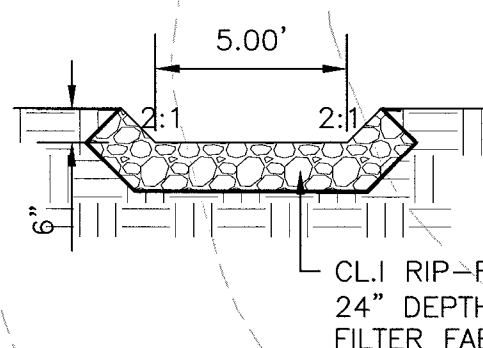
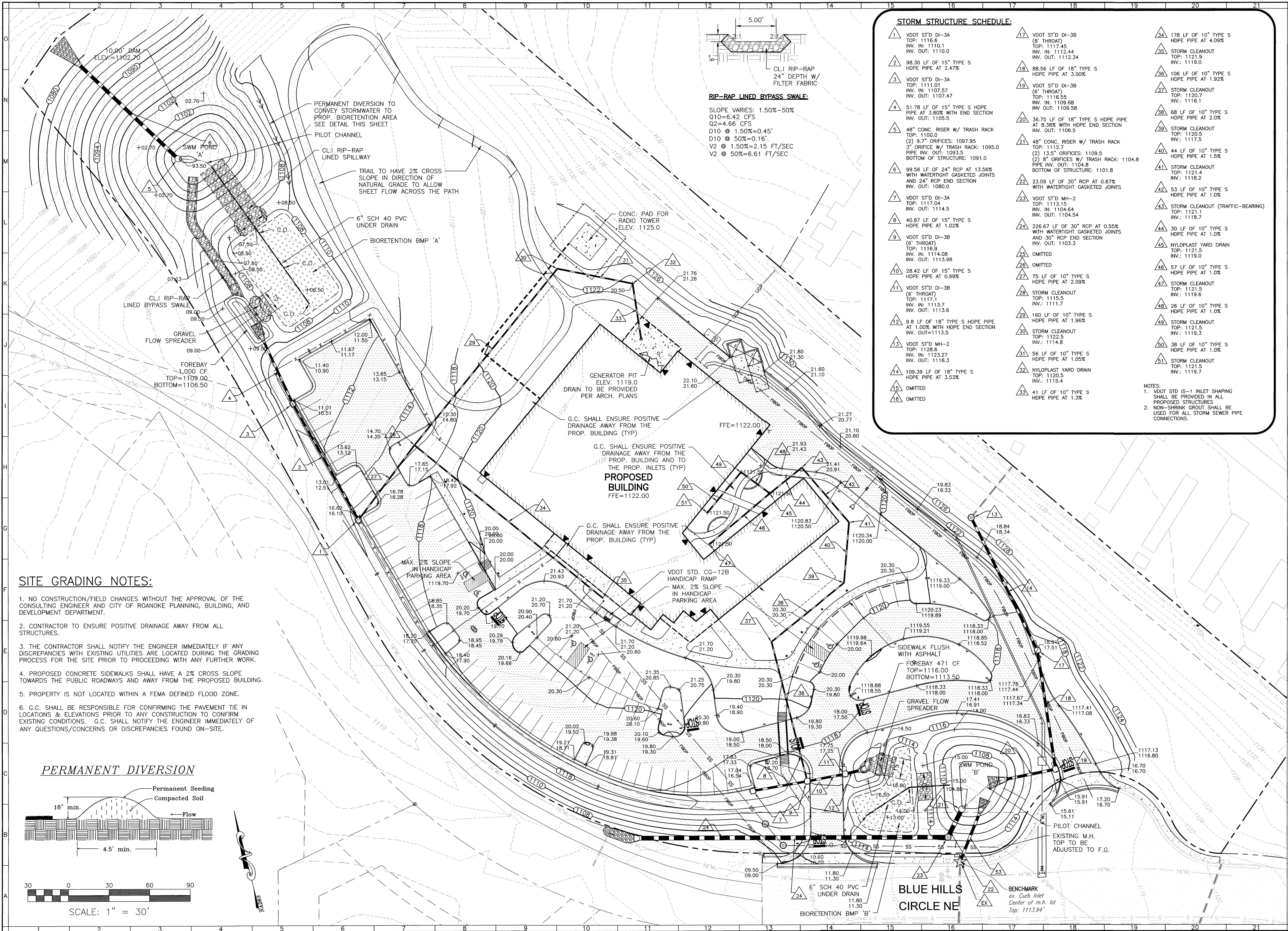




RIP-RAP LINED BYPASS SWALE:
SLOPE VARIES: 1.50%-50%
Q10=6.42 CFS
Q2=4.66 CFS
D10 @ 1.50%=0.45'
D10 @ 50%=0.16'
V2 @ 1.50%=2.15 FT/SEC
V2 @ 50%=6.61 FT/SEC

STORM STRUCTURE SCHEDULE:					
1	VDOT STD DI-3A TOP: 1116.6 INV. IN: 1110.1 INV. OUT: 1110.0	17	VDOT STD DI-3B (8" THROAT) TOP: 1117.45 INV. IN: 1112.44 INV. OUT: 1112.34	34	178 LF OF 10" TYPE S HDPE PIPE AT 4.09%
2	98.30 LF OF 15" TYPE S HDPE PIPE AT 2.47%	18	88.56 LF OF 18" TYPE S HDPE PIPE AT 3.00%	35	STORM CLEANOUT TOP: 1121.9 INV.: 1119.0
3	VDOT STD DI-3A TOP: 1111.01 INV. IN: 1107.57 INV. OUT: 1107.47	19	VDOT STD DI-3B (6" THROAT) TOP: 1116.55 INV. IN: 1109.68 INV. OUT: 1109.58	36	106 LF OF 10" TYPE S HDPE PIPE AT 1.92%
4	51.78 LF OF 15" TYPE S HDPE PIPE AT 3.80% WITH END SECTION INV. OUT: 1105.5	20	36.75 LF OF 18" TYPE S HDPE PIPE AT 8.38% WITH HDPE END SECTION INV. OUT: 1106.5	37	STORM CLEANOUT TOP: 1120.7 INV.: 1116.1
5	48" CONC. RISER W/ TRASH RACK TOP: 1100.0 (2) 9.7" ORIFICES: 1097.95 3" ORIFICE W/ TRASH RACK: 1095.0 PIPE INV. OUT: 1093.5 BOTTOM OF STRUCTURE: 1091.0	21	48" CONC. RISER W/ TRASH RACK TOP: 1112.7 (2) 13.5" ORIFICES: 1109.5 (2) 8" ORIFICES W/ TRASH RACK: 1104.8 PIPE INV. OUT: 1104.8 BOTTOM OF STRUCTURE: 1101.8	38	68 LF OF 10" TYPE S HDPE PIPE AT 2.0%
6	99.56 LF OF 24" RCP AT 13.56% WITH WATERTIGHT GASKETED JOINTS AND 24" RCP END SECTION INV. OUT: 1080.0	22	23.09 LF OF 30" RCP AT 0.67% WITH WATERTIGHT GASKETED JOINTS	39	STORM CLEANOUT TOP: 1120.5 INV.: 1117.5
7	VDOT STD DI-3A TOP: 1117.04 INV. IN: 1114.5	23	VDOT STD MH-2 TOP: 1113.15 INV. IN: 1104.64 INV. OUT: 1104.54	40	44 LF OF 10" TYPE S HDPE PIPE AT 1.5%
8	40.87 LF OF 15" TYPE S HDPE PIPE AT 1.02%	24	226.67 LF OF 30" RCP AT 0.55% WITH WATERTIGHT GASKETED JOINTS AND 30" RCP END SECTION INV. OUT: 1103.3	41	STORM CLEANOUT TOP: 1121.4 INV.: 1118.2
9	VDOT STD DI-3B (6" THROAT) TOP: 1116.9 INV. IN: 1114.08 INV. OUT: 1113.98	25	OMITTED	42	53 LF OF 10" TYPE S HDPE PIPE AT 1.0%
10	28.42 LF OF 15" TYPE S HDPE PIPE AT 0.99%	26	OMITTED	43	STORM CLEANOUT (TRAFFIC-BEARING) TOP: 1121.1 INV.: 1118.7
11	VDOT STD DI-3B (6" THROAT) TOP: 1117.1 INV. IN: 1113.7 INV. OUT: 1113.6	27	75 LF OF 10" TYPE S HDPE PIPE AT 2.09%	44	30 LF OF 10" TYPE S HDPE PIPE AT 1.0%
12	9.8 LF OF 18" TYPE S HDPE PIPE AT 1.00% WITH HDPE END SECTION INV. OUT: 1113.5	28	STORM CLEANOUT TOP: 1115.5 INV.: 1111.7	45	NYLOPLAST YARD DRAIN TOP: 1121.5 INV.: 1119.0
13	VDOT STD MH-2 TOP: 1128.6 INV. IN: 1123.27 INV. OUT: 1116.3	29	160 LF OF 10" TYPE S HDPE PIPE AT 1.96%	46	57 LF OF 10" TYPE S HDPE PIPE AT 1.0%
14	109.39 LF OF 18" TYPE S HDPE PIPE AT 3.53%	30	STORM CLEANOUT TOP: 1122.5 INV.: 1114.8	47	STORM CLEANOUT TOP: 1121.5 INV.: 1119.6
15	OMITTED	31	56 LF OF 10" TYPE S HDPE PIPE AT 1.05%	48	26 LF OF 10" TYPE S HDPE PIPE AT 1.0%
16	OMITTED	32	NYLOPLAST YARD DRAIN TOP: 1120.5 INV.: 1115.4	49	STORM CLEANOUT TOP: 1121.5 INV.: 1119.3
		33	41 LF OF 10" TYPE S HDPE PIPE AT 1.3%	50	38 LF OF 10" TYPE S HDPE PIPE AT 1.0%
				51	STORM CLEANOUT TOP: 1121.5 INV.: 1119.7

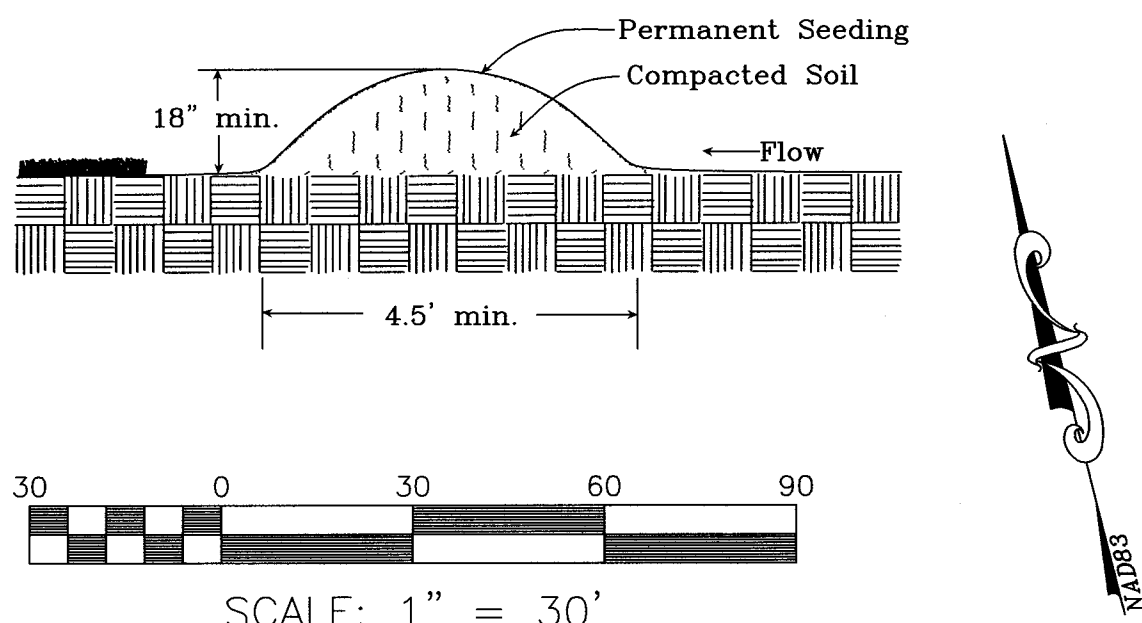
NOTES:
1. VDOT STD IS-1 INLET SHAPING SHALL BE PROVIDED IN ALL PROPOSED STRUCTURES
2. NON-SHRINK GROUT SHALL BE USED FOR ALL STORM SEWER PIPE CONNECTIONS.

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SITE GRADING NOTES:

1. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND CITY OF ROANOKE PLANNING, BUILDING, AND DEVELOPMENT DEPARTMENT.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES WITH EXISTING UTILITIES ARE LOCATED DURING THE GRADING PROCESS FOR THE SITE PRIOR TO PROCEEDING WITH ANY FURTHER WORK.
4. PROPOSED CONCRETE SIDEWALKS SHALL HAVE A 2% CROSS SLOPE TOWARDS THE PUBLIC ROADWAYS AND AWAY FROM THE PROPOSED BUILDING.
5. PROPERTY IS NOT LOCATED WITHIN A FEMA DEFINED FLOOD ZONE.
6. G.C. SHALL BE RESPONSIBLE FOR CONFIRMING THE PAVEMENT TIE IN LOCATIONS & ELEVATIONS PRIOR TO ANY CONSTRUCTION TO CONFIRM EXISTING CONDITIONS. G.C. SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY QUESTIONS/CONCERNS OR DISCREPANCIES FOUND ON-SITE.

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City of Roanoke
Planning, Building, & Development
COMPREHENSIVE DEVELOPMENT PLAN
APPROVED
by Adrian Gilbert 07/16/2018

COMMONWEALTH OF VIRGINIA
C. CHRISTOPHER P. BURNS
Lic. No. 047338
6/27/18
PROFESSIONAL ENGINEER

COMMUNICATIONS CENTER
0 BLUE HILLS CIRCLE NE
GRADING PLAN
CITY OF ROANOKE, VIRGINIA

DRAWN BY EJP
DESIGNED BY CPB
CHECKED BY CPB
DATE 5/30/2018
SCALE 1"=30'

REVISIONS:
6/27/2018

SHEET NO.
C4
JOB NO. 03170040.00