



CONSTRUCTION PLAN

PRACTICE(S) SHORELINE PROTECTION (580); TRAILS/WALKWAYS (575); CRITICAL PLANTING

AREA (342)

December 6, 2016

LANDOWNER SMITHING

2017-01

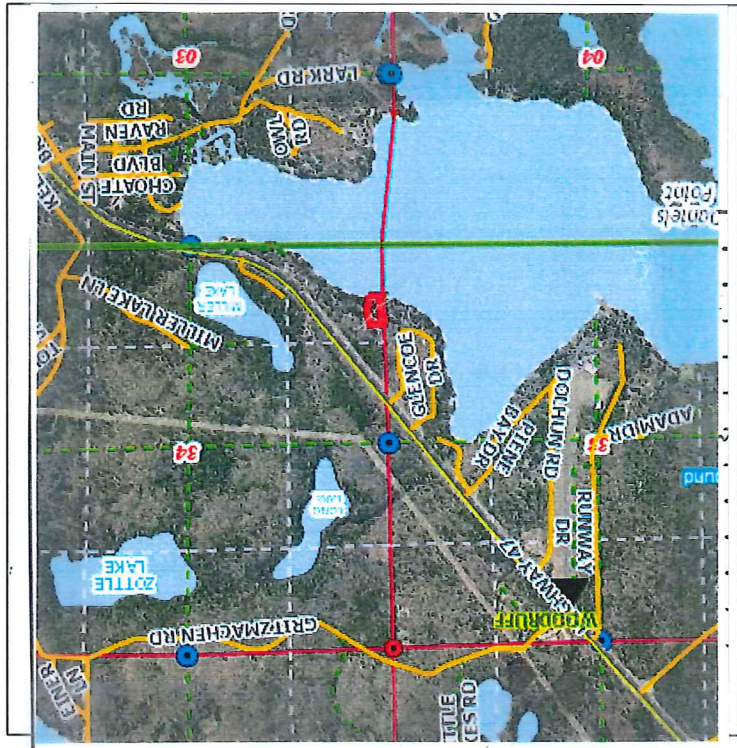
ADDRESS 7361 HWY 47, LAKE TOMAHAWK WI 54539

LANDOWNER PHONE NO. \_\_\_\_\_ COUNTY ONEIDA

TOWNSHIP WOODRUFF T 39 N, R 07 E/W, Sec. 34

FIELD OFFICE \_\_\_\_\_ TELEPHONE NO. \_\_\_\_\_

Sheet	Contents
1	COVER SHEET
2	PROJECT SUMMARY
3	DESIGN
4	ESTIMATED QUANTITIES
5	PLANTING NOTES
6	PLANT LIST
7	_____
8	_____
9	_____
10	_____
11	_____
12	_____



LOCATION MAP

**DIGGERS HOTLINE**

Call 3 Work Days Before You Dig!

Nationwide 811

Toll Free 1-800-242-8511

TDD 1-800-542-2289



Not to Scale

Website

www.diggershotline.com

**NOTICE TO LANDOWNERS AND EXCAVATORS**

Any representation made by the USDA, Natural Resources Conservation Service, or the ONEIDA County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. (Call Diggers Hotline) Ticket # \_\_\_\_\_

Landowner Acceptance: See WI Jobsheet 819 \_\_\_\_\_

Designed by: \_\_\_\_\_ Date: \_\_\_\_\_

Checked by: \_\_\_\_\_ Date: ESTIMATED QUANTITIES

Approved by: \_\_\_\_\_ Date: DESIGN

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Job Approval Class \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

## SMITHING PROJECT SUMMARY

Total Project Cost: \$25,499.92

BEFORE



Project consisted of 100' of upland plantings, bag walls, permeable pathway and sediment logs. A total of 5,390 square feet were restored. Construction was completed in Summer, 2017

BEFORE





**AFTER**

**Nineteen trees, 137 shrubs, 1,972 ground cover plants, and 12 ounces of native seed were used. Additionally, 200 enviroloc bags (two plants per bag) and 3 sediment logs were utilized in this design.**

**AFTER**



**SHOWING SEDIMENT LOG**



**Revised**

N

pervious concrete pathway

70' bag wall

berms

one → 30'

one → 60'

sediment logs

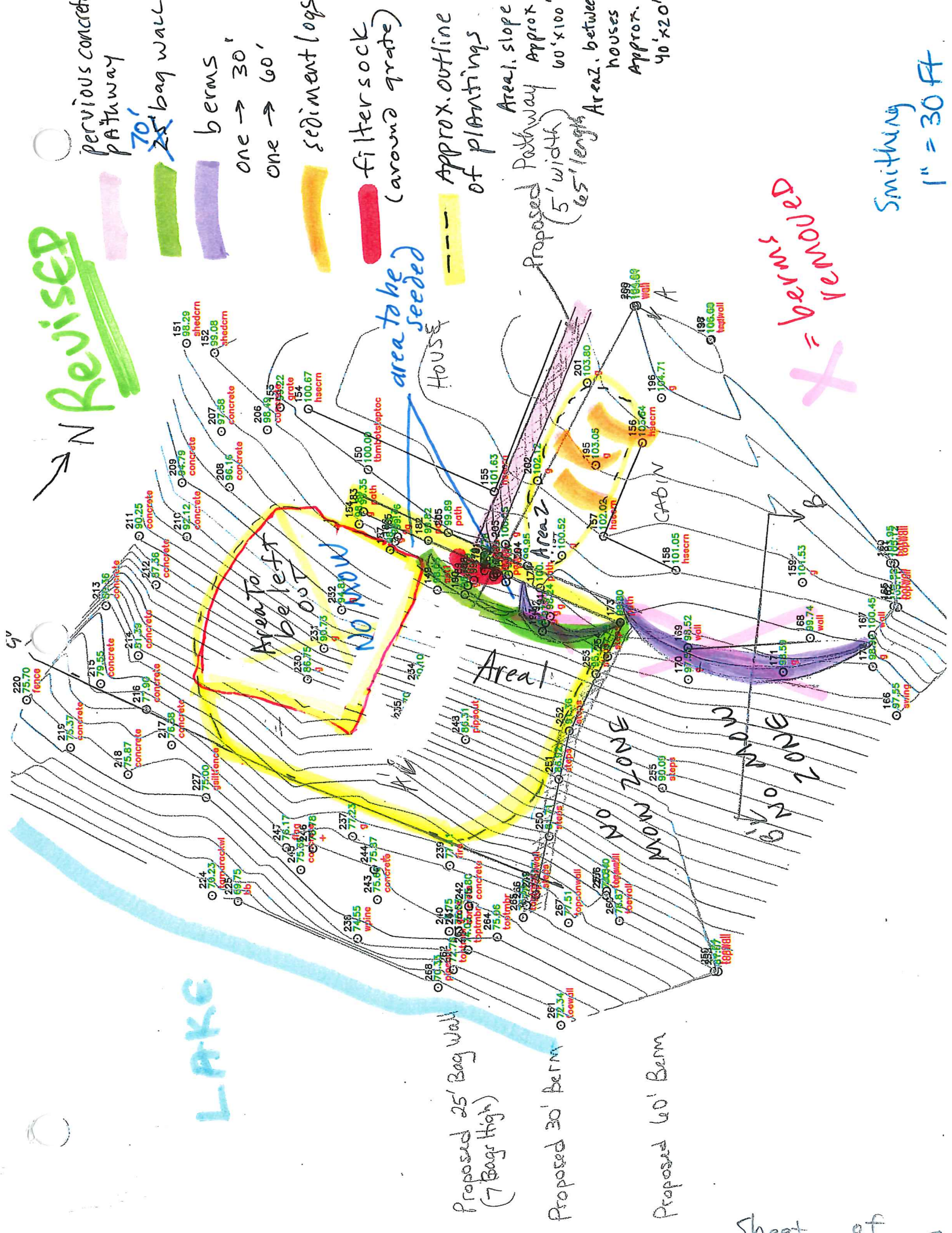
filter sock (around grate)

Approx. outline of plantings

Area, slope of pathway approx 60' x 100' (65' length)

Area, between houses approx. 40' x 20'

Smithing 1" = 30 FT



berms = removed

Proposed 25' Bag Wall (7 Bags High)

Proposed 30' Berm

Proposed 60' Berm

Sheet of

### ESTIMATED QUANTITIES

Items	Quantity	Units	Sheet Number	WI Const. Spec. or Job Sheet No.
Mobilization	1	Job		WCS #7 (pg. 13MM)
Erosion/Pollution Control	1	Job		WCS #5 (pg. 13KK)
Excavation	1	Job		WCS #2 (pg. 13FF)
Earthfill--Berms	0	CY		WCS #3 (pg. 13HH)
Earthfill--Behind bags & sediment logs	38	CY		WCS #3
Geotextile Bags (filled, tan color)	200	EA		WCS #13 (pg. 13NN)
Spikes (for bags)	400	EA		WCS #13
Curlex Excelsior (or equivalent) Sediment logs (12" diameter, 10' long), with spikes	3	EA		WI Bio Tech Note 1 (pg. 13N)
FF Inlet Fabric (6' x 2')	1	EA		
Surfaced path (exact system TBD by contractor, must meet specs.)	5' x 65'	1		WDNR Standard 1008 (pg. 13)
Jute mat (area #2, under compost )	90	SY		WI Bio Tech Note 1
Compost (area #2 = 2" deep, except for dirt pathway = 3" deep, area #1 = worked into/around planting holes)	15	CY		WI Bio Tech Note 1
Trees (area #1)	5	EA		WI Bio Tech Note 1
Trees (area #2)	4	EA		WI Bio Tech Note 1
Shrubs (bags)	56	EA		WI Bio Tech Note 1
Shrubs (area #1)	81	EA		WI Bio Tech Note 1
Shrubs (area #2)	16	EA		WI Bio Tech Note 1
Ground Cover (bags)	272	EA		WI Bio Tech Note 1
Ground Cover (area #1)	1012	EA		WI Bio Tech Note 1
Ground Cover (area #2)	200	EA		WI Bio Tech Note 1
Curlex Excelsior Class I Type B Net Free Erosion Control Blanket w/ biodegradable stakes	600	SY		WI Bio Tech Note 1
Custom Native Seed (bag lips)	12	OZ		WI Bio Tech Note 1
Nurse Crop Seed	3	LB		WI Bio Tech Note 1
Fencing: maximum 2 year growing season and maximum \$1000 cost shared.	1	Job		WI Bio Tech Note 1
Watering system: maximum 2 year growing season and maximum \$500 cost shared.	1	Job		WI Bio Tech Note 1

Designed by: ms

Checked by: \_\_\_\_\_

Sheet \_\_\_\_\_ of \_\_\_\_\_

Revised 6-27-17

## PLANTING PLAN NOTES

### (SMITHING)

1. Wisconsin Biology Technical Note 1 is enclosed. This booklet includes information you and/or your landscaper will need to prepare your site and complete your planting.
2. All plants shall be native and chosen only from Native Vegetation List provided in plan. Use scientific names to purchase plants. To benefit pollinators and other wildlife, consider choosing pollinator/wildlife friendly plants and shrubs (as marked in the Native Vegetation List).
3. Plant species, quantities, and seed packets will need to be approved by Oneida County's Land & Water Conservation Department prior to planting. This should occur during the pre-construction meeting.
4. A list of the selected plants (scientific names) with individual amounts planted shall be submitted with paid invoice(s).
5. Maximum size for vegetation cost share shall be the following: Trees – 7 gallon container; Shrubs – 2 gallon container; ground cover – 4.5 inch.
6. Location of vegetation will be in Area 1, Area 2, Berms (2), and bag wall, as shown on the plan.
7. One plant per hole.
8. Two plants per soil filled bag or one shrub per soil filled bag (shrubs should be evenly distributed in bag system, not every bag will have a shrub).
9. Plants shall be evenly distributed in the areas designated for plantings and the correct plants placed in the correct habitat – i.e. sun, shade, etc.
10. All plants shall be in good condition at time of planting. Keep plants watered and in the shade until planted. Soak thoroughly before removing from the container to plant.
11. Plant vegetation at the optimal time of the year.
12. Custom native seed mix to be used on bag lips and in rutted driveway area when graded smooth.
13. 2" layer of compost to be applied to Area 2. Compost **shall not** be applied as a layer in Area 1, but should instead be applied into/around each planting hole. 2" layer of compost to be worked into rutted driveway area, graded smooth, and seeded.
14. Annual rye grass for nurse crop not to be seeded after September 15<sup>th</sup>.
15. Newly planted areas will be covered with an excelsior net free erosion control blanket that has a 60 day protection unless otherwise noted, and 100% biodegradable stakes or staples must be used.
16. Water shall be provided to the newly planted vegetation on a regular basis. An irrigation system will need to be installed temporarily, not to exceed two growing seasons. Thereafter, water when drought conditions exist.
17. Do not use chemicals and/or fertilizers after installation of vegetation.
18. No substitutions unless prior approval by Oneida County Land & Water Conservation Department and landowner.
19. Remember, this is a restoration of a shoreland area and the goal is to look natural, not landscaped.

SMITHING

ONEIDA COUNTY LWCD, WI

Designed: ms

Checked:

6/28/2017

Sheet of —

**NATIVE VEGETATION LIST**  
SMITHING

Revised  
4-19-17

**Notes:**

- Species with \* are mandatory.
- Species with ^ are especially good for pollinators and other wildlife.
- Trees with ! are smaller-statured and are good for building a multi-story forest canopy.
- Plant species and quantities need to be approved by Oneida County LWCD prior to planting. This should occur during the pre-construction meeting.
- **Any substitutions must** be approved by Oneida County Land & Water, no exceptions.
- Nurse crops must be planted by September 15<sup>th</sup>.

**TREES = 19 (Area 1 = 15, Area 2 = 4)**

- Notes: Choose a minimum of two (2) different species/varieties, diverse plantings are healthier!  
 Trees with ^ are good for pollinators and other wildlife.  
 Trees with ! are smaller-statured and are good for building a multi-story forest canopy.

Common name	Scientific name
!^American native plum	<i>Prunus americana</i>
^Black cherry	<i>Prunus serotina</i>
!^Chokecherry	<i>Prunus virginiana</i>
^Common serviceberry	<i>Amelanchier arborea</i>
!^Glossy black chokeberry	<i>Aronia melanocarpa</i>
Hemlock	<i>Tsuga canadensis</i>
!Ironwood	<i>Ostrya virginiana</i>
!Mountain maple	<i>Acer spicatum</i>
!Musclewood	<i>Carpinus caroliniana</i>
^Northern pin oak	<i>Quercus ellipsoidalis</i>
^Northern red oak	<i>Quercus rubra</i>
^Pin cherry	<i>Prunus pensylvanica</i>
Red maple	<i>Acer rubrum</i>
Red pine	<i>Pinus resinosa</i>
^Showy mountain ash	<i>Sorbus decora</i>
!^Smooth serviceberry	<i>Amelanchier laevis</i>
Sugar maple	<i>Acer saccharum</i>
White pine	<i>Pinus strobus</i>

**SHRUBS = 192 (Area 1 = 120, Area 2 = 16, Bag wall = 56)**

- Notes: Choose a minimum of three (3) different species/varieties, diverse plantings are healthier!  
 Shrubs with \* are mandatory.  
 Shrubs with ^ are good for pollinators and other wildlife.

Common name	Scientific name
^American hazelnut	<i>Corylus americana</i>
^Beaked hazelnut	<i>Corylus cornuta</i>

## NATIVE VEGETATION LIST

### SMITHING

Bearberry	<i>Arctostaphylos uva-ursi</i>
^Black elderberry	<i>Sambucus canadensis</i>
^Blueberry	<i>Vaccinium angustifolium</i>
*Bush honeysuckle	<i>Diervilla lonicera</i>
Downy arrowwood	<i>Viburnum rafinesquianum</i>
^Glossy black chokeberry	<i>Aronia melanocarpa</i>
Gray dogwood	<i>Cornus racemose</i>
^Highbush cranberry	<i>Viburnum trilobum</i>
Maple leaf viburnum	<i>Viburnum acerifolium</i>
Meadowsweet	<i>Spirea alba</i>
^Nannyberry	<i>Viburnum lentago</i>
Nine bark	<i>Physocarpus opulifolius</i>
^Red elderberry	<i>Sambucus pubens</i>
^Red stem dogwood	<i>Cornus stolonifera</i>
Smooth rose	<i>Rosa blanda</i>
Snowberry	<i>Symphoricarpus albus</i>
Staghorn sumac	<i>Rhus typhina</i>
Steeplebush	<i>Spirea tomentosa</i>
*Sweet fern	<i>Comptonia peregrine</i>
Sweet gale	<i>Myrica gale</i>
^Winterberry	<i>Ilex verticillata</i>

**GROUND COVER = 1972 (Area 1 = 1500 [450 must be grasses], Area 2 = 200 [60 must be grasses], Bag wall = 272 [82 must be grasses])**

Notes: Choose a minimum of ten (10) different varieties, diverse plantings are healthier!  
 Ground cover shall be comprised of a minimum of 30% grasses and/or sedges.  
 Plants with ^ are good for pollinators and other wildlife.

Grasses:

Common name	Scientific name
Bottlebrush grass	<i>Hystrix patula</i>
Bottlebrush sedge	<i>Carex comosa</i>
^Common sedge	<i>Carex communis</i>
Dark green bulrush	<i>Scirpus schoenoplectus atrovirens</i>
^Fox sedge	<i>Carex vulpinoidea</i>
Indian grass	<i>Sorghastrum nutans</i>
June grass	<i>Koeleria macrantha</i>
Little blue stem	<i>Andropogon scoparius</i>
Path rush	<i>Juncus tenuis</i>
Sickle sedge	<i>Carex crinita</i>
Wool grass	<i>Scirpus schoenoplectus cyperinus</i>

## NATIVE VEGETATION LIST

### SMITHING

Ferns:

Common name	Scientific name
Christmas fern	<i>Polystichum acrostichoides</i>
Cinnamon fern	<i>Osmunda cinnamomea</i>
Interrupted fern	<i>Osmunda claytoniana</i>
Lady fern	<i>Athyrium filix femina</i>
Leatherwood fern	<i>Dryopteris marginallis</i>
Maidenhair fern	<i>Adiantum pedatum</i>
Ostrich fern	<i>Matteuccia pennsylvanica</i>
Royal fern	<i>Osmunda regalis</i>
Sensitive fern	<i>Onoclea sensibilis</i>
Wood fern	<i>Dryopteris intermedia</i>

Flowers:

Common name	Scientific name
Barren strawberry	<i>Waldsteinia fragarioides</i>
Bearberry	<i>Arctostaphylos uva-ursi</i>
Big-leaved aster	<i>Aster macrophyllus</i>
Black-eye Susan	<i>Rudbeckia hirta</i>
Blue bead lily	<i>Clintonia borealis</i>
Bunchberry	<i>Cornus Canadensis</i>
Canada goldenrod	<i>Solidago canadensis</i>
Common milkweed	<i>Asclepias syriaca</i>
Common spiderwort	<i>Tradescantia ohiensis</i>
^Culvers root	<i>Veronicastrum virginicum</i>
^Cup plant	<i>Silphium perfoliatum</i>
Daisy fleabane	<i>Erigeron glabellus</i>
Dogbane	<i>Apocynum androsaemifolium</i>
^Dotted mint	<i>Monarda punctata</i>
Downy yellow forest violet	<i>Viola pubescens</i>
^Dutchman's breeches	<i>Dicentra cucullaria</i>
Early goldenrod	<i>Solidago juncea</i>
Early meadow rue	<i>Thalictrum dioicum</i>
Fireweed	<i>Epilobium angustifolium</i>
Frost aster	<i>Aster pilosus</i>
^Golden alexander	<i>Zizia aurea</i>
^Hairy wood mint	<i>Blephilia hirsuta</i>
Harebell	<i>Campanula rotundifolia</i>
Heath aster	<i>Aster ericoides</i>

## NATIVE VEGETATION LIST

### SMITHING

Labrador violet	<i>Viola labradorica</i>
Lance leaf coreopsis	<i>Coreopsis lanceolata</i>
^New England aster	<i>Aster novae-angliae</i>
Old field goldenrod	<i>Solidago nemoralis</i>
Ox-eyed sunflower	<i>Heliopsis helianthoides</i>
Pale purple coneflower	<i>Echinacea pallida</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Purple prairie clover	<i>Dalea purpurea</i>
Pussytoes	<i>Antennaria spp</i>
Red baneberry	<i>Actaea rubra</i>
^Rough blazing star	<i>Liatris aspera</i>
^Rough sunflower	<i>Helianthus hirsutus</i>
Showy blazing star	<i>Liatris ligulistylis</i>
Showy goldenrod	<i>Solidago speciosa</i>
^Sky blue aster	<i>Aster azureus</i>
Small white aster	<i>Aster vimineus</i>
^Smooth aster	<i>Aster laevis</i>
Smooth goldenrod	<i>Solidago gigantea</i>
^Turtlehead	<i>Chelone glabra</i>
White baneberry	<i>Actaea pachypoda</i>
^White sage	<i>Artemisia ludoviciana</i>
^Whorled milkweed	<i>Asclepias verticillata</i>
^Wild bergamot	<i>Monarda fistulosa</i>
^Wild columbine	<i>Aquilegia canadensis</i>
Wild geranium	<i>Geranium bicknellii</i>
Wild lupine	<i>Lupinus perennis</i>
Wild strawberry	<i>Fragaria virginiana</i>
Woodland phlox	<i>Phlox divaricata</i>
^Woodland sunflower	<i>Helianthus strumosus</i>
Yarrow	<i>Achillea millefolium</i>
Zig zag goldenrod	<i>Solidago flexicaulis</i>

### NURSE CROP

\* Annual ryegrass = 3 pounds

Notes: **Caution:** Do not use winter rye or perennial rye as nurse crop.

Seed label must be submitted to Oneida County LWCD for approval **prior** to planting.

Nurse crops must be planted by September 15<sup>th</sup>.