

ARC GIS Area Calculations

$$\text{Total Impervious Area} = \boxed{6,822,589 \text{ ft}^2}$$

$$\text{Total Area} = \boxed{9,131,207 \text{ ft}^2}$$

$$\text{Total pervious Area} =$$

$$= 9,131,207 - 6,822,589$$

$$= \boxed{2,308,618 \text{ ft}^2}$$

Pool
Area
Small
Sections

$$716,486 \text{ ft}^2$$

$$\text{Area of small
Sections} = 3,075,160 \text{ ft}^2$$

$$\text{Total Impervious Area} = 4,925,189 - 716,486 + 3,075,160 (.85)$$

$$\text{Total Impervious Area} = \boxed{6,822,589 \text{ ft}^2}$$

Area of proposed wetland
rough estimate



$$\text{Area} \approx 210,000 \text{ ft}^2$$

Sizing of wetpond LC SWM

Step 1 3 or 4.5 for large $3 \text{ or } 4.5 \times V_r$ runoff

Step 2 Find R (rainfall from mean annual storm)

$$R = .47'' = 0.039'$$

Step 3 Calculate V_r = runoff volume

$$V_r = (0.9 A_1 + 0.25 A_{2g} + 0.10 A_{2f} + 0.01 A_0) \times R$$

$$V_r = [0.9 (6,822,589 \text{ ft}^2) + 0.25 (2,308,618 \text{ ft}^2)] \times 0.039'$$

$$V_r = 261,982 \text{ ft}^3$$

Step 4

$$V_b = t V_r$$

$$V_b = 3 (261,982 \text{ ft}^3) = 785,946 \text{ ft}^3$$

Wetland Dimensions

79.2

Step 6:

$$V_b = 785,946 \text{ ft}^3$$

Area of wetlands proposed $\approx 210,000 \text{ ft}^2$



$$\text{Area of wetland} = \frac{V_b}{d} = \frac{785,946 \text{ ft}^3}{3 \text{ ft}} = \underline{\underline{261,982 \text{ ft}^2}}$$

Step 7:

$$\text{Volume of presettling cell} = 261,982 \text{ ft}^3$$

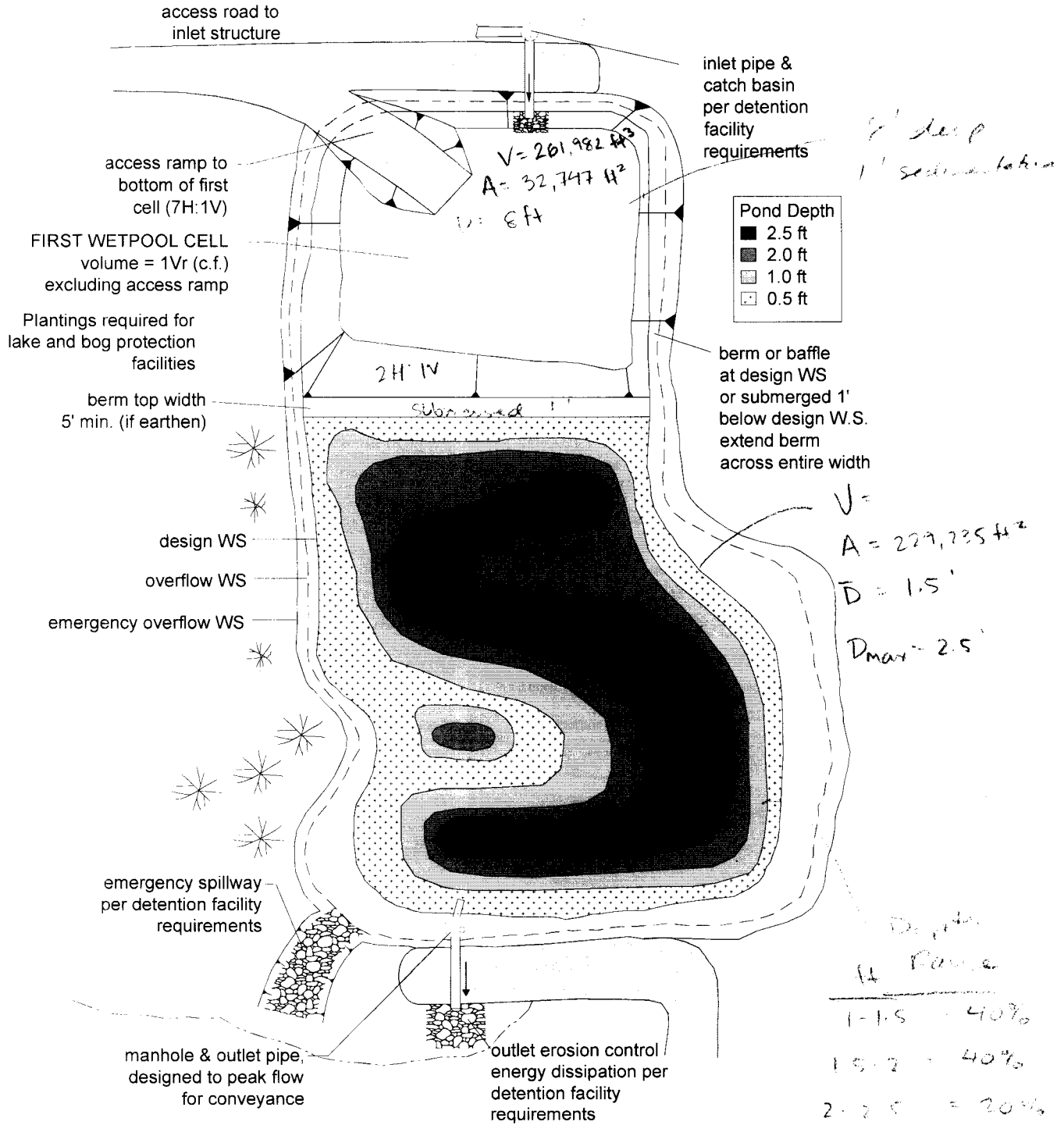
$$\text{Surface Area of 1st cell} = \frac{261,982 \text{ ft}^3}{8 \text{ ft}} = 32,747.8 \text{ ft}^2$$

Step 8

$$261,982 - 32,747 \text{ ft}^2 = \underline{\underline{229,235 \text{ ft}^2}}$$

Area of wetlands cell

FIGURE 6.4.3.B STORMWATER WETLAND — OPTION B



PLAN VIEW Option B
NTS