

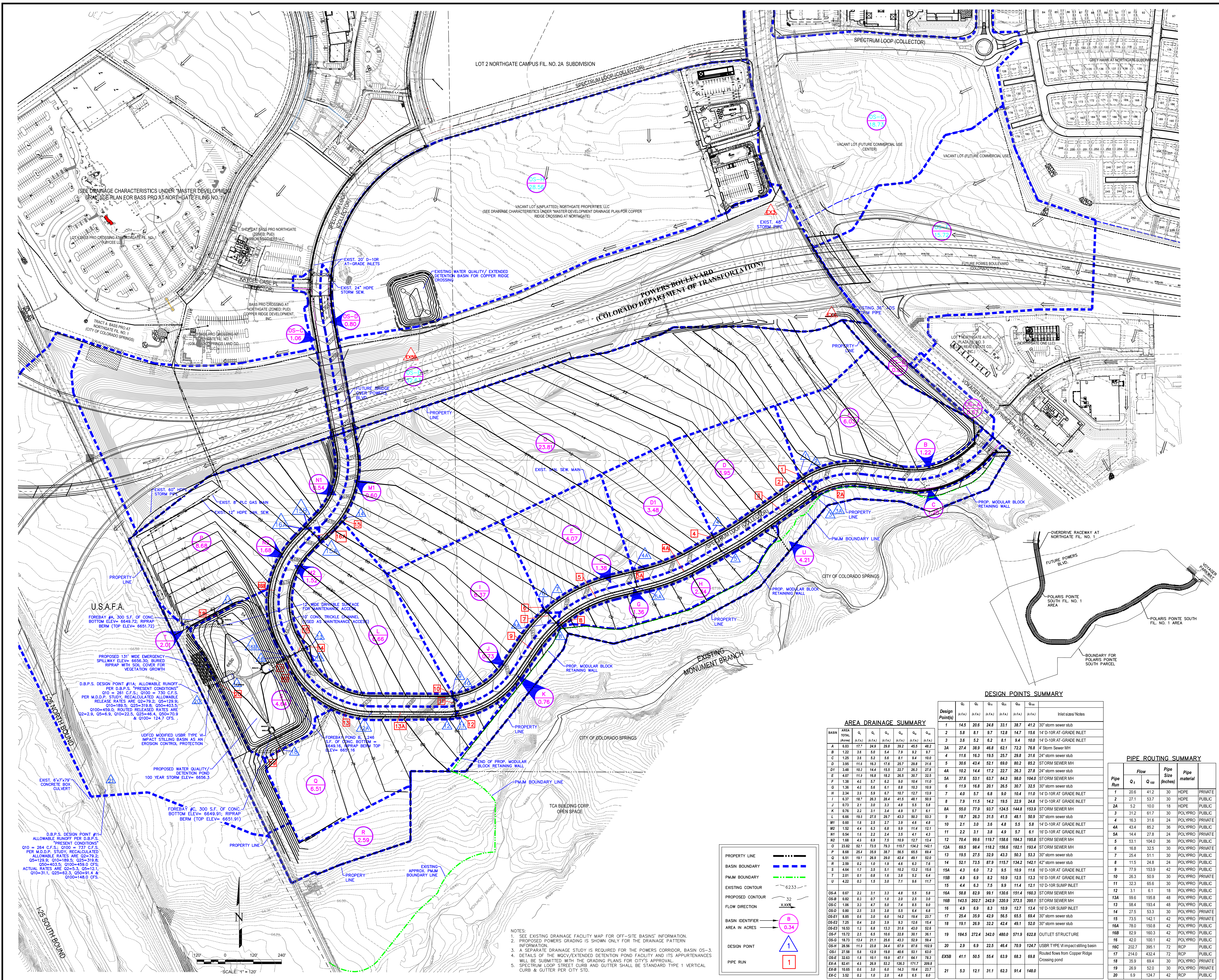
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NO.	REVISION DESCRIPTION	DATE	BY
1	CITY COMMENTS	07/15/16	BHY
2	ADDITIONAL TO MDP/FR	12/09/16	BHY
3	MINOR CHANGES TO LABELS	02/01/17	BHY
4	PER CITY COMMENTS	02/03/17	BHY
5			

CLIENT INFORMATION:
NORTHGATE PROPERTIES, LLC.
 18540 MEADOWGRASS DRIVE
 SUITE 200
 COLORADO SPRINGS, CO 80921
 (719) 631-0707

PROJECT NAME: **POLARIS POINTE SOUTH FILING NO. 1**
 DRAWING TITLE: **PROPOSED DRAINAGE FACILITY MAP**

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 DRAWING TITLE: **PROPOSED DRAINAGE FACILITY MAP**
 H-Scale: 1"=150'
 V-Scale: N/A
 Date: 08/01/16
 Project No.: 1201
 Drawn by: BHY
 Designed by: BHY
 Approved by: BHY
 SHEET: **DM-2**
 SHEET 2 OF 2



AREA DRAINAGE SUMMARY

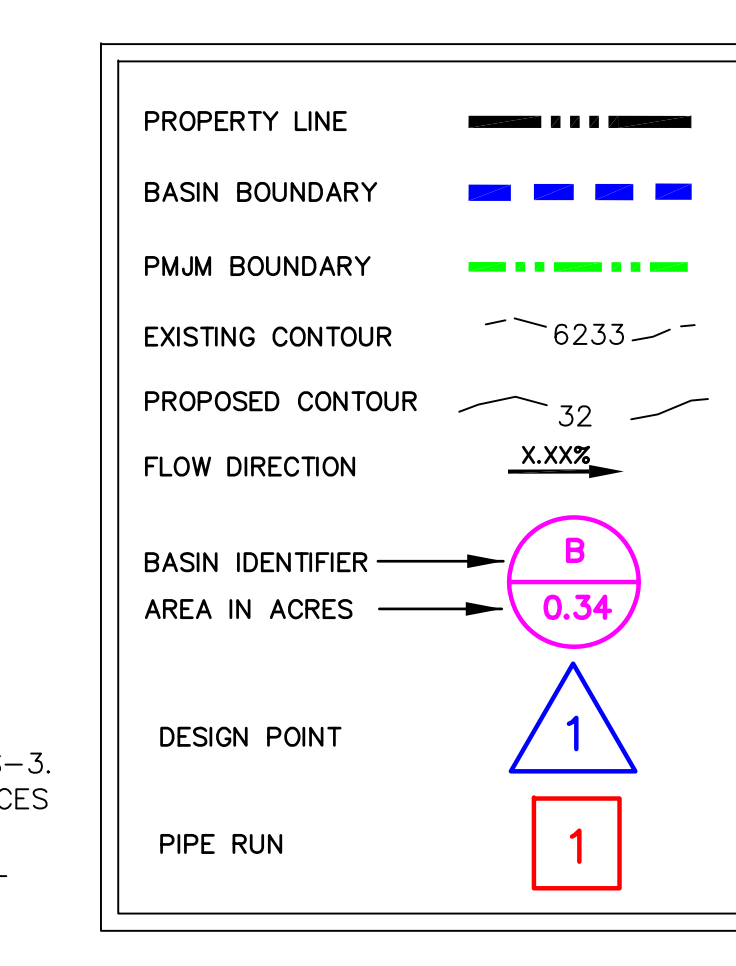
Basin	Area (Acres)	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Q ₆	Q ₇	Q ₈
A	6.03	17.7	24.9	29.8	39.2	45.5	48.2		
B	1.22	3.6	5.0	5.4	7.9	9.2	9.7		
C	1.25	3.6	5.2	5.6	8.1	9.4	10.0		
D	3.95	11.6	16.3	17.6	25.7	29.8	31.6		
D1	3.48	10.1	14.4	15.5	22.7	26.3	27.8		
E	4.07	11.9	16.8	18.2	26.5	30.7	32.5		
F	1.30	4.2	5.7	6.2	9.0	10.4	11.0		
G	1.30	4.2	5.6	6.1	8.8	10.3	10.9		
H	2.34	3.5	5.9	6.7	10.7	12.7	13.9		
I	6.37	18.7	26.3	28.4	41.5	48.1	50.9		
J	0.73	2.1	3.0	3.3	4.8	5.5	5.8		
K	0.76	2.2	3.1	3.4	4.9	5.7	6.1		
L	6.66	19.5	27.5	29.7	43.3	50.3	53.3		
M	0.60	1.8	2.5	2.7	3.9	4.6	4.8		
M1	1.52	4.4	6.3	6.8	9.9	11.4	12.1		
N	0.54	1.6	2.2	2.4	3.5	4.1	4.3		
N1	1.63	4.6	6.9	7.5	10.9	12.7	13.4		
O	23.82	52.1	73.5	79.3	115.7	134.2	142.1		
P	8.68	25.4	35.9	38.7	56.5	65.5	69.0		
Q	0.51	1.91	2.69	2.90	4.24	4.91	5.20		
R	2.99	8.2	11.9	13.1	19.4	22.7	24.1		
S	4.64	13.7	19.5	21.1	30.2	35.2	36.6		
T	2.01	6.1	8.8	9.6	13.8	16.2	17.1		
U	4.22	12.3	17.5	19.1	27.6	32.1	33.5		
V	0.67	2.2	3.1	3.3	4.8	5.5	5.8		
OSA	0.82	2.3	3.3	3.6	5.1	5.9	6.2		
OS-B	1.06	3.3	4.7	5.0	7.4	8.5	9.0		
OS-C	0.80	2.5	3.5	3.8	5.3	6.1	6.4		
OS-D	0.85	2.6	3.6	3.9	5.4	6.2	6.5		
OS-E	0.85	2.6	3.6	3.9	5.4	6.2	6.5		
OS-F	1.25	3.6	5.0	5.4	7.9	9.2	9.7		
OS-G	16.53	48.1	68.1	73.6	106.2	123.8	130.8		
OS-H	15.72	45.1	63.9	69.4	100.1	116.7	123.8		
OS-I	19.73	55.4	77.5	83.0	118.7	137.1	144.8		
OS-J	27.58	75.8	106.1	113.1	163.1	186.1	195.1		
OS-K	32.63	91.8	128.1	136.1	196.1	226.1	237.1		
OS-L	32.61	91.7	128.0	136.0	196.0	226.0	237.0		
OS-M	10.65	30.0	42.0	45.0	64.0	74.0	78.0		
OS-N	3.52	10.0	14.0	15.0	21.0	24.0	25.0		

DESIGN POINTS SUMMARY

Design Point	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Q ₆	Q ₇	Inlet sizes/Notes
1	14.5	20.6	24.8	33.1	38.7	41.2	41.2	30" storm sewer stub
2	5.8	8.1	9.7	12.8	14.7	15.6	15.6	14" D-TOR AT GRADE INLET
3	3.6	5.2	6.2	8.1	9.4	10.0	10.0	14" D-TOR AT GRADE INLET
3A	27.4	38.9	46.8	62.1	72.2	76.8	76.8	4" Storm Sewer MH
4	11.6	16.3	19.5	25.7	29.8	31.6	31.6	24" storm sewer stub
5	30.6	43.4	52.1	69.0	80.2	85.2	85.2	30" STORM SEWER MH
4A	10.2	14.4	17.2	22.7	26.3	27.8	27.8	24" storm sewer stub
5A	37.6	53.1	63.7	84.3	98.0	104.0	104.0	30" STORM SEWER MH
6	11.9	16.8	20.1	26.5	30.7	32.5	32.5	30" storm sewer stub
7	4.0	5.7	6.8	9.0	10.4	11.0	11.0	14" D-TOR AT GRADE INLET
8	7.9	11.5	14.2	19.5	22.9	24.8	24.8	14" D-TOR AT GRADE INLET
8A	55.0	77.9	93.7	124.5	144.8	153.9	153.9	30" STORM SEWER MH
9	18.7	26.3	31.5	41.5	48.1	50.9	50.9	30" storm sewer stub
10	2.1	3.0	3.6	4.8	5.5	5.8	5.8	14" D-TOR AT GRADE INLET
11	2.2	3.1	3.8	4.9	5.7	6.1	6.1	16" D-TOR AT GRADE INLET
12	70.4	99.6	119.7	158.6	184.3	195.8	195.8	30" STORM SEWER MH
12A	69.5	98.4	118.2	156.6	182.1	193.4	193.4	30" STORM SEWER MH
13	19.5	27.5	32.9	43.3	50.3	53.3	53.3	30" storm sewer stub
14	52.1	73.5	87.9	115.7	134.2	142.1	142.1	42" storm sewer stub
15A	4.3	6.0	7.2	9.5	10.9	11.6	11.6	16" D-TOR AT GRADE INLET
15B	4.9	6.9	8.2	10.9	12.5	13.3	13.3	16" D-TOR AT GRADE INLET
15	4.4	6.3	7.5	9.9	11.4	12.1	12.1	10" D-TOR SUMP INLET
16A	58.8	82.9	99.1	130.6	151.4	160.3	160.3	30" STORM SEWER MH
16B	143.5	202.7	242.0	320.9	372.3	395.1	395.1	30" STORM SEWER MH
16	4.9	6.9	8.3	10.9	12.7	13.4	13.4	16" D-TOR SUMP INLET
17	25.4	35.9	42.9	56.5	65.5	69.4	69.4	30" storm sewer stub
18	19.1	26.9	32.2	42.4	48.1	50.9	50.9	30" storm sewer stub
19	184.5	272.4	342.0	480.0	571.9	622.8	622.8	OUTLET STRUCTURE
EXSB	41.1	50.5	55.4	63.9	68.3	69.8	69.8	USBR TYPE VI impact stilling basin
21	5.3	7.5	9.1	12.1	14.1	14.8	14.8	Rounded flows from Copper Ridge Crossing pond

PIPE ROUTING SUMMARY

Flow	Flow (cfs)	Q ₁₀₀ (cfs)	Pipe Size (inches)	Pipe material
1	20.6	41.2	30	HDPE PRIVATE
2	27.1	53.7	30	HDPE PUBLIC
2A	5.2	10.0	18	HDPE PUBLIC
3	3.12	6.17	30	POLYPRO PUBLIC
4	16.3	31.6	24	POLYPRO PRIVATE
4A	43.4	85.2	36	POLYPRO PUBLIC
5A	14.4	27.8	24	POLYPRO PRIVATE
5	5.31	10.4	36	POLYPRO PUBLIC
6	16.8	32.5	30	POLYPRO PRIVATE
7	25.4	51.1	30	POLYPRO PUBLIC
8	11.5	24.8	24	POLYPRO PUBLIC
9	77.9	153.9	42	POLYPRO PUBLIC
10	26.3	50.9	30	POLYPRO PRIVATE
11	32.3	65.6	30	POLYPRO PUBLIC
12	3.1	6.1	18	POLYPRO PUBLIC
13A	99.6	195.8	48	POLYPRO PUBLIC
13	98.4	193.4	48	POLYPRO PUBLIC
14	27.5	53.3	30	POLYPRO PRIVATE
15	73.5	142.1	42	POLYPRO PRIVATE
16A	78.0	150.8	42	POLYPRO PUBLIC
16B	32.9	160.3	42	POLYPRO PUBLIC
16	42.0	100.1	42	POLYPRO PUBLIC
16C	232.7	395.1	72	RCP PUBLIC
17	214.0	432.4	72	RCP PUBLIC
18	35.9	69.4	30	POLYPRO PRIVATE
19	26.9	52.0	30	POLYPRO PRIVATE
20	5.9	12.4	42	RCP PUBLIC



- NOTES:**
- SEE EXISTING DRAINAGE FACILITY MAP FOR OFF-SITE BASINS' INFORMATION.
 - PROPOSED POWERS GRADING IS SHOWN ONLY FOR THE DRAINAGE PATTERN INFORMATION.
 - A SEPARATE DRAINAGE STUDY IS REQUIRED FOR THE POWERS CORRIDOR, BASIN OS-3.
 - DETAILS OF THE WQCV/EXTENDED DETENTION POND FACILITY AND ITS APPURTENANCES WILL BE SUBMITTED WITH THE GRADING PLANS FOR CITY'S APPROVAL.
 - SPECTRUM LOOP STREET CURB AND GUTTER SHALL BE STANDARD TYPE 1 VERTICAL CURB & GUTTER PER CITY STD.

