

Clarksburg Town Center Water Quality for Phase 2B

**Sand Filter Basin No. 10
Bio-Retention / Recharge Facilities 12 and 13
Bio-Retention Area No. 23
Water Quality Manholes 1 and 2**

Prepared by: J. Strulic
November, 2002

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1751 ELTON ROAD SUITE 300 SILVER SPRING, MARYLAND 20910

(301) 434-7000 Fax (301) 434-9394 FREDERICK MD-FAIRFAX, VA

Sand Filter Basin No. 10

$$V = (1.0") \times (12.25 \text{ Ac.}) \left(\frac{1 \text{ in.}}{12 \text{ ft}} \right) \left(\frac{43,560 \text{ CF}}{1 \text{ ac.}} \right) \quad A = 23.10 \text{ Ac.}$$

$$I = 68\%$$

$$V = 45,375 \text{ CF}$$

$$A_1 = 15.50 \text{ Ac.}$$

$$A_{\text{design}} = 15.50 - 3.0 \text{ ac. (Imp. DA from facilities 18 \& 19)} = 12.50 \text{ Ac.}$$

Calculate minimum sand surface required:

(10% of total volume)

$$A = 45,375 \text{ CF} \times 0.10 = 4538 \text{ SF}$$

$$A(\text{Provided}) = 4620 \text{ SF}$$

Inflow pipe calculations based on 1.0" of runoff using SCS tabular method:

$$q = q + AQ$$

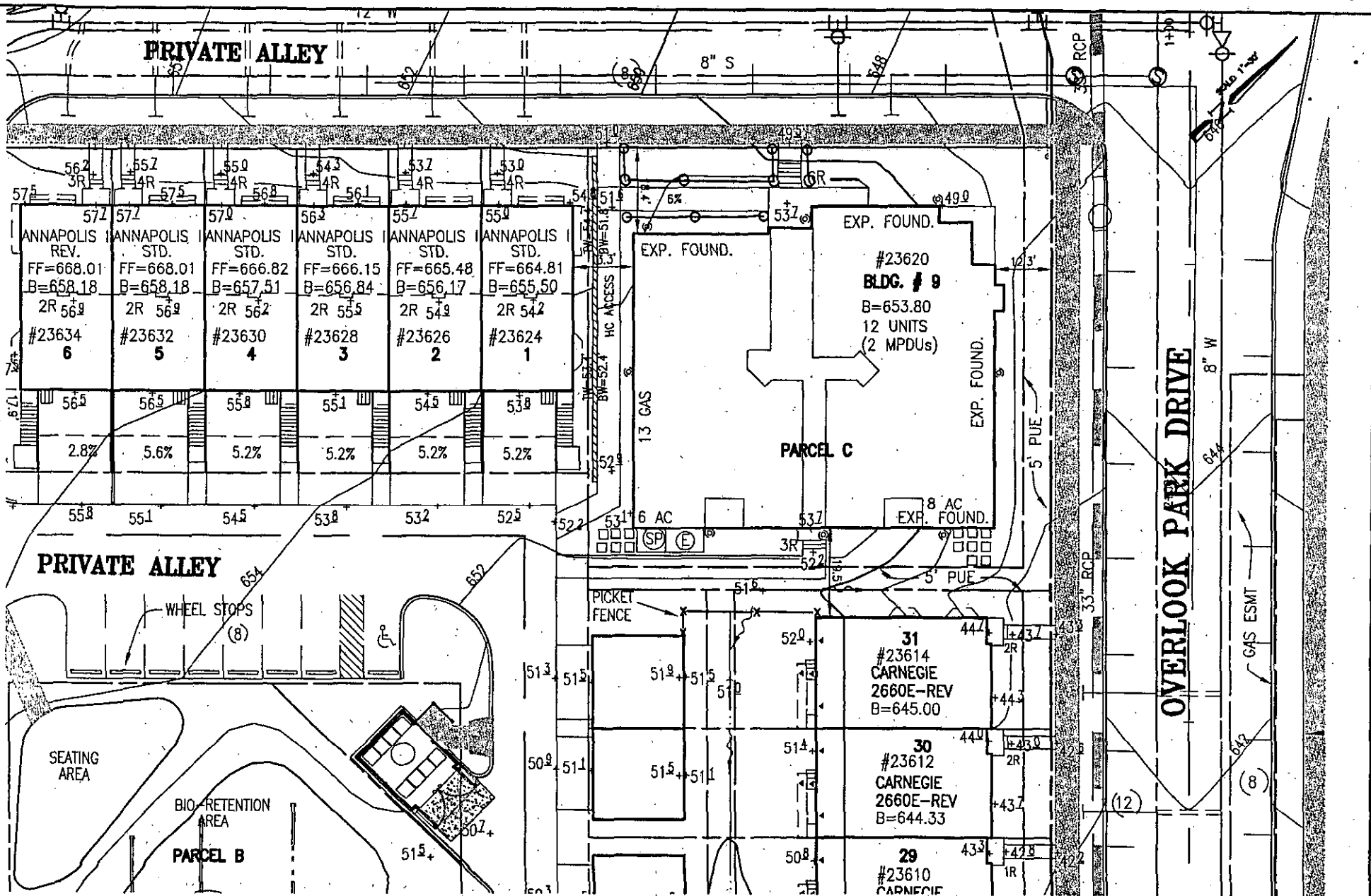
$$Q = 1.0"$$

$$qt = 1010 \text{ cfs}$$

$$A = 12.50 \text{ Ac.}$$

$$q = (1010) (12.25 / 640) (1.0") = 19.35 \text{ cfs}$$

$$\text{First flush WSEL} = 601.10$$

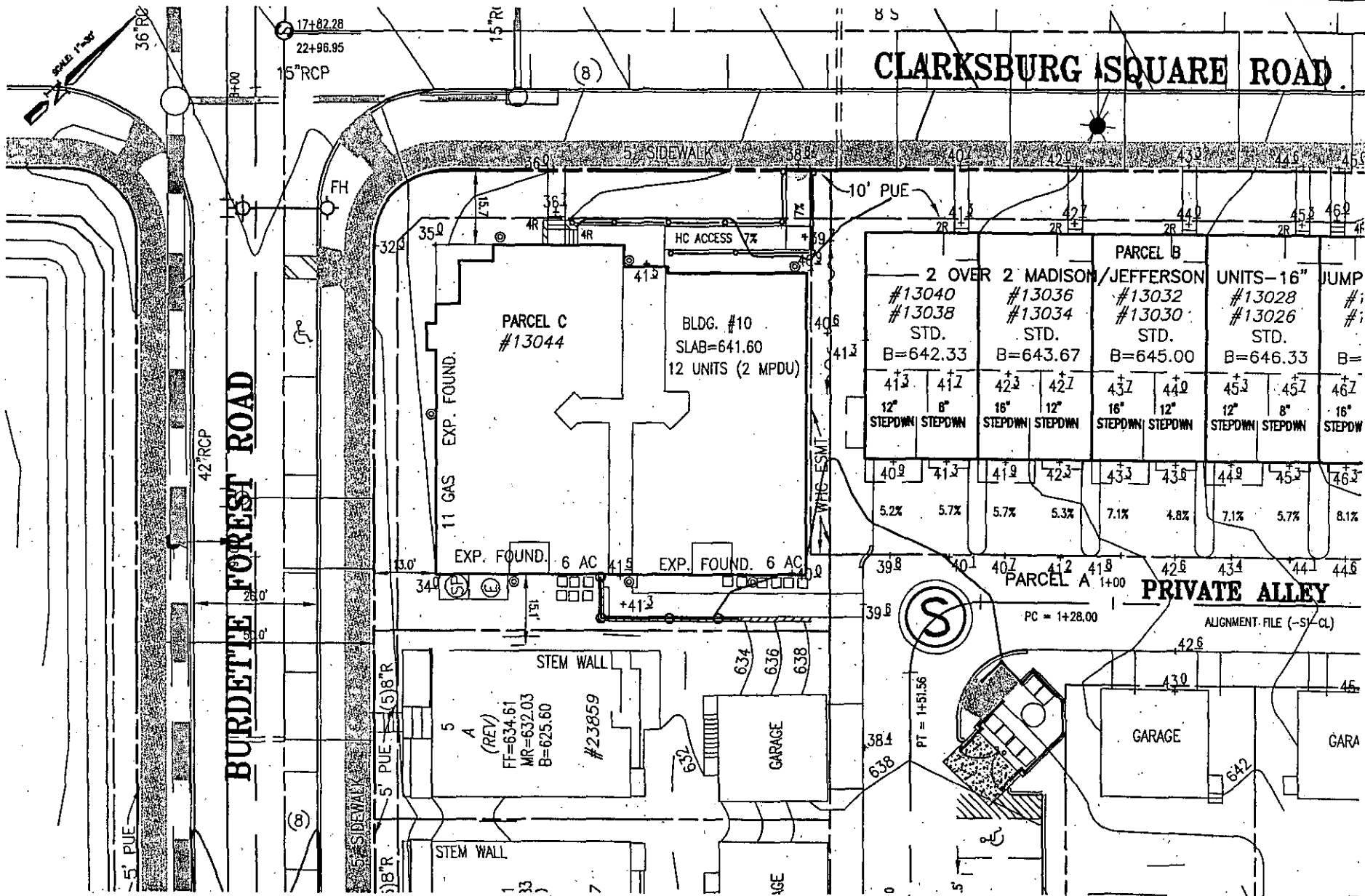


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% IMPERVIOUS = 67%

IMPERVIOUS AREA (TOTAL)
= 6,550 SF
BLDG (5315 SF) (0.15 AC)
PATH, S/W (1,235)

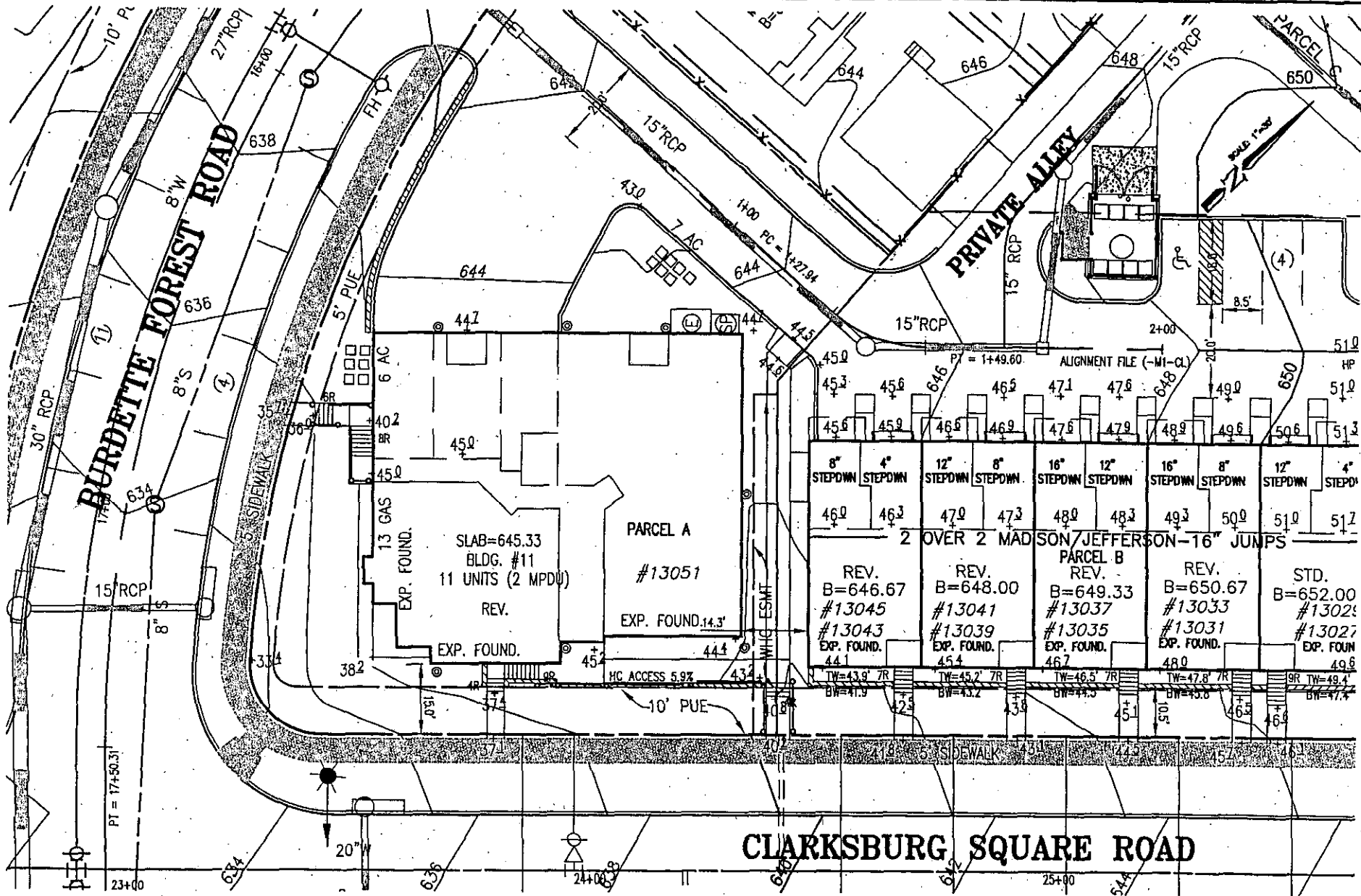


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% IMPERVIOUS = 63%

TOTAL AREA = 0.22 Ac
IMPERVIOUS AREA (TOTAL)
= 5,930 SF
BLDG (5315 SF) (0.14 Ac)
PATH, S/W (615 SF)



**MANOR HOUSE - BLDG. # 11
CLARKSBURG TOWN CENTER**

CLARKSBURG (2nd) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

SCALE: 1"=30'

BY: mas

DATE: AUG.04'

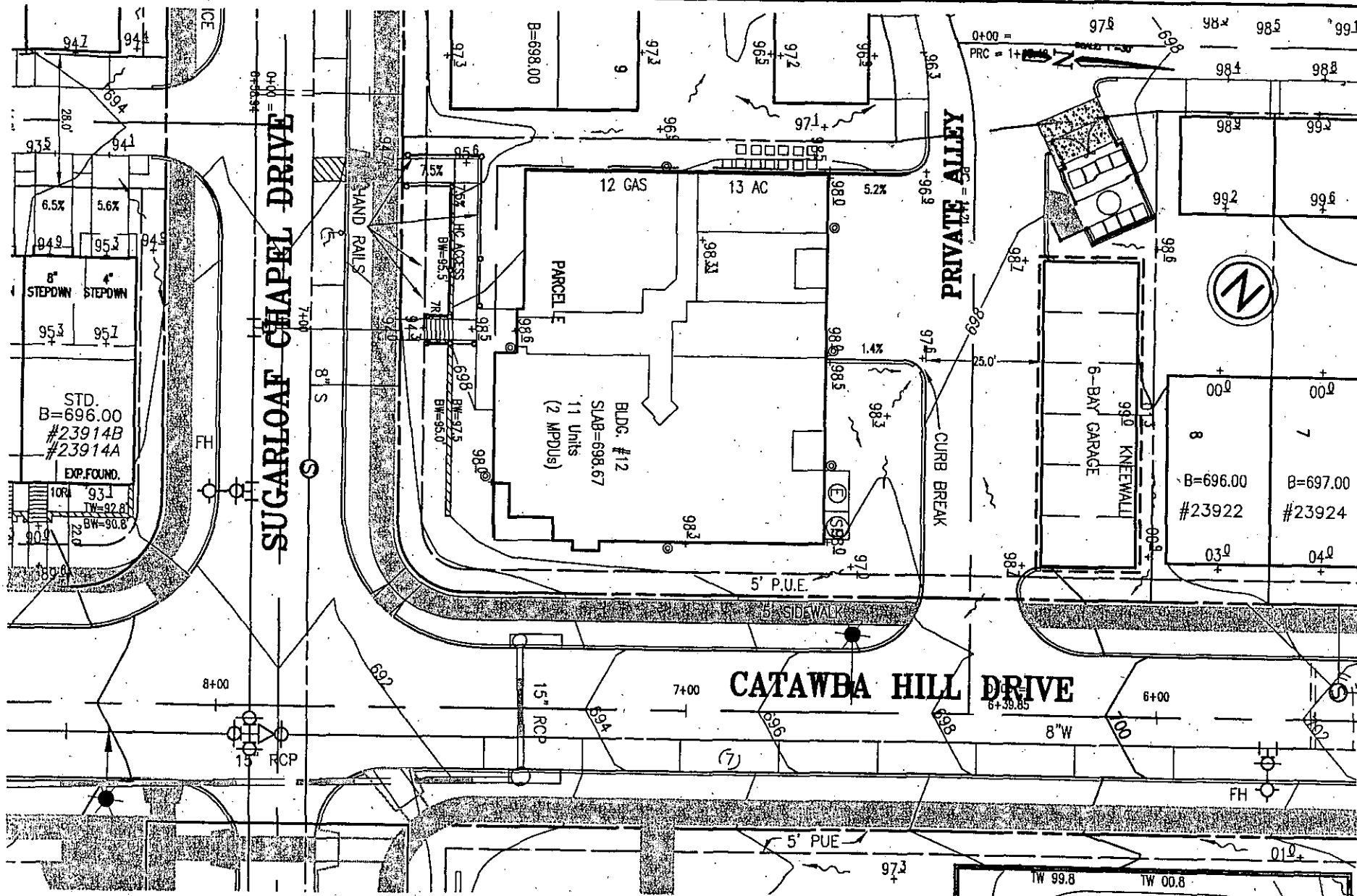
% IMPERVIOUS = 66%

TOTAL AREA = 0.35 Ac.

IMPERVIOUS AREA (TOTAL)
= 9,840 SF
(0.23 Ac)
BLDG (5315 SF)
PAVING, S/W (4,525 SF)

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**MANOR HOUSE - BLDG. # 12
CLARKSBURG TOWN CENTER**

CLARKSBURG (2nd) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

SCALE: 1"=30' BY: mss DATE: AUG.04'

TOTAL AREA= 0.37 Ac

% IMPERVIOUS = 67%

IMPERVIOUS AREA (TOTAL)

BLDG (5315 SF) = 10,810 SF
PAVING, S/W (5,495 SF) (0.25 Ac)

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