

PALISADES LAKE ESTATES

Planned Unit Development Application

Prepared for:

Lakeview Realty Group, Inc.

Prepared by:

Compass Corporation  
and  
Richard Givens, Planning Consultant

January 25, 1985

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**Response:** The site plan provides adequate access to the subject lots via a private driveway easement. The only alternative to the requested variance is the construction of the street far enough to provide 25 feet of frontage to lots 5 and 6. As discussed above, this would result in unnecessary hardship to the applicant.

d. The request is not in conflict with the Comprehensive Plan.

**Response:** The 25 foot frontage standard is a development standard only and is not referred to in the Comprehensive Plan. Granting this request, therefore, would not be in conflict with the Comprehensive Plan.

#### **E. Site Circulation Standards - Driveways and Private Streets**

Palisades Lake Drive has been designed to conform to the standards established in this section for private streets. The street width is proposed to be 24 feet. A fire truck turn-around is provided which meets the turning radius specifications of the ordinance. Street grades do not exceed the 15 percent maximum and are less than 5 percent at the intersection with Palisades Terrace Drive.

#### **F. Site Circulation Standards - Bikeways and Walkways**

The site plan for the proposed development calls for the construction of sidewalks along the project frontage with Palisades Terrace Drive, along the north side of Palisades Lake Drive and along Oak Street to the new turn-around. Additionally pedestrian trails are proposed around the wetland area, as depicted on the site plan for this area. Sidewalks are proposed to be concrete, 5 feet in width along all streets.

#### **G. Drainage for Major Development**

Storm sewer and stormwater detention, as required by this ordinance are proposed to be developed in conjunction with this project. Storm sewer locations are depicted on the preliminary utility plan submitted with this application. Stormwater detention is planned in association with the wetland area. Please see the attached preliminary stormwater calculations for

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PROCEDURE FOR DETERMINING

RUNOFF RATES AND REQUIRED DETENTION VOLUME

I. UNDEVELOPED RUNOFF RATE

- 1. Total Area of Site,  $A_{tot}$  . . . . . 7.1 acres
- 2. General Slope of Site (AVERAGE) . . . . . 18 %
- 3. Runoff Factor, C, for Undeveloped Site  
(Use Sheet 2) . . . . . 0.20
- 4. Longest Travel Route of Runoff
  - a. Length . . . . . 800 feet
  - b. Drop . . . . . 37 feet
  - c. Condition (overland flow, channel, pipe, etc.) . . . . . SHALLOW FLOW
- 5. Time of Concentration,  $T_c$ , (5 Minute Minimum)  
(Use Sheet 3) . . . . . 5 minutes
- 6. Rainfall Intensity, I, for 10-Year Storm  
(Use Sheet 4) . . . . . 2.60 in/hr.
- 7. Peak Undeveloped Runoff Rate,  $Q=CIA$   
(Line 1 X Line 3 X Line 6) . . . . . 3.7 c.f.s.

II. DEVELOPED RUNOFF RATE

- 8. Impermeable Area,  $A_I$  . . . . . 1.5 acres
- 9. Permeable Areas  $A_p$  . . . . . 5.6 acres
- 10. Runoff Factors, C, for Permeable Areas  
(Use Sheet 2) . . . . . 0.25
- 11. Composite Runoff Factor, C  
Line 8 X 0.9 + Line 9 X Line 10  
Line 1 Line 1 . . . . . 0.39
- 12. Time of Concentration,  $T_c$ , For Developed Site  
(Use Sheet 3) . . . . . 5 minutes
- 13. Rainfall Intensity, I, for 50-Year Storm  
With  $T_c =$  Line 12 (Use Sheet 5) . . . . . 3.43 in/hr.
- 14. Peak Developed Runoff Rate  
(Line 1 X Line 11 X Line 13) . . . . . 9.5 c.f.s.

III. REQUIRED DETENTION VOLUME

- 15. (Use Sheet 6) . . . . . 1033 cu.ft.

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 TELEPHONE 653-9093

DETENTION VOLUME CALCULATION SHEET

A Duration Time Start at $T_c$ (min)	B Intensity for 50-year storm (use sheet 5) (in/hr)	C Inflow Rates (Line 1 x Line 11 = 2.77 x Col B) (cfs)	D Stored Rates (Col C - Line 7) (cfs)	E Detention Volumes (Col A x Col D x 60) Store Maximum Volume (cu. ft.)
5	3.43	9.50	5.8	1740
8	2.72	7.53	3.85	1838 *
10	2.42	6.70	3.0	1800
12	2.2	6.09	2.39	1721
14	2.02	5.60	1.9	1596
16	1.86	5.15	1.45	1392
18	1.73	4.79	1.09	1177
20	1.61	4.46	0.76	912
* 1838 CU FT COULD BE DETAINED IN POND AREAS.				
THIS WOULD ADD 1' DEPTH OVER AN 1838 SQ FT.				
AREA OR ROUGHLY 92' X 20'.				

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TELEPHONE 653-9193

OREGON STATE HIGHWAY DIVISION  
HYDRAULICS MANUAL

Subject RUNOFF FACTORS FOR STORM SEWERS	Page: 8-39
	Revision:
Approved <i>Victor D. Wolfe</i>	Effective Date:

TABLE 8-5  
RUNOFF FACTORS FOR STORM SEWERS

	Flat	Rolling 2% - 10%	Hilly Over 10%
Pavement & Roofs	0.90	0.90	0.90
Earth Shoulders	0.50	0.50	
Drives & Walks	0.75	0.80	0.85
Gravel Pavement	0.50	0.55	0.60
City Business Areas	0.80	0.85	0.85
Apartment Dwelling Areas	0.50	0.60	0.70
Suburban, Normal Residential	0.45	0.50	0.55
Dense Residential Sections	0.60	0.65	0.70
Lawns, Sandy Soil	0.10	0.15	0.20
Lawns, Heavy Soil	0.17	0.22	0.35
Grass Shoulders	0.25	0.25	0.25
Side Slopes, Earth	0.60	0.60	0.60
Side Slopes, Turf	0.30	0.30	0.30
Median Areas, Turf	0.25	0.30	0.30
Cultivated Land, Clay and Loam	0.50	0.55	0.60
Cultivated Land, Sand & Gravel	0.25	0.30	0.35
Industrial Areas, Light	0.50		0.80
Industrial Areas, Heavy	0.60		0.90
Parks & Cemeteries	0.10		0.25
Playgrounds	0.20		0.30
Woodland and Forests	0.10	0.15	0.20
Meadows & Pasture Land	0.25	0.30	0.35
Unimproved Areas	0.10	0.20	0.30

LINE (10)  
FOR  
LANDSCAPE  
AREAS.

LINE (3)

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TELEPHONE 653-9013

# Givens Talbot Assoc., Inc.

LANDSCAPE ARCHITECTURE • PLANNING

15800 SW Boones Ferry Road, Suite 103  
Lake Oswego, Oregon 97034  
(503) 636-5422

February 8, 1985

Mr. Stan Tidman  
City of Lake Oswego  
348 N. State Street  
Lake Oswego, OR 97034

RE: Palisades Lake Wetland Habitat Areas / Sidewalks

Dear Stan:

Transmitted herewith is a copy of a map of the wetland area located on the Palisades Lake site. Also enclosed, please find a copy of an analysis of this area prepared by our clients, Lake View Realty Group, which examines the wildlife habitat features of this area.

Discussions with the project developer since the time of the original submittal have raised concern regarding the location and width of sidewalk on Palisades Lake Drive. An area of special concern in this project is the preservation of existing trees on the site. The applicant would like to make the sidewalk optional along this private street so that the maximum number of trees at the entry area can be preserved. If the sidewalk is constructed, the applicant proposes that the width be reduced to 4 feet and that the improvement be located on the south side of the street, rather than on the north side as shown on the preliminary street plan.

Additionally, the application is not clear in specifying a time schedule for installation of street trees, sidewalks and common area landscaping. Street trees, sidewalks and some of the common area landscaping will be installed after construction of homes on the lots in the development to avoid conflict with driveways, sewer stubs, etc.

A further point of clarification should be made regarding lot coverage standards as applied to this development. As is normal for a P.D., 30 percent site coverage will be for the site as a whole, rather than each individual lot area.

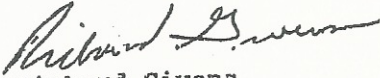
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Please review this information as soon as possible. If you have any questions regarding this material, or if you need further information, please contact our office.

Sincerely yours,



Richard Givens

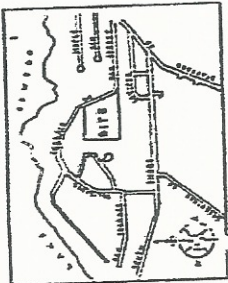
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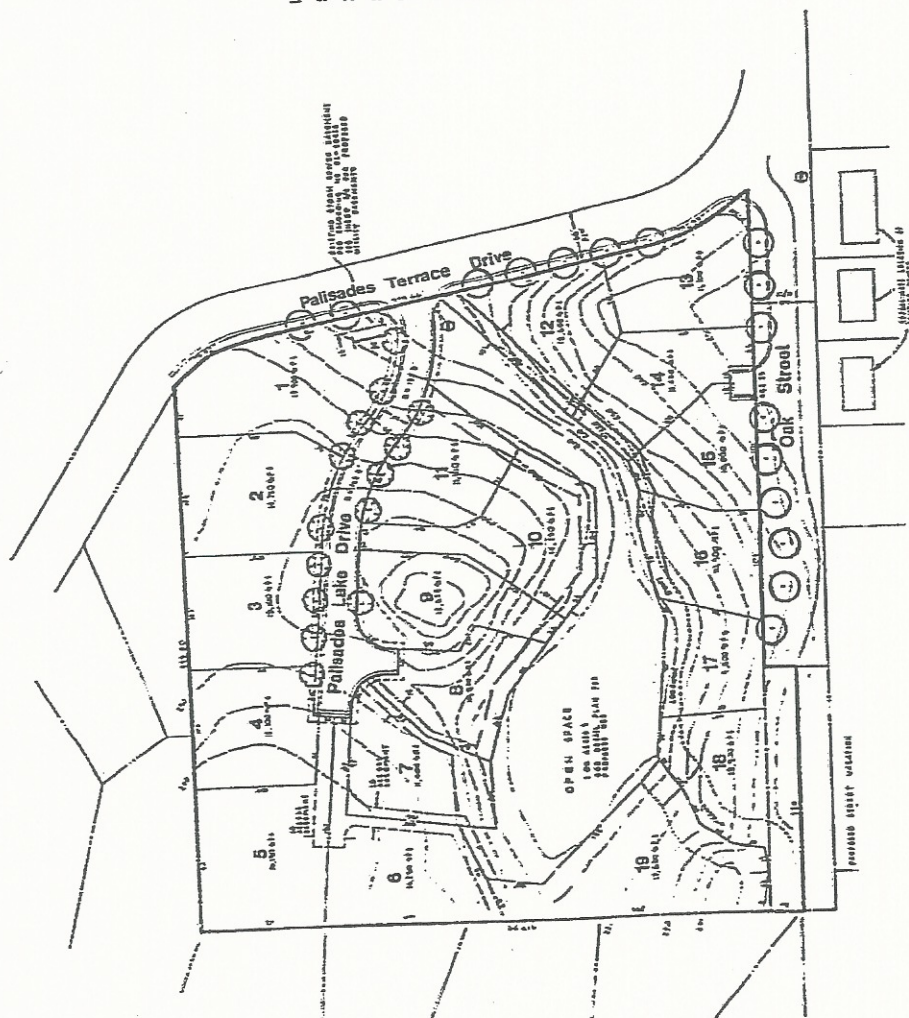
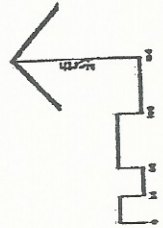


VICINITY MAP

LOCATION: T.E.B. R.I.E., SECTION 1068, T4E LOTS 2900 & 3000  
 SITE AREA: 700 ACRES  
 ZONING: R-10  
 SEWERS: CITY OF LAKE OHAWO  
 WATER: CITY OF LAKE OHAWO  
 STREETS: PALISADES LAKE DRIVE, PRIVATE  
 PALISADES TERRACE DRIVE, PRIVATE  
 CITY OF LAKE OHAWO

**STREET THREES**

- QUERQUE COCHINEA 8" GAL 40' DC
- SCHLEI 8" GAL 40' DC
- PAVING, BITUMY
- BITUMY CURBENT
- OPEN SPACE, 10' WIDE, 10' HIGH, 10' DEEP, 10' LONG, 10' WIDE, 10' HIGH, 10' DEEP, 10' LONG



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 Palisades Lake Estates

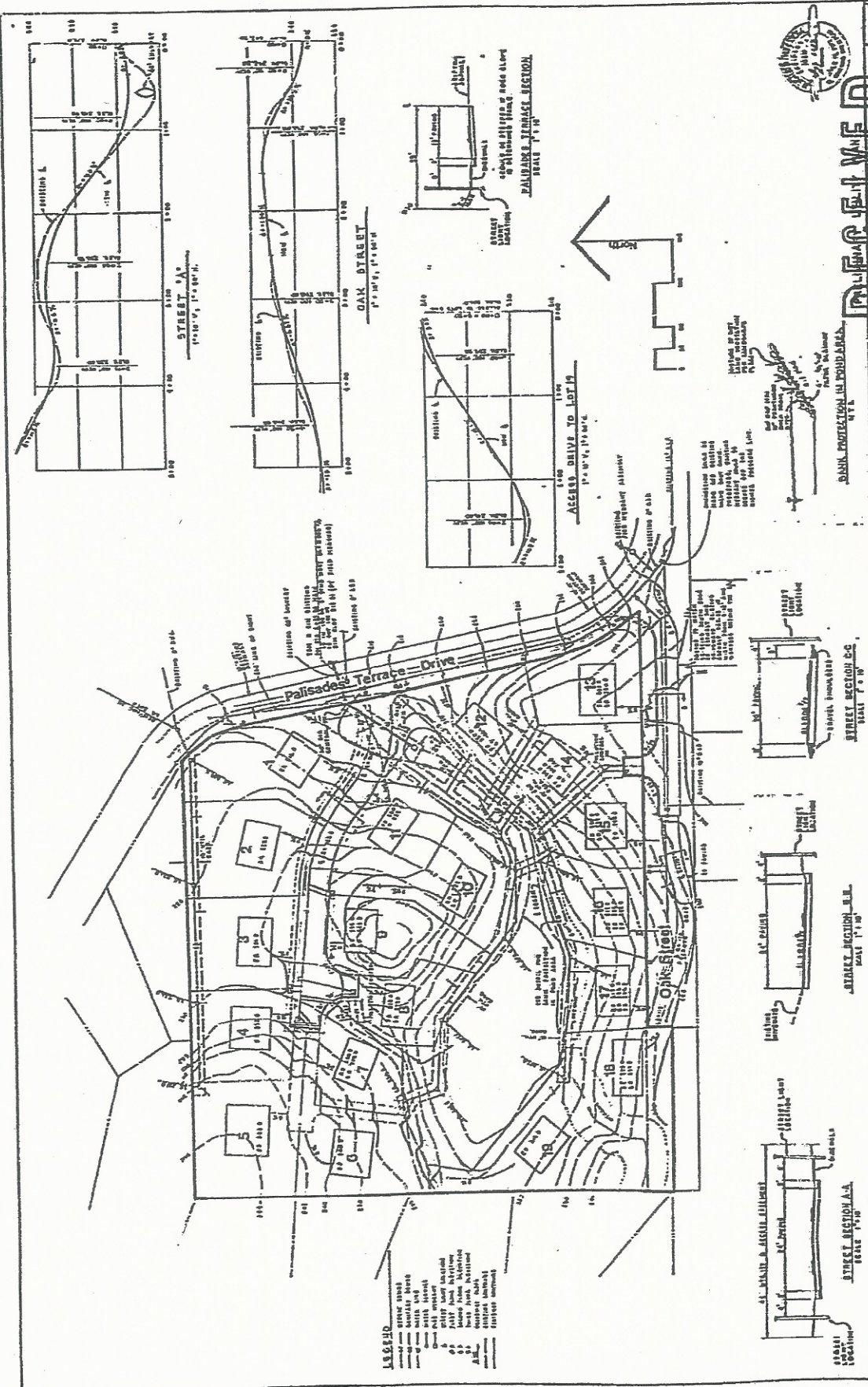
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COMPASS CORPORATION 10017 B.W. Bryant Rd. Lake Oswego, OR 97034	Richard E. Glens 10017 B.W. Bryant Rd. Lake Oswego, OR 97034
---	--


DATE: 1/24/85  
 DRAWN BY: J.L. JENSEN  
 CHECKED BY: J.L. JENSEN  
 SCALE: AS SHOWN





**LEGEND**

- existing roads
- proposed roads
- easements
- utility lines
- 10' utility easement
- 20' utility easement
- 30' utility easement
- 40' utility easement
- 50' utility easement
- 60' utility easement
- 70' utility easement
- 80' utility easement
- 90' utility easement
- 100' utility easement
- 110' utility easement
- 120' utility easement
- 130' utility easement
- 140' utility easement
- 150' utility easement
- 160' utility easement
- 170' utility easement
- 180' utility easement
- 190' utility easement
- 200' utility easement



**COMPASS CORPORATION**  
 18000 Oak Reserve Ferry Rd.  
 Lakewood, Ohio 44122

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**STREET SECTION A-A**  
SCALE 1" = 10'

**STREET SECTION B-B**  
SCALE 1" = 10'

**STREET SECTION C-C**  
SCALE 1" = 10'

**STREET SECTION D-D**  
SCALE 1" = 10'

**STREET SECTION E-E**  
SCALE 1" = 10'

**STREET SECTION F-F**  
SCALE 1" = 10'

**STREET SECTION G-G**  
SCALE 1" = 10'

**STREET SECTION H-H**  
SCALE 1" = 10'

**STREET SECTION I-I**  
SCALE 1" = 10'

**STREET SECTION J-J**  
SCALE 1" = 10'

**STREET SECTION K-K**  
SCALE 1" = 10'

**STREET SECTION L-L**  
SCALE 1" = 10'

**STREET SECTION M-M**  
SCALE 1" = 10'

**STREET SECTION N-N**  
SCALE 1" = 10'

**STREET SECTION O-O**  
SCALE 1" = 10'

**STREET SECTION P-P**  
SCALE 1" = 10'

**STREET SECTION Q-Q**  
SCALE 1" = 10'

**STREET SECTION R-R**  
SCALE 1" = 10'

**STREET SECTION S-S**  
SCALE 1" = 10'

**STREET SECTION T-T**  
SCALE 1" = 10'

**STREET SECTION U-U**  
SCALE 1" = 10'

**STREET SECTION V-V**  
SCALE 1" = 10'

**STREET SECTION W-W**  
SCALE 1" = 10'

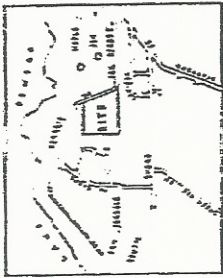
**STREET SECTION X-X**  
SCALE 1" = 10'

**STREET SECTION Y-Y**  
SCALE 1" = 10'

**STREET SECTION Z-Z**  
SCALE 1" = 10'

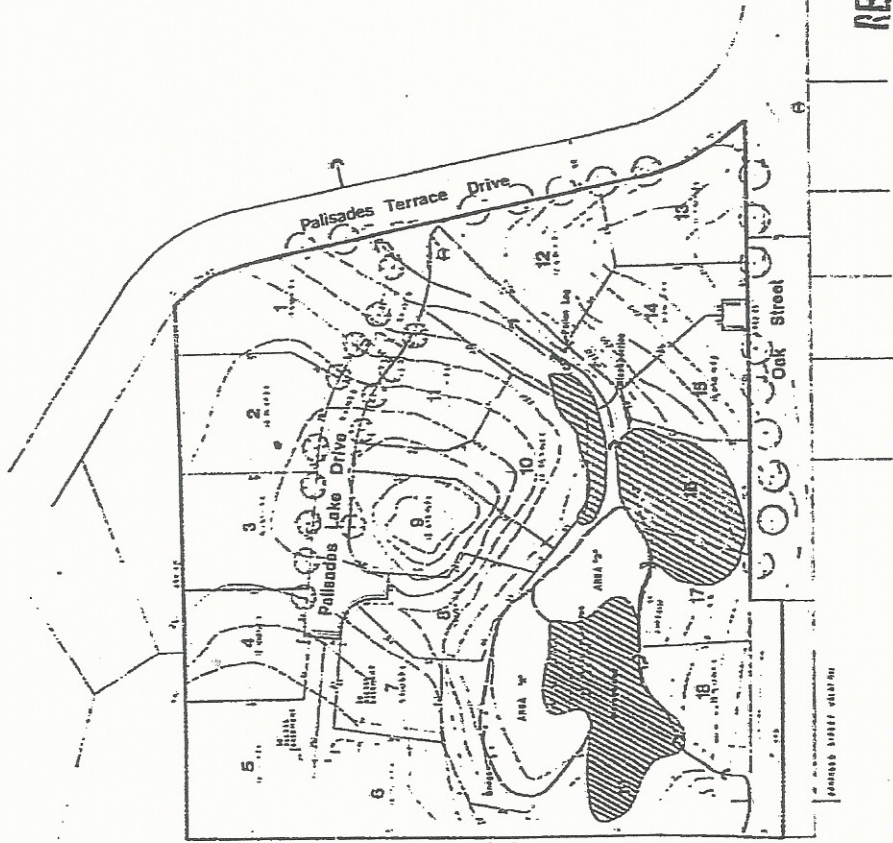
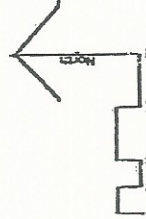
**Palisades Lake Estates**

**Richard E. Olenski**  
 18000 Oak Reserve Ferry Rd.  
 Lakewood, Ohio 44122



LOCATION: 135.0 AC. NEIGH. W/TH. ONE LOT# 2000 & 3000  
 SITE AREA: 700 ACRES  
 ZONING: R-1B  
 SEWERS: CITY OF LAKE OSWEGO  
 WATER: CITY OF LAKE OSWEGO  
 STREETS: PALISADES LAKE DRIVE, OSWEGO  
 ON STREET, CITY OF LAKE OSWEGO  
 STREET: THREE

( ) SERVICE CONCRETE 1" CAL 40 CC  
 SQUARE ON  
 SQUARE SCHEDULE 40  
 SQUARE SCHEDULE



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Wetland Area Analysis

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DESCRIPTION OF WETLAND WILDLIFE HABITAT

The Wetland Area Analysis map submitted with this narrative depicts the significant wetland area located on the Palisades Lake Estates site. The wetland area (shown as the shaded pattern on the map) is divided into two sub-areas, Area "A" and Area "B". Area "A" has been identified as containing the most significant wetland vegetation and wildlife habitat features. Area "B" contains numerous small ponds, with pockets of grass in between. Non-wetland areas covered primarily with non-native blackberry vines are shown around the border of the two wetland areas. The map also depicts significant wildlife habitat features of the site, including old tree snags located in Area "A", and a large old Douglas Fir log which is covered with salal and located on a hillside adjacent to the creek.

The dominant plant in the wetland area is Creek Dogwood (*Cornus Stolonifera*), a many stemmed shrub which is generally widely spreading from root sprouts. This plant, which is found extensively in Area "A", has 3 to 5 inch-long paired leaves with untoothed margins and bold, curving veins. Twigs of this species are usually red, hence the other common name, Red Osier.

From a wildlife habitat standpoint, Creek Dogwood is the most significant plant in the wetland area. The large bunches of white or bluish berries produced by the plant provide a useful food source. The plant is also important because of its tendency to form dense thickets which can provide shelter and nesting sites for ducks and other aquatic species. Since the Creek Dogwood grows quickly and easily in marshy areas, additional plantings are planned around the margin of the wetland, in areas where it does not now exist. Probable plantings include "Flaviramea", a yellow twigged variety, and "Sibirica", a red twigged variety.

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The common skunk cabbage (*Lysichitum Americanum*), is a useful plant as an understory to the Creek Dogwood. By providing additional cover in and amongst the many stems of the Creek Dogwood, the combination of the two plants provides an ideal nesting place for ducks and other aquatic species. Additionally, the tubers of the skunk cabbage provide a food source for ducks.

Skunk cabbage is found on the project site primarily within Area "A". The plant is extremely easy to propagate and additional plantings are planned in conjunction with the proposed new plantings of Creek Dogwood in the wetland area.

The proposed site plan for the subject property would augment the the wildlife habitat value of the natural vegetation on the site by providing a year-around pond adjacent to the wetland area. The proposed pond will provide a valuable water source for aquatic wildlife, fulfilling such needs as drinking water supply, feeding area, swimming, bathing, etc. The margin area between the pond and the wetland plants described above will create a very desirable "edge effect" which is so important to wildlife habitat.

Another interesting plant found in the wetland area on the subject property is Horsetail or Equisetum. This plant, which grows in dark marshy areas, is found in a large group located at the west end of Area "A". This plant forms dense thickets which provide good shelter areas for various species of wildlife. From a shelter standpoint, it is probably more valuable than the skunk cabbage because it is an evergreen plant. Skunk cabbage is a perennial which disappears completely for much of the year.

Rocks found on the subject property also provide an additional source of wildlife shelter. Rocks can be a very important shelter habitat around the margin of and within ponds. The many crevices and nooks provided by a jumble of rocks in and around a pond provide unique sources of shelter for many aquatic species.

In addition, many types of wildlife, such as frogs, turtles, birds, etc., will use the dry tops of rocks as spots to sun or preen themselves.

Although not a wetland environment itself, we should mention the importance of the mature coniferous forest as a wildlife habitat around the perimeter of the wetland area. Mature evergreen conifers such as Douglas Fir, Western Red Cedar, etc. provide additional shelter areas for wildlife that inhabit wetland areas. When located adjacent to the proposed pond, the wildlife value of this shelter area is increased through the creation of another "edge effect". For example, certain types of birds (including red-tailed hawks, screech owls, and possibly the great blue herons or green herons) might make their nest high up in the trees and then use the pond area for hunting their natural prey. Potential food sources for such birds, depending upon the species, include insects, fish, frogs, etc.

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PALISADES LAKE ESTATES

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Preliminary Pond Storage Calculations for Storm Detention

Q = 87.5 CFS, 10 year storm, C = 0.5 by CM2M Study, Actual  
C = 0.35 for composite basin giving Q = (0.35/0.5)(87.5) = 61.3 CFS

Assume an orifice control of 24" in diameter

$$Q = CA \sqrt{2gh}$$

Assume, h = 4' average

$$C = 0.6$$

$$A = \pi (2)^2 / 4 = 3.14 \text{ Sq.Ft.}$$

$$Q = (0.6)(3.14)(\sqrt{2(32.2)(4)}) = 30.2 \text{ Cu.Ft./Sec.}$$

Storage for 10 Year Storm Over Basin Above Development

$$\text{Vol} = (Q_{in} - Q_{out})(60)(T)$$

Assume T = 20 minute duration

$$\text{Vol} = (61.3 - 30.2)(60)(20) = 37,320 \text{ Cu.Ft.}$$

Pond to be in two levels due to elevation difference across the wet land area.

Lower pond area = Approx. 5,000 Sq.Ft.

Upper pond area = Approx. 8,000 Sq.Ft.

Wet land area as shown on Landscape Architect plan =

Approx. 12,000 Sq.Ft. separate from pond area.

Average Depth of Permanent ponds to be 4 Approximately Feet

$$\text{Vol} = 13,000 \text{ Sq.Ft.} \times 4 \text{ Ft.} = 52,000 \text{ Cu.Ft.}$$

Average Depth of Water in Wet Land Area to be 0.5 to 1.0 Feet

$$\text{Vol} = 12,000 \text{ Sq.Ft.} \times (0.5 \text{ to } 1.0 \text{ Ft.}) = 6,000 \text{ Cu.Ft. to } 12,000 \text{ Cu.Ft.}$$

Additional storage could be handled by increasing depth in ponds by 1.5 feet including overflow into wet land area -

$$\text{Ponds @ } 13,000 \text{ Sq.Ft.} = (1.5)(13,000) = 19,500 \text{ Cu.Ft.}$$

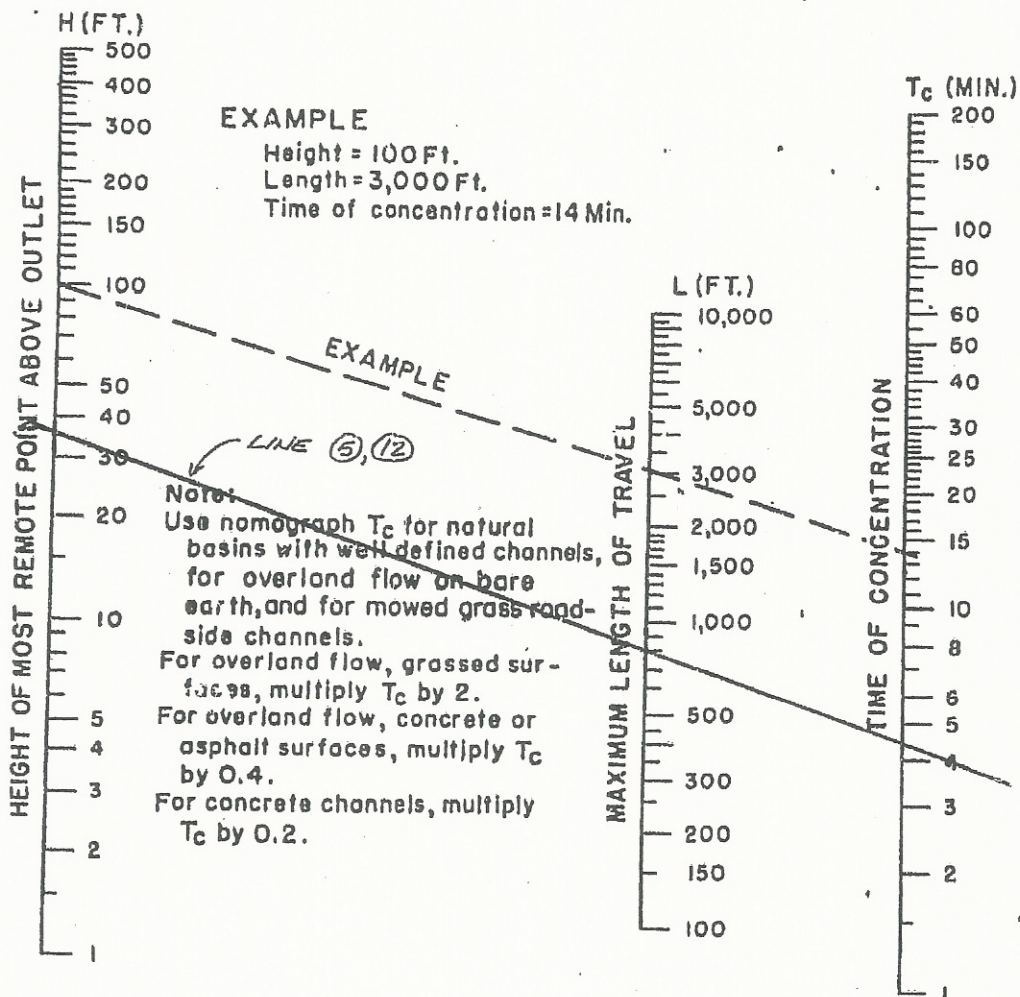
$$\text{Wet Land @ } 12,000 \text{ Sq.Ft.} = (1.5)(12,000) = 18,000 \text{ Cu.Ft.}$$

$$\underline{37,500 \text{ Cu.Ft.}}$$

Lower pond level to vary between elevation 209.5 & 211.0 and  
upper pond level to vary between elevation 211.5 & 213.0.

Pond levels to be controlled by weir structures with an orifice at the control manhole to allow for normal flow through system to maintain water quality. Final design of these structures to be completed during the design phase of this project and will consider safety and ease of maintenance for City crews.

1382yd<sup>3</sup>



Based on study by P. Z. Kirpich,  
 Civil Engineering, Vol. 10, No. 6, June 1940, p. 362

Fig. I-4 — Time of concentration of small drainage basins.

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 TELEPHONE 653 9093

AT N 45° W 122° 42' 30" (FANNO CREEK STUDY AREA)  
**INTENSITY OF PRECIPITATION**  
**FOR 10 YEAR STORM**  
 (Intensity in/hr)

	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
5	2.60	2.58	2.55	2.53	2.50	2.48	2.45	2.43	2.40	2.38
6	2.36	2.35	2.33	2.32	2.30	2.28	2.26	2.25	2.23	2.22
7	2.20	2.19	2.17	2.16	2.14	2.13	2.11	2.10	2.08	2.07
8	2.06	2.04	2.03	2.02	2.01	2.00	1.99	1.98	1.97	1.95
9	1.94	1.93	1.92	1.91	1.90	1.89	1.88	1.87	1.86	1.85
10	1.84	1.83	1.82	1.81	1.80	1.80	1.79	1.78	1.77	1.76
11	1.75	1.74	1.73	1.72	1.71	1.70	1.70	1.69	1.68	1.68
12	1.67	1.67	1.66	1.65	1.64	1.64	1.63	1.62	1.62	1.61
13	1.60	1.60	1.59	1.58	1.57	1.56	1.56	1.55	1.54	1.54
14	1.53	1.53	1.52	1.51	1.51	1.50	1.50	1.49	1.48	1.48
15	1.47	1.47	1.46	1.46	1.45	1.44	1.44	1.43	1.42	1.42
16	1.41	1.40	1.40	1.39	1.38	1.38	1.37	1.37	1.37	1.36
17	1.36	1.36	1.35	1.35	1.34	1.34	1.33	1.33	1.32	1.32
18	1.31	1.31	1.30	1.30	1.29	1.29	1.29	1.28	1.28	1.27
19	1.27	1.27	1.26	1.26	1.25	1.25	1.25	1.24	1.24	1.23
20	1.23	1.23	1.22	1.22	1.22	1.21	1.21	1.21	1.20	1.20
21	1.19	1.19	1.18	1.18	1.18	1.17	1.17	1.16	1.16	1.15

Min.

Min.	22	23	24	25	26	27	28	29
	1.15	1.12	1.09	1.06	1.04	1.01	1.00	1.00
Min.	30	35	40	45	50	60	JAN 25 1985 90 120	
	.95	.86	.79	.74	.69	.62	PLANNING DEPT.	
							.49	.42

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BY: WJB, JCB 1-75



VI

AT N 45° 29' W 122° 42' 30" (FANNING CREEK STUDY AREA)  
**INTENSITY OF PRECIPITATION**  
**FOR 50 YEAR STORM**  
 (intensity in/hr)

	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
5	3.43	3.40	3.37	3.34	3.31	3.28	3.25	3.22	3.20	3.17
6	3.14	3.11	3.09	3.06	3.04	3.01	2.99	2.97	2.95	2.93
7	2.91	2.89	2.87	2.85	2.83	2.82	2.80	2.78	2.76	2.74
8	2.72	2.70	2.69	2.67	2.66	2.64	2.62	2.61	2.59	2.58
9	2.56	2.55	2.53	2.52	2.50	2.49	2.48	2.46	2.45	2.43
10	2.42	2.41	2.40	2.38	2.37	2.36	2.35	2.34	2.32	2.31
11	2.30	2.29	2.28	2.27	2.26	2.25	2.24	2.23	2.22	2.21
12	2.20	2.19	2.18	2.17	2.16	2.16	2.15	2.14	2.13	2.12
13	2.11	2.10	2.09	2.08	2.07	2.07	2.06	2.05	2.04	2.03
14	2.02	2.01	2.00	2.00	1.99	1.98	1.97	1.96	1.96	1.95
15	1.94	1.93	1.92	1.92	1.91	1.90	1.89	1.88	1.88	1.87
16	1.86	1.85	1.85	1.84	1.83	1.83	1.82	1.81	1.80	1.80
17	1.79	1.78	1.78	1.77	1.77	1.76	1.75	1.75	1.74	1.74
18	1.73	1.72	1.72	1.71	1.71	1.70	1.69	1.69	1.68	1.68
19	1.67	1.66	1.66	1.65	1.65	1.64	1.63	1.63	1.62	1.62
20	1.61	1.61	1.60	1.60	1.59	1.59	1.58	1.58	1.57	1.57
21	1.56	1.56	1.55	1.55	1.54	1.54	1.54	1.53	1.53	1.52

Min.

BASED ON SHEET 6 PAGE II

Min.	22	23	24	25	26	27	28	29
	1.52	1.48	1.44	1.40	1.36	RECEIVED JAN 25 1985 PLANNING DEPT.		1.27
Min.	30	35	40	45	50			120
	1.24	1.13	1.04	0.97	0.91	0.81	0.64	0.53

PAZ, LAZ  
 BY: PRT WAR 8/5