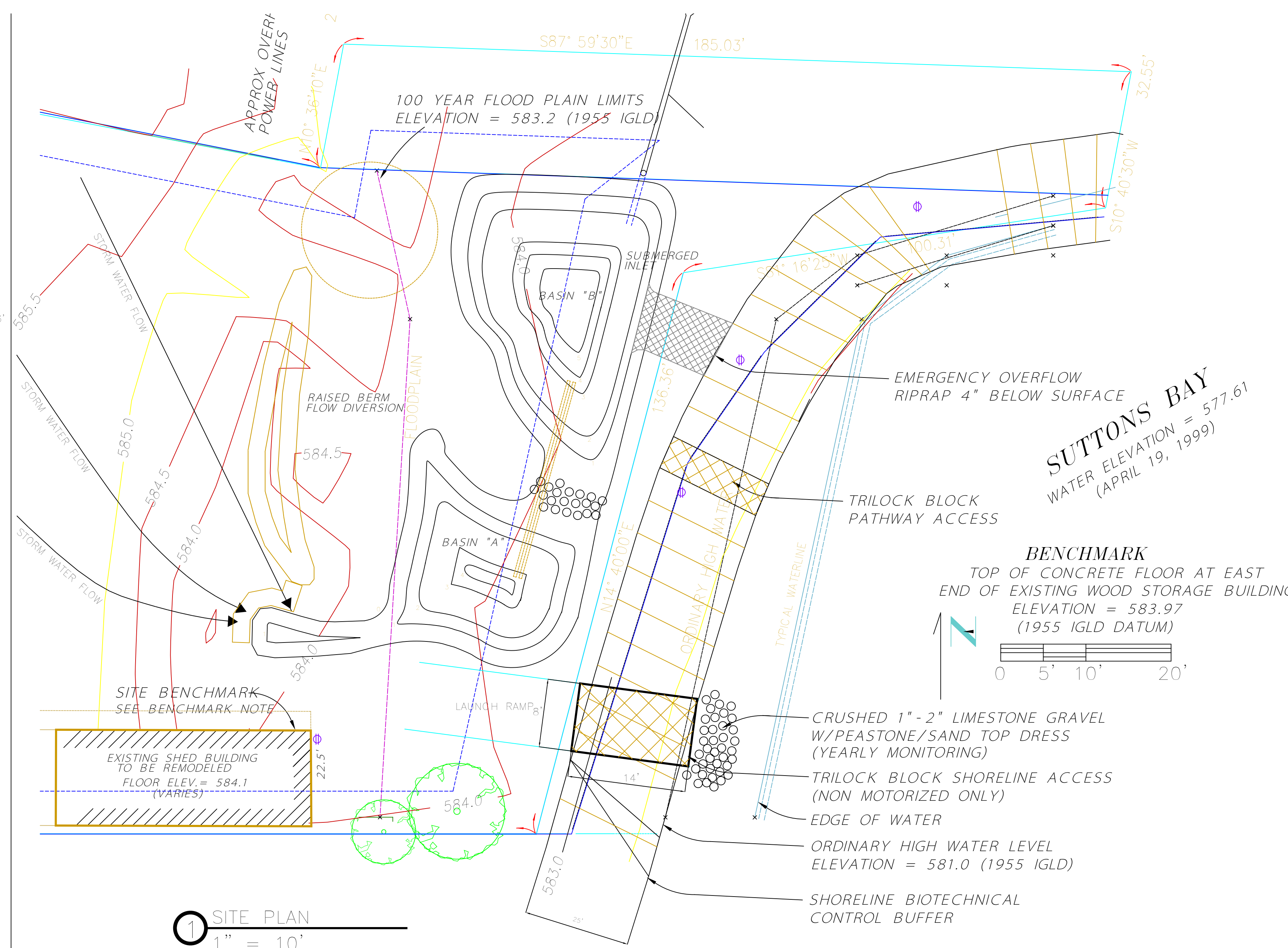
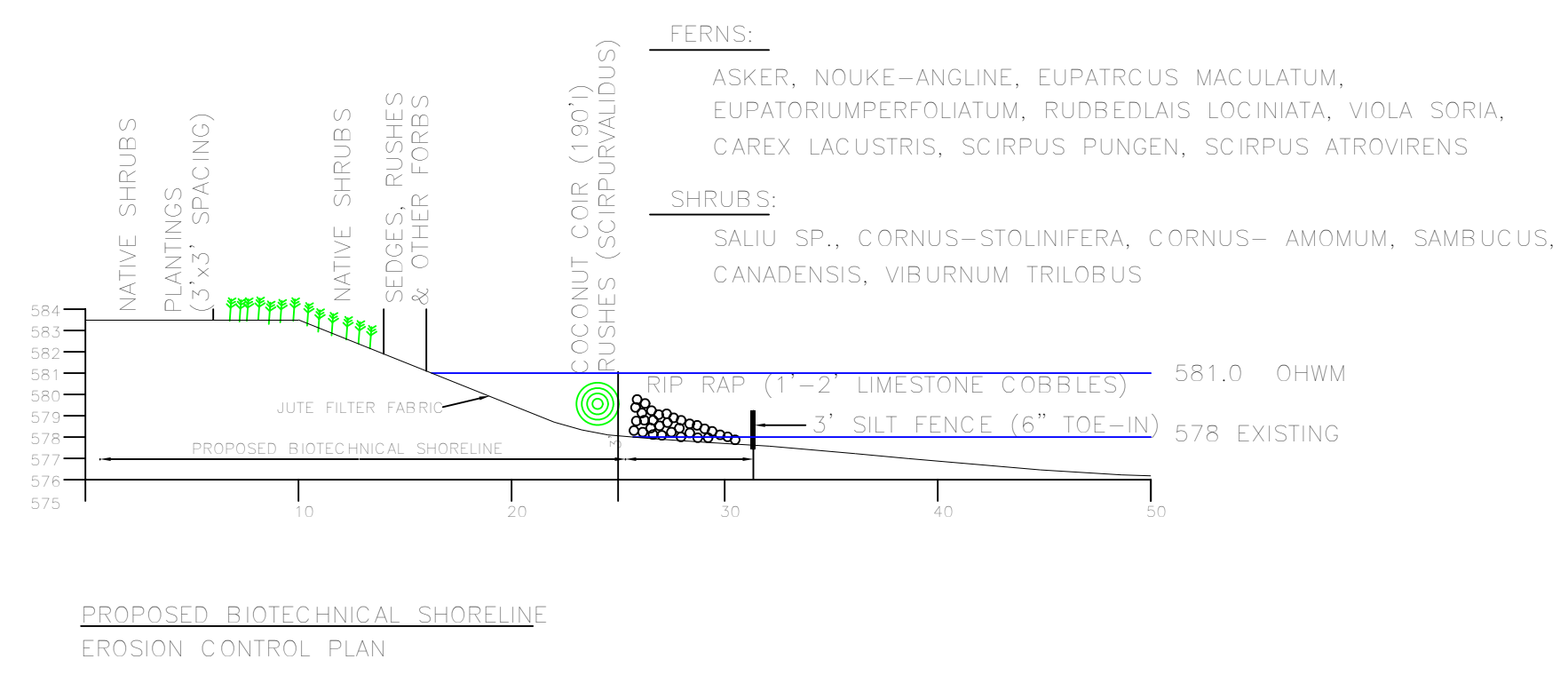
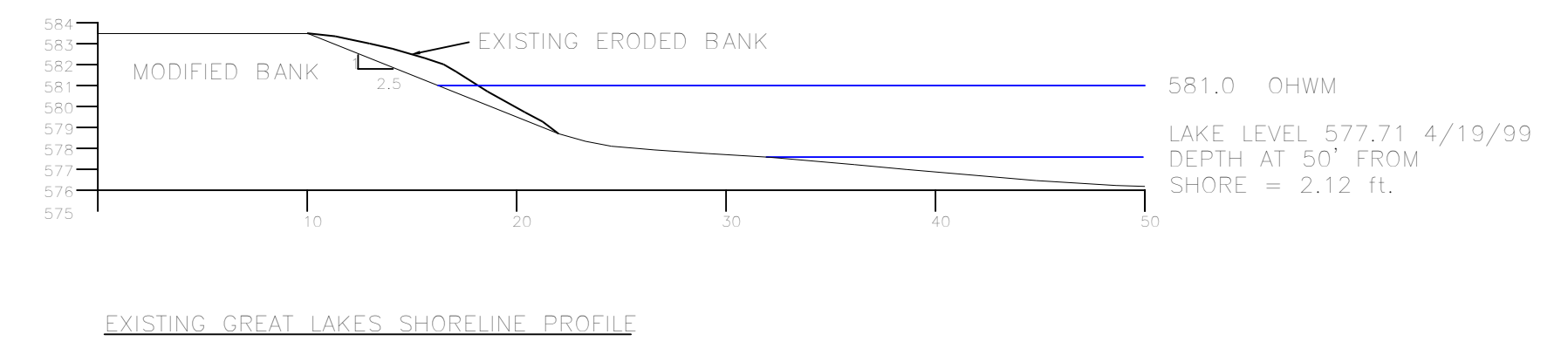


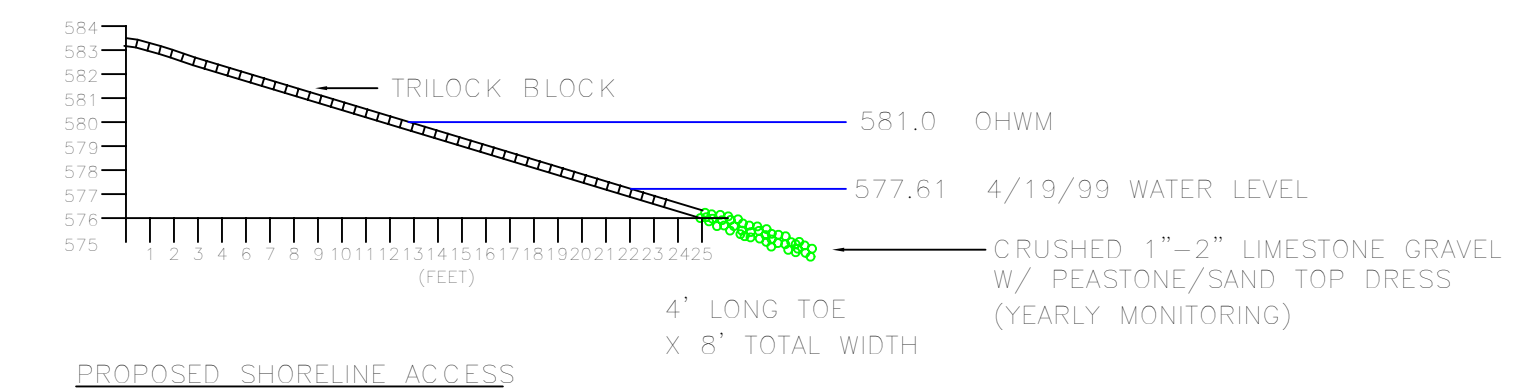
3 CONSTRUCTED WETLANDS



1 SITE PLAN
1" = 10'



2 BIOTECHNICAL SHORELINE EROSION CONTROL
1/8" = 1'-0"



- DIMENSION (25' LONG X 8' WIDE)
- DREDGING TO BE DISCONTINUED AT PROPOSED DINGY LAUNCH SITE.
- SLOPE 1:3.33
- CONSTRUCTION TRI LOCK SHORELINE BLOCK W/CRUSHED GRAVEL TOE

referred to are the property of and owned by D. Hanawalt whether the project for which they are made is executed or not. They were created, evolved, developed and produced for the sole use on and in connection with this project and none of the above may be disclosed or given to or used by any person, firm or corporation for any use or purpose whatsoever including any other project, except upon written permission and direction of D. Hanawalt.

- NOTES:**
- 3/21/2003- INTERIM CD
 - 2/9/2005- REVISED
 - 3/8/2005- REVISED
 - 3/29/2006- REVISED
 - 4/5/2006- CD

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INLAND SEAS EDUCATION CENTER
CONSTRUCTED WETLAND

MI DEQ LAND & WATER QUALITY DIVISION
PERMIT #03-45-0027-P

DAME & DOCK STREETS
SUTTONS BAY, MICHIGAN

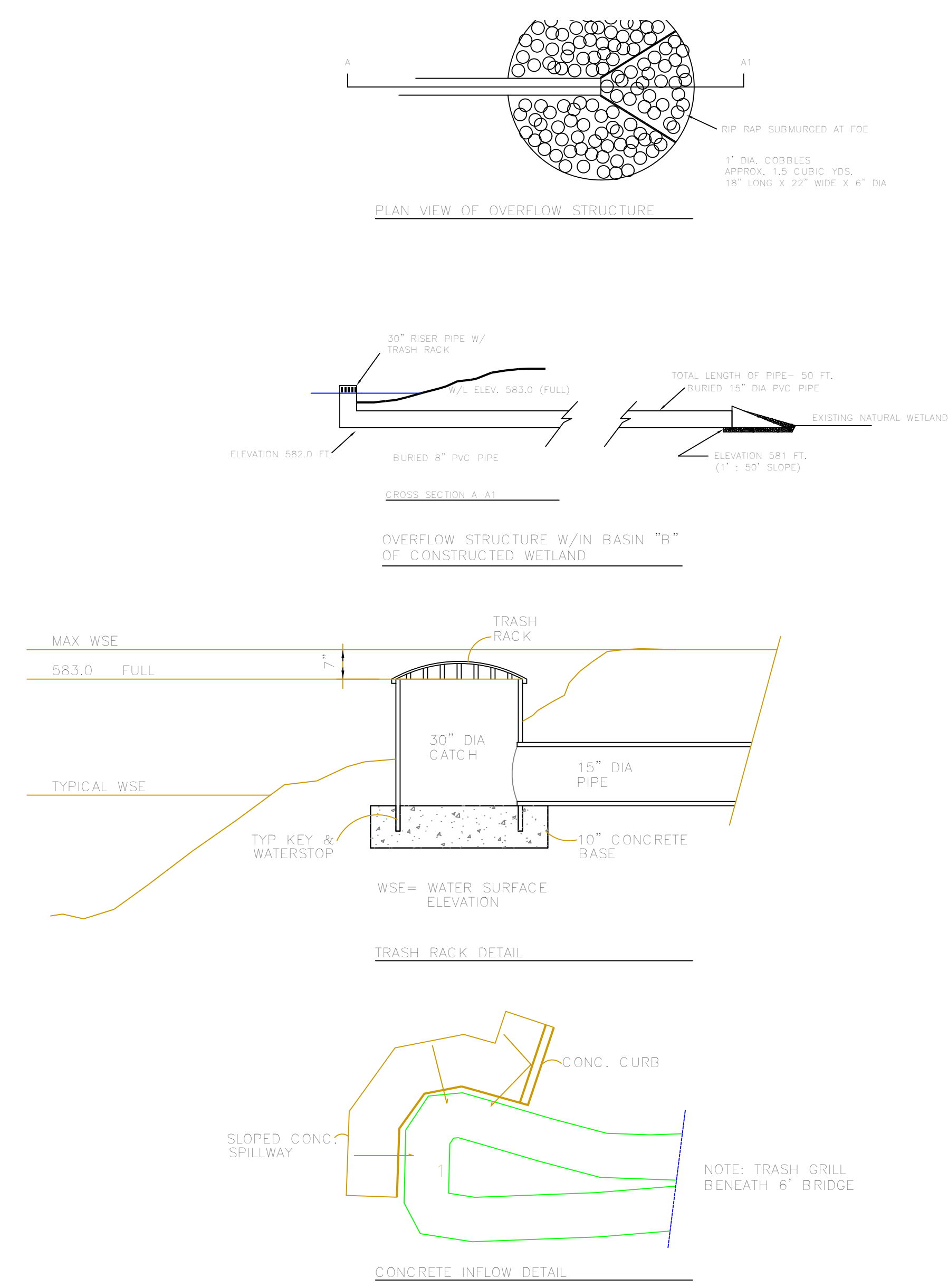
WETLAND DEMONSTRATION PROJECT

DESIGNED BY:
CHRIS GROEBBEL PHD & DAVID HANAWALT AIA

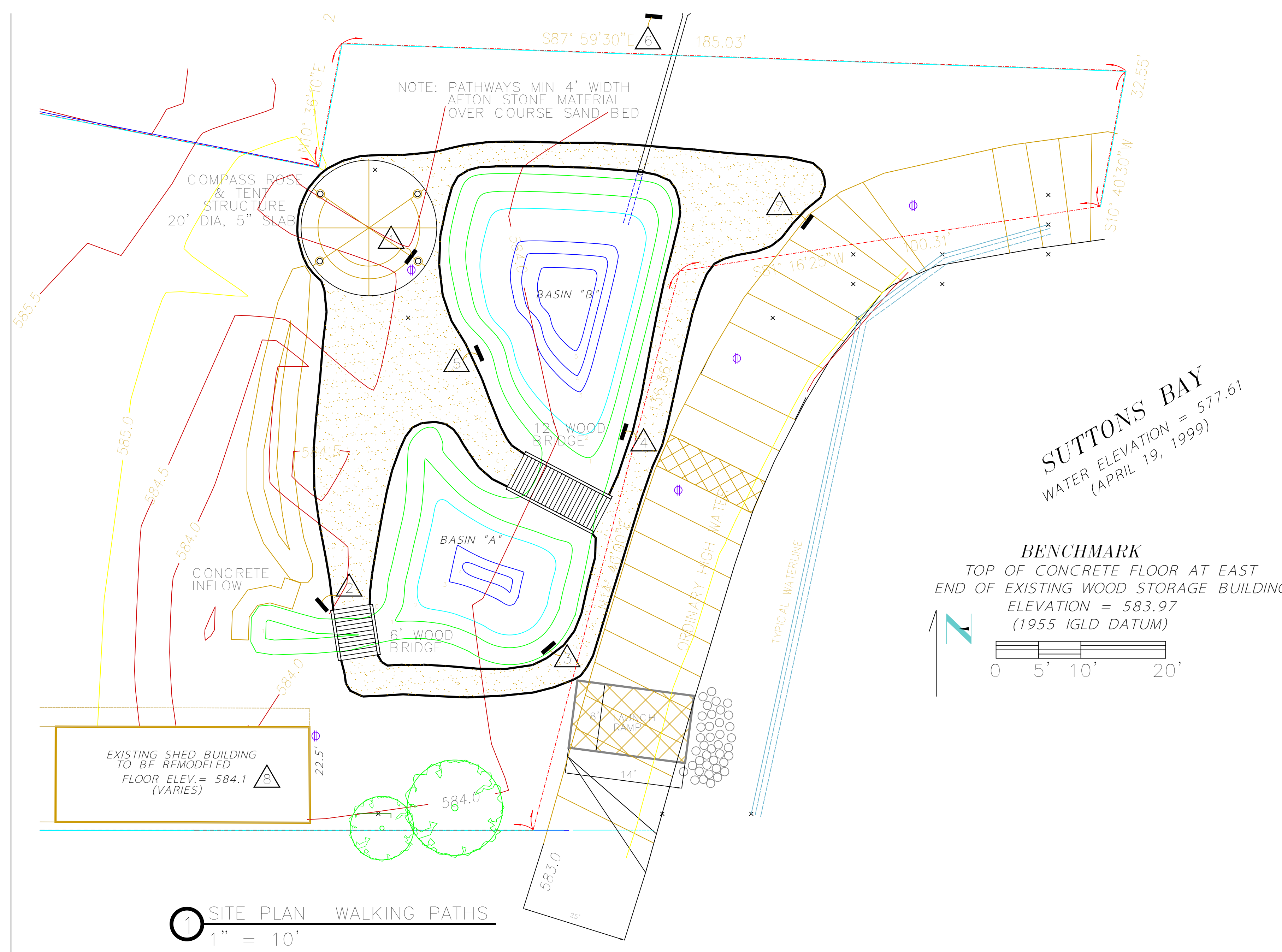
VARIOUS SCALE

A-1.7

4540 FILE: 0000517063 E07 DATE: 4/5/2004



3 DETAILS



1 SITE PLAN- WALKING PATHS
1" = 10'

PROPOSED PLANTING PLAN: BASIN "A"

- SHRUB/SCRUB HABITAT
- SALIX SP., CORNUS STOLINIFERA, CORNUSAMOMUM, SAMBUCUS CONDADENSIS, VIBURNUM TRILORUM
- PROPOSED SHORELINE PLANTING
- FERNS:
ASKER, NOUKE-ANGLINE, EUPATRCUS MACULATUM, EUPATORIUMPERFOLIATUM, RUDREDLAIS LOCINIATA, VIOLA SORIA, CAREX LACUSTRIS, SCIRPUS PUNGEN, SCIRPUS ATROVIRENS
- SHRUBS:
SALIU SP., CORNUS-STOLINIFERA, CORNUS- AMOMUM, SAMBUCUS, CANADENSIS, VIBURNUM TRILORUS

PROPOSED PLANTING PLAN: BASIN "B"

- PLANTING ZONES
- 0'-2' SATURATED: CAREX STRICTA, SCIRPUS VALIDUS, CORNUS A MONUM, CAREX LACUSTRIS, CICUTA MACULATA, SCRUB SHRUB: SALIX SP., CORNUS SP., ARONIA MELANO-CARPA
 - 2'-3' CESPITOSE PERINNIALS: JUNCUS EFFUSUS, CAREX STRICTA, SCIRPUS ATROVIRENS, SCIRPUS CYPERNIUM
 - 3'-4' AERENCHYMATUS PERRINURRAS, ALISMA PLANTAGO-AQUATICA, SAGITTARIN CUNEATA, SAGITTARIA GRAMINEA, SAGITTARIATIFOLIA
 - 4'-5' SUBMERGED FLOATING AQUATICS: POTAMOGETAS SP., PONTEDERIN CORDUTA, NUPHAR VARIEATUM, NYMPHAEA ODORATA, AND WOODY DEBRIS

4 PLANTING

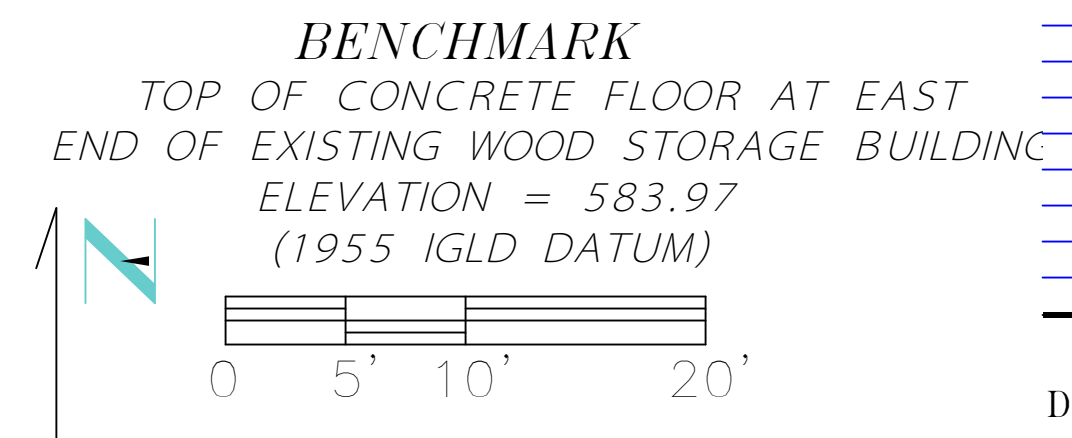
- 1** GATHERING: COVERED AREA
MAIN SIGNAGE:
PICNIC BENCH
- 2** RUNOFF INPUT:
PLAQUE
BRIDGE
- 3** BASIN 'A': PRIMARY
PLAQUE
- 4** SHORELINE & CONNECTION:
PLAQUE
BRIDGE
- 5** BASIN 'B': SECONDARY
PLAQUE
- 6** RUNOFF OUTPUT: TERTIARY
PLAQUE
- 7** SHORELINE:
PLAQUE
PICNIC BENCHES
- 8** GATHERING: OUTDOOR CLASSROOM
REMODEL EX'G SHED BUILDING END
PROVIDE SHELTER, BENCHES, LIGHTING

2 EDUCATIONAL

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SUTTONS BAY
WATER ELEVATION = 577.61
(APRIL 19, 1999)



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SUTTONS BAY, MICHIGAN

WETLAND
DEMONSTRATION
PROJECT

DESIGNED BY:
CHRIS GROEBBEL PHD
&
DAVID HANAWALT AIA

VARIOUS SCALES

A-1.8

ASAP FILE: 090918.DWG PLOT DATE: 4/5/2006