

Application No. P-58186
 Permit No. 58187

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PORTLAND GENERAL ELECTRIC COMPANY

WATER RESOURCES DEPT.
 SALEM, OREGON

IRRIGATION SYSTEM DESIGN DATA

Page 1

Name Harold Vrooman Layout No. N / 15 / 78
 Address Revenue Road
Route 2, Box 481 B Date March 28, 1978
Gresham, Oregon County Clackamas
 Township 1 S Range 4 E Section 29 Aerial Map No. DFK-6DD-9
 Division Gresham Phone: 663-5802

WATER SOURCE

Well:

Depth _____ Ft. Diameter _____ In. Static _____ Ft.
 Yield _____ GPM Drawdown _____ Ft. Pumping Level _____ Ft.
 Yield _____ GPM Drawdown _____ Ft. Pumping Level _____ Ft.
 Yield _____ GPM Drawdown _____ Ft. Pumping Level _____ Ft.

Pond or Lake:

Capacity Unknown Acre-Feet _____ Minimum Input Unknown GPM _____

Stream:

Name _____ Flow _____ GPM _____

SYSTEM REQUIREMENTS

| Crops | Acreage | Net Irrigation Requirements (Inches per Year) | Application Rate (Inches per Hour) | Time per Lateral Set in Hours | Lateral Sets per Day | Depth Applied (Inches) | Irrigation Frequency (Days) | Capacity (GPM) |
|---------|----------------|---|------------------------------------|-------------------------------|----------------------|------------------------|-----------------------------|----------------|
| Pasture | Any 5 acres | 16 - 18 | 0.258 | 11½ | 1 | 3 | 14 | 48 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Design Capacity 42 GPM Total Required System Capacity 48 GPM

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SPRINKLER SELECTION

Number 9 Type Impact Nozzle Size 1 1/64 In. x -- In.
 Pressure 40 PSI Discharge 5.37 GPM Application Rate 0.258 In./Hr.
 Sprinkler Spacing 40 Ft. Lateral Spacing 50 Ft.
 Spacing - Rectangular Triangular Wetted Diameter 92 Ft.
 Maximum Spacing = 60 % of wetted diameter for 6 mph wind.

LATERAL PIPING SELECTION

Number - 1
 Length (feet) - 340
 Diameter (inches) - 2
 Material - Aluminum

SUPPLY LINE PIPING SELECTION
(that portion of main line without outlet valves)

Feet 250 Diameter Inches 3 Material Aluminum
 Feet _____ Diameter Inches _____ Material _____
 Feet _____ Diameter Inches _____ Material _____

MAIN LINE PIPING SELECTION

Feet 750 Diameter Inches 3 Material Aluminum
 Feet _____ Diameter Inches _____ Material _____
 Feet _____ Diameter Inches _____ Material _____
 Outlet Spacing None Feet

OFFSET PIPES AND ELBOWS

Number _____ Lengths _____ Ft. Diameter _____ In.

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TOTAL DYNAMIC HEAD REQUIREMENTS

| | | |
|--|--------------|------|
| Elevation difference between center of pump and water source or distance between the pumping level and well head | 5.0 | Feet |
| Elevation difference between pump and highest point of lateral | 40.0 | Feet |
| Friction head loss in suction line . .30' of 3" @ 48 gpm = | 0.2 | Feet |
| Friction head loss in drop pipe or pump column | -- | Feet |
| Friction head loss in main lines <u>1000'</u> of 3" @ 48 gpm = | 8.3 | Feet |
| _____ | _____ | Feet |
| _____ | _____ | Feet |
| Friction head loss in lateral line <u>9</u> sprinklers on 2" | 10.4 | Feet |
| Miscellaneous friction head loss in fittings | 5.0 | Feet |
| Sprinkler operating pressure <u>40</u> psi x 2.31 | 92.4 | Feet |
| TOTAL | <u>161.3</u> | Feet |

Design Capacity (from Page 1) 48 GPM

PUMP UNIT SELECTION

Pump Number #1

Type Centrifugal

Speed 3,500 RPM

Capacity 55 GPM

At 168 Ft. Hd.

Horsepower 5

Efficiency 52 %

Discharge Size 1 In.

Phase Single

Voltage 230

Code H, B, C

Pump Number _____

Type _____

Speed _____ RPM

Capacity _____ GPM

At _____ Ft. Hd.

Horsepower _____

Efficiency _____ %

Discharge Size _____ In.

Phase _____

Voltage _____

Code _____

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REMARKS:

This system is designed to provide a 3-inch irrigation every 14 days to 5 acres of pasture by operating one 11½- to 12-hour lateral setting per day (any 5 acres).

All piping in this design will be portable aluminum so that it can be used at alternate locations. Outlet valves were eliminated from the main line to reduce equipment cost. The operator will add or remove 50-foot lengths of main line as the lateral line is moved across the field.

If ample water is available in the pond, additional acreage can be irrigated by operating two lateral settings per day.

Designed by: Dick Murphy
Agricultural Specialist

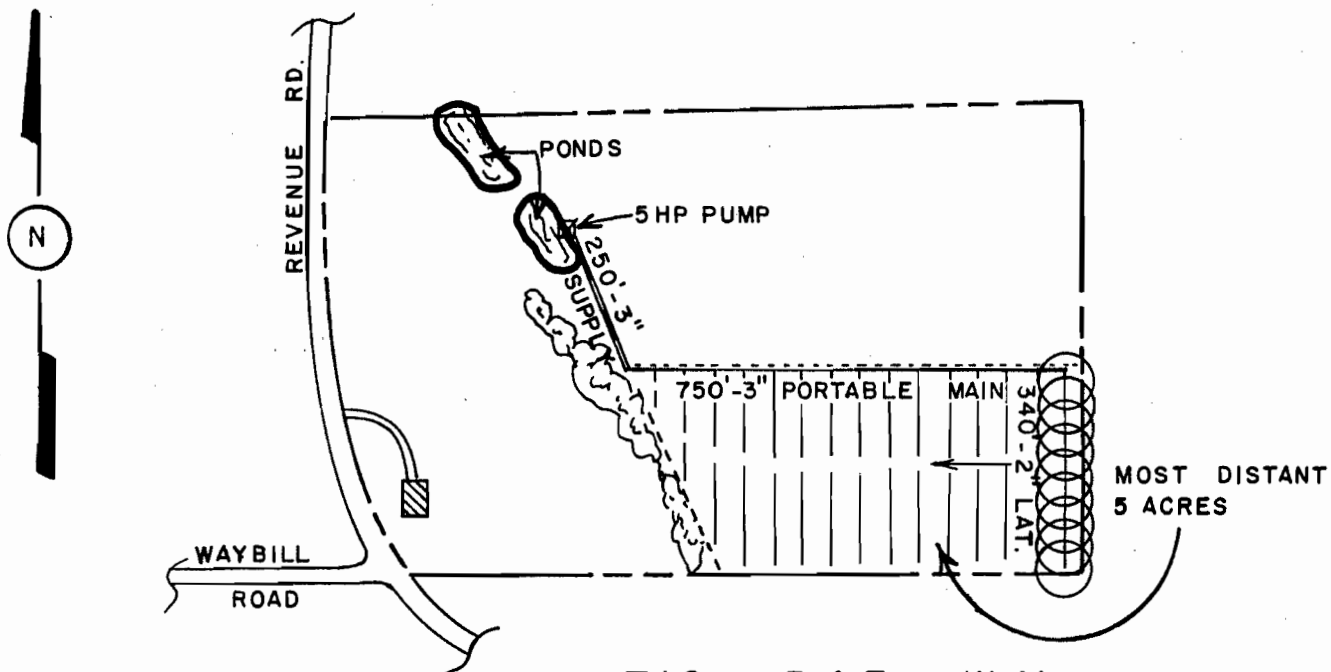
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IRRIGATION SYSTEM DESIGN
 FOR
 HAROLD VROOMAN, GRESHAM

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T1S, R4E, W.M.

SECTION 29

DESIGN KEY

| | |
|----------------------|--|
| SUPPLY LINE |  |
| PORTABLE MAIN |  |
| LATERAL SETS |  |
| LATERAL & SPRINKLERS |  |
| FIELD BORDER |  |
| PROPERTY LINE |  |

DESIGNED BY: DICK MURPHY
 PTLD. GEN. ELEC.

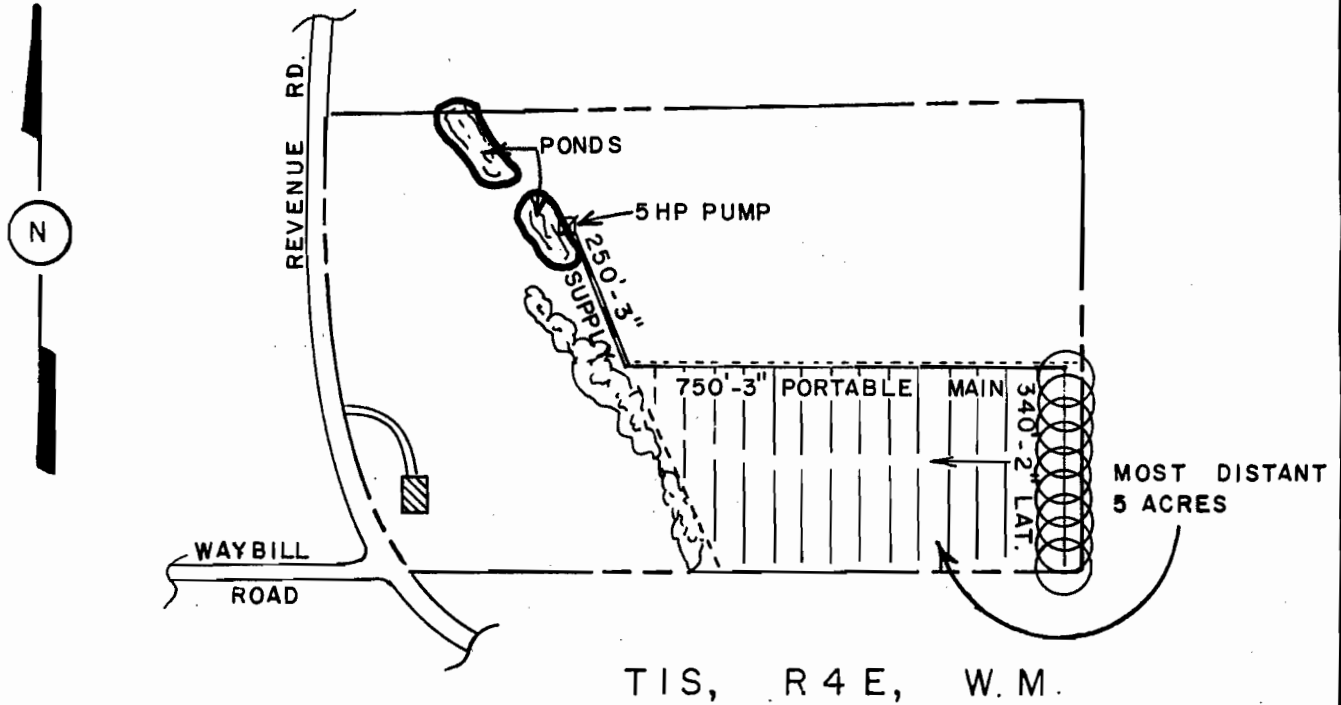
DRAWN BY: DORIS DAVIDS, P.G.E.

MARCH 31, 1978

SCALE: 1" = 330 FT.

IRRIGATION SYSTEM DESIGN
 FOR
 HAROLD VROOMAN, GRESHAM




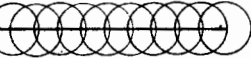


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