

SAMPLE: Vegetation Assurance for 1234 View Drive, Duneville April 27, 2019

Project site description: The site is a forested dune with a mix of red oak (*Quercus rubra*), hemlock (*Tsuga canadensis*), white cedar (*Thuja occidentalis*), white pine (*Pinus strobus*) and low growing plants typical of a mesic northern forest community.

Proposed development: Impacts to the existing vegetation are proposed within the building footprint and septic field. Trees over 3 inches diameter at breast height and saplings will be impacted. Total number of trees removed for the project will be six: two hemlock; one white cedar; two red oak; and one white pine. Low growing vegetation will be removed from the impact areas. Impact will occur to 0.5 acres of forested dune. See the attached site plan.

Seasonal issues: Oaks are at risk of being infected with oak wilt if trees are pruned or roots disturbed between April 15 and July 15.

Special considerations: The mature trees on the site will be protected. A survey for endangered and threatened species was conducted and noted Pitcher's Thistle (*Cirsium pitcheri*) on the lakeward facing slope. The thistle location is outside of the impact area and will not be disturbed during construction. Garlic mustard (*Alliaria petiolata*), an invasive species, was found onsite.

Proposed actions for maintaining site stability during and after construction:

1. Stumps and roots of trees/shrubs cut down outside the building footprint and septic field will be left in place.
2. No disturbance will occur outside a 10-foot buffer surrounding the walls of the house and a 5-foot buffer surrounding walks, decks, septic, and well.
3. All trees outside this buffer will be marked/flagged and protected from construction activities with fencing installed at the drip line. Any damage to oaks will be painted with tree paint immediately to protect the trees from oak wilt.
4. To decrease the risk of oak wilt the oaks will not be pruned, or roots disturbed between April 15 and July 15. Any damage to branches will be painted immediately to prevent infection.
5. All hemlock branches and logs will remain onsite. If we need to move hemlock a compliance agreement with the Michigan Department of Agriculture and Rural Development will be in place.

Proposed revegetation of the site:







1. Upon completion of construction activities all exposed soils will be re-vegetated with native species or covered with a weed-free biodegradable mulch blanket to stabilize soils and allow dead leaf material to accumulate. Where possible, existing herbaceous layers of soils and seedling plant materials will be recovered and moved for re-establishment in disturbed areas.
2. Nine trees greater than 4 feet in height or greater than 2-inch caliper will be planted on the site as replacement for trees removed. Trees will be a mix of hemlock (*Tsuga canadensis*) from a hemlock woolly adelgid-free source, red maple (*Acer rubrum*), sugar maple (*Acer saccharum*) and American basswood (*Tilia americana*). Red oak (*Quercus rubra*) may be planted if there is no immediate threat of oak wilt. Hemlock will be

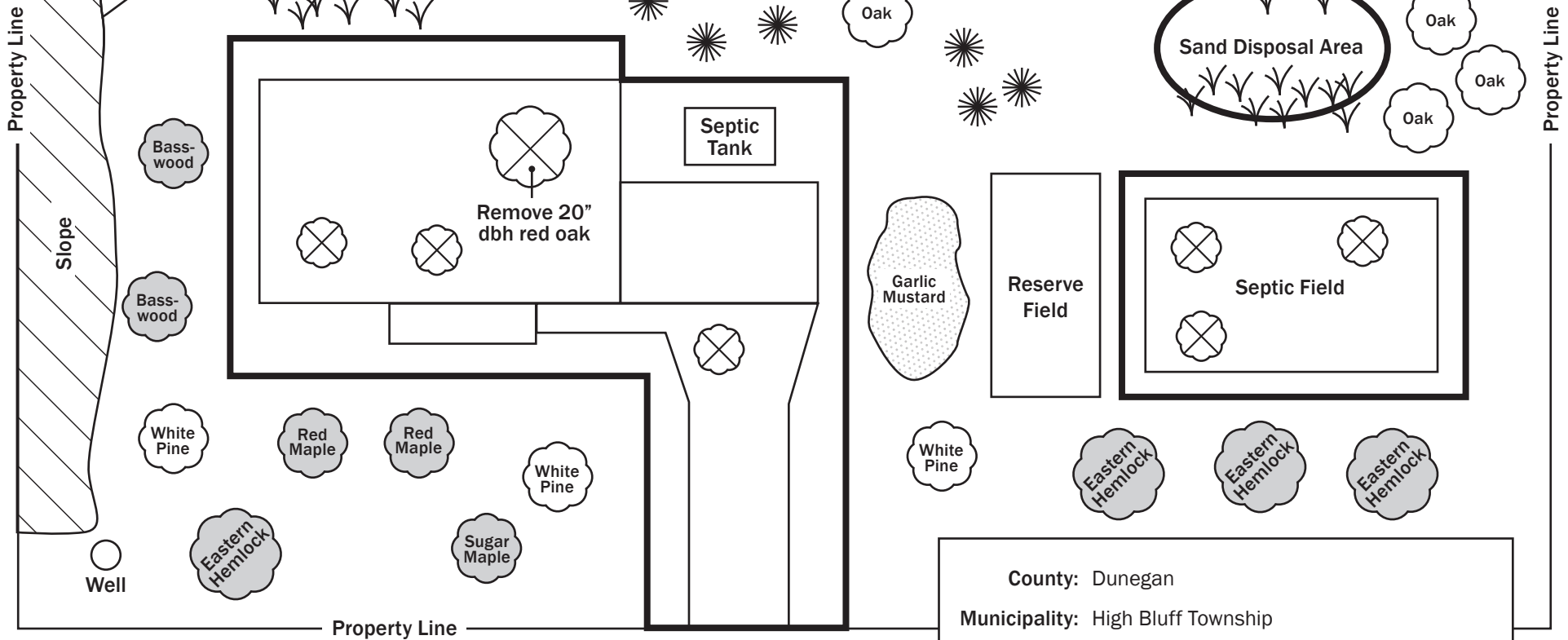
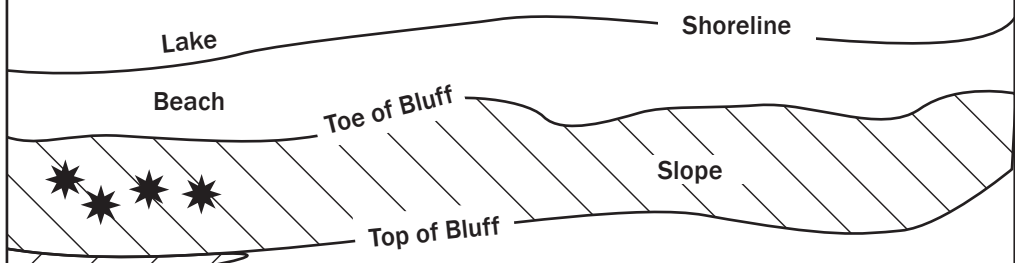
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monitored for the occurrence of hemlock woolly adelgid. Trees will be replaced if mortality occurs within two growing seasons.

3. Shrub species, serviceberry (*Amelanchier* spp.) and red-osier dogwood (*Cornus stolonifera*) will be used as understory plantings. Shrubs will be from 5-gallon pots or larger.
4. Plugs of little bluestem (*Schizachyrium scoparium*), will be installed to stabilize the sand disposal area.
5. Garlic mustard will be removed by hand and the homeowner will be shown what garlic mustard looks like and the importance of continued removal. Monitoring for invasive species on the site will occur for two growing seasons. Invasive species will be removed with techniques using hand held tools as recommended by the staff of the Northwest Michigan Invasive Species Network, the local Cooperative Invasive Species Management Area (CISMA).

Sample Vegetation Assurance Plan

 <p>TREES REMOVED (greater than 4 ft tall and 3 inch dbh)</p> <ul style="list-style-type: none"> - Eastern Hemlock (2) - Northern White Cedar (1) - Northern Red Oak (2) - White Pine (1) 	 <p>TREES PROPOSED (greater than 4 ft tall and greater than 2 inch caliper)</p> <ul style="list-style-type: none"> - Eastern Hemlock - Red Maple - Sugar Maple - American Basswood
 <p>TREES REMAINING</p>	 <p>GRASSES PROPOSED</p> <ul style="list-style-type: none"> - Little Bluestem plugs
 <p>SHRUBS PROPOSED (5 gallon pots)</p> <ul style="list-style-type: none"> - Serviceberry - Red Osier Dogwood 	 <p>THREATENED SPECIES</p> <ul style="list-style-type: none"> - Pitcher's Thistle



SHOW LIMITS OF IMPACT, VEGETATION REMOVAL AND LANDSCAPING



County: Dunegan
Municipality: High Bluff Township
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 Duneville, MI 56789
Date: April 27, 2019
Drawn by: N. House