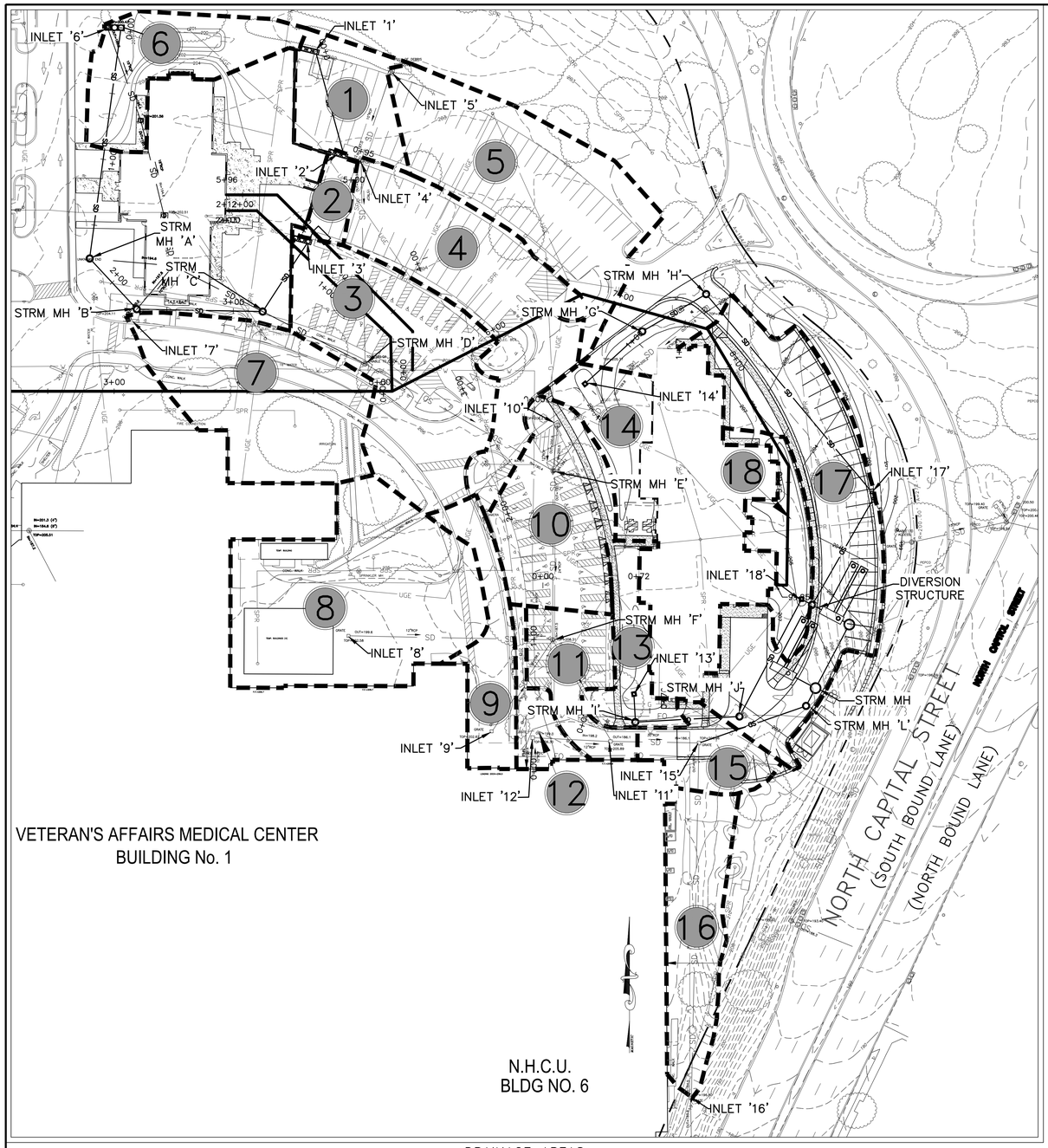

DRAINAGE AREAS
SCALE: H: 1" = 40'

DRAINAGE AREAS:

DA #1:
TOTAL AREA: 0.1538 Ac.
PERVIOUS: 0.0422 Ac.
IMPERVIOUS: 0.1116 Ac.
C: 0.74

DA #2:
TOTAL AREA: 0.0455 Ac.
PERVIOUS: 0.0048 Ac.
IMPERVIOUS: 0.0407 Ac.
C: 0.84

DA #3:
TOTAL AREA: 0.4281 Ac.
PERVIOUS: 0.0673 Ac.
IMPERVIOUS: 0..3608 Ac.
C: 0.81

DA #4:
TOTAL AREA: 0.3958 Ac.
PERVIOUS: 0.0680 Ac.
IMPERVIOUS: 0.3278 Ac.
C: 0.80

DA #5:
TOTAL AREA: 0.4241 Ac.
PERVIOUS: 0.1270 Ac.
IMPERVIOUS: 0.2971 Ac.
C: 0.72

DA #6:
TOTAL AREA: 0.1877 Ac.
PERVIOUS: 0.0492 Ac.
IMPERVIOUS: 0.1384 Ac.
C: 0.74

DA #7:
TOTAL AREA: 0.3677 Ac.
PERVIOUS: 0.2082 Ac.
IMPERVIOUS: 0.1595 Ac.
C: 0.56

DA #8:
TOTAL AREA: 0.5174 Ac.
PERVIOUS: 0.1288 Ac.
IMPERVIOUS: 0.3886 Ac.
C: 0.75

DA #9:
TOTAL AREA: 0.1386 Ac.
PERVIOUS: 0.0000 Ac.
IMPERVIOUS: 0.1386 Ac.
C: 0.90

DA #10:
TOTAL AREA: 0.2626 Ac.
PERVIOUS: 0.0700 Ac.
IMPERVIOUS: 0.1926 Ac.
C: 0.74

DA #11:
TOTAL AREA: 0.1341 Ac.
PERVIOUS: 0.0074 Ac.
IMPERVIOUS: 0.1267 Ac.
C: 0.87

DA #12:
TOTAL AREA: 0.0600 Ac.
PERVIOUS: 0.0455 Ac.
IMPERVIOUS: 0.0145 Ac.
C: 0.45

DA #13:
TOTAL AREA: 0.1097 Ac.
PERVIOUS: 0.0214 Ac.
IMPERVIOUS: 0.0883 Ac.
C: 0.78

DA #14:
TOTAL AREA: 0.1274 Ac.
PERVIOUS: 0.0042 Ac.
IMPERVIOUS: 0.1232 Ac.
C: 0.88

DA #15:
TOTAL AREA: 0.1026 Ac.
PERVIOUS: 0.0299 Ac.
IMPERVIOUS: 0.0727 Ac.
C: 0.73

DA #16:
TOTAL AREA: 0.2141 Ac.
PERVIOUS: 0.0091 Ac.
IMPERVIOUS: 0.2050 Ac.
C: 0.87

DA #17:
TOTAL AREA: 0.3058 Ac.
PERVIOUS: 0.0790 Ac.
IMPERVIOUS: 0.2268 Ac.
C: 0.75

DA #18:
TOTAL AREA: 0.1169 Ac.
PERVIOUS: 0.0040 Ac.
IMPERVIOUS: 0.1129 Ac.
C: 0.88

PIPE CALCULATIONS (15 YEAR STORM):

Start Node	Stop Node	Upstream CA (acres)	System Intensity (in/hr)	Flow (ft³/s)	Diameter (in)	Length (ft)	Slope (Calculated) (ft/ft)	Manning's n	Capacity (Full Flow) (ft³/s)	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
INLET 6	STRM MH 'A'	0.139	7.56	5.06	15	175	0.009	0.013	6.23	196.2	194.57	200.88	202.96	197.11	195.42
STRM MH 'A'	STRM MH 'B'	0.139	7.451	5.05	15	52	0.01	0.013	6.52	194.49	193.96	202.96	203.66	195.4	194.91
STRM MH 'B'	STRM MH 'C'	0.345	7.419	6.58	15	95	0.01	0.013	6.49	193.87	192.91	203.66	203.84	194.91	193.94
STRM MH 'C'	STRM MH 'D'	0.692	7.364	9.14	24	99	0.009	0.013	21.08	192.86	192	203.84	205.06	193.94	193.39
STRM MH 'D'	STRM MH 'E'	1.465	7.31	14.79	24	162.9	0.01	0.013	22.42	192	190.4	205.06	206.3	193.39	191.59
STRM MH 'E'	STRM MH 'F'	1.659	7.234	16.1	24	127.2	0.02	0.013	32.34	190.1	187.5	206.3	208.31	191.55	188.5
STRM MH 'F'	INLET 11	2.172	7.19	19.75	30	87.5	0.006	0.013	31	187.4	186.9	208.31	205.89	188.91	188.35
INLET 11	INLET 15	2.316	7.144	26.31	30	66.6	0.006	0.013	31.79	186.1	185.7	205.89	206.06	187.85	187.66
INLET 15	INLET 16	2.391	7.112	30.42	33	267	0.004	0.013	35.45	185.7	184.5	206.06	196.8	187.66	186.33
INLET 16	END SITE	2.577	6.971	31.39	33	5	0.01	0.013	52.88	183.9	183.85	196.8	197	185.76	185.59
INLET 1	INLET 2	0.113	7.56	0.86	15	81	0.01	0.013	6.38	197.99	197.2	202	203.18	198.35	197.97
INLET 2	INLET 4	0.151	7.481	1.14	15	13	0.012	0.013	7.17	197.16	197	203.18	203.03	197.97	197.98
INLET 4	STRM MH 'D'	0.773	7.47	5.82	15	153	0.033	0.013	11.68	197	192	203.03	205.06	197.98	193.39
INLET 14	STRM MH 'G'	0.112	7.56	3.64	15	59	0.01	0.013	6.46	200.11	199.52	205.1	207.2	200.88	200.19
STRM MH 'G'	STRM MH 'H'	0.112	7.522	3.64	15	56	0.01	0.013	6.46	199.42	198.88	207.2	207.2	200.19	199.53
STRM MH 'H'	INLET 17	0.112	7.485	3.64	15	195	0.005	0.013	4.56	198.76	197.79	207.2	203.5	199.6	198.87
INLET 17	DIVERSION	0.341	7.318	5.31	15	92	0.005	0.013	4.62	197.69	197.22	203.5	205.4	198.87	198.15
INLET 13	STRM MH 'I'	0.086	7.56	0.65	15	22	0.01	0.013	6.46	201.58	201.36	206.1	207.8	201.9	201.63
STRM MH 'I'	STRM MH 'J'	0.086	7.537	0.65	15	79	0.01	0.013	6.46	201.26	200.47	207.8	207.3	201.57	200.74
STRM MH 'J'	INLET 18	0.086	7.454	0.64	15	100	0.01	0.013	6.46	200.37	199.37	207.3	206	200.68	199.73
INLET 18	DIVERSION	0.188	7.349	1.4	15	12	0.01	0.013	6.46	199.26	199.14	206	205.4	199.73	199.54
DIVERSION	QUANTITY	0.53	7.243	6.66	18	12	0.01	0.013	10.5	197.12	197	205.4	205.5	198.12	197.9
INLET 7	STRM MH 'B'	0.206	7.56	1.57	10	9.7	0.052	0.013	4.98	199.5	199	204.11	203.66	200.06	199.36
INLET 3	STRM MH 'C'	0.347	7.56	2.64	15	63	0.031	0.013	11.45	194.84	192.86	203.67	203.84	195.49	193.94
INLET 5	INLET 4	0.305	7.56	2.33	10	70	0.01	0.013	2.19	197.7	197	202.77	203.03	198.77	197.98
INLET 10	STRM MH 'E'	0.194	7.56	1.48	12	34.5	0.012	0.013	3.84	200.9	200.5	206.27	206.3	201.42	200.93
INLET 8	STRM MH 'F'	0.388	7.56	2.96	12	154	0.023	0.013	5.45	199.6	196	202.58	208.31	200.34	196.53
INLET 9	STRM MH 'F'	0.125	7.56	0.95	8	83	0.029	0.013	2.05	200.7	198.3	202.62	208.31	201.16	198.62
INLET 12	INLET 11	0.027	7.56	5.84	12	58.5	0.014	0.013	4.17	199	198.2	206.3	205.89	200.75	199.15
STRM MH'	STRM MH 'L'	0	7.56	3.65	15	16	0.005	0.013	4.57	187.14	187.06	206.4	206.6	187.98	187.88
STRM MH 'L'	INLET 15	0	7.56	3.65	15	86	0.005	0.013	4.57	186.96	186.53	206.6	206.06	187.88	187.66

INLET CALCULATIONS (15 YEAR STORM):

Label	Inlet Drainage Area (acres)	Inlet C	Local CA (acres)	System Intensity (in/hr)	Local Flow Time (min)	Flow (Total Surface) (ft³/s)	Flow (Additional Subsurface) (ft³/s)	Elevation (Ground) (ft)	Capture Efficiency (%)	Gutter Spread (ft)	Clogging Factor (%)
INLET 1	0.154	0.735	0.113	7.56	5	0.86	0	202	100	4.8	0
INLET 2	0.046	0.837	0.038	7.481	5	0.29	0	203.18	100	4.3	0
INLET 3	0.428	0.81	0.347	7.56	5	2.64	0	203.67	100	9.7	0
INLET 4	0.396	0.8	0.317	7.47	5	2.41	0	203.03	100	11.6	0
INLET 5	0.424	0.72	0.305	7.56	5	2.33	0	202.77	100	11.3	0
INLET 6	0.188	0.742	0.139	7.56	5	5.06	4.00*	200.88	100	10.4	50
INLET 7	0.368	0.56	0.206	7.56	5	1.57	0	204.11	100	8.7	0
INLET 8	0.517	0.751	0.388	7.56	5	2.96	0	202.58	100	14.6	0
INLET 9	0.139	0.9	0.125	7.56	5	0.95	0	202.62	100	7.7	0
INLET 10	0.263	0.74	0.194	7.56	5	1.48	0	206.27	100	8.3	0
INLET 11	0.134	0.87	0.117	7.144	5	0.89	0	205.89	100	9.5	50
INLET 12	0.06	0.45	0.027	7.56	5	5.84	5.63**	206.3	100	3.8	0
INLET 13	0.11	0.78	0.086	7.56	5	0.65	0	206.1	100	6.4	0
INLET 14	0.127	0.88	0.112	7.56	5	3.64	2.79***	205.1	100	9.3	50
INLET 15	0.103	0.73	0.075	7.112	5	0.57	0	206.06	100	7.5	50
INLET 16	0.214	0.87	0.186	6.971	5	1.42	0	196.8	100	12.2	50
INLET 17	0.306	0.75	0.229	7.318	5	1.75	0	203.5	100	7.3	0
INLET 18	0.117	0.88	0.103	7.349	5	0.78	0	206	100	7	0
STRM MH'	(N/A)	(N/A)	0	7.56	0	3.65	3.65****	206.4	100	0	0

*– ADDITIONAL FLOW FROM SURFACE SAND FILTER FACILITY (15 YEAR)
**– ADDITIONAL FLOW FROM ROOF DRAINS OF EXISTING HOSPITAL
***– ADDITIONAL FLOW FROM ROOF DRAINS OF PROPOSED DOM. BUILDING
****– COMBINED FLOW FROM THE QUALITY AND QUANTITY STRUCTURES

Revisions: | Date

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Drawing Title: SITE DEVELOPMENT
DRAINAGE AREAS AND CALCULATIONS

Approved Project Director

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50 Irving Street, NW
Washington, DC 20422

Location: Washington DC

Date: December 2009 | Checked: JA | Drawn: RAF

Project Number: 805-100

Building Number: -

Drawing Number: CU-102
Dwg. 4 of 4

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