

Shoreline Stabilization Techniques

Plants and Practices

Brent Hanson, Hanson's Garden Village



Vegetation is usually the ideal long term solution.



Higher energy sites often require a “hard-armor only” approach for toe protection.

- Seawall (not on inland lakes)
- Articulated Concrete Mattress
- Heavy Gabions
- Heavy Rip Rap



Vegetated Rip Rap

GRANT PROJECT
BLUE LAKE
ONEIDA COUNTY, WI

RIP RAP DETAIL
- VEGETATED -

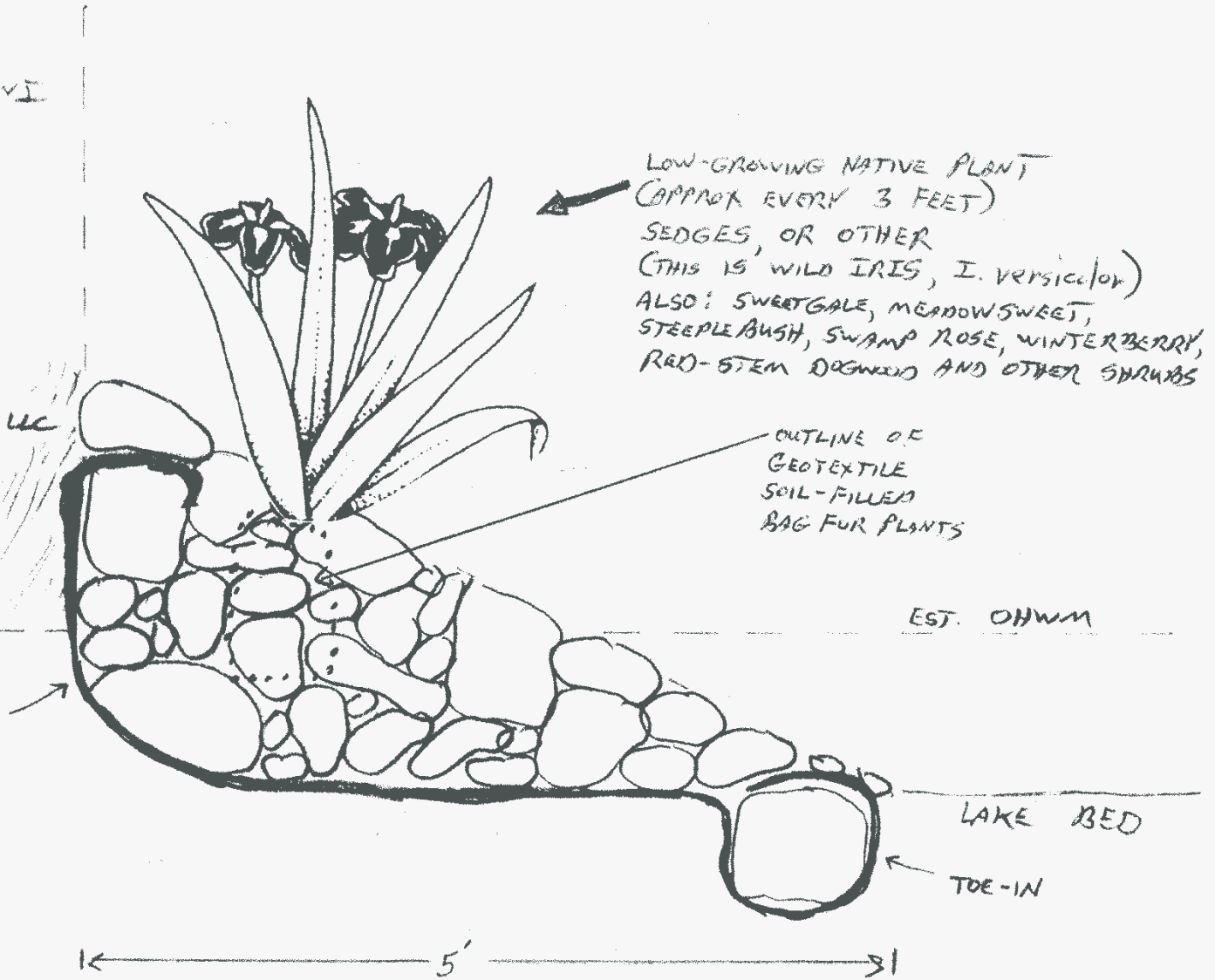
SCALE 1" = 1'

DEC. 26, 2011
BRENT HANSON
715. 365. 2929
HANSON'S GARDEN VILLAGE, LLC

2:1 FACE ON RIP RAP
ROCK SIZE 6" TO 14"

BANK

CLASS I
NONWOVEN
GEOTEXTILE



35-FT
SETBACK

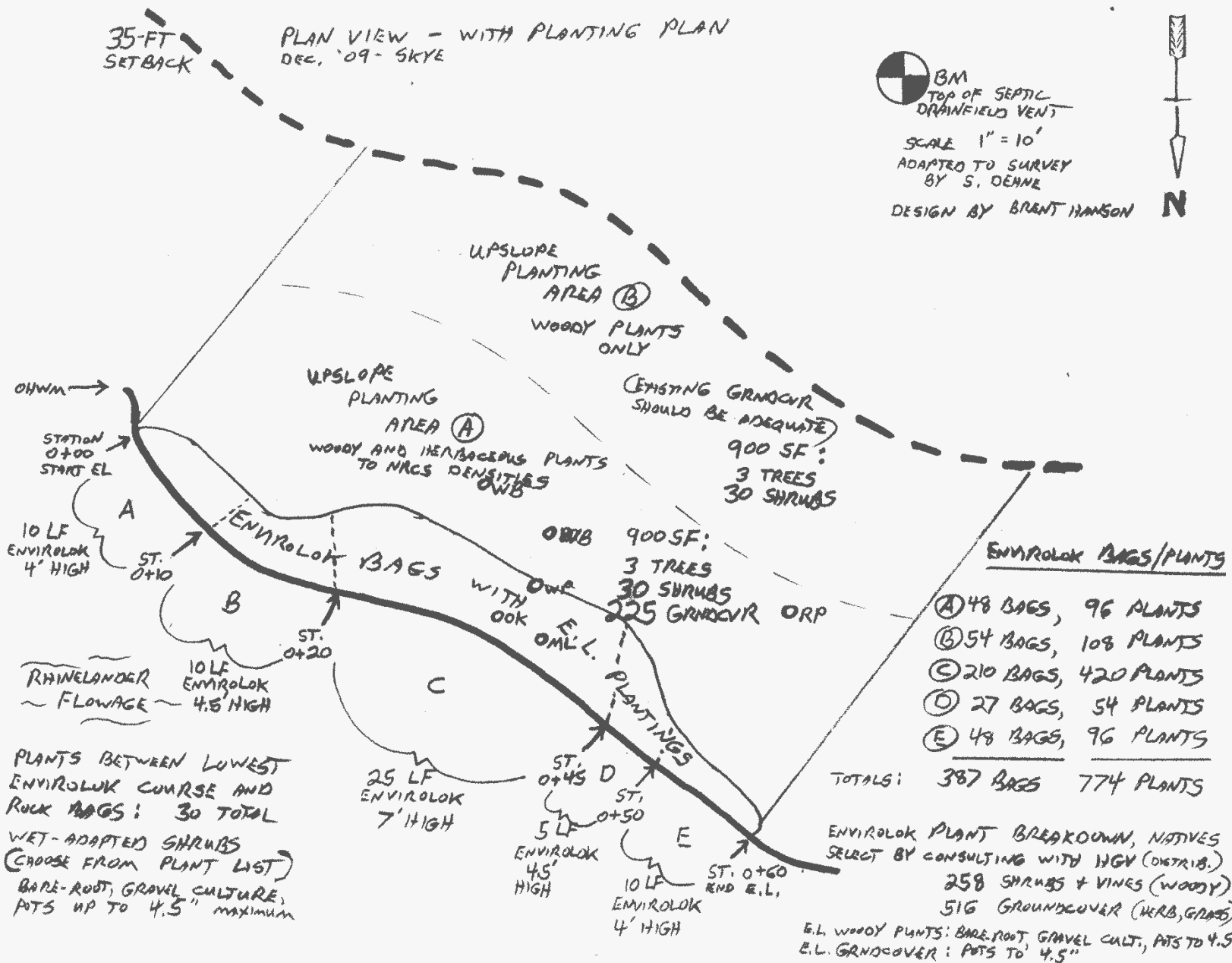
PLAN VIEW - WITH PLANTING PLAN
DEC. '09 - SKYE



BM
TOP OF SEPTIC
DRAINFIELD VENT

SCALE 1" = 10'
ADAPTED TO SURVEY
BY S. DEANE

DESIGN BY BRANT HANSON



UPSLOPE
PLANTING
AREA (B)
WOODY PLANTS
ONLY

UPSLOPE
PLANTING
AREA (A)
WOODY AND HERBACEOUS PLANTS
TO NACS DENSITIES
OWB

(EXISTING GRNDCVR
SHOULD BE ADEQUATE)
900 SF:
3 TREES
30 SHRUBS

OHWM →
STATION
0+00
START EL

A
10 LF
ENVIROLOK
4' HIGH
ST. 0+10

ENVIROLOK BAGS

900 SF:
3 TREES
30 SHRUBS
225 GRNDCVR ORP

ENVIROLOK BAGS/PLANTS

- (A) 48 BAGS, 96 PLANTS
- (B) 54 BAGS, 108 PLANTS
- (C) 210 BAGS, 420 PLANTS
- (D) 27 BAGS, 54 PLANTS
- (E) 48 BAGS, 96 PLANTS

TOTALS: 387 BAGS 774 PLANTS

RHINELANDER
FLOWAGE
10 LF
ENVIROLOK
4.5 HIGH

PLANTS BETWEEN LOWEST
ENVIROLOK COURSE AND
ROCK BAGS: 30 TOTAL

WET-ADAPTED SHRUBS
(CHOOSE FROM PLANT LIST)
BARE-ROOT, GRAVEL CULTURE,
POTS UP TO 4.5" MAXIMUM

25 LF
ENVIROLOK
7' HIGH

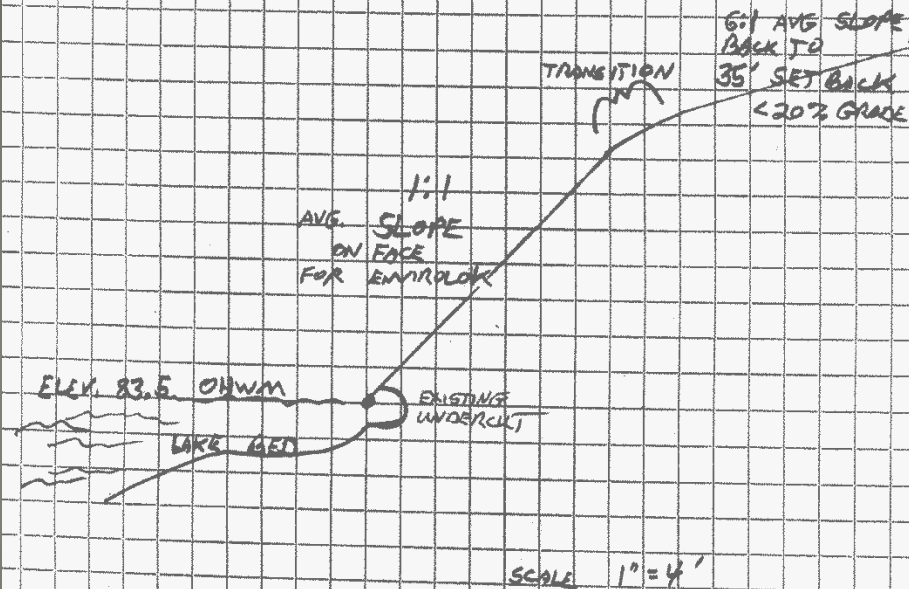
ST. 0+45 D
5 LF
ENVIROLOK
4.5' HIGH

ST. 0+50 E
10 LF
ENVIROLOK
4' HIGH
ST. 0+60
END E.L.

ENVIROLOK PLANT BREAKDOWN, NATIVES
SELECT BY CONSULTING WITH HGV (DISTRIB.)
258 SHRUBS + VINES (WOODY)
516 GRNDCOVER (HERB, GRASS)

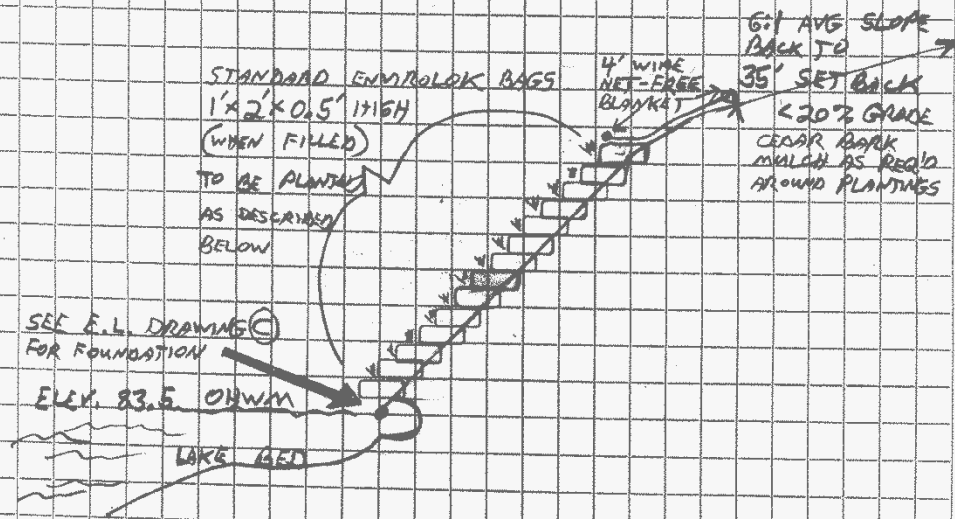
E.L. WOODY PLANTS: BARE-ROOT, GRAVEL CULT., POTS TO 4.5"
E.L. GRNDCOVER: POTS TO 4.5"

ENVIROLOK DRAWING A SKYE



CROSS-SECTION, ACROSS BANK
ST. 0+30 BUSTING 12-09 BJN

ENVIROLOK, DRAWING B
 DESIGN, AT STATION 0+30
 (HIGHEST PART OF ENVIROLOK SLOPE)

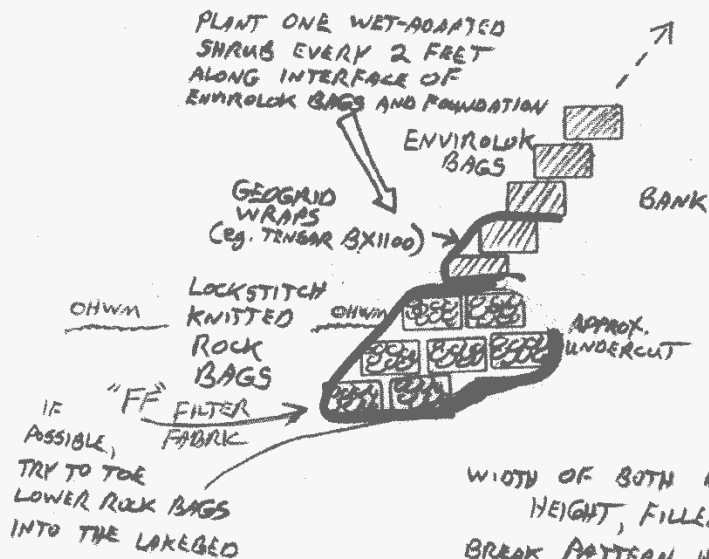


SCALE 1" = 4'

ENVIROLOK TO BE LAD AND STABILIZED PER INSTRUCTIONS SUPPLIED AND PER RECOMMENDATIONS OF HGV (DISTRIB.) THIS IS A VEGETATED PRACTICE. PLANTS ARE PUT IN BETWEEN COURSES OF BAGS, TWO PER BAG, WITH A BIT OF COMPOST APPLIED AROUND ROOTS AT EACH PLANTING SPOT. GENERALLY, ONE-THIRD OF TOTAL PLANTS ARE WOODY, AND REMAINING TWO-THIRDS NATIVE WILDFLOWERS, HERBACEOUS VINES, GRASSES, AND SEDGES. THE BAGS MUST BE WET THROUGH WHEN PLANTED, AND BE KEPT MOIST THROUGH THE ENTIRE FIRST SEASON.

12-09 BOTH

E.L. DRAWING C - SKYE
 FOUNDATION TO ENVIROLOK
 AND GEO GRID WRAPS



NOT TO SCALE

WIDTH OF BOTH BIOENGINEERING BAG IS APPROX. 12" FILLED
 HEIGHT, FILLED APPROX. 6"

BREAK PATTERN HORIZONTAL (L TO R) OF BOTH BAGS
 ACROSS THE COURSES

ROCK FILL IN ROCK BAGS NON-ANGULAR (NOT SHARP),
 1 1/2" TO 2 1/2" CLEAN ROCK. NO FINES.

ROCK BAGS SHOULD BE APPROX 20" x 12" x 6" HIGH, FILLED.

SEE SUGGESTED SPECIFICATION ON BAG MATERIAL,
 DEC. 2009 BOTH

ADAPTED FROM A DESIGN BY GIL LAYTON (LAYTON ENVIRONMENTAL)

ENVIROLOK DRAWING C









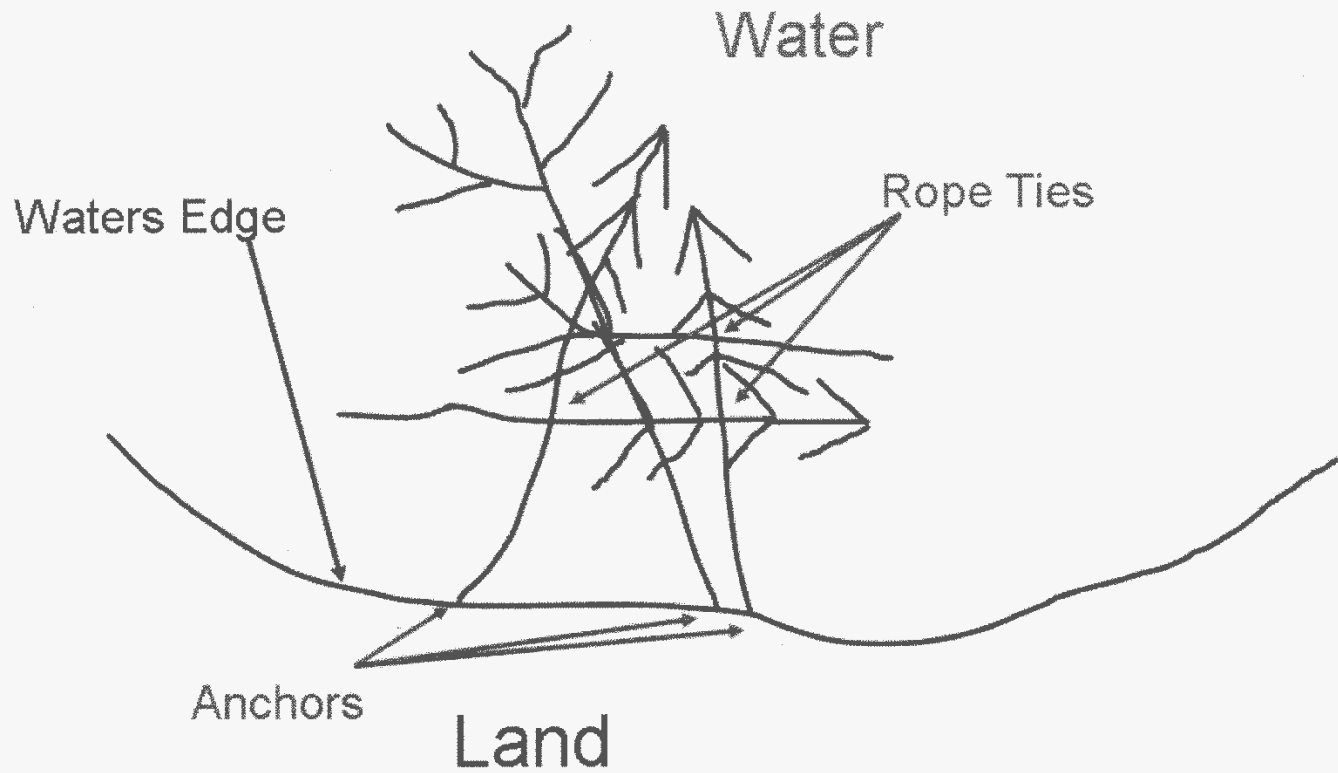
Natural Log Protection (Tree Revetments)



Natural Stump Wads/Tree Drop



“Fishsticks”



Configurations

Point House Tree Drops



Geotextile Left Behind After Brush Bundle Failure



Good Vegetation – In a Coir Biolog



Bioengineering Structure Assessment Team



Watch For:

- University of Minnesota Lakeshore Practices Decision Making Tool (Web-Based)
- For Natural Resource Professionals



Coir Biolog With Plastic Strap Anchors (2012)



Coir Biolog Install From 2011





Coir Biolog Install From 2010



Curlex® Bloc

- An American Made Alternative to Coir Logs



Geogrid Lifts





Geotextile Bags Envirolok®





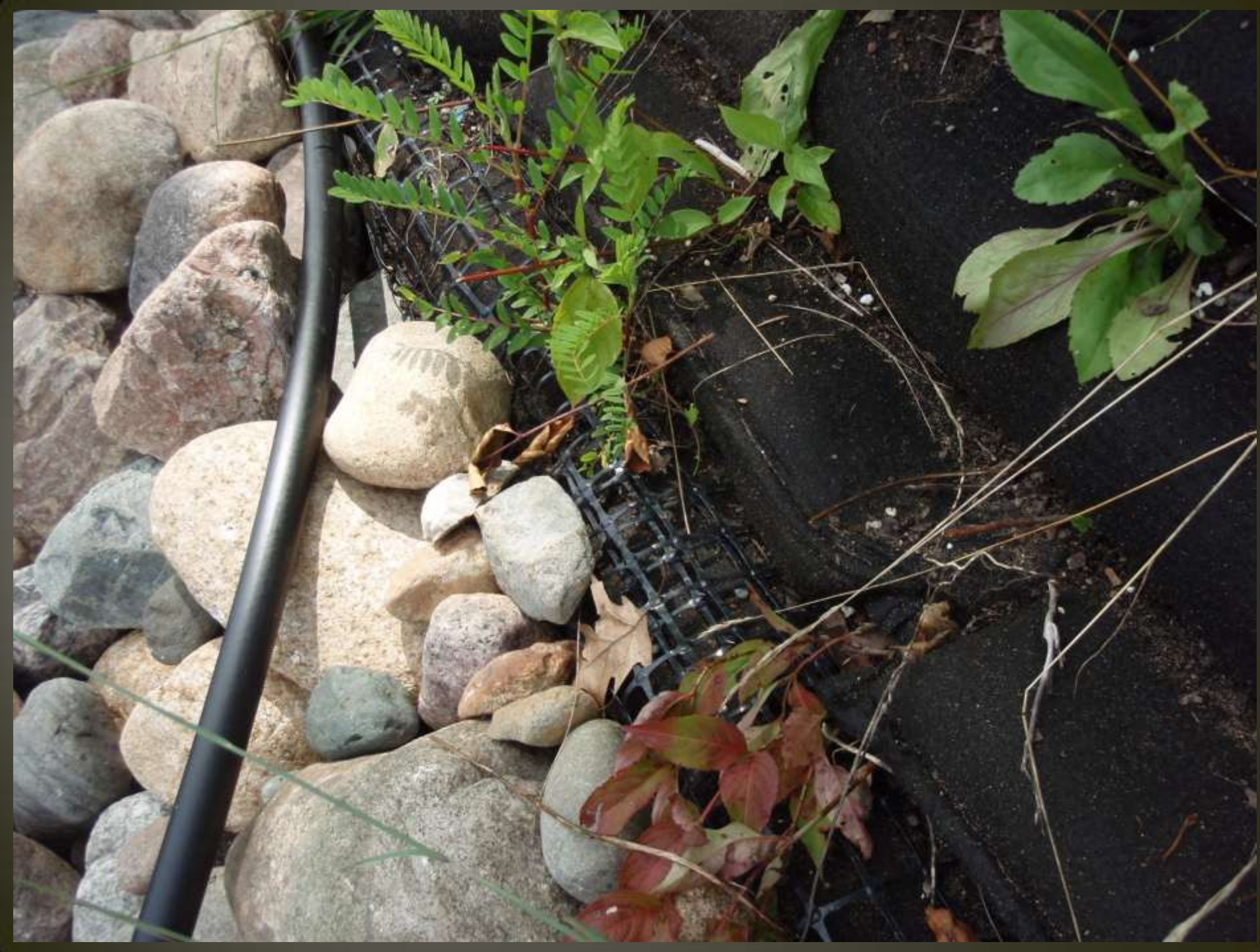












Lake Tomahawk “Kemp Woods”

























Wood Is Good



Coco Wrapped Water Bars



Sediment Log Water Bars

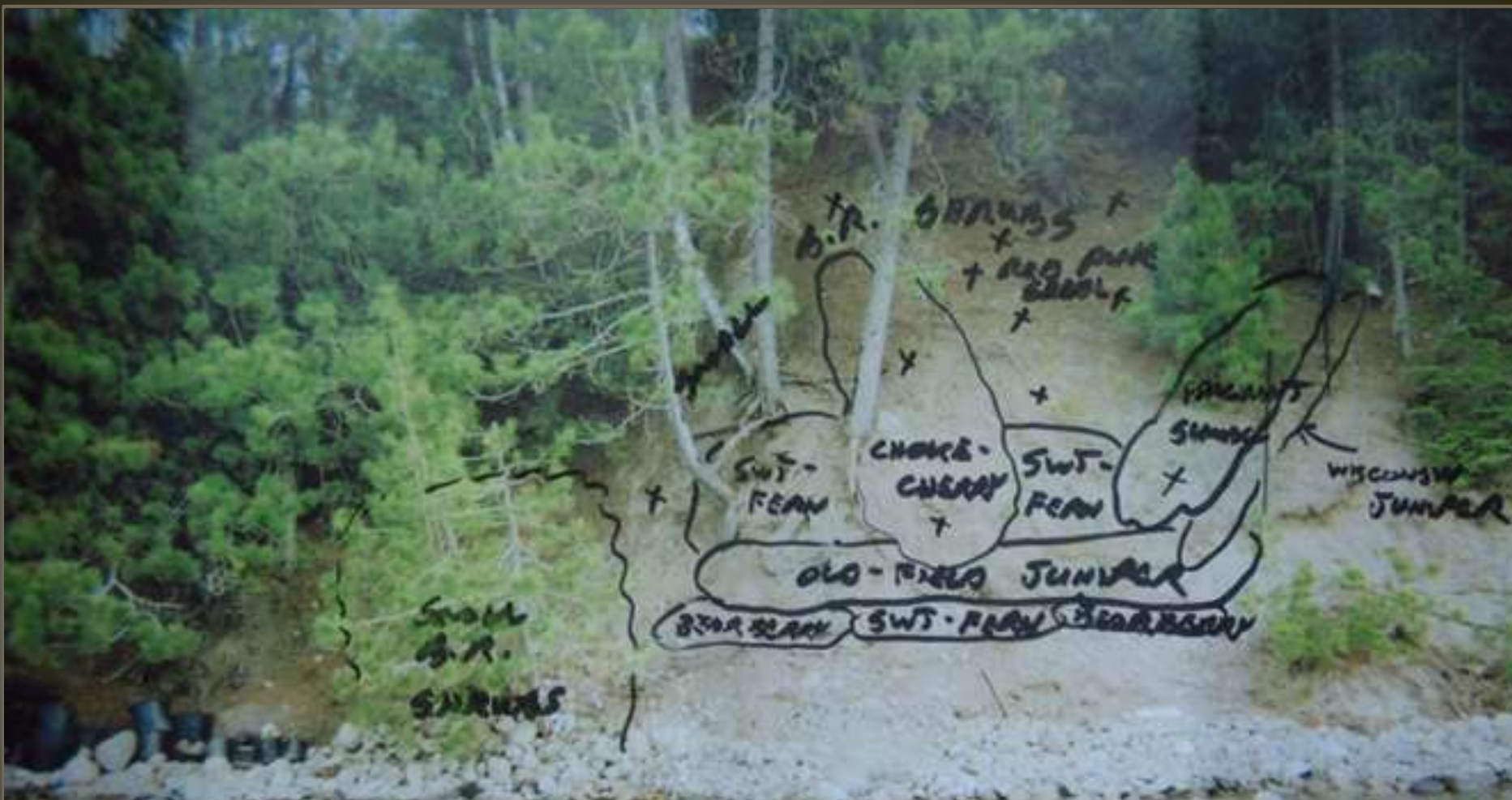


Entry Into Rain Garden



The All Important Plants





B.R. GRASSES +
+ RED PINE
SEED

Small

SWT-FERN

CHOKE-CHERRY

SWT-FERN

PERENNIALS
SHRUBS

WISCONSIN JUNIPER

OLD-FIELD JUNIPER

BEAR GRASS

SWT-FERN

BEAR GRASS

Small
B.R.
SHRUBS

AREA 3
ADD A
MAPLE?

AREA 5
X = RED OAK
SWEET PINE SEED
PERENNIALS WILD BEAR GRASS
SEED ALONG
LOWER SLOPE



Solomon's Seal



Bunchberry



Bush Honeysuckle

Lowbush Blueberry



Virgin's Bower



Bearberry



Birdsfoot Violet





Milorganite Helps Protect Our Waterways!

Phosphorus Exemption Handout

Brent Hanson

Native Plants and Lakeshore Consultant



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