6.39	24	3.41	23.50	26.23	25.70	27.76	24.00	32.47	INLET 1
2	1	84	0.12	3.01	0.82	0.10	2.84	5.0	15.6	6.3	18.02	26.69	6.54	24	1.39	26.23	27.40	28.01	28.93	32.47	34.03	INLET 2
3	2	25	0.09	0.99	0.95	0.09	0.09	5.0	5.0	8.1	0.70	32.67	1.52	18	9.68	27.40	29.82	29.69	30.13	34.03	36.48	INLET 3
4	2	24	0.03	0.40	0.95	0.03	0.38	5.0	7.1	7.7	2.93	6.78	1.66	18	0.42	27.40	27.50	29.65	29.65	34.03	34.04	INLET 4
5	4	20	0.00	0.37	0.00	0.00	0.35	5.0	6.9	7.7	2.72	12.86	1.54	18	1.50	27.50	27.80	29.67	29.68	34.04	33.58	JB 5A
6	5	70	0.00	0.37	0.00	0.00	0.35	5.0	6.4	7.8	2.76	3.45	2.25	15	0.29	27.80	28.00	29.68	29.81	33.58	35.00	JB 5B
7	6	37	0.07	0.37	0.95	0.07	0.35	5.0	6.2	7.9	2.77	4.14	3.53	12	1.35	28.00	28.50	29.81	30.04	35.00	35.50	DI 7
8	7	55	0.18	0.18	0.95	0.17	0.17	5.0	5.0	8.1	1.39	7.82	2.67	12	4.82	28.50	31.15	30.18	31.65	35.50	36.00	DI 24
9	7	87	0.12	0.12	0.95	0.11	0.11	5.0	5.0	8.1	0.93	1.91	1.18	12	0.29	28.50	28.75	30.21	30.27	35.50	31.00	DI 25
10	2	181	0.20	2.40	0.95	0.19	2.28	15.0	15.0	6.4	14.64	21.92	5.52	24	0.94	27.40	29.10	29.35	30.48	34.03	34.10	INLET 8
11	10	26	0.90	0.90	0.95	0.86	0.86	5.0	5.0	8.1	6.97	15.55	4.21	18	2.19	29.10	29.67	30.86	30.91	34.10	36.07	WALG
12	10	26	0.16	1.12	0.95	0.15	1.06	5.0	11.5	6.9	7.38	5.45	4.18	18	0.27	29.10	29.17	30.83	30.96	34.10	33.96	INLET 10
13	12	100	0.96	0.96	0.95	0.91	0.91	11.0	11.0	7.0	6.39	9.57	3.71	18	0.83	29.17	30.00	31.03	31.35	33.96	37.00	WALG
14	10	26	0.18	0.18	0.95	0.17	0.17	5.0	5.0	8.1	1.39	15.55	0.80	18	2.19	29.10	29.67	31.08	31.09	34.10	36.07	Inlet 9

Project File: SD Network 12-16.stm

Number of lines: 14

Run Date: 12/13/16

NOTES: intensity = 155.43 / (inlet time + 26.20) ^ 0.86; Return period = Yrs. 25 ; c = cir e = ellip b = box



# Storm Sewer Tabulation

Station	Line To Line	Len (ft)	Drng Area (ac)		Rhoff coeff (C)	Area x C		Tc (min)		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rim Elev (ft)		Line ID
			Incr	Total		Incr	Total	Inlet	Syst					Slope (%)	Size (in)	Dn	Up	Dn	Up	Dn	Up	
1	End	80	0.03	3.04	0.95	0.03	2.87	5.0	15.7	7.6	21.74	41.78	7.35	24	3.41	23.50	26.23	27.00	27.90	24.00	32.47	INLET 1
2	1	84	0.12	3.01	0.82	0.10	2.84	5.0	15.5	7.6	21.61	26.89	7.41	24	1.39	26.23	27.40	28.10	29.06	32.47	34.03	INLET 2
3	2	25	0.09	0.09	0.95	0.09	0.09	5.0	5.0	9.6	0.82	32.87	1.61	18	9.68	27.40	29.82	29.99	30.16	34.03	36.46	INLET 3
4	2	24	0.03	0.40	0.95	0.03	0.38	5.0	6.8	9.2	3.49	6.78	1.97	18	0.42	27.40	27.50	29.93	29.96	34.03	34.04	INLET 4
5	4	20	0.00	0.37	0.00	0.00	0.35	5.0	6.6	9.2	3.24	12.86	1.83	18	1.50	27.50	27.80	29.97	29.99	34.04	33.58	JB 5A
6	5	70	0.00	0.37	0.00	0.00	0.35	5.0	6.2	9.3	3.27	3.45	2.67	15	0.29	27.80	28.00	29.99	30.17	33.58	35.00	JB 5B
7	6	37	0.07	0.37	0.95	0.07	0.35	5.0	6.0	9.4	3.29	4.14	4.19	12	1.35	28.00	28.50	30.17	30.48	35.00	35.50	DI 7
8	7	55	0.18	0.18	0.95	0.17	0.17	5.0	5.0	9.6	1.64	7.82	2.93	12	4.82	28.50	31.15	30.69	31.69	35.50	36.00	DI 24
9	7	87	0.12	0.12	0.95	0.11	0.11	5.0	5.0	9.6	1.09	1.91	1.39	12	0.29	28.50	28.75	30.73	30.81	35.50	31.00	DI 25
10	2	181	0.20	2.40	0.95	0.19	2.28	15.0	15.0	7.7	17.51	21.92	6.24	24	0.94	27.40	29.10	29.51	30.61	34.03	34.10	INLET 8
11	10	26	0.90	0.90	0.95	0.86	0.86	5.0	5.0	9.6	8.21	15.55	4.64	18	2.19	29.10	29.67	31.01	31.17	34.10	36.07	WALG
12	10	26	0.16	1.12	0.95	0.15	1.06	5.0	11.4	8.3	8.80	5.45	4.98	18	0.27	29.10	29.17	30.96	31.14	34.10	33.96	INLET 10
13	12	100	0.96	0.96	0.95	0.91	0.91	11.0	11.0	8.3	7.51	9.57	4.30	18	0.83	29.17	30.00	31.24	31.77	33.96	37.00	WALG
14	10	26	0.18	0.18	0.95	0.17	0.17	5.0	5.0	9.6	1.64	15.55	0.93	18	2.19	29.10	29.67	31.33	31.34	34.10	36.07	Inlet 9

Project File: SD Network 12-16.sbn

Number of lines: 14

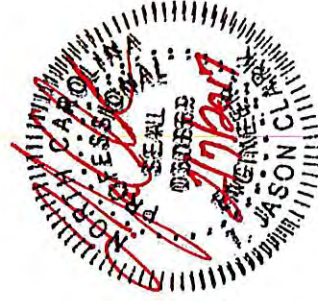
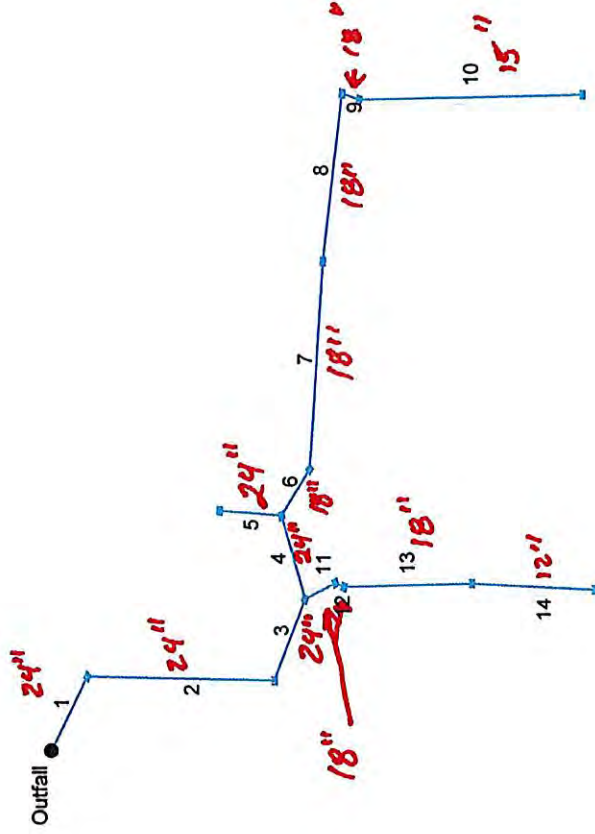
Run Date: 12/13/16

NOTES: intensity = 198.56 / (inlet time + 28.80) ^ 0.86; Return period = Yrs. 100 ; c = cir e = ellip b = box

# DECK SD'S 2

[FEB 2017 REVISIONS]

RECEIVED  
FEB 09 2017  
ENGINEERING



# Storm Sewer Tabulation

Station Line	To Line	Len (ft)	Drng Area (ac)		Rnoff coeff (C)	Area x C		Tc (min)		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rim Elev (ft)		Line ID
			Incr	Total		Incr	Total	Inlet	Syst					Size (in)	Slope (%)	Dn	Up	Dn	Up	Dn	Up	
1	End	35	0.10	1.78	0.95	0.10	1.55	5.0	9.4	6.4	9.92	27.03	4.39	24	1.43	23.50	24.00	25.30	28.00	28.70	Inlet 11	
2	1	105	0.04	1.68	0.95	0.04	1.45	5.0	8.8	6.5	9.44	7.96	3.01	24	0.12	24.00	24.13	26.00	28.70	28.37	Inlet 11	
3	2	36	0.17	1.64	0.67	0.11	1.41	5.0	8.6	6.5	9.24	9.97	2.94	24	0.19	24.13	24.20	26.19	28.37	28.59	Inlet 12	
4	3	35	0.16	1.13	0.82	0.13	0.99	5.0	8.3	6.6	6.51	32.66	3.40	24	2.09	24.20	24.93	26.20	28.59	28.97	Inlet 18	
5	4	35	0.08	0.08	0.95	0.08	0.08	5.0	5.0	7.2	0.55	0.00	0.17	24	-0.89	24.93	24.62	26.93	28.97	28.12	Inlet 17	
6	4	24	0.18	0.89	0.86	0.15	0.78	5.0	6.8	6.9	5.37	23.87	4.37	18	5.17	24.93	26.17	26.04	28.97	32.67	DI-19	
7	6	81	0.07	0.71	0.83	0.06	0.63	5.0	6.2	7.0	4.37	20.04	3.75	18	3.64	26.17	29.12	27.34	32.67	34.50	Inlet 20	
8	7	66	0.06	0.64	0.29	0.02	0.57	5.0	5.7	7.1	4.02	18.86	3.75	18	3.23	29.12	31.25	30.16	34.50	37.00	DI-22	
9	8	10	0.02	0.58	0.95	0.02	0.55	5.0	5.7	7.1	3.91	10.50	3.76	18	1.00	31.25	31.35	32.25	37.00	37.70	CI-21	
10	9	126	0.56	0.56	0.95	0.53	0.53	5.0	5.0	7.2	3.85	9.36	4.37	15	2.10	31.35	34.00	32.25	37.70	37.50	DI-16	
11	3	18	0.00	0.34	0.00	0.00	0.31	5.0	7.5	6.7	2.10	19.49	1.19	18	3.44	24.20	24.82	26.31	28.59	31.79	Inlet 13	
12	11	5	0.16	0.34	0.88	0.14	0.31	5.0	7.5	6.7	2.10	11.50	4.28	18	1.20	26.79	26.85	27.22	31.79	33.00	CI-15	
13	12	72	0.00	0.18	0.00	0.00	0.17	5.0	5.7	7.1	1.21	19.76	2.23	18	3.54	26.85	29.40	27.59	33.00	34.50	JB-14	
14	13	70	0.18	0.18	0.95	0.17	0.17	5.0	5.0	7.2	1.24	3.69	3.21	12	1.07	29.40	30.15	29.92	34.50	34.25	DI-6	

Run Date: 2/7/17

Number of lines: 14

DECK SD'S 2

NOTES: intensity = 121.80 / (Inlet time + 23.50) ^ 0.84; Return period = Yrs. 10 ; c = cir e = ellip b = box

# Storm Sewer Tabulation

Station Line	To Line	Len (ft)	Drng Area (ac)		Rnoff coeff (C)	Area x C		Tc (min)		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rim Elev (ft)		Line ID
			Incr	Total		Incr	Total	Inlet	Syst					Slope (%)	Size (in)	Dn	Up	Dn	Up	Dn	Up	
1	End	35	0.10	1.78	0.95	0.10	1.55	5.0	8.9	7.4	11.40	27.03	3.77	24	1.43	23.50	24.00	25.70	28.00	28.70	Inlet 11	
2	1	105	0.04	1.68	0.95	0.04	1.45	5.0	8.4	7.5	10.83	7.96	3.45	24	0.12	24.00	24.13	26.00	28.70	28.37	Inlet 11	
3	2	36	0.17	1.64	0.67	0.11	1.41	5.0	8.2	7.5	10.60	9.97	3.37	24	0.19	24.13	24.20	26.25	28.37	28.59	Inlet 12	
4	3	35	0.16	1.13	0.82	0.13	0.99	5.0	8.0	7.5	7.45	32.66	2.68	24	2.09	24.20	24.93	26.42	28.59	28.97	Inlet 18	
5	4	35	0.08	0.08	0.95	0.08	0.08	5.0	5.0	8.1	0.62	0.00	0.20	24	-0.89	24.93	24.62	26.93	28.97	28.12	Inlet 17	
6	4	24	0.18	0.89	0.86	0.15	0.78	5.0	6.6	7.8	6.10	23.87	4.31	18	5.17	24.93	26.17	26.41	28.97	32.67	DI-19	
7	6	81	0.07	0.71	0.83	0.06	0.63	5.0	6.1	7.9	4.96	20.04	3.96	18	3.64	26.17	29.12	27.41	32.67	34.50	Inlet 20	
8	7	66	0.06	0.64	0.29	0.02	0.57	5.0	5.7	8.0	4.55	18.86	3.94	18	3.23	29.12	31.25	30.22	34.50	37.00	DI-22	
9	8	10	0.02	0.58	0.95	0.02	0.55	5.0	5.6	8.0	4.42	10.50	3.95	18	1.00	31.25	31.35	32.30	37.00	37.70	CI-21	
10	9	126	0.56	0.56	0.95	0.53	0.53	5.0	5.0	8.1	4.33	9.36	4.66	15	2.10	31.35	34.00	32.29	37.00	37.50	DI-16	
11	3	18	0.00	0.34	0.00	0.00	0.31	5.0	7.3	7.7	2.39	19.49	1.35	18	3.44	24.20	24.82	26.48	28.59	31.79	Inlet 13	
12	11	5	0.16	0.34	0.88	0.14	0.31	5.0	7.2	7.7	2.40	11.50	4.45	18	1.20	26.79	26.85	27.25	31.79	33.00	CI-15	
13	12	72	0.00	0.18	0.00	0.00	0.17	5.0	5.7	8.0	1.37	19.76	2.31	18	3.54	26.85	29.40	27.64	33.00	34.50	JB-14	
14	13	70	0.18	0.18	0.95	0.17	0.17	5.0	5.0	8.1	1.39	3.69	3.36	12	1.07	29.40	30.15	29.95	34.50	34.25	DI-6	

DECK SD'S 2

Number of lines: 14

Run Date: 2/7/17

NOTES: intensity = 155.43 / (Inlet time + 26.20) ^ 0.86; Return period = Yrs. 25 ; c = cir e = ellip b = box

# Storm Sewer Tabulation

Station	Line To Line	Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	35	0.10	1.78	0.95	0.10	1.55	5.0	8.3	8.9	13.71	27.03	4.36	24	1.43	23.50	24.00	27.00	27.13	28.00	28.70	Inlet 11
2	1	105	0.04	1.68	0.95	0.04	1.45	5.0	7.9	8.9	13.00	7.96	4.14	24	0.12	24.00	24.13	27.16	27.51	28.70	28.37	Inlet 11
3	2	36	0.17	1.64	0.67	0.11	1.41	5.0	7.7	9.0	12.70	9.97	4.04	24	0.19	24.13	24.20	27.52	27.63	28.37	28.59	Inlet 12
4	3	35	0.16	1.13	0.82	0.13	0.99	5.0	7.5	9.0	8.92	32.66	2.84	24	2.09	24.20	24.93	27.76	27.81	28.59	28.97	Inlet 18
5	4	35	0.08	0.08	0.95	0.08	0.08	5.0	5.0	9.6	0.73	0.00	0.23	24	-0.89	24.93	24.62	27.94	27.94	28.97	28.12	Inlet 17
6	4	24	0.18	0.89	0.86	0.15	0.78	5.0	6.3	9.3	7.25	23.87	4.10	18	5.17	24.93	26.17	27.81	27.93	28.97	32.67	DI-19
7	6	81	0.07	0.71	0.83	0.06	0.63	5.0	5.9	9.4	5.87	20.04	4.20	18	3.64	26.17	29.12	28.02	30.05	32.67	34.50	Inlet 20
8	7	66	0.06	0.64	0.29	0.02	0.57	5.0	5.6	9.5	5.38	18.86	4.24	18	3.23	29.12	31.25	30.31	32.14	34.50	37.00	DI-22
9	8	10	0.02	0.58	0.95	0.02	0.55	5.0	5.5	9.5	5.22	10.50	4.25	18	1.00	31.25	31.35	32.38	32.23	37.00	37.70	CJ-21
10	9	126	0.56	0.56	0.95	0.53	0.53	5.0	5.0	9.6	5.11	9.36	5.14	15	2.10	31.35	34.00	32.33	34.92	37.70	37.50	DI-16
11	3	18	0.00	0.34	0.00	0.00	0.31	5.0	6.9	9.2	2.85	19.49	1.62	18	3.44	24.20	24.82	27.84	27.86	28.59	31.79	Inlet 13
12	11	5	0.16	0.34	0.88	0.14	0.31	5.0	6.9	9.2	2.86	11.50	3.04	18	1.20	26.79	26.85	27.86	27.49	31.79	33.00	CJ-15
13	12	72	0.00	0.18	0.00	0.00	0.17	5.0	5.6	9.5	1.62	19.76	2.43	18	3.54	26.85	29.40	27.72	29.88	33.00	34.50	JB-14
14	13	70	0.18	0.18	0.95	0.17	0.17	5.0	5.0	9.6	1.64	3.69	3.61	12	1.07	29.40	30.15	29.98	30.69	34.50	34.25	DI-6

DECK SD'S 2

Number of lines: 14

Run Date: 2/7/17

NOTES: Intensity = 198.56 / (Inlet time + 28.80) ^ 0.86; Return period = Yrs. 100 ; c = cir e = ellip b = box