AGENDA

CANBY PLANNING COMMISSION

REGULAR MEETING
City Council Chambers

AUGUST 13, 1990 - 7:30 p.m.

I. ROLL CALL

II. MINUTES

July 23, 1990

III. COMMUNICATIONS

IV. UNFINISHED BUSINESS

V. BUSINESS FROM THE AUDIENCE

VI. PUBLIC HEARING

VII. WORKSHOP

Sewer Infrastructure System - Flow Diversion Discussion

Ivy & Second
Juniper and Highway

VIII. FINDINGS

CUP 90-05 - Gerald Mootz
CUP 90-02 - DeAnza Development

IX. ADJOURNMENT

PRESTON
THORGRIMSON
SHIDLER
GATES & ELLIS

ATTORNEYS AT LAW

RECEIVED
JUL 24 1990
CITY OF CANBY

3200 U.S. BANCORP TOWER
111 S.W. FIFTH AVENUE
PORTLAND, OR 97204-3635
TELEPHONE: (503) 228-3200
FACSIMILE: (503) 248-9085

July 23, 1990

Rusty Klem, Director
Canby Department of Public Works
182 N. Holly
P.O. Box 930
Canby, Oregon 97013

Re: Cedar Creek Community Subdivision Application

Dear Mr. Klem,

Willamette Valley Development Corporation, with the concurrence of Mr. Dack, have directed me to withdraw the above application from consideration by the Planning Commission.

I expect there will be a new applicatin, substantially different from that which was previously filed, to come before the Commission.

We appreciate your time and assistance in this matter.

Very Truly Yours,
PRESTON THORGRIMSON SHIDLER
GATES & ELLIS

Edward J. Sullivan

EJS/jr
cc: Butch Olsen
Al Sizer
Steve Pfeiffer
Bob Bouneff

-M E M O-

TO: Canby Planning Commission

FROM: Rusty Klem, Director of Public Works Rusty

RE: Sewer Capacity

DATE: August 10, 1990

The main point of the meeting on August 13th will be to "discuss" the issue of sewer capacity.

I have included information from our 1973 Sewer Master Plan (Attachment "A"). Although it is dated information, it provides good background and we can use it for reference. I have included, as Attachment "B", a letter from Curt McLeod, dated January 20, 1986, that was used as a basis for designing the south side sewer line. A letter from Curt McLeod, dated March 2, 1990, has been included as Attachment "C". Attachment "D", is a worksheet from recent measurements.

We will begin the meeting by discussing the Wastewater Treatment Plant (WWTP). The second topic for discussion will be the collection system in general. The third topic will be locations that either are problems at the present time, or will become problems.

The attached information is provided for background information. The information that will be presented at the meeting, and the discussion, will bring us more up-to-date. We will also have maps and, possibly, additional data.

I will be at the meeting as the Public Works Director. Curt McLeod, our Engineer of Record; Hank Fenske, the newest member on the Commission, who is an engineer with Brown and Caldwell; and Steve Hanson, our WWTP Supervisor will also be in attendance. Between myself, Curt, Hank, Steve and the Commissioners, I expect some very constructive discussion.

ATTACHMENT A

5. HYDRAULIC PARAMETERS OF SEWERS

The flow of sanitary sewage and storm water runoff is designed to flow in the collection system by gravity. Under the conditions of gravity flow, the surface of the flowing liquid is under atmospheric pressure and the hydraulic grade line lies in the surface of the flowing liquid.

Where excavation becomes excessive to maintain gravity flow, pumping stations are required to lift the liquid near the surface. Gravity flow is then allowed to be continued.

Flow by gravity should require the liquid to maintain a minimum velocity of 2.5 to 3.0 feet per second when the conduit is flowing full or half-full. This minimum velocity will prevent the deposition of settable solids and maintain a clear flow line.

The capacity of a conduit is dependent upon the diameter of the conduit, the slope of the line, and roughness of the conduit interior wall.

Power developed from change in elevation in the conduit is the energy used to cause the liquid to flow. The smoother the interior conduit walls, the less energy required to move a given volume of liquid.

A coefficient dependent on the roughness of the conduit has been selected in this study to be 0.013.

An exception to gravity flow is closed conduit flow. This occurs when the liquid in the conduit is at a pressure above atmospheric. A situation when pressure above atmospheric may occur is when the runoff or collection of liquid is in excess to the capacity by gravity flow of the conduit.

This condition could occur when a storm or higher intensity than the five-year design period selected is exceeded.

When a conduit is carrying its full capacity at anything less than full depth, the slightest obstruction or interference may create a surcharge of the conduit.

The hydraulic elements of a sewer are the volume of discharge, the velocity of flow, the cross sectional area of the conduit and the hydraulic radius.

Circular conduits are generally selected for structural reasons. They are readily available and generally more economically constructed than shapes other than circular.

VALUES OF HYDRAULIC ELEMENTS OF CIRCULAR SECTION FOR VARIOUS DEPTHS OF FLOW

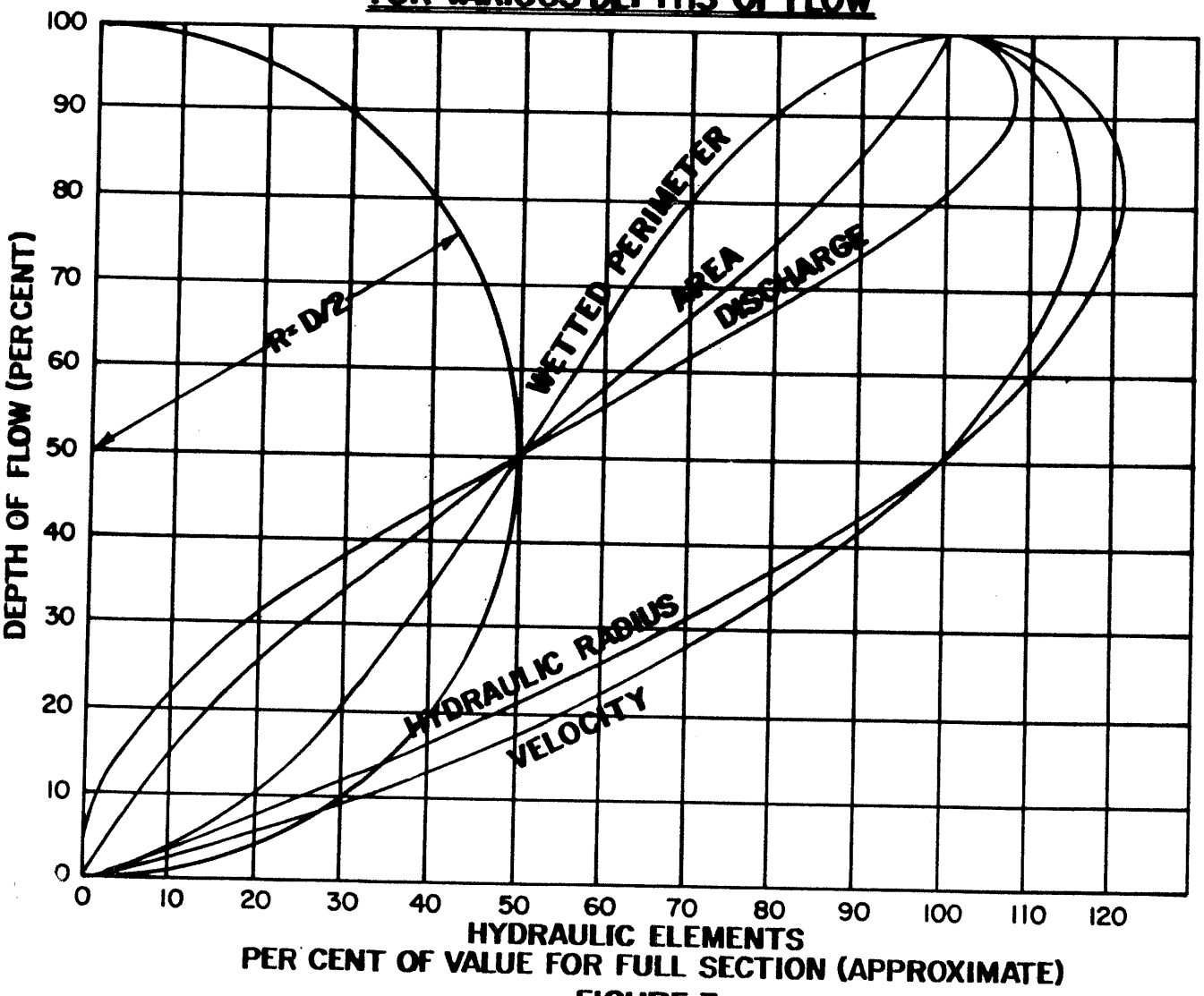


FIGURE 3

AGENDA

CANBY PLANNING COMMISSION

SPECIAL MEETING

City Council Chambers

November 12, 1990 - 7:30 p.m.

I. ROLL CALL

II. MINUTES

III. COMMUNICATIONS

IV. UNFINISHED BUSINESS

Reconsideration of decision - SUB 90-02 - Township Village III

V. BUSINESS FROM THE AUDIENCE

VI. PUBLIC HEARING

VII. FINDINGS

VIII. ADJOURNMENT

The City of Canby Planning Commission welcomes your interest in these agenda items. Please feel free to come and go as you please.

Kurt Schrader, Chair
Linda Mihata, Vice-Chair
Don Bear
John Zieg
Wade Wiegand
Robert Westcott
Henry Fenske

AGENDA
CANBY PLANNING COMMISSION
REGULAR MEETING
City Council Chambers
November 19, 1990 - 7:30 p.m.

I. ROLL CALL

II. MINUTES

November 5, 1990

III. COMMUNICATIONS

IV. UNFINISHED BUSINESS

V. BUSINESS FROM THE AUDIENCE

VI. PUBLIC HEARING

CUP 90-06, a request by Dave Nelson. The applicant is requesting approval to construct a 147-unit mobile home park on property identified as Tax Lot 1790 of Tax Map 4-1E-4C. The property is is generally located east of the Canby Community Park and south of S. Elm Street.
Continued from October 15, 1990.

MLP 90-11, a request by Kenneth Perinchief for approval of a minor land partition to divide a 46,680 square foot parcel into three lots containing 18,335, 10,355 and 10,440 square feet respectively, plus a 24 foot access drive. The property is located at 563 N.E. 10th Avenue (Tax Lot 1000 of Tax Map 3-1E-33AC).

SUB 90-05, a request by Ron Tatone for approval to subdivide Parcel VIII (6.8 acres) of Partition Plat No. 1990-17 into 24 single family residential lots (Lillian's Meadow). Development is proposed to be constructed in two phases. The property is located west of N.W. Ash Street, north of Knights Bridge Road, and south of N.W. 12th Avenue (Tax Lot 300 of Tax Map 3-1E-32A).

VII. FINDINGS

SUB 90-03 - Harvest Oak Estates
SUB 90-04 - Cedar Creek Community

VIII. ADJOURNMENT

- S T A F F R E P O R T -

APPLICANT:

Kenneth Perinchief

OWNER:

Kenneth Perinchief

LEGAL DESCRIPTION:

Tax Lot 1000 of
Tax Map 3-1E-33AC

LOCATION:

563 N.E. 10th

COMP. PLAN DESIGNATION:

Medium Density Residential

FILE NO.:

MLP 90-11

STAFF:

Robert G. Hoffman, AICP
Planning Director

DATE OF REPORT:

November 9, 1990

DATE OF HEARING:

November 19, 1990

ZONING DESIGNATION:

R-1

I. APPLICANT'S REQUEST:

The applicant is requesting approval to divide a 1.08 acre lot into three parcels containing approximately 10,440, 10,355 and 18,000 square feet, respectively.

II. APPLICABLE CRITERIA:

This is a quasi-judicial land use application. In judging whether a Minor Partition should be approved, the Planning Commission must consider the following standards:

A. Conformance with the text and the applicable maps of the Comprehensive Plan;

B. Conformance with all other requirements of the land development and planning ordinance;

C. The overall design and arrangement of parcels shall be functional and shall adequately provide building sites, utility easements, and access facilities deemed necessary for the development of the subject property without unduly hindering the use or development of the adjacent properties;

D. No minor partitions shall be approved where the sole means of access is by private road, unless it is found that adequate assurance has been provided for year-round maintenance sufficient to allow for unhindered use by emergency vehicles, and unless it is found that the construction of a street to City standards is not necessary to insure safe and efficient access to the parcels;

E. It must be demonstrated that all required public facilities and services are available, or will become available through the development, to adequately meet the needs of the proposed land division.

III. OTHER APPLICABLE CRITERIA:

A. 16.56 General Provisions (for land divisions)

B. 16.60 Major or Minor Partitions

C. 16.62 Subdivisions - Applications

D. 16.64 Subdivisions - Design Standards

E. 16.64.040 - Lots Related to Flag Lots:

1. Flag Lots or Panhandle-shaped Lots

The Commission may allow the creation of flag lots provided that the following standards are met:

a. Not more than one flag lot shall be created to the rear of any conventional lot and having frontage on the same street unless it is found that access will be adequate and that multiple flag lots are the only reasonable method to allow for development of the site.

b. The access strip is to be a minimum of twenty feet in width and shall be paved for its full width from its connection with the public street to the main body of the lot. Except, however, that the width requirement may be reduced to twelve feet where the total length of the access strip does not exceed one hundred feet. Access strips not less than ten feet in width may be permitted where two such drives abut and are provided with reciprocal easements for use.

c. For residential flag lots, a minimum building setback of five feet from the access strip shall be maintained where such buildings exist prior to the creation of the flag lot.

d. Design and locations of buildings on flag lots shall be such that normal traffic will have sufficient area to turn around, rather than necessitating backing motions down the access strip. The Commission may establish special setback requirements at the time of approving the creation of flag lots.

IV. FINDINGS:

A. Location:

The subject property is identified on the Clackamas County Assessor's Map as Tax Lot 1000 of Tax Map 3-1E-33AC. The property consists of approximately 1.08 acres, with 120 lineal feet of frontage along N.E. 10th Avenue. The rear fence line is a County Fairgrounds boundary. The entire area is zoned R-1.

The lot is currently occupied by a single-family house addressed as 563 N.E. 10th Avenue. There is room for adequate yards if the minor partition is granted. Single family homes occupy the parcels on each side.

B. Conformance with the Text and Maps of the Comprehensive Plan and Other Ordinances:

1. The Canby Comprehensive Plan Map shows the subject property located in a Medium Density Residential District, as are adjacent parcels. Parcels to the north are designated Low Density Residential and parcels to the south are zoned Public (Fairgrounds).

2. The Residential Lands Policy No. 2 (page 140, Canby Comprehensive Plan) states the following:

POLICY NO. 2: CANBY SHALL ENCOURAGE A GRADUAL INCREASE IN HOUSING DENSITY AS A RESPONSE TO THE INCREASE IN HOUSING COSTS. . .

IMPLEMENTATION MEASURES: Continue to allow for a variety of lot sizes within residential zones with the overall average equaling the minimum square footage requirement.

C. Compliance with All Other Applicable City Ordinances:

1. Section 16.60.030 of the Canby Municipal Code requires all public facilities and services be available, or made available through the development of the property.

In most cases, services will not have to be extended to serve the parcels of property proposed to be created. The following comments can be made regarding each facility/service:

a. Sewer

The City has sewer lines in N.E. 10th and in Manzanita. They are approximately 10 feet deep. Easements will be necessary to serve each lot. There are no known sewer capacity problems in this prt of the City, or related to it.

b. Water

The water system is operated by Canby Utility Board. Capacity is available in the system. There is a 12 inch line in N.E. 10th Avenue.

c. Electricity

The electrical system is owned and operated by the Canby Utility Board. Service to the newly created parcels can be obtained. The expense of extending those services will be borne by the applicant.

d. Fire

The existing parcel is presently served by Fire District No. 62. The proposed parcels can easily be served, as well.

e. **Police**

The City provides police protection to the area and can easily serve the proposed parcels.

f. **Storm Drainage**

All on-site storm water will be dealt with on site and not discharged to the City system. This proposal does not add any additional street area to be drained. There are catchbasins at both Manzanita and 10th and Maple Lane and 10th.

2. **Street/Traffic**

Canby's ordinance requires that any newly created parcels have access to a public street. The three parcels will have access to N.E. 10th Avenue by way of a common easement of wider than required width. Sidewalks are not present on the entire frontage. N.E. 10th is an existing collector in the Comprehensive Plan. It is currently a 40 foot right-of-way and the standard for a collector street such as 10th Avenue is 50 feet. Ten feet of right-of-way should be dedicated.

D. Overall Design of the Parcels:

The partition, as proposed, will result in the creation of three rectangular lots consisting of approximately 10,440, 10,355 and 18,000 square feet, respectively. The applicant will be required to provide any necessary easements for utilities as a standard condition of approval. An access easement of over 24 feet in width is proposed to serve the rear two flag lots.

The subject property is generally flat with adequate room for building and required setbacks and yards. The parcel is zoned R-1, Low Density Residential, and each parcel is large enough to provide adequate development space and yards. A minimum of a three foot rear yard needs to be provided behind the "pump house."

E. Justification for More than One Flag Lot

Plat maps indicate that the access to two flag lots behind the same residence will be adequate to serve both dwellings, provided that a reciprocal agreement is recorded. Turnarounds will be adequate on each building site without necessitating backing onto the access driveway itself. No access is available from the east or west due to private properties, nor from the south, where Clackamas Count Fairgrounds adjoin petitioner's property. Placing two additional single-

family dwellings on lots of almost one-quarter acre each, provides a reasonable use of this land. N.E. 10th Avenue affords access and egress just opposite the Manzanita Avenue intersection. Traffic flow should not be affected dramatically, if at all. Construction of a new full public street to serve the two rear lots would serve no useful purpose since adequate access with year-round maintenance can be provided through a reciprocal access agreement and a driveway will be constructed to an adequate standard of at least 20 feet of pavement width.

V. CONCLUSION:

1. Staff finds that the partition requested is in conformance with the Comprehensive Plan Map and the Municipal Code.

2. Staff concludes that the overall design of the proposed partition will be compatible with the area and will provide adequate building area and area for the provision of public facilities and services.

3. Staff concludes that the partition will have adequate frontage on a public street to insure safe and efficient access.

4. Staff concludes that all necessary public services will become available through the development of the property, to adequately meet the needs of the proposed land division.

VI. RECOMMENDATION:

Based upon the findings and conclusions in this report, the information submitted by the applicant, and the additional information contained in the file, staff recommends approval of MLP 90-11, subject to the following conditions:

1. The applicant shall prepare a final partition map. The final partition map shall be a surveyed plat map meeting all of the specifications required by the Clackamas County Surveyor and all conditions of approval. Said partition map shall be recorded with the Clackamas County Surveyor and Clackamas County Clerk, and a copy of the recorded map shall be provided to the Canby Planning Department.

2. A new deed and legal description for the new lots shall be prepared and recorded with the Clackamas County Clerk. A copy of the new deeds shall be provided to the Canby Planning Department.

3. Utility easements 12 feet in width shall be provided on the exterior of the proposed development and six feet on all other property lines, and shall be part of the final partition.

4. A final plat, modified to illustrate the conditions of approval, shall be submitted to the Director of Public Works for review and approval. The final plat shall reference this land use application - City of Canby, Planning Department, File No. MLP 90-11.

5. Plans to extend the sewer shall be approved for construction by the Director of Public Works, prior to the issuance of a building permit on the site.

6. All monumentation and recording fees shall be borne by the applicant.

7. All utilities must meet the standards and criteria of the providing utility authority.

8. A sidewalk and new pavement of the street area between curb and current street pavement shall be provided prior to building permits being issued for the flag lots.

9. A reciprocal agreement to share the driveway shall be made a part of the final partition.

10. A strip of land 10 feet wide shall be dedicated for eventual widening of N.E. 10th Avenue to collector street standards.

EXHIBITS

1. Applicant's Application
2. Vicinity Map

$150.00

MINOR LAND PARTITION APPLICATION

OWNER

Name Mr & Mrs Kenneth Perinchief
Address 563 NE 10th Ave
City Canby State OR Zip 97013
SIGNATURE Kenneth Perinchief

APPLICANT

Name Kenneth Perinchief
Address 563 NE 10th Ave
City Canby State OR Zip 97013
Phone 266-7588

DESCRIPTION OF PROPERTY

Tax Map 3 1E 33AC Tax Lot(s) 1000 Lot Size 1.08 Acres (Acres/Sq.Ft.)

or
Legal Description, Metes and Bounds (Attach Copy)
Plat Name _____ Lot _____ Block _____

PROPERTY OWNERSHIP LIST

Attach a list of the names and addresses of the owners of properties located within 200 feet of the subject property (if the address of the property owner is different from the situs, a label for the situs must also be prepared and addressed to "Occupant"). Lists of property owners may be obtained from any title insurance company or from the County Assessor. If the property ownership list is incomplete, this may be cause for postponing the hearing. The names and addresses are to be typed onto an 8-1/2 x 11 sheet of labels, just as you would address an envelope.

USE

Existing Residential R1 Proposed Same
Existing Structures House, Pump House, single garage

PROJECT DESCRIPTION

Minor partition yielding two additional tax lots, with reciprocal easements for access, with reciprocal easement with existing dwelling. See accompanying map, drawing.

ZONING R-1 COMPREHENSIVE PLAN DESIGNATION Medium Density

PREVIOUS ACTION (if any) _____

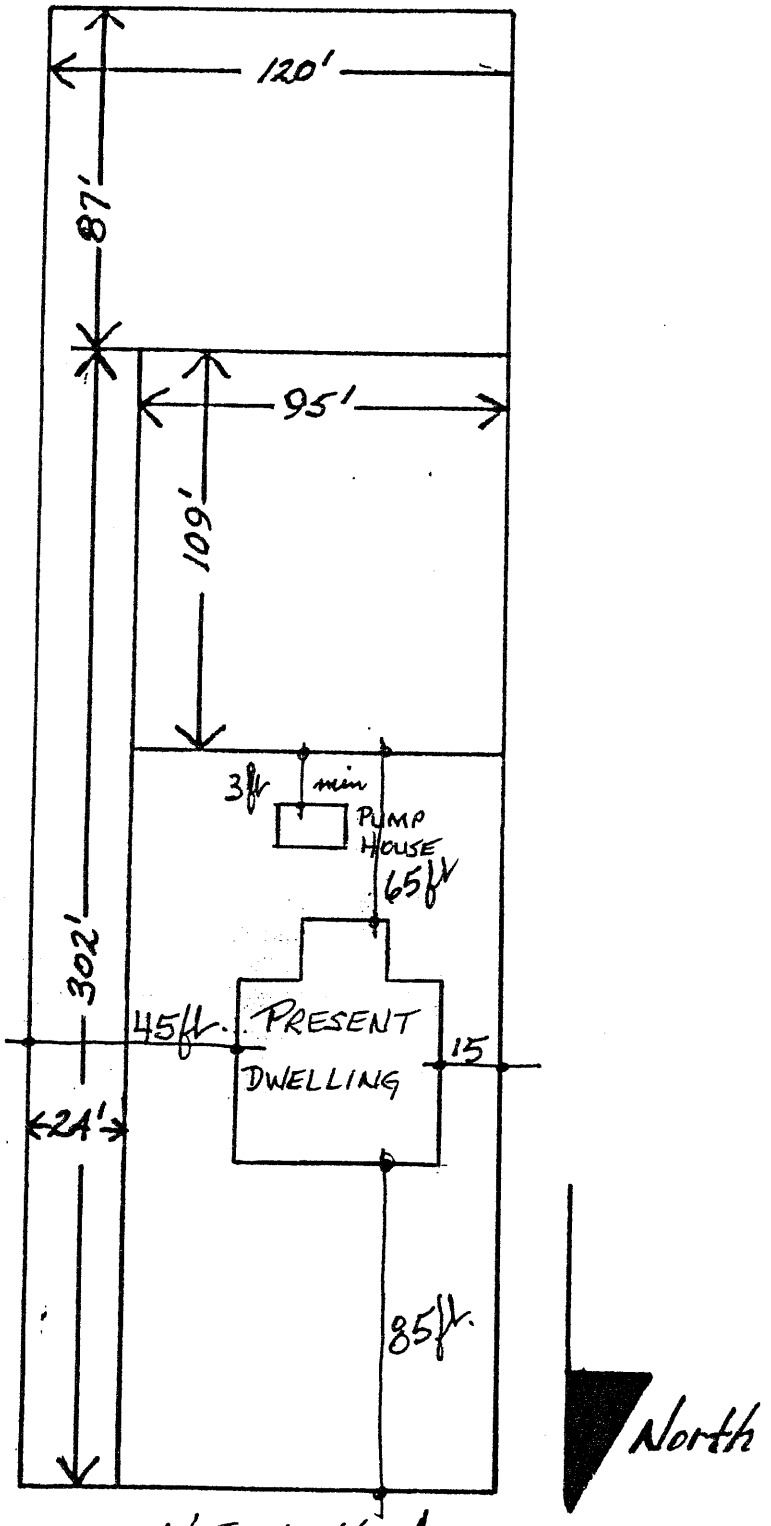
File No. MLP 90-11
Receipt No. 1157
Received by Joyce Fallin
Date Received 10-17-90
Completeness Date 10-24-90
Pre-Ap Meeting _____
Hearing Date 11-19?

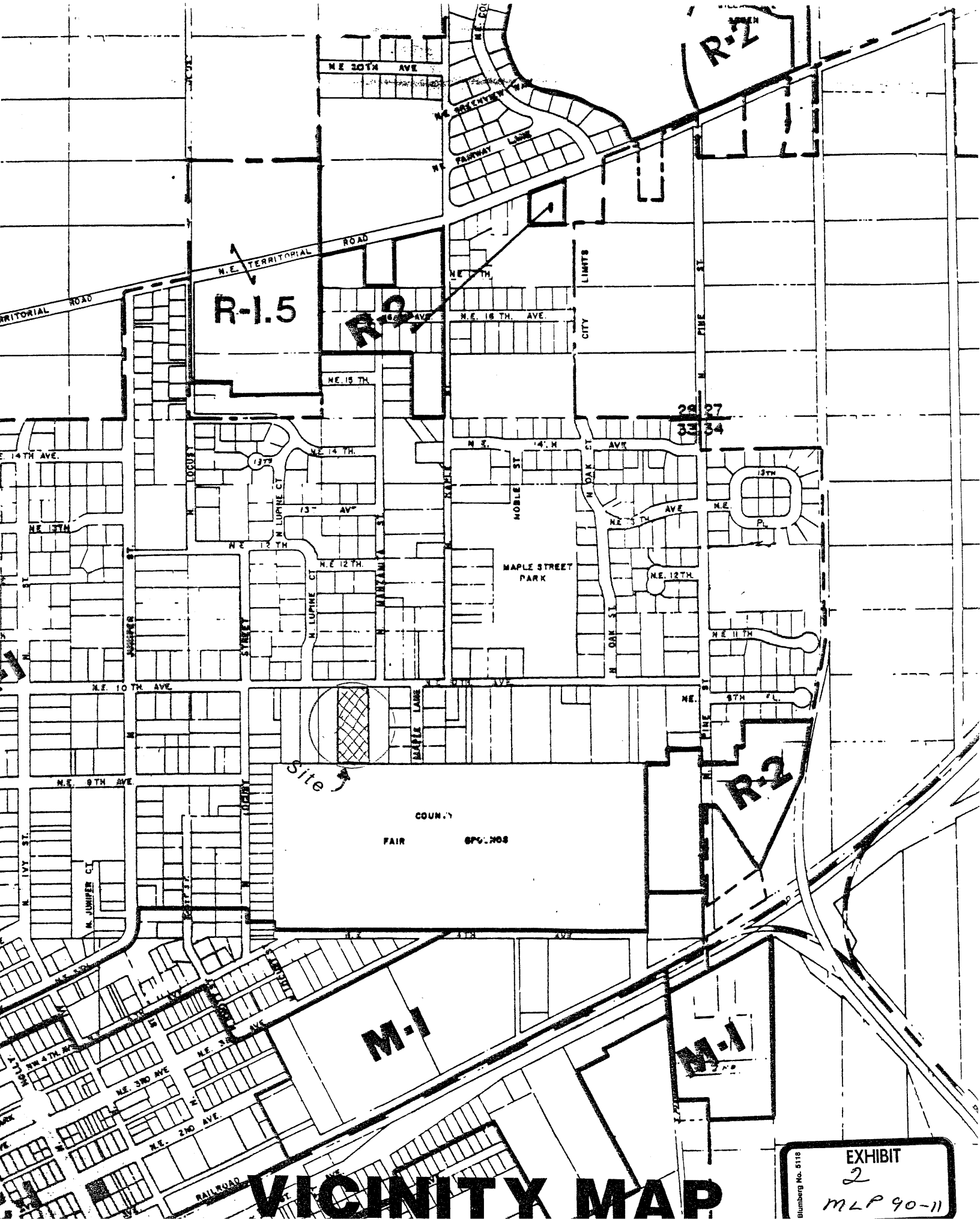
EXHIBIT 1 3pg MLP 90-11

* If the applicant is not the property owner, he must attach documentary evidence of his authority to act as agent in making application.

Justification for more than one flag lot

Platte maps indicate that the access to two flag lots behind the same residence WILL BE adequate to serve both dwellings. Turn-arounds will be adequate on each building site without necessitating backing onto the access driveway itself. No access is available from the East or West due to private properties, nor from the South where County Fairgrounds adjoind petitioners' property. Placing two single-family dwellings on lots of almost ¼ acre each in size provides highest and best use of this land. Northeast Tenth Avenue affords access and egress just opposite Manzanita Avenue intersection. Traffic flow should not be affected dramatically, if at all.


120'
87'
95'
109'
3ft min
PUMP HOUSE
65ft
302'
45ft.
PRESENT DWELLING
15
24'
85ft.
North
N.E. 10th Ave.



VICINITY MAP

EXHIBIT
2
MLP 90-11

Blumberg No. 5118

- S T A F F R E P O R T -

APPLICANT:

Ron Tatone

OWNER:

Ron Tatone

LEGAL DESCRIPTION:

Tax Lot 300 of
Tax Map 3-1E-32A

LOCATION:

West of N.W. Ash Street,
north of Knights Bridge Rd.,
and south of N.W. 12th Avenue

COMP. PLAN DESIGNATION:

Low Density Residential

FILE NO.:

SUB 90-05

STAFF:

Robert G. Hoffman, AICP,
Planning Director

DATE OF REPORT:

November 9, 1990

DATE OF HEARING:

November 19, 1990

ZONING DESIGNATION:

R-1 (Low Density Residential)

I. APPLICANT'S REQUEST:

The applicant is requesting approval to subdivide Parcel VIII (6.8 acres) of Partition Plat No. 1990-17 into 24 single family residential lots **(Lillian's Meadow)**. Development is proposed to be constructed in two phases.

182 N. Holly, P.O. Box 930, Canby, Oregon 97013, (503) 266-4021

II. APPLICABLE CRITERIA:

A. City of Canby Code Section 16.62.020

This is a quasi-judicial land use application. Applications for a subdivision shall be evaluated based upon the following standards and criteria:

i. Conformance with the text and applicable maps of the Comprehensive Plan.

ii. Conformance with other applicable requirements of the land development and planning ordinance.

iii. The overall design and arrangement of lots shall be functional and shall adequately provide building sites, utility easements, and access facilities deemed necessary for the development of the subject property without unduly hindering the use or development of adjacent properties.

B. Other Applicable Policies and Regulations:

- **City of Canby Comprehensive Plan:**

I. Citizen Involvement
II. Urban Growth
III. Land Use
IV. Environmental Concerns
V. Transportation
VI. Public Facilities and Services
VII. Economics
VIII. Housing
IX. Energy

- **City of Canby General Ordinances:**

16.20 Off-Street Parking and Loading
16.16 R-1 Low Density Residential Zone
16.42 Signs
16.46 Access Limitations
16.60 Major and Minor Partitions (Subdivisions) (especially 16.64, Subdivision Design)
16.86 Street Alignment
16.88 General Standards

III. FINDINGS:

A. Background and Relationships

In the past, the site has been used for agricultural and nursery purposes. The realignment of Knights Bridge Road, in 1964, changed the local traffic pattern somewhat. Single family homes surround the site, except to the northwest, which is vacant land. The surrounding zoning is all R-1, Low Density Residential, except the nearby embankment along the Molalla River, which has a Hazard Overlay. The Comprehensive Plan land use designation in the area is Low Density Residential and a Hazard Overlay along the adjacent slope. There is Medium Density Residential designation for the parcel immediately south of the subject parcel. The Molalla River is located an average distance of 500 feet westerly of the site. The river is the City limits. The original tax lot has been partitioned in the past, creating 6 lots along the west side of Ash, between 9th and 10th Avenues. The Commission has, in the past, considered plans for this area.

B. Comprehensive Plan Consistency Analysis

I. Citizen Involvement - not applicable

II. Urban Growth

The proposed subdivision is located within the City limits and within the Urban Growth Boundary. It is a priority "B" area in terms of Growth Priorities. It is provided with urban services.

III. Land Use

The proposed subdivision area has a Low Density Residential land use designation and is zoned R-1. The proposed development is to be entirely single family homes on adequately sized lots. The triangular area immediately to the south is designated in the Comprehensive Plan as a "unique area," area "L" on the map titled "Areas of Special Concern." The text regarding this area reads as follows:

"12. Area "L" is a small triangular shaped piece of property with potential development limitations due to steeply sloping west and south sides and lack of present sewer service. Proper site planning and some financial investment should mitigate both problems at some point in the future. Until that time,

development will be limited to a single family dwelling. Any further development will require the prior upzoning to R-1.5."

This triangular shaped parcel is currently developed with a single family house and a greenhouse, with intensive landscape treatment. It is currently zoned single family, with a Hazard/Steep Slope Overlay on part of the site near the Molalla River. Access to the property is via a driveway extended from Knights Bridge Road. The applicant proposes a 15 foot easement on his proposed tentative plat in this vicinity. A larger turnaround area near Knights Bridge Road and Ash is proposed to be vacated. Adequate provision of access to this triangular area must be assured. The County has previously informed us that this driveway and turnaround area are County-owned and they have not agreed to vacation at this time. Further steps on the part of the applicant are necessary to resolve this matter. Otherwise, the development implements the intent in the Land Use policies and, in particular, "encourage(s) a general increase in the intensity and density of permitted development as a means of minimizing urban sprawl" and follows the recommended land use map proposals.

IV. Environmental Concerns

Soil in this vicinity is Dabney loamy sand, a deep and somewhat excessively drained soil. It presents no special construction difficulties for urban type use. The site is basically flat, has been a tree nursery, and has minimal trees now, except in the far northern corner. There are no other particular environmental concerns related to this site.

V. Transportation

Access to and from the site will be via 9th and 10th Avenues to collector streets on Birch, and 10th Avenue to Knights Bridge Road, or Holly Street and Territorial. Ash Street is not proposed to be connected directly to Knights Bridge Road. This intersection, if it has been made, would have been at a curve and start of grade. This would have been undesirable. The developer states that some neighbors are requesting **not** to have this connection. Staff has received a letter and an office visit from residents on Aspen Street (the next street to the east of Ash), expressing concern about additional traffic on Aspen which would be caused by the development, and also reminding the City that there is a very narrow opening at Aspen and Knights Bridge Road. Staff is satisfied that most traffic will use the arterial and collector systems

rather than the narrow opening at Aspen and Knights Bridge Road. A "No Right Turn" sign at the southwest corner of 10th and Aspen and 9th and Aspen would discourage traffic to use Aspen. The proposed streets within and adjacent to the site are designed to City standards. Full sidewalks to City standards are proposed. Adequate access to the triangular parcel on Knights Bridge Road must be assured. There is a 10 foot wide jogging trail located in the northern corner, which is indicated on the proposed tentative plat. It is not clear what this is intended to access. There also does not appear to be adequate right-of-way shown in this vicinity, as drawn. Two turnarounds and temporary dead-end street barriers will be needed at the end of the north-south streets. A dead-end barrier and a 'Private Road' sign are necessary at the end of the street in the southwestern corner.

VI. Public Facilities and Services

Canby Utility Board (CUB) reports that it can provide electric and water services to this proposed subdivision. Sewer service is available in Ash Street between 5 and 8 feet below grade. It ties into the Knights Bridge Road interceptor. There are no known capacity problems in this part of the City. Other utility services will be provided.

The school board has not reported any service problems for this area. There are two elementary schools just across Knights Bridge Road. These schools include open space for physical education purposes. There is property owned by the school district at the southwestern corner of Territorial and Holly. There has been some discussion by the Parks Committee that additional recreational land should be provided in this vicinity. The tax lot immediately to the west of the subject parcel is almost 13 acres, and is occupied by a single family home which has access to the Molalla River. The northern corner of the proposed subdivision is wooded.

VII. Economics

Since the proposed subdivision is for residential purposes, this plan section does not directly apply. However, adequate homes and living environment is needed for owners, employees and clients of economic enterprises. Therefore, the housing proposal indirectly supports economic activity in Canby and nearby businesses.

VIII. Housing

The proposed subdivision supports the goals and policies of the Housing Element by adding to the supply and variety of housing available in Canby.

IX. Energy

No special solar provisions are proposed except that each lot is large enough that solar features could be designed into each home, and solar access provided.

C. Development Code Consistency Analysis

1. Section 16.62.020 - Standards and Criteria

- **Conformance with Comprehensive Plan**

The foregoing discussion described the subject subdivision, master plan and their relation to applicable Comprehensive Plan Goals and Policies.

- **Conformance with Applicable Requirements of the Land Development and Planning Ordinance**

This is the object of this entire staff report.

- **Design and Lot Arrangement - The Overall design shall be functional in terms of sites, utility easements and access, without hindering adjacent development.**

Since the site is a triangular shape, some creativity and ingenuity are necessary to solve some of the problem areas. The site plan illustrates how the adjacent parcel to the west could be developed and still be related to the subject development in terms of streets, utilities and lot layout to be compatible with this design. There are a few awkward situations which the applicant proposes to solve through deed restrictions. These are as follows: Lots 1, 2 and 8 are to be oversized lots. The house location is proposed to be specified in the CC&Rs so that area within the lot, that lies within the narrow "acute angle" end of the lot, can eventually be combined with adjacent land. This would be done in order to form more regular lots at a later time. Lot 2 is proposed with only 25 feet of frontage on a street and the street end is designed at an extremely acute

angle. The applicant must show how a driveway could work in this situation **or lot lines will need to be adjusted to provide a safe driveway** to Lot 2. The current access drive, from Knights Bridge Road to the two existing homes near the Molalla River, is to be replaced by access from the new streets and/or by a 15 foot easement located at the rear of Lots 19-24. The applicant reports that the existing access road off Knights Bridge Road exists on his property, but he proposes to leave an easement to continue this access. The County reports that this is a County street with a turnaround. The applicant will need to resolve this matter. Otherwise, the lots are designed to meet City standards and are all larger than the required 7,000 square feet.

Streets - The proposed streets are shown in the cross-sections on the proposed Preliminary Plat, to be 50 feet in right-of-way, with 36 feet of pavement and 5 feet of sidewalk on each side. The corner radii are 12 feet. These meet City standards and do not encourage excess traffic on residential streets. Conditions will be needed to cover endings of streets expected to eventually be continued. Temporary turnarounds will need to be required.

Blocks - Generally, the block designs, sizes, topography, lengths, and shapes are well suited to the site and provide an adequate framework for lot design. The exceptional situations needing further resolution are the "acute angle" lot structures such as Lots 1 and 2.

Easements - All necessary easements will be provided by the developer.

2. Section 16.64 - Subdivision Design Standards

Lots (Section 16.64.040) - In most cases, lots have been designed to meet standard subdivision practices and are appropriate for the difficult triangular site. Lots 1 and 2 need further work to resolve the difficulties.

Public Open Spaces (Section 16.64.050) - The applicant has not proposed any public open space.

Grading of Building Sites (Section 16.64.060) - Standard building practices will be followed, meeting City requirements.

Improvements (Section 16.64.070) - All improvements will be made to fully comply with Canby requirements.

IV. CONCLUSION

The proposed subdivision is consistent with the Comprehensive Plan, all applicable requirements of the Land Development and Planning Ordinance, and the overall design and arrangement of lots is functional and will not unduly hinder use or development of adjacent properties, provided:

1. Certain conditions of approval are adopted, and

2. The driveway access issue to Lot 2 is resolved, turnaround is provided, driveway off Knights Bridge Road (extended), and signage is provided.

V. RECOMMENDATION

Based on the findings and conclusions presented in this report, and without benefit of public testimony, staff recommends **delaying** approval of SUB 90-05 (Lillian's Meadow) at this time. At a later time, if the application is approved, the following conditions should be included:

1. Temporary turnarounds, meeting the requirements of the Fire Marshal and Director of Public Works, shall be provided at the ends of the streets that will continue at a later time. A full-width barricade shall be placed, at the developer's expense, at the end of the new streets.

2. N.W. Ash Street shall be constructed 50 feet in width throughout the subdivision, with a 36 foot pavement over its entire length, including the northern end.

3. Any necessary utilities shall be constructed to the specifications of the provider.

4. Utility easements shall be provided and are to be twelve (12) feet along all streets. Exterior lines of the subdivision adjacent to other platted subdivisions with easements, and easements along all interior lot lines, are to be six (6) feet wide off of each lot, for a total of twelve (12) feet.

   "As-built" drawings shall be submitted to the City within sixty (60) days of completion.

5. Street name and traffic control signs shall be provided at the developer's expense. This shall include "dead end" signs for the ends of Ash and the new streets, "No Right Turn" signs at the southwest corner of 10th and Aspen and 9th and Aspen, and a "Private Drive" sign at the end of the street in the southwest corner.

6. The final plat shall reference this land use application - City of Canby, File No. SUB 90-05, and shall be registered with the Clackamas County Surveyor's Office and recorded with the Clackamas County Clerk's Office. Evidence of this shall be provided to the City of Canby Planning Department prior to the issuance of building permits requested subsequent to the date of this approval.

Exhibits:

1. Vicinity Map
2. Tentative Plat

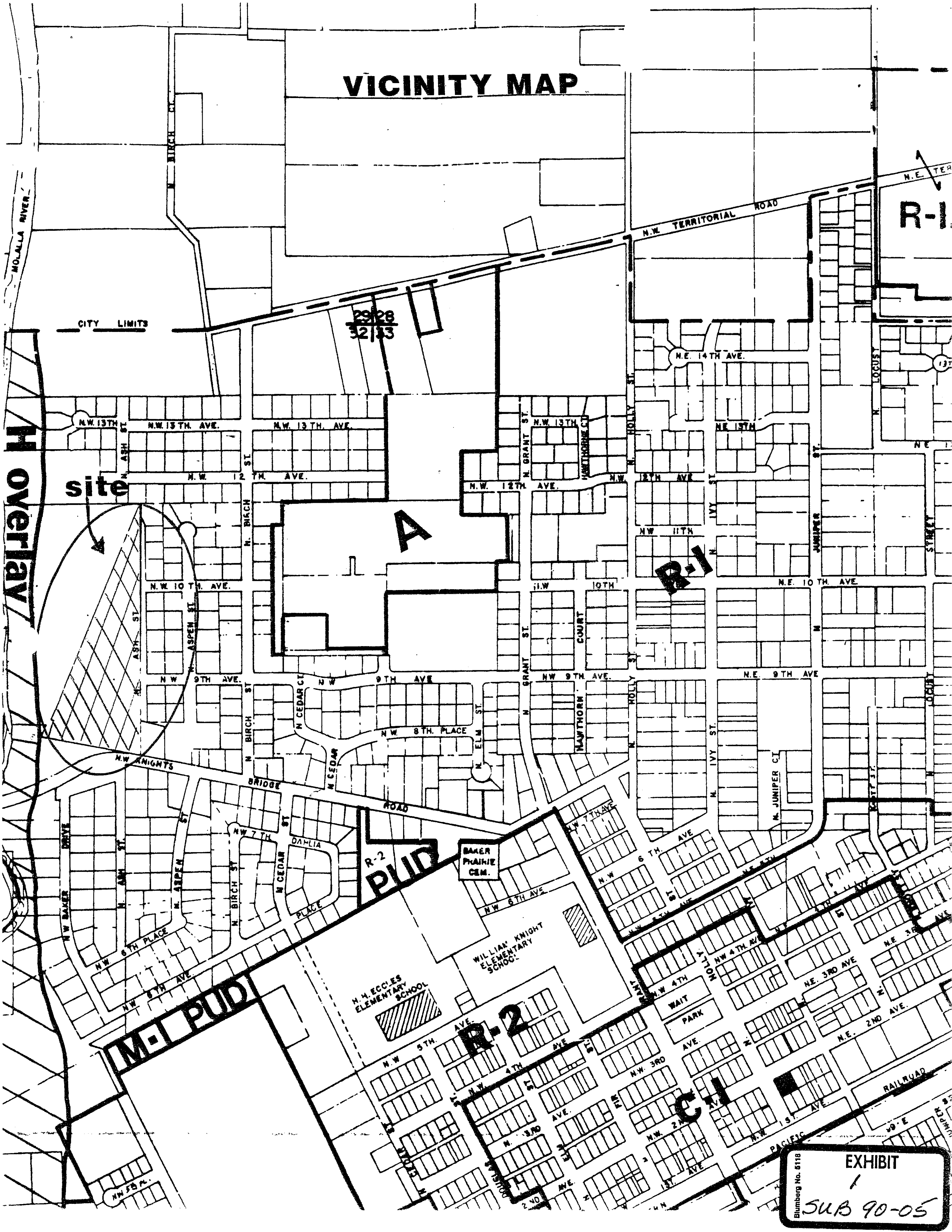
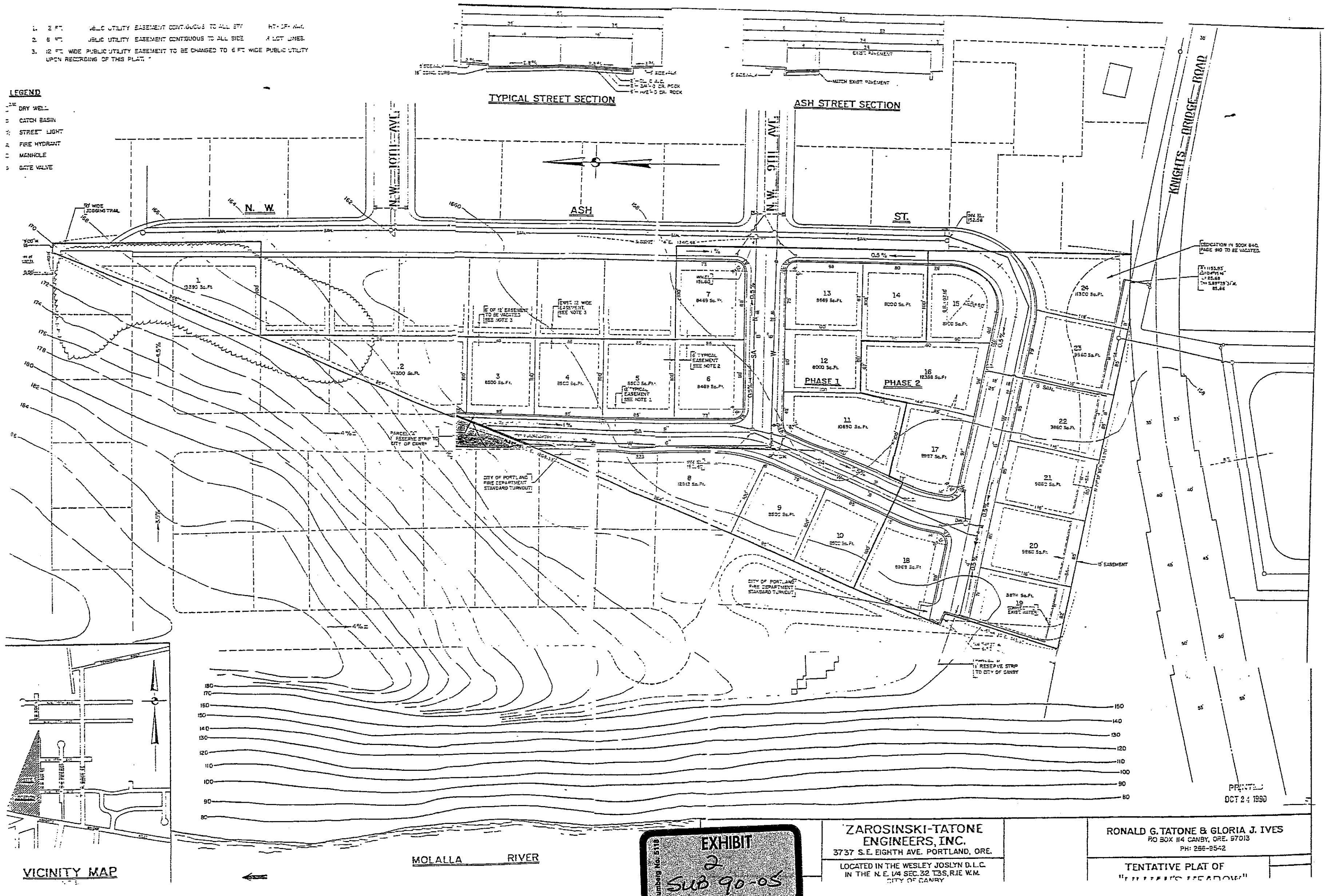


EXHIBIT
1
SUB 90-05
Blumberg No. 5118



1. 2 FT. ... UTILITY EASEMENT CONTIGUOUS TO ALL ST... ...
2. 6 FT. ...UBLIC UTILITY EASEMENT CONTIGUOUS TO ALL SIDE ... LOT LINES.
3. 12 FT. WIDE PUBLIC UTILITY EASEMENT TO BE CHANGED TO 6 FT. WIDE PUBLIC UTILITY UPON RECORDING OF THIS PLAT.
LEGEND
DRY WELL
CATCH BASIN
STREET LIGHT
FIRE HYDRANT
MANHOLE
GATE VALVE
TYPICAL STREET SECTION
ASH STREET SECTION
N.W. 10TH AVE.
N.W. 9TH AVE.
N. W. ASH ST.
KNIGHTS BRIDGE ROAD
10' WIDE JOGGING TRAIL
PHASE 1
PHASE 2
CITY OF PORTLAND FIRE DEPARTMENT STANDARD TURNOUT
1' RESERVE STRIP TO CITY OF CANBY
15' EASEMENT
VICINITY MAP
MOLALLA RIVER
PRINTED OCT 24 1990
ZAROSINSKI-TATONE ENGINEERS, INC.
3737 S.E. EIGHTH AVE. PORTLAND, ORE.
LOCATED IN THE WESLEY JOSLYN D.L.C. IN THE N.E. 1/4 SEC.32 T.3S, R.1E W.M. CITY OF CANBY
RONALD G. TATONE & GLORIA J. IVES
P/O BOX 114 CANBY, ORE. 97013
PH: 266-9542
TENTATIVE PLAT OF
EXHIBIT 2 SUB 90-05

- M E M O -

TO: **Canby Planning Commission**

FROM: **Robert G. Hoffman, AICP**
Planning Director

RE: **David Nelson - CUP 90-06 - Supplemental Report**

DATE: **November 9, 1990**

At the last Planning Commission meeting, the Commission requested that staff address a number of issues. Those issues are addressed below.

Issue:

1. **Feedback regarding how analogous the Multnomah County report is to the present situation (size of development, number of accesses, etc.)**

   The proposal was for a country club located at the edge of Gresham, including land in Multnomah County that lies in a farm zone. Three road segments were proposed outside the Urban Growth Boundary to serve urban development within Gresham. Thus, there are some similarities with the mobile home park situation before the Canby Planning Commission. It is important to note that this type of situation is a process that involves State Goal exceptions which are far from automatic. In the Multnomah County situation, the County supported the application. In our situation, Doug McClain (Clackamas County) stated, in his letter of September 14, 1990, that the issue of "roadway connection to Elm Street will require County review and approval." Mr. McClain stated that this issue "could be resolved by conditioning any City approval on County approval of the extension of Elm Street. It is important to note, however, that **such approval may be difficult to secure**, if it is necessary to take exceptions from Goal 3, 4, 12 and 14." (emphasis added)

2. **Feedback regarding the number of mobile homes put in since the Comprehensive Plan was adopted; number of multi-family dwellings; and single family dwellings. (January 1985 through October 1990)**

Mobile Homes	112 units
Single Family Residences	245 units
Multiple Family Residences(35 structures)	116 units
Total	483 units

3. **Feedback from DeAnza about re-routing the road.**

Mr. Adrian Smith, manager of Elmwood for DeAnza, stated on November 8, 1990, that DeAnza had not agreed to any proposal for extending Elm Street across a corner of their property but were, in fact, opposed to **any** extension of Elm Street because it would add traffic and congestion, which they do not need or want. He agreed to advise me if there was any change to this position.

4. **Feedback regarding the 20th Street easement - making sure it is a valid easement.**

The applicant has sent us copies of two letters he sent, advising he would **not** be using Island Park Road (20th Street) for access to his development. He states he no longer needs emergency access. The two letters were addressed to Mr. Wolf of 25261 S. Highway 170 and to Bob Traverso of Canby Sand and Gravel, 24420 S. Highway 99E. The applicant is now proposing all emergency access by way of Canby Community Park.

5. **Staff should re-address, based on new testimony, the fill permit with Division of State Lands.**

A fill permit would be required to fill any wetlands area. Joel Shaich said they are very careful about allowing fill in such areas. Justification would be required showing alternatives had been investigated and were not practical and that the "public good" required the fill. Mitigation plans and 1 for 1 replacements would be required. Lake areas surrounded by private manufactured housing sites would be about a fourth level possibility or <u>almost</u> not acceptable or not likely to be approved.

The gravel reclamation plan requires a certain amount of regrading but does not allow fill of land in the buffer area established to protect the stream and wetlands. This buffer area around the perimeter of the site includes a "150 feet setback in

mining activity from the stream channel." Mr. Torgeson agreed by letter to DOGAMA on June 17, 1987, " . . . to revegetate the reparian habitat within 150 feet of the stream channel which was disturbed during recent mining activities on the site. I agree to commence revegetation in September 1987 or as soon thereafter as weather conditions permit. It is my intent to reseed the area with grass and plant deciduous trees. . . ."

6. **Feedback regarding silvaculture done on the property with logging permits. Confirm all that. See what has actually been done on this particular piece of property.**

There are logging permits from the State Forestry for each of the past few years. Logging has taken place. A comparison of the aerial photos of the site for 4-25-88 and August 1990 indicate a substantial degree of cutting. Neighbors' reports and site visits by staff indicate that most of the remaining timber has been cut since August 1990. We have a video tape of the site showing recent cutting and down timber. The LCDC Oregon State Department's Cooperation Agreement clearly says that final determinations on most matters are a local determination. This is especially so of land use regulation. There are appeal procedures for aggrieved parties.

7. **Feedback from staff regarding the City's procedure on drywells, wetwells, etc. Get Public Works input. Address how the City's stormwater filters out toward the river. (Three ways we can treat this - let it filter out, or let it go through a wetwell or drywell situation.)**

Our standard procedure for drywells is, as you know, to channel stormwater into a 26-foot dry hole in the ground. In this case, that will not work because of the high water table. The next most effective method will be to catch the stormwater in grated and trapped inlets, then channel it to the on-site lake for settling with discharge to the wetlands and on to the Molalla River through the City Park. Actually, this method will be very effective even in the rest of the City, but we do not have opportunities to use it.

8. **Feedback on four accesses within the 1000 feet in the new plan (whether or not it is a problem). Comment was made on the City standard being a 40 foot street with a sidewalk. Check into it and address it.**

The project has been redesigned (November 1990). Centerlines between adjacent streets entering Cairnsmoor Drive are at least 200 feet. All streets are now at 90 degrees for intersections. According to city standards, all new streets must be at least 40 feet wide in right of way width. In his letter of September 18, 1990, the City Engineer, Curt McLeod, stated "for the number of homes proposed in this

development, a single 30-foot access road with on street parking will not be adequate." He also said that "street development must meet city standards in all areas of public right of way." Sidewalks on both sides of public streets are required.

9. Staff's feedback on issue of the floodway vs. floodplain.

The Molalla River "floodway" is located very close to and paralleling the river. There is no floodway on the subject site. The "flood plain fringe" is located on the site, and its upper limit is at the 104-foot level in the northwest corner of the site and slopes gradually to the 106-foot level at the southwest corner. No construction is permitted within the "floodway," except in extremely limited circumstances. Under FEMA guidelines, fill of the "flood plain fringe" is allowed provided special procedures are followed. However, more recent recommendations have been made which place greater emphasis on detention of water in higher level areas and non-structural solutions rather than the previous emphasis on utilizing the "floodway" concept and dams as the primary defense against flooding. In a publication of FEMA entitled "A Unified National Program for Floodplain Management" of March 1986, a number of recommendations are made for improving flood control. (The last 5 pages, D-8 to D-12 are attached.) The Oregon's Statewide Goals 1990 publication on page 8 gives information regarding Goal 7 Areas Subject to Natural Disasters and Hazards. Guideline No. 3 states: "3. Low density and open space uses that are least subject to loss of life or property damage such as open storage, forestry, agriculture and recreation should be preferred in floodplains, especially the floodway portion. The floodway portion should be given special attention to avoid development that is likely to cause an impediment to the flow of floodwaters." (emphasis added)

Within the Canby Comprehensive Plan, the following is found:

> Policy No. 8-R: Canby shall seek to preserve and maintain open space where appropriate and where compatible with other land uses.
>
> Implementation Measures:
>
> C) Include the consideration of open space values within criteria for development reviews within "H" (Hazard-Flood Prone/Steep Slope) overlay zoned areas.
>
> Policy No. 9-R: Canby shall attempt to minimize the adverse impacts of new developments on fish and wildlife habitats.

Implementation Measures:

A) Continue to enforce overlay zoning of flood prone and steep slope areas to limit the densities and intensities of development in such areas. Include consideration of fish and wildlife values within "H" overlay zoned areas.

B) Encourage cluster developments as a means of assuring large open space areas.

Policy No. 2-H: Canby shall continue to participate in and shall actively support the Federal Flood Insurance Program.

Implementation Measures:

A) Continue to enforce the provisions of the "H" overlay zone which restricts development in areas of identified flood hazards.

B) In reviewing development proposals, prevent the creation of additional building sites in hazardous locations, encourage the clustering of development in the most appropriate locations, and require proof from a registered surveyor or engineer that proposed buildings will have habitable floor elevations at least one foot above the flood levels identified in the engineer's mapping.

Within the context of the above described statetments one should now review Section 16.40.040. This section is located within Chapter 16.40 Hazard Overlay Zone (H) and is essentially a "flood water detention" strategy fully in compliance with the intent of the above described policies.

16.40.40 Special conditions relating to fish and wildlife protection.

In reviewing any discretionary application for development in an "H" overlay zoned area, the planning commission and city council shall consider the potential impacts of the development upon fish, wildlife and open space resources of the community. Where it is found that the potential for such impacts is significant, the hearing body shall impose whatever conditions or restrictions upon the development are necessary to mitigate or minimize such impacts. Grading plans shall be submitted for the review of the planning commission prior to the commencement of any road building or major site grading. Tree cutting plans shall be submitted for review prior to the removal

of any trees having trunks of greater than six inches in diameter. Grading plans and tree-cutting plans shall be reviewed by the commission except in the case of minor tree cutting in isolated cases which shall require only the prior approval of the city forester. The commission may require the developer to plant selected species of trees or other vegetation to stabilize slopes and enhance wildlife habitate areas. (emphasis added)

10. **Staff to address how the new project affects public vs. private use of the property once it's reclaimed. In particular, since they have already submitted a reclamation plan, what the procedure is for DOGAMA to approve this one versus the old plan.**

The proposed new project does not propose any "public" space. The applicant's testimony has stated that playground equipment is not needed because the Canby Community Park is nearby for resident children to use. Residents are expected to use other Canby public facilities such as schools, ballfields, libraries, parks, etc. The current mining reclamation plan proposes that there will be public access to the lakes. The reclamation plan currently states that the "planned subsequent beneficial use of the permit area. . . (will be) ground water resovoir (sic) for recreational purposes adjacent to city park. Public access will be provided." Oregon Trout in their letter of October 16, 1990, has expressed concern about the wetlands and water habitat for steelhead and cutthroat trout. They also state that water rights permits from the State Water Resources Department would be needed to create man made lakes. Frank Schnitzer, reclamationist for the Department of Geology and Mineral Industries, has stated in his letter of October 12 that modification of pre-existing reclamation plans is possible. He states that "modification to the plan must be an approved land use by the City of Canby. Our approval would be conditioned on land-use approval for the planned subsequent beneficial use of the property." Planning Staff believes that DOGAMA would support requiring public access to reclamation lands, if Canby required it.

11. **Feedback regarding the wetlands violation. Shaich-Franklin-Park situation. Who is the authority that the Commission needs to relate to?**

No actual wetlands violation has been issued, but several warnings have been given both orally and in writing. Kenneth T. Franklin is the supervisor of the Environmental Permits Section (including wetlands). Joel Shaich is one of his staff who works on enforcement (see recent letter of November 2, 1990). Mr. Park works on wetlands permits. Thus Canby will be relating to all these at one time or another. Joel Shaich has recently walked the site and then visited our office. There is a new wetlands and wildlife report for the site dated November 1990. Staff has not yet evaluated this report.

12. **Staff's opinion about the setbacks not being required since the landscaping would go to the edge of the wetlands.**

Staff believes that setbacks are required for all wetlands and stream corridors. "Setback" is defined in the code as meaning a distance which a structure is required to be set back from a lot line. In the new Wildlife Resources Report by Lynn Sharp just submitted by the applicant on November 8, it states as a recommendation on page 5: "Protect buffer zones around the stream, ponds, and wetlands in perpetuity with restrictive covenants that prevent mowing and removal of desirable wildlife plants by residents." This is common practice in many communities including, but not limited to, West Linn and Lake Oswego.

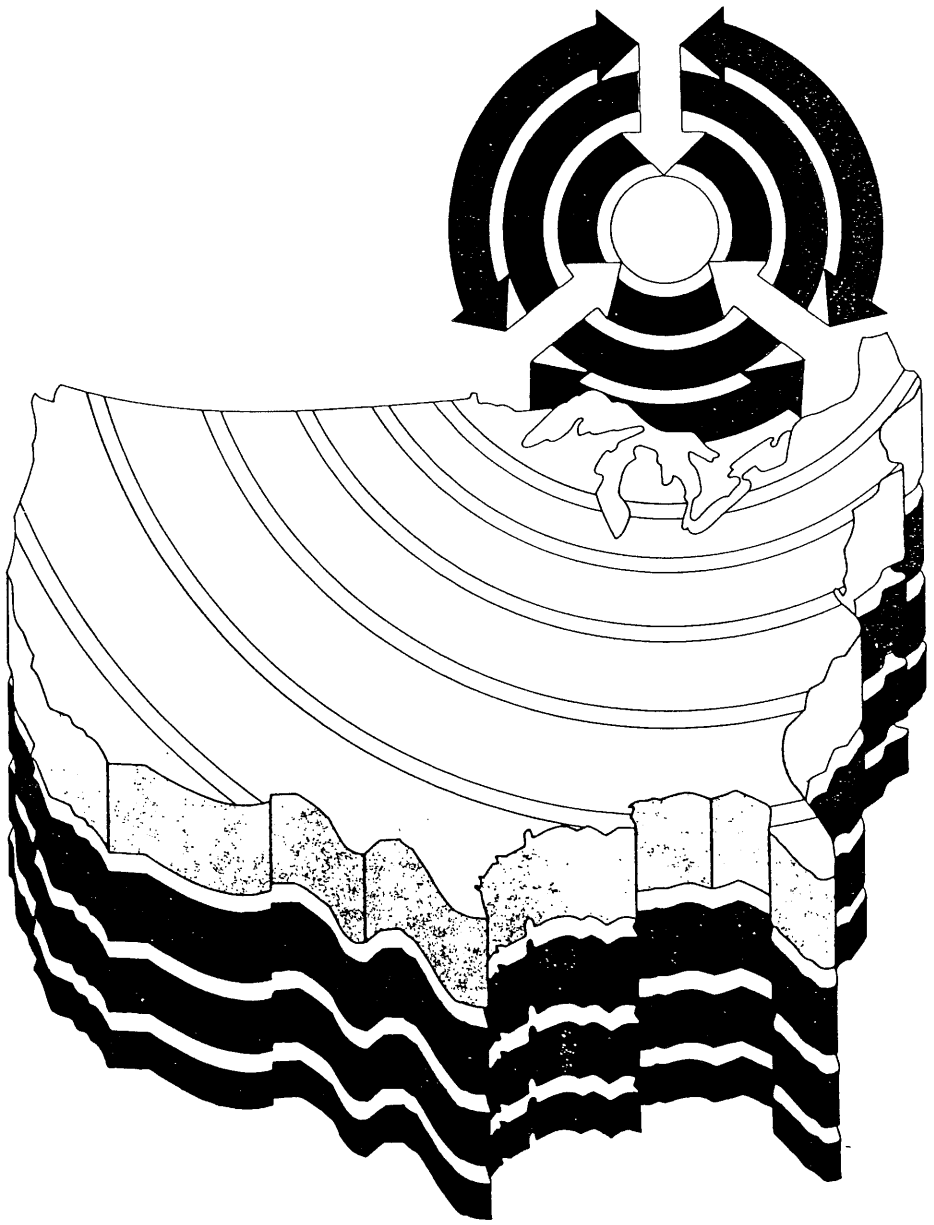
13. **Staff should reconcile the difference between the number of trip generations between what County proposed and what was given at the hearing by Mr. Nelson. There appears to be a 2:1 difference.**

The basic difference is in the factor utilized for trip generation per household. The consultant used a factor of 4.8 trips per unit while the county engineer used a rule of thumb of 10 trips per unit. In the adjacent development, Cedar Creek (Ridge), the same consultant used a daily trip generation of the 5.6 trips per unit for "retirement housing." When Mr. Keech, the traffic consultant, was questioned about the low trip generation rates, he said he would send us further documentation. I had asked him how an area which would be occupied mainly by families with children living in double-wide units could generate fewer trips per unit than "retirement" housing. The documentation has not arrived at this time.

14. **Response from staff regarding Mr. Nelson's statement that the topography survey is not needed at this time.**

Mr. Nelson has submitted a new topographic survey prepared by Geometric Consultants, Inc., based on recent survey information. It is required by ordinance. Staff needs a "base line" of existing conditions to compare all proposals against. Changes have been made since the original contour map was drawn. These have affected the location of flood plain and wetlands. We need to know where they are at this point so that we can evaluate proposed changes.

A Unified National Program for Floodplain Management



RECOMMENDATIONS

STRATEGY A: MODIFY THE SUSCEPTIBILITY TO FLOOD DAMAGE AND DISRUPTION

1. Floodplain management regulations should be developed in consonance with Federal and State law, and adopted and enforced by local communities.

2. All levels of government and private entitites should make increased use of alternatives of identifying and acquiring those 100-year floodplain areas for which inundation would be particularly costly or which have particular value for other purposes. Generally, these lands should be dedicated to open space use.

3. There should be complete implementation of Executive Order 11988 by all affected Federal agencies. In complying with the Executive Order, Federal agencies must insure consistency within each agency, A new and effective approach, such as appropriate multiagency review for proposed projects and forseeable activities on an area-wide basis, is strongly encouraged.

4. States should be encouraged to adopt Executive orders, similar to the Federal Executive Order, which will properly guide investment of State monies away from high hazard areas.

5. Planning, including standards, guidelines and procedures for dealing with urban storm runoffs, should include consideration of future changes in land use and density when estimating discharges and predicting future probabilities of flooding.

6. Storm water detention regulations are relatively recent and related planning, design, and legal issues should be explored through a number of demonstrated projects.

7. Use of the 100-year flood standard as a minimum for regulation of flood hazard areas should be continued. In addition, critical facilities should be at a minimum protected to the 500-year flood elevation. These include but are not limited to fire, disaster and police centers, hospitals, prisons, and facilities for the elderly and handicapped. Both standards should be checked periodically to determine the need for boundary adjustment.

8. The States should be encouraged to provide increased funding and staff for flood hazard mitigation in floodplain management, response planning, and stormwater management. The Federal government should support the States in developing well defined legislative and administrative provisions and staff to carry out flood hazard mitigation.

9. Complete and comprehensive flood hazard mitigation plans for coastal areas, including barrier islands, should be developed and implemented.

10. Greater emphasis should be placed on the consequences of potential dam failures.

11. Flood warning and response systems should be expanded to the maximum extent practicable to cover occupied flood-prone areas. The response plans must be developed locally, and where practicable, linked to the regional and national warning systems. Each system should be tested at least annually, and where practicable, semi-annually, and be conducted under the ageis of an independent organization.

12. Policies should be developed to help prevent bias in the benefit/cost analysis of alternative measures for flood loss reduction. Such bias may relate to non-structural/structural, governmental/private, and developmental/environmental measures.

13. Federal, State and local authorities should study the potentials for major coastal erosion, landslides, and mudslides, and should develop land-use plans and implement appropriate land-use regulations.

14. Liaison and coordination between government agencies responsible for flood hazard mitigation and other aspects of water resources planning and management should be improved, or whenever appropriate be established, developed and used.

15. Further methodology to improve integration of planning different aspects of flood hazard mitigation should be developed. Such strategies may be effective if they reflect mixes of structural and nonstructural approaches appropriate to the circumstances.

16. Federal agencies, State offices and local communities should improve the development, and updated maintenance of pre- and post-disaster flood hazard mitigation plans

to facilitate timely local response, relief, rehabilitation and long term recovery.

17. Federal and State agencies and local communities should make a determined effort to strengthen the existing flood forecasting, warning and evacuation systems.

18. Federal, State and local program standards, guidelines and regulations should be changed to prohibit any new development in floodway areas which will increase flood elevations. In circumstances requiring exceptions to this prohibition, a promising solution may be for the developer to purchase all necessary property rights from all adversely affected property owners to compensate for increased flood damage, increased building costs, increased flood insurance and other costs.

19. Research should be undertaken to identify means available to local governments to strengthen their responsibilities for flood mitigation. Also, research should be undertaken to identify ways in which State and Federal agencies can carry out their respective programs in order to strengthen the role of local governments and avoid pre-empting that local responsibility.

20. Research should be supported to determine the general beneficial aspects of flooding to groundwater resources, recreation, water quality, commercial and sport fisheries, general wildlife resources, and other components of riverine and coastal floodplain and wetland environments. Information from this research should be incorporated within the various flood hazard mitigation strategies.

STRATEGY B: MODIFY FLOODING

1. No funding for any Federal, State or local structural flood control measures should be made available unless accompanied by appropriate floodplain regulations and flood preparedness plans.

2. The various Federal, State and local policies covering the design, construction, and use of levees and channel modifications for flood control should be reviewed. Any problems associated with the policies should be identified and solutions should be recommended.

STRATEGY C: MODIFY THE IMPACT OF FLOODING ON INDIVIDUALS AND THE COMMUNITY

1. The availability of Federal flood insurance in an area should continue to be contingent upon appropriate local land use planning and implementation. Also, Federal flood control measures, financial assistance in floodplain land acquisition, and financial aid in relocating floodplain occupants out of the floodplain should be contingent upon effective local land-use planning and implementation.

2. Policies and procedures should be developed to decrease or eliminate the subsidy for flood insurance from the Federal government in high hazard areas after repetitive losses.

3. To assure public awareness of flood potential, past and potential flood heights should be prominently displayed in developed and developing floodplains.

4. Information presented to residents in hazard-prone areas should stress the potential losses from future floods.

5. Research should be undertaken to better analyze the nature, size and trend of the Federal subsidy to the National Flood Insurance Program.

6. The information on the probability of future floods should also be presented on the basis of the risk of its occurrence over a time period such as 20 or 30 years rather than a one year or 100-year time period; people are likely to pay more attention to, and take protective action for, an event which they see as somewhat likely to occur in their lifetime such as their mortgage period.

7. The impact and effectiveness of different programs and procedures for disseminating information on flood hazards relative to individual and community adoption of mitigation measures should be evaluated.

8. A national effort should be undertaken to disseminate both structural and non-structural design information to State and local governments and to the design professions. Much of this information is available, but it is not reaching the proper users.

9. Educational information and guidance manuals need to be supplied to local officials and lenders in all flood-prone communities. They must be made aware of the opportunities to incorporate such information into local planning and development efforts.

10. An information packet should be developed for the media which explains the nature of floods, the relationship between unwise development and damage, hazard mitigation methods, and available programs.

11. The important role that tax adjustments at the Federal, State and local level can play, both in influencing decisions about floodplain occupancy and in providing relief to individuals should be examined.

*U.S. GOVERNMENT PRINTING OFFICE: 1986-620-902

PLANNING COMMISSION

TESTIMONY SIGN-IN SHEET

CITY OF CANBY · HOME OF THE GOOD EARTH · INCORPORATED IN 1893 · CLACKAMAS COUNTY, ORE.

Date: November 19, 1990

NELSON HEARING

NAME (Please Print)	ADDRESS (Please Print)	INDICATE PRO, CON OR NEUTRAL
✓ Al Sizer	764 SW. Westwood Dr, Ptld, Or 97201	
✓ John W Beck (continuance)	1715 S Fir Canby	
Ginny Jones	620 N.W. Baker Canby	Con
✓ Pat Ewert	596 NW Baker Canby	Con
~~[illegible]~~		
✓ Bob [illegible]	42 Willamette Gr. Canby	
✓ Lisa Wilcox Williams	685 NW 4th Canby	
✓ Marjorie Wolf	25261 S. Hwy 170 Canby	
Todd Neary	7659 SW 74th Ave #10 Portland	
✓ John & Sande Jorgeson	26940 S Bolland Rd. Canby	Pro

PLANNING COMMISSION

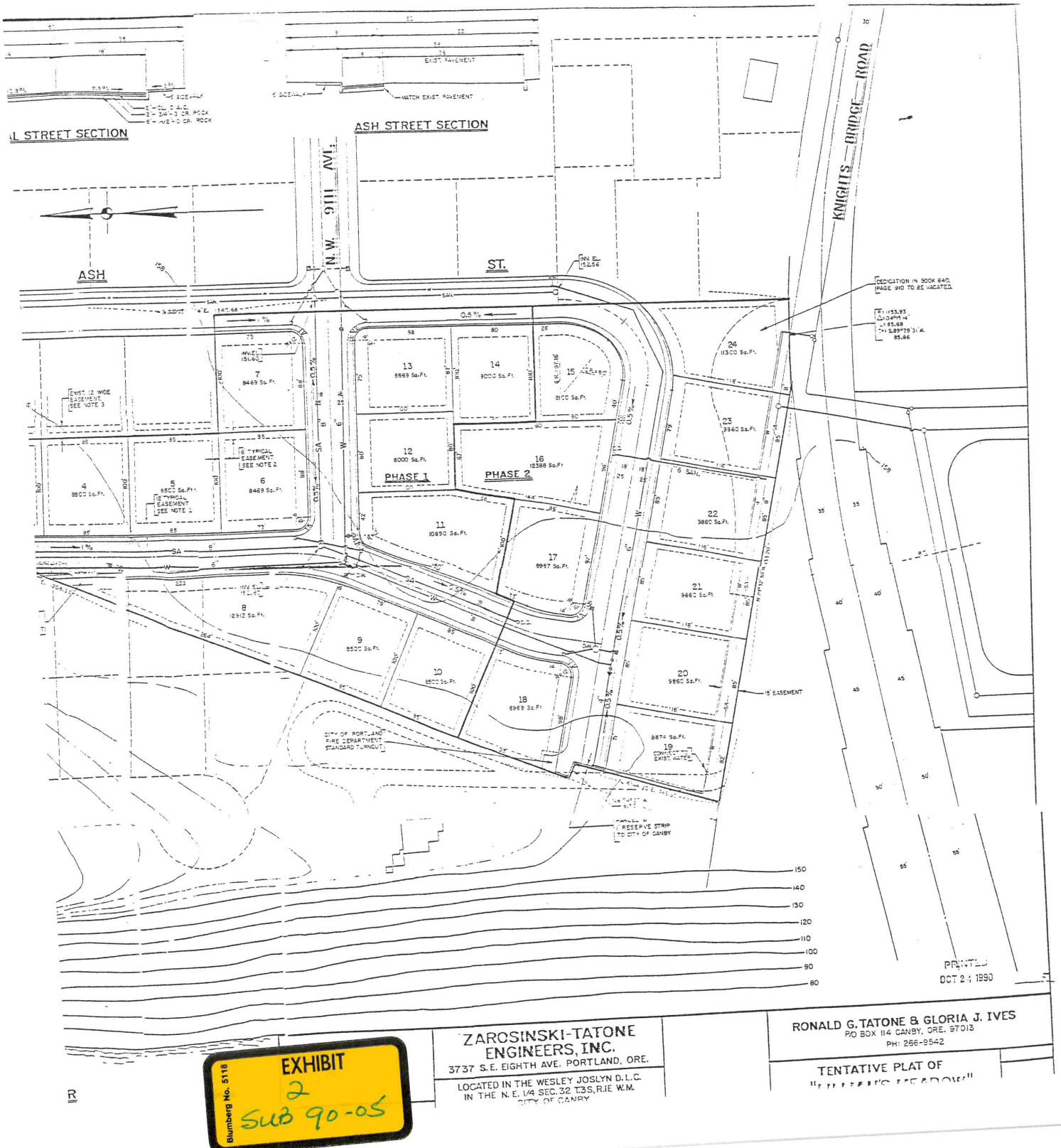
SIGN-IN SHEET

Date: NOVEMBER 19, 1990

NAME (Please Print)	ADDRESS (Please Print)
John Beck	1715 S Fir Canby
LISA + DIRK WILLIAMS	685 NW 4th CANBY
Al Sizer	Phil, Or.
Marjorie Wall	25261 S Hwy 170 Canby
Arthur Ellickson	1625 S. Elm St. Canby
~~Kathy R Hickson~~	1625 S Elm St Canby
Ron & Jan Cernichiaro	563 NE 10th Ave Canby
Ed & Mary Ann Schram	943 N ASH Canby
Eric Long Street	1023 N ASH Canby
~~Jorgensen~~	
Dave Nelson	
Lynn Sharp	
Roger Reif	
Pat Ewert	
~~Lisa Wilcox~~	
Conny Jones	
Cheryl Packle	

Bob Graham
Cheryl Learfield
~~Ron~~ Edna Nelson

~~Earl Walker~~
~~Ms. Wolf~~
~~John Beck~~
~~Lisa Wilcox~~ ~~Williams~~



ZAROSINSKI-TATONE ENGINEERS, INC.
3737 S.E. EIGHTH AVE. PORTLAND, ORE.

LOCATED IN THE WESLEY JOSLYN D.L.C. IN THE N.E. 1/4 SEC. 32 T3S, R1E W.M. CITY OF CANBY

RONALD G. TATONE & GLORIA J. IVES
P.O BOX 114 CANBY, ORE. 97013
PH: 266-9542

TENTATIVE PLAT OF "[illegible]"

Blumberg No. 5118

EXHIBIT 2
SUB 90-05

ATTACHMENT B

January 29, 1986

CURRAN-McLEOD, INC.
CONSULTING ENGINEERS

7460 S.W. HUNZIKER ROAD, SUITE D
PORTLAND, OREGON 97223
PHONE (503) 684-3478

Mr. Wayne Klem
Public Works Director
City of Canby
P.O. Box 930
Canby, Oregon 97013

RE: Redwood Interceptor Design

Dear Rusty:

This letter is to summarize the design flows generated for the Redwood Interceptor Sewer and to resolve the remaining conflicts regarding connection to the existing system and pipeline alignment.

Design Flows

We have generated a flow for each area within the U.G.B., which includes a very modest amount for infiltration and inflow, as well as the domestic contribution. Each area is broken down by the land use designation, and the following flows projected:

LAND USE	ACRES	PEAK FLOW IN G/D/AC I/I	DOMESTIC	TOTAL	TOTAL FLOW (MGD)
Agricultural	43.9	0	0	0	0.000
Low Density Residential	1,808.5	150	2,400	2,550	4.612
Medium Density Residential	97.7	150	4,200	4,350	0.425
High Density Residential	259.0	150	6,000	6,150	1.593
Private - Recreational	149.8	0	0	0	0.000
Public Owned	240.2	150	750	900	0.216
Downtown Commercial	58.0	150	1,250	1,400	0.081
Convenience Commercial	2.0	150	1,250	1,400	0.003
Residential Commercial	17.8	150	1,250	1,400	0.025
Highway Commercial	109.0	150	1,250	1,400	0.153
Commercial Manufacturing	71.6	150	1,500	1,650	0.118
Light Industrial	394.2	150	3,000	3,150	1.242
Heavy Industrial	94.3	150	3,000	3,150	0.297
Flood-Steep Slopes	82.0	150	600	750	0.062
TOTAL ACRES	3,428.0		TOTAL PEAK FLOW		8.827

The above flows are based upon 150 gpd/acre infiltration for all sewered areas; Low Density Residential 8 people/gross acre, 300 gpcd; Medium Density Residential 14 people/gross acre, 300 gpcd; High Density Residential 20 people/gross acre, 300 gpcd; Agricultural and Private-Recreational contributions are negligible; Public Owned is based upon 30 people/gross acre, 25 gpcd; Commercial use 50 people/gross acre, 25 gpcd; Commercial Manufacturing 1,500 gallons/gross acre; Industrial 3,000 gallons /gross acre and Flood-Steep Slopes 2 people/gross acre, 300 gpcd.

This projection estimates peak instantaneous flows at 8.827 MGD at the treatment plant.

Please review these figures and respond, as soon as possible, if you would like any modifications. Additional factor of safety will be included when sizing the pipeline simply by the necessity of utilizing standard manufactured pipe sizes.

Alignment Modifications

Our design is currently delayed pending resolution of the Hellhake easement situation. From our past discussions, the alignment as originally accepted by Mr. Hellhake is now unacceptable to him.

My recommendation is to terminate any negotiations with Mr. Hellhake, and to utilize the existing easement along Highway 99E. This option appears to be roughly comparable to an alignment behind the residence, and eliminates the need to negotiate an easement.

To complete the alignment along the existing easement, a property survey should be completed to determine the northerly property line. If the City terminates negotiations with Mr. Hellhake, as recommended, we need to be absolutely positive of our alignment. The additional cost for this survey was included in the cost estimate for Option "C", and can be completed within a few days of your authorization to proceed. Total cost of the additional survey work is estimated at approximately $600.00.

Sewage Treatment Plant Wetwell/Pump Station Analysis

The existing wetwell/ pump station at the sewage treatment plant will not be adequate to accommodate the new interceptor sewer, and should be modified as a portion of this construction.

In order to utilize the existing wetwell, the pipe should enter the structure approximately 24" above the minimum water surface elevation. This allows an operational range for the pumps without surcharging the influent line and creating the potential for solids deposition and odor problems. In order to accomplish this orientation with the existing wetwell, the invert of the new line must be at an elevation of approximately 82 feet. This would provide less than 3 feet of cover over the interceptor in some areas, and would limit the service area.

In addition, this wetwell only contains approximately 350 gallons per foot of storage capacity. In order to accommodate the future pump capacities, which will be in the range of 2,800 gpm each, the wetwell must be enlarged. Ultimately, the wetwell/pump station should include three variable speed pumps to provide full redundancy in the event of a pump failure, with minimum operational storage of approximately 2,500 gallons.

Ideally, the mechanically cleaned bar screen and grit removal units should be incorporated into the schematic prior to any pumping operations. These units could be designed into the new structure.

In summary, the invert of the new interceptor sewer is designed to enter into a new wetwell/pump station structure. This structure will be located on the east side of the access road on the south end of the treatment plant site.

Please review these matters and respond with any changes you would like or any questions you may have.

Very truly yours,

CURRAN-McLEOD, INC.

Curt J. McLeod, P.E.

CJM:bnn

ATTACHMENT C

March 2, 1990

CURRAN-McLEOD, INC.
CONSULTING ENGINEERS
7460 S.W. HUNZIKER ROAD, SUITE D
PORTLAND, OREGON 97223
PHONE (503) 684-3478

Mr. Wayne Klem
City of Canby
P.O. Box 930
182 N. Holly
Canby, OR 97013

RE: SOUTH IVY STREET SANITARY SEWERS

Dear Rusty;

This is to follow up on my letter of February 14 regarding the sanitary sewer capacities on South 2nd and South Ivy.

We have inventoried acreages and land use for both existing conditions and ultimate buildout to the limits of the UGB along South Ivy. The area and flow contributions to each manhole is listed below for key lines, for both existing and ultimate:

		EXISTING		ULTIMATE	
LINE LOCATION	CAPACITY MGD (size)	AREA Acres	FLOW MGD	AREA Acres	FLOW MGD
South Ivy St: 6th Ave to Township	0.49 (8")	80	0.20	215	0.52
Township to 3rd Ave	0.78 (8")	80	0.20	215	0.52
3rd Ave to 2nd Ave	0.56 (8")	190	0.46	405	0.97
2nd Ave to 2nd Ave	0.60 (10")	250	0.61	510	1.22
South 2nd Ave: Ivy to Knott	0.60 (10")	250	0.61	510	1.22
South Knott St: 2nd to 1st Ave	0.60 (10")	280	0.68	540	1.30
South 1st Ave: Knott to Locust	1.22 (12")	310	0.75	570	1.37
South 3rd Ave: Grant to Ivy	0.49 (8")	110	0.26	190	0.45
South 2nd Ave: Grant to Ivy	0.39 (8")	60	0.15	105	0.25

This data indicates capacity problems will be developed on several mainline sections as development approaches the limits of the UGB. The Ivy/South 2nd Avenue mainline is currently at capacity with only existing development. Approximately 1100 LF, from South 2nd Avenue to South 1st Avenue, will ultimately require replacement or rerouting to eliminate surcharging problems.

I've enclosed the two maps loaned to me for this review. If you have any additional questions, please call.

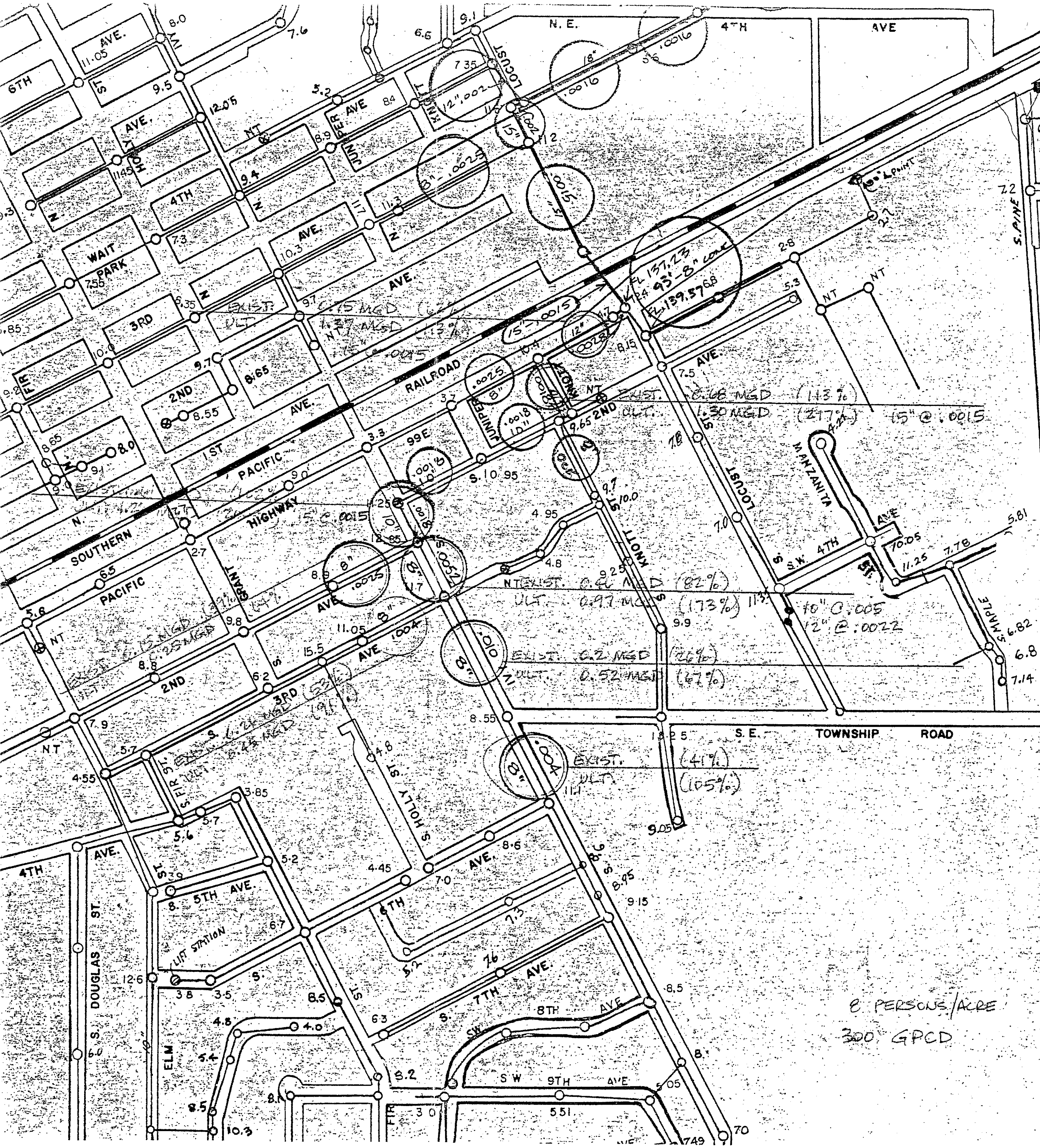
Very truly yours,

CURRAN-McLEOD, INC.

Curt J. McLeod, P.E.

CJM:cs

Enclosures



N. E.
4TH
AVE
6TH
AVE.
IVY
ST
LOCUST
KNOTT
JUNIPER
AVE
HOLLY
N
4TH
AVE.
N
WAIT
PARK
3RD
2ND
N
AVE.
FIR
1ST
PACIFIC
SOUTHERN
PACIFIC
RAILROAD
AVE.
HIGHWAY
99E
GRANT
AVE
2ND
3RD
S. FIR ST.
S. HOLLY ST.
IVY
S. KNOTT ST.
LOCUST
MANZANITA
S.W. 4TH
AVE
S. MAPLE
S. PINE
S.E. TOWNSHIP ROAD
4TH
AVE.
5TH AVE.
6TH
7TH AVE.
8TH AVE
SW 9TH AVE
S. DOUGLAS ST.
ELM
LIFT STATION
EXIST. 6.68 MGD (113%)
ULT. 1.30 MGD (217%)
15" @ .0015
EXIST. 0.2 MGD (26%)
ULT. 0.52 MGD (67%)
EXIST. (41%)
ULT. (105%)
10" @ .005
12" @ .0022
FL 137.23
93'-8" conc
FL 139.57
8 PERSONS/ACRE
300 GPCD

ATTACHMENT D

LOG
Aug 2

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1	2:53 P.M.	2 1/2 IN.	NO	CLUMP OF GREASE POKED AND BROKE UP
2	2:57 P.M.	2 1/2 IN.	NO	
3	3:00 P.M	2 1/2 IN.	NO	
4	3:04 P.M.	2 1/2 IN	NO	
5	8:30 A.M	3 IN	??	MAINLINE [illegible]
6	8:34 AM	2 1/2 IN	NO	
7	8:40 AM	5 IN	NO	LOT OF FLOW NOISY PIPE IS DEEP
8	8:51 A.M	5 IN	ELEV. CHANGE SLIGHT BOIL	DEEP 9FT.+
9	8:55 AM	6 IN	NO	
10	8:58 AM	4 1/2 IN	NO	
11	9:03 AM.	2 1/2 IN	NO	GREASE BUILD UP
12	9:08 AM	3 IN	NO	
13	9:12 AM	5 IN	NO	
14	9:15 AM	4 1/2 IN	NO	
15	9:16 AM	3 1/2 IN	NO	GRIT IN BOTTOM OF LINE
16	9:18 AM	5 IN	NO	
17	1:38 PM	3 1/2 IN	NO	
18	1:40	3 IN	NO	
19	1:43	2 1/2 IN + OR −	[illegible]	FAST FLOW
A	8:44 AM.	2 IN	NO	[illegible]
B	8:48 AM	2 3/4 IN	NO	[illegible] FLOW

LOG

Aug 3, 1990

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1	8:28	2"		
2	8:30	-1"		Slow Flow
3	8:33	3"		
4	8:35	2"		
5	8:37	2"		1.5'
6	8:40	3"		
7	8:42	2½"		Good Flow
8	8:50	5"		
9	8:54	4"		
10	8:55	4½"		
11	8:58	1½"		
12	8:59	1½"		
13	9:00	6"		
14	9:03	5"		
15	9:05	4"		
16	9:06	6"		
17	9:11	4½"		
18	9:10	3"		
19	9:07	4½"		
A	8:45	2½"		
B	8:48	2½"		

LOG

Aug 7, 1990

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1	[illegible]	2"		
2	8:21	1 1/2"		
3	8:23	2 1/2"		
4	8:24	2 1/2"		
5	8:25	2 3/4"		
6	[illegible]	2 3/4"		
7	[illegible]	4 3/4"		
8	8:30	2"		
9	8:35	5 1/2"		
10	8:39	5 1/4"		
11	[illegible]	2 1/2"		
12	[illegible]	2 1/2"		
13	[illegible]	6"		
14	[illegible]	[illegible]		Grease build up
15	[illegible]	5 1/2"		
16	[illegible]	[illegible]		
17	[illegible]	3"		
18	8:55	3"		
19	8:56	2"		
A	8:30	2"		
B	8:32	3"		

LOG

Aug 8, 1990

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1	12:50	2"		
2	12:51	2"		
3	12:52	2 1/4"		
4	12:54	2 1/4"		
5	12:55	2 1/4"		
6	12:56	2 1/2"		
7	12:57	3"		
8	1:03	6"		
9	1:07	6"		
10	1:10	6"		
11	1:12	2 1/4"		
12	1:13	2 1/4"		
13	1:15	6"		
14	1:17	6"		
15	1:19	5"		
16	1:20	5"		
17	1:25	3 1/4"		
18	1:26	3 1/2"		
19	1:27	3 1/2"		
A	12:59	2"		
B	1:01	4"		

LOG

Aug 9, 1990

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1 8"	3:20	2"		
2 8"	3:23	2 1/4"		
3 8"	3:25	2"		
4 8"	3:26	2"		
5 8"	3:27	2"		
6 8"	3:28	2"		
7 8"	3:30	3"		
8 10"	3:36	5"		
9 10"	3:38	5 1/2"		
10 10"	3:40	5"		
11 8"	3:42	2"		
12 8"	3:43	2"		
13 10"	3:45	6"		
P 14 12"	3:47	5 1/2"		
P 15 12	3:48	5 1/2"		
P 16 12"	3:49	6"		
17 6"	3:53	3"		
18 6"	3:57	3"		
19 6"	3:59	3"		
A 8"	3:32	3"		
B 8"	3:34	3"		

LOG 8-10-1990

MANHOLE	TIME	DEPTH	SURCHARGE	COMMENTS
1	8:17 am	2"		O.K.
2	8:19 am	2"		O.K.
3	8:20 am	2 1/4"		O.K.
4	8:23 am	2 1/4"		O.K.
5	8:25 am	3 1/4"		O.K.
6	8:27 am	3"		O.K.
7	8:30 am	4 1/2"		O.K.
8	8:39 am	6 1/4"		O.K.
9	8:42 am	6 1/4"		O.K.
10	8:43 am	5 1/2"		O.K.
11	8:46 am	2 1/2"		O.K.
12	8:47 am	2"		O.K.
13	8:45 am	6 1/4"		O.K.
14	8:50 am	5 1/4"		O.K.
15	8:52 am	5"		O.K.
16	8:53 am	5 1/2"		O.K.
17	8:55 am	2 1/4"		O.K.
18	8:56 am	3 1/2"		O.K.
19	8:58 am	3 1/2"		O.K.
A	8:35 am	2 3/4"		O.K.
B	8:37 am	3 1/4"		O.K.

ATTACHMENT A

SECTION II

B. SANITARY SEWER COLLECTION SYSTEM

1. EXISTING FACILITIES

Construction of the existing sanitary sewer collection system commenced in November, 1955. Approximately 36,000 feet of sewer pipe varying in size from 8-inch to 18-inch was installed within the following year.

The 18-inch trunk sewer was placed on a two-tenths percent (0.2%) grade. This grade allows a discharge of nearly five (5) cubic feet per second (2250 gpm) when using pipe having a roughness coefficient of 0.013.

Based upon accepted standards at 300 gallons per person per day for design of trunk lines, the existing 18-inch trunk sewer would serve a population of over 10,000 people.

The collection system was not designed to serve structures with below-surface facilities. Areas where the depth of the collection line is deep enough to serve basements is due primarily to the grade of the sewer to maintain gravity flow and the topographical features of the land.

Extensions to the original collection system to serve areas near city limit boundaries require the installation of sewage pumping stations.

The collection system has two pumping stations: one located on Knights Bridge Road near Pendleton Drive; the second pumping station at South Elm Street and Southwest Sixth Avenue.

The existing collection system is constructed of concrete pipe and asbestos cement pipe.

A map of the existing collection system together with recommended improvements is shown in Section V on Page 2-13.

Treatment Plant Facilities

The design and layout of the sanitary sewer trunks is based on the premise that the present sewage treatment plant site will be maintained as the treatment plant site for the entire design study area. However, it should be emphasized that the design capacity of the collection system is greater than the planned expansion of the plant.

The total sewage collection system will have a population design capacity of 107,000 people. The current 30-year expansion plan for the treatment plant calls for development within 15 years to a 30,000 population capacity. (City of Canby Sewage Treatment Plant Study, June, 1970). To maintain projected requirements, the plant would be ultimately required to be tripled in capacity in order to serve as a regional plant site.

Further plant expansion appears to be feasible since no serious problems are apparent in maintaining this site as the permanent sewage treatment location for the Canby area.

2. IMPROVEMENT TO EXISTING FACILITIES

Evaluation of sewage flows have found the existing sanitary sewer facilities sufficient to provide for the present service area. However, in projecting future demands on the system, some notable exceptions have been found requiring attention to continue trouble-free service. These are:

(1) Trunk Sewer

The trunk sewer is limited to serve a population of 10,000. At the present rate of growth, it is expected this demand to occur in approximately the year 1987. To eliminate this condition, it is required to divert all of the sewage South of Highway 99-E to the new proposed trunks "E" and "F".

(2) Main #3

In conjunction with diverting all of the sewage South of Highway 99-E to trunks "E" and "F", Main #3 should be abandoned from Manhole #2 on South Locust Street to Manhole #1 North of Highway 99-E. It would be replaced by Main E-1 from Manhole #2 West on Highway 99-E to Knott Street and then South on Knott Street to South Second Avenue then West to South Ivy Street. This will provide sufficient capacity for the planned extension of the existing laterals Southward to the bluffs above the Molalla River.

(3) Laterals O and O-1

The principal replacements North of Highway 99-E involve the Pendleton Drive and Dahlia Court areas. The existing line on Knights Bridge Road does not have sufficient capacity to serve this entire area once it is fully developed. Changes will need to be made from this area to Locust Street, where the laterals tie into the trunk line. The changes are as follows: the existing 8-inch line from Pendleton Drive East on Knights Bridge Road to its connection with Lateral O-1 at Ferry Road will be supplemented with an additional 8-inch line. The existing lift station on Knights Bridge Road near Pendleton Drive will be increased from 250 gpm capacity to 400 gpm.

The existing lateral O-1 from Knights Bridge Road Southward along North Holly Street to its intersection with Lateral O has sufficient capacity for future demands. However, from here on, the existing lines do not have sufficient capacity to carry future demands. A new line should be constructed to carry Lateral O-1 sewage to the trunk line. The new line will extend from the intersection of Laterals O and O-1 Southward on North Holly Street to Third Avenue, then it will go Eastward along Third Avenue to its intersection with trunk line at Locust Street.

There are two principal areas within the existing city limits of Canby that are not presently being served by sanitary sewers. The larger of the two areas is South of South Seventh Avenue. This area can be served by extending the existing Laterals G and H-1 and Main #3. The extended boundaries would be as follows:

Lateral G

Lateral "G" now serves a relatively small area. With the addition of a pump station at the West end of Southwest Fifth Avenue, one block South of Highway 99-E, it would be capable of serving an area of 160 acres which would be equal to its capacity. This area would include everything from the bluff area East to roughly one lot West of Elm Street and North to Highway 99-E. The exact location of the Lateral "G" extension will depend upon future street development of the area.

Lateral H-1.2

Lateral H-1.2 service area should be extended to include approximately 80 acres South of Mundorf Road. The new boundaries would be on the West side, one lot West of Elm Street, then South to the Bluff, then Southeasterly along the Bluff to 600 feet East of the extension of Fir Street; then North again to South Sixth Avenue. The pump station at South Sixth and Elm has a capacity of 250 gpm. This will be sufficient to develop the area described to the South without an increase in pumping capacity.

Main #3

Main #3 basin now extends to the Middle School. Ultimately, it should extend East to the present city limits. On the West, it would be bounded by Lateral H-1 basin, which is one lot East of South Fir Street.

Another area that will require considerable extension is North of Highway 99-E and between the Molalla River and North Cedar Street. The existing boundaries extend Westward from Cedar Street along Northwest Third Avenue to the bluffs above the Molalla River, then Northward to the South end of Baker Drive; then Eastward along Northwest Eighth Avenue to Cedar Street; then South to Northwest Third Avenue. This area contains approximately 70 acres, most of which is zoned commercial.

The area may be served by gravity flow to existing laterals. To accomplish this, however, it is necessary that proposed laterals adhere closely to minimum allowable grades. With this limitation, the extended laterals may serve building sewer lines no more than four feet below the surface of the existing street grade.

This limitation is critical and local topographical conditions must be checked before engineering plans for individual parcels can be confirmed. Instances may occur in which a local pump station would be required.

The lines that are available to serve this area are:

1. Lateral "A" extended Westward on Northwest Third Avenue.
2. Lateral "N" extended Westward from North Cedar Street between Northwest Fifth Avenue and Northwest Sixth Avenue, or
3. The lateral running South from Dahlia Park subdivision extended Westward serving the water treatment plant area.

3. DESIGN GUIDES

General

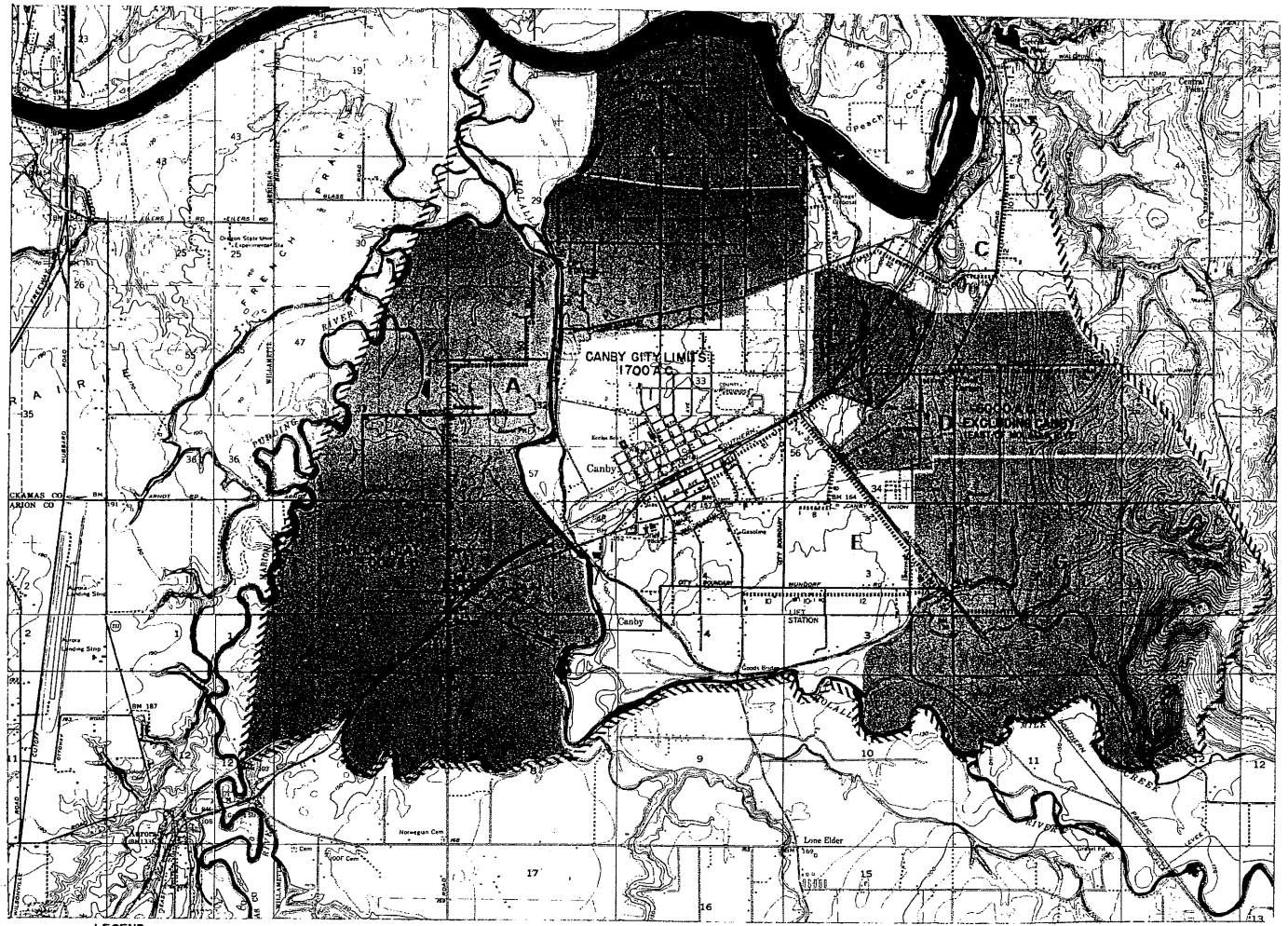
This study has outlined the sub-basins and established trunk line routes. It also provides routes for the major mains in areas where development has begun. In addition, within the city limits, plans for revision and extension of existing laterals are provided. Adoption of this plan substantially completes the collection system within the existing city limits. In the outlying areas, however, where little or no development has occurred, only the basic trunk layout is furnished.

All laterals, mains, and trunks are designed to provide a minimum liquid velocity of two feet per second when the pipe is running full or half-full.

Design Guides

Sanitary collection systems should be designed to remove only domestic sewage and limited strength industrial and commercial wastes. Infiltration of ground water is difficult to exclude entirely and allowance should be made for limited entry.

SANITARY SEWER COLLECTION SYSTEM MASTER PLAN



LEGEND

- PROPOSED EXPANDED SEWER SERVICE AREA
- SEWAGE TREATMENT SITE
- CANBY CITY LIMITS
- (C) INDICATES TRUNK-LINE SERVICE AREA

II-4 Figure 4

The selection of the pipe diameter has been made from an average density of ten persons per acre. Each person contributing an average daily flow of 100 gallons.

Peak flows may be expected to be as much as three (3) times the average flow. The peak flow of 300 gallons per person per day is the selected guide for determining pipe diameters in this study.

Governing agencies' regulations require all public sanitary sewers to have a minimum diameter of eight (8) inches. The minimum grade of sanitary sewers should be established to provide an average velocity of two (2) feet per second when flowing full or half-full.

The following criteria was used to determine the layout of the trunk lines.

1. The area contributing to individual drainage basins was determined from existing ground contours and topographical features.
2. The trunk routes as established were located in regard to:
   (a) existing drainage routes and ground contours;
   (b) established public right-of-ways and accepted travel routes.
3. The profile grades were determined from:
   (a) the ability of laterals from the extremities of the basin to maintain adequate depth and grade to provide gravity flow to the receiving trunk;
   (b) the ability of the trunk line to maintain adequate depth and grade;
   (c) the required capacities of the lines to insure adequate slope to maintain a minimum of two feet per second velocity when flowing full or half-full.

Essentially the same guide lines used for the trunk selection was used for the location, line, grade and pipe size for mains and laterals.

4. TRIBUTARY AREA AND TRUNK ROUTE SELECTION

The study area was divided into eight major sub-basins with supporting trunk lines. The basins and trunk lines are designated by the letters "A" through "G". The existing trunk line and supporting sub-basin has not been assigned a separate designation other than "existing trunk".

Trunks "A" and "B" serve the area North of Territorial Road. In additio Trunk "A" serves the Barlow Flats area. Trunks "C", "D", "E" and "G" are intercepted by Trunk "F". Trunk "F" runs North from Highway 99-E to the treatment plant. Trunk "F" provides flow for all of the sewage South of Highway 99-E and North of Highway 99-E that is East of the existing city limits from the point of interception with Trunk "F" to the treatment plant.

The Barlow Flats area is a special condition within the greater Canby drainage basin. It is a large, lowland area of 3,000 acres situated between the Molalla River and the Pudding River. The area is subject to flooding from the Molalla and Pudding Rivers (see exhibits). Flooding of this area may be controlled by upstream dams to be constructed in the future. The area may result in a potentially large discharge of industrial and sanitary wastes

MOLALLA [illegible]ER AT FLOOD STAGE NEAR 7-ACRES

The elevation varies from a high of 105 feet near the center of the South end to a low of 75 feet along the rivers on the North end. The slope of the land is gentle from South to North. However, a typical East-West cross section shows the land to be crowned in the center and sloping to the rivers on either side.

With the higher elevation near the middle, two alternatives are available for trunk location:

(1) Pump the collected sewage from the perimeter to a trunk near the center of the area.

(2) Place the trunk near the perimeter of the area and allow the sewage to flow by gravity into the trunk.

Advantages of locating the trunk line near the center of the area are as follows:

(1) There is 4,000 lineal feet more right-of-way and clearing required for the river route than the central route.

(2) The central route is 7,200 feet shorter than the river route.

(3) The river route profile grade is lower than the other route making it more susceptible to flooding.

The disadvantages of locating the trunk line near the center of the area would be the requirement of pumping units.

Without placing a valuation resulting from flooding, there would be a savings of approximately $25,000 by employing the central route. Special effort should be made to secure the central route. This route through the Barlow Flats area has been designated as Trunk "A" and serves the 3,000 acre area as previously described.

Trunk A

The central route for Trunk "A" commences on the Barlow-Monitor Road approximately 3500 feet South of Highway 99-E and runs North under Highway 99-E and on Malloy Road to a point approximately 1600 feet North of the PGE sub-station, then North and East following section lines and access roads to a point approximately 750 feet South of Bouncy Boulevard if extended Westerly.

From this point Trunk "A" crosses under the Molalla River to a pumping station. The sewage is then lifted approximately 65 feet to the top of the East river bank. The trunk then runs North to the North dead end of Bouncy Boulevard then traverses Easterly to the sewage treatment plant.

From the East bank of the Molalla River to Amrine Road the trunk serves an area extending in width from approximately 200 feet South of Territorial Road on the South to a line 800 feet North of the intersection of Hillcrest Road at Ferry on the North and parallel to Hillcrest. It crosses Amrine Road at the intersection of Amrine Court Street. It then runs diagonally from the Eastern end of Amrine Court to the treatment plant traversing Willamette Valley Country Club Golf Course.

Trunk B

Trunk "B" located in Ferry Road runs North from the North line of Pruneland. Ferry Road is presently the only access in the area. This access determined the selection of the trunk route. Ferry Road grade is generally at least as high as the surrounding area and often higher than adjacent ground. However, the general slope of the land is towards the river. Individual laterals serving the area will be required to run to a point further North and East before intercepting the trunk.

The trunk then flows East at the base of the hill and continues East leaving Ferry Road where the road turns North to the Ferry. The trunk then continues Easterly following the river bank to the Molalla Forest Road. It then continues in the same Southeasterly direction along the Molalla Forest Road to the pumping station serving Country Club Estates Annex No. 2. The lift station discharges into a pressure line that runs to the sewage plant.

From the lift station to the sewage plant there is no foreseeable need for gravity inflow to the system. In the event this area requires sewage collection, gravity lines may be placed, terminating at the lift station.

Trunk C

Trunk "C" provides service for collecting sewage in the Northeast corner of the drainage basin. This trunk is located in the existing main roads of the area. The trunk commences at the intersection of Haines Road with Highway 99-E on the New Era Hill. It follows Haines Road in a Southerly direction to Territorial Road (Brown Road). Then continues North on Brown Road to Highway 99-E. It then goes under the highway and the Southern Pacific Railroad track and continues to follow Territorial Road Northwesterly and then Southwesterly, passing under High Creek to a lift station prior to terminating into Trunk "F".

The invert elevation of Trunk "F" relative to the interception with Trunk "C" restricts the use of an inverted siphon under High Creek.

Trunk D

Trunk "D" serves the central portion of the Eastern section of the drainage basin. It commences at the highest elevation on Bramer Road. This point of beginning is approximately 4500 feet East of the intersection with Haines Road. From the point of beginning it follows Bramer Road Westerly to Haines Road then Southwesterly and West on Haines Road to County Road No. 540, then South along the County Road beyond Zoar Cemetery, then traversing Westerly and Southwesterly to the Southern Pacific Railroad line Trunk "D" connects into Trunk "E" at the same point Main E-2 enters Trunk "E".

An alternate route for Trunk "D" is available. The alternate would begin at the intersection of Bramer Road and Haines Road and extend Northward cross country following the ridge to Territorial Road. At this point it would connect to Trunk "C" immediately prior to Trunk "C's" steep descent down Territorial Road to Highway 99-E.

The principal advantage of this alternate is 2600 feet less length than the route intersecting Trunk "E".

When traversing cross-country, the alternate route does not serve additional drainage area that could not otherwise be served by a lateral. Trunk "D" in the initial location when traversing open ground would serve an additional 160 acres.

Trunk E

Trunk "E" serves the area South of Highway 99-E from the Molalla River on the West and South, and to the Canby-Mulino Road on the West together with the area serviced by Trunks "D" and "G".

Trunk "E" begins at South Ivy Street on Mundorf Road and runs East on Mundorf Road to the Molalla Forest Road, then North following the Molalla Forest Road to the Southern Pacific Railroad right-of-way where it intercepts Trunk "G". It then continues Northwesterly along the Molalla Forest Road to approximately 2000 feet beyond the intersection of Molalla Forest Road and Southeast Fourth Avenue. At this point Trunk "D" and Main E-2 connect to Trunk "E". Then Trunk "E" continues Easterly along the highway to Garden Road where it crosses under the roadway and connects to Trunk "F".

Main E-1

Main E-1 replaces the future extension of existing Main #3. Main E-1 will serve all of the existing laterals and their future extensions South of Highway 99-E and within the existing city limits. The line begins at South Second Avenue on South Ivy Street where it collects flow from Laterals "G" and "H" and Main #3. It then flows Northwesterly on South Ivy Street to South Second Avenue then Northeasterly on South Second Avenue to Knott Street then Northwesterly again to Highway 99-E; then it flows Northeasterly along the highway to the Molalla Forest Road where it connects into Trunk "E".

Main E-2

Main E-2 serves an area East of the city limits and adjacent to Southeast Fourth Avenue. It runs Easterly 1000 feet on Southeast Township Road from a high point in the road near the East city limits. Then it leaves Township Road and runs Northerly over open ground to the intersection with Trunk "E" on the Molalla Forest Road.

Trunk F

Trunk "F" commences at the intersection of Garden Road and Highway 99-E. Then it runs North on Garden Road and continues North to the treatment plant. The primary purpose of Trunk "F" is to collect the flow from Trunks "E", "G", and "D" South of Highway 99-E. It also collects the flow of Trunk "C" at Territorial Road. Trunk "F" may also be considered as an interceptor of planned trunk lines "C", "D", "E", and "G".

Trunk G

Trunk "G" is designed to carry all future requirements of the Southeastern corner of the basin.

Trunk "G" begins on Union Hall Road at a point approximately 1000 feet East from a point where a Milk Creek tributary crosses Canby Union Hall Road. It then runs in a Southerly direction to a point directly East of the intersection of the Southern Pacific Railroad tracks with the Canby-Mulino Road. Then it runs Westerly to the Canby-Mulino Road through a lift station and into a pressure line which carries it Northwesterly along the Southern Pacific Railroad to the point where it connects into Trunk "E".

This connection is located where the Molalla Forest Road and the Southern Pacific Railroad come together.

There would be no significant difference in cost for an alternate route should the pressure line run West on Mundorf Road to Molalla Forest Road and then connect to Trunk "E". The initial planned alignment of Trunk "G" is based upon favorable existing contours that allow sufficient fall from its beginning to the pump station.

Final alignment of Trunk "G" should correspond to the location of roads as adopted in future developments.

5. 1973 ESTIMATED COST OF CONSTRUCTION

Sanitary sewer construction costs were estimated by using early 1973 prices. In recent years construction costs have risen an average of 4½ percent per year for this type of work.

Cost estimates were prepared on a unit price basis for each major component of construction. These items included in-place price for each size of pipe, excavation, backfill and bedding, manholes, pavement removal and replacement, outfalls, right-of-ways, clearing and special items such as lift stations and boring costs.

Where trunk lines traverse private property, construction and permanent easements will be required.

Permanent easements to perpetually maintain the sewer trunks should have a minimum width of ten (10) feet.

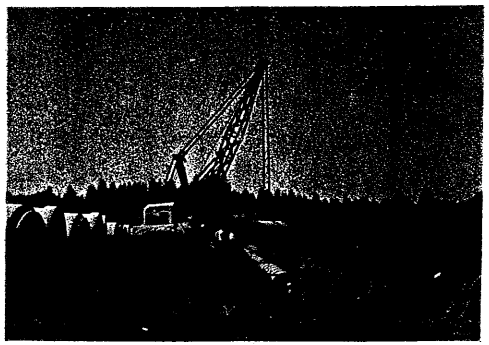
Easements for construction when land use allows should have a minimum width of 25 feet and preferably 50 feet.

In most cases, benefitted land owners should cooperate with the sewer district and City of Canby by providing easements with minimum of cost.

The cost estimates scheduled represent the total cost of construction including engineering, legal and contingencies of 25 percent (25%).

SUMMARY OF SANITARY SEWER CONSTRUCTION COSTS

Trunk	Station From	Station To	Length In Feet	Excavation Vol in cy.	Estimated Cost
Trunk A	0+00	178+25	17,825	29,183	$ 450,00
Trunk A	178+25	274+00	9,575	18,880	$ 270,00
Trunk B	0+00	95+30	9,530	9,415	$ 160,00
Trunk C	0+00	94+00	9,400	7,507	$ 175,00
Trunk D	0+00	97+40	9,740	8,950	$ 132,00
Trunk E	0+00	133+00	13,300	18,000	$ 265,00
Main E-1	0+00	41+40	4,140	4,360	$ 71,00
Main E-2	0+00	25+30	2,530	1,610	$ 30,00
Trunk F	0+00	58+00	5,800	6,070	$ 145,00
Trunk G	0+00	86+50	8,650	7,726	$ 162,00
Lat. 0-1 Ext.	0+00	51+00	4,415	3,390	$ 45,00
		Total Length	94,905	Total Cost	$1,905,00



TYPICAL SEWER INSTALLATION

6. PROGRAM IMPLEMENTATION

To implement this plan, three major factors with related costs must be reviewed. They are: (1) interim development (2) new trunk construction (3) revision of existing sanitary sewer system.

A principal means of regulating development prior to construction of sewer lines is through the controlled use of septic tanks. The size of lot required for each septic tank and disposal field determines the density of development. This area would be dependent upon the slope of the land, type of soil and ground water tables. These requirements are established by the County Sanitarian and Soil Analysist under the direction of the County Engineer. Past records indicate sewage disposal by sub-surface methods become more restrictive with the increase of density.

Soils and slopes are generally favorable within the study area. The principal exceptions are the Barlow Flats area, where a high water table and unfavorable soil conditions exist, and the Southeast area of the basin where steep slopes are prevalent.

Before development could be expected to approach the estimated density of ten (10) people per acre in the Barlow Flats area, Trunk A sanitary sewer must be constructed. Also, in the Southeast area Trunk "G" would be required. However, Trunk "G" connects into Trunk "E" which is also dependent upon installation of Trunk "F". As a result, both Trunks "E" and "F" would also require construction before ultimate density could be approached.

Trunk "B" is independent of all other trunks; therefore, construction of Trunk "B" could serve the Northern most section of the study area when the need arises.

Trunk "C" cannot function until Trunk "F" is completed from the treatment plant South to Territorial Road. Trunk "D" will require the completion of Trunk "F" and construction of Trunk "E" to its point of intersection with Trunk "D" prior to beginning service. However, if the alternate location for Trunk "D" is used, portions of Trunk "C" and Trunk "F" would be required in place of Trunks "E" and "F".

As previously pointed out, the existing trunk and Main #3 will be expected to approach capacity sometime near 1985. Construction of Trunks "E" and "F" and Main E-1 should be scheduled for completion to serve all of the area South of Highway 99-E before 1985.

North of Highway 99-E existing Laterals "O" and "o-1" between North Ivy Street and Pendleton Drive may require reinforcing by constructing a new parallel lateral. The density of future development will be the controlling factor requiring additional lateral capacity.

The ten-inch existing main on Territorial Road should be extended Westerly on Territorial Road to Pendleton Drive.

This extension would serve the area South of Territorial Road to the existing system and limited area North of Territorial Road. The limited area would be controlled by minimum pipe cover at the street right-of-way at points of service.

Interim Program Development

The complete development of the master plan is dependent upon many tangible and intangible factors. The prime tangible factor being the ability to provide construction funds. This ability is dependent upon the residential, commercial and industrial location and development of the area together with public attitude toward controlling the rate of growth.

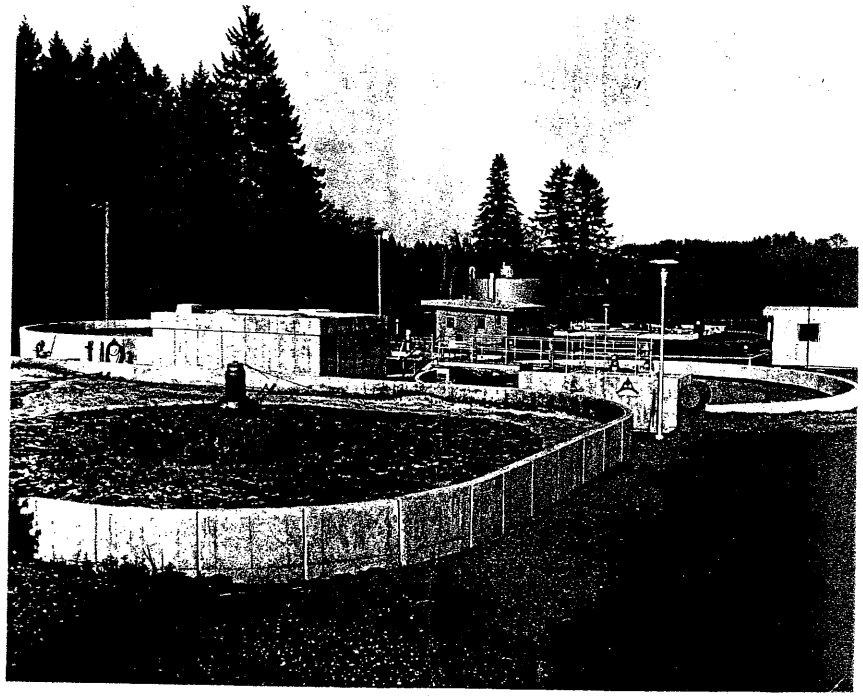
As a result, construction should be considered in phases. Phase construction would allow the flexibility to alter proposed plans to meet unforeseen conditions.

Developments being established outside existing sanitary sewer service areas are presently controlled by City of Canby, Clackamas County, and State of Oregon statutes. These statutes limit the area and method of disposing of sanitary wastes by sub-surface means.

In addition to meeting these requirements, sanitary sewer lines within the limits of the development project should be set in place in accordance with line, grade, and size to allow immediate connection to future sewer trunk lines.

Consideration must also be given to potential areas outside the development area that would require servicing through the development project.

A planned orderly development would provide ultimate construction of the master plan at minimum construction costs.



CITY OF CANBY
SEWAGE TREATMENT PLANT

PLANNING COMMISSION

SIGN-IN SHEET

DATE: AUGUST 13, 1990

NAME (Please Print)	ADDRESS
Steve Hanson	City of Canby
Keith Stiglbauer	1120 NW 12th
CURT McLEAD	25610 SW Mt Rd W.L.
D. NELSON	