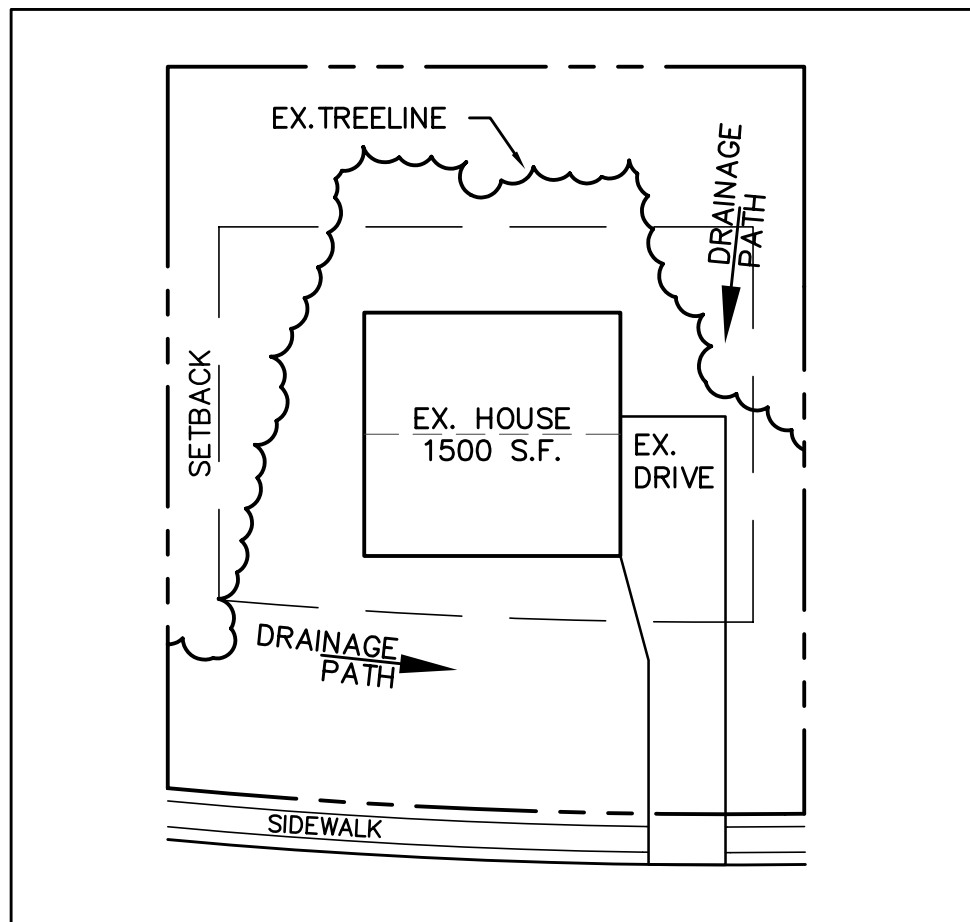


PROPOSED REDEVELOPMENT



EXISTING SITE

Case Study One: Residential Single Family Redevelopment

- Demonstrate how to provide storage for the water quality volume (WQV). Assume that detention is not required because site has already been developed as single-family residential.
- WQV = 0.5" of runoff over the impervious area.
- Drainage area is assumed to equal site area, 12,000 S.F.

Existing Conditions

- Woods = 3,800 S.F. (site is approx. 1/3 forested)
- Roof + pavement = 2,500 S.F.
- Lawn = 5,700 S.F.
- Site drains to southeast corner

Post-Development Conditions

- Woods = 1,300 S.F.
- Roof + pavement = 5,100 S.F.
- Lawn = 5,600 S.F.
- Roof leaders drain to driveway
- Drainage pattern is unchanged

Result

- **Water quality volume = 213 C.F.**
 - $WQV = 0.5" / (12" \text{ per foot}) * 5,100 \text{ S.F.}$

BMPs

- Either Option A or Option B will meet storage requirement.
- Option A: 213 S.F. bioretention cell
 - Assume 6" surface storage and 6" subsurface storage is provided.
 - Bioretention cell is designed so that surface ponding drains within 24 hours.
- Option B: 213 S.F. section of permeable pavement
 - Assume 1' storage in gravel bed below permeable pavement.



1" = 30' HORIZONTAL