

Misquamicut Club

File No.: 199402926

City and State: Westerly, RI

General Impacts: 0.48 acre non-tidal emergent

Functions and Values Lost:

- Groundwater
- Floodflow Alteration
- Sediment Retention
- Shore Stabilization
- Wildlife Habitat

Year(s) Mitigation Constructed: January 1997

Size and Type of Mitigation as Proposed: 0.56 acre non-tidal emergent

Proposed Functions and Values of Mitigation:

- Uniqueness

Mitigation Special Condition(s):

5. Approximately 0.56 acre of wetlands shall be created around the perimeter of the golf course ponds as shown on the permit plans. The creation area shall be considered the area between elevations 2.5' and 4.0' NGVD. This area shall not be mowed or otherwise maintained as part of the play area for the golf course.

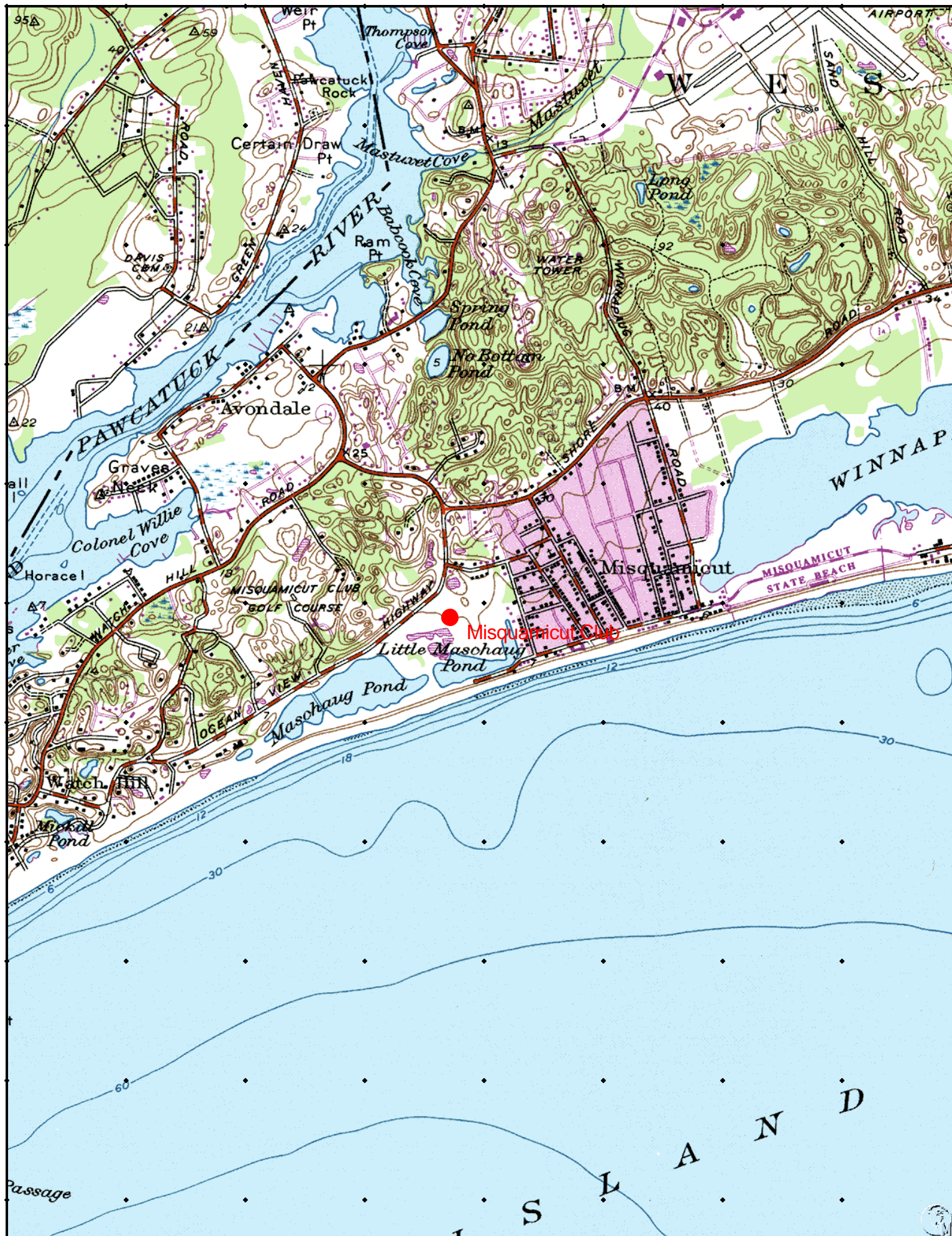
Remarks:

None

Directions:

Take 128/95 south. Take exit 12, staying on I-95 south. Take exit 92, CT-49 towards CT-2/Pawcatuck. Turn left onto CT-49/Pendleton Hill Road. CT-49/Pendleton Hill Road becomes CT-49/Voluntown road. Turn left onto CT-2/Liberty Street. Take the CT-78 east ramp towards Westerly RI/Misquamicut Beaches. CT-78 east becomes Airport Road. Turn left onto Winnapaug Road. Turn right onto RI-1A/Shore Road. Turn left onto Ocean View Highway.





MITIGATION SITE FIELD DATA FORM

Site Name: Misquamicut Club **File No.** 199402926

City/Town: Watch Hill **State:** RI **Waterbody:**

Monitor(s): Ladd, Minkin, Barbeau **Date:** 9-19-02

Was site constructed? yes

Is site wetland? yes

Size of proposed wetland: TBD

Actual size of wetland: narrow fringe around ponds.

Landscape position: coastal

Lat/Long Points: N41.32000W071.82639

Saved GPS Waypoint name: MC17, MC14W, MC14E, MC11N

GPS Tracking Log Name: N/A

Perimeter: TBD

Surrounding land use:
Golf course

Is wetland function compromised by surrounding land use?
Yes

Plant health:
Good

Invasive species:
Phragmites australis,
Lythrum salicaria,

Wildlife use:
Green frogs, bull frog, Canada geese, musk rats, fish, diving beetles, snapping turtles, blue dragonfly, red fox, coyote, swans

Plants:

Between 13th tee and 17th fairway:
(vegetated fringe around pond 2 added areas)

Asclepias incarnata

Aster sp.

Bidens sp.

Eleocharis sp.

Hibiscus moscheutos

Hypericum sp.

Impatiens capensis

Juncus spp.

Lycopus virginicus

Lythrum salicaria

Polygonum spp.

Sagittaria sp. (floating leaf)

Scirpus americanus

Scirpus cyperinus

Scirpus validus

Sparganium sp. (large)

Typha latifolia

17th tee and 14th fairway(new pond)

Alisma sp.

Alnus sp.-cultivar

Aster sp.

Baccharis halimifolia

Bidens sp.

Carex sp. (ovales)

Cyperus strigosus

Eupatorium maculatum

Euthamia tenuifolia

Hibiscus sp.

Impatiens sp.

Juncus canadensis

Juncus effusus

Juncus sp.
Lactuca sp.
Lycopus sp.
Lythrum salicaria
Myrica pensylvanica
Onoclea sensibilis
Panicum virgatum
Polygonum spp.
Rosa palustris
Sagittaria sp. (floatingleaf)
Salix nigra
Scirpus americanus
Scirpus cyperinus
Solidago sp.
Typha angustifolia
Typha latifolia
Verbena hastata
Viburnum dentatum

Pond 3:

Alisma sp.
Alnus sp.-cultivar
Baccharis halimifolia
Bidens sp.
Eleocharis sp.
Juncus acuminatus

Juncus canadensis
Juncus effusus
Lactuca sp.
Lycopus sp.
Lythrum salicaria
Onoclea sensibilis
Polygonum sp.
Rubus sp.
Salix nigra
Sambucus sp.
Scirpus americanus
Scirpus cyperinus
Solidago sempervirens
Solidago sp.
Sparganium sp.-small
Thelypteris palustris
Typha angustifolia
Typha latifolia
Viburnum dentatum

MC11N & MC11S

Alnus sp.
Phragmites australis
Scirpus americanus
Scirpus cyperinus

Soils Data:

Soils data not collected at this site.

Sketch approximate mitigation site, noting areas and types of wetlands, waters, other features, landscape position, landmarks, etc., and data and photo point(s)

See file.

Overall Description of site:

Fringes of ponds on golf course

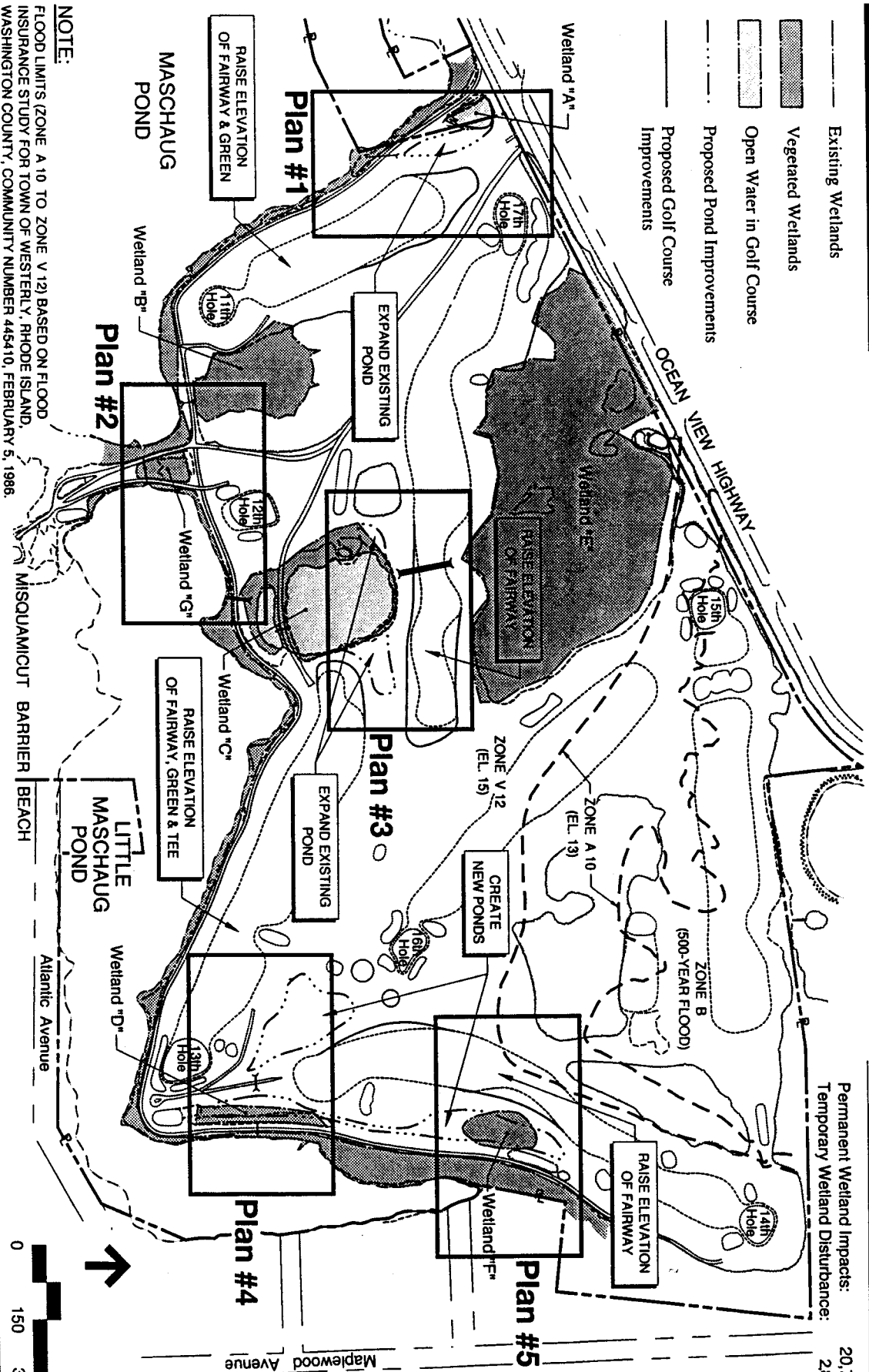
Comments, problems, recommendations:

Cultivars used. *Phragmites australis* seen at one site; site staff cannot seem to eradicate it. A few other invasives were seen, but were not dominant. Algae was noted in the pond at the site designated MC11. At the site designated Pond 3, different types of vegetation were seen growing on different sides of the pond. *Celastrus* sp. was seen growing on the upland slope.

SUMMARY OF WETLAND ALTERATIONS

Permanent Wetland Impacts: 20,769 sq.ft.
Temporary Wetland Disturbance: 2,823 sq.ft.

- Existing Wetlands
- Vegetated Wetlands
- Open Water in Golf Course
- Proposed Pond Improvements
- Proposed Golf Course Improvements



NOTE:

FLOOD LIMITS (ZONE A 10 TO ZONE V 12) BASED ON FLOOD INSURANCE STUDY FOR TOWN OF WESTERLY, RHODE ISLAND, WASHINGTON COUNTY, COMMUNITY NUMBER 445410, FEBRUARY 5, 1986.

VHB

Vanasse Hangen Brustlin, Inc.
Engineers, Planners & Scientists
530 Broadway
Providence, Rhode Island 02909
401 272 8100 FAX 401 273 9694

ADJACENT PROPERTY OWNERS:
(SEE SHEET 2A OF 20)

DATUM: NGVD 1929

MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM

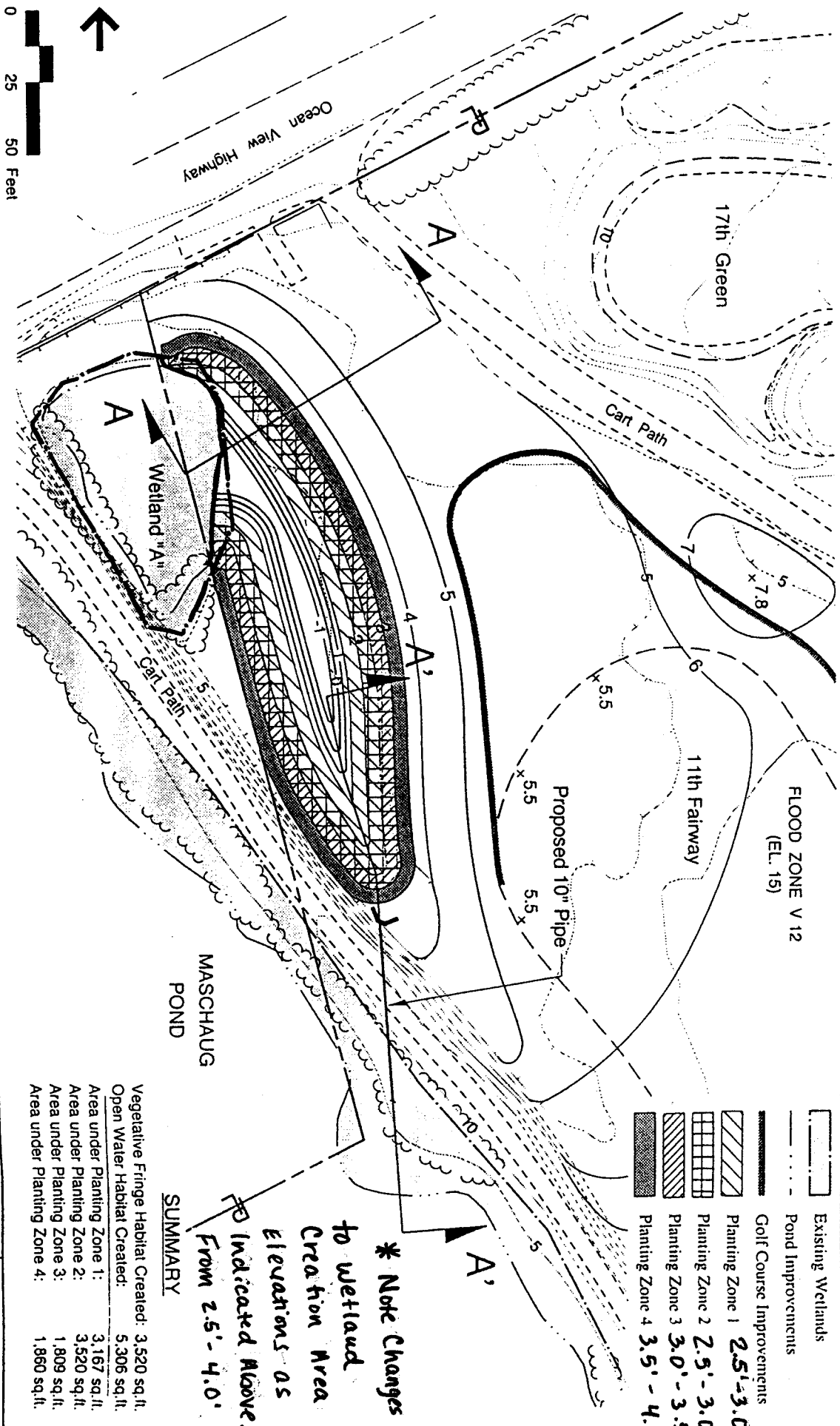
INDEX MAP FOR IMPACT PLAN VIEWS

AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND
IN: TOWN OF WESTERLY, RHODE ISLAND
PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE

APPLICATION BY:
The Misquamicut Club

DATE: November 1994

SHEET 3 OF 20



FLOOD ZONE V 12
(EL. 15)

11th Fairway

Cart Path

Proposed 10" Pipe

5.5

5.5

5

A

* Note Changes to wetland creation area elevations as indicated above.

SUMMARY

Vegetative Fringe Habitat Created:	3,520 sq.ft.
Open Water Habitat Created:	5,306 sq.ft.
Area under Planting Zone 1:	3,167 sq.ft.
Area under Planting Zone 2:	3,520 sq.ft.
Area under Planting Zone 3:	1,809 sq.ft.
Area under Planting Zone 4:	1,860 sq.ft.

- Existing Wetlands
- Pond Improvements
- Golf Course Improvements
- Planting Zone 1 2.5' - 3.0'
- Planting Zone 2 2.5' - 3.0'
- Planting Zone 3 3.0' - 3.5'
- Planting Zone 4 3.5' - 4.0'



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DATUM: NGVD 1928

MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM

MITIGATION PLAN VIEW #1

AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND
IN: TOWN OF WESTERLY, RHODE ISLAND

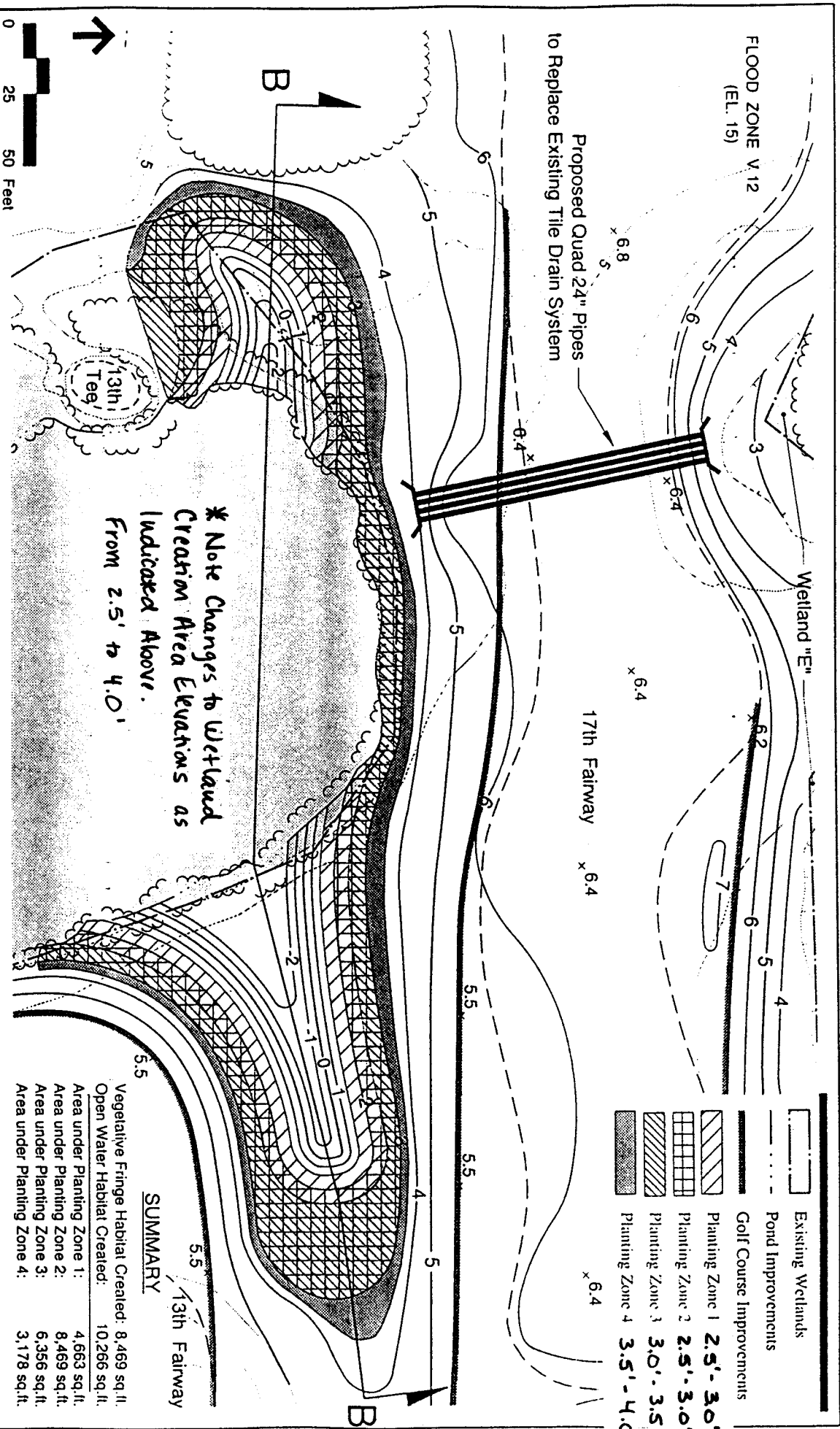
PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE

APPLICATION BY:
The Misquamicut Club

DATE: November 1994

SHEET 11 OF 20

REVISED 7/17/95



* Note Changes to Wetland Creation Area Elevations as Indicated Above.
From 2.5' to 4.0'

- Existing Wetlands
- Pond Improvements
- Golf Course Improvements
- Planting Zone 1 2.5' - 3.0'
- Planting Zone 2 2.5' - 3.0'
- Planting Zone 3 3.0' - 3.5'
- Planting Zone 4 3.5' - 4.0'

SUMMARY

Vegetative Fringe Habitat Created:	8,469 sq. ft.
Open Water Habitat Created:	10,266 sq. ft.
Area under Planting Zone 1:	4,663 sq. ft.
Area under Planting Zone 2:	8,469 sq. ft.
Area under Planting Zone 3:	6,356 sq. ft.
Area under Planting Zone 4:	3,178 sq. ft.



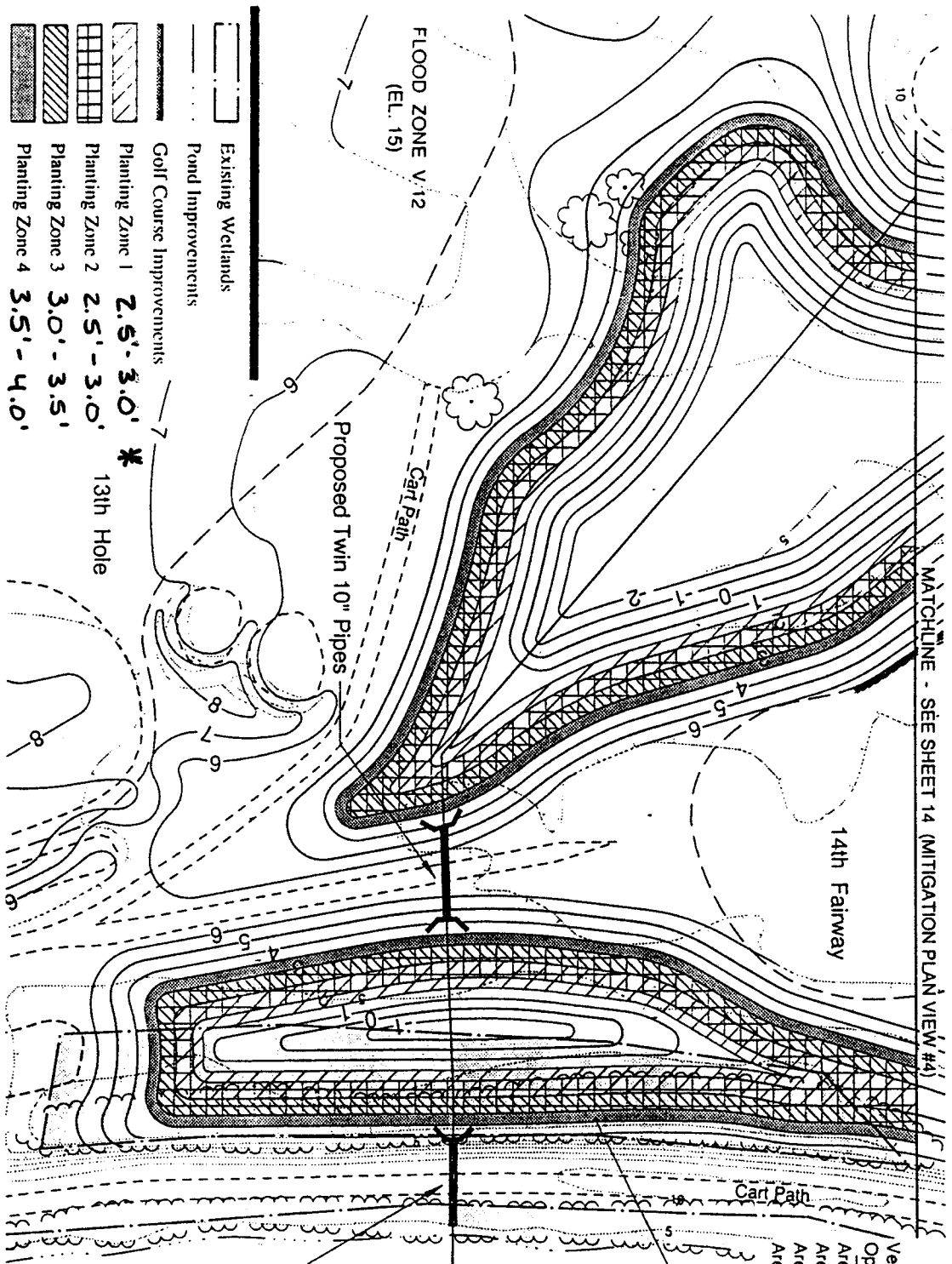
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ADJACENT PROPERTY OWNERS: (SEE SHEET 2A OF 20)		MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM		APPLICATION BY: The Misquamicut Club	
DATUM: NGVD 1929		MITIGATION PLAN VIEW #3		DATE: November 1994	
AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND		IN: TOWN OF WESTERLY, RHODE ISLAND		SHEET 12 OF 20	
PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE					

MATCHLINE - SEE SHEET 14 (MITIGATION PLAN VIEW #4)

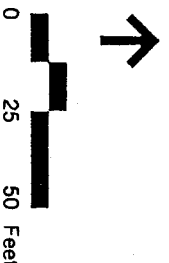
SUMMARY

Vegetative Fringe Habitat Created:	9,860 sq.ft.
Open Water Habitat Created:	22,464 sq.ft.
Area under Planting Zone 1:	7,668 sq.ft.
Area under Planting Zone 2:	9,860 sq.ft.
Area under Planting Zone 3:	5,044 sq.ft.
Area under Planting Zone 4:	3,622 sq.ft.



* Note Changes to Wetland Creation Area Elevations as Indicated at Left. From 2.5' to 4.0'

- Existing Wetlands
- Pond Improvements
- Golf Course Improvements
- Planting Zone 1 2.5'-3.0'
- Planting Zone 2 2.5'-3.0'
- Planting Zone 3 3.0'-3.5'
- Planting Zone 4 3.5'-4.0'



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ADJACENT PROPERTY OWNERS:
(SEE SHEET 2A OF 20)

DATUM: NGVD 1929

MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM

MITIGATION PLAN VIEW #4

AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND
IN: TOWN OF WESTERLY, RHODE ISLAND

PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE

APPLICATION BY:

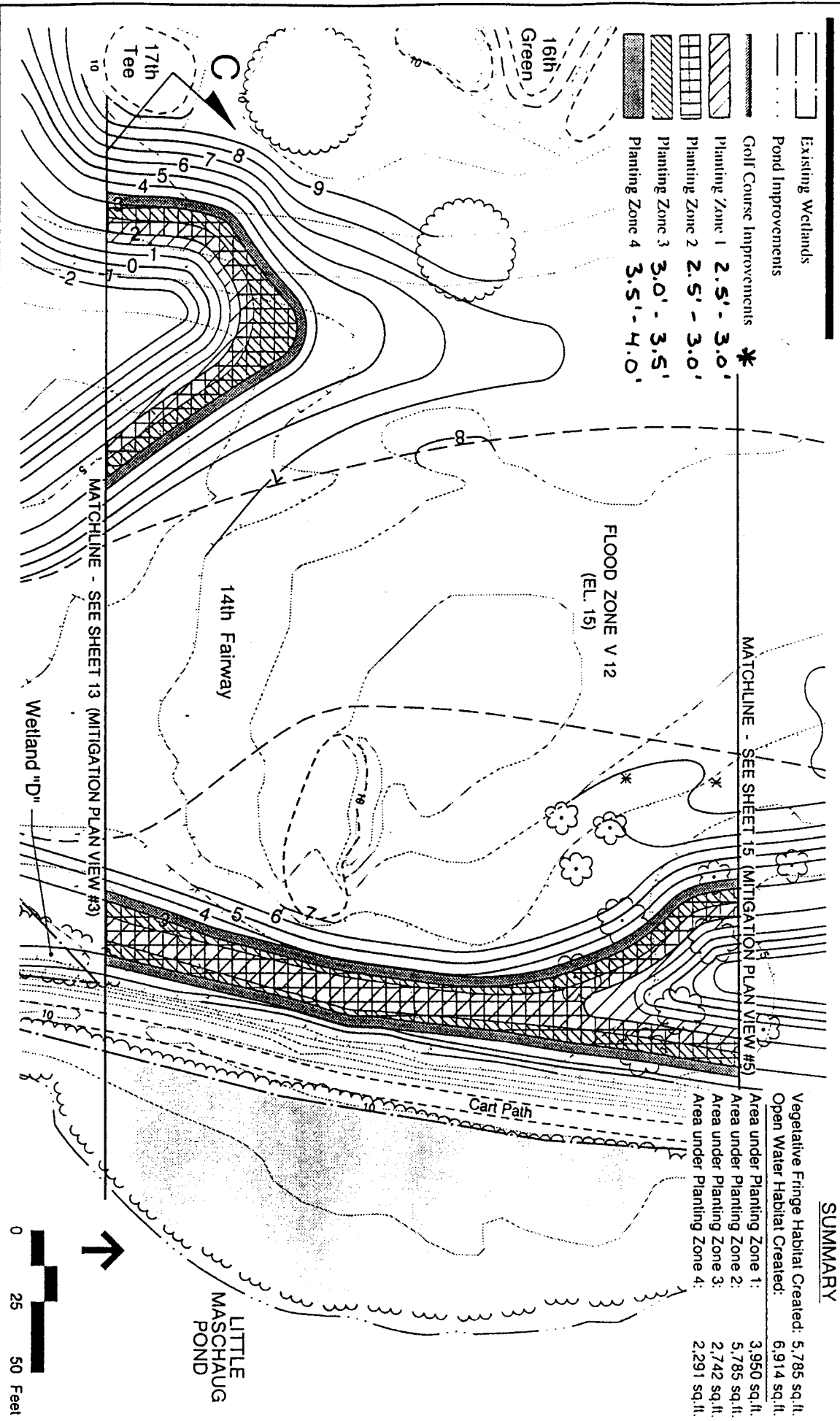
The Misquamicut Club

DATE: November 1994

SHEET 13 OF 20

Revised 7/16/95

* Note Changes to Wetland Creation Area Elevations as Indicated Below. From 2.5'-4.0'.



- Existing Wetlands
- Pond Improvements
- Golf Course Improvements
- Planting Zone 1 2.5' - 3.0'
- Planting Zone 2 2.5' - 3.0'
- Planting Zone 3 3.0' - 3.5'
- Planting Zone 4 3.5' - 4.0'

MATCHLINE - SEE SHEET 15 (MITIGATION PLAN VIEW #5)

MATCHLINE - SEE SHEET 13 (MITIGATION PLAN VIEW #3)

SUMMARY

Vegetative Fringe Habitat Created:	5,785 sq. ft.
Open Water Habitat Created:	6,914 sq. ft.
Area under Planting Zone 1:	3,950 sq. ft.
Area under Planting Zone 2:	5,785 sq. ft.
Area under Planting Zone 3:	2,742 sq. ft.
Area under Planting Zone 4:	2,291 sq. ft.



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ADJACENT PROPERTY OWNERS:
 (SEE SHEET 2A OF 20)

MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM

MITIGATION PLAN VIEW #4

DATUM: NGVD 1929

AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND
 IN: TOWN OF WESTERLY, RHODE ISLAND

PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE

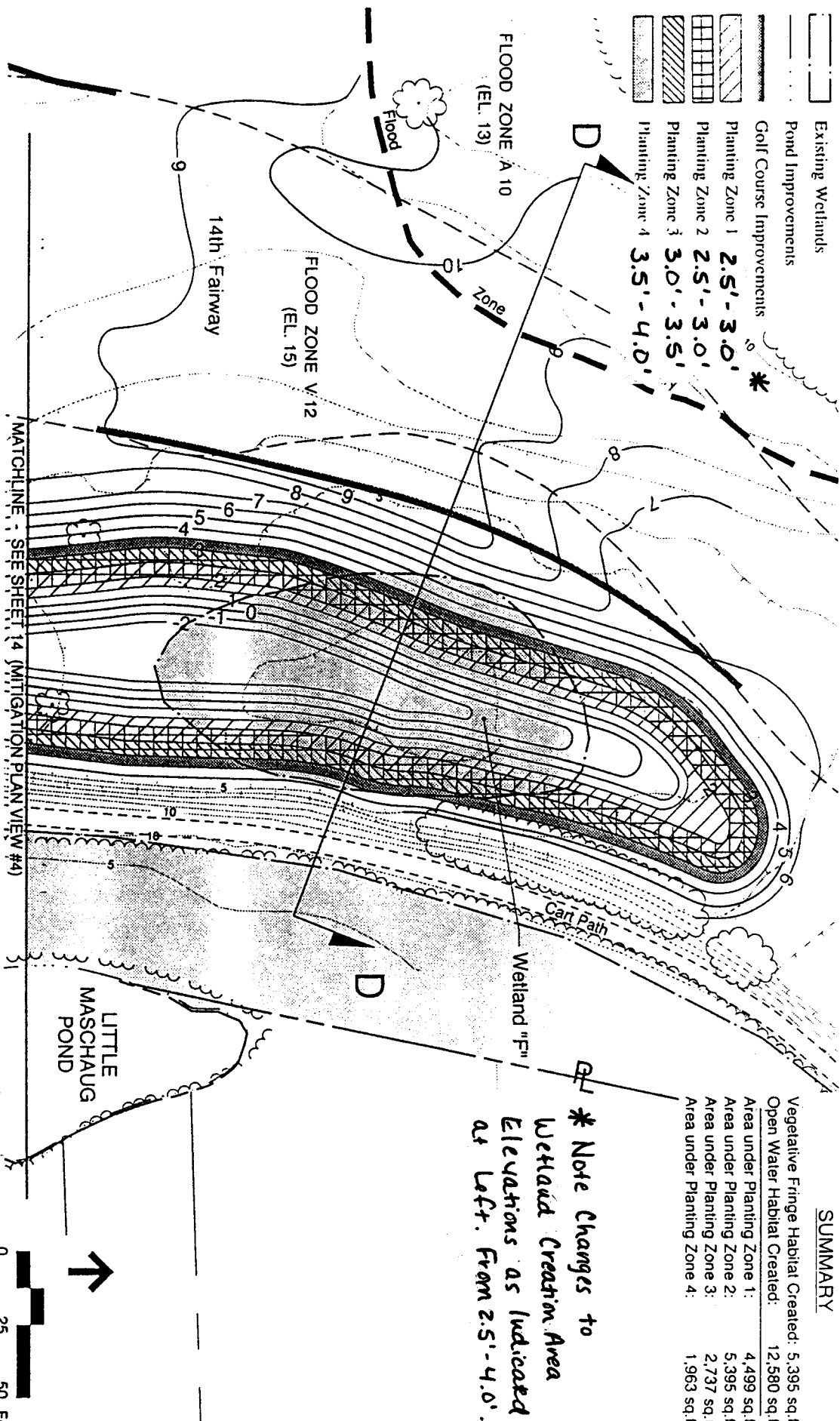
APPLICATION BY:
 The Misquamicut Club

DATE: November 1994

SHEET 14 OF 20

REVISED 7/16/95

- Existing Wetlands
- Pond Improvements
- Golf Course Improvements
- Planting Zone 1 2.5'-3.0'
- Planting Zone 2 2.5'-3.0'
- Planting Zone 3 3.0'-3.5'
- Planting Zone 4 3.5'-4.0'



SUMMARY

Vegetative Fringe Habitat Created:	5,395 sq.ft.
Open Water Habitat Created:	12,580 sq.ft.
Area under Planting Zone 1:	4,499 sq.ft.
Area under Planting Zone 2:	5,395 sq.ft.
Area under Planting Zone 3:	2,737 sq.ft.
Area under Planting Zone 4:	1,963 sq.ft.

* Note Changes to Wetland Creation Area Elevations as Indicated at Left. From 2.5'-4.0'.

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ADJACENT PROPERTY OWNERS:
(SEE SHEET 2A OF 20)

DATUM: NGVD 1929

MISQUAMICUT CLUB DRAINAGE IMPROVEMENTS PROGRAM

MITIGATION PLAN VIEW #5

AT: MASCHAUG PONDS ON BLOCK ISLAND SOUND
IN: TOWN OF WESTERLY, RHODE ISLAND

PURPOSE: IMPROVE DRAINAGE ON GOLF COURSE

APPLICATION BY:
The Misquamicut Club

DATE: November 1994

SHEET 15 OF 20

REVISOR 7/17/95

Wetland Function-Value Evaluation Form

Misquamicut Club

199402926

Total area of wetland 0.56 ac Human made? yes Is wetland part of a wildlife corridor? no or a "habitat island"? yes

Adjacent land use golf course Distance to nearest roadway or other development varies from adjacent to 1000 feet

Dominant wetland systems present PEM/POW Contiguous undeveloped buffer zone present no

Is the wetland a separate hydraulic system? yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. _____













Latitude N41.32000 Longitude W71.82639

Prepared by: Ladd Minkin Date 9/19/02

Wetland Impact:
Type _____ Area _____

Evaluation based on:
Office _____ Field X

Corps manual wetland delineation
completed? Y _____ N X

Function/Value	Suitability Y N		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
 Groundwater Recharge/Discharge	X				sandy soil, adjacent to ocean
 Floodflow Alteration	X				one of intended functions
 Fish and Shellfish Habitat	X				minnows
 Sediment/Toxicant Retention	X			X	golf course runoff
 Nutrient Removal	X				very limited
 Production Export		X			
 Sediment/Shoreline Stabilization		X			
 Wildlife Habitat	X				ubiquitous
 Recreation		X			
 Educational/Scientific Value		X			
 Uniqueness/Heritage		X			
 Visual Quality/Aesthetics	X				nothing too special
ES Endangered Species Habitat		X			
Other					

Notes:

* Refer to backup list of numbered considerations.

199402926
Misquamicut Club
Westerly, RI
9/19/02



Looking north-northeast from near 13th tee. Western lobe of wetland creation is on the left. The eastern lobe is in the distance on the right. The central portion was pre-existing and known as Wetland C.



Example of one of the non-native species planted in the mitigation areas: *Alnus glutinosa*



Looking southeasterly down the fringe of PEM and PSS along the pond to the west of the 14th fairway.



Looking west across the pond to the west of the 14t fairway at the wetland fringe on the far side.



Looking south along the berm at the easternmost edge of the course at the long, narrow mitigation site just east of the 14th fairway.



Looking southeast at the westernmost mitigation area (associated with Wetland A)

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USGS 1 km W of Misquamicut, Rhode Island, United States 05 Apr 2001



0 200M

0 200yd

Image courtesy of the U.S. Geological Survey
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