PROPOSED SITE AREAS:

SITE COVERAGES	AREA	PERCENTAGE
BUILDING	69,629 sf	20.6%
PAVEMENT	108,690 sf	32.1%
GREENSPACE	160,142 sf	47.3%

TOTAL IMPERVIOUS = 178,319 sf (4.09 AC)
TOTAL GREENSPACE = 160,142 sf (3.68 AC)

DIFFERENTIAL SITE RUNOFF:

2-YEAR STORM

Q = 3.68(1.15) + 4.09(2.39) = 14.01

ΔQ = 14.01 - 13.04 = 0.97 CFS

15 YEAR STORM

Q = 3.68(1.87) + 4.09(3.85) = 22.43 CFS

ΔQ = 22.43 - 21.08 = 1.35 CFS

25 YEAR STORM

Q = 3.68(2.31) + 4.09(4.75) = 27.93 CFS

ΔQ = 27.93 - 26.03 = 1.90 CFS

100 YEAR STORM

Q = 3.68(2.95) + 4.09(6.08) = 35.72 CFS

ΔQ = 35.72 - 33.28 = 2.44 CFS

INTERSECTION FLOW CALCULATIONS:

SOUTH ENTRANCE

AREA = 0.11 ACRES

PI FACTOR = 3.85

FLOW = 0.42 CFS

EAST ENTRANCE

AREA = 0.03 ACRES

PI FACTOR = 3.85

FLOW = 0.12 CFS

POST DEVELOPMENT DRAINAGE CALCULATIONS:

DRAINAGE AREA	TOTAL AREA (AC.)	GREENSPACE (AC.)	IMPERVIOUS	2-YEAR FLOW (CFS)	15 YEAR FLOW (CFS)	25 YEAR FLOW (CFS)	100 YEAR FLOW (CFS)
1	1.35	0.64	0.71	2.43	3.93	4.85	6.20
2	0.64	0.00	0.64	1.53	2.46	3.04	3.89
3	0.94	0.00	0.94	2.25	3.62	4.47	5.72
4	0.02	0.00	0.02	0.05	0.08	0.10	0.12
5	0.1	0.06	0.04	0.16	0.27	0.33	0.42
6	0.19	0.05	0.14	0.39	0.63	0.78	1.00
7	1.64	0.28	1.36	3.57	5.76	7.11	9.09
8	1.05	0.86	0.21	1.49	2.42	2.98	3.81
9	0.44	0.17	0.27	0.84	1.36	1.68	2.14
10	0.32	0.00	0.32	0.76	1.23	1.52	1.95
11	0.36	0.20	0.16	0.61	0.99	1.22	1.56
12	1.21	0.42	0.79	2.37	3.83	4.72	6.04
13	0.38	0.20	0.18	0.66	1.07	1.32	1.68
14	3.48	2.54	0.94	5.17	8.37	10.33	13.21
TOTALS	12.12	5.42	6.72	22.29	36.01	44.44	56.85

FLOWS BASED ON 20 MINUTE STORM DURATION

DETENTION RESULTS:

STORM	INFLOW (CFS)	OUTFLOW (CFS)	FLOW ATTENUATION REQUIRED (CFS)	FLOW ATTENUATION PROVIDED (CFS)
2-YEAR	4.41	0.00	0.97	**4.41**
15-YEAR	7.12	3.71	1.35	**3.41**
25-YEAR	8.78	6.34	1.90	**2.44**
100-YEAR	11.24	7.36	2.44	**3.88**

FLOWS BASED ON 20 MINUTE STORM DURATION

BMP CALCULATIONS:

WQv = [P*Rv*A] / 12

WQv = WATER QUALITY VOLUME (AC-FT)
P = 1.14 INCHES OF RAINFALL
Rv = 0.05 + 0.009 * I (WHERE I IS PERCENT OF IMPERVIOUS COVER)
A = DRAINAGE AREA TRIBUTARY TO THE BASIN (AC.)

WQv = [1.14*(0.05 + 0.009 * 78)*2.08] / 12
= 0.15 AC-FT
= 6,534 CF

PER DISSCUSSIONS WITH THE TOWN 90% OF WQv NEEDS TO BE STORED IN BIORETENTION BASIN

6,534 *0.90 = 5,881 CF REQUIRED

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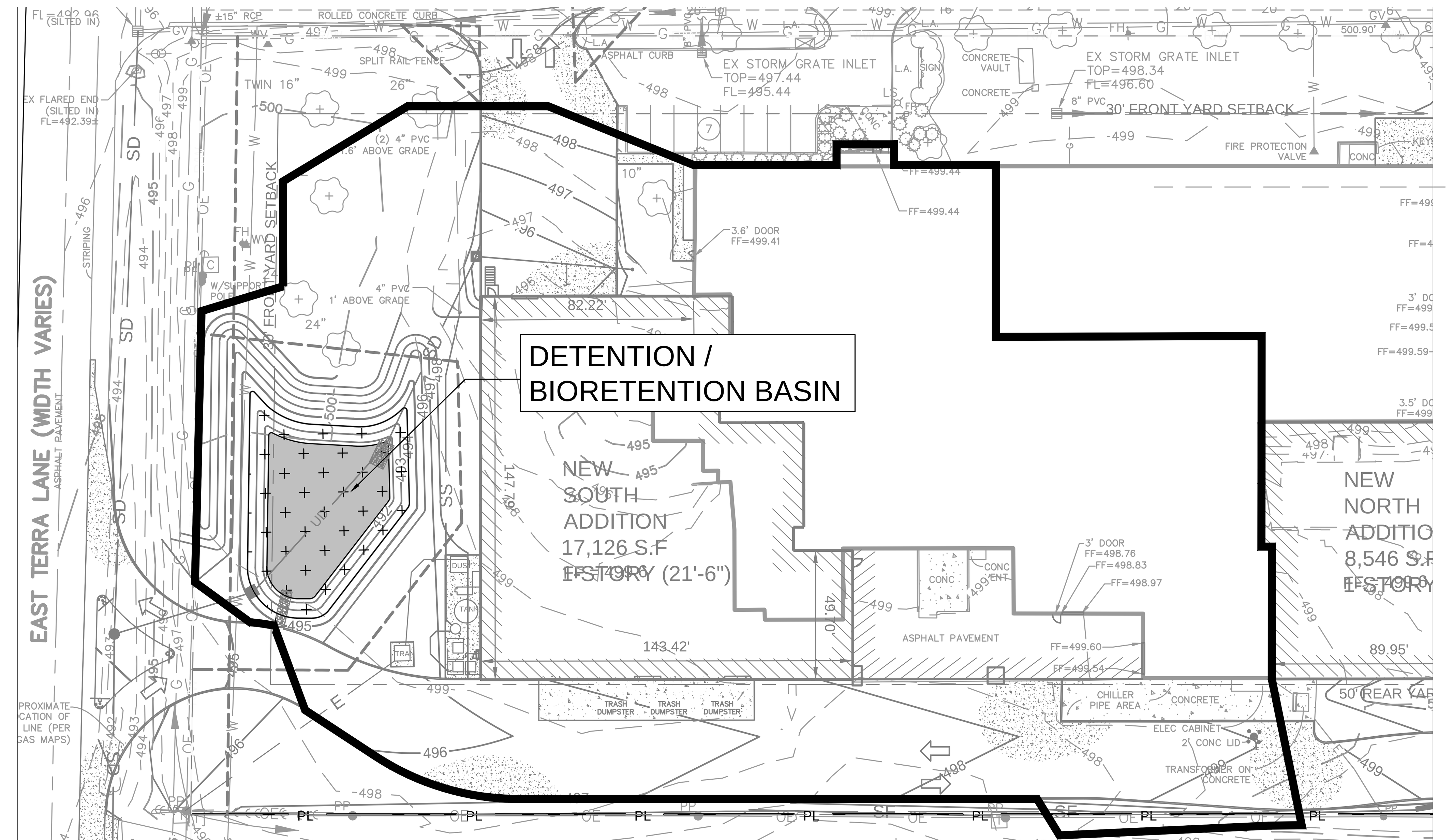
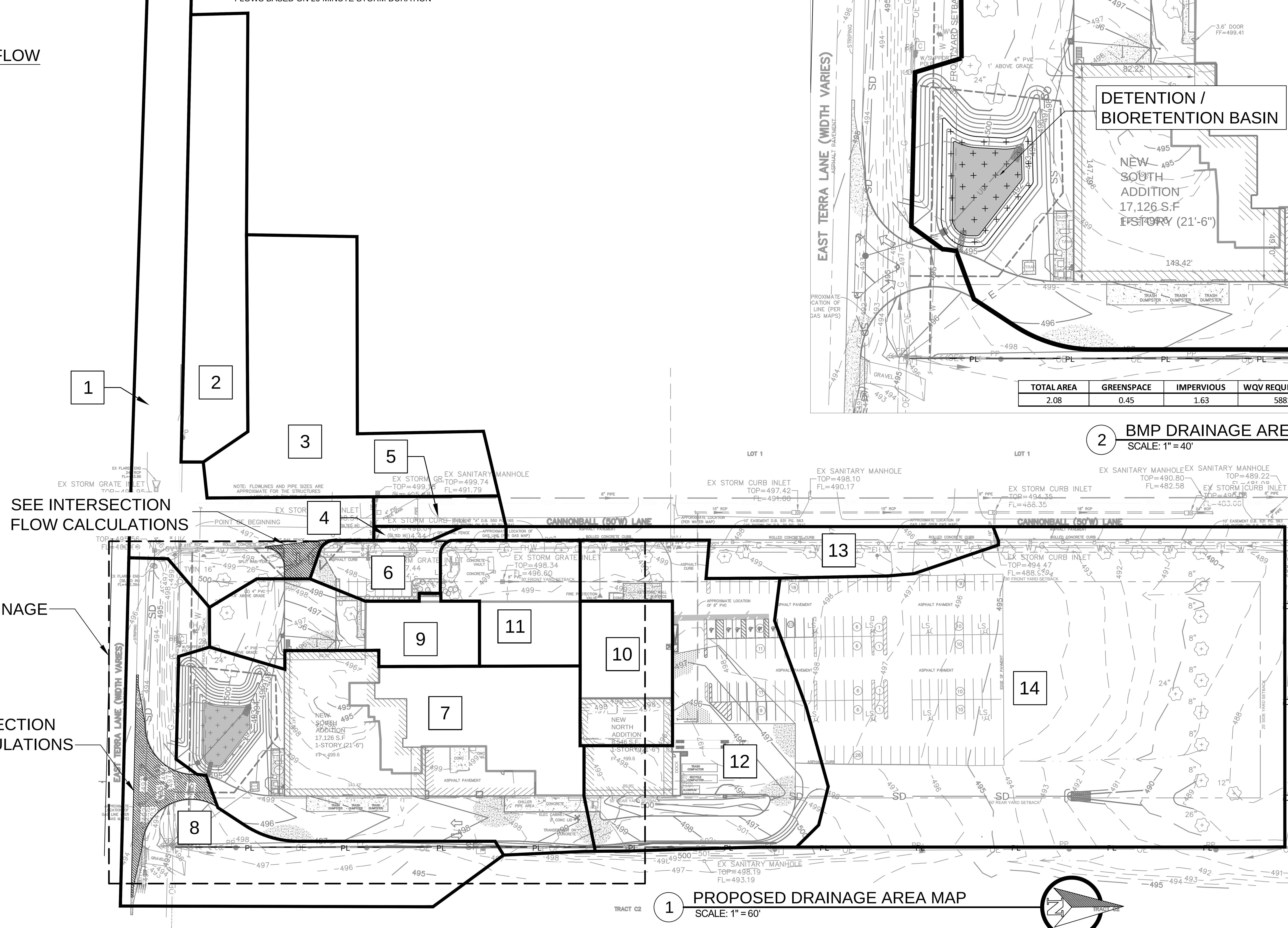
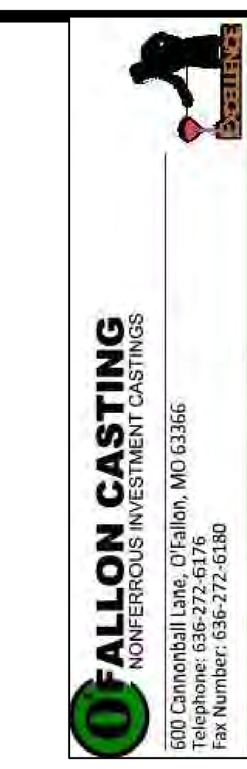


TOTAL AREA	GREENSPACE	IMPERVIOUS	WQV REQUIRED (CF)	WQV PROVIDED (CF)
2.08	0.45	1.63	5881	5882

2 BMP DRAINAGE AREA MAP
SCALE: 1" = 40'



1 PROPOSED DRAINAGE AREA MAP
SCALE: 1" = 60'



ADDITION & RENOVATION FOR
O'FALLON CASTING
600 CANNONBALL LANE O'FALLON, MISSOURI 63366
PROPOSED DRAINAGE AREA MAP

REVISIONS

NO.	DATE
3	08/10/2016

ISSUE DATE: MAY 26, 2016
PROJECT NO.: 15-187
DRAWN BY: GAS
CHECKED BY: TBS

SEAL

SHEET
C7.03
PROPOSED DRAINAGE AREA MAP