

AN ECOLOGICAL ASSESSMENT OF PORTIONS OF SAN MARINO SHORES  
LOCATED BETWEEN LAKE MICHIGAN AND HIGHWAY 31, PARTS OF SECTIONS 24,  
25 & 26, T. 31 N. R. 9 W., TORCH TOWNSHIP,  
ANTRIM COUNTY, MICHIGAN

DOCUMENTATION IN PREPARATION FOR A CONSERVATION EASEMENT

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12 JULY 1991

## INTRODUCTION

The following inventory of the physical and ecological features of San Marino Shores has been made to assess the values for a future Conservation Easement status. This work was undertaken at the request of David and Donna Miller, residents of San Marino Shores, and with the permission of several adjacent land owners. The purpose of this inventory is for use in documentation of some future easement, and as an aid in future monitoring. The field work for this assessment was done on 8 July 1991. On this occasion, plant species were identified by sight, and a few difficult specimens were taken home for further scrutiny. It is important to realize that the date of the field work was after the blooming of the spring flora, and substantially before the blooming of the fall flora. Therefore, it was only by the vegetative portions of those plants that I identified them. It is also quite possible that I missed a few of the more seasonally restricted species.

This inventory includes only the lands south and east of the private road through San Marino Shores. Therefore, no shoreline habitats are considered or described in this description. The map of the lots is used to mark significant land and water features. The photographs are included to be a valuable record for easement monitoring and documentation. The photos are keyed to the numbers on the map. The darkness of the day and the completeness of the tree canopy cover has restricted the quality of the photographs. I suggest that a more complete photographic index be made when the leaves are off in the fall or before leaf-out in the spring.

## GENERAL DESCRIPTION OF SAN MARINO SHORES (species lists appended)

The entrance road which runs easterly from Highway 31 curves to run in a north-south direction along most of the lots. The wooded portions of most of the residential lots represent stabilized dunes as evidenced by the fine blown sand in the hillsides and road cuts. The road serves as a general divider between the present shoreline habitats and the more ancient heavily wooded, stabilized dunes which have considerable relief. I shall leave to some future earth scientist to delineate exactly where the

Nippissing (most recent post-glacial shore line) extends in this area, and to put an age on the stabilized dunes. However, the area west of the road probably contains the most recent glacial lake terraces. The high dune sand hills to the east of the road have undergone ecological succession to form, in some cases, very mature hardwood stands. The more mature stands have Beech, Sugar Maple, Ironwood, Musclewood, and typical understory for a climax Beech-Maple forest. Closer to the bottoms of these hills and on the north-facing slopes are significant admixtures of Hemlocks and White and Yellow Birch. Of particular importance are the numerous stems of Striped Maple or Moosewood (Acer striatum). The only other places in this region where similar numbers of this species are found are near the tip of the Leelanau Peninsula, and the Lake Michigan Islands (particularly the Manitous, and Foxes). It is, of course, quite common in portions of the Upper Peninsula and Ontario. The proximity of the Leelanau Peninsula and the Islands to this site probably tells us something of a common origin or specialized conditions needed by the species or both.

Interspersed with the ancient dune hills are former interdunal ponds probably still at the level of Lake Michigan which are now rich woodland ponds. Some of these ponds appear to be seasonal with saturated soils and wetland plants which are the only remnants of the wet seasons. Other ponds, especially the ones on lots I, J, and K (3 separate ponds) appear to be substantially filled year-around. An unusually rich amphibian population is associated with these ponds (observed were Green Frogs, Spring Peepers, and Wood Frogs; while Tree Frogs, Red-backed Salamanders and newts may be expected). The flora surrounding these ponds, as well as other wet spots observed, is made up of a variety of obligate wetland species which can tolerate the shaded environment. These include willows, ferns, sedges, horsetails, and a variety of water seeking flowering plants (list attached). I have never encountered ponds quite like this anywhere in the region. They seem to me to be unique, and worthy of further investigation and consultation with other experts as to their origin and significance.

Another low wet area exists in the portions of lots 1-12 which are east of the road. This wetland is substantially different than those described in

the above paragraph. The differences are the lower elevation of the land and the lack of the rich hardwood species found on the high relief, stabilized dunes to the North. These differences are probably the result of differences in the origin of this area. An educated guess is that this lowland represents the site of a former bay-mouth-bar lake which has undergone vegetational succession and subsequent organic matter accumulation long before the time of human settlement of this region of Michigan. The vegetation found in this area is dominated by swamp hardwoods (ash and soft maples) along with some clonal stands of each of three species of aspen, which probably indicate past blowdowns or logging that allowed these shade intolerant species to get started here. The herbaceous vegetation in this zone has a high percentage of obligate wetland species, and mostly saturated soils. A complete documentation of this habitat is in order, but beyond the scope and seasonality of this work.

There are the remains of a bog lake at the entrance road to the property. This was originally a lake with open water, but Sphagnum Moss, and associated acidophyll plants have taken over the former dystrophic lake and contributed organic matter which has filled in the basin. This plant association is now being overtopped by White Pines and various other bog-loving shrubs, and is one of the finest examples of a late stage bog lake that I have seen in while. The plant and soil types here preclude most human uses, however, this would make an excellent area to study fossil pollen deposition and the process of ecological succession. It may be possible that with further investigation some of the rarer (protected by law) orchid and butterfly species may turn up here. Certainly there is a six-ten thousand year record entrapped under the mosses.

I have saved for last the most puzzling habitat type. That type is the area of boulders which is found at the bottom of several of the tallest stabilized dunes and in conjunction with the woodland ponds mentioned above (the best example is between lots J and K. These boulder fields probably represent boulders from some former, and much higher, lake shore which was not covered by blowing sands. An alternative suggestion is that the boulders represent a glacial deposition which was spared from the sands. I much prefer the former explanation. However, either origin

makes them a fairly unique landform. It is a shame that such a unique landform does not have a legal protective standing yet. The best hope for protecting these sites will be the associated wet vegetation and their aquatic animal species.

Identification of the property's resources and preparation of this report was completed following names set forth in several field guides. The names of trees follow *Michigan Trees* by Barnes and Wagner (1989). Names of flowering plants follow *Michigan Wildflowers* by Smith (1966). Names of ferns follow *Ferns of Michigan* by Billington (1952). Names of shrubs follow *Shrubs of Michigan*, also by Billington (1949).

#### SPECIES LISTS BY HABITATS (Coordinated with accompanying map)

Some species that occur in more than one habitat are repeated, and are therefore intentionally duplicated, but the scientific name is not repeated.

#### EAST OF ROAD AT BASE AND SLOPE OF FIRST RIDGE- MATURE HARDWOODS

##### TREES:

Beech	<i>Fagus grandifolia</i>
Sugar Maple	<i>Acer Saccharum</i>
Hemlock	<i>Tsuga canadensis</i>
Yellow Birch	<i>Betula lutea</i>
White Birch	<i>Betula papyrifera</i>
Striped Maple	<i>Acer striatum</i>
Red Maple	<i>Acer rubrum</i>
June Berry	<i>Amelanchier humilis</i>
Red Oak	<i>Quercus rubra</i>
White Oak	<i>Quercus alba</i>
Balsam Fir	<i>Abies balsamea</i>
Red Pine	<i>Pinus resinosa</i>
White Pine	<i>Pinus strobus</i>
Basswood	<i>Tilia americana</i>

Large Toothed Aspen  
American Ash  
Ironwood  
Musclewood

*Populus grandidentata*  
*Fraxinus americana*  
*Carpinus carolina*  
*Ostrya virginiana*

Shrubs:

Choke Cherry  
Blackberry  
Raspberry  
Red Osier Dogwood  
Maple-leaf Viburnum

*Prunus virginiana*  
*Rubus sp.*  
*Rubus sp.*  
*Cornus stolonifera*  
*Viburnum acerifolium*

Herbaceous Plants:

Yellow Sweet Clover  
Beech Drops  
Yarrow  
St. John's Wort  
Bracken Fern  
Vetch  
Mullein  
Queen Anne's Lace  
Tall Buttercup  
Canada Anemone  
Black-eyed Susan  
Red Tops Grass  
Golden Rod  
Hoary Allyssum  
Green Milkweed  
Fleabane  
Viper's Bugloss  
Canary Reed Grass  
Princess Pine

*Melilotus alba*  
*Epifagus virginiana*  
*Aquillea millefolium*  
*Hypericum perforatum*  
*Pteridium aquilinum*  
*Viccia americanum*  
*Verbascum sp.*  
*Daucus carota*  
*Ranunculus acris*  
*Anemone canadensis*  
*Rubeckia hirta*  
*Calamagrostis sp.*  
*Solidago sp.*  
*Allysum allysoides*  
*Asclepias viridiformis*  
*Erigeron philadelphicum*  
*Echium vulgare*  
*Phleum pratense*  
*Lycopodium clavatum*

VALLEYS NEAR PONDS

TREES:

Balsam Fir

Hemlock

Red Maple

Trembling Aspen

*Populus tremuloides*

Shrubs:

Juniper (unusual location)

*Juniperus virginianus*

Bunchberry

*Cornus canadensis*

Honeysuckle

*Lonicera tartarica*

Maple Leaf Viburnum

Blueberry

*Vaccinium angustifolium*

Huckleberry

*Gaylussacia baccata*

Herbaceous Plants:

Starflower

*Trientalis borealis*

Wintergreen

*Gaultheria procumbens*

Partridge Berry

*Mitchella repens*

Bracken Fern

Canada Mayflower

*Mianthemum canadense*

Wild Sarsaparilla

*Aralia nudicaulis*

Cow Wheat

*Melampyrum lineare*

Shining Club Moss

*Lycopodium lucidulum*

True Solomon's Seal

*Polygonatum pubescens*

False Solomon's Seal

*Smilacina racemosa*

Sensitive Fern

*Onoclea sensibilis*

Bulblet Fern

*Cystopteris bulbifera*

Duck Weed (in water)

*Lemna minor*

Beggars Tick  
Sedges at least 3 sp.  
Dewberry  
Royal Fern  
Shinleaf  
Wood Strawberry  
Poison Ivy  
Water Horsetail  
Wood Betony  
Reed  
Cinnamon Fern  
Heal All  
Sweet Cicely  
Dolls Eyes  
Gooseberry  
Bedstraw  
Kidney Violet  
Wild Grape

*Bidens beckii*  
*Carex sp.*  
*Rubus septentrionalis*  
*Osmunda regalis*  
*Pyrola rotundifolia*  
*Fragaria vesca*  
*Rhus radicans*  
*Equisetum fluviatile*  
*Pedicularis canadensis*  
*Scirpus atricapillus*  
*Osmunda cinnamomea*  
*Prunella vulgaris*  
*Osmorhiza claytoni*  
*Actea rubra*  
*Ribes cynosbatti*  
*Gallium boreale*  
*Viola reniformis*  
*Vitis riparia*

#### BOG NEAR ENTRANCE ROAD

Cinnamon Fern  
Huckleberry  
Blueberry  
Deciduous Holly  
Leather Leaf  
Sphagnum Moss  
Bog Birch  
Bog Rosemary  
Bog Laurel  
Cotton Grass  
Winter Green  
White Pine  
Chokeberry

*Ilex verticillata*  
*Chamedaphne calyculata*  
*Sphagnum sp.*  
*Betula pumila*  
*Andromeda glaucophylla*  
*Kalmia polifolia*  
*Eriophorum*  
  
*Pyrus melanocarpa*

Juneberry  
Cattail

apparently *Amelanchier canadensis*  
*Typha latifolia*

#### LOWLANDS AT LOTS 1-12

The same ash, aspen, and red maple mentioned above along with the same ferns, raspberry, wild grape, and balsam fir. The only additional species observed here is *Populus tuckermanni* the Balsam Poplar or Balm of Gilead.

#### BIRDS AND MAMMALS:

White Tailed Deer  
Veery (thrush)  
Ruby Throated Hummingbird  
Blue Jay  
Chickadee  
Wood Peewee  
Redstart Warbler

#### DISCUSSION and CONCLUSIONS:

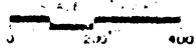
The area surveyed is a significant tract of wild land which contains species, habitats and geologic formations which range from uncommon to irreplaceable in the northwest Michigan Region. Most of the area is of questionable potential for residential development. The only dry areas have steep slopes, and the wet areas are indeed classified as wetlands. I do, therefore, heartily recommend that the land owners (either together as a group, or separately) take steps to preserve the area as a Conservation Easement. Not only would this protect the values of their waterfront properties, but it would also give them certain tax advantages while keeping this small peice of unique habitat safe from development.

PART OF SECTIONS 24, 25 & 26, T 31 N., R 9 W  
TORCH LAKE TOWNSHIP, ANTRIM COUNTY, MICHIGAN

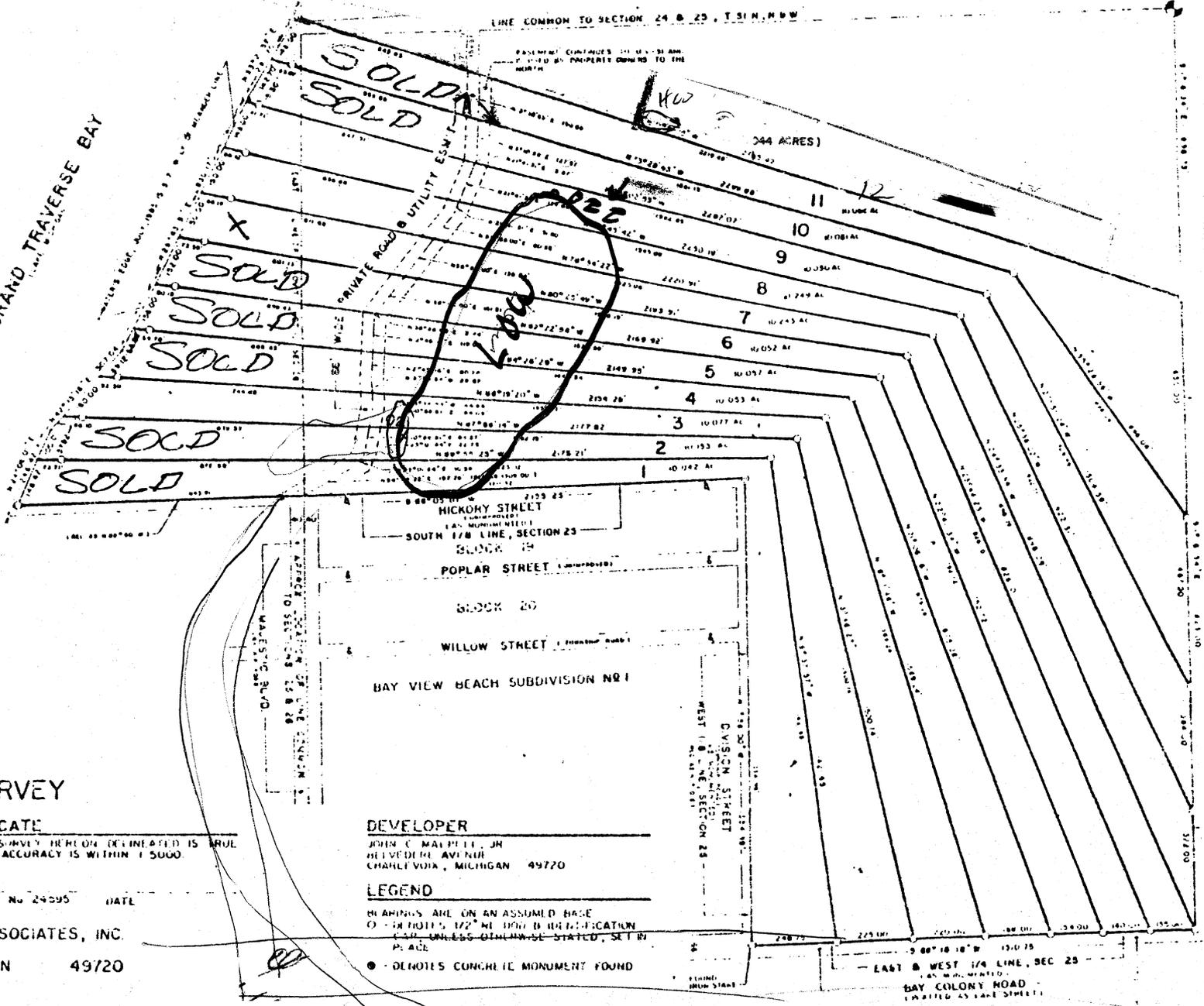
LINE COMMON TO SECTION 24 & 25, T 31 N., R 9 W

NORTH 1/4 CORNER,  
SEC 25, T 31 N., R 9 W  
EAST 1/4 CORNER  
STEEL ANG.

GRAND TRAVERSE BAY



AT THE INTERSECTION OF PARALLEL  
LINES THE EASTMENT LINE  
IS MARKED WITH A 1/2" RED ROD



NORTH 1/4 CORNER,  
SEC 25, T 31 N., R 9 W  
SOUTH 1/4 CORNER,  
SEC 25, T 31 N., R 9 W

BOUNDARY SURVEY

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE SURVEY HEREON DELINEATED IS TRUE  
AND CORRECT, AND THAT THE ACCURACY IS WITHIN 1/5000.

JOHN E. FERGUSON L.L.S. No. 24095 DATE

JOHN E. FERGUSON ASSOCIATES, INC.  
PINE RIVER BUILDING  
CHARLEVOIX, MICHIGAN 49720

UPON BY SAC 8-21-85  
FIELD 224 JMS 8-85  
JOB NUMBER 56-16500-85

DEVELOPER

JOHN C. MALPETTI, JR.  
HELVETHE AVENUE  
CHARLEVOIX, MICHIGAN 49720

LEGEND

MEASUREMENTS ARE ON AN ASSUMED BASE  
O - 1/4" DIAMETER 1/2" NE. 1000 IN. DIAMETER  
C - 1/2" UNLESS OTHERWISE STATED, SET IN  
PLACE

● - DENOTES CONCRETE MONUMENT FOUND

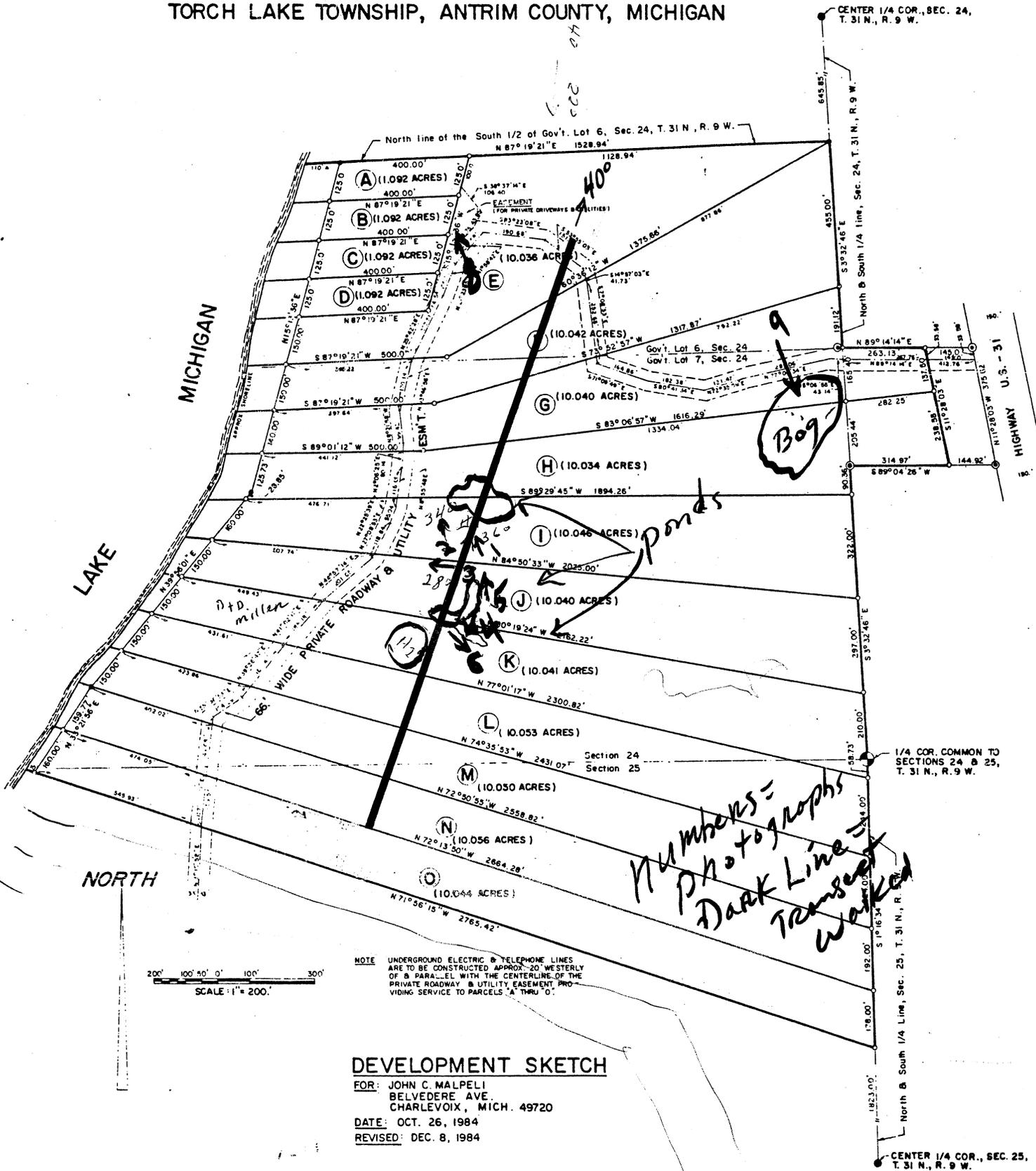
CENTER 1/4 CORNER,  
SEC 25, T 31 N., R 9 W  
P.N.M. MARK STAKE

EAST & WEST 1/4 LINE, SEC 25 -  
1.45 AC. UNPLATTED  
BAY COLONY ROAD -  
UNPLATTED AS LAKE STREET

# SAN MARINO SHORES

A PARCEL DEVELOPMENT

PART OF SECTIONS 24, 25 & 26, T. 31 N., R. 9 W.  
TORCH LAKE TOWNSHIP, ANTRIM COUNTY, MICHIGAN



## DEVELOPMENT SKETCH

FOR: JOHN C. MALPELI  
BELVEDERE AVE.  
CHARLEVOIX, MICH. 49720

DATE: OCT. 26, 1984

REVISED: DEC. 8, 1984

### NOTES

- ⊙ INDICATES IRON STAKE FOUND IN PLACE
- ⊕ INDICATES CONCRETE MONUMENT FOUND IN PLACE.
- INDICATES 1/2" ROD & IDENTIFICATION CAP SET.

John E. Ferguson, L.S. No. 24595



JOHN E. FERGUSON ASSOCIATES, INC.  
LAND SURVEYORS  
PINE RIVER BUILDING  
CHARLEVOIX, MICH. 49720  
(616) 547-8882

DRAWN 10-28-84 PART OF SECTIONS 24, 25 & 26, T. 31 N., R. 9 W.  
PLD SURVEY OCT. '84 TORCH LAKE TWP., ANTRIM COUNTY, MI.

REVISED 12-8-84