

Lower Owyhee River Rehabilitation Project Phase II

**Water Conservation and Nonpoint Source Pollution Reduction in
the Owyhee and Snake Rivers**

**WaterSMART: Water and Energy Efficiency
Grants for FY2012, No. R12SF80049**

**A Project To Convert An Open Lateral System
In Malheur County, Oregon To A Gravity Flow
Pressurized System**

**Owyhee Irrigation District
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TABLE OF CONTENTS

	PAGE
Table of Contents	2
Technical Proposal and Evaluation Criteria	3
Executive Summary	3
Background Data	3
Technical Project Description	5
Evaluation Criteria	6
Subcriterion No. 1(a)—Quantifiable Water Savings	6
Subcriterion No. A.1(b)—Improved Water Management	7
Subcriterion No. A.2—Percentage of Total Supply	7
Subcriterion No. A.3—Reasonableness of Costs	7
Evaluation Criterion B: Energy-Water Nexus	8
Subcriterion No. B.2—Increasing Energy Efficiency in Water Management	8
Evaluation Criterion C: Benefits to Endangered Species	8
Evaluation Criterion D: Water Marketing	9
Evaluation Criterion E: Other Contributions to Water Supply Sustainability	9
Evaluation Criterion F: Implementation and Results	10
Subcriterion No. F.1—Project Planning	10
Subcriterion No. F.2—Readiness to Proceed	11
Subcriterion No. F.3—Performance Measures	12
Evaluation Criterion G: Connection to Reclamation Project Activities	12
Environmental Compliance	12
Required Permits or Approvals	14
Funding Plan and Letters of Commitment	14
Official Resolution	14
Budget Narrative	14
Budget Proposal	15-18

TECHNICAL PROPOSAL AND EVALUATION CRITERIA

1. Technical Proposal: Executive Summary

1/19/2012

Owyhee Irrigation District
Nyssa
Malheur County, Oregon

This project is located in the Lower Owyhee and the Mid Snake-Succor Creek Subbasins in Malheur County, Oregon. The Lower Owyhee River Rehabilitation Project is designed to conserve water, conserve energy and reduce non-point source pollutants in the Owyhee and Snake Rivers. Phase II of this project will improve water quality in three 303 (d) listed waterways; the Owyhee River, the Snake River and Overstreet Drain and conserve 1957 acre feet per year.

Task A-Water Conservation: 1) The Owyhee Irrigation District (OID) is proposing to convert 4.5 miles of an open lateral to pipeline, with a water savings of 188 acre feet per year, to provide gravity flow enabling landowners to convert 460 acres from furrow to sprinkler irrigation and 213 acres to drip irrigation with an estimated savings of 1743 acre feet of water annually. 2) The District proposes to install an automated side sweep cleaner and 20 Micrometer propeller flow meters. Under the current furrow irrigation system the landowners utilize 3760 acre feet of water per year on the farms. After the project is completed the estimated water savings will be 1931 acre feet per year. The estimated water saved will be stored in the Owyhee Dam or be available for users down the system.

Task B-Energy Efficiency: The side sweep cleaner with screen will be operated by solar panels. Idaho Power estimates an energy savings of approximately 338,354 kilowatt hours per year with landowners converting to sprinkler and drip irrigation due to the pressurized pipeline. (Please see Attachment.)

The Owyhee Watershed Council submitted a grant to the Oregon Watershed Enhancement Board (OWEB) for supplies and materials to complete this portion of the project. The grant was approved; however, the funds will be distributed over 2 grant cycles. The Council has a grant agreement for \$350,000 and the next grant agreement will be issued in March 2012 for an additional \$350,000. (See Attached Grant Agreement)

2. Technical Proposal: Background Data

The Owyhee Irrigation District's water supply comes from reservoir storage behind Owyhee Dam in Lake Owyhee which has a storage capacity of 1,120,000 acre-feet. The Owyhee Dam was completed in 1939 and the irrigation system is over 75 years old.

Reservoir storage relies heavily upon winter precipitation and snow pack conditions. Shortfalls in water supply are due to drought and could, at some point in time, be affected by climate

change. Water users try to maintain a two year supply of irrigation water in storage in Lake Owyhee due to the irregular flow of the Owyhee River. Pumping plants on the Snake River which provides irrigation water to 30,000 to 35,000 acres of lower elevation lands make possible the two year supply in Lake Owyhee.

Irrigation water managed by the Owyhee Irrigation District (OID) originates in the Owyhee Watershed and is stored in the Owyhee Dam. Irrigation water is released from Lake Owyhee through a 3.5 mile tunnel to Tunnel Canyon where the diversion works for the North and South Canals are located. The South Canal, managed by the South Board of Control Irrigation District, extends from the diversion works through a 5 mile tunnel and then southward 37 miles to the Snake River south of Marsing, Idaho. The North Canal, managed by the Owyhee Irrigation District, extends from the division works northward 61.5 miles to the Snake River near Weiser, Idaho. Irrigation water flows from the canals to laterals to on farm ditches.

There are 500 miles of canals and laterals within the Owyhee Irrigation District's jurisdiction. The District has been working over the past several years to upgrade the aging irrigation system and minimize water quality issues to address the Total Maximum Daily Load (TMDL) of non-point source pollutants into the Owyhee and Snake Rivers. Approximately seventy-five miles of open laterals have been converted to pipeline. Approximately 125 sediment ponds have been installed ranging from one-eighth acre to five acres in size. There have also been several miles of on farm pipelines and sprinklers installed to save water and reduce irrigation-induced erosion within the district. Any water savings resulting from updating the system, which is over 75 years old, and irrigation efficiency benefits the entire system from storage to the users on the ground.

Appropriated water rights are based upon Oregon State Statute and contractual agreements with the Bureau of Reclamation. Current water uses are for agriculture with the primary crops including but not limited to row crops (onions, sugar beets, potatoes), cereal crops (wheat, corn and barley), and forage crops (alfalfa, grass hay and rye hay). There are 1084 water users on the system with 67,161 acres served by the District.

Current water demands are determined by crop rotations, farming practices and irrigation practices which include drip systems, wheellines, pivots, and furrow (flood) irrigation.

Water demands are also based upon historic use, weather conditions and soil type. Usage has remained fairly consistent over the years and is expected to be the same in the future. The amount of water served per acre depends upon annual storage in the Owyhee Reservoir. The allotment is set by the amount of water in storage at the beginning of the irrigation season.

Pivots that operate off of systems that are not pressurized must utilize electricity to pump water for the pivots. Landowners converting to sprinklers due to the pressurized pipeline will have an energy savings of approximately 338,354 kilowatt hours per year. The automated systems that will be installed will be solar powered. A greater effort is being made to pressurize areas that are conducive to pressurization and utilizing solar energy to operate automated systems.

In the 1980s, the water users obtained Federal Energy Regulatory Commission licenses to construct and operate three hydropower facilities on the Owyhee Project. These include a 5,000

kilowatt powerplant at Owyhee Dam, using power outlet facilities installed during construction, an 8000 kilowatt powerplant at Tunnel No1, the major diversion works for the project, and a 2000 kilowatt powerplant on the Mitchell Butte Lateral. The powerplants became operable between 1985 and 1993.

The District has had several projects with Reclamation through the Water Conservation Field Services Program. Projects with Reclamation from 2000-2011 have included installing water measurement devices (Stevens Instrument Continuous Recorders), Langeman Overshot Gates, a Supervisory Control and Data Acquisition (SCADA) system, canal monitoring system, turnout headgate structures for water conservation, canal gates, and lined 2 miles of canal with a geotextile liner. The District is currently working on Phase I of the Lower Owyhee River Rehabilitation Project installing 2.9 miles of pipeline with funds from the Oregon Watershed Enhancement Board and the Bureau of Reclamation.

This project is located within the Upstream Snake River Segment of the Snake River-Hells Canyon TMDL where the majority of agricultural land use occurs. Flow within this segment is a result of seasonal precipitation events, upstream and tributary catchments, and irrigation diversions and returns. This segment of the Snake River is on the Idaho and Oregon 303(d) list and the pollutants include bacteria, dissolved oxygen, mercury, nutrients, pH, sediment and temperature. Irrigation-induced erosion is identified as a specific concern in the Owyhee Agriculture Water Quality Management Area Plan and with the Oregon Department of Environmental Quality (ODEQ). The ODEQ has listed Overstreet Drain, the drain that collects all of the tailwater from the farms associated with the project, on the State's 303 (d) list.

The Oregon Department of Fish and Wildlife were contacted and there are no existing Endangered Species Act issues in the geographic area.

Pressurizing the conveyance system will make it easier for landowners to convert from furrow to sprinkler irrigation. Six hundred and seventy three acres (673 ac) will be converted from furrow to sprinkler and drip irrigation. With a pressurized system, landowners will not have to pay pumping costs associated with sprinklers and drip irrigation resulting in a savings of 338,354 kilowatt hours. Information provided by Idaho Power. (Please see attachment)

3. Technical Proposal: Technical Project Description

The proposed project will convert Kingman 5.4/0.8 Lateral from an open lateral (23,760') to pipeline; install an automated side sweep cleaner with screen with offsite controls, and 20 Micrometer propeller flow meters. The installation of the pipeline will provide pressurization enabling 673 acres to be converted from furrow to sprinkler irrigation.

The project has been engineered by a private engineer in cooperation with the Owyhee Irrigation District engineer.

The project consists of installing approximately 23,760' (4.5 miles) of 6-30 inch PVC piping with pressure capacities ranging from 100 PSI to 125 PSI. The pipe will eliminate approximately 4.5 miles of open laterals and supply a gravity flow pressurized system to irrigate

940 acres in which 673 acres will be converted to sprinklers and drip irrigation eliminating the need for pumping. The acres not converted to sprinklers or drip will be planted to wheat. The new pipeline will parallel the existing open lateral. The existing lateral will be maintained as a drain for surface runoff during major storm events.

All required appurtenances including delivery points and flow meters will be installed at required points. Each farm will have a constant pressurized head with an accurate individual metered system. The trench and vacated lateral will be backfilled and restored.

The OID will install turnouts, flow meters, valves, automated screen, and construct and install the intake while excavation, installation and backfill of the main pipeline will be done by subcontractors.

4. Technical Proposal: Evaluation Criterion

Evaluation Criterion A: Water Conservation

Subcriterion No. 1(a)—Quantifiable Water Savings

Direct water use savings from this project is projected to be a minimum of 1931 acre feet annually. Water conservation comes from the elimination of an open conveyance system and on farm conversion from furrow to sprinkler and drip irrigation. The average annual water supply for the Owyhee Irrigation District and the South Board of Control Irrigation District is 550,000 acre feet that are stored in Lake Owyhee behind the Owyhee Dam. Water conserved from the project can stay in the lake or be available to users downstream especially in drought years.

Canal lining and piping:

- **Estimated Water Savings** The on farm water savings of 1743 acre feet was determined by using a Natural Resources Conservation District (NRCS) Water Savings Estimator worksheet. (Please See Attachments) The on farm water savings can be quantified through Micrometer flow meters and district irrigation records.
- **Canal seepage losses** There will be an additional 188 acre feet per year saved by piping the lateral. This figure was determined using water delivery and spills information documented in a daily log book, daily water user orders, and employee experience. The irrigation district estimates a 5% loss in water due to seepage and evaporation.
- **Expected post seepage losses** There will not be any post seepage losses once the lateral has been piped. The district is utilizing PIP PVC pipe for the project.
- **Annual Transit loss** It is very difficult to determine transit loss through seepage and evaporation in an open system; however, once the pipeline is installed OID will be able to compare historical records with new computerized records initiated after the installation of the pipeline.

- **Verified seepage reductions** Computerized water delivery records initiated after the pipeline has been installed will be compared with historical water delivery records.
- **Detailed description of the materials** Please see attachment

Subcriterion No. A.1(b)—Improved Water Management:

This project will improve water management throughout the OID system. In order to fully appreciate how important the water savings of 1931 acre feet is to the OID and landowners, it must be put into the context of the environment in which the irrigation system operates. Irrigation water comes from storage in the Owyhee Dam which relies on snow and rain in the Owyhee Mountains which can be limiting due to drought. Frequency of drought, six out of every ten years, is a major factor when considering water quantity, especially in a semi-arid environment such as the Owyhee Watershed. Most of the Owyhee Watershed is a high desert which automatically makes water a limiting factor. There is limited perennial water within the watershed. Knowing that an annual 1931 acre feet of water is available provides water managers an advantage and flexibility in determining water usage. This minor water advantage can be very important when determining water projections to meet peak demands more efficiently. So, the percent of water better managed would be 100% of the annual average water supplied to the OID.

335,805 acre feet
335,805 acre feet

Subcriterion No. A.2—Percentage of Total Supply:

Kingman 5.4/0.8 lateral provides 3760 acre feet of water, 4 acre feet per acre, to 940 acres of land. Piping the lateral and converting the fields from furrow to sprinkler irrigation will implement a 51% water savings, 1931 acre feet per year.

The water savings of this project is only 1% of the total supply of 335,805 acre feet; however, it still provides flexibility in managing the entire yearly supply of water. The conserved water can be used in various management scenarios-i.e. storage, used for landowners down the line, equally allocated to supplement farms, or released to the entire Owyhee irrigation system allowing for the maximization of the water delivery system. Water left in the reservoir provides recreational opportunities for area residents and will help meet minimum requirements for in-stream flow for recreation and fisheries below the Dam.

Subcriterion No. A.3—Reasonableness of Costs:

Total project cost is currently estimated at \$1,103,135. The annual acre feet conserved is 1931 while the total acre feet better managed will be an average of 335,805 acre feet (see Subcriterion No. A.1(b)). The expected life of the project is estimated to be 50 years. That yields a reasonableness cost figure of 0.0657.

1,103,135
335,805 x 50

Evaluation Criterion B: Energy-Water Nexus

Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery:

By saving 1931 acre feet of water through conservation, the OID will keep the water saved in the system to assist in the operation of existing OID hydropower production which currently at 14.8 megawatts per day. This savings has the potential of increasing hydropower production.

In order for an energy-water nexus to be developed, the potential to develop it must exist. The District has weighed the potential of installing in-line hydropower within the pipeline; however the consequences of that outweigh the benefits. Installing an in-line hydropower system would decrease the pressure that some of the landowners need to operate their irrigation systems with gravity flow. Some of the landowners would then be required to purchase power to operate their sprinklers. The cost of purchasing power to operate the sprinklers would negate any benefits of developing hydropower on the lateral. In addition, if landowners had to purchase power they would not readily install sprinklers.

Subcriterion No. B.2—Increasing Energy Efficiency in Water Management

The automated self cleaning screen will be operated by solar power. The sprinklers and drip systems that will be installed and the pressurized pipeline will save 338,354 kilowatt hours per year in pumping costs according to Idaho Power.

Evaluation Criterion C: Benefits to Endangered Species

The proposed project has the potential to benefit recovery efforts for fall Snake River Chinook salmon; spring/summer Snake River Chinook Salmon; and sockeye salmon, all of which are federally recognized endangered species. It will also benefit Snake River steelhead and Snake River white sturgeon, both of which are listed as federally recognized species.

This project will allow for the reduction in irrigation-induced erosion by converting 673 acres from furrow to sprinkler and drip irrigation. The Malheur Experiment Station has determined that these fields are highly erodible and erosion occurs at a rate of 10-15 tons per acre per year. This project could eliminate 10,095 tons of sediment from entering the Lower Owyhee River and ultimately the Snake River benefiting recovery efforts of the federally recognized endangered species listed above.

In addition, the project will also reduce or eliminate weed seeds, including noxious weeds, with the installation of the water screen. This would not be possible with an open system. The screen and closed system will result in a reduction in the use of herbicides which could potentially make their way to the Snake River.

Evaluation Criterion D: Water Marketing

1. There will be an estimated annual water savings of at least 1931 acre feet,

2. The first priority use of any water saved would always be to meet the demands of the Owyhee Irrigation District, South Board of Control Irrigation District, and the Old Owyhee Irrigation Improvement District.
3. The saved water, 1931 acre feet, could be retained in the Owyhee Reservoir and potentially marketed to irrigation entities downstream from the Dam.
4. Legal guidelines are already in place for water marketing in the Oregon water statutes.
5. The saved water could help insure the continued release of 30 cfs per year in-stream in the Lower Owyhee River for fisheries. There is also the potential to lease additional water downstream for local fishery enhancement.

There is the potential to increase in-stream flows to help meet the target of 429,000 acre feet of to make possible downstream flow augmentation that meets the needs of the increased flow strategy outlined in salmon recovery efforts and to maintain flows for steelhead and white sturgeon protection. Augmentation amounts are set by the biological opinion of the Upper Snake River for salmon recovery.

Saved water could potentially be sent down stream to Idaho Power for hydropower generation in their 3 complexes downstream in the Snake River.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability

1. Eastern Oregon is a semiarid desert. The average rainfall in the area is 10 inches per year. Source of water for the Owyhee Dam is primarily late fall, winter and spring runoff from the Owyhee River Basin above the Owyhee Dam. Most of the snowpack is in the Upper Owyhee Subbasin in Nevada and Idaho. The area is under drought conditions six out of every 10 years. Water saved through piping open laterals and improved irrigation practices by landowners will be in storage in the reservoir and available to everyone on the system in the future. The irrigation districts try to maintain a two year supply of irrigation water in storage in the Owyhee Dam due to the irregular flow of the Owyhee River.

Climate change may play a significant role in the availability of water for irrigation or other uses. The project will annually result in up to 1931 acre feet of water being stored in the Owyhee Reservoir which will benefit the landowners in the future.

2. The landowners in conjunction with the Owyhee Irrigation District, Malheur Soil and Water Conservation District, South Board of Control Irrigation District, Natural Resources Conservation Service and the Owyhee Watershed Council have worked to develop projects that will address water quality and water conservation. This working group has had tremendous support from the Oregon Department of Agriculture, Oregon Department of Environmental Quality, and Oregon Watershed Enhancement Board.

This project is part of a basin wide effort to conserve water and improve water quality. There have been several projects completed where open laterals have been converted to pipelines and landowners have converted to sprinklers. Approximately 75 miles of open laterals have been converted to pipelines and approximately 4500 acres have been converted from furrow to sprinkler irrigation. Water savings on the farm and throughout the irrigation system will keep water in the Owyhee Dam for use during low water years.

3. This WaterSMART grant project will enable 673 acres of furrow irrigated land to be converted to sprinkler and drip irrigation. The NRCS is ready to work with the landowners to help them apply for EQIP funds for the on farm projects. Oregon Watershed Enhancement Board funds are also available to the landowners.

The WaterSMART grant would provide the installation costs for pressurizing a gravity flow system that would enable landowners to convert to sprinklers and drip irrigation without the costs of pumping which makes it economically feasible for landowners. Two hundred and thirteen acres will be converted to microirrigation systems (drip irrigation) and 460 acres will be converted to sprinkler irrigation (pivots).

The NRCS Estimated Water Savings Worksheets estimates that the 213 acres of microirrigation will save 440 acre feet of water and the 460 acres of sprinklers will save 1323 acre feet of water.

There are only 4 landowners involved with the project so NRCS is going to work with them individually as funding allows.

4. This project has greatly increased the awareness of water and/or energy conservation and energy efforts. There are 2 more pressurized pipeline designs to be funded that will convert an additional 2000 acres to sprinklers. Landowners are very much aware of the benefits of pressurization and converting from furrow to sprinkler irrigation. The project integrates the saving of 1931 acre feet of water and 338,354 kilowatts of power.

Evaluation Criterion F: Implementation and Results

Subcriterion No. F.1—Project Planning

1. The Owyhee Irrigation District has a Water Management/Conservation Plan that was completed in 2002 and within this Plan is a Drought Contingency Plan. The District is trying to update the system as funding allows. Outlined in the Plan is a schedule for conservation program implementation which calls for automation of headgates/flood control systems as well as installing flow measurement devices. This project does both. An automated system will be installed in the canal and 20 Micrometer flow meters will be installed on the pipeline. The area was also chosen because of water quality issues as it relates to the Owyhee and Snake Rivers and the groundwater in the area.

2. The project was engineered by a private engineer with oversight by the OID engineer.

3. The project conforms to the following plans:

1. Owyhee Irrigation District Water Management/Conservation Plan (2002)-Goals include improving the OID distribution system, improve water control, decrease seepage losses, decrease maintenance costs, and improve individual delivery accountability.
2. Owyhee River Basin Agriculture Water Quality Management Plan (March 2003) – The sections on Irrigation and Sediment in Irrigation Return Flow of this plan highlight the problems and objectives for improving water quality. Practices listed under this plan include irrigation water management and conversion from furrow irrigation to sprinklers.
3. Mid Snake-Succor Creek TMDL Implementation Plan for Agriculture (June 2005) – The section on Best Management Practices addresses converting from furrow irrigation to sprinklers to reduce sediments, nutrients, and phosphorus.
4. Snake River – Hells Canyon TMDL Plan (June 2004) – The sections on General Water Quality Concerns for the Snake River-Hells Canyon TMDL Reach (2.2.4) and the description of Pollutant Sources (2.5) discuss the problems associated with nutrient loading and the potential impact of irrigation management on this problem.

Subcriterion No. F.2—Readiness to Proceed

The Owyhee Watershed Council has submitted a grant to the Oregon Watershed Enhancement Board for supplies and materials for the pipeline and it has been approved. Installation of the project can begin in November 2012 and be completed by November 2013.

SCOPE OF WORK AND MILESTONES

Estimated Date

Task Description

<p>November 2012 – December 2012</p>	<ul style="list-style-type: none"> • Installation of the inlet structure, Self cleaning inlet screen • Installed by Structural Mechanic and General Mechanic • Removal of old concrete structures by Irrigation District
<p>November 2012 – March 2013</p>	<ul style="list-style-type: none"> • Excavation of 23,660 ft. of pipeline trench by Sub Contractor • Installation of 23,660 ft. of pipe, tees, elbows, reducers and thrust blocks by Sub Contractor • Backfill and compaction of trench by Sub Contractor • Installation of Air Vents, Pressure Relief Valves, Control Valves, Turnout Structures and Flow Meters by Irrigation District. • Oversight of installation by engineering technician • Inspection of installation by managers
<p>March 2013 – November 2013</p>	<ul style="list-style-type: none"> • Fill and Test pipeline and Turnout assemblies • Monitor, make necessary adjustments, and repairs to

	<p>pipeline and turnout structures if needed.</p> <ul style="list-style-type: none"> • Make adjustments to and prepare existing open lateral for use as drainage for storm event water conveyance. • Finalize project
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The above SCOPE OF WORK AND MILESTONES are conditional to having adequate weather conditions for the construction process.

If inadequate or hazardous weather conditions are encountered the remainder of this project will be installed at a later date but will be completed by the grant ending date.

Subcriterion No. F.3—Performance Measures

Water deliveries are recorded and compiled at the end of each season. These will be compared to previous years to determine the degree of water conserved. Water samples will be taken in the drains to determine the reduction of sediment loading into the Owyhee River.

Evaluation Criterion G: Connection to Reclamation Project Activities

This project is within the Reclamation’s Owyhee Project completed in 1939.

The OID receives BOR water from the Owyhee Reservoir. The specific lateral canals in the proposed project convey water and are within the infrastructure of the BOR. The proposed project is located in the Owyhee River Basin where the Owyhee Reservoir is located. The water conserved as a result of the project will be left in the Owyhee Reservoir and will be used to benefit projects established under BOR contracts.

Environmental Compliance

1. Will the project impact the surrounding area?

There will be no negative impact to the surrounding area. The surrounding area is farm land. The pipeline will be buried along an existing open lateral and the existing lateral will be reclaimed once the pipeline has been installed.

2. Are you aware of any species listed or proposed to be listed as a federal endangered or threatened species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

According to the Oregon Department of Fish and Wildlife, there are no listed or proposed listed species present in the project area.

3. Are there wetlands or other surface waters inside the project boundaries that potentially fall under the Federal Clean Water Act jurisdiction as “waters of the United States?” If so, please describe and estimate any impacts the project may have.

There are no “waters of the United States” within the boundaries of the project area.

4. When was the water delivery system constructed?

The delivery system was constructed between 1926 and 1939.

5. Will the project result in any modifications of or effects to, individual features of an irrigation system (e.g. headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alteration or modifications to those features completed previously.

The Kingman 5.4/0.8 Lateral will be piped requiring the installation of turnout structures with flow meters replacing headgates. The existing open lateral and headgates were installed in the 1930's. The OID irrigation system is over 75 years old.

6. Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

The Owyhee Dam was placed on the National Register of Historic Places in 2010.

7. Are there any known archeological sites in the proposed project area?

No

8. Will the project have a disproportionately high and adverse effect on low income or minority populations?

No

9. Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

No

10. Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The project will help control noxious weeds growing in the area. The elimination of open laterals and on farm ditches will eliminate noxious weed infestations growing along the banks.

Required Permits or Approvals

There are no permits or approvals required to complete this project.

Funding Plan and Letters of Commitment

Non-Reclamation funds are through a grant submitted to the Oregon Watershed Enhancement Board (OWEB) for the amount of \$692,814 which has been approved; however, half of the funds

**RESOLUTION
LOWER OWYHEE RIVER REHABILITATION PROJECT
PHASE II - WATER SMART GRANT**

RESOLVED, that Owyhee Irrigation District shall apply for the USBR Water SMART: Water and Efficiency Grant for FY2012, No. R125F80049 for \$299,000.00 of financial assistance for the Lower Owyhee River Rehabilitation Project Phase II; President Bruce Corn is authorized to enter into any required grant agreement on behalf of the District; the Board of Directors having reviewed the application submitted, supports the application; Owyhee Irrigation District has the capability to provide the funding and/or in-kind contributions specified in the funding plan; and Owyhee Irrigation District will work with USBR to meet established deadlines for entering into a cooperative agreement.

I, Michael W. Horton, General Counsel for Owyhee Irrigation District, hereby certify that the above resolution was duly adopted by the Board of Directors of Owyhee Irrigation District on January 17, 2012.

Dated: January 18, 2012



Michael W. Horton
General Counsel

COPY

January 16, 2012

Bureau of Reclamation
P.O. Box 25007
Denver, CO 80225

To Whom It May Concern:

This letter is in support of the Lower Owyhee River Rehabilitation Project Phase II developed by the Owyhee Watershed Council in cooperation with landowners and the Owyhee Irrigation District.

The project involves piping a lateral that will provide gravity flow to several producers to help facilitate the conversion of 673 acres from furrow irrigation to sprinkler and drip irrigation.

The installation of this pipeline will eliminate seepage within the lateral and return flows from entering the system. Through the course of the irrigation season there is so much sediment in the lateral from return flows that producers have sediment ponds at their turnouts to reduce sediment before irrigating the fields.

The pressurized system will also eliminate the need for electrical power to operate pumps for the pivots and drip irrigation systems saving the producers thousands of dollars.

As landowners, we understand the need to improve water quality in the Lower Owyhee River. Through the pressurization of the lateral, installation of sprinklers, and implementation of Best Management Practices, this project simultaneously works to protect the environment and the interests of local landowners.

It is my intent to install sprinklers on 260 acres and install microirrigation on 200 acres within the next five years.

Thank you for your time and consideration of this worthy project.

Thank you,



WBH Farms

COPY

January 16, 2012

Bureau of Reclamation
P.O. Box 25007
Denver, CO 80225

To Whom It May Concern:

This letter is in support of the Lower Owyhee River Rehabilitation Project Phase II developed by the Owyhee Watershed Council in cooperation with landowners and the Owyhee Irrigation District.

The project involves piping a lateral that will provide gravity flow to several producers to help facilitate the conversion of 673 acres from furrow irrigation to sprinkler and drip irrigation.

The installation of this pipeline will eliminate seepage within the lateral and return flows from entering the system. Through the course of the irrigation season there is so much sediment in the lateral from return flows that producers have sediment ponds at their turnouts to reduce sediment before irrigating the fields.

The pressurized system will also eliminate the need for electrical power to operate pumps for the pivots and drip irrigation systems saving the producers thousands of dollars.

As landowners, we understand the need to improve water quality in the Lower Owyhee River. Through the pressurization of the lateral, installation of sprinklers, and implementation of Best Management Practices, this project simultaneously works to protect the environment and the interests of local landowners.

It is my intent to install sprinklers on 120 acres within the next five years.

Thank you for your time and consideration of this worthy project.

Thank you,

A handwritten signature in cursive script that reads "Norma K. Bennett". The signature is written in black ink and is positioned to the right of the typed name "Thank you,".

were awarded in September 2011 and the second half will be awarded in March 2012 (Attached is a grant agreement for the 1st award). The grant agreement for the 2nd half of the funds will be submitted to BOR by April 1, 2012. The OID will have an in-kind of \$111,946.

Funding Plan:

Funding Sources:	Funding Amount
Non-federal entities:	
1. Oregon Watershed Enhancement Board	\$692,190
2. Owyhee Irrigation District*	\$169,814
Non-Federal Subtotal	\$862,004
Other Federal Entities:	
1.	
2.	
3.	
Other Federal Subtotal:	
Requested Reclamation Funding:	\$299,000
Total Project Funding:	\$1,161,004

Official Resolution

Please see attachment

Budget Narrative

Salaries and Wages:

The Owyhee Irrigation District will have responsibility for the installation of the pipeline. Owyhee Irrigation District Manager, Jay Chamberlin, Assistant Manager; Harvey Manser, and the Engineer, Mark Carpenter will be the key personnel that will be on site. The rest of the individuals are heavy equipment operators and laborers.

Fringe Benefits:

Employee insurance and retirement costs are the benefits for the Owyhee Irrigation District employees.

Travel:

Travel to and from site by managers to inspect the pipeline. Its 21.4 miles round trip.

Equipment:

A 320 DL Excavator, 420 Backhoe and 444 Loader are owned by the District. Equipment operators are District employees.

Supplies and Materials:

Project construction supplies and materials will be purchased with a grant from the Oregon Watershed Enhancement Board (OWEB).

Contractual Construction:

The District will have a subcontractor dig, lay, and backfill 23,660' pipeline at \$7.80/foot and install the thrust blocks at \$100/each.

Environmental and Regulatory Compliance:

These funds will be used to prepare any necessary environmental compliance reports, analysis, permits or approvals.

Reports:

As Built Drawings-Drawings will be completed by the District engineer tech.

Other: N/A

Indirect Costs: N/A

Contingency Costs: N/A

Total Costs:	Non-federal (OWEB & OID)	\$862,004
	BOR	\$299,000
	Total Costs	\$1,161,004

Budget Proposal

Budget Item Description	Quantity	\$/UNIT	OWEB GRANT	RECEIPIENT FUNDING	RECLAMATION FUNDING	TOTAL COST
Salaries & Wages						
OID Mgr-Jay Chamberlin	100hrs	\$37.93/hr		\$ 3,793.00		\$ 3,793.00
Asst. Mgr-Harvey Manser	60hrs	\$23.18/hr		\$ 1,398.80		\$ 1,398.80
Engineer Tech-Mark Carpenter	1044hrs	\$19.25/hr		\$ 13,097.00	\$ 7,000.00	\$ 20,097.00
Excavator Operator	520hrs	\$18.31/hr		\$ 1,831.00	\$ 7,690.20	\$ 9,521.20
Backhoe Operator	360hrs	\$16.55/hr		\$ 1,655.00	\$ 4,303.00	\$ 5,958.00
Loader Operator	320hrs	\$16.55/hr		\$ 1,655.00	\$ 3,641.00	\$ 5,296.00
Pipe Installer/Laborer 1	480hrs	\$16.55/hr		\$ 1,655.00	\$ 6,289.00	\$ 7,944.00
General Laborers 3	500 hrs/laborer	\$16.55/hr			\$ 24,825.00	\$ 24,825.00
Structural Mechanic	80hrs	\$18.01/hr		\$ 1,440.80		\$ 1,440.80
General Mechanic	80hrs	\$17.55/hr		\$ 1,404.00		\$ 1,404.00
Fringe Benefits						
OID Mgr-Jay Chamberlin	100hrs	\$20.55/hr		\$ 2,055.00		\$ 2,055.00
Asst. Mgr- Harvey Manser	60hrs	\$15.10/hr		\$ 906.00		\$ 906.00
Engineer Tech-Mark Carpenter	1044hrs	\$11.95/hr		\$ 10,527.40	\$ 1,948.40	\$12,475.80
Excavator Operator	520hrs	\$12.26/hr		\$ 1,226.00	\$ 5,149.20	\$ 6,375.20
Backhoe Operator	360hrs	\$11.46/hr		\$ 1,146.00	\$ 2,979.60	\$ 4,125.60
Loader Operator	320hrs	\$11.46/hr		\$ 1,146.00	\$ 2,521.20	\$ 3,667.20
Pipe Installer/Laborer 1	480hrs	\$11.46/hr		\$ 1,146.00	\$ 4,354.80	\$ 5,500.80
General Laborers 3	500 hrs/laborer	\$11.46/hr		\$ 2,284.20	\$14,905.80	\$17,190.00
Structural Mechanic	80hrs	\$12.61/hr		\$ 1,008.80		\$ 1,008.80
General Mechanic	80hrs	\$11.25/hr		\$ 900.00		\$ 900.00
Travel						
Manager-Inspect (42 miles round trip;30 round trips)	30	@ \$.51/mi = \$21.42/ea		\$ 642.60		\$ 642.60
Asst Mgr-Site Visit(42 miles round trip;50 trips)	50	@ \$.51/mi = \$21.42/ea		\$ 1,071.00		\$ 1,071.00
Equipment						
320DL Excavator	520hrs	\$59.08/hr		\$ 30,721.60		\$ 30,721.60
320DL Excavator fuel cost	520hrs	\$3.499/ gal @7.5 gal/hr		\$13,646.10		\$13,646.10
420 Backhoe	360hrs	\$38.90/hr		\$ 14,004.00		\$14,004.00
420 Backhoe fuel cost	360hrs	\$3.499/ Gal @5.3 Gal/hr		\$ 6,676.10		\$ 6,676.10
444 Loader	320hrs	\$40.00/hr		\$ 12,800.00		\$12,800.00
444 Loader fuel cost	320hrs	\$3.499/ gal @2.8 gal/hr		\$ 3,135.11		\$ 3,135.11
Supplies/Materials						
Construction						
30" pipe 100 psi	7540'	\$44.65/ft	336,661.0 0			336,661.00

27" pipe 100 psi	1220'	\$27.39/ft	33,415.80		33,415.80
24" pipe 125 psi	3160'	\$27.97/ft	88,385.20		88,385.20
18" pipe 125 psi	2040'	\$15.17/ft	30,946.81		30,946.81
15" pipe 125 psi	1860'	\$10.16/ft	18,897.60		18,897.60
12" pipe 125 psi	3460'	\$6.52/ft	22,559.20		22,559.20
10" pipe 125 psi	3820'	\$4.49/ft	17,151.80		17,151.80
8" pipe 125 psi	280'	\$2.88/ft	806.40		806.40
6" pipe 125 psi	280'	\$1.64/ft	459.20		459.20
30x30x6 Tee	1	\$564/ea	564.00		564.00
30x30x8 Tee	1	\$588/ea	588.00		588.00
30x30x10 Tee	2	\$700/ea	1,400.00		1,400.00
30x30x12 Tee	1	\$630/ea	630.00		630.00
27x27x6 Tee	1	\$528/ea	528.00		528.00
27x27x10 Tee	2	\$672/ea	1,344.00		1,344.00
24x24x18 Tee	1	\$850/ea	850.00		850.00
24x24x6 Tee	3	\$540/ea	1,620.00		1,620.00
18x18x6 Tee	2	\$360/ea	720.00		720.00
15x15x10 Tee	1	\$408/ea	408.00		408.00
15x15x8 Tee	1	\$370/ea	370.00		370.00
12x12x10 Tee	1	\$200/ea	200.00		200.00
12x12x8 Tee	3	\$180/ea	540.00		540.00
12x12x6 Tee	1	\$168.77/ea	168.77		168.77
10x10x10 Tee	1	\$130/ea	130.00		130.00
10x10x8 Tee	1	\$110/ea	110.00		110.00
10x10x6 Tee	2	\$96/ea	192.00		192.00
30-27 Reducer	1	1080/ea	1,080.00		1,080.00
27-24 Reducer	1	\$1020/ea	1,020.00		1,020.00
24-18 Reducer	1	\$894/ea	894.00		894.00
18-15 Reducer	1	\$280/ea	280.00		280.00
15-12 Reducer	1	\$161/ea	161.00		161.00
12-10 Reducer	1	\$165.60/ea	165.60		165.60
8" Gate	11	\$621.47/ea	6,836.17		6,836.17
10" Gate	8	\$720/ea	5,760.00		5,760.00
12" Gate	1	\$830/ea	830.00		830.00
8" Flow Meter	11	\$1327/ea	14,597.00		14,597.00
10" Flow Meter	8	\$1440/ea	11,520.00		11,520.00
12" Flow Meter	1	\$1570/ea	1,570.00		1,570.00
8" Elbow	24	\$96/ea	2,304.00		2,304.00
10" Elbow	23	\$144/ea	3,312.00		3,312.00
10"x45 Elbow	5	\$175/ea	875.00		875.00
12" Elbow	13	\$190/ea	2,470.00		2,470.00
12"x45 Elbow	1	\$225/ea	225.00		225.00
15" Elbow	1	\$370/ea	370.00		370.00
18" Elbow	3	\$420/ea	1,260.00		1,260.00
24" Elbow	1	\$480/ea	480.00		480.00
27" Elbow	1	1030/ea	1,030.00		1,030.00
30" Elbow	1	\$700/ea	700.00		700.00
30"x45 Elbow	4	\$845/ea	3,380.00		3,380.00
Air Vac Valves (air vents)	9	\$840/ea	7,560.00		7,560.00
24" Inline valve	1	\$5000/ea	5,000.00		5,000.00
18" Inline valve	4	\$2841/ea	11,364.00		11,364.00
Concrete (Thrust Blocks)	34 yards	\$600/ea	20,400.00		20,400.00
Surge Valves	2	\$550/ea	1,100.00		1,100.00

Inlet Structure	1	\$8,000/ea	8,000.00			8,000.00
Screen (Filter)	1	\$34,100/ea	18,000		\$ 16,100.00	34,100.00
Contractual Construction						
contract pipe installation of mainline	23,660ft	\$7.80/ft			\$184,548.80	\$184,548.80
contract installation of thrust blocks	34	\$100.00/ea			\$ 3,400.00	\$ 3,400.00
Environmental & Regulatory Compliance	1	\$7,500.00		\$ 1,900.00	\$5,600.00	\$7,500.00
Other						
Reporting						
As Built Drawings	120hr	\$31.20/hr			\$3,744.00	\$3,744.00
Rehabilitation of existing open lateral:						
Salaries & Wages						
Excavator Operator	120	\$18.31/hr		\$ 2,197.20		\$ 2,197.20
Loader Operator	80	\$16.55/hr		\$ 1,324.00		\$ 1,324.00
General Laborer 3	120	\$16.55/hr		\$ 5,958.00		\$ 5,958.00
Grader Operator	40	\$16.55/hr		\$ 662.00		\$ 662.00
Fringe Benefits						
Excavator Operator	120	\$12.26/hr		\$ 1,471.20		\$ 1,471.20
Loader Operator	80	\$11.46/hr		\$ 916.80		\$ 916.80
General Laborer 3	120	\$11.46/hr		\$ 4,125.60		\$ 4,125.60
Grader Operator	40	\$11.46/hr		\$ 458.40		\$ 458.40
Equipment						
320DL Excavator	120	\$59.08/hr		\$ 7,089.60		\$ 7,089.60
320DL Excavator fuel cost	120hrs	\$3.499/ gal @7.5 gal/hr		\$ 3,149.10		\$ 3,149.10
Large Dump Truck 3	120	\$41.70/hr		\$ 5,004.00		\$ 5,004.00
444C Loader	80	\$40.00/hr		\$ 3,200.00		\$ 3,200.00
444 Loader fuel cost	80hrs	\$3.499/ gal @2.8 gal/hr		\$ 783.78		\$ 783.78
130G Grader	40	\$43.44/hr		\$ 1,737.60		\$ 1,737.60
Total Direct Costs						
Indirect Costs						
Total Project Costs			692,189. 55	\$169,813.68	\$299,000.00	\$1,161,003.23

Copy

Owhyee Irrigation District
Mark Carpenter

January 18, 2012

RE: Adrian Irrigation Line

Mark-

Warrington Construction's Proposal to install owner furnished approximately 5,600 L.F. 30" PVC, 2,000 L.F. 27" PVC, 3,600 L.F. of 24" PVC, and the remaining 12,460 L.F. of smaller diameter pipe in Adrian, Oregon. Included in the bid is Equipment and Labor to install all 23,660 L.F. of main line pipe with elbows and tees, (3) Road Crossings without asphalt and removal of obstructions. Asphalt and disposal of concrete structures/debris by others.

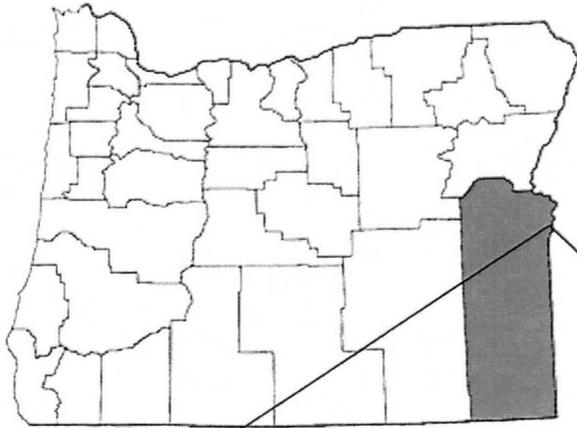
PRICE PER FOOT	\$ 7.80/Foot
Thrust Blocks(20)	\$100.00/Thrust Block

Thank You

Chelsey Warrington

COPY

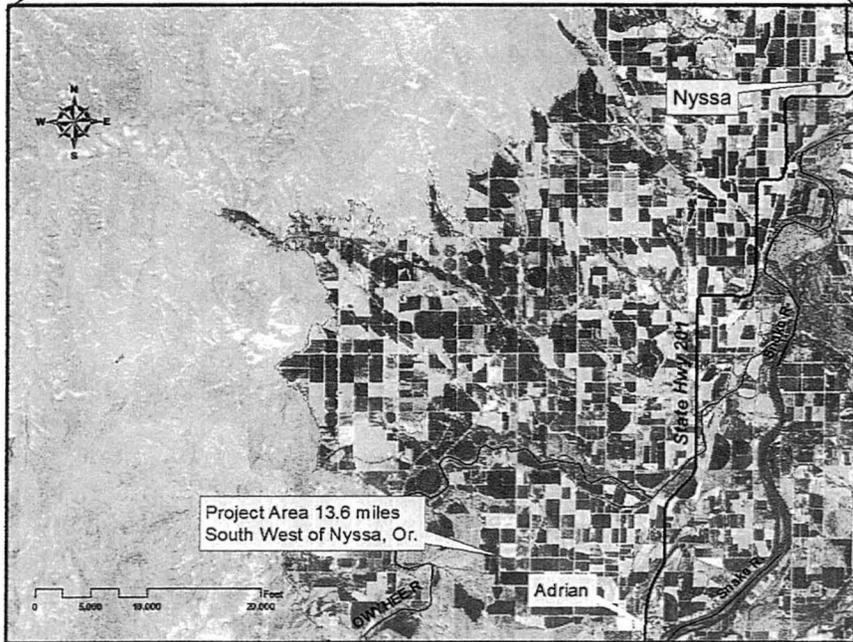
Owyhee Watershed council Newell Water Quality Improvement Project Phase 1



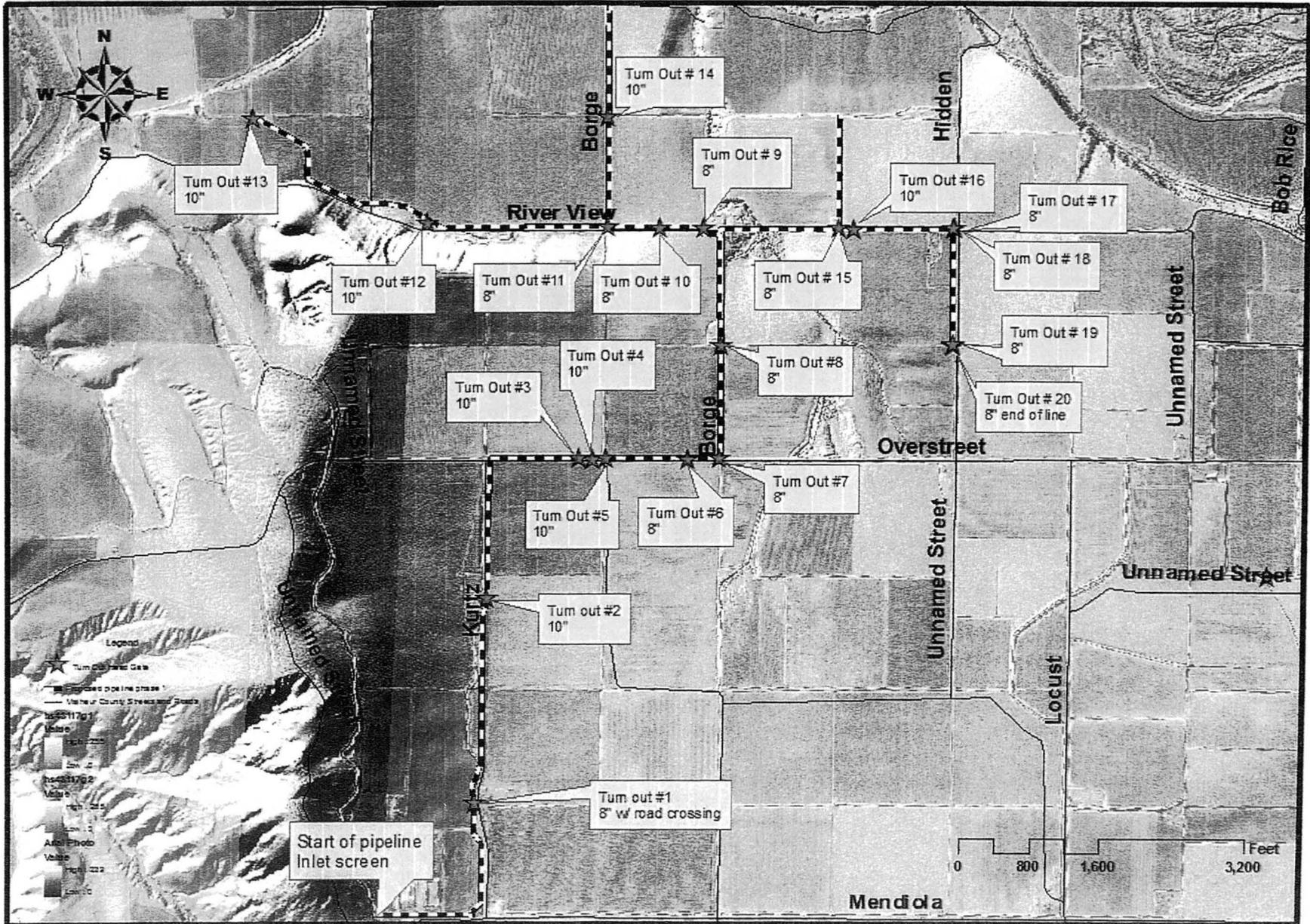
Project Area is approximately 13.6 miles South West of Nyssa, Or.

Index of Drawings

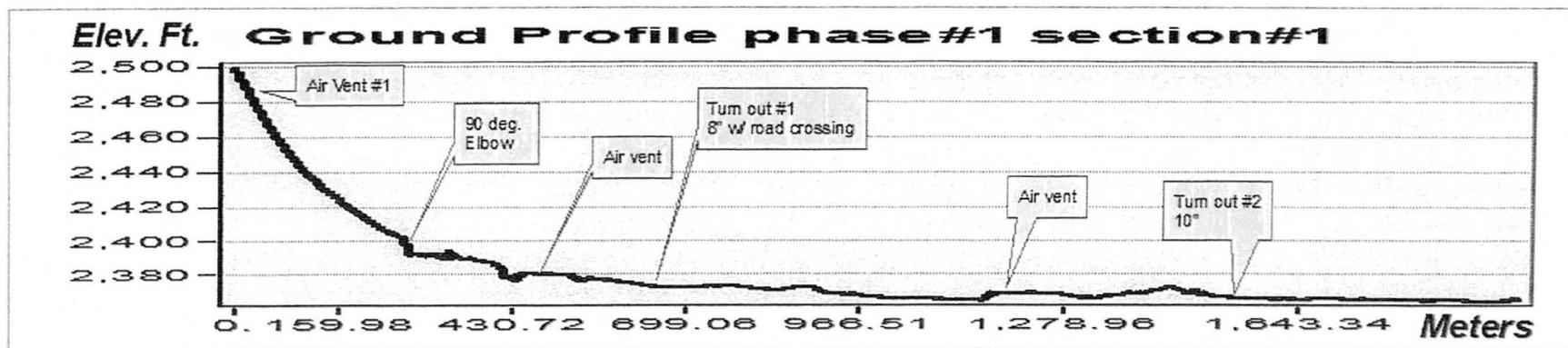
Sheet No.	Title
1.	Project location and Index of Drawings
2.	Plan View
3.	Proposed pipeline 1 section 1 Ground profile & layout
4.	Proposed pipeline 1 section 2 Ground profile & layout
5.	Proposed pipeline 1 section 3 Ground profile & layout
6.	Proposed pipeline 1 section 4 Ground profile & layout
7.	Proposed pipeline 1 section 5 Ground profile & layout
8.	Inlet screen specs.
9.	Material list
10.	Hydraulic Design sheet 1
11.	Hydraulic Design sheet 2
12.	Hydraulic Design sheet 3
13.	Hydraulic Design sheet 4
14.	Thrust-block and Outlet detail sheet
15.	Air vent and Burial Valve detail
16.	Trench Backfill Detail sheet 1
17.	Trench Backfill Detail sheet 2
18.	Trench Backfill Detail sheet 3



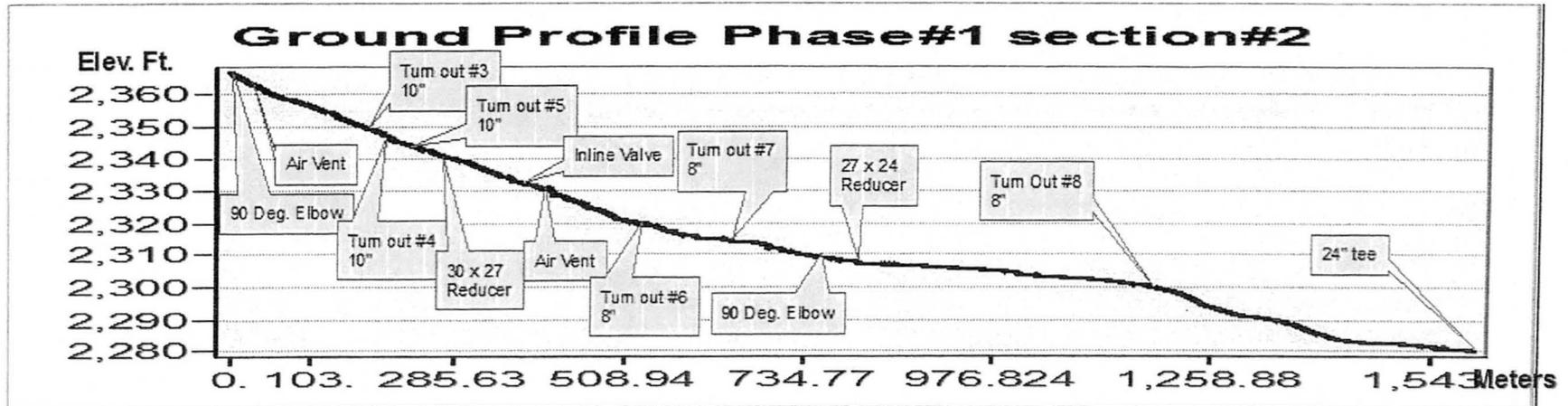
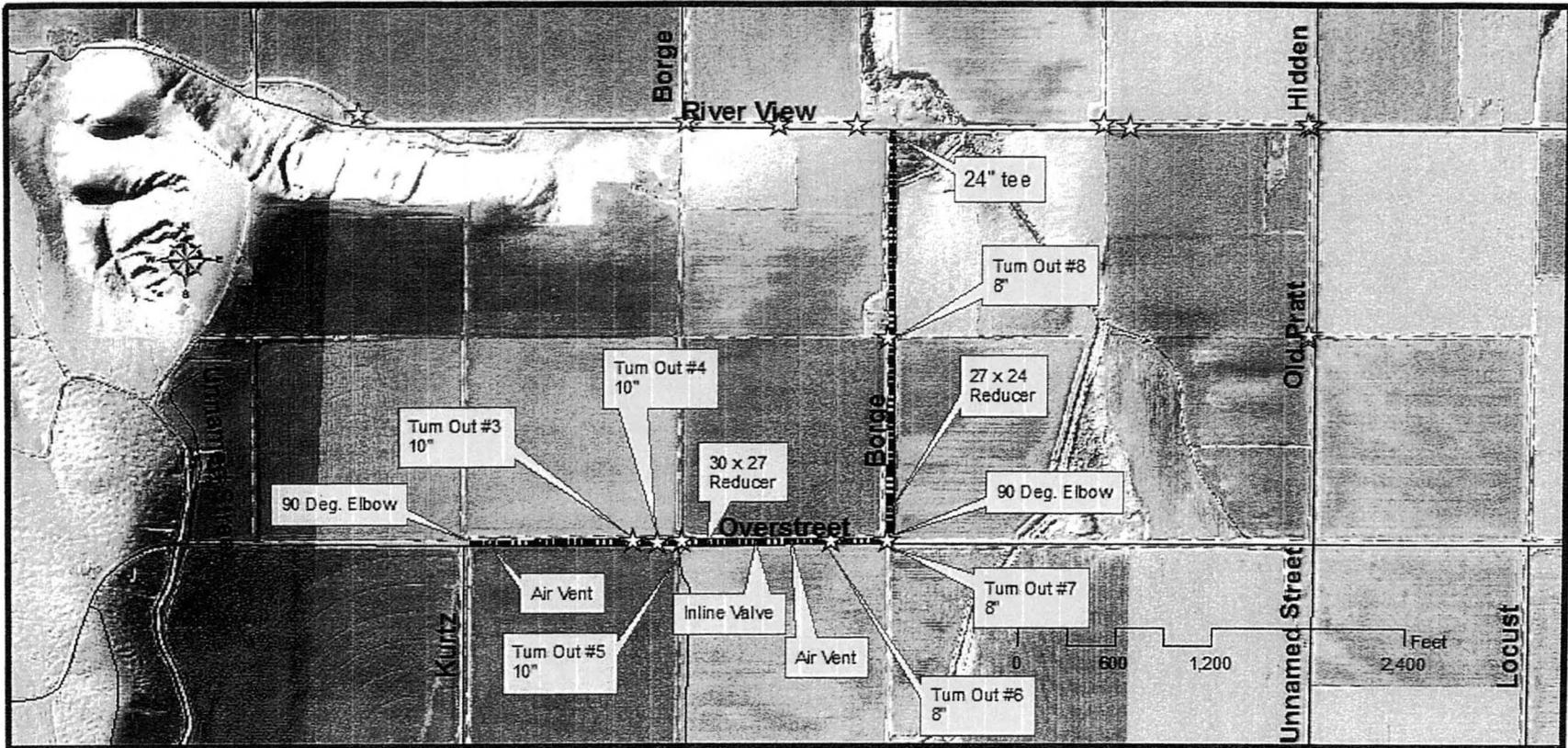
Newell Water Quality Improvement Project Phase 1 Plan View



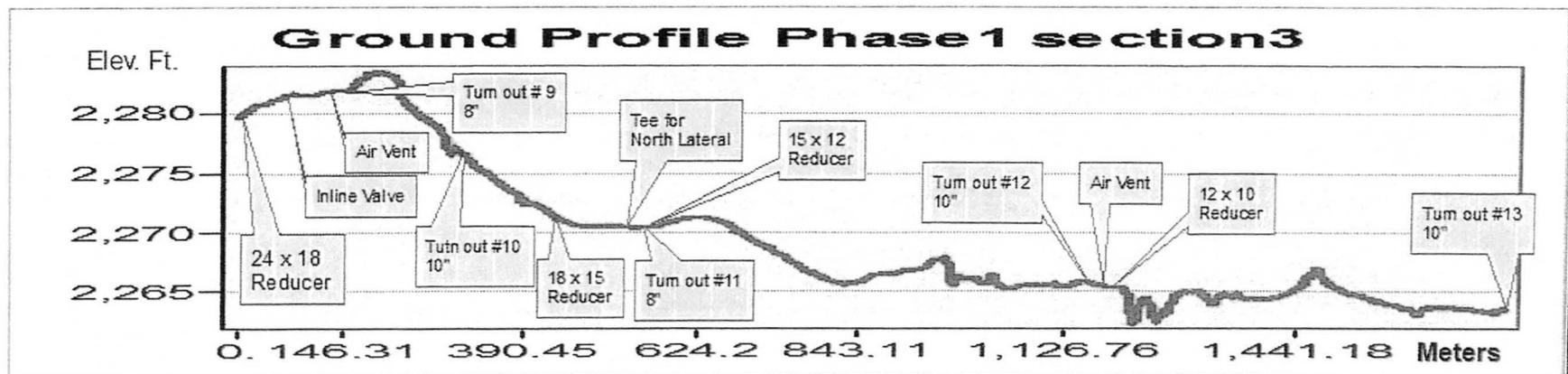
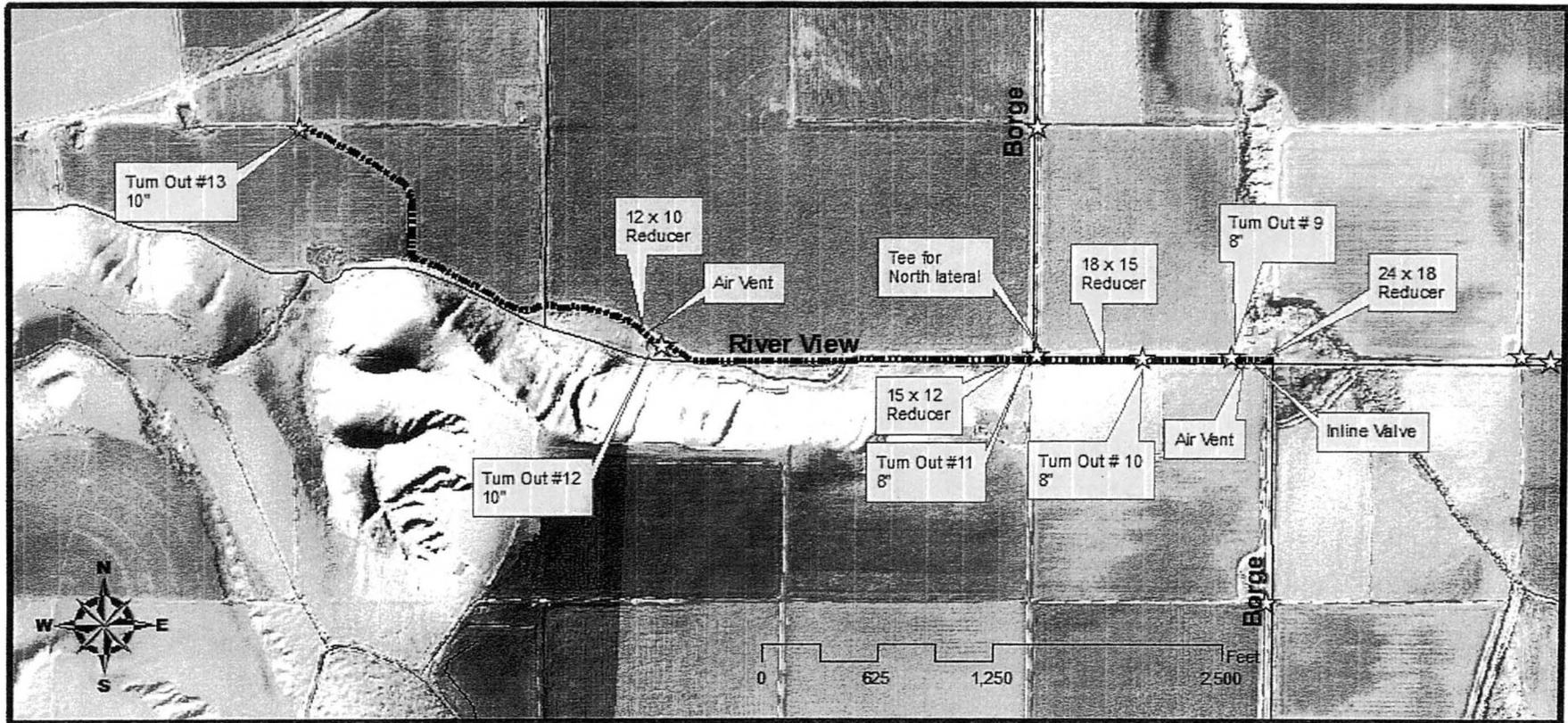
Proposed pipeline Phase #1 section #1 Ground Profile and layout



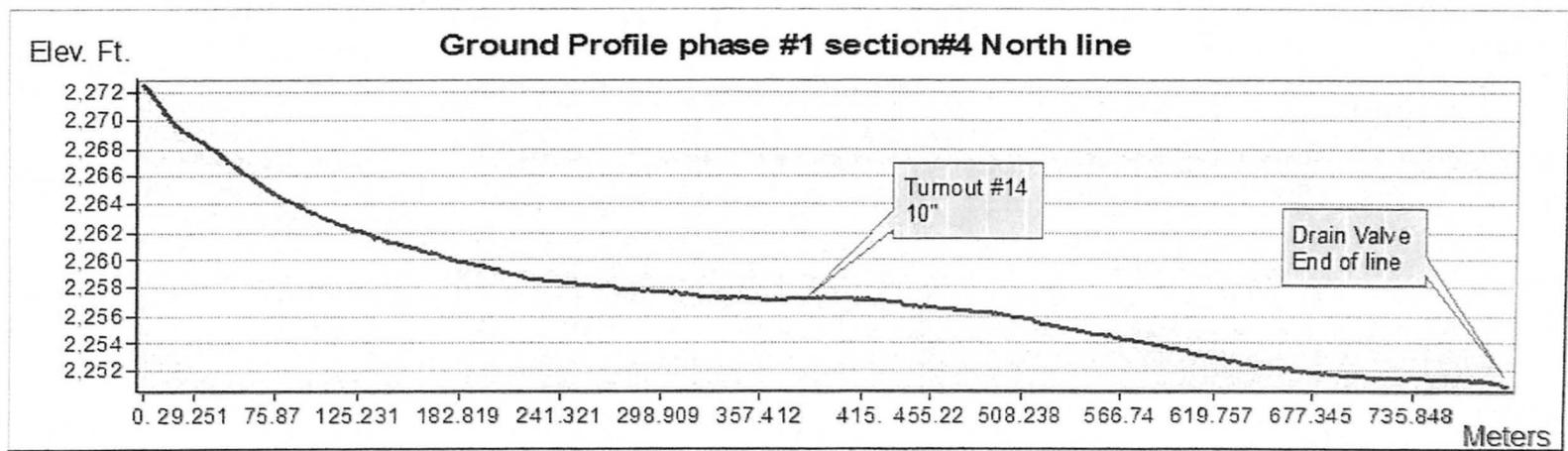
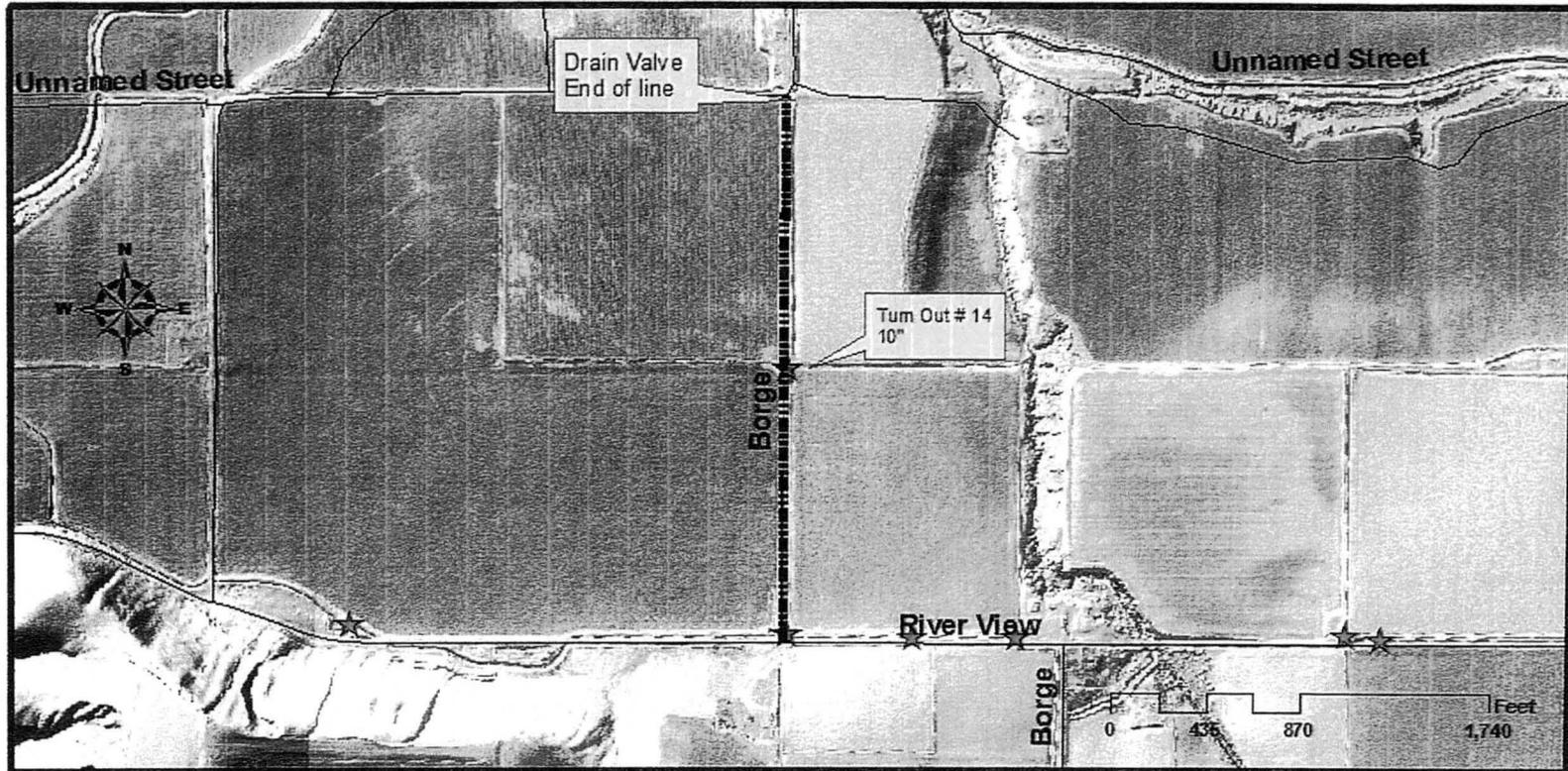
Proposed Pipeline Phase#1 section#2 Ground Profile and layout



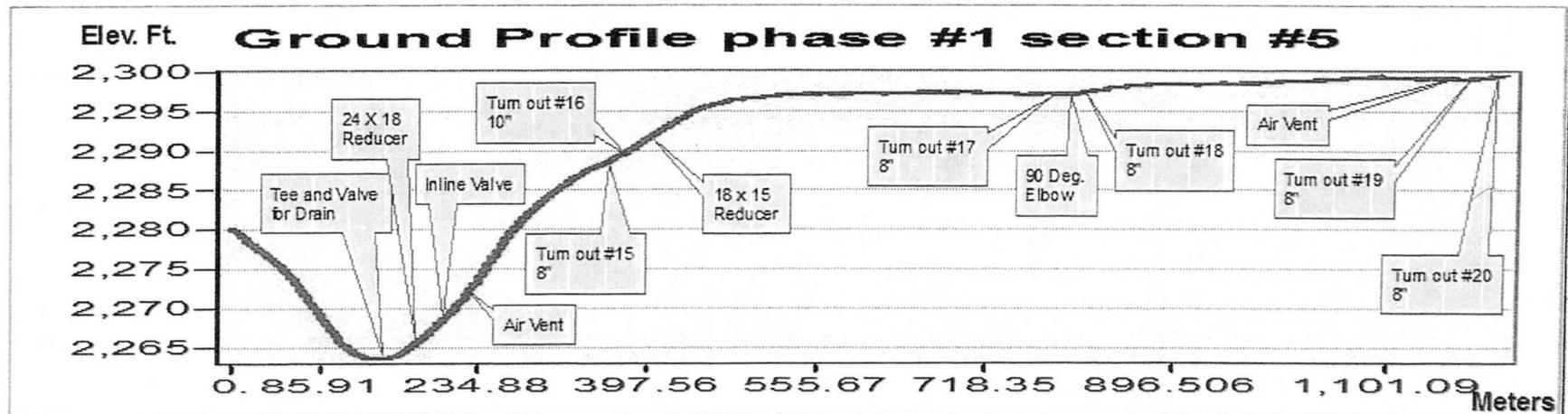
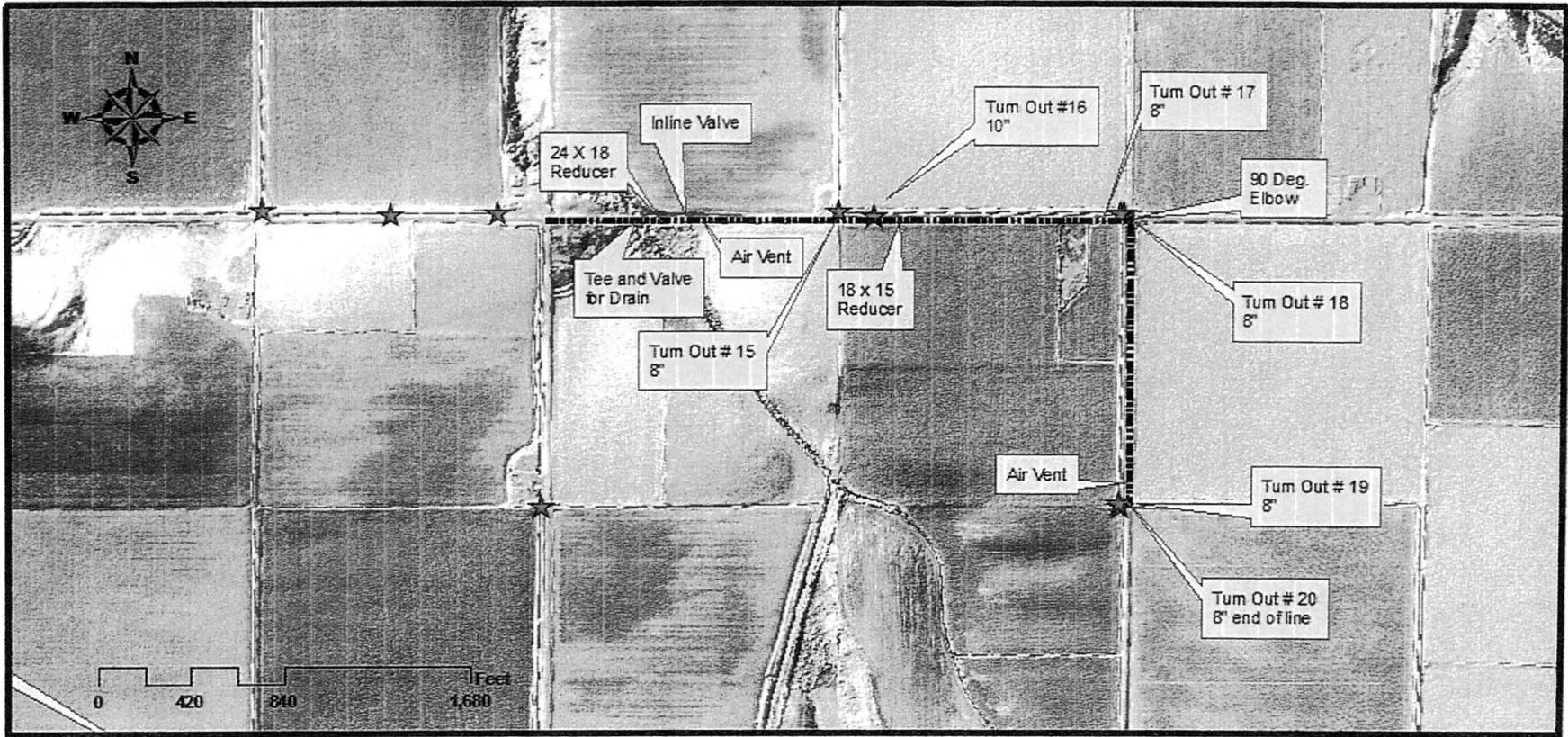
Proposed pipeline Phase #1 section#3 Ground Profile and layout



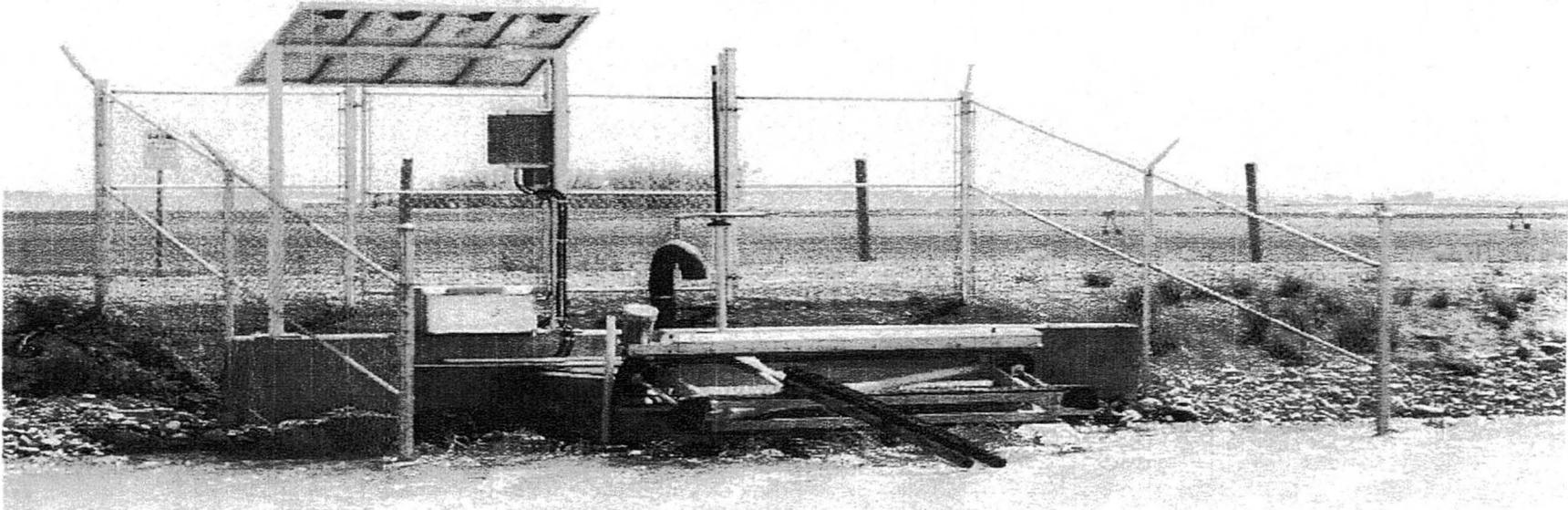
Proposed pipeline Phase #1 Section #4 North line Ground Profile and layout



Prosed pipeline #1 section #5 Ground Profile and Layout



Newell Water Quality Improvement Project Inlet screen for Phase #1



Inlet Screen Manufactured by: Aqua Systems 2000 Inc.

Capacity: up to 50 cfs

Screen surface area: 80 sq. ft. 8' x 10'

Drive Train: 2hp 24 V dc gear motor

Power Source: Solar dc

Newell Water Quality Improvement Project Phase 1

Material List

<u>Pipe Dia.</u>	<u>Quantity</u>	<u>Pipe Dia.</u>	<u>Quantity</u>
<u>100psi pipe</u>		<u>Reducers</u>	
30"	7540 ft.	30-27	1
27"	1220 ft.	27-24	1
<u>125psi pipe</u>		24-18	1
24"	3160 ft.	21-18	1
18"	2040 ft.	18-15	1
15"	1860 ft.	15-12	1
12"	3460 ft.	12-10	1
10"	3540 ft.	<u>Gates</u>	
8"	300 ft.	8"	11
<u>TEE'S</u>		10"	8
30x30x8	1	12"	1
30x30x12	1	<u>Flow Meters</u>	
27x27x10	1	8"	11
27x27x8	1	10"	8
24x24x10	2	12"	1
21x21x10	1	<u>Elbows</u>	
18x18x18	1	8"	24
18x18x8	5	10"	23
15x15x10	1	12"	13
15x15x8	1	18"	3
12x12x12	1	24"	1
12x12x10	1	27"	1
10x10x10	1	30"	1
10x10x8	2	<u>Air Vac</u>	
		<u>Valves</u>	
		<u>Inline Valves</u>	
		24"	1
		18"	4
		<u>Thrust Blocks</u>	
		Concrete	34yds.
		<u>Inlet Structures</u>	
			1
		<u>Filter</u>	1

Hydraulic Design sheet 1

C = 140

Owyhee Irrigation District
Lateral O-1 Green Line

Preliminary Design

16 December 2010

<u>AG Dist</u>	<u>Station</u>	<u>Outlet</u>	<u>Station</u>	<u>Length</u>	<u>Q</u>	<u>Nom</u>	<u>ID</u>	<u>Vel</u>	<u>Friction</u>	<u>HGL</u>	<u>Oper. Press</u>	<u>Static Hd</u>	<u>Static Hd</u>			
		<u>cfs</u>	<u>gpm</u>	<u>Dia ins</u>	<u>Elev</u>	<u>Ft</u>	<u>CFS</u>	<u>gpm</u>	<u>Dia</u>	<u>fps</u>	<u>Loss</u>	<u>Elev</u>	<u>PSI</u>	<u>Feet</u>	<u>PSI</u>	
	Bot Canal HWL				2482.1 2485.6							2494.6	0.0	9.0	0.0	
20.0	Air Vent	0.000	0	6	2480.0	20	24.32	10912	30	29.5	5.12	0.05	2494.6	6.3	14.6	6.3
1080.0	Tee 0	0.000	0	12	2382.4	1060	24.32	10912	30	29.5	5.12	2.47	2494.6	6.3	14.6	6.3
1336.0	Pipe	0.000	0	0	2377.0	256	24.32	10912	30	29.5	5.12	0.60	2492.1	47.5	112.2	48.6
2189.0	Driveway	0.000	0	0	2370.3	853	24.32	10912	30	29.5	5.12	1.99	2491.5	49.6	117.6	50.9
2428.0	12" Pipe	0.000	0.0	0	2367.4	239	24.32	10912	30	29.5	5.12	0.56	2489.5	51.6	124.3	53.8
2485.0	Gate 1	0.925	415	8 37	2366.9	57	24.32	10912	30	29.5	5.12	0.13	2488.9	52.6	127.2	55.1
4702.0	Beg Conc Pipe County Road	0.000	0.0	0	2365.3	2217	23.40	10497	30	29.5	4.93	4.80	2488.8	52.8	127.7	55.3
4812.0	End Conc Pipe	0.000	0.0	0	2364.3	110	23.40	10497	30	29.5	4.93	0.24	2484.0	51.4	129.3	56.0
4856.0	Gate 2	1.850	830	10 74	2364.7	44	23.40	10497	30	29.5	4.93	0.10	2483.8	51.7	130.3	56.4
6454.0	Beg CMP County Road	0.000	0.0	0	2358.7	1598	21.55	9667	30	29.5	4.54	2.97	2483.7	51.5	129.9	56.2
6501.0	End CMP	0.000	0.0	0	2359.2	47	21.55	9667	30	29.5	4.54	0.09	2480.7	52.8	135.9	58.8
7527.0	Gate 3 N	1.800	807	10 72	2332.4	1026	21.55	9667	30	29.5	4.54	1.91	2480.6	52.6	135.4	58.6
7678.0	Gate 4 N	1.850	830	10 74	2328.6	151	19.75	8859	27	26.59	5.12	0.40	2478.7	63.3	162.2	70.2
						138	17.90	8030	27	26.59	4.64	0.30	2478.3	64.8	165.0	71.9

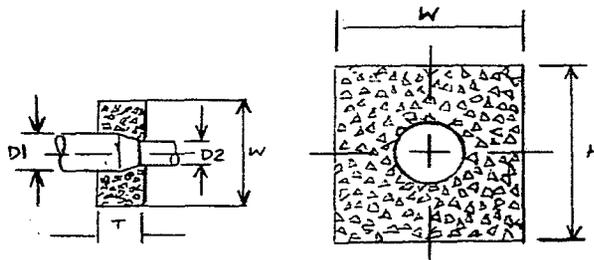
Hydraulic Design sheet 2

AG Dist	Station	Outlet		Station		Length Ft	Q		Nom Dia	ID	Vel fps	Friction Loss	HGL Elev	Oper Press PSI	Static Hd Feet	Static Hd PSI	
		cfs	gpm	Dia ins	Elev		CFS	gpm									
7816.0	Gate 5 S	1.925	864	10	77	2325.2							2478.0	66.2	169.4	73.3	
8739.0	Gate 6 S	0.325	146	8	13	2308.4	923	15.97	7166	27	26.59	4.14	1.64	2476.4	72.7	186.2	80.6
9067.0	Inline Gate	0.000	0	0		2302.0	328	15.65	7020	24	23.59	5.15	1.00	2475.4	75.1	192.6	83.4
9077.0	Air Vent	0	0	6		2301.5	10	15.65	7020	24	23.59	5.15	0.03	2475.3	75.3	193.1	83.6
9097.0	Elbow-Gate 7 E	0.775	348	6	31	2301.3	20	15.65	7020	24	23.59	5.15	0.06	2475.3	75.3	193.3	83.7
9846.0	Driveway	0.000	0	0		2298.1	749	14.87	6673	24	23.59	4.90	2.08	2473.2	75.8	196.5	85.1
10405.0	Gate 8 E	0.450	202	6	18	2293.5	559	14.87	6673	24	23.59	4.90	1.55	2471.6	77.1	201.1	87.1
10450.0	Beg Drive	0.000	0	0		2293.1	45	14.42	6471	24	23.59	4.75	0.12	2471.5	77.2	201.5	87.2
10518.0	End Drive-Lawr	0.000	0	0		2292.4	68	14.42	6471	24	23.59	4.75	0.18	2473.0	78.2	202.2	87.5
10672.0	Driveway	0.000	0	0		2289.3	154	14.42	6471	24	23.59	4.75	0.40	2472.6	79.4	205.3	88.9
11840.0	Beg CMP County Road	0.000	0	0		2275.9	1168	14.42	6471	24	23.59	4.75	3.07	2469.5	83.8	215.7	94.7
11886.0	End CMP	0.000	0	0		2275.4	46	14.42	6471	24	23.59	4.75	0.12	2469.4	84.0	219.2	94.9
11896.0	Tee 1 to Drain	7.374	3308	18		2275.4	10	14.42	6471	24	23.59	4.75	0.03	2469.4	84.0	219.2	94.9
11906.0	Gate 9 N	0.775	348	6	31	2275.4	10	7.05	3163	18	17.79	4.08	0.03	2469.4	84.0	219.2	94.9
12402.0	Gate 10 N	0.825	370	6	33	2271.2	496	6.28	2815	18	17.79	3.64	1.10	2469.4	84.0	219.2	94.9
12971.0	Tee 2	1.675	751	10	67	2263.4	569	5.45	2445	15	14.55	4.72	2.59	2468.3	85.3	223.4	96.7
12991.0	Beg CMP County Road	0.000	0	0		2263.4	20	3.78	1693	12	11.64	5.11	0.14	2465.7	87.6	231.2	100.1
13043.0	End CMP	0.000	0	0		2263.1	52	3.78	1693	12	11.64	5.11	0.36	2465.6	87.5	231.2	100.1
														2465.2	87.5	231.5	100.2

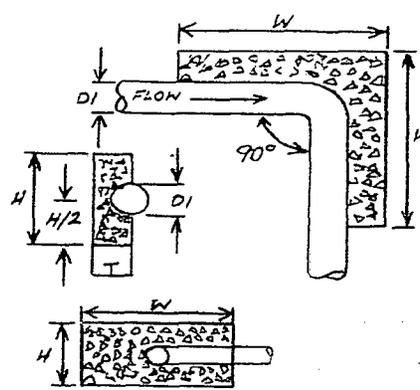
Hydraulic Design sheet 3

AG Dist	Station	Outlet		Station		Length	Q		Nom	ID	Vel	Friction	HGL	Oper Press	Static Hd	Static Hd
		cfs	gpm	Dia	ins		Elev	Ft								
13063.0	Inline Gate	0.000	0	0	2263.0	20	3.78	1693	12	11.64	5.11	0.14	2465.1	87.5	231.6	100.3
13073.0	Air Vent	0.000	0	6	2259.9	10	3.78	1693	12	11.64	5.11	0.07	2465.0	88.8	234.7	101.6
13083.0	Gate 11 NW	0.975	437	8	2259.9	10	3.78	1693	12	11.64	5.11	0.07	2464.9	88.8	234.7	101.6
13963.0	Beg CMP	0.000	0	0	2259.8	880	2.80	1256	12	11.64	3.79	3.46	2461.6	87.4	234.8	101.6
	County Road					56	2.80	1256	12	11.64	3.79	0.22				
14019.0	End CMP	0.000	0	0	2259.8	805	2.80	1256	12	11.64	3.79	3.17	2461.4	87.3	234.8	101.6
14824.0	Beg CMP	0.000	0	0	2258.3	73	2.80	1256	12	11.64	3.79	0.29	2458.2	86.5	236.3	102.3
	County Road															
14897.0	End CMP	0.000	0	0	2256.9	137	2.80	1256	12	11.64	3.79	0.54	2457.9	87.0	237.7	102.9
15034.0	Gate 12 NW	1.725	774	10	2258.1	444	1.08	482	10	9.702	2.09	0.72	2457.4	86.3	236.5	102.4
15478.0	Beg CMP	0.000	0	0	2258.3	43	1.08	482	10	9.702	2.09	0.07	2456.7	85.9	236.3	102.3
	County Road															
15521.0	End CMP	0.000	0	0	2257.6	777	1.08	482	10	9.702	2.09	1.26	2456.6	86.1	237.0	102.6
16298.0	Pipes	0.000	0	0	2262.2	928	1.08	482	10	9.702	2.09	1.51	2455.3	83.6	232.4	100.6
17226.0	End Gate 13	1.075	482	10	2256.9								2453.8	85.3	237.7	102.9
							0.00	0								
			10912													
	East Side Lateral															
	Tee 1			0	2275.4								2492.5			
						566	7.38	3308	18	17.79	4.27	1.70				
566.0	Drain	0.000	0	15	2275.0	920	7.38	3308	18	17.79	4.27	2.76	2490.8	93.4	219.6	95.1
1486.0	Gate 15 SW	1.250	561	8	2285.9	20	6.13	2748	18	17.79	3.55	0.11	2488.0	87.5	208.7	90.3
1506.0	Gate 16 N	2.000	897	10	2291.9								2487.9	84.9	202.7	87.7

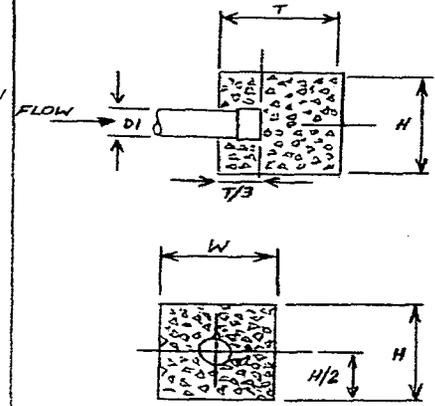
Thrust Block and Outlet Design Detail



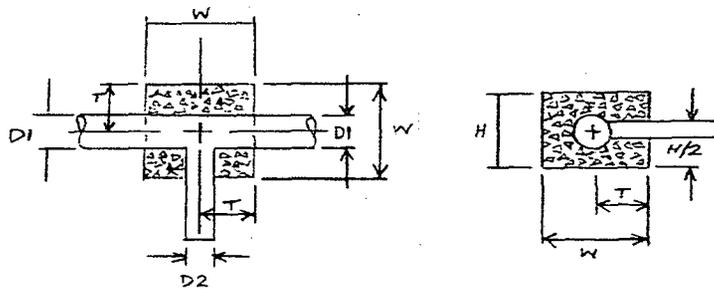
— THRUST BLOCK DETAIL —
FOR REDUCERS



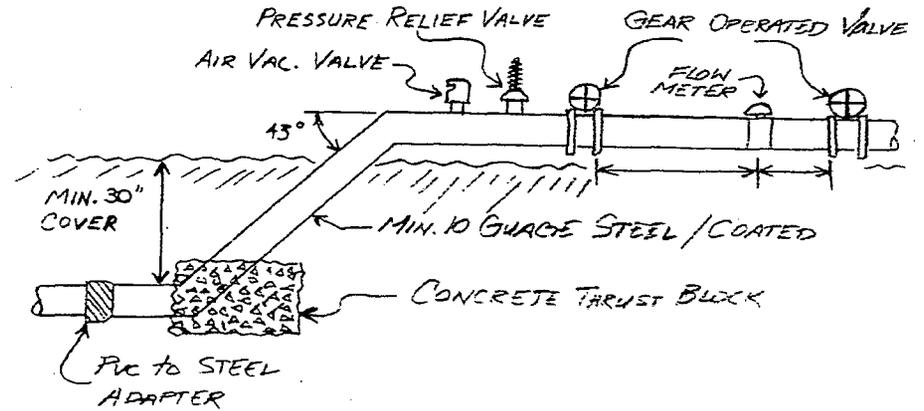
— THRUST BLOCK DETAIL —
FOR 90° ELBOW



— THRUST BLOCK DETAIL FOR —
END CAP

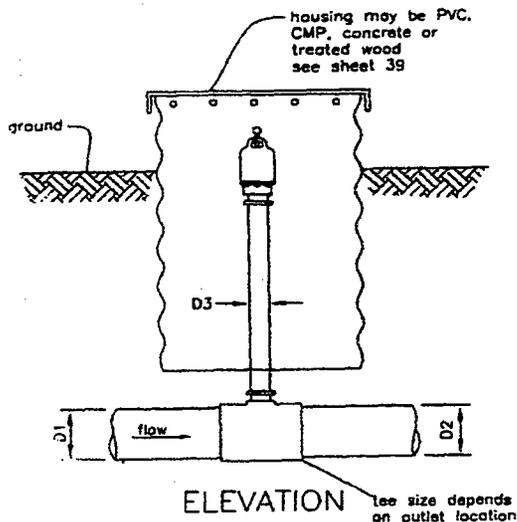


— THRUST BLOCK DETAIL —
FOR TEES



— TURN-OUT DETAIL —

Air Vent And Buried Valve Detail

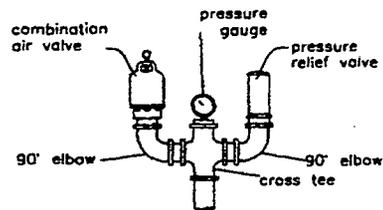


Riser shall be schedule 80 pvc pipe with threaded adapters or be schedule 40 galvanized steel pipe.

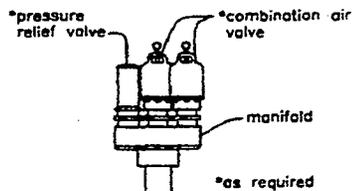
DIMENSIONS

- Air relief valve dia. depends (in)
- Pressure rating depends on location (psi)
- Pressure relief valve dia. depends (in)
- Pressure rating depends on location (psi)
- D1 = see outlet details (in)
- D2 = see outlet details (in)
- D3 = see outlet details (in)
- Alternative _____

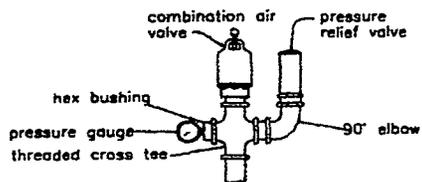
This drawing requires supporting technical documentation prior to use and must be adapted to the specific site.



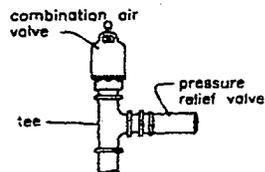
ALTERNATE A



ALTERNATE B

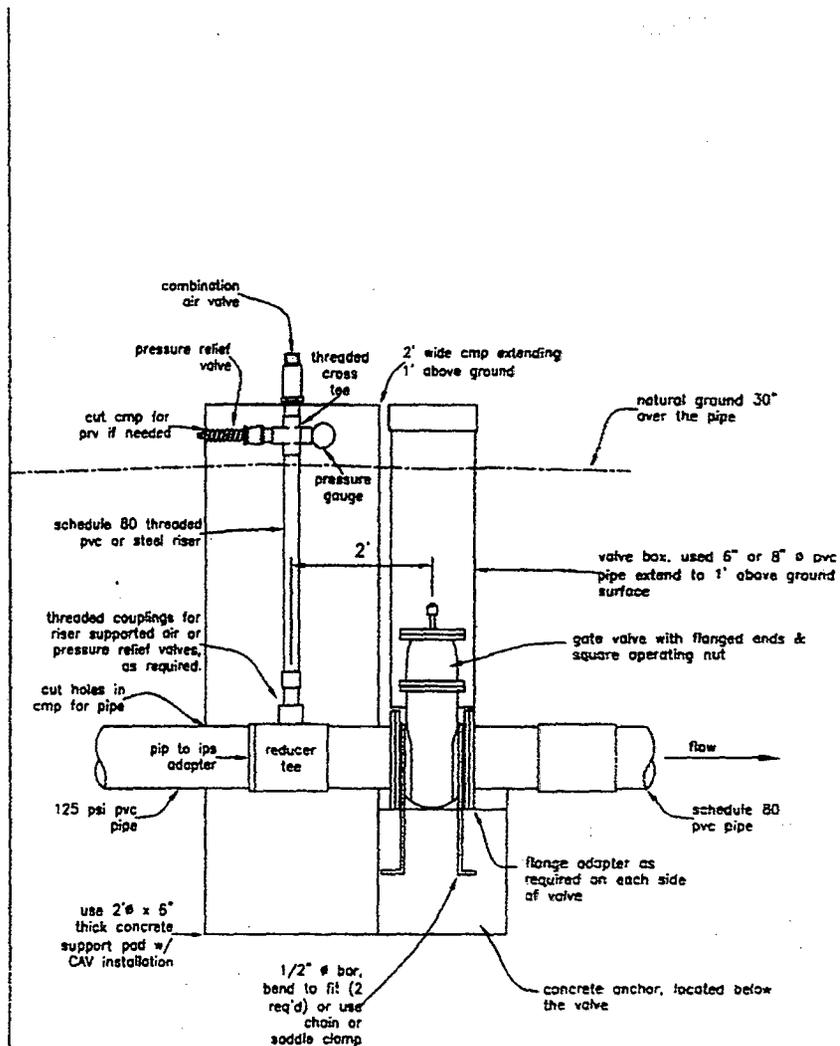


ALTERNATE C



ALTERNATE D

Drawing not to scale.



GATE VALVE ASSEMBLY

drawing not to scale

Trench Backfill Detail sheet 1

* Place fill over pipe as shown to provide minimum cover in places where natural ground is low.

Final backfill shall be free from material larger than 3 inches.

Select backfill shall consist of soil or granular material that is free from rocks greater than 1 inch in diameter.

Bedding shall be used on foundations containing material larger than 1 inch. Bedding may be either granular material conforming to ASTM C-33 gradation 7 or 8, or select backfill material.

This drawing requires supporting technical documentation prior to use and must be adopted to the specific site.

See NRCS CS-13, NRCS CS-62, NRCS CS-64, NRCS MS-211

QAR 437-004-3100: Excavation

(1) Definition. Excavation — A man-made cut, hole, pit, trench or depression in the earth.

NOTE: Before any digging you must comply with Oregon's "Call Before You Dig" law. Call 1-800-332-2344.

(2) Five feet or more. Employees must not enter any excavation 5 feet or deeper unless protective systems are in place to protect from cave-in or sloughing.

(3) Less than 5 feet. Employees must not enter any excavation less than 5 feet deep when the sides are losing their shape, are loose or show other signs of being unstable unless protective systems are in place to protect from cave-in or sloughing.

(4) Shoring. Systems installed in the excavation must be strong enough and engineered to provide protection from hazards of the particular excavation.

QAR 437-004-3100 (continued)

Excavation

(5) Design. Systems must be as follows:

(a) Designed by a registered professional engineer.

(b) Designed using the manufacturer's or other tabulated data.

(6) Follow instructions. When using manufactured systems, follow the instructions and do not exceed the limitations of the system.

(7) System size. Systems must extend from the bottom of the excavation to at least the top edge.

(8) Slope. Shoring is an acceptable system to protect workers. Shoring must be at a ratio of at least 1 1/2 to 1. That means a horizontal distance of 1 1/2 feet for every 1-foot of trench depth.

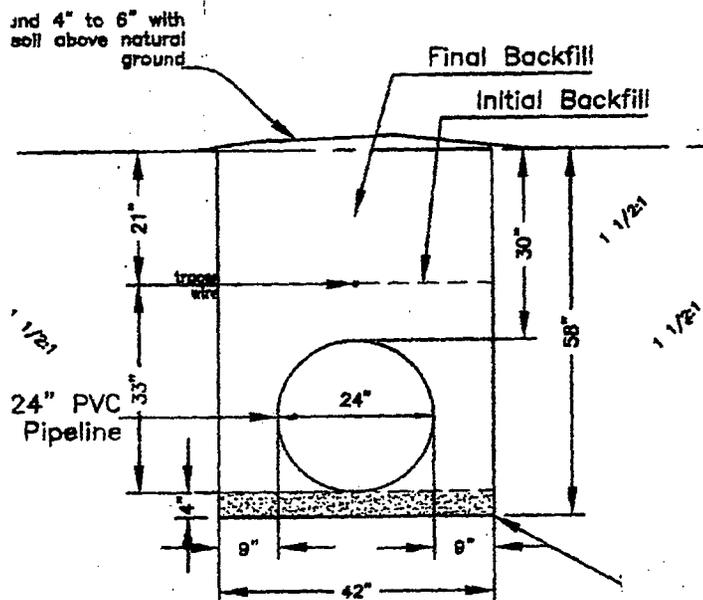
(9) Access/Egress. There must be a safe way, such as a ladder or steps, to get into and out of excavations 4 or more feet deep. In trenches, these cuts must be at least every 25 feet.

(10) Water. Workers will not enter excavations when there is accumulating water, unless every ground seepage or surface run-off, unless there are adequate precautions from hazards caused by the water.

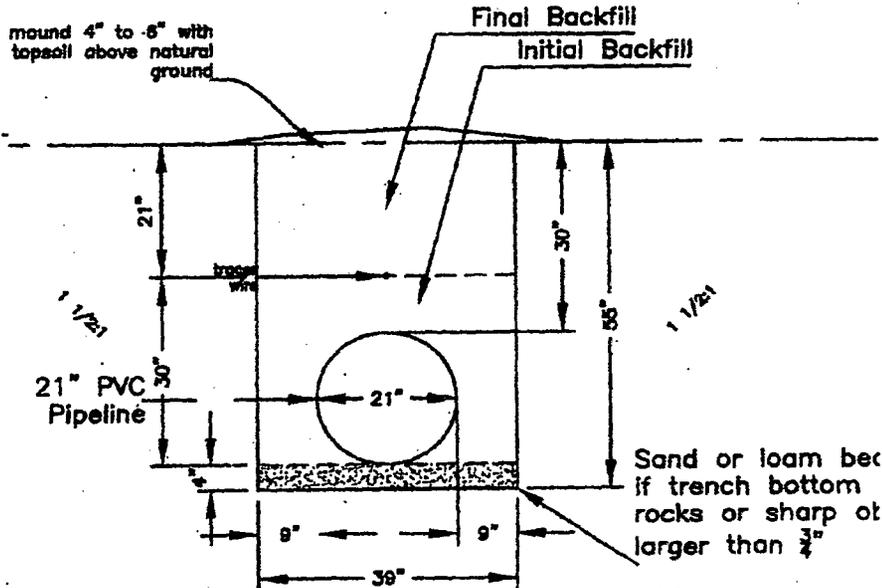
(11) Shoring daily. A person familiar with these rules and the work must inspect all excavations daily, before workers enter or remain.

(12) Shells and equipment. Keep soil and material removed from the excavation (spoils) at least two feet away from the edge of the excavation or restriction. Equipment that could roll or fall into the excavation must also be at least two feet back or restrained.

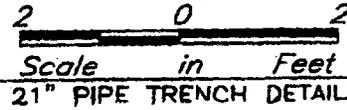
(13) Bury plates deeper than the minimum of 30" in field areas to avoid damage from these equipment.



DETAIL OF TRENCH BACKFILL



DETAIL OF TRENCH BACKFILL



Trench Backfill Detail sheet 3

* Pipes fit over pipe as shown to provide minimum cover in places where natural ground is low.

Final backfill shall be free from material larger than 3 inches.

Select backfill shall consist of soil or granular material that is free from rocks greater than 1 inch in diameter.

Bedding shall be used on foundations containing material larger than 1 inch. Bedding may be either granular material conforming to ASTM C-33 paragraph 7 or 8, or exact bedding material.

This drawing requires approving technical cooperation prior to use and must be adapted to the specific site.

See NRCS CS-13, NRCS CS-82, NRCS CS-84, NRCS MS-211

ORR 437-004-3100: Excavation

(1) Definition: Excavation -- A man-made cut, hole, pit, trench or depression in the earth.

NOTE: Before any digging you must comply with Oregon's "Call Before You Dig" law. Call 1-800-332-2344.

(2) Five feet or more: Employees must not enter any excavation 5 feet or deeper unless protective systems are in place to protect from cave-in or sloughing.

(3) Less than 5 feet: Employees must not enter any excavation less than 5 feet deep when the sides are being kept straight, are loose or show other signs of being unstable unless protective systems are in place to protect from cave-in or sloughing.

(4) Strength: Systems installed in the excavation must be strong enough and engineered to provide protection from hazards of the particular excavation.

ORR 437-004-3100 (continued)

Continued

(5) Design: Systems must be as follows:

(a) Designed by a registered professional engineer.

(b) Designed using the manufacturer's or other tabulated data.

(c) Follow instructions. When using manufactured systems, follow the instructions and do not exceed the limitations of the system.

(7) System size: Systems must extend from the bottom of the excavation to at least the top edge.

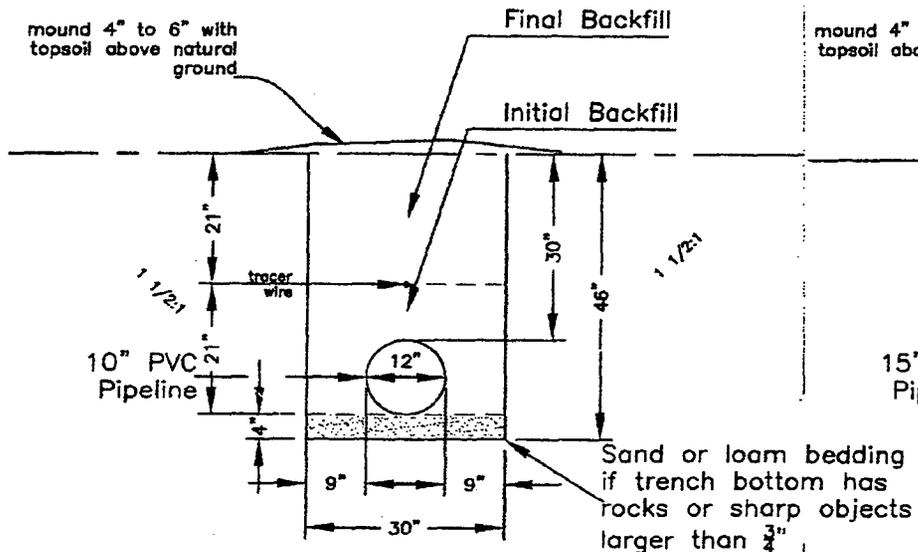
(8) Shoring: Shoring is an acceptable system to protect workers. Shoring must be at a ratio of at least 1 1/2 to 1. That means a horizontal distance of 1 1/2 feet for every 1-foot of trench depth.

(9) Access/Exit: There must be a safe way, such as a ladder or steps, to get into and out of excavations 4 or more feet deep. In addition, these ladders must be at least every 25 linear feet.

(10) Water: Workers will not enter excavations when there is accumulating water, either from ground seepage or surface run-off, unless there are adequate precautions taken to protect workers from the water.

(11) Inspect daily: A person familiar with these rules and the work must inspect all excavations daily, before workers enter or re-enter.

(12) Shields and equipment: Shields and equipment must be placed around the excavation (depth) of least two feet away from the edge of the excavation or re-entrant. Equipment that could roll or fall into the excavation must also be at least two feet back or restrained.

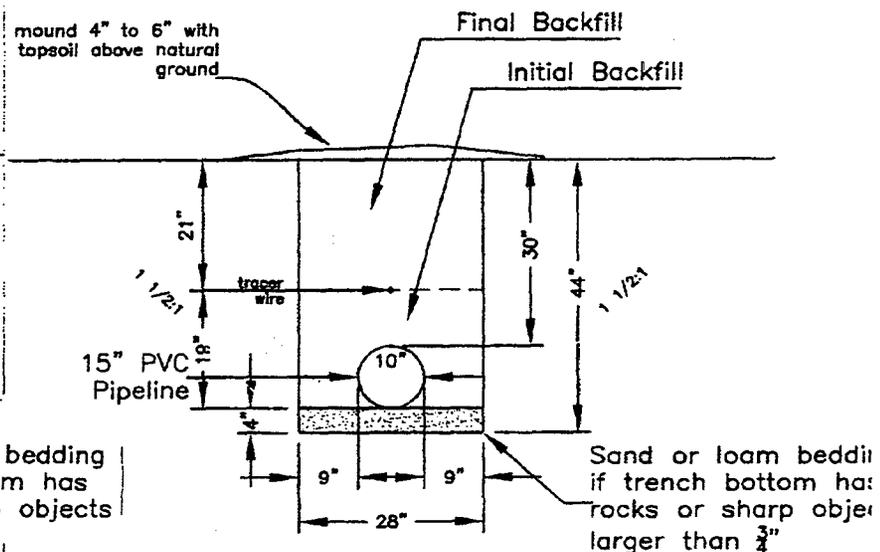


DETAIL OF TRENCH BACKFILL



Scale in Feet

12" PIPE TRENCH DETAIL



DETAIL OF TRENCH BACKFILL



Scale in Feet

10" PIPE TRENCH DETAIL

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____

County: _____
 Field ID: _____
 Evaluator: _____

Climatic Region: **Region26** Malheur

Crop Rotation	EXISTING		PLANNED	
	Annual Net Irrig Req't (in)	Peak ET Rate (in/day)	Annual Net Irrig Req't (in)	Peak ET Rate (in/day)
Year 1: Alfalfa Hay	34.3	0.30	Alfalfa Hay 34.3	0.30
Year 2: Alfalfa Hay	34.3	0.30	Alfalfa Hay 34.3	0.30
Year 3: Alfalfa Hay	34.3	0.30	Alfalfa Hay 34.3	0.30
Year 4: Alfalfa Hay	34.3	0.30	Alfalfa Hay 34.3	0.30
Year 5: Alfalfa Hay	34.3	0.30	Alfalfa Hay 34.3	0.30
Average:	34.3		Average:	34.3
Alternative NIR Value:	_____		Alternative NIR Value:	_____

Water right (ac-in/ac): **80**

Application System Predominant Soil: **Silt Loam**

Existing Application System: **Furrow - existing**

Planned Application System: **Center-Pivot**

Application System

Conveyance System Predominant Soil: **Silt Loam**

Existing Conveyance System: **Ditch-Unlined-Good**

Planned Conveyance System: **Pipeline**

Conveyance System

Planned Level of IWM: **Non-intense**

IWM

Estimated EXISTING water use: **73.3 acre-in/acre**

Estimated PLANNED water use: **40.1 acre-in/acre**

Annual Water Savings Estimate: **33.1 acre-in/acre**

Annual Water Savings Estimate: **45.2%**

Total Annual Water Savings Acres: **120**

Estimated savings for this field **ONLY**: **331.4 acre-ft**

Water right = **80 ac-in/ac**

Estimated Water Savings

	Existing System	Planned System
System Efficiency:	47%	85%
Quality Criteria Potential Efficiency:	57%	85%
Quality Criteria Met?	Yes	Yes

Quality Criteria

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____

County: Malheur _____
 Field ID: _____
 Evaluator: _____

Climatic Region: Region26 Malheur

Crop Rotation	EXISTING			PLANNED		
		Annual Net Irrig Req (in)	Peak ET Rate (in/day)		Annual Net Irrig Req (in)	Peak ET Rate (in/day)
Year 1	Onions	24.1	0.32	Onions	24.1	0.32
Year 2	Onions	24.1	0.32	Onions	24.1	0.32
Year 3	Onions	24.1	0.32	Onions	24.1	0.32
Year 4	Onions	24.1	0.32	Onions	24.1	0.32
Year 5	Onions	24.1	0.32	Onions	24.1	0.32
	Average:	24.1		Average:	24.1	
	Alternative NIR Value:	_____		Alternative NIR Value:	_____	

Water right (ac-in/ac): 80

Application System Predominant Soil:	Silt Loam	Application System
Existing Application System:	Furrow - existing	
Planned Application System:	Microirrigation	

Conveyance System Predominant Soil:	Silt Loam	Conveyance System
Existing Conveyance System:	Ditch-Unlined-Good	
Planned Conveyance System:	Pipeline	

Planned Level of IWM:	Non-intense	IWM
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Estimated EXISTING water use:	51.4 acre-in/acre	Water right = 80 ac-in/ac
Estimated PLANNED water use:	27.2 acre-in/acre	
Annual Water Savings Estimate:	24.2 acre-in/acre	Estimated Water Savings
Annual Water Savings Estimate:	47.2%	
Total Annual Water Savings Acres:	200	
Estimated savings for this field ONLY :	404.0 acre-ft	

	Existing System	Planned System	Quality Criteria
System Efficiency:	47%	89%	
Quality Criteria Potential Efficiency:	57%	89%	
Quality Criteria Met?	Yes	Yes	

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____

County: Malheur _____
 Field ID: _____
 Evaluator: _____

Climatic Region: Region26 Malheur

Crop Rotation	EXISTING		PLANNED		
	Annual Net Irrig Req't (in)	Peak ET Rate (in/day)	Annual Net Irrig Req't (in)	Peak ET Rate (in/day)	
Year 1: Sugar Beets	36.0	0.39	Sugar Beets	36.0	0.39
Year 2: Grain (Winter)	23.6	0.31	Grain (Winter)	23.6	0.31
Year 3: Potatoes	28.9	0.36	Potatoes	28.9	0.36
Year 4:					
Year 5:					
Average:		29.5	Average:		29.5
Alternative NIR Value:		_____	Alternative NIR Value:		_____

Water right (ac-in/ac): 80

Application System Predominant Soil: Silt Loam

Existing Application System: Furrow - existing

Planned Application System: Center-Pivot

Application System

Conveyance System Predominant Soil: Silt Loam

Existing Conveyance System: Ditch-Unlined-Good

Planned Conveyance System: Pipeline

Conveyance System

Planned Level of IWM: Non-intense

IWM

Estimated EXISTING water use: 63.0 acre-in/acre

Estimated PLANNED water use: 34.5 acre-in/acre

Annual Water Savings Estimate: 28.5 acre-in/acre

Annual Water Savings Estimate: 45.2%

Total Annual Water Savings Acres: 260

Estimated savings for this field **ONLY**: 617.7 acre-ft

Water right = 80 ac-in/ac

Estimated Water Savings

	Existing System	Planned System
System Efficiency:	47%	85%
Quality Criteria Potential Efficiency:	57%	85%
Quality Criteria Met?	Yes	Yes

Quality Criteria

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____

County: Malheur _____
 Field ID: _____
 Evaluator: _____

Climatic Region: Region26 Malheur

Crop Rotation	EXISTING		PLANNED	
	Annual Net Irrig Req (in)	Peak ET Rate (in/day)	Annual Net Irrig Req (in)	Peak ET Rate (in/day)
Year 1: Corn (Field)	28.5	0.35	28.5	0.35
Year 2:				
Year 3:				
Year 4:				
Year 5:				
Average:		28.5	Average: 28.5	
Alternative NIR Value:		_____	Alternative NIR Value: _____	

Water right (ac-in/ac): 80

Application System Predominant Soil:	Silt Loam	Application System
Existing Application System:	Center-Pivot - used	
Planned Application System:	Center-Pivot	

Conveyance System Predominant Soil:	Silt Loam	Conveyance System
Existing Conveyance System:	Ditch-Unlined-Good	
Planned Conveyance System:	Pipeline	

Planned Level of IWM:	Non-intense	IWM
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Estimated EXISTING water use:	45.2 acre-in/acre	Water right = 80 ac-in/ac
Estimated PLANNED water use:	33.3 acre-in/acre	
Annual Water Savings Estimate:	11.9 acre-in/acre	Estimated Water Savings
Annual Water Savings Estimate:	26.3%	
Total Annual Water Savings Acres:	80	
Estimated savings for this field ONLY :	79.2 acre-ft	

	Existing System	Planned System	Quality Criteria
System Efficiency:	63%	85%	
Quality Criteria Potential Efficiency:	74%	85%	
Quality Criteria Met?	Yes	Yes	

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____
 Climatic Region: Malheur

County:
 Field ID: _____
 Evaluator: _____

Crop Rotation	EXISTING	
	Annual Net Irrig Req (in)	Peak ET Rate (in/day)
Year 1:	Alfalfa Hay 34.3	0.30
Year 2:	Alfalfa Hay 34.3	0.30
Year 3:	Alfalfa Hay 34.3	0.30
Year 4:	Alfalfa Hay 34.3	0.30
Year 5:	Alfalfa Hay 34.3	0.30
Average:		34.3
Alternative NIR Value:		<input type="text"/>
Water right (ac-in/ac):		<input type="text" value="80"/>

Crop Rotation	PLANNED	
	Annual Net Irrig Req (in)	Peak ET Rate (in/day)
Year 1:	Alfalfa Hay 34.3	0.30
Year 2:	Alfalfa Hay 34.3	0.30
Year 3:	Alfalfa Hay 34.3	0.30
Year 4:	Alfalfa Hay 34.3	0.30
Year 5:	Alfalfa Hay 34.3	0.30
Average:		34.3
Alternative NIR Value:		<input type="text"/>

Application System Predominant Soil:

Existing Application System:

Planned Application System:

Application System

Conveyance System Predominant Soil:

Existing Conveyance System:

Planned Conveyance System:

Conveyance System

Planned Level of IWM:

IWM

Estimated EXISTING water use: Water right = 80 ac-in/ac

Estimated PLANNED water use:

Annual Water Savings Estimate:

Annual Water Savings Estimate:

Total Annual Water Savings Acres:

Estimated savings for this field **ONLY**:

Estimated Water Savings

	Existing System	Planned System
System Efficiency:	<input type="text" value="47%"/>	<input type="text" value="85%"/>
Quality Criteria Potential Efficiency:	<input type="text" value="57%"/>	<input type="text" value="85%"/>
Quality Criteria Met?	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>

Quality Criteria

COPY

Water Savings Estimator for Irrigation System Planning and Ranking



Applicant: _____
 Farm/Tract ID: _____
 Date: _____

County: Malheur _____
 Field ID: _____
 Evaluator: _____

Climatic Region: Region26 Malheur

Crop Rotation	EXISTING		PLANNED	
	Annual Net Irrig Req (in)	Peak ET Rate (in/day)	Annual Net Irrig Req (in)	Peak ET Rate (in/day)
Year 1: Corn (Field)	28.5	0.35	Corn (Field)	28.5
Year 2: Corn (Field)	28.5	0.35	Corn (Field)	28.5
Year 3: Corn (Field)	28.5	0.35	Corn (Field)	28.5
Year 4: Corn (Field)	28.5	0.35	Corn (Field)	28.5
Year 5: Corn (Field)	28.5	0.35	Corn (Field)	28.5
Average:	28.5		Average:	28.5
Alternative NIR Value:	_____		Alternative NIR Value:	_____

Water right (ac-in/ac): 80

Application System Predominant Soil:	Silt Loam	<i>Application System</i>
Existing Application System:	Furrow - existing	
Planned Application System:	Center-Pivot	

Conveyance System Predominant Soil:	Silt Loam	<i>Conveyance System</i>
Existing Conveyance System:	Ditch-Unlined-Good	
Planned Conveyance System:	Pipeline	

Planned Level of IWM:	Non-intense	<i>IWM</i>
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Estimated EXISTING water use:	60.8 acre-in/acre	Water right = 80 ac-in/ac
Estimated PLANNED water use:	33.3 acre-in/acre	
Annual Water Savings Estimate:	27.5 acre-in/acre	<i>Estimated Water Savings</i>
Annual Water Savings Estimate:	45.2%	
Total Annual Water Savings Acres:	120	
Estimated savings for this field ONLY:	275.2 acre-ft	

	Existing System	Planned System	<i>Quality Criteria</i>
System Efficiency:	47%	85%	
Quality Criteria Potential Efficiency:	57%	85%	
Quality Criteria Met?	Yes	Yes	

COPY

Newell Project Energy Savings Estimation

Total Acres Irrigated	Acres Furrow Irrigated	Acres Drip Irrigated	Acres Sprinkled
940	360	200	380

Total Water Allocation (GPM)	Water Allocated to Furrow	Water Allocated To Drip	Water Allocated to Sprinkler
10941	4190	2328	4423

Average Pressure (Drip)(Psi)	Average Pressure (Sprinkler)(Psi)	Average Pumping Plant Efficiency	Average Hours Per Season (Eastern Oregon)
35	47.5	75%	2000

Horsepower Saved (Drip)	Horsepower Saved (Sprinkler)
63	163

Equation: $\text{Allocated GPM} \times \text{Average Pressure (TDH)} / 3960 \times \text{Average Pplant Efficiency}$

kW Saved (Drip)	kW Saved (Sprinkler)
47	122

Equation: $\text{Horsepower Saved} \times 746 \text{ Watts}$

kWhs Saved (Drip)	kWhs Saved (Sprinkler)
94553	243801

Equation: $\text{kW saved} \times \text{Average Hrs per Season}$

What is the life expectancy of PVC pipe?

The durability of PVC pipes is related, as it is for all other thermoplastics materials, to the chemical degradation of the polymer used in the pipes. However unlike other thermoplastic pipes PVC pipes do not oxidise.

Stabilisers are used in PVC pipes to prevent degradation of the polymer during the extrusion process and storage of the pipes before they are buried in the ground. However, when the pipes are buried in the ground, no chemical degradation is expected to take place. For this reason the durability of the PVC material in buried pipes is expected to be very good (maybe even be more than 1000 years¹).

In standardised pipes for potable water (EN 1452) the expected lifetime of PVC pipes under pressure is extrapolated based on hoop stress testing of pipes for up to 20000 hours. This allows an estimation of the durability by extrapolation to a life expectancy under pressure of 50 to 100 years².

Real experience in Germany³ has shown that buried PVC pressure pipes dug up after 60 years of active use were proven to be fit for purpose when analysed and likely to have a further life expectancy of 50 years.

"Studies in the Netherlands have examined several potential degradation processes for PVC pipes and carried out tests on pipes up to 45 years old. These studies also concluded that the life of PVC drinking water systems could exceed 100 years."⁴

References

- 1 Janson, Lars Eric 1996 "Plastics Pipes - How long can they last? KP Council Nov. 1996
- 2 EN-ISO 9080.
- 3 60 Jahre Erfahrungen mit Rohrleitungen aus Weichmachfreiem PVC, 1995, KRV
- 4 'Long Term Performance of Existing PVC Water Distribution Systems' by A. Boersma and J Breen, 9th International PVC Conference, Brighton, 26-28th April 2005, pp 307-315.

[Back to the list](#)

OREGON WATERSHED ENHANCEMENT BOARD
RESTORATION GRANT AGREEMENT

Grantee: Owyhee Watershed Council

Grant Number: 212-5008

Grant Name: Newell Water Quality Improvement – Phase 1

Award Amount: \$351,010.00

Grant Completion Date: June 30, 2013

Post-Implementation Reporting Period: Two (2) years (See Exhibits C and D)

Post-Implementation Status Reporting Schedule: Two (2) annual reports are due with the first report due one year after the submission of the Project Completion Report and the second report due one year after the submission of the first annual report.

Grantee

Owyhee Watershed Council
PO Box 275
Adrian OR 97901
Phone: (541) 372-5782
Fax: (541) 372-5785
Email: agreenowc@qwestoffice.net
Contact: Adena Green

Project Manager for the Grantee

Adena Green
Owyhee Watershed Council
P.O. Box 275
Adrian, OR 97901
Phone: (541) 372-5782
Fax: (541) 372-5785
Email: agreenowc@qwestoffice.net

Fiscal Agent

Adena Green
Owyhee Watershed Council
PO Box 275
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Project Manager for the Board

Karen Leiendecker
OWEB
PO Box 538
Enterprise OR 97828
Phone: (541) 786-0061
Fax: (541) 426-6019
Email: karenoweb@eoni.com

Fund Source:

This grant includes \$351,010.00 of either Oregon Lottery funds or another state fund source and must comply with the requirements defined in Article XV, section 4b(2) of the Oregon Constitution.

This Grant Agreement is between the Oregon Watershed Enhancement Board, hereafter called "Board," and the Grantee as identified above, in consideration of the mutual covenants contained herein. This Agreement consists of the following, in descending order of precedence: this Agreement less all exhibits; attached Exhibits A (Schedule for Release of Funds), B (Special Conditions), C (Project Completion Report Requirements), D (Post-Implementation Status Report Requirements), E (Permits and Licenses), F (Cooperative/Landowner Agreement(s)), G (Oregon Prevailing Wage Rate Law), and H (Grant Application approved by the Board). All exhibits are incorporated by reference.

A. Authorization

This grant is authorized by ORS 541.351 to 541.401, as amended by Oregon Laws 2011, chapter 643, and is subject to Oregon Administrative Rules 695-001-0000 to 695-050-0050, as such rules may periodically be amended by the Board.

B. Grant Award

The Grantee agrees to perform the project described in the grant application (Exhibit H) and as specified in this Agreement, including without limitation in accordance with Sections C through O of this Agreement, and in accordance with the Special Conditions identified in Exhibit B. In return, the Board agrees to payment of costs identified in this Agreement according to the *Schedule for Release of Funds*, attached as Exhibit A.

The Grantee agrees that funds provided by the Board will be used only for the purposes specified in the grant application (Exhibit H) and as detailed in Exhibits A and B.

C. Term of Agreement

This Agreement will become effective upon signature by all parties. Any changes to the project must be approved before implementation and approved by all parties according to Section F, Amendments. The Project Completion Report is due within 60 days following grant completion. The Grantee will provide at least 25% non-Board match for the total amount of funding from the Board unless otherwise specified in Exhibit B.

D. Funding Conditions

The Board's obligation to disburse funds to Grantee under this Agreement is subject to the Board having received, on the date of each disbursement, sufficient funding, appropriations, limitations, allotments, or other expenditure authority to allow the Board, in the exercise of its reasonable administrative discretion, to make each disbursement. Nothing in this Agreement entitles Grantee to receive payment under this Agreement from any part of Oregon state government other than the Board, and nothing in this Agreement is to be construed as permitting any violation of Article IX, section 7 of the Oregon Constitution or any other law regulating liabilities or monetary obligations of the State of Oregon.

As a condition for the disbursement of any Board funds, the Grantee agrees to do the following:

1. Acknowledge Funding

- (a) Provide a "funding partners sign" on the project site if the property is adjacent to a federal, state, county, or other well-traveled road and is visible from the road.
- (b) Provide for review and approval by the Board's Project Manager, draft and final copies of any technical, outreach or informational materials produced through the grant before publication or electronic posting.
- (c) Provide acknowledgement on any technical, outreach or informational material produced through this grant and distributed either in paper or electronic form that funding was provided by the Board.

2. Obtain Necessary Permits and Licenses

Submit to the Board's Project Manager, before release of any Board funds for the project components requiring permits or licenses, or for activities dependent on portions of the project for which a permit or license has yet to be issued, copies of all permits and licenses from local, state or federal agencies or governing bodies that have been obtained, or written evidence that permits and licenses are not needed (see Exhibit E, *Permits and Licenses*) as required by ORS 541.375(10).

This statute gives OWEB discretion in releasing funds for portions of projects that do not require a permit or license. In considering whether to release funds for portions of on-the-ground restoration activities that do not require permits or licenses, OWEB will consider whether the activities provide ecological benefit consistent with the project objectives, and are not dependent on the portion of the project for which a permit or license has yet to be issued. OWEB also has the discretion to condition its release of funds based on specific circumstances of a project. Grantee should review Exhibit B Special Conditions of this Agreement for any related conditions with respect to permitting, licensing and fund release.

3. Comply With Implementation Conditions

- (a) Submit to the Board's Project Manager, before release of any Board funds, documentation that non-Board match has been secured as required by OAR 695-005-0060(3).
- (b) Notify the Board's Project Manager when any change or modification of the project is proposed.
- (c) Comply with the Oregon Aquatic Habitat Restoration Guidelines under the Oregon Plan for Salmon and Watersheds.
See <http://www.oregon.gov/OWEB/docs/pubs/habguide99-complete.pdf>.
- (d) Inform the Board's Project Manager of any address changes.
- (e) Adhere to the Special Conditions as described in Exhibit B.

4. Document and Report Project Completion

- (a) Submit to the Board's Project Manager all verifiable receipts, expenditure tracking sheet, and other accounting records throughout the term of this Agreement to document expenditure of grant fund installments, and to account for all other funding, in-kind contributions and donations in the Project Completion Report.
- (b) Submit to the Board's Project Manager a Project Completion Report (Exhibit C) and final Request for Release of Funds form within 60 days of grant completion date.

5. Post-Implementation Reporting

Submit to the Board's Project Manager a Post-Implementation Status Report, as required in Exhibit D.

E. Records Maintenance and Access

- 1. Access to Records and Facilities.** The Board, the Secretary of State's Office of the State of Oregon and their duly authorized representatives will have access to the books, documents, papers and records of Grantee that are directly related to this Agreement, the

grant moneys provided hereunder, or the project for the purpose of making audits and examinations. In addition, the Board, the Secretary of State's Office of the State of Oregon and their duly authorized representatives may make and retain excerpts, copies and transcriptions of the foregoing books, documents, papers and records. Grantee will permit authorized representatives of the Board, the Secretary of State's Office of the State of Oregon and their duly authorized representatives to perform site reviews of all services delivered as part of the project.

2. **Retention of Records.** Grantee will retain and keep accessible all books, documents, papers, and records that are directly related to this Agreement, the grant moneys or the project for a minimum of six (6) years, or such longer period as may be required by other provisions of this Agreement or applicable law, following termination or expiration of this Agreement. If there are unresolved audit questions or litigation at the end of the six-year period, Grantee will retain the records until the questions or litigation is resolved.
3. **Expenditure Records.** Grantee will document the expenditure of all grant moneys disbursed by the Board under this Agreement. Grantee will create and maintain all expenditure records in accordance with generally accepted accounting principles and in sufficient detail to permit the Board to verify how the grant moneys were expended, including without limitation accounting for all other funds expended, as well as in-kind services and donated materials.

F. Amendments

Any modifications of this Agreement must be mutually agreed to in writing by all parties. Amendments for time extensions, reinstatements, and award amendments will be permitted only if all reporting obligations under any earlier agreements have been met. Other amendments, such as budget or fiscal agent changes, may proceed regardless of reporting obligation status. Modifications to the budget elements only, as shown in Exhibit A, may be approved for change upon signature of the Board's Project Manager.

G. Assignment

The Grantee will not assign or transfer its interest in this Agreement without prior written approval from the Board.

H. Permission Required to Access Private Property; Access to Project Sites

In carrying out this Agreement, Grantee will not access any private property without first obtaining verbal or written consent from the landowner of the private property. Grantee will direct its contractors not to access private property without first obtaining verbal or written consent from the landowner of the private property.

Upon Board request and consistent with the Cooperative/Landowner Agreement(s) meeting the requirements as specified in Exhibit F, Grantee will seek the landowner's permission for mutually convenient access to the project site by Board members and their representatives for the purposes of evaluating project implementation, completion, post-implementation status or effectiveness.

I. Public Domain Information

Projects funded by this grant may be used in the collection of monitoring information on private lands about the effects of the project on aquatic or terrestrial conditions. Grantee acknowledges that all monitoring information obtained from private lands may become public information subject to the requirements of ORS 192.410 to 192.505.

J. Post-Implementation Maintenance and Post-Implementation Reports

Projects funded by the Board are intended to provide long-term benefits to the watershed. The Grantee or landowner will provide necessary and normal maintenance to sustain the value of the project once it is completed. Maintenance will be in accordance with the terms of the Cooperative/Landowner Agreement(s) (Exhibit F).

Grantee may be required to submit a Post-Implementation Status Report to the Board on the status of the grant at a frequency and period specified on page 1 of this Agreement. Those reports will be in accordance with the *Post-Implementation Status Reporting Requirements*, attached as Exhibit D.

K. Termination of Grant Agreement

If this Agreement is not signed by all parties within one (1) year of Board approval, funding will be terminated. OAR 695-005-0050(2)

This Agreement may be terminated:

1. At any time by mutual written consent of all parties;
2. Upon written notice by the Board to Grantee for Grantee's failure to perform any other provision of this Agreement;
3. Upon 30 days written notice by the Board to Grantee for any other reason specified in writing; or
4. At any time, upon written notice by the Board, if the Board lacks sufficient funding, appropriations, limitations, allotments, or other expenditure authority to allow the Board, in the exercise of its reasonable administrative discretion, to disburse the grant funds.

Within 30 days of termination, Grantee will return to the Board any unspent funds provided by the Board under this Agreement in accordance with Section O, Recovery of Grant Funds. The Board will reimburse the Grantee for authorized services performed and expenses incurred before termination under this Agreement.

L. Compliance With Applicable Law

Grantee shall comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to this Agreement or to the project. Without limiting the generality of the foregoing, Grantee expressly agrees to comply with the following laws, regulations and executive orders to the extent they are applicable to the Agreement or the project: (a) all applicable requirements of state civil rights and rehabilitation statutes, rules and regulations, (b) Titles VI and VII of the Civil Rights Act of 1964, as amended, (c) Sections 503 and 504 of the Rehabilitation Act of 1973, as amended, (d) the Americans with Disabilities Act of 1990, as amended, (e) Executive Order 11246, as amended, (f) the Health Insurance Portability and Accountability Act of 1996, (g) the Age Discrimination in Employment Act of 1967, as

amended, and the Age Discrimination Act of 1975, as amended, (h) the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, (i) all regulations and administrative rules established pursuant to the foregoing laws, and (j) all other applicable requirements of federal civil rights and rehabilitation statutes, rules and regulations. These laws, regulations and executive orders are incorporated by reference herein to the extent that they are applicable to the Agreement or the project and required by law to be so incorporated. Grantee shall not discriminate against any individual, who receives or applies for services as part of the project, on the basis of actual or perceived age, race, creed, religion, color, national origin, gender, disability, marital status, sexual orientation, age or citizenship. All employers, including Grantee, that employ subject workers who provide services in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126.

M. Grantee Authority

The individual signing on behalf of the Grantee hereby certifies and swears under penalty of applicable law that s/he is authorized to act on behalf of Grantee, has authority and knowledge regarding Grantee's payment of taxes, and to the best of her/his knowledge, Grantee is not in violation of any Oregon tax laws.

N. Indemnity

Grantee will defend (subject to any limitation imposed by ORS Chapter 180), save, hold harmless, and indemnify the State of Oregon and the Board and their officers, employees and agents from and against all claims, suits, actions, losses, damages, liabilities, costs and expenses of any nature resulting from or arising out of, or relating to the activities of Grantee or its officers, employees, contractors, or agents under this Agreement or in the implementation of the project.

O. Recovery of Grant Funds

Any funds disbursed to Grantee under this Agreement that are expended in violation or contravention of one or more of the provisions of this Agreement ("Misexpended Funds") or that remain unexpended on the earlier termination of this Agreement or grant completion ("Unexpended Funds") must be returned to the Board not later than 15 days after the Board's written demand.

THIS AGREEMENT, INCLUDING ALL MATERIALS INCORPORATED BY REFERENCE, CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES ON THIS SUBJECT. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HERE REGARDING THIS AGREEMENT. NO WAIVER, CONSENT, MODIFICATION OR CHANGE OF TERMS OF THIS AGREEMENT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION OR CHANGE, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THE FAILURE OF THE BOARD TO ENFORCE ANY PROVISION OF THIS AGREEMENT SHALL NOT CONSTITUTE A WAIVER BY THE BOARD OF THAT OR ANY OTHER PROVISION. GRANTEE, BY EXECUTING THIS AGREEMENT, HEREBY ACKNOWLEDGES THAT GRANTEE HAS READ THIS AGREEMENT, UNDERSTANDS IT AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

CERTIFICATION

GRANTEE CERTIFIES THAT BEFORE BEGINNING WORK ON PROJECTS INVOLVING PRIVATE LANDS, GRANTEE HAS SECURED, OR WILL SECURE, COOPERATIVE LANDOWNER AGREEMENTS WITH ALL PARTICIPATING PRIVATE LANDOWNERS THAT, AT A MINIMUM, INCLUDE THE FOLLOWING:

- (a) Permission to access the private land, at times agreeable to the landowner, to implement the project, inspect the project, track the status of the project, or perform repairs or maintenance;
- (b) Permission for the Board or its representatives to access the private land for inspections and evaluations of the project;
- (c) Identification of the party responsible for repairs and maintenance of the project; and
- (d) Acknowledgement that the landowner is aware of the application to OWEB and that information relating to the work, including effectiveness monitoring data, is a public record.

AGREED:

FOR THE GRANTEE:

Adena L Green

ADENA L GREEN
Print Name

10-20-11
Date

FOR THE BOARD:

David Luman
OWEB Grant Program Manager

10/14/11
Date

**(If the grant is for more than \$150,000)
APPROVED FOR LEGAL SUFFICIENCY:**

Jay Adams
Assistant Attorney General
Oregon Department of Justice

10/13/11
Date

EXHIBIT A
SCHEDULE FOR RELEASE OF FUNDS

All fund requests must be submitted using the most current Request for Release of Funds form signed by the Grantee or the Grantee's authorized agent. Funds are released upon presentation of receipts, invoices or bills for purchases or work accomplished. If a landowner is requesting reimbursement for materials and supplies provided for the project, OWEB may reimburse Grantee for certain costs, pursuant to the landowner receipts guidance provided in OWEB's Grant Billing Instructions at: http://www.oregon.gov/OWEB/forms_linked.shtml.

Funds may also be released in advance on the basis of a detailed estimate of expenses. Receipts/invoices and an expense tracking spreadsheet must be submitted to document **all funds** received from the Board for this project within 120 days of the date of the check. Failure to comply may delay new grants from being issued, and other grant payment requests and amendments.

Authorized travel expenses will be reimbursed at State of Oregon rates. Receipts for lodging are required for reimbursement. In-house personnel costs include: gross wages, payroll taxes, health insurance, retirement benefits, accrued leave liability, and workers compensation insurance. Fiscal administration costs include: accounting, auditing, contract management and fiscal reporting expenses, including final report expenses for this grant. Definitions of Budget Categories can be found at: http://oregon.gov/OWEB/forms/budget_categories_defs_sep06.pdf.

The grant budget consists of the elements listed below. Modifications to the budget elements only, as shown in Exhibit A, may be approved for change upon signature of the Board's Project Manager.

Budget Category	Amount
OWEB Funds	
Pre-Implementation	\$0.00
Project Management	\$1,250.00
In-House Personnel	\$0.00
Contracted Services	\$0.00
Travel	\$30.00
Supplies/Materials	\$345,759.00
Equipment	\$0.00
Outreach	\$0.00
Categories Subtotal	\$347,039.00
Fiscal Administration (OAR 695-005-0030(5))*	\$3,471.00
Post-Implementation Status Reporting	\$500.00
Effectiveness Monitoring	\$0.00
Plant Establishment	\$0.00
Grant Total	\$351,010.00

***Not to exceed 10% of the Categories Subtotal**

Note: The final 10% of the grant (\$35,101.00) will be released for payment upon receipt of all grant expense documentation and acceptance of the Project Completion Report by the Board. OAR 695-005-0060(8)

EXHIBIT B
SPECIAL CONDITIONS

1. Special Grant Conditions.

The following special conditions apply to the implementation of this Agreement:

- (a) Grantee will notify the Board's Project Manager when initial construction is scheduled for a site review with the contractor.
- (b) Submit to the Board's Project Manager **two (2) copies** of all fiscal-related materials including accounting receipts, request for funds, reports, permits and other related documentation associated with this project.
- (c) OWEB will not release any funds for a project site until Grantee has submitted to the Board's Project Manager copies of signed Cooperative/Landowner Agreement(s) for that project site [See Exhibits E and F] **OR** documentation from the Grantee of verbal Cooperative/Landowner Agreement(s) for that project site.
- (d) Grantee will provide a brief report to the Board on the progress made to implement the project before Board action on awarding the reserved and committed funding. The report should be in the form of a brief e-mail to the Board's Project manager. The subject heading in the e-mail should be "212-5008 Progress Report."

2. Project Completion and Post-Implementation Status Reports.

The following special conditions apply to both reports:

- (a) The Project Completion Report and the Post-Implementation Status reports must address the following:
 - i) The preliminary engineering estimated a 28-30 percent water savings. The reports will include
 - 1) descriptions of whether the system was constructed as designed and is functioning and performing as predicted, including installation (e.g., was it installed as designed, or were there changes that may affect the water savings),
 - 2) number of acres converted to sprinklers to-date, and
 - 3) other factors considered in the original estimate of the water savings.
 - ii) Include any calculations done by the Owyhee Irrigation District (OID) regarding water savings as a result of this project.
 - iii) Include, if applicable, whether there have been any changes in irrigation practices including the timing and duration of irrigation.

3. Project Completion Report.

The following special condition applies to the Project Completion Report:

- (a) Include a project component map that shows the location of all installed project components and include a legend and scale.

4. Post-Implementation Status Report.

The following special conditions apply to the Post-Implementation Status Report:

- (a) Provide any collected or anecdotal information in the report regarding the effect on water use within the area irrigated by the installed pipeline, realizing that there are different water needs in different years depending on type of crops grown, precipitation, and other factors. Therefore, it would be very difficult to provide exact data on water savings.
- (b) Provide any water quality monitoring data collected.
- (c) As applicable, submit all water quality data (including temperature) to DEQ at: <http://www.deq.state.or.us/lab/lasar.htm> and provide confirmation that your data were successfully transmitted to DEQ.

EXHIBIT C

PROJECT COMPLETION REPORT REQUIREMENTS

Oregon Administrative Rule 695-010-0100(1) states that “Grantee must submit a report at completion of the project describing the work done and placing it in its larger watershed context.” Therefore, the Board requires **Grantee to submit a Project Completion Report within 60 days following project completion** that includes, but is not limited to:

- (1) A **final project summary** that in 200 words or less, describes **what the project accomplished and what problem(s) it addressed**. The information you provide will be used for accountability and reporting purposes, and displayed for the general public. Please make a clear and concise statement; avoid jargon and acronyms. For guidance see www.oregon.gov/OWEB/GRANTS/final_report_guidance.shtml.
- (2) A brief, narrative description of the project including:
 - (a) Background on the problem that generated the project;
 - (b) A description of the work done, placing it in its larger watershed context;
 - (c) A description and explanation of any changes to the original proposal;
 - (d) A summary of any outreach activities related to the project, including identification of any tours or presentations and copies of newspaper or other media coverage about the project;
 - (e) Lessons learned, if any, from the project; and
 - (f) Recommendations, if any, for more effective implementation of similar projects.
- (3) **See Exhibit B for any Special Conditions applying to the Project Completion Report.**
- (4) Documentation that the project complies with the Oregon Aquatic Habitat Restoration and Enhancement Guide, if applicable. See <http://www.oregon.gov/OWEB/docs/pubs/habguide99-complete.pdf>.
- (5) Color photographs of the project areas before and after the project completion taken at pre-set photo points. Guidelines for photo point documentation are provided on the OWEB website at: http://www.oregon.gov/OWEB/docs/pubs/PhotoPoint_Monitoring_Doc_July2007.pdf.
- (6) Completed copy of the most current version of the Oregon Watershed Restoration Inventory (OWRI) with the required map(s) and location information. The forms and instructions for submittal are available on the OWEB website at: <http://www.oregon.gov/OWEB/MONITOR/OWRI.shtml>.
- (7) An accounting of the expenditures of Board moneys and all other funding in the project, including a final accounting of all in-kind contributions, donations and the **required non-Board match funds**, using the Match Form for Final Report form provided on the OWEB website at http://www.oregon.gov/OWEB/forms_linked.shtml.

The Board’s Project Manager must review and approve project completion, including the review and approval of all documents, permits, invoices, etc., before the final 10% of the grant award is released.

Submittal and acceptance of a Project Completion Report and final request for release of funds will authorize the Board to retain any remaining unspent funds.

OWEB will not issue new grant agreements when Grantee has any outstanding reports due to OWEB.

EXHIBIT D

POST-IMPLEMENTATION STATUS REPORT REQUIREMENTS

Oregon Administrative Rule 695-010-0100(2) states that “Grantee will monitor the long-term effectiveness of the project, and continue its maintenance, submitting periodic reports on a schedule set by the Board. All reports will be filed with the Board or at a location specified by the Board.”

A Post-Implementation Status Report must include the following elements:

1. An assessment of whether the project continues to meet the goals specified in the Grant Agreement.
2. A description of any maintenance or modifications made since project completion or since the last Status Report, whichever was last.
3. An accounting of any costs associated with project maintenance and reporting to the Board.
4. A summary of any outreach activities related to the project undertaken since project completion or since the last Status Report, whichever was last.
5. Lessons learned, if any, from the project.

Unless otherwise specified, the Grantee will provide color photos of all project elements (i.e., fencing, planting, or structures) to show compliance of the project with the Board funding decision. Photo points will be set up, and the color photographs should be taken with the same focal-length lens at the same time of year, showing conditions before and after project completion. Guidelines for photo point documentation are provided on the OWEB website at: http://www.oregon.gov/OWEB/docs/pubs/PhotoPoint_Monitoring_Doc_July2007.pdf.

Photos must be taken:

1. At the same location as photographs from before project implementation (see Exhibit C);
2. Upon project completion; and
3. For each year the Board requires a Status Report. (See reporting requirements for this grant in Section J.)

NOTE: See Exhibit B for any Special Conditions applying to the Post-Implementation Status Report.

EXHIBIT E

PERMITS AND LICENSES

ORS 541.375(10) states that “the Board may not disburse funds to the applicant for any part of the project that requires the applicant to obtain a permit or license from a local, state or federal agency or governing body until the applicant presents evidence that the agency has granted the permit or license.” This statute gives OWEB discretion in releasing funds for portions of projects that do not require a permit or license. In considering whether to release funds for portions of on-the-ground restoration activities that do not require permits or licenses, OWEB will consider whether the activities provide ecological benefit consistent with the project objectives, and are not dependent on the portion of the project for which a permit or license has yet to be issued. OWEB also has the discretion to condition its release of funds based on specific circumstances of a project. Grantee should review Exhibit B Special Conditions of this Agreement for any related conditions with respect to permitting, licensing and fund release.

All or any portion of the project may require a state or federal permit, license or General Authorization. Before the release of Board funds for activities requiring a permit, license or for activities dependent on portions of the project for which a permit or license has yet to be issued, the Grantee must submit written evidence that the work under this Agreement will comply with all applicable federal, state and local laws. Copies of the applicable issued permits, licenses and other agreements will provide sufficient evidence that this requirement has been met and the Grantee has complied with the requirements as defined in ORS 541.375(10).

The following are often required for projects involving waterway alteration or watershed enhancement. (See *Oregon Plan for Salmon and Watersheds, A Guide to Oregon Permits Issued by State and Federal Agencies, Spring 2000* on the OWEB website at: <http://www.oregon.gov/OWEB/docs/pubs/permitguide.pdf>)

- Removal/Fill permit(s) – Dept. of State Lands
- Water Right Permit(s) – Water Resources Dept.
- Zone or Development Permit(s) – City or County Planning Department.
- Fill permit(s) – US Army Corps of Engineers
- City or County permit(s)

The foregoing list of permits and licenses is not exhaustive. I understand that it is my responsibility to determine which permits, licenses and General Authorizations are required for the project.

List the components of your project requiring permits or licenses and the associated permit(s)/license(s). If necessary, list additional activities requiring a permit or license, the name of the permit or license and issuer on a separate page and attach to this Exhibit.

Project Activity Requiring Permit/License	Permit/License Name and Entity Issuing
NONE	

Adena L. Green
 Grantee Signature

10-20-11
 Date

EXHIBIT F

COOPERATIVE/LANDOWNER AGREEMENT(S)

Grantee has certified that before beginning work on projects involving private lands, Grantee will obtain a Cooperative Agreement from the landowner of the property that, at a minimum, includes:

- (a) Permission to access the private land, at times agreeable to the landowner, to implement the project, inspect the project, track the status of the project, or perform repairs or maintenance;
- (b) Permission for the Board or its representatives to access the private land for inspections and evaluations of the project;
- (c) Identification of the party responsible for repairs and maintenance of the project; and
- (d) Acknowledgement that the landowner is aware of the application to OWEB and that information relating to the work, including effectiveness monitoring data, is a public record.

A sample Cooperative/Landowner Agreement form is available on OWEB's website at http://www.oregon.gov/OWEB/forms_linked.shtml. Such Agreement shall include (but are not limited to):

- Landowner's certification that the landowner owns the land where the work will be carried out;
- Landowner's Agreement to allow Grantee to carry out the work, or a portion of the work on the Landowner's property;
- Landowner's Agreement to allow maintenance of the work over a time period consistent with the grant application;
- Landowner's Agreement to allow the OWEB Board and its representatives access to the site where the work is being carried out for inspection and evaluation; and
- Landowner's acknowledgment that he/she is aware of the application to OWEB and that information relating to the work, including effectiveness monitoring data, is a public record.

EXHIBIT G

OREGON PREVAILING WAGE RATE LAW

Grantees may be required to comply with Oregon's prevailing wage rate law. ORS 279C.800-279C.870. This law requires that entities using public funds for public works must pay not less than the prevailing rate of wage for an hour's work, including fringe benefits, in the same trade in the locality where the work is performed. Contracts not exceeding \$50,000 are exempt from prevailing wage rate laws and nonprofit organizations are exempt for work other than construction. Public works is defined as including "roads, highways, buildings, structures and improvements of all types, the construction, reconstruction, major renovation or painting of which is carried on or contracted for by any public agency to serve the public interest . . ." ORS 279C.800(6)(a). Construction is defined as "the initial construction of buildings and other structures, or additions thereto, and of highways and roads." OAR 839-025-0004(5)

Failure to comply with prevailing wage rate laws could result in a Grantee being liable to the workers affected in the amount of their unpaid minimum wages, including all fringe benefits, and in an additional amount equal to unpaid wages as liquidated damages.

Information regarding prevailing wage rate law can be found on the Bureau of Labor and Industries website at http://www.oregon.gov/BOLI/WHD/PWR/W_PWR_Pwrbk.shtml.

EXHIBIT H
OWEB GRANT APPLICATION
(In OWEB files)